

## **APPENDIX A**

### **Cross Sections – with 2 year through 100 year flood levels**

- Lower Reach + Tributaries
- Middle Reach

### **Manning's “n”**

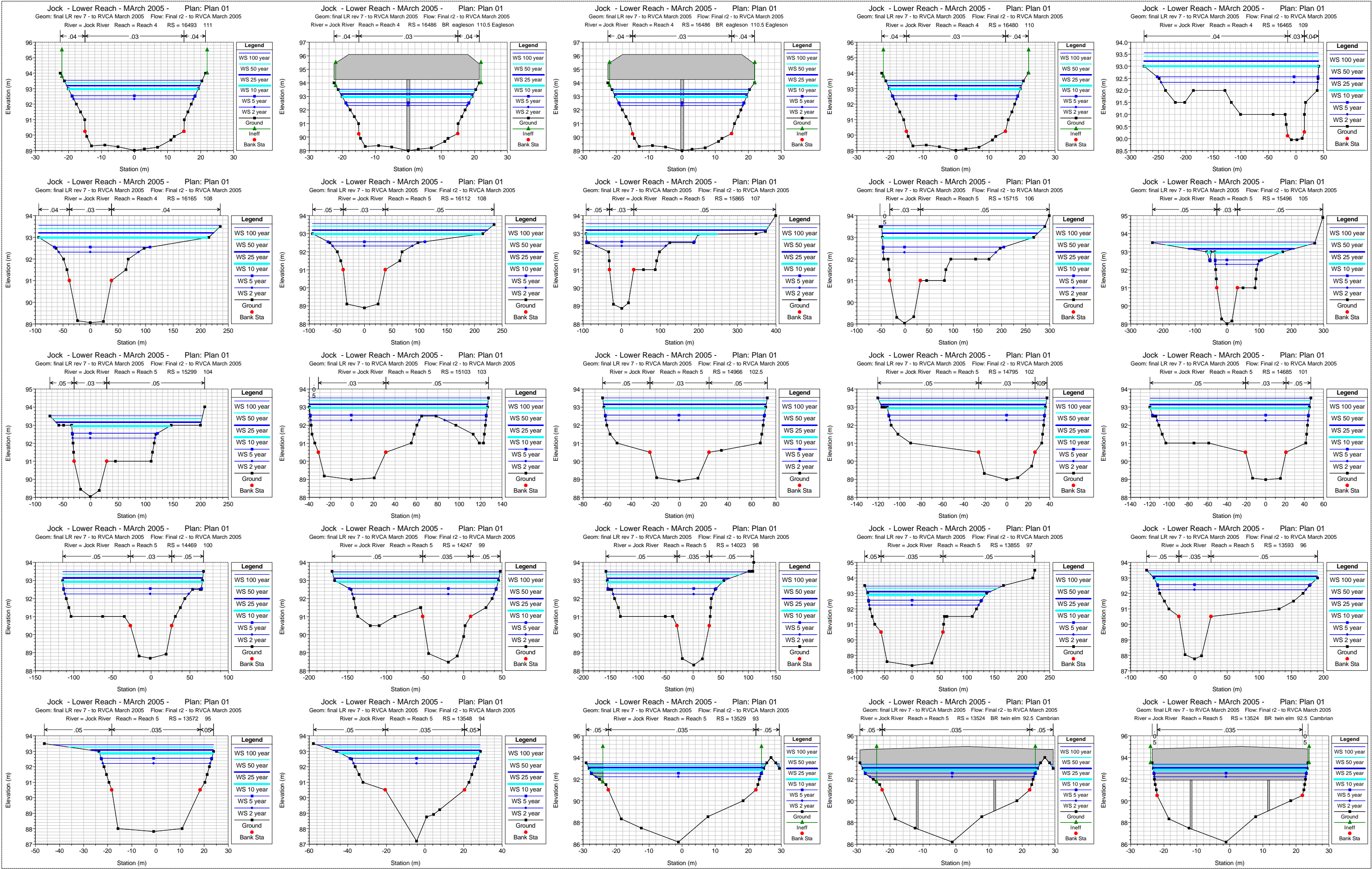
## ● Lower Reach

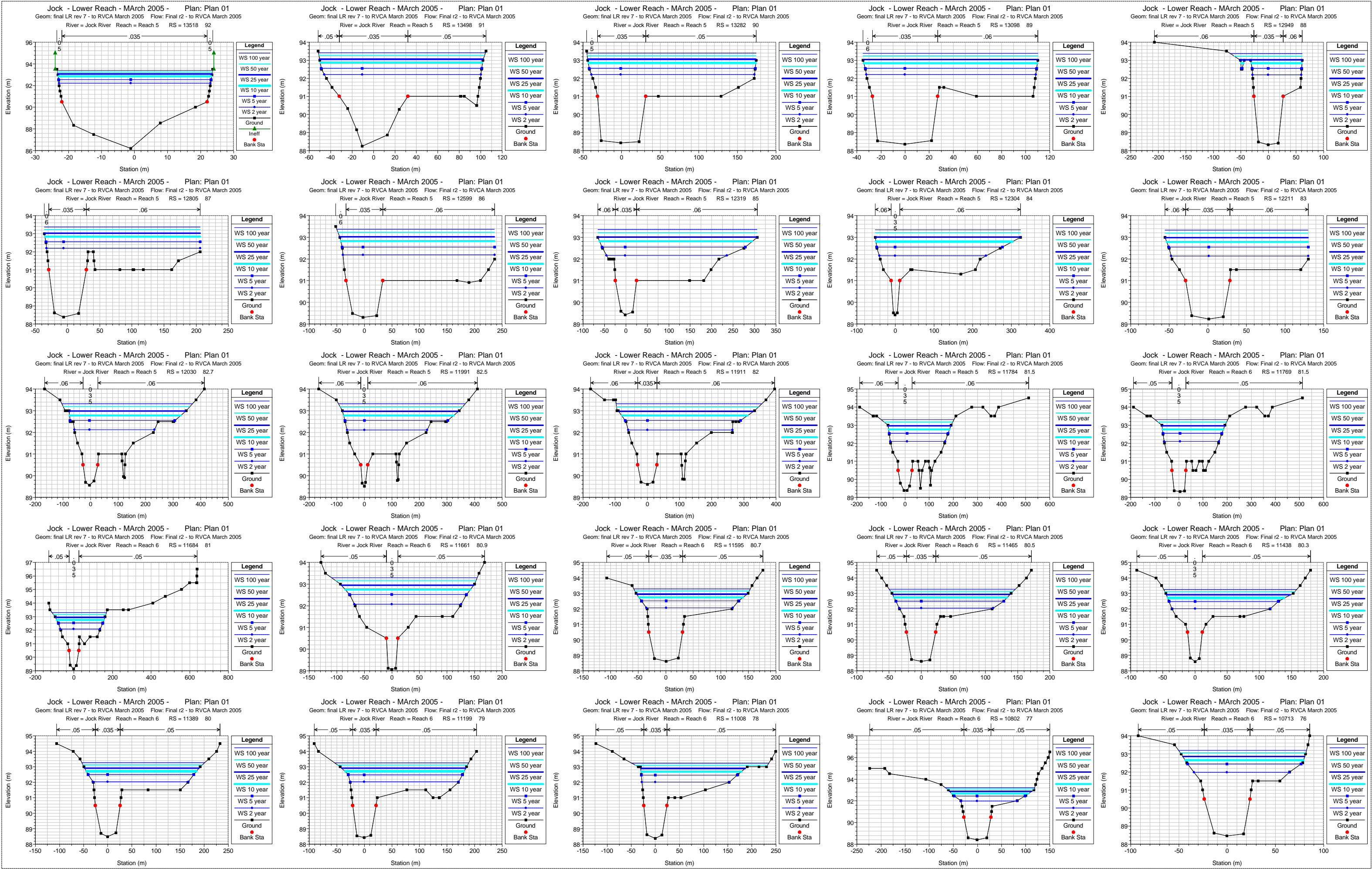
Jock River Flood Risk Mapping (within the City of Ottawa)  
Hydraulics Report - November 2004







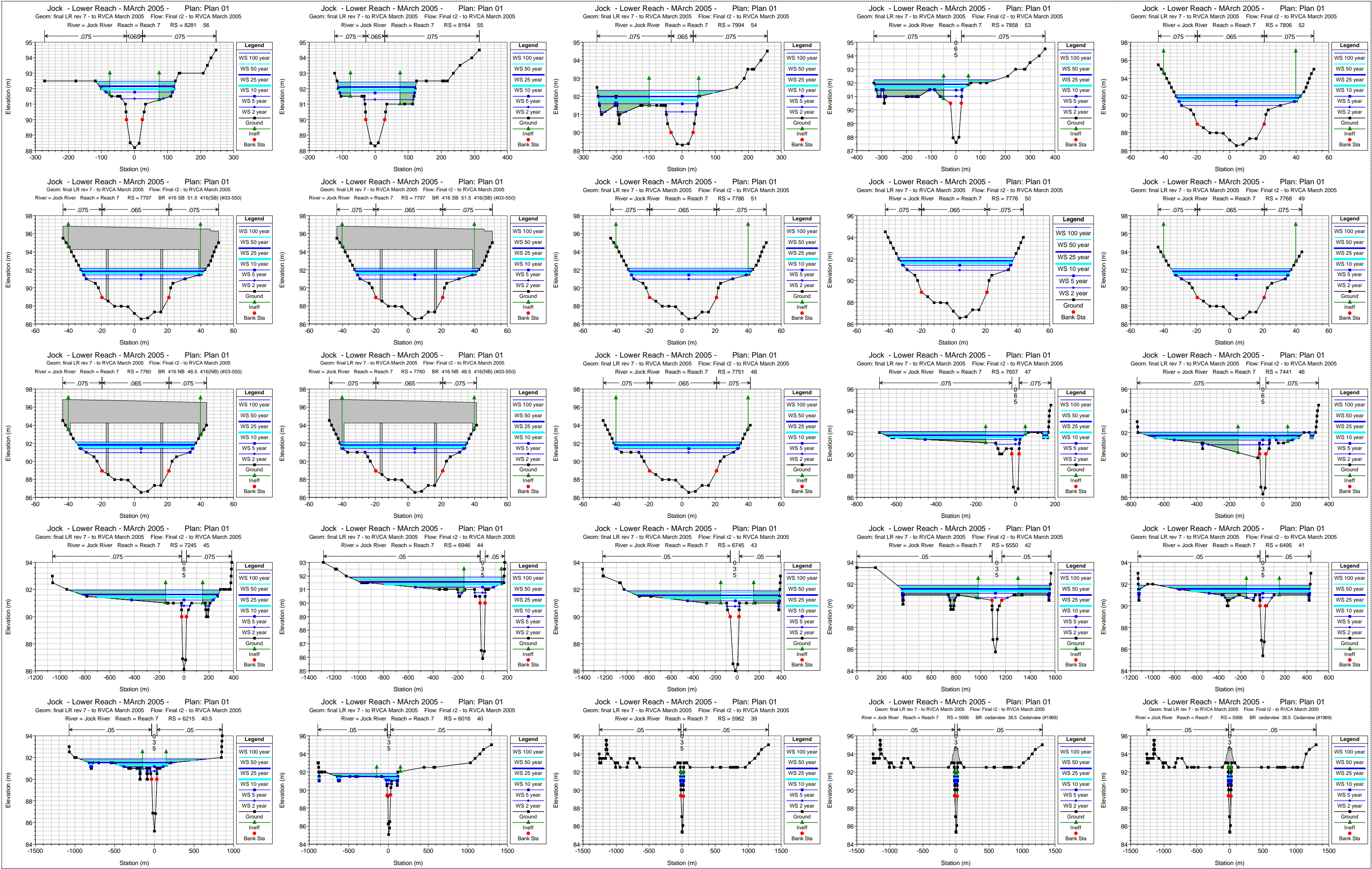


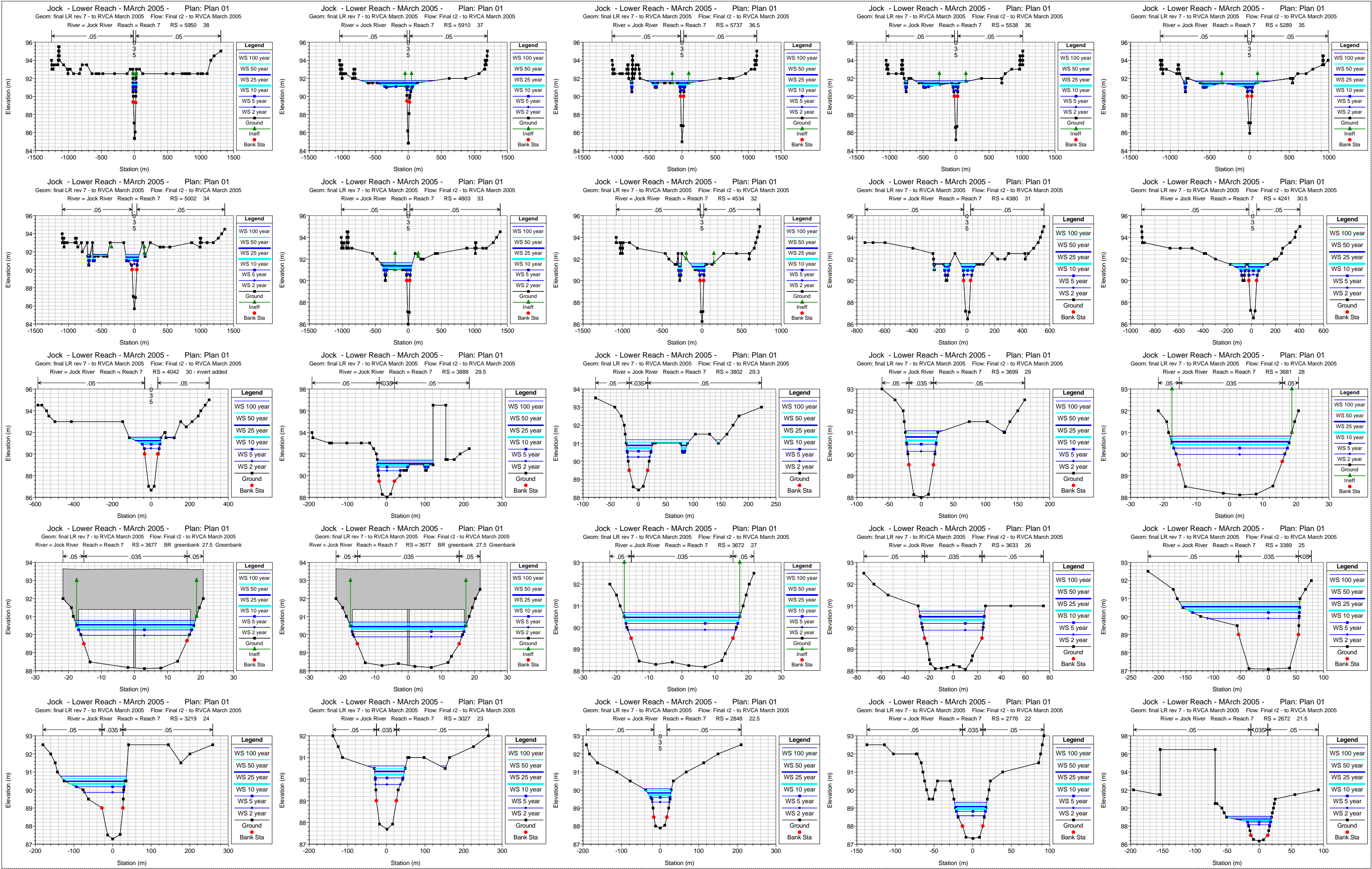








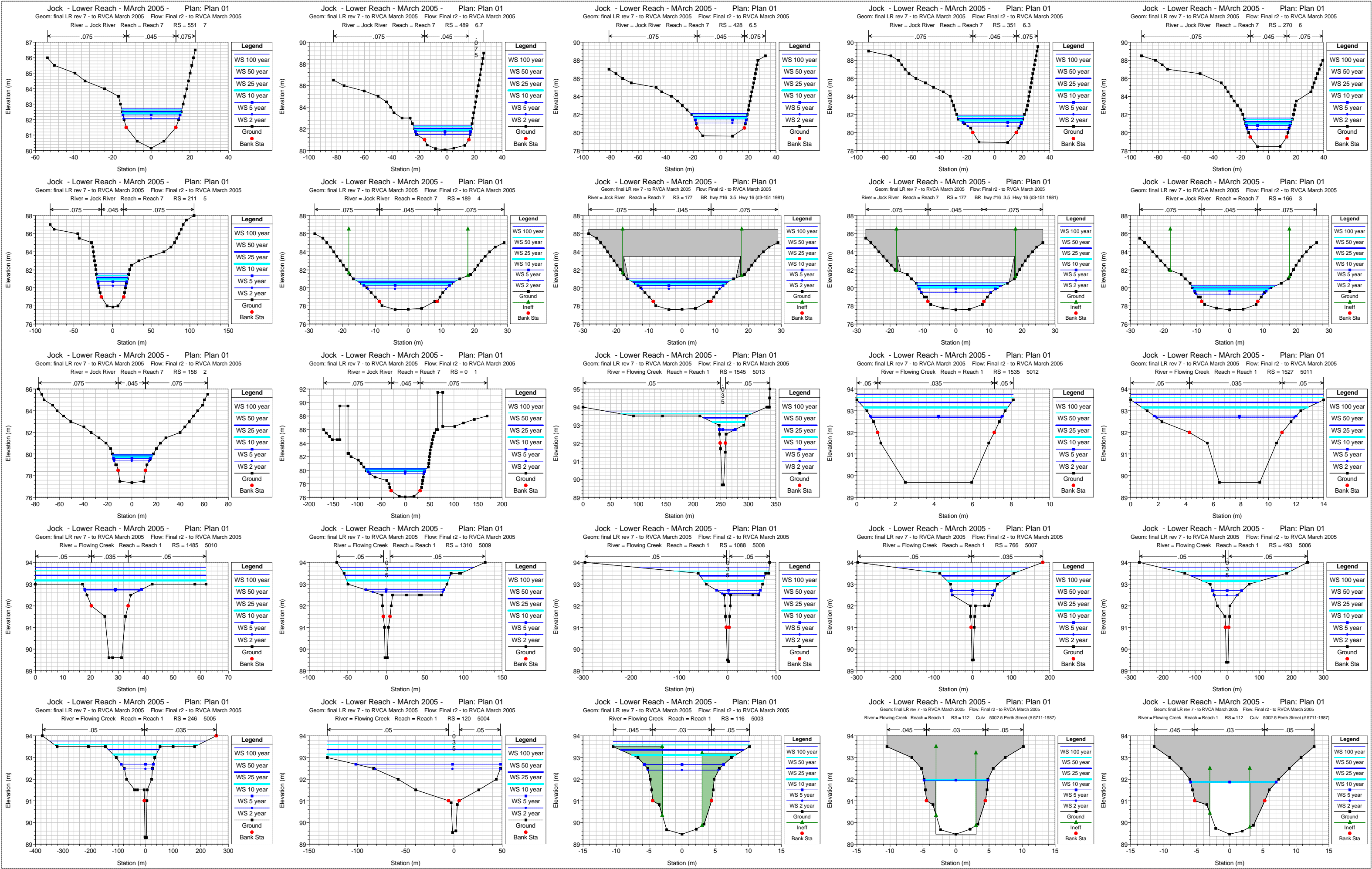










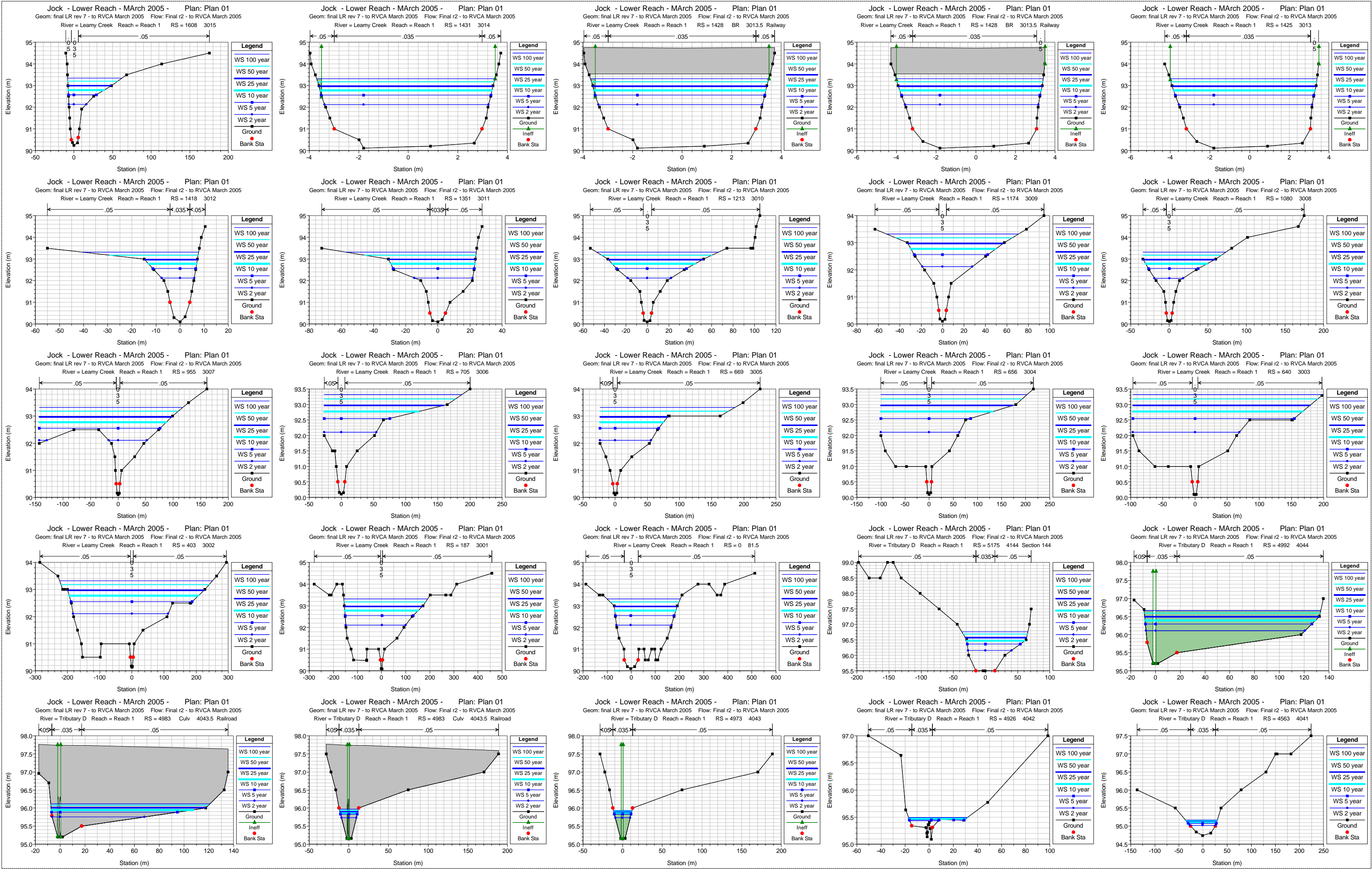






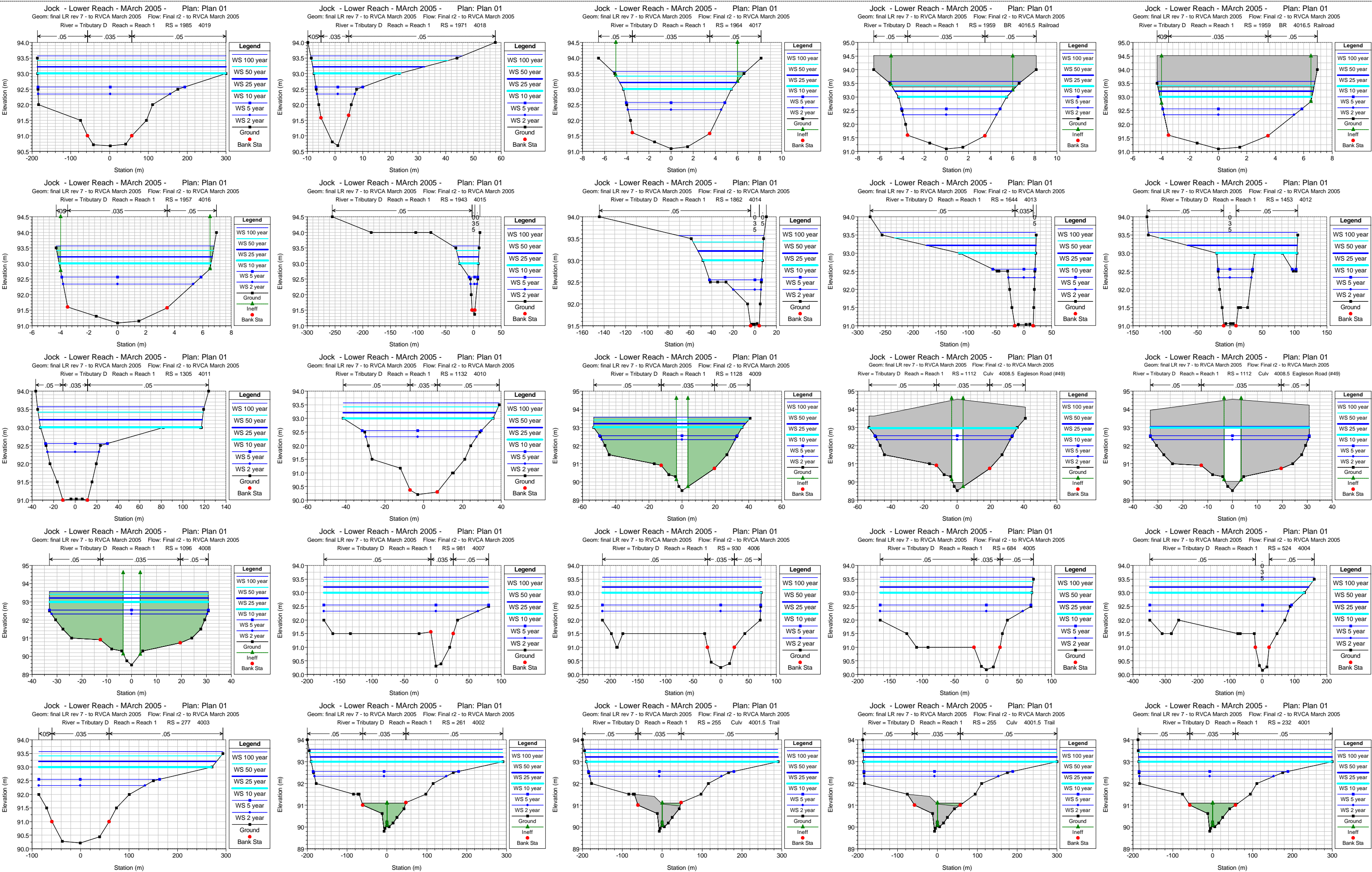




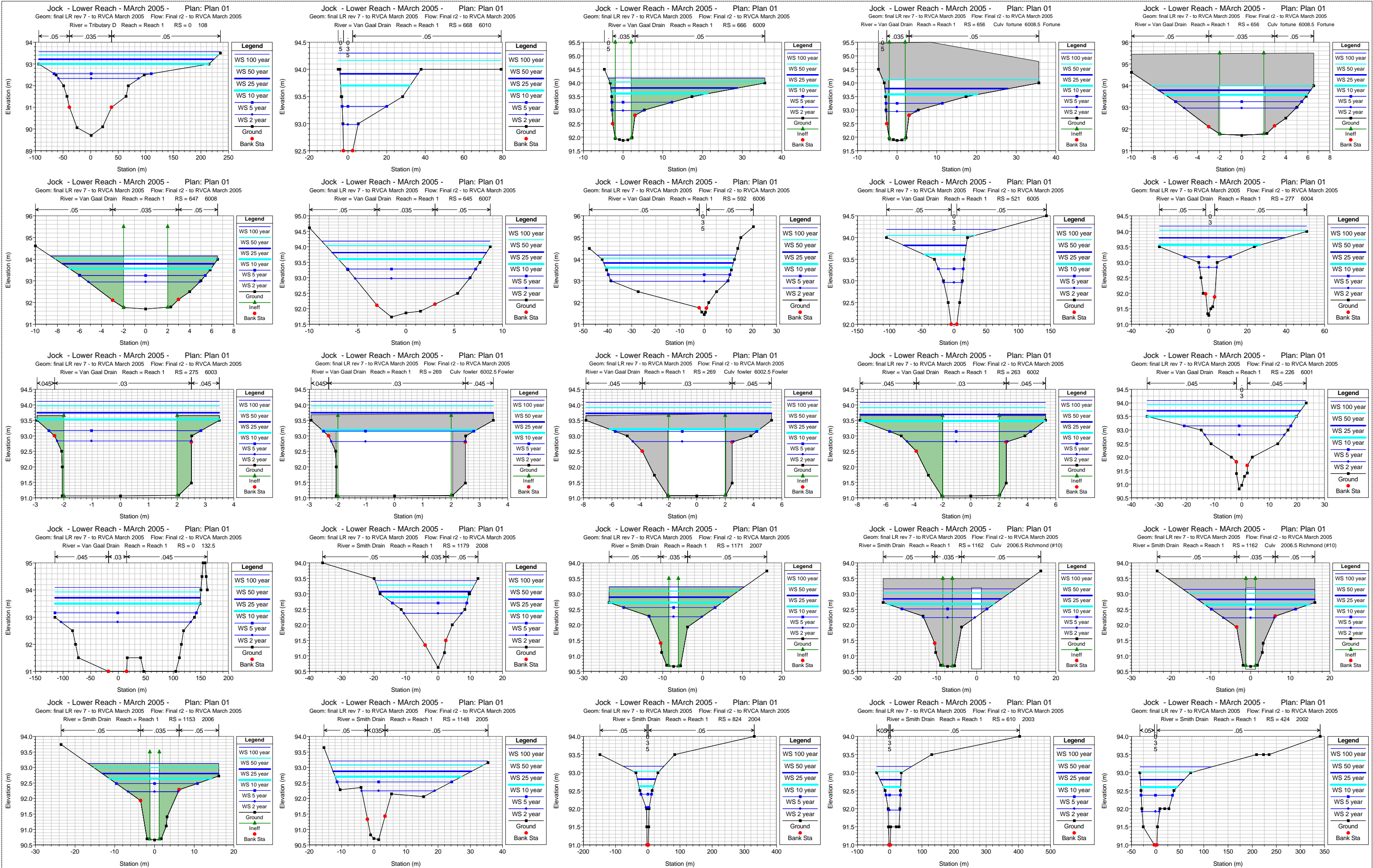








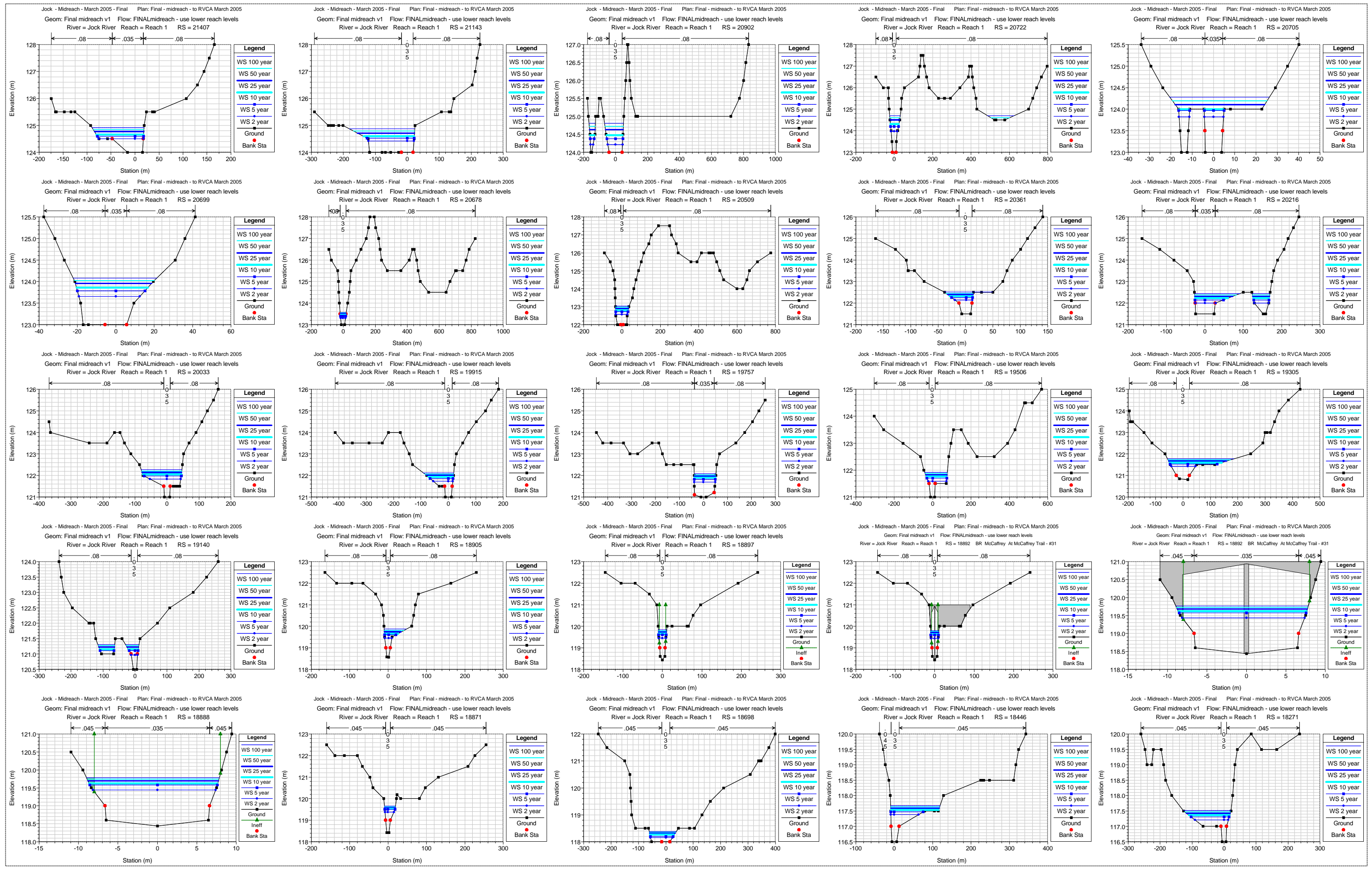






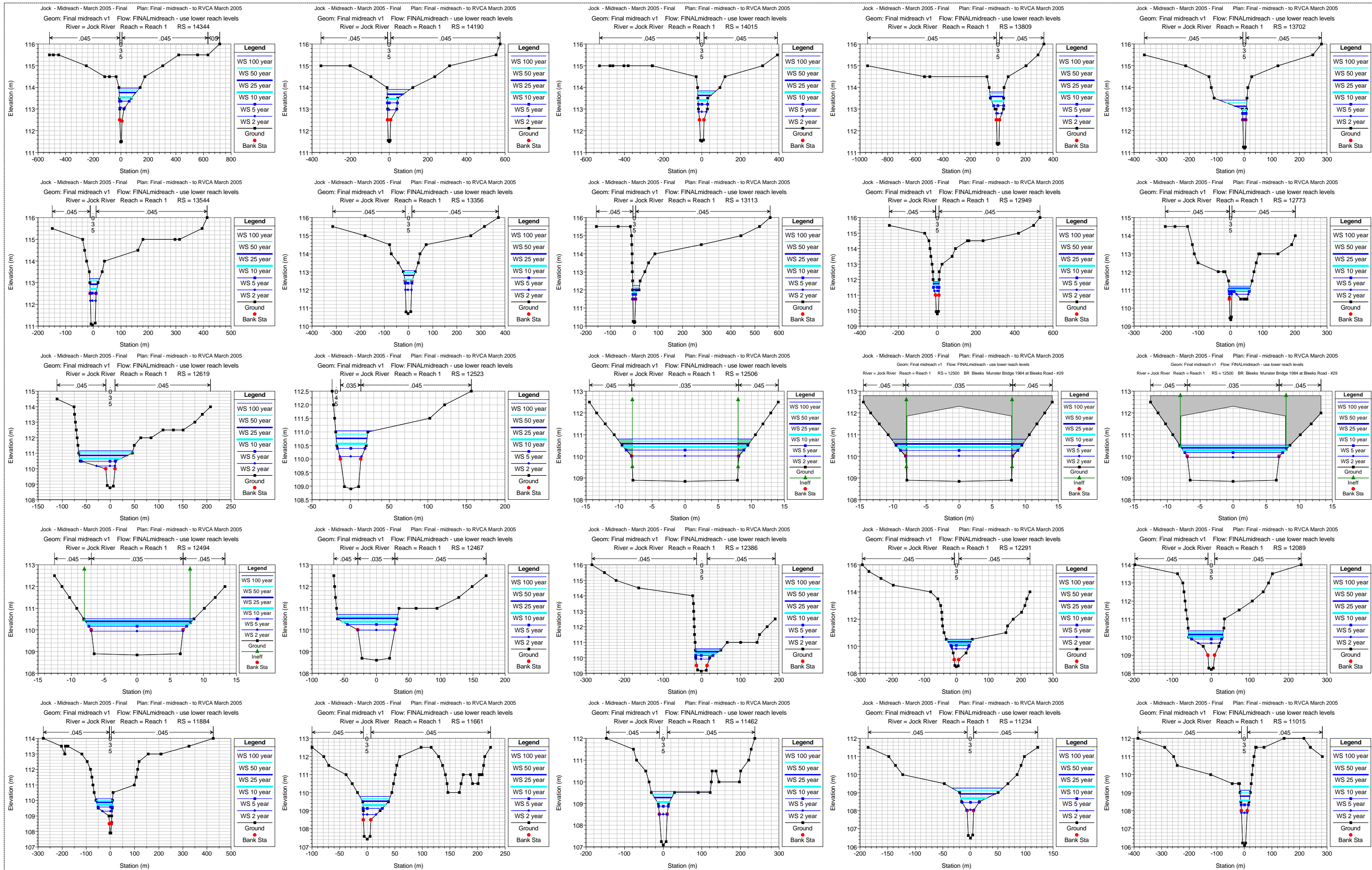
## ● Middle Reach



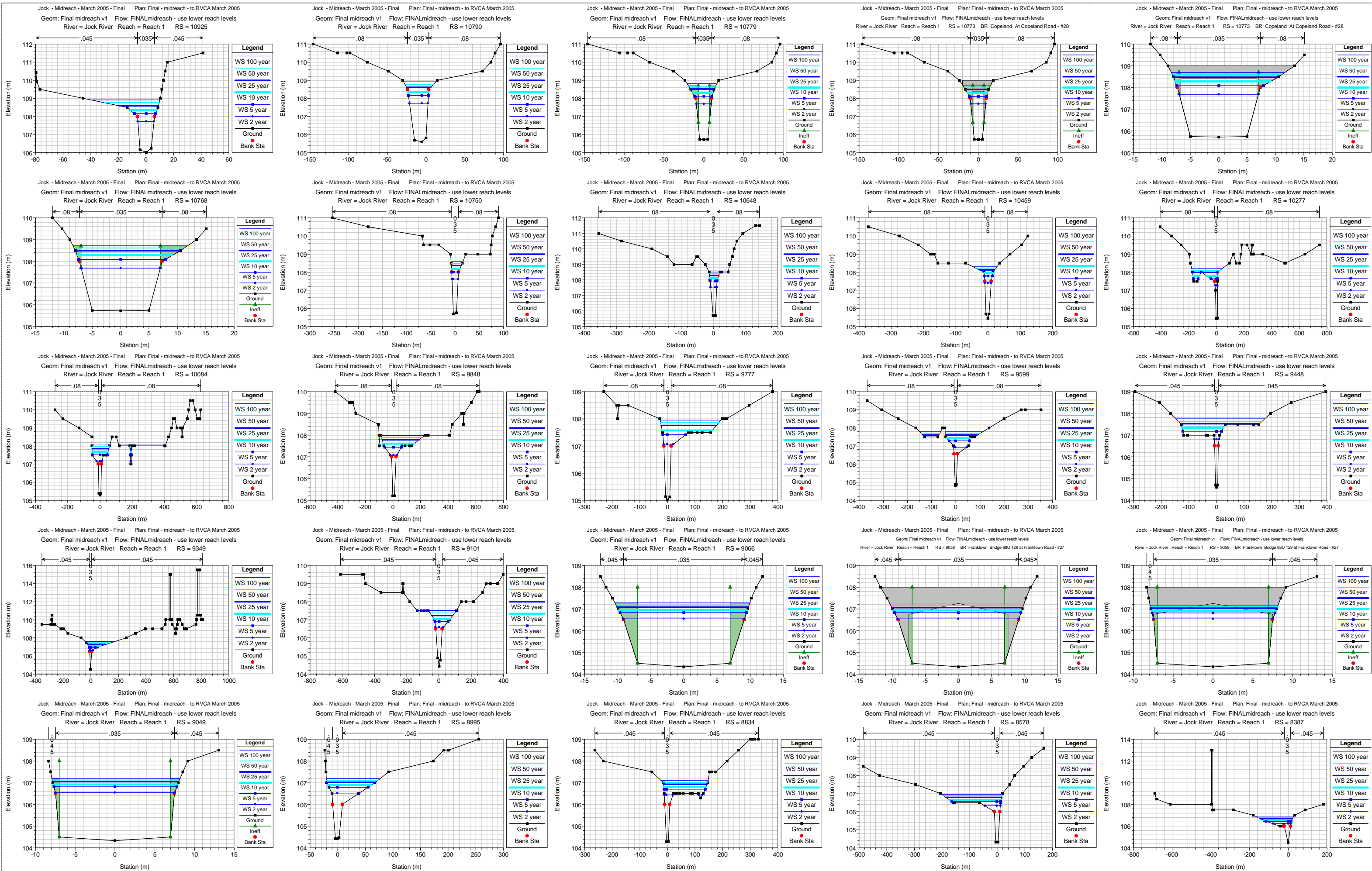


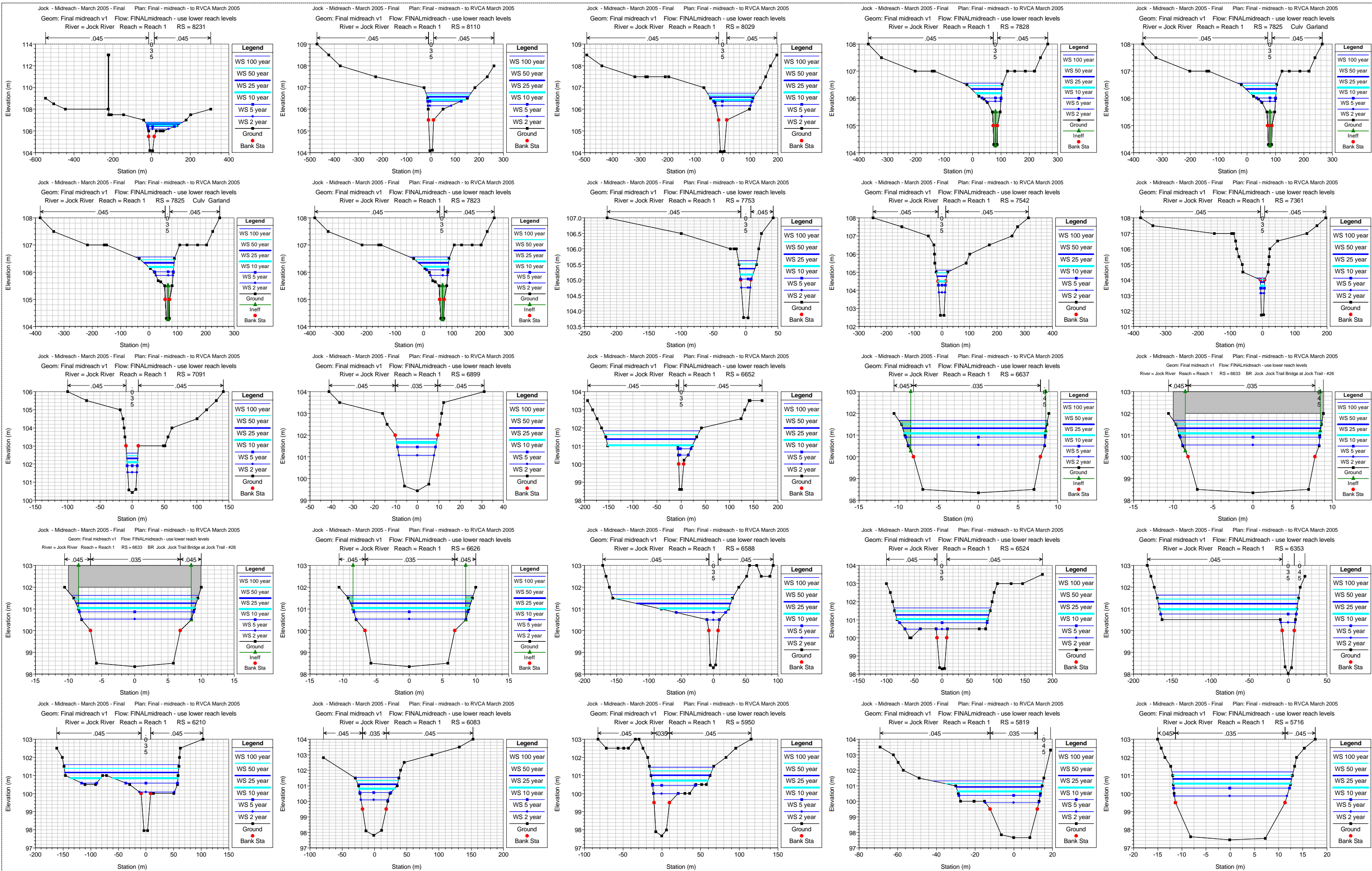




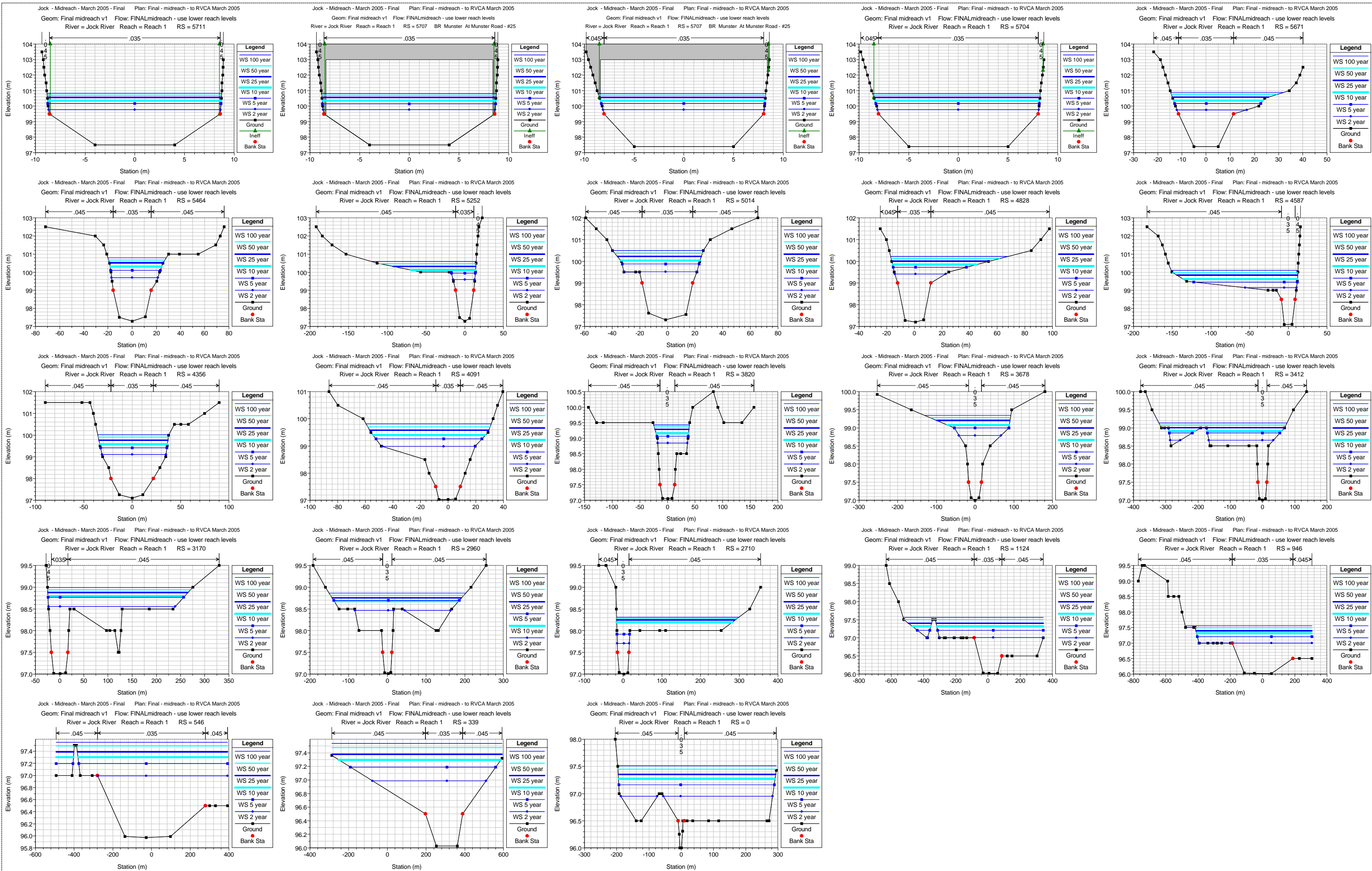














## **Manning's “n”**

Generally an ‘n’ value of 0.030 to 0.035 was used to characterise the smooth rocky nature of the channel; except in steeper parts of the Lower Reach where the large boulders and cobbles present suggest a value of, say, 0.045 to 0.065. The overbanks were characterised as either dense trees and shrub or urban areas; or open fields with crops; and ‘n’ values ranging between 0.075-0.080; and 0.045-.050, respectively, were used.

A sensitivity analysis was undertaken, whereby the “n” value was raised and lowered by 25% in both channel and overbank components of a cross section – for all cross sections in both the lower and middle reaches. The results are illustrated in Figures A1 and A2 respectively.

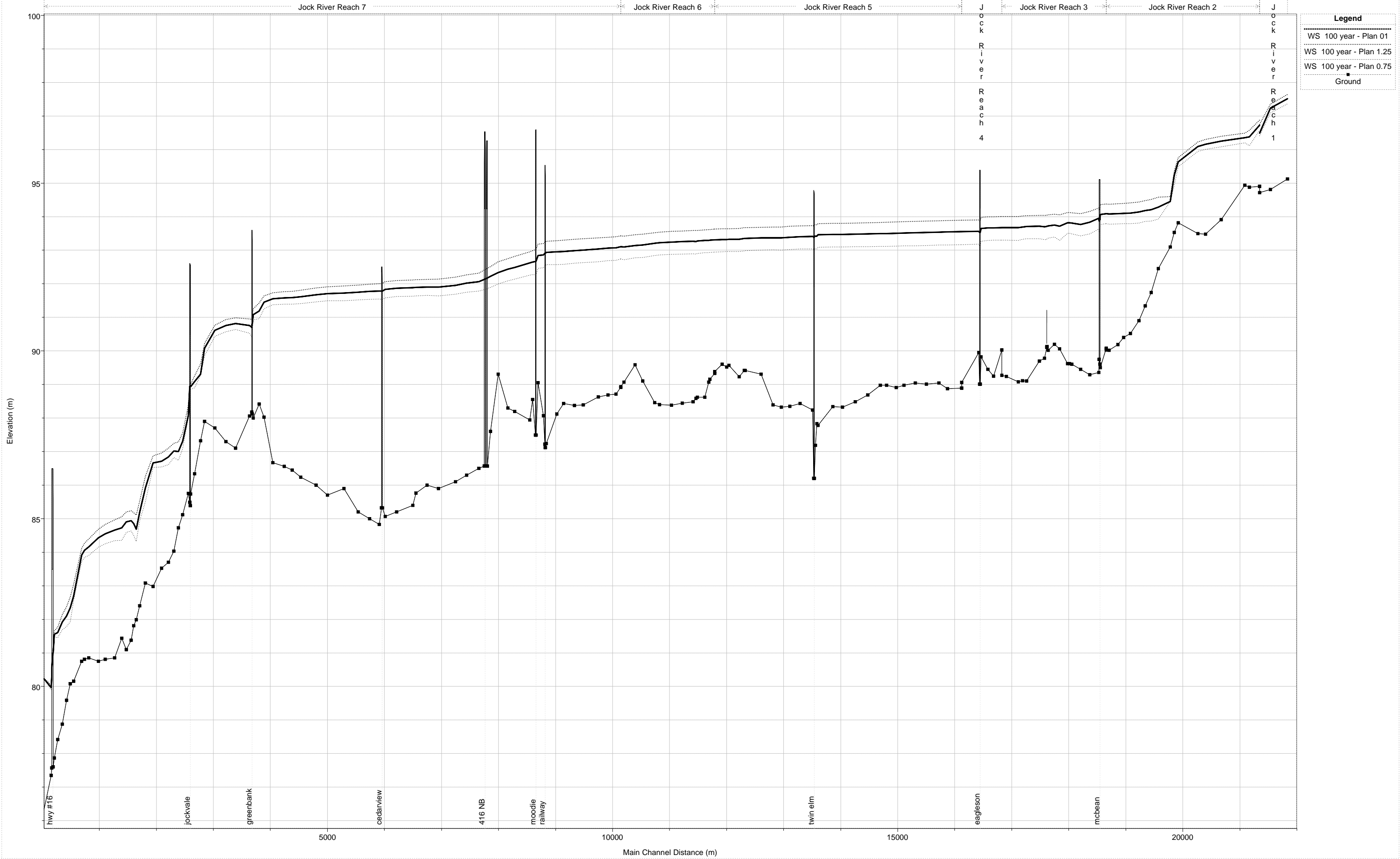
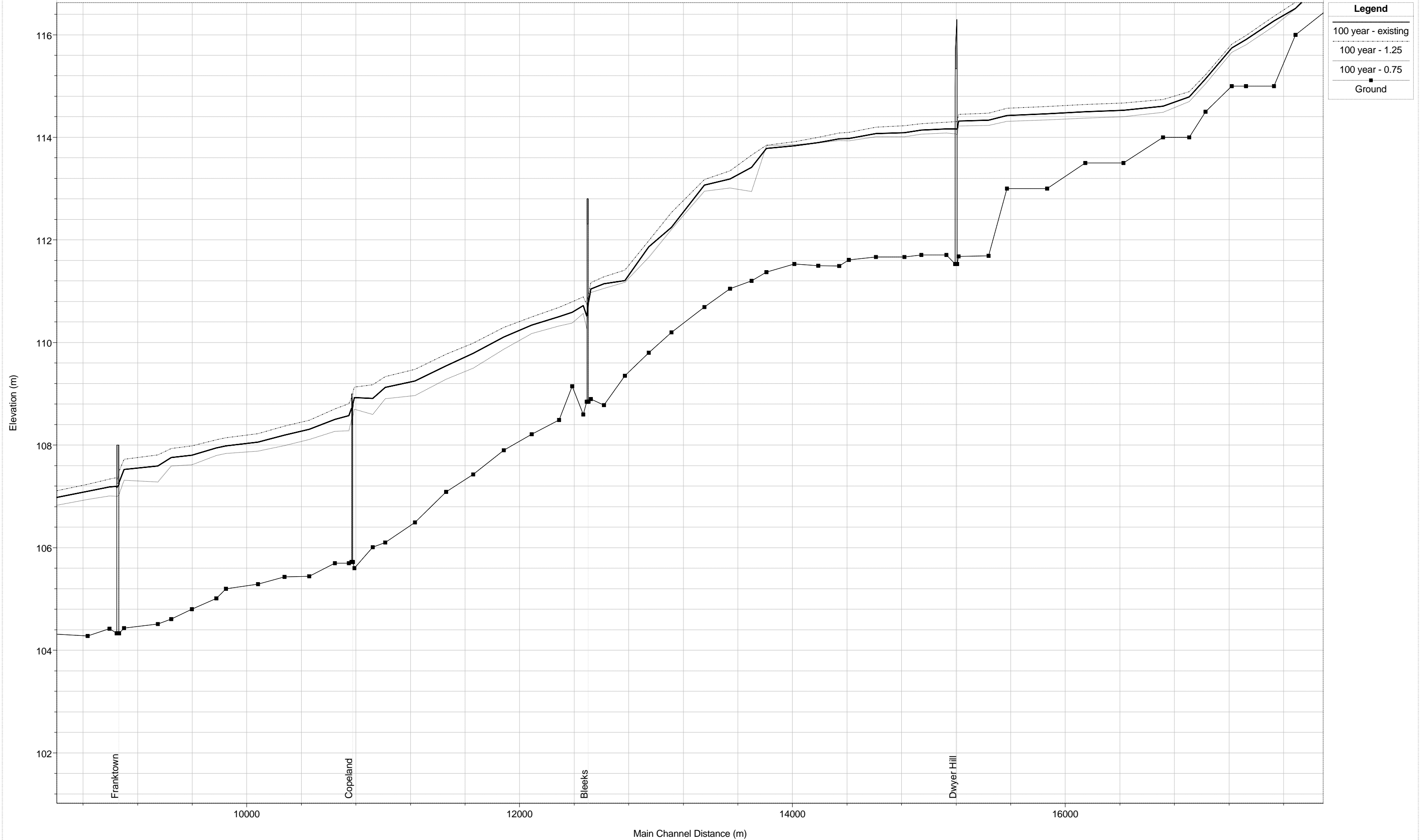


FIGURE A1 - Lower Reach - Manning's "n" Sensitivity

Jock River Reach 1



**Legend**

- 100 year - existing
- 100 year - 1.25
- 100 year - 0.75
- Ground

FIGURE A2 - Middle Reach - Mannings "n" Sensitivity