Final Design Report

Hydrology and Hydraulics

Cumberland Mills Bridges

Over Presumpscot River, Westbrook, ME

PIN Numbers 11063.00 and 11064.00

By: ***Northstar Hydro, Inc.***

For: **Stantec**

and Maine Dept. of Transportation

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STATE OF MAINE
ELLEN KNIGHT O'BRIEN
No. 7945
LICENSED
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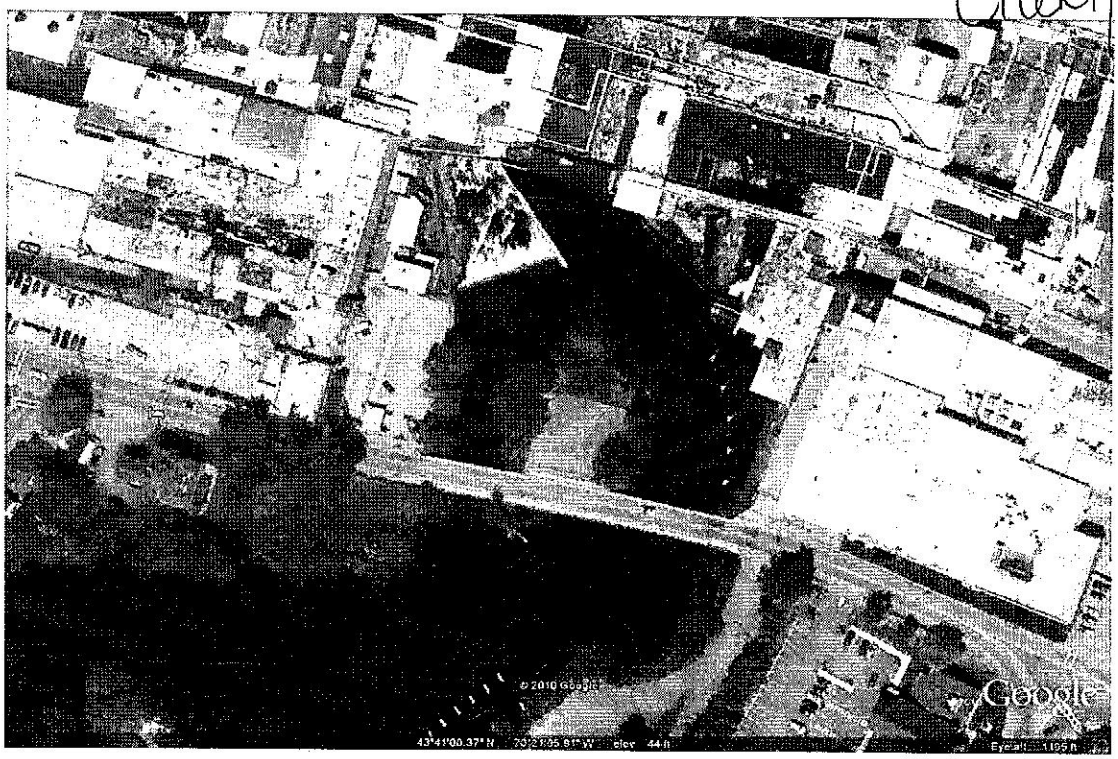


September, 2011

1.0 Introduction:

The Cumberland Mills Twin Bridges carry Cumberland Street over the Presumpscot River in Westbrook, just upstream of the Sappi Mill dams. The two bridges span two river channels divided by an island and are single span bridges on granite block abutments. The bridges are set for replacement. Note that project datum is NAVD 1988. NAVD 1988 = NGVD 1929 – 0.67' for this location.

2.0 River Environment:

The Cumberland Mills Bridges are about 300' upstream of the Sappi Mill dams. The dams were recently evaluated for fish passage through consideration of dam removal. Following evaluation of impacts of dam removal, Sappi chose to construct a fish passage structure on one of the dams. In studies and plans for fish passage, the two channels are known as the "freshet" channel (on the left when facing downstream) and the "main" channel (on the right when facing downstream). River flow is divided downstream of the dams as it passes under and through mill structures. The two dam structures can be seen in the air photo following. The freshet dam is orange and the main dam is shown in blue. Flow is to top of photo, and twin bridges are at bottom of photo.

The river channel merges above the dams and splits again at the bridges where the channels pass by an island. The channels merge upstream of the bridge and bend around from the west.

The flow environment at the bridges is influenced by:

- Flow through the bridge structures
- Backwater from the two dams
- Under high flows, backwater from the mill buildings and channels below the dams

The flow environment will be modified due to:

- Reconstruction of the bridges
- Addition of the fishway to the freshet channel
- Changes in the spillway/flashboards on the freshet channel dam due to fishway addition

3.0 Review of Existing Data:

Existing data related to the bridges was reviewed including:

- FEMA 1980 Flood Insurance Study (Effective study as of January 2011). FEMA did not model the buildings or the dam in their flood profile. FEMA used the following flow distribution (cfs), and flood elevations <u>upstream</u> of the Cumberland Mills Bridges: (1929 NGVD)

a.	10-yr	8,500	44.9
b.	50-yr	11,800	45.5
c.	100-yr	13,300	46.5

d. 500-yr 17,000 46.9

- Preliminary Data for FEMA MAPMOD update program. USGS has recently redone the hydraulic model in this area. The model was furnished by USGS. Because the USGS model was designed to map the City of Westbrook, limited geometric data was obtained for the Sappi buildings, the channels below them, the dams and the twin bridges. The new model does use the same flow distribution as used for this study, and downstream elevations used for that model were evaluated for use as boundary conditions for the HECRAS model for the Bridge PDR study. Model results from the USGS model (assumed NAVD) are summarized below:

Flood Frequency	US Sappi Bridge	US dams	US Cumberland Mills BR
1996	44.8	52.3	52.6
50-year	41.1	50.1	50.0
100-year	42.4	51.0	50.9
500-year	45.7	53.3	53.9

- USGS Gage Data at Sappi Bridge downstream of Mill. Gage No. 01064118 Presumpscot River at Westbrook.
  From 1976 to present, USGS reported measured gage height. From 1976 to 1997, flow rate was also reported. The gage datum is 13.42' above NGVD 1929 and the river drains 577 square miles at this location, including Sebago Lake.

- USGS Regional Formula for Peak Flow: Estimating the Magnitude and Frequency of Peak Flows for Streams in Maine for Selected Recurrence Intervals. Based on this report and on MDOT recommendations, the following flow-frequency distribution was adopted for this project.

1.1-yr:	2,450 cfs
1916/1954:	12,400 cfs
25-yr	13,000 cfs
50-yr	15,700 cfs
100-yr	18,900 cfs
1996:	23,300 cfs
500-yr:	28,000 cfs

- Sappi Dam Removal and Fishway Studies:

  - Kleinshmidt worked with Sappi to determine potential effects of dam removal. Dam removal was investigated as a means to address fish passage issues. Kleinshmidt Associates did extensive and detailed survey and modeling through the Sappi buildings for the dam removal study. This study was focused on low flows, but also found that under high flow conditions, the dam became completely submerged. The frequency of flow for the submerged condition was not determined, but was found to occur at high flows. The Kleinshmidt model was obtained through Sappi. This data was purchased by MDOT rather than resurvey the Sappi property (which would have required draining the

Sappi head-pond, and shutting down the mill since Sappi's water supply is from the pond) in addition to considerable time and expense.

- Following evaluation of dam removal potential effects, Sappi evaluated and designed a fishway to meet fish passage requirements, rather than dam removal. Acheron Engineering of Newport, Maine prepared the design for the new fishway. Sappi provided Acheron's design drawings for the fishway and discussions were held with Acheron Engineering to clarify spillway operation.

- Historical Flood Data:
  Data on historical flooding was obtained from USGS in a report titled Flood of October 1996 in Southern Maine. In addition, flood data from the USGS gaging station in Westbrook was used. The following table summarized known flood elevations and flows for this reach of river in order of magnitude.

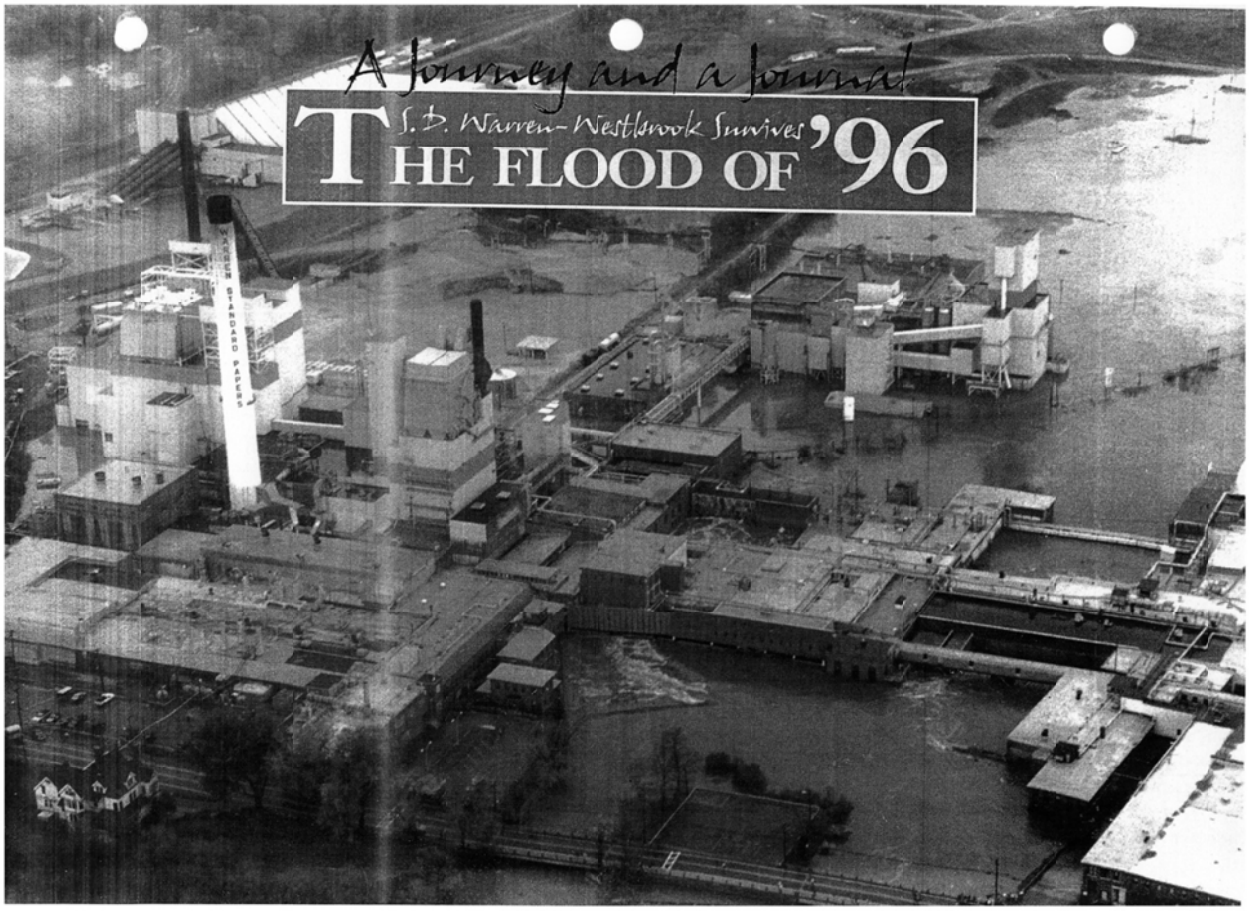
Year	**Flow**	**At Gage (DS of mill)**		**At Dam/DS bridges**		**US of Bridges**	
		NGVD	NAVD	NGVD	NAVD	NGVD	NAVD
1987	7,360						
1916	12,400			46.0	45.3		
1954	12,400			45.8	45.1		
1977	12,500						
2007	13,300		38.0				
1991	13,900		38.9				
1996	23,300		47.5	51.6	50.9	52.5	51.8

Sappi furnished numerous photos of flooding conditions at and around the Sappi mill dams and buildings. Note that these photographs are copyrighted by Sappi. Examples of these photos follow:

April, 2005. Flow into freshet channel. Note flow over finger-wall walkway. (Sappi photo)

April, 2005. Flow from main channel dam under Sappi building. Other flood photos show water at or above the elevation of the base of the building. (Sappi photo)

April, 2005. This photo shows water in the walkway between the buildings. Other photos show actual flow occurring through this section. (Sappi photo)



This photo shows the site in aerial view during the 1996 flood and is from a report on that flood. Although this photograph was not taken at the peak of this flood, note flow through building in center of photo and note that main channel dam is submerged.

The photos furnished by Sappi were used to fine tune the HECRAS model for high flows to assure that all areas through which flow occurs were included in the model.

4.0 Hydrologic Analysis.

The flood flow frequency distribution for this bridge design study is based on the data at the USGS gaging station on Presumpscot River just downstream of Sappi Mill. MDOT also recommended use of these flows.

Frequency	Flow, cfs
1.1-yr	2,450
2-yr	5,310
10-yr	9,890
25-yr	13,000
50-yr	15,700
100-yr	18,900
500-yr	28,000

Historical Flows at this gaging station are summarized below:

Year	Flow, cfs
1991	13,900
1996	23,300
1896	13,800
1895	13,000
1954, 1916	12,400
1900	11,300
1936, 1977	11,200

Summary of Hydrologic Data:

Drainage Area, sq. mi.	577
25-year Discharge, cfs (Q25)	13,000
Design Discharge, cfs (Q50)	15,700
Check Discharge, cfs (Q100)	18,900
Scour Check Discharge, cfs (Q500)	28,000
Ordinary Annual Discharge, cfs (Q1.1)	2,450
Flood of Record (1996)	23,300

5.0 Hydraulic Analysis:

The Cumberland Mills Bridges will be replaced. Existing openings are 77’ at the freshet channel and 90’ at the main channel. Existing low chords on the freshet side are 49.5’ and 49.6’ (L/R). Existing low chords on the main channel are 47.5’ left and 47.0’ right.

Proposed bridges will be slightly lengthened. The new spans will be 82’ on the freshet side and 100’ at the main channel. Proposed low chord will range from 49.9’ to 50.5’ on the freshet side and from 49.0’ to 49.5’ on the main channel side.

Flow elevations at the twin bridges are controlled by downstream conditions at the Sappi dams and in very high flows by the Sappi buildings and conditions downstream of the buildings. Under existing conditions, both dams have flashboards that are designed to fail under high flow conditions. Based on historic flood and repair photos furnished by Sappi, the exact amount of failure (if any) cannot be predicted. To be conservative, it was assumed that under existing conditions, the flashboards remain upright and in-place. It was also assumed that the dam gates remain closed because flooding can occur at any time of the day, flooding may limit access, and the gates require some manual operation.

The Sappi dam that discharges to the freshet channel will be modified when the fishway is constructed. The flashboards on this dam will be replaced with an Obermeyer spillway with an automatic headpond elevation control system. According to Sappi's consultant for the fishway dam, the spillway will normally keep the headpond at a target elevation, and under high flow conditions, will decrease in height and therefore pass more flow than under existing conditions. Acheron summarized the new spillway function as follows:

> *"Under "normal" flow conditions, defined at 300 to 4,500 +/- cfs, the sluice gates in the main channel spillway will remain closed, the flashboards on the main channel spillway will remain in place and the new Obermeyer gates on the freshet channel will move up and down as the flow changes so as to maintain a headpond elevation of approximately 41.5 ft (NGVD 1929) at all times. As the flow rate in the river declines (below 4,500 cfs), the position of the gates will be raised. As the flow rate in the river increases, the position of the gates will be adjusted automatically based on a water level monitoring system in the headpond. Once the flow rate in the river increases above 4,500 +/- cfs, all of the spillway gates will be in the full down position and the water level in the headpond will rise as water will be flowing over the flashboards on the main channel and through the fully open crest of the freshet channel spillway. The top of the Obermeyer gates in the fully lowered position is approximately 36.0 ft (NGVD 1927-* ed. Note 1929*). The future configuration of the freshet channel spillway (*during high flows) *will be similar to a situation that could exist today if all of the flashboards on the freshet channel spillway were completely removed."*

The hydraulic model for the twin bridges was compiled using model HECRAS. The model includes data from the Kleinshmidt dam removal study, from the Acheron fishway project, and from the MDOT survey for the bridge project. In addition, photographs of historical floods at the mill were used to supplement model data and to accurately reflect the various paths that flood water takes through the Sappi buildings.

- The Kleinshmidt model was used for the portion of the current HECRAS model downstream of the Sappi dam. Elevations were added to sections to reflect high flow conditions and several areas of the split dam were added to the model that experience overflow during high flows, such as the finger wall walkway, and the walkway between the buildings. These areas were identified through discussions with Sappi engineering and by studying flood photos from 1996, 1991, 2007 and 2010.

- Information from the Acheron fishway plans was used for the proposed dam condition model.

- The Sappi model (converted to NAVD), the Acheron fishway data (converted to NAVD) and the MDOT survey data (at NAVD) were used to compile one working model of existing conditions at the dam and at the bridges. Four geometry files were compiled by Northstar for Stantec, including

    - the existing dam/existing bridge model,
    - the existing dam, proposed bridge model,
    - the fishway/existing bridge model and
    - fishway/proposed bridge conditions.

The dams and downstream channels were modeled as split flow with the flow optimization routine in HECRAS assisting in balancing flows. The split flow reaches are the "freshet" reach (on left) and the "main" reach on the right (facing downstream). In the main reach, the buildings downstream of the dam were modeled as bridges as flood photos show water reaching the floor/low chord of the buildings. In the freshet reach, it does not appear that the buildings provide such "pressure" type of flow.

Boundary conditions downstream were based on data from the USGS gage. USGS was consulted relative to the gage and the rating curve used at the gage. USGS indicated that the rating curve may need to be updated, but data is not currently available. The proposed FEMA profile was considered as a source of boundary condition at the downstream end, but does not appear to reflect historical data at that location. Therefore the gage data was used as best available information. Model results indicate that the downstream starting water surface elevations only affect floods above 100-year frequency. Upstream boundary condition was assumed to be critical flow, although upstream is backwater so the "critical flow" assumption does not affect the model at the bridges, but allows it to run in "mixed flow" mode. The model was run as "mixed" flow meaning mix of sub- and super-critical.

The HECRAS model indicates that the dams submerge somewhat in lower flows, and completely submerge (meaning no significant drop in WSEL over the dam) in the 1996 type of flood event. The model indicates that up to about a 100-year event, the dam still has some drop in water surface elevation and so controls water surface. Water elevations in the downstream channels are above the crest of the flashboards.

Pictures show flow in 2007 and 2004 going over the fingerwall walkway into the channel by at least a foot, maybe 2'. The model spillways were configured to include that flow. In addition, the model accounts for flow that goes into the building walkway between the two channels, and assumes it flows into the freshet channel. These areas are modeled as straight-on not lateral spillways in the HECRAS model. The model assumes that the gates remain shut due to the need for manual operation and the uncertainty of this occurring during a high flow event. The model also assumes that the flashboards do not fail, even in high water. While this is a conservative assumption, historic flood photos show great variation in flashboard outcomes after flood events.

The following critical elevations were incorporated into the model:

Key elevations: (known)

Freshet dam crest (w boards) 40.6 NGVD 39.9 NAVD
Freshet dam crest w fishway, Obermeyer gates lowered. 36.0' NGVD 35.3' NAVD
Main channel dam (w boards) 41.5 NGVD 40.8 NAVD
Top of walkway into channel 43.0 NAVD
Existing Bridges Low Chords
Freshet: 49.5-49.6' NAVD, - width: 77'
Main: 47.5-47.0' NAVD, - width: 90'
Proposed Bridges Low chords:
Freshet: 49.9-50.5' NAVD, – width: 82'
Main: 49-49.5' NAVD, – width: 100'

Assumed/Estimated Elevations: (based on photos of flooding)

Walkway below central building Floor: 43.0', concrete wall 45.0' NAVD
Ceiling of building over walkway 51.0' NAVD
Building base over piers in main channel 42.0' NAVD

Data/model results for existing condition and model calibration are summarized in the following table. Calibration is not perfect. Unknowns remain and may not be able to be resolved, including exact nature of flow through buildings and channels and downstream water surface elevations at the USGS gage. HECRAS is limited in ability to model more complex flow, so the model appears to be adequately simulating flows for bridge design purposes. Engineering judgment based on historical flooding is necessarily included in interpreting the HECRAS model results for this bridge evaluation.

		Elevations							
Year	**Flow**	**At Gage (DS of mill)**		**At Dam/DS bridges**		**US of Bridges**		**Existing HECRAS Model at Bridges**	
		NGVD	NAVD	NGVD	NAVD	NGVD	NAVD	NAVD DS/US	
Q1.1	2450	24.6	23.9					42.5	42.5
1987	7360								
1916	12400			46.0	45.3			46.0	46.2
1954	12400			45.8	45.1			46.0	46.2
1977	12500								
Q25	13000		37.5					46.1	46.4
2007	13300		38.0						
1991	13900		38.9						
Q50	15700		40.5					46.7	47.0
Q100	18900		42.8					47.2	47.7
1996	23300		47.5	51.6	50.9	52.5	51.8	48.3	49.0
Q500	28000	51.5	50.8					52.1	53.1

For the 1916/1954 flow (just under 25 year), the model is 0.9 – 1.1' too high. For the 1996 flood, the model is 2.6-2.8' too low. The latter is likely due to starting elevation at the downstream end of the model.

Hydraulic Evaluation Summary:

	Existing Bridge	LC=47.4	Proposed Bridge	LC = 49.0
	Existing Dam	w/Fishway	Existing Dam	w/Fishway
Headwater at Q25, cfs	46.4	45.2	46.3	45.1
Headwater at Q50, cfs	47.0	45.9	46.9	45.8
Headwater Q100, cfs	47.7	47.0	47.6	46.6
Velocity Q25, fps	5.8	6.5	5.5	6.1
Velocity Q50,fps	6.8	7.5	6.2	6.8
Velocity Q100, fps	7.9	8.4	7.2	7.8
Ordinary High water, Q1.1 Elev.	42.5	40.9	42.5	40.9
Velocity, Q 1.1, fps	1.5	1.8	1.4	1.7
Clearance at Q50	0.4	1.5	2.1	3.2

6.0 Scour

For preliminary design, scour was not computed in detail. Scour history, and apparent bedrock at base of foundations suggests little to no potential for scour at this site. Additional borings and geotechnical evaluations are being considered for final design. At this stage of design, it is expected that foundations will be on solid rock and that scour will not be a design consideration. If deep sequences of unconsolidated materials are found with additional geotechnical investigation, such that foundations will not be on rock, then potential scour will be computed for final design such that foundations can be designed to resist potential scour. According to Stantec, the existing abutment foundations pre-date the 1951 construction and have no known scour issues, despite a long history of flooding. Potential scour computations would be done with fishway gates down under high flow conditions.

7.0 Summary of Findings

- The Cumberland Mills Bridges are impacted by backwater from dams downstream at the Sappi Mill.
- The "freshet" dam will be reconfigured within two years to include a fishway and an Obermeyer spillway.
- The channels and buildings downstream of the dams also have some impact on backwater at the twin bridges.
- The 1980 Flood Insurance Study had limited data on the mill buildings and dam. The new draft model for an updated FIS also has limited data and modeling through the Sappi site.
- The USGS gaging station downstream of the mills was used for the flow-frequency distribution for this study. The gage has a record of just over 30 years of data. The gage rating curve may need to be updated, but has not been recently.
- Fish passage requirements below the bridges will be met by construction of a fishway, rather than through dam removal.

- Historic flows and flood elevations are available at or near this site, dating back to 1916.
- The 1996 flood was approximately a 250-year event, but may have been of higher frequency. Prior events included 5 floods that are just lower than the 25-year storm magnitude, including April of 2007.
- Flood photos show complex flow through the mills and over the various spillways during high flow events. Photos also show inconsistency in how many or where flashboards fail.
- The new spillway for the freshet channel/fishway will include and Obermeyer spillway designed to depress in high flows, such that flood elevations should be lower once this construction is complete.
- The HECRAS model simulated flood flows to within 1' of recorded events for 25-year type of storms but is somewhat low on predictions for the 1996 flood. It is likely that additional backwater from downstream causes the dam to be inundated by more than the current model shows.
- The proposed bridge spans will be slightly lengthened and freeboard will be added to improve clearance for the 50- and 100-year flood flows. Under existing conditions, 50-year clearance is 0.5'. By adding the fishway/spillway this clearance is improved to 1.6'. With the new bridge, existing dam, 50-year clearance is 2.1' and with the new fishway/spillway, clearance is expected to be 3.2' if the construction proceeds as shown on plans.
- Potential scour was computed roughly using model HECRAS, but it is most likely that foundations will be constructed on bedrock, with shapes nearly identical to existing. The bridge does have the potential to experience scour through contraction, abutment and pier scour if significant depths of unconsolidated material underlies the foundations.
- Despite the addition of the fishway lowering high flood levels, Stantec recommends maintaining the low chord for existing dam conditions. The fishway is not yet constructed and the mechanical flashboards may not always operate as planned during flood events. Therefore, the minimum low chord is proposed to be 49.0' (NAVD).

References:

1. U.S. Dept. of the Interior, Geological Survey. Flood of October 1996 in Southern Maine. WRIR 97-4189. Augusta, ME

2. U. S. Dept. of the Interior, Geological Survey, with Maine Dept. of Transportation. Estimating the Magnitude and Frequency of Peak Flows for Streams in Maine for Selected Recurrence Intervals. Water Resources Investigations Report 99-4008.

3. U.S. Army Corps of Engineers, Hydrologic Engineering Center. HEC-RAS River Analysis System. Version 3.1.3. May, 2005. Davis, CA

4. U.S. Department of Transportation. Federal Highway Administration. Evaluating Scour at Bridges, 4th edition. HEC-18. May, 2001

5. U.S. Department of Transportation. Federal Highway Administration. Bridge Scour and Stream Instability Countermeasures. HEC-23. March, 2001.

6. Maine Dept. of Transportation. Standard Details Highways and Bridges. April 1997

7. USGS 01064118 Presumpscot River at Westbrook, Maine. http://waterdata.usgs.gov/usa/nwis/uv?site_no=01064118

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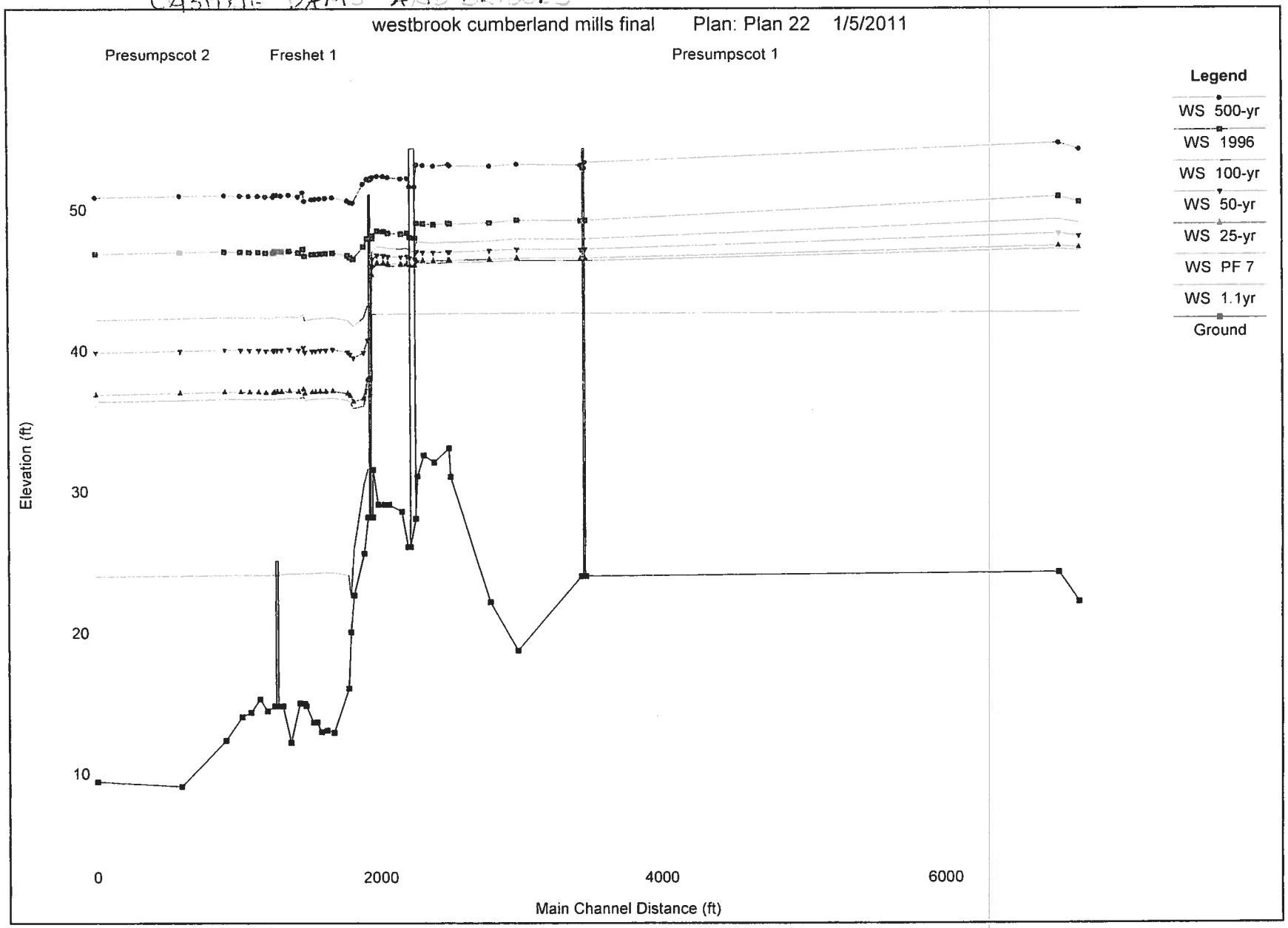
Hydrology/Hydraulics

Appendix

1. Hydrologic Calculations
2. HECRAS model results including flood profiles, tables, section plots and flow distribution tables.
    - Existing Dam/Existing Bridge
    - Existing Bridges, Fishway
    - Proposed Bridges, Existing Dam
    - Proposed Bridges, Proposed Dam
3. USGS model results for draft FIS

EXISTING DAMS AND BRIDGES



1 in Horiz. = 1000 ft 1 in Vert. = 10 ft

Existing Dams + Bridges

HEC-RAS Plan: PDR

River	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
Presumpscot	1	2101	1.1yr	2450.00	22.10	42.63	28.52	42.67	0.000029	1.46	1678.09	120.08	0.07
Presumpscot	1	2101	25-yr	13000.00	22.10	47.21	34.92	47.74	0.000317	5.84	2228.80	120.41	0.24
Presumpscot	1	2101	50-yr	15700.00	22.10	48.04	36.06	48.74	0.000400	6.75	2327.96	120.47	0.27
Presumpscot	1	2101	100-yr	18900.00	22.10	48.97	37.32	49.90	0.000497	7.76	2439.86	120.54	0.30
Presumpscot	1	2101	1996	23300.00	22.10	50.46	38.90	51.69	0.000596	8.91	2619.77	120.64	0.34
Presumpscot	1	2101	500-yr	28000.00	22.10	54.21	40.44	55.51	0.000507	9.14	3073.19	120.91	0.32
Presumpscot	1	2101	PF 7	12400.00	22.10	47.00	34.65	47.49	0.000300	5.63	2202.98	120.40	0.23
Presumpscot	1	2100	1.1yr	2450.00	24.18	42.64		42.66	0.000020	1.16	2118.99	170.74	0.06
Presumpscot	1	2100	25-yr	13000.00	24.18	47.34		47.64	0.000197	4.39	3051.26	254.72	0.19
Presumpscot	1	2100	50-yr	15700.00	24.18	48.22		48.61	0.000240	5.02	3292.60	296.14	0.21
Presumpscot	1	2100	100-yr	18900.00	24.18	49.22		49.72	0.000286	5.69	3608.46	330.54	0.23
Presumpscot	1	2100	1996	23300.00	24.18	50.83		51.45	0.000322	6.38	4165.36	354.08	0.25
Presumpscot	1	2100	500-yr	28000.00	24.18	54.67		55.24	0.000244	6.24	5545.25	360.00	0.23
Presumpscot	1	2100	PF 7	12400.00	24.18	47.12		47.39	0.000188	4.24	2995.13	244.88	0.19
Presumpscot	1	2099	1.1yr	2450.00	23.90	42.57	28.15	42.59	0.000021	1.23	1994.76	151.50	0.06
Presumpscot	1	2099	25-yr	13000.00	23.90	46.50	34.22	46.89	0.000253	4.99	2618.20	165.33	0.21
Presumpscot	1	2099	50-yr	15700.00	23.90	47.14	35.24	47.66	0.000326	5.81	2724.66	167.55	0.25
Presumpscot	1	2099	100-yr	18900.00	23.90	47.86	36.36	48.56	0.000412	6.71	2846.12	170.05	0.28
Presumpscot	1	2099	1996	23300.00	23.90	49.18	37.76	50.10	0.000495	7.71	3072.88	174.61	0.31
Presumpscot	1	2099	500-yr	28000.00	23.90	53.32	39.15	54.22	0.000373	7.61	3826.62	188.98	0.28
Presumpscot	1	2099	PF 7	12400.00	23.90	46.32	33.97	46.68	0.000238	4.81	2588.91	164.72	0.21
Presumpscot	1	2098.5		Bridge									
Presumpscot	1	2098	1.1yr	2450.00	23.90	42.57		42.59	0.000021	1.23	1994.66	151.49	0.06
Presumpscot	1	2098	25-yr	13000.00	23.90	46.49		46.88	0.000254	5.00	2616.28	165.29	0.21
Presumpscot	1	2098	50-yr	15700.00	23.90	47.12		47.65	0.000327	5.81	2721.95	167.50	0.25
Presumpscot	1	2098	100-yr	18900.00	23.90	47.84		48.54	0.000414	6.72	2842.27	169.97	0.28
Presumpscot	1	2098	1996	23300.00	23.90	49.14		50.07	0.000498	7.72	3067.41	174.50	0.31
Presumpscot	1	2098	500-yr	28000.00	23.90	53.12		54.03	0.000384	7.67	3788.74	188.29	0.28
Presumpscot	1	2098	PF 7	12400.00	23.90	46.31		46.67	0.000239	4.82	2587.14	164.68	0.21
Presumpscot	1	2097	1.1yr	2450.00	18.65	42.57		42.58	0.000009	0.94	2609.39	146.39	0.04
Presumpscot	1	2097	25-yr	13000.00	18.65	46.50		46.76	0.000132	4.07	3246.81	208.71	0.15
Presumpscot	1	2097	50-yr	15700.00	18.65	47.14		47.49	0.000174	4.77	3387.20	227.30	0.18
Presumpscot	1	2097	100-yr	18900.00	18.65	47.86		48.34	0.000226	5.55	3551.10	228.17	0.20
Presumpscot	1	2097	1996	23300.00	18.65	49.18		49.82	0.000282	6.45	3852.87	229.75	0.23
Presumpscot	1	2097	500-yr	28000.00	18.65	53.16		53.82	0.000239	6.56	4778.65	234.56	0.22
Presumpscot	1	2097	PF 7	12400.00	18.65	46.32		46.56	0.000123	3.92	3210.34	202.42	0.15
Presumpscot	1	2096	1.1yr	2450.00	22.07	42.56		42.58	0.000014	1.05	2330.83	153.64	0.05

HEC-RAS Plan: PDR (Continued)

River	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
Presumpscot	1	2096	25-yr	13000.00	22.07	46.42		46.72	0.000182	4.43	3000.99	216.22	0.18
Presumpscot	1	2096	50-yr	15700.00	22.07	47.03		47.45	0.000237	5.17	3138.26	228.17	0.21
Presumpscot	1	2096	100-yr	18900.00	22.07	47.72		48.28	0.000305	6.00	3295.46	228.62	0.24
Presumpscot	1	2096	1996	23300.00	22.07	49.01		49.74	0.000374	6.93	3590.07	229.46	0.26
Presumpscot	1	2096	500-yr	28000.00	22.07	53.04		53.76	0.000295	6.91	4516.70	230.00	0.24
Presumpscot	1	2096	PF 7	12400.00	22.07	46.25		46.53	0.000170	4.26	2964.13	211.70	0.17
Presumpscot	1	2095	1.1yr	2450.00	30.97	42.55		42.57	0.000036	1.24	1976.74	229.25	0.07
Presumpscot	1	2095	25-yr	13000.00	30.97	46.34		46.66	0.000302	4.54	2970.69	310.47	0.23
Presumpscot	1	2095	50-yr	15700.00	30.97	46.94		47.36	0.000374	5.22	3163.52	325.80	0.26
Presumpscot	1	2095	100-yr	18900.00	30.97	47.62		48.17	0.000454	5.95	3388.61	333.86	0.28
Presumpscot	1	2095	1996	23300.00	30.97	48.93		49.60	0.000503	6.65	3833.56	349.24	0.30
Presumpscot	1	2095	500-yr	28000.00	30.97	53.07		53.63	0.000307	6.12	5304.85	356.00	0.25
Presumpscot	1	2095	PF 7	12400.00	30.97	46.17		46.46	0.000288	4.39	2918.05	305.84	0.22
Presumpscot	1	1262	1.1yr	2450.00	33.00	42.54		42.57	0.000056	1.35	1819.91	261.24	0.09
Presumpscot	1	1262	25-yr	13000.00	33.00	46.33		46.65	0.000378	4.53	3081.08	453.01	0.25
Presumpscot	1	1262	50-yr	15700.00	33.00	46.95		47.35	0.000452	5.14	3359.82	455.31	0.27
Presumpscot	1	1262	100-yr	18900.00	33.00	47.65		48.15	0.000530	5.77	3677.85	457.92	0.30
Presumpscot	1	1262	1996	23300.00	33.00	48.98		49.57	0.000552	6.29	4292.09	462.92	0.31
Presumpscot	1	1262	500-yr	28000.00	33.00	53.15		53.59	0.000289	5.50	6317.85	519.12	0.24
Presumpscot	1	1262	PF 7	12400.00	33.00	46.16		46.46	0.000364	4.40	3002.91	452.36	0.24
Presumpscot	1	1156	1.1yr	2450.00	32.00	42.54		42.57	0.000035	1.22	2016.20	233.00	0.07
Presumpscot	1	1156	25-yr	13000.00	32.00	46.31		46.61	0.000317	4.39	2980.79	297.46	0.23
Presumpscot	1	1156	50-yr	15700.00	32.00	46.91		47.30	0.000392	5.03	3165.29	315.81	0.26
Presumpscot	1	1156	100-yr	18900.00	32.00	47.59		48.10	0.000475	5.72	3386.86	336.53	0.29
Presumpscot	1	1156	1996	23300.00	32.00	48.89		49.51	0.000517	6.36	3843.73	362.79	0.30
Presumpscot	1	1156	500-yr	28000.00	32.00	53.05		53.55	0.000296	5.75	5509.69	442.49	0.24
Presumpscot	1	1156	PF 7	12400.00	32.00	46.14		46.42	0.000303	4.26	2930.56	292.26	0.22
Presumpscot	1	1081	1.1yr	2450.00	32.50	42.54		42.56	0.000048	1.19	2064.61	317.35	0.08
Presumpscot	1	1081	25-yr	13000.00	32.50	46.33		46.57	0.000303	3.96	3284.99	327.24	0.22
Presumpscot	1	1081	50-yr	15700.00	32.50	46.94		47.25	0.000366	4.50	3485.62	328.84	0.24
Presumpscot	1	1081	100-yr	18900.00	32.50	47.63		48.03	0.000432	5.09	3715.32	334.68	0.27
Presumpscot	1	1081	1996	23300.00	32.50	48.95		49.44	0.000457	5.61	4163.86	346.53	0.28
Presumpscot	1	1081	500-yr	28000.00	32.50	53.10		53.50	0.000257	5.04	5711.65	417.83	0.22
Presumpscot	1	1081	PF 7	12400.00	32.50	46.15		46.38	0.000292	3.84	3228.49	326.79	0.22
Presumpscot	1	1036	1.1yr	2450.00	31.00	42.54	34.39	42.56	0.000026	0.98	2501.47	313.78	0.06
Presumpscot	1	1036	25-yr	13000.00	31.00	46.35	37.88	46.54	0.000201	3.51	3705.76	318.63	0.18
Presumpscot	1	1036	50-yr	15700.00	31.00	46.97	38.45	47.22	0.000249	4.02	3902.69	319.42	0.20
Presumpscot	1	1036	100-yr	18900.00	31.00	47.67	39.08	47.99	0.000303	4.58	4126.71	321.64	0.23

HEC-RAS Plan: PDR (Continued)

River	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
Presumpscot	1	1036	1996	23300.00	31.00	48.99	39.87	49.39	0.000338	5.12	4554.09	325.96	0.24
Presumpscot	1	1036	500-yr	28000.00	31.00	53.13	40.66	53.47	0.000210	4.72	6045.11	408.84	0.20
Presumpscot	1	1036	PF 7	12400.00	31.00	46.18	37.72	46.36	0.000192	3.40	3650.38	318.41	0.18
Presumpscot	1	1000		Bridge									
Presumpscot	1	970	1.1yr	2450.00	26.00	42.53		42.55	0.000023	1.07	2279.13	222.10	0.06
Presumpscot	1	970	25-yr	13000.00	26.00	46.12		46.39	0.000258	4.19	3104.66	238.12	0.20
Presumpscot	1	970	50-yr	15700.00	26.00	46.65		47.01	0.000335	4.86	3231.18	240.48	0.23
Presumpscot	1	970	100-yr	18900.00	26.00	47.22		47.71	0.000429	5.61	3370.98	243.07	0.27
Presumpscot	1	970	1996	23300.00	26.00	48.29		48.93	0.000524	6.41	3632.65	247.83	0.30
Presumpscot	1	970	500-yr	28000.00	26.00	52.16		52.73	0.000377	6.05	4627.31	285.99	0.26
Presumpscot	1	970	PF 7	12400.00	26.00	45.96		46.21	0.000243	4.04	3067.27	237.42	0.20
Presumpscot	1	926	1.1yr	2450.00	28.50	42.53		42.55	0.000030	1.16	2116.66	229.67	0.07
Presumpscot	1	926	25-yr	13000.00	28.50	46.08		46.37	0.000312	4.38	2968.43	249.98	0.22
Presumpscot	1	926	50-yr	15700.00	28.50	46.59		46.99	0.000401	5.07	3098.58	252.94	0.26
Presumpscot	1	926	100-yr	18900.00	28.50	47.16		47.69	0.000510	5.83	3242.56	256.17	0.29
Presumpscot	1	926	1996	23300.00	28.50	48.22		48.90	0.000613	6.63	3516.79	262.22	0.32
Presumpscot	1	926	500-yr	28000.00	28.50	52.13		52.71	0.000443	6.10	4691.03	388.39	0.28
Presumpscot	1	926	PF 7	12400.00	28.50	45.92		46.20	0.000295	4.23	2929.67	249.09	0.22
Presumpscot	1	835	1.1yr	2450.00	29.00	42.52		42.54	0.000044	1.16	2105.94	307.25	0.08
Presumpscot	1	835	25-yr	13000.00	29.00	46.08		46.33	0.000372	3.98	3265.27	369.26	0.24
Presumpscot	1	835	50-yr	15700.00	29.00	46.61		46.93	0.000458	4.53	3462.59	376.48	0.26
Presumpscot	1	835	100-yr	18900.00	29.00	47.20		47.60	0.000550	5.13	3691.45	417.12	0.29
Presumpscot	1	835	1996	23300.00	29.00	48.29		48.79	0.000587	5.67	4149.73	418.98	0.31
Presumpscot	1	835	500-yr	28000.00	29.00	52.24		52.62	0.000299	4.94	5819.78	446.64	0.23
Presumpscot	1	835	PF 7	12400.00	29.00	45.92		46.16	0.000354	3.87	3207.32	364.84	0.23
Presumpscot	1	804	1.1yr	2450.00	29.00	42.53		42.54	0.000021	0.86	2843.32	373.43	0.06
Presumpscot	1	804	25-yr	13000.00	29.00	46.14		46.29	0.000167	3.08	4219.79	419.72	0.16
Presumpscot	1	804	50-yr	15700.00	29.00	46.69		46.88	0.000207	3.55	4448.67	419.82	0.18
Presumpscot	1	804	100-yr	18900.00	29.00	47.29		47.55	0.000253	4.06	4701.77	419.93	0.21
Presumpscot	1	804	1996	23300.00	29.00	48.40		48.73	0.000288	4.57	5167.97	420.13	0.22
Presumpscot	1	804	500-yr	28000.00	29.00	52.30		52.58	0.000174	4.22	6920.02	513.72	0.18
Presumpscot	1	804	PF 7	12400.00	29.00	45.98		46.12	0.000159	2.99	4152.99	384.64	0.16
Presumpscot	1	95	1.1yr	2450.00	29.00	42.53		42.54	0.000009	0.68	3588.92	359.70	0.04
Presumpscot	1	95	25-yr	13000.00	29.00	46.16		46.27	0.000095	2.65	4897.06	360.11	0.13
Presumpscot	1	95	50-yr	15700.00	29.00	46.72		46.86	0.000122	3.08	5095.40	360.17	0.14
Presumpscot	1	95	100-yr	18900.00	29.00	47.32		47.52	0.000154	3.56	5314.66	360.24	0.16
Presumpscot	1	95	1996	23300.00	29.00	48.44		48.70	0.000185	4.08	5715.93	360.37	0.18

HEC-RAS Plan: PDR (Continued)

River	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
Presumpscot	1	95	500-yr	28000.00	29.00	52.32		52.56	0.000130	3.93	7293.27	479.57	0.16
Presumpscot	1	95	PF 7	12400.00	29.00	46.00		46.10	0.000090	2.56	4838.88	360.09	0.12
Presumpscot	2	74	1.1yr	2450.00	12.29	23.98		24.00	0.000051	1.12	2181.20	231.96	0.06
Presumpscot	2	74	25-yr	13000.00	12.29	36.99		37.07	0.000084	2.30	5713.69	346.62	0.09
Presumpscot	2	74	50-yr	15700.00	12.29	39.98		40.07	0.000075	2.39	6853.79	415.70	0.09
Presumpscot	2	74	100-yr	18900.00	12.29	42.30		42.40	0.000077	2.59	7877.48	469.13	0.09
Presumpscot	2	74	1996	23300.00	12.29	46.97		47.07	0.000062	2.61	10193.56	500.19	0.08
Presumpscot	2	74	500-yr	28000.00	12.29	50.95		51.06	0.000056	2.69	12186.01	500.25	0.08
Presumpscot	2	74	PF 7	12400.00	12.29	36.49		36.57	0.000084	2.25	5542.03	334.99	0.09
Presumpscot	2	73	1.1yr	2450.00	9.00	23.94		23.98	0.000061	1.59	1536.54	154.44	0.09
Presumpscot	2	73	25-yr	13000.00	9.00	36.91		37.04	0.000084	3.00	5351.21	451.21	0.12
Presumpscot	2	73	50-yr	15700.00	9.00	39.91		40.04	0.000073	3.06	6815.18	524.99	0.11
Presumpscot	2	73	100-yr	18900.00	9.00	42.22		42.37	0.000073	3.27	8094.86	581.88	0.11
Presumpscot	2	73	1996	23300.00	9.00	46.91		47.05	0.000056	3.22	11073.33	665.00	0.10
Presumpscot	2	73	500-yr	28000.00	9.00	50.91		51.04	0.000048	3.23	13730.38	665.00	0.10
Presumpscot	2	73	PF 7	12400.00	9.00	36.41		36.54	0.000084	2.95	5127.44	438.84	0.12
Presumpscot	2	72	1.1yr	2450.00	9.35	23.90	13.62	23.95	0.000055	1.77	1729.34	215.01	0.09
Presumpscot	2	72	25-yr	13000.00	9.35	36.80	19.42	36.98	0.000101	3.85	5680.08	397.51	0.13
Presumpscot	2	72	50-yr	15700.00	9.35	39.80	20.52	39.99	0.000093	3.99	6936.26	439.95	0.13
Presumpscot	2	72	100-yr	18900.00	9.35	42.10	21.69	42.31	0.000098	4.30	7985.56	472.49	0.14
Presumpscot	2	72	1996	23300.00	9.35	46.80	23.13	47.00	0.000081	4.30	10352.31	522.00	0.13
Presumpscot	2	72	500-yr	28000.00	9.35	50.80	24.57	51.00	0.000072	4.37	12440.31	522.00	0.12
Presumpscot	2	72	PF 7	12400.00	9.35	36.30	19.19	36.48	0.000100	3.77	5483.10	390.43	0.13
Main	1	86	1.1yr	899.86	24.30	42.53	27.50	42.54	0.000013	0.72	1730.11	143.00	0.03
Main	1	86	25-yr	5337.92	24.30	46.14	32.27	46.27	0.000225	3.29	2246.43	143.00	0.13
Main	1	86	50-yr	6247.27	24.30	46.69	33.18	46.86	0.000280	3.72	2325.54	143.00	0.14
Main	1	86	100-yr	7306.13	24.30	47.31	34.67	47.52	0.000345	4.19	2413.38	143.00	0.16
Main	1	86	1996	8836.33	24.30	48.43	35.64	48.69	0.000422	4.75	2573.22	143.00	0.18
Main	1	86	500-yr	10089.98	24.30	52.33	36.36	52.56	0.000317	4.45	3131.18	143.00	0.15
Main	1	86	PF 7	5089.95	24.30	45.98	32.04	46.10	0.000211	3.17	2223.60	143.00	0.12
Main	1	85.5		Inl Struct									
Main	1	85	1.1yr	899.86	22.36	26.94	26.94	28.21	0.018140	9.06	99.27	39.10	1.00
Main	1	85	25-yr	5337.92	22.36	37.39		37.69	0.000921	5.20	1472.15	143.00	0.26
Main	1	85	50-yr	6247.27	22.36	40.36		40.60	0.000593	4.69	1897.83	143.00	0.21
Main	1	85	100-yr	7306.13	22.36	42.79		43.02	0.000492	4.62	2244.74	143.00	0.19
Main	1	85	1996	8836.33	22.36	47.82		48.01	0.000316	4.19	2964.35	143.00	0.16
Main	1	85	500-yr	10089.98	22.36	52.16		52.33	0.000237	3.93	3585.49	143.00	0.13

HEC-RAS Plan: PDR (Continued)

River	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
Main	1	85	PF 7	5089.95	22.36	36.87		37.18	0.000975	5.23	1398.84	143.00	0.27
Main	1	84	1.1yr	899.86	22.35	25.93	25.25	26.37	0.008464	5.30	169.70	76.20	0.63
Main	1	84	25-yr	5337.92	22.35	37.41		37.62	0.000494	3.66	1458.47	116.00	0.18
Main	1	84	50-yr	6247.27	22.35	40.37		40.56	0.000352	3.47	1802.09	116.00	0.15
Main	1	84	100-yr	7306.13	22.35	42.79		42.99	0.000310	3.51	2082.79	116.00	0.15
Main	1	84	1996	8836.33	22.35	47.82		47.99	0.000217	3.31	2665.59	116.00	0.12
Main	1	84	500-yr	10089.98	22.35	52.16		52.32	0.000170	3.18	3169.03	116.00	0.11
Main	1	84	PF 7	5089.95	22.35	36.90		37.11	0.000510	3.64	1399.33	116.00	0.18
Main	1	83	1.1yr	899.86	21.54	25.90	24.76	26.15	0.004674	4.03	223.23	98.65	0.47
Main	1	83	25-yr	5337.92	21.54	37.43	28.06	37.60	0.000373	3.34	1597.37	120.00	0.16
Main	1	83	50-yr	6247.27	21.54	40.39	28.48	40.54	0.000275	3.20	1952.62	120.00	0.14
Main	1	83	100-yr	7306.13	21.54	42.81	28.94	42.97	0.000247	3.26	2242.99	120.00	0.13
Main	1	83	1996	8836.33	21.54	47.83	29.63	47.98	0.000178	3.11	2845.69	120.00	0.11
Main	1	83	500-yr	10089.98	21.54	52.17	30.14	52.31	0.000141	3.00	3366.37	120.00	0.10
Main	1	83	PF 7	5089.95	21.54	36.92	27.94	37.09	0.000382	3.31	1536.17	120.00	0.16
Main	1	82.5		Bridge									
Main	1	82	1.1yr	899.86	21.54	25.85		26.01	0.002668	3.23	278.99	113.07	0.36
Main	1	82	25-yr	5337.92	21.54	37.42		37.58	0.000329	3.20	1665.74	120.00	0.15
Main	1	82	50-yr	6247.27	21.54	40.37		40.52	0.000250	3.09	2019.97	120.00	0.13
Main	1	82	100-yr	7306.13	21.54	42.75		42.91	0.000229	3.17	2305.69	120.00	0.13
Main	1	82	1996	8836.33	21.54	47.79		47.94	0.000167	3.04	2910.74	120.00	0.11
Main	1	82	500-yr	10089.98	21.54	52.14		52.28	0.000134	2.94	3432.51	120.00	0.10
Main	1	82	PF 7	5089.95	21.54	36.91		37.07	0.000336	3.17	1604.55	120.00	0.15
Main	1	81	1.1yr	899.86	21.85	25.74		25.92	0.002284	3.43	262.55	93.00	0.36
Main	1	81	25-yr	5337.92	21.85	37.33		37.56	0.000354	3.87	1480.64	110.00	0.18
Main	1	81	50-yr	6247.27	21.85	40.29		40.50	0.000262	3.74	1806.24	110.00	0.16
Main	1	81	100-yr	7306.13	21.85	42.67		42.89	0.000235	3.84	2067.81	110.00	0.15
Main	1	81	1996	8836.33	21.85	47.72		47.92	0.000164	3.69	2623.25	110.00	0.13
Main	1	81	500-yr	10089.98	21.85	52.07		52.27	0.000125	3.57	3171.58	135.00	0.12
Main	1	81	PF 7	5089.95	21.85	36.82		37.05	0.000363	3.83	1424.69	110.00	0.18
Main	1	80.9	1.1yr	899.86	22.41	25.53	24.62	25.86	0.004005	4.62	194.84	78.00	0.51
Main	1	80.9	25-yr	5337.92	22.41	37.19	28.27	37.52	0.000806	4.70	1201.22	90.00	0.22
Main	1	80.9	50-yr	6247.27	22.41	40.16	28.86	40.47	0.000656	4.52	1468.94	90.00	0.19
Main	1	80.9	100-yr	7306.13	22.41	42.54	29.57	42.86	0.000635	4.63	1682.58	90.00	0.18
Main	1	80.9	1996	8836.33	22.41	47.60	30.45	47.90	0.000509	4.43	2138.43	90.00	0.16
Main	1	80.9	500-yr	10089.98	22.41	51.98	31.14	52.24	0.000395	4.20	2639.68	130.00	0.15
Main	1	80.9	PF 7	5089.95	22.41	36.68	28.12	37.01	0.000811	4.65	1155.65	90.00	0.22

HEC-RAS Plan: PDR (Continued)

River	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
Main	1	80.6		Bridge									
Main	1	80.5	1.1yr	899.86	22.03	24.33	24.33	25.14	0.016688	7.24	124.27	78.00	1.01
Main	1	80.5	25-yr	5337.92	22.03	37.06		37.39	0.000785	4.65	1212.69	90.00	0.22
Main	1	80.5	50-yr	6247.27	22.03	40.05		40.36	0.000640	4.48	1482.08	90.00	0.19
Main	1	80.5	100-yr	7306.13	22.03	42.39		42.71	0.000625	4.60	1692.43	90.00	0.18
Main	1	80.5	1996	8836.33	22.03	47.21		47.51	0.000516	4.45	2125.90	90.00	0.16
Main	1	80.5	500-yr	10089.98	22.03	51.34		51.62	0.000423	4.27	2579.93	130.00	0.15
Main	1	80.5	PF 7	5089.95	22.03	36.56		36.88	0.000788	4.60	1167.18	90.00	0.22
Main	1	80.1	1.1yr	899.86	19.98	23.94	23.32	24.36	0.005845	5.18	173.68	78.85	0.62
Main	1	80.1	25-yr	5337.92	19.98	37.05		37.34	0.000644	4.32	1296.72	90.00	0.19
Main	1	80.1	50-yr	6247.27	19.98	40.05		40.31	0.000543	4.21	1566.09	90.00	0.17
Main	1	80.1	100-yr	7306.13	19.98	42.38		42.67	0.000540	4.35	1776.34	90.00	0.17
Main	1	80.1	1996	8836.33	19.98	47.20		47.47	0.000459	4.25	2209.81	90.00	0.15
Main	1	80.1	500-yr	10089.98	19.98	51.34		51.59	0.000383	4.11	2663.57	130.00	0.14
Main	1	80.1	PF 7	5089.95	19.98	36.55		36.82	0.000642	4.26	1251.24	90.00	0.20
Main	1	80	1.1yr	899.86	18.68	24.14		24.26	0.001027	2.81	320.32	79.85	0.25
Main	1	80	25-yr	5337.92	18.68	37.15		37.29	0.000208	3.12	1780.27	117.00	0.14
Main	1	80	50-yr	6247.27	18.68	40.13		40.28	0.000162	3.07	2129.64	117.00	0.12
Main	1	80	100-yr	7306.13	18.68	42.47		42.63	0.000152	3.19	2403.51	117.00	0.12
Main	1	80	1996	8836.33	18.68	47.28		47.43	0.000114	3.14	2966.28	117.00	0.11
Main	1	80	500-yr	10089.98	18.68	51.41		51.56	0.000093	3.10	3449.13	117.00	0.10
Main	1	80	PF 7	5089.95	18.68	36.64		36.78	0.000211	3.07	1720.92	117.00	0.14
Main	1	79	1.1yr	899.86	17.89	24.16		24.21	0.000307	1.72	523.77	114.00	0.14
Main	1	79	25-yr	5337.92	17.89	37.16		37.27	0.000129	2.64	2094.53	125.00	0.11
Main	1	79	50-yr	6247.27	17.89	40.15		40.26	0.000105	2.63	2467.59	125.00	0.10
Main	1	79	100-yr	7306.13	17.89	42.49		42.61	0.000101	2.76	2760.29	125.00	0.10
Main	1	79	1996	8836.33	17.89	47.30		47.42	0.000080	2.76	3361.35	125.00	0.09
Main	1	79	500-yr	10089.98	17.89	51.43		51.54	0.000066	2.74	3877.08	125.00	0.09
Main	1	79	PF 7	5089.95	17.89	36.66		36.76	0.000129	2.59	2031.07	125.00	0.11
Main	1	78.9	1.1yr	899.86	16.99	24.07	20.93	24.19	0.001033	2.83	317.61	84.17	0.26
Main	1	78.9	25-yr	5337.92	16.99	37.04	25.28	37.25	0.000494	3.71	1499.56	95.60	0.16
Main	1	78.9	50-yr	6247.27	16.99	40.03	25.83	40.24	0.000435	3.66	1785.65	95.70	0.15
Main	1	78.9	100-yr	7306.13	16.99	42.36	26.44	42.59	0.000444	3.82	2009.06	95.77	0.14
Main	1	78.9	1996	8836.33	16.99	47.18	27.27	47.40	0.000391	3.77	2470.61	95.93	0.13
Main	1	78.9	500-yr	10089.98	16.99	51.32	27.91	51.52	0.000335	3.66	2912.33	118.00	0.13
Main	1	78.9	PF 7	5089.95	16.99	36.54	25.12	36.74	0.000488	3.65	1451.34	95.58	0.16

HEC-RAS Plan: PDR (Continued)

River	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
Main	1	78.6		Bridge									
Main	1	78.5	1.1yr	899.86	16.99	23.98		24.09	0.000869	2.69	334.97	84.17	0.24
Main	1	78.5	25-yr	5337.92	16.99	36.97		37.17	0.000475	3.66	1517.32	95.59	0.16
Main	1	78.5	50-yr	6247.27	16.99	39.97		40.17	0.000421	3.62	1803.87	95.69	0.14
Main	1	78.5	100-yr	7306.13	16.99	42.28		42.50	0.000432	3.79	2025.61	95.77	0.14
Main	1	78.5	1996	8836.33	16.99	46.95		47.16	0.000387	3.77	2472.99	95.92	0.13
Main	1	78.5	500-yr	10089.98	16.99	50.94		51.15	0.000343	3.69	2892.09	118.00	0.13
Main	1	78.5	PF 7	5089.95	16.99	36.47		36.67	0.000469	3.60	1469.27	95.58	0.16
Main	1	78.1	1.1yr	899.86	16.96	23.95		24.05	0.000832	2.63	342.34	85.00	0.23
Main	1	78.1	25-yr	5337.92	16.96	36.95		37.15	0.000465	3.62	1533.97	96.00	0.15
Main	1	78.1	50-yr	6247.27	16.96	39.95		40.15	0.000413	3.59	1821.78	96.00	0.14
Main	1	78.1	100-yr	7306.13	16.96	42.27		42.48	0.000424	3.75	2044.09	96.00	0.14
Main	1	78.1	1996	8836.33	16.96	46.93		47.15	0.000382	3.74	2492.35	96.00	0.13
Main	1	78.1	500-yr	10089.98	16.96	50.93		51.13	0.000339	3.66	2911.39	118.00	0.13
Main	1	78.1	PF 7	5089.95	16.96	36.45		36.64	0.000459	3.56	1485.73	96.00	0.15
Main	1	78	1.1yr	899.86	16.29	24.01		24.02	0.000038	0.81	1110.80	155.00	0.05
Main	1	78	25-yr	5337.92	16.29	37.06		37.10	0.000044	1.70	3212.47	165.00	0.07
Main	1	78	50-yr	6247.27	16.29	40.05		40.10	0.000038	1.73	3706.46	165.00	0.06
Main	1	78	100-yr	7306.13	16.29	42.38		42.43	0.000038	1.83	4089.92	165.00	0.06
Main	1	78	1996	8836.33	16.29	47.04		47.10	0.000032	1.87	4859.85	165.00	0.06
Main	1	78	500-yr	10089.98	16.29	51.03		51.08	0.000028	1.89	5552.05	185.00	0.06
Main	1	78	PF 7	5089.95	16.29	36.55		36.60	0.000043	1.66	3129.04	165.00	0.07
Main	1	77	1.1yr	899.86	16.50	23.99		24.02	0.000126	1.43	781.12	197.50	0.10
Main	1	77	25-yr	5337.92	16.50	37.04		37.10	0.000079	2.25	3358.84	197.50	0.09
Main	1	77	50-yr	6247.27	16.50	40.04		40.10	0.000065	2.25	3950.74	197.50	0.08
Main	1	77	100-yr	7306.13	16.50	42.36		42.43	0.000064	2.36	4409.77	197.50	0.08
Main	1	77	1996	8836.33	16.50	47.03		47.09	0.000052	2.38	5331.88	197.50	0.08
Main	1	77	500-yr	10089.98	16.50	51.02		51.08	0.000044	2.38	6119.33	197.50	0.07
Main	1	77	PF 7	5089.95	16.50	36.53		36.59	0.000078	2.21	3259.00	197.50	0.09
Main	1	76	1.1yr	899.86	15.10	24.00		24.01	0.000039	0.82	1193.38	200.00	0.05
Main	1	76	25-yr	5337.92	15.10	37.05		37.09	0.000038	1.61	3804.26	200.00	0.06
Main	1	76	50-yr	6247.27	15.10	40.05		40.09	0.000033	1.63	4403.47	200.00	0.06
Main	1	76	100-yr	7306.13	15.10	42.37		42.42	0.000033	1.73	4868.45	200.00	0.06
Main	1	76	1996	8836.33	15.10	47.04		47.09	0.000027	1.77	5802.10	200.00	0.06
Main	1	76	500-yr	10089.98	15.10	51.03		51.07	0.000024	1.79	6599.42	200.00	0.05
Main	1	76	PF 7	5089.95	15.10	36.55		36.58	0.000038	1.57	3703.10	200.00	0.06
Main	1	75	1.1yr	899.86	15.04	24.00		24.01	0.000034	0.82	1403.56	255.00	0.05

HEC-RAS Plan: PDR (Continued)

River	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
Main	1	75	25-yr	5337.92	15.04	37.06		37.09	0.000034	1.55	4733.79	255.00	0.06
Main	1	75	50-yr	6247.27	15.04	40.05		40.08	0.000029	1.56	5497.98	255.00	0.06
Main	1	75	100-yr	7306.13	15.04	42.38		42.41	0.000029	1.66	6091.09	255.00	0.06
Main	1	75	1996	8836.33	15.04	47.05		47.08	0.000024	1.68	7281.72	255.00	0.05
Main	1	75	500-yr	10089.98	15.04	51.04		51.07	0.000021	1.70	8298.44	255.00	0.05
Main	1	75	PF 7	5089.95	15.04	36.55		36.58	0.000033	1.51	4604.74	255.00	0.06
Freshet	1	65	1.1yr	1550.14	31.47	42.51	34.18	42.54	0.000069	1.33	1171.26	127.19	0.08
Freshet	1	65	25-yr	7662.08	31.47	45.97	37.76	46.27	0.000540	4.54	1938.91	330.37	0.22
Freshet	1	65	50-yr	9352.73	31.47	46.44	38.48	46.84	0.000702	5.30	2106.58	385.76	0.25
Freshet	1	65	100-yr	11593.87	31.47	46.99	39.38	47.52	0.000885	6.11	2320.12	385.98	0.29
Freshet	1	65	1996	14463.67	31.47	48.10	40.45	48.69	0.000937	6.61	2748.23	386.43	0.30
Freshet	1	65	500-yr	17910.02	31.47	52.24	41.62	52.56	0.000423	5.21	4349.50	387.00	0.21
Freshet	1	65	PF 7	7210.05	31.47	45.82	37.56	46.10	0.000504	4.35	1888.78	330.17	0.21
Freshet	1	64.5		Inl Struct									
Freshet	1	64.45	1.1yr	1550.14	28.10	31.67	30.38	31.98	0.003236	4.45	348.15	113.37	0.45
Freshet	1	64.45	25-yr	7662.08	28.10	37.96	33.82	38.75	0.002146	7.14	1073.11	117.12	0.42
Freshet	1	64.45	50-yr	9352.73	28.10	40.72	34.56	41.41	0.001404	6.69	1398.16	118.76	0.34
Freshet	1	64.45	100-yr	11593.87	28.10	43.13	35.48	43.87	0.001199	6.87	1693.47	126.27	0.32
Freshet	1	64.45	1996	14463.67	28.10	47.92	36.57	48.36	0.000577	5.66	3118.04	386.16	0.23
Freshet	1	64.45	500-yr	17910.02	28.10	52.17	37.78	52.44	0.000312	4.69	4762.02	387.10	0.17
Freshet	1	64.45	PF 7	7210.05	28.10	37.49	33.61	38.26	0.002244	7.08	1017.66	116.84	0.42
Freshet	1	64.4		Bridge									
Freshet	1	64	1.1yr	1550.14	28.10	31.58		31.91	0.003558	4.58	338.17	113.31	0.47
Freshet	1	64	25-yr	7662.08	28.10	37.91		38.71	0.002186	7.18	1066.79	117.09	0.42
Freshet	1	64	50-yr	9352.73	28.10	40.68		41.38	0.001416	6.71	1394.29	118.74	0.34
Freshet	1	64	100-yr	11593.87	28.10	43.11		43.84	0.001206	6.88	1689.96	126.25	0.32
Freshet	1	64	1996	14463.67	28.10	47.90		48.35	0.000579	5.67	3111.72	386.15	0.23
Freshet	1	64	500-yr	17910.02	28.10	52.11		52.39	0.000316	4.71	4741.75	387.10	0.18
Freshet	1	64	PF 7	7210.05	28.10	37.43		38.22	0.002291	7.13	1011.00	116.80	0.43
Freshet	1	63	1.1yr	1550.14	25.54	30.49	30.49	31.63	0.018034	8.58	180.74	79.72	1.00
Freshet	1	63	25-yr	7662.08	25.54	36.53		38.49	0.006559	11.24	681.98	86.17	0.70
Freshet	1	63	50-yr	9352.73	25.54	39.80		41.25	0.003358	9.64	969.77	89.66	0.52
Freshet	1	63	100-yr	11593.87	25.54	42.25		43.72	0.002788	9.72	1193.36	98.41	0.48
Freshet	1	63	1996	14463.67	25.54	47.32		48.28	0.001391	8.09	2385.71	369.69	0.34
Freshet	1	63	500-yr	17910.02	25.54	51.76		52.35	0.000763	6.81	4033.52	372.00	0.26
Freshet	1	63	PF 7	7210.05	25.54	35.99		37.99	0.007197	11.34	636.03	85.60	0.73

HEC-RAS Plan: PDR (Continued)

River	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
Freshet	1	62.5	1.1yr	1550.14	22.56	25.85	26.84	29.18	0.065816	14.63	105.92	54.86	1.86
Freshet	1	62.5	25-yr	7662.08	22.56	36.32		38.05	0.004206	10.58	724.22	63.33	0.55
Freshet	1	62.5	50-yr	9352.73	22.56	39.41		41.00	0.003107	10.12	924.10	65.84	0.48
Freshet	1	62.5	100-yr	11593.87	22.56	41.67		43.47	0.003112	10.79	1074.73	67.67	0.48
Freshet	1	62.5	1996	14463.67	22.56	46.44		48.08	0.002284	10.28	1406.93	71.53	0.41
Freshet	1	62.5	500-yr	17910.02	22.56	50.42		52.15	0.002086	10.55	1697.66	74.00	0.39
Freshet	1	62.5	PF 7	7210.05	22.56	35.83		37.51	0.004224	10.40	693.54	62.94	0.55
Freshet	1	62	1.1yr	1550.14	19.96	22.41	24.04	27.35	0.088743	17.83	86.95	41.47	2.17
Freshet	1	62	25-yr	7662.08	19.96	36.72		37.79	0.002122	8.29	924.53	60.00	0.37
Freshet	1	62	50-yr	9352.73	19.96	39.69		40.81	0.001914	8.48	1102.57	60.00	0.35
Freshet	1	62	100-yr	11593.87	19.96	41.92		43.29	0.002132	9.38	1236.44	60.00	0.36
Freshet	1	62	1996	14463.67	19.96	46.55		47.97	0.001899	9.55	1514.34	60.00	0.34
Freshet	1	62	500-yr	17910.02	19.96	50.44		52.07	0.001951	10.24	1753.65	65.00	0.33
Freshet	1	62	PF 7	7210.05	19.96	36.24		37.24	0.002060	8.05	895.42	60.00	0.37
Freshet	1	61	1.1yr	1550.14	15.96	23.98	21.80	24.41	0.002327	5.25	295.13	60.00	0.42
Freshet	1	61	25-yr	7662.08	15.96	36.89		37.68	0.000943	7.16	1069.44	60.00	0.30
Freshet	1	61	50-yr	9352.73	15.96	39.84		40.71	0.000878	7.50	1246.52	60.00	0.29
Freshet	1	61	100-yr	11593.87	15.96	42.09		43.18	0.000987	8.39	1381.45	60.00	0.31
Freshet	1	61	1996	14463.67	15.96	46.70		47.88	0.000887	8.72	1657.98	60.00	0.29
Freshet	1	61	500-yr	17910.02	15.96	50.59		51.98	0.000920	9.47	1891.57	60.00	0.30
Freshet	1	61	PF 7	7210.05	15.96	36.40		37.14	0.000910	6.93	1039.99	60.00	0.29
Freshet	1	60	1.1yr	1550.14	12.83	24.16		24.26	0.000212	2.50	618.87	61.00	0.14
Freshet	1	60	25-yr	7662.08	12.83	37.06		37.52	0.000403	5.45	1405.74	61.00	0.20
Freshet	1	60	50-yr	9352.73	12.83	40.01		40.55	0.000418	5.90	1585.72	61.00	0.20
Freshet	1	60	100-yr	11593.87	12.83	42.29		42.99	0.000499	6.72	1724.78	61.00	0.22
Freshet	1	60	1996	14463.67	12.83	46.89		47.70	0.000498	7.21	2005.30	61.00	0.22
Freshet	1	60	500-yr	17910.02	12.83	50.80		51.79	0.000544	7.98	2251.26	66.00	0.23
Freshet	1	60	PF 7	7210.05	12.83	36.56		36.99	0.000381	5.24	1375.29	61.00	0.19
Freshet	1	59	1.1yr	1550.14	12.98	24.15		24.25	0.000209	2.50	619.28	60.00	0.14
Freshet	1	59	25-yr	7662.08	12.98	37.03		37.50	0.000412	5.50	1392.09	60.00	0.20
Freshet	1	59	50-yr	9352.73	12.98	39.98		40.53	0.000428	5.96	1568.89	60.00	0.21
Freshet	1	59	100-yr	11593.87	12.98	42.25		42.97	0.000513	6.80	1705.14	60.00	0.22
Freshet	1	59	1996	14463.67	12.98	46.84		47.67	0.000513	7.30	1980.81	60.00	0.22
Freshet	1	59	500-yr	17910.02	12.98	50.74		51.76	0.000568	8.09	2214.79	60.00	0.23
Freshet	1	59	PF 7	7210.05	12.98	36.53		36.97	0.000390	5.29	1362.25	60.00	0.20
Freshet	1	58	1.1yr	1550.14	12.88	24.14		24.24	0.000210	2.51	617.62	60.00	0.14
Freshet	1	58	25-yr	7662.08	12.88	37.01		37.49	0.000413	5.51	1389.87	60.00	0.20
Freshet	1	58	50-yr	9352.73	12.88	39.96		40.51	0.000430	5.97	1566.63	60.00	0.21

HEC-RAS Plan: PDR (Continued)

River	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
Freshet	1	58	100-yr	11593.87	12.88	42.23		42.95	0.000515	6.81	1702.63	60.00	0.23
Freshet	1	58	1996	14463.67	12.88	46.82		47.65	0.000515	7.31	1978.31	60.00	0.22
Freshet	1	58	500-yr	17910.02	12.88	50.72		51.74	0.000565	8.09	2219.28	65.00	0.23
Freshet	1	58	PF 7	7210.05	12.88	36.52		36.95	0.000391	5.30	1360.10	60.00	0.20
Freshet	1	57	1.1yr	1550.14	13.57	24.13		24.23	0.000223	2.56	606.22	60.00	0.14
Freshet	1	57	25-yr	7662.08	13.57	36.99		37.47	0.000424	5.56	1377.82	60.00	0.20
Freshet	1	57	50-yr	9352.73	13.57	39.94		40.50	0.000439	6.02	1554.53	60.00	0.21
Freshet	1	57	100-yr	11593.87	13.57	42.20		42.93	0.000526	6.86	1690.23	60.00	0.23
Freshet	1	57	1996	14463.67	13.57	46.79		47.63	0.000524	7.36	1965.91	60.00	0.23
Freshet	1	57	500-yr	17910.02	13.57	50.69		51.72	0.000574	8.14	2209.37	67.00	0.24
Freshet	1	57	PF 7	7210.05	13.57	36.50		36.94	0.000401	5.35	1348.12	60.00	0.20
Freshet	1	56	1.1yr	1550.14	13.55	24.13		24.23	0.000227	2.57	603.21	60.00	0.14
Freshet	1	56	25-yr	7662.08	13.55	36.98		37.46	0.000428	5.57	1374.41	60.00	0.21
Freshet	1	56	50-yr	9352.73	13.55	39.92		40.49	0.000443	6.03	1551.09	60.00	0.21
Freshet	1	56	100-yr	11593.87	13.55	42.18		42.92	0.000530	6.87	1686.63	60.00	0.23
Freshet	1	56	1996	14463.67	13.55	46.78		47.62	0.000527	7.37	1962.32	60.00	0.23
Freshet	1	56	500-yr	17910.02	13.55	50.67		51.70	0.000578	8.15	2202.79	65.00	0.24
Freshet	1	56	PF 7	7210.05	13.55	36.48		36.93	0.000405	5.36	1344.75	60.00	0.20
Freshet	1	55	1.1yr	1550.14	14.73	24.08		24.21	0.000346	2.94	527.55	60.00	0.17
Freshet	1	55	25-yr	7662.08	14.73	36.89		37.43	0.000510	5.91	1296.30	60.00	0.22
Freshet	1	55	50-yr	9352.73	14.73	39.83		40.46	0.000516	6.35	1472.84	60.00	0.23
Freshet	1	55	100-yr	11593.87	14.73	42.07		42.88	0.000610	7.21	1607.26	60.00	0.25
Freshet	1	55	1996	14463.67	14.73	46.67		47.58	0.000594	7.68	1883.09	60.00	0.24
Freshet	1	55	500-yr	17910.02	14.73	50.55		51.66	0.000642	8.46	2122.36	65.00	0.25
Freshet	1	55	PF 7	7210.05	14.73	36.40		36.90	0.000484	5.69	1266.94	60.00	0.22
Freshet	1	54.5	1.1yr	1550.14	14.90	24.13		24.18	0.000212	1.88	825.76	132.90	0.13
Freshet	1	54.5	25-yr	7662.08	14.90	37.18		37.30	0.000121	2.92	2870.45	160.00	0.12
Freshet	1	54.5	50-yr	9352.73	14.90	40.17		40.31	0.000112	3.07	3349.09	160.00	0.11
Freshet	1	54.5	100-yr	11593.87	14.90	42.51		42.69	0.000124	3.44	3723.91	160.00	0.12
Freshet	1	54.5	1996	14463.67	14.90	47.17		47.37	0.000110	3.60	4469.77	160.00	0.12
Freshet	1	54.5	500-yr	17910.02	14.90	51.17		51.40	0.000112	3.92	5109.07	160.00	0.12
Freshet	1	54.5	PF 7	7210.05	14.90	36.67		36.79	0.000117	2.82	2788.65	160.00	0.11
Freshet	1	54	1.1yr	1550.14	14.92	24.09		24.17	0.000276	2.32	670.96	90.53	0.15
Freshet	1	54	25-yr	7662.08	14.92	37.02		37.28	0.000259	4.19	1964.69	101.00	0.16
Freshet	1	54	50-yr	9352.73	14.92	39.99		40.29	0.000249	4.47	2264.43	101.00	0.16
Freshet	1	54	100-yr	11593.87	14.92	42.28		42.66	0.000284	5.04	2495.73	101.00	0.17
Freshet	1	54	1996	14463.67	14.92	46.91		47.34	0.000261	5.33	2963.44	101.00	0.17
Freshet	1	54	500-yr	17910.02	14.92	50.85		51.36	0.000270	5.85	3373.68	109.00	0.18

HEC-RAS Plan: PDR (Continued)

River	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
Freshet	1	54	PF 7	7210.05	14.92	36.52		36.77	0.000248	4.05	1914.22	101.00	0.16
Freshet	1	53	1.1yr	1550.14	12.14	24.10		24.15	0.000167	1.88	822.93	88.07	0.11
Freshet	1	53	25-yr	7662.08	12.14	37.06		37.25	0.000198	3.55	2603.69	164.27	0.13
Freshet	1	53	50-yr	9352.73	12.14	40.05		40.24	0.000184	3.72	3099.09	167.89	0.13
Freshet	1	53	100-yr	11593.87	12.14	42.36		42.60	0.000205	4.16	3490.90	170.70	0.14
Freshet	1	53	1996	14463.67	12.14	47.02		47.27	0.000180	4.33	4286.64	171.00	0.13
Freshet	1	53	500-yr	17910.02	12.14	50.99		51.28	0.000181	4.70	4965.54	171.00	0.14
Freshet	1	53	PF 7	7210.05	12.14	36.56		36.73	0.000191	3.43	2520.98	163.66	0.13
Freshet	1	52.9	1.1yr	1550.14	14.71	24.05	17.19	24.13	0.000268	2.28	680.19	76.63	0.13
Freshet	1	52.9	25-yr	7662.08	14.71	37.01	21.85	37.22	0.000253	3.94	2481.12	164.20	0.15
Freshet	1	52.9	50-yr	9352.73	14.71	40.00	22.84	40.22	0.000231	4.10	2977.02	167.83	0.15
Freshet	1	52.9	100-yr	11593.87	14.71	42.30	24.07	42.58	0.000253	4.56	3367.62	170.63	0.16
Freshet	1	52.9	1996	14463.67	14.71	46.96	25.59	47.25	0.000217	4.71	4164.48	171.00	0.15
Freshet	1	52.9	500-yr	17910.02	14.71	50.93	27.53	51.26	0.000217	5.09	4843.01	171.00	0.15
Freshet	1	52.9	PF 7	7210.05	14.71	36.51	21.57	36.71	0.000245	3.82	2398.76	163.59	0.15
Freshet	1	52.5		Bridge									
Freshet	1	52.1	1.1yr	1550.14	14.71	23.99		24.07	0.000257	2.23	693.93	77.55	0.13
Freshet	1	52.1	25-yr	7662.08	14.71	36.95		37.16	0.000245	3.88	2544.08	167.46	0.15
Freshet	1	52.1	50-yr	9352.73	14.71	39.93		40.15	0.000223	4.03	3047.28	169.85	0.14
Freshet	1	52.1	100-yr	11593.87	14.71	42.23		42.49	0.000245	4.49	3439.08	171.69	0.15
Freshet	1	52.1	1996	14463.67	14.71	46.89		47.16	0.000211	4.63	4240.16	172.00	0.15
Freshet	1	52.1	500-yr	17910.02	14.71	50.84		51.16	0.000211	5.01	4920.63	172.00	0.15
Freshet	1	52.1	PF 7	7210.05	14.71	36.45		36.64	0.000237	3.76	2460.63	167.06	0.14
Freshet	1	52	1.1yr	1550.14	14.36	23.98		24.05	0.000243	2.13	728.14	87.61	0.13
Freshet	1	52	25-yr	7662.08	14.36	36.95		37.14	0.000218	3.67	2564.19	167.46	0.14
Freshet	1	52	50-yr	9352.73	14.36	39.93		40.14	0.000198	3.82	3067.47	169.85	0.14
Freshet	1	52	100-yr	11593.87	14.36	42.23		42.48	0.000218	4.26	3459.31	171.69	0.15
Freshet	1	52	1996	14463.67	14.36	46.89		47.15	0.000188	4.41	4260.51	172.00	0.14
Freshet	1	52	500-yr	17910.02	14.36	50.84		51.14	0.000187	4.77	4941.08	172.00	0.14
Freshet	1	52	PF 7	7210.05	14.36	36.45		36.63	0.000211	3.55	2480.74	167.06	0.14
Freshet	1	51	1.1yr	1550.14	15.20	23.97		24.04	0.000276	2.09	742.99	111.45	0.14
Freshet	1	51	25-yr	7662.08	15.20	36.98		37.11	0.000154	3.03	2818.21	184.28	0.12
Freshet	1	51	50-yr	9352.73	15.20	39.96		40.11	0.000136	3.15	3372.52	186.79	0.12
Freshet	1	51	100-yr	11593.87	15.20	42.27		42.45	0.000146	3.50	3804.86	188.72	0.13
Freshet	1	51	1996	14463.67	15.20	46.93		47.12	0.000122	3.60	4689.66	190.00	0.12
Freshet	1	51	500-yr	17910.02	15.20	50.89		51.11	0.000119	3.89	5443.00	190.00	0.12
Freshet	1	51	PF 7	7210.05	15.20	36.48		36.60	0.000150	2.94	2725.98	183.86	0.12

HEC-RAS Plan: PDR (Continued)

River	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
Freshet	1	50	1.1yr	1550.14	14.27	23.98		24.02	0.000111	1.51	1044.43	152.51	0.09
Freshet	1	50	25-yr	7662.08	14.27	36.99		37.10	0.000103	2.71	3148.85	165.84	0.10
Freshet	1	50	50-yr	9352.73	14.27	39.97		40.10	0.000098	2.88	3646.57	167.66	0.10
Freshet	1	50	100-yr	11593.87	14.27	42.27		42.43	0.000110	3.25	4034.13	169.07	0.11
Freshet	1	50	1996	14463.67	14.27	46.93		47.11	0.000099	3.44	4825.17	170.00	0.11
Freshet	1	50	500-yr	17910.02	14.27	50.89		51.10	0.000101	3.77	5498.67	170.00	0.11
Freshet	1	50	PF 7	7210.05	14.27	36.49		36.59	0.000099	2.62	3065.81	165.54	0.10
Freshet	1	49	1.1yr	1550.14	13.95	23.98		24.01	0.000073	1.27	1248.29	169.69	0.08
Freshet	1	49	25-yr	7662.08	13.95	37.00		37.08	0.000077	2.41	3504.98	176.66	0.09
Freshet	1	49	50-yr	9352.73	13.95	39.98		40.08	0.000074	2.57	4034.72	178.13	0.09
Freshet	1	49	100-yr	11593.87	13.95	42.29		42.42	0.000084	2.91	4446.64	179.26	0.10
Freshet	1	49	1996	14463.67	13.95	46.95		47.09	0.000077	3.09	5284.76	180.00	0.10
Freshet	1	49	500-yr	17910.02	13.95	50.91		51.09	0.000079	3.40	5998.51	180.00	0.10
Freshet	1	49	PF 7	7210.05	13.95	36.50		36.58	0.000074	2.32	3416.37	176.42	0.09

Existing Dam + Bridges

HEC-RAS Plan: PDR River: Presumpscot Reach: 1

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	Frctn Loss (ft)	C & E Loss (ft)	Top Width (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Vel Chnl (ft/s)
1	2100	1.1yr	42.66	42.64		0.07	0.00	170.74		2450.00		1.16
1	2100	25-yr	47.64	47.34		0.74	0.01	254.72	22.10	12970.68	7.22	4.39
1	2100	50-yr	48.61	48.22		0.93	0.01	296.14	46.77	15631.14	22.09	5.02
1	2100	100-yr	49.72	49.22		1.14	0.02	330.54	97.83	18739.69	62.48	5.69
1	2100	1996	51.45	50.83		1.32	0.03	354.08	257.97	22869.94	172.10	6.38
1	2100	500-yr	55.24	54.67		1.00	0.03	360.00	765.66	26686.26	548.08	6.24
1	2099	1.1yr	42.59	42.57	28.15	0.00	0.00	151.50		2450.00		1.23
1	2099	25-yr	46.89	46.50	34.22	0.00	0.00	165.33	3.05	12994.61	2.35	4.99
1	2099	50-yr	47.66	47.14	35.24	0.00	0.00	167.55	5.80	15689.73	4.47	5.81
1	2099	100-yr	48.56	47.86	36.36	0.00	0.00	170.05	10.59	18881.26	8.16	6.71
1	2099	1996	50.10	49.18	37.76	0.00	0.00	174.61	23.51	23258.37	18.12	7.71
1	2099	500-yr	54.22	53.32	39.15	0.00	0.04	188.98	88.41	27843.47	68.12	7.61
1	2098.5 BR U	1.1yr	42.59	42.57	28.17	0.00	0.00	148.54		2450.00		1.23
1	2098.5 BR U	25-yr	46.89	46.49	34.23	0.00	0.00	150.00		13000.00		5.04
1	2098.5 BR U	50-yr	47.66	47.13	35.25	0.00	0.00	150.00		15700.00		5.87
1	2098.5 BR U	100-yr	48.55	47.84	36.37	0.00	0.00	150.00		18900.00		6.79
1	2098.5 BR U	1996	50.09	49.14	37.79	0.01	0.00	150.00		23300.00		7.82
1	2098.5 BR U	500-yr	54.17	52.89	39.17	0.02	0.00			28000.00		9.10
1	2098.5 BR D	1.1yr	42.59	42.57	28.17	0.00	0.00	148.54		2450.00		1.23
1	2098.5 BR D	25-yr	46.86	46.49	34.23	0.00	0.00	150.00		13000.00		5.04
1	2098.5 BR D	50-yr	47.66	47.12	35.25	0.01	0.00	150.00		15700.00		5.87
1	2098.5 BR D	100-yr	48.55	47.83	36.37	0.01	0.00	150.00		18900.00		6.79
1	2098.5 BR D	1996	50.09	49.13	37.79	0.01	0.01	150.00		23300.00		7.83
1	2098.5 BR D	500-yr	54.15	52.87	39.17	0.01	0.11			28000.00		9.10
1	2098	1.1yr	42.59	42.57		0.01	0.00	151.49		2450.00		1.23
1	2098	25-yr	46.88	46.49		0.08	0.04	165.29	3.02	12994.66	2.33	5.00
1	2098	50-yr	47.65	47.12		0.11	0.05	167.50	5.74	15689.83	4.42	5.81
1	2098	100-yr	48.54	47.84		0.14	0.07	169.97	10.46	18881.48	8.06	6.72
1	2098	1996	50.07	49.14		0.17	0.09	174.50	23.23	23258.87	17.90	7.72
1	2098	500-yr	54.03	53.12		0.14	0.08	188.29	84.88	27849.72	65.40	7.67
1	2097	1.1yr	42.56	42.57		0.00	0.00	146.39		2450.00		0.94
1	2097	25-yr	46.76	46.50		0.03	0.00	208.71	0.55	12988.77	10.69	4.07
1	2097	50-yr	47.49	47.14		0.04	0.01	227.30	1.20	15670.83	27.97	4.77
1	2097	100-yr	48.34	47.86		0.05	0.01	228.17	2.47	18830.92	66.60	5.55
1	2097	1996	49.82	49.18		0.06	0.01	229.75	6.41	23122.31	171.27	6.45
1	2097	500-yr	53.82	53.16		0.05	0.01	234.56	29.48	27402.76	567.77	6.56
1	1081	1.1yr	42.56	42.54		0.00	0.00	317.35		2450.00		1.19
1	1081	25-yr	46.57	46.33		0.01	0.02	327.24		13000.00		3.96
1	1081	50-yr	47.25	46.94		0.01	0.02	328.84		15700.00		4.50
1	1081	100-yr	48.03	47.63		0.02	0.02	334.68	0.27	18899.73		5.09
1	1081	1996	49.44	48.95		0.02	0.02	346.53	5.52	23294.48		5.61
1	1081	500-yr	53.50	53.10		0.01	0.01	417.63	87.42	27912.56	0.01	5.04
1	1036	1.1yr	42.56	42.54	34.39	0.00	0.00	313.78		2450.00		0.98
1	1036	25-yr	46.54	46.35	37.88	0.01	0.03	318.63		13000.00		3.51
1	1036	50-yr	47.22	46.97	38.45	0.01	0.05	319.42		15700.00		4.02
1	1036	100-yr	47.99	47.67	39.08	0.01	0.06	321.64		18900.00		4.58
1	1036	1996	49.39	48.99	39.87	0.01	0.09	325.96		23300.00		5.12
1	1036	500-yr	53.47	53.13	40.66	0.01	0.14	408.84	43.72	27956.00	0.28	4.72
1	1000 BR U	1.1yr	42.56	42.52	33.49	0.00	0.00	169.16		2447.53	2.47	1.49
1	1000 BR U	25-yr	46.50	45.97	38.32	0.03	0.03	174.70		12970.13	29.87	5.84
1	1000 BR U	50-yr	47.17	46.45	39.11	0.04	0.04	175.46		15660.42	39.58	6.81
1	1000 BR U	100-yr	47.92	46.96	39.98	0.05	0.06	176.27		18847.64	52.36	7.90
1	1000 BR U	1996	49.29	47.94	41.11	0.13	0.08	79.27		23231.95	68.05	9.34
1	1000 BR U	500-yr	53.32	51.56	42.25	0.22	0.09		0.02	27911.00	88.98	10.66
1	1000 BR D	1.1yr	42.55	42.52	30.75	0.00	0.00	169.17		2447.16	2.84	1.28
1	1000 BR D	25-yr	46.44	46.02	36.61	0.01	0.04	174.77		12967.66	32.34	5.19
1	1000 BR D	50-yr	47.08	46.51	37.43	0.01	0.06	175.56		15657.11	42.89	6.07
1	1000 BR D	100-yr	47.81	47.04	38.31	0.01	0.09	165.49		18853.57	46.43	7.06
1	1000 BR D	1996	49.08	47.98	39.44	0.02	0.14	79.29		23230.73	69.27	8.43
1	1000 BR D	500-yr	53.01	51.56	40.58	0.02	0.26		0.13	27908.70	91.17	9.67
1	970	1.1yr	42.55	42.53		0.00	0.00	222.10		2450.00		1.07
1	970	25-yr	46.39	46.12		0.01	0.00	238.12		13000.00		4.19
1	970	50-yr	47.01	46.65		0.02	0.00	240.48		15700.00		4.86
1	970	100-yr	47.71	47.22		0.02	0.00	243.07		18900.00		5.61

HEC-RAS Plan: PDR River: Presumpscot Reach: 1 (Continued)

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	Frctn Loss (ft)	C & E Loss (ft)	Top Width (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Vel Chnl (ft/s)
1	970	1996	48.93	48.29		0.02	0.00	247.83		23300.00		6.41
1	970	500-yr	52.73	52.16		0.02	0.00	285.99	0.22	27999.76	0.02	6.05
1	926	1.1yr	42.55	42.53		0.00	0.00	229.67		2450.00		1.16
1	926	25-yr	46.37	46.08		0.03	0.02	249.98		13000.00		4.38
1	926	50-yr	46.99	46.59		0.04	0.02	252.94		15700.00		5.07
1	926	100-yr	47.69	47.16		0.05	0.04	256.17		18900.00		5.83
1	926	1996	48.90	48.22		0.05	0.05	262.22		23300.00		6.63
1	926	500-yr	52.71	52.13		0.03	0.06	388.39	8.35	27942.25	49.40	6.10

Existing Dam-Bridges

Plan: PDR Presumpscot 1 RS: 1000 BR U Profile: 100-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	Chan	340.00	355.60	577.36	149.76	23.23	3.05	9.98	3.86
2	Chan	355.60	371.20	1187.50	198.08	15.84	6.28	12.70	6.00
3	Chan	371.20	386.80	1551.45	231.64	15.69	8.21	14.85	6.70
4	Chan	386.80	402.40	1348.14	213.24	15.75	7.13	13.67	6.32
5	Chan	402.40	418.00	856.39	174.15	18.75	4.53	11.16	4.92
6	Chan	418.00	433.60	3.96	4.55	6.58	0.02	3.21	0.87
7	Chan	433.60	449.20						
8	Chan	449.20	464.80						
9	Chan	464.80	480.40						
10	Chan	480.40	496.00						
11	Chan	496.00	511.60						
12	Chan	511.60	527.20						
13	Chan	527.20	542.80						
14	Chan	542.80	558.40						
15	Chan	558.40	574.00	884.29	163.52	25.29	4.68	11.90	5.41
16	Chan	574.00	589.60	2598.84	257.69	15.65	13.75	16.52	10.09
17	Chan	589.60	605.20	2930.57	276.96	15.65	15.51	17.75	10.58
18	Chan	605.20	620.80	3052.43	285.17	15.84	16.15	18.28	10.70
19	Chan	620.80	636.40	2265.10	238.98	15.93	11.98	15.32	9.48
20	Chan	636.40	652.00	1591.62	193.02	15.86	8.42	12.37	8.25
21	ROB	652.00	780.00	52.36	27.24	13.28	0.28	4.78	1.92

Plan: PDR Presumpscot 1 RS: 1000 BR U Profile: 500-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	210.00	340.00	0.02	0.08	2.01	0.00	0.08	0.29
2	Chan	340.00	355.60	1201.02	190.13	41.44	4.29	12.19	6.32
3	Chan	355.60	371.20	2118.69	239.34	31.44	7.57	15.34	8.85
4	Chan	371.20	386.80	2645.25	272.90	31.29	9.45	17.49	9.69
5	Chan	386.80	402.40	2351.73	254.50	31.35	8.40	16.31	9.24
6	Chan	402.40	418.00	1675.81	215.41	34.35	5.99	13.81	7.78
7	Chan	418.00	433.60	17.93	9.07	11.28	0.06	4.53	1.98
8	Chan	433.60	449.20						
9	Chan	449.20	464.80						
10	Chan	464.80	480.40						
11	Chan	480.40	496.00						
12	Chan	496.00	511.60	1.87	2.56	23.58	0.01	0.22	0.73
13	Chan	511.60	527.20	0.02	0.08	5.03	0.00	0.03	0.21
14	Chan	527.20	542.80						
15	Chan	542.80	558.40						
16	Chan	558.40	574.00	1412.04	168.13	39.59	5.04	12.09	8.40
17	Chan	574.00	589.60	3466.72	262.16	31.25	12.38	16.80	13.22
18	Chan	589.60	605.20	3883.88	280.66	31.25	13.87	17.99	13.84
19	Chan	605.20	620.80	4040.83	288.10	31.44	14.43	18.47	14.03
20	Chan	620.80	636.40	2998.12	241.14	31.53	10.71	15.46	12.43
21	Chan	636.40	652.00	2097.10	194.41	31.46	7.49	12.46	10.79
22	ROB	652.00	780.00	88.98	27.55	19.06	0.32	4.81	3.23

Evaluate Dam - Bridges

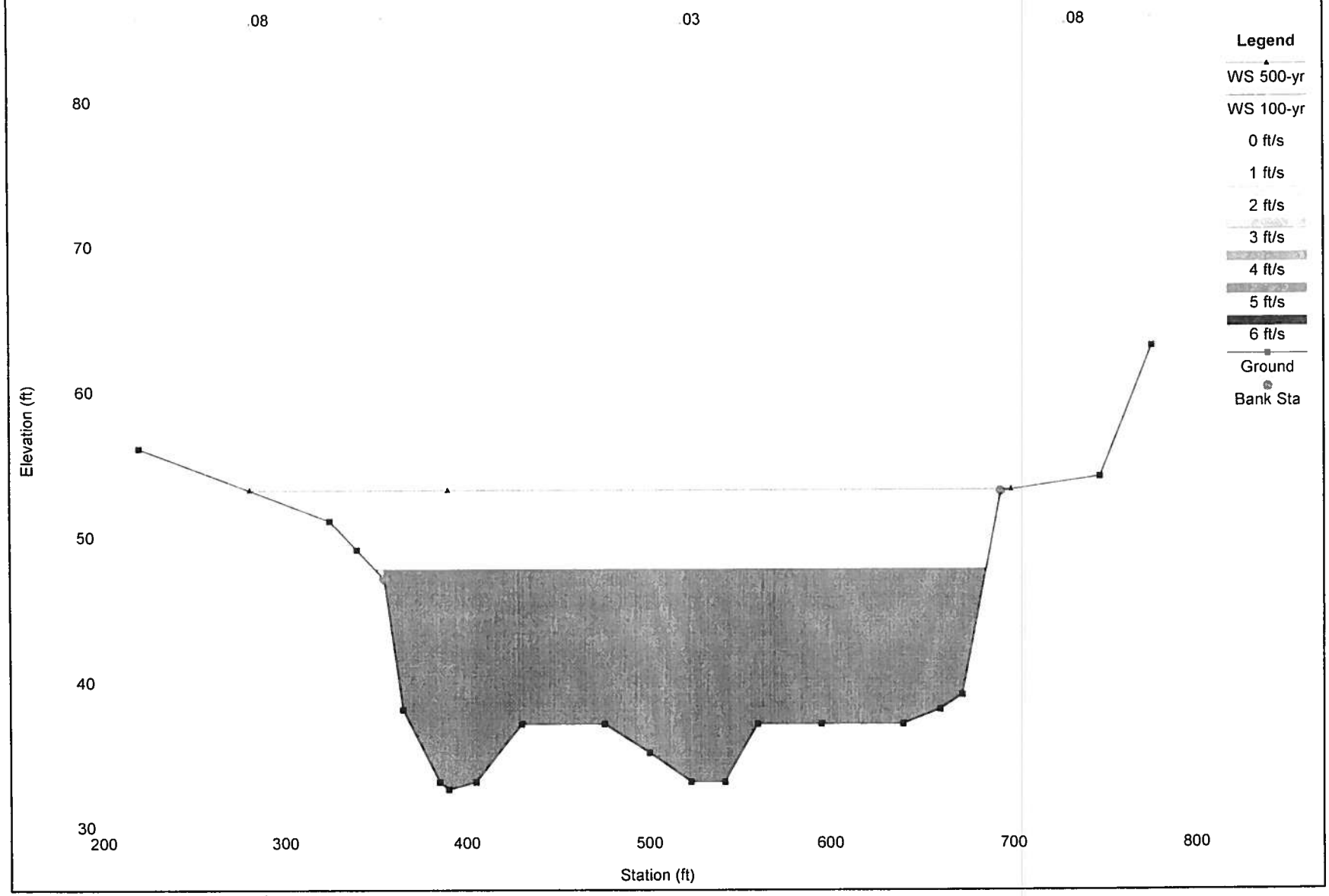
Plan: PDR Presumpscot 1 RS: 1000 BR D Profile: 100-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	Chan	340.00	355.60	621.66	152.39	23.25	3.29	10.14	4.08
2	Chan	355.60	371.20	1382.99	211.40	15.88	7.32	13.55	6.54
3	Chan	371.20	386.80	1643.68	232.97	15.63	8.70	14.93	7.06
4	Chan	386.80	402.40	1482.96	219.10	15.64	7.85	14.04	6.77
5	Chan	402.40	418.00	1060.82	198.89	20.30	5.61	12.75	5.33
6	Chan	418.00	433.60	4.28	4.66	6.66	0.02	3.25	0.92
7	Chan	433.60	449.20						
8	Chan	449.20	464.80						
9	Chan	464.80	480.40						
10	Chan	480.40	496.00						
11	Chan	496.00	511.60						
12	Chan	511.60	527.20						
13	Chan	527.20	542.80						
14	Chan	542.80	558.40						
15	Chan	558.40	574.00	692.29	169.98	26.00	3.66	12.34	4.07
16	Chan	574.00	589.60	2488.36	301.91	16.04	13.17	19.35	8.24
17	Chan	589.60	605.20	2892.43	326.95	15.62	15.30	20.96	8.85
18	Chan	605.20	620.80	2882.09	326.72	15.68	15.25	20.94	8.82
19	Chan	620.80	636.40	2354.80	291.49	15.96	12.46	18.68	8.08
20	Chan	636.40	652.00	1347.21	233.74	21.23	7.13	14.98	5.76
21	ROB	652.00	786.00	46.43	29.11	20.59	0.25	5.08	1.59

Plan: PDR Presumpscot 1 RS: 1000 BR D Profile: 500-yr

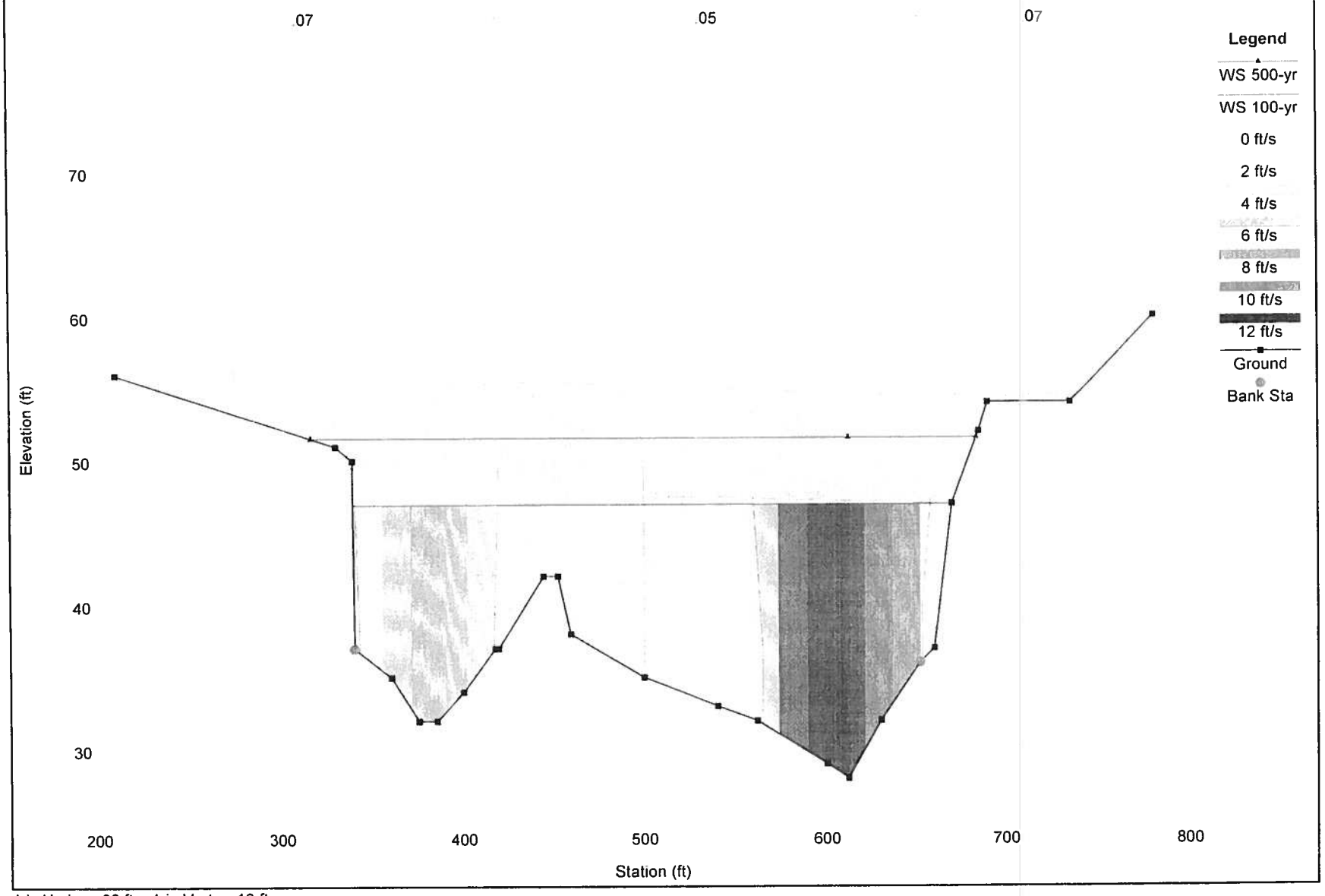
	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	215.00	340.00	0.13	0.81	21.81	0.00	0.07	0.16
2	Chan	340.00	355.60	1259.71	191.54	41.38	4.50	12.28	6.58
3	Chan	355.60	371.20	2378.09	251.40	31.48	8.49	16.12	9.46
4	Chan	371.20	386.80	2742.53	272.96	31.23	9.79	17.50	10.05
5	Chan	386.80	402.40	2513.48	259.10	31.24	8.98	16.61	9.70
6	Chan	402.40	418.00	2001.16	238.89	35.90	7.15	15.31	8.38
7	Chan	418.00	433.60	18.55	9.07	11.28	0.07	4.53	2.05
8	Chan	433.60	449.20						
9	Chan	449.20	464.80						
10	Chan	464.80	480.40						
11	Chan	480.40	496.00						
12	Chan	496.00	511.60						
13	Chan	511.60	527.20						
14	Chan	527.20	542.80						
15	Chan	542.80	558.40						
16	Chan	558.40	574.00	1088.50	173.48	40.21	3.89	12.47	6.27
17	Chan	574.00	589.60	3273.12	305.12	31.64	11.69	19.56	10.73
18	Chan	589.60	605.20	3751.61	329.39	31.22	13.40	21.11	11.39
19	Chan	605.20	620.80	3728.15	328.39	31.28	13.31	21.05	11.35
20	Chan	620.80	636.40	3053.83	292.39	31.56	10.91	18.74	10.44
21	Chan	636.40	652.00	2099.96	233.91	31.68	7.50	14.99	8.98
22	ROB	652.00	786.00	91.17	29.11	20.59	0.33	5.08	3.13

Existing Dam Bridge



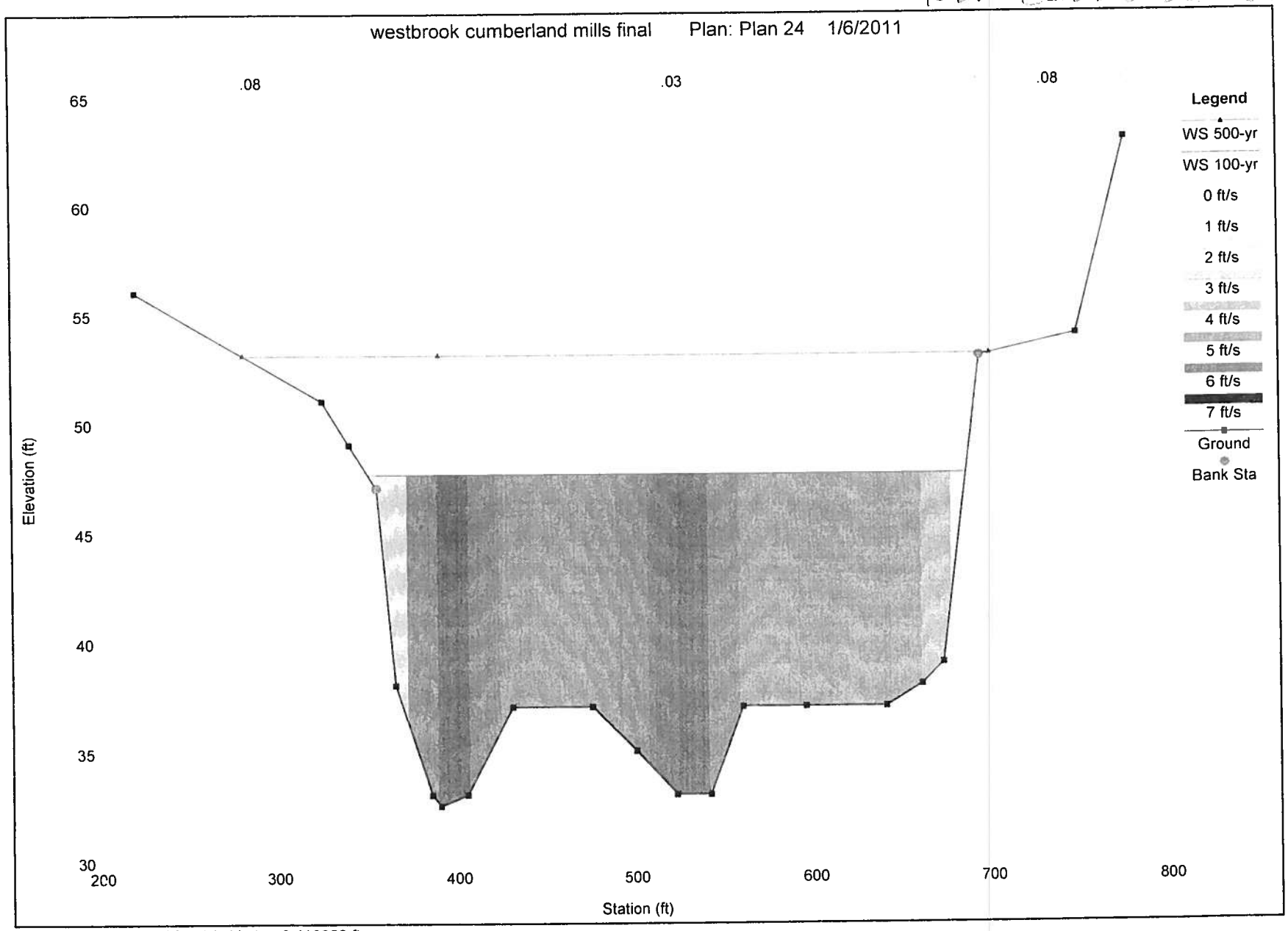
1 in Horiz. = 80 ft 1 in Vert. = 10 ft

Existing Dam + Bridge
Contracted section



1 in Horiz. = 80 ft 1 in Vert. = 10 ft

1081 Existing Dam + Bridges



1 in Horiz. = 78.87817 ft 1 in Vert. = 6.410256 ft

Existing Bridges + Dam

Plan: PDR Presumpscot 1 RS: 1081 Profile: 100-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	220.00	355.00	0.27	1.49	4.77	0.00	0.32	0.18
2	Chan	355.00	371.90	407.67	123.71	20.57	2.16	7.32	3.30
3	Chan	371.90	388.80	1252.78	226.53	17.32	6.63	13.40	5.53
4	Chan	388.80	405.70	1514.62	251.50	16.92	8.01	14.88	6.02
5	Chan	405.70	422.60	1225.81	222.52	17.11	6.49	13.17	5.51
6	Chan	422.60	439.50	897.54	184.04	16.99	4.75	10.89	4.88
7	Chan	439.50	456.40	865.42	179.66	16.90	4.58	10.63	4.82
8	Chan	456.40	473.30	865.42	179.66	16.90	4.58	10.63	4.82
9	Chan	473.30	490.20	939.08	188.90	16.95	4.97	11.18	4.97
10	Chan	490.20	507.10	1136.03	211.81	16.96	6.01	12.53	5.36
11	Chan	507.10	524.00	1362.87	236.27	16.96	7.21	13.98	5.77
12	Chan	524.00	540.90	1473.66	247.26	16.90	7.80	14.63	5.96
13	Chan	540.90	557.80	1190.53	219.52	17.29	6.30	12.99	5.42
14	Chan	557.80	574.70	867.90	180.20	16.95	4.59	10.66	4.82
15	Chan	574.70	591.60	865.42	179.66	16.90	4.58	10.63	4.82
16	Chan	591.60	608.50	865.42	179.66	16.90	4.58	10.63	4.82
17	Chan	608.50	625.40	865.42	179.66	16.90	4.58	10.63	4.82
18	Chan	625.40	642.30	864.26	179.53	16.90	4.57	10.62	4.81
19	Chan	642.30	659.20	793.07	170.58	16.92	4.20	10.09	4.65
20	Chan	659.20	676.10	599.55	147.07	17.77	3.17	8.70	4.08
21	Chan	676.10	693.00	47.28	26.09	10.63	0.25	2.95	1.81

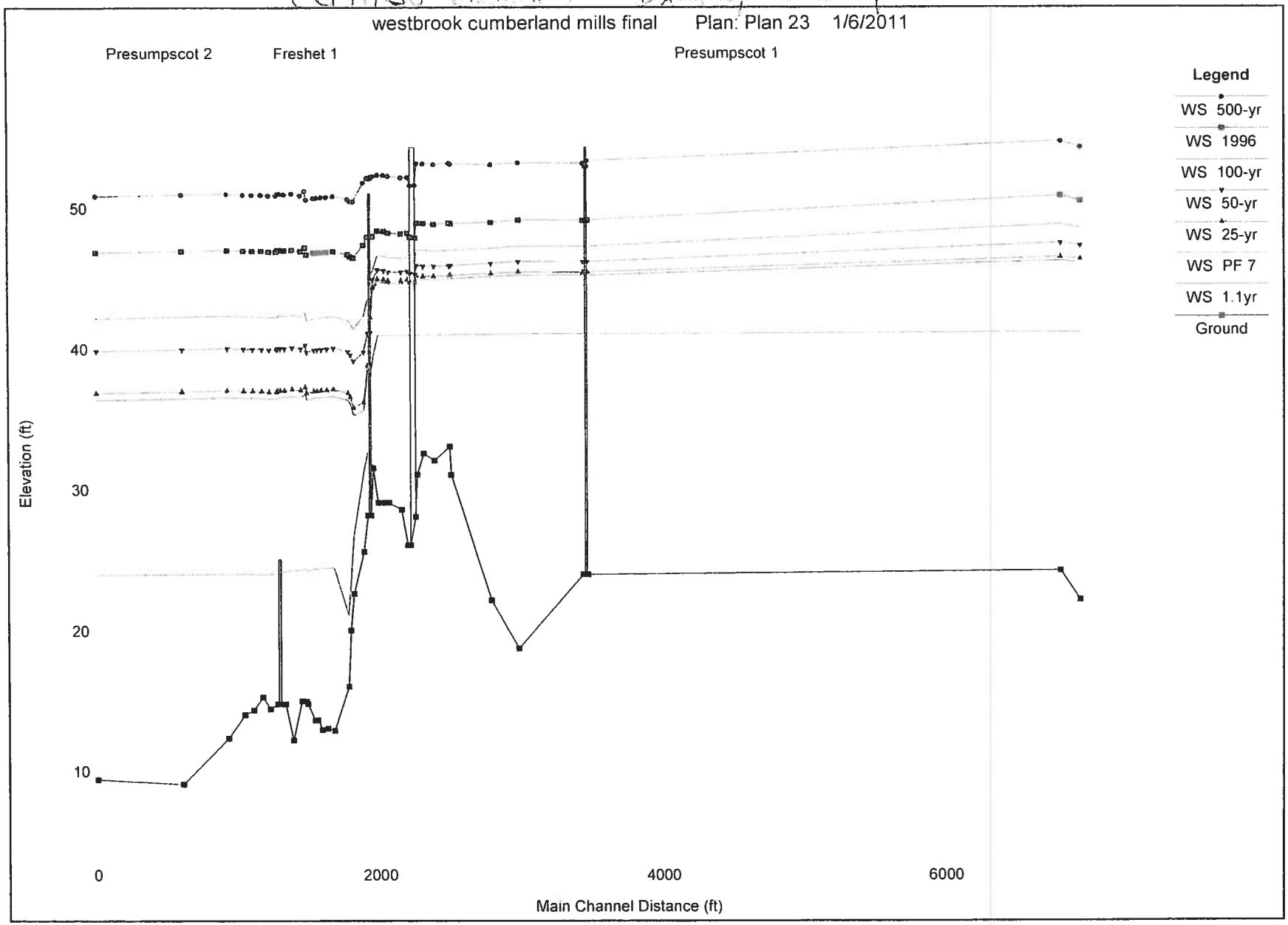
Plan: PDR Presumpscot 1 RS: 1081 Profile: 500-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	220.00	355.00	87.42	169.53	74.48	0.31	2.29	0.52
2	Chan	355.00	371.90	800.79	216.19	20.57	2.86	12.79	3.70
3	Chan	371.90	388.80	1717.22	319.01	17.32	6.13	18.88	5.38
4	Chan	388.80	405.70	1977.50	343.98	16.92	7.06	20.35	5.75
5	Chan	405.70	422.60	1694.92	315.00	17.11	6.05	18.64	5.38
6	Chan	422.60	439.50	1370.56	276.52	16.99	4.89	16.36	4.96
7	Chan	439.50	456.40	1339.52	272.14	16.90	4.78	16.10	4.92
8	Chan	456.40	473.30	1339.52	272.14	16.90	4.78	16.10	4.92
9	Chan	473.30	490.20	1413.48	281.38	16.95	5.05	16.65	5.02
10	Chan	490.20	507.10	1609.83	304.29	16.96	5.75	18.01	5.29
11	Chan	507.10	524.00	1831.08	328.75	16.96	6.54	19.45	5.57

Plan: PDR Presumpscot 1 RS: 1081 Profile: 500-yr (Continued)

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
12	Chan	524.00	540.90	1938.83	339.74	16.90	6.92	20.10	5.71
13	Chan	540.90	557.80	1657.14	312.00	17.29	5.92	18.46	5.31
14	Chan	557.80	574.70	1341.10	272.68	16.95	4.79	16.13	4.92
15	Chan	574.70	591.60	1339.52	272.14	16.90	4.78	16.10	4.92
16	Chan	591.60	608.50	1339.52	272.14	16.90	4.78	16.10	4.92
17	Chan	608.50	625.40	1339.52	272.14	16.90	4.78	16.10	4.92
18	Chan	625.40	642.30	1338.28	272.01	16.90	4.78	16.10	4.92
19	Chan	642.30	659.20	1264.78	263.06	16.92	4.52	15.57	4.81
20	Chan	659.20	676.10	1047.35	239.55	17.77	3.74	14.17	4.37
21	Chan	676.10	693.00	212.13	96.95	20.31	0.76	5.74	2.19
22	ROB	693.00	776.00	0.01	0.29	5.67	0.00	0.05	0.04

Existing Bridges Dam w/ Fishway



1 in Horiz. = 1000 ft 1 in Vert. = 10 ft

Existing Bridges w/Fishway

HEC-RAS Plan: PDR

River	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
Presumpscot	1	2101	1.1yr	2450.00	22.10	41.08	28.52	41.12	0.000042	1.64	1492.14	118.90	0.08
Presumpscot	1	2101	25-yr	13000.00	22.10	46.30	34.92	46.88	0.000376	6.14	2118.35	120.35	0.26
Presumpscot	1	2101	50-yr	15700.00	22.10	47.24	36.06	48.01	0.000460	7.04	2232.06	120.41	0.29
Presumpscot	1	2101	100-yr	18900.00	22.10	48.49	37.32	49.47	0.000537	7.94	2382.46	120.50	0.31
Presumpscot	1	2101	1996	23300.00	22.10	50.40	38.90	51.64	0.000601	8.93	2613.35	120.64	0.34
Presumpscot	1	2101	500-yr	28000.00	22.10	54.23	40.44	55.52	0.000506	9.13	3075.08	120.92	0.32
Presumpscot	1	2101	PF 7	12400.00	22.10	46.03	34.65	46.58	0.000359	5.95	2086.23	120.33	0.25
Presumpscot	1	2100	1.1yr	2450.00	24.18	41.09		41.11	0.000029	1.32	1860.56	162.55	0.07
Presumpscot	1	2100	25-yr	13000.00	24.18	46.43		46.76	0.000239	4.65	2835.93	220.88	0.21
Presumpscot	1	2100	50-yr	15700.00	24.18	47.43		47.86	0.000282	5.27	3073.83	258.88	0.23
Presumpscot	1	2100	100-yr	18900.00	24.18	48.75		49.28	0.000314	5.85	3456.25	316.91	0.24
Presumpscot	1	2100	1996	23300.00	24.18	50.77		51.40	0.000325	6.40	4146.84	353.76	0.25
Presumpscot	1	2100	500-yr	28000.00	24.18	54.68		55.26	0.000243	6.24	5550.74	360.00	0.23
Presumpscot	1	2100	PF 7	12400.00	24.18	46.15		46.47	0.000231	4.52	2775.35	215.42	0.20
Presumpscot	1	2099	1.1yr	2450.00	23.90	40.99	28.15	41.02	0.000030	1.39	1759.79	145.68	0.07
Presumpscot	1	2099	25-yr	13000.00	23.90	45.40	34.22	45.84	0.000318	5.35	2437.58	161.50	0.24
Presumpscot	1	2099	50-yr	15700.00	23.90	46.15	35.24	46.73	0.000396	6.16	2559.58	164.10	0.27
Presumpscot	1	2099	100-yr	18900.00	23.90	47.25	36.36	47.99	0.000462	6.95	2742.19	167.91	0.29
Presumpscot	1	2099	1996	23300.00	23.90	49.11	37.76	50.03	0.000501	7.74	3060.76	174.37	0.31
Presumpscot	1	2099	500-yr	28000.00	23.90	53.34	39.15	54.23	0.000372	7.60	3830.08	189.05	0.28
Presumpscot	1	2099	PF 7	12400.00	23.90	45.16	33.97	45.58	0.000304	5.18	2400.04	160.69	0.23
Presumpscot	1	2098.5		Bridge									
Presumpscot	1	2098	1.1yr	2450.00	23.90	40.99		41.02	0.000030	1.39	1759.65	145.68	0.07
Presumpscot	1	2098	25-yr	13000.00	23.90	45.36		45.83	0.000318	5.35	2435.44	161.46	0.24
Presumpscot	1	2098	50-yr	15700.00	23.90	46.13		46.72	0.000398	6.17	2556.59	164.04	0.27
Presumpscot	1	2098	100-yr	18900.00	23.90	47.22		47.97	0.000465	6.96	2738.13	167.83	0.29
Presumpscot	1	2098	1996	23300.00	23.90	49.07		50.01	0.000504	7.75	3055.26	174.26	0.31
Presumpscot	1	2098	500-yr	28000.00	23.90	53.14		54.05	0.000383	7.67	3792.08	188.35	0.28
Presumpscot	1	2098	PF 7	12400.00	23.90	45.15		45.57	0.000305	5.18	2398.04	160.65	0.23
Presumpscot	1	2097	1.1yr	2450.00	18.65	40.99		41.00	0.000012	1.03	2379.73	144.14	0.04
Presumpscot	1	2097	25-yr	13000.00	18.65	45.39		45.68	0.000157	4.29	3037.67	171.02	0.17
Presumpscot	1	2097	50-yr	15700.00	18.65	46.14		46.53	0.000203	5.00	3174.66	195.08	0.19
Presumpscot	1	2097	100-yr	18900.00	18.65	47.24		47.75	0.000248	5.71	3410.76	227.42	0.21
Presumpscot	1	2097	1996	23300.00	18.65	49.11		49.75	0.000285	6.47	3836.88	229.67	0.23
Presumpscot	1	2097	500-yr	28000.00	18.65	53.18		53.84	0.000238	6.56	4782.81	234.58	0.22
Presumpscot	1	2097	PF 7	12400.00	18.65	45.16		45.43	0.000148	4.14	2998.56	164.90	0.16
Presumpscot	1	2096	1.1yr	2450.00	22.07	40.98		41.00	0.000019	1.17	2090.17	150.37	0.06
Presumpscot	1	2096	25-yr	13000.00	22.07	45.29		45.54	0.000224	4.72	2774.41	186.73	0.20
Presumpscot	1	2096	50-yr	15700.00	22.07	46.01		46.48	0.000285	5.47	2915.61	205.61	0.22
Presumpscot	1	2096	100-yr	18900.00	22.07	47.09		47.68	0.000341	6.21	3150.74	228.21	0.25
Presumpscot	1	2096	1996	23300.00	22.07	48.93		49.68	0.000378	6.95	3573.58	229.42	0.27
Presumpscot	1	2096	500-yr	28000.00	22.07	53.05		53.78	0.000295	6.90	4520.86	230.00	0.24
Presumpscot	1	2096	PF 7	12400.00	22.07	45.07		45.39	0.000213	4.56	2732.57	180.76	0.19
Presumpscot	1	2095	1.1yr	2450.00	30.97	40.95		40.99	0.000066	1.51	1620.01	218.17	0.10
Presumpscot	1	2095	25-yr	13000.00	30.97	45.15		45.55	0.000425	5.03	2623.08	278.43	0.27
Presumpscot	1	2095	50-yr	15700.00	30.97	45.86		46.37	0.000503	5.71	2825.78	297.63	0.29
Presumpscot	1	2095	100-yr	18900.00	30.97	46.95		47.56	0.000540	6.27	3167.77	325.95	0.31
Presumpscot	1	2095	1996	23300.00	30.97	48.85		49.54	0.000512	6.69	3807.38	348.35	0.31
Presumpscot	1	2095	500-yr	28000.00	30.97	53.08		53.64	0.000306	6.11	5311.40	356.00	0.25
Presumpscot	1	2095	PF 7	12400.00	30.97	44.93		45.30	0.000414	4.90	2560.52	272.27	0.26
Presumpscot	1	1262	1.1yr	2450.00	33.00	40.94		40.99	0.000124	1.74	1409.44	250.49	0.13
Presumpscot	1	1262	25-yr	13000.00	33.00	45.13		45.54	0.000570	5.16	2570.38	372.82	0.30
Presumpscot	1	1262	50-yr	15700.00	33.00	45.85		46.36	0.000648	5.77	2861.93	437.96	0.32
Presumpscot	1	1262	100-yr	18900.00	33.00	46.97		47.55	0.000652	6.18	3367.31	455.37	0.33
Presumpscot	1	1262	1996	23300.00	33.00	48.90		49.51	0.000563	6.34	4257.03	462.64	0.31
Presumpscot	1	1262	500-yr	28000.00	33.00	53.17		53.60	0.000288	5.49	6327.37	519.43	0.24
Presumpscot	1	1262	PF 7	12400.00	33.00	44.90		45.29	0.000564	5.05	2486.89	351.95	0.30
Presumpscot	1	1156	1.1yr	2450.00	32.00	40.94		40.97	0.000064	1.48	1650.84	223.69	0.10
Presumpscot	1	1156	25-yr	13000.00	32.00	45.10		45.48	0.000452	4.92	2643.68	260.61	0.27
Presumpscot	1	1156	50-yr	15700.00	32.00	45.81		46.29	0.000533	5.55	2835.92	282.22	0.30
Presumpscot	1	1156	100-yr	18900.00	32.00	46.91		47.48	0.000568	6.06	3164.84	315.77	0.31
Presumpscot	1	1156	1996	23300.00	32.00	48.81		49.45	0.000527	6.40	3816.24	361.62	0.31
Presumpscot	1	1156	500-yr	28000.00	32.00	53.07		53.57	0.000295	5.74	5517.87	442.87	0.24
Presumpscot	1	1156	PF 7	12400.00	32.00	44.87		45.23	0.000439	4.80	2584.74	256.15	0.27
Presumpscot	1	1081	1.1yr	2450.00	32.50	40.93		40.97	0.000121	1.57	1556.77	313.15	0.12
Presumpscot	1	1081	25-yr	13000.00	32.50	45.11		45.43	0.000458	4.50	2889.08	324.07	0.27
Presumpscot	1	1081	50-yr	15700.00	32.50	45.83		46.22	0.000520	5.03	3123.28	325.95	0.29
Presumpscot	1	1081	100-yr	18900.00	32.50	46.95		47.40	0.000529	5.42	3489.29	328.87	0.29
Presumpscot	1	1081	1996	23300.00	32.50	48.87		49.37	0.000466	5.65	4137.71	345.85	0.28
Presumpscot	1	1081	500-yr	28000.00	32.50	53.12		53.51	0.000256	5.03	5719.35	419.23	0.22
Presumpscot	1	1081	PF 7	12400.00	32.50	44.88		45.16	0.000453	4.41	2814.08	323.46	0.26
Presumpscot	1	1036	1.1yr	2450.00	31.00	40.94	34.39	40.96	0.000049	1.22	2010.45	298.08	0.08

HEC-RAS Plan: PDR (Continued)

River	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
Presumpscot	1	1036	25-yr	13000.00	31.00	45.15	37.88	45.39	0.000266	3.91	3323.18	317.10	0.21
Presumpscot	1	1036	50-yr	15700.00	31.00	45.88	38.45	46.18	0.000336	4.42	3554.00	318.02	0.23
Presumpscot	1	1036	100-yr	18900.00	31.00	46.99	39.06	47.36	0.000358	4.83	3910.87	319.45	0.24
Presumpscot	1	1036	1996	23300.00	31.00	48.91	39.87	49.32	0.000344	5.14	4529.74	325.72	0.24
Presumpscot	1	1036	500-yr	28000.00	31.00	53.14	40.67	53.49	0.000209	4.71	6052.59	409.33	0.20
Presumpscot	1	1036	PF 7	12400.00	31.00	44.92	37.74	45.14	0.000280	3.82	3249.53	316.80	0.21
Presumpscot	1	1000		Bridge									
Presumpscot	1	970	1.1yr	2450.00	26.00	40.92		40.94	0.000038	1.27	1927.08	214.90	0.07
Presumpscot	1	970	25-yr	13000.00	26.00	44.86		45.19	0.000346	4.63	2808.49	232.50	0.23
Presumpscot	1	970	50-yr	15700.00	26.00	45.48		45.92	0.000435	5.31	2954.37	235.29	0.26
Presumpscot	1	970	100-yr	18900.00	26.00	46.50		47.04	0.000501	5.91	3195.28	239.82	0.29
Presumpscot	1	970	1996	23300.00	26.00	48.21		48.86	0.000532	6.45	3613.60	247.49	0.30
Presumpscot	1	970	500-yr	28000.00	26.00	52.16		52.72	0.000378	6.06	4626.47	285.81	0.26
Presumpscot	1	970	PF 7	12400.00	26.00	44.64		44.96	0.000332	4.49	2758.80	231.54	0.23
Presumpscot	1	926	1.1yr	2450.00	28.50	40.91		40.94	0.000053	1.40	1753.28	220.44	0.09
Presumpscot	1	926	25-yr	13000.00	28.50	44.80		45.17	0.000433	4.90	2653.27	242.66	0.26
Presumpscot	1	926	50-yr	15700.00	28.50	45.41		45.89	0.000538	5.60	2802.30	246.15	0.29
Presumpscot	1	926	100-yr	18900.00	28.50	46.42		47.01	0.000607	6.19	3053.34	251.91	0.31
Presumpscot	1	926	1996	23300.00	28.50	48.14		48.83	0.000623	6.66	3496.16	261.77	0.32
Presumpscot	1	926	500-yr	28000.00	28.50	52.13		52.71	0.000442	6.10	4689.87	387.72	0.28
Presumpscot	1	926	PF 7	12400.00	28.50	44.59		44.94	0.000417	4.77	2601.88	241.45	0.26
Presumpscot	1	835	1.1yr	2450.00	29.00	40.90		40.93	0.000078	1.48	1650.59	254.89	0.10
Presumpscot	1	835	25-yr	13000.00	29.00	44.78		45.11	0.000511	4.61	2818.89	323.00	0.28
Presumpscot	1	835	50-yr	15700.00	29.00	45.40		45.82	0.000636	5.19	3022.72	342.04	0.31
Presumpscot	1	835	100-yr	18900.00	29.00	46.44		46.92	0.000702	5.56	3396.64	374.09	0.33
Presumpscot	1	835	1996	23300.00	29.00	48.21		48.72	0.000601	5.71	4116.38	418.84	0.31
Presumpscot	1	835	500-yr	25000.00	29.00	52.24		52.61	0.000299	4.94	5818.48	446.38	0.23
Presumpscot	1	835	PF 7	12400.00	29.00	44.57		44.89	0.000501	4.51	2749.62	321.50	0.27
Presumpscot	1	804	1.1yr	2450.00	29.00	40.91		40.93	0.000045	1.09	2243.50	368.18	0.08
Presumpscot	1	804	25-yr	13000.00	29.00	44.87		45.06	0.000247	3.49	3727.97	381.04	0.20
Presumpscot	1	804	50-yr	15700.00	29.00	45.51		45.76	0.000294	3.95	3972.47	383.11	0.22
Presumpscot	1	804	100-yr	18900.00	29.00	46.56		46.85	0.000312	4.32	4392.83	419.79	0.23
Presumpscot	1	804	1996	23300.00	29.00	48.32		48.65	0.000293	4.60	5135.51	420.12	0.22
Presumpscot	1	804	500-yr	28000.00	29.00	52.30		52.58	0.000175	4.22	5918.53	513.59	0.18
Presumpscot	1	804	PF 7	12400.00	29.00	44.65		44.83	0.000241	3.40	3644.78	380.33	0.19
Presumpscot	1	95	1.1yr	2450.00	29.00	40.91		40.92	0.000016	0.91	3008.00	359.52	0.05
Presumpscot	1	95	25-yr	13000.00	29.00	44.90		45.04	0.000130	2.93	4443.21	359.97	0.15
Presumpscot	1	95	50-yr	15700.00	29.00	45.55		45.73	0.000161	3.36	4675.90	360.04	0.16
Presumpscot	1	95	100-yr	18900.00	29.00	46.60		46.81	0.000181	3.74	5052.46	360.16	0.18
Presumpscot	1	95	1996	23300.00	29.00	48.36		48.62	0.000188	4.10	5688.37	360.36	0.18
Presumpscot	1	95	500-yr	28000.00	29.00	52.32		52.56	0.000130	3.93	7291.89	479.57	0.16
Presumpscot	1	95	PF 7	12400.00	29.00	44.68		44.81	0.000126	2.84	4364.25	359.94	0.14
Presumpscot	2	74	1.1yr	2450.00	12.29	23.98		24.00	0.000051	1.12	2181.19	231.96	0.06
Presumpscot	2	74	25-yr	13000.00	12.29	36.99		37.07	0.000084	2.30	5713.69	346.62	0.09
Presumpscot	2	74	50-yr	15700.00	12.29	39.98		40.07	0.000075	2.39	6853.79	415.70	0.09
Presumpscot	2	74	100-yr	18900.00	12.29	42.30		42.40	0.000077	2.59	7877.48	459.13	0.09
Presumpscot	2	74	1996	23300.00	12.29	46.97		47.07	0.000062	2.51	10193.56	500.19	0.08
Presumpscot	2	74	500-yr	28000.00	12.29	50.95		51.06	0.000056	2.69	12186.01	500.25	0.08
Presumpscot	2	74	PF 7	12400.00	12.29	36.49		36.57	0.000084	2.25	5542.03	334.99	0.09
Presumpscot	2	73	1.1yr	2450.00	9.00	23.94		23.98	0.000061	1.59	1536.53	154.44	0.09
Presumpscot	2	73	25-yr	13000.00	9.00	36.91		37.04	0.000084	3.00	5351.21	451.21	0.12
Presumpscot	2	73	50-yr	15700.00	9.00	39.91		40.04	0.000073	3.06	6815.18	524.99	0.11
Presumpscot	2	73	100-yr	18900.00	9.00	42.22		42.37	0.000073	3.27	8094.86	581.88	0.11
Presumpscot	2	73	1996	23300.00	9.00	46.91		47.05	0.000056	3.22	11073.33	665.00	0.10
Presumpscot	2	73	500-yr	28000.00	9.00	50.91		51.04	0.000048	3.23	13730.38	665.00	0.10
Presumpscot	2	73	PF 7	12400.00	9.00	36.41		36.54	0.000084	2.95	5127.44	438.84	0.12
Presumpscot	2	72	1.1yr	2450.00	9.35	23.90	13.62	23.95	0.000055	1.77	1729.34	215.01	0.09
Presumpscot	2	72	25-yr	13000.00	9.35	36.80	19.42	36.98	0.000101	3.85	5680.08	397.51	0.13
Presumpscot	2	72	50-yr	15700.00	9.35	39.80	20.52	39.99	0.000093	3.99	6936.26	439.95	0.13
Presumpscot	2	72	100-yr	18900.00	9.35	42.10	21.69	42.31	0.000098	4.30	7985.56	472.49	0.14
Presumpscot	2	72	1996	23300.00	9.35	46.80	23.13	47.00	0.000081	4.30	10352.31	522.00	0.13
Presumpscot	2	72	500-yr	28000.00	9.35	50.80	24.57	51.00	0.000072	4.37	12440.31	522.00	0.12
Presumpscot	2	72	PF 7	12400.00	9.35	36.30	19.19	36.48	0.000100	3.77	5483.10	390.43	0.13
Main	1	86	1.1yr	1.45	24.30	40.92	24.54	40.92	0.000000	0.00	1500.05	143.00	0.00
Main	1	86	25-yr	3583.43	24.30	44.95	30.65	45.02	0.000125	2.39	2075.65	143.00	0.10
Main	1	86	50-yr	4513.87	24.30	45.60	31.54	45.70	0.000177	2.88	2169.15	143.00	0.11
Main	1	86	100-yr	5325.00	24.30	46.66	32.26	46.78	0.000205	3.18	2320.85	143.00	0.12
Main	1	86	1996	6645.07	24.30	48.36	35.56	48.62	0.000408	4.66	2563.90	143.00	0.17
Main	1	86	500-yr	10083.86	24.30	52.33	36.36	52.55	0.000317	4.44	3130.80	143.00	0.15
Main	1	86	PF 7	3293.86	24.30	44.73	30.36	44.79	0.000111	2.23	2044.43	143.00	0.09
Main	1	85.5		Inl Struct									

HEC-RAS Plan: PDR (Continued)

River	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
Main	1	85	1.1yr	1.45	22.36	24.01		24.01	0.000012	0.11	13.02	15.83	0.02
Main	1	85	25-yr	3583.43	22.36	37.22		37.36	0.000436	3.55	1448.16	143.00	0.18
Main	1	85	50-yr	4513.87	22.36	40.23		40.36	0.000319	3.43	1878.32	143.00	0.16
Main	1	85	100-yr	5325.00	22.36	42.61		42.74	0.000270	3.41	2219.66	143.00	0.14
Main	1	85	1996	8645.07	22.36	47.79		47.97	0.000304	4.11	2959.82	143.00	0.15
Main	1	85	500-yr	10083.86	22.36	52.16		52.33	0.000236	3.93	3585.30	143.00	0.13
Main	1	85	PF 7	3293.86	22.36	36.70		36.83	0.000431	3.44	1373.92	143.00	0.18
Main	1	84	1.1yr	1.45	22.35	24.01		24.01	0.000001	0.03	44.17	53.03	0.01
Main	1	84	25-yr	3583.43	22.35	37.23		37.33	0.000233	2.49	1437.39	116.00	0.12
Main	1	84	50-yr	4513.87	22.35	40.23		40.33	0.000189	2.53	1785.64	116.00	0.11
Main	1	84	100-yr	5325.00	22.35	42.62		42.72	0.000170	2.58	2062.17	116.00	0.11
Main	1	84	1996	8645.07	22.35	47.79		47.95	0.000208	3.25	2661.93	116.00	0.12
Main	1	84	500-yr	10083.86	22.35	52.16		52.31	0.000170	3.18	3168.88	116.00	0.11
Main	1	84	PF 7	3293.86	22.35	36.71		36.80	0.000225	2.39	1377.21	116.00	0.12
Main	1	83	1.1yr	1.45	21.54	24.01	21.77	24.01	0.000000	0.02	73.29	54.84	0.00
Main	1	83	25-yr	3583.43	21.54	37.24	27.12	37.32	0.000175	2.28	1574.72	120.00	0.11
Main	1	83	50-yr	4513.87	21.54	40.24	27.64	40.32	0.000148	2.33	1934.97	120.00	0.10
Main	1	83	100-yr	5325.00	21.54	42.62	28.05	42.71	0.000135	2.40	2221.05	120.00	0.10
Main	1	83	1996	8645.07	21.54	47.80	29.55	47.94	0.000171	3.04	2841.86	120.00	0.11
Main	1	83	500-yr	10083.86	21.54	52.17	30.14	52.30	0.000141	3.00	3366.21	120.00	0.10
Main	1	83	PF 7	3293.86	21.54	36.72	26.96	36.79	0.000168	2.18	1512.41	120.00	0.11
Main	1	82.5		Bridge									
Main	1	82	1.1yr	1.45	21.54	24.01		24.01	0.000000	0.01	109.14	87.97	0.00
Main	1	82	25-yr	3583.43	21.54	37.23		37.31	0.000155	2.18	1643.50	120.00	0.10
Main	1	82	50-yr	4513.87	21.54	40.23		40.31	0.000134	2.25	2003.27	120.00	0.10
Main	1	82	100-yr	5325.00	21.54	42.59		42.68	0.000125	2.33	2286.68	120.00	0.09
Main	1	82	1996	8645.07	21.54	47.76		47.90	0.000160	2.97	2907.07	120.00	0.11
Main	1	82	500-yr	10083.86	21.54	52.14		52.27	0.000134	2.94	3432.36	120.00	0.10
Main	1	82	PF 7	3293.86	21.54	36.71		36.78	0.000147	2.08	1581.21	120.00	0.10
Main	1	81	1.1yr	1.45	21.85	24.01		24.01	0.000000	0.01	104.37	83.81	0.00
Main	1	81	25-yr	3583.43	21.85	37.19		37.30	0.000165	2.62	1465.40	110.00	0.12
Main	1	81	50-yr	4513.87	21.85	40.19		40.30	0.000139	2.72	1795.01	110.00	0.12
Main	1	81	100-yr	5325.00	21.85	42.55		42.67	0.000127	2.82	2054.53	110.00	0.11
Main	1	81	1996	8645.07	21.85	47.69		47.89	0.000158	3.61	2620.22	110.00	0.13
Main	1	81	500-yr	10083.86	21.85	52.07		52.26	0.000125	3.57	3171.42	135.00	0.12
Main	1	81	PF 7	3293.86	21.85	36.68		36.77	0.000157	2.50	1408.68	110.00	0.12
Main	1	80.9	1.1yr	1.45	22.41	24.01	22.49	24.01	0.000000	0.02	30.25	65.00	0.00
Main	1	80.9	25-yr	3583.43	22.41	37.13	27.06	37.28	0.000368	3.17	1195.96	90.00	0.15
Main	1	80.9	50-yr	4513.87	22.41	40.12	27.72	40.29	0.000345	3.28	1465.38	90.00	0.14
Main	1	80.9	100-yr	5325.00	22.41	42.48	28.26	42.65	0.000340	3.39	1677.40	90.00	0.14
Main	1	80.9	1996	8645.07	22.41	47.58	30.34	47.86	0.000489	4.34	2136.40	90.00	0.15
Main	1	80.9	500-yr	10083.86	22.41	51.98	31.13	52.24	0.000395	4.19	2639.53	130.00	0.15
Main	1	80.9	PF 7	3293.86	22.41	36.62	26.83	36.76	0.000344	3.03	1150.04	90.00	0.14
Main	1	80.6		Bridge									
Main	1	80.5	1.1yr	1.45	22.03	24.01		24.01	0.000000	0.01	99.02	78.00	0.00
Main	1	80.5	25-yr	3583.43	22.03	37.07		37.22	0.000353	3.12	1213.90	90.00	0.15
Main	1	80.5	50-yr	4513.87	22.03	40.07		40.23	0.000334	3.23	1483.32	90.00	0.14
Main	1	80.5	100-yr	5325.00	22.03	42.40		42.57	0.000331	3.35	1693.42	90.00	0.13
Main	1	80.5	1996	8645.07	22.03	47.20		47.49	0.000495	4.35	2125.43	90.00	0.16
Main	1	80.5	500-yr	10083.86	22.03	51.34		51.62	0.000422	4.27	2579.89	130.00	0.15
Main	1	80.5	PF 7	3293.86	22.03	36.57		36.70	0.000329	2.98	1168.37	90.00	0.14
Main	1	80.1	1.1yr	1.45	19.98	24.01		24.01	0.000000	0.01	178.75	78.86	0.00
Main	1	80.1	25-yr	3583.43	19.98	37.07		37.20	0.000289	2.90	1298.35	90.00	0.13
Main	1	80.1	50-yr	4513.87	19.98	40.06		40.20	0.000283	3.04	1567.71	90.00	0.13
Main	1	80.1	100-yr	5325.00	19.98	42.40		42.55	0.000286	3.17	1777.75	90.00	0.12
Main	1	80.1	1996	8645.07	19.98	47.19		47.45	0.000439	4.16	2209.37	90.00	0.15
Main	1	80.1	500-yr	10083.86	19.98	51.34		51.59	0.000382	4.10	2663.53	130.00	0.14
Main	1	80.1	PF 7	3293.86	19.98	36.57		36.68	0.000266	2.76	1252.87	90.00	0.13
Main	1	80	1.1yr	1.45	18.68	24.01		24.01	0.000000	0.00	309.94	79.76	0.00
Main	1	80	25-yr	3583.43	18.68	37.11		37.18	0.000095	2.10	1776.38	117.00	0.09
Main	1	80	50-yr	4513.87	18.68	40.11		40.18	0.000085	2.22	2126.90	117.00	0.09
Main	1	80	100-yr	5325.00	18.68	42.45		42.53	0.000081	2.33	2400.34	117.00	0.09
Main	1	80	1996	8645.07	18.68	47.27		47.42	0.000110	3.08	2965.29	117.00	0.11
Main	1	80	500-yr	10083.86	18.68	51.41		51.56	0.000093	3.10	3449.08	117.00	0.10
Main	1	80	PF 7	3293.86	18.68	36.60		36.66	0.000089	1.99	1716.81	117.00	0.09
Main	1	79	1.1yr	1.45	17.89	24.01		24.01	0.000000	0.00	505.81	114.00	0.00
Main	1	79	25-yr	3583.43	17.89	37.12		37.17	0.000059	1.77	2089.03	125.00	0.07
Main	1	79	50-yr	4513.87	17.89	40.12		40.17	0.000055	1.90	2463.60	125.00	0.07
Main	1	79	100-yr	5325.00	17.89	42.46		42.52	0.000054	2.02	2755.81	125.00	0.07
Main	1	79	1996	8645.07	17.89	47.29		47.40	0.000076	2.70	3360.20	125.00	0.09
Main	1	79	500-yr	10083.86	17.89	51.42		51.54	0.000066	2.74	3677.03	125.00	0.09
Main	1	79	PF 7	3293.86	17.89	36.61		36.65	0.000054	1.68	2025.29	125.00	0.07

HEC-RAS Plan PDR (Continued)

River	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
Main	1	78.9	1.1yr	1.45	16.99	24.01	17.06	24.01	0.000000	0.00	312.52	84.17	0.00
Main	1	78.9	25-yr	3583.43	16.99	37.07	24.12	37.16	0.000222	2.49	1501.98	95.60	0.11
Main	1	78.9	50-yr	4513.87	16.99	40.06	24.75	40.16	0.000227	2.64	1788.05	95.70	0.10
Main	1	78.9	100-yr	5325.00	16.99	42.39	25.27	42.51	0.000235	2.78	2011.34	95.77	0.10
Main	1	78.9	1996	8645.07	16.99	47.18	27.17	47.38	0.000374	3.69	2470.22	95.93	0.13
Main	1	78.9	500-yr	10083.86	16.99	51.32	27.91	51.52	0.000334	3.66	2912.30	118.00	0.13
Main	1	78.9	PF 7	3293.86	16.99	36.56	23.91	36.65	0.000203	2.36	1453.74	95.58	0.10
Main	1	78.6		Bridge									
Main	1	78.5	1.1yr	1.45	16.99	24.01		24.01	0.000000	0.00	337.01	84.17	0.00
Main	1	78.5	25-yr	3583.43	16.99	37.03		37.13	0.000212	2.45	1523.49	95.60	0.10
Main	1	78.5	50-yr	4513.87	16.99	40.02		40.13	0.000218	2.61	1809.31	95.69	0.10
Main	1	78.5	100-yr	5325.00	16.99	42.34		42.46	0.000228	2.75	2031.56	95.77	0.10
Main	1	78.5	1996	8645.07	16.99	46.96		47.16	0.000370	3.69	2473.55	95.92	0.13
Main	1	78.5	500-yr	10083.86	16.99	50.94		51.15	0.000343	3.69	2892.11	118.00	0.13
Main	1	78.5	PF 7	3293.86	16.99	36.53		36.61	0.000194	2.32	1475.53	95.58	0.10
Main	1	78.1	1.1yr	1.45	16.96	24.01		24.01	0.000000	0.00	347.35	85.00	0.00
Main	1	78.1	25-yr	3583.43	16.96	37.03		37.12	0.000207	2.42	1541.12	96.00	0.10
Main	1	78.1	50-yr	4513.87	16.96	40.01		40.12	0.000214	2.58	1827.98	96.00	0.10
Main	1	78.1	100-yr	5325.00	16.96	42.34		42.45	0.000224	2.72	2050.81	96.00	0.10
Main	1	78.1	1996	8645.07	16.96	46.94		47.14	0.000365	3.66	2492.97	96.00	0.12
Main	1	78.1	500-yr	10083.86	16.96	50.93		51.13	0.000339	3.66	2911.41	118.00	0.13
Main	1	78.1	PF 7	3293.86	16.96	36.53		36.61	0.000190	2.29	1493.02	96.00	0.10
Main	1	78	1.1yr	1.45	16.29	24.01		24.01	0.000000	0.00	1109.50	155.00	0.00
Main	1	78	25-yr	3583.43	16.29	37.07		37.09	0.000020	1.14	3214.83	165.00	0.04
Main	1	78	50-yr	4513.87	16.29	40.07		40.09	0.000020	1.25	3708.80	165.00	0.05
Main	1	78	100-yr	5325.00	16.29	42.39		42.42	0.000020	1.34	4092.66	165.00	0.05
Main	1	78	1996	8645.07	16.29	47.05		47.10	0.000031	1.83	4860.13	165.00	0.06
Main	1	78	500-yr	10083.86	16.29	51.03		51.08	0.000028	1.89	5552.06	185.00	0.06
Main	1	78	PF 7	3293.86	16.29	36.57		36.59	0.000018	1.07	3131.37	165.00	0.04
Main	1	77	1.1yr	1.45	16.50	24.01		24.01	0.000000	0.00	784.56	197.50	0.00
Main	1	77	25-yr	3583.43	16.50	37.07		37.09	0.000035	1.51	3363.95	197.50	0.06
Main	1	77	50-yr	4513.87	16.50	40.06		40.09	0.000034	1.62	3955.24	197.50	0.06
Main	1	77	100-yr	5325.00	16.50	42.39		42.42	0.000034	1.72	4414.69	197.50	0.06
Main	1	77	1996	8645.07	16.50	47.03		47.09	0.000050	2.33	5332.34	197.50	0.07
Main	1	77	500-yr	10083.86	16.50	51.02		51.08	0.000044	2.38	6119.34	197.50	0.07
Main	1	77	PF 7	3293.86	16.50	36.56		36.58	0.000033	1.43	3264.19	197.50	0.06
Main	1	76	1.1yr	1.45	15.10	24.01		24.01	0.000000	0.00	1194.66	200.00	0.00
Main	1	76	25-yr	3583.43	15.10	37.07		37.09	0.000017	1.08	3807.92	200.00	0.04
Main	1	76	50-yr	4513.87	15.10	40.07		40.09	0.000017	1.18	4406.80	200.00	0.04
Main	1	76	100-yr	5325.00	15.10	42.39		42.42	0.000017	1.26	4872.17	200.00	0.04
Main	1	76	1996	8645.07	15.10	47.04		47.09	0.000026	1.73	5802.46	200.00	0.06
Main	1	76	500-yr	10083.86	15.10	51.03		51.07	0.000024	1.78	6599.43	200.00	0.05
Main	1	76	PF 7	3293.86	15.10	36.57		36.58	0.000016	1.02	3706.79	200.00	0.04
Main	1	75	1.1yr	1.45	15.04	24.01		24.01	0.000000	0.00	1405.68	255.00	0.00
Main	1	75	25-yr	3583.43	15.04	37.07		37.09	0.000015	1.04	4737.98	255.00	0.04
Main	1	75	50-yr	4513.87	15.04	40.07		40.08	0.000015	1.13	5501.72	255.00	0.04
Main	1	75	100-yr	5325.00	15.04	42.40		42.41	0.000015	1.21	6095.21	255.00	0.04
Main	1	75	1996	8645.07	15.04	47.05		47.08	0.000023	1.65	7282.12	255.00	0.05
Main	1	75	500-yr	10083.86	15.04	51.04		51.07	0.000021	1.69	8298.45	255.00	0.05
Main	1	75	PF 7	3293.86	15.04	36.57		36.58	0.000014	0.98	4608.98	255.00	0.04
Freshet	1	65	1.1yr	2449.28	31.47	39.32	35.01	39.47	0.000616	3.12	784.66	119.39	0.21
Freshet	1	65	25-yr	9416.57	31.47	44.30	38.51	45.00	0.001428	6.74	1460.18	228.38	0.35
Freshet	1	65	50-yr	11086.13	31.47	44.85	39.18	45.70	0.001653	7.48	1585.29	229.04	0.38
Freshet	1	65	100-yr	13575.00	31.47	45.50	40.13	46.58	0.001996	8.51	1782.98	329.76	0.42
Freshet	1	65	1996	14654.92	31.47	47.97	40.52	48.80	0.001003	6.80	2700.62	386.38	0.31
Freshet	1	65	500-yr	17916.14	31.47	52.22	41.62	52.55	0.000426	5.22	4341.48	387.00	0.21
Freshet	1	65	PF 7	9006.14	31.47	44.13	38.32	44.79	0.001384	6.57	1419.74	228.16	0.34
Freshet	1	64.5		Inl Struct									
Freshet	1	64.45	1.1yr	2449.28	28.10	32.78	31.02	33.19	0.002966	5.17	474.06	114.03	0.45
Freshet	1	64.45	25-yr	9416.57	28.10	38.83	34.59	39.82	0.002441	8.01	1175.00	117.64	0.45
Freshet	1	64.45	50-yr	11086.13	28.10	41.11	35.28	42.03	0.001779	7.67	1445.62	119.00	0.39
Freshet	1	64.45	100-yr	13575.00	28.10	43.53	36.24	44.48	0.001503	7.82	1743.59	126.53	0.36
Freshet	1	64.45	1996	14654.92	28.10	47.95	36.64	48.40	0.000588	5.72	3128.89	366.18	0.23
Freshet	1	64.45	500-yr	17916.14	28.10	52.17	37.78	52.44	0.000312	4.69	4752.36	387.10	0.17
Freshet	1	64.45	PF 7	9006.14	28.10	38.55	34.41	39.52	0.002436	7.88	1142.59	117.47	0.45
Freshet	1	64.4		Bridge									
Freshet	1	64	1.1yr	2449.28	28.10	32.70		33.13	0.003155	5.27	465.05	113.98	0.46
Freshet	1	64	25-yr	9416.57	28.10	38.76		39.77	0.002489	8.06	1167.59	117.60	0.45
Freshet	1	64	50-yr	11086.13	28.10	41.07		41.99	0.001799	7.70	1440.48	118.98	0.39
Freshet	1	64	100-yr	13575.00	28.10	43.50		44.45	0.001515	7.84	1739.01	126.51	0.36

HEC-RAS Plan: PDR (Continued)

River	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
Freshet	1	64	1996	14654.92	28.10	47.93		48.39	0.000590	5.73	3122.40	386.17	0.23
Freshet	1	64	500-yr	17916.14	28.10	52.11		52.39	0.000316	4.71	4742.07	387.10	0.18
Freshet	1	64	PF 7	9006.14	28.10	38.49		39.47	0.002486	7.93	1135.19	117.44	0.45
Freshet	1	63	1.1yr	2449.28	25.54	31.30	31.30	32.84	0.016701	9.97	245.68	80.59	1.01
Freshet	1	63	25-yr	9416.57	25.54	36.15	35.76	39.42	0.011500	14.49	649.67	85.77	0.93
Freshet	1	63	50-yr	11086.13	25.54	39.75		41.80	0.004792	11.49	964.74	89.60	0.62
Freshet	1	63	100-yr	13575.00	25.54	42.27		44.28	0.003804	11.37	1195.47	98.45	0.56
Freshet	1	63	1996	14654.92	25.54	47.33		48.31	0.001423	6.19	2390.06	389.70	0.35
Freshet	1	63	500-yr	17916.14	25.54	51.76		52.35	0.000763	6.81	4033.75	372.00	0.26
Freshet	1	63	PF 7	9006.14	25.54	35.55	35.55	39.07	0.013584	15.06	598.00	85.13	1.00
Freshet	1	62.5	1.1yr	2449.28	22.56	26.71	27.89	30.67	0.050066	15.97	153.33	55.56	1.69
Freshet	1	62.5	25-yr	9416.57	22.56	35.76		38.56	0.007338	13.66	689.22	62.88	0.73
Freshet	1	62.5	50-yr	11086.13	22.56	39.09		41.43	0.004665	12.28	902.82	65.58	0.58
Freshet	1	62.5	100-yr	13575.00	22.56	41.34		43.92	0.004521	12.89	1052.77	67.40	0.57
Freshet	1	62.5	1996	14654.92	22.56	46.42		48.11	0.002351	10.43	1405.66	71.52	0.41
Freshet	1	62.5	500-yr	17916.14	22.56	50.42		52.15	0.002086	10.55	1697.62	74.00	0.39
Freshet	1	62.5	PF 7	9006.14	22.56	35.22	33.27	38.15	0.007774	13.74	655.46	62.45	0.75
Freshet	1	62	1.1yr	2449.28	19.96	23.31	25.04	29.16	0.074298	19.40	126.23	45.73	2.06
Freshet	1	62	25-yr	9416.57	19.96	36.53		38.18	0.003322	10.31	912.99	60.00	0.47
Freshet	1	62	50-yr	11086.13	19.96	39.53		41.13	0.002756	10.14	1093.00	60.00	0.42
Freshet	1	62	100-yr	13575.00	19.96	41.73		43.64	0.002996	11.08	1225.32	60.00	0.43
Freshet	1	62	1996	14654.92	19.96	46.54		47.99	0.001952	9.68	1513.50	60.00	0.34
Freshet	1	62	500-yr	17916.14	19.96	50.44		52.07	0.001952	10.25	1753.62	65.00	0.33
Freshet	1	62	PF 7	9006.14	19.96	36.04		37.65	0.003341	10.19	883.49	60.00	0.47
Freshet	1	61	1.1yr	2449.28	15.96	21.05	22.78	27.60	0.113394	20.53	119.31	60.00	2.57
Freshet	1	61	25-yr	9416.57	15.96	36.80		38.02	0.001446	8.85	1064.20	60.00	0.37
Freshet	1	61	50-yr	11086.13	15.96	39.75		40.99	0.001249	8.93	1241.27	60.00	0.35
Freshet	1	61	100-yr	13575.00	15.96	41.98		43.49	0.001373	9.87	1374.87	60.00	0.36
Freshet	1	61	1996	14654.92	15.96	46.69		47.90	0.000912	8.84	1657.41	60.00	0.30
Freshet	1	61	500-yr	17916.14	15.96	50.59		51.98	0.000920	9.47	1891.56	60.00	0.30
Freshet	1	61	PF 7	9006.14	15.96	36.31		37.49	0.001443	8.70	1034.75	60.00	0.37
Freshet	1	60	1.1yr	2449.28	12.83	24.40	17.69	24.64	0.000490	3.87	633.70	61.00	0.21
Freshet	1	60	25-yr	9416.57	12.83	37.07		37.77	0.000608	6.70	1405.35	61.00	0.25
Freshet	1	60	50-yr	11086.13	12.83	40.00		40.76	0.000587	6.99	1585.07	61.00	0.24
Freshet	1	60	100-yr	13575.00	12.83	42.27		43.23	0.000666	7.88	1723.20	61.00	0.26
Freshet	1	60	1996	14654.92	12.83	46.89		47.72	0.000511	7.31	2005.06	61.00	0.22
Freshet	1	60	500-yr	17916.14	12.83	50.80		51.79	0.000545	7.98	2251.25	66.00	0.23
Freshet	1	60	PF 7	9006.14	12.83	36.58		37.24	0.000594	6.54	1376.13	61.00	0.24
Freshet	1	59	1.1yr	2449.28	12.98	24.38		24.61	0.000486	3.87	633.01	60.00	0.21
Freshet	1	59	25-yr	9416.57	12.98	37.03		37.74	0.000623	6.77	1391.70	60.00	0.25
Freshet	1	59	50-yr	11086.13	12.98	39.95		40.73	0.000604	7.07	1567.39	60.00	0.24
Freshet	1	59	100-yr	13575.00	12.98	42.21		43.19	0.000707	7.97	1702.57	60.00	0.26
Freshet	1	59	1996	14654.92	12.98	46.84		47.59	0.000527	7.40	1980.49	60.00	0.23
Freshet	1	59	500-yr	17916.14	12.98	50.74		51.76	0.000569	8.09	2214.78	60.00	0.23
Freshet	1	59	PF 7	9006.14	12.98	36.53		37.21	0.000608	6.61	1362.09	60.00	0.24
Freshet	1	58	1.1yr	2449.28	12.88	24.36		24.59	0.000491	3.88	630.59	60.00	0.21
Freshet	1	58	25-yr	9416.57	12.88	37.00		37.71	0.000626	6.78	1388.88	60.00	0.25
Freshet	1	58	50-yr	11086.13	12.88	39.93		40.71	0.000606	7.09	1564.62	60.00	0.24
Freshet	1	58	100-yr	13575.00	12.88	42.17		43.16	0.000710	7.99	1699.50	60.00	0.26
Freshet	1	58	1996	14654.92	12.88	46.81		47.57	0.000529	7.41	1977.95	60.00	0.23
Freshet	1	58	500-yr	17916.14	12.88	50.72		51.74	0.000565	8.10	2219.26	65.00	0.24
Freshet	1	58	PF 7	9006.14	12.88	36.50		37.19	0.000611	6.63	1359.31	60.00	0.25
Freshet	1	57	1.1yr	2449.28	13.57	24.33		24.58	0.000522	3.96	618.31	60.00	0.22
Freshet	1	57	25-yr	9416.57	13.57	36.96		37.69	0.000643	6.84	1376.10	60.00	0.25
Freshet	1	57	50-yr	11086.13	13.57	39.89		40.69	0.000621	7.14	1551.91	60.00	0.25
Freshet	1	57	100-yr	13575.00	13.57	42.14		43.14	0.000726	8.05	1686.43	60.00	0.27
Freshet	1	57	1996	14654.92	13.57	46.79		47.65	0.000538	7.46	1965.51	60.00	0.23
Freshet	1	57	500-yr	17916.14	13.57	50.69		51.72	0.000574	8.14	2209.35	67.00	0.24
Freshet	1	57	PF 7	9006.14	13.57	36.47		37.17	0.000628	6.69	1346.58	60.00	0.25
Freshet	1	56	1.1yr	2449.28	13.55	24.32		24.56	0.000533	3.98	614.73	60.00	0.22
Freshet	1	56	25-yr	9416.57	13.55	36.94		37.67	0.000649	6.86	1372.28	60.00	0.25
Freshet	1	56	50-yr	11086.13	13.55	39.87		40.67	0.000626	7.16	1548.13	60.00	0.25
Freshet	1	56	100-yr	13575.00	13.55	42.11		43.12	0.000732	8.07	1682.45	60.00	0.27
Freshet	1	56	1996	14654.92	13.55	46.77		47.64	0.000542	7.47	1961.89	60.00	0.23
Freshet	1	56	500-yr	17916.14	13.55	50.67		51.70	0.000578	8.16	2202.77	65.00	0.24
Freshet	1	56	PF 7	9006.14	13.55	36.45		37.15	0.000635	6.71	1342.78	60.00	0.25
Freshet	1	55	1.1yr	2449.28	14.73	24.20		24.52	0.000828	4.58	534.76	60.00	0.27
Freshet	1	55	25-yr	9416.57	14.73	36.80		37.63	0.000779	7.29	1291.11	60.00	0.28
Freshet	1	55	50-yr	11086.13	14.73	39.74		40.63	0.000733	7.56	1467.38	60.00	0.27
Freshet	1	55	100-yr	13575.00	14.73	41.96		43.07	0.000848	8.48	1600.28	60.00	0.29
Freshet	1	55	1996	14654.92	14.73	46.56		47.60	0.000610	7.78	1882.47	60.00	0.24
Freshet	1	55	500-yr	17916.14	14.73	50.55		51.66	0.000642	8.47	2122.34	65.00	0.25
Freshet	1	55	PF 7	9006.14	14.73	36.31		37.11	0.000764	7.14	1261.81	60.00	0.27

HEC-RAS Plan: PDR (Continued)

River	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
Freshet	1	54.5	1.1yr	2449.28	14.90	24.33		24.46	0.000479	2.88	852.38	134.60	0.20
Freshet	1	54.5	25-yr	9416.57	14.90	37.24		37.43	0.000181	3.57	2881.05	160.00	0.14
Freshet	1	54.5	50-yr	11086.13	14.90	40.22		40.42	0.000157	3.64	3357.27	160.00	0.14
Freshet	1	54.5	100-yr	13575.00	14.90	42.57		42.81	0.000159	4.02	3732.60	160.00	0.14
Freshet	1	54.5	1996	14654.92	14.90	47.18		47.37	0.000113	3.65	4470.35	160.00	0.12
Freshet	1	54.5	500-yr	17916.14	14.90	51.17		51.40	0.000112	3.92	5109.08	160.00	0.12
Freshet	1	54.5	PF 7	9006.14	14.90	36.73		36.92	0.000181	3.51	2799.72	160.00	0.14
Freshet	1	54	1.1yr	2449.28	14.92	24.23		24.43	0.000649	3.61	683.53	90.84	0.23
Freshet	1	54	25-yr	9416.57	14.92	37.00		37.40	0.000392	5.16	1963.00	101.00	0.20
Freshet	1	54	50-yr	11086.13	14.92	39.96		40.39	0.000352	5.30	2261.93	101.00	0.19
Freshet	1	54	100-yr	13575.00	14.92	42.24		42.77	0.000391	5.91	2492.14	101.00	0.20
Freshet	1	54	1996	14654.92	14.92	46.90		47.34	0.000268	5.41	2963.07	101.00	0.17
Freshet	1	54	500-yr	17916.14	14.92	50.85		51.36	0.000270	5.85	3373.67	109.00	0.18
Freshet	1	54	PF 7	9006.14	14.92	36.50		36.89	0.000388	5.06	1912.67	101.00	0.20
Freshet	1	53	1.1yr	2449.28	12.14	24.25		24.38	0.000397	2.93	836.11	88.17	0.17
Freshet	1	53	25-yr	9416.57	12.14	37.07		37.34	0.000298	4.36	2604.88	164.28	0.16
Freshet	1	53	50-yr	11086.13	12.14	40.05		40.32	0.000259	4.41	3099.20	167.89	0.16
Freshet	1	53	100-yr	13575.00	12.14	42.36		42.69	0.000281	4.87	3490.40	170.70	0.16
Freshet	1	53	1996	14654.92	12.14	47.01		47.28	0.000185	4.39	4286.52	171.00	0.14
Freshet	1	53	500-yr	17916.14	12.14	50.99		51.28	0.000181	4.70	4965.53	171.00	0.14
Freshet	1	53	PF 7	9006.14	12.14	36.57		36.83	0.000297	4.28	2522.36	163.67	0.16
Freshet	1	52.9	1.1yr	2449.28	14.71	24.13	18.07	24.33	0.000651	3.57	686.53	76.70	0.21
Freshet	1	52.9	25-yr	9416.57	14.71	36.99	22.89	37.31	0.000384	4.85	2477.32	164.18	0.18
Freshet	1	52.9	50-yr	11086.13	14.71	39.97	23.80	40.29	0.000325	4.87	2973.41	167.80	0.17
Freshet	1	52.9	100-yr	13575.00	14.71	42.26	25.10	42.66	0.000348	5.35	3363.26	170.60	0.18
Freshet	1	52.9	1996	14654.92	14.71	46.96	25.71	47.26	0.000223	4.77	4164.11	171.00	0.15
Freshet	1	52.9	500-yr	17916.14	14.71	50.93	27.54	51.26	0.000217	5.09	4843.00	171.00	0.15
Freshet	1	52.9	PF 7	9006.14	14.71	36.48	22.66	36.80	0.000384	4.78	2394.86	163.57	0.18
Freshet	1	52.5		Bridge									
Freshet	1	52.1	1.1yr	2449.28	14.71	23.98		24.17	0.000645	3.53	692.91	77.54	0.21
Freshet	1	52.1	25-yr	9416.57	14.71	36.89		37.21	0.000373	4.78	2534.84	167.41	0.18
Freshet	1	52.1	50-yr	11086.13	14.71	39.88		40.19	0.000316	4.79	3039.07	169.81	0.17
Freshet	1	52.1	100-yr	13575.00	14.71	42.17		42.54	0.000339	5.27	3429.52	171.65	0.18
Freshet	1	52.1	1996	14654.92	14.71	46.88		47.16	0.000217	4.70	4239.41	172.00	0.15
Freshet	1	52.1	500-yr	17916.14	14.71	50.84		51.16	0.000211	5.01	4920.60	172.00	0.15
Freshet	1	52.1	PF 7	9006.14	14.71	36.39		36.70	0.000373	4.71	2451.15	167.01	0.18
Freshet	1	52	1.1yr	2449.28	14.36	23.96		24.13	0.000613	3.37	725.89	87.58	0.21
Freshet	1	52	25-yr	9416.57	14.36	36.89		37.18	0.000332	4.52	2554.84	167.41	0.17
Freshet	1	52	50-yr	11086.13	14.36	39.88		40.17	0.000281	4.54	3059.20	169.81	0.16
Freshet	1	52	100-yr	13575.00	14.36	42.17		42.51	0.000301	5.00	3449.72	171.65	0.17
Freshet	1	52	1996	14654.92	14.36	46.88		47.15	0.000193	4.46	4259.77	172.00	0.14
Freshet	1	52	500-yr	17916.14	14.36	50.84		51.14	0.000187	4.77	4941.06	172.00	0.14
Freshet	1	52	PF 7	9006.14	14.36	36.39		36.67	0.000332	4.45	2471.13	167.01	0.17
Freshet	1	51	1.1yr	2449.28	15.20	23.93		24.10	0.000701	3.32	738.09	111.22	0.23
Freshet	1	51	25-yr	9416.57	15.20	36.94		37.14	0.000235	3.74	2810.65	184.25	0.15
Freshet	1	51	50-yr	11086.13	15.20	39.93		40.13	0.000192	3.74	3365.88	186.76	0.14
Freshet	1	51	100-yr	13575.00	15.20	42.23		42.47	0.000201	4.10	3797.20	188.68	0.15
Freshet	1	51	1996	14654.92	15.20	46.93		47.12	0.000125	3.65	4689.06	190.00	0.12
Freshet	1	51	500-yr	17916.14	15.20	50.89		51.11	0.000119	3.89	5442.96	190.00	0.12
Freshet	1	51	PF 7	9006.14	15.20	36.43		36.64	0.000237	3.68	2718.21	183.83	0.15
Freshet	1	50	1.1yr	2449.28	14.27	23.96		24.05	0.000281	2.40	1040.53	152.06	0.15
Freshet	1	50	25-yr	9416.57	14.27	36.95		37.12	0.000156	3.34	3143.08	165.82	0.13
Freshet	1	50	50-yr	11086.13	14.27	39.94		40.11	0.000138	3.42	3641.24	167.65	0.12
Freshet	1	50	100-yr	13575.00	14.27	42.24		42.45	0.000152	3.82	4027.79	169.05	0.13
Freshet	1	50	1996	14654.92	14.27	46.93		47.11	0.000101	3.48	4824.66	170.00	0.11
Freshet	1	50	500-yr	17916.14	14.27	50.89		51.10	0.000101	3.77	5498.65	170.00	0.11
Freshet	1	50	PF 7	9006.14	14.27	36.45		36.61	0.000155	3.27	3059.95	165.52	0.13
Freshet	1	49	1.1yr	2449.28	13.95	23.96		24.02	0.000184	2.02	1244.35	169.67	0.12
Freshet	1	49	25-yr	9416.57	13.95	36.97		37.10	0.000117	2.96	3499.75	176.65	0.11
Freshet	1	49	50-yr	11086.13	13.95	39.96		40.10	0.000105	3.06	4029.91	178.11	0.11
Freshet	1	49	100-yr	13575.00	13.95	42.26		42.43	0.000116	3.42	4440.94	179.24	0.12
Freshet	1	49	1996	14654.92	13.95	46.95		47.09	0.000079	3.13	5284.29	180.00	0.10
Freshet	1	49	500-yr	17916.14	13.95	50.91		51.09	0.000079	3.40	5998.50	180.00	0.10
Freshet	1	49	PF 7	9006.14	13.95	36.47		36.59	0.000116	2.90	3411.02	176.40	0.11

Existing Bridge, Proposed Fishway

HEC-RAS Plan: PDR River: Presumpscot Reach: 1

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	Frctn Loss (ft)	C & E Loss (ft)	Top Width (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Vel Chnl (ft/s)
1	2100	1.1yr	41.11	41.09		0.10	0.00	162.55		2450.00		1.32
1	2100	25-yr	46.76	46.43		0.91	0.01	220.88	9.77	12987.38	2.85	4.65
1	2100	50-yr	47.86	47.43		1.11	0.02	258.88	28.28	15662.06	9.66	5.27
1	2100	100-yr	49.28	48.75		1.26	0.02	316.91	76.52	18780.17	43.32	5.85
1	2100	1996	51.40	50.77		1.33	0.03	353.76	252.73	22878.53	168.75	6.40
1	2100	500-yr	55.26	54.68		0.99	0.03	360.00	767.36	26683.22	549.42	6.24
1	2099	1.1yr	41.02	40.99	28.15	0.00	0.00	145.68		2450.00		1.39
1	2099	25-yr	45.84	45.40	34.22	0.00	0.00	161.50	0.99	12998.24	0.76	5.35
1	2099	50-yr	46.73	46.15	35.24	0.00	0.00	164.10	2.72	15695.19	2.09	6.16
1	2099	100-yr	47.99	47.25	36.36	0.00	0.00	167.91	7.46	18886.79	5.75	6.95
1	2099	1996	50.03	49.11	37.76	0.00	0.00	174.37	22.89	23259.48	17.63	7.74
1	2099	500-yr	54.23	53.34	39.15	0.00	0.04	189.05	88.74	27842.89	68.37	7.60
1	2098.5 BR U	1.1yr	41.02	40.99	28.17	0.00	0.00	145.68		2450.00		1.39
1	2098.5 BR U	25-yr	45.84	45.39	34.23	0.00	0.00	150.00		13000.00		5.38
1	2098.5 BR U	50-yr	46.73	46.13	35.25	0.00	0.00	150.00		15700.00		6.21
1	2098.5 BR U	100-yr	47.99	47.22	36.37	0.01	0.00	150.00		18900.00		7.02
1	2098.5 BR U	1996	50.03	49.07	37.79	0.01	0.00	150.00		23300.00		7.85
1	2098.5 BR U	500-yr	54.19	52.90	39.17	0.02	0.00			28000.00		9.10
1	2098.5 BR D	1.1yr	41.02	40.99	28.17	0.00	0.00	145.68		2450.00		1.39
1	2098.5 BR D	25-yr	45.83	45.38	34.23	0.01	0.00	150.00		13000.00		5.38
1	2098.5 BR D	50-yr	46.73	46.13	35.25	0.01	0.00	150.00		15700.00		6.22
1	2098.5 BR D	100-yr	47.98	47.22	36.37	0.01	0.00	150.00		18900.00		7.03
1	2098.5 BR D	1996	50.02	49.06	37.79	0.01	0.01	150.00		23300.00		7.85
1	2098.5 BR D	500-yr	54.17	52.89	39.17	0.01	0.11			28000.00		9.10
1	2098	1.1yr	41.02	40.99		0.01	0.00	145.68		2450.00		1.39
1	2098	25-yr	45.83	45.38		0.10	0.05	161.46	0.98	12998.27	0.75	5.35
1	2098	50-yr	46.72	46.13		0.13	0.06	164.04	2.67	15695.27	2.06	6.17
1	2098	100-yr	47.97	47.22		0.15	0.07	167.83	7.35	18886.99	5.66	6.96
1	2098	1996	50.01	49.07		0.17	0.09	174.26	22.61	23259.98	17.42	7.75
1	2098	500-yr	54.05	53.14		0.13	0.08	188.35	85.19	27849.17	65.64	7.67
1	2097	1.1yr	41.00	40.99		0.00	0.00	144.14		2450.00		1.03
1	2097	25-yr	45.68	45.39		0.04	0.01	171.02	0.13	12998.54	1.33	4.29
1	2097	50-yr	46.53	46.14		0.05	0.01	196.08	0.44	15691.95	7.61	5.00

HEC-RAS Plan: PDR River: Presumpscot Reach: 1 (Continued)

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	Frctn Loss (ft)	C & E Loss (ft)	Top Width (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Vel Chnl (ft/s)
1	2097	100-yr	47.75	47.24		0.06	0.01	227.42	1.57	18860.44	37.99	5.71
1	2097	1996	49.75	49.11		0.06	0.01	229.67	6.20	23127.54	166.26	6.47
1	2097	500-yr	53.84	53.18		0.05	0.01	234.58	29.60	27401.04	569.35	6.56
1	1081	1.1yr	40.97	40.93		0.00	0.00	313.15		2450.00		1.57
1	1081	25-yr	45.43	45.11		0.02	0.02	324.07		13000.00		4.50
1	1081	50-yr	46.22	45.83		0.02	0.03	325.95		15700.00		5.03
1	1081	100-yr	47.40	46.95		0.02	0.03	328.87		18900.00		5.42
1	1081	1996	49.37	48.87		0.02	0.03	345.85	5.01	23294.98		5.65
1	1081	500-yr	53.51	53.12		0.01	0.01	419.23	88.13	27911.85	0.02	5.03
1	1036	1.1yr	40.96	40.94	34.39	0.00	0.00	298.08		2450.00		1.22
1	1036	25-yr	45.39	45.15	37.88	0.01	0.04	317.10		13000.00		3.91
1	1036	50-yr	46.18	45.88	38.45	0.01	0.06	318.02		15700.00		4.42
1	1036	100-yr	47.36	46.99	39.06	0.01	0.07	319.45		18900.00		4.83
1	1036	1996	49.32	48.91	39.87	0.01	0.09	325.72		23300.00		5.14
1	1036	500-yr	53.49	53.14	40.67	0.01	0.14	409.33	44.28	27955.43	0.29	4.71
1	1000 BR U	1.1yr	40.96	40.91	33.49	0.00	0.00	166.58		2448.36	1.64	1.78
1	1000 BR U	25-yr	45.34	44.68	38.32	0.04	0.05	172.64		12977.36	22.64	6.48
1	1000 BR U	50-yr	46.11	45.25	39.11	0.05	0.06	173.55		15669.01	30.99	7.47
1	1000 BR U	100-yr	47.28	46.19	39.98	0.06	0.07	175.07		18854.64	45.36	8.35
1	1000 BR U	1996	49.22	47.86	41.13	0.13	0.08	81.28		23231.51	68.49	9.36
1	1000 BR U	500-yr	53.34	51.59	42.25	0.24	0.09		0.02	27904.78	95.20	10.64
1	1000 BR D	1.1yr	40.95	40.91	30.75	0.00	0.00	166.59		2447.94	2.06	1.49
1	1000 BR D	25-yr	45.25	44.75	36.61	0.01	0.05	172.75		12975.09	24.91	5.68
1	1000 BR D	50-yr	46.00	45.33	37.43	0.01	0.07	173.68		15666.00	34.00	6.58
1	1000 BR D	100-yr	47.14	46.29	38.31	0.01	0.09	175.23		18850.45	49.55	7.41
1	1000 BR D	1996	49.01	47.91	39.44	0.02	0.14	79.28		23230.45	69.55	8.44
1	1000 BR D	500-yr	53.00	51.56	40.58	0.02	0.26		0.14	27904.76	95.10	9.66
1	970	1.1yr	40.94	40.92		0.00	0.00	214.90		2450.00		1.27
1	970	25-yr	45.19	44.86		0.02	0.00	232.50		13000.00		4.63
1	970	50-yr	45.92	45.48		0.02	0.00	235.29		15700.00		5.31
1	970	100-yr	47.04	46.50		0.02	0.01	239.82		18900.00		5.91
1	970	1996	48.86	48.21		0.03	0.00	247.49		23300.00		6.45

Cumberland Mills Bridges

HEC-RAS Plan: PDR River: Presumpscot Reach: 1 (Continued)

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	Frctn Loss (ft)	C & E Loss (ft)	Top Width (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Vel Chnl (ft/s)
1	970	500-yr	52.72	52.16		0.02	0.00	285.81	0.21	27999.77	0.02	6.06
1	926	1.1yr	40.94	40.91		0.01	0.00	220.44		2450.00		1.40
1	926	25-yr	45.17	44.80		0.04	0.01	242.66		13000.00		4.90
1	926	50-yr	45.89	45.41		0.05	0.02	246.15		15700.00		5.60
1	926	100-yr	47.01	46.42		0.06	0.03	251.91		18900.00		6.19
1	926	1996	48.83	48.14		0.06	0.05	261.77		23300.00		6.66
1	926	500-yr	52.71	52.13		0.03	0.06	387.72	8.29	27942.46	49.25	6.10

EXISTING BRIDGES, Fishway

Plan: PDR Presumpscot 1 RS: 1081 Profile: 100-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	Chan	355.00	371.90	383.88	112.19	20.49	2.03	6.66	3.42
2	Chan	371.90	388.80	1269.52	215.01	17.32	6.72	12.72	5.90
3	Chan	388.80	405.70	1548.48	239.98	16.92	8.19	14.20	6.45
4	Chan	405.70	422.60	1240.19	211.00	17.11	6.56	12.49	5.88
5	Chan	422.60	439.50	890.86	172.52	16.99	4.71	10.21	5.16
6	Chan	439.50	456.40	856.65	168.14	16.90	4.53	9.95	5.09
7	Chan	456.40	473.30	856.65	168.14	16.90	4.53	9.95	5.09
8	Chan	473.30	490.20	934.76	177.38	16.95	4.95	10.50	5.27
9	Chan	490.20	507.10	1144.08	200.29	16.96	6.05	11.85	5.71
10	Chan	507.10	524.00	1386.17	224.75	16.96	7.33	13.30	6.17
11	Chan	524.00	540.90	1504.54	235.74	16.90	7.96	13.95	6.38
12	Chan	540.90	557.80	1203.00	208.00	17.29	6.37	12.31	5.78
13	Chan	557.80	574.70	859.40	168.68	16.95	4.55	9.98	5.09
14	Chan	574.70	591.60	856.65	168.14	16.90	4.53	9.95	5.09
15	Chan	591.60	608.50	856.65	168.14	16.90	4.53	9.95	5.09
16	Chan	608.50	625.40	856.65	168.14	16.90	4.53	9.95	5.09
17	Chan	625.40	642.30	855.43	168.01	16.90	4.53	9.94	5.09
18	Chan	642.30	659.20	780.26	159.06	16.92	4.13	9.41	4.91
19	Chan	659.20	676.10	578.53	135.55	17.77	3.06	8.02	4.27
20	Chan	676.10	693.00	37.67	20.40	9.40	0.20	2.61	1.85

Plan: PDR Presumpscot 1 RS: 1081 Profile: 500-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	220.00	355.00	88.13	170.90	74.87	0.31	2.29	0.52
2	Chan	355.00	371.90	801.23	216.50	20.57	2.86	12.81	3.70
3	Chan	371.90	388.80	1716.85	319.32	17.32	6.13	18.89	5.38
4	Chan	388.80	405.70	1976.84	344.29	16.92	7.06	20.37	5.74
5	Chan	405.70	422.60	1694.58	315.31	17.11	6.05	18.66	5.37
6	Chan	422.60	439.50	1370.61	276.83	16.99	4.90	16.38	4.95
7	Chan	439.50	456.40	1339.60	272.45	16.90	4.78	16.12	4.92
8	Chan	456.40	473.30	1339.60	272.45	16.90	4.78	16.12	4.92
9	Chan	473.30	490.20	1413.48	281.69	16.95	5.05	16.67	5.02
10	Chan	490.20	507.10	1609.61	304.60	16.96	5.75	18.02	5.28
11	Chan	507.10	524.00	1830.59	329.06	16.96	6.54	19.47	5.56
12	Chan	524.00	540.90	1938.21	340.05	16.90	6.92	20.12	5.70
13	Chan	540.90	557.80	1656.84	312.31	17.29	5.92	18.48	5.31
14	Chan	557.80	574.70	1341.17	272.99	16.95	4.79	16.15	4.91
15	Chan	574.70	591.60	1339.60	272.45	16.90	4.78	16.12	4.92
16	Chan	591.60	608.50	1339.60	272.45	16.90	4.78	16.12	4.92
17	Chan	608.50	625.40	1339.60	272.45	16.90	4.78	16.12	4.92
18	Chan	625.40	642.30	1338.36	272.32	16.90	4.78	16.11	4.91
19	Chan	642.30	659.20	1264.94	263.37	16.92	4.52	15.58	4.80
20	Chan	659.20	676.10	1047.69	239.86	17.77	3.74	14.19	4.37
21	Chan	676.10	693.00	212.87	97.26	20.31	0.76	5.75	2.19
22	ROB	693.00	776.00	0.02	0.41	6.68	0.00	0.06	0.05

Plan: PDR Presumpscot 1 RS: 1000 BR U Profile: 100-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	Chan	340.00	355.60	564.62	138.40	22.45	2.99	9.33	4.08
2	Chan	355.60	371.20	1167.87	186.20	15.84	6.18	11.94	6.27
3	Chan	371.20	386.80	1549.36	219.77	15.69	8.20	14.09	7.05
4	Chan	386.80	402.40	1335.88	201.36	15.75	7.07	12.91	6.63
5	Chan	402.40	418.00	831.04	162.29	18.72	4.40	10.40	5.12
6	Chan	418.00	433.60	3.17	3.60	5.83	0.02	2.85	0.88
7	Chan	433.60	449.20						
8	Chan	449.20	464.80						
9	Chan	464.80	480.40						
10	Chan	480.40	496.00						
11	Chan	496.00	511.60						
12	Chan	511.60	527.20						
13	Chan	527.20	542.80						
14	Chan	542.80	558.40						
15	Chan	558.40	574.00	884.55	153.20	24.45	4.68	11.45	5.77
16	Chan	574.00	589.60	2619.01	245.81	15.65	13.86	15.76	10.65
17	Chan	589.60	605.20	2969.87	265.09	15.65	15.71	16.99	11.20
18	Chan	605.20	620.80	3100.01	273.30	15.84	16.40	17.52	11.34
19	Chan	620.80	636.40	2268.31	227.11	15.93	12.00	14.56	9.99
20	Chan	636.40	652.00	1560.95	181.15	15.86	8.26	11.61	8.62
21	ROB	652.00	780.00	45.36	23.09	12.36	0.24	4.45	1.96

Plan: PDR Presumpscot 1 RS: 1000 BR U Profile: 500-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	210.00	340.00	0.02	0.08	2.01	0.00	0.08	0.31
2	Chan	340.00	355.60	1198.97	190.13	41.44	4.28	12.19	6.31
3	Chan	355.60	371.20	2115.07	239.34	31.44	7.55	15.34	8.84
4	Chan	371.20	386.80	2640.74	272.90	31.29	9.43	17.49	9.68
5	Chan	386.80	402.40	2347.72	254.50	31.35	8.38	16.31	9.22
6	Chan	402.40	418.00	1674.19	215.43	34.32	5.98	13.81	7.77
7	Chan	418.00	433.60	19.00	10.56	38.42	0.07	0.68	1.80
8	Chan	433.60	449.20	0.11	0.33	10.51	0.00	0.06	0.32
9	Chan	449.20	464.80						
10	Chan	464.80	480.40						
11	Chan	480.40	496.00						
12	Chan	496.00	511.60	2.52	3.07	23.62	0.01	0.26	0.82
13	Chan	511.60	527.20	0.07	0.25	8.80	0.00	0.06	0.30
14	Chan	527.20	542.80						
15	Chan	542.80	558.40						
16	Chan	558.40	574.00	1414.86	168.60	39.65	5.05	12.11	8.39
17	Chan	574.00	589.60	3470.82	262.61	31.25	12.40	16.83	13.22
18	Chan	589.60	605.20	3885.96	281.04	31.25	13.88	18.02	13.83
19	Chan	605.20	620.80	4040.96	288.40	31.44	14.43	18.49	14.01
20	Chan	620.80	636.40	2997.64	241.37	31.53	10.71	15.47	12.42
21	Chan	636.40	652.00	2096.16	194.56	31.46	7.49	12.47	10.77
22	ROB	652.00	780.00	95.20	27.59	19.07	0.34	4.81	3.45

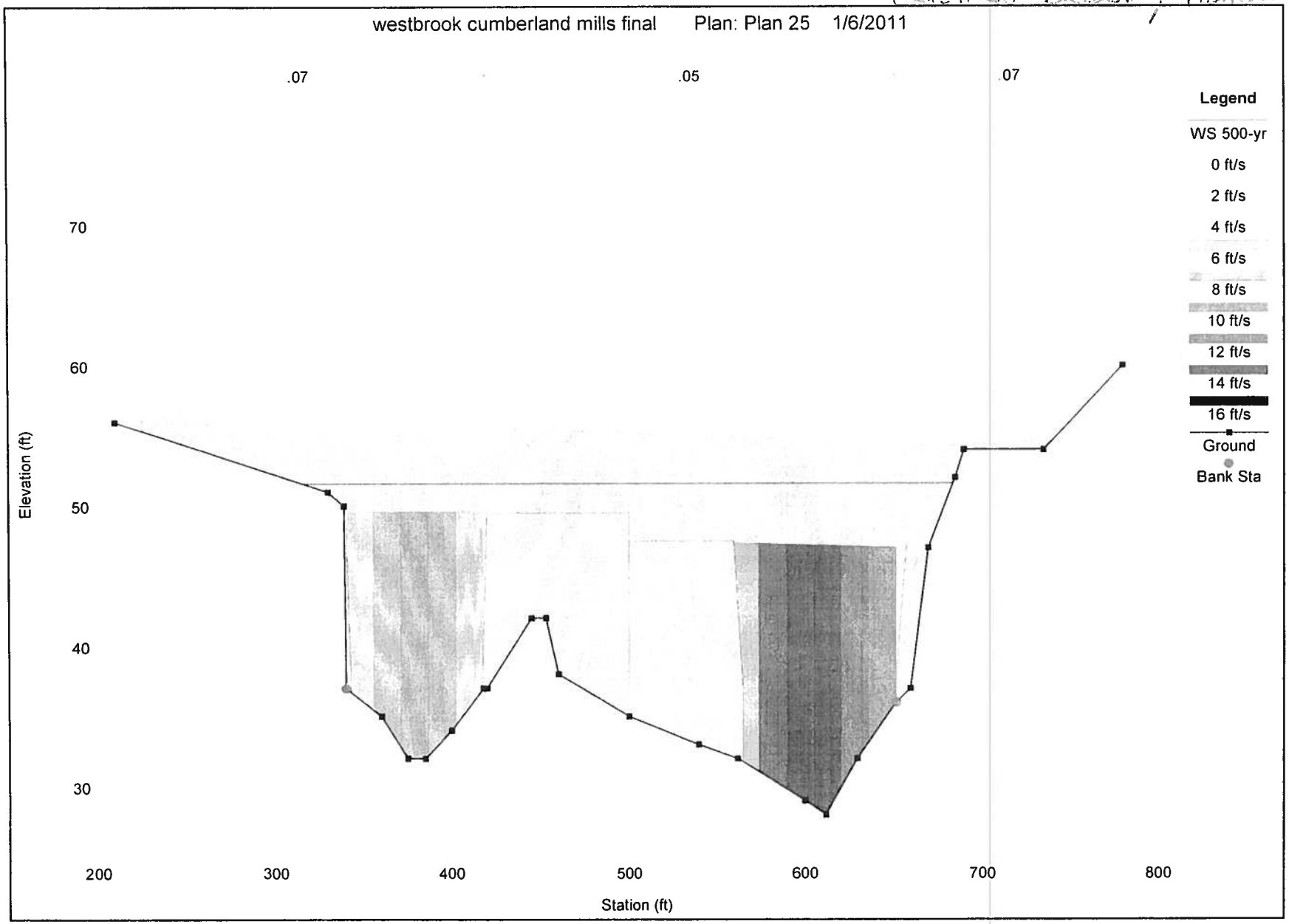
Plan: PDR Presumpscot 1 RS: 1000 BR D Profile: 100-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	Chan	340.00	355.60	595.23	141.29	22.49	3.15	9.51	4.21
2	Chan	355.60	371.20	1337.33	199.82	15.88	7.08	12.81	6.69
3	Chan	371.20	386.80	1603.66	221.38	15.63	8.48	14.19	7.24
4	Chan	386.80	402.40	1438.87	207.51	15.64	7.61	13.30	6.93
5	Chan	402.40	418.00	1020.82	187.33	20.26	5.40	12.01	5.45
6	Chan	418.00	433.60	3.39	3.73	5.93	0.02	2.90	0.91
7	Chan	433.60	449.20						
8	Chan	449.20	464.80						
9	Chan	464.80	480.40						
10	Chan	480.40	496.00						
11	Chan	496.00	511.60						
12	Chan	511.60	527.20						
13	Chan	527.20	542.80						
14	Chan	542.80	558.40						
15	Chan	558.40	574.00	678.37	159.89	25.18	3.59	11.91	4.24
16	Chan	574.00	589.60	2476.30	290.33	16.04	13.10	18.61	8.53
17	Chan	589.60	605.20	2893.07	315.37	15.62	15.31	20.22	9.17
18	Chan	605.20	620.80	2882.61	315.13	15.68	15.25	20.20	9.15
19	Chan	620.80	636.40	2337.82	279.90	15.96	12.37	17.94	8.35
20	Chan	636.40	652.00	1582.99	222.20	16.08	8.38	14.24	7.12
21	ROB	652.00	786.00	49.55	25.17	14.01	0.26	4.79	1.97

Plan: PDR Presumpscot 1 RS: 1000 BR D Profile: 500-yr

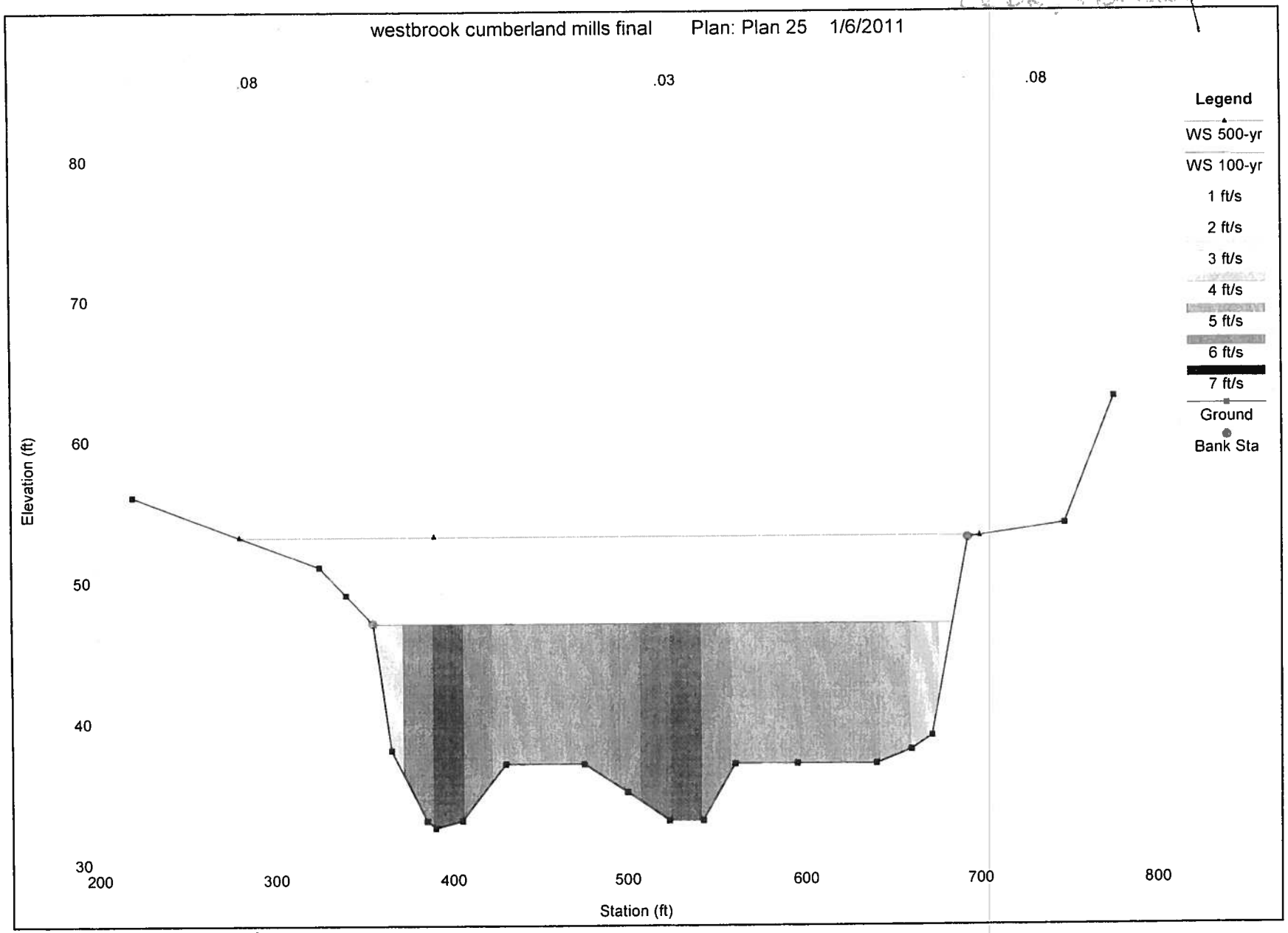
	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	215.00	340.00	0.14	0.81	21.81	0.00	0.07	0.17
2	Chan	340.00	355.60	1258.42	191.54	41.38	4.49	12.28	6.57
3	Chan	355.60	371.20	2375.66	251.40	31.48	8.48	16.12	9.45
4	Chan	371.20	386.80	2739.73	272.96	31.23	9.78	17.50	10.04
5	Chan	386.80	402.40	2510.92	259.10	31.24	8.97	16.61	9.69
6	Chan	402.40	418.00	2000.56	238.91	35.86	7.14	15.31	8.37
7	Chan	418.00	433.60	10.56	10.56	38.42	0.04	0.68	1.00
8	Chan	433.60	449.20	0.08	0.29	7.00	0.00	0.08	0.28
9	Chan	449.20	464.80						
10	Chan	464.80	480.40						
11	Chan	480.40	496.00						
12	Chan	496.00	511.60						
13	Chan	511.60	527.20						
14	Chan	527.20	542.80						
15	Chan	542.80	558.40						
16	Chan	558.40	574.00	1091.28	173.95	40.27	3.90	12.49	6.27
17	Chan	574.00	589.60	3277.92	305.58	31.64	11.71	19.59	10.73
18	Chan	589.60	605.20	3754.96	329.77	31.22	13.41	21.14	11.39
19	Chan	605.20	620.80	3730.04	328.69	31.28	13.32	21.07	11.35
20	Chan	620.80	636.40	3054.61	292.61	31.56	10.91	18.76	10.44
21	Chan	636.40	652.00	2100.01	234.06	31.68	7.50	15.00	8.97
22	ROB	652.00	786.00	95.10	29.15	20.60	0.34	5.08	3.26

Existing Bridges/ Fishway



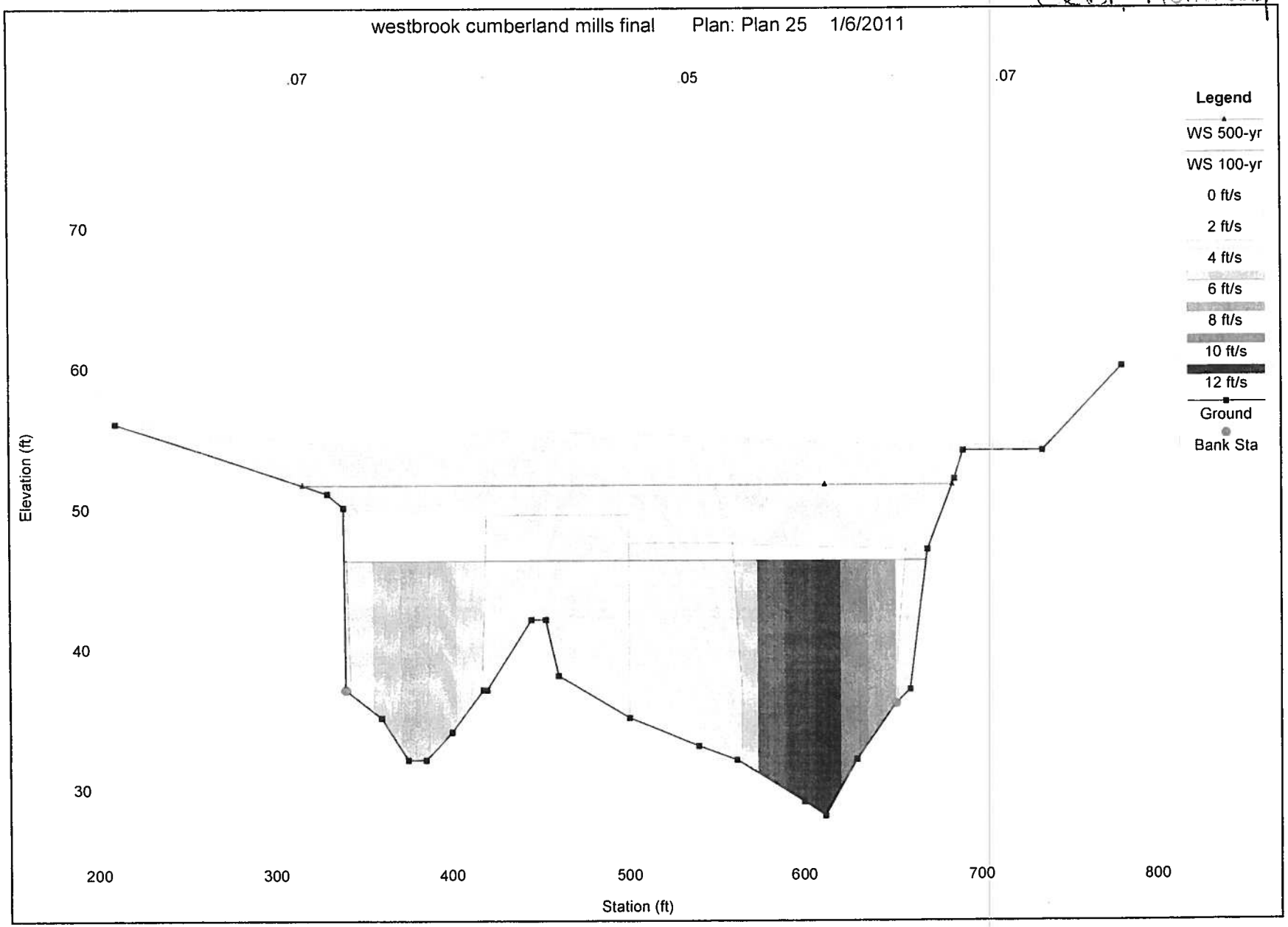
1 in Horiz. = 80 ft 1 in Vert. = 10 ft

Ex Br. Fishway



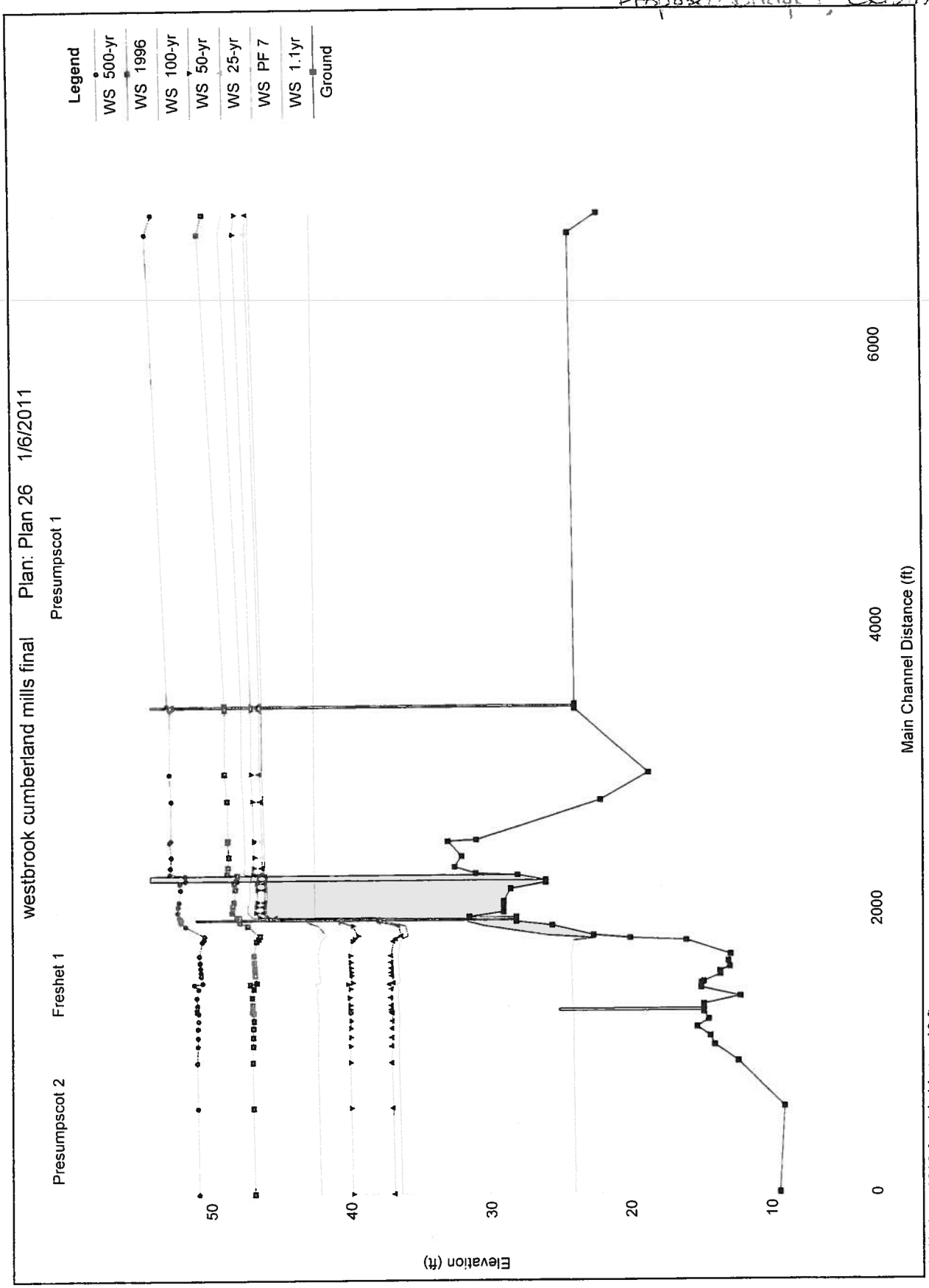
1 in Horiz. = 80 ft 1 in Vert. = 10 ft

Ex Br. Fishway



1 in Horiz. = 80 ft 1 in Vert. = 10 ft

Proposed Bridges, Existing Dam



Existing DAM, Proposed Bridge

HEC-RAS Plan: Plan 28 River: Presumpscot Reach: 1

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	Frctn Loss (ft)	C & E Loss (ft)	Top Width (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Vel Chnl (ft/s)
1	2100	1.1yr	42.66	42.64		0.07	0.00	170.73		2450.00		1.16
1	2100	25-yr	47.62	47.32		0.75	0.01	253.60	21.76	12971.22	7.02	4.39
1	2100	50-yr	48.58	48.19		0.94	0.01	294.69	45.90	15632.63	21.47	5.03
1	2100	100-yr	49.68	49.18		1.15	0.02	329.33	95.81	18743.48	60.71	5.70
1	2100	1996	51.33	50.70		1.35	0.03	353.33	245.78	22889.90	164.32	6.43
1	2100	500-yr	55.07	54.48		1.03	0.03	360.00	744.39	26724.31	531.30	6.30
1	2100	PF 7	47.37	47.09		0.71	0.01	244.03	17.63	12377.23	5.13	4.25
1	2099	1.1yr	42.59	42.57	28.15	0.00	0.00	151.49		2450.00		1.23
1	2099	25-yr	46.86	46.47	34.22	0.00	0.00	165.24	2.98	12994.73	2.29	5.00
1	2099	50-yr	47.63	47.10	35.24	0.00	0.00	167.42	5.66	15689.97	4.36	5.82
1	2099	100-yr	48.51	47.81	36.36	0.00	0.00	169.86	10.29	18881.78	7.93	6.73
1	2099	1996	49.95	49.01	37.76	0.00	0.00	174.05	22.07	23260.93	17.00	7.77
1	2099	500-yr	54.01	53.09	39.15	0.00	0.04	188.19	84.40	27850.58	65.02	7.68
1	2099	PF 7	46.66	46.30	33.97	0.00	0.00	164.63	2.45	12395.65	1.89	4.82
1	2098.5 BR U	1.1yr	42.59	42.57	28.17	0.00	0.00	148.54		2450.00		1.23
1	2098.5 BR U	25-yr	46.86	46.46	34.23	0.00	0.00	150.00		13000.00		5.05
1	2098.5 BR U	50-yr	47.63	47.09	35.25	0.00	0.00	150.00		15700.00		5.88
1	2098.5 BR U	100-yr	48.51	47.79	36.37	0.00	0.00	150.00		18900.00		6.81
1	2098.5 BR U	1996	49.94	48.98	37.79	0.01	0.00	150.00		23300.00		7.89
1	2098.5 BR U	500-yr	53.96	52.68	39.17	0.02	0.00			28000.00		9.10
1	2098.5 BR U	PF 7	46.66	46.29	33.98	0.00	0.00	150.00		12400.00		4.86
1	2098.5 BR D	1.1yr	42.59	42.57	28.17	0.00	0.00	148.54		2450.00		1.23
1	2098.5 BR D	25-yr	46.86	46.46	34.23	0.00	0.00	150.00		13000.00		5.05
1	2098.5 BR D	50-yr	47.62	47.08	35.25	0.01	0.00	150.00		15700.00		5.88
1	2098.5 BR D	100-yr	48.50	47.78	36.37	0.01	0.00	150.00		18900.00		6.81
1	2098.5 BR D	1996	49.94	48.97	37.79	0.01	0.01	150.00		23300.00		7.89
1	2098.5 BR D	500-yr	53.95	52.66	39.17	0.01	0.11			28000.00		9.10
1	2098.5 BR D	PF 7	46.65	46.29	33.98	0.00	0.00	150.00		12400.00		4.86
1	2098	1.1yr	42.59	42.56		0.01	0.00	151.49		2450.00		1.23
1	2098	25-yr	46.85	46.46		0.08	0.04	165.20	2.95	12994.78	2.27	5.00
1	2098	50-yr	47.61	47.09		0.11	0.05	167.36	5.60	15690.08	4.32	5.83
1	2098	100-yr	48.49	47.78		0.14	0.07	169.78	10.17	18882.00	7.83	6.74
1	2098	1996	49.92	48.98		0.17	0.09	173.94	21.79	23261.43	16.79	7.79
1	2098	500-yr	53.83	52.90		0.14	0.08	187.52	81.05	27856.50	62.45	7.75
1	2098	PF 7	46.65	46.29		0.08	0.04	164.59	2.43	12395.69	1.87	4.82
1	2097	1.1yr	42.58	42.57		0.00	0.00	146.39		2450.00		0.94
1	2097	25-yr	46.73	46.47		0.03	0.00	207.72	0.53	12989.18	10.29	4.08
1	2097	50-yr	47.45	47.10		0.04	0.01	227.25	1.16	15672.15	26.69	4.78
1	2097	100-yr	48.28	47.81		0.05	0.01	228.10	2.39	18833.67	63.94	5.57
1	2097	1996	49.66	49.01		0.06	0.01	229.56	5.92	23134.48	159.60	6.49
1	2097	500-yr	53.61	52.94		0.05	0.01	234.29	27.92	27424.18	547.90	6.62
1	2097	PF 7	46.53	46.30		0.03	0.00	201.49	0.42	12391.96	7.63	3.92
1	1081	1.1yr	42.56	42.54		0.00	0.00	317.35		2450.00		1.19
1	1081	25-yr	46.54	46.30		0.01	0.02	327.16		13000.00		3.97
1	1081	50-yr	47.21	46.90		0.01	0.02	328.73		15700.00		4.52
1	1081	100-yr	47.98	47.57		0.02	0.02	334.15	0.21	18899.79		5.12
1	1081	1996	49.27	48.77		0.02	0.03	344.94	4.38	23295.62		5.69
1	1081	500-yr	53.28	52.87		0.01	0.02	407.14	78.90	27921.10		5.11
1	1081	PF 7	46.36	46.13		0.01	0.02	326.72		12400.00		3.85
1	1036	1.1yr	42.56	42.54	34.39	0.00	0.00	313.78		2450.00		0.98
1	1036	25-yr	46.51	46.32	37.88	0.01	0.03	318.59		13000.00		3.52
1	1036	50-yr	47.18	46.93	38.45	0.01	0.04	319.36		15700.00		4.04
1	1036	100-yr	47.94	47.61	39.08	0.01	0.05	321.45		18900.00		4.60
1	1036	1996	49.23	48.81	39.87	0.01	0.07	325.39		23300.00		5.18
1	1036	500-yr	53.25	52.90	40.66	0.01	0.10	402.77	37.11	27962.74	0.15	4.78
1	1036	PF 7	46.33	46.15	37.72	0.01	0.03	318.37		12400.00		3.41
1	1000 BR U	1.1yr	42.55	42.52	33.46	0.00	0.00	182.00		2420.85	29.15	1.41
1	1000 BR U	25-yr	46.48	46.02	38.23	0.03	0.03	182.00		12819.24	180.76	5.50
1	1000 BR U	50-yr	47.14	46.51	38.96	0.04	0.04	182.00		15479.26	220.74	6.41
1	1000 BR U	100-yr	47.88	47.03	39.78	0.05	0.05	182.00		18631.55	268.45	7.44
1	1000 BR U	1996	49.15	48.02	40.83	0.06	0.06	182.00		22963.95	336.05	8.58
1	1000 BR U	500-yr	53.14	51.76	41.88	0.15	0.07			27529.00	470.99	9.50
1	1000 BR U	PF 7	46.30	45.87	38.05	0.03	0.03	182.00		12228.23	171.77	5.31
1	1000 BR D	1.1yr	42.55	42.53	30.76	0.00	0.00	182.00		2414.51	35.49	1.21
1	1000 BR D	25-yr	46.42	46.06	36.56	0.01	0.03	182.00		12788.27	211.73	4.91

Curb [illegible]

HEC-RAS Plan: Plan 28 River: Presumpscot Reach: 1 (Continued)

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	Frctn Loss (ft)	C & E Loss (ft)	Top Width (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Vel Chnl (ft/s)
1	1000 BR D	50-yr	47.06	46.56	37.38	0.01	0.04	182.00		15442.03	257.97	5.73
1	1000 BR D	100-yr	47.78	47.10	38.22	0.01	0.06	182.00		18586.92	313.08	6.67
1	1000 BR D	1996	49.02	48.11	39.28	0.01	0.08	182.00		22909.35	390.65	7.73
1	1000 BR D	500-yr	52.91	51.77	40.33	0.01	0.17			27444.83	555.17	8.65
1	1000 BR D	PF 7	46.25	45.90	36.36	0.01	0.03	182.00		12198.63	201.37	4.73
1	970	1.1yr	42.55	42.53		0.00	0.00	222.10		2450.00		1.07
1	970	25-yr	46.39	46.12		0.01	0.00	238.12		13000.00		4.19
1	970	50-yr	47.01	46.65		0.02	0.00	240.48		15700.00		4.86
1	970	100-yr	47.71	47.22		0.02	0.00	243.07		18900.00		5.61
1	970	1996	48.93	48.29		0.02	0.00	247.83		23300.00		6.41
1	970	500-yr	52.73	52.16		0.02	0.00	285.99	0.22	27999.76	0.02	6.05
1	970	PF 7	46.21	45.96		0.01	0.00	237.42		12400.00		4.04
1	926	1.1yr	42.55	42.53		0.00	0.00	229.67		2450.00		1.16
1	926	25-yr	46.37	46.08		0.03	0.02	249.98		13000.00		4.38
1	926	50-yr	46.99	46.59		0.04	0.02	252.94		15700.00		5.07
1	926	100-yr	47.69	47.16		0.05	0.04	256.17		18900.00		5.83
1	926	1996	48.90	48.22		0.05	0.05	262.22		23300.00		6.63
1	926	500-yr	52.71	52.13		0.03	0.06	388.39	8.35	27942.25	49.40	6.10
1	926	PF 7	46.20	45.92		0.03	0.01	249.09		12400.00		4.23

EXISTING DAM PROPOSED BRIDGE

HEC-RAS Plan: Plan 28

River	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
Presumpscot	1	2101	1.1yr	2450.00	22.10	42.63	28.52	42.66	0.000029	1.46	1677.86	120.08	0.07
Presumpscot	1	2101	25-yr	13000.00	22.10	47.19	34.92	47.72	0.000319	5.85	2225.92	120.41	0.24
Presumpscot	1	2101	50-yr	15700.00	22.10	48.01	36.06	48.72	0.000403	6.76	2324.22	120.47	0.27
Presumpscot	1	2101	100-yr	18900.00	22.10	48.92	37.32	49.86	0.000500	7.77	2434.78	120.53	0.30
Presumpscot	1	2101	1996	23300.00	22.10	50.33	38.90	51.58	0.000607	8.96	2604.82	120.64	0.34
Presumpscot	1	2101	500-yr	28000.00	22.10	54.02	40.44	55.33	0.000520	9.21	3049.66	120.90	0.32
Presumpscot	1	2101	PF 7	12400.00	22.10	46.98	34.65	47.47	0.000301	5.64	2200.25	120.39	0.23
Presumpscot	1	2100	1.1yr	2450.00	24.18	42.64		42.66	0.000020	1.16	2118.67	170.73	0.06
Presumpscot	1	2100	25-yr	13000.00	24.18	47.32		47.62	0.000198	4.39	3045.22	253.60	0.19
Presumpscot	1	2100	50-yr	15700.00	24.18	48.19		48.58	0.000242	5.03	3283.51	294.69	0.21
Presumpscot	1	2100	100-yr	18900.00	24.18	49.18		49.68	0.000289	5.70	3594.73	329.33	0.24
Presumpscot	1	2100	1996	23300.00	24.18	50.70		51.33	0.000329	6.43	4122.26	353.33	0.25
Presumpscot	1	2100	500-yr	28000.00	24.18	54.48		55.07	0.000251	6.30	5476.74	360.00	0.23
Presumpscot	1	2100	PF 7	12400.00	24.18	47.09		47.37	0.000188	4.25	2989.62	244.03	0.19
Presumpscot	1	2099	1.1yr	2450.00	23.90	42.57	28.15	42.59	0.000021	1.23	1994.47	151.49	0.06
Presumpscot	1	2099	25-yr	13000.00	23.90	46.47	34.22	46.86	0.000254	5.00	2613.56	165.24	0.22
Presumpscot	1	2099	50-yr	15700.00	23.90	47.10	35.24	47.63	0.000328	5.82	2718.31	167.42	0.25
Presumpscot	1	2099	100-yr	18900.00	23.90	47.81	36.36	48.51	0.000416	6.73	2837.03	169.86	0.28
Presumpscot	1	2099	1996	23300.00	23.90	49.01	37.76	49.95	0.000509	7.77	3044.61	174.05	0.31
Presumpscot	1	2099	500-yr	28000.00	23.90	53.09	39.15	54.01	0.000385	7.68	3783.46	188.19	0.28
Presumpscot	1	2099	PF 7	12400.00	23.90	46.30	33.97	46.66	0.000240	4.82	2584.55	164.63	0.21
Presumpscot	1	2098.5		Bridge									
Presumpscot	1	2098	1.1yr	2450.00	23.90	42.56		42.59	0.000021	1.23	1994.36	151.49	0.06
Presumpscot	1	2098	25-yr	13000.00	23.90	46.46		46.85	0.000255	5.00	2611.63	165.20	0.22
Presumpscot	1	2098	50-yr	15700.00	23.90	47.09		47.61	0.000329	5.83	2715.60	167.36	0.25
Presumpscot	1	2098	100-yr	18900.00	23.90	47.78		48.49	0.000418	6.74	2833.16	169.78	0.28
Presumpscot	1	2098	1996	23300.00	23.90	48.98		49.92	0.000512	7.79	3039.07	173.94	0.31
Presumpscot	1	2098	500-yr	28000.00	23.90	52.90		53.83	0.000396	7.75	3747.06	187.52	0.28
Presumpscot	1	2098	PF 7	12400.00	23.90	46.29		46.65	0.000240	4.82	2582.78	164.59	0.21
Presumpscot	1	2097	1.1yr	2450.00	18.65	42.57		42.58	0.000009	0.94	2609.11	146.39	0.04
Presumpscot	1	2097	25-yr	13000.00	18.65	46.47		46.73	0.000132	4.08	3240.96	207.72	0.15
Presumpscot	1	2097	50-yr	15700.00	18.65	47.10		47.45	0.000175	4.78	3378.58	227.25	0.18
Presumpscot	1	2097	100-yr	18900.00	18.65	47.81		48.28	0.000227	5.57	3538.88	228.10	0.21
Presumpscot	1	2097	1996	23300.00	18.65	49.01		49.66	0.000289	6.49	3815.53	229.56	0.23
Presumpscot	1	2097	500-yr	28000.00	18.65	52.94		53.61	0.000245	6.82	4726.71	234.29	0.22
Presumpscot	1	2097	PF 7	12400.00	18.65	46.30		46.53	0.000124	3.92	3205.00	201.49	0.15
Presumpscot	1	2096	1.1yr	2450.00	22.07	42.56		42.58	0.000014	1.05	2330.54	153.64	0.05
Presumpscot	1	2096	25-yr	13000.00	22.07	46.39		46.69	0.000183	4.44	2994.84	215.48	0.18
Presumpscot	1	2096	50-yr	15700.00	22.07	46.99		47.41	0.000239	5.18	3129.42	228.15	0.21
Presumpscot	1	2096	100-yr	18900.00	22.07	47.67		48.23	0.000308	6.02	3282.88	228.59	0.24
Presumpscot	1	2096	1996	23300.00	22.07	48.84		49.59	0.000384	6.96	3551.57	229.35	0.27
Presumpscot	1	2096	500-yr	28000.00	22.07	52.81		53.55	0.000305	6.97	4464.69	230.00	0.24
Presumpscot	1	2096	PF 7	12400.00	22.07	46.22		46.50	0.000171	4.27	2958.46	211.00	0.17
Presumpscot	1	2095	1.1yr	2450.00	30.97	42.55		42.57	0.000036	1.24	1976.29	229.24	0.07
Presumpscot	1	2095	25-yr	13000.00	30.97	46.31		46.63	0.000305	4.55	2961.50	309.67	0.23
Presumpscot	1	2095	50-yr	15700.00	30.97	46.90		47.32	0.000378	5.23	3150.30	325.32	0.26
Presumpscot	1	2095	100-yr	18900.00	30.97	47.57		48.12	0.000461	5.98	3369.45	333.18	0.29
Presumpscot	1	2095	1996	23300.00	30.97	48.75		49.45	0.000524	6.74	3772.45	347.16	0.31
Presumpscot	1	2095	500-yr	28000.00	30.97	52.84		53.41	0.000321	6.20	5222.95	356.00	0.25
Presumpscot	1	2095	PF 7	12400.00	30.97	46.14		46.44	0.000290	4.40	2909.54	305.08	0.22
Presumpscot	1	1262	1.1yr	2450.00	33.00	42.54		42.57	0.000056	1.35	1819.40	261.22	0.09
Presumpscot	1	1262	25-yr	13000.00	33.00	46.30		46.62	0.000382	4.55	3067.50	452.89	0.25
Presumpscot	1	1262	50-yr	15700.00	33.00	46.91		47.32	0.000456	5.16	3341.09	455.15	0.28
Presumpscot	1	1262	100-yr	18900.00	33.00	47.59		48.10	0.000539	5.81	3651.19	457.70	0.30
Presumpscot	1	1262	1996	23300.00	33.00	48.80		49.42	0.000579	6.39	4210.14	462.26	0.32
Presumpscot	1	1262	500-yr	28000.00	33.00	52.92		53.37	0.000303	5.58	6199.21	515.30	0.24
Presumpscot	1	1262	PF 7	12400.00	33.00	46.13		46.43	0.000367	4.42	2990.08	452.25	0.24
Presumpscot	1	1156	1.1yr	2450.00	32.00	42.54		42.56	0.000035	1.22	2015.75	232.99	0.07
Presumpscot	1	1156	25-yr	13000.00	32.00	46.28		46.58	0.000320	4.41	2971.88	296.55	0.23
Presumpscot	1	1156	50-yr	15700.00	32.00	46.87		47.27	0.000396	5.05	3152.33	314.56	0.26
Presumpscot	1	1156	100-yr	18900.00	32.00	47.53		48.05	0.000482	5.75	3367.33	334.75	0.29
Presumpscot	1	1156	1996	23300.00	32.00	48.71		49.35	0.000541	6.45	3779.59	360.04	0.31
Presumpscot	1	1156	500-yr	28000.00	32.00	52.82		53.33	0.000310	5.83	5407.79	437.75	0.25
Presumpscot	1	1156	PF 7	12400.00	32.00	46.11		46.39	0.000305	4.27	2922.29	291.40	0.23
Presumpscot	1	1081	1.1yr	2450.00	32.50	42.54		42.56	0.000046	1.19	2063.99	317.35	0.08
Presumpscot	1	1081	25-yr	13000.00	32.50	46.30		46.54	0.000306	3.97	3275.14	327.16	0.22
Presumpscot	1	1081	50-yr	15700.00	32.50	46.90		47.21	0.000371	4.52	3472.07	328.73	0.25
Presumpscot	1	1081	100-yr	18900.00	32.50	47.57		47.98	0.000439	5.12	3695.86	334.15	0.27
Presumpscot	1	1081	1996	23300.00	32.50	48.77		49.27	0.000479	5.69	4102.79	344.94	0.29
Presumpscot	1	1081	500-yr	28000.00	32.50	52.87		53.28	0.000270	5.11	5617.10	407.14	0.22
Presumpscot	1	1081	PF 7	12400.00	32.50	46.13		46.36	0.000294	3.85	3219.19	326.72	0.22
Presumpscot	1	1036	1.1yr	2450.00	31.00	42.54	34.39	42.56	0.000026	0.98	2500.86	313.78	0.06

HEC-RAS Plan: Plan 28 (Continued)

River	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
Presumpscot	1	1036	25-yr	13000.00	31.00	46.32	37.88	46.51	0.000203	3.52	3696.25	318.59	0.18
Presumpscot	1	1036	50-yr	15700.00	31.00	46.93	38.45	47.18	0.000251	4.04	3889.65	319.36	0.20
Presumpscot	1	1036	100-yr	18900.00	31.00	47.61	39.08	47.94	0.000307	4.60	4108.20	321.45	0.23
Presumpscot	1	1036	1996	23300.00	31.00	48.81	39.87	49.23	0.000352	5.18	4497.19	325.39	0.25
Presumpscot	1	1036	500-yr	28000.00	31.00	52.90	40.66	53.25	0.000219	4.78	5952.19	402.77	0.20
Presumpscot	1	1036	PF 7	12400.00	31.00	46.15	37.72	46.33	0.000194	3.41	3641.39	318.37	0.18
Presumpscot	1	1000		Bridge									
Presumpscot	1	970	1.1yr	2450.00	26.00	42.53		42.55	0.000023	1.07	2279.13	222.10	0.06
Presumpscot	1	970	25-yr	13000.00	26.00	46.12		46.39	0.000258	4.19	3104.66	238.12	0.20
Presumpscot	1	970	50-yr	15700.00	26.00	46.65		47.01	0.000335	4.86	3231.18	240.48	0.23
Presumpscot	1	970	100-yr	18900.00	26.00	47.22		47.71	0.000429	5.61	3370.98	243.07	0.27
Presumpscot	1	970	1996	23300.00	26.00	48.29		48.93	0.000524	6.41	3632.65	247.83	0.30
Presumpscot	1	970	500-yr	28000.00	26.00	52.16		52.73	0.000377	6.05	4627.31	285.99	0.26
Presumpscot	1	970	PF 7	12400.00	26.00	45.96		46.21	0.000243	4.04	3067.27	237.42	0.20
Presumpscot	1	926	1.1yr	2450.00	28.50	42.53		42.55	0.000030	1.16	2116.66	229.67	0.07
Presumpscot	1	926	25-yr	13000.00	28.50	46.08		46.37	0.000312	4.38	2968.43	249.98	0.22
Presumpscot	1	926	50-yr	15700.00	28.50	46.59		46.99	0.000401	5.07	3098.58	252.94	0.26
Presumpscot	1	926	100-yr	18900.00	28.50	47.16		47.69	0.000510	5.83	3242.56	256.17	0.29
Presumpscot	1	926	1996	23300.00	28.50	48.22		48.90	0.000613	6.63	3516.79	262.22	0.32
Presumpscot	1	926	500-yr	28000.00	28.50	52.13		52.71	0.000443	6.10	4691.03	388.39	0.28
Presumpscot	1	926	PF 7	12400.00	28.50	45.92		46.20	0.000295	4.23	2929.67	249.09	0.22
Presumpscot	1	835	1.1yr	2450.00	29.00	42.52		42.54	0.000044	1.16	2105.94	307.25	0.08
Presumpscot	1	835	25-yr	13000.00	29.00	46.08		46.33	0.000372	3.98	3265.27	369.26	0.24
Presumpscot	1	835	50-yr	15700.00	29.00	46.61		46.93	0.000458	4.53	3462.59	376.48	0.26
Presumpscot	1	835	100-yr	18900.00	29.00	47.20		47.60	0.000550	5.13	3691.45	417.12	0.29
Presumpscot	1	835	1996	23300.00	29.00	48.29		48.79	0.000587	5.67	4149.73	418.98	0.31
Presumpscot	1	835	500-yr	28000.00	29.00	52.24		52.62	0.000299	4.94	5819.78	446.64	0.23
Presumpscot	1	835	PF 7	12400.00	29.00	45.92		46.16	0.000354	3.87	3207.32	364.84	0.23
Presumpscot	1	804	1.1yr	2450.00	29.00	42.53		42.54	0.000021	0.86	2843.32	373.43	0.06
Presumpscot	1	804	25-yr	13000.00	29.00	46.14		46.29	0.000167	3.08	4219.79	419.72	0.16
Presumpscot	1	804	50-yr	15700.00	29.00	46.69		46.88	0.000207	3.55	4448.67	419.82	0.18
Presumpscot	1	804	100-yr	18900.00	29.00	47.29		47.55	0.000253	4.06	4701.77	419.93	0.21
Presumpscot	1	804	1996	23300.00	29.00	48.40		48.73	0.000288	4.57	5167.97	420.13	0.22
Presumpscot	1	804	500-yr	28000.00	29.00	52.30		52.58	0.000174	4.22	6920.01	513.71	0.18
Presumpscot	1	804	PF 7	12400.00	29.00	45.98		46.12	0.000159	2.99	4152.99	384.64	0.16
Presumpscot	1	95	1.1yr	2450.00	29.00	42.53		42.54	0.000009	0.68	3588.92	359.70	0.04
Presumpscot	1	95	25-yr	13000.00	29.00	46.16		46.27	0.000095	2.65	4897.06	360.11	0.13
Presumpscot	1	95	50-yr	15700.00	29.00	46.72		46.86	0.000122	3.08	5095.40	360.17	0.14
Presumpscot	1	95	100-yr	18900.00	29.00	47.32		47.52	0.000154	3.56	5314.66	360.24	0.16
Presumpscot	1	95	1996	23300.00	29.00	48.44		48.70	0.000185	4.08	5715.93	360.37	0.18
Presumpscot	1	95	500-yr	28000.00	29.00	52.32		52.56	0.000130	3.93	7293.27	479.57	0.16
Presumpscot	1	95	PF 7	12400.00	29.00	46.00		46.10	0.000090	2.56	4838.88	360.09	0.12
Presumpscot	2	74	1.1yr	2450.00	12.29	23.98		24.00	0.000051	1.12	2181.20	231.96	0.06
Presumpscot	2	74	25-yr	13000.00	12.29	36.99		37.07	0.000084	2.30	5713.69	346.62	0.09
Presumpscot	2	74	50-yr	15700.00	12.29	39.98		40.07	0.000075	2.39	6653.79	415.70	0.09
Presumpscot	2	74	100-yr	18900.00	12.29	42.30		42.40	0.000077	2.59	7877.48	469.13	0.09
Presumpscot	2	74	1996	23300.00	12.29	46.97		47.07	0.000062	2.61	10193.56	500.19	0.08
Presumpscot	2	74	500-yr	28000.00	12.29	50.95		51.06	0.000056	2.59	12186.01	500.25	0.08
Presumpscot	2	74	PF 7	12400.00	12.29	36.49		36.57	0.000084	2.25	5542.03	334.99	0.09
Presumpscot	2	73	1.1yr	2450.00	9.00	23.94		23.98	0.000061	1.59	1536.54	154.44	0.09
Presumpscot	2	73	25-yr	13000.00	9.00	36.91		37.04	0.000084	3.00	5351.21	451.21	0.12
Presumpscot	2	73	50-yr	15700.00	9.00	39.91		40.04	0.000073	3.06	6815.18	524.99	0.11
Presumpscot	2	73	100-yr	18900.00	9.00	42.22		42.37	0.000073	3.27	8094.86	581.88	0.11
Presumpscot	2	73	1996	23300.00	9.00	46.91		47.05	0.000056	3.22	11073.33	665.00	0.10
Presumpscot	2	73	500-yr	28000.00	9.00	50.91		51.04	0.000048	3.23	13730.38	665.00	0.10
Presumpscot	2	73	PF 7	12400.00	9.00	36.41		36.54	0.000084	2.95	5127.44	438.84	0.12
Presumpscot	2	72	1.1yr	2450.00	9.35	23.90	13.62	23.95	0.000055	1.77	1729.34	215.01	0.09
Presumpscot	2	72	25-yr	13000.00	9.35	36.80	19.42	36.98	0.000101	3.85	5680.08	397.51	0.13
Presumpscot	2	72	50-yr	15700.00	9.35	39.80	20.52	39.99	0.000093	3.99	6936.26	439.95	0.13
Presumpscot	2	72	100-yr	18900.00	9.35	42.10	21.69	42.31	0.000098	4.30	7985.56	472.49	0.14
Presumpscot	2	72	1996	23300.00	9.35	46.80	23.13	47.00	0.000081	4.30	10352.31	522.00	0.13
Presumpscot	2	72	500-yr	28000.00	9.35	50.80	24.57	51.00	0.000072	4.37	12440.31	522.00	0.12
Presumpscot	2	72	PF 7	12400.00	9.35	36.30	19.19	36.48	0.000100	3.77	5483.10	390.43	0.13
Main	1	86	1.1yr	899.86	24.30	42.53	27.50	42.54	0.000013	0.72	1730.11	143.00	0.03
Main	1	86	25-yr	5337.92	24.30	46.14	32.27	46.27	0.000225	3.29	2246.43	143.00	0.13
Main	1	86	50-yr	6247.27	24.30	46.69	33.18	46.86	0.000280	3.72	2325.54	143.00	0.14
Main	1	86	100-yr	7306.13	24.30	47.31	34.67	47.52	0.000345	4.19	2413.38	143.00	0.16
Main	1	86	1996	8636.33	24.30	48.43	35.64	48.69	0.000422	4.75	2573.22	143.00	0.18
Main	1	86	500-yr	10089.97	24.30	52.33	36.36	52.56	0.000317	4.45	3131.18	143.00	0.15
Main	1	86	PF 7	5089.95	24.30	45.98	32.04	46.10	0.000211	3.17	2223.60	143.00	0.12
Main	1	85.5		Inl Struct									

HEC-RAS Plan: Plan 28 (Continued)

River	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)	
Main	1	85	1.1yr	899.86	22.36	26.94	26.94	28.21	0.018140	9.06	99.27	39.10	1.00
Main	1	85	25-yr	5337.92	22.36	37.39		37.69	0.000921	5.20	1472.15	143.00	0.26
Main	1	85	50-yr	6247.27	22.36	40.36		40.60	0.000593	4.69	1897.83	143.00	0.21
Main	1	85	100-yr	7306.13	22.36	42.79		43.02	0.000492	4.62	2244.74	143.00	0.19
Main	1	85	1996	8836.33	22.36	47.82		48.01	0.000316	4.19	2964.35	143.00	0.16
Main	1	85	500-yr	10089.97	22.36	52.16		52.33	0.000237	3.93	3585.49	143.00	0.13
Main	1	85	PF 7	5089.95	22.36	36.87		37.18	0.000975	5.23	1398.84	143.00	0.27
Main	1	84	1.1yr	899.86	22.35	25.93	25.25	26.37	0.008464	5.30	169.70	76.20	0.63
Main	1	84	25-yr	5337.92	22.35	37.41		37.62	0.000494	3.66	1458.47	116.00	0.18
Main	1	84	50-yr	6247.27	22.35	40.37		40.56	0.000352	3.47	1802.09	116.00	0.15
Main	1	84	100-yr	7306.13	22.35	42.79		42.99	0.000310	3.51	2082.79	116.00	0.15
Main	1	84	1996	8836.33	22.35	47.82		47.99	0.000217	3.31	2665.59	116.00	0.12
Main	1	84	500-yr	10089.97	22.35	52.16		52.32	0.000170	3.18	3169.03	116.00	0.11
Main	1	84	PF 7	5089.95	22.35	36.90		37.11	0.000510	3.64	1399.33	116.00	0.18
Main	1	83	1.1yr	899.86	21.54	25.90	24.76	26.15	0.004674	4.03	223.23	98.65	0.47
Main	1	83	25-yr	5337.92	21.54	37.43	28.06	37.60	0.000373	3.34	1597.37	120.00	0.16
Main	1	83	50-yr	6247.27	21.54	40.39	28.48	40.54	0.000275	3.20	1952.62	120.00	0.14
Main	1	83	100-yr	7306.13	21.54	42.81	28.94	42.97	0.000247	3.26	2242.99	120.00	0.13
Main	1	83	1996	8836.33	21.54	47.83	29.63	47.98	0.000178	3.11	2845.69	120.00	0.11
Main	1	83	500-yr	10089.97	21.54	52.17	30.14	52.31	0.000141	3.00	3366.37	120.00	0.10
Main	1	83	PF 7	5089.95	21.54	36.92	27.94	37.09	0.000382	3.31	1536.17	120.00	0.16
Main	1	82.5		Bridge									
Main	1	82	1.1yr	899.86	21.54	25.85		26.01	0.002668	3.23	278.99	113.07	0.36
Main	1	82	25-yr	5337.92	21.54	37.42		37.58	0.000329	3.20	1665.74	120.00	0.15
Main	1	82	50-yr	6247.27	21.54	40.37		40.52	0.000250	3.09	2019.97	120.00	0.13
Main	1	82	100-yr	7306.13	21.54	42.75		42.91	0.000229	3.17	2305.69	120.00	0.13
Main	1	82	1996	8836.33	21.54	47.79		47.94	0.000167	3.04	2910.74	120.00	0.11
Main	1	82	500-yr	10089.97	21.54	52.14		52.28	0.000134	2.94	3432.51	120.00	0.10
Main	1	82	PF 7	5089.95	21.54	36.91		37.07	0.000336	3.17	1604.55	120.00	0.15
Main	1	81	1.1yr	899.86	21.85	25.74		25.92	0.002284	3.43	262.55	93.00	0.36
Main	1	81	25-yr	5337.92	21.85	37.33		37.56	0.000354	3.87	1480.64	110.00	0.18
Main	1	81	50-yr	6247.27	21.85	40.29		40.50	0.000262	3.74	1805.24	110.00	0.16
Main	1	81	100-yr	7306.13	21.85	42.67		42.89	0.000235	3.84	2067.81	110.00	0.15
Main	1	81	1996	8836.33	21.85	47.72		47.92	0.000164	3.69	2623.25	110.00	0.13
Main	1	81	500-yr	10089.97	21.85	52.07		52.27	0.000125	3.57	3171.58	135.00	0.12
Main	1	81	PF 7	5089.95	21.85	36.82		37.05	0.000363	3.83	1424.69	110.00	0.18
Main	1	80.9	1.1yr	899.86	22.41	25.53	24.62	25.86	0.004005	4.62	194.84	78.00	0.51
Main	1	80.9	25-yr	5337.92	22.41	37.19	28.27	37.52	0.000806	4.70	1201.22	90.00	0.22
Main	1	80.9	50-yr	6247.27	22.41	40.16	28.86	40.47	0.000656	4.52	1468.94	90.00	0.19
Main	1	80.9	100-yr	7306.13	22.41	42.54	29.57	42.86	0.000635	4.63	1682.58	90.00	0.18
Main	1	80.9	1996	8836.33	22.41	47.60	30.45	47.90	0.000509	4.43	2138.43	90.00	0.16
Main	1	80.9	500-yr	10089.97	22.41	51.98	31.14	52.24	0.000395	4.20	2639.68	130.00	0.15
Main	1	80.9	PF 7	5089.95	22.41	36.68	28.12	37.01	0.000811	4.65	1155.65	90.00	0.22
Main	1	80.6		Bridge									
Main	1	80.5	1.1yr	899.86	22.03	24.33	24.33	25.14	0.016688	7.24	124.27	78.00	1.01
Main	1	80.5	25-yr	5337.92	22.03	37.06		37.39	0.000785	4.65	1212.69	90.00	0.22
Main	1	80.5	50-yr	6247.27	22.03	40.05		40.36	0.000640	4.48	1482.08	90.00	0.19
Main	1	80.5	100-yr	7306.13	22.03	42.39		42.71	0.000625	4.60	1692.43	90.00	0.18
Main	1	80.5	1996	8836.33	22.03	47.21		47.51	0.000516	4.45	2125.90	90.00	0.16
Main	1	80.5	500-yr	10089.97	22.03	51.34		51.62	0.000423	4.27	2579.93	130.00	0.15
Main	1	80.5	PF 7	5089.95	22.03	36.56		36.88	0.000788	4.60	1167.18	90.00	0.22
Main	1	80.1	1.1yr	899.86	19.98	23.94	23.32	24.36	0.005845	5.18	173.68	78.85	0.62
Main	1	80.1	25-yr	5337.92	19.98	37.05		37.34	0.000644	4.32	1296.72	90.00	0.19
Main	1	80.1	50-yr	6247.27	19.98	40.05		40.31	0.000543	4.21	1566.09	90.00	0.17
Main	1	80.1	100-yr	7306.13	19.98	42.38		42.67	0.000540	4.35	1776.34	90.00	0.17
Main	1	80.1	1996	8836.33	19.98	47.20		47.47	0.000459	4.25	2209.81	90.00	0.15
Main	1	80.1	500-yr	10089.97	19.98	51.34		51.59	0.000383	4.11	2663.57	130.00	0.14
Main	1	80.1	PF 7	5089.95	19.98	36.55		36.82	0.000542	4.26	1251.24	90.00	0.20
Main	1	80	1.1yr	899.86	18.68	24.14		24.26	0.001027	2.81	320.32	79.85	0.25
Main	1	80	25-yr	5337.92	18.68	37.15		37.29	0.000208	3.12	1780.27	117.00	0.14
Main	1	80	50-yr	6247.27	18.68	40.13		40.28	0.000162	3.07	2129.64	117.00	0.12
Main	1	80	100-yr	7306.13	18.68	42.47		42.63	0.000152	3.19	2403.51	117.00	0.12
Main	1	80	1996	8836.33	18.68	47.28		47.43	0.000114	3.14	2966.28	117.00	0.11
Main	1	80	500-yr	10089.97	18.68	51.41		51.56	0.000093	3.10	3449.13	117.00	0.10
Main	1	80	PF 7	5089.95	18.68	36.64		36.78	0.000211	3.07	1720.92	117.00	0.14
Main	1	79	1.1yr	899.86	17.89	24.16		24.21	0.000307	1.72	523.77	114.00	0.14
Main	1	79	25-yr	5337.92	17.89	37.16		37.27	0.000129	2.54	2094.53	125.00	0.11
Main	1	79	50-yr	6247.27	17.89	40.15		40.26	0.000105	2.63	2467.59	125.00	0.10
Main	1	79	100-yr	7306.13	17.89	42.49		42.61	0.000101	2.76	2760.29	125.00	0.10
Main	1	79	1996	8836.33	17.89	47.30		47.42	0.000080	2.76	3361.35	125.00	0.09
Main	1	79	500-yr	10089.97	17.89	51.43		51.54	0.000066	2.74	3877.08	125.00	0.09
Main	1	79	PF 7	5089.95	17.89	36.66		36.76	0.000129	2.59	2031.07	125.00	0.11

HEC-RAS Plan: Plan 28 (Continued)

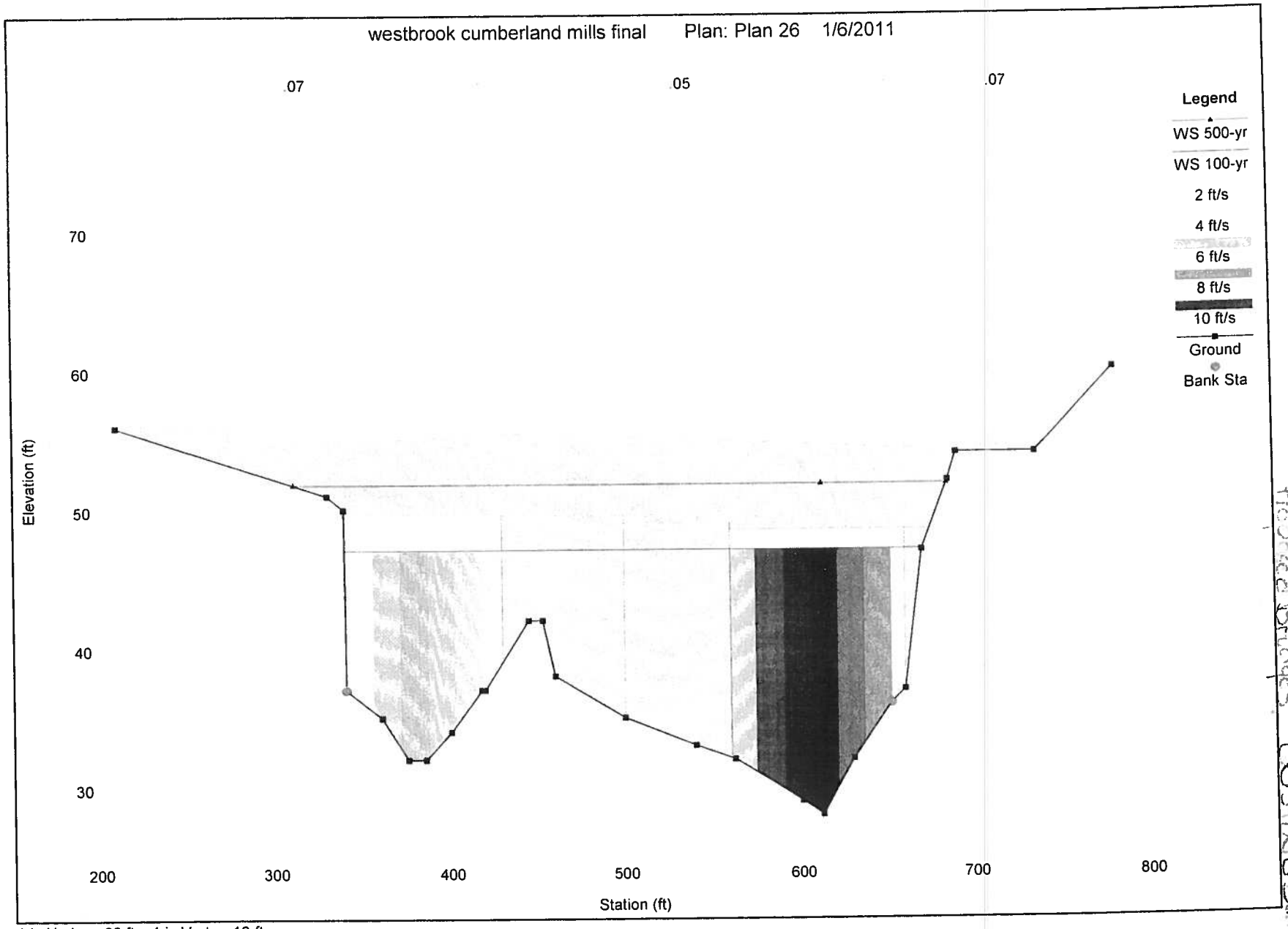
River	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main	1	78.9	1.1yr	899.86	16.99	24.07	20.93	24.19	0.001033	2.83	317.61	84.17	0.26
Main	1	78.9	25-yr	5337.92	16.99	37.04	25.28	37.25	0.000494	3.71	1499.56	95.60	0.16
Main	1	78.9	50-yr	6247.27	16.99	40.03	25.83	40.24	0.000435	3.66	1785.65	95.70	0.15
Main	1	78.9	100-yr	7306.13	16.99	42.36	26.44	42.59	0.000444	3.82	2009.06	95.77	0.14
Main	1	78.9	1996	8836.33	16.99	47.18	27.27	47.40	0.000391	3.77	2470.61	95.93	0.13
Main	1	78.9	500-yr	10089.97	16.99	51.32	27.91	51.52	0.000335	3.66	2912.33	118.00	0.13
Main	1	78.9	PF 7	5089.95	16.99	36.54	25.12	36.74	0.000488	3.65	1451.34	95.58	0.16
Main	1	78.6		Bridge									
Main	1	78.5	1.1yr	899.86	16.99	23.98		24.09	0.000869	2.69	334.97	84.17	0.24
Main	1	78.5	25-yr	5337.92	16.99	36.97		37.17	0.000475	3.66	1517.32	95.59	0.16
Main	1	78.5	50-yr	6247.27	16.99	39.97		40.17	0.000421	3.62	1803.87	95.69	0.14
Main	1	78.5	100-yr	7306.13	16.99	42.28		42.50	0.000432	3.79	2025.61	95.77	0.14
Main	1	78.5	1996	8836.33	16.99	46.95		47.16	0.000387	3.77	2472.99	95.92	0.13
Main	1	78.5	500-yr	10089.97	16.99	50.94		51.15	0.000343	3.69	2892.09	118.00	0.13
Main	1	78.5	PF 7	5089.95	16.99	36.47		36.67	0.000469	3.60	1469.27	95.58	0.16
Main	1	78.1	1.1yr	899.86	16.96	23.95		24.05	0.000832	2.63	342.34	85.00	0.23
Main	1	78.1	25-yr	5337.92	16.96	36.95		37.15	0.000465	3.62	1533.97	96.00	0.15
Main	1	78.1	50-yr	6247.27	16.96	39.95		40.15	0.000413	3.59	1821.78	96.00	0.14
Main	1	78.1	100-yr	7306.13	16.96	42.27		42.48	0.000424	3.75	2044.09	96.00	0.14
Main	1	78.1	1996	8836.33	16.96	46.93		47.15	0.000382	3.74	2492.35	96.00	0.13
Main	1	78.1	500-yr	10089.97	16.96	50.93		51.13	0.000339	3.66	2911.39	118.00	0.13
Main	1	78.1	PF 7	5089.95	16.96	36.45		36.64	0.000459	3.56	1485.73	96.00	0.15
Main	1	78	1.1yr	899.86	16.29	24.01		24.02	0.000038	0.81	1110.80	155.00	0.05
Main	1	78	25-yr	5337.92	16.29	37.06		37.10	0.000044	1.70	3212.47	165.00	0.07
Main	1	78	50-yr	6247.27	16.29	40.05		40.10	0.000038	1.73	3706.46	165.00	0.06
Main	1	78	100-yr	7306.13	16.29	42.38		42.43	0.000038	1.83	4089.92	165.00	0.06
Main	1	78	1996	8836.33	16.29	47.04		47.10	0.000032	1.87	4859.85	165.00	0.06
Main	1	78	500-yr	10089.97	16.29	51.03		51.08	0.000028	1.89	5552.05	185.00	0.06
Main	1	78	PF 7	5089.95	16.29	36.55		36.60	0.000043	1.66	3129.04	165.00	0.07
Main	1	77	1.1yr	899.86	16.50	23.99		24.02	0.000126	1.43	781.12	197.50	0.10
Main	1	77	25-yr	5337.92	16.50	37.04		37.10	0.000079	2.25	3358.84	197.50	0.09
Main	1	77	50-yr	6247.27	16.50	40.04		40.10	0.000065	2.25	3950.74	197.50	0.08
Main	1	77	100-yr	7306.13	16.50	42.36		42.43	0.000064	2.36	4409.77	197.50	0.08
Main	1	77	1996	8836.33	16.50	47.03		47.09	0.000052	2.38	5331.88	197.50	0.08
Main	1	77	500-yr	10089.97	16.50	51.02		51.06	0.000044	2.36	6119.33	197.50	0.07
Main	1	77	PF 7	5089.95	16.50	36.53		36.59	0.000078	2.21	3259.00	197.50	0.09
Main	1	76	1.1yr	899.86	15.10	24.00		24.01	0.000039	0.82	1193.38	200.00	0.05
Main	1	76	25-yr	5337.92	15.10	37.05		37.09	0.000038	1.61	3804.26	200.00	0.06
Main	1	76	50-yr	6247.27	15.10	40.05		40.09	0.000033	1.63	4403.47	200.00	0.06
Main	1	76	100-yr	7306.13	15.10	42.37		42.42	0.000033	1.73	4868.45	200.00	0.06
Main	1	76	1996	8836.33	15.10	47.04		47.09	0.000027	1.77	5802.10	200.00	0.06
Main	1	76	500-yr	10089.97	15.10	51.03		51.07	0.000024	1.79	6599.42	200.00	0.05
Main	1	76	PF 7	5089.95	15.10	36.55		36.58	0.000038	1.57	3703.10	200.00	0.06
Main	1	75	1.1yr	899.86	15.04	24.00		24.01	0.000034	0.82	1403.56	255.00	0.05
Main	1	75	25-yr	5337.92	15.04	37.06		37.09	0.000034	1.55	4733.79	255.00	0.06
Main	1	75	50-yr	6247.27	15.04	40.05		40.08	0.000029	1.56	5497.98	255.00	0.06
Main	1	75	100-yr	7306.13	15.04	42.38		42.41	0.000029	1.66	6091.09	255.00	0.06
Main	1	75	1996	8836.33	15.04	47.05		47.08	0.000024	1.68	7281.72	255.00	0.05
Main	1	75	500-yr	10089.97	15.04	51.04		51.07	0.000021	1.70	8298.44	255.00	0.05
Main	1	75	PF 7	5089.95	15.04	36.55		36.58	0.000033	1.51	4604.74	255.00	0.06
Freshet	1	65	1.1yr	1550.14	31.47	42.51	34.18	42.54	0.000069	1.33	1171.26	127.19	0.08
Freshet	1	65	25-yr	7662.08	31.47	45.97	37.76	46.27	0.000540	4.54	1938.91	330.37	0.22
Freshet	1	65	50-yr	9352.73	31.47	46.44	38.48	46.84	0.000702	5.30	2106.58	385.76	0.25
Freshet	1	65	100-yr	11593.87	31.47	46.99	39.38	47.52	0.000885	6.11	2320.12	385.98	0.29
Freshet	1	65	1996	14463.67	31.47	48.10	40.45	48.69	0.000937	6.61	2748.23	386.43	0.30
Freshet	1	65	500-yr	17910.03	31.47	52.24	41.62	52.56	0.000423	5.21	4349.50	387.00	0.21
Freshet	1	65	PF 7	7210.05	31.47	45.82	37.56	46.10	0.000504	4.35	1888.78	330.17	0.21
Freshet	1	64.5		Inl Struct									
Freshet	1	64.45	1.1yr	1550.14	28.10	31.67	30.38	31.98	0.003236	4.45	348.15	113.37	0.45
Freshet	1	64.45	25-yr	7662.08	28.10	37.96	33.82	38.75	0.002146	7.14	1073.10	117.12	0.42
Freshet	1	64.45	50-yr	9352.73	28.10	40.72	34.56	41.41	0.001404	6.69	1398.16	118.76	0.34
Freshet	1	64.45	100-yr	11593.87	28.10	43.13	35.48	43.87	0.001199	6.87	1693.48	126.27	0.32
Freshet	1	64.45	1996	14463.67	28.10	47.92	36.57	48.36	0.000577	5.66	3118.04	386.16	0.23
Freshet	1	64.45	500-yr	17910.03	28.10	52.17	37.78	52.44	0.000312	4.69	4762.02	387.10	0.17
Freshet	1	64.45	PF 7	7210.05	28.10	37.49	33.61	38.26	0.002244	7.08	1017.66	116.84	0.42
Freshet	1	64.4		Bridge									
Freshet	1	64	1.1yr	1550.14	28.10	31.58		31.91	0.003558	4.58	338.17	113.31	0.47
Freshet	1	64	25-yr	7662.08	28.10	37.91		38.71	0.002186	7.18	1066.79	117.09	0.42
Freshet	1	64	50-yr	9352.73	28.10	40.68		41.38	0.001416	6.71	1394.29	118.74	0.34
Freshet	1	64	100-yr	11593.87	28.10	43.11		43.84	0.001206	6.88	1689.96	126.25	0.32

HEC-RAS Plan: Plan 28 (Continued)

River	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
Freshet	1	64	1996	14463.67	28.10	47.90		48.35	0.000579	5.67	3111.72	386.15	0.23
Freshet	1	64	500-yr	17910.03	28.10	52.11		52.39	0.000316	4.71	4741.75	387.10	0.18
Freshet	1	64	PF 7	7210.05	28.10	37.43		38.22	0.002291	7.13	1011.00	116.80	0.43
Freshet	1	63	1.1yr	1550.14	25.54	30.49	30.49	31.63	0.018034	8.58	180.74	79.72	1.00
Freshet	1	63	25-yr	7662.08	25.54	36.53		38.49	0.006559	11.24	681.98	86.17	0.70
Freshet	1	63	50-yr	9352.73	25.54	39.80		41.25	0.003358	9.64	969.77	89.66	0.52
Freshet	1	63	100-yr	11593.87	25.54	42.25		43.72	0.002788	9.72	1193.36	98.41	0.48
Freshet	1	63	1996	14463.67	25.54	47.32		48.28	0.001391	8.09	2385.71	369.69	0.34
Freshet	1	63	500-yr	17910.03	25.54	51.76		52.35	0.000763	6.81	4033.53	372.00	0.26
Freshet	1	63	PF 7	7210.05	25.54	35.99		37.99	0.007197	11.34	636.03	85.60	0.73
Freshet	1	62.5	1.1yr	1550.14	22.56	25.85	26.84	29.18	0.065816	14.63	105.92	54.86	1.86
Freshet	1	62.5	25-yr	7662.08	22.56	36.32		38.05	0.004206	10.58	724.22	63.33	0.55
Freshet	1	62.5	50-yr	9352.73	22.56	39.41		41.00	0.003107	10.12	924.10	65.84	0.48
Freshet	1	62.5	100-yr	11593.87	22.56	41.67		43.47	0.003112	10.79	1074.73	67.67	0.48
Freshet	1	62.5	1996	14463.67	22.56	46.44		48.08	0.002284	10.28	1406.93	71.53	0.41
Freshet	1	62.5	500-yr	17910.03	22.56	50.42		52.15	0.002086	10.55	1697.66	74.00	0.39
Freshet	1	62.5	PF 7	7210.05	22.56	35.83		37.51	0.004224	10.40	693.54	62.94	0.55
Freshet	1	62	1.1yr	1550.14	19.96	22.41	24.04	27.35	0.088743	17.83	86.95	41.47	2.17
Freshet	1	62	25-yr	7662.08	19.96	36.72		37.79	0.002122	8.29	924.53	60.00	0.37
Freshet	1	62	50-yr	9352.73	19.96	39.69		40.81	0.001914	8.48	1102.57	60.00	0.35
Freshet	1	62	100-yr	11593.87	19.96	41.92		43.29	0.002132	9.38	1236.44	60.00	0.36
Freshet	1	62	1996	14463.67	19.96	46.55		47.97	0.001899	9.55	1514.34	60.00	0.34
Freshet	1	62	500-yr	17910.03	19.96	50.44		52.07	0.001951	10.24	1753.65	65.00	0.33
Freshet	1	62	PF 7	7210.05	19.96	36.24		37.24	0.002060	8.05	895.42	60.00	0.37
Freshet	1	61	1.1yr	1550.14	15.96	23.98	21.80	24.41	0.002327	5.25	295.13	60.00	0.42
Freshet	1	61	25-yr	7662.08	15.96	36.89		37.68	0.000943	7.16	1069.44	60.00	0.30
Freshet	1	61	50-yr	9352.73	15.96	39.84		40.71	0.000878	7.50	1246.52	60.00	0.29
Freshet	1	61	100-yr	11593.87	15.96	42.09		43.18	0.000987	8.39	1381.45	60.00	0.31
Freshet	1	61	1996	14463.67	15.96	46.70		47.88	0.000887	8.72	1657.98	60.00	0.29
Freshet	1	61	500-yr	17910.03	15.96	50.59		51.98	0.000920	9.47	1891.57	60.00	0.30
Freshet	1	61	PF 7	7210.05	15.96	36.40		37.14	0.000910	6.93	1039.99	60.00	0.29
Freshet	1	60	1.1yr	1550.14	12.83	24.16		24.26	0.000212	2.50	618.87	61.00	0.14
Freshet	1	60	25-yr	7662.08	12.83	37.06		37.52	0.000403	5.45	1405.74	61.00	0.20
Freshet	1	60	50-yr	9352.73	12.83	40.01		40.55	0.000418	5.90	1585.72	61.00	0.20
Freshet	1	60	100-yr	11593.87	12.83	42.29		42.99	0.000499	6.72	1724.78	61.00	0.22
Freshet	1	60	1996	14463.67	12.83	46.89		47.70	0.000498	7.21	2005.30	61.00	0.22
Freshet	1	60	500-yr	17910.03	12.83	50.80		51.79	0.000544	7.98	2251.26	66.00	0.23
Freshet	1	60	PF 7	7210.05	12.83	36.56		36.99	0.000381	5.24	1375.29	61.00	0.19
Freshet	1	59	1.1yr	1550.14	12.98	24.15		24.25	0.000209	2.50	619.28	60.00	0.14
Freshet	1	59	25-yr	7662.08	12.98	37.03		37.50	0.000412	5.50	1392.09	60.00	0.20
Freshet	1	59	50-yr	9352.73	12.98	39.98		40.53	0.000428	5.96	1568.89	60.00	0.21
Freshet	1	59	100-yr	11593.87	12.98	42.25		42.97	0.000513	6.80	1705.14	60.00	0.22
Freshet	1	59	1996	14463.67	12.98	46.84		47.67	0.000513	7.30	1980.81	60.00	0.22
Freshet	1	59	500-yr	17910.03	12.98	50.74		51.76	0.000568	8.09	2214.79	60.00	0.23
Freshet	1	59	PF 7	7210.05	12.98	36.53		36.97	0.000390	5.29	1362.25	60.00	0.20
Freshet	1	58	1.1yr	1550.14	12.88	24.14		24.24	0.000210	2.51	617.62	60.00	0.14
Freshet	1	58	25-yr	7662.08	12.88	37.01		37.49	0.000413	5.51	1389.87	60.00	0.20
Freshet	1	58	50-yr	9352.73	12.88	39.96		40.51	0.000430	5.97	1566.63	60.00	0.21
Freshet	1	58	100-yr	11593.87	12.88	42.23		42.95	0.000515	6.81	1702.63	60.00	0.23
Freshet	1	58	1996	14463.67	12.88	46.82		47.65	0.000515	7.31	1978.31	60.00	0.22
Freshet	1	58	500-yr	17910.03	12.88	50.72		51.74	0.000565	8.09	2219.28	65.00	0.23
Freshet	1	58	PF 7	7210.05	12.88	36.52		36.95	0.000391	5.30	1360.10	60.00	0.20
Freshet	1	57	1.1yr	1550.14	13.57	24.13		24.23	0.000223	2.56	606.22	60.00	0.14
Freshet	1	57	25-yr	7662.08	13.57	36.99		37.47	0.000424	5.56	1377.82	60.00	0.20
Freshet	1	57	50-yr	9352.73	13.57	39.94		40.50	0.000439	6.02	1554.53	60.00	0.21
Freshet	1	57	100-yr	11593.87	13.57	42.20		42.93	0.000526	6.86	1690.23	60.00	0.23
Freshet	1	57	1996	14463.67	13.57	46.79		47.63	0.000524	7.36	1965.91	60.00	0.23
Freshet	1	57	500-yr	17910.03	13.57	50.69		51.72	0.000574	8.14	2209.37	67.00	0.24
Freshet	1	57	PF 7	7210.05	13.57	36.50		36.94	0.000401	5.35	1348.12	60.00	0.20
Freshet	1	56	1.1yr	1550.14	13.55	24.13		24.23	0.000227	2.57	603.21	60.00	0.14
Freshet	1	56	25-yr	7662.08	13.55	36.98		37.46	0.000428	5.57	1374.41	60.00	0.21
Freshet	1	56	50-yr	9352.73	13.55	39.92		40.49	0.000443	6.03	1551.09	60.00	0.21
Freshet	1	56	100-yr	11593.87	13.55	42.18		42.92	0.000530	6.87	1686.63	60.00	0.23
Freshet	1	56	1996	14463.67	13.55	46.78		47.62	0.000527	7.37	1962.32	60.00	0.23
Freshet	1	56	500-yr	17910.03	13.55	50.67		51.70	0.000578	8.15	2202.79	65.00	0.24
Freshet	1	56	PF 7	7210.05	13.55	36.48		36.93	0.000405	5.36	1344.75	60.00	0.20
Freshet	1	55	1.1yr	1550.14	14.73	24.08		24.21	0.000346	2.94	527.55	60.00	0.17
Freshet	1	55	25-yr	7662.08	14.73	36.89		37.43	0.000510	5.91	1296.30	60.00	0.22
Freshet	1	55	50-yr	9352.73	14.73	39.83		40.46	0.000516	6.35	1472.84	60.00	0.23
Freshet	1	55	100-yr	11593.87	14.73	42.07		42.88	0.000610	7.21	1607.26	60.00	0.25
Freshet	1	55	1996	14463.67	14.73	46.67		47.58	0.000594	7.68	1883.09	60.00	0.24
Freshet	1	55	500-yr	17910.03	14.73	50.55		51.66	0.000642	8.46	2122.36	65.00	0.25
Freshet	1	55	PF 7	7210.05	14.73	36.40		36.90	0.000484	5.69	1266.94	60.00	0.22

HEC-RAS Plan: Plan 28 (Continued)

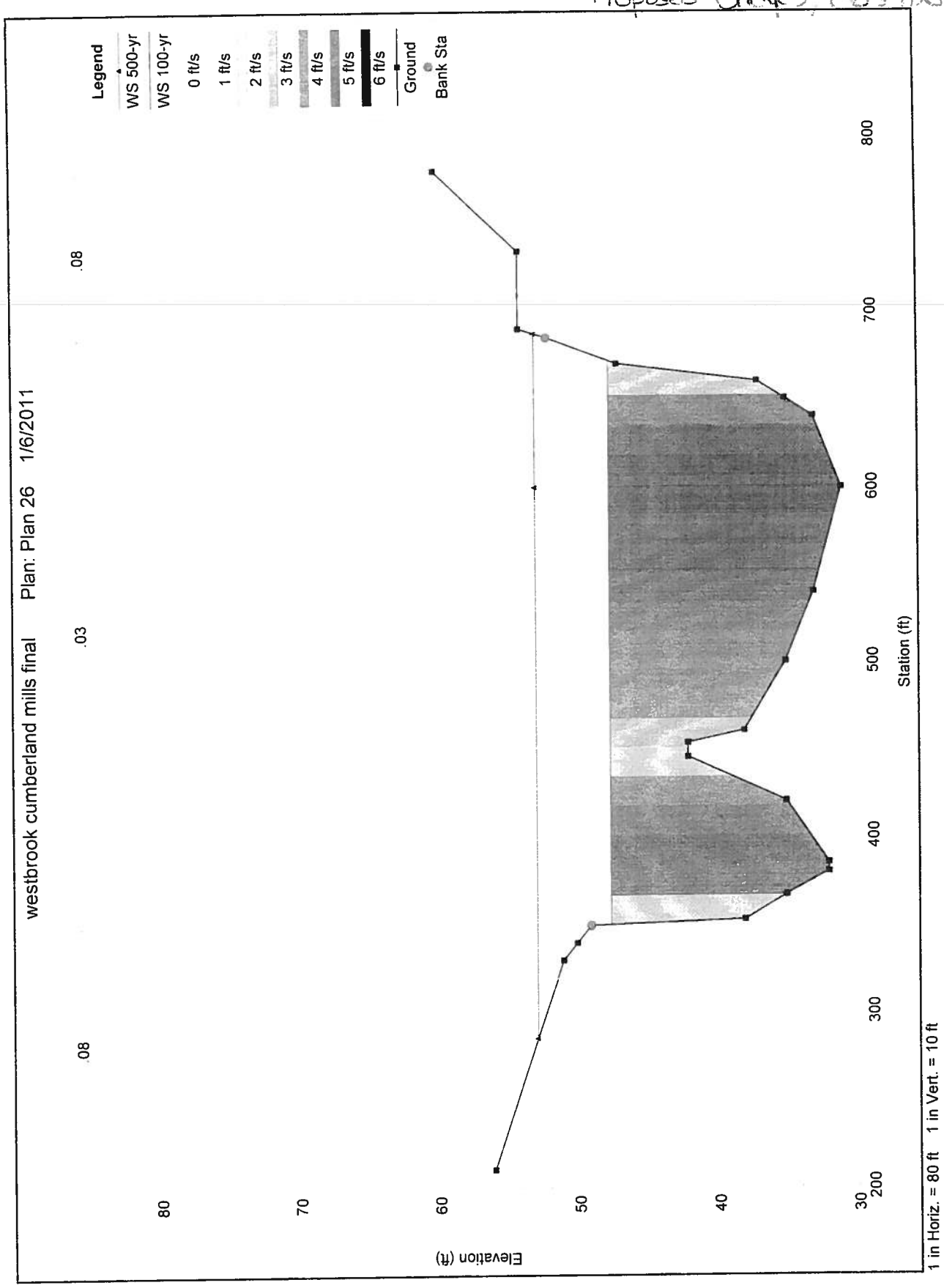
River	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Freshet	1	54.5	1.1yr	1550.14	14.90	24.13		24.18	0.000212	1.88	825.76	132.90	0.13
Freshet	1	54.5	25-yr	7662.08	14.90	37.18		37.30	0.000121	2.92	2870.45	160.00	0.12
Freshet	1	54.5	50-yr	9352.73	14.90	40.17		40.31	0.000112	3.07	3349.09	160.00	0.11
Freshet	1	54.5	100-yr	11593.87	14.90	42.51		42.69	0.000124	3.44	3723.91	160.00	0.12
Freshet	1	54.5	1996	14463.67	14.90	47.17		47.37	0.000110	3.60	4469.77	160.00	0.12
Freshet	1	54.5	500-yr	17910.03	14.90	51.17		51.40	0.000112	3.92	5109.07	160.00	0.12
Freshet	1	54.5	PF 7	7210.05	14.90	36.67		36.79	0.000117	2.82	2788.65	160.00	0.11
Freshet	1	54	1.1yr	1550.14	14.92	24.09		24.17	0.000276	2.32	670.96	90.53	0.15
Freshet	1	54	25-yr	7662.08	14.92	37.02		37.28	0.000259	4.19	1964.59	101.00	0.16
Freshet	1	54	50-yr	9352.73	14.92	39.99		40.29	0.000249	4.47	2264.43	101.00	0.16
Freshet	1	54	100-yr	11593.87	14.92	42.28		42.66	0.000284	5.04	2495.73	101.00	0.17
Freshet	1	54	1996	14463.67	14.92	46.91		47.34	0.000261	5.33	2963.44	101.00	0.17
Freshet	1	54	500-yr	17910.03	14.92	50.85		51.36	0.000270	5.85	3373.68	109.00	0.18
Freshet	1	54	PF 7	7210.05	14.92	36.52		36.77	0.000248	4.05	1914.22	101.00	0.16
Freshet	1	53	1.1yr	1550.14	12.14	24.10		24.15	0.000167	1.88	822.93	88.07	0.11
Freshet	1	53	25-yr	7662.08	12.14	37.06		37.25	0.000198	3.55	2603.69	164.27	0.13
Freshet	1	53	50-yr	9352.73	12.14	40.05		40.24	0.000184	3.72	3099.09	167.89	0.13
Freshet	1	53	100-yr	11593.87	12.14	42.36		42.60	0.000205	4.15	3490.90	170.70	0.14
Freshet	1	53	1996	14463.67	12.14	47.02		47.27	0.000180	4.33	4266.64	171.00	0.13
Freshet	1	53	500-yr	17910.03	12.14	50.99		51.28	0.000181	4.70	4965.54	171.00	0.14
Freshet	1	53	PF 7	7210.05	12.14	36.56		36.73	0.000191	3.43	2520.98	163.66	0.13
Freshet	1	52.9	1.1yr	1550.14	14.71	24.05	17.19	24.13	0.000268	2.28	680.19	76.63	0.13
Freshet	1	52.9	25-yr	7662.08	14.71	37.01	21.85	37.22	0.000253	3.94	2481.12	164.20	0.15
Freshet	1	52.9	50-yr	9352.73	14.71	40.00	22.84	40.22	0.000231	4.10	2977.02	167.83	0.15
Freshet	1	52.9	100-yr	11593.87	14.71	42.30	24.07	42.58	0.000253	4.56	3367.62	170.63	0.16
Freshet	1	52.9	1996	14463.67	14.71	46.96	25.59	47.25	0.000217	4.71	4164.48	171.00	0.15
Freshet	1	52.9	500-yr	17910.03	14.71	50.93	27.53	51.26	0.000217	5.09	4843.01	171.00	0.15
Freshet	1	52.9	PF 7	7210.05	14.71	36.51	21.57	36.71	0.000245	3.82	2398.76	163.59	0.15
Freshet	1	52.5		Bridge									
Freshet	1	52.1	1.1yr	1550.14	14.71	23.99		24.07	0.000257	2.23	693.93	77.55	0.13
Freshet	1	52.1	25-yr	7662.08	14.71	36.95		37.16	0.000245	3.88	2544.08	167.46	0.15
Freshet	1	52.1	50-yr	9352.73	14.71	39.93		40.15	0.000223	4.03	3047.28	169.85	0.14
Freshet	1	52.1	100-yr	11593.87	14.71	42.23		42.49	0.000245	4.49	3439.08	171.69	0.15
Freshet	1	52.1	1996	14463.67	14.71	46.89		47.16	0.000211	4.63	4240.16	172.00	0.15
Freshet	1	52.1	500-yr	17910.03	14.71	50.84		51.16	0.000211	5.01	4920.63	172.00	0.15
Freshet	1	52.1	PF 7	7210.05	14.71	36.45		36.64	0.000237	3.76	2460.63	167.06	0.14
Freshet	1	52	1.1yr	1550.14	14.36	23.98		24.05	0.000243	2.13	728.14	87.61	0.13
Freshet	1	52	25-yr	7662.08	14.36	36.95		37.14	0.000218	3.67	2564.19	167.46	0.14
Freshet	1	52	50-yr	9352.73	14.36	39.93		40.14	0.000198	3.82	3067.47	169.85	0.14
Freshet	1	52	100-yr	11593.87	14.36	42.23		42.48	0.000218	4.26	3459.31	171.69	0.15
Freshet	1	52	1996	14463.67	14.36	46.89		47.15	0.000188	4.41	4260.51	172.00	0.14
Freshet	1	52	500-yr	17910.03	14.36	50.84		51.14	0.000187	4.77	4941.08	172.00	0.14
Freshet	1	52	PF 7	7210.05	14.36	36.45		36.63	0.000211	3.55	2480.74	167.06	0.14
Freshet	1	51	1.1yr	1550.14	15.20	23.97		24.04	0.000276	2.09	742.99	111.45	0.14
Freshet	1	51	25-yr	7662.08	15.20	36.98		37.11	0.000154	3.03	2818.21	184.28	0.12
Freshet	1	51	50-yr	9352.73	15.20	39.96		40.11	0.000136	3.15	3372.52	186.79	0.12
Freshet	1	51	100-yr	11593.87	15.20	42.27		42.45	0.000146	3.50	3804.86	188.72	0.13
Freshet	1	51	1996	14463.67	15.20	46.93		47.12	0.000122	3.60	4689.66	190.00	0.12
Freshet	1	51	500-yr	17910.03	15.20	50.89		51.11	0.000119	3.89	5443.00	190.00	0.12
Freshet	1	51	PF 7	7210.05	15.20	36.48		36.60	0.000150	2.94	2725.98	183.86	0.12
Freshet	1	50	1.1yr	1550.14	14.27	23.98		24.02	0.000111	1.51	1044.43	152.51	0.09
Freshet	1	50	25-yr	7662.08	14.27	36.99		37.10	0.000103	2.71	3148.85	165.84	0.10
Freshet	1	50	50-yr	9352.73	14.27	39.97		40.10	0.000098	2.88	3646.57	167.66	0.10
Freshet	1	50	100-yr	11593.87	14.27	42.27		42.43	0.000110	3.25	4034.13	169.07	0.11
Freshet	1	50	1996	14463.67	14.27	46.93		47.11	0.000099	3.44	4825.17	170.00	0.11
Freshet	1	50	500-yr	17910.03	14.27	50.89		51.10	0.000101	3.77	5498.67	170.00	0.11
Freshet	1	50	PF 7	7210.05	14.27	36.49		36.59	0.000099	2.62	3065.81	165.54	0.10
Freshet	1	49	1.1yr	1550.14	13.95	23.98		24.01	0.000073	1.27	1248.29	169.69	0.08
Freshet	1	49	25-yr	7662.08	13.95	37.00		37.08	0.000077	2.41	3504.98	176.66	0.09
Freshet	1	49	50-yr	9352.73	13.95	39.98		40.08	0.000074	2.57	4034.72	178.13	0.09
Freshet	1	49	100-yr	11593.87	13.95	42.29		42.42	0.000084	2.91	4446.64	179.25	0.10
Freshet	1	49	1996	14463.67	13.95	46.95		47.09	0.000077	3.09	5264.76	180.00	0.10
Freshet	1	49	500-yr	17910.03	13.95	50.91		51.09	0.000079	3.40	5998.51	180.00	0.10
Freshet	1	49	PF 7	7210.05	13.95	36.50		36.58	0.000074	2.32	3416.37	176.42	0.09



1 in Horiz. = 80 ft 1 in Vert. = 10 ft

Proposed Bridges, Existing Dam

Proposed Bridges, Existing Dams



Proposed Bridges, Existing Dams

Plan: PDR Presumpscot 1 RS: 1081 Profile: 100-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	220.00	355.00	0.19	1.13	4.16	0.00	0.28	0.16
2	Chan	355.00	371.90	404.87	122.35	20.57	2.14	7.24	3.31
3	Chan	371.90	388.80	1254.68	225.17	17.32	6.64	13.32	5.57
4	Chan	388.80	405.70	1518.43	250.14	16.92	8.03	14.80	6.07
5	Chan	405.70	422.60	1227.45	221.16	17.11	6.49	13.09	5.55
6	Chan	422.60	439.50	896.81	182.68	16.99	4.75	10.81	4.91
7	Chan	439.50	456.40	864.45	178.30	16.90	4.57	10.55	4.85
8	Chan	456.40	473.30	864.45	178.30	16.90	4.57	10.55	4.85
9	Chan	473.30	490.20	938.61	187.54	16.95	4.97	11.10	5.00
10	Chan	490.20	507.10	1136.96	210.45	16.96	6.02	12.45	5.40
11	Chan	507.10	524.00	1365.51	234.91	16.96	7.22	13.90	5.81
12	Chan	524.00	540.90	1477.14	245.90	16.90	7.82	14.55	6.01
13	Chan	540.90	557.80	1191.95	218.16	17.29	6.31	12.91	5.46
14	Chan	557.80	574.70	866.96	178.83	16.95	4.59	10.58	4.85
15	Chan	574.70	591.60	864.45	178.30	16.90	4.57	10.55	4.85
16	Chan	591.60	608.50	864.45	178.30	16.90	4.57	10.55	4.85
17	Chan	608.50	625.40	864.45	178.30	16.90	4.57	10.55	4.85
18	Chan	625.40	642.30	863.28	178.16	16.90	4.57	10.54	4.85
19	Chan	642.30	659.20	791.64	169.21	16.92	4.19	10.01	4.68
20	Chan	659.20	676.10	597.18	145.71	17.77	3.16	8.62	4.10
21	Chan	676.10	693.00	46.10	25.38	10.49	0.24	2.91	1.82

Plan: PDR Presumpscot 1 RS: 1081 Profile: 500-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	220.00	355.00	78.42	152.09	69.36	0.28	2.20	0.52
2	Chan	355.00	371.90	794.77	212.08	20.57	2.84	12.55	3.75
3	Chan	371.90	388.80	1722.11	314.90	17.32	6.15	18.63	5.47
4	Chan	388.80	405.70	1986.27	339.87	16.92	7.09	20.11	5.84
5	Chan	405.70	422.60	1699.27	310.88	17.11	6.07	18.40	5.47
6	Chan	422.60	439.50	1369.87	272.41	16.99	4.89	16.12	5.03
7	Chan	439.50	456.40	1338.30	268.03	16.90	4.78	15.86	4.99
8	Chan	456.40	473.30	1338.30	268.03	16.90	4.78	15.86	4.99
9	Chan	473.30	490.20	1413.38	277.27	16.95	5.05	16.41	5.10
10	Chan	490.20	507.10	1612.72	300.18	16.96	5.76	17.76	5.37
11	Chan	507.10	524.00	1837.48	324.63	16.96	6.56	19.21	5.66
12	Chan	524.00	540.90	1946.93	335.63	16.90	6.95	19.86	5.80
13	Chan	540.90	557.80	1661.05	307.89	17.29	5.93	18.22	5.39
14	Chan	557.80	574.70	1339.94	268.56	16.95	4.79	15.89	4.99
15	Chan	574.70	591.60	1338.30	268.03	16.90	4.78	15.86	4.99
16	Chan	591.60	608.50	1338.30	268.03	16.90	4.78	15.86	4.99
17	Chan	608.50	625.40	1338.30	268.03	16.90	4.78	15.86	4.99
18	Chan	625.40	642.30	1337.04	267.89	16.90	4.78	15.85	4.99
19	Chan	642.30	659.20	1262.51	258.94	16.92	4.51	15.32	4.88
20	Chan	659.20	676.10	1042.76	235.44	17.77	3.72	13.93	4.43
21	Chan	676.10	693.00	203.98	92.84	20.06	0.73	5.56	2.20

Plan: PDR Presumpscot 1 RS: 1000 BR U Profile: 100-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	Chan	340.00	355.60	610.37	169.14	25.74	3.23	10.84	3.61
2	Chan	355.60	371.20	1112.97	199.74	15.84	5.89	12.80	5.57
3	Chan	371.20	386.80	1451.15	233.31	15.69	7.68	14.96	6.22
4	Chan	386.80	402.40	1262.28	214.90	15.75	6.68	13.78	5.87
5	Chan	402.40	418.00	913.10	177.25	15.82	4.83	11.36	5.15
6	Chan	418.00	433.60	476.18	110.74	20.26	2.52	9.23	4.30
7	Chan	433.60	449.20						
8	Chan	449.20	464.80						
9	Chan	464.80	480.40						
10	Chan	480.40	496.00						
11	Chan	496.00	511.60						
12	Chan	511.60	527.20						
13	Chan	527.20	542.80						
14	Chan	542.80	558.40						
15	Chan	558.40	574.00	1190.31	216.46	29.01	6.30	15.46	5.50
16	Chan	574.00	589.60	2427.91	259.35	15.65	12.85	16.63	9.36
17	Chan	589.60	605.20	2735.78	278.63	15.65	14.48	17.86	9.82
18	Chan	605.20	620.80	2848.72	286.84	15.84	15.07	18.39	9.93
19	Chan	620.80	636.40	2117.89	240.65	15.93	11.21	15.43	8.80
20	Chan	636.40	652.00	1492.27	194.69	15.86	7.90	12.48	7.66
21	ROB	652.00	780.00	261.07	84.50	18.12	1.38	10.56	3.09

Plan: PDR Presumpscot 1 RS: 1000 BR U Profile: 500-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	210.00	340.00	0.02	0.08	2.01	0.00	0.08	0.23
2	Chan	340.00	355.60	1146.25	208.59	43.78	4.09	13.37	5.50
3	Chan	355.60	371.20	1797.30	239.34	31.44	6.42	15.34	7.51
4	Chan	371.20	386.80	2243.99	272.90	31.29	8.01	17.49	8.22
5	Chan	386.80	402.40	1994.99	254.50	31.35	7.12	16.31	7.84
6	Chan	402.40	418.00	1525.59	216.84	31.42	5.45	13.90	7.04
7	Chan	418.00	433.60	929.79	141.20	34.80	3.32	11.77	6.58
8	Chan	433.60	449.20						
9	Chan	449.20	464.80						
10	Chan	464.80	480.40						
11	Chan	480.40	496.00						
12	Chan	496.00	511.60						
13	Chan	511.60	527.20						
14	Chan	527.20	542.80						
15	Chan	542.80	558.40						
16	Chan	558.40	574.00	1959.71	236.59	44.45	7.00	16.90	8.28
17	Chan	574.00	589.60	3316.92	281.78	31.25	11.85	18.06	11.77
18	Chan	589.60	605.20	3703.43	301.06	31.25	13.23	19.30	12.30
19	Chan	605.20	620.80	3857.86	309.27	31.44	13.78	19.82	12.47
20	Chan	620.80	636.40	2940.57	263.08	31.53	10.50	16.86	11.18
21	Chan	636.40	652.00	2138.63	217.12	31.46	7.64	13.92	9.85
22	ROB	652.00	780.00	444.96	96.00	27.56	1.59	12.00	4.63

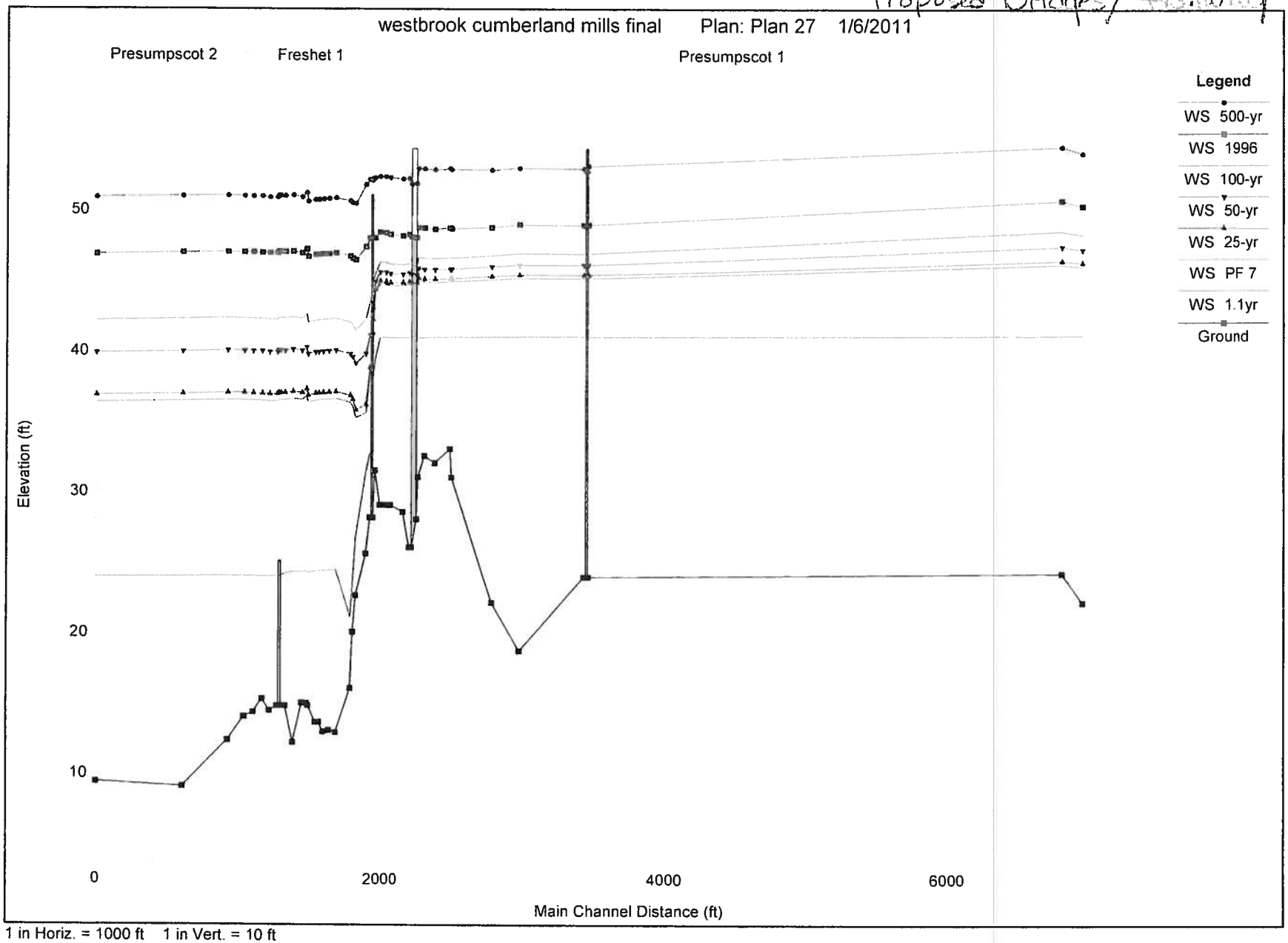
Plan: PDR Presumpscot 1 RS: 1000 BR D Profile: 100-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	Chan	340.00	355.60	648.29	170.98	25.85	3.43	10.96	3.79
2	Chan	355.60	371.20	1289.91	212.61	15.88	6.82	13.63	6.07
3	Chan	371.20	386.80	1531.71	234.18	15.63	8.10	15.01	6.54
4	Chan	386.80	402.40	1382.69	220.31	15.64	7.32	14.12	6.28
5	Chan	402.40	418.00	1170.63	202.61	16.28	6.19	12.99	5.78
6	Chan	418.00	433.60	246.41	81.36	17.23	1.30	6.78	3.03
7	Chan	433.60	449.20						
8	Chan	449.20	464.80						
9	Chan	464.80	480.40						
10	Chan	480.40	496.00						
11	Chan	496.00	511.60						
12	Chan	511.60	527.20						
13	Chan	527.20	542.80						
14	Chan	542.80	558.40						
15	Chan	558.40	574.00	936.97	224.62	29.43	4.96	16.04	4.17
16	Chan	574.00	589.60	2314.29	303.12	16.04	12.24	19.43	7.63
17	Chan	589.60	605.20	2688.71	328.16	15.62	14.23	21.04	8.19
18	Chan	605.20	620.80	2679.11	327.93	15.68	14.18	21.02	8.17
19	Chan	620.80	636.40	2190.59	292.70	15.96	11.59	18.76	7.48
20	Chan	636.40	652.00	1511.46	234.99	16.08	8.00	15.06	6.43
21	ROB	652.00	786.00	309.25	94.53	19.75	1.64	11.82	3.27

Plan: PDR Presumpscot 1 RS: 1000 BR D Profile: 500-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	215.00	340.00	0.11	0.81	21.81	0.00	0.07	0.14
2	Chan	340.00	355.60	1230.12	209.63	43.84	4.39	13.44	5.87
3	Chan	355.60	371.20	2076.48	251.40	31.48	7.42	16.12	8.26
4	Chan	371.20	386.80	2394.70	272.96	31.23	8.55	17.50	8.77
5	Chan	386.80	402.40	2194.70	259.10	31.24	7.84	16.61	8.47
6	Chan	402.40	418.00	1924.22	241.40	31.88	6.87	15.47	7.97
7	Chan	418.00	433.60	530.55	111.20	31.72	1.89	9.27	4.77
8	Chan	433.60	449.20						
9	Chan	449.20	464.80						
10	Chan	464.80	480.40						
11	Chan	480.40	496.00						
12	Chan	496.00	511.60						
13	Chan	511.60	527.20						
14	Chan	527.20	542.80						
15	Chan	542.80	558.40						
16	Chan	558.40	574.00	1561.47	244.03	44.82	5.58	17.43	6.40
17	Chan	574.00	589.60	3170.95	324.75	31.64	11.32	20.82	9.76
18	Chan	589.60	605.20	3620.85	349.79	31.22	12.93	22.42	10.35
19	Chan	605.20	620.80	3612.53	349.56	31.28	12.90	22.41	10.33
20	Chan	620.80	636.40	3008.26	314.32	31.56	10.74	20.15	9.57
21	Chan	636.40	652.00	2139.82	256.62	31.68	7.64	16.45	8.34
22	ROB	652.00	786.00	535.26	105.62	29.14	1.91	13.20	5.07

Proposed Bridges/ Fishway



1 in Horiz. = 1000 ft 1 in Vert. = 10 ft

HEC-RAS Plan: Plan 28 Proposed Bridge - Fishway

River	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
Presumpscot	1	2101	1.1yr	2450.00	22.10	41.08	28.52	41.12	0.000042	1.64	1491.83	118.89	0.08
Presumpscot	1	2101	25-yr	13000.00	22.10	46.27	34.92	46.85	0.000378	6.15	2114.86	120.34	0.26
Presumpscot	1	2101	50-yr	15700.00	22.10	47.20	36.06	47.98	0.000463	7.06	2227.64	120.41	0.29
Presumpscot	1	2101	100-yr	18900.00	22.10	48.24	37.32	49.25	0.000560	8.04	2353.04	120.49	0.32
Presumpscot	1	2101	1996	23300.00	22.10	50.28	38.90	51.54	0.000612	8.98	2598.81	120.63	0.34
Presumpscot	1	2101	500-yr	28000.00	22.10	54.01	40.44	55.33	0.000520	9.21	3049.41	120.90	0.32
Presumpscot	1	2101	PF 7	12400.00	22.10	46.00	34.65	46.55	0.000361	5.96	2082.91	120.32	0.25
Presumpscot	1	2100	1.1yr	2450.00	24.18	41.09		41.11	0.000029	1.32	1860.13	162.53	0.07
Presumpscot	1	2100	25-yr	13000.00	24.18	46.40		46.74	0.000240	4.66	2829.58	220.31	0.21
Presumpscot	1	2100	50-yr	15700.00	24.18	47.39		47.82	0.000284	5.28	3064.46	257.16	0.23
Presumpscot	1	2100	100-yr	18900.00	24.18	48.51		49.05	0.000329	5.94	3380.74	309.89	0.25
Presumpscot	1	2100	1996	23300.00	24.18	50.65		51.29	0.000332	6.44	4104.95	353.04	0.26
Presumpscot	1	2100	500-yr	28000.00	24.18	54.47		55.06	0.000251	6.30	5476.01	360.00	0.23
Presumpscot	1	2100	PF 7	12400.00	24.18	46.12		46.44	0.000232	4.53	2769.45	214.88	0.20
Presumpscot	1	2099	1.1yr	2450.00	23.90	40.98	28.15	41.01	0.000030	1.39	1759.40	145.67	0.07
Presumpscot	1	2099	25-yr	13000.00	23.90	45.36	34.22	45.81	0.000320	5.36	2431.78	161.38	0.24
Presumpscot	1	2099	50-yr	15700.00	23.90	46.10	35.24	46.69	0.000400	6.18	2551.82	163.94	0.27
Presumpscot	1	2099	100-yr	18900.00	23.90	46.92	36.36	47.70	0.000492	7.08	2687.79	166.79	0.30
Presumpscot	1	2099	1996	23300.00	23.90	48.95	37.76	49.89	0.000515	7.80	3033.18	173.82	0.31
Presumpscot	1	2099	500-yr	28000.00	23.90	53.09	39.15	54.00	0.000385	7.68	3783.00	188.18	0.28
Presumpscot	1	2099	PF 7	12400.00	23.90	45.13	33.97	45.55	0.000306	5.19	2394.57	160.58	0.23
Presumpscot	1	2098.5		Bridge									
Presumpscot	1	2098	1.1yr	2450.00	23.90	40.98		41.01	0.000030	1.39	1759.26	145.67	0.07
Presumpscot	1	2098	25-yr	13000.00	23.90	45.35		45.79	0.000321	5.36	2429.62	161.33	0.24
Presumpscot	1	2098	50-yr	15700.00	23.90	46.08		46.67	0.000402	6.19	2548.82	163.87	0.27
Presumpscot	1	2098	100-yr	18900.00	23.90	46.89		47.68	0.000495	7.09	2683.59	166.70	0.30
Presumpscot	1	2098	1996	23300.00	23.90	48.92		49.86	0.000518	7.81	3027.61	173.71	0.31
Presumpscot	1	2098	500-yr	28000.00	23.90	52.90		53.83	0.000396	7.75	3746.62	187.51	0.28
Presumpscot	1	2098	PF 7	12400.00	23.90	45.12		45.53	0.000307	5.19	2392.57	160.53	0.23
Presumpscot	1	2097	1.1yr	2450.00	18.65	40.98		41.00	0.000012	1.03	2379.34	144.14	0.04
Presumpscot	1	2097	25-yr	13000.00	18.65	45.36		45.65	0.000158	4.30	3031.54	170.07	0.17
Presumpscot	1	2097	50-yr	15700.00	18.65	46.10		46.49	0.000205	5.01	3165.42	194.40	0.19
Presumpscot	1	2097	100-yr	18900.00	18.65	46.92		47.44	0.000261	5.80	3336.97	223.50	0.22
Presumpscot	1	2097	1996	23300.00	18.65	48.95		49.60	0.000292	6.51	3800.41	229.48	0.23
Presumpscot	1	2097	500-yr	28000.00	18.65	52.94		53.61	0.000245	6.62	4726.16	234.29	0.22
Presumpscot	1	2097	PF 7	12400.00	18.65	45.13		45.40	0.000149	4.15	2992.96	164.02	0.16
Presumpscot	1	2096	1.1yr	2450.00	22.07	40.98		41.00	0.000019	1.17	2089.76	150.36	0.06
Presumpscot	1	2096	25-yr	13000.00	22.07	45.26		45.60	0.000225	4.73	2767.57	185.77	0.20
Presumpscot	1	2096	50-yr	15700.00	22.07	45.96		46.43	0.000288	5.48	2905.66	204.33	0.23
Presumpscot	1	2096	100-yr	18900.00	22.07	46.75		47.37	0.000362	6.32	3074.32	224.94	0.25
Presumpscot	1	2096	1996	23300.00	22.07	48.77		49.53	0.000389	7.01	3535.96	229.31	0.27
Presumpscot	1	2096	500-yr	28000.00	22.07	52.81		53.55	0.000305	6.97	4464.14	230.00	0.24
Presumpscot	1	2096	PF 7	12400.00	22.07	45.03		45.36	0.000214	4.57	2726.32	179.85	0.19
Presumpscot	1	2095	1.1yr	2450.00	30.97	40.95		40.99	0.000066	1.51	1619.41	218.15	0.10
Presumpscot	1	2095	25-yr	13000.00	30.97	45.12		45.51	0.000430	5.05	2612.26	277.38	0.27
Presumpscot	1	2095	50-yr	15700.00	30.97	45.81		46.32	0.000511	5.74	2811.23	295.21	0.29
Presumpscot	1	2095	100-yr	18900.00	30.97	46.59		47.24	0.000595	6.46	3050.92	317.41	0.32
Presumpscot	1	2095	1996	23300.00	30.97	48.68		49.38	0.000533	6.77	3747.72	346.32	0.31
Presumpscot	1	2095	500-yr	28000.00	30.97	52.83		53.41	0.000321	6.20	5222.08	356.00	0.25
Presumpscot	1	2095	PF 7	12400.00	30.97	44.89		45.27	0.000419	4.92	2550.53	271.27	0.26
Presumpscot	1	1262	1.1yr	2450.00	33.00	40.94		40.98	0.000124	1.74	1408.75	250.45	0.13
Presumpscot	1	1262	25-yr	13000.00	33.00	45.09		45.51	0.000579	5.19	2555.53	369.19	0.30
Presumpscot	1	1262	50-yr	15700.00	33.00	45.79		46.31	0.000660	5.80	2838.41	433.07	0.33
Presumpscot	1	1262	100-yr	18900.00	33.00	46.59		47.23	0.000734	6.41	3198.68	453.98	0.35
Presumpscot	1	1262	1996	23300.00	33.00	48.73		49.35	0.000590	6.43	4176.85	461.99	0.32
Presumpscot	1	1262	500-yr	28000.00	33.00	52.92		53.37	0.000303	5.58	6197.95	515.26	0.24
Presumpscot	1	1262	PF 7	12400.00	33.00	44.86		45.26	0.000572	5.08	2473.66	348.53	0.30
Presumpscot	1	1156	1.1yr	2450.00	32.00	40.94		40.97	0.000064	1.48	1650.22	223.67	0.10
Presumpscot	1	1156	25-yr	13000.00	32.00	45.06		45.44	0.000457	4.94	2633.23	259.39	0.27
Presumpscot	1	1156	50-yr	15700.00	32.00	45.76		46.24	0.000542	5.58	2820.68	280.56	0.30
Presumpscot	1	1156	100-yr	18900.00	32.00	46.54		47.15	0.000629	6.26	3049.80	304.45	0.33
Presumpscot	1	1156	1996	23300.00	32.00	48.64		49.29	0.000551	6.48	3753.66	358.93	0.31
Presumpscot	1	1156	500-yr	28000.00	32.00	52.81		53.33	0.000310	5.83	5406.71	437.70	0.25
Presumpscot	1	1156	PF 7	12400.00	32.00	44.84		45.20	0.000444	4.82	2575.04	255.75	0.27
Presumpscot	1	1081	1.1yr	2450.00	32.50	40.93		40.96	0.000121	1.57	1555.90	313.14	0.12
Presumpscot	1	1081	25-yr	13000.00	32.50	45.07		45.39	0.000465	4.52	2875.93	323.96	0.27
Presumpscot	1	1081	50-yr	15700.00	32.50	45.78		46.17	0.000530	5.06	3105.49	325.81	0.29
Presumpscot	1	1081	100-yr	18900.00	32.50	46.58		47.07	0.000592	5.61	3367.00	327.89	0.31
Presumpscot	1	1081	1996	23300.00	32.50	48.70		49.21	0.000488	5.73	4078.04	344.29	0.29
Presumpscot	1	1081	500-yr	28000.00	32.50	52.87		53.27	0.000270	5.11	5616.11	407.09	0.22
Presumpscot	1	1081	PF 7	12400.00	32.50	44.84		45.14	0.000460	4.43	2801.70	323.36	0.26
Presumpscot	1	1036	1.1yr	2450.00	31.00	40.93	34.39	40.96	0.000049	1.22	2009.62	298.06	0.08

HEC-RAS Plan: Plan 28 (Continued)

River	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
Presumpscot	1	1036	25-yr	13000.00	31.00	45.11	37.88	45.35	0.000290	3.93	3310.47	317.05	0.21
Presumpscot	1	1036	50-yr	15700.00	31.00	45.82	38.45	46.13	0.000341	4.44	3536.88	317.95	0.23
Presumpscot	1	1036	100-yr	18900.00	31.00	46.63	39.08	47.01	0.000395	4.98	3793.74	318.98	0.25
Presumpscot	1	1036	1996	23300.00	31.00	48.74	39.87	49.16	0.000358	5.21	4474.09	325.16	0.25
Presumpscot	1	1036	500-yr	28000.00	31.00	52.89	40.67	53.25	0.000220	4.78	5951.21	402.71	0.20
Presumpscot	1	1036	PF 7	12400.00	31.00	44.88	37.74	45.11	0.000283	3.83	3237.56	316.75	0.21
Presumpscot	1	1000		Bridge									
Presumpscot	1	970	1.1yr	2450.00	26.00	40.92		40.94	0.000038	1.27	1927.08	214.90	0.07
Presumpscot	1	970	25-yr	13000.00	26.00	44.86		45.19	0.000346	4.63	2808.49	232.50	0.23
Presumpscot	1	970	50-yr	15700.00	26.00	45.48		45.92	0.000435	5.31	2954.37	235.29	0.26
Presumpscot	1	970	100-yr	18900.00	26.00	46.17		46.74	0.000538	6.06	3117.74	238.37	0.30
Presumpscot	1	970	1996	23300.00	26.00	48.21		48.86	0.000532	6.45	3613.60	247.49	0.30
Presumpscot	1	970	500-yr	28000.00	26.00	52.16		52.72	0.000378	6.06	4626.47	285.81	0.26
Presumpscot	1	970	PF 7	12400.00	26.00	44.64		44.96	0.000332	4.49	2758.80	231.54	0.23
Presumpscot	1	926	1.1yr	2450.00	28.50	40.91		40.94	0.000053	1.40	1753.28	220.44	0.09
Presumpscot	1	926	25-yr	13000.00	28.50	44.80		45.17	0.000433	4.90	2653.27	242.66	0.26
Presumpscot	1	926	50-yr	15700.00	28.50	45.41		45.89	0.000538	5.60	2802.30	246.15	0.29
Presumpscot	1	926	100-yr	18900.00	28.50	46.08		46.71	0.000658	6.36	2969.63	250.00	0.33
Presumpscot	1	926	1996	23300.00	28.50	48.14		48.83	0.000523	6.66	3496.16	261.77	0.32
Presumpscot	1	926	500-yr	28000.00	28.50	52.13		52.71	0.000442	6.10	4689.87	387.72	0.28
Presumpscot	1	926	PF 7	12400.00	28.50	44.59		44.94	0.000417	4.77	2601.88	241.45	0.26
Presumpscot	1	835	1.1yr	2450.00	29.00	40.90		40.93	0.000078	1.48	1650.59	254.89	0.10
Presumpscot	1	835	25-yr	13000.00	29.00	44.78		45.11	0.000511	4.61	2818.89	323.00	0.28
Presumpscot	1	835	50-yr	15700.00	29.00	45.40		45.82	0.000636	5.19	3022.71	342.04	0.31
Presumpscot	1	835	100-yr	18900.00	29.00	46.09		46.61	0.000784	5.78	3269.56	369.42	0.34
Presumpscot	1	835	1996	23300.00	29.00	48.21		48.72	0.000601	5.71	4116.38	418.84	0.31
Presumpscot	1	835	500-yr	28000.00	29.00	52.24		52.61	0.000299	4.94	5818.48	446.38	0.23
Presumpscot	1	835	PF 7	12400.00	29.00	44.57		44.89	0.000501	4.51	2749.62	321.50	0.27
Presumpscot	1	804	1.1yr	2450.00	29.00	40.91		40.93	0.000045	1.09	2243.50	368.18	0.08
Presumpscot	1	804	25-yr	13000.00	29.00	44.87		45.06	0.000247	3.49	3727.97	381.04	0.20
Presumpscot	1	804	50-yr	15700.00	29.00	45.51		45.76	0.000294	3.95	3972.46	383.11	0.22
Presumpscot	1	804	100-yr	18900.00	29.00	46.23		46.53	0.000344	4.45	4254.47	419.73	0.24
Presumpscot	1	804	1996	23300.00	29.00	48.32		48.65	0.000293	4.60	5135.51	420.12	0.22
Presumpscot	1	804	500-yr	28000.00	29.00	52.30		52.58	0.000175	4.22	6918.53	513.59	0.18
Presumpscot	1	804	PF 7	12400.00	29.00	44.65		44.83	0.000241	3.40	3644.78	380.33	0.19
Presumpscot	1	95	1.1yr	2450.00	29.00	40.91		40.92	0.000016	0.81	3008.00	359.52	0.05
Presumpscot	1	95	25-yr	13000.00	29.00	44.90		45.04	0.000130	2.93	4443.21	359.97	0.15
Presumpscot	1	95	50-yr	15700.00	29.00	45.55		45.73	0.000161	3.36	4675.90	360.04	0.16
Presumpscot	1	95	100-yr	18900.00	29.00	46.27		46.50	0.000196	3.83	4935.27	360.12	0.18
Presumpscot	1	95	1996	23300.00	29.00	48.36		48.62	0.000188	4.10	5688.37	360.36	0.18
Presumpscot	1	95	500-yr	28000.00	29.00	52.32		52.56	0.000130	3.93	7291.89	479.57	0.16
Presumpscot	1	95	PF 7	12400.00	29.00	44.68		44.81	0.000126	2.84	4364.25	359.94	0.14
Presumpscot	2	74	1.1yr	2450.00	12.29	23.98		24.00	0.000051	1.12	2181.19	231.96	0.06
Presumpscot	2	74	25-yr	13000.00	12.29	36.99		37.07	0.000084	2.30	5713.69	346.62	0.09
Presumpscot	2	74	50-yr	15700.00	12.29	39.98		40.07	0.000075	2.39	6853.79	415.70	0.09
Presumpscot	2	74	100-yr	18900.00	12.29	42.30		42.40	0.000077	2.59	7877.48	469.13	0.09
Presumpscot	2	74	1996	23300.00	12.29	46.97		47.07	0.000062	2.61	10193.56	500.19	0.08
Presumpscot	2	74	500-yr	28000.00	12.29	50.95		51.06	0.000056	2.69	12186.01	500.25	0.08
Presumpscot	2	74	PF 7	12400.00	12.29	36.49		36.57	0.000084	2.25	5542.03	334.99	0.09
Presumpscot	2	73	1.1yr	2450.00	9.00	23.94		23.96	0.000061	1.59	1536.53	154.44	0.09
Presumpscot	2	73	25-yr	13000.00	9.00	36.91		37.04	0.000084	3.00	5351.21	451.21	0.12
Presumpscot	2	73	50-yr	15700.00	9.00	39.91		40.04	0.000073	3.06	6815.18	524.99	0.11
Presumpscot	2	73	100-yr	18900.00	9.00	42.22		42.37	0.000073	3.27	8094.86	581.88	0.11
Presumpscot	2	73	1996	23300.00	9.00	46.91		47.05	0.000056	3.22	11073.33	665.00	0.10
Presumpscot	2	73	500-yr	28000.00	9.00	50.91		51.04	0.000048	3.23	13730.38	665.00	0.10
Presumpscot	2	73	PF 7	12400.00	9.00	36.41		36.54	0.000084	2.95	5127.44	438.84	0.12
Presumpscot	2	72	1.1yr	2450.00	9.35	23.90	13.62	23.95	0.000055	1.77	1729.34	215.01	0.09
Presumpscot	2	72	25-yr	13000.00	9.35	36.80	19.42	36.98	0.000101	3.85	5680.08	397.51	0.13
Presumpscot	2	72	50-yr	15700.00	9.35	39.80	20.52	39.99	0.000093	3.99	6936.26	439.95	0.13
Presumpscot	2	72	100-yr	18900.00	9.35	42.10	21.69	42.31	0.000098	4.30	7985.56	472.49	0.14
Presumpscot	2	72	1996	23300.00	9.35	46.80	23.13	47.00	0.000081	4.30	10352.31	522.00	0.13
Presumpscot	2	72	500-yr	28000.00	9.35	50.80	24.57	51.00	0.000072	4.37	12440.31	522.00	0.12
Presumpscot	2	72	PF 7	12400.00	9.35	36.30	19.19	36.48	0.000100	3.77	5483.10	390.43	0.13
Main	1	86	1.1yr	1.45	24.30	40.92	24.54	40.92	0.000000	0.00	1500.05	143.00	0.00
Main	1	86	25-yr	3583.43	24.30	44.95	30.65	45.02	0.000126	2.39	2075.65	143.00	0.10
Main	1	86	50-yr	4513.87	24.30	45.60	31.54	45.70	0.000177	2.88	2169.15	143.00	0.11
Main	1	86	100-yr	5645.87	24.30	46.33	32.50	46.47	0.000244	3.44	2273.19	143.00	0.13
Main	1	86	1996	8645.07	24.30	48.36	35.56	48.62	0.000408	4.66	2563.90	143.00	0.17
Main	1	86	500-yr	10083.86	24.30	52.33	36.36	52.55	0.000317	4.44	3130.80	143.00	0.15
Main	1	86	PF 7	3293.86	24.30	44.73	30.36	44.79	0.000111	2.23	2044.43	143.00	0.09
Main	1	85.5		Inl Struct									

Cumberland Mills Dam

HEC-RAS Plan: Plan 28 (Continued)

River	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
Main	1	85	1.1yr	1.45	22.36	24.01		24.01	0.000012	0.11	13.02	15.83	0.02
Main	1	85	25-yr	3583.43	22.36	37.22		37.36	0.000436	3.55	1448.16	143.00	0.18
Main	1	85	50-yr	4513.87	22.36	40.23		40.36	0.000319	3.43	1878.32	143.00	0.16
Main	1	85	100-yr	5645.87	22.36	42.64		42.78	0.000302	3.60	2223.20	143.00	0.15
Main	1	85	1996	8645.07	22.36	47.79		47.97	0.000304	4.11	2959.82	143.00	0.15
Main	1	85	500-yr	10083.86	22.36	52.16		52.33	0.000236	3.93	3585.30	143.00	0.13
Main	1	85	PF 7	3293.86	22.36	36.70		36.83	0.000431	3.44	1373.92	143.00	0.18
Main	1	84	1.1yr	1.45	22.35	24.01		24.01	0.000001	0.03	44.17	53.03	0.01
Main	1	84	25-yr	3583.43	22.35	37.23		37.33	0.000233	2.49	1437.39	116.00	0.12
Main	1	84	50-yr	4513.87	22.35	40.23		40.33	0.000189	2.53	1785.64	116.00	0.11
Main	1	84	100-yr	5645.87	22.35	42.64		42.76	0.000190	2.73	2065.08	116.00	0.11
Main	1	84	1996	8645.07	22.35	47.79		47.95	0.000208	3.25	2661.93	116.00	0.12
Main	1	84	500-yr	10083.86	22.35	52.16		52.31	0.000170	3.18	3168.88	116.00	0.11
Main	1	84	PF 7	3293.86	22.35	36.71		36.80	0.000225	2.39	1377.21	116.00	0.12
Main	1	83	1.1yr	1.45	21.54	24.01	21.77	24.01	0.000000	0.02	73.29	54.84	0.00
Main	1	83	25-yr	3583.43	21.54	37.24	27.12	37.32	0.000175	2.28	1574.72	120.00	0.11
Main	1	83	50-yr	4513.87	21.54	40.24	27.64	40.32	0.000148	2.33	1934.97	120.00	0.10
Main	1	83	100-yr	5645.87	21.54	42.65	28.21	42.75	0.000151	2.54	2224.15	120.00	0.10
Main	1	83	1996	8645.07	21.54	47.80	29.55	47.94	0.000171	3.04	2841.86	120.00	0.11
Main	1	83	500-yr	10083.86	21.54	52.17	30.14	52.30	0.000141	3.00	3366.21	120.00	0.10
Main	1	83	PF 7	3293.86	21.54	36.72	26.96	36.79	0.000168	2.18	1512.41	120.00	0.11
Main	1	82.5		Bridge									
Main	1	82	1.1yr	1.45	21.54	24.01		24.01	0.000000	0.01	109.14	67.97	0.00
Main	1	82	25-yr	3583.43	21.54	37.23		37.31	0.000155	2.18	1643.50	120.00	0.10
Main	1	82	50-yr	4513.87	21.54	40.23		40.31	0.000134	2.25	2003.27	120.00	0.10
Main	1	82	100-yr	5645.87	21.54	42.62		42.71	0.000140	2.47	2289.36	120.00	0.10
Main	1	82	1996	8645.07	21.54	47.76		47.90	0.000160	2.97	2907.07	120.00	0.11
Main	1	82	500-yr	10083.86	21.54	52.14		52.27	0.000134	2.94	3432.36	120.00	0.10
Main	1	82	PF 7	3293.86	21.54	36.71		36.78	0.000147	2.08	1581.21	120.00	0.10
Main	1	81	1.1yr	1.45	21.85	24.01		24.01	0.000000	0.01	104.37	83.81	0.00
Main	1	81	25-yr	3583.43	21.85	37.19		37.30	0.000165	2.62	1465.40	110.00	0.12
Main	1	81	50-yr	4513.87	21.85	40.19		40.30	0.000139	2.72	1795.01	110.00	0.12
Main	1	81	100-yr	5645.87	21.85	42.57		42.70	0.000143	2.98	2056.40	110.00	0.12
Main	1	81	1996	8645.07	21.85	47.69		47.89	0.000158	3.61	2620.22	110.00	0.13
Main	1	81	500-yr	10083.86	21.85	52.07		52.26	0.000125	3.57	3171.42	135.00	0.12
Main	1	81	PF 7	3293.86	21.85	36.68		36.77	0.000157	2.50	1408.68	110.00	0.12
Main	1	80.9	1.1yr	1.45	22.41	24.01	22.49	24.01	0.000000	0.02	80.25	65.00	0.00
Main	1	80.9	25-yr	3583.43	22.41	37.13	27.06	37.28	0.000368	3.17	1195.96	90.00	0.15
Main	1	80.9	50-yr	4513.87	22.41	40.12	27.72	40.29	0.000345	3.28	1465.38	90.00	0.14
Main	1	80.9	100-yr	5645.87	22.41	42.49	28.47	42.68	0.000382	3.59	1678.14	90.00	0.14
Main	1	80.9	1996	8645.07	22.41	47.58	30.34	47.86	0.000489	4.34	2136.40	90.00	0.15
Main	1	80.9	500-yr	10083.86	22.41	51.98	31.13	52.24	0.000395	4.19	2639.53	130.00	0.15
Main	1	80.9	PF 7	3293.86	22.41	36.62	26.83	36.76	0.000344	3.03	1150.04	90.00	0.14
Main	1	80.6		Bridge									
Main	1	80.5	1.1yr	1.45	22.03	24.01		24.01	0.000000	0.01	99.02	78.00	0.00
Main	1	80.5	25-yr	3583.43	22.03	37.07		37.22	0.000353	3.12	1213.90	90.00	0.15
Main	1	80.5	50-yr	4513.87	22.03	40.07		40.23	0.000334	3.23	1483.32	90.00	0.14
Main	1	80.5	100-yr	5645.87	22.03	42.40		42.59	0.000373	3.55	1693.29	90.00	0.14
Main	1	80.5	1996	8645.07	22.03	47.20		47.49	0.000495	4.35	2125.43	90.00	0.16
Main	1	80.5	500-yr	10083.86	22.03	51.34		51.62	0.000422	4.27	2579.89	130.00	0.15
Main	1	80.5	PF 7	3293.86	22.03	36.57		36.70	0.000329	2.98	1166.37	90.00	0.14
Main	1	80.1	1.1yr	1.45	19.98	24.01		24.01	0.000000	0.01	178.75	78.86	0.00
Main	1	80.1	25-yr	3583.43	19.98	37.07		37.20	0.000289	2.90	1296.35	90.00	0.13
Main	1	80.1	50-yr	4513.87	19.98	40.06		40.20	0.000283	3.04	1567.71	90.00	0.13
Main	1	80.1	100-yr	5645.87	19.98	42.40		42.57	0.000322	3.36	1777.56	90.00	0.13
Main	1	80.1	1996	8645.07	19.98	47.19		47.45	0.000439	4.16	2209.37	90.00	0.15
Main	1	80.1	500-yr	10083.86	19.98	51.34		51.59	0.000382	4.10	2663.53	130.00	0.14
Main	1	80.1	PF 7	3293.86	19.98	36.57		36.68	0.000268	2.76	1252.87	90.00	0.13
Main	1	80	1.1yr	1.45	18.68	24.01		24.01	0.000000	0.00	309.94	79.78	0.00
Main	1	80	25-yr	3583.43	18.68	37.11		37.18	0.000095	2.10	1776.38	117.00	0.09
Main	1	80	50-yr	4513.87	18.68	40.11		40.18	0.000085	2.22	2126.90	117.00	0.09
Main	1	80	100-yr	5645.87	18.68	42.45		42.54	0.000091	2.47	2400.80	117.00	0.09
Main	1	80	1996	8645.07	18.68	47.27		47.42	0.000110	3.08	2965.29	117.00	0.11
Main	1	80	500-yr	10083.86	18.68	51.41		51.56	0.000093	3.10	3449.08	117.00	0.10
Main	1	80	PF 7	3293.86	18.68	36.60		36.66	0.000089	1.99	1716.81	117.00	0.09
Main	1	79	1.1yr	1.45	17.89	24.01		24.01	0.000000	0.00	505.81	114.00	0.00
Main	1	79	25-yr	3583.43	17.89	37.12		37.17	0.000059	1.77	2089.03	125.00	0.07
Main	1	79	50-yr	4513.87	17.89	40.12		40.17	0.000055	1.90	2463.60	125.00	0.07
Main	1	79	100-yr	5645.87	17.89	42.46		42.53	0.000061	2.14	2756.45	125.00	0.08
Main	1	79	1996	8645.07	17.89	47.29		47.40	0.000076	2.70	3360.20	125.00	0.09
Main	1	79	500-yr	10083.86	17.89	51.42		51.54	0.000066	2.74	3877.03	125.00	0.09
Main	1	79	PF 7	3293.86	17.89	36.61		36.65	0.000054	1.68	2025.29	125.00	0.07

HEC-RAS Plan: Plan 28 (Continued)

River	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
Main	1	78.9	1.1yr	1.45	16.99	24.01	17.06	24.01	0.000000	0.00	312.52	84.17	0.00
Main	1	78.9	25-yr	3583.43	16.99	37.07	24.12	37.16	0.000222	2.49	1501.98	95.60	0.11
Main	1	78.9	50-yr	4513.87	16.99	40.06	24.75	40.16	0.000227	2.64	1788.05	95.70	0.10
Main	1	78.9	100-yr	5645.87	16.99	42.39	25.47	42.52	0.000264	2.95	2011.03	95.77	0.11
Main	1	78.9	1996	8645.07	16.99	47.18	27.17	47.38	0.000374	3.69	2470.22	95.93	0.13
Main	1	78.9	500-yr	10083.86	16.99	51.32	27.91	51.52	0.000334	3.66	2912.30	118.00	0.13
Main	1	78.9	PF 7	3293.86	16.99	36.56	23.91	36.65	0.000203	2.36	1453.74	95.58	0.10
Main	1	78.6		Bridge									
Main	1	78.5	1.1yr	1.45	16.99	24.01		24.01	0.000000	0.00	337.01	84.17	0.00
Main	1	78.5	25-yr	3583.43	16.99	37.03		37.13	0.000212	2.45	1523.49	95.60	0.10
Main	1	78.5	50-yr	4513.87	16.99	40.02		40.13	0.000218	2.61	1809.31	95.69	0.10
Main	1	78.5	100-yr	5645.87	16.99	42.34		42.46	0.000256	2.92	2030.72	95.77	0.11
Main	1	78.5	1996	8645.07	16.99	46.96		47.16	0.000370	3.69	2473.55	95.92	0.13
Main	1	78.5	500-yr	10083.86	16.99	50.94		51.15	0.000343	3.69	2892.11	118.00	0.13
Main	1	78.5	PF 7	3293.86	16.99	36.53		36.61	0.000194	2.32	1475.53	95.58	0.10
Main	1	78.1	1.1yr	1.45	16.96	24.01		24.01	0.000000	0.00	347.35	85.00	0.00
Main	1	78.1	25-yr	3583.43	16.96	37.03		37.12	0.000207	2.42	1541.12	96.00	0.10
Main	1	78.1	50-yr	4513.87	16.96	40.01		40.12	0.000214	2.58	1827.98	96.00	0.10
Main	1	78.1	100-yr	5645.87	16.96	42.33		42.45	0.000252	2.89	2049.87	96.00	0.11
Main	1	78.1	1996	8645.07	16.96	46.94		47.14	0.000365	3.66	2492.97	96.00	0.12
Main	1	78.1	500-yr	10083.86	16.96	50.93		51.13	0.000339	3.66	2911.41	118.00	0.13
Main	1	78.1	PF 7	3293.86	16.96	36.53		36.61	0.000190	2.29	1493.02	96.00	0.10
Main	1	78	1.1yr	1.45	16.29	24.01		24.01	0.000000	0.00	1109.50	155.00	0.00
Main	1	78	25-yr	3583.43	16.29	37.07		37.09	0.000020	1.14	3214.83	165.00	0.04
Main	1	78	50-yr	4513.87	16.29	40.07		40.09	0.000020	1.25	3708.80	165.00	0.05
Main	1	78	100-yr	5645.87	16.29	42.39		42.42	0.000023	1.42	4092.28	165.00	0.05
Main	1	78	1996	8645.07	16.29	47.05		47.10	0.000031	1.83	4860.13	165.00	0.06
Main	1	78	500-yr	10083.86	16.29	51.03		51.08	0.000028	1.89	5552.06	185.00	0.06
Main	1	78	PF 7	3293.86	16.29	36.57		36.59	0.000018	1.07	3131.37	165.00	0.04
Main	1	77	1.1yr	1.45	16.50	24.01		24.01	0.000000	0.00	784.56	197.50	0.00
Main	1	77	25-yr	3583.43	16.50	37.07		37.09	0.000035	1.51	3363.95	197.50	0.06
Main	1	77	50-yr	4513.87	16.50	40.06		40.09	0.000034	1.62	3955.24	197.50	0.06
Main	1	77	100-yr	5645.87	16.50	42.38		42.42	0.000038	1.83	4414.00	197.50	0.06
Main	1	77	1996	8645.07	16.50	47.03		47.09	0.000050	2.33	5332.34	197.50	0.07
Main	1	77	500-yr	10083.86	16.50	51.02		51.08	0.000044	2.38	6119.34	197.50	0.07
Main	1	77	PF 7	3293.86	16.50	36.56		36.58	0.000033	1.43	3264.19	197.50	0.06
Main	1	76	1.1yr	1.45	15.10	24.01		24.01	0.000000	0.00	1194.66	200.00	0.00
Main	1	76	25-yr	3583.43	15.10	37.07		37.09	0.000017	1.08	3807.92	200.00	0.04
Main	1	76	50-yr	4513.87	15.10	40.07		40.09	0.000017	1.18	4406.80	200.00	0.04
Main	1	76	100-yr	5645.87	15.10	42.39		42.42	0.000020	1.34	4871.65	200.00	0.05
Main	1	76	1996	8645.07	15.10	47.04		47.09	0.000026	1.73	5802.46	200.00	0.06
Main	1	76	500-yr	10083.86	15.10	51.03		51.07	0.000024	1.78	6599.43	200.00	0.05
Main	1	76	PF 7	3293.86	15.10	36.57		36.58	0.000016	1.02	3706.79	200.00	0.04
Main	1	75	1.1yr	1.45	15.04	24.01		24.01	0.000000	0.00	1405.68	255.00	0.00
Main	1	75	25-yr	3583.43	15.04	37.07		37.09	0.000015	1.04	4737.96	255.00	0.04
Main	1	75	50-yr	4513.87	15.04	40.07		40.08	0.000015	1.13	5501.72	255.00	0.04
Main	1	75	100-yr	5645.87	15.04	42.39		42.41	0.000017	1.28	6094.63	255.00	0.04
Main	1	75	1996	8645.07	15.04	47.05		47.08	0.000023	1.65	7282.12	255.00	0.05
Main	1	75	500-yr	10083.86	15.04	51.04		51.07	0.000021	1.69	8298.45	255.00	0.05
Main	1	75	PF 7	3293.86	15.04	36.57		36.58	0.000014	0.98	4608.98	255.00	0.04
Freshet	1	65	1.1yr	2449.28	31.47	39.32	35.01	39.47	0.000616	3.12	784.66	119.39	0.21
Freshet	1	65	25-yr	9416.57	31.47	44.30	38.51	45.00	0.001428	6.74	1460.18	228.38	0.35
Freshet	1	65	50-yr	11086.13	31.47	44.85	39.18	45.70	0.001653	7.48	1585.29	229.04	0.38
Freshet	1	65	100-yr	13254.13	31.47	45.42	40.01	46.47	0.001952	8.38	1758.58	329.66	0.42
Freshet	1	65	1996	14654.92	31.47	47.97	40.52	48.60	0.001003	6.80	2700.62	386.38	0.31
Freshet	1	65	500-yr	17916.14	31.47	52.22	41.62	52.55	0.000426	5.22	4341.48	387.00	0.21
Freshet	1	65	PF 7	9006.14	31.47	44.13	38.32	44.79	0.001384	6.57	1419.74	228.16	0.34
Freshet	1	64.5		Inl Struct									
Freshet	1	64.45	1.1yr	2449.28	28.10	32.78	31.02	33.19	0.002966	5.17	474.06	114.03	0.45
Freshet	1	64.45	25-yr	9416.57	28.10	38.83	34.59	39.82	0.002441	8.01	1175.00	117.64	0.45
Freshet	1	64.45	50-yr	11086.13	28.10	41.11	35.28	42.03	0.001779	7.67	1445.62	119.00	0.39
Freshet	1	64.45	100-yr	13254.13	28.10	43.46	36.12	44.37	0.001456	7.67	1734.24	126.49	0.36
Freshet	1	64.45	1996	14654.92	28.10	47.95	36.64	48.40	0.000588	5.72	3128.89	386.18	0.23
Freshet	1	64.45	500-yr	17916.14	28.10	52.17	37.78	52.44	0.000312	4.69	4762.36	387.10	0.17
Freshet	1	64.45	PF 7	9006.14	28.10	38.55	34.41	39.52	0.002436	7.88	1142.59	117.47	0.45
Freshet	1	64.4		Bridge									
Freshet	1	64	1.1yr	2449.28	28.10	32.70		33.13	0.003155	5.27	465.06	113.98	0.46
Freshet	1	64	25-yr	9416.57	28.10	38.76		39.77	0.002489	8.06	1167.59	117.60	0.45
Freshet	1	64	50-yr	11086.13	28.10	41.07		41.99	0.001799	7.70	1440.48	118.98	0.39
Freshet	1	64	100-yr	13254.13	28.10	43.42		44.34	0.001468	7.69	1729.83	126.46	0.36

HEC-RAS Plan: Plan 28 (Continued)

River	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)	
Freshet	1	64	1996	14654.92	28.10	47.93		48.39	0.000590	5.73	3122.40	386.17	0.23
Freshet	1	64	500-yr	17916.14	28.10	52.11		52.39	0.000316	4.71	4742.07	387.10	0.18
Freshet	1	64	PF 7	9006.14	28.10	38.49		39.47	0.002486	7.93	1135.19	117.44	0.45
Freshet	1	63	1.1yr	2449.28	25.54	31.30	31.30	32.84	0.016701	9.97	245.68	80.59	1.01
Freshet	1	63	25-yr	9416.57	25.54	36.15	35.76	39.42	0.011500	14.49	649.67	85.77	0.93
Freshet	1	63	50-yr	11086.13	25.54	39.75		41.80	0.004792	11.49	964.74	89.60	0.62
Freshet	1	63	100-yr	13254.13	25.54	42.26		44.18	0.003633	11.10	1194.64	98.43	0.54
Freshet	1	63	1996	14654.92	25.54	47.33		48.31	0.001423	8.19	2390.06	369.70	0.35
Freshet	1	63	500-yr	17916.14	25.54	51.76		52.35	0.000763	6.81	4033.75	372.00	0.26
Freshet	1	63	PF 7	9006.14	25.54	35.55	35.55	39.07	0.013584	15.06	598.00	85.13	1.00
Freshet	1	62.5	1.1yr	2449.28	22.56	26.71	27.89	30.67	0.050066	15.97	153.33	55.56	1.69
Freshet	1	62.5	25-yr	9416.57	22.56	35.76		38.66	0.007338	13.66	689.22	62.88	0.73
Freshet	1	62.5	50-yr	11086.13	22.56	39.09		41.43	0.004665	12.28	902.82	65.58	0.58
Freshet	1	62.5	100-yr	13254.13	22.56	41.40		43.64	0.004264	12.54	1056.79	67.45	0.56
Freshet	1	62.5	1996	14654.92	22.56	46.42		48.11	0.002351	10.43	1405.66	71.52	0.41
Freshet	1	62.5	500-yr	17916.14	22.56	50.42		52.15	0.002088	10.55	1697.62	74.00	0.39
Freshet	1	62.5	PF 7	9006.14	22.56	35.22	33.27	38.15	0.007774	13.74	655.46	62.45	0.75
Freshet	1	62	1.1yr	2449.28	19.96	23.31	25.04	29.16	0.074298	19.40	126.23	45.73	2.06
Freshet	1	62	25-yr	9416.57	19.96	36.53		38.18	0.003322	10.31	912.99	60.00	0.47
Freshet	1	62	50-yr	11086.13	19.96	39.53		41.13	0.002756	10.14	1093.00	60.00	0.42
Freshet	1	62	100-yr	13254.13	19.96	41.77		43.58	0.002845	10.80	1227.29	60.00	0.42
Freshet	1	62	1996	14654.92	19.96	46.54		47.99	0.001952	9.68	1513.50	60.00	0.34
Freshet	1	62	500-yr	17916.14	19.96	50.44		52.07	0.001952	10.25	1753.62	65.00	0.33
Freshet	1	62	PF 7	9006.14	19.96	36.04		37.65	0.003341	10.19	883.49	60.00	0.47
Freshet	1	61	1.1yr	2449.28	15.96	21.05	22.78	27.60	0.113394	20.53	119.31	60.00	2.57
Freshet	1	61	25-yr	9416.57	15.96	36.80		38.02	0.001446	8.85	1064.20	60.00	0.37
Freshet	1	61	50-yr	11086.13	15.96	39.75		40.99	0.001249	8.93	1241.27	60.00	0.35
Freshet	1	61	100-yr	13254.13	15.96	42.00		43.44	0.001305	9.63	1376.01	60.00	0.35
Freshet	1	61	1996	14654.92	15.96	46.69		47.90	0.000912	8.84	1657.41	60.00	0.30
Freshet	1	61	500-yr	17916.14	15.96	50.59		51.98	0.000920	9.47	1891.56	60.00	0.30
Freshet	1	61	PF 7	9006.14	15.96	36.31		37.49	0.001443	8.70	1034.75	60.00	0.37
Freshet	1	60	1.1yr	2449.28	12.83	24.40	17.69	24.64	0.000490	3.87	633.70	61.00	0.21
Freshet	1	60	25-yr	9416.57	12.83	37.07		37.77	0.000608	6.70	1406.35	61.00	0.25
Freshet	1	60	50-yr	11086.13	12.83	40.00		40.76	0.000587	6.99	1585.07	61.00	0.24
Freshet	1	60	100-yr	13254.13	12.83	42.27		43.19	0.000654	7.69	1723.46	61.00	0.25
Freshet	1	60	1996	14654.92	12.83	46.89		47.72	0.000511	7.31	2005.06	61.00	0.22
Freshet	1	60	500-yr	17916.14	12.83	50.80		51.79	0.000545	7.98	2251.25	66.00	0.23
Freshet	1	60	PF 7	9006.14	12.83	36.58		37.24	0.000594	6.54	1376.13	61.00	0.24
Freshet	1	59	1.1yr	2449.28	12.98	24.38		24.61	0.000486	3.87	633.01	60.00	0.21
Freshet	1	59	25-yr	9416.57	12.98	37.03		37.74	0.000623	6.77	1391.70	60.00	0.25
Freshet	1	59	50-yr	11086.13	12.98	39.95		40.73	0.000604	7.07	1567.39	60.00	0.24
Freshet	1	59	100-yr	13254.13	12.98	42.21		43.15	0.000674	7.78	1703.00	60.00	0.26
Freshet	1	59	1996	14654.92	12.98	46.84		47.69	0.000527	7.40	1980.49	60.00	0.23
Freshet	1	59	500-yr	17916.14	12.98	50.74		51.76	0.000569	8.09	2214.78	60.00	0.23
Freshet	1	59	PF 7	9006.14	12.98	36.53		37.21	0.000608	6.61	1362.09	60.00	0.24
Freshet	1	58	1.1yr	2449.28	12.88	24.36		24.59	0.000491	3.88	630.59	60.00	0.21
Freshet	1	58	25-yr	9416.57	12.88	37.00		37.71	0.000626	6.78	1388.88	60.00	0.25
Freshet	1	58	50-yr	11086.13	12.88	39.93		40.71	0.000606	7.09	1564.62	60.00	0.24
Freshet	1	58	100-yr	13254.13	12.88	42.18		43.13	0.000676	7.80	1700.03	60.00	0.26
Freshet	1	58	1996	14654.92	12.88	46.81		47.67	0.000529	7.41	1977.95	60.00	0.23
Freshet	1	58	500-yr	17916.14	12.88	50.72		51.74	0.000565	8.10	2219.26	65.00	0.24
Freshet	1	58	PF 7	9006.14	12.88	36.50		37.19	0.000611	6.63	1359.31	60.00	0.25
Freshet	1	57	1.1yr	2449.28	13.57	24.33		24.58	0.000522	3.96	618.31	60.00	0.22
Freshet	1	57	25-yr	9416.57	13.57	36.96		37.69	0.000643	6.84	1376.10	60.00	0.25
Freshet	1	57	50-yr	11086.13	13.57	39.89		40.69	0.000621	7.14	1551.91	60.00	0.25
Freshet	1	57	100-yr	13254.13	13.57	42.15		43.10	0.000691	7.86	1687.08	60.00	0.26
Freshet	1	57	1996	14654.92	13.57	46.79		47.65	0.000538	7.46	1965.51	60.00	0.23
Freshet	1	57	500-yr	17916.14	13.57	50.69		51.72	0.000574	8.14	2209.35	67.00	0.24
Freshet	1	57	PF 7	9006.14	13.57	36.47		37.17	0.000628	6.69	1346.58	60.00	0.25
Freshet	1	56	1.1yr	2449.28	13.55	24.32		24.56	0.000533	3.98	614.73	60.00	0.22
Freshet	1	56	25-yr	9416.57	13.55	36.94		37.67	0.000649	6.86	1372.28	60.00	0.25
Freshet	1	56	50-yr	11086.13	13.55	39.87		40.67	0.000626	7.16	1548.13	60.00	0.25
Freshet	1	56	100-yr	13254.13	13.55	42.12		43.09	0.000697	7.87	1683.17	60.00	0.26
Freshet	1	56	1996	14654.92	13.55	46.77		47.64	0.000542	7.47	1961.89	60.00	0.23
Freshet	1	56	500-yr	17916.14	13.55	50.67		51.70	0.000578	8.16	2202.77	65.00	0.24
Freshet	1	56	PF 7	9006.14	13.55	36.45		37.15	0.000635	6.71	1342.78	60.00	0.25
Freshet	1	55	1.1yr	2449.28	14.73	24.20		24.52	0.000828	4.58	534.76	60.00	0.27
Freshet	1	55	25-yr	9416.57	14.73	36.80		37.63	0.000779	7.29	1291.11	60.00	0.28
Freshet	1	55	50-yr	11086.13	14.73	39.74		40.63	0.000733	7.56	1467.38	60.00	0.27
Freshet	1	55	100-yr	13254.13	14.73	41.98		43.04	0.000806	8.28	1601.49	60.00	0.28
Freshet	1	55	1996	14654.92	14.73	46.66		47.60	0.000610	7.78	1882.47	60.00	0.24
Freshet	1	55	500-yr	17916.14	14.73	50.55		51.66	0.000642	8.47	2122.34	65.00	0.25
Freshet	1	55	PF 7	9006.14	14.73	36.31		37.11	0.000764	7.14	1261.81	60.00	0.27

HEC-RAS Plan: Plan 28 (Continued)

River	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
Freshet	1	54.5	1.1yr	2449.28	14.90	24.33		24.46	0.000479	2.88	852.38	134.60	0.20
Freshet	1	54.5	25-yr	9416.57	14.90	37.24		37.43	0.000181	3.57	2881.05	160.00	0.14
Freshet	1	54.5	50-yr	11086.13	14.90	40.22		40.42	0.000157	3.64	3357.27	160.00	0.14
Freshet	1	54.5	100-yr	13254.13	14.90	42.56		42.79	0.000162	3.93	3731.08	160.00	0.14
Freshet	1	54.5	1996	14654.92	14.90	47.18		47.37	0.000113	3.65	4470.35	160.00	0.12
Freshet	1	54.5	500-yr	17916.14	14.90	51.17		51.40	0.000112	3.92	5109.08	160.00	0.12
Freshet	1	54.5	PF 7	9006.14	14.90	36.73		36.92	0.000181	3.51	2799.72	160.00	0.14
Freshet	1	54	1.1yr	2449.28	14.92	24.23		24.43	0.000649	3.61	683.63	90.84	0.23
Freshet	1	54	25-yr	9416.57	14.92	37.00		37.40	0.000392	5.16	1963.00	101.00	0.20
Freshet	1	54	50-yr	11086.13	14.92	39.96		40.39	0.000352	5.30	2261.93	101.00	0.19
Freshet	1	54	100-yr	13254.13	14.92	42.25		42.75	0.000373	5.77	2492.75	101.00	0.20
Freshet	1	54	1996	14654.92	14.92	46.90		47.34	0.000268	5.41	2963.07	101.00	0.17
Freshet	1	54	500-yr	17916.14	14.92	50.85		51.36	0.000270	5.85	3373.57	109.00	0.18
Freshet	1	54	PF 7	9006.14	14.92	36.50		36.89	0.000388	5.06	1912.67	101.00	0.20
Freshet	1	53	1.1yr	2449.28	12.14	24.25		24.38	0.000397	2.93	836.11	88.17	0.17
Freshet	1	53	25-yr	9416.57	12.14	37.07		37.34	0.000298	4.36	2604.88	164.28	0.16
Freshet	1	53	50-yr	11086.13	12.14	40.05		40.32	0.000259	4.41	3099.20	167.89	0.16
Freshet	1	53	100-yr	13254.13	12.14	42.36		42.67	0.000268	4.76	3490.47	170.70	0.16
Freshet	1	53	1996	14654.92	12.14	47.01		47.28	0.000185	4.39	4286.52	171.00	0.14
Freshet	1	53	500-yr	17916.14	12.14	50.99		51.28	0.000181	4.70	4965.53	171.00	0.14
Freshet	1	53	PF 7	9006.14	12.14	36.57		36.83	0.000297	4.28	2522.36	163.67	0.16
Freshet	1	52.9	1.1yr	2449.28	14.71	24.13	18.07	24.33	0.000651	3.57	686.53	76.70	0.21
Freshet	1	52.9	25-yr	9416.57	14.71	36.99	22.89	37.31	0.000384	4.85	2477.32	164.18	0.18
Freshet	1	52.9	50-yr	11086.13	14.71	39.97	23.80	40.29	0.000325	4.87	2973.41	167.80	0.17
Freshet	1	52.9	100-yr	13254.13	14.71	42.28	24.92	42.64	0.000331	5.22	3364.01	170.60	0.18
Freshet	1	52.9	1996	14654.92	14.71	46.96	25.71	47.26	0.000223	4.77	4164.11	171.00	0.15
Freshet	1	52.9	500-yr	17916.14	14.71	50.93	27.54	51.26	0.000217	5.09	4843.00	171.00	0.15
Freshet	1	52.9	PF 7	9006.14	14.71	36.48	22.66	36.80	0.000384	4.78	2394.88	163.57	0.18
Freshet	1	52.5		Bridge									
Freshet	1	52.1	1.1yr	2449.28	14.71	23.98		24.17	0.000645	3.53	692.91	77.54	0.21
Freshet	1	52.1	25-yr	9416.57	14.71	36.89		37.21	0.000373	4.78	2534.84	167.41	0.18
Freshet	1	52.1	50-yr	11086.13	14.71	39.88		40.19	0.000316	4.79	3039.07	169.81	0.17
Freshet	1	52.1	100-yr	13254.13	14.71	42.18		42.53	0.000323	5.14	3431.18	171.66	0.17
Freshet	1	52.1	1996	14654.92	14.71	46.88		47.16	0.000217	4.70	4239.41	172.00	0.15
Freshet	1	52.1	500-yr	17916.14	14.71	50.84		51.16	0.000211	5.01	4920.60	172.00	0.15
Freshet	1	52.1	PF 7	9006.14	14.71	36.39		36.70	0.000373	4.71	2451.15	167.01	0.18
Freshet	1	52	1.1yr	2449.28	14.36	23.96		24.13	0.000613	3.37	725.89	87.58	0.21
Freshet	1	52	25-yr	9416.57	14.36	36.89		37.18	0.000332	4.52	2554.84	167.41	0.17
Freshet	1	52	50-yr	11086.13	14.36	39.88		40.17	0.000281	4.54	3059.20	169.81	0.16
Freshet	1	52	100-yr	13254.13	14.36	42.18		42.51	0.000287	4.88	3451.39	171.66	0.17
Freshet	1	52	1996	14654.92	14.36	46.88		47.15	0.000193	4.46	4259.77	172.00	0.14
Freshet	1	52	500-yr	17916.14	14.36	50.84		51.14	0.000187	4.77	4941.06	172.00	0.14
Freshet	1	52	PF 7	9006.14	14.36	36.39		36.67	0.000332	4.45	2471.13	167.01	0.17
Freshet	1	51	1.1yr	2449.28	15.20	23.93		24.10	0.000701	3.32	738.09	111.22	0.23
Freshet	1	51	25-yr	9416.57	15.20	36.94		37.14	0.000235	3.74	2810.65	184.25	0.15
Freshet	1	51	50-yr	11086.13	15.20	39.93		40.13	0.000192	3.74	3365.88	186.76	0.14
Freshet	1	51	100-yr	13254.13	15.20	42.23		42.47	0.000192	4.00	3798.53	188.69	0.15
Freshet	1	51	1996	14654.92	15.20	46.93		47.12	0.000125	3.65	4689.06	190.00	0.12
Freshet	1	51	500-yr	17916.14	15.20	50.89		51.11	0.000119	3.89	5442.98	190.00	0.12
Freshet	1	51	PF 7	9006.14	15.20	36.43		36.64	0.000237	3.68	2718.21	183.83	0.15
Freshet	1	50	1.1yr	2449.28	14.27	23.96		24.05	0.000281	2.40	1040.53	152.06	0.15
Freshet	1	50	25-yr	9416.57	14.27	36.95		37.12	0.000156	3.34	3143.06	165.82	0.13
Freshet	1	50	50-yr	11086.13	14.27	39.94		40.11	0.000138	3.42	3641.24	167.65	0.12
Freshet	1	50	100-yr	13254.13	14.27	42.24		42.45	0.000144	3.73	4028.89	169.05	0.13
Freshet	1	50	1996	14654.92	14.27	46.93		47.11	0.000101	3.48	4824.66	170.00	0.11
Freshet	1	50	500-yr	17916.14	14.27	50.89		51.10	0.000101	3.77	5498.65	170.00	0.11
Freshet	1	50	PF 7	9006.14	14.27	36.45		36.61	0.000155	3.27	3059.95	165.52	0.13
Freshet	1	49	1.1yr	2449.28	13.95	23.96		24.02	0.000184	2.02	1244.35	169.57	0.12
Freshet	1	49	25-yr	9416.57	13.95	36.97		37.10	0.000117	2.96	3499.75	176.65	0.11
Freshet	1	49	50-yr	11086.13	13.95	39.96		40.10	0.000105	3.06	4029.91	178.11	0.11
Freshet	1	49	100-yr	13254.13	13.95	42.26		42.43	0.000111	3.33	4441.92	179.25	0.11
Freshet	1	49	1996	14654.92	13.95	46.95		47.09	0.000079	3.13	5284.29	180.00	0.10
Freshet	1	49	500-yr	17916.14	13.95	50.91		51.09	0.000079	3.40	5998.50	180.00	0.10
Freshet	1	49	PF 7	9006.14	13.95	36.47		36.59	0.000116	2.90	3411.06	176.40	0.11

Proposed Bridge - Fishway

HEC-RAS Plan: Plan 28 River: Presumpscot Reach: 1

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	Frctn Loss (ft)	C & E Loss (ft)	Top Width (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Vel Chnl (ft/s)
1	2100	1.1yr	41.11	41.09		0.10	0.00	162.53		2450.00		1.32
1	2100	25-yr	46.74	46.40		0.92	0.01	220.31	9.46	12987.80	2.74	4.66
1	2100	50-yr	47.82	47.39		1.12	0.02	257.16	27.61	15663.12	9.26	5.28
1	2100	100-yr	49.05	48.51		1.33	0.02	309.89	66.85	18798.78	34.37	5.94
1	2100	1996	51.29	50.65		1.37	0.03	353.04	240.90	22897.89	161.21	6.44
1	2100	500-yr	55.06	54.47		1.03	0.03	360.00	744.17	26724.71	531.12	6.30
1	2100	PF 7	46.44	46.12		0.89	0.01	214.88	6.44	12391.81	1.74	4.53
1	2099	1.1yr	41.01	40.98	28.15	0.00	0.00	145.67		2450.00		1.39
1	2099	25-yr	45.81	45.36	34.22	0.00	0.00	161.38	0.95	12998.33	0.73	5.36
1	2099	50-yr	46.69	46.10	35.24	0.00	0.00	163.94	2.60	15695.40	2.00	6.18
1	2099	100-yr	47.70	46.92	36.36	0.00	0.00	166.79	6.04	18889.32	4.65	7.08
1	2099	1996	49.89	48.95	37.76	0.00	0.00	173.82	21.49	23261.95	16.56	7.80
1	2099	500-yr	54.00	53.09	39.15	0.00	0.04	188.18	84.35	27850.66	64.99	7.68
1	2099	PF 7	45.55	45.13	33.97	0.00	0.00	160.58	0.65	12398.86	0.50	5.19
1	2098.5 BR U	1.1yr	41.01	40.98	28.17	0.00	0.00	145.67		2450.00		1.39
1	2098.5 BR U	25-yr	45.80	45.35	34.23	0.00	0.00	150.00		13000.00		5.40
1	2098.5 BR U	50-yr	46.69	46.08	35.25	0.00	0.00	150.00		15700.00		6.23
1	2098.5 BR U	100-yr	47.69	46.90	36.37	0.01	0.00	150.00		18900.00		7.15
1	2098.5 BR U	1996	49.89	48.91	37.79	0.01	0.00	150.00		23300.00		7.91
1	2098.5 BR U	500-yr	53.96	52.68	39.17	0.02	0.00			28000.00		9.10
1	2098.5 BR U	PF 7	45.54	45.12	33.98	0.00	0.00	150.00		12400.00		5.22
1	2098.5 BR D	1.1yr	41.01	40.98	28.17	0.00	0.00	145.67		2450.00		1.39
1	2098.5 BR D	25-yr	45.80	45.35	34.23	0.01	0.00	150.00		13000.00		5.40
1	2098.5 BR D	50-yr	46.68	46.08	35.25	0.01	0.00	150.00		15700.00		6.23
1	2098.5 BR D	100-yr	47.69	46.89	36.37	0.01	0.00	150.00		18900.00		7.16
1	2098.5 BR D	1996	49.88	48.91	37.79	0.01	0.01	150.00		23300.00		7.92
1	2098.5 BR D	500-yr	53.94	52.66	39.17	0.01	0.11			28000.00		9.10
1	2098.5 BR D	PF 7	45.54	45.12	33.98	0.00	0.00	150.00		12400.00		5.22
1	2098	1.1yr	41.01	40.98		0.01	0.00	145.67		2450.00		1.39
1	2098	25-yr	45.79	45.35		0.10	0.05	161.33	0.93	12998.36	0.72	5.36
1	2098	50-yr	46.67	46.08		0.13	0.06	163.87	2.56	15695.47	1.97	6.19
1	2098	100-yr	47.68	46.89		0.16	0.08	166.70	5.93	18889.50	4.57	7.09
1	2098	1996	49.86	48.92		0.17	0.09	173.71	21.21	23262.44	16.34	7.81
1	2098	500-yr	53.83	52.90		0.14	0.08	187.51	81.01	27856.57	62.42	7.75
1	2098	PF 7	45.53	45.12		0.09	0.05	160.53	0.63	12398.88	0.49	5.19
1	2097	1.1yr	41.00	40.98		0.00	0.00	144.14		2450.00		1.03
1	2097	25-yr	45.65	45.36		0.04	0.01	170.07	0.12	12998.68	1.20	4.30
1	2097	50-yr	46.49	46.10		0.05	0.01	194.40	0.42	15692.55	7.04	5.01
1	2097	100-yr	47.44	46.92		0.06	0.01	223.50	1.19	18872.95	25.86	5.80
1	2097	1996	49.60	48.95		0.06	0.01	229.48	5.73	23139.36	154.91	6.51
1	2097	500-yr	53.61	52.94		0.05	0.01	234.29	27.90	27424.41	547.69	6.62
1	2097	PF 7	45.40	45.13		0.03	0.01	164.02	0.08	12399.40	0.52	4.15
1	1081	1.1yr	40.96	40.93		0.00	0.00	313.14		2450.00		1.57
1	1081	25-yr	45.39	45.07		0.02	0.02	323.96		13000.00		4.52
1	1081	50-yr	46.17	45.78		0.02	0.03	325.81		15700.00		5.06
1	1081	100-yr	47.07	46.58		0.02	0.03	327.89		18900.00		5.61
1	1081	1996	49.21	48.70		0.02	0.03	344.29	3.96	23296.04		5.73
1	1081	500-yr	53.27	52.87		0.01	0.02	407.09	78.81	27921.18		5.11
1	1081	PF 7	45.14	44.84		0.02	0.02	323.36		12400.00		4.43
1	1036	1.1yr	40.96	40.93	34.39	0.00	0.00	298.06		2450.00		1.22
1	1036	25-yr	45.35	45.11	37.88	0.01	0.03	317.05		13000.00		3.93
1	1036	50-yr	46.13	45.82	38.45	0.01	0.04	317.95		15700.00		4.44
1	1036	100-yr	47.01	46.63	39.08	0.01	0.06	318.98		18900.00		4.98
1	1036	1996	49.16	48.74	39.87	0.01	0.07	325.16		23300.00		5.21
1	1036	500-yr	53.25	52.89	40.67	0.01	0.10	402.71	37.04	27962.81	0.15	4.78
1	1036	PF 7	45.11	44.88	37.74	0.01	0.03	316.75		12400.00		3.83
1	1000 BR U	1.1yr	40.95	40.91	33.46	0.00	0.00	182.00		2425.34	24.66	1.68
1	1000 BR U	25-yr	45.31	44.74	38.23	0.04	0.04	182.00		12826.02	173.98	6.09
1	1000 BR U	50-yr	46.07	45.32	38.96	0.05	0.05	182.00		15485.81	214.19	7.02
1	1000 BR U	100-yr	46.94	45.95	39.78	0.06	0.06	182.00		18637.64	262.36	8.04
1	1000 BR U	1996	49.08	47.94	40.83	0.06	0.06	182.00		22964.31	335.69	8.62
1	1000 BR U	500-yr	53.14	51.75	41.88	0.15	0.07			27529.00	470.99	9.50
1	1000 BR U	PF 7	45.07	44.53	38.05	0.04	0.04	182.00		12235.33	164.67	5.91
1	1000 BR D	1.1yr	40.95	40.92	30.76	0.00	0.00	182.00		2416.38	31.62	1.41
1	1000 BR D	25-yr	45.23	44.79	36.56	0.01	0.03	182.00		12794.28	205.72	5.36

Cumb Mills Bridge

HEC-RAS Plan: Plan 28 River: Presumpscot Reach: 1 (Continued)

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	Frctn Loss (ft)	C & E Loss (ft)	Top Width (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Vel Chnl (ft/s)
1	1000 BR D	50-yr	45.98	45.39	37.38	0.01	0.05	182.00		15447.83	252.18	6.20
1	1000 BR D	100-yr	46.82	46.04	38.22	0.01	0.06	182.00		18592.28	307.72	7.14
1	1000 BR D	1996	48.96	48.03	39.28	0.01	0.08	182.00		22909.66	390.34	7.77
1	1000 BR D	500-yr	52.91	51.76	40.33	0.01	0.17			27443.55	556.45	8.66
1	1000 BR D	PF 7	45.00	44.58	36.37	0.01	0.03	182.00		12204.92	195.08	5.19
1	970	1.1yr	40.94	40.92		0.00	0.00	214.90		2450.00		1.27
1	970	25-yr	45.19	44.86		0.02	0.00	232.50		13000.00		4.63
1	970	50-yr	45.92	45.48		0.02	0.00	235.29		15700.00		5.31
1	970	100-yr	46.74	46.17		0.03	0.01	238.37		18900.00		6.06
1	970	1996	48.86	48.21		0.03	0.00	247.49		23300.00		6.45
1	970	500-yr	52.72	52.16		0.02	0.00	285.81	0.21	27999.77	0.02	6.06
1	970	PF 7	44.96	44.64		0.02	0.00	231.54		12400.00		4.49
1	926	1.1yr	40.94	40.91		0.01	0.00	220.44		2450.00		1.40
1	926	25-yr	45.17	44.80		0.04	0.01	242.66		13000.00		4.90
1	926	50-yr	45.89	45.41		0.05	0.02	246.15		15700.00		5.60
1	926	100-yr	46.71	46.08		0.07	0.03	250.00		18900.00		6.36
1	926	1996	48.83	48.14		0.06	0.05	261.77		23300.00		6.66
1	926	500-yr	52.71	52.13		0.03	0.06	387.72	8.29	27942.46	49.25	6.10
1	926	PF 7	44.94	44.59		0.04	0.01	241.45		12400.00		4.77

Proposed Bridges / Fishway

Plan: PDR Presumpscot 1 RS: 1081 Profile: 100-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	Chan	355.00	371.90	375.98	105.55	19.89	1.99	6.44	3.56
2	Chan	371.90	388.80	1279.73	208.26	17.32	6.77	12.32	6.14
3	Chan	388.80	405.70	1569.73	233.23	16.92	8.31	13.80	6.73
4	Chan	405.70	422.60	1248.88	204.25	17.11	6.61	12.09	6.11
5	Chan	422.60	439.50	886.11	165.77	16.99	4.69	9.81	5.35
6	Chan	439.50	456.40	850.56	161.39	16.90	4.50	9.55	5.27
7	Chan	456.40	473.30	850.56	161.39	16.90	4.50	9.55	5.27
8	Chan	473.30	490.20	931.50	170.63	16.95	4.93	10.10	5.46
9	Chan	490.20	507.10	1148.70	193.54	16.96	6.08	11.45	5.94
10	Chan	507.10	524.00	1400.59	218.00	16.96	7.41	12.90	6.42
11	Chan	524.00	540.90	1523.86	228.99	16.90	8.06	13.55	6.65
12	Chan	540.90	557.80	1210.47	201.25	17.29	6.40	11.91	6.01
13	Chan	557.80	574.70	853.49	161.93	16.95	4.52	9.58	5.27
14	Chan	574.70	591.60	850.56	161.39	16.90	4.50	9.55	5.27
15	Chan	591.60	608.50	850.57	161.39	16.90	4.50	9.55	5.27
16	Chan	608.50	625.40	850.57	161.39	16.90	4.50	9.55	5.27
17	Chan	625.40	642.30	849.31	161.25	16.90	4.49	9.54	5.27
18	Chan	642.30	659.20	771.64	152.30	16.92	4.08	9.01	5.07
19	Chan	659.20	676.10	564.83	128.80	17.77	2.99	7.62	4.39
20	Chan	676.10	693.00	32.37	17.40	8.68	0.17	2.41	1.86
				3421	626	94			

Plan: PDR Presumpscot 1 RS: 1081 Profile: 500-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	220.00	355.00	78.59	152.42	69.46	0.28	2.20	0.52
2	Chan	355.00	371.90	794.88	212.16	20.57	2.84	12.55	3.75
3	Chan	371.90	388.80	1722.02	314.98	17.32	6.15	18.64	5.47
4	Chan	388.80	405.70	1986.10	339.94	16.92	7.09	20.12	5.84
5	Chan	405.70	422.60	1699.19	310.96	17.11	6.07	18.40	5.46
6	Chan	422.60	439.50	1369.89	272.49	16.99	4.89	16.12	5.03
7	Chan	439.50	456.40	1338.32	268.11	16.90	4.78	15.86	4.99
8	Chan	456.40	473.30	1338.32	268.11	16.90	4.78	15.86	4.99
9	Chan	473.30	490.20	1413.39	277.35	16.95	5.05	16.41	5.10
10	Chan	490.20	507.10	1612.66	300.26	16.96	5.76	17.77	5.37
11	Chan	507.10	524.00	1837.36	324.71	16.96	6.56	19.21	5.66
12	Chan	524.00	540.90	1946.78	335.71	16.90	6.95	19.86	5.80
13	Chan	540.90	557.80	1660.98	307.97	17.29	5.93	18.22	5.39
14	Chan	557.80	574.70	1339.97	268.64	16.95	4.79	15.90	4.99
15	Chan	574.70	591.60	1338.32	268.10	16.90	4.78	15.86	4.99
16	Chan	591.60	608.50	1338.33	268.11	16.90	4.78	15.86	4.99
17	Chan	608.50	625.40	1338.33	268.11	16.90	4.78	15.86	4.99
18	Chan	625.40	642.30	1337.07	267.97	16.90	4.78	15.86	4.99
19	Chan	642.30	659.20	1262.56	259.02	16.92	4.51	15.33	4.87
20	Chan	659.20	676.10	1042.85	235.52	17.77	3.72	13.94	4.43
21	Chan	676.10	693.00	204.11	92.92	20.07	0.73	5.57	2.20

Plan: PDR Presumpscot 1 RS: 1000 BR U Profile: 100-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	Chan	340.00	355.60	595.94	152.33	24.66	3.15	9.76	3.91
2	Chan	355.60	371.20	1086.06	182.93	15.84	5.75	11.73	5.94

Plan: PDR Presumpscot 1 RS: 1000 BR U Profile: 100-yr (Continued)

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
3	Chan	371.20	386.80	1447.39	216.50	15.69	7.66	13.88	6.69
4	Chan	386.80	402.40	1245.09	198.09	15.75	6.59	12.70	6.29
5	Chan	402.40	418.00	873.77	160.44	15.82	4.62	10.28	5.45
6	Chan	418.00	433.60	452.01	97.81	19.18	2.39	8.15	4.62
7	Chan	433.60	449.20						
8	Chan	449.20	464.80						
9	Chan	464.80	480.40						
10	Chan	480.40	496.00						
11	Chan	496.00	511.60						
12	Chan	511.60	527.20						
13	Chan	527.20	542.80						
14	Chan	542.80	558.40						
15	Chan	558.40	574.00	1222.73	201.38	27.93	6.47	14.38	6.07
16	Chan	574.00	589.60	2453.17	242.54	15.65	12.98	15.55	10.11
17	Chan	589.60	605.20	2786.37	261.81	15.65	14.74	16.78	10.64
18	Chan	605.20	620.80	2910.29	270.03	15.84	15.40	17.31	10.78
19	Chan	620.80	636.40	2120.75	223.84	15.93	11.22	14.35	9.47
20	Chan	636.40	652.00	1450.40	177.88	15.86	7.67	11.40	8.15
21	ROB	652.00	780.00	256.03	75.88	17.05	1.35	9.48	3.37

Plan: PDR Presumpscot 1 RS: 1000 BR U Profile: 500-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	210.00	340.00	0.02	0.08	2.01	0.00	0.08	0.24
2	Chan	340.00	355.60	1149.39	208.59	43.78	4.10	13.37	5.51
3	Chan	355.60	371.20	1802.22	239.34	31.44	6.44	15.34	7.53
4	Chan	371.20	386.80	2250.14	272.90	31.29	8.04	17.49	8.25
5	Chan	386.80	402.40	2000.46	254.50	31.35	7.14	16.31	7.86
6	Chan	402.40	418.00	1529.76	216.84	31.42	5.46	13.90	7.05
7	Chan	418.00	433.60	836.97	141.56	41.90	2.99	9.07	5.91
8	Chan	433.60	449.20	0.13	0.51	17.53	0.00	0.06	0.26
9	Chan	449.20	464.80						
10	Chan	464.80	480.40						
11	Chan	480.40	496.00						
12	Chan	496.00	511.60						
13	Chan	511.60	527.20						
14	Chan	527.20	542.80						
15	Chan	542.80	558.40						
16	Chan	558.40	574.00	1965.07	236.59	44.45	7.02	16.90	8.31
17	Chan	574.00	589.60	3326.00	281.78	31.25	11.88	18.06	11.80
18	Chan	589.60	605.20	3713.57	301.06	31.25	13.26	19.30	12.34
19	Chan	605.20	620.80	3868.42	309.27	31.44	13.82	19.82	12.51
20	Chan	620.80	636.40	2948.62	263.08	31.53	10.53	16.86	11.21
21	Chan	636.40	652.00	2144.49	217.12	31.46	7.66	13.92	9.88
22	ROB	652.00	780.00	464.73	96.00	27.56	1.66	12.00	4.84

Plan: PDR Presumpscot 1 RS: 1000 BR D Profile: 100-yr

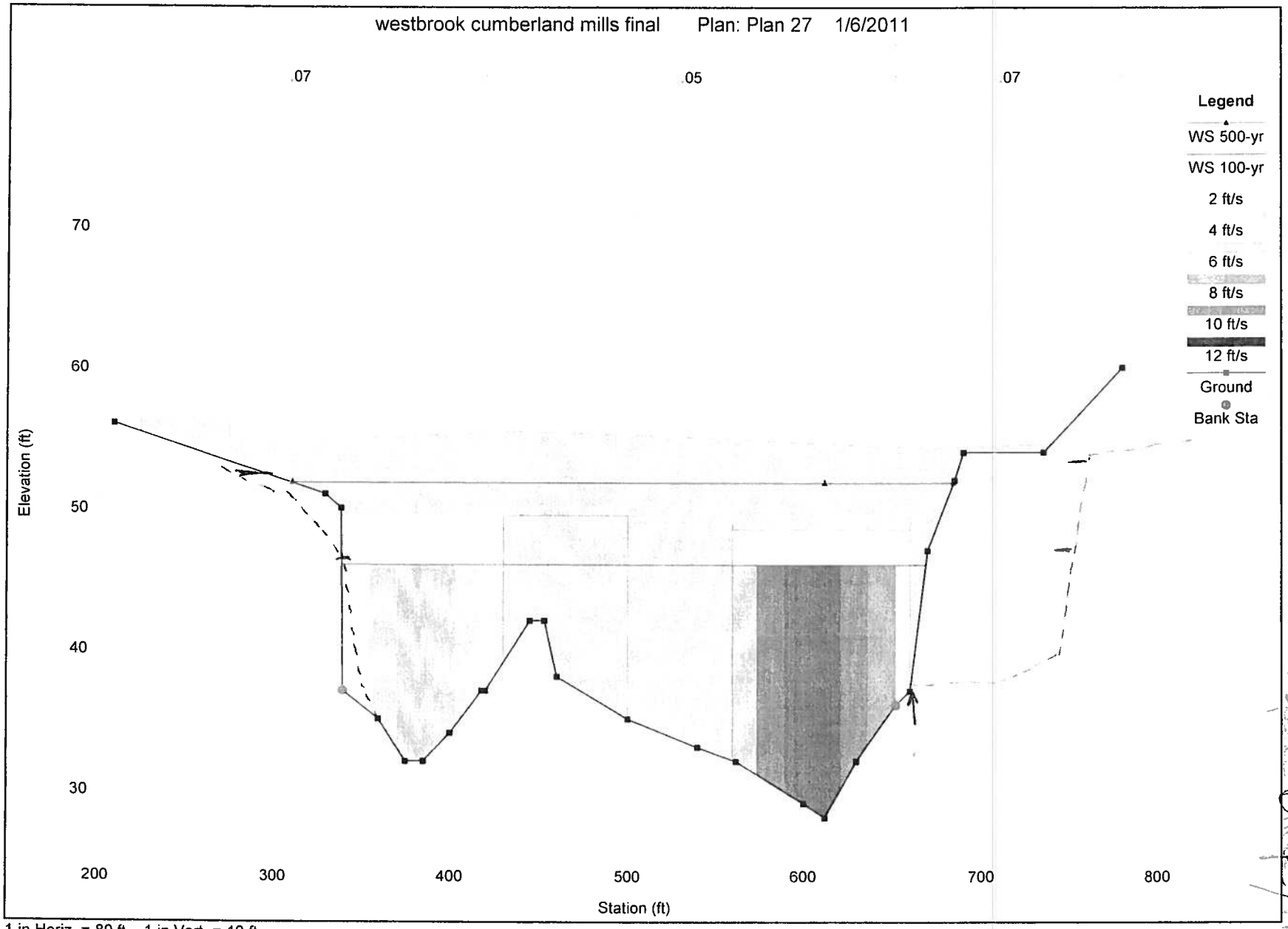
	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	Chan	340.00	355.60	627.07	154.41	24.79	3.32	9.90	4.06
2	Chan	355.60	371.20	1256.06	196.04	15.88	6.65	12.57	6.41

Plan: PDR Presumpscot 1 RS: 1000 BR D Profile: 100-yr (Continued)

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
3	Chan	371.20	386.80	1510.91	217.60	15.63	7.99	13.95	6.94
4	Chan	386.80	402.40	1353.04	203.73	15.64	7.16	13.06	6.64
5	Chan	402.40	418.00	1131.99	186.04	16.28	5.99	11.93	6.08
6	Chan	418.00	433.60	215.74	68.61	16.17	1.14	5.72	3.14
7	Chan	433.60	449.20						
8	Chan	449.20	464.80						
9	Chan	464.80	480.40						
10	Chan	480.40	496.00						
11	Chan	496.00	511.60						
12	Chan	511.60	527.20						
13	Chan	527.20	542.80						
14	Chan	542.80	558.40						
15	Chan	558.40	574.00	954.93	209.75	28.37	5.05	14.98	4.55
16	Chan	574.00	589.60	2349.15	286.55	16.04	12.43	18.37	8.20
17	Chan	589.60	605.20	2749.32	311.58	15.62	14.55	19.97	8.82
18	Chan	605.20	620.80	2739.33	311.35	15.68	14.49	19.96	8.80
19	Chan	620.80	636.40	2215.96	276.12	15.96	11.72	17.70	8.03
20	Chan	636.40	652.00	1491.60	218.42	16.08	7.89	14.00	6.83
21	ROB	652.00	786.00	304.91	86.03	18.69	1.61	10.75	3.54

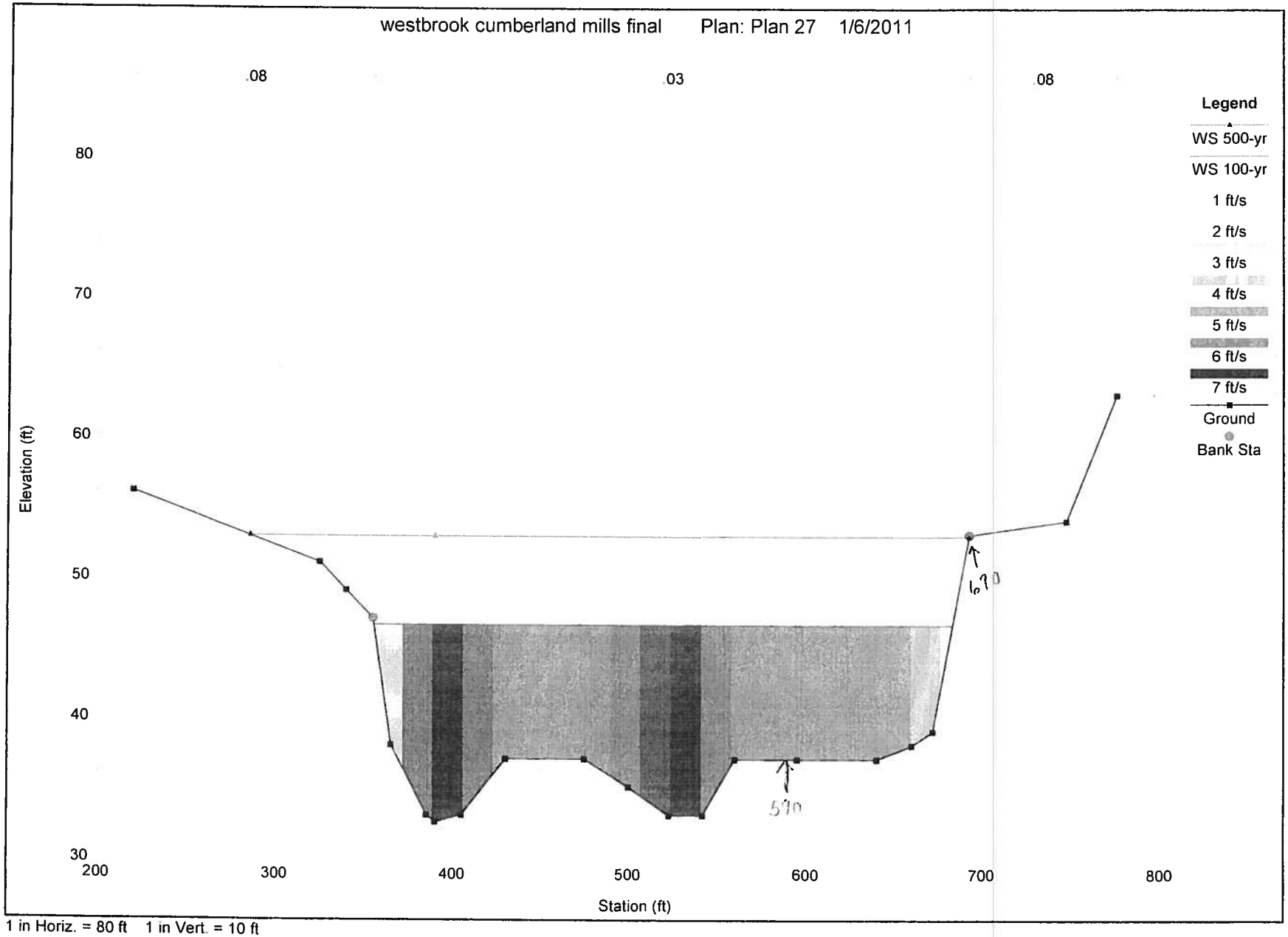
Plan: PDR Presumpscot 1 RS: 1000 BR D Profile: 500-yr

	Pos	Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	Percent Conv	Hydr Depth(ft)	Velocity (ft/s)
1	LOB	215.00	340.00	0.11	0.81	21.81	0.00	0.07	0.14
2	Chan	340.00	355.60	1232.62	209.63	43.84	4.40	13.44	5.88
3	Chan	355.60	371.20	2080.69	251.40	31.48	7.43	16.12	8.28
4	Chan	371.20	386.80	2399.56	272.96	31.23	8.57	17.50	8.79
5	Chan	386.80	402.40	2199.15	259.10	31.24	7.85	16.61	8.49
6	Chan	402.40	418.00	1928.13	241.40	31.88	6.89	15.47	7.99
7	Chan	418.00	433.60	467.15	111.56	38.82	1.67	7.15	4.19
8	Chan	433.60	449.20	0.08	0.32	7.08	0.00	0.09	0.26
9	Chan	449.20	464.80						
10	Chan	464.80	480.40						
11	Chan	480.40	496.00						
12	Chan	496.00	511.60						
13	Chan	511.60	527.20						
14	Chan	527.20	542.80						
15	Chan	542.80	558.40						
16	Chan	558.40	574.00	1564.64	244.03	44.82	5.59	17.43	6.41
17	Chan	574.00	589.60	3177.38	324.75	31.64	11.35	20.82	9.78
18	Chan	589.60	605.20	3628.20	349.79	31.22	12.96	22.42	10.37
19	Chan	605.20	620.80	3619.85	349.56	31.28	12.93	22.41	10.36
20	Chan	620.80	636.40	3014.36	314.32	31.56	10.77	20.15	9.59
21	Chan	636.40	652.00	2144.16	256.62	31.68	7.66	16.45	8.36
22	ROB	652.00	786.00	543.93	105.62	29.14	1.94	13.20	5.15



1 in Horiz. = 80 ft 1 in Vert. = 10 ft

Proposed Bridge / Fishway


westbrook cumberland mills final Plan: Plan 27 1/6/2011
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Legend
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WS 100-yr
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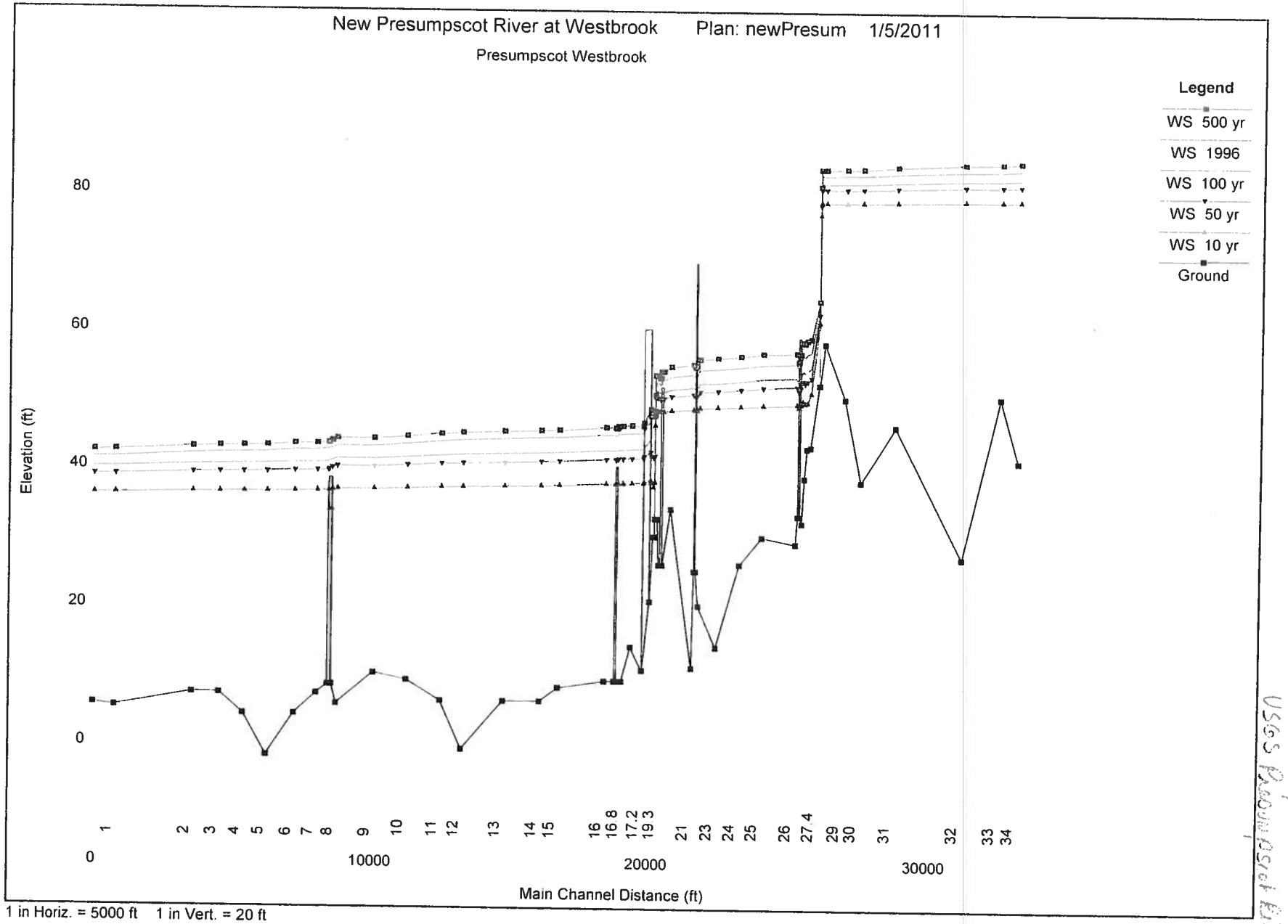
1 in Horiz. = 80 ft 1 in Vert. = 10 ft



FEMA Draft FIS
USGS Presumpscot River

USGS Presumpscot River Model FEMA Draft/Preliminary

HEC-RAS Plan: Presumpscot River: Presumpscot Reach: Westbrook

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
Westbrook	34	1996	23800.00	41.00	83.38		83.66	0.000193	4.36	6748.80	437.85	0.14
Westbrook	34	10 yr	9890.00	41.00	78.86		78.93	0.000063	2.24	4908.31	375.01	0.08
Westbrook	34	50 yr	15700.00	41.00	81.03		81.18	0.000116	3.21	5757.20	405.21	0.11
Westbrook	34	100 yr	18900.00	41.00	82.01		82.21	0.000147	3.68	6161.82	418.83	0.12
Westbrook	34	500 yr	28000.00	41.00	84.46		84.80	0.000232	4.88	7228.51	452.80	0.15
Westbrook	33	1996	23800.00	50.20	83.28		83.52	0.000205	4.15	8250.51	683.73	0.14
Westbrook	33	10 yr	9890.00	50.20	78.81		78.89	0.000076	2.24	5424.76	529.61	0.08
Westbrook	33	50 yr	15700.00	50.20	80.96		81.10	0.000132	3.13	6698.30	644.91	0.11
Westbrook	33	100 yr	18900.00	50.20	81.93		82.11	0.000162	3.56	7336.85	668.17	0.13
Westbrook	33	500 yr	28000.00	50.20	84.34		84.63	0.000239	4.60	8984.78	695.98	0.16
Westbrook	32	1996	23800.00	27.00	83.20		83.34	0.000070	2.99	10930.61	903.23	0.08
Westbrook	32	10 yr	9890.00	27.00	78.80		78.83	0.000019	1.44	7814.23	477.40	0.04
Westbrook	32	50 yr	15700.00	27.00	80.92		80.99	0.000038	2.13	9094.12	706.55	0.06
Westbrook	32	100 yr	18900.00	27.00	81.88		81.97	0.000050	2.49	9807.10	788.75	0.07
Westbrook	32	500 yr	28000.00	27.00	84.25		84.42	0.000086	3.39	11919.43	993.12	0.09
Westbrook	31	1996	23800.00	46.00	82.85		83.07	0.000174	4.06	10600.10	1150.11	0.14
Westbrook	31	10 yr	9890.00	46.00	78.68		78.75	0.000063	2.19	6302.52	855.28	0.08
Westbrook	31	50 yr	15700.00	46.00	80.70		80.84	0.000111	3.06	8250.49	1039.42	0.11
Westbrook	31	100 yr	18900.00	46.00	81.60		81.77	0.000137	3.48	9205.38	1085.77	0.12
Westbrook	31	500 yr	28000.00	46.00	83.83		84.10	0.000204	4.50	11750.22	1200.59	0.15
Westbrook	30	1996	23800.00	38.00	82.55		82.81	0.000253	4.42	8412.90	770.18	0.15
Westbrook	30	10 yr	9890.00	38.00	78.57		78.65	0.000090	2.36	5537.58	632.34	0.09
Westbrook	30	50 yr	15700.00	38.00	80.52		80.67	0.000158	3.32	6884.52	734.94	0.12
Westbrook	30	100 yr	18900.00	38.00	81.37		81.57	0.000196	3.78	7517.46	749.73	0.13
Westbrook	30	500 yr	28000.00	38.00	83.47		83.79	0.000299	4.91	9129.41	786.15	0.17
Westbrook	29	1996	23800.00	50.00	82.53		82.68	0.000118	3.42	10084.81	753.43	0.12
Westbrook	29	10 yr	9890.00	50.00	78.56		78.61	0.000041	1.83	7191.19	700.15	0.07
Westbrook	29	50 yr	15700.00	50.00	80.50		80.59	0.000072	2.56	8583.74	729.53	0.09
Westbrook	29	100 yr	18900.00	50.00	81.35		81.47	0.000090	2.92	9208.08	739.56	0.10
Westbrook	29	500 yr	28000.00	50.00	83.44		83.63	0.000141	3.81	10781.22	764.26	0.13
Westbrook	28	1996	23800.00	58.00	82.46		82.57	0.000142	2.76	10130.70	962.98	0.12
Westbrook	28	10 yr	9890.00	58.00	78.53		78.57	0.000060	1.54	6936.82	598.77	0.08
Westbrook	28	50 yr	15700.00	58.00	80.46		80.52	0.000095	2.10	8363.22	801.87	0.10
Westbrook	28	100 yr	18900.00	58.00	81.30		81.36	0.000115	2.38	9066.07	869.52	0.11
Westbrook	28	500 yr	28000.00	58.00	83.37		83.50	0.000164	3.05	11038.49	1036.04	0.13
Westbrook	27.6	1996	23800.00	52.00	82.44	63.63	82.55	0.000098	2.69	8844.33	374.03	0.10
Westbrook	27.6	10 yr	9890.00	52.00	78.53	61.10	78.56	0.000030	1.34	7383.62	373.98	0.05
Westbrook	27.6	50 yr	15700.00	52.00	80.45	62.29	80.51	0.000056	1.94	8100.77	374.00	0.07
Westbrook	27.6	100 yr	18900.00	52.00	81.28	62.86	81.36	0.000072	2.25	8413.50	374.02	0.08
Westbrook	27.6	500 yr	28000.00	52.00	83.33	64.22	83.48	0.000121	3.05	9179.10	374.04	0.11
Westbrook	27.5		Inl Struct									
Westbrook	27.4	1996	23800.00	52.00	63.63	63.63	66.24	0.013973	12.96	1836.66	354.75	1.00
Westbrook	27.4	10 yr	9890.00	52.00	61.10	61.10	62.72	0.014495	10.19	970.51	304.16	1.01
Westbrook	27.4	50 yr	15700.00	52.00	62.29	62.29	64.34	0.014567	11.48	1367.72	343.95	1.01
Westbrook	27.4	100 yr	18900.00	52.00	62.86	62.86	65.13	0.014217	12.08	1564.44	348.52	1.00
Westbrook	27.4	500 yr	28000.00	52.00	64.22	64.22	67.13	0.013950	13.58	2047.58	359.51	1.01
Westbrook	27.3	1996	23800.00	43.00	56.81		57.68	0.002776	7.47	3186.86	386.22	0.46
Westbrook	27.3	10 yr	9890.00	43.00	50.84	50.84	52.33	0.018431	9.78	1011.14	342.87	1.00
Westbrook	27.3	50 yr	15700.00	43.00	53.06		54.26	0.007424	8.78	1789.12	358.97	0.69
Westbrook	27.3	100 yr	18900.00	43.00	54.48		55.52	0.004815	8.20	2306.07	369.29	0.58
Westbrook	27.3	500 yr	28000.00	43.00	58.74		59.52	0.002145	7.09	3950.23	425.90	0.41
Westbrook	27.2	1996	23800.00	42.80	56.58		57.36	0.001898	7.08	3360.70	323.99	0.39
Westbrook	27.2	10 yr	9890.00	42.80	49.47		50.52	0.006968	8.24	1200.58	252.53	0.67
Westbrook	27.2	50 yr	15700.00	42.80	52.56		53.48	0.004058	7.60	2064.68	323.94	0.53
Westbrook	27.2	100 yr	18900.00	42.80	54.16		54.99	0.002851	7.34	2575.46	323.96	0.46
Westbrook	27.2	500 yr	28000.00	42.80	58.52		59.29	0.001504	7.02	3990.16	324.01	0.35
Westbrook	27.1	1996	23800.00	38.50	56.17		57.19	0.001405	8.74	3148.07	279.87	0.39
Westbrook	27.1	10 yr	9890.00	38.50	49.36		50.12	0.002070	7.29	1478.53	210.27	0.43
Westbrook	27.1	50 yr	15700.00	38.50	52.30		53.24	0.001804	8.21	2141.63	240.34	0.42
Westbrook	27.1	100 yr	18900.00	38.50	53.78		54.78	0.001672	8.55	2506.91	255.48	0.41
Westbrook	27.1	500 yr	28000.00	38.50	58.12		59.14	0.001231	8.84	3712.69	299.78	0.37
Westbrook	27	1996	23800.00	32.00	56.40	45.27	56.96	0.000577	6.29	3988.92	240.39	0.25
Westbrook	27	10 yr	9890.00	32.00	49.53	41.61	49.90	0.000454	4.18	2441.94	216.90	0.21
Westbrook	27	50 yr	15700.00	32.00	52.59	43.27	53.00	0.000546	5.28	3097.39	227.15	0.24
Westbrook	27	100 yr	18900.00	32.00	54.06	44.09	54.55	0.000575	5.76	3435.21	232.26	0.25
Westbrook	27	500 yr	28000.00	32.00	58.31	46.15	58.96	0.000572	6.67	4453.66	247.01	0.26

HEC-RAS Plan Presumpscot River Presumpscot Reach Westbrook (Continued)

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
Westbrook	26.6	1996	23800.00	33.00	54.96	46.98	56.89	0.001769	11.14	2137.39	111.46	0.45
Westbrook	26.6	10 yr	9890.00	33.00	49.15	42.02	49.84	0.001017	6.64	1489.58	111.41	0.32
Westbrook	26.6	50 yr	15700.00	33.00	51.71	44.25	52.92	0.001431	8.85	1774.21	111.43	0.39
Westbrook	26.6	100 yr	18900.00	33.00	52.94	45.39	54.46	0.001616	9.89	1912.20	111.44	0.42
Westbrook	26.6	500 yr	28000.00	33.00	56.60	48.28	58.87	0.001864	12.08	2319.65	111.48	0.47
Westbrook	26.5		Bridge									
Westbrook	26.4	1996	23800.00	33.00	54.06	46.98	56.43	0.002077	11.69	2036.82	111.45	0.48
Westbrook	26.4	10 yr	9890.00	33.00	48.81	42.02	49.70	0.001109	6.62	1451.30	111.41	0.33
Westbrook	26.4	50 yr	15700.00	33.00	51.12	44.25	52.68	0.001521	9.19	1709.16	111.43	0.41
Westbrook	26.4	100 yr	18900.00	33.00	52.23	45.39	54.14	0.001864	10.32	1832.19	111.44	0.45
Westbrook	26.4	500 yr	28000.00	33.00	55.46	48.28	58.20	0.002250	12.78	2192.20	111.47	0.51
Westbrook	26	1996	23800.00	29.00	55.11		55.97	0.000996	7.68	3677.23	342.44	0.30
Westbrook	26	10 yr	9890.00	29.00	49.19		49.54	0.000616	4.79	2125.05	166.69	0.22
Westbrook	26	50 yr	15700.00	29.00	51.80		52.40	0.000856	6.32	2681.33	258.12	0.27
Westbrook	26	100 yr	18900.00	29.00	53.06		53.79	0.000948	6.96	3028.28	290.29	0.29
Westbrook	26	500 yr	28000.00	29.00	56.69		57.64	0.001020	8.17	4251.29	391.99	0.31
Westbrook	25	1996	23800.00	30.00	54.97		55.22	0.000270	4.21	5602.33	679.90	0.16
Westbrook	25	10 yr	9890.00	30.00	49.02		49.13	0.000158	2.59	4008.58	312.58	0.12
Westbrook	25	50 yr	15700.00	30.00	51.62		51.79	0.000226	3.45	4847.75	345.67	0.14
Westbrook	25	100 yr	18900.00	30.00	52.88		53.10	0.000255	3.82	5338.88	461.18	0.15
Westbrook	25	500 yr	28000.00	30.00	56.59		56.86	0.000275	4.46	7736.89	736.41	0.16
Westbrook	24	1996	23800.00	26.00	54.60		54.97	0.000355	5.05	5652.14	737.52	0.18
Westbrook	24	10 yr	9890.00	26.00	48.86		48.99	0.000171	2.92	3531.06	236.67	0.12
Westbrook	24	50 yr	15700.00	26.00	51.35		51.59	0.000272	4.01	4140.41	255.48	0.16
Westbrook	24	100 yr	18900.00	26.00	52.56		52.86	0.000319	4.51	4515.77	367.03	0.17
Westbrook	24	500 yr	28000.00	26.00	56.19		56.60	0.000366	5.36	6897.14	821.13	0.19
Westbrook	23	1996	23800.00	14.00	54.32		54.70	0.000292	5.29	6768.00	793.64	0.18
Westbrook	23	10 yr	9890.00	14.00	48.72		48.87	0.000132	3.07	3552.33	261.98	0.11
Westbrook	23	50 yr	15700.00	14.00	51.11		51.38	0.000227	4.30	4413.51	610.92	0.15
Westbrook	23	100 yr	18900.00	14.00	52.29		52.62	0.000268	4.82	5204.79	733.39	0.17
Westbrook	23	500 yr	28000.00	14.00	55.92		56.33	0.000301	5.57	8071.60	834.59	0.18
Westbrook	22	1996	23800.00	20.00	54.19	34.63	54.50	0.000280	4.61	5459.00	617.95	0.16
Westbrook	22	10 yr	9890.00	20.00	46.68	29.71	48.78	0.000117	2.55	4007.71	260.04	0.10
Westbrook	22	50 yr	15700.00	20.00	51.03	32.03	51.22	0.000202	3.60	4776.93	414.41	0.13
Westbrook	22	100 yr	18900.00	20.00	52.18	33.14	52.44	0.000243	4.06	5307.60	503.10	0.15
Westbrook	22	500 yr	28000.00	20.00	55.77	35.72	56.12	0.000299	4.96	7458.56	547.21	0.16
Westbrook	21.6	1996	23800.00	25.00	53.38	43.41	54.35	0.001321	8.13	3114.21	182.37	0.32
Westbrook	21.6	10 yr	9890.00	25.00	48.36	38.68	48.69	0.000643	4.67	2206.07	172.97	0.21
Westbrook	21.6	50 yr	15700.00	25.00	50.49	40.87	51.10	0.001009	6.40	2587.47	182.33	0.27
Westbrook	21.6	100 yr	18900.00	25.00	51.52	41.90	52.30	0.001182	7.20	2776.46	182.35	0.30
Westbrook	21.6	500 yr	28000.00	25.00	54.81	44.60	55.96	0.001428	8.85	3375.65	182.39	0.34
Westbrook	21.5		Bridge									
Westbrook	21.4	1996	23800.00	25.00	53.23	43.41	54.12	0.001355	8.20	3087.91	182.37	0.33
Westbrook	21.4	10 yr	9890.00	25.00	48.30	38.68	48.62	0.000652	4.69	2196.31	172.82	0.22
Westbrook	21.4	50 yr	15700.00	25.00	50.39	40.89	50.96	0.001030	6.44	2570.37	182.33	0.28
Westbrook	21.4	100 yr	18900.00	25.00	51.41	41.91	52.12	0.001210	7.26	2755.47	182.34	0.30
Westbrook	21.4	500 yr	28000.00	25.00	54.63	44.56	55.66	0.001471	8.94	3342.99	182.38	0.34
Westbrook	21	1996	23800.00	11.00	53.52		53.89	0.000294	5.12	6158.81	554.42	0.16
Westbrook	21	10 yr	9890.00	11.00	48.42		48.54	0.000110	2.77	3736.11	303.33	0.10
Westbrook	21	50 yr	15700.00	11.00	50.58		50.82	0.000200	3.95	4645.41	475.55	0.13
Westbrook	21	100 yr	18900.00	11.00	51.64		51.94	0.000247	4.50	5163.23	504.97	0.15
Westbrook	21	500 yr	28000.00	11.00	54.96		55.39	0.000329	5.59	7071.14	687.94	0.17
Westbrook	20	1996	23800.00	34.00	53.16		53.58	0.000562	5.39	5459.23	527.62	0.23
Westbrook	20	10 yr	9890.00	34.00	48.24		48.40	0.000318	3.27	3308.02	358.37	0.16
Westbrook	20	50 yr	15700.00	34.00	50.29		50.58	0.000471	4.39	4104.65	419.22	0.20
Westbrook	20	100 yr	18900.00	34.00	51.30		51.66	0.000537	4.90	4547.08	457.46	0.22
Westbrook	20	500 yr	28000.00	34.00	54.59		55.05	0.000577	5.75	6252.54	581.80	0.23
Westbrook	19.6	1996	23800.00	25.90	52.62	41.02	53.34	0.000908	6.83	3484.87	175.25	0.27
Westbrook	19.6	10 yr	9890.00	25.90	48.09	36.62	48.30	0.000331	3.67	2691.52	175.13	0.17
Westbrook	19.6	50 yr	15700.00	25.90	50.00	38.73	50.42	0.000594	5.19	3025.98	175.18	0.22
Westbrook	19.6	100 yr	18900.00	25.90	50.91	39.66	51.46	0.000741	5.93	3185.83	175.20	0.25
Westbrook	19.6	500 yr	28000.00	25.90	53.91	41.96	54.79	0.001049	7.54	3741.33	245.09	0.29
Westbrook	19.5		Bridge									

HEC-RAS Plan: Presumpscot River: Presumpscot Reach: Westbrook (Continued)

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)	
Westbrook	19.4	1996	23800.00	25.90	52.01		52.78	0.000993	7.04	3378.51	175.23	0.28
Westbrook	19.4	10 yr	9890.00	25.90	48.06		48.27	0.000333	3.68	2686.97	175.13	0.17
Westbrook	19.4	50 yr	15700.00	25.90	49.95		50.37	0.000599	5.20	3016.68	175.18	0.22
Westbrook	19.4	100 yr	18900.00	25.90	50.82		51.37	0.000752	5.96	3169.40	175.20	0.25
Westbrook	19.4	500 yr	28000.00	25.90	53.00		53.96	0.001191	7.88	3551.52	175.26	0.31
Westbrook	19.3	1996	23800.00	25.90	51.97		52.74	0.000999	7.06	3370.96	175.23	0.28
Westbrook	19.3	10 yr	9890.00	25.90	48.05		48.26	0.000334	3.68	2684.58	175.13	0.17
Westbrook	19.3	50 yr	15700.00	25.90	49.92		50.34	0.000601	5.21	3012.31	175.18	0.22
Westbrook	19.3	100 yr	18900.00	25.90	50.79		51.34	0.000756	5.97	3163.78	175.20	0.25
Westbrook	19.3	500 yr	28000.00	25.90	52.95		53.92	0.001200	7.90	3542.32	175.25	0.31
Westbrook	18.2	1996	23800.00	32.60	52.30		52.54	0.000438	3.95	6050.33	358.16	0.17
Westbrook	18.2	10 yr	9890.00	32.60	48.13		48.20	0.000190	2.17	4563.84	355.06	0.11
Westbrook	18.2	50 yr	15700.00	32.60	50.09		50.23	0.000302	3.00	5260.40	358.11	0.14
Westbrook	18.2	100 yr	18900.00	32.60	51.01		51.19	0.000358	3.40	5591.02	358.13	0.15
Westbrook	18.2	500 yr	28000.00	32.60	53.37		53.66	0.000495	4.38	6433.52	358.19	0.18
Westbrook	18.1	1996	23800.00	32.60	52.26	40.36	52.50	0.000441	3.96	6037.17	358.16	0.17
Westbrook	18.1	10 yr	9890.00	32.60	48.11	38.03	48.19	0.000191	2.18	4558.29	355.06	0.11
Westbrook	18.1	50 yr	15700.00	32.60	50.07	39.09	50.21	0.000304	3.00	5251.44	358.11	0.14
Westbrook	18.1	100 yr	18900.00	32.60	50.98	39.60	51.16	0.000360	3.40	5580.33	358.13	0.15
Westbrook	18.1	500 yr	28000.00	32.60	53.32	40.96	53.62	0.000499	4.39	6418.56	358.19	0.18
Westbrook	18		Inl Struct									
Westbrook	17.8	1996	23800.00	30.00	45.91		47.01	0.002077	8.45	2817.95	213.93	0.41
Westbrook	17.8	10 yr	9890.00	30.00	37.91		39.11	0.005778	8.79	1124.51	205.55	0.66
Westbrook	17.8	50 yr	15700.00	30.00	41.68		42.73	0.002923	8.20	1915.09	213.08	0.48
Westbrook	17.8	100 yr	18900.00	30.00	43.24		44.34	0.002604	8.41	2247.76	213.89	0.46
Westbrook	17.8	500 yr	28000.00	30.00	47.54		48.75	0.002020	8.84	3167.58	213.96	0.40
Westbrook	17.6	1996	23800.00	30.00	45.80		46.92	0.001198	8.51	2795.14	213.93	0.42
Westbrook	17.6	10 yr	9890.00	30.00	37.16		38.77	0.005021	10.18	971.46	203.91	0.82
Westbrook	17.6	50 yr	15700.00	30.00	41.52		42.60	0.001741	8.35	1879.19	212.75	0.50
Westbrook	17.6	100 yr	18900.00	30.00	43.10		44.23	0.001527	8.52	2217.09	213.89	0.47
Westbrook	17.6	500 yr	28000.00	30.00	47.44		48.67	0.001150	8.90	3145.58	213.96	0.41
Westbrook	17.5	1996	23800.00	20.60	45.85	36.11	46.78	0.000801	7.73	3078.39	168.96	0.32
Westbrook	17.5	10 yr	9890.00	20.60	37.79	32.34	38.30	0.000759	5.76	1716.21	168.88	0.32
Westbrook	17.5	50 yr	15700.00	20.60	41.70	34.06	42.38	0.000739	6.60	2377.86	168.92	0.31
Westbrook	17.5	100 yr	18900.00	20.60	43.23	34.88	44.03	0.000793	7.17	2636.12	168.93	0.32
Westbrook	17.5	500 yr	28000.00	20.60	47.45	37.10	48.54	0.000870	8.36	3348.49	168.97	0.33
Westbrook	17.4		Mult Open									
Westbrook	17.2	1996	23800.00	10.50	44.95		45.36	0.000252	5.16	4615.43	169.04	0.17
Westbrook	17.2	10 yr	9890.00	10.60	37.74		37.87	0.000104	2.91	3397.70	168.97	0.11
Westbrook	17.2	50 yr	15700.00	10.60	41.37		41.61	0.000163	3.91	4011.45	169.00	0.14
Westbrook	17.2	100 yr	18900.00	10.60	42.69		43.00	0.000202	4.46	4234.52	169.01	0.16
Westbrook	17.2	500 yr	28000.00	10.50	46.00		46.53	0.000313	5.84	4792.95	169.05	0.19
Westbrook	17	1996	23800.00	14.00	44.94		45.19	0.000332	5.05	7510.85	1134.00	0.17
Westbrook	17	10 yr	9890.00	14.00	37.66		37.81	0.000238	3.50	3428.82	242.60	0.14
Westbrook	17	50 yr	15700.00	14.00	41.30		41.52	0.000299	4.37	4466.65	478.47	0.16
Westbrook	17	100 yr	18900.00	14.00	42.62		42.86	0.000339	4.82	5259.49	702.42	0.17
Westbrook	17	500 yr	28000.00	14.00	46.04		46.31	0.000361	5.41	8789.48	1192.83	0.18
Westbrook	16.8	1996	23800.00	9.00	44.37		45.10	0.000235	4.73	8590.17	1298.82	0.15
Westbrook	16.8	10 yr	9890.00	9.00	37.63	19.50	37.74	0.000133	3.01	3915.96	242.57	0.10
Westbrook	16.8	50 yr	15700.00	9.00	41.24		41.43	0.000199	4.03	4994.30	563.86	0.13
Westbrook	16.8	100 yr	18900.00	9.00	42.56		42.78	0.000232	4.48	5959.11	885.14	0.14
Westbrook	16.8	500 yr	28000.00	9.00	45.96		46.21	0.000259	5.07	10033.56	1347.92	0.15
Westbrook	16.6	1996	23800.00	9.00	44.82	25.09	45.05	0.000268	4.84	8889.45	1396.90	0.15
Westbrook	16.6	10 yr	9890.00	9.00	37.60	19.50	37.72	0.000157	3.14	3907.96	242.55	0.11
Westbrook	16.6	50 yr	15700.00	9.00	41.21	22.10	41.40	0.000218	4.04	5005.34	606.18	0.13
Westbrook	16.6	100 yr	18900.00	9.00	42.51	23.31	42.74	0.000256	4.51	6055.19	986.90	0.14
Westbrook	16.6	500 yr	28000.00	9.00	45.89	26.41	46.15	0.000302	5.25	10417.83	1443.26	0.16
Westbrook	16.5		Bridge									
Westbrook	16.4	1996	23800.00	9.00	44.64		44.88	0.000277	4.90	8640.35	1381.11	0.15
Westbrook	16.4	10 yr	9890.00	9.00	37.58	19.50	37.69	0.000157	3.14	3903.77	242.54	0.11
Westbrook	16.4	50 yr	15700.00	9.00	41.10		41.29	0.000222	4.07	4944.01	576.19	0.13
Westbrook	16.4	100 yr	18900.00	9.00	42.44		42.67	0.000259	4.53	5989.16	981.19	0.14
Westbrook	16.4	500 yr	28000.00	9.00	45.69		45.96	0.000314	5.33	10107.89	1420.62	0.16
Westbrook	16	1996	23800.00	9.00	44.67		44.75	0.000210	3.28	14686.42	1526.20	0.10

Sappi dam

Left Spillway 47.1

Right Spillway 41.8

Mill Building

Sappi Bridge

HEC-RAS Plan: Presumpscot River: Presumpscot Reach: Westbrook (Continued)

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
Westbrook	16	10 yr	9890.00	9.00	37.55		37.62	0.000169	2.50	6045.59	606.21	0.09
Westbrook	16	50 yr	15700.00	9.00	41.11		41.19	0.000200	2.96	9467.62	1405.50	0.10
Westbrook	16	100 yr	18900.00	9.00	42.46		42.55	0.000214	3.16	11403.08	1451.44	0.10
Westbrook	16	500 yr	28000.00	9.00	45.72		45.81	0.000234	3.54	16308.96	1561.82	0.11
Westbrook	15	1996	23800.00	8.00	44.31		44.40	0.000215	3.11	11641.32	789.79	0.10
Westbrook	15	10 yr	9890.00	8.00	37.30		37.35	0.000151	2.22	6627.02	616.70	0.08
Westbrook	15	50 yr	15700.00	8.00	40.80		40.86	0.000183	2.66	8984.47	722.32	0.09
Westbrook	15	100 yr	18900.00	8.00	42.12		42.20	0.000203	2.89	9956.55	747.71	0.09
Westbrook	15	500 yr	28000.00	8.00	45.31		45.41	0.000250	3.43	12436.30	808.89	0.10
Westbrook	14	1996	23800.00	6.00	44.22		44.30	0.000105	3.23	17745.20	1773.02	0.10
Westbrook	14	10 yr	9890.00	6.00	37.23		37.28	0.000075	2.33	7706.40	1062.68	0.08
Westbrook	14	50 yr	15700.00	6.00	40.72		40.78	0.000091	2.79	12101.03	1445.88	0.09
Westbrook	14	100 yr	18900.00	6.00	42.03		42.11	0.000101	3.03	14083.29	1568.57	0.10
Westbrook	14	500 yr	28000.00	6.00	45.21		45.30	0.000121	3.53	19533.37	1864.73	0.11
Westbrook	13	1996	26600.00	6.00	44.04		44.15	0.000127	3.57	20204.07	2391.57	0.11
Westbrook	13	10 yr	9890.00	6.00	37.13		37.19	0.000071	2.29	7834.92	1049.98	0.08
Westbrook	13	50 yr	15700.00	6.00	40.58		40.66	0.000092	2.82	12478.99	2071.71	0.09
Westbrook	13	100 yr	18900.00	6.00	41.89		41.97	0.000100	3.04	15264.23	2192.42	0.10
Westbrook	13	500 yr	28000.00	6.00	45.05		45.14	0.000115	3.46	22655.98	2484.49	0.10
Westbrook	12	1996	26600.00	-1.00	43.81		43.93	0.000166	4.14	17777.75	1578.61	0.12
Westbrook	12	10 yr	9890.00	-1.00	37.01		37.07	0.000084	2.56	8538.66	1087.77	0.08
Westbrook	12	50 yr	15700.00	-1.00	40.43		40.51	0.000109	3.14	12784.10	1381.30	0.10
Westbrook	12	100 yr	18900.00	-1.00	41.72		41.81	0.000123	3.43	14605.04	1456.35	0.10
Westbrook	12	500 yr	28000.00	-1.00	44.83		44.94	0.000154	4.07	19421.16	1638.35	0.12
Westbrook	11	1996	26600.00	6.00	43.60		43.76	0.000275	3.84	10586.17	738.19	0.12
Westbrook	11	10 yr	9890.00	6.00	36.93		36.99	0.000123	2.22	6172.56	539.66	0.08
Westbrook	11	50 yr	15700.00	6.00	40.32		40.40	0.000170	2.82	8252.64	681.48	0.09
Westbrook	11	100 yr	18900.00	6.00	41.58		41.68	0.000196	3.11	9125.99	703.24	0.10
Westbrook	11	500 yr	28000.00	6.00	44.64		44.78	0.000258	3.80	11355.67	755.95	0.11
Westbrook	10	1996	26600.00	9.00	43.21		43.40	0.000289	4.24	10034.42	714.75	0.13
Westbrook	10	10 yr	9890.00	9.00	36.77		36.84	0.000121	2.37	5855.03	544.70	0.08
Westbrook	10	50 yr	15700.00	9.00	40.08		40.19	0.000171	3.04	7871.59	669.30	0.10
Westbrook	10	100 yr	18900.00	9.00	41.30		41.43	0.000200	3.38	8699.76	687.05	0.11
Westbrook	10	500 yr	28000.00	9.00	44.26		44.44	0.000273	4.20	10794.96	734.50	0.13
Westbrook	9	1996	26600.00	10.00	42.82		43.08	0.000231	5.02	9607.52	1170.12	0.16
Westbrook	9	10 yr	9890.00	10.00	36.61		36.70	0.000098	2.81	4734.36	443.25	0.10
Westbrook	9	50 yr	15700.00	10.00	39.85		40.00	0.000138	3.53	6470.29	653.02	0.12
Westbrook	9	100 yr	18900.00	10.00	41.03		41.21	0.000162	4.04	7618.67	1051.63	0.13
Westbrook	9	500 yr	28000.00	10.00	43.91		44.15	0.000211	4.91	10922.32	1242.27	0.15
Westbrook	8	1996	26600.00	5.50	42.86		42.90	0.000045	2.49	25639.87	3214.51	0.07
Westbrook	8	10 yr	9890.00	5.50	36.60	14.24	36.63	0.000021	1.49	8965.90	1341.52	0.05
Westbrook	8	50 yr	15700.00	5.50	39.86		39.89	0.000030	1.90	16106.49	3074.49	0.06
Westbrook	8	100 yr	18900.00	5.50	41.05		41.08	0.000033	2.06	19860.03	3173.71	0.06
Westbrook	8	500 yr	28000.00	5.50	43.95		43.99	0.000040	2.39	29160.99	3239.12	0.07
Westbrook	7.6	1996	26600.00	8.30	42.52	22.91	42.86	0.000322	5.59	9012.15	1129.16	0.17
Westbrook	7.6	10 yr	9890.00	8.30	36.48	16.63	36.61	0.000132	3.12	3916.58	450.24	0.11
Westbrook	7.6	50 yr	15700.00	8.30	39.66	19.12	39.87	0.000194	4.08	6068.58	902.88	0.13
Westbrook	7.6	100 yr	18900.00	8.30	40.81	20.32	41.05	0.000226	4.52	7183.47	1017.25	0.14
Westbrook	7.6	500 yr	28000.00	8.30	43.64	23.36	43.95	0.000287	5.40	10323.17	1188.88	0.16
Westbrook	7.5		Bridge									
Westbrook	7.4	1996	26600.00	8.30	42.42		42.78	0.000332	5.66	8758.23	1100.83	0.17
Westbrook	7.4	10 yr	9890.00	8.30	36.35		36.48	0.000135	3.15	3842.96	419.79	0.11
Westbrook	7.4	50 yr	15700.00	8.30	39.31		39.53	0.000207	4.18	5692.68	828.55	0.14
Westbrook	7.4	100 yr	18900.00	8.30	40.56		40.81	0.000239	4.62	6820.39	971.12	0.15
Westbrook	7.4	500 yr	28000.00	8.30	43.33		43.66	0.000310	5.57	9780.39	1154.08	0.17
Westbrook	7	1996	26600.00	7.00	42.27		42.65	0.000287	5.52	8238.62	813.28	0.17
Westbrook	7	10 yr	9890.00	7.00	36.32		36.43	0.000097	2.81	4410.23	446.92	0.10
Westbrook	7	50 yr	15700.00	7.00	39.26		39.45	0.000157	3.83	6019.39	649.00	0.12
Westbrook	7	100 yr	18900.00	7.00	40.48		40.72	0.000189	4.32	6861.47	723.96	0.14
Westbrook	7	500 yr	28000.00	7.00	43.16		43.54	0.000279	5.55	8981.40	857.60	0.17
Westbrook	6	1996	26600.00	4.00	42.22		42.41	0.000193	4.62	14433.32	1333.62	0.14
Westbrook	6	10 yr	9890.00	4.00	36.27		36.35	0.000085	2.70	7368.77	945.49	0.09
Westbrook	6	50 yr	15700.00	4.00	39.20		39.32	0.000122	3.46	10530.05	1211.45	0.11
Westbrook	6	100 yr	18900.00	4.00	40.42		40.56	0.000140	3.79	12074.87	1293.49	0.12
Westbrook	6	500 yr	28000.00	4.00	43.12		43.30	0.000180	4.55	15648.25	1353.82	0.14

HEC-RAS Plan: Presumpscot River: Presumpscot Reach: Westbrook (Continued)

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)	
Westbrook	5	1996	26600.00	-2.00	41.96		42.20	0.000227	4.97	11021.84	914.57	0.14
Westbrook	5	10 yr	9890.00	-2.00	36.19		36.27	0.000079	2.61	6299.21	674.64	0.08
Westbrook	5	50 yr	15700.00	-2.00	39.07		39.20	0.000125	3.49	8465.61	831.69	0.11
Westbrook	5	100 yr	18900.00	-2.00	40.26		40.42	0.000150	3.92	9493.73	886.83	0.12
Westbrook	5	500 yr	28000.00	-2.00	42.86		43.10	0.000219	4.95	11859.81	929.43	0.14
Westbrook	4	1996	26600.00	4.00	41.87		42.02	0.000155	4.12	15152.67	2537.71	0.12
Westbrook	4	10 yr	9890.00	4.00	36.15		36.21	0.000061	2.27	7529.33	660.00	0.08
Westbrook	4	50 yr	15700.00	4.00	39.00		39.10	0.000095	3.03	9613.19	800.90	0.10
Westbrook	4	100 yr	18900.00	4.00	40.18		40.30	0.000113	3.39	10896.05	2516.32	0.11
Westbrook	4	500 yr	28000.00	4.00	42.79		42.93	0.000139	3.97	17511.53	2549.49	0.12
Westbrook	3	1996	26600.00	7.00	41.78		41.89	0.000115	3.61	20725.85	1979.60	0.11
Westbrook	3	10 yr	9890.00	7.00	36.11		36.16	0.000049	2.08	10815.04	1377.71	0.07
Westbrook	3	50 yr	15700.00	7.00	38.95		39.02	0.000072	2.69	15237.30	1784.59	0.09
Westbrook	3	100 yr	18900.00	7.00	40.13		40.20	0.000084	2.97	17450.85	1969.00	0.09
Westbrook	3	500 yr	28000.00	7.00	42.72		42.81	0.000105	3.51	22574.55	1985.56	0.11
Westbrook	2	1996	26600.00	7.00	41.63		41.77	0.000139	3.91	16758.70	1526.05	0.12
Westbrook	2	10 yr	9890.00	7.00	36.05		36.10	0.000059	2.25	9038.07	1149.91	0.08
Westbrook	2	50 yr	15700.00	7.00	38.86		38.94	0.000085	2.67	12630.08	1402.64	0.09
Westbrook	2	100 yr	18900.00	7.00	40.02		40.12	0.000098	3.16	14316.75	1505.08	0.10
Westbrook	2	500 yr	28000.00	7.00	42.58		42.70	0.000129	3.82	18203.34	1538.31	0.12
Westbrook	1	1996	26600.00	5.00	41.07		41.27	0.000231	4.96	16336.80	2187.94	0.15
Westbrook	1	10 yr	9890.00	5.00	35.81		35.89	0.000095	2.84	7384.52	1231.22	0.09
Westbrook	1	50 yr	15700.00	5.00	38.53		38.64	0.000136	3.61	11347.49	1688.48	0.12
Westbrook	1	100 yr	18900.00	5.00	39.64		39.77	0.000157	3.96	13326.52	1875.55	0.12
Westbrook	1	500 yr	28000.00	5.00	42.08		42.25	0.000204	4.75	18568.65	2236.01	0.14
Westbrook	.2	1996	26600.00	5.40	41.00	22.11	41.12	0.000124	3.55	15553.20	1057.00	0.11
Westbrook	.2	10 yr	9890.00	5.40	35.80	15.46	35.83	0.000041	1.79	10659.86	840.40	0.06
Westbrook	.2	50 yr	15700.00	5.40	38.50	17.98	38.56	0.000064	2.40	13067.45	943.00	0.08
Westbrook	.2	100 yr	18900.00	5.40	39.60	19.17	39.67	0.000077	2.71	14127.74	984.80	0.09
Westbrook	.2	500 yr	28000.00	5.40	42.00	22.66	42.12	0.000119	3.56	15638.70	1114.00	0.11