HYDROLOGY REPORT

This 10.5 square mile watershed exists to the east of the bridge site, with the shape fairly uniform (not long and narrow). The mean basin elevation is 196 feet with the maximum basin elevation of 363 feet. Over 42% of the basin area is occupied by known sand and gravel aquifers, with over 62% of the basin area featuring well-drained hydrologic soil type A. Over 6 percent of the basin is open water and total storage area including wetlands is 15.6% of the watershed area. Impervious area is less than 1% of the watershed area, presumably including the 2% of developed urban land. Mean flows during the summer months are predicted to be about 8 cubic feet per second with spring runoff flows closer to 30 cubic feet per second. Soils are mapped as silt-loams with gravelly fractions increasing with depth. Mean annual precipitation is 39.5 inches.

Medium intensity SCS soil mapping shows soils around the brook in the immediate upstream reaches to be identified as Scantic-Biddeford complex characterized as silty clay. Borings acquired for this project confirm the presence of silty clays.

Predicted peak storm flows at the bridge from the contributing watershed are listed below for the various design storms. Due to the highly pervious watershed soils and the presence of large areas overlain by sand and gravel aquifers, we conclude that the stream tributary to the bridge experiences a significant portion of its flow from groundwater and that large storms are heavily influenced by the infiltration of the precipitation. This stream would not be considered "flashy" or prone to short-term variations in flow rate.

SUMMARY

Drainage Area	10.5	mi^2
Q1.1	121.9	ft^3/s
Q10	481.3	ft^3/s
Q50	729.4	ft^3/s
Q100	855.0	ft^3/s
Q500	1138.8	ft^3/s

Reported by: Mark Gray with calculations by Charles Hebson
Date for calculations: June 9, 2017

Note: All elevations based on North American Vertical Datum (NAVD) of 1988.

HYDRAULIC REPORT

Schoodic Brook flows under State Route 193 from east to west. When the bridge was constructed in 1939, the stream channel was diverted on the south side of the stream on the east side of the roadway per the 1939 record drawings. The existing 30' span concrete bridge is predicted to pass the 50-year design storm without difficulty. A large scour hole exists on the inlet side of the bridge, probably due to the kink in the stream alignment caused by the current zero-skew bridge alignment. The bank full width of Schoodic Brook along this reach has been determined to be 31 feet. The channel for the design of this replacement bridge will provide bank-full width plus 20% minimum, as required by the programmatic agreement with the U.S. Fish and Wildlife agency. The stream bottom surface is sand and silt overlain by shallow fine silt and clay. The 13.5-degree proposed skew will align the barrel of the replacement bridge with the stream channel.

HEC-RAS version 5.0.1 was used to model the water surface elevation and stream velocities for both the existing and proposed bridge openings. Four cross sections were utilized; two upstream and two downstream. The bridge openings were modelled by extrapolating the center two stream sections through the bridge opening, modeling the top chord elevation and adjusting the stream channel shape to conform to the cross section adopted by the Environmental Section. Manning's roughness coefficients for the stream channel were 0.035 for the channel and riprap channel areas, and 0.05 for overbank areas. The design frequency storms modelled were the 1.1 year, 10 year, 25 year, 50 year, 100 year and 500 year storms. Upstream and downstream boundary conditions selected for the model were both normal depth with a slope of 0.002 feet per foot.

Of most interest are the water surface profiles for the 50 and 100 year storm frequencies as well as the average water velocities for these storms and the 500 year storm which is a parameter in empirical scour calculations. Clearance of two feet of the bottom girder flange is desired above the water surface elevation of the 50 year frequency design storm.

The following chart summarizes the results of the HEC-RAS analysis. Reports from the computer program can be found in Appendix E.

HEC-RAS Hydraulic Results					
		Existing 30' Span		Proposed 60' Span	
Storm	Flow cfs	Upstream Bridge Water Surface Elevation	Downsream Bridge Average Water Velocity	Upstream Bridge Water Surface Elevation	Downsream Bridge Average Water Velocity
Q1.1	121.9	100.59	2.68	100.59	2.33
Q10	481.3	102.82	4.29	102.83	4.12
Q25	633.1	103.41	4.89	103.42	4.86
Q50	729.4	103.7	5.3	103.71	4.85
Q100	855.0	104.02	5.83	104.03	5.24
Q500	1138.8	104.56	7.08	104.57	6.14
Bottom Chord Elevation			107.86		107.62
Clearance over Q50 WS feet			4.2		3.9
Clearance over Q100 WS feet			3.8		3.6
Clearance over Q500 WS feet			3.3		3.1

There is little hydraulic performance change between existing and proposed predicted by the model except for a reduction in average flow velocity for the larger storms. What is not captured by the model is the smoothing of the alignment of the stream and the reduction in turbulence upstream of the bridge. It is expected that the scour hole upstream of the bridge will fill in with sediment over time.

With a doubling of the span length from 30’ to 60’, and the need to minimize changes in vertical and horizontal alignment due to compressible soils, there is little change in the clearance of the proposed bridge structure over the water surface for the design storms. These clearances are satisfactory.

Refer to Appendix F for a cross section sketch of the stream channel inside the barrel of the bridge opening. The channel features a gently sloping 3’ wide shelf at the approximate top-of-stream-bank elevation on both sides of the stream. The intent is to provide a seamless travel-way for wildlife as they travel the edge of each bank.

Scour calculations were not performed for this bridge. No abutment scour issues were reported or observed. The scour hole on the easterly side of the bridge is believed to be caused by the previous realignment of the stream channel. However, the soils are extremely erodible and it is likely that the existing abutments have been scoured during past storm events and subsequently filled in over time by the normal behavior of the stream. Due to the poor soils, placing riprap at a depth below predicted scour depth would not be practicable and scour calculations to predict the depth of scour would be of little value. The proposed steel pile-

supported abutments located well back from the stream edge, and located behind the existing abutments (to be left in place) should together provide adequate protection against failure of the bridge from scour during a large storm event. Configuring the proposed bridge with a 13.5-degree skew will smooth the flow of water through the barrel of the bridge opening, reducing the chances of localized scour.

WIN:	22230.00	**Project Name:**	Cherryfield Br3649 Schoodic
Town:	Cherryfield	**Stream Name:**	Schoodic Brook
Route No.	Rt 139	**Bridge Name:**	Schoodic Brook
Asset ID:	3649	**Analysis by:**	DFB
Lat:	44.6849 **Long:** -67.94971	**Date:**	8/15/2017

Peak Flow Calculations by USGS Regression Equations (Hodgkins, 1999 & Lombard/Hodgkins, 2015)

Enter data in blue cells only!

	km²	mi²	ac	
A	27.20	10.50	6720.0	Watershed Area *DRNAREA*
W	4.24	1.6	1047.6	Wetlands area (by NWI)

Enter data in [mi²]

P_c	585454 4949430	watershed centroid (E, N; UTM 19N; meters)
County	Somerset S	*choose county from drop-down menu*
pptA	39.5	mean annual precipitation (inches; by look-up)
SG	0.42	sand & gravel aquifer as decimal fraction of watershed A

Worksheet prepared by:

Charles S. Hebson, PE
Environmental Office
Maine Dept. Transportation
Augusta, ME 04333-0016
207-557-1052
Charles.Hebson@maine.gov

ver. 2017 Jun. 09

A (km²)	27.20	**Conf Lvl**	0.67
W (%)	15.59		NWI Wetlands % *STORNWI*

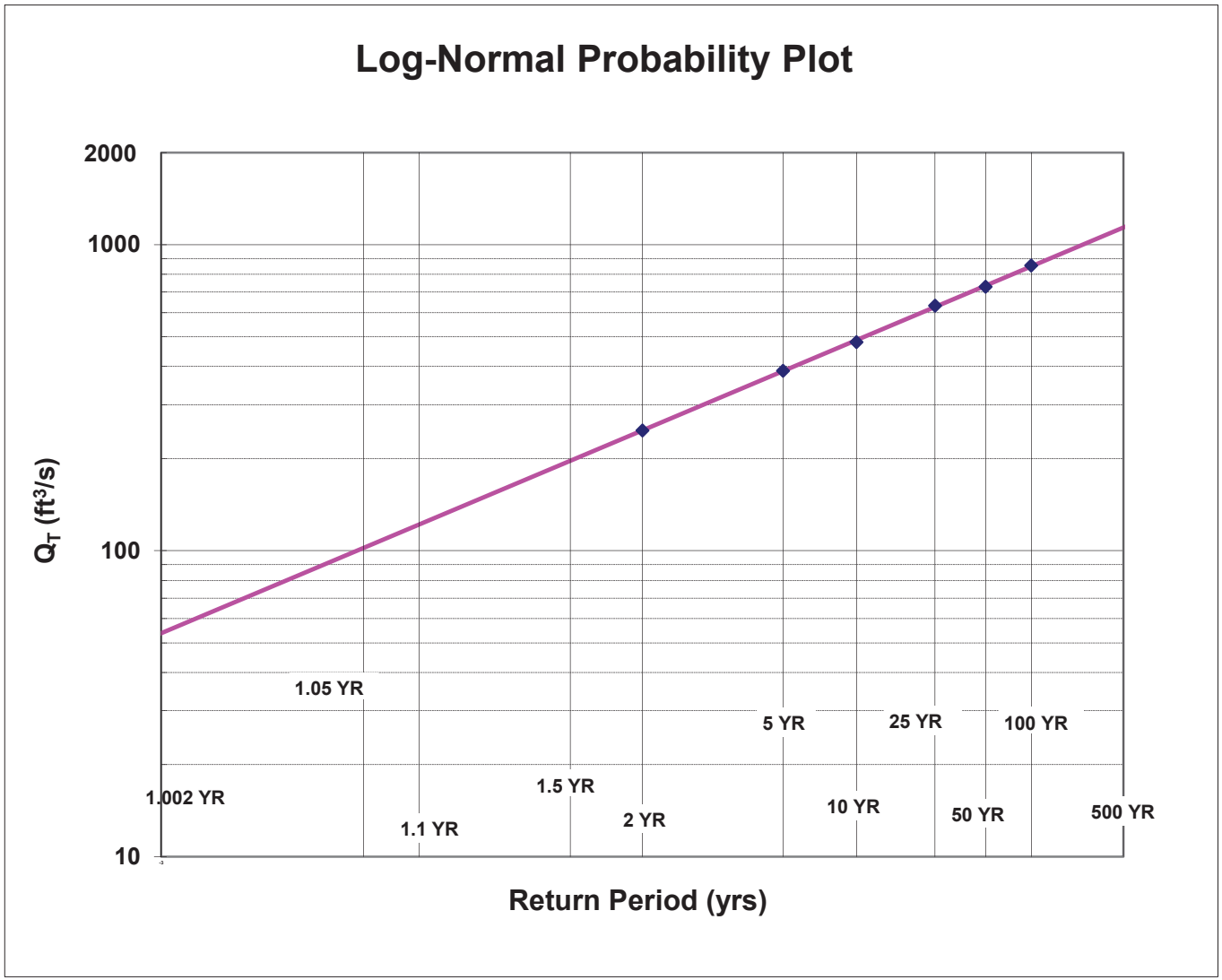
Ret Pd T (yr)	Peak Flow Estimate Lower	Q_T (m³/s)	Upper	Q_T (ft³/s)
1.1		3.45		121.9
2		7.01		247.4
5		10.97		387.2
10		13.63		481.3
25		17.93		633.1
50		20.66		729.4
100		24.21		855.0
500		32.25		1138.8

References:

Hodgkins, G.A., 1999.
Estimating the magnitude of peak flows for streams in Maine for selected recurrence intervals
WRIR 99-4008, USGS Augusta, ME

Lombard, P.J. & G.A. Hodgkins, 2015.
Peak flow regression equations for small, ungaged streams in Maine - Comparing map-based to field-based variables
SIR 2015-4059, USGS, Augusta, ME

$Q_T = b \times A^a \times 10^{-wW}$


Log-Normal Probability Plot
2000
1000
100
10
Q_T (ft^3/s)
1.05 YR
5 YR
25 YR
100 YR
1.002 YR
1.5 YR
10 YR
1.1 YR
2 YR
50 YR
500 YR
Return Period (yrs)

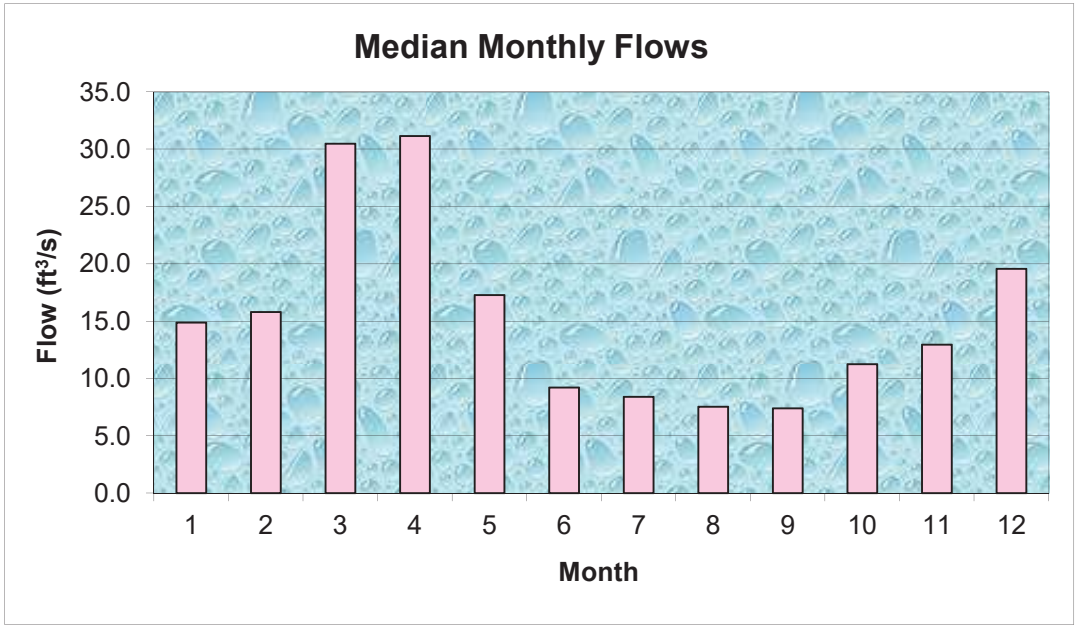
WIN:	22230.00	**Project Name:**	Cherryfield Br3649 Schoodic
Town:	Cherryfield	**Stream Name:**	Schoodic Brook
Route No.	Rt 139	**Bridge Name:**	Schoodic Brook
Asset ID:	3649	**Analysis by:**	DFB
Lat:	44.68486 **Long:** -67.94971	**Date:**	8/15/2017

DO NOT ENTER ANY DATA ON THIS PAGE; EVERYTHING IS CALCULATED

MAINE MONTHLY MEDIAN FLOWS and HYDRAULIC GEOMETRY BY USGS REGRESSION EQUATIONS (2004, 2013)

	Value	Variable	Explanation
	10.50	*A*	Area (mi^2)
585453.9	4949430	P_c	Watershed centroid (E,N; UTM; Zone 19; meters)
	37.69	*DIST*	Distance from Coastal reference line (mi)
	39.5	*pptA*	Mean Annual Precipitation (inches)
	0.42	*SG*	Sand & Gravel Aquifer (decimal fraction of watershed area)

Month	Q_{median} (ft3/s)	(m^3/s)
Jan	**14.90**	0.4221
Feb	**15.79**	0.4476
Mar	**30.50**	0.8642
Apr	**31.15**	0.8827
May	**17.28**	0.4898
Jun	**9.22**	0.2611
Jul	**8.41**	0.2384
Aug	**7.54**	0.2135
Sep	**7.42**	0.2102
Oct	**11.25**	0.3188
Nov	**12.95**	0.3670
Dec	**19.58**	0.5548



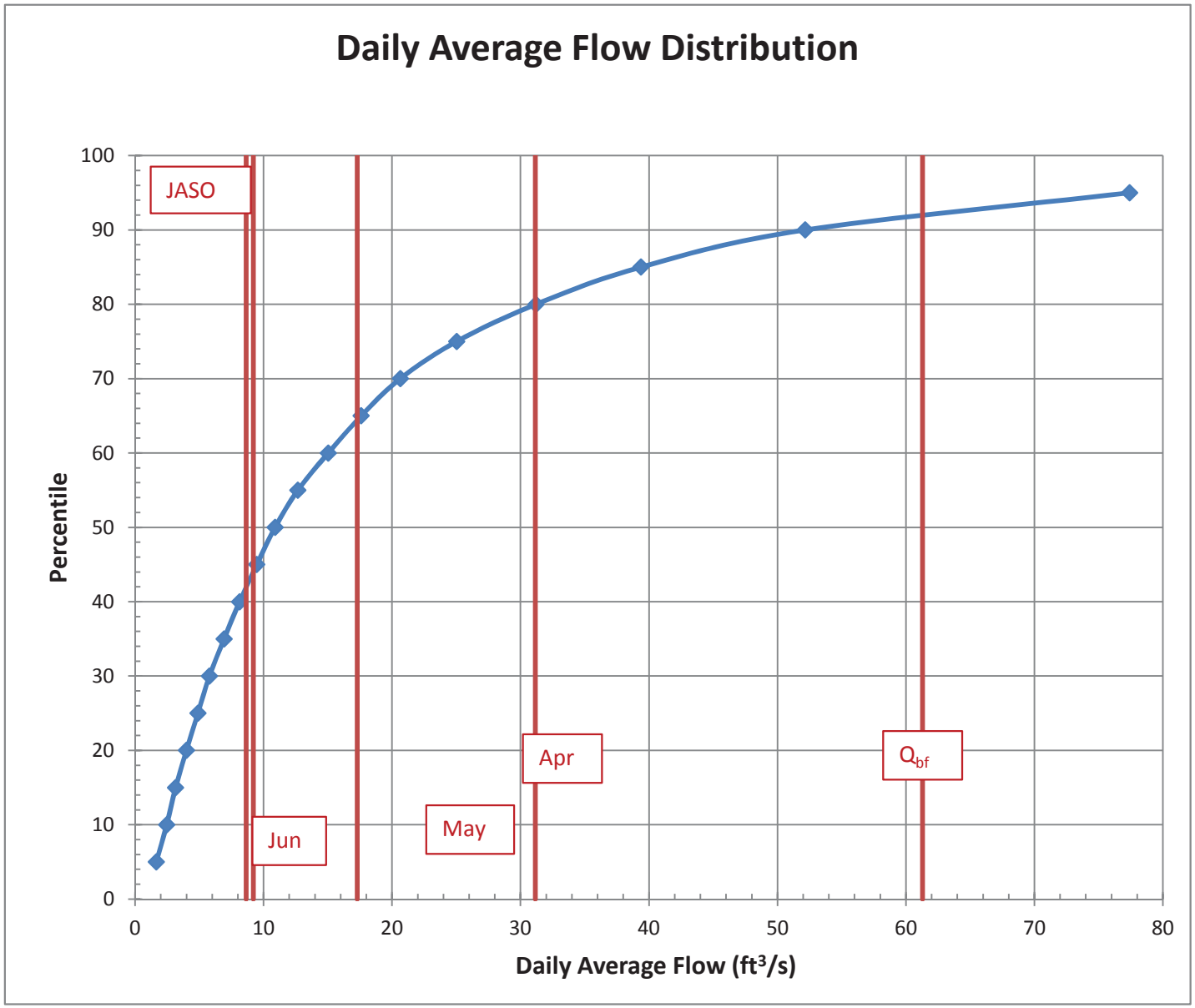
Q_{bf}	**61.3**	
ann avg	**20.0**	
ann med	**9.3**	
$Q_{1.002}$	**53.7**	
$Q_{1.01}$	**71.8**	
$Q_{1.05}$	**102.1**	
Q_{bf}	**153.7**	assume v = 4ft/s

W_{bf}	**29.1**	estimated bankfull width (ft)
d_{bf}	**1.3**	estimated bankfull depth (ft)
A_{bf}	**34.4**	estimated bankfull flow area (ft^2)

References

Dudley, R.W., 2013. FY2013 Progress Report - Phase 1 …, USFWS QRP Project

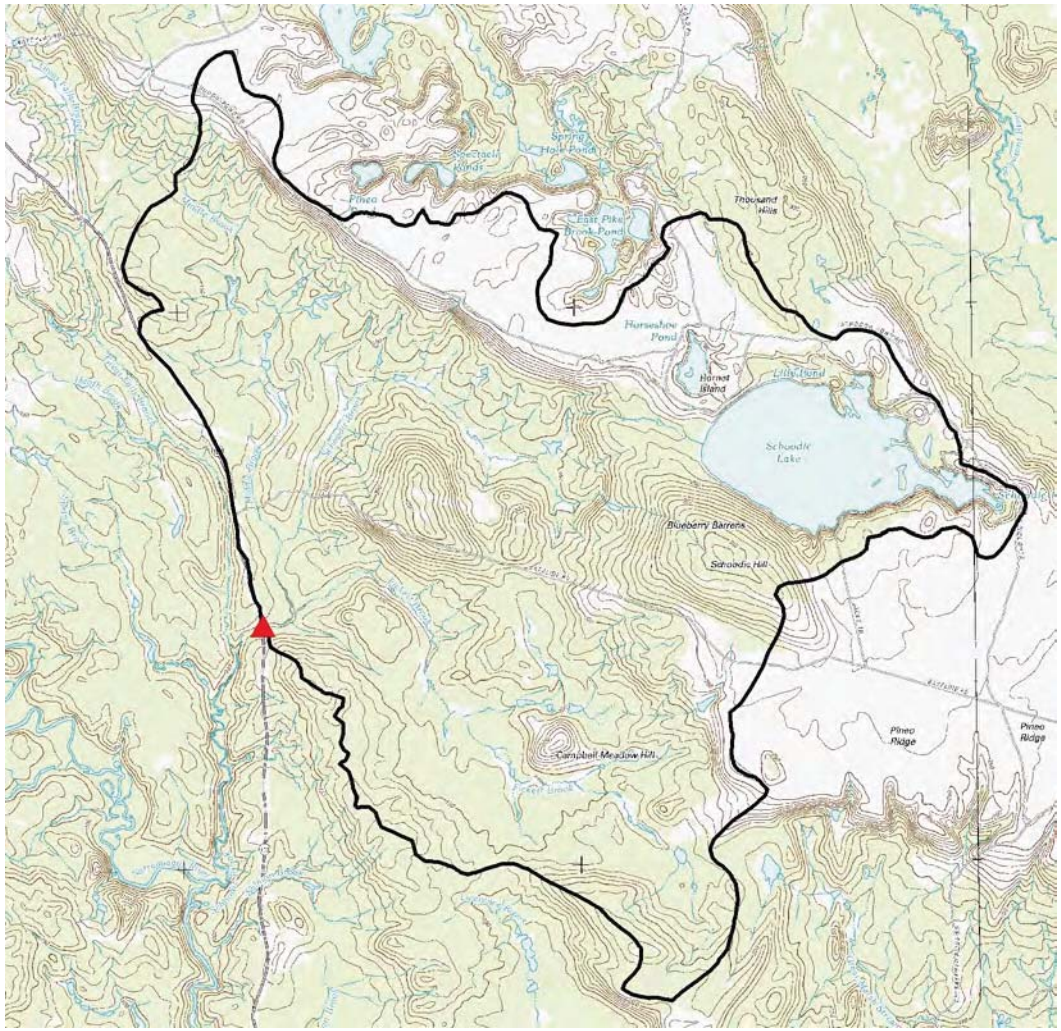
Dudley, R.W., 2004. Estimating Monthly Streamflows … , SIR 2004-5026



	Daily Avg Flow Dist
A_{ws} = (mi^2)	10.5
Q (ft^3/s)	

Pctl	Median	84th pctl
5	1.65	2.66
10	2.45	3.69
15	3.16	4.61
20	4.00	5.59
25	4.89	6.55
30	5.79	7.46
35	6.93	8.53
40	8.13	9.81
45	9.47	11.09
50	10.91	13.09
55	12.67	15.24
60	15.04	17.89
65	17.60	20.84
70	20.64	24.31
75	25.02	29.24
80	31.21	34.91
85	39.38	44.74
90	52.16	60.07
95	77.41	93.41

Q_{bf}	61.3
$Q_{1.002}$	53.7
$Q_{1.1}$	121.9
Q_2	247.4


Spring Hole Pond
Pinea
Thousand Hills
East Pike Brook Pond
Horseshoe Pond
Hornet Island
Lily Pond
Schoodic Lake
Blueberry Barrens
Schoodic Hill
Campbell Meadow Hill
Pinea Ridge

Cherryfield 22230 Br3649 Schoodic

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Workspace ID: ME20170815102044778000
Clicked Point (Latitude, Longitude): 44.68486, -67.94971
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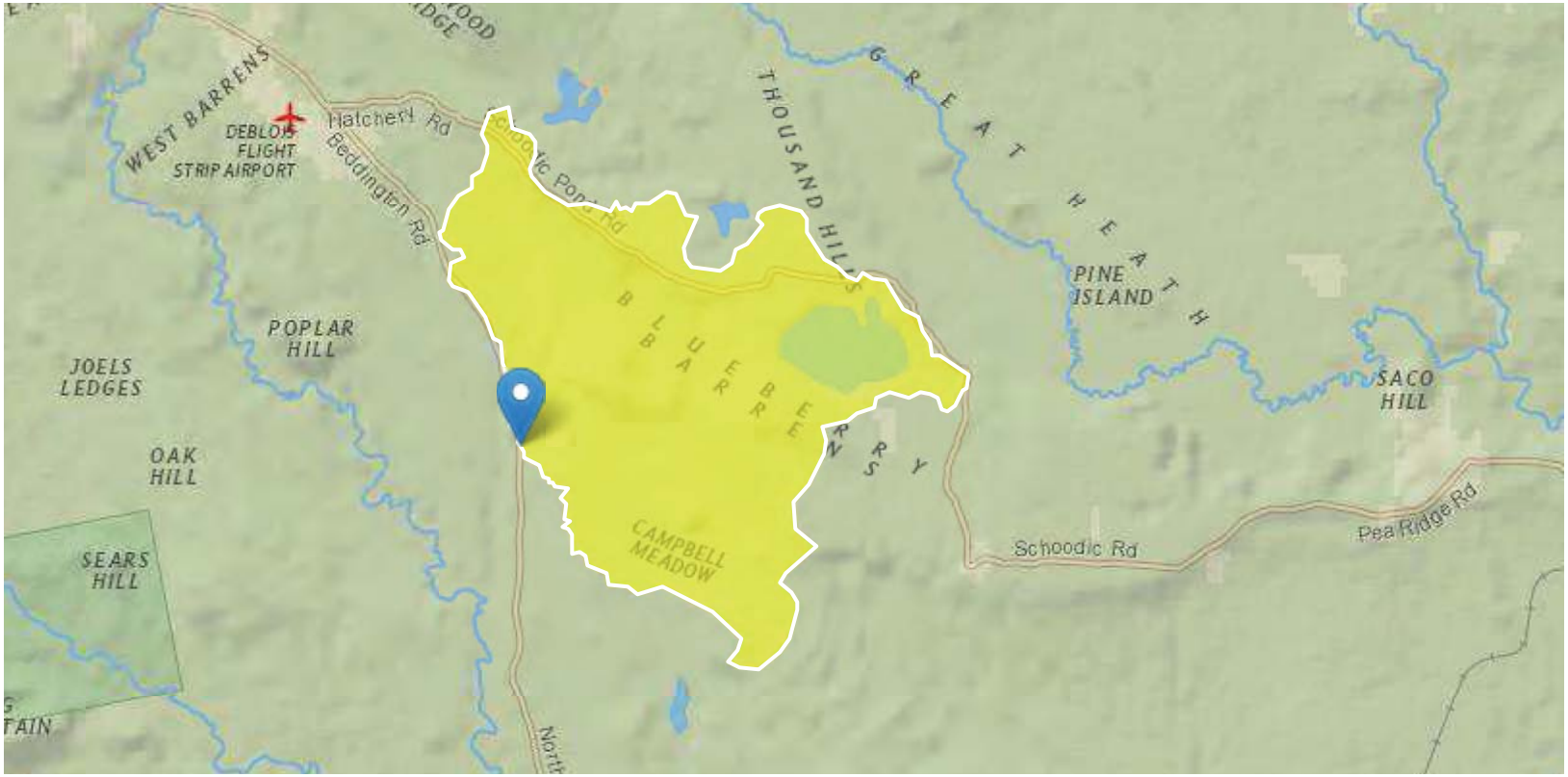


Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	10.5	square miles
STORNWI	Percentage of strorage (combined water bodies and wetlands) from the Nationa Wetlands Inventory	15.59	percent

Parameter Code	Parameter Description	Value	Unit
SANDGRAVAF	Fraction of land surface underlain by sand and gravel aquifers	0.421	dimensionless
ELEV	Mean Basin Elevation	196.1	feet
BSLDEM10M	Mean basin slope computed from 10 m DEM	4.13	percent
COASTDIST	Shortest distance from the coastline to the basin centroid	38.5	miles
ELEVMAX	Maximum basin elevation	363	feet
LC06WATER	Percent of open water, class 11, from NLCD 2006	6.27	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	2.13	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	0.44	percent
PRECIP	Mean Annual Precipitation	48.6	inches
SANDGRAVAP	Percentage of land surface underlain by sand and gravel aquifers	42.15	percent
STATSGOA	Percentage of area of Hydrologic Soil Type A from STATSGO	62.6	percent

Bankfull Statistics Parameters [Central and Coastal Bankfull 2004 5042]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	10.5	square miles	2.92	298

Bankfull Statistics Flow Report [Central and Coastal Bankfull 2004 5042]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SEe
Bankfull Streamflow	61.3	ft^3/s	54.1
Bankfull Width	26.1	ft	33
Bankfull Depth	1.32	ft	26.2
Bankfull Area	34.4	ft^2	57.4

Bankfull Statistics Citations

Dudley, R.W.,2004, Hydraulic-Geometry Relations for Rivers in Coastal and Central Maine: U.S. Geological Survey Scientific Investigations Report 2004-5042, 30 p (http://pubs.usgs.gov/sir/2004/5042/pdf/sir2004-5042.pdf)

Peak-Flow Statistics Parameters [Statewide Peak Flow DA LT 12sqmi 2015 5049]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	10.5	square miles	0.31	12
STORNWI	Percentage of Storage from NWI	15.59	percent	0	22.2

Peak-Flow Statistics Flow Report [Statewide Peak Flow DA LT 12sqmi 2015 5049]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SEp
1.01 Year Peak Flood	72.6	ft^3/s	38
2 Year Peak Flood	247	ft^3/s	34
5 Year Peak Flood	387	ft^3/s	35
10 Year Peak Flood	481	ft^3/s	37
25 Year Peak Flood	633	ft^3/s	39
50 Year Peak Flood	729	ft^3/s	41
100 Year Peak Flood	855	ft^3/s	42
250 Year Peak Flood	953	ft^3/s	44
500 Year Peak Flood	1140	ft^3/s	47

Peak-Flow Statistics Citations

Lombard, P.J., and Hodgkins, G.A.,2015, Peak flow regression equations for small, ungaged streams in Maine— Comparing map-based to field-based variables: U.S. Geological Survey Scientific Investigations Report 2015–5049, 12 p. (http://dx.doi.org/10.3133/sir20155049)

August Flow-Duration Statistics Parameters [East Coast 2 Variable SIR 2004 5157]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit

DRNAREA	Drainage Area	10.5	square miles	0.04	73.2
SANDGRAVAF	Fraction of Sand and Gravel Aquifers	0.421	dimensionless	0	0.706

August Flow-Duration Statistics Parameters [Statewide August SIR 2015 5151]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	10.5	square miles	14.9	1419
SANDGRAVAF	Fraction of Sand and Gravel Aquifers	0.421	dimensionless	0	0.212
ELEV	Mean Basin Elevation	196.1	feet	239	2120

August Flow-Duration Statistics Flow Report [East Coast 2 Variable SIR 2004 5157]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	SEp
August 50 Percent Duration	3.57	ft^3/s	32.8	32.8

August Flow-Duration Statistics Disclaimers [Statewide August SIR 2015 5151]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

August Flow-Duration Statistics Flow Report [Statewide August SIR 2015 5151]

Statistic	Value	Unit
August 1 Percent Duration	6.34	ft^3/s
August 5 Percent Duration	4.51	ft^3/s
August 10 Percent Duration	4.79	ft^3/s
August 25 Percent Duration	4.53	ft^3/s
August 50 Percent Duration	4.61	ft^3/s
August 75 Percent Duration	5.12	ft^3/s
August 90 Percent Duration	8.04	ft^3/s
August 95 Percent Duration	16.3	ft^3/s

Statistic	Value	Unit
August 99 Percent Duration	89.1	ft^3/s

August Flow-Duration Statistics Citations

Lombard, P. J.,2004, August Median Streamflow on Ungaged Streams in Eastern Coastal Maine: U.S. Geological Survey Scientific Investigations Report 2004-5157, 15 p. (http://water.usgs.gov/pubs/sir/2004/5157/)

Dudley, R.W.,2015, Regression equations for monthly and annual mean and selected percentile streamflows for ungaged rivers in Maine: U.S. Geological Survey Scientific Investigations Report 2015–5151, 35 p. (http://dx.doi.org/10.3133/sir20155151)

Low-Flow Statistics Parameters [Statewide LowFlow SIR 2004 5026]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	10.5	square miles	9.79	1418
SANDGRAVAF	Fraction of Sand and Gravel Aquifers	0.421	dimensionless	0	0.455

Low-Flow Statistics Flow Report [Statewide LowFlow SIR 2004 5026]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	SEp	Equiv. Yrs.
7 Day 10 Year Low Flow	4.26	ft^3/s	44.3	44.3	2.9

Low-Flow Statistics Citations

Dudley, R.W.,2004, Estimating Monthly, Annual, and Low 7-Day, 10-Year Streamflows for Ungaged Rivers in Maine: U.S. Geological Survey Scientific Investigations Report 2004-5026, 22 p. (http://water.usgs.gov/pubs/sir/2004/5026/pdf/sir2004-5026.pdf)

Flow-Duration Statistics Parameters [Statewide Annual SIR 2015 5151]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	10.5	square miles	14.9	1419

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
SANDGRAVAF	Fraction of Sand and Gravel Aquifers	0.421	dimensionless	0	0.212
ELEV	Mean Basin Elevation	196.1	feet	239	2120

Flow-Duration Statistics Disclaimers [Statewide Annual SIR 2015 5151]

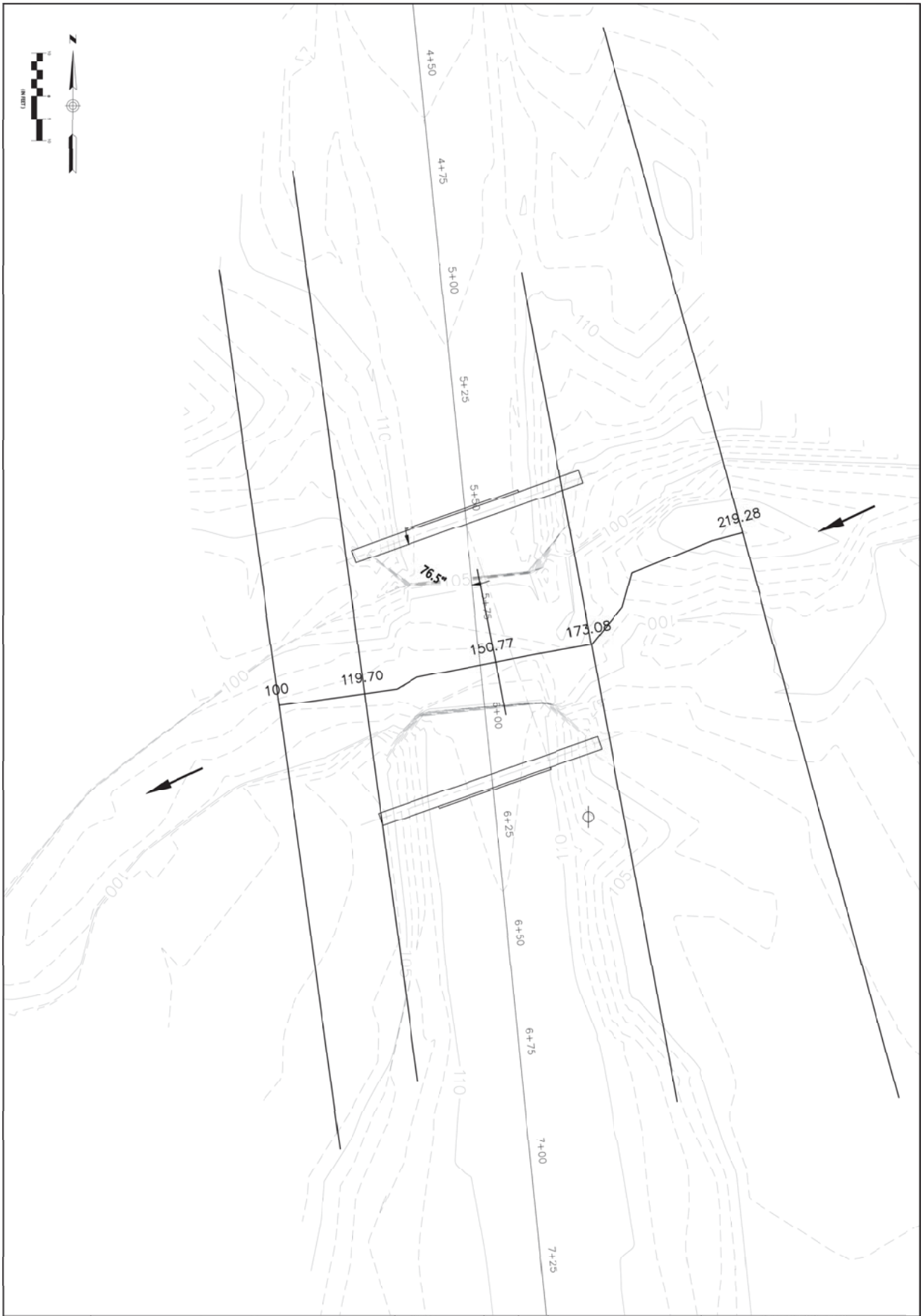
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Flow-Duration Statistics Flow Report [Statewide Annual SIR 2015 5151]

Statistic	Value	Unit
1 Percent Duration	6.35	ft^3/s
5 Percent Duration	5.15	ft^3/s
10 Percent Duration	5.34	ft^3/s
25 Percent Duration	8.44	ft^3/s
50 Percent Duration	18.4	ft^3/s
75 Percent Duration	33.4	ft^3/s
90 Percent Duration	56.2	ft^3/s
95 Percent Duration	79.3	ft^3/s
99 Percent Duration	185	ft^3/s

Flow-Duration Statistics Citations

Dudley, R.W.,2015, Regression equations for monthly and annual mean and selected percentile streamflows for ungaged rivers in Maine: U.S. Geological Survey Scientific Investigations Report 2015–5151, 35 p. (http://dx.doi.org/10.3133/sir20155151)



SCHOODIC BROOK BRIDGE
STATE ROUTE 193, MAIN STREET
CHERRYFIELD, MAINE

HEC-RAS MODEL SECTION LOCATIONS

PROJECT MANAGER		BY	DATE
DESIGN-DETAILED			
CHECKED PER NSHED			
DESIGN2-DETAILED2			
DESIGNED3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2081(500)

WIN
020815.00

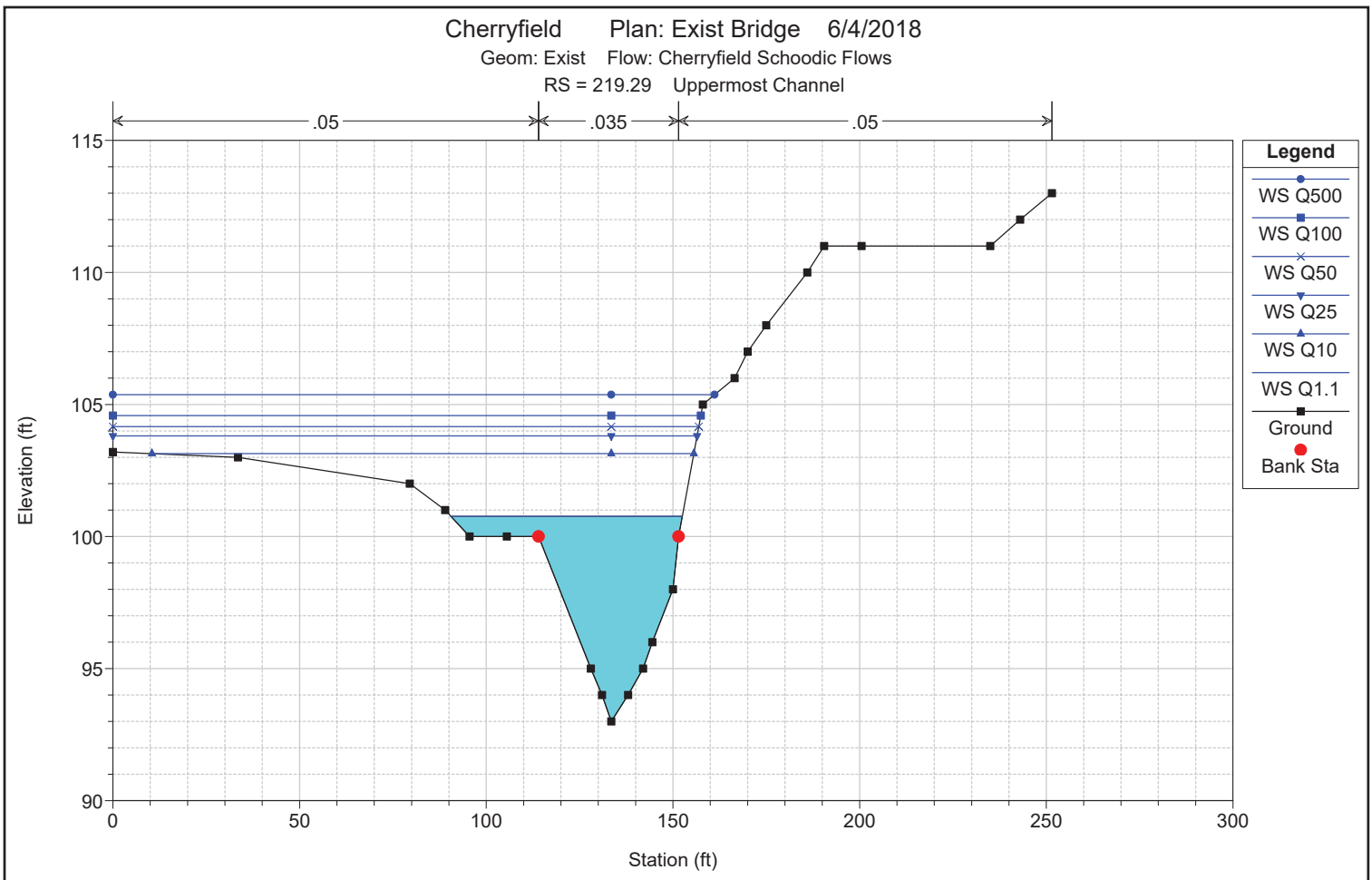
BRIDGE NO. 2135

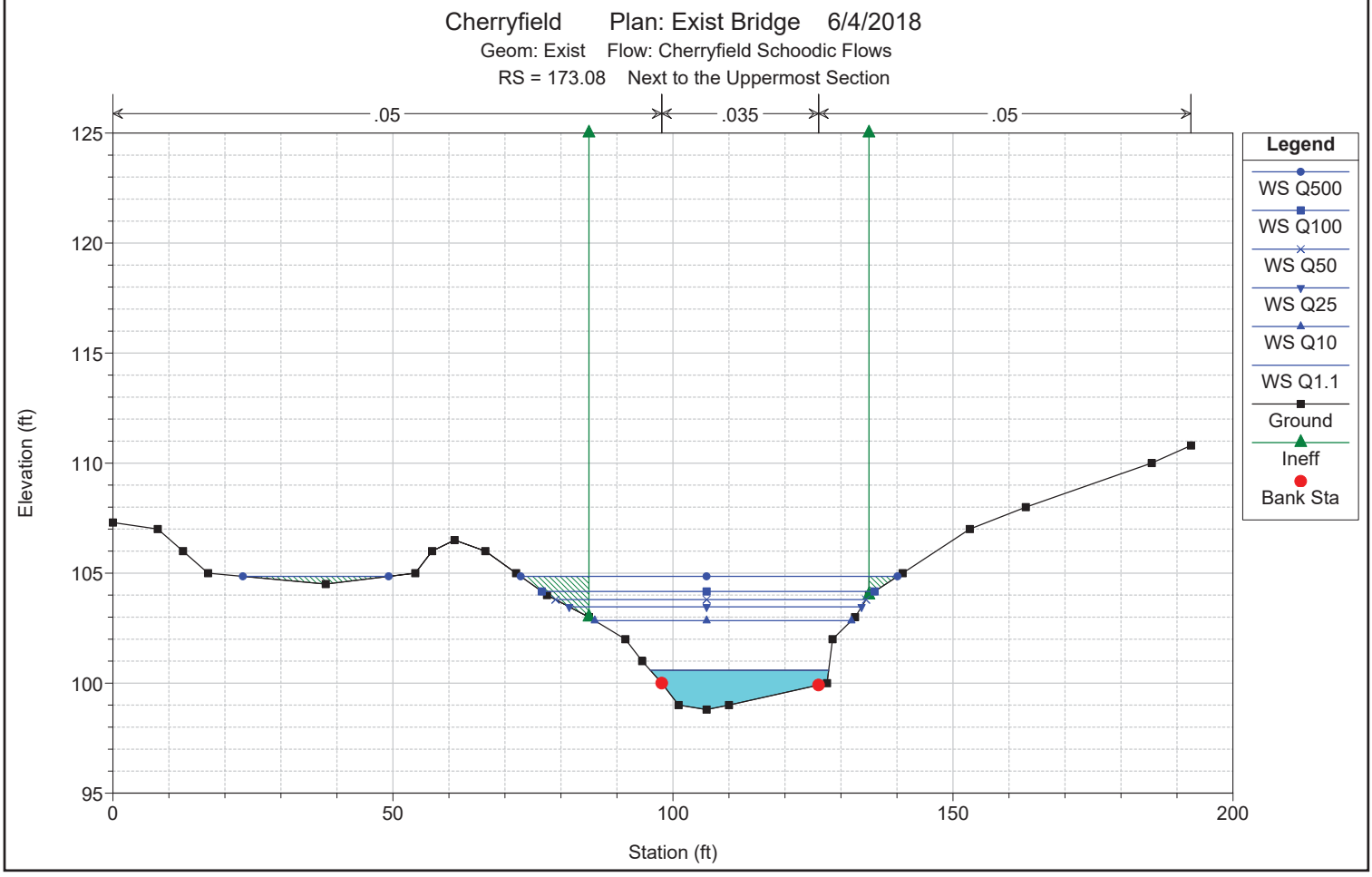
BRIDGE PLANS

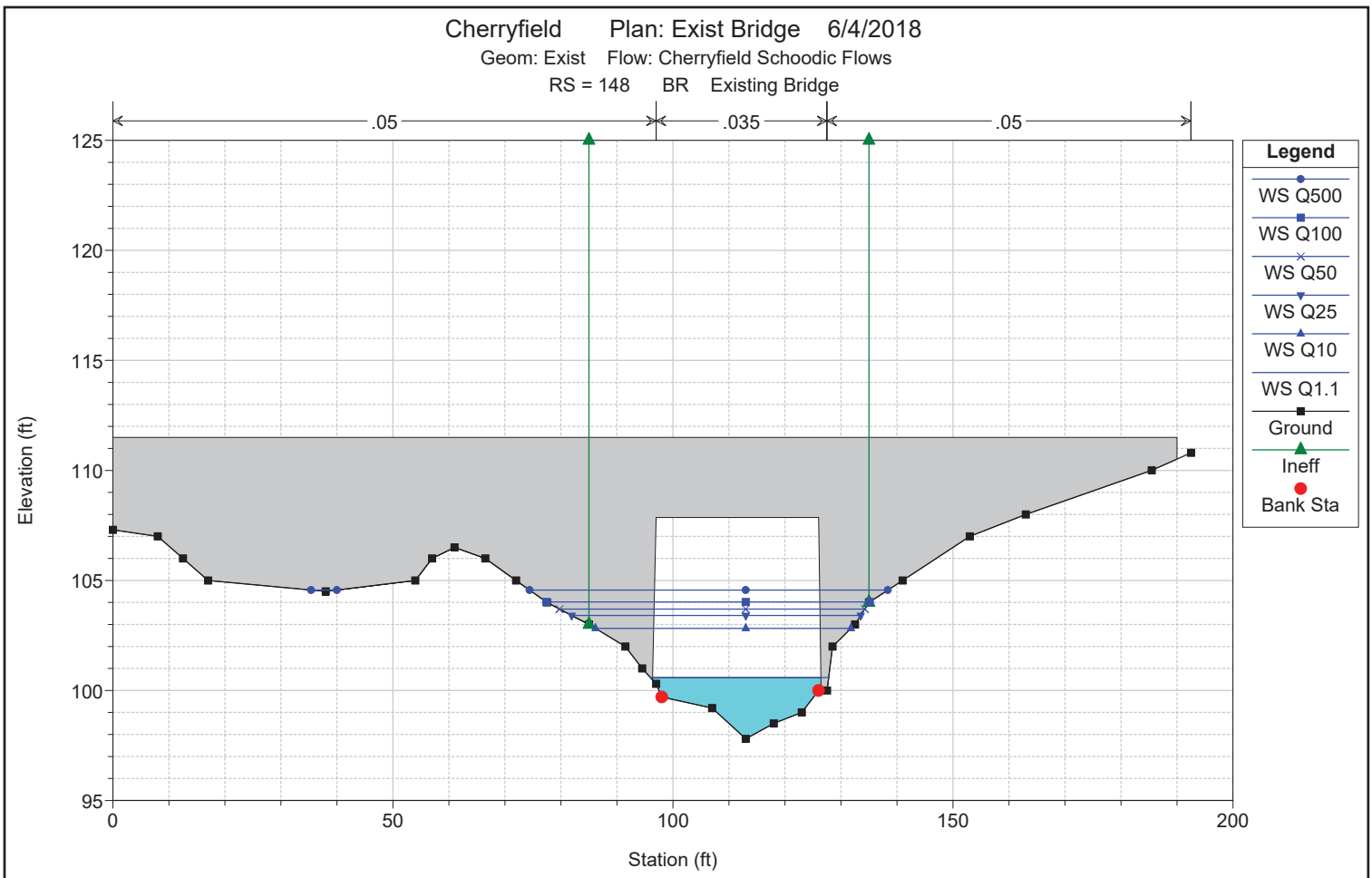
SHEET NUMBER
A
6 OF 18

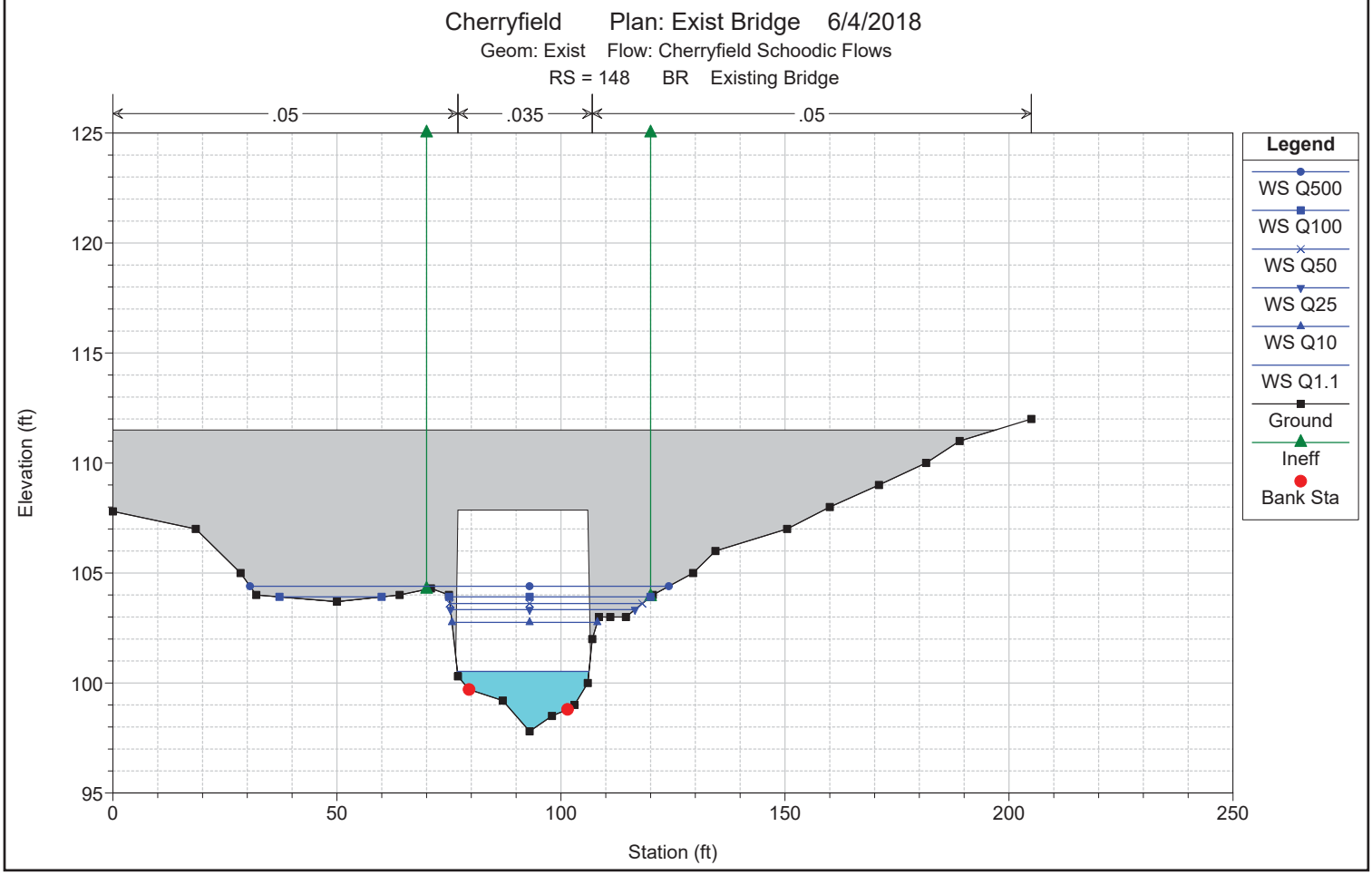
EXISTING CONDITIONS

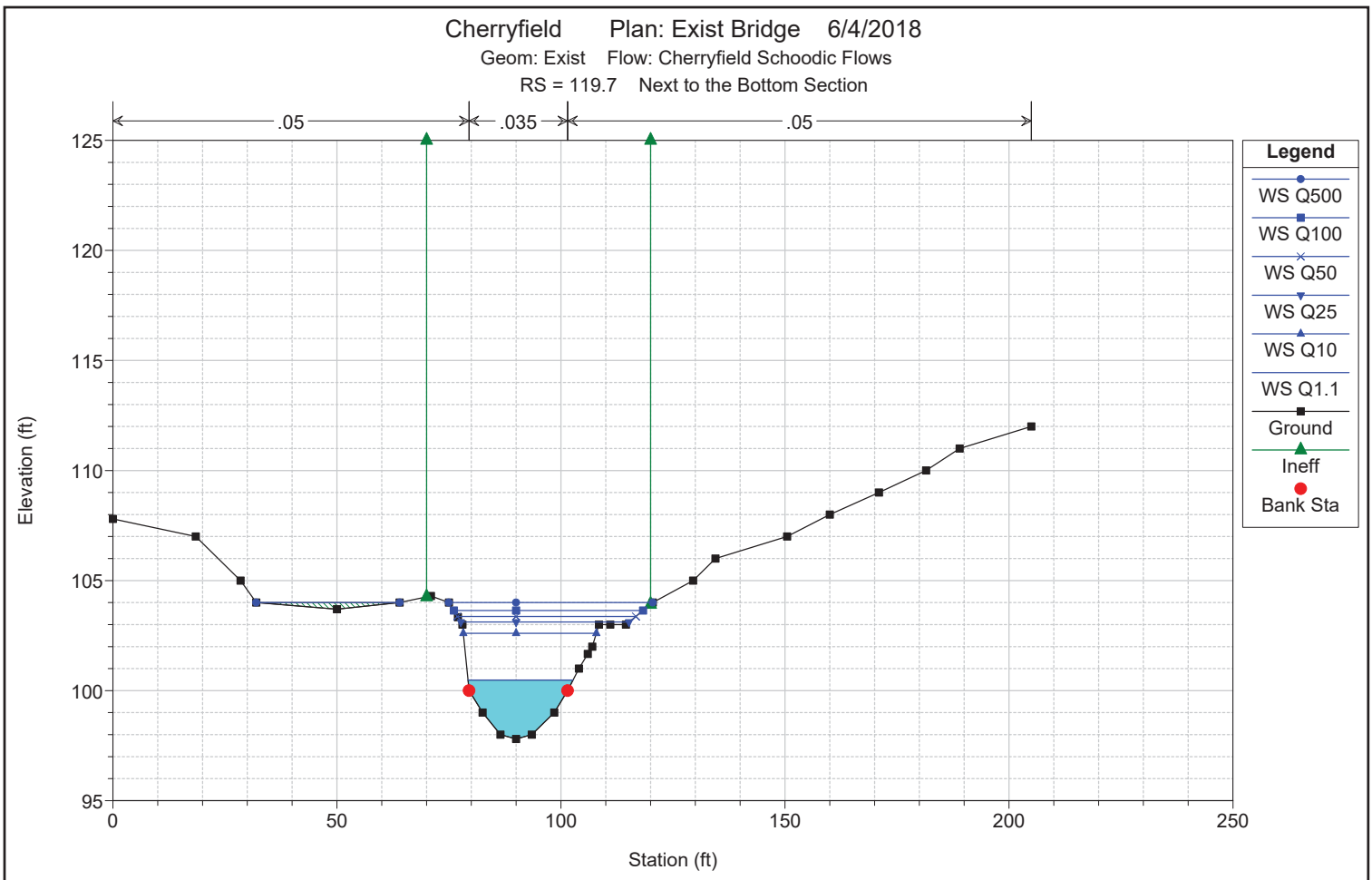
EXISTING CONDITIONS

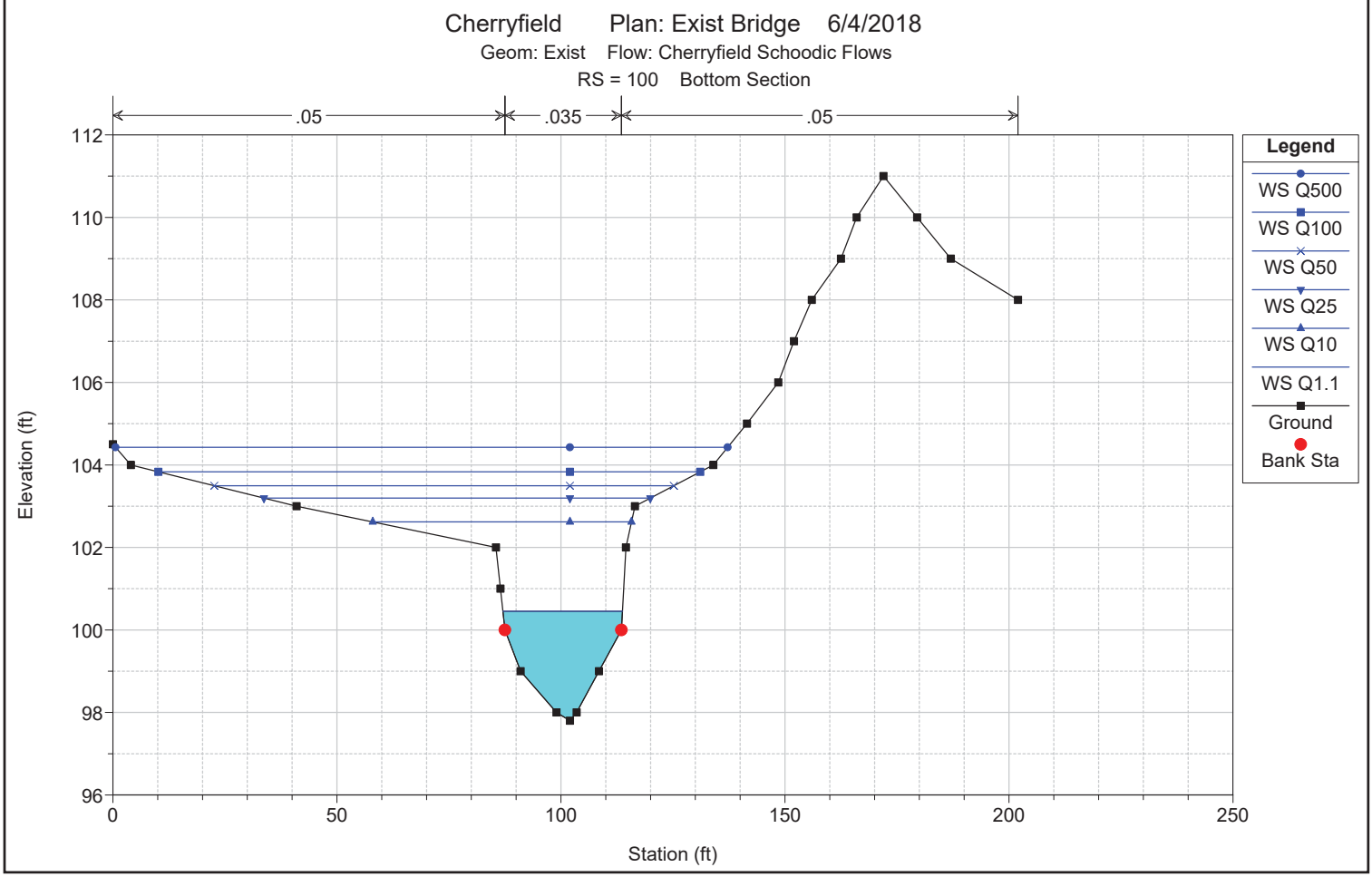

Cherryfield Plan: Exist Bridge 6/4/2018
Geom: Exist Flow: Cherryfield Schoodic Flows
RS = 219.29 Uppermost Channel
.05
.035
.05
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Bank Sta
Elevation (ft)
Station (ft)

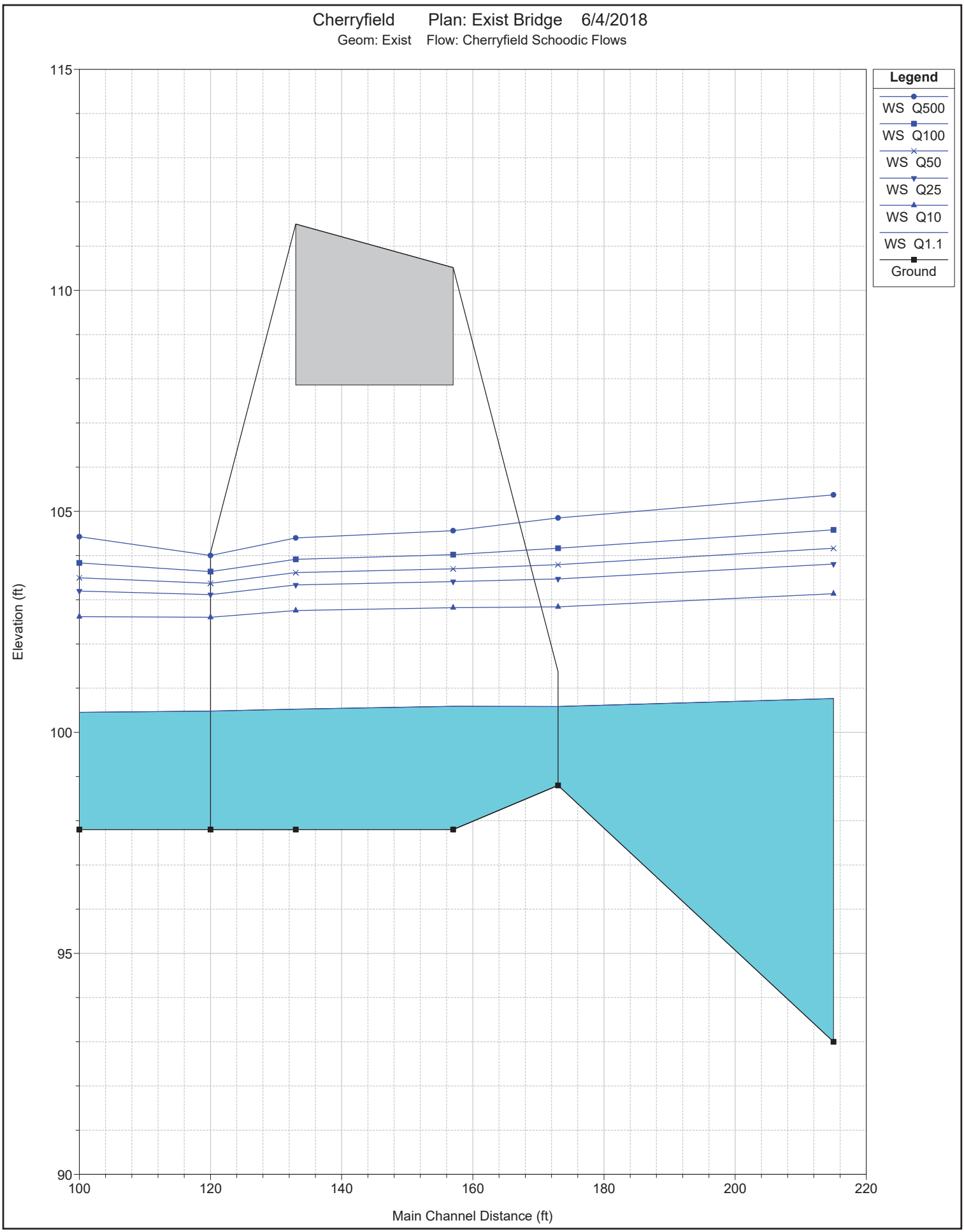

Cherryfield Plan: Exist Bridge 6/4/2018
Geom: Exist Flow: Cherryfield Schoodic Flows
RS = 173.08 Next to the Uppermost Section
.05
.035
.05
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Cherryfield Plan: Exist Bridge 6/4/2018
Geom: Exist Flow: Cherryfield Schoodic Flows
RS = 148 BR Existing Bridge
.05
.035
.05
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
125
120
115
110
105
100
95
0
50
100
150
200


Cherryfield Plan: Exist Bridge 6/4/2018
Geom: Exist Flow: Cherryfield Schoodic Flows
RS = 148 BR Existing Bridge
.05
.035
.05
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
125
120
115
110
105
100
95
0
50
100
150
200
250


Cherryfield Plan: Exist Bridge 6/4/2018
Geom: Exist Flow: Cherryfield Schoodic Flows
RS = 119.7 Next to the Bottom Section
.05
.035
.05
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
125
120
115
110
105
100
95
0
50
100
150
200
250


Cherryfield Plan: Exist Bridge 6/4/2018
Geom: Exist Flow: Cherryfield Schoodic Flows
RS = 100 Bottom Section
.05
.035
.05
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Bank Sta
Elevation (ft)
Station (ft)
112
110
108
106
104
102
100
98
96
0
50
100
150
200
250


Cherryfield Plan: Exist Bridge 6/4/2018
Geom: Exist Flow: Cherryfield Schoodic Flows
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Elevation (ft)
115
110
105
100
95
90
100
120
140
160
180
200
220
Main Channel Distance (ft)

Plan: Exist Schoodic Reach1 RS: 148 Profile: Q1.1

E.G. US. (ft)	100.75	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	100.59	E.G. Elev (ft)	100.69	100.64
Q Total (cfs)	121.90	W.S. Elev (ft)	100.59	100.52
Q Bridge (cfs)	121.90	Crit W.S. (ft)	99.72	99.72
Q Weir (cfs)		Max Chl Dpth (ft)	2.79	2.72
Weir Sta Lft (ft)		Vel Total (ft/s)	2.52	2.68
Weir Sta Rgt (ft)		Flow Area (sq ft)	48.41	45.53
Weir Submerg		Froude # Chl	0.27	0.38
Weir Max Depth (ft)		Specif Force (cu ft)	54.78	51.94
Min El Weir Flow (ft)	111.51	Hydr Depth (ft)	1.61	1.55
Min El Prs (ft)	107.86	W.P. Total (ft)	31.40	30.33
Delta EG (ft)	0.14	Conv. Total (cfs)	2855.2	2651.7
Delta WS (ft)	0.10	Top Width (ft)	30.06	29.38
BR Open Area (sq ft)	262.29	Frctn Loss (ft)	0.05	0.03
BR Open Vel (ft/s)	2.68	C & E Loss (ft)	0.00	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.18	0.20
BR Sel Method	Energy only	Power Total (lb/ft s)	0.44	0.53

Plan: Exist Schoodic Reach1 RS: 148 Profile: Q10

E.G. US. (ft)	103.14	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	102.84	E.G. Elev (ft)	103.10	103.06
Q Total (cfs)	481.30	W.S. Elev (ft)	102.82	102.76
Q Bridge (cfs)	481.30	Crit W.S. (ft)	100.99	101.04
Q Weir (cfs)		Max Chl Dpth (ft)	5.02	4.96
Weir Sta Lft (ft)		Vel Total (ft/s)	4.18	4.29
Weir Sta Rgt (ft)		Flow Area (sq ft)	115.16	112.22
Weir Submerg		Froude # Chl	0.33	0.35
Weir Max Depth (ft)		Specif Force (cu ft)	291.26	282.99
Min El Weir Flow (ft)	111.51	Hydr Depth (ft)	3.87	3.76
Min El Prs (ft)	107.86	W.P. Total (ft)	35.88	34.97
Delta EG (ft)	0.12	Conv. Total (cfs)	11766.1	11081.3
Delta WS (ft)	0.24	Top Width (ft)	29.73	29.81
BR Open Area (sq ft)	262.29	Frctn Loss (ft)	0.04	0.03
BR Open Vel (ft/s)	4.29	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.34	0.38
BR Sel Method	Energy only	Power Total (lb/ft s)	1.40	1.62

Plan: Exist Schoodic Reach1 RS: 148 Profile: Q25

E.G. US. (ft)	103.81	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	103.47	E.G. Elev (ft)	103.78	103.73
Q Total (cfs)	633.10	W.S. Elev (ft)	103.41	103.33
Q Bridge (cfs)	633.10	Crit W.S. (ft)	101.39	101.45
Q Weir (cfs)		Max Chl Dpth (ft)	5.61	5.53
Weir Sta Lft (ft)		Vel Total (ft/s)	4.77	4.89
Weir Sta Rgt (ft)		Flow Area (sq ft)	132.65	129.42
Weir Submerg		Froude # Chl	0.36	0.38
Weir Max Depth (ft)		Specif Force (cu ft)	396.09	385.71
Min El Weir Flow (ft)	111.51	Hydr Depth (ft)	4.47	4.35
Min El Prs (ft)	107.86	W.P. Total (ft)	37.06	36.13
Delta EG (ft)	0.13	Conv. Total (cfs)	14872.2	13933.6
Delta WS (ft)	0.35	Top Width (ft)	29.65	29.72
BR Open Area (sq ft)	262.29	Frctn Loss (ft)	0.05	0.03
BR Open Vel (ft/s)	4.89	C & E Loss (ft)	0.00	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.40	0.46
BR Sel Method	Energy only	Power Total (lb/ft s)	1.93	2.26

Plan: Exist Schoodic Reach1 RS: 148 Profile: Q50

E.G. US. (ft)	104.17	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	103.80	E.G. Elev (ft)	104.13	104.08
Q Total (cfs)	729.40	W.S. Elev (ft)	103.70	103.61
Q Bridge (cfs)	729.40	Crit W.S. (ft)	101.64	101.69
Q Weir (cfs)		Max Chl Dpth (ft)	5.90	5.81
Weir Sta Lft (ft)		Vel Total (ft/s)	5.16	5.30
Weir Sta Rgt (ft)		Flow Area (sq ft)	141.23	137.71
Weir Submerg		Froude # Chl	0.38	0.40
Weir Max Depth (ft)		Specif Force (cu ft)	459.22	447.42
Min El Weir Flow (ft)	111.51	Hydr Depth (ft)	4.77	4.64
Min El Prs (ft)	107.86	W.P. Total (ft)	37.64	36.69
Delta EG (ft)	0.14	Conv. Total (cfs)	16503.4	15397.0
Delta WS (ft)	0.42	Top Width (ft)	29.60	29.67
BR Open Area (sq ft)	262.29	Frctn Loss (ft)	0.05	0.03
BR Open Vel (ft/s)	5.30	C & E Loss (ft)	0.00	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.46	0.53
BR Sel Method	Energy only	Power Total (lb/ft s)	2.36	2.79

Plan: Exist Schoodic Reach1 RS: 148 Profile: Q100

E.G. US. (ft)	104.58	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	104.17	E.G. Elev (ft)	104.54	104.48
Q Total (cfs)	855.00	W.S. Elev (ft)	104.02	103.91
Q Bridge (cfs)	855.00	Crit W.S. (ft)	101.93	101.99
Q Weir (cfs)		Max Chl Dpth (ft)	6.22	6.11
Weir Sta Lft (ft)		Vel Total (ft/s)	5.67	5.83
Weir Sta Rgt (ft)		Flow Area (sq ft)	150.70	146.61
Weir Submerg		Froude # Chl	0.41	0.43
Weir Max Depth (ft)		Specif Force (cu ft)	540.08	525.93
Min El Weir Flow (ft)	111.51	Hydr Depth (ft)	5.10	4.95
Min El Prs (ft)	107.86	W.P. Total (ft)	38.28	37.29
Delta EG (ft)	0.16	Conv. Total (cfs)	18384.4	17031.5
Delta WS (ft)	0.53	Top Width (ft)	29.56	29.63
BR Open Area (sq ft)	262.29	Frctn Loss (ft)	0.06	0.04
BR Open Vel (ft/s)	5.83	C & E Loss (ft)	0.00	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.53	0.62
BR Sel Method	Energy only	Power Total (lb/ft s)	3.02	3.61

Plan: Exist Schoodic Reach1 RS: 148 Profile: Q500

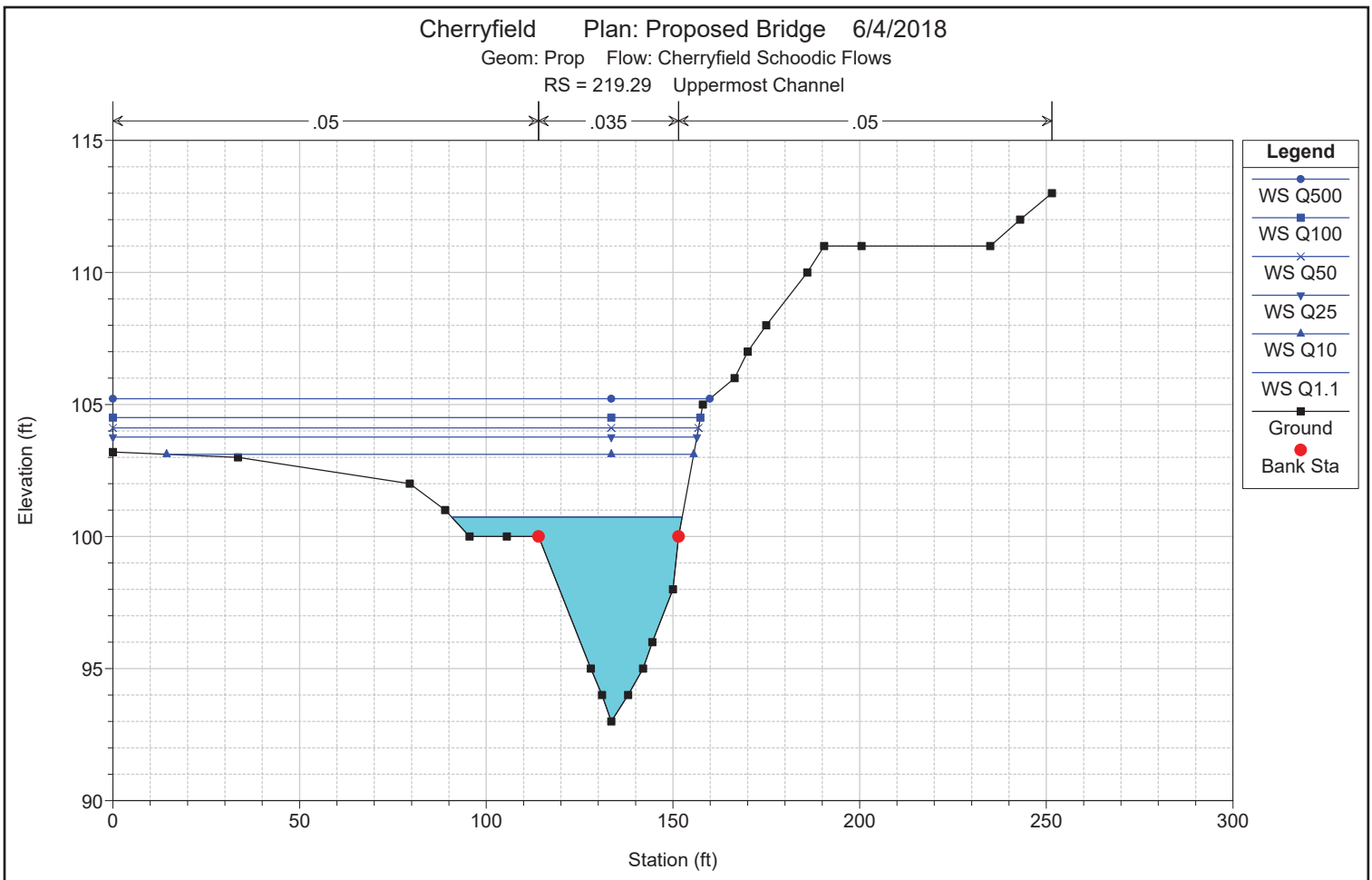
E.G. US. (ft)	105.37	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	104.85	E.G. Elev (ft)	105.31	105.23
Q Total (cfs)	1138.80	W.S. Elev (ft)	104.56	104.40
Q Bridge (cfs)	1138.80	Crit W.S. (ft)	102.56	102.61
Q Weir (cfs)		Max Chl Dpth (ft)	6.76	6.60
Weir Sta Lft (ft)		Vel Total (ft/s)	6.83	7.08
Weir Sta Rgt (ft)		Flow Area (sq ft)	166.69	160.94
Weir Submerg		Froude # Chl	0.47	0.50
Weir Max Depth (ft)		Specif Force (cu ft)	718.28	698.57
Min El Weir Flow (ft)	111.51	Hydr Depth (ft)	5.65	5.45
Min El Prs (ft)	107.86	W.P. Total (ft)	39.37	38.26
Delta EG (ft)	0.23	Conv. Total (cfs)	21750.3	19797.1
Delta WS (ft)	0.85	Top Width (ft)	29.48	29.55
BR Open Area (sq ft)	262.29	Frctn Loss (ft)	0.07	0.05
BR Open Vel (ft/s)	7.08	C & E Loss (ft)	0.01	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	0.72	0.87
BR Sel Method	Energy only	Power Total (lb/ft s)	4.95	6.15

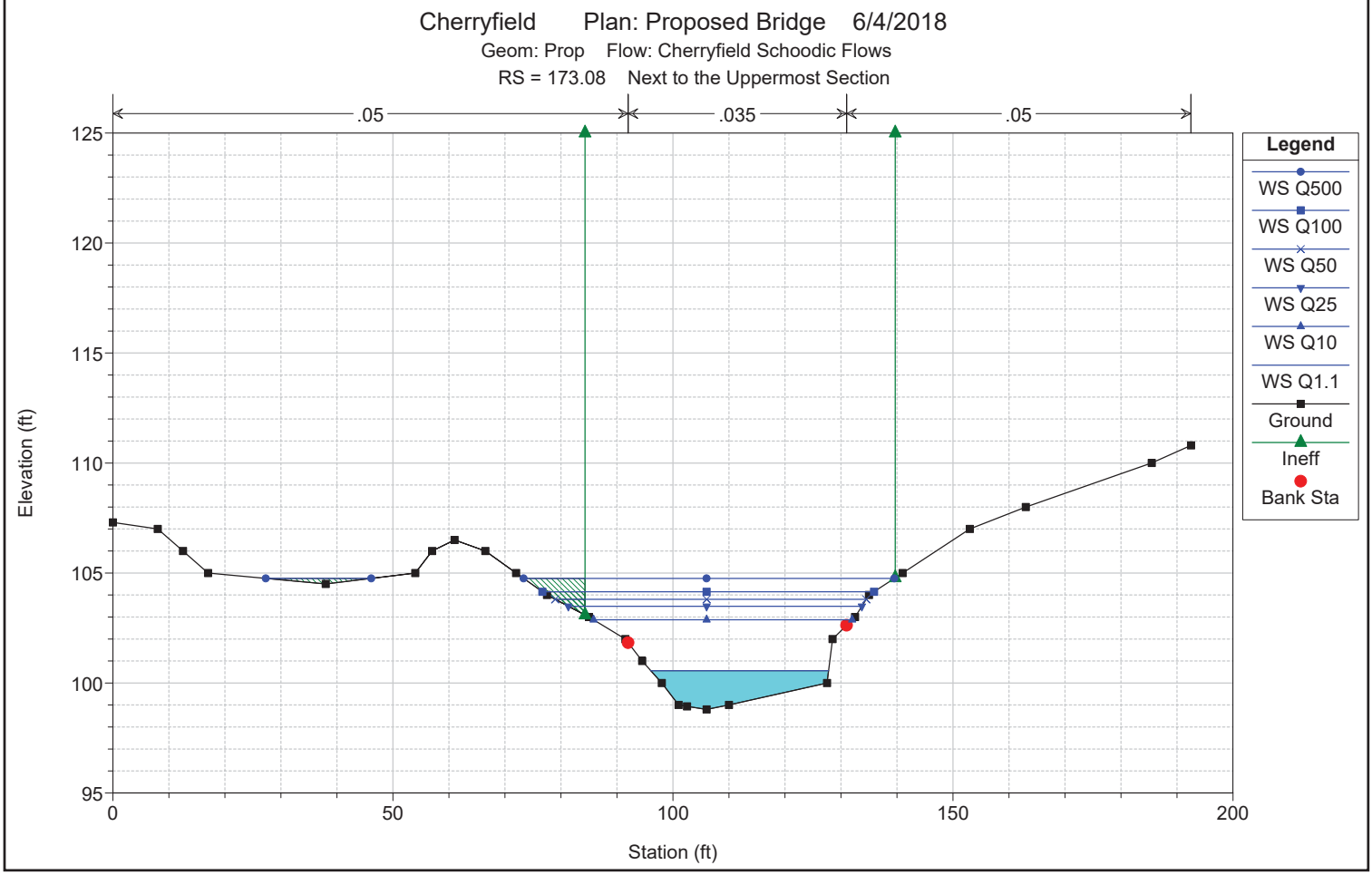
HEC-RAS Plan: Exist River: Schoodic Reach: Reach1

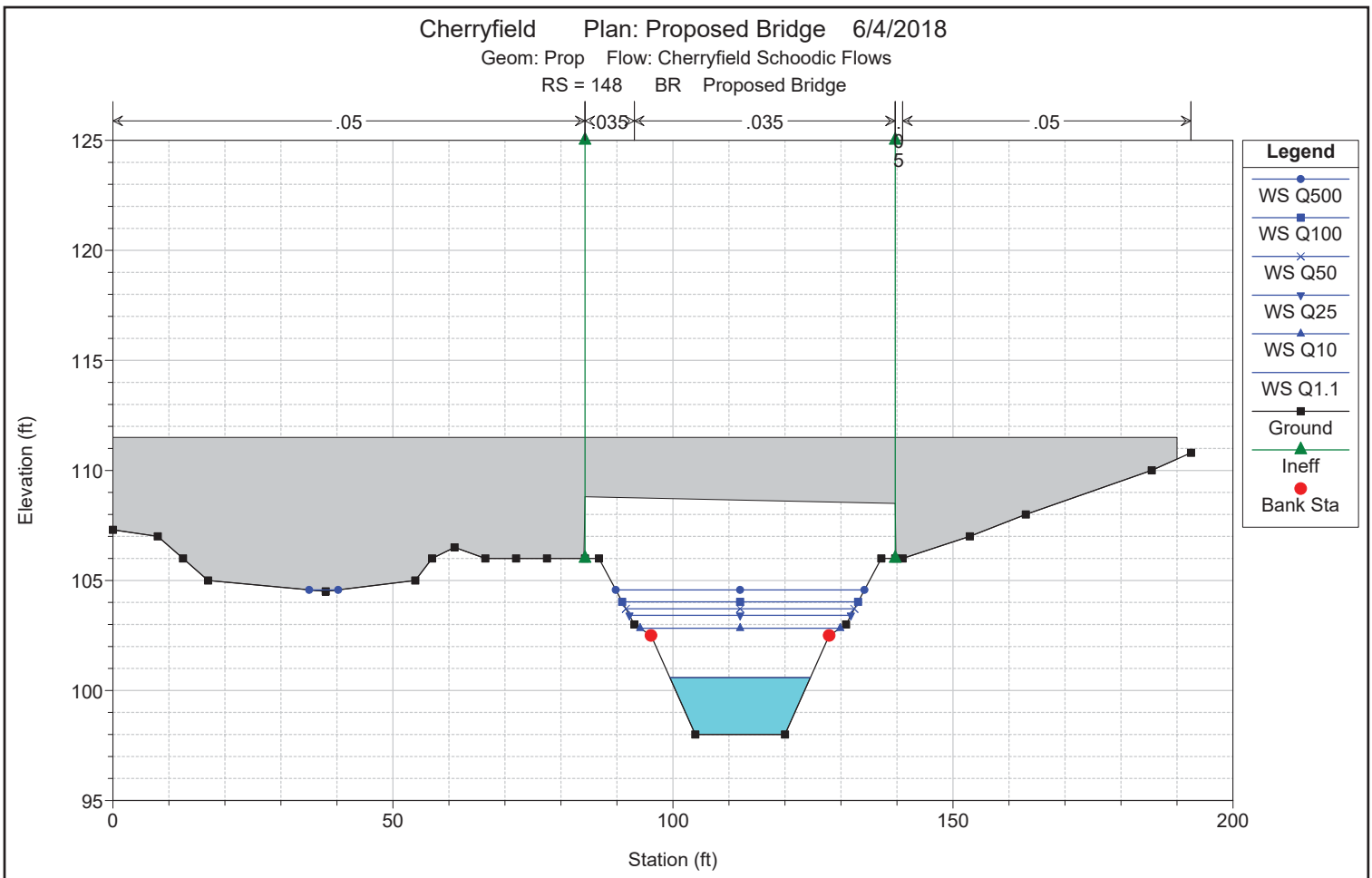
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach1	219.29	Q1.1	121.90	93.00	100.77	95.35	100.77	0.000036	0.68	193.42	61.97	0.05
Reach1	219.29	Q10	481.30	93.00	103.14	97.16	103.18	0.000121	1.63	393.98	145.14	0.11
Reach1	219.29	Q25	633.10	93.00	103.81	97.66	103.85	0.000133	1.83	498.38	156.45	0.12
Reach1	219.29	Q50	729.40	93.00	104.17	97.94	104.21	0.000140	1.93	554.19	156.91	0.12
Reach1	219.29	Q100	855.00	93.00	104.58	98.28	104.63	0.000149	2.06	619.44	157.45	0.12
Reach1	219.29	Q500	1138.80	93.00	105.37	98.94	105.44	0.000168	2.32	745.17	161.17	0.13
Reach1	173.08	Q1.1	121.90	98.80	100.59	100.12	100.75	0.004274	3.30	38.10	31.84	0.51
Reach1	173.08	Q10	481.30	98.80	102.84	101.36	103.14	0.002092	4.50	121.69	45.82	0.42
Reach1	173.08	Q25	633.10	98.80	103.47	101.76	103.81	0.001974	4.88	151.77	52.20	0.42
Reach1	173.08	Q50	729.40	98.80	103.80	102.00	104.17	0.001978	5.13	167.70	55.45	0.43
Reach1	173.08	Q100	855.00	98.80	104.17	102.28	104.58	0.002013	5.46	186.24	59.42	0.44
Reach1	173.08	Q500	1138.80	98.80	104.85	102.96	105.37	0.002167	6.18	220.49	93.33	0.46
Reach1	148		Bridge									
Reach1	119.7	Q1.1	121.90	97.80	100.48	99.48	100.61	0.002070	2.91	42.14	23.44	0.37
Reach1	119.7	Q10	481.30	97.80	102.60	101.06	103.02	0.002467	5.25	99.05	29.71	0.46
Reach1	119.7	Q25	633.10	97.80	103.12	101.56	103.68	0.002863	6.12	115.28	37.55	0.51
Reach1	119.7	Q50	729.40	97.80	103.37	101.86	104.02	0.003108	6.61	125.13	39.85	0.53
Reach1	119.7	Q100	855.00	97.80	103.64	102.23	104.42	0.003490	7.27	136.04	42.24	0.57
Reach1	119.7	Q500	1138.80	97.80	104.00	102.86	105.15	0.004744	8.87	152.00	77.58	0.67
Reach1	100	Q1.1	121.90	97.80	100.45	99.51	100.57	0.002001	2.71	45.15	26.68	0.36
Reach1	100	Q10	481.30	97.80	102.62	100.91	102.95	0.002003	4.65	115.00	57.74	0.42
Reach1	100	Q25	633.10	97.80	103.20	101.36	103.58	0.002001	5.10	156.37	86.23	0.43
Reach1	100	Q50	729.40	97.80	103.50	101.63	103.90	0.002000	5.33	184.66	102.56	0.43
Reach1	100	Q100	855.00	97.80	103.83	101.94	104.26	0.002000	5.57	222.36	120.95	0.43
Reach1	100	Q500	1138.80	97.80	104.43	103.00	104.87	0.002003	6.00	300.02	136.61	0.44

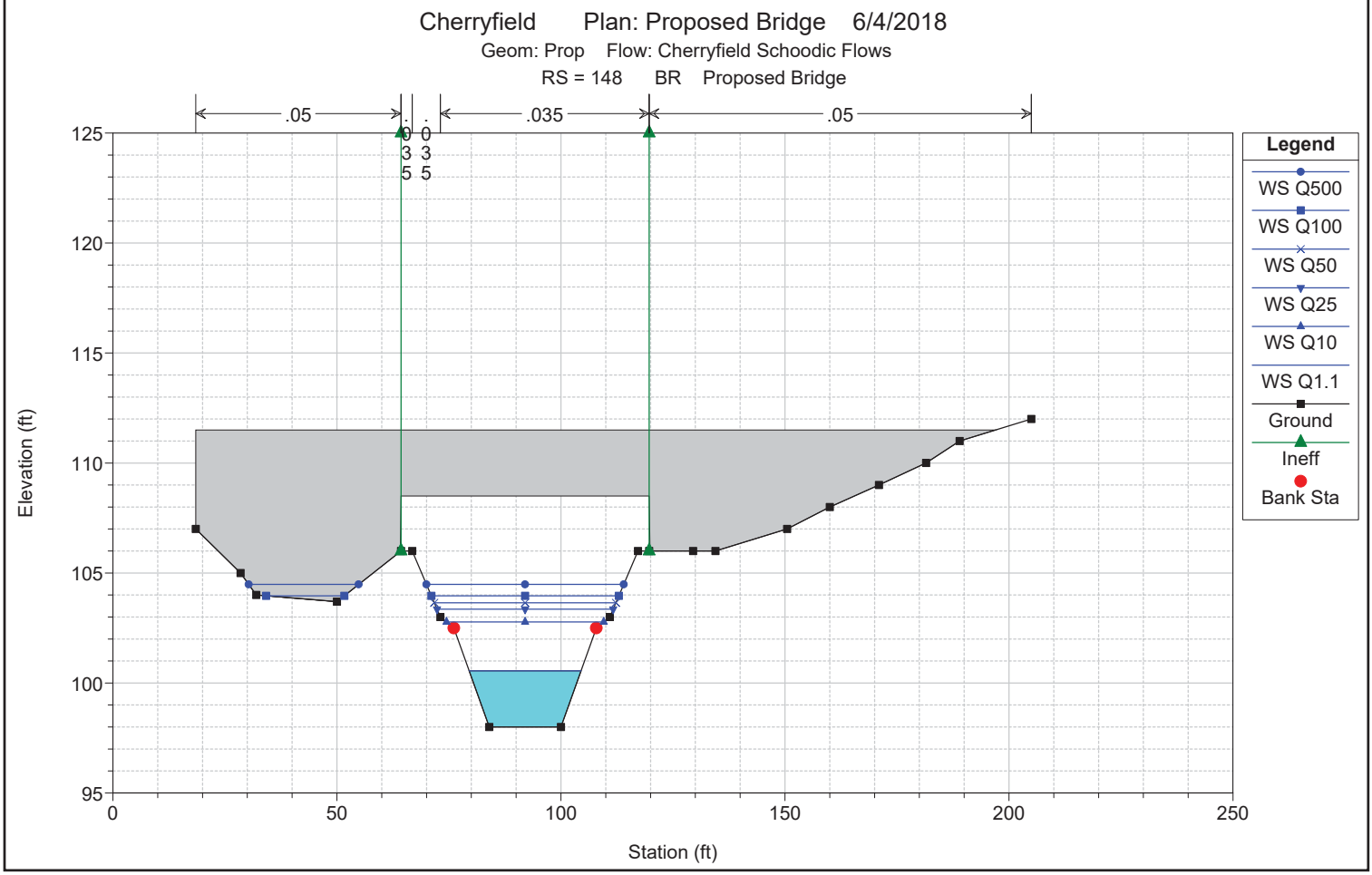
PROPOSED CONDITIONS

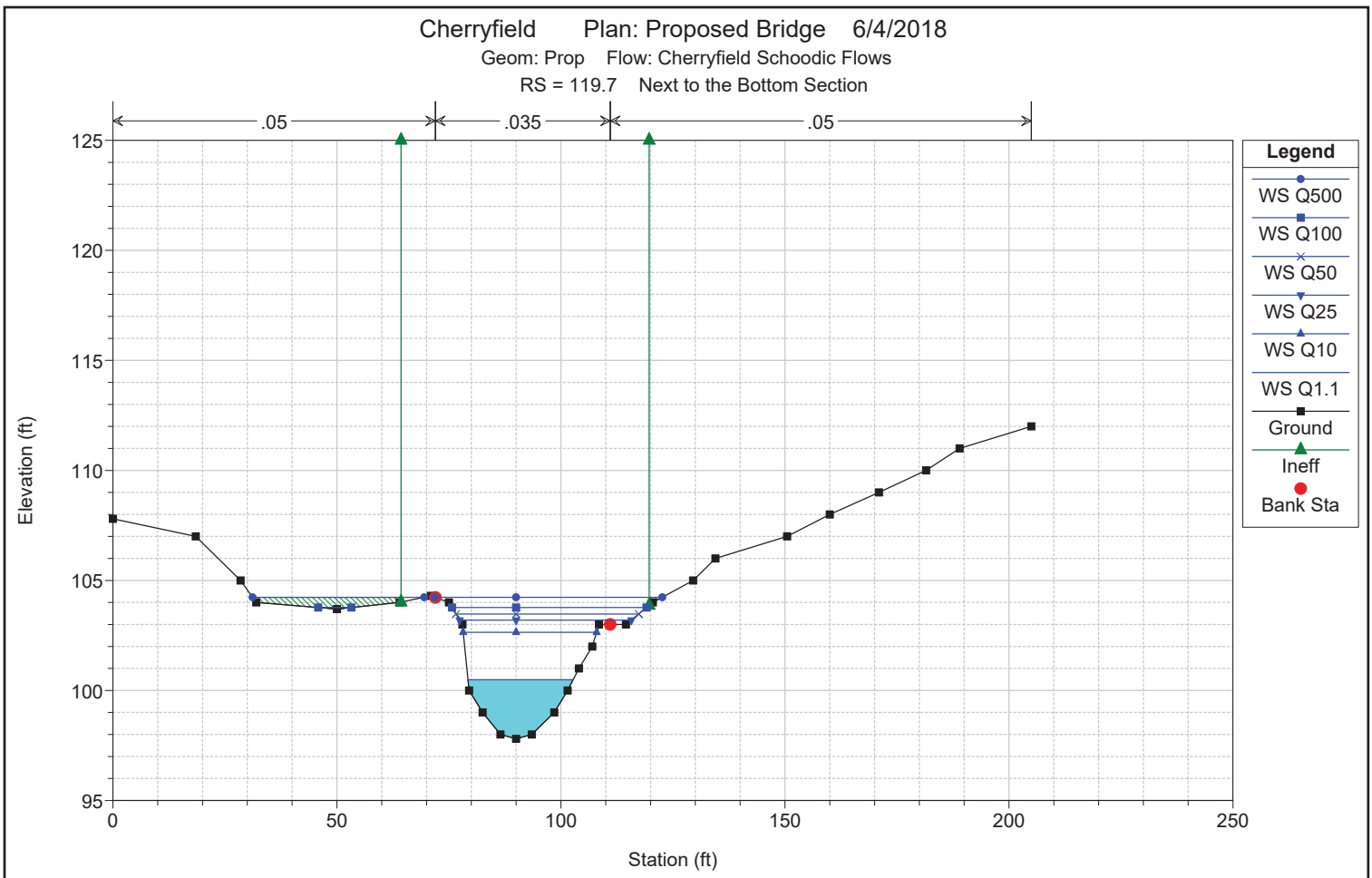
PROPOSED CONDITIONS

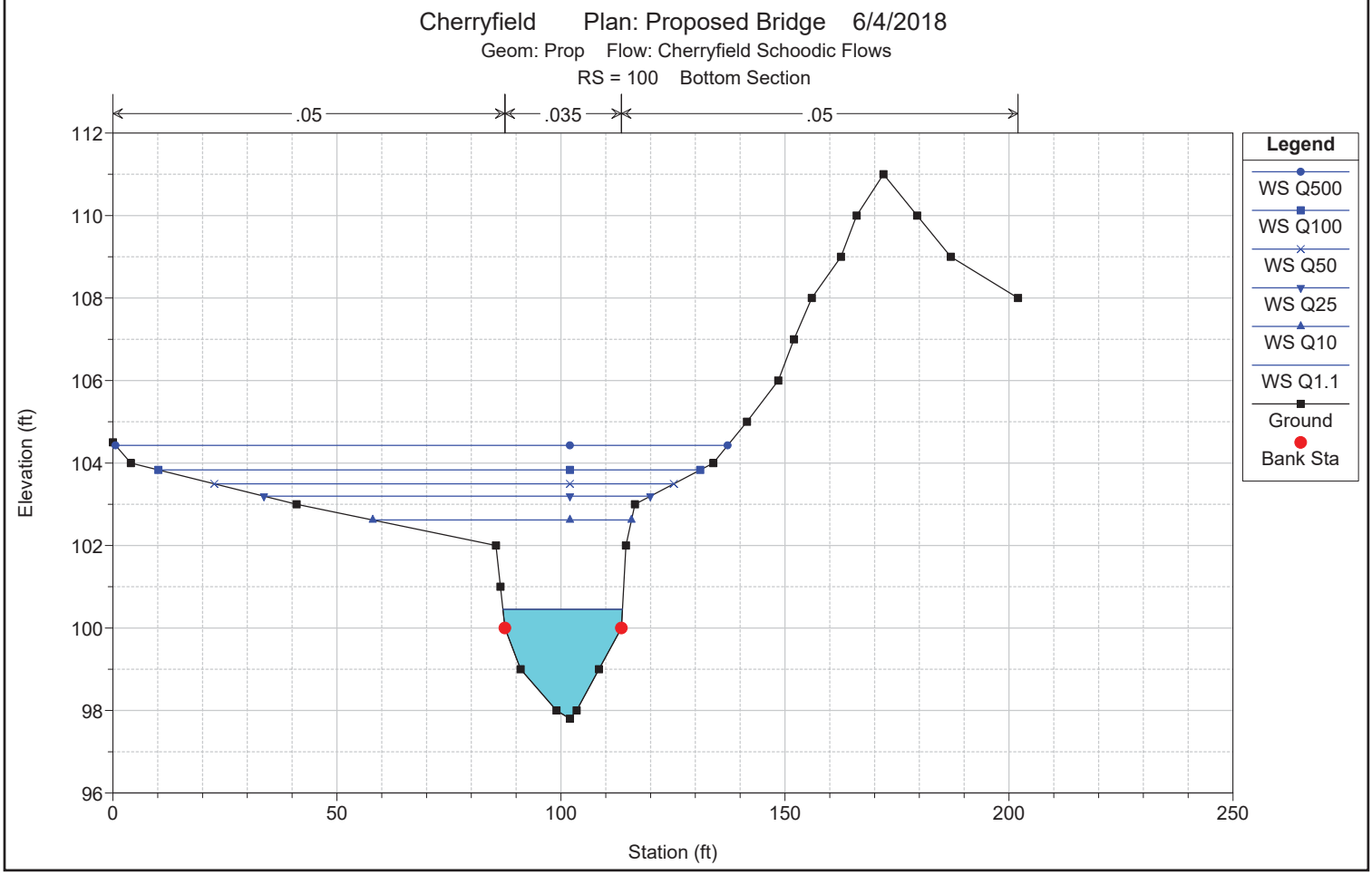

Cherryfield Plan: Proposed Bridge 6/4/2018
Geom: Prop Flow: Cherryfield Schoodic Flows
RS = 219.29 Uppermost Channel
.05
.035
.05
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Bank Sta
Elevation (ft)
Station (ft)
115
110
105
100
95
90
0
50
100
150
200
250
300

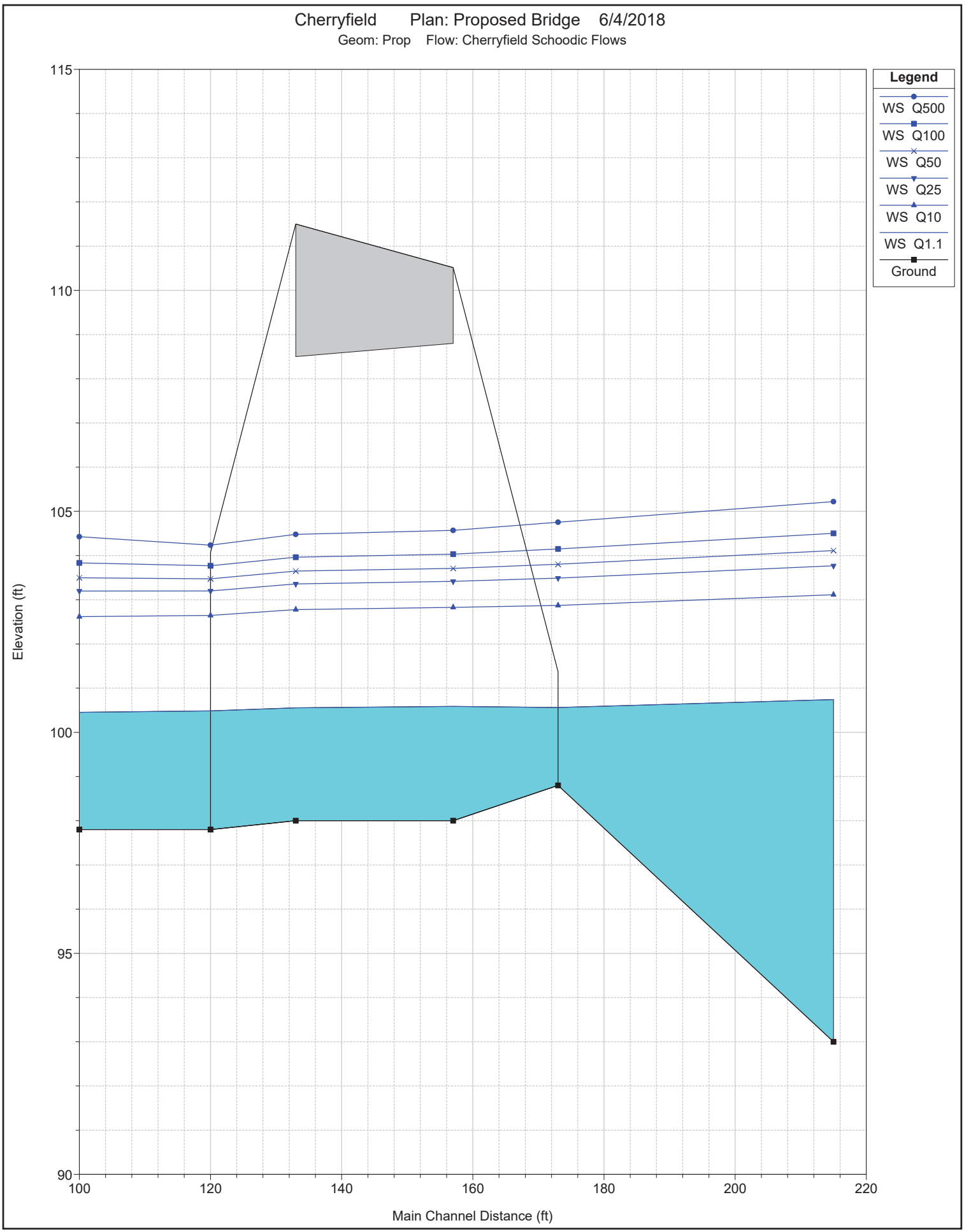

Cherryfield Plan: Proposed Bridge 6/4/2018
Geom: Prop Flow: Cherryfield Schoodic Flows
RS = 173.08 Next to the Uppermost Section
.05
.035
.05
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
125
120
115
110
105
100
95
0
50
100
150
200


Cherryfield Plan: Proposed Bridge 6/4/2018
Geom: Prop Flow: Cherryfield Schoodic Flows
RS = 148 BR Proposed Bridge
.05
.035
.035
.05
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
125
120
115
110
105
100
95
0
50
100
150
200


Cherryfield Plan: Proposed Bridge 6/4/2018
Geom: Prop Flow: Cherryfield Schoodic Flows
RS = 148 BR Proposed Bridge
.05
.035
.05
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
125
120
115
110
105
100
95
0
50
100
150
200
250


Cherryfield Plan: Proposed Bridge 6/4/2018
Geom: Prop Flow: Cherryfield Schoodic Flows
RS = 119.7 Next to the Bottom Section
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Ineff
Bank Sta


Cherryfield Plan: Proposed Bridge 6/4/2018
Geom: Prop Flow: Cherryfield Schoodic Flows
RS = 100 Bottom Section
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Bank Sta


Cherryfield Plan: Proposed Bridge 6/4/2018
Geom: Prop Flow: Cherryfield Schoodic Flows
Legend
WS Q500
WS Q100
WS Q50
WS Q25
WS Q10
WS Q1.1
Ground
Elevation (ft)
115
110
105
100
95
90
100
120
140
160
180
200
220
Main Channel Distance (ft)

Plan: Prop Schoodic Reach1 RS: 148 Profile: Q1.1

E.G. US. (ft)	100.73	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	100.56	E.G. Elev (ft)	100.67	100.64
Q Total (cfs)	121.90	W.S. Elev (ft)	100.59	100.56
Q Bridge (cfs)	121.90	Crit W.S. (ft)	99.16	99.16
Q Weir (cfs)		Max Chl Dpth (ft)	2.59	2.56
Weir Sta Lft (ft)		Vel Total (ft/s)	2.29	2.33
Weir Sta Rgt (ft)		Flow Area (sq ft)	53.14	52.35
Weir Submerg		Froude # Chl	0.28	0.28
Weir Max Depth (ft)		Specif Force (cu ft)	72.36	70.83
Min El Weir Flow (ft)	111.51	Hydr Depth (ft)	2.12	2.10
Min El Prs (ft)	108.80	W.P. Total (ft)	26.45	26.33
Delta EG (ft)	0.11	Conv. Total (cfs)	3591.7	3514.8
Delta WS (ft)	0.08	Top Width (ft)	25.08	24.97
BR Open Area (sq ft)	395.75	Frctn Loss (ft)	0.03	0.02
BR Open Vel (ft/s)	2.33	C & E Loss (ft)	0.00	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.14	0.15
BR Sel Method	Energy only	Power Total (lb/ft s)	0.33	0.35

Plan: Prop Schoodic Reach1 RS: 148 Profile: Q10

E.G. US. (ft)	103.12	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	102.87	E.G. Elev (ft)	103.09	103.04
Q Total (cfs)	481.30	W.S. Elev (ft)	102.83	102.78
Q Bridge (cfs)	481.30	Crit W.S. (ft)	100.74	100.74
Q Weir (cfs)		Max Chl Dpth (ft)	4.83	4.78
Weir Sta Lft (ft)		Vel Total (ft/s)	4.06	4.12
Weir Sta Rgt (ft)		Flow Area (sq ft)	118.62	116.78
Weir Submerg		Froude # Chl	0.37	0.38
Weir Max Depth (ft)		Specif Force (cu ft)	313.32	308.08
Min El Weir Flow (ft)	111.51	Hydr Depth (ft)	3.32	3.33
Min El Prs (ft)	108.80	W.P. Total (ft)	38.17	37.54
Delta EG (ft)	0.12	Conv. Total (cfs)	11447.0	11177.3
Delta WS (ft)	0.23	Top Width (ft)	35.74	35.11
BR Open Area (sq ft)	395.75	Frctn Loss (ft)	0.04	0.03
BR Open Vel (ft/s)	4.12	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.34	0.36
BR Sel Method	Energy only	Power Total (lb/ft s)	1.39	1.48

Plan: Prop Schoodic Reach1 RS: 148 Profile: Q25

E.G. US. (ft)	103.77	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	103.49	E.G. Elev (ft)	103.74	103.69
Q Total (cfs)	633.10	W.S. Elev (ft)	103.42	103.36
Q Bridge (cfs)	633.10	Crit W.S. (ft)	101.23	101.23
Q Weir (cfs)		Max Chl Dpth (ft)	5.42	5.36
Weir Sta Lft (ft)		Vel Total (ft/s)	4.49	4.56
Weir Sta Rgt (ft)		Flow Area (sq ft)	141.01	138.78
Weir Submerg		Froude # Chl	0.39	0.40
Weir Max Depth (ft)		Specif Force (cu ft)	418.33	411.77
Min El Weir Flow (ft)	111.51	Hydr Depth (ft)	3.57	3.53
Min El Prs (ft)	108.80	W.P. Total (ft)	42.20	41.93
Delta EG (ft)	0.13	Conv. Total (cfs)	14742.2	14404.1
Delta WS (ft)	0.29	Top Width (ft)	39.54	39.31
BR Open Area (sq ft)	395.75	Frctn Loss (ft)	0.05	0.03
BR Open Vel (ft/s)	4.56	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.38	0.40
BR Sel Method	Energy only	Power Total (lb/ft s)	1.73	1.82

Plan: Prop Schoodic Reach1 RS: 148 Profile: Q50

E.G. US. (ft)	104.12	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	103.80	E.G. Elev (ft)	104.08	104.03
Q Total (cfs)	729.40	W.S. Elev (ft)	103.71	103.65
Q Bridge (cfs)	729.40	Crit W.S. (ft)	101.51	101.51
Q Weir (cfs)		Max Chl Dpth (ft)	5.71	5.65
Weir Sta Lft (ft)		Vel Total (ft/s)	4.77	4.85
Weir Sta Rgt (ft)		Flow Area (sq ft)	152.83	150.36
Weir Submerg		Froude # Chl	0.40	0.41
Weir Max Depth (ft)		Specif Force (cu ft)	482.21	474.72
Min El Weir Flow (ft)	111.51	Hydr Depth (ft)	3.75	3.71
Min El Prs (ft)	108.80	W.P. Total (ft)	43.57	43.28
Delta EG (ft)	0.14	Conv. Total (cfs)	16565.0	16179.2
Delta WS (ft)	0.33	Top Width (ft)	40.78	40.53
BR Open Area (sq ft)	395.75	Frctn Loss (ft)	0.05	0.03
BR Open Vel (ft/s)	4.85	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.42	0.44
BR Sel Method	Energy only	Power Total (lb/ft s)	2.03	2.14

Plan: Prop Schoodic Reach1 RS: 148 Profile: Q100

E.G. US. (ft)	104.51	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	104.15	E.G. Elev (ft)	104.47	104.41
Q Total (cfs)	855.00	W.S. Elev (ft)	104.03	103.96
Q Bridge (cfs)	855.00	Crit W.S. (ft)	101.85	101.85
Q Weir (cfs)		Max Chl Dpth (ft)	6.03	5.96
Weir Sta Lft (ft)		Vel Total (ft/s)	5.15	5.24
Weir Sta Rgt (ft)		Flow Area (sq ft)	166.16	163.32
Weir Submerg		Froude # Chl	0.43	0.44
Weir Max Depth (ft)		Specif Force (cu ft)	563.18	554.37
Min El Weir Flow (ft)	111.51	Hydr Depth (ft)	3.94	3.90
Min El Prs (ft)	108.80	W.P. Total (ft)	45.06	44.75
Delta EG (ft)	0.15	Conv. Total (cfs)	18685.8	18228.8
Delta WS (ft)	0.38	Top Width (ft)	42.13	41.85
BR Open Area (sq ft)	395.75	Frctn Loss (ft)	0.05	0.04
BR Open Vel (ft/s)	5.24	C & E Loss (ft)	0.00	0.01
BR Sluice Coef		Shear Total (lb/sq ft)	0.48	0.50
BR Sel Method	Energy only	Power Total (lb/ft s)	2.48	2.62

Plan: Prop Schoodic Reach1 RS: 148 Profile: Q500

E.G. US. (ft)	105.23	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	104.75	E.G. Elev (ft)	105.17	105.11
Q Total (cfs)	1138.80	W.S. Elev (ft)	104.57	104.48
Q Bridge (cfs)	1138.80	Crit W.S. (ft)	102.54	102.54
Q Weir (cfs)		Max Chl Dpth (ft)	6.57	6.48
Weir Sta Lft (ft)		Vel Total (ft/s)	6.01	6.14
Weir Sta Rgt (ft)		Flow Area (sq ft)	189.47	185.51
Weir Submerg		Froude # Chl	0.48	0.49
Weir Max Depth (ft)		Specif Force (cu ft)	738.04	725.72
Min El Weir Flow (ft)	111.51	Hydr Depth (ft)	4.27	4.21
Min El Prs (ft)	108.80	W.P. Total (ft)	47.57	47.15
Delta EG (ft)	0.18	Conv. Total (cfs)	22544.6	21875.7
Delta WS (ft)	0.52	Top Width (ft)	44.39	44.02
BR Open Area (sq ft)	395.75	Frctn Loss (ft)	0.06	0.05
BR Open Vel (ft/s)	6.14	C & E Loss (ft)	0.00	0.02
BR Sluice Coef		Shear Total (lb/sq ft)	0.63	0.67
BR Sel Method	Energy only	Power Total (lb/ft s)	3.81	4.09

HEC-RAS Plan: Prop River: Schoodic Reach: Reach1

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)	
Reach1	219.29	Q1.1	121.90	93.00	100.74	95.35	100.75	0.000036	0.68	191.90	61.78	0.06
Reach1	219.29	Q10	481.30	93.00	103.11	97.17	103.15	0.000122	1.64	390.61	141.17	0.11
Reach1	219.29	Q25	633.10	93.00	103.77	97.66	103.81	0.000137	1.84	491.97	156.40	0.12
Reach1	219.29	Q50	729.40	93.00	104.11	97.95	104.16	0.000145	1.95	545.85	156.85	0.12
Reach1	219.29	Q100	855.00	93.00	104.50	98.28	104.56	0.000156	2.09	607.06	157.35	0.13
Reach1	219.29	Q500	1138.80	93.00	105.22	98.95	105.29	0.000183	2.39	720.50	159.86	0.14
Reach1	173.08	Q1.1	121.90	98.80	100.56	100.13	100.73	0.004881	3.26	37.36	31.75	0.53
Reach1	173.08	Q10	481.30	98.80	102.87	101.33	103.12	0.002090	3.99	123.16	46.16	0.40
Reach1	173.08	Q25	633.10	98.80	103.49	101.72	103.77	0.001922	4.32	153.00	52.39	0.40
Reach1	173.08	Q50	729.40	98.80	103.80	101.93	104.12	0.001914	4.55	168.69	55.54	0.40
Reach1	173.08	Q100	855.00	98.80	104.15	102.22	104.51	0.001966	4.87	186.26	59.23	0.41
Reach1	173.08	Q500	1138.80	98.80	104.75	102.81	105.23	0.002201	5.62	218.52	85.00	0.45
Reach1	148		Bridge									
Reach1	119.7	Q1.1	121.90	97.80	100.48	99.48	100.61	0.002227	2.89	42.22	23.45	0.38
Reach1	119.7	Q10	481.30	97.80	102.64	101.08	103.00	0.002854	4.80	100.23	29.79	0.46
Reach1	119.7	Q25	633.10	97.80	103.20	101.58	103.65	0.003398	5.38	118.44	38.30	0.51
Reach1	119.7	Q50	729.40	97.80	103.47	101.86	103.98	0.003593	5.73	129.27	40.77	0.53
Reach1	119.7	Q100	855.00	97.80	103.77	102.19	104.36	0.003904	6.19	141.71	50.86	0.55
Reach1	119.7	Q500	1138.80	97.80	104.24	102.87	105.04	0.005202	7.26	163.38	89.09	0.64
Reach1	100	Q1.1	121.90	97.80	100.45	99.51	100.57	0.002001	2.71	45.15	26.68	0.36
Reach1	100	Q10	481.30	97.80	102.62	100.91	102.95	0.002003	4.65	115.00	57.74	0.42
Reach1	100	Q25	633.10	97.80	103.20	101.36	103.58	0.002001	5.10	156.37	86.23	0.43
Reach1	100	Q50	729.40	97.80	103.50	101.63	103.90	0.002000	5.33	184.66	102.56	0.43
Reach1	100	Q100	855.00	97.80	103.83	101.94	104.26	0.002000	5.57	222.36	120.95	0.43
Reach1	100	Q500	1138.80	97.80	104.43	103.00	104.87	0.002003	6.00	300.02	136.61	0.44