STOCKWELL

June 9, 2016

Gorden Wray
Environmental Specialist
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102

RE: Trenton Farms RE, LLC, Grundy County, MO
SE Project No. Y15118

Dear Mr. Wray:

As part of the Trenton Farms RE, LLC's CAFO Operating Permit application, one of the factor to be considered was the flood plain for Hickey Creek and the Thompson River. Given the general nature of the available FEMA flood plains maps for the area, we contracted with John Holmes, PE, CFM, LEED-AP (MO PE# E-29459) with Allstate Consultants, Columbia Missouri to complete a 100-yr Flood Plain Certification for the project site. A copy of the report is attached for reference.

The results of the study state that the 100-yr Flood Plain elevation perpendicular to the building site for Hickey Creek is 744.35'. The finished floor elevation (Top of slat) for the gestation barn is 757.80' and the bottom of the manure containment pit below the building is 747.80'. The flood plain elevation and corresponding building elevations are illustrated in drawings Site Plan/Aerial Map C101 and Site Plan Cross Section C102 which are part of the application.

To the best of my knowledge, I believe Trenton Farms RE, LLC's CAFO Operating Permit application and supporting materials meets all of the design requirement, including the need to protect certain parts of the operation from inundation and damage from a 100 year flood event per Missouri state rule 10 CSR 20-8.300(5).Your timely review would be appreciated. Let me know if you have questions. Thanks

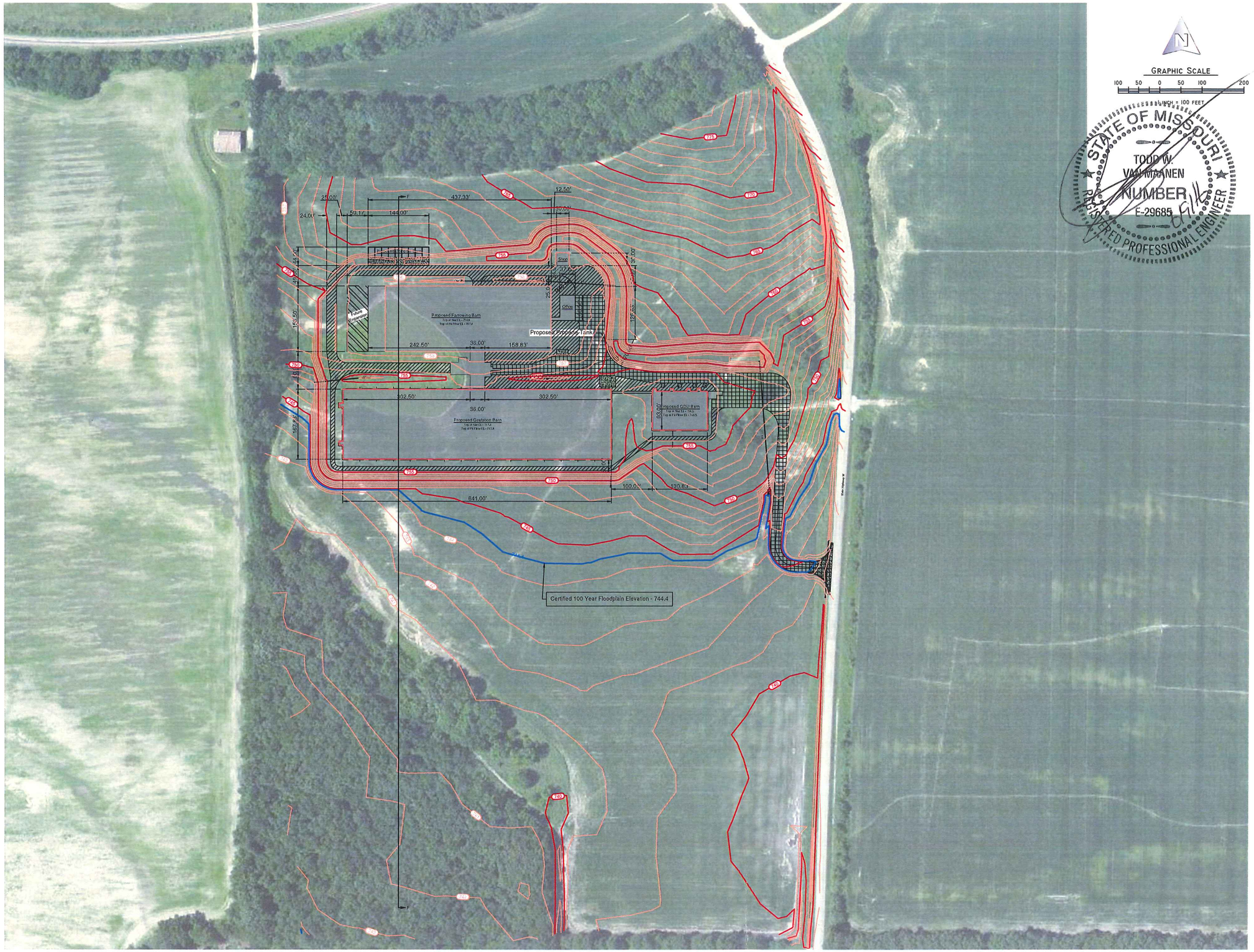
Sincerely,
Stockwell Engineer, Inc.

STATE OF MISSOURI
TODD W. VAN MAANEN
NUMBER E-29685
REGISTERED PROFESSIONAL ENGINEER

Todd Van Maanen, PE
Project Engineer

Enclosures

C-SP08-15118 Setback Maps.dwg



STATE OF MISSOURI
TODD W. VAN WAANEN
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STOCKWELL ENGINEERS, INC.
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FAX: 605.665.0523

Trenton Family Farms RE, LLC
SW 1/4, Sec. 19, T60N, R24W, Grundy County, Missouri

REVISION SCHEDULE

ISSUE/REVISION	DATE

SEI PROJECT #: Y15118

Site Plan / Aerial Map

C 101

C-SP08-15118 Setback Maps.dwg

GRAPHIC SCALE

100 50 0 50 100 200

1 INCH = 100 FEET

STATE OF MISSOURI
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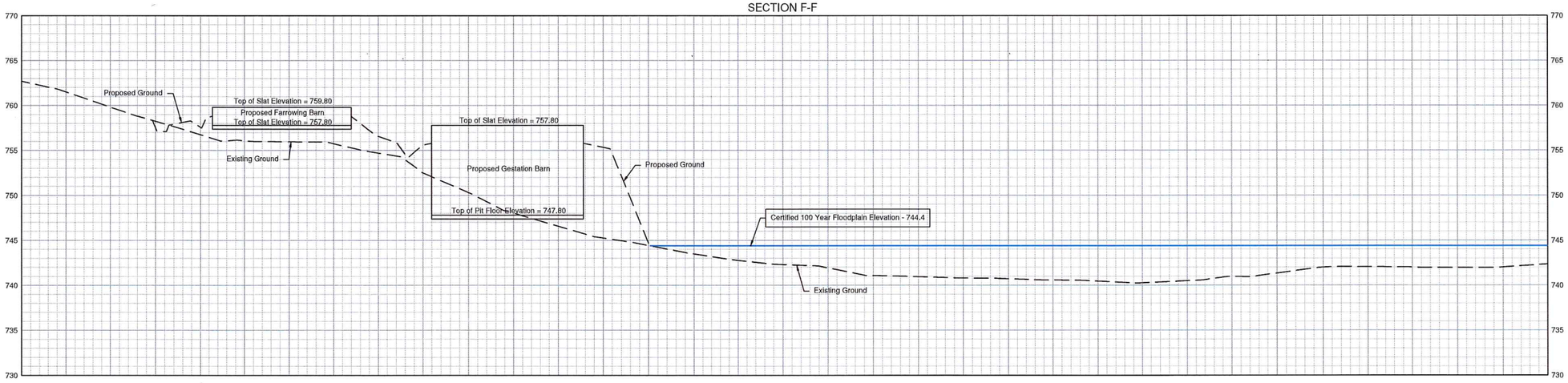
SECTION F-F



Trenton Family Farms RE, LLC

SW 1/4, Sec. 19, T60N, R24W, Grundy County, Missouri

REVISION SCHEDULE

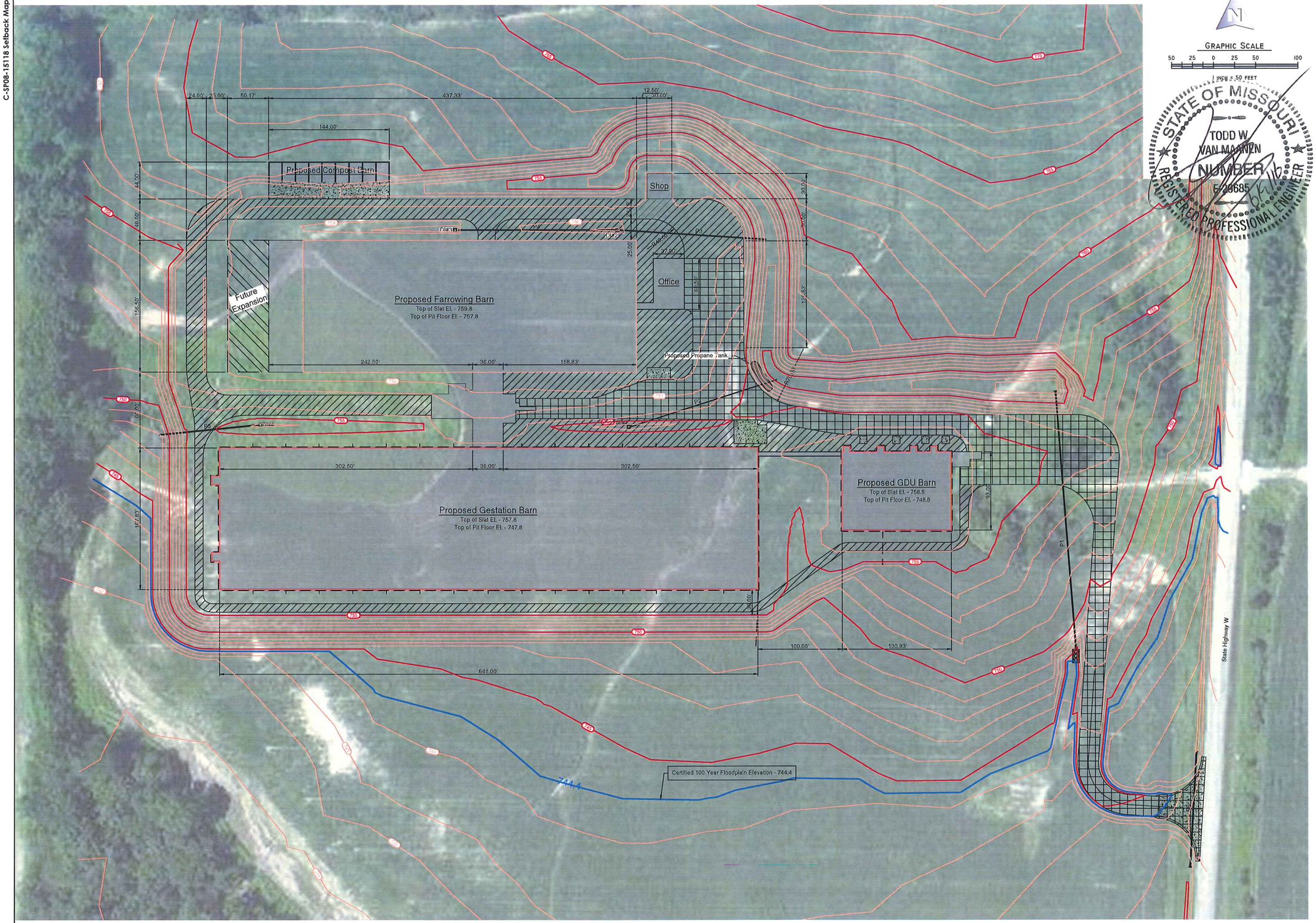
ISSUE/REVISION	DATE

SEI PROJECT #: Y15118

Site Plan
Cross Section

C 102

C-SP08-15118 Setback Maps.dwg



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Trenton Family Farms RE, LLC

SW 1/4, Sec. 19, T60N, R24W, Grundy County, Missouri

REVISION SCHEDULE

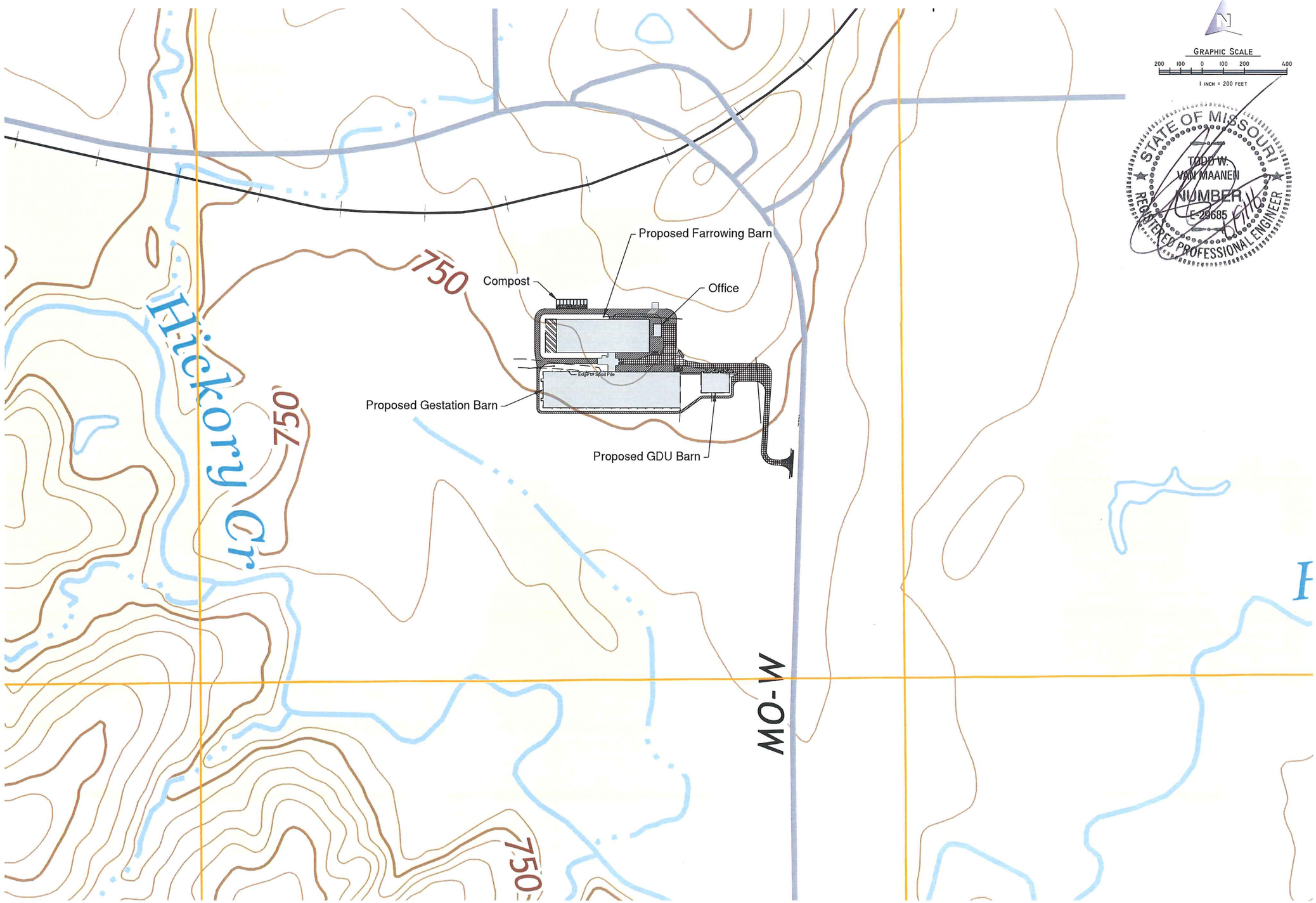
ISSUE/REVISION	DATE

SEI PROJECT #: Y15118

Site Plan / Aerial Map Close up

C 103

C-SP08-15118 Setback Maps.dwg



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Trenton Family Farms RE, LLC

SW 1/4, Sec. 19, T60N, R24W, Grundy County, Missouri

REVISION SCHEDULE

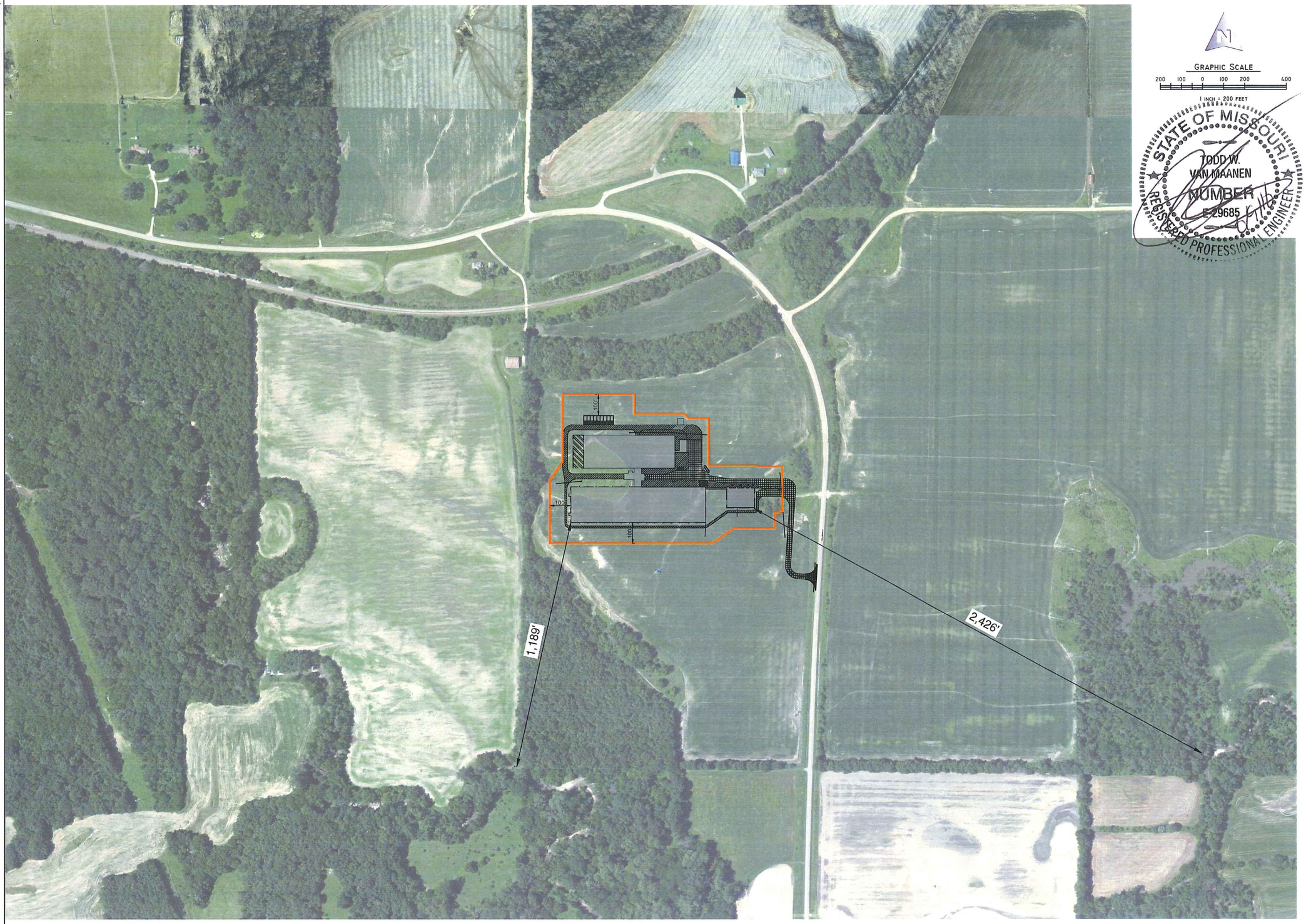
ISSUE/REVISION	DATE

SEI PROJECT #: Y15118

Site Plan / Topo Quad.

C 104

C-SP08-15118 Setback Maps.dwg



STATE OF MISSOURI
TODD W. VAN MAANEN
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Trenton Family Farms RE, LLC

SW 1/4, Sec. 19, T60N, R24W, Grundy County, Missouri

REVISION SCHEDULE

ISSUE/REVISION	DATE

SEI PROJECT #: Y15118

Waterway Setback Map

C 105

C-SP08-15118 Setback Maps.dwg

N

GRAPHIC SCALE

300 150 0 150 300 600

1 INCH = 300 FEET

STATE OF MISSOURI
TODD W. VAN MAANEN
NUMBER
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Trenton Family Farms RE, LLC

SW 1/4, Sec. 19, T60N, R24W, Grundy County, Missouri

REVISION SCHEDULE

ISSUE/REVISION	DATE

SEI PROJECT #: Y15118

Residential Setback Map

C 106

C-SP08-15118 Setback Maps.dwg

N

GRAPHIC SCALE

300 150 0 150 300 600

1 INCH = 300 FEET

STATE OF MISSOURI
TODD W. VAN MAANEN
NUMBER E-29685
REGISTERED PROFESSIONAL ENGINEER
8/9/16

STOCKWELL

STOCKWELL ENGINEERS, INC.
215 WALNUT STREET
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PH: 605.665.8092
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Trenton Family Farms RE, LLC

SW 1/4, Sec. 19, T60N, R24W, Grundy County, Missouri

REVISION SCHEDULE

ISSUE/REVISION	DATE

SEI PROJECT #: Y15118

Landowner Notification Map

C 107

Floodplain Modeling Report

Description	Trenton Farms			Job No.	16037.01
Analyst	John Holmes			Date	May 26, 2016
Route	Hwy W	County	Grundy	Stream	Hickory Creek, Thompson River
Lat/Lon	39°59'36.69", -93°38'26.84"				
Additional Description	Just upstream of Hwy W and north of Hickory Creek				

Comments: The proposed project lies at the junction of the Thompson River and Hickory Creek. Neither of which have published base flood elevations. Because of the proximity to both rivers, calculations were done for both. The final results indicated that 100 year flood on Hickory Creek is the critical flood for determining base flood elevation at the site regardless of whether tailwater conditions were set by Thompson River.

STATE OF MISSOURI
JOHN L. HOLMES
NUMBER E-29459
REGISTERED PROFESSIONAL ENGINEER
6/7/16

National Flood Insurance Program Information			
Has a flood insurance study been performed for the community?			Y
Is the site in a special flood hazard area?			Y
Is the site in a designated floodway?			N
Has a Flood Insurance Rate Map (FIRM) been published for the area?			Y
What is the insurance rating for the site (A1, B, C, etc.)?			A
Community and Map panel number	Grundy Cnty, 290150 0125 B	Map date	12/1/1983
Additional comments on flood insurance study:	This area was on a Flood Hazard Boundary Map, converted by letter to become the effective FIRM.		

Design Flow Calculation Inputs – Thompson River			
Drainage Area (units?)	1,920 Sq Miles	Description of Contributing Drainage Area	Mostly Rural
Length to Divide (mi)	162.6	Average Basin Slope (ft/ft)	NA
Avg slope in reach (ft/ft)	0.00034	Measured from USGS DEM Data	NHD Plus V2 lists the slope in this section as 0.00149, the measured value was used to remain conservative.
Shape Factor	13.8	Mo Rural Regression Equations Region	Region 1

Additional comments on design flow calculations: *(method chosen and why, expected level of upstream development, etc.)*	Regression equations calculated per USGS Scientific Investigations Report 2014-5165, "Methods for Estimating Annual Exceedance-Probability Discharges and Largest Recorded Floods for Unregulated Streams in Rural Missouri". The USGS gage at Trenton (06899500) is about 7.5 miles upstream. The report included Log Pearson Type III analysis of the gage data which tended to by about 1.4 times greater than predicted by the Rural Regression Equations. The rural regression equation results for Thompson River at the project site were multiplied by this ratio to make them consistent with the historical gage data, specifically the more directly measured Log Pearson Type III analysis results.

Calculated Flow Rates (cfs) Thompson River								
Annual Exceedance Probability (AEP) (%)	50	20	10	4	2	1	0.5	0.2
Return Period (yrs)	2	5	10	25	50	100	200	500
Method	Results							
USGS Rural Regression Equations (2014) – Thompson At Hickory Creek	20,000	32,000	39,800	50,400	57,800	65,400	73,500	83,000
USGS Rural Regression Equations - Thompson At Hickory Creek – adjusted by ratio to better match Gage at Trenton LP3 Historical Data.	**25,950**	**42,900**	**54,400**	**68,900**	**79,700**	**90,000**	**100,500**	**114,700**
USGS Rural Regression Equations - USGS Gage at Trenton (DA=1,720)	18,500	29,600	36,900	46,800	53,700	60,900	68,400	77,400
Log Pearson III from Report 2014-5165 at USGS Gage at Trenton	24,000	39,700	50,400	64,000	74,000	83,800	93,500	106,000
Ratio LP3/Regression	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4

Design Flow Calculation Inputs – Hickory Creek				
Drainage Area (units?)	25.7 Sq Miles	Description of Contributing Drainage Area	Mostly Rural	
Length to Divide (mi)		16	Average Basin Slope (ft/ft)	NA
Avg slope in reach (ft/ft)		0.001	From NHD Plus V2 data.	The USGS DEM appeared to be corrupted at the downstream end, so it couldn't be used for slope calculations.

Shape Factor	9.96	Mo Rural Regression Equations Region	Region 1
Additional comments on design flow calculations: *(method chosen and why, expected level of upstream development, etc.)*	Regression equations calculated per USGS Scientific Investigations Report 2014-5165, "Methods for Estimating Annual Exceedance-Probability Discharges and Largest Recorded Floods for Unregulated Streams in Rural Missouri". MoDOT's 1951 Bridge Survey Report for the Hwy W bridge estimated the design flow rate at 4,600 (presumably for the 50 or 100 year event)		

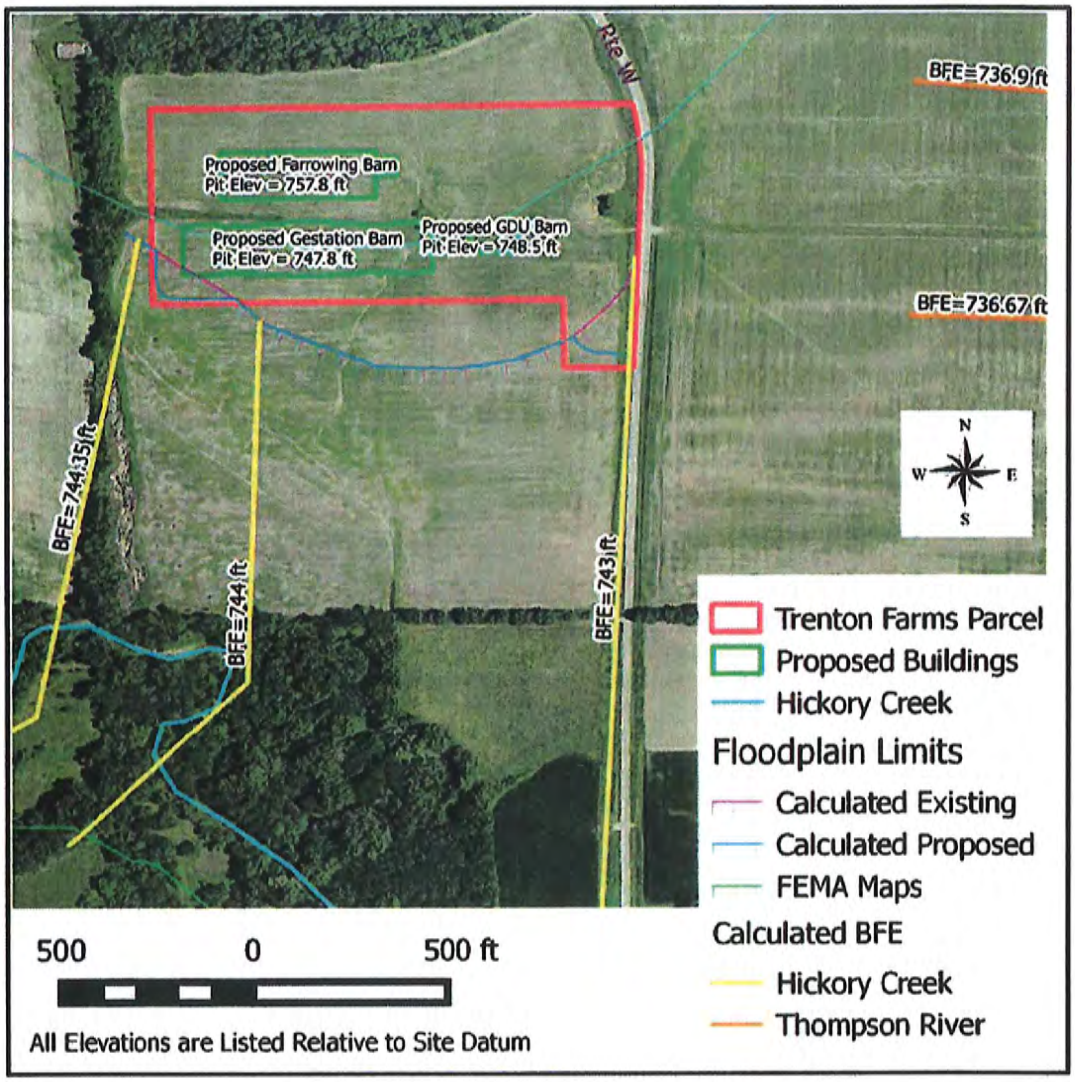
Calculated Flow Rates (cfs)								
Annual Exceedance Probability (AEP) (%)	50	20	10	4	2	1	0.5	0.2
Return Period (yrs)	2	5	10	25	50	100	200	500
Method	Results							
USGS Rural Regression Equations (2014) –Hickory Creek	**1,530**	**2,700**	**3,550**	**4,710**	**5,580**	**6,480**	**7,390**	**8,560**

Hydraulic Model Inputs	
Elevation Data	LIDAR data was not available for this area. The USGS 1/3 arc second DEM was downloaded from USGS as the base elevation set. Field survey data was collected for one cross section on both the Thompson River and Hickory Creek. The field data matched the DEM relatively well, except for in the channels. Accordingly, the channels in the HEC-RAS Model were modified to be consistent with the surveyed channels. The Allstate Consultants Survey data for the river modeling was tied to a benchmark LEO326 in Trenton which resulted in a reasonable match with the bridge deck elevation on the MoDOT plans at Hwy W. However, there was a 4.23' difference in the elevations between the survey for the flood study and for the site design because the site designers used a different bench mark to the west of the project. The hydraulic models were set up based on the Trenton Bench mark. To convert from the hydraulic model results to the site survey the elevations are increased by 4.23'. The design Base Flood Elevation at the site, after having added the 4.23' ranges from 743.09' at Hwy W to 744.35' at the upstream end of the property.
Flow Data	Flow data was collected as described above.
Model Extents	The Thompson River Model was extended about 2.5 miles downstream from the confluence with Hickory Creek to make sure and factor in the impacts of a significant natural downstream constriction in the valley. The Hickory Creek Model was extended to just downstream of the bridge at Hwy W to include the impacts from the Bridge.

Results

The modeling results, which represent a more detailed analysis using more current data than was used in the original FEMA study (completed in 1983), indicate that the actual floodplain limits do not encroach on the site as much as would be indicated by the FEMA floodplain limits. This is not an unusual result, because FEMA used very approximate methods. The FEMA study did not include 100 year Base Flood Elevations (BFE) but calculated BFEs are shown below for both the Hickory Creek 100 year flood and the Thompson River 100 year flood. The lowest proposed pit, in the Proposed Gestation Barn is 3.5' above the calculated BFE. However, the lowest opening to the building is 13.5' above the calculated flood elevation (757.8'). The following table lists the calculated base flood elevations and the map below shows the corrected 100 year floodplain for both existing and proposed conditions.

Location	River Station (ft)	100 Year Flow Rate (cfs)	100 Year Flood Elevation (ft) (Allstate Datum)	100 Year Flood Elevation (ft) (Site Datum)
Thompson River, upstream end of site	15,894	89,304	732.67'	736.90'
Thompson River, downstream end of site	15,209	89,304	732.44'	736.67
Hickory Creek, upstream end of site	3,340	6,480	740.12	744.35
Hickory Creek, dnstream end of site	810.87	6,480	738.86	743.09


Rte W
BFE=736.9 ft
Proposed Farrowing Barn
Pit Elev = 757.8 ft
Proposed Gestation Barn
Pit Elev = 747.8 ft
Proposed GDU Barn
Pit Elev = 748.5 ft
BFE=736.67 ft
BFE=744.35 ft
BFE=744 ft
BFE=743 ft
N
W
E
S
Trenton Farms Parcel
Proposed Buildings
Hickory Creek
Floodplain Limits
Calculated Existing
Calculated Proposed
FEMA Maps
Calculated BFE
Hickory Creek
Thompson River
500
0
500 ft
All Elevations are Listed Relative to Site Datum

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

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

****

PROJECT DATA
Project Title: Hickory Creek - Final
Project File : HickoryCreek-Fin.prj
Run Date and Time: 5/31/2016 5:04:10 PM

Project in English units

****

PLAN DATA

Plan Title: Existing Conditions w Thompson TW
Plan File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\HickoryCreek-Fin.p04

Geometry Title: Existing Model, with Bridge at W
Geometry File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\HickoryCreek-Fin.g03

Flow Title : Hickory USGS Rural w Thompson BW
Flow File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\HickoryCreek-Fin.f02

Plan Summary Information:
Number of: Cross Sections = 7 Multiple Openings = 0
Culverts = 0 Inline Structures = 0
Bridges = 1 Lateral Structures = 0

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

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

****

FLOW DATA

Flow Title: Hickory USGS Rural w Thompson BW
Flow File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\HickoryCreek-Fin.f02

Flow Data (cfs)

River	Reach	RS	PK2	PK5	PK10	PK25	PK50	PK100	PK200	PK500
Hickory Creek	Alignment - Hick	3924.41	1530	2700	3550	4710	5580	6480	7390	8560

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Hickory Creek	Alignment - Hick	PK2		Known WS = 726.15
Hickory Creek	Alignment - Hick	PK5		Known WS = 729.07
Hickory Creek	Alignment - Hick	PK10		Known WS = 729.09
Hickory Creek	Alignment - Hick	PK25		Known WS = 730.25
Hickory Creek	Alignment - Hick	PK50		Known WS = 730.93
Hickory Creek	Alignment - Hick	PK100		Known WS = 732.32
Hickory Creek	Alignment - Hick	PK200		Known WS = 733.07
Hickory Creek	Alignment - Hick	PK500		Known WS = 734

```
*******************************************************************************

GEOMETRY DATA

Geometry Title: Existing Model, with Bridge at W
Geometry File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\HickoryCreek-Fin.g03

CROSS SECTION


RIVER: Hickory Creek
REACH: Alignment - Hick   RS: 3924.41

INPUT
Description:
Station Elevation Data    num=      83
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
       0  740.94     3.5  740.91   13.87  740.7828.78003  740.6340.26001  740.48
52.78998  740.2966.65002  740.1579.34003  740.0193.03998  739.83  104.62  739.83
  119.43  739.84  135.61   739.6  145.82  739.48  163.21  739.24  172.21  739.14
  190.82  738.88   198.6  738.79  218.42  738.51     225  738.43  231.01  738.43
  251.39  738.43  256.29  738.37  277.78  738.08  281.57  738.03  304.17  737.71
  328.85  737.39  330.56  737.37  332.13  737.37  356.95  737.36  367.78  737.23
  383.34  737.04  407.96  736.75  409.73  736.73  411.66  736.71  436.12   736.4
  458.52  736.14  462.51   736.1   483.8  736.09   488.9  736.09  494.48     736
   515.3  735.73  534.36  735.37  541.69  735.17  559.64  734.68  568.08  734.46
  584.92  734.44  586.56  734.44  601.61   734.2  606.24  734.09  613.67  734.04
  627.21  733.88  637.21  733.77  638.99  733.76     652  725.18     670   724.8
  687.72  734.44  699.16  734.85  700.28  734.88  702.08     735  719.44  736.04
  730.14  736.87   738.6  737.49  752.32  738.79  757.76  739.25  761.11  739.54
  775.25  740.79  792.08  742.22  796.08  742.57  802.55  743.26  815.24  744.12
  823.06  744.65  852.78  746.97  853.56  747.05  854.03  747.11  872.72  749.16
  885.01  750.65  891.88  751.37  903.02  752.67  911.04  753.63  915.98  754.29
  936.84  756.74  946.96  757.89  949.63  758.17

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0      .1       0    .045  949.63      .1

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0  949.63              500     728     300              .1       .3
```



```
CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************
* E.G. Elev (ft)         *  740.27  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.10  * Wt. n-Val.             *          *   0.045  *         *
* W.S. Elev (ft)         *  740.17  * Reach Len. (ft)        *  500.00  *  728.00  *  300.00  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *          * 2561.45  *          *
* E.G. Slope (ft/ft)     *0.001059  * Area (sq ft)           *          * 2561.45  *          *
* Q Total (cfs)          * 6480.00  * Flow (cfs)             *          * 6480.00  *          *
* Top Width (ft)         *  703.62  * Top Width (ft)         *          *  703.62  *          *
* Vel Total (ft/s)       *    2.53  * Avg. Vel. (ft/s)       *          *    2.53  *          *
* Max Chl Dpth (ft)      *   15.37  * Hydr. Depth (ft)       *          *    3.64  *          *
* Conv. Total (cfs)      *199156.5  * Conv. (cfs)            *          *199156.5  *          *
* Length Wtd. (ft)       *  613.43  * Wetted Per. (ft)       *          *  708.92  *          *
* Min Ch El (ft)         *  724.80  * Shear (lb/sq ft)       *          *    0.24  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *  949.63  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.50  * Cum Volume (acre-ft)   *   72.96  *  126.36  *   33.39  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *   28.10  *   27.29  *    9.27  *
*****************************************************************************************

CROSS SECTION


RIVER: Hickory Creek
REACH: Alignment - Hick   RS: 3196.39

INPUT
Description:
Station Elevation Data    num=     110
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
       0  738.535.209961  738.469.819946  738.3918.96997  738.3837.57996  738.37
46.94995  738.2265.34998  737.9467.81995   737.975.27991   737.8   93.12  737.54
109.5599  737.31  120.89  737.16143.4099  736.88148.6599  736.81159.2799  736.82
172.1699  736.82176.4299  736.82193.0399  736.59   204.2  736.43  226.38  736.16
  231.97  736.08  243.28  735.95  255.65   735.8  259.73  735.75  276.52  735.53
287.4999  735.33  297.39  735.31  315.27  735.28318.2599  735.19  327.29   734.9
  333.98  734.69  343.04  734.39350.8199  734.22     358 733.766     372 724.456
     390 724.076  408.56  734.05  422.61  734.08  426.35  734.09  433.78  734.27
  454.11  734.76475.2599  735.01481.8799  735.12  495.29  735.13  506.08  735.14
  509.65  735.15  516.74  735.16  537.42  735.19  558.22   735.2565.1899  735.21
   579.3  735.25  592.96  735.28610.4299  735.34  620.73  735.38641.1799  735.43
648.4999  735.45   663.3  735.48  673.04   735.5676.2599  735.51  682.67  735.51
   688.6  735.51  702.78  735.52  710.86  735.52714.6899  735.52  742.73  735.53
```

```
750.3799  735.53  761.64  735.55  769.36  735.54  774.59  735.55  801.95  735.49
  806.46  735.48  808.59  735.47826.2999  735.35838.3199  735.31855.5399  735.29
870.1899  735.33  883.25  735.35902.0499  735.37  902.49  735.37  921.21  735.28
933.9199  735.23949.4399  735.19959.1699  735.12  965.78  735.11  978.16  735.12
  996.39  735.22  997.64  735.22 1000.29  735.24 1029.51  735.42 1043.34  735.59
 1054.08  735.66 1061.37  735.71 1090.29  736.09 1093.24  736.17 1099.46  736.66
  1125.1  738.68 1130.01  738.92 1137.24  739.29 1148.99  739.92 1156.97  740.49
 1184.19  742.59 1186.95  742.81 1188.83     743 1205.94  744.67 1220.69  746.41
 1224.92  746.93 1231.14  747.93 1252.56  750.79 1262.88   752.5 1263.21  752.56

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0      .1     358    .045  408.56      .1

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           358  408.56              500     967     500             .1       .3

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************
* E.G. Elev (ft)          *  739.77  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.12  * Wt. n-Val.             *   0.100  *   0.045  *   0.100  *
* W.S. Elev (ft)          *  739.65  * Reach Len. (ft)        *  500.00  *  967.00  *  500.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      * 1089.00  *  620.82  * 3062.51  *
* E.G. Slope (ft/ft)      *0.000652  * Area (sq ft)           * 1089.00  *  620.82  * 3062.51  *
* Q Total (cfs)           * 6480.00  * Flow (cfs)             *  865.70  * 2606.39  * 3007.92  *
* Top Width (ft)          * 1143.91  * Top Width (ft)         *  358.00  *   50.56  *  735.35  *
* Vel Total (ft/s)        *    1.36  * Avg. Vel. (ft/s)       *    0.79  *    4.20  *    0.98  *
* Max Chl Dpth (ft)       *   15.57  * Hydr. Depth (ft)       *    3.04  *   12.28  *    4.16  *
* Conv. Total (cfs)       *253737.5  * Conv. (cfs)            * 33898.1  *102058.4  *117781.0  *
* Length Wtd. (ft)        *  827.42  * Wetted Per. (ft)       *  359.17  *   55.89  *  735.49  *
* Min Ch El (ft)          *  724.08  * Shear (lb/sq ft)       *    0.12  *    0.45  *    0.17  *
* Alpha                   *    4.13  * Stream Power (lb/ft s) * 1263.21  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.47  * Cum Volume (acre-ft)   *   66.71  *   99.77  *   22.84  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)         *   26.05  *   20.99  *    6.74  *
*****************************************************************************************

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION


RIVER: Hickory Creek
REACH: Alignment - Hick    RS: 2229.35
```



```
INPUT
Description:
Station Elevation Data     num=      98
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
       0  740.2212.79004  740.2216.28003  740.2338.33008   739.942.66003  739.79
   63.87  739.2769.04004  739.1289.41003  738.5595.42004  738.36114.9501  738.36
   121.8  738.36140.4901  737.88148.1801  737.69   156.4  737.55174.5601   737.2
  191.57  736.95  200.94  736.86  217.11  736.73  227.32  736.66  238.23  736.66
   253.7  736.67  265.51  736.59  280.08  736.47  292.78  736.36  306.46  736.24
  319.27  736.12  332.84  735.98344.8101  735.99  359.22  735.82  374.61  735.82
  377.16  735.79388.3101  735.74  393.82  735.72409.5601  735.63  423.17  735.54
434.1201  735.51  446.94  735.45  458.02  735.41  465.63  735.38474.4301  735.35
  492.88  735.26  503.02  735.26514.7401  735.26  521.71  735.26527.7401  735.25
   540.4  735.19  555.05  735.14  562.59  735.12  595.35  735.09  596.48  735.09
  597.45  735.09  615.17  735.08632.3101  735.07  635.66  735.07  652.55  735.08
  667.16  735.09  671.25  735.09  675.97  735.09  702.02   735.1  716.28   735.1
  736.88  735.09  746.01  735.09  756.58  735.08  764.71  735.08  771.73  735.09
   783.4  735.07  796.89  734.94  802.09   734.9  806.59  734.82  820.48  734.49
837.2001   734.1841.4501     734  858.17  733.89   876.3  733.78   877.5  733.77
     888 732.799     902 723.489     920 723.109     943 735.819  946.02  736.06
  951.63  736.51  958.12  737.12  970.32  738.33  980.87  739.46998.4301  740.35
 1015.73  741.37  1026.4  742.66 1038.73  744.47 1050.59  746.21 1063.78  748.42
 1079.04  751.61 1082.47  752.24 1085.44  752.87 1119.35  759.71 1119.86  759.81
  1120.3  759.88 1138.55  761.95 1141.03   762.2

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0      .1       0    .045 1141.03      .1

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0 1141.03            638.24  638.24  638.24             .1       .3

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************
* E.G. Elev (ft)          *  739.27  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.05  * Wt. n-Val.             *          *   0.045  *          *
* W.S. Elev (ft)          *  739.22  * Reach Len. (ft)        *  638.24  *  638.24  *  638.24  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *          * 3551.44  *          *
* E.G. Slope (ft/ft)      *0.000504  * Area (sq ft)           *          * 3551.44  *          *
* Q Total (cfs)           * 6480.00  * Flow (cfs)             *          * 6480.00  *          *
* Top Width (ft)          *  913.11  * Top Width (ft)         *          *  913.11  *          *
```

```
* Vel Total (ft/s)       *    1.82  * Avg. Vel. (ft/s)        *           *    1.82  *           *
* Max Chl Dpth (ft)      *   16.11  * Hydr. Depth (ft)        *           *    3.89  *           *
* Conv. Total (cfs)      *288692.9  * Conv. (cfs)             *           *288692.9  *           *
* Length Wtd. (ft)       *  638.24  * Wetted Per. (ft)        *           *  919.46  *           *
* Min Ch El (ft)         *  723.11  * Shear (lb/sq ft)        *           *    0.12  *           *
* Alpha                  *    1.00  * Stream Power (lb/ft s) * 1141.03  *    0.00  *      0.00  *
* Frctn Loss (ft)        *    0.48  * Cum Volume (acre-ft)   *   60.46  *   53.46  *      5.27  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *   23.99  *   10.29  *      2.52  *
*****************************************************************************************************
```

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hickory Creek
REACH: Alignment - Hick RS: 1591.1

INPUT
Description:
Station Elevation Data num= 103

```
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*****************************************************************************************
       0  740.5812.92004  740.5215.79004  740.5117.89001  740.4846.24011  740.16
70.59009  739.8874.46008  739.8476.69006  739.8185.04004   739.7  107.14  739.41
  123.29  739.19132.3501  739.04137.5901  738.95  157.16  738.84  168.04  738.78
170.9501  738.72175.9901  738.64198.4901  738.25228.7001  737.76228.9401  737.76
248.1501  737.47259.3901  737.32267.4501  737.22281.4001  737.06286.7501     737
289.8401  736.96301.3901  736.92  320.29  736.84  325.35  736.78   334.1  736.67
344.6501  736.54350.7401  736.46373.5101   736.2381.1901  736.11383.2401  736.08
   386.8  736.04411.6401   735.8421.8401  735.78439.5001  735.73441.1401  735.73
442.0901  735.72445.6301   735.7  472.54  735.51492.2101  735.38502.9901  735.32
518.3401  735.22533.4401  735.17537.6401  735.15  544.91  735.13563.8901  735.09
  589.86  735.08594.3401  735.08  595.54  735.07  597.61  735.08  624.79  735.08
650.3101  735.08653.4301  735.07655.2401  735.07  661.98  735.08685.6901  735.08
703.0101  735.09716.1401  735.09730.6301  735.09746.5901  735.08755.7201  735.08
  777.04  735.09806.2101  735.09807.4901  735.09807.8301  735.09  808.42  735.09
827.1301   735.1837.9401  735.12861.1201  735.13868.3801  735.13  885.02  735.13
898.8301  735.13913.8201  735.16923.6201  735.18  929.28  735.19950.4401  735.23
959.7301  735.25  966.52  735.24  981.52  735.22990.1801  735.15 1000.82  735.12
 1019.23  735.05 1020.12  735.05 1020.63  735.05 1039.42  734.37 1051.08  733.81
    1058 732.161    1072 722.851    1090 722.471    1113 735.181 1172.88  740.41
```



```
 1177.33   741.6 1203.33  749.06 1213.11  751.45 1230.03  755.34 1232.41   755.9
 1233.78  756.16 1251.71  759.39 1254.06  759.72
```

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0      .1 1019.23    .045    1113      .1
```

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

```
       1019.23    1113           780.22  780.22  780.22              .1       .3
```

CROSS SECTION OUTPUT Profile #PK100

```
*****************************************************************************************************
* E.G. Elev (ft)         *  738.78  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.22  * Wt. n-Val.              *   0.100  *   0.045  *   0.100  *
* W.S. Elev (ft)         *  738.57  * Reach Len. (ft)         *  780.22  *  780.22  *  780.22  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       * 2401.32  *  833.30  *   65.59  *
* E.G. Slope (ft/ft)     *0.001209  * Area (sq ft)            * 2401.32  *  833.30  *   65.59  *
* Q Total (cfs)          * 6480.00  * Flow (cfs)              * 2501.35  * 3930.64  *   48.01  *
* Top Width (ft)         *  971.48  * Top Width (ft)          *  838.95  *   93.77  *   38.76  *
* Vel Total (ft/s)       *    1.96  * Avg. Vel. (ft/s)        *    1.04  *    4.72  *    0.73  *
* Max Chl Dpth (ft)      *   16.09  * Hydr. Depth (ft)        *    2.86  *    8.89  *    1.69  *
* Conv. Total (cfs)      *186344.0  * Conv. (cfs)             * 71930.8  *113032.6  *  1380.6  *
* Length Wtd. (ft)       *  780.22  * Wetted Per. (ft)        *  838.97  *  100.08  *   38.91  *
* Min Ch El (ft)         *  722.47  * Shear (lb/sq ft)        *    0.22  *    0.63  *    0.13  *
* Alpha                  *    3.61  * Stream Power (lb/ft s) * 1254.06  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.95  * Cum Volume (acre-ft)   *   42.87  *   21.34  *    4.79  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *   17.85  *    2.91  *    2.23  *
*****************************************************************************************************
```

CROSS SECTION

RIVER: Hickory Creek
REACH: Alignment - Hick RS: 810.87

INPUT
Description:
Station Elevation Data num= 152

```
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*****************************************************************************************
       0  742.919.390015  742.9111.18005  742.9136.40002   742.837.55005   742.8
63.41003  742.6863.92004  742.6884.95996  742.5490.29004   742.590.42004   742.5
  116.67  742.34   141.7  742.34  143.04  742.34  167.46  742.14  169.41  742.12
```

193.22	741.88	195.79	741.84	198.47	741.81	222.16	741.57	225.49	741.56
248.53	741.56	252.5	741.51	274.9	741.24	279.51	741.17	301.28	740.86
322.04	740.58	327.65	740.5	347.8	740.19	354.02	740.08	360.55	740.08
380.4	740.07	387.5	601	739.95	406.77	739.64	414.58	739.51	433.14	739.2
441.59	739.06	459.51	738.75	476.61	738.74	485.89	738.74	502.37	738.44
512.26	738.27	522.63	738.1	538.63	737.83	553.9	737.54	565.01	737.38
576.65	737.22	591.38	736.98	603.66	736.98	617.75	736.98	631.1	901	736.79
644.12	736.65	657.6	901	736.52	670.5	736.36	682.71	736.22	696.87	736.11
711.71	736.01	723.24	735.92	734.24	735.92	749.62	735.92	760	735.85
775.99	735.75	792.75	735.66	802.36	735.59	819.76	735.5	828.73	735.46
837.29	735.46	855.11	735.46	873.79	735.37	881.48	735.34	888.8	101	735.32
907.85	735.23	914.58	735.22	934.23	735.13	940.34	735.14	960.6	735.09
981.84	735.09	986.97	735.09	991.86	735.09	1013.34	735.09	1035.87	735.09
1039.72	735.09	1062.88	735.09	1066.09	735.09	1069.15	735.09	1092.46	735.09
1116.9	735.09	1118.84	735.09	1120.68	735.09	1145.21	735.09	1170.93	735.09
1171.58	735.09	1197.94	735.09	1197.95	735.09	1198.48	735.09	1223.73	735.09
1224.33	735.09	1249.49	735.09	1250.7	735.09	1275.25	735.09	1277.07	735.09
1278.98	735.09	1303.45	735.09	1326.78	735.09	1329.82	735.09	1333	735.09
1356.19	735.09	1360.02	735.09	1382.56	735.09	1387.03	735.09	1408.94	735.11
1414.04	735.11	1435.31	735.09	1441.05	735.09	1461.68	735.09	1481.36	734.95
1488.06	734.91	1507.12	734.17	1514.43	733.91	1532.88	732.28	1538	731.38
1552	722.07	1570	721.69	1593.55	732.6	1610.17	733.48	1619.92	734.19
1630.14	734.47	1646.29	734.94	1653.33	734.96	1659.44	734.94	1677.54	734.9
1678.27	734.9	1679.24	734.89	1710.55	734.86	1715.92	734.85	1723.04	734.85
1734.75	734.86	1743.57	734.87	1766.84	735.29	1772.4	735.41	1776.58	735.57
1791.22	736.1	1809.6	737.2	1810.05	737.22	1810.65	737.25	1828.88	738.25
1842.62	739.13	1854.45	739.45	1875.63	740.13	1885.35	740.72	1898.25	741.54
1908.65	742.27	1939.51	744.15						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	1488.06	.045	1646.29	.1

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1488.06	1646.29	130	100	130	.1	.3

CROSS SECTION OUTPUT Profile #PK100

E.G. Elev (ft)	737.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.100	0.045	0.100
W.S. Elev (ft)	737.65	Reach Len. (ft)	45.00	45.00	45.00
Crit W.S. (ft)	733.71	Flow Area (sq ft)	2025.71	1078.27	396.39
E.G. Slope (ft/ft)	0.001218	Area (sq ft)	2025.71	1078.27	396.39

Q Total (cfs)	6480.00	Flow (cfs)	1753.31	4367.46	359.23
Top Width (ft)	1269.50	Top Width (ft)	939.70	158.23	171.57
Vel Total (ft/s)	1.85	Avg. Vel. (ft/s)	0.87	4.05	0.91
Max Chl Dpth (ft)	15.96	Hydr. Depth (ft)	2.16	6.81	2.31
Conv. Total (cfs)	185640.8	Conv. (cfs)	50229.4	125120.2	10291.3
Length Wtd. (ft)	45.00	Wetted Per. (ft)	939.72	163.68	171.63
Min Ch El (ft)	721.69	Shear (lb/sq ft)	0.16	0.50	0.18
Alpha	3.30	Stream Power (lb/ft s)	1939.51	0.00	0.00
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	3.22	4.22	0.65
C & E Loss (ft)	0.09	Cum SA (acres)	1.92	0.66	0.35

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

BRIDGE

RIVER: Hickory Creek
REACH: Alignment - Hick RS: 745

INPUT
Description: Route W Bridge
Distance from Upstream XS = 45
Deck/Roadway Width = 40
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	741	720	1506	741	720	1507	741	737
1614	741	737	1615	741	720	2000	741	720

Upstream Bridge Cross Section Data
Station Elevation Data num= 152

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	742.9	19.39001	5	742.9	111.18005	742.9	136.40002	742.8	37.55005	742.8
63.41003	742.6	863.92004		742.6	884.95996	742.5	490.29004	742.5	90.42004	742.5
116.67	742.34	141.7	742.34	143.04	742.34	167.46	742.14	169.41	742.12
193.22	741.88	195.79	741.84	198.47	741.81	222.16	741.57	225.49	741.56

248.53	741.56	252.5	741.51	274.9	741.24	279.51	741.17	301.28	740.86
322.04	740.58	327.65	740.5	347.8	740.19	354.02	740.08	360.55	740.08
380.4	740.07	387.5601	739.95	406.77	739.64	414.58	739.51	433.14	739.2
441.59	739.06	459.51	738.75	476.61	738.74	485.89	738.74	502.37	738.44
512.26	738.27	522.63	738.1	538.63	737.83	553.9	737.54	565.01	737.38
576.65	737.22	591.38	736.98	603.66	736.98	617.75	736.98	631.1901	736.79
644.12	736.65	657.6901	736.52	670.5	736.36	682.71	736.22	696.87	736.11
711.71	736.01	723.24	735.92	734.24	735.92	749.62	735.92	760	735.85
775.99	735.75	792.75	735.66	802.36	735.59	819.76	735.5	828.73	735.46
837.29	735.46	855.11	735.46	873.79	735.37	881.48	735.34	888.8101	735.32
907.85	735.23	914.58	735.22	934.23	735.13	940.34	735.14	960.6	735.09
981.84	735.09	986.97	735.09	991.86	735.09	1013.34	735.09	1035.87	735.09
1039.72	735.09	1062.88	735.09	1066.09	735.09	1069.15	735.09	1092.46	735.09
1116.9	735.09	1118.84	735.09	1120.68	735.09	1145.21	735.09	1170.93	735.09
1171.58	735.09	1197.94	735.09	1197.95	735.09	1198.48	735.09	1223.73	735.09
1224.33	735.09	1249.49	735.09	1250.7	735.09	1275.25	735.09	1277.07	735.09
1278.98	735.09	1303.45	735.09	1326.78	735.09	1329.82	735.09	1333	735.09
1356.19	735.09	1360.02	735.09	1382.56	735.09	1387.03	735.09	1408.94	735.11
1414.04	735.11	1435.31	735.09	1441.05	735.09	1461.68	735.09	1481.36	734.95
1488.06	734.91	1507.12	734.17	1514.43	733.91	1532.88	732.28	1538	731.38
1552	722.07	1570	721.69	1593.55	732.6	1610.17	733.48	1619.92	734.19
1630.14	734.47	1646.29	734.94	1653.33	734.96	1659.44	734.94	1677.54	734.9
1678.27	734.9	1679.24	734.89	1710.55	734.86	1715.92	734.85	1723.04	734.85
1734.75	734.86	1743.57	734.87	1766.84	735.29	1772.4	735.41	1776.58	735.57
1791.22	736.1	1809.6	737.2	1810.05	737.22	1810.65	737.25	1828.88	738.25
1842.62	739.13	1854.45	739.45	1875.63	740.13	1885.35	740.72	1898.25	741.54
1908.65	742.27	1939.51	744.15						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	1488.06	.045	1646.29	.1

Bank Sta: Left Right Coeff Contr. Expan.
1488.06 1646.29 .1 .3

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	741	720	1506	741	720	1507	741	737
1614	741	737	1615	741	720	2000	741	720

Downstream Bridge Cross Section Data

Station Elevation Data num= 152

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	742.68	9.390015	742.68	11.18005	742.68	36.40002	742.57	37.55005	742.57
63.41003	742.45	63.92004	742.45	84.95996	742.31	90.29004	742.27	90.42004	742.27
116.67	742.11	141.7	742.11	143.04	742.11	167.46	741.91	169.41	741.89
193.22	741.65	195.79	741.61	198.47	741.58	222.16	741.34	225.49	741.33
248.53	741.33	252.5	741.28	274.9	741.01	279.51	740.94	301.28	740.63
322.04	740.35	327.65	740.27	347.8	739.96	354.02	739.85	360.55	739.85
380.4	739.84	387.5601	739.72	406.77	739.41	414.58	739.28	433.14	738.97
441.59	738.83	459.51	738.52	476.61	738.51	485.89	738.51	502.37	738.21
512.26	738.04	522.63	737.87	538.63	737.6	553.9	737.31	565.01	737.15
576.65	736.99	591.38	736.75	603.66	736.75	617.75	736.75	631.1901	736.56
644.12	736.42	657.6901	736.29	670.5	736.13	682.71	735.99	696.87	735.88
711.71	735.78	723.24	735.69	734.24	735.69	749.62	735.69	760	735.62
775.99	735.52	792.75	735.43	802.36	735.36	819.76	735.27	828.73	735.23
837.29	735.23	855.11	735.23	873.79	735.14	881.48	735.11	888.8101	735.09
907.85	735	914.58	734.99	934.23	734.9	940.34	734.91	960.6	734.86
981.84	734.86	986.97	734.86	991.86	734.86	1013.34	734.86	1035.87	734.86
1039.72	734.86	1062.88	734.86	1066.09	734.86	1069.15	734.86	1092.46	734.86
1116.9	734.86	1118.84	734.86	1120.68	734.86	1145.21	734.86	1170.93	734.86
1171.58	734.86	1197.94	734.86	1197.95	734.86	1198.48	734.86	1223.73	734.86
1224.33	734.86	1249.49	734.86	1250.7	734.86	1275.25	734.86	1277.07	734.86
1278.98	734.86	1303.45	734.86	1326.78	734.86	1329.82	734.86	1333	734.86
1356.19	734.86	1360.02	734.86	1382.56	734.86	1387.03	734.86	1408.94	734.88
1414.04	734.88	1435.31	734.86	1441.05	734.86	1461.68	734.86	1481.36	734.72
1488.06	734.68	1507.12	733.94	1514.43	733.68	1532.88	732.05	1538	731.15
1552	721.84	1570	721.46	1593.55	732.37	1610.17	733.25	1619.92	733.96
1630.14	734.24	1646.29	734.71	1653.33	734.73	1659.44	734.71	1677.54	734.67
1678.27	734.67	1679.24	734.66	1710.55	734.63	1715.92	734.62	1723.04	734.62
1734.75	734.63	1743.57	734.64	1766.84	735.06	1772.4	735.18	1776.58	735.34
1791.22	735.87	1809.6	736.97	1810.05	736.99	1810.65	737.02	1828.88	738.02
1842.62	738.9	1854.45	739.22	1875.63	739.9	1885.35	740.49	1898.25	741.31
1908.65	742.04	1939.51	743.92						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	1488.06	.045	1646.29	.1

Bank Sta: Left Right Coeff Contr. Expan.
1488.06 1646.29 .1 .3

Upstream Embankment side slope = 2 horiz. to 1.0 vertical

```
Downstream Embankment side slope            =       2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Piers =  2

Pier Data
Pier Station     Upstream=    1536    Downstream=    1536
Upstream     num=       2
    Width   Elev    Width   Elev
*********************************
       2     720       2     740
Downstream     num=       2
    Width   Elev    Width   Elev
*********************************
       2     720       2     740

Pier Data
Pier Station     Upstream=    1585    Downstream=    1585
Upstream     num=       2
    Width   Elev    Width   Elev
*********************************
       2     720       2     740
Downstream     num=       2
    Width   Elev    Width   Elev
*********************************
       2     720       2     740

Number of Bridge Coefficient Sets =  1

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

High Flow Method
       Energy Only

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
```



```
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION


RIVER: Hickory Creek
REACH: Alignment - Hick   RS: 690

INPUT
Description:
Station Elevation Data    num=     152
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
       0  742.689.390015  742.6811.18005  742.6836.40002  742.5737.55005  742.57
63.41003  742.4563.92004  742.4584.95996  742.3190.29004  742.2790.42004  742.27
  116.67  742.11   141.7  742.11  143.04  742.11  167.46  741.91  169.41  741.89
  193.22  741.65  195.79  741.61  198.47  741.58  222.16  741.34  225.49  741.33
  248.53  741.33   252.5  741.28   274.9  741.01  279.51  740.94  301.28  740.63
  322.04  740.35  327.65  740.27   347.8  739.96  354.02  739.85  360.55  739.85
   380.4  739.84387.5601  739.72  406.77  739.41  414.58  739.28  433.14  738.97
  441.59  738.83  459.51  738.52  476.61  738.51  485.89  738.51  502.37  738.21
  512.26  738.04  522.63  737.87  538.63   737.6   553.9  737.31  565.01  737.15
  576.65  736.99  591.38  736.75  603.66  736.75  617.75  736.75631.1901  736.56
  644.12  736.42657.6901  736.29   670.5  736.13  682.71  735.99  696.87  735.88
  711.71  735.78  723.24  735.69  734.24  735.69  749.62  735.69     760  735.62
  775.99  735.52  792.75  735.43  802.36  735.36  819.76  735.27  828.73  735.23
  837.29  735.23  855.11  735.23  873.79  735.14  881.48  735.11888.8101  735.09
  907.85     735  914.58  734.99  934.23   734.9  940.34  734.91   960.6  734.86
  981.84  734.86  986.97  734.86  991.86  734.86 1013.34  734.86 1035.87  734.86
 1039.72  734.86 1062.88  734.86 1066.09  734.86 1069.15  734.86 1092.46  734.86
  1116.9  734.86 1118.84  734.86 1120.68  734.86 1145.21  734.86 1170.93  734.86
 1171.58  734.86 1197.94  734.86 1197.95  734.86 1198.48  734.86 1223.73  734.86
 1224.33  734.86 1249.49  734.86  1250.7  734.86 1275.25  734.86 1277.07  734.86
 1278.98  734.86 1303.45  734.86 1326.78  734.86 1329.82  734.86    1333  734.86
 1356.19  734.86 1360.02  734.86 1382.56  734.86 1387.03  734.86 1408.94  734.88
 1414.04  734.88 1435.31  734.86 1441.05  734.86 1461.68  734.86 1481.36  734.72
 1488.06  734.68 1507.12  733.94 1514.43  733.68 1532.88  732.05    1538  731.15
    1552  721.84    1570  721.46 1593.55  732.37 1610.17  733.25 1619.92  733.96
 1630.14  734.24 1646.29  734.71 1653.33  734.73 1659.44  734.71 1677.54  734.67
 1678.27  734.67 1679.24  734.66 1710.55  734.63 1715.92  734.62 1723.04  734.62
 1734.75  734.63 1743.57  734.64 1766.84  735.06  1772.4  735.18 1776.58  735.34
 1791.22  735.87  1809.6  736.97 1810.05  736.99 1810.65  737.02 1828.88  738.02
 1842.62   738.9 1854.45  739.22 1875.63   739.9 1885.35  740.49 1898.25  741.31
```

1908.65 742.04 1939.51 743.92

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	1488.06	.045	1646.29	.1

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
1488.06 1646.29 100 100 100 .1 .3

CROSS SECTION OUTPUT Profile #PK100

E.G. Elev (ft)	736.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.100	0.045	0.100
W.S. Elev (ft)	736.63	Reach Len. (ft)	100.00	100.00	100.00
Crit W.S. (ft)	733.48	Flow Area (sq ft)	1307.45	953.38	266.62
E.G. Slope (ft/ft)	0.002367	Area (sq ft)	1307.45	953.38	266.62
Q Total (cfs)	6480.00	Flow (cfs)	1248.18	4958.17	273.65
Top Width (ft)	1177.33	Top Width (ft)	861.54	158.23	157.56
Vel Total (ft/s)	2.56	Avg. Vel. (ft/s)	0.95	5.20	1.03
Max Chl Dpth (ft)	15.17	Hydr. Depth (ft)	1.52	6.03	1.69
Conv. Total (cfs)	133193.9	Conv. (cfs)	25655.8	101913.3	5624.8
Length Wtd. (ft)	100.00	Wetted Per. (ft)	861.55	163.68	157.60
Min Ch El (ft)	721.46	Shear (lb/sq ft)	0.22	0.86	0.25
Alpha	3.18	Stream Power (lb/ft s)	1939.51	0.00	0.00
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	1.50	1.67	0.31
C & E Loss (ft)	0.23	Cum SA (acres)	0.99	0.29	0.18

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Hickory Creek
REACH: Alignment - Hick RS: 590

INPUT
Description:
Station Elevation Data num= 152

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	742.78	9.390015	742.78	11.18005	742.78	36.40002	742.67	37.55005	742.67
63.41003	742.55	63.92004	742.55	84.95996	742.41	90.29004	742.37	90.42004	742.37
116.67	742.21	141.7	742.21	143.04	742.21	167.46	742.01	169.41	741.99
193.22	741.75	195.79	741.71	198.47	741.68	222.16	741.44	225.49	741.43
248.53	741.43	252.5	741.38	274.9	741.11	279.51	741.04	301.28	740.73
322.04	740.45	327.65	740.37	347.8	740.06	354.02	739.95	360.55	739.95
380.4	739.94	387.5601	739.82	406.77	739.51	414.58	739.38	433.14	739.07
441.59	738.93	459.51	738.62	476.61	738.61	485.89	738.61	502.37	738.31
512.26	738.14	522.63	737.97	538.63	737.7	553.9	737.41	565.01	737.25
576.65	737.09	591.38	736.85	603.66	736.85	617.75	736.85	631.1901	736.66
644.12	736.52	657.6901	736.39	670.5	736.23	682.71	736.09	696.87	735.98
711.71	735.88	723.24	735.79	734.24	735.79	749.62	735.79	760	735.72
775.99	735.62	792.75	735.53	802.36	735.46	819.76	735.37	828.73	735.33
837.29	735.33	855.11	735.33	873.79	735.24	881.48	735.21	888.8101	735.19
907.85	735.1	914.58	735.09	934.23	735	940.34	735.01	960.6	734.96
981.84	734.96	986.97	734.96	991.86	734.96	1013.34	734.96	1035.87	734.96
1039.72	734.96	1062.88	734.96	1066.09	734.96	1069.15	734.96	1092.46	734.96
1116.9	734.96	1118.84	734.96	1120.68	734.96	1145.21	734.96	1170.93	734.96
1171.58	734.96	1197.94	734.96	1197.95	734.96	1198.48	734.96	1223.73	734.96
1224.33	734.96	1249.49	734.96	1250.7	734.96	1275.25	734.96	1277.07	734.96
1278.98	734.96	1303.45	734.96	1326.78	734.96	1329.82	734.96	1333	734.96
1356.19	734.96	1360.02	734.96	1382.56	734.96	1387.03	734.96	1408.94	734.98
1414.04	734.98	1435.31	734.96	1441.05	734.96	1461.68	734.96	1481.36	734.82
1488.06	734.78	1507.12	734.04	1514.43	733.78	1532.88	732.15	1538	731.25
1552	721.94	1570	721.56	1593.55	732.47	1610.17	733.35	1619.92	734.06
1630.14	734.34	1646.29	734.81	1653.33	734.83	1659.44	734.81	1677.54	734.77
1678.27	734.77	1679.24	734.76	1710.55	734.73	1715.92	734.72	1723.04	734.72
1734.75	734.73	1743.57	734.74	1766.84	735.16	1772.4	735.28	1776.58	735.44
1791.22	735.97	1809.6	737.07	1810.05	737.09	1810.65	737.12	1828.88	738.12
1842.62	739	1854.45	739.32	1875.63	740	1885.35	740.59	1898.25	741.41
1908.65	742.14	1939.51	744.02						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	1488.06	.045	1646.29	.1

Bank Sta: Left Right Coeff Contr. Expan.
1488.06 1646.29 .1 .3

CROSS SECTION OUTPUT Profile #PK100

E.G. Elev (ft)	736.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.60	Wt. n-Val.		0.045	
W.S. Elev (ft)	733.60	Reach Len. (ft)			
Crit W.S. (ft)	733.60	Flow Area (sq ft)		500.34	
E.G. Slope (ft/ft)	0.018609	Area (sq ft)		500.34	
Q Total (cfs)	6480.00	Flow (cfs)		6480.00	
Top Width (ft)	97.23	Top Width (ft)		97.23	
Vel Total (ft/s)	12.95	Avg. Vel. (ft/s)		12.95	
Max Chl Dpth (ft)	12.04	Hydr. Depth (ft)		5.15	
Conv. Total (cfs)	47502.3	Conv. (cfs)		47502.3	
Length Wtd. (ft)		Wetted Per. (ft)		102.63	
Min Ch El (ft)	721.56	Shear (lb/sq ft)		5.66	
Alpha	1.00	Stream Power (lb/ft s)	1939.51	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: User specified water surface is not possible for the specified flow regime. The program used critical depth as the
starting water surface.

SUMMARY OF MANNING'S N VALUES

River:Hickory Creek

Reach	River Sta.	n1	n2	n3
Alignment - Hick	3924.41	.1	.045	.1
Alignment - Hick	3196.39	.1	.045	.1
Alignment - Hick	2229.35	.1	.045	.1
Alignment - Hick	1591.1	.1	.045	.1
Alignment - Hick	810.87	.1	.045	.1
Alignment - Hick	745	Bridge		
Alignment - Hick	690	.1	.045	.1
Alignment - Hick	590	.1	.045	.1

SUMMARY OF REACH LENGTHS

River: Hickory Creek

Reach	River Sta.	Left	Channel	Right
Alignment - Hick	3924.41	500	728	300
Alignment - Hick	3196.39	500	967	500
Alignment - Hick	2229.35	638.24	638.24	638.24
Alignment - Hick	1591.1	780.22	780.22	780.22
Alignment - Hick	810.87	130	130	130
Alignment - Hick	745	Bridge		
Alignment - Hick	690	100	100	100
Alignment - Hick	590			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Hickory Creek

Reach	River Sta.	Contr.	Expan.
Alignment - Hick	3924.41	.1	.3
Alignment - Hick	3196.39	.1	.3
Alignment - Hick	2229.35	.1	.3
Alignment - Hick	1591.1	.1	.3
Alignment - Hick	810.87	.1	.3
Alignment - Hick	745	Bridge	
Alignment - Hick	690	.1	.3
Alignment - Hick	590	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Alignment - Hick	3924.41	PK100	6480.00	724.80	740.17		740.27	0.001059	2.53	2561.45	703.62	0.23
Alignment - Hick	3196.39	PK100	6480.00	724.08	739.65		739.77	0.000652	4.20	4772.33	1143.91	0.21

```
* Alignment - Hick * 2229.35     * PK100   * 6480.00 *    723.11 *    739.22 *           *    739.27 *   0.000504
*     1.82 *   3551.44 *    913.11 *         0.16 *
* Alignment - Hick * 1591.1      * PK100   * 6480.00 *    722.47 *    738.57 *           *    738.78 *   0.001209
*     4.72 *   3300.21 *    971.48 *         0.28 *
* Alignment - Hick * 810.87      * PK100   * 6480.00 *    721.69 *    737.65 *    733.71 *    737.82 *   0.001218
*     4.05 *   3500.36 *   1269.50 *         0.27 *
* Alignment - Hick * 745         *         *  Bridge *           *           *           *           *
*          *          *          *                 *
* Alignment - Hick * 690         * PK100   * 6480.00 *    721.46 *    736.63 *    733.48 *    736.95 *   0.002367
*     5.20 *   2527.46 *   1177.33 *         0.37 *
* Alignment - Hick * 590         * PK100   * 6480.00 *    721.56 *    733.60 *    733.60 *    736.21 *   0.018609
*    12.95 *    500.34 *     97.23 *         1.01 *
*************************************************************************************************************
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                    HEC-RAS Version 4.1.0 Jan 2010
                     U.S. Army Corps of Engineers
                    Hydrologic Engineering Center
                          609 Second Street
                          Davis, California

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

*******************************************************************************

PROJECT DATA
Project Title: Hickory Creek - Final
Project File : HickoryCreek-Fin.prj
Run Date and Time: 5/31/2016 7:33:40 PM

Project in English units

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PLAN DATA

Plan Title: Existing Conditions
Plan File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\HickoryCreek-Fin.p03

          Geometry Title: Existing Model, with Bridge at W
          Geometry File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\HickoryCreek-Fin.g03

          Flow Title    : Hickory USGS Rural
          Flow File     : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\HickoryCreek-Fin.f01

Plan Summary Information:
Number of:  Cross Sections =    7    Multiple Openings  =    0
            Culverts       =    0    Inline Structures  =    0
            Bridges        =    1    Lateral Structures =    0

Computational Information
    Water surface calculation tolerance  =  0.01
    Critical depth calculation tolerance =  0.01
    Maximum number of iterations         =  20
```

```
    Maximum difference tolerance          =  0.3
    Flow tolerance factor                 =  0.001

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

*******************************************************************************

FLOW DATA

Flow Title: Hickory USGS Rural
Flow File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\HickoryCreek-Fin.f01

Flow Data (cfs)
*****************************************************************************************************************
*****************************************************************
* River           Reach           RS      *            PK2            PK5            PK10           PK25
        PK50           PK100           PK200           PK500 *
* Hickory Creek   Alignment - Hick3924.41 *           1530           2700           3550           4710
        5580           6480           7390           8560 *
*****************************************************************************************************************
*****************************************************************

Boundary Conditions
*****************************************************************************************************************
* River           Reach           Profile         *           Upstream                Downstream    *
*****************************************************************************************************************
* Hickory Creek   Alignment - HickPK2             *                                 Normal S = 0.001 *
* Hickory Creek   Alignment - HickPK5             *                                 Normal S = 0.001 *
* Hickory Creek   Alignment - HickPK10            *                                 Normal S = 0.001 *
* Hickory Creek   Alignment - HickPK25            *                                 Normal S = 0.001 *
* Hickory Creek   Alignment - HickPK50            *                                 Normal S = 0.001 *
* Hickory Creek   Alignment - HickPK100           *                                 Normal S = 0.001 *
* Hickory Creek   Alignment - HickPK200           *                                 Normal S = 0.001 *
* Hickory Creek   Alignment - HickPK500           *                                 Normal S = 0.001 *
*****************************************************************************************************************

*******************************************************************************

GEOMETRY DATA

Geometry Title: Existing Model, with Bridge at W
Geometry File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\HickoryCreek-Fin.g03
```



```
CROSS SECTION


RIVER: Hickory Creek
REACH: Alignment - Hick   RS: 3924.41

INPUT
Description:
Station Elevation Data    num=      83
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
       0  740.94     3.5  740.91   13.87  740.7828.78003  740.6340.26001  740.48
52.78998  740.2966.65002  740.1579.34003  740.0193.03998  739.83  104.62  739.83
  119.43  739.84  135.61   739.6  145.82  739.48  163.21  739.24  172.21  739.14
  190.82  738.88   198.6  738.79  218.42  738.51     225  738.43  231.01  738.43
  251.39  738.43  256.29  738.37  277.78  738.08  281.57  738.03  304.17  737.71
  328.85  737.39  330.56  737.37  332.13  737.37  356.95  737.36  367.78  737.23
  383.34  737.04  407.96  736.75  409.73  736.73  411.66  736.71  436.12   736.4
  458.52  736.14  462.51   736.1   483.8  736.09   488.9  736.09  494.48     736
   515.3  735.73  534.36  735.37  541.69  735.17  559.64  734.68  568.08  734.46
  584.92  734.44  586.56  734.44  601.61   734.2  606.24  734.09  613.67  734.04
  627.21  733.88  637.21  733.77  638.99  733.76     652  725.18     670   724.8
  687.72  734.44  699.16  734.85  700.28  734.88  702.08     735  719.44  736.04
  730.14  736.87   738.6  737.49  752.32  738.79  757.76  739.25  761.11  739.54
  775.25  740.79  792.08  742.22  796.08  742.57  802.55  743.26  815.24  744.12
  823.06  744.65  852.78  746.97  853.56  747.05  854.03  747.11  872.72  749.16
  885.01  750.65  891.88  751.37  903.02  752.67  911.04  753.63  915.98  754.29
  936.84  756.74  946.96  757.89  949.63  758.17

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0      .1       0    .045  949.63      .1

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0  949.63               500     728     300              .1       .3

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)          *  740.53  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.09  * Wt. n-Val.             *          *    0.045 *          *
* W.S. Elev (ft)          *  740.45  * Reach Len. (ft)        *  500.00  *  728.00  *  300.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *          * 2760.56  *          *
* E.G. Slope (ft/ft)      *0.000865  * Area (sq ft)           *          * 2760.56  *          *
* Q Total (cfs)           * 6480.00  * Flow (cfs)             *          * 6480.00  *          *
* Top Width (ft)          *  729.01  * Top Width (ft)         *          *  729.01  *          *
* Vel Total (ft/s)        *    2.35  * Avg. Vel. (ft/s)       *          *    2.35  *          *
* Max Chl Dpth (ft)       *   15.65  * Hydr. Depth (ft)       *          *    3.79  *          *
```

* Conv. Total (cfs)	*220386.1	* Conv. (cfs)	*	*220386.1	*	*			
* Length Wtd. (ft)	* 609.27	* Wetted Per. (ft)	*	* 734.33	*	*			
* Min Ch El (ft)	* 724.80	* Shear (lb/sq ft)	*	* 0.20	*	*			
* Alpha	* 1.00	* Stream Power (lb/ft s)	*	949.63	*	0.00	*	0.00	*
* Frctn Loss (ft)	* 0.40	* Cum Volume (acre-ft)	*	100.85	*	141.25	*	39.52	*
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	*	31.34	*	27.89	*	9.91	*

CROSS SECTION

RIVER: Hickory Creek
REACH: Alignment - Hick RS: 3196.39

INPUT
Description:
Station Elevation Data num= 110

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	738.535.209961	738.469.819946	738.3918.96997	738.3837.57996	738.37				
46.94995	738.2265.34998	737.9467.81995	737.975.27991	737.8	93.12	737.54			
109.5599	737.31	120.89	737.16143.4099	736.88148.6599	736.81159.2799	736.82			
172.1699	736.82176.4299	736.82193.0399	736.59	204.2	736.43	226.38	736.16		
231.97	736.08	243.28	735.95	255.65	735.8	259.73	735.75	276.52	735.53
287.4999	735.33	297.39	735.31	315.27	735.28318.2599	735.19	327.29	734.9	
333.98	734.69	343.04	734.39350.8199	734.22	358	733.766	372	724.456	
390	724.076	408.56	734.05	422.61	734.08	426.35	734.09	433.78	734.27
454.11	734.76475.2599	735.01481.8799	735.12	495.29	735.13	506.08	735.14		
509.65	735.15	516.74	735.16	537.42	735.19	558.22	735.2565.1899	735.21	
579.3	735.25	592.96	735.28610.4299	735.34	620.73	735.38641.1799	735.43		
648.4999	735.45	663.3	735.48	673.04	735.5676.2599	735.51	682.67	735.51	
688.6	735.51	702.78	735.52	710.86	735.52714.6899	735.52	742.73	735.53	
750.3799	735.53	761.64	735.55	769.36	735.54	774.59	735.55	801.95	735.49
806.46	735.48	808.59	735.47826.2999	735.35838.3199	735.31855.5399	735.29			
870.1899	735.33	883.25	735.35902.0499	735.37	902.49	735.37	921.21	735.28	
933.9199	735.23949.4399	735.19959.1699	735.12	965.78	735.11	978.16	735.12		
996.39	735.22	997.64	735.22 1000.29	735.24 1029.51	735.42 1043.34	735.59			
1054.08	735.66 1061.37	735.71 1090.29	736.09 1093.24	736.17 1099.46	736.66				
1125.1	738.68 1130.01	738.92 1137.24	739.29 1148.99	739.92 1156.97	740.49				
1184.19	742.59 1186.95	742.81 1188.83	743 1205.94	744.67 1220.69	746.41				
1224.92	746.93 1231.14	747.93 1252.56	750.79 1262.88	752.5 1263.21	752.56				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	358	.045	408.56	.1

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

358 408.56 500 967 500 .1 .3

CROSS SECTION OUTPUT Profile #PK100

* E.G. Elev (ft)	* 740.13	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 0.09	* Wt. n-Val.	* 0.100	* 0.045	* 0.100	*
* W.S. Elev (ft)	* 740.04	* Reach Len. (ft)	* 500.00	* 967.00	* 500.00	*
* Crit W.S. (ft)	*	* Flow Area (sq ft)	* 1229.35	* 640.64	* 3352.19	*
* E.G. Slope (ft/ft)	*0.000517	* Area (sq ft)	* 1229.35	* 640.64	* 3352.19	*
* Q Total (cfs)	* 6480.00	* Flow (cfs)	* 942.29	* 2444.43	* 3093.29	*
* Top Width (ft)	* 1150.66	* Top Width (ft)	* 358.00	* 50.56	* 742.10	*
* Vel Total (ft/s)	* 1.24	* Avg. Vel. (ft/s)	* 0.77	* 3.82	* 0.92	*
* Max Chl Dpth (ft)	* 15.96	* Hydr. Depth (ft)	* 3.43	* 12.67	* 4.52	*
* Conv. Total (cfs)	*285098.8	* Conv. (cfs)	* 41457.5	*107546.8	*136094.5	*
* Length Wtd. (ft)	* 821.58	* Wetted Per. (ft)	* 359.56	* 55.89	* 742.25	*
* Min Ch El (ft)	* 724.08	* Shear (lb/sq ft)	* 0.11	* 0.37	* 0.15	*
* Alpha	* 3.89	* Stream Power (lb/ft s)	* 1263.21	* 0.00	* 0.00	*
* Frctn Loss (ft)	* 0.34	* Cum Volume (acre-ft)	* 93.79	* 112.82	* 27.98	*
* C & E Loss (ft)	* 0.02	* Cum SA (acres)	* 29.28	* 21.37	* 7.35	*

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: Hickory Creek
REACH: Alignment - Hick RS: 2229.35

INPUT
Description:
Station Elevation Data num= 98

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	740.2212.79004	740.2216.28003	740.2338.33008	739.942.66003	739.79				
63.87	739.2769.04004	739.1289.41003	738.5595.42004	738.36114.9501	738.36				
121.8	738.36140.4901	737.88148.1801	737.69	156.4	737.55174.5601	737.2			
191.57	736.95	200.94	736.86	217.11	736.73	227.32	736.66	238.23	736.66
253.7	736.67	265.51	736.59	280.08	736.47	292.78	736.36	306.46	736.24
319.27	736.12	332.84	735.98344.8101	735.99	359.22	735.82	374.61	735.82	
377.16	735.79388.3101	735.74	393.82	735.72409.5601	735.63	423.17	735.54		
434.1201	735.51	446.94	735.45	458.02	735.41	465.63	735.38474.4301	735.35	
492.88	735.26	503.02	735.26514.7401	735.26	521.71	735.26527.7401	735.25		
540.4	735.19	555.05	735.14	562.59	735.12	595.35	735.09	596.48	735.09
597.45	735.09	615.17	735.08632.3101	735.07	635.66	735.07	652.55	735.08	
667.16	735.09	671.25	735.09	675.97	735.09	702.02	735.1	716.28	735.1
736.88	735.09	746.01	735.09	756.58	735.08	764.71	735.08	771.73	735.09
783.4	735.07	796.89	734.94	802.09	734.9	806.59	734.82	820.48	734.49

```
837.2001   734.1841.4501     734  858.17  733.89   876.3  733.78   877.5  733.77
     888 732.799      902 723.489     920 723.109     943 735.819  946.02  736.06
  951.63  736.51  958.12  737.12  970.32  738.33  980.87  739.46998.4301  740.35
 1015.73  741.37  1026.4  742.66 1038.73  744.47 1050.59  746.21 1063.78  748.42
 1079.04  751.61 1082.47  752.24 1085.44  752.87 1119.35  759.71 1119.86  759.81
  1120.3  759.88 1138.55  761.95 1141.03   762.2

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
************************************************
       0      .1        0    .045 1141.03      .1

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0 1141.03           638.24  638.24  638.24             .1        .3

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************
* E.G. Elev (ft)          *  739.77  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.04  * Wt. n-Val.              *          *   0.045  *         *
* W.S. Elev (ft)          *  739.73  * Reach Len. (ft)         *  638.24  *  638.24  *  638.24  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *          * 4024.69  *         *
* E.G. Slope (ft/ft)      *0.000346  * Area (sq ft)            *          * 4024.69  *         *
* Q Total (cfs)           * 6480.00  * Flow (cfs)              *          * 6480.00  *         *
* Top Width (ft)          *  941.24  * Top Width (ft)          *          *  941.24  *         *
* Vel Total (ft/s)        *    1.61  * Avg. Vel. (ft/s)        *          *    1.61  *         *
* Max Chl Dpth (ft)       *   16.62  * Hydr. Depth (ft)        *          *    4.28  *         *
* Conv. Total (cfs)       *348536.7  * Conv. (cfs)             *          *348536.7  *         *
* Length Wtd. (ft)        *  638.24  * Wetted Per. (ft)        *          *  947.62  *         *
* Min Ch El (ft)          *  723.11  * Shear (lb/sq ft)        *          *    0.09  *         *
* Alpha                   *    1.00  * Stream Power (lb/ft s)  * 1141.03  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.32  * Cum Volume (acre-ft)    *   86.74  *   61.04  *    8.74  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *   27.23  *   10.37  *    3.09  *
*****************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or
greater than 1.4.
         This may indicate the need for additional cross sections.

CROSS SECTION


RIVER: Hickory Creek
REACH: Alignment - Hick   RS: 1591.1

INPUT
Description:
Station Elevation Data    num=     103
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
```



```
*********************************************************************************
       0  740.5812.92004  740.5215.79004  740.5117.89001  740.4846.24011  740.16
70.59009  739.8874.46008  739.8476.69006  739.8185.04004   739.7  107.14  739.41
  123.29  739.19132.3501  739.04137.5901  738.95  157.16  738.84  168.04  738.78
170.9501  738.72175.9901  738.64198.4901  738.25228.7001  737.76228.9401  737.76
248.1501  737.47259.3901  737.32267.4501  737.22281.4001  737.06286.7501     737
289.8401  736.96301.3901  736.92  320.29  736.84  325.35  736.78   334.1  736.67
344.6501  736.54350.7401  736.46373.5101   736.2381.1901  736.11383.2401  736.08
   386.8  736.04411.6401   735.8421.8401  735.78439.5001  735.73441.1401  735.73
442.0901  735.72445.6301   735.7  472.54  735.51492.2101  735.38502.9901  735.32
518.3401  735.22533.4401  735.17537.6401  735.15  544.91  735.13563.8901  735.09
  589.86  735.08594.3401  735.08  595.54  735.07  597.61  735.08  624.79  735.08
650.3101  735.08653.4301  735.07655.2401  735.07  661.98  735.08685.6901  735.08
703.0101  735.09716.1401  735.09730.6301  735.09746.5901  735.08755.7201  735.08
  777.04  735.09806.2101  735.09807.4901  735.09807.8301  735.09  808.42  735.09
827.1301   735.1837.9401  735.12861.1201  735.13868.3801  735.13  885.02  735.13
898.8301  735.13913.8201  735.16923.6201  735.18  929.28  735.19950.4401  735.23
959.7301  735.25  966.52  735.24  981.52  735.22990.1801  735.15 1000.82  735.12
 1019.23  735.05 1020.12  735.05 1020.63  735.05 1039.42  734.37 1051.08  733.81
    1058 732.161    1072 722.851    1090 722.471    1113 735.181 1172.88  740.41
 1177.33   741.6 1203.33  749.06 1213.11  751.45 1230.03  755.34 1232.41   755.9
 1233.78  756.16 1251.71  759.39 1254.06  759.72

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
************************************************
       0      .1 1019.23    .045    1113      .1

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1019.23    1113           780.22  780.22  780.22             .1        .3

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************
* E.G. Elev (ft)          *  739.45  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.14  * Wt. n-Val.              *   0.100  *   0.045  *   0.100  *
* W.S. Elev (ft)          *  739.30  * Reach Len. (ft)         *  780.22  *  780.22  *  780.22  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 3045.65  *  902.53  *   97.33  *
* E.G. Slope (ft/ft)      *0.000773  * Area (sq ft)            * 3045.65  *  902.53  *   97.33  *
* Q Total (cfs)           * 6480.00  * Flow (cfs)              * 2826.30  * 3588.76  *   64.95  *
* Top Width (ft)          * 1045.29  * Top Width (ft)          *  904.30  *   93.77  *   47.21  *
* Vel Total (ft/s)        *    1.60  * Avg. Vel. (ft/s)        *    0.93  *    3.98  *    0.67  *
* Max Chl Dpth (ft)       *   16.83  * Hydr. Depth (ft)        *    3.37  *    9.62  *    2.06  *
* Conv. Total (cfs)       *233131.5  * Conv. (cfs)             *101682.0  *129113.0  *  2336.6  *
* Length Wtd. (ft)        *  780.22  * Wetted Per. (ft)        *  904.33  *  100.08  *   47.39  *
* Min Ch El (ft)          *  722.47  * Shear (lb/sq ft)        *    0.16  *    0.43  *    0.10  *
* Alpha                   *    3.56  * Stream Power (lb/ft s)  * 1254.06  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.49  * Cum Volume (acre-ft)    *   64.42  *   24.94  *    8.03  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          *   20.60  *    2.78  *    2.74  *
```

CROSS SECTION

RIVER: Hickory Creek
REACH: Alignment - Hick RS: 810.87

INPUT
Description:
Station Elevation Data num= 152

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	742.91	9.390015	742.91	11.18005	742.91	36.40002	742.83	7.55005	742.8
63.41003	742.68	63.92004	742.68	84.95996	742.54	90.29004	742.59	0.42004	742.5
116.67	742.34	141.7	742.34	143.04	742.34	167.46	742.14	169.41	742.12
193.22	741.88	195.79	741.84	198.47	741.81	222.16	741.57	225.49	741.56
248.53	741.56	252.5	741.51	274.9	741.24	279.51	741.17	301.28	740.86
322.04	740.58	327.65	740.5	347.8	740.19	354.02	740.08	360.55	740.08
380.4	740.07	387.5601	739.95	406.77	739.64	414.58	739.51	433.14	739.2
441.59	739.06	459.51	738.75	476.61	738.74	485.89	738.74	502.37	738.44
512.26	738.27	522.63	738.1	538.63	737.83	553.9	737.54	565.01	737.38
576.65	737.22	591.38	736.98	603.66	736.98	617.75	736.98	631.1901	736.79
644.12	736.65	657.6901	736.52	670.5	736.36	682.71	736.22	696.87	736.11
711.71	736.01	723.24	735.92	734.24	735.92	749.62	735.92	760	735.85
775.99	735.75	792.75	735.66	802.36	735.59	819.76	735.5	828.73	735.46
837.29	735.46	855.11	735.46	873.79	735.37	881.48	735.34	888.8101	735.32
907.85	735.23	914.58	735.22	934.23	735.13	940.34	735.14	960.6	735.09
981.84	735.09	986.97	735.09	991.86	735.09	1013.34	735.09	1035.87	735.09
1039.72	735.09	1062.88	735.09	1066.09	735.09	1069.15	735.09	1092.46	735.09
1116.9	735.09	1118.84	735.09	1120.68	735.09	1145.21	735.09	1170.93	735.09
1171.58	735.09	1197.94	735.09	1197.95	735.09	1198.48	735.09	1223.73	735.09
1224.33	735.09	1249.49	735.09	1250.7	735.09	1275.25	735.09	1277.07	735.09
1278.98	735.09	1303.45	735.09	1326.78	735.09	1329.82	735.09	1333	735.09
1356.19	735.09	1360.02	735.09	1382.56	735.09	1387.03	735.09	1408.94	735.11
1414.04	735.11	1435.31	735.09	1441.05	735.09	1461.68	735.09	1481.36	734.95
1488.06	734.91	1507.12	734.17	1514.43	733.91	1532.88	732.28	1538	731.38
1552	722.07	1570	721.69	1593.55	732.6	1610.17	733.48	1619.92	734.19
1630.14	734.47	1646.29	734.94	1653.33	734.96	1659.44	734.94	1677.54	734.9
1678.27	734.9	1679.24	734.89	1710.55	734.86	1715.92	734.85	1723.04	734.85
1734.75	734.86	1743.57	734.87	1766.84	735.29	1772.4	735.41	1776.58	735.57
1791.22	736.1	1809.6	737.2	1810.05	737.22	1810.65	737.25	1828.88	738.25
1842.62	739.13	1854.45	739.45	1875.63	740.13	1885.35	740.72	1898.25	741.54
1908.65	742.27	1939.51	744.15						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

0	.1	1488.06	.045	1646.29	.1

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
1488.06	1646.29	130	130	130	.1	.3

CROSS SECTION OUTPUT Profile #PK100

E.G. Elev (ft)	738.94	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.08	Wt. n-Val.	0.100	0.045	0.100	
W.S. Elev (ft)	738.86	Reach Len. (ft)	45.00	45.00	45.00	
Crit W.S. (ft)	733.71	Flow Area (sq ft)	3213.43	1270.65	617.97	
E.G. Slope (ft/ft)	0.000513	Area (sq ft)	3213.43	1270.65	617.97	
Q Total (cfs)	6480.00	Flow (cfs)	2301.50	3725.51	452.98	
Top Width (ft)	1385.33	Top Width (ft)	1034.97	158.23	192.13	
Vel Total (ft/s)	1.27	Avg. Vel. (ft/s)	0.72	2.93	0.73	
Max Chl Dpth (ft)	17.17	Hydr. Depth (ft)	3.10	8.03	3.22	
Conv. Total (cfs)	286119.4	Conv. (cfs)	101621.1	164497.1	20001.1	
Length Wtd. (ft)	45.00	Wetted Per. (ft)	1035.00	163.68	192.23	
Min Ch El (ft)	721.69	Shear (lb/sq ft)	0.10	0.25	0.10	
Alpha	3.20	Stream Power (lb/ft s)	1939.51	0.00	0.00	
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	8.37	5.48	1.62	
C & E Loss (ft)	0.09	Cum SA (acres)	3.24	0.53	0.60	

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

BRIDGE

RIVER: Hickory Creek
REACH: Alignment - Hick RS: 745

INPUT
Description: Route W Bridge
Distance from Upstream XS = 45
Deck/Roadway Width = 40
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	741	720	1506	741	720	1507	741	737
1614	741	737	1615	741	720	2000	741	720

Upstream Bridge Cross Section Data
Station Elevation Data num= 152

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	742.91	9.390015	742.91	11.18005	742.91	36.40002	742.83	7.55005	742.8
63.41003	742.68	63.92004	742.68	84.95996	742.54	90.29004	742.5	90.42004	742.5
116.67	742.34	141.7	742.34	143.04	742.34	167.46	742.14	169.41	742.12
193.22	741.88	195.79	741.84	198.47	741.81	222.16	741.57	225.49	741.56
248.53	741.56	252.5	741.51	274.9	741.24	279.51	741.17	301.28	740.86
322.04	740.58	327.65	740.5	347.8	740.19	354.02	740.08	360.55	740.08
380.4	740.07	387.5601	739.95	406.77	739.64	414.58	739.51	433.14	739.2
441.59	739.06	459.51	738.75	476.61	738.74	485.89	738.74	502.37	738.44
512.26	738.27	522.63	738.1	538.63	737.83	553.9	737.54	565.01	737.38
576.65	737.22	591.38	736.98	603.66	736.98	617.75	736.98	631.1901	736.79
644.12	736.65	657.6901	736.52	670.5	736.36	682.71	736.22	696.87	736.11
711.71	736.01	723.24	735.92	734.24	735.92	749.62	735.92	760	735.85
775.99	735.75	792.75	735.66	802.36	735.59	819.76	735.5	828.73	735.46
837.29	735.46	855.11	735.46	873.79	735.37	881.48	735.34	888.8101	735.32
907.85	735.23	914.58	735.22	934.23	735.13	940.34	735.14	960.6	735.09
981.84	735.09	986.97	735.09	991.86	735.09	1013.34	735.09	1035.87	735.09
1039.72	735.09	1062.88	735.09	1066.09	735.09	1069.15	735.09	1092.46	735.09
1116.9	735.09	1118.84	735.09	1120.68	735.09	1145.21	735.09	1170.93	735.09
1171.58	735.09	1197.94	735.09	1197.95	735.09	1198.48	735.09	1223.73	735.09
1224.33	735.09	1249.49	735.09	1250.7	735.09	1275.25	735.09	1277.07	735.09
1278.98	735.09	1303.45	735.09	1326.78	735.09	1329.82	735.09	1333	735.09
1356.19	735.09	1360.02	735.09	1382.56	735.09	1387.03	735.09	1408.94	735.11
1414.04	735.11	1435.31	735.09	1441.05	735.09	1461.68	735.09	1481.36	734.95
1488.06	734.91	1507.12	734.17	1514.43	733.91	1532.88	732.28	1538	731.38
1552	722.07	1570	721.69	1593.55	732.6	1610.17	733.48	1619.92	734.19
1630.14	734.47	1646.29	734.94	1653.33	734.96	1659.44	734.94	1677.54	734.9
1678.27	734.9	1679.24	734.89	1710.55	734.86	1715.92	734.85	1723.04	734.85
1734.75	734.86	1743.57	734.87	1766.84	735.29	1772.4	735.41	1776.58	735.57
1791.22	736.1	1809.6	737.2	1810.05	737.22	1810.65	737.25	1828.88	738.25
1842.62	739.13	1854.45	739.45	1875.63	740.13	1885.35	740.72	1898.25	741.54
1908.65	742.27	1939.51	744.15						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	1488.06	.045	1646.29	.1

Bank Sta: Left	Right	Coeff Contr.	Expan.
1488.06	1646.29	.1	.3

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	741	720	1506	741	720	1507	741	737
1614	741	737	1615	741	720	2000	741	720

Downstream Bridge Cross Section Data
Station Elevation Data num= 152

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	742.68	9.390015	742.68	11.18005	742.68	36.40002	742.57	37.55005	742.57
63.41003	742.45	63.92004	742.45	84.95996	742.31	90.29004	742.27	90.42004	742.27
116.67	742.11	141.7	742.11	143.04	742.11	167.46	741.91	169.41	741.89
193.22	741.65	195.79	741.61	198.47	741.58	222.16	741.34	225.49	741.33
248.53	741.33	252.5	741.28	274.9	741.01	279.51	740.94	301.28	740.63
322.04	740.35	327.65	740.27	347.8	739.96	354.02	739.85	360.55	739.85
380.4	739.84	387.5601	739.72	406.77	739.41	414.58	739.28	433.14	738.97
441.59	738.83	459.51	738.52	476.61	738.51	485.89	738.51	502.37	738.21
512.26	738.04	522.63	737.87	538.63	737.6	553.9	737.31	565.01	737.15
576.65	736.99	591.38	736.75	603.66	736.75	617.75	736.75	631.1901	736.56
644.12	736.42	657.6901	736.29	670.5	736.13	682.71	735.99	696.87	735.88
711.71	735.78	723.24	735.69	734.24	735.69	749.62	735.69	760	735.62
775.99	735.52	792.75	735.43	802.36	735.36	819.76	735.27	828.73	735.23
837.29	735.23	855.11	735.23	873.79	735.14	881.48	735.11	888.8101	735.09
907.85	735	914.58	734.99	934.23	734.9	940.34	734.91	960.6	734.86
981.84	734.86	986.97	734.86	991.86	734.86	1013.34	734.86	1035.87	734.86
1039.72	734.86	1062.88	734.86	1066.09	734.86	1069.15	734.86	1092.46	734.86
1116.9	734.86	1118.84	734.86	1120.68	734.86	1145.21	734.86	1170.93	734.86
1171.58	734.86	1197.94	734.86	1197.95	734.86	1198.48	734.86	1223.73	734.86
1224.33	734.86	1249.49	734.86	1250.7	734.86	1275.25	734.86	1277.07	734.86
1278.98	734.86	1303.45	734.86	1326.78	734.86	1329.82	734.86	1333	734.86
1356.19	734.86	1360.02	734.86	1382.56	734.86	1387.03	734.86	1408.94	734.88
1414.04	734.88	1435.31	734.86	1441.05	734.86	1461.68	734.86	1481.36	734.72
1488.06	734.68	1507.12	733.94	1514.43	733.68	1532.88	732.05	1538	731.15
1552	721.84	1570	721.46	1593.55	732.37	1610.17	733.25	1619.92	733.96
1630.14	734.24	1646.29	734.71	1653.33	734.73	1659.44	734.71	1677.54	734.67
1678.27	734.67	1679.24	734.66	1710.55	734.63	1715.92	734.62	1723.04	734.62
1734.75	734.63	1743.57	734.64	1766.84	735.06	1772.4	735.18	1776.58	735.34
1791.22	735.87	1809.6	736.97	1810.05	736.99	1810.65	737.02	1828.88	738.02
1842.62	738.9	1854.45	739.22	1875.63	739.9	1885.35	740.49	1898.25	741.31
1908.65	742.04	1939.51	743.92						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	1488.06	.045	1646.29	.1

Bank Sta: Left	Right	Coeff Contr.	Expan.
1488.06	1646.29	.1	.3

Upstream Embankment side slope = 2 horiz. to 1.0 vertical

```
Downstream Embankment side slope              =       2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins           =
Energy head used in spillway design           =
Spillway height used in design                =
Weir crest shape                              = Broad Crested

Number of Piers =  2

Pier Data
Pier Station     Upstream=    1536    Downstream=    1536
Upstream     num=       2
   Width   Elev    Width   Elev
*********************************
       2     720       2     740
Downstream     num=       2
   Width   Elev    Width   Elev
*********************************
       2     720       2     740

Pier Data
Pier Station     Upstream=    1585    Downstream=    1585
Upstream     num=       2
   Width   Elev    Width   Elev
*********************************
       2     720       2     740
Downstream     num=       2
   Width   Elev    Width   Elev
*********************************
       2     720       2     740

Number of Bridge Coefficient Sets =  1

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

High Flow Method
       Energy Only

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

CROSS SECTION
```



```
RIVER: Hickory Creek
REACH: Alignment - Hick   RS: 690

INPUT
Description:
Station Elevation Data    num=     152
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
       0  742.689.390015  742.6811.18005  742.6836.40002  742.5737.55005  742.57
63.41003  742.4563.92004  742.4584.95996  742.3190.29004  742.2790.42004  742.27
  116.67  742.11   141.7  742.11  143.04  742.11  167.46  741.91  169.41  741.89
  193.22  741.65  195.79  741.61  198.47  741.58  222.16  741.34  225.49  741.33
  248.53  741.33   252.5  741.28   274.9  741.01  279.51  740.94  301.28  740.63
  322.04  740.35  327.65  740.27   347.8  739.96  354.02  739.85  360.55  739.85
   380.4  739.84387.5601  739.72  406.77  739.41  414.58  739.28  433.14  738.97
  441.59  738.83  459.51  738.52  476.61  738.51  485.89  738.51  502.37  738.21
  512.26  738.04  522.63  737.87  538.63   737.6   553.9  737.31  565.01  737.15
  576.65  736.99  591.38  736.75  603.66  736.75  617.75  736.75631.1901  736.56
  644.12  736.42657.6901  736.29   670.5  736.13  682.71  735.99  696.87  735.88
  711.71  735.78  723.24  735.69  734.24  735.69  749.62  735.69     760  735.62
  775.99  735.52  792.75  735.43  802.36  735.36  819.76  735.27  828.73  735.23
  837.29  735.23  855.11  735.23  873.79  735.14  881.48  735.11888.8101  735.09
  907.85     735  914.58  734.99  934.23   734.9  940.34  734.91   960.6  734.86
  981.84  734.86  986.97  734.86  991.86  734.86 1013.34  734.86 1035.87  734.86
 1039.72  734.86 1062.88  734.86 1066.09  734.86 1069.15  734.86 1092.46  734.86
  1116.9  734.86 1118.84  734.86 1120.68  734.86 1145.21  734.86 1170.93  734.86
 1171.58  734.86 1197.94  734.86 1197.95  734.86 1198.48  734.86 1223.73  734.86
 1224.33  734.86 1249.49  734.86  1250.7  734.86 1275.25  734.86 1277.07  734.86
 1278.98  734.86 1303.45  734.86 1326.78  734.86 1329.82  734.86    1333  734.86
 1356.19  734.86 1360.02  734.86 1382.56  734.86 1387.03  734.86 1408.94  734.88
 1414.04  734.88 1435.31  734.86 1441.05  734.86 1461.68  734.86 1481.36  734.72
 1488.06  734.68 1507.12  733.94 1514.43  733.68 1532.88  732.05    1538  731.15
    1552  721.84    1570  721.46 1593.55  732.37 1610.17  733.25 1619.92  733.96
 1630.14  734.24 1646.29  734.71 1653.33  734.73 1659.44  734.71 1677.54  734.67
 1678.27  734.67 1679.24  734.66 1710.55  734.63 1715.92  734.62 1723.04  734.62
 1734.75  734.63 1743.57  734.64 1766.84  735.06  1772.4  735.18 1776.58  735.34
 1791.22  735.87  1809.6  736.97 1810.05  736.99 1810.65  737.02 1828.88  738.02
 1842.62   738.9 1854.45  739.22 1875.63   739.9 1885.35  740.49 1898.25  741.31
 1908.65  742.04 1939.51  743.92

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***************************************************
       0      .1 1488.06    .045 1646.29      .1

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
      1488.06 1646.29              100      100      100              .1        .3

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)          *  738.01  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.13  * Wt. n-Val.              *   0.100  *   0.045  *   0.100  *
* W.S. Elev (ft)          *  737.88  * Reach Len. (ft)         *  100.00  *  100.00  *  100.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 2469.92  * 1152.05  *  478.37  *
* E.G. Slope (ft/ft)      *0.000852  * Area (sq ft)            * 2469.92  * 1152.05  *  478.37  *
* Q Total (cfs)           * 6480.00  * Flow (cfs)              * 2003.24  * 4078.81  *  397.95  *
* Top Width (ft)          * 1304.43  * Top Width (ft)          *  966.14  *  158.23  *  180.07  *
* Vel Total (ft/s)        *    1.58  * Avg. Vel. (ft/s)        *    0.81  *    3.54  *    0.83  *
* Max Chl Dpth (ft)       *   16.42  * Hydr. Depth (ft)        *    2.56  *    7.28  *    2.66  *
* Conv. Total (cfs)       *221961.8  * Conv. (cfs)             * 68617.6  *139713.1  * 13631.1  *
* Length Wtd. (ft)        *  100.00  * Wetted Per. (ft)        *  966.16  *  163.68  *  180.14  *
* Min Ch El (ft)          *  721.46  * Shear (lb/sq ft)        *    0.14  *    0.37  *    0.14  *
* Alpha                   *    3.26  * Stream Power (lb/ft s)  * 1939.51  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.09  * Cum Volume (acre-ft)    *    5.43  *    2.61  *    1.05  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *    2.20  *    0.36  *    0.41  *
*****************************************************************************************************

CROSS SECTION


RIVER: Hickory Creek
REACH: Alignment - Hick   RS: 590

INPUT
Description:
Station Elevation Data    num=     152
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************************
       0  742.789.390015  742.7811.18005  742.7836.40002  742.6737.55005  742.67
63.41003  742.5563.92004  742.5584.95996  742.4190.29004  742.3790.42004  742.37
  116.67  742.21   141.7  742.21  143.04  742.21  167.46  742.01  169.41  741.99
  193.22  741.75  195.79  741.71  198.47  741.68  222.16  741.44  225.49  741.43
  248.53  741.43   252.5  741.38   274.9  741.11  279.51  741.04  301.28  740.73
  322.04  740.45  327.65  740.37   347.8  740.06  354.02  739.95  360.55  739.95
   380.4  739.94387.5601  739.82  406.77  739.51  414.58  739.38  433.14  739.07
  441.59  738.93  459.51  738.62  476.61  738.61  485.89  738.61  502.37  738.31
  512.26  738.14  522.63  737.97  538.63   737.7   553.9  737.41  565.01  737.25
  576.65  737.09  591.38  736.85  603.66  736.85  617.75  736.85631.1901  736.66
  644.12  736.52657.6901  736.39   670.5  736.23  682.71  736.09  696.87  735.98
  711.71  735.88  723.24  735.79  734.24  735.79  749.62  735.79     760  735.72
  775.99  735.62  792.75  735.53  802.36  735.46  819.76  735.37  828.73  735.33
  837.29  735.33  855.11  735.33  873.79  735.24  881.48  735.21888.8101  735.19
  907.85   735.1  914.58  735.09  934.23     735  940.34  735.01   960.6  734.96
  981.84  734.96  986.97  734.96  991.86  734.96 1013.34  734.96 1035.87  734.96
```



```
 1039.72  734.96 1062.88  734.96 1066.09  734.96 1069.15  734.96 1092.46  734.96
  1116.9  734.96 1118.84  734.96 1120.68  734.96 1145.21  734.96 1170.93  734.96
 1171.58  734.96 1197.94  734.96 1197.95  734.96 1198.48  734.96 1223.73  734.96
 1224.33  734.96 1249.49  734.96  1250.7  734.96 1275.25  734.96 1277.07  734.96
 1278.98  734.96 1303.45  734.96 1326.78  734.96 1329.82  734.96    1333  734.96
 1356.19  734.96 1360.02  734.96 1382.56  734.96 1387.03  734.96 1408.94  734.98
 1414.04  734.98 1435.31  734.96 1441.05  734.96 1461.68  734.96 1481.36  734.82
 1488.06  734.78 1507.12  734.04 1514.43  733.78 1532.88  732.15    1538  731.25
    1552  721.94    1570  721.56 1593.55  732.47 1610.17  733.35 1619.92  734.06
 1630.14  734.34 1646.29  734.81 1653.33  734.83 1659.44  734.81 1677.54  734.77
 1678.27  734.77 1679.24  734.76 1710.55  734.73 1715.92  734.72 1723.04  734.72
 1734.75  734.73 1743.57  734.74 1766.84  735.16  1772.4  735.28 1776.58  735.44
 1791.22  735.97  1809.6  737.07 1810.05  737.09 1810.65  737.12 1828.88  738.12
 1842.62     739 1854.45  739.32 1875.63     740 1885.35  740.59 1898.25  741.41
 1908.65  742.14 1939.51  744.02

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
       0      .1 1488.06    .045 1646.29      .1

Bank Sta: Left   Right    Coeff Contr.   Expan.
       1488.06 1646.29             .1       .3

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)          *  737.91  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.15  * Wt. n-Val.              *   0.100  *   0.045  *   0.100  *
* W.S. Elev (ft)          *  737.77  * Reach Len. (ft)         *          *          *          *
* Crit W.S. (ft)          *  733.61  * Flow Area (sq ft)       * 2264.38  * 1118.17  *  440.23  *
* E.G. Slope (ft/ft)      *0.001000  * Area (sq ft)            * 2264.38  * 1118.17  *  440.23  *
* Q Total (cfs)           * 6480.00  * Flow (cfs)              * 1894.44  * 4204.64  *  380.93  *
* Top Width (ft)          * 1287.82  * Top Width (ft)          *  953.43  *  158.23  *  176.16  *
* Vel Total (ft/s)        *    1.70  * Avg. Vel. (ft/s)        *    0.84  *    3.76  *    0.87  *
* Max Chl Dpth (ft)       *   16.21  * Hydr. Depth (ft)        *    2.37  *    7.07  *    2.50  *
* Conv. Total (cfs)       *204869.2  * Conv. (cfs)             * 59893.7  *132932.2  * 12043.3  *
* Length Wtd. (ft)        *          * Wetted Per. (ft)        *  953.44  *  163.68  *  176.23  *
* Min Ch El (ft)          *  721.56  * Shear (lb/sq ft)        *    0.15  *    0.43  *    0.16  *
* Alpha                   *    3.28  * Stream Power (lb/ft s)  * 1939.51  *    0.00  *    0.00  *
* Frctn Loss (ft)         *          * Cum Volume (acre-ft)    *          *          *          *
* C & E Loss (ft)         *          * Cum SA (acres)          *          *          *          *
*****************************************************************************************************

*******************************************************************************

SUMMARY OF MANNING'S N VALUES

River:Hickory Creek
```

Reach	River Sta.	n1	n2	n3
Alignment - Hick	3924.41	.1	.045	.1
Alignment - Hick	3196.39	.1	.045	.1
Alignment - Hick	2229.35	.1	.045	.1
Alignment - Hick	1591.1	.1	.045	.1
Alignment - Hick	810.87	.1	.045	.1
Alignment - Hick	745	Bridge		
Alignment - Hick	690	.1	.045	.1
Alignment - Hick	590	.1	.045	.1

SUMMARY OF REACH LENGTHS

River: Hickory Creek

Reach	River Sta.	Left	Channel	Right
Alignment - Hick	3924.41	500	728	300
Alignment - Hick	3196.39	500	967	500
Alignment - Hick	2229.35	638.24	638.24	638.24
Alignment - Hick	1591.1	780.22	780.22	780.22
Alignment - Hick	810.87	130	130	130
Alignment - Hick	745	Bridge		
Alignment - Hick	690	100	100	100
Alignment - Hick	590			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Hickory Creek

Reach	River Sta.	Contr.	Expan.
Alignment - Hick	3924.41	.1	.3
Alignment - Hick	3196.39	.1	.3
Alignment - Hick	2229.35	.1	.3
Alignment - Hick	1591.1	.1	.3
Alignment - Hick	810.87	.1	.3
Alignment - Hick	745	Bridge	
Alignment - Hick	690	.1	.3
Alignment - Hick	590	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Alignment - Hick	3924.41	PK100	6480.00	724.80	740.45		740.53	0.000865	2.35	2760.56	729.01	0.21
Alignment - Hick	3196.39	PK100	6480.00	724.08	740.04		740.13	0.000517	3.82	5222.18	1150.66	0.19
Alignment - Hick	2229.35	PK100	6480.00	723.11	739.73		739.77	0.000346	1.61	4024.69	941.24	0.14
Alignment - Hick	1591.1	PK100	6480.00	722.47	739.30		739.45	0.000773	3.98	4045.50	1045.29	0.23
Alignment - Hick	810.87	PK100	6480.00	721.69	738.86	733.71	738.94	0.000513	2.93	5102.04	1385.33	0.18
Alignment - Hick	745			Bridge								
Alignment - Hick	690	PK100	6480.00	721.46	737.88		738.01	0.000852	3.54	4100.35	1304.43	0.23
Alignment - Hick	590	PK100	6480.00	721.56	737.77	733.61	737.91	0.001000	3.76	3822.79	1287.82	0.25

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

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

****

PROJECT DATA
Project Title: Thompson river - Final
Project File : Thompsonriver-Fi.prj
Run Date and Time: 5/31/2016 7:35:23 PM

Project in English units

****

PLAN DATA

Plan Title: Existing w Trenton Gage Adj
Plan File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\Thompsonriver-Fi.p02

Geometry Title: Existing Conditions Model
Geometry File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\Thompsonriver-Fi.g03

Flow Title : USGS Rural Regression Adj Trenton Gage
Flow File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\Thompsonriver-Fi.f02

Plan Summary Information:
Number of: Cross Sections = 35 Multiple Openings = 0
Culverts = 0 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

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

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

****

FLOW DATA

Flow Title: USGS Rural Regression Adj Trenton Gage
Flow File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\Thompsonriver-Fi.f02

Flow Data (cfs)

```
**********************************************************************************************************************
**********************************************************
* River          Reach          RS      *          PK2          PK5          PK10          PK25
   PK50          PK100          PK200          PK500 *
* Thompson       Alignment - surv15894   *       25686.49     42516.55     53951.22      68239.31
78960.89        89304.1        99651.31       112847.5 *
* Thompson       Alignment - surv11624.13*       25945.95     42918.92     54360.98      68923.08
79649.91       89992.12       100471.5       113669.3 *
* Thompson       Alignment - surv864.84  *       26205.41     43187.16     54907.32      69470.09
80201.12       90817.73       101291.7       114627.9 *
**********************************************************************************************************************
**********************************************************
```

Boundary Conditions

```
**********************************************************************************************************
* River          Reach          Profile          *          Upstream                Downstream    *
**********************************************************************************************************
* Thompson       Alignment - survPK2             *                                  Normal S = 0.00038 *
* Thompson       Alignment - survPK5             *                                  Normal S = 0.00038 *
* Thompson       Alignment - survPK10            *                                  Normal S = 0.00038 *
* Thompson       Alignment - survPK25            *                                  Normal S = 0.00038 *
* Thompson       Alignment - survPK50            *                                  Normal S = 0.00038 *
```

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* Thompson        Alignment - survPK100          *                                Normal S = 0.00038 *
* Thompson        Alignment - survPK200          *                                Normal S = 0.00038 *
* Thompson        Alignment - survPK500          *                                Normal S = 0.00038 *
*****************************************************************************************************
```

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```

GEOMETRY DATA

Geometry Title: Existing Conditions Model
Geometry File : i:\2016\16092.01 - Stockwell Eng - Trenton Farms\Storm\RAS\Thompsonriver-Fi.g03

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 15894

INPUT
Description:
Station Elevation Data num= 331

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	77810.28906	777.4517.72949	777.248.78906	776.0381.19922	774.51				
87.2793	774.27103.8096	773.38125.7793	772.4127.3291	772.32149.0293	771.41				
164.2695	770.96171.6396	770.68182.1299	770.64202.7695	769.94236.9297	769.78				
239.4795	769.85241.2598	769.88251.4893	769.87279.7598	770284.6992	769.95				
291.7295	769.64307.3096	769.09	318.25	768.36329.9199	766.95346.5293	764.21			
352.5293	763.33	356.75	762.61395.2393	760.54401.3291	760.3420.3691	759.76			
433.7393	759.22456.1299	758.25465.5898	757.95472.2295	757.67510.2393	755.89				
510.7295	755.87510.9297	755.85533.4199	753.86549.2197	751.83565.7295	750.86				
587.71	749.62620.5293	748.2	626.21	748.04646.4795	747.62664.6992	747.18			
669.0898	747.05675.3291	746.85691.6992	746.47703.1992	746.04730.1299	743.51				
741.6895	742.29780.1895	740.07784.9395	739.81804.7598	738.58827.3691	737.3				
857.1797	735.69872.5898	735.04894.5391	734.23895.1992	734.21895.6699	734.19				
934.1699	732.6972.6592	731.94985.6494	731.76 1004.14	731.6 1008.26	731.55				
1053.489	731.391058.939	731.39	1076.1	731.361088.149	731.361113.739	731.46			
1126.649	731.53 1165.14	731.661166.539	731.67 1203.63	731.68 1223.34	731.65				
1242.13	731.58 1278.14	731.14	1279.6	731.121280.619	731.121286.489	731.05			
1387.739	729.941392.659	729.881396.109	729.85 1415.27	729.66	1434.6	729.51			
1460.489	729.26	1473.1	729.19 1511.59	729.16 1550.09	729.23 1552.14	729.23			
1606.939	729.37	1686.6	729.39 1819.55	729.34 1844.88	729.271935.029	729.17			
1935.739	729.17 1980.55	729.11 1981.72	729.12006.539	729.042038.069	728.86				
2151.72	728.552164.189	728.49 2321.84	728.492353.359	728.56 2408.52	728.76				

2447.949	7292479.479	729.352542.539	729.652573.329	729.712574.069	729.72
2574.75	729.72 2637.13	729.462668.659	729.27 2672.22	729.242700.189	728.97
2725.829	728.39 2731.72	728.27 2738.14	727.67 2763.25	725.25	2771.1
724.84					
2794.779	723.512816.479	722.45 2826.31	722.02	2867	708.97
3123	708.6				
3148.859	722.6 3173.13	723.043204.659	724.233232.569	724.743236.189	724.8
3239.51	724.87	3298.5	725.85 3299.25	725.863330.159	726.323330.779
726.33					
3360.38	727.2 3362.31	727.25 3393.84	727.653425.369	727.98 3430.34	728.01
3456.899	728.21 3488.43	728.38 3511.46	728.343632.329	728.283646.079	728.29
3825.89	728.273961.369	728.444182.079	728.59 4254.39	728.56	4327.3
728.75					
4339.729	728.814402.789	728.934659.689	729.074749.609	729.03 4750.33	729.02
4781.14	728.97 4781.79	728.974812.669	728.86 4814.75	728.85	4871.2
728.68					
4938.79	728.374970.319	727.92 5001.85	727.655033.379	727.325096.439	726.5
5127.97	725.53 5222.56	723.85254.089	722.7 5285.62	722.24 5317.14	721.89
5348.669	721.76	5380.2	721.75 5408.06	721.915411.729	721.94	5415.1	722
5443.26	722.43 5445.31	722.48 5474.79	723.115475.529	723.125506.319	723.89
5506.95	723.93 5537.85	724.84 5566.18	726.465569.379	726.55 5572.87	726.63
5600.91	727.315626.609	727.85632.439	727.92	5695.5	728.785727.029	728.72
5758.56	728.47 5821.62	727.695853.149	726.97 5884.68	726.725916.209	726.56
5947.74	726.54 5979.27	726.626010.799	726.85 6042.33	726.96 6105.39	726.97
6136.919	726.816199.149	726.636200.729	726.63	6231.5	726.57 6357.62	726.53
6389.149	726.56452.209	726.41 6858.39	726.51	6862.1	726.56988.209	726.57
6990.24	726.58	7077	726.727082.799	726.727145.859	726.85 7177.39	727
7288.52	727.34 7303.51	727.447319.859	727.5 7335.04	727.597429.629	727.85
7461.16	727.98 7555.75	728.14 7651.12	728.15 7741.77	728.03 7744.93	728.02
7902.569	727.938028.689	728.08 8060.22	728.238186.339	728.54 8394.64	728.62
8557.609	728.518564.699	728.528596.229	728.58753.869	728.818785.399	728.96
8911.52	729.28 8943.05	729.41 9000.93	729.56 9037.64	729.64 9069.17	729.78
9222.38	729.799226.819	729.89231.659	729.79 9289.88	729.76 9297.59	729.77
9321.409	729.75 9554.76	729.749668.229	729.849845.709	729.88 9920.47	729.83
10008	729.6810015.06	729.6610078.12	729.5810141.18	729.4210235.76	729.26
10267.29	729.1510424.94	728.9510484.22	728.93	10488	728.9410677.18	728.97
10708.71	729.04 10803.3	729.1110960.95	729.3810992.48	729.511077.54	729.67
11118.59	729.7711181.68	730.0211213.33	730.111214.73	730.1 11243.5	730.18
11244.99	730.1811276.65	730.3811403.29	730.7611434.94	730.9411529.92	731.24
11531.16	731.2411559.93	731.3311561.58	731.34 11588.7	731.4711593.24	731.5
11688.21	731.811719.87	731.9711809.98	732.2211814.85	732.2411845.18	732.31
11876.36	732.5511878.17	732.5611880.38	732.5811909.83	732.7111941.48	732.91
11973.14	733.18 12004.8	733.512036.46	734.4312068.12	735.1712091.56	735.93
12106.49	736.3312131.44	737.1912161.96	739.14 12163.1	739.212194.75	740.3
12197.16	740.3812226.41	741.4412250.32	742.3612258.07	742.6312279.09	743.46
12289.73	743.8612321.39	746.4612336.62	747.1312353.05	747.9712365.39	748.63
12384.71	749.8112416.37	752.0612422.92	752.6212448.02	754.5712451.69	755.17
12479.68	759.1412480.45	759.1912488.13	759.5612511.34	760.7112513.94	760.81
12543	762.0112549.13	762.3812574.66	763.7512584.33	765.212606.32	768.21

```
12619.53  769.1812637.98  770.4712653.05  771.4412669.64  772.5512701.29  774.12
12707.77  774.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
       0     .092816.479     .043148.859     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      2816.4793148.859           342.31  342.31  342.31            .1       .3

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  726.81  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.31  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  726.49  * Reach Len. (ft)         *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  150.44  * 5303.99  * 1780.87  *
* E.G. Slope (ft/ft)      *0.000392  * Area (sq ft)            *  150.44  * 5303.99  * 1780.87  *
* Q Total (cfs)           *25686.49  * Flow (cfs)              *   84.97  *24456.49  * 1145.02  *
* Top Width (ft)          * 1447.38  * Top Width (ft)          *   66.12  *  332.38  * 1048.88  *
* Vel Total (ft/s)        *    3.55  * Avg. Vel. (ft/s)        *    0.56  *    4.61  *    0.64  *
* Max Chl Dpth (ft)       *   17.89  * Hydr. Depth (ft)        *    2.28  *   15.96  *    1.70  *
* Conv. Total (cfs)       *1297156.0  * Conv. (cfs)            *  4291.1  *1235042.0  * 57823.1  *
* Length Wtd. (ft)        *  342.31  * Wetted Per. (ft)        *   66.25  *  337.98  * 1049.07  *
* Min Ch El (ft)          *  708.60  * Shear (lb/sq ft)        *    0.06  *    0.38  *    0.04  *
* Alpha                   *    1.61  * Stream Power (lb/ft s) *12707.77  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.13  * Cum Volume (acre-ft)    * 1424.16  * 1951.23  * 2157.23  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  596.24  *  129.26  * 1651.20  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)          *  729.77  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.43  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  729.34  * Reach Len. (ft)         *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  762.76  * 6249.95  *11302.26  *
* E.G. Slope (ft/ft)      *0.000488  * Area (sq ft)            *  762.76  * 6249.95  *11302.26  *
* Q Total (cfs)           *42516.55  * Flow (cfs)              *  357.01  *35869.23  * 6290.31  *
* Top Width (ft)          * 7815.29  * Top Width (ft)          *  959.30  *  332.38  * 6523.61  *
* Vel Total (ft/s)        *    2.32  * Avg. Vel. (ft/s)        *    0.47  *    5.74  *    0.56  *
* Max Chl Dpth (ft)       *   20.74  * Hydr. Depth (ft)        *    0.80  *   18.80  *    1.73  *
* Conv. Total (cfs)       *1924451.0  * Conv. (cfs)            * 16159.7  *1623569.0  *284721.8  *
```



```
* Length Wtd. (ft)        *  342.31  * Wetted Per. (ft)        *  959.54  *  337.98  * 6523.87  *
* Min Ch El (ft)          *  708.60  * Shear (lb/sq ft)        *    0.02  *    0.56  *    0.05  *
* Alpha                   *    5.17  * Stream Power (lb/ft s) *12707.77  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.16  * Cum Volume (acre-ft)    * 4849.75  * 2462.80  *10476.33  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          * 1082.67  *  130.36  * 2597.28  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)          *  730.17  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.64  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  729.54  * Reach Len. (ft)         *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 1000.03  * 6315.86  *12619.83  *
* E.G. Slope (ft/ft)      *0.000724  * Area (sq ft)            * 1000.03  * 6315.86  *12619.83  *
* Q Total (cfs)           *53951.22  * Flow (cfs)              *  492.79  *44452.00  * 9006.43  *
* Top Width (ft)          * 8375.83  * Top Width (ft)          * 1285.13  *  332.38  * 6758.33  *
* Vel Total (ft/s)        *    2.71  * Avg. Vel. (ft/s)        *    0.49  *    7.04  *    0.71  *
* Max Chl Dpth (ft)       *   20.94  * Hydr. Depth (ft)        *    0.78  *   19.00  *    1.87  *
* Conv. Total (cfs)       *2005277.0  * Conv. (cfs)            * 18316.1  *1652206.0  *334754.1  *
* Length Wtd. (ft)        *  342.31  * Wetted Per. (ft)        * 1285.36  *  337.98  * 6758.59  *
* Min Ch El (ft)          *  708.60  * Shear (lb/sq ft)        *    0.04  *    0.84  *    0.08  *
* Alpha                   *    5.58  * Stream Power (lb/ft s) *12707.77  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.24  * Cum Volume (acre-ft)    * 3255.06  * 2194.26  * 6693.78  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          *  988.46  *  129.89  * 2354.08  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)          *  731.28  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.57  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  730.71  * Reach Len. (ft)         *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 2679.28  * 6704.54  *21794.23  *
* E.G. Slope (ft/ft)      *0.000700  * Area (sq ft)            * 2679.28  * 6704.54  *21794.23  *
* Q Total (cfs)           *68239.31  * Flow (cfs)              * 1724.21  *48298.57  *18216.53  *
* Top Width (ft)          *10067.32  * Top Width (ft)          * 1498.59  *  332.38  * 8236.35  *
* Vel Total (ft/s)        *    2.19  * Avg. Vel. (ft/s)        *    0.64  *    7.20  *    0.84  *
* Max Chl Dpth (ft)       *   22.11  * Hydr. Depth (ft)        *    1.79  *   20.17  *    2.65  *
* Conv. Total (cfs)       *2578646.0  * Conv. (cfs)            * 65154.8  *1825120.0  *688371.3  *
* Length Wtd. (ft)        *  342.31  * Wetted Per. (ft)        * 1498.83  *  337.98  * 8236.61  *
* Min Ch El (ft)          *  708.60  * Shear (lb/sq ft)        *    0.08  *    0.87  *    0.12  *
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* Alpha                  *    7.71  * Stream Power (lb/ft s) *12707.77  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.23  * Cum Volume (acre-ft)   * 4722.67  * 2387.13  *10151.71  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         * 1174.78  *  130.17  * 2630.09  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************
* E.G. Elev (ft)         *  731.91  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.52  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.39  * Reach Len. (ft)       *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     * 3719.62  * 6930.53  *27454.60  *
* E.G. Slope (ft/ft)     *0.000677  * Area (sq ft)          * 3719.62  * 6930.53  *27454.60  *
* Q Total (cfs)          *78960.89  * Flow (cfs)            * 2852.50  *50181.93  *25926.45  *
* Top Width (ft)         *10346.38  * Top Width (ft)        * 1591.75  *  332.38  * 8422.25  *
* Vel Total (ft/s)       *    2.07  * Avg. Vel. (ft/s)      *    0.77  *    7.24  *    0.94  *
* Max Chl Dpth (ft)      *   22.79  * Hydr. Depth (ft)      *    2.34  *   20.85  *    3.26  *
* Conv. Total (cfs)      *3034956.0  * Conv. (cfs)          *109639.3  *1928802.0  *996513.9  *
* Length Wtd. (ft)       *  342.31  * Wetted Per. (ft)      * 1592.00  *  337.98  * 8422.51  *
* Min Ch El (ft)         *  708.60  * Shear (lb/sq ft)      *    0.10  *    0.87  *    0.14  *
* Alpha                  *    7.83  * Stream Power (lb/ft s) *12707.77  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.22  * Cum Volume (acre-ft)   * 5838.26  * 2515.80  *12600.40  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         * 1253.61  *  130.24  * 2669.28  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************
* E.G. Elev (ft)         *  733.01  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.34  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  732.67  * Reach Len. (ft)       *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     * 6046.29  * 7355.99  *38457.63  *
* E.G. Slope (ft/ft)     *0.000486  * Area (sq ft)          * 6046.29  * 7355.99  *38457.63  *
* Q Total (cfs)          *89304.10  * Flow (cfs)            * 4787.94  *46960.95  *37555.21  *
* Top Width (ft)         *10967.21  * Top Width (ft)        * 1883.90  *  332.38  * 8750.93  *
* Vel Total (ft/s)       *    1.72  * Avg. Vel. (ft/s)      *    0.79  *    6.38  *    0.98  *
* Max Chl Dpth (ft)      *   24.07  * Hydr. Depth (ft)      *    3.21  *   22.13  *    4.39  *
* Conv. Total (cfs)      *4050851.0  * Conv. (cfs)          *217181.7  *2130158.0  *1703512.0  *
* Length Wtd. (ft)       *  342.31  * Wetted Per. (ft)      * 1884.16  *  337.98  * 8751.20  *
* Min Ch El (ft)         *  708.60  * Shear (lb/sq ft)      *    0.10  *    0.66  *    0.13  *
* Alpha                  *    7.37  * Stream Power (lb/ft s) *12707.77  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.16  * Cum Volume (acre-ft)   * 8865.69  * 2880.42  *19136.29  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         * 1327.28  *  130.36  * 2714.24  *
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CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************
* E.G. Elev (ft)         *  733.68  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.29  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  733.39  * Reach Len. (ft)       *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     * 7409.39  * 7595.38  *44798.29  *
* E.G. Slope (ft/ft)     *0.000444  * Area (sq ft)          * 7409.39  * 7595.38  *44798.29  *
* Q Total (cfs)          *99651.31  * Flow (cfs)            * 6379.99  *47326.41  *45944.91  *
* Top Width (ft)         *11078.37  * Top Width (ft)        * 1901.34  *  332.38  * 8844.65  *
* Vel Total (ft/s)       *    1.67  * Avg. Vel. (ft/s)      *    0.86  *    6.23  *    1.03  *
* Max Chl Dpth (ft)      *   24.79  * Hydr. Depth (ft)      *    3.90  *   22.85  *    5.07  *
* Conv. Total (cfs)      *4731201.0  * Conv. (cfs)          *302906.5  *2246942.0  *2181352.0  *
* Length Wtd. (ft)       *  342.31  * Wetted Per. (ft)      * 1901.61  *  337.98  * 8844.92  *
* Min Ch El (ft)         *  708.60  * Shear (lb/sq ft)      *    0.11  *    0.62  *    0.14  *
* Alpha                  *    6.83  * Stream Power (lb/ft s) *12707.77  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.14  * Cum Volume (acre-ft)   * 9982.15  * 2990.44  *21401.47  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         * 1341.46  *  130.36  * 2721.73  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************
* E.G. Elev (ft)         *  734.54  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.25  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  734.29  * Reach Len. (ft)       *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     * 9136.22  * 7895.52  *52805.30  *
* E.G. Slope (ft/ft)     *0.000394  * Area (sq ft)          * 9136.22  * 7895.52  *52805.30  *
* Q Total (cfs)          *112847.50  * Flow (cfs)           * 8461.09  *47586.63  *56799.79  *
* Top Width (ft)         *11138.72  * Top Width (ft)        * 1923.54  *  332.38  * 8882.80  *
* Vel Total (ft/s)       *    1.62  * Avg. Vel. (ft/s)      *    0.93  *    6.03  *    1.08  *
* Max Chl Dpth (ft)      *   25.69  * Hydr. Depth (ft)      *    4.75  *   23.75  *    5.94  *
* Conv. Total (cfs)      *5683965.0  * Conv. (cfs)          *426172.7  *2396869.0  *2860923.0  *
* Length Wtd. (ft)       *  342.31  * Wetted Per. (ft)      * 1923.83  *  337.98  * 8883.08  *
* Min Ch El (ft)         *  708.60  * Shear (lb/sq ft)      *    0.12  *    0.57  *    0.15  *
* Alpha                  *    6.11  * Stream Power (lb/ft s) *12707.77  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)   *11366.84  * 3124.71  *24180.20  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         * 1366.24  *  130.36  * 2731.00  *
*****************************************************************************************

CROSS SECTION


RIVER: Thompson
REACH: Alignment - surv   RS: 15551.6*
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INPUT
Description:
Station Elevation Data num= 495

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	771.59	11.53	770.91	19.87	770.52	23.77	770.33	24.23	770.31
25.21	770.27	54.67	769.16	65.6	768.7	90.99	767.55	97.8	767.28
106.02	766.87	106.72	766.84	108.88	766.73	116.33	766.37	133.29	765.63
140.95	765.26	142.68	765.16	160.55	764.34	167	764.1	184.08	763.57
187.81	763.44	188.97	763.39	192.34	763.27	204.09	763.09	209.53	762.91
227.22	762.35	242.34	762.12	265.5	761.52	266.4	761.51	268.36	761.5
269.6	761.48	270.35	761.48	281.81	761.31	313.49	760.93	319.03	760.81
326.91	760.49	332.91	760.28	344.37	759.86	351.39	759.47	353.48	759.36
356.63	759.18	359.89	758.9	369.7	758.04	374.03	757.56	378.65	757.03
388.31	755.84	395.04	755.09	399.77	754.49	405.91	754.15	433.17	752.89
435.73	752.78	442.9	752.45	443.55	752.43	449.72	752.2	471.06	751.6
511.13	750.23	514.95	750.13	521.73	749.92	529.17	749.65	542.22	749.14
569.48	748.14	571.77	748.05	572.31	748.03	572.54	748.02	579.66	747.57
596.74	746.52	597.74	746.46	600.22	746.24	615.45	744.94	633.95	744.14
651.27	743.43	658.58	743.11	670.79	742.68	678.53	742.39	695.35	741.9
705.79	741.71	723.6	741.47	724.43	741.46	744.85	741.17	749.77	741.09
756.76	740.96	760.32	740.92	775.11	740.8	778.23	740.74	785.28	740.64
787.58	740.6	787.99	740.59	818.17	739.03	831.12	738.26	861.9	737.33
867.53	737.15	869.37	737.1	879.59	736.79	896.63	736.21	901.8	736.05
923.89	735.43	927.14	735.32	960.54	734.29	977.81	733.86	978.42	733.85
1002.41	733.32	1003.15	733.31	1003.67	733.29	1046.82	732.19	1089.95	731.67
1104.5	731.53	1114.29	731.46	1114.73	731.46	1115.62	731.45	1125.22	731.39
1129.84	731.35	1196.52	731.14	1196.58	731.14	1219.36	731.1	1277.38	731.18
1305.64	731.17	1307.2	731.18	1370.85	731.04	1391.91	730.95	1432.26	730.55
1433.9	730.53	1435.04	730.53	1441.62	730.46	1441.88	730.45	1564.46	729.51
1636.6	729.13	1650.73	729.09	1659.99	729.09	1731.16	729.23	1737.01	729.25
1739.3	729.25	1878.09	729.66	1932.61	729.75	1959.87	729.87	2038.96	730.01
2067.34	730.02	2068.93	730.03	2177.98	730.19	2205.24	729.68	2232.5	729.23
2248.49	729.22	2259.77	729.19	2283.83	729.5	2284.27	729.51	2287.03	729.55
2314.29	729.88	2341.55	729.9	2367.93	729.84	2368.81	729.83	2369.23	729.83
2411.18	729.71	2425.15	729.65	2450.11	729.61	2450.6	729.61	2532.39	729.41
2533.1	729.4	2535.27	729.4	2585.29	729.29	2601.82	729.2	2611.23	729.17
2689.49	729.1	2715.02	729.03	2743.13	729.06	2778.46	729.21	2837.81	729.24
2870.69	729.18	2883.63	729.13	2884.46	729.13	2885.22	729.12	2948.53	728.56
2955.12	728.45	2974.48	728.09	2990.45	727.92	3025.79	727.46	3026.37	727.45
3052.32	726.92	3054.52	726.87	3061.12	726.71	3068.31	726.23	3078.26	725.54
3096.45	724.42	3104.21	724.14	3105.25	724.1	3131.78	723.12	3156.1	722.34
3162.22	722.14	3165.73	721.45	3189.14	712.43	3205.58	708.83	3456.33	708.47

3482.79	722.32	3507.34	722.73	3539.24	723.67	3544.42	723.75	3571.14	724.2
3574.5	724.27	3575.23	724.28	3634.18	725.27	3634.94	725.28	3636.87	725.32
3666.21	725.99	3666.84	726.01	3667.68	726.03	3698.74	726.84	3729.32	727.3
3730.64	727.31	3762.54	727.72	3767.56	727.76	3790.95	728	3821.77	728.33
3826.34	728.36	3829.8	728.37	4095.48	728.49	4099.11	728.48	4601.27	728.58
4675.03	728.7	4687.61	728.74	4931.16	728.83	5069.65	728.71	5102.29	728.62
5103.02	728.62	5134.19	728.54	5134.85	728.54	5166.09	728.43	5168.19	728.42
5208.51	728.29	5293.69	727.83	5325.58	727.46	5357.48	727.2	5362.59	727.15
5392.36	726.76	5393.41	726.75	5394.38	726.73	5423.89	726.37	5424.6	726.36
5453.18	726	5485.08	725.22	5512.45	724.78	5516.67	724.69	5521.29	724.62
5547.49	724.07	5580.78	723.53	5609.12	722.77	5612.68	722.67	5670.76	721.93
5676.47	721.88	5708.37	721.75	5740.27	721.73	5763.21	721.82	5768.45	721.86
5772.17	721.9	5775.58	721.96	5794.02	722.23	5804.07	722.59	5824.84	723.41
5836.71	723.73	5855.66	724.29	5867.86	724.63	5868.5	724.67	5875.84	724.89
5886.48	725.26	5899.76	725.63	5917.3	726.44	5925.74	726.8	5928.43	726.92
5931.66	727.01	5935.19	727.09	5948.11	727.41	5963.56	727.67	5972.54	727.79
5978.93	727.89	5995.46	728.1	6009.75	728.22	6014.3	728.25	6059.26	728.6
6071.38	728.56	6091.16	728.37	6102.19	728.22	6123.06	727.99	6186.86	727.11
6218.76	726.48	6225.46	726.41	6250.46	726.11	6250.66	726.11	6256.28	726.06
6287.09	725.9	6348.73	725.87	6378.25	725.99	6379.54	726	6410.15	726.06
6473.95	726.07	6568.81	725.83	6656.89	725.77	6824.83	725.89	6840.87	725.92
6841.79	725.92	6903.42	726	7235.77	726.08	7239.53	726.07	7526.61	726.2
7558.51	726.3	7670.94	726.5	7686.11	726.57	7702.65	726.6	7718.01	726.66
7735	726.69	7740.17	726.69	7845.6	726.85	7941.3	726.89	7949.56	726.88
7950.55	726.88	8072.28	726.73	8104.52	726.64	8106.66	726.63	8129.5	726.59
8132.7	726.58	8292.18	726.36	8419.78	726.37	8420.84	726.38	8579.28	726.55
8703.61	726.36	8720.38	726.36	8736.49	726.41	8751.17	726.5	8766.69	726.75
8796.88	727.48	8812.76	727.91	8829.29	728.32	8843.55	728.78	8860.7	728.83
8874.35	728.92	8892.13	728.91	8905.13	728.93	8935.93	728.84	8966.73	728.52
9059.1	727.89	9089.9	727.75	9120.69	727.9	9153.46	728.24	9182.28	728.62
9185.36	728.65	9213.07	728.87	9237.73	728.91	9243.86	728.93	9274.66	728.92
9367.04	729.3	9394.82	729.46	9426.25	729.54	9428.62	729.55	9440.55	729.56
9459.42	729.61	9472.45	729.62	9490.21	729.59	9491.29	729.59	9521	729.52
9521.48	729.52	9551.67	729.38	9627.46	729.33	9631.95	729.34	9636.84	729.32
9644.17	729.32	9672.43	729.27	9674.97	729.27	9695.75	729.23	9853.59	729.42
9952.1	729.51	10064.93	729.41	10321.62	729.42	10368.81	729.29	10383.21	729.21
10397.03	729.05	10414	728.89	10475.59	728.67	10525.9	728.64	10537.17	728.65
10567.97	728.78	10714.42	728.91	10721.93	728.93	10907.9	728.82	11386.39	728.82
11418.29	728.89	11423.55	728.89	11514.12	729.08	11522.55	729.11	11531.31	729.18
11553.34	729.28	11562.73	729.35	11584.13	729.58	11641.73	730.05	11643.15	730.06
11672.25	730.31	11673.76	730.32	11676.51	730.35	11695.28	730.67	11707.3	730.84
11725.47	730.96	11738.1	731.01	11751.24	731.02	11768.89	731.08	11799.68	731.04
11816.04	730.96	11830.48	730.86	11833.92	730.78	11861.27	730.21	11892.06	729.86
11908.34	729.76	11922.86	729.61	11936.81	729.55	11953.65	729.56	11962.03	729.61

```
11963.28  729.6211967.01  729.6411984.44  730.0311992.39  730.34 11997.2  730.54
12034.01  731.3712046.03   731.712057.58  731.9812076.82  732.3812107.61  732.83
12117.96  732.9412138.41  733.2912191.11  733.7212199.99  733.7812261.58  734.29
12280.98  734.5212285.37  734.5912292.37  734.6912312.53  734.8812314.36  734.89
12316.59  734.9212378.41   735.412384.75  735.4712410.44  735.8312411.03  735.84
12442.46  736.1912446.34  736.2912473.88  736.94 12474.5  736.9612506.53  737.59
12507.92  737.6312510.45  737.6912530.25  738.2112538.72  738.3912545.35  738.57
12568.13  739.2812569.51  739.33 12570.6  739.3612601.47  740.7912602.63  740.84
12630.97  741.61 12631.1  741.6112634.65   741.712661.42  742.4512662.38  742.48
12690.87   743.312692.68  743.3512698.71  743.53 12721.8  744.2812723.48  744.33
12730.74  744.5312762.77  746.3212778.18  746.7812807.29  747.7712815.86  748.11
12819.48  748.2412826.83  748.5212846.65   749.412858.86  749.8612865.49  750.17
12877.44  750.6812890.88   751.3 12894.6  751.6912922.92  754.2212923.69  754.25
12939.03   754.712954.95  755.2112957.58  755.2712969.82   755.612986.98  756.21
12993.18   756.513019.01  757.5913028.79  758.6113031.41  758.8713051.04  760.73
13062.21  761.33 13064.4  761.4413083.07  762.3413092.99  762.7913098.32  763.01
 13115.1  763.7313123.79  764.0113133.67  764.2613147.12  764.5613153.68  764.62

Manning's n Values          num=        3
     Sta   n Val      Sta   n Val      Sta   n Val
**************************************************
       0     .09  3156.1     .04 3482.79     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        3156.1 3482.79            342.31  342.31  342.31             .1       .3

CROSS SECTION OUTPUT  Profile #PK2
**********************************************************************************************
* E.G. Elev (ft)          *  726.67  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.32  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  726.35  * Reach Len. (ft)         *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  209.07  * 5249.10  * 2230.84  *
* E.G. Slope (ft/ft)      *0.000395  * Area (sq ft)            *  209.07  * 5249.10  * 2230.84  *
* Q Total (cfs)           *25686.49  * Flow (cfs)              *  120.53  *24393.57  * 1172.40  *
* Top Width (ft)          * 2462.23  * Top Width (ft)          *   89.64  *  326.69  * 2045.90  *
* Vel Total (ft/s)        *    3.34  * Avg. Vel. (ft/s)        *    0.58  *    4.65  *    0.53  *
* Max Chl Dpth (ft)       *   17.88  * Hydr. Depth (ft)        *    2.33  *   16.07  *    1.09  *
* Conv. Total (cfs)       *1292838.0  * Conv. (cfs)            *  6066.2  *1227763.0  * 59008.5  *
* Length Wtd. (ft)        *  342.31  * Wetted Per. (ft)        *   89.74  *  332.23  * 2046.06  *
* Min Ch El (ft)          *  708.47  * Shear (lb/sq ft)        *    0.06  *    0.39  *    0.03  *
* Alpha                   *    1.84  * Stream Power (lb/ft s)   *13153.68  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.13  * Cum Volume (acre-ft)     * 1422.74  * 1909.76  * 2141.47  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)           *  595.63  *  126.67  * 1639.04  *
**********************************************************************************************
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Warning: Divided flow computed for this cross-section.

```
CROSS SECTION OUTPUT  Profile #PK5
**********************************************************************************************
* E.G. Elev (ft)          *  729.59  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.37  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  729.22  * Reach Len. (ft)         *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  707.13  * 6186.98  *14100.49  *
* E.G. Slope (ft/ft)      *0.000437  * Area (sq ft)            *  707.13  * 6186.98  *14100.49  *
* Q Total (cfs)           *42516.55  * Flow (cfs)              *  397.12  *33754.74  * 8364.69  *
* Top Width (ft)          * 8001.79  * Top Width (ft)          *  648.90  *  326.69  * 7026.20  *
* Vel Total (ft/s)        *    2.03  * Avg. Vel. (ft/s)        *    0.56  *    5.46  *    0.59  *
* Max Chl Dpth (ft)       *   20.75  * Hydr. Depth (ft)        *    1.09  *   18.94  *    2.01  *
* Conv. Total (cfs)       *2033890.0  * Conv. (cfs)            * 18997.4  *1614746.0  *400146.7  *
* Length Wtd. (ft)        *  342.31  * Wetted Per. (ft)        *  649.03  *  332.23  * 7026.48  *
* Min Ch El (ft)          *  708.47  * Shear (lb/sq ft)        *    0.03  *    0.51  *    0.05  *
* Alpha                   *    5.78  * Stream Power (lb/ft s)   *13153.68  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.14  * Cum Volume (acre-ft)     * 4843.97  * 2413.93  *10376.52  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)           * 1076.35  *  127.77  * 2544.04  *
**********************************************************************************************
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Warning: Divided flow computed for this cross-section.

```
CROSS SECTION OUTPUT  Profile #PK10
**********************************************************************************************
* E.G. Elev (ft)          *  729.91  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.56  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  729.35  * Reach Len. (ft)         *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  800.42  * 6227.44  *14985.70  *
* E.G. Slope (ft/ft)      *0.000670  * Area (sq ft)            *  800.42  * 6227.44  *14985.70  *
* Q Total (cfs)           *53951.22  * Flow (cfs)              *  392.77  *42251.46  *11306.99  *
* Top Width (ft)          * 8448.81  * Top Width (ft)          *  821.15  *  326.69  * 7300.97  *
* Vel Total (ft/s)        *    2.45  * Avg. Vel. (ft/s)        *    0.49  *    6.78  *    0.75  *
* Max Chl Dpth (ft)       *   20.88  * Hydr. Depth (ft)        *    0.97  *   19.06  *    2.05  *
* Conv. Total (cfs)       *2084402.0  * Conv. (cfs)            * 15174.6  *1632382.0  *436844.7  *
* Length Wtd. (ft)        *  342.31  * Wetted Per. (ft)        *  821.28  *  332.23  * 7301.24  *
* Min Ch El (ft)          *  708.47  * Shear (lb/sq ft)        *    0.04  *    0.78  *    0.09  *
* Alpha                   *    6.02  * Stream Power (lb/ft s)   *13153.68  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.21  * Cum Volume (acre-ft)     * 3247.98  * 2144.97  * 6585.32  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)           *  980.18  *  127.30  * 2298.84  *
**********************************************************************************************
```

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK25

E.G. Elev (ft)	731.03	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.50	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	730.53	Reach Len. (ft)	342.31	342.31	342.31	
Crit W.S. (ft)		Flow Area (sq ft)	2438.78	6612.41	24605.64	
E.G. Slope (ft/ft)	0.000641	Area (sq ft)	2438.78	6612.41	24605.64	
Q Total (cfs)	68239.31	Flow (cfs)	1286.20	45674.46	21278.65	
Top Width (ft)	10402.27	Top Width (ft)	1720.72	326.69	8354.86	
Vel Total (ft/s)	2.03	Avg. Vel. (ft/s)	0.53	6.91	0.86	
Max Chl Dpth (ft)	22.06	Hydr. Depth (ft)	1.42	20.24	2.95	
Conv. Total (cfs)	2695259.0	Conv. (cfs)	50801.2	1804012.0	840446.1	
Length Wtd. (ft)	342.31	Wetted Per. (ft)	1720.87	332.23	8355.16	
Min Ch El (ft)	708.47	Shear (lb/sq ft)	0.06	0.80	0.12	
Alpha	7.83	Stream Power (lb/ft s)	13153.68	0.00	0.00	
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)	4702.56	2334.80	9969.40	
C & E Loss (ft)	0.03	Cum SA (acres)	1162.13	127.58	2564.90	

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK50

E.G. Elev (ft)	731.67	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.46	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	731.21	Reach Len. (ft)	342.31	342.31	342.31	
Crit W.S. (ft)		Flow Area (sq ft)	3647.18	6834.52	30340.31	
E.G. Slope (ft/ft)	0.000623	Area (sq ft)	3647.18	6834.52	30340.31	
Q Total (cfs)	78960.89	Flow (cfs)	2258.59	47591.85	29110.46	
Top Width (ft)	10851.28	Top Width (ft)	1980.63	326.69	8543.96	
Vel Total (ft/s)	1.93	Avg. Vel. (ft/s)	0.62	6.96	0.96	
Max Chl Dpth (ft)	22.74	Hydr. Depth (ft)	1.84	20.92	3.55	
Conv. Total (cfs)	3162512.0	Conv. (cfs)	90460.0	1906131.0	1165921.0	
Length Wtd. (ft)	342.31	Wetted Per. (ft)	1980.78	332.23	8544.28	
Min Ch El (ft)	708.47	Shear (lb/sq ft)	0.07	0.80	0.14	
Alpha	7.91	Stream Power (lb/ft s)	13153.68	0.00	0.00	
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	5809.32	2461.71	12373.31	
C & E Loss (ft)	0.02	Cum SA (acres)	1239.57	127.65	2602.62	

CROSS SECTION OUTPUT Profile #PK100

E.G. Elev (ft)	732.83	Element	Left OB	Channel	Right OB	

Vel Head (ft)	0.28	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	732.55	Reach Len. (ft)	342.31	342.31	342.31	
Crit W.S. (ft)		Flow Area (sq ft)	6437.49	7273.45	41857.35	
E.G. Slope (ft/ft)	0.000427	Area (sq ft)	6437.49	7273.45	41857.35	
Q Total (cfs)	89304.10	Flow (cfs)	4601.11	43701.74	41001.24	
Top Width (ft)	11055.74	Top Width (ft)	2123.40	326.69	8605.65	
Vel Total (ft/s)	1.61	Avg. Vel. (ft/s)	0.71	6.01	0.98	
Max Chl Dpth (ft)	24.08	Hydr. Depth (ft)	3.03	22.26	4.86	
Conv. Total (cfs)	4320952.0	Conv. (cfs)	222623.5	2114496.0	1983833.0	
Length Wtd. (ft)	342.31	Wetted Per. (ft)	2123.56	332.23	8605.99	
Min Ch El (ft)	708.47	Shear (lb/sq ft)	0.08	0.58	0.13	
Alpha	7.02	Stream Power (lb/ft s)	13153.68	0.00	0.00	
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	8816.64	2822.94	18820.72	
C & E Loss (ft)	0.01	Cum SA (acres)	1311.53	127.77	2646.04	

CROSS SECTION OUTPUT Profile #PK200

E.G. Elev (ft)	733.52	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.25	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	733.28	Reach Len. (ft)	342.31	342.31	342.31	
Crit W.S. (ft)		Flow Area (sq ft)	7992.99	7511.17	48138.01	
E.G. Slope (ft/ft)	0.000391	Area (sq ft)	7992.99	7511.17	48138.01	
Q Total (cfs)	99651.31	Flow (cfs)	6254.81	44090.13	49306.38	
Top Width (ft)	11133.52	Top Width (ft)	2151.94	326.69	8654.89	
Vel Total (ft/s)	1.57	Avg. Vel. (ft/s)	0.78	5.87	1.02	
Max Chl Dpth (ft)	24.81	Hydr. Depth (ft)	3.71	22.99	5.56	
Conv. Total (cfs)	5042280.0	Conv. (cfs)	316488.6	2230927.0	2494865.0	
Length Wtd. (ft)	342.31	Wetted Per. (ft)	2152.11	332.23	8655.23	
Min Ch El (ft)	708.47	Shear (lb/sq ft)	0.09	0.55	0.14	
Alpha	6.45	Stream Power (lb/ft s)	13153.68	0.00	0.00	
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	9921.63	2931.08	21036.31	
C & E Loss (ft)	0.01	Cum SA (acres)	1325.54	127.77	2652.98	

CROSS SECTION OUTPUT Profile #PK500

E.G. Elev (ft)	734.40	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.21	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	734.19	Reach Len. (ft)	342.31	342.31	342.31	
Crit W.S. (ft)		Flow Area (sq ft)	9969.29	7808.41	56063.21	
E.G. Slope (ft/ft)	0.000351	Area (sq ft)	9969.29	7808.41	56063.21	
Q Total (cfs)	112847.50	Flow (cfs)	8469.30	44607.52	59770.69	
Top Width (ft)	11284.53	Top Width (ft)	2191.44	326.69	8766.40	

* Vel Total (ft/s)	* 1.53	* Avg. Vel. (ft/s)	* 0.85	* 5.71	* 1.07	*	
* Max Chl Dpth (ft)	* 25.72	* Hydr. Depth (ft)	* 4.55	* 23.90	* 6.40	*	
* Conv. Total (cfs)	*6020892.0	* Conv. (cfs)	*451872.8	*2380000.0	*3189019.0	*	
* Length Wtd. (ft)	* 342.31	* Wetted Per. (ft)	* 2191.62	* 332.23	* 8766.74	*	
* Min Ch El (ft)	* 708.47	* Shear (lb/sq ft)	* 0.10	* 0.52	* 0.14	*	
* Alpha	* 5.80	* Stream Power (lb/ft s)	*13153.68	* 0.00	* 0.00	*	
* Frctn Loss (ft)	* 0.11	* Cum Volume (acre-ft)	*11291.77	* 3063.01	*23752.44	*	
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 1350.07	* 127.77	* 2661.65	*	

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 15209.3*

INPUT
Description:
Station Elevation Data num= 384

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	765.18	12.77	764.38	26.32	763.6	26.84	763.56	27.93	763.53
72.66	761.82	117.43	759.87	118.21	759.84	128.85	759.35	147.63	758.55
177.82	757.03	184.97	756.78	205.48	756.13	208.02	756.04	209.31	755.98
213.03	755.86	226.05	755.54	232.08	755.34	238.22	755.18	251.67	754.76
268.41	754.37	294.07	753.26	295.06	753.22	298.61	753.09	347.23	751.85
353.36	751.67	381.42	750.62	389.2	750.26	395	750	409.49	749.14
419.4	748.42	430.1	747.47	437.55	746.85	442.79	746.38	449.59	745.98
490.56	744.36	491.28	744.34	505.38	743.88	566.13	742.21	570.37	742.11
577.87	741.9	600.56	741.15	630.76	740.3	633.9	740.2	634.15	740.19
642.03	739.85	660.96	739.1	662.06	739.05	681.67	738.06	687.59	737.87
691.15	737.77	710.36	737.18	721.35	736.88	729.45	736.61	751.55	735.94
770.18	735.61	781.74	735.46	801.47	735.31	802.39	735.3	842.13	735.06
858.51	735.12	872.79	735.14	906.21	734.54	920.56	734.24	954.64	733.96
993.12	733.56	1023.31	733.39	1083.03	732.69	1083.7	732.68	1111.09	732.4
1111.68	732.4	1159.46	731.77	1234.19	731.24	1234.69	731.23	1235.67	731.23
1325.28	730.9	1415.86	730.78	1446.13	730.69	1541.69	730.32	1586.38	729.96
1588.2	729.94	1589.46	729.94	1596.75	729.87	1597.04	729.86	1728.52	729.19
1778.22	729.06	1838.61	729	1989.6	729.52	2019.79	729.71	2140.58	730.13
2170.77	730.38	2289.8	730.78	2291.56	730.78	2350.17	731.06	2351.95	731.06
2401.69	731.19	2412.34	731.21	2442.54	730.23	2472.74	729.38	2502.93	729.39
2529.58	730.15	2530.07	730.16	2563.32	730.97	2593.52	731.08	2622.74	731.02
2623.72	731.01	2624.18	731.01	2713.76	730.74	2714.31	730.74	2804.9	730.32
2805.68	730.32	2863.48	730.08	2888.72	729.85	2920.91	729.7	2922.95	729.7

2978.44	729.48	2978.9	729.47	3007.17	729.22	3122.13	728.97	3179.6	728.68
3193.93	728.54	3194.85	728.54	3265.82	727.63	3294.55	726.83	3351.38	725.95
3352.03	725.93	3380.77	725.41	3383.21	725.35	3390.52	725.15	3409.51	724.27
3429.65	723.58	3438.24	723.39	3439.4	723.37	3473.53	722.63	3495.72	722.23
3501.71	722.11	3505.15	720.89	3528.07	710.5	3544.17	708.69	3789.67	708.34
3816.71	722.03	3839.25	722.39	3841.55	722.42	3847.89	722.57	3873.82	723.11
3879.06	723.18	3969.86	724.7	3972.58	724.74	4002.9	725.68	4003.75	725.71
4033.19	726.38	4035.17	726.42	4097.27	727.43	4128.44	727.81	4159.62	728.31
4167.74	728.36	4248.57	728.58	4253.14	728.58	4284.31	728.69	5281.86	728.63
5421.95	728.37	5451.82	728.22	5454.97	728.22	5455.71	728.21	5487.24	728.11
5487.9	728.11	5562.42	727.84	5648.58	727.28	5718.29	726.7	5748.4	726.24
5749.46	726.22	5780.3	725.86	5781.01	725.86	5809.92	725.5	5842.19	724.91
5869.88	724.53	5874.15	724.42	5878.82	724.36	5905.33	723.73	5939	723.27
5967.67	722.71	5971.27	722.65	5998.84	722.32	6030.02	721.9	6035.8	721.86
6100.33	721.71	6123.54	721.76	6128.85	721.82	6154.71	722.19	6164.87	722.74
6185.88	723.94	6197.14	724.31	6197.9	724.33	6217.07	724.99	6229.41	725.37
6230.05	725.4	6237.47	725.64	6248.24	726.06	6261.68	726.42	6279.41	727.05
6287.96	727.29	6290.67	727.39	6310.59	727.88	6341.76	728.18	6407.4	728.41
6423.02	728.42	6435.28	728.37	6466.45	727.8	6552.1	726.53	6559.97	726.38
6584.36	725.99	6591.15	725.91	6616.44	725.5	6616.63	725.5	6622.32	725.42
6653.49	725.25	6713.44	725.11	6842.51	725.16	7027.57	724.99	7089.92	725.1
7094.23	725.12	7183.44	725.34	7183.81	725.35	7213.68	725.42	7214.61	725.43
7276.96	725.57	7339.3	725.68	7746.02	725.56	7748.1	725.57	7907.36	725.55
8211.62	725.72	8215.02	725.73	8271.64	725.69	8273.91	725.68	8276.1	725.69
8459.35	725.35	8491.96	725.21	8494.12	725.21	8642.59	724.86	8803.45	724.66
8896.9	724.69	9039.63	724.39	9083.8	724.17	9114.96	724.13	9131.25	724.21
9146.1	724.4	9161.8	724.88	9192.34	726.35	9208.41	727.22	9225.13	728.05
9239.55	728.97	9256.9	729.09	9270.7	729.27	9288.69	729.26	9301.85	729.31
9333	729.16	9364.15	728.52	9457.59	727.16	9488.75	726.82	9519.9	727.05
9582.2	728.29	9613.35	728.7	9644.5	728.76	9675.65	728.66	9733.64	728.93
9737.95	728.94	9800.24	729.4	9828.99	729.46	9831.4	729.48	9833.7	729.47
9894.79	729.4	9924.85	729.25	9925.33	729.25	9955.87	728.98	10108.57	728.7
10261.29	729.09	10267.48	729.09	10360.93	729.28	10475.07	729	10734.74	729.01
10746.98	728.96	10749.94	728.94	10782.47	728.81	0797.03	728.68	10811.02	728.37
10828.19	728.08	10890.48	727.73	10952.78	727.82	10963.73	727.96	10983.93	728.15
11068.51	728.47	11069.66	728.48	11132.08	728.71	1139.68	728.75	11233.13	728.81
11577.03	728.66	11700.37	728.36	11887.26	728.31	11949.57	728.5	11958.43	728.63
11980.71	728.76	11990.21	728.87	12011.87	729.23	12105.32	730.5	12124.3	731.03
12134.93	731.27	12136.46	731.3	12167.61	731.55	12180.91	731.53	12198.77	731.6
12212.69	731.48	12229.91	731.41	12246.46	731.22	12261.06	730.98	12264.54	730.8
12292.21	729.51	12307.54	729.08	12323.36	728.71	12339.82	728.44	12354.51	728.09
12368.62	727.94	12385.66	727.9	12394.14	727.98	12395.41	728	12399.17	728.03
12416.81	728.76	12424.85	729.36	12426.54	729.48	12429.71	729.72	12447.97	730.41
12466.95	731.22	12479.11	731.84	12490.79	732.36	12510.26	733.09	12541.41	733.9

```
12551.88   734.112572.56   734.712582.42  734.7912697.15  736.3112728.31  736.99
12821.76  737.9712847.74  738.4812848.34  738.4912880.13  738.8712884.05  738.98
12944.95  740.01 12977.5  740.6313040.99  742.4413042.15  742.4713070.83  743.04
13070.95  743.0413101.62  743.64 13102.6  743.6713131.42  744.2513133.25  744.28
13160.86  744.98 13162.7  745.02 13164.4  745.0713171.75  745.1913204.15  746.18
13257.85  747.0813261.52  747.1113268.96  747.22   13289  747.5913301.36  747.66
13320.15  747.8213333.75  748.04 13337.5   748.213366.15  749.3113366.94  749.32
13382.45  749.47 13413.6  749.8913430.95   750.413444.75  750.8713463.36  751.42
13473.25  752.0313495.76  753.2613507.05  753.64 13538.2  754.4713560.56  754.91
13569.35  755.0413579.34  755.0613592.95     75513599.58  754.93

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
       0     .09 3495.72     .04 3816.71     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       3495.72 3816.71           342.31  342.31  342.31             .1       .3

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)         *  726.53  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.30  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  726.24  * Reach Len. (ft)        *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *  326.02  * 5200.00  * 4365.31  *
* E.G. Slope (ft/ft)     *0.000374  * Area (sq ft)           *  326.02  * 5200.00  * 4365.31  *
* Q Total (cfs)          *25686.49  * Flow (cfs)             *  165.36  *23644.36  * 1876.78  *
* Top Width (ft)         * 3821.60  * Top Width (ft)         *  162.91  *  320.99  * 3337.70  *
* Vel Total (ft/s)       *    2.60  * Avg. Vel. (ft/s)       *    0.51  *    4.55  *    0.43  *
* Max Chl Dpth (ft)      *   17.90  * Hydr. Depth (ft)       *    2.00  *   16.20  *    1.31  *
* Conv. Total (cfs)      *1327546.0  * Conv. (cfs)           *  8546.0  *1222004.0  * 96996.9  *
* Length Wtd. (ft)       *  342.31  * Wetted Per. (ft)       *  162.97  *  326.82  * 3337.92  *
* Min Ch El (ft)         *  708.34  * Shear (lb/sq ft)       *    0.05  *    0.37  *    0.03  *
* Alpha                  *    2.82  * Stream Power (lb/ft s) *13599.58  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.12  * Cum Volume (acre-ft)   * 1420.64  * 1868.71  * 2115.55  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *  594.63  *  124.13  * 1617.88  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)         *  729.43  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.29  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
```



```
* W.S. Elev (ft)         *  729.14  * Reach Len. (ft)        *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      * 1070.83  * 6131.04  *17453.95  *
* E.G. Slope (ft/ft)     *0.000374  * Area (sq ft)           * 1070.83  * 6131.04  *17453.95  *
* Q Total (cfs)          *42516.55  * Flow (cfs)             *  599.11  *31089.39  *10828.04  *
* Top Width (ft)         * 8833.99  * Top Width (ft)         *  581.27  *  320.99  * 7931.72  *
* Vel Total (ft/s)       *    1.72  * Avg. Vel. (ft/s)       *    0.56  *    5.07  *    0.62  *
* Max Chl Dpth (ft)      *   20.80  * Hydr. Depth (ft)       *    1.84  *   19.10  *    2.20  *
* Conv. Total (cfs)      *2199053.0  * Conv. (cfs)           * 30987.2  *1608014.0  *560051.1  *
* Length Wtd. (ft)       *  342.31  * Wetted Per. (ft)       *  581.35  *  326.82  * 7932.19  *
* Min Ch El (ft)         *  708.34  * Shear (lb/sq ft)       *    0.04  *    0.44  *    0.05  *
* Alpha                  *    6.36  * Stream Power (lb/ft s) *13599.58  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.12  * Cum Volume (acre-ft)   * 4836.99  * 2365.53  *10252.54  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         * 1071.52  *  125.22  * 2485.27  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)         *  729.66  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.46  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  729.21  * Reach Len. (ft)        *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      * 1114.19  * 6153.47  *18011.81  *
* E.G. Slope (ft/ft)     *0.000584  * Area (sq ft)           * 1114.19  * 6153.47  *18011.81  *
* Q Total (cfs)          *53951.22  * Flow (cfs)             *  753.33  *39081.88  *14116.01  *
* Top Width (ft)         * 9014.04  * Top Width (ft)         *  657.07  *  320.99  * 8035.98  *
* Vel Total (ft/s)       *    2.13  * Avg. Vel. (ft/s)       *    0.68  *    6.35  *    0.78  *
* Max Chl Dpth (ft)      *   20.87  * Hydr. Depth (ft)       *    1.70  *   19.17  *    2.24  *
* Conv. Total (cfs)      *2233363.0  * Conv. (cfs)           * 31184.8  *1617832.0  *584346.1  *
* Length Wtd. (ft)       *  342.31  * Wetted Per. (ft)       *  657.15  *  326.82  * 8036.45  *
* Min Ch El (ft)         *  708.34  * Shear (lb/sq ft)       *    0.06  *    0.69  *    0.08  *
* Alpha                  *    6.45  * Stream Power (lb/ft s) *13599.58  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.19  * Cum Volume (acre-ft)   * 3240.46  * 2096.32  * 6455.66  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)         *  974.37  *  124.75  * 2238.57  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)         *  730.79  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.41  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  730.38  * Reach Len. (ft)        *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      * 2370.87  * 6529.79  *27806.68  *
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```
* E.G. Slope (ft/ft)      *0.000566  * Area (sq ft)            * 2370.87  * 6529.79  *27806.68  *
* Q Total (cfs)           *68239.31  * Flow (cfs)              * 1498.20  *42498.38  *24242.73  *
* Top Width (ft)          *10224.27  * Top Width (ft)          * 1449.83  *  320.99  * 8453.45  *
* Vel Total (ft/s)        *    1.86  * Avg. Vel. (ft/s)        *    0.63  *    6.51  *    0.87  *
* Max Chl Dpth (ft)       *   22.04  * Hydr. Depth (ft)        *    1.64  *   20.34  *    3.29  *
* Conv. Total (cfs)       *2867877.0  * Conv. (cfs)            * 62964.4  *1786069.0  *1018843.0  *
* Length Wtd. (ft)        *  342.31  * Wetted Per. (ft)        * 1449.95  *  326.82  * 8453.99  *
* Min Ch El (ft)          *  708.34  * Shear (lb/sq ft)        *    0.06  *    0.71  *    0.12  *
* Alpha                   *    7.71  * Stream Power (lb/ft s) *13599.58  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.18  * Cum Volume (acre-ft)   * 4683.67  * 2283.16  * 9763.46  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)         * 1149.67  *  125.04  * 2498.86  *
**********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK50
**********************************************************************************************
* E.G. Elev (ft)          *  731.44  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.38  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.06  * Reach Len. (ft)        *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      * 3575.52  * 6748.67  *33592.66  *
* E.G. Slope (ft/ft)      *0.000549  * Area (sq ft)            * 3575.52  * 6748.67  *33592.66  *
* Q Total (cfs)           *78960.89  * Flow (cfs)              * 2183.58  *44212.27  *32565.04  *
* Top Width (ft)          *10974.10  * Top Width (ft)          * 2136.90  *  320.99  * 8516.22  *
* Vel Total (ft/s)        *    1.80  * Avg. Vel. (ft/s)        *    0.61  *    6.55  *    0.97  *
* Max Chl Dpth (ft)       *   22.72  * Hydr. Depth (ft)        *    1.67  *   21.02  *    3.94  *
* Conv. Total (cfs)       *3370019.0  * Conv. (cfs)            * 93194.3  *1886962.0  *1389863.0  *
* Length Wtd. (ft)        *  342.31  * Wetted Per. (ft)        * 2137.04  *  326.82  * 8516.80  *
* Min Ch El (ft)          *  708.34  * Shear (lb/sq ft)        *    0.06  *    0.71  *    0.14  *
* Alpha                   *    7.56  * Stream Power (lb/ft s) *13599.58  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.18  * Cum Volume (acre-ft)   * 5780.94  * 2408.34  *12122.11  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)         * 1223.39  *  125.10  * 2535.59  *
**********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK100
**********************************************************************************************
* E.G. Elev (ft)          *  732.68  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.24  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.44  * Reach Len. (ft)        *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      * 6777.90  * 7192.08  *45511.00  *
* E.G. Slope (ft/ft)      *0.000378  * Area (sq ft)            * 6777.90  * 7192.08  *45511.00  *
* Q Total (cfs)           *89304.10  * Flow (cfs)              * 4362.71  *40815.02  *44126.37  *
```



```
* Top Width (ft)          *11386.20  * Top Width (ft)          * 2388.90  *  320.99  * 8676.31  *
* Vel Total (ft/s)        *    1.50  * Avg. Vel. (ft/s)        *    0.64  *    5.67  *    0.97  *
* Max Chl Dpth (ft)       *   24.10  * Hydr. Depth (ft)        *    2.84  *   22.41  *    5.25  *
* Conv. Total (cfs)       *4590668.0  * Conv. (cfs)            *224264.8  *2098092.0  *2268312.0  *
* Length Wtd. (ft)        *  342.31  * Wetted Per. (ft)        * 2389.05  *  326.82  * 8676.93  *
* Min Ch El (ft)          *  708.34  * Shear (lb/sq ft)        *    0.07  *    0.52  *    0.12  *
* Alpha                   *    6.74  * Stream Power (lb/ft s) *13599.58  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.13  * Cum Volume (acre-ft)   * 8764.72  * 2766.10  *18477.44  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         * 1293.80  *  125.22  * 2578.14  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
**********************************************************************************************
* E.G. Elev (ft)          *  733.39  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.21  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  733.18  * Reach Len. (ft)        *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      * 8560.28  * 7428.24  *51901.58  *
* E.G. Slope (ft/ft)      *0.000346  * Area (sq ft)            * 8560.28  * 7428.24  *51901.58  *
* Q Total (cfs)           *99651.31  * Flow (cfs)              * 6044.56  *41177.68  *52429.07  *
* Top Width (ft)          *11472.42  * Top Width (ft)          * 2454.44  *  320.99  * 8696.99  *
* Vel Total (ft/s)        *    1.47  * Avg. Vel. (ft/s)        *    0.71  *    5.54  *    1.01  *
* Max Chl Dpth (ft)       *   24.84  * Hydr. Depth (ft)        *    3.49  *   23.14  *    5.97  *
* Conv. Total (cfs)       *5358350.0  * Conv. (cfs)            *325022.0  *2214165.0  *2819163.0  *
* Length Wtd. (ft)        *  342.31  * Wetted Per. (ft)        * 2454.60  *  326.82  * 8697.61  *
* Min Ch El (ft)          *  708.34  * Shear (lb/sq ft)        *    0.08  *    0.49  *    0.13  *
* Alpha                   *    6.16  * Stream Power (lb/ft s) *13599.58  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.12  * Cum Volume (acre-ft)   * 9856.59  * 2872.38  *20643.23  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         * 1307.44  *  125.22  * 2584.80  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
**********************************************************************************************
* E.G. Elev (ft)          *  734.27  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.18  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  734.10  * Reach Len. (ft)        *  342.31  *  342.31  *  342.31  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *10862.62  * 7723.12  *59907.45  *
* E.G. Slope (ft/ft)      *0.000311  * Area (sq ft)            *10862.62  * 7723.12  *59907.45  *
* Q Total (cfs)           *112847.50  * Flow (cfs)             * 8288.52  *41638.26  *62920.71  *
* Top Width (ft)          *11613.94  * Top Width (ft)          * 2557.88  *  320.99  * 8735.07  *
* Vel Total (ft/s)        *    1.44  * Avg. Vel. (ft/s)        *    0.76  *    5.39  *    1.05  *
* Max Chl Dpth (ft)       *   25.76  * Hydr. Depth (ft)        *    4.25  *   24.06  *    6.86  *
* Conv. Total (cfs)       *6403050.0  * Conv. (cfs)            *470297.0  *2362585.0  *3570168.0  *
* Length Wtd. (ft)        *  342.31  * Wetted Per. (ft)        * 2558.04  *  326.82  * 8735.71  *
* Min Ch El (ft)          *  708.34  * Shear (lb/sq ft)        *    0.08  *    0.46  *    0.13  *
```

```
* Alpha                    *    5.51  * Stream Power (lb/ft s) *13599.58  *    0.00  *    0.00  *
* Frctn Loss (ft)          *    0.10  * Cum Volume (acre-ft)   *11209.91  * 3001.98  *23296.77  *
* C & E Loss (ft)          *    0.00  * Cum SA (acres)         * 1331.41  *  125.22  * 2592.88  *
*****************************************************************************************************
```

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 14867.08

INPUT
Description:
Station Elevation Data num= 450

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	758.7	728.87	988	756.86	29.4	502	756.82	30.64	063
756.78	54.73	047	755.89	62.58	008	755.57	79.72	07	754.94
128.83	98	752.87	129.69	04	752.84	132.31	05	752.72	161.97
07	751.47	179.66	99	750.51	195.10	06	749.72	225.44	04
748.74	228.23	05	748.64	229.64	06	748.58	254.62	99	747.77
261.36	04	747.61	294.49	02	746.62	323.73	05	744.93	327.62
01	744.7	360.75	743.53	372.87	01	743.07	404.56	05	741.93
427.00	98	741.06	429.54	98	740.67	454.53	03	740.04	460.14
06	739.81	493.27	05	737.81	526.40	04	736.67	529.5	736.57
539.00	98	735.76	559.53	03	735.61	592.66	02	734.78	604.46
734.51	625.78	03	734.16	58.91	02	733.17	692.04	732.45	704.41
02	732.13	725.16	99	731.68	729.40	04	731.58	754.39	06
731.03	758.29	98	730.96	779.37	01	730.53	791.43	07	730.32
815.15	04	729.21	879.33	01	729.14	890.82	03	729.13	923.95
02	729.7	945.72	07	729.5	954.29	729.65	957.08	01	729.69
1047.39	1	730.58	1054.24	730.63	1056.47	1	730.65	1089.60	1
730.9	1122.73	731.35	1159.15	731.47	1188.99	731.51	1222.12	731.5	1255.25
731.43	1352.42	731.02	1354.10	1	731.02	1354.64	1	731.01	1420.9
730.82	1454.03	730.66	1454.10	1	730.66	1552.29	730.39	1553.42	730.38
1555.77	1	730.37	1601.43	730.12	1619.68	1	730.05	1719.07	729.56
1752.2	729.27	1778.89	1	729.14	1851.59	728.92	1917.85	1	728.81
1945.43	1	728.91	2050.37	729.09	2103.73	729.26	2149.76	729.45	2153.71
729.46	2182.89	1	729.6	2216.02	1	729.87	2278.65	730.19	2282.28
730.2	2348.54	730.51	2381.67	730.88	2514.19	731.54	2547.32	731.85	2578.5
731.98	2580.45	731.98	2646.71	732.24	2679.84	730.78	2712.97	1	729.54
2746.10	1	729.59	2775.88	730.81	2779.23	730.94	2812.36	732.06	2829.99
732.2	2845.49	732.26	2877.55	732.2	2878.62	732.19	2879.13	732.19	2977.41
731.86	2978.01	731.86	3011.14	1	731.58	3077.4	731.24	3078.26	731.23
3080.9	731.22	3141.68	1	730.88	3169.37	730.53	3173.21	730.49	3202.35
1	730.29	3204.74	730.27	3206.92	730.26	3267.8	729.85	3268.31	1
729.84	3299.33	729.4	3393.92	728.82	3425.45	728.69	3448.55	728.51	3488.51
728.17	3520.04	727.75	3551.57	727.26	3583.10	1	726.71	3614.63	725.56
3677.69	724.42	3709.22	1	723.9	3740.75	723	3772.28	722.64	3811
722.29	3835.34	722.12							

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
3841.2	722.08	3867	708.58	4123	708.21	4150.64	1	721.75	4173.44
722.08	4182.17	722.22	4213.7	722.61	4245.23	723.07	4276.76	723.59	4308.29
724.17	4339.82	725.39	4402.88	726.62	4434.41	727.16	4465.94	727.62	4488.5
728.08	4497.47	728.29	4505.69	728.35	4587.44	728.71	4592.06	1	728.72
4623.59	728.89	4692.75	728.94	4777.52	1	728.9	4781.24	728.89	5049.36
728.75	5159.61	728.67	5532.62	728.54	5632.56	1	728.43	5664.09	728.3
5774.25	728.03	5804.46	727.82	5916.33	727.4	5947.86	727.09	6038.48	726.52
6073.98	726.25	6104.44	725.72	6105.51	725.7	6106.5	725.69	6136.7	725.35
6137.42	725.35	6227.31	724.27	6231.63	724.15	6236.35	724.1	6263.16	723.4
6326.22	722.66	6357.75	722.33	6389.28	721.87	6420.81	721.75	6452.34	721.69
6483.87	721.7	6515.4	722.14	6546.93	724.47	6578.47	725.69	6599.11	726.39
6610	726.87	6641.53	727.66	6650.17	727.78	6673.06	728.35	6698.05	728.42
6704.59	728.47	6736.12	728.43	6740.78	728.41	6770.98	728.33	6799.18	728.18
6830.71	727.39	6891.8	726.34	6925.3	725.82	6956.83	725.41	6982.41	724.89
6988.36	724.79	7019.89	724.6	7082.95	724.35	7114.48	724.28	7398.25	724.21
7461.31	724.39	7465.67	724.41	7524.37	724.6	7555.9	724.8	7556.28	724.81
7586.49	724.93	7587.43	724.94	7650.49	725.14	7654.42	725.14	7713.55	725.3
7828.12	725.34	7871.2	725.29	7965.73	725.24	8091.75	725.1	8238.66	724.93
8501.33	724.79	8506.62	724.78	8564.34	724.72	8595.85	724.63	8599.29	724.63
8658.56	724.51	8658.86	724.5	8661.07	724.5	8720.86	724.36	8721.87	724.36
8753	724.2	8753.74	724.2	8815.52	724.04	8816.39	1	724.04	8846.42
723.97	8879.4	723.78	8881.59	723.78	9005.43	723.46	9031.76	723.32	9036.93
723.39	162.96	1	723.06	9194.46	1	722.96	9203.05	1	722.96
9288.98	722.85	9402.45	722.44	9415.01	722.37	9433.34	722.3	9464.23	722.09
9478.02	721.97	9492.37	721.92	9509.53	721.9	9526.01	722.02	9541.03	722.3
9556.91	723.02	9572.54	724.09	958	7.80	1	725.21	9604.05	1
726.53	9620.96	1	727.78	9635.55	1	729.16	9653.1	729.35	9667.06
1	729.62	9685.25	729.62	9698.56	1	729.7	9711.36	729.63	9730.07
729.48	9761.58	728.52	9781.69	728.13	9793.08	727.87	9804.03	727.58	9856.09
726.42	9887.6	725.88	9896.7	725.99	9919.11	726.2	9942.42	726.82	9982.12
727.96	100	06.71	728.41	001	3.63	728.54	10038.86	728.56	100
45.13	728.58	10051.16	728.56	100	76.64	728.41	0108.14	728.53	10135.3
728.71	00	139.65	728.71	0171.16	728.96	100	199.59	729.31	0202.66
729.32	10231.74	729.39	10234.17	729.41	10236.5	729.41	0265.68	729.37	10297.18
729.21	10298.29	729.21	10328.69	728.99	10329.18	728.98	10360.07	728.58	10360.32
728.58	10391.7	728.54	10392.47	728.54	10452.74	728.38	10454.71	728.38	10483.63
728.26	10486.22	728.26	10514.52	728.16	10521.06	728.16	10549.23	728.23	10576.3
728.37	10585.35	728.39	10612.24	728.53	10668.98	728.76	10675.25	728.77	10699.87
728.88	10730.76	72	910769.77	729.05	10823.43	728.81	10842.52	728.76	10885.21
728.58	10938.96	728.53	10958.81	728.57	11021.82	728.59	11084.83	728.54	11116.34
728.59	11147.85	728.59	11163.23	728.51	11179.35	728.45	11196.13	728.32	11210.86
728.14	11225.01	727.69	11242.37	727.28	11260.43	727.12	11273.87	726.96	11305.38
726.8	11336.88	726.83	11356.86	726.92	11368.39	72	711379.47	727.22	11399.9
727.53	11421.16	727.68	11441.25	727.84	11485.45	728.08	11494.41	728.15	11517.6
728.37	11525.92	728.42	11549.74	728.51	11557.43	728.58	11620.44	728.71	11651.95
728.72	11714.96	728.65	11746.46	728.59	11967.01	728.53	11997.28	728.47	11998.51
728.46									

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11999.79  728.4612059.06  728.2712061.52  728.2712093.03  728.1512124.54  727.95
12219.06  727.73 12275.3  727.6512313.57  727.6712321.26   727.712367.97  727.84
12376.59  727.8912385.55  728.0812408.09  728.24 12417.7  728.38 12439.6  728.89
12491.54  729.8112534.12  730.6512553.32  731.3912565.62  731.7612584.21  731.99
12597.13  732.0812610.58  732.0412628.64  732.1212642.72  731.9212660.14  731.79
12676.88  731.4712691.65  731.0912707.02  729.9412723.15  728.8112738.66  728.14
12754.66  727.5512771.31  727.1312786.17  726.5812800.44  726.3312817.67  726.25
12831.34  726.4212849.18  727.4912862.23   728.912880.69   729.912899.89  731.07
12912.19  731.9812924.01  732.74 12943.7  733.81 12975.2  734.9712985.79  735.25
13006.71   736.113016.68  736.2213060.63  737.0113069.72  737.1513092.77   737.6
13132.73  738.3313157.07  739.0813164.24  739.2813258.76  740.4713285.65  741.14
 13317.8  741.5613321.77  741.6613349.95  742.0113353.28  742.0613384.78  742.45
13387.37  742.4913416.29  742.8713446.38  743.64 13447.8  743.6813510.68  744.47
13510.81  744.4713541.83  744.8413542.82  744.8613573.82  745.2113603.61  745.77
13605.33  745.8113636.83  746.0113668.34   746.113671.41   746.113699.85  746.04
13703.56  745.9813731.35  745.79 13735.7  745.6813762.86  744.9613794.36  744.53
13825.87  744.2413857.38  744.1813864.29  744.3513888.88  744.9213920.39  745.49
 13951.9  745.95 13983.4  746.1614014.91  746.0714025.02  745.8614045.49  745.23

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
       0     .09 3835.34     .044150.641     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       3835.344150.641           463.28  463.28  463.28             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0 2646.71  732.24       T
   1256014045.49     732       T

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  726.40  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.24  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  726.15  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  570.63  * 5158.42  * 6956.75  *
* E.G. Slope (ft/ft)      *0.000327  * Area (sq ft)            *  570.63  * 5158.42  * 6956.75  *
* Q Total (cfs)           *25686.49  * Flow (cfs)              *  305.87  *22023.15  * 3357.47  *
* Top Width (ft)          * 4031.85  * Top Width (ft)          *  237.02  *  315.30  * 3479.53  *
* Vel Total (ft/s)        *    2.02  * Avg. Vel. (ft/s)        *    0.54  *    4.27  *    0.48  *
* Max Chl Dpth (ft)       *   17.94  * Hydr. Depth (ft)        *    2.41  *   16.36  *    2.00  *
* Conv. Total (cfs)       *1421027.0  * Conv. (cfs)            * 16921.5  *1218364.0  *185741.6  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        *  237.06  *  321.76  * 3479.89  *
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* Min Ch El (ft)          *  708.21  * Shear (lb/sq ft)        *    0.05  *    0.33  *    0.04  *
* Alpha                   *    3.82  * Stream Power (lb/ft s)   *14045.49  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.16  * Cum Volume (acre-ft)    * 1417.12  * 1828.01  * 2071.07  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  593.06  *  121.63  * 1591.10  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)          *  729.30  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.23  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  729.07  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 1504.53  * 6076.06  *20969.47  *
* E.G. Slope (ft/ft)      *0.000316  * Area (sq ft)            * 1544.64  * 6076.06  *21231.81  *
* Q Total (cfs)           *42516.55  * Flow (cfs)              *  944.05  *28459.90  *13112.61  *
* Top Width (ft)          * 9235.96  * Top Width (ft)          *  723.55  *  315.30  * 8197.12  *
* Vel Total (ft/s)        *    1.49  * Avg. Vel. (ft/s)        *    0.63  *    4.68  *    0.63  *
* Max Chl Dpth (ft)       *   20.86  * Hydr. Depth (ft)        *    3.13  *   19.27  *    2.60  *
* Conv. Total (cfs)       *2391167.0  * Conv. (cfs)            * 53093.9  *1600609.0  *737464.1  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        *  481.46  *  321.76  * 8052.02  *
* Min Ch El (ft)          *  708.21  * Shear (lb/sq ft)        *    0.06  *    0.37  *    0.05  *
* Alpha                   *    6.68  * Stream Power (lb/ft s)   *14045.49  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.14  * Cum Volume (acre-ft)    * 4826.71  * 2317.57  *10100.53  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          * 1066.39  *  122.72  * 2421.89  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)          *  729.45  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.37  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  729.09  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 1514.37  * 6082.48  *21133.68  *
* E.G. Slope (ft/ft)      *0.000504  * Area (sq ft)            * 1559.53  * 6082.48  *21398.99  *
* Q Total (cfs)           *53951.22  * Flow (cfs)              * 1199.79  *36006.51  *16744.91  *
* Top Width (ft)          * 9257.00  * Top Width (ft)          *  737.36  *  315.30  * 8204.34  *
* Vel Total (ft/s)        *    1.88  * Avg. Vel. (ft/s)        *    0.79  *    5.92  *    0.79  *
* Max Chl Dpth (ft)       *   20.88  * Hydr. Depth (ft)        *    3.12  *   19.29  *    2.62  *
* Conv. Total (cfs)       *2402540.0  * Conv. (cfs)            * 53428.7  *1603432.0  *745679.8  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        *  484.79  *  321.76  * 8058.58  *
* Min Ch El (ft)          *  708.21  * Shear (lb/sq ft)        *    0.10  *    0.60  *    0.08  *
* Alpha                   *    6.69  * Stream Power (lb/ft s)   *14045.49  *    0.00  *    0.00  *
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* Frctn Loss (ft)        *    0.23  * Cum Volume (acre-ft)   * 3229.95  * 2048.25  * 6300.81  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  968.90  *  122.25  * 2174.76  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************************
* E.G. Elev (ft)         *  730.59  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.34  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  730.25  * Reach Len. (ft)       *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     * 2197.28  * 6449.84  *30768.72  *
* E.G. Slope (ft/ft)     *0.000497  * Area (sq ft)          * 2973.26  * 6449.84  *31226.70  *
* Q Total (cfs)          *68239.31  * Flow (cfs)            * 1825.21  *39422.03  *26992.07  *
* Top Width (ft)         *10492.59  * Top Width (ft)        * 1630.48  *  315.30  * 8546.81  *
* Vel Total (ft/s)       *    1.73  * Avg. Vel. (ft/s)      *    0.83  *    6.11  *    0.88  *
* Max Chl Dpth (ft)      *   22.04  * Hydr. Depth (ft)      *    3.16  *   20.46  *    3.68  *
* Conv. Total (cfs)      *3060503.0  * Conv. (cfs)          * 81859.7  *1768061.0  *1210583.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)      *  695.37  *  321.76  * 8363.94  *
* Min Ch El (ft)         *  708.21  * Shear (lb/sq ft)      *    0.10  *    0.62  *    0.11  *
* Alpha                  *    7.31  * Stream Power (lb/ft s) *14045.49  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.23  * Cum Volume (acre-ft)   * 4662.67  * 2232.17  * 9531.51  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         * 1137.57  *  122.54  * 2432.06  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************************
* E.G. Elev (ft)         *  731.25  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.32  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  730.93  * Reach Len. (ft)       *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     * 2706.88  * 6663.17  *36437.73  *
* E.G. Slope (ft/ft)     *0.000488  * Area (sq ft)          * 4253.65  * 6663.17  *37026.72  *
* Q Total (cfs)          *78960.89  * Flow (cfs)            * 2322.96  *41251.40  *35386.52  *
* Top Width (ft)         *11052.89  * Top Width (ft)        * 2143.20  *  315.30  * 8594.39  *
* Vel Total (ft/s)       *    1.72  * Avg. Vel. (ft/s)      *    0.86  *    6.19  *    0.97  *
* Max Chl Dpth (ft)      *   22.72  * Hydr. Depth (ft)      *    3.36  *   21.13  *    4.34  *
* Conv. Total (cfs)      *3572919.0  * Conv. (cfs)          *105112.3  *1866594.0  *1601213.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)      *  804.62  *  321.76  * 8391.38  *
* Min Ch El (ft)         *  708.21  * Shear (lb/sq ft)      *    0.10  *    0.63  *    0.13  *
* Alpha                  *    6.89  * Stream Power (lb/ft s) *14045.49  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.22  * Cum Volume (acre-ft)   * 5750.18  * 2355.64  *11844.63  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         * 1206.57  *  122.60  * 2468.36  *
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Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)         *  732.55  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.23  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  732.32  * Reach Len. (ft)       *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     * 4223.59  * 7102.77  *48266.19  *
* E.G. Slope (ft/ft)     *0.000370  * Area (sq ft)          * 8004.76  * 7102.77  *49108.22  *
* Q Total (cfs)          *89304.10  * Flow (cfs)            * 1633.87  *39912.68  *47757.55  *
* Top Width (ft)         *12220.49  * Top Width (ft)        * 3138.33  *  315.30  * 8766.86  *
* Vel Total (ft/s)       *    1.50  * Avg. Vel. (ft/s)      *    0.39  *    5.62  *    0.99  *
* Max Chl Dpth (ft)      *   24.11  * Hydr. Depth (ft)      *    1.35  *   22.53  *    5.51  *
* Conv. Total (cfs)      *4645744.0  * Conv. (cfs)          * 84996.6  *2076322.0  *2484425.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)      * 3138.57  *  321.76  * 8767.94  *
* Min Ch El (ft)         *  708.21  * Shear (lb/sq ft)      *    0.03  *    0.51  *    0.13  *
* Alpha                  *    6.52  * Stream Power (lb/ft s) *14045.49  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.16  * Cum Volume (acre-ft)   * 8706.63  * 2709.94  *18105.66  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         * 1272.09  *  122.72  * 2509.60  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************************
* E.G. Elev (ft)         *  733.27  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.20  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  733.07  * Reach Len. (ft)       *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     * 6581.31  * 7338.42  *54822.83  *
* E.G. Slope (ft/ft)     *0.000336  * Area (sq ft)          *10362.47  * 7338.42  *55664.86  *
* Q Total (cfs)          *99651.31  * Flow (cfs)            * 3238.97  *40173.93  *56238.41  *
* Top Width (ft)         *12266.49  * Top Width (ft)        * 3171.77  *  315.30  * 8779.42  *
* Vel Total (ft/s)       *    1.45  * Avg. Vel. (ft/s)      *    0.49  *    5.47  *    1.03  *
* Max Chl Dpth (ft)      *   24.86  * Hydr. Depth (ft)      *    2.07  *   23.27  *    6.24  *
* Conv. Total (cfs)      *5438236.0  * Conv. (cfs)          *176759.2  *2192398.0  *3069079.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)      * 3172.03  *  321.76  * 8780.52  *
* Min Ch El (ft)         *  708.21  * Shear (lb/sq ft)      *    0.04  *    0.48  *    0.13  *
* Alpha                  *    6.04  * Stream Power (lb/ft s) *14045.49  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.14  * Cum Volume (acre-ft)   * 9782.24  * 2814.36  *20220.58  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         * 1285.33  *  122.72  * 2516.13  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************************
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* E.G. Elev (ft)          *  734.17  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.17  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  734.00  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 9553.82  * 7632.28  *63013.47  *
* E.G. Slope (ft/ft)      *0.000298  * Area (sq ft)            *13334.99  * 7632.28  *63855.50  *
* Q Total (cfs)           *112847.50  * Flow (cfs)              * 5642.33  *40434.44  *66770.74  *
* Top Width (ft)          *12319.57  * Top Width (ft)          * 3206.03  *  315.30  * 8798.24  *
* Vel Total (ft/s)        *    1.41  * Avg. Vel. (ft/s)        *    0.59  *    5.30  *    1.06  *
* Max Chl Dpth (ft)       *   25.79  * Hydr. Depth (ft)        *    2.98  *   24.21  *    7.16  *
* Conv. Total (cfs)       *6532504.0  * Conv. (cfs)             *326622.3  *2340664.0  *3865218.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 3206.29  *  321.76  * 8799.37  *
* Min Ch El (ft)          *  708.21  * Shear (lb/sq ft)        *    0.06  *    0.44  *    0.13  *
* Alpha                   *    5.42  * Stream Power (lb/ft s)  *14045.49  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.13  * Cum Volume (acre-ft)    *11114.84  * 2941.65  *22810.48  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          * 1308.76  *  122.72  * 2523.99  *
*****************************************************************************************************
```

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 14403.8*

INPUT
Description:
Station Elevation Data num= 385

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	759.01	6.24	758.6	26.55	757.19	30.86	756.88	31.47	756.83
32.74	756.77	33.27	756.75	52.41	755.8	58.49	755.42	66.88	754.85
75.5	754.3	85.42	753.86	98.58	753.23	137.68	751.44	138.59	751.41
141.39	751.27	167.84	750.06	173.09	749.77	190.93	748.61	192	748.55
208.49	747.68	243.9	746.41	245.41	746.34	272.11	745.45	279.3	745.27
306.37	744.41	314.71	744.19	350.11	742.45	352.55	742.37	398.47	740.98
398.72	740.98	399.4	740.95	485.73	738.23	491.08	738.05	491.73	738.03
514.17	736.99	517.15	736.84	527.13	736.37	562.54	735.39	565.85	735.31
565.98	735.3	597.94	734.47	645.96	733.52	668.74	733.16	704.15	732.36
739.55	731.74	752.77	731.46	790.27	730.8	791.22	730.78	845.76	729.87
881.17	729.12	916.57	728.86	951.98	728.76	987.38	728.79	1022.79	729.19
1119.3	729.86	1126.62	729.89	1129	729.91	1164.4	730.08	1183.7	730.28
1184.35	730.29	1199.81	730.44	1306.02	730.49	1321.71	730.45	1322.24	730.45
1445.27	730.01	1447.06	730.01	1447.64	730	1448.79	730	1517.95	729.82
1518.45	729.81	1553.85	729.68	1553.93	729.68	1658.86	729.45	1660.07	729.44
1830.16	728.82	1831.93	728.82	1837.09	728.8	1899.42	728.47	2078.99	728.33

2155.73	728.47	2248.15	728.85	2332.75	729.21	2361.18	729.43	2361.76	729.43
2368.15	729.48	2499.12	730.1	2499.7	730.1	2509.77	730.14	2545.18	730.48
2615.14	730.81	2616.86	730.81	2638.23	730.9	2640.72	730.92	2686.79	731.1
2722.2	731.37	2755.52	731.48	2757.6	731.48	2828.41	731.71	2863.82	730.46
2899.22	729.4	2934.63	729.44	2966.45	730.49	2970.03	730.6	3005.43	731.56
3040.84	731.73	3075.1	731.68	3076.24	731.67	3076.79	731.67	3181.81	731.39
3182.46	731.39	3288.67	730.85	3289.59	730.84	3292.41	730.84	3357.36	730.54
3386.95	730.24	3492.14	729.66	3492.69	729.65	3525.83	729.27	3676.54	728.65
3677.18	728.64	3678.09	728.64	3728	728.33	3794.28	727.57	3795.39	727.55
3813.91	727.28	3829.09	727.05	3861.88	726.05	3862.78	726.02	3930.17	724.78
3931.14	724.77	3963.87	724.18	3977.32	723.81	3997.56	723.18	4000.4	723.13
4069.01	722.33	4069.67	722.33	4092.75	722.12	4098.64	722.09	4104.52	721.73
4130.41	708.74	4136.41	708.4	4387.29	708.04	4414.07	721.77	4476.18	722.51
4476.69	722.52	4542.98	723.48	4570.61	723.98	4601.93	725.06	4608.81	725.18
4609.78	725.2	4664.55	726.09	4727.16	726.8	4749.57	727.18	4758.48	727.36
4766.64	727.41	4883.71	727.86	5885.62	727.52	6026.32	727.19	6041.86	727.1
6043.51	727.1	6056.32	727.02	6167.4	726.67	6198.71	726.4	6323.95	725.69
6354.2	725.24	6355.26	725.22	6356.24	725.22	6386.23	724.93	6386.94	724.93
6476.21	724.01	6480.5	723.91	6485.18	723.86	6511.81	723.27	6637.04	721.96
6730.97	721.82	6762.28	722.2	6793.59	724.2	6824.91	725.25	6845.4	725.85
6856.22	726.27	6887.53	726.94	6896.11	727.05	6918.84	727.54	6943.65	727.6
6950.15	727.64	6981.45	727.61	6986.08	727.59	7044.07	727.4	7075.38	726.73
7169.31	725.39	7200.62	725.04	7202.14	725.01	7231.93	724.51	7357.17	724.08
7638.95	724.05	7764.19	724.39	7795.5	724.57	7795.87	724.58	7825.87	724.68
7826.81	724.69	7889.42	724.87	7893.33	724.87	8065.81	725.09	8888.45	724.7
8890.74	724.69	8952.3	724.58	8953.31	724.59	8984.22	724.45	9047.79	724.33
9049.66	724.32	9076.98	724.28	9080.81	724.26	9081.72	724.26	9109.73	724.12
9234.88	723.88	9261.03	723.76	9516.45	723.43	9641.59	723.05	9642.05	723.05
9718.41	722.69	9732.35	722.68	9735.45	722.67	9751.82	722.78	9766.73	723.02
9782.5	723.65	9798.02	724.57	9804.63	724.99	9807.12	725.14	9813.17	725.53
9829.31	726.67	9839.59	727.33	9840.14	727.36	9846.1	727.75	9860.59	728.93
9878.02	729.1	9891.88	729.33	9909.94	729.34	9923.16	729.41	9954.45	729.23
9985.74	728.4110017.02		727.8710027.89		727.6210079.59		726.6310110.88		726.18
10142.17	726.4610204.73		727.9810236.02		728.48 10267.3		728.5210298.59		728.38
10392.45	728.8710420.68		729.1710452.61		729.2510455.02		729.2710457.33		729.26
10517.59	729.110518.69		729.110548.88		728.9110549.36		728.910580.04		728.56
10702.73	728.2910705.31		728.2910733.41		728.210986.87		728.97 11101.5		728.57
11154.88	728.52 11362.3		728.5711410.25		728.3311424.87		728.1711438.92		727.79
11456.16	727.4311518.73		727.0111569.85		727.11 11581.3		727.18 11592.3		727.37
11612.59	727.6311737.73		728.3811761.38		728.4411769.02		728.5111862.88		728.62
12118.12	728.3912118.24		728.3812205.79		728.2612207.01		728.2512208.28		728.25
12267.14	728.0612269.58		728.0612332.16		727.7312479.42		727.3812573.88		727.5
12582.44	727.5412591.34		727.712613.32		727.8212613.72		727.8312623.27		727.94
12645.01	728.3612738.87		729.8412756.26		730.4112757.94		730.4712770.15		730.79

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12788.61  730.9812801.44  731.06 12814.8  731.0212832.73  731.0912846.71  730.92
12864.01  730.8112880.63  730.53 12895.3  730.2112910.46  729.2312910.56  729.22
12926.58  728.2612941.98  727.6912957.87  727.19 12974.4  726.8412989.16  726.37
13003.33  726.1613020.44   726.113034.01  726.2513051.73  727.1813064.69  728.39
13083.02  729.2613102.08  730.28 13114.3  731.0713126.03  731.7313145.58  732.66
13176.86  733.6813187.38  733.9213208.15  734.6613218.05  734.7813238.48  735.12
13270.72  735.6113272.75  735.6513273.61  735.6613333.29  736.6513357.46   737.3
13364.58  737.4713458.44  738.4813485.14  739.0513517.07  739.4113521.01  739.49
13583.58  740.1713586.15  740.2113614.87  740.5513644.75  741.2313646.16  741.27
13667.71  741.5313669.78  741.5513708.37  742.05 13708.6  742.0613708.72  742.06
13739.53  742.4913740.51  742.5113771.29  742.8813800.88  743.4813801.83  743.51
13802.58  743.5313833.86  743.9413834.85  743.95 13868.2  744.9513896.44  745.52
13900.13  745.5513900.87  745.5613927.72     74613933.89     74613959.01  745.92
13990.29   746.113997.54  746.1713999.92  746.1814001.92  746.2114021.58  746.57
 14032.3  746.8214032.93  746.8414052.87     74714062.68   747.314065.95  747.41
14084.15  747.9514142.13  749.3814146.73  749.48   14165  749.7914178.01   750.1
   14198  750.37 14209.3  750.3914219.34  750.2614231.02  750.0114239.66  749.79

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
       0     .09 4098.64     .04 4414.07     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      4098.64 4414.07           463.28  463.28  463.28            .1        .3

CROSS SECTION OUTPUT  Profile #PK2
**********************************************************************************************
* E.G. Elev (ft)          *  726.24  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.26  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  725.98  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  509.46  * 5158.81  * 6262.64  *
* E.G. Slope (ft/ft)      *0.000343  * Area (sq ft)            *  509.46  * 5158.81  * 6262.64  *
* Q Total (cfs)           *25686.49  * Flow (cfs)              *  261.91  *22565.07  * 2859.51  *
* Top Width (ft)          * 4060.38  * Top Width (ft)          *  233.69  *  315.43  * 3511.26  *
* Vel Total (ft/s)        *    2.15  * Avg. Vel. (ft/s)        *    0.51  *    4.37  *    0.46  *
* Max Chl Dpth (ft)       *   17.94  * Hydr. Depth (ft)        *    2.18  *   16.35  *    1.78  *
* Conv. Total (cfs)       *1386833.0  * Conv. (cfs)            * 14140.7  *1218306.0  *154387.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        *  233.72  *  321.84  * 3511.53  *
* Min Ch El (ft)          *  708.04  * Shear (lb/sq ft)        *    0.05  *    0.34  *    0.04  *
* Alpha                   *    3.63  * Stream Power (lb/ft s)  *14239.66  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.16  * Cum Volume (acre-ft)    * 1411.38  * 1773.14  * 2000.77  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  590.56  *  118.28  * 1553.92  *
**********************************************************************************************
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Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
**********************************************************************************************
* E.G. Elev (ft)          *  729.15  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.21  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.93  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 1636.74  * 6090.52  *21933.10  *
* E.G. Slope (ft/ft)      *0.000300  * Area (sq ft)            * 1636.74  * 6090.52  *21933.10  *
* Q Total (cfs)           *42516.55  * Flow (cfs)              *  873.30  *27813.04  *13830.21  *
* Top Width (ft)          * 9523.54  * Top Width (ft)          * 1053.61  *  315.43  * 8154.50  *
* Vel Total (ft/s)        *    1.43  * Avg. Vel. (ft/s)        *    0.53  *    4.57  *    0.63  *
* Max Chl Dpth (ft)       *   20.89  * Hydr. Depth (ft)        *    1.55  *   19.31  *    2.69  *
* Conv. Total (cfs)       *2456073.0  * Conv. (cfs)            * 50448.3  *1606688.0  *798935.8  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 1053.68  *  321.84  * 8155.15  *
* Min Ch El (ft)          *  708.04  * Shear (lb/sq ft)        *    0.03  *    0.35  *    0.05  *
* Alpha                   *    6.70  * Stream Power (lb/ft s)  *14239.66  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.14  * Cum Volume (acre-ft)    * 4809.79  * 2252.87  * 9871.00  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          * 1056.94  *  119.37  * 2334.94  *
**********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
**********************************************************************************************
* E.G. Elev (ft)          *  729.22  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.36  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.86  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 1559.68  * 6066.61  *21317.79  *
* E.G. Slope (ft/ft)      *0.000500  * Area (sq ft)            * 1559.68  * 6066.61  *21317.79  *
* Q Total (cfs)           *53951.22  * Flow (cfs)              * 1099.25  *35680.04  *17171.93  *
* Top Width (ft)          * 9374.17  * Top Width (ft)          *  979.12  *  315.43  * 8079.62  *
* Vel Total (ft/s)        *    1.86  * Avg. Vel. (ft/s)        *    0.70  *    5.88  *    0.81  *
* Max Chl Dpth (ft)       *   20.82  * Hydr. Depth (ft)        *    1.59  *   19.23  *    2.64  *
* Conv. Total (cfs)       *2413572.0  * Conv. (cfs)            * 49176.3  *1596189.0  *768206.4  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        *  979.19  *  321.84  * 8080.26  *
* Min Ch El (ft)          *  708.04  * Shear (lb/sq ft)        *    0.05  *    0.59  *    0.08  *
* Alpha                   *    6.65  * Stream Power (lb/ft s)  *14239.66  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.23  * Cum Volume (acre-ft)    * 3213.37  * 1983.64  * 6073.65  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  959.77  *  118.90  * 2088.17  *
**********************************************************************************************

Warning: Divided flow computed for this cross-section.
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CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)          *  730.36  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.33  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  730.03  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 3345.92  * 6434.95  *31131.80  *
* E.G. Slope (ft/ft)      *0.000493  * Area (sq ft)            * 3345.92  * 6434.95  *31131.80  *
* Q Total (cfs)           *68239.31  * Flow (cfs)              * 2053.88  *39095.00  *27090.44  *
* Top Width (ft)          *10951.22  * Top Width (ft)          * 2106.15  *  315.43  * 8529.65  *
* Vel Total (ft/s)        *     1.67  * Avg. Vel. (ft/s)       *    0.61  *    6.08  *    0.87  *
* Max Chl Dpth (ft)       *    21.99  * Hydr. Depth (ft)       *    1.59  *   20.40  *    3.65  *
* Conv. Total (cfs)       *3073706.0  * Conv. (cfs)            * 92512.9  *1760958.0  *1220236.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 2106.26  *  321.84  * 8530.38  *
* Min Ch El (ft)          *  708.04  * Shear (lb/sq ft)        *    0.05  *    0.62  *    0.11  *
* Alpha                   *    7.71  * Stream Power (lb/ft s) *14239.66  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.23  * Cum Volume (acre-ft)    * 4629.06  * 2163.65  * 9199.90  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          * 1117.70  *  119.18  * 2341.26  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************
* E.G. Elev (ft)          *  731.02  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.30  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  730.71  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 5008.40  * 6652.19  *37025.69  *
* E.G. Slope (ft/ft)      *0.000474  * Area (sq ft)            * 5008.40  * 6652.19  *37025.69  *
* Q Total (cfs)           *78960.89  * Flow (cfs)              * 3089.21  *40532.84  *35338.84  *
* Top Width (ft)          *11604.18  * Top Width (ft)          * 2696.44  *  315.43  * 8592.32  *
* Vel Total (ft/s)        *     1.62  * Avg. Vel. (ft/s)       *    0.62  *    6.09  *    0.95  *
* Max Chl Dpth (ft)       *    22.67  * Hydr. Depth (ft)       *    1.86  *   21.09  *    4.31  *
* Conv. Total (cfs)       *3625657.0  * Conv. (cfs)            *141847.7  *1861151.0  *1622658.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 2696.58  *  321.84  * 8593.10  *
* Min Ch El (ft)          *  708.04  * Shear (lb/sq ft)        *    0.05  *    0.61  *    0.13  *
* Alpha                   *    7.41  * Stream Power (lb/ft s) *14239.66  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.22  * Cum Volume (acre-ft)    * 5700.92  * 2284.84  *11450.84  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          * 1180.84  *  119.25  * 2376.96  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK100
```



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*****************************************************************************************
* E.G. Elev (ft)          *  732.38  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.18  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.20  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 9614.08  * 7119.69  *49906.52  *
* E.G. Slope (ft/ft)      *0.000314  * Area (sq ft)            * 9614.08  * 7119.69  *49906.52  *
* Q Total (cfs)           *89304.10  * Flow (cfs)              * 5642.15  *36942.34  *46719.61  *
* Top Width (ft)          *12422.36  * Top Width (ft)          * 3385.16  *  315.43  * 8721.77  *
* Vel Total (ft/s)        *     1.34  * Avg. Vel. (ft/s)       *    0.59  *    5.19  *    0.94  *
* Max Chl Dpth (ft)       *    24.16  * Hydr. Depth (ft)       *    2.84  *   22.57  *    5.72  *
* Conv. Total (cfs)       *5038367.0  * Conv. (cfs)            *318319.2  *2084216.0  *2635832.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 3385.35  *  321.84  * 8722.60  *
* Min Ch El (ft)          *  708.04  * Shear (lb/sq ft)        *    0.06  *    0.43  *    0.11  *
* Alpha                   *    6.47  * Stream Power (lb/ft s) *14239.66  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.14  * Cum Volume (acre-ft)    * 8612.94  * 2634.31  *17579.13  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          * 1237.40  *  119.37  * 2416.60  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************
* E.G. Elev (ft)          *  733.11  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.16  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.95  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *12194.99  * 7358.86  *56526.15  *
* E.G. Slope (ft/ft)      *0.000284  * Area (sq ft)            *12194.99  * 7358.86  *56526.15  *
* Q Total (cfs)           *99651.31  * Flow (cfs)              * 7920.44  *37124.18  *54606.70  *
* Top Width (ft)          *12476.80  * Top Width (ft)          * 3420.82  *  315.43  * 8740.55  *
* Vel Total (ft/s)        *     1.31  * Avg. Vel. (ft/s)       *    0.65  *    5.04  *    0.97  *
* Max Chl Dpth (ft)       *    24.91  * Hydr. Depth (ft)       *    3.56  *   23.33  *    6.47  *
* Conv. Total (cfs)       *5911326.0  * Conv. (cfs)            *469841.3  *2202210.0  *3239275.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 3421.02  *  321.84  * 8741.40  *
* Min Ch El (ft)          *  708.04  * Shear (lb/sq ft)        *    0.06  *    0.41  *    0.11  *
* Alpha                   *    5.84  * Stream Power (lb/ft s) *14239.66  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.13  * Cum Volume (acre-ft)    * 9662.29  * 2736.21  *19623.98  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          * 1250.27  *  119.37  * 2422.96  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************
* E.G. Elev (ft)          *  734.03  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.13  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  733.90  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *15444.74  * 7656.31  *64782.40  *
* E.G. Slope (ft/ft)      *0.000253  * Area (sq ft)            *15444.74  * 7656.31  *64782.40  *
```

* Q Total (cfs)	*112847.50	* Flow (cfs)	*10965.30	*37401.78	*64480.43	*	
* Top Width (ft)	*12559.55	* Top Width (ft)	* 3471.78	* 315.43	* 8772.34	*	
* Vel Total (ft/s)	* 1.28	* Avg. Vel. (ft/s)	* 0.71	* 4.89	* 1.00	*	
* Max Chl Dpth (ft)	* 25.86	* Hydr. Depth (ft)	* 4.45	* 24.27	* 7.38	*	
* Conv. Total (cfs)	*7098062.0	* Conv. (cfs)	*689712.7	*2352557.0	*4055793.0	*	
* Length Wtd. (ft)	* 463.28	* Wetted Per. (ft)	* 3471.99	* 321.84	* 8773.20	*	
* Min Ch El (ft)	* 708.04	* Shear (lb/sq ft)	* 0.07	* 0.38	* 0.12	*	
* Alpha	* 5.17	* Stream Power (lb/ft s)	*14239.66	* 0.00	* 0.00	*	
* Frctn Loss (ft)	* 0.11	* Cum Volume (acre-ft)	*10961.79	* 2860.35	*22126.42	*	
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 1273.25	* 119.37	* 2430.55	*	

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 13940.5*

INPUT
Description:
Station Elevation Data num= 356

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	759.25	6.64	758.82	28.26	757.26	33.49	756.85	34.85	756.77
35.41	756.73	55.78	755.51	80.35	753.33	90.67	752.81	90.91	752.79
104.91	752.05	153.56	749.67	154.06	749.65	178.63	748.45	184.21	748.07
195.33	747.22	203.2	746.65	221.89	745.65	227.77	745.4	256.39	744.29
259.57	744.18	261.17	744.11	289.59	743.13	297.25	742.93	301.49	742.8
320.64	742.14	326.05	741.98	334.92	741.75	372.6	740.2	424.07	738.9
424.34	738.89	425.06	738.87	460.11	737.98	485.64	737.23	488.53	737.16
498.05	736.88	508.6	736.64	522.62	736.26	523.32	736.25	561	734.92
602.2	734.04	602.33	734.04	636.36	733.33	687.45	732.53	711.7	732.23
749.38	731.55	824.74	730.47	841.04	730.23	842.05	730.22	857.97	729.98
862.42	729.93	927.07	728.96	937.78	728.76	1013.13	728.39	1050.81	728.39
1088.49	728.68	1239.21	729.27	1258.78	729.41	1259.75	729.41	1260.43	729.42
1276.88	729.54	1352.24	729.53	1538.11	728.99	1540.02	728.99	1540.64	728.98
1541.87	728.98	1615.46	728.81	1615.99	728.81	1653.67	728.69	1947.73	728.06
1949.61	728.05	1955.1	728.04	2021.44	727.8	2144.3	727.77	2291.73	728.03
2482.61	728.81	2512.86	729.04	2513.49	729.05	2591.52	729.42	2595.65	729.43
2659.67	729.73	2660.29	729.74	2671	729.78	2758.57	730.32	2783.14	730.4
2784.97	730.41	2932.54	730.98	2934.75	730.98	3010.11	731.17	3047.79	730.13
3085.47	729.25	3123.15	729.29	3160.83	730.26	3198.51	731.06	3236.19	731.21
3272.65	731.16	3273.86	731.15	3274.44	731.15	3386.22	730.91	3386.9	730.91
3499.94	730.46	3500.92	730.46	3573.04	730.2	3644.76	729.76	3647.24	729.76

3716.48	729.46	3717.06	729.45	3752.34	729.14	3888.83	728.76	3967.49	728.49
4039.21	727.84	4075.07	727.39	4109.97	726.5	4110.93	726.47	4218.51	724.47
4232.83	724.09	4254.37	723.36	4257.39	723.29	4326.46	722.39	4330.41	722.35
4331.11	722.34	4355.68	722.09	4361.95	722.05	4367.85	721.38	4393.82	708.89
4399.84	708.23	4651.57	707.86	4677.5	721.79	4739.17	722.42	4739.68	722.43
4801.86	723.24	4832.94	723.79	4838.67	723.99	4864.03	724.73	4870.87	724.83
4871.83	724.85	4926.21	725.55	4953.77	725.8	4983.62	725.95	4988.39	725.99
5010.63	726.28	5019.48	726.43	5112.74	726.72	5114.86	726.72	5143.83	726.83
5295.61	726.89	5299.27	726.88	6138.68	726.61	6278.38	726.36	6418.48	725.94
6573.92	725.14	6603.95	724.76	6635.76	724.5	6636.47	724.5	6725.1	723.75
6729.36	723.66	6734.02	723.63	6760.45	723.13	6884.8	722.06	6978.07	721.95
7009.16	722.27	7040.25	723.94	7091.7	725.32	7102.43	725.66	7133.52	726.23
7142.04	726.32	7164.61	726.73	7189.25	726.78	7195.7	726.82	7288.97	726.62
7320.05	726.06	7442.81	724.68	7444.41	724.67	7469.63	724.3	7475.5	724.23
7599.85	723.89	7879.65	723.89	8035.09	724.34	8035.47	724.34	8065.25	724.43
8066.18	724.44	8128.36	724.59	8132.23	724.59	8190.54	724.72	8563.44	724.96
8885.19	725	8888.24	725.01	9120.34	724.89	9122.61	724.88	9307.55	724.59
9311.35	724.57	9312.25	724.57	9340.07	724.46	9770.29	723.96	9868.18	723.73
9868.63	723.73	9944.45	723.45	9961.37	723.45	9977.62	723.54	9992.43	723.75
10008.09	724.27	10032.54	725.52	10038.55	725.85	10054.57	726.81	10071.25	727.71
10085.63	728.7	10102.93	728.85	10116.7	729.05	10134.63	729.05	10147.76	729.12
10178.83	728.98	10209.9	728.31	10240.96	727.86	10251.75	727.66	10303.08	726.85
10334.15	726.47	10365.22	726.72	10427.35	7281	0458.42	728.42	10491.47	728.46
10520.54	728.35	10613.74	728.78	10641.77	729.03	10644.8	729.05	10706.94	729.1
10738	728.99	10739.09	728.99	10769.07	728.83	10769.55	728.82	10800.01	728.54
10958.74	728.24	11104.59	728.68	11110.78	728.68	11203.97	728.89	11317.8	728.55
11576.76	728.55	11624.36	728.34	11638.89	728.21	11652.84	727.88	11669.96	727.59
11732.08	727.23	11782.84	727.31	11794.21	727.36	11825.28	727.73	11949.54	728.33
11973.02	728.38	11980.61	728.44	12073.8	728.52	12414.3	728.06	12415.51	728.05
12416.77	728.05	12475.21	727.85	12477.64	727.85	12539.78	727.51	12686	727.12
12687.83	727.11	12779.8	727.16	12788.3	727.19	12797.13	727.32	12818.96	727.41
12819.36	727.41	12828.83	727.51	2943.62	729.03	12960.88	729.51	2962.55	729.55
12974.68	729.81	13005.75	730.04	13019.01	730.01	13036.82	730.06	13050.7	729.92
13067.88	729.83	13084.38	729.61	3098.95	729.33	13114	728.51	13114.1	728.5
13130.01	727.71	13145.3	727.24	13161.08	726.83	13177.49	726.55	13192.14	726.17
13206.22	726	13223.2	725.95	13236.68	726.09	13254.27	726.87	13267.14	727.88
13285.34	728.62	13304.27	729.5	13316.4	730.17	13328.05	730.73	13347.47	731.51
13378.53	732.38	13388.97	732.59	13409.03	733.21	13409.6	733.23	13419.43	733.33
13439.71	733.64	13441.8	733.68	13443.58	733.71	3533.85	734.96	13564.92	735.66
13658.12	736.51	3684.63	736.97	13716.33	737.25	13720.25	737.32	13748.03	737.57
13751.32	737.61	13782.38	737.91	3813.44	738.22	13844.51	738.86	13900.75	739.54
13906.29	739.64	13906.64	739.64	13933.53	740.09	13937.23	740.13	13938.2	740.15
13956.42	740.36	13968.77	740.55	13986.59	740.91	13998.14	741.21	3999.09	741.23
13999.84	741.25	14031.88	741.88	14046.92	742.72	14061.96	743.63	14064.65	743.78

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14064.99   743.814093.03     74514096.69  745.1114097.44  745.1414107.26  745.56
14124.09  746.2214128.38  746.3314155.16  746.87   14163  747.1114186.22  747.67
14195.79  747.9314197.77  748.0114217.29  748.8914227.94  749.4214228.56  749.46
14248.36  749.8214255.17  750.08 14258.1  750.1814261.34  750.3214279.42  750.97
14288.27  751.2614294.13  751.4814341.56  753.0214359.69  753.5114372.62  754.03
14378.77  754.2414392.47  754.6414403.68  754.7214413.65  754.6614425.25  754.51
14433.84  754.35

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .09 4361.95     .04  4677.5     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       4361.95  4677.5           463.28  463.28  463.28             .1       .3

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  726.08  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.28  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  725.80  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  452.35  * 5157.36  * 5484.80  *
* E.G. Slope (ft/ft)      *0.000361  * Area (sq ft)            *  452.35  * 5157.36  * 5484.80  *
* Q Total (cfs)           *25686.49  * Flow (cfs)              *  233.20  *23133.89  * 2319.40  *
* Top Width (ft)          * 4163.11  * Top Width (ft)          *  214.72  *  315.55  * 3632.84  *
* Vel Total (ft/s)        *    2.32  * Avg. Vel. (ft/s)        *    0.52  *    4.49  *    0.42  *
* Max Chl Dpth (ft)       *   17.94  * Hydr. Depth (ft)        *    2.11  *   16.34  *    1.51  *
* Conv. Total (cfs)       *1351724.0  * Conv. (cfs)            * 12271.7  *1217396.0  *122055.8  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        *  214.76  *  321.98  * 3633.02  *
* Min Ch El (ft)          *  707.86  * Shear (lb/sq ft)        *    0.05  *    0.36  *    0.03  *
* Alpha                   *    3.38  * Stream Power (lb/ft s) *14433.84  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.17  * Cum Volume (acre-ft)   * 1406.26  * 1718.28  * 1938.30  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  588.17  *  114.92  * 1515.93  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)          *  729.01  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.20  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.81  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 1937.04  * 6107.33  *22467.43  *
* E.G. Slope (ft/ft)      *0.000288  * Area (sq ft)            * 1937.04  * 6107.33  *22467.43  *
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* Q Total (cfs)           *42516.55  * Flow (cfs)              *  868.81  *27365.70  *14282.04  *
* Top Width (ft)          * 9975.16  * Top Width (ft)          * 1538.90  *  315.55  * 8120.71  *
* Vel Total (ft/s)        *    1.39  * Avg. Vel. (ft/s)        *    0.45  *    4.48  *    0.64  *
* Max Chl Dpth (ft)       *   20.95  * Hydr. Depth (ft)        *    1.26  *   19.35  *    2.77  *
* Conv. Total (cfs)       *2507009.0  * Conv. (cfs)            * 51229.9  *1613631.0  *842147.5  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 1538.97  *  321.98  * 8121.20  *
* Min Ch El (ft)          *  707.86  * Shear (lb/sq ft)        *    0.02  *    0.34  *    0.05  *
* Alpha                   *    6.73  * Stream Power (lb/ft s) *14433.84  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.13  * Cum Volume (acre-ft)   * 4790.79  * 2188.00  * 9634.89  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         * 1043.15  *  116.01  * 2248.39  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)          *  728.98  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.36  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.63  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 1681.43  * 6050.68  *21031.42  *
* E.G. Slope (ft/ft)      *0.000502  * Area (sq ft)            * 1681.43  * 6050.68  *21031.42  *
* Q Total (cfs)           *53951.22  * Flow (cfs)              * 1069.12  *35606.90  *17275.20  *
* Top Width (ft)          * 9503.08  * Top Width (ft)          * 1304.65  *  315.55  * 7882.88  *
* Vel Total (ft/s)        *    1.88  * Avg. Vel. (ft/s)        *    0.64  *    5.88  *    0.82  *
* Max Chl Dpth (ft)       *   20.77  * Hydr. Depth (ft)        *    1.29  *   19.18  *    2.67  *
* Conv. Total (cfs)       *2407282.0  * Conv. (cfs)            * 47703.5  *1588766.0  *770812.4  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 1304.72  *  321.98  * 7883.35  *
* Min Ch El (ft)          *  707.86  * Shear (lb/sq ft)        *    0.04  *    0.59  *    0.08  *
* Alpha                   *    6.56  * Stream Power (lb/ft s) *14433.84  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.23  * Cum Volume (acre-ft)   * 3196.13  * 1919.21  * 5848.45  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  947.62  *  115.54  * 2003.29  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)          *  730.13  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.34  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  729.79  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 4022.55  * 6418.25  *30770.59  *
* E.G. Slope (ft/ft)      *0.000500  * Area (sq ft)            * 4022.55  * 6418.25  *30770.59  *
* Q Total (cfs)           *68239.31  * Flow (cfs)              * 2236.82  *39213.86  *26788.63  *
* Top Width (ft)          *11454.32  * Top Width (ft)          * 2603.62  *  315.55  * 8535.15  *
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* Vel Total (ft/s)        *    1.66  * Avg. Vel. (ft/s)        *    0.56  *    6.11  *    0.87  *
* Max Chl Dpth (ft)       *   21.93  * Hydr. Depth (ft)        *    1.54  *   20.34  *    3.61  *
* Conv. Total (cfs)       *3050298.0  * Conv. (cfs)            * 99985.8  *1752860.0  *1197452.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 2603.72  *  321.98  * 8535.70  *
* Min Ch El (ft)          *  707.86  * Shear (lb/sq ft)        *    0.05  *    0.62  *    0.11  *
* Alpha                   *    7.94  * Stream Power (lb/ft s) *14433.84  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.23  * Cum Volume (acre-ft)    * 4589.88  * 2095.30  * 8870.72  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          * 1092.65  *  115.83  * 2250.51  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************************
* E.G. Elev (ft)          *  730.80  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.30  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  730.49  * Reach Len. (ft)        *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      * 5978.56  * 6640.22  *36831.36  *
* E.G. Slope (ft/ft)      *0.000476  * Area (sq ft)           * 5978.56  * 6640.22  *36831.36  *
* Q Total (cfs)           *78960.89  * Flow (cfs)             * 3593.93  *40489.26  *34877.71  *
* Top Width (ft)          *11952.91  * Top Width (ft)         * 2991.71  *  315.55  * 8645.65  *
* Vel Total (ft/s)        *    1.60  * Avg. Vel. (ft/s)        *    0.60  *    6.10  *    0.95  *
* Max Chl Dpth (ft)       *   22.63  * Hydr. Depth (ft)        *    2.00  *   21.04  *    4.26  *
* Conv. Total (cfs)       *3617670.0  * Conv. (cfs)            *164659.2  *1855055.0  *1597956.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 2991.84  *  321.98  * 8646.22  *
* Min Ch El (ft)          *  707.86  * Shear (lb/sq ft)        *    0.06  *    0.61  *    0.13  *
* Alpha                   *    7.64  * Stream Power (lb/ft s) *14433.84  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.22  * Cum Volume (acre-ft)    * 5642.50  * 2214.15  *11058.09  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          * 1150.59  *  115.89  * 2285.30  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)          *  732.23  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.17  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.06  * Reach Len. (ft)        *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *11395.94  * 7135.69  *50437.63  *
* E.G. Slope (ft/ft)      *0.000297  * Area (sq ft)           *11395.94  * 7135.69  *50437.63  *
* Q Total (cfs)           *89304.10  * Flow (cfs)             * 6935.77  *36033.30  *46335.03  *
* Top Width (ft)          *12646.40  * Top Width (ft)         * 3641.09  *  315.55  * 8689.77  *
* Vel Total (ft/s)        *    1.29  * Avg. Vel. (ft/s)        *    0.61  *    5.05  *    0.92  *
* Max Chl Dpth (ft)       *   24.20  * Hydr. Depth (ft)        *    3.13  *   22.61  *    5.80  *
```



```
* Conv. Total (cfs)       *5183386.0  * Conv. (cfs)            *402565.9  *2091444.0  *2689377.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 3641.24  *  321.98  * 8690.37  *
* Min Ch El (ft)          *  707.86  * Shear (lb/sq ft)        *    0.06  *    0.41  *    0.11  *
* Alpha                   *    6.42  * Stream Power (lb/ft s) *14433.84  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.13  * Cum Volume (acre-ft)    * 8501.21  * 2558.50  *17045.53  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          * 1200.03  *  116.01  * 2324.01  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************************
* E.G. Elev (ft)          *  732.98  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.14  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.84  * Reach Len. (ft)        *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *14223.54  * 7378.98  *57148.95  *
* E.G. Slope (ft/ft)      *0.000267  * Area (sq ft)           *14223.54  * 7378.98  *57148.95  *
* Q Total (cfs)           *99651.31  * Flow (cfs)             * 9435.13  *36172.09  *54044.10  *
* Top Width (ft)          *12728.98  * Top Width (ft)         * 3694.01  *  315.55  * 8719.42  *
* Vel Total (ft/s)        *    1.27  * Avg. Vel. (ft/s)        *    0.66  *    4.90  *    0.95  *
* Max Chl Dpth (ft)       *   24.98  * Hydr. Depth (ft)        *    3.85  *   23.38  *    6.55  *
* Conv. Total (cfs)       *6092881.0  * Conv. (cfs)            *576882.6  *2211634.0  *3304365.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 3694.17  *  321.98  * 8720.02  *
* Min Ch El (ft)          *  707.86  * Shear (lb/sq ft)        *    0.06  *    0.38  *    0.11  *
* Alpha                   *    5.78  * Stream Power (lb/ft s) *14433.84  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.12  * Cum Volume (acre-ft)    * 9521.80  * 2657.83  *19019.49  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          * 1212.44  *  116.01  * 2330.12  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************************
* E.G. Elev (ft)          *  733.91  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.12  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  733.79  * Reach Len. (ft)        *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *17783.17  * 7680.70  *65507.89  *
* E.G. Slope (ft/ft)      *0.000237  * Area (sq ft)           *17783.17  * 7680.70  *65507.89  *
* Q Total (cfs)           *112847.50  * Flow (cfs)            *12771.72  *36424.50  *63651.27  *
* Top Width (ft)          *12835.92  * Top Width (ft)         * 3747.72  *  315.55  * 8772.65  *
* Vel Total (ft/s)        *    1.24  * Avg. Vel. (ft/s)        *    0.72  *    4.74  *    0.97  *
* Max Chl Dpth (ft)       *   25.93  * Hydr. Depth (ft)        *    4.75  *   24.34  *    7.47  *
* Conv. Total (cfs)       *7325194.0  * Conv. (cfs)            *829041.9  *2364399.0  *4131753.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 3747.89  *  321.98  * 8773.27  *
* Min Ch El (ft)          *  707.86  * Shear (lb/sq ft)        *    0.07  *    0.35  *    0.11  *
* Alpha                   *    5.10  * Stream Power (lb/ft s) *14433.84  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.11  * Cum Volume (acre-ft)    *10785.10  * 2778.79  *21433.57  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          * 1234.86  *  116.01  * 2337.26  *
```

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 13477.2*

INPUT
Description:
Station Elevation Data num= 355

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	759.49	7.04	759.04	29.97	757.33	35.52	756.86	36.95	756.76
37.55	756.72	59.14	755.21	85.2	752.35	96.14	751.74	96.4	751.72
111.25	750.88	155.38	748.59	156.4	748.54	159.56	748.37	162.83	748.21
163.36	748.18	189.41	746.84	195.33	746.37	207.13	745.36	215.47	744.69
216.67	744.62	235.28	743.61	241.52	743.32	267.57	742.23	275.24	741.94
276.94	741.87	295.71	741.18	317.85	740.51	319.69	740.46	339.99	739.71
345.73	739.54	355.14	739.32	362.14	739.06	395.1	737.94	449.66	736.81
449.95	736.8	450.72	736.79	480.5	736.18	527.41	735.02	528.11	735
539.3	734.8	554.17	734.47	554.91	734.46	561.44	734.33	580.23	733.88
583.59	733.78	594.86	733.48	638.55	732.78	638.69	732.78	674.77	732.19
891.81	729.67	892.87	729.65	994.38	728.4	1074.29	728.02	1114.24	727.98
1154.2	728.18	1205.52	728.26	1314.01	728.45	1334.76	728.54	1335.79	728.55
1336.51	728.55	1353.96	728.63	1433.87	728.54	1440.01	728.51	1630.96	727.98
1632.99	727.97	1634.94	727.97	1712.98	727.8	1713.54	727.8	1753.5	727.71
1871.99	727.58	1873.36	727.57	2089.44	727.23	2091.36	727.22	2145.26	727.13
2404.01	727.49	2430.06	727.6	2432.7	727.6	2537	728.03	2632.47	728.42
2664.55	728.65	2665.21	728.66	2820.22	729.37	2820.87	729.37	2832.23	729.41
2872.19	729.68	3109.56	730.48	3191.81	730.64	3271.72	729.11	3311.68	729.14
3351.63	729.92	3391.58	730.56	3431.53	730.68	3591.35	730.44	3711.21	730.08
3712.24	730.07	3715.43	730.07	3788.73	729.87	3864.77	729.51	3867.4	729.51
3940.82	729.27	3941.44	729.26	3978.84	729.01	3993.31	728.96	4148.91	728.8
4149.63	728.79	4150.66	728.79	4245.01	728.43	4279.9	728.16	4303.93	727.92
4305.95	727.91	4321.06	727.73	4358.06	726.96	4359.08	726.93	4436.22	725.49
4436.79	725.47	4473.15	724.75	4488.34	724.36	4511.18	723.54	4514.38	723.45
4566.5	722.66	4587.62	722.42	4591.81	722.36	4592.55	722.36	4595.9	722.31
4618.6	722.05	4625.25	722.02	4631.17	721.03	4657.23	709.05	4663.27	708.06
4915.86	707.69	4940.94	721.81	5002.17	722.33	5002.67	722.34	5055.29	722.94
5068.03	723.12	5095.27	723.6	5100.96	723.79	5126.14	724.4	5132.93	724.49
5199.75	725.1	5215.24	725.14	5232.67	725.12	5249.61	725.17	5280.48	725.5
5368.56	725.71	5373.09	725.71	5500.54	725.84	6391.74	725.7	6547.4	725.47
6669.55	725.2	6823.89	724.58	6853.71	724.29	6854.75	724.27	6855.72	724.27

6885.29	724.08	6885.99	724.08	6974	723.48	6978.23	723.42	6982.85	723.39
7009.09	723	7132.57	722.15	7225.17	722.07	7256.04	722.33	7286.91	723.67
7337.99	724.78	7348.65	725.06	7379.52	725.51	7387.98	725.58	7410.39	725.92
7434.85	725.96	7441.26	725.99	7533.86	725.85	7564.73	725.4	7688.2	724.3
7719.07	723.95	7842.54	723.69	8120.35	723.73	8182.09	723.84	8186.35	723.86
8274.69	724.1	8275.06	724.11	8304.64	724.18	8305.56	724.19	8793.27	724.89
9216.4	725.14	9292.8	725.1	9296.17	725.11	9415.19	725.03	9416.18	725.04
9541.88	724.89	9542.78	724.88	9570.4	724.8	9572.54	724.81	9867.37	724.59
9997.57	724.56	10094.76	724.41	10095.21	724.4	10187.3	724.22	10203.43	724.3
10218.13	724.47	10233.68	724.91	10263.92	726.17	10279.83	726.95	10289.97	727.4
10290.5	727.42	10296.39	727.68	10310.67	728.47	10327.85	728.59	10341.52	728.76
10359.33	728.77	10372.36	728.83	10403.21	728.72	10434.05	728.21	10464.89	727.86
10526.58	727.06	10557.43	726.77	10588.28	726.97	10649.96	728.03	10674.04	728.28
10680.81	728.37	10742.5	728.33	10835.03	728.71	10862.87	728.91	10927.57	728.96
10958.41	728.87	10959.49	728.87	10989.26	728.75	10989.73	728.74	11019.98	728.52
11177.58	728.28	11421.07	728.81	11586.71	728.51	11787.65	728.53	11838.48	728.35
11852.9	728.24	11866.75	727.98	11883.75	727.74	11945.44	727.44	11995.84	727.49
12007.12	727.54	12037.97	727.83	12192.19	728.37	12284.73	728.41	12622.81	727.85
12624.01	727.84	12625.26	727.84	12747.4	727.29	12892.58	726.85	12894.4	726.84
12959.5	726.81	12994.15	726.84	13002.92	726.94	13024.59	7271	3024.99	727
13034.4	727.06	13055.84	727.31	13057.14	727.32	13148.38	728.22	13165.51	728.59
13167.17	728.63	13179.21	728.84	13210.06	729.02	13223.23	728.99	13240.91	729.04
13254.69	728.92	13271.75	728.85	13302.6	728.44	13317.54	727.79	13317.64	727.78
13333.44	727.16	13348.62	726.79	13364.28	726.48	13380.58	726.25	13395.13	725.96
13409.1	725.83	13425.97	725.81	13439.35	725.92	13456.82	726.55	13469.6	727.37
13487.67	727.98	13506.46	728.71	13518.51	729.26	13530.08	729.72	13549.35	730.37
13580.19	731.09	13590.56	731.27	13610.48	731.78	13611.04	731.79	13620.8	731.89
13663.83	732.45	13672.73	732.54	13674.73	732.57	13734.42	733.28	13765.26	733.85
13857.8	734.51	13884.12	734.88	13915.6	735.11	3919.49	735.16	3947.07	735.35
13981.17	735.62	13983.71	735.65	14012.02	735.91	4041.48	736.42	4042.87	736.45
14064.12	736.68	14066.16	736.71	14098.71	737.11	4104.21	737.22	4104.43	737.23
14104.56	737.23	14131.25	737.74	14134.92	737.78	4135.89	737.81	4153.98	738.01
14166.24	738.22	14183.94	738.59	14195.41	738.91	4196.35	738.94	4197.09	738.97
14213.9	739.38	14228.91	739.82	14243.84	741.05	4258.78	742.39	4261.45	742.62
14261.78	742.65	14273.8	743.48	14289.63	744.48	4293.26	744.68	4303.76	745.39
14320.46	746.43	14326.55	746.74	14351.31	747.83	4359.1	748.23	4391.65	749.67
14393.62	749.81	14416.36	751.47	14423.57	752.02	4424.19	752.08	4443.85	752.64
14453.52	753.07	14456.74	753.23	14474.69	754	4483.47	754.35	4489.29	754.62
14536.38	756.55	14554.39	757.22	14567.22	757.97	4573.33	758.31	4586.93	758.91
14598.07	759.04	14603.29	759.04	14607.97	759.06	4619.48	759.02	4628.01	758.91

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
      0     .09 4625.25     .04 4940.94     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      4625.25 4940.94           463.28  463.28  463.28            .1        .3

CROSS SECTION OUTPUT  Profile #PK2
*********************************************************************************************
* E.G. Elev (ft)         *  725.90  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.30  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  725.60  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *  404.57  * 5152.62  * 4912.82  *
* E.G. Slope (ft/ft)     *0.000378  * Area (sq ft)            *  404.57  * 5152.62  * 4912.82  *
* Q Total (cfs)          *25686.49  * Flow (cfs)              *  211.24  *23633.18  * 1842.07  *
* Top Width (ft)         * 4525.75  * Top Width (ft)          *  195.11  *  315.69  * 4014.96  *
* Vel Total (ft/s)       *    2.45  * Avg. Vel. (ft/s)        *    0.52  *    4.59  *    0.37  *
* Max Chl Dpth (ft)      *   17.91  * Hydr. Depth (ft)        *    2.07  *   16.32  *    1.22  *
* Conv. Total (cfs)      *1320591.0  * Conv. (cfs)            * 10860.1  *1215026.0  * 94704.3  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)        *  195.14  *  322.18  * 4015.08  *
* Min Ch El (ft)         *  707.69  * Shear (lb/sq ft)        *    0.05  *    0.38  *    0.03  *
* Alpha                  *    3.22  * Stream Power (lb/ft s)  *14628.01  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.18  * Cum Volume (acre-ft)    * 1401.70  * 1663.46  * 1883.01  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  585.99  *  111.56  * 1475.26  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*********************************************************************************************
* E.G. Elev (ft)         *  728.87  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.19  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  728.69  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       * 2656.15  * 6126.35  *23297.30  *
* E.G. Slope (ft/ft)     *0.000270  * Area (sq ft)            * 2656.15  * 6126.35  *23297.30  *
* Q Total (cfs)          *42516.55  * Flow (cfs)              * 1025.33  *26653.35  *14837.87  *
* Top Width (ft)         *10564.45  * Top Width (ft)          * 2148.12  *  315.69  * 8100.64  *
* Vel Total (ft/s)       *    1.33  * Avg. Vel. (ft/s)        *    0.39  *    4.35  *    0.64  *
* Max Chl Dpth (ft)      *   21.00  * Hydr. Depth (ft)        *    1.24  *   19.41  *    2.88  *
* Conv. Total (cfs)      *2586320.0  * Conv. (cfs)            * 62371.6  *1621347.0  *902600.8  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)        * 2148.20  *  322.18  * 8100.98  *
* Min Ch El (ft)         *  707.69  * Shear (lb/sq ft)        *    0.02  *    0.32  *    0.05  *
* Alpha                  *    6.84  * Stream Power (lb/ft s)  *14628.01  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.12  * Cum Volume (acre-ft)    * 4766.36  * 2122.95  * 9391.52  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          * 1023.55  *  112.66  * 2162.13  *
*********************************************************************************************
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Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
*********************************************************************************************
* E.G. Elev (ft)         *  728.75  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.35  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  728.40  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       * 2087.30  * 6036.37  *21085.07  *
* E.G. Slope (ft/ft)     *0.000494  * Area (sq ft)            * 2087.30  * 6036.37  *21085.07  *
* Q Total (cfs)          *53951.22  * Flow (cfs)              * 1177.04  *35168.85  *17605.32  *
* Top Width (ft)         * 9487.89  * Top Width (ft)          * 1819.30  *  315.69  * 7352.90  *
* Vel Total (ft/s)       *    1.85  * Avg. Vel. (ft/s)        *    0.56  *    5.83  *    0.83  *
* Max Chl Dpth (ft)      *   20.71  * Hydr. Depth (ft)        *    1.15  *   19.12  *    2.87  *
* Conv. Total (cfs)      *2426660.0  * Conv. (cfs)            * 52942.0  *1581852.0  *791865.9  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)        * 1819.37  *  322.18  * 7353.23  *
* Min Ch El (ft)         *  707.69  * Shear (lb/sq ft)        *    0.04  *    0.58  *    0.09  *
* Alpha                  *    6.55  * Stream Power (lb/ft s)  *14628.01  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.23  * Cum Volume (acre-ft)    * 3176.09  * 1854.93  * 5624.49  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  931.01  *  112.19  * 1922.27  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*********************************************************************************************
* E.G. Elev (ft)         *  729.90  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.33  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  729.56  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       * 4840.31  * 6402.06  *30717.47  *
* E.G. Slope (ft/ft)     *0.000500  * Area (sq ft)            * 4840.31  * 6402.06  *30717.47  *
* Q Total (cfs)          *68239.31  * Flow (cfs)              * 2670.34  *39030.27  *26538.71  *
* Top Width (ft)         *11711.76  * Top Width (ft)          * 2810.93  *  315.69  * 8585.15  *
* Vel Total (ft/s)       *    1.63  * Avg. Vel. (ft/s)        *    0.55  *    6.10  *    0.86  *
* Max Chl Dpth (ft)      *   21.87  * Hydr. Depth (ft)        *    1.72  *   20.28  *    3.58  *
* Conv. Total (cfs)      *3050508.0  * Conv. (cfs)            *119372.3  *1744773.0  *1186362.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)        * 2811.02  *  322.18  * 8585.52  *
* Min Ch El (ft)         *  707.69  * Shear (lb/sq ft)        *    0.05  *    0.62  *    0.11  *
* Alpha                  *    8.15  * Stream Power (lb/ft s)  *14628.01  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.23  * Cum Volume (acre-ft)    * 4542.75  * 2027.12  * 8543.74  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          * 1063.86  *  112.47  * 2159.47  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.
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CROSS SECTION OUTPUT Profile #PK50

E.G. Elev (ft)	730.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	730.28	Reach Len. (ft)	463.28	463.28	463.28
Crit W.S. (ft)		Flow Area (sq ft)	7051.55	6629.89	36920.45
E.G. Slope (ft/ft)	0.000467	Area (sq ft)	7051.55	6629.89	36920.45
Q Total (cfs)	78960.89	Flow (cfs)	4207.48	39971.35	34782.06
Top Width (ft)	12278.99	Top Width (ft)	3357.47	315.69	8605.83
Vel Total (ft/s)	1.56	Avg. Vel. (ft/s)	0.60	6.03	0.94
Max Chl Dpth (ft)	22.59	Hydr. Depth (ft)	2.10	21.00	4.29
Conv. Total (cfs)	3653532.0	Conv. (cfs)	194680.8	1849480.0	1609371.0
Length Wtd. (ft)	463.28	Wetted Per. (ft)	3357.58	322.18	8606.21
Min Ch El (ft)	707.69	Shear (lb/sq ft)	0.06	0.60	0.13
Alpha	7.73	Stream Power (lb/ft s)	14628.01	0.00	0.00
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)	5573.21	2143.58	10665.90
C & E Loss (ft)	0.00	Cum SA (acres)	1116.83	112.54	2193.56

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK100

E.G. Elev (ft)	732.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	731.94	Reach Len. (ft)	463.28	463.28	463.28
Crit W.S. (ft)		Flow Area (sq ft)	13355.50	7153.64	51256.96
E.G. Slope (ft/ft)	0.000277	Area (sq ft)	13355.50	7153.64	51256.96
Q Total (cfs)	89304.10	Flow (cfs)	8302.63	34966.54	46034.93
Top Width (ft)	12928.66	Top Width (ft)	3929.12	315.69	8683.85
Vel Total (ft/s)	1.24	Avg. Vel. (ft/s)	0.62	4.89	0.90
Max Chl Dpth (ft)	24.25	Hydr. Depth (ft)	3.40	22.66	5.90
Conv. Total (cfs)	5361704.0	Conv. (cfs)	498478.9	2099346.0	2763878.0
Length Wtd. (ft)	463.28	Wetted Per. (ft)	3929.24	322.18	8684.26
Min Ch El (ft)	707.69	Shear (lb/sq ft)	0.06	0.38	0.10
Alpha	6.33	Stream Power (lb/ft s)	14628.01	0.00	0.00
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	8369.59	2482.51	16504.74
C & E Loss (ft)	0.00	Cum SA (acres)	1159.78	112.66	2231.62

CROSS SECTION OUTPUT Profile #PK200

E.G. Elev (ft)	732.86	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.13	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	732.72	Reach Len. (ft)	463.28	463.28	463.28
Crit W.S. (ft)		Flow Area (sq ft)	16454.67	7400.81	58080.09
E.G. Slope (ft/ft)	0.000250	Area (sq ft)	16454.67	7400.81	58080.09
Q Total (cfs)	99651.31	Flow (cfs)	11048.12	35093.13	53510.07
Top Width (ft)	13045.69	Top Width (ft)	3983.19	315.69	8746.81
Vel Total (ft/s)	1.22	Avg. Vel. (ft/s)	0.67	4.74	0.92
Max Chl Dpth (ft)	25.03	Hydr. Depth (ft)	4.13	23.44	6.64
Conv. Total (cfs)	6308588.0	Conv. (cfs)	699419.1	2221628.0	3387542.0
Length Wtd. (ft)	463.28	Wetted Per. (ft)	3983.32	322.18	8747.22
Min Ch El (ft)	707.69	Shear (lb/sq ft)	0.06	0.36	0.10
Alpha	5.70	Stream Power (lb/ft s)	14628.01	0.00	0.00
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	9358.66	2579.24	18406.73
C & E Loss (ft)	0.00	Cum SA (acres)	1171.61	112.66	2237.24

CROSS SECTION OUTPUT Profile #PK500

E.G. Elev (ft)	733.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	733.69	Reach Len. (ft)	463.28	463.28	463.28
Crit W.S. (ft)		Flow Area (sq ft)	20341.67	7706.59	66589.35
E.G. Slope (ft/ft)	0.000221	Area (sq ft)	20341.67	7706.59	66589.35
Q Total (cfs)	112847.50	Flow (cfs)	14661.05	35309.82	62876.63
Top Width (ft)	13169.96	Top Width (ft)	4038.41	315.69	8815.86
Vel Total (ft/s)	1.19	Avg. Vel. (ft/s)	0.72	4.58	0.94
Max Chl Dpth (ft)	26.00	Hydr. Depth (ft)	5.04	24.41	7.55
Conv. Total (cfs)	7595796.0	Conv. (cfs)	986839.3	2376714.0	4232243.0
Length Wtd. (ft)	463.28	Wetted Per. (ft)	4038.55	322.18	8816.27
Min Ch El (ft)	707.69	Shear (lb/sq ft)	0.07	0.33	0.10
Alpha	5.02	Stream Power (lb/ft s)	14628.01	0.00	0.00
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	10582.36	2696.96	20731.11
C & E Loss (ft)	0.00	Cum SA (acres)	1193.46	112.66	2243.72

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 13013.9*

INPUT
Description:
Station Elevation Data num= 496

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	759.73	7.44	759.26	31.67	757.39	34.97	757.11	36.81	756.94
37.54	756.87	62.51	754.91	73.12	753.56	90.05	751.38	101.61	750.67
101.89	750.66	117.58	749.7	164.22	747.17	165.3	747.11	200.19	745.23
206.45	744.67	218.92	743.51	227.73	742.73	240.33	742.05	248.68	741.58
255.27	741.24	273.77	740.44	282.8	740.02	287.35	739.85	292.7	739.64
307.21	739.1	310.34	738.96	312.54	738.88	324.55	738.5	333.13	738.25
335.95	738.16	337.88	738.11	359.35	737.28	365.42	737.1	375.36	736.88
382.75	736.65	412.63	735.84	417.59	735.69	420.5	735.63	448.04	735.17
452.97	735.08	475.26	734.72	475.57	734.72	476.38	734.7	507.85	734.2
530.65	733.69	557.44	733.13	570	732.97	585.72	732.68	586.5	732.68
593.41	732.62	613.26	732.32	616.81	732.25	628.73	732.04	640.21	731.93
670.95	731.56	674.9	731.52	675.05	731.52	687.03	731.36	713.18	731.05
770.45	730.54	797.62	730.35	924.31	729.25	942.58	729.11	943.7	729.09
1014.7	728.44	1050.99	728.04	1093.22	727.83	1108.93	727.78	1135.45	727.65
1136.47	727.65	1177.67	727.58	1205.42	727.63	1219.9	727.68	1356.76	727.69
1384.3	727.63	1388.81	727.63	1410.75	727.68	1412.6	727.68	1431.04	727.72
1436.01	727.72	1439.37	727.71	1494.44	727.63	1576.43	727.4	1577.06	727.39
1632.13	727.24	1659.68	727.12	1723.8	726.96	1725.95	726.96	1726.63	726.95
1728.01	726.95	1810.49	726.8	1811.09	726.8	1853.32	726.73	1853.41	726.73
1978.56	726.64	1980	726.63	1983	726.63	2041.2	726.56	2114.76	726.52
2127.8	726.49	2191.14	726.52	2208.38	726.49	2210.41	726.49	2233.37	726.45
2265.49	726.45	2267.39	726.46	2293.03	726.54	2347.07	726.59	2348.1	726.6
2348.82	726.59	2403.18	726.68	2430.71	726.78	2508.88	726.95	2512.66	726.97
2514.28	726.97	2540.86	727.02	2568.4	727.16	2653.09	727.46	2681.43	727.63
2681.48	727.63	2740.1	727.86	2745.13	727.87	2788.69	728.06	2816.23	728.26
2816.93	728.27	2824.56	728.31	2926.38	728.73	2953.92	728.9	2980.77	729
2981.46	729.01	2993.47	729.05	3035.69	729.28	3091.61	729.53	3119.14	729.6
3121.2	729.61	3286.57	729.99	3289.06	729.99	3373.52	730.11	3415.74	729.49
3457.97	728.96	3500.2	728.99	3538.16	729.52	3584.65	730.06	3626.88	730.15
3795.03	729.97	3795.79	729.97	3922.48	729.69	3923.57	729.68	3926.94	729.68
4004.41	729.53	4039.7	729.37	4084.78	729.26	4087.56	729.25	4165.16	729.07
4165.81	729.07	4205.35	728.88	4220.64	728.84	4224.8	728.84	4248.18	728.8
4358.32	728.8	4366.1	728.83	4385.1	728.87	4446.48	728.8	4496.01	728.62
4520.7	728.46	4523.54	728.45	4525.53	728.43	4548.94	728.24	4551.08	728.23
4567.05	728.07	4606.15	727.41	4607.23	727.38	4633.69	726.86	4661.23	726.39
4687.61	725.87	4688.76	725.85	4689.37	725.83	4727.8	725.04	4743.84	724.64
4767.99	723.72	4771.38	723.62	4808.17	722.98	4881.53	722.02	4888.55	721.98
4894.49	720.67	4920.64	709.21	4926.71	707.88	5180.14	707.52	5204.37	721.83
5265.16	722.24	5265.66	722.25	5278.2	722.35	5317.9	722.78	5326.95	722.89
5330.55	722.94	5357.6	723.4	5363.25	723.59	5388.25	724.07	5395.93	724.15
5422.76	724.36	5461.33	724.52	5476.71	724.49	5480.19	724.47	5494.01	724.37
5506.14	724.34	5526.71	724.44	5541.49	724.57	5556.1	724.59	5559.41	724.58

5617.29	724.7	5635.51	724.71	5664.07	724.78	5756.23	724.8	5759.97	724.81
5813.69	724.87	5817.31	724.87	5820.95	724.88	5978.52	724.87	5984.41	724.86
6344.04	724.78	6350.14	724.79	6644.8	724.79	6782.52	724.69	6797.73	724.65
6799.34	724.65	6920.62	724.47	6951.27	724.35	7073.86	724.03	7103.46	723.81
7104.5	723.8	7105.47	723.8	7134.82	723.66	7135.52	723.66	7222.89	723.22
7227.09	723.17	7231.68	723.15	7257.74	722.86	7349.68	722.43	7380.33	722.24
7441.62	722.18	7472.27	722.2	7502.92	722.4	7533.56	723.4	7564.22	723.94
7584.28	724.24	7594.87	724.45	7625.52	724.8	7633.91	724.85	7656.16	725.1
7680.45	725.14	7686.81	725.16	7717.46	725.16	7721.99	725.15	7778.75	725.07
7809.4	724.74	7901.34	724.09	7930.41	723.93	7931.99	723.93	7933.47	723.92
7962.64	723.67	8085.22	723.5	8361.05	723.56	8483.64	723.77	8514.29	723.87
8514.65	723.87	8544.02	723.94	8544.93	723.94	8606.23	724.05	8610.05	724.05
8667.52	724.14	8673.67	724.14	8820.02	724.37	8820.76	724.37	8996.84	724.78
9029.15	724.81	9030.3	724.82	9126.1	724.9	9158.42	724.98	9287.68	725.08
9352.32	725.17	9355.32	725.18	9433.25	725.24	9525.12	725.26	9528.46	725.27
9647.61	725.26	9677.87	725.21	9773.31	725.2	9800.73	725.15	9948.82	725.1
9953.85	725.09	10095.58	725.12	10098.81	725.11	10160.22	725.15	10162.51	725.14
10192.53	725.15	10224.84	725.17	10369.19	725.03	10382.59	724.99	10413.22	725
10429.24	725.07	10443.84	725.21	10459.27	725.52	10474.46	725.99	10489.3	726.49
10505.09	727.08	10515.16	727.43	10515.69	727.45	10521.53	727.64	10535.71	728.24
10548.01	728.32	10552.77	728.34	10566.34	728.47	10584.02	728.49	10596.96	728.54
10627.58	728.47	10658.21	728.09	10677.76	727.95	10688.83	727.85	10750.08	727.27
10780.7	727.06	10789.55	727.12	10806.53	727.21	10811.33	727.23	10872.58	728.05
10903.21	728.31	10939.68	728.34	10964.45	728.31	11056.32	728.61	11083.96	728.77
11086.94	728.78	11115.21	728.83	11117.57	728.84	11119.83	728.83	11129.69	728.84
11148.2	728.83	11178.82	728.76	11179.89	728.76	11209.44	728.67	11209.92	728.66
11239.95	728.5	11360.05	728.37	11362.56	728.37	11390.07	728.32	11396.43	728.32
11540.21	728.59	11546.3	728.59	11638.17	728.72	11802.63	728.51	12001.06	728.51
12002.13	728.5	12005.67	728.51	12036.29	728.43	12066.92	728.28	12080.67	728.08
12097.54	727.91	12128.16	727.74	12158.79	727.66	12208.83	727.68	12220.03	727.71
12230.8	727.81	12250.66	727.93	12333.82	728.12	12373.15	728.25	12396.31	728.27
12403.78	728.31	12583.92	728.22	12587.52	728.21	12745.35	727.91	12747.05	727.9
12831.32	727.65	12833.76	727.63	12907.07	727.37	12939.39	727.15	12955.01	727.08
13068.65	726.72	13100.97	726.57	13101.55	726.57	13132.23	726.51	13191.63	726.48
13200.01	726.49	13208.72	726.56	13230.62	726.58	13239.97	726.62	13353.13	727.41
13370.14	727.68	13371.79	727.71	13383.74	727.86	13401.81	727.96	13414.37	727.99
13427.45	727.98	13445	728.01	13458.69	727.92	13475.62	727.86	13491.89	727.72
13506.25	727.56	13521.08	727.07	13521.19	727.07	13536.86	726.61	13551.94	726.34
13567.49	726.12	13583.67	725.96	13598.12	725.75	13611.99	725.67	13628.74	725.66
13642.02	725.75	13659.37	726.24	13672.05	726.87	13682.65	727.14	13689.99	727.34
13708.66	727.93	13720.61	728.36	13732.1	728.71	13751.24	729.22	13781.86	729.79
13792.15	729.94	13811.93	730.34	13812.49	730.35	13822.17	730.45	13842.17	730.7
13844.23	730.73	13845.98	730.74	13875.71	731.03	13876.55	731.04	13905.46	731.33
13934.98	731.6	13958.64	731.94	13965.6	732.03	14057.48	732.53	14083.62	732.79

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14114.87  732.9514118.72  732.9914135.09  733.0614146.12  733.1314149.35  733.16
14179.97  733.3514182.49  733.3714199.71  733.48 14210.6  733.5814232.03  733.89
14239.85  734.0214241.22  734.0414264.35  734.2814296.67  734.6814302.13  734.81
14302.47  734.8114328.98  735.3914351.54  735.6514363.72  735.8814381.29  736.28
14392.67  736.6314393.61  736.6614394.34  736.6914411.03  737.1914424.96  737.72
14425.93  737.7514440.76  739.3814455.59  741.1514458.24  741.4714458.58   741.5
 14470.5  742.6114486.22  743.9614490.56  744.3114500.25  745.2214516.84  746.65
14522.88  747.1214547.46  748.7914555.19  749.3614578.08  750.8114585.18  751.28
14587.51  751.4214589.46  751.5914608.71  753.5414612.04  753.8914619.21  754.63
14619.82   754.714639.34  755.4614646.05  755.8114648.94  755.9514652.14  756.14
14669.96  757.0314678.68  757.4414684.46  757.7614700.58  758.5714708.42  758.95
14716.77  759.3814726.71  759.8614731.21  760.0914749.09  760.9414761.83  761.91
 14767.9  762.35 14781.4  763.1814792.46  763.3614802.28  763.4614813.72  763.53
14822.18  763.48

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .09 4888.55     .04 5204.37     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       4888.55 5204.37           463.28  463.28  463.28             .1       .3

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  725.73  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.31  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  725.42  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  365.08  * 5152.24  * 5281.54  *
* E.G. Slope (ft/ft)      *0.000384  * Area (sq ft)            *  365.08  * 5152.24  * 5281.54  *
* Q Total (cfs)           *25686.49  * Flow (cfs)              *  189.63  *23782.22  * 1714.64  *
* Top Width (ft)          * 5745.23  * Top Width (ft)          *  179.28  *  315.82  * 5250.12  *
* Vel Total (ft/s)        *    2.38  * Avg. Vel. (ft/s)        *    0.52  *    4.62  *    0.32  *
* Max Chl Dpth (ft)       *   17.90  * Hydr. Depth (ft)        *    2.04  *   16.31  *    1.01  *
* Conv. Total (cfs)       *1311498.0  * Conv. (cfs)            *  9682.3  *1214270.0  * 87546.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        *  179.32  *  322.42  * 5250.19  *
* Min Ch El (ft)          *  707.52  * Shear (lb/sq ft)        *    0.05  *    0.38  *    0.02  *
* Alpha                   *    3.49  * Stream Power (lb/ft s)   *14822.18  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.17  * Cum Volume (acre-ft)    * 1397.61  * 1608.66  * 1828.80  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  584.00  *  108.21  * 1425.99  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
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* E.G. Elev (ft)          *  728.75  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.18  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.57  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 3730.33  * 6147.97  *24168.44  *
* E.G. Slope (ft/ft)      *0.000257  * Area (sq ft)            * 3730.33  * 6147.97  *24168.44  *
* Q Total (cfs)           *42516.55  * Flow (cfs)              * 1491.98  *26154.33  *14870.24  *
* Top Width (ft)          *10710.95  * Top Width (ft)          * 2273.84  *  315.82  * 8121.29  *
* Vel Total (ft/s)        *    1.25  * Avg. Vel. (ft/s)        *    0.40  *    4.25  *    0.62  *
* Max Chl Dpth (ft)       *   21.05  * Hydr. Depth (ft)        *    1.64  *   19.47  *    2.98  *
* Conv. Total (cfs)       *2649856.0  * Conv. (cfs)            * 92988.1  *1630076.0  *926792.2  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 2273.91  *  322.42  * 8121.51  *
* Min Ch El (ft)          *  707.52  * Shear (lb/sq ft)        *    0.03  *    0.31  *    0.05  *
* Alpha                   *    7.23  * Stream Power (lb/ft s)   *14822.18  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.11  * Cum Volume (acre-ft)    * 4732.40  * 2057.68  * 9139.11  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          * 1000.03  *  109.30  * 2075.87  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)          *  728.52  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.33  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.19  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 2887.18  * 6025.89  *21277.53  *
* E.G. Slope (ft/ft)      *0.000482  * Area (sq ft)            * 2887.18  * 6025.89  *21277.53  *
* Q Total (cfs)           *53951.22  * Flow (cfs)              * 1507.68  *34596.98  *17846.56  *
* Top Width (ft)          * 9383.65  * Top Width (ft)          * 2101.79  *  315.82  * 6966.04  *
* Vel Total (ft/s)        *    1.79  * Avg. Vel. (ft/s)        *    0.52  *    5.74  *    0.84  *
* Max Chl Dpth (ft)       *   20.67  * Hydr. Depth (ft)        *    1.37  *   19.08  *    3.05  *
* Conv. Total (cfs)       *2458408.0  * Conv. (cfs)            * 68700.7  *1576489.0  *813218.2  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 2101.86  *  322.42  * 6966.25  *
* Min Ch El (ft)          *  707.52  * Shear (lb/sq ft)        *    0.04  *    0.56  *    0.09  *
* Alpha                   *    6.69  * Stream Power (lb/ft s)   *14822.18  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.22  * Cum Volume (acre-ft)    * 3149.64  * 1790.79  * 5399.22  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  910.16  *  108.83  * 1846.12  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)          *  729.66  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.33  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
```

```
* W.S. Elev (ft)          *  729.34  * Reach Len. (ft)          *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)        * 5775.01  * 6388.90  *30634.18  *
* E.G. Slope (ft/ft)      *0.000494  * Area (sq ft)             * 5775.01  * 6388.90  *30634.18  *
* Q Total (cfs)           *68239.31  * Flow (cfs)               * 3283.56  *38635.40  *26320.35  *
* Top Width (ft)          *11935.25  * Top Width (ft)           * 3066.29  *  315.82  * 8553.14  *
* Vel Total (ft/s)        *    1.59  * Avg. Vel. (ft/s)         *    0.57  *    6.05  *    0.86  *
* Max Chl Dpth (ft)       *   21.82  * Hydr. Depth (ft)         *    1.88  *   20.23  *    3.58  *
* Conv. Total (cfs)       *3069597.0  * Conv. (cfs)             *147703.8  *1737929.0  *1183963.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)         * 3066.38  *  322.42  * 8553.37  *
* Min Ch El (ft)          *  707.52  * Shear (lb/sq ft)         *    0.06  *    0.61  *    0.11  *
* Alpha                   *    8.26  * Stream Power (lb/ft s)   *14822.18  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.23  * Cum Volume (acre-ft)     * 4486.30  * 1959.10  * 8217.49  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)           * 1032.61  *  109.11  * 2068.33  *
*****************************************************************************************************
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Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK50

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*****************************************************************************************************
* E.G. Elev (ft)          *  730.36  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.28  * Wt. n-Val.               *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  730.08  * Reach Len. (ft)          *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)        * 8310.70  * 6622.20  *36967.54  *
* E.G. Slope (ft/ft)      *0.000458  * Area (sq ft)             * 8310.70  * 6622.20  *36967.54  *
* Q Total (cfs)           *78960.89  * Flow (cfs)               * 4931.84  *39483.61  *34545.44  *
* Top Width (ft)          *12838.16  * Top Width (ft)           * 3927.86  *  315.82  * 8594.47  *
* Vel Total (ft/s)        *    1.52  * Avg. Vel. (ft/s)         *    0.59  *    5.96  *    0.93  *
* Max Chl Dpth (ft)       *   22.56  * Hydr. Depth (ft)         *    2.12  *   20.97  *    4.30  *
* Conv. Total (cfs)       *3689669.0  * Conv. (cfs)             *230453.9  *1844983.0  *1614233.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)         * 3927.97  *  322.42  * 8594.71  *
* Min Ch El (ft)          *  707.52  * Shear (lb/sq ft)         *    0.06  *    0.59  *    0.12  *
* Alpha                   *    7.85  * Stream Power (lb/ft s)   *14822.18  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.21  * Cum Volume (acre-ft)     * 5491.51  * 2073.11  *10272.98  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)           * 1078.08  *  109.18  * 2102.09  *
*****************************************************************************************************
```

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK100

```
*****************************************************************************************************
* E.G. Elev (ft)          *  731.97  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.14  * Wt. n-Val.               *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.83  * Reach Len. (ft)          *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)        *15592.15  * 7175.60  *52152.16  *
```



```
* E.G. Slope (ft/ft)      *0.000259  * Area (sq ft)             *15592.15  * 7175.60  *52152.16  *
* Q Total (cfs)           *89304.10  * Flow (cfs)               * 9862.46  *33914.20  *45527.44  *
* Top Width (ft)          *13302.11  * Top Width (ft)           * 4239.84  *  315.82  * 8746.45  *
* Vel Total (ft/s)        *    1.19  * Avg. Vel. (ft/s)         *    0.63  *    4.73  *    0.87  *
* Max Chl Dpth (ft)       *   24.31  * Hydr. Depth (ft)         *    3.68  *   22.72  *    5.96  *
* Conv. Total (cfs)       *5553608.0  * Conv. (cfs)             *613322.7  *2109043.0  *2831242.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)         * 4239.95  *  322.42  * 8746.70  *
* Min Ch El (ft)          *  707.52  * Shear (lb/sq ft)         *    0.06  *    0.36  *    0.10  *
* Alpha                   *    6.28  * Stream Power (lb/ft s)   *14822.18  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.12  * Cum Volume (acre-ft)     * 8215.66  * 2406.31  *15954.84  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)           * 1116.33  *  109.30  * 2138.93  *
*****************************************************************************************************
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CROSS SECTION OUTPUT Profile #PK200

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*****************************************************************************************************
* E.G. Elev (ft)          *  732.74  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.12  * Wt. n-Val.               *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.62  * Reach Len. (ft)          *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)        *18982.64  * 7426.40  *59140.01  *
* E.G. Slope (ft/ft)      *0.000232  * Area (sq ft)             *18982.64  * 7426.40  *59140.01  *
* Q Total (cfs)           *99651.31  * Flow (cfs)               *12863.75  *34039.24  *52748.32  *
* Top Width (ft)          *13473.50  * Top Width (ft)           * 4295.34  *  315.82  * 8862.34  *
* Vel Total (ft/s)        *    1.16  * Avg. Vel. (ft/s)         *    0.68  *    4.58  *    0.89  *
* Max Chl Dpth (ft)       *   25.10  * Hydr. Depth (ft)         *    4.42  *   23.51  *    6.67  *
* Conv. Total (cfs)       *6538163.0  * Conv. (cfs)             *843995.9  *2233328.0  *3460839.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)         * 4295.46  *  322.42  * 8862.58  *
* Min Ch El (ft)          *  707.52  * Shear (lb/sq ft)         *    0.06  *    0.33  *    0.10  *
* Alpha                   *    5.64  * Stream Power (lb/ft s)   *14822.18  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.10  * Cum Volume (acre-ft)     * 9170.22  * 2500.39  *17783.39  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)           * 1127.59  *  109.30  * 2143.59  *
*****************************************************************************************************
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CROSS SECTION OUTPUT Profile #PK500

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*****************************************************************************************************
* E.G. Elev (ft)          *  733.70  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.10  * Wt. n-Val.               *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  733.60  * Reach Len. (ft)          *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)        *23224.08  * 7735.94  *67898.06  *
* E.G. Slope (ft/ft)      *0.000206  * Area (sq ft)             *23224.08  * 7735.94  *67898.06  *
* Q Total (cfs)           *112847.50  * Flow (cfs)              *16783.43  *34275.75  *61788.33  *
* Top Width (ft)          *13677.24  * Top Width (ft)           * 4353.68  *  315.82  * 9007.74  *
* Vel Total (ft/s)        *    1.14  * Avg. Vel. (ft/s)         *    0.72  *    4.43  *    0.91  *
* Max Chl Dpth (ft)       *   26.08  * Hydr. Depth (ft)         *    5.33  *   24.49  *    7.54  *
* Conv. Total (cfs)       *7870732.0  * Conv. (cfs)             *1170587.0  *2390618.0  *4309527.0  *
```

* Length Wtd. (ft)	* 463.28	* Wetted Per. (ft)	* 4353.81	* 322.42	* 9007.99 *
* Min Ch El (ft)	* 707.52	* Shear (lb/sq ft)	* 0.07	* 0.31	* 0.10 *
* Alpha	* 4.98	* Stream Power (lb/ft s)	*14822.18	* 0.00	* 0.00 *
* Frctn Loss (ft)	* 0.09	* Cum Volume (acre-ft)	*10350.69	* 2614.84	*20015.95 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 1148.83	* 109.30	* 2148.94 *

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 12550.6*

INPUT
Description:
Station Elevation Data num= 474

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	759.97	7.84	759.48	33.38	757.46	38.79	756.96	39.56	756.89
41.16	756.75	41.83	756.69	65.88	754.61	77.06	753.01	84.06	751.98
94.9	750.41	107.09	749.61	107.38	749.59	123.91	748.52	132.04	748.07
152.94	746.86	173.07	745.74	174.21	745.68	181.37	745.27	181.96	745.25
210.97	743.61	217.57	742.97	230.71	741.65	240	740.78	241.34	740.7
253.27	740.05	262.07	739.54	269.02	739.17	288.52	738.28	298.04	737.81
302.82	737.63	306.57	737.48	308.47	737.4	323.76	736.82	327.06	736.67
329.37	736.59	342.03	736.18	351.07	735.91	354.04	735.81	356.08	735.76
378.7	734.85	385.1	734.66	395.58	734.45	403.37	734.25	429.48	733.69
440.08	733.44	443.14	733.38	452.71	733.24	477.37	732.92	500.86	732.64
501.18	732.63	530.2	732.28	535.2	732.21	573.58	731.49	577	731.44
587.46	731.25	588.24	731.24	600.7	731.13	617.27	730.9	625.37	730.9
646.29	730.77	650.04	730.72	662.59	730.59	674.7	730.54	711.26	730.26
711.41	730.25	751.59	729.91	993.34	728.55	994.53	728.53	1063.1	728.05
1069.35	727.99	1107.6	727.68	1164.44	727.44	1168.65	727.43	1196.6	727.28
1197.68	727.28	1241.1	727.17	1313.75	727.14	1342.78	727.03	1406.92	726.97
1416.12	726.95	1419.11	726.95	1429.84	726.93	1458.86	726.82	1486.73	726.82
1487.87	726.81	1488.68	726.82	1508.12	726.82	1516.9	726.79	1574.94	726.66
1603.96	726.52	1661.34	726.38	1662.01	726.38	1816.65	725.95	1818.91	725.94
1821.08	725.94	1908.01	725.79	1908.64	725.79	1953.14	725.74	1982.01	725.72
1986.42	725.73	2086.65	725.7	2089.8	725.69	2271.43	725.68	2300.45	725.75
2302.67	725.75	2309.16	725.76	2387.51	725.78	2416.53	725.9	2473.49	726
2474.57	726.01	2475.33	726.01	2532.61	726.13	2561.63	726.27	2647.99	726.49
2649.7	726.49	2677.71	726.56	2706.74	726.72	2795.98	727.03	2825.85	727.22
2825.91	727.22	2938.9	727.67	2967.92	727.88	2968.66	727.88	3084	728.35
3113.02	728.53	3141.31	728.64	3142.04	728.64	3154.7	728.68	3229.1	728.98

3258.12	729.14	3287.14	729.2	3289.31	729.2	3463.59	729.49	3555.22	729.58
3644.22	728.82	3688.72	728.84	3777.73	729.56	3822.23	729.62	4133.74	729.3
4138.45	729.3	4257.28	729.09	4262.44	729.07	4301.59	729.01	4304.8	729.01
4307.72	729	4389.5	728.88	4390.19	728.87	4431.85	728.74	4476.99	728.7
4593.06	728.82	4621.29	728.94	4622.09	728.94	4623.23	728.95	4680.12	728.97
4738.17	728.86	4767.18	728.74	4769.28	728.72	4770.68	728.71	4793.95	728.57
4796.21	728.56	4813.03	728.41	4854.25	727.87	4855.38	727.84	4883.27	727.27
4912.29	726.79	4940.09	726.23	4941.31	726.21	4941.94	726.19	4982.44	725.32
4999.35	724.91	5024.8	723.91	5028.37	723.78	5065.27	723.09	5086.41	722.77
5109.94	722.46	5114.61	722.39	5115.44	722.38	5144.45	721.98	5151.85	721.95
5157.81	720.32	5184.06	709.36	5190.14	707.71	5444.43	707.35	5467.8	721.85
5528.15	722.15	5528.65	722.15	5580.51	722.61	5593.07	722.76	5619.92	723.21
5625.54	723.39	5650.36	723.74	5657.04	723.79	5657.99	723.8	5690.45	723.94
5722.91	723.94	5738.18	723.84	5741.64	723.8	5755.36	723.62	5767.39	723.54
5772.06	723.54	5787.82	723.57	5793.83	723.59	5802.49	723.64	5817	723.64
5820.28	723.63	5877.74	723.71	5982.56	723.75	5988.1	723.74	5990.93	723.74
6015.03	723.77	6015.69	723.77	6019.4	723.79	6072.74	723.87	6076.33	723.87
6079.94	723.88	6236.38	723.89	6242.22	723.88	7034.58	723.85	7049.69	723.83
7051.29	723.84	7171.69	723.74	7323.82	723.47	7353.22	723.33	7354.25	723.32
7355.21	723.32	7384.35	723.24	7385.04	723.24	7471.79	722.96	7475.96	722.93
7480.51	722.92	7506.38	722.73	7628.09	722.33	7719.37	722.32	7749.8	722.46
7780.22	723.14	7810.66	723.5	7830.58	723.7	7841.09	723.85	7871.51	724.08
7879.85	724.12	7901.94	724.29	7926.05	724.32	7932.37	724.34	7962.79	724.34
7967.29	724.33	8023.65	724.29	8054.07	724.08	8071.87	723.99	8077.96	723.97
8174.21	723.56	8175.78	723.56	8177.25	723.55	8200.46	723.42	8206.2	723.4
8327.91	723.3	8662.6	723.48	8753.88	723.64	8754.25	723.64	8783.4	723.69
8784.31	723.69	8845.16	723.78	8848.95	723.78	8906.01	723.85	8912.12	723.85
9057.41	724.14	9058.15	724.14	9072.54	724.18	9104.63	724.33	9200.87	724.56
9265.04	724.74	9266.18	724.74	9361.29	724.88	9393.37	724.99	9521.71	725.13
9553.79	725.23	9585.88	725.26	9588.86	725.27	9682.12	725.38	9825.07	725.45
9842.54	725.48	9878.07	725.48	9879.05	725.49	9969.42	725.47	9970.26	725.48
9972.69	725.48	10099.2	725.49	10152.68	725.55	10420.04	725.72	10426.31	725.74
10639.14	725.77	10655.04	725.83	10669.54	725.92	10684.86	726.15	10699.95	726.47
10706.37	726.62	10708.79	726.67	10714.67	726.81	10730.35	727.22	10740.34	727.46
10740.87	727.47	10746.67	727.61	10760.75	728.02	10769.87	728.05	10772.96	728.07
10777.69	728.09	10791.16	728.19	10808.71	728.21	10821.55	728.25	10851.96	728.22
10882.37	727.98	10912.77	727.85	10997.53	727.38	11003.98	727.36	11034.39	727.49
11095.19	728.07	11125.6	728.25	11186.4	728.29	11277.62	728.52	11308.01	728.65
11336.08	728.69	11429.63	728.59	11430.1	728.59	11459.91	728.47	11615.27	728.37
11758.01	728.55	11764.06	728.55	11855.28	728.64	12018.54	728.5	12215.54	728.49
12216.61	728.48	12220.12	728.48	12266.71	728.37	12280.93	728.31	12311.34	728.05
12372.14	727.87	12432.95	727.89	12443.64	727.95	12463.35	728.02	12607.95	728.21
12615.37	728.23	12794.21	728.12	12797.78	728.11	12954.47	727.74	12954.62	727.74
12954.75	727.73	12956.17	727.73	13039.83	727.44	13041.01	727.43	13042.25	727.43

```
13115.03  727.1613147.12  726.9313275.45  726.4813307.54   726.313308.12   726.3
13338.58  726.2313339.62  726.2313368.09  726.1913371.71  726.18   13376  726.18
13405.86  726.1413414.51  726.1713445.53  726.1813466.67  726.2513467.95  726.25
13557.88   726.613574.77  726.7613576.41  726.7813588.28  726.8913606.21  726.95
13618.68  726.9713631.66  726.9613649.09  726.9813662.68  726.9213679.49  726.88
13695.64  726.79 13709.9  726.6813724.63  726.3513724.73  726.3513740.29  726.06
 13770.7  725.7613786.77  725.6713801.11  725.5413814.88   725.5 13831.5  725.51
 13844.7  725.5913861.91  725.9313874.51  726.3613885.03  726.5513892.32   726.7
13910.85  727.1413917.12  727.3113922.72  727.4513934.12  727.7113953.12  728.07
13983.52   728.513993.74  728.6114013.37  728.9114013.93  728.9214023.55  729.01
 14043.4  729.2314045.45  729.2514047.18  729.2614074.73  729.47 14076.7  729.49
14077.54  729.4914106.23  729.7214135.54  729.9114159.03  730.1614165.95  730.22
14183.91  730.3114257.16  730.5414283.11  730.7114314.13   730.814317.96  730.82
14334.21  730.8614345.16  730.9114348.37  730.9314378.77  731.0714381.27  731.09
14398.37  731.1714409.17  731.2614430.46   731.514439.58  731.6314462.54  731.86
14494.63  732.2514500.04  732.3914500.26   732.414500.39   732.4 14526.7  733.03
14530.32  733.0814531.28  733.0914549.11   733.314561.19  733.5514578.63  733.96
14589.94  734.3414590.87  734.38 14591.6  734.4114608.16  735.01   14622  735.65
14622.96  735.6914637.68  737.7214655.03  740.3114667.21  741.7514682.81  743.44
14686.39  743.8114687.12  743.8914696.74  745.0514713.21  746.86 14719.2  747.49
14743.62  749.7514751.29  750.4914774.01  752.3814781.06  752.9814783.37  753.16
14785.31  753.3814814.84  757.2314815.45  757.3214834.83  758.2914844.36  758.83
14847.54  759.0614873.89  760.5314879.62   760.914903.42  762.2914911.71  762.79
14921.57  763.3514926.04  763.6214943.79  764.6614956.44  765.8514962.46   766.4
14975.87  767.4514986.84  767.6815007.95  768.0415016.35  768.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
       0     .09 5151.85     .04  5467.8     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       5151.85  5467.8           463.28  463.28  463.28             .1       .3

CROSS SECTION OUTPUT  Profile #PK2
**********************************************************************************************
* E.G. Elev (ft)          *  725.55  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.27  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  725.27  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  339.80  * 5162.02  * 6375.37  *
* E.G. Slope (ft/ft)      *0.000353  * Area (sq ft)            *  339.80  * 5162.02  * 6375.37  *
* Q Total (cfs)           *25686.49  * Flow (cfs)              *  168.89  *22873.70  * 2643.90  *
* Top Width (ft)          * 4608.21  * Top Width (ft)          *  167.53  *  315.95  * 4124.74  *
* Vel Total (ft/s)        *    2.16  * Avg. Vel. (ft/s)        *    0.50  *    4.43  *    0.41  *
```



```
* Max Chl Dpth (ft)       *   17.92  * Hydr. Depth (ft)        *    2.03  *   16.34  *    1.55  *
* Conv. Total (cfs)       *1367059.0  * Conv. (cfs)            *  8988.2  *1217360.0  *140711.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        *  167.57  *  322.72  * 4124.77  *
* Min Ch El (ft)          *  707.35  * Shear (lb/sq ft)        *    0.04  *    0.35  *    0.03  *
* Alpha                   *    3.74  * Stream Power (lb/ft s) *15016.35  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.16  * Cum Volume (acre-ft)    * 1393.86  * 1553.81  * 1766.81  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  582.16  *  104.85  * 1376.14  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK5
**********************************************************************************************
* E.G. Elev (ft)          *  728.63  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.15  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.47  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 4998.78  * 6173.12  *25230.80  *
* E.G. Slope (ft/ft)      *0.000235  * Area (sq ft)            * 4998.78  * 6173.12  *25230.80  *
* Q Total (cfs)           *42516.55  * Flow (cfs)              * 2099.34  *25122.91  *15294.31  *
* Top Width (ft)          *10554.13  * Top Width (ft)          * 2447.68  *  315.95  * 7790.50  *
* Vel Total (ft/s)        *    1.17  * Avg. Vel. (ft/s)        *    0.42  *    4.07  *    0.61  *
* Max Chl Dpth (ft)       *   21.12  * Hydr. Depth (ft)        *    2.04  *   19.54  *    3.24  *
* Conv. Total (cfs)       *2775763.0  * Conv. (cfs)            *137058.8  *1640190.0  *998513.8  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 2447.77  *  322.72  * 7790.62  *
* Min Ch El (ft)          *  707.35  * Shear (lb/sq ft)        *    0.03  *    0.28  *    0.05  *
* Alpha                   *    7.28  * Stream Power (lb/ft s) *15016.35  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.10  * Cum Volume (acre-ft)    * 4685.98  * 1992.16  * 8876.42  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  974.92  *  105.94  * 1991.25  *
**********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
**********************************************************************************************
* E.G. Elev (ft)          *  728.29  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.31  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.98  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 3852.51  * 6018.42  *21692.15  *
* E.G. Slope (ft/ft)      *0.000460  * Area (sq ft)            * 3852.51  * 6018.42  *21692.15  *
* Q Total (cfs)           *53951.22  * Flow (cfs)              * 2079.71  *33738.02  *18133.49  *
* Top Width (ft)          * 9261.07  * Top Width (ft)          * 2230.81  *  315.95  * 6714.31  *
* Vel Total (ft/s)        *    1.71  * Avg. Vel. (ft/s)        *    0.54  *    5.61  *    0.84  *
* Max Chl Dpth (ft)       *   20.63  * Hydr. Depth (ft)        *    1.73  *   19.05  *    3.23  *
* Conv. Total (cfs)       *2514236.0  * Conv. (cfs)            * 96918.8  *1572260.0  *845057.1  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 2230.89  *  322.72  * 6714.42  *
* Min Ch El (ft)          *  707.35  * Shear (lb/sq ft)        *    0.05  *    0.54  *    0.09  *
```

```
* Alpha                  *    6.81  * Stream Power (lb/ft s) *15016.35  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)   * 3113.80  * 1726.74  * 5170.72  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *  887.12  *  105.47  * 1773.37  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)         *  729.43  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.31  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  729.12  * Reach Len. (ft)        *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      * 6829.83  * 6376.53  *30668.31  *
* E.G. Slope (ft/ft)     *0.000484  * Area (sq ft)           * 6829.83  * 6376.53  *30668.31  *
* Q Total (cfs)          *68239.31  * Flow (cfs)             * 4069.54  *38094.42  *26075.35  *
* Top Width (ft)         *12267.80  * Top Width (ft)         * 3386.33  *  315.95  * 8565.53  *
* Vel Total (ft/s)       *    1.56  * Avg. Vel. (ft/s)       *    0.60  *    5.97  *    0.85  *
* Max Chl Dpth (ft)      *   21.77  * Hydr. Depth (ft)       *    2.02  *   20.18  *    3.58  *
* Conv. Total (cfs)      *3101226.0  * Conv. (cfs)           *184945.7  *1731251.0  *1185029.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)       * 3386.42  *  322.72  * 8565.65  *
* Min Ch El (ft)         *  707.35  * Shear (lb/sq ft)       *    0.06  *    0.60  *    0.11  *
* Alpha                  *    8.36  * Stream Power (lb/ft s) *15016.35  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.22  * Cum Volume (acre-ft)   * 4419.27  * 1891.22  * 7891.50  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *  998.29  *  105.75  * 1977.30  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************
* E.G. Elev (ft)         *  730.14  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.27  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  729.88  * Reach Len. (ft)        *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      * 9862.17  * 6615.59  *37183.63  *
* E.G. Slope (ft/ft)     *0.000445  * Area (sq ft)           * 9862.17  * 6615.59  *37183.63  *
* Q Total (cfs)          *78960.89  * Flow (cfs)             * 5890.77  *38849.18  *34220.94  *
* Top Width (ft)         *13372.34  * Top Width (ft)         * 4394.04  *  315.95  * 8662.35  *
* Vel Total (ft/s)       *    1.47  * Avg. Vel. (ft/s)       *    0.60  *    5.87  *    0.92  *
* Max Chl Dpth (ft)      *   22.53  * Hydr. Depth (ft)       *    2.24  *   20.94  *    4.29  *
* Conv. Total (cfs)      *3741374.0  * Conv. (cfs)           *279119.8  *1840776.0  *1621478.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)       * 4394.14  *  322.72  * 8662.47  *
* Min Ch El (ft)         *  707.35  * Shear (lb/sq ft)       *    0.06  *    0.57  *    0.12  *
* Alpha                  *    8.02  * Stream Power (lb/ft s) *15016.35  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.20  * Cum Volume (acre-ft)   * 5394.88  * 2002.72  * 9878.67  *
```



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* C & E Loss (ft)        *    0.01  * Cum SA (acres)         * 1033.83  *  105.82  * 2010.32  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************
* E.G. Elev (ft)         *  731.85  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.12  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.72  * Reach Len. (ft)        *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *18185.96  * 7199.20  *53502.09  *
* E.G. Slope (ft/ft)     *0.000239  * Area (sq ft)           *18185.96  * 7199.20  *53502.09  *
* Q Total (cfs)          *89304.10  * Flow (cfs)             *11626.91  *32779.43  *44897.76  *
* Top Width (ft)         *13887.58  * Top Width (ft)         * 4590.65  *  315.95  * 8980.98  *
* Vel Total (ft/s)       *    1.13  * Avg. Vel. (ft/s)       *    0.64  *    4.55  *    0.84  *
* Max Chl Dpth (ft)      *   24.37  * Hydr. Depth (ft)       *    3.96  *   22.79  *    5.96  *
* Conv. Total (cfs)      *5773828.0  * Conv. (cfs)           *751721.3  *2119307.0  *2902800.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)       * 4590.75  *  322.72  * 8981.11  *
* Min Ch El (ft)         *  707.35  * Shear (lb/sq ft)       *    0.06  *    0.33  *    0.09  *
* Alpha                  *    6.26  * Stream Power (lb/ft s) *15016.35  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.10  * Cum Volume (acre-ft)   * 8036.04  * 2329.87  *15393.00  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         * 1069.38  *  105.94  * 2044.66  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************
* E.G. Elev (ft)         *  732.63  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.11  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  732.53  * Reach Len. (ft)        *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *21905.59  * 7453.93  *60769.54  *
* E.G. Slope (ft/ft)     *0.000212  * Area (sq ft)           *21905.59  * 7453.93  *60769.54  *
* Q Total (cfs)          *99651.31  * Flow (cfs)             *14828.94  *32730.54  *52091.83  *
* Top Width (ft)         *13996.14  * Top Width (ft)         * 4642.24  *  315.95  * 9037.95  *
* Vel Total (ft/s)       *    1.11  * Avg. Vel. (ft/s)       *    0.68  *    4.39  *    0.86  *
* Max Chl Dpth (ft)      *   25.18  * Hydr. Depth (ft)       *    4.72  *   23.59  *    6.72  *
* Conv. Total (cfs)      *6837408.0  * Conv. (cfs)           *1017463.0  *2245751.0  *3574194.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)       * 4642.36  *  322.72  * 9038.09  *
* Min Ch El (ft)         *  707.35  * Shear (lb/sq ft)       *    0.06  *    0.31  *    0.09  *
* Alpha                  *    5.55  * Stream Power (lb/ft s) *15016.35  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)   * 8952.78  * 2421.26  *17145.74  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         * 1080.06  *  105.94  * 2048.41  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************
* E.G. Elev (ft)         *  733.61  * Element               *  Left OB *  Channel * Right OB *
```

* Vel Head (ft)	* 0.09	* Wt. n-Val.	* 0.090	* 0.040	* 0.090	*
* W.S. Elev (ft)	* 733.52	* Reach Len. (ft)	* 463.28	* 463.28	* 463.28	*
* Crit W.S. (ft)	*	* Flow Area (sq ft)	*26548.23	* 7767.25	*69757.02	*
* E.G. Slope (ft/ft)	*0.000186	* Area (sq ft)	*26548.23	* 7767.25	*69757.02	*
* Q Total (cfs)	*112847.50	* Flow (cfs)	*18922.98	*32810.68	*61113.84	*
* Top Width (ft)	*14123.06	* Top Width (ft)	* 4715.17	* 315.95	* 9091.95	*
* Vel Total (ft/s)	* 1.08	* Avg. Vel. (ft/s)	* 0.71	* 4.22	* 0.88	*
* Max Chl Dpth (ft)	* 26.17	* Hydr. Depth (ft)	* 5.63	* 24.58	* 7.67	*
* Conv. Total (cfs)	*8272606.0	* Conv. (cfs)	*1387203.0	*2405280.0	*4480124.0	*
* Length Wtd. (ft)	* 463.28	* Wetted Per. (ft)	* 4715.29	* 322.72	* 9092.09	*
* Min Ch El (ft)	* 707.35	* Shear (lb/sq ft)	* 0.07	* 0.28	* 0.09	*
* Alpha	* 4.84	* Stream Power (lb/ft s)	*15016.35	* 0.00	* 0.00	*
* Frctn Loss (ft)	* 0.08	* Cum Volume (acre-ft)	*10086.01	* 2532.40	*19283.94	*
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 1100.60	* 105.94	* 2052.69	*

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 12087.4*

INPUT
Description:
Station Elevation Data num= 419

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	760.21	8.24	759.7	35.08	757.52	38.74	757.18	40.78	756.98
41.58	756.9	43.26	756.74	43.96	756.67	69.24	754.32	77.27	753.05
99.75	749.43	112.56	748.54	112.86	748.52	130.25	747.34	138.79	746.85
183.11	744.24	190.64	743.81	191.26	743.78	221.76	742	228.69	741.27
242.5	739.79	252.26	738.82	253.68	738.74	266.22	738.05	275.46	737.5
282.77	737.09	303.26	736.12	313.27	735.6	340.3	734.54	343.77	734.38
346.21	734.29	359.51	733.86	369.02	733.57	372.14	733.47	374.28	733.42
398.06	732.42	404.78	732.22	423.99	731.84	451.43	731.39	462.57	731.19
465.79	731.14	475.84	731.02	501.76	730.76	526.46	730.55	526.8	730.55
527.69	730.53	557.3	730.28	562.56	730.22	587.81	729.8	617.48	729.36
618.31	729.35	631.4	729.3	648.81	729.11	649.68	729.12	657.33	729.19
679.32	729.21	683.26	729.19	696.45	729.15	709.18	729.14	747.61	728.99
747.77	728.99	801.33	728.72	1044.11	727.98	1045.36	727.97	1075.86	727.85
1117.43	727.6	1124.01	727.55	1210.98	727.13	1228.38	727.08	1257.76	726.92
1258.89	726.91	1380.9	726.59	1411.4	726.42	1502.91	726.18	1533.42	726.01
1562.72	725.95	1564.77	725.95	1585.19	725.91	1655.43	725.7	1685.93	725.52
1746.25	725.36	1746.95	725.36	1838.46	725.06	1909.5	724.93	1914.16	724.93

1927.74	724.9	1933.15	724.9	2005.52	724.79	2235	724.75	2342.57	724.85
2357.01	724.84	2387.52	724.87	2418.02	724.99	2420.35	724.99	2446.27	725.02
2448.52	725.02	2509.53	725.1	2540.04	725.27	2599.9	725.41	2601.04	725.42
2601.84	725.42	2662.05	725.59	2692.55	725.75	2779.14	726	2783.33	726.02
2785.12	726.02	2814.57	726.09	2845.07	726.29	2933.29	726.57	2938.88	726.6
2964.81	726.78	2970.28	726.81	2970.33	726.81	3089.1	727.27	3119.6	727.49
3120.38	727.5	3241.62	727.96	3272.12	728.17	3301.86	728.27	3302.63	728.28
3315.93	728.31	3394.14	728.57	3424.64	728.75	3455.14	728.8	3457.42	728.8
3488.94	728.87	3736.92	729.04	3830.47	728.67	3877.25	728.69	3970.8	729.06
4474.87	728.8	4521.43	728.76	4524.81	728.75	4675.29	728.6	4679.91	728.61
4705.8	728.6	4827.81	728.84	4857.47	729.02	4859.51	729.02	4919.32	729.12
4980.33	729.11	5010.83	729.02	5013.03	729.01	5014.5	729	5041.33	728.88
5059.02	728.75	5102.34	728.32	5103.53	728.3	5132.84	727.69	5163.35	727.19
5192.57	726.6	5193.85	726.57	5194.52	726.55	5254.86	725.19	5281.6	724.09
5285.36	723.94	5324.15	723.18	5346.37	722.82	5376.01	722.41	5376.88	722.4
5407.38	721.95	5415.16	721.91	5421.14	719.97	5447.47	709.52	5453.57	707.54
5708.71	707.17	5731.23	721.87	5791.15	722.06	5791.64	722.06	5804	722.13
5843.13	722.45	5855.6	722.58	5882.25	723.02	5887.82	723.19	5912.46	723.41
5919.1	723.45	5920.04	723.45	5946.48	723.49	5952.26	723.49	5984.49	723.37
5999.65	723.19	6003.08	723.13	6016.7	722.87	6028.65	722.74	6048.93	722.69
6054.9	722.69	6063.49	722.71	6077.9	722.69	6081.16	722.67	6138.2	722.72
6154.11	722.71	6156.16	722.7	6242.26	722.71	6247.75	722.7	6250.57	722.7
6274.49	722.74	6275.14	722.74	6278.83	722.76	6335.34	722.87	6494.23	722.9
6500.04	722.89	6854.49	722.87	6860.5	722.88	7055.17	722.93	7422.77	723.01
7573.79	722.91	7602.97	722.85	7604.95	722.85	7633.88	722.81	7634.57	722.81
7720.68	722.7	7724.82	722.68	7729.35	722.68	7755.03	722.59	7906.06	722.42
7966.47	722.45	7996.68	722.52	8026.88	722.87	8087.3	723.24	8117.51	723.37
8125.79	723.39	8147.71	723.48	8268.54	723.51	8298.74	723.41	8418.01	723.18
8419.57	723.19	8421.03	723.19	8449.77	723.12	8963.27	723.36	8993.48	723.41
8993.84	723.41	9022.78	723.44	9150.57	723.56	9294.81	723.91	9295.54	723.91
9309.83	723.96	9341.68	724.14	9437.23	724.43	9469.08	724.59	9500.93	724.66
9502.06	724.67	9596.48	724.85	9628.33	724.99	9755.73	725.19	9787.59	725.3
9819.44	725.34	9822.4	725.35	9851.28	725.39	9851.71	725.39	9914.99	725.51
10052.24	725.6	10109.51	725.71	10201.64	725.76	10203.44	725.77	10233.49	725.83
10329.04	725.87	10382.13	725.97	10407.36	725.98	10488.29	726.07	10520.15	726.15
10615.71	726.27	10653.78	726.31	10679.4	726.38	10848.62	726.52	10862.07	726.55
10865.06	726.55	10895.24	726.65	10910.45	726.77	10934.2	727.05	10965.53	727.5
10966.06	727.51	0971.81	727.57	10985.79	727.79	10994.85	727.81	10997.91	727.83
11002.6	727.84	11015.98	727.9	11033.4	727.92	11046.15	727.96	11076.34	727.97
11112.09	727.87	11227.25	727.65	11257.44	727.75	11284.56	727.93	11341.36	728.17
11347.99	728.19	11380.11	728.22	11383.95	728.23	11408.36	728.26	11411.96	728.27
11526.14	728.51	1529.08	728.51	11556.94	728.55	11650.29	728.51	11679.88	728.45
11887.03	728.44	12430.03	728.47	12431.09	728.46	12434.58	728.46	12494.94	728.35
12525.13	728.21	2615.67	728.07	12645.86	728.07	12917.51	728.11	13004.5	728.03

```
 13163.6  727.5813163.75  727.5813163.87  727.5713165.28  727.5713248.34  727.23
13249.51  727.2313250.74  727.22   13323  726.9513354.85   726.713482.25  726.23
 13514.1  726.0313514.68  726.0313544.92  725.9413545.96  725.9413611.71  725.79
 13620.3  725.79 13641.5  725.7513641.89  725.7513762.63  725.79 13779.4  725.85
13781.02  725.8613792.81  725.9113822.99  725.9513853.18  725.9513899.39  725.85
13913.54   725.813928.17  725.6313928.27  725.6313943.72  725.5113973.91   725.4
14017.77  725.3314034.27  725.3614047.37  725.4214064.46  725.6214076.96  725.85
14087.41  725.9614113.04  726.3614119.26  726.4714136.15   726.714155.01  726.92
14185.19   727.214195.33  727.2814214.82  727.4714215.37  727.4814244.63  727.75
14246.67  727.7814248.39  727.7814277.69  727.9514278.52  727.9514307.01  728.11
14310.37  728.1214366.29  728.4114384.12  728.47 14513.4  728.64 14517.2  728.65
14533.33  728.66 14544.2  728.6914547.39  728.7114597.02  728.8614607.75  728.93
14628.88  729.1214636.58   729.214637.94  729.2214660.73  729.4314692.58  729.82
14697.96  729.98 14698.3  729.9814724.43  730.6814728.02  730.7214728.97  730.74
14746.67  730.9414775.98  731.6414787.21  732.0614788.13  732.0914788.85  732.13
 14805.3  732.8314819.03  733.5714819.98  733.62 14834.6  736.0514851.83  739.15
14852.16   739.214863.92  740.88 14879.4  742.9214882.96  743.3814883.68  743.48
14893.23  744.8814909.58  747.0814913.75  747.6214915.53  747.8614939.77   750.7
14947.38  751.6114976.94  754.6914979.24  754.9114981.16  755.1815000.13  758.19
15003.41  758.7215010.48  759.8315011.08  759.9415030.32  761.1115036.94  761.53
15039.78  761.7215042.93  761.9715069.09  763.6215074.79  764.0515098.41  765.62
15106.64   766.215116.43  766.8515138.49  768.3715157.03  770.4515170.33  771.72
15181.23  772.0115186.34  772.1315202.19  772.5415210.53   772.6

Manning's n Values         num=       3
    Sta    n Val      Sta    n Val      Sta    n Val
**************************************************
       0      .09 5415.16      .04 5731.23      .09

Bank Sta: Left    Right     Lengths: Left Channel    Right      Coeff Contr.    Expan.
       5415.16 5731.23            463.28  463.28  463.28              .1          .3

CROSS SECTION OUTPUT  Profile #PK2
**********************************************************************************************
* E.G. Elev (ft)          *  725.38  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.24  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  725.14  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  509.69  * 5177.94  * 7831.20  *
* E.G. Slope (ft/ft)      *0.000320  * Area (sq ft)            *  509.69  * 5177.94  * 7831.20  *
* Q Total (cfs)           *25686.49  * Flow (cfs)              *  173.77  *21887.47  * 3625.25  *
* Top Width (ft)          * 5173.98  * Top Width (ft)          *  863.30  *  316.07  * 3994.60  *
* Vel Total (ft/s)        *    1.90  * Avg. Vel. (ft/s)        *    0.34  *    4.23  *    0.46  *
* Max Chl Dpth (ft)       *   17.97  * Hydr. Depth (ft)        *    0.59  *   16.38  *    1.96  *
* Conv. Total (cfs)       *1434990.0  * Conv. (cfs)            *  9707.6  *1222756.0  *202526.5  *
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* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        *  863.34  *  323.06  * 3994.63  *
* Min Ch El (ft)          *  707.17  * Shear (lb/sq ft)        *    0.01  *    0.32  *    0.04  *
* Alpha                   *    4.23  * Stream Power (lb/ft s) *15210.53  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.14  * Cum Volume (acre-ft)    * 1389.34  * 1498.83  * 1691.26  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  576.68  *  101.48  * 1332.97  *
**********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
**********************************************************************************************
* E.G. Elev (ft)          *  728.52  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.13  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.39  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 6485.90  * 6202.83  *26545.59  *
* E.G. Slope (ft/ft)      *0.000211  * Area (sq ft)            * 6485.90  * 6202.83  *26545.59  *
* Q Total (cfs)           *42516.55  * Flow (cfs)              * 2796.61  *24022.92  *15697.02  *
* Top Width (ft)          *10687.60  * Top Width (ft)          * 2747.13  *  316.07  * 7624.40  *
* Vel Total (ft/s)        *    1.08  * Avg. Vel. (ft/s)        *    0.43  *    3.87  *    0.59  *
* Max Chl Dpth (ft)       *   21.22  * Hydr. Depth (ft)        *    2.36  *   19.62  *    3.48  *
* Conv. Total (cfs)       *2924111.0  * Conv. (cfs)            *192338.8  *1652196.0  *1079576.0  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 2747.22  *  323.06  * 7624.46  *
* Min Ch El (ft)          *  707.17  * Shear (lb/sq ft)        *    0.03  *    0.25  *    0.05  *
* Alpha                   *    7.34  * Stream Power (lb/ft s) *15210.53  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.09  * Cum Volume (acre-ft)    * 4624.91  * 1926.34  * 8601.09  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  947.30  *  102.58  * 1909.28  *
**********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
**********************************************************************************************
* E.G. Elev (ft)          *  728.08  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.28  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.80  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 4978.27  * 6016.78  *22360.25  *
* E.G. Slope (ft/ft)      *0.000433  * Area (sq ft)            * 4978.27  * 6016.78  *22360.25  *
* Q Total (cfs)           *53951.22  * Flow (cfs)              * 2832.99  *32674.98  *18443.26  *
* Top Width (ft)          * 9254.02  * Top Width (ft)          * 2401.48  *  316.07  * 6536.48  *
* Vel Total (ft/s)        *    1.62  * Avg. Vel. (ft/s)        *    0.57  *    5.43  *    0.82  *
* Max Chl Dpth (ft)       *   20.63  * Hydr. Depth (ft)        *    2.07  *   19.04  *    3.42  *
* Conv. Total (cfs)       *2593016.0  * Conv. (cfs)            *136159.7  *1570432.0  *886424.1  *
* Length Wtd. (ft)        *  463.28  * Wetted Per. (ft)        * 2401.56  *  323.06  * 6536.53  *
* Min Ch El (ft)          *  707.17  * Shear (lb/sq ft)        *    0.06  *    0.50  *    0.09  *
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* Alpha                  *    6.92  * Stream Power (lb/ft s) *15210.53  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.19  * Cum Volume (acre-ft)   * 3066.84  * 1662.74  * 4936.46  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *  862.49  *  102.11  * 1702.91  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)         *  729.21  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.30  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  728.91  * Reach Len. (ft)        *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      * 8135.38  * 6368.70  *31070.52  *
* E.G. Slope (ft/ft)     *0.000467  * Area (sq ft)           * 8135.38  * 6368.70  *31070.52  *
* Q Total (cfs)          *68239.31  * Flow (cfs)             * 5370.87  *37307.83  *25560.62  *
* Top Width (ft)         *13096.71  * Top Width (ft)         * 3907.11  *  316.07  * 8873.53  *
* Vel Total (ft/s)       *    1.50  * Avg. Vel. (ft/s)       *    0.66  *    5.86  *    0.82  *
* Max Chl Dpth (ft)      *   21.74  * Hydr. Depth (ft)       *    2.08  *   20.15  *    3.50  *
* Conv. Total (cfs)      *3157894.0  * Conv. (cfs)           *248546.5  *1726485.0  *1182862.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)       * 3907.21  *  323.06  * 8873.58  *
* Min Ch El (ft)         *  707.17  * Shear (lb/sq ft)       *    0.06  *    0.57  *    0.10  *
* Alpha                  *    8.50  * Stream Power (lb/ft s) *15210.53  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)   * 4339.69  * 1823.45  * 7563.19  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *  959.51  *  102.39  * 1884.56  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************
* E.G. Elev (ft)         *  729.94  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.25  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  729.69  * Reach Len. (ft)        *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *11766.32  * 6614.35  *37999.21  *
* E.G. Slope (ft/ft)     *0.000424  * Area (sq ft)           *11766.32  * 6614.35  *37999.21  *
* Q Total (cfs)          *78960.89  * Flow (cfs)             * 7249.84  *37852.05  *33859.00  *
* Top Width (ft)         *14086.39  * Top Width (ft)         * 4819.78  *  316.07  * 8950.55  *
* Vel Total (ft/s)       *    1.40  * Avg. Vel. (ft/s)       *    0.62  *    5.72  *    0.89  *
* Max Chl Dpth (ft)      *   22.52  * Hydr. Depth (ft)       *    2.44  *   20.93  *    4.25  *
* Conv. Total (cfs)      *3836012.0  * Conv. (cfs)           *352205.8  *1838897.0  *1644910.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)       * 4819.88  *  323.06  * 8950.60  *
* Min Ch El (ft)         *  707.17  * Shear (lb/sq ft)       *    0.06  *    0.54  *    0.11  *
* Alpha                  *    8.20  * Stream Power (lb/ft s) *15210.53  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.19  * Cum Volume (acre-ft)   * 5279.86  * 1932.36  * 9478.86  *
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* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *  984.83  *  102.46  * 1916.66  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************
* E.G. Elev (ft)         *  731.74  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.11  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.63  * Reach Len. (ft)        *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *21288.32  * 7228.55  *55484.58  *
* E.G. Slope (ft/ft)     *0.000212  * Area (sq ft)           *21288.32  * 7228.55  *55484.58  *
* Q Total (cfs)          *89304.10  * Flow (cfs)             *13493.93  *31072.90  *44737.27  *
* Top Width (ft)         *14338.86  * Top Width (ft)         * 4978.42  *  316.07  * 9044.37  *
* Vel Total (ft/s)       *    1.06  * Avg. Vel. (ft/s)       *    0.63  *    4.30  *    0.81  *
* Max Chl Dpth (ft)      *   24.46  * Hydr. Depth (ft)       *    4.28  *   22.87  *    6.13  *
* Conv. Total (cfs)      *6128022.0  * Conv. (cfs)           *925949.9  *2132213.0  *3069859.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)       * 4978.53  *  323.06  * 9044.45  *
* Min Ch El (ft)         *  707.17  * Shear (lb/sq ft)       *    0.06  *    0.30  *    0.08  *
* Alpha                  *    6.03  * Stream Power (lb/ft s) *15210.53  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)   * 7826.12  * 2253.15  *14813.44  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         * 1018.49  *  102.58  * 1948.81  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************
* E.G. Elev (ft)         *  732.54  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.09  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  732.45  * Reach Len. (ft)        *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *25369.48  * 7486.52  *62875.05  *
* E.G. Slope (ft/ft)     *0.000188  * Area (sq ft)           *25369.48  * 7486.52  *62875.05  *
* Q Total (cfs)          *99651.31  * Flow (cfs)             *16912.95  *30986.45  *51751.91  *
* Top Width (ft)         *14398.88  * Top Width (ft)         * 5017.75  *  316.07  * 9065.07  *
* Vel Total (ft/s)       *    1.04  * Avg. Vel. (ft/s)       *    0.67  *    4.14  *    0.82  *
* Max Chl Dpth (ft)      *   25.28  * Hydr. Depth (ft)       *    5.06  *   23.69  *    6.94  *
* Conv. Total (cfs)      *7269803.0  * Conv. (cfs)           *1233840.0  *2260536.0  *3775426.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)       * 5017.87  *  323.06  * 9065.17  *
* Min Ch El (ft)         *  707.17  * Shear (lb/sq ft)       *    0.06  *    0.27  *    0.08  *
* Alpha                  *    5.31  * Stream Power (lb/ft s) *15210.53  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.08  * Cum Volume (acre-ft)   * 8701.39  * 2341.81  *16488.24  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         * 1028.69  *  102.58  * 1952.14  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************
* E.G. Elev (ft)         *  733.52  * Element               *  Left OB *  Channel * Right OB *
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* Vel Head (ft)          *    0.07  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  733.45  * Reach Len. (ft)         *  463.28  *  463.28  *  463.28  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *30406.49  * 7803.05  *71964.23  *
* E.G. Slope (ft/ft)     *0.000164  * Area (sq ft)            *30406.49  * 7803.05  *71964.23  *
* Q Total (cfs)          *112847.50  * Flow (cfs)             *21312.88  *31037.08  *60497.54  *
* Top Width (ft)         *14443.72  * Top Width (ft)          * 5042.10  *  316.07  * 9085.55  *
* Vel Total (ft/s)       *    1.02  * Avg. Vel. (ft/s)        *    0.70  *    3.98  *    0.84  *
* Max Chl Dpth (ft)      *   26.28  * Hydr. Depth (ft)        *    6.03  *   24.69  *    7.92  *
* Conv. Total (cfs)      *8806367.0  * Conv. (cfs)            *1663210.0  *2422065.0  *4721093.0  *
* Length Wtd. (ft)       *  463.28  * Wetted Per. (ft)        * 5042.25  *  323.06  * 9085.67  *
* Min Ch El (ft)         *  707.17  * Shear (lb/sq ft)        *    0.06  *    0.25  *    0.08  *
* Alpha                  *    4.60  * Stream Power (lb/ft s) *15210.53  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.07  * Cum Volume (acre-ft)    * 9783.14  * 2449.60  *18530.30  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          * 1048.72  *  102.58  * 1956.03  *
*****************************************************************************************************
```

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 11624.13

INPUT
Description:
Station Elevation Data num= 318

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
       0  760.458.640625  759.9236.79004  757.5940.62012  757.2246.10059  756.66
72.61035  754.0284.94043   751.9104.6006  748.46118.3506  747.45136.5801  746.16
  145.54  745.63168.5703  744.21199.9102  742.34200.5605  742.31227.1006  740.71
  232.54  740.39  254.29  737.93264.5303  736.86279.1602  736.05296.5205  735.01
318.0098  733.96   328.5  733.39356.8506  732.26360.4902  732.09  363.04  731.99
390.2305  731.12392.4805  731.07417.4102  729.99  424.46  729.78444.6006  729.43
473.3799   729.1488.4404  728.89498.9805  728.79520.4307  728.65526.1602   728.6
552.4102  728.46553.3506  728.45584.4004  728.28589.9102  728.23616.3906  727.86
648.3701  727.47662.1006  727.46680.3604  727.32  689.29  727.47712.3506  727.66
716.4805  727.66743.6602  727.75784.1299  727.73  840.29  727.61 1094.88  727.42
 1096.19  727.41 1128.17  727.34 1178.66  727.11 1283.47  726.74 1288.11  726.73
1320.101  726.54 1341.79  726.47 1448.04  726.04 1480.03   725.8 1483.32  725.79
 1575.99  725.42 1607.98   725.2  1638.7  725.09 1639.96  725.081640.851  725.08
 1668.04  724.98 1671.95  724.96 1735.92  724.73 1767.91  724.52 1831.16  724.34
1831.891  724.34 1895.86  724.171927.851  724.03 2021.47  723.892027.141  723.89
 2103.04  723.782184.601  723.77 2189.47  723.78 2343.67  723.84 2375.66   723.9
 2456.47  724.01 2471.62  724.01 2503.61  724.07 2535.59  724.22 2538.04  724.22
```



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 2565.22  724.28 2567.58  724.28 2631.55  724.43 2663.54  724.63 2726.32  724.82
 2727.51  724.832728.351  724.83 2755.53  724.91 2791.49  725.04 2823.47  725.24
2914.271  725.53 2918.66  725.55 2920.54  725.55 2951.42  725.63 2983.41  725.85
 3075.92  726.14 3081.78  726.17 3108.97  726.37 3114.76   726.4  3239.3  726.88
 3271.29   727.13272.101  727.11 3399.24  727.58 3431.22   727.8 3462.41  727.91
 3463.21  727.91 3559.17  728.17 3591.16  728.363623.141   728.4 3625.53   728.4
 3655.13  728.45 3658.58  728.46 4223.66  728.57 4902.62  728.48 4907.46  728.49
 4934.61   728.5 5062.55  728.86 5093.66  729.09 5094.54  729.09  5095.8   729.1
 5158.51  729.27 5222.49  729.35 5251.17  729.31 5254.47  729.31 5256.78   729.3
 5283.97  729.21 5286.46  729.215350.431  728.78 5367.71   728.4 5382.42  728.11
 5414.41  727.595446.391  726.93 5447.09  726.91 5510.37  725.465542.351   724.1
 5583.03  723.27 5606.33  722.87 5632.26   722.5 5637.41  722.42 5638.32  722.41
  5670.3  721.91 5678.46  721.88    5717  707.37    5973     707 5994.66  721.89
6054.141  721.97  6066.9  722.02 6105.74  722.28 6118.12   722.4 6144.58  722.83
 6150.11  722.99 6181.16   723.1 6182.09   723.1 6208.34  723.06 6214.08  723.04
 6246.07  722.79 6261.12  722.54 6278.05  722.12 6289.91  721.94 6310.04  721.81
  6338.8  721.74 6342.03  721.72 6398.66  721.73 6416.49   721.7 6501.96  721.67
 6507.41  721.66 6533.95  721.716534.601  721.71 6538.26  721.73 6597.92  721.87
 6752.09  721.926757.851  721.91 7109.71  721.917115.681  721.92 7295.84  721.98
 7323.03  722.02 7460.33   722.1  7553.6   722.2 7555.18  722.21 8560.96  722.76
 8566.96  722.778661.811  722.818664.811  722.82 9389.02  723.27  9532.2  723.68
 9547.11  723.74 9578.73  723.95 9673.58  724.31  9705.2   724.5 9736.82  724.59
 9737.94   724.6 9831.67  724.83 9863.29     725 9989.76  725.2410021.38  725.38
   10053  725.4310055.94  725.4410084.61  725.4810085.04  725.4810116.23  725.53
10147.85  725.6310153.34  725.6310288.72  725.8410305.94  725.8910432.41  726.05
 10434.2  726.0610464.03  726.14 10464.9  726.1410558.88  726.25 10590.5  726.35
10716.97  726.5610748.59  726.6610780.21  726.7110783.37  726.7110811.83  726.76
10812.46  726.7610843.45  726.8310845.69  726.8310875.06  726.8710906.68  726.98
11001.53  727.1211088.01  727.3211157.24  727.4311159.62  727.4311190.72  727.53
11191.24  727.5311219.82  727.5711222.86  727.5811336.21  727.7811365.31  727.85
11444.18  727.94 11475.8  727.9911507.42  728.0911602.27  728.1611633.89  728.25
11791.98  728.4212541.92   728.512644.52  728.4512645.57  728.4413214.79  727.93
 13246.4  727.8613372.73  727.4213372.88  727.42   13373  727.41 13374.4  727.41
13404.49   727.313467.73  726.9713530.96  726.7413562.58  726.4813689.05  725.99
 13718.9  725.7713720.67  725.7613751.26  725.6513752.29  725.6513780.35  725.57
13783.91  725.5513788.14  725.5413847.14  725.3413878.76  725.1913984.03  724.94
14131.71  724.9114289.79  725.3714321.41  725.6214416.27  726.0414445.86  726.28
14447.88   726.314449.59   726.314478.68  726.41 14479.5  726.4114507.78   726.5
14511.12   726.514584.33  726.6314637.59   726.614732.45  726.4614795.68  726.55
 14827.3  726.7314856.94  726.9914858.92  727.0114886.04  727.3314890.54  727.39
14895.88  727.5614922.15  728.3314944.23  728.5914973.33  729.3214985.39  729.81
15002.43  730.6515017.01  731.5615031.52  734.3815048.62  737.9915060.62  740.02
15080.24  743.0615089.72  744.7115111.86  748.2315143.48  752.7415172.82  756.39
 15175.1  756.6515177.01  756.97 15199.1  761.1315206.11  762.4315206.71  762.56
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 15235.2   764.615238.33  764.88 15264.3  766.7115269.95  767.19 15293.4  768.96
15301.57  769.6115311.29  770.3415333.19  772.0915351.59   774.5 15364.8  775.99
15380.69  776.4915396.42  777.05 15404.7  777.16

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .09 5678.46     .04 5994.66     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       5678.46 5994.66           448.79  448.79  448.79             .1       .3

CROSS SECTION OUTPUT  Profile #PK2
**********************************************************************************************
* E.G. Elev (ft)         *  725.23  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.20  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  725.03  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      * 1246.77  * 5197.61  * 9375.14  *
* E.G. Slope (ft/ft)     *0.000288  * Area (sq ft)           * 1246.77  * 5197.61  * 9375.14  *
* Q Total (cfs)          *25945.95  * Flow (cfs)             *  365.54  *20867.16  * 4713.25  *
* Top Width (ft)         * 5713.86  * Top Width (ft)         * 1290.47  *  316.20  * 4107.20  *
* Vel Total (ft/s)       *    1.64  * Avg. Vel. (ft/s)       *    0.29  *    4.01  *    0.50  *
* Max Chl Dpth (ft)      *   18.03  * Hydr. Depth (ft)       *    0.97  *   16.44  *    2.28  *
* Conv. Total (cfs)      *1528721.0  * Conv. (cfs)           * 21537.2  *1229482.0  *277702.3  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 1290.51  *  323.47  * 4107.22  *
* Min Ch El (ft)         *  707.00  * Shear (lb/sq ft)       *    0.02  *    0.29  *    0.04  *
* Alpha                  *    4.84  * Stream Power (lb/ft s) *15404.70  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)   * 1380.00  * 1443.65  * 1599.76  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  565.23  *   98.12  * 1289.88  *
**********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
**********************************************************************************************
* E.G. Elev (ft)         *  728.42  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.11  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  728.31  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      * 8475.56  * 6234.79  *28660.53  *
* E.G. Slope (ft/ft)     *0.000189  * Area (sq ft)           * 8475.56  * 6234.79  *28660.53  *
* Q Total (cfs)          *42918.92  * Flow (cfs)             * 3623.68  *22900.34  *16394.90  *
* Top Width (ft)         *11444.61  * Top Width (ft)         * 3308.80  *  316.20  * 7819.61  *
* Vel Total (ft/s)       *    0.99  * Avg. Vel. (ft/s)       *    0.43  *    3.67  *    0.57  *
* Max Chl Dpth (ft)      *   21.31  * Hydr. Depth (ft)       *    2.56  *   19.72  *    3.67  *
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* Conv. Total (cfs)      *3120518.0  * Conv. (cfs)           *263468.1  *1665021.0  *1192029.0  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 3308.90  *  323.47  * 7819.66  *
* Min Ch El (ft)         *  707.00  * Shear (lb/sq ft)       *    0.03  *    0.23  *    0.04  *
* Alpha                  *    7.49  * Stream Power (lb/ft s) *15404.70  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)   * 4545.35  * 1860.20  * 8307.52  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  915.09  *   99.22  * 1827.15  *
**********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
**********************************************************************************************
* E.G. Elev (ft)         *  727.88  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.26  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.62  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      * 6312.07  * 6017.69  *23686.17  *
* E.G. Slope (ft/ft)     *0.000408  * Area (sq ft)           * 6312.07  * 6017.69  *23686.17  *
* Q Total (cfs)          *54360.98  * Flow (cfs)             * 3614.56  *31700.63  *19045.80  *
* Top Width (ft)         *10057.20  * Top Width (ft)         * 2907.15  *  316.20  * 6833.86  *
* Vel Total (ft/s)       *    1.51  * Avg. Vel. (ft/s)       *    0.57  *    5.27  *    0.80  *
* Max Chl Dpth (ft)      *   20.62  * Hydr. Depth (ft)       *    2.17  *   19.03  *    3.47  *
* Conv. Total (cfs)      *2691448.0  * Conv. (cfs)           *178959.1  *1569519.0  *942969.9  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 2907.24  *  323.47  * 6833.90  *
* Min Ch El (ft)         *  707.00  * Shear (lb/sq ft)       *    0.06  *    0.47  *    0.09  *
* Alpha                  *    7.21  * Stream Power (lb/ft s) *15404.70  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.19  * Cum Volume (acre-ft)   * 3006.80  * 1598.74  * 4691.60  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  834.26  *   98.74  * 1631.81  *
**********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
**********************************************************************************************
* E.G. Elev (ft)         *  728.99  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.28  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  728.71  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *10103.63  * 6362.34  *32119.60  *
* E.G. Slope (ft/ft)     *0.000452  * Area (sq ft)           *10103.63  * 6362.34  *32119.60  *
* Q Total (cfs)          *68923.08  * Flow (cfs)             * 5914.68  *36599.81  *26408.59  *
* Top Width (ft)         *14093.63  * Top Width (ft)         * 4823.07  *  316.20  * 8954.37  *
* Vel Total (ft/s)       *    1.42  * Avg. Vel. (ft/s)       *    0.59  *    5.75  *    0.82  *
* Max Chl Dpth (ft)      *   21.71  * Hydr. Depth (ft)       *    2.09  *   20.12  *    3.59  *
* Conv. Total (cfs)      *3243126.0  * Conv. (cfs)           *278310.8  *1722178.0  *1242637.0  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 4823.18  *  323.47  * 8954.42  *
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* Min Ch El (ft)          *  707.00  * Shear (lb/sq ft)        *    0.06  *    0.55  *    0.10  *
* Alpha                   *    8.88  * Stream Power (lb/ft s) *15404.70  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.20  * Cum Volume (acre-ft)   * 4242.70  * 1755.75  * 7227.17  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *  913.08  *   99.03  * 1789.76  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************************
* E.G. Elev (ft)          *  729.74  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.22  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  729.52  * Reach Len. (ft)       *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)     *14187.10  * 6618.62  *39389.75  *
* E.G. Slope (ft/ft)      *0.000389  * Area (sq ft)          *14187.10  * 6618.62  *39389.75  *
* Q Total (cfs)           *79649.91  * Flow (cfs)            * 8979.23  *36294.09  *34376.59  *
* Top Width (ft)          *14538.90  * Top Width (ft)        * 5239.09  *  316.20  * 8983.61  *
* Vel Total (ft/s)        *     1.32  * Avg. Vel. (ft/s)      *    0.63  *    5.48  *    0.87  *
* Max Chl Dpth (ft)       *    22.52  * Hydr. Depth (ft)      *    2.71  *   20.93  *    4.38  *
* Conv. Total (cfs)       *4036557.0  * Conv. (cfs)           *455055.9  *1839339.0  *1742162.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)      * 5239.21  *  323.47  * 8983.68  *
* Min Ch El (ft)          *  707.00  * Shear (lb/sq ft)      *    0.07  *    0.50  *    0.11  *
* Alpha                   *    8.04  * Stream Power (lb/ft s) *15404.70  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.17  * Cum Volume (acre-ft)   * 5141.85  * 1862.00  * 9067.33  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *  931.34  *   99.10  * 1821.29  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)          *  731.64  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.09  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.55  * Reach Len. (ft)       *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)     *24891.09  * 7260.46  *57667.55  *
* E.G. Slope (ft/ft)      *0.000187  * Area (sq ft)          *24891.09  * 7260.46  *57667.55  *
* Q Total (cfs)           *89992.12  * Flow (cfs)            *15764.66  *29362.94  *44864.52  *
* Top Width (ft)          *14640.09  * Top Width (ft)        * 5301.69  *  316.20  * 9022.20  *
* Vel Total (ft/s)        *     1.00  * Avg. Vel. (ft/s)      *    0.63  *    4.04  *    0.78  *
* Max Chl Dpth (ft)       *    24.55  * Hydr. Depth (ft)      *    4.69  *   22.96  *    6.39  *
* Conv. Total (cfs)       *6577502.0  * Conv. (cfs)           *1152235.0  *2146130.0  *3279137.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)      * 5301.85  *  323.47  * 9022.32  *
* Min Ch El (ft)          *  707.00  * Shear (lb/sq ft)      *    0.05  *    0.26  *    0.07  *
* Alpha                   *    5.69  * Stream Power (lb/ft s) *15404.70  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.08  * Cum Volume (acre-ft)   * 7580.55  * 2176.10  *14211.73  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  963.82  *   99.22  * 1852.74  *
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*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************************
* E.G. Elev (ft)          *  732.45  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.08  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.38  * Reach Len. (ft)       *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)     *29271.86  * 7521.13  *65107.30  *
* E.G. Slope (ft/ft)      *0.000166  * Area (sq ft)          *29271.86  * 7521.13  *65107.30  *
* Q Total (cfs)           *100471.50  * Flow (cfs)           *19404.84  *29339.77  *51726.89  *
* Top Width (ft)          *14667.24  * Top Width (ft)        * 5324.50  *  316.20  * 9026.54  *
* Vel Total (ft/s)        *     0.99  * Avg. Vel. (ft/s)      *    0.66  *    3.90  *    0.79  *
* Max Chl Dpth (ft)       *    25.38  * Hydr. Depth (ft)      *    5.50  *   23.79  *    7.21  *
* Conv. Total (cfs)       *7794252.0  * Conv. (cfs)           *1505364.0  *2276084.0  *4012804.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)      * 5324.67  *  323.47  * 9026.74  *
* Min Ch El (ft)          *  707.00  * Shear (lb/sq ft)      *    0.06  *    0.24  *    0.07  *
* Alpha                   *    4.99  * Stream Power (lb/ft s) *15404.70  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.07  * Cum Volume (acre-ft)   * 8410.82  * 2262.01  *15807.66  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  973.70  *   99.22  * 1855.93  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************************
* E.G. Elev (ft)          *  733.45  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.06  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  733.38  * Reach Len. (ft)       *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)     *34660.49  * 7840.38  *74223.51  *
* E.G. Slope (ft/ft)      *0.000146  * Area (sq ft)          *34660.49  * 7840.38  *74223.51  *
* Q Total (cfs)           *113669.30  * Flow (cfs)           *24001.45  *29440.29  *60227.55  *
* Top Width (ft)          *14697.77  * Top Width (ft)        * 5349.83  *  316.20  * 9031.74  *
* Vel Total (ft/s)        *     0.97  * Avg. Vel. (ft/s)      *    0.69  *    3.75  *    0.81  *
* Max Chl Dpth (ft)       *    26.38  * Hydr. Depth (ft)      *    6.48  *   24.80  *    8.22  *
* Conv. Total (cfs)       *9418448.0  * Conv. (cfs)           *1988720.0  *2439373.0  *4990354.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)      * 5350.02  *  323.47  * 9032.04  *
* Min Ch El (ft)          *  707.00  * Shear (lb/sq ft)      *    0.06  *    0.22  *    0.07  *
* Alpha                   *    4.33  * Stream Power (lb/ft s) *15404.70  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.06  * Cum Volume (acre-ft)   * 9437.14  * 2366.42  *17752.91  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  993.46  *   99.22  * 1859.69  *
*****************************************************************************************************

CROSS SECTION

RIVER: Thompson
```

REACH: Alignment - surv RS: 11175.3*

INPUT
Description:
Station Elevation Data num= 416

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	763.55	.3	763.53	8.94	763.06	27.79	761.71	38.05	760.95
42.01	760.61	47.67	760.09	55.29	759.42	75.09	757.76	108.17	753.01
122.39	752.12	141.24	750.98	150.51	750.51	165.28	749.73	179.54	748.91
206.73	747.42	207.41	747.4	240.48	745.57	247.04	744.93	247.78	744.85
262.97	743.35	273.56	742.38	288.69	741.58	302.77	740.78	306.64	740.53
330.27	739.2	339.71	738.72	369.03	737.6	372.8	737.44	375.43	737.35
385.27	737.04	399.41	736.63	403.55	736.5	405.88	736.45	431.66	735.43
433.87	735.36	438.95	735.21	440.26	735.18	459.78	734.88	503.47	734.46
505.11	734.44	516.01	734.38	538.2	734.3	544.12	734.27	547.82	734.26
549.87	734.25	550.25	734.25	571.27	734.22	572.24	734.21	573.07	734.21
604.35	734.12	605.24	734.11	610.05	734.08	670.5	733.47	684.7	733.45
687.74	733.43	689.07	733.41	696.23	733.34	703.58	733.25	712.27	733.32
712.82	733.32	715.24	733.33	736.67	733.34	769.04	733.2	797.73	732.96
810.9	732.76	825.23	732.51	828.26	732.49	851.46	732.27	852.73	732.26
868.97	732.11	921.06	731.76	935.22	731.69	944.26	731.59	962.72	731.44
990.22	731.29	990.65	731.28	1013.86	731.12	1017.71	731.1	1037.06	730.89
1045.21	730.82	1057.07	730.47	1072.71	730.17	1090.82	729.86	1100.2	729.52
1106.65	729.45	1127.71	729.26	1132.25	729.24	1133.61	729.23	1155.2	729.1
1176.25	729.03	1199.45	728.89	1210.2	728.79	1218.89	728.74	1222.65	728.73
1259.58	728.48	1265.19	728.45	1289.86	728.25	1292.25	728.24	1292.69	728.23
1320.19	728.03	1332.08	727.91	1347.69	727.72	1365.16	727.57	1428.34	727.13
1430.18	727.12	1431.45	727.11	1457.68	726.83	1497.47	726.56	1530.55	726.24
1567.67	725.99	1595.17	725.73	1629.79	725.5	1662.87	725.2	1694.64	725
1695.94	724.99	1696.86	724.99	1705.15	724.93	1732.66	724.68	1733.03	724.68
1795.17	724.34	1842.64	723.97	1893.67	723.74	1894.42	723.73	1895.79	723.73
1951.69	723.49	1975.78	723.31	1978.73	723.28	1993.66	723.19	2029.39	723.09
2083	723.08	2090.47	723.07	2090.83	723.07	2096.34	723.08	2174.83	723.02
2259.17	723.09	2438.39	723.38	2540.32	723.61	2555.99	723.62	2565.45	723.65
2589.07	723.7	2592.25	723.72	2622.14	723.84	2624.67	723.84	2652.78	723.89
2655.22	723.89	2721.38	724.02	2754.46	724.18	2762.85	724.2	2816.92	724.23
2819.38	724.24	2820.61	724.25	2821.48	724.25	2843.96	724.3	2919.85	724.71
3013.75	725.01	3018.29	725.03	3020.23	725.03	3052.16	725.11	3085.25	725.31
3087.31	725.32	3180.91	725.62	3186.97	725.65	3215.09	725.83	3221.08	725.86
3222.51	725.86	3345.63	726.33	3349.87	726.34	3382.95	726.54	3383.79	726.55
3515.27	727	3548.34	727.2	3580.6	727.3	3581.42	727.3	3680.66	727.56
3713.74	727.73	3746.81	727.79	3749.28	727.79	3779.9	727.84	3783.46	727.85
4980.01	727.82	5004.54	727.79	5103.05	727.75	5235.36	727.95	5267.53	728.12

5268.44	728.11	5269.74	728.12	5400.76	728.23	5430.41	728.18	5433.83	728.18
5436.22	728.17	5466.91	728.08	5533.06	727.69	5566.14	727.12	5599.23	726.68
5632.3	726.12	5633.02	726.1	5698.46	724.88	5731.54	723.75	5773.6	723.05
5797.7	722.71	5827.96	722.36	5829.84	722.33	5830.78	722.33	5863.85	721.89
5872.29	721.87	5898.83	710.9	5910.55	707.19	6164.67	706.83	6188.29	721.89
6247.4	721.96	6260.08	722.01	6298.69	722.22	6310.99	722.32	6337.28	722.69
6342.78	722.82	6373.64	722.92	6374.56	722.92	6406.35	722.88	6438.15	722.68
6453.1	722.47	6469.93	722.12	6481.72	721.98	6501.72	721.88	6530.3	721.83
6533.51	721.82	6589.79	721.84	6692.45	721.84	6697.87	721.83	6724.25	721.88
6724.89	721.88	6728.53	721.9	6806.03	722.06	6936.08	722.14	6941.04	722.15
6946.76	722.14	7296.45	722.33	7737.59	722.74	7739.16	722.75	7748.89	722.75
7752.62	722.76	8149.34	722.85	8182.97	722.79	8317.47	722.64	8351.1	722.55
8552.87	722.54	8620.12	722.69	8653.74	722.85	8738.72	723.02	8744.69	723.04
9225.4	723.1	9226.99	723.11	9453.33	723.13	9561.66	723.17	9703.96	723.48
9718.77	723.53	9727.53	723.58	9750.2	723.7	9844.46	723.98	9863.4	724.07
9864.62	724.08	9875.89	724.13	9907.31	724.2	9908.42	724.21	9998.81	724.37
10001.58	724.38	10001.73	724.38	10033	724.51	10158.69	724.71	10190.11	724.82
10221.54	724.86	10224.46	724.87	10252.95	724.91	10253.38	724.9	10315.8	725.03
10321.26	725.03	10598.6	725.42	10600.38	725.43	10630.02	725.53	10630.89	725.53
10635.5	725.54	10637.72	725.54	10704.97	725.69	10805.86	726.05	10873.11	726.19
10874.89	726.2	10881.4	726.21	10944.25	726.39	10947.39	726.39	10975.67	726.45
10976.3	726.45	11007.1	726.53	11009.33	726.53	11038.51	726.61	1069.94	726.71
11142.12	726.85	11144.23	726.85	11318.95	727.15	11321.31	727.15	11352.22	727.22
11381.14	727.24	11384.16	727.25	11496.81	727.37	11635.54	727.47	11645.36	727.49
11646.52	727.51	1666.96	727.54	11761.23	727.55	11781.03	727.59	11792.65	727.62
12178.27	727.61	12184.55	727.61	2284.66	727.56	12285.43	727.57	12797.03	727.38
12798.08	727.37	13363.78	726.94	13520.74	726.51	13522.4	726.51	13677.99	725.95
13709.41	725.73	13835.1	725.32	13866.53	725.13	13896.93	725.04	13897.95	725.04
13925.84	724.97	13929.38	724.95	13933.58	724.95	14023.64	724.65	14034.03	724.63
14128.26	724.54	14275.03	724.67	14403.91	725.06	14432.13	725.07	14437.54	725.1
14463.55	725.29	14471.17	725.32	14504.79	725.55	14557.83	725.79	14587.23	725.99
14589.24	726	14590.94	726	14619.85	726.11	4620.66	726.11	4648.77	726.19
14652.09	726.19	14672.93	726.23	14724.85	726.41	4773.81	726.53	14807.44	726.66
14841.06	726.89	14864.81	727.44	14872.05	727.57	14874.69	727.63	14934.89	728.37
14937.36	728.42	14944.62	728.53	14966.31	728.94	14971.21	729.04	14983.06	729.32
14995.77	729.59	15009.2	729.92	15024.69	730.51	5028.76	730.66	15029.16	730.68
15042.82	731.41	5060.58	732.12	15082.52	732.69	15104.21	733.53	15111.44	733.79
15123.43	734.38	15140.36	735.33	15143.71	735.55	15154.85	736.31	15169.27	738.88
15177.34	740.44	15184.01	741.64	15186.27	742.04	15198.19	743.74	15209.29	745.19
15210.96	745.41	5217.69	746.27	15227.11	747.63	15249.11	750.54	15278.21	753.96
15280.54	754.23	15309.7	757.19	15311.84	757.41	5311.96	757.41	15313.86	757.66
15317.01	758.14	15335.81	760.97	15336.57	761.08	15342.78	762.01	15343.38	762.12
15345.47	762.23	15370.21	763.61	15371.69	763.67	15374.8	763.86	15379.09	764.06
15400.61	765.21	5406.23	765.56	15429.53	766.89	15437.65	767.38	15446.35	767.88

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15447.31  767.9315450.01   768.115463.86  768.9415469.08  769.2715479.97  770.42
15487.36  771.1815500.49  772.32 15513.6  772.5715516.28  772.6315531.91  773.04
15540.14   773.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .09 5872.29     .04 6188.29     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       5872.29 6188.29            448.79  448.79  448.79            .1       .3

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  725.09  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.22  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  724.87  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 1786.31  * 5197.85  * 8257.50  *
* E.G. Slope (ft/ft)      *0.000307  * Area (sq ft)            * 1786.31  * 5197.85  * 8257.50  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              *  608.95  *21545.57  * 3791.43  *
* Top Width (ft)          * 6169.76  * Top Width (ft)          * 1432.23  *  316.00  * 4421.52  *
* Vel Total (ft/s)        *    1.70  * Avg. Vel. (ft/s)        *    0.34  *    4.15  *    0.46  *
* Max Chl Dpth (ft)       *   18.04  * Hydr. Depth (ft)        *    1.25  *   16.45  *    1.87  *
* Conv. Total (cfs)       *1481685.0  * Conv. (cfs)            * 34775.0  *1230394.0  *216515.6  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 1432.27  *  323.14  * 4421.54  *
* Min Ch El (ft)          *  706.83  * Shear (lb/sq ft)        *    0.02  *    0.31  *    0.04  *
* Alpha                   *    4.94  * Stream Power (lb/ft s)  *15540.14  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.14  * Cum Volume (acre-ft)    * 1364.38  * 1390.10  * 1508.93  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  551.20  *   94.87  * 1245.95  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)          *  728.33  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.12  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.21  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 9612.59  * 6252.82  *29687.76  *
* E.G. Slope (ft/ft)      *0.000199  * Area (sq ft)            * 9612.59  * 6252.82  *29687.76  *
* Q Total (cfs)           *42918.92  * Flow (cfs)              * 3704.54  *23596.20  *15618.19  *
* Top Width (ft)          *13590.09  * Top Width (ft)          * 4540.54  *  316.00  * 8733.56  *
* Vel Total (ft/s)        *    0.94  * Avg. Vel. (ft/s)        *    0.39  *    3.77  *    0.53  *
* Max Chl Dpth (ft)       *   21.38  * Hydr. Depth (ft)        *    2.12  *   19.79  *    3.40  *
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* Conv. Total (cfs)       *3045119.0  * Conv. (cfs)            *262838.6  *1674162.0  *1108119.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 4540.62  *  323.14  * 8733.60  *
* Min Ch El (ft)          *  706.83  * Shear (lb/sq ft)        *    0.03  *    0.24  *    0.04  *
* Alpha                   *    8.95  * Stream Power (lb/ft s)  *15540.14  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.08  * Cum Volume (acre-ft)    * 4452.17  * 1795.88  * 8006.94  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  874.66  *   95.96  * 1741.88  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)          *  727.69  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.27  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.42  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 6867.55  * 6002.93  *22951.63  *
* E.G. Slope (ft/ft)      *0.000425  * Area (sq ft)            * 6867.55  * 6002.93  *22951.63  *
* Q Total (cfs)           *54360.98  * Flow (cfs)              * 4509.23  *32227.32  *17624.43  *
* Top Width (ft)          *10427.35  * Top Width (ft)          * 2563.44  *  316.00  * 7547.91  *
* Vel Total (ft/s)        *    1.52  * Avg. Vel. (ft/s)        *    0.66  *    5.37  *    0.77  *
* Max Chl Dpth (ft)       *   20.59  * Hydr. Depth (ft)        *    2.68  *   19.00  *    3.04  *
* Conv. Total (cfs)       *2638398.0  * Conv. (cfs)            *218854.3  *1564146.0  *855397.7  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 2563.52  *  323.14  * 7547.95  *
* Min Ch El (ft)          *  706.83  * Shear (lb/sq ft)        *    0.07  *    0.49  *    0.08  *
* Alpha                   *    7.52  * Stream Power (lb/ft s)  *15540.14  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.20  * Cum Volume (acre-ft)    * 2938.90  * 1536.82  * 4451.35  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  806.08  *   95.49  * 1557.72  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)          *  728.78  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.26  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.53  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *11076.43  * 6353.46  *32473.06  *
* E.G. Slope (ft/ft)      *0.000428  * Area (sq ft)            *11076.43  * 6353.46  *32473.06  *
* Q Total (cfs)           *68923.08  * Flow (cfs)              * 6777.40  *35570.33  *26575.35  *
* Top Width (ft)          *13692.03  * Top Width (ft)          * 4619.82  *  316.00  * 8756.21  *
* Vel Total (ft/s)        *    1.38  * Avg. Vel. (ft/s)        *    0.61  *    5.60  *    0.82  *
* Max Chl Dpth (ft)       *   21.70  * Hydr. Depth (ft)        *    2.40  *   20.11  *    3.71  *
* Conv. Total (cfs)       *3331437.0  * Conv. (cfs)            *327589.6  *1719312.0  *1284535.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 4619.91  *  323.14  * 8756.25  *
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* Min Ch El (ft)          *  706.83  * Shear (lb/sq ft)        *    0.06  *    0.53  *    0.10  *
* Alpha                   *    8.63  * Stream Power (lb/ft s) *15540.14  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.18  * Cum Volume (acre-ft)   * 4133.59  * 1690.24  * 6894.42  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *  864.44  *   95.77  * 1698.53  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************************
* E.G. Elev (ft)          *  729.56  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.20  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  729.37  * Reach Len. (ft)       *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)     *15000.80  * 6618.02  *39821.79  *
* E.G. Slope (ft/ft)      *0.000364  * Area (sq ft)          *15000.80  * 6618.02  *39821.79  *
* Q Total (cfs)           *79649.91  * Flow (cfs)            *10168.63  *35133.34  *34347.93  *
* Top Width (ft)          *13869.16  * Top Width (ft)        * 4756.26  *  316.00  * 8796.90  *
* Vel Total (ft/s)        *    1.30  * Avg. Vel. (ft/s)      *    0.68  *    5.31  *    0.86  *
* Max Chl Dpth (ft)       *   22.54  * Hydr. Depth (ft)      *    3.15  *   20.94  *    4.53  *
* Conv. Total (cfs)       *4172059.0  * Conv. (cfs)          *532632.4  *1840283.0  *1799143.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)      * 4756.35  *  323.14  * 8796.96  *
* Min Ch El (ft)          *  706.83  * Shear (lb/sq ft)      *    0.07  *    0.47  *    0.10  *
* Alpha                   *    7.62  * Stream Power (lb/ft s) *15540.14  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.16  * Cum Volume (acre-ft)   * 4991.49  * 1793.81  * 8659.28  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *  879.85  *   95.84  * 1729.70  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)          *  731.56  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.08  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.47  * Reach Len. (ft)       *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)     *25157.93  * 7284.31  *58443.98  *
* E.G. Slope (ft/ft)      *0.000176  * Area (sq ft)          *25157.93  * 7284.31  *58443.98  *
* Q Total (cfs)           *89992.12  * Flow (cfs)            *16357.90  *28627.50  *45006.71  *
* Top Width (ft)          *14086.09  * Top Width (ft)        * 4913.74  *  316.00  * 8856.35  *
* Vel Total (ft/s)        *    0.99  * Avg. Vel. (ft/s)      *    0.65  *    3.93  *    0.77  *
* Max Chl Dpth (ft)       *   24.64  * Hydr. Depth (ft)      *    5.12  *   23.05  *    6.60  *
* Conv. Total (cfs)       *6787968.0  * Conv. (cfs)          *1233852.0  *2159329.0  *3394788.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)      * 4913.85  *  323.14  * 8856.45  *
* Min Ch El (ft)          *  706.83  * Shear (lb/sq ft)      *    0.06  *    0.25  *    0.07  *
* Alpha                   *    5.39  * Stream Power (lb/ft s) *15540.14  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.07  * Cum Volume (acre-ft)   * 7322.73  * 2101.18  *13613.59  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  911.20  *   95.96  * 1760.64  *
*****************************************************************************************************
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CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************************
* E.G. Elev (ft)          *  732.38  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.07  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.31  * Reach Len. (ft)       *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)     *29289.64  * 7547.02  *65815.55  *
* E.G. Slope (ft/ft)      *0.000158  * Area (sq ft)          *29289.64  * 7547.02  *65815.55  *
* Q Total (cfs)           *100471.50  * Flow (cfs)           *19700.90  *28812.33  *51958.27  *
* Top Width (ft)          *14219.96  * Top Width (ft)        * 5024.54  *  316.00  * 8879.42  *
* Vel Total (ft/s)        *    0.98  * Avg. Vel. (ft/s)      *    0.67  *    3.82  *    0.79  *
* Max Chl Dpth (ft)       *   25.48  * Hydr. Depth (ft)      *    5.83  *   23.88  *    7.41  *
* Conv. Total (cfs)       *7987822.0  * Conv. (cfs)          *1566288.0  *2290677.0  *4130857.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)      * 5024.66  *  323.14  * 8879.53  *
* Min Ch El (ft)          *  706.83  * Shear (lb/sq ft)      *    0.06  *    0.23  *    0.07  *
* Alpha                   *    4.79  * Stream Power (lb/ft s) *15540.14  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.07  * Cum Volume (acre-ft)   * 8109.15  * 2184.39  *15133.23  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  920.38  *   95.96  * 1763.69  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************************
* E.G. Elev (ft)          *  733.38  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.06  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  733.32  * Reach Len. (ft)       *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)     *34444.79  * 7868.36  *74862.43  *
* E.G. Slope (ft/ft)      *0.000141  * Area (sq ft)          *34444.79  * 7868.36  *74862.43  *
* Q Total (cfs)           *113669.30  * Flow (cfs)           *23992.12  *29114.00  *60563.17  *
* Top Width (ft)          *14373.68  * Top Width (ft)        * 5147.13  *  316.00  * 8910.55  *
* Vel Total (ft/s)        *    0.97  * Avg. Vel. (ft/s)      *    0.70  *    3.70  *    0.81  *
* Max Chl Dpth (ft)       *   26.49  * Hydr. Depth (ft)      *    6.69  *   24.90  *    8.40  *
* Conv. Total (cfs)       *9587084.0  * Conv. (cfs)          *2023541.0  *2455530.0  *5108013.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)      * 5147.25  *  323.14  * 8910.68  *
* Min Ch El (ft)          *  706.83  * Shear (lb/sq ft)      *    0.06  *    0.21  *    0.07  *
* Alpha                   *    4.21  * Stream Power (lb/ft s) *15540.14  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.06  * Cum Volume (acre-ft)   * 9081.15  * 2285.49  *16984.91  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  939.38  *   95.96  * 1767.26  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: Thompson
```

REACH: Alignment - surv RS: 10726.5*

INPUT
Description:
Station Elevation Data num= 437

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	766.65	.31	766.63	9.23	766.21	28.71	765.02	39.3	764.3
43.39	763.99	57.12	762.92	77.57	761.5	85.52	760.58	90.74	759.99
111.74	757.56	136.65	756.27	145.9	755.81	155.48	755.4	170.74	754.72
185.47	753.92	213.56	752.51	214.25	752.48	248.42	750.76	255.19	750.18
255.96	750.12	259.3	749.83	271.65	748.78	282.59	747.9	284.36	747.82
298.22	747.11	312.77	746.33	316.76	746.05	339.72	744.6	341.17	744.5
350.93	744.05	369.57	743.35	381.21	742.95	385.1	742.8	387.82	742.7
397.98	742.4	416.87	741.88	419.27	741.83	445.91	740.87	448.2	740.8
453.44	740.63	454.79	740.6	474.95	740.33	483.19	740.25	521.79	739.99
562.08	739.94	568.41	739.94	590.12	739.98	624.3	739.96	625.22	739.95
630.18	739.93	653.63	739.79	658.47	739.74	682.04	739.57	692.63	739.47
707.3	739.44	710.44	739.42	719.21	739.3	726.81	739.18	736.35	739.18
738.85	739.17	759.74	739.04	760.98	739.03	794.43	738.64	795.66	738.63
807.67	738.43	824.07	738.19	847.91	737.48	852.47	737.33	872.51	737.02
879.56	736.9	903.53	736.53	909.27	736.45	917.64	736.36	951.46	735.94
966.09	735.81	975.43	735.63	994.49	735.34	1022.9	735.05	1023.35	735.04
1047.32	734.73	1051.3	734.69	1071.29	734.29	1079.71	734.15	1091.96	733.47
1108.12	732.88	1126.83	732.27	1136.52	731.59	1143.18	731.46	1164.93	731.1
1169.63	731.06	1171.03	731.05	1193.33	730.84	1215.08	730.76	1221.74	730.7
1239.05	730.58	1250.15	730.43	1263	730.36	1301.16	729.98	1306.96	729.94
1310.94	729.9	1334.9	729.61	1335.36	729.61	1363.77	729.3	1376.05	729.1
1392.17	728.8	1410.22	728.59	1477.38	727.93	1478.7	727.91	1505.79	727.46
1546.9	727.07	1581.07	726.68	1619.41	726.32	1622.49	726.28	1647.82	725.9
1750.57	724.92	1751.92	724.9	1752.87	724.89	1761.44	724.82	1786.09	724.47
1789.85	724.41	1790.24	724.41	1792.35	724.4	1854.43	723.96	1875.07	723.78
1888.6	723.61	1903.47	723.47	1956.17	723.13	1956.95	723.13	1958.37	723.12
1960.25	723.1	2013.32	722.8	2016.11	722.78	2041	722.51	2044.04	722.47
2059.46	722.35	2068.69	722.3	2096.38	722.2	2188.03	722.28	2267.49	722.29
2333.74	722.41	2338.94	722.43	2407.15	722.57	2435.08	722.69	2503.67	722.85
2624.17	723.22	2674.53	723.33	2677.81	723.35	2708.69	723.46	2711.31	723.46
2740.34	723.5	2742.86	723.5	2811.2	723.61	2845.38	723.73	2854.04	723.74
2909.9	723.66	2912.44	723.66	2913.71	723.67	2914.61	723.67	2937.83	723.71
2965.77	723.92	2982.06	724	2993.7	724.08	3016.22	724.18	3113.22	724.48
3117.91	724.5	3119.92	724.5	3152.91	724.59	3217.14	724.89	3285.91	725.1
3327.4	725.32	3328.87	725.32	3456.07	725.79	3460.44	725.8	3494.62	725.98
3495.48	725.99	3631.3	726.42	3665.46	726.59	3698.78	726.69	3699.64	726.69
3802.15	726.96	3836.32	727.1	3870.49	727.18	3873.04	727.18	3904.66	727.23

3908.35	727.24	4385.96	727.57	4390.25	727.58	4753.36	727.53	4754.41	727.52
5144.39	727.15	5169.73	727.09	5174.97	727.09	5225.1	727.02	5237.31	727.01
5242.48	727.02	5256.12	727.01	5259.5	727	5408.16	727.04	5423.7	727.1
5441.4	727.14	5535.43	727.17	5563.36	727.12	5579.02	727.12	5585.05	727.1
5591.29	727.1	5609.66	727.06	5613.19	727.06	5644.7	726.96	5647.36	726.96
5715.7	726.6	5734.16	726.33	5749.87	726.13	5784.04	725.77	5818.21	725.31
5818.95	725.29	5886.55	724.3	5920.72	723.39	5964.17	722.83	6016.77	722.3
6020.32	722.27	6055.74	721.89	6057.4	721.88	6066.12	721.85	6092.47	709.98
6104.09	707.01	6356.33	706.65	6381.92	721.9	6440.67	721.96	6453.27	721.99
6491.63	722.17	6503.86	722.25	6529.99	722.54	6535.45	722.65	6566.12	722.74
6592.96	722.73	6598.63	722.71	6630.22	722.56	6645.09	722.4	6661.81	722.13
6672.72	722.02	6673.52	722.01	6693.4	721.95	6721.81	721.93	6725	721.92
6882.95	722.01	6888.33	722	6914.54	722.06	6915.19	722.06	6977.72	722.22
7129.99	722.38	7135.68	722.38	7921.58	723.28	7923.14	723.29	7932.81	723.29
7936.52	723.3	8210.93	723.39	8330.77	723.26	8364.19	723.13	8397.61	723.05
8497.86	722.75	8501.7	722.72	8531.27	722.56	8631.52	722.39	8731.79	722.43
8798.62	722.68	8832.04	722.99	8899.99	723.25	8965.7	723.39	9065.95	723.34
9166.2	723.12	9433.55	723.13	9626.65	723.06	9634.05	723.07	9734.3	723.06
9890.44	723.31	9921.67	723.44	10015.34	723.65	10034.16	723.72	10035.38	723.72
10046.57	723.76	10077.8	723.81	10078.91	723.81	10168.73	723.92	10171.63	723.92
10202.71	724.03	10327.61	724.16	10358.84	724.26	10390.07	724.29	10392.98	724.3
10421.29	724.33	10483.75	724.43	10622.88	724.56	10639.88	724.61	10764.79	724.79
10766.56	724.81	10770.25	724.81	10796.02	724.92	10796.88	724.92	10801.46	724.93
10803.66	724.94	10870.5	725.15	10903.92	725.41	10037.59	725.83	11071.01	725.99
11077.06	726.01	11108.29	726.07	11139.52	726.14	11140.14	726.14	11170.75	726.22
11171.26	726.23	11172.96	726.23	11233.19	726.45	11304.93	726.61	11307.03	726.61
11480.66	726.87	11483.01	726.87	11505.44	726.91	11686.15	726.98	11795.28	726.95
11805.04	726.96	11806.19	726.97	11920.18	726.95	11942.85	726.97	11951.41	726.99
12202.46	726.9	12207.2	726.89	12307.45	726.78	12334.63	726.77	12608.22	726.54
12675.05	726.46	13543.98	725.91	3668.75	725.61	13668.89	725.61	13669.01	725.6
13670.4	725.61	3825.02	725.15	13856.25	724.98	13981.15	724.65	14012.38	724.5
14042.59	724.42	14043.61	724.42	14178.84	724.11	4211.44	724.12	14212.26	724.13
14272.49	724.13	14345.93	724.26	14418.34	724.43	14513.01	724.78	14546.43	724.82
14574.46	724.78	14579.84	724.79	14605.69	724.96	14613.26	72	14634.39	725.17
14646.68	725.29	14680.11	725.48	14699.38	725.53	14730.6	725.71	14732.29	725.71
14761.02	725.81	4761.83	725.81	4789.76	725.88	14793.06	725.88	14813.77	725.92
14819.42	725.94	14914.02	726.45	14925.16	726.57	14947.44	726.77	14951.59	726.84
14978.03	727.24	14980.86	727.27	15004.46	728.41	15011.65	728.68	15014.28	728.79
15047.69	729.53	15074.1	730.21	5076.55	730.27	15083.77	730.46	15110.2	731.31
15121.97	731.76	15136.56	732.27	15147.94	732.69	15167.39	733.94	15181.36	734.99
15199	735.91	15214.79	736.54	15220.81	736.81	5242.37	737.91	15249.55	738.26
15261.46	738.96	15268.8	739.43	15278.29	740.01	15281.62	740.24	15292.69	741.05
15303.63	742.82	15307.02	743.38	15315.04	744.81	5321.67	745.76	15323.91	746.09
15335.76	747.46	15346.79	748.62	15348.45	748.81	5355.14	749.48	15364.5	750.56

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15381.87  752.3815386.37  752.8415415.29  755.51 15417.6  755.7215446.58     758
 15448.7  758.1515448.83  758.1615450.71  758.3515453.84  758.7215472.53  760.81
15473.28   760.915479.45   761.615480.04  761.6815482.12  761.7515506.71  762.71
15508.18  762.7415511.27  762.8515515.54  762.9415536.92  763.69 15542.5  763.94
15565.66  764.8315573.73  765.1615582.37  765.4915599.78  766.2215604.96  766.45
15615.79  767.3215623.13  767.8615636.18  768.6515649.21  768.7315651.87  768.76
15667.41  769.0315675.59  769.04

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
       0     .09 6066.12     .04 6381.92     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       6066.12 6381.92            448.79  448.79  448.79             .1       .3

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  724.95  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.24  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  724.71  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 2401.09  * 5197.67  * 7288.18  *
* E.G. Slope (ft/ft)      *0.000322  * Area (sq ft)            * 2401.09  * 5197.67  * 7288.18  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              *  926.52  *22075.77  * 2943.66  *
* Top Width (ft)          * 6800.96  * Top Width (ft)          * 1617.46  *  315.80  * 4867.70  *
* Vel Total (ft/s)        *    1.74  * Avg. Vel. (ft/s)        *    0.39  *    4.25  *    0.40  *
* Max Chl Dpth (ft)       *   18.06  * Hydr. Depth (ft)        *    1.48  *   16.46  *    1.50  *
* Conv. Total (cfs)       *1446675.0  * Conv. (cfs)            * 51660.0  *1230885.0  *164130.4  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 1617.50  *  322.92  * 4867.71  *
* Min Ch El (ft)          *  706.65  * Shear (lb/sq ft)        *    0.03  *    0.32  *    0.03  *
* Alpha                   *    5.06  * Stream Power (lb/ft s)  *15675.59  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.15  * Cum Volume (acre-ft)    * 1342.81  * 1336.55  * 1428.85  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  535.49  *   91.61  * 1198.09  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)          *  728.24  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.10  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.14  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *11876.80  * 6281.33  *31311.04  *
* E.G. Slope (ft/ft)      *0.000171  * Area (sq ft)            *11876.80  * 6281.33  *31311.04  *
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* Q Total (cfs)           *42918.92  * Flow (cfs)              * 4824.62  *22096.84  *15997.46  *
* Top Width (ft)          *13543.21  * Top Width (ft)          * 4610.40  *  315.80  * 8617.01  *
* Vel Total (ft/s)        *    0.87  * Avg. Vel. (ft/s)        *    0.41  *    3.52  *    0.51  *
* Max Chl Dpth (ft)       *   21.49  * Hydr. Depth (ft)        *    2.58  *   19.89  *    3.63  *
* Conv. Total (cfs)       *3277983.0  * Conv. (cfs)            *368486.3  *1687672.0  *1221825.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 4610.47  *  322.92  * 8617.06  *
* Min Ch El (ft)          *  706.65  * Shear (lb/sq ft)        *    0.03  *    0.21  *    0.04  *
* Alpha                   *    8.62  * Stream Power (lb/ft s)  *15675.59  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.07  * Cum Volume (acre-ft)    * 4341.47  * 1731.31  * 7692.71  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  827.52  *   92.71  * 1652.50  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)          *  727.49  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.30  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.19  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 7804.47  * 5979.35  *23080.82  *
* E.G. Slope (ft/ft)      *0.000461  * Area (sq ft)            * 7804.47  * 5979.35  *23080.82  *
* Q Total (cfs)           *54360.98  * Flow (cfs)              * 5182.95  *33371.46  *15806.58  *
* Top Width (ft)          *12211.24  * Top Width (ft)          * 3302.86  *  315.80  * 8592.58  *
* Vel Total (ft/s)        *    1.47  * Avg. Vel. (ft/s)        *    0.66  *    5.58  *    0.68  *
* Max Chl Dpth (ft)       *   20.54  * Hydr. Depth (ft)        *    2.36  *   18.93  *    2.69  *
* Conv. Total (cfs)       *2532429.0  * Conv. (cfs)            *241449.7  *1554624.0  *736356.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 3302.93  *  322.92  * 8592.61  *
* Min Ch El (ft)          *  706.65  * Shear (lb/sq ft)        *    0.07  *    0.53  *    0.08  *
* Alpha                   *    8.88  * Stream Power (lb/ft s)  *15675.59  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.20  * Cum Volume (acre-ft)    * 2863.32  * 1475.09  * 4214.21  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  775.86  *   92.23  * 1474.58  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)          *  728.59  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.22  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.37  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *12915.19  * 6352.28  *33247.56  *
* E.G. Slope (ft/ft)      *0.000390  * Area (sq ft)            *12915.19  * 6352.28  *33247.56  *
* Q Total (cfs)           *68923.08  * Flow (cfs)              * 8336.39  *33942.05  *26644.63  *
* Top Width (ft)          *13570.72  * Top Width (ft)          * 4633.26  *  315.80  * 8621.66  *
* Vel Total (ft/s)        *    1.31  * Avg. Vel. (ft/s)        *    0.65  *    5.34  *    0.80  *
* Max Chl Dpth (ft)       *   21.72  * Hydr. Depth (ft)        *    2.79  *   20.11  *    3.86  *
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* Conv. Total (cfs)      *3491762.0  * Conv. (cfs)            *422336.0  *1719563.0  *1349863.0  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 4633.34  *  322.92  * 8621.72  *
* Min Ch El (ft)         *  706.65  * Shear (lb/sq ft)       *    0.07  *    0.48  *    0.09  *
* Alpha                  *    8.34  * Stream Power (lb/ft s) *15675.59  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.17  * Cum Volume (acre-ft)   * 4010.00  * 1624.79  * 6555.87  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *  816.77  *   92.52  * 1609.01  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************
* E.G. Elev (ft)         *  729.40  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.17  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  729.23  * Reach Len. (ft)       *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *16934.99  * 6624.11  *40680.18  *
* E.G. Slope (ft/ft)     *0.000330  * Area (sq ft)          *16934.99  * 6624.11  *40680.18  *
* Q Total (cfs)          *79649.91  * Flow (cfs)            *11936.45  *33484.21  *34229.25  *
* Top Width (ft)         *13665.89  * Top Width (ft)        * 4697.95  *  315.80  * 8652.15  *
* Vel Total (ft/s)       *    1.24  * Avg. Vel. (ft/s)      *    0.70  *    5.05  *    0.84  *
* Max Chl Dpth (ft)      *   22.58  * Hydr. Depth (ft)      *    3.60  *   20.98  *    4.70  *
* Conv. Total (cfs)      *4386252.0  * Conv. (cfs)           *657329.9  *1843947.0  *1884976.0  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 4698.03  *  322.92  * 8652.22  *
* Min Ch El (ft)         *  706.65  * Shear (lb/sq ft)       *    0.07  *    0.42  *    0.10  *
* Alpha                  *    7.23  * Stream Power (lb/ft s) *15675.59  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.14  * Cum Volume (acre-ft)   * 4826.98  * 1725.59  * 8244.58  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *  831.15  *   92.59  * 1639.81  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************
* E.G. Elev (ft)         *  731.48  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.07  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.41  * Reach Len. (ft)       *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *27401.36  * 7311.82  *59614.33  *
* E.G. Slope (ft/ft)     *0.000159  * Area (sq ft)          *27401.36  * 7311.82  *59614.33  *
* Q Total (cfs)          *89992.12  * Flow (cfs)            *17921.81  *27408.42  *44661.89  *
* Top Width (ft)         *13966.26  * Top Width (ft)        * 4919.67  *  315.80  * 8730.79  *
* Vel Total (ft/s)       *    0.95  * Avg. Vel. (ft/s)      *    0.65  *    3.75  *    0.75  *
* Max Chl Dpth (ft)      *   24.76  * Hydr. Depth (ft)      *    5.57  *   23.15  *    6.83  *
* Conv. Total (cfs)      *7137816.0  * Conv. (cfs)           *1421487.0  *2173926.0  *3542403.0  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 4919.77  *  322.92  * 8730.89  *
* Min Ch El (ft)         *  706.65  * Shear (lb/sq ft)       *    0.06  *    0.22  *    0.07  *
* Alpha                  *    5.10  * Stream Power (lb/ft s) *15675.59  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.07  * Cum Volume (acre-ft)   * 7051.98  * 2025.98  *13005.43  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  860.54  *   92.71  * 1670.04  *
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CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************
* E.G. Elev (ft)         *  732.31  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.06  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  732.24  * Reach Len. (ft)       *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *31532.17  * 7576.31  *66936.02  *
* E.G. Slope (ft/ft)     *0.000143  * Area (sq ft)          *31532.17  * 7576.31  *66936.02  *
* Q Total (cfs)          *100471.50  * Flow (cfs)           *21461.55  *27629.86  *51380.08  *
* Top Width (ft)         *14008.59  * Top Width (ft)        * 4938.91  *  315.80  * 8753.88  *
* Vel Total (ft/s)       *    0.95  * Avg. Vel. (ft/s)      *    0.68  *    3.65  *    0.77  *
* Max Chl Dpth (ft)      *   25.59  * Hydr. Depth (ft)      *    6.38  *   23.99  *    7.65  *
* Conv. Total (cfs)      *8387440.0  * Conv. (cfs)           *1791627.0  *2306563.0  *4289250.0  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 4939.03  *  322.92  * 8754.00  *
* Min Ch El (ft)         *  706.65  * Shear (lb/sq ft)       *    0.06  *    0.21  *    0.07  *
* Alpha                  *    4.52  * Stream Power (lb/ft s) *15675.59  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.06  * Cum Volume (acre-ft)   * 7795.83  * 2106.48  *14449.37  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  869.06  *   92.71  * 1672.86  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************
* E.G. Elev (ft)         *  733.32  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.05  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  733.27  * Reach Len. (ft)       *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *36600.40  * 7899.40  *75904.18  *
* E.G. Slope (ft/ft)     *0.000128  * Area (sq ft)          *36600.40  * 7899.40  *75904.18  *
* Q Total (cfs)          *113669.30  * Flow (cfs)           *25897.33  *27992.92  *59779.04  *
* Top Width (ft)         *14059.38  * Top Width (ft)        * 4968.59  *  315.80  * 8774.99  *
* Vel Total (ft/s)       *    0.94  * Avg. Vel. (ft/s)      *    0.71  *    3.54  *    0.79  *
* Max Chl Dpth (ft)      *   26.62  * Hydr. Depth (ft)      *    7.37  *   25.01  *    8.65  *
* Conv. Total (cfs)      *10041230.0  * Conv. (cfs)          *2287700.0  *2472818.0  *5280717.0  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 4968.73  *  322.92  * 8775.14  *
* Min Ch El (ft)         *  706.65  * Shear (lb/sq ft)       *    0.06  *    0.20  *    0.07  *
* Alpha                  *    3.96  * Stream Power (lb/ft s) *15675.59  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.05  * Cum Volume (acre-ft)   * 8715.16  * 2204.27  *16208.25  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  887.27  *   92.71  * 1676.16  *
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CROSS SECTION

RIVER: Thompson
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REACH: Alignment - surv RS: 10277.7*

INPUT
Description:
Station Elevation Data num= 470

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	769.75	.32	769.74	9.53	769.35	29.63	768.32	40.56	767.66
44.78	767.38	50.82	766.96	58.94	766.41	80.05	765.23	115.31	762.11
141.02	761.02	150.57	760.63	176.19	759.7	191.39	758.92	220.38	757.59
221.1	757.57	256.35	755.94	263.35	755.44	264.13	755.38	267.58	755.12
280.33	754.2	291.62	753.42	293.44	753.34	322.76	751.88	326.89	751.57
350.57	749.92	352.08	749.81	362.14	749.38	381.38	748.68	393.39	748.29
397.41	748.15	400.22	748.06	410.7	747.76	425.78	747.38	430.19	747.26
432.67	747.21	440.01	746.98	460.15	746.3	462.52	746.24	467.93	746.06
469.32	746.02	490.13	745.79	498.63	745.71	521.86	745.61	527.95	745.57
536.71	745.55	538.46	745.54	583.98	745.62	586.57	745.62	608.98	745.74
610.9	745.74	623.15	745.78	645.2	745.8	650.32	745.79	660.36	745.75
674.51	745.72	679.51	745.68	703.83	745.56	714.77	745.47	729.9	745.44
733.14	745.42	734.56	745.39	742.19	745.26	750.03	745.11	759.29	745.04
759.88	745.03	762.46	745.01	784.01	744.73	791.76	744.61	819.81	744.09
833.48	743.77	850.4	743.41	875	742.36	879.7	742.14	900.39	741.7
932.4	740.99	938.33	740.88	946.96	740.74	981.86	740.13	996.96	739.94
1006.6	739.66	1026.27	739.24	1055.59	738.81	1056.05	738.8	1080.79	738.35
1084.89	738.29	1105.52	737.69	1114.21	737.48	1126.86	736.47	1143.53	735.59
1162.83	734.67	1172.83	733.67	1179.71	733.47	1202.15	732.94	1204.44	732.92
1207	732.89	1208.44	732.86	1231.46	732.58	1253.9	732.48	1278.64	732.27
1290.09	732.06	1303.36	731.99	1319.4	731.81	1342.73	731.49	1348.72	731.44
1377.56	730.99	1378.02	730.98	1407.34	730.57	1427.01	730.12	1436.66	729.88
1455.28	729.62	1522.63	728.78	1524.59	728.75	1553.91	728.09	1631.59	727.12
1671.16	726.65	1700.47	726.08	1806.51	724.83	1807.9	724.81	1817.72	724.7
1847.04	724.15	1847.44	724.15	1849.62	724.12	1934.98	723.37	1948.95	723.16
1964.29	722.96	2018.68	722.53	2019.48	722.52	2020.94	722.51	2022.88	722.49
2080.53	722.07	2106.21	721.71	2109.35	721.65	2134.79	721.44	2138.17	721.42
2163.36	721.3	2170.7	721.33	2220.51	721.44	2228.86	721.44	2253.47	721.48
2282.3	721.48	2287.03	721.49	2339.94	721.54	2484.06	721.95	2512.89	722.13
2628.18	722.53	2657	722.68	2759.99	722.96	2763.38	722.98	2795.24	723.08
2901.03	723.19	2945.24	723.28	2974.06	723.15	3002.88	723.08	3005.5	723.08
3006.81	723.09	3007.74	723.09	3031.7	723.12	3060.54	723.39	3089.36	723.56
3217.54	723.98	3219.61	723.98	3253.65	724.07	3288.92	724.24	3291.12	724.24
3319.94	724.37	3390.9	724.58	3433.72	724.78	3435.24	724.78	3464.06	724.91
3550.53	725.17	3606.28	725.42	3607.17	725.42	3747.33	725.84	3816.97	726.08
3817.85	726.08	3958.9	726.48	3963.44	726.48	3994.16	726.56	3996.79	726.57
4409.79	727.03	4845.98	727.06	4847.6	727.05	4905.24	727.02	4906.33	727.01

4934.06	726.98	4934.9	726.98	4962.89	726.95	5049.53	726.88	5106.33	726.77
5107.01	726.77	5134.91	726.74	5135.83	726.74	5163.48	726.7	5165.85	726.7
5193.48	726.67	5194.93	726.67	5222.3	726.6	5224.01	726.6	5251.12	726.55
5253.09	726.55	5279.94	726.52	5282.17	726.52	5334.92	726.39	5337.6	726.38
5340.33	726.38	5392.06	726.3	5395.24	726.3	5404.66	726.28	5410	726.28
5424.07	726.26	5427.56	726.25	5452.89	726.24	5485.72	726.17	5534.92	726.16
5539.36	726.15	5580.97	726.14	5615.27	726.17	5616.24	726.16	5617.62	726.16
5712.3	726.1	5788.9	725.93	5792.54	725.93	5795.09	725.92	5856.41	725.71
5885.24	725.55	5898.33	725.5	6004.12	724.5	6004.89	724.48	6074.65	723.73
6109.9	723.04	6180.43	722.4	6209.02	722.21	6212.69	722.18	6214.7	722.16
6215.7	722.16	6249.24	721.87	6250.95	721.86	6259.95	721.84	6286.1	709.07
6297.64	706.84	6548	706.47	6575.56	721.9	6633.93	721.95	6684.57	722.11
6696.72	722.17	6722.69	722.4	6728.12	722.49	6758.6	722.56	6785.27	722.56
6790.9	722.55	6822.3	722.45	6837.07	722.33	6853.69	722.13	6864.53	722.06
6865.33	722.05	6885.08	722.02	6913.31	722.02	6916.48	722.01	7073.44	722.18
7078.79	722.18	7104.84	722.23	7105.48	722.23	7185.61	722.43	7324.59	722.61
7346.14	722.67	7442.47	722.81	7474.58	722.9	7763.55	723.31	7795.66	723.4
8105.58	723.82	8116.74	723.83	8120.42	723.84	8314.31	723.94	8512.2	723.67
8545.41	723.47	8578.62	723.34	8581.41	723.32	8678.24	722.86	8682.06	722.82
8708.34	722.59	8711.45	722.57	8811.07	722.29	8910.7	722.32	8977.12	722.68
9010.33	723.12	9077.85	723.5	9143.16	723.68	9176.37	723.7	9193.23	723.67
9196.17	723.67	9309.2	723.37	9338.77	723.24	9342.4	723.23	9375.61	723.18
9574.87	723.19	9576.44	723.2	9641.28	723.09	9906.95	722.96	10047.47	723.07
10070.75	723.13	10072.99	723.13	10093.14	723.19	10204.93	723.36	10206.14	723.37
10248.29	723.41	10249.39	723.42	10305.45	723.44	10310.71	723.45	10341.38	723.46
10341.54	723.47	10372.42	723.54	10496.54	723.62	10558.61	723.72	10561.5	723.73
10869.99	723.99	10930.98	724.16	10932.74	724.17	10936.4	724.18	10962.01	724.3
10962.87	724.31	10967.42	724.32	11036.03	724.61	11069.24	724.95	11135.66	725.27
11202.07	725.48	11235.28	725.66	11272.33	725.76	11275.43	725.76	11303.36	725.83
11303.98	725.83	11334.4	725.92	11334.9	725.93	11336.59	725.93	11396.45	726.18
11467.73	726.36	11469.82	726.37	11534.15	726.54	11624.13	726.61	1675.22	726.61
11675.73	726.61	1830.88	726.57	11955.01	726.43	11986.05	726.43	11999.07	726.4
12079.14	726.34	12297.95	726.22	12463.99	725.96	12464.72	725.96	12467.51	725.95
12491	725.93	12497.19	725.91	12596.06	725.78	12596.82	725.78	12727.4	725.63
12729.66	725.62	12762.86	725.58	12779.95	725.51	12829.28	725.45	12832.48	725.45
12962.11	725.26	13692.77	724.93	13816.76	724.71	3818.39	724.71	3972.05	724.36
14003.08	724.23	14127.21	723.98	14156.5	723.87	14158.24	723.87	14188.26	723.81
14189.27	723.81	14216.81	723.77	14220.31	723.76	14224.46	723.76	14323.66	723.57
14353	723.64	14356.05	723.64	14356.86	723.65	14489.7	723.92	14522.9	724.09
14561.66	724.19	14655.73	724.57	14688.94	724.59	14716.8	724.48	14722.15	724.47
14747.84	724.63	14755.36	724.67	14776.35	724.88	14788.56	725.03	14821.78	725.24
14840.94	725.28	14871.96	725.41	14873.64	725.41	14902.19	725.49	14902.99	725.49
14930.75	725.57	14934.03	725.57	14954.61	725.61	15021.03	726.05	15054.24	726.38
15087.44	726.87	15091.57	726.98	15117.84	727.61	5120.65	727.65	15144.1	729.38

```
15151.25  729.7915153.86  729.9515187.07  731.0415213.31  732.0215215.75  732.12
15222.91  732.3915244.34  733.3515249.18  733.5815260.88  734.1915273.43   734.8
15275.38   734.915286.69  735.4615306.01  737.2215306.41  737.25 15319.9  738.58
15337.43  739.6915353.11  740.55 15359.1   740.915380.52   742.315387.66  742.73
 15399.5  743.5315406.79  744.0615416.22  744.6915419.53  744.9415430.53  745.79
 15441.4  747.3715444.77  747.8815452.74  749.1515459.33  749.8915461.56  750.13
15473.33  751.1715484.29  752.0615485.95  752.1915492.59  752.6915501.89  753.48
15523.62  755.1515552.36  757.0615554.66  757.2115583.45   758.815585.57  758.91
15585.69  758.9215587.56  759.0515590.67  759.2915609.24  760.6615609.99  760.71
15616.12  761.1815616.71  761.2315618.78  761.2715643.21  761.8115644.67  761.81
15647.75  761.8315651.98  761.8215673.23  762.1815678.78  762.3115701.79  762.76
15719.35  763.12 15735.7  763.4915740.85  763.6415751.61  764.2215758.91  764.54
15771.87  764.9815784.81  764.8915787.47   764.9 15802.9  765.0215811.03  764.98

Manning's n Values        num=       3
    Sta   n Val     Sta   n Val     Sta   n Val
************************************************
       0     .09 6259.95     .04 6575.56     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       6259.95 6575.56           448.79  448.79  448.79            .1        .3

CROSS SECTION OUTPUT  Profile #PK2
*************************************************************************************************
* E.G. Elev (ft)          *  724.80  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.24  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  724.56  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 3121.07  * 5198.17  * 6598.19  *
* E.G. Slope (ft/ft)      *0.000326  * Area (sq ft)            * 3121.07  * 5198.17  * 6598.19  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              * 1334.33  *22235.76  * 2375.85  *
* Top Width (ft)          * 7396.02  * Top Width (ft)          * 1820.86  *  315.61  * 5259.55  *
* Vel Total (ft/s)        *    1.74  * Avg. Vel. (ft/s)        *    0.43  *    4.28  *    0.36  *
* Max Chl Dpth (ft)       *   18.09  * Hydr. Depth (ft)        *    1.71  *   16.47  *    1.25  *
* Conv. Total (cfs)       *1436859.0  * Conv. (cfs)            * 73893.9  *1231393.0  *131572.3  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 1820.90  *  322.80  * 5259.57  *
* Min Ch El (ft)          *  706.47  * Shear (lb/sq ft)        *    0.03  *    0.33  *    0.03  *
* Alpha                   *    5.19  * Stream Power (lb/ft s) *15811.03  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.14  * Cum Volume (acre-ft)    * 1314.36  * 1283.00  * 1357.31  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  517.78  *   88.36  * 1145.93  *
*************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
```



```
*************************************************************************************************
* E.G. Elev (ft)          *  728.17  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.08  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.09  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *14573.04  * 6311.22  *33040.52  *
* E.G. Slope (ft/ft)      *0.000146  * Area (sq ft)            *14573.04  * 6311.22  *33040.52  *
* Q Total (cfs)           *42918.92  * Flow (cfs)              * 6169.87  *20536.69  *16212.36  *
* Top Width (ft)          *13572.34  * Top Width (ft)          * 4705.73  *  315.61  * 8551.00  *
* Vel Total (ft/s)        *    0.80  * Avg. Vel. (ft/s)        *    0.42  *    3.25  *    0.49  *
* Max Chl Dpth (ft)       *   21.62  * Hydr. Depth (ft)        *    3.10  *   20.00  *    3.86  *
* Conv. Total (cfs)       *3555931.0  * Conv. (cfs)            *511187.8  *1701512.0  *1343232.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 4705.80  *  322.80  * 8551.06  *
* Min Ch El (ft)          *  706.47  * Shear (lb/sq ft)        *    0.03  *    0.18  *    0.04  *
* Alpha                   *    8.18  * Stream Power (lb/ft s) *15811.03  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.06  * Cum Volume (acre-ft)    * 4205.22  * 1666.44  * 7361.21  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  779.53  *   89.45  * 1564.06  *
*************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK10
*************************************************************************************************
* E.G. Elev (ft)          *  727.28  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.27  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.01  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 9564.75  * 5971.00  *23836.76  *
* E.G. Slope (ft/ft)      *0.000429  * Area (sq ft)            * 9564.75  * 5971.00  *23836.76  *
* Q Total (cfs)           *54360.98  * Flow (cfs)              * 6022.58  *32144.57  *16193.83  *
* Top Width (ft)          *12933.79  * Top Width (ft)          * 4100.98  *  315.61  * 8517.20  *
* Vel Total (ft/s)        *    1.38  * Avg. Vel. (ft/s)        *    0.63  *    5.38  *    0.68  *
* Max Chl Dpth (ft)       *   20.54  * Hydr. Depth (ft)        *    2.33  *   18.92  *    2.80  *
* Conv. Total (cfs)       *2623634.0  * Conv. (cfs)            *290668.9  *1551399.0  *781565.4  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 4101.05  *  322.80  * 8517.24  *
* Min Ch El (ft)          *  706.47  * Shear (lb/sq ft)        *    0.06  *    0.50  *    0.08  *
* Alpha                   *    9.09  * Stream Power (lb/ft s) *15811.03  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.18  * Cum Volume (acre-ft)    * 2773.85  * 1413.53  * 3972.52  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  737.72  *   88.98  * 1386.44  *
*************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*************************************************************************************************
* E.G. Elev (ft)          *  728.42  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.19  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.23  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
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* Crit W.S. (ft)          *          * Flow Area (sq ft)      *15232.66  * 6355.43  *34238.45  *
* E.G. Slope (ft/ft)      *0.000348  * Area (sq ft)           *15232.66  * 6355.43  *34238.45  *
* Q Total (cfs)           *68923.08  * Flow (cfs)             *10252.15  *32097.47  *26573.46  *
* Top Width (ft)          *13580.60  * Top Width (ft)         * 4712.09  *  315.61  * 8552.90  *
* Vel Total (ft/s)        *    1.23  * Avg. Vel. (ft/s)       *    0.67  *    5.05  *    0.78  *
* Max Chl Dpth (ft)       *   21.76  * Hydr. Depth (ft)       *    3.23  *   20.14  *    4.00  *
* Conv. Total (cfs)       *3696422.0  * Conv. (cfs)           *549834.2  *1721423.0  *1425164.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)       * 4712.17  *  322.80  * 8552.97  *
* Min Ch El (ft)          *  706.47  * Shear (lb/sq ft)       *    0.07  *    0.43  *    0.09  *
* Alpha                   *    7.99  * Stream Power (lb/ft s) *15811.03  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.15  * Cum Volume (acre-ft)   * 3865.00  * 1559.33  * 6208.22  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *  768.63  *   89.27  * 1520.53  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK50
**********************************************************************************************
* E.G. Elev (ft)          *  729.25  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.15  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  729.11  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *19402.70  * 6633.44  *41777.61  *
* E.G. Slope (ft/ft)      *0.000293  * Area (sq ft)           *19402.70  * 6633.44  *41777.61  *
* Q Total (cfs)           *79649.91  * Flow (cfs)             *13995.86  *31669.81  *33984.23  *
* Top Width (ft)          *13643.99  * Top Width (ft)         * 4763.54  *  315.61  * 8564.84  *
* Vel Total (ft/s)        *    1.17  * Avg. Vel. (ft/s)       *    0.72  *    4.77  *    0.81  *
* Max Chl Dpth (ft)       *   22.64  * Hydr. Depth (ft)       *    4.07  *   21.02  *    4.88  *
* Conv. Total (cfs)       *4649614.0  * Conv. (cfs)           *817017.3  *1848746.0  *1983851.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)       * 4763.63  *  322.80  * 8564.94  *
* Min Ch El (ft)          *  706.47  * Shear (lb/sq ft)       *    0.07  *    0.38  *    0.09  *
* Alpha                   *    6.84  * Stream Power (lb/ft s) *15811.03  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.12  * Cum Volume (acre-ft)   * 4639.79  * 1657.30  * 7819.81  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *  782.41  *   89.33  * 1551.12  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
**********************************************************************************************
* E.G. Elev (ft)          *  731.41  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.06  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.35  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *30233.55  * 7340.12  *61008.69  *
* E.G. Slope (ft/ft)      *0.000141  * Area (sq ft)           *30233.55  * 7340.12  *61008.69  *
* Q Total (cfs)           *89992.12  * Flow (cfs)             *19922.60  *25984.06  *44085.45  *
* Top Width (ft)          *13840.53  * Top Width (ft)         * 4905.21  *  315.61  * 8619.71  *
* Vel Total (ft/s)        *    0.91  * Avg. Vel. (ft/s)       *    0.66  *    3.54  *    0.72  *
* Max Chl Dpth (ft)       *   24.88  * Hydr. Depth (ft)       *    6.16  *   23.26  *    7.08  *
```



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* Conv. Total (cfs)       *7579630.0  * Conv. (cfs)           *1677991.0  *2188520.0  *3713119.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)       * 4905.32  *  322.80  * 8619.85  *
* Min Ch El (ft)          *  706.47  * Shear (lb/sq ft)       *    0.05  *    0.20  *    0.06  *
* Alpha                   *    4.76  * Stream Power (lb/ft s) *15811.03  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.06  * Cum Volume (acre-ft)   * 6755.08  * 1950.51  *12384.05  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  809.93  *   89.45  * 1580.66  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
**********************************************************************************************
* E.G. Elev (ft)          *  732.24  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.05  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.19  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *34392.86  * 7605.87  *68276.30  *
* E.G. Slope (ft/ft)      *0.000129  * Area (sq ft)           *34392.86  * 7605.87  *68276.30  *
* Q Total (cfs)           *100471.50  * Flow (cfs)            *23377.82  *26351.63  *50742.04  *
* Top Width (ft)          *13934.46  * Top Width (ft)         * 4976.85  *  315.61  * 8642.00  *
* Vel Total (ft/s)        *    0.91  * Avg. Vel. (ft/s)       *    0.68  *    3.46  *    0.74  *
* Max Chl Dpth (ft)       *   25.72  * Hydr. Depth (ft)       *    6.91  *   24.10  *    7.90  *
* Conv. Total (cfs)       *8853792.0  * Conv. (cfs)           *2060110.0  *2322170.0  *4471512.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)       * 4976.96  *  322.80  * 8642.16  *
* Min Ch El (ft)          *  706.47  * Shear (lb/sq ft)       *    0.06  *    0.19  *    0.06  *
* Alpha                   *    4.26  * Stream Power (lb/ft s) *15811.03  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.05  * Cum Volume (acre-ft)   * 7456.22  * 2028.27  *13752.84  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  817.98  *   89.45  * 1583.24  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
**********************************************************************************************
* E.G. Elev (ft)          *  733.26  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.05  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  733.22  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *39564.10  * 7930.29  *77171.91  *
* E.G. Slope (ft/ft)      *0.000116  * Area (sq ft)           *39564.10  * 7930.29  *77171.91  *
* Q Total (cfs)           *113669.30  * Flow (cfs)            *27733.42  *26865.30  *59070.58  *
* Top Width (ft)          *14050.89  * Top Width (ft)         * 5069.49  *  315.61  * 8665.79  *
* Vel Total (ft/s)        *    0.91  * Avg. Vel. (ft/s)       *    0.70  *    3.39  *    0.77  *
* Max Chl Dpth (ft)       *   26.75  * Hydr. Depth (ft)       *    7.80  *   25.13  *    8.91  *
* Conv. Total (cfs)       *10533640.0  * Conv. (cfs)          *2570033.0  *2489585.0  *5474021.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)       * 5069.61  *  322.80  * 8665.98  *
* Min Ch El (ft)          *  706.47  * Shear (lb/sq ft)       *    0.06  *    0.18  *    0.06  *
* Alpha                   *    3.77  * Stream Power (lb/ft s) *15811.03  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.05  * Cum Volume (acre-ft)   * 8322.81  * 2122.72  *15419.70  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  835.56  *   89.45  * 1586.31  *
```

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 9828.96*

INPUT
Description:
Station Elevation Data num= 461

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	772.85	.33	772.84	9.82	772.5	30.55	771.62	41.81	771.02
46.17	770.77	60.77	769.91	82.52	768.97	118.88	766.66	145.39	765.77
155.23	765.46	181.65	764.69	197.32	763.93	211.87	763.29	227.21	762.68
242.09	762.08	264.29	761.12	271.5	760.7	272.31	760.64	289.01	759.62
300.65	758.95	332.75	757.42	337.01	757.09	361.43	755.24	362.98	755.12
373.35	754.71	393.19	754	405.57	753.63	412.61	753.41	423.42	753.12
446.07	752.59	453.63	752.38	474.4	751.74	476.84	751.68	482.41	751.49
483.86	751.45	505.31	751.24	514.07	751.17	544.3	751.09	553.32	751.09
555.13	751.1	602.07	751.3	604.32	751.3	604.74	751.31	627.83	751.49
629.82	751.51	634.96	751.54	664.19	751.64	680.81	751.63	695.4	751.65
700.55	751.62	725.62	751.54	736.9	751.47	752.5	751.43	755.84	751.41
765.17	751.22	773.25	751.04	782.8	750.89	783.4	750.89	786.06	750.86
808.29	750.42	809.61	750.4	816.28	750.26	845.2	749.54	859.29	749.11
876.73	748.64	902.09	747.24	906.94	746.95	928.27	746.38	937.17	746.12
961.27	745.46	967.38	745.31	976.28	745.13	997.61	744.63	1012.27	744.32
1027.83	744.06	1037.77	743.7	1058.05	743.14	1088.27	742.57	1088.75	742.56
1114.25	741.96	1118.49	741.88	1139.75	741.09	1148.71	740.81	1161.75	739.46
1178.93	738.29	1198.84	737.08	1209.15	735.74	1216.23	735.48	1239.37	734.77
1241.73	734.75	1244.37	734.71	1245.86	734.68	1269.59	734.32	1292.73	734.21
1318.23	733.96	1330.04	733.7	1343.72	733.63	1360.25	733.4	1384.31	733
1390.48	732.93	1394.71	732.87	1420.21	732.37	1420.69	732.35	1450.92	731.83
1458.71	731.61	1463.98	731.47	1471.2	731.26	1481.14	730.95	1569.78	729.6
1571.8	729.56	1573.19	729.53	1598.69	728.82	1602.02	728.72	1682.11	727.56
1722.9	726.99	1726.17	726.9	1753.13	726.25	1863.88	724.72	1864.89	724.71
1874	724.58	1895.79	724.08	1900.23	723.97	1904.23	723.88	1904.64	723.88
1906.89	723.85	1994.89	722.95	2025.11	722.45	2081.18	721.92	2082.01	721.91
2083.52	721.9	2085.52	721.88	2141.98	721.39	2144.95	721.36	2171.43	720.91
2174.66	720.84	2191.07	720.67	2204.38	720.56	2230.35	720.41	2237.92	720.45
2289.26	720.61	2297.48	720.62	2297.87	720.62	2323.25	720.69	2352.97	720.7
2412.4	720.8	2442.11	720.94	2560.98	721.33	2590.7	721.57	2709.56	722.07
2739.27	722.26	2828.42	722.52	2845.45	722.59	2848.94	722.61	2878.4	722.7

2990.85	722.78	3036.43	722.82	3066.15	722.62	3095.86	722.5	3100.87	722.5
3125.58	722.53	3155.3	722.85	3185.02	723.04	3244.45	723.19	3317.17	723.45
3319.3	723.45	3540.04	724.24	3541.61	724.24	3571.32	724.38	3660.47	724.63
3717.94	724.86	3718.86	724.86	3821.04	725.13	3838.77	725.21	3935.16	725.47
3936.07	725.47	3957.63	725.51	3987.34	725.62	4117.83	725.95	4120.55	725.95
4254.79	726.21	4666.25	726.6	4670.82	726.61	4908.55	726.61	4910.95	726.6
5205.88	726.33	5235.42	726.23	5264.44	726.19	5265.14	726.19	5293.9	726.15
5294.85	726.15	5323.36	726.1	5325.8	726.1	5354.28	726.06	5355.78	726.06
5384	725.96	5385.76	725.96	5413.71	725.91	5415.74	725.9	5443.43	725.86
5445.72	725.86	5500.1	725.7	5502.87	725.68	5505.68	725.68	5559.02	725.57
5562.3	725.57	5621.73	725.47	5655.58	725.36	5753.78	725.23	5770.3	725.23
5775.49	725.21	5789.13	725.19	5791.56	725.19	5800.03	725.16	5889.17	725.03
5918.89	724.91	5948.6	724.86	5971.9	724.8	5974.52	724.79	6005.43	724.71
6008.26	724.71	6067.46	724.45	6080.96	724.41	6190.03	723.68	6190.82	723.68
6262.74	723.15	6299.09	722.68	6371.8	722.24	6407.13	722.08	6408.16	722.07
6444.51	721.84	6453.78	721.83	6479.73	708.15	6491.19	706.66	6739.67	706.3
6769.19	721.9	6839.64	721.96	6889.59	722.1	6915.4	722.26	6920.79	722.32
6951.07	722.38	6983.18	722.39	7014.38	722.33	7029.06	722.26	7045.57	722.14
7056.34	722.09	7076.77	722.09	7088.24	722.11	7183.96	722.2	7295.14	722.4
7295.77	722.4	7375.4	722.61	7503.01	722.81	7534.92	722.92	7630.64	723.11
7662.55	723.23	7790.16	723.44	8109.22	724.12	8289.57	724.36	8300.66	724.37
8304.31	724.38	8496.99	724.48	8627	724.29	8627.86	724.29	8693.63	724.08
8726.63	723.8	8731.91	723.78	8759.63	723.62	8858.62	722.97	8862.42	722.92
8888.53	722.61	8891.62	722.58	8990.62	722.18	9056.62	722.16	9089.62	722.21
9097.35	722.24	9122.62	722.4	9155.62	722.67	9188.62	723.26	9255.72	723.74
9320.61	723.98	9358.38	723.99	9370.37	723.96	9373.29	723.96	9485.6	723.53
9518.6	723.33	9551.6	723.26	9697.72	723.3	9749.6	723.24	9751.16	723.24
9815.6	723.09	10079.59	722.86	10219.23	722.87	10242.36	722.91	10244.59	722.9
10665.47	723.08	10727.15	723.15	10730.01	723.16	11036.56	723.33	11097.17	723.53
11128.01	723.69	11128.86	723.69	11133.38	723.72	11135.56	723.72	11159.48	723.85
11168.55	723.88	11201.55	724.07	11234.56	724.5	11300.56	724.88	11366.55	725.12
11368.31	725.14	11374.69	725.17	11399.55	725.33	11467.21	725.52	11467.82	725.53
11498.04	725.62	11498.55	725.62	11528.87	725.79	11531.55	725.81	11630.54	726.12
11632.62	726.13	11696.54	726.32	11785.95	726.33	11861.54	726.25	11991.4	726.15
12026.53	726.04	12124.4	725.91	12125.53	725.91	12257.52	725.73	12260.48	725.72
12455.52	725.49	12620.52	725.13	12621.25	725.13	12624.02	725.12	12647.36	725.09
12653.52	725.07	12751.76	724.89	12752.51	724.89	12785.51	724.79	12882.28	724.68
12884.52	724.67	12917.51	724.61	12950.51	724.48	12983.51	724.44	12986.69	724.43
13115.5	724.19	13117.21	724.18	13841.56	723.95	13964.76	723.8	13966.39	723.8
14119.08	723.57	14149.92	723.48	14302.37	723.24	14304.1	723.24	14333.93	723.2
14334.94	723.2	14365.77	723.17	14369.9	723.16	14458.28	723.04	14468.47	723.04
14474.56	723.05	14500.66	723.16	14501.47	723.17	14633.46	723.59	14666.46	723.82
14798.46	724.37	14831.45	724.36	14859.14	724.18	14864.45	724.16	14892.2	724.3
14897.45	724.34	14930.45	724.77	14963.46	72	15011.35	725.11	15013.32	725.12

```
15014.99  725.1215022.72  725.1315043.36  725.1915044.16  725.1915071.74  725.26
   15075  725.2615095.45  725.3115101.03  725.3415161.45  725.8515194.45   726.3
15198.34  726.3915227.45  726.9815231.55  727.1315257.65  727.9615260.44  728.04
15283.75  730.3415290.85  730.9115293.44  731.1115326.44  732.5515352.52  733.84
15354.94  733.9715359.44  734.1815362.06  734.3215383.36  735.5615388.16  735.85
15399.79  736.6315425.44  738.2415444.64  740.4915445.03  740.5415450.24  741.18
15458.43  742.1715475.86  743.4815489.48  744.4215491.44  744.5715497.39  745.01
15518.68  746.6915525.77   747.215537.54  748.1115544.78  748.6915554.15  749.37
15557.44  749.6315568.37  750.5415579.18  751.9215582.52  752.3815590.44   753.5
15596.99  754.02 15599.2  754.18 15610.9  754.89 15621.8   755.515630.04   755.9
15639.28   756.415656.44  757.2515660.88  757.4615668.87  757.7915689.43  758.61
15691.71  758.6915713.72  759.3915720.33  759.6115722.43  759.6715722.55  759.67
15724.42  759.7415727.51  759.8715745.96   760.5 15746.7  760.52 15752.8  760.76
15753.38  760.7915755.43  760.7915779.71  760.9215781.17  760.8815784.22  760.81
15788.43  760.6915809.55  760.6715815.06  760.6915837.93  760.6915845.89  760.71
15855.37  760.7115858.02  760.7315871.61  760.7615876.73  760.8215887.42  761.12
15894.68  761.2115907.56  761.3115920.42  761.0515923.06  761.04 15938.4  761.01
15946.47  760.93

Manning's n Values        num=       3
    Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
      0     .09 6453.78     .04 6769.19     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       6453.78 6769.19           448.79  448.79  448.79             .1       .3

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  724.66  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.24  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  724.42  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 3997.04  * 5201.71  * 6477.08  *
* E.G. Slope (ft/ft)      *0.000319  * Area (sq ft)            * 3997.04  * 5201.71  * 6477.08  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              * 1843.64  *22035.87  * 2066.44  *
* Top Width (ft)          * 8605.59  * Top Width (ft)          * 2079.94  *  315.41  * 6210.24  *
* Vel Total (ft/s)        *    1.66  * Avg. Vel. (ft/s)        *    0.46  *    4.24  *    0.32  *
* Max Chl Dpth (ft)       *   18.12  * Hydr. Depth (ft)        *    1.92  *   16.49  *    1.04  *
* Conv. Total (cfs)       *1451660.0  * Conv. (cfs)            *103150.4  *1232894.0  *115615.9  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 2079.99  *  322.76  * 6210.27  *
* Min Ch El (ft)          *  706.30  * Shear (lb/sq ft)        *    0.04  *    0.32  *    0.02  *
* Alpha                   *    5.57  * Stream Power (lb/ft s) *15946.47  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.14  * Cum Volume (acre-ft)    * 1277.69  * 1229.42  * 1289.96  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  497.68  *   85.11  * 1086.84  *
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*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)          *  728.10  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.06  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.04  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *17469.37  * 6343.21  *34817.45  *
* E.G. Slope (ft/ft)      *0.000123  * Area (sq ft)            *17469.37  * 6343.21  *34817.45  *
* Q Total (cfs)           *42918.92  * Flow (cfs)              * 7561.88  *19027.95  *16329.09  *
* Top Width (ft)          *13611.25  * Top Width (ft)          * 4804.67  *  315.41  * 8491.18  *
* Vel Total (ft/s)        *    0.73  * Avg. Vel. (ft/s)        *    0.43  *    3.00  *    0.47  *
* Max Chl Dpth (ft)       *   21.74  * Hydr. Depth (ft)        *    3.64  *   20.11  *    4.10  *
* Conv. Total (cfs)       *3870674.0  * Conv. (cfs)            *681973.6  *1716049.0  *1472651.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 4804.75  *  322.76  * 8491.25  *
* Min Ch El (ft)          *  706.30  * Shear (lb/sq ft)        *    0.03  *    0.15  *    0.03  *
* Alpha                   *    7.66  * Stream Power (lb/ft s) *15946.47  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.05  * Cum Volume (acre-ft)    * 4040.15  * 1601.25  * 7011.65  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  730.54  *   86.20  * 1476.27  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)          *  727.08  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.24  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  726.85  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *11796.08  * 5967.54  *24726.74  *
* E.G. Slope (ft/ft)      *0.000393  * Area (sq ft)            *11796.08  * 5967.54  *24726.74  *
* Q Total (cfs)           *54360.98  * Flow (cfs)              * 7101.22  *30712.95  *16546.81  *
* Top Width (ft)          *13492.51  * Top Width (ft)          * 4725.41  *  315.41  * 8451.69  *
* Vel Total (ft/s)        *    1.28  * Avg. Vel. (ft/s)        *    0.60  *    5.15  *    0.67  *
* Max Chl Dpth (ft)       *   20.55  * Hydr. Depth (ft)        *    2.50  *   18.92  *    2.93  *
* Conv. Total (cfs)       *2743509.0  * Conv. (cfs)            *358386.6  *1550032.0  *835090.1  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 4725.48  *  322.76  * 8451.74  *
* Min Ch El (ft)          *  706.30  * Shear (lb/sq ft)        *    0.06  *    0.45  *    0.07  *
* Alpha                   *    9.26  * Stream Power (lb/ft s) *15946.47  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.16  * Cum Volume (acre-ft)    * 2663.81  * 1352.03  * 3722.35  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  692.25  *   85.73  * 1299.03  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
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* E.G. Elev (ft)          *  728.26  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.16  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.10  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *17776.26  * 6363.34  *35359.56  *
* E.G. Slope (ft/ft)      *0.000306  * Area (sq ft)            *17776.26  * 6363.34  *35359.56  *
* Q Total (cfs)           *68923.08  * Flow (cfs)              *12280.72  *30195.39  *26446.97  *
* Top Width (ft)          *13616.36  * Top Width (ft)          * 4809.08  *  315.41  * 8491.88  *
* Vel Total (ft/s)        *    1.16  * Avg. Vel. (ft/s)        *    0.69  *    4.75  *    0.75  *
* Max Chl Dpth (ft)       *   21.80  * Hydr. Depth (ft)        *    3.70  *   20.17  *    4.16  *
* Conv. Total (cfs)       *3937748.0  * Conv. (cfs)            *701628.4  *1725138.0  *1510982.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 4809.16  *  322.76  * 8491.95  *
* Min Ch El (ft)          *  706.30  * Shear (lb/sq ft)        *    0.07  *    0.38  *    0.08  *
* Alpha                   *    7.57  * Stream Power (lb/ft s) *15946.47  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.13  * Cum Volume (acre-ft)   * 3694.96  * 1493.81  * 5849.70  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *  719.58  *   86.02  * 1432.73  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************************
* E.G. Elev (ft)          *  729.12  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.12  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  729.00  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *22121.94  * 6646.62  *42990.47  *
* E.G. Slope (ft/ft)      *0.000259  * Area (sq ft)            *22121.94  * 6646.62  *42990.47  *
* Q Total (cfs)           *79649.91  * Flow (cfs)              *16140.84  *29854.30  *33654.76  *
* Top Width (ft)          *13677.94  * Top Width (ft)          * 4861.55  *  315.41  * 8500.98  *
* Vel Total (ft/s)        *    1.11  * Avg. Vel. (ft/s)        *    0.73  *    4.49  *    0.78  *
* Max Chl Dpth (ft)       *   22.70  * Hydr. Depth (ft)        *    4.55  *   21.07  *    5.06  *
* Conv. Total (cfs)       *4949126.0  * Conv. (cfs)            *1002927.0  *1855027.0  *2091172.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 4861.64  *  322.76  * 8501.09  *
* Min Ch El (ft)          *  706.30  * Shear (lb/sq ft)        *    0.07  *    0.33  *    0.08  *
* Alpha                   *    6.44  * Stream Power (lb/ft s) *15946.47  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.11  * Cum Volume (acre-ft)   * 4425.88  * 1588.89  * 7383.14  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *  732.83  *   86.08  * 1463.21  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)          *  731.35  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.05  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.29  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *33406.53  * 7369.89  *62511.90  *
* E.G. Slope (ft/ft)      *0.000125  * Area (sq ft)            *33406.53  * 7369.89  *62511.90  *
* Q Total (cfs)           *89992.12  * Flow (cfs)              *21896.31  *24606.95  *43488.86  *
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* Top Width (ft)          *13827.57  * Top Width (ft)          * 4983.71  *  315.41  * 8528.44  *
* Vel Total (ft/s)        *    0.87  * Avg. Vel. (ft/s)        *    0.66  *    3.34  *    0.70  *
* Max Chl Dpth (ft)       *   24.99  * Hydr. Depth (ft)        *    6.70  *   23.37  *    7.33  *
* Conv. Total (cfs)       *8058665.0  * Conv. (cfs)            *1960784.0  *2203517.0  *3894365.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 4983.83  *  322.76  * 8528.66  *
* Min Ch El (ft)          *  706.30  * Shear (lb/sq ft)        *    0.05  *    0.18  *    0.06  *
* Alpha                   *    4.46  * Stream Power (lb/ft s) *15946.47  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.05  * Cum Volume (acre-ft)   * 6427.24  * 1874.73  *11747.74  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  758.99  *   86.20  * 1492.32  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************************
* E.G. Elev (ft)          *  732.19  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.05  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.14  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *37636.29  * 7636.71  *69734.70  *
* E.G. Slope (ft/ft)      *0.000115  * Area (sq ft)            *37636.29  * 7636.71  *69734.70  *
* Q Total (cfs)           *100471.50  * Flow (cfs)             *25482.21  *25033.53  *49955.77  *
* Top Width (ft)          *13884.06  * Top Width (ft)          * 5020.82  *  315.41  * 8547.83  *
* Vel Total (ft/s)        *    0.87  * Avg. Vel. (ft/s)        *    0.68  *    3.28  *    0.72  *
* Max Chl Dpth (ft)       *   25.84  * Hydr. Depth (ft)        *    7.50  *   24.21  *    8.16  *
* Conv. Total (cfs)       *9383816.0  * Conv. (cfs)            *2379982.0  *2338076.0  *4665759.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 5020.94  *  322.76  * 8548.07  *
* Min Ch El (ft)          *  706.30  * Shear (lb/sq ft)        *    0.05  *    0.17  *    0.06  *
* Alpha                   *    3.99  * Stream Power (lb/ft s) *15946.47  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.05  * Cum Volume (acre-ft)   * 7085.17  * 1949.75  *13041.89  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  766.48  *   86.20  * 1494.69  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************************
* E.G. Elev (ft)          *  733.21  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.04  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  733.17  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *42846.48  * 7962.19  *78567.09  *
* E.G. Slope (ft/ft)      *0.000104  * Area (sq ft)            *42846.48  * 7962.19  *78567.09  *
* Q Total (cfs)           *113669.30  * Flow (cfs)             *29963.66  *25622.48  *58083.16  *
* Top Width (ft)          *13964.96  * Top Width (ft)          * 5079.75  *  315.41  * 8569.80  *
* Vel Total (ft/s)        *    0.88  * Avg. Vel. (ft/s)        *    0.70  *    3.22  *    0.74  *
* Max Chl Dpth (ft)       *   26.87  * Hydr. Depth (ft)        *    8.43  *   25.24  *    9.17  *
* Conv. Total (cfs)       *11119640.0  * Conv. (cfs)           *2931180.0  *2506507.0  *5681956.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 5079.88  *  322.76  * 8570.06  *
* Min Ch El (ft)          *  706.30  * Shear (lb/sq ft)        *    0.06  *    0.16  *    0.06  *
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* Alpha                    *    3.55  * Stream Power (lb/ft s) *15946.47  *    0.00  *    0.00  *
* Frctn Loss (ft)          *    0.04  * Cum Volume (acre-ft)   * 7898.28  * 2040.86  *14617.42  *
* C & E Loss (ft)          *    0.00  * Cum SA (acres)         *  783.28  *   86.20  * 1497.52  *
*****************************************************************************************************
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CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 9380.17*

INPUT
Description:
Station Elevation Data num= 471

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	775.95	.34	775.94	10.12	775.64	31.46	774.93	43.07	774.38
47.55	774.16	62.59	773.4	85	772.71	122.45	771.21	149.75	770.52
187.1	769.67	203.24	768.93	218.24	768.33	234.03	767.76	234.79	767.74
249.36	767.21	265.86	766.56	272.23	766.3	279.66	765.95	280.49	765.91
284.16	765.71	297.69	765.04	309.68	764.47	311.61	764.39	342.75	762.97
373.88	760.43	384.57	760.04	405	759.33	417.75	758.98	422.02	758.85
436.13	758.47	456.83	758.03	459.47	757.97	467.26	757.78	491.16	757.11
498.39	756.87	529.51	756.62	560.64	756.6	571.8	756.65	620.15	756.98
622.47	756.99	622.9	756.99	646.69	757.25	654.03	757.32	661.74	757.37
684.14	757.47	685.15	757.48	701.25	757.51	716.28	757.58	721.59	757.56
747.42	757.53	759.03	757.47	778.54	757.41	780.05	757.36	788.15	757.19
796.48	756.97	806.31	756.75	806.93	756.74	809.67	756.7	832.57	756.12
833.93	756.08	840.79	755.91	870.58	754.98	871.93	754.94	885.09	754.46
903.06	753.86	929.19	752.13	934.18	751.77	937.62	751.65	956.15	751.06
963.88	750.78	965.31	750.74	990.14	749.92	996.44	749.73	1005.6	749.51
1027.57	748.89	1042.67	748.5	1058.7	748.19	1068.93	747.73	1089.82	747.04
1120.96	746.34	1121.45	746.32	1147.72	745.58	1152.08	745.48	1173.98	744.49
1183.21	744.15	1196.64	742.46	1214.34	741	1234.85	739.49	1245.46	737.82
1252.76	737.49	1276.6	736.61	1279.03	736.58	1307.72	736.06	1331.55	735.94
1338.85	735.85	1357.82	735.65	1369.99	735.34	1384.07	735.26	1401.11	734.99
1425.88	734.5	1432.24	734.43	1436.6	734.35	1460.16	733.8	1462.87	733.74
1494.49	733.1	1515.38	732.4	1525.63	732.03	1616.92	730.42	1619	730.38
1620.44	730.33	1646.71	729.47	1650.14	729.35	1774.65	727.32	1778.02	727.22
1805.78	726.43	1918.38	724.65	1919.85	724.63	1920.9	724.61	1930.29	724.47
1952.73	723.85	1961.42	723.62	1961.85	723.62	1964.16	723.58	1988.11	723.29
1992.55	723.23	2054.81	722.54	2085.93	721.95	2144.54	721.31	2148.15	721.26
2209.37	720.66	2236.64	720.11	2239.98	720.02	2270.58	719.69	2297.33	719.52
2305.13	719.57	2358.02	719.79	2366.48	719.81	2366.89	719.81	2397.78	719.9

2423.63	719.91	2428.66	719.93	2484.85	720.05	2515.46	720.23	2637.9	720.72
2668.5	721.01	2752.45	721.42	2760.33	721.44	2821.54	721.84	2904.17	722.12
2913.36	722.14	2934.51	722.24	2964.85	722.32	3003.03	722.33	3005.79	722.34
3097.02	722.39	3127.63	722.36	3158.23	722.09	3188.84	721.92	3219.45	721.94
3250.07	722.32	3280.67	722.53	3341.89	722.66	3416.79	722.93	3418.99	722.93
3492.59	723.16	3525.53	723.32	3639.58	723.67	3646.36	723.7	3647.97	723.7
3678.58	723.85	3770.4	724.08	3787.36	724.18	3829.61	724.3	3830.55	724.3
3935.8	724.56	4053.34	724.86	4054.28	724.86	4076.49	724.9	4107.1	725.02
4208.88	725.23	4241.51	725.34	4244.3	725.34	4382.57	725.64	4505.01	725.8
4806.4	726.12	5055.97	726.12	5058.45	726.11	5146.07	726.07	5147.79	726.06
5209.01	726.01	5210.16	726	5239.62	725.94	5240.5	725.94	5270.22	725.9
5270.84	725.9	5361.87	725.78	5362.23	725.78	5392.66	725.66	5422.55	725.61
5423.27	725.61	5452.9	725.56	5453.88	725.56	5483.24	725.5	5485.76	725.5
5515.09	725.45	5516.64	725.44	5545.7	725.33	5547.52	725.33	5576.31	725.26
5578.4	725.25	5606.91	725.21	5609.28	725.2	5637.52	725.13	5665.29	725
5668.14	724.98	5671.04	724.98	5725.97	724.84	5729.35	724.84	5790.57	724.71
5817	724.57	5825.43	724.54	5943.61	724.29	5963	724.22	5964.03	724.21
5965.51	724.21	5974.22	724.17	6066.05	723.97	6096.65	723.81	6127.26	723.74
6134.23	723.71	6151.26	723.67	6153.96	723.67	6219.08	723.49	6249.69	723.35
6263.6	723.32	6375.93	722.87	6376.75	722.87	6450.83	722.57	6488.27	722.33
6597.42	722	6599.55	721.99	6600.62	721.99	6636.23	721.83	6638.06	721.83
6647.61	721.81	6673.37	707.24	6684.73	706.48	6931.33	706.12	6962.82	721.91
7082.46	722.02	7108.1	722.12	7113.46	722.15	7143.55	722.2	7206.46	722.22
7237.45	722.14	7248.94	722.13	7296.32	722.21	7299.45	722.21	7371.61	722.32
7374.96	722.32	7406.66	722.43	7485.43	722.57	7486.07	722.58	7533.48	722.68
7565.18	722.8	7691.99	723.04	7723.69	723.18	7818.81	723.41	7850.51	723.56
7977.32	723.83	8009.02	723.96	8135.84	724.22	8167.55	724.35	8473.56	724.89
8475.09	724.9	8484.58	724.91	8488.21	724.92	8679.66	725.01	8757.47	724.91
8808.85	724.76	8809.7	724.76	8875.06	724.49	8907.85	724.14	8913.09	724.11
9039.01	723.08	9042.78	723.01	9068.73	722.62	9071.8	722.58	9120.6	722.28
9170.16	722.08	9235.75	722.04	9268.54	722.09	9301.33	722.33	9334.12	722.67
9366.91	723.39	9433.58	723.99	9498.07	724.28	9530.86	724.29	9596.43	724.07
9662.01	723.69	9691.22	723.46	9694.8	723.44	9727.59	723.35	9801.76	723.31
9872.79	723.36	9924.34	723.28	9925.89	723.29	9989.91	723.08	10146.59	722.86
10390.98	722.67	10546.46	722.65	10547.65	722.66	10645.71	722.57	10650.9	722.58
10681.19	722.55	10681.35	722.56	11203.14	722.67	11263.36	722.91	11265.1	722.91
11294	723.08	11294.85	723.08	11299.34	723.11	11301.5	723.12	11367.08	723.53
11399.88	724.05	11465.46	724.51	11531.04	724.77	11532.78	724.78	11563.83	725.01
11631.05	725.22	11631.66	725.22	11661.69	725.31	11662.19	725.32	11694.98	725.54
11793.35	725.88	11795.42	725.89	11858.93	726.09	11947.78	726.06	11965.78	726.03
11990.1	726.01	11998.23	725.99	11998.73	725.99	12022.89	725.92	12026.43	725.92
12029.37	725.91	12151.92	725.74	12186.83	725.59	12284.07	725.38	12285.2	725.38
12317.99	725.27	12416.36	725.1	12613.1	724.75	12656.42	724.62	12674.03	724.6
12678.68	724.58	12751.84	724.41	12777.05	724.31	12777.77	724.31	12780.53	724.29

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12803.72  724.2612809.84  724.2212907.46     72412908.21     724   12941  723.88
13037.15  723.7313039.37  723.7213072.16  723.6513089.03  723.5413104.95  723.48
13137.74  723.43 13140.9  723.4213236.11  723.23 13268.9  723.1113270.59   723.1
14266.11  722.7814613.29   722.514642.26  722.6714645.27  722.6814646.07  722.69
14777.23  723.2514810.02  723.5414941.18  724.1614973.97  724.1315006.76  723.84
15034.33  723.9715039.54  724.0115060.28  724.3115072.33  724.5215105.13  724.76
15152.72  724.8215164.02  724.8315184.53  724.8815185.32  724.8815212.73  724.95
15215.96  724.9515236.29     72515241.84  725.0415269.08   725.315301.87  725.66
15334.66  726.2315338.52  726.3315345.59  726.5315367.45  727.0815371.52  727.27
15386.95  727.8915397.46  728.3315400.24  728.4215423.39  731.3115433.03  732.28
15465.82  734.0615494.14  735.82 15498.6  736.0815501.21  736.2415511.06  736.94
15527.15  738.12 15538.7  739.0715551.09  740.0115553.01  740.1615564.18  741.01
15579.29   743.215583.26  743.7715583.65  743.8315596.97  745.7615614.29  747.27
15627.82  748.4115629.77  748.5815635.68  749.1115656.83  751.0815663.88  751.67
15682.77  753.3115692.08  754.0515695.35  754.3215706.21  755.2815716.95  756.48
15720.27  756.8815728.14  757.8515734.65  758.1415736.85  758.2315748.47  758.61
15760.93  758.9815767.49  759.1115776.67  759.3315793.72  759.6815798.13  759.76
15806.08  759.8815826.51  760.1615857.21  760.41 15859.3  760.4315861.27  760.43
15864.34  760.4415882.67  760.3415889.47  760.3415890.05  760.3515892.09  760.31
15916.21  760.0215920.69   759.815924.88  759.5715945.86  759.1515951.33  759.06
15990.45  758.3215991.39  758.3115994.03  758.2716007.53  758.0416012.62     758
16023.24  758.0116030.45  757.8916043.25  757.6416056.03  757.2116073.89  756.99
16081.92  756.87

Manning's n Values          num=       3
     Sta    n Val      Sta    n Val      Sta    n Val
**********************************************
       0      .09 6647.61      .04 6962.82      .09

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
       6647.61 6962.82            448.79  448.79  448.79              .1        .3

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  724.51  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.21  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  724.30  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 5228.41  * 5214.08  * 7576.62  *
* E.G. Slope (ft/ft)      *0.000289  * Area (sq ft)            * 5228.41  * 5214.08  * 7576.62  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              * 2419.72  *21037.94  * 2488.29  *
* Top Width (ft)          * 8944.65  * Top Width (ft)          * 2607.13  *  315.21  * 6022.31  *
* Vel Total (ft/s)        *    1.44  * Avg. Vel. (ft/s)        *    0.46  *    4.03  *    0.33  *
* Max Chl Dpth (ft)       *   18.18  * Hydr. Depth (ft)        *    2.01  *   16.54  *    1.26  *
* Conv. Total (cfs)       *1526399.0  * Conv. (cfs)             *142352.0  *1237661.0  *146385.8  *
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* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 2607.19  *  322.81  * 6022.36  *
* Min Ch El (ft)          *  706.12  * Shear (lb/sq ft)        *    0.04  *    0.29  *    0.02  *
* Alpha                   *    6.38  * Stream Power (lb/ft s) *16081.92  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.12  * Cum Volume (acre-ft)    * 1230.17  * 1175.77  * 1217.56  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  473.54  *   81.86  * 1023.82  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)          *  728.05  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.05  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.00  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *20571.89  * 6377.95  *36665.39  *
* E.G. Slope (ft/ft)      *0.000103  * Area (sq ft)            *20571.89  * 6377.95  *36665.39  *
* Q Total (cfs)           *42918.92  * Flow (cfs)              * 8956.84  *17581.04  *16381.05  *
* Top Width (ft)          *13656.39  * Top Width (ft)          * 4914.49  *  315.21  * 8426.69  *
* Vel Total (ft/s)        *    0.67  * Avg. Vel. (ft/s)        *    0.44  *    2.76  *    0.45  *
* Max Chl Dpth (ft)       *   21.88  * Hydr. Depth (ft)        *    4.19  *   20.23  *    4.35  *
* Conv. Total (cfs)       *4227132.0  * Conv. (cfs)             *882168.6  *1731576.0  *1613387.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 4914.59  *  322.81  * 8426.78  *
* Min Ch El (ft)          *  706.12  * Shear (lb/sq ft)        *    0.03  *    0.13  *    0.03  *
* Alpha                   *    7.09  * Stream Power (lb/ft s) *16081.92  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.04  * Cum Volume (acre-ft)    * 3844.19  * 1535.72  * 6643.41  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  680.47  *   82.95  * 1389.12  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)          *  726.91  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.19  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  726.71  * Reach Len. (ft)         *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *14307.95  * 5973.26  *25867.66  *
* E.G. Slope (ft/ft)      *0.000341  * Area (sq ft)            *14307.95  * 5973.26  *25867.66  *
* Q Total (cfs)           *54360.98  * Flow (cfs)              * 8973.53  *28675.64  *16711.80  *
* Top Width (ft)          *13557.04  * Top Width (ft)          * 4851.78  *  315.21  * 8390.05  *
* Vel Total (ft/s)        *    1.18  * Avg. Vel. (ft/s)        *    0.63  *    4.80  *    0.65  *
* Max Chl Dpth (ft)       *   20.59  * Hydr. Depth (ft)        *    2.95  *   18.95  *    3.08  *
* Conv. Total (cfs)       *2942837.0  * Conv. (cfs)             *485783.2  *1552359.0  *904695.1  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 4851.86  *  322.81  * 8390.12  *
* Min Ch El (ft)          *  706.12  * Shear (lb/sq ft)        *    0.06  *    0.39  *    0.07  *
* Alpha                   *    8.90  * Stream Power (lb/ft s) *16081.92  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.14  * Cum Volume (acre-ft)    * 2529.34  * 1290.52  * 3461.72  *
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* C & E Loss (ft)        *    0.01  * Cum SA (acres)          *  642.91  *   82.48  * 1212.27  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************************
* E.G. Elev (ft)         *  728.12  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.13  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.99  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *20554.19  * 6376.82  *36635.07  *
* E.G. Slope (ft/ft)     *0.000266  * Area (sq ft)           *20554.19  * 6376.82  *36635.07  *
* Q Total (cfs)          *68923.08  * Flow (cfs)             *14376.99  *28251.34  *26294.75  *
* Top Width (ft)         *13656.08  * Top Width (ft)         * 4914.27  *  315.21  * 8426.60  *
* Vel Total (ft/s)       *    1.08  * Avg. Vel. (ft/s)       *    0.70  *    4.43  *    0.72  *
* Max Chl Dpth (ft)      *   21.87  * Hydr. Depth (ft)       *    4.18  *   20.23  *    4.35  *
* Conv. Total (cfs)      *4223168.0  * Conv. (cfs)           *880930.7  *1731063.0  *1611175.0  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 4914.36  *  322.81  * 8426.70  *
* Min Ch El (ft)         *  706.12  * Shear (lb/sq ft)       *    0.07  *    0.33  *    0.07  *
* Alpha                  *    7.10  * Stream Power (lb/ft s) *16081.92  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.11  * Cum Volume (acre-ft)   * 3497.50  * 1428.18  * 5478.82  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *  669.49  *   82.77  * 1345.57  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************************
* E.G. Elev (ft)         *  729.01  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.10  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  728.91  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *25062.96  * 6664.38  *44330.98  *
* E.G. Slope (ft/ft)     *0.000227  * Area (sq ft)           *25062.96  * 6664.38  *44330.98  *
* Q Total (cfs)          *79649.91  * Flow (cfs)             *18316.60  *28045.77  *33287.54  *
* Top Width (ft)         *13726.75  * Top Width (ft)         * 4970.22  *  315.21  * 8441.31  *
* Vel Total (ft/s)       *    1.05  * Avg. Vel. (ft/s)       *    0.73  *    4.21  *    0.75  *
* Max Chl Dpth (ft)      *   22.79  * Hydr. Depth (ft)       *    5.04  *   21.14  *    5.25  *
* Conv. Total (cfs)      *5291235.0  * Conv. (cfs)           *1216793.0  *1863113.0  *2211330.0  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 4970.33  *  322.81  * 8441.45  *
* Min Ch El (ft)         *  706.12  * Shear (lb/sq ft)       *    0.07  *    0.29  *    0.07  *
* Alpha                  *    6.01  * Stream Power (lb/ft s) *16081.92  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)   * 4182.81  * 1520.32  * 6933.31  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *  682.18  *   82.83  * 1375.93  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)         *  731.29  * Element                *  Left OB *  Channel * Right OB *
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* Vel Head (ft)          *    0.04  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.25  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *36816.08  * 7402.04  *64107.34  *
* E.G. Slope (ft/ft)     *0.000110  * Area (sq ft)           *36816.08  * 7402.04  *64107.34  *
* Q Total (cfs)          *89992.12  * Flow (cfs)             *23884.02  *23278.74  *42829.36  *
* Top Width (ft)         *13852.79  * Top Width (ft)         * 5077.52  *  315.21  * 8460.06  *
* Vel Total (ft/s)       *    0.83  * Avg. Vel. (ft/s)       *    0.65  *    3.14  *    0.67  *
* Max Chl Dpth (ft)      *   25.13  * Hydr. Depth (ft)       *    7.25  *   23.48  *    7.58  *
* Conv. Total (cfs)      *8579659.0  * Conv. (cfs)           *2277052.0  *2219346.0  *4083261.0  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 5077.66  *  322.81  * 8460.34  *
* Min Ch El (ft)         *  706.12  * Shear (lb/sq ft)       *    0.05  *    0.16  *    0.05  *
* Alpha                  *    4.18  * Stream Power (lb/ft s) *16081.92  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.05  * Cum Volume (acre-ft)   * 6065.50  * 1798.63  *11095.48  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  707.16  *   82.95  * 1404.81  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************************
* E.G. Elev (ft)         *  732.14  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.04  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  732.10  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *41147.57  * 7669.67  *71293.95  *
* E.G. Slope (ft/ft)     *0.000102  * Area (sq ft)           *41147.57  * 7669.67  *71293.95  *
* Q Total (cfs)          *100471.50  * Flow (cfs)            *27508.81  *23776.49  *49186.20  *
* Top Width (ft)         *13907.36  * Top Width (ft)         * 5123.78  *  315.21  * 8468.37  *
* Vel Total (ft/s)       *    0.84  * Avg. Vel. (ft/s)       *    0.67  *    3.10  *    0.69  *
* Max Chl Dpth (ft)      *   25.98  * Hydr. Depth (ft)       *    8.03  *   24.33  *    8.42  *
* Conv. Total (cfs)      *9950138.0  * Conv. (cfs)           *2724320.0  *2354691.0  *4871127.0  *
* Length Wtd. (ft)       *  448.79  * Wetted Per. (ft)       * 5123.92  *  322.81  * 8468.70  *
* Min Ch El (ft)         *  706.12  * Shear (lb/sq ft)       *    0.05  *    0.15  *    0.05  *
* Alpha                  *    3.76  * Stream Power (lb/ft s) *16081.92  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.04  * Cum Volume (acre-ft)   * 6679.33  * 1870.90  *12315.39  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  714.22  *   82.95  * 1407.03  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************************
* E.G. Elev (ft)         *  733.17  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.04  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  733.13  * Reach Len. (ft)        *  448.79  *  448.79  *  448.79  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *46467.54  * 7996.00  *80069.45  *
* E.G. Slope (ft/ft)     *0.000094  * Area (sq ft)           *46467.54  * 7996.00  *80069.45  *
* Q Total (cfs)          *113669.30  * Flow (cfs)            *32147.18  *24417.90  *57104.21  *
* Top Width (ft)         *13955.70  * Top Width (ft)         * 5154.62  *  315.21  * 8485.88  *
```

```
* Vel Total (ft/s)        *    0.84  * Avg. Vel. (ft/s)        *    0.69  *    3.05  *    0.71  *
* Max Chl Dpth (ft)       *   27.01  * Hydr. Depth (ft)        *    9.01  *   25.37  *    9.44  *
* Conv. Total (cfs)       *11749760.0  * Conv. (cfs)           *3322988.0  *2524028.0  *5902746.0  *
* Length Wtd. (ft)        *  448.79  * Wetted Per. (ft)        * 5154.78  *  322.81  * 8486.23  *
* Min Ch El (ft)          *  706.12  * Shear (lb/sq ft)        *    0.05  *    0.14  *    0.06  *
* Alpha                   *    3.35  * Stream Power (lb/ft s) *16081.92  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.04  * Cum Volume (acre-ft)    * 7438.19  * 1958.65  *13800.22  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  730.56  *   82.95  * 1409.66  *
*****************************************************************************************************
```

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 8931.38

INPUT
Description:
Station Elevation Data num= 419

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************************
       0  779.05.3505859  779.0432.37988  778.2364.41992   776.9 96.4502  776.27
154.1201  775.27192.5605  774.66209.1699  773.94224.6006  773.37256.6299  772.34
287.8105  771.21288.6699  771.17292.4404  771.01320.7002  769.91352.7402  768.52
384.7803  765.74416.8105  764.66448.8506  763.83465.3301  763.51480.8799  763.18
505.4805  762.55512.9199  762.29544.9502  762.08576.9902  762.12586.5605  762.18
638.2305  762.66640.6201  762.67641.0605  762.68667.6504  763.04673.1006   763.1
681.0303  763.17705.1299  763.32721.7002  763.39737.1699  763.51748.7305   763.5
  769.21  763.52801.2402   763.4  802.79  763.35811.1299  763.15829.8203  762.61
833.2803  762.54856.8408  761.81865.3105  761.56897.3506  760.38910.9004   759.8
929.3906  759.09956.2803  757.01961.4199  756.58  964.96  756.44984.0303  755.74
991.9805  755.41  993.46  755.361019.011  754.38 1025.49  754.16 1034.92  753.89
 1057.53  753.15 1073.07  752.69 1089.57  752.311100.101  751.771121.601  750.94
1153.641   750.1 1154.15  750.081181.181  749.19 1185.67  749.07 1208.21  747.89
 1217.71  747.48 1231.53  745.46 1249.75  743.711270.851   741.9 1281.78  739.89
 1289.29   739.5 1313.82  738.45 1316.32  738.411345.851   737.8 1370.38  737.67
1377.891  737.57 1397.41  737.341409.931  736.981424.431  736.89 1441.96  736.58
 1467.46  736.01    1474  735.92 1478.49  735.83 1502.73  735.191505.521  735.12
 1506.03   735.1 1538.07  734.37 1559.57  733.54 1570.11  733.11 1664.07  731.24
 1666.21  731.19 1667.69  731.141694.721  730.12 1698.25  729.981826.391  727.65
 1829.86  727.531858.431   726.6 1986.57  724.35 2018.61  723.352019.051  723.35
2021.431  723.31 2046.08  722.97 2050.65   722.92114.721  722.13 2146.75  721.44
 2208.67  720.68 2210.79  720.65 2239.41  720.322270.641  719.99 2273.79  719.95
 2301.86  719.31 2305.29  719.212333.091  718.87 2336.79  718.83 2364.32  718.63
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2372.341  718.692426.771  718.97  2435.9  718.992462.801   719.1 2467.69  719.11
2494.301  719.132499.471  719.152557.301  719.312588.801  719.52 2645.36  719.76
2683.301  719.932714.811   720.12746.311  720.45 2832.71  720.932840.811  720.96
2872.311  721.152903.811  721.422988.851  721.742998.311  721.76 3020.07  721.87
3051.301  721.94 3187.32  721.96 3218.82   721.9 3250.32  721.56 3281.82  721.34
 3313.32  721.35 3344.83  721.79 3376.33  722.01 3439.33  722.12 3470.83  722.27
 3596.83  722.63 3628.33   722.83754.341  723.163785.841  723.323880.341  723.54
 3897.79  723.644050.561  723.984069.351  724.064195.351  724.294226.851  724.42
4331.601   724.6 4352.86   724.7 4478.86  724.96 4510.36  725.07 4636.37  725.26
 4667.87  725.35 4699.37  725.39 4819.42  725.53 4946.54  725.63 4951.38  725.64
5203.391  725.63 5205.94  725.62 5296.12  725.575297.891  725.565360.891   725.5
 5362.08  725.495392.391  725.425393.301  725.425423.891  725.37 5424.53  725.37
5486.801  725.27 5518.21  725.23 5518.58  725.23  5549.9  725.09 5580.66  725.03
   5581.4  725.035611.891  724.97  5612.9  724.97 5643.12   724.9 5645.71   724.9
   5675.9  724.84 5677.49  724.83  5707.4  724.695709.271  724.69  5738.9  724.61
5741.051   724.6  5770.4  724.55 5772.83  724.54  5801.9  724.46 5830.48   724.3
 5833.41  724.285836.391  724.285892.931  724.11 5896.41  724.11 5927.91  724.03
 5931.73  724.01 5959.41  723.94 5986.61  723.77 5995.29  723.736049.061  723.57
 6053.91  723.55 6116.91  723.36 6122.41  723.32 6148.42  723.18 6242.92   722.9
 6274.42   722.7 6298.88  722.63 6305.92  722.626313.091  722.59 6400.42  722.38
 6431.92  722.256589.431  722.02 6789.79  721.91 6829.73  721.81 6841.44   721.8
    6867706.3199    7123  705.95 7156.45  721.91 7282.45  721.95 7439.96  722.16
 7471.46  722.27 7565.96  722.45 7597.46  722.587723.471  722.857754.971  722.98
7880.971  723.267912.471  723.43 8006.98  723.71 8038.48  723.89 8164.48  724.21
 8195.98  724.37 8321.99  724.68 8353.49  724.83 8447.99  725.04 8479.49  725.16
  8668.5  725.45 8672.11  725.468728.391  725.52 8862.34  725.55 8939.65  725.42
  8990.7  725.238991.551  725.23 9056.49   724.9 9089.07  724.48 9094.28  724.44
 9121.65   724.29124.391  724.179219.391  723.199223.141  723.11 9248.92  722.64
9251.971  722.599300.461  722.229349.711  721.97 9377.78  721.929414.881  721.92
9447.461  721.98 9455.09  722.039480.041  722.26 9512.62  722.66  9545.2  723.53
 9577.78  723.91 9611.45  724.24 9642.94  724.449675.521  724.589708.101  724.59
9712.811  724.58 9740.68  724.48 9773.26  724.31 9838.42  723.85 9867.44  723.57
     9871  723.54 9903.58  723.43 9977.28  723.389996.301  723.4110047.85  723.43
10099.07  723.3310100.61  723.3310131.65  723.2410164.23  723.0810319.91  722.79
10327.13  722.7910357.11  722.7510359.71  722.7510537.51  722.4810585.58  722.46
10587.78  722.4510717.22   722.310718.41   722.310815.84  722.14   10821  722.14
10848.42   722.110851.25   722.110978.74    72211109.07  722.0211369.71  722.01
11434.87   722.3 11465.3   722.511467.45  722.5111491.07  722.6811500.03  722.73
11532.61  722.99 11565.2   723.611630.36  724.1111695.52  724.4111697.25  724.43
 11728.1  724.6811825.38  725.0111825.84  725.0211858.42  725.2711956.16  725.64
11958.21  725.6512021.32  725.86 12109.6  725.7912151.65  725.7112184.23  725.59
12186.92  725.5912312.44  725.3212347.13  725.1312443.75  724.8512444.87  724.85
12477.45  724.7112575.19  724.4812578.11  724.4712607.77  724.4212666.67  724.25
12770.68  724.0212813.72  723.8612831.22  723.8312835.84  723.8112908.53  723.59
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12933.58  723.47 12934.3  723.4712937.04  723.4612960.08  723.4212966.16  723.38
13063.16  723.11 13063.9  723.1113096.48  722.9613192.02  722.7813194.23  722.77
13226.81  722.6813243.57  722.5513259.39  722.4813291.97  722.4213295.11  722.41
13389.71  722.1813422.29  722.0313423.97  722.02 14758.1  721.9714764.11     722
14786.89  722.1814789.88   722.214790.68  722.2114888.42  722.73   14921  722.92
14953.58  723.27 15083.9  723.9615116.48   723.915149.06  723.5315176.46  723.64
15181.64  723.6815202.24  724.0215214.22  724.2615246.81  724.5215305.32  724.53
15377.13  724.6915382.64  724.7415409.71  725.0415442.29  725.4715474.87  726.15
15485.73  726.5215507.45  727.19 15511.5  727.4215526.83  728.1615537.27  728.69
15540.03   728.815563.04  732.2815572.61  733.4415605.19  735.5715633.33  737.67
15637.77  737.9815640.36  738.1715650.15     73915666.13  740.3915677.61  741.51
15702.93  743.7815721.89  747.0515735.51  749.3515766.16  752.39 15768.1  752.59
15794.99  755.4715820.76  757.9415833.26  759.0115854.72  761.0315865.84   762.2
15872.31  762.27 15896.8  762.3715898.42  762.37   15931  762.1215943.28  761.98
15963.58  761.7115987.56  761.3115996.16  761.1916001.17  761.0216020.12  760.15
16028.74  759.8316052.71  759.1316061.32  758.4516126.48  755.9316130.03  755.81
16143.45  755.3116159.06  754.9116191.64  753.3716217.36  752.81

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .09 6841.44     .04 7156.45     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      6841.44 7156.45           450.47  450.47  450.47            .1        .3

CROSS SECTION OUTPUT  Profile #PK2
**********************************************************************************************
* E.G. Elev (ft)         *  724.38  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.16  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  724.21  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      * 6935.99  * 5231.51  * 9192.82  *
* E.G. Slope (ft/ft)     *0.000248  * Area (sq ft)           * 6935.99  * 5231.51  * 9192.82  *
* Q Total (cfs)          *25945.95  * Flow (cfs)             * 3137.01  *19586.66  * 3222.29  *
* Top Width (ft)         * 9351.64  * Top Width (ft)         * 3145.10  *  315.01  * 5891.52  *
* Vel Total (ft/s)       *    1.21  * Avg. Vel. (ft/s)       *    0.45  *    3.74  *    0.35  *
* Max Chl Dpth (ft)      *   18.26  * Hydr. Depth (ft)       *    2.21  *   16.61  *    1.56  *
* Conv. Total (cfs)      *1648174.0  * Conv. (cfs)           *199273.3  *1244210.0  *204690.4  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)       * 3145.18  *  322.95  * 5891.59  *
* Min Ch El (ft)         *  705.95  * Shear (lb/sq ft)       *    0.03  *    0.25  *    0.02  *
* Alpha                  *    7.20  * Stream Power (lb/ft s) *16217.36  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.11  * Cum Volume (acre-ft)   * 1167.51  * 1121.96  * 1131.18  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  443.91  *   78.61  *  962.45  *
**********************************************************************************************
```



```
Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
**********************************************************************************************
* E.G. Elev (ft)         *  728.00  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.04  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.96  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *23881.63  * 6412.51  *38454.30  *
* E.G. Slope (ft/ft)     *0.000086  * Area (sq ft)           *23881.63  * 6412.51  *38454.30  *
* Q Total (cfs)          *42918.92  * Flow (cfs)             *10354.45  *16243.39  *16321.08  *
* Top Width (ft)         *13713.51  * Top Width (ft)         * 5032.22  *  315.01  * 8366.28  *
* Vel Total (ft/s)       *    0.62  * Avg. Vel. (ft/s)       *    0.43  *    2.53  *    0.42  *
* Max Chl Dpth (ft)      *   22.01  * Hydr. Depth (ft)       *    4.75  *   20.36  *    4.60  *
* Conv. Total (cfs)      *4615312.0  * Conv. (cfs)           *1113472.0  *1746743.0  *1755097.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)       * 5032.34  *  322.95  * 8366.42  *
* Min Ch El (ft)         *  705.95  * Shear (lb/sq ft)       *    0.03  *    0.11  *    0.02  *
* Alpha                  *    6.52  * Stream Power (lb/ft s) *16217.36  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.04  * Cum Volume (acre-ft)   * 3615.19  * 1469.83  * 6256.44  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  629.23  *   79.71  * 1302.61  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK10
**********************************************************************************************
* E.G. Elev (ft)         *  726.75  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.15  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  726.60  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *17053.60  * 5982.73  *27060.85  *
* E.G. Slope (ft/ft)     *0.000293  * Area (sq ft)           *17053.60  * 5982.73  *27060.85  *
* Q Total (cfs)          *54360.98  * Flow (cfs)             *10946.88  *26639.09  *16775.01  *
* Top Width (ft)         *13629.71  * Top Width (ft)         * 4982.89  *  315.01  * 8331.81  *
* Vel Total (ft/s)       *    1.09  * Avg. Vel. (ft/s)       *    0.64  *    4.45  *    0.62  *
* Max Chl Dpth (ft)      *   20.65  * Hydr. Depth (ft)       *    3.42  *   18.99  *    3.25  *
* Conv. Total (cfs)      *3175288.0  * Conv. (cfs)           *639420.1  *1556020.0  *979847.6  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)       * 4982.99  *  322.95  * 8331.91  *
* Min Ch El (ft)         *  705.95  * Shear (lb/sq ft)       *    0.06  *    0.34  *    0.06  *
* Alpha                  *    8.42  * Stream Power (lb/ft s) *16217.36  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)   * 2367.78  * 1228.93  * 3189.06  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  592.25  *   79.23  * 1126.13  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK25
**********************************************************************************************
* E.G. Elev (ft)         *  728.00  * Element                *  Left OB *  Channel * Right OB *
```

Vel Head (ft)	0.11	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	727.90	Reach Len. (ft)	450.47	450.47	450.47	
Crit W.S. (ft)		Flow Area (sq ft)	23564.77	6392.66	37927.36	
E.G. Slope (ft/ft)	0.000230	Area (sq ft)	23564.77	6392.66	37927.36	
Q Total (cfs)	68923.08	Flow (cfs)	16530.01	26366.23	26026.84	
Top Width (ft)	13708.74	Top Width (ft)	5028.76	315.01	8364.98	
Vel Total (ft/s)	1.02	Avg. Vel. (ft/s)	0.70	4.12	0.69	
Max Chl Dpth (ft)	21.95	Hydr. Depth (ft)	4.69	20.29	4.53	
Conv. Total (cfs)	4542578.0	Conv. (cfs)	1089459.0	1737744.0	1715376.0	
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5028.87	322.95	8365.11	
Min Ch El (ft)	705.95	Shear (lb/sq ft)	0.07	0.28	0.07	
Alpha	6.60	Stream Power (lb/ft s)	16217.36	0.00	0.00	
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	3270.23	1362.40	5094.72	
C & E Loss (ft)	0.00	Cum SA (acres)	618.27	79.52	1259.07	

CROSS SECTION OUTPUT Profile #PK50

E.G. Elev (ft)	728.91	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.08	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	728.82	Reach Len. (ft)	450.47	450.47	450.47	
Crit W.S. (ft)		Flow Area (sq ft)	28235.17	6683.76	45665.85	
E.G. Slope (ft/ft)	0.000197	Area (sq ft)	28235.17	6683.76	45665.85	
Q Total (cfs)	79649.91	Flow (cfs)	20554.18	26299.00	32796.73	
Top Width (ft)	13778.32	Top Width (ft)	5079.58	315.01	8383.73	
Vel Total (ft/s)	0.99	Avg. Vel. (ft/s)	0.73	3.93	0.72	
Max Chl Dpth (ft)	22.87	Hydr. Depth (ft)	5.56	21.22	5.45	
Conv. Total (cfs)	5668432.0	Conv. (cfs)	1462776.0	1871617.0	2334039.0	
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5079.70	322.95	8383.89	
Min Ch El (ft)	705.95	Shear (lb/sq ft)	0.07	0.26	0.07	
Alpha	5.59	Stream Power (lb/ft s)	16217.36	0.00	0.00	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	3908.25	1451.55	6469.70	
C & E Loss (ft)	0.00	Cum SA (acres)	630.41	79.59	1289.26	

CROSS SECTION OUTPUT Profile #PK100

E.G. Elev (ft)	731.24	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.04	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	731.20	Reach Len. (ft)	450.47	450.47	450.47	
Crit W.S. (ft)		Flow Area (sq ft)	40463.57	7433.77	65645.63	
E.G. Slope (ft/ft)	0.000097	Area (sq ft)	40463.57	7433.77	65645.63	
Q Total (cfs)	89992.12	Flow (cfs)	25925.45	22015.43	42051.23	
Top Width (ft)	13890.33	Top Width (ft)	5175.84	315.01	8399.48	

Vel Total (ft/s)	0.79	Avg. Vel. (ft/s)	0.64	2.96	0.64	
Max Chl Dpth (ft)	25.25	Hydr. Depth (ft)	7.82	23.60	7.82	
Conv. Total (cfs)	9134295.0	Conv. (cfs)	2631461.0	2234590.0	4268245.0	
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5176.00	322.95	8399.81	
Min Ch El (ft)	705.95	Shear (lb/sq ft)	0.05	0.14	0.05	
Alpha	3.91	Stream Power (lb/ft s)	16217.36	0.00	0.00	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	5667.40	1722.21	10427.07	
C & E Loss (ft)	0.00	Cum SA (acres)	654.34	79.71	1317.96	

CROSS SECTION OUTPUT Profile #PK200

E.G. Elev (ft)	732.09	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.04	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	732.06	Reach Len. (ft)	450.47	450.47	450.47	
Crit W.S. (ft)		Flow Area (sq ft)	44889.45	7702.04	72801.20	
E.G. Slope (ft/ft)	0.000091	Area (sq ft)	44889.45	7702.04	72801.20	
Q Total (cfs)	100471.50	Flow (cfs)	29627.81	22573.44	48270.25	
Top Width (ft)	13938.48	Top Width (ft)	5218.36	315.01	8405.11	
Vel Total (ft/s)	0.80	Avg. Vel. (ft/s)	0.66	2.93	0.66	
Max Chl Dpth (ft)	26.11	Hydr. Depth (ft)	8.60	24.45	8.66	
Conv. Total (cfs)	10551260.0	Conv. (cfs)	3111437.0	2370604.0	5069217.0	
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5218.53	322.95	8405.51	
Min Ch El (ft)	705.95	Shear (lb/sq ft)	0.05	0.14	0.05	
Alpha	3.54	Stream Power (lb/ft s)	16217.36	0.00	0.00	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	6236.12	1791.71	11573.10	
C & E Loss (ft)	0.00	Cum SA (acres)	660.94	79.71	1320.11	

CROSS SECTION OUTPUT Profile #PK500

E.G. Elev (ft)	733.13	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.03	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	733.09	Reach Len. (ft)	450.47	450.47	450.47	
Crit W.S. (ft)		Flow Area (sq ft)	50332.65	8028.99	81528.98	
E.G. Slope (ft/ft)	0.000084	Area (sq ft)	50332.65	8028.99	81528.98	
Q Total (cfs)	113669.30	Flow (cfs)	34290.54	23291.71	56087.05	
Top Width (ft)	13998.83	Top Width (ft)	5270.51	315.01	8413.30	
Vel Total (ft/s)	0.81	Avg. Vel. (ft/s)	0.68	2.90	0.69	
Max Chl Dpth (ft)	27.14	Hydr. Depth (ft)	9.55	25.49	9.69	
Conv. Total (cfs)	12399170.0	Conv. (cfs)	3740450.0	2540685.0	6118039.0	
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5270.69	322.95	8413.77	
Min Ch El (ft)	705.95	Shear (lb/sq ft)	0.05	0.13	0.05	
Alpha	3.18	Stream Power (lb/ft s)	16217.36	0.00	0.00	

```
* Frctn Loss (ft)        *    0.04  * Cum Volume (acre-ft)   * 6939.53  * 1876.10  *12967.77  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  676.85  *   79.71  * 1322.61  *
*****************************************************************************************************
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CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 8480.90*

INPUT
Description:
Station Elevation Data num= 378

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	777.43	31.7	776.58	31.92	776.58	32.04	776.57	63.51	775.27
67.25	775.18	67.63	775.18	95.09	774.53	102.81	774.37	137.92	773.82
138.81	773.8	189.85	773.13	206.23	772.51	208.96	772.43	209.99	772.39
221.44	772.03	245.04	771.38	245.58	771.36	253.02	771.16	280.6	770.29
315.53	769.06	316.16	769.04	347.78	767.8	379.37	765.33	410.95	764.33
422.83	764.04	423.54	764.01	442.54	763.37	458.39	762.93	474.12	762.51
493.15	761.93	494.72	761.89	498.37	761.77	505.71	761.48	537.29	761.05
565.06	760.86	568.88	760.81	600.61	760.63	629.26	760.69	631.61	760.68
632.05	760.69	635.25	760.71	637.09	760.71	658.26	760.82	671.45	760.84
671.73	760.83	672.68	760.83	707.29	760.74	708.27	760.73	726.8	760.71
758.39	760.42	777.34	760.12	789.97	760.02	791.5	759.97	799.72	759.76
818.15	759.21	821.56	759.13	853.14	758.15	884.73	757	885.07	756.99
898.09	756.45	916.32	755.76	919.43	755.53	920.63	755.45	942.83	753.77
947.9	753.36	951.39	753.21	956.19	753.03	957.41	752.98	970.19	752.53
978.03	752.22	979.49	752.17	1004.68	751.25	1057.98	749.67	1062.86	749.56
1064.19	749.52	1074.25	749.28	1084.63	748.76	1105.83	747.96	1132.58	747.26
1133.96	747.22	1137.42	747.13	1137.92	747.11	1164.57	746.25	1168.1	746.16
1169	746.14	1169.52	746.11	1191.22	745.04	1200.59	744.66	1205.08	744.05
1214.21	742.84	1232.17	741.25	1252.98	739.61	1263.75	737.8	1271.16	737.44
1274.67	737.3	1276.19	737.23	1295.34	736.48	1297.81	736.44	1326.92	735.88
1351.11	735.74	1377.76	735.43	1390.1	735.1	1404.4	735.01	1421.68	734.71
1446.82	734.17	1452.28	734.09	1453.27	734.08	1453.98	734.07	1457.7	734
1481.6	733.41	1484.35	733.35	1484.85	733.33	1516.44	732.66	1548.03	731.52
1640.67	729.78	1642.78	729.73	1644.24	729.69	1670.89	728.77	1674.37	728.64
1800.71	726.52	1804.13	726.41	1832.3	725.58	1958.63	723.57	1990.22	722.68
1990.66	722.68	1993	722.64	2084.98	721.59	2116.56	720.98	2238.71	719.69
2241.81	719.65	2269.49	719.09	2272.87	719	2300.28	718.69	2331.07	718.48
2392.64	718.78	2521.34	719.09	2676.63	719.79	2707.69	720.1	2792.87	720.53
2800.86	720.55	2862.98	720.96	2946.82	721.25	2956.15	721.26	3008.39	721.42

3173.55	721.39	3235.67	720.89	3266.73	720.9	3297.79	721.29	3328.85	721.49
3406.04	721.65	3729.64	722.73	3732.6	722.75	3825.77	722.97	3842.98	723.07
4049.66	723.52	4089.46	723.49	4136.35	723.64	4167.41	723.82	4223.08	723.95
4270.69	724.03	4291.65	724.13	4294.13	724.13	4602.23	724.78	4938.59	725.13
5130.22	725.19	5132.73	725.18	5221.64	725.16	5223.05	725.15	5440.97	724.94
5441.92	724.93	5471.85	724.82	5596.08	724.64	5597.65	724.63	5627.14	724.52
5658.19	724.46	5660.32	724.45	5689.25	724.41	5720.31	724.34	5720.85	724.34
5750.57	724.2	5754.31	724.2	5756.41	724.19	5810.06	724.06	5813.49	724.07
5875.6	723.93	6030.89	723.49	6036.31	723.45	6155.13	723.12	6210.3	722.88
6217.24	722.88	6218.65	722.87	6341.47	722.45	6496.77	722.15	6694.31	722.23
6745.23	722.13	6749.68	719.84	6771.96	708.09	6796.35	707.65	6819.69	707.08
6824.22	706.99	6847.77	706.07	7039.67	705.78	7046.44	708.66	7058.27	713.02
7070.09	717.83	7081.91	721.87	7145.24	721.75	7240.25	721.8	7365.23	722.12
7366.92	722.12	7805.95	723.12	7963.35	723.69	8278.16	724.51	8652.81	725.14
8783.96	725.17	8786.67	725.18	8914.94	724.9	8915.79	724.9	8980.69	724.6
9143.48	723.06	9147.23	722.99	9172.99	722.57	9176.04	722.53	9273.72	721.97
9371.4	721.98	9379.03	722.02	9436.52	722.58	9469.08	723.35	9535.28	723.99
9599.31	724.29	9631.87	724.3	9696.99	724.05	9794.66	723.36	9900.87	723.22
9971.39	723.2	710186.34	722.79	10510.22	722.41	0510.97	722.39	10931.27	721.93
11292.38	721.96	11386.69	722.37	11387.91	722.38	11390.05	722.38	11422.61	722.57
11422.83	722.57	11455.17	722.79	11487.74	723.33	11552.86	723.79	11617.97	724.09
11619.7	724.11	11650.53	724.35	11747.75	724.66	11748.21	724.67	11780.77	724.89
11943.56	725.37	12234.49	724.91	12365.71	724.5	12366.83	724.5	12613.41	723.95
12615.44	723.94	12744.98	723.7	12746.74	723.69	12752.92	723.69	12757.54	723.67
12855.21	723.42	12855.93	723.42	12858.67	723.41	12881.7	723.38	12887.77	723.35
12905.93	723.31	13018.01	723.05	13113.48	722.96	13115.69	722.95	13148.25	722.88
13165	722.77	13166.03	722.76	13343.6	722.41	3345.28	722.39	14137.67	722.47
14202.45	722.41	4678.53	722.66	14710.29	722.88	14711.08	722.89	14720.65	722.95
14721.42	722.95	14773.49	723.2	14785.43	723.21	14841.32	723.45	14873.88	723.74
14960.16	724.26	14979.76	724.43	15004.11	724.35	15010.05	724.29	15012.14	724.29
15036.67	724.21	15040.16	724.17	15069.23	723.69	15076.93	723.67	15096.61	723.68
15101.79	723.7	15134.34	724.06	15166.91	724.08	15173.51	724.05	15206.47	724.06
15226.84	724.59	15271.25	724.72	15297.15	724.66	15298.68	724.67	15302.65	724.73
15303.64	724.74	15321.78	724.76	15362.26	725.18	15394.82	725.79	15427.38	726.68
15431.43	726.88	15433.19	726.95	15457.18	728.01	15459.94	728.11	15465.58	728.87
15482.93	731.16	15492.5	732.17	15497.97	732.5	15525.06	734.03	15530.36	734.38
15553.18	736.52	15557.61	736.91	15560.2	737.16	15562.74	737.42	15585.96	738.42
15595.13	738.91	15597.43	739.13	15600.19	739.38	15622.73	741.34	15623.77	741.51
15627.51	742.1	15653.52	746.51	15655.29	746.82	15659.91	747.35	15669.78	748.38
15685.92	749.98	15692.3	750.65	15714.73	753.23	15724.68	754.27	15740.48	755.76
15752.23	756.77	15752.97	756.83	15757.07	757.23	15774.42	758.87	15774.76	758.91
15785.53	760.04	15789.46	760.12	15792	760.16	15816.47	760.44	15818.09	760.45
15821.84	760.46	15840.2	760.66	15850.65	760.69	15854.24	760.69	15862.92	760.65
15915.77	760.07	15920.2	759.95	15920.77	759.93	15939.71	759.17	15948.33	758.89

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15972.28  758.2915980.88  757.6916000.21  757.04   16046  755.2516062.96  754.72
16076.74  754.4216078.56  754.3916080.21  754.3316080.95   754.316106.87  753.51
16111.12  753.3716113.34  753.3416136.82  753.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .09 6745.23     .04 7081.91     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       6745.23 7081.91           450.47  450.47  450.47            .1        .3

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  724.27  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.16  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  724.10  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 7369.25  * 5430.13  * 8068.70  *
* E.G. Slope (ft/ft)      *0.000247  * Area (sq ft)            * 7369.25  * 5430.13  * 8068.70  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              * 3405.82  *19967.37  * 2572.76  *
* Top Width (ft)          * 9707.44  * Top Width (ft)          * 3314.25  *  336.68  * 6056.51  *
* Vel Total (ft/s)        *    1.24  * Avg. Vel. (ft/s)        *    0.46  *    3.68  *    0.32  *
* Max Chl Dpth (ft)       *   18.32  * Hydr. Depth (ft)        *    2.22  *   16.13  *    1.33  *
* Conv. Total (cfs)       *1652130.0  * Conv. (cfs)            *216868.5  *1271439.0  *163822.5  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 3314.32  *  343.15  * 6056.56  *
* Min Ch El (ft)          *  705.78  * Shear (lb/sq ft)        *    0.03  *    0.24  *    0.02  *
* Alpha                   *    6.76  * Stream Power (lb/ft s)  *16136.82  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.11  * Cum Volume (acre-ft)    * 1093.54  * 1066.83  * 1041.92  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  410.51  *   75.24  *  900.67  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)          *  727.96  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.04  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.93  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *25147.03  * 6717.34  *38482.33  *
* E.G. Slope (ft/ft)      *0.000081  * Area (sq ft)            *25147.03  * 6717.34  *38482.33  *
* Q Total (cfs)           *42918.92  * Flow (cfs)              *10895.15  *16264.25  *15759.53  *
* Top Width (ft)          *13738.43  * Top Width (ft)          * 5028.37  *  336.68  * 8373.39  *
* Vel Total (ft/s)        *    0.61  * Avg. Vel. (ft/s)        *    0.43  *    2.42  *    0.41  *
* Max Chl Dpth (ft)       *   22.15  * Hydr. Depth (ft)        *    5.00  *   19.95  *    4.60  *
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* Conv. Total (cfs)       *4782873.0  * Conv. (cfs)            *1214152.0  *1812483.0  *1756237.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5028.47  *  343.15  * 8373.51  *
* Min Ch El (ft)          *  705.78  * Shear (lb/sq ft)        *    0.03  *    0.10  *    0.02  *
* Alpha                   *    6.26  * Stream Power (lb/ft s)  *16136.82  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.04  * Cum Volume (acre-ft)    * 3361.68  * 1401.94  * 5858.63  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  577.21  *   76.34  * 1216.06  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)          *  726.62  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.15  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  726.47  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *17902.47  * 6228.06  *26337.84  *
* E.G. Slope (ft/ft)      *0.000283  * Area (sq ft)            *17902.47  * 6228.06  *26337.84  *
* Q Total (cfs)           *54360.98  * Flow (cfs)              *11727.74  *26882.95  *15750.29  *
* Top Width (ft)          *13617.68  * Top Width (ft)          * 4943.08  *  336.68  * 8337.92  *
* Vel Total (ft/s)        *    1.08  * Avg. Vel. (ft/s)        *    0.66  *    4.32  *    0.60  *
* Max Chl Dpth (ft)       *   20.69  * Hydr. Depth (ft)        *    3.62  *   18.50  *    3.16  *
* Conv. Total (cfs)       *3231048.0  * Conv. (cfs)            *697060.3  *1597839.0  *936148.2  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 4943.17  *  343.15  * 8338.01  *
* Min Ch El (ft)          *  705.78  * Shear (lb/sq ft)        *    0.06  *    0.32  *    0.06  *
* Alpha                   *    8.11  * Stream Power (lb/ft s)  *16136.82  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.13  * Cum Volume (acre-ft)    * 2187.03  * 1165.79  * 2912.96  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  540.93  *   75.86  * 1039.93  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)          *  727.90  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.10  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.80  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *24516.19  * 6675.07  *37431.22  *
* E.G. Slope (ft/ft)      *0.000221  * Area (sq ft)            *24516.19  * 6675.07  *37431.22  *
* Q Total (cfs)           *68923.08  * Flow (cfs)              *17319.96  *26664.72  *24938.39  *
* Top Width (ft)          *13728.11  * Top Width (ft)          * 5020.88  *  336.68  * 8370.55  *
* Vel Total (ft/s)        *    1.00  * Avg. Vel. (ft/s)        *    0.71  *    3.99  *    0.67  *
* Max Chl Dpth (ft)       *   22.02  * Hydr. Depth (ft)        *    4.88  *   19.83  *    4.47  *
* Conv. Total (cfs)       *4635882.0  * Conv. (cfs)            *1164970.0  *1793514.0  *1677398.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5020.99  *  343.15  * 8370.66  *
* Min Ch El (ft)          *  705.78  * Shear (lb/sq ft)        *    0.07  *    0.27  *    0.06  *
* Alpha                   *    6.40  * Stream Power (lb/ft s)  *16136.82  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.10  * Cum Volume (acre-ft)    * 3021.62  * 1294.83  * 4705.07  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  566.31  *   76.15  * 1172.54  *
```

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**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK50
**********************************************************************************************
* E.G. Elev (ft)          *  728.82  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.08  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.74  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *29250.84  * 6990.81  *45288.44  *
* E.G. Slope (ft/ft)      *0.000189  * Area (sq ft)            *29250.84  * 6990.81  *45288.44  *
* Q Total (cfs)           *79649.91  * Flow (cfs)              *21352.91  *26638.55  *31658.44  *
* Top Width (ft)          *13792.89  * Top Width (ft)          * 5073.52  *  336.68  * 8382.70  *
* Vel Total (ft/s)        *    0.98  * Avg. Vel. (ft/s)        *    0.73  *    3.81  *    0.70  *
* Max Chl Dpth (ft)       *   22.96  * Hydr. Depth (ft)        *    5.77  *   20.76  *    5.40  *
* Conv. Total (cfs)       *5792051.0  * Conv. (cfs)            *1552760.0  *1937125.0  *2302166.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5073.63  *  343.15  * 8382.86  *
* Min Ch El (ft)          *  705.78  * Shear (lb/sq ft)        *    0.07  *    0.24  *    0.06  *
* Alpha                   *    5.44  * Stream Power (lb/ft s)   *16136.82  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.08  * Cum Volume (acre-ft)    * 3611.01  * 1380.85  * 5999.40  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  577.91  *   76.22  * 1202.57  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
**********************************************************************************************
* E.G. Elev (ft)          *  731.20  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.04  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.16  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *41656.10  * 7806.76  *65626.32  *
* E.G. Slope (ft/ft)      *0.000093  * Area (sq ft)            *41656.10  * 7806.76  *65626.32  *
* Q Total (cfs)           *89992.12  * Flow (cfs)              *26560.84  *22398.25  *41033.02  *
* Top Width (ft)          *13915.90  * Top Width (ft)          * 5178.18  *  336.68  * 8401.05  *
* Vel Total (ft/s)        *    0.78  * Avg. Vel. (ft/s)        *    0.64  *    2.87  *    0.63  *
* Max Chl Dpth (ft)       *   25.38  * Hydr. Depth (ft)        *    8.04  *   23.19  *    7.81  *
* Conv. Total (cfs)       *9355214.0  * Conv. (cfs)            *2761157.0  *2328431.0  *4265625.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5178.32  *  343.15  * 8401.37  *
* Min Ch El (ft)          *  705.78  * Shear (lb/sq ft)        *    0.05  *    0.13  *    0.05  *
* Alpha                   *    3.84  * Stream Power (lb/ft s)   *16136.82  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.04  * Cum Volume (acre-ft)    * 5242.78  * 1643.40  * 9748.30  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  600.80  *   76.34  * 1231.09  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
**********************************************************************************************
* E.G. Elev (ft)          *  732.05  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.03  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
```



```
* W.S. Elev (ft)          *  732.02  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *46095.50  * 8094.35  *72805.84  *
* E.G. Slope (ft/ft)      *0.000087  * Area (sq ft)            *46095.50  * 8094.35  *72805.84  *
* Q Total (cfs)           *100471.50  * Flow (cfs)             *30291.97  *23015.13  *47164.39  *
* Top Width (ft)          *13956.79  * Top Width (ft)          * 5210.97  *  336.68  * 8409.14  *
* Vel Total (ft/s)        *    0.79  * Avg. Vel. (ft/s)        *    0.66  *    2.84  *    0.65  *
* Max Chl Dpth (ft)       *   26.24  * Hydr. Depth (ft)        *    8.85  *   24.04  *    8.66  *
* Conv. Total (cfs)       *10796370.0  * Conv. (cfs)           *3255086.0  *2473139.0  *5068148.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5211.13  *  343.15  * 8409.51  *
* Min Ch El (ft)          *  705.78  * Shear (lb/sq ft)        *    0.05  *    0.13  *    0.05  *
* Alpha                   *    3.48  * Stream Power (lb/ft s)   *16136.82  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.04  * Cum Volume (acre-ft)    * 5765.66  * 1710.04  *10820.21  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  607.01  *   76.34  * 1233.17  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
**********************************************************************************************
* E.G. Elev (ft)          *  733.09  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.03  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  733.06  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *51534.84  * 8444.72  *81564.95  *
* E.G. Slope (ft/ft)      *0.000080  * Area (sq ft)            *51534.84  * 8444.72  *81564.95  *
* Q Total (cfs)           *113669.30  * Flow (cfs)             *34999.11  *23806.89  *54863.30  *
* Top Width (ft)          *14010.15  * Top Width (ft)          * 5247.54  *  336.68  * 8425.93  *
* Vel Total (ft/s)        *    0.80  * Avg. Vel. (ft/s)        *    0.68  *    2.82  *    0.67  *
* Max Chl Dpth (ft)       *   27.28  * Hydr. Depth (ft)        *    9.82  *   25.08  *    9.68  *
* Conv. Total (cfs)       *12672460.0  * Conv. (cfs)           *3901887.0  *2654118.0  *6116451.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5247.71  *  343.15  * 8426.33  *
* Min Ch El (ft)          *  705.78  * Shear (lb/sq ft)        *    0.05  *    0.12  *    0.05  *
* Alpha                   *    3.14  * Stream Power (lb/ft s)   *16136.82  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.04  * Cum Volume (acre-ft)    * 6412.81  * 1790.92  *12124.46  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  622.47  *   76.34  * 1235.54  *
**********************************************************************************************

CROSS SECTION


RIVER: Thompson
REACH: Alignment - surv   RS: 8030.43*

INPUT
Description:
Station Elevation Data    num=     378
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
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*****************************************************************************************
       0  775.82   31.24  774.93   31.47  774.93   31.58  774.92   62.61  773.63
    66.3  773.54   66.66  773.54  101.35   772.6  135.95  772.11   136.4  772.11
  136.83   772.1  187.14  771.59  203.29  771.09  205.98  771.02     207  770.99
  218.28  770.69  241.55  770.16  242.08  770.14  249.41  769.97  279.72  769.16
  284.22     769  342.82  767.09  373.96  764.92  405.09     764   416.8  763.73
  436.23  762.92  451.85  762.35  452.24  762.33  467.35  761.85  486.12  761.18
  487.66  761.13  491.26  760.99  498.49  760.68  521.95  760.18  522.75  760.16
  529.62  760.02     557   759.6  570.06   759.3  592.05  758.88  620.28  758.72
   622.6  758.69  626.19  758.69  654.17  758.56  661.88   758.5  662.15   758.5
   701.4  758.05  716.44  757.92  732.25  757.67  747.58  757.31  766.25   756.8
   767.3  756.78   778.7  756.65  780.21  756.59  788.32  756.37  802.35  755.93
  803.42   755.9  806.48   755.8  809.84  755.73   837.4  754.85  840.97  754.75
   871.3  753.65  872.11  753.63  872.45  753.61  885.28  753.09  903.25  752.43
  908.67  752.06  929.38  750.53  934.38  750.14  942.55  749.79  956.35  749.33
  964.08  749.03  965.52  748.99  990.35  748.13  996.65  747.93 1005.81  747.69
 1042.89  746.64  1047.7  746.54 1049.01   746.5 1058.93  746.25 1069.16  745.75
 1090.06  744.97 1116.42  744.29 1121.19  744.16 1121.69  744.14 1147.96  743.32
 1151.44  743.23 1152.32   743.2 1152.84  743.18 1154.25  743.11 1174.23  742.19
 1183.46  741.83 1196.89  740.21  1214.6   738.8 1235.11  737.31 1245.73  735.71
 1253.03  735.38  1259.5  735.13 1276.87  734.51    1308  733.95 1331.84  733.81
 1358.11  733.51 1370.28  733.21 1384.37  733.12 1396.54  732.93  1401.4  732.85
 1426.19  732.33 1431.56  732.25 1432.54  732.24 1433.24  732.23 1436.91  732.16
 1460.46  731.63 1463.18  731.58 1463.67  731.56 1468.29  731.47 1470.02  731.43
 1494.81  730.95 1525.95  729.93 1619.35  728.28 1620.79  728.23 1650.49   727.3
 1775.02  725.38 1806.16  724.55 1816.74   724.4 1818.79  724.36  1930.7  722.78
 1961.84     722 1962.26     722 1988.53  721.71 1992.97  721.65 2055.24  721.05
 2086.37  720.52 2146.55  719.93 2148.61   719.9 2209.84  719.36 2237.12  718.86
 2240.45  718.78 2297.82  718.33 2358.52   718.6 2424.15  718.72 2485.38  718.86
 2638.46  719.48 2669.07  719.75 2822.14   720.5 2965.48  720.91 3128.29  720.88
 3189.52  720.44 3220.13  720.45 3250.75  720.79 3281.37  720.96 3676.44  722.16
 3679.36  722.18  3954.9   722.9 3956.84  722.91 3996.04   722.9 4031.13  722.77
 4077.35     723 4107.97  723.23 4230.43  723.56 4688.09  724.42 5057.04  724.74
 5059.52  724.73 5147.16  724.75 5148.55  724.74 5210.11  724.75 5211.27  724.74
 5271.34  724.68 5271.96  724.69 5363.37  724.65  5364.3  724.64 5393.81  724.56
 5516.26  724.44 5517.81  724.43 5546.88  724.35 5668.55  724.12 5669.34  724.11
  5791.8  723.93 5944.87  723.62 6067.33  723.35 6128.56  723.13 6129.95  723.13
 6135.53   723.1 6340.26  722.37 6480.46  722.29 6620.66  722.53 6649.02  722.46
 6653.67  720.45 6676.92  709.86 6678.02  709.83 6697.69  709.17 6702.38     709
 6726.74   707.9 6731.46  707.74 6756.05  705.92 6956.33  705.61 6964.52  708.81
  6978.8  713.07 6981.72  714.11 6993.08  718.21 6996.02  718.95 7007.36  721.84
 7064.07  721.58  7133.2  721.59 7133.95   721.6  7165.6  721.61 7228.89  721.94
 7285.38  722.07  7290.5  722.07 7292.18  722.08 7856.77  723.35 8045.52  723.86
 8328.65  724.45 8521.02   724.7    8711   724.8 8840.04  724.57 8904.89  724.31
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  8912.18  724.24 8914.32  724.21 8937.43  723.97 8969.96  723.75  8972.7  723.72
  9067.57  722.94 9071.32  722.87 9100.11  722.46 9197.72  721.97 9295.34  721.97
  9360.42   722.5 9392.95  723.18 9459.11  723.73  9523.1     724 9555.64  724.01
  9620.71  723.79 9718.32  723.19 9947.63  723.0310109.74  722.6910854.17  721.85
 11215.05  721.91 11307.3  722.24 11309.3  722.2411310.51  722.25 11345.2  722.41
 11345.41  722.4111377.73   722.611410.28  723.0611469.51  723.4311475.35  723.48
 11540.43  723.7811542.15   723.811572.96  724.0111630.97  724.1611633.85  724.18
 11670.11  724.3111670.57  724.3111703.11   724.511800.72  724.7411802.77  724.75
 11865.79  724.8912156.53  724.4912287.67  724.15 12535.2   723.712537.23  723.69
 12540.37   723.712939.53  723.1513069.69  723.0713086.43  722.9813087.46  722.98
 13264.91  722.7713637.69  723.0614058.46  722.9614064.96  722.9314123.19  722.82
 14382.12  723.0114598.95  723.3414630.69  723.5714631.49  723.5814641.05  723.63
 14641.82  723.6414693.85  723.8614705.79  723.8214761.64  723.9814794.17  724.22
 14800.46  724.2314806.65  724.31 14880.4  724.7914899.99  725.0414924.32  724.73
 14930.26  724.6214932.35  724.6314956.86  724.5214960.35  724.4814964.72  724.36
  14989.4  723.8514997.09  723.7815021.93  723.72 15040.3  723.8215042.51  723.82
 15054.47  723.8715087.02  723.6415090.89  723.5915093.61  723.5815120.25  723.57
 15126.55  723.5915145.45  724.57 15146.9  724.6515158.92  724.72 15177.5  724.73
 15191.28  724.8115217.16  724.64 15218.7  724.6415222.67  724.7115223.65  724.74
 15241.79  724.5715253.51  724.6215282.24  724.8915306.81  725.3215314.77  725.42
 15347.31  726.1715377.09  727.3315379.85  727.4215385.48  728.0915402.83  730.05
 15412.39   730.9 15413.4  730.9515417.85   731.215444.92   732.515450.22  732.79
 15480.05  736.1415482.58  736.4515505.78  736.4515514.95  736.53   15520  737.01
 15542.53  738.9115547.31   739.6 15573.3  743.9615575.07  744.2915579.68   744.9
 15589.55  745.9815605.68  747.5615612.05  748.2215630.75  750.5415634.47  750.99
 15644.41  752.1115660.21  753.5915671.95  754.5915672.69  754.6615676.78  755.06
 15679.91  755.3515694.12  756.7215694.46  756.7615705.23  757.8715709.15  757.99
 15711.69  758.0515736.15  758.5215737.76  758.5415741.51  758.5715759.86  759.11
  15770.3  759.2715773.88  759.31 15786.5  759.3115835.38  758.9615838.61  758.89
 15839.81  758.8615840.38  758.85 15859.3  758.1915867.91  757.9515891.85  757.44
 15900.45  756.9215919.76  756.3815935.71  755.6915968.08  754.4915969.07  754.47
 15982.47  754.1215996.24  753.8915998.06  753.8716000.44   753.816026.35  753.45
  16030.6  753.36 16042.8  753.3516056.28  753.27

Manning's n Values        num=       3
     Sta    n Val     Sta   n Val     Sta   n Val
***********************************************
       0      .09 6649.02     .04 7007.36     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       6649.02 7007.36           450.47  450.47  450.47             .1       .3

CROSS SECTION OUTPUT  Profile #PK2
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* E.G. Elev (ft)          *  724.15  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.16  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  724.00  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       * 7926.85  * 5617.00  * 7036.04  *
* E.G. Slope (ft/ft)      *0.000243  * Area (sq ft)            * 7926.85  * 5617.00  * 7036.04  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              * 3722.39  *20183.05  * 2040.51  *
* Top Width (ft)          *10127.73  * Top Width (ft)          * 3521.63  *  358.34  * 6247.76  *
* Vel Total (ft/s)        *    1.26  * Avg. Vel. (ft/s)        *    0.47  *    3.59  *    0.29  *
* Max Chl Dpth (ft)       *   18.39  * Hydr. Depth (ft)        *    2.25  *   15.68  *    1.13  *
* Conv. Total (cfs)       *1663408.0  * Conv. (cfs)            *238644.2  *1293946.0  *130817.9  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 3521.68  *  363.74  * 6247.82  *
* Min Ch El (ft)          *  705.61  * Shear (lb/sq ft)        *    0.03  *    0.23  *    0.02  *
* Alpha                   *    6.34  * Stream Power (lb/ft s) *16056.28  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.11  * Cum Volume (acre-ft)    * 1014.45  * 1009.71  *  963.82  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  375.16  *   71.65  *  837.05  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*********************************************************************************************
* E.G. Elev (ft)          *  727.93  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.03  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.89  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *26470.79  * 7013.38  *38443.26  *
* E.G. Slope (ft/ft)      *0.000075  * Area (sq ft)            *26470.79  * 7013.38  *38443.26  *
* Q Total (cfs)           *42918.92  * Flow (cfs)              *11482.11  *16240.85  *15195.97  *
* Top Width (ft)          *13752.31  * Top Width (ft)          * 5017.50  *  358.34  * 8376.47  *
* Vel Total (ft/s)        *    0.60  * Avg. Vel. (ft/s)        *    0.43  *    2.32  *    0.40  *
* Max Chl Dpth (ft)       *   22.28  * Hydr. Depth (ft)        *    5.28  *   19.57  *    4.59  *
* Conv. Total (cfs)       *4950631.0  * Conv. (cfs)            *1324444.0  *1873356.0  *1752831.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5017.60  *  363.74  * 8376.63  *
* Min Ch El (ft)          *  705.61  * Shear (lb/sq ft)        *    0.02  *    0.09  *    0.02  *
* Alpha                   *    6.00  * Stream Power (lb/ft s) *16056.28  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.03  * Cum Volume (acre-ft)    * 3094.78  * 1330.94  * 5460.87  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  525.27  *   72.74  * 1129.45  *
*********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK10
*********************************************************************************************
* E.G. Elev (ft)          *  726.49  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.14  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  726.35  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *18792.33  * 6461.24  *25556.78  *
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* E.G. Slope (ft/ft)      *0.000275  * Area (sq ft)            *18792.33  * 6461.24  *25556.78  *
* Q Total (cfs)           *54360.98  * Flow (cfs)              *12534.55  *27079.68  *14746.74  *
* Top Width (ft)          *13640.12  * Top Width (ft)          * 4937.12  *  358.34  * 8344.65  *
* Vel Total (ft/s)        *    1.07  * Avg. Vel. (ft/s)        *    0.67  *    4.19  *    0.58  *
* Max Chl Dpth (ft)       *   20.74  * Hydr. Depth (ft)        *    3.81  *   18.03  *    3.06  *
* Conv. Total (cfs)       *3280283.0  * Conv. (cfs)            *756367.4  *1634058.0  *889856.6  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 4937.20  *  363.74  * 8344.76  *
* Min Ch El (ft)          *  705.61  * Shear (lb/sq ft)        *    0.07  *    0.30  *    0.05  *
* Alpha                   *    7.81  * Stream Power (lb/ft s) *16056.28  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.12  * Cum Volume (acre-ft)    * 1997.30  * 1100.18  * 2644.63  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  489.84  *   72.27  *  953.67  *
*********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK25
*********************************************************************************************
* E.G. Elev (ft)          *  727.80  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.09  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.71  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *25535.16  * 6946.52  *36880.48  *
* E.G. Slope (ft/ft)      *0.000213  * Area (sq ft)            *25535.16  * 6946.52  *36880.48  *
* Q Total (cfs)           *68923.08  * Flow (cfs)              *18198.08  *26877.08  *23847.92  *
* Top Width (ft)          *13744.79  * Top Width (ft)          * 5011.54  *  358.34  * 8374.91  *
* Vel Total (ft/s)        *    0.99  * Avg. Vel. (ft/s)        *    0.71  *    3.87  *    0.65  *
* Max Chl Dpth (ft)       *   22.10  * Hydr. Depth (ft)        *    5.10  *   19.39  *    4.40  *
* Conv. Total (cfs)       *4727912.0  * Conv. (cfs)            *1248333.0  *1843685.0  *1635894.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5011.64  *  363.74  * 8375.05  *
* Min Ch El (ft)          *  705.61  * Shear (lb/sq ft)        *    0.07  *    0.25  *    0.06  *
* Alpha                   *    6.19  * Stream Power (lb/ft s) *16056.28  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.09  * Cum Volume (acre-ft)    * 2762.82  * 1224.39  * 4320.82  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  514.44  *   72.56  * 1085.95  *
*********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK50
*********************************************************************************************
* E.G. Elev (ft)          *  728.74  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.08  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.66  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *30318.46  * 7287.38  *44850.84  *
* E.G. Slope (ft/ft)      *0.000181  * Area (sq ft)            *30318.46  * 7287.38  *44850.84  *
* Q Total (cfs)           *79649.91  * Flow (cfs)              *22260.98  *26888.78  *30500.14  *
* Top Width (ft)          *13792.60  * Top Width (ft)          * 5051.11  *  358.34  * 8383.15  *
* Vel Total (ft/s)        *    0.97  * Avg. Vel. (ft/s)        *    0.73  *    3.69  *    0.68  *
* Max Chl Dpth (ft)       *   23.05  * Hydr. Depth (ft)        *    6.00  *   20.34  *    5.35  *
* Conv. Total (cfs)       *5915275.0  * Conv. (cfs)            *1653233.0  *1996921.0  *2265122.0  *
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* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5051.21  *  363.74  * 8383.36  *
* Min Ch El (ft)          *  705.61  * Shear (lb/sq ft)        *    0.07  *    0.23  *    0.06  *
* Alpha                   *    5.28  * Stream Power (lb/ft s) *16056.28  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.08  * Cum Volume (acre-ft)   * 3302.99  * 1307.02  * 5533.32  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  525.56  *   72.62  * 1115.87  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)          *  731.16  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.03  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.12  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *42920.77  * 8170.52  *65539.89  *
* E.G. Slope (ft/ft)      *0.000088  * Area (sq ft)           *42920.77  * 8170.52  *65539.89  *
* Q Total (cfs)           *89992.12  * Flow (cfs)             *27322.46  *22703.74  *39965.91  *
* Top Width (ft)          *13930.62  * Top Width (ft)         * 5163.16  *  358.34  * 8409.12  *
* Vel Total (ft/s)        *    0.77  * Avg. Vel. (ft/s)       *    0.64  *    2.78  *    0.61  *
* Max Chl Dpth (ft)       *   25.51  * Hydr. Depth (ft)       *    8.31  *   22.80  *    7.79  *
* Conv. Total (cfs)       *9577788.0  * Conv. (cfs)           *2907907.0  *2416340.0  *4253540.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5163.29  *  363.74  * 8409.45  *
* Min Ch El (ft)          *  705.61  * Shear (lb/sq ft)        *    0.05  *    0.12  *    0.04  *
* Alpha                   *    3.76  * Stream Power (lb/ft s) *16056.28  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.04  * Cum Volume (acre-ft)   * 4805.46  * 1560.79  * 9070.08  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  547.33  *   72.74  * 1144.17  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************************
* E.G. Elev (ft)          *  732.01  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.03  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.98  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *47360.86  * 8477.42  *72749.30  *
* E.G. Slope (ft/ft)      *0.000083  * Area (sq ft)           *47360.86  * 8477.42  *72749.30  *
* Q Total (cfs)           *100471.50  * Flow (cfs)            *31039.79  *23400.22  *46031.48  *
* Top Width (ft)          *13989.16  * Top Width (ft)         * 5204.10  *  358.34  * 8426.73  *
* Vel Total (ft/s)        *    0.78  * Avg. Vel. (ft/s)       *    0.66  *    2.76  *    0.63  *
* Max Chl Dpth (ft)       *   26.37  * Hydr. Depth (ft)       *    9.10  *   23.66  *    8.63  *
* Conv. Total (cfs)       *11032420.0  * Conv. (cfs)          *3408371.0  *2569496.0  *5054556.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5204.25  *  363.74  * 8427.07  *
* Min Ch El (ft)          *  705.61  * Shear (lb/sq ft)        *    0.05  *    0.12  *    0.04  *
* Alpha                   *    3.42  * Stream Power (lb/ft s) *16056.28  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.04  * Cum Volume (acre-ft)   * 5282.43  * 1624.35  *10067.59  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  553.16  *   72.74  * 1146.12  *
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CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************************
* E.G. Elev (ft)          *  733.05  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.03  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  733.02  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *52816.79  * 8851.20  *81549.85  *
* E.G. Slope (ft/ft)      *0.000077  * Area (sq ft)           *52816.79  * 8851.20  *81549.85  *
* Q Total (cfs)           *113669.30  * Flow (cfs)            *35698.00  *24280.76  *53690.54  *
* Top Width (ft)          *14061.70  * Top Width (ft)         * 5258.42  *  358.34  * 8444.93  *
* Vel Total (ft/s)        *    0.79  * Avg. Vel. (ft/s)       *    0.68  *    2.74  *    0.66  *
* Max Chl Dpth (ft)       *   27.41  * Hydr. Depth (ft)       *   10.04  *   24.70  *    9.66  *
* Conv. Total (cfs)       *12925860.0  * Conv. (cfs)          *4059385.0  *2761078.0  *6105400.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5258.58  *  363.74  * 8445.31  *
* Min Ch El (ft)          *  705.61  * Shear (lb/sq ft)        *    0.05  *    0.12  *    0.05  *
* Alpha                   *    3.10  * Stream Power (lb/ft s) *16056.28  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.03  * Cum Volume (acre-ft)   * 5873.24  * 1701.48  *11281.04  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  568.14  *   72.74  * 1148.30  *
*****************************************************************************************************

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv   RS: 7579.96*

INPUT
Description:
Station Elevation Data    num=     377
      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*****************************************************************************************
        0    774.2    30.79   773.28    31.01   773.27    31.12   773.27     61.7      772
    65.34    771.9     65.7    771.9    99.88   770.84   133.98   770.41   134.42   770.41
   134.85    770.4   184.44   770.06   200.35   769.66   215.13   769.34    245.8   768.79
   275.67   768.13   276.49    768.1   306.53    767.3   307.14   767.28   337.86   766.37
   341.04   766.18    342.3    766.1   368.55    764.5   376.22   764.32   399.23   763.68
   410.77   763.42   411.46   763.38   429.91   762.46   445.31   761.76    445.7   761.74
   480.61   760.37   484.16   760.22   491.28   759.87    514.4    759.2   515.18   759.18
   521.96   758.98   548.94   758.35   549.76   758.32   552.65    758.2   583.48   757.12
    611.3   756.74   613.59    756.7   614.02    756.7   618.91   756.65    652.3   756.17
   652.57   756.16   706.07   755.12   721.65   754.76    756.2   753.44   767.44   753.27
   768.92   753.22   790.74   752.53   791.79   752.49   794.81    752.4   798.13   752.32
    858.7   750.28   859.49   750.25   859.83   750.24   890.18    749.1   894.37   748.84
   895.52   748.76   915.94   747.29   920.86   746.92   924.25   746.76   928.91   746.56
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976.02	745	982.23	744.82	1027.8	743.62	1032.54	743.52	1033.83	743.48
1043.6	743.22	1053.69	742.74	1067.08	742.23	1074.28	741.99	1100.27	741.32
1101.61	741.28	1104.97	741.19	1105.46	741.17	1131.35	740.38	1134.78	740.29
1135.65	740.27	1136.16	740.24	1157.24	739.34	1166.34	739.01	1170.7	738.53
1179.57	737.59	1197.02	736.34	1217.24	735.02	1227.7	733.62	1234.9	733.32
1238.31	733.2	1239.79	733.14	1258.39	732.54	1260.79	732.51	1289.07	732.03
1312.57	731.88	1338.46	731.6	1350.45	731.33	1364.34	731.24	1376.34	731.06
1377.96	731.04	1405.55	730.49	1410.85	730.41	1411.81	730.4	1416.11	730.33
1442.49	729.79	1447.04	729.71	1448.75	729.67	1473.18	729.24	1503.87	728.33
1595.92	726.82	1626.6	725.96	1652.42	725.6	1654.3	725.58	1749.34	724.25
1780.03	723.53	1902.76	722	1933.45	721.33	1933.87	721.33	1936.15	721.3
2025.5	720.52	2056.18	720.06	2177.86	719.06	2204.75	718.64	2208.03	718.57
2264.57	718.18	2324.39	718.41	2449.41	718.64	2600.28	719.17	2630.45	719.4
2781.3	720.05	2892.66	720.35	3083.02	720.37	3143.36	719.99	3173.54	720
3203.72	720.29	3233.89	720.44	3312.37	720.58	3515.94	721.25	3519.63	721.27
3623.24	721.59	3626.12	721.61	3897.67	722.32	3899.59	722.33	3934.13	722.29
3972.8	722.05	4033.59	722.5	4037.76	722.56	4072.3	722.74	4169.22	722.99
4624.99	723.87	4983.87	724.3	4986.31	724.29	5072.68	724.34	5074.05	724.33
5285.76	724.36	5286.68	724.35	5436.44	724.24	5437.97	724.23	5496.78	724.15
5498.84	724.14	5584.5	724.04	5586.53	724.03	5644.32	723.97	5647.65	723.98
5858.85	723.74	5979.54	723.57	6033.14	723.39	6039.88	723.39	6041.26	723.38
6242.22	722.54	6248.51	722.5	6386.69	722.44	6490.31	722.84	6552.81	722.8
6557.65	721.07	6581.88	711.63	6583.03	711.59	6603.52	710.61	6608.41	710.36
6633.78	708.73	6638.7	708.48	6664.32	705.77	6873	705.43	6882.6	708.96
6899.34	713.11	6916.08	718.6	6919.52	719.25	6932.82	721.8	6989.49	721.41
6996.07	721.38	7090.95	721.43	7154.2	721.87	7215.77	722.03	7247.2	722.16
8127.48	723.87	8445.47	724.32	8635.32	724.43	8764.28	724.24	8829.09	724.01
8962.04	723.02	8991.67	722.81	9021.14	722.43	9024.18	722.4	9130.15	721.95
9219.28	721.97	9226.9	722	9284.31	722.42	9316.83	723	9382.95	723.48
9446.89	723.71	9544.44	723.53	9641.98	723.01	9871.14	722.88	10090	722.52
10355.14	722.29	10356.59	722.28	10647.7	721.88	10650.33	721.87	10777.08	721.78
11137.72	721.86	11229.9	722.12	11231.9	722.12	11233.12	722.13	11235.26	722.13
11267.78	722.24	11268	722.24	11300.29	722.41	1332.82	722.79	11462.88	723.46
11464.61	723.48	11495.39	723.68	11592.48	723.95	11592.94	723.96	11625.46	724.12
11723	724.29	11725.05	724.31	11788.03	724.41	2078.58	724.08	12132.74	723.92
12426.67	723.48	12724.93	723.31	12956.41	723.31	12958.62	723.31	2991.13	723.27
12997.47	723.23	13007.86	723.21	3008.89	723.19	13186.22	723.15	13187.9	723.14
13558.76	723.59	13849.86	723.61	3979.24	723.44	14043.93	723.23	14140.96	723.24
14302.69	723.52	14335.04	723.68	14519.38	724.03	14551.1	724.25	14551.89	724.26
14561.45	724.32	14562.22	724.32	14614.22	724.51	14626.14	724.42	14681.96	724.51
14690.83	724.56	14694.12	724.56	14709.42	724.67	14720.75	724.71	4723.18	724.73
14726.94	724.79	14768.11	725.14	14800.64	725.33	14820.22	725.64	14844.53	725.12
14850.47	724.96	14852.56	724.98	14860.21	724.95	14877.05	724.83	14880.54	724.79
14884.9	724.64	14909.56	724.01	14917.25	723.89	14932.83	723.81	14942.08	723.73

14960.43	723.74	14974.59	723.67	14981.94	723.58	15007.12	723.2	15011	723.12
15013.71	723.11	5014.28	723.11	5040.33	723.09	15046.63	723.13	15065.51	724.59
15066.97	724.71	15078.98	724.81	15097.54	724.79	15111.31	724.91	5137.18	724.61
15138.71	724.61	5142.68	724.71	5143.66	724.73	15161.79	724.38	15176.01	724.4
15179.89	724.42	15202.21	724.61	15208.35	724.69	15226.76	724.99	15234.73	725.06
15267.24	725.66	15271.28	725.79	15273.05	725.84	15297	726.66	15299.76	726.73
15305.39	727.31	15322.72	728.93	15332.27	729.64	15333.29	729.67	15337.74	729.91
15364.79	730.96	15370.08	731.21	5392.87	734.21	15397.3	734.78	15402.42	735.48
15425.61	734.48	15434.77	734.15	15437.07	734.38	15439.82	734.64	15462.33	736.47
15463.38	736.61	15467.11	737.09	15493.08	741.41	15494.85	741.76	15499.46	742.45
15509.32	743.57	15525.44	745.15	15531.81	745.8	15550.49	748.27	15554.21	748.75
15564.15	749.96	15579.93	751.41	15591.67	752.41	15592.41	752.48	15596.5	752.89
15599.62	753.18	15613.82	754.56	15614.17	754.6	15624.92	755.71	15628.84	755.87
15652.88	756.52	15655.82	756.59	15661.18	756.69	15679.52	757.57	15689.95	757.84
15693.53	757.92	15706.14	758	15754.98	757.84	15759.98	757.76	15778.89	757.21
15787.5	757.01	15811.42	756.6	15820.01	756.16	15839.31	755.71	15855.25	755
15885.04	753.9	15887.6	753.82	15901.98	753.53	15915.75	753.35	15917.56	753.35
15919.21	753.32	15919.94	753.31	5945.83	753.39	15950.07	753.36	15952.29	753.37
15962.27	753.47	15975.74	753.51						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.09	6552.81	.04	6932.82	.09

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
6552.81	6932.82	450.47	450.47	450.47	.1	.3

CROSS SECTION OUTPUT Profile #PK2

E.G. Elev (ft)	724.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	723.90	Reach Len. (ft)	450.47	450.47	450.47
Crit W.S. (ft)		Flow Area (sq ft)	8678.94	5794.09	6242.71
E.G. Slope (ft/ft)	0.000234	Area (sq ft)	8678.94	5794.09	6242.71
Q Total (cfs)	25945.95	Flow (cfs)	4148.14	20083.71	1714.11
Top Width (ft)	10482.65	Top Width (ft)	3716.73	380.01	6385.92
Vel Total (ft/s)	1.25	Avg. Vel. (ft/s)	0.48	3.47	0.27
Max Chl Dpth (ft)	18.47	Hydr. Depth (ft)	2.34	15.25	0.98
Conv. Total (cfs)	1696052.0	Conv. (cfs)	271158.1	1312845.0	112048.9
Length Wtd. (ft)	450.47	Wetted Per. (ft)	3716.79	384.63	6385.98
Min Ch El (ft)	705.43	Shear (lb/sq ft)	0.03	0.22	0.01
Alpha	5.96	Stream Power (lb/ft s)	15975.74	0.00	0.00
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	928.58	950.70	895.16

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* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  337.73  *   67.83  *  771.73  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************************
* E.G. Elev (ft)         *  727.89  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.03  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.86  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *27837.45  * 7301.02  *38452.90  *
* E.G. Slope (ft/ft)     *0.000070  * Area (sq ft)           *27837.45  * 7301.02  *38452.90  *
* Q Total (cfs)          *42918.92  * Flow (cfs)             *12062.09  *16168.45  *14688.38  *
* Top Width (ft)         *13778.99  * Top Width (ft)         * 5020.49  *  380.01  * 8378.49  *
* Vel Total (ft/s)       *    0.58  * Avg. Vel. (ft/s)       *    0.43  *    2.21  *    0.38  *
* Max Chl Dpth (ft)      *   22.43  * Hydr. Depth (ft)       *    5.54  *   19.21  *    4.59  *
* Conv. Total (cfs)      *5123006.0  * Conv. (cfs)           *1439789.0  *1929943.0  *1753274.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)       * 5020.58  *  384.63  * 8378.71  *
* Min Ch El (ft)         *  705.43  * Shear (lb/sq ft)       *    0.02  *    0.08  *    0.02  *
* Alpha                  *    5.73  * Stream Power (lb/ft s) *15975.74  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.03  * Cum Volume (acre-ft)   * 2813.97  * 1256.93  * 5063.26  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  473.36  *   68.93  * 1042.82  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************************
* E.G. Elev (ft)         *  726.37  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.13  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  726.24  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *19749.33  * 6683.04  *24843.89  *
* E.G. Slope (ft/ft)     *0.000266  * Area (sq ft)           *19749.33  * 6683.04  *24843.89  *
* Q Total (cfs)          *54360.98  * Flow (cfs)             *13392.50  *27142.13  *13826.35  *
* Top Width (ft)         *13667.93  * Top Width (ft)         * 4936.10  *  380.01  * 8351.83  *
* Vel Total (ft/s)       *    1.06  * Avg. Vel. (ft/s)       *    0.68  *    4.06  *    0.56  *
* Max Chl Dpth (ft)      *   20.81  * Hydr. Depth (ft)       *    4.00  *   17.59  *    2.97  *
* Conv. Total (cfs)      *3335586.0  * Conv. (cfs)           *821762.9  *1665439.0  *848383.6  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)       * 4936.17  *  384.63  * 8351.98  *
* Min Ch El (ft)         *  705.43  * Shear (lb/sq ft)       *    0.07  *    0.29  *    0.05  *
* Alpha                  *    7.50  * Stream Power (lb/ft s) *15975.74  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.12  * Cum Volume (acre-ft)   * 1798.01  * 1032.21  * 2384.02  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  438.79  *   68.45  *  867.34  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK25
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*****************************************************************************************************
* E.G. Elev (ft)         *  727.71  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.09  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.62  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *26605.61  * 7207.64  *36394.39  *
* E.G. Slope (ft/ft)     *0.000204  * Area (sq ft)           *26605.61  * 7207.64  *36394.39  *
* Q Total (cfs)          *68923.08  * Flow (cfs)             *19103.31  *26973.18  *22846.59  *
* Top Width (ft)         *13761.38  * Top Width (ft)         * 5005.51  *  380.01  * 8375.86  *
* Vel Total (ft/s)       *    0.98  * Avg. Vel. (ft/s)       *    0.72  *    3.74  *    0.63  *
* Max Chl Dpth (ft)      *   22.19  * Hydr. Depth (ft)       *    5.32  *   18.97  *    4.35  *
* Conv. Total (cfs)      *4826806.0  * Conv. (cfs)           *1337839.0  *1888980.0  *1599987.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)       * 5005.60  *  384.63  * 8376.07  *
* Min Ch El (ft)         *  705.43  * Shear (lb/sq ft)       *    0.07  *    0.24  *    0.06  *
* Alpha                  *    5.97  * Stream Power (lb/ft s) *15975.74  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)   * 2493.22  * 1151.21  * 3941.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  462.64  *   68.74  *  999.34  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************************
* E.G. Elev (ft)         *  728.65  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.07  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  728.58  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *31458.95  * 7574.01  *44474.64  *
* E.G. Slope (ft/ft)     *0.000174  * Area (sq ft)           *31458.95  * 7574.01  *44474.64  *
* Q Total (cfs)          *79649.91  * Flow (cfs)             *23160.45  *27049.65  *29439.80  *
* Top Width (ft)         *13823.61  * Top Width (ft)         * 5057.43  *  380.01  * 8386.17  *
* Vel Total (ft/s)       *    0.95  * Avg. Vel. (ft/s)       *    0.74  *    3.57  *    0.66  *
* Max Chl Dpth (ft)      *   23.15  * Hydr. Depth (ft)       *    6.22  *   19.93  *    5.30  *
* Conv. Total (cfs)      *6041420.0  * Conv. (cfs)           *1756713.0  *2051707.0  *2233000.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)       * 5057.53  *  384.63  * 8386.43  *
* Min Ch El (ft)         *  705.43  * Shear (lb/sq ft)       *    0.07  *    0.21  *    0.06  *
* Alpha                  *    5.11  * Stream Power (lb/ft s) *15975.74  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.08  * Cum Volume (acre-ft)   * 2983.56  * 1230.18  * 5071.45  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  473.29  *   68.81  * 1029.17  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)         *  731.12  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.03  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.09  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *44261.67  * 8525.50  *65523.19  *
* E.G. Slope (ft/ft)     *0.000084  * Area (sq ft)           *44261.67  * 8525.50  *65523.19  *
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* Q Total (cfs)          *89992.12  * Flow (cfs)              *28061.64  *22955.01  *38975.46  *
* Top Width (ft)         *13992.92  * Top Width (ft)          * 5178.18  *  380.01  * 8434.74  *
* Vel Total (ft/s)       *    0.76  * Avg. Vel. (ft/s)        *    0.63  *    2.69  *    0.59  *
* Max Chl Dpth (ft)      *   25.66  * Hydr. Depth (ft)        *    8.55  *   22.43  *    7.77  *
* Conv. Total (cfs)      *9797126.0  * Conv. (cfs)            *3054973.0  *2499031.0  *4243122.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)        * 5178.30  *  384.63  * 8435.06  *
* Min Ch El (ft)         *  705.43  * Shear (lb/sq ft)        *    0.05  *    0.12  *    0.04  *
* Alpha                  *    3.68  * Stream Power (lb/ft s) *15975.74  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.04  * Cum Volume (acre-ft)    * 4354.67  * 1474.46  * 8392.40  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  493.86  *   68.93  * 1057.07  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************
* E.G. Elev (ft)         *  731.98  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.03  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.94  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *48735.77  * 8851.75  *72768.69  *
* E.G. Slope (ft/ft)     *0.000080  * Area (sq ft)           *48735.77  * 8851.75  *72768.69  *
* Q Total (cfs)          *100471.50  * Flow (cfs)             *31697.75  *23728.95  *45044.80  *
* Top Width (ft)         *14073.18  * Top Width (ft)          * 5250.28  *  380.01  * 8442.90  *
* Vel Total (ft/s)       *    0.77  * Avg. Vel. (ft/s)        *    0.65  *    2.68  *    0.62  *
* Max Chl Dpth (ft)      *   26.51  * Hydr. Depth (ft)        *    9.28  *   23.29  *    8.62  *
* Conv. Total (cfs)      *11264660.0  * Conv. (cfs)           *3553886.0  *2660441.0  *5050330.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)        * 5250.41  *  384.63  * 8443.27  *
* Min Ch El (ft)         *  705.43  * Shear (lb/sq ft)        *    0.05  *    0.11  *    0.04  *
* Alpha                  *    3.37  * Stream Power (lb/ft s) *15975.74  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.03  * Cum Volume (acre-ft)    * 4785.54  * 1534.75  * 9315.16  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  499.11  *   68.93  * 1058.89  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************
* E.G. Elev (ft)         *  733.02  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.03  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  732.99  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *54262.56  * 9249.01  *81599.14  *
* E.G. Slope (ft/ft)     *0.000074  * Area (sq ft)           *54262.56  * 9249.01  *81599.14  *
* Q Total (cfs)          *113669.30  * Flow (cfs)             *36361.96  *24666.42  *52640.91  *
* Top Width (ft)         *14139.17  * Top Width (ft)          * 5308.35  *  380.01  * 8450.81  *
* Vel Total (ft/s)       *    0.78  * Avg. Vel. (ft/s)        *    0.67  *    2.67  *    0.65  *
* Max Chl Dpth (ft)      *   27.56  * Hydr. Depth (ft)        *   10.22  *   24.34  *    9.66  *
* Conv. Total (cfs)      *13190700.0  * Conv. (cfs)           *4219606.0  *2862403.0  *6108687.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)        * 5308.50  *  384.63  * 8451.25  *
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* Min Ch El (ft)         *  705.43  * Shear (lb/sq ft)        *    0.05  *    0.11  *    0.04  *
* Alpha                  *    3.06  * Stream Power (lb/ft s) *15975.74  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.03  * Cum Volume (acre-ft)    * 5319.56  * 1607.89  *10437.45  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  513.51  *   68.93  * 1060.94  *
*****************************************************************************************

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv   RS: 7129.48*

INPUT
Description:
Station Elevation Data    num=     388
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Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	772.58	30.34	771.63	30.56	771.62	30.66	771.62	60.8	770.37
64.73	770.25	98.41	769.07	132.02	768.71	132.87	768.71	181.73	768.52
197.4	768.23	200.02	768.19	201.01	768.17	234.56	767.71	235.07	767.7
242.19	767.6	268.59	767.16	271.62	767.1	275.99	766.99	302.03	766.42
302.63	766.41	332.9	765.65	363.14	764.09	370.7	763.94	393.36	763.35
404.73	763.1	405.42	763.07	423.6	762	438.77	761.17	439.15	761.16
472.05	759.67	473.55	759.61	477.05	759.44	484.07	759.06	506.84	758.22
507.62	758.2	514.3	757.95	540.88	757.09	541.69	757.05	574.91	755.36
604.58	754.72	605	754.71	608.06	754.65	642.72	753.83	642.99	753.82
643.89	753.8	677.02	752.83	677.96	752.8	695.7	752.32	711.06	751.84
745.09	750.11	756.17	749.89	757.63	749.84	779.13	749.12	786.41	748.91
846.09	746.9	846.87	746.87	847.2	746.86	877.11	745.77	880.09	745.6
882.37	745.46	907.34	743.7	915.27	743.33	916.44	743.29	936.18	742.66
937.58	742.62	961.69	741.87	1012.71	740.6	1017.38	740.51	1018.65	740.46
1028.28	740.19	1038.22	739.73	1051.42	739.23	1058.51	739	1084.11	738.34
1085.44	738.31	1088.75	738.22	1089.23	738.21	1114.74	737.45	1118.12	737.36
1118.97	737.33	1119.48	737.31	1120.85	737.26	1140.25	736.49	1149.21	736.18
1162.25	734.96	1179.45	733.88	1199.36	732.73	1209.68	731.53	1221.58	731.09
1239.92	730.57	1242.28	730.54	1270.15	730.1	1293.29	729.95	1318.8	729.68
1330.62	729.44	1344.3	729.35	1357.73	729.17	1360.85	729.12	1384.91	728.65
1390.13	728.57	1391.09	728.56	1395.32	728.5	1420.83	728.03	1421.31	728.02
1451.55	727.53	1481.79	726.74	1572.48	725.36	1573.88	725.33	1599.39	724.71
1602.72	724.62	1628.16	724.31	1630.01	724.28	1723.65	723.11	1753.89	722.5
1798.17	722.01	1800.19	721.98	1874.82	721.21	1905.06	720.66	1905.48	720.66
1907.72	720.63	1995.77	719.98	2025.99	719.6	2084.43	719.17	2145.89	718.77
2175.61	718.36	2231.32	718.04	2562.1	718.85	2591.83	719.05	2740.47	719.59
2879.66	719.88	3037.76	719.86	3097.21	719.54	3126.94	719.55	3156.68	719.79

3260.3	720.02 3570.05	721.02 3572.88	721.04 3840.44	721.74 3842.33	721.75
3872.36	721.68 3876.37	721.68 3914.47	721.33 3974.37	721.88 3978.48	721.95
3982.6	721.99 4012.51	722.16 4076.38	722.31 4080.58	722.33 4110.38	722.42
4420.94	723.09 5059.33	724 5060.46	723.99 5356.62	724.04 5504.5	723.95
5505.27	723.94 5508.09	723.95 5510.09	723.94 5594.46	723.93 5598.06	723.92
5891.75	723.8 5951.2	723.64 5952.56	723.64 6156.77	722.63 6292.91	722.6
6395.02	723.15 6429.06	723.21 6456.6	723.13 6461.64	721.69 6486.84	713.4
6488.03	713.34 6509.34	712.05 6514.43	711.72 6540.83	709.55 6545.95	709.23
6572.6	705.63 6789.67	705.26 6800.68	709.11 6819.88	713.16 6823.8	714.34
6839.08	718.98 6858.28	721.77 6914.9	721.24 6921.49	721.2 7016.3	721.24
7047.91	721.46 7079.51	721.8 7141.04	721.99 7142.72	721.99 7174.33	722.13
7521.97	722.6 8052.15	723.55 8369.92	723.94 8598.95	724.04 8753.29	723.72
8818.28	723.29 8821.01	723.28 8889.87	722.84 8915.76	722.68 8948.25	722.34
9045.73	721.96 9051.48	721.96 9054.15	721.95 9143.22	721.97 9208.21	722.35
9240.7	722.83 9306.78	723.22 9403.17	723.42 9598.14	722.78 9794.64	722.72
9956.54	722.48 9958.29	722.4910279.78	722.2310280.52	722.2210570.69	721.81
10573.32	721.810699.99	721.711060.38	721.811152.51	721.9911154.51	722
11157.87	72211181.42	722.0611184.84	722.0611190.36	722.0811190.58	722.08
11222.85	722.211255.36	722.5311420.66	723.3611475.75	723.4511478.63	723.47
11508.08	723.5911514.85	723.611515.31	723.61 11547.8	723.7411710.27	723.92
12380.82	723.212383.95	723.2112510.11	723.2612511.86	723.2512518.03	723.26
12522.63	723.2512620.12	723.2512620.83	723.2612623.57	723.2512646.55	723.27
12652.61	723.2512670.73	723.2512671.55	723.26 12672	723.2612897.99	723.48
12912.57	723.4612929.29	723.4113107.53	723.5213109.21	723.5113382.85	724.01
13673.75	724.1613803.05	724.1213900.03	723.9213932.35	723.72 13997	723.66
14061.64	723.6614223.26	724.0314255.59	724.2514352.56	724.5214359.17	724.52
14439.81	724.71 14471.5	724.94 14472.3	724.9514481.85	72514482.62	725.01
14534.58	725.17 14546.5	725.0314602.28	725.0414611.15	725.0714614.43	725.07
14634.77	725.1714641.04	725.1614643.47	725.214647.22	725.2814688.37	725.66
14720.88	725.8614740.44	726.2414764.74	725.514770.67	725.314772.76	725.32
14780.41	725.2914797.24	725.1414800.72	725.114805.09	724.9214829.73	724.17
14837.42	72414852.98	723.8714862.23	723.7514880.57	723.6614894.72	723.47
14902.06	723.3314927.22	722.76 14931.1	722.6614933.81	722.6314934.38	722.64
14960.41	722.6214966.71	722.6614987.03	724.7614999.03	724.8915017.58	724.86
15031.35	725 15057.2	724.5915058.73	724.5715063.68	724.7215081.79	724.19
15093.5	724.1515099.88	724.1715122.19	724.3215128.32	724.3915146.72	724.66
15154.68	724.715160.65	724.7715182.18	725.0915187.17	725.1415191.21	725.25
15192.98	725.2915216.91	725.9815219.67	726.0415225.29	726.5315242.62	727.81
15252.16	728.3715253.17	728.415257.62	728.6115284.66	729.4315289.95	729.62
15305.63	731.9615319.73	734.1115322.26	734.5215345.43	732.5115354.59	731.77
15359.64	732.2715382.14	734.0315383.18	734.1615386.91	734.5915412.86	738.87
15414.63	739.2315419.24	74015429.09	741.1715447.13	742.9315451.56	743.38
15470.24	74615473.95	746.5115483.88	747.815499.65	749.2415511.38	750.24
15512.12	750.3115516.21	750.7215519.33	751.0115533.52	752.4115533.87	752.45

15544.61	753.5415548.54	753.7415551.07	753.8415572.55	754.5715577.11	754.71
15580.85	754.815599.17	756.0215613.18	756.5415625.78	756.6915674.59	756.73
15677.82	756.6915679.02	756.6815679.59	756.6715698.49	756.2315710.15	756.03
15730.99	755.7515739.58	755.3915742.48	755.3315758.86	755.05 15774.8	754.3
15804.57	753.2215807.12	753.1415808.11	753.1315821.49	752.9315835.25	752.82
15837.06	752.8315838.71	752.8215839.44	752.815865.32	753.3315869.55	753.35
15871.77	753.3915881.74	753.6 15895.2	753.74		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.09	6456.6	.04	6858.28	.09

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
6456.6	6858.28	450.47	450.47	450.47	. .1	.3

CROSS SECTION OUTPUT Profile #PK2

* E.G. Elev (ft)	* 723.94	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.13	* Wt. n-Val.	* 0.090	* 0.040	* 0.090 *
* W.S. Elev (ft)	* 723.81	* Reach Len. (ft)	* 450.47	* 450.47	* 450.47 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	* 9635.57	* 5959.10	* 6052.96 *
* E.G. Slope (ft/ft)	*0.000221	* Area (sq ft)	* 9635.57	* 5959.10	* 6052.96 *
* Q Total (cfs)	*25945.95	* Flow (cfs)	* 4595.29	*19714.28	* 1636.37 *
* Top Width (ft)	*10317.82	* Top Width (ft)	* 3835.54	* 401.68	* 6080.60 *
* Vel Total (ft/s)	* 1.20	* Avg. Vel. (ft/s)	* 0.48	* 3.31	* 0.27 *
* Max Chl Dpth (ft)	* 18.55	* Hydr. Depth (ft)	* 2.51	* 14.84	* 1.00 *
* Conv. Total (cfs)	*1747260.0	* Conv. (cfs)	*309457.6	*1327606.0	*110197.2 *
* Length Wtd. (ft)	* 450.47	* Wetted Per. (ft)	* 3835.59	* 405.74	* 6080.70 *
* Min Ch El (ft)	* 705.26	* Shear (lb/sq ft)	* 0.03	* 0.20	* 0.01 *
* Alpha	* 5.82	* Stream Power (lb/ft s)	*15895.20	* 0.00	* 0.00 *
* Frctn Loss (ft)	* 0.10	* Cum Volume (acre-ft)	* 833.88	* 889.93	* 831.58 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 298.68	* 63.79	* 707.27 *

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK5

* E.G. Elev (ft)	* 727.86	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.03	* Wt. n-Val.	* 0.090	* 0.040	* 0.090 *
* W.S. Elev (ft)	* 727.83	* Reach Len. (ft)	* 450.47	* 450.47	* 450.47 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	*29304.09	* 7577.32	*38588.48 *
* E.G. Slope (ft/ft)	*0.000065	* Area (sq ft)	*29304.09	* 7577.32	*38588.48 *

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* Q Total (cfs)          *42918.92  * Flow (cfs)              *12667.16  *16009.21  *14242.55  *
* Top Width (ft)         *13810.30  * Top Width (ft)          * 5023.86  *  401.68  * 8384.76  *
* Vel Total (ft/s)       *    0.57  * Avg. Vel. (ft/s)        *    0.43  *    2.11  *    0.37  *
* Max Chl Dpth (ft)      *   22.57  * Hydr. Depth (ft)        *    5.83  *   18.86  *    4.60  *
* Conv. Total (cfs)      *5311768.0  * Conv. (cfs)            *1567723.0  *1981346.0  *1762699.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)        * 5023.95  *  405.74  * 8385.06  *
* Min Ch El (ft)         *  705.26  * Shear (lb/sq ft)        *    0.02  *    0.08  *    0.02  *
* Alpha                  *    5.46  * Stream Power (lb/ft s)  *15895.20  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.03  * Cum Volume (acre-ft)    * 2518.51  * 1180.00  * 4664.91  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  421.43  *   64.88  *  956.14  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)         *  726.25  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.12  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  726.13  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *20795.70  * 6891.27  *24288.01  *
* E.G. Slope (ft/ft)     *0.000254  * Area (sq ft)            *20795.70  * 6891.27  *24288.01  *
* Q Total (cfs)          *54360.98  * Flow (cfs)              *14285.58  *26974.72  *13100.68  *
* Top Width (ft)         *13689.05  * Top Width (ft)          * 4934.52  *  401.68  * 8352.85  *
* Vel Total (ft/s)       *    1.05  * Avg. Vel. (ft/s)        *    0.69  *    3.91  *    0.54  *
* Max Chl Dpth (ft)      *   20.87  * Hydr. Depth (ft)        *    4.21  *   17.16  *    2.91  *
* Conv. Total (cfs)      *3408764.0  * Conv. (cfs)            *895792.8  *1691479.0  *821492.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)        * 4934.59  *  405.74  * 8353.08  *
* Min Ch El (ft)         *  705.26  * Shear (lb/sq ft)        *    0.07  *    0.27  *    0.05  *
* Alpha                  *    7.13  * Stream Power (lb/ft s)  *15895.20  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.11  * Cum Volume (acre-ft)    * 1588.36  *  962.03  * 2129.97  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  387.75  *   64.41  *  780.96  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)         *  727.62  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.08  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.53  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *27786.93  * 7455.79  *36052.32  *
* E.G. Slope (ft/ft)     *0.000195  * Area (sq ft)            *27786.93  * 7455.79  *36052.32  *
* Q Total (cfs)          *68923.08  * Flow (cfs)              *20062.27  *26901.04  *21959.76  *
* Top Width (ft)         *13787.45  * Top Width (ft)          * 5005.19  *  401.68  * 8380.58  *
* Vel Total (ft/s)       *    0.97  * Avg. Vel. (ft/s)        *    0.72  *    3.61  *    0.61  *
* Max Chl Dpth (ft)      *   22.27  * Hydr. Depth (ft)        *    5.55  *   18.56  *    4.30  *
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* Conv. Total (cfs)      *4941430.0  * Conv. (cfs)            *1438362.0  *1928666.0  *1574402.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)        * 5005.28  *  405.74  * 8380.86  *
* Min Ch El (ft)         *  705.26  * Shear (lb/sq ft)        *    0.07  *    0.22  *    0.05  *
* Alpha                  *    5.73  * Stream Power (lb/ft s)  *15895.20  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)    * 2211.97  * 1075.39  * 3567.34  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  410.88  *   64.70  *  912.70  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************
* E.G. Elev (ft)         *  728.58  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.07  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  728.51  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *32701.78  * 7847.93  *44241.30  *
* E.G. Slope (ft/ft)     *0.000166  * Area (sq ft)            *32701.78  * 7847.93  *44241.30  *
* Q Total (cfs)          *79649.91  * Flow (cfs)              *24117.61  *27052.20  *28480.11  *
* Top Width (ft)         *13860.75  * Top Width (ft)          * 5061.88  *  401.68  * 8397.19  *
* Vel Total (ft/s)       *    0.94  * Avg. Vel. (ft/s)        *    0.74  *    3.45  *    0.64  *
* Max Chl Dpth (ft)      *   23.25  * Hydr. Depth (ft)        *    6.46  *   19.54  *    5.27  *
* Conv. Total (cfs)      *6185041.0  * Conv. (cfs)            *1872800.0  *2100680.0  *2211561.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)        * 5061.98  *  405.74  * 8397.50  *
* Min Ch El (ft)         *  705.26  * Shear (lb/sq ft)        *    0.07  *    0.20  *    0.05  *
* Alpha                  *    4.93  * Stream Power (lb/ft s)  *15895.20  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.07  * Cum Volume (acre-ft)    * 2651.81  * 1150.43  * 4612.72  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  420.97  *   64.76  *  942.38  *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************
* E.G. Elev (ft)         *  731.08  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.03  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.05  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *45792.36  * 8868.68  *65655.39  *
* E.G. Slope (ft/ft)     *0.000080  * Area (sq ft)            *45792.36  * 8868.68  *65655.39  *
* Q Total (cfs)          *89992.12  * Flow (cfs)              *28771.70  *23083.27  *38137.16  *
* Top Width (ft)         *14076.53  * Top Width (ft)          * 5233.60  *  401.68  * 8441.25  *
* Vel Total (ft/s)       *    0.75  * Avg. Vel. (ft/s)        *    0.63  *    2.60  *    0.58  *
* Max Chl Dpth (ft)      *   25.79  * Hydr. Depth (ft)        *    8.75  *   22.08  *    7.78  *
* Conv. Total (cfs)      *10040910.0  * Conv. (cfs)           *3210216.0  *2575527.0  *4255172.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)        * 5233.72  *  405.74  * 8441.69  *
* Min Ch El (ft)         *  705.26  * Shear (lb/sq ft)        *    0.04  *    0.11  *    0.04  *
* Alpha                  *    3.59  * Stream Power (lb/ft s)  *15895.20  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.04  * Cum Volume (acre-ft)    * 3889.03  * 1384.52  * 7714.12  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  440.03  *   64.88  *  969.81  *
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CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************
* E.G. Elev (ft)          *  731.94  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.03  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.91  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *50305.65  * 9214.39  *72923.11  *
* E.G. Slope (ft/ft)      *0.000076  * Area (sq ft)            *50305.65  * 9214.39  *72923.11  *
* Q Total (cfs)           *100471.50  * Flow (cfs)              *32569.13  *23861.40  *44040.97  *
* Top Width (ft)          *14102.04  * Top Width (ft)          * 5250.19  *  401.68  * 8450.17  *
* Vel Total (ft/s)        *    0.76  * Avg. Vel. (ft/s)        *    0.65  *    2.59  *    0.60  *
* Max Chl Dpth (ft)       *   26.65  * Hydr. Depth (ft)        *    9.58  *   22.94  *    8.63  *
* Conv. Total (cfs)       *11558260.0  * Conv. (cfs)            *3746758.0  *2745019.0  *5066481.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5250.34  *  405.74  * 8450.69  *
* Min Ch El (ft)          *  705.26  * Shear (lb/sq ft)        *    0.05  *    0.11  *    0.04  *
* Alpha                   *    3.28  * Stream Power (lb/ft s) *15895.20  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.03  * Cum Volume (acre-ft)    * 4273.43  * 1441.33  * 8561.84  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  444.81  *   64.88  *  971.54  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************
* E.G. Elev (ft)          *  732.99  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.03  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.96  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *55810.75  * 9635.19  *81792.02  *
* E.G. Slope (ft/ft)      *0.000071  * Area (sq ft)            *55810.75  * 9635.19  *81792.02  *
* Q Total (cfs)           *113669.30  * Flow (cfs)              *37359.47  *24834.40  *51475.43  *
* Top Width (ft)          *14144.93  * Top Width (ft)          * 5261.19  *  401.68  * 8482.06  *
* Vel Total (ft/s)        *    0.77  * Avg. Vel. (ft/s)        *    0.67  *    2.58  *    0.63  *
* Max Chl Dpth (ft)       *   27.70  * Hydr. Depth (ft)        *   10.61  *   23.99  *    9.64  *
* Conv. Total (cfs)       *13534980.0  * Conv. (cfs)            *4448518.0  *2957116.0  *6129351.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5261.39  *  405.74  * 8482.74  *
* Min Ch El (ft)          *  705.26  * Shear (lb/sq ft)        *    0.05  *    0.10  *    0.04  *
* Alpha                   *    2.98  * Stream Power (lb/ft s) *15895.20  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.03  * Cum Volume (acre-ft)    * 4750.41  * 1510.25  * 9592.61  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  458.86  *   64.88  *  973.39  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
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CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 6679.01*

INPUT
Description:
Station Elevation Data num= 395

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	770.97	.33	770.96	29.89	769.98	30.1	769.97	30.21	769.97
59.89	768.73	63.42	768.62	63.77	768.61	96.95	767.3	130.05	767.01
179.02	766.99	231.06	766.49	231.57	766.48	238.59	766.42	264.59	766.12
267.57	766.07	268.37	766.06	271.88	765.99	327.94	764.93	332.25	764.76
357.72	763.68	365.18	763.55	387.5	763.02	398.7	762.79	399.37	762.75
432.23	760.59	432.61	760.57	465.02	758.92	466.5	758.85	476.85	758.26
499.29	757.25	500.06	757.22	506.63	756.92	532.82	755.83	533.62	755.78
566.35	753.61	595.58	752.73	595.98	752.72	600.74	752.58	633.14	751.5
633.4	751.49	634.3	751.45	666.93	750.2	667.86	750.16	670.95	750.04
685.34	749.53	700.46	748.92	732.99	746.83	733.99	746.78	744.9	746.52
746.34	746.46	767.52	745.72	768.54	745.69	771.47	745.59	774.69	745.5
833.48	743.52	834.25	743.5	834.58	743.48	864.04	742.44	868.11	742.23
869.22	742.16	889.04	740.82	893.82	740.48	901.63	740.09	902.78	740.06
935.16	739.08	953.38	738.59	997.62	737.58	1002.22	737.49	1003.48	737.44
1012.96	737.15	1022.75	736.73	1035.75	736.24	1042.74	736.02	1067.96	735.37
1069.27	735.34	1072.52	735.25	1073	735.24	1098.13	734.51	1101.45	734.43
1102.3	734.4	1102.79	734.38	1123.26	733.64	1132.09	733.36	1136.32	733.01
1144.94	732.34	1161.87	731.42	1181.49	730.44	1191.65	729.44	1198.63	729.19
1204.83	729.01	1221.44	728.6	1251.22	728.18	1268.93	728.06	1270.44	728.04
1274.02	728.02	1299.15	727.77	1310.79	727.56	1324.27	727.47	1337.5	727.3
1340.57	727.25	1364.28	726.81	1369.42	726.73	1370.36	726.72	1399.66	726.26
1400.13	726.25	1404.55	726.19	1406.2	726.16	1429.92	725.82	1459.71	725.15
1469.91	725.02	1550.43	723.88	1578.84	723.28	1697.97	721.98	1727.76	721.48
1737.88	721.38	1739.84	721.35	1771.38	721.07	1773.37	721.04	1846.89	720.43
1876.67	719.98	1877.08	719.98	1966.03	719.44	1995.8	719.14	2053.37	718.8
2055.34	718.78	2113.91	718.47	2140.01	718.19	2143.2	718.14	2198.07	717.89
2523.92	718.54	2553.21	718.7	2699.63	719.13	2836.75	719.36	2992.49	719.34
3051.06	719.1	3080.35	719.1	3138.93	719.39	3178.23	719.42	3245.21	719.62
3248.63	719.64	3412.7	720.14	3416.27	720.16	3516.85	720.45	3519.64	720.47
3783.22	721.17	3785.08	721.17	3818.61	721.06	3822.58	721.03	3852.14	720.65
3856.14	720.61	3915.15	721.26	3919.19	721.34	3923.26	721.39	3952.72	721.59
4049.14	721.85	4053.31	721.85	4480.55	722.75	4484.58	722.75	4489.18	722.77
5013.23	723.63	5014.08	723.64	5246.33	723.8	5248.74	723.81	5478.57	723.88

5481.81	723.89	5686.8	724	5803.95	724.02	5855.98	723.9	5863.86	723.9
5869.19	723.87	5897.39	723.79	6065.03	722.76	6126.1	722.66	6199.14	722.75
6232.67	723.07	6333.26	723.55	6360.39	723.46	6365.62	722.3	6391.79	715.17
6393.04	715.1	6415.17	713.49	6420.46	713.08	6447.87	710.38	6453.19	709.97
6480.87	705.48	6706.33	705.09	6718.75	709.25	6740.41	713.21	6744.84	714.45
6762.07	719.37	6766.52	719.84	6783.73	721.73	6840.32	721.07	6846.9	721.02
6941.65	721.05	6973.24	721.31	7004.82	721.73	7036.4	721.9	7061.2	721.93
7066.31	721.95	7067.99	721.95	7131.16	722.16	7446.98	722.47	7819.82	723.1
8294.38	723.56	8561.03	723.66	8677.49	723.42	8684.76	723.38	8686.9	723.36
8742.43	723.07	8745.16	723.05	8839.85	722.56	8872.32	722.27	8969.74	721.96
8975.48	721.96	8978.15	721.95	9067.16	721.96	9132.11	722.27	9164.58	722.65
9230.61	722.97	9326.94	723.13	9485.75	722.68	9489.3	722.66	9879.95	722.38
9881.69	722.39	9936.73	722.34	9943.92	722.35	10203.71	722.17	10208.46	722.15
10493.69	721.74	10496.31	721.73	10622.9	721.62	11077.11	721.87	11078.33	721.88
11145.42	722.01	11177.9	722.26	11237.01	722.48	11242.84	722.53	11307.79	722.83
11309.51	722.85	11340.26	723.02	11398.15	723.11	1401.02	723.12	11430.45	723.24
11470.15	723.36	11688.87	723.37	11976.75	723.15	11979.58	723.16	12302.61	722.95
12353.77	723.08	12568.16	723.23	12574.22	723.22	12754.84	723.51	12819.44	723.68
12916.35	723.68	12948.66	723.82	13098.49	724.05	13110.16	724.11	3400.89	724.64
13691.6	724.68	13820.81	724.41	13853.12	724.16	13885.41	724.06	13982.32	724.08
14143.83	724.55	14176.13	724.82	14273.04	725.15	14279.65	725.15	14360.23	725.4
14391.91	725.62	14392.71	725.63	14402.25	725.69	14403.02	725.69	14454.95	725.83
14466.86	725.63	14522.59	725.57	14531.46	725.58	14534.74	725.57	14555.07	725.64
14561.34	725.63	14563.76	725.67	14567.51	725.77	14596.06	726.03	14608.63	726.19
14628.37	726.29	14641.12	726.41	4660.67	726.85	14684.96	725.89	14690.88	725.64
14692.97	725.66	14700.61	725.63	14717.43	725.46	14720.91	725.41	4725.27	725.19
14732.01	724.97	14749.9	724.33	14757.58	724.11	14773.13	723.93	14777.21	723.85
14782.37	723.77	14800.7	723.58	14814.84	723.28	14822.18	723.08	14847.33	722.32
14851.2	722.19	14853.9	722.16	14854.48	722.17	14880.5	722.14	14886.78	722.2
14907.1	724.82	14919.09	724.97	14937.63	724.92	14951.38	725.09	14977.21	724.56
14978.75	724.54	14982.71	724.68	14983.69	724.71	15001.79	72	415013.49	723.92
15019.87	723.92	15042.16	724.03	15048.29	724.08	15066.68	724.33	15074.63	724.33
15080.6	724.37	15102.11	724.6	15107.1	724.63	15112.9	724.73	15139.58	725.36
15145.2	725.75	15152.38	726.12	15162.51	726.69	15172.05	727.11	5173.06	727.12
15177.5	727.31	15204.52	727.89	15209.81	728.03	15225.48	730.67	15232.57	731.9
15236.99	732.65	15239.58	733.11	5242.11	733.55	15265.26	730.54	15274.41	729.39
15279.45	729.89	15301.94	731.59	15302.98	731.71	15306.71	732.08	15332.65	736.32
15334.41	736.71	5339.01	737.54	15348.86	738.76	15371.32	740.96	15389.98	743.73
15393.69	744.27	15403.61	745.65	15419.38	747.06	15431.1	748.06	15431.84	748.13
15435.92	748.55	15439.04	748.84	15453.22	750.25	15453.57	750.29	15464.31	751.38
15468.23	751.61	15470.76	751.73	15492.23	752.62	15500.52	752.92	15518.83	754.48
15532.83	755.15	15545.42	755.38	15561.73	755.48	15594.2	755.61	15597.43	755.6
15598.62	755.59	15618.08	755.26	15626.67	755.14	15650.56	754.91	15659.14	754.63
15662.04	754.58	15678.41	754.38	15694.34	753.61	15718.96	752.71	15726.64	752.47

15741	752.34	15754.75	752.29	15756.56	752.31	15758.21	752.31	15758.94	752.3
15784.8	753.28	15789.03	753.35	15791.24	753.41	15801.21	753.72	15814.67	753.97

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.09	6360.39	.04	6783.73	.09

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
6360.39	6783.73	450.47	450.47	450.47	.1	.3

CROSS SECTION OUTPUT Profile #PK2

E.G. Elev (ft)	723.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	723.72	Reach Len. (ft)	450.47	450.47	450.47
Crit W.S. (ft)		Flow Area (sq ft)	10832.45	6115.93	6509.46
E.G. Slope (ft/ft)	0.000205	Area (sq ft)	10832.45	6115.93	6509.46
Q Total (cfs)	25945.95	Flow (cfs)	5178.85	19186.35	1580.74
Top Width (ft)	10703.73	Top Width (ft)	4026.60	423.34	6253.79
Vel Total (ft/s)	1.11	Avg. Vel. (ft/s)	0.48	3.14	0.24
Max Chl Dpth (ft)	18.63	Hydr. Depth (ft)	2.69	14.45	1.04
Conv. Total (cfs)	1811934.0	Conv. (cfs)	361665.0	1339878.0	110391.1
Length Wtd. (ft)	450.47	Wetted Per. (ft)	4026.65	427.03	6253.93
Min Ch El (ft)	705.09	Shear (lb/sq ft)	0.03	0.18	0.01
Alpha	5.99	Stream Power (lb/ft s)	15814.67	0.00	0.00
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	728.05	827.50	766.63
C & E Loss (ft)	0.01	Cum SA (acres)	258.03	59.52	643.49

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK5

E.G. Elev (ft)	727.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	727.81	Reach Len. (ft)	450.47	450.47	450.47
Crit W.S. (ft)		Flow Area (sq ft)	30853.50	7845.87	38660.29
E.G. Slope (ft/ft)	0.000061	Area (sq ft)	30853.50	7845.87	38660.29
Q Total (cfs)	42918.92	Flow (cfs)	13277.40	15859.10	13782.43
Top Width (ft)	13905.38	Top Width (ft)	5065.07	423.34	8416.98
Vel Total (ft/s)	0.55	Avg. Vel. (ft/s)	0.43	2.02	0.36
Max Chl Dpth (ft)	22.72	Hydr. Depth (ft)	6.09	18.53	4.59
Conv. Total (cfs)	5492044.0	Conv. (cfs)	1699019.0	2029381.0	1763644.0

```
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5065.16  *  427.03  * 8417.35  *
* Min Ch El (ft)          *  705.09  * Shear (lb/sq ft)        *    0.02  *    0.07  *    0.02  *
* Alpha                   *    5.22  * Stream Power (lb/ft s) *15814.67  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.03  * Cum Volume (acre-ft)   * 2207.45  * 1100.25  * 4265.48  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  369.26  *   60.62  *  869.26  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK10
**********************************************************************************************
* E.G. Elev (ft)          *  726.13  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.11  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  726.02  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *21914.90  * 7089.42  *23704.74  *
* E.G. Slope (ft/ft)      *0.000244  * Area (sq ft)           *21914.90  * 7089.42  *23704.74  *
* Q Total (cfs)           *54360.98  * Flow (cfs)             *15237.35  *26749.99  *12373.63  *
* Top Width (ft)          *13648.04  * Top Width (ft)         * 4944.51  *  423.34  * 8280.19  *
* Vel Total (ft/s)        *    1.03  * Avg. Vel. (ft/s)       *    0.70  *    3.77  *    0.52  *
* Max Chl Dpth (ft)       *   20.93  * Hydr. Depth (ft)       *    4.43  *   16.75  *    2.86  *
* Conv. Total (cfs)       *3482918.0  * Conv. (cfs)           *976259.8  *1713877.0  *792780.9  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 4944.58  *  427.03  * 8280.50  *
* Min Ch El (ft)          *  705.09  * Shear (lb/sq ft)        *    0.07  *    0.25  *    0.04  *
* Alpha                   *    6.77  * Stream Power (lb/ft s) *15814.67  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.11  * Cum Volume (acre-ft)   * 1367.52  *  889.74  * 1881.82  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  336.67  *   60.15  *  694.96  *
**********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
**********************************************************************************************
* E.G. Elev (ft)          *  727.53  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.08  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.45  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *29046.57  * 7694.46  *35652.81  *
* E.G. Slope (ft/ft)      *0.000186  * Area (sq ft)           *29046.57  * 7694.46  *35652.81  *
* Q Total (cfs)           *68923.08  * Flow (cfs)             *21053.39  *26811.29  *21058.40  *
* Top Width (ft)          *13858.25  * Top Width (ft)         * 5034.60  *  423.34  * 8400.31  *
* Vel Total (ft/s)        *    0.95  * Avg. Vel. (ft/s)       *    0.72  *    3.48  *    0.59  *
* Max Chl Dpth (ft)       *   22.36  * Hydr. Depth (ft)       *    5.77  *   18.18  *    4.24  *
* Conv. Total (cfs)       *5050161.0  * Conv. (cfs)           *1542633.0  *1964528.0  *1543000.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5034.68  *  427.03  * 8400.68  *
* Min Ch El (ft)          *  705.09  * Shear (lb/sq ft)        *    0.07  *    0.21  *    0.05  *
* Alpha                   *    5.51  * Stream Power (lb/ft s) *15814.67  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.08  * Cum Volume (acre-ft)   * 1918.10  *  997.05  * 3196.58  *
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* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  358.97  *   60.43  *  825.93  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK50
**********************************************************************************************
* E.G. Elev (ft)          *  728.50  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.06  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  728.44  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *34066.34  * 8112.63  *43969.32  *
* E.G. Slope (ft/ft)      *0.000159  * Area (sq ft)           *34066.34  * 8112.63  *43969.32  *
* Q Total (cfs)           *79649.91  * Flow (cfs)             *25063.14  *27054.89  *27531.88  *
* Top Width (ft)          *13979.32  * Top Width (ft)         * 5127.48  *  423.34  * 8428.50  *
* Vel Total (ft/s)        *    0.92  * Avg. Vel. (ft/s)       *    0.74  *    3.33  *    0.63  *
* Max Chl Dpth (ft)       *   23.35  * Hydr. Depth (ft)       *    6.64  *   19.16  *    5.22  *
* Conv. Total (cfs)       *6316898.0  * Conv. (cfs)           *1987715.0  *2145677.0  *2183506.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5127.57  *  427.03  * 8428.91  *
* Min Ch El (ft)          *  705.09  * Shear (lb/sq ft)        *    0.07  *    0.19  *    0.05  *
* Alpha                   *    4.78  * Stream Power (lb/ft s) *15814.67  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.07  * Cum Volume (acre-ft)   * 2306.57  * 1067.91  * 4156.61  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  368.28  *   60.50  *  855.38  *
**********************************************************************************************

CROSS SECTION OUTPUT  Profile #PK100
**********************************************************************************************
* E.G. Elev (ft)          *  731.05  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.03  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.02  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *47387.44  * 9203.93  *65741.99  *
* E.G. Slope (ft/ft)      *0.000076  * Area (sq ft)           *47387.44  * 9203.93  *65741.99  *
* Q Total (cfs)           *89992.12  * Flow (cfs)             *29782.06  *23075.89  *37134.16  *
* Top Width (ft)          *14090.27  * Top Width (ft)         * 5190.43  *  423.34  * 8476.49  *
* Vel Total (ft/s)        *    0.74  * Avg. Vel. (ft/s)       *    0.63  *    2.51  *    0.56  *
* Max Chl Dpth (ft)       *   25.93  * Hydr. Depth (ft)       *    9.13  *   21.74  *    7.76  *
* Conv. Total (cfs)       *10326730.0  * Conv. (cfs)          *3417535.0  *2647992.0  *4261199.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5190.60  *  427.03  * 8477.29  *
* Min Ch El (ft)          *  705.09  * Shear (lb/sq ft)        *    0.04  *    0.10  *    0.04  *
* Alpha                   *    3.46  * Stream Power (lb/ft s) *15814.67  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.03  * Cum Volume (acre-ft)   * 3407.22  * 1291.07  * 7034.70  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *  386.13  *   60.62  *  882.34  *
**********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK200
```

E.G. Elev (ft)	731.91	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.03	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	731.88	Reach Len. (ft)	450.47	450.47	450.47	
Crit W.S. (ft)		Flow Area (sq ft)	51870.77	9569.00	73061.58	
E.G. Slope (ft/ft)	0.000072	Area (sq ft)	51870.77	9569.00	73061.58	
Q Total (cfs)	100471.50	Flow (cfs)	33570.90	23922.76	42977.84	
Top Width (ft)	14128.72	Top Width (ft)	5206.96	423.34	8498.43	
Vel Total (ft/s)	0.75	Avg. Vel. (ft/s)	0.65	2.50	0.59	
Max Chl Dpth (ft)	26.79	Hydr. Depth (ft)	9.96	22.60	8.60	
Conv. Total (cfs)	11865990.0	Conv. (cfs)	3964825.0	2825350.0	5075813.0	
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5207.15	427.03	8499.39	
Min Ch El (ft)	705.09	Shear (lb/sq ft)	0.04	0.10	0.04	
Alpha	3.18	Stream Power (lb/ft s)	15814.67	0.00	0.00	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	3745.11	1344.21	7807.00	
C & E Loss (ft)	0.00	Cum SA (acres)	390.74	60.62	883.91	

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK500

E.G. Elev (ft)	732.95	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.03	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	732.93	Reach Len. (ft)	450.47	450.47	450.47	
Crit W.S. (ft)		Flow Area (sq ft)	57344.96	10013.32	81992.80	
E.G. Slope (ft/ft)	0.000067	Area (sq ft)	57344.96	10013.32	81992.80	
Q Total (cfs)	113669.30	Flow (cfs)	38334.47	24978.31	50356.52	
Top Width (ft)	14166.22	Top Width (ft)	5223.02	423.34	8519.86	
Vel Total (ft/s)	0.76	Avg. Vel. (ft/s)	0.67	2.49	0.61	
Max Chl Dpth (ft)	27.84	Hydr. Depth (ft)	10.98	23.65	9.62	
Conv. Total (cfs)	13867720.0	Conv. (cfs)	4676828.0	3047369.0	6143525.0	
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5223.24	427.03	8521.06	
Min Ch El (ft)	705.09	Shear (lb/sq ft)	0.05	0.10	0.04	
Alpha	2.91	Stream Power (lb/ft s)	15814.67	0.00	0.00	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	4165.32	1408.65	8745.73	
C & E Loss (ft)	0.00	Cum SA (acres)	404.64	60.62	885.48	

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 6228.54*

INPUT
Description:
Station Elevation Data num= 391

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	769.35	.32	769.34	29.44	768.33	29.65	768.32	29.75	768.32
58.98	767.1	62.46	766.98	62.8	766.97	95.48	765.54	128.08	765.31
128.91	765.31	176.31	765.45	194.06	765.37	195.01	765.36	227.57	765.27
228.07	765.26	260.59	765.08	263.53	765.05	293.03	764.67	293.61	764.66
322.98	764.22	326.02	764.12	327.23	764.09	352.31	763.27	359.65	763.17
392.67	762.48	393.33	762.44	425.69	760	426.07	759.98	459.44	758.09
469.64	757.45	491.74	756.27	492.49	756.24	498.97	755.89	524.76	754.58
525.55	754.52	528.31	754.28	557.78	751.85	584.38	750.83	586.57	750.74
586.97	750.72	589.94	750.61	623.57	749.16	623.82	749.15	624.7	749.11
656.85	747.56	689.87	746.01	721.9	743.51	722.89	743.44	733.63	743.14
735.05	743.08	755.91	742.32	756.92	742.29	759.8	742.19	762.97	742.1
788.93	741.22	792.3	741.12	820.87	740.14	821.63	740.12	821.95	740.11
850.97	739.11	853.86	738.98	856.07	738.86	880.3	737.26	888	736.86
921.02	735.92	938.96	735.48	982.53	734.55	987.06	734.47	988.3	734.42
997.64	734.12	1007.28	733.72	1020.08	733.24	1026.96	733.03	1051.8	732.4
1053.09	732.36	1056.3	732.28	1056.77	732.27	1084.79	731.49	1085.63	731.47
1086.11	731.45	1087.45	731.4	1114.96	730.53	1119.13	730.25	1127.62	729.72
1163.62	728.14	1173.63	727.35	1180.5	727.13	1185.18	727	1202.96	726.63
1232.29	726.25	1249.73	726.13	1251.22	726.11	1254.75	726.09	1279.5	725.85
1290.97	725.68	1304.24	725.58	1317.26	725.43	1348.7	724.89	1349.63	724.88
1350.29	724.87	1353.74	724.83	1375.93	724.52	1378.49	724.49	1378.96	724.48
1408.29	724.1	1437.63	723.56	1447.67	723.44	1482.37	722.92	1525.62	722.45
1526.98	722.42	1554.96	721.94	1672.29	720.85	1678.6	720.76	1680.5	720.74
1701.62	720.45	1744.58	720.13	1746.54	720.11	1818.95	719.64	1848.29	719.31
1848.69	719.31	1936.29	718.9	1965.61	718.67	2081.93	718.18	2107.64	717.97
2110.78	717.93	2164.83	717.74	2485.74	718.23	2514.59	718.35	2793.84	718.85
2947.23	718.83	3004.91	718.65	3033.75	718.65	3062.6	718.8	3166.47	718.95
3397.61	719.69	3401.16	719.69	3463.65	719.88	3466.4	719.9	3552.93	720.14
3559.02	720.17	3562.72	720.17	3568.91	720.2	3725.99	720.59	3727.82	720.59
3760.85	720.45	3764.76	720.41	3793.87	719.94	3797.81	719.89	3826.89	720.21
3855.93	720.65	3859.91	720.74	3892.93	721.01	3954.9	721.18	3958.97	721.2
3987.89	721.28	4764.34	722.96	4779.64	722.98	4784.51	723	5043.56	723.46
5048.68	723.48	5166.97	723.58	5169.34	723.59	5283.51	723.71	5285.74	723.72
5338.52	723.77	5340.46	723.78	5341.2	723.77	5343.93	723.78	5600.78	724.13
5605.82	724.12	5676.09	724.26	5808.18	724.05	5841.2	723.76	5940.27	723.18
5973.29	722.89	6072.35	722.82	6105.37	722.91	6138.39	723.29	6204.44	723.76

```
 6237.46  723.88 6264.18  723.79 6269.61  722.92 6296.75  716.94 6298.04  716.85
    6321  714.92 6326.48  714.44 6354.92   711.2 6360.44  710.72 6389.15  705.33
    6623  704.92 6636.83   709.4 6660.95  713.25 6665.88  714.56 6685.07  719.75
 6690.02  720.14 6709.19   721.7 6765.74   720.9 6772.32  720.84    6867  720.86
 6873.68  720.91 6898.57  721.17 6930.13  721.67 6961.69  721.85 6991.57   721.9
 7056.38  722.12    7372  722.34 7744.59  722.84 8405.61   723.3 8408.31  723.31
 8536.16  723.25    8537  723.26 8608.96   723.1 8611.09  723.08 8763.94  722.43
 8796.39  722.21 8893.74  721.96 8899.49  721.96 8902.15  721.95  8991.1  721.96
 9056.01  722.19 9088.46  722.48 9154.44  722.72 9250.71  722.84 9445.41  722.45
 10126.9  722.1110131.64  722.0910255.28  721.83 10501.5  721.5611067.98  721.81
11265.52  722.6911320.54  722.7411323.42  722.7611352.83  722.8911392.49  722.97
11637.63  722.8511642.67  722.8611898.76  722.7711901.59  722.78 12224.4   722.7
12227.53  722.7212275.53  722.89 12515.2  723.2212592.45  723.4712593.19  723.47
12676.33  723.6412708.61  723.81 12720.8  723.83   12723  723.8412837.73  723.95
12870.02  724.13 13063.7  724.5813072.91  724.5813160.54  724.8813321.95  725.17
13612.47  725.22 13741.6  724.8913773.88  724.5913806.15  724.4813830.27  724.52
13838.44   724.513843.72  724.52   13903  724.49 14064.4  725.0614096.68  725.39
14193.53  725.7914200.13  725.7914280.66  726.0914312.31  726.3114313.11  726.32
14322.64  726.3714323.42  726.3814375.31  726.4914387.21  726.2414419.49   726.1
14442.91   726.114446.71  726.1114451.77   726.114455.05  726.0814470.32  726.12
14481.63  726.0914484.05  726.14 14487.8  726.2514516.33  726.5414528.89  726.72
14548.61  726.8114561.36  726.93 14580.9  727.4514611.09  725.9814613.17  726.01
14620.81  725.9714637.62  725.77 14641.1  725.7114645.46  725.4714652.19  725.22
14670.07  724.4914677.74  724.2214693.28  723.9914710.02  723.6514720.84   723.5
14723.04  723.4314734.97  723.08 14742.3  722.83 14771.3  721.73   14774  721.69
14800.58  721.6614806.86  721.7314825.71  724.6514827.16  724.8814839.14  725.05
14857.67  724.9914871.42  725.1814898.76   724.5 14903.7   724.714921.79  723.81
14933.48  723.6814935.99  723.6814939.85  723.6614962.13  723.7414968.26  723.78
14986.64  723.9914994.58  723.9715000.54  723.9815022.05  724.1115027.04  724.12
15032.83  724.1815059.49  724.67 15065.1  724.9615072.28   725.2 15082.4  725.58
15091.94  725.8315092.95  725.8415097.39  726.0115129.67  726.4415145.33  729.37
15156.84  731.5915159.42  732.0815161.95  732.5815185.08  728.5715194.23  727.01
15199.27  727.5215221.74  729.1615222.78  729.2615226.51  729.5815252.43  733.78
15254.19  734.1715258.79  735.0915268.63  736.3615284.72  737.9115291.07  738.54
15309.72  741.4615313.43  742.0315323.35  743.49 15339.1  744.8915350.81  745.88
15351.55  745.9615355.63  746.3815358.75  746.6715372.93   748.115373.27  748.14
   15384  749.2215387.92  749.4915390.45  749.6215414.84  750.8115416.45  750.88
15420.19  751.0315438.49  752.9315452.48  753.7715465.06  754.0715491.64  754.33
 15513.8   754.515518.79   754.515546.25   754.215549.32  754.18 15556.3  754.16
15570.13  754.0615578.71  753.86 15581.6  753.8315597.97  753.7215613.88  752.91
15638.49  752.0315646.16  751.7915647.14  751.7915674.25  751.7515676.06  751.79
15677.71  751.8115678.44  751.8115704.28  753.2215708.51  753.3415720.68  753.84
15734.13   754.2
```



```
Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .09 6264.18     .04 6709.19     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       6264.18 6709.19           450.47  450.47  450.47            .1        .3

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  723.74  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.09  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  723.65  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *12231.00  * 6265.50  * 7254.27  *
* E.G. Slope (ft/ft)      *0.000183  * Area (sq ft)            *12231.00  * 6265.50  * 7254.27  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              * 5846.67  *18277.30  * 1821.98  *
* Top Width (ft)          *10642.57  * Top Width (ft)          * 4120.60  *  444.13  * 6077.85  *
* Vel Total (ft/s)        *    1.01  * Avg. Vel. (ft/s)        *    0.48  *    2.92  *    0.25  *
* Max Chl Dpth (ft)       *   18.73  * Hydr. Depth (ft)        *    2.97  *   14.11  *    1.19  *
* Conv. Total (cfs)       *1919076.0  * Conv. (cfs)            *432444.9  *1351869.0  *134761.9  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 4120.65  *  447.60  * 6078.05  *
* Min Ch El (ft)          *  704.92  * Shear (lb/sq ft)        *    0.03  *    0.16  *    0.01  *
* Alpha                   *    5.96  * Stream Power (lb/ft s)  *15734.13  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.08  * Cum Volume (acre-ft)    *  608.80  *  763.48  *  695.46  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *  215.90  *   55.04  *  579.73  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)          *  727.81  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.02  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.78  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *32595.39  * 8105.53  *38825.33  *
* E.G. Slope (ft/ft)      *0.000057  * Area (sq ft)            *32595.39  * 8105.53  *38825.33  *
* Q Total (cfs)           *42918.92  * Flow (cfs)              *13956.71  *15607.41  *13354.80  *
* Top Width (ft)          *13981.89  * Top Width (ft)          * 5096.04  *  445.01  * 8440.84  *
* Vel Total (ft/s)        *    0.54  * Avg. Vel. (ft/s)        *    0.43  *    1.93  *    0.34  *
* Max Chl Dpth (ft)       *   22.86  * Hydr. Depth (ft)        *    6.40  *   18.21  *    4.60  *
* Conv. Total (cfs)       *5702309.0  * Conv. (cfs)            *1854322.0  *2073637.0  *1774350.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5096.15  *  448.49  * 8441.54  *
* Min Ch El (ft)          *  704.92  * Shear (lb/sq ft)        *    0.02  *    0.06  *    0.02  *
* Alpha                   *    4.96  * Stream Power (lb/ft s)  *15734.13  *    0.00  *    0.00  *
```

```
* Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)   * 1879.38  * 1017.77  * 3864.82  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  316.72  *   56.13  *  782.09  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************************
* E.G. Elev (ft)         *  726.02  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.10  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  725.92  * Reach Len. (ft)       *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *23173.67  * 7277.41  *23326.05  *
* E.G. Slope (ft/ft)     *0.000230  * Area (sq ft)          *23173.67  * 7277.41  *23326.05  *
* Q Total (cfs)          *54360.98  * Flow (cfs)            *16134.52  *26258.32  *11968.15  *
* Top Width (ft)         *13433.97  * Top Width (ft)        * 4992.16  *  445.01  * 7996.81  *
* Vel Total (ft/s)       *    1.01  * Avg. Vel. (ft/s)      *    0.70  *    3.61  *    0.51  *
* Max Chl Dpth (ft)      *   21.00  * Hydr. Depth (ft)      *    4.64  *   16.35  *    2.92  *
* Conv. Total (cfs)      *3587118.0  * Conv. (cfs)          *1064668.0  *1732708.0  *789742.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)      * 4992.23  *  448.49  * 7997.22  *
* Min Ch El (ft)         *  704.92  * Shear (lb/sq ft)      *    0.07  *    0.23  *    0.04  *
* Alpha                  *    6.35  * Stream Power (lb/ft s) *15734.13  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.10  * Cum Volume (acre-ft)   * 1134.38  *  815.45  * 1638.64  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  285.29  *   55.66  *  610.80  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************************
* E.G. Elev (ft)         *  727.44  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.07  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.37  * Reach Len. (ft)       *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *30505.35  * 7922.92  *35363.96  *
* E.G. Slope (ft/ft)     *0.000177  * Area (sq ft)          *30505.35  * 7922.92  *35363.96  *
* Q Total (cfs)          *68923.08  * Flow (cfs)            *22096.73  *26549.29  *20277.05  *
* Top Width (ft)         *13962.56  * Top Width (ft)        * 5090.84  *  445.01  * 8426.71  *
* Vel Total (ft/s)       *    0.93  * Avg. Vel. (ft/s)      *    0.72  *    3.35  *    0.57  *
* Max Chl Dpth (ft)      *   22.45  * Hydr. Depth (ft)      *    5.99  *   17.80  *    4.20  *
* Conv. Total (cfs)      *5182644.0  * Conv. (cfs)          *1661555.0  *1996364.0  *1524725.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)      * 5090.93  *  448.49  * 8427.31  *
* Min Ch El (ft)         *  704.92  * Shear (lb/sq ft)      *    0.07  *    0.20  *    0.05  *
* Alpha                  *    5.26  * Stream Power (lb/ft s) *15734.13  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.08  * Cum Volume (acre-ft)   * 1610.18  *  916.30  * 2829.37  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  306.61  *   55.94  *  738.92  *
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*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************************
* E.G. Elev (ft)         *  728.43  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.06  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  728.37  * Reach Len. (ft)       *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *35598.75  * 8367.58  *43800.17  *
* E.G. Slope (ft/ft)     *0.000150  * Area (sq ft)          *35598.75  * 8367.58  *43800.17  *
* Q Total (cfs)          *79649.91  * Flow (cfs)            *26286.24  *26795.84  *26567.82  *
* Top Width (ft)         *14006.38  * Top Width (ft)        * 5105.85  *  445.01  * 8455.51  *
* Vel Total (ft/s)       *    0.91  * Avg. Vel. (ft/s)      *    0.74  *    3.20  *    0.61  *
* Max Chl Dpth (ft)      *   23.45  * Hydr. Depth (ft)      *    6.97  *   18.80  *    5.18  *
* Conv. Total (cfs)      *6499524.0  * Conv. (cfs)          *2144988.0  *2186571.0  *2167965.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)      * 5105.97  *  448.49  * 8456.33  *
* Min Ch El (ft)         *  704.92  * Shear (lb/sq ft)      *    0.07  *    0.17  *    0.05  *
* Alpha                  *    4.56  * Stream Power (lb/ft s) *15734.13  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.07  * Cum Volume (acre-ft)   * 1946.35  *  982.69  * 3702.79  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  315.37  *   56.01  *  768.08  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)         *  731.01  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.03  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  730.98  * Reach Len. (ft)       *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)     *49008.34  * 9529.89  *65960.41  *
* E.G. Slope (ft/ft)     *0.000072  * Area (sq ft)          *49008.34  * 9529.89  *65960.41  *
* Q Total (cfs)          *89992.12  * Flow (cfs)            *30739.05  *23016.67  *36236.41  *
* Top Width (ft)         *14117.12  * Top Width (ft)        * 5163.58  *  445.01  * 8508.53  *
* Vel Total (ft/s)       *    0.72  * Avg. Vel. (ft/s)      *    0.63  *    2.42  *    0.55  *
* Max Chl Dpth (ft)      *   26.06  * Hydr. Depth (ft)      *    9.49  *   21.42  *    7.75  *
* Conv. Total (cfs)      *10618730.0  * Conv. (cfs)         *3627091.0  *2715879.0  *4275759.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)      * 5163.76  *  448.49  * 8509.98  *
* Min Ch El (ft)         *  704.92  * Shear (lb/sq ft)      *    0.04  *    0.10  *    0.03  *
* Alpha                  *    3.35  * Stream Power (lb/ft s) *15734.13  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.03  * Cum Volume (acre-ft)   * 2908.79  * 1194.21  * 6353.71  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  332.59  *   56.13  *  794.51  *
*****************************************************************************************************
```

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK200

E.G. Elev (ft)	731.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	731.85	Reach Len. (ft)	450.47	450.47	450.47
Crit W.S. (ft)		Flow Area (sq ft)	53481.43	9914.36	73317.73
E.G. Slope (ft/ft)	0.000068	Area (sq ft)	53481.43	9914.36	73317.73
Q Total (cfs)	100471.50	Flow (cfs)	34493.09	23938.36	42040.04
Top Width (ft)	14160.61	Top Width (ft)	5192.25	445.01	8523.34
Vel Total (ft/s)	0.73	Avg. Vel. (ft/s)	0.64	2.41	0.57
Max Chl Dpth (ft)	26.93	Hydr. Depth (ft)	10.30	22.28	8.60
Conv. Total (cfs)	12175500.0	Conv. (cfs)	4179998.0	2900937.0	5094565.0
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5192.45	448.49	8525.02
Min Ch El (ft)	704.92	Shear (lb/sq ft)	0.04	0.09	0.04
Alpha	3.09	Stream Power (lb/ft s)	15734.13	0.00	0.00
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	3200.37	1243.47	7050.12
C & E Loss (ft)	0.00	Cum SA (acres)	336.97	56.13	795.89

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK500

E.G. Elev (ft)	732.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	732.90	Reach Len. (ft)	450.47	450.47	450.47
Crit W.S. (ft)		Flow Area (sq ft)	58960.04	10382.15	82286.46
E.G. Slope (ft/ft)	0.000064	Area (sq ft)	58960.04	10382.15	82286.46
Q Total (cfs)	113669.30	Flow (cfs)	39228.92	25116.62	49323.76
Top Width (ft)	14214.88	Top Width (ft)	5232.07	445.01	8537.81
Vel Total (ft/s)	0.75	Avg. Vel. (ft/s)	0.67	2.42	0.60
Max Chl Dpth (ft)	27.98	Hydr. Depth (ft)	11.27	23.33	9.64
Conv. Total (cfs)	14177250.0	Conv. (cfs)	4892773.0	3132636.0	6151839.0
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5232.28	448.49	8539.70
Min Ch El (ft)	704.92	Shear (lb/sq ft)	0.05	0.09	0.04
Alpha	2.85	Stream Power (lb/ft s)	15734.13	0.00	0.00
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	3563.94	1303.20	7896.29
C & E Loss (ft)	0.00	Cum SA (acres)	350.58	56.13	797.28

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 5778.06*

INPUT
Description:
Station Elevation Data num= 390

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	767.73	.32	767.72	28.98	766.67	29.19	766.67	29.29	766.66
58.08	765.47	61.5	765.34	61.84	765.33	94.01	763.77	126.11	763.6
126.53	763.61	126.93	763.61	159.04	763.79	173.6	763.92	191.08	763.96
192.02	763.95	224.07	764.04	256.58	764.04	259.48	764.02	260.25	764.01
288.53	763.79	289.1	763.78	318.02	763.5	321.01	763.44	322.2	763.41
346.9	762.86	354.13	762.79	386.64	762.17	387.29	762.12	419.16	759.41
419.52	759.39	452.38	757.33	455.72	757.11	462.43	756.64	484.19	755.29
484.93	755.25	516.7	753.32	517.47	753.25	549.21	750.09	577.56	748.75
577.95	748.73	580.88	748.6	613.99	746.83	614.24	746.81	679.27	743.09
710.81	740.19	711.79	740.11	722.37	739.76	723.76	739.71	745.29	738.88
808.26	736.77	809.02	736.74	837.9	735.78	840.75	735.66	841.84	735.62
842.93	735.56	866.78	734.04	869.97	733.86	874.36	733.63	875.47	733.59
894.33	733.09	895.66	733.06	906.87	732.76	971.9	731.45	973.12	731.4
982.31	731.09	1004.41	730.24	1011.19	730.05	1035.65	729.43	1036.92	729.39
1040.08	729.31	1040.54	729.3	1068.13	728.56	1068.95	728.53	1069.43	728.51
1097.84	727.71	1101.95	727.49	1110.3	727.09	1126.72	726.51	1134.46	726.26
1145.75	725.85	1155.6	725.26	1162.37	725.07	1165.58	724.99	1166.97	724.95
1168.38	724.93	1184.49	724.66	1186.74	724.64	1213.37	724.33	1230.54	724.2
1232	724.18	1235.48	724.16	1259.85	723.94	1271.14	723.79	1284.21	723.7
1295.51	723.58	1297.03	723.57	1327.99	723.05	1328.9	723.04	1329.55	723.03
1332.95	723	1357.32	722.71	1357.78	722.71	1415.55	721.97	1425.44	721.87
1459.6	721.38	1502.19	720.99	1531.07	720.6	1685.3	719.36	1791.01	718.86
1819.9	718.64	1820.3	718.64	1991.25	718.04	1993.16	718.04	2131.58	717.59
2750.93	718.33	2901.96	718.32	2987.16	718.2	3020.29	718.31	3023.47	718.3
3117.83	718.41	3309.45	719.03	3312.92	719.05	3345.43	719.13	3348.93	719.13
3410.45	719.31	3413.16	719.33	3504.35	719.6	3508	719.6	3641.84	719.98
3670.57	720.01	3699.25	719.85	3703.08	719.84	3706.93	719.79	3735.6	719.23
3739.48	719.18	3768.11	719.53	3796.7	720.03	3800.63	720.13	3804.57	720.18
3833.14	720.44	3861.67	720.51	3924.36	720.7	4348.91	721.64	4353.37	721.66
4483.43	721.92	4511.33	722.05	4641.26	722.32	4691.17	722.52	4693.47	722.52
4774.77	722.7	4776.37	722.7	4833.17	722.87	4966.1	723.16	4971.14	723.19
5087.61	723.36	5117.17	723.44	5118.6	723.44	5145.56	723.5	5261.86	723.69
5263.77	723.7	5393.83	723.92	5426.34	724.07	5588.92	724.46	5686.46	724.41
5718.97	724.3	5751.49	723.99	5849.03	723.34	5881.54	723.02	5952.57	722.92
6011.6	723.06	6044.12	723.51	6109.15	724.07	6141.66	724.22	6167.97	724.13

```
 6173.59  723.54 6201.71   718.7 6203.05  718.61 6226.83  716.36 6232.51   715.8
 6261.97  712.03 6267.68  711.46 6297.42  705.18 6539.67  704.74 6554.91  709.55
 6581.49   713.3 6586.92  714.68 6608.07  720.14 6613.52  720.44 6634.65  721.66
 6691.16  720.72 6697.73  720.65 6792.36  720.67 6799.03  720.73  6823.9  721.02
 6848.72  721.49 6855.44   721.6 6886.98  721.81 6916.84  721.86  6948.2  722.01
 6950.07  722.01 7297.02  722.21  7738.6   722.6 7801.69  722.56 8409.59  722.96
 8533.15  722.81 8717.42  722.16 8826.15  721.95 8915.05  721.96  8979.9  722.11
 9012.33   722.3 9142.05  722.54 9336.62  722.3110047.89  722.0610049.34  722.05
10178.38  721.7610179.67  721.7610180.11  721.7510339.67  721.61 10342.3   721.6
10468.71  721.47 10791.3   721.710923.54  721.6310925.68  721.6210990.54  721.61
11082.01  721.8511187.95  722.3611242.93  722.3811245.81  722.41 11275.2  722.54
11281.95  722.5411282.41  722.5511307.45  722.5911559.81  722.3611564.85  722.37
11639.14  722.3511641.82  722.36 12146.2  722.4612197.29  722.6912307.49  722.87
12385.02  723.0912385.73   723.112388.46   723.112435.53   723.2 12436.8   723.2
   12514  723.5312514.73  723.5412597.83  723.7712630.08  723.9812642.26  724.01
12644.46  724.0112662.34  724.0612759.12  724.2112791.38  724.4312871.46  724.63
12873.14  724.6412984.93  725.0112994.14  725.0113081.71  725.3513243.01   725.7
13533.34  725.7613662.38  725.3713694.64  725.02 13726.9  724.89   13751  724.94
13759.16  724.9213764.44  724.9413823.67  724.9113984.97  725.5714017.23  725.95
14114.01  726.4314120.61  726.4314201.09  726.7714232.72  726.9914233.51     727
14243.04  727.0614243.81  727.0614295.67  727.1414307.57  726.8414325.95  726.76
14339.82  726.6514367.03  726.6314372.08  726.6114375.36  726.5814390.62   726.6
14401.92  726.5614404.35  726.6114408.09  726.74 14436.6  727.0514449.16  727.25
14468.86  727.34 14481.6  727.4614501.13  728.05 14531.3  726.3114533.38  726.35
14541.01  726.3114557.81  726.0814561.29  726.0214565.64  725.7514572.37  725.47
14590.24  724.65 14597.9  724.3314613.44  724.0514630.16  723.6314640.97  723.42
14643.17  723.3414662.42  722.59 14691.4  721.26 14694.1  721.2114694.67  721.22
14720.66  721.1814726.94  721.2614745.77  724.6714747.22  724.94 14759.2  725.14
14777.71  725.0514791.45  725.2714817.25  724.5114818.78  724.4714822.73  724.65
14823.71   724.714841.79  723.6214853.47  723.4514855.98  723.4414859.84  723.41
14882.11  723.4514888.23  723.4814906.59  723.6614920.49  723.5814941.98  723.62
14946.97  723.6114952.76  723.6214976.65  723.95 14979.4  723.9814985.01  724.18
14992.18  724.28 15002.3  724.4615011.82  724.5715012.84  724.5615017.27  724.72
15049.53  724.8515065.19  728.0815081.79  731.6115114.05  724.6315119.09  725.15
15141.54  726.7215142.58  726.81 15146.3  727.0715172.21  731.2315173.97  731.64
15178.57  732.64 15188.4  733.9515210.83  736.1215229.46   739.215243.08  741.34
15270.53   743.715271.27  743.7815275.34  744.2115278.46   744.515292.63  745.94
15292.97  745.98 15303.7  747.0515307.61  747.3615310.13  747.5115331.58  748.73
15339.86  749.1515358.15  751.3915372.12  752.38 15384.7  752.7615433.41  753.38
15437.83  753.41 15438.4  753.41 15468.9  753.2515475.88  753.26 15489.7  753.22
15498.27   753.115501.17  753.0815517.52  753.0615533.42  752.2215558.01  751.35
15563.13  751.1915565.68  751.1215566.66  751.1215593.75  751.22 15597.2  751.31
15597.93  751.3115623.76  753.16 15630.2  753.4415640.15  753.9615653.59  754.44
```



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Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
       0     .09 6167.97     .04 6634.65     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       6167.97 6634.65           450.47  450.47  450.47            .1        .3

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  723.66  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.08  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  723.58  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *13858.18  * 6409.76  * 8120.11  *
* E.G. Slope (ft/ft)      *0.000159  * Area (sq ft)            *13858.18  * 6409.76  * 8120.11  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              * 6635.99  *17246.72  * 2063.24  *
* Top Width (ft)          *10665.47  * Top Width (ft)          * 4142.66  *  461.48  * 6061.33  *
* Vel Total (ft/s)        *    0.91  * Avg. Vel. (ft/s)        *    0.48  *    2.69  *    0.25  *
* Max Chl Dpth (ft)       *   18.84  * Hydr. Depth (ft)        *    3.35  *   13.89  *    1.34  *
* Conv. Total (cfs)       *2059729.0  * Conv. (cfs)            *526800.6  *1369138.0  *163791.3  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 4142.71  *  464.88  * 6061.62  *
* Min Ch El (ft)          *  704.74  * Shear (lb/sq ft)        *    0.03  *    0.14  *    0.01  *
* Alpha                   *    5.84  * Stream Power (lb/ft s) *15653.59  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.07  * Cum Volume (acre-ft)    *  473.90  *  697.94  *  615.96  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  173.18  *   50.36  *  516.96  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)          *  727.78  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.02  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.76  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *34423.44  * 8357.32  *39152.17  *
* E.G. Slope (ft/ft)      *0.000052  * Area (sq ft)            *34423.44  * 8357.32  *39152.17  *
* Q Total (cfs)           *42918.92  * Flow (cfs)              *14689.29  *15247.61  *12982.01  *
* Top Width (ft)          *14004.04  * Top Width (ft)          * 5071.93  *  466.68  * 8465.43  *
* Vel Total (ft/s)        *    0.52  * Avg. Vel. (ft/s)        *    0.43  *    1.82  *    0.33  *
* Max Chl Dpth (ft)       *   23.02  * Hydr. Depth (ft)        *    6.79  *   17.91  *    4.62  *
* Conv. Total (cfs)       *5952523.0  * Conv. (cfs)            *2037292.0  *2114726.0  *1800505.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5072.06  *  470.10  * 8466.80  *
* Min Ch El (ft)          *  704.74  * Shear (lb/sq ft)        *    0.02  *    0.06  *    0.02  *
* Alpha                   *    4.66  * Stream Power (lb/ft s) *15653.59  *    0.00  *    0.00  *
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* Frctn Loss (ft)        *    0.02  * Cum Volume (acre-ft)   * 1532.84  *  932.64  * 3461.63  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  264.14  *   51.41  *  694.68  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK10
*********************************************************************************************
* E.G. Elev (ft)         *  725.92  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.09  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  725.83  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *24682.71  * 7456.86  *23319.59  *
* E.G. Slope (ft/ft)     *0.000213  * Area (sq ft)           *24682.71  * 7456.86  *23319.59  *
* Q Total (cfs)          *54360.98  * Flow (cfs)             *17196.10  *25527.56  *11637.32  *
* Top Width (ft)         *13371.38  * Top Width (ft)         * 5021.91  *  466.68  * 7882.79  *
* Vel Total (ft/s)       *    0.98  * Avg. Vel. (ft/s)       *    0.70  *    3.42  *    0.50  *
* Max Chl Dpth (ft)      *   21.09  * Hydr. Depth (ft)       *    4.92  *   15.98  *    2.96  *
* Conv. Total (cfs)      *3724034.0  * Conv. (cfs)           *1178030.0  *1748782.0  *797222.3  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)       * 5022.00  *  470.10  * 7883.60  *
* Min Ch El (ft)         *  704.74  * Shear (lb/sq ft)       *    0.07  *    0.21  *    0.04  *
* Alpha                  *    5.94  * Stream Power (lb/ft s) *15653.59  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)   *  886.93  *  739.26  * 1397.45  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  233.51  *   50.94  *  528.69  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK25
*********************************************************************************************
* E.G. Elev (ft)         *  727.37  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.06  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.30  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *32093.86  * 8142.76  *35267.93  *
* E.G. Slope (ft/ft)     *0.000165  * Area (sq ft)           *32093.86  * 8142.76  *35267.93  *
* Q Total (cfs)          *68923.08  * Flow (cfs)             *23345.12  *26045.17  *19532.79  *
* Top Width (ft)         *13947.76  * Top Width (ft)         * 5062.08  *  466.68  * 8419.01  *
* Vel Total (ft/s)       *    0.91  * Avg. Vel. (ft/s)       *    0.73  *    3.20  *    0.55  *
* Max Chl Dpth (ft)      *   22.56  * Hydr. Depth (ft)       *    6.34  *   17.45  *    4.19  *
* Conv. Total (cfs)      *5358770.0  * Conv. (cfs)           *1815083.0  *2025012.0  *1518675.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)       * 5062.19  *  470.10  * 8420.23  *
* Min Ch El (ft)         *  704.74  * Shear (lb/sq ft)       *    0.07  *    0.18  *    0.04  *
* Alpha                  *    4.96  * Stream Power (lb/ft s) *15653.59  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.07  * Cum Volume (acre-ft)   * 1286.50  *  833.23  * 2464.16  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  254.11  *   51.23  *  651.82  *
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*********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK50
*********************************************************************************************
* E.G. Elev (ft)         *  728.36  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.05  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  728.31  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *37215.50  * 8613.74  *43811.65  *
* E.G. Slope (ft/ft)     *0.000141  * Area (sq ft)           *37215.50  * 8613.74  *43811.65  *
* Q Total (cfs)          *79649.91  * Flow (cfs)             *27504.32  *26432.50  *25713.07  *
* Top Width (ft)         *14046.73  * Top Width (ft)         * 5091.45  *  466.68  * 8488.61  *
* Vel Total (ft/s)       *    0.89  * Avg. Vel. (ft/s)       *    0.74  *    3.07  *    0.59  *
* Max Chl Dpth (ft)      *   23.57  * Hydr. Depth (ft)       *    7.31  *   18.46  *    5.16  *
* Conv. Total (cfs)      *6701544.0  * Conv. (cfs)           *2314145.0  *2223965.0  *2163434.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)       * 5091.58  *  470.10  * 8490.15  *
* Min Ch El (ft)         *  704.74  * Shear (lb/sq ft)       *    0.06  *    0.16  *    0.05  *
* Alpha                  *    4.34  * Stream Power (lb/ft s) *15653.59  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.06  * Cum Volume (acre-ft)   * 1569.85  *  894.89  * 3249.77  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  262.64  *   51.29  *  680.47  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK100
*********************************************************************************************
* E.G. Elev (ft)         *  730.98  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.03  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  730.95  * Reach Len. (ft)        *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *50803.22  * 9847.57  *66308.69  *
* E.G. Slope (ft/ft)     *0.000068  * Area (sq ft)           *50803.22  * 9847.57  *66308.69  *
* Q Total (cfs)          *89992.12  * Flow (cfs)             *31646.69  *22897.91  *35447.51  *
* Top Width (ft)         *14178.53  * Top Width (ft)         * 5182.13  *  466.68  * 8529.73  *
* Vel Total (ft/s)       *    0.71  * Avg. Vel. (ft/s)       *    0.62  *    2.33  *    0.53  *
* Max Chl Dpth (ft)      *   26.21  * Hydr. Depth (ft)       *    9.80  *   21.10  *    7.77  *
* Conv. Total (cfs)      *10925270.0  * Conv. (cfs)          *3841990.0  *2779866.0  *4303419.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)       * 5182.30  *  470.10  * 8532.04  *
* Min Ch El (ft)         *  704.74  * Shear (lb/sq ft)       *    0.04  *    0.09  *    0.03  *
* Alpha                  *    3.23  * Stream Power (lb/ft s) *15653.59  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.03  * Cum Volume (acre-ft)   * 2392.70  * 1094.01  * 5669.79  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  279.09  *   51.41  *  706.41  *
*********************************************************************************************
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Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK200

E.G. Elev (ft)	731.84	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.02	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	731.82	Reach Len. (ft)	450.47	450.47	450.47	
Crit W.S. (ft)		Flow Area (sq ft)	55298.93	10251.36	73694.25	
E.G. Slope (ft/ft)	0.000065	Area (sq ft)	55298.93	10251.36	73694.25	
Q Total (cfs)	100471.50	Flow (cfs)	35429.74	23897.12	41144.64	
Top Width (ft)	14221.23	Top Width (ft)	5214.40	466.68	8540.15	
Vel Total (ft/s)	0.72	Avg. Vel. (ft/s)	0.64	2.33	0.56	
Max Chl Dpth (ft)	27.08	Hydr. Depth (ft)	10.61	21.97	8.63	
Conv. Total (cfs)	12497080.0	Conv. (cfs)	4406903.0	2972426.0	5117748.0	
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5214.59	470.10	8542.69	
Min Ch El (ft)	704.74	Shear (lb/sq ft)	0.04	0.09	0.03	
Alpha	3.01	Stream Power (lb/ft s)	15653.59	0.00	0.00	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	2637.90	1139.20	6289.96	
C & E Loss (ft)	0.00	Cum SA (acres)	283.16	51.41	707.66	

CROSS SECTION OUTPUT Profile #PK500

E.G. Elev (ft)	732.90	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.02	Wt. n-Val.	0.090	0.040	0.090	
W.S. Elev (ft)	732.87	Reach Len. (ft)	450.47	450.47	450.47	
Crit W.S. (ft)		Flow Area (sq ft)	60815.76	10742.65	82687.35	
E.G. Slope (ft/ft)	0.000061	Area (sq ft)	60815.76	10742.65	82687.35	
Q Total (cfs)	113669.30	Flow (cfs)	40103.30	25120.07	48445.93	
Top Width (ft)	14277.63	Top Width (ft)	5265.29	466.68	8545.66	
Vel Total (ft/s)	0.74	Avg. Vel. (ft/s)	0.66	2.34	0.59	
Max Chl Dpth (ft)	28.13	Hydr. Depth (ft)	11.55	23.02	9.68	
Conv. Total (cfs)	14541750.0	Conv. (cfs)	5130430.0	3213619.0	6197705.0	
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5265.49	470.10	8548.31	
Min Ch El (ft)	704.74	Shear (lb/sq ft)	0.04	0.09	0.04	
Alpha	2.78	Stream Power (lb/ft s)	15653.59	0.00	0.00	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	2944.62	1193.97	7043.26	
C & E Loss (ft)	0.00	Cum SA (acres)	296.31	51.41	708.94	

CROSS SECTION

RIVER: Thompson

REACH: Alignment - surv RS: 5327.59*

INPUT
Description:
Station Elevation Data num= 384

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	766.12	.31	766.1	28.53	765.02	28.74	765.02	28.84	765.01
57.17	763.83	60.54	763.7	60.87	763.69	92.55	762.01	124.15	761.9
124.55	761.91	124.95	761.91	156.56	762.2	185.64	762.53	188.1	762.55
189.02	762.55	220.58	762.82	221.06	762.82	252.58	763	255.43	762.99
256.19	762.99	284.03	762.91	284.62	762.91	313.06	762.78	317.18	762.74
341.49	762.44	348.6	762.4	380.61	761.86	381.25	761.81	412.62	758.83
412.98	758.8	443.91	756.66	445.33	756.57	476.63	754.32	477.36	754.27
508.64	752.07	509.4	751.99	512.08	751.67	540.65	748.34	568.55	746.76
568.94	746.74	571.82	746.58	573.48	746.47	604.41	744.49	604.66	744.48
605.51	744.42	637.55	742.23	668.68	740.18	699.73	736.86	700.68	736.77
712.47	736.33	732.69	735.51	736.46	735.39	795.66	733.39	796.4	733.37
824.83	732.45	828.71	732.31	829.78	732.26	853.26	730.81	856.4	730.64
860.72	730.39	861.82	730.36	892.73	729.6	956.74	728.44	957.94	728.38
988.75	727.24	1019.49	726.46	1020.74	726.42	1023.85	726.34	1024.31	726.33
1052.28	725.6	1052.75	725.58	1054.04	725.55	1080.71	724.88	1084.76	724.73
1092.98	724.47	1127.88	723.56	1137.58	723.17	1148.77	722.91	1166.01	722.69
1211.34	722.27	1212.79	722.25	1276.8	721.7	1307.27	721.21	1308.17	721.2
1308.81	721.19	1333.67	720.97	1336.15	720.94	1336.6	720.94	1340.81	720.9
1342.39	720.88	1403.2	720.29	1436.84	719.85	1476.86	719.55	1507.19	719.26
1531.11	719.13	1532.86	719.11	1659.02	718.36	1660.89	718.34	1791.51	717.96
2098.33	717.44	2708.02	717.81	3034.01	717.82	3037.19	717.83	3065.97	717.85
3293.24	718.57	3296.69	718.57	3449.69	719.03	3453.28	719.03	3613.31	719.43
3645.32	719.22	3649.11	719.17	3677.33	718.52	3681.15	718.46	3709.34	718.86
3737.48	719.41	3741.34	719.53	3745.22	719.58	3773.35	719.86	3863.15	720.13
4349.48	721.25	4353.94	721.27	4573.53	721.87	4605.54	722.04	4700.29	722.29
4701.86	722.29	4757.78	722.5	4785.73	722.56	4786.54	722.56	4813.69	722.63
4814.26	722.63	4897.4	722.9	4898.58	722.9	4925.52	722.97	4952.82	723.02
4953.48	723.03	4980.54	723.08	4981.43	723.09	5008.25	723.14	5010.55	723.15
5037.35	723.24	5038.76	723.24	5065.3	723.33	5149.17	723.5	5149.66	723.5
5176.41	723.61	5181.67	723.61	5208.39	723.68	5213.67	723.71	5229.96	723.75
5233.05	723.75	5309.69	723.94	5341.7	724.13	5469.73	724.49	5501.74	724.67
5596.49	724.67	5597.76	724.66	5629.77	724.56	5661.77	724.21	5757.79	723.51
5789.8	723.15	5827.68	723.05	5885.82	723.09	5917.83	723.22	5923.8	723.3
5949.84	723.74	6013.85	724.37	6045.86	724.56	6071.76	724.46	6077.58	724.15
6102.21	721.05	6106.67	720.47	6108.05	720.36	6132.66	717.8	6138.53	717.16
6169.01	712.85	6174.93	712.21	6205.7	705.04	6456.33	704.57	6472.98	709.7
6502.02	713.34	6507.96	714.79	6531.06	720.52	6537.03	720.73	6560.1	721.63

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 6616.58  720.55 6623.15  720.47 6717.71  720.48 6724.37  720.55 6749.23  720.88
 6780.75  721.53 6812.27  721.76 6843.79  721.82 6850.58  721.87 6906.83  722.05
 7222.03  722.08 7229.19   722.1 7663.33  722.32  7670.9   722.3 7947.02  722.32
 8254.27  722.55 8256.96  722.56 8457.34  722.53 8459.48  722.51  8582.6  722.24
  8586.3  722.22 8612.12  722.18 8615.85  722.16 8747.49  721.96 8750.15  721.95
 9065.84  722.25 9650.15  722.07 9651.89  722.08 9972.52     722 9973.27  721.99
10101.48  721.6810262.67  721.5410265.29  721.5310347.37  721.41   10714  721.65
10842.94  721.5110844.93   721.510846.14   721.510848.28  721.4910939.66  721.44
11004.51  721.5411107.55  722.0211165.33  722.0311197.57  722.19   11482  721.87
11742.78     722 11745.6  722.0111819.41  722.0411820.53  722.0511950.16  722.14
12067.99  722.2112119.05  722.4912196.93  722.6712198.68  722.6712306.65  723.04
12307.37  723.0412357.13  723.1812357.95  723.19 12358.4  723.1912390.36  723.43
12435.55  723.5912436.28   723.612519.32   723.912551.55  724.1412583.79  724.25
12604.64  724.24   12615  724.2712616.03  724.27 12680.5  724.4712712.75  724.74
12792.77     72512794.45  725.0112906.17  725.4312915.37  725.4313002.88  725.83
13164.08  726.2213454.21  726.2913486.45  726.2513583.17  725.8613615.41  725.46
13647.64  725.3113671.72  725.3613679.88  725.3413685.15  725.3613744.35  725.33
13835.88  725.6813905.54  726.0913937.78  726.52 14034.5  727.0614041.09  727.06
14098.97   727.314153.12  727.6814153.92  727.6814163.44  727.7414216.04   727.8
14227.92  727.4514260.16  727.2114287.34  727.16 14292.4  727.1314295.67  727.09
14310.92  727.0914322.22  727.0214324.64  727.0814328.38  727.2214356.87  727.56
14369.42  727.7714389.11  727.8614401.84     72814421.35  728.66 14451.5  726.65
14453.58   726.714461.21  726.6514481.47  726.3314485.83  726.0214492.55  725.71
14518.07  724.4414533.59  724.11 14550.3   723.614561.11  723.3414582.54  722.34
 14611.5   720.8 14614.2  720.7414614.77  720.7514640.74  720.7114647.01   720.8
14667.29  724.9914679.25  725.2214697.76  725.1214711.49  725.3614738.79  724.43
14743.73  724.6914761.79  723.4314773.47  723.2114775.97   723.214779.83  723.16
 14808.2  723.1714826.55  723.3314840.44  723.1914861.92  723.1414872.68  723.07
 14899.3  723.2914904.92   723.414912.08  723.3514931.71   723.314932.72  723.29
14937.16  723.42 14969.4  723.2714985.04  726.7815001.63  730.6515033.87  722.25
 15038.9  722.7715061.34  724.2815062.38  724.36 15066.1  724.5715091.99  728.69
15093.75  729.1115098.34  730.1815108.17  731.5515124.24  733.0915126.17  733.27
15130.58   733.715149.21  736.9315162.82  739.1815190.24  741.5315190.98  741.61
15195.06  742.0415198.17  742.3315212.33  743.7915212.67  743.8315223.39  744.89
 15227.3  745.2415251.25  746.7815254.19  746.95 15255.8  747.0515259.53  747.26
 15277.8  749.8415291.77     75115304.34  751.4515356.24  752.3115357.44  752.32
15385.43  752.3215395.46  752.3715409.27  752.3715417.83  752.3315420.73  752.33
15437.07  752.3915452.96  751.5215477.54  750.6615482.65  750.52 15485.2  750.44
15513.25  750.6815515.06  750.75 15516.7   750.815517.43  750.8115543.24   753.1
15547.46  753.3315549.67  753.4615559.62  754.0915573.05  754.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
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       0     .09 6071.76     .04  6560.1     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       6071.76  6560.1           450.47  450.47  450.47            .1       .3

CROSS SECTION OUTPUT  Profile #PK2
*********************************************************************************************
* E.G. Elev (ft)          *  723.59  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.06  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  723.53  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *15757.86  * 6547.60  * 9001.90  *
* E.G. Slope (ft/ft)      *0.000136  * Area (sq ft)            *15757.86  * 6547.60  * 9001.90  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              * 7496.17  *16189.75  * 2260.04  *
* Top Width (ft)          *10884.55  * Top Width (ft)          * 4210.31  *  477.59  * 6196.65  *
* Vel Total (ft/s)        *    0.83  * Avg. Vel. (ft/s)        *    0.48  *    2.47  *    0.25  *
* Max Chl Dpth (ft)       *   18.96  * Hydr. Depth (ft)        *    3.74  *   13.71  *    1.45  *
* Conv. Total (cfs)       *2222278.0  * Conv. (cfs)            *642048.8  *1386657.0  *193572.6  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 4210.38  *  481.01  * 6197.28  *
* Min Ch El (ft)          *  704.57  * Shear (lb/sq ft)        *    0.03  *    0.12  *    0.01  *
* Alpha                   *    5.66  * Stream Power (lb/ft s)  *15573.05  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.06  * Cum Volume (acre-ft)    *  320.76  *  630.94  *  527.43  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  129.99  *   45.50  *  453.58  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #PK5
*********************************************************************************************
* E.G. Elev (ft)          *  727.76  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.02  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.74  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *36425.81  * 8597.98  *39490.61  *
* E.G. Slope (ft/ft)      *0.000047  * Area (sq ft)            *36425.81  * 8597.98  *39490.61  *
* Q Total (cfs)           *42918.92  * Flow (cfs)              *15356.27  *14806.05  *12756.60  *
* Top Width (ft)          *13965.23  * Top Width (ft)          * 5096.53  *  488.34  * 8380.36  *
* Vel Total (ft/s)        *    0.51  * Avg. Vel. (ft/s)        *    0.42  *    1.72  *    0.32  *
* Max Chl Dpth (ft)       *   23.17  * Hydr. Depth (ft)        *    7.15  *   17.61  *    4.71  *
* Conv. Total (cfs)       *6236491.0  * Conv. (cfs)            *2231399.0  *2151448.0  *1853644.0  *
* Length Wtd. (ft)        *  450.47  * Wetted Per. (ft)        * 5096.67  *  491.81  * 8382.64  *
* Min Ch El (ft)          *  704.57  * Shear (lb/sq ft)        *    0.02  *    0.05  *    0.01  *
* Alpha                   *    4.33  * Stream Power (lb/ft s)  *15573.05  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.02  * Cum Volume (acre-ft)    * 1166.50  *  844.97  * 3054.99  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  211.57  *   46.48  *  607.57  *
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Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK10

E.G. Elev (ft)	725.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	725.75	Reach Len. (ft)	450.47	450.47	450.47
Crit W.S. (ft)		Flow Area (sq ft)	26361.36	7627.23	23711.03
E.G. Slope (ft/ft)	0.000188	Area (sq ft)	26361.36	7627.23	23711.03
Q Total (cfs)	54360.98	Flow (cfs)	18028.32	24176.12	12156.54
Top Width (ft)	12737.72	Top Width (ft)	5025.32	488.34	7224.06
Vel Total (ft/s)	0.94	Avg. Vel. (ft/s)	0.68	3.17	0.51
Max Chl Dpth (ft)	21.18	Hydr. Depth (ft)	5.25	15.62	3.28
Conv. Total (cfs)	3962010.0	Conv. (cfs)	1313965.0	1762037.0	886009.1
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5025.43	491.81	7225.62
Min Ch El (ft)	704.57	Shear (lb/sq ft)	0.06	0.18	0.04
Alpha	5.27	Stream Power (lb/ft s)	15573.05	0.00	0.00
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	623.00	661.27	1154.27
C & E Loss (ft)	0.00	Cum SA (acres)	181.56	46.00	450.58

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK25

E.G. Elev (ft)	727.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	727.23	Reach Len. (ft)	450.47	450.47	450.47
Crit W.S. (ft)		Flow Area (sq ft)	33853.62	8351.19	35294.05
E.G. Slope (ft/ft)	0.000153	Area (sq ft)	33853.62	8351.19	35294.05
Q Total (cfs)	68923.08	Flow (cfs)	24435.22	25311.35	19176.51
Top Width (ft)	13779.49	Top Width (ft)	5082.81	488.34	8208.34
Vel Total (ft/s)	0.89	Avg. Vel. (ft/s)	0.72	3.03	0.54
Max Chl Dpth (ft)	22.66	Hydr. Depth (ft)	6.66	17.10	4.30
Conv. Total (cfs)	5580844.0	Conv. (cfs)	1978570.0	2049512.0	1552762.0
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5082.94	491.81	8210.43
Min Ch El (ft)	704.57	Shear (lb/sq ft)	0.06	0.16	0.04
Alpha	4.60	Stream Power (lb/ft s)	15573.05	0.00	0.00
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	945.50	747.94	2099.31
C & E Loss (ft)	0.00	Cum SA (acres)	201.66	46.29	565.84

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK50

E.G. Elev (ft)	728.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	728.25	Reach Len. (ft)	450.47	450.47	450.47
Crit W.S. (ft)		Flow Area (sq ft)	39037.96	8847.93	43824.63
E.G. Slope (ft/ft)	0.000132	Area (sq ft)	39037.96	8847.93	43824.63
Q Total (cfs)	79649.91	Flow (cfs)	28771.10	25972.16	24906.65
Top Width (ft)	14090.18	Top Width (ft)	5110.36	488.34	8491.48
Vel Total (ft/s)	0.87	Avg. Vel. (ft/s)	0.74	2.94	0.57
Max Chl Dpth (ft)	23.68	Hydr. Depth (ft)	7.64	18.12	5.16
Conv. Total (cfs)	6920707.0	Conv. (cfs)	2499894.0	2256697.0	2164116.0
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5110.51	491.81	8493.94
Min Ch El (ft)	704.57	Shear (lb/sq ft)	0.06	0.15	0.04
Alpha	4.12	Stream Power (lb/ft s)	15573.05	0.00	0.00
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	1175.57	804.60	2796.63
C & E Loss (ft)	0.00	Cum SA (acres)	209.89	46.36	592.67

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PK100

E.G. Elev (ft)	730.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	730.93	Reach Len. (ft)	450.47	450.47	450.47
Crit W.S. (ft)		Flow Area (sq ft)	52867.64	10153.58	66619.63
E.G. Slope (ft/ft)	0.000064	Area (sq ft)	52867.64	10153.58	66619.63
Q Total (cfs)	89992.12	Flow (cfs)	32687.36	22710.38	34594.38
Top Width (ft)	14252.30	Top Width (ft)	5220.37	488.34	8543.59
Vel Total (ft/s)	0.69	Avg. Vel. (ft/s)	0.62	2.24	0.52
Max Chl Dpth (ft)	26.36	Hydr. Depth (ft)	10.13	20.79	7.80
Conv. Total (cfs)	11248180.0	Conv. (cfs)	4085618.0	2838587.0	4323978.0
Length Wtd. (ft)	450.47	Wetted Per. (ft)	5220.56	491.81	8546.92
Min Ch El (ft)	704.57	Shear (lb/sq ft)	0.04	0.08	0.03
Alpha	3.12	Stream Power (lb/ft s)	15573.05	0.00	0.00
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	1856.65	990.59	4982.46
C & E Loss (ft)	0.00	Cum SA (acres)	225.31	46.48	618.13

CROSS SECTION OUTPUT Profile #PK200

E.G. Elev (ft)	731.81	Element	Left OB	Channel	Right OB

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* Vel Head (ft)          *    0.02  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.79  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *57397.26  *10576.74  *74025.63  *
* E.G. Slope (ft/ft)     *0.000061  * Area (sq ft)            *57397.26  *10576.74  *74025.63  *
* Q Total (cfs)          *100471.50  * Flow (cfs)             *36520.64  *23725.39  *40225.47  *
* Top Width (ft)         *14273.34  * Top Width (ft)          * 5234.41  *  488.34  * 8550.60  *
* Vel Total (ft/s)       *    0.71  * Avg. Vel. (ft/s)        *    0.64  *    2.24  *    0.54  *
* Max Chl Dpth (ft)      *   27.22  * Hydr. Depth (ft)        *   10.97  *   21.66  *    8.66  *
* Conv. Total (cfs)      *12867250.0  * Conv. (cfs)           *4677151.0  *3038479.0  *5151624.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)        * 5234.62  *  491.81  * 8553.98  *
* Min Ch El (ft)         *  704.57  * Shear (lb/sq ft)        *    0.04  *    0.08  *    0.03  *
* Alpha                  *    2.90  * Stream Power (lb/ft s) *15573.05  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.03  * Cum Volume (acre-ft)    * 2055.18  * 1031.50  * 5526.15  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  229.13  *   46.48  *  619.29  *
*****************************************************************************************************

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************************
* E.G. Elev (ft)         *  732.87  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.02  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  732.85  * Reach Len. (ft)         *  450.47  *  450.47  *  450.47  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *62926.41  *11091.54  *83045.42  *
* E.G. Slope (ft/ft)     *0.000058  * Area (sq ft)            *62926.41  *11091.54  *83045.42  *
* Q Total (cfs)          *113669.30  * Flow (cfs)             *41299.90  *24993.29  *47376.11  *
* Top Width (ft)         *14309.12  * Top Width (ft)          * 5259.18  *  488.34  * 8561.60  *
* Vel Total (ft/s)       *    0.72  * Avg. Vel. (ft/s)        *    0.66  *    2.25  *    0.57  *
* Max Chl Dpth (ft)      *   28.28  * Hydr. Depth (ft)        *   11.97  *   22.71  *    9.70  *
* Conv. Total (cfs)      *14958110.0  * Conv. (cfs)           *5434787.0  *3288947.0  *6234375.0  *
* Length Wtd. (ft)       *  450.47  * Wetted Per. (ft)        * 5259.42  *  491.81  * 8565.03  *
* Min Ch El (ft)         *  704.57  * Shear (lb/sq ft)        *    0.04  *    0.08  *    0.03  *
* Alpha                  *    2.69  * Stream Power (lb/ft s) *15573.05  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.03  * Cum Volume (acre-ft)    * 2304.79  * 1081.07  * 6186.31  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  241.89  *   46.48  *  620.49  *
*****************************************************************************************************

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv   RS: 4877.12

INPUT
Description:
Station Elevation Data    num=     437
```



```
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*****************************************************************************************
       0   764.528.08008  763.3728.37988  763.3659.58008  762.0659.91016  762.05
91.08008  760.24122.1797   760.2122.5801  760.21122.9697  760.21154.0801  760.61
185.1201  761.14186.0293  761.14217.0801   761.6217.5596   761.6248.5801  761.96
279.5293  762.03280.0801  762.03     311  762.07312.1494  762.07343.0801  762.02
374.5801  761.55  375.21  761.49406.0801  758.24436.8799  755.91438.2695  755.81
469.0801  753.34469.7998  753.29500.5801  750.81501.3301  750.72532.0801  746.58
562.7598  744.56564.3896  744.44595.0801  742.14595.9199  742.07626.5801  739.66
627.4502  739.59658.0801  737.26688.6396  733.54689.5801  733.44721.0801  732.11
  722.04  732.08752.5801     731783.0498  730.01784.0801  729.98814.5195  729.04
815.5801  729.01816.6299  728.96847.0801  727.16848.1602  727.13878.5801  726.44
911.2197  725.87941.5801  725.42942.7598  725.36973.0801  724.24 1003.34  723.49
1004.569  723.45 1034.81  722.691036.069  722.65 1037.34  722.621067.569  721.97
1099.069  721.48 1129.22  720.891130.569  720.86 1131.93  720.851192.149  720.34
1193.569  720.32 1255.09  719.841256.569  719.83 1286.56  719.371288.069  719.35
1319.569  719.14 1321.12  719.12 1380.97  718.721414.069  718.311477.069  717.95
 1506.85  717.831508.569  717.821538.319  717.711571.569  717.51 1601.26  717.43
1603.069  717.431632.729  717.351634.569  717.34  1664.2   717.31666.069  717.29
2926.069   717.32929.149  717.29 2985.93  717.292989.069   717.3 3017.39  717.31
3020.569  717.323048.859  717.463052.069  717.48 3055.27  717.493083.569  717.54
3178.069  717.79 3206.21  717.923209.569  717.94 3241.06  718.01 3244.45  718.01
 3304.06  718.17 3332.09  718.323395.029  718.46 3398.56  718.463528.229  718.84
 3556.06  718.85 3583.85  718.63 3587.56  718.61 3591.29  718.55 3619.06  717.81
3622.819  717.74 3650.56  718.18 3678.26  718.79 3682.06  718.92 3685.88  718.98
 3713.56  719.29  3741.2  719.37 3745.06  719.39 3772.67  719.48 3776.56   719.5
 3804.14  719.56 3808.06  719.56 3906.59  719.76 3934.06  719.88 4060.06  720.11
 4091.56  720.24 4213.24  720.53 4217.56  720.55 4280.56  720.71 4284.95  720.73
 4343.56  720.86 4370.59  721.02 4375.06  721.04 4496.47  721.38 4501.06   721.4
4527.939  721.57 4532.56  721.59 4559.41  721.67 4564.06  721.69 4595.56  721.78
 4600.25   721.8 4627.06  721.88 4658.56  722.06 4690.06  722.14 4694.84  722.16
4748.229  722.32 4811.17  722.57 4816.06   722.6 4820.96  722.61 4847.56   722.7
 4942.06  722.964978.609  723.14 5031.45  723.27 5062.92  723.37 5068.06  723.38
 5094.39  723.52 5099.56  723.535125.859  723.62 5131.06  723.65 5194.06  723.85
 5199.33  723.86 5225.56  723.96 5257.06  724.19 5383.06  724.66 5414.56  724.87
5472.029  724.94 5509.06  724.92 5540.56  724.815566.439  724.51 5572.06  724.43
 5597.91  724.24 5666.56  723.685692.319  723.36 5698.06  723.28 5735.34  723.18
 5766.87  723.18 5792.56  723.235798.399  723.25 5824.06  723.37 5829.93  723.47
 5855.56  723.96 5918.56  724.68 5950.06   724.9 5975.55  724.79 5981.56  724.77
 6007.02  722.64 6013.06  722.12 6038.49  719.24 6044.56  718.52 6076.06  713.68
 6082.17  712.95 6113.97  704.89    6373   704.4 6391.06  709.85 6422.56  713.39
    6429   714.9 6454.06  720.916460.529  721.03 6485.56  721.59 6492.06  721.45
 6517.06  720.86    6542  720.38 6548.56  720.29 6580.06  720.35 6611.56  720.35
 6643.06  720.29 6649.72  720.37 6674.56  720.73 6699.35  721.32 6706.06  721.46
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 6737.56  721.72 6762.29  721.76 6769.06  721.78 6775.84  721.83 6800.56  721.94
 6832.06  722.02 7108.46  721.93 7147.05  721.95  7154.2  721.97 7210.05  722.04
 7430.55  722.12 7588.05  722.04 7595.62  722.02 7651.05  721.95 7714.05  721.94
 7871.55  721.95  8178.6  722.18 8220.46  722.248317.109  722.278381.539  722.24
 8383.67  722.23 8506.71  722.08 8510.41  722.07  8512.8  722.07 8645.43  721.95
 8671.49  721.96 8674.15  721.95 9573.55  721.979575.289  721.989831.279  722.02
 9860.17  721.98 9895.71  721.949901.189  721.929992.359  721.7310024.58   721.6
10025.87   721.6 10056.8  721.5410121.23  721.5610153.44  721.5210157.44  721.52
10183.97  721.4710185.66  721.4710188.28  721.4610270.31  721.3410314.53  721.32
10476.44  721.4210636.69  721.6110765.55  721.3910767.54  721.3810797.77  721.27
10803.49  721.27 10862.2  721.1810927.01  721.2210958.85  721.4311023.29  721.67
11032.81  721.6911087.72  721.6711090.59   721.711119.94  721.8411152.15  721.84
11271.55  721.5711377.59  721.4111377.67  721.4111404.18  721.3811409.88  721.39
11500.73  721.4411538.75  721.4711570.96  721.5611664.79  721.6211667.61  721.63
11828.84  721.7711881.65  721.8711951.88  721.9111957.56  721.9211987.76  721.96
11989.78  721.96 11992.9  721.9912040.81  722.2912086.43  722.4112118.64  722.52
12120.39  722.5212150.86  722.6212183.08  722.8312278.73  723.1612279.55  723.17
   12280  723.1712311.94  723.4512440.81  724.0312473.02  724.3112505.24  724.44
12526.08  724.4412537.46  724.4912597.87  724.7212601.89  724.7312634.11  725.04
12729.31  725.4412757.03  725.6212783.55  725.6812795.19  725.76 12827.4  725.86
 12836.6  725.86 12879.5  726.0512891.84  726.0812924.05  726.3112988.49   726.5
13052.92  726.6213085.14  726.7513278.43  726.8713375.08  726.8313393.66  726.78
 13407.3  726.7813471.73  726.5113503.95  726.3413510.42  726.2413536.17  725.89
13568.38  725.7213592.45  725.78 13600.6  725.7613605.87  725.7813665.03  725.75
13685.45  725.8313711.98  725.97 13756.5  726.1413826.11   726.613858.33  727.09
13954.98   727.713961.57   727.7 13987.2  727.8614019.41  727.9714051.63  728.22
14083.84  728.4314084.61  728.4314116.06  728.47 14136.4  728.4614148.28  728.05
14166.64  727.9214180.49  727.7614207.66  727.6814212.71  727.6414215.98  727.59
14231.22  727.5714242.51  727.4914244.93  727.5514248.67  727.7114277.14  728.07
14289.68   728.314309.36  728.3914322.08  728.5314341.58  729.2614371.71  726.99
14373.79  727.0414381.41  726.9914401.66  726.6414406.01   726.314412.73  725.96
14438.23  724.5514453.74  724.1714470.44  723.5814481.24  723.2614502.66  722.09
 14531.6  720.33 14534.3  720.2714534.87  720.2814560.82  720.2314567.09  720.33
14587.35  725.0514599.31   725.3 14617.8  725.1814631.52  725.4514658.81   724.4
14663.74  724.6814681.79  723.2414693.46  722.9814695.96  722.9614699.82  722.91
14728.17  722.8714746.51    72314760.39  722.7914781.85  722.6514792.61  722.51
14824.82  722.6214831.98  722.4314852.61  722.0114857.04  722.1214889.26  721.68
14904.89  725.4914921.47  729.6814945.91  722.2514953.69  719.8714958.72   720.4
14982.18  721.91 14985.9  722.0615011.77  726.1415018.12  727.7315027.94  729.14
15050.34  731.2815068.95  734.6615082.55  737.0315109.96  739.3515114.77  739.87
15117.88  740.1615132.37  741.6715146.99  743.1115170.93  744.83 15179.2  745.38
15197.46   748.315211.42  749.6115223.98  750.1415243.64  750.5615250.51  750.72
15275.85  751.2115277.04  751.2315282.56  751.2715308.07   751.415315.04  751.47
15340.29  751.5815356.62  751.73 15372.5  750.8315397.06  749.9815404.72  749.77
```



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15432.75  750.15 15436.2   750.315436.93  750.3115462.72  753.0415469.15  753.48
15479.09  754.2115492.51   754.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .09 5975.55     .04 6485.56     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       5975.55 6485.56           445.81  445.81  445.81            .1        .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
14341.5815492.51  729.26       F

CROSS SECTION OUTPUT  Profile #PK2
*************************************************************************************************
* E.G. Elev (ft)          *  723.53  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.05  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  723.48  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  711.25  * Flow Area (sq ft)      *17880.22  * 6686.65  * 9622.50  *
* E.G. Slope (ft/ft)      *0.000115  * Area (sq ft)           *17880.22  * 6686.65  *10142.07  *
* Q Total (cfs)           *25945.95  * Flow (cfs)             * 8432.93  *15138.88  * 2374.14  *
* Top Width (ft)          *10931.55  * Top Width (ft)         * 4231.67  *  488.60  * 6211.28  *
* Vel Total (ft/s)        *    0.76  * Avg. Vel. (ft/s)       *    0.47  *    2.26  *    0.25  *
* Max Chl Dpth (ft)       *   19.08  * Hydr. Depth (ft)       *    4.23  *   13.69  *    1.65  *
* Conv. Total (cfs)       *2423873.0  * Conv. (cfs)           *  787804.9  *1414276.0  *221792.2  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)       * 4231.75  *  492.18  * 5833.49  *
* Min Ch El (ft)          *  704.40  * Shear (lb/sq ft)       *    0.03  *    0.10  *    0.01  *
* Alpha                   *    5.33  * Stream Power (lb/ft s) *15492.51  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.08  * Cum Volume (acre-ft)   *  146.83  *  562.51  *  428.44  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *   86.34  *   40.50  *  389.42  *
*************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT  Profile #PK5
*************************************************************************************************
* E.G. Elev (ft)          *  727.74  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.02  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
```

```
* W.S. Elev (ft)         *  727.72  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  713.78  * Flow Area (sq ft)      *38691.96  * 8830.72  *37268.55  *
* E.G. Slope (ft/ft)     *0.000044  * Area (sq ft)           *38691.96  * 8830.72  *40026.80  *
* Q Total (cfs)          *42918.92  * Flow (cfs)             *16371.30  *14576.53  *11971.09  *
* Top Width (ft)         *13824.77  * Top Width (ft)         * 5137.95  *  510.01  * 8176.80  *
* Vel Total (ft/s)       *    0.51  * Avg. Vel. (ft/s)       *    0.42  *    1.65  *    0.32  *
* Max Chl Dpth (ft)      *   23.32  * Hydr. Depth (ft)       *    7.53  *   17.31  *    4.95  *
* Conv. Total (cfs)      *6434035.0  * Conv. (cfs)           *2454245.0  *2185188.0  *1794602.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 5138.12  *  513.64  * 7534.99  *
* Min Ch El (ft)         *  704.40  * Shear (lb/sq ft)       *    0.02  *    0.05  *    0.01  *
* Alpha                  *    3.99  * Stream Power (lb/ft s) *15492.51  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.03  * Cum Volume (acre-ft)   *  778.09  *  754.85  * 2643.83  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  158.65  *   41.31  *  521.96  *
*****************************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK10

```
*****************************************************************************************************
* E.G. Elev (ft)         *  725.74  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.06  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  725.68  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  715.20  * Flow Area (sq ft)      *28267.18  * 7789.10  *22939.91  *
* E.G. Slope (ft/ft)     *0.000172  * Area (sq ft)           *28267.18  * 7789.10  *24470.38  *
* Q Total (cfs)          *54360.98  * Flow (cfs)             *19313.21  *23274.83  *11772.93  *
* Top Width (ft)         *12420.63  * Top Width (ft)         * 5051.39  *  510.01  * 6859.22  *
* Vel Total (ft/s)       *    0.92  * Avg. Vel. (ft/s)       *    0.68  *    2.99  *    0.51  *
* Max Chl Dpth (ft)      *   21.28  * Hydr. Depth (ft)       *    5.60  *   15.27  *    3.64  *
* Conv. Total (cfs)      *4140388.0  * Conv. (cfs)           *1470985.0  *1772721.0  *896681.9  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 5051.53  *  513.64  * 6297.25  *
* Min Ch El (ft)         *  704.40  * Shear (lb/sq ft)       *    0.06  *    0.16  *    0.04  *
* Alpha                  *    4.77  * Stream Power (lb/ft s) *15492.51  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.11  * Cum Volume (acre-ft)   *  340.53  *  581.55  *  905.14  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *  129.45  *   40.84  *  377.76  *
*****************************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK25

```
*****************************************************************************************************
* E.G. Elev (ft)         *  727.22  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.05  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.17  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  718.84  * Flow Area (sq ft)      *35871.51  * 8550.50  *33180.48  *
* E.G. Slope (ft/ft)     *0.000145  * Area (sq ft)           *35871.51  * 8550.50  *35589.77  *
* Q Total (cfs)          *68923.08  * Flow (cfs)             *26061.03  *24916.19  *17945.85  *
* Top Width (ft)         *13652.69  * Top Width (ft)         * 5128.66  *  510.01  * 8014.02  *
* Vel Total (ft/s)       *    0.89  * Avg. Vel. (ft/s)       *    0.73  *    2.91  *    0.54  *
* Max Chl Dpth (ft)      *   22.77  * Hydr. Depth (ft)       *    6.99  *   16.77  *    4.49  *
* Conv. Total (cfs)      *5728368.0  * Conv. (cfs)           *2165997.0  *2070847.0  *1491524.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 5128.81  *  513.64  * 7385.68  *
* Min Ch El (ft)         *  704.40  * Shear (lb/sq ft)       *    0.06  *    0.15  *    0.04  *
* Alpha                  *    4.24  * Stream Power (lb/ft s) *15492.51  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)   *  584.98  *  660.55  * 1732.79  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *  148.86  *   41.13  *  481.96  *
*****************************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK50

```
*****************************************************************************************************
* E.G. Elev (ft)         *  728.24  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.05  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  728.20  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  719.88  * Flow Area (sq ft)      *41136.15  * 9073.15  *40895.56  *
* E.G. Slope (ft/ft)     *0.000127  * Area (sq ft)           *41136.15  * 9073.15  *43962.02  *
* Q Total (cfs)          *79649.91  * Flow (cfs)             *30558.50  *25728.93  *23362.47  *
* Top Width (ft)         *14013.84  * Top Width (ft)         * 5145.99  *  510.01  * 8357.83  *
* Vel Total (ft/s)       *    0.87  * Avg. Vel. (ft/s)       *    0.74  *    2.84  *    0.57  *
* Max Chl Dpth (ft)      *   23.80  * Hydr. Depth (ft)       *    7.99  *   17.79  *    5.31  *
* Conv. Total (cfs)      *7077105.0  * Conv. (cfs)           *2715204.0  *2286084.0  *2075818.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 5146.17  *  513.64  * 7703.00  *
* Min Ch El (ft)         *  704.40  * Shear (lb/sq ft)       *    0.06  *    0.14  *    0.04  *
* Alpha                  *    3.80  * Stream Power (lb/ft s) *15492.51  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.08  * Cum Volume (acre-ft)   *  761.02  *  711.93  * 2342.72  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *  156.86  *   41.19  *  505.55  *
```

```
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************
* E.G. Elev (ft)          *  730.92  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.02  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  730.90  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  720.39  * Flow Area (sq ft)       *55137.07  *10451.90  *67013.75  *
* E.G. Slope (ft/ft)      *0.000060  * Area (sq ft)            *55137.07  *10451.90  *67013.75  *
* Q Total (cfs)           *89992.12  * Flow (cfs)              *33890.40  *22379.88  *33721.84  *
* Top Width (ft)          *14290.68  * Top Width (ft)          * 5219.87  *  510.01  * 8560.80  *
* Vel Total (ft/s)        *    0.68  * Avg. Vel. (ft/s)        *    0.61  *    2.14  *    0.50  *
* Max Chl Dpth (ft)       *   26.50  * Hydr. Depth (ft)        *   10.56  *   20.49  *    7.83  *
* Conv. Total (cfs)       *11636810.0  * Conv. (cfs)           *4382340.0  *2893924.0  *4360543.0  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        * 5220.10  *  513.64  * 8565.01  *
* Min Ch El (ft)          *  704.40  * Shear (lb/sq ft)        *    0.04  *    0.08  *    0.03  *
* Alpha                   *    2.99  * Stream Power (lb/ft s) *15492.51  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.03  * Cum Volume (acre-ft)    * 1298.19  *  884.05  * 4291.48  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  171.32  *   41.31  *  529.69  *
*****************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************
* E.G. Elev (ft)          *  731.79  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.02  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.77  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  721.55  * Flow Area (sq ft)       *59676.74  *10894.39  *74444.59  *
* E.G. Slope (ft/ft)      *0.000057  * Area (sq ft)            *59676.74  *10894.39  *74444.59  *
* Q Total (cfs)           *100471.50  * Flow (cfs)             *37713.78  *23463.75  *39293.97  *
* Top Width (ft)          *14322.13  * Top Width (ft)          * 5244.66  *  510.01  * 8567.46  *
* Vel Total (ft/s)        *    0.69  * Avg. Vel. (ft/s)        *    0.63  *    2.15  *    0.53  *
* Max Chl Dpth (ft)       *   27.37  * Hydr. Depth (ft)        *   11.38  *   21.36  *    8.69  *
* Conv. Total (cfs)       *13278400.0  * Conv. (cfs)           *4984284.0  *3100988.0  *5193123.0  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        * 5244.90  *  513.64  * 8571.74  *
* Min Ch El (ft)          *  704.40  * Shear (lb/sq ft)        *    0.04  *    0.08  *    0.03  *
* Alpha                   *    2.80  * Stream Power (lb/ft s) *15492.51  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.03  * Cum Volume (acre-ft)    * 1449.83  *  920.48  * 4758.46  *
```



```
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  174.95  *   41.31  *  530.78  *
*****************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************
* E.G. Elev (ft)          *  732.84  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.02  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.82  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  722.38  * Flow Area (sq ft)       *65226.41  *11432.63  *83489.41  *
* E.G. Slope (ft/ft)      *0.000054  * Area (sq ft)            *65226.41  *11432.63  *83489.41  *
* Q Total (cfs)           *113669.30  * Flow (cfs)             *42507.74  *24795.75  *46365.80  *
* Top Width (ft)          *14354.62  * Top Width (ft)          * 5271.34  *  510.01  * 8573.27  *
* Vel Total (ft/s)        *    0.71  * Avg. Vel. (ft/s)        *    0.65  *    2.17  *    0.56  *
* Max Chl Dpth (ft)       *   28.42  * Hydr. Depth (ft)        *   12.37  *   22.42  *    9.74  *
* Conv. Total (cfs)       *15405350.0  * Conv. (cfs)           *5760980.0  *3360513.0  *6283855.0  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        * 5271.61  *  513.64  * 8577.65  *
* Min Ch El (ft)          *  704.40  * Shear (lb/sq ft)        *    0.04  *    0.08  *    0.03  *
* Alpha                   *    2.60  * Stream Power (lb/ft s) *15492.51  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.03  * Cum Volume (acre-ft)    * 1642.15  *  964.60  * 5325.21  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *  187.44  *   41.31  *  531.89  *
*****************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION


RIVER: Thompson
REACH: Alignment - surv   RS: 4431.31*

INPUT
Description:
Station Elevation Data    num=     461
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
       0  766.95   25.59  765.97   25.86  765.96   30.86  765.77   54.29  764.84
   54.59  764.83   82.99  763.23  111.33  763.19  111.69   763.2  112.05   763.2
   140.4  763.55  168.68  764.02  169.51  764.02   197.8  764.43  198.24  764.43
  226.51  764.75  254.71  764.82  255.21  764.82  283.38  764.87  312.61  764.85
  341.32  764.45  341.89   764.4  370.02  761.51  398.08  759.44  399.35  759.35
```

427.42	757.16	428.08	757.11	456.13	754.91	456.81	754.83	484.83	751.15
512.78	749.35	514.27	749.25	542.24	747.2	543	747.13	571.73	744.92
599.64	742.85	627.49	739.54	628.34	739.45	657.05	738.27	685.75	737.27
713.51	736.38	714.45	736.36	743.15	735.48	744.11	735.44	771.86	733.83
772.84	733.8	800.56	733.18	830.3	732.66	857.96	732.26	859.04	732.2
886.67	731.2	914.24	730.53	915.36	730.49	942.92	729.81	944.06	729.77
945.22	729.75	972.77	729.16	980.77	729.04	1001.47	728.69	1028.94	728.13
1030.17	728.1	1031.41	728.09	1086.28	727.58	1087.58	727.56	1143.63	727.08
1144.98	727.07	1173.68	726.63	1202.39	726.43	1203.8	726.41	1258.34	726.04
1288.5	725.66	1345.9	725.32	1373.04	725.22	1374.6	725.21	1401.71	725.11
1432.01	724.92	1459.06	724.85	1460.71	724.85	1487.74	724.78	1489.41	724.77
1516.41	724.74	1518.12	724.73	2188.73	724.8	2410.75	724.3	2570.46	723.35
2666.22	723.23	2669.03	723.22	2705.07	723.17	2752.33	722.98	2754.99	722.99
2778.11	722.99	2781.04	723	2895.85	722.76	2924.55	722.76	3010.65	722.58
3036.19	722.59	3049.54	722.56	3093.54	722.32	3096.76	722.29	3148.3	722.04
3209.2	721.97	3214.91	721.97	3240.27	721.89	3254.91	721.73	3268.97	721.55
3272.37	721.48	3297.68	720.67	3301.1	720.59	3326.38	720.83	3351.62	721.23
3355.08	721.33	3358.56	721.37	3361.56	721.38	3368.91	721.43	3383.78	721.61
3408.97	721.72	3412.49	721.75	3466.32	721.99	3469.89	721.99	3528.62	722.21
3559.67	722.14	3584.7	722.15	3688.28	721.95	3699.51	721.87	3728.22	721.74
3788.04	721.36	3839.09	721.15	3843.03	721.15	3894.65	720.98	3900.43	720.99
3904.43	721.01	3957.84	721.14	3982.47	721.29	3988.37	721.32	4007.7	721.38
4097.17	721.56	4125.84	721.72	4167.37	721.83	4216.16	721.79	4244.87	721.93
4273.57	721.99	4277.92	722.01	4326.57	722.12	4327.07	722.13	4486.79	722.71
4503.19	722.74	4613.32	723.13	4618	723.14	4641	723.27	4641.99	723.28
4646.45	723.29	4646.7	723.29	4670.67	723.36	4675.41	723.38	4732.81	723.54
4737.61	723.54	4761.51	723.62	4790.22	723.82	4905.03	724.29	4933.73	724.49
4986.1	724.6	5019.84	724.6	5048.54	724.52	5077.24	724.21	5163.35	723.55
5186.82	723.26	5192.05	723.18	5226.02	723.08	5254.75	723.06	5283.48	723.11
5285.24	723.12	5306.87	723.21	5335.57	723.72	5387.35	724.28	5392.97	724.36
5421.68	724.6	5444.9	724.55	5450.54	724.42	5474.42	722.05	5480.09	721.47
5503.94	718.43	5509.64	717.68	5513.82	716.99	5517.59	716.36	5519.47	716.03
5539.19	713.11	5544.92	712.44	5574.75	705.18	5594.05	705.08	5663.62	704.97
5668.6	704.97	5766.52	704.81	5813.42	704.27	5817.74	704.23	5837.56	709.07
5872.12	712.22	5879.19	713.57	5900.08	717.62	5900.89	717.79	5906.69	718.96
5913.78	719.12	5920.67	719.3	5940.62	721.54	5941.25	721.6	5947.31	721.47
5970.63	720.94	5993.89	720.5	6000.01	720.41	6058.77	720.48	6088.15	720.44
6094.36	720.51	6105.98	720.67	6109.6	720.73	6117.53	720.84	6140.65	721.37
6146.91	721.5	6176.29	721.74	6199.35	721.78	6205.67	721.81	6211.99	721.86
6264.42	722.06	6275.39	722.06	6357.6	722.2	6385.15	722.33	6440.52	722.74
6441.19	722.74	6522.22	722.08	6524.13	722.07	6558.21	722.07	6822.62	722.11
6969.52	722	6976.58	721.98	7023.74	721.92	7273.54	721.97	7276.95	721.98
7709.59	722.24	7711.58	722.23	7719.43	722.23	7826.34	722.09	7829.79	722.08
8106.2	721.96	8113.37	721.97	8608.93	721.94	8615.23	721.95	8821.36	721.97

8822.98	721.98	9061.74	721.99	9105.41	721.92	9109.29	721.92	9211.97	721.7
9242.03	721.58	9243.23	721.58	9271.94	721.51	9332.17	721.53	9362.21	721.49
9365.94	721.49	9390.69	721.44	9392.26	721.44	9394.71	721.43	9512.46	721.33
9605	721.4	9609.63	721.41	9812.93	721.59	9851.11	721.51	9854.44	721.51
9933.11	721.34	9934.97	721.34	9963.16	721.23	9968.5	721.23	10023.26	721.15
10083.7	721.19	10113.4	721.37	10155.81	721.51	0157.04	721.51	10182.38	721.58
10233.6	721.55	10236.27	721.58	10242.47	721.61	0263.65	721.71	0293.69	721.7
10503.95	721.27	10504.03	721.27	10507.37	721.26	10654.26	721.31	10683.2	721.39
10684.3	721.39	10771.82	721.49	10924.82	721.65	10974.08	721.76	11039.58	721.8
11073.04	721.84	11074.93	721.84	11077.84	721.87	11122.52	722.14	11195.11	722.33
11196.75	722.33	11208.25	722.36	11225.17	722.42	11255.22	722.61	11344.43	722.91
11345.19	722.92	11345.61	722.92	11375.4	723.16	11495.6	723.65	11525.64	723.89
11555.69	723.99	11575.13	723.97	11585.74	724.01	11587.3	724.02	11642.08	724.22
11645.83	724.22	11675.88	724.51	1764.67	724.87	11790.53	725.03	11813.32	725.07
11826.12	725.14	11856.16	725.21	11864.74	725.21	1916.26	725.38	11946.3	725.59
12039.34	725.83	12062.35	725.83	12096.55	725.92	12114.69	725.91	12265.36	726.14
12366.97	726.12	12384.3	726.08	12397.02	726.08	12456.55	725.83	12457.12	725.83
12487.17	725.65	12493.2	725.55	12517.22	725.25	12522.24	725.22	12547.26	725.11
12569.71	725.17	12577.31	725.16	12582.23	725.18	12637.4	725.19	12719.34	725.55
12722.71	725.56	12787.64	725.98	12817.69	726.42	12907.83	726.97	12913.98	726.97
12937.88	727.11	12967.93	727.19	13028.02	727.59	13028.74	727.59	13077.04	727.68
13088.12	727.34	13105.24	727.24	13118.16	727.1	13143.5	727.05	13148.21	727.01
13151.26	726.97	13156.31	726.97	13165.48	726.95	13176.01	726.87	13178.26	726.92
13181.75	727.06	13208.31	727.36	13220	727.56	13238.36	727.63	13244.6	727.69
13244.82	727.69	13245.95	727.71	3250.22	727.75	13268.41	728.39	13296.51	726.36
13298.45	726.41	3305.56	726.36	13320.16	726.11	13324.44	726.05	13328.5	725.76
13332.92	725.56	13334.77	725.48	13358.55	724.29	13373.02	723.99	13388.59	723.51
13395.49	723.34	13398.67	723.29	13418.64	722.53	13421.21	722.42	13445.64	721.29
13448.15	721.27	13448.69	721.28	13472.89	721.53	13478.74	721.69	13497.63	726.13
13507.75	726.46	13508.79	726.49	13526.03	726.65	13538.83	727.09	13546.18	726.93
13564.28	726.51	13568.88	726.81	13585.71	725.75	13596.6	725.66	13598.93	725.68
13602.53	725.69	13621.51	725.95	13628.97	72	13646.08	726.25	13659.02	726.17
13679.04	726.21	13689.08	726.16	13719.12	726.48	13725.79	726.36	13745.04	726.13
13749.17	726.25	13772.2	726.11	13779.22	726.04	13793.8	729.46	13809.26	733.23
13836.26	725.47	13839.31	724.59	13844	725.09	13847.55	725.33	13865.88	726.48
13869.35	726.61	13893.48	730.26	13899.4	731.67	13908.56	732.93	13929.45	734.85
13946.81	737.88	13959.5	740.01	13985.06	742.11	13989.55	742.58	13992.45	742.84
13998.22	743.43	14005.96	744.2	14019.6	745.49	14041.93	747.04	14049.64	747.53
14066.67	750.14	14079.69	751.34	14091.41	751.85	14099.06	752.03	14109.74	752.25
14116.15	752.41	14140.89	752.87	14146.04	752.91	14148.9	752.92	14169.83	753.05
14176.33	753.12	14199.88	753.24	14215.12	753.39	14215.89	753.35	14224.24	752.89
14229.93	752.59	14252.83	751.84	14259.98	751.66	14286.12	75	14289.34	752.14
14290.02	752.15	14296.16	752.77	14314.07	754.56	14320.07	754.95	14329.34	755.58
14341.86	756.18								

```
Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .09  5444.9     .04 5941.25     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        5444.9 5941.25          445.81  445.81  445.81            .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
12947.8214341.86729.2267       F

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)         *  723.44  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.16  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  723.28  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  711.70  * Flow Area (sq ft)      * 2387.34  * 6475.76  * 7981.33  *
* E.G. Slope (ft/ft)     *0.000272  * Area (sq ft)           * 2387.34  * 6475.76  * 8092.38  *
* Q Total (cfs)          *25945.95  * Flow (cfs)             *  719.06  *22427.08  * 2799.81  *
* Top Width (ft)         * 8173.67  * Top Width (ft)         * 2143.77  *  479.24  * 5550.66  *
* Vel Total (ft/s)       *    1.54  * Avg. Vel. (ft/s)       *    0.30  *    3.46  *    0.35  *
* Max Chl Dpth (ft)      *   19.05  * Hydr. Depth (ft)       *    1.11  *   13.51  *    1.46  *
* Conv. Total (cfs)      *1572081.0  * Conv. (cfs)           * 43568.1  *1358870.0  *169642.1  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 2143.81  *  482.35  * 5464.07  *
* Min Ch El (ft)         *  704.23  * Shear (lb/sq ft)       *    0.02  *    0.23  *    0.02  *
* Alpha                  *    4.38  * Stream Power (lb/ft s) *14341.86  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)   *   43.12  *  495.15  *  335.13  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *   53.71  *   35.55  *  329.23  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)         *  727.71  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.04  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.67  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  714.16  * Flow Area (sq ft)      *18551.55  * 8640.01  *35469.55  *
* E.G. Slope (ft/ft)     *0.000084  * Area (sq ft)           *18551.55  * 8640.01  *36868.87  *
* Q Total (cfs)          *42918.92  * Flow (cfs)             * 7371.98  *19701.32  *15845.62  *
* Top Width (ft)         *12714.92  * Top Width (ft)         * 4368.19  *  496.35  * 7850.38  *
```



```
* Vel Total (ft/s)       *    0.68  * Avg. Vel. (ft/s)       *    0.40  *    2.28  *    0.45  *
* Max Chl Dpth (ft)      *   23.44  * Hydr. Depth (ft)       *    4.25  *   17.41  *    5.06  *
* Conv. Total (cfs)      *4676408.0  * Conv. (cfs)           *803244.2  *2146638.0  *1726525.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 4368.26  *  499.52  * 7006.62  *
* Min Ch El (ft)         *  704.23  * Shear (lb/sq ft)       *    0.02  *    0.09  *    0.03  *
* Alpha                  *    5.30  * Stream Power (lb/ft s) *14341.86  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.04  * Cum Volume (acre-ft)   *  485.17  *  665.45  * 2250.34  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *  110.00  *   36.16  *  439.95  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)         *  725.61  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.21  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  725.41  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  715.62  * Flow Area (sq ft)      * 8941.09  * 7517.07  *20147.90  *
* E.G. Slope (ft/ft)     *0.000407  * Area (sq ft)           * 8941.09  * 7517.07  *20534.54  *
* Q Total (cfs)          *54360.98  * Flow (cfs)             * 4995.26  *34326.11  *15039.61  *
* Top Width (ft)         *10941.38  * Top Width (ft)         * 4113.61  *  496.35  * 6331.42  *
* Vel Total (ft/s)       *    1.49  * Avg. Vel. (ft/s)       *    0.56  *    4.57  *    0.75  *
* Max Chl Dpth (ft)      *   21.18  * Hydr. Depth (ft)       *    2.17  *   15.14  *    3.27  *
* Conv. Total (cfs)      *2695540.0  * Conv. (cfs)           *247694.6  *1702092.0  *745753.1  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 4113.67  *  499.52  * 6160.86  *
* Min Ch El (ft)         *  704.23  * Shear (lb/sq ft)       *    0.06  *    0.38  *    0.08  *
* Alpha                  *    6.05  * Stream Power (lb/ft s) *14341.86  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.21  * Cum Volume (acre-ft)   *  150.13  *  503.23  *  674.84  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *   82.56  *   35.69  *  310.26  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)         *  727.12  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.14  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  726.98  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  717.26  * Flow Area (sq ft)      *15575.49  * 8298.85  *30656.64  *
* E.G. Slope (ft/ft)     *0.000301  * Area (sq ft)           *15575.49  * 8298.85  *31580.80  *
```

```
* Q Total (cfs)          *68923.08  * Flow (cfs)              *10532.74  *34826.35  *23564.00  *
* Top Width (ft)         *12322.65  * Top Width (ft)          * 4294.16  *  496.35  * 7532.15  *
* Vel Total (ft/s)       *    1.26  * Avg. Vel. (ft/s)        *    0.68  *    4.20  *    0.77  *
* Max Chl Dpth (ft)      *   22.75  * Hydr. Depth (ft)        *    3.63  *   16.72  *    4.40  *
* Conv. Total (cfs)      *3972427.0  * Conv. (cfs)            *607061.1  *2007239.0  *1358126.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)        * 4294.22  *  499.52  * 6974.77  *
* Min Ch El (ft)         *  704.23  * Shear (lb/sq ft)        *    0.07  *    0.31  *    0.08  *
* Alpha                  *    5.74  * Stream Power (lb/ft s) *14341.86  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.15  * Cum Volume (acre-ft)    *  321.71  *  574.33  * 1389.06  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)          *  100.64  *   35.98  *  402.41  *
*****************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK50

```
*****************************************************************************************
* E.G. Elev (ft)         *  728.16  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.11  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  728.05  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  718.38  * Flow Area (sq ft)       *20212.79  * 8827.89  *38121.82  *
* E.G. Slope (ft/ft)     *0.000245  * Area (sq ft)            *20212.79  * 8827.89  *39848.82  *
* Q Total (cfs)          *79649.91  * Flow (cfs)              *14402.95  *34797.23  *30449.73  *
* Top Width (ft)         *12788.88  * Top Width (ft)          * 4408.91  *  496.35  * 7883.61  *
* Vel Total (ft/s)       *    1.19  * Avg. Vel. (ft/s)        *    0.71  *    3.94  *    0.80  *
* Max Chl Dpth (ft)      *   23.82  * Hydr. Depth (ft)        *    4.58  *   17.79  *    5.44  *
* Conv. Total (cfs)      *5092972.0  * Conv. (cfs)            *920953.1  *2225003.0  *1947015.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)        * 4408.99  *  499.52  * 7006.62  *
* Min Ch El (ft)         *  704.23  * Shear (lb/sq ft)        *    0.07  *    0.27  *    0.08  *
* Alpha                  *    5.07  * Stream Power (lb/ft s) *14341.86  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)    *  447.08  *  620.33  * 1913.84  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)          *  107.97  *   36.04  *  422.44  *
*****************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK100

```
*****************************************************************************************
* E.G. Elev (ft)         *  730.88  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.04  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  730.84  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
```



```
* Crit W.S. (ft)         *  719.50  * Flow Area (sq ft)       *32729.78  *10214.18  *61960.88  *
* E.G. Slope (ft/ft)     *0.000103  * Area (sq ft)            *32729.78  *10214.18  *61960.88  *
* Q Total (cfs)          *89992.12  * Flow (cfs)              *20414.22  *28737.30  *40840.59  *
* Top Width (ft)         *12976.34  * Top Width (ft)          * 4543.43  *  496.35  * 7936.56  *
* Vel Total (ft/s)       *    0.86  * Avg. Vel. (ft/s)        *    0.62  *    2.81  *    0.66  *
* Max Chl Dpth (ft)      *   26.61  * Hydr. Depth (ft)        *    7.20  *   20.58  *    7.81  *
* Conv. Total (cfs)      *8885191.0  * Conv. (cfs)            *2015558.0  *2837319.0  *4032314.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)        * 4543.54  *  499.52  * 7939.27  *
* Min Ch El (ft)         *  704.23  * Shear (lb/sq ft)        *    0.05  *    0.13  *    0.05  *
* Alpha                  *    3.82  * Stream Power (lb/ft s) *14341.86  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.05  * Cum Volume (acre-ft)    *  848.56  *  778.30  * 3631.49  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  121.36  *   36.16  *  445.27  *
*****************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK200

```
*****************************************************************************************
* E.G. Elev (ft)         *  731.75  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.04  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.71  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  720.55  * Flow Area (sq ft)       *36706.11  *10647.07  *68887.06  *
* E.G. Slope (ft/ft)     *0.000096  * Area (sq ft)            *36706.11  *10647.07  *68887.06  *
* Q Total (cfs)          *100471.50  * Flow (cfs)             *23752.66  *29724.71  *46994.12  *
* Top Width (ft)         *13015.70  * Top Width (ft)          * 4572.39  *  496.35  * 7946.96  *
* Vel Total (ft/s)       *    0.86  * Avg. Vel. (ft/s)        *    0.65  *    2.79  *    0.68  *
* Max Chl Dpth (ft)      *   27.48  * Hydr. Depth (ft)        *    8.03  *   21.45  *    8.67  *
* Conv. Total (cfs)      *10277260.0  * Conv. (cfs)           *2429668.0  *3040551.0  *4807044.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)        * 4572.51  *  499.52  * 7950.00  *
* Min Ch El (ft)         *  704.23  * Shear (lb/sq ft)        *    0.05  *    0.13  *    0.05  *
* Alpha                  *    3.51  * Stream Power (lb/ft s) *14341.86  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.05  * Cum Volume (acre-ft)    *  956.62  *  810.25  * 4025.00  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *  124.71  *   36.16  *  446.27  *
*****************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK500

```
*****************************************************************************************
* E.G. Elev (ft)         *  732.81  * Element                *  Left OB *  Channel * Right OB *
```

* Vel Head (ft)	* 0.04	* Wt. n-Val.	* 0.090	* 0.040	* 0.090	*
* W.S. Elev (ft)	* 732.77	* Reach Len. (ft)	* 445.81	* 445.81	* 445.81	*
* Crit W.S. (ft)	* 724.33	* Flow Area (sq ft)	*41572.04	*11173.04	*77316.76	*
* E.G. Slope (ft/ft)	*0.000088	* Area (sq ft)	*41572.04	*11173.04	*77316.76	*
* Q Total (cfs)	*113669.30	* Flow (cfs)	*27926.12	*30993.98	*54749.20	*
* Top Width (ft)	*13080.07	* Top Width (ft)	* 4621.02	* 496.35	* 7962.69	*
* Vel Total (ft/s)	* 0.87	* Avg. Vel. (ft/s)	* 0.67	* 2.77	* 0.71	*
* Max Chl Dpth (ft)	* 28.54	* Hydr. Depth (ft)	* 9.00	* 22.51	* 9.71	*
* Conv. Total (cfs)	*12084270.0	* Conv. (cfs)	*2968848.0	*3294995.0	*5820432.0	*
* Length Wtd. (ft)	* 445.81	* Wetted Per. (ft)	* 4621.15	* 499.52	* 7966.08	*
* Min Ch El (ft)	* 704.23	* Shear (lb/sq ft)	* 0.05	* 0.12	* 0.05	*
* Alpha	* 3.21	* Stream Power (lb/ft s)	*14341.86	* 0.00	* 0.00	*
* Frctn Loss (ft)	* 0.05	* Cum Volume (acre-ft)	* 1095.64	* 848.92	* 4502.34	*
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 136.82	* 36.16	* 447.27	*

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 3985.50*

INPUT
Description:
Station Elevation Data num= 383

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	769.4	23.09	768.57	23.34	768.57	49	767.61	49.27	767.61
74.9	766.22	101.13	766.19	152.24	766.91	152.99	766.91	178.53	767.26
178.92	767.26	204.43	767.55	229.88	767.61	230.34	767.61	282.15	767.68
308.05	767.35	313.64	766.81	331.5	765.02	333.96	764.78	359.29	762.97
360.43	762.9	385.77	760.98	386.36	760.94	411.67	759.01	412.29	758.94
437.58	755.72	462.81	754.15	464.15	754.06	515.3	750.31	516.01	750.25
541.2	748.43	566.33	745.54	567.11	745.46	593.01	744.42	593.8	744.4
643.98	742.75	644.82	742.73	669.86	741.98	670.73	741.96	671.59	741.92
696.63	740.5	697.52	740.47	722.54	739.92	774.35	739.09	775.32	739.05
800.25	738.16	825.14	737.56	826.15	737.53	851.02	736.93	853.1	736.87
877.96	736.36	885.18	736.25	903.87	735.9	928.66	735.37	929.77	735.34
980.42	734.82	981.58	734.8	1033.39	734.31	1059.3	733.91	1085.21	733.72
1086.48	733.7	1135.7	733.35	1162.92	733.02	1299.76	732.31	1342.75	732.21

1368.63	732.17	1370.16	732.16	1975.42	732.3	2175.8	731.3	2319.95	729.4
2406.38	729.16	2408.91	729.14	2441.44	729.05	2455.61	728.9	2481.48	728.66
2636.77	727.59	2639.53	727.58	2752.34	726.77	2841.47	725.46	2896.44	725.12
2901.59	725.1	2924.48	724.94	2937.69	724.74	2947.34	724.54	2950.39	724.49
2953.45	724.4	2976.29	723.53	2979.38	723.44	3002.2	723.49	3024.98	723.67
3028.1	723.74	3031.24	723.75	3040.59	723.75	3054.01	723.93	3128.5	724.42
3131.72	724.43	3184.73	724.72	3226.39	724.45	3235.35	724.42	3322.61	723.87
3328.83	723.81	3418.87	722.33	3515.09	721.26	3572.12	721.43	3598.02	721.59
3599.67	721.59	3617.12	721.65	3634.37	721.63	3697.87	721.74	3761.22	721.95
3803.78	721.7	3805.26	721.7	3904.91	721.93	3905.37	721.93	3956.68	722.16
3960.7	722.19	4049.51	722.52	4092.48	722.6	4094.38	722.62	4167.94	722.9
4188.7	723.04	4189.59	723.04	4193.62	723.05	4193.85	723.05	4297.47	723.29
4426.99	723.92	4452.9	724.12	4530.62	724.28	4556.52	724.24	4577.8	724.04
4582.43	723.98	4660.14	723.42	4686.05	723.08	4742.64	722.95	4789.67	723.05
4794.5	723.12	4815.58	723.49	4862.31	723.96	4867.39	724.03	4893.29	724.31
4914.25	724.31	4919.52	724.07	4947.12	720.82	4969.4	717.62	4974.72	716.83
4982.14	715.5	4983.9	715.15	4989.15	714.42	5002.32	712.53	5007.67	711.93
5035.53	705.47	5053.55	705.31	5214.64	705.12	5258.44	704.12	5262.48	704.06
5284.05	708.3	5321.68	711.06	5329.38	712.23	5352.12	715.78	5353.01	715.95
5359.31	717.02	5367.04	717.21	5374.53	717.43	5396.25	721.5	5396.94	721.61
5402.56	721.5	5424.2	721.01	5445.78	720.61	5447.73	720.58	5451.46	720.54
5533.23	720.58	5549.78	720.8	5550.9	720.82	5560.49	720.95	5581.95	721.42
5587.75	721.53	5615.01	721.76	5642.27	721.83	5696.79	722.09	5705.98	722.1
5706.97	722.11	5783.24	722.4	5808.8	722.69	5860.18	723.51	5860.48	723.52
5860.79	723.51	5937.75	722.2	6405.51	721.88	6478.54	721.92	6481.02	721.93
6788.85	722.08	6791.44	722.09	6862.03	722.15	6864.82	722.16	7037.65	722.24
7039.49	722.23	7149.92	722.09	7151.23	722.1	7288.56	721.99	7290.86	721.98
7482.89	722	7717.32	721.86	8069.17	721.96	8070.67	721.97	8178.19	721.96
8181.57	721.95	8332.72	721.89	8347.95	721.87	8459.47	721.55	8460.59	721.55
8487.23	721.48	8598.86	721.42	8601.13	721.41	8710.38	721.34	8989.17	721.56
9100.68	721.3	9128.56	721.19	9133.51	721.2	9240.4	721.16	9307.3	721.41
9308.44	721.41	9331.95	721.47	9379.47	721.44	9381.95	721.46	9407.35	721.56
9653.32	721.09	9879.27	721.35	9881.29	721.36	10160.08	721.72	10162.78	721.75
10204.24	722	10206.97	722	10271.59	722.14	10283.77	722.16	10299.47	722.21
10344.72	722.45	10410.12	722.66	10410.83	722.67	10411.22	722.67	10438.86	722.88
10550.38	723.27	10578.26	723.47	10689.77	723.72	10717.66	723.97	10824.03	724.44
10846.98	724.47	10857.05	724.52	10884.92	724.56	10892.88	724.54	10940.69	724.68
10968.56	724.86	11054.88	725.11	11124.79	725.05	11194.7	725.34	11271.99	725.41
11275.23	725.42	11386.75	725.39	11441.98	725.14	11442.5	725.14	11470.38	724.95
11474.32	724.89	11498.26	724.61	11526.14	724.51	11546.97	724.56	11554.02	724.56
11558.58	724.58	11609.78	724.63	11749.17	725.35	11777.05	725.75	11860.69	726.24
11866.39	726.24	11893.73	726.38	11916.44	726.41	11963.64	726.67	11972.2	726.74
11972.86	726.75	12017.68	726.91	12027.96	726.62	12033.53	726.61	12055.83	726.45
12079.35	726.42	12083.72	726.39	12086.55	726.35	12091.23	726.36	12109.5	726.26

```
 12111.6   726.312114.83  726.4212139.47  726.6612150.32  726.8212167.35  726.87
12173.15  726.9112173.35  726.92 12174.4  726.9212178.36  726.9612195.24  727.51
12221.31  725.7312223.11  725.77 12229.7  725.7212243.26   725.512247.23  725.46
12250.99  725.2212255.09  725.0612256.81     72512278.87  724.0312292.29  723.82
12306.75  723.4512313.14  723.3112316.09  723.3212334.63  722.9712337.01  722.91
12359.67  722.2512362.01  722.27 12362.5  722.2912383.05  722.7812384.96  722.83
12390.38  723.0612407.92  727.21 12417.3  727.6412418.26  727.6912434.27  728.12
12446.14  728.7312452.96  728.7212469.75  728.6112474.02  728.9512489.64  728.27
12499.74  728.3512500.85  728.37 12501.9   728.412505.24  728.4712522.85  729.01
12529.78  729.1212545.65   729.512557.66  729.5512576.23  729.7612585.54  729.82
12613.41  730.3512619.61  730.2912637.46  730.2412641.29  730.3912662.67  730.44
12669.18  730.39 12682.7  733.4312697.05  736.7712722.11  730.0612724.93  729.32
12729.28  729.7812732.58  730.0112749.59  731.0512752.81  731.1712775.19  734.37
12780.69  735.6112789.19  736.7212808.57  738.4212824.67  741.1112836.44  742.99
12860.16  744.8712864.32  745.2912867.02  745.5312879.55  746.7312892.21  747.87
12912.92  749.2412920.08  749.6912935.88  751.9912942.29  752.5412947.96  753.06
12958.83  753.5612965.93  753.7513003.72  754.49 13031.6  754.6913037.63  754.76
13059.48   754.913073.61  755.0513074.33  755.0213087.35  754.3413108.61  753.71
13115.24  753.5513139.49  753.8613142.48  753.9813143.11  753.9813165.43  756.08
13170.99  756.4113179.59  756.9613191.21  757.47

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
       0     .09 4914.25     .04 5396.94     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       4914.25 5396.94           445.81  445.81  445.81             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
11554.0613191.21729.1934       F

CROSS SECTION OUTPUT  Profile #PK2
*************************************************************************************************
* E.G. Elev (ft)          *  723.31  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.19  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  723.12  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  712.05  * Flow Area (sq ft)       *  897.82  * 6313.04  * 6737.21  *
* E.G. Slope (ft/ft)      *0.000311  * Area (sq ft)            *  897.82  * 6313.04  * 6766.46  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              *  265.44  *23303.32  * 2377.19  *
* Top Width (ft)          * 6560.31  * Top Width (ft)          *  964.57  *  469.35  * 5126.39  *
* Vel Total (ft/s)        *    1.86  * Avg. Vel. (ft/s)        *    0.30  *    3.69  *    0.35  *
* Max Chl Dpth (ft)       *   19.06  * Hydr. Depth (ft)        *    0.93  *   13.45  *    1.33  *
* Conv. Total (cfs)       *1470696.0  * Conv. (cfs)            * 15045.9  *1320904.0  *134746.5  *
```



```
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        *  964.59  *  472.27  * 5062.50  *
* Min Ch El (ft)          *  704.06  * Shear (lb/sq ft)        *    0.02  *    0.26  *    0.03  *
* Alpha                   *    3.54  * Stream Power (lb/ft s) *13191.21  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.15  * Cum Volume (acre-ft)    *   26.31  *  429.71  *  259.10  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *   37.80  *   30.70  *  274.59  *
*************************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK5
*************************************************************************************************
* E.G. Elev (ft)          *  727.66  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.05  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.61  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  714.54  * Flow Area (sq ft)       * 9399.97  * 8470.89  *32784.38  *
* E.G. Slope (ft/ft)      *0.000106  * Area (sq ft)            * 9399.97  * 8470.89  *34570.23  *
* Q Total (cfs)           *42918.92  * Flow (cfs)              * 4110.56  *21804.05  *17004.32  *
* Top Width (ft)          * 9782.74  * Top Width (ft)          * 2280.35  *  482.69  * 7019.70  *
* Vel Total (ft/s)        *    0.85  * Avg. Vel. (ft/s)        *    0.44  *    2.57  *    0.52  *
* Max Chl Dpth (ft)       *   23.55  * Hydr. Depth (ft)        *    4.12  *   17.55  *    5.32  *
* Conv. Total (cfs)       *4165811.0  * Conv. (cfs)            *398980.6  *2116352.0  *1650479.0  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        * 2280.44  *  485.67  * 6157.18  *
* Min Ch El (ft)          *  704.06  * Shear (lb/sq ft)        *    0.03  *    0.12  *    0.04  *
* Alpha                   *    4.86  * Stream Power (lb/ft s) *13191.21  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.05  * Cum Volume (acre-ft)    *  342.13  *  577.89  * 1884.77  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *   75.98  *   31.15  *  363.85  *
*************************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK10
*************************************************************************************************
* E.G. Elev (ft)          *  725.40  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.30  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  725.10  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  715.94  * Flow Area (sq ft)       * 4025.29  * 7259.31  *17402.15  *
* E.G. Slope (ft/ft)      *0.000536  * Area (sq ft)            * 4025.29  * 7259.31  *17701.53  *
* Q Total (cfs)           *54360.98  * Flow (cfs)              * 2443.15  *37895.36  *14022.48  *
* Top Width (ft)          * 8631.97  * Top Width (ft)          * 2012.63  *  482.69  * 6136.65  *
* Vel Total (ft/s)        *    1.89  * Avg. Vel. (ft/s)        *    0.61  *    5.22  *    0.81  *
* Max Chl Dpth (ft)       *   21.04  * Hydr. Depth (ft)        *    2.00  *   15.04  *    2.98  *
```

```
* Conv. Total (cfs)      *2347285.0  * Conv. (cfs)          *105494.1  *1636306.0  *605484.8  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)      * 2012.70  *  485.67  * 5845.11  *
* Min Ch El (ft)         *  704.06  * Shear (lb/sq ft)      *    0.07  *    0.50  *    0.10  *
* Alpha                  *    5.34  * Stream Power (lb/ft s) *13191.21  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.26  * Cum Volume (acre-ft)  *   83.78  *  427.62  *  479.18  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *   51.21  *   30.68  *  246.45  *
*****************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK25

```
*****************************************************************************************
* E.G. Elev (ft)         *  726.96  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.21  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  726.76  * Reach Len. (ft)       *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  717.67  * Flow Area (sq ft)     * 7509.17  * 8059.70  *27539.33  *
* E.G. Slope (ft/ft)     *0.000395  * Area (sq ft)          * 7509.17  * 8059.70  *28615.64  *
* Q Total (cfs)          *68923.08  * Flow (cfs)            * 5654.63  *38728.27  *24540.18  *
* Top Width (ft)         * 9544.72  * Top Width (ft)        * 2161.09  *  482.69  * 6900.94  *
* Vel Total (ft/s)       *    1.60  * Avg. Vel. (ft/s)      *    0.75  *    4.81  *    0.89  *
* Max Chl Dpth (ft)      *   22.70  * Hydr. Depth (ft)      *    3.47  *   16.70  *    4.47  *
* Conv. Total (cfs)      *3466631.0  * Conv. (cfs)          *284411.3  *1947920.0  *1234300.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)      * 2161.17  *  485.67  * 6157.18  *
* Min Ch El (ft)         *  704.06  * Shear (lb/sq ft)      *    0.09  *    0.41  *    0.11  *
* Alpha                  *    5.20  * Stream Power (lb/ft s) *13191.21  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.19  * Cum Volume (acre-ft)  *  203.58  *  490.62  * 1081.03  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)        *   67.61  *   30.97  *  328.55  *
*****************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK50

```
*****************************************************************************************
* E.G. Elev (ft)         *  728.03  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.17  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.86  * Reach Len. (ft)       *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  718.75  * Flow Area (sq ft)     * 9972.19  * 8591.06  *34317.27  *
* E.G. Slope (ft/ft)     *0.000330  * Area (sq ft)          * 9972.19  * 8591.06  *36318.74  *
* Q Total (cfs)          *79649.91  * Flow (cfs)            * 7916.76  *39369.32  *32363.84  *
* Top Width (ft)         * 9826.78  * Top Width (ft)        * 2316.48  *  482.69  * 7027.60  *
```



```
* Vel Total (ft/s)       *    1.51  * Avg. Vel. (ft/s)      *    0.79  *    4.58  *    0.94  *
* Max Chl Dpth (ft)      *   23.80  * Hydr. Depth (ft)      *    4.30  *   17.80  *    5.57  *
* Conv. Total (cfs)      *4383405.0  * Conv. (cfs)          *435685.9  *2166627.0  *1781092.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)      * 2316.57  *  485.67  * 6157.18  *
* Min Ch El (ft)         *  704.06  * Shear (lb/sq ft)      *    0.09  *    0.36  *    0.11  *
* Alpha                  *    4.76  * Stream Power (lb/ft s) *13191.21  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.16  * Cum Volume (acre-ft)  *  292.62  *  531.20  * 1524.08  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *   73.55  *   31.03  *  346.13  *
*****************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK100

```
*****************************************************************************************
* E.G. Elev (ft)         *  730.83  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.07  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  730.76  * Reach Len. (ft)       *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  719.73  * Flow Area (sq ft)     *17308.44  * 9990.02  *57042.50  *
* E.G. Slope (ft/ft)     *0.000144  * Area (sq ft)          *17308.44  * 9990.02  *57042.50  *
* Q Total (cfs)          *89992.12  * Flow (cfs)            *11858.86  *33481.34  *44651.92  *
* Top Width (ft)         *10479.11  * Top Width (ft)        * 2697.26  *  482.69  * 7299.16  *
* Vel Total (ft/s)       *    1.07  * Avg. Vel. (ft/s)      *    0.69  *    3.35  *    0.78  *
* Max Chl Dpth (ft)      *   26.70  * Hydr. Depth (ft)      *    6.42  *   20.70  *    7.81  *
* Conv. Total (cfs)      *7488331.0  * Conv. (cfs)          *986787.6  *2786014.0  *3715529.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)      * 2697.36  *  485.67  * 7300.23  *
* Min Ch El (ft)         *  704.06  * Shear (lb/sq ft)      *    0.06  *    0.19  *    0.07  *
* Alpha                  *    3.99  * Stream Power (lb/ft s) *13191.21  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.07  * Cum Volume (acre-ft)  *  592.50  *  674.91  * 3022.53  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *   84.31  *   31.15  *  367.31  *
*****************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK200

```
*****************************************************************************************
* E.G. Elev (ft)         *  731.70  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.07  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.63  * Reach Len. (ft)       *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  723.96  * Flow Area (sq ft)     *19709.07  *10413.17  *63450.40  *
* E.G. Slope (ft/ft)     *0.000136  * Area (sq ft)          *19709.07  *10413.17  *63450.40  *
* Q Total (cfs)          *100471.50  * Flow (cfs)           *13925.71  *34830.84  *51714.95  *
```

```
* Top Width (ft)          *10605.59  * Top Width (ft)          * 2805.31  *  482.69  * 7317.59  *
* Vel Total (ft/s)        *    1.07  * Avg. Vel. (ft/s)        *    0.71  *    3.34  *    0.82  *
* Max Chl Dpth (ft)       *   27.57  * Hydr. Depth (ft)        *    7.03  *   21.57  *    8.67  *
* Conv. Total (cfs)       *8611720.0  * Conv. (cfs)            *1193615.0  *2985458.0  *4432647.0  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        * 2805.42  *  485.67  * 7318.91  *
* Min Ch El (ft)          *  704.06  * Shear (lb/sq ft)        *    0.06  *    0.18  *    0.07  *
* Alpha                   *    3.72  * Stream Power (lb/ft s) *13191.21  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.07  * Cum Volume (acre-ft)    *  667.93  *  702.48  * 3347.81  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *   86.96  *   31.15  *  368.16  *
*****************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK500

```
*****************************************************************************************
* E.G. Elev (ft)          *  732.76  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.07  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.69  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  724.42  * Flow Area (sq ft)       *23108.40  *10925.00  *71218.23  *
* E.G. Slope (ft/ft)      *0.000132  * Area (sq ft)            *23108.40  *10925.00  *71218.23  *
* Q Total (cfs)           *113669.30  * Flow (cfs)             *14890.34  *37140.88  *61638.07  *
* Top Width (ft)          *11504.88  * Top Width (ft)          * 3688.50  *  482.69  * 7333.68  *
* Vel Total (ft/s)        *    1.08  * Avg. Vel. (ft/s)        *    0.64  *    3.40  *    0.87  *
* Max Chl Dpth (ft)       *   28.63  * Hydr. Depth (ft)        *    6.26  *   22.63  *    9.71  *
* Conv. Total (cfs)       *9897660.0  * Conv. (cfs)            *1296564.0  *3234012.0  *5367084.0  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        * 3688.61  *  485.67  * 7335.34  *
* Min Ch El (ft)          *  704.06  * Shear (lb/sq ft)        *    0.05  *    0.19  *    0.08  *
* Alpha                   *    3.63  * Stream Power (lb/ft s) *13191.21  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.06  * Cum Volume (acre-ft)    *  764.66  *  735.84  * 3742.25  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *   94.29  *   31.15  *  368.99  *
*****************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 3539.69*

INPUT
Description:
Station Elevation Data num= 397

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	771.84	20.6	771.18	20.82	771.17	43.71	770.39	43.95	770.38
61.31	769.51	66.82	769.21	89.63	769.18	89.92	769.19	90.21	769.19
113.03	769.44	135.8	769.79	136.47	769.79	159.25	770.09	159.6	770.09
182.36	770.34	205.06	770.4	205.46	770.4	251.68	770.5	274.79	770.25
275.25	770.21	279.78	769.79	297.9	768.04	320.49	766.5	321.51	766.44
344.11	764.79	344.64	764.76	367.22	763.1	367.77	763.04	390.33	760.29
407.22	759.29	412.84	758.94	436.55	757.31	437.16	757.26	459.65	755.63
460.29	755.58	482.76	754.02	505.18	751.54	505.87	751.47	528.98	750.58
529.68	750.56	574.44	749.13	575.19	749.11	597.52	748.45	598.3	748.43
599.07	748.4	621.41	747.17	622.2	747.15	644.52	746.66	690.73	745.93
691.6	745.89	713.84	745.12	736.04	744.6	736.94	744.57	759.13	744.05
760.05	744.02	783.16	743.55	789.6	743.46	806.27	743.1	813.93	742.91
828.39	742.61	829.37	742.58	874.55	742.06	875.59	742.04	921.81	741.56
943.81	741.21	944.92	741.19	1013.07	740.67	1037.35	740.37	1105.41	739.99
1106.67	739.99	1159.41	739.72	1171.94	739.71	1174.67	739.7	1176	739.7
1197.75	739.65	1199.1	739.64	1220.84	739.61	1222.21	739.6	1418.5	739.63
1426.87	739.66	1762.11	739.8	1940.86	738.3	2069.44	735.45	2146.54	735.09
2148.8	735.07	2177.81	734.93	2213.53	734.34	2377.61	732.06	2380.1	732.01
2455.14	730.97	2490.56	730.03	2493.15	729.95	2534.64	728.88	2583.68	728.27
2588.28	728.23	2608.69	727.98	2620.47	727.75	2629.08	727.5	2631.8	727.43
2634.54	727.33	2654.91	726.39	2657.67	726.29	2678.02	726.14	2694.39	726.11
2698.34	726.12	2701.12	726.15	2703.93	726.14	2712.26	726.07	2724.23	726.26
2840.84	727.24	2878	726.76	2885.99	726.69	2963.83	725.77	2969.38	725.68
3049.69	723.3	3135.52	721.54	3186.39	721.71	3210.97	721.87	3226.54	721.93
3241.92	721.87	3301.93	721.93	3321.65	722.02	3355.08	722.06	3393.05	721.61
3394.37	721.61	3483.66	721.73	3612.24	722.32	3650.57	722.34	3736.4	722.8
3760.28	722.83	3764.1	722.85	3833.42	722.95	3856.53	723.07	3869.36	723.09
4014.23	723.91	4064.5	723.95	4087.61	723.76	4126.48	723.57	4156.93	723.29
4180.04	722.99	4230.52	722.83	4255.06	722.83	4272.48	722.89	4295.58	723.25
4337.28	723.63	4341.8	723.71	4364.91	724.01	4383.61	724.07	4388.5	723.71
4409.23	720.86	4414.15	720.17	4434.85	716.81	4439.8	715.99	4446.7	714.64
4448.33	714.28	4453.21	713.63	4465.44	711.96	4470.42	711.42	4496.31	705.76
4513.06	705.54	4573.44	705.49	4577.77	705.5	4662.76	705.43	4703.47	703.98
4707.22	703.89	4730.55	707.52	4771.24	709.89	4804.16	713.94	4805.12	714.1
4811.94	715.07	4828.4	715.55	4851.89	721.45	4852.63	721.63	4897.67	720.73
4899.46	720.7	4902.91	720.66	4978.32	720.73	4993.58	720.92	4994.61	720.94
4996.68	720.96	5003.46	721.05	5023.24	721.47	5028.6	721.57	5053.74	721.77
5078.88	721.86	5084.29	721.91	5129.15	722.13	5137.63	722.14	5138.54	722.15
5208.88	722.61	5232.45	723.05	5279.83	724.29	5280.11	724.3	5280.4	724.29

```
 5349.73  722.38 5351.37  722.34 5380.53   722.3 5386.23  722.31 5422.26  722.28
 5422.97  722.29  5707.6  721.95 5709.24  721.94 5778.85  721.85 5850.09  721.91
 5852.38  721.92  5992.6  721.96 5995.51  721.97 6203.75  722.14 6206.32  722.15
 6277.57  722.16 6278.97  722.15 6374.12  722.24  6633.8  721.97 6754.67  722.04
  6992.5  721.81 7316.98  721.96 7318.36  721.97 7417.52  721.94 7426.87  721.92
 7563.35  721.85 7676.92  721.53 7677.95  721.53 7856.28  721.32 8165.41  721.54
 8198.07  721.46 8200.93  721.46 8268.24  721.25 8269.83  721.25 8293.95  721.16
 8397.09  721.13 8458.79  721.31 8459.84  721.31 8481.53  721.36 8525.35  721.32
 8527.64  721.34 8576.76  721.41 8756.67  720.98 8756.74  720.98  8759.6  720.97
 8910.05  721.05 8910.99  721.06 9158.94  721.54 9245.23   721.6 9247.72  721.63
 9288.47  721.86  9359.3  721.96 9415.51  722.22 9475.82  722.42 9476.84  722.42
 9502.33  722.59 9605.17  722.88 9630.87  723.05 9656.59  723.08 9673.22  723.04
 9730.51  723.21 9733.72  723.21 9759.43  723.43 9865.25  723.86  9941.5  723.91
10070.42  724.3610134.89   724.210199.36   724.610376.47  724.6910392.76  724.65
 10427.4  724.4610427.89  724.46 10453.6  724.2610457.23   724.210458.76  724.18
10479.31  723.9710505.02  723.8910521.68  723.9410524.23  723.9610530.73  723.96
10534.94  723.9810582.15  724.07 10710.7  724.7310736.41  725.0810813.54  725.51
 10818.8  725.5110839.25  725.6110864.96  725.6310908.48  725.8310916.38   725.9
10916.99   725.910958.32  726.13 10967.8  725.9110972.93  725.9110993.51  725.79
11015.19  725.7811021.83  725.7411026.15  725.7411033.99  725.71   11043  725.64
11044.93  725.6711047.92  725.7711070.64  725.9511080.64  726.0811096.35   726.1
 11101.7  726.1411101.88  726.14 11106.5  726.1811122.06  726.6411146.11   725.1
11147.77  725.1311153.85  725.0911166.35  724.8911170.01  724.8811173.48  724.69
11178.84  724.5211199.19  723.7711211.57  723.64 11224.9  723.38 11230.8  723.29
11233.52  723.3611250.61  723.4111252.81   723.411273.71  723.2211275.86  723.27
11276.32  723.2911297.03  724.1311302.03  724.42 11318.2  728.2811326.86  728.82
11327.74  728.88 11342.5   729.611353.45  730.3711359.74   730.511375.23  730.71
11379.16  731.0811393.56  730.7811402.88  731.03 11403.9  731.0711404.87  731.12
11407.95  731.2411424.19  732.0711430.58  732.2511445.21  732.7511456.29  732.92
11473.42  733.32   11482  733.4711488.66  733.6811507.71  734.2111513.42  734.23
11529.89  734.3611533.42  734.5211553.13  734.7711559.13  734.7511571.61  737.41
11584.84  740.3211607.95  734.6611610.55  734.0411614.57  734.47 11617.6  734.69
11633.29  735.6211636.26  735.72 11656.9  738.4911661.97  739.5611669.81  740.51
11687.68     74211702.54  744.3311713.39  745.9711735.26  747.64 11739.1     748
11741.58  748.2111746.53  748.6711753.15  749.2611764.81  750.2511783.92  751.45
11790.52  751.8411805.09  753.83   11811  754.3111816.23  754.7911826.25  755.26
 11832.8  755.4611867.65  756.12 11868.6  756.14   11873  756.1811875.45  756.19
11893.36  756.3411898.92  756.4111919.08  756.5611932.11  756.7111932.77  756.69
11939.92  756.3211944.78   756.111964.38  755.5711970.49  755.4411992.86  755.71
11995.62  755.81 11996.2  755.8212001.45  756.2812004.39  756.5512016.78   757.6
12029.84  758.3312040.55  758.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
```



```
**********************************************
       0     .09 4383.61     .04 4852.63     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       4383.61 4852.63           445.81  445.81  445.81             .1       .3
Ineffective Flow     num=       1
   Sta L    Sta R    Elev  Permanent
 10160.312040.55  729.16       F

CROSS SECTION OUTPUT  Profile #PK2
*************************************************************************************************
* E.G. Elev (ft)          *  723.16  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.21  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  722.95  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  712.31  * Flow Area (sq ft)      *  636.25  * 6174.89  * 5552.92  *
* E.G. Slope (ft/ft)      *0.000341  * Area (sq ft)           *  636.25  * 6174.89  * 5552.92  *
* Q Total (cfs)           *25945.95  * Flow (cfs)             *  168.79  *23872.41  * 1904.75  *
* Top Width (ft)          * 5968.45  * Top Width (ft)         *  848.97  *  458.59  * 4660.89  *
* Vel Total (ft/s)        *    2.10  * Avg. Vel. (ft/s)       *    0.27  *    3.87  *    0.34  *
* Max Chl Dpth (ft)       *   19.06  * Hydr. Depth (ft)       *    0.75  *   13.46  *    1.19  *
* Conv. Total (cfs)       *1404995.0  * Conv. (cfs)           *   9140.2  *1292711.0  *103143.7  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)       *  848.99  *  461.56  * 4660.92  *
* Min Ch El (ft)          *  703.89  * Shear (lb/sq ft)       *    0.02  *    0.28  *    0.03  *
* Alpha                   *    3.12  * Stream Power (lb/ft s) *12040.55  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.16  * Cum Volume (acre-ft)   *   18.46  *  365.81  *  196.06  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *   28.52  *   25.95  *  224.51  *
*************************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK5
*************************************************************************************************
* E.G. Elev (ft)          *  727.61  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.07  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.55  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  714.78  * Flow Area (sq ft)      * 7087.15  * 8324.92  *29448.11  *
* E.G. Slope (ft/ft)      *0.000120  * Area (sq ft)           * 7087.15  * 8324.92  *32569.65  *
* Q Total (cfs)           *42918.92  * Flow (cfs)             * 3250.83  *22966.48  *16701.61  *
* Top Width (ft)          * 8687.68  * Top Width (ft)         * 1756.16  *  469.02  * 6462.50  *
* Vel Total (ft/s)        *    0.96  * Avg. Vel. (ft/s)       *    0.46  *    2.76  *    0.57  *
* Max Chl Dpth (ft)       *   23.66  * Hydr. Depth (ft)       *    4.04  *   17.75  *    5.55  *
* Conv. Total (cfs)       *3915602.0  * Conv. (cfs)           *  296581.5  *2095290.0  *1523730.0  *
```

```
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        * 1756.27  *  472.05  * 5307.75  *
* Min Ch El (ft)          *  703.89  * Shear (lb/sq ft)        *    0.03  *    0.13  *    0.04  *
* Alpha                   *    4.60  * Stream Power (lb/ft s) *12040.55  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.06  * Cum Volume (acre-ft)   *  257.77  *  491.95  * 1541.20  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)         *   55.32  *   26.28  *  294.86  *
*****************************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK10

```
*****************************************************************************************************
* E.G. Elev (ft)          *  725.13  * Element                * Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.39  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  724.74  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  716.21  * Flow Area (sq ft)      * 2788.94  * 7008.26  *14548.15  *
* E.G. Slope (ft/ft)      *0.000660  * Area (sq ft)           * 2788.94  * 7008.26  *14869.24  *
* Q Total (cfs)           *54360.98  * Flow (cfs)             * 1888.05  *40390.74  *12082.19  *
* Top Width (ft)          * 7841.13  * Top Width (ft)         * 1382.51  *  469.02  * 5989.60  *
* Vel Total (ft/s)        *    2.23  * Avg. Vel. (ft/s)       *    0.68  *    5.76  *    0.83  *
* Max Chl Dpth (ft)       *   20.85  * Hydr. Depth (ft)       *    2.02  *   14.94  *    2.74  *
* Conv. Total (cfs)       *2116575.0  * Conv. (cfs)           * 73512.2  *1572636.0  *470426.7  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)       * 1382.57  *  472.05  * 5307.75  *
* Min Ch El (ft)          *  703.89  * Shear (lb/sq ft)       *    0.08  *    0.61  *    0.11  *
* Alpha                   *    4.98  * Stream Power (lb/ft s) *12040.55  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.33  * Cum Volume (acre-ft)   *   48.91  *  354.61  *  312.50  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *   33.83  *   25.81  *  184.40  *
*****************************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK25

```
*****************************************************************************************************
* E.G. Elev (ft)          *  726.77  * Element                * Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.26  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  726.51  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  717.76  * Flow Area (sq ft)      * 5328.57  * 7837.26  *23929.54  *
* E.G. Slope (ft/ft)      *0.000470  * Area (sq ft)           * 5328.57  * 7837.26  *25853.06  *
* Q Total (cfs)           *68923.08  * Flow (cfs)             * 4443.38  *41094.70  *23385.00  *
* Top Width (ft)          * 8504.09  * Top Width (ft)         * 1583.48  *  469.02  * 6451.59  *
* Vel Total (ft/s)        *    1.86  * Avg. Vel. (ft/s)       *    0.83  *    5.24  *    0.98  *
* Max Chl Dpth (ft)       *   22.62  * Hydr. Depth (ft)       *    3.37  *   16.71  *    4.51  *
```



```
* Conv. Total (cfs)       *3177828.0  * Conv. (cfs)           *204870.1  *1894748.0  *1078209.0  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)       * 1583.57  *  472.05  * 5307.75  *
* Min Ch El (ft)          *  703.89  * Shear (lb/sq ft)       *    0.10  *    0.49  *    0.13  *
* Alpha                   *    4.86  * Stream Power (lb/ft s) *12040.55  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.23  * Cum Volume (acre-ft)   *  137.89  *  409.27  *  802.30  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *   48.44  *   26.10  *  260.23  *
*****************************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK50

```
*****************************************************************************************************
* E.G. Elev (ft)          *  727.86  * Element                * Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.22  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.64  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  718.82  * Flow Area (sq ft)      * 7257.31  * 8370.32  *29961.90  *
* E.G. Slope (ft/ft)      *0.000398  * Area (sq ft)           * 7257.31  * 8370.32  *33195.25  *
* Q Total (cfs)           *79649.91  * Flow (cfs)             * 6150.23  *42199.19  *31300.49  *
* Top Width (ft)          * 8691.42  * Top Width (ft)         * 1759.49  *  469.02  * 6462.91  *
* Vel Total (ft/s)        *    1.75  * Avg. Vel. (ft/s)       *    0.85  *    5.04  *    1.04  *
* Max Chl Dpth (ft)       *   23.75  * Hydr. Depth (ft)       *    4.12  *   17.85  *    5.65  *
* Conv. Total (cfs)       *3990821.0  * Conv. (cfs)           *308154.4  *2114371.0  *1568296.0  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)       * 1759.61  *  472.05  * 5307.75  *
* Min Ch El (ft)          *  703.89  * Shear (lb/sq ft)       *    0.10  *    0.44  *    0.14  *
* Alpha                   *    4.57  * Stream Power (lb/ft s) *12040.55  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.20  * Cum Volume (acre-ft)   *  204.45  *  444.40  * 1168.36  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)         *   52.69  *   26.16  *  277.10  *
*****************************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK100

```
*****************************************************************************************************
* E.G. Elev (ft)          *  730.76  * Element                * Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.09  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  730.67  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  719.78  * Flow Area (sq ft)      *12857.75  * 9790.69  *52825.84  *
* E.G. Slope (ft/ft)      *0.000164  * Area (sq ft)           *12857.75  * 9790.69  *52825.84  *
* Q Total (cfs)           *89992.12  * Flow (cfs)             * 9679.24  *35203.81  *45109.05  *
* Top Width (ft)          * 8906.10  * Top Width (ft)         * 1917.26  *  469.02  * 6519.82  *
* Vel Total (ft/s)        *    1.19  * Avg. Vel. (ft/s)       *    0.75  *    3.60  *    0.85  *
```

```
* Max Chl Dpth (ft)       *   26.78  * Hydr. Depth (ft)        *    6.71  *   20.87  *    8.10  *
* Conv. Total (cfs)       *7018558.0  * Conv. (cfs)            *754892.1  *2745574.0  *3518092.0  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        * 1917.41  *  472.05  * 6520.55  *
* Min Ch El (ft)          *  703.89  * Shear (lb/sq ft)        *    0.07  *    0.21  *    0.08  *
* Alpha                   *    3.86  * Stream Power (lb/ft s) *12040.55  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.08  * Cum Volume (acre-ft)    *  438.14  *  573.68  * 2460.31  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *   60.70  *   26.28  *  296.59  *
*****************************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK200

```
*****************************************************************************************************
* E.G. Elev (ft)          *  731.63  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.08  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  731.55  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  720.72  * Flow Area (sq ft)       *14564.18  *10203.15  *58582.35  *
* E.G. Slope (ft/ft)      *0.000157  * Area (sq ft)            *14564.18  *10203.15  *58582.35  *
* Q Total (cfs)           *100471.50  * Flow (cfs)             *11435.77  *36864.10  *52171.63  *
* Top Width (ft)          * 9000.89  * Top Width (ft)          * 1970.45  *  469.02  * 6561.42  *
* Vel Total (ft/s)        *    1.21  * Avg. Vel. (ft/s)        *    0.79  *    3.61  *    0.89  *
* Max Chl Dpth (ft)       *   27.66  * Hydr. Depth (ft)        *    7.39  *   21.75  *    8.93  *
* Conv. Total (cfs)       *8015678.0  * Conv. (cfs)            *912353.0  *2941041.0  *4162284.0  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        * 1970.61  *  472.05  * 6562.18  *
* Min Ch El (ft)          *  703.89  * Shear (lb/sq ft)        *    0.07  *    0.21  *    0.09  *
* Alpha                   *    3.63  * Stream Power (lb/ft s) *12040.55  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.07  * Cum Volume (acre-ft)    *  492.55  *  596.98  * 2723.34  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *   62.52  *   26.28  *  297.14  *
*****************************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK500

```
*****************************************************************************************************
* E.G. Elev (ft)          *  732.70  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.08  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  732.62  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  724.57  * Flow Area (sq ft)       *16704.58  *10703.03  *65588.58  *
* E.G. Slope (ft/ft)      *0.000149  * Area (sq ft)            *16704.58  *10703.03  *65588.58  *
* Q Total (cfs)           *113669.30  * Flow (cfs)             *13646.14  *38871.51  *61151.65  *
* Top Width (ft)          * 9103.85  * Top Width (ft)          * 2046.12  *  469.02  * 6588.71  *
* Vel Total (ft/s)        *    1.22  * Avg. Vel. (ft/s)        *    0.82  *    3.63  *    0.93  *
```



```
* Max Chl Dpth (ft)       *   28.73  * Hydr. Depth (ft)        *    8.16  *   22.82  *    9.95  *
* Conv. Total (cfs)       *9313942.0  * Conv. (cfs)            *1118150.0  *3185091.0  *5010701.0  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        * 2046.29  *  472.05  * 6589.49  *
* Min Ch El (ft)          *  703.89  * Shear (lb/sq ft)        *    0.08  *    0.21  *    0.09  *
* Alpha                   *    3.39  * Stream Power (lb/ft s) *12040.55  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.07  * Cum Volume (acre-ft)    *  560.93  *  625.17  * 3042.19  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *   64.95  *   26.28  *  297.75  *
*****************************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 3093.88*

INPUT
Description:
Station Elevation Data num= 401

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	774.29	18.11	773.78	18.3	773.77	32.18	773.37	38.42	773.17
53.89	772.45	58.73	772.21	78.78	772.17	79.04	772.18	79.29	772.18
119.36	772.67	119.95	772.67	139.97	772.92	140.28	772.92	160.28	773.14
180.24	773.19	180.59	773.19	200.53	773.28	201.27	773.28	221.21	773.33
241.52	773.15	241.93	773.12	245.91	772.77	261.84	771.31	281.69	770.04
302.46	768.61	302.92	768.58	322.77	767.2	323.25	767.15	343.08	764.85
357.93	764.03	362.86	763.74	383.7	762.36	384.24	762.32	404.01	760.96
404.57	760.92	424.32	759.61	444.03	757.53	444.63	757.48	464.94	756.73
465.56	756.72	525.88	754.9	526.55	754.87	546.19	753.84	546.88	753.82
566.5	753.4	607.12	752.77	607.88	752.73	627.43	752.08	646.94	751.64
647.73	751.61	688.35	750.75	694.02	750.66	728.98	749.82	760.37	749.43
768.68	749.3	769.6	749.29	791.29	748.98	810.22	748.8	829.56	748.48
890.43	747.98	911.77	747.73	952.4	747.44	971.6	747.38	972.71	747.38
995.84	747.3	1013.33	747.16	1019.06	747.13	1052.76	747.08	1053.95	747.07
1142.12	747.02	1231.34	747.12	1246.79	747.07	1254.14	747.11	1460.13	747.3
1473.33	747.27	1548.8	747.3	1592.93	746.81	1687.16	745.49	1705.91	745.3
1818.93	741.5	1886.69	741.02	1888.68	741	1914.18	740.81	1947.62	739.97
1949.51	739.94	2067.32	737.26	2069.49	737.22	2089.79	736.74	2091.98	736.68
2157.94	735.18	2189.07	733.89	2191.35	733.79	2227.82	732.29	2270.92	731.42
2274.96	731.36	2292.9	731.02	2303.26	730.76	2313.21	730.37	2315.62	730.25
2333.52	729.25	2335.95	729.14	2353.83	728.79	2368.23	728.59	2371.7	728.56

```
 2374.15  728.56 2376.61  728.53 2383.93   728.4 2394.46  728.58 2412.28  728.78
 2414.77  728.82 2452.86  729.27 2455.39  729.29 2496.95  729.76 2518.92  729.28
 2605.05  727.67 2609.93  727.54 2680.52  724.26 2722.94  722.82 2755.96  721.83
 2760.05  721.84 2762.88  721.86 2800.67     722 2820.98  722.14 2822.28  722.14
 2835.96   722.2 2849.48   722.1 2939.85  722.17 2942.85  722.18 2948.94  722.18
 2963.16  721.89 2966.18  721.84 2982.31  721.52 3057.75  721.52  3061.6  721.54
 3061.95  721.54 3102.18  721.75 3105.33  721.78 3174.97  722.13 3208.66  722.08
  3284.1  722.56 3305.09  722.57 3308.44  722.58 3369.37  722.61 3389.69   722.7
 3400.97  722.71 3470.93  723.18 3491.24  723.37 3552.17  723.64 3572.48  723.66
 3626.96  723.42 3653.73  723.17 3674.04  722.89 3738.73  722.69 3755.28  722.72
 3775.59  723.01 3812.24  723.31 3816.21  723.39 3836.52  723.72 3852.96  723.83
 3857.48  723.36 3881.18  719.52 3900.31  716.01 3904.88  715.15 3911.25  713.77
 3912.76   713.4 3917.27  712.85 3928.57  711.38 3933.17   710.9 3957.09  706.04
 3972.57  705.78 4028.36  705.75 4032.35  705.76 4110.88  705.73 4148.49  703.84
 4151.96  703.72 4177.05  706.75 4220.81  708.72  4256.2   712.1 4257.23  712.25
 4264.56  713.12 4282.26  713.68 4307.52  721.41 4308.32  721.64 4349.56  720.84
 4354.36  720.79 4423.41  720.88 4446.43  721.16 4469.44  721.61 4492.46  721.79
 4515.48  721.89 4520.43  721.94 4561.52  722.16 4568.44  722.18    4569  722.18
 4569.28  722.19 4570.11   722.2 4634.52  722.82  4656.1   723.4 4699.74  725.08
 4764.99  722.47 5156.41  721.82 5286.88  721.98 5352.12  721.95 5354.79  721.96
 5483.67  722.05 5485.85  722.06 5701.46  722.24 5905.63  722.02 5907.57  722.01
 6049.91  722.06 6267.68  721.76 6441.91  721.95 6564.78  721.95 6566.05  721.96
 6572.58  721.97 6656.84  721.92 6665.41   721.9 6800.19   721.8  6804.2  721.78
 6894.36  721.51  6895.3   721.5  6917.8  721.43 7012.07  721.37 7013.98  721.36
 7113.51  721.37 7341.64  721.52  7435.8  721.21 7437.26   721.2 7459.35  721.12
 7553.79   721.1 7610.28  721.21 7611.24  721.22 7671.22   721.2  7718.3  721.27
 7902.47   720.8 8023.47  720.88 8024.34  720.89  8092.9  721.08 8093.26  721.08
 8094.96  721.09 8200.57  721.24 8259.58  721.45  8328.9  721.48 8369.97  721.71
 8434.83  721.76 8486.29  721.99 8495.69    722 8541.52  722.17 8542.45  722.17
 8565.79   722.3 8659.96   722.5 8683.49  722.63 8707.04  722.62  8731.8  722.58
 8777.66  722.71  8801.2  722.89 8898.09  723.27 8942.45  723.25 8949.17  723.23
 8989.53  723.29 9013.07  723.41 9085.96  723.63 9103.98   723.5    9145  723.34
 9204.03  723.86 9366.19    724 9381.11  723.97 9412.83  723.77 9413.27  723.77
 9436.82  723.56 9441.54  723.49 9460.36  723.32  9483.9  723.28 9618.72  723.83
 9621.36  723.83 9672.23  724.11 9695.77  724.41 9766.39  724.78 9771.21  724.78
  9794.3  724.87 9813.47  724.86 9853.33  724.98 9860.55  725.06 9861.12  725.06
 9898.96  725.35 9907.64  725.19 9912.34  725.21 9931.18  725.13 9951.03  725.15
 9954.72  725.14 9957.11  725.12 9961.07  725.13  9976.5  725.02 9978.27  725.05
    9981  725.13 10001.8  725.2510010.97  725.3410025.35  725.3410030.24  725.36
10030.41  725.37 10031.3  725.3710034.64  725.3910048.89  725.7710070.91  724.47
10072.43  724.49   10078  724.4510089.44  724.2810092.79  724.2910095.97  724.15
10099.43  724.0710119.52  723.5210130.85  723.4710143.05  723.3110148.45  723.27
10150.94  723.39 10166.6  723.8510168.61  723.8910187.74  724.1810189.71  724.27
10190.13   724.310207.49  725.3310209.09  725.4310213.68  725.7810228.48  729.36
```



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10236.41     73010237.22  730.0710250.73  731.0710260.76  732.0110266.52  732.29
 10280.7  732.82 10284.3  733.2210297.49  733.2910306.02  733.7210306.96  733.77
10307.84  733.8410310.67  734.0210325.53  735.1410331.38  735.3710344.78     736
10354.92   736.310370.61  736.8710378.47  737.1210384.57  737.39   10402  738.07
10407.24  738.1610422.31  738.4810425.55  738.6610433.55  738.87 10443.6  739.09
10449.09  739.1110460.51  741.3810472.63  743.8710493.79  739.2610496.17  738.77
10499.85  739.1610502.63  739.37 10514.5  740.0510516.99  740.1810519.71  740.28
10538.61   742.610543.25   743.510550.43  744.3110561.64  745.15 10566.8  745.57
 10580.4  747.5510590.33  748.9510610.36   750.410613.88  750.7110616.15  750.89
10620.68  751.2910626.74  751.7910637.42  752.6310654.92  753.6610660.96  753.99
 10674.3  755.6710679.71  756.09 10684.5  756.5110693.68  756.9710699.68  757.18
10708.05  757.3310713.07  757.4410731.58  757.7610732.45  757.7810755.13  757.98
10760.22  758.0510778.67  758.22 10790.6  758.3810797.75  758.0410802.21  757.86
10820.15  757.4410825.75  757.3310846.23  757.5710848.75  757.6510849.29  757.66
 10854.1  758.0410856.79  758.2710868.13  759.1210872.83  759.3410880.09  759.71
 10889.9  760.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
       0     .09 3852.96     .04 4308.32     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       3852.96 4308.32          445.81  445.81  445.81             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
8766.544 10889.9729.1267       F

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  723.00  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.24  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  722.77  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  712.46  * Flow Area (sq ft)      *  457.95  * 6061.89  * 4490.92  *
* E.G. Slope (ft/ft)      *0.000366  * Area (sq ft)           *  457.95  * 6061.89  * 4491.93  *
* Q Total (cfs)           *25945.95  * Flow (cfs)             *  109.90  *24381.05  * 1455.00  *
* Top Width (ft)          * 5524.78  * Top Width (ft)         *  729.40  *  447.18  * 4348.20  *
* Vel Total (ft/s)        *    2.36  * Avg. Vel. (ft/s)       *    0.24  *    4.02  *    0.32  *
* Max Chl Dpth (ft)       *   19.05  * Hydr. Depth (ft)       *    0.63  *   13.56  *    1.04  *
* Conv. Total (cfs)       *1355972.0  * Conv. (cfs)           *  5743.4  *1274188.0  * 76040.4  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)       *  729.43  *  450.37  * 4329.68  *
* Min Ch El (ft)          *  703.72  * Shear (lb/sq ft)       *    0.01  *    0.31  *    0.02  *
* Alpha                   *    2.74  * Stream Power (lb/ft s) *10889.90  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.17  * Cum Volume (acre-ft)   *   12.86  *  303.19  *  144.66  *
```

```
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *   20.45  *   21.31  *  178.41  *
*********************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

```
CROSS SECTION OUTPUT  Profile #PK5
*********************************************************************************************
* E.G. Elev (ft)         *  727.55  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.08  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.48  * Reach Len. (ft)       *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  714.88  * Flow Area (sq ft)     * 5855.41  * 8201.12  *25343.72  *
* E.G. Slope (ft/ft)     *0.000135  * Area (sq ft)          * 5855.41  * 8201.12  *30406.63  *
* Q Total (cfs)          *42918.92  * Flow (cfs)            * 3163.65  *24244.87  *15510.41  *
* Top Width (ft)         * 7609.37  * Top Width (ft)        * 1241.64  *  455.36  * 5912.37  *
* Vel Total (ft/s)       *    1.09  * Avg. Vel. (ft/s)      *    0.54  *    2.96  *    0.61  *
* Max Chl Dpth (ft)      *   23.76  * Hydr. Depth (ft)      *    4.72  *   18.01  *    5.68  *
* Conv. Total (cfs)      *3687907.0  * Conv. (cfs)          *271843.4  *2083296.0  *1332767.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)      * 1241.78  *  458.63  * 4458.34  *
* Min Ch El (ft)         *  703.72  * Shear (lb/sq ft)      *    0.04  *    0.15  *    0.05  *
* Alpha                  *    4.29  * Stream Power (lb/ft s) *10889.90  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.07  * Cum Volume (acre-ft)  *  191.54  *  407.38  * 1218.94  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)        *   39.98  *   21.55  *  231.54  *
*********************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

```
CROSS SECTION OUTPUT  Profile #PK10
*********************************************************************************************
* E.G. Elev (ft)         *  724.78  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.51  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  724.27  * Reach Len. (ft)       *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  716.20  * Flow Area (sq ft)     * 1989.20  * 6742.74  *11081.99  *
* E.G. Slope (ft/ft)     *0.000829  * Area (sq ft)          * 1989.20  * 6742.74  *11804.00  *
* Q Total (cfs)          *54360.98  * Flow (cfs)            * 1345.07  *43287.51  * 9728.41  *
* Top Width (ft)         * 7060.15  * Top Width (ft)        * 1172.71  *  455.36  * 5432.08  *
* Vel Total (ft/s)       *    2.74  * Avg. Vel. (ft/s)      *    0.68  *    6.42  *    0.88  *
* Max Chl Dpth (ft)      *   20.55  * Hydr. Depth (ft)      *    1.70  *   14.81  *    2.51  *
* Conv. Total (cfs)      *1887765.0  * Conv. (cfs)          * 46709.4  *1503223.0  *337833.4  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)      * 1172.78  *  458.63  * 4417.15  *
* Min Ch El (ft)         *  703.72  * Shear (lb/sq ft)      *    0.09  *    0.76  *    0.13  *
* Alpha                  *    4.38  * Stream Power (lb/ft s) *10889.90  *    0.00  *    0.00  *
```



```
* Frctn Loss (ft)        *    0.43  * Cum Volume (acre-ft)  *   24.46  *  284.24  *  176.01  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)        *   20.76  *   21.08  *  125.96  *
*********************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

```
CROSS SECTION OUTPUT  Profile #PK25
*********************************************************************************************
* E.G. Elev (ft)         *  726.53  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.34  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  726.19  * Reach Len. (ft)       *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  717.72  * Flow Area (sq ft)     * 4275.11  * 7615.03  *19605.50  *
* E.G. Slope (ft/ft)     *0.000575  * Area (sq ft)          * 4275.11  * 7615.03  *22800.19  *
* Q Total (cfs)          *68923.08  * Flow (cfs)            * 3918.83  *44163.41  *20840.84  *
* Top Width (ft)         * 7576.35  * Top Width (ft)        * 1213.94  *  455.36  * 5907.05  *
* Vel Total (ft/s)       *    2.19  * Avg. Vel. (ft/s)      *    0.92  *    5.80  *    1.06  *
* Max Chl Dpth (ft)      *   22.47  * Hydr. Depth (ft)      *    3.52  *   16.72  *    4.40  *
* Conv. Total (cfs)      *2873315.0  * Conv. (cfs)          *163371.0  *1841116.0  *868827.7  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)      * 1214.05  *  458.63  * 4458.34  *
* Min Ch El (ft)         *  703.72  * Shear (lb/sq ft)      *    0.13  *    0.60  *    0.16  *
* Alpha                  *    4.58  * Stream Power (lb/ft s) *10889.90  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.29  * Cum Volume (acre-ft)  *   88.74  *  330.20  *  553.33  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)        *   34.13  *   21.37  *  196.98  *
*********************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

```
CROSS SECTION OUTPUT  Profile #PK50
*********************************************************************************************
* E.G. Elev (ft)         *  727.66  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.28  * Wt. n-Val.            *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.38  * Reach Len. (ft)       *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  718.77  * Flow Area (sq ft)     * 5732.67  * 8156.07  *24902.63  *
* E.G. Slope (ft/ft)     *0.000484  * Area (sq ft)          * 5732.67  * 8156.07  *29821.69  *
* Q Total (cfs)          *79649.91  * Flow (cfs)            * 5778.34  *45402.97  *28468.60  *
* Top Width (ft)         * 7606.83  * Top Width (ft)        * 1239.51  *  455.36  * 5911.96  *
* Vel Total (ft/s)       *    2.05  * Avg. Vel. (ft/s)      *    1.01  *    5.57  *    1.14  *
* Max Chl Dpth (ft)      *   23.66  * Hydr. Depth (ft)      *    4.62  *   17.91  *    5.59  *
* Conv. Total (cfs)      *3621304.0  * Conv. (cfs)          *262713.7  *2064258.0  *1294332.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)      * 1239.65  *  458.63  * 4458.34  *
* Min Ch El (ft)         *  703.72  * Shear (lb/sq ft)      *    0.14  *    0.54  *    0.17  *
```

```
* Alpha                  *    4.32  * Stream Power (lb/ft s) *10889.90  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.25  * Cum Volume (acre-ft)   *  137.98  *  359.83  *  845.89  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *   37.35  *   21.43  *  213.78  *
*****************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK100

```
*****************************************************************************************
* E.G. Elev (ft)         *  730.68  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.10  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  730.57  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  719.73  * Flow Area (sq ft)      *10199.59  * 9612.53  *48758.38  *
* E.G. Slope (ft/ft)     *0.000187  * Area (sq ft)           *10199.59  * 9612.53  *48758.38  *
* Q Total (cfs)          *89992.12  * Flow (cfs)             * 8099.18  *37102.07  *44790.87  *
* Top Width (ft)         * 7936.06  * Top Width (ft)         * 1544.98  *  455.36  * 5935.72  *
* Vel Total (ft/s)       *    1.31  * Avg. Vel. (ft/s)       *    0.79  *    3.86  *    0.92  *
* Max Chl Dpth (ft)      *   26.85  * Hydr. Depth (ft)       *    6.60  *   21.11  *    8.21  *
* Conv. Total (cfs)      *6584130.0  * Conv. (cfs)           *592563.9  *2714513.0  *3277053.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 1545.19  *  458.63  * 5936.45  *
* Min Ch El (ft)         *  703.72  * Shear (lb/sq ft)       *    0.08  *    0.24  *    0.10  *
* Alpha                  *    3.84  * Stream Power (lb/ft s) *10889.90  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.09  * Cum Volume (acre-ft)   *  320.15  *  474.39  * 1940.48  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *   42.98  *   21.55  *  232.85  *
*****************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK200

```
*****************************************************************************************
* E.G. Elev (ft)         *  731.56  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.10  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.46  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  720.66  * Flow Area (sq ft)      *11578.82  *10014.70  *54005.73  *
* E.G. Slope (ft/ft)     *0.000179  * Area (sq ft)           *11578.82  *10014.70  *54005.73  *
* Q Total (cfs)          *100471.50  * Flow (cfs)            * 9635.71  *38896.80  *51939.00  *
* Top Width (ft)         * 7985.84  * Top Width (ft)         * 1583.93  *  455.36  * 5946.55  *
* Vel Total (ft/s)       *    1.33  * Avg. Vel. (ft/s)       *    0.83  *    3.88  *    0.96  *
* Max Chl Dpth (ft)      *   27.74  * Hydr. Depth (ft)       *    7.31  *   21.99  *    9.08  *
* Conv. Total (cfs)      *7507366.0  * Conv. (cfs)           *719993.1  *2906422.0  *3880952.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 1584.15  *  458.63  * 5947.32  *
* Min Ch El (ft)         *  703.72  * Shear (lb/sq ft)       *    0.08  *    0.24  *    0.10  *
```



```
* Alpha                  *    3.61  * Stream Power (lb/ft s) *10889.90  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.08  * Cum Volume (acre-ft)   *  358.77  *  493.52  * 2147.20  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *   44.33  *   21.55  *  233.13  *
*****************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK500

```
*****************************************************************************************
* E.G. Elev (ft)         *  732.62  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.10  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  732.53  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  724.44  * Flow Area (sq ft)      *13300.58  *10501.74  *60373.65  *
* E.G. Slope (ft/ft)     *0.000171  * Area (sq ft)           *13300.58  *10501.74  *60373.65  *
* Q Total (cfs)          *113669.30  * Flow (cfs)            *11624.35  *41104.89  *60940.05  *
* Top Width (ft)         * 8050.84  * Top Width (ft)         * 1630.92  *  455.36  * 5964.56  *
* Vel Total (ft/s)       *    1.35  * Avg. Vel. (ft/s)       *    0.87  *    3.91  *    1.01  *
* Max Chl Dpth (ft)      *   28.81  * Hydr. Depth (ft)       *    8.16  *   23.06  *   10.12  *
* Conv. Total (cfs)      *8699228.0  * Conv. (cfs)           *889623.2  *3145800.0  *4663805.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 1631.16  *  458.63  * 5965.36  *
* Min Ch El (ft)         *  703.72  * Shear (lb/sq ft)       *    0.09  *    0.24  *    0.11  *
* Alpha                  *    3.38  * Stream Power (lb/ft s) *10889.90  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.08  * Cum Volume (acre-ft)   *  407.39  *  516.66  * 2397.61  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *   46.13  *   21.55  *  233.51  *
*****************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 2648.07*

INPUT
Description:
Station Elevation Data num= 422

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	776.74	15.61	776.38	15.78	776.38	18.83	776.3	27.75	776.09
33.13	775.94	33.31	775.94	46.47	775.39	50.64	775.2	68.37	775.17
85.67	775.33	102.92	775.56	103.43	775.56	120.69	775.76	120.96	775.76

138.21	775.93	155.41	775.98	155.72	775.98	158.65	775.99	172.91	776.08
173.55	776.09	190.75	776.16	208.26	776.05	208.61	776.03	212.04	775.76
225.77	774.58	242.9	773.57	243.67	773.52	249.54	773.16	260.8	772.43
261.2	772.41	278.31	771.3	278.73	771.26	295.83	769.42	308.63	768.77
313.79	768.48	365.88	765.19	382.87	763.53	383.4	763.49	400.91	762.89
401.44	762.88	435.36	761.87	435.94	761.86	452.86	761.39	453.45	761.38
454.03	761.35	470.96	760.51	471.56	760.49	488.48	760.14	523.5	759.61
524.16	759.58	541.02	759.04	557.84	758.67	558.52	758.65	575.34	758.29
576.04	758.27	576.74	758.26	593.55	757.94	598.43	757.87	611.06	757.52
616.88	757.34	627.83	757.08	628.58	757.06	662.82	756.55	663.61	756.53
682.31	756.21	698.63	756.04	715.31	755.76	716.15	755.75	767.8	755.3
786.2	755.08	791.62	755.05	813.24	754.85	837.78	754.77	838.74	754.77
855.28	754.72	858.69	754.7	878.71	754.54	888.21	754.56	890.28	754.55
891.28	754.55	907.77	754.51	908.79	754.5	925.27	754.48	926.31	754.47
1061.75	754.58	1075.07	754.52	1081.42	754.57	1259.03	754.8	1276.09	754.76
1335.49	754.8	1373.54	754.19	1454.79	752.54	1470.96	752.3	1568.41	747.56
1626.85	746.95	1628.56	746.92	1650.55	746.7	1660.13	746.32	1661.88	746.26
1665.84	746.1	1677.62	745.69	1681.01	745.59	1695.12	745.12	1696.9	745.07
1698.68	745	1782.6	742.1	1784.47	742.04	1860.74	739.38	1920.99	735.71
1958.16	734.57	1977.11	734.07	1986.04	733.77	1992.56	733.41	1994.63	733.31
1996.7	733.18	2014.23	731.98	2029.65	731.44	2042.06	731.07	2045.05	731
2047.17	730.97	2049.29	730.92	2055.61	730.72	2064.68	730.9	2097.54	731.42
2099.71	731.46	2153.06	732.27	2181.22	731.39	2246.27	729.57	2250.48	729.41
2311.34	725.23	2342.49	723.65	2344.9	723.54	2347.93	723.38	2376.39	722.11
2379.92	722.12	2382.36	722.14	2414.95	722.28	2432.46	722.41	2433.58	722.41
2445.38	722.47	2457.04	722.34	2542.8	722.29	2555.06	721.92	2557.67	721.85
2571.57	721.43	2636.62	721.33	2639.94	721.34	2640.25	721.34	2651.05	721.38
2737.7	721.93	2766.75	721.82	2831.8	722.32	2887.82	722.29	2890.75	722.28
2932.57	722.32	3042.36	723.22	3080.46	723.38	3092.02	723.34	3094.85	723.32
3127.44	723.27	3150.52	723.04	3168.03	722.79	3206.29	722.6	3216.61	722.58
3223.82	722.55	3238.09	722.56	3255.6	722.78	3287.2	722.98	3290.63	723.06
3308.14	723.42	3322.31	723.58	3326.46	723.01	3348.21	718.87	3365.76	715.2
3369.95	714.31	3373.03	713.58	3375.8	712.91	3377.19	712.52	3381.32	712.06
3391.7	710.81	3395.92	710.39	3417.87	706.33	3432.07	706.01	3449.09	705.97
3541.82	706.07	3559.01	706.04	3593.52	703.7	3596.7	703.55	3623.54	705.97
3670.37	707.55	3708.24	710.26	3709.34	710.4	3717.19	711.17	3736.13	711.81
3763.15	721.37	3764.01	721.65	3801.45	720.96	3805.8	720.91	3823.24	720.92
3826.7	720.94	3868.5	721.02	3881.18	721.17	3882.04	721.19	3883.75	721.2
3889.39	721.27	3910.29	721.65	3993.88	722.2	4000.17	722.22	4000.67	722.22
4000.92	722.23	4060.16	723.03	4079.75	723.76	4119.14	725.85	4119.37	725.86
4119.61	725.84	4177.24	722.68	4178.61	722.61	4237.54	722.46	4238.12	722.46
4356.29	722.06	4396.11	722.05	4415.5	721.97	4495.41	721.85	4500.43	721.83
4533.97	721.78	4652.42	721.99	4830.1	722.03	4831.08	722.04	4949.71	722.09
5021.81	722.24	5028.8	722.25	5244.68	721.99	5345.15	722.09	5481.59	721.77

5600.04	721.76	5701.03	721.95	5812.59	721.95	5813.75	721.96	5819.67	721.97
5896.17	721.89	6014.64	721.78	6111.81	721.48	6112.66	721.48	6133.09	721.4
6260.91	721.29	6429.22	721.57	6547.41	721.4	6603.37	721.16	6604.69	721.16
6624.74	721.08	6710.48	721.06	6815.36	721.09	6817.1	721.08	6819	721.09
6838.47	721.14	7009.4	720.7	7133.76	720.7	7136.9	720.71	7137.68	720.72
7199.93	720.95	7297.68	721.11	7351.25	721.34	7415.53	721.37	7451.47	721.56
7463.63	721.59	7512.02	721.57	7557.08	721.77	7565.61	721.77	7607.22	721.92
7608.06	721.92	7619.21	722	7714.74	722.12	7726.38	722.19	7757.48	722.17
7778.86	722.1	7779.97	722.1	7818.94	722.2	7821.6	722.2	7833.57	722.28
7837.47	722.32	7924.52	722.66	7971.21	722.6	7977.31	722.57	7994.33	722.54
8035.32	722.69	8047.93	722.7	8101.5	722.9	8117.86	722.73	8155.1	722.49
8208.69	723.12	8369.46	723.29	8398.25	723.09	8398.66	723.09	8420.03	722.87
8423.05	722.81	8441.41	722.68	8462.78	722.66	8478.74	722.74	8484.15	722.75
8487.65	722.78	8526.89	722.94	8530.22	722.97	8633.75	723.49	8655.13	723.74
8719.25	724.05	8723.62	724.05	8744.58	724.12	8798.17	724.13	8804.73	724.21
8805.24	724.22	8839.6	724.57	8847.48	724.48	8851.75	724.51	8868.85	724.47
8886.88	724.52	8892.4	724.5	8895.99	724.51	8902.5	724.48	8910	724.4
8911.6	724.42	8914.08	724.48	8932.97	724.54	8941.29	724.6	8954.34	724.58
8959.75	724.59	8962.78	724.61	8975.72	724.9	8995.71	723.83	8997.09	723.85
9002.14	723.82	9012.53	723.67	9015.58	723.7	9018.46	723.61	9022.92	723.55
9039.84	723.26	9050.13	723.29	9061.21	723.24	9066.11	723.24	9068.37	723.42
9084.41	724.39	9101.78	725.14	9103.57	725.26	9103.95	725.3	9119.7	726.6
9121.16	726.73	9125.32	727.15	9138.76	730.44	9145.96	731.18	9146.7	731.27
9158.96	732.54	9168.07	733.65	9173.3	734.08	9186.17	734.92	9189.44	735.35
9201.42	735.81	9209.16	736.4	9210.01	736.48	9210.82	736.56	9213.38	736.8
9226.88	738.2	9232.18	738.5	9244.35	739.25	9253.56	739.68	9267.79	740.43
9274.93	740.77	9280.47	741.1	9296.3	741.94	9301.05	742.09	9314.74	742.6
9317.68	742.79	9324.94	743.09	9334.06	743.42	9339.05	743.47	9349.42	745.35
9360.42	747.42	9379.63	743.85	9381.79	743.49	9385.13	743.85	9387.66	744.05
9398.43	744.65	9400.69	744.75	9403.16	744.83	9420.32	746.72	9424.54	747.44
9431.05	748.1	9441.23	748.79	9445.91	749.14	9458.26	750.78	9467.28	751.93
9485.46	753.16	9488.66	753.43	9490.72	753.58	9494.83	753.91	9500.33	754.32
9510.03	755.01	9531.4	756.14	9543.51	757.52	9548.42	757.86	9552.77	758.24
9561.11	758.68	9566.55	758.89	9595.52	759.4	9599.97	759.45	9602	759.46
9616.89	759.63	9621.51	759.7	9638.27	759.88	9649.1	760.04	9649.65	760.02
9655.59	759.76	9659.63	759.62	9675.93	759.3	9681.01	759.23	9699.6	759.42
9701.89	759.49	9702.38	759.49	9706.75	759.8	9709.19	759.99	9719.49	760.64
9730.35	761.08	9739.25	761.32						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.09	3322.31	.04	3764.01	.09

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       3322.31 3764.01           445.81  445.81  445.81            .1       .3
Ineffective Flow     num=        1
  Sta L   Sta R    Elev  Permanent
7372.786 9739.25729.0933       F

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  722.83  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.26  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  722.58  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  712.49  * Flow Area (sq ft)       *  327.90  * 5973.63  * 3220.23  *
* E.G. Slope (ft/ft)      *0.000387  * Area (sq ft)            *  327.90  * 5973.63  * 3566.59  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              *   71.20  *24874.48  * 1000.27  *
* Top Width (ft)          * 5075.82  * Top Width (ft)          *  619.30  *  435.27  * 4021.26  *
* Vel Total (ft/s)        *    2.72  * Avg. Vel. (ft/s)        *    0.22  *    4.16  *    0.31  *
* Max Chl Dpth (ft)       *   19.03  * Hydr. Depth (ft)        *    0.53  *   13.72  *    0.94  *
* Conv. Total (cfs)       *1319557.0  * Conv. (cfs)            *  3621.2  *1265064.0  * 50871.5  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        *  619.33  *  438.86  * 3443.03  *
* Min Ch El (ft)          *  703.55  * Shear (lb/sq ft)        *    0.01  *    0.33  *    0.02  *
* Alpha                   *    2.24  * Stream Power (lb/ft s)   * 9739.25  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.18  * Cum Volume (acre-ft)    *    8.84  *  241.60  *  103.42  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *   13.55  *   16.80  *  135.58  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)          *  727.49  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.10  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  727.38  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  714.72  * Flow Area (sq ft)       * 5001.24  * 8093.24  *20355.81  *
* E.G. Slope (ft/ft)      *0.000161  * Area (sq ft)            * 5001.24  * 8093.24  *28058.97  *
* Q Total (cfs)           *42918.92  * Flow (cfs)              * 2984.34  *26403.76  *13530.82  *
* Top Width (ft)          * 6846.26  * Top Width (ft)          * 1042.30  *  441.70  * 5362.26  *
* Vel Total (ft/s)        *    1.28  * Avg. Vel. (ft/s)        *    0.60  *    3.26  *    0.66  *
* Max Chl Dpth (ft)       *   23.83  * Hydr. Depth (ft)        *    4.80  *   18.32  *    5.64  *
* Conv. Total (cfs)       *3377820.0  * Conv. (cfs)            *234874.3  *2078038.0  *1064907.0  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        * 1042.48  *  445.38  * 3608.96  *
* Min Ch El (ft)          *  703.55  * Shear (lb/sq ft)        *    0.05  *    0.18  *    0.06  *
* Alpha                   *    4.08  * Stream Power (lb/ft s)   * 9739.25  *    0.00  *    0.00  *
```



```
* Frctn Loss (ft)         *    0.08  * Cum Volume (acre-ft)    *  135.98  *  324.00  *  919.76  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *   28.30  *   16.96  *  173.84  *
*****************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)          *  724.32  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.77  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  723.55  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  716.05  * Flow Area (sq ft)       * 1125.74  * 6402.63  * 6641.71  *
* E.G. Slope (ft/ft)      *0.001162  * Area (sq ft)            * 1125.74  * 6402.63  * 7978.87  *
* Q Total (cfs)           *54360.98  * Flow (cfs)              *  697.16  *47956.34  * 5707.48  *
* Top Width (ft)          * 6253.15  * Top Width (ft)          *  975.46  *  441.51  * 4836.19  *
* Vel Total (ft/s)        *    3.84  * Avg. Vel. (ft/s)        *    0.62  *    7.49  *    0.86  *
* Max Chl Dpth (ft)       *   20.00  * Hydr. Depth (ft)        *    1.15  *   14.50  *    1.89  *
* Conv. Total (cfs)       *1594448.0  * Conv. (cfs)            * 20448.4  *1406595.0  *167404.5  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        *  975.52  *  445.19  * 3521.77  *
* Min Ch El (ft)          *  703.55  * Shear (lb/sq ft)        *    0.08  *    1.04  *    0.14  *
* Alpha                   *    3.37  * Stream Power (lb/ft s)   * 9739.25  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.63  * Cum Volume (acre-ft)    *    8.52  *  216.97  *   74.78  *
* C & E Loss (ft)         *    0.05  * Cum SA (acres)          *    9.76  *   16.49  *   73.41  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)          *  726.22  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.50  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  725.72  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  717.58  * Flow Area (sq ft)       * 3288.62  * 7358.95  *14356.88  *
* E.G. Slope (ft/ft)      *0.000767  * Area (sq ft)            * 3288.62  * 7358.95  *19157.65  *
* Q Total (cfs)           *68923.08  * Flow (cfs)              * 3286.42  *49126.79  *16509.88  *
* Top Width (ft)          * 6799.69  * Top Width (ft)          * 1018.10  *  441.70  * 5339.90  *
* Vel Total (ft/s)        *    2.76  * Avg. Vel. (ft/s)        *    1.00  *    6.68  *    1.15  *
* Max Chl Dpth (ft)       *   22.17  * Hydr. Depth (ft)        *    3.23  *   16.66  *    3.98  *
* Conv. Total (cfs)       *2488030.0  * Conv. (cfs)            *118635.2  *1773411.0  *595984.2  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        * 1018.22  *  445.38  * 3603.82  *
* Min Ch El (ft)          *  703.55  * Shear (lb/sq ft)        *    0.15  *    0.79  *    0.19  *
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* Alpha                  *    4.23  * Stream Power (lb/ft s) * 9739.25  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.41  * Cum Volume (acre-ft)   *   50.04  *  253.57  *  338.62  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)         *   22.71  *   16.78  *  139.43  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************
* E.G. Elev (ft)         *  727.40  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.41  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  726.99  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  718.64  * Flow Area (sq ft)      * 4590.96  * 7918.89  *18931.37  *
* E.G. Slope (ft/ft)     *0.000639  * Area (sq ft)           * 4590.96  * 7918.89  *25942.81  *
* Q Total (cfs)          *79649.91  * Flow (cfs)             * 5165.15  *50639.57  *23845.19  *
* Top Width (ft)         * 6837.95  * Top Width (ft)         * 1036.56  *  441.70  * 5359.70  *
* Vel Total (ft/s)       *    2.53  * Avg. Vel. (ft/s)       *    1.13  *    6.39  *    1.26  *
* Max Chl Dpth (ft)      *   23.44  * Hydr. Depth (ft)       *    4.43  *   17.93  *    5.25  *
* Conv. Total (cfs)      *3151997.0  * Conv. (cfs)           *204401.1  *2003967.0  *943629.1  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 1036.72  *  445.38  * 3608.96  *
* Min Ch El (ft)         *  703.55  * Shear (lb/sq ft)       *    0.18  *    0.71  *    0.21  *
* Alpha                  *    4.14  * Stream Power (lb/ft s) * 9739.25  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.34  * Cum Volume (acre-ft)   *   85.15  *  277.57  *  560.53  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)         *   25.70  *   16.84  *  156.10  *
*****************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************
* E.G. Elev (ft)         *  730.59  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.12  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  730.47  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  719.60  * Flow Area (sq ft)      * 8295.93  * 9455.70  *44618.80  *
* E.G. Slope (ft/ft)     *0.000208  * Area (sq ft)           * 8295.93  * 9455.70  *44618.80  *
* Q Total (cfs)          *89992.12  * Flow (cfs)             * 7561.81  *38858.72  *43571.59  *
* Top Width (ft)         * 6924.79  * Top Width (ft)         * 1108.08  *  441.70  * 5375.01  *
* Vel Total (ft/s)       *    1.44  * Avg. Vel. (ft/s)       *    0.91  *    4.11  *    0.98  *
* Max Chl Dpth (ft)      *   26.92  * Hydr. Depth (ft)       *    7.49  *   21.41  *    8.30  *
* Conv. Total (cfs)      *6237188.0  * Conv. (cfs)           *524095.0  *2693226.0  *3019867.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 1108.35  *  445.38  * 5375.79  *
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* Min Ch El (ft)         *  703.55  * Shear (lb/sq ft)       *    0.10  *    0.28  *    0.11  *
* Alpha                  *    3.76  * Stream Power (lb/ft s) * 9739.25  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.10  * Cum Volume (acre-ft)   *  225.50  *  376.82  * 1462.66  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *   29.40  *   16.96  *  174.97  *
*****************************************************************************************

Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK200
*****************************************************************************************
* E.G. Elev (ft)         *  731.47  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.12  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.35  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  720.54  * Flow Area (sq ft)      * 9309.66  * 9846.77  *49381.50  *
* E.G. Slope (ft/ft)     *0.000202  * Area (sq ft)           * 9309.66  * 9846.77  *49381.50  *
* Q Total (cfs)          *100471.50  * Flow (cfs)            * 8824.00  *40918.65  *50728.85  *
* Top Width (ft)         * 7025.54  * Top Width (ft)         * 1200.36  *  441.70  * 5383.48  *
* Vel Total (ft/s)       *    1.47  * Avg. Vel. (ft/s)       *    0.95  *    4.16  *    1.03  *
* Max Chl Dpth (ft)      *   27.80  * Hydr. Depth (ft)       *    7.76  *   22.29  *    9.17  *
* Conv. Total (cfs)      *7075023.0  * Conv. (cfs)           *621370.2  *2881418.0  *3572235.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       * 1200.65  *  445.38  * 5384.31  *
* Min Ch El (ft)         *  703.55  * Shear (lb/sq ft)       *    0.10  *    0.28  *    0.12  *
* Alpha                  *    3.56  * Stream Power (lb/ft s) * 9739.25  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.10  * Cum Volume (acre-ft)   *  251.88  *  391.89  * 1618.15  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *   30.08  *   16.96  *  175.15  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK500
*****************************************************************************************
* E.G. Elev (ft)         *  732.54  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.12  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  732.42  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  724.41  * Flow Area (sq ft)      *10664.20  *10319.50  *55148.71  *
* E.G. Slope (ft/ft)     *0.000196  * Area (sq ft)           *10664.20  *10319.50  *55148.71  *
* Q Total (cfs)          *113669.30  * Flow (cfs)            * 9955.31  *43640.92  *60073.07  *
* Top Width (ft)         * 7150.05  * Top Width (ft)         * 1314.54  *  441.70  * 5393.81  *
* Vel Total (ft/s)       *    1.49  * Avg. Vel. (ft/s)       *    0.93  *    4.23  *    1.09  *
* Max Chl Dpth (ft)      *   28.87  * Hydr. Depth (ft)       *    8.11  *   23.36  *   10.22  *
* Conv. Total (cfs)      *8115161.0  * Conv. (cfs)           *710736.8  *3115644.0  *4288781.0  *
```

* Length Wtd. (ft)	* 445.81	* Wetted Per. (ft)	* 1314.88	* 445.38	* 5394.69 *
* Min Ch El (ft)	* 703.55	* Shear (lb/sq ft)	* 0.10	* 0.28	* 0.13 *
* Alpha	* 3.40	* Stream Power (lb/ft s)	* 9739.25	* 0.00	* 0.00 *
* Frctn Loss (ft)	* 0.09	* Cum Volume (acre-ft)	* 284.75	* 410.11	* 1806.46 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 31.06	* 16.96	* 175.39 *

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 2202.26*

INPUT
Description:
Station Elevation Data num= 462

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	779.19	13.12	778.98	13.26	778.98	23.32	778.82	27.83	778.72
27.99	778.72	39.05	778.34	42.55	778.19	57.08	778.16	57.45	778.16
86.48	778.44	86.91	778.44	96.99	778.53	101.42	778.59	101.64	778.59
116.13	778.73	130.59	778.77	130.85	778.77	133.31	778.78	145.29	778.89
145.83	778.89	160.28	778.99	175	778.95	175.29	778.93	178.17	778.74
188.32	777.95	189.71	777.85	204.1	777.1	204.75	777.07	219.15	776.25
219.48	776.23	233.86	775.4	234.21	775.37	243.33	774.48	248.58	773.99
259.34	773.51	263.67	773.29	278.01	772.48	278.4	772.45	292.73	771.6
293.13	771.58	307.44	770.78	321.72	769.53	322.16	769.5	336.87	769.05
337.32	769.04	365.83	768.24	366.31	768.23	380.53	767.86	381.02	767.85
381.51	767.83	395.74	767.18	396.24	767.16	410.46	766.88	439.89	766.44
440.44	766.42	454.6	766	468.74	765.71	469.32	765.7	483.44	765.41
484.03	765.39	498.75	765.13	502.85	765.08	513.46	764.73	518.35	764.55
527.55	764.32	528.18	764.3	550.92	763.92	556.95	763.79	557.61	763.77
573.33	763.44	586.35	763.29	587.05	763.28	601.06	763.04	601.76	763.03
616.48	762.87	617.2	762.86	628.34	762.73	645.16	762.61	660.63	762.43
665.18	762.4	683.35	762.22	703.97	762.16	704.77	762.15	721.53	762.11
738.36	761.96	748.92	761.98	762.78	761.94	777.48	761.92	778.36	761.91
827.53	761.88	892.17	762.04	903.36	761.96	908.69	762.02	923.67	762.09
1057.94	762.3	1072.27	762.25	1122.19	762.31	1154.16	761.57	1222.43	759.59
1236.02	759.3	1317.9	753.61	1367	752.88	1368.44	752.85	1386.92	752.58
1399.76	751.86	1411.15	751.3	1412.52	751.24	1424.37	750.65	1427.36	750.51
1543.59	744.6	1551.41	744.22	1563.53	743.59	1586.09	741.6	1587.74	741.45

1614.17	739.13	1645.4	737.72	1661.32	737.11	1668.83	736.77	1674.31	736.37
1676.04	736.25	1677.78	736.11	1692.51	734.83	1715.9	733.55	1718.41	733.44
1720.19	733.39	1721.97	733.3	1723.51	733.23	1727.28	733.04	1734.9	733.22
1738.56	733.29	1777.22	734.13	1779.05	734.16	1809.16	734.79	1832.83	733.7
1887.49	731.47	1891.03	731.27	1896.78	730.69	1942.17	726.2	1970.36	724.13
1972.91	723.95	1996.83	722.39	2043.94	722.68	2044.88	722.69	2051.49	722.72
2054.8	722.75	2064.59	722.57	2130.07	722.42	2136.66	722.41	2146.96	721.95
2149.15	721.86	2160.83	721.34	2209.37	721.17	2215.49	721.13	2218.28	721.15
2218.54	721.15	2227.62	721.18	2247.69	721.34	2249.97	721.37	2252.26	721.38
2300.43	721.74	2324.83	721.56	2379.49	722.08	2426.57	721.97	2429.03	721.97
2464.17	721.93	2529.58	722.62	2573.73	723.01	2588.44	723.09	2600.53	723.09
2603.16	723.08	2627.92	723.13	2659.34	722.74	2662.03	722.69	2708.9	722.41
2720.89	722.4	2723.63	722.42	2735.61	722.54	2762.16	722.66	2779.76	723.13
2791.66	723.34	2795.44	722.66	2815.24	718.22	2831.22	714.39	2835.03	713.46
2837.83	712.73	2840.36	712.05	2841.62	711.64	2845.38	711.28	2854.83	710.24
2858.67	709.88	2878.65	706.62	2891.58	706.24	2907.07	706.21	2991.48	706.37
3007.13	706.35	3038.54	703.56	3041.44	703.38	3070.04	705.2	3119.93	706.39
3160.28	708.42	3161.45	708.55	3169.81	709.23	3189.99	709.94	3218.79	721.33
3219.7	721.66	3223.57	721.6	3253.34	721.07	3254.68	721.06	3257.25	721.03
3313.58	721.17	3325.75	721.31	3327.29	721.32	3332.36	721.38	3351.14	721.68
3369.91	721.83	3388.69	721.94	3396.82	722.03	3431.89	722.27	3432.57	722.27
3433.25	722.29	3485.8	723.24	3503.4	724.11	3538.79	726.63	3539	726.64
3539.21	726.62	3592.22	722.74	3645.17	722.54	3645.7	722.54	3751.88	722.05
3787.66	722.03	3805.08	721.95	3858.3	721.84	3859.53	721.83	3914.43	721.75
3964.73	721.89	3966.44	721.89	4017.96	722	4071.18	721.94	4073.36	721.95
4124.38	722.02	4142.96	721.98	4178.48	722.02	4180.27	722.03	4228.89	722.1
4230.81	722.11	4284.04	722.06	4285.08	722.05	4349.86	722.24	4356.15	722.25
4424.48	722.15	4426.68	722.14	4427.2	722.14	4428.1	722.15	4443.69	722.17
4522.7	722.05	4524.28	722.04	4607.92	722.02	4640.39	722.12	4762.99	721.73
4816.21	721.67	4922.64	721.83	4960.16	721.95	5035.57	721.88	5060.4	721.95
5061.44	721.95	5066.76	721.97	5135.5	721.87	5137.83	721.86	5295.15	721.63
5329.25	721.46	5330.02	721.46	5348.37	721.37	5425.27	721.32	5426.83	721.31
5446.47	721.27	5561.23	721.52	5564.19	721.52	5614.45	721.6	5718.52	721.39
5770.93	721.12	5772.12	721.11	5790.14	721.04	5968.65	720.97	5982.18	721
6081.52	720.79	6135.76	720.55	6137.95	720.54	6247.51	720.53	6250.32	720.55
6251.02	720.55	6291.96	720.79	6307.25	720.81	6308.64	720.82	6394.79	720.98
6442.93	721.23	6491.08	721.23	6499.47	721.25	6500.68	721.25	6531.09	721.41
6543.89	721.44	6587.38	721.37	6627.86	721.54	6635.53	721.53	6645.83	721.59
6672.92	721.67	6673.67	721.67	6683.69	721.73	6753.83	721.68	6779.98	721.79
6827.14	721.63	6863.15	721.69	6876.29	721.75	6879.8	721.79	6884.75	721.82
6963.79	722.08	6972.59	722.06	6973.83	722.05	6999.97	721.95	7005.45	721.91
7020.75	721.85	7117.04	722.16	7131.74	721.95	7134.4	721.92	7165.2	721.63
7213.35	722.38	7215.73	722.4	7357.8	722.61	7383.68	722.4	7384.04	722.4
7403.25	722.17	7405.96	722.12	7407.11	722.12	7422.45	722.04	7441.65	722.05

7460.86	722.15	7464	722.18	7499.27	722.38	7502.25	722.41	7548.75	722.67
7553.79	722.68	7595.28	722.86	7614.49	723.07	7672.1	723.33	7676.03	723.32
7694.86	723.37	7718.05	723.28	7743.02	723.29	7748.91	723.37	7749.37	723.38
7761.59	723.51	7780.24	723.8	7787.32	723.77	7791.16	723.81	7822.72	723.89
7825.73	723.89	7827.68	723.88	7830.9	723.9	7843.49	723.79	7844.93	723.8
7847.16	723.83	7864.13	723.84	7871.61	723.87	7887.33	723.81	7887.47	723.82
7888.19	723.81	7890.92	723.82	7902.55	724.02	7920.51	723.2	7921.75	723.22
7926.29	723.18	7935.62	723.06	7938.36	723.11	7940.95	723.07	7944.96	723.07
7960.16	723	7969.4	723.11	7983.76	723.22	7985.8	723.45	8000.2	724.88
8015.81	726.1	8017.42	726.26	8017.76	726.3	8031.92	727.88	8033.23	728.03
8036.97	728.51	8049.05	731.52	8055.51	732.36	8056.17	732.46	8067.2	734.01
8075.37	735.28	8080.08	735.86	8091.64	737.03	8094.58	737.48	8105.34	738.32
8112.3	739.09	8113.06	739.18	8113.79	739.27	8116.09	739.58	8128.22	741.27
8132.99	741.63	8143.92	742.5	8152.19	743.06	8171.4	744.43	8176.37	744.81
8190.6	745.8	8194.87	746.02	8207.16	746.71	8209.8	746.93	8216.33	747.32
8224.53	747.75	8229.01	747.82	8238.33	749.32	8248.21	750.96	8265.47	748.45
8267.42	748.21	8270.41	748.54	8272.68	748.73	8282.36	749.24	8284.4	749.32
8286.62	749.38	8302.04	750.83	8305.82	751.38	8311.67	751.89	8320.82	752.43
8325.03	752.71	8336.12	754	8344.23	754.91	8360.57	755.92	8363.43	756.14
8365.29	756.26	8368.98	756.53	8382.64	757.39	8401.84	758.3	8412.72	759.36
8417.13	759.63	8421.04	759.96	8428.53	760.39	8433.42	760.61	8440.25	760.72
8444.34	760.8	8460.16	761.05	8465.27	761.1	8478.66	761.28	8482.81	761.35
8497.86	761.54	8507.6	761.7	8508.09	761.69	8513.43	761.47	8517.06	761.37
8531.7	761.16	8536.27	761.12	8544.46	761.22	8552.98	761.28	8555.03	761.33
8555.47	761.33	8559.39	761.56	8561.58	761.71	8570.84	762.16	8574.67	762.27
8580.6	762.46	8588.6	762.61						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.09	2791.66	.04	3219.7	.09

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

2791.66	3219.7	445.81	445.81	445.81	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
5979.027	8588.6	729.06	F

CROSS SECTION OUTPUT Profile #PK2

E.G. Elev (ft)	722.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	722.37	Reach Len. (ft)	445.81	445.81	445.81
Crit W.S. (ft)	712.23	Flow Area (sq ft)	243.15	5907.76	1589.61

E.G. Slope (ft/ft)	0.000406	Area (sq ft)	243.15	5907.76	2846.96
Q Total (cfs)	25945.95	Flow (cfs)	61.35	25493.14	391.46
Top Width (ft)	4650.79	Top Width (ft)	368.39	422.97	3859.43
Vel Total (ft/s)	3.35	Avg. Vel. (ft/s)	0.25	4.32	0.25
Max Chl Dpth (ft)	18.99	Hydr. Depth (ft)	0.66	13.97	0.63
Conv. Total (cfs)	1287002.0	Conv. (cfs)	3043.0	1264541.0	19417.9
Length Wtd. (ft)	445.81	Wetted Per. (ft)	368.42	427.13	2514.64
Min Ch El (ft)	703.38	Shear (lb/sq ft)	0.02	0.35	0.02
Alpha	1.63	Stream Power (lb/ft s)	8588.60	0.00	0.00
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	5.91	180.80	70.60
C & E Loss (ft)	0.00	Cum SA (acres)	8.49	12.41	95.25

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK5

E.G. Elev (ft)	727.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	727.25	Reach Len. (ft)	445.81	445.81	445.81
Crit W.S. (ft)	714.47	Flow Area (sq ft)	4155.96	7995.26	14771.36
E.G. Slope (ft/ft)	0.000202	Area (sq ft)	4155.96	7995.26	25436.29
Q Total (cfs)	42918.92	Flow (cfs)	2786.94	29524.70	10607.28
Top Width (ft)	6094.78	Top Width (ft)	860.14	428.04	4806.60
Vel Total (ft/s)	1.59	Avg. Vel. (ft/s)	0.67	3.69	0.72
Max Chl Dpth (ft)	23.87	Hydr. Depth (ft)	4.83	18.68	5.35
Conv. Total (cfs)	3019487.0	Conv. (cfs)	196070.4	2077160.0	746257.1
Length Wtd. (ft)	445.81	Wetted Per. (ft)	860.38	432.29	2759.61
Min Ch El (ft)	703.38	Shear (lb/sq ft)	0.06	0.23	0.07
Alpha	3.75	Stream Power (lb/ft s)	8588.60	0.00	0.00
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	89.12	241.67	646.02
C & E Loss (ft)	0.01	Cum SA (acres)	18.56	12.51	121.81

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK10

E.G. Elev (ft)	723.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.23	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	722.41	Reach Len. (ft)	445.81	445.81	445.81

Crit W.S. (ft)	715.80	Flow Area (sq ft)	259.64	5926.35	1700.38
E.G. Slope (ft/ft)	0.001760	Area (sq ft)	259.64	5926.35	3017.20
Q Total (cfs)	54360.98	Flow (cfs)	140.23	53312.88	907.87
Top Width (ft)	4712.88	Top Width (ft)	395.50	423.17	3894.22
Vel Total (ft/s)	6.89	Avg. Vel. (ft/s)	0.54	9.00	0.53
Max Chl Dpth (ft)	19.03	Hydr. Depth (ft)	0.66	14.00	0.67
Conv. Total (cfs)	1295765.0	Conv. (cfs)	3342.5	1270782.0	21640.2
Length Wtd. (ft)	445.81	Wetted Per. (ft)	395.53	427.33	2526.59
Min Ch El (ft)	703.38	Shear (lb/sq ft)	0.07	1.52	0.07
Alpha	1.67	Stream Power (lb/ft s)	8588.60	0.00	0.00
Frctn Loss (ft)	0.88	Cum Volume (acre-ft)	1.43	153.88	18.51
C & E Loss (ft)	0.03	Cum SA (acres)	2.75	12.07	28.74

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK25

E.G. Elev (ft)	725.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.83	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	724.94	Reach Len. (ft)	445.81	445.81	445.81
Crit W.S. (ft)	717.31	Flow Area (sq ft)	2192.33	7003.17	8416.18
E.G. Slope (ft/ft)	0.001152	Area (sq ft)	2192.33	7003.17	14362.90
Q Total (cfs)	68923.08	Flow (cfs)	2343.36	56542.55	10037.17
Top Width (ft)	5994.30	Top Width (ft)	832.27	428.04	4733.99
Vel Total (ft/s)	3.91	Avg. Vel. (ft/s)	1.07	8.07	1.19
Max Chl Dpth (ft)	21.56	Hydr. Depth (ft)	2.63	16.36	3.10
Conv. Total (cfs)	2030311.0	Conv. (cfs)	69029.8	1665610.0	295671.4
Length Wtd. (ft)	445.81	Wetted Per. (ft)	832.41	432.29	2712.26
Min Ch El (ft)	703.38	Shear (lb/sq ft)	0.19	1.17	0.22
Alpha	3.51	Stream Power (lb/ft s)	8588.60	0.00	0.00
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	21.99	180.08	167.09
C & E Loss (ft)	0.07	Cum SA (acres)	13.24	12.33	87.88

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK50

E.G. Elev (ft)	727.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	726.35	Reach Len. (ft)	445.81	445.81	445.81
Crit W.S. (ft)	718.41	Flow Area (sq ft)	3380.55	7607.32	12271.74
E.G. Slope (ft/ft)	0.000938	Area (sq ft)	3380.55	7607.32	21084.88
Q Total (cfs)	79649.91	Flow (cfs)	4286.31	58545.89	16817.71
Top Width (ft)	6069.38	Top Width (ft)	850.98	428.04	4790.36
Vel Total (ft/s)	3.42	Avg. Vel. (ft/s)	1.27	7.70	1.37
Max Chl Dpth (ft)	22.97	Hydr. Depth (ft)	3.97	17.77	4.46
Conv. Total (cfs)	2601102.0	Conv. (cfs)	139976.6	1911915.0	549210.6
Length Wtd. (ft)	445.81	Wetted Per. (ft)	851.17	432.29	2751.47
Min Ch El (ft)	703.38	Shear (lb/sq ft)	0.23	1.03	0.26
Alpha	3.75	Stream Power (lb/ft s)	8588.60	0.00	0.00
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	44.36	198.12	319.88
C & E Loss (ft)	0.05	Cum SA (acres)	16.04	12.39	104.16

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK100

E.G. Elev (ft)	730.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	730.34	Reach Len. (ft)	445.81	445.81	445.81
Crit W.S. (ft)	719.38	Flow Area (sq ft)	6858.15	9316.04	40300.84
E.G. Slope (ft/ft)	0.000236	Area (sq ft)	6858.15	9316.04	40300.84
Q Total (cfs)	89992.12	Flow (cfs)	6775.00	41155.82	42061.29
Top Width (ft)	6143.98	Top Width (ft)	891.33	428.04	4824.61
Vel Total (ft/s)	1.59	Avg. Vel. (ft/s)	0.99	4.42	1.04
Max Chl Dpth (ft)	26.96	Hydr. Depth (ft)	7.69	21.76	8.35
Conv. Total (cfs)	5860128.0	Conv. (cfs)	441176.2	2679995.0	2738957.0
Length Wtd. (ft)	445.81	Wetted Per. (ft)	891.72	432.29	4825.43
Min Ch El (ft)	703.38	Shear (lb/sq ft)	0.11	0.32	0.12
Alpha	3.74	Stream Power (lb/ft s)	8588.60	0.00	0.00
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	147.96	280.76	1028.11
C & E Loss (ft)	0.00	Cum SA (acres)	19.17	12.51	122.78

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy

was used.

CROSS SECTION OUTPUT Profile #PK200

E.G. Elev (ft)	731.37	Element	Left OB	Channel	Right OB		
Vel Head (ft)	0.14	Wt. n-Val.	0.090	0.040	0.090		
W.S. Elev (ft)	731.23	Reach Len. (ft)	445.81	445.81	445.81		
Crit W.S. (ft)	720.33	Flow Area (sq ft)	7653.73	9696.19	44587.26		
E.G. Slope (ft/ft)	0.000230	Area (sq ft)	7653.73	9696.19	44587.26		
Q Total (cfs)	100471.50	Flow (cfs)	7973.51	43406.98	49091.01		
Top Width (ft)	6156.42	Top Width (ft)	900.21	428.04	4828.18		
Vel Total (ft/s)	1.62	Avg. Vel. (ft/s)	1.04	4.48	1.10		
Max Chl Dpth (ft)	27.85	Hydr. Depth (ft)	8.50	22.65	9.23		
Conv. Total (cfs)	6630817.0	Conv. (cfs)	526227.9	2864730.0	3239859.0		
Length Wtd. (ft)	445.81	Wetted Per. (ft)	900.64	432.29	4829.11		
Min Ch El (ft)	703.38	Shear (lb/sq ft)	0.12	0.32	0.13		
Alpha	3.55	Stream Power (lb/ft s)	8588.60	0.00	0.00		
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	165.07	291.88	1137.30		
C & E Loss (ft)	0.00	Cum SA (acres)	19.34	12.51	122.90		

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK500

E.G. Elev (ft)	732.44	Element	Left OB	Channel	Right OB		
Vel Head (ft)	0.14	Wt. n-Val.	0.090	0.040	0.090		
W.S. Elev (ft)	732.30	Reach Len. (ft)	445.81	445.81	445.81		
Crit W.S. (ft)	724.42	Flow Area (sq ft)	8632.73	10155.89	49776.04		
E.G. Slope (ft/ft)	0.000223	Area (sq ft)	8632.73	10155.89	49776.04		
Q Total (cfs)	113669.30	Flow (cfs)	9430.89	46194.82	58043.59		
Top Width (ft)	6187.94	Top Width (ft)	924.54	428.04	4835.36		
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)	1.09	4.55	1.17		
Max Chl Dpth (ft)	28.92	Hydr. Depth (ft)	9.34	23.73	10.29		
Conv. Total (cfs)	7614862.0	Conv. (cfs)	631788.3	3094654.0	3888419.0		
Length Wtd. (ft)	445.81	Wetted Per. (ft)	925.00	432.29	4836.38		
Min Ch El (ft)	703.38	Shear (lb/sq ft)	0.13	0.33	0.14		
Alpha	3.35	Stream Power (lb/ft s)	8588.60	0.00	0.00		
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	186.01	305.34	1269.54		
C & E Loss (ft)	0.00	Cum SA (acres)	19.60	12.51	123.05		

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy

was used.

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 1756.45*

INPUT
Description:
Station Elevation Data num= 464

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	781.63	10.62	781.58	10.74	781.58	18.88	781.55	22.54	781.5
22.67	781.49	31.62	781.28	34.46	781.18	46.23	781.15	46.53	781.15
70.05	781.32	70.39	781.32	78.55	781.38	82.14	781.42	82.32	781.42
94.06	781.52	105.77	781.56	105.98	781.56	107.97	781.57	117.68	781.69
118.11	781.69	129.81	781.82	141.73	781.85	141.97	781.84	144.31	781.72
152.52	781.18	153.65	781.12	165.31	780.63	165.83	780.61	177.49	780.07
177.76	780.05	189.41	779.49	189.69	779.47	197.08	778.88	201.33	778.56
210.04	778.25	212.94	778.12	225.17	777.53	225.48	777.51	237.08	776.93
237.41	776.91	241.63	776.7	249	776.37	260.57	775.53	260.92	775.51
273.2	775.19	275.78	775.14	308.99	774.31	320.52	773.85	320.93	773.84
344.79	773.43	356.27	773.28	356.72	773.27	368.19	772.96	379.64	772.75
380.11	772.74	391.55	772.53	392.51	772.51	403.94	772.33	407.27	772.29
419.82	771.76	427.27	771.56	446.2	771.16	451.08	771.03	451.62	771.01
464.35	770.67	473	770.56	474.9	770.53	475.46	770.53	487.38	770.31
499.3	770.16	499.88	770.15	508.9	770.03	522.53	769.93	535.05	769.79
538.74	769.76	553.46	769.58	570.16	769.55	570.81	769.54	584.38	769.52
594.65	769.4	598.01	769.37	604.47	769.4	606.57	769.4	617.79	769.37
670.23	769.32	722.58	769.49	731.65	769.41	735.96	769.48	748.1	769.56
856.84	769.8	868.45	769.74	908.88	769.81	934.77	768.94	990.07	766.63
1001.07	766.3	1067.39	759.66	1107.16	758.81	1108.33	758.78	1123.29	758.46
1129.81	757.93	1131	757.84	1133.69	757.62	1141.71	757.05	1142.92	756.96
1144.02	756.89	1213.16	751.77	1214.43	751.67	1226.35	750.78	1227.63	750.69
1266.33	747.8	1307.34	742.55	1332.63	740.87	1345.53	740.15	1351.61	739.78
1356.05	739.33	1358.86	739.03	1370.79	737.68	1389.74	736.03	1391.77	735.89
1393.21	735.8	1394.66	735.69	1395.9	735.59	1398.95	735.36	1405.13	735.55
1408.09	735.62	1415.59	735.84	1417.05	735.89	1427.49	736.2	1428.97	736.25
1465.27	737.31	1484.44	736.01	1528.71	733.37	1531.57	733.13	1573	727.17
1594.2	724.9	1597.89	724.51	1617.27	722.67	1653.73	722.94	1655.43	722.96
1656.18	722.96	1661.54	722.99	1664.21	723.02	1672.15	722.81	1730.51	722.52
1738.86	721.98	1750.1	721.26	1750.78	721.25	1789.41	720.99	1794.37	720.94
1796.62	720.95	1796.83	720.95	1804.18	720.98	1863.15	721.54	1882.92	721.29

1883.8	721.31	1915.7	721.69	1922.63	721.79	1927.19	721.84	1927.6	721.84
1929.45	721.83	1929.56	721.83	1977.24	721.6	1989.16	721.58	1995.77	721.54
2055.86	722.32	2084.51	722.69	2096.43	722.8	2128.4	722.98	2156.02	722.6
2189.08	722.32	2193.99	722.27	2194.71	722.26	2203.7	722.24	2215.61	722.3
2237.12	722.33	2239.45	722.42	2251.37	722.83	2261.02	723.1	2264.42	722.31
2282.27	717.57	2300.11	712.62	2302.63	711.88	2304.91	711.19	2306.05	710.77
2309.44	710.49	2317.96	709.66	2321.42	709.37	2339.43	706.91	2351.09	706.47
2365.05	706.44	2393.1	706.54	2396.11	706.56	2399.1	706.56	2441.14	706.67
2455.25	706.66	2483.57	703.41	2486.18	703.21	2516.54	704.42	2569.49	705.22
2612.32	706.57	2613.57	706.7	2622.44	707.28	2643.86	708.06	2674.42	721.29
2675.39	721.68	2706.42	721.17	2708.7	721.16	2722.6	721.16	2758.67	721.32
2768.78	721.42	2769.46	721.43	2770.83	721.44	2775.33	721.49	2791.98	721.72
2808.64	721.85	2817.01	721.89	2825.29	721.97	2828.88	722.02	2863.62	722.31
2864.22	722.31	2864.83	722.33	2911.43	723.44	2927.05	724.47	2958.44	727.4
2958.63	727.42	2958.82	727.4	3004.76	722.98	3005.84	722.88	3052.81	722.63
3053.28	722.63	3147.46	722.05	3179.21	722.02	3194.66	721.92	3210.72	721.92
3241.87	721.8	3242.96	721.79	3289.08	721.71	3336.28	721.88	3337.8	721.89
3383.49	722	3430.71	721.93	3432.64	721.94	3477.9	722.01	3494.38	721.96
3525.89	722	3527.48	722.01	3570.61	722.09	3572.31	722.1	3619.52	722.03
3620.45	722.02	3677.92	722.25	3683.49	722.26	3747.32	722.16	3761.14	722.19
3855.55	722	3935.64	722.15	4044.39	721.7	4093.22	721.62	4180.71	721.81
4186.01	721.81	4219.29	721.95	4282.33	721.86	4308.21	721.94	4309.13	721.95
4313.85	721.96	4374.83	721.85	4381.02	721.82	4422.04	721.77	4439.92	721.8
4469.25	721.7	4516.45	721.61	4546.7	721.43	4547.38	721.43	4563.66	721.35
4570.7	721.33	4610.87	721.34	4630.98	721.29	4633.26	721.29	4650.68	721.25
4665.54	721.25	4723.59	721.51	4755.11	721.54	4760.38	721.56	4799.69	721.62
4892	721.36	4893.9	721.35	4938.5	721.07	4939.55	721.07	4953.71	721.01
5023.87	721	5028.21	721.01	5064.75	720.92	5163.94	720.81	5288.93	720.34
5361.25	720.37	5363.74	720.38	5364.37	720.38	5400.68	720.65	5413.98	720.68
5491.89	720.85	5512.42	721.03	5534.6	721.12	5565.79	721.13	5577.31	721.11
5584.76	721.13	5585.83	721.13	5614.48	721.27	5620.03	721.27	5624.16	721.29
5653.96	721.19	5654.89	721.19	5661.41	721.17	5662.73	721.17	5698.65	721.31
5705.45	721.3	5714.59	721.36	5738.61	721.42	5739.05	721.42	5739.28	721.43
5748.17	721.47	5790.89	721.31	5824.31	721.35	5833.59	721.4	5858.38	721.26
5864.77	721.2	5875.42	721.15	5909.49	721.19	5919.02	721.23	5922.14	721.26
5996.64	721.49	6004.44	721.46	6005.54	721.45	6047.16	721.16	6132.58	721.43
6145.62	721.17	6175.3	720.78	6218.02	721.65	6346.15	721.93	6369.11	721.72
6369.43	721.72	6386.47	721.48	6388.87	721.43	6389.89	721.43	6406.35	721.4
6437.57	721.55	6440.36	721.58	6471.64	721.82	6474.29	721.85	6515.53	722.1
6518.09	722.1	6556.81	722.24	6559.71	722.26	6573.85	722.4	6602.43	722.56
6624.95	722.6	6628.44	722.59	6645.14	722.61	6687.86	722.44	6693.09	722.53
6693.5	722.53	6704.34	722.69	6720.88	723.02	6727.16	723.05	6730.57	723.11
6765.82	723.29	6776.99	723.17	6778.27	723.17	6780.25	723.19	6795.3	723.13
6801.93	723.13	6812.34	723.05	6819.06	723.04	6829.37	723.15	6845.31	722.57

6846.41	722.58	6850.43	722.55	6858.72	722.45	6861.14	722.52	6863.44	722.53
6865.95	722.58	6880.48	722.74	6888.68	722.94	6897.51	723.11	6901.42	723.2
6903.22	723.48	6914.55	725.16	6916	725.37	6929.85	727.06	6931.28	727.26
6931.58	727.31	6944.14	729.15	6945.3	729.33	6948.62	729.87	6959.33	732.59
6965.07	733.54	6965.65	733.66	6975.43	735.49	6982.68	736.92	6986.85	737.65
6997.11	739.13	6999.72	739.62	7009.27	740.83	7015.44	741.77	7016.11	741.88
7016.76	741.99	7029.56	744.33	7033.79	744.75	7043.49	745.75	7067.86	748.08
7072.27	748.53	7084.89	749.66	7099.59	750.83	7101.93	751.06	7107.72	751.54
7114.99	752.08	7118.97	752.18	7127.23	753.29	7136	754.51	7151.31	753.05
7153.04	752.94	7155.7	753.23	7157.71	753.42	7166.29	753.83	7168.1	753.89
7170.07	753.94	7183.75	754.95	7187.1	755.33	7192.3	755.68	7200.41	756.07
7204.14	756.29	7213.98	757.23	7221.17	757.89	7235.67	758.68	7238.21	758.85
7239.85	758.94	7243.13	759.15	7255.25	759.77	7272.28	760.45	7281.93	761.21
7285.85	761.4	7289.31	761.69	7295.96	762.09	7300.29	762.32	7324.01	762.69
7326.93	762.72	7328.55	762.73	7340.42	762.92	7344.1	762.99	7366.09	763.36
7366.53	763.36	7371.27	763.19	7374.49	763.13	7387.47	763.03	7391.52	763.01
7398.8	763.1	7406.35	763.13	7408.17	763.17	7408.56	763.17	7412.04	763.32
7413.98	763.42	7422.19	763.68	7430.85	763.83	7437.94	763.89		

```
Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
       0     .09 2261.02     .04 2675.39     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       2261.02 2675.39           445.81  445.81  445.81            .1        .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
4585.268 7437.94729.0267       F

CROSS SECTION OUTPUT  Profile #PK2
*************************************************************************************************
* E.G. Elev (ft)          *  722.47  * Element                 *  Left OB *   Channel * Right OB *
* Vel Head (ft)           *    0.30  * Wt. n-Val.              *   0.090  *    0.040  *   0.090  *
* W.S. Elev (ft)          *  722.17  * Reach Len. (ft)         *  445.81  *   445.81  *  445.81  *
* Crit W.S. (ft)          *  711.84  * Flow Area (sq ft)       *  210.78  * 5876.31  *  496.79  *
* E.G. Slope (ft/ft)      *0.000408  * Area (sq ft)            *  210.78  * 5876.31  * 2371.07  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              *   54.52  *25806.91  *   84.51  *
* Top Width (ft)          * 4207.66  * Top Width (ft)          *  308.75  *  410.46  * 3488.44  *
* Vel Total (ft/s)        *    3.94  * Avg. Vel. (ft/s)        *    0.26  *    4.39  *    0.17  *
* Max Chl Dpth (ft)       *   18.96  * Hydr. Depth (ft)        *    0.68  *   14.32  *    0.32  *
* Conv. Total (cfs)       *1283792.0  * Conv. (cfs)            *  2697.8  *1276913.0  *  4181.6  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        *  308.80  *  415.36  * 1535.16  *
* Min Ch El (ft)          *  703.21  * Shear (lb/sq ft)        *    0.02  *    0.36  *    0.01  *
```

```
* Alpha                  *    1.24  * Stream Power (lb/ft s) * 7437.94  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.18  * Cum Volume (acre-ft)   *    3.59  *  120.50  *   43.90  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *    5.03  *    8.14  *   57.65  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)         *  727.29  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.21  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  727.08  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  714.09  * Flow Area (sq ft)      * 3316.69  * 7908.23  * 9502.13  *
* E.G. Slope (ft/ft)     *0.000253  * Area (sq ft)           * 3316.69  * 7908.23  *22586.88  *
* Q Total (cfs)          *42918.92  * Flow (cfs)             * 2488.85  *33132.32  * 7297.76  *
* Top Width (ft)         * 5349.10  * Top Width (ft)         *  687.20  *  414.37  * 4247.53  *
* Vel Total (ft/s)       *    2.07  * Avg. Vel. (ft/s)       *    0.75  *    4.19  *    0.77  *
* Max Chl Dpth (ft)      *   23.87  * Hydr. Depth (ft)       *    4.83  *   19.08  *    4.99  *
* Conv. Total (cfs)      *2696045.0  * Conv. (cfs)           *156342.2  *2081278.0  *458424.9  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       *  687.50  *  419.38  * 1903.18  *
* Min Ch El (ft)         *  703.21  * Shear (lb/sq ft)       *    0.08  *    0.30  *    0.08  *
* Alpha                  *    3.19  * Stream Power (lb/ft s) * 7437.94  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)   *   50.88  *  160.29  *  400.27  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *   10.64  *    8.20  *   75.48  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)         *  722.73  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.53  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  721.21  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  715.45  * Flow Area (sq ft)      *    9.82  * 5481.36  *    1.04  *
* E.G. Slope (ft/ft)     *0.002248  * Area (sq ft)           *    9.82  * 5481.36  *  300.01  *
* Q Total (cfs)          *54360.98  * Flow (cfs)             *    2.06  *54358.84  *    0.09  *
* Top Width (ft)         * 1337.13  * Top Width (ft)         *   70.88  *  405.65  *  860.60  *
* Vel Total (ft/s)       *    9.90  * Avg. Vel. (ft/s)       *    0.21  *    9.92  *    0.08  *
* Max Chl Dpth (ft)      *   18.00  * Hydr. Depth (ft)       *    0.14  *   13.51  *    0.04  *
* Conv. Total (cfs)      *1146415.0  * Conv. (cfs)           *    43.4  *1146369.0  *     1.9  *
```



```
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       *   70.88  *  410.33  *   28.99  *
* Min Ch El (ft)         *  703.21  * Shear (lb/sq ft)       *    0.02  *    1.88  *    0.01  *
* Alpha                  *    1.00  * Stream Power (lb/ft s) * 7437.94  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    1.13  * Cum Volume (acre-ft)   *    0.05  *   95.51  *    1.54  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)         *    0.36  *    7.83  *    4.40  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This
may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************
* E.G. Elev (ft)         *  725.05  * Element               *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.50  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  723.54  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  717.02  * Flow Area (sq ft)      *  944.14  * 6442.00  * 2903.25  *
* E.G. Slope (ft/ft)     *0.001942  * Area (sq ft)           *  944.14  * 6442.00  * 7740.10  *
* Q Total (cfs)          *68923.08  * Flow (cfs)             *  878.26  *65164.70  * 2880.13  *
* Top Width (ft)         * 5209.68  * Top Width (ft)         *  652.95  *  414.37  * 4142.36  *
* Vel Total (ft/s)       *    6.70  * Avg. Vel. (ft/s)       *    0.93  *   10.12  *    0.99  *
* Max Chl Dpth (ft)      *   20.33  * Hydr. Depth (ft)       *    1.45  *   15.55  *    1.59  *
* Conv. Total (cfs)      *1564053.0  * Conv. (cfs)           * 19930.0  *1478765.0  * 65358.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       *  653.07  *  419.38  * 1824.04  *
* Min Ch El (ft)         *  703.21  * Shear (lb/sq ft)       *    0.18  *    1.86  *    0.19  *
* Alpha                  *    2.16  * Stream Power (lb/ft s) * 7437.94  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    1.06  * Cum Volume (acre-ft)   *    5.94  *  111.28  *   53.99  *
* C & E Loss (ft)        *    0.07  * Cum SA (acres)         *    5.64  *    8.02  *   42.46  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional
cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This
may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************
```

```
* E.G. Elev (ft)         *  726.45  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.23  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  725.22  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  718.05  * Flow Area (sq ft)      * 2052.45  * 7136.14  * 5993.34  *
* E.G. Slope (ft/ft)     *0.001523  * Area (sq ft)           * 2052.45  * 7136.14  *14723.34  *
* Q Total (cfs)          *79649.91  * Flow (cfs)             * 2789.55  *68446.00  * 8414.35  *
* Top Width (ft)         * 5277.32  * Top Width (ft)         *  669.80  *  414.37  * 4193.15  *
* Vel Total (ft/s)       *    5.25  * Avg. Vel. (ft/s)       *    1.36  *    9.59  *    1.40  *
* Max Chl Dpth (ft)      *   22.01  * Hydr. Depth (ft)       *    3.06  *   17.22  *    3.22  *
* Conv. Total (cfs)      *2040833.0  * Conv. (cfs)           * 71475.5  *1753761.0  *215597.1  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       *  670.00  *  419.38  * 1863.67  *
* Min Ch El (ft)         *  703.21  * Shear (lb/sq ft)       *    0.29  *    1.62  *    0.31  *
* Alpha                  *    2.88  * Stream Power (lb/ft s) * 7437.94  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.90  * Cum Volume (acre-ft)   *   16.56  *  122.68  *  136.64  *
* C & E Loss (ft)        *    0.11  * Cum SA (acres)         *    8.26  *    8.08  *   58.19  *
*****************************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the
need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK100

```
*****************************************************************************************************
* E.G. Elev (ft)         *  730.37  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.18  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  730.19  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  719.06  * Flow Area (sq ft)      * 5484.10  * 9194.56  *35825.85  *
* E.G. Slope (ft/ft)     *0.000271  * Area (sq ft)           * 5484.10  * 9194.56  *35825.85  *
* Q Total (cfs)          *89992.12  * Flow (cfs)             * 5823.63  *44020.54  *40147.95  *
* Top Width (ft)         * 5397.83  * Top Width (ft)         *  708.99  *  414.37  * 4274.48  *
* Vel Total (ft/s)       *    1.78  * Avg. Vel. (ft/s)       *    1.06  *    4.79  *    1.12  *
* Max Chl Dpth (ft)      *   26.98  * Hydr. Depth (ft)       *    7.74  *   22.19  *    8.38  *
* Conv. Total (cfs)      *5469725.0  * Conv. (cfs)           *353960.5  *2675571.0  *2440194.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       *  709.51  *  419.38  * 4275.47  *
* Min Ch El (ft)         *  703.21  * Shear (lb/sq ft)       *    0.13  *    0.37  *    0.14  *
* Alpha                  *    3.73  * Stream Power (lb/ft s) * 7437.94  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)   *   84.80  *  186.04  *  638.55  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *   10.98  *    8.20  *   76.22  *
*****************************************************************************************************
```


Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK200

```
*****************************************************************************************************
* E.G. Elev (ft)         *  731.26  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.18  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  731.08  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  720.02  * Flow Area (sq ft)      * 6117.73  * 9563.28  *39630.95  *
* E.G. Slope (ft/ft)     *0.000266  * Area (sq ft)           * 6117.73  * 9563.28  *39630.95  *
* Q Total (cfs)          *100471.50  * Flow (cfs)            * 6881.63  *46559.68  *47030.19  *
* Top Width (ft)         * 5407.52  * Top Width (ft)         *  715.17  *  414.37  * 4277.98  *
* Vel Total (ft/s)       *    1.82  * Avg. Vel. (ft/s)       *    1.12  *    4.87  *    1.19  *
* Max Chl Dpth (ft)      *   27.87  * Hydr. Depth (ft)       *    8.55  *   23.08  *    9.26  *
* Conv. Total (cfs)      *6164660.0  * Conv. (cfs)           *422238.2  *2856776.0  *2885645.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       *  715.76  *  419.38  * 4279.08  *
* Min Ch El (ft)         *  703.21  * Shear (lb/sq ft)       *    0.14  *    0.38  *    0.15  *
* Alpha                  *    3.56  * Stream Power (lb/ft s) * 7437.94  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)   *   94.60  *  193.33  *  706.33  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *   11.07  *    8.20  *   76.30  *
*****************************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK500

```
*****************************************************************************************************
* E.G. Elev (ft)         *  732.33  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.18  * Wt. n-Val.             *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  732.15  * Reach Len. (ft)        *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  721.20  * Flow Area (sq ft)      * 6891.50  *10009.26  *44237.59  *
* E.G. Slope (ft/ft)     *0.000259  * Area (sq ft)           * 6891.50  *10009.26  *44237.59  *
* Q Total (cfs)          *113669.30  * Flow (cfs)            * 8236.15  *49644.54  *55788.61  *
* Top Width (ft)         * 5419.24  * Top Width (ft)         *  722.66  *  414.37  * 4282.22  *
* Vel Total (ft/s)       *    1.86  * Avg. Vel. (ft/s)       *    1.20  *    4.96  *    1.26  *
* Max Chl Dpth (ft)      *   28.94  * Hydr. Depth (ft)       *    9.54  *   24.16  *   10.33  *
* Conv. Total (cfs)      *7057323.0  * Conv. (cfs)           *511353.1  *3082254.0  *3463717.0  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)       *  723.32  *  419.38  * 4283.45  *
* Min Ch El (ft)         *  703.21  * Shear (lb/sq ft)       *    0.15  *    0.39  *    0.17  *
* Alpha                  *    3.36  * Stream Power (lb/ft s) * 7437.94  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.13  * Cum Volume (acre-ft)   *  106.57  *  202.15  *  788.46  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *   11.17  *    8.20  *   76.39  *
*****************************************************************************************************
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 1310.64*

INPUT
Description:
Station Elevation Data num= 476

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	784.08	8.13	784.19	8.22	784.19	14.45	784.27	17.35	784.27
24.2	784.23	26.37	784.17	35.38	784.15	35.61	784.15	53.61	784.21
53.87	784.2	60.12	784.22	62.86	784.25	63	784.25	71.98	784.32
80.94	784.35	81.1	784.35	82.63	784.36	90.06	784.49	90.39	784.5
99.35	784.65	108.47	784.75	108.65	784.75	110.44	784.71	116.73	784.42
117.59	784.39	129.97	784.07	135.83	783.88	136.04	783.88	144.96	783.59
145.17	783.58	150.82	783.28	154.08	783.13	160.75	782.99	162.96	782.92
163.43	782.9	172.32	782.59	172.56	782.58	181.44	782.25	181.69	782.24
190.56	781.95	199.41	781.53	199.68	781.52	208.81	781.36	209.08	781.35
211.05	781.32	226.75	780.99	227.05	780.98	235.86	780.8	236.17	780.8
245.29	780.51	245.61	780.51	254.41	780.36	272.66	780.12	273	780.11
281.78	779.92	290.54	779.78	290.9	779.78	299.65	779.65	300.02	779.64
300.39	779.64	311.68	779.49	321.29	778.98	326.99	778.8	341.48	778.41
345.22	778.27	345.63	778.25	355.37	777.9	363.44	777.78	363.87	777.77
372.56	777.6	372.99	777.59	382.11	777.44	382.56	777.44	389.47	777.32
412.3	777.12	423.56	776.95	445.46	776.93	447.23	776.92	457.66	776.78
462.61	776.83	463.68	776.82	464.21	776.82	472.8	776.8	512.93	776.75
553	776.95	559.93	776.85	563.24	776.93	572.53	777.02	655.75	777.3
664.63	777.24	695.57	777.31	715.39	776.32	757.7	773.68	766.13	773.3
816.88	765.71	847.32	764.73	848.21	764.71	859.66	764.34	867.62	763.38
873.76	762.73	875.53	762.54	882.87	761.72	883.8	761.62	884.73	761.51
938.53	755.47	939.51	755.35	964.89	752.5	969.13	752	1000.52	745.96
1019.87	744.02	1029.74	743.2	1034.4	742.79	1039.95	741.96	1049.08	740.53
1063.57	738.51	1065.13	738.33	1066.23	738.21	1067.34	738.08	1068.29	737.96
1070.63	737.69	1077.62	737.95	1121.38	739.82	1136.05	738.32	1169.93	735.27
1172.12	735	1203.82	728.13	1222.88	725.08	1237.7	722.96	1239.54	722.97
1240.81	722.99	1266.91	723.23	1267.49	723.24	1271.58	723.27	1273.63	723.3
1279.7	723.04	1324.37	722.64	1330.76	722.01	1332.12	721.88	1339.36	721.17
1339.88	721.16	1358.12	720.94	1359.51	720.93	1373.24	720.74	1374.97	720.75

1375.13	720.76	1380.75	720.77	1425.88	721.35	1441.01	721.03	1441.68	721.04
1466.09	721.46	1467.58	721.48	1471.4	721.55	1474.89	721.6	1475.21	721.6
1476.62	721.59	1476.7	721.59	1484.32	721.52	1504.07	721.35	1505.59	721.33
1527.38	721.16	1573.36	721.96	1578.12	722.07	1604.41	722.52	1610.43	722.6
1611.9	722.61	1628.87	722.83	1648.35	722.53	1650.01	722.5	1675.32	722.2
1679.63	722.12	1686.5	722.08	1712.08	722.01	1713.87	722.09	1722.99	722.54
1730.37	722.86	1733.4	721.95	1749.3	716.92	1765.19	711.78	1767.44	711.03
1769.47	710.33	1770.48	709.89	1773.5	709.71	1781.09	709.09	1784.17	708.86
1800.21	707.2	1810.59	706.7	1823.03	706.68	1848.02	706.8	1850.69	706.82
1890.81	706.98	1903.37	706.96	1928.59	703.27	1930.92	703.04	1963.04	703.65
2019.05	704.05	2064.36	704.73	2065.68	704.85	2075.07	705.33	2097.72	706.19
2130.06	721.25	2131.08	721.69	2134.08	721.64	2157.12	721.31	2158.16	721.29
2160.15	721.28	2172.28	721.27	2174.69	721.29	2203.76	721.46	2212.58	721.55
2213.18	721.56	2214.37	721.56	2229.73	721.72	2232.83	721.76	2254.67	721.91
2295.34	722.35	2295.7	722.35	2295.87	722.36	2296.4	722.38	2337.07	723.65
2350.7	724.82	2378.1	728.18	2378.26	728.2	2378.43	728.17	2419.46	723.01
2460.45	722.71	2460.86	722.71	2501.85	722.32	2543.05	722.04	2570.75	722
2584.24	721.9	2598.26	721.89	2625.44	721.77	2626.39	721.76	2668.89	721.68
2707.83	721.87	2709.15	721.88	2749.03	722.01	2790.23	721.93	2791.92	721.94
2831.42	722.01	2845.8	721.95	2873.3	721.99	2874.68	722	2912.33	722.08
2913.81	722.08	2952.6	721.99	2955.01	721.99	2955.82	721.98	3005.97	722.25
3006.95	722.25	3010.84	722.26	3037.4	722.16	3066.54	722.17	3078.6	722.21
3122.98	722.13	3139.77	722.08	3140.99	722.07	3160.99	722.01	3205.74	722.05
3230.88	722.17	3243.39	722.12	3258.38	722	3288.5	721.92	3325.78	721.66
3362.72	721.59	3366.98	721.57	3368.4	721.57	3449.37	721.79	3450.92	721.8
3478.42	721.94	3536.8	721.85	3556.02	721.94	3556.82	721.94	3560.94	721.96
3572.96	721.9	3614.15	721.83	3615.96	721.81	3655.35	721.73	3670.96	721.77
3696.55	721.67	3698.47	721.67	3737.74	721.58	3764.14	721.41	3764.74	721.41
3778.94	721.32	3779.01	721.32	3785.09	721.3	3820.14	721.31	3837.69	721.27
3838.47	721.26	3839.68	721.26	3854.88	721.22	3867.86	721.24	3918.52	721.53
3946.02	721.57	3950.62	721.59	3984.92	721.65	4065.49	721.34	4067.14	721.33
4084.37	721.15	4106.06	721.03	4106.98	721.02	4119.33	720.97	4171.75	720.99
4184.35	720.97	4216.24	720.83	4216.85	720.83	4220.97	720.81	4224.99	720.81
4253.52	720.74	4254.72	720.73	4256.05	720.73	4346.49	720.54	4388.48	720.27
4390.18	720.25	4411.88	720.19	4474.99	720.2	4477.17	720.21	4477.71	720.21
4509.4	720.52	4521.24	720.54	4522.31	720.55	4589	720.72	4606.92	720.92
4626.27	721.02	4653.49	721.02	4663.55	720.99	4670.04	721.01	4670.98	721.01
4672.42	721.02	4694.52	721.11	4695.98	721.12	4700.83	721.12	4704.43	721.14
4730.44	721	4731.24	721	4736.93	720.97	4738.09	720.97	4769.44	721.09
4775.37	721.06	4783.34	721.12	4804.31	721.17	4804.69	721.18	4804.9	721.18
4812.65	721.2	4849.93	720.96	4866.95	720.94	4887.19	721	4923.7	720.67
4951.58	720.68	4953.43	720.69	4961.75	720.7	4964.47	720.73	5025.02	720.89
5029.48	720.89	5036.3	720.85	5073.58	720.48	5110.85	720.5	5148.12	720.69
5159.5	720.4	5185.4	719.92	5222.68	720.91	5224.52	720.93	5334.5	721.25

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 5354.53  721.03 5354.81  721.03 5371.78  720.74 5399.41  720.83 5409.05   720.9
 5410.52  720.92 5414.28  720.95 5444.01  721.26 5446.33  721.29 5484.55  721.53
 5486.22  721.53 5520.87  721.63 5558.15  721.87 5577.81  721.87 5580.85  721.86
 5595.43  721.86 5613.38  721.69 5632.71   721.6 5637.27  721.69 5637.62  721.69
 5647.08  721.86 5661.52  722.24    5667  722.34 5669.97  722.41 5700.74  722.67
 5710.49  722.55  5711.6  722.54 5713.33  722.54 5744.42  722.26 5744.53  722.27
 5745.09  722.26  5747.2  722.25  5756.2  722.28 5770.11  721.94 5771.07  721.94
 5781.81  721.84 5783.93  721.94 5785.93     722 5788.12  722.08  5800.8  722.48
 5819.08  723.17 5820.65  723.51  5831.8  725.87 5843.89  728.03  5845.4  728.31
 5856.35  730.43 5857.37  730.63 5860.26  731.24 5869.61  733.67 5874.62  734.72
 5875.13  734.85 5883.66  736.96 5889.99  738.56 5893.63  739.43 5902.59  741.24
 5904.86  741.75 5913.19  743.35 5918.58  744.46 5919.17  744.58 5919.73  744.71
  5930.9   747.4 5959.36   751.1 5964.33  751.73 5968.18  752.24 5979.19  753.53
 5992.01  754.95 5994.06   755.2 5999.11  755.77 6005.46   756.4 6008.93  756.54
 6023.79  758.06 6035.07  757.71 6037.15  757.64 6038.66  757.66 6040.98  757.92
 6042.73   758.1 6050.23  758.42  6051.8  758.46 6053.52  758.49 6065.46  759.06
 6068.39  759.27 6072.92  759.47    6080   759.7 6083.26  759.86 6098.12  760.87
 6110.77  761.44 6112.99  761.56 6117.28  761.77 6127.85  762.15 6142.72   762.6
 6151.14  763.05 6154.56  763.18 6157.59  763.42 6167.17  764.04 6187.32  764.32
 6187.87  764.32 6191.83  764.37 6224.59  765.02 6224.97  765.02  6229.1   764.9
 6231.92  764.89 6243.25  764.89 6246.78   764.9 6253.13  764.97 6259.72  764.99
 6261.31     765 6261.65  765.01 6264.68  765.08 6266.38  765.14 6273.55   765.2
 6287.29  765.18

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**************************************************
       0     .09 1730.37     .04 2131.08     .09

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1730.37 2131.08            445.81  445.81  445.81             .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev  Permanent
 3191.51 6287.29728.9933       F

CROSS SECTION OUTPUT  Profile #PK2
*****************************************************************************************
* E.G. Elev (ft)          *  722.29  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.30  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  721.99  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  711.31  * Flow Area (sq ft)       *  177.04  * 5879.19  *   89.97  *
* E.G. Slope (ft/ft)      *0.000395  * Area (sq ft)            *  177.04  * 5879.19  * 2111.06  *
* Q Total (cfs)           *25945.95  * Flow (cfs)              *   46.91  *25884.90  *   14.13  *
* Top Width (ft)          * 3462.09  * Top Width (ft)          *  243.83  *  397.82  * 2820.44  *
```



```
* Vel Total (ft/s)        *    4.22  * Avg. Vel. (ft/s)        *    0.26  *    4.40  *    0.16  *
* Max Chl Dpth (ft)       *   18.95  * Hydr. Depth (ft)        *    0.73  *   14.78  *    0.22  *
* Conv. Total (cfs)       *1305654.0  * Conv. (cfs)            *  2360.8  *1302582.0  *   711.1  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        *  243.90  *  403.64  *  411.73  *
* Min Ch El (ft)          *  703.04  * Shear (lb/sq ft)        *    0.02  *    0.36  *    0.01  *
* Alpha                   *    1.09  * Stream Power (lb/ft s)  * 6287.29  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.17  * Cum Volume (acre-ft)    *    1.61  *   60.34  *   20.96  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *    2.20  *    4.01  *   25.37  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK5
*****************************************************************************************
* E.G. Elev (ft)          *  727.16  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.30  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)          *  726.86  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  713.62  * Flow Area (sq ft)       * 2480.71  * 7828.84  * 4813.66  *
* E.G. Slope (ft/ft)      *0.000313  * Area (sq ft)            * 2480.71  * 7828.84  *19588.34  *
* Q Total (cfs)           *42918.92  * Flow (cfs)              * 2055.80  *36956.38  * 3906.74  *
* Top Width (ft)          * 4604.11  * Top Width (ft)          *  518.62  *  400.71  * 3684.78  *
* Vel Total (ft/s)        *    2.84  * Avg. Vel. (ft/s)        *    0.83  *    4.72  *    0.81  *
* Max Chl Dpth (ft)       *   23.82  * Hydr. Depth (ft)        *    4.78  *   19.54  *    4.63  *
* Conv. Total (cfs)       *2426099.0  * Conv. (cfs)            *116208.9  *2089051.0  *220838.3  *
* Length Wtd. (ft)        *  445.81  * Wetted Per. (ft)        *  519.05  *  406.65  * 1039.39  *
* Min Ch El (ft)          *  703.04  * Shear (lb/sq ft)        *    0.09  *    0.38  *    0.09  *
* Alpha                   *    2.39  * Stream Power (lb/ft s)  * 6287.29  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.15  * Cum Volume (acre-ft)    *   21.22  *   79.76  *  184.45  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *    4.47  *    4.03  *   34.88  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK10
*****************************************************************************************
* E.G. Elev (ft)          *  721.57  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.84  * Wt. n-Val.              *          *   0.040  *          *
* W.S. Elev (ft)          *  719.73  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)          *  714.98  * Flow Area (sq ft)       *          * 4991.13  *          *
* E.G. Slope (ft/ft)      *0.002885  * Area (sq ft)            *          * 4991.13  *          *
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* Q Total (cfs)          *54360.98  * Flow (cfs)              *          *54360.98  *          *
* Top Width (ft)         *  386.37  * Top Width (ft)          *          *  386.37  *          *
* Vel Total (ft/s)       *   10.89  * Avg. Vel. (ft/s)        *          *   10.89  *          *
* Max Chl Dpth (ft)      *   16.69  * Hydr. Depth (ft)        *          *   12.92  *          *
* Conv. Total (cfs)      *1011992.0  * Conv. (cfs)             *          *1011992.0  *          *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)        *          *  391.41  *          *
* Min Ch El (ft)         *  703.04  * Shear (lb/sq ft)        *          *    2.30  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) * 6287.29  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.28  * Cum Volume (acre-ft)    *          *   41.92  *          *
* C & E Loss (ft)        *    0.27  * Cum SA (acres)          *          *    3.77  *          *
*****************************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional
cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater
than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This
may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK25
*****************************************************************************************************
* E.G. Elev (ft)         *  723.91  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.21  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  721.70  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  716.57  * Flow Area (sq ft)       *  108.59  * 5763.15  *   25.28  *
* E.G. Slope (ft/ft)     *0.002976  * Area (sq ft)            *  108.59  * 5763.15  * 1405.05  *
* Q Total (cfs)          *68923.08  * Flow (cfs)              *   60.26  *68853.61  *    9.21  *
* Top Width (ft)         * 2698.98  * Top Width (ft)          *  224.50  *  396.89  * 2077.59  *
* Vel Total (ft/s)       *   11.69  * Avg. Vel. (ft/s)        *    0.55  *   11.95  *    0.36  *
* Max Chl Dpth (ft)      *   18.66  * Hydr. Depth (ft)        *    0.48  *   14.52  *    0.23  *
* Conv. Total (cfs)      *1263319.0  * Conv. (cfs)             *  1104.6  *1262046.0  *   168.9  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)        *  224.55  *  402.66  *  111.98  *
* Min Ch El (ft)         *  703.04  * Shear (lb/sq ft)        *    0.09  *    2.66  *    0.04  *
* Alpha                  *    1.04  * Stream Power (lb/ft s) * 6287.29  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.29  * Cum Volume (acre-ft)    *    0.56  *   48.82  *    7.19  *
* C & E Loss (ft)        *    0.30  * Cum SA (acres)          *    1.15  *    3.87  *   10.63  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional
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cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater
than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This
may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK50
*****************************************************************************************************
* E.G. Elev (ft)         *  725.44  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    2.31  * Wt. n-Val.              *   0.090  *   0.040  *   0.090  *
* W.S. Elev (ft)         *  723.13  * Reach Len. (ft)         *  445.81  *  445.81  *  445.81  *
* Crit W.S. (ft)         *  717.66  * Flow Area (sq ft)       *  591.59  * 6333.09  * 1055.56  *
* E.G. Slope (ft/ft)     *0.002829  * Area (sq ft)            *  591.59  * 6333.09  * 5989.78  *
* Q Total (cfs)          *79649.91  * Flow (cfs)              *  618.26  *78040.50  *  991.15  *
* Top Width (ft)         * 4461.56  * Top Width (ft)          *  472.09  *  400.71  * 3588.76  *
* Vel Total (ft/s)       *    9.98  * Avg. Vel. (ft/s)        *    1.05  *   12.32  *    0.94  *
* Max Chl Dpth (ft)      *   20.09  * Hydr. Depth (ft)        *    1.25  *   15.80  *    1.10  *
* Conv. Total (cfs)      *1497427.0  * Conv. (cfs)             * 11623.3  *1467170.0  * 18633.7  *
* Length Wtd. (ft)       *  445.81  * Wetted Per. (ft)        *  472.24  *  406.65  *  962.32  *
* Min Ch El (ft)         *  703.04  * Shear (lb/sq ft)        *    0.22  *    2.75  *    0.19  *
* Alpha                  *    1.49  * Stream Power (lb/ft s) * 6287.29  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.19  * Cum Volume (acre-ft)    *    3.03  *   53.75  *   30.65  *
* C & E Loss (ft)        *    0.34  * Cum SA (acres)          *    2.42  *    3.91  *   18.36  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional
cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater
than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This
may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy
was used.

CROSS SECTION OUTPUT  Profile #PK100
*****************************************************************************************************
* E.G. Elev (ft)         *  730.24  * Element                 *  Left OB *  Channel * Right OB *
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* Vel Head (ft)	* 0.23	* Wt. n-Val.	* 0.090	* 0.040	* 0.090	*
* W.S. Elev (ft)	* 730.00	* Reach Len. (ft)	* 445.81	* 445.81	* 445.81	*
* Crit W.S. (ft)	* 718.66	* Flow Area (sq ft)	* 4137.00	* 9086.97	*31237.70	*
* E.G. Slope (ft/ft)	*0.000315	* Area (sq ft)	* 4137.00	* 9086.97	*31237.70	*
* Q Total (cfs)	*89992.12	* Flow (cfs)	* 4731.86	*47499.15	*37761.11	*
* Top Width (ft)	* 4658.95	* Top Width (ft)	* 535.18	* 400.71	* 3723.05	*
* Vel Total (ft/s)	* 2.02	* Avg. Vel. (ft/s)	* 1.14	* 5.23	* 1.21	*
* Max Chl Dpth (ft)	* 26.96	* Hydr. Depth (ft)	* 7.73	* 22.68	* 8.39	*
* Conv. Total (cfs)	*5073854.0	* Conv. (cfs)	*266787.6	*2678054.0	*2129013.0	*
* Length Wtd. (ft)	* 445.81	* Wetted Per. (ft)	* 535.91	* 406.65	* 3724.43	*
* Min Ch El (ft)	* 703.04	* Shear (lb/sq ft)	* 0.15	* 0.44	* 0.16	*
* Alpha	* 3.69	* Stream Power (lb/ft s)	* 6287.29	* 0.00	* 0.00	*
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	* 35.57	* 92.49	* 295.37	*
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 4.62	* 4.03	* 35.29	*

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK200

* E.G. Elev (ft)	* 731.13	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 0.23	* Wt. n-Val.	* 0.090	* 0.040	* 0.090	*
* W.S. Elev (ft)	* 730.89	* Reach Len. (ft)	* 445.81	* 445.81	* 445.81	*
* Crit W.S. (ft)	* 719.62	* Flow Area (sq ft)	* 4614.82	* 9443.37	*34551.02	*
* E.G. Slope (ft/ft)	*0.000312	* Area (sq ft)	* 4614.82	* 9443.37	*34551.02	*
* Q Total (cfs)	*100471.50	* Flow (cfs)	* 5622.48	*50416.48	*44432.53	*
* Top Width (ft)	* 4667.52	* Top Width (ft)	* 539.29	* 400.71	* 3727.52	*
* Vel Total (ft/s)	* 2.07	* Avg. Vel. (ft/s)	* 1.22	* 5.34	* 1.29	*
* Max Chl Dpth (ft)	* 27.85	* Hydr. Depth (ft)	* 8.56	* 23.57	* 9.27	*
* Conv. Total (cfs)	*5690307.0	* Conv. (cfs)	*318435.2	*2855390.0	*2516482.0	*
* Length Wtd. (ft)	* 445.81	* Wetted Per. (ft)	* 540.11	* 406.65	* 3728.98	*
* Min Ch El (ft)	* 703.04	* Shear (lb/sq ft)	* 0.17	* 0.45	* 0.18	*
* Alpha	* 3.54	* Stream Power (lb/ft s)	* 6287.29	* 0.00	* 0.00	*
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	* 39.68	* 96.07	* 326.73	*
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 4.65	* 4.03	* 35.34	*

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK500

* E.G. Elev (ft)	* 732.20	* Element	* Left OB	* Channel	* Right OB	*

* Vel Head (ft)	* 0.24	* Wt. n-Val.	* 0.090	* 0.040	* 0.090	*
* W.S. Elev (ft)	* 731.97	* Reach Len. (ft)	* 445.81	* 445.81	* 445.81	*
* Crit W.S. (ft)	* 720.78	* Flow Area (sq ft)	* 5198.06	* 9874.75	*38566.36	*
* E.G. Slope (ft/ft)	*0.000308	* Area (sq ft)	* 5198.06	* 9874.75	*38566.36	*
* Q Total (cfs)	*113669.30	* Flow (cfs)	* 6766.82	*53942.25	*52960.22	*
* Top Width (ft)	* 4676.94	* Top Width (ft)	* 544.25	* 400.71	* 3731.98	*
* Vel Total (ft/s)	* 2.12	* Avg. Vel. (ft/s)	* 1.30	* 5.46	* 1.37	*
* Max Chl Dpth (ft)	* 28.93	* Hydr. Depth (ft)	* 9.55	* 24.64	* 10.33	*
* Conv. Total (cfs)	*6482033.0	* Conv. (cfs)	*385880.6	*3076077.0	*3020076.0	*
* Length Wtd. (ft)	* 445.81	* Wetted Per. (ft)	* 545.20	* 406.65	* 3733.57	*
* Min Ch El (ft)	* 703.04	* Shear (lb/sq ft)	* 0.18	* 0.47	* 0.20	*
* Alpha	* 3.37	* Stream Power (lb/ft s)	* 6287.29	* 0.00	* 0.00	*
* Frctn Loss (ft)	* 0.15	* Cum Volume (acre-ft)	* 44.70	* 100.40	* 364.73	*
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 4.69	* 4.03	* 35.38	*

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Thompson
REACH: Alignment - surv RS: 864.84

INPUT
Description:
Station Elevation Data num= 310

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	786.536.800293	786.8410.02002		78716.78027	787.1741.68018	787.07			
57.29004	787.1576.57031	787.6980.93018		787.6590.11035	787.71104.5703	787.68			
111.4502	787.73 128.21	787.55146.3301		787.51 175.48	787.11199.1201	786.84			
216.1001	786.7222.7603	786.19236.7603		785.65246.3901	785.13 250.98	785.04			
270.0303	784.62285.8604	784.48293.6699		784.31310.0801	784.33317.3101	784.19			
320.7402	784.25355.6304	784.18383.4102		784.41388.2202	784.3390.5103	784.39			
396.9502	784.49398.8003	784.5425.6201		784.68454.6499	784.8458.7603	784.75			
460.8101	784.73482.2603	784.81	496	783.7525.3403	780.73531.1802	780.3			
566.3701	771.76596.0303	770.22601.5503		769.14607.0303	768.19666.7202	757.2			
671.9302	756.21693.6899	749.38707.1104		747.17717.1802	745.8737.4102	740.99			
740.6802	740.33742.3003	740.01747.1499		740.28777.4902	742.34787.6602	740.63			
808.1001	737.61811.1499	737.17812.6699		736.86834.6499	729.1847.8604	725.64			
858.1401	723.24 878.79	723.51881.6304		723.54883.0503	723.57887.2603	723.28			
918.23	722.75928.6201	721.08 949.48		720.62952.1104	720.55953.4199	720.56			

957.3203	720.57	988.6104	721.15	999.1001	720.77	1020.17	721.31	1022.59	721.36
1023.79	721.35	1058.98	720.77	1090.86	721.59	1094.16	721.71	1116.56	722.35
1129.35	722.68	1161.55	722.07	1164.54	721.98	1187.04	721.68	1199.72	722.62
1232.24	710.18	1234.02	709.47	1234.91	709.01	1237.56	708.92	1270.1	706.93
1281.01	706.91	1302.93	707.06	1305.28	707.09	1307.62	707.1	1340.47	707.28
1351.49	707.27	1373.62	703.13	1375.66	702.87	1516.4	702.89	1517.79	703
1551.59	704.32	1585.69	721.21	1586.77	721.7	1609.9	721.41	1621.96	721.39
1656.38	721.67	1656.89	721.68	1657.91	721.68	1692.33	721.93	1703.88	722.11
1727.07	722.39	1727.37	722.39	1727.52	722.4	1727.97	722.42	1762.71	723.86
1774.35	725.18	1797.75	728.96	1797.89	728.98	1798.03	728.95	1833.08	723.15
1868.09	722.8	1868.44	722.8	1903.45	722.35	1915.31	722.26	1938.64	722.03
1939.13	722.03	1962.3	721.99	1973.82	721.87	1985.79	721.87	2009.01	721.73
2009.82	721.72	2044.2	721.64	2056.27	721.69	2079.38	721.86	2080.51	721.87
2114.57	722.02	2126.74	722	2149.76	721.92	2151.2	721.93	2184.94	722
2197.22	721.93	2220.13	721.97	2220.71	721.97	2221.89	721.98	2255.31	722.07
2288.44	721.96	2290.5	721.96	2291.19	721.95	2325.69	722.2	2338.18	722.27
2360.87	722.16	2385.16	722.18	2396.06	722.23	2428.56	722.16	2431.25	722.15
2433.96	722.15	2466.43	722.02	2479.13	722.06	2501.62	722.05	2504.65	722.06
2526.12	722.2	2536.81	722.14	2549.61	722	2575.34	721.91	2607.18	721.62
2638.73	721.54	2642.37	721.52	2643.58	721.52	2646.03	721.53	2677.55	721.6
2708.79	721.76	2712.74	721.77	2714.06	721.78	2716.72	721.79	2737.55	721.94
2747.92	721.94	2778.85	721.83	2784.54	721.83	2787.41	721.84	2808.03	721.96
2818.3	721.89	2848.91	721.81	2853.48	721.81	2855.02	721.79	2858.1	721.77
2888.67	721.7	2902	721.74	2923.86	721.63	2925.5	721.63	2948.99	721.56
2959.04	721.56	2994.23	721.29	2999.48	721.27	3029.42	721.28	3059.09	721.2
3064.6	721.22	3070.17	721.22	3099.79	721.43	3113.44	721.55	3134.97	721.59
3136.93	721.59	3140.86	721.61	3170.16	721.67	3205.35	721.51	3238.97	721.31
3240.38	721.3	3255.1	721.11	3272.22	720.99	3284.96	720.93	3329.73	720.96
3340.49	720.93	3367.73	720.73	3368.25	720.73	3371.77	720.71	3399.57	720.62
3404.35	720.59	3431.41	720.54	3441.66	720.54	3478.98	720.41	3495.08	720.31
3516.29	720.11	3534.83	720.04	3588.73	720.03	3590.59	720.04	3618.12	720.38
3628.23	720.41	3654.27	720.44	3686.11	720.59	3701.41	720.81	3717.94	720.91
3740.16	720.91	3749.78	720.87	3777.48	720.97	3781.62	720.97	3784.7	720.99
3812.46	720.77	3813.45	720.77	3840.22	720.86	3845.29	720.83	3852.1	720.89
3877.13	720.94	3889.41	720.8	3908.97	720.61	3923.51	720.57	3940.8	720.6
3964.04	720.28	3972.64	720.19	3979.04	720.18	4004.48	720.18	4006.8	720.2
4062.33	720.3	4068.15	720.25	4099.99	719.79	4117.86	719.8	4131.83	719.77
4163.66	719.96	4173.38	719.62	4195.5	719.07	4227.34	720.17	4228.91	720.19
4259.17	720.32	4262.54	720.33	4291.01	720.36	4322.85	720.57	4339.96	720.35
4354.69	720.05	4367.72	720.13	4386.52	720.29	4411.79	720.63	4418.36	720.73
4449.1	720.95	4451.01	720.95	4482.03	721	4513.87	721.17	4545.71	721.11
4561.04	720.89	4577.55	720.75	4589.83	721.04	4609.38	721.71	4635.66	722.06
4672.97	721.49	4673.06	721.49	4673.54	721.48	4704.9	721.23	4710.29	721.58
4736.73	723.15	4747.6	726.36	4768.57	731.7	4784.17	735.9	4800.41	741.22

4822.22	747.28	4832.24	750.46	4864.08	755.95	4890.5	759.99	4895.92	760.73
4922.99	762.24	4927.76	762.78	4934.16	763.01	4959.59	763.34	4991.43	764.39
5006.28	764.62	5023.27	764.95	5034.04	765.75	5055.1	766	5083.41	766.69
5086.94	766.62	5107.46	766.85	5117.33	766.84	5118.78	766.86	5136.64	766.46

Manning's n values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.09	1199.72	.04	1586.77	.09

Bank Sta: Left Right Coeff Contr. Expan.
1199.72 1586.77 .1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
1797.75	5136.64	728.96	F

CROSS SECTION OUTPUT Profile #PK2

E.G. Elev (ft)	722.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.30	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	721.82	Reach Len. (ft)			
Crit W.S. (ft)	710.72	Flow Area (sq ft)	137.09	5913.24	22.42
E.G. Slope (ft/ft)	0.000381	Area (sq ft)	137.09	5913.24	1985.29
Q Total (cfs)	26205.41	Flow (cfs)	37.34	26165.21	2.86
Top Width (ft)	2708.00	Top Width (ft)	185.92	384.95	2137.13
Vel Total (ft/s)	4.32	Avg. Vel. (ft/s)	0.27	4.42	0.13
Max Chl Dpth (ft)	18.95	Hydr. Depth (ft)	0.74	15.36	0.25
Conv. Total (cfs)	1343364.0	Conv. (cfs)	1914.1	1341304.0	146.7
Length Wtd. (ft)		Wetted Per. (ft)	186.03	391.90	89.93
Min Ch El (ft)	702.87	Shear (lb/sq ft)	0.02	0.36	0.01
Alpha	1.05	Stream Power (lb/ft s)	5136.64	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK5

E.G. Elev (ft)	727.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	726.58	Reach Len. (ft)			

Crit W.S. (ft)	713.06	Flow Area (sq ft)	1665.29	7757.62	831.53	
E.G. Slope (ft/ft)	0.000381	Area (sq ft)	1665.29	7757.62	16457.49	
Q Total (cfs)	43187.16	Flow (cfs)	1500.06	40986.33	700.77	
Top Width (ft)	3874.93	Top Width (ft)	355.46	387.05	3132.42	
Vel Total (ft/s)	4.21	Avg. Vel. (ft/s)	0.90	5.28	0.84	
Max Chl Dpth (ft)	23.71	Hydr. Depth (ft)	4.68	20.04	4.24	
Conv. Total (cfs)	2213556.0	Conv. (cfs)	76885.5	2100752.0	35918.0	
Length Wtd. (ft)		Wetted Per. (ft)	356.11	394.15	196.50	
Min Ch El (ft)	702.87	Shear (lb/sq ft)	0.11	0.47	0.10	
Alpha	1.50	Stream Power (lb/ft s)	5136.64	0.00	0.00	
Frctn Loss (ft)		Cum Volume (acre-ft)				
C & E Loss (ft)		Cum SA (acres)				

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK10

E.G. Elev (ft)	719.02	Element	Left OB	Channel	Right OB	
Vel Head (ft)	4.57	Wt. n-Val.		0.040		
W.S. Elev (ft)	714.45	Reach Len. (ft)				
Crit W.S. (ft)	714.45	Flow Area (sq ft)		3200.42		
E.G. Slope (ft/ft)	0.011361	Area (sq ft)		3200.42		
Q Total (cfs)	54907.32	Flow (cfs)		54907.32		
Top Width (ft)	350.94	Top Width (ft)		350.94		
Vel Total (ft/s)	17.16	Avg. Vel. (ft/s)		17.16		
Max Chl Dpth (ft)	11.58	Hydr. Depth (ft)		9.12		
Conv. Total (cfs)	515138.1	Conv. (cfs)		515138.1		
Length Wtd. (ft)		Wetted Per. (ft)		354.84		
Min Ch El (ft)	702.87	Shear (lb/sq ft)		6.40		
Alpha	1.00	Stream Power (lb/ft s)	5136.64	0.00	0.00	
Frctn Loss (ft)		Cum Volume (acre-ft)				
C & E Loss (ft)		Cum SA (acres)				

Warning: Slope-Area method could not converge on a starting water surface elevation within the specified number of trials. The
program used critical depth as the starting water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK25

E.G. Elev (ft)	721.32	Element	Left OB	Channel	Right OB	
Vel Head (ft)	5.25	Wt. n-Val.		0.040		
W.S. Elev (ft)	716.07	Reach Len. (ft)				
Crit W.S. (ft)	716.07	Flow Area (sq ft)		3777.43		
E.G. Slope (ft/ft)	0.010791	Area (sq ft)		3777.43		
Q Total (cfs)	69470.09	Flow (cfs)		69470.09		
Top Width (ft)	358.48	Top Width (ft)		358.48		
Vel Total (ft/s)	18.39	Avg. Vel. (ft/s)		18.39		
Max Chl Dpth (ft)	13.20	Hydr. Depth (ft)		10.54		
Conv. Total (cfs)	668770.4	Conv. (cfs)		668770.4		
Length Wtd. (ft)		Wetted Per. (ft)		363.06		
Min Ch El (ft)	702.87	Shear (lb/sq ft)		7.01		
Alpha	1.00	Stream Power (lb/ft s)	5136.64	0.00	0.00	
Frctn Loss (ft)		Cum Volume (acre-ft)				
C & E Loss (ft)		Cum SA (acres)				

Warning: Slope-Area method could not converge on a starting water surface elevation within the specified number of trials. The
program used critical depth as the starting water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK50

E.G. Elev (ft)	722.90	Element	Left OB	Channel	Right OB	
Vel Head (ft)	5.74	Wt. n-Val.		0.040		
W.S. Elev (ft)	717.16	Reach Len. (ft)				
Crit W.S. (ft)	717.16	Flow Area (sq ft)		4171.29		
E.G. Slope (ft/ft)	0.010543	Area (sq ft)		4171.29		
Q Total (cfs)	80201.12	Flow (cfs)		80201.12		
Top Width (ft)	363.53	Top Width (ft)		363.53		
Vel Total (ft/s)	19.23	Avg. Vel. (ft/s)		19.23		
Max Chl Dpth (ft)	14.29	Hydr. Depth (ft)		11.47		
Conv. Total (cfs)	781095.8	Conv. (cfs)		781095.8		
Length Wtd. (ft)		Wetted Per. (ft)		368.57		
Min Ch El (ft)	702.87	Shear (lb/sq ft)		7.45		
Alpha	1.00	Stream Power (lb/ft s)	5136.64	0.00	0.00	
Frctn Loss (ft)		Cum Volume (acre-ft)				
C & E Loss (ft)		Cum SA (acres)				

Warning: Slope-Area method could not converge on a starting water surface elevation within the specified number of

trials. The
program used critical depth as the starting water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK100

E.G. Elev (ft)	730.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	729.76	Reach Len. (ft)			
Crit W.S. (ft)	718.22	Flow Area (sq ft)	2813.29	8986.90	26483.90
E.G. Slope (ft/ft)	0.000379	Area (sq ft)	2813.29	8986.90	26483.90
Q Total (cfs)	90817.73	Flow (cfs)	3510.75	52285.85	35021.14
Top Width (ft)	3928.17	Top Width (ft)	366.94	387.05	3174.18
Vel Total (ft/s)	2.37	Avg. Vel. (ft/s)	1.25	5.82	1.32
Max Chl Dpth (ft)	26.89	Hydr. Depth (ft)	7.67	23.22	8.34
Conv. Total (cfs)	4662624.0	Conv. (cfs)	180243.3	2684380.0	1798001.0
Length Wtd. (ft)		Wetted Per. (ft)	368.03	394.15	3176.13
Min Ch El (ft)	702.87	Shear (lb/sq ft)	0.18	0.54	0.20
Alpha	3.59	Stream Power (lb/ft s)	5136.64	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK200

E.G. Elev (ft)	730.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	730.65	Reach Len. (ft)			
Crit W.S. (ft)	719.20	Flow Area (sq ft)	3139.60	9329.92	29298.50
E.G. Slope (ft/ft)	0.000380	Area (sq ft)	3139.60	9329.92	29298.50
Q Total (cfs)	101291.70	Flow (cfs)	4196.45	55671.76	41423.50
Top Width (ft)	3934.16	Top Width (ft)	369.45	387.05	3177.66
Vel Total (ft/s)	2.43	Avg. Vel. (ft/s)	1.34	5.97	1.41
Max Chl Dpth (ft)	27.78	Hydr. Depth (ft)	8.50	24.11	9.22
Conv. Total (cfs)	5198713.0	Conv. (cfs)	215379.4	2857307.0	2126027.0
Length Wtd. (ft)		Wetted Per. (ft)	370.69	394.15	3179.72
Min Ch El (ft)	702.87	Shear (lb/sq ft)	0.20	0.56	0.22
Alpha	3.48	Stream Power (lb/ft s)	5136.64	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PK500

E.G. Elev (ft)	732.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.090	0.040	0.090
W.S. Elev (ft)	731.72	Reach Len. (ft)			
Crit W.S. (ft)	720.40	Flow Area (sq ft)	3537.56	9745.13	32709.61
E.G. Slope (ft/ft)	0.000379	Area (sq ft)	3537.56	9745.13	32709.61
Q Total (cfs)	114627.90	Flow (cfs)	5088.31	59836.50	49703.08
Top Width (ft)	3941.41	Top Width (ft)	372.49	387.05	3181.87
Vel Total (ft/s)	2.49	Avg. Vel. (ft/s)	1.44	6.14	1.52
Max Chl Dpth (ft)	28.85	Hydr. Depth (ft)	9.50	25.18	10.28
Conv. Total (cfs)	5885688.0	Conv. (cfs)	261264.5	3072367.0	2552056.0
Length Wtd. (ft)		Wetted Per. (ft)	373.91	394.15	3184.07
Min Ch El (ft)	702.87	Shear (lb/sq ft)	0.22	0.59	0.24
Alpha	3.34	Stream Power (lb/ft s)	5136.64	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

SUMMARY OF MANNING'S N VALUES

River:Thompson

Reach	River Sta.	n1	n2	n3
Alignment - surv	15894	.09	.04	.09
Alignment - surv	15551.6	.09	.04	.09
Alignment - surv	15209.3	.09	.04	.09
Alignment - surv	14867.08	.09	.04	.09
Alignment - surv	14403.8	.09	.04	.09
Alignment - surv	13940.5	.09	.04	.09
Alignment - surv	13477.2	.09	.04	.09
Alignment - surv	13013.9	.09	.04	.09
Alignment - surv	12550.6	.09	.04	.09

Alignment - surv	12087.4*	*	.09*	.04*	.09*
Alignment - surv	11624.13	*	.09*	.04*	.09*
Alignment - surv	11175.3*	*	.09*	.04*	.09*
Alignment - surv	10726.5*	*	.09*	.04*	.09*
Alignment - surv	10277.7*	*	.09*	.04*	.09*
Alignment - surv	9828.96*	*	.09*	.04*	.09*
Alignment - surv	9380.17*	*	.09*	.04*	.09*
Alignment - surv	8931.38	*	.09*	.04*	.09*
Alignment - surv	8480.90*	*	.09*	.04*	.09*
Alignment - surv	8030.43*	*	.09*	.04*	.09*
Alignment - surv	7579.96*	*	.09*	.04*	.09*
Alignment - surv	7129.48*	*	.09*	.04*	.09*
Alignment - surv	6679.01*	*	.09*	.04*	.09*
Alignment - surv	6228.54*	*	.09*	.04*	.09*
Alignment - surv	5778.06*	*	.09*	.04*	.09*
Alignment - surv	5327.59*	*	.09*	.04*	.09*
Alignment - surv	4877.12	*	.09*	.04*	.09*
Alignment - surv	4431.31*	*	.09*	.04*	.09*
Alignment - surv	3985.50*	*	.09*	.04*	.09*
Alignment - surv	3539.69*	*	.09*	.04*	.09*
Alignment - surv	3093.88*	*	.09*	.04*	.09*
Alignment - surv	2648.07*	*	.09*	.04*	.09*
Alignment - surv	2202.26*	*	.09*	.04*	.09*
Alignment - surv	1756.45*	*	.09*	.04*	.09*
Alignment - surv	1310.64*	*	.09*	.04*	.09*
Alignment - surv	864.84	*	.09*	.04*	.09*

SUMMARY OF REACH LENGTHS

River: Thompson

Reach	River Sta.	Left	Channel	Right
Alignment - surv	15894	342.31*	342.31*	342.31*
Alignment - surv	15551.6*	342.31*	342.31*	342.31*
Alignment - surv	15209.3*	342.31*	342.31*	342.31*
Alignment - surv	14867.08	463.28*	463.28*	463.28*
Alignment - surv	14403.8*	463.28*	463.28*	463.28*
Alignment - surv	13940.5*	463.28*	463.28*	463.28*
Alignment - surv	13477.2*	463.28*	463.28*	463.28*
Alignment - surv	13013.9*	463.28*	463.28*	463.28*

Alignment - surv	12550.6*	*	463.28*	463.28*	463.28*
Alignment - surv	12087.4*	*	463.28*	463.28*	463.28*
Alignment - surv	11624.13	*	448.79*	448.79*	448.79*
Alignment - surv	11175.3*	*	448.79*	448.79*	448.79*
Alignment - surv	10726.5*	*	448.79*	448.79*	448.79*
Alignment - surv	10277.7*	*	448.79*	448.79*	448.79*
Alignment - surv	9828.96*	*	448.79*	448.79*	448.79*
Alignment - surv	9380.17*	*	448.79*	448.79*	448.79*
Alignment - surv	8931.38	*	450.47*	450.47*	450.47*
Alignment - surv	8480.90*	*	450.47*	450.47*	450.47*
Alignment - surv	8030.43*	*	450.47*	450.47*	450.47*
Alignment - surv	7579.96*	*	450.47*	450.47*	450.47*
Alignment - surv	7129.48*	*	450.47*	450.47*	450.47*
Alignment - surv	6679.01*	*	450.47*	450.47*	450.47*
Alignment - surv	6228.54*	*	450.47*	450.47*	450.47*
Alignment - surv	5778.06*	*	450.47*	450.47*	450.47*
Alignment - surv	5327.59*	*	450.47*	450.47*	450.47*
Alignment - surv	4877.12	*	445.81*	445.81*	445.81*
Alignment - surv	4431.31*	*	445.81*	445.81*	445.81*
Alignment - surv	3985.50*	*	445.81*	445.81*	445.81*
Alignment - surv	3539.69*	*	445.81*	445.81*	445.81*
Alignment - surv	3093.88*	*	445.81*	445.81*	445.81*
Alignment - surv	2648.07*	*	445.81*	445.81*	445.81*
Alignment - surv	2202.26*	*	445.81*	445.81*	445.81*
Alignment - surv	1756.45*	*	445.81*	445.81*	445.81*
Alignment - surv	1310.64*	*	445.81*	445.81*	445.81*
Alignment - surv	864.84	*	*	*	*

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Thompson

Reach	River Sta.	Contr.	Expan.
Alignment - surv	15894 *	.1*	.3*
Alignment - surv	15551.6**	.1*	.3*
Alignment - surv	15209.3**	.1*	.3*
Alignment - surv	14867.08*	.1*	.3*
Alignment - surv	14403.8**	.1*	.3*
Alignment - surv	13940.5**	.1*	.3*
Alignment - surv	13477.2**	.1*	.3*

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*Alignment - surv*    13013.9**       .1*       .3*
*Alignment - surv*    12550.6**       .1*       .3*
*Alignment - surv*    12087.4**       .1*       .3*
*Alignment - surv*    11624.13*       .1*       .3*
*Alignment - surv*    11175.3**       .1*       .3*
*Alignment - surv*    10726.5**       .1*       .3*
*Alignment - surv*    10277.7**       .1*       .3*
*Alignment - surv*    9828.96**       .1*       .3*
*Alignment - surv*    9380.17**       .1*       .3*
*Alignment - surv*    8931.38 *       .1*       .3*
*Alignment - surv*    8480.90**       .1*       .3*
*Alignment - surv*    8030.43**       .1*       .3*
*Alignment - surv*    7579.96**       .1*       .3*
*Alignment - surv*    7129.48**       .1*       .3*
*Alignment - surv*    6679.01**       .1*       .3*
*Alignment - surv*    6228.54**       .1*       .3*
*Alignment - surv*    5778.06**       .1*       .3*
*Alignment - surv*    5327.59**       .1*       .3*
*Alignment - surv*    4877.12 *       .1*       .3*
*Alignment - surv*    4431.31**       .1*       .3*
*Alignment - surv*    3985.50**       .1*       .3*
*Alignment - surv*    3539.69**       .1*       .3*
*Alignment - surv*    3093.88**       .1*       .3*
*Alignment - surv*    2648.07**       .1*       .3*
*Alignment - surv*    2202.26**       .1*       .3*
*Alignment - surv*    1756.45**       .1*       .3*
*Alignment - surv*    1310.64**       .1*       .3*
*Alignment - surv*    864.84  *       .1*       .3*
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Profile Output Table - Standard Table 1
*******************************************************************************************************************
*****************************************************
* Reach            * River Sta   * Profile *   Q Total * Min Ch El * W.S. Elev * Crit W.S. * E.G. Elev * E.G.
Slope * Vel Chnl * Flow Area * Top Width * Froude # Chl *
*                  *             *         *     (cfs) *     (ft) *      (ft) *      (ft) *      (ft) *
(ft/ft) *   (ft/s) *   (sq ft) *     (ft) *                 *
*******************************************************************************************************************
*****************************************************
* Alignment - surv * 15894       * PK2     *  25686.49 *    708.60 *    726.49 *           *    726.81 *
0.000392 *     4.61 *   7235.30 *   1447.38 *          0.20 *
* Alignment - surv * 15894       * PK5     *  42516.55 *    708.60 *    729.34 *           *    729.77 *
0.000488 *     5.74 *  18314.97 *   7815.29 *          0.23 *
* Alignment - surv * 15894       * PK10    *  53951.22 *    708.60 *    729.54 *           *    730.17 *
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0.000724 *     7.04 *  19935.72 *   8375.83 *          0.28 *
* Alignment - surv * 15894       * PK25    *  68239.31 *    708.60 *    730.71 *           *    731.28 *
0.000700 *     7.20 *  31178.04 *  10067.32 *          0.28 *
* Alignment - surv * 15894       * PK50    *  78960.89 *    708.60 *    731.39 *           *    731.91 *
0.000677 *     7.24 *  38104.75 *  10346.38 *          0.28 *
* Alignment - surv * 15894       * PK100   *  89304.10 *    708.60 *    732.67 *           *    733.01 *
0.000486 *     6.38 *  51859.91 *  10967.21 *          0.24 *
* Alignment - surv * 15894       * PK200   *  99651.31 *    708.60 *    733.39 *           *    733.68 *
0.000444 *     6.23 *  59803.05 *  11078.37 *          0.23 *
* Alignment - surv * 15894       * PK500   * 112847.50 *    708.60 *    734.29 *           *    734.54 *
0.000394 *     6.03 *  69837.03 *  11138.72 *          0.22 *
*                                *         *            *          *           *           *           *
 *          *           *          *          *
* Alignment - surv * 15551.6*    * PK2     *  25686.49 *    708.47 *    726.35 *           *    726.67 *
0.000395 *     4.65 *   7689.01 *   2462.23 *          0.20 *
* Alignment - surv * 15551.6*    * PK5     *  42516.55 *    708.47 *    729.22 *           *    729.59 *
0.000437 *     5.46 *  20994.60 *   8001.79 *          0.22 *
* Alignment - surv * 15551.6*    * PK10    *  53951.22 *    708.47 *    729.35 *           *    729.91 *
0.000670 *     6.78 *  22013.55 *   8448.81 *          0.27 *
* Alignment - surv * 15551.6*    * PK25    *  68239.31 *    708.47 *    730.53 *           *    731.03 *
0.000641 *     6.91 *  33656.83 *  10402.27 *          0.27 *
* Alignment - surv * 15551.6*    * PK50    *  78960.89 *    708.47 *    731.21 *           *    731.67 *
0.000623 *     6.96 *  40822.01 *  10851.28 *          0.27 *
* Alignment - surv * 15551.6*    * PK100   *  89304.10 *    708.47 *    732.55 *           *    732.83 *
0.000427 *     6.01 *  55568.29 *  11055.74 *          0.22 *
* Alignment - surv * 15551.6*    * PK200   *  99651.31 *    708.47 *    733.28 *           *    733.52 *
0.000391 *     5.87 *  63642.17 *  11133.52 *          0.22 *
* Alignment - surv * 15551.6*    * PK500   * 112847.50 *    708.47 *    734.19 *           *    734.40 *
0.000351 *     5.71 *  73840.91 *  11284.53 *          0.21 *
*                *               *          *            *          *           *           *           *
 *          *           *          *          *
* Alignment - surv * 15209.3*    * PK2     *  25686.49 *    708.34 *    726.24 *           *    726.53 *
0.000374 *     4.55 *   9891.34 *   3821.60 *          0.20 *
* Alignment - surv * 15209.3*    * PK5     *  42516.55 *    708.34 *    729.14 *           *    729.43 *
0.000374 *     5.07 *  24655.81 *   8833.99 *          0.20 *
* Alignment - surv * 15209.3*    * PK10    *  53951.22 *    708.34 *    729.21 *           *    729.66 *
0.000584 *     6.35 *  25279.47 *   9014.04 *          0.26 *
* Alignment - surv * 15209.3*    * PK25    *  68239.31 *    708.34 *    730.38 *           *    730.79 *
0.000566 *     6.51 *  36707.34 *  10224.27 *          0.25 *
* Alignment - surv * 15209.3*    * PK50    *  78960.89 *    708.34 *    731.06 *           *    731.44 *
0.000549 *     6.55 *  43916.85 *  10974.10 *          0.25 *
* Alignment - surv * 15209.3*    * PK100   *  89304.10 *    708.34 *    732.44 *           *    732.68 *
0.000378 *     5.67 *  59480.99 *  11386.20 *          0.21 *
* Alignment - surv * 15209.3*    * PK200   *  99651.31 *    708.34 *    733.18 *           *    733.39 *
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0.000346 *     5.54 *  67890.10 *  11472.42 *          0.20 *
* Alignment - surv * 15209.3*    * PK500    * 112847.50 *    708.34 *    734.10 *            *    734.27 *
0.000311 *     5.39 *  78493.18 *  11613.94 *          0.19 *
*          *          *          *          *          *          *          *          *          *
 *          *          *          *          *
* Alignment - surv * 14867.08    * PK2      *  25686.49 *    708.21 *    726.15 *            *    726.40 *
0.000327 *     4.27 *  12685.81 *   4031.85 *          0.19 *
* Alignment - surv * 14867.08    * PK5      *  42516.55 *    708.21 *    729.07 *            *    729.30 *
0.000316 *     4.68 *  28550.06 *   9235.96 *          0.19 *
* Alignment - surv * 14867.08    * PK10     *  53951.22 *    708.21 *    729.09 *            *    729.45 *
0.000504 *     5.92 *  28730.54 *   9257.00 *          0.24 *
* Alignment - surv * 14867.08    * PK25     *  68239.31 *    708.21 *    730.25 *            *    730.59 *
0.000497 *     6.11 *  39415.84 *  10492.59 *          0.24 *
* Alignment - surv * 14867.08    * PK50     *  78960.89 *    708.21 *    730.93 *            *    731.25 *
0.000488 *     6.19 *  45807.78 *  11052.89 *          0.24 *
* Alignment - surv * 14867.08    * PK100    *  89304.10 *    708.21 *    732.32 *            *    732.55 *
0.000370 *     5.62 *  59592.55 *  12220.49 *          0.21 *
* Alignment - surv * 14867.08    * PK200    *  99651.31 *    708.21 *    733.07 *            *    733.27 *
0.000336 *     5.47 *  68742.55 *  12266.49 *          0.20 *
* Alignment - surv * 14867.08    * PK500    * 112847.50 *    708.21 *    734.00 *            *    734.17 *
0.000298 *     5.30 *  80199.57 *  12319.57 *          0.19 *
*          *          *          *          *          *          *          *          *          *
 *          *          *          *          *
* Alignment - surv * 14403.8*    * PK2      *  25686.49 *    708.04 *    725.98 *            *    726.24 *
0.000343 *     4.37 *  11930.91 *   4060.38 *          0.19 *
* Alignment - surv * 14403.8*    * PK5      *  42516.55 *    708.04 *    728.93 *            *    729.15 *
0.000300 *     4.57 *  29660.36 *   9523.54 *          0.18 *
* Alignment - surv * 14403.8*    * PK10     *  53951.22 *    708.04 *    728.86 *            *    729.22 *
0.000500 *     5.88 *  28944.08 *   9374.17 *          0.24 *
* Alignment - surv * 14403.8*    * PK25     *  68239.31 *    708.04 *    730.03 *            *    730.36 *
0.000493 *     6.08 *  40912.67 *  10951.22 *          0.24 *
* Alignment - surv * 14403.8*    * PK50     *  78960.89 *    708.04 *    730.71 *            *    731.02 *
0.000474 *     6.09 *  48686.27 *  11604.18 *          0.23 *
* Alignment - surv * 14403.8*    * PK100    *  89304.10 *    708.04 *    732.20 *            *    732.38 *
0.000314 *     5.19 *  66640.29 *  12422.36 *          0.19 *
* Alignment - surv * 14403.8*    * PK200    *  99651.31 *    708.04 *    732.95 *            *    733.11 *
0.000284 *     5.04 *  76080.00 *  12476.80 *          0.18 *
* Alignment - surv * 14403.8*    * PK500    * 112847.50 *    708.04 *    733.90 *            *    734.03 *
0.000253 *     4.89 *  87883.45 *  12559.55 *          0.17 *
*          *          *          *          *          *          *          *          *          *
 *          *          *          *          *
* Alignment - surv * 13940.5*    * PK2      *  25686.49 *    707.86 *    725.80 *            *    726.08 *
0.000361 *     4.49 *  11094.51 *   4163.11 *          0.20 *
* Alignment - surv * 13940.5*    * PK5      *  42516.55 *    707.86 *    728.81 *            *    729.01 *
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0.000288 *     4.48 *  30511.79 *   9975.16 *          0.18 *
* Alignment - surv * 13940.5*    * PK10     *  53951.22 *    707.86 *    728.63 *            *    728.98 *
0.000502 *     5.88 *  28763.53 *   9503.08 *          0.24 *
* Alignment - surv * 13940.5*    * PK25     *  68239.31 *    707.86 *    729.79 *            *    730.13 *
0.000500 *     6.11 *  41211.40 *  11454.32 *          0.24 *
* Alignment - surv * 13940.5*    * PK50     *  78960.89 *    707.86 *    730.49 *            *    730.80 *
0.000476 *     6.10 *  49450.14 *  11952.91 *          0.23 *
* Alignment - surv * 13940.5*    * PK100    *  89304.10 *    707.86 *    732.06 *            *    732.23 *
0.000297 *     5.05 *  68969.27 *  12646.40 *          0.19 *
* Alignment - surv * 13940.5*    * PK200    *  99651.31 *    707.86 *    732.84 *            *    732.98 *
0.000267 *     4.90 *  78751.48 *  12728.98 *          0.18 *
* Alignment - surv * 13940.5*    * PK500    * 112847.50 *    707.86 *    733.79 *            *    733.91 *
0.000237 *     4.74 *  90971.77 *  12835.92 *          0.17 *
*          *          *          *          *          *          *          *          *          *
 *          *          *          *          *
* Alignment - surv * 13477.2*    * PK2      *  25686.49 *    707.69 *    725.60 *            *    725.90 *
0.000378 *     4.59 *  10470.00 *   4525.75 *          0.20 *
* Alignment - surv * 13477.2*    * PK5      *  42516.55 *    707.69 *    728.69 *            *    728.87 *
0.000270 *     4.35 *  32079.81 *  10564.45 *          0.17 *
* Alignment - surv * 13477.2*    * PK10     *  53951.22 *    707.69 *    728.40 *            *    728.75 *
0.000494 *     5.83 *  29208.73 *   9487.89 *          0.23 *
* Alignment - surv * 13477.2*    * PK25     *  68239.31 *    707.69 *    729.56 *            *    729.90 *
0.000500 *     6.10 *  41959.84 *  11711.76 *          0.24 *
* Alignment - surv * 13477.2*    * PK50     *  78960.89 *    707.69 *    730.28 *            *    730.58 *
0.000467 *     6.03 *  50601.89 *  12278.99 *          0.23 *
* Alignment - surv * 13477.2*    * PK100    *  89304.10 *    707.69 *    731.94 *            *    732.09 *
0.000277 *     4.89 *  71766.09 *  12928.66 *          0.18 *
* Alignment - surv * 13477.2*    * PK200    *  99651.31 *    707.69 *    732.72 *            *    732.86 *
0.000250 *     4.74 *  81935.56 *  13045.69 *          0.17 *
* Alignment - surv * 13477.2*    * PK500    * 112847.50 *    707.69 *    733.69 *            *    733.80 *
0.000221 *     4.58 *  94637.62 *  13169.96 *          0.16 *
*          *          *          *          *          *          *          *          *          *
 *          *          *          *          *
* Alignment - surv * 13013.9*    * PK2      *  25686.49 *    707.52 *    725.42 *            *    725.73 *
0.000384 *     4.62 *  10798.86 *   5745.23 *          0.20 *
* Alignment - surv * 13013.9*    * PK5      *  42516.55 *    707.52 *    728.57 *            *    728.75 *
0.000257 *     4.25 *  34046.74 *  10710.95 *          0.17 *
* Alignment - surv * 13013.9*    * PK10     *  53951.22 *    707.52 *    728.19 *            *    728.52 *
0.000482 *     5.74 *  30190.60 *   9383.65 *          0.23 *
* Alignment - surv * 13013.9*    * PK25     *  68239.31 *    707.52 *    729.34 *            *    729.66 *
0.000494 *     6.05 *  42798.09 *  11935.25 *          0.24 *
* Alignment - surv * 13013.9*    * PK50     *  78960.89 *    707.52 *    730.08 *            *    730.36 *
0.000458 *     5.96 *  51900.45 *  12838.16 *          0.23 *
* Alignment - surv * 13013.9*    * PK100    *  89304.10 *    707.52 *    731.83 *            *    731.97 *
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0.000259 *     4.73 *  74919.91 *  13302.11 *          0.17 *
* Alignment - surv * 13013.9*    * PK200    *  99651.31 *    707.52 *    732.62 *           *    732.74 *
0.000232 *     4.58 *  85549.05 *  13473.50 *          0.17 *
* Alignment - surv * 13013.9*    * PK500    * 112847.50 *    707.52 *    733.60 *           *    733.70 *
0.000206 *     4.43 *  98858.08 *  13677.24 *          0.16 *
*                *                *          *          *          *           *           *           *
 *          *          *          *          *
* Alignment - surv * 12550.6*    * PK2      *  25686.49 *    707.35 *    725.27 *           *    725.55 *
0.000353 *     4.43 *  11877.19 *   4608.21 *          0.19 *
* Alignment - surv * 12550.6*    * PK5      *  42516.55 *    707.35 *    728.47 *           *    728.63 *
0.000235 *     4.07 *  36402.70 *  10554.13 *          0.16 *
* Alignment - surv * 12550.6*    * PK10     *  53951.22 *    707.35 *    727.98 *           *    728.29 *
0.000460 *     5.61 *  31563.09 *   9261.07 *          0.23 *
* Alignment - surv * 12550.6*    * PK25     *  68239.31 *    707.35 *    729.12 *           *    729.43 *
0.000484 *     5.97 *  43874.67 *  12267.80 *          0.23 *
* Alignment - surv * 12550.6*    * PK50     *  78960.89 *    707.35 *    729.88 *           *    730.14 *
0.000445 *     5.87 *  53661.39 *  13372.34 *          0.23 *
* Alignment - surv * 12550.6*    * PK100    *  89304.10 *    707.35 *    731.72 *           *    731.85 *
0.000239 *     4.55 *  78887.25 *  13887.58 *          0.17 *
* Alignment - surv * 12550.6*    * PK200    *  99651.31 *    707.35 *    732.53 *           *    732.63 *
0.000212 *     4.39 *  90129.05 *  13996.14 *          0.16 *
* Alignment - surv * 12550.6*    * PK500    * 112847.50 *    707.35 *    733.52 *           *    733.61 *
0.000186 *     4.22 * 104072.50 *  14123.06 *          0.15 *
*                *                *          *          *          *           *           *           *
 *          *          *          *          *
* Alignment - surv * 12087.4*    * PK2      *  25686.49 *    707.17 *    725.14 *           *    725.38 *
0.000320 *     4.23 *  13518.82 *   5173.98 *          0.18 *
* Alignment - surv * 12087.4*    * PK5      *  42516.55 *    707.17 *    728.39 *           *    728.52 *
0.000211 *     3.87 *  39234.32 *  10687.60 *          0.15 *
* Alignment - surv * 12087.4*    * PK10     *  53951.22 *    707.17 *    727.80 *           *    728.08 *
0.000433 *     5.43 *  33355.30 *   9254.02 *          0.22 *
* Alignment - surv * 12087.4*    * PK25     *  68239.31 *    707.17 *    728.91 *           *    729.21 *
0.000467 *     5.86 *  45574.59 *  13096.71 *          0.23 *
* Alignment - surv * 12087.4*    * PK50     *  78960.89 *    707.17 *    729.69 *           *    729.94 *
0.000424 *     5.72 *  56379.88 *  14086.39 *          0.22 *
* Alignment - surv * 12087.4*    * PK100    *  89304.10 *    707.17 *    731.63 *           *    731.74 *
0.000212 *     4.30 *  84001.45 *  14338.86 *          0.16 *
* Alignment - surv * 12087.4*    * PK200    *  99651.31 *    707.17 *    732.45 *           *    732.54 *
0.000188 *     4.14 *  95731.04 *  14398.88 *          0.15 *
* Alignment - surv * 12087.4*    * PK500    * 112847.50 *    707.17 *    733.45 *           *    733.52 *
0.000164 *     3.98 * 110173.80 *  14443.72 *          0.14 *
*                *                *          *          *          *           *           *           *
 *          *          *          *          *
* Alignment - surv * 11624.13    * PK2      *  25945.95 *    707.00 *    725.03 *           *    725.23 *
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0.000288 *     4.01 *  15819.52 *   5713.86 *          0.17 *
* Alignment - surv * 11624.13    * PK5      *  42918.92 *    707.00 *    728.31 *           *    728.42 *
0.000189 *     3.67 *  43370.89 *  11444.61 *          0.15 *
* Alignment - surv * 11624.13    * PK10     *  54360.98 *    707.00 *    727.62 *           *    727.88 *
0.000408 *     5.27 *  36015.93 *  10057.20 *          0.21 *
* Alignment - surv * 11624.13    * PK25     *  68923.08 *    707.00 *    728.71 *           *    728.99 *
0.000452 *     5.75 *  48585.58 *  14093.63 *          0.23 *
* Alignment - surv * 11624.13    * PK50     *  79649.91 *    707.00 *    729.52 *           *    729.74 *
0.000389 *     5.48 *  60195.47 *  14538.90 *          0.21 *
* Alignment - surv * 11624.13    * PK100    *  89992.12 *    707.00 *    731.55 *           *    731.64 *
0.000187 *     4.04 *  89819.09 *  14640.09 *          0.15 *
* Alignment - surv * 11624.13    * PK200    * 100471.50 *    707.00 *    732.38 *           *    732.45 *
0.000166 *     3.90 * 101900.30 *  14667.24 *          0.14 *
* Alignment - surv * 11624.13    * PK500    * 113669.30 *    707.00 *    733.38 *           *    733.45 *
0.000146 *     3.75 * 116724.40 *  14697.77 *          0.13 *
*                *                *          *          *          *           *           *           *
 *          *          *          *          *
* Alignment - surv * 11175.3*    * PK2      *  25945.95 *    706.83 *    724.87 *           *    725.09 *
0.000307 *     4.15 *  15241.65 *   6169.76 *          0.18 *
* Alignment - surv * 11175.3*    * PK5      *  42918.92 *    706.83 *    728.21 *           *    728.33 *
0.000199 *     3.77 *  45553.16 *  13590.09 *          0.15 *
* Alignment - surv * 11175.3*    * PK10     *  54360.98 *    706.83 *    727.42 *           *    727.69 *
0.000425 *     5.37 *  35822.12 *  10427.35 *          0.22 *
* Alignment - surv * 11175.3*    * PK25     *  68923.08 *    706.83 *    728.53 *           *    728.78 *
0.000428 *     5.60 *  49902.95 *  13692.03 *          0.22 *
* Alignment - surv * 11175.3*    * PK50     *  79649.91 *    706.83 *    729.37 *           *    729.56 *
0.000364 *     5.31 *  61440.61 *  13869.16 *          0.20 *
* Alignment - surv * 11175.3*    * PK100    *  89992.12 *    706.83 *    731.47 *           *    731.56 *
0.000176 *     3.93 *  90886.22 *  14086.09 *          0.14 *
* Alignment - surv * 11175.3*    * PK200    * 100471.50 *    706.83 *    732.31 *           *    732.38 *
0.000158 *     3.82 * 102652.20 *  14219.96 *          0.14 *
* Alignment - surv * 11175.3*    * PK500    * 113669.30 *    706.83 *    733.32 *           *    733.38 *
0.000141 *     3.70 * 117175.60 *  14373.68 *          0.13 *
*                *                *          *          *          *           *           *           *
 *          *          *          *          *
* Alignment - surv * 10726.5*    * PK2      *  25945.95 *    706.65 *    724.71 *           *    724.95 *
0.000322 *     4.25 *  14886.94 *   6800.96 *          0.18 *
* Alignment - surv * 10726.5*    * PK5      *  42918.92 *    706.65 *    728.14 *           *    728.24 *
0.000171 *     3.52 *  49469.17 *  13543.21 *          0.14 *
* Alignment - surv * 10726.5*    * PK10     *  54360.98 *    706.65 *    727.19 *           *    727.49 *
0.000461 *     5.58 *  36864.64 *  12211.24 *          0.23 *
* Alignment - surv * 10726.5*    * PK25     *  68923.08 *    706.65 *    728.37 *           *    728.59 *
0.000390 *     5.34 *  52515.03 *  13570.72 *          0.21 *
* Alignment - surv * 10726.5*    * PK50     *  79649.91 *    706.65 *    729.23 *           *    729.40 *
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0.000330 *     5.05 *  64239.28 *  13665.89 *          0.19 *
* Alignment - surv * 10726.5*    * PK100    *  89992.12 *    706.65 *    731.41 *            *    731.48 *
0.000159 *     3.75 *  94327.52 *  13966.26 *          0.14 *
* Alignment - surv * 10726.5*    * PK200    * 100471.50 *    706.65 *    732.24 *            *    732.31 *
0.000143 *     3.65 * 106044.50 *  14008.59 *          0.13 *
* Alignment - surv * 10726.5*    * PK500    * 113669.30 *    706.65 *    733.27 *            *    733.32 *
0.000128 *     3.54 * 120404.00 *  14059.38 *          0.12 *
*                  *                  *          *          *          *           *           *           *
 *          *          *          *          *
* Alignment - surv * 10277.7*    * PK2      *  25945.95 *    706.47 *    724.56 *            *    724.80 *
0.000326 *     4.28 *  14917.44 *   7396.02 *          0.19 *
* Alignment - surv * 10277.7*    * PK5      *  42918.92 *    706.47 *    728.09 *            *    728.17 *
0.000146 *     3.25 *  53924.79 *  13572.34 *          0.13 *
* Alignment - surv * 10277.7*    * PK10     *  54360.98 *    706.47 *    727.01 *            *    727.28 *
0.000429 *     5.38 *  39372.51 *  12933.79 *          0.22 *
* Alignment - surv * 10277.7*    * PK25     *  68923.08 *    706.47 *    728.23 *            *    728.42 *
0.000348 *     5.05 *  55826.54 *  13580.60 *          0.20 *
* Alignment - surv * 10277.7*    * PK50     *  79649.91 *    706.47 *    729.11 *            *    729.25 *
0.000293 *     4.77 *  67813.75 *  13643.99 *          0.18 *
* Alignment - surv * 10277.7*    * PK100    *  89992.12 *    706.47 *    731.35 *            *    731.41 *
0.000141 *     3.54 *  98582.36 *  13840.53 *          0.13 *
* Alignment - surv * 10277.7*    * PK200    * 100471.50 *    706.47 *    732.19 *            *    732.24 *
0.000129 *     3.46 * 110275.00 *  13934.46 *          0.12 *
* Alignment - surv * 10277.7*    * PK500    * 113669.30 *    706.47 *    733.22 *            *    733.26 *
0.000116 *     3.39 * 124666.30 *  14050.89 *          0.12 *
*                  *                  *          *          *          *           *           *           *
 *          *          *          *          *
* Alignment - surv * 9828.96*    * PK2      *  25945.95 *    706.30 *    724.42 *            *    724.66 *
0.000319 *     4.24 *  15675.83 *   8605.59 *          0.18 *
* Alignment - surv * 9828.96*    * PK5      *  42918.92 *    706.30 *    728.04 *            *    728.10 *
0.000123 *     3.00 *  58630.02 *  13611.25 *          0.12 *
* Alignment - surv * 9828.96*    * PK10     *  54360.98 *    706.30 *    726.85 *            *    727.08 *
0.000393 *     5.15 *  42490.37 *  13492.51 *          0.21 *
* Alignment - surv * 9828.96*    * PK25     *  68923.08 *    706.30 *    728.10 *            *    728.26 *
0.000306 *     4.75 *  59499.16 *  13616.36 *          0.19 *
* Alignment - surv * 9828.96*    * PK50     *  79649.91 *    706.30 *    729.00 *            *    729.12 *
0.000259 *     4.49 *  71759.03 *  13677.94 *          0.17 *
* Alignment - surv * 9828.96*    * PK100    *  89992.12 *    706.30 *    731.29 *            *    731.35 *
0.000125 *     3.34 * 103288.30 *  13827.57 *          0.12 *
* Alignment - surv * 9828.96*    * PK200    * 100471.50 *    706.30 *    732.14 *            *    732.19 *
0.000115 *     3.28 * 115007.70 *  13884.06 *          0.12 *
* Alignment - surv * 9828.96*    * PK500    * 113669.30 *    706.30 *    733.17 *            *    733.21 *
0.000104 *     3.22 * 129375.80 *  13964.96 *          0.11 *
*                  *                  *          *          *          *           *           *           *
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 *          *          *          *          *
* Alignment - surv * 9380.17*    * PK2      *  25945.95 *    706.12 *    724.30 *            *    724.51 *
0.000289 *     4.03 *  18019.10 *   8944.65 *          0.17 *
* Alignment - surv * 9380.17*    * PK5      *  42918.92 *    706.12 *    728.00 *            *    728.05 *
0.000103 *     2.76 *  63615.23 *  13656.39 *          0.11 *
* Alignment - surv * 9380.17*    * PK10     *  54360.98 *    706.12 *    726.71 *            *    726.91 *
0.000341 *     4.80 *  46148.87 *  13557.04 *          0.19 *
* Alignment - surv * 9380.17*    * PK25     *  68923.08 *    706.12 *    727.99 *            *    728.12 *
0.000266 *     4.43 *  63566.08 *  13656.08 *          0.17 *
* Alignment - surv * 9380.17*    * PK50     *  79649.91 *    706.12 *    728.91 *            *    729.01 *
0.000227 *     4.21 *  76058.33 *  13726.75 *          0.16 *
* Alignment - surv * 9380.17*    * PK100    *  89992.12 *    706.12 *    731.25 *            *    731.29 *
0.000110 *     3.14 * 108325.50 *  13852.79 *          0.11 *
* Alignment - surv * 9380.17*    * PK200    * 100471.50 *    706.12 *    732.10 *            *    732.14 *
0.000102 *     3.10 * 120111.20 *  13907.36 *          0.11 *
* Alignment - surv * 9380.17*    * PK500    * 113669.30 *    706.12 *    733.13 *            *    733.17 *
0.000094 *     3.05 * 134533.00 *  13955.70 *          0.11 *
*                  *                  *          *          *          *           *           *           *
 *          *          *          *          *
* Alignment - surv * 8931.38     * PK2      *  25945.95 *    705.95 *    724.21 *            *    724.38 *
0.000248 *     3.74 *  21360.32 *   9351.64 *          0.16 *
* Alignment - surv * 8931.38     * PK5      *  42918.92 *    705.95 *    727.96 *            *    728.00 *
0.000086 *     2.53 *  68748.44 *  13713.51 *          0.10 *
* Alignment - surv * 8931.38     * PK10     *  54360.98 *    705.95 *    726.60 *            *    726.75 *
0.000293 *     4.45 *  50097.18 *  13629.71 *          0.18 *
* Alignment - surv * 8931.38     * PK25     *  68923.08 *    705.95 *    727.90 *            *    728.00 *
0.000230 *     4.12 *  67884.80 *  13708.74 *          0.16 *
* Alignment - surv * 8931.38     * PK50     *  79649.91 *    705.95 *    728.82 *            *    728.91 *
0.000197 *     3.93 *  80584.78 *  13778.32 *          0.15 *
* Alignment - surv * 8931.38     * PK100    *  89992.12 *    705.95 *    731.20 *            *    731.24 *
0.000097 *     2.96 * 113543.00 *  13890.33 *          0.11 *
* Alignment - surv * 8931.38     * PK200    * 100471.50 *    705.95 *    732.06 *            *    732.09 *
0.000091 *     2.93 * 125392.70 *  13938.48 *          0.10 *
* Alignment - surv * 8931.38     * PK500    * 113669.30 *    705.95 *    733.09 *            *    733.13 *
0.000084 *     2.90 * 139890.60 *  13998.83 *          0.10 *
*                  *                  *          *          *          *           *           *           *
 *          *          *          *          *
* Alignment - surv * 8480.90*    * PK2      *  25945.95 *    705.78 *    724.10 *            *    724.27 *
0.000247 *     3.68 *  20868.08 *   9707.44 *          0.16 *
* Alignment - surv * 8480.90*    * PK5      *  42918.92 *    705.78 *    727.93 *            *    727.96 *
0.000081 *     2.42 *  70346.70 *  13738.43 *          0.10 *
* Alignment - surv * 8480.90*    * PK10     *  54360.98 *    705.78 *    726.47 *            *    726.62 *
0.000283 *     4.32 *  50468.37 *  13617.68 *          0.18 *
* Alignment - surv * 8480.90*    * PK25     *  68923.08 *    705.78 *    727.80 *            *    727.90 *
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0.000221 *     3.99 *  68622.48 *  13728.11 *          0.16 *
* Alignment - surv * 8480.90*    * PK50    *  79649.91 *    705.78 *    728.74 *           *    728.82 *
0.000189 *     3.81 *  81530.09 *  13792.89 *          0.15 *
* Alignment - surv * 8480.90*    * PK100   *  89992.12 *    705.78 *    731.16 *           *    731.20 *
0.000093 *     2.87 * 115089.20 *  13915.90 *          0.10 *
* Alignment - surv * 8480.90*    * PK200   * 100471.50 *    705.78 *    732.02 *           *    732.05 *
0.000087 *     2.84 * 126995.70 *  13956.79 *          0.10 *
* Alignment - surv * 8480.90*    * PK500   * 113669.30 *    705.78 *    733.06 *           *    733.09 *
0.000080 *     2.82 * 141544.50 *  14010.15 *          0.10 *
*              *              *   *         *           *          *           *           *
 *          *          *          *         *
* Alignment - surv * 8030.43*    * PK2     *  25945.95 *    705.61 *    724.00 *           *    724.15 *
0.000243 *     3.59 *  20579.89 *  10127.73 *          0.16 *
* Alignment - surv * 8030.43*    * PK5     *  42918.92 *    705.61 *    727.89 *           *    727.93 *
0.000075 *     2.32 *  71927.44 *  13752.31 *          0.09 *
* Alignment - surv * 8030.43*    * PK10    *  54360.98 *    705.61 *    726.35 *           *    726.49 *
0.000275 *     4.19 *  50810.34 *  13640.12 *          0.17 *
* Alignment - surv * 8030.43*    * PK25    *  68923.08 *    705.61 *    727.71 *           *    727.80 *
0.000213 *     3.87 *  69362.15 *  13744.79 *          0.15 *
* Alignment - surv * 8030.43*    * PK50    *  79649.91 *    705.61 *    728.66 *           *    728.74 *
0.000181 *     3.69 *  82456.67 *  13792.60 *          0.14 *
* Alignment - surv * 8030.43*    * PK100   *  89992.12 *    705.61 *    731.12 *           *    731.16 *
0.000088 *     2.78 * 116631.20 *  13930.62 *          0.10 *
* Alignment - surv * 8030.43*    * PK200   * 100471.50 *    705.61 *    731.98 *           *    732.01 *
0.000083 *     2.76 * 128587.60 *  13989.16 *          0.10 *
* Alignment - surv * 8030.43*    * PK500   * 113669.30 *    705.61 *    733.02 *           *    733.05 *
0.000077 *     2.74 * 143217.80 *  14061.70 *          0.10 *
*              *              *   *         *           *          *           *           *
 *          *          *          *         *
* Alignment - surv * 7579.96*    * PK2     *  25945.95 *    705.43 *    723.90 *           *    724.04 *
0.000234 *     3.47 *  20715.73 *  10482.65 *          0.16 *
* Alignment - surv * 7579.96*    * PK5     *  42918.92 *    705.43 *    727.86 *           *    727.89 *
0.000070 *     2.21 *  73591.37 *  13778.99 *          0.09 *
* Alignment - surv * 7579.96*    * PK10    *  54360.98 *    705.43 *    726.24 *           *    726.37 *
0.000266 *     4.06 *  51276.27 *  13667.93 *          0.17 *
* Alignment - surv * 7579.96*    * PK25    *  68923.08 *    705.43 *    727.62 *           *    727.71 *
0.000204 *     3.74 *  70207.64 *  13761.38 *          0.15 *
* Alignment - surv * 7579.96*    * PK50    *  79649.91 *    705.43 *    728.58 *           *    728.65 *
0.000174 *     3.57 *  83507.61 *  13823.61 *          0.14 *
* Alignment - surv * 7579.96*    * PK100   *  89992.12 *    705.43 *    731.09 *           *    731.12 *
0.000084 *     2.69 * 118310.40 *  13992.92 *          0.10 *
* Alignment - surv * 7579.96*    * PK200   * 100471.50 *    705.43 *    731.94 *           *    731.98 *
0.000080 *     2.68 * 130356.20 *  14073.18 *          0.10 *
* Alignment - surv * 7579.96*    * PK500   * 113669.30 *    705.43 *    732.99 *           *    733.02 *
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0.000074 *     2.67 * 145110.70 *  14139.17 *          0.10 *
*              *              *   *         *           *          *           *           *
 *          *          *          *         *
* Alignment - surv * 7129.48*    * PK2     *  25945.95 *    705.26 *    723.81 *           *    723.94 *
0.000221 *     3.31 *  21647.63 *  10317.82 *          0.15 *
* Alignment - surv * 7129.48*    * PK5     *  42918.92 *    705.26 *    727.83 *           *    727.86 *
0.000065 *     2.11 *  75469.89 *  13810.30 *          0.09 *
* Alignment - surv * 7129.48*    * PK10    *  54360.98 *    705.26 *    726.13 *           *    726.25 *
0.000254 *     3.91 *  51974.98 *  13689.05 *          0.17 *
* Alignment - surv * 7129.48*    * PK25    *  68923.08 *    705.26 *    727.53 *           *    727.62 *
0.000195 *     3.61 *  71295.05 *  13787.45 *          0.15 *
* Alignment - surv * 7129.48*    * PK50    *  79649.91 *    705.26 *    728.51 *           *    728.58 *
0.000166 *     3.45 *  84791.02 *  13860.75 *          0.14 *
* Alignment - surv * 7129.48*    * PK100   *  89992.12 *    705.26 *    731.05 *           *    731.08 *
0.000080 *     2.60 * 120316.40 *  14076.53 *          0.10 *
* Alignment - surv * 7129.48*    * PK200   * 100471.50 *    705.26 *    731.91 *           *    731.94 *
0.000076 *     2.59 * 132443.20 *  14102.04 *          0.10 *
* Alignment - surv * 7129.48*    * PK500   * 113669.30 *    705.26 *    732.96 *           *    732.99 *
0.000071 *     2.58 * 147238.00 *  14144.93 *          0.09 *
*              *              *   *         *           *          *           *           *
 *          *          *          *         *
* Alignment - surv * 6679.01*    * PK2     *  25945.95 *    705.09 *    723.72 *           *    723.84 *
0.000205 *     3.14 *  23457.84 *  10703.73 *          0.15 *
* Alignment - surv * 6679.01*    * PK5     *  42918.92 *    705.09 *    727.81 *           *    727.83 *
0.000061 *     2.02 *  77359.66 *  13905.38 *          0.08 *
* Alignment - surv * 6679.01*    * PK10    *  54360.98 *    705.09 *    726.02 *           *    726.13 *
0.000244 *     3.77 *  52709.07 *  13648.04 *          0.16 *
* Alignment - surv * 6679.01*    * PK25    *  68923.08 *    705.09 *    727.45 *           *    727.53 *
0.000186 *     3.48 *  72393.84 *  13858.25 *          0.14 *
* Alignment - surv * 6679.01*    * PK50    *  79649.91 *    705.09 *    728.44 *           *    728.50 *
0.000159 *     3.33 *  86148.30 *  13979.32 *          0.13 *
* Alignment - surv * 6679.01*    * PK100   *  89992.12 *    705.09 *    731.02 *           *    731.05 *
0.000076 *     2.51 * 122333.40 *  14090.27 *          0.09 *
* Alignment - surv * 6679.01*    * PK200   * 100471.50 *    705.09 *    731.88 *           *    731.91 *
0.000072 *     2.50 * 134501.30 *  14128.72 *          0.09 *
* Alignment - surv * 6679.01*    * PK500   * 113669.30 *    705.09 *    732.93 *           *    732.95 *
0.000067 *     2.49 * 149351.10 *  14166.22 *          0.09 *
*              *              *   *         *           *          *           *           *
 *          *          *          *         *
* Alignment - surv * 6228.54*    * PK2     *  25945.95 *    704.92 *    723.65 *           *    723.74 *
0.000183 *     2.92 *  25750.77 *  10642.57 *          0.14 *
* Alignment - surv * 6228.54*    * PK5     *  42918.92 *    704.92 *    727.78 *           *    727.81 *
0.000057 *     1.93 *  79526.25 *  13981.89 *          0.08 *
* Alignment - surv * 6228.54*    * PK10    *  54360.98 *    704.92 *    725.92 *           *    726.02 *
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0.000230 *     3.61 *  53777.13 *  13433.97 *          0.16 *
* Alignment - surv * 6228.54*    * PK25    *  68923.08 *    704.92 *    727.37 *           *    727.44 *
0.000177 *     3.35 *  73792.23 *  13962.56 *          0.14 *
* Alignment - surv * 6228.54*    * PK50    *  79649.91 *    704.92 *    728.37 *           *    728.43 *
0.000150 *     3.20 *  87766.50 *  14006.38 *          0.13 *
* Alignment - surv * 6228.54*    * PK100   *  89992.12 *    704.92 *    730.98 *           *    731.01 *
0.000072 *     2.42 * 124498.60 *  14117.12 *          0.09 *
* Alignment - surv * 6228.54*    * PK200   * 100471.50 *    704.92 *    731.85 *           *    731.87 *
0.000068 *     2.41 * 136713.50 *  14160.61 *          0.09 *
* Alignment - surv * 6228.54*    * PK500   * 113669.30 *    704.92 *    732.90 *           *    732.92 *
0.000064 *     2.42 * 151628.70 *  14214.88 *          0.09 *
*              *          *          *          *          *          *          *          *          *
 *          *          *          *          *          *
* Alignment - surv * 5778.06*    * PK2     *  25945.95 *    704.74 *    723.58 *           *    723.66 *
0.000159 *     2.69 *  28388.05 *  10665.47 *          0.13 *
* Alignment - surv * 5778.06*    * PK5     *  42918.92 *    704.74 *    727.76 *           *    727.78 *
0.000052 *     1.82 *  81932.94 *  14004.04 *          0.08 *
* Alignment - surv * 5778.06*    * PK10    *  54360.98 *    704.74 *    725.83 *           *    725.92 *
0.000213 *     3.42 *  55459.17 *  13371.38 *          0.15 *
* Alignment - surv * 5778.06*    * PK25    *  68923.08 *    704.74 *    727.30 *           *    727.37 *
0.000165 *     3.20 *  75504.53 *  13947.76 *          0.13 *
* Alignment - surv * 5778.06*    * PK50    *  79649.91 *    704.74 *    728.31 *           *    728.36 *
0.000141 *     3.07 *  89640.89 *  14046.73 *          0.13 *
* Alignment - surv * 5778.06*    * PK100   *  89992.12 *    704.74 *    730.95 *           *    730.98 *
0.000068 *     2.33 * 126959.50 *  14178.53 *          0.09 *
* Alignment - surv * 5778.06*    * PK200   * 100471.50 *    704.74 *    731.82 *           *    731.84 *
0.000065 *     2.33 * 139244.50 *  14221.23 *          0.09 *
* Alignment - surv * 5778.06*    * PK500   * 113669.30 *    704.74 *    732.87 *           *    732.90 *
0.000061 *     2.34 * 154245.80 *  14277.63 *          0.09 *
*              *          *          *          *          *          *          *          *          *
 *          *          *          *          *          *
* Alignment - surv * 5327.59*    * PK2     *  25945.95 *    704.57 *    723.53 *           *    723.59 *
0.000136 *     2.47 *  31307.36 *  10884.55 *          0.12 *
* Alignment - surv * 5327.59*    * PK5     *  42918.92 *    704.57 *    727.74 *           *    727.76 *
0.000047 *     1.72 *  84514.40 *  13965.23 *          0.07 *
* Alignment - surv * 5327.59*    * PK10    *  54360.98 *    704.57 *    725.75 *           *    725.83 *
0.000188 *     3.17 *  57699.62 *  12737.72 *          0.14 *
* Alignment - surv * 5327.59*    * PK25    *  68923.08 *    704.57 *    727.23 *           *    727.29 *
0.000153 *     3.03 *  77498.86 *  13779.49 *          0.13 *
* Alignment - surv * 5327.59*    * PK50    *  79649.91 *    704.57 *    728.25 *           *    728.30 *
0.000132 *     2.94 *  91710.52 *  14090.18 *          0.12 *
* Alignment - surv * 5327.59*    * PK100   *  89992.12 *    704.57 *    730.93 *           *    730.95 *
0.000064 *     2.24 * 129640.90 *  14252.30 *          0.09 *
* Alignment - surv * 5327.59*    * PK200   * 100471.50 *    704.57 *    731.79 *           *    731.81 *
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0.000061 *     2.24 * 141999.60 *  14273.34 *          0.08 *
* Alignment - surv * 5327.59*    * PK500   * 113669.30 *    704.57 *    732.85 *           *    732.87 *
0.000058 *     2.25 * 157063.40 *  14309.12 *          0.08 *
*              *          *          *          *          *          *          *          *          *
 *          *          *          *          *          *
* Alignment - surv * 4877.12     * PK2     *  25945.95 *    704.40 *    723.48 *    711.25 *    723.53 *
0.000115 *     2.26 *  34189.37 *  10931.55 *          0.11 *
* Alignment - surv * 4877.12     * PK5     *  42918.92 *    704.40 *    727.72 *    713.78 *    727.74 *
0.000044 *     1.65 *  84791.23 *  13824.77 *          0.07 *
* Alignment - surv * 4877.12     * PK10    *  54360.98 *    704.40 *    725.68 *    715.20 *    725.74 *
0.000172 *     2.99 *  58996.18 *  12420.63 *          0.13 *
* Alignment - surv * 4877.12     * PK25    *  68923.08 *    704.40 *    727.17 *    718.84 *    727.22 *
0.000145 *     2.91 *  77602.50 *  13652.69 *          0.13 *
* Alignment - surv * 4877.12     * PK50    *  79649.91 *    704.40 *    728.20 *    719.88 *    728.24 *
0.000127 *     2.84 *  91104.86 *  14013.84 *          0.12 *
* Alignment - surv * 4877.12     * PK100   *  89992.12 *    704.40 *    730.90 *    720.39 *    730.92 *
0.000060 *     2.14 * 132602.70 *  14290.68 *          0.08 *
* Alignment - surv * 4877.12     * PK200   * 100471.50 *    704.40 *    731.77 *    721.55 *    731.79 *
0.000057 *     2.15 * 145015.70 *  14322.13 *          0.08 *
* Alignment - surv * 4877.12     * PK500   * 113669.30 *    704.40 *    732.82 *    722.38 *    732.84 *
0.000054 *     2.17 * 160148.50 *  14354.62 *          0.08 *
*              *          *          *          *          *          *          *          *          *
 *          *          *          *          *          *
* Alignment - surv * 4431.31*    * PK2     *  25945.95 *    704.23 *    723.28 *    711.70 *    723.44 *
0.000272 *     3.46 *  16844.43 *   8173.67 *          0.17 *
* Alignment - surv * 4431.31*    * PK5     *  42918.92 *    704.23 *    727.67 *    714.16 *    727.71 *
0.000084 *     2.28 *  62661.11 *  12714.92 *          0.10 *
* Alignment - surv * 4431.31*    * PK10    *  54360.98 *    704.23 *    725.41 *    715.62 *    725.61 *
0.000407 *     4.57 *  36606.05 *  10941.38 *          0.21 *
* Alignment - surv * 4431.31*    * PK25    *  68923.08 *    704.23 *    726.98 *    717.26 *    727.12 *
0.000301 *     4.20 *  54530.98 *  12322.65 *          0.18 *
* Alignment - surv * 4431.31*    * PK50    *  79649.91 *    704.23 *    728.05 *    718.38 *    728.16 *
0.000245 *     3.94 *  67162.50 *  12788.88 *          0.16 *
* Alignment - surv * 4431.31*    * PK100   *  89992.12 *    704.23 *    730.84 *    719.50 *    730.88 *
0.000103 *     2.81 * 104904.80 *  12976.34 *          0.11 *
* Alignment - surv * 4431.31*    * PK200   * 100471.50 *    704.23 *    731.71 *    720.55 *    731.75 *
0.000096 *     2.79 * 116240.20 *  13015.70 *          0.11 *
* Alignment - surv * 4431.31*    * PK500   * 113669.30 *    704.23 *    732.77 *    724.33 *    732.81 *
0.000088 *     2.77 * 130061.80 *  13080.07 *          0.10 *
*              *          *          *          *          *          *          *          *          *
 *          *          *          *          *          *
* Alignment - surv * 3985.50*    * PK2     *  25945.95 *    704.06 *    723.12 *    712.05 *    723.31 *
0.000311 *     3.69 *  13948.07 *   6560.31 *          0.18 *
* Alignment - surv * 3985.50*    * PK5     *  42918.92 *    704.06 *    727.61 *    714.54 *    727.66 *
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0.000106 *     2.57 *  50655.24 *   9782.74 *          0.11 *
* Alignment - surv * 3985.50*    * PK10    *  54360.98 *    704.06 *    725.10 *    715.94 *    725.40 *
0.000536 *     5.22 *  28686.74 *   8631.97 *          0.24 *
* Alignment - surv * 3985.50*    * PK25    *  68923.08 *    704.06 *    726.76 *    717.67 *    726.96 *
0.000395 *     4.81 *  43108.21 *   9544.72 *          0.21 *
* Alignment - surv * 3985.50*    * PK50    *  79649.91 *    704.06 *    727.86 *    718.75 *    728.03 *
0.000330 *     4.58 *  52880.53 *   9826.78 *          0.19 *
* Alignment - surv * 3985.50*    * PK100   *  89992.12 *    704.06 *    730.76 *    719.73 *    730.83 *
0.000144 *     3.35 *  84340.96 *  10479.11 *          0.13 *
* Alignment - surv * 3985.50*    * PK200   * 100471.50 *    704.06 *    731.63 *    723.96 *    731.70 *
0.000136 *     3.34 *  93572.64 *  10605.59 *          0.13 *
* Alignment - surv * 3985.50*    * PK500   * 113669.30 *    704.06 *    732.69 *    724.42 *    732.76 *
0.000132 *     3.40 * 105251.60 *  11504.88 *          0.13 *
*              *              *             *             *             *             *             *             *
 *          *          *          *          *
* Alignment - surv * 3539.69*    * PK2     *  25945.95 *    703.89 *    722.95 *    712.31 *    723.16 *
0.000341 *     3.87 *  12364.06 *   5968.45 *          0.19 *
* Alignment - surv * 3539.69*    * PK5     *  42918.92 *    703.89 *    727.55 *    714.78 *    727.61 *
0.000120 *     2.76 *  44860.18 *   8687.68 *          0.12 *
* Alignment - surv * 3539.69*    * PK10    *  54360.98 *    703.89 *    724.74 *    716.21 *    725.13 *
0.000660 *     5.76 *  24345.35 *   7841.13 *          0.26 *
* Alignment - surv * 3539.69*    * PK25    *  68923.08 *    703.89 *    726.51 *    717.76 *    726.77 *
0.000470 *     5.24 *  37095.38 *   8504.09 *          0.23 *
* Alignment - surv * 3539.69*    * PK50    *  79649.91 *    703.89 *    727.64 *    718.82 *    727.86 *
0.000398 *     5.04 *  45589.54 *   8691.42 *          0.21 *
* Alignment - surv * 3539.69*    * PK100   *  89992.12 *    703.89 *    730.67 *    719.78 *    730.76 *
0.000164 *     3.60 *  75474.29 *   8906.10 *          0.14 *
* Alignment - surv * 3539.69*    * PK200   * 100471.50 *    703.89 *    731.55 *    720.72 *    731.63 *
0.000157 *     3.61 *  83349.69 *   9000.89 *          0.14 *
* Alignment - surv * 3539.69*    * PK500   * 113669.30 *    703.89 *    732.62 *    724.57 *    732.70 *
0.000149 *     3.63 *  92996.18 *   9103.85 *          0.13 *
*              *              *             *             *             *             *             *             *
 *          *          *          *          *
* Alignment - surv * 3093.88*    * PK2     *  25945.95 *    703.72 *    722.77 *    712.46 *    723.00 *
0.000366 *     4.02 *  11010.76 *   5524.78 *          0.19 *
* Alignment - surv * 3093.88*    * PK5     *  42918.92 *    703.72 *    727.48 *    714.88 *    727.55 *
0.000135 *     2.96 *  39400.26 *   7609.37 *          0.12 *
* Alignment - surv * 3093.88*    * PK10    *  54360.98 *    703.72 *    724.27 *    716.20 *    724.78 *
0.000829 *     6.42 *  19813.93 *   7060.15 *          0.29 *
* Alignment - surv * 3093.88*    * PK25    *  68923.08 *    703.72 *    726.19 *    717.72 *    726.53 *
0.000575 *     5.80 *  31495.64 *   7576.35 *          0.25 *
* Alignment - surv * 3093.88*    * PK50    *  79649.91 *    703.72 *    727.38 *    718.77 *    727.66 *
0.000484 *     5.57 *  38791.38 *   7606.83 *          0.23 *
* Alignment - surv * 3093.88*    * PK100   *  89992.12 *    703.72 *    730.57 *    719.73 *    730.68 *
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0.000187 *     3.86 *  68570.50 *   7936.06 *          0.15 *
* Alignment - surv * 3093.88*    * PK200   * 100471.50 *    703.72 *    731.46 *    720.66 *    731.56 *
0.000179 *     3.88 *  75599.25 *   7985.84 *          0.15 *
* Alignment - surv * 3093.88*    * PK500   * 113669.30 *    703.72 *    732.53 *    724.44 *    732.62 *
0.000171 *     3.91 *  84175.97 *   8050.84 *          0.14 *
*              *              *             *             *             *             *             *             *
 *          *          *          *          *
* Alignment - surv * 2648.07*    * PK2     *  25945.95 *    703.55 *    722.58 *    712.49 *    722.83 *
0.000387 *     4.16 *   9521.75 *   5075.82 *          0.20 *
* Alignment - surv * 2648.07*    * PK5     *  42918.92 *    703.55 *    727.38 *    714.72 *    727.49 *
0.000161 *     3.26 *  33450.28 *   6846.26 *          0.13 *
* Alignment - surv * 2648.07*    * PK10    *  54360.98 *    703.55 *    723.55 *    716.05 *    724.32 *
0.001162 *     7.49 *  14170.07 *   6253.15 *          0.35 *
* Alignment - surv * 2648.07*    * PK25    *  68923.08 *    703.55 *    725.72 *    717.58 *    726.22 *
0.000767 *     6.68 *  25004.45 *   6799.69 *          0.29 *
* Alignment - surv * 2648.07*    * PK50    *  79649.91 *    703.55 *    726.99 *    718.64 *    727.40 *
0.000639 *     6.39 *  31441.22 *   6837.95 *          0.27 *
* Alignment - surv * 2648.07*    * PK100   *  89992.12 *    703.55 *    730.47 *    719.60 *    730.59 *
0.000208 *     4.11 *  62370.43 *   6924.79 *          0.16 *
* Alignment - surv * 2648.07*    * PK200   * 100471.50 *    703.55 *    731.35 *    720.54 *    731.47 *
0.000202 *     4.16 *  68537.93 *   7025.54 *          0.16 *
* Alignment - surv * 2648.07*    * PK500   * 113669.30 *    703.55 *    732.42 *    724.41 *    732.54 *
0.000196 *     4.23 *  76132.41 *   7150.05 *          0.15 *
*              *              *             *             *             *             *             *             *
 *          *          *          *          *
* Alignment - surv * 2202.26*    * PK2     *  25945.95 *    703.38 *    722.37 *    712.23 *    722.65 *
0.000406 *     4.32 *   7740.52 *   4650.79 *          0.20 *
* Alignment - surv * 2202.26*    * PK5     *  42918.92 *    703.38 *    727.25 *    714.47 *    727.40 *
0.000202 *     3.69 *  26922.58 *   6094.78 *          0.15 *
* Alignment - surv * 2202.26*    * PK10    *  54360.98 *    703.38 *    722.41 *    715.80 *    723.65 *
0.001760 *     9.00 *   7886.37 *   4712.88 *          0.42 *
* Alignment - surv * 2202.26*    * PK25    *  68923.08 *    703.38 *    724.94 *    717.31 *    725.77 *
0.001152 *     8.07 *  17611.68 *   5994.30 *          0.35 *
* Alignment - surv * 2202.26*    * PK50    *  79649.91 *    703.38 *    726.35 *    718.41 *    727.03 *
0.000938 *     7.70 *  23259.62 *   6069.38 *          0.32 *
* Alignment - surv * 2202.26*    * PK100   *  89992.12 *    703.38 *    730.34 *    719.38 *    730.49 *
0.000236 *     4.42 *  56475.03 *   6143.98 *          0.17 *
* Alignment - surv * 2202.26*    * PK200   * 100471.50 *    703.38 *    731.23 *    720.33 *    731.37 *
0.000230 *     4.48 *  61937.17 *   6156.42 *          0.17 *
* Alignment - surv * 2202.26*    * PK500   * 113669.30 *    703.38 *    732.30 *    724.42 *    732.44 *
0.000223 *     4.55 *  68564.66 *   6187.94 *          0.16 *
*              *              *             *             *             *             *             *             *
 *          *          *          *          *
* Alignment - surv * 1756.45*    * PK2     *  25945.95 *    703.21 *    722.17 *    711.84 *    722.47 *
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0.000408 *     4.39 *   6583.87 *   4207.66 *          0.20 *
* Alignment - surv * 1756.45*    * PK5     *  42918.92 *    703.21 *    727.08 *    714.09 *    727.29 *
0.000253 *     4.19 *  20727.04 *   5349.10 *          0.17 *
* Alignment - surv * 1756.45*    * PK10    *  54360.98 *    703.21 *    721.21 *    715.45 *    722.73 *
0.002248 *     9.92 *   5492.22 *   1337.13 *          0.48 *
* Alignment - surv * 1756.45*    * PK25    *  68923.08 *    703.21 *    723.54 *    717.02 *    725.05 *
0.001942 *    10.12 *  10289.39 *   5209.68 *          0.45 *
* Alignment - surv * 1756.45*    * PK50    *  79649.91 *    703.21 *    725.22 *    718.05 *    726.45 *
0.001523 *     9.59 *  15181.93 *   5277.32 *          0.41 *
* Alignment - surv * 1756.45*    * PK100   *  89992.12 *    703.21 *    730.19 *    719.06 *    730.37 *
0.000271 *     4.79 *  50504.51 *   5397.83 *          0.18 *
* Alignment - surv * 1756.45*    * PK200   * 100471.50 *    703.21 *    731.08 *    720.02 *    731.26 *
0.000266 *     4.87 *  55311.95 *   5407.52 *          0.18 *
* Alignment - surv * 1756.45*    * PK500   * 113669.30 *    703.21 *    732.15 *    721.20 *    732.33 *
0.000259 *     4.96 *  61138.35 *   5419.24 *          0.18 *
*              *              *          *          *          *           *           *           *
 *          *          *          *          *
* Alignment - surv * 1310.64*    * PK2     *  25945.95 *    703.04 *    721.99 *    711.31 *    722.29 *
0.000395 *     4.40 *   6146.20 *   3462.09 *          0.20 *
* Alignment - surv * 1310.64*    * PK5     *  42918.92 *    703.04 *    726.86 *    713.62 *    727.16 *
0.000313 *     4.72 *  15123.20 *   4604.11 *          0.19 *
* Alignment - surv * 1310.64*    * PK10    *  54360.98 *    703.04 *    719.73 *    714.98 *    721.57 *
0.002885 *    10.89 *   4991.13 *    386.37 *          0.53 *
* Alignment - surv * 1310.64*    * PK25    *  68923.08 *    703.04 *    721.70 *    716.57 *    723.91 *
0.002976 *    11.95 *   5897.01 *   2698.98 *          0.55 *
* Alignment - surv * 1310.64*    * PK50    *  79649.91 *    703.04 *    723.13 *    717.66 *    725.44 *
0.002829 *    12.32 *   7980.24 *   4461.56 *          0.55 *
* Alignment - surv * 1310.64*    * PK100   *  89992.12 *    703.04 *    730.00 *    718.66 *    730.24 *
0.000315 *     5.23 *  44461.68 *   4658.95 *          0.19 *
* Alignment - surv * 1310.64*    * PK200   * 100471.50 *    703.04 *    730.89 *    719.62 *    731.13 *
0.000312 *     5.34 *  48609.21 *   4667.52 *          0.19 *
* Alignment - surv * 1310.64*    * PK500   * 113669.30 *    703.04 *    731.97 *    720.78 *    732.20 *
0.000308 *     5.46 *  53639.17 *   4676.94 *          0.19 *
*              *              *          *          *          *           *           *           *
 *          *          *          *          *
* Alignment - surv * 864.84      * PK2     *  26205.41 *    702.87 *    721.82 *    710.72 *    722.12 *
0.000381 *     4.42 *   6072.76 *   2708.00 *          0.20 *
* Alignment - surv * 864.84      * PK5     *  43187.16 *    702.87 *    726.58 *    713.06 *    727.00 *
0.000381 *     5.28 *  10254.44 *   3874.93 *          0.21 *
* Alignment - surv * 864.84      * PK10    *  54907.32 *    702.87 *    714.45 *    714.45 *    719.02 *
0.011361 *    17.16 *   3200.42 *    350.94 *          1.00 *
* Alignment - surv * 864.84      * PK25    *  69470.09 *    702.87 *    716.07 *    716.07 *    721.32 *
0.010791 *    18.39 *   3777.43 *    358.48 *          1.00 *
* Alignment - surv * 864.84      * PK50    *  80201.12 *    702.87 *    717.16 *    717.16 *    722.90 *
```



```
0.010543 *    19.23 *   4171.29 *    363.53 *          1.00 *
* Alignment - surv * 864.84      * PK100   *  90817.73 *    702.87 *    729.76 *    718.22 *    730.07 *
0.000379 *     5.82 *  38284.09 *   3928.17 *          0.21 *
* Alignment - surv * 864.84      * PK200   * 101291.70 *    702.87 *    730.65 *    719.20 *    730.96 *
0.000380 *     5.97 *  41768.02 *   3934.16 *          0.21 *
* Alignment - surv * 864.84      * PK500   * 114627.90 *    702.87 *    731.72 *    720.40 *    732.04 *
0.000379 *     6.14 *  45992.30 *   3941.41 *          0.22 *
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```