Southeast Truckee Meadows Flood Control Master Plan Addendum

Southeast Damonte Ranch

Prepared for:

Nevada Tri-Partners

November 2002

Job No. 0214

Nimbus Engineers

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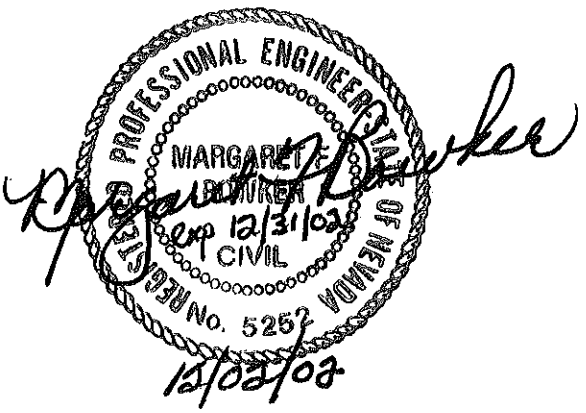

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Table of Contents

Table of Figures

List of Plates

List of Tables

Appendices

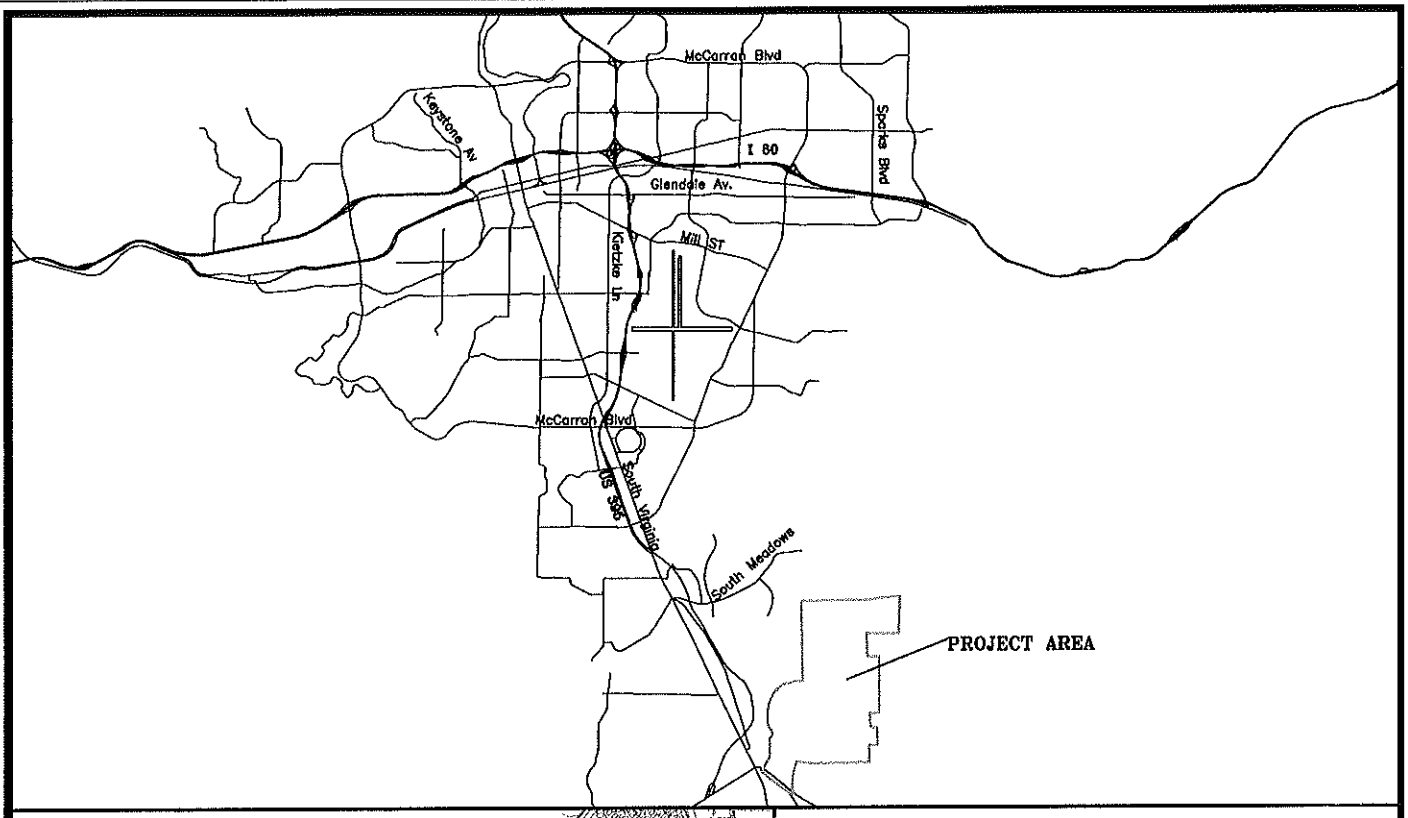
1.0 Introduction

The Southeast Truckee Meadows Flood Control Master Plan was originally prepared for the Nevada Tri-Partners in May 1995 (Nimbus, 1995). This plan was developed in order to provide a general framework for the future development within the area north of Geiger Grade referred to as the Damonte Ranch. This area is bounded on the east by Mira Loma Road, the west by Old Highway 395 / South Virginia Street, and on the north by the Bella Vista Ranch and the Double Diamond Ranch development. Figure 1 shows a vicinity map for this area.

The Southeast Truckee Meadows Specific Plan area lies within the Steamboat Creek hydrologic basin. In addition to Steamboat Creek, flows from two branches of Whites Creek and flows from the Virginia Range affect this area. Regional detention facilities and major channel systems provide conveyance and control of 100-year storm waters. A Conditional Letter of Map Revision (CLOMR) for the Damonte Ranch/Double Diamond Ranch Regional Flood Control Improvements (FEMA Case No. 01-09-589R) (Nimbus, 2001) was approved by FEMA in October of 2001.

A number of hydrology and hydraulic analysis reports are available for this area and the surrounding development. These reports are listed in the reference section.

The Southeast Damonte Ranch is located within the watersheds surrounding the new flood control detention facilities on Damonte Ranch. Damonte Ranch is a medium- to high-density single family residential development with lot sizes generally less than 1/8 acre. This is in general agreement with the original Specific Plan used to develop the Master Flood Control Plan.



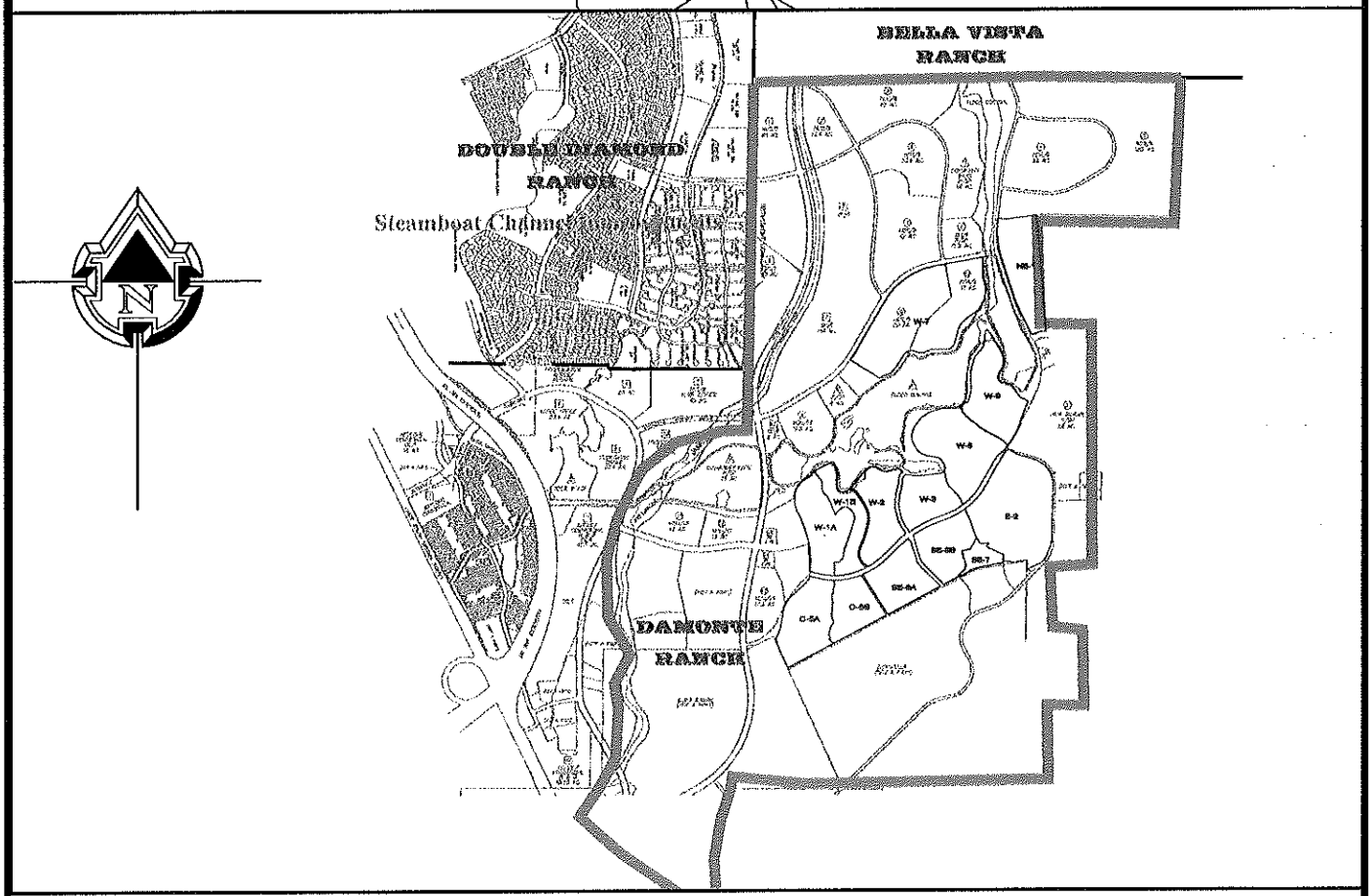


Figure 1
Vicinity Map

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2.0 Hydrologic Analyses for Southeast Damonte Ranch

The SCS methods were originally used to develop the on-site parameters used in the HEC-1 (U.S. Army Corps of Engineers, 1998) hydrologic modeling for the Southeast Truckee Meadows. The watershed boundaries for the Southeast Damonte Ranch were modified only slightly in this study from the original proposed watersheds. Watershed areas were adjusted to agree with the new layout. Figure 2 shows the watershed map for the region and Figure 3 shows the original proposed development on-site watersheds. Plate 1 shows the up-dated developed conditions on-site watersheds used in the new HEC-1 model.

Curve numbers originally developed for this area as a part of the Southeast Truckee Meadows Flood Control Master Plan were used in both the original and the new proposed conditions hydrologic models. Any changes based on development type are reflected in the percent impervious area. The average percent impervious area for the new Southeast Damonte Ranch was determined based upon the criteria in Table 702 of the Washoe County, Hydrologic Criteria and Drainage Design Manual (Washoe County, 1996). This parameter was adjusted in the model to agree with the estimated percent impervious area by watershed. Developed conditions used to estimate percent impervious were 1/8 and ¼ acre lots, neighborhood areas, and parks and golf courses. Table 1 shows the watersheds modified by division or simply by hydrologic parameters in the HEC-1 model.

Table 1. HEC-1 watershed parameters.

Original HEC-1 model – PSTMWHIT.DAT					Updated HEC-1 Model – 214DMNTE.DAT				
Watershed	Area (mi^2)	CN	% Imp	Lag Time (hr)	Watershed	Area (mi^2)	CN	% Imp	Lag Time (hr)
C-5	0.068	70	63	0.20	C-5A	0.046	70	65	0.20
					C-5B	0.029	70	65	0.20
C-7	0.026	81	70	0.16	C-7	0.025	81	70	0.16
T-1	0.036	74	68	0.20	T-1	0.034	74	68	0.20
W-1	0.065	81	65	0.22	W-1A	0.044	81	65	0.22
					W-1B	0.027	81	65	0.22
W-2	0.027	73	5	0.18	W-2	0.039	73	5	0.18
W-3	0.04	73	70	0.18	W-3	0.031	73	65	0.18
W-8	0.063	81	63	0.19	W-8	0.062	81	65	0.19
W-9	0.041	81	64	0.19	W-9	0.048	81	65	0.19
E-2	0.07	74	38	0.21	E-2	0.09	74	38	0.21
SE-7	0.01	76	65	0.14	SE-7	0.01	76	65	0.14
SE-8	0.065	78	64	0.22	SE-8A	0.035	78	65	0.22
					SE-8B	0.036	78	65	0.22
W-6	0.017	77	5	0.15	NA				
W-7	0.053	76	70	0.17	W-7	0.11	76	65	0.3
NE-1	0.044	63	34	0.24	NE-1	0.05	63	38	0.24
N-1	0.104	76	68	0.29	N-1	0.081	76	68	0.29
NW-3	0.076	73	65	0.22	NW-3	0.069	73	65	0.22

Explanation

- Watershed Boundaries
- Damonte Watershed Boundary
- Combine Points
- Routing

CP DN
D2
D1
See Figure 3 for original proposed conditions - Damonte on-site watersheds.
CP P3
CS DSW
W18R
W18RA
B1
B2
C
CP W4
W11R
CP W
OUT DS
CP23
E2
A
W20R
CP P4
W10R
OUT40
CP DIF
CP W4
W17R
W19R
F1
E1
W8R
W8+CH
W7+CH
W7R
W6R
40
W5R
W6+CH
W1+W2
W1R
W1-W4
W4R
W9R
OUT30
J1
W2R
W3R
OUT J1
G3
G2
OUT35
35
30
G1
15

Figure 2

Off-site
Watershed Map

Nimbus Job No. 0214

Date: April 2002

N
W
E
S

0 5000 10000 15000 20000 25000 Feet

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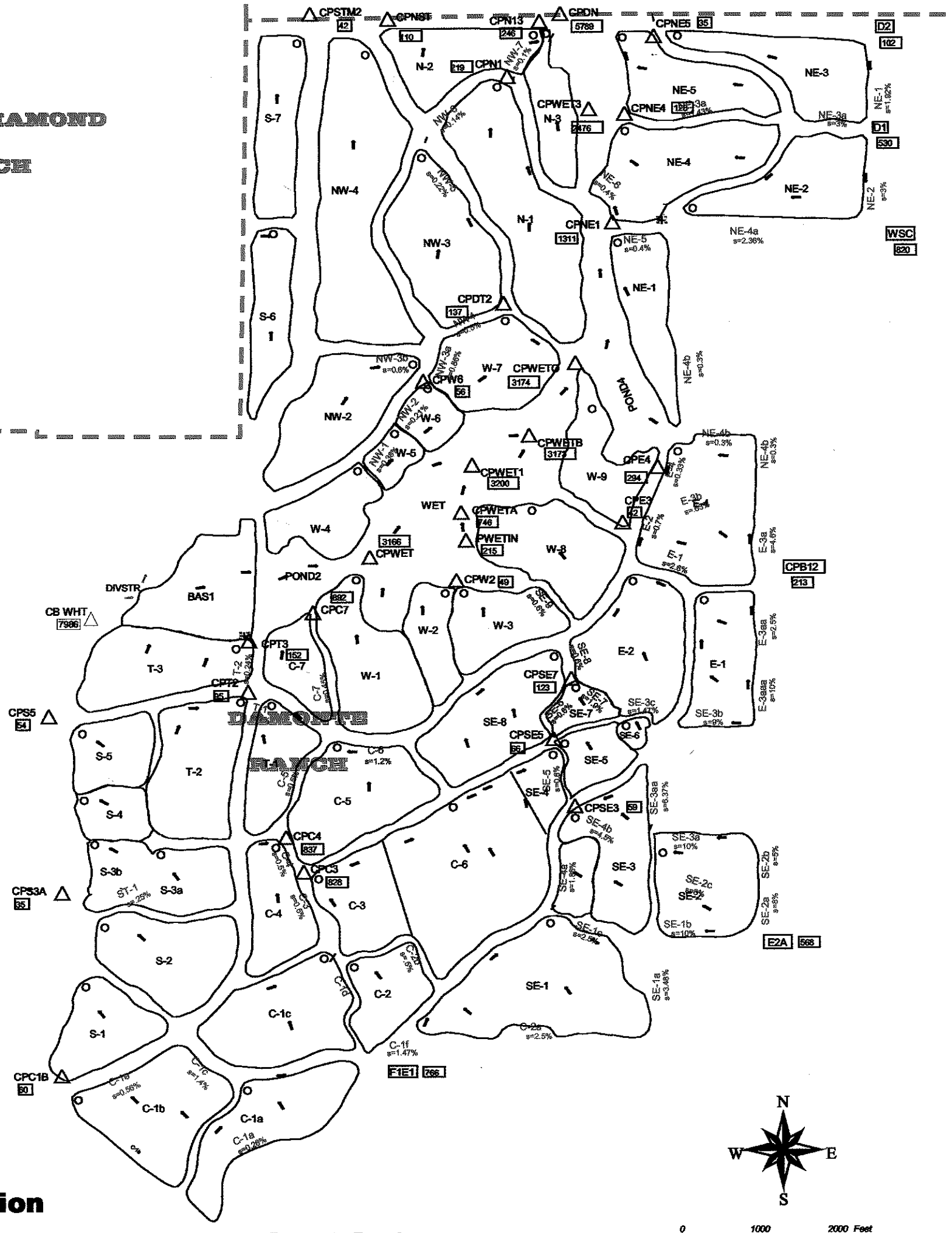
DOUBLE DIAMOND

RANCH

BELLA VISTA

RANCH



DAMONTE

RANCH

Explanation

C-7 s=0.45% **Original planned channels on Damonte Ranch**

C-7 s=0.45% **Channels to be re-routed**

Figure 3
Damonte Ranch
On-Site Watershed Map (1995)
(Flow rates shown for 100-year event)

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Nimbus Job No. 0214

Date: May 2002

Lag times for all of the new and modified watersheds were reviewed and found to be comparable with those in the Southeast Truckee Meadows Flood Control Master Plan. Therefore, with the exception of watershed W-7 which was combined with W-6 under proposed conditions, the original lag times calculated for the Southeast Truckee Meadows Flood Control Master Plan were maintained. The calculations are shown in Appendix C.

3.0 Hydraulic Analyses for Channel and Culvert Designs

Watershed flows are routed through a series of proposed drainage channels within the on-site development. Slight changes to the layout of the Southeast Damonte Ranch required that drainage channels C-6, SE-7, SE-8, SE-9, E-1 and E-2 be removed and replaced with drainage channels C-5B, W-1B, SE-8A, and W-3 (see Plate 1). Channels C-5 and C-7 will be relocated slightly to the west to accommodate the larger size of watersheds C-5A and W-1A.

Conceptual designs have been developed for the channels and their culverts at the road crossings within the Southeast Damonte Ranch. Channels are planned to be of moderate slope with natural vegetation and pedestrian walkways alongside. Where natural channel slopes are such that average velocities exceed 5 fps, drop structures have been incorporated into the model to reduce channel slopes and lower the average flow velocities to less than 5 fps. Those models are included in Appendix B. Note, however, that the original plans for channels with average channel velocities in excess of 5 fps show riprap for the channel bottom and sides. Table 2 summarizes the proposed channel design and Table 3 summarizes the proposed culvert sizing to convey the 100-year, 24-hours peak flows for the new channels and culverts within the Southeast Damonte Ranch. For reference the location of these channels and culverts are shown on Plate 1 using the model designations.

- Channel C-4 begins at the southwest corner of the Southeast Damonte Ranch. It is planned as a 45-ft wide channel with 3:1 side slopes and will convey flows from the watersheds to the south of the development (Plate 1: F1E1, C-1C, C-2, and C-3). The approximate Q_{100} peak flow for this segment of channel is 840 cfs (at Combine Point CPC4 in the model and on Plate 1). The natural slope of this channel is 0.013 ft/ft. In order to reduce the average channel velocity to less than 5 fps, two (2) 2-ft drop structures spaced at approximate 200-ft intervals are proposed for this section of channel. Channel C-4 ends along the west side of the Southeast Damonte Ranch where channel C-5 begins.

- Channel C-5 begins along the west side of the Southeast Damonte Ranch. It is planned as a 45-ft wide channel with 3:1 side slopes and will convey flows from the watersheds C-4 and C-5A as well as the flow in channel C-4. The approximate Q_{100} peak flow for this segment of channel is 840 cfs (at Combine Point C-C5A in the model and on Plate 1). The natural slope of this channel is 0.009 ft/ft. In order to reduce the average channel velocity to less than 5 fps, four (4) 2-ft drop structures spaced at approximate 400-ft intervals are proposed for this section of channel to develop an effective slope of 0.005 ft/ft. Channel C-5 conveys floodwaters to the culverts under Damonte Parkway South at crossing C-C5A. The modeled culverts at this crossing are three (3) 10' x 4' RCBs.

- Channel C-7 starts at the outlet of the culverts at C-C5A and continues to the Damonte flood control facilities. It is also planned as a 45-ft bottom width channel with 3:1 side slopes and will convey flows from watersheds C-7 and W-1A in addition to the flow coming from channel C-5. The approximate Q_{100} peak flow for this segment of the channel is 860 cfs (at Combine Point CPC7 in the model and on Plate 1). The natural slope of this channel section is 0.014 ft/ft. In order to maintain average channel velocities below 5 fps, six (6) 2-ft and one (1) 3-ft drop structures spaced at approximate 250-ft intervals are proposed for this section of channel. This channel will discharge to the Damonte flood control facilities and will be dispersed and returned to sheetflow as it leaves the channel.

- Channel C-5B passes between the Southeast Damonte Ranch watersheds C-5B and SE-8A. Overland flows from watershed C-6 will be collected at the back of the lots along watersheds C-5B and SE-8A in a temporary collector channel and conveyed to channel C-5B. The Q_{100} peak flow from watershed C-6 is approximately 35 cfs. A simplified cross-section for a 5-ft bottom width collector channel is included in Appendix B with the model for channel C-5B. Flows from watersheds C-6 and C-5B (Plate 1) will be conveyed through channel C-5B. As these are relatively small Q_{100} peak flows, approximately 55 cfs (at Combine Point C-C5B in the model and on Plate 1), a 5-ft bottom width channel with 3:1 side slopes is proposed. The natural slope of this channel is 0.018 ft/ft. The peak flow rates, however, are such that this channel geometry passes the flows and maintains the average channel velocity below 5 fps without the need for drop structures. Channel C-5B conveys floodwaters to the culverts below Damonte Parkway South at road crossing C-C5B. The modeled culverts at C-C5B are two (2) 36" RCPs.

- Channel W-1B starts at the outlet of the culvert at C-C5B and continues to the Damonte flood control facilities. This channel section is also planned as a 5-ft bottom width channel with 3:1 side slopes and will convey the flow from channel C-5B and watershed W-1B – approximate Q_{100} peak flow of 80 cfs (at Combine Point CPW1B in the model and on Plate 1). The natural slope of this channel is 0.018 ft/ft. Modeling of the proposed channel shows no need to provide any drop structures for energy dissipation as the average channel velocities remain below 5 fps. This channel will discharge to the Damonte flood control facilities and will be dispersed and returned to sheetflow as it leaves the channel.

- Channel SE-8A passes between the Southeast Damonte Ranch watersheds SE-8A and SE-8B. It is planned as a 45-ft wide channel with 3:1 side slopes and will convey flows from the watersheds to the south and east of the development (Plate 1: E2A, SE-1, SE-2, SE-3, SE-4, SE-5, SE-6, SE-7, SE-8A, SE-8B and E-2). The approximate Q_{100} peak flow for this segment of channel is 640 cfs (at Combine Point CSE-8A in the model and on Plate 1). The natural slope of this channel is 0.022 ft/ft. In order to reduce the average channel velocity to less than 5 fps, seven (7) 2-ft drop structures spaced at approximate 150-ft intervals are proposed for this section of channel. Channel SE-8A conveys floodwater to the culverts below Damonte

Parkway South at road crossing CSE-8A. The culverts at CSE-8A are three (3) 10' x 4' RCBs.

A simplified cross-section for the collection channel for the flows from watersheds E-2, SE-6, and SE-7 is included in Appendix B with the model for channel SE-8A. This temporary section of collector channel will pick up and carry a Q_{100} peak flow of approximately 70 cfs. This collector channel will flow into a larger collector channel at the back of the lots on watershed SE-8B. A simplified cross-section for this section of channel is also included in Appendix B with the model for channel SE-8A. This section of collector channel will convey the flows from watersheds E2A, SE-1, SE-2, SE-3, SE-4 and the flow from the smaller collector channel to the east. The ground slope in this area is minimal and therefore no drop structures are planned in the collector channels.

- Channel W-3 starts at the outlet of the culverts at CSE-8A and continues to the Damonte flood control facilities. It is also planned as a 45-ft bottom width channel with 3:1 side slopes and will convey flows from watersheds W-2 and W-3 in addition to the flow coming from channel CSE-8A. The approximate Q_{100} peak flow for this segment of the channel is 650 cfs (at Combine Point CPW2 in the model and on Plate 1). The natural slope of this channel section is 0.016 ft/ft. In order to maintain average channel velocities below 5 fps, six (6) 2-ft drop structures spaced at approximate 250-ft intervals are proposed for this section of channel. This channel will discharge to the Damonte flood control facilities and will be dispersed and returned to sheetflow as it leaves the channel.

The Southeast Damonte Ranch watersheds W-7, W-8, W-9, and NE-1 will discharge to the Damonte flood control facilities and associated drainage network via on-site storm drainage pipes.

Table 2. Summary of proposed channel design.

Channel	Approx. Length (feet)	Channel Bottom Width (ft)	Uniform Side Slopes	Natural Slope (ft/ft)	Design Slope (ft/ft)	Manning 'n'	Q_{100} Peak Flow (cfs)	Average Velocity (fps)
C-4	600	45	3:1	0.013	0.006	0.045	840	5.0
C-5	1443	45	3:1	0.009	0.005	0.045	840	4.6
C-7	1767	45	3:1	0.014	0.006	0.045	860	5.0
C5-B	882	5	3:1	0.018	0.018	0.045	55	4.25
W1-B	1683	5	3:1	0.018	0.018	0.045	80	4.5
SE-8A	1106	45	3:1	0.022	0.008	0.045	640	4.9
W-3	1208	45	3:1	0.016	0.008	0.045	650	4.9

Table 3. Summary of proposed culvert design.

Culvert Designator	RCB/RCP Size	Number of Boxes/Pipes	Peak Flow (cfs)	Outlet Velocity (fps)
C-C5A	10' x 4'	3	840	14.77
C-C5B	36"	2	55	7.8
C-SE8A	10' x 4'	3	640	11.76

4.0 Summary of Findings

1. The Southeast Damonte Ranch follows the general land use plan upon which the Southeast Truckee Meadows Flood Control Master Plan is based.

2. The HEC-1 hydrologic modeling of the proposed Southeast Damonte Ranch shows that the water surface elevations within the Damonte flood control facilities for the 100-year event remain essentially the same as the original design and will have no adverse affects. The flood detention facilities, as designed in the original Southeast Truckee Meadows Flood Control Master Plan, are adequate in capacity to convey and mitigate peak flows from fully developed upstream areas without negatively impacting downstream properties. Table 4 summarizes the peak flow and stage for each of the flood control structures based on the CLOMR approved for the Damonte Ranch and on modeling results contained in this report.

   Table 4. Summary of peak flows and stage for the Damonte flood control facilities.

Structure	Model Designator	CLOMR		This Report	
		Peak Flow (cfs)	Peak Stage (ft)	Peak Flow (cfs)	Peak Stage (ft)
Detention Basin #1	BAS 1	3246	4482.12	3246	4482.12
Wetlands	RS DT2	2531	4460.38	2524	4460.37
Pond 4	POND4	2434	4455.88	2446	4455.91
Damonte North Property Line	CPDN	5789		5754	

3. Conveyance channels and culverts at roadway crossings have been sized to carry the 100-year, 24-hour peak flows.

5.0 References

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APPENDIX A

Appendix A
HEC-1 Hydrologic Models

HEC-1 Hydrologic Model
Proposed Development Conditions Southeast Damonte Development
100-year, 24-hour

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN  1998                *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   21NOV02  TIME  15:24:29   *
*                                       *
*****************************************
```

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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 756-1104              *
*                                       *
*****************************************
```

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

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM


```
LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
                *
                *DIAGRAM
   1            ID   ********************************************************************************
   2            ID    100-Year HEC-1 for proposed conditions.  Includes Steamboat Creek &
   3            ID    tributaries (i.e. Galena, Jones, Browns, Bailey, 30, & 40 watersheds);
   4            ID    Damonte Ranch with refined watersheds, detention stuctures, & refined
   5            ID    east range watersheds; Whites Creek watersheds collected by Branch 3 & 4
   6            ID    with routing onto Damonte
   7            ID
   8            ID    This file has been modified to show changes on the Damonte Ranch for the
   9            ID    Southeast Damonte Ranch Development.  Watersheds affected: C5, C6, SE-8,
  10            ID    E-2, W-8, W-9, W-3, W-1, W-6, & W-7
  11            ID
  12            ID    File Name: 214DMNT.DAT
  13            ID    Nimbus Engineers                APRIL, 2002
  14            ID   ********************************************************************************
                *   Legend :
                *    W(No.)R = Subbasin
                *    CP XX = Combine flows at point XX
                *    RT XX = Route to CP XX
                *    DV XX = Divert hydrograph XX
                *    DR XX = Recall hydrograph XX
                *    XX = Street and Channel #, where applicable
                *       V = Virginia, Z = Zolezzi, F = 580 (Freeway), W = Wedge
                *  ********************************************************************************
  15            IT       5 27JUL00    0005     288
  16            IO       5       0
  17            IN    15.0
                *  TOTAL WATERSHED AREA = 85 SQ. MI.
                *  AREAL REDUCTION =  0.94
  18            JR    PREC    0.94

  19            KK     W1R Whites Creek 1
  20            BA    1.36
  21            PB     5.5
  22            PC     0.0    .002    .005    .008    .011    .014    .017    .020    .023    .026
  23            PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
  24            PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
  25            PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
  26            PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
  27            PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
  28            PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
  29            PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
  30            PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
  31            PC    .983    .986    .992    .995    .998    1.00
  32            LS              63
  33            UD    0.48

  34            KK     W2R  Whites Creek No. 2
  35            BA    0.84
  36            PB     5.4
  37            LS              65
  38            UD    0.52
```



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

```
   39          KK   W1+W2  Combine W1 and W2
   40          HC      2
   41          KK    RT-A  Route to pt A
   42          RM      1      .1     0.4
   43          KK     W3R  Whites Creek No. 3
   44          BA    1.38
   45          PB    5.25
   46          LS              65
   47          UD    0.54
   48          KK    RT-A  Route to pt A
   49          RM      1      .1      .4
   50          KK     W4R  Whites Creek No. 4
   51          BA    1.47
   52          PB     5.0
   53          LS              57
   54          UD    0.72
   55          KK   W1234  Combine W1-W4
   56          HC      3
   57          KK    RT-B  Route to pt B
   58          RM      1      .1     0.4
   59          KK     W5R  Whites Creek No. 5
   60          BA    1.27
   61          PB     4.8
   62          LS              58
   63          UD    0.85
   64          KK   W5+CH  Combine W5 and channel
   65          HC      2
   66          KK    RT-C  Route to pt C
   67          RM      2   0.185     0.4
   68          KK     W6R  Whites Creek No. 6
   69          BA    1.43
   70          PB     4.1
   71          LS              57
   72          UD    1.23
   73          KK   W6+CH  Combine W6 and channel
   74          HC      2
   75          KK    RT-D  Route to pt D
   76          RM      1     0.1     0.4
1                                        HEC-1 INPUT                                    PAGE  3
         LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
   77          KK     W7R  Whites Creek No. 7
   78          BA    0.85
   79          PB     3.4
   80          LS              68
   81          UD    0.96
   82          KK   W7+CH  Combine W7 and channel
   83          HC      2
   84          KK  RT-DIF  Route flows to Diffluence
   85          RM      1   0.104     0.4
   86          KK     W8R  Whites Creek No. 8
   87          BA    0.75
   88          PB     3.0
   89          LS              65
   90          UD    1.19
   91          KK  CP DIF  Combine flows at Diffluence
   92          HC      2
   93          KK    DV 4  Divert flows into channel #4 - south branch
   94          KM          Hydrograph at this station is flow in channel 4
   95          DT  CH 123
   96          DI      0    2000    3500    5100
   97          DQ      0    1700    2700    3750
   98          KK   RT W4  Route flows in channel #4 to Wedge Parkway
   99          RM      2    .178      .3
  100          KK    W17R  Whites Creek No. 17
  101          BA    0.58
  102          PB     2.8
  103          LS              67
  104          UD    0.31
  105          KK   CP W4  Combine flows at Wedge Parkway
  106          HC      2
```

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107          KK   RT F4  Route flows to proposed RCB at 580
108          RM       1   0.111      .3

109          KK    W19R  Whites Creek No. 19
110          BA    0.33
111          PB    2.75
112          LS              60
113          UD    0.22

114          KK     W9R  Whites Creek No. 9  (Steamboat Hills Area, above Mt. Rose Hwy)
115          BA    2.39
116          PB     2.8
117          LS              69
118          UD    0.51
1                                        HEC-1 INPUT                                        PAGE  4

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

119          KK   RT F4  Route flows to proposed RCB at 580  (Channel 4)
120          RM       2   0.181     0.3

121          KK   CP F4  Combine flows at proposed I-580 RCB  (Channel 4)
122          HC       3

123          KK   RT V4  Route flows to Virginia Street (Channel 4 near Browns School)
124          RM       1   0.121      .3

125          KK    W20R  Whites Creek No. 20
126          BA    0.22
127          PB    2.73
128          LS              61
129          UD    0.22

130          KK   CP V4  Combine flows at Channel #4 and Virginia St. (near Browns School)
131          HC       2

132          KK  RT STM  ROUTE BRACH 4 TO STEAMBOAT CREEK  - THRU PROPOSED CHANNEL
133          RK    2250   0.013    .035            TRAP      75       3
             *  ************************************************************************
             *  STEAMBOAT CREEK MODEL
             *  ************************************************************************

134          KK    G1G2 Upper Galena Creek - G1 & G2 COMBINED
135          BA     8.0
136          PB    4.89
137          LS              70
138          UD     1.9

139          KK   OUTJ1 Route to Confluence with Jones Creek
140          RD    5280    .046    0.07            TRAP      15     0.5

141          KK      J1 Jones Creek Watershed
142          BA     6.4
143          PB    3.51
144          LS              58
145          UD     1.3

146          KK   OUTJ1 Combine Jones and Galena Creek
147          HC       2

148          KK   OUTG3 Route Galena to Pleasant Valley foothill
149          RD    7392   0.043    0.07            TRAP      15       1

150          KK      G3 Lower Galena Creek
151          BA     3.9
152          PB     3.4
153          LS              62
154          UD     1.2
1                                        HEC-1 INPUT                                        PAGE  5

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

155          KK   OUTG3 Combine Galena flows at Pleasant Valley foothill
156          HC       2

157          KK   OUT30 Route Galena Creek watershed to Steamboat Gage  (use COE routing)
158          RM       7    0.61     0.2

159          KK      15 Browns Creek
160          BA     4.2
161          PB    4.10
162          LS              61
163          UD     1.7

164          KK   OUT30 Route Browns Creek to Steamboat Gage  (use COE routing)
165          RM      16    1.34     0.2

166          KK      30 COE Watershed No. 30
167          BA    16.7
168          BF     500       0       1
169          PB     2.8
170          LS              77
171          UD     1.8
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 172          KK   OUT30 Combine
 173          HC       3

 174          KK   OUT40 Route flows to HWY 341 (use COE routing)
 175          RM       3    0.23     0.2

 176          KK      35 Bailey Canyon
 177          BA    15.3
 178          BF       0       10      1.1
 179          PB    2.95
 180          LS               80
 181          UD     2.2

 182          KK      40 Watershed No.40
 183          BA     2.5
 184          PB    2.77
 185          LS               77
 186          UD     1.1

 187          KK   OUT40  Combine Steamboat Ck with areas 35 and 40 at HWY 341
 188          HC       3

 189          KK  OUT341  ROUTE STEAMBOAT THROUGH HWY 341 USING MODIFIED PULS
 190          RS       1    STOR       0
 191          SA     .31    9.48    46.1
 192          SE    4550    4560    4570
 193          SQ     300    2475   58000
1                                        HEC-1 INPUT                                        PAGE  6

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

 194          KK    C-1B
 195          BA   0.072
 196          PB     2.5
 197          LS               69      64
 198          UD    0.22

 199          KK    C-1A
 200          BA   0.062
 201          LS               64
 202          UD    0.20

 203          KK   RT C1 ROUTING POD C-1A THRU CHANNEL C-1C TO CHANNEL C-1E
 204          RD    1000   0.014   0.030            TRAP       5       3

 205          KK   RT C1 ROUTING POD C-1A THRU CHANNEL C-1E TO CULVERT C-C2C
 206          RD    1800  0.0056   0.030            TRAP       5       3

 207          KK   CPC1B
 208          HC       2

 209          KK  CB CUR  Combine flows just north of SR 341 (Steamboat Ck)
 210          HC       2

 211          KK   OUTDS  Route Steamboat to just north of south Damonte property line
 212          RM       2   0.153     .35

 213          KK   CB DS  COMBINE STEAMBOAT & WHITES BRANCH 4 @ DAMONTE SOUTH BOUNDARY
 214          HC       2

 215          KK  RT WHT  ROUTE TO SOUTH BOUNDARY OF WHITE'S CREEK MEADOW SUBDIVISION
 216          RM       1   0.084     0.2
              * WHITES CREEK BRANCH3

 217          KK  DR 123  Recall channel 1, 2, and 3 flows
 218          DR  CH 123

 219          KK  DV 2&3  Divert flows into channels 2 and 3 - two middle branches
 220          KM          Hydrograph at this station is flow in channels 2 and 3
 221          DT    CH 1
 222          DI       0    1700    2700    3750
 223          DQ       0     350     550     700

 224          KK  RT 2&3  Route flows to pt where channels 2 and 3 combine (2000' u/s Virginia)
 225          RM       3    .245      .3

 226          KK    W10R  Whites Creek No. 10
 227          BA     0.3
 228          PB     2.8
 229          LS               55
 230          UD     .32
1                                        HEC-1 INPUT                                        PAGE  7

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

 231          KK   CP 23  Combine local flows with channels 2 and 3
 232          HC       2

 233          KK  DV 23A  Divert flows at CP 23 (Channels 2 and 3 Diverge)
 234          KM          Hydrograph at this station is in channel 3 (Channel 2 is diverted)
 235          DT    CH 2
 236          DI       0    2000    3500
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237          DQ       0    1000    1750

238          KK   RT V3  Route flow to Virginia St. (CP V3)
239          RM       2   0.136      .2

240          KK    W11R  Whites Creek No. 11
241          BA    0.32
242          PB     2.7
243          LS              75
244          UD    0.27

245          KK  CP V24  Combine Subbasin W11R, and Channel 3 at Virginia Street
246          HC       2

247          KK   RT F3  Route flow to F3 (Channel 3 at S80)
248          RM       3   0.234     0.2

249          KK    W16R  Whites Creek No. 16
250          BA    0.11
251          PB     2.7
252          LS              81
253          UD    0.21

254          KK   CP F3  Combine flows at proposed RCB on S80  (Channel 3)
255          HC       2

256          KK  RT DSW  ROUTE THRU DRAINAGE DITCH TO STEAMBOAT CREEK
             *  USED CHANNEL DESIGN PARAMETERS
257          RD    2700   0.003   0.035            TRAP       50       3

258          KK   W18RA
             * Basin W18R - subdivided - area south of Channel #3 = W18RA
259          BA    0.21
260          PB     2.7
261          LS              80
262          UD    0.33

263          KK  CB DSW  COMBINE WHITES CREEK BRANCHES 3 & W18RA @ STEAMBOAT CREEK
264          HC       2

265          KK     S-1
266          BA   0.041
267          PH       1   0.001   0.478   0.869   0.145    1.52    1.58    2.11    2.53
268          LS              66
269          UD    0.17
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LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

270          KK   RT S3 ROUTING POD S-1 THRU STEAMBOAT TO CPS3A
271          RM       2      .2      .4

272          KK     S-2
273          BA   0.062
274          LS              62
275          UD    0.20

276          KK   RT S3 ROUTING POD S-2 THRU STEAMBOAT TO CPS3A
277          RM       1      .1      .1

278          KK    S-3A
279          BA   0.039
280          LS              63
281          UD    0.17

282          KK   RT S3 ROUTING POD S-3A THRU CHANNEL ST-1 TO CPS3A
283          RD    1000  0.0025   0.030            TRAP       5       3

284          KK   CPS3A
285          HC       3

286          KK   RT S5 ROUTING CPS3A THRU STEAMBOAT TO CPS5
287          RM       4  0.3311     0.4

288          KK    S-3B
289          BA   0.016
290          LS              63
291          UD    0.14

292          KK   RT S5 ROUTING POD S-3B THRU STEAMBOAT TO CPS5
293          RM       3  0.2837     0.4

294          KK     S-4
295          BA   0.021
296          LS              63
297          UD    0.16

298          KK   RT S5 ROUTING POD S-4 THRU STEAMBOAT TO CPS5
299          RM       2  0.1497     0.4

300          KK     S-5
301          BA   0.032
302          LS              76
303          UD    0.16
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      304          KK   RT S5 ROUTING POD S-5 OVERLAND TO CPS5
      305          RM       2  0.1230      0.1
1                                        HEC-1 INPUT                                           PAGE  9

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


      306          KK    CPS5
      307          HC       4

      308          KK  RT WHT ROUTINT CPS5 TO WHT THRU STEAMBOAT
      309          RM       2  0.1775      .4

      310          KK  CB WHT  COMBINE STEAMBOAT CREEK W/ WHITES CREEK BRANCHES 3&4
      311          HC       3
                   *   DIVERSION FROM STEAMBOAT TO EAST

      312          KK  DIVSTR STAGE, STORAGE, AND DISCHARGE FROM DIVERSION POND
      313          KM   BACKWATER FROM THE 5-108" RCP
      314          RS       1    ELEV    4475
                   * DIVERSION POND AREAS FOR ELEVATION 4475 TO 4490; 5-108" RCP, I.E.4475
                   * WEIR WIDTH = 240' @ CREST 4485'
                   * ADDITIONAL ELEVATIONS ADDED TO RESERVOIR , AREAS IN THESE 2 ARE
                   * KEPT CLOSE TO THE AREA AT ELEVATION 4488
      315          SA     .08    0.11    0.37    0.93    1.17    2.86    3.23    3.63    4.00    4.83
      316          SA    5.64     5.8
      317          SE    4475    4476    4477    4479    4480    4483    4484    4485    4486    4487
      318          SE    4488    4489
      319          SQ       0      50     210     750    1100    2330    2750    3175    4221    5984
      320          SQ    8072   10495

      321          KK    STEAM  DIVERSION
                   *  DI=CULVERT+WEIR FLOW, DQ=WEIR FLOW INTO DETENTION BASIN 1
      322          DT    BAS 1
                   *  DI CARDS FOR 5-108" RCP CULVERTS AND WEIR
      323          DI       0      50     210     750    1100    2330    2750    3175    4221    5984
      324          DI    8072   10495
                   *  DQ CARDS INDICATE FLOW OVER WEIR INTO BASIN 1
      325          DQ       0       0       0       0       0       0       0       0     726    2074
      326          DQ    3847    5980

      327          KK    OUTDM  Route Steamboat to DM (near middle of Damonte property)
      328          RM       2    0.15    0.25

      329          KK    OUTDN  ROUTE STEAMBOAT TO DN -DAMONTE NORTH BOUNDARY
      330          RM       2     0.2    0.25

      331          KK  RC BAS   RECALL DIVERSION FROM STEAMBOAT
      332          DR    BAS 1

      333          KK    BAS 1 STAGE, STORAGE, AND DISCHARGE FROM BASIN 1
      334          KM    MODIFY BASIN 1 MAKE IT 5 FT DEEPER TO REDUCE PEAK FLOWS TO EAST
      335          RS       1    ELEV    4473
                   *  *** BAS 1 OUTLET 100' WEIR W/1-36" RCP *****
      336          SA       0       6      17      26    35.5      36    36.5      37    37.5      38
      337          SA    38.5      39    39.5
      338          SE    4473    4474    4475    4476    4477    4478    4479    4480    4481    4482
      339          SE    4483    4484    4485
                   *  *****   36" RCP *****************
      340          SL  4472.9   7.069      .7      .5
                   *  ************** 100' WEIR *****************
1                                        HEC-1 INPUT                                           PAGE 10

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

      341          SS    4477     100     2.7     1.5

      342          KK  BAS1DS
      343          DT  36DIVQ             130
                   *  ************** 100' WEIR ******************
      344          DI       0  106.05  378.09  743.19 1181.89 1683.44 2240.80 2848.84 3503.66 4202.11
      345          DQ       0      30      50      64      75   85.12      94     109     116     123

      346          KK    POND2
      347          KM    POND 2 WILL OUTFLOW OVER NATURAL GROUND WITH NO DETENTION.  THE FLOW
      348          KM    WILL BE ROUTED OVERLAND TO THE FIRST COMBINATION POINT IN THE WETLANDS.
      349          RM       1     0.2     0.2

      350          KK     T-1
      351          BA   0.034
      352          PB     2.5
      353          LS              74      68
      354          UD    0.20

      355          KK   RT T2 ROUTING POD T-1 THRU CHANNEL T-1 TO CPT2
      356          RD     300    0.01   0.030            TRAP      10       3

      357          KK     T-2
      358          BA   0.065
      359          PB     2.5
      360          LS              73      70
      361          UD    0.21

      362          KK    CPT2             COMBINING PODS T1 AND T2
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                363          HC       2

                364          KK   RT T3 ROUTING CPT2 THRU CHANNEL T-2 TO CPT3
                365          RD     970    0.01    0.030            TRAP       10        3

                366          KK     T-3
                367          BA   0.061
                368          PB     2.5
                369          LS               79       78
                370          UD    0.22

                371          KK    CPT3
                372          HC       2

                373          KK   CPD1A  COMBINING TAHOE AND CPT3 AND SPLIT FROM STEAMBOAT
                374          HC       2

                375          KK   RT WT   ROUTE TO CPWET
                376          RM       3  0.2621     0.1
                             *  East side drainages
1                                                          HEC-1 INPUT                                                          PAGE 11

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

                377          KK    WSF1  East side watershed F1
                378          BA   0.775
                379          PB    2.80
                380          LS               77
                381          UD     .24

                382          KK    WSE1  East side watershed E
                383          BA     2.1
                384          PB     2.8
                385          LS               78
                386          UD     .53

                387          KK    F1E1  COMBINE F1 & E1
                388          HC       2

                389          KK     C-2
                390          BA   0.034
                391          PB     2.5
                392          LS               62       20
                393          UD    0.17

                394          KK   RT C3 ROUTING C-2 THRU CHANNEL C-3 TO CPC3
                395          RD    1050   0.005   0.030            TRAP       65        3

                396          KK    C-1C
                397          BA   0.070
                398          PB     2.5
                399          LS               63       50
                400          UD    0.20

                401          KK   RT C3 ROUTING C-1C THRU CHANNEL C-3 TO CPC3
                402          RD    1050   0.005   0.030            TRAP       65        3

                403          KK     C-3
                404          BA   0.034
                405          PB     2.5
                406          LS               63       20
                407          UD    0.18

                408          KK    CPC3
                409          HC       4

                410          KK   RT C4 ROUTING CPC3 THRU CHANNEL C-4 TO CPC4
                411          RD     550   0.005   0.030            TRAP       65        3

                412          KK     C-4
                413          BA   0.040
                414          PB     2.5
                415          LS               65       64
                416          UD    0.19
1                                                          HEC-1 INPUT                                                          PAGE 12

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

                417          KK    CPC4 COMBINE CPC3 AND POD C-4
                418          HC       2
                             *
                             *  Modified stormwater channel
                             *

                419          KK   RT C7 ROUTING CPC4 THRU CHANNEL C-5 TO CHANNEL C-7
                420          RD    1443   0.014   0.035            TRAP       45        3
                             *
                             *  Begin watershed modifications for Caramella
                             *

                421          KK    C-5A     Watershed modified for Caramella
                422          BA   0.046
                423          PB     2.5
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```
 424          LS              70      65
 425          UD    0.20
              *

 426          KK    CC5A  COMBINING FLOW FROM ROUTED COMBINE POINT CPC4 & WATERSHED C-5A
 427          HC       2
              *

 428          KK   RT C7  ROUTING COMBINED FLOW AT C-C5A THRU CHANNEL C-7 TO CPC7
 429          RD    1767   0.014    .035            TRAP       45       3
              *

 430          KK     C-7
 431          BA   0.025
 432          PB     2.5
 433          LS              81      70
 434          UD    0.16
              *

 435          KK    W-1A     Watershed modified for Caramella
 436          BA   0.044
 437          PB     2.5
 438          LS              81      65
 439          UD    0.22
              *

 440          KK    CPC7  COMBINING ROUTED FLOWS FROM C-C5A, C-7, & W-1A
 441          HC       3
              *

 442          KK   RT WT ROUTING CPC7 TO CPWET
 443          RM       2  0.1804     0.1
              *
1                                        HEC-1 INPUT                                        PAGE 13

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

 444          KK    C-5B     Watershed modified for Caramella
 445          BA   0.029
 446          PB     2.5
 447          LS              70      65
 448          UD    0.20
              *

 449          KK     C-6
 450          BA   0.125
 451          PB     2.5
 452          LS              64      20
 453          UD    0.23
              *

 454          KK   RTC5B ROUTING POD C-6 THRU CHANNEL C-5B TO CHANNEL C-W1B
 455          RD     982   0.022   0.035            TRAP       5       3
              *

 456          KK   C-C5B   COMBINING ROUTED FLOW FROM POD C-6 WITH WATERSHED C-5B
 457          HC       2
              *

 458          KK  RTCW1B ROUTING COMBINED FLOW AT C-C5B THRU CHANNEL C-W1B TO WETLANDS
 459          RD    1683   0.013   0.035            TRAP       5       3
              *

 460          KK    W-1B     Watershed modified for Caramella
 461          BA   0.027
 462          PB     2.5
 463          LS              81      65
 464          UD    0.22
              *

 465          KK   CPW1B COMBINE ROUTED WSD C-5B & C-6 WITH W-1B
 466          HC       2
              *

 467          KK   RT W1 ROUTING POD W-1 TO CPWET
 468          RM       1      .1      .1
              *

 469          KK   CPWET COMBINE CPC7, CPW1B, & D1B (CET #1)
 470          HC       3
              *

 471          KK   RT W1 ROUTING CPWET TO CPWET1
 472          RM       3  0.2708     0.1
              *
              *  East side drainages
              *
1                                        HEC-1 INPUT                                        PAGE 14

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

 473          KK     E2A
 474          KM   THIS IS A COMBINED WATERSHED (E2 & A)
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```
475          BA     2.1
476          PB     2.8
477          LS                   78
478          UD     0.53
             *
479          KK   RTSE2 ROUTING E2A THRU POD SE-2 & THEN COMBINING WITH S-2
480          RD    1800   0.045   0.035                  TRAP        20         3
             *
481          KK     SE-2
482          BA     0.06
483          PB      2.5
484          LS                   72
485          UD     0.19
             *
486          KK   CPSE2  COMBINING ROUTED E2A WITH SE-2
487          HC        2
             *
488          KK   RT S3 ROUTING POD SE-2 THRU CHANNEL SE-4B TO CPSE3
489          RD    1300   0.045   0.035                  TRAP        20         3
             *
490          KK     SE-3
491          BA    0.053
492          PB      2.5          62        23
493          LS
494          UD     0.21
             *
495          KK     SE-1
496          BA    0.106
497          PB      2.5          62        23
498          LS
499          UD     0.22
             *
500          KK   RT S3 ROUTING POD SE-1 THRU CHANNEL SE-4A TO CPSE3
501          RD    1450  0.0186   0.030                  TRAP        15         3
             *
502          KK   CPSE3
503          HC       3
             *
```

PAGE 15

HEC-1 INPUT

1

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

504          KK   RT S5 ROUTING CPSE3 THRU CHANNEL SE-5 TO CPSE5
505          RD     920   0.006   0.030                  TRAP        50         3
             *
             *       SE-6 & SE-7 rerouted through new Caramella drainages
             *
506          KK     SE-6
507          BA    0.004
508          PB      2.5
509          LS                   66
510          UD     0.12
             *
511          KK     E-2
512          BA     0.09
513          LS                   74        38
514          UD     0.21
             *
515          KK   CPSE6   COMBINE PODS SE-6 AND E-2
516          HC        2
             *
517          KK   RT S7 ROUTING POD CPSE6 THRU CHANNEL SE-7 TO CHANNEL SE-8A
518          RD     120   0.008   0.035                  TRAP         5         3
             *
519          KK     SE-7
520          BA     0.01
521          PB      2.5          76        65
522          LS
523          UD     0.14
             *
524          KK   CPSE7   COMBINE PODS SE-6 AND SE-7 AND WSD E-2
525          HC        2
             *
526          KK     SE-4
527          BA    0.016
528          PB      2.5          65        20
529          LS
530          UD     0.16
             *
```

```
 531          KK    SE-5
 532          BA   0.021
 533          PB     2.5
 534          LS              63        5
 535          UD    0.15
              *
```



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

 536          KK   CPSE5 COMBINES ALL FLOWS ROUTED FROM PODS SE-1 THRU SE-7
 537          HC       4
              *

 538          KK  RTSE8A ROUTING CPSE5 THRU CHANNEL SE-8A TO CPSE8A
 539          RD    1106   0.022   0.035            TRAP      45       3
              *

 540          KK   SE-8A
 541          BA   0.035
 542          LS              78      65
 543          UD    0.22
              *

 544          KK   SE-8B
 545          BA   0.036
 546          LS              78      65
 547          UD    0.22
              *

 548          KK   CSE8A  COMBINE ROUTED FLOWS THRU SE-8A WITH WSDS SE-8A & SE-8B
 549          HC       3
              *

 550          KK  RT CW3 ROUTING COMBINED FLOWS AT CSE8A THRU CHANNEL W-3 TO CPW2
 551          RD    1208   0.019   0.035 ,          TRAP      45       3
              *

 552          KK     W-2
 553          BA   0.039
 554          PB     2.5
 555          LS              73       5
 556          UD    0.18
              *

 557          KK     W-3
 558          BA   0.031
 559          PB     2.5
 560          LS              73      65
 561          UD    0.18
              *

 562          KK    CPW2  COMBINE ALL FLOWS ROUTED FROM CSE8A THRU CHANNEL W-3 WITH W-2
 563          KM          & W-3
 564          HC       3
              *

 565          KK  RTG WI
 566          RM       1  0.0567     0.1
              *
```



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

 567          KK  CPWETA  COMBINE CPWTIN, OFFSITE FLOW E2A BEFORE ROUTING TO CPWET1
 568          HC       2
              *

 569          KK   RT W1  ROUTE CPWTIN THRU WETLANDS TO CPWET1 '
 570          RM       2  0.1462       .1
              *

 571          KK     W-8
 572          BA   0.062
 573          PB     2.5
 574          LS              81      65
 575          UD    0.19
              *

 576          KK  CPWET1  COMBINE CPWET & W-8
 577          HC       2
              *

 578          KK  RTWET1
 579          KM   ADD ROUTING FROM CPWET1 TO CPWETB  ADDED 7/2/01 DEW
 580          RM       1      .2      .2
              *

 581          KK     WET
 582          BA    0.12
 583          PB     2.5
 584          LS              81
```

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585          UD    0.36
             *

586          KK  CPWETB  COMBINE CPWET1 AND BASIN WETR (INFLOW OF DET #1)
587          HC       2
             *

588          KK  RTWETB
589          KM   ROUTE WETB TO WETO
590          RM       1      .2      .2
             *

591          KK  RS DT2   ROUTE THRU DET #2
592          KM   BELOW IS DATA FOR THE RESERVOIR ABOVE TRAPEZ WEIR,CALLED DT2 OR POND 3
593          KM    DT2 INCLUDES PORTION OF WETLAND AS STORAGE
594          RS       1    FLOW      -1
595          SA       0     3.1    10.4      20    27.3    32.8    37.7    43.2    48.4    53.4
596          SA    58.0
597          SE    4452    4453    4454    4455    4456    4457    4458    4459    4460    4461
598          SE    4462
599          KM   INSERT TRAPEZOIDAL WEIR, CREST LENGT=65', ELEV=4454, Z=.25H:1V
600          SQ       0       0       0   162.5     460     844    1300    1752    2292    2914
601          SQ    3582
             *

1                                        HEC-1 INPUT                                        PAGE 18

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

602          KK     E-1
603          BA    0.05
604          PB     2.5
605          LS               63
606          UD     0.2

607          KK   RT E3  ROUTING POD E-1 THRU CHANNEL E-1 TO CHANNEL E-2
608          RD     950   0.026    0.03            TRAP        5       3

609          KK    RTE3
610          RD    1000    .007     .03            TRAP        5       3
             *
             *  East side drainages
             *

611          KK    WSB2
612          BA    0.12
613          PB     2.6
614          LS               76
615          UD    0.07

616          KK    WSB1
617          BA    0.36
618          PB     2.8
619          LS               76
620          UD     .18

621          KK   CPB12   COMBINE WATERSHEDS B1 & B2
622          HC       2

623          KK   RT E3 ROUTING WSB12 THRU CHANNEL E-3A TO CHANNEL E-3B
624          RD    1350   0.046   0.035            TRAP       15       3

625          KK   RT E3 ROUTING WSB12 THRU CHANNEL E-3B TO CPE3
626          RD    1300  0.0063   0.030            TRAP       15       3

627          KK   RT E4 ROUTING CPE3 THRU CHANNEL E-4 TO CPE-4
628          RD     970  0.0035   0.030            TRAP       15       3

629          KK     E-4
630          KM   MODIFY E-4, INCLUDE OLD E-3.  THESE 2 ARE NOW THE HIGH SCHOOL SITE
631          BA     0.1
632          PB     2.5
633          LS               86
634          UD     0.2

635          KK   RT E4 ROUTING POD E-4 THRU CHANNEL E-4 TO CPE-4
636          RD     430  0.0035   0.030            TRAP       15       3
1                                        HEC-1 INPUT                                        PAGE 19

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

637          KK    CPE4  COMBINE CPE3 AND POD E-4
638          HC       3
             *

639          KK     W-9
640          BA   0.048
641          PB     2.5
642          LS               81      65
643          UD    0.19
             *

644          KK    CW-9
645          KM   COMBINE W-9 & CPE4
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646          HC       3
             *
647          KK   POND4
648          KM   ROUTE THRU POND 4 JUST UPSTREAM OF DAMONTE PKWY CULVERT
649          KM    OUTLET MODELED AS 5 BOX CULVERTS 4' X 12'
650          RS       1    STOR       0
651          SA       0    6.69    8.86   11.18   14.43   18.03   20.98
652          SE    4450    4451    4452    4453    4454    4455    4456
653          SQ       0     200     500     950    1450    2000    2500    2800
654          SE    4450   51.08    4452 4453.07 4454.06 4455.04 4456.01  4456.7
             *
             *  East side drainages
             *
655          KK     WSC
656          BA    3.31
657          PB     2.8
658          LS               79
659          UD     .65

660          KK   RT N1 ROUTING BASIN WSC THRU CHANNEL NE-4A TO CHANNEL NE-5
661          RD    2500  0.0236   0.035            TRAP      25       3

662          KK   RT N1 ROUTING BASIN WSC THRU CHANNEL NE-5 TO CPNE1
663          RD     800  0.0040   0.030            TRAP      80       3

664          KK    NE-2
665          BA   0.057
666          PB     2.5
667          LS               69       34
668          UD    0.24

669          KK   RT N1 ROUTING POD NE-2 THRU CHANNEL NE-5 TO CPNE-1
670          RD     800  0.0040   0.030            TRAP      80       3
1                                        HEC-1 INPUT                                                    PAGE 20

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

671          KK    NE-1   Updated based on Caramella development
672          BA    0.05
673          PB     2.5
674          LS               63       38
675          UD    0.24

676          KK   RT N1 ROUTING POD NE-1 THRU CHANNEL NE-5 TO CPNE1
677          RD     100   0.004    0.03            TRAP      80       3
             *  East side drainages

678          KK      D1
679          BA    1.72
680          PB     2.8
681          LS               78
682          UD     .45

683          KK   RT N1 ROUTING BASIN D1 THRU CHANNEL NE-2 TO CHANNEL NE-4A
684          RD    1150    .030    .035            TRAP      25       3

685          KK   RT N1 ROUTING BASIN D1 THRU CHANNEL NE-4A TO CHANNEL NE-5
686          RD    2500   .0236    .035            TRAP      25       3

687          KK   RT N1 ROUTING BASIN D1 THRU CHANNEL NE-5 TO CPNE-1
688          RD     800  0.0040   0.030            TRAP      80       3

689          KK   CPNE1   COMBINE OFFSITE FLOW WSC, PODS NE-2, NE-1, AND BASIN D1
690          HC       4

691          KK   RT W3  ROUTING CPNE1 THRU CHANNEL NE-6
692          RD     670    .004     .03            TRAP      80       3

693          KK   RT W3 ROUTING CPNE1 TO CPWET3
694          RM       3       1     0.1
             *  East side drainages

695          KK      D2
696          BA    0.15
697          PB     2.6
698          LS               78
699          UD    0.06

700          KK   RT N4 ROUTING BASIN D2 THRU CHANNEL NE-1 TO CHANNEL NE-3A
701          RD    1300  0.0192   0.035            TRAP       5       3

702          KK   RT N4 ROUTING BASIN D2 THRU CHANNEL NE-3A TO CHANNEL NE-3B
703          RD    1100    0.03   0.035            TRAP       5       3

704          KK   RT N4 ROUTING BASIN D2 THRU CHANNEL NE-3B TO CPNE4
705          RD    2050  0.0143   0.030            TRAP      15       3
1                                        HEC-1 INPUT                                                    PAGE 21

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

706          KK    NE-4
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707          BA   0.070
708          PB     2.5
709          LS               43       64
710          UD    0.21

711          KK   CPNE4   COMBINE BSIN D2 AND POD NE-4
712          HC        2

713          KK   RT W3 ROUTING CPNE4 TO CPWET3
714          RM       10        1       .1

715          KK  CPWET3  COMBINE CPWETO, CPNE1, AND CPNE4
716          HC        3

717          KK   RT DN ROUTING CPWET3 TO CPDN OFFSITE
718          RM        6  0.4830      0.1

719          KK    NE-3
720          BA   0.054
721          PB     2.5
722          LS               68       34
723          UD    0.25

724          KK   RT N5 ROUTING POD NE-3 OVERLAND TO CPNE5
725          RM        3  0.2566      0.1

726          KK    NE-5
727          BA   0.051
728          PB     2.5
729          LS               44       38
730          UD    0.23

731          KK   CPNE5  COMBINE PODS NE-3 AND NE-5
732          HC        2

733          KK   RT DN ROUTING CPNE5 OVERLAND TO CPDN
734          RM        2  0.1741      0.1

735          KK     W-4
736          BA   0.038
737          PB     2.5
738          LS               79       68
739          UD    0.18

740          KK   RT W6 ROUTING POD W-4 THRU CHANNEL NW-1 TO CHANNEL NW-2
741          RD      650  0.0038   0.030            TRAP        5        3

742          KK   RT W6 ROUTING POD W-4 THRU CHANNEL NW-2 TO CPW6
743          RD      700  0.0021   0.030            TRAP        5        3
1                                        HEC-1 INPUT                                                    PAGE 22

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

744          KK     W-5
745          BA   0.013
746          PB     2.5
747          LS               77       65
748          UD    0.14

749          KK   RT W6 ROUTING POD W-5 THRU CHANNEL NW-2 TO CPW6
750          RD      700  0.0021   0.030            TRAP        5        3

751          KK    CPW6   COMBINE PODS W-4 & W-5
752          HC        2

753          KK  RT DT2 ROUTING CPW6 THRU CHANNEL NW-3A TO CHANNEL NW-4
754          RD      350  0.0086   0.030            TRAP        5        3

755          KK  RT DT2 ROUTING CPW6 THRU CHANNEL NW-4 TO CPDT2
756          RD     1200   0.005   0.030            TRAP        5        3

757          KK    NW-2
758          BA   0.066
759          PB     2.5
760          LS               78       50
761          UD    0.26

762          KK  RT DT2 ROUTING POD NW-2 THRU  CHANNEL NW-3B TO CHANNEL NW-4
763          RD      285   0.006   0.030            TRAP        0        3

764          KK     W-7   W-7 & W-6 are combined as a part of the Caramella development
765          BA    0.11
766          PB     2.5
767          LS               76       65
768          UD     0.3

769          KK   CPDT2        COMBINE CPW6 AND PODS NW-2 AND W-7
770          HC        3

771          KK   RT N1 ROUTING CPDT2 THRU CHANNEL NW-5 TO CHANNEL NW-6
772          RD     2275  0.0022   0.030            TRAP        5        3

773          KK   RT N1 ROUTING CPDT2 THRU CHANNEL NW-6 TO CPN1
```

```
774          RD    1650  0.0014   0.030            TRAP       15       3

775          KK    NW-3
776          BA   0.069
777          PB     2.5
778          LS              73       65
779          UD    0.22
1                                        HEC-1 INPUT                                                    PAGE 23

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


780          KK   RT N1 ROUTING POD NW-3 THRU CHANNEL NW-6 TO CPN1
781          RD    1650  0.0014   0.030            TRAP       15       3

782          KK     N-1
783          BA   0.081
784          PB     2.5
785          LS              76       68
786          UD    0.29

787          KK    CPN1              COMBINE CPDT2 AND PODS NW-3 , N-1
788          HC       3

789          KK  RT N13  ROUT CPN1 THRU CHANNEL NW-7 TO CPN13
790          RD     800    .001     .03            TRAP       18       3

791          KK     S-6
792          BA   0.038
793          PB     2.5
794          LS              73       64
795          UD    0.24

796          KK  RT ST2 ROUTING POD S-6 THRU STEAMBOAT TO CPSTM2
797          RM       8  0.6266       .4

798          KK     S-7
799          BA   0.046
800          PB     2.5
801          LS              73       64
802          UD    0.23

803          KK  CPSTM2           COMBINE PODS S-6 AND S-7
804          HC       2

805          KK  RT NST ROUTING CPSTM2 TO CPN4STM2
806          RM       5  0.3916       .4

807          KK    NW-4
808          BA   0.129
809          PB     2.5
810          LS              73       68
811          UD    0.33

812          KK   CPNST   COMBINE CPSTN2 AND POD NW-4
813          HC       2

814          KK  RT N13 ROUTING CPN4STM2 TO CPN13
815          RM      10  0.8647       .4

816          KK     N-2
817          BA   0.047
818          PB     2.5
819          LS              75       68
820          UD    0.21
1                                        HEC-1 INPUT                                                    PAGE 24

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

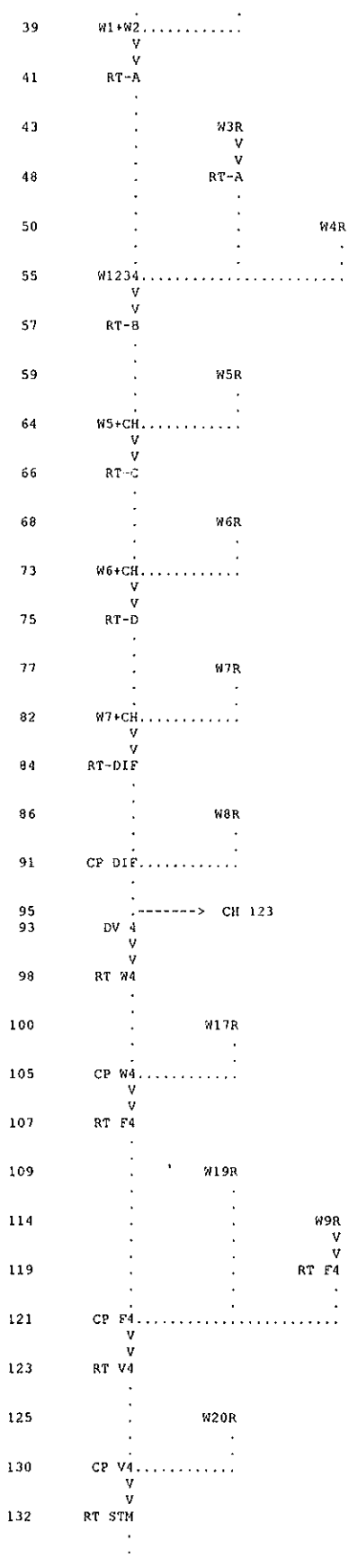

821          KK     N-3
822          BA   0.030
823          PB     2.5
824          LS              80        5
825          UD    0.11

826          KK   CPN13  COMBINE CPN1, CPNST AND PODS N-2 AND N-3
827          HC       4

828          KK    CPDN CPN13, CPWET3, CPNE5 AND OUTDN ROUTED TO CPDN, NORTH BNDRY OF DAMONTE
829          HC       4
             *
830          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    19       W1R
               .
               .
    34         .          W2R
               .            .
```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43 W3R
48 RT-A
50 W4R
55 W1234
57 RT-B
59 W5R
64 W5+CH
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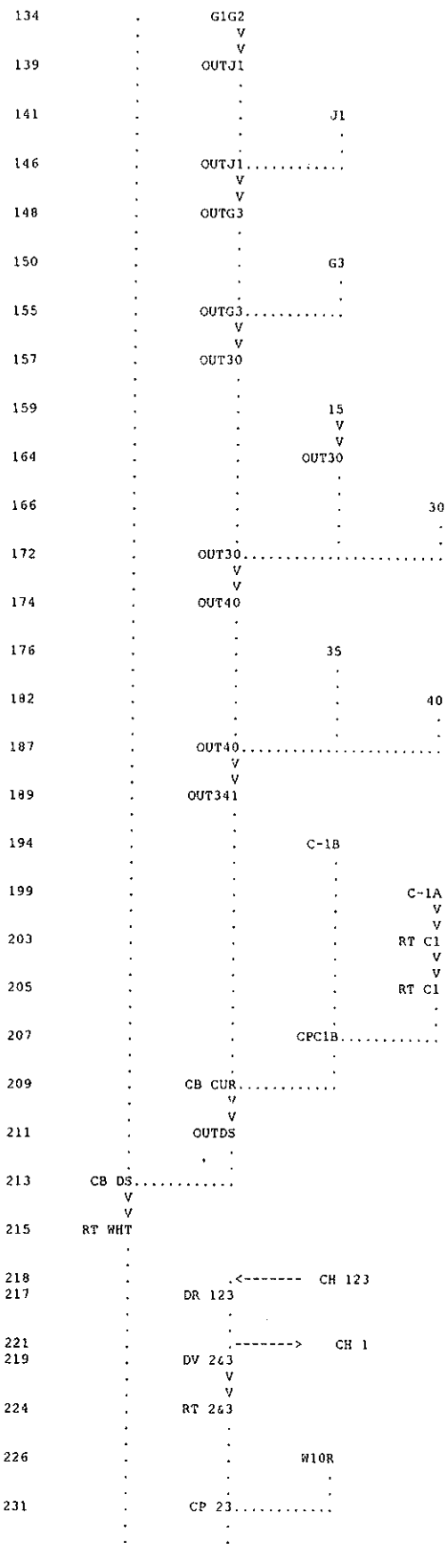
68 W6R
73 W6+CH
75 RT-D
77 W7R
82 W7+CH
84 RT-DIF
86 W8R
91 CP DIF
95 CH 123
93 DV 4
98 RT W4
100 W17R
105 CP W4
107 RT F4
109 W19R
114 W9R
119 RT F4
121 CP F4
123 RT V4
125 W20R
130 CP V4
132 RT STM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174 OUT40
176 35
182 40
187 OUT40
189 OUT341
194 C-1B
199 C-1A
203 RT C1
205 RT C1
207 CPC1B
209 CB CUR
211 OUTDS
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215 RT WHT
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217 DR 123
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219 DV 2&3
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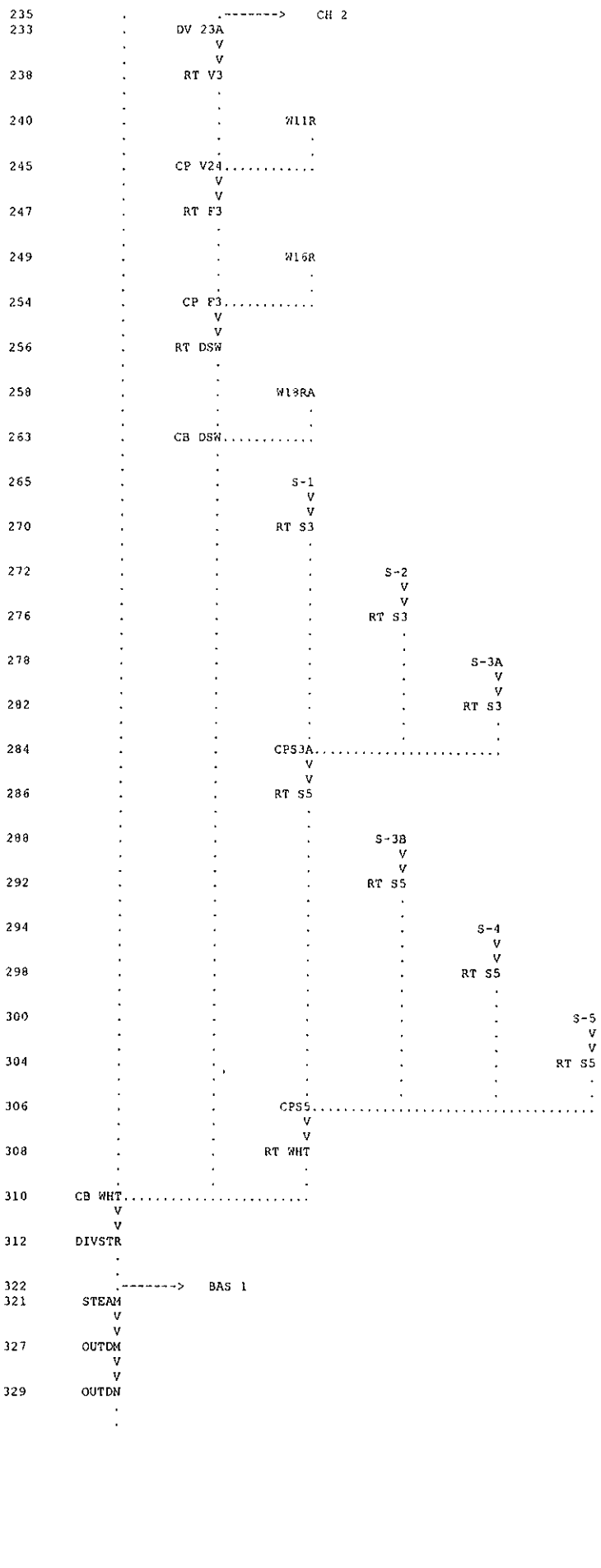
226 W10R
231 CP 23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294
298
300
304
306
308
310
312
322
321
327
329
.-------> CH 2
DV 23A
RT V3
W11R
CP V24
RT F3
W16R
CP F3
RT DSW
W18RA
CB DSW
S-1
RT S3
S-2
RT S3
S-3A
RT S3
CPS3A
RT S5
S-3B
RT S5
S-4
RT S5
S-5
RT S5
CPS5
RT WHT
CB WHT
DIVSTR
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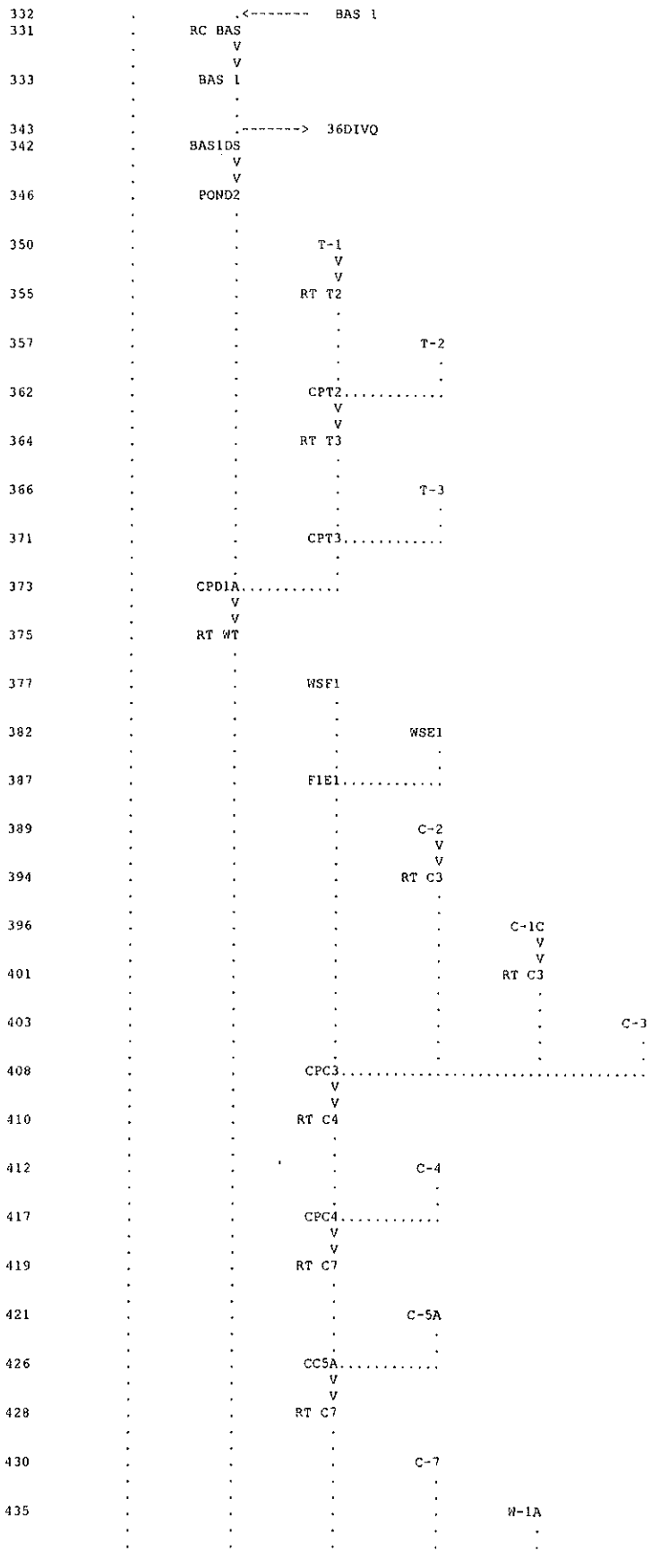
STEAM
OUTDM
OUTDN


332 .<-------- BAS 1
331 RC BAS
333 BAS 1
343 .--------> 36DIVQ
342 BAS1DS
346 POND2
350 T-1
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357 T-2
362 CPT2
364 RT T3
366 T-3
371 CPT3
373 CPD1A
375 RT WT
377 WSF1
382 WSE1
387 F1E1
389 C-2
394 RT C3
396 C-1C
401 RT C3
403 C-3
408 CPC3
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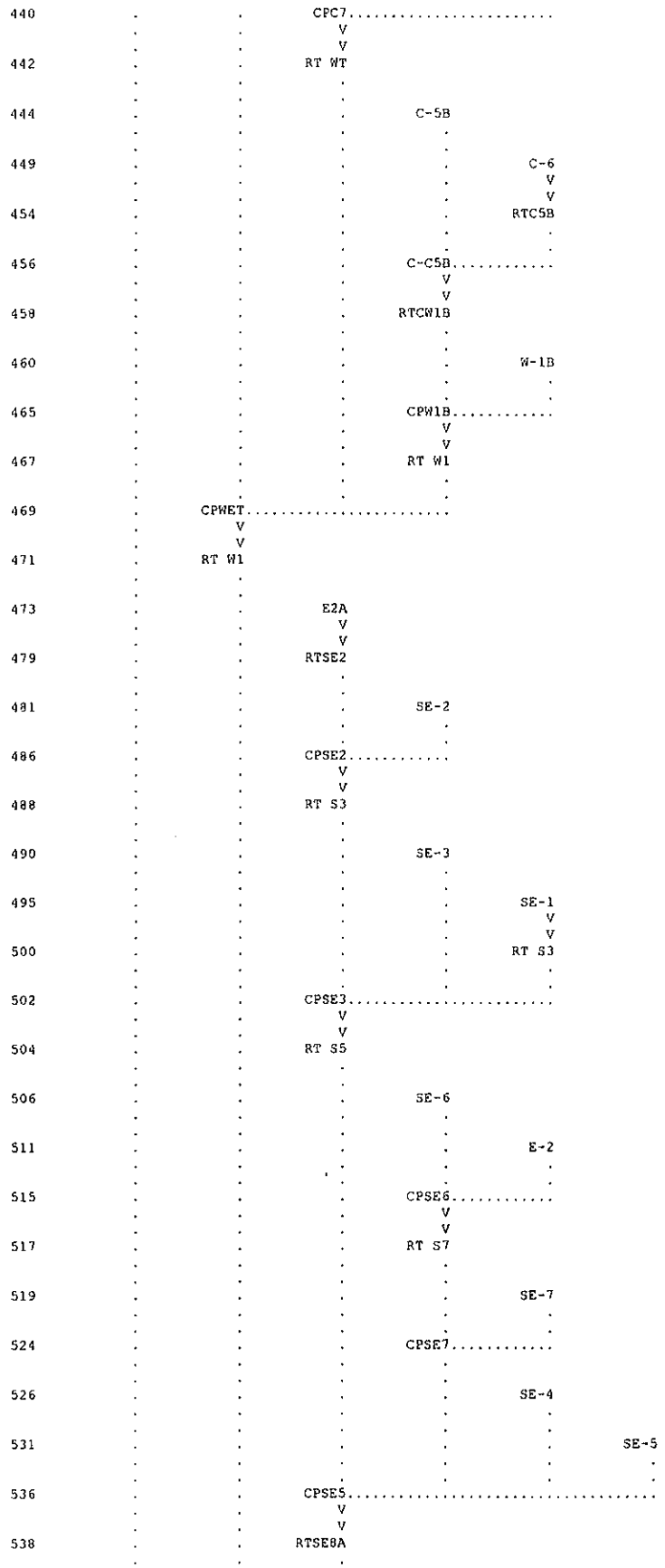
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RT W1
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471
RT W1
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E2A
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RTSE2
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SE-2
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CPSE2
488
RT S3
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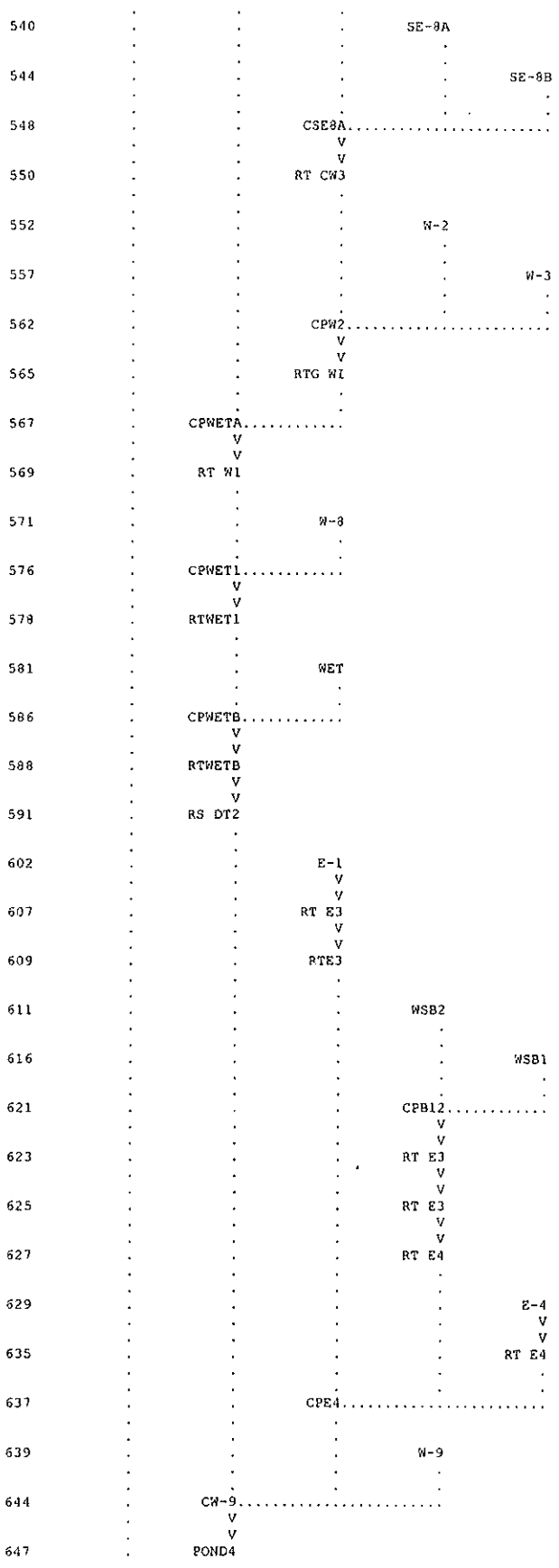
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W-3
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567
CPWETA
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RT W1
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W-8
576
CPWET1
578
RTWET1
581
WET
586
CPWETB
588
RTWETB
591
RS DT2
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E-1
607
RT E3
609
RTE3
611
WSB2
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RT E3
625
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CW-9
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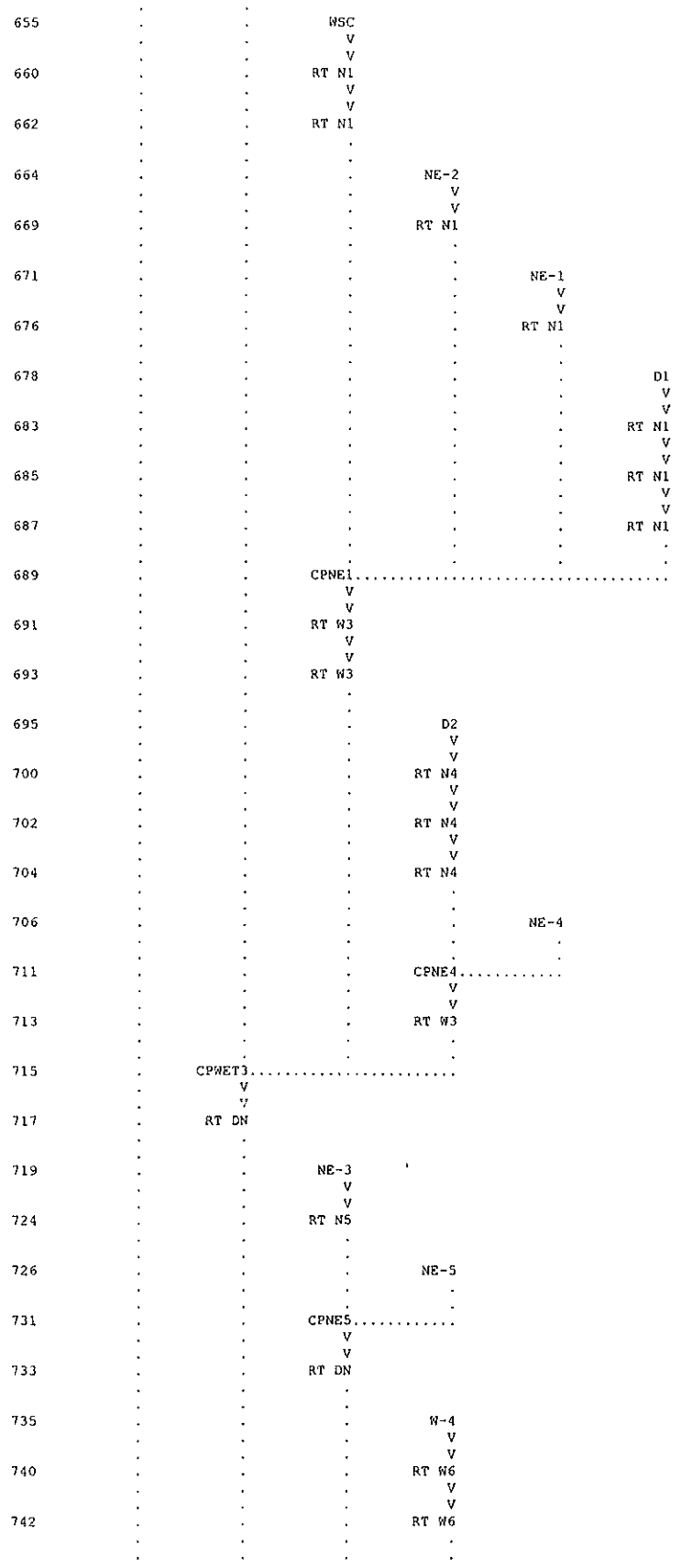
POND4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671 NE-1
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683 RT N1
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689 CPNE1
691 RT W3
693 RT W3
695 D2
700 RT N4
702 RT N4
704 RT N4
706 NE-4
711 CPNE4
713 RT W3
715 CPWET3
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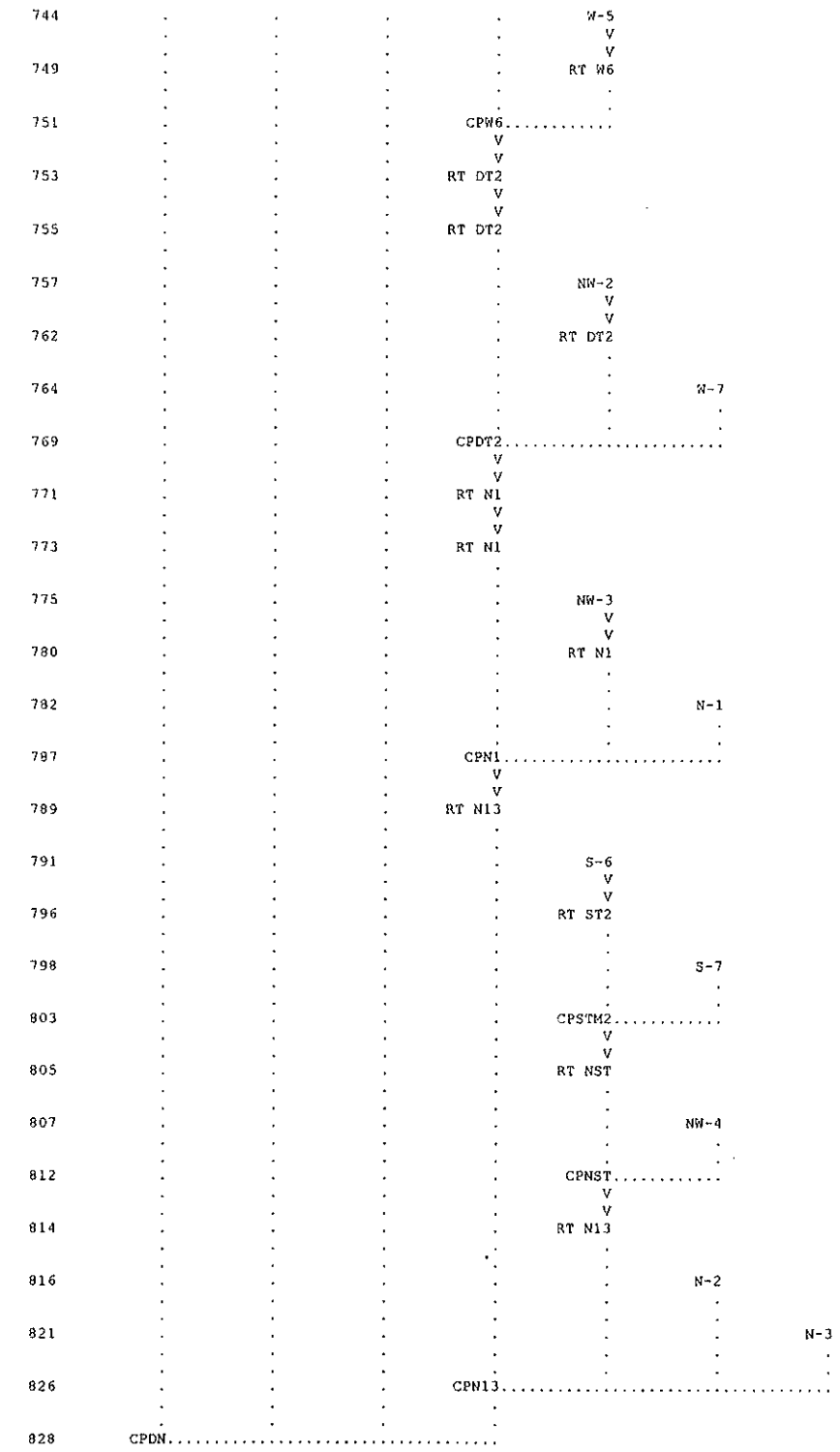
735 W-4
740 RT W6
742 RT W6



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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* *

* FLOOD HYDROGRAPH PACKAGE (HEC-1) *

* JUN 1998 *

* VERSION 4.1 *

* *

* RUN DATE 02MAY02 TIME 09:23:49 *

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* *

* U.S. ARMY CORPS OF ENGINEERS *

* HYDROLOGIC ENGINEERING CENTER *

* 609 SECOND STREET *

* DAVIS, CALIFORNIA 95616 *

* (916) 756-1104 *

* *

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                          **********************************************************************
                          100-Year HEC-1 for proposed conditions.  Includes Steamboat Creek &
                          tributaries (i.e. Galena, Jones, Browns, Bailey, 30, & 40 watersheds);
                          Damonte Ranch with refined watersheds, detention stuctures, & refined
                          east range watersheds; Whites Creek watersheds collected by Branch 3 & 4
                          with routing onto Damonte

                          This file has been modified to show changes on the Damonte Ranch for the
                          Caramella Development.  Watersheds affected: C5, C6, SE-8, E-2, W-8, W-9
                          W-3, W-1, W-6, & W-7

                          File Name: 214DMNT.DAT
                          Nimbus Engineers                APRIL, 2002
                          **********************************************************************

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

     IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE     27JUL 0  STARTING DATE
                      ITIME        0005  STARTING TIME
                         NQ         288  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE     28JUL 0  ENDING DATE
                     NDTIME        0000  ENDING TIME
                      ICENT          19  CENTURY MARK

                    COMPUTATION INTERVAL      .08 HOURS
                         TOTAL TIME BASE   23.92 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

     JP          MULTI-PLAN OPTION
                    NPLAN          1  NUMBER OF PLANS

     JR          MULTI-RATIO OPTION
                 RATIOS OF PRECIPITATION
                 .94
1

          PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
                              FLOWS IN CUBIC FEET PER SECOND,  AREA IN SQUARE MILES
                                                TIME TO PEAK IN HOURS

                                                                  RATIOS APPLIED TO PRECIPITATION
 OPERATION       STATION      AREA     PLAN                RATIO 1
                                                               .94

 HYDROGRAPH AT
+                  W1R        1.36      1    FLOW            809.
                                             TIME           12.42

 HYDROGRAPH AT
+                  W2R         .84      1    FLOW            507.
                                             TIME           12.42

   2 COMBINED AT
+                 W1+W2        2.20      1    FLOW           1317.
                                             TIME           12.42

 ROUTED TO
+                  RT-A        2.20      1    FLOW           1302.
                                             TIME           12.50

 HYDROGRAPH AT
+                  W3R         1.38      1    FLOW            762.
                                             TIME           12.50

 ROUTED TO
+                  RT-A        1.38      1    FLOW            758.
                                             TIME           12.58

 HYDROGRAPH AT
+                  W4R         1.47      1    FLOW            336.
                                             TIME           12.75

   3 COMBINED AT
+                 W1234        5.05      1    FLOW           2361.
                                             TIME           12.58

 ROUTED TO
+                  RT-B        5.05      1    FLOW           2348.
```

				TIME	12.67
HYDROGRAPH AT					
+	W5R	1.27	1	FLOW	249.
				TIME	12.92
2 COMBINED AT					
+	W5+CH	6.32	1	FLOW	2573.
				TIME	12.67
ROUTED TO					
+	RT-C	6.32	1	FLOW	2536.
				TIME	12.83
HYDROGRAPH AT					
+	W6R	1.43	1	FLOW	117.
				TIME	13.50
2 COMBINED AT					
+	W6+CH	7.75	1	FLOW	2617.
				TIME	12.83
ROUTED TO					
+	RT-D	7.75	1	FLOW	2603.
				TIME	13.00
HYDROGRAPH AT					
+	W7R	.85	1	FLOW	129.
				TIME	13.00
2 COMBINED AT					
+	W7+CH	8.60	1	FLOW	2731.
				TIME	13.00
ROUTED TO					
+	RT-DIF	8.60	1	FLOW	2719.
				TIME	13.08
HYDROGRAPH AT					
+	W8R	.75	1	FLOW	49.
				TIME	13.42
2 COMBINED AT					
+	CP DIF	9.35	1	FLOW	2764.
				TIME	13.08
DIVERSION TO					
+	CH 123	9.35	1	FLOW	2209.
				TIME	13.08
HYDROGRAPH AT					
+	DV 4	9.35	1	FLOW	555.
				TIME	13.08
ROUTED TO					
+	RT W4	9.35	1	FLOW	537.
				TIME	13.25
HYDROGRAPH AT					
+	W17R	.58	1	FLOW	87.
				TIME	12.25
2 COMBINED AT					
+	CP W4	9.93	1	FLOW	562.
				TIME	13.25
ROUTED TO					
+	RT F4	9.93	1	FLOW	546.
				TIME	13.33
HYDROGRAPH AT					
+	W19R	.33	1	FLOW	16.
				TIME	12.25
HYDROGRAPH AT					
+	W9R	2.39	1	FLOW	335.
				TIME	12.50
ROUTED TO					
+	RT F4	2.39	1	FLOW	326.
				TIME	12.67
3 COMBINED AT					
+	CP F4	12.65	1	FLOW	725.
				TIME	13.33
ROUTED TO					
+	RT V4	12.65	1	FLOW	710.
				TIME	13.42
HYDROGRAPH AT					
+	W20R	.22	1	FLOW	13.
				TIME	12.25
2 COMBINED AT					

+	CP V4	12.87	1	FLOW	715.
				TIME	13.42
ROUTED TO					
+	RT STM	12.87	1	FLOW	714.
				TIME	13.50
HYDROGRAPH AT					
+	G1G2	8.00	1	FLOW	2018.
				TIME	14.00
ROUTED TO					
+	OUTJ1	8.00	1	FLOW	2018.
				TIME	14.08
HYDROGRAPH AT					
+	J1	6.40	1	FLOW	313.
				TIME	13.67
2 COMBINED AT					
+	OUTJ1	14.40	1	FLOW	2307.
				TIME	14.00
ROUTED TO					
+	OUTG3	14.40	1	FLOW	2306.
				TIME	14.17
HYDROGRAPH AT					
+	G2	3.90	1	FLOW	285.
				TIME	13.42
2 COMBINED AT					
+	OUTG3	18.30	1	FLOW	2531.
				TIME	14.08
ROUTED TO					
+	OUT30	18.30	1	FLOW	2505.
				TIME	14.67
HYDROGRAPH AT					
+	15	4.20	1	FLOW	410.
				TIME	14.00
ROUTED TO					
+	OUT30	4.20	1	FLOW	401.
				TIME	15.33
HYDROGRAPH AT					
+	30	16.70	1	FLOW	2494.
				TIME	13.92
3 COMBINED AT					
+	OUT30	39.20	1	FLOW	5072.
				TIME	14.50
ROUTED TO					
+	OUT40	39.20	1	FLOW	5053.
				TIME	14.75
HYDROGRAPH AT					
+	35	15.30	1	FLOW	2158.
				TIME	14.33
HYDROGRAPH AT					
+	40	2.50	1	FLOW	416.
				TIME	13.17
3 COMBINED AT					
+	OUT40	57.00	1	FLOW	7318.
				TIME	14.58
ROUTED TO					
+	OUT341	57.00	1	FLOW	7314.
				TIME	14.67
			** PEAK STAGES IN FEET **		
			1	STAGE	4560.87
				TIME	14.67
HYDROGRAPH AT					
+	C-1B	.07	1	FLOW	60.
				TIME	12.08
HYDROGRAPH AT					
+	C-1A	.06	1	FLOW	4.
				TIME	12.17
ROUTED TO					
+	RT C1	.06	1	FLOW	4.
				TIME	12.33
ROUTED TO					
+	RT C1	.06	1	FLOW	4.
				TIME	12.50

2 COMBINED AT					
+	CPC1B	.13	1	FLOW	60.
				TIME	12.08
2 COMBINED AT					
+	CB CUR	57.13	1	FLOW	7326.
				TIME	14.67
ROUTED TO					
+	OUTDS	57.13	1	FLOW	7319.
				TIME	14.83
2 COMBINED AT					
+	CB DS	70.00	1	FLOW	7546.
				TIME	14.83
ROUTED TO					
+	RT WHT	70.00	1	FLOW	7538.
				TIME	14.92
HYDROGRAPH AT					
+	DR 123	.00	1	FLOW	2209.
				TIME	13.08
DIVERSION TO					
+	CH 1	.00	1	FLOW	452.
				TIME	13.08
HYDROGRAPH AT					
+	DV 2&3	.00	1	FLOW	1757.
				TIME	13.08
ROUTED TO					
+	RT 2&3	.00	1	FLOW	1723.
				TIME	13.33
HYDROGRAPH AT					
+	W10R	.30	1	FLOW	3.
				TIME	12.92
2 COMBINED AT					
+	CP 23	.30	1	FLOW	1727.
				TIME	13.33
DIVERSION TO					
+	CH 2	.30	1	FLOW	863.
				TIME	13.33
HYDROGRAPH AT					
+	DV 23A	.30	1	FLOW	863.
				TIME	13.33
ROUTED TO					
+	RT V3	.30	1	FLOW	851.
				TIME	13.50
HYDROGRAPH AT					
+	W11R	.32	1	FLOW	108.
				TIME	12.17
2 COMBINED AT					
+	CP V24	.62	1	FLOW	867.
				TIME	13.50
ROUTED TO					
+	RT F3	.62	1	FLOW	847.
				TIME	13.75
HYDROGRAPH AT					
+	W16R	.11	1	FLOW	65.
				TIME	12.08
2 COMBINED AT					
+	CP F3	.73	1	FLOW	856.
				TIME	13.75
ROUTED TO					
+	RT DSW	.73	1	FLOW	853.
				TIME	13.83
HYDROGRAPH AT					
+	W18RA	.21	1	FLOW	92.
				TIME	12.25
2 COMBINED AT					
+	CB DSW	.94	1	FLOW	864.
				TIME	13.83
HYDROGRAPH AT					
+	S-1	.04	1	FLOW	14.
				TIME	7.08
ROUTED TO					
+	RT S3	.04	1	FLOW	13.
				TIME	7.25

HYDROGRAPH AT					
+	S-2	.06	1	FLOW	15.
				TIME	7.08
ROUTED TO					
+	RT S3	.06	1	FLOW	13.
				TIME	7.17
HYDROGRAPH AT					
+	S-3A	.04	1	FLOW	11.
				TIME	7.08
ROUTED TO					
+	RT S3	.04	1	FLOW	10.
				TIME	7.25
3 COMBINED AT					
+	CPS3A	.14	1	FLOW	35.
				TIME	7.25
ROUTED TO					
+	RT S5	.14	1	FLOW	34.
				TIME	7.58
HYDROGRAPH AT					
+	S-3B	.02	1	FLOW	5.
				TIME	7.08
ROUTED TO					
+	RT S5	.02	1	FLOW	5.
				TIME	7.50
HYDROGRAPH AT					
+	S-4	.02	1	FLOW	6.
				TIME	7.08
ROUTED TO					
+	RT S5	.02	1	FLOW	6.
				TIME	7.25
HYDROGRAPH AT					
+	S-5	.03	1	FLOW	21.
				TIME	6.25
ROUTED TO					
+	RT S5	.03	1	FLOW	18.
				TIME	6.33
4 COMBINED AT					
+	CPS5	.21	1	FLOW	54.
				TIME	7.58
ROUTED TO					
+	RT WHT	.21	1	FLOW	54.
				TIME	7.75
3 COMBINED AT					
+	CB WHT	71.15	1	FLOW	7986.
				TIME	14.83
ROUTED TO					
+	DIVSTR	71.15	1	FLOW	7987.
				TIME	14.83
			** PEAK STAGES IN FEET **		
			1	STAGE	4487.96
				TIME	14.83
DIVERSION TO					
+	BAS 1	71.15	1	FLOW	3774.
				TIME	14.83
HYDROGRAPH AT					
+	STEAM	71.15	1	FLOW	4212.
				TIME	14.83
ROUTED TO					
+	OUTDM	71.15	1	FLOW	4210.
				TIME	15.00
ROUTED TO					
+	OUTDN	71.15	1	FLOW	4208.
				TIME	15.17
HYDROGRAPH AT					
+	RC BAS	.00	1	FLOW	3774.
				TIME	14.83
ROUTED TO					
+	BAS 1	.00	1	FLOW	3246.
				TIME	15.42
			** PEAK STAGES IN FEET **		
			1	STAGE	4482.12

				TIME	15.42
DIVERSION TO					
+	36DIVQ	.00	1	FLOW	113.
				TIME	15.42
HYDROGRAPH AT					
+	BAS1DS	.00	1	FLOW	3133.
				TIME	15.42
ROUTED TO					
+	POND2	.00	1	FLOW	3095.
				TIME	15.67
HYDROGRAPH AT					
+	T-1	.03	1	FLOW	32.
				TIME	12.08
ROUTED TO					
+	RT T2	.03	1	FLOW	32.
				TIME	12.08
HYDROGRAPH AT					
+	T-2	.06	1	FLOW	61.
				TIME	12.08
2 COMBINED AT					
+	CPT2	.10	1	FLOW	93.
				TIME	12.08
ROUTED TO					
+	RT T3	.10	1	FLOW	87.
				TIME	12.17
HYDROGRAPH AT					
+	T-3	.06	1	FLOW	63.
				TIME	12.08
2 COMBINED AT					
+	CPT3	.16	1	FLOW	149.
				TIME	12.08
2 COMBINED AT					
+	CPD1A	.16	1	FLOW	3117.
				TIME	15.67
ROUTED TO					
+	RT WT	.16	1	FLOW	3090.
				TIME	15.92
HYDROGRAPH AT					
+	WSF1	.77	1	FLOW	335.
				TIME	12.17
HYDROGRAPH AT					
+	WSE1	2.10	1	FLOW	568.
				TIME	12.42
2 COMBINED AT					
+	F1E1	2.88	1	FLOW	766.
				TIME	12.25
HYDROGRAPH AT					
+	C-2	.03	1	FLOW	10.
				TIME	12.08
ROUTED TO					
+	RT C3	.03	1	FLOW	10.
				TIME	12.25
HYDROGRAPH AT					
+	C-1C	.07	1	FLOW	46.
				TIME	12.08
ROUTED TO					
+	RT C3	.07	1	FLOW	45.
				TIME	12.17
HYDROGRAPH AT					
+	C-3	.03	1	FLOW	10.
				TIME	12.08
4 COMBINED AT					
+	CPC3	3.01	1	FLOW	828.
				TIME	12.25
ROUTED TO					
+	RT C4	3.01	1	FLOW	819.
				TIME	12.25
HYDROGRAPH AT					
+	C-4	.04	1	FLOW	34.
				TIME	12.08
2 COMBINED AT					

+	CPC4	3.05	1	FLOW	837.
				TIME	12.25
ROUTED TO					
+	RT C7	3.05	1	FLOW	820.
				TIME	12.33
HYDROGRAPH AT					
+	C-5A	.05	1	FLOW	41.
				TIME	12.08
2 COMBINED AT					
+	CC5A	3.10	1	FLOW	839.
				TIME	12.25
ROUTED TO					
+	RT C7	3.10	1	FLOW	835.
				TIME	12.33
HYDROGRAPH AT					
+	C-7	.03	1	FLOW	27.
				TIME	12.08
HYDROGRAPH AT					
+	W-1A	.04	1	FLOW	42.
				TIME	12.08
3 COMBINED AT					
+	CPC7	3.17	1	FLOW	862.
				TIME	12.33
ROUTED TO					
+	RT WT	3.17	1	FLOW	800.
				TIME	12.50
HYDROGRAPH AT					
+	C-5B	.03	1	FLOW	26.
				TIME	12.08
HYDROGRAPH AT					
+	C-6	.13	1	FLOW	34.
				TIME	12.08
ROUTED TO					
+	RTC5B	.13	1	FLOW	33.
				TIME	12.17
2 COMBINED AT					
+	C-C5B	.15	1	FLOW	56.
				TIME	12.08
ROUTED TO					
+	RTCW1B	.15	1	FLOW	56.
				TIME	12.17
HYDROGRAPH AT					
+	W-1B	.03	1	FLOW	26.
				TIME	12.08
2 COMBINED AT					
+	CPW1B	.18	1	FLOW	79.
				TIME	12.17
ROUTED TO					
+	RT W1	.18	1	FLOW	72.
				TIME	12.25
3 COMBINED AT					
+	CPWET	3.51	1	FLOW	3180.
				TIME	15.92
ROUTED TO					
+	RT W1	3.51	1	FLOW	3150.
				TIME	16.17
HYDROGRAPH AT					
+	E2A	2.10	1	FLOW	568.
				TIME	12.42
ROUTED TO					
+	RTSE2	2.10	1	FLOW	565.
				TIME	12.42
HYDROGRAPH AT					
+	SE-2	.06	1	FLOW	14.
				TIME	12.08
2 COMBINED AT					
+	CPSE2	2.16	1	FLOW	575.
				TIME	12.42
ROUTED TO					
+	RT S3	2.16	1	FLOW	567.
				TIME	12.42

HYDROGRAPH AT					
+	SE-3	.05	1	FLOW	16.
				TIME	12.08
HYDROGRAPH AT					
+	SE-1	.11	1	FLOW	32.
				TIME	12.08
ROUTED TO					
+	RT S3	.11	1	FLOW	32.
				TIME	12.17
3 COMBINED AT					
+	CPSE3	2.32	1	FLOW	590.
				TIME	12.42
ROUTED TO					
+	RT S5	2.32	1	FLOW	586.
				TIME	12.50
HYDROGRAPH AT					
+	SE-6	.00	1	FLOW	1.
				TIME	12.08
HYDROGRAPH AT					
+	E-2	.09	1	FLOW	57.
				TIME	12.08
2 COMBINED AT					
+	CPSE6	.09	1	FLOW	58.
				TIME	12.08
ROUTED TO					
+	RT S7	.09	1	FLOW	57.
				TIME	12.08
HYDROGRAPH AT					
+	SE-7	.01	1	FLOW	10.
				TIME	12.00
2 COMBINED AT					
+	CPSE7	.10	1	FLOW	67.
				TIME	12.08
HYDROGRAPH AT					
+	SE-4	.02	1	FLOW	5.
				TIME	12.08
HYDROGRAPH AT					
+	SE-5	.02	1	FLOW	1.
				TIME	12.00
4 COMBINED AT					
+	CPSE5	2.46	1	FLOW	612.
				TIME	12.50
ROUTED TO					
+	RTSE8A	2.46	1	FLOW	611.
				TIME	12.50
HYDROGRAPH AT					
+	SE-8A	.04	1	FLOW	32.
				TIME	12.08
HYDROGRAPH AT					
+	SE-9B	.04	1	FLOW	33.
				TIME	12.08
3 COMBINED AT					
+	CSE8A	2.53	1	FLOW	631.
				TIME	12.50
ROUTED TO					
+	RT CW3	2.53	1	FLOW	625.
				TIME	12.50
HYDROGRAPH AT					
+	W-2	.04	1	FLOW	13.
				TIME	12.08
HYDROGRAPH AT					
+	W-3	.03	1	FLOW	29.
				TIME	12.08
3 COMBINED AT					
+	CPW2	2.60	1	FLOW	644.
				TIME	12.50
ROUTED TO					
+	RTG WI	2.60	1	FLOW	640.
				TIME	12.58
2 COMBINED AT					
+	CPWETA	6.11	1	FLOW	3227.
				TIME	16.17

ROUTED TO					
+	RT W1	6.11	1	FLOW	3216.
				TIME	16.33
HYDROGRAPH AT					
+	W-8	.06	1	FLOW	63.
				TIME	12.08
2 COMBINED AT					
+	CPWET1	6.17	1	FLOW	3223.
				TIME	16.33
ROUTED TO					
+	RTWET1	6.17	1	FLOW	3187.
				TIME	16.58
HYDROGRAPH AT					
+	WET	.12	1	FLOW	42.
				TIME	12.25
2 COMBINED AT					
+	CPWETB	6.29	1	FLOW	3194.
				TIME	16.58
ROUTED TO					
+	RTWETB	6.29	1	FLOW	3162.
				TIME	16.75
ROUTED TO					
+	RS DT2	6.29	1	FLOW	2524.
				TIME	17.58
			** PEAK STAGES IN FEET **		
			1	STAGE	4460.37
				TIME	17.58
HYDROGRAPH AT					
+	E-1	.05	1	FLOW	2.
				TIME	12.17
ROUTED TO					
+	RT E3	.05	1	FLOW	2.
				TIME	12.25
ROUTED TO					
+	RTE3	.05	1	FLOW	2.
				TIME	12.42
HYDROGRAPH AT					
+	WSB2	.12	1	FLOW	68.
				TIME	12.00
HYDROGRAPH AT					
+	WSB1	.36	1	FLOW	174.
				TIME	12.08
2 COMBINED AT					
+	CPB12	.48	1	FLOW	213.
				TIME	12.08
ROUTED TO					
+	RT E3	.48	1	FLOW	211.
				TIME	12.08
ROUTED TO					
+	RT E3	.48	1	FLOW	197.
				TIME	12.17
ROUTED TO					
+	RT E4	.48	1	FLOW	188.
				TIME	12.17
HYDROGRAPH AT					
+	E-4	.10	1	FLOW	71.
				TIME	12.08
ROUTED TO					
+	RT E4	.10	1	FLOW	66.
				TIME	12.08
3 COMBINED AT					
+	CPE4	.63	1	FLOW	252.
				TIME	12.17
HYDROGRAPH AT					
+	W-9	.05	1	FLOW	49.
				TIME	12.08
3 COMBINED AT					
+	CW-9	6.97	1	FLOW	2550.
				TIME	17.58
ROUTED TO					
+	POND4	6.97	1	FLOW	2446.

				TIME	18.00
			** PEAK STAGES IN FEET **		
			1	STAGE	4455.91
				TIME	18.00
HYDROGRAPH AT					
+	WSC	3.31	1	FLOW	820.
				TIME	12.50
ROUTED TO					
+	RT N1	3.31	1	FLOW	810.
				TIME	12.58
ROUTED TO					
+	RT N1	3.31	1	FLOW	809.
				TIME	12.58
HYDROGRAPH AT					
+	NE-2	.06	1	FLOW	27.
				TIME	12.08
ROUTED TO					
+	RT N1	.06	1	FLOW	27.
				TIME	12.25
HYDROGRAPH AT					
+	NE-1	.05	1	FLOW	23.
				TIME	12.08
ROUTED TO					
+	RT N1	.05	1	FLOW	22.
				TIME	12.08
HYDROGRAPH AT					
+	D1	1.72	1	FLOW	530.
				TIME	12.33
ROUTED TO					
+	RT N1	1.72	1	FLOW	524.
				TIME	12.33
ROUTED TO					
+	RT N1	1.72	1	FLOW	520.
				TIME	12.42
ROUTED TO					
+	RT N1	1.72	1	FLOW	512.
				TIME	12.42
4 COMBINED AT					
+	CPNE1	5.14	1	FLOW	1311.
				TIME	12.50
ROUTED TO					
+	RT W3	5.14	1	FLOW	1294.
				TIME	12.50
ROUTED TO					
+	RT W3	5.14	1	FLOW	769.
				TIME	13.50
HYDROGRAPH AT					
+	D2	.15	1	FLOW	102.
				TIME	12.00
ROUTED TO					
+	RT N4	.15	1	FLOW	88.
				TIME	12.00
ROUTED TO					
+	RT N4	.15	1	FLOW	85.
				TIME	12.08
ROUTED TO					
+	RT N4	.15	1	FLOW	80.
				TIME	12.17
HYDROGRAPH AT					
+	NE-4	.07	1	FLOW	56.
				TIME	12.08
2 COMBINED AT					
+	CPNE4	.22	1	FLOW	128.
				TIME	12.17
ROUTED TO					
+	RT W3	.22	1	FLOW	66.
				TIME	13.08
3 COMBINED AT					
+	CPWET3	12.33	1	FLOW	2488.
				TIME	18.00
ROUTED TO					

+	RT DN	12.33	1	FLOW	2473.
				TIME	18.50
HYDROGRAPH AT					
+	NE-3	.05	1	FLOW	24.
				TIME	12.17
ROUTED TO					
+	RT N5	.05	1	FLOW	20.
				TIME	12.33
HYDROGRAPH AT					
+	NE-5	.05	1	FLOW	23.
				TIME	12.08
2 COMBINED AT					
+	CPNE5	.11	1	FLOW	35.
				TIME	12.17
ROUTED TO					
+	RT DN	.11	1	FLOW	32.
				TIME	12.33
HYDROGRAPH AT					
+	W-4	.04	1	FLOW	39.
				TIME	12.08
ROUTED TO					
+	RT W6	.04	1	FLOW	37.
				TIME	12.08
ROUTED TO					
+	RT W6	.04	1	FLOW	35.
				TIME	12.17
HYDROGRAPH AT					
+	W-5	.01	1	FLOW	14.
				TIME	12.00
ROUTED TO					
+	RT W6	.01	1	FLOW	13.
				TIME	12.08
2 COMBINED AT					
+	CPW6	.05	1	FLOW	48.
				TIME	12.17
ROUTED TO					
+	RT DT2	.05	1	FLOW	47.
				TIME	12.17
ROUTED TO					
+	RT DT2	.05	1	FLOW	47.
				TIME	12.25
HYDROGRAPH AT					
+	NW-2	.07	1	FLOW	47.
				TIME	12.17
ROUTED TO					
+	RT DT2	.07	1	FLOW	47.
				TIME	12.17
HYDROGRAPH AT					
+	W-7	.11	1	FLOW	84.
				TIME	12.17
3 COMBINED AT					
+	CPDT2	.23	1	FLOW	172.
				TIME	12.17
ROUTED TO					
+	RT N1	.23	1	FLOW	162.
				TIME	12.33
ROUTED TO					
+	RT N1	.23	1	FLOW	147.
				TIME	12.42
HYDROGRAPH AT					
+	NW-3	.07	1	FLOW	60.
				TIME	12.08
ROUTED TO					
+	RT N1	.07	1	FLOW	51.
				TIME	12.25
HYDROGRAPH AT					
+	N-1	.08	1	FLOW	65.
				TIME	12.17
3 COMBINED AT					
+	CPN1	.38	1	FLOW	221.
				TIME	12.33

```
 ROUTED TO
+                  RT N13        .38     1   FLOW          209.
                                             TIME        12.42

 HYDROGRAPH AT
+                    S-6         .04     1   FLOW           31.
                                             TIME        12.08

 ROUTED TO
+                  RT ST2        .04     1   FLOW           27.
                                             TIME        12.75

 HYDROGRAPH AT
+                    S-7         .05     1   FLOW           38.
                                             TIME        12.08

   2 COMBINED AT
+                  CPSTM2        .08     1   FLOW           42.
                                             TIME        12.08

 ROUTED TO
+                  RT NST        .08     1   FLOW           39.
                                             TIME        12.50

 HYDROGRAPH AT
+                   NW-4         .13     1   FLOW           93.
                                             TIME        12.17

   2 COMBINED AT
+                   CPNST        .21     1   FLOW          110.
                                             TIME        12.25

 ROUTED TO
+                  RT N13        .21     1   FLOW          101.
                                             TIME        13.08

 HYDROGRAPH AT
+                    N-2         .05     1   FLOW           44.
                                             TIME        12.08

 HYDROGRAPH AT
+                    N-3         .03     1   FLOW           19.
                                             TIME        12.00

   4 COMBINED AT
+                   CPN13        .67     1   FLOW          246.
                                             TIME        12.42

   4 COMBINED AT
+                    CPDN      84.25     1   FLOW         5754.
                                             TIME        18.25
1
                                  SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                      (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                                INTERPOLATED TO
                                                                              COMPUTATION INTERVAL
          ISTAQ     ELEMENT      DT       PEAK     TIME TO      VOLUME      DT       PEAK     TIME TO      VOLUME
                                                      PEAK                                      PEAK

                                (MIN)      (CFS)      (MIN)      (IN)     (MIN)      (CFS)      (MIN)       (IN)

        FOR PLAN = 1  RATIO=  .94
          RT STM  MANE          1.51     714.59     808.24       .23      5.00     713.88     810.00        .23

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1609E+03 EXCESS= .0000E+00 OUTFLOW= .1602E+03 BASIN STORAGE= .8542E+00 PERCENT ERROR=   -.1

        FOR PLAN = 1  RATIO=  .00
          OUTJ1  MANE           5.00    2017.57     845.00      1.64      5.00    2017.57     845.00       1.64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7027E+03 EXCESS= .0000E+00 OUTFLOW= .6995E+03 BASIN STORAGE= .4234E+01 PERCENT ERROR=   -.1

        FOR PLAN = 1  RATIO=  .00
          OUTG3  MANE           5.00    2305.58     850.00      1.06      5.00    2305.58     850.00       1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8204E+03 EXCESS= .0000E+00 OUTFLOW= .8146E+03 BASIN STORAGE= .7346E+01 PERCENT ERROR=   -.2

        FOR PLAN = 1  RATIO=  .00
          RT C1  MANE           1.25       4.32     736.25       .77      5.00       4.25     740.00        .77

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2549E+01 EXCESS= .0000E+00 OUTFLOW= .2532E+01 BASIN STORAGE= .1746E-01 PERCENT ERROR=    .0

        FOR PLAN = 1  RATIO=  .00
          RT C1  MANE           1.75       4.35     747.25       .75      5.00       4.22     755.00        .75

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2533E+01 EXCESS= .0000E+00 OUTFLOW= .2492E+01 BASIN STORAGE= .4446E-01 PERCENT ERROR=   -.1
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          FOR PLAN = 1  RATIO=  .00
            RT DSW  MANE          5.00    853.15    830.00      4.91      5.00    853.15    830.00        4.91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1933E+03 EXCESS= .0000E+00 OUTFLOW= .1915E+03 BASIN STORAGE= .2393E+01 PERCENT ERROR=   -.3

          FOR PLAN = 1  RATIO=  .00
            RT S3  MANE           1.50     10.23    433.50      3.62      5.00     10.19    435.00        3.62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7578E+01 EXCESS= .0000E+00 OUTFLOW= .7537E+01 BASIN STORAGE= .4286E-01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
            RT T2  MANE           1.24     31.84    726.46      4.23      5.00     31.51    725.00        4.24

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7690E+01 EXCESS= .0000E+00 OUTFLOW= .7678E+01 BASIN STORAGE= .1283E-01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
            RT T3  MANE           2.94     89.01    726.18      3.26      5.00     86.84    730.00        3.26

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1727E+02 EXCESS= .0000E+00 OUTFLOW= .1721E+02 BASIN STORAGE= .6817E-01 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RT C3  MANE           5.00     10.26    735.00      3.41      5.00     10.26    735.00        3.41

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6284E+01 EXCESS= .0000E+00 OUTFLOW= .6188E+01 BASIN STORAGE= .1120E+00 PERCENT ERROR=   -.3

          FOR PLAN = 1  RATIO=  .00
            RT C3  MANE           5.00     44.83    730.00      2.29      5.00     44.83    730.00        2.29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8628E+01 EXCESS= .0000E+00 OUTFLOW= .8549E+01 BASIN STORAGE= .1145E+00 PERCENT ERROR=   -.4

          FOR PLAN = 1  RATIO=  .00
            RT C4  MANE           1.42    822.95    736.19       .52      5.00    819.35    735.00         .52

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8381E+02 EXCESS= .0000E+00 OUTFLOW= .8371E+02 BASIN STORAGE= .1696E+00 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RT C7  MANE           2.70    828.75    736.57       .56      5.00    819.68    740.00         .56

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9153E+02 EXCESS= .0000E+00 OUTFLOW= .9135E+02 BASIN STORAGE= .3461E+00 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
            RT C7  MANE           3.30    835.76    739.38       .60      5.00    835.04    740.00         .60

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9951E+02 EXCESS= .0000E+00 OUTFLOW= .9925E+02 BASIN STORAGE= .4697E+00 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
            RTC5B  MANE           2.79     33.55    728.52      1.18      5.00     33.20    730.00        1.18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7886E+01 EXCESS= .0000E+00 OUTFLOW= .7861E+01 BASIN STORAGE= .2758E-01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
            RTCW1B  MANE          5.00     55.96    730.00      1.83      5.00     55.96    730.00        1.83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1518E+02 EXCESS= .0000E+00 OUTFLOW= .1509E+02 BASIN STORAGE= .1057E+00 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RTSE2  MANE           2.25    566.43    743.98       .39      5.00    564.93    745.00         .39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4411E+02 EXCESS= .0000E+00 OUTFLOW= .4408E+02 BASIN STORAGE= .7114E-01 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RT S3  MANE           1.62    572.59    746.17       .44      5.00    566.60    745.00         .44

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5018E+02 EXCESS= .0000E+00 OUTFLOW= .5014E+02 BASIN STORAGE= .7802E-01 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RT S3  MANE           5.00     31.51    730.00      1.36      5.00     31.51    730.00        1.36
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .7771E+01 EXCESS= .0000E+00 OUTFLOW= .7724E+01 BASIN STORAGE= .5686E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT S5	MANE	2.37	587.40	749.56	.52	5.00	585.60	750.00	.52

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6461E+02 EXCESS= .0000E+00 OUTFLOW= .6449E+02 BASIN STORAGE= .2109E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT S7	MANE	.47	57.48	725.44	1.85	5.00	57.08	725.00	1.85

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9283E+01 EXCESS= .0000E+00 OUTFLOW= .9280E+01 BASIN STORAGE= .5606E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RTSE8A	MANE	1.99	611.86	748.02	.64	5.00	610.97	750.00	.64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8440E+02 EXCESS= .0000E+00 OUTFLOW= .8425E+02 BASIN STORAGE= .2444E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT CW3	MANE	2.26	627.07	752.86	.74	5.00	624.82	750.00	.74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9970E+02 EXCESS= .0000E+00 OUTFLOW= .9949E+02 BASIN STORAGE= .3314E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT E3	MANE	1.00	2.26	735.00	.50	5.00	2.26	735.00	.50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1343E+01 EXCESS= .0000E+00 OUTFLOW= .1335E+01 BASIN STORAGE= .8296E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RTE3	MANE	1.25	2.26	745.00	.50	5.00	2.26	745.00	.50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1336E+01 EXCESS= .0000E+00 OUTFLOW= .1323E+01 BASIN STORAGE= .1421E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT E3	MANE	2.19	214.40	723.98	.72	5.00	211.41	725.00	.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1851E+02 EXCESS= .0000E+00 OUTFLOW= .1846E+02 BASIN STORAGE= .6918E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT E3	MANE	3.50	205.63	728.00	.72	5.00	196.52	730.00	.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1845E+02 EXCESS= .0000E+00 OUTFLOW= .1837E+02 BASIN STORAGE= .1198E+00 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RT E4	MANE	3.53	192.31	731.27	.71	5.00	187.57	730.00	.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1836E+02 EXCESS= .0000E+00 OUTFLOW= .1827E+02 BASIN STORAGE= .1105E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT E4	MANE	2.15	68.68	727.70	1.59	5.00	66.45	725.00	1.59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8479E+01 EXCESS= .0000E+00 OUTFLOW= .8463E+01 BASIN STORAGE= .3004E-01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RT N1	MANE	3.56	815.58	752.02	.41	5.00	810.13	755.00	.41

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7198E+02 EXCESS= .0000E+00 OUTFLOW= .7193E+02 BASIN STORAGE= .1395E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT N1	MANE	2.36	809.53	754.46	.41	5.00	808.79	755.00	.41

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7195E+02 EXCESS= .0000E+00 OUTFLOW= .7189E+02 BASIN STORAGE= .1172E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT N1	MANE	5.00	27.01	735.00	2.42	5.00	27.01	735.00	2.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7437E+01 EXCESS= .0000E+00 OUTFLOW= .7361E+01 BASIN STORAGE= .1023E+00 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00
RT N1 MANE 1.10 22.66 727.08 2.72 5.00 22.12 725.00 2.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7270E+01 EXCESS= .0000E+00 OUTFLOW= .7260E+01 BASIN STORAGE= .1267E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RT N1 MANE 1.75 527.46 741.36 .40 5.00 524.16 740.00 .40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3716E+02 EXCESS= .0000E+00 OUTFLOW= .3714E+02 BASIN STORAGE= .5565E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RT N1 MANE 4.13 524.45 744.13 .40 5.00 520.20 745.00 .40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3715E+02 EXCESS= .0000E+00 OUTFLOW= .3711E+02 BASIN STORAGE= .1322E+00 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RT N1 MANE 2.78 514.77 747.09 .40 5.00 511.73 745.00 .40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3711E+02 EXCESS= .0000E+00 OUTFLOW= .3706E+02 BASIN STORAGE= .1116E+00 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RT W3 MANE 1.65 1304.98 751.96 .45 5.00 1293.97 750.00 .45

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1236E+03 EXCESS= .0000E+00 OUTFLOW= .1235E+03 BASIN STORAGE= .2181E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RT N4 MANE 3.20 95.23 722.71 1.01 5.00 88.38 720.00 1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8099E+01 EXCESS= .0000E+00 OUTFLOW= .8067E+01 BASIN STORAGE= .4219E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RT N4 MANE 2.39 87.38 722.64 1.00 5.00 85.32 725.00 1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8053E+01 EXCESS= .0000E+00 OUTFLOW= .8029E+01 BASIN STORAGE= .3054E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RT N4 MANE 4.00 84.88 728.00 1.00 5.00 80.39 730.00 1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8045E+01 EXCESS= .0000E+00 OUTFLOW= .7986E+01 BASIN STORAGE= .8840E-01 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00
RT W6 MANE 3.34 37.94 727.96 3.94 5.00 37.42 725.00 3.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8015E+01 EXCESS= .0000E+00 OUTFLOW= .7983E+01 BASIN STORAGE= .3432E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RT W6 MANE 4.53 35.29 728.70 3.92 5.00 34.91 730.00 3.92

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7997E+01 EXCESS= .0000E+00 OUTFLOW= .7965E+01 BASIN STORAGE= .4613E-01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00
RT W6 MANE 5.00 12.91 725.00 9.33 5.00 12.91 725.00 9.33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6523E+01 EXCESS= .0000E+00 OUTFLOW= .6480E+01 BASIN STORAGE= .4524E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RT DT2 MANE 1.27 47.13 730.85 5.29 5.00 46.72 730.00 5.29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1442E+02 EXCESS= .0000E+00 OUTFLOW= .1440E+02 BASIN STORAGE= .2273E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RT DT2 MANE 5.00 46.52 735.00 5.26 5.00 46.52 735.00 5.26

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1443E+02 EXCESS= .0000E+00 OUTFLOW= .1434E+02 BASIN STORAGE= .9556E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RT DT2 MANE 1.12 47.11 729.36 2.49 5.00 47.10 730.00 2.50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8792E+01 EXCESS= .0000E+00 OUTFLOW= .8785E+01 BASIN STORAGE= .1135E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RT N1	MANE	5.00	162.08	740.00	2.86	5.00	162.08	740.00	2.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3505E+02 EXCESS= .0000E+00 OUTFLOW= .3468E+02 BASIN STORAGE= .4109E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT N1	MANE	5.00	147.47	745.00	2.83	5.00	147.47	745.00	2.83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3468E+02 EXCESS= .0000E+00 OUTFLOW= .3434E+02 BASIN STORAGE= .4248E+00 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RT N1	MANE	5.00	51.45	735.00	2.56	5.00	51.45	735.00	2.56

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9561E+01 EXCESS= .0000E+00 OUTFLOW= .9429E+01 BASIN STORAGE= .1599E+00 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RT N13	MANE	4.39	208.96	746.97	2.67	5.00	208.60	745.00	2.68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5410E+02 EXCESS= .0000E+00 OUTFLOW= .5383E+02 BASIN STORAGE= .3200E+00 PERCENT ERROR= -.1

*** NORMAL END OF HEC-1 ***

HEC-1 Hydrologic Model –Developed Conditions from CLOMR – 100-year, 24-hour

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1**************************************
*                                    *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*             JUN  1998              *
*          VERSION 4.1               *
*                                    *
*  RUN DATE   18SEP01  TIME  11:10:47*
*                                    *
**************************************
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**************************************
*                                    *
*   U.S. ARMY CORPS OF ENGINEERS     *
*   HYDROLOGIC ENGINEERING CENTER    *
*        609 SECOND STREET           *
*      DAVIS, CALIFORNIA 95616       *
*         (916) 756-1104             *
*                                    *
**************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X       XX
X     X  X        X             X
XXXXXXX  XXXX     X       XXXXX X
X     X  X        X             X
X     X  X        X     X       X
X     X  XXXXXXX   XXXXX        XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, QSS:WRITE STAGE FREQUENCY,
QSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM


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

              *
              *DIAGRAM
    1         ID   ********************************************************************
    2         ID    100-Year HEC-1 for proposed conditions.  Includes Steamboat Creek &
    3         ID    tributaries (i.e. Galena, Jones, Browns, Bailey, 30, & 40 watersheds);
    4         ID    Damonte Ranch with refined watersheds, detention stuctures, & refined
    5         ID    east range watersheds; Whites Creek watersheds collected by Branch 3 & 4
    6         ID    with routing onto Damonte; the remainder of the Whites Creek & split flow
    7         ID    from Thomas Creeks watersheds routed through Double Diamond;
    8         ID    & Bella Vista Ranch with the remaining east range watersheds.
    9         ID
   10         ID    File Name: 30CLCMR.DAT
   11         ID    Nimbus Engineers                 September, 2001
   12         ID   ********************************************************************
              *   Legend :
              *    W(No.)R = Subbasin
              *    CP XX = Combine flows at point XX
              *    RT XX = Route to CP XX
              *    DV XX = Divert hydrograph XX
              *    OR XX = Recall hydrograph XX
              *    XX = Street and Channel #, where applicable
              *       V = Virginia, Z = Zolezzi, F = 580 (Freeway), W = Wedge
              *  ********************************************************************
   13         IT       5 27JUL00    0005     288
   14         IO       5       0
   15         IN    15.0
              *  TOTAL WATERSHED AREA = 85 SQ. MI.
              *  ARSEAL REDUCTION =  0.94
   16         JR    PREC    0.94

   17         KK     W1R Whites Creek 1
   18         BA    1.36
   19         PB     5.5
   20         PC     0.0    .002    .005    .008    .011    .014    .017    .020    .023    .026
   21         PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
   22         PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
   23         PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
   24         PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
   25         PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
   26         PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
   27         PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
   28         PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
   29         PC    .983    .986    .992    .995    .998   1.00
   30         LS              63
   31         UD    0.48

   32         KK     W2R  Whites Creek No. 2
   33         BA    0.84
   34         PB     5.4
   35         LS              65
   36         UD    0.52
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LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

   37         KK   W1-W2  Combine W1 and W2
```

```
                38          HC       2

                39          KK     RT-A  Route to pt A
                40          RM        1      .1     0.4

                41          KK      W3R  Whites Creek No. 3
                42          BA     1.38
                43          PB     5.25
                44          LS               65
                45          UD     0.54

                46          KK     RT-A  Route to pt A
                47          RM        1      .1      .4

                48          KK      W4R  Whites Creek No. 4
                49          BA     1.47
                50          PB      5.0
                51          LS               57
                52          UD     0.72

                53          KK    W1234  Combine W1-W4
                54          HC        3

                55          KK     RT-B  Route to pt B
                56          RM        1      .1     0.4

                57          KK      W5R  Whites Creek No. 5
                58          BA     1.27
                59          PB      4.8
                60          LS               58
                61          UD     0.85

                62          KK    W5+CH  Combine W5 and channel
                63          HC        2

                64          KK     RT-C  Route to pt C
                65          RM        2    0.185     0.4

                66          KK      W6R  Whites Creek No. 6
                67          BA     1.43
                68          PB      4.1
                69          LS               57
                70          UD     1.23

                71          KK    W6+CH  Combine W6 and channel
                72          HC        2

                73          KK     RT-D  Route to pt D
                74          RM        1      0.1     0.4
1                                                  HEC-1 INPUT                                                  PAGE  3

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

                75          KK      W7R  Whites Creek No. 7
                76          BA     0.85
                77          PB      3.4
                78          LS               68
                79          UD     0.96

                80          KK    W7+CH  Combine W7 and channel
                81          HC        2

                82          KK   RT-DIF  Route flows to Diffluence
                83          RM        1    0.104     0.4

                84          KK      W8R  Whites Creek No. 8
                85          BA     0.75
                86          PB      3.0
                87          LS               65
                88          UD     1.19

                89          KK   CP DIF  Combine flows at Diffluence
                90          HC        2

                91          KK     DV 4  Divert flows into channel #4 - south branch
                92          KM           Hydrograph at this station is flow in channel 4
                93          DT   CH 123
                94          DI        0     2000     3500     5100
                95          DQ        0     1700     2700     3750

                96          KK    RT W4  Route flows in channel #4 to Wedge Parkway
                97          RM        2     .178       .3

                98          KK     W17R  Whites Creek No. 17
                99          BA     0.58
               100          PB      2.8
               101          LS               67
               102          UD     0.31

               103          KK    CP W4  Combine flows at Wedge Parkway
               104          HC        2

               105          KK    RT 74  Route flows to proposed RCB at 580
               106          RM        1    0.111       .3
```

```
107          KK    W19R  Whites Creek No. 19
108          BA    0.33
109          PB    2.75
110          LS              60
111          UD    0.22

112          KK     W9R  Whites Creek No. 9  (Steamboat Hills Area, above Mt. Rose Hwy)
113          BA    2.39
114          PB     2.8
115          LS              69
116          UD    0.51
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LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

117          KK   RT F4  Route flows to proposed RCB at 580  (Channel 4)
118          RM       2   0.181     0.3

119          KK   CP F4  Combine flows at proposed I-580 RCB  (Channel 4)
120          HC       3

121          KK   RT V4  Route flows to Virginia Street (Channel 4 near Browns School)
122          RM       1   0.121      .3

123          KK    W20R  Whites Creek No. 20
124          BA    0.22
125          PB    2.73
126          LS              61
127          UD    0.22

128          KK   CP V4  Combine flows at Channel #4 and Virginia St. (near Browns School)
129          HC       2

130          KK  RT STM  ROUTE BRACH 4 TO STEAMBOAT CREEK  - THRU PROPOSED CHANNEL
131          RK    2250   0.013    .035              TRAP       75        3
             *  ***************************************************************************
             *  STEAMBOAT CREEK MODEL
             *  ***************************************************************************

132          KK    G1G2 Upper Galena Creek - G1 & G2 COMBINED
133          BA     8.0
134          PB    4.89
135          LS              70
136          UD     1.9

137          KK   OUTJ1 Route to Confluence with Jones Creek
138          RD    5280    .046    0.07              TRAP       15      0.5

139          KK      J1 Jones Creek Watershed
140          BA     6.4
141          PB    3.51
142          LS              58
143          UD     1.3

144          KK   OUTJ1 Combine Jones and Galena Creek
145          HC       2

146          KK   OUTG3 Route Galena to Pleasant Valley foothill
147          RD    7392   0.043    0.07              TRAP       15        1

148          KK      G3 Lower Galena Creek
149          BA     3.9
150          PB     3.4
151          LS              62
152          UD     1.2
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LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

153          KK   OUTG3 Combine Galena flows at Pleasant Valley foothill
154          HC       2

155          KK   OUT30 Route Galena Creek watershed to Steamboat Gage  (use COE routing)
156          RM       7    0.61     0.2

157          KK      15 Browns Creek
158          BA     4.2
159          PB    4.10
160          LS              61
161          UD     1.7

162          KK   OUT30 Route Browns Creek to Steamboat Gage  (use COE routing)
163          RM      16    1.34     0.2

164          KK      30 COE Watershed No. 30
165          BA    16.7
166          SF     500       0       1
167          PB     2.8
168          LS              77
169          UD     1.8

170          KK   OUT30 Combine
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```
 171          HC       3

 172          KK   OUT40 Route flows to HWY 341 (use COE routing)
 173          RM       3    0.23     0.2

 174          KK      35 Bailey Canyon
 175          BA    15.3
 176          BF       0      10      1.1
 177          PB    2.95
 178          LS               80
 179          UD     2.2

 180          KK      40 Watershed No.40
 181          BA     2.5
 182          PB    2.77
 183          LS               77
 184          UD     1.1

 185          KK   OUT40  Combine Steamboat Ck with areas 35 and 40 at HWY 341
 186          HC       3

 187          KK  OUT341  ROUTE STEAMBOAT THROUGH HWY 341 USING MODIFIED PULS
 188          RS       1    STOR       0
 189          SA     .31    9.48    46.1
 190          SE    4550    4560    4570
 191          SQ     300    2475   58000
1                                        HEC-1 INPUT                                    PAGE  6

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

 192          KK    C-1B
 193          BA   0.072
 194          PB     2.5
 195          LS               69       64
 196          UD    0.22

 197          KK    C-1A
 198          BA   0.062
 199          LS               64
 200          UD    0.20

 201          KK   RT C1 ROUTING POD C-1A THRU CHANNEL C-1C TO CHANNEL C-1E
 202          RD    1000   0.014   0.030             TRAP       5       3

 203          KK   RT C1 ROUTING POD C-1A THRU CHANNEL C-1E TO CULVERT C-C2C
 204          RD    1800  0.0056   0.030             TRAP       5       3

 205          KK   CPC1B
 206          HC       2

 207          KK  CB CUR  Combine flows just north of SR 341 (Steamboat Ck)
 208          HC       2

 209          KK   OUTDS  Route Steamboat to just north of south Oamonte property line
 210          RM       2   0.153      .35

 211          KK   CB OS  COMBINE STEAMBOAT & WHITES BRANCH 4 @ OAMONTE SOUTH BOUNDARY
 212          HC       2

 213          KK  RT WHT  ROUTE TO SOUTH BOUNDARY OF WHITE'S CREEK MEADOW SUBDIVISION
 214          RM       1   0.084      0.2
              * WHITES CREEK BRANCH3

 215          KK  OR 123  Recall channel 1, 2, and 3 flows
 216          OR  CH 123

 217          KK  OV 2&3  Divert flows into channels 2 and 3 - two middle branches
 218          KM          Hydrograph at this station is flow in channels 2 and 3
 219          OT    CH 1
 220          OI       0    1700    2700    3750
 221          OQ       0     350     550     700

 222          KK  RT 2&3  Route flows to pt where channels 2 and 3 combine (2000' u/s Virginia)
 223          RM       3    .245      .3

 224          KK    W10R  Whicas Creek No. 10
 225          BA     0.3
 226          PB     2.8
 227          LS              55
 228          UD     .32
1                                        HEC-1 INPUT                                    PAGE  7

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

 229          KK   CP 23  Combine local flows with channels 2 and 3
 230          HC       2

 231          KK  OV 23A  Divert flows at CP 23 (Channels 2 and 3 Diverge)
 232          KM          Hydrograph at this station is in channel 3 (Channel 2 is diverted)
 233          OT    CH 2
 234          OI       0    2000    3500
 235          OQ       0    1000    1750
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236          KK   RT V3  Route flow to Virginia St. (CP V3)
237          RM       2   0.136      .2

238          KK    W11R  Whites Creek No. 11
239          BA    0.32
240          PB     2.7
241          LS               75
242          UD    0.27

243          KK  CP V24  Combine Subbasin W11R, and Channel 3 at Virginia Street
244          HC       2

245          KK   RT F3  Route flow to F3 (Channel 3 at 580)
246          RM       3   0.234     0.2

247          KK    W16R  Whites Creek No. 16
248          BA    0.11
249          PB     2.7
250          LS               81
251          UD    0.21

252          KK   CP F3  Combine flows at proposed RCB on 580  (Channel 3)
253          HC       2

254          KK  RT DSW  ROUTE THRU DRAINAGE DITCH TO STEAMBOAT CREEK
             *  USED CHANNEL DESIGN PARAMETERS
255          RD    2700   0.003   0.035            TRAP      50       3

256          KK   W18RA
             * Basin W18R - subdivided - area south of Channel #3 = W18RA
257          BA    0.21
258          PB     2.7
259          LS               80
260          UD    0.33

261          KK  CB DSW  COMBINE WHITES CREEK BRANCHES 3 & W18RA @ STEAMBOAT CREEK
262          HC       2

263          KK     S-1
264          BA   0.041
265          PH       1   0.001   0.478   0.869   0.145    1.52    1.58    2.11    2.53
266          LS               66
267          UD    0.17
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9.......10

268          KK   RT S3 ROUTING POD S-1 THRU STEAMBOAT TO CPS3A
269          RM       2      .2      .4

270          KK     S-2
271          BA   0.062
272          LS               62
273          UD    0.20

274          KK   RT S3 ROUTING POD S-2 THRU STEAMBOAT TO CPS3A
275          RM       1      .1      .1

276          KK    S-3A
277          BA   0.039
278          LS               63
279          UD    0.17

280          KK   RT S3 ROUTING POD S-3A THRU CHANNEL ST-1 TO CPS3A
281          RD    1000  0.0025   0.030            TRAP       5       3

282          KK   CPS3A
283          HC       3

284          KK   RT S5 ROUTING CPS3A THRU STEAMBOAT TO CPS5
285          RM       4  0.3311     0.4

286          KK    S-3B
287          BA   0.016
288          LS               63
289          UD    0.14

290          KK   RT S5 ROUTING POD S-3B THRU STEAMBOAT TO CPS5
291          RM       3  0.2837     0.4

292          KK     S-4
293          BA   0.021
294          LS               63
295          UD    0.16

296          KK   RT S5 ROUTING POD S-4 THRU STEAMBOAT TO CPS5
297          RM       2  0.1497     0.4

298          KK     S-5
299          BA   0.032
300          LS               76
301          UD    0.16

302          KK   RT S5 ROUTING POD S-5 OVERLAND TO CPS5
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 303          RM       2  0.1230     0.1
1                                        HEC-1 INPUT                                                    PAGE  9
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 304          KK    CPS5
 305          HC       4

 306          KK  RT WHT ROUTINT CPS5 TO WHT THRU STEAMBOAT
 307          RM       2  0.1775      .4

 308          KK  CB WHT  COMBINE STEAMBOAT CREEK W/ WHITES CREEK BRANCHES 3&4
 309          HC       3
              *   DIVERSION FROM STEAMBOAT TO EAST

 310          KK  DIVSTR STAGE, STORAGE, AND DISCHARGE FROM DIVERSION POND
 311          KM   BACKWATER FROM THE 5-108' RCP
 312          RS       1    ELEV    4475
              * DIVERSION POND AREAS FOR ELEVATION 4475 TO 4490; 5-108' RCP, I.E.4475
              * WEIR WIDTH = 240' @ CREST 4485'
              * ADDITIONAL ELEVATIONS ADDED TO RESERVOIR , AREAS IN THESE 2 ARE
              * KEPT CLOSE TO THE AREA AT ELEVATION 4488
 313          SA     .08    0.11    0.37    0.93    1.17    2.86    3.23    3.63    4.00    4.83
 314          SA    5.64     5.8
 315          SE    4475    4476    4477    4479    4480    4483    4484    4485    4486    4487
 316          SE    4488    4489
 317          SQ       0      50     210     750    1100    2330    2750    3175    4221    5984
 318          SQ    8072   10495

 319          KK   STEAM  DIVERSION
              *  DI=CULVERT+WEIR FLOW, DQ=WEIR FLOW INTO DETENTION BASIN 1
 320          DT   BAS 1
              *  DI CARDS FOR 5-108' RCP CULVERTS AND WEIR
 321          DI       0      50     210     750    1100    2330    2750    3175    4221    5984
 322          DI    8072   10495
              *  DQ CARDS INDICATE FLOW OVER WEIR INTO BASIN 1
 323          DQ       0       0       0       0       0       0       0       0     726    2074
 324          DQ    3847    5980

 325          KK   OUTDM  Route Steamboat to DM (near middle of Damonte property)
 326          RM       2    0.15    0.25

 327          KK   OUTDN  ROUTE STEAMBOAT TO DN -DAMONTE NORTH BOUNDARY
 328          RM       2     0.2    0.25

 329          KK  RC BAS   RECALL DIVERSION FROM STEAMBOAT
 330          DR   BAS 1

 331          KK   BAS 1 STAGE, STORAGE, AND DISCHARGE FROM BASIN 1
 332          KM   MODIFY BASIN 1 MAKE IT 5 FT DEEPER TO REDUCE PEAK FLOWS TO EAST
 333          RS       1    ELEV    4473
              *  *** BAS 1 OUTLET 100' WEIR W/1-36' RCP *****
 334          SA       0       6      17      26    35.5      36    36.5      37    37.5      38
 335          SA    38.5      39    39.5
 336          SE    4473    4474    4475    4476    4477    4478    4479    4480    4481    4482
 337          SE    4483    4484    4485
              *  *****   36' RCP ******************
 338          SL  4472.9   7.069      .7      .5
              *  ************** 100' WEIR ********************
1                                        HEC-1 INPUT                                                    PAGE 10
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 339          SS    4477     100     2.7     1.5

 340          KK  BAS1DS
 341          DT  36DIVQ             130
              *  ************** 100' WEIR ********************
 342          DI       0  106.05  378.09  743.19 1181.89 1683.44 2240.80 2848.84 3503.66 4202.11
 343          DQ       0      30      50      64      75   85.12      94     109     116     123

 344          KK   POND2
 345          KM   POND 2 WILL OUTFLOW OVER NATURAL GROUND WITH NO DETENTION.  THE FLOW
 346          KM   WILL BE ROUTED OVERLAND TO THE FIRST COMBINATION POINT IN THE WETLANDS.
 347          RM       1     0.2     0.2

 348          KK     T-1
 349          BA   0.036
 350          PB     2.5
 351          LS              74      68
 352          UD    0.20

 353          KK   RT T2 ROUTING POD T-1 THRU CHANNEL T-1 TO CPT2
 354          RD     300    0.01   0.030            TRAP      10       3

 355          KK     T-2
 356          BA   0.065
 357          PB     2.5
 358          LS              73      70
 359          UD    0.21

 360          KK    CPT2             COMBINING PODS T1 AND T2
 361          HC       2
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 362          KK   RT T3 ROUTING CPT2 THRU CHANNEL T-2 TO CPT3
 363          RD     970    0.01   0.030            TRAP      10       3

 364          KK     T-3
 365          BA   0.061
 366          PB     2.5
 367          LS              79      78
 368          UD    0.22

 369          KK    CPT3
 370          HC       2

 371          KK   CPD1A  COMBINING TAHOE AND CPT3 AND SPLIT FROM STEAMBOAT
 372          HC       2

 373          KK   RT WT   ROUTE TO CPWET
 374          RM       3  0.2621     0.1
              *  East side drainages
1                                        HEC-1 INPUT                                        PAGE 11

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

 375          KK    WSF1  East side watershed F1
 376          BA   0.775
 377          PB    2.80
 378          LS              77
 379          UD     .24

 380          KK    WSE1  East side watershed E
 381          BA     2.1
 382          PB     2.8
 383          LS              78
 384          UD     .53

 385          KK    F1E1  COMBINE F1 & E1
 386          HC       2

 387          KK     C-2
 388          BA   0.034
 389          PB     2.5
 390          LS              62      20
 391          UD    0.17

 392          KK   RT C3 ROUTING C-2 THRU CHANNEL C-3 TO CPC3
 393          RD    1050   0.005   0.030            TRAP      65       3

 394          KK    C-1C
 395          BA   0.070
 396          PB     2.5
 397          LS              63      50
 398          UD    0.20

 399          KK   RT C3 ROUTING C-1C THRU CHANNEL C-3 TO CPC3
 400          RD    1050   0.005   0.030            TRAP      65       3

 401          KK     C-3
 402          BA   0.034
 403          PB     2.5
 404          LS              63      20
 405          UD    0.18

 406          KK    CPC3
 407          HC       4

 408          KK   RT C4 ROUTING CPC3 THRU CHANNEL C-4 TO CPC4
 409          RD     550   0.005   0.030            TRAP      65       3

 410          KK     C-4
 411          BA   0.040
 412          PB     2.5
 413          LS              65      64
 414          UD    0.19
1                                        HEC-1 INPUT                                        PAGE 12

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

 415          KK    CPC4 COMBINE CPC3 AND POD C-4
 416          HC       2

 417          KK   RT C7 ROUTING CPC4 THRU CHANNEL C-5 TO CHANNEL C-7
 418          RD    1700   0.005   0.030            TRAP      70       3

 419          KK   RT C7 ROUTING CPC4 THRU CHANNEL C-7 TO CPC7
 420          RD    1400  0.0045   0.030            TRAP      75       3

 421          KK     C-5
 422          BA   0.068
 423          PB     2.5
 424          LS              70      63
 425          UD    0.20

 426          KK   RT C7 ROUTING POD C-5 THRU CHANNEL C-5 TO CHANNEL C-7
 427          RD     100   0.005   0.030            TRAP      70       3
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 428          KK   RT C7  ROUTING POD C-5 THRU CHANNEL C-7 TO CPC7
 429          RD    1400  0.0045    .030             TRAP      75       3

 430          KK     C-7
 431          BA   0.026
 432          PB     2.5
 433          LS              81       70
 434          UD    0.16

 435          KK     C-6
 436          BA   0.125
 437          PB     2.5
 438          LS              64       20
 439          UD    0.23

 440          KK   RT C7 ROUTING POD C-6 THRU CHANNEL C-6 TO CHANNEL C5
 441          RD    2000  0.0120   0.030             TRAP      10       3

 442          KK   RT C7 ROUTING POD C-6 THRU CHANNLE C-5  TO CHANNEL C-7
 443          RD     100    .005    0.03             TRAP       3

 444          KK   RT C7 ROUTING POD C-6 THRU CHANNEL C-7 TO CPC7
 445          RD    1400  0.0045   0.030             TRAP      75       3

 446          KK    CPC7  COMBINING CPC4 AND PODS C-5, C-7, C-6
 447          HC       4

 448          KK   RT WT ROUTING CPC7 TO CPWET
 449          RM       2  0.1804      0.1

 450          KK     W-1
 451          BA   0.065
 452          PB     2.5
 453          LS              81       65
 454          UD    0.22
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LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 455          KK   RT W1 ROUTING POD W-1 TO CPWET
 456          RM       1       .1       .1

 457          KK   CPWET COMBINE CPC7, POD W-1, AND D1B (CET #1)
 458          HC       3

 459          KK   RT W1 ROUTING CPWET TO CPWET1
 460          RM       3  0.2708      0.1
              *  East side drainages

 461          KK     E2A
 462          KM   THIS IS A COMBINED WATERSHED (E2 & A)
 463          BA     2.1
 464          PB     2.8
 465          LS              78
 466          UD    0.53

 467          KK    SE-2
 468          BA    0.06
 469          PB     2.5
 470          LS              72
 471          UD    0.19

 472          KK   RT S3 ROUTING POD SE-2 THRU CHANNEL SE-4B TO CPSE3
 473          RD    1300   0.045   0.035             TRAP      20       3

 474          KK    SE-3
 475          BA   0.053
 476          PB     2.5
 477          LS              62       23
 478          UD    0.21

 479          KK    SE-1
 480          BA   0.106
 481          PB     2.5
 482          LS              62       23
 483          UD    0.22

 484          KK   RT S3 ROUTING POD SE-1 THRU CHANNEL SE-4A TO CPSE3
 485          RD    1450  0.0186   0.030             TRAP      15       3

 486          KK   CPSE3
 487          HC       3

 488          KK   RT S5 ROUTING CPSE3 THRU CHANNEL SE-5 TO CPSE5
 489          RD     920   0.006   0.030             TRAP      50       3

 490          KK    SE-4
 491          BA   0.016
 492          PB     2.5
 493          LS              65       20
 494          UD    0.16
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  495     KK    SE-5
  496     BA   0.021
  497     PB     2.5
  498     LS              63        5
  499     UD    0.15

  500     KK   CPSE5 COMBINE CPSE5 CPSE5 AND PODS SE-4 AND SE-5
  501     HC       3

  502     KK   RT S7 ROUTING CPSE5 THRU CHANNEL SE-6 TO CPSE7
  503     RD    1025   0.006   0.030            TRAP       50       3

  504     KK    SE-6
  505     BA   0.004
  506     PB     2.5
  507     LS              66
  508     UD    0.12

  509     KK   RT S7 ROUTING POD SE-6 THRU CHANNEL SE-7 TO CHANNEL SE-8
  510     RD     800   0.019   0.030            TRAP       18       3

  511     KK    SE-7
  512     BA    0.10
  513     PB     2.5
  514     LS              76      65
  515     UD    0.14

  516     KK   CPSE7   COMBINE CPSE5 AND PODS SE-6 AND SE-7
  517     HC       3

  518     KK   RT WI ROUTING CPSE-7 THRU CHANNEL SE-8 TO CHANNEL SE-9
  519     RD     620  0.0060   0.030       .     TRAP       65       3

  520     KK   RT WI  ROUTING CPSE-7 THRU CHANNEL SE-9 TO CPWTIN
  521     RD    2000    .006     .03            TRAP       65       3

  522     KK    SE-8
  523     BA   0.065
  524     LS              78      64
  525     UD    0.22

  526     KK   RTWI ROUTING POD SE-8 THRU CHANNEL SE-8 TO CHANNEL SE-9
  527     RD     120   0.006    0.03            TRAP       65       3

  528     KK   RT WI ROUTING POD SE-8 THRU CHANNEL SE-9 TO CPWETIN
  529     RD    2000   0.006   0.030            TRAP       65       3

  530     KK     W-2
  531     BA   0.027
  532     PB     2.5
  533     LS              73        5
  534     UD    0.18
1                                        HEC-1 INPUT                                                    PAGE 15

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

  535     KK     W-3
  536     BA    0.04
  537     PB     2.5
  538     LS              73      70
  539     UD    0.18

  540     KK    CPW2
  541     HC       2

  542     KK  RTG WI
  543     RM       1  0.0567     0.1

  544     KK  PWETIN   COMBINE CPSE7 , CPW2, AND POD SE-8
  545     HC       3

  546     KK  CPWETA  COMBINE CPWTIN, OFFSITE FLOW Z2A BEFORE ROUTING TO CPWET1
  547     HC       2

  548     KK   RT W1  ROUTE CPWTIN THRU WETLANDS TO CPWET1
  549     RM       2  0.1462      .1

  550     KK  CPWET1  COMBINE CPWTIN AND CPWET
  551     HC       2

  552     KK  RTWET1
  553     KM   ADD ROUTING FROM CPWET1 TO CPWETB  ADDED 7/2/01 DEW
  554     RM       1      .2      .2

  555     KK     WET
  556     BA    0.12
  557     PB     2.5
  558     LS              81
  559     UD    0.36

  560     KK  CPWETB  COMBINE CPWET1 AND BASIN WETR (INFLOW OF DET #1)
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                561          HC       2

                562          KK  RTWETB
                563          KM   ROUTE WETB TO WETO
                564          RM       1       .2       .2

                565          KK     E-2
                566          BA    0.07
                567          LS               74       38
                568          UD    0.21

                569          KK   RT E3 ROUTING POD E-2 THRU CHANNEL E-2 TO CPE3
                570          RD    1000   0.007   0.030            TRAP       5       3
1                                                  HEC-1 INPUT                                                  PAGE 16

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

                571          KK     E-1
                572          BA    0.05
                573          PB     2.5
                574          LS               63
                575          UD     0.2

                576          KK   RT E3  ROUTING POD E-1 THRU CHANNEL E-1 TO CHANNEL E-2
                577          RD     950   0.026    0.03             TRAP       5       3

                578          KK    RTE3
                579          RD    1000    .007     .03             TRAP       5       3

                580          KK    CPE3   COMBINE PODS E-2 & E-1
                581          HC       2
                             *  East side drainages

                582          KK    WSB2
                583          BA    0.12
                584          PB     2.6
                585          LS               76
                586          UD    0.07

                587          KK    WSB1
                588          BA    0.36
                589          PB     2.8
                590          LS               76
                591          UD     .18

                592          KK   CPB12   COMBINE WATERSHEDS B1 & B2
                593          HC       2

                594          KK   RT E3 ROUTING WSB12 THRU CHANNEL E-3A TO CHANNEL E-3B
                595          RD    1350   0.046   0.035             TRAP      15       3

                596          KK   RT E3 ROUTING WSB12 THRU CHANNEL E-3B TO CPE3
                597          RD    1300  0.0063   0.030             TRAP      15       3

                598          KK   RT E4 ROUTING CPE3 THRU CHANNEL E-4 TO CPE-4
                599          RD     970  0.0035   0.030             TRAP      15       3

                600          KK     E-4
                601          KM   MODIFY E-4, INCLUDE OLD E-3.  THESE 2 ARE NOW THE HIGH SCHOOL SITE
                602          BA     0.1
                603          PB     2.5
                604          LS               86
                605          UD     0.2

                606          KK   RT E4 ROUTING POD E-4 THRU CHANNEL E-4 TO CPE-4
                607          RD     430  0.0035   0.030             TRAP      15       3
1                                                  HEC-1 INPUT                                                  PAGE 17

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

                608          KK    CPE4  COMBINE CPE3 AND POD E-4
                609          HC       3

                610          KK     W-8
                611          BA   0.063
                612          PB     2.5
                613          LS               81       63
                614          UD    0.19

                615          KK  CPWETO
                616          HC       3

                617          KK  RS DT2   ROUTE THRU DET #2
                618          KM   BELOW IS DATA FOR THE RESERVOIR ABOVE TRAPEZ WEIR,CALLED DT2 OR POND 3
                619          KM    DT2 INCLUDES PORTION OF WETLAND AS STORAGE
                620          RS       1    FLOW       -1
                621          SA       0     3.1     10.4       20     27.3     32.8     37.7     43.2     48.4     53.4
                622          SA    58.0
                623          SE    4452     4453     4454     4455     4456     4457     4458     4459     4460     4461
                624          SE    4462
                625          KM   INSERT TRAPEZOIDAL WEIR, CREST LENGT=65', ELEV=4454, Z=.25H:1V
                626          SQ       0        0        0   162.5      460      844     1300     1752     2292     2914
                627          SQ    3582
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 628          KK     W-9
 629          BA   0.041
 630          PB     2.5
 631          LS              81      64
 632          UD    0.19

 633          KK    CW-9
 634          KM   COMBINE W-9 & CPWETO
 635          HC       2

 636          KK   POND4
 637          KM   ROUTE THRU POND 4 JUST UPSTREAM OF DAMONTE PKWY CULVERT
 638          KM    OUTLET MODELED AS 5 BOX CULVERTS 4' X 12'
 639          RS       1    STOR       0
 640          SA       0    6.69    8.86   11.18   14.43   18.03   20.98
 641          SE    4450    4451    4452    4453    4454    4455    4456
 642          SQ       0     200     500     950    1450    2000    2500    2800
 643          SE    4450   51.08    4452 4453.07 4454.06 4455.04 4456.01  4456.7
              *  East side drainages

 644          KK     WSC
 645          BA    3.31
 646          PB     2.8
 647          LS              79
 648          UD     .65
1                                        HEC-1 INPUT                                        PAGE 18

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


 649          KK   RT N1 ROUTING BASIN WSC THRU CHANNEL NE-4A TO CHANNEL NE-5
 650          RD    2500  0.0236   0.035             TRAP       25        3

 651          KK   RT N1 ROUTING BASIN WSC THRU CHANNEL NE-5 TO CPNE1
 652          RD     800  0.0040   0.030             TRAP       80        3

 653          KK    NE-2
 654          BA   0.057
 655          PB     2.5
 656          LS              69      34
 657          UD    0.24

 658          KK   RT N1 ROUTING POD NE-2 THRU CHANNEL NE-5 TO CPNE-1
 659          RD     800  0.0040   0.030             TRAP       80        3

 660          KK    NE-1
 661          BA   0.044
 662          PB     2.5
 663          LS              63      34
 664          UD    0.24

 665          KK   RT N1 ROUTING POD NE-1 THRU CHANNEL NE-5 TO CPNE1
 666          RD     100   0.004    0.03             TRAP       80        3
              *  East side drainages

 667          KK      D1
 668          BA    1.72
 669          PB     2.8
 670          LS              78
 671          UD     .45

 672          KK   RT N1 ROUTING BASIN D1 THRU CHANNEL NE-2 TO CHANNEL NE-4A
 673          RD    1150    .030    .035             TRAP       25        3

 674          KK   RT N1 ROUTING BASIN D1 THRU CHANNEL NE-4A TO CHANNEL NE-5
 675          RD    2500   .0236    .035             TRAP       25        3

 676          KK   RT N1 ROUTING BASIN D1 THRU CHANNEL NE-5 TO CPNE-1
 677          RD     800  0.0040   0.030             TRAP       80        3

 678          KK   CPNE1   COMBINE OFFSITE FLOW WSC, PODS NE-2, NE-1, AND BASIN D1
 679          HC       4

 680          KK   RT W3  ROUTING CPNE1 THRU CHANNEL NE-6
 681          RD     670    .004     .03             TRAP       80        3

 682          KK   RT W3 ROUTING CPNE1 TO CPWETJ
 683          RM       3       1     0.1
              *  East side drainages
1                                        HEC-1 INPUT                                        PAGE 19

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


 684          KK      D2
 685          BA    0.15
 686          PB     2.6
 687          LS              78
 688          UD    0.06

 689          KK   RT N4 ROUTING BASIN D2 THRU CHANNEL NE-1 TO CHANNEL NE-3A
 690          RD    1300  0.0192   0.035             TRAP        5        3

 691          KK   RT N4 ROUTING BASIN D2 THRU CHANNEL NE-3A TO CHANNEL NE-3B
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 692          RD    1100    0.03   0.035            TRAP       5       3

 693          KK   RT N4 ROUTING BASIN D2 THRU CHANNEL NE-3B TO CPNE4
 694          RD    2050  0.0143   0.030            TRAP      15       3

 695          KK    NE-4
 696          BA   0.070
 697          PB     2.5
 698          LS              43      64
 699          UD    0.21

 700          KK   CPNE4   COMBINE BSIN D2 AND POD NE-4
 701          HC       2

 702          KK   RT W3 ROUTING CPNE4 TO CPWET3
 703          RM      10       1      .1

 704          KK  CPWET3  COMBINE CPWETO, CPNE1, AND CPNE4
 705          HC       3

 706          KK   RT DN ROUTING CPWET3 TO CPDN OFFSITE
 707          RM       6  0.4830     0.1

 708          KK    NE-3
 709          BA   0.054
 710          PB     2.5
 711          LS              68      34
 712          UD    0.25

 713          KK   RT N5 ROUTING POD NE-3 OVERLAND TO CPNE5
 714          RM       3  0.2566     0.1

 715          KK    NE-5
 716          BA   0.051
 717          PB     2.5
 718          LS              44      38
 719          UD    0.23

 720          KK   CPNE5  COMBINE PODS NE-3 AND NE-5
 721          HC       2
1                                      HEC-1 INPUT                                                    PAGE 20

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

 722          KK   RT DN ROUTING CPNE5 OVERLAND TO CPDN
 723          RM       2  0.1741     0.1

 724          KK     W-4
 725          BA   0.038
 726          PB     2.5
 727          LS              79      68
 728          UD    0.18

 729          KK   RT W6 ROUTING POD W-4 THRU CHANNEL NW-1 TO CHANNEL NW-2
 730          RD     650  0.0038   0.030            TRAP       5       3

 731          KK   RT W6 ROUTING POD W-4 THRU CHANNEL NW-2 TO CPW6
 732          RD     700  0.0021   0.030            TRAP       5       3

 733          KK     W-5
 734          BA   0.013
 735          PB     2.5
 736          LS              77      65
 737          UD    0.14

 738          KK   RT W6 ROUTING POD W-5 THRU CHANNEL NW-2 TO CPW6
 739          RD     700  0.0021   0.030            TRAP       5       3

 740          KK     W-6
 741          BA   0.017
 742          PB     2.5
 743          LS              77       5
 744          UD    0.15

 745          KK    CPW6   COMBINE PODS W-4, W-5 AND W-6
 746          HC       3

 747          KK  RT DT2 ROUTING CPW6 THRU CHANNEL NW-3A TO CHANNEL NW-4
 748          RD     350  0.0086   0.030            TRAP       5       3

 749          KK  RT DT2 ROUTING CPW6 THRU CHANNEL NW-4 TO CPDT2
 750          RD    1200   0.005   0.030            TRAP       5       3

 751          KK    NW-2
 752          BA   0.066
 753          PB     2.5
 754          LS              78      50
 755          UD    0.26

 756          KK  RT DT2 ROUTING POD NW-2 THRU  CHANNEL NW-3B TO CHANNEL NW-4
 757          RD     285   0.006   0.030            TRAP       0       3

 758          KK     W-7
 759          BA   0.053
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  760          PB     2.5
  761          LS                76      70
  762          UD    0.17
1                                          HEC-1 INPUT                                                          PAGE 21

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

  763          KK    CPDT2         COMBINE CPW6 AND PODS NW-2 AND W-7
  764          HC        3

  765          KK    RT N1 ROUTING CPDT2 THRU CHANNEL NW-5 TO CHANNEL NW-6
  766          RD     2275  0.0022    0.030             TRAP        5        3

  767          KK    RT N1 ROUTING CPDT2 THRU CHANNEL NW-6 TO CPN1
  768          RD     1650  0.0014    0.030             TRAP       15        3

  769          KK     NW-3
  770          BA    0.076
  771          PB      2.5
  772          LS                73      65
  773          UD     0.22

  774          KK    RT N1 ROUTING POD NW-3 THRU CHANNEL NW-6 TO CPN1
  775          RD     1650  0.0014    0.030             TRAP       15        3

  776          KK      N-1
  777          BA    0.104
  778          PB      2.5
  779          LS                76      68
  780          UD     0.29

  781          KK     CPN1                COMBINE CPDT2 AND PODS NW-3 , N-1
  782          HC        3

  783          KK   RT N13   ROUT CPN1 THRU CHANNEL NW-7 TO CPN13
  784          RD      800     .001      .03             TRAP       18        3

  785          KK      S-6
  786          BA    0.038
  787          PB      2.5
  788          LS                73      64
  789          UD     0.24

  790          KK   RT ST2 ROUTING POD S-6 THRU STEAMBOAT TO CPSTM2
  791          RM        8  0.6266       .4

  792          KK      S-7
  793          BA    0.046
  794          PB      2.5
  795          LS                73      64
  796          UD     0.23

  797          KK   CPSTM2            COMBINE PODS S-6 AND S-7
  798          HC        2

  799          KK   RT NST ROUTING CPSTM2 TO CPN4STM2
  800          RM        5  0.3916       .4
1                                          HEC-1 INPUT                                                          PAGE 22

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

  801          KK     NW-4
  802          BA    0.129
  803          PB      2.5
  804          LS                73      68
  805          UD     0.33

  806          KK    CPNST    COMBINE CPSTN2 AND POD NW-4
  807          HC        2

  808          KK   RT N13 ROUTING CPN4STM2 TO CPN13
  809          RM       10  0.8647       .4

  810          KK      N-2
  811          BA    0.047
  812          PB      2.5
  813          LS                75      68
  814          UD     0.21

  815          KK      N-3
  816          BA    0.030
  817          PB      2.5
  818          LS                80       5
  819          UD     0.11

  820          KK    CPN13  COMBINE CPN1, CPNST AND PODS N-2 AND N-3
  821          HC        4

  822          KK     CPDN CPN13, CPWET3, CPNE5 AND OUTDN ROUTED TO CPDN, NORTH BNDRY OF DAMONTE
  823          HC        4
               *  ***************************************************************************
               *   Routing flow from Damonte property line to Bella Vista Ranch model
               *  ***************************************************************************
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 824          KK    RT01 ROUTING OF FLOW FROM DAMONTE
 825          RM       8    1.25      0.1

 826          KK      D4  BELLA VISTA RANCH WATERSHED 4
 827          KM    CALCULATE RUNOFF FROM WATERSHED 4
 828          BA    0.80
 829          PB     2.5
 830          LS              73
 831          UD     .77

 832          KK    PT01   COMBINE FLOW FROM DAMONTE (RT01) WITH WATERSHED 4
 833          HC       2

 834          KK    RT02   ROUTE TO CONFLUENCE WITH WATERSHED 3
 835          RM       3    0.57      .1
1                                        HEC-1 INPUT                                        PAGE 23

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

 836          KK      D3   BELLA VISTA RANCH WATERSHED 3
 837          KM    CALCULATE RUNOFF FROM WATERSHED 3
 838          BA     0.7
 839          PB     2.5
 840          LS              79
 841          UD    0.77

 842          KK    PT02   COMBINE FLOWS FROM WATERSHED 3 WITH RT02
 843          HC       2

 844          KK    RT03   ROUTE TOTAL FLOW TO CONFLUENCE WITH WATERSHED 2
 845          RM       9    1.47      .1

 846          KK      D2   BELLA VISTA RANCH WATERSHED 2
 847          KM    CALCULATE RUNOFF FROM WATERSHED 2
 848          BA    0.36
 849          PB     2.5
 850          LS              70
 851          UD    0.49
              *  ***************************************************************************
              *  File name : 028AS-PH1.DAT (NOV 2000) - Includes only the section of this
              *  model that starts at 'Begin Double Diamond Model' with watershed W18RB.
              *  This model was modified from AS-PH1.DAT (MAY 1995); Whites Creek Branches
              *  3 & 4 were diverted to Steamboat Creek.
              *  DOUBLE DIAMOND SUBDIVISION-PROJECT #0028 HYDROLOGIC & HYDRAULIC ANALYSIS
              *  SOUTH MEADOWS PARKWAY & CENTRAL CHANNEL
              *  SOUTH MEADOW/DOUBLE DIAMOND
              *  BY NIMBUS ENGINEERS, RENO, NV
              *  100-Year, 24 hour model
              *  WHITES CREEK MODEL COPIED FROM WHITECN.DAT
              *  FIS THOMAS CREEK 100-YEAR PEAK = 2544 CFS @ S. VIRGINIA STREET.
              *  WHITES CREEK SUBBASIN W18RB-NORTH OF WHITES CREEK BRANCH #3 DIVERSION
              *  ADD PHASE I, PHASE VI AND PHASE V TO CENTRAL CHANNEL
              *  FROM CARAT AVE TO END OF CENTRAL CHANNEL
              *  MODEL INCLUDES DOUBLE DIAMOND DEVELOPMENT PHASE I (PORTIONS OF VILLAGES 11 AN
              *  , PHASE I(VILLAGES 1, 2, 3 AND 4), PHASE VI )PARK, K-6 SCHOOL, AND VILLAGE 29
              *  AND PHASE V (VILLAGES 24 AND 25)
              *  100-YEAR,24-HOUR MODEL
              *  MODEL INCLUDES DOUBLE DIAMOND DEVELOPMENT PHASE II (VILLAGES 5 & 6 AND PARKS)
              *  , PHASE III (VILLAGES 16, 17, 18, AND 19), AND PHASE IV (VILLAGES 7, 8, 9,
              *  20, 21, 22, AND 23) PLUS WETLAND BETWEEN VILLAGES 18/19 & 20.
              *  USE SUBBASIN AREAS FROM MACKAY & SOMPS
              *  NIMBUS ENGINEERS, RENO, NEVADA
              *  MODEL MODIFIED FROM CARATDD.DAT (#9908)
              *  ***************************************************************************

 852          KK   W18RB WHITES CREEK SUBBASIN W18RB-NORTH BOUNDARY OF WHITES CK MEADOW SUBDIV.
 853          KM        DAMONTE RANCH NORTH OF WHITES CK. BRANCH #3 AND SOUTH OF DOUBLE DIAMOND
 854          BA   .2344
 855          PB     2.6
 856          LS              85
 857          UD    0.30
1                                        HEC-1 INPUT                                        PAGE 24

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

 858          KK  V18-19 DOUBLE DIAMOND VILLAGES 18 & 19
 859          BA   .0548
 860          LS              92
 861          UD    0.24

 862          KK     V20 DOUBLE DIAMOND VILLAGE 20
 863          BA  0.0450
 864          LS              92
 865          UD    0.21

 866          KK     WET WETLANDS # 5 & #6 BETWEEN VILLAGES 18/19 AND VILLAGE 20
 867          BA   .0153
 868          LS              80
 869          UD    0.26

 870          KK  CB WET COMBINE W18RB, V18-19, V20, & WET RUNOFF HYDROGRAPHS IN THE WETLAND
 871          KM         BETWEEN VILLAGES 18/19 AND VILLAGE 20
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 872          HC       4

 873          KK    PH-IV PHASE IV DOUBLE DIAMOND DEVELOPMENT (VILLAGES 7,8,9,21,22,&23).
 874          KM          VILLAGE 20 WAS MODELED ABOVE WITH FLOW ENTERING THE WETLAND SOUTH
 875          KM          OF WILBUR MAY BLVD.  DETAILED DRAINAGE PLANS WERE NOT AVAILABLE
 876          KM          AND AS A RESULT THE PHASE IV VILLAGES LIST FOR PH-IV WERE COMBINED.
 877          KM          AS PLANS ARE DEVELOPED, THE VILLAGES CAN BE MODELED SEPARATELY.
 878          BA  0.1931
 879          LS               92
 880          UD   0.31

 881          KK     E14 HYDROGRAPH FROM VILLAGE 6 DRAINAGE POINT E14
 882          KM    CALCULATE RUNOFF FROM SUBBASIN E14
 883          BA     .025
 884          LS               92
 885          UD     .225

 886          KK     C14
 887          KM    COMBINE RUNOFF FROM E14 WITH CENTRAL CHANNEL FLOW (FLOW FROM RT1617 & PH-IV)
 888          HC       3

 889          KK   E14-E1
 890          KM    ROUTE FLOW TO E1 ALONG CENTRAL CHANNEL
 891          RD     400    .004    .030            TRAP     100       3

 892          KK      E1
 893          KM    CALCULATE RUNOFF FROM SUBBASIN E1-VILLAGE 5
 894          BA    .0058
 895          LS               92
 896          UD     .135

 897          KK      C1
 898          KM    COMBINE RUNOFF FROM E1 WITH CENTRAL CHANNEL FLOW
 899          HC       2
1                                        HEC-1 INPUT                                        PAGE 25

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

 900          KK    E1-E2
 901          KM    ROUTE FLOW TO E2 ALONG CENTRAL CHANNEL
 902          RD     300    .004    .030            TRAP     100       3

 903          KK      E2
 904          KM    CALCULATE RUNOFF FROM SUBBASIN E2-VILLAGE 5
 905          BA     .003
 906          LS               92
 907          UD     .118

 908          KK      C2
 909          KM    COMBINE RUNOFF FROM E2 WITH CENTRAL CHANNEL FLOW
 910          HC       2

 911          KK    E2-E3
 912          KM    ROUTE FLOW TO E3 ALONG CENTRAL CHANNEL
 913          RD     300    .004    .030            TRAP     100       3

 914          KK      E3
 915          KM    CALCULATE RUNOFF FROM SUBBASIN E3-VILLAGE 5
 916          BA    .0025
 917          LS               92
 918          UD     .119

 919          KK      C3
 920          KM    COMBINE RUNOFF FROM E3 WITH CENTRAL CHANNEL FLOW
 921          HC       2

 922          KK    E3-E4
 923          KM    ROUTE FLOW TO E4 ALONG CENTRAL CHANNEL
 924          RD     360    .004    .030            TRAP     100       3

 925          KK      E4
 926          KM    CALCULATE RUNOFF FROM SUBBASIN E4-VILLAGE 5
 927          BA     .003
 928          LS               92
 929          UD     .113

 930          KK      C4
 931          KM    COMBINE RUNOFF FROM E4 WITH CENTRAL CHANNEL FLOW
 932          HC       2

 933          KK     D10
 934          KM    CALCULATE RUNOFF FROM SUBBASIN D10
 935          KM    SUBBASIN D10 IS LOCATED ALONG DOUBLE DIAMOND PKWY.  THE AREA DRAINED IS
 936          KM    COMPRISED OF PORTIONS OF VILLAGES 5,6,13,14,15,16 & 17 THAT BORDER THE PKWY.
 937          KM    THE D10 SYSTEM IS A PARALLEL STORM DRAIN SYSTEM
 938          KM    ALONG DOUBLE DIAMOND PARKWAY THAT DRAINS TO AN OPEN
 939          KM    CHANNEL ALONG THE SOUTH EDGE OF THE PARK LOCATED IMMEDIATELY SOUTHEAST OF
 940          KM    THE INTERSECTION OF CARAT AV. AND DOUBLE DIAMOND PKWY.
 941          BA     .122
 942          LS               92
 943          UD     .277
1                                        HEC-1 INPUT                                        PAGE 26

            LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
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 944          KK     D12
 945          KM   CALCULATE RUNOFF FROM SUBBASIN D12-VILLAGE 5
 946          BA  0.0166
 947          LS               92
 948          UD   0.173

 949          KK    PARK
 950          KM   CALCULATE RUNOFF FROM PARK JUST SOUTH OF CARAT AVE
 951          BA   .0078
 952          LS               80
 953          UD     .14

 954          KK  C10PRK
 955          KM   COMBINE HYDROGRAPHS FROM PARK, D10, D12 AND CENTRAL CHANNEL
 956          HC       4

 957          KK  PK-CAR
 958          KM   ROUTE FLOW TO STATION -62+20 ALONG CENTRAL CHANNEL
 959          RD     720    .004    .030            TRAP     100       3

 960          KK    PhVa PHASE V SUB-BASIN a
 961          BA   0.011
 962          LS               92
 963          UD    0.16

 964          KK      V4 DOUBLE DIAMOND VILLAGE 4 OF PHASE I
 965          BA   0.026
 966          LS               86
 967          UD    0.16

 968          KK    CB 1 COMBINE PhVa AND V4 AT STATION -62+20
 969          HC       3

 970          KK   RT1-2
 971          KM    ROUTE TO CB 2 AT STATION -74+65
 972          RD    1245    .004    0.04            TRAP     100       3

 973          KK    PhVb DOUBLE DIAMOND PHASE V AREA PhVb
 974          BA   0.028
 975          LS               92
 976          UD    0.23

 977          KK     CB2 COMBINE PvVb WITH CENTRAL CHANNEL FLOW AT STATION -74+65
 978          HC       2

 979          KK   RT2-3 ROUTE CB2 DOWN CENTRAL CHANNEL TO CB 3 AT STATON -79+00
 980          RD     435  .00204    0.04            TRAP     100       3

 981          KK     V12 PORTION OF VILLAGE 12 THAT DRAINS TO CENTRAL CHANNEL
 982          BA   0.015
 983          LS               86
 984          UD    0.16
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LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 985          KK     V11 PORTION OF VILLAGE 11 THAT DRAINS TO CENTRAL CHANNEL
 986          BA   0.008
 987          LS               86
 988          UD    0.12

 989          KK      V3 PHASE I VILLAGE 3
 990          BA   0.026
 991          LS               86
 992          UD    0.19

 993          KK     CB3  COMBINE PORTIONS OF VILLAGES 11&12 WITH VILLAGE 3 AT STA 79+00
 994          HC       4

 995          KK   RT3-4
 996          KM   ROUTE CB3 DOWN CENTRAL CHANNEL TO CB4 AT STATION -82+00
 997          RD     300 0.00204    0.04            TRAP     100       3

 998          KK    PhVc PHASE V SUB-AREA PhVc
 999          BA   0.022
1000          LS               92
1001          UD    0.19

1002          KK      V2 VILLAGE 2 OF PHASE I
1003          BA    0.04
1004          LS               86
1005          UD    0.20

1006          KK     CB4  COMBINE PhVc WITH VILLAGE 2
1007          HC       3

1008          KK   RT4-5  ROUTE CB4 DOWN CENTRAL CHANNEL TO CB5 AT STATION -83+65
1009          RD     165 0.00204    0.04            TRAP     100       3

1010          KK  PARKVI PHASE VI PARK
1011          BA   0.004
1012          LS               80
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1013          UD    0.14

1014          KK      CB5  COMBINE PHASE VI PARK WITH CENTRAL CHANNEL FLOW AT CB5
1015          HC        2

1016          KK    RT5-6  ROUTE CB5 DOWN CENTRAL CHANNEL TO CB6 AT STATION -87+50
1017          RD      385 0.00204    0.04            TRAP      100        3

1018          KK   K6SCHL  PHASE VI K-6 SCHOOL
1019          BA    0.013
1020          LS              85
1021          UD     0.15
1                                        HEC-1 INPUT                                        PAGE 28

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


1022          KK      CB6  COMBINE K-6 SCHOOL WITH CENTRAL CHANNEL FLOW AT CB6
1023          HC        2

1024          KK    RT6-7  ROUTE CB6 DOWN CENTRAL CHANNEL TO CB7 AT STATION -101+00
1025          KM           END OF CENTRAL CHANNEL
1026          RD     1350  .00204    0.04            TRAP      100        3

1027          KK       V1  PHASE I VILLAGE 1
1028          BA    0.037
1029          LS              86
1030          UD     0.21

1031          KK      V29  PHASE VI VILLAGE 29
1032          BA    0.065
1033          LS              92
1034          UD     0.20

1035          KK      CB7  COMBINATION POINT 7; END OF CENTRAL CHANNEL
1036          HC        3
              *  WHITES CREEK BRANCHES 1 & 2

1037          KK     DR 1  Recall Channel 1 Hydrograph (0 Diffluence)
1038          DR     CH 1

1039          KK    RT Z1  Route Channel 1 to Zolezzi Lane (approx. 2800' West of Virginia St.)
1040          RM        4      .34       .3

1041          KK     W13R  Whites Creek No. 13
1042          BA      1.3
1043          PB      2.8
1044          LS              61
1045          UD     0.52

1046          KK    CP Z1  Combine channel 1 w/ W13R at Zolezzi Lane
1047          HC        2

1048          KK    DV 1B  Divert flows to the north of Zolezzi (Channel 1A)
1049          KM           Hydrograph is for flows along Zolezzi (Channel 1B, Ea. to Virginia)
1050          DT    CH 1A
1051          DI        0      200     1500
1052          DQ        0      200      200

1053          KK   RT V12  Route Channel 1B to Virginia St.
1054          RM        1     0.12      .25

1055          KK     W12R  Whites Creek No. 12
1056          BA      0.6
1057          PB      2.8
1058          LS              61
1059          UD     0.45
1                                        HEC-1 INPUT                                        PAGE 29

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


1060          KK   CP V12  Combine Channel 1B and W12R at int. of Virginia and Zolezzi
1061          HC        2

1062          KK   DR CH2  Recall Channel 2 Hydrograph
1063          DR     CH 2

1064          KK   RT V12  Route Flows to int. of Virginia and Zolezzi
1065          RM        3     .221       .2

1066          KK   CP V12  Combine channels 1B and 2 at int. of Virginia and Zolezzi
1067          HC        2

1068          KK   RT F12  Route flows to proposed RCB at 580 (Channels 1B and 2)
1069          RM        2    0.201       0.2

1070          KK     W15R  Whites Creek No. 15
1071          BA     0.21
1072          PB      2.7
1073          LS              79
1074          UD     0.21

1075          KK   CP F12  Combine flows at proposed RCB at 580 (Channels 1B and 2)
1076          HC        2
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1077          KK   DR 1A  Recall Channel 1A Hydrograph
1078          DR   CH 1A

1079          KK  RT F1A  Route flows to proposed RCB at 580 (Channel 1A)
1080          RM       4   0.306     0.2

1081          KK    W14R  Whites Creek No. 14
1082          BA    0.18
1083          PB     2.7
1084          LS              77
1085          UD    0.26

1086          KK  CP F1A  Combine flows at proposed RCB at 580 (Channel 1A)
1087          HC       2

1088          KK  CB 1&2  COMBINE WHITES CREEK BRANCHES 1 & 2 @ I-580
1089          HC       2
              *  ROUTE WHITES CREEK BRANCHES 1 & 2 TO THE CONFLUENCE W/ LUMBERJACK CHANNEL

1090          KK  RT WT2  ROUTE WHITES 1&2 THRU WS WT2P - CHANNEL 'A'
1091          RD    3040  0.0026   0.035            TRAP     135       5

1092          KK  RT WT2  ROUTE WHITES 1&2 THRU WS WT2P- PARK AND OPEN SPACE
1093          RM       5    0.44     0.20
1                                        HEC-1 INPUT                                        PAGE 30

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


1094          KK  RT WT2  ROUTE WHITES CREEK 1&2 THRU WS WT2P - CHANNEL 'B'
1095          RD    1914  0.0028   0.035            TRAP     151       3

1096          KK  WT 6P1  PORTION OF PHASE I VILLAGES 11, 12, & 13 DRAINING TO 'B' CHANNEL
1097          BA    0.07
1098          PB     2.7
1099          LS              83
1100          UD    0.38

1101          KK  W WT2P  ON-SITE WATERSHED WT2P
              *  EXISTING CONDITION(NO ON-SITE DETENTION)
1102          BA    0.59
1103          PB     2.7
1104          LS              79
1105          UD    0.73

1106          KK  CB WT2   COMBINE WHITES CREEK 1&2 & WT2P
1107          HC       3

1108          KK  WS WT1  WATERSHED WT1 - AREAS BETWEEN WHITES CREEK AND THOMAS CREEK
1109          BA    1.93
1110          PB    2.75
1111          LS              66
1112          UD    0.97

1113          KK  RT WT3  ROUTE TO CONFLUENCE
1114          RM       3    0.29     0.25

1115          KK  THOMAS
1116          KM      HYDROGRAPH FROM FIS HYDROLOGY MODEL - THOM100.901
1117          KM      THOMAS CREEK PEAK FLOW @ S. VIRGINIA STREET
1118          BA   11.54
1119          QI       0        0        0        0        0        0        0        0        0        0
1120          QI       0        0        0        0        0        0        0        0        0        0
1121          QI       0        0        0        0        0        0        0        0        0        0
1122          QI       0        0        0        0        0        0        0        2        6       12
1123          QI      20       29       41       54       70       89      112      144      203      285
1124          QI     790     1223     1828     2544     2447     1943     1462     1170     1019      933
1125          QI     873      825      786      756      729      698      665      636      613      594
1126          QI     577      562      549      535      521      504      481      445      407      379
1127          QI     362      350      341      334      327      321      316      310      305      300
1128          QI     295      291      287      282      278      275      271

1129          KK  DV HOL
1130          KM      SPLIT FLOW ACROSS HOLCOME LANE TO NORTH.
1131          KM      REFER TO FIS HEC-2 MODEL FOR THOMAS CREEK - THOMAS A.DAT
1132          KM      SPLIT FLOW RATING CALCULATED USING THOMAS A.DAT
1133          DT  HOLCOM
1134          DI       0     1000     2000     2550     3000     4000
1135          DQ       0      274      955     1385     1746     2562
1                                        HEC-1 INPUT                                        PAGE 31

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


1136          KK  RT WT3   ROUTE TO OPEN SPACE/WETLAND
1137          RM       2   0.167    0.25

1138          KK  DV THO   THOMAS CREEK DIVERSION AT WETLAND/OPEN SPACE
1139          DT     THOM
1140          DI       0      500     1000     1465
1141          DQ       0        0        0      159

1142          KK  RT WT3   ROUTE TO CONFLUENCE
1143          RM       1   0.083    0.25
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1144          KK    WT3P  WATERSHED WT3P  - EXISTING CONDITION ( NO ON-SITE DETENTION)
1145          BA     0.49
1146          PB      2.7
1147          LS               79
1148          UD     0.33

1149          KK  CB WT3  COMBINE OFFSITE FLOWS -WT1 & THOMAS CREEK & WT3P
1150          HC        3

1151          KK  CB OFF  COMBINE WHITES CREEK 1&2 & THOMAS CREEK
1152          HC        2

1153          KK  RT WHC  ROUTE THRU WHITES CHANNEL 'C'
1154          RD    1689  0.0021    0.035            TRAP      150        3

1155          KK  CB WHC  COMBINE WHITES CREEK BRANCHES 1,2,3,&4 & THOMAS CREEK
1156          HC        2

1157          KK  RT DET ROUTE TO DETENTION BASIN THRU PROPOSED CHANNEL
1158          RD    1985 0.00275   0.035            TRAP      170        3
              *   ROUTE THRU DETENTION BASIN

1159          KK  RT DET
1160          RS        1    FLOW      -1
              *   AS-BUILT VOLUME - PHASE 1
1161          SV        0   16.64   41.62   72.60  123.04  170.39  216.38  238.26
              *   PHASE 2 VOLUME - W/O ARCHEOLOGICAL SITE
1162          SE  4422.7 4424.09 4425.20 4426.25 4427.55 4428.60 4429.52 4429.94
1163          SQ        0      200      500     1000     2000     3000     4000     4500

1164          KK   RT WT  ROUTE TO CP WT
1165          RM        1    0.06    0.15

1166          KK  THOMAS  RECALL DIVERSION FROM THOMAS CREEK
1167          DR    THOM

1168          KK   RT WT   ROUTE TO NORTHEAST PROP
1169          RM       19    1.59     0.2
1                                        HEC-1 INPUT                                                    PAGE 32

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

1170          KK    WT4P  ON-SITE WATERSHED WP4P
              *  EXISTING CONDITION (NO ON-SITE DETENTION)
1171          BA     1.73
1172          PB      2.7
1173          LS               82
1174          UD     1.62

1175          KK    WT7P  ON-SITE WATERSHED WT7P
              * EXISTING CONDITIONS
1176          BA     0.16
1177          PB      2.7
1178          LS               80
1179          UD     1.48

1180          KK   RT WT   ROUTE TO CP WT
1181          RM        8    0.65    0.15

1182          KK  WS WT5  WATERSHED WT5
1183          BA     0.49
1184          PB     2.65
1185          LS               83
1186          UD     0.28

1187          KK   RT WT  ROUTE TO CP WT
1188          RM        6    0.47    0.15

1189          KK   CB WT  COMBINE FLOWS AT NORTHEAST PROPERTY CORNER
1190          HC        4

1191          KK   CP WT  COMBINE ALL FLOWS @ CP WT
1192          HC        2
              *
              *   FLOW FROM DOUBLE DIAMOND ONTO BELLA VISTA RANCH NORTH OF THE NARROWS
              *

1193          KK    PT03   COMBINE FLOW FROM WATERSHED 2 WITH RT03 AND DOUBLE DIAMOND FLOWS
1194          HC        3

1195          KK    RT04   ROUTE TOTAL FLOW TO CONFLUENCE WITH WATERSHEDS 1 & 5, & DD
1196          RM       11    1.77     0.1

1197          KK      D1   BELLA VISTA RANCH WATERSHED 1
1198          KM    CALCULATE RUNOFF FROM WATERSHED 1
1199          BA     0.44
1200          PB      2.5
1201          LS               77
1202          UD     0.60

1203          KK      D5   BELLA VISTA RANCH WATERSHED 5
1204          KM    CALCULATE RUNOFF FROM WATERSHED 5
1205          BA     1.21
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          1206          PB      2.4
          1207          LS                74
          1208          UD     5.36
1                                                HEC-1 INPUT                                                PAGE 33

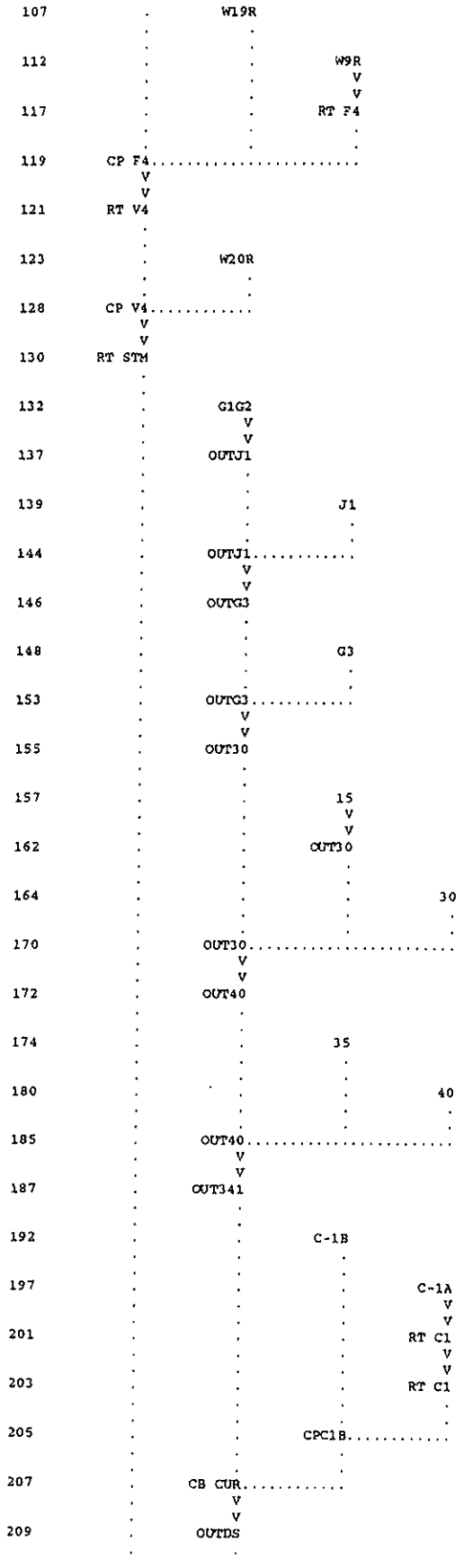
          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

          1209          KK     PT04  COMBINE FLOWS FROM WSD 1 & 5 WITH ROUTED FLOW FROM PT03
          1210          HC        3
                        *
          1211          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

    17          W1R
                 .
                 .
    32           .          W2R
                 .            .
                 .            .
    37       W1+W2.............
                 V
                 V
    39        RT-A
                 .
                 .
    41           .          W3R
                 .            V
                 .            V
    46           .         RT-A
                 .            .
                 .            .
    48           .            .          W4R
                 .            .            .
                 .            .            .
    53       W1234.........................
                 V
                 V
    55        RT-B
                 .
                 .
    57           .          W5R
                 .            .
                 .            .
    62       W5+CH.............
                 V
                 V
    64        RT-C
                 .
                 .
    66           .          W6R
                 .            .
                 .            .
    71       W6+CH.............
                 V
                 V
    73        RT-D
                 .
                 .
    75           .          W7R
                 .          .   .
                 .            .
    80       W7+CH.............
                 V
                 V
    82       RT-DIF
                 .
                 .
    84           .          W8R
                 .            .
                 .            .
    89       CP DIF............
                 .
                 .
    93           .-------->  CH 123
    91        DV 4
                 V
                 V
    96        RT W4
                 .
                 .
    98           .         W17R
                 .            .
                 .            .
   103       CP W4.............
                 V
                 V
   105       RT F4
                 .
                 .
```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W19R
112
W9R
117
RT F4
119
CP F4
121
RT V4
123
W20R
128
CP V4
130
RT STM
132
G1G2
137
OUTJ1
139
J1
144
OUTJ1
146
OUTG3
148
G3
153
OUTG3
155
OUT30
157
15
162
OUT30
164
30
170
OUT30
172
OUT40
174
35
180
40
185
OUT40
187
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CB CUR
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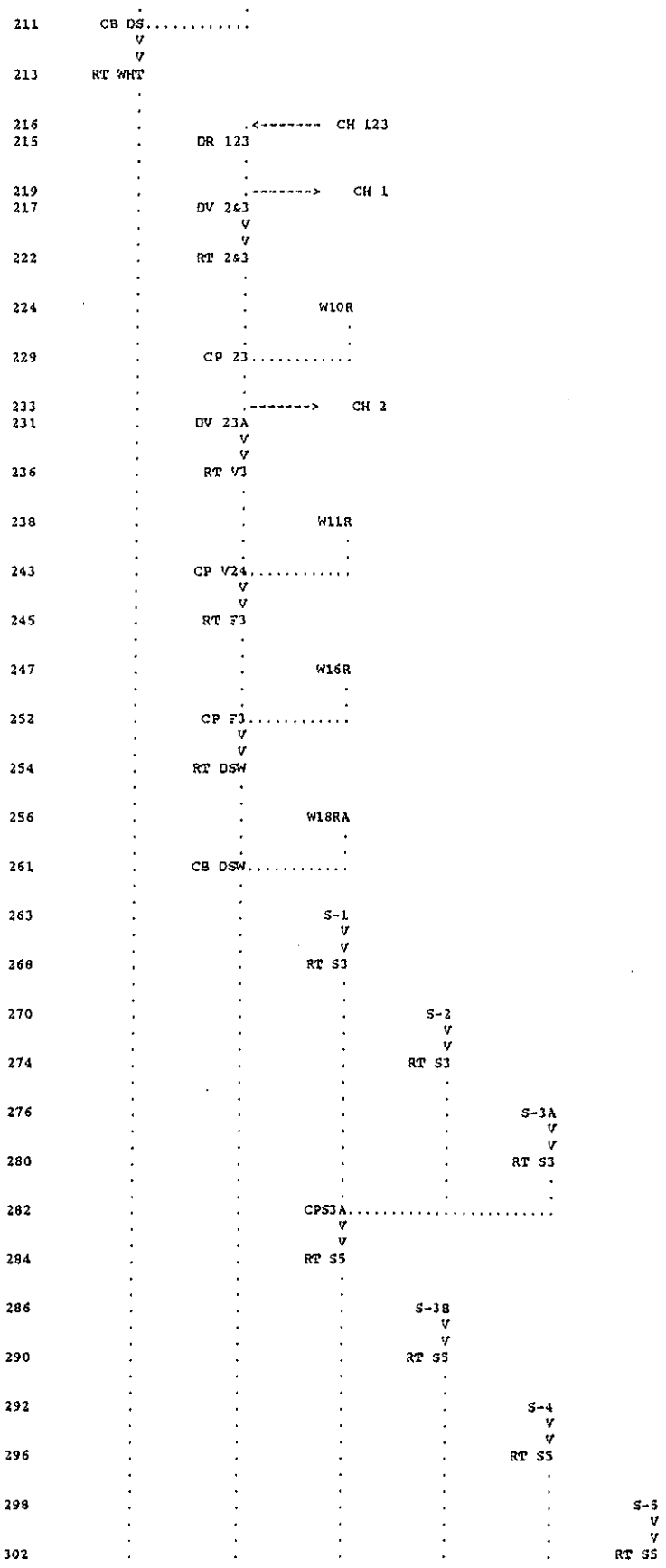
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216 CH 123
215 DR 123
219 CH 1
217 DV 2&3
222 RT 2&3
224 W10R
229 CP 23
233 CH 2
231 DV 23A
236 RT V3
238 W11R
243 CP V24
245 RT F3
247 W16R
252 CP F3
254 RT DSW
256 W18RA
261 CB DSW
263 S-1
268 RT S3
270 S-2
274 RT S3
276 S-3A
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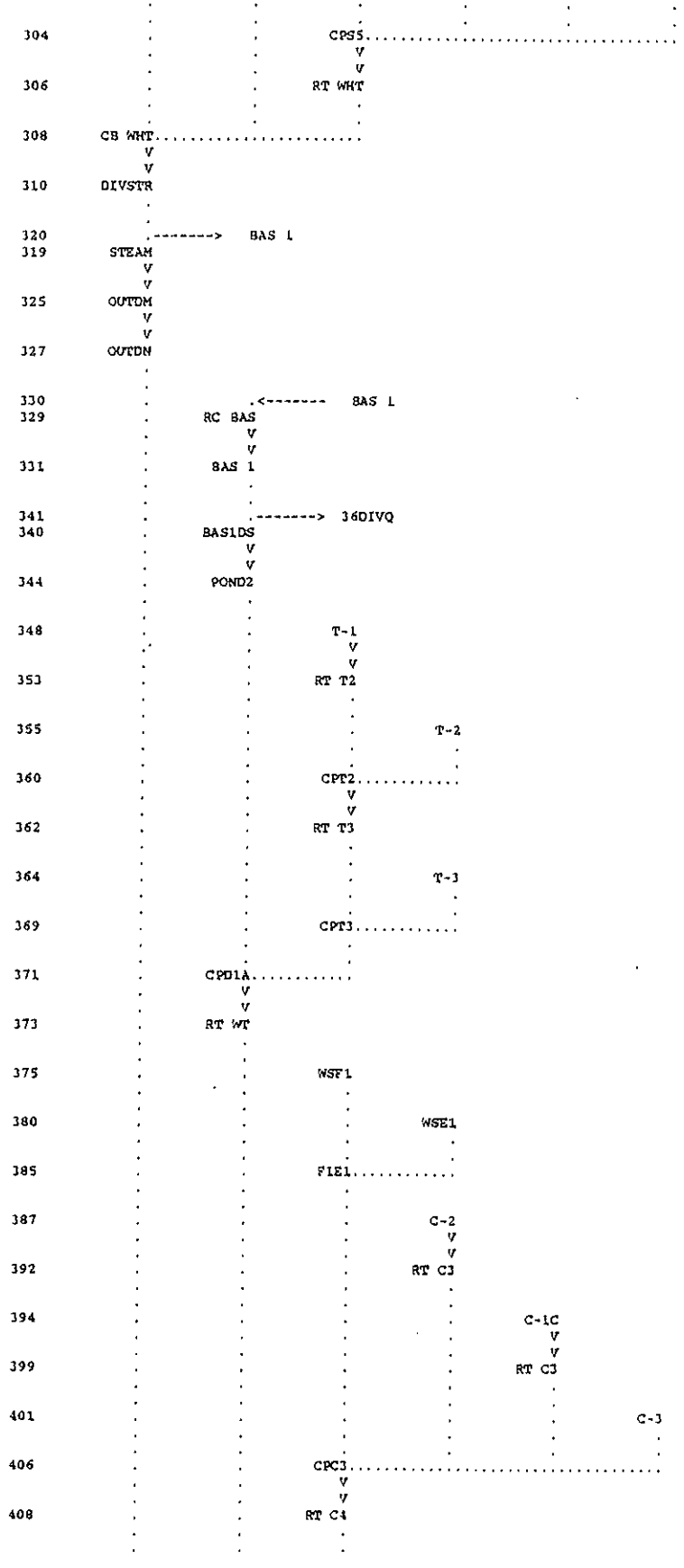
284 RT S5
286 S-3B
290 RT S5
292 S-4
296 RT S5
298 S-5
302 RT S5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308 CB WHT
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327 OUTDN
330 BAS 1
329 RC BAS
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341 36DIVQ
340 BAS1DS
344 POND2
348 T-1
353 RT T2
355 T-2
360 CPT2
362 RT T3
364 T-3
369 CPT3
371 CPD1A
373 RT WT
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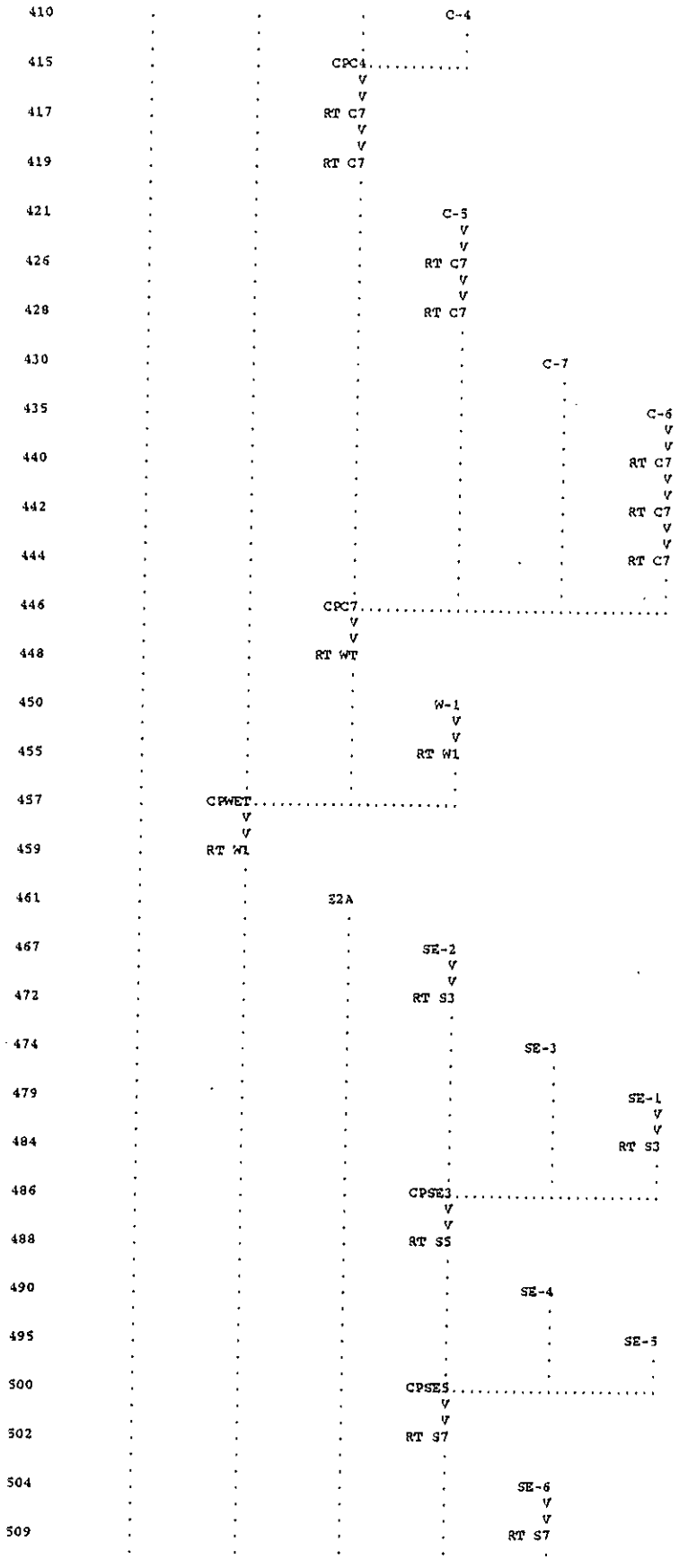
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W-1
455
RT W1
457
CPWET
459
RT W1
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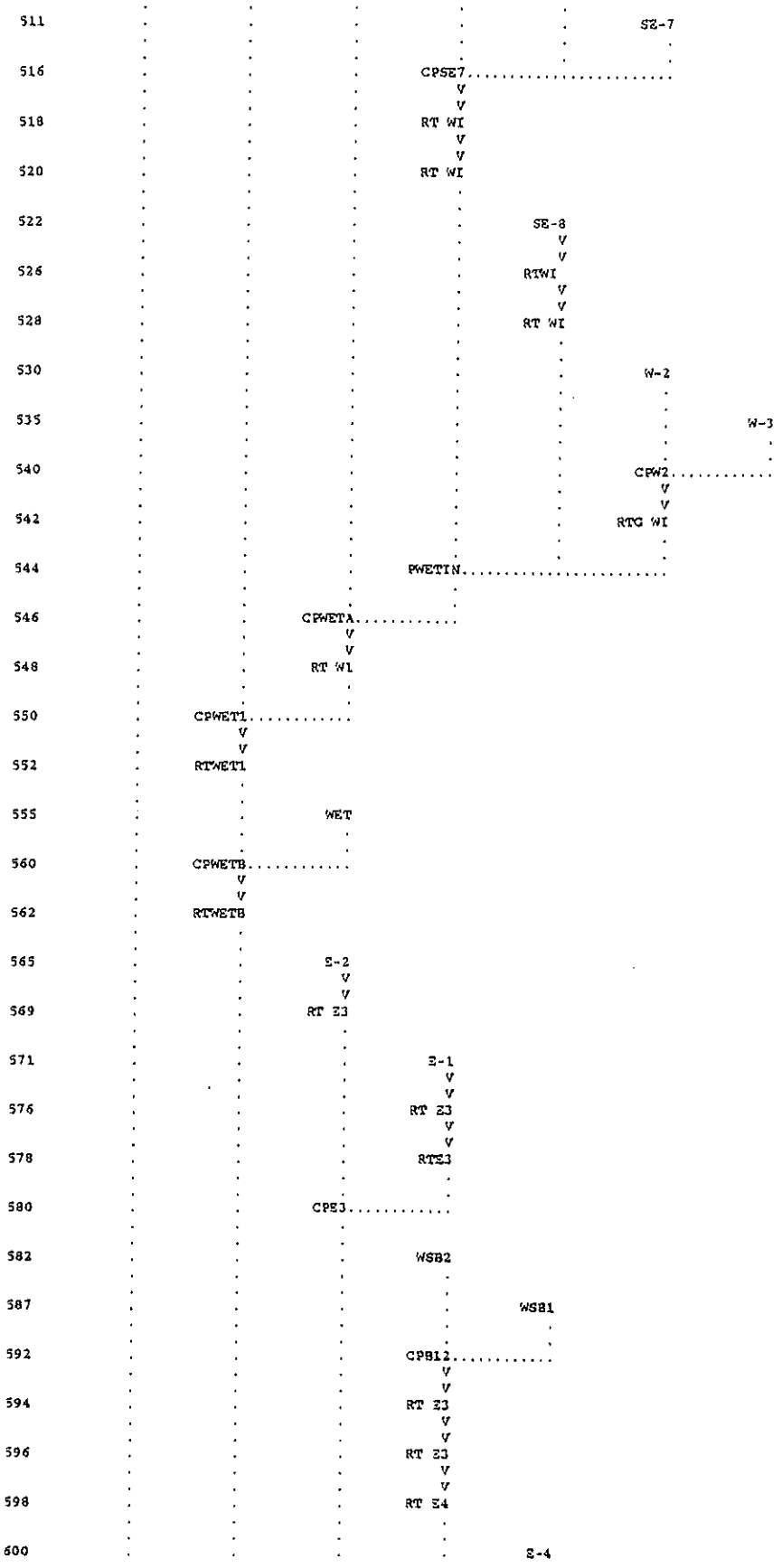
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W-3
540
CPW2
542
RTG WI
544
PWETIN
546
CPWETA
548
RT W1
550
CPWET1
552
RTWET1
555
WET
560
CPWETB
562
RTWETB
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RT E3
571
E-1
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RT E3
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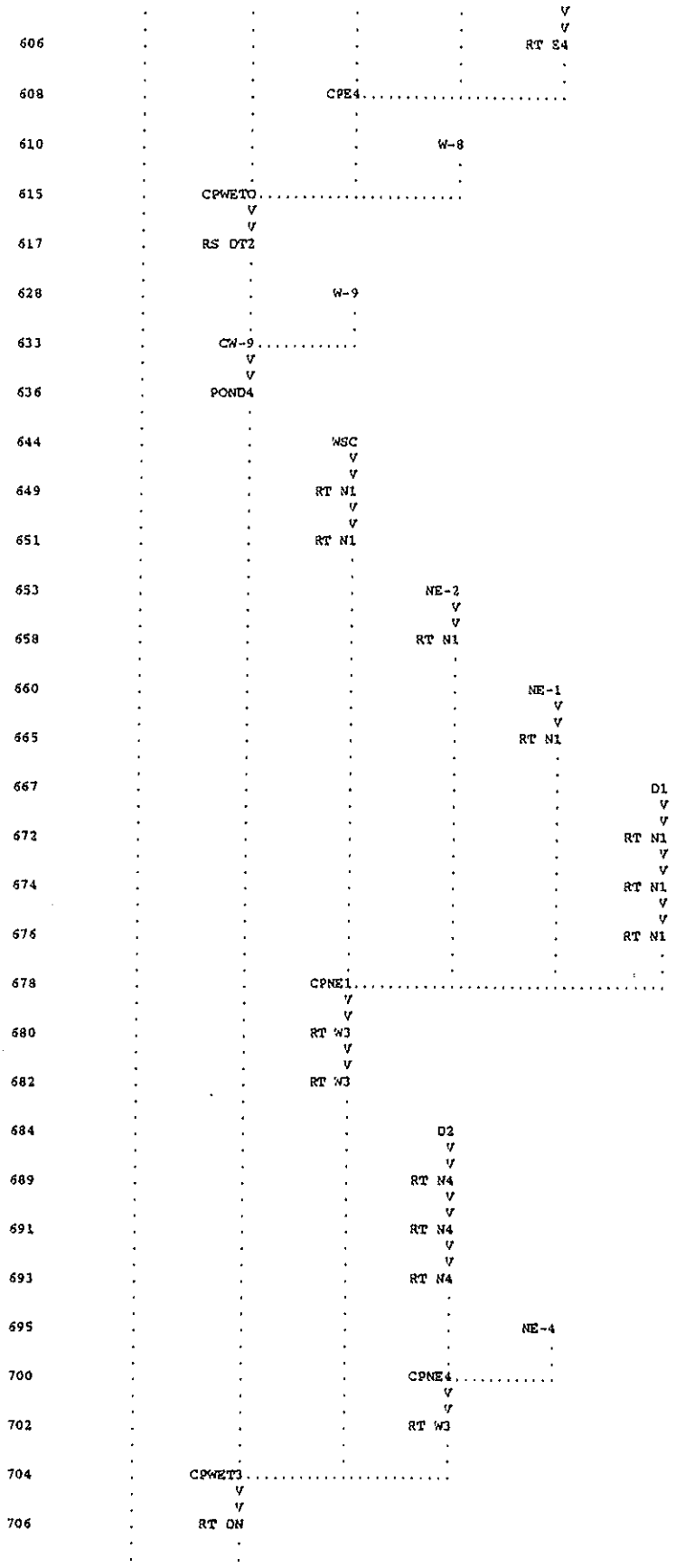
E-4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678
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689
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706
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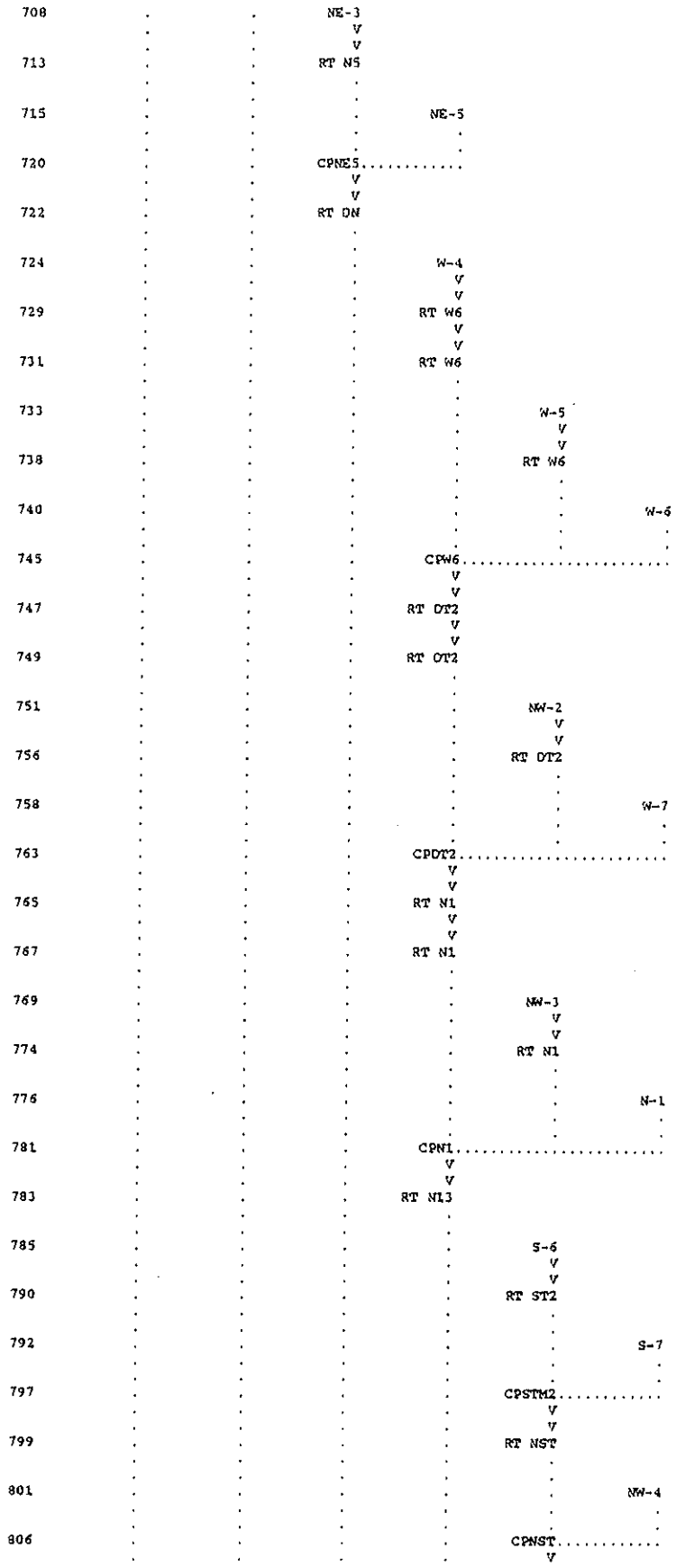
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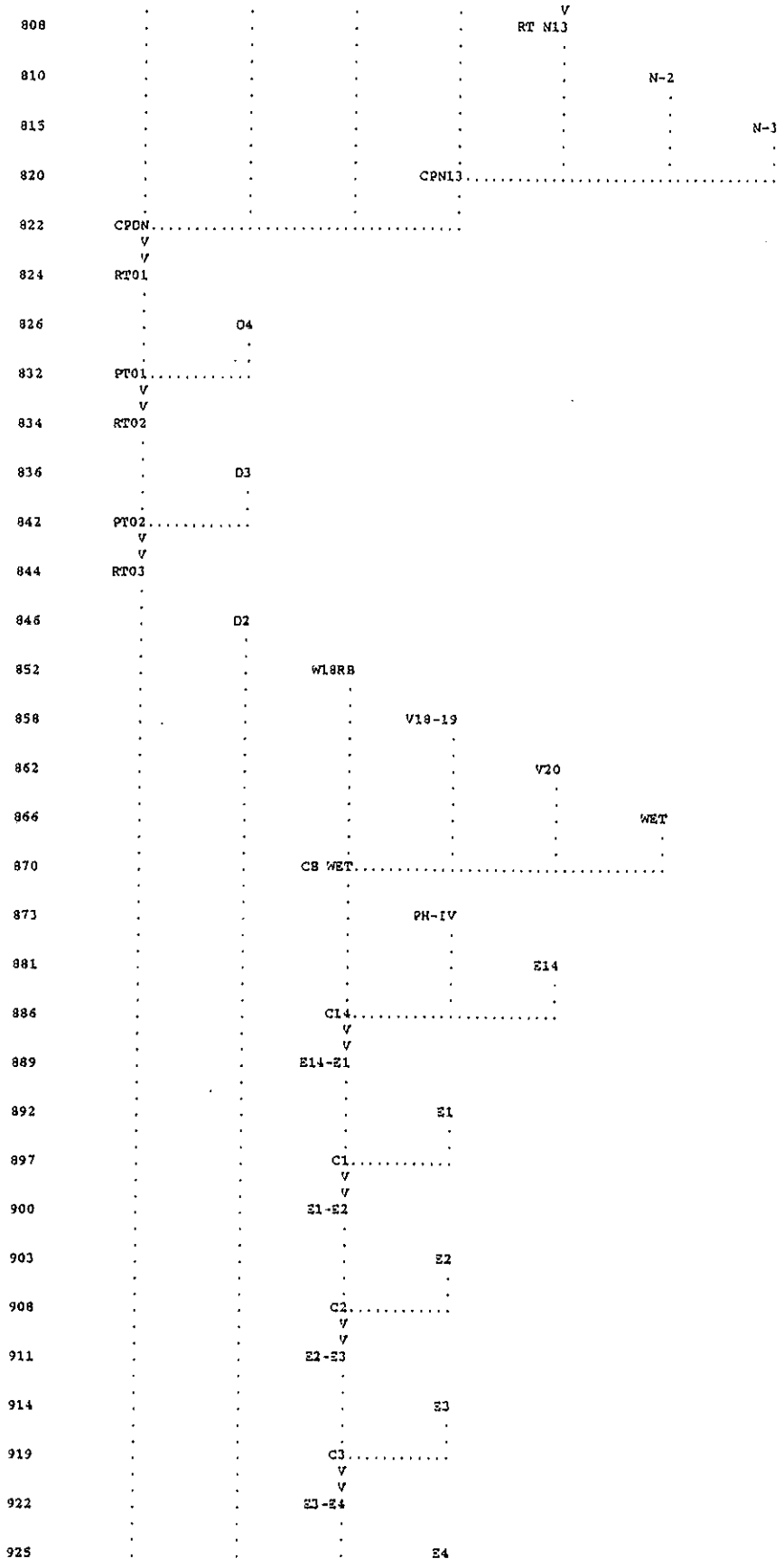
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O4
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834
RT02
836
D3
842
PT02
844
RT03
846
D2
852
W18RB
858
V18-19
862
V20
866
WET
870
CB WET
873
PH-IV
881
E14
886
C14
889
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E1
897
C1
900
E1-E2
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C3
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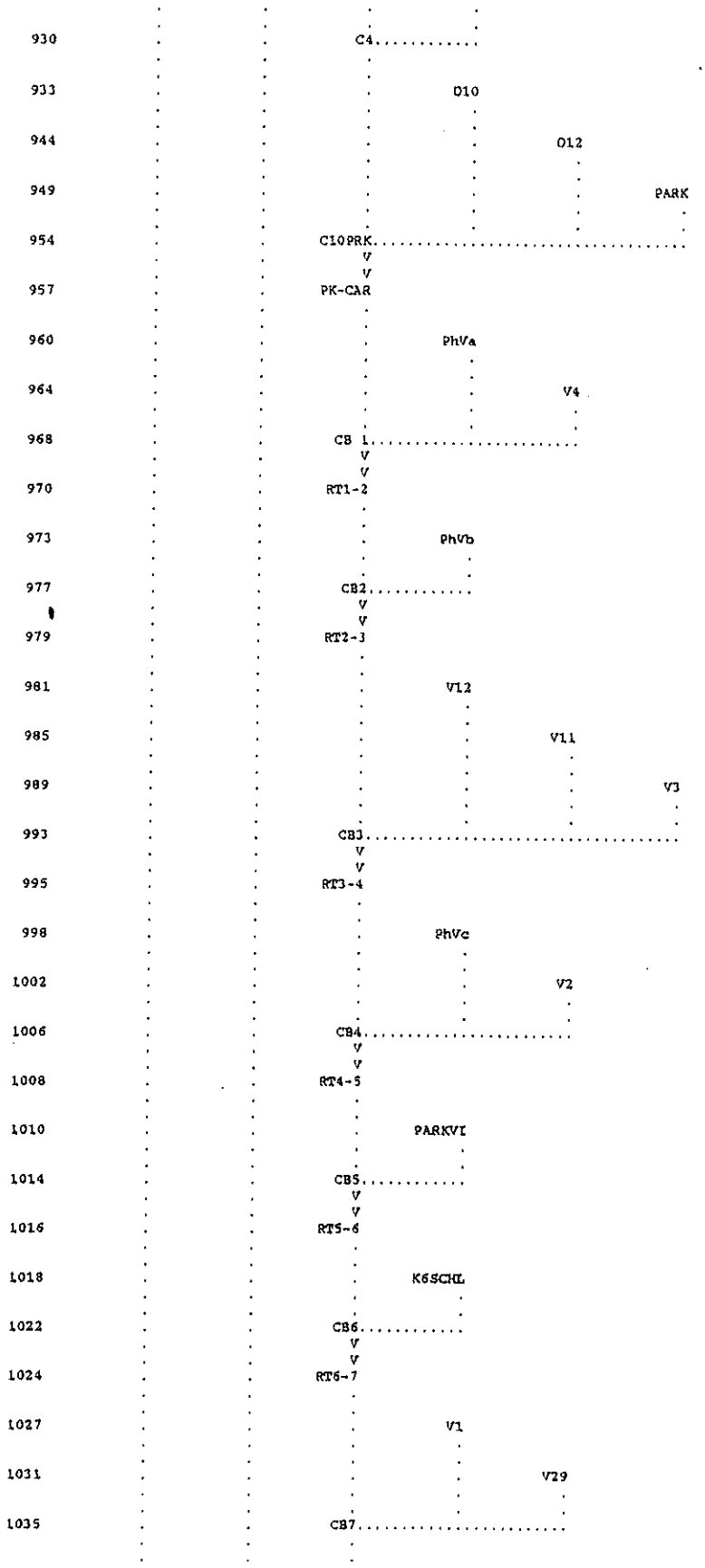
E4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PARK
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C10PRK
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V4
968
CB 1
970
RT1-2
973
PhVb
977
CB2
979
RT2-3
981
V12
985
V11
989
V3
993
CB3
995
RT3-4
998
PhVc
1002
V2
1006
CB4
1008
RT4-5
1010
PARKVI
1014
CB5
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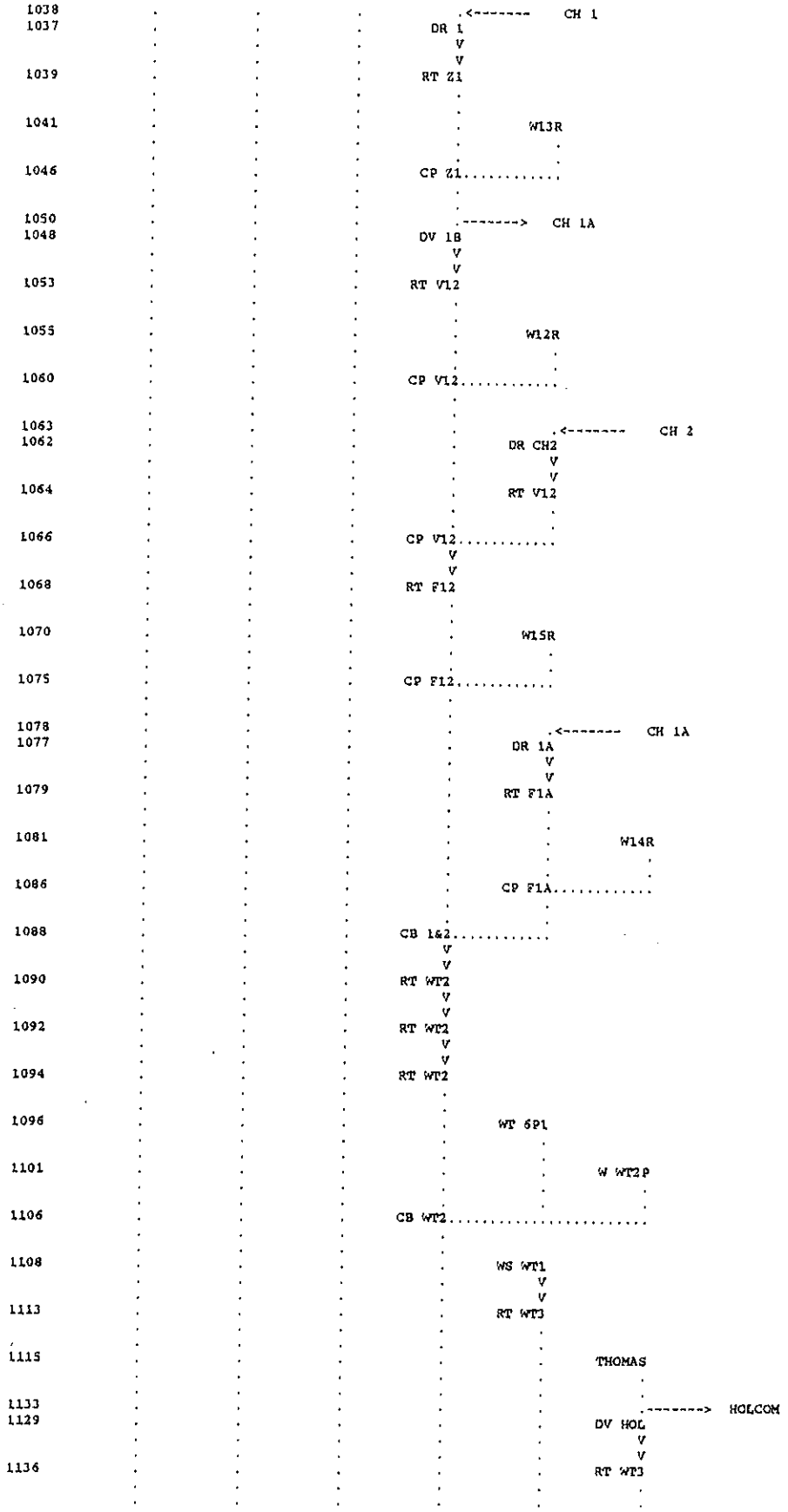
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1086
1088
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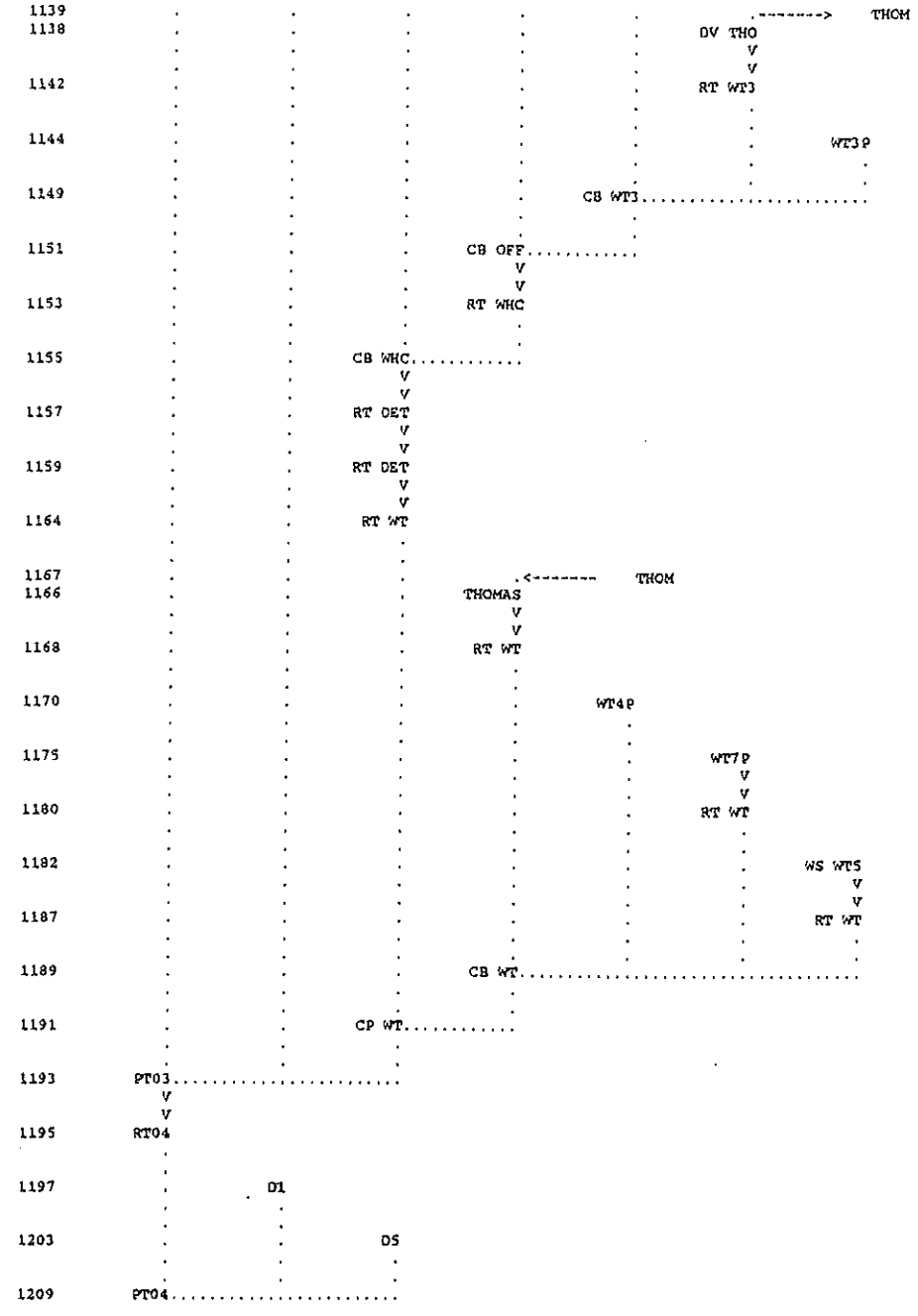
1092
1094
1096
1101
1106
1108
1113
1115
1133
1129
1136
.<-------- CH 1
DR 1
V
V
RT Z1
W13R
CP Z1.....
.--------> CH 1A
DV 1B
V
V
RT V12
W12R
CP V12.....
.<-------- CH 2
DR CH2
V
V
RT V12
CP V12.....
V
V
RT F12
W15R
CP F12.....
.<-------- CH 1A
DR 1A
V
V
RT F1A
W14R
CP F1A.....
CB 1&2.....
V
V
RT WT2
V
V
RT WT2
V
V
RT WT2
WT 6P1
W WT2P
CB WT2.....
WS WT1
V
V
RT WT3
THOMAS
.--------> HOLCOM
DV HOL
V
V
RT WT3



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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*                                    *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)*
*              JUN  1998             *
*           VERSION 4.1              *
*                                    *
*  RUN DATE   18SEP01  TIME  11:30:47*
*                                    *
**************************************
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**************************************
*                                    *
*    U.S. ARMY CORPS OF ENGINEERS    *
*    HYDROLOGIC ENGINEERING CENTER   *
*         609 SECOND STREET          *
*       DAVIS, CALIFORNIA 95616      *
*           (916) 756-1104           *
*                                    *
**************************************
```

100-Year HEC-1 for proposed conditions. Includes Steamboat Creek & tributaries (i.e. Galena, Jones, Browns, Bailey, 30, & 40 watersheds); Oamonte Ranch with refined watersheds, detention stuctures, & refined east range watersheds; Whites Creek watersheds collected by Branch 3 & 4 with routing onto Oamonte; the remainder of the Whites Creek & split flow from Thomas Creeks watersheds routed through Double Diamond;

& Bella Vista Ranch with the remaining east range watersheds.

File Name: 30CLOMR.DAT
Nimbus Engineers September, 2001
****

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

IT HYDROGRAPH TIME DATA
NMIN 5 MINUTES IN COMPUTATION INTERVAL
IDATE 27JUL 0 STARTING DATE
ITIME 0005 STARTING TIME
NQ 288 NUMBER OF HYDROGRAPH ORDINATES
NDDATE 28JUL 0 ENDING DATE
NDTIME 0000 ENDING TIME
ICENT 19 CENTURY MARK

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 23.92 HOURS

ENGLISH UNITS
DRAINAGE AREA SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION FEET
FLOW CUBIC FEET PER SECOND
STORAGE VOLUME ACRE-FEET
SURFACE AREA ACRES
TEMPERATURE DEGREES FAHRENHEIT

JP MULTI-PLAN OPTION
NPLAN 1 NUMBER OF PLANS

JR MULTI-RATIO OPTION
RATIOS OF PRECIPITATION
.94

*** WARNING *** UNIT HYDROGRAPH TRUNCATED FROM 324 TO 300 INTERVALS

*** WARNING *** UNIT HYDROGRAPH TRUNCATED FROM 324 TO 300 INTERVALS
1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1 .94
HYDROGRAPH AT					
+	W1R	1.36	1	FLOW	809.
				TIME	12.42
HYDROGRAPH AT					
+	W2R	.84	1	FLOW	507.
				TIME	12.42
2 COMBINED AT					
+	W1+W2	2.20	1	FLOW	1317.
				TIME	12.42
ROUTED TO					
+	RT-A	2.20	1	FLOW	1302.
				TIME	12.50
HYDROGRAPH AT					
+	W3R	1.38	1	FLOW	762.
				TIME	12.50
ROUTED TO					
+	RT-A	1.38	1	FLOW	758.
				TIME	12.58
HYDROGRAPH AT					
+	W4R	1.47	1	FLOW	336.
				TIME	12.75
3 COMBINED AT					
+	W1234	5.05	1	FLOW	2361.
				TIME	12.58
ROUTED TO					
+	RT-B	5.05	1	FLOW	2348.
				TIME	12.67
HYDROGRAPH AT					
+	W5R	1.27	1	FLOW	249.
				TIME	12.92

2 COMBINED AT					
+	W5+CH	6.32	1	FLOW	2573.
				TIME	12.67
ROUTED TO					
+	RT-C	6.32	1	FLOW	2536.
				TIME	12.83
HYDROGRAPH AT					
+	W6R	1.43	1	FLOW	117.
				TIME	13.50
2 COMBINED AT					
+	W6+CH	7.75	1	FLOW	2617.
				TIME	12.83
ROUTED TO					
+	RT-D	7.75	1	FLOW	2603.
				TIME	13.00
HYDROGRAPH AT					
+	W7R	.85	1	FLOW	129.
				TIME	13.00
2 COMBINED AT					
+	W7+CH	8.60	1	FLOW	2731.
				TIME	13.00
ROUTED TO					
+	RT-DIF	8.60	1	FLOW	2719.
				TIME	13.08
HYDROGRAPH AT					
+	W8R	.75	1	FLOW	49.
				TIME	13.42
2 COMBINED AT					
+	CP DIF	9.35	1	FLOW	2764.
				TIME	13.08
DIVERSION TO					
+	CH 123	9.35	1	FLOW	2209.
				TIME	13.08
HYDROGRAPH AT					
+	DV 4	9.35	1	FLOW	555.
				TIME	13.08
ROUTED TO					
+	RT W4	9.35	1	FLOW	537.
				TIME	13.25
HYDROGRAPH AT					
+	W17R	.58	1	FLOW	87.
				TIME	12.25
2 COMBINED AT					
+	CP W4	9.93	1	FLOW	562.
				TIME	13.25
ROUTED TO					
+	RT F4	9.93	1	FLOW	546.
				TIME	13.33
HYDROGRAPH AT					
+	W19R	.33	1	FLOW	16.
				TIME	12.25
HYDROGRAPH AT					
+	W9R	2.39	1	FLOW	335.
				TIME	12.50
ROUTED TO					
+	RT F4	2.39	1	FLOW	326.
				TIME	12.67
3 COMBINED AT					
+	CP F4	12.65	1	FLOW	725.
				TIME	13.33
ROUTED TO					
+	RT V4	12.65	1	FLOW	710.
				TIME	13.42
HYDROGRAPH AT					
+	W20R	.22	1	FLOW	13.
				TIME	12.25
2 COMBINED AT					
+	CP V4	12.87	1	FLOW	715.
				TIME	13.42
ROUTED TO					
+	RT STM	12.87	1	FLOW	714.
				TIME	13.50

HYDROGRAPH AT					
+	G1G2	8.00	1	FLOW	2018.
				TIME	14.00
ROUTED TO					
+	OUTJ1	8.00	1	FLOW	2018.
				TIME	14.08
HYDROGRAPH AT					
+	J1	6.40	1	FLOW	313.
				TIME	13.67
2 COMBINED AT					
+	OUTJ1	14.40	1	FLOW	2307.
				TIME	14.00
ROUTED TO					
+	OUTG3	14.40	1	FLOW	2306.
				TIME	14.17
HYDROGRAPH AT					
+	G3	3.90	1	FLOW	285.
				TIME	13.42
2 COMBINED AT					
+	OUTG3	18.30	1	FLOW	2531.
				TIME	14.08
ROUTED TO					
+	OUT30	18.30	1	FLOW	2505.
				TIME	14.67
HYDROGRAPH AT					
+	15	4.20	1	FLOW	410.
				TIME	14.00
ROUTED TO					
+	OUT30	4.20	1	FLOW	401.
				TIME	15.33
HYDROGRAPH AT					
+	30	16.70	1	FLOW	2494.
				TIME	13.92
3 COMBINED AT					
+	OUT30	39.20	1	FLOW	5072.
				TIME	14.50
ROUTED TO					
+	OUT40	39.20	1	FLOW	5053.
				TIME	14.75
HYDROGRAPH AT					
+	35	15.30	1	FLOW	2158.
				TIME	14.33
HYDROGRAPH AT					
+	40	2.50	1	FLOW	416.
				TIME	13.17
3 COMBINED AT					
+	OUT40	57.00	1	FLOW	7318.
				TIME	14.58
ROUTED TO					
+	OUT341	57.00	1	FLOW	7314.
				TIME	14.67
			** PEAK STAGES IN FEET **		
			1	STAGE	4560.87
				TIME	14.67
HYDROGRAPH AT					
+	C-1B	.07	1	FLOW	60.
				TIME	12.08
HYDROGRAPH AT					
+	C-1A	.06	1	FLOW	4.
				TIME	12.17
ROUTED TO					
+	RT C1	.06	1	FLOW	4.
				TIME	12.33
ROUTED TO					
+	RT G1	.06	1	FLOW	4.
				TIME	12.58
2 COMBINED AT					
+	CPC1B	.13	1	FLOW	60.
				TIME	12.08
2 COMBINED AT					
+	CB CUR	57.13	1	FLOW	7326.

				TIME	14.67
ROUTED TO					
+	OUTDS	57.13	1	FLOW	7319.
				TIME	14.83
2 COMBINED AT					
+	CB DS	70.00	1	FLOW	7546.
				TIME	14.83
ROUTED TO					
+	RT WHT	70.00	1	FLOW	7538.
				TIME	14.92
HYDROGRAPH AT					
+	DR 123	.00	1	FLOW	2209.
				TIME	13.08
DIVERSION TO					
+	CH 1	.00	1	FLOW	452.
				TIME	13.08
HYDROGRAPH AT					
+	DV 2&3	.00	1	FLOW	1757.
				TIME	13.08
ROUTED TO					
+	RT 2&3	.00	1	FLOW	1723.
				TIME	13.33
HYDROGRAPH AT					
+	W10R	.30	1	FLOW	3.
				TIME	12.92
2 COMBINED AT					
+	CP 23	.30	1	FLOW	1727.
				TIME	13.33
DIVERSION TO					
+	CH 2	.30	1	FLOW	863.
				TIME	13.33
HYDROGRAPH AT					
+	DV 23A	.30	1	FLOW	863.
				TIME	13.33
ROUTED TO					
+	RT V3	.30	1	FLOW	851.
				TIME	13.50
HYDROGRAPH AT					
+	W11R	.32	1	FLOW	108.
				TIME	12.17
2 COMBINED AT					
+	CP V24	.62	1	FLOW	867.
				TIME	13.50
ROUTED TO					
+	RT F3	.62	1	FLOW	847.
				TIME	13.75
HYDROGRAPH AT					
+	W16R	.11	1	FLOW	65.
				TIME	12.08
2 COMBINED AT					
+	CP F3	.73	1	FLOW	856.
				TIME	13.75
ROUTED TO					
+	RT DSW	.73	1	FLOW	853.
				TIME	13.83
HYDROGRAPH AT					
+	W18RA	.21	1	FLOW	92.
				TIME	12.25
2 COMBINED AT					
+	CB DSW	.94	1	FLOW	864.
				TIME	13.83
HYDROGRAPH AT					
+	S-1	.04	1	FLOW	14.
				TIME	7.08
ROUTED TO					
+	RT S3	.04	1	FLOW	13.
				TIME	7.25
HYDROGRAPH AT					
+	S-2	.06	1	FLOW	15.
				TIME	7.08
ROUTED TO					

+	RT S3	.06	1	FLOW	13.
				TIME	7.17
HYDROGRAPH AT					
+	S-3A	.04	1	FLOW	11.
				TIME	7.08
ROUTED TO					
+	RT S3	.04	1	FLOW	10.
				TIME	7.25
3 COMBINED AT					
+	CPS3A	.14	1	FLOW	35.
				TIME	7.25
ROUTED TO					
+	RT S5	.14	1	FLOW	34.
				TIME	7.58
HYDROGRAPH AT					
+	S-3B	.02	1	FLOW	5.
				TIME	7.08
ROUTED TO					
+	RT S5	.02	1	FLOW	5.
				TIME	7.50
HYDROGRAPH AT					
+	S-4	.02	1	FLOW	6.
				TIME	7.08
ROUTED TO					
+	RT S5	.02	1	FLOW	6.
				TIME	7.25
HYDROGRAPH AT					
+	S-5	.03	1	FLOW	21.
				TIME	6.25
ROUTED TO					
+	RT S5	.03	1	FLOW	18.
				TIME	6.33
4 COMBINED AT					
+	CPS5	.21	1	FLOW	54.
				TIME	7.58
ROUTED TO					
+	RT WHT	.21	1	FLOW	54.
				TIME	7.75
3 COMBINED AT					
+	CB WHT	71.15	1	FLOW	7986.
				TIME	14.83
ROUTED TO					
+	DIVSTR	71.15	1	FLOW	7987.
				TIME	14.83
			** PEAK STAGES IN FEET **		
			1	STAGE	4487.96
				TIME	14.83
DIVERSION TO					
+	BAS 1	71.15	1	FLOW	3774.
				TIME	14.83
HYDROGRAPH AT					
+	STEAM	71.15	1	FLOW	4212.
				TIME	14.83
ROUTED TO					
+	OUTDM	71.15	1	FLOW	4210.
				TIME	15.00
ROUTED TO					
+	OUTDN	71.15	1	FLOW	4208.
				TIME	15.17
HYDROGRAPH AT					
+	RC BAS	.00	1	FLOW	3774.
				TIME	14.83
ROUTED TO					
+	BAS 1	.00	1	FLOW	3246.
				TIME	15.42
			** PEAK STAGES IN FEET **		
			1	STAGE	4482.12
				TIME	15.42
DIVERSION TO					
+	36DIVQ	.00	1	FLOW	113.
				TIME	15.42

HYDROGRAPH AT					
+	BAS1DS	.00	1	FLOW	3133.
				TIME	15.42
ROUTED TO					
+	POND2	.00	1	FLOW	3095.
				TIME	15.67
HYDROGRAPH AT					
+	T-1	.04	1	FLOW	34.
				TIME	12.08
ROUTED TO					
+	RT T2	.04	1	FLOW	33.
				TIME	12.08
HYDROGRAPH AT					
+	T-2	.06	1	FLOW	61.
				TIME	12.08
2 COMBINED AT					
+	CPT2	.10	1	FLOW	95.
				TIME	12.08
ROUTED TO					
+	RT T3	.10	1	FLOW	89.
				TIME	12.17
HYDROGRAPH AT					
+	T-3	.06	1	FLOW	63.
				TIME	12.08
2 COMBINED AT					
+	CPT3	.16	1	FLOW	152.
				TIME	12.08
2 COMBINED AT					
+	CPD1A	.16	1	FLOW	3117.
				TIME	15.67
ROUTED TO					
+	RT WT	.16	1	FLOW	3090.
				TIME	15.92
HYDROGRAPH AT					
+	WSF1	.77	1	FLOW	335.
				TIME	12.17
HYDROGRAPH AT					
+	WSE1	2.10	1	FLOW	568.
				TIME	12.42
2 COMBINED AT					
+	F1E1	2.88	1	FLOW	766.
				TIME	12.25
HYDROGRAPH AT					
+	C-2	.03	1	FLOW	10.
				TIME	12.08
ROUTED TO					
+	RT C3	.03	1	FLOW	10.
				TIME	12.25
HYDROGRAPH AT					
+	C-1C	.07	1	FLOW	46.
				TIME	12.08
ROUTED TO					
+	RT C3	.07	1	FLOW	45.
				TIME	12.17
HYDROGRAPH AT					
+	C-3	.03	1	FLOW	10.
				TIME	12.08
4 COMBINED AT					
+	CPC3	3.01	1	FLOW	828.
				TIME	12.25
ROUTED TO					
+	RT C4	3.01	1	FLOW	819.
				TIME	12.25
HYDROGRAPH AT					
+	C-4	.04	1	FLOW	34.
				TIME	12.08
2 COMBINED AT					
+	CPC4	3.05	1	FLOW	837.
				TIME	12.25
ROUTED TO					
+	RT C7	3.05	1	FLOW	825.
				TIME	12.33

ROUTED TO					
+	RT C7	3.05	1	FLOW	811.
				TIME	12.42
HYDROGRAPH AT					
+	C-5	.07	1	FLOW	59.
				TIME	12.08
ROUTED TO					
+	RT C7	.07	1	FLOW	58.
				TIME	12.08
ROUTED TO					
+	RT C7	.07	1	FLOW	57.
				TIME	12.25
HYDROGRAPH AT					
+	C-7	.03	1	FLOW	28.
				TIME	12.08
HYDROGRAPH AT					
+	C-6	.13	1	FLOW	34.
				TIME	12.08
ROUTED TO					
+	RT C7	.13	1	FLOW	34.
				TIME	12.25
ROUTED TO					
+	RT C7	.13	1	FLOW	34.
				TIME	12.25
ROUTED TO					
+	RT C7	.13	1	FLOW	34.
				TIME	12.42
4 COMBINED AT					
+	CPC7	3.27	1	FLOW	892.
				TIME	12.33
ROUTED TO					
+	RT W7	3.27	1	FLOW	829.
				TIME	12.58
HYDROGRAPH AT					
+	W-1	.06	1	FLOW	62.
				TIME	12.08
ROUTED TO					
+	RT W1	.06	1	FLOW	56.
				TIME	12.17
3 COMBINED AT					
+	CPWET	3.50	1	FLOW	3166.
				TIME	15.92
ROUTED TO					
+	RT W1	3.50	1	FLOW	3136.
				TIME	16.17
HYDROGRAPH AT					
+	S2A	2.10	1	FLOW	568.
				TIME	12.42
HYDROGRAPH AT					
+	SE-2	.06	1	FLOW	14.
				TIME	12.08
ROUTED TO					
+	RT S3	.06	1	FLOW	14.
				TIME	12.17
HYDROGRAPH AT					
+	SE-3	.05	1	FLOW	16.
				TIME	12.08
HYDROGRAPH AT					
+	SE-1	.11	1	FLOW	32.
				TIME	12.08
ROUTED TO					
+	RT S3	.11	1	FLOW	32.
				TIME	12.17
3 COMBINED AT					
+	CPSE3	.22	1	FLOW	59.
				TIME	12.17
ROUTED TO					
+	RT S5	.22	1	FLOW	60.
				TIME	12.25
HYDROGRAPH AT					
+	SE-4	.02	1	FLOW	5.

				TIME	12.08
HYDROGRAPH AT					
+	SE-5	.02	1	FLOW	1.
				TIME	12.00
3 COMBINED AT					
+	CPSE5	.26	1	FLOW	66.
				TIME	12.25
ROUTED TO					
+	RT S7	.26	1	FLOW	67.
				TIME	12.33
HYDROGRAPH AT					
+	SE-6	.00	1	FLOW	1.
				TIME	12.08
ROUTED TO					
+	RT S7	.00	1	FLOW	1.
				TIME	12.42
HYDROGRAPH AT					
+	SE-7	.10	1	FLOW	104.
				TIME	12.00
3 COMBINED AT					
+	CPSE7	.36	1	FLOW	123.
				TIME	12.08
ROUTED TO					
+	RT WI	.36	1	FLOW	121.
				TIME	12.08
ROUTED TO					
+	RT WI	.36	1	FLOW	123.
				TIME	12.25
HYDROGRAPH AT					
+	SE-8	.06	1	FLOW	59.
				TIME	12.08
ROUTED TO					
+	RTWI	.06	1	FLOW	58.
				TIME	12.08
ROUTED TO					
+	RT WI	.06	1	FLOW	57.
				TIME	12.25
HYDROGRAPH AT					
+	W-2	.03	1	FLOW	9.
				TIME	12.08
HYDROGRAPH AT					
+	W-3	.04	1	FLOW	40.
				TIME	12.08
2 COMBINED AT					
+	CPW2	.07	1	FLOW	49.
				TIME	12.08
ROUTED TO					
+	RTG WI	.07	1	FLOW	45.
				TIME	12.08
3 COMBINED AT					
+	PWETIN	.49	1	FLOW	215.
				TIME	12.25
2 COMBINED AT					
+	CPWETA	2.59	1	FLOW	746.
				TIME	12.33
ROUTED TO					
+	RT W1	2.59	1	FLOW	712.
				TIME	12.50
2 COMBINED AT					
+	CPWET1	6.09	1	FLOW	3200.
				TIME	16.17
ROUTED TO					
+	RTWET1	6.09	1	FLOW	3166.
				TIME	16.42
HYDROGRAPH AT					
+	WET	.12	1	FLOW	42.
				TIME	12.25
2 COMBINED AT					
+	CPWETB	6.21	1	FLOW	3173.
				TIME	16.42
ROUTED TO					

+	RTWETB	6.21	1	FLOW	3138.
				TIME	16.58
HYDROGRAPH AT					
+	E-2	.07	1	FLOW	45.
				TIME	12.08
ROUTED TO					
+	RT E3	.07	1	FLOW	42.
				TIME	12.17
HYDROGRAPH AT					
+	E-1	.05	1	FLOW	2.
				TIME	12.17
ROUTED TO					
+	RT E3	.05	1	FLOW	2.
				TIME	12.25
ROUTED TO					
+	RTE3	.05	1	FLOW	2.
				TIME	12.42
2 COMBINED AT					
+	CPE3	.12	1	FLOW	42.
				TIME	12.17
HYDROGRAPH AT					
+	WSB2	.12	1	FLOW	68.
				TIME	12.00
HYDROGRAPH AT					
+	WSB1	.36	1	FLOW	174.
				TIME	12.08
2 COMBINED AT					
+	CPB12	.48	1	FLOW	213.
				TIME	12.08
ROUTED TO					
+	RT E3	.48	1	FLOW	211.
				TIME	12.08
ROUTED TO					
+	RT E3	.48	1	FLOW	197.
				TIME	12.17
ROUTED TO					
+	RT E4	.48	1	FLOW	188.
				TIME	12.17
HYDROGRAPH AT					
+	E-4	.10	1	FLOW	71.
				TIME	12.08
ROUTED TO					
+	RT E4	.10	1	FLOW	66.
				TIME	12.08
3 COMBINED AT					
+	CPE4	.70	1	FLOW	294.
				TIME	12.17
HYDROGRAPH AT					
+	W-8	.06	1	FLOW	63.
				TIME	12.08
3 COMBINED AT					
+	CPWETO	6.97	1	FLOW	3174.
				TIME	16.58
ROUTED TO					
+	RS DT2	6.97	1	FLOW	2531.
				TIME	17.42
			** PEAK STAGES IN FEET **		
			1	STAGE	4460.38
				TIME	17.42
HYDROGRAPH AT					
+	W-9	.04	1	FLOW	42.
				TIME	12.08
2 COMBINED AT					
+	CW-9	7.01	1	FLOW	2537.
				TIME	17.42
ROUTED TO					
+	POND4	7.01	1	FLOW	2434.
				TIME	17.92
			** PEAK STAGES IN FEET **		
			1	STAGE	4455.88
				TIME	17.92

HYDROGRAPH AT					
+	WSC	3.31	1	FLOW	820.
				TIME	12.50
ROUTED TO					
+	RT N1	3.31	1	FLOW	810.
				TIME	12.58
ROUTED TO					
+	RT N1	3.31	1	FLOW	809.
				TIME	12.58
HYDROGRAPH AT					
+	NE-2	.06	1	FLOW	27.
				TIME	12.08
ROUTED TO					
+	RT N1	.06	1	FLOW	27.
				TIME	12.25
HYDROGRAPH AT					
+	NE-1	.04	1	FLOW	18.
				TIME	12.08
ROUTED TO					
+	RT N1	.04	1	FLOW	18.
				TIME	12.17
HYDROGRAPH AT					
+	O1	1.72	1	FLOW	530.
				TIME	12.33
ROUTED TO					
+	RT N1	1.72	1	FLOW	524.
				TIME	12.33
ROUTED TO					
+	RT N1	1.72	1	FLOW	520.
				TIME	12.42
ROUTED TO					
+	RT N1	1.72	1	FLOW	512.
				TIME	12.42
4 COMBINED AT					
+	CPNE1	5.13	1	FLOW	1311.
				TIME	12.50
ROUTED TO					
+	RT W3	5.13	1	FLOW	1294.
				TIME	12.50
ROUTED TO					
+	RT W3	5.13	1	FLOW	768.
				TIME	13.50
HYDROGRAPH AT					
+	O2	.15	1	FLOW	102.
				TIME	12.00
ROUTED TO					
+	RT N4	.15	1	FLOW	88.
				TIME	12.00
ROUTED TO					
+	RT N4	.15	1	FLOW	85.
				TIME	12.08
ROUTED TO					
+	RT N4	.15	1	FLOW	80.
				TIME	12.17
HYDROGRAPH AT					
+	NE-4	.07	1	FLOW	56.
				TIME	12.08
2 COMBINED AT					
+	CPNE4	.22	1	FLOW	128.
				TIME	12.17
ROUTED TO					
+	RT W3	.22	1	FLOW	66.
				TIME	13.08
3 COMBINED AT					
+	CPWET3	12.37	1	FLOW	2476.
				TIME	17.92
ROUTED TO					
+	RT ON	12.37	1	FLOW	2461.
				TIME	18.33
HYDROGRAPH AT					
+	NE-3	.05	1	FLOW	24.
				TIME	12.17

ROUTED TO					
+	RT N5	.05	1	FLOW	20.
				TIME	12.33
HYDROGRAPH AT					
+	NE-5	.05	1	FLOW	23.
				TIME	12.08
2 COMBINED AT					
+	CPNE5	.11	1	FLOW	35.
				TIME	12.17
ROUTED TO					
+	RT ON	.11	1	FLOW	32.
				TIME	12.33
HYDROGRAPH AT					
+	W-4	.04	1	FLOW	39.
				TIME	12.08
ROUTED TO					
+	RT W6	.04	1	FLOW	37.
				TIME	12.08
ROUTED TO					
+	RT W6	.04	1	FLOW	35.
				TIME	12.17
HYDROGRAPH AT					
+	W-5	.01	1	FLOW	14.
				TIME	12.00
ROUTED TO					
+	RT W6	.01	1	FLOW	13.
				TIME	12.08
HYDROGRAPH AT					
+	W-6	.02	1	FLOW	8.
				TIME	12.08
3 COMBINED AT					
+	CPW6	.07	1	FLOW	56.
				TIME	12.17
ROUTED TO					
+	RT DT2	.07	1	FLOW	55.
				TIME	12.17
ROUTED TO					
+	RT DT2	.07	1	FLOW	55.
				TIME	12.25
HYDROGRAPH AT					
+	NW-2	.07	1	FLOW	47.
				TIME	12.17
ROUTED TO					
+	RT DT2	.07	1	FLOW	47.
				TIME	12.17
HYDROGRAPH AT					
+	W-7	.05	1	FLOW	55.
				TIME	12.08
3 COMBINED AT					
+	CPDT2	.19	1	FLOW	137.
				TIME	12.17
ROUTED TO					
+	RT N1	.19	1	FLOW	129.
				TIME	12.25
ROUTED TO					
+	RT N1	.19	1	FLOW	119.
				TIME	12.42
HYDROGRAPH AT					
+	NW-3	.08	1	FLOW	66.
				TIME	12.08
ROUTED TO					
+	RT N1	.08	1	FLOW	57.
				TIME	12.25
HYDROGRAPH AT					
+	N-1	.10	1	FLOW	83.
				TIME	12.17
3 COMBINED AT					
+	CPN1	.37	1	FLOW	219.
				TIME	12.33
ROUTED TO					
+	RT N13	.37	1	FLOW	204.

				TIME	12.33
HYDROGRAPH AT					
+	S-6	.04	1	FLOW	31.
				TIME	12.08
ROUTED TO					
+	RT ST2	.04	1	FLOW	27.
				TIME	12.75
HYDROGRAPH AT					
+	S-7	.05	1	FLOW	38.
				TIME	12.08
2 COMBINED AT					
+	CPSTM2	.08	1	FLOW	42.
				TIME	12.08
ROUTED TO					
+	RT NST	.08	1	FLOW	39.
				TIME	12.50
HYDROGRAPH AT					
+	NW-4	.13	1	FLOW	93.
				TIME	12.17
2 COMBINED AT					
+	CPNST	.21	1	FLOW	110.
				TIME	12.25
ROUTED TO					
+	RT N13	.21	1	FLOW	101.
				TIME	13.08
HYDROGRAPH AT					
+	N-2	.05	1	FLOW	44.
				TIME	12.08
HYDROGRAPH AT					
+	N-3	.03	1	FLOW	19.
				TIME	12.00
4 COMBINED AT					
+	CPN13	.66	1	FLOW	246.
				TIME	12.33
4 COMBINED AT					
+	CPDN	84.28	1	FLOW	5789.
				TIME	18.08
ROUTED TO					
+	RT01	84.28	1	FLOW	5726.
				TIME	19.25
HYDROGRAPH AT					
+	D4	.80	1	FLOW	70.
				TIME	12.67
2 COMBINED AT					
+	PT01	85.08	1	FLOW	5732.
				TIME	19.25
ROUTED TO					
+	RT02	85.08	1	FLOW	5696.
				TIME	19.75
HYDROGRAPH AT					
+	D3	.70	1	FLOW	114.
				TIME	12.67
2 COMBINED AT					
+	PT02	85.78	1	FLOW	5701.
				TIME	19.75
ROUTED TO					
+	RT03	85.78	1	FLOW	5628.
				TIME	21.17
HYDROGRAPH AT					
+	D2	.36	1	FLOW	31.
				TIME	12.42
HYDROGRAPH AT					
+	W18RB	.23	1	FLOW	134.
				TIME	12.17
HYDROGRAPH AT					
+	V18-19	.05	1	FLOW	51.
				TIME	12.08
HYDROGRAPH AT					
+	V20	.05	1	FLOW	46.
				TIME	12.08
HYDROGRAPH AT					

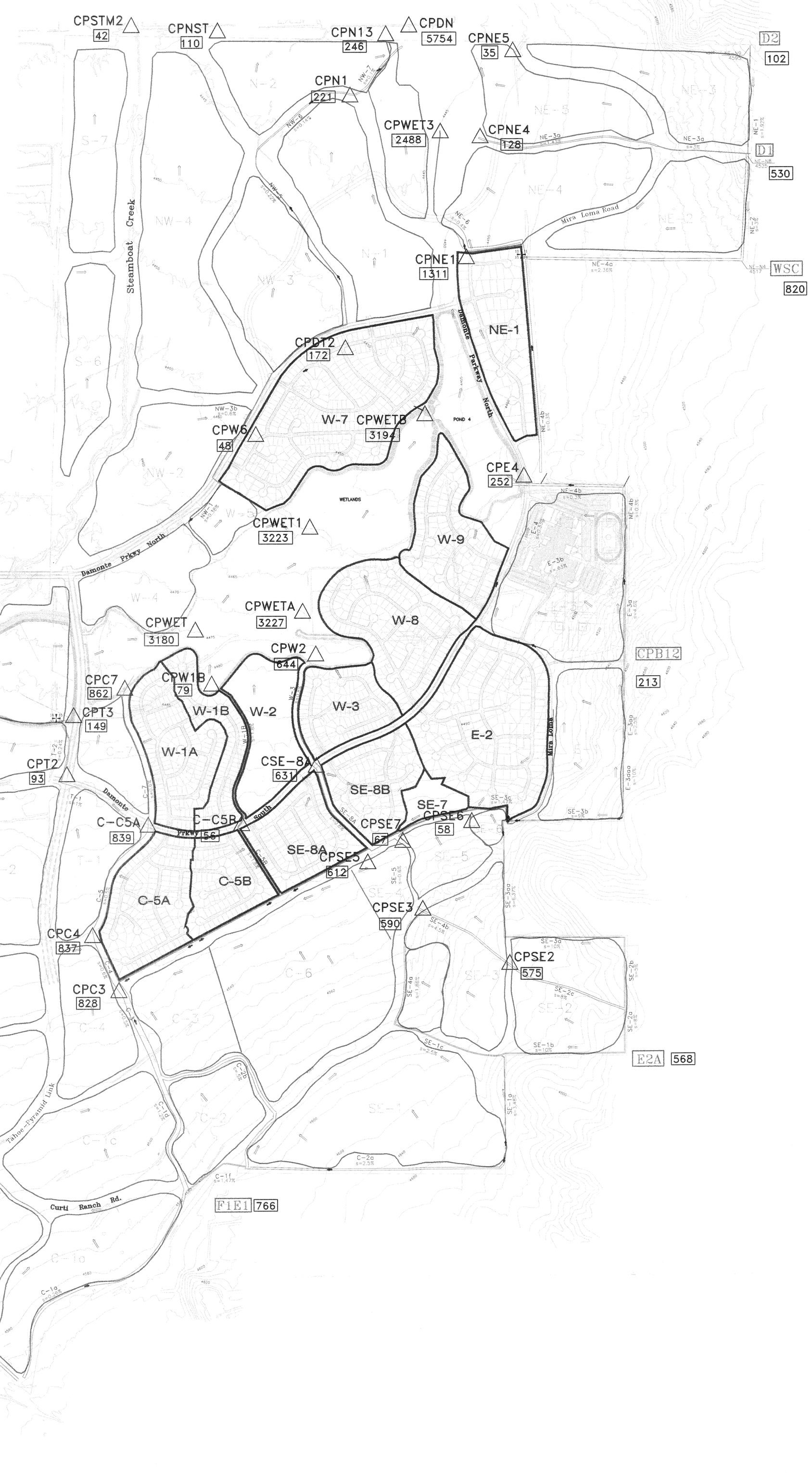
+	WET	.02	1	FLOW	7.
				TIME	12.17
4 COMBINED AT					
+	C8 WET	.35	1	FLOW	230.
				TIME	12.17
HYDROGRAPH AT					
+	PH-IV	.19	1	FLOW	158.
				TIME	12.17
HYDROGRAPH AT					
+	E14	.03	1	FLOW	34.
				TIME	12.08
3 COMBINED AT					
+	C14	.57	1	FLOW	411.
				TIME	12.17
ROUTED TO					
+	E14-E1	.57	1	FLOW	404.
				TIME	12.17
HYDROGRAPH AT					
+	E1	.01	1	FLOW	7.
				TIME	12.00
2 COMBINED AT					
+	C1	.57	1	FLOW	411.
				TIME	12.17
ROUTED TO					
+	E1-E2	.57	1	FLOW	402.
				TIME	12.17
HYDROGRAPH AT					
+	E2	.00	1	FLOW	4.
				TIME	12.00
2 COMBINED AT					
+	C2	.58	1	FLOW	406.
				TIME	12.17
ROUTED TO					
+	E2-E3	.58	1	FLOW	396.
				TIME	12.17
HYDROGRAPH AT					
+	E3	.00	1	FLOW	3.
				TIME	12.00
2 COMBINED AT					
+	C3	.58	1	FLOW	399.
				TIME	12.17
ROUTED TO					
+	E3-E4	.58	1	FLOW	394.
				TIME	12.25
HYDROGRAPH AT					
+	E4	.00	1	FLOW	4.
				TIME	12.00
2 COMBINED AT					
+	C4	.58	1	FLOW	398.
				TIME	12.25
HYDROGRAPH AT					
+	D10	.12	1	FLOW	106.
				TIME	12.17
HYDROGRAPH AT					
+	D12	.02	1	FLOW	18.
				TIME	12.08
HYDROGRAPH AT					
+	PARK	.01	1	FLOW	5.
				TIME	12.08
4 COMBINED AT					
+	C10PRK	.73	1	FLOW	512.
				TIME	12.17
ROUTED TO					
+	PK-CAR	.73	1	FLOW	506.
				TIME	12.25
HYDROGRAPH AT					
+	PhVa	.01	1	FLOW	12.
				TIME	12.08
HYDROGRAPH AT					
+	V4	.03	1	FLOW	21.
				TIME	12.08

3 COMBINED AT					
+	CB 1	.77	1	FLOW	525.
				TIME	12.25
ROUTED TO					
+	RT1-2	.77	1	FLOW	520.
				TIME	12.33
HYDROGRAPH AT					
+	PhVb	.03	1	FLOW	27.
				TIME	12.08
2 COMBINED AT					
+	CB2	.79	1	FLOW	532.
				TIME	12.33
ROUTED TO					
+	RT2-3	.79	1	FLOW	527.
				TIME	12.33
HYDROGRAPH AT					
+	V12	.01	1	FLOW	12.
				TIME	12.08
HYDROGRAPH AT					
+	V11	.01	1	FLOW	7.
				TIME	12.00
HYDROGRAPH AT					
+	V3	.03	1	FLOW	20.
				TIME	12.08
4 COMBINED AT					
+	CB3	.84	1	FLOW	553.
				TIME	12.33
ROUTED TO					
+	RT3-4	.84	1	FLOW	540.
				TIME	12.33
HYDROGRAPH AT					
+	PhVc	.02	1	FLOW	23.
				TIME	12.08
HYDROGRAPH AT					
+	V2	.04	1	FLOW	30.
				TIME	12.08
3 COMBINED AT					
+	CB4	.90	1	FLOW	560.
				TIME	12.33
ROUTED TO					
+	RT4-5	.90	1	FLOW	553.
				TIME	12.33
HYDROGRAPH AT					
+	PARKVI	.00	1	FLOW	2.
				TIME	12.08
2 COMBINED AT					
+	CB5	.91	1	FLOW	555.
				TIME	12.33
ROUTED TO					
+	RT5-6	.91	1	FLOW	551.
				TIME	12.42
HYDROGRAPH AT					
+	K6SCHL	.01	1	FLOW	10.
				TIME	12.08
2 COMBINED AT					
+	CB6	.92	1	FLOW	561.
				TIME	12.42
ROUTED TO					
+	RT6-7	.92	1	FLOW	549.
				TIME	12.50
HYDROGRAPH AT					
+	V1	.04	1	FLOW	27.
				TIME	12.08
HYDROGRAPH AT					
+	V29	.06	1	FLOW	67.
				TIME	12.08
3 COMBINED AT					
+	CB7	1.02	1	FLOW	568.
				TIME	12.50
HYDROGRAPH AT					
+	DR 1	.00	1	FLOW	452.
				TIME	13.08

ROUTED TO					
+	RT Z1	.00	1	FLOW	439.
				TIME	13.42
HYDROGRAPH AT					
+	W13R	1.30	1	FLOW	35.
				TIME	12.42
2 COMBINED AT					
+	CP Z1	1.30	1	FLOW	449.
				TIME	13.42
DIVERSION TO					
+	CH 1A	1.30	1	FLOW	200.
				TIME	13.00
HYDROGRAPH AT					
+	DV 1B	1.30	1	FLOW	249.
				TIME	13.42
ROUTED TO					
+	RT V12	1.30	1	FLOW	242.
				TIME	13.58
HYDROGRAPH AT					
+	W12R	.60	1	FLOW	18.
				TIME	12.42
2 COMBINED AT					
+	CP V12	1.90	1	FLOW	251.
				TIME	13.58
HYDROGRAPH AT					
+	DR CH2	.00	1	FLOW	863.
				TIME	13.33
ROUTED TO					
+	RT V12	.00	1	FLOW	844.
				TIME	13.58
2 COMBINED AT					
+	CP V12	1.90	1	FLOW	1095.
				TIME	13.58
ROUTED TO					
+	RT F12	1.90	1	FLOW	1061.
				TIME	13.75
HYDROGRAPH AT					
+	W15R	.21	1	FLOW	106.
				TIME	12.08
2 COMBINED AT					
+	CP F12	2.11	1	FLOW	1070.
				TIME	13.75
HYDROGRAPH AT					
+	DR 1A	.00	1	FLOW	200.
				TIME	13.00
ROUTED TO					
+	RT F1A	.00	1	FLOW	200.
				TIME	14.00
HYDROGRAPH AT					
+	W14R	.18	1	FLOW	69.
				TIME	12.17
2 COMBINED AT					
+	CP F1A	.18	1	FLOW	209.
				TIME	13.75
2 COMBINED AT					
+	CB 1&2	2.29	1	FLOW	1279.
				TIME	13.75
ROUTED TO					
+	RT WT2	2.29	1	FLOW	1271.
				TIME	13.92
ROUTED TO					
+	RT WT2	2.29	1	FLOW	1219.
				TIME	14.42
ROUTED TO					
+	RT WT2	2.29	1	FLOW	1215.
				TIME	14.50
HYDROGRAPH AT					
+	WT 6P1	.07	1	FLOW	32.
				TIME	12.25
HYDROGRAPH AT					
+	W WT2P	.59	1	FLOW	122.

EXPLANATION

- CHANNEL ALIGNMENT
- CPC7 110 — CATCHPOINT, Q_{100} PEAK FLOW, cfs
- FLOW DIRECTIONS
- F1E1 213 — OFFSITE FLOWS (Q_{100} PEAK FLOW, cfs)
- CARAMELLA DEVELOPMENT
- EXISTING WATERSHED BOUNDARY



Sheet H1	PLATE 1 HYDROLOGIC WORKMAP	Scale: 1" = 600'	Revisions: / Date:
1 of 1	*Southeast Damonte*	Date: MAY 2002	1
Nimbus Job # 0214	*Reno* *Washoe County* *Nevada*	File Name: 0214PLATE1	2
		Drawn By: TAD	3
		Designed By: MS	4
			5
			6

References

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				TIME	12.58
3 COMBINED AT					
*	CB WT2	2.95	1	FLOW	1233.
				TIME	14.50
HYDROGRAPH AT					
*	WS WT1	1.93	1	FLOW	73.
				TIME	12.83
ROUTED TO					
*	RT WT3	1.93	1	FLOW	72.
				TIME	13.17
HYDROGRAPH AT					
*	THOMAS	11.54	1	FLOW	2544.
				TIME	13.25
DIVERSION TO					
*	HOLCOM	11.54	1	FLOW	1380.
				TIME	13.25
HYDROGRAPH AT					
*	OV HOL	11.54	1	FLOW	1164.
				TIME	13.25
ROUTED TO					
*	RT WT3	11.54	1	FLOW	1151.
				TIME	13.50
DIVERSION TO					
*	THOM	11.54	1	FLOW	52.
				TIME	13.50
HYDROGRAPH AT					
*	OV THO	11.54	1	FLOW	1099.
				TIME	13.50
ROUTED TO					
*	RT WT3	11.54	1	FLOW	1097.
				TIME	13.58
HYDROGRAPH AT					
*	WT3P	.49	1	FLOW	185.
				TIME	12.25
3 COMBINED AT					
*	CB WT3	13.96	1	FLOW	1163.
				TIME	13.58
2 COMBINED AT					
*	CB OFF	16.91	1	FLOW	2055.
				TIME	14.42
ROUTED TO					
*	RT WHC	16.91	1	FLOW	2050.
				TIME	14.50
2 COMBINED AT					
*	CB WHC	17.93	1	FLOW	2225.
				TIME	14.50
ROUTED TO					
*	RT DET	17.93	1	FLOW	2222.
				TIME	14.58
ROUTED TO					
*	RT DET	17.93	1	FLOW	1929.
				TIME	15.08
			**	PEAK STAGES IN FEET **	
			1	STAGE	4427.46
				TIME	15.08
ROUTED TO					
*	RT WT	17.93	1	FLOW	1926.
				TIME	15.08
HYDROGRAPH AT					
*	THOMAS	.00	1	FLOW	52.
				TIME	13.50
ROUTED TO					
*	RT WT	.00	1	FLOW	32.
				TIME	15.08
HYDROGRAPH AT					
*	WT4P	1.73	1	FLOW	220.
				TIME	13.42
HYDROGRAPH AT					
*	WT7P	.16	1	FLOW	19.
				TIME	13.33
ROUTED TO					

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+                    RT WT        .16     1   FLOW          18.
                                              TIME        14.00

 HYDROGRAPH AT
+                    WS WT5       .49     1   FLOW         266.
                                              TIME        12.17

 ROUTED TO
+                    RT WT        .49     1   FLOW         202.
                                              TIME        12.58

  4 COMBINED AT
+                    CB WT       2.38     1   FLOW         327.
                                              TIME        12.67

  2 COMBINED AT
+                    CP WT      20.31     1   FLOW        2041.
                                              TIME        15.08

  3 COMBINED AT
+                     PT03     106.46     1   FLOW        6225.
                                              TIME        21.08

 ROUTED TO
+                     RT04     106.46     1   FLOW        6164.
                                              TIME        22.67

 HYDROGRAPH AT
+                      01         .44     1   FLOW          74.
                                              TIME        12.50

 HYDROGRAPH AT
+                      D5        1.21     1   FLOW          16.
                                              TIME        17.25

  3 COMBINED AT
+                     PT04     108.11     1   FLOW        6176.
                                              TIME        22.67
1
                                SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                    (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                                  INTERPOLATED TO
                                                                                  COMPUTATION INTERVAL
          ISTAQ    ELEMENT       DT        PEAK     TIME TO      VOLUME       DT        PEAK     TIME TO      VOLUME
                                                                    PEAK                            PEAK
                                 (MIN)      (CFS)      (MIN)      (IN)      (MIN)      (CFS)      (MIN)        (IN)
        FOR PLAN = 1  RATIO= .94
          RT STM  MANE          1.51     714.59     808.24       .23       5.00     713.88     810.00         .23

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1609E+03 EXCESS= .0000E+00 OUTFLOW= .1602E+03 BASIN STORAGE= .8542E+00 PERCENT ERROR=   -.1

        FOR PLAN = 1  RATIO= .00
          OUTJ1  MANE          5.00    2017.57     845.00      1.64       5.00    2017.57     845.00        1.64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7027E+03 EXCESS= .0000E+00 OUTFLOW= .6995E+03 BASIN STORAGE= .4234E+01 PERCENT ERROR=   -.1

        FOR PLAN = 1  RATIO= .00
          OUTG3  MANE          5.00    2305.58     850.00      1.06       5.00    2305.58     850.00        1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8204E+03 EXCESS= .0000E+00 OUTFLOW= .8146E+03 BASIN STORAGE= .7346E+01 PERCENT ERROR=   -.2

        FOR PLAN = 1  RATIO= .00
          RT C1  MANE          1.25       4.32     736.25       .77       5.00       4.25     740.00         .77

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2549E+01 EXCESS= .0000E+00 OUTFLOW= .2532E+01 BASIN STORAGE= .1746E-01 PERCENT ERROR=    .0

        FOR PLAN = 1  RATIO= .00
          RT C1  MANE          1.75       4.35     747.25       .75       5.00       4.22     755.00         .75

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2533E+01 EXCESS= .0000E+00 OUTFLOW= .2492E+01 BASIN STORAGE= .4446E-01 PERCENT ERROR=   -.1

        FOR PLAN = 1  RATIO= .00
          RT OSW  MANE         5.00     853.15     830.00      4.91       5.00     853.15     830.00        4.91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1933E+03 EXCESS= .0000E+00 OUTFLOW= .1915E+03 BASIN STORAGE= .2393E-01 PERCENT ERROR=   -.3

        FOR PLAN = 1  RATIO= .00
          RT S3  MANE          1.50      10.23     433.50      3.62       5.00      10.19     435.00        3.62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7578E+01 EXCESS= .0000E+00 OUTFLOW= .7537E+01 BASIN STORAGE= .4286E-01 PERCENT ERROR=    .0
```

FOR PLAN = 1 RATIO= .00

RT T2	MANE	1.22	33.64	726.53	4.06	5.00	33.35	725.00	4.06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7811E+01 EXCESS= .0000E+00 OUTFLOW= .7799E+01 BASIN STORAGE= .1283E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RT T3	MANE	2.92	92.71	727.83	3.21	5.00	89.30	730.00	3.22

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1737E+02 EXCESS= .0000E+00 OUTFLOW= .1731E+02 BASIN STORAGE= .6834E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT C3	MANE	5.00	10.26	735.00	3.41	5.00	10.26	735.00	3.41

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6284E+01 EXCESS= .0000E+00 OUTFLOW= .6188E+01 BASIN STORAGE= .1120E+00 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RT C3	MANE	5.00	44.83	730.00	2.29	5.00	44.83	730.00	2.29

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8628E+01 EXCESS= .0000E+00 OUTFLOW= .8549E+01 BASIN STORAGE= .1145E+00 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00

RT C4	MANE	1.42	822.95	736.19	.52	5.00	819.35	735.00	.52

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8381E+02 EXCESS= .0000E+00 OUTFLOW= .8371E+02 BASIN STORAGE= .1696E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT C7	MANE	4.45	832.02	738.88	.56	5.00	825.00	740.00	.56

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9168E+02 EXCESS= .0000E+00 OUTFLOW= .9137E+02 BASIN STORAGE= .6082E+00 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RT C7	MANE	3.88	815.34	741.08	.56	5.00	810.91	745.00	.56

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9140E+02 EXCESS= .0000E+00 OUTFLOW= .9111E+02 BASIN STORAGE= .5375E+00 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RT C7	MANE	.69	58.04	725.43	2.57	5.00	57.69	725.00	2.58

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9343E+01 EXCESS= .0000E+00 OUTFLOW= .9339E+01 BASIN STORAGE= .1118E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT C7	MANE	5.00	56.55	735.00	2.54	5.00	56.55	735.00	2.54

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9352E+01 EXCESS= .0000E+00 OUTFLOW= .9242E+01 BASIN STORAGE= .1689E+00 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .00

RT C7	MANE	5.00	33.94	735.00	1.17	5.00	33.94	735.00	1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7894E+01 EXCESS= .0000E+00 OUTFLOW= .7825E+01 BASIN STORAGE= .8120E-01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RT C7	MANE	.24	33.82	734.87	1.17	5.00	33.82	735.00	1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7814E+01 EXCESS= .0000E+00 OUTFLOW= .7811E+01 BASIN STORAGE= .3499E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RT C7	MANE	5.00	33.92	745.00	1.15	5.00	33.92	745.00	1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7824E+01 EXCESS= .0000E+00 OUTFLOW= .7696E+01 BASIN STORAGE= .1709E+00 PERCENT ERROR= -.6

FOR PLAN = 1 RATIO= .00

RT S3	MANE	1.50	13.80	730.50	1.90	5.00	13.65	730.00	1.90

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6124E+01 EXCESS= .0000E+00 OUTFLOW= .6084E+01 BASIN STORAGE= .4591E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT S3	MANE	5.00	31.51	730.00	1.36	5.00	31.51	730.00	1.36

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7771E+01 EXCESS= .0000E+00 OUTFLOW= .7724E+01 BASIN STORAGE= .5686E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT S5	MANE	5.00	59.58	735.00	1.75	5.00	59.58	735.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2057E+02 EXCESS= .0000E+00 OUTFLOW= .2044E+02 BASIN STORAGE= .1706E+00 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RT S7	MANE	5.00	66.58	740.00	1.79	5.00	66.58	740.00	1.79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2471E+02 EXCESS= .0000E+00 OUTFLOW= .2454E+02 BASIN STORAGE= .2175E+00 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RT S7	MANE	1.00	.55	736.00	1.39	5.00	.50	745.00	1.39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2995E+00 EXCESS= .0000E+00 OUTFLOW= .2958E+00 BASIN STORAGE= .4227E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RT W1	MANE	3.02	121.38	725.34	1.88	5.00	120.52	725.00	1.88

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3627E+02 EXCESS= .0000E+00 OUTFLOW= .3613E+02 BASIN STORAGE= .1719E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT W1	MANE	5.00	122.68	735.00	1.86	5.00	122.68	735.00	1.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3621E+02 EXCESS= .0000E+00 OUTFLOW= .3576E+02 BASIN STORAGE= .5598E+00 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RTW1	MANE	.76	58.84	725.86	2.71	5.00	58.13	725.00	2.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9414E+01 EXCESS= .0000E+00 OUTFLOW= .9405E+01 BASIN STORAGE= .1230E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RT W1	MANE	5.00	57.05	735.00	2.67	5.00	57.05	735.00	2.67

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9419E+01 EXCESS= .0000E+00 OUTFLOW= .9284E+01 BASIN STORAGE= .2083E+00 PERCENT ERROR= -.8

FOR PLAN = 1 RATIO= .00

RT E3	MANE	3.98	43.14	727.90	2.20	5.00	42.00	730.00	2.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8242E+01 EXCESS= .0000E+00 OUTFLOW= .8205E+01 BASIN STORAGE= .4259E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT E3	MANE	1.00	2.26	735.00	.50	5.00	2.26	735.00	.50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1343E+01 EXCESS= .0000E+00 OUTFLOW= .1335E+01 BASIN STORAGE= .8296E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RTE3	MANE	1.25	2.26	745.00	.50	5.00	2.26	745.00	.50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1336E+01 EXCESS= .0000E+00 OUTFLOW= .1323E+01 BASIN STORAGE= .1421E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT E3	MANE	2.19	214.40	723.98	.72	5.00	211.41	725.00	.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1851E+02 EXCESS= .0000E+00 OUTFLOW= .1846E+02 BASIN STORAGE= .6918E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT E3	MANE	3.50	205.63	728.00	.72	5.00	196.52	730.00	.72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1845E+02 EXCESS= .0000E+00 OUTFLOW= .1837E+02 BASIN STORAGE= .1198E-00 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RT E4	MANE	3.53	192.31	731.27	.71	5.00	187.57	730.00	.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1836E+02 EXCESS= .0000E+00 OUTFLOW= .1827E+02 BASIN STORAGE= .1105E+00 PERCENT ERROR= -.1

```
          FOR PLAN = 1  RATIO=  .00
             RT E4  MANE          2.15     68.68    727.70       1.59       5.00      66.45     725.00         1.59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8479E+01 EXCESS= .0000E+00 OUTFLOW= .8463E+01 BASIN STORAGE= .1004E-01 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             RT N1  MANE          3.56    815.58    752.02        .41       5.00     810.13     755.00          .41

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7198E+02 EXCESS= .0000E+00 OUTFLOW= .7193E+02 BASIN STORAGE= .1395E+00 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RT N1  MANE          2.36    809.53    754.46        .41       5.00     808.79     755.00          .41

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7195E+02 EXCESS= .0000E+00 OUTFLOW= .7189E+02 BASIN STORAGE= .1172E+00 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RT N1  MANE          5.00     27.01    735.00       2.42       5.00      27.01     735.00         2.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7437E+01 EXCESS= .0000E+00 OUTFLOW= .7361E+01 BASIN STORAGE= .1023E+00 PERCENT ERROR=   -.4

          FOR PLAN = 1  RATIO=  .00
             RT N1  MANE          1.20     17.99    727.21       2.95       5.00      17.57     730.00         2.95

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6939E+01 EXCESS= .0000E+00 OUTFLOW= .6929E+01 BASIN STORAGE= .1264E-01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RT N1  MANE          1.75    527.46    741.36        .40       5.00     524.16     740.00          .40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3716E+02 EXCESS= .0000E+00 OUTFLOW= .3714E+02 BASIN STORAGE= .5565E-01 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RT N1  MANE          4.13    524.45    744.13        .40       5.00     520.20     745.00          .40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3715E+02 EXCESS= .0000E+00 OUTFLOW= .3711E+02 BASIN STORAGE= .1322E+00 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             RT N1  MANE          2.78    514.77    747.09        .40       5.00     511.73     745.00          .40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3711E+02 EXCESS= .0000E+00 OUTFLOW= .3706E+02 BASIN STORAGE= .1116E+00 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
             RT W3  MANE          1.65   1304.91    751.97        .45       3.00    1293.79     750.00          .45

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1232E+03 EXCESS= .0000E+00 OUTFLOW= .1232E+03 BASIN STORAGE= .2180E+00 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RT N4  MANE          3.20     95.23    722.71       1.01       5.00      88.38     720.00         1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8099E+01 EXCESS= .0000E+00 OUTFLOW= .8067E+01 BASIN STORAGE= .4219E-01 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RT N4  MANE          2.39     87.38    722.64       1.00       5.00      85.32     725.00         1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8053E+01 EXCESS= .0000E+00 OUTFLOW= .8029E+01 BASIN STORAGE= .3054E-01 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
             RT N4  MANE          4.00     84.88    728.00       1.00       5.00      80.39     730.00         1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8045E+01 EXCESS= .0000E+00 OUTFLOW= .7986E+01 BASIN STORAGE= .8840E-01 PERCENT ERROR=   -.4

          FOR PLAN = 1  RATIO=  .00
             RT W6  MANE          3.34     37.94    727.96       3.94       5.00      37.42     725.00         3.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8015E+01 EXCESS= .0000E+00 OUTFLOW= .7983E+01 BASIN STORAGE= .3432E-01 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
             RT W6  MANE          4.53     35.29    728.70       3.92       5.00      34.91     730.00         3.92
```

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7997E+01 EXCESS= .0000E+00 OUTFLOW= .7965E+01 BASIN STORAGE= .4613E-01 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RT W6	MANE	5.00	12.91	725.00	9.33	5.00	12.91	725.00	9.33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6523E+01 EXCESS= .0000E+00 OUTFLOW= .6480E+01 BASIN STORAGE= .4524E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RT DT2	MANE	1.22	55.20	731.18	5.31	5.00	54.84	730.00	5.31

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1929E+02 EXCESS= .0000E+00 OUTFLOW= .1926E+02 BASIN STORAGE= .2884E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RT DT2	MANE	5.00	54.61	735.00	5.28	5.00	54.61	735.00	5.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1930E+02 EXCESS= .0000E+00 OUTFLOW= .1918E+02 BASIN STORAGE= .1213E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RT DT2	MANE	1.12	47.11	729.36	2.49	5.00	47.10	730.00	2.50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8792E+01 EXCESS= .0000E+00 OUTFLOW= .8785E+01 BASIN STORAGE= .1135E-01 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RT N1	MANE	5.00	129.25	735.00	3.66	5.00	129.25	735.00	3.66

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3694E+02 EXCESS= .0000E+00 OUTFLOW= .3653E+02 BASIN STORAGE= .4645E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

RT N1	MANE	5.00	119.33	745.00	3.62	5.00	119.33	745.00	3.62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3653E+02 EXCESS= .0000E+00 OUTFLOW= .3615E+02 BASIN STORAGE= .4769E+00 PERCENT ERROR= -.3

FOR PLAN = 1 RATIO= .00

RT N1	MANE	5.00	56.80	735.00	2.42	5.00	56.80	735.00	2.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9952E+01 EXCESS= .0000E+00 OUTFLOW= .9816E+01 BASIN STORAGE= .1600E+00 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00

RT N13	MANE	4.41	207.11	741.08	2.93	5.00	204.39	740.00	2.93

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5770E+02 EXCESS= .0000E+00 OUTFLOW= .5740E+02 BASIN STORAGE= .3461E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

E14-E1	MANE	1.62	404.94	731.43	1.78	5.00	404.00	730.00	1.78

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5394E+02 EXCESS= .0000E+00 OUTFLOW= .5382E+02 BASIN STORAGE= .1675E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

E1-E2	MANE	1.22	406.55	730.93	1.89	5.00	402.47	730.00	1.90

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5798E+02 EXCESS= .0000E+00 OUTFLOW= .5793E+02 BASIN STORAGE= .1346E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

E2-E3	MANE	1.22	402.88	731.55	1.96	5.00	395.79	730.00	1.96

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6020E+02 EXCESS= .0000E+00 OUTFLOW= .6014E+02 BASIN STORAGE= .1395E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

E3-E4	MANE	1.48	397.09	733.34	2.00	5.00	394.36	735.00	2.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6205E+02 EXCESS= .0000E+00 OUTFLOW= .6193E+02 BASIN STORAGE= .1723E+00 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00

PK-CAR	MANE	2.69	508.68	733.60	2.18	5.00	505.39	735.00	2.18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8499E+02 EXCESS= .0000E+00 OUTFLOW= .8468E+02 BASIN STORAGE= .4255E+00 PERCENT ERROR= -.1

```
          FOR PLAN = 1  RATIO=  .00
            RT1-2  MANE          5.00     519.69     740.00       2.37       5.00     519.69     740.00       2.37

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .9752E+02 EXCESS= .0000E+00 OUTFLOW= .9684E+02 BASIN STORAGE= .9932E+00 PERCENT ERROR=   -.3

          FOR PLAN = 1  RATIO=  .00
            RT2-3  MANE          2.36     527.08     740.17       2.44       5.00     526.56     740.00       2.45

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1037E+03 EXCESS= .0000E+00 OUTFLOW= .1034E+03 BASIN STORAGE= .4532E+00 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
            RT3-4  MANE          1.61     544.09     740.73       2.68       5.00     540.49     740.00       2.68

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1206E+03 EXCESS= .0000E+00 OUTFLOW= .1203E+03 BASIN STORAGE= .3510E+00 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RT4-5  MANE           .88     556.02     741.41       2.77       5.00     552.63     740.00       2.77

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1339E+03 EXCESS= .0000E+00 OUTFLOW= .1338E+03 BASIN STORAGE= .2080E+00 PERCENT ERROR=    .0

          FOR PLAN = 1  RATIO=  .00
            RT5-6  MANE          2.06     551.72     743.58       2.78       5.00     551.12     745.00       2.78

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1352E+03 EXCESS= .0000E+00 OUTFLOW= .1349E+03 BASIN STORAGE= .4910E+00 PERCENT ERROR=   -.1

          FOR PLAN = 1  RATIO=  .00
            RT6-7  MANE          5.00     548.62     750.00       2.84       5.00     548.62     750.00       2.84

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .1412E+03 EXCESS= .0000E+00 OUTFLOW= .1399E+03 BASIN STORAGE= .1792E+01 PERCENT ERROR=   -.4

          FOR PLAN = 1  RATIO=  .00
            RT WT2  MANE          5.00    1271.33     835.00       2.36       5.00    1271.33     835.00       2.36

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2918E+03 EXCESS= .0000E+00 OUTFLOW= .2881E+03 BASIN STORAGE= .5190E+01 PERCENT ERROR=   -.5

          FOR PLAN = 1  RATIO=  .00
            RT WT2  MANE          5.00    1215.49     870.00       2.31       5.00    1215.49     870.00       2.31

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .2843E+03 EXCESS= .0000E+00 OUTFLOW= .2824E+03 BASIN STORAGE= .3325E+01 PERCENT ERROR=   -.5

          FOR PLAN = 1  RATIO=  .00
            RT WHC  MANE          5.00    2049.74     870.00        .86       5.00    2049.74     870.00        .86

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .7837E+03 EXCESS= .0000E+00 OUTFLOW= .7786E+03 BASIN STORAGE= .6366E+01 PERCENT ERROR=   -.2

          FOR PLAN = 1  RATIO=  .00
            RT DET  MANE          5.00    2221.73     875.00        .97       5.00    2221.73     875.00        .97

 CONTINUITY SUMMARY (AC-FT) - INFLOW= .9341E+03 EXCESS= .0000E+00 OUTFLOW= .9277E+03 BASIN STORAGE= .8200E+01 PERCENT ERROR=   -.2


 *** NORMAL END OF HEC-1 ***
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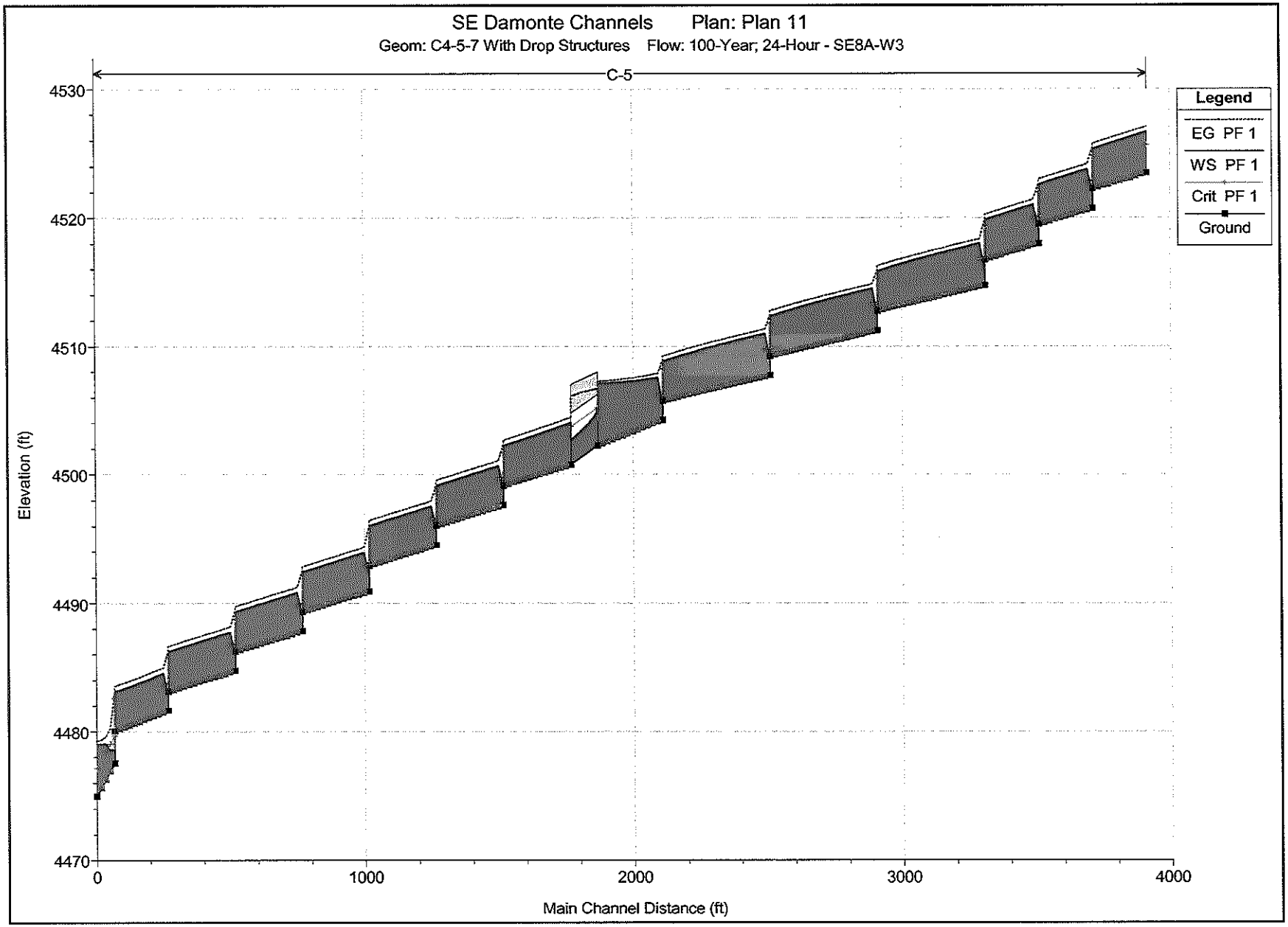
APPENDIX B

Appendix B

HEC-RAS Hydraulic Models & Calculations

HEC-RAS Hydraulic Models & Calculations – Channel C-4/C-5 to C-7

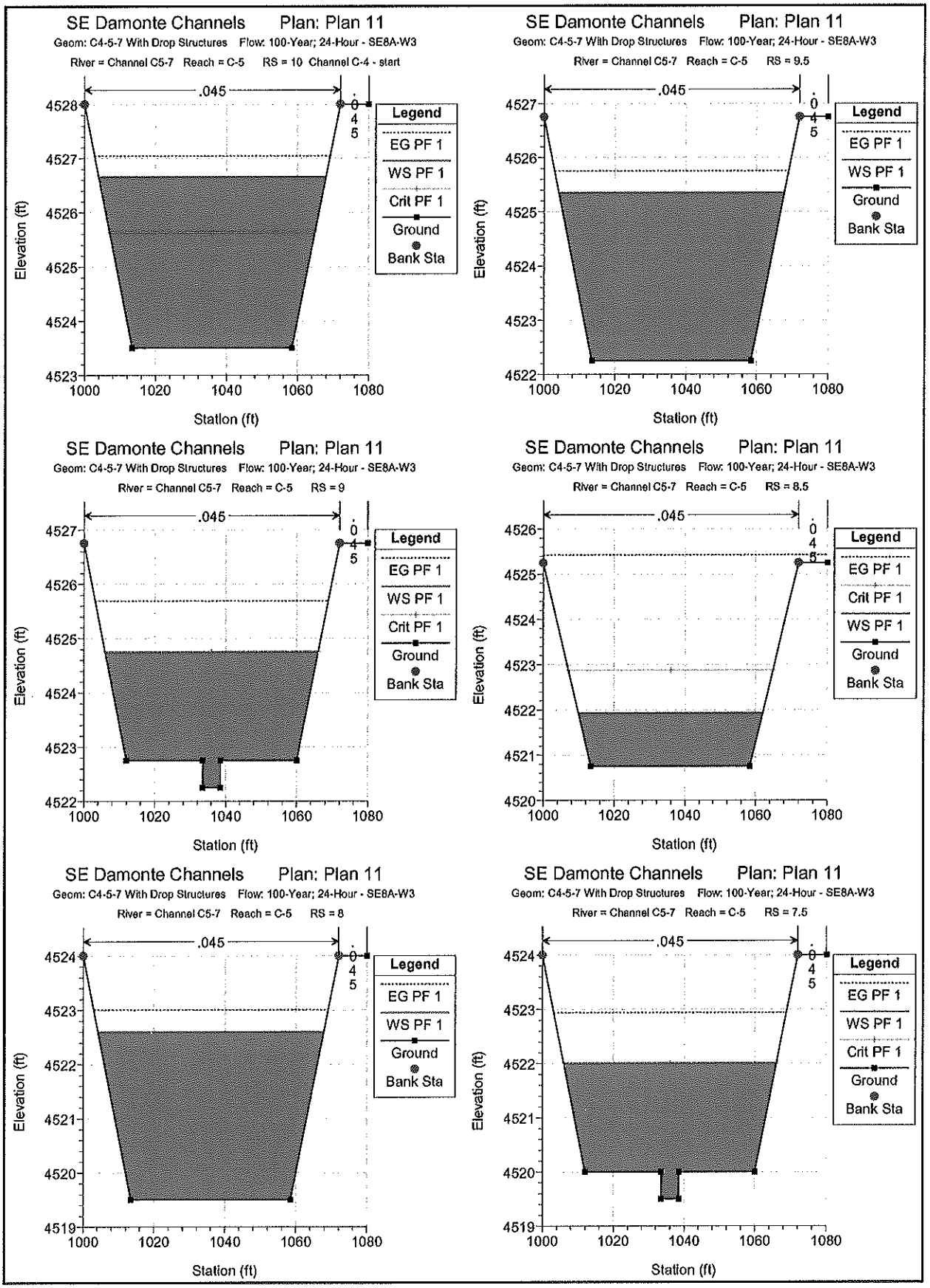

SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
C-5
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (ft)
4530
4520
4510
4500
4490
4480
4470
0
1000
2000
3000
4000
Main Channel Distance (ft)

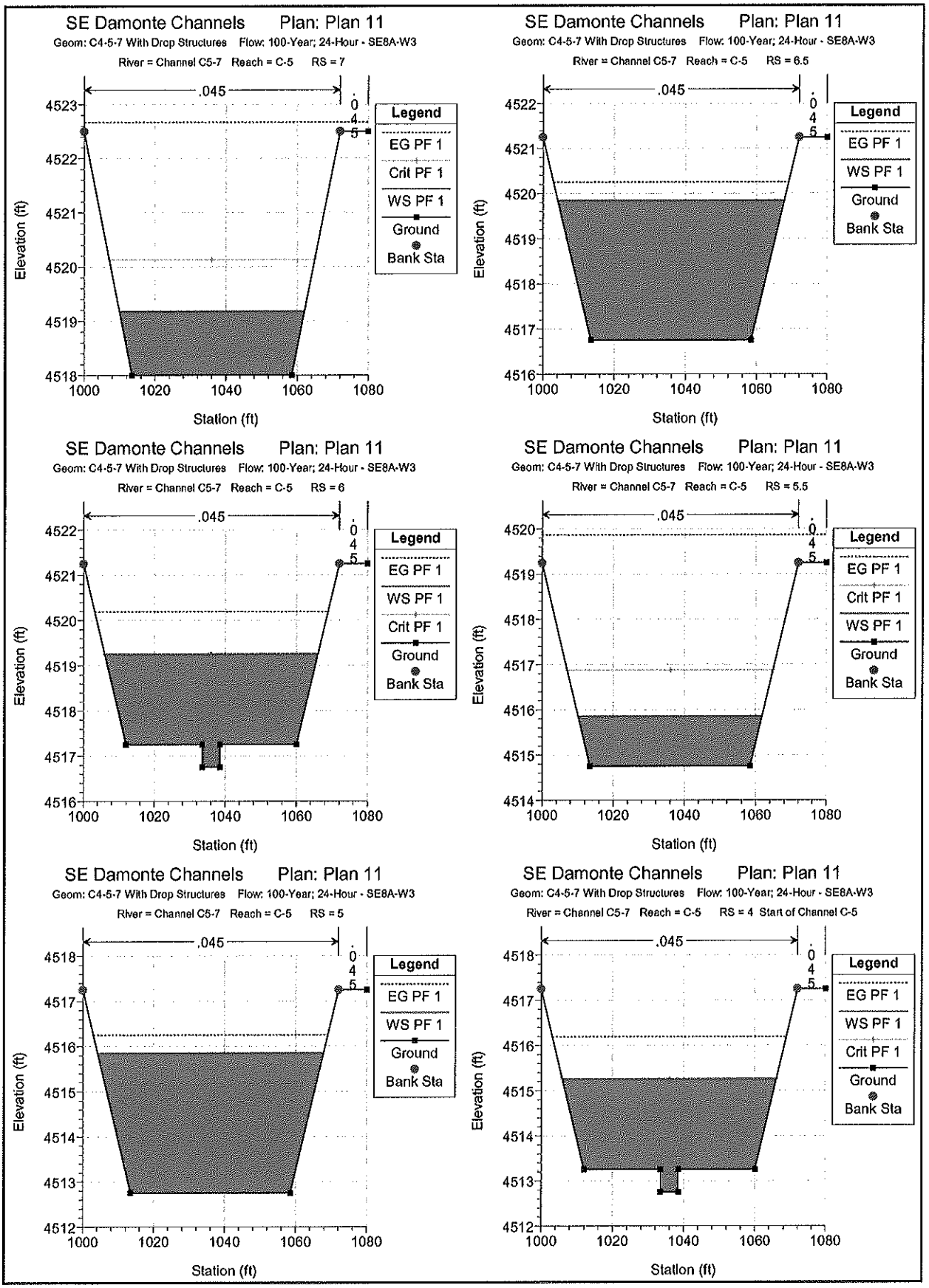
HEC-RAS Plan: Plan 04 River: Channel C5-7 Reach: C-5 Profile: PF 1

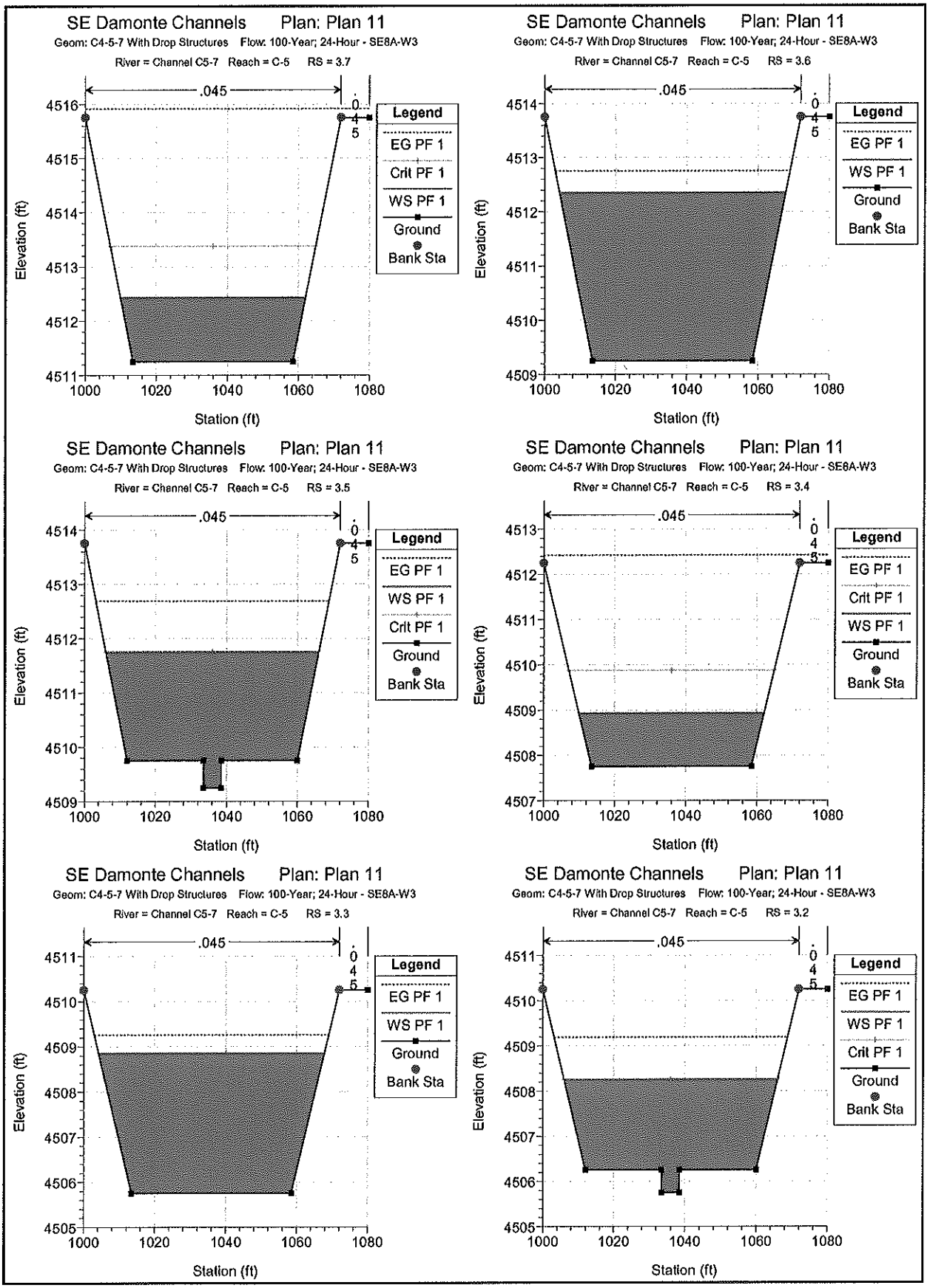
Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
C-5	10	860.00	4523.50	4526.66	4525.63	4527.05	0.006232	4.99	172.26	63.97	0.54
C-5	9.5	860.00	4522.25	4525.35		4525.76	0.006680	5.11	168.31	63.60	0.55
C-5	9	860.00	4522.25	4524.76	4524.76	4525.69	0.025252	7.76	110.86	60.04	1.01
C-5	8.5	860.00	4520.75	4521.93	4522.88	4525.42	0.183057	14.99	57.36	52.09	2.52
C-5	8	860.00	4519.50	4522.60		4523.01	0.006680	5.11	168.31	63.60	0.55
C-5	7.5	860.00	4519.50	4522.01	4522.01	4522.94	0.025252	7.76	110.86	60.04	1.01
C-5	7	860.00	4518.00	4519.18	4520.13	4522.67	0.183057	14.99	57.36	52.09	2.52
C-5	6.5	860.00	4516.75	4519.85		4520.26	0.006684	5.11	168.27	63.59	0.55
C-5	6	860.00	4516.75	4519.26	4519.26	4520.19	0.025252	7.76	110.86	60.04	1.01
C-5	5.5	860.00	4514.75	4515.86	4516.88	4519.87	0.228006	16.07	53.51	51.64	2.78
C-5	5	860.00	4512.75	4515.85		4516.26	0.006676	5.11	168.34	63.60	0.55
C-5	4	860.00	4512.75	4515.26	4515.26	4516.19	0.025170	7.75	110.97	60.05	1.00
C-5	3.7	860.00	4511.25	4512.43	4513.38	4515.92	0.183057	14.99	57.36	52.09	2.52
C-5	3.6	860.00	4509.25	4512.35		4512.76	0.006676	5.11	168.34	63.60	0.55
C-5	3.5	860.00	4509.25	4511.76	4511.76	4512.69	0.025231	7.76	110.89	60.04	1.01
C-5	3.4	860.00	4507.75	4508.93	4509.88	4512.42	0.183057	14.99	57.36	52.09	2.52
C-5	3.3	860.00	4505.75	4508.85		4509.26	0.006665	5.11	168.43	63.61	0.55
C-5	3.2	860.00	4505.75	4508.26	4508.26	4509.19	0.025149	7.75	111.00	60.05	1.00
C-5	3.1	860.00	4504.25	4505.43	4506.38	4508.92	0.183057	14.99	57.36	52.09	2.52
C-5	3	860.00	4502.25	4507.10	4504.41	4507.25	0.001470	3.15	273.32	67.76	0.28
C-5	2.5	Culvert									
C-5	2	860.00	4500.75	4504.03		4504.42	0.007246	5.04	170.54	59.15	0.52
C-5	1.95	860.00	4499.15	4502.25		4502.65	0.006706	5.12	168.09	63.58	0.55
C-5	1.9	860.00	4499.15	4501.68	4501.68	4502.59	0.024133	7.64	112.50	60.20	0.99
C-5	1.85	860.00	4497.65	4498.83	4499.78	4502.32	0.182801	14.99	57.39	52.09	2.52
C-5	1.8	860.00	4496.05	4499.15		4499.56	0.006673	5.11	168.37	63.60	0.55
C-5	1.75	860.00	4496.05	4498.55	4498.55	4499.49	0.025396	7.77	110.65	60.01	1.01
C-5	1.7	860.00	4494.55	4495.73	4496.68	4499.22	0.183057	14.99	57.36	52.09	2.52
C-5	1.65	860.00	4492.95	4496.05		4496.46	0.006684	5.11	168.27	63.59	0.55
C-5	1.6	860.00	4492.95	4495.45	4495.45	4496.39	0.025334	7.77	110.74	60.02	1.01
C-5	1.55	860.00	4490.95	4492.06	4493.08	4496.07	0.228006	16.07	53.51	51.64	2.78
C-5	1.5	860.00	4489.35	4492.45		4492.86	0.006680	5.11	168.31	63.60	0.55
C-5	1.45	860.00	4489.35	4491.86	4491.86	4492.79	0.025272	7.76	110.83	60.03	1.01
C-5	1.4	860.00	4487.85	4489.03	4489.98	4492.52	0.183057	14.99	57.36	52.09	2.52
C-5	1.35	860.00	4486.25	4489.35		4489.75	0.006710	5.12	168.06	63.57	0.55
C-5	1.3	860.00	4486.25	4488.79	4488.79	4489.69	0.024055	7.64	112.62	60.21	0.98

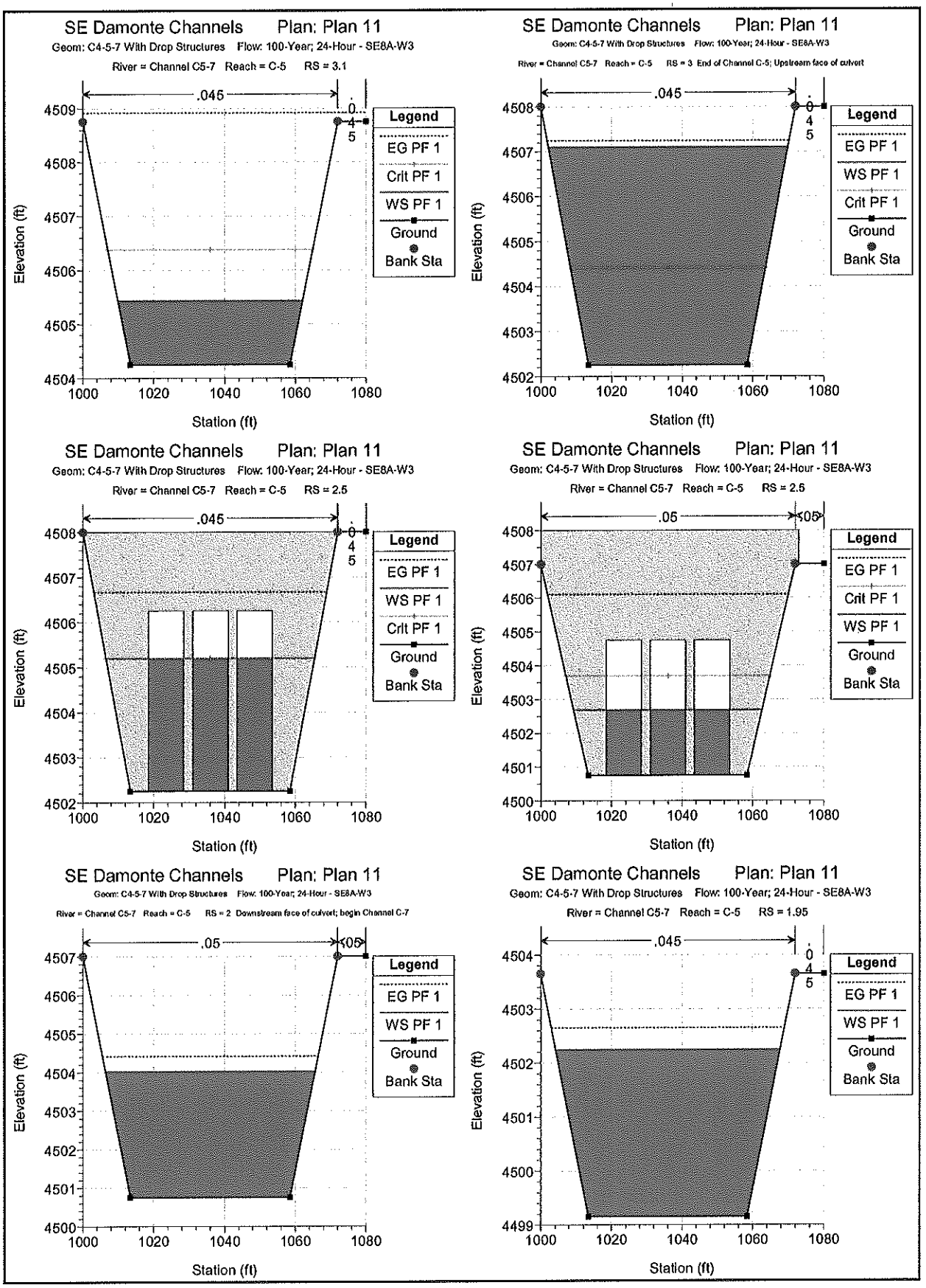
HEC-RAS Plan: Plan 04 River: Channel C5-7 Reach: C-5 Profile: PF 1 (Continued)

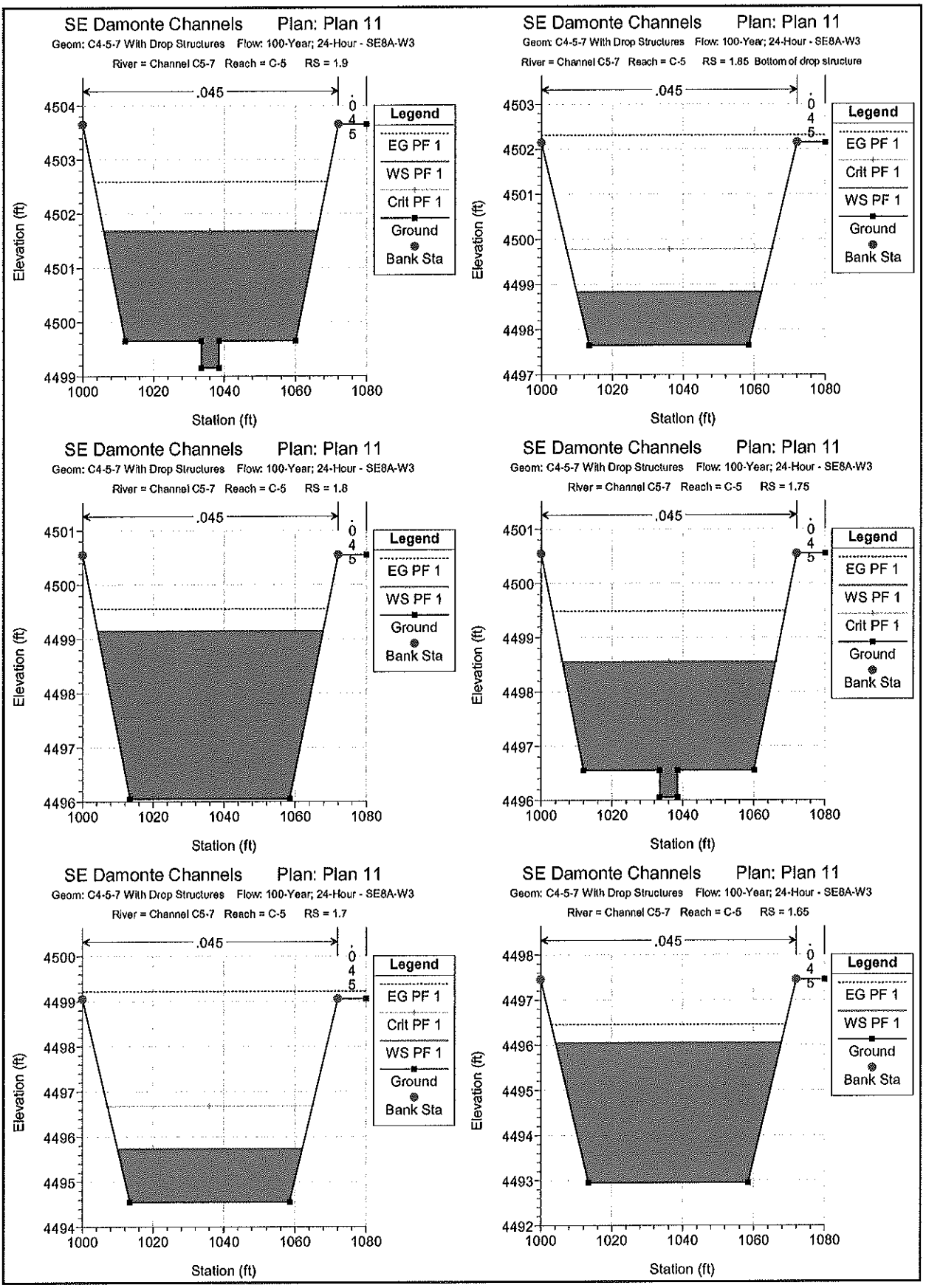
Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
C-5	1.25	860.00	4484.75	4485.93	4486.88	4489.42	0.182801	14.99	57.39	52.09	2.52
C-5	1.2	860.00	4483.15	4486.25		4486.66	0.006669	5.11	168.40	63.61	0.55
C-5	1.15	860.00	4483.15	4485.65	4485.65	4486.59	0.025396	7.77	110.65	60.01	1.01
C-5	1.1	860.00	4481.65	4482.83	4483.78	4486.32	0.225996	14.99	57.36	52.09	2.52
C-5	1.075	860.00	4480.05	4483.15		4483.55	0.006717	5.12	167.99	63.57	0.55
C-5	1.05	860.00	4480.05	4482.59	4482.59	4483.49	0.024055	7.64	112.62	60.21	0.98
C-5	1.025	860.00	4477.55	4478.60	4479.68	4483.11	0.275314	17.06	50.42	51.28	3.03
C-5	1	860.00	4475.00	4478.79	4477.15	4479.05	0.006001	4.11	209.37	65.47	0.40

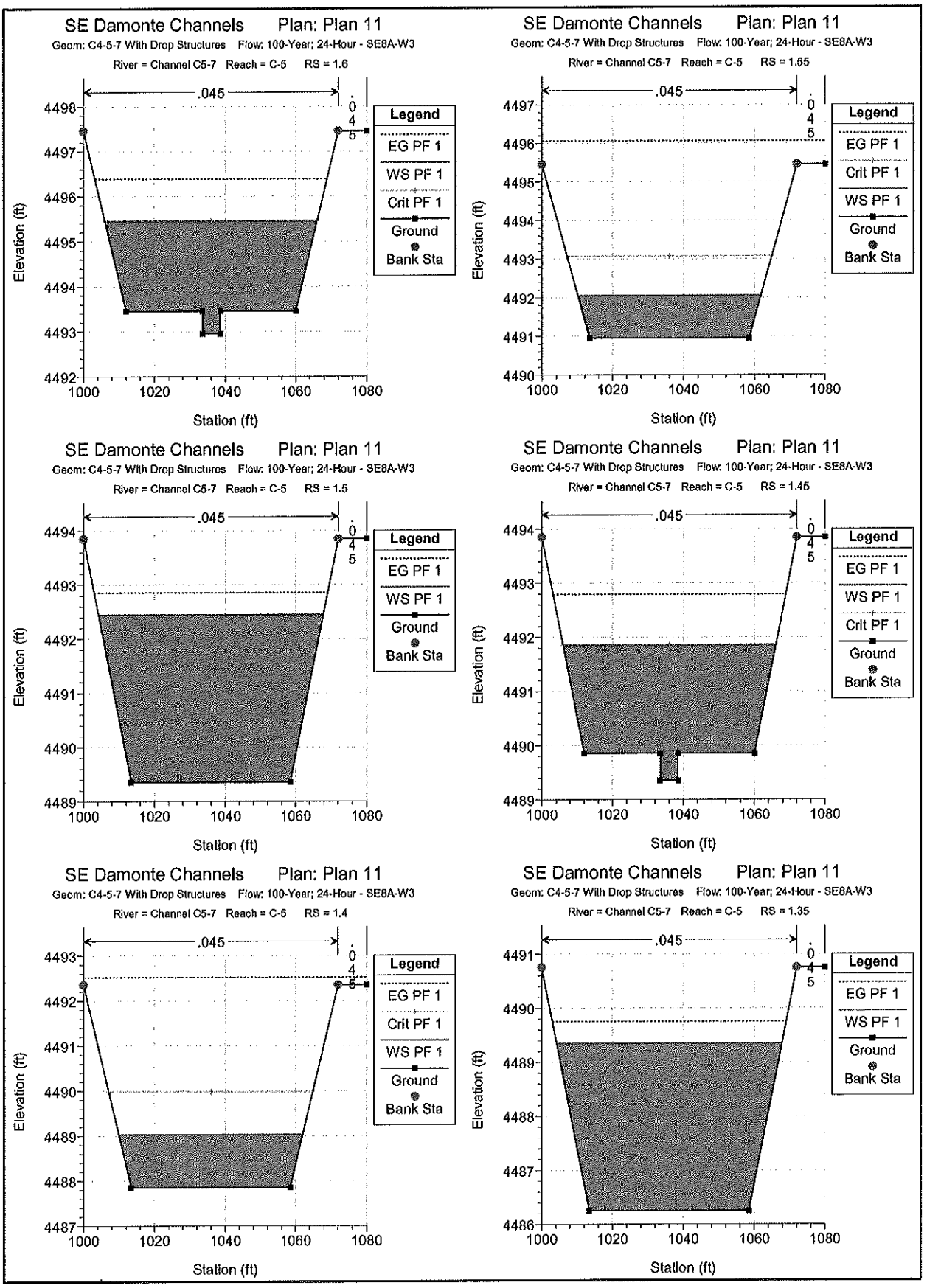

SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 10 Channel C-4 - start
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 9.5
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 9
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 8.5
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 8
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 7.5

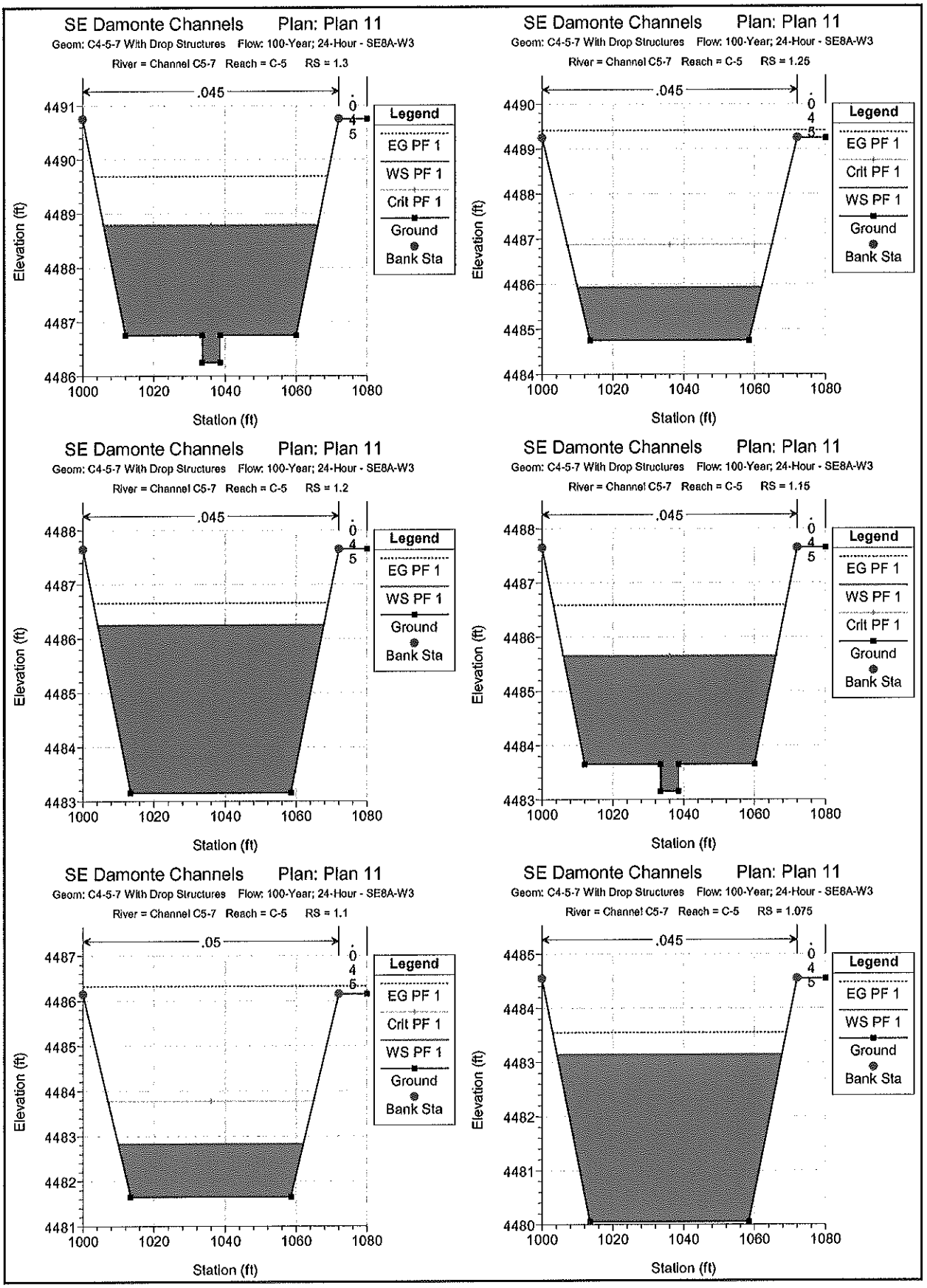

SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 7
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 6.5
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 6
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 5.5
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 5
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 4 Start of Channel C-5
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

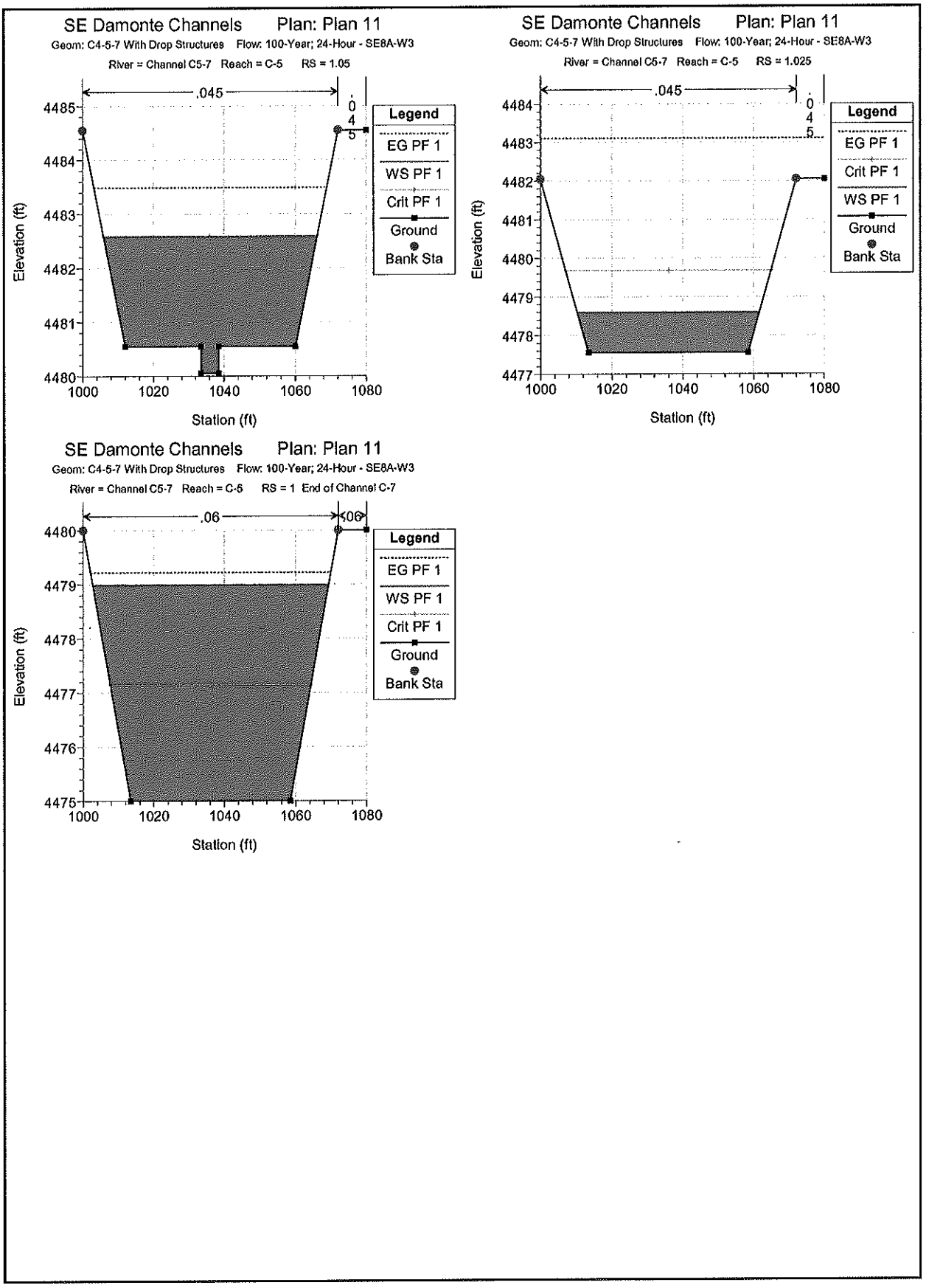

SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 3.7
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 3.6
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 3.5
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 3.4
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 3.3
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 3.2
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 3.1
.045
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 3 End of Channel C-5; Upstream face of culvert
.045
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 2.5
.045
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 2.5
.05
.05
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 2 Downstream face of culvert; begin Channel C-7
.05
.05
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.95
.045
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

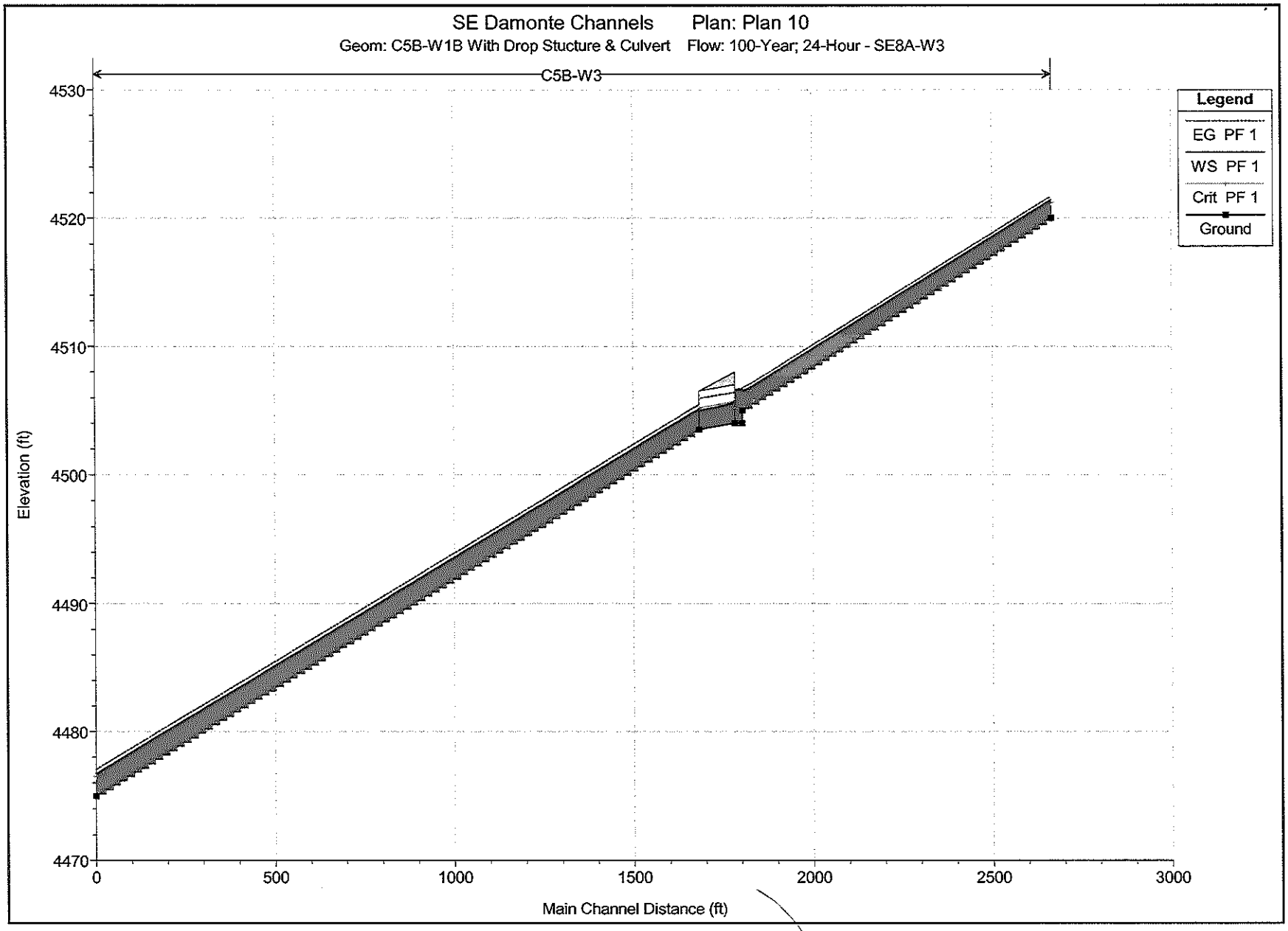

SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.9
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.85 Bottom of drop structure
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.8
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.75
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.7
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.65
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.6
.045
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.55
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.5
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.45
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.4
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.35


SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.3
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.25
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.2
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.15
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.1
.05
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.075
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

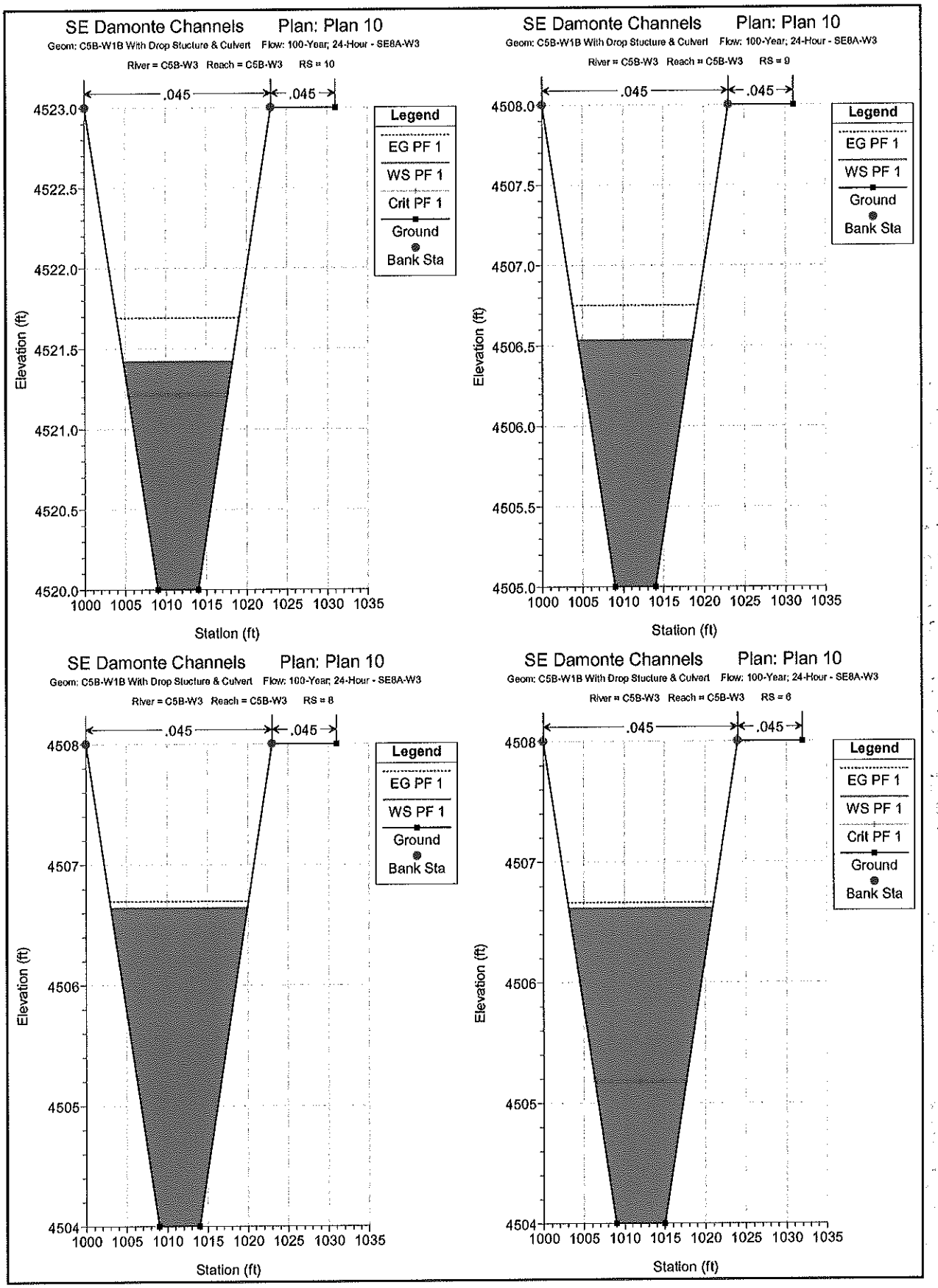

SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.05
.045
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4485
4484
4483
4482
4481
4480
1000
1020
1040
1060
1080
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1.025
.045
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4484
4483
4482
4481
4480
4479
4478
4477
1000
1020
1040
1060
1080
SE Damonte Channels Plan: Plan 11
Geom: C4-5-7 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = Channel C5-7 Reach = C-5 RS = 1 End of Channel C-7
.06
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
4480
4479
4478
4477
4476
4475
1000
1020
1040
1060
1080

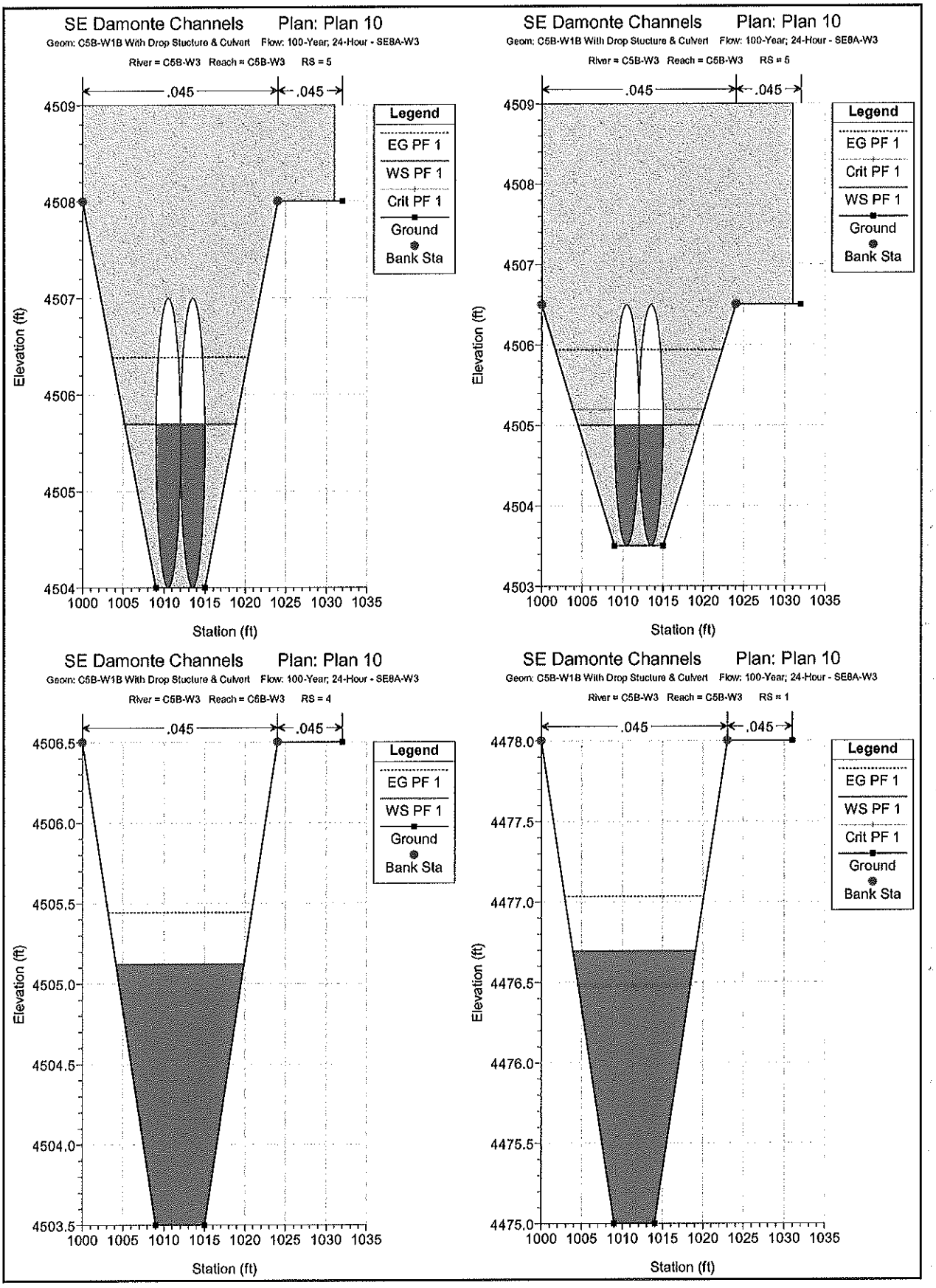
HEC-RAS Hydraulic Models & Calculations – Channel C-5B to W-1B


SE Damonte Channels Plan: Plan 10
Geom: C5B-W1B With Drop Stucture & Culvert Flow: 100-Year; 24-Hour - SE8A-W3
C5B-W3
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (ft)
4530
4520
4510
4500
4490
4480
4470
0
500
1000
1500
2000
2500
3000
Main Channel Distance (ft)

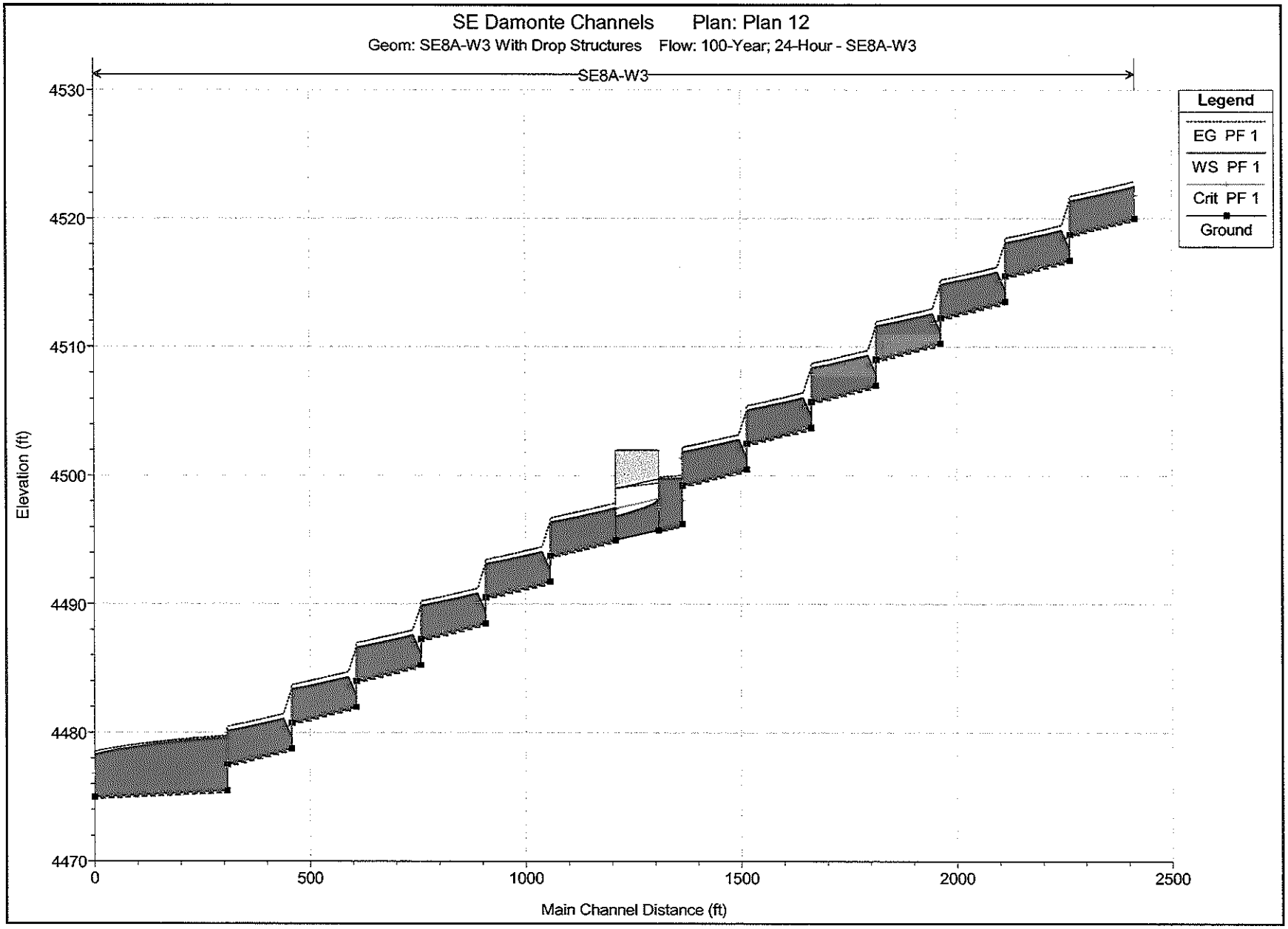
HEC-RAS Plan: Plan 04 River: C5B-W3 Reach: C5B-W3 Profile: PF 1

Reach	River Sta	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)	
C5B-W3	10	55.00	4520.00	4521.42	4521.21	4521.69	0.017441	4.19	13.14	13.52	0.75
C5B-W3	9	55.00	4505.00	4506.54		4506.75	0.012700	3.73	14.75	14.21	0.64
C5B-W3	8	55.00	4504.00	4506.64		4506.70	0.001768	1.90	28.90	16.89	0.26
C5B-W3	6	55.00	4504.00	4506.62	4505.18	4506.66	0.001477	1.77	31.08	17.77	0.24
C5B-W3	5	Culvert									
C5B-W3	4	80.00	4503.50	4505.12		4505.44	0.016966	4.54	17.63	15.73	0.76
C5B-W3	1	80.00	4475.00	4476.69	4476.48	4477.04	0.018036	4.69	17.07	15.16	0.78


SE Damonte Channels Plan: Plan 10
Geom: C5B-W1B With Drop Stucture & Culvert Flow: 100-Year, 24-Hour - SE8A-W3
River = C5B-W3 Reach = C5B-W3 RS = 10
.045
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 10
Geom: C5B-W1B With Drop Stucture & Culvert Flow: 100-Year, 24-Hour - SE8A-W3
River = C5B-W3 Reach = C5B-W3 RS = 9
SE Damonte Channels Plan: Plan 10
Geom: C5B-W1B With Drop Stucture & Culvert Flow: 100-Year, 24-Hour - SE8A-W3
River = C5B-W3 Reach = C5B-W3 RS = 8
SE Damonte Channels Plan: Plan 10
Geom: C5B-W1B With Drop Stucture & Culvert Flow: 100-Year, 24-Hour - SE8A-W3
River = C5B-W3 Reach = C5B-W3 RS = 6


SE Damonte Channels Plan: Plan 10
Geom: C5B-W1B With Drop Stucture & Culvert Flow: 100-Year; 24-Hour - SE8A-W3
River = C5B-W3 Reach = C5B-W3 RS = 5
.045
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 10
Geom: C5B-W1B With Drop Stucture & Culvert Flow: 100-Year; 24-Hour - SE8A-W3
River = C5B-W3 Reach = C5B-W3 RS = 6
.045
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 10
Geom: C5B-W1B With Drop Stucture & Culvert Flow: 100-Year; 24-Hour - SE8A-W3
River = C5B-W3 Reach = C5B-W3 RS = 4
.045
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 10
Geom: C5B-W1B With Drop Stucture & Culvert Flow: 100-Year; 24-Hour - SE8A-W3
River = C5B-W3 Reach = C5B-W3 RS = 1
.045
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

HEC-RAS Hydraulic Models & Calculations – Channel SE-8A to W-3

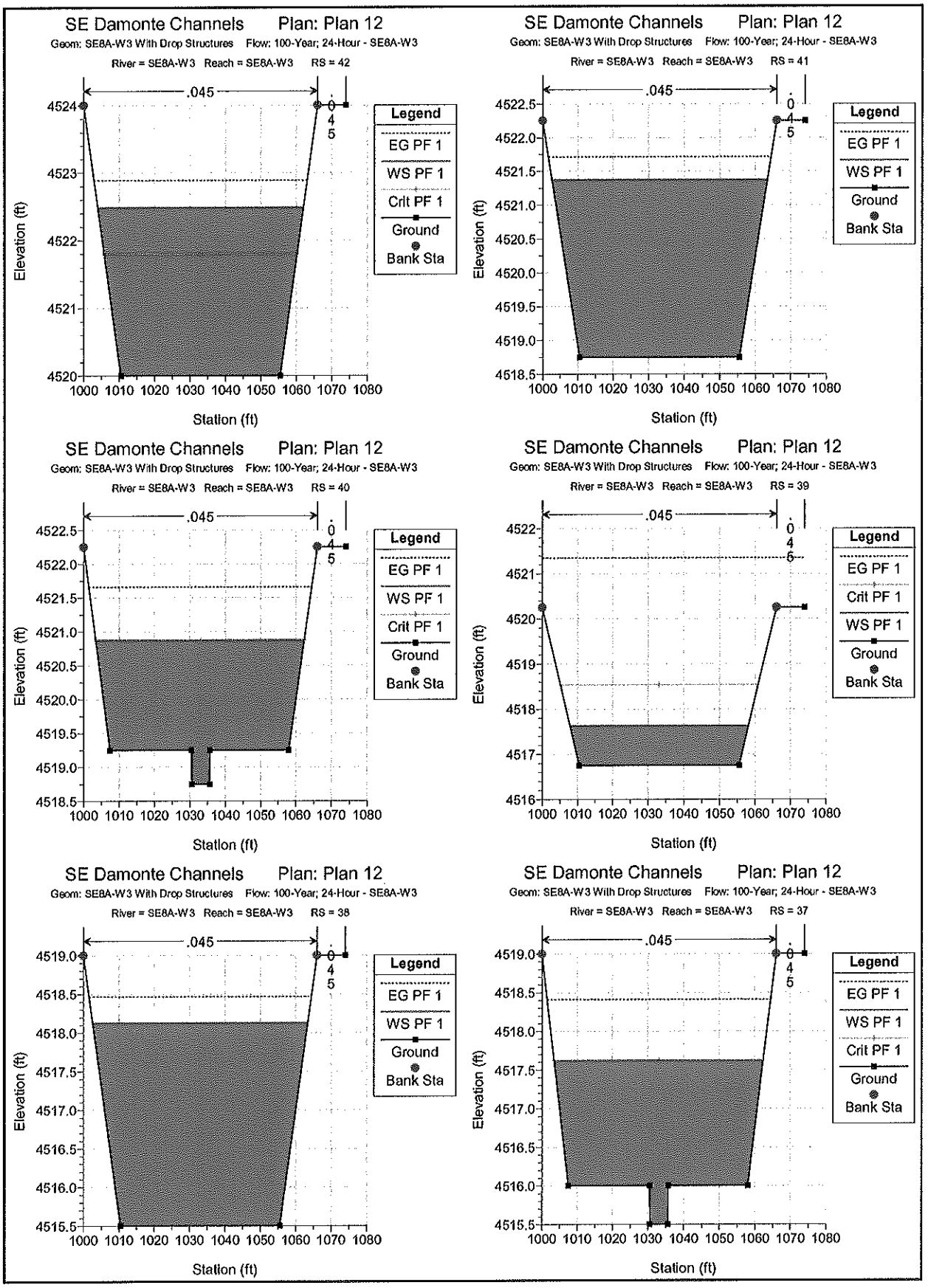

SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
SE8A-W3
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (ft)
4530
4520
4510
4500
4490
4480
4470
0
500
1000
1500
2000
2500
Main Channel Distance (ft)

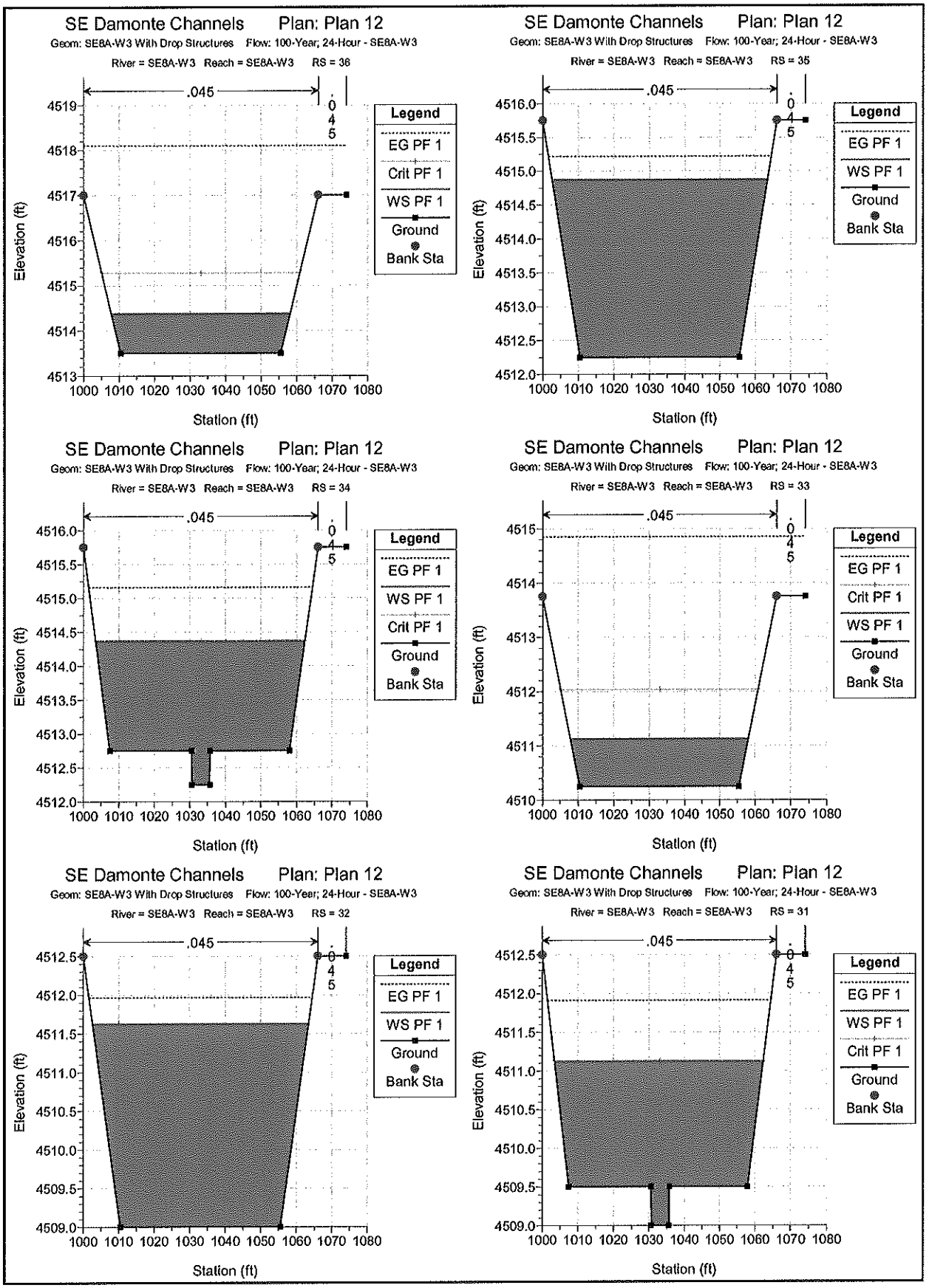
HEC-RAS Plan: Plan 04 River: SE8A-W3 Reach: SE8A-W3 Profile: PF 1

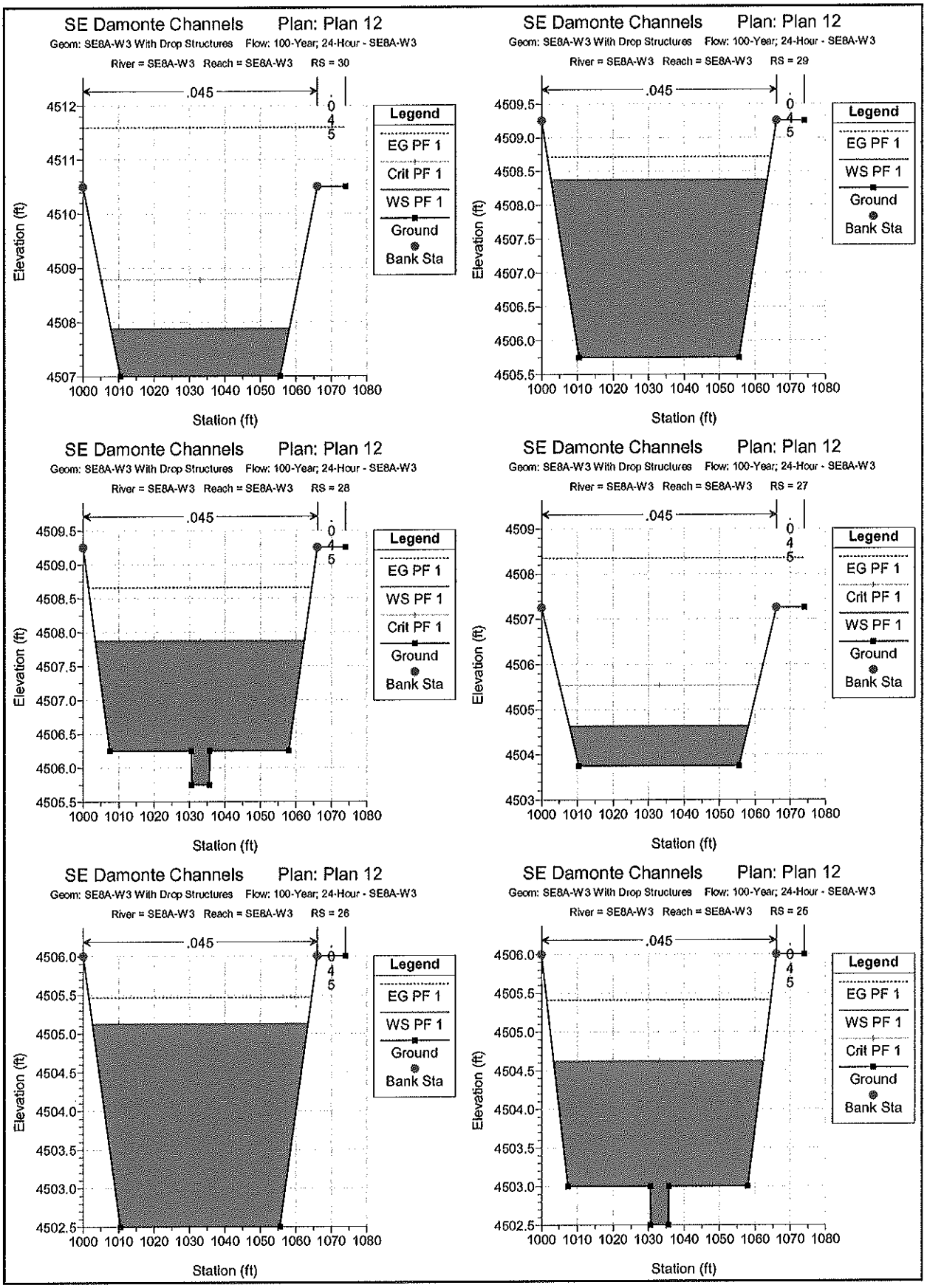
Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SE8A-W3	42	650.00	4520.00	4522.49	4521.80	4522.89	0.008368	5.07	128.23	58.06	0.60
SE8A-W3	41	650.00	4518.75	4521.38		4521.72	0.006805	4.68	138.83	60.75	0.55
SE8A-W3	40	650.00	4518.75	4520.87	4520.87	4521.66	0.026673	7.11	91.38	58.89	1.01
SE8A-W3	39	650.00	4516.75	4517.63	4518.54	4521.35	0.281084	15.47	42.02	50.29	2.98
SE8A-W3	38	650.00	4515.50	4518.13		4518.47	0.006805	4.68	138.83	60.75	0.55
SE8A-W3	37	650.00	4515.50	4517.62	4517.62	4518.41	0.026752	7.12	91.29	58.88	1.01
SE8A-W3	36	650.00	4513.50	4514.38	4515.29	4518.10	0.281084	15.47	42.02	50.29	2.98
SE8A-W3	35	650.00	4512.25	4514.88		4515.22	0.006796	4.68	138.89	60.76	0.55
SE8A-W3	34	650.00	4512.25	4514.37	4514.37	4515.16	0.026859	7.13	91.18	58.87	1.01
SE8A-W3	33	650.00	4510.25	4511.13	4512.04	4514.85	0.281609	15.48	41.99	50.29	2.99
SE8A-W3	32	650.00	4509.00	4511.63		4511.97	0.006805	4.68	138.83	60.75	0.55
SE8A-W3	31	650.00	4509.00	4511.12	4511.12	4511.91	0.026673	7.11	91.38	58.89	1.01
SE8A-W3	30	650.00	4507.00	4507.88	4508.79	4511.60	0.281084	15.47	42.02	50.29	2.98
SE8A-W3	29	650.00	4505.75	4508.38		4508.72	0.006805	4.68	138.83	60.75	0.55
SE8A-W3	28	650.00	4505.75	4507.87	4507.87	4508.66	0.026752	7.12	91.29	58.88	1.01
SE8A-W3	27	650.00	4503.75	4504.63	4505.54	4508.35	0.281084	15.47	42.02	50.29	2.98
SE8A-W3	26	650.00	4502.50	4505.13		4505.47	0.006801	4.68	138.86	60.76	0.55
SE8A-W3	25	650.00	4502.50	4504.62	4504.62	4505.41	0.026832	7.13	91.20	58.88	1.01
SE8A-W3	24	650.00	4500.50	4501.37	4502.27	4505.10	0.288254	15.49	41.95	51.11	3.01
SE8A-W3	23	650.00	4499.25	4501.88		4502.22	0.006805	4.68	138.83	60.75	0.55
SE8A-W3	22	650.00	4499.25	4501.38	4501.38	4502.16	0.026647	7.11	91.41	58.89	1.01
SE8A-W3	21	650.00	4496.25	4499.84	4498.05	4500.02	0.002414	3.40	191.40	61.74	0.34
SE8A-W3	20	650.00	4495.75	4499.76	4497.55	4499.90	0.001634	2.98	218.08	63.72	0.28
SE8A-W3	19.5	Culvert									
SE8A-W3	19	650.00	4495.00	4497.48		4497.87	0.008275	4.99	130.14	59.89	0.60
SE8A-W3	18.5	650.00	4493.75	4496.38		4496.72	0.006805	4.68	138.83	60.75	0.55
SE8A-W3	18	650.00	4493.75	4495.87	4495.87	4496.66	0.026752	7.12	91.29	58.88	1.01
SE8A-W3	17.5	650.00	4491.75	4492.63	4493.54	4496.35	0.281084	15.47	42.02	50.29	2.98
SE8A-W3	17	650.00	4490.50	4493.13		4493.47	0.006796	4.68	138.89	60.76	0.55
SE8A-W3	16.5	650.00	4490.50	4492.62	4492.62	4493.41	0.026859	7.13	91.18	58.87	1.01
SE8A-W3	16	650.00	4488.50	4489.38	4490.28	4493.10	0.281609	15.48	41.99	50.29	2.99
SE8A-W3	15.5	650.00	4487.25	4489.88		4490.22	0.006805	4.68	138.83	60.75	0.55
SE8A-W3	15	650.00	4487.25	4489.37	4489.37	4490.16	0.026673	7.11	91.38	58.89	1.01
SE8A-W3	14.5	650.00	4485.25	4486.13	4487.03	4489.85	0.281084	15.47	42.02	50.29	2.98
SE8A-W3	14	650.00	4484.00	4486.63		4486.97	0.006805	4.68	138.83	60.75	0.55
SE8A-W3	13.5	650.00	4484.00	4486.12	4486.12	4486.91	0.026752	7.12	91.29	58.88	1.01

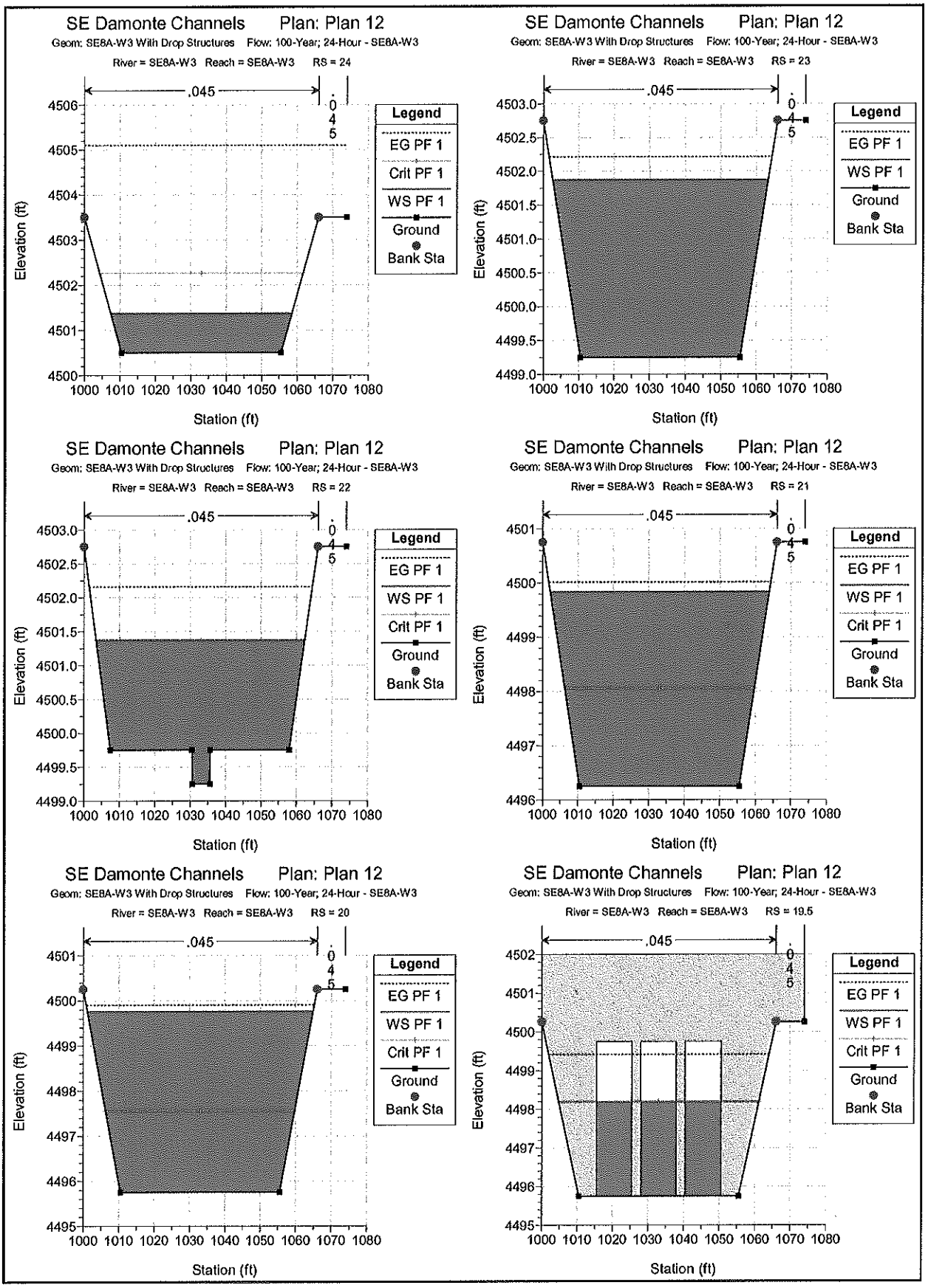
HEC-RAS Plan: Plan 04 River: SE8A-W3 Reach: SE8A-W3 Profile: PF 1 (Continued)

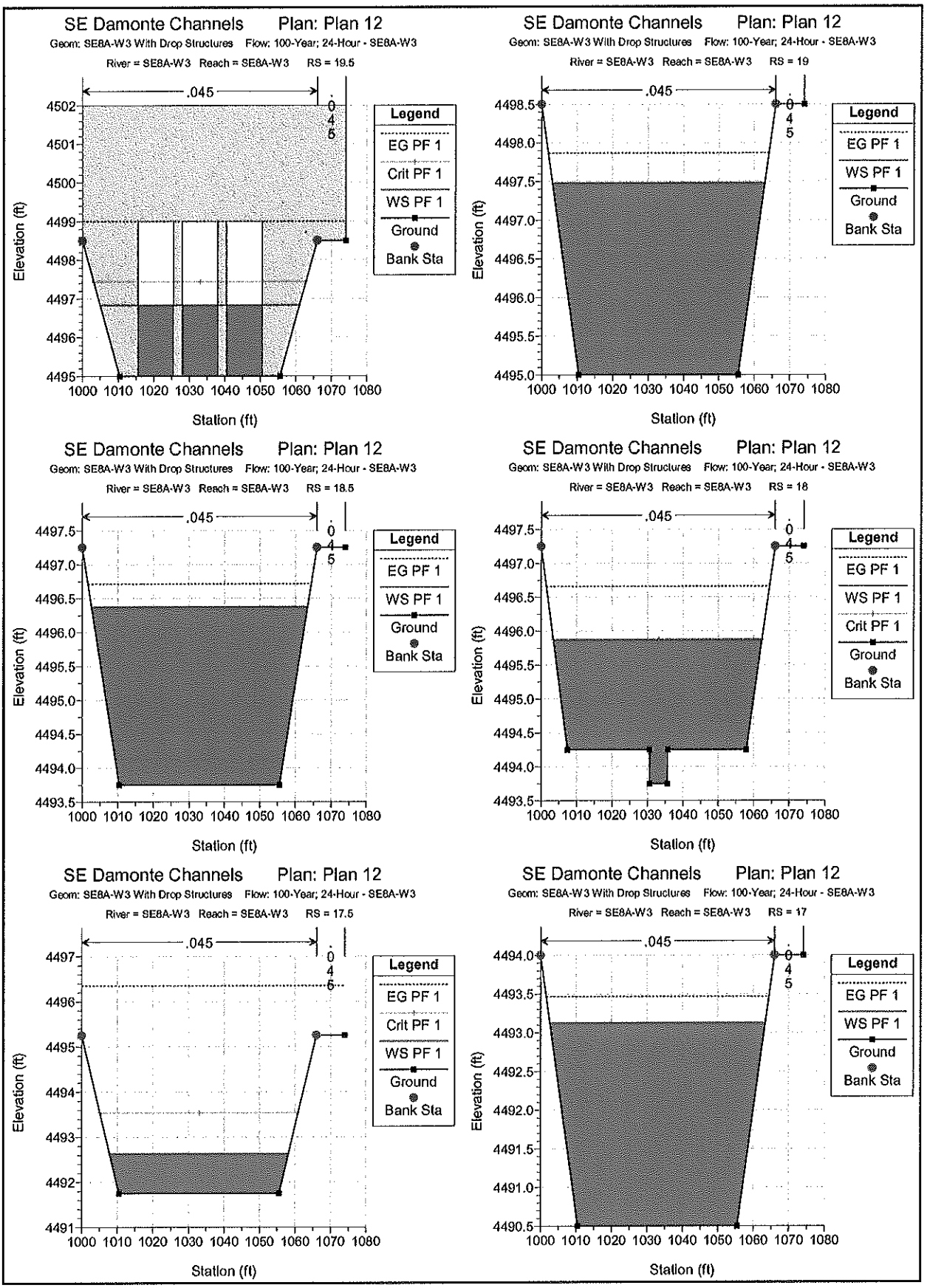
Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SE8A-W3	13	650.00	4482.00	4482.88	4483.78	4486.60	0.281084	15.47	42.02	50.29	2.98
SE8A-W3	12.5	650.00	4480.75	4483.38		4483.72	0.006801	4.68	138.86	60.76	0.55
SE8A-W3	12	650.00	4480.75	4482.87	4482.87	4483.66	0.026832	7.13	91.20	58.88	1.01
SE8A-W3	11.5	650.00	4478.75	4479.63	4480.53	4483.35	0.281084	15.47	42.02	50.29	2.98
SE8A-W3	11	650.00	4477.50	4480.13		4480.47	0.006805	4.68	138.83	60.75	0.55
SE8A-W3	10.5	650.00	4477.50	4479.63	4479.63	4480.41	0.026647	7.11	91.41	58.89	1.01
SE8A-W3	10	650.00	4475.50	4479.62	4477.30	4479.75	0.002217	2.89	225.27	64.25	0.27
SE8A-W3	9.5	650.00	4475.00	4478.29	4476.81	4478.52	0.008003	3.80	170.93	58.83	0.39

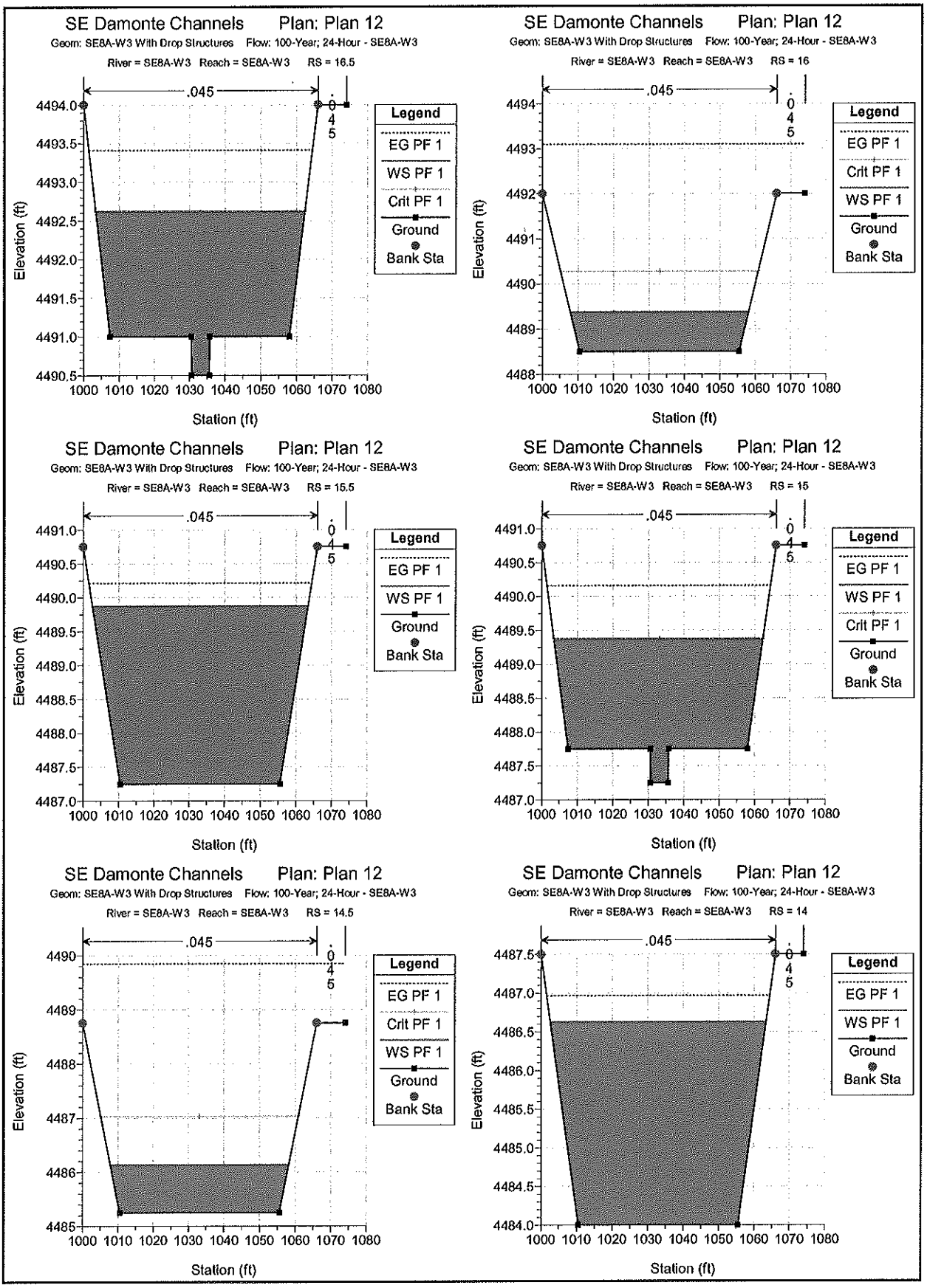

SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 42
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 41
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 40
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 39
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 38
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 37
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

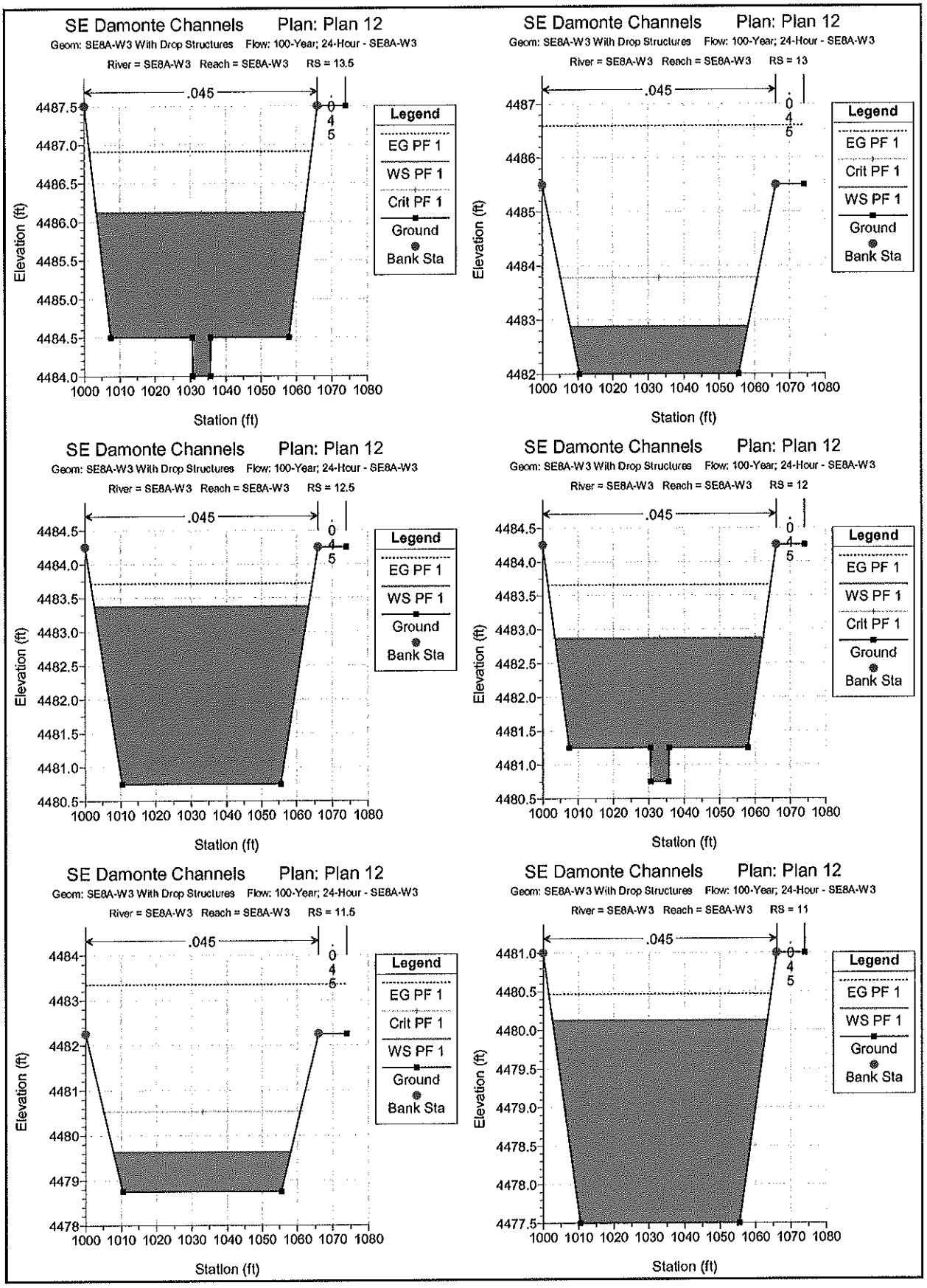

SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 36
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 35
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 34
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 33
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 32
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 31
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

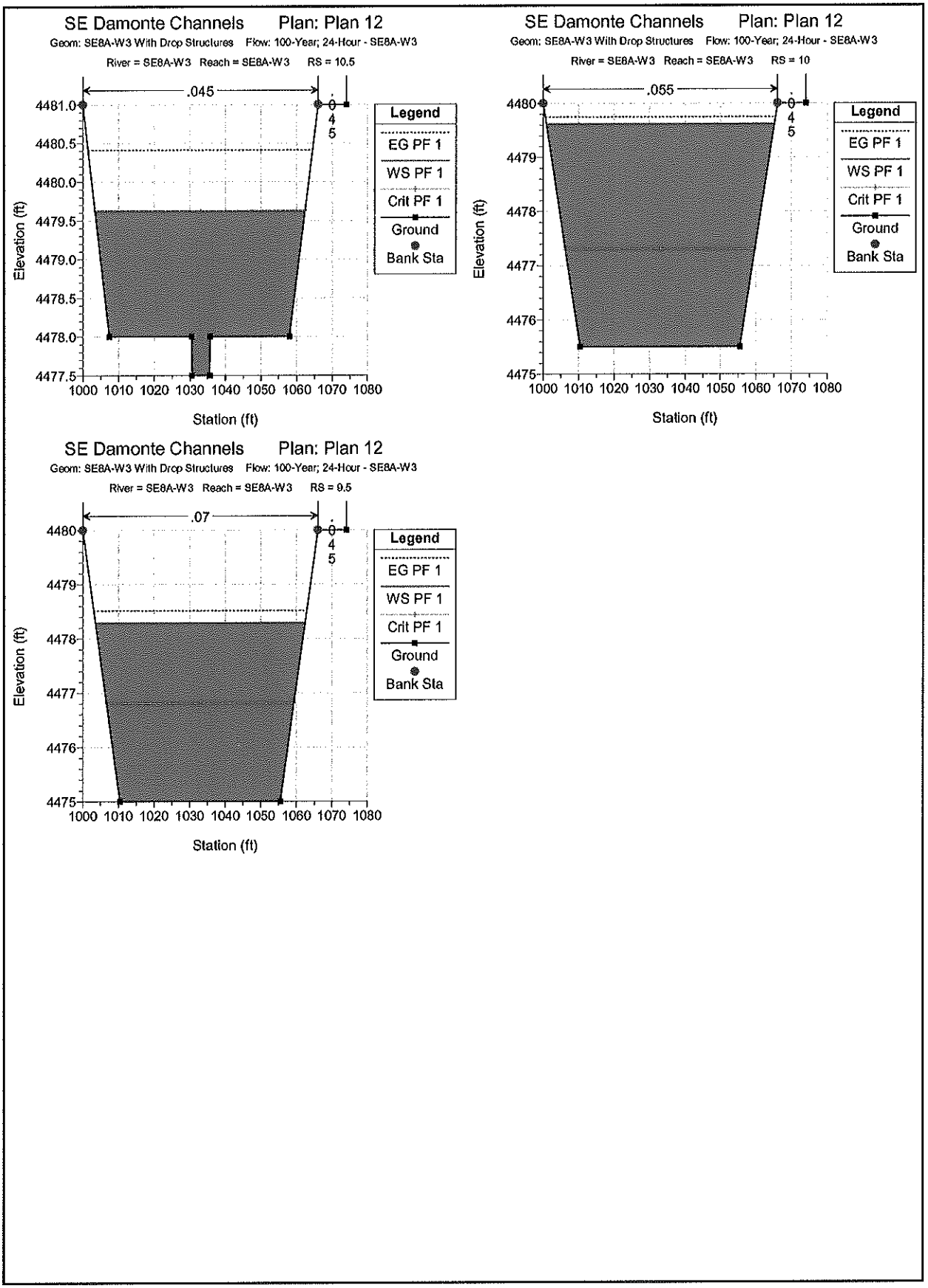

SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 30
.045
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 29
.045
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 28
.045
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 27
.045
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 26
.045
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 25
.045
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 24
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 23
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 22
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 21
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 20
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 19.5
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 19.5
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 19
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 18.5
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 18
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 17.5
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 17
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 16.5
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 16
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 15.5
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 15
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 14.5
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 14
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

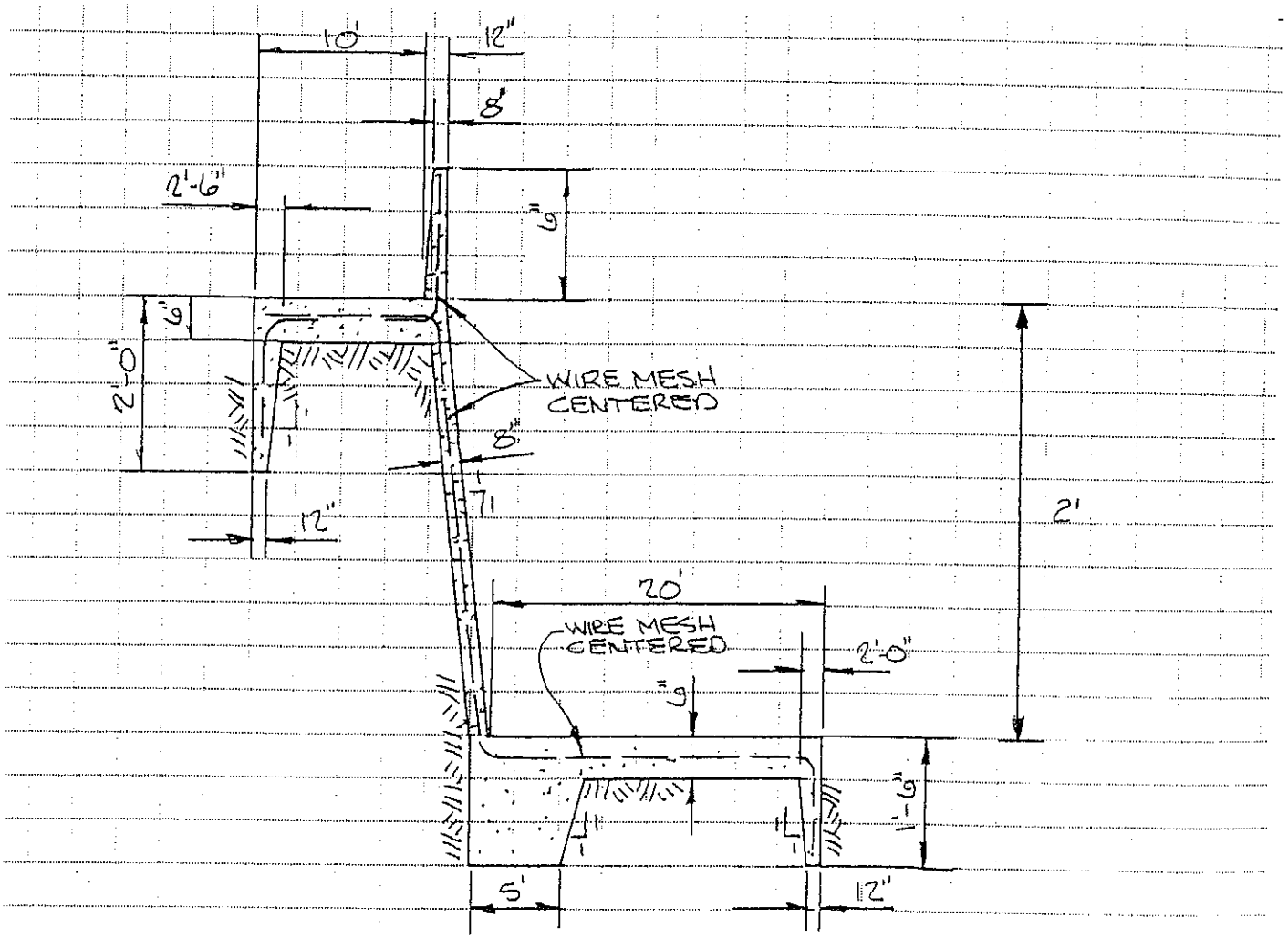

SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 13.5
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 13
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 12.5
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 12
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 11.5
.045
Legend
EG PF 1
Crit PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 11
.045
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 10.5
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 10
.055
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
SE Damonte Channels Plan: Plan 12
Geom: SE8A-W3 With Drop Structures Flow: 100-Year; 24-Hour - SE8A-W3
River = SE8A-W3 Reach = SE8A-W3 RS = 9.5
.07
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

Typical Drop Structures

JOB Ø214

GENERAL DIAGRAM OF DROP STRUCTURES
(NOT TO SCALE)



APPENDIX C

Appendix C

Hydrologic Calculations

DEVELOPMENT: Damonte Southeast

CALCULATED BY: MS DATE: April 2002

WATERSHED DATA					INLAND/OVERLAND TIME (t_i)			TRAVEL TIME (t_t)				$t_c=(t_i+t_t)$	t_c URBANIZED BASINS CHECK		FINAL t_c	T_{lag}*
Watershed	CN Existing Conditions	CN Developed Conditions	R	Area (mi^2)	Length (ft)	Slope (%)	t_i (min)	Length (ft)	Slope (%)	Velocity (ft/s)	t_t (min)	t_c (min)	Tot. Length (ft)	$t_c=(L/180)+10$ (min)	t_c (min)	
C-5A	70	70	0.53	0.046	134.00	2.24%	9.015072	1396.00	0.72%	1.75	13	22.31	1530	18.50	18.50	0.19
C-5B	70	70	0.53	0.029	198.00	1.52%	12.48158	1443.00	0.69%	1.7	14	26.63	1641	19.12	19.12	0.19
W-1A	81	81	0.68	0.044	135.00	2.22%	6.744027	2232.00	0.45%	1.45	26	32.40	2367	23.15	23.15	0.23
W-1B	81	81	0.68	0.027	136.00	2.21%	6.785631	2611.00	0.38%	1.45	30	36.80	2747	25.26	25.26	0.25
W-3	73	73	0.57	0.031	130.00	2.31%	8.175245	1511.00	0.66%	1.65	15	23.44	1641	19.12	19.12	0.19
SE-8A	78	78	0.64	0.035	167.00	1.80%	8.809768	1460.00	0.68%	1.7	14	23.12	1627	19.04	19.04	0.19
SE-8B	78	78	0.64	0.036	123.00	2.44%	6.827918	1172.00	0.85%	1.8	11	17.68	1295	17.19	17.19	0.17
W-8	81	78	0.64	0.062	167.00	1.80%	8.809768	2098.00	0.48%	1.45	24	32.92	2265	22.58	22.58	0.23
W-9	81	81	0.68	0.048	127.00	2.36%	6.409305	1415.00	0.71%	1.75	13	19.89	1542	18.57	18.57	0.19
E-2	74	74	0.59	0.090	152.00	1.97%	9.079356	2782.00	0.36%	1.45	32	41.06	2934	26.30	26.30	0.26
W-7	76	76	0.61	0.110	165.00	1.82%	9.221876	3500.00	0.29%	1.45	40	49.45	3665	30.36	30.36	0.30
NE-1	63	63	0.44	0.050	123.00	2.44%	9.764339	2207.00	0.45%	1.45	25	35.13	2330	22.94	22.94	0.23

*Lag times are calculated based on Equations 701, 702, 703, 704, & 709 outlined in the Washoe County Hydrologic Criteria & Drainage Design Manual.

Equation 701: tc = ti + tt

Equation 702: ti = [1.8 * (1.1 - R) * L0.5] / S0.33

Equation 703: R = (0.0132 * CN) - 0.39

Equation 709: TLAG = 0.6 * tc

Equation 704: tc = L/180 + 10

Note: The minimum tc in Washoe County for urbanized paved areas shall be 5 minutes and 10 minutes for vegetated landscaped ares.

Combined old watersheds W-6 & W-7 into a single watershed - W-7. Changed lag time for this watershed only.

RUNOFF CURVE NUMBERS

Land Use or Surface Characteristics	Aver. % Impervious Area	Runoff Curve Numbers Soil Comp A	Soil Comp B	Soil Comp C	Soil Comp D
Business/Commercial:					
Downtown Areas	85	89	92	94	95
Neighborhood Areas	70	80	87	91	93
Residential:					
(Average Lot Size)					
1/8 Acre or Less (Multi-Unit)	65	77	85	90	92
1/4 Acre	38	61	75	83	87
1/3 Acre	30	57	72	81	86
1/2 Acre	25	54	70	80	85
1 Acre	20	51	68	79	84
Industrial:	72	81	88	91	93
Irrigated Areas:					
Lawns, Parks, Golf Courses/	5	41	62	75	81
Agriculture	0	39	61	74	80
Undeveloped Areas (Open Space):					
Herbaceous (grasses)	0	40	62	74	85
Mixed Grass and Shrub	0	39	61	73	82
Shrub/Brush	0	35	56	70	77
Forest (Evergreen)	0	30	54	66	75
Outcrops	70	77	86	91	94
Street/Roads:					
Paved	100	98	98	98	98
Gravel	20	76	85	89	91
Drives/Walks:	95	97	97	97	97
Roofs:	90	95	95	95	95

Notes:

1. Grass - Grassed Landscaping or Irrigated Vegetation