

Appendix E – Photographical report



Photography 1. Section XS3 upstream, node boundary.



Photography 2. Bridge at Section XS4, view from west to east.



Photography 3. Section XS4 bridge downstream.



Photography 4. Section between XS5 and Bridge XS6, view from west to east.



Photography 5. Section XS8 culvert inlet.



Photography 6. Section XS8 culvert inlet and surface water point of discharge.



Photography 7. Section XS9 culver outlet showing culvert at Section XS10.



Photography 8. Culver inlet at Section XS10.



Photography 9. Section XS11 downstream, culvert outlet.



Photography 10. Section XS12 culvert inlet.



Photography 11. Section XS12 culvert outlet and Section XS13 bridge upstream.



Photography 12. Section XS14 bridge downstream.



Photography 13. Surface water discharge between Section SX14 and Section SX15.



Photography 14. Section XS15 dual culvert inlet.



Photography 16. Section XS16 downstream, culvert outlet.



Photography 17. Section XS17 bridge downstream.



Photography 18. Section XS18 dual culvert inlet.



Photography 19. Section XS19 downstream, culvert outlet.



Photography 20. Surface water discharge between Section XS19 and XS20.



Photography 21. Section XS20 bridge upstream.



Photography 22. Section XS21 downstream.



Photography 23. Surface water discharge points between Section XS21 and XS22.



Photography 24. Section XS22 bridge upstream.



Photography 25. Section XS22 bridge downstream.



Photography 26. Section XS24 bridge downstream, showing the XS25 culvert inlet.



Photography 27. Section XS27 Linkwood road bridge upstream.



Photography 28. Section XS28 Linkwood road bridge downstream.



Photography 29. Tyock Burn nearby upstream Section XS29. View from downstream to upstream.



Photography 30. Section XS29 upstream, Ashgrove Road culvert inlet.



Photography 31. Section XS30 downstream, Ashgrove Road culvert outlet.



Photography 32. Surface water discharge between Section XS31 and XS31.



Photography 33. Tyock Burn at Nicol-Togneri Park.



Photography 34. Section XS31, East road bridge upstream.



Photography 35. Section XS32, East road bridge downstream.



Photography 36. Section XS33, Moycroft road culvert, view from the bridge to upstream.



Photography 37. Section XS34, Moycroft road culvert, view from the bridge to downstream.



Photography 38. Section XS35 culvert outlet.



Photography 39. Section XS36 downstream, node boundary.



Photography 40. View from north to south at the east end of Fairfield Avenue showing the higher ground at the central part of the site.



Photography 41. View from south to north at the east end of Fairfield Avenue showing the ground levels falling and raising again at the proximity of the existing railway tracks.



Photography 42. View from west to east at the south side of the Fairfield Avenue residential units showing the higher ground at the central part of the site falling north.



Photography 43. View from west to east at the Mayne Road bridge showing levels raising, south to north, at the proximity of the railway tracks and the low area at the east site boundary.



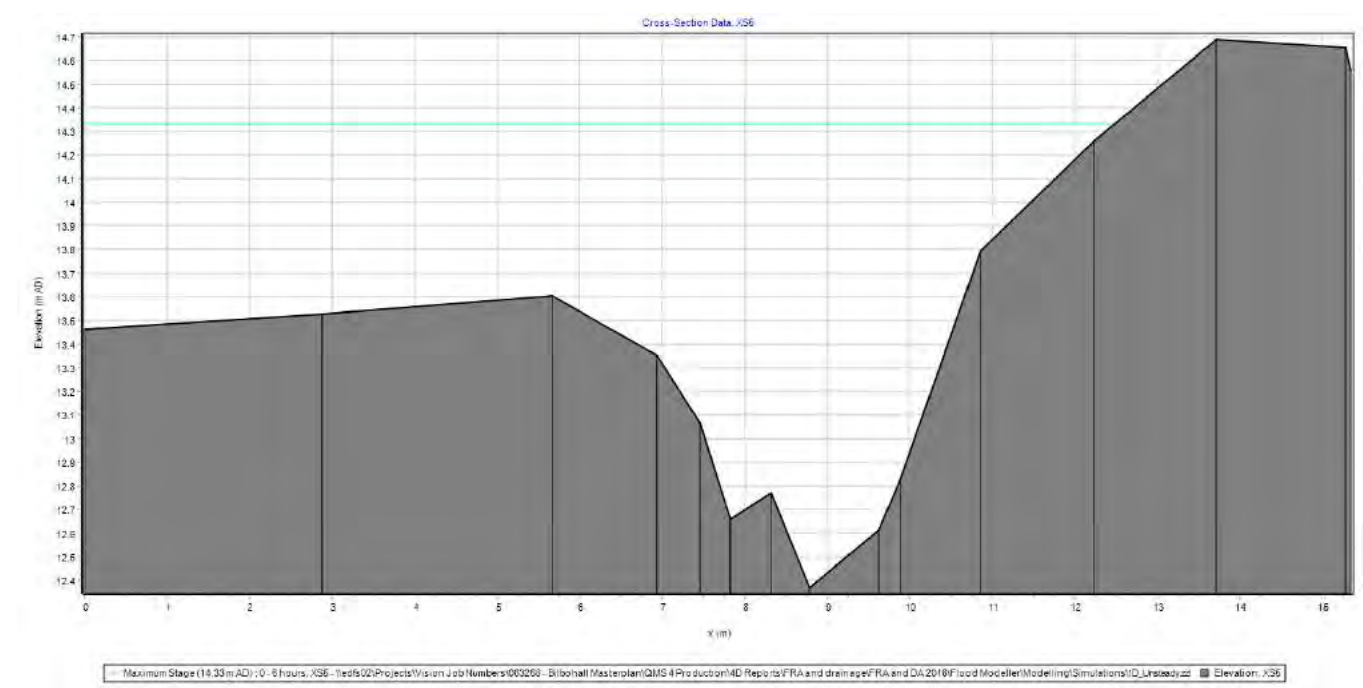
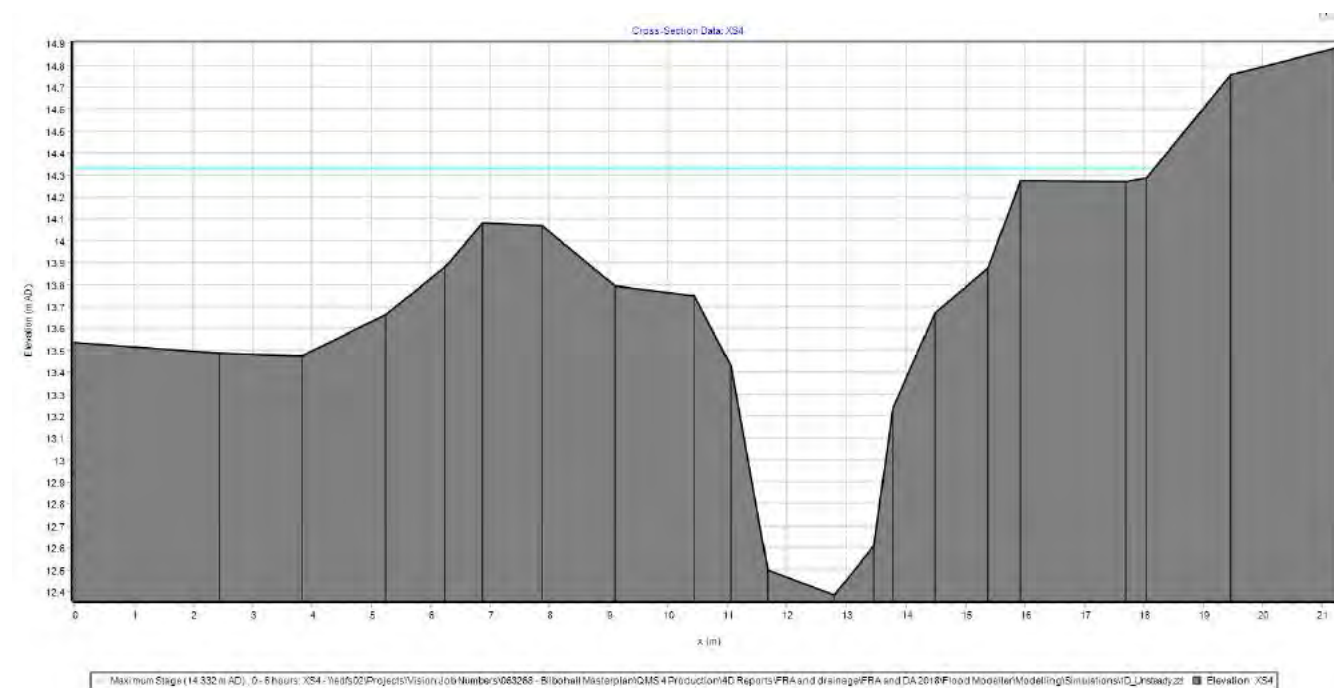
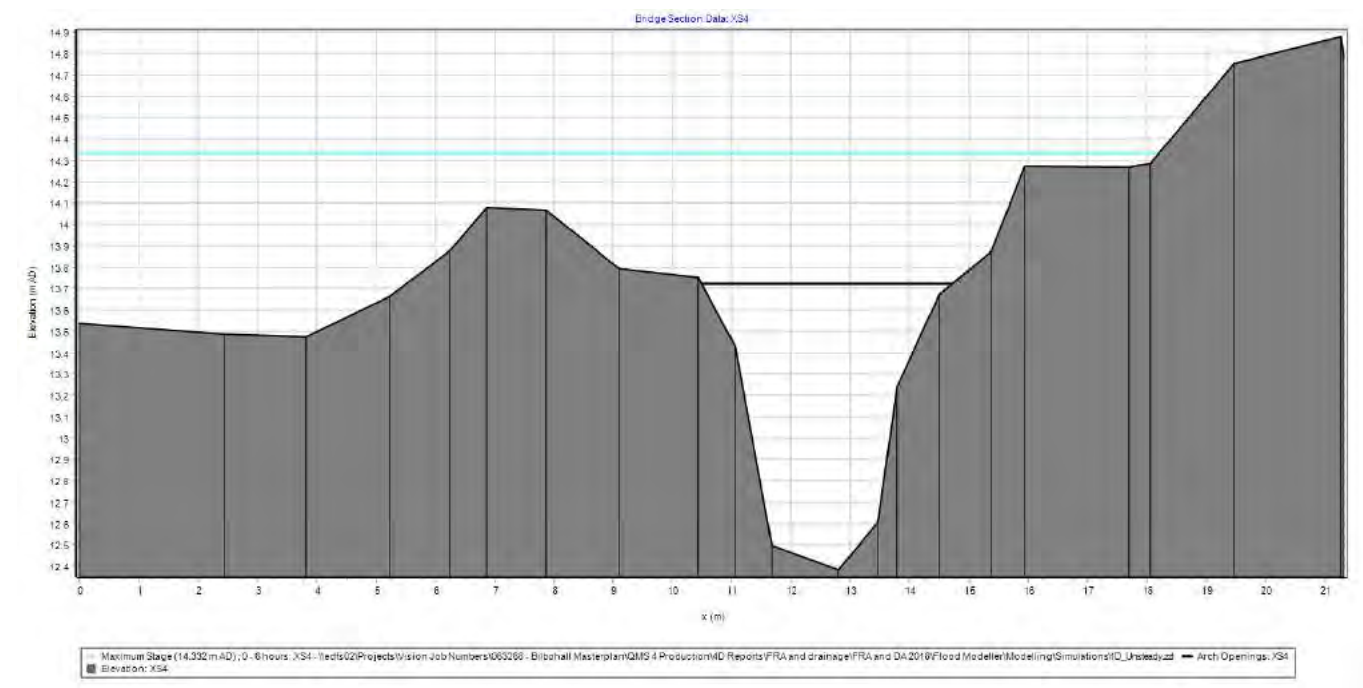
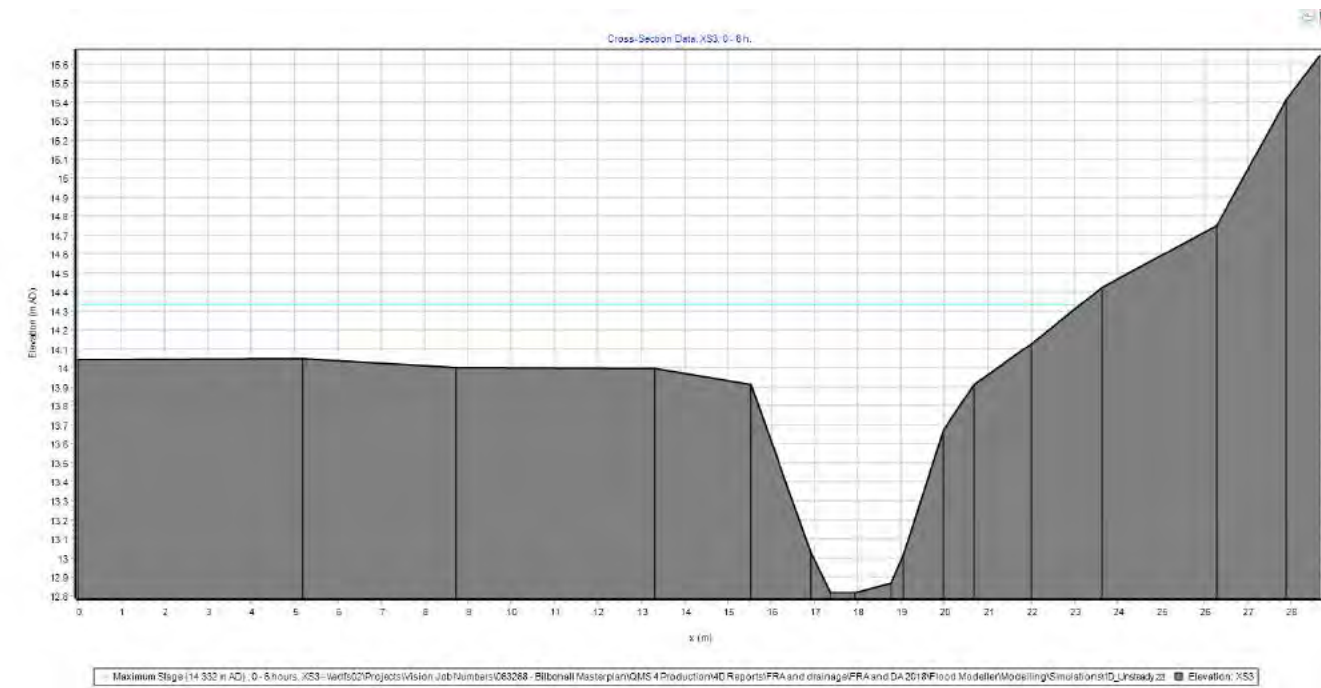
Photography 44. View from west to east at the Mayne Road bridge showing levels raising, south to north, at the proximity of the railway tracks and the low area at the east site boundary.

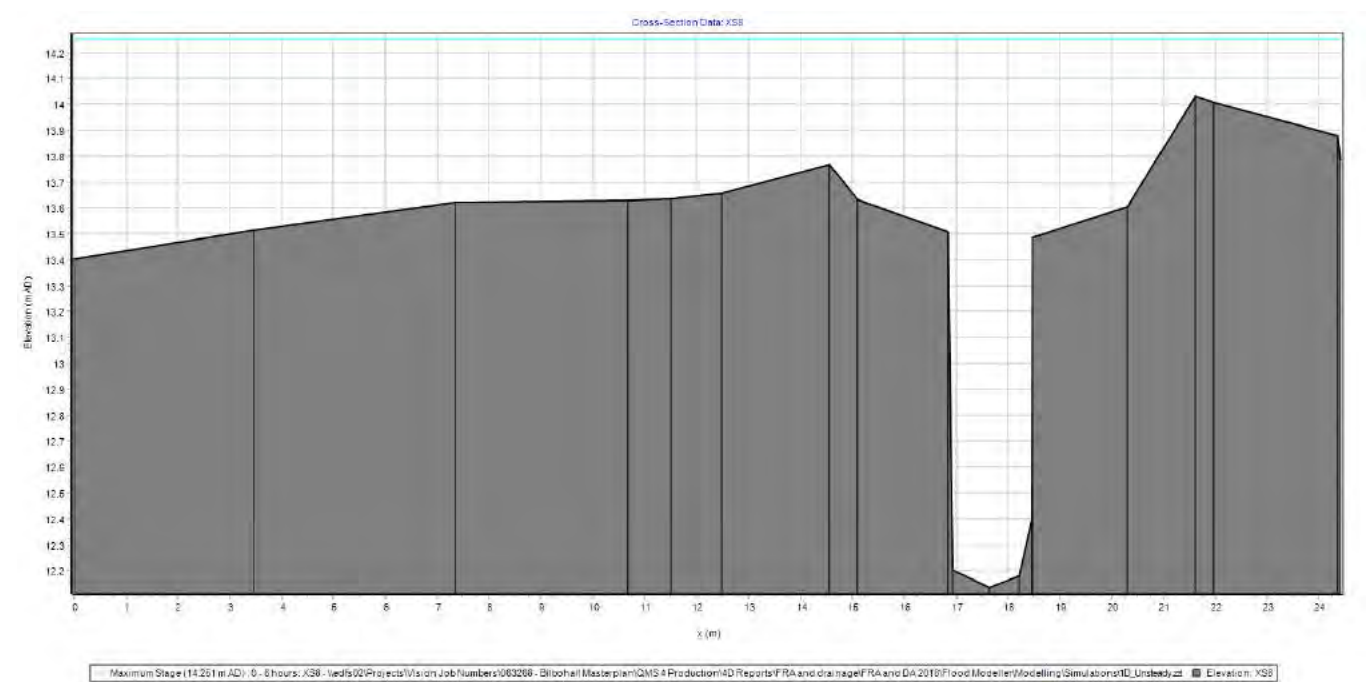
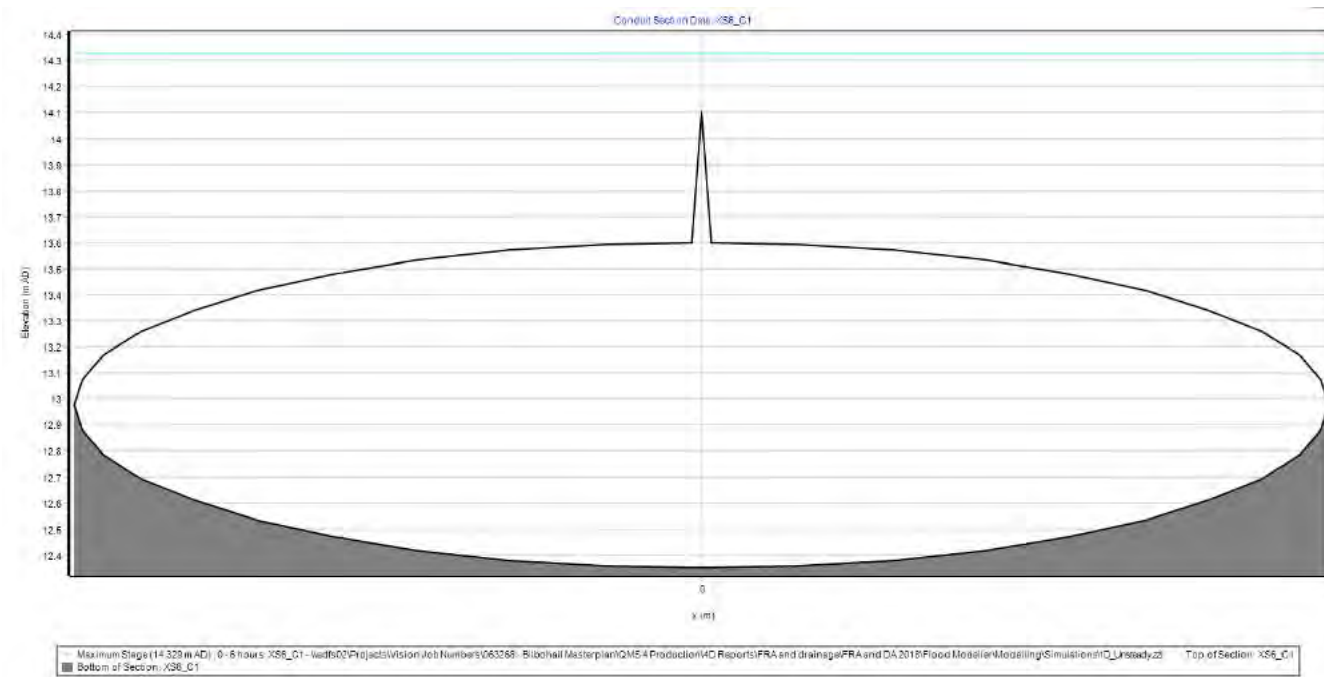
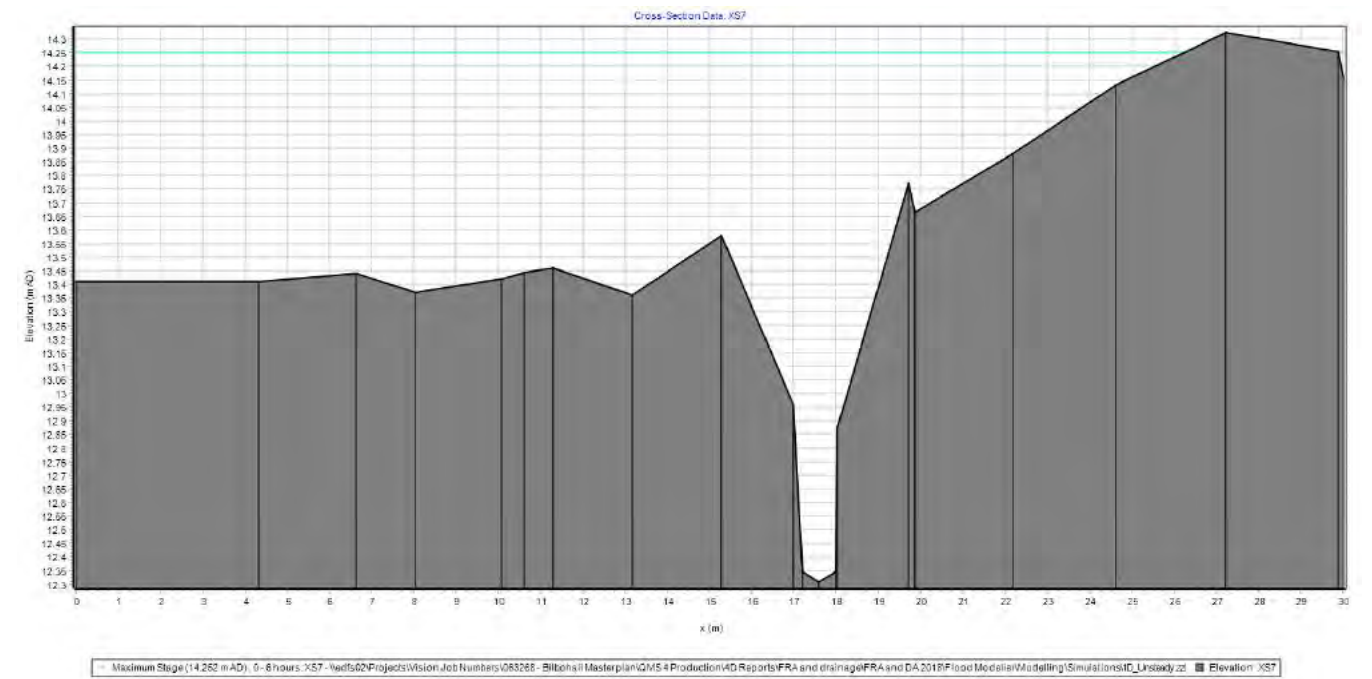
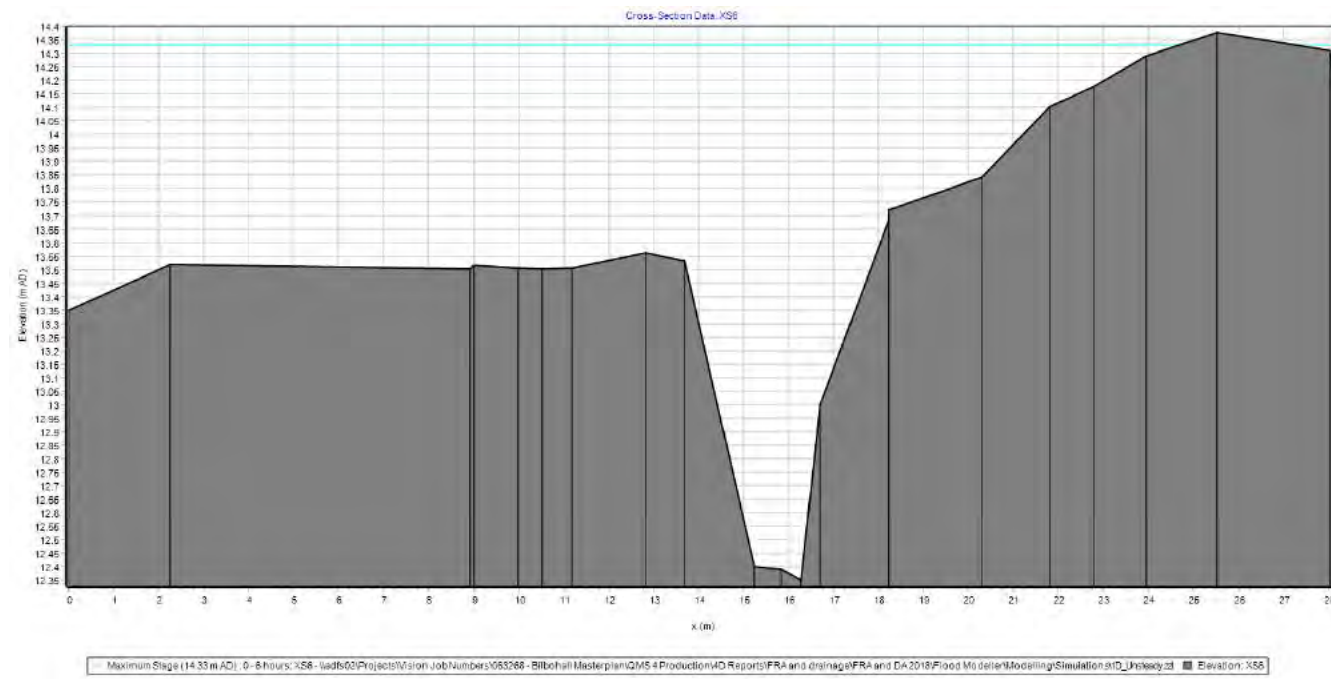


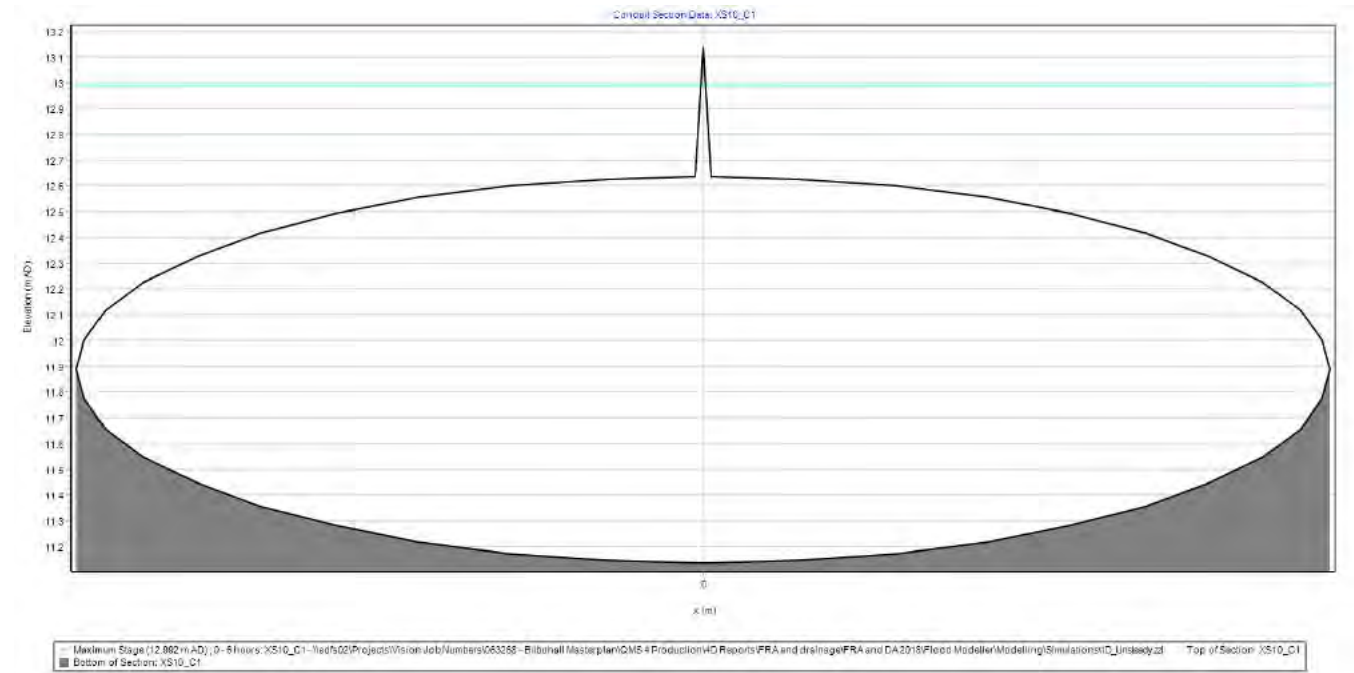
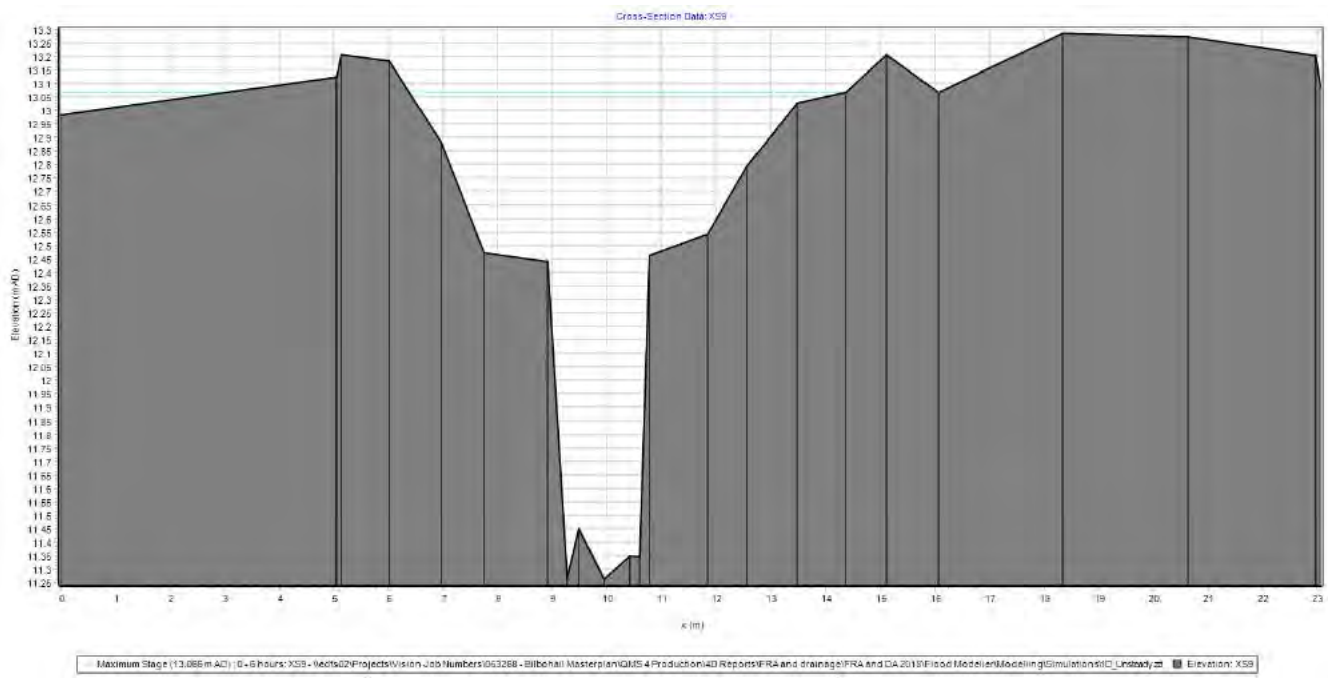
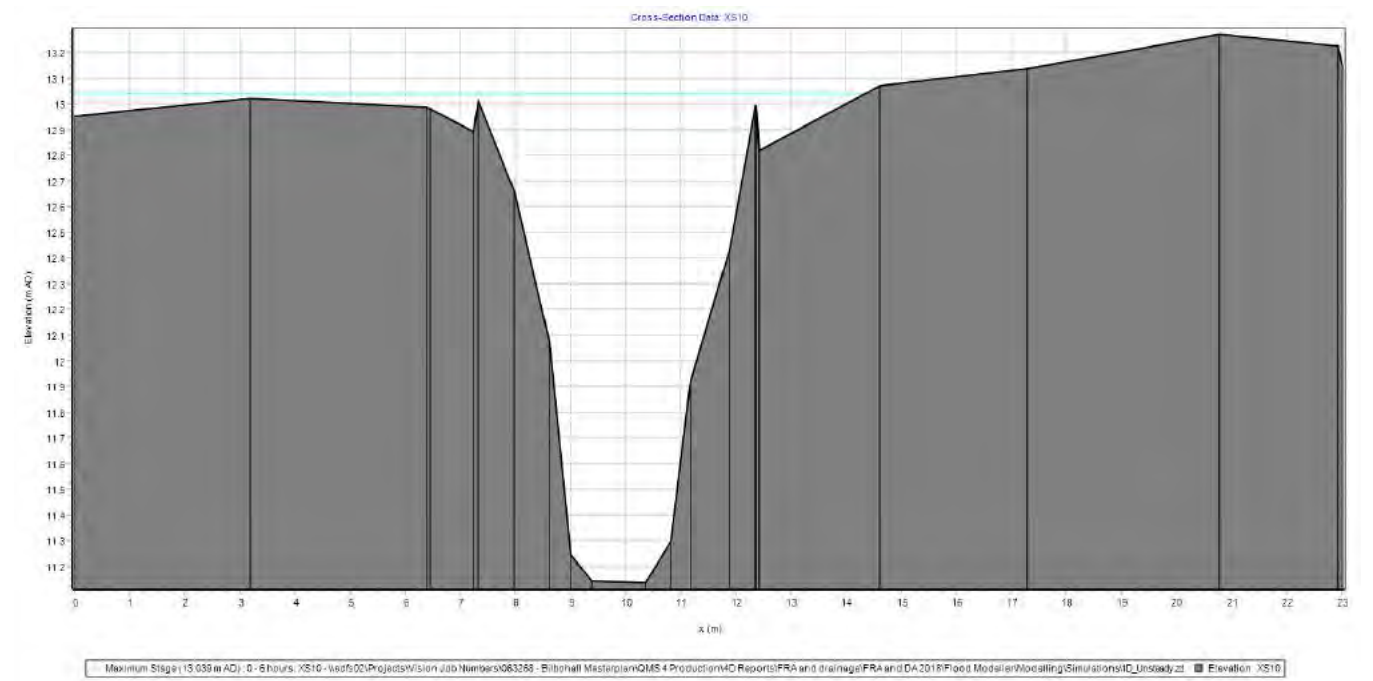
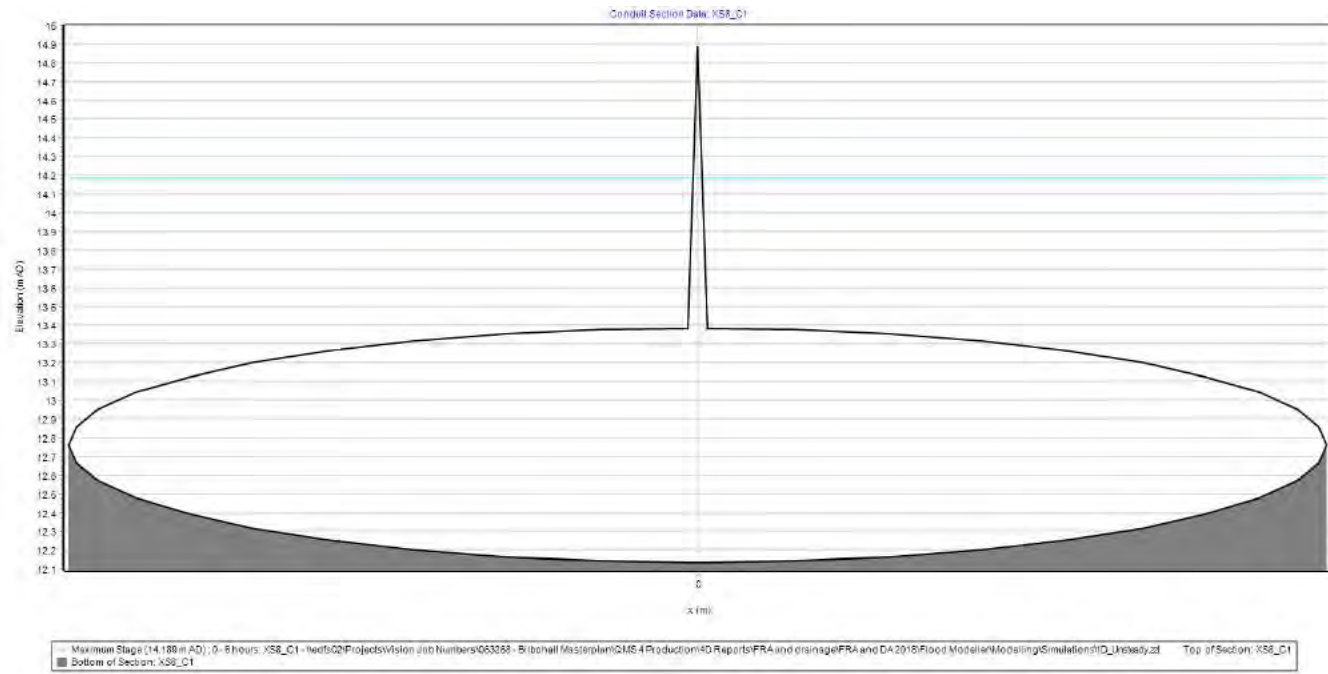
Photography 45. View from west to east at the Mayne Road bridge showing levels raising, south to north, at the proximity of the railway tracks and the low area at the east site boundary.

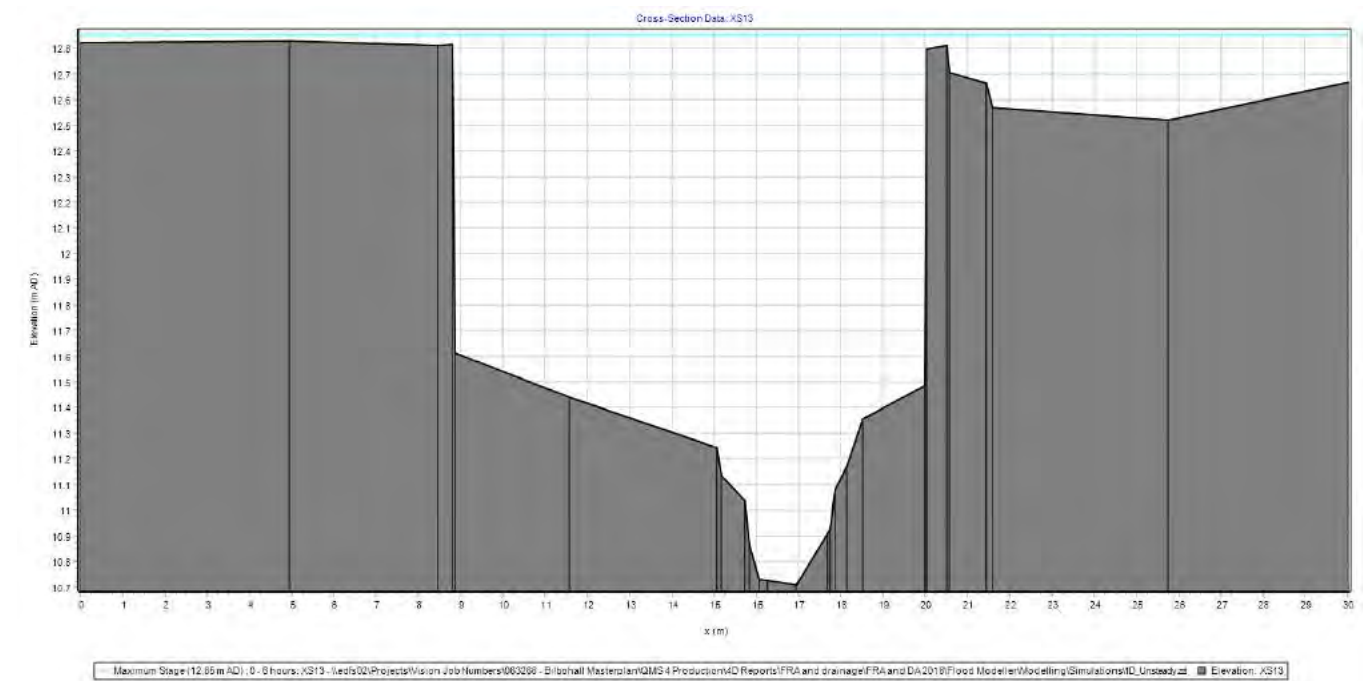
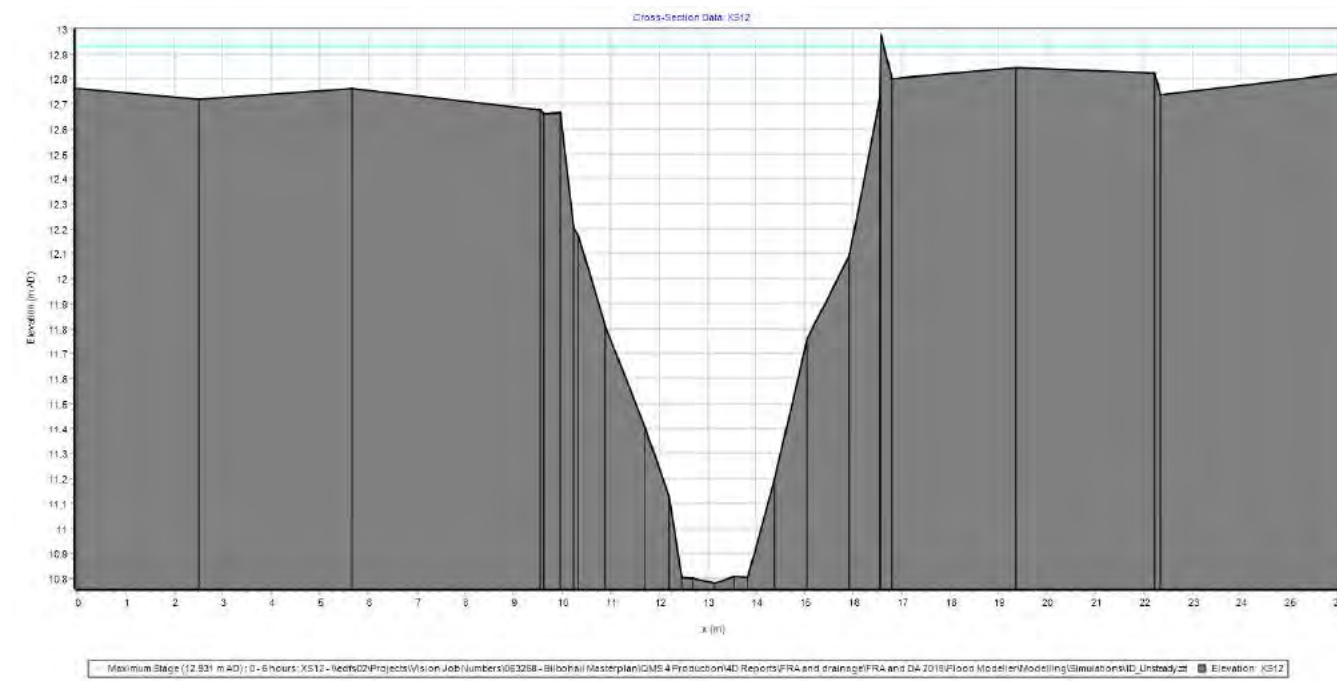
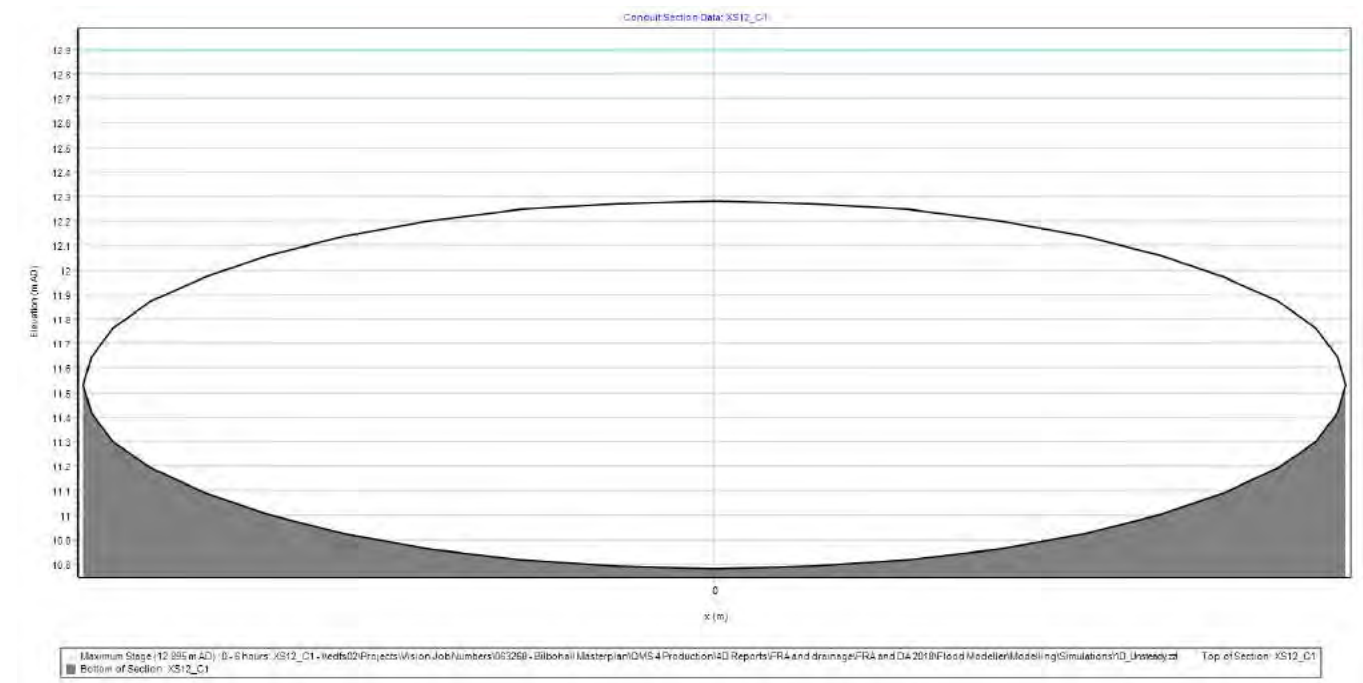
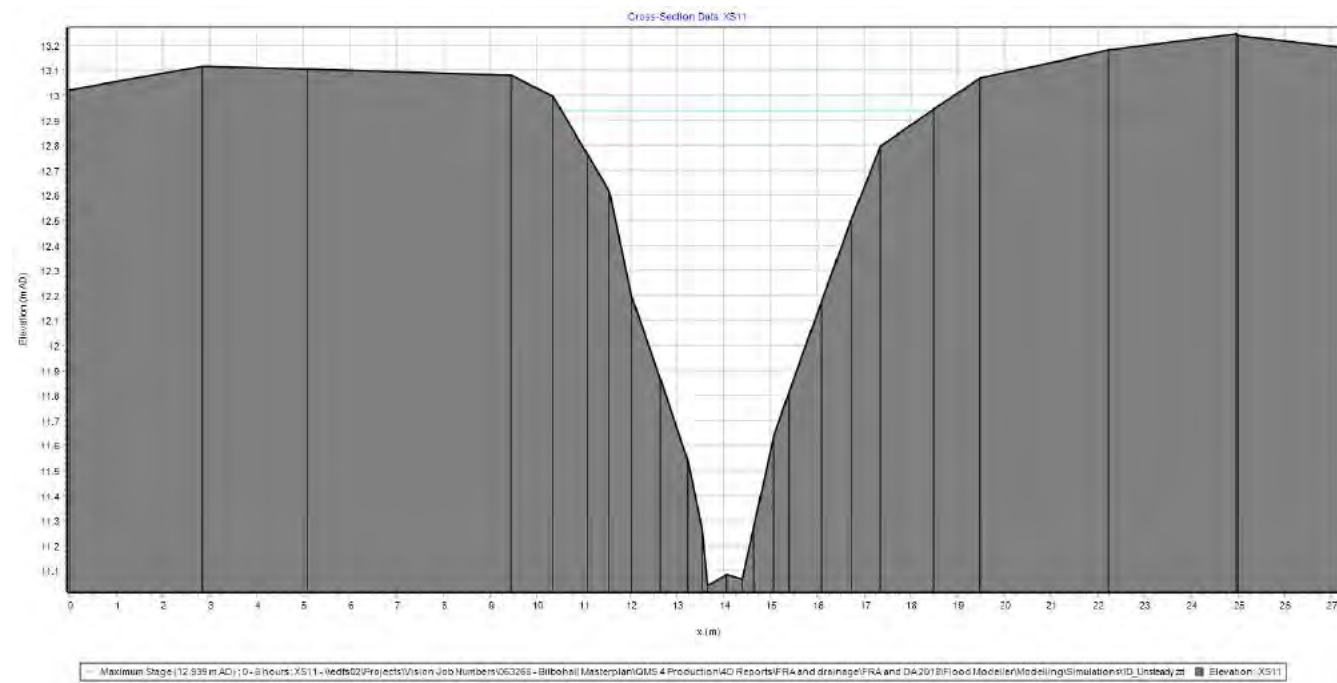
Appendix F – Tyock Burn, Pre development scenario.1 in 200 year event + 20% Climate Change Results

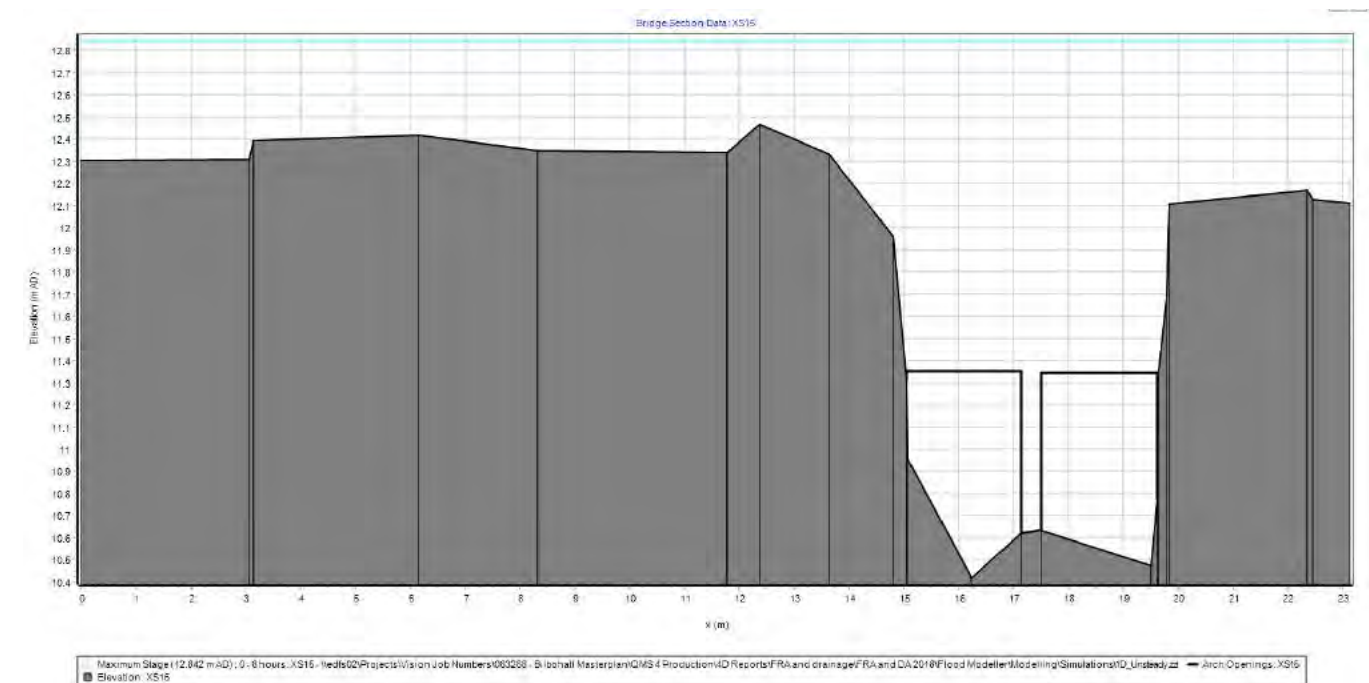
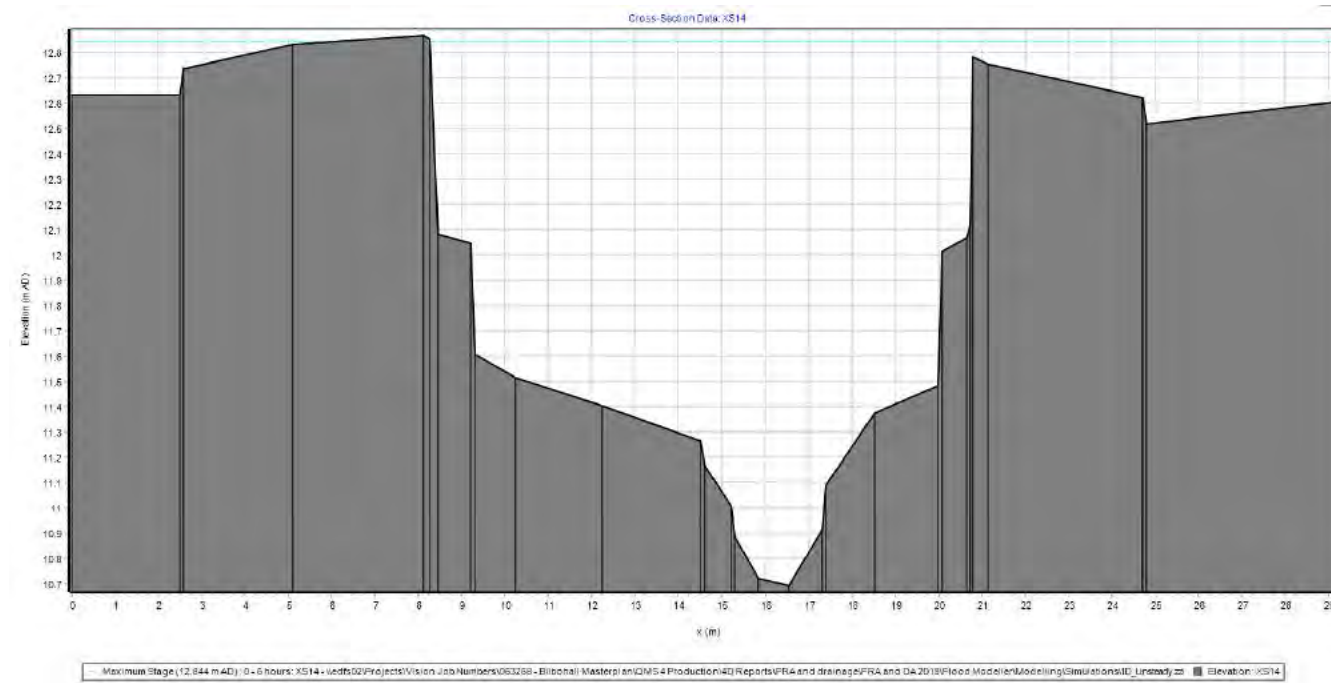
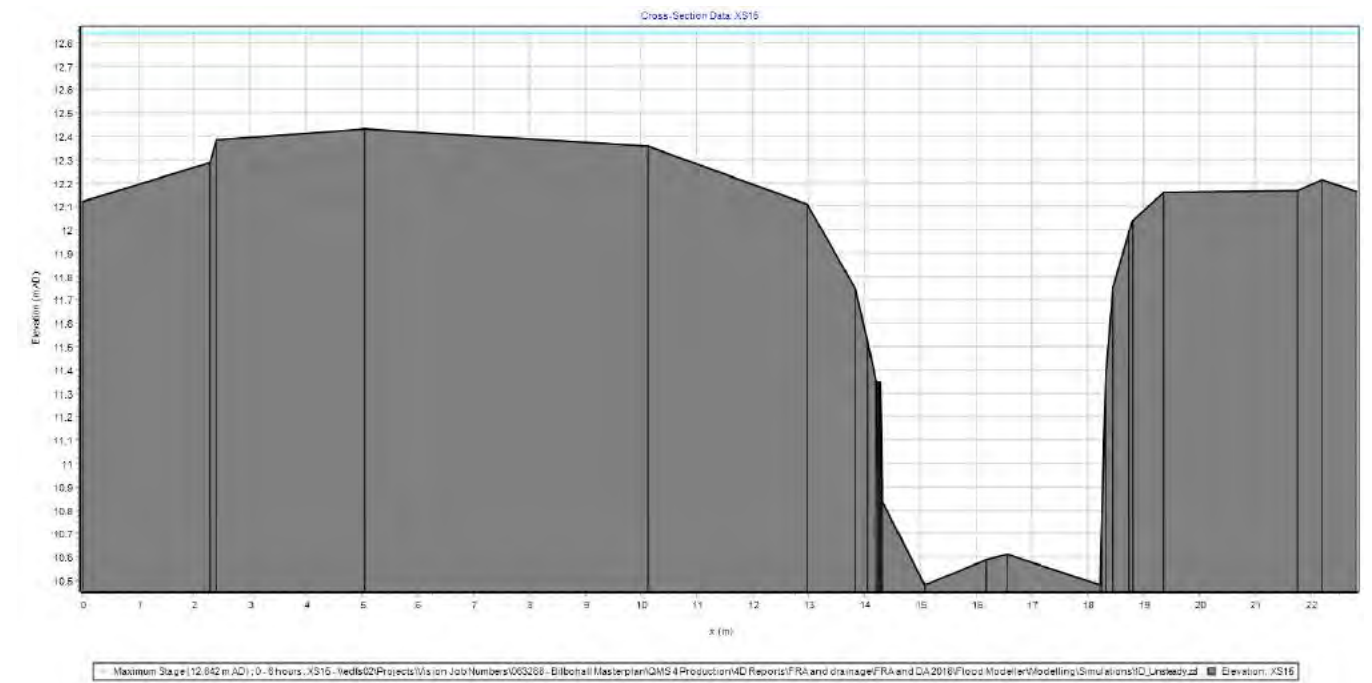
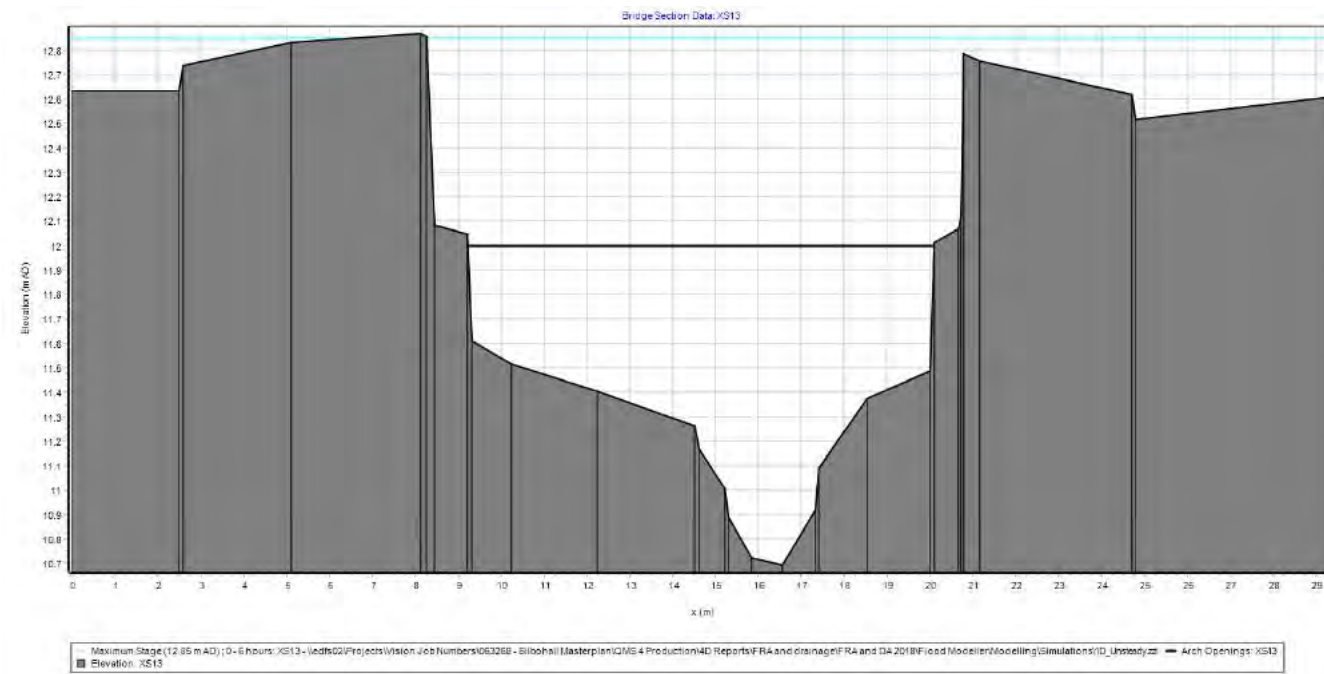
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XS3	14.332	1.667	12.875	4.583	13.232	0.649	1.083	0.025	0.000	0.132
XS4	14.332	1.667	12.624	5.417	13.081	1.315	1.250	-0.519	1.167	0.133
XS5	14.331	1.667	12.595	5.333	13.062	1.245	1.250	-0.824	1.167	0.133
XS6	14.331	1.667	12.513	5.417	13.014	0.802	2.250	-1.379	1.167	0.134
XS6_C1	14.329	1.667	12.508	5.500	13.011	0.802	2.250	-1.379	1.167	0.134
XS6_C2	14.257	1.583	12.505	5.500	12.941	0.802	2.250	-1.379	1.167	0.134
XS7	14.253	1.583	12.498	5.417	12.932	1.676	1.250	-0.418	1.167	0.324
XS8	14.252	1.583	12.359	5.083	12.819	1.486	2.000	0.050	5.083	0.326
XS8_C1	14.189	1.583	12.266	5.083	12.696	2.387	1.417	0.075	5.083	0.690
XS8_C2	13.136	1.750	11.493	4.917	11.977	2.400	1.167	0.075	4.917	0.691
XS9	13.066	1.833	11.473	4.917	11.930	2.400	1.167	0.075	4.917	0.691
XS10	13.039	1.833	11.351	4.917	11.834	2.350	1.417	0.075	4.917	0.692
XS10_C1	12.992	1.833	11.290	4.917	11.782	2.350	1.417	0.075	4.917	0.692
XS10_C2	12.987	1.833	11.297	4.917	11.783	2.350	1.417	0.075	4.917	0.692
XS11	12.940	1.833	11.238	4.917	11.718	2.350	1.417	0.075	4.917	0.692
XS12	12.932	1.833	10.996	5.000	11.564	2.256	1.417	0.075	5.000	0.693
XS12_C1	12.897	1.917	10.932	5.000	11.508	2.256	1.417	0.075	5.000	0.693
XS12_C2	12.886	1.917	10.923	5.000	11.500	2.256	1.417	0.075	5.000	0.693
XS13	12.851	1.917	10.865	6.000	11.445	2.236	1.417	0.075	5.000	0.693
XS14	12.845	1.917	10.866	6.000	11.444	2.236	1.417	0.075	5.000	0.693
XS15	12.843	1.917	10.691	6.000	11.349	2.148	2.000	0.075	4.083	0.694
XS16	12.772	1.833	10.692	6.000	11.335	2.148	2.000	0.075	4.083	0.694
XS17	12.769	1.833	10.644	6.000	11.307	2.282	2.083	0.075	4.000	0.696
XS17B	12.687	1.833	10.642	6.000	11.289	2.282	2.083	0.075	4.000	0.696
XS18	12.685	1.833	10.564	6.000	11.251	2.513	2.250	0.071	0.417	0.698
XS19	12.622	1.750	10.564	6.000	11.235	2.513	2.250	0.071	0.417	0.698
XS20	12.621	1.750	10.540	6.000	11.225	2.619	2.250	0.020	0.500	0.699
XS21	12.545	1.667	10.541	6.000	11.204	2.619	2.250	0.020	0.500	0.699
XS22	12.536	1.667	10.494	6.000	11.158	4.319	1.167	0.097	3.917	1.394
XS23	12.257	1.750	10.494	6.000	11.093	4.319	1.167	0.097	3.917	1.394
XS24	12.226	1.833	10.211	3.917	10.876	3.889	1.583	0.096	3.917	1.397
XS24B	12.162	1.833	10.211	3.917	10.863	3.889	1.583	0.096	3.917	1.397
XS25	12.144	1.833	9.918	6.000	10.688	3.774	1.833	0.100	6.000	1.398
XS25_C1	12.118	1.833	9.912	6.000	10.670	3.774	1.833	0.100	6.000	1.398
XS25_C2	11.682	1.833	9.855	6.000	10.523	3.775	1.833	0.101	6.000	1.407
XS26(B)	11.647	1.833	9.853	6.000	10.507	3.775	1.833	0.101	6.000	1.407
XS27	11.600	1.750	9.419	6.000	10.298	3.995	2.167	0.101	6.000	1.414
XS28	11.436	1.750	9.417	6.000	10.252	3.995	2.167	0.101	6.000	1.414
XS29	11.267	1.750	9.139	6.000	10.015	5.372	1.250	0.127	6.000	1.955
XS30	11.161	1.833	9.138	6.000	9.982	5.372	1.250	0.127	6.000	1.955
XS31	11.028	1.833	8.684	6.000	9.687	5.903	1.667	0.153	6.000	2.354
XS32	10.931	1.917	8.688	6.000	9.661	5.903	1.667	0.153	6.000	2.354
XS33	10.915	1.917	8.526	6.000	9.596	5.837	1.833	0.154	6.000	2.356
XS34	10.526	1.917	8.531	6.000	9.492	5.837	1.833	0.154	6.000	2.356
XS34B	10.220	2.000	7.603	6.000	9.056	5.757	2.000	0.159	6.000	2.375
XS34_C1	10.181	2.000	7.512	6.000	9.031	5.757	2.000	0.159	6.000	2.375
XS34_C2	10.135	2.000	7.309	6.000	9.008	5.757	2.000	0.180	6.000	2.391
XS35	10.107	2.000	7.305	6.000	8.998	5.757	2.000	0.180	6.000	2.391
XS36	10.105	2.000	7.303	6.000	8.996	5.757	2.000	0.180	6.000	2.391

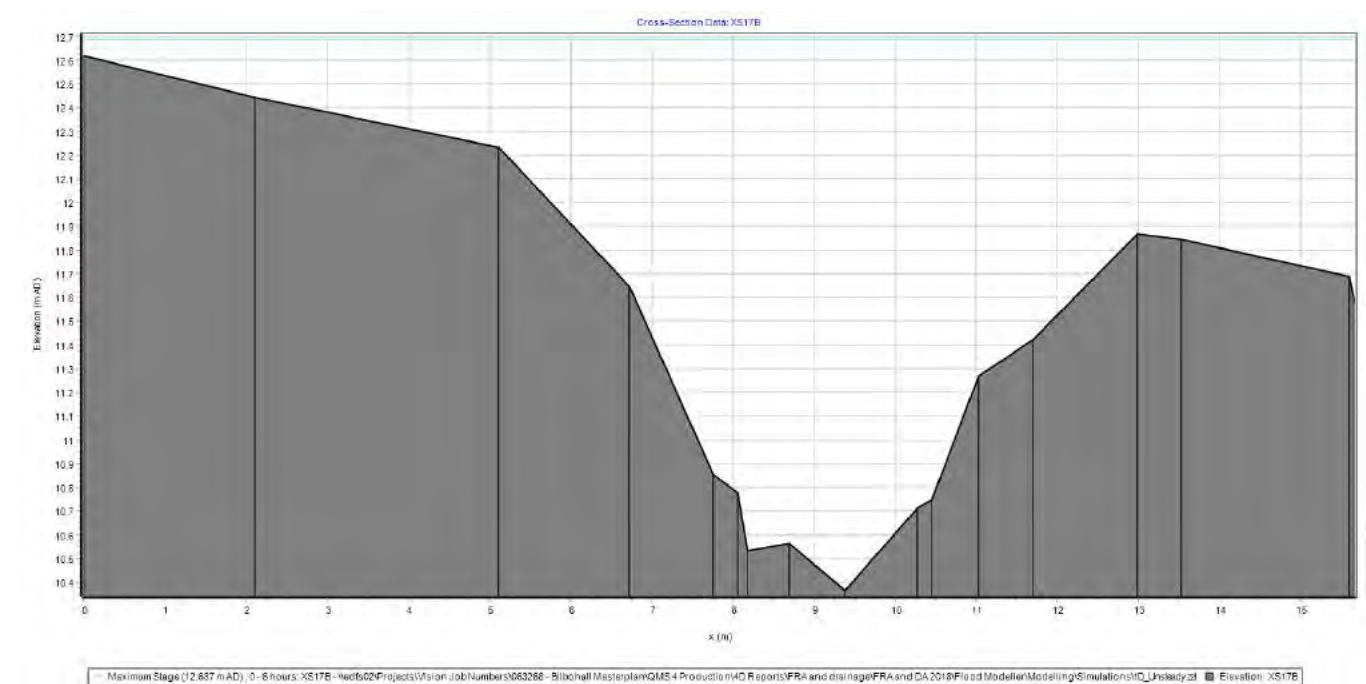
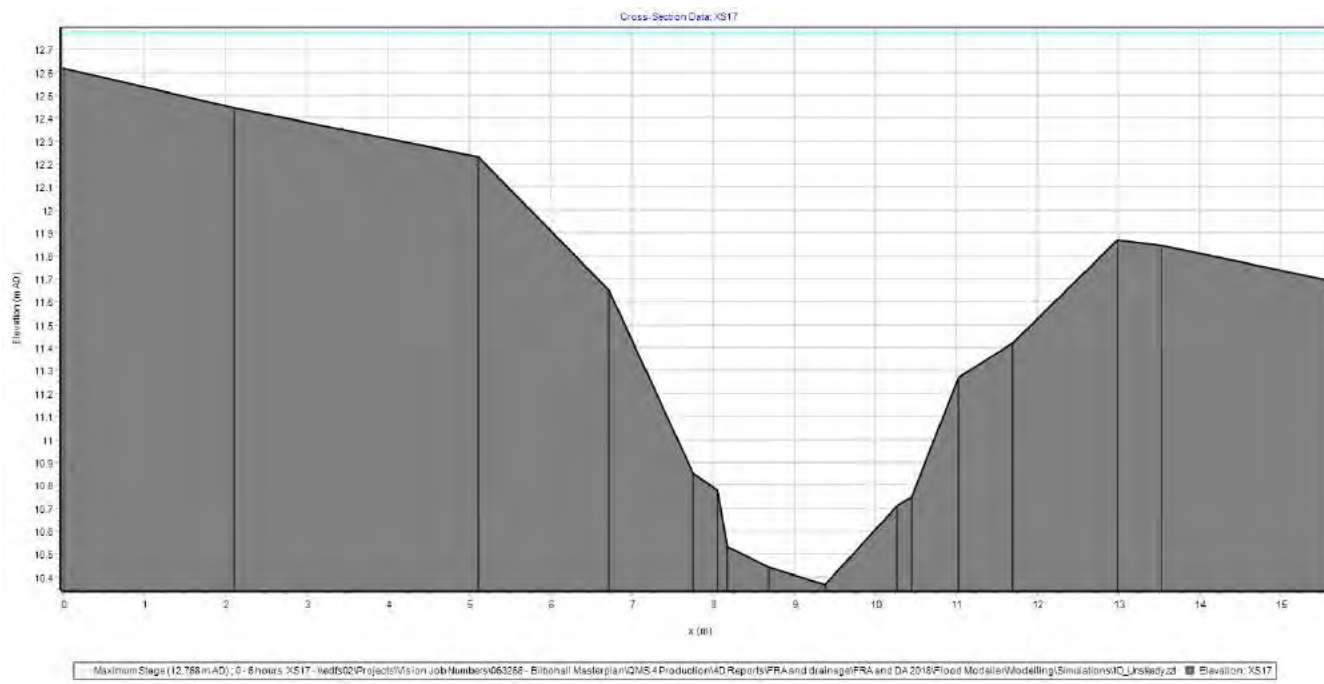
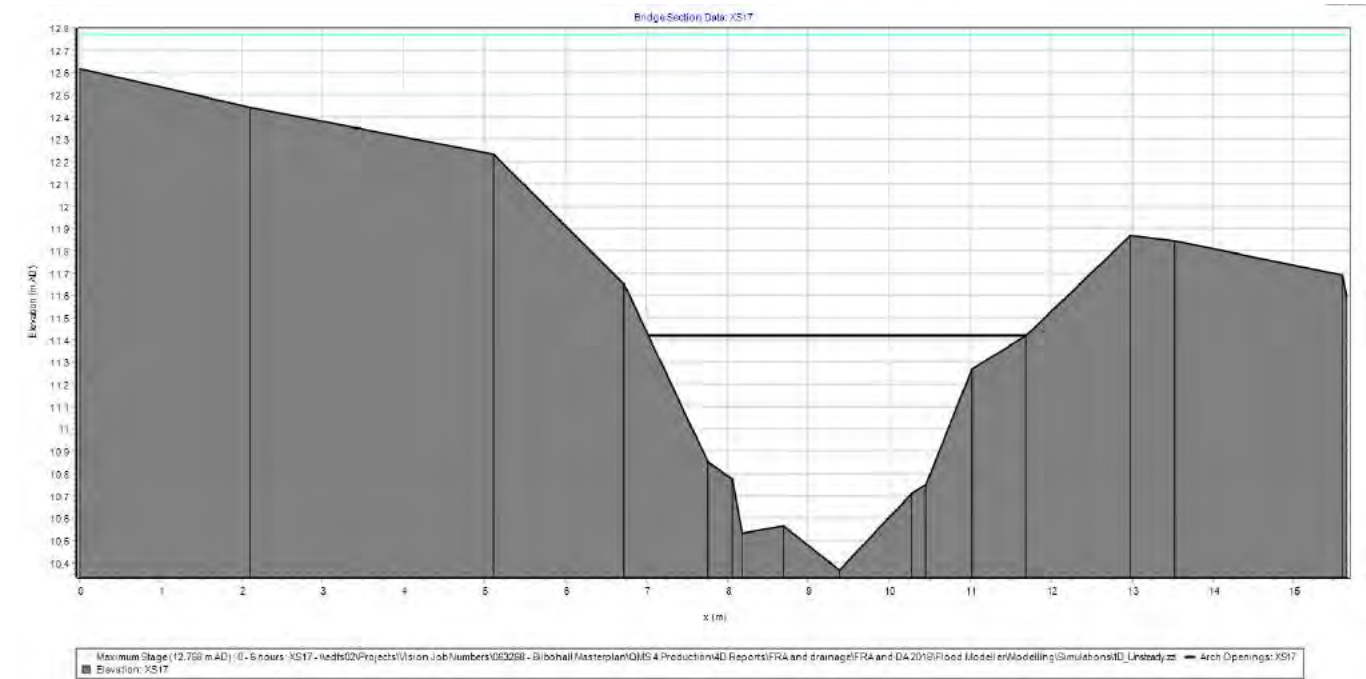
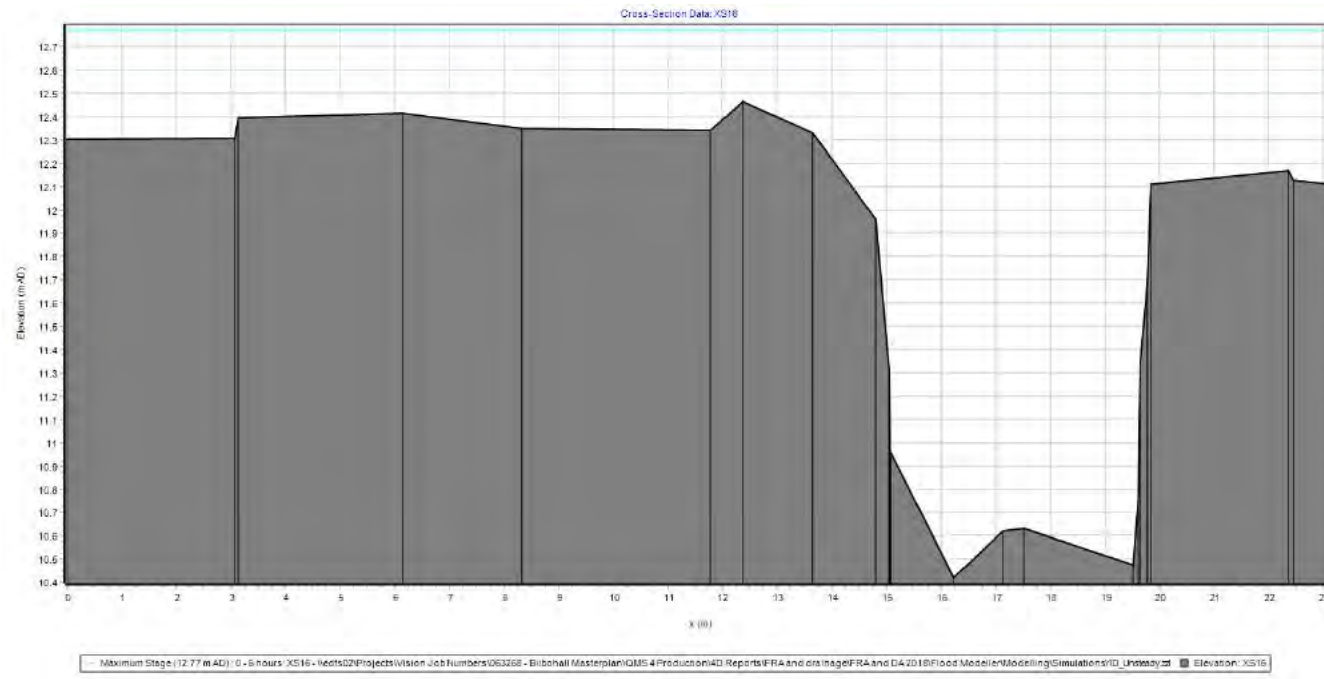


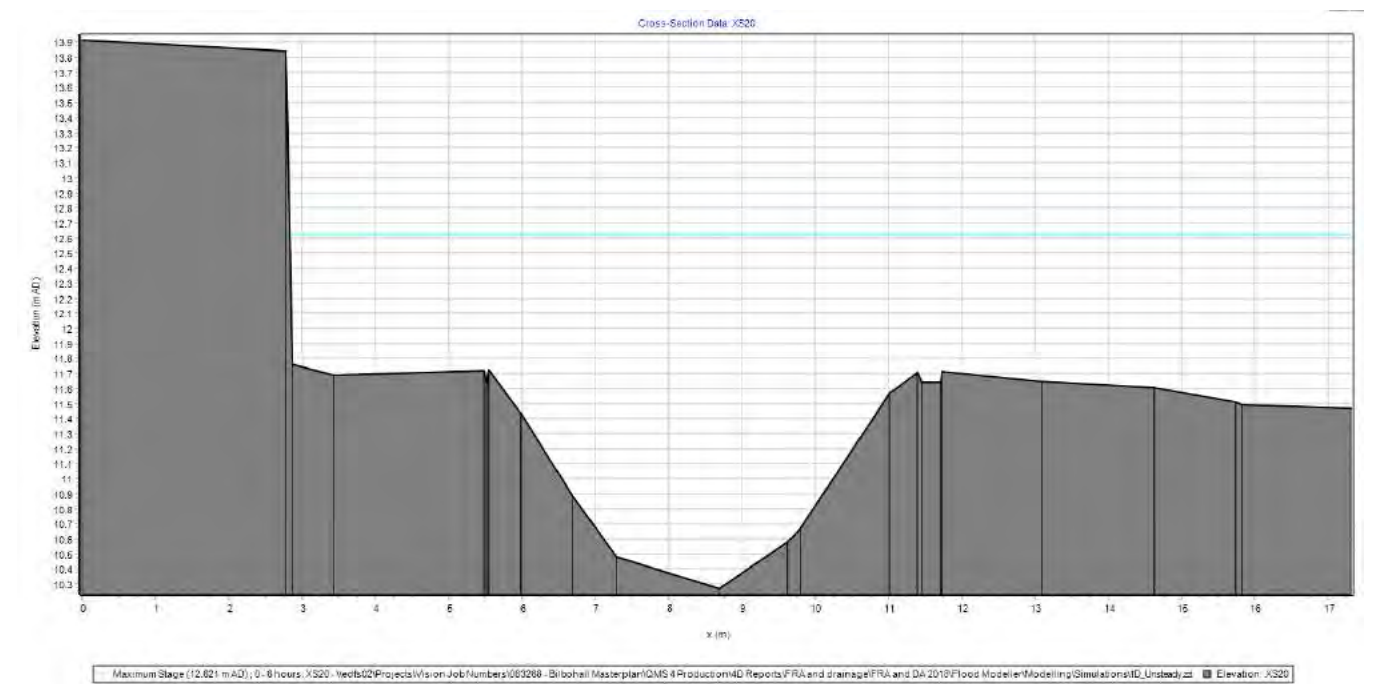
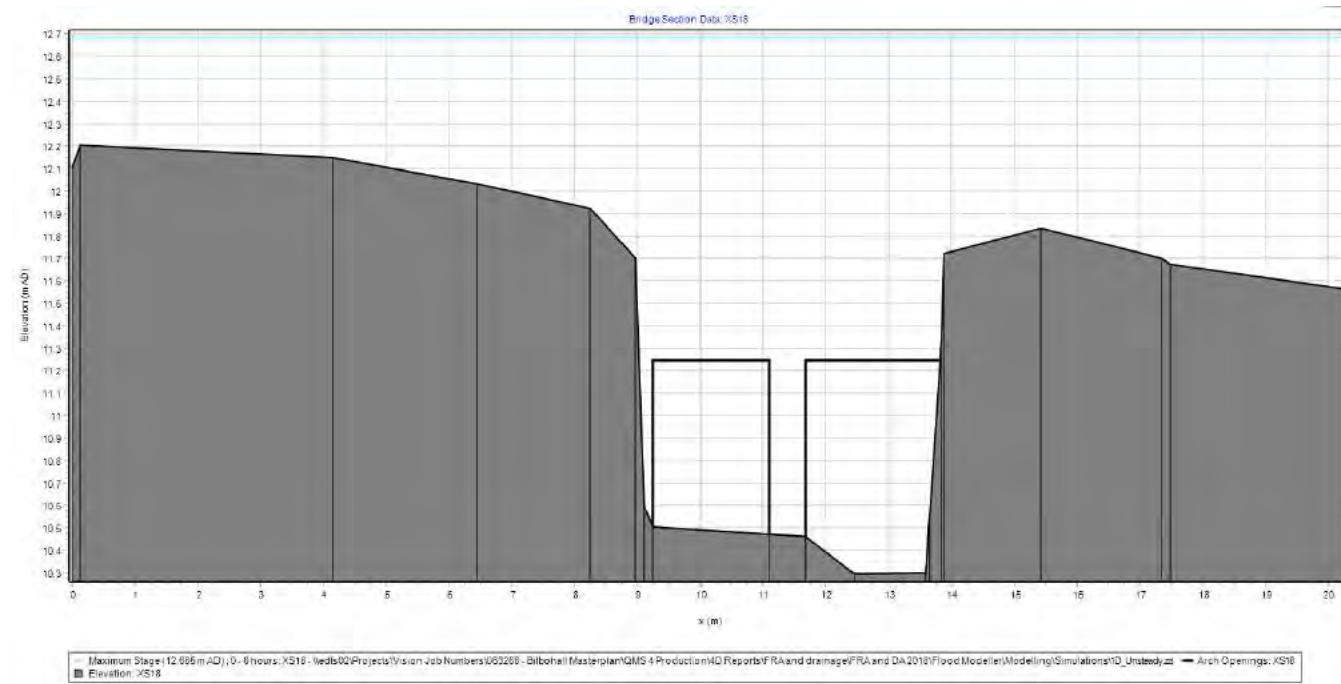
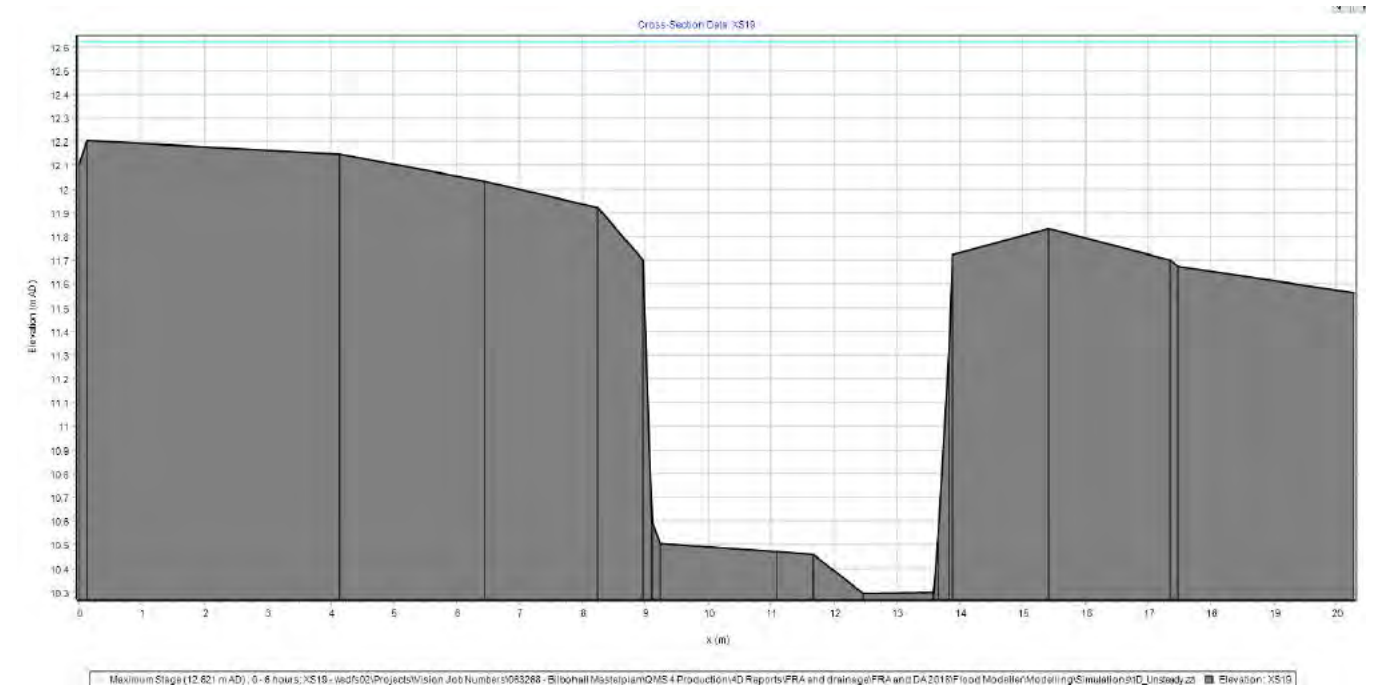
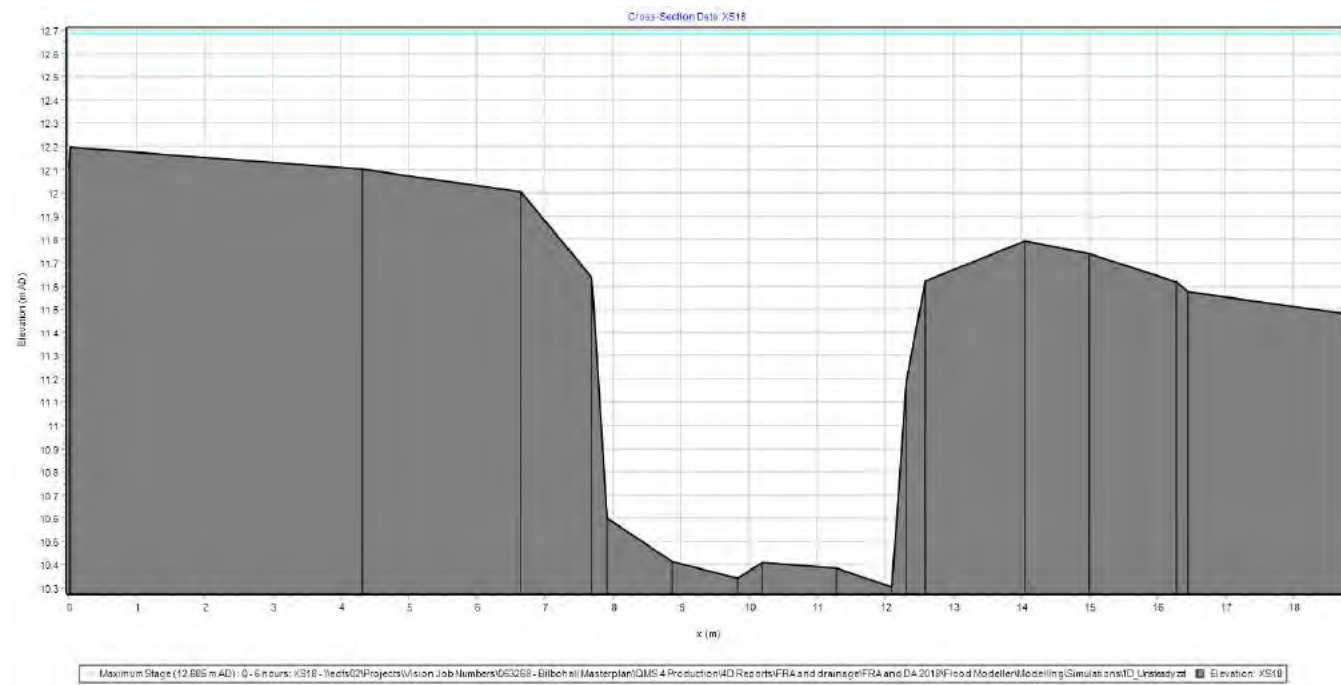


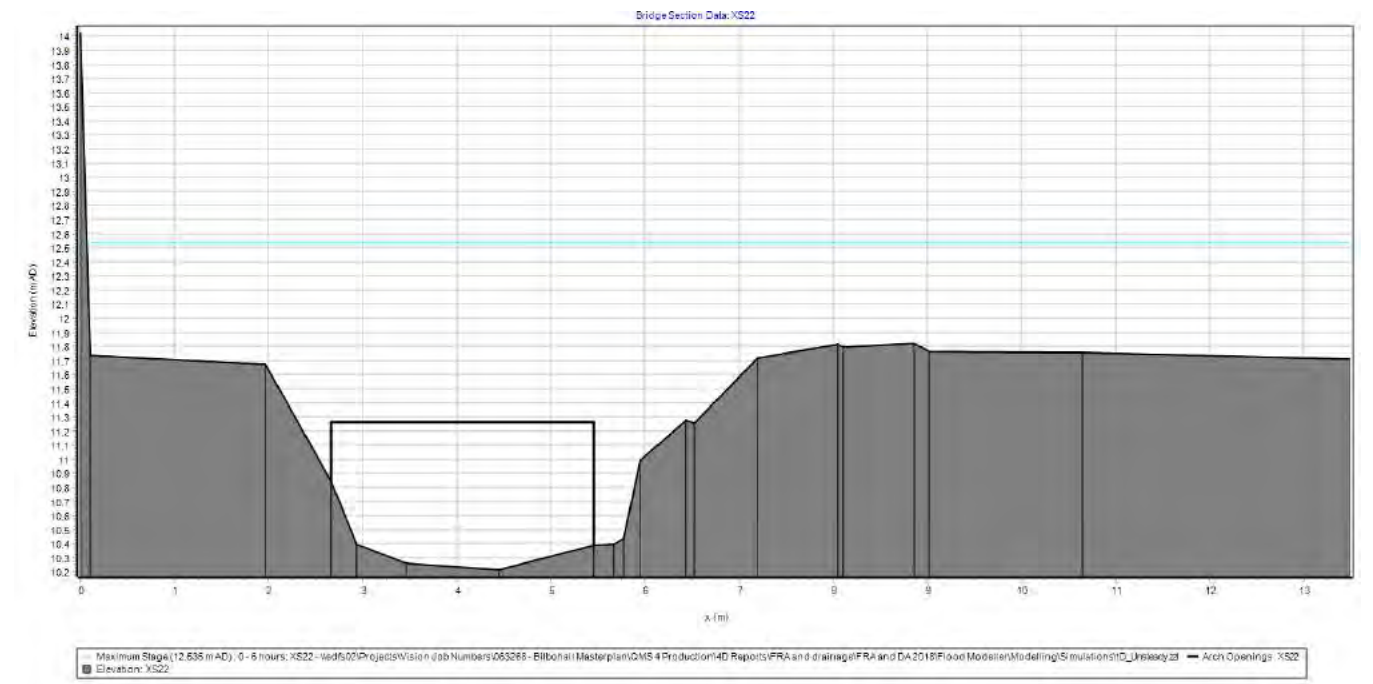
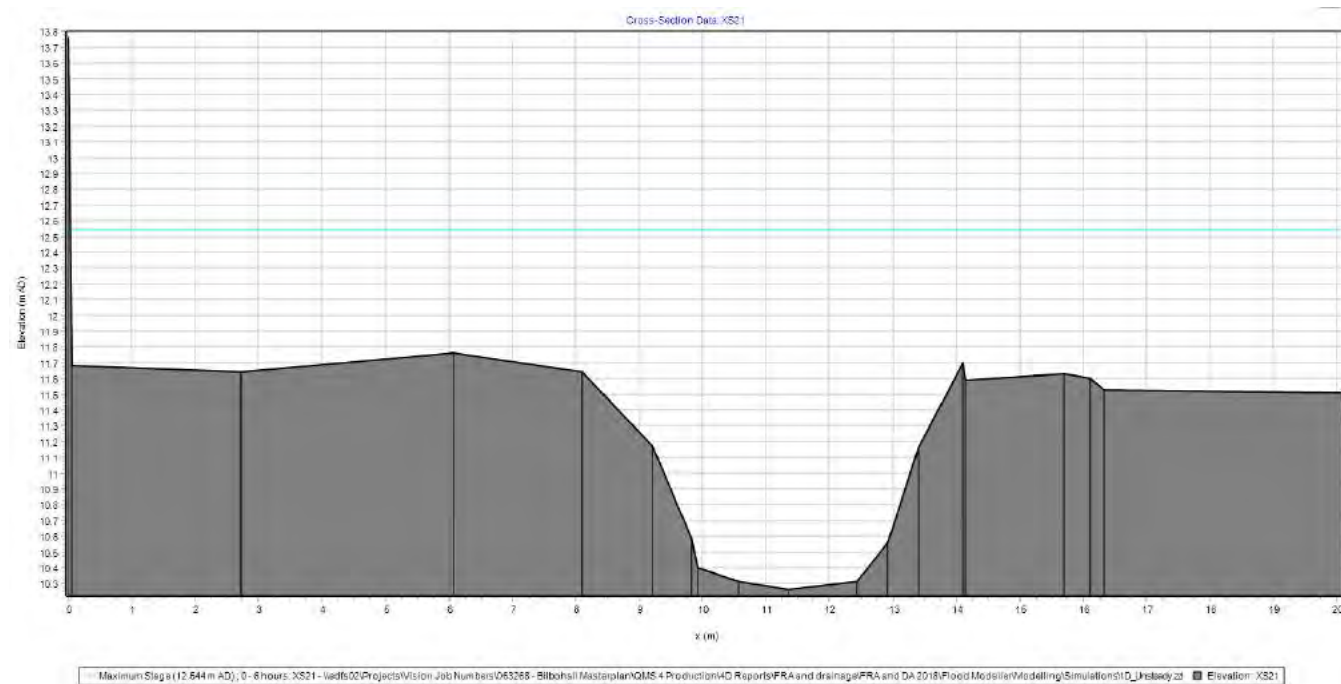
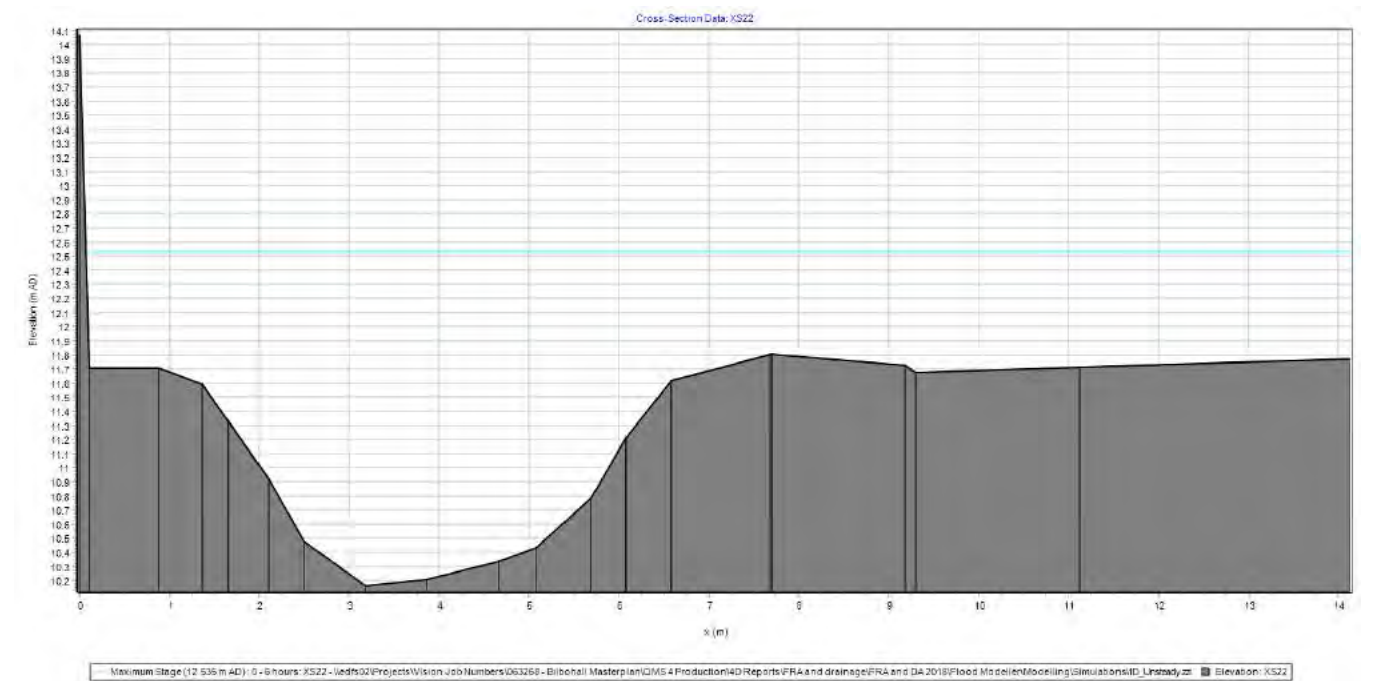
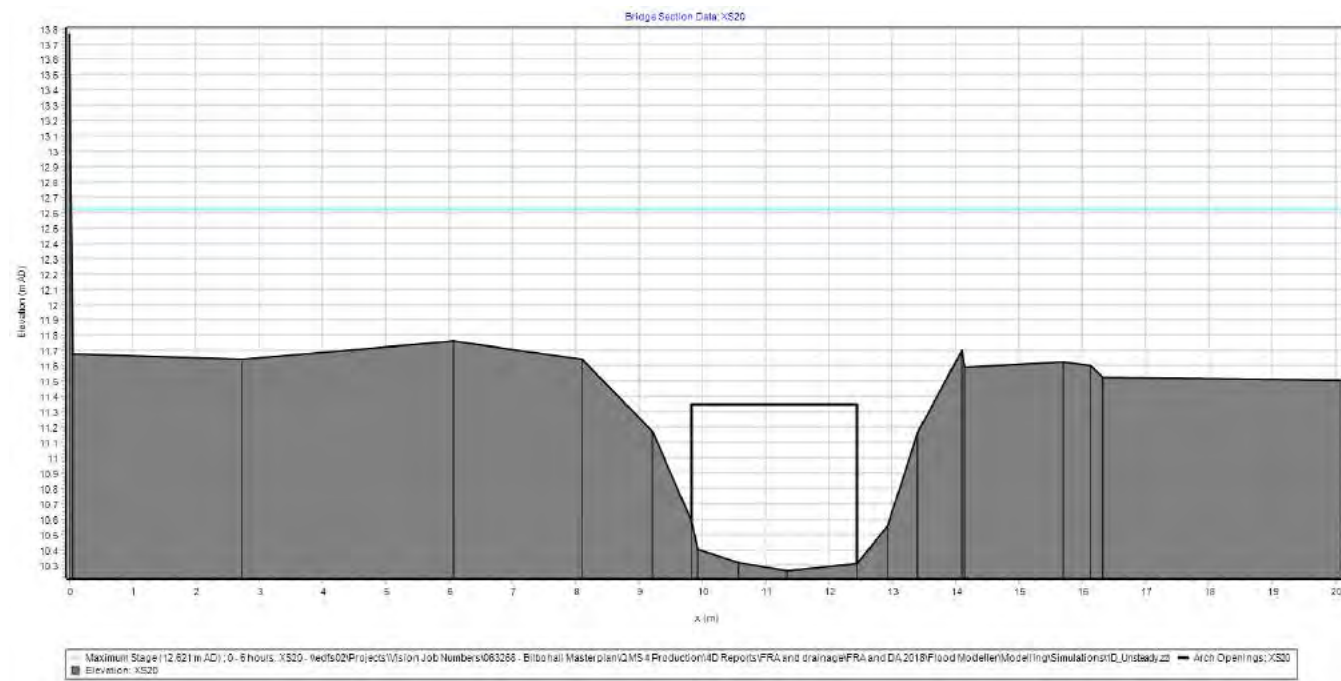


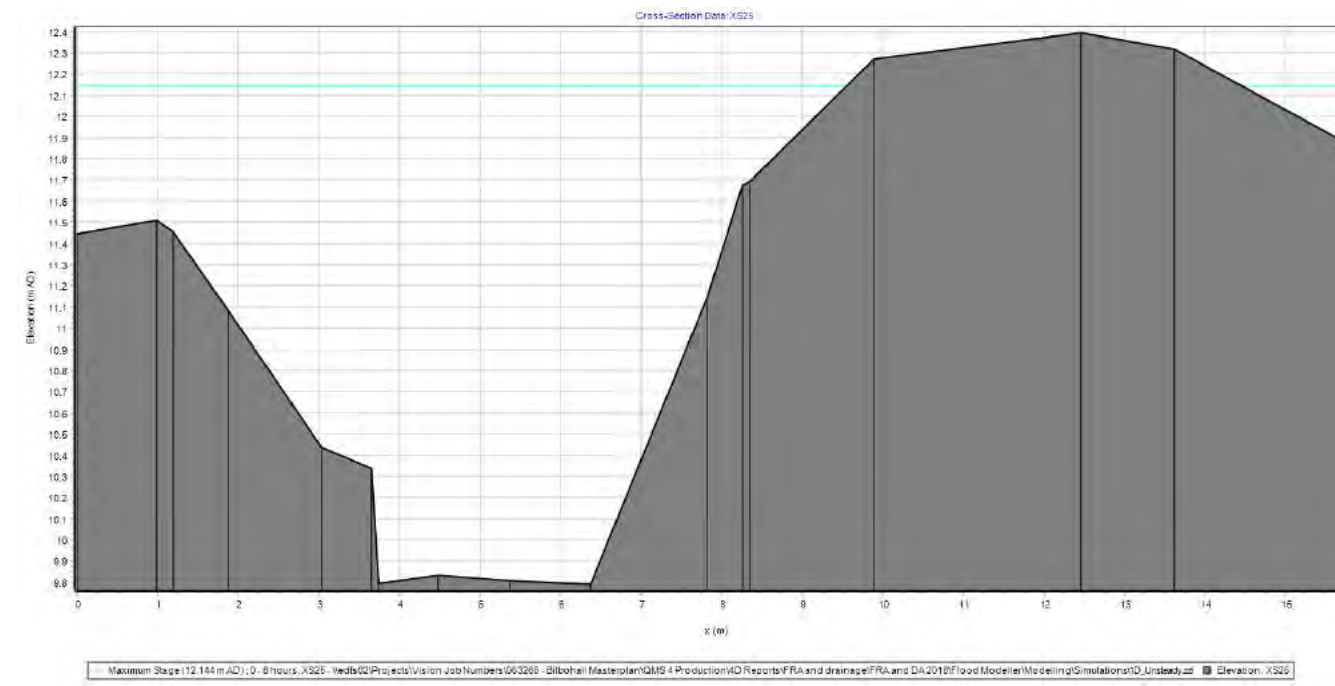
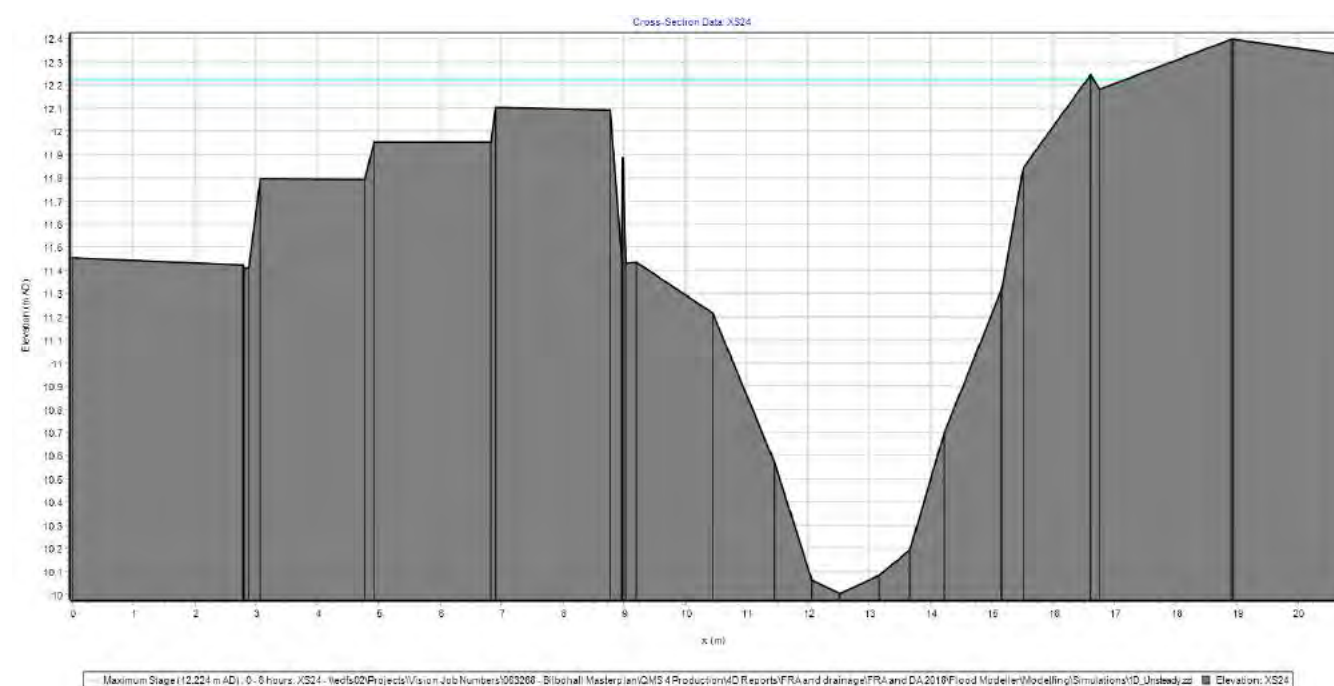
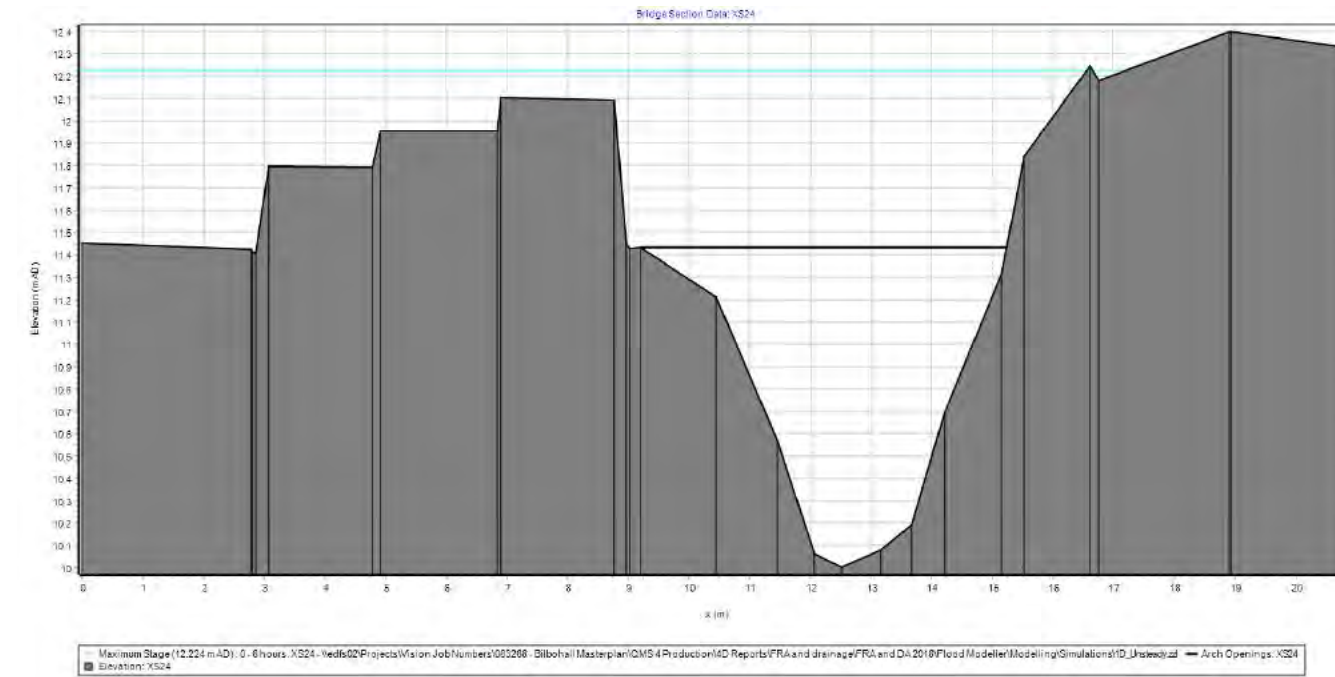
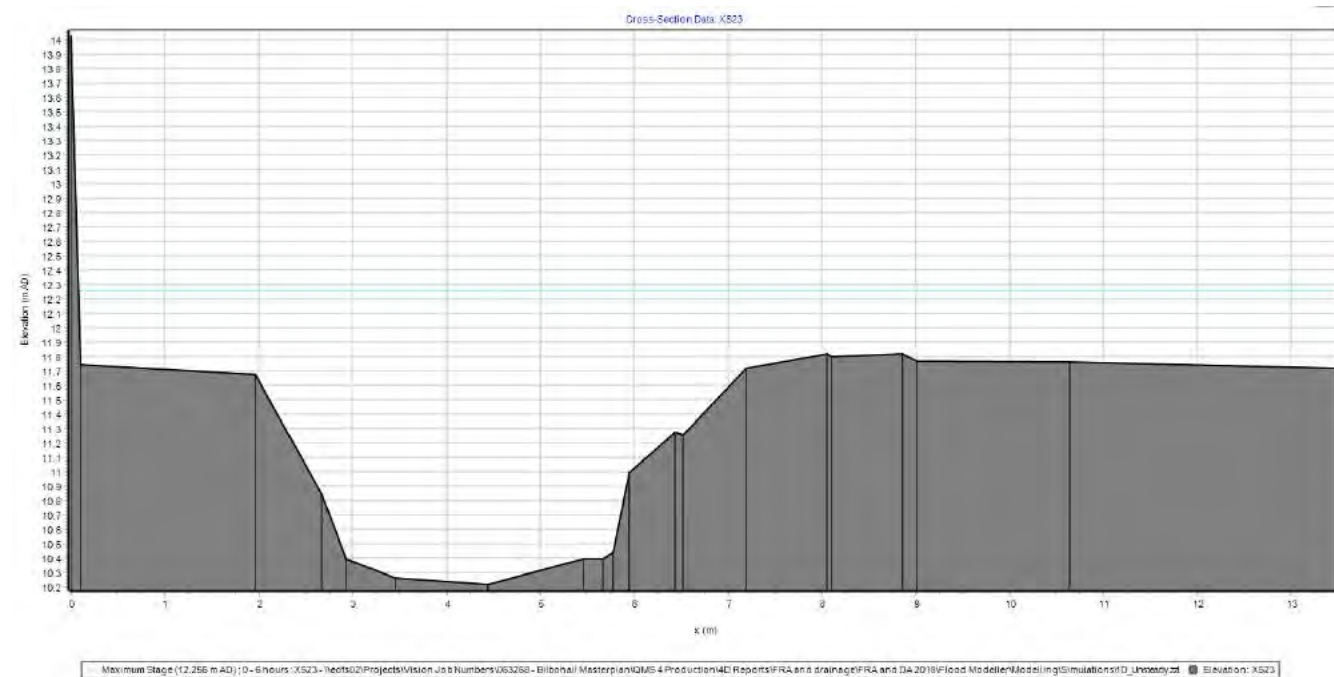


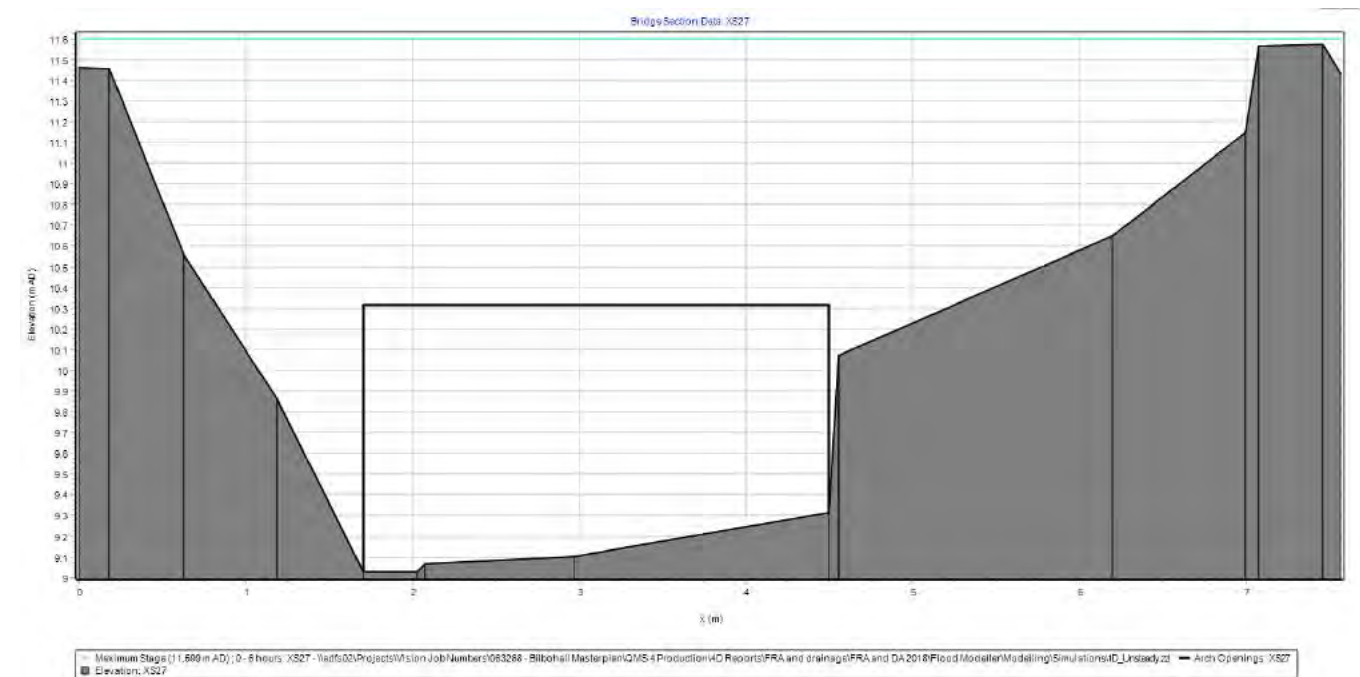
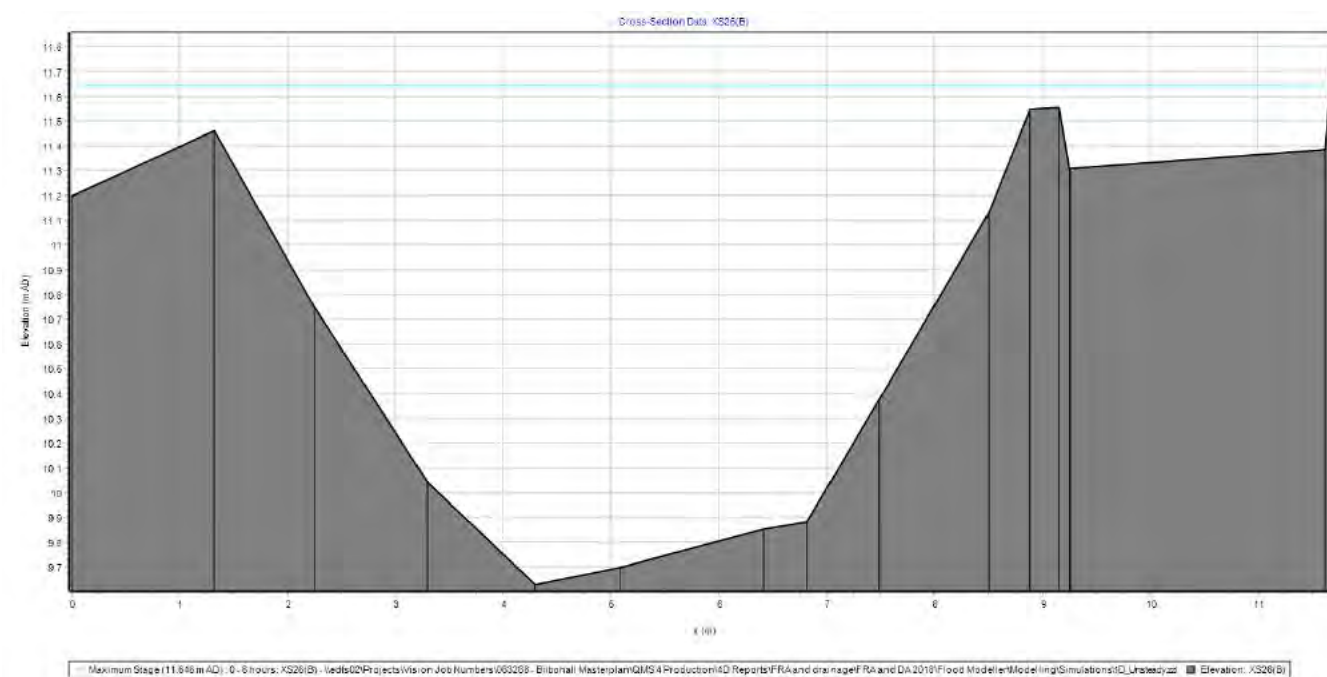
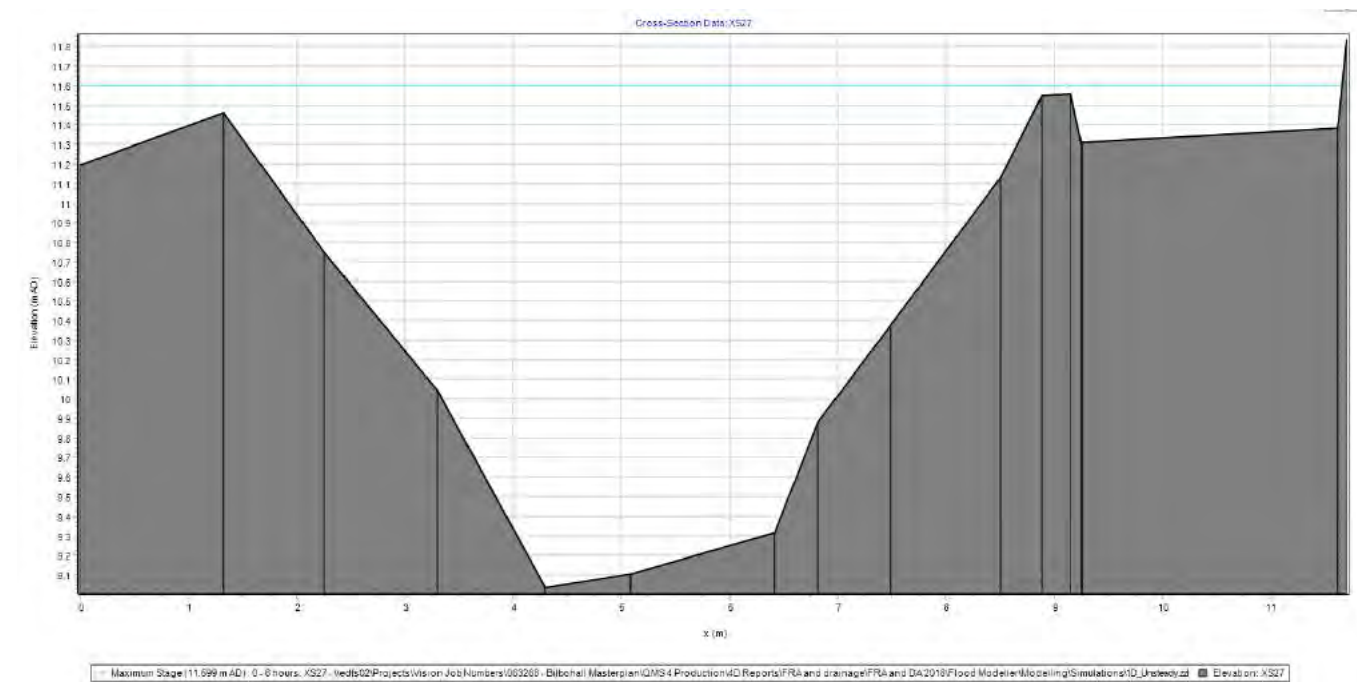
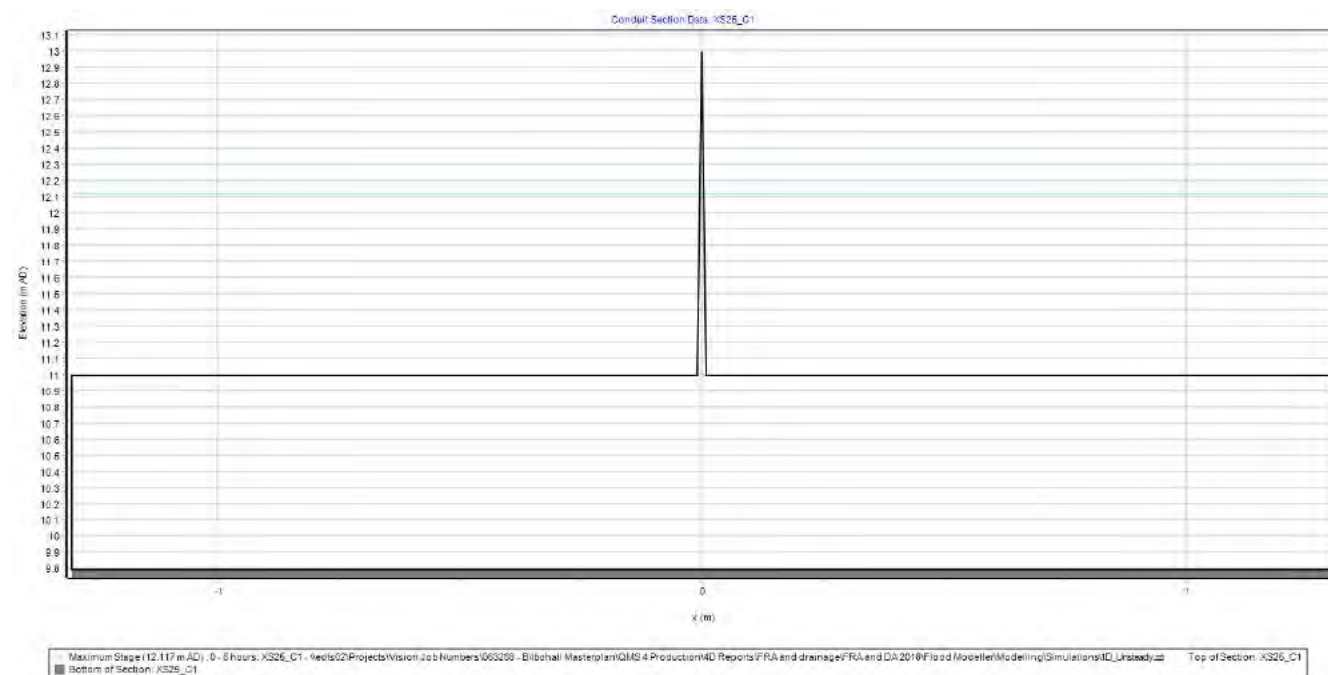


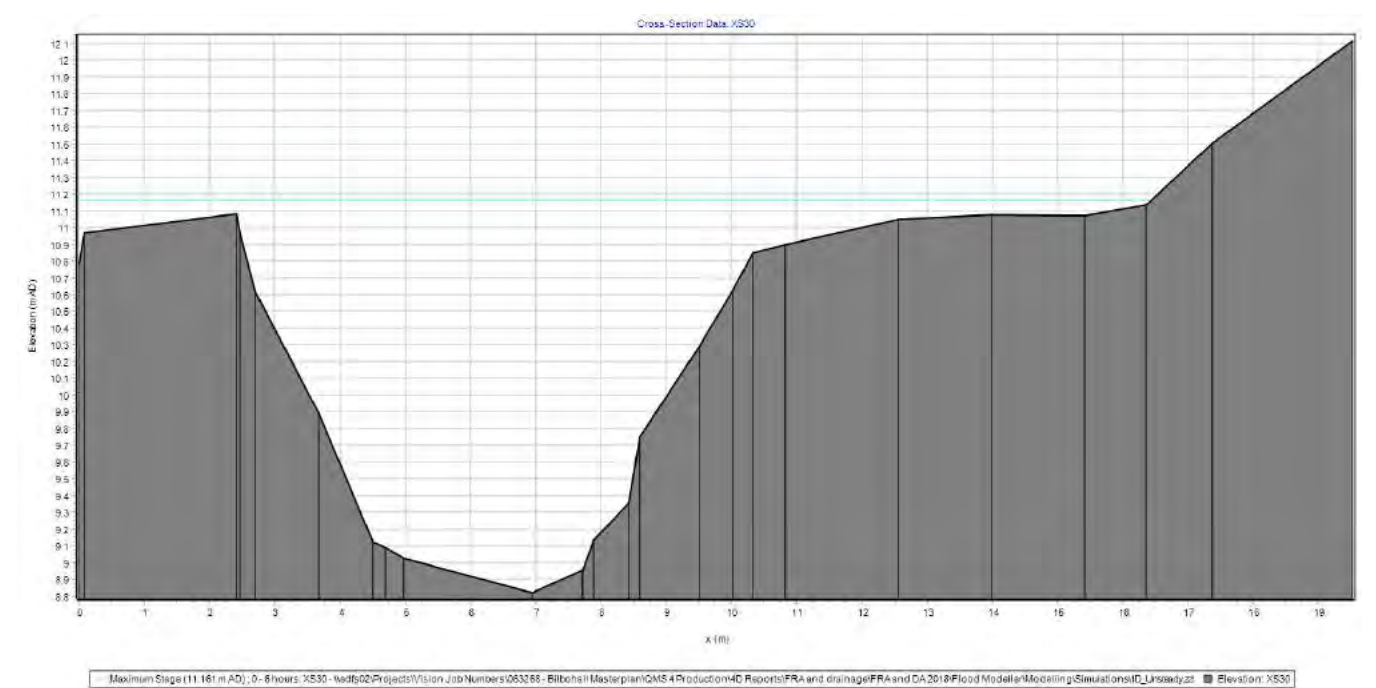
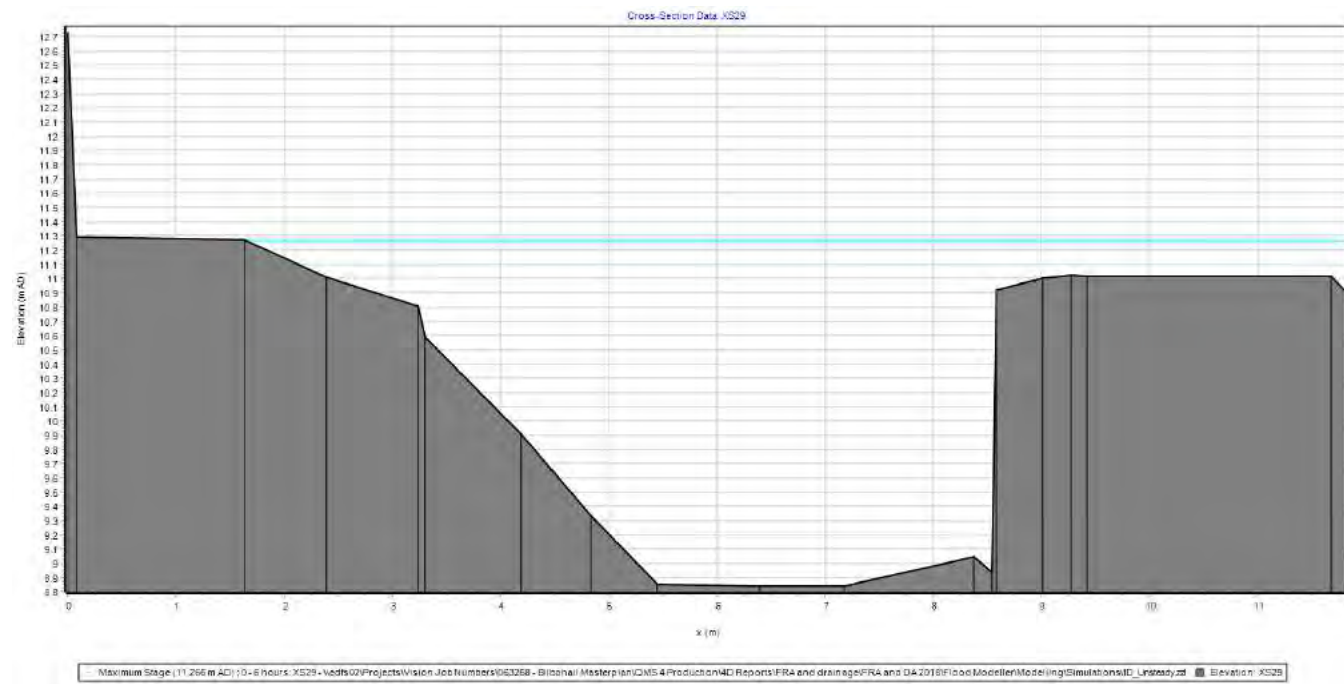
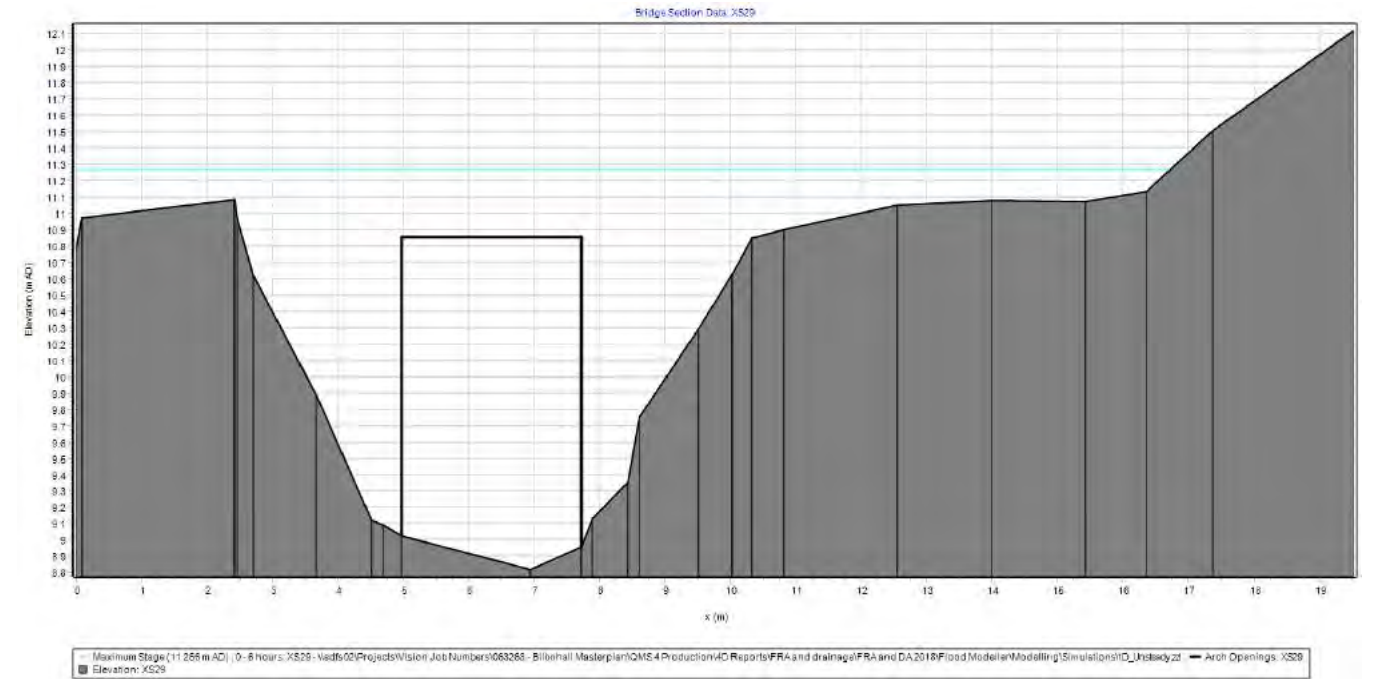
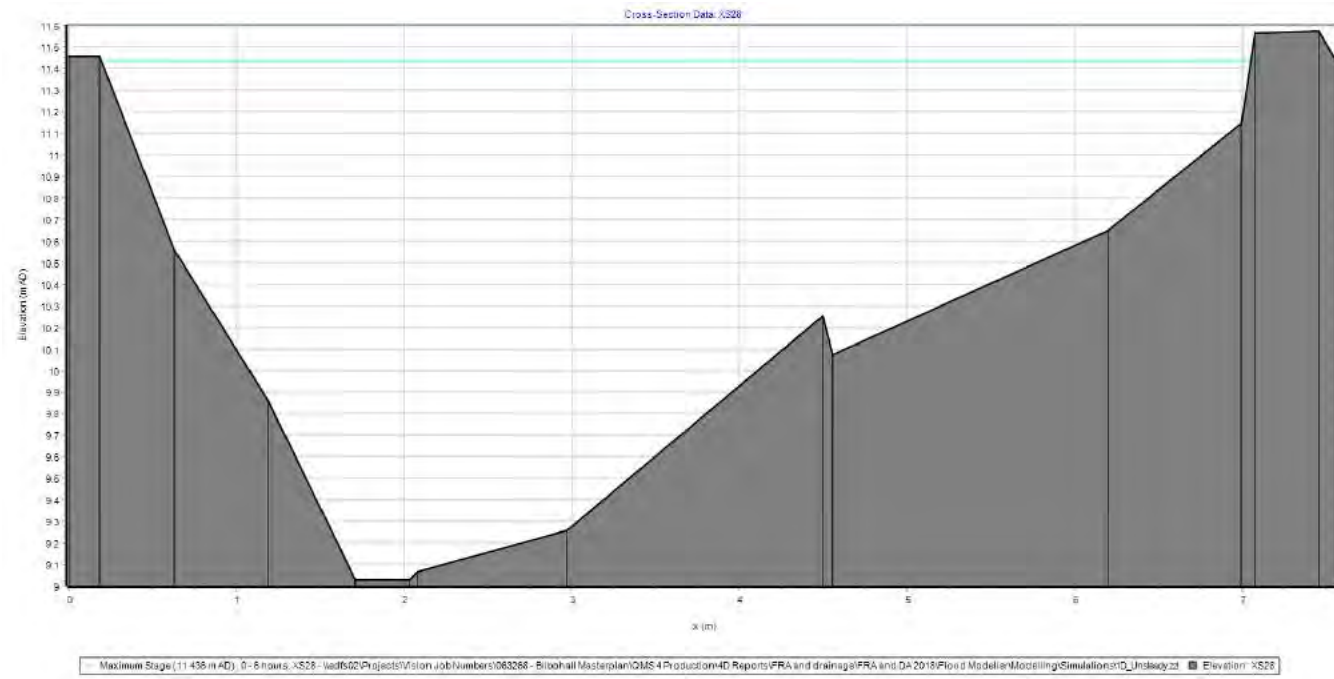


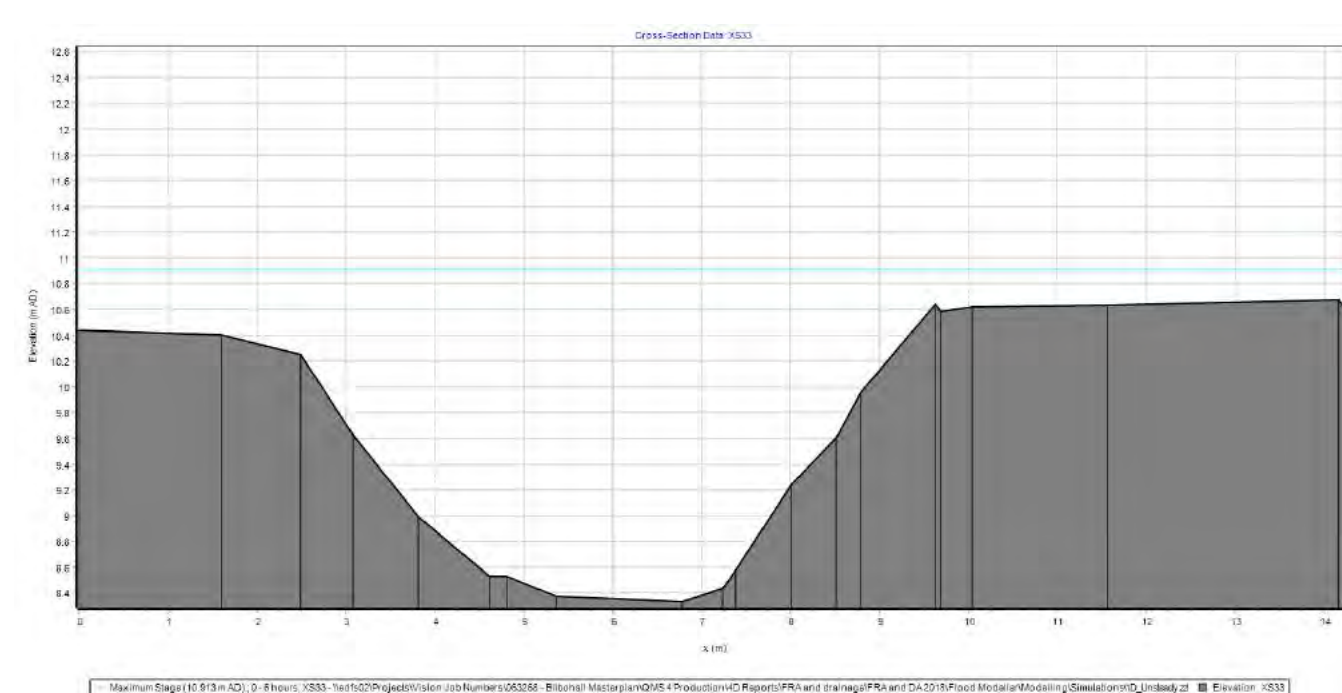
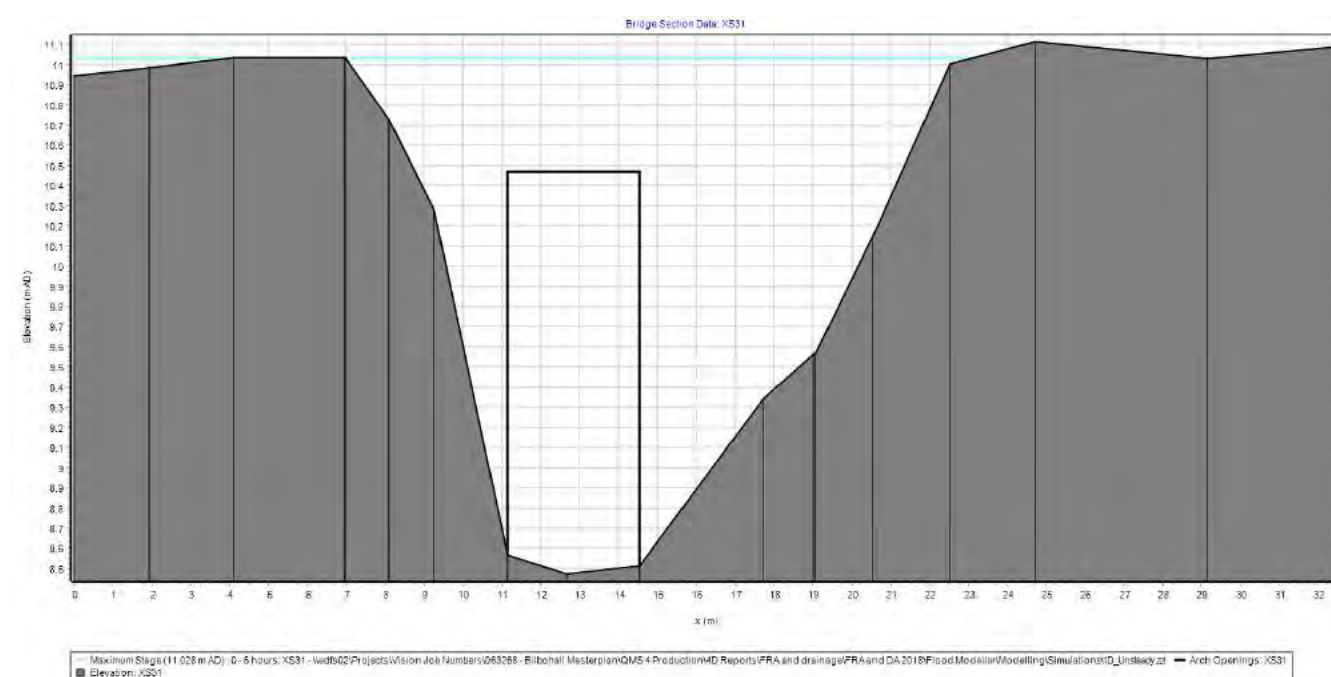
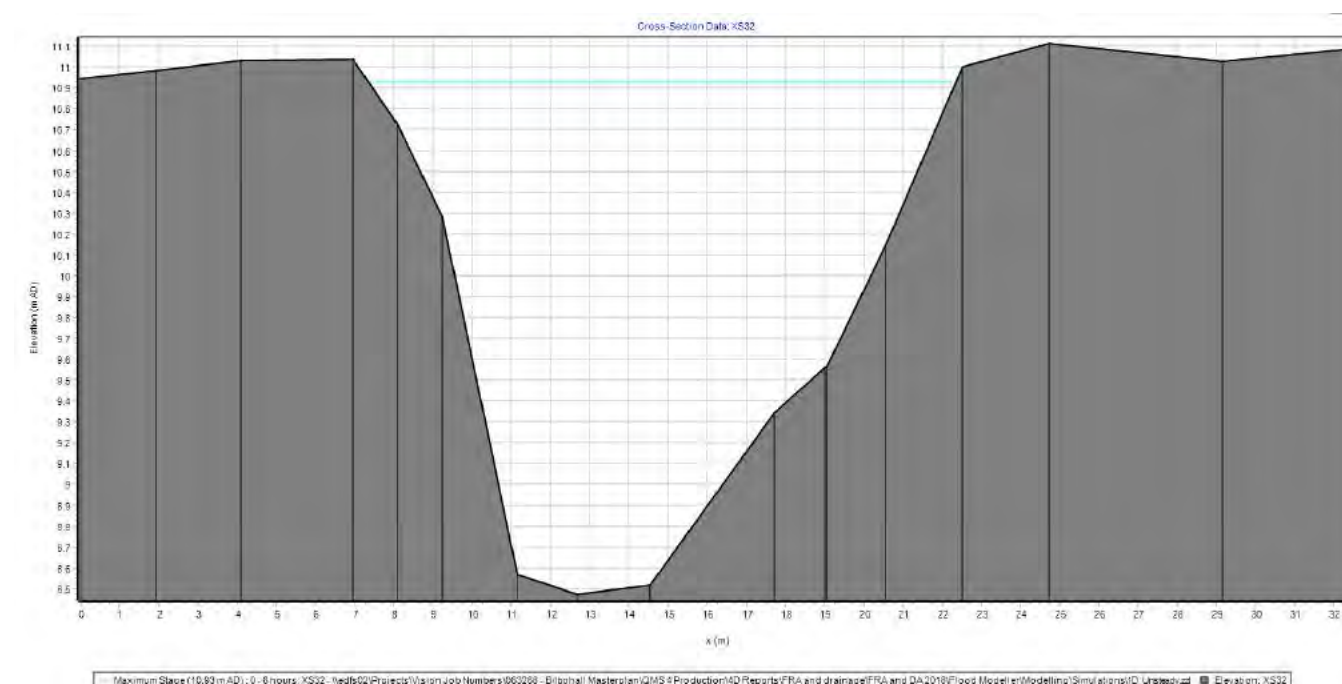
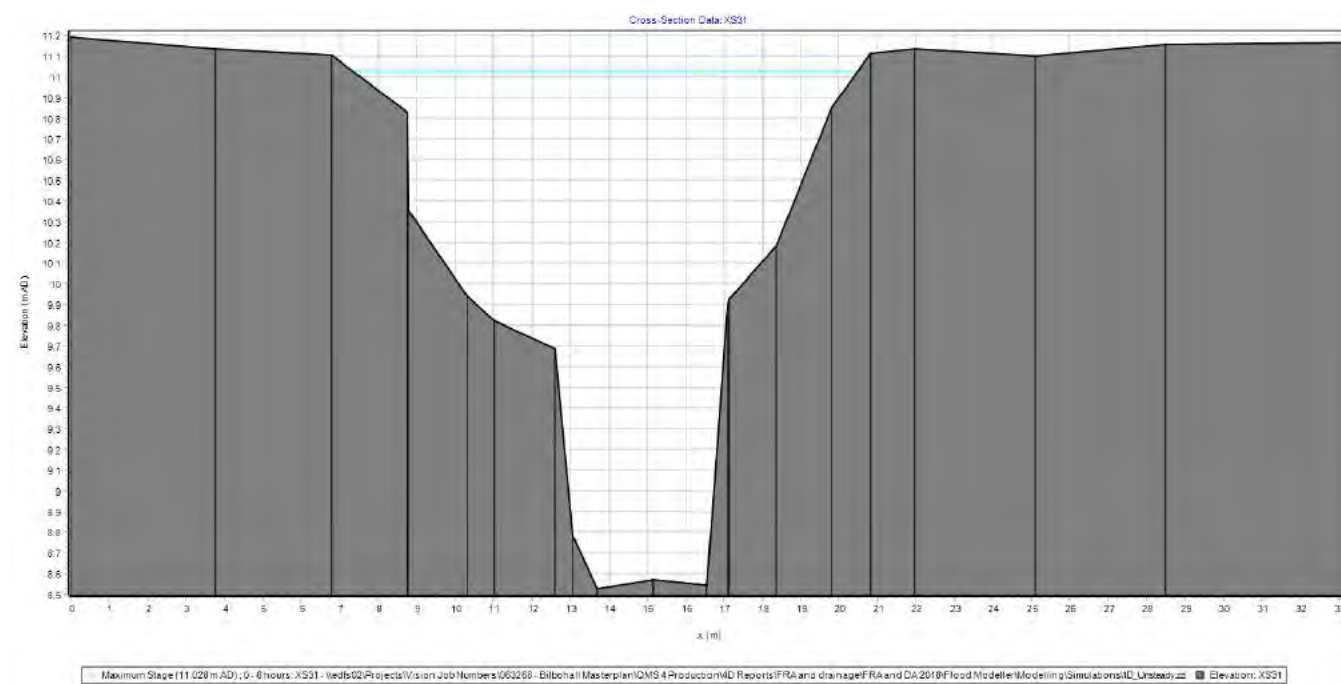


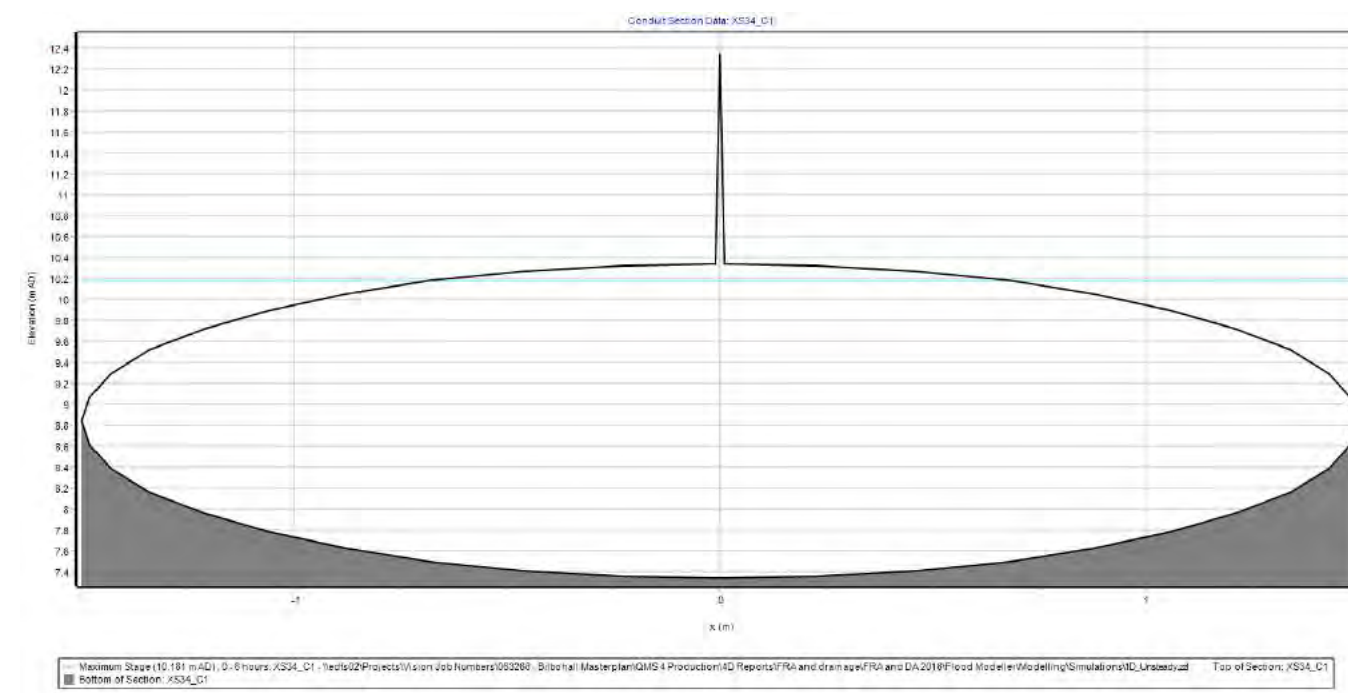
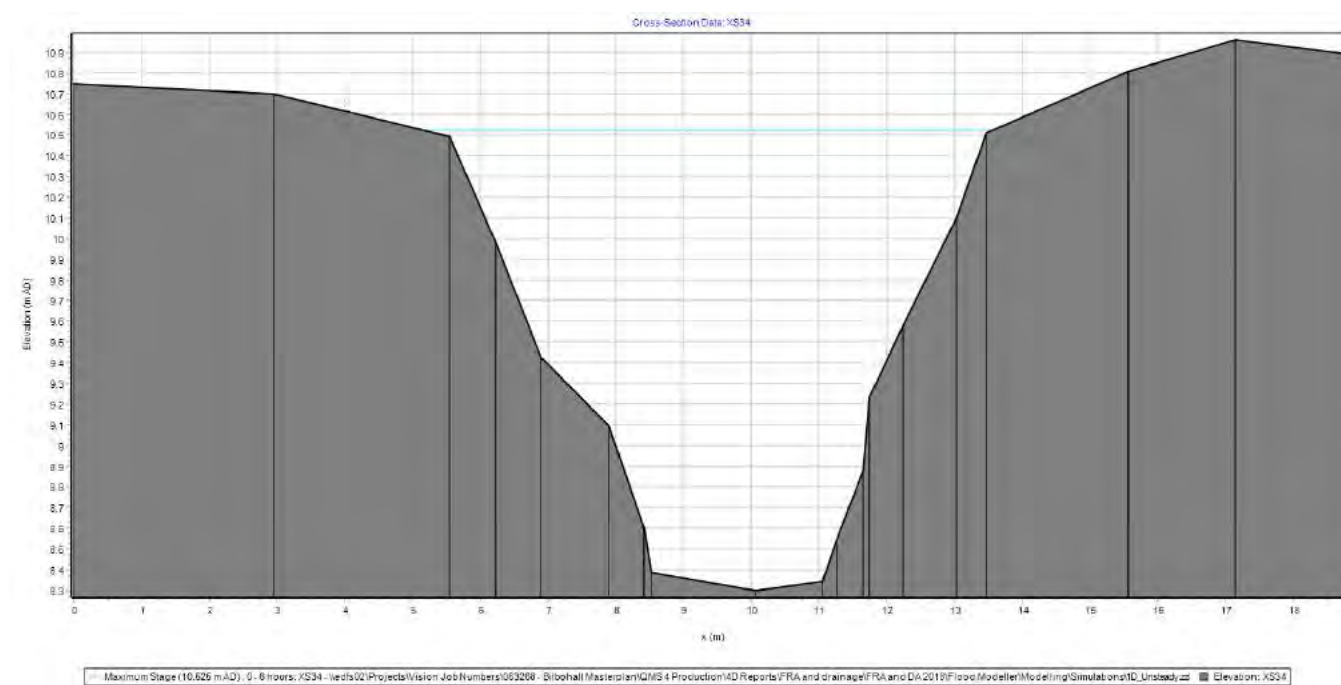
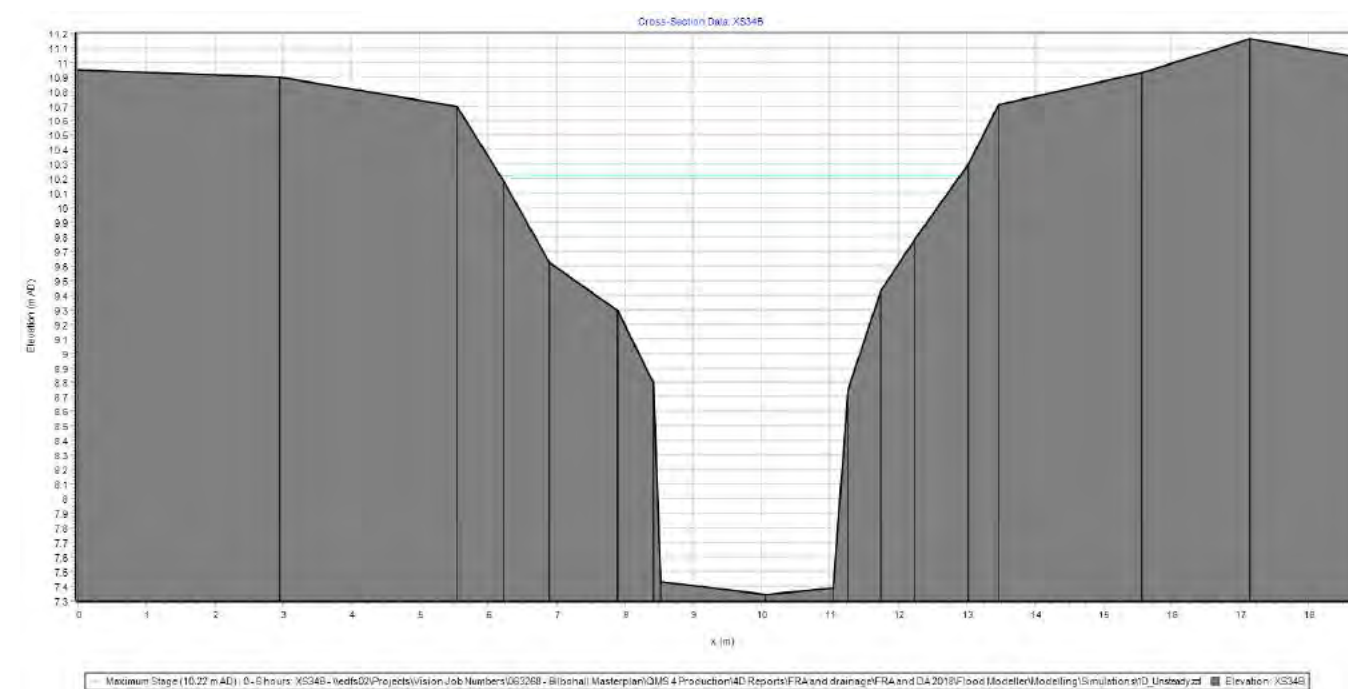
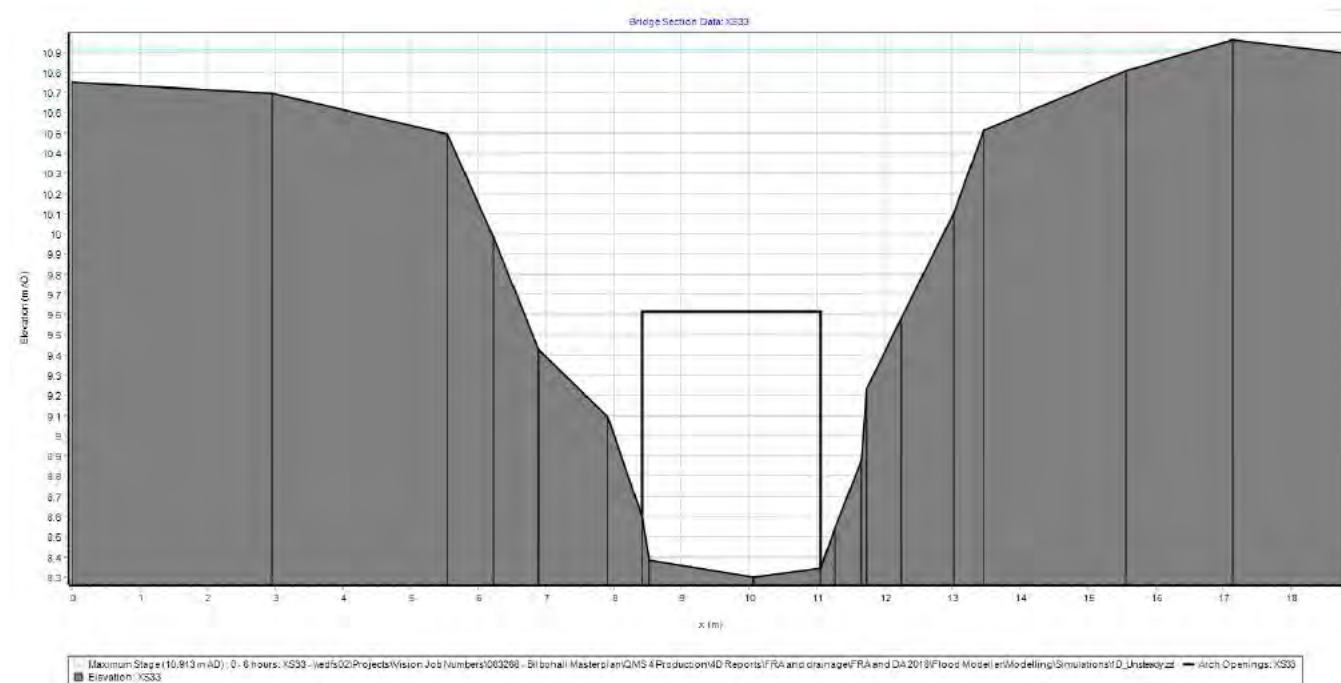


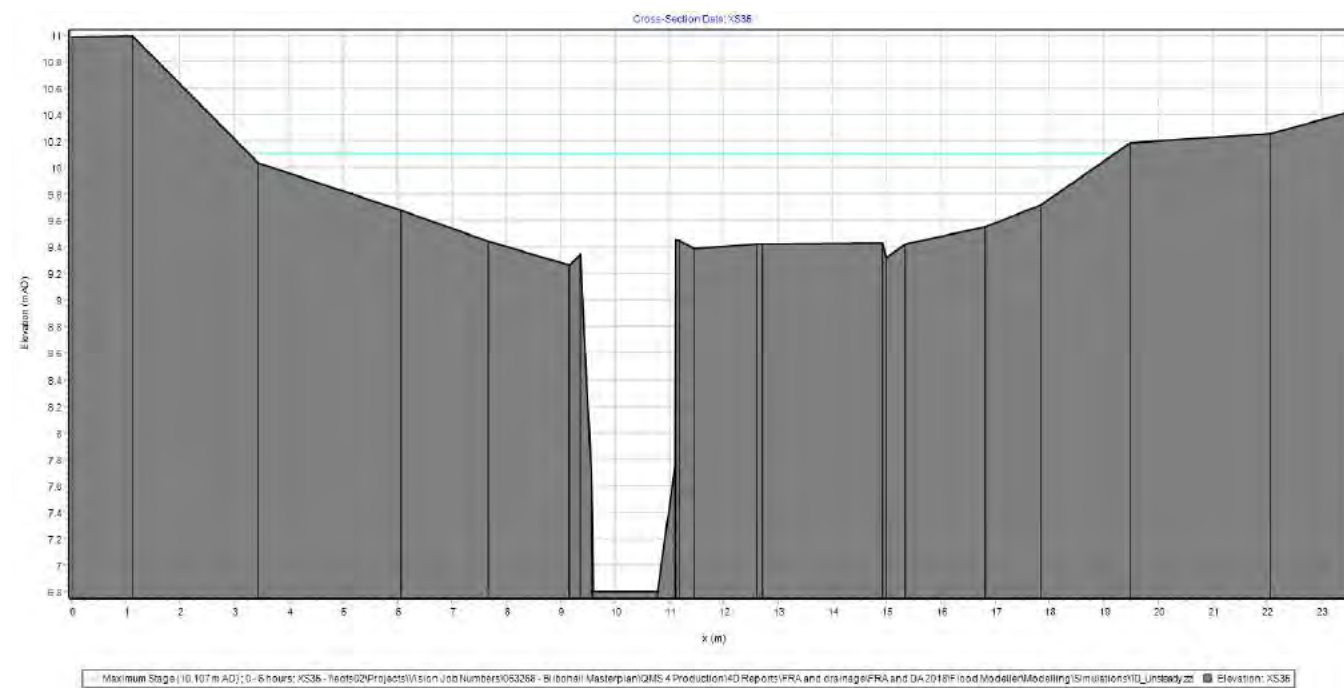




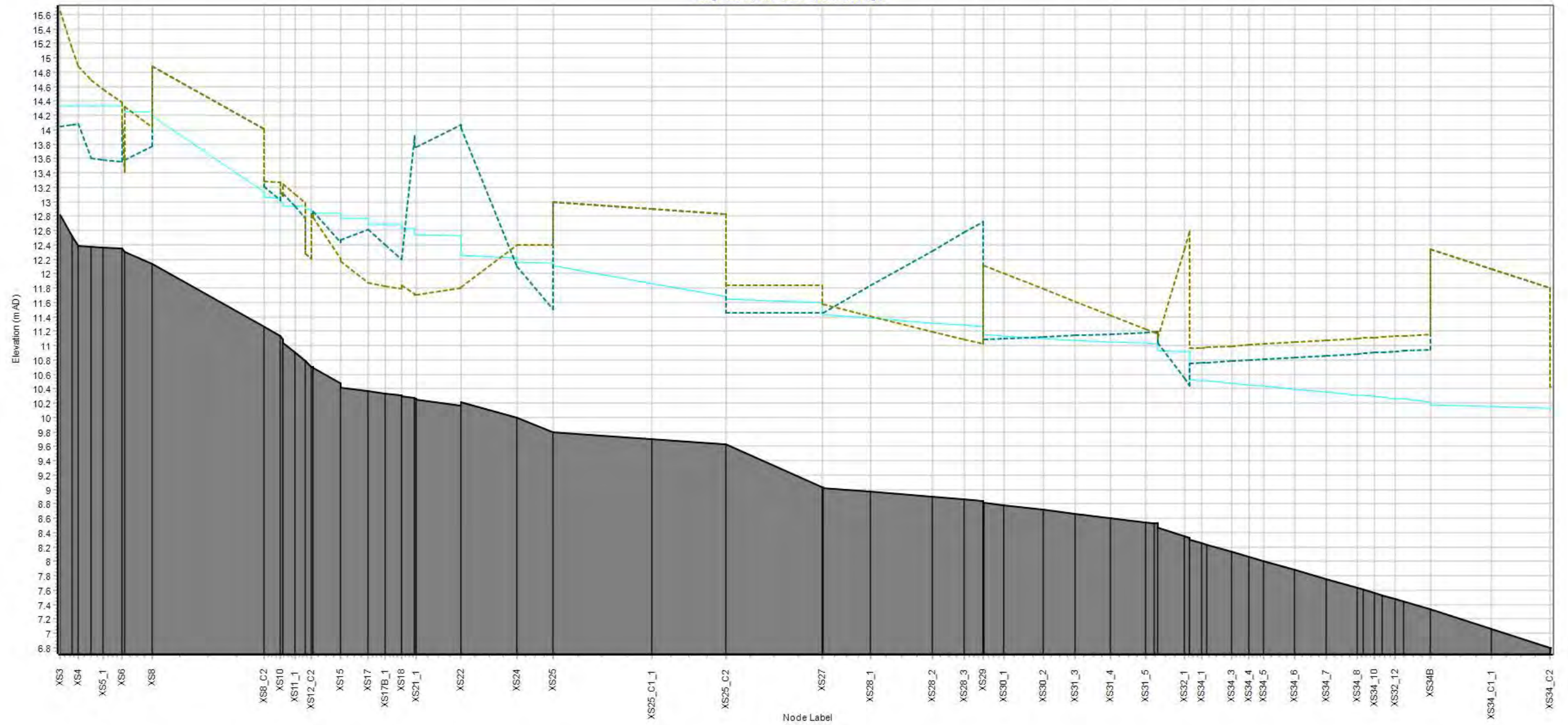








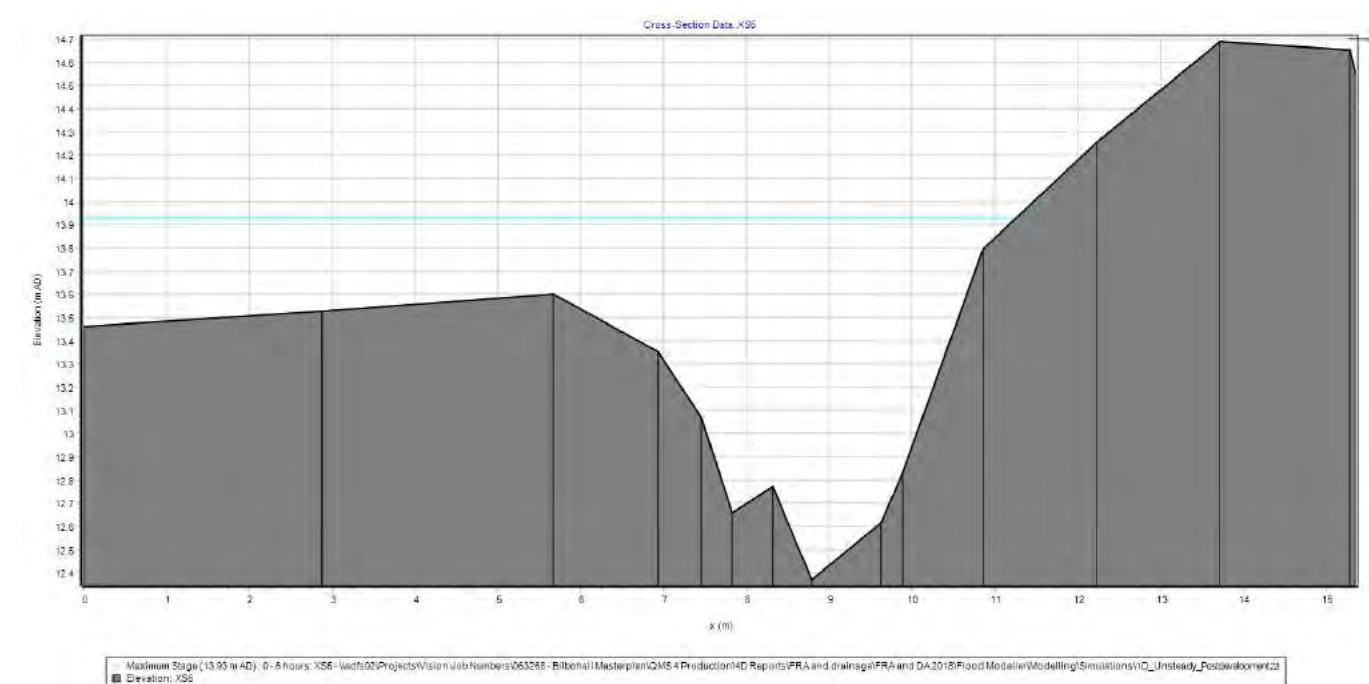
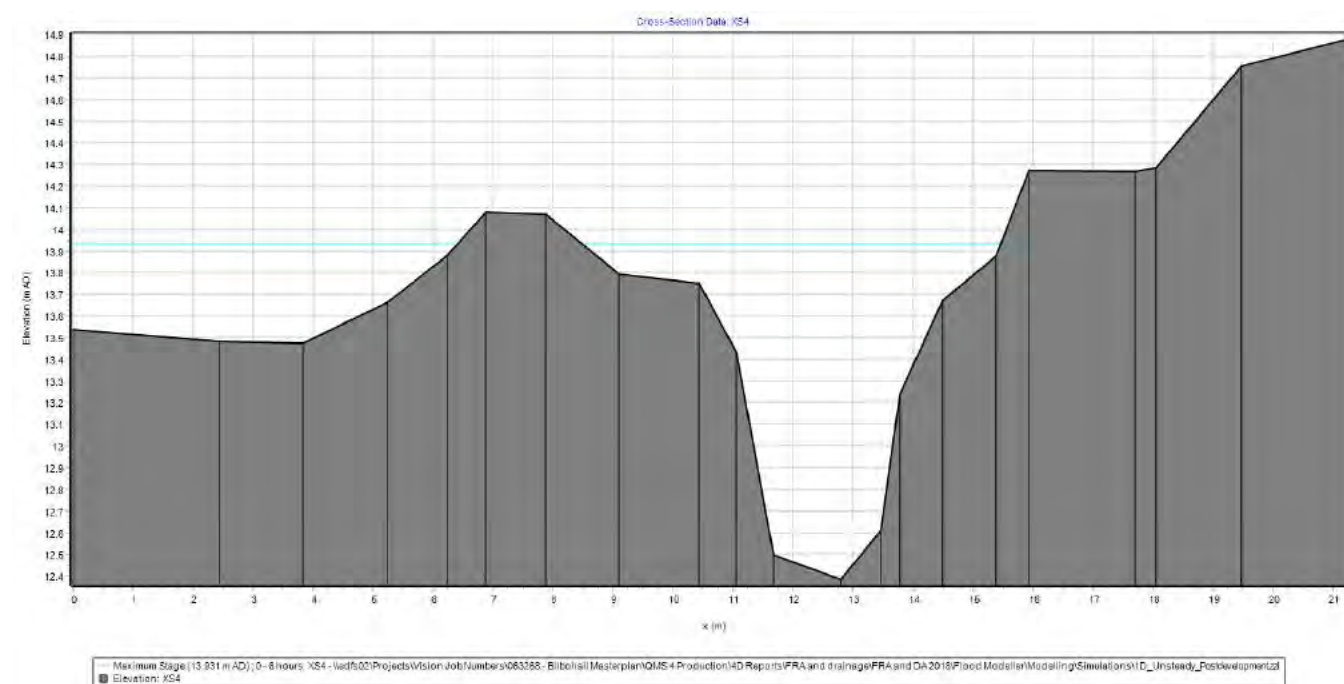
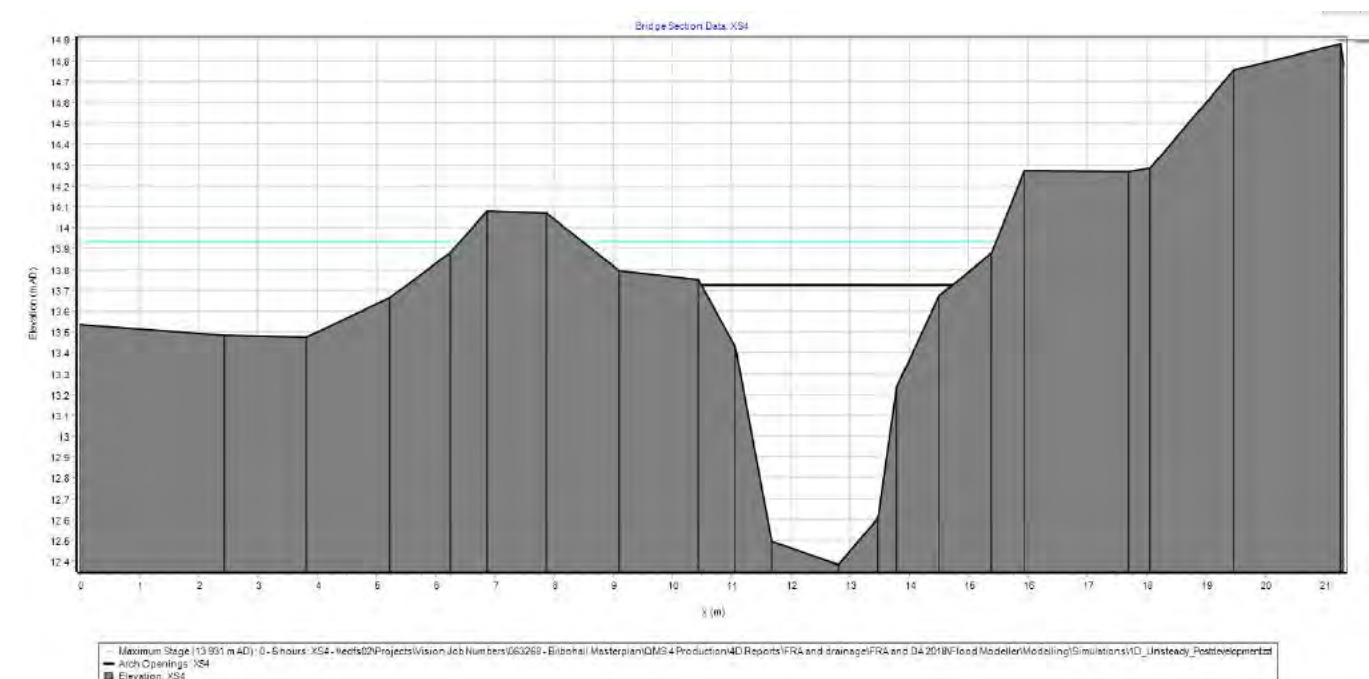
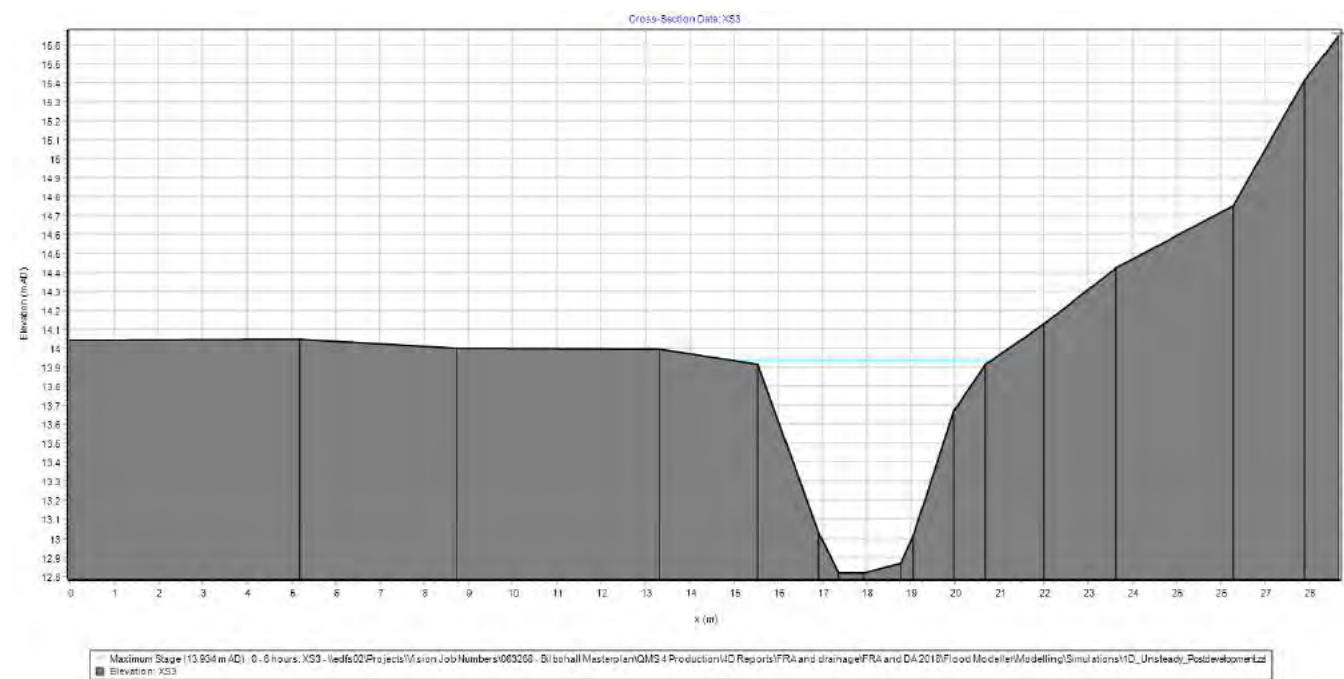
Long Section: XS3 - XS36 - Maximum Stage

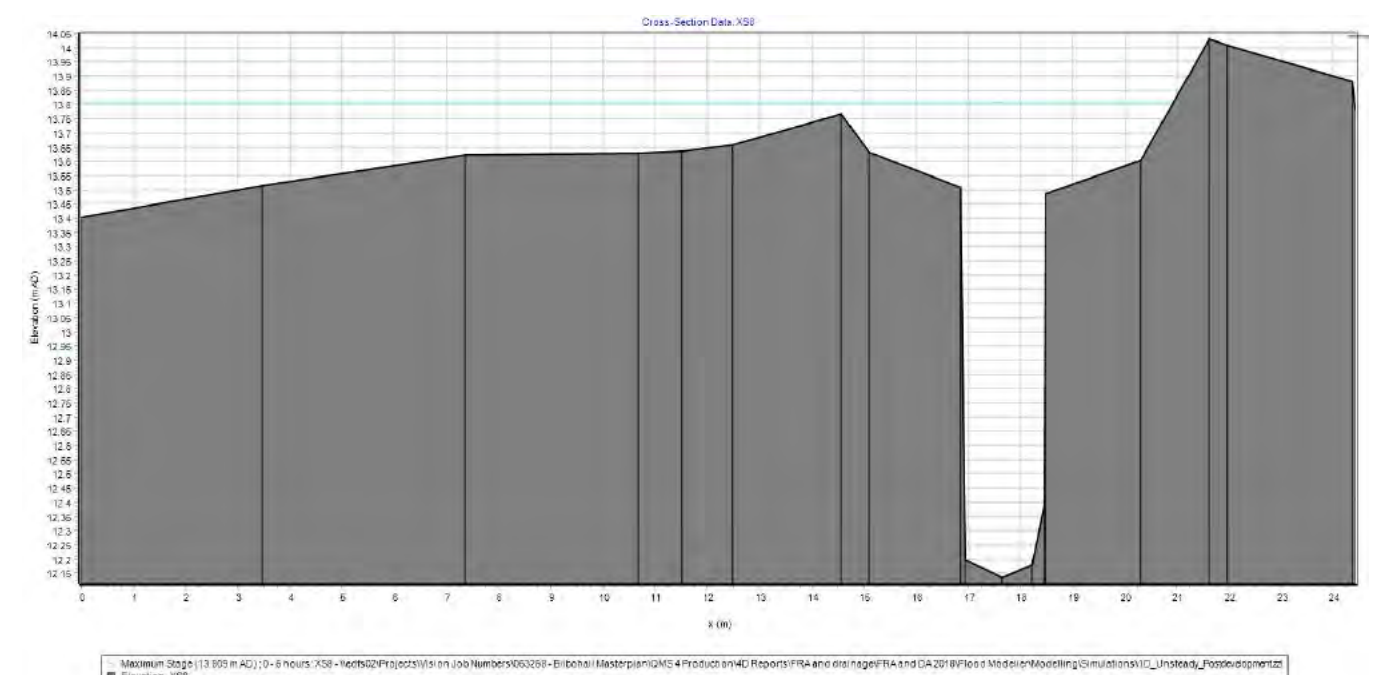
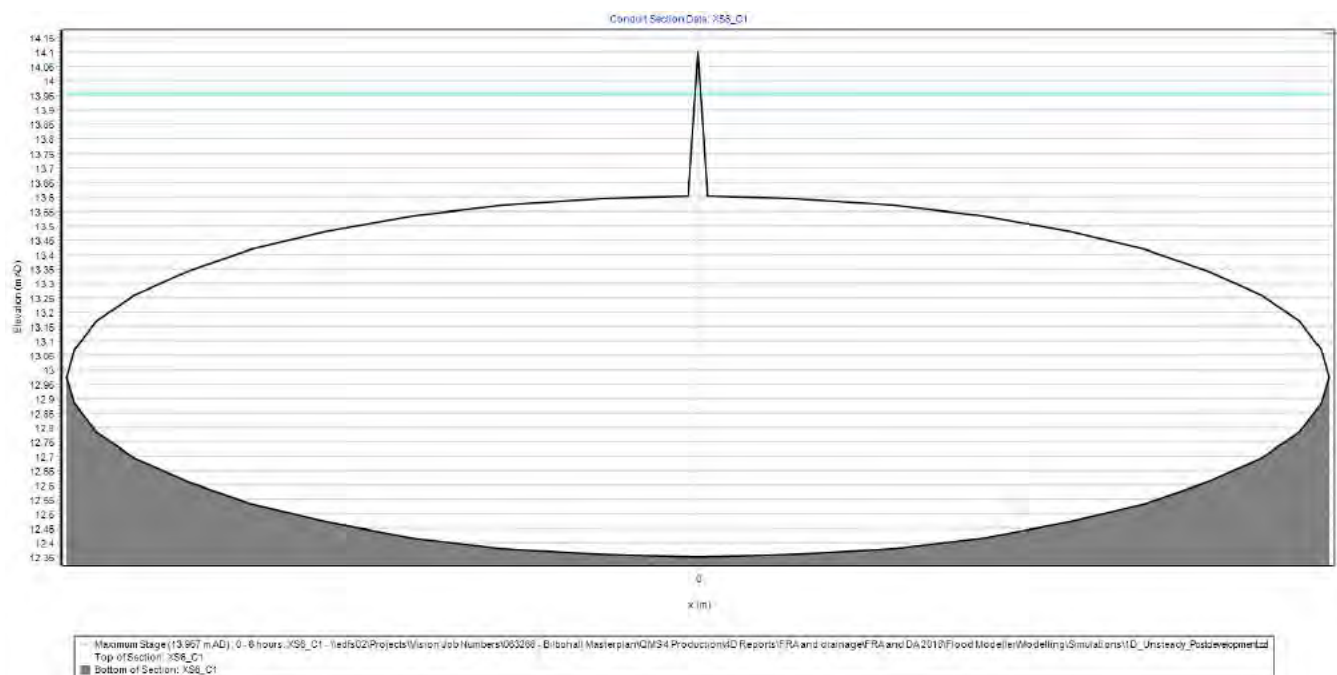
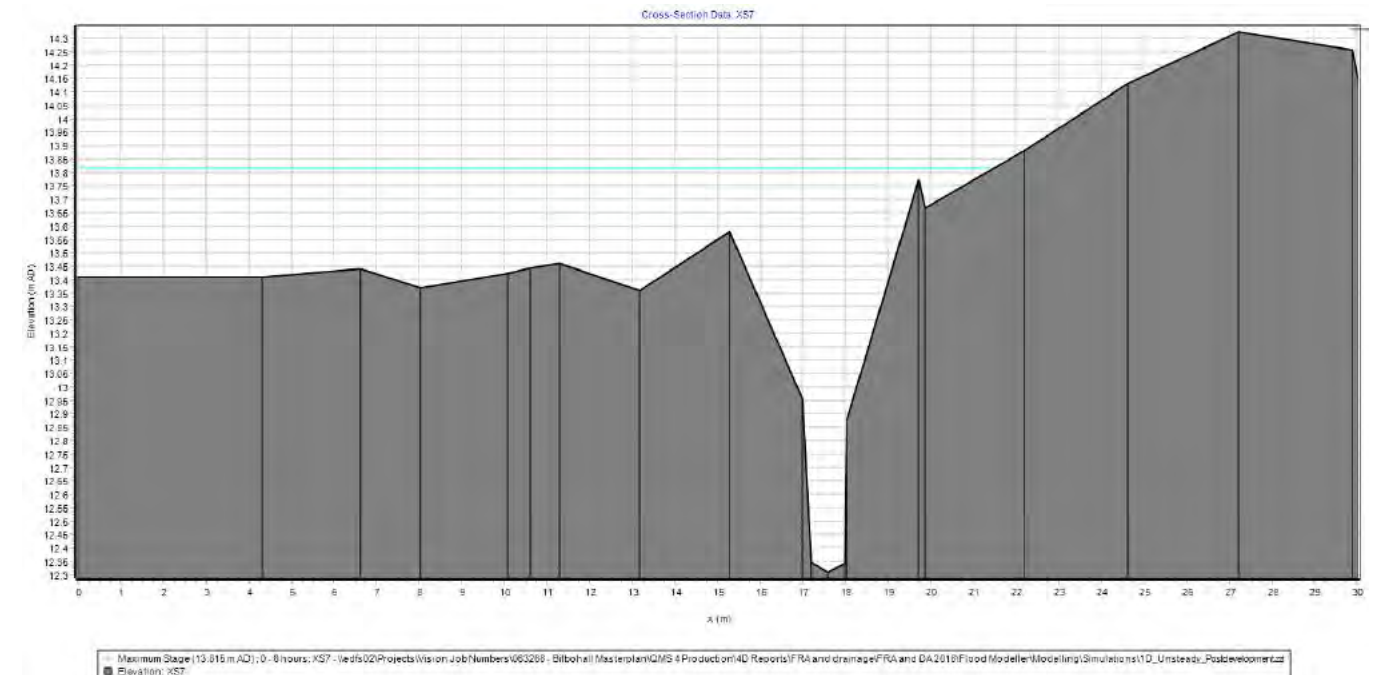
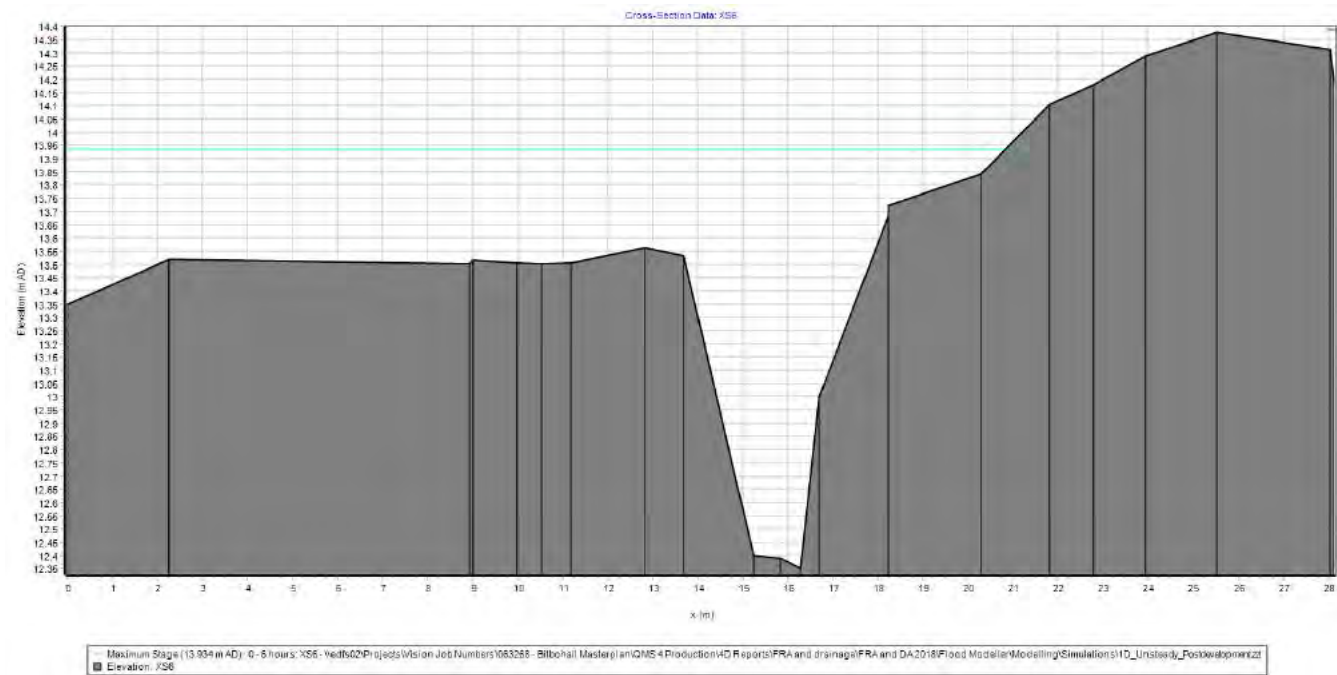


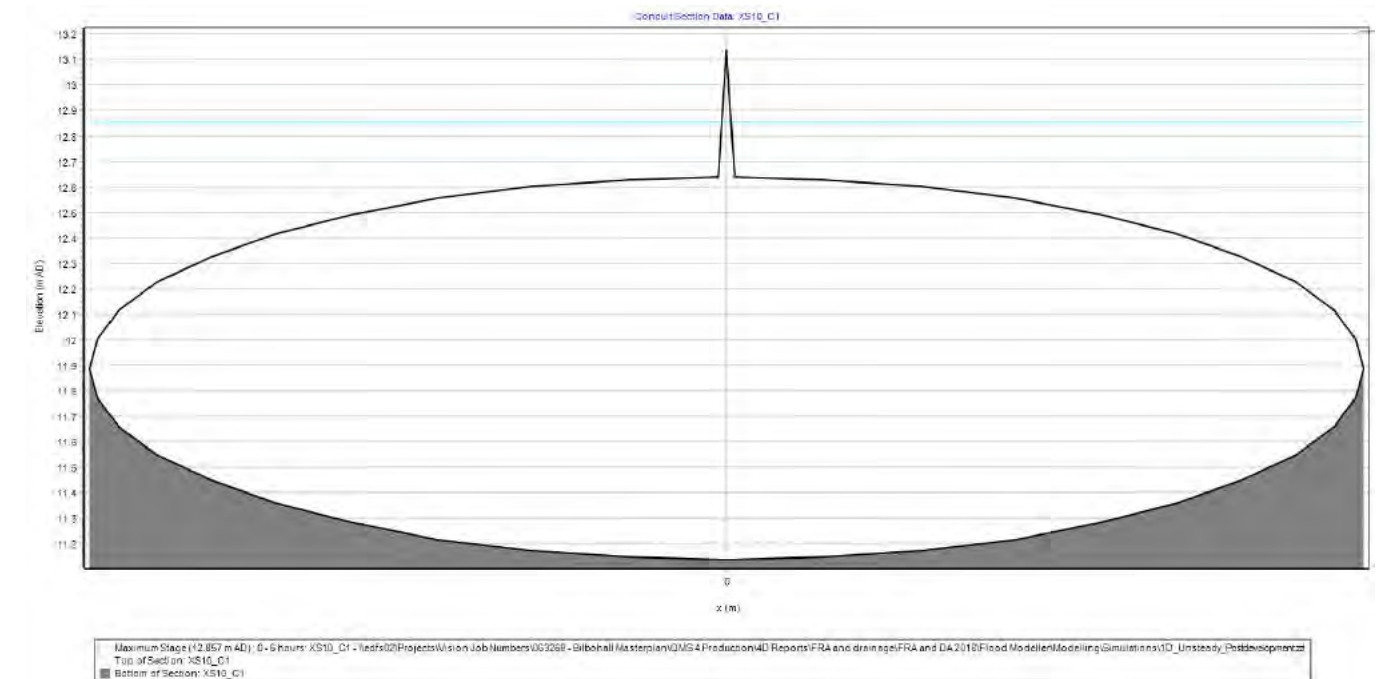
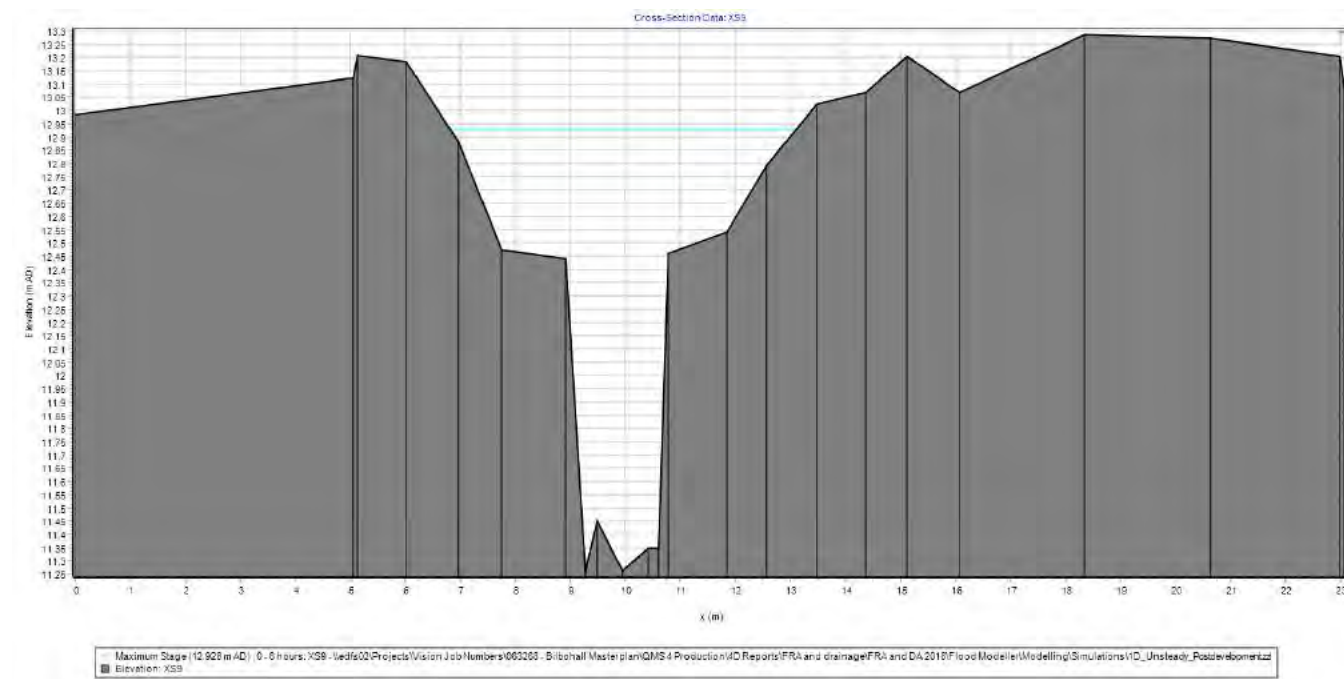
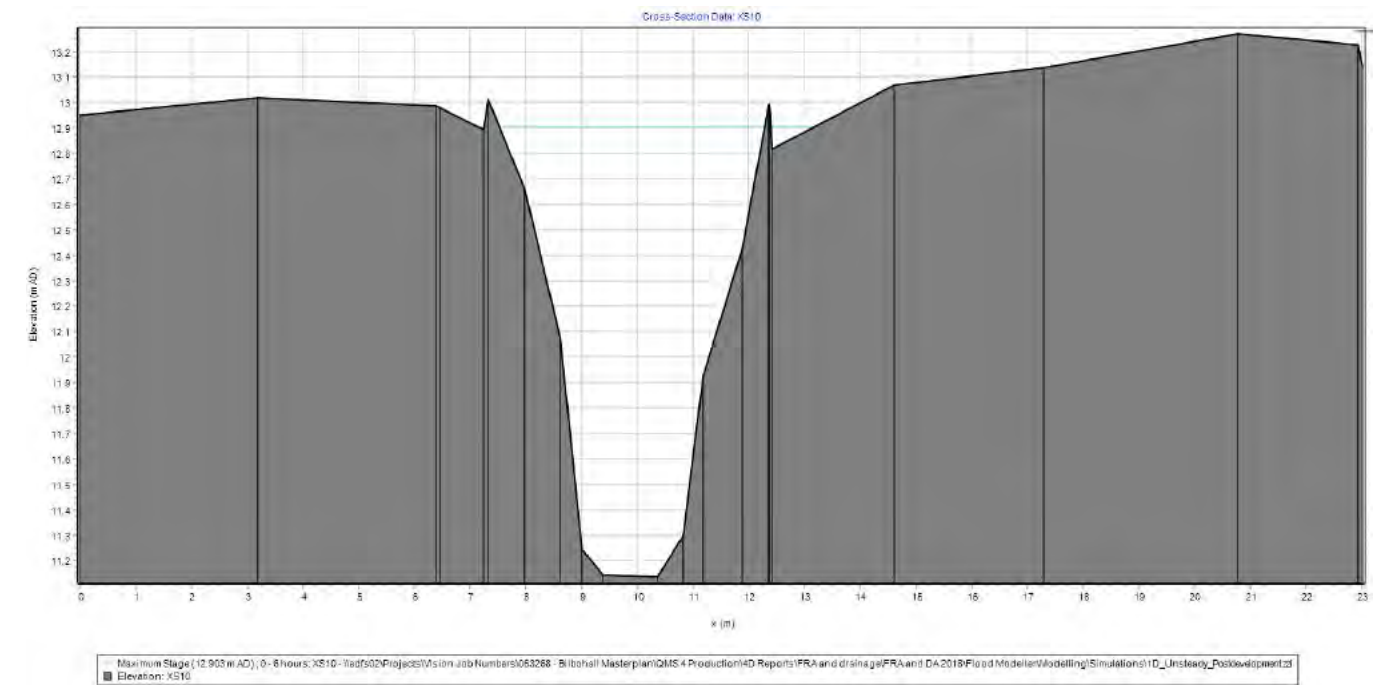
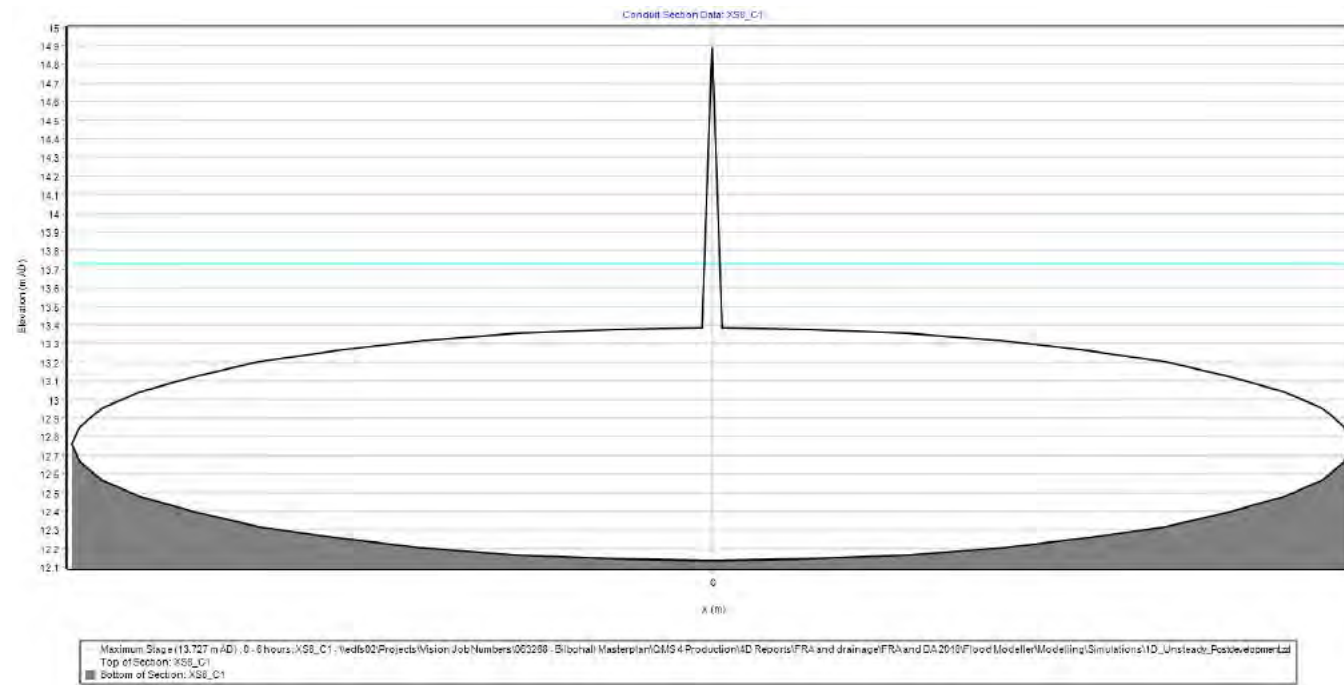
Maximum Stage; 0 - 6 hours: XS3 - XS36 - Wedfs02\Projects\Vision Job Numbers\063268 - Bilbohall Masterplan\QMS 4 Production\4D Reports\FRA and drainage\FRA and DA 2018\Flood Modeller\Modelling\Simulations\1D_Unsteady\2d Bed Elevation: XS3 - XS36: XS3 - XS36 -- Left Bank: XS3 - XS36: XS3 - XS36 -- Right Bank: XS3 - XS36: XS3 - XS36

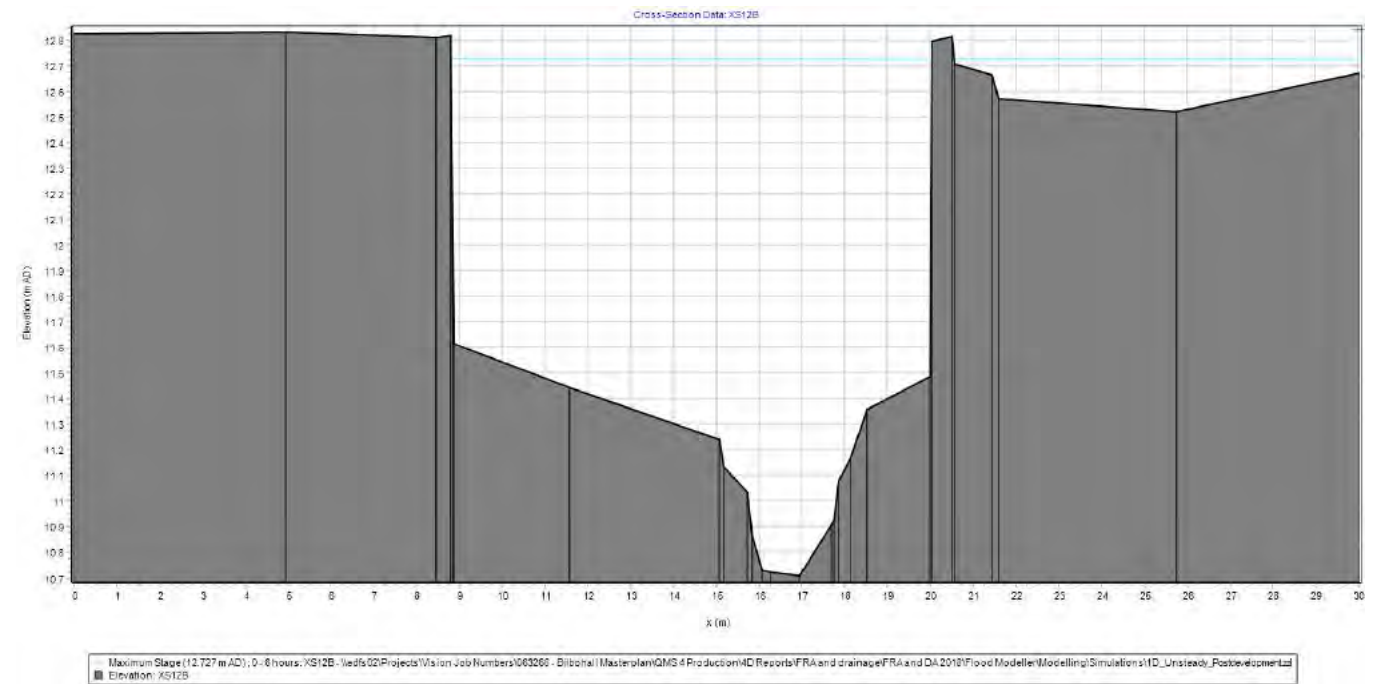
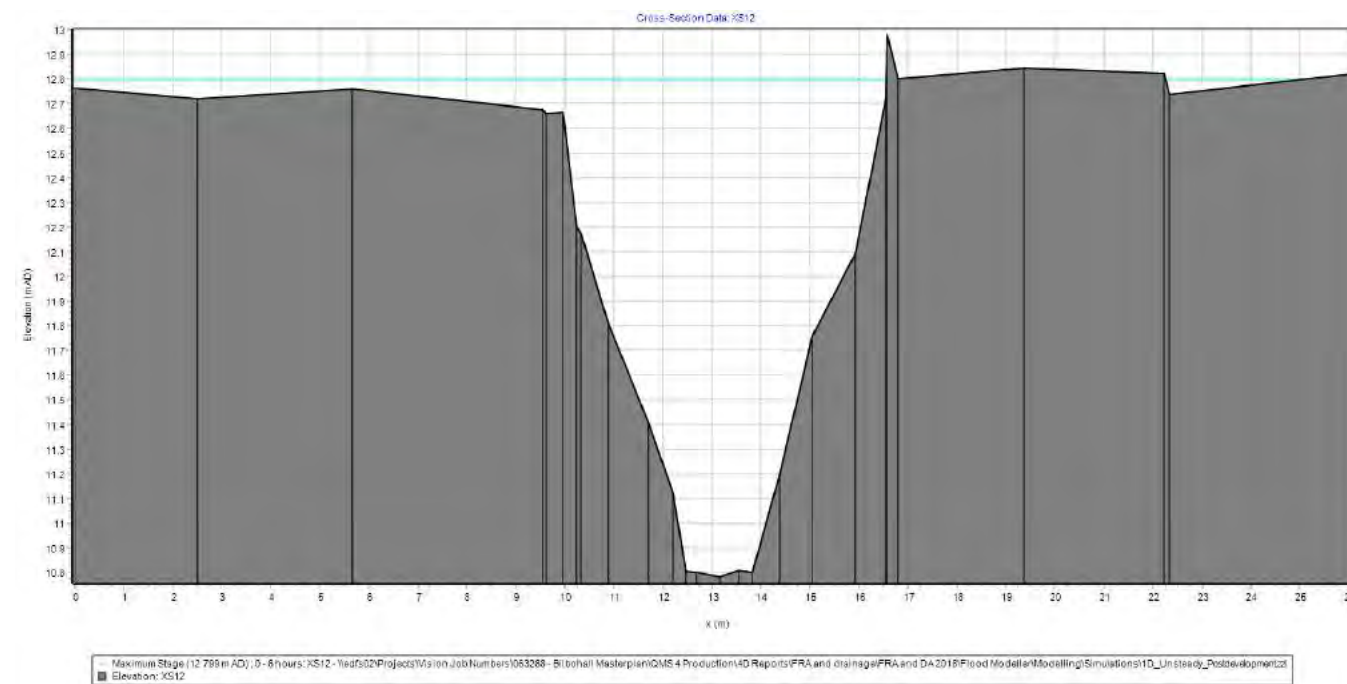
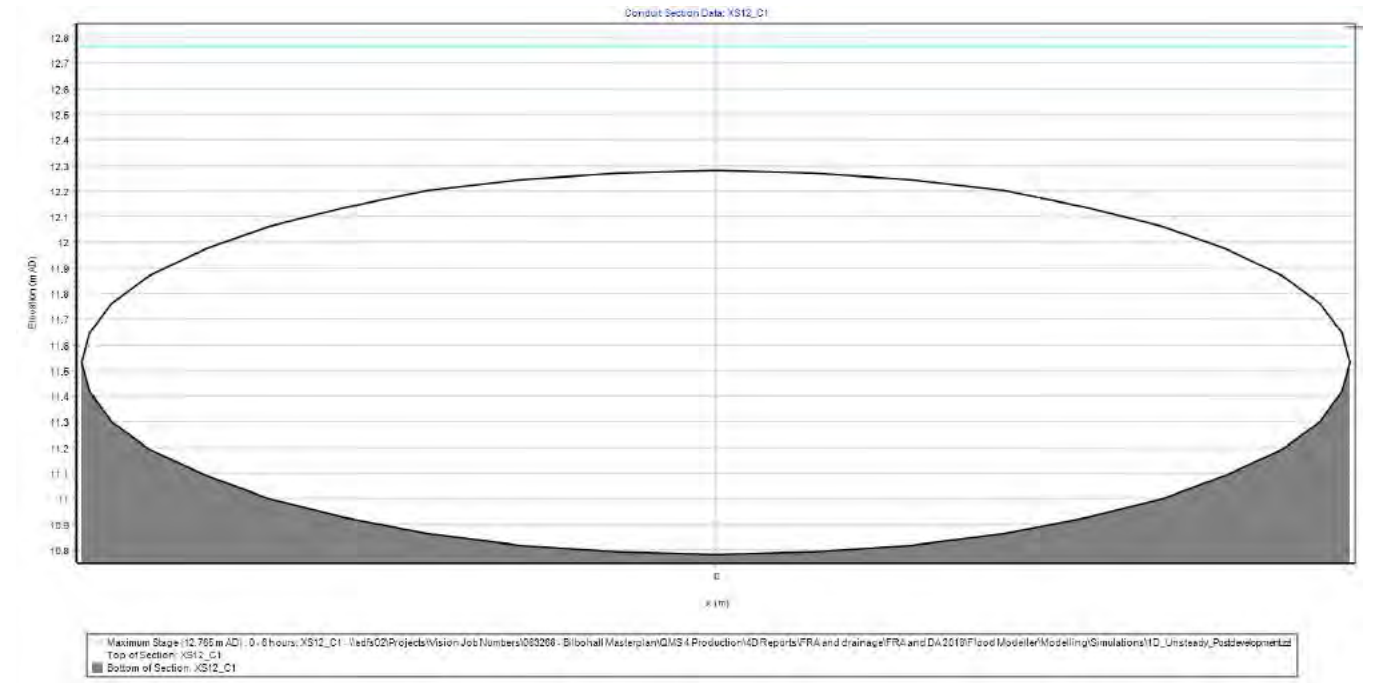
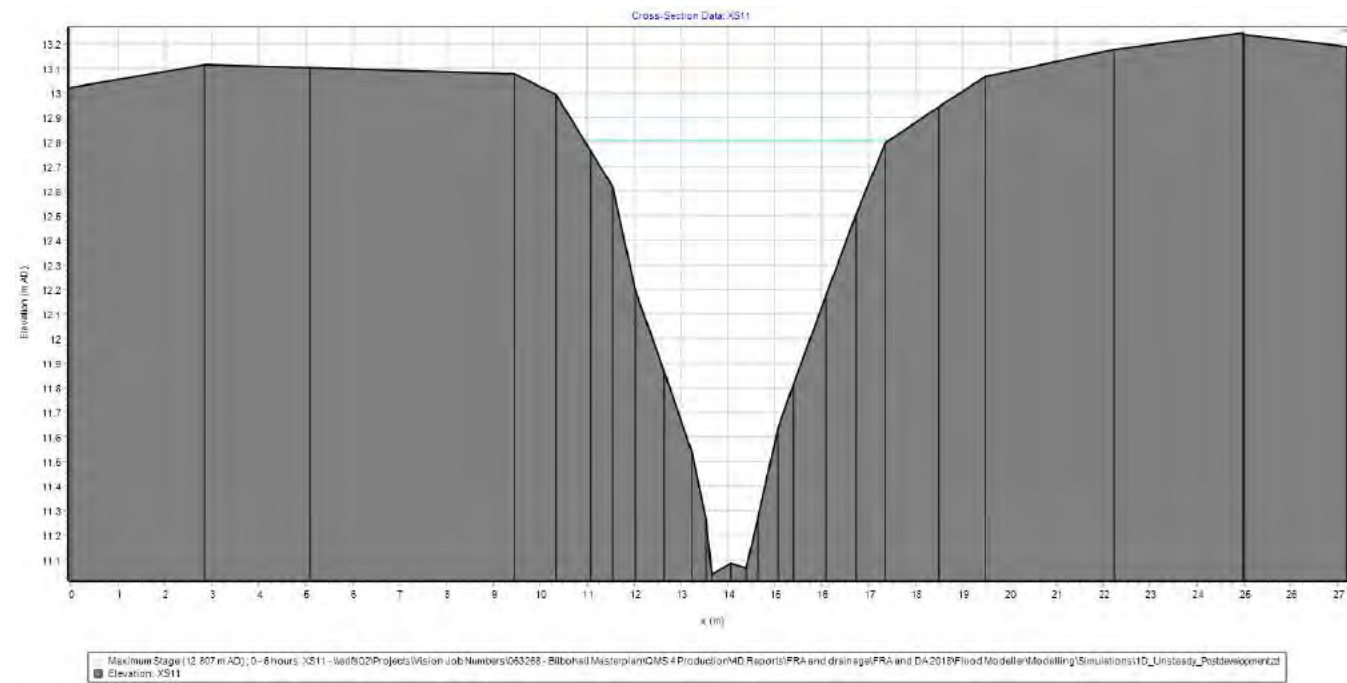
Appendix G – Tyock Burn, Post development scenario.1 in 200 year event + 20% Climate Change Results

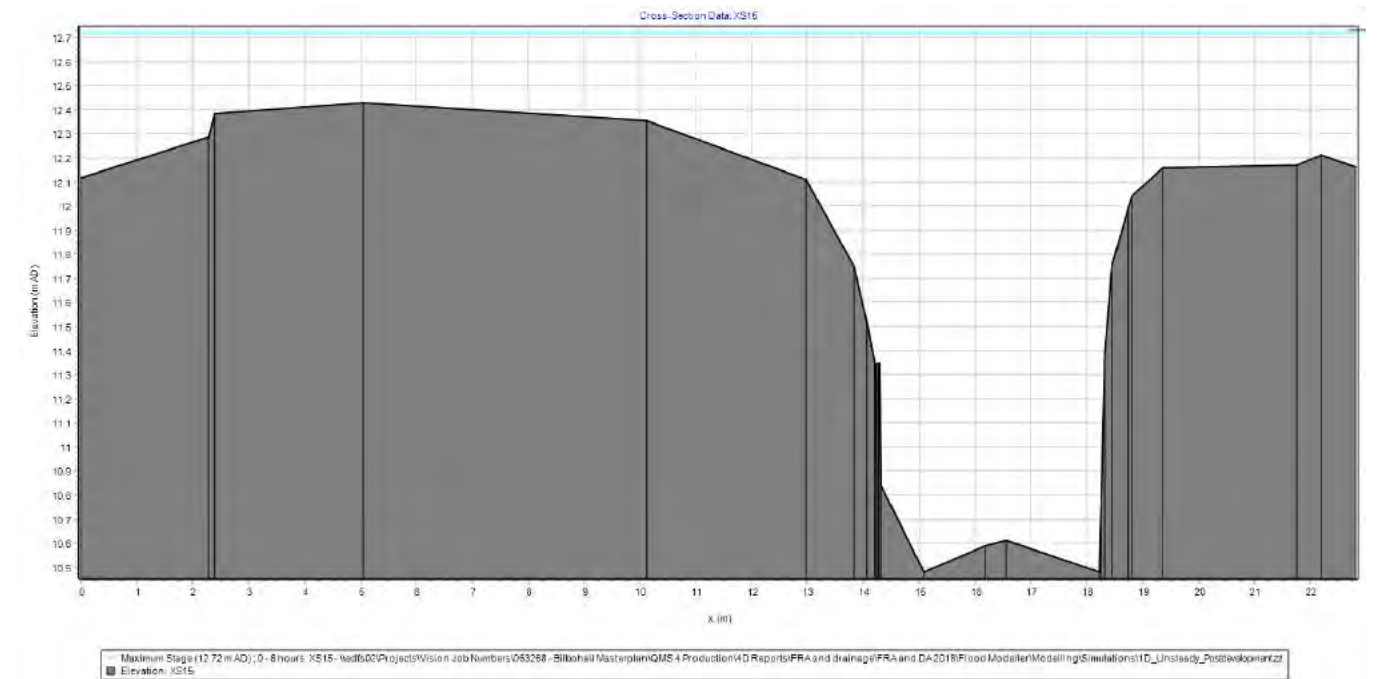
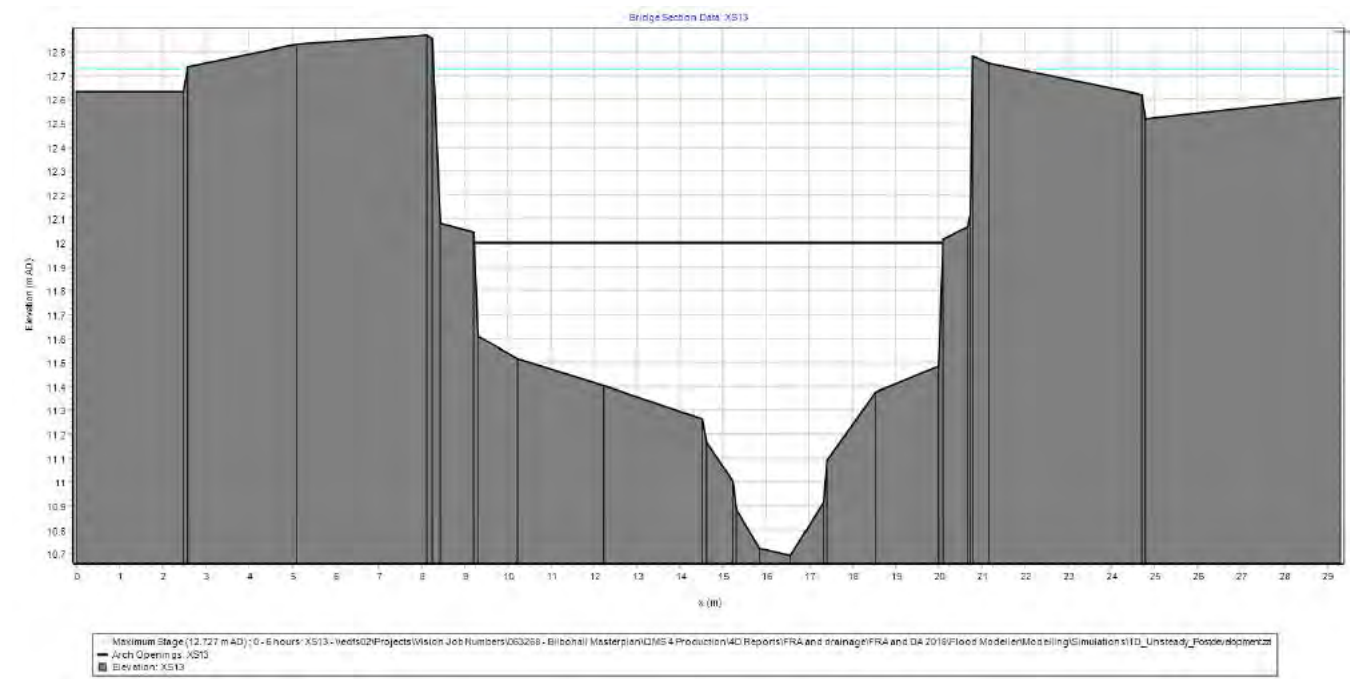
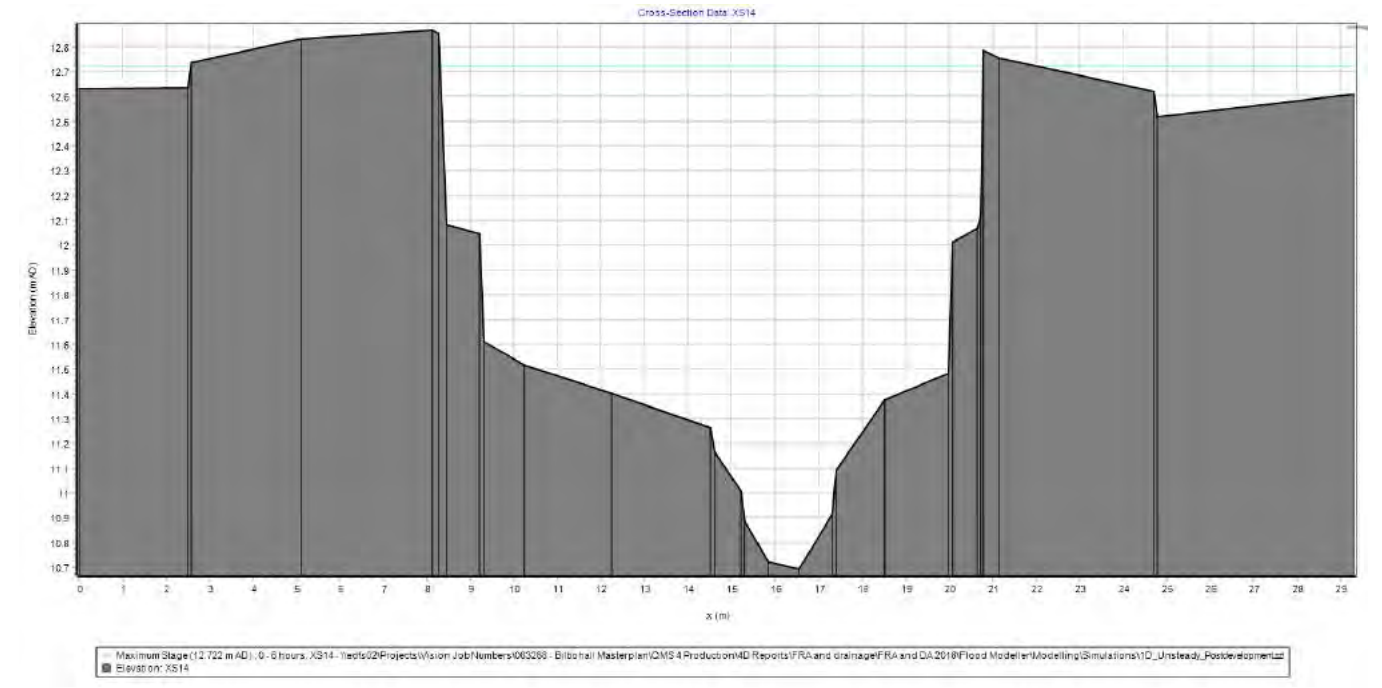
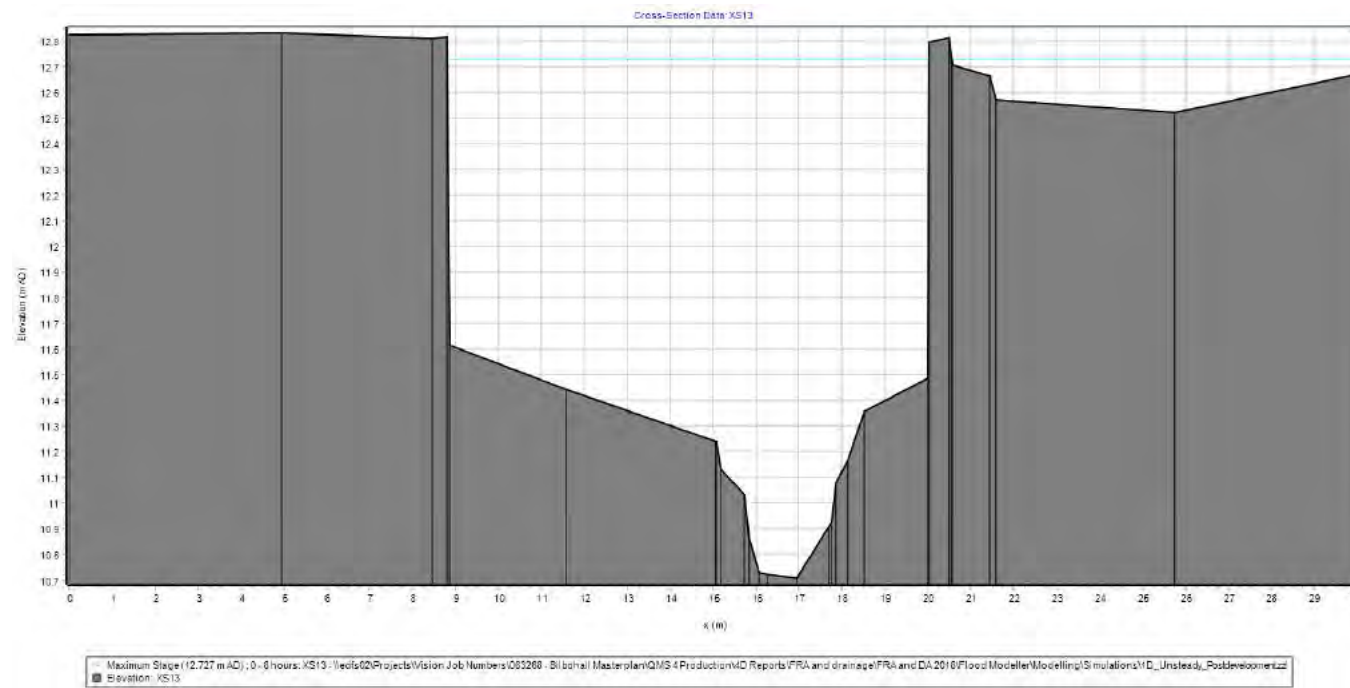
Label	Max Stage	Time (hr)mx2	Min Stage	Time (hr)mn2	Mean Stage	Max Flow	Time (hr)mx1	Min Flow	Time (hr)mn1	Mean Flow
XS3	14.019	1.417	12.896	0.000	13.087	0.128	1.083	0.053	0.000	0.062
XS4	14.002	1.417	12.702	0.000	12.957	0.891	1.417	-0.736	1.417	0.062
XS5	14.002	1.417	12.679	5.000	12.937	0.897	1.417	-0.961	1.417	0.062
XS6	13.979	1.417	12.601	5.083	12.884	0.615	1.417	-1.239	1.417	0.062
XS6_C1	13.997	1.417	12.594	5.083	12.883	0.615	1.417	-1.239	1.417	0.062
XS6_C2	13.823	1.583	12.589	5.083	12.850	0.615	1.417	-1.239	1.417	0.062
XS7	13.825	1.417	12.577	5.083	12.844	1.202	1.250	-0.616	1.417	0.215
XS8	13.858	1.417	12.417	4.500	12.724	1.040	1.917	0.019	1.083	0.216
XS8_C1	13.771	1.417	12.299	4.500	12.582	2.227	1.167	0.117	4.500	0.579
XS8_C2	12.997	1.667	11.548	3.667	11.916	2.244	1.167	0.117	4.500	0.579
XS9	12.928	1.750	11.522	0.000	11.873	2.244	1.167	0.117	4.500	0.579
XS10	12.903	1.750	11.399	0.000	11.781	2.184	1.167	0.115	0.000	0.579
XS10_C1	12.857	1.750	11.333	0.000	11.716	2.184	1.167	0.115	0.000	0.579
XS10_C2	12.853	1.750	11.349	0.000	11.724	2.184	1.167	0.116	0.000	0.579
XS11	12.809	1.750	11.288	0.000	11.661	2.184	1.167	0.116	0.000	0.579
XS12	12.800	1.750	11.050	0.000	11.499	2.098	1.417	0.117	4.833	0.579
XS12_C1	12.768	1.833	10.966	0.000	11.437	2.098	1.417	0.117	4.833	0.579
XS12_C2	12.759	1.833	10.971	0.000	11.444	2.098	1.417	0.114	0.000	0.579
XS13	12.727	1.833	10.908	0.000	11.382	2.086	1.417	0.116	0.000	0.579
XS14	12.722	1.833	10.909	0.000	11.382	2.086	1.417	0.116	0.000	0.579
XS15	12.720	1.833	10.738	0.000	11.285	1.883	1.833	0.112	0.000	0.579
XS16	12.666	1.833	10.738	0.000	11.276	1.883	1.833	0.112	0.000	0.579
XS17	12.663	1.833	10.682	0.000	11.239	1.956	2.000	0.105	0.000	0.579
XS17B	12.600	1.750	10.680	0.000	11.228	1.956	2.000	0.105	0.000	0.579
XS18	12.598	1.750	10.596	0.000	11.186	2.134	2.000	0.058	0.333	0.579
XS19	12.547	1.750	10.596	0.000	11.176	2.134	2.000	0.058	0.333	0.579
XS20	12.546	1.750	10.557	0.000	11.165	2.238	2.083	0.000	0.500	0.578
XS21	12.483	1.667	10.560	0.000	11.151	2.238	2.083	0.000	0.500	0.578
XS22	12.473	1.667	10.483	0.000	11.099	4.239	1.167	0.108	0.000	1.271
XS23	12.212	1.750	10.483	0.000	11.044	4.239	1.167	0.108	0.000	1.271
XS24	12.175	1.750	10.226	0.083	10.826	3.829	1.417	0.107	0.083	1.270
XS24B	12.116	1.750	10.226	0.083	10.815	3.829	1.417	0.107	0.083	1.270
XS25	12.097	1.750	9.941	0.083	10.622	3.704	1.750	0.110	0.083	1.270
XS25_C1	12.071	1.750	9.935	0.083	10.608	3.704	1.750	0.110	0.083	1.270
XS25_C2	11.655	1.750	9.884	0.167	10.472	3.704	1.750	0.126	0.167	1.271
XS26(B)	11.620	1.750	9.882	0.167	10.457	3.704	1.750	0.126	0.167	1.271
XS27	11.573	1.750	9.471	6.000	10.237	3.893	2.083	0.000	0.583	1.271
XS28	11.416	1.750	9.469	6.000	10.198	3.893	2.083	0.000	0.583	1.271
XS29	11.243	1.750	9.170	0.000	9.953	5.364	1.333	0.154	0.333	1.799
XS30	11.144	1.833	9.169	0.000	9.923	5.364	1.333	0.154	0.333	1.799
XS31	11.006	1.833	8.699	0.000	9.612	5.872	1.250	0.186	0.000	2.184
XS32	10.911	1.917	8.704	0.000	9.589	5.872	1.250	0.186	0.000	2.184
XS33	10.895	1.917	8.554	0.000	9.516	5.774	1.750	0.186	0.000	2.184
XS34	10.514	1.917	8.558	0.000	9.422	5.774	1.750	0.186	0.000	2.184
XS34B	10.212	2.000	7.628	0.250	8.936	5.694	2.000	0.191	0.333	2.184
XS34_C1	10.173	2.000	7.527	0.000	8.894	5.694	2.000	0.191	0.333	2.184
XS34_C2	10.129	2.000	7.333	0.000	8.845	5.694	2.000	0.190	0.000	2.184
XS35	10.101	2.000	7.330	0.000	8.835	5.694	2.000	0.190	0.000	2.184
XS36	10.099	2.000	7.328	0.000	8.833	5.694	2.000	0.192	0.000	2.184

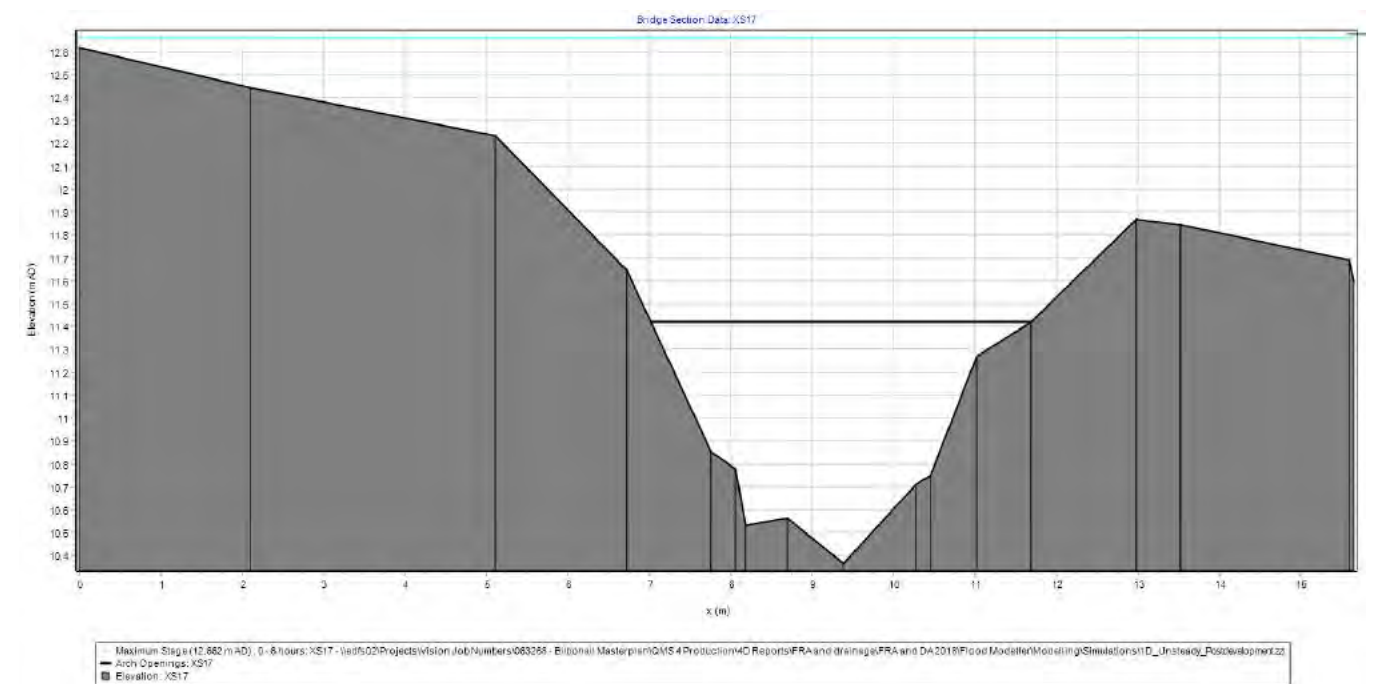
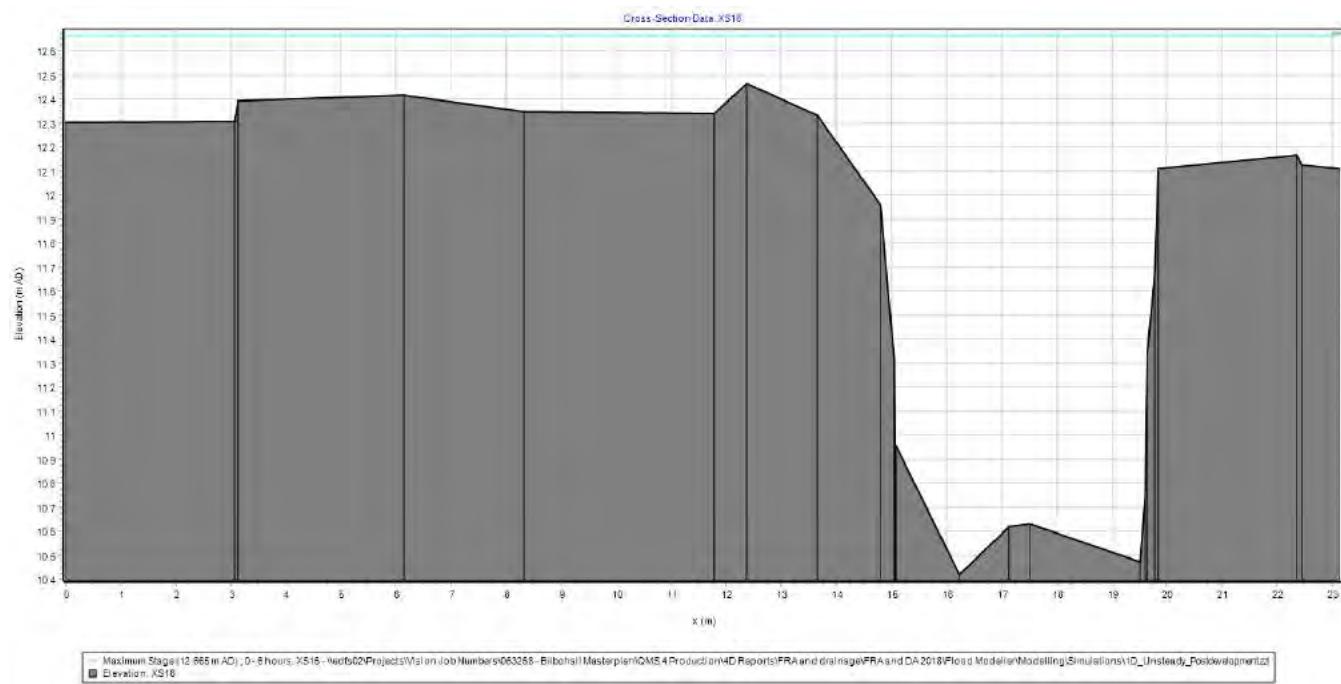
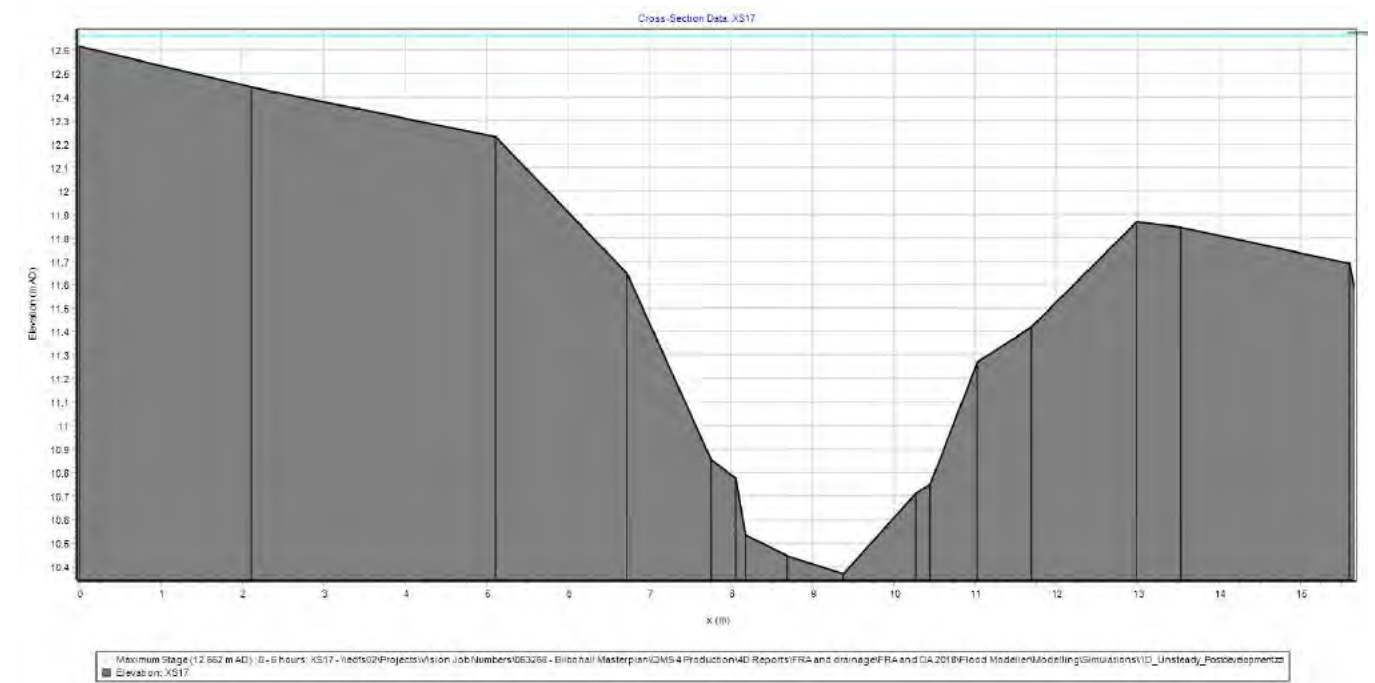
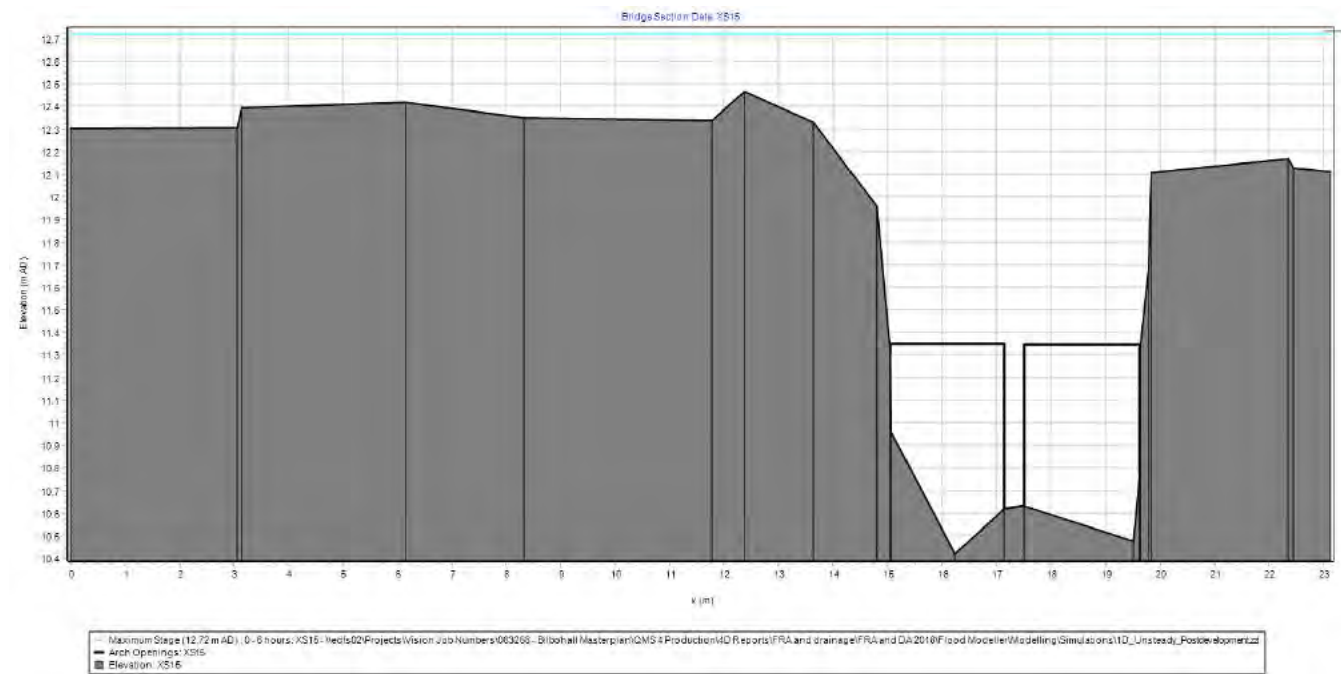


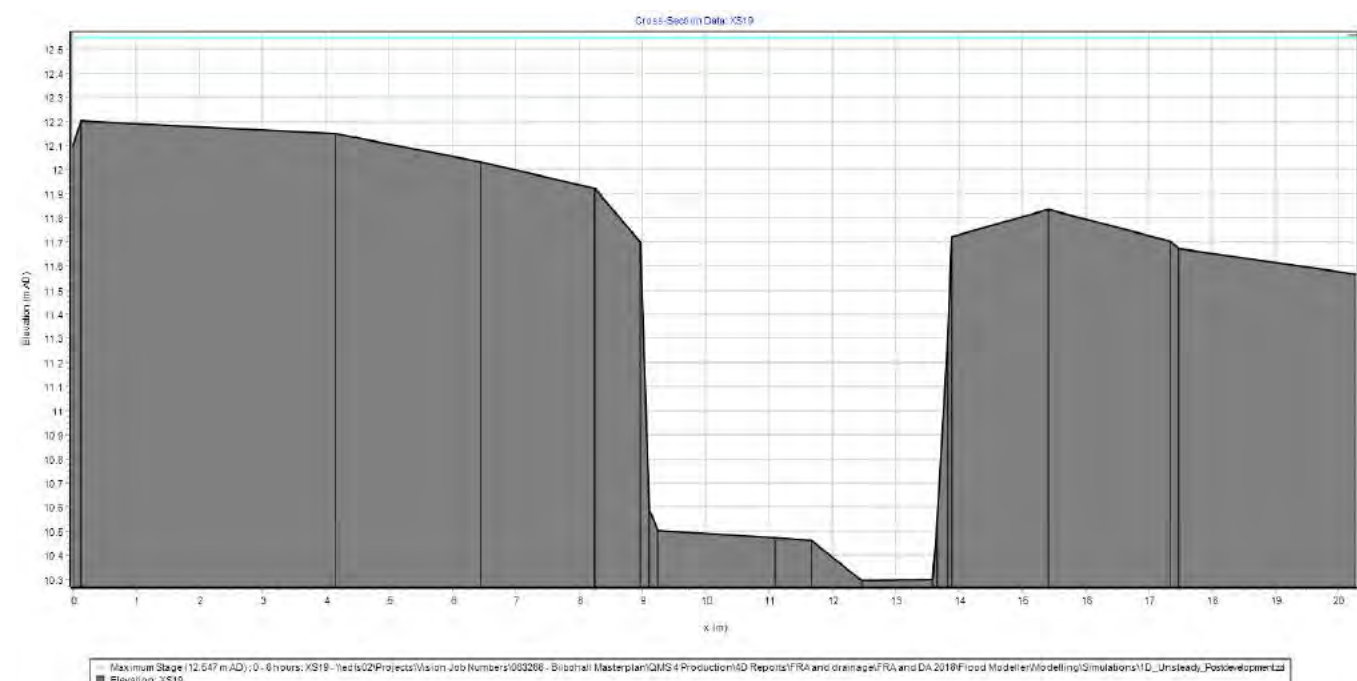
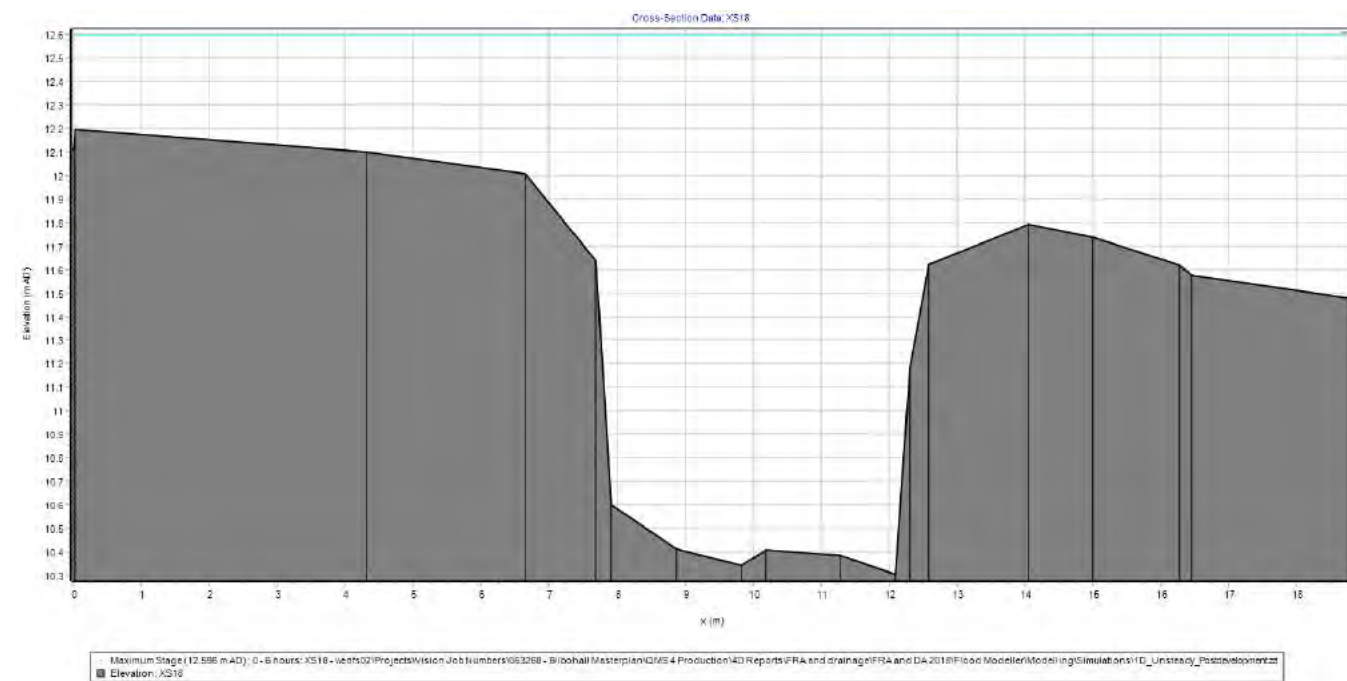
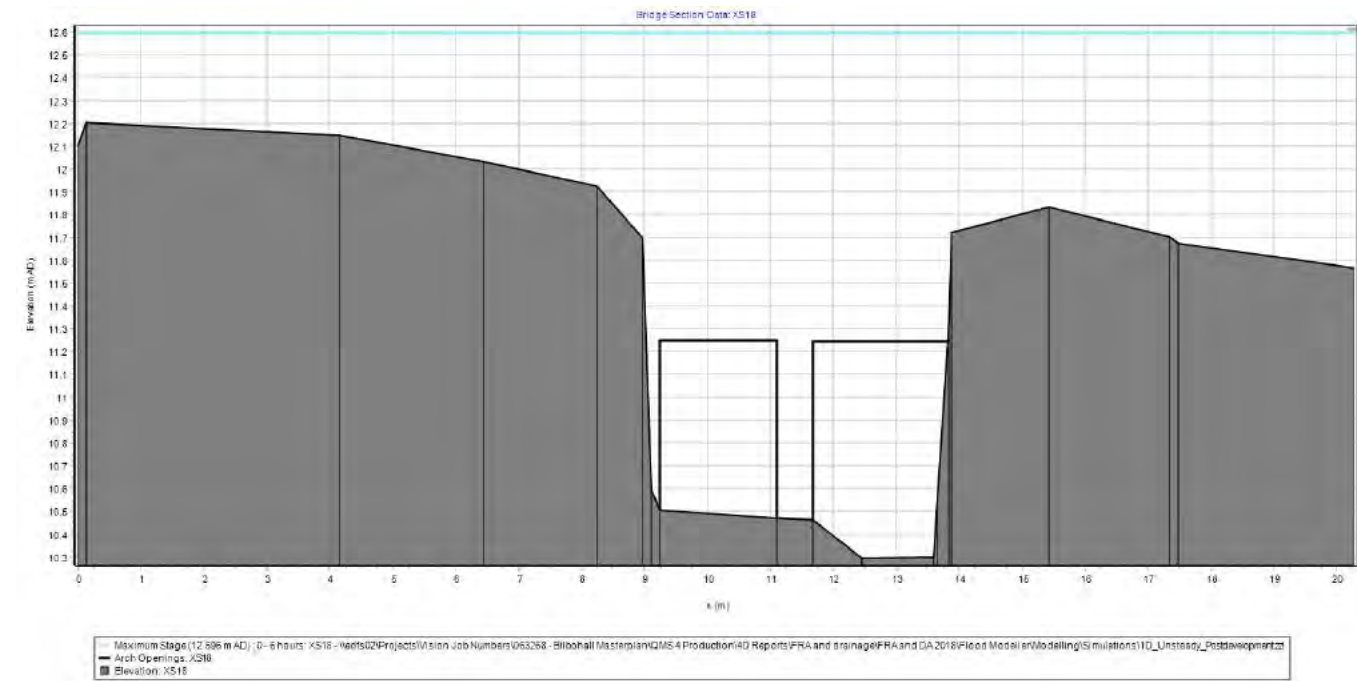
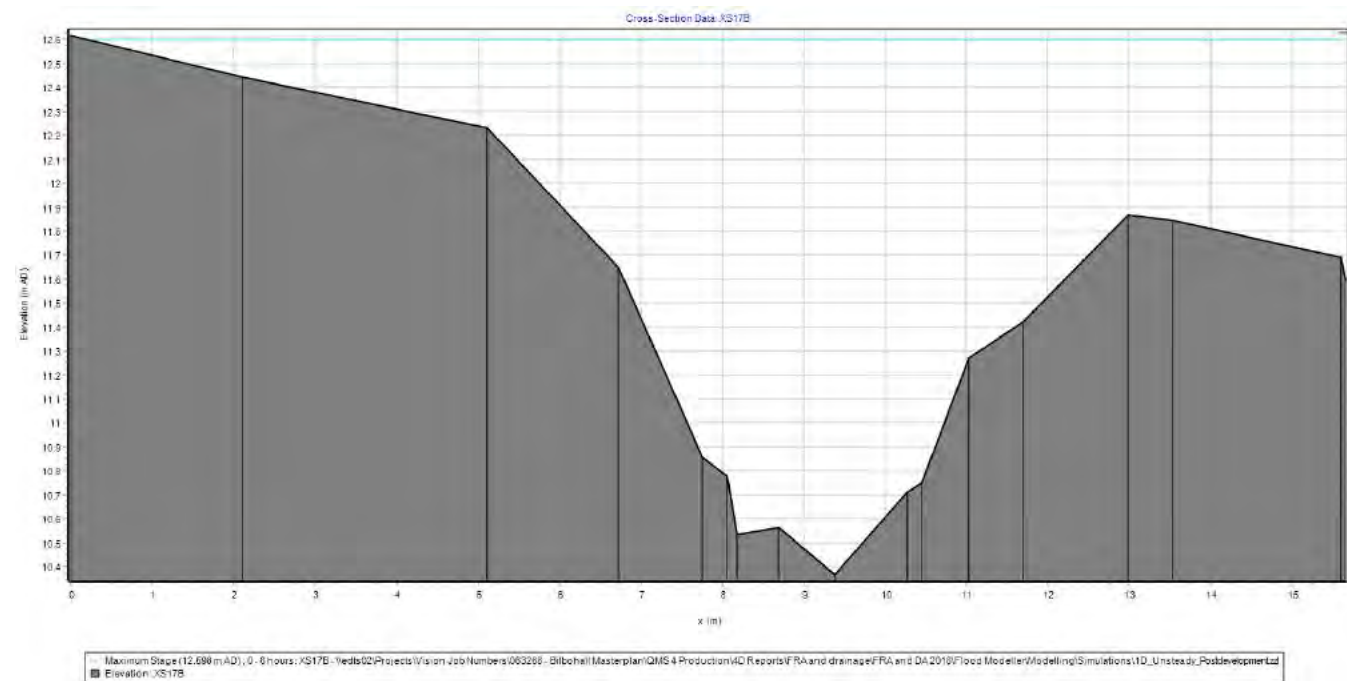


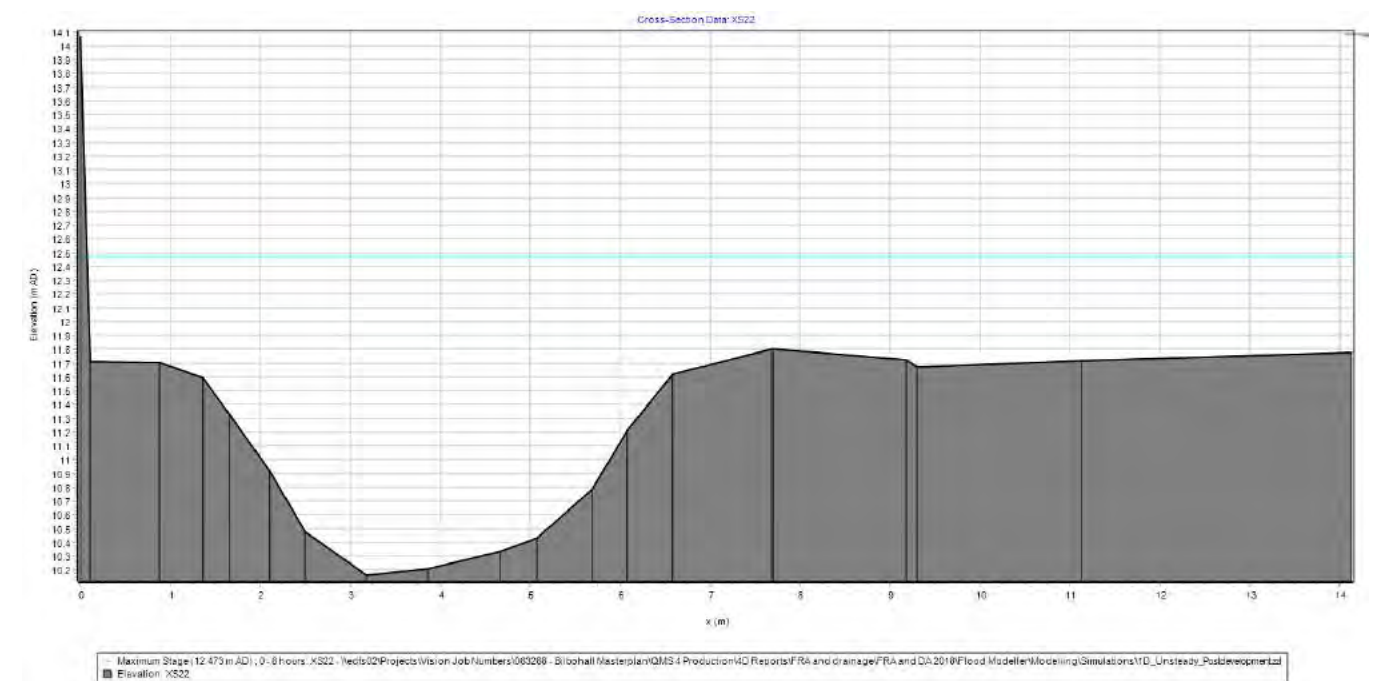
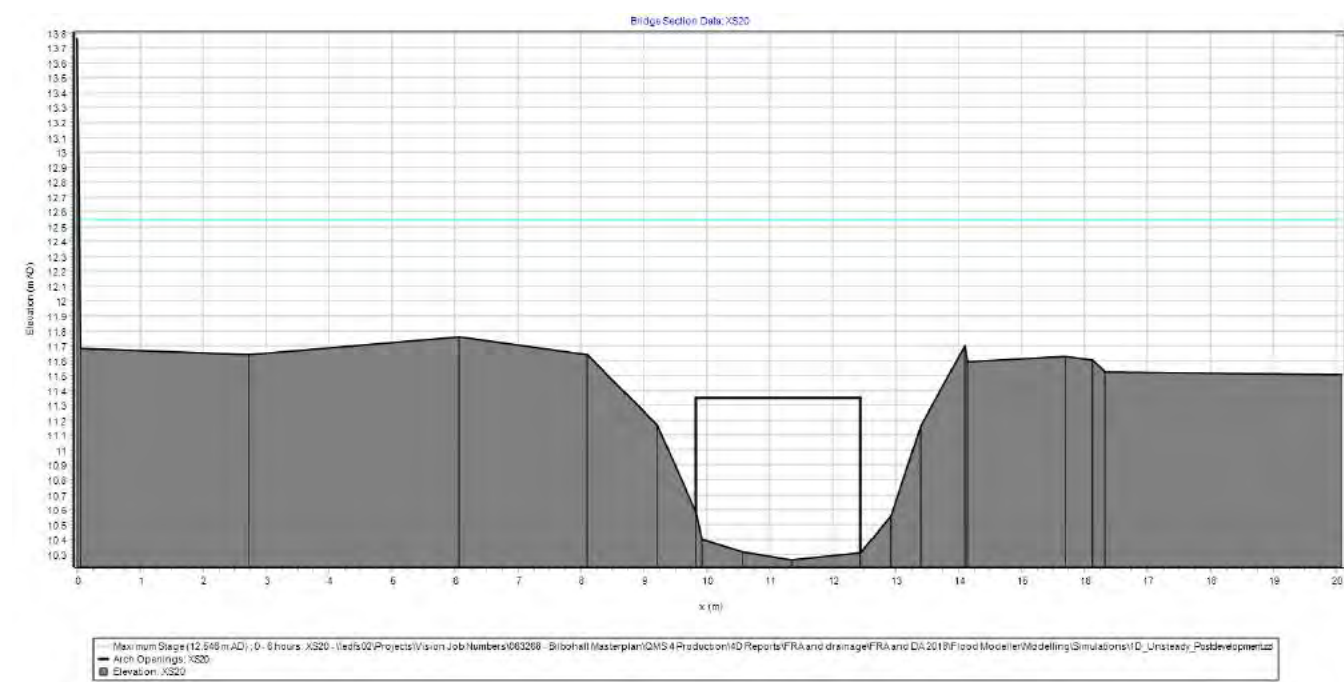
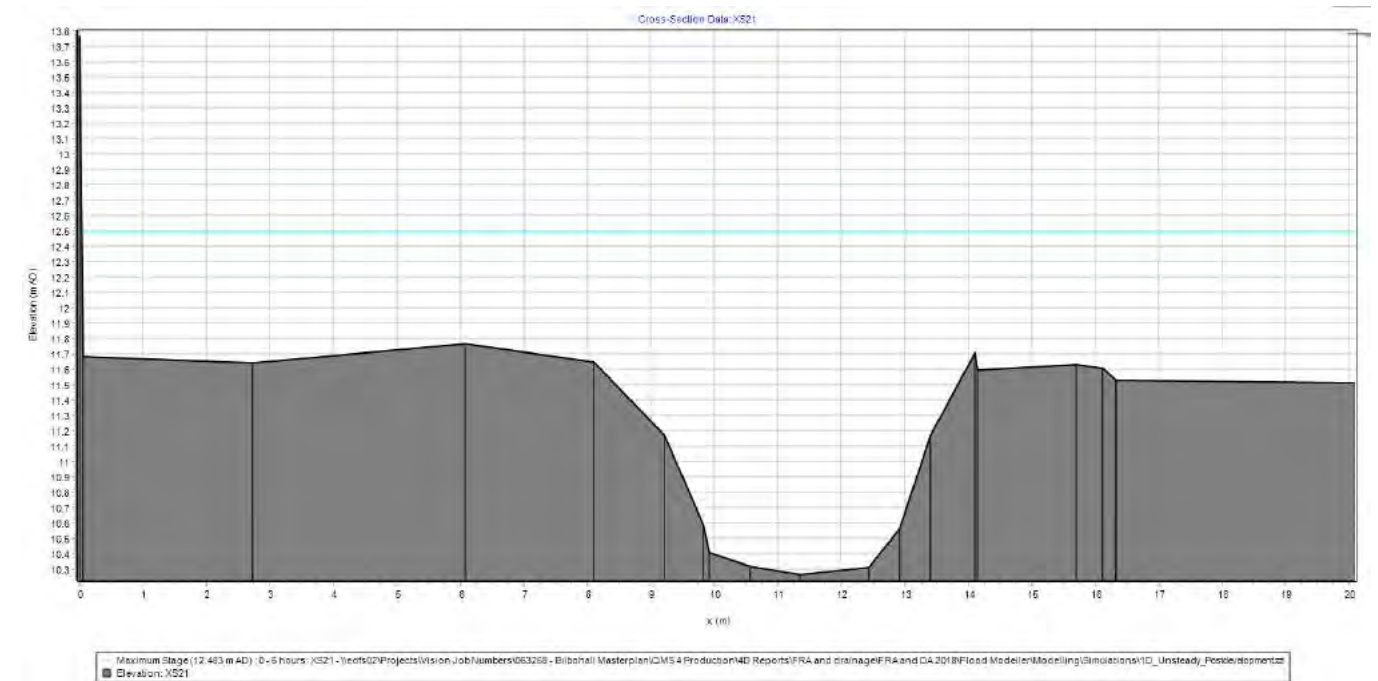
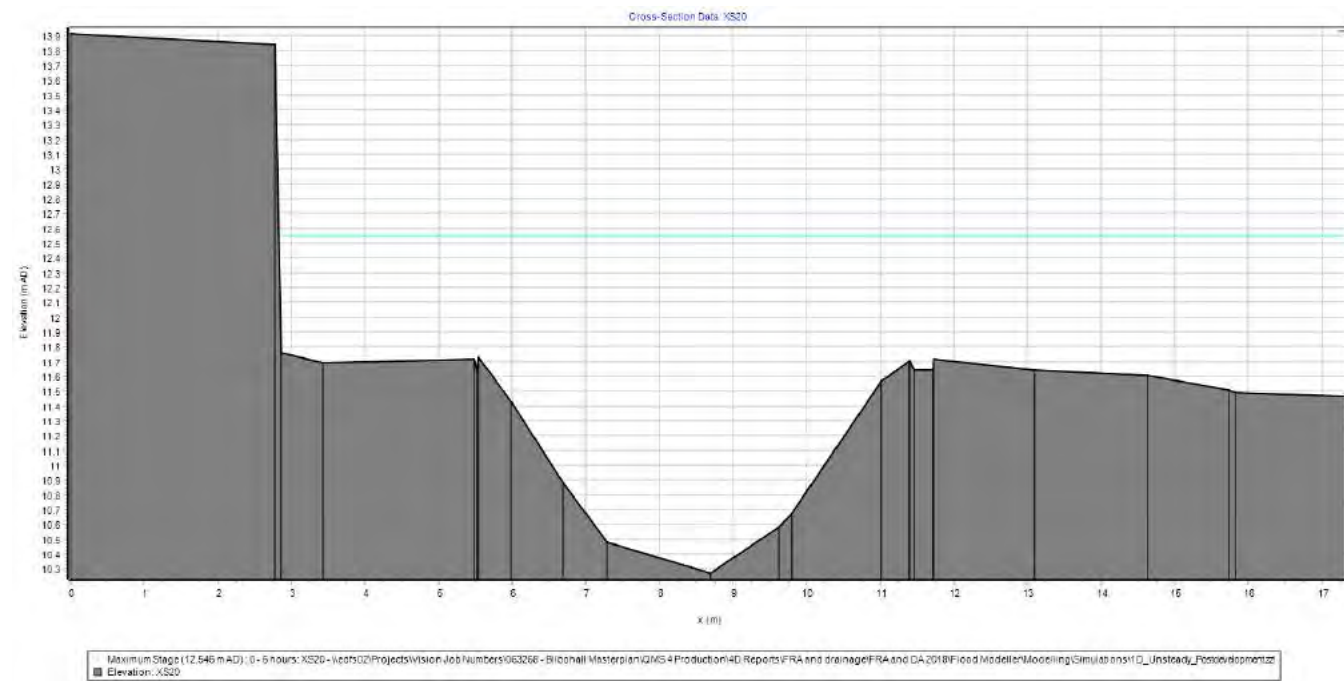


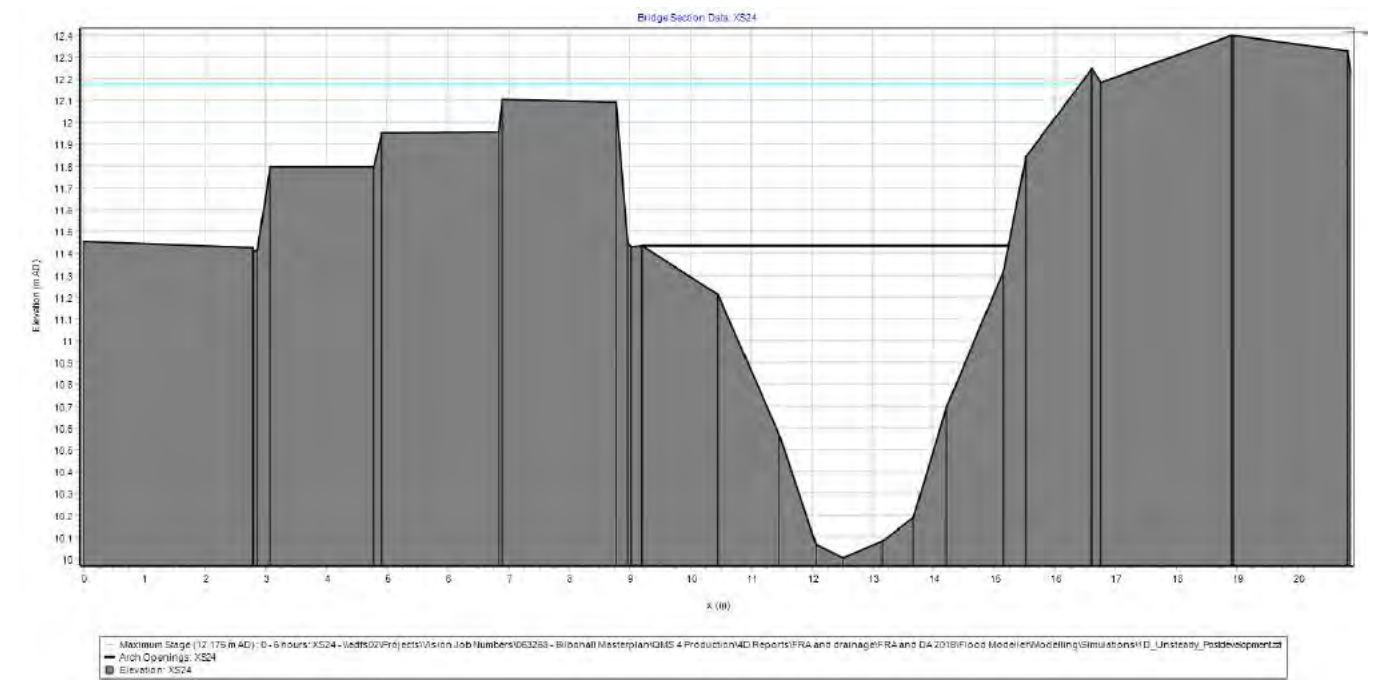
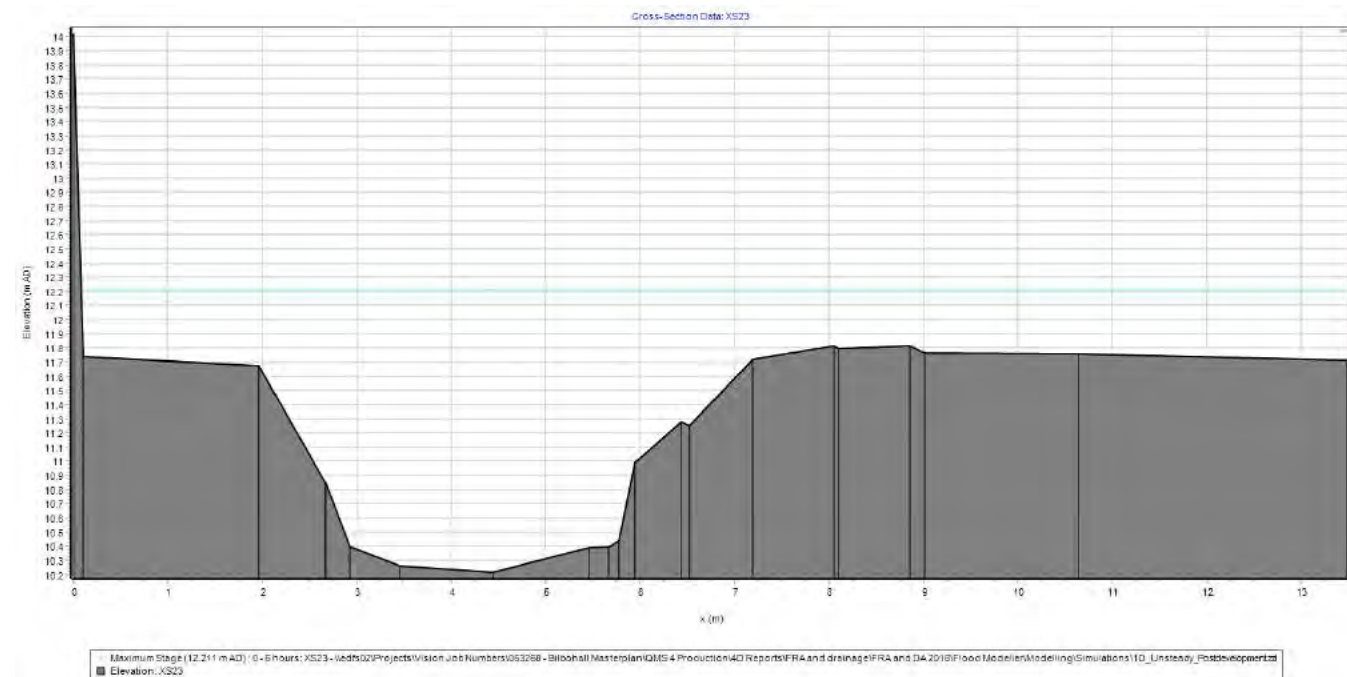
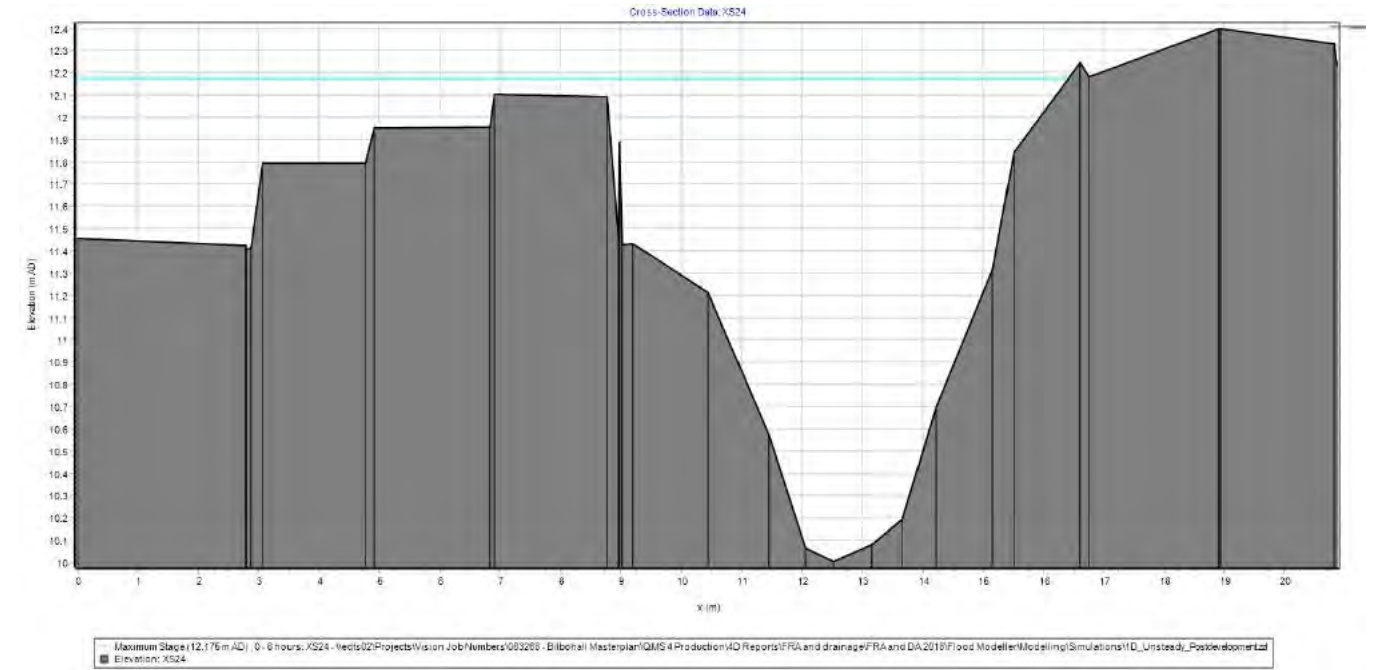
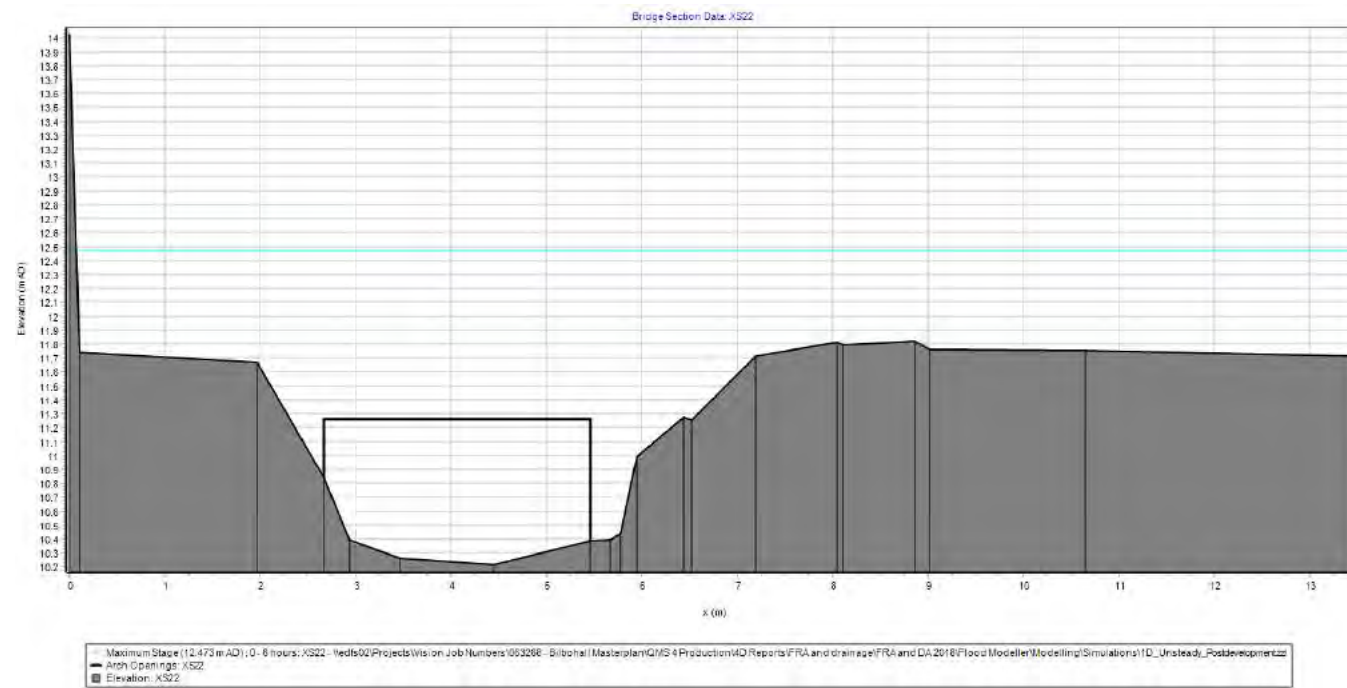


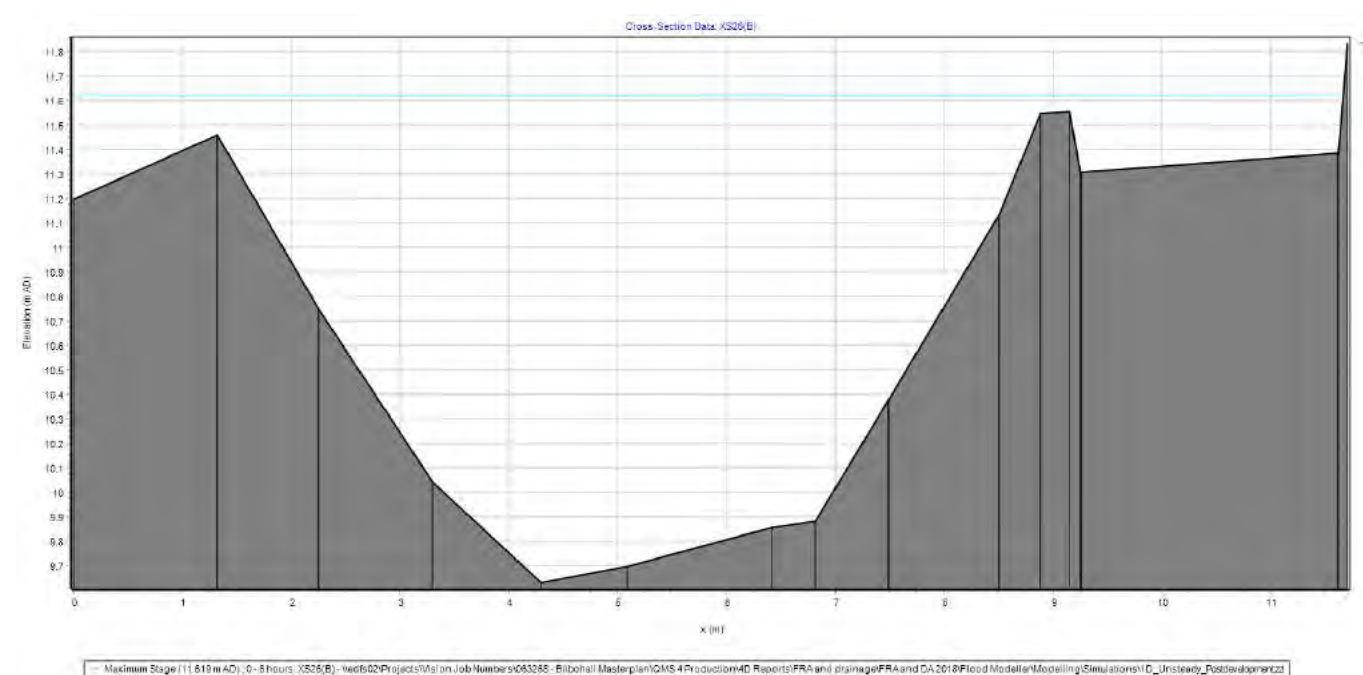
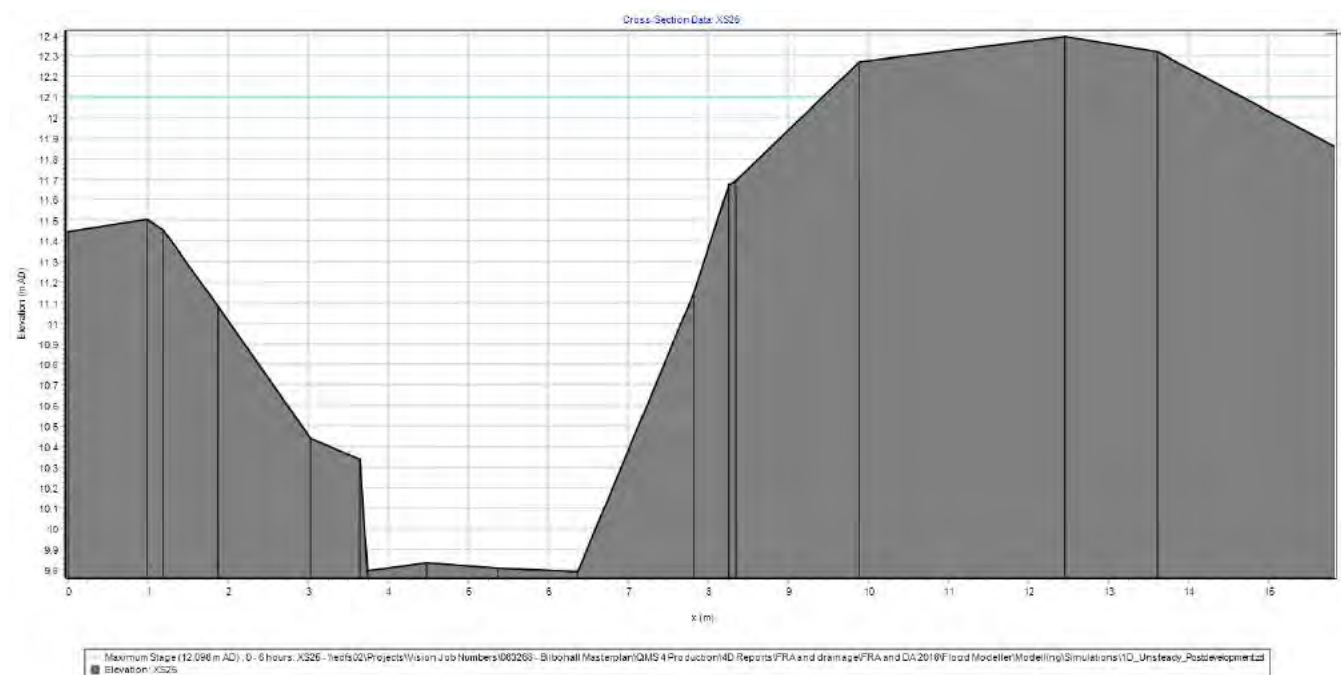
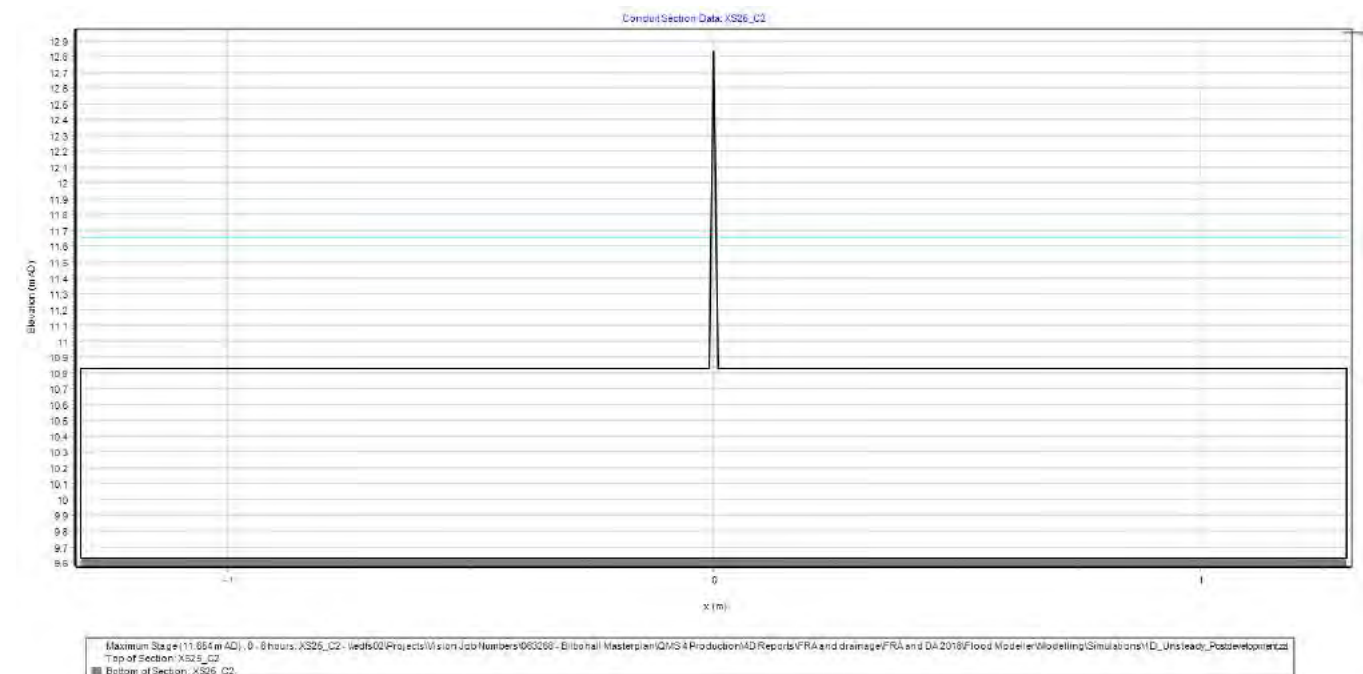
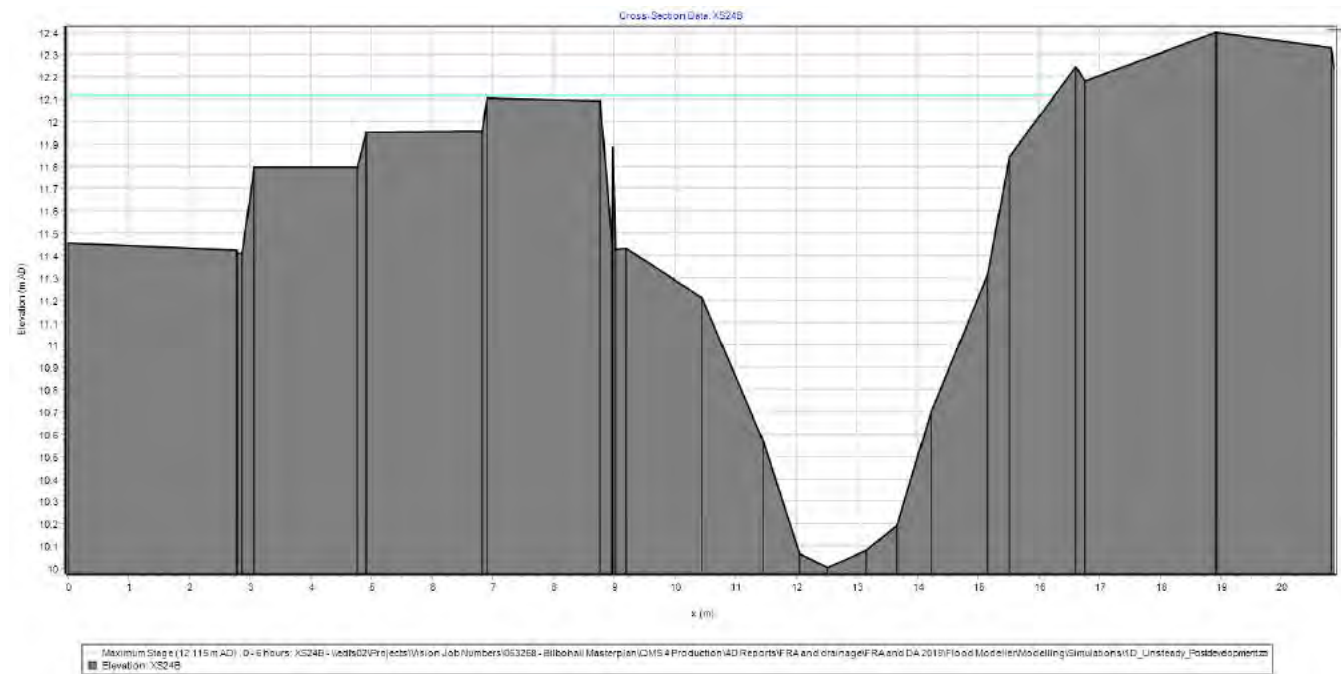


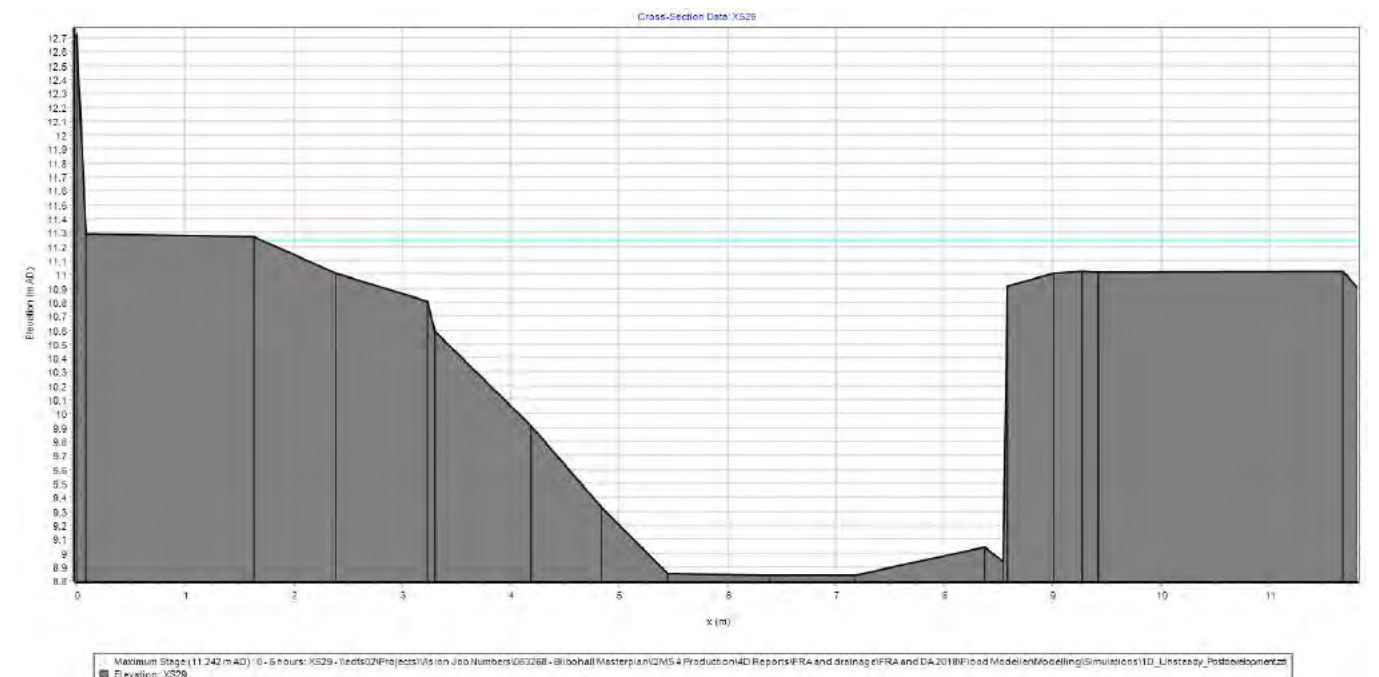
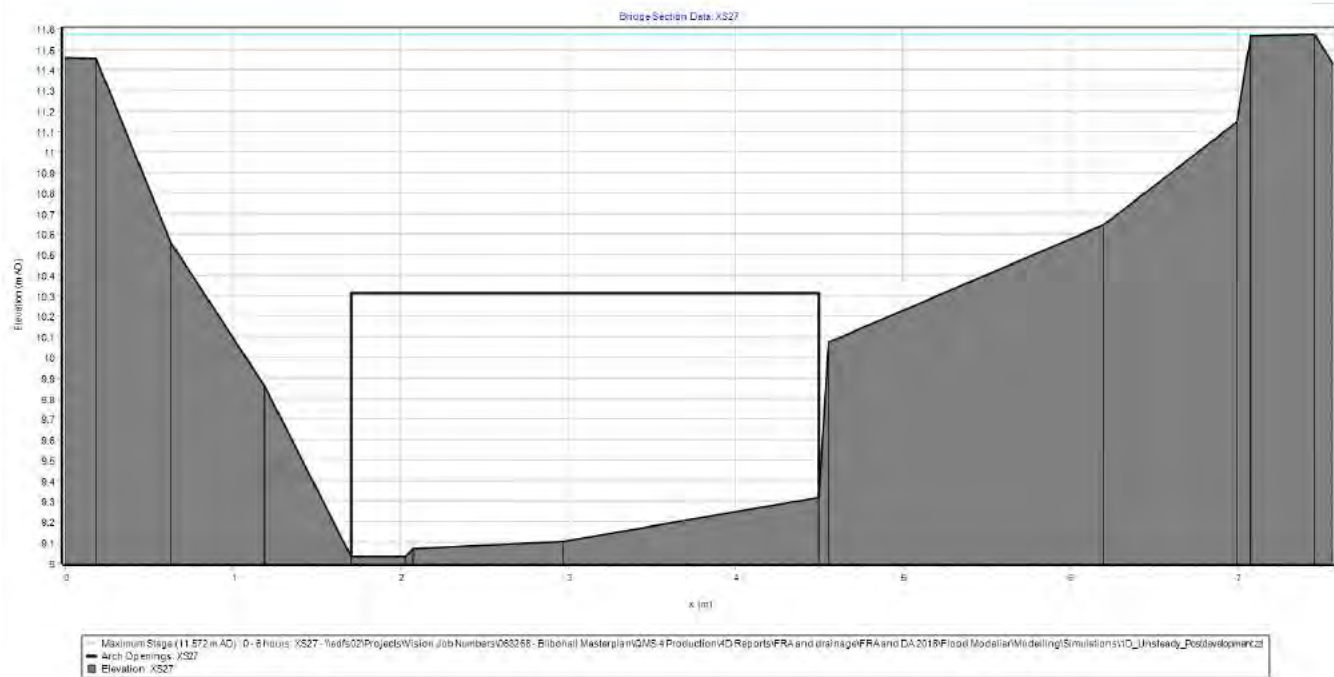
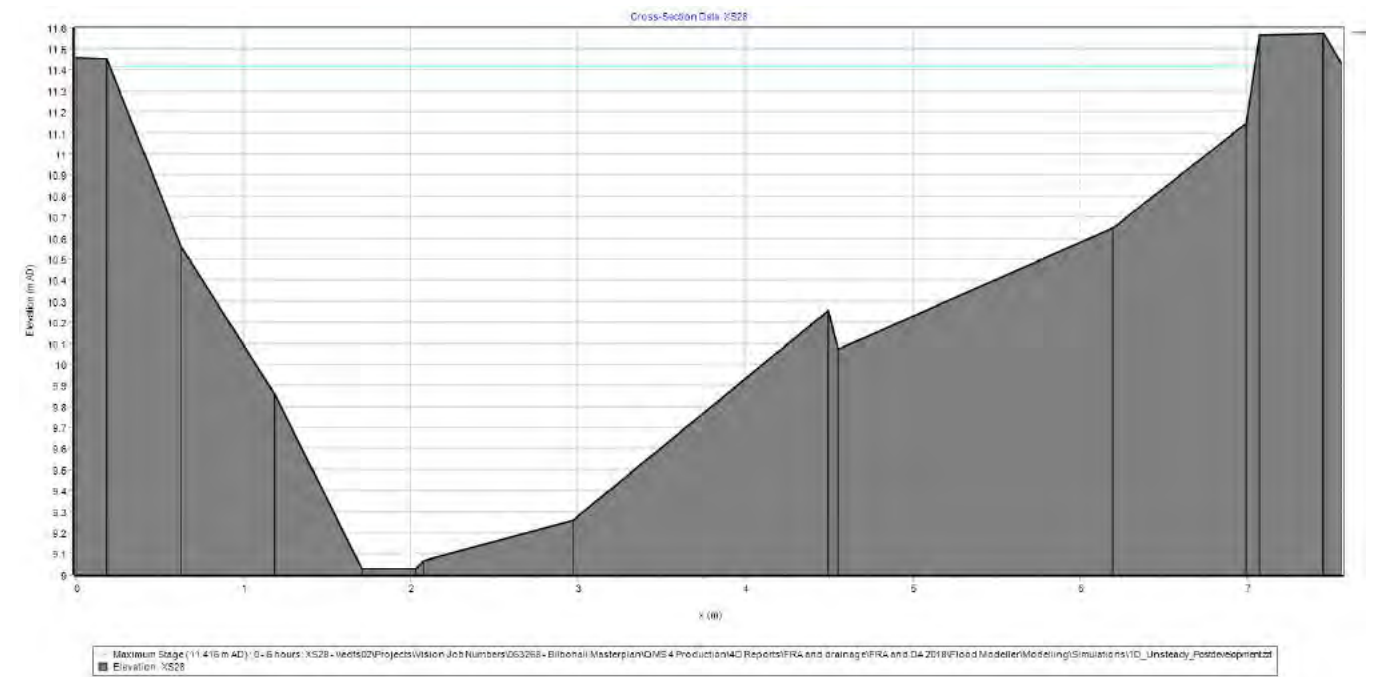
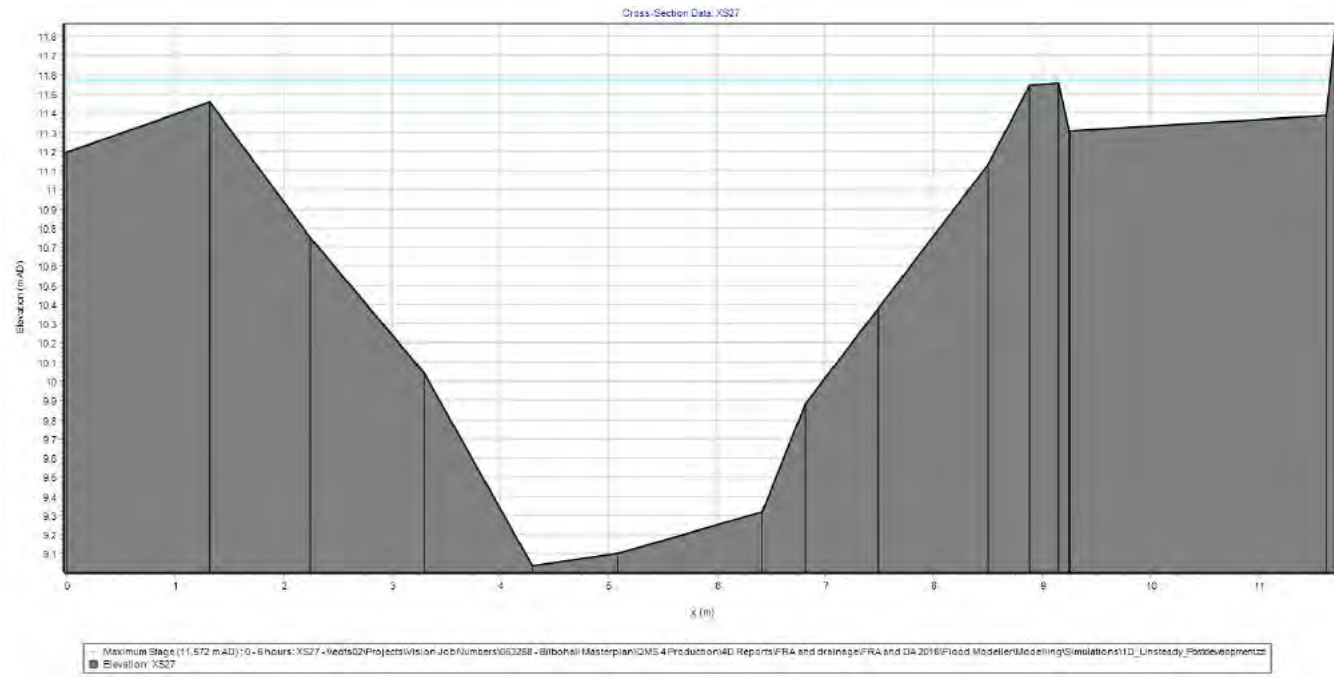


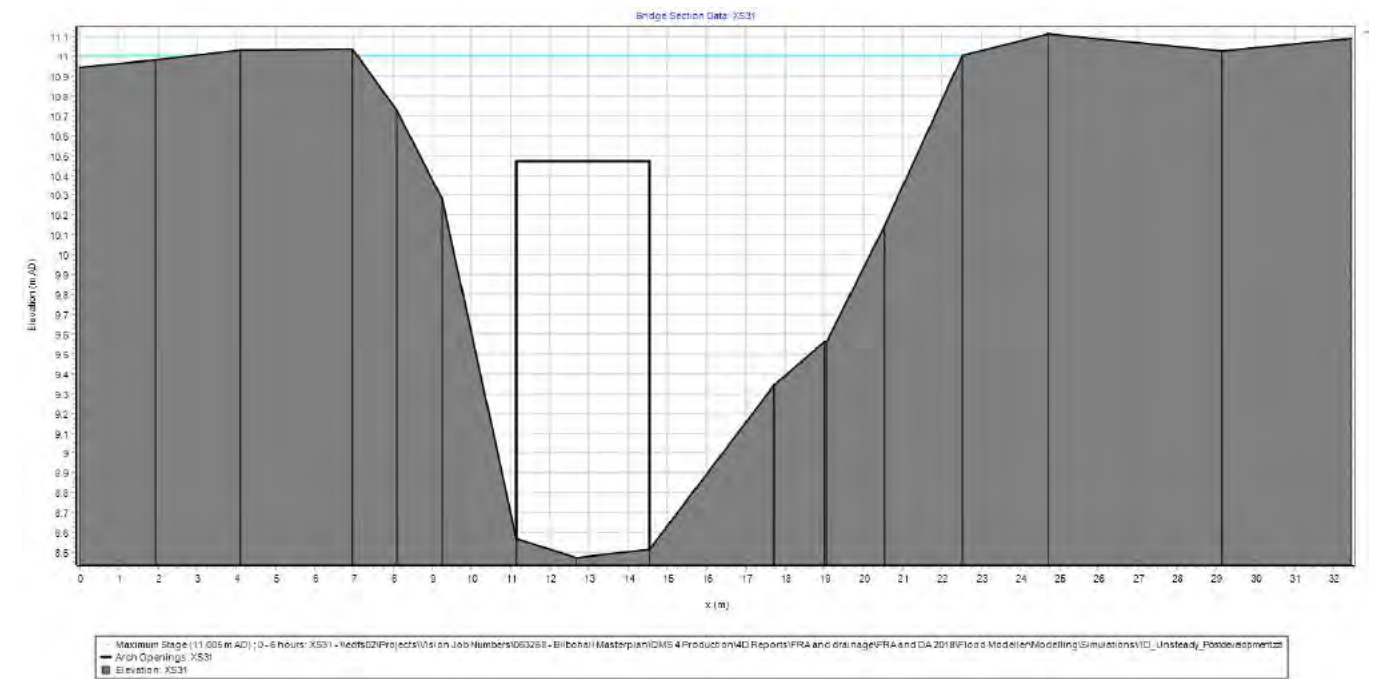
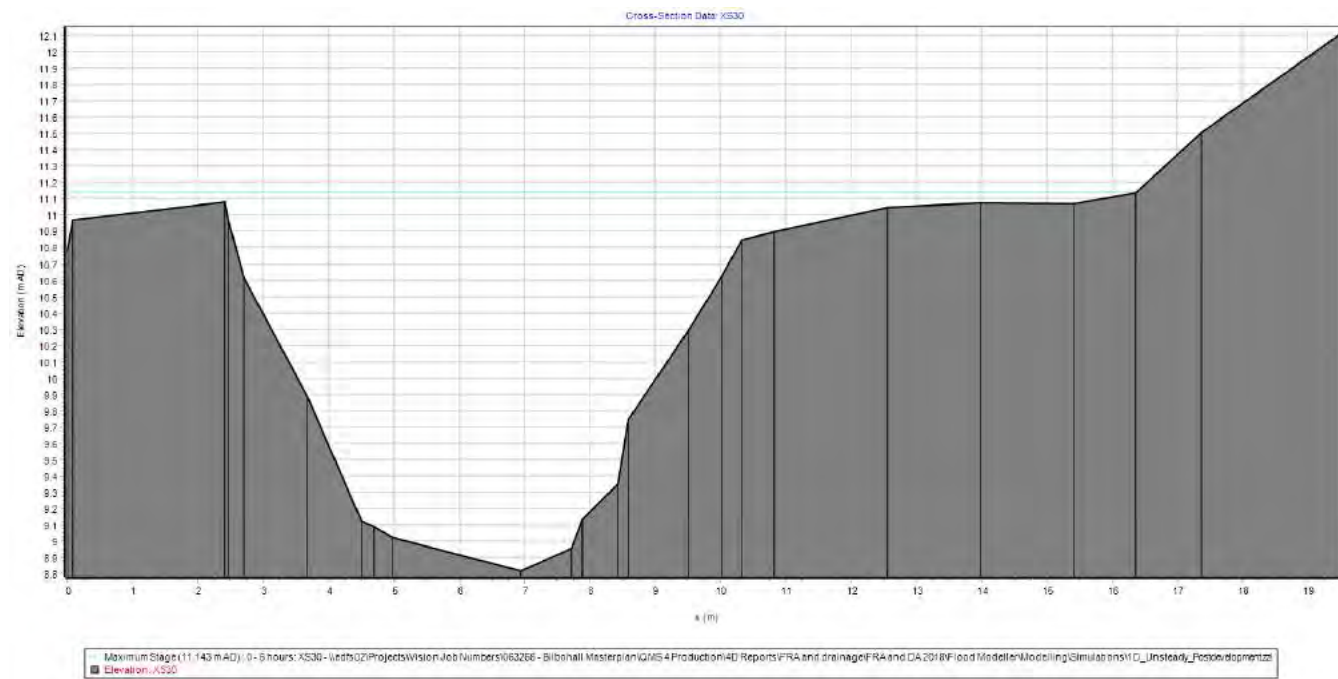
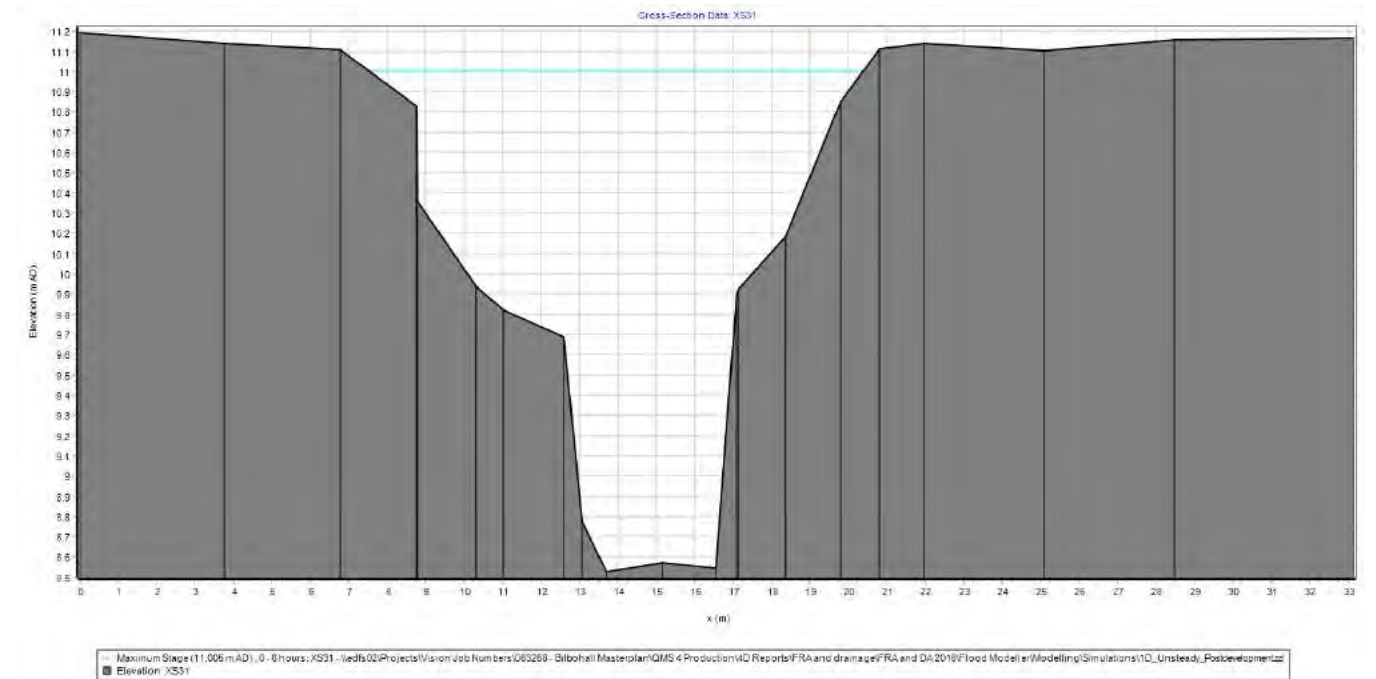
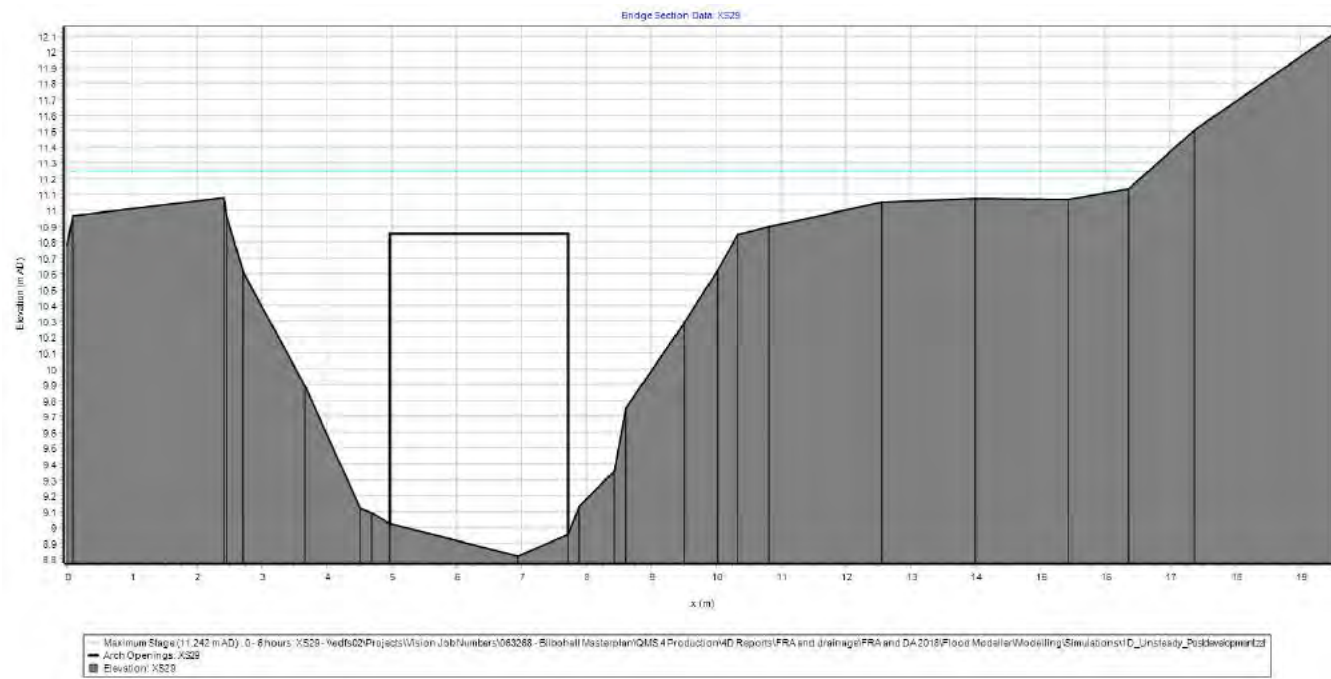


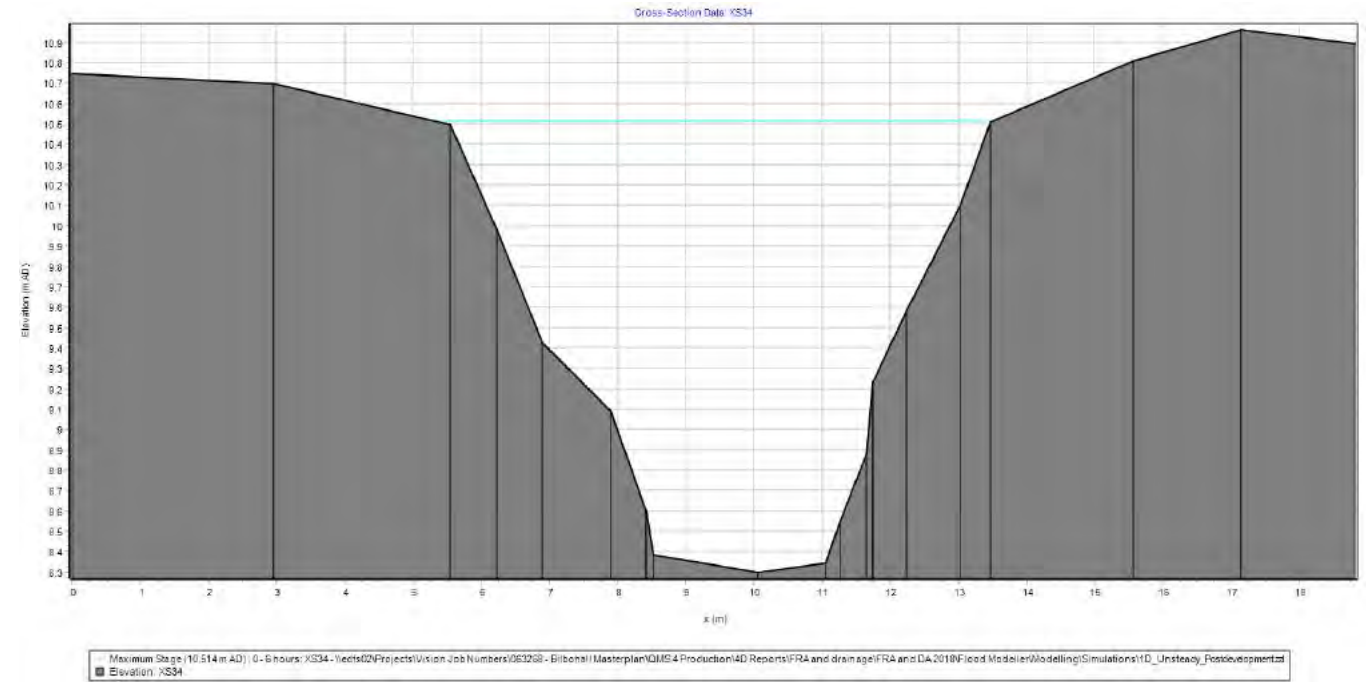
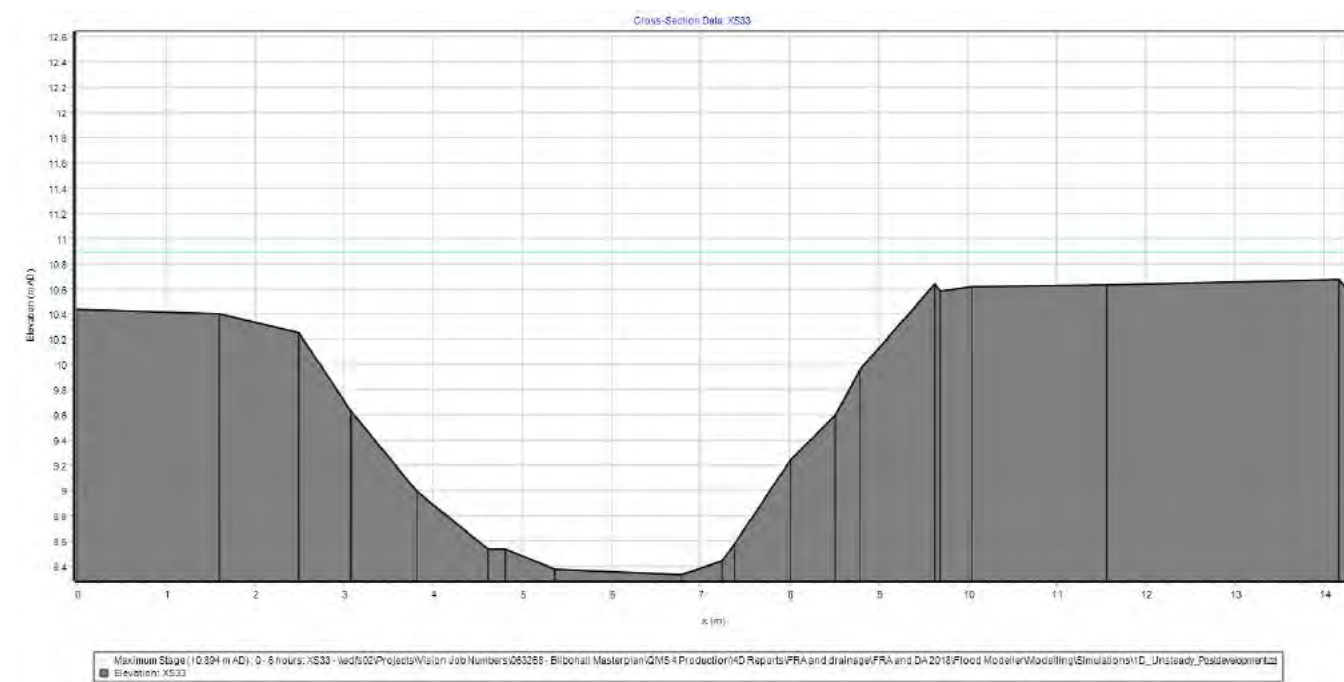
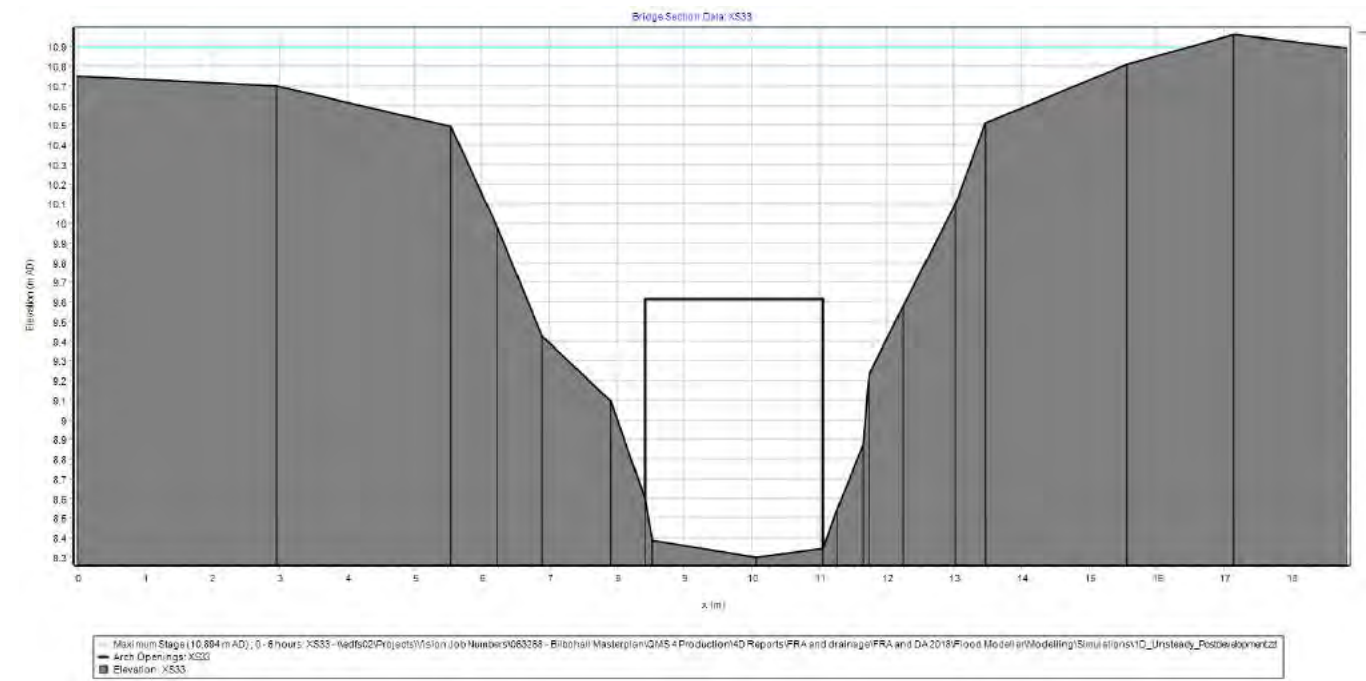
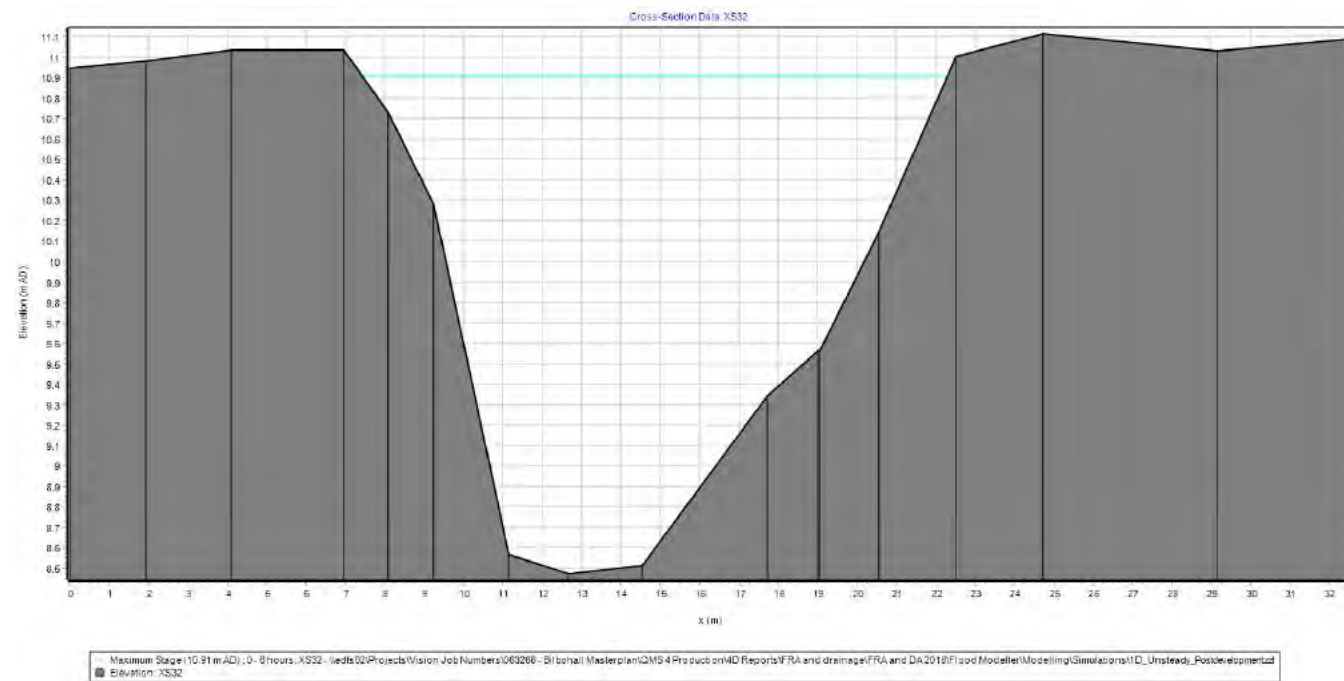


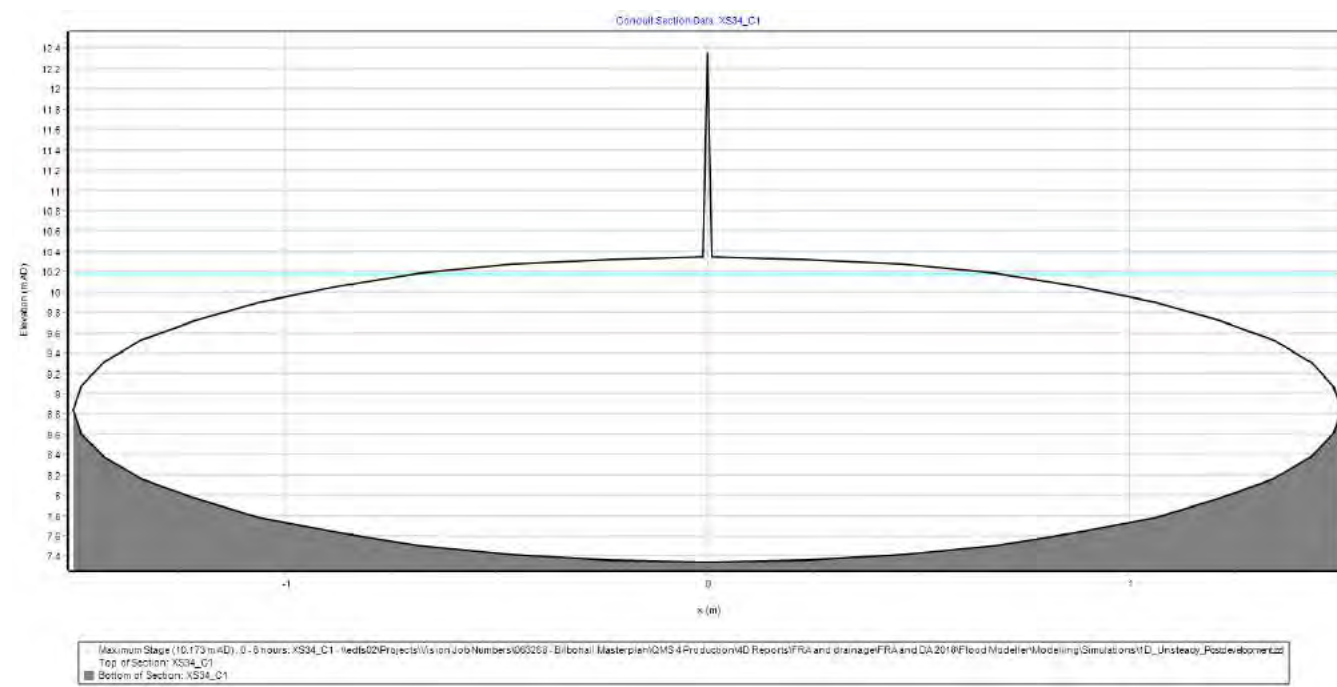
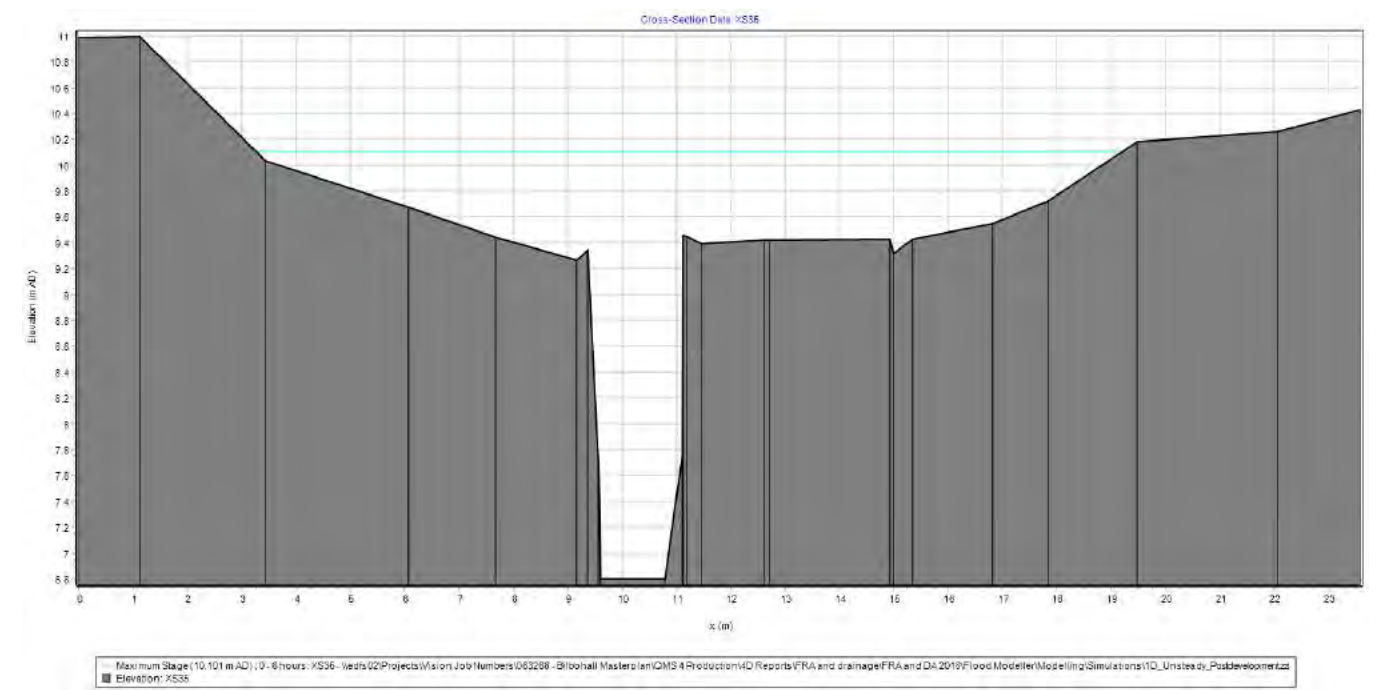
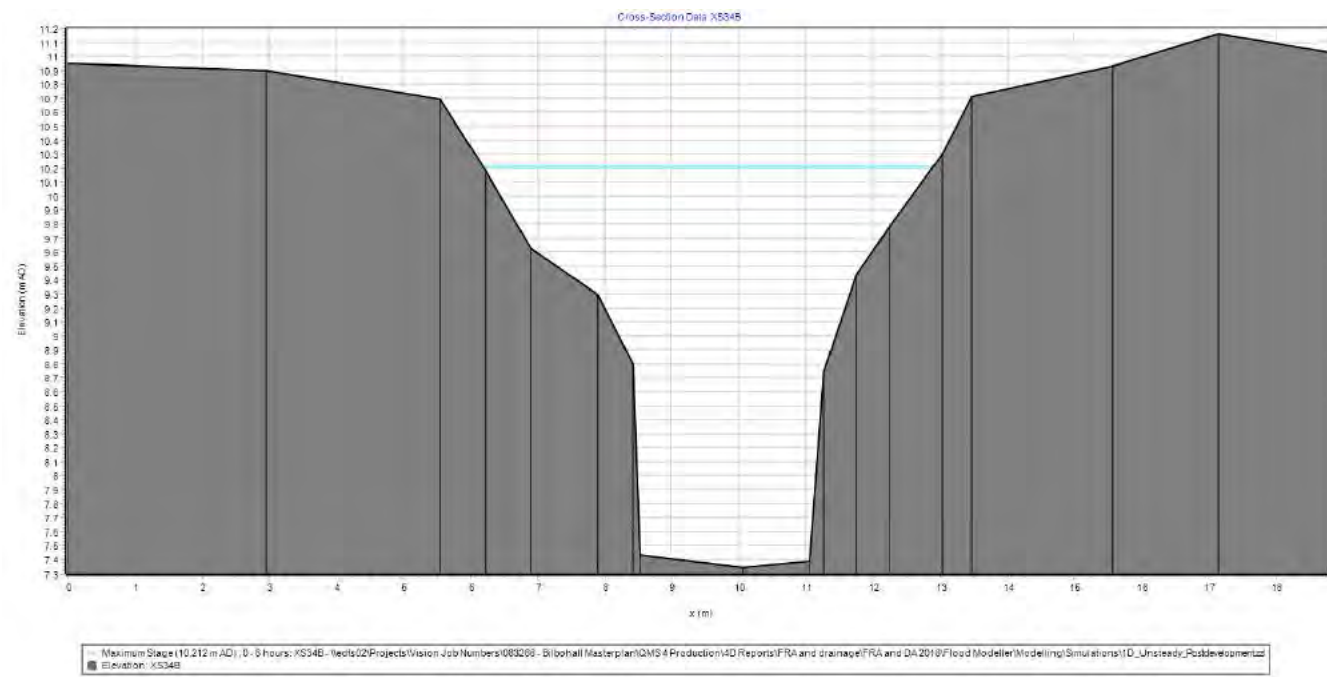




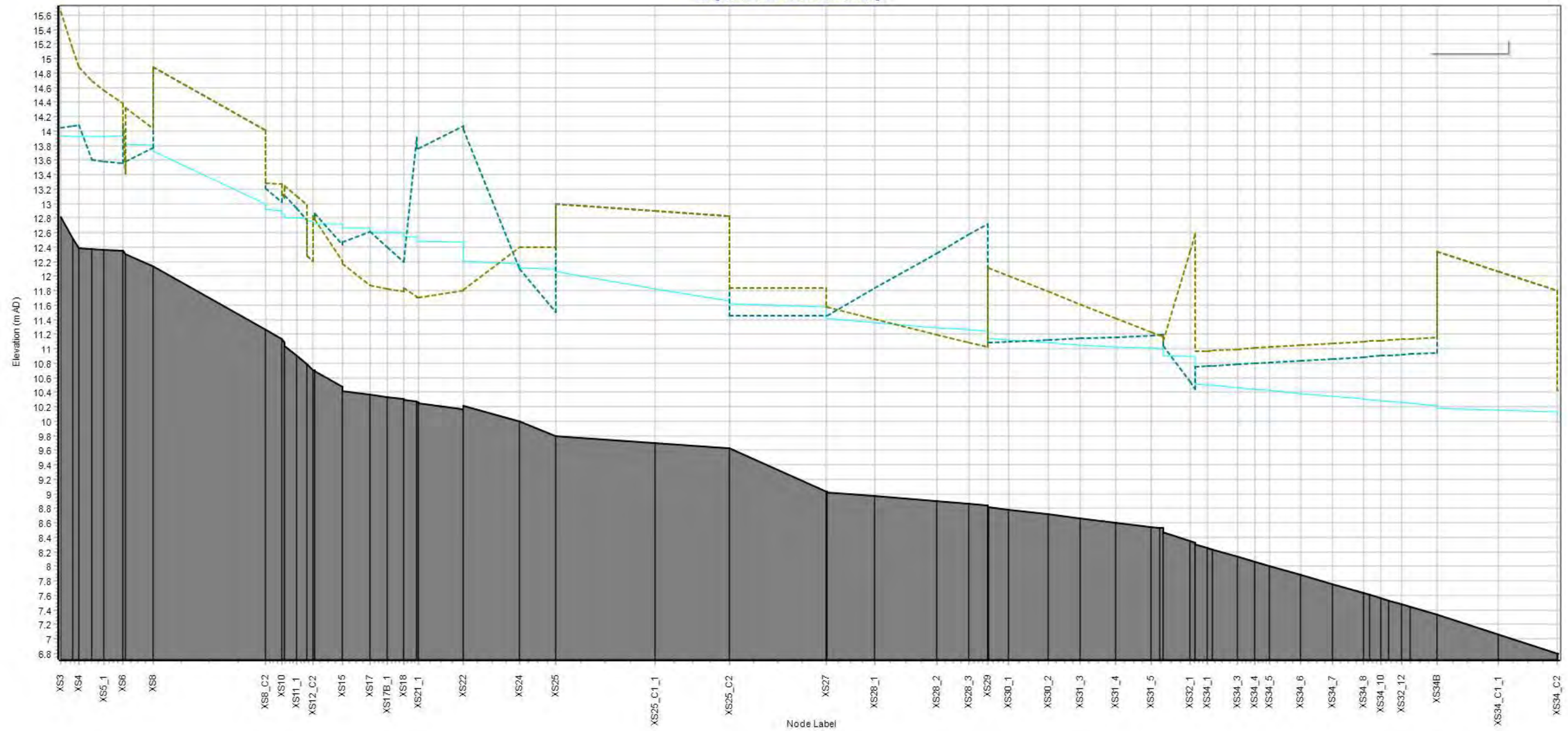






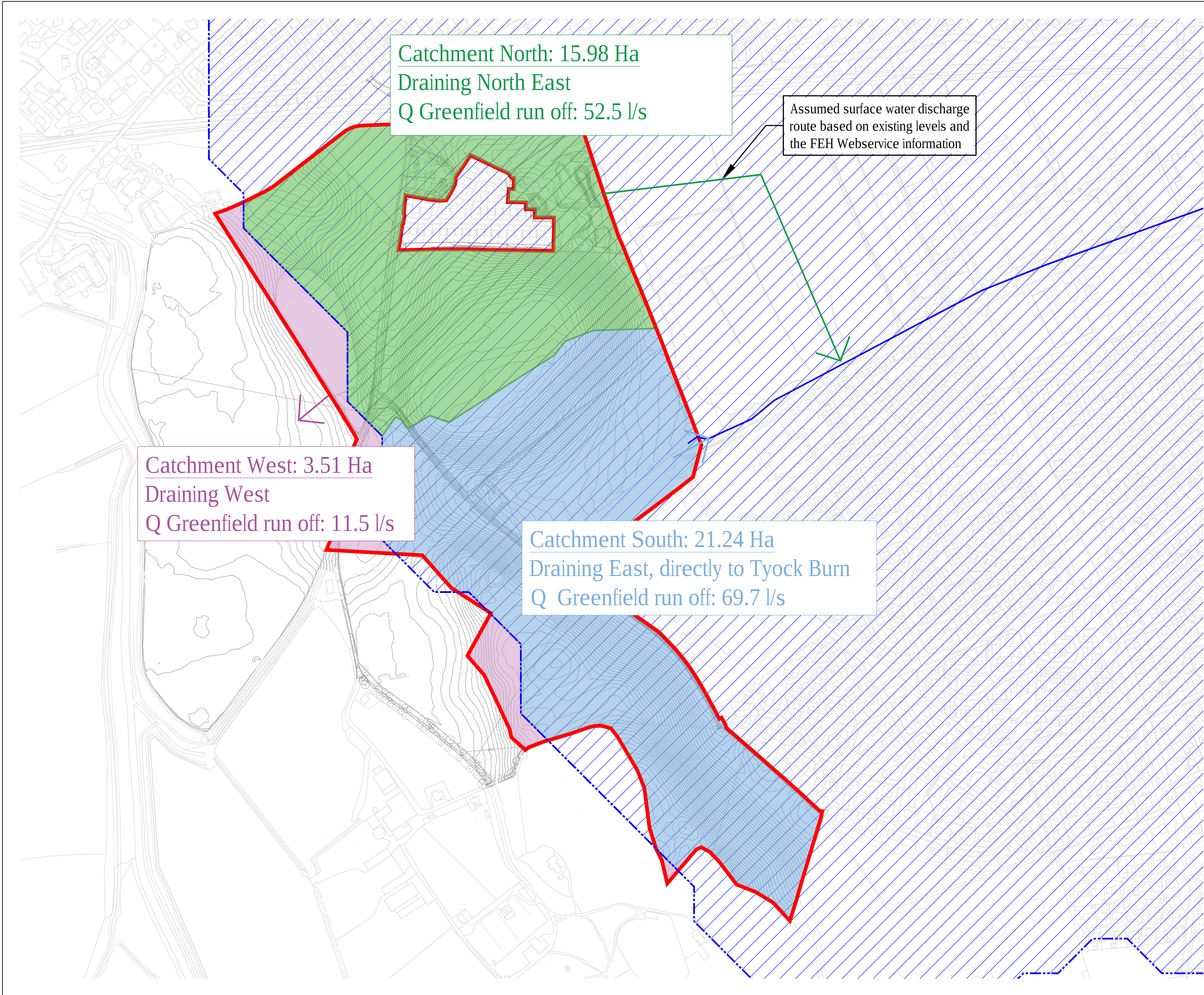


Long Section: XS3 - XS36 - Maximum Stage



Maximum Stage; 0 - 6 hours: XS3 - XS36 - \\edfs02\Projects\Vision Job Numbers\063268 - Bilbohall Masterplan\QMS 4 Production\4D Reports\FRA and drainage\FRA and DA2018\Flood Modeller\Modelling\Simulations\1D_Unsteady_Postdevelopmentzz Bed Elevation: XS3 - XS36: XS3 - XS36 -- Left Bank: XS3 - XS36: XS3 - XS36
 -- Right Bank: XS3 - XS36: XS3 - XS36

Appendix H – Drainage Strategy – Pre development scenario



Catchment North: 15.98 Ha
Draining North East
Q Greenfield run off: 52.5 l/s

Assumed surface water discharge
route based on existing levels and
the FEH Webservice information

Catchment West: 3.51 Ha
Draining West
Q Greenfield run off: 11.5 l/s

Catchment South: 21.24 Ha
Draining East, directly to Tyock Burn
Q Greenfield run off: 69.7 l/s

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.
5. FEH CATCHMENT BOUNDARY TAKEN FROM THE FLOOD ESTIMATION HANDBOOK WEB SERVICE.
6. CATCHMENT AREA 1 SURFACE WATER DISCHARGING ROUTE HAS BEEN ASSUMED BASED ON TOPOGRAPHICAL SURVEY LEVELS UNDERTAKEN BY PROPERTY AND LAND SURVEYS (HIGHLANDS) LTD IN CONJUNCTION WITH SCOTTISH WATER PLANS ALONG WITH A SITE WALKOVER.

KEY:

- Application Boundary
- FEH Tyock Burn Catchment Boundary
- Catchment North, discharging North East
- Catchment South, discharging East
- Catchment West, discharging West
- Tyock Burn

REV	ISSUED	00/00/00	XXX	XXX
Rev:	Description:	Date:	By:	Chkd:



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Web

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Birmingham • Bristol • Cambridge • Cardiff • Douglas • Dublin • Edinburgh • Glasgow • Harlow • Leeds • Liverpool • London • Manchester • Nottingham

Status:	PRELIMINARY			
Project:	Bilbohall, Masterplan			
Dwg Title:	Drainage Strategy - Pre Development Scenario			
Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	17/07/18	CVB	CVB	PP
Scale:	1:2500			
Project No:	Originator:	Zone:	Level:	Type: Discipline: Category / Number: Rev:
063268	- CUR	- XX	- XX	- DR - C - 92002 -P01

Appendix I – Drainage Strategy – Post development scenario



GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.

2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.

3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

4. FOR GENERAL NOTES REFER TO DRAWING.

5. THE SURFACE WATER DRAINAGE SYSTEM WILL COMPRISE SIX NETWORKS. ALL PROPOSED TO DISCHARGE TO THE ENHANCED BASIN AT THE EAST OF THE SITE PRIOR ITS DISCHARGE TO THE TYOCK BURN:

5.1. CATCHMENT AREAS A, B AND C.

5.2. CATCHMENT AREAS D.

5.3. CATCHMENT AREAS E, F, G, H, I, J, K, L AND M.

5.4. CATCHMENT AREAS N AND O.

5.5. CATCHMENT AREAS P.

5.6. CATCHMENT AREAS Q, R, S AND T.

6. THE NETWORKS WILL BE DESIGNED IN ACCORDANCE WITH SEWER FOR SCOTLAND 3rd EDITION. THIS INCLUDES THE NETWORK BEING DESIGNED TO ACCOMMODATE NO FLOODING UP TO AND INCLUDING THE 200 YEAR EVENT + 30% CLIMATE CHANGE.

7. IN ACCORDANCE WITH 'MORAY COUNCIL ADVISORY NOTE FOR PLANNING APPLICANTS' THE NETWORK AND SUDS STRUCTURES WILL BE DESIGNED TO WITHSTAND A 1 IN 30 YEAR EVENT (PLUS 30% ALLOWANCE FOR CLIMATE CHANGE) WITHOUT SURCHARGING.

8. IN ACCORDANCE WITH THE SUDS MANUAL C753, THE SIMPLE INDEX APPROACH HAS BEEN UTILISED TO ASCERTAIN THE TOTAL POTENTIAL POLLUTION HAZARD FOR EACH CATCHMENT AREA.

9. MITIGATION TREATMENT HAS BEEN PROVIDED THROUGH:

9.1. CATCHMENT AREAS A, B AND C, SUDS BASIN.

9.2. CATCHMENT AREAS D, SUDS BASIN.

9.3. CATCHMENT AREAS E, F, G, H, I, J, K, L AND M, ENHANCED BASIN.

9.4. CATCHMENT AREAS N AND O, SUDS BASIN.

9.5. CATCHMENT AREAS P, SUDS BASIN.

9.6. CATCHMENT AREAS Q, R, S AND T, SUDS BASIN.

9.7. PRIMARY ROAD, FILTER DRAIN + ENHANCED BASIN.

10. ATTENUATION HAS BEEN PROVIDED TO CONTROL THE DISCHARGE TO THE EXISTING GREENFIELD RUN OFF RATE AS PER 'THE MORAY COUNCIL ADVISORY NOTE FOR PLANNING APPLICANTS':

10.1. 53.2 l/s TO THE TYOCK BURN.

10.2. 14.2 l/s TO THE NATURE RESERVE

11. A MICRODRAINAGE ASSESSMENT HAS BEEN CARRIED OUT USING THE FSR METHOD TO CALCULATE THE POTENTIAL ATTENUATION VOLUME REQUIRED AND THE VOLUMES SSESSED ARE:

10.1. CATCHMENT AREAS A, B AND C, 1087.6 m³.

10.2. CATCHMENT AREAS D, 799.3 m³.

10.3. CATCHMENT AREAS E, F, G, H, I, J, K, L AND M, 3855.7 m³.

10.4. CATCHMENT AREAS N AND O, 629.7 m³.

10.5. CATCHMENT AREAS P, 551.5 m³.

10.6. CATCHMENT AREAS Q, R, S AND T, 1086.1 m³.

12. DETAILED DESIGN WILL REFINE THE STORAGE VOLUMES REQUIRED AND IDENTIFY ANY ADDITIONAL STORAGE REQUIREMENT OR FLOW ROUTES FOR EXCEEDANCE ABOVE THE 1 IN 30 YEAR EVENT + 30% CLIMATE CHANGE.

13. SUDS BASINS AND FILTER DRAINS TO BE DESIGNED IN ACCORDANCE WITH SEWER FOR SCOTLAND 3rd EDITION.

14. 70% HARDSTANDING HAVE BEEN ASSUMES FOR THE DEVELOPED AREAS. ROADS FOOTPRINTS HAVE BEEN INCLUDED WITHIN THE CATCHMENT AREAS.

KEY:

Application Boundary

Tertiary Road

Secondary Road

Primary Road

Proposed Filter Drain

Proposed Swale

Indicative Surface Water Route

02

Basin for catchment area d location amended

19/10/18

CVB

PP

REV

ISSUED

00/00/00

XXX

XXX

Rev:

Description:

Date:

By:

Chkd:

Office

Telephone

Email

Web

Chels & Structures

Transport Planning

Environmental

Infrastructure

Geotechnical

Conservation & Heritage

Principal Designer

Birmingham

Bristol

Cardiff

Canterbury

Coventry

Edinburgh

Exeter

Gloucester

Leeds

London

Manchester

Nottingham

Status:

PRELIMINARY

Project:

Bilbohall, Masterplan

Dwg Title:

Drainage Strategy - Post Development Scenario

Size:

Date:

Drawn By:

Designed By:

Checked By:

Scale:

1:2500

CVB

CVB

PP

Project No:

Originator:

Zone:

Level:

Type:

Discipline:

Category / Number:

Rev:

063268

- CUR

- XX

- XX

- DR

- C

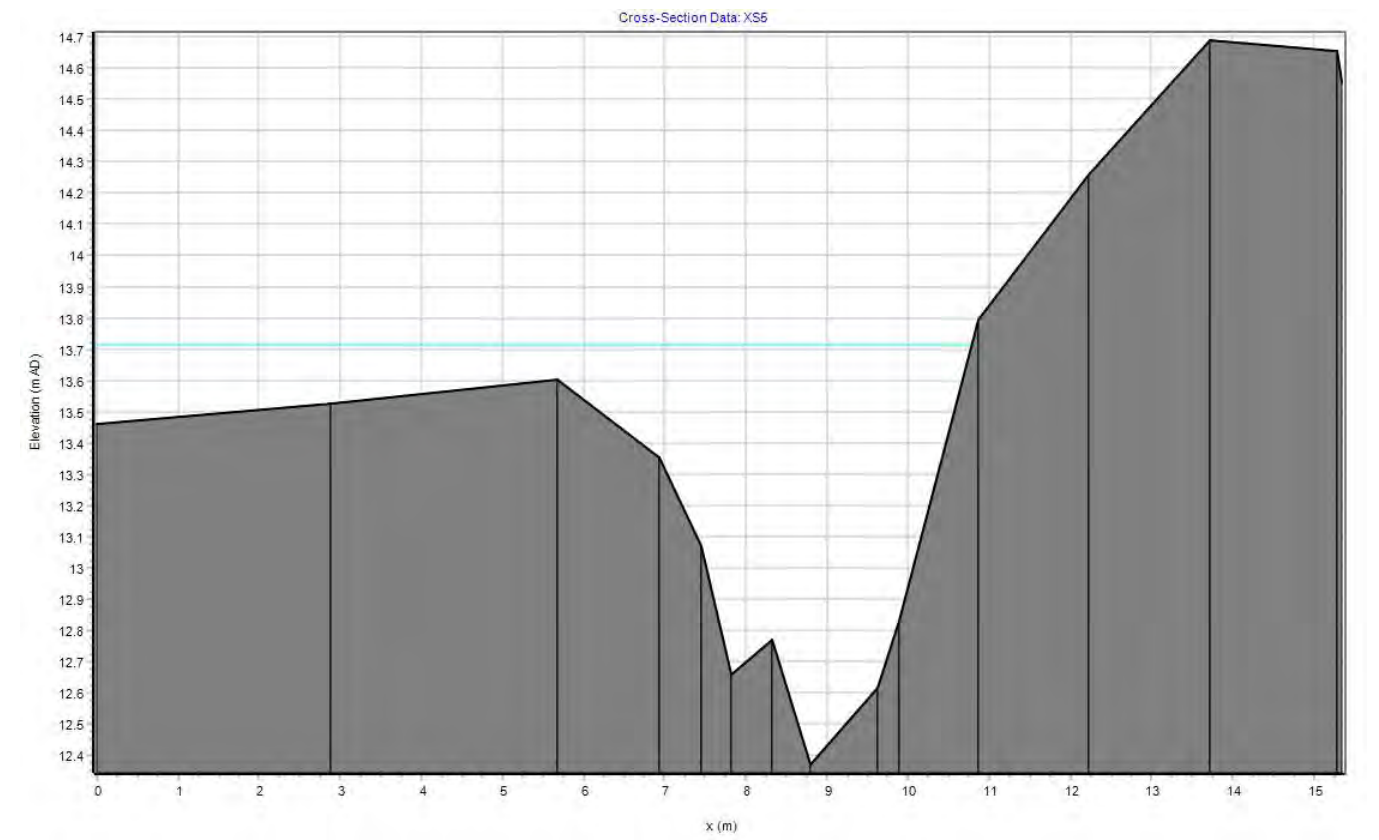
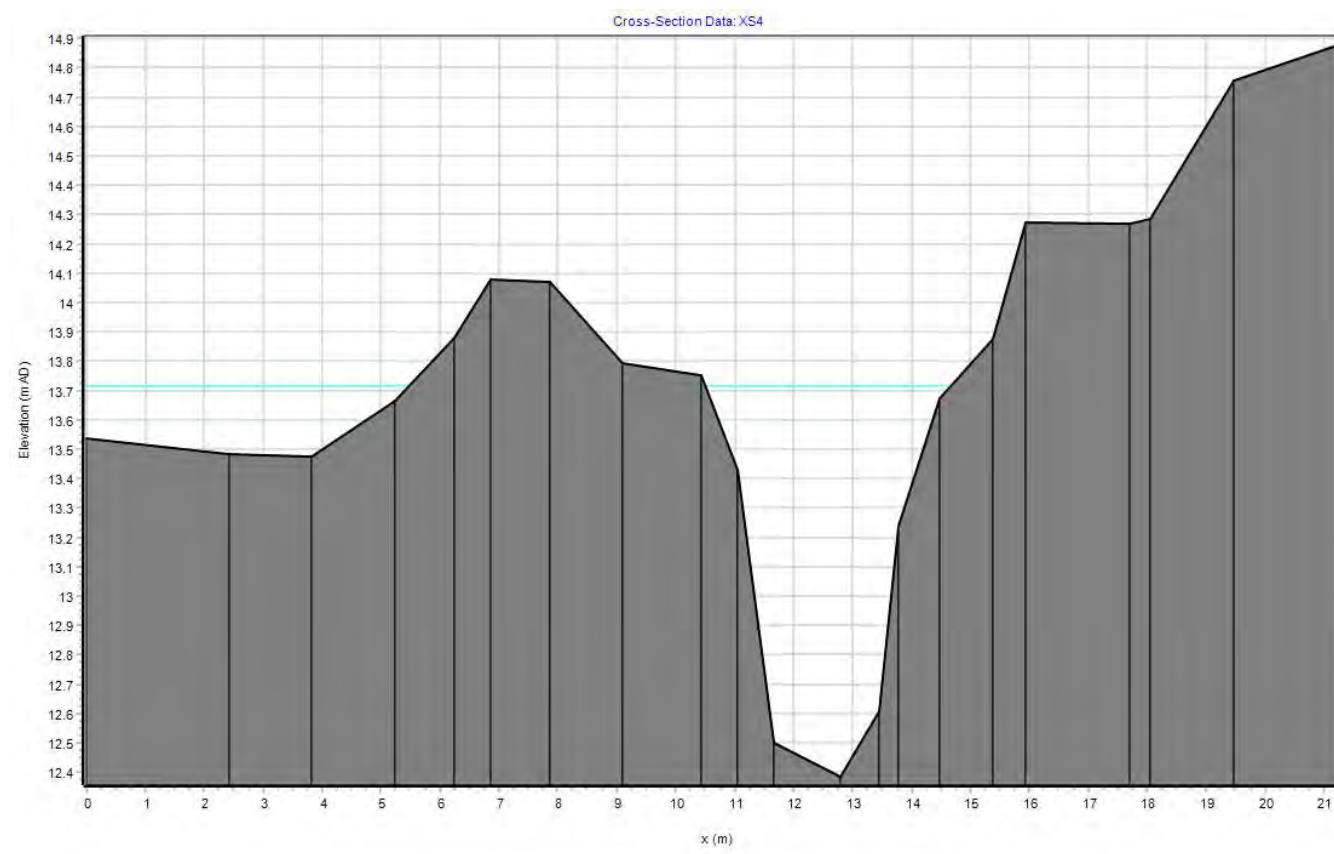
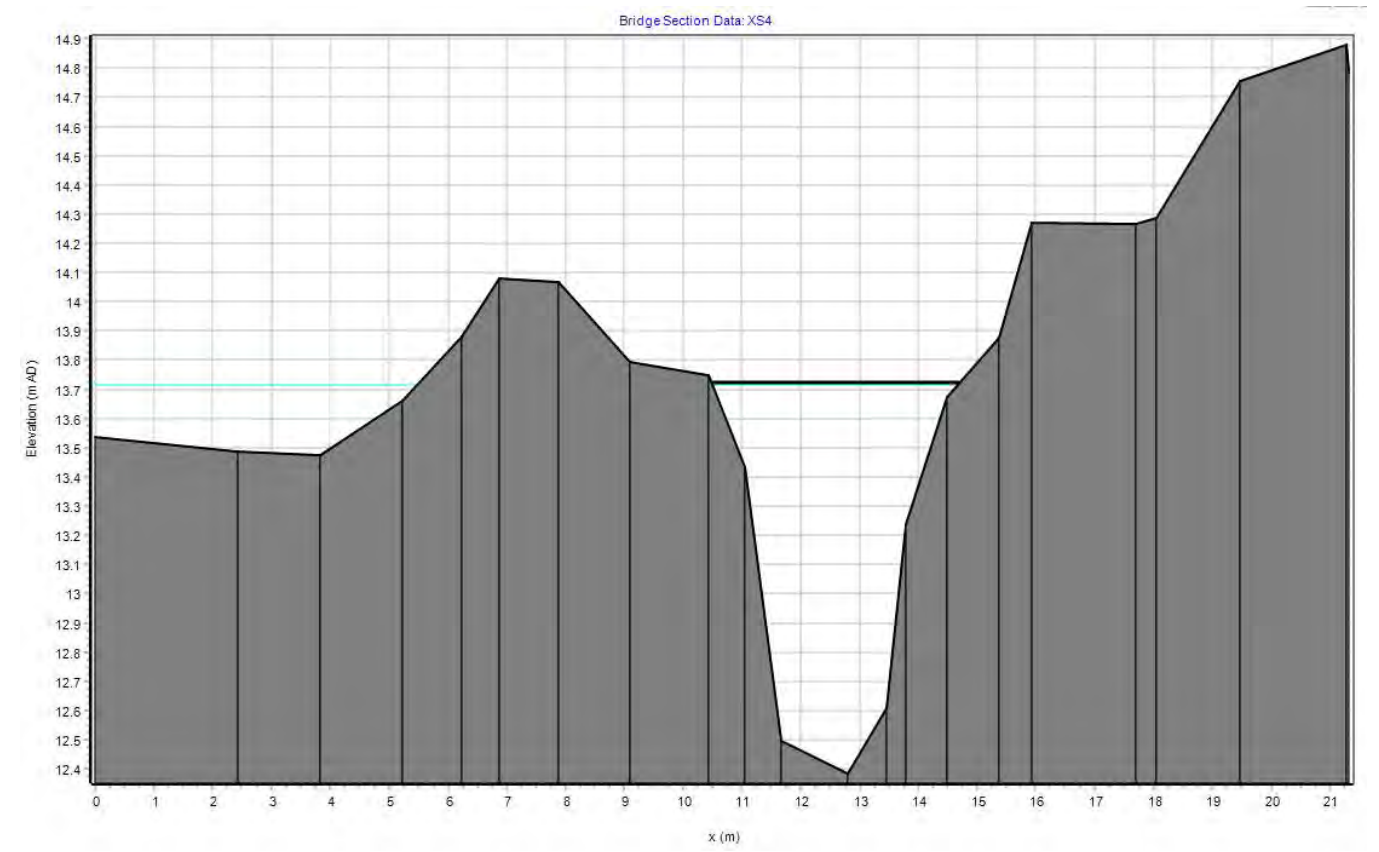
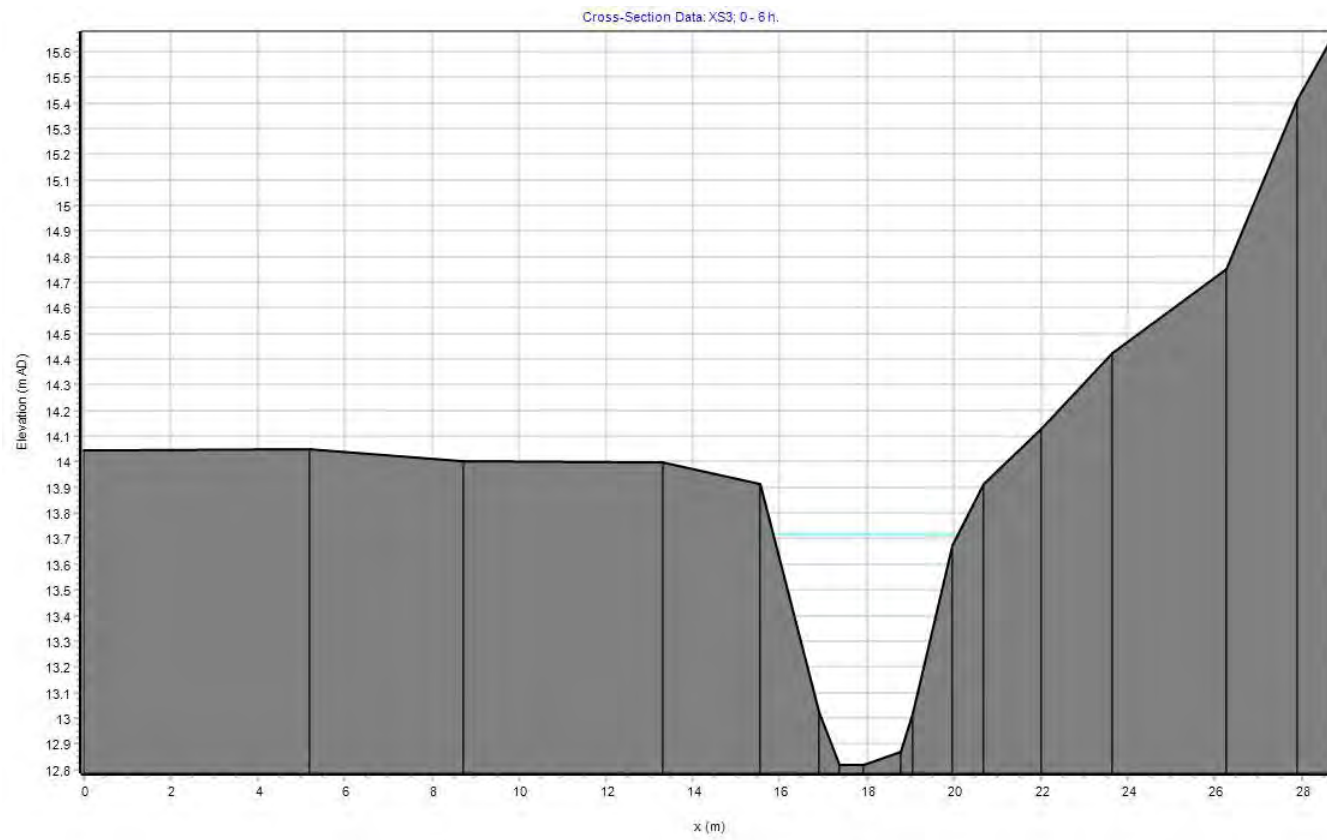
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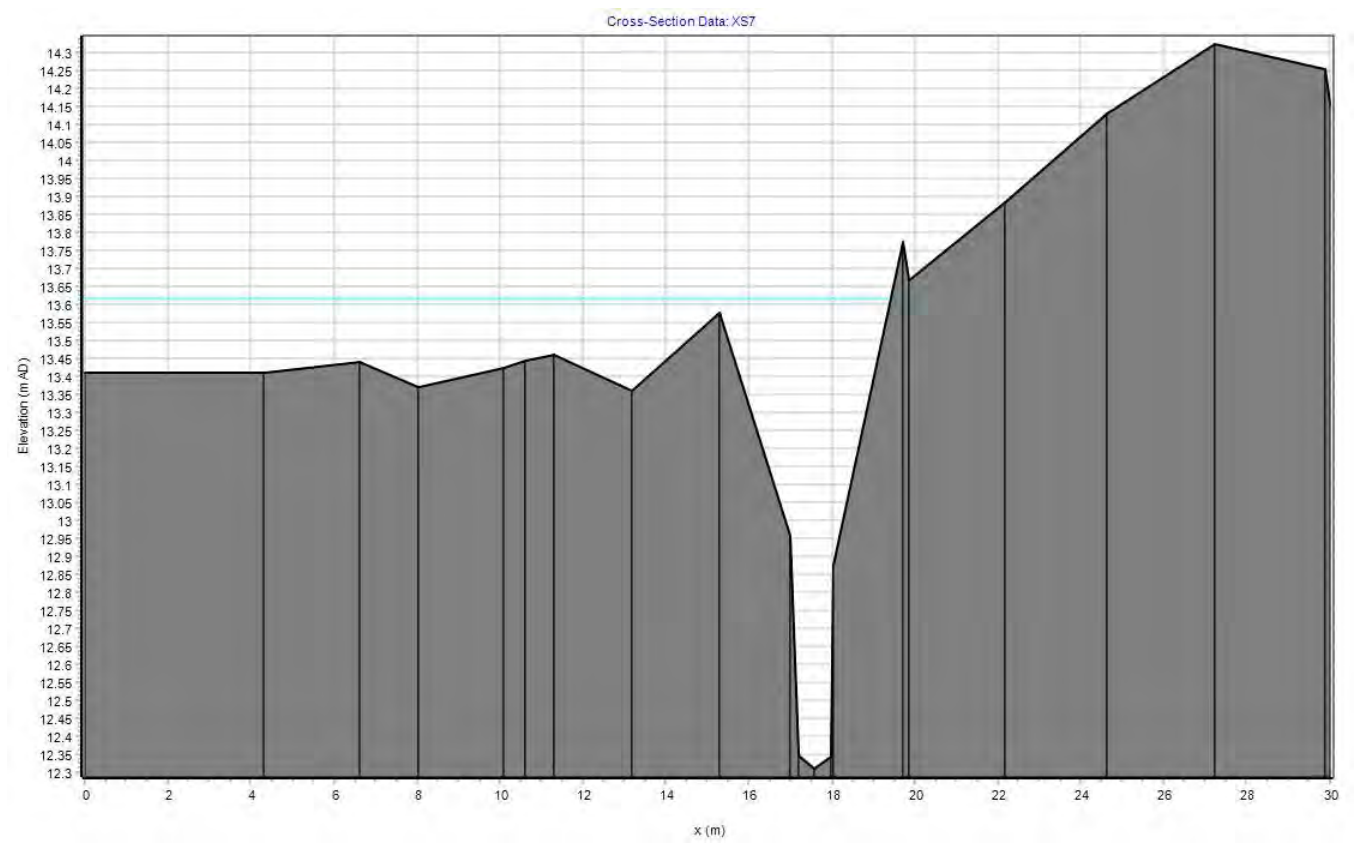
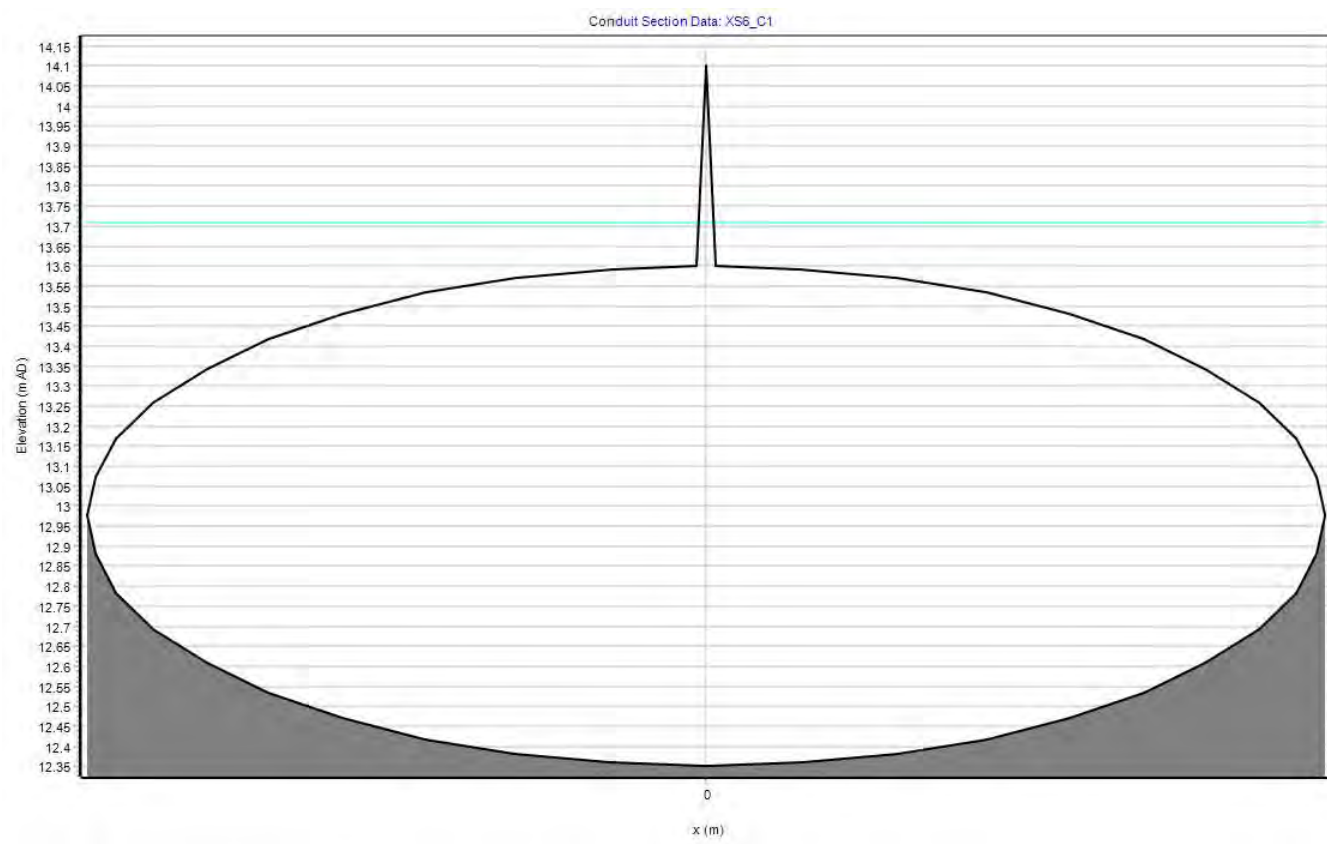
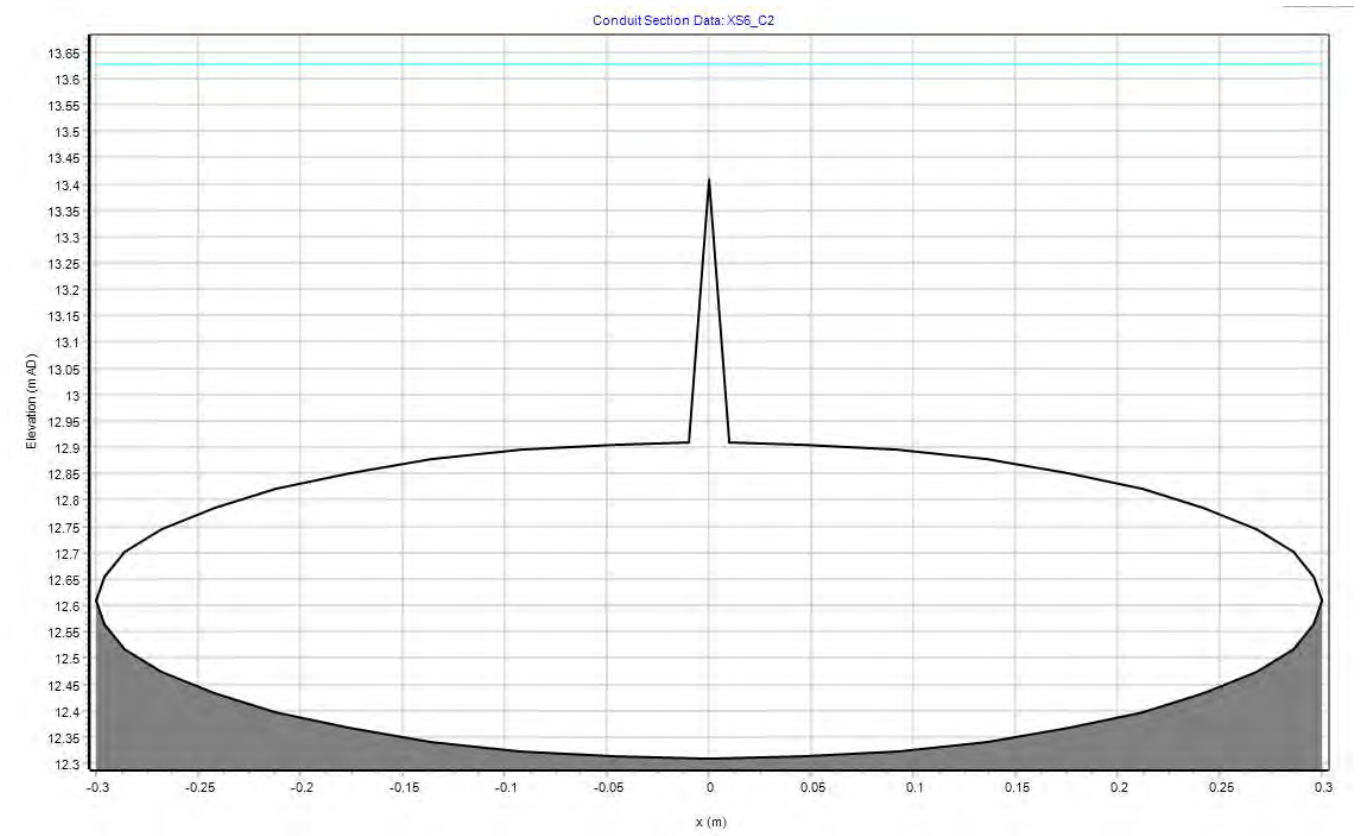
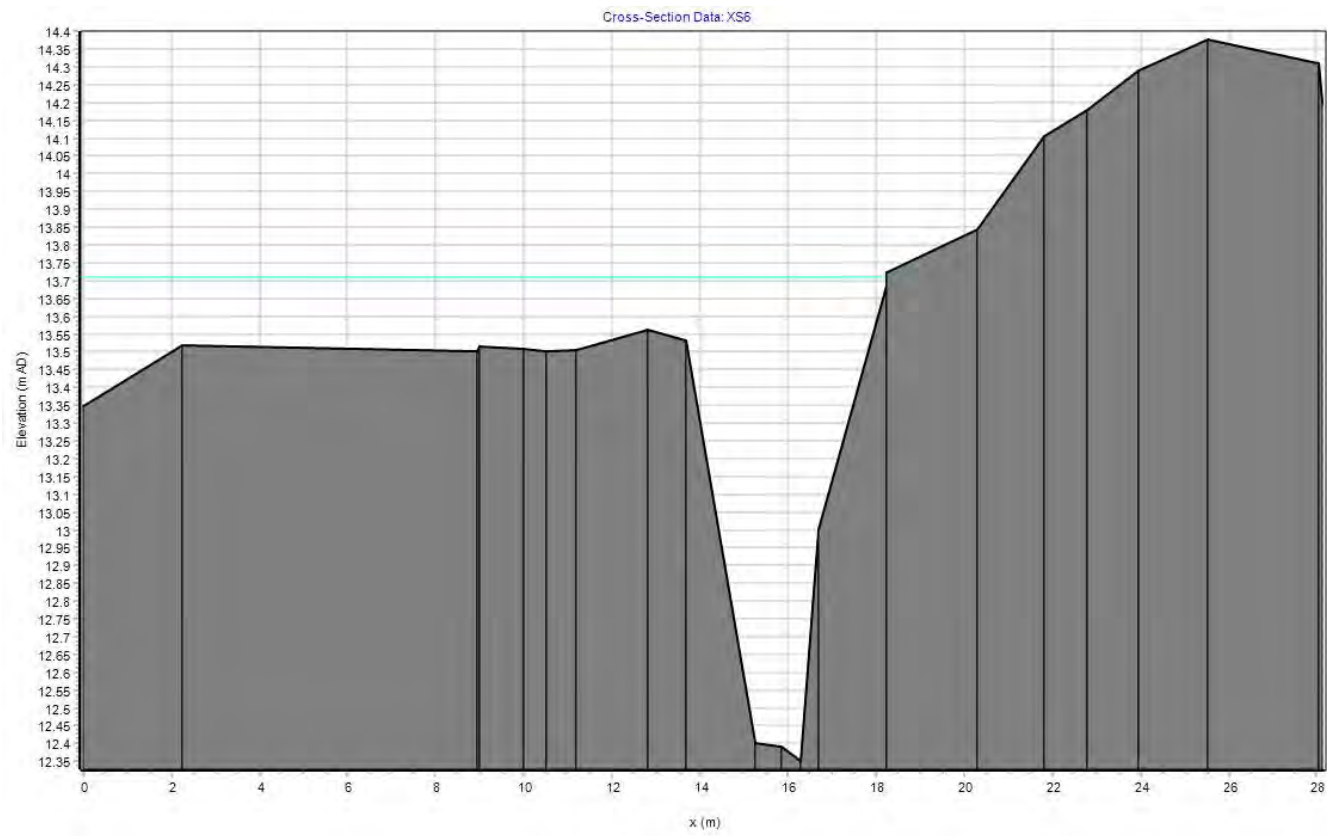
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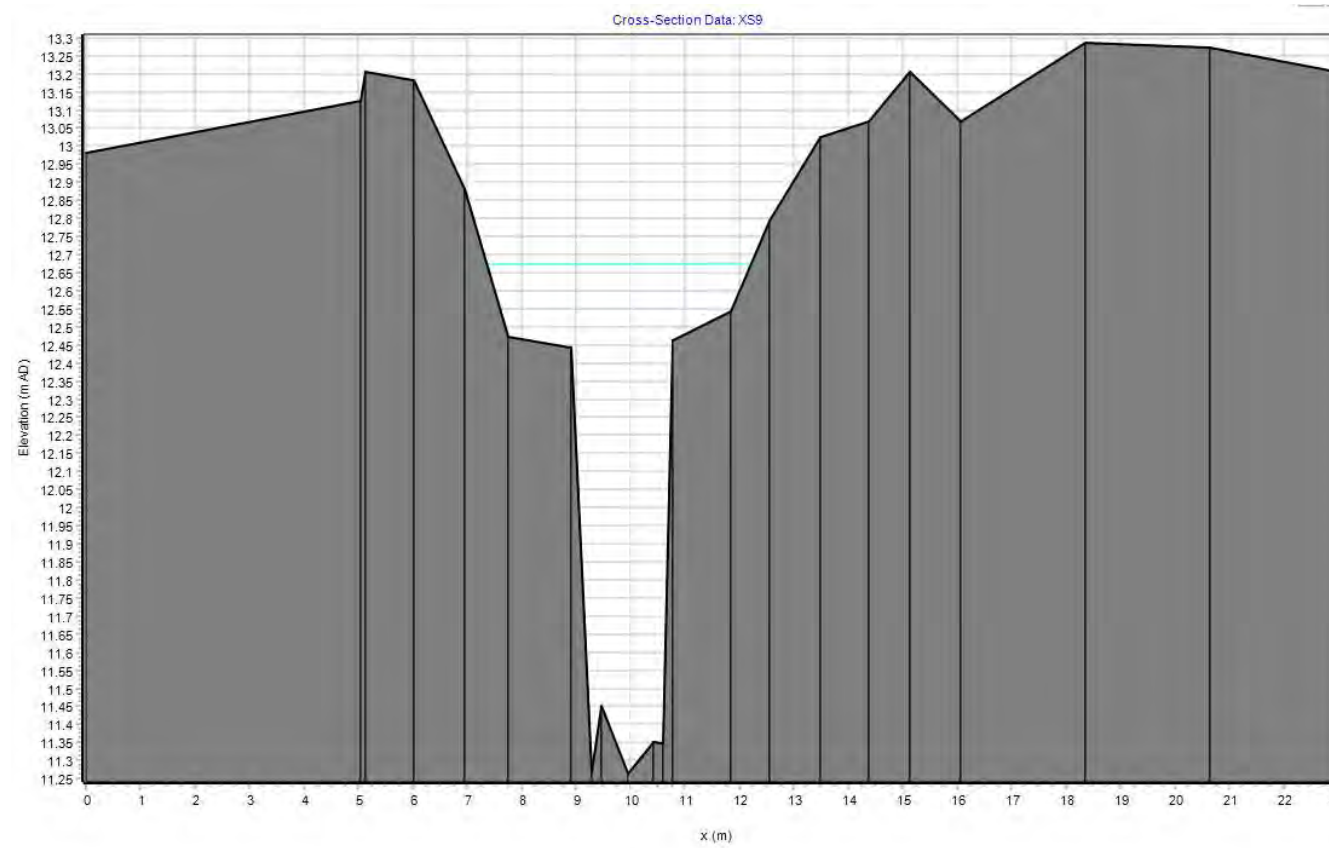
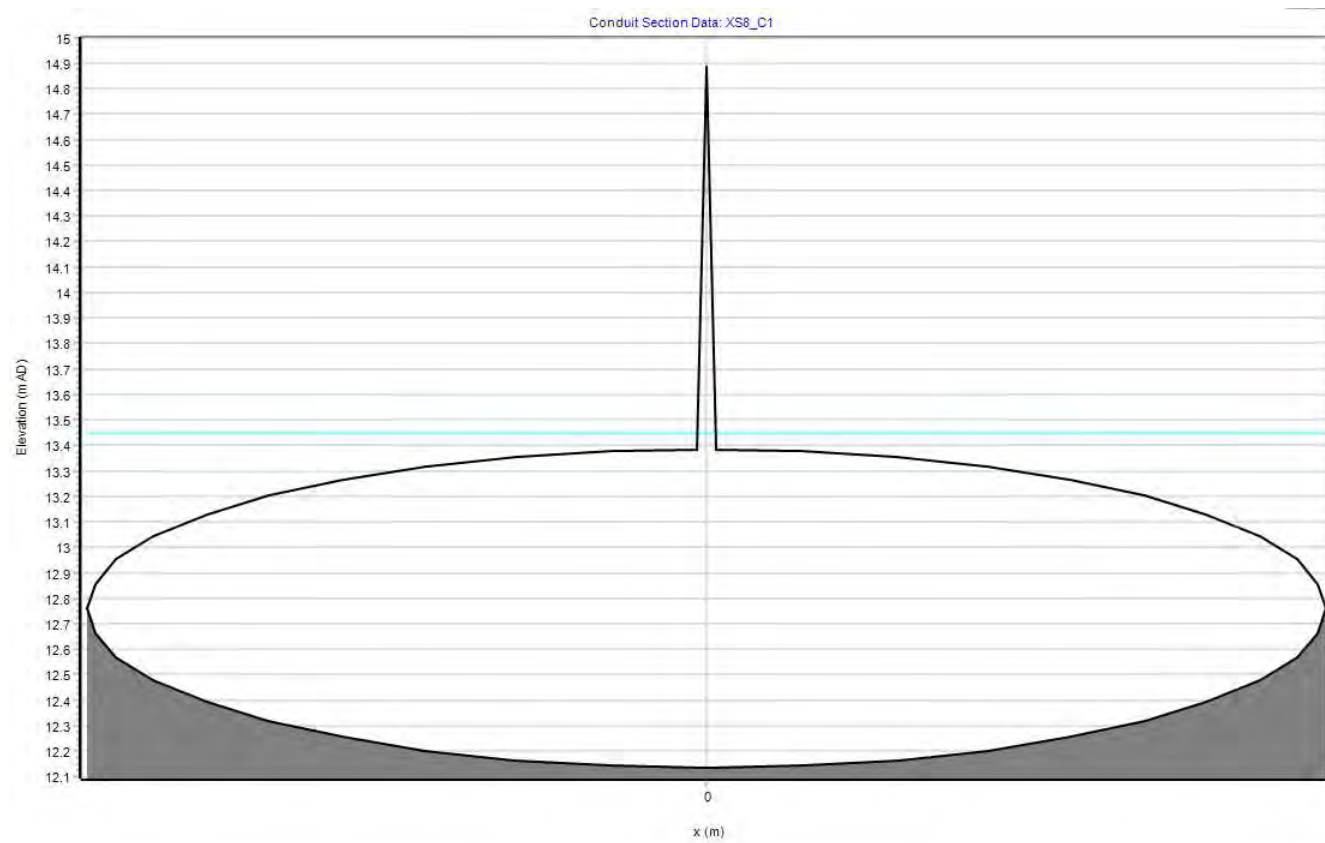
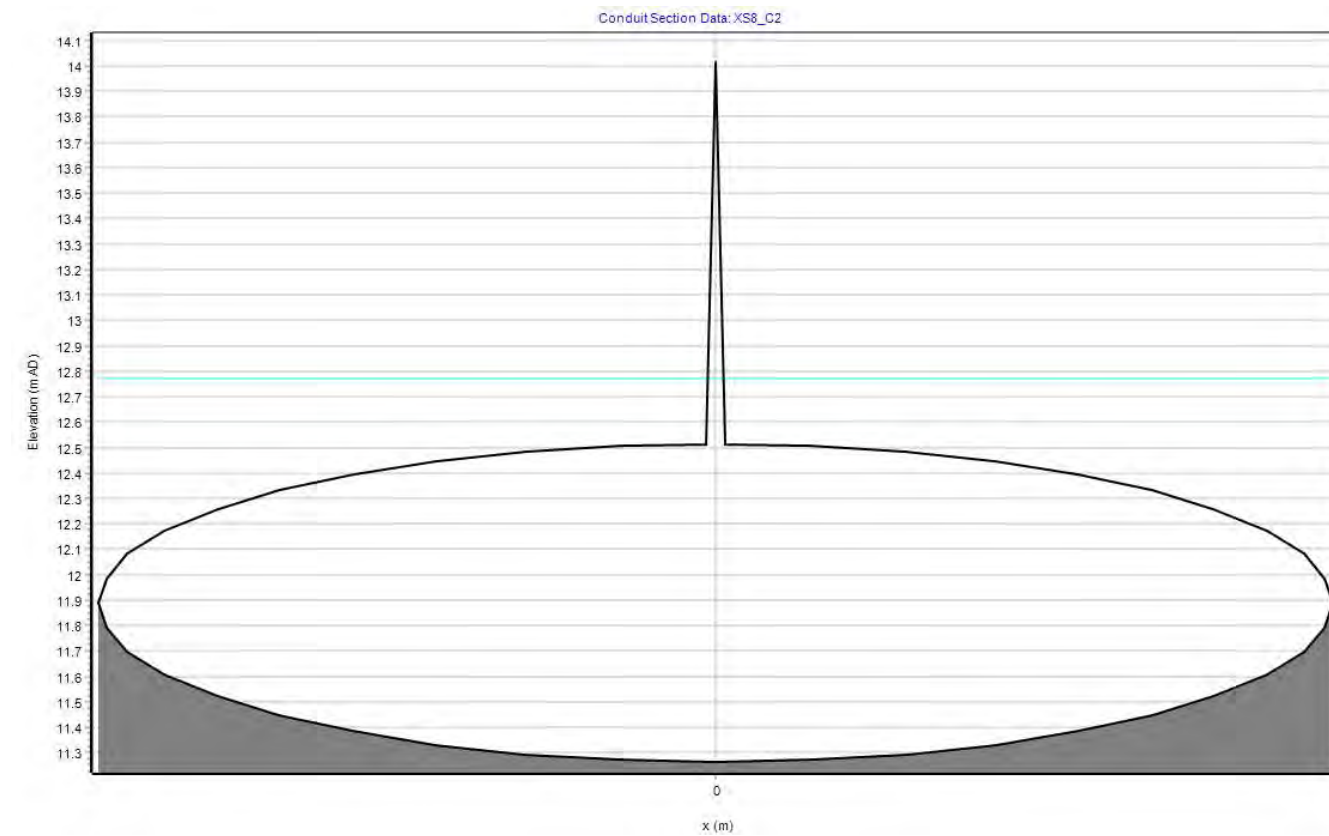
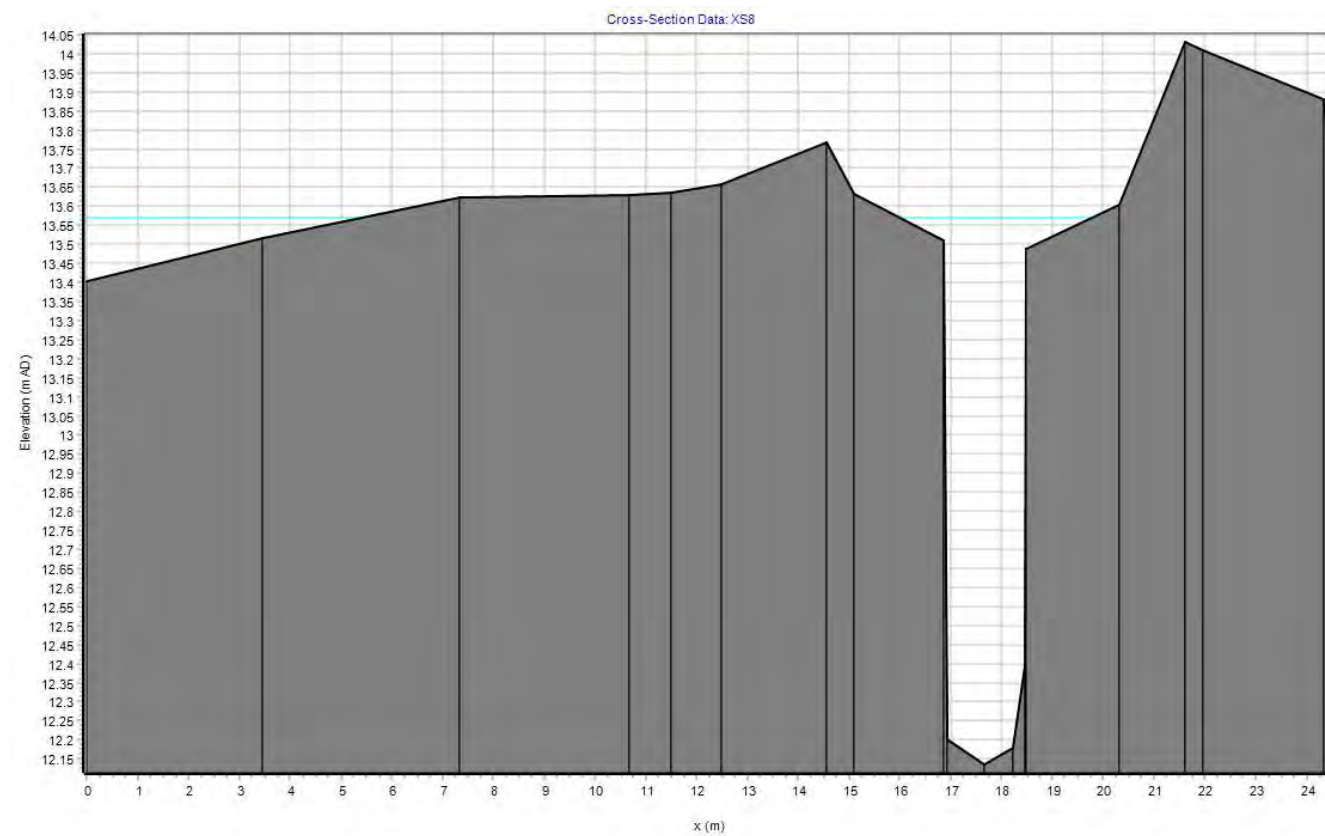
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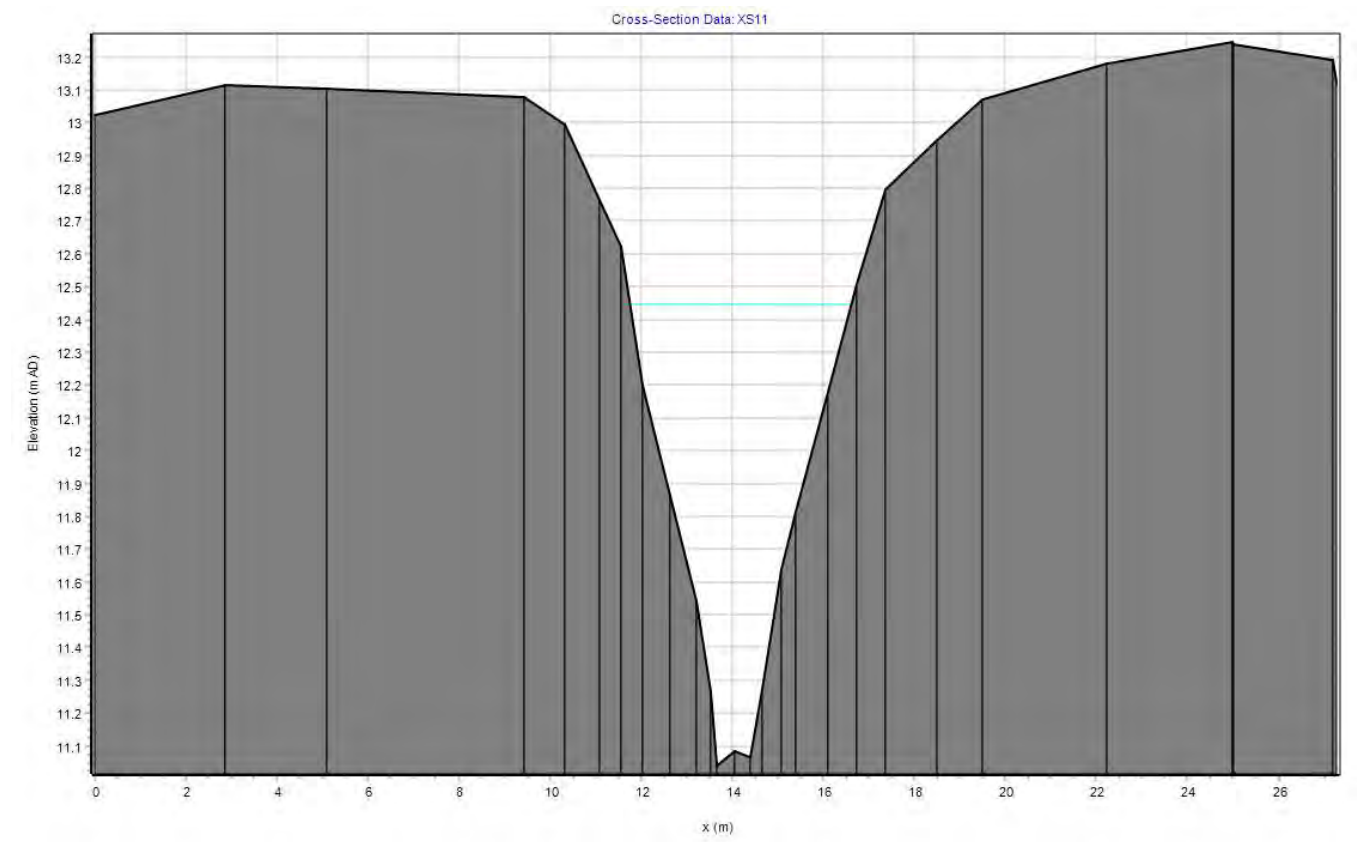
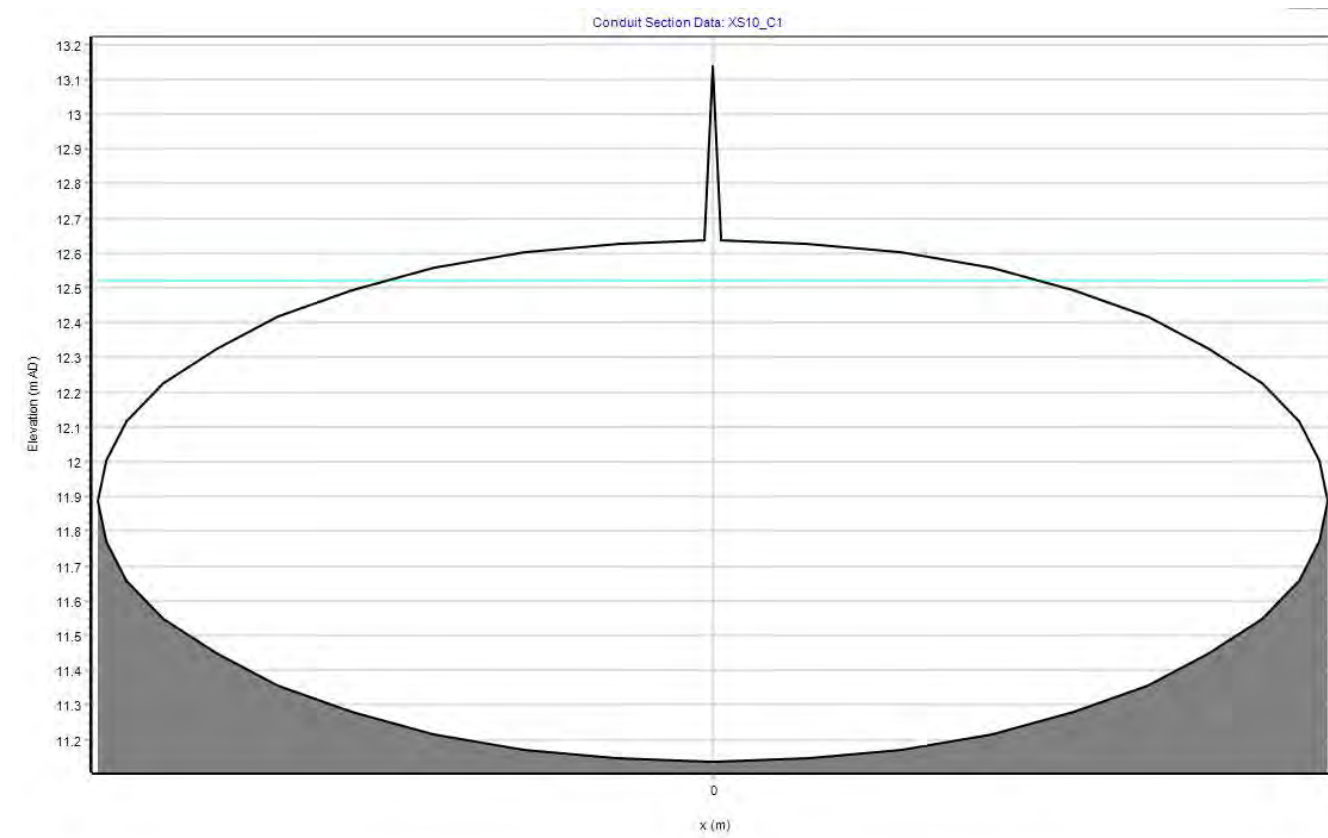
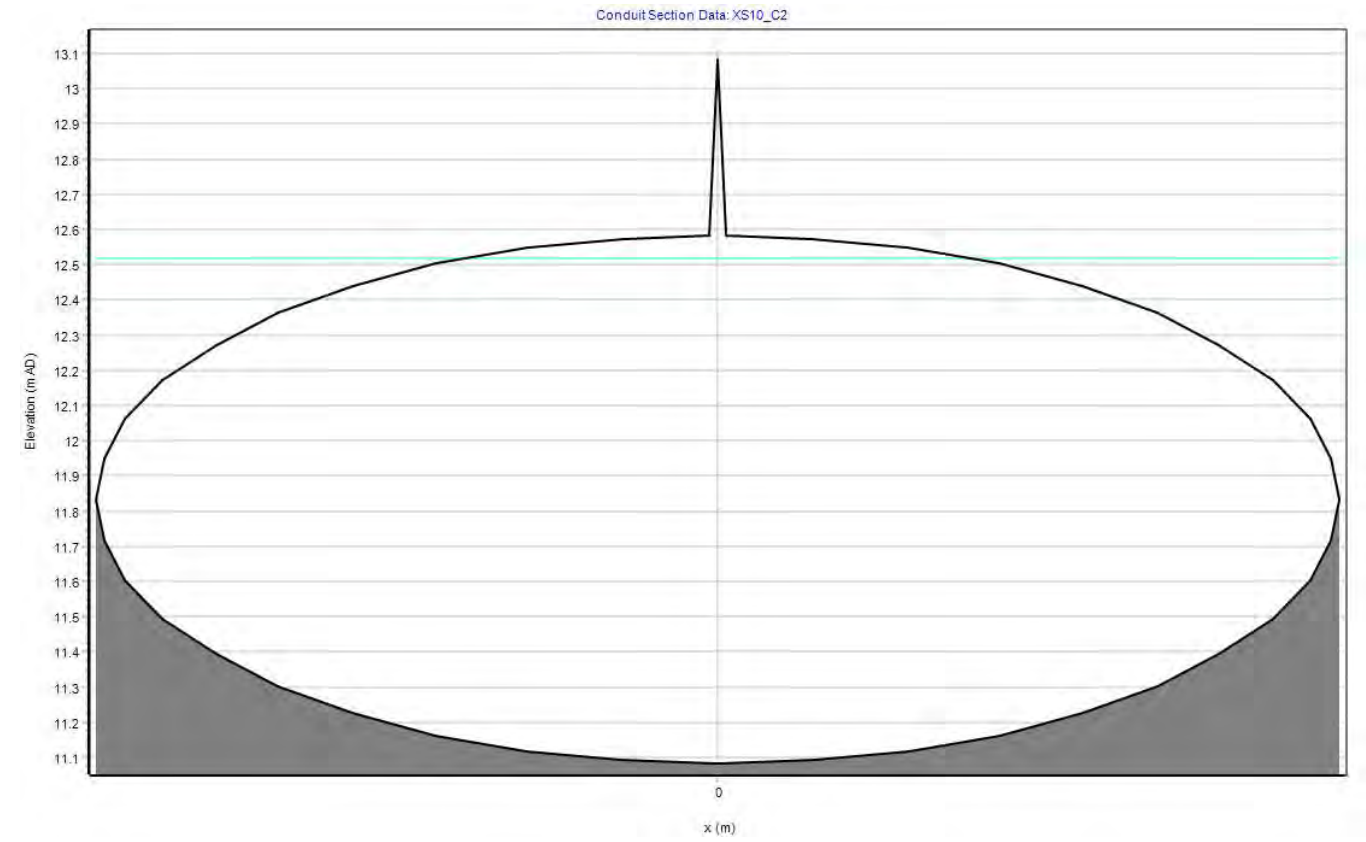
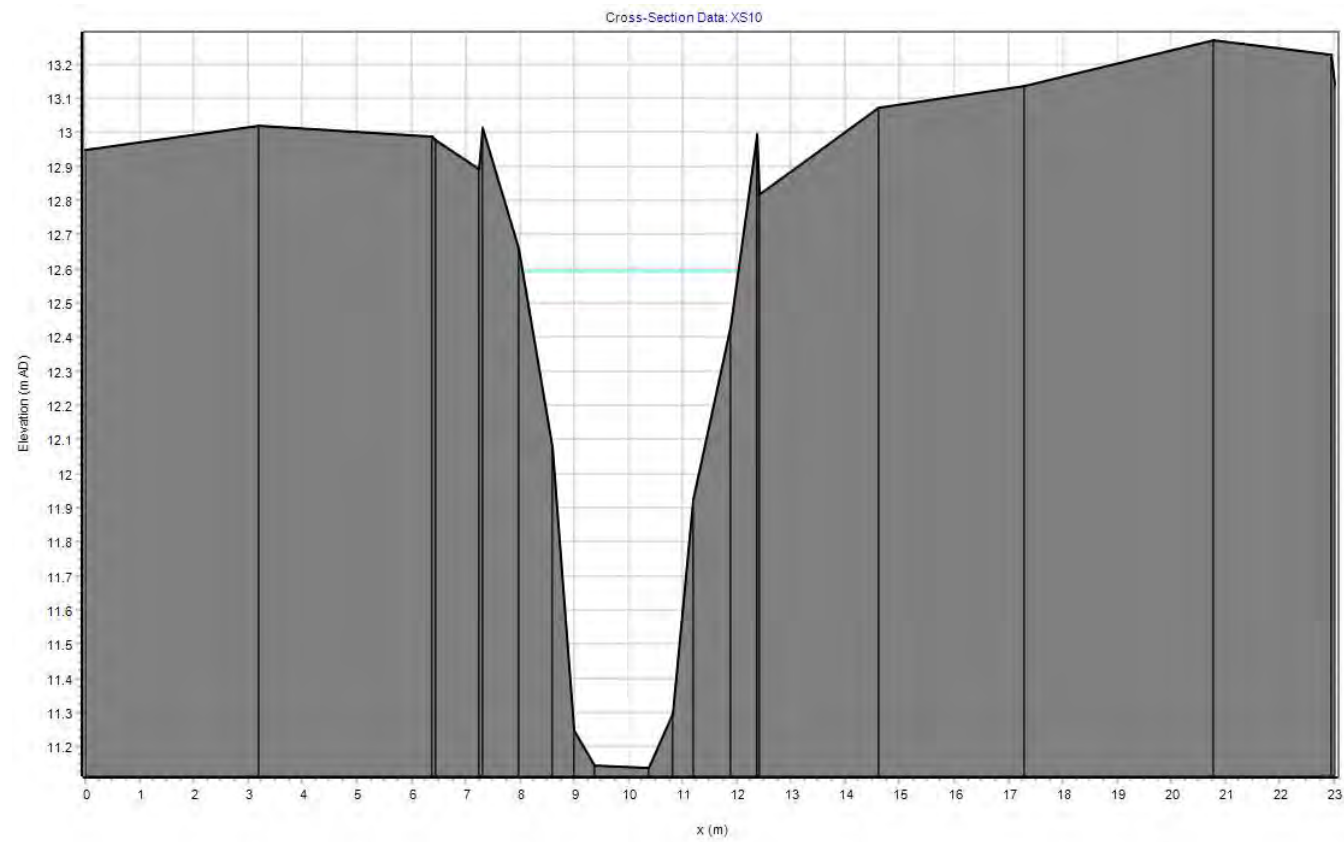
Appendix J – Tyock Burn, Pre development scenario.1 in 30 year event + 30% Climate Change Results

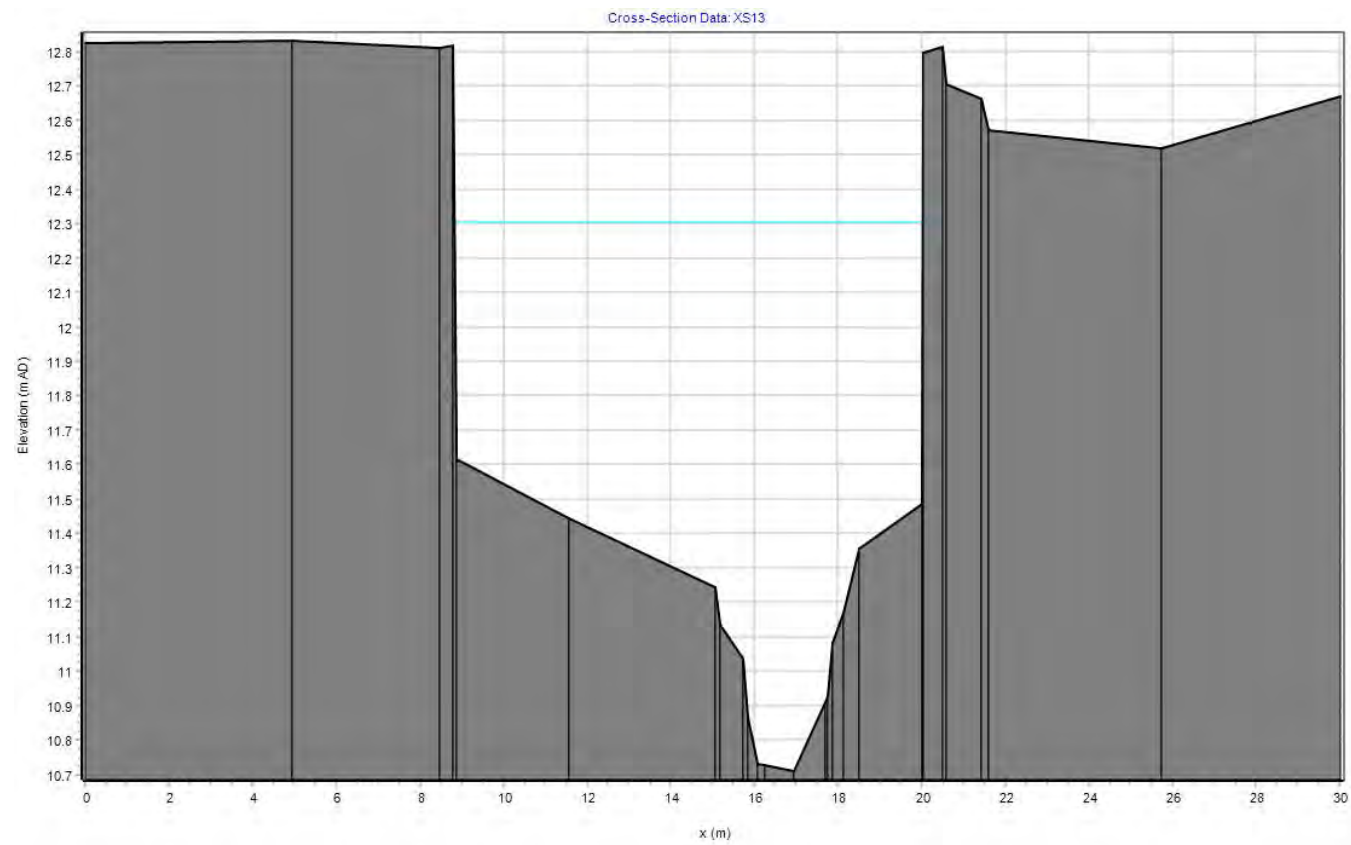
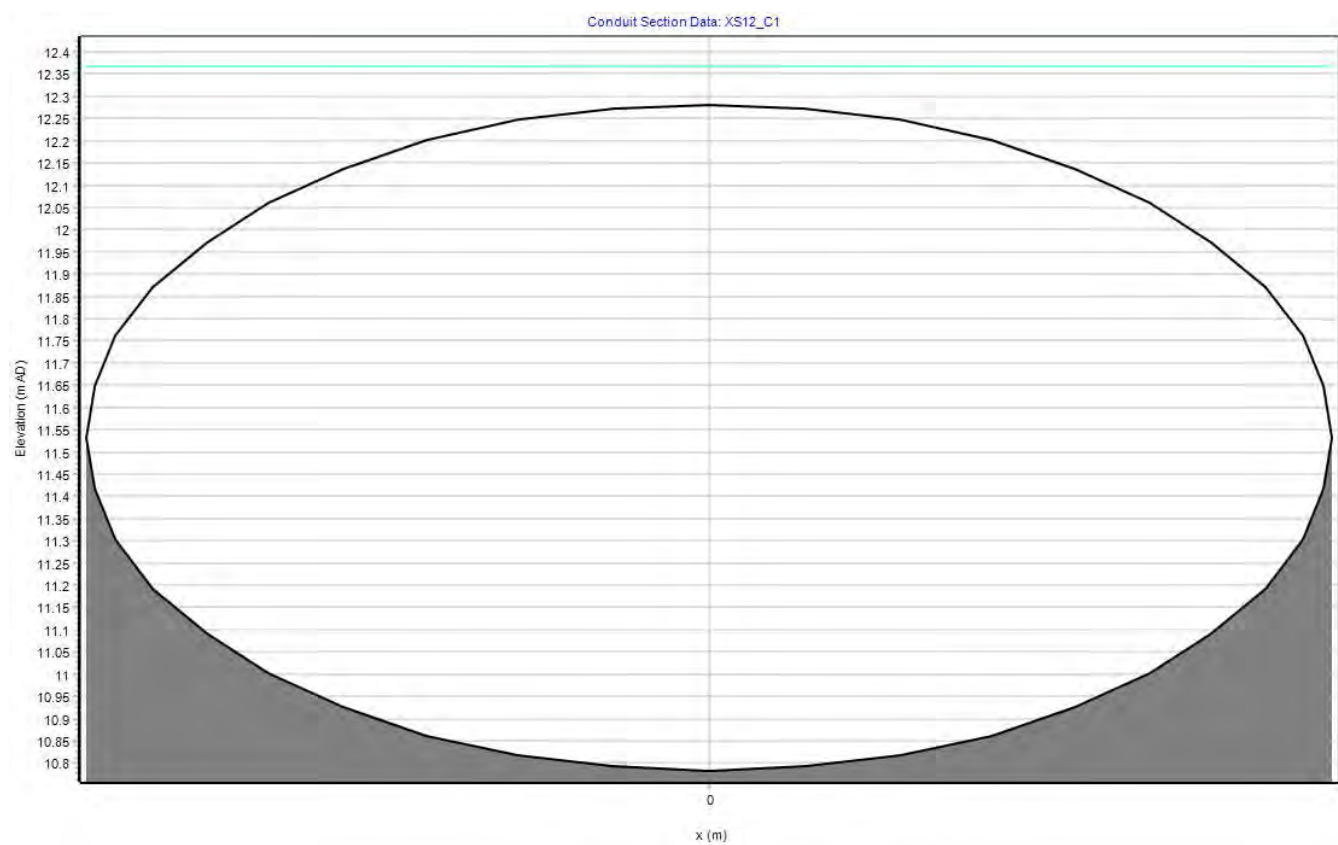
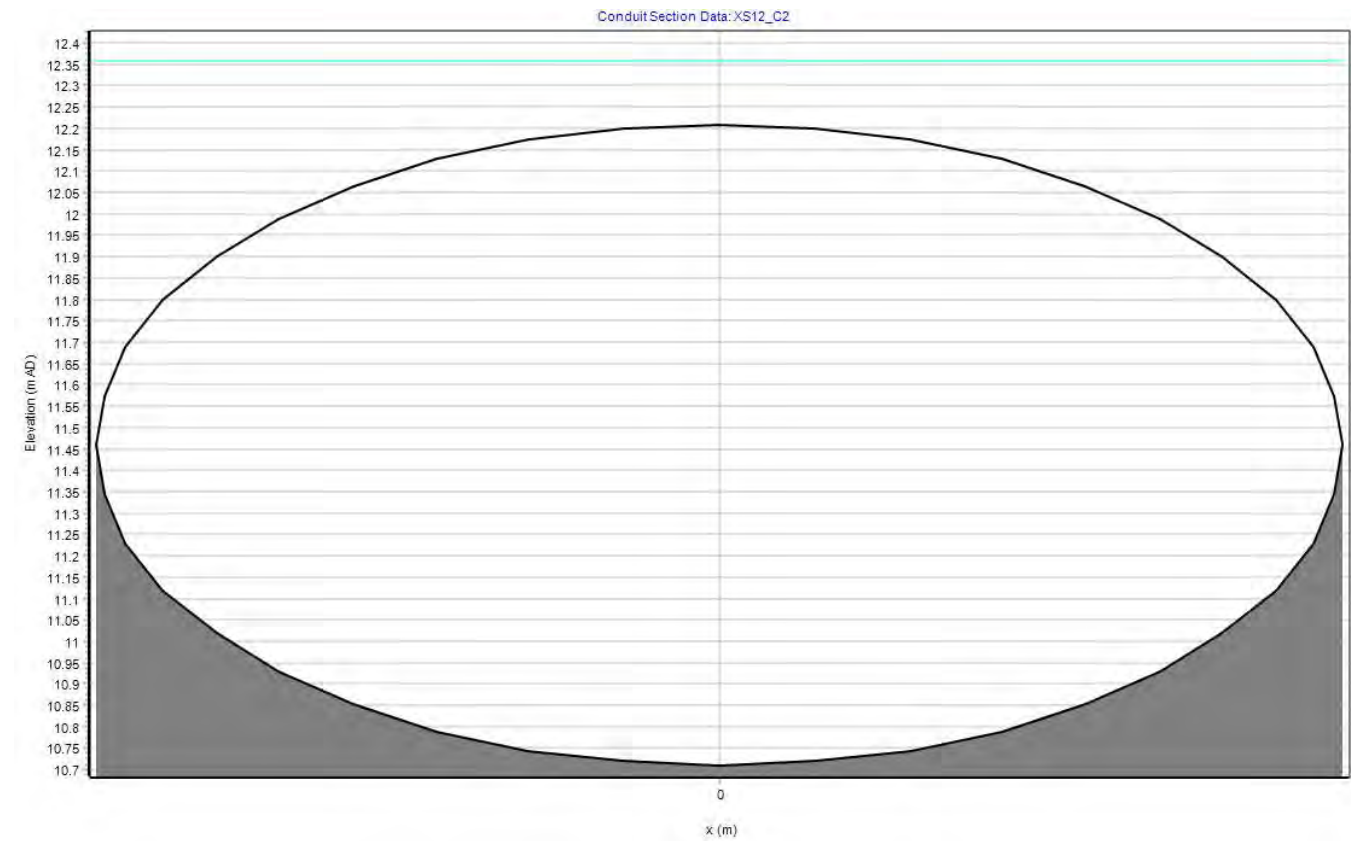
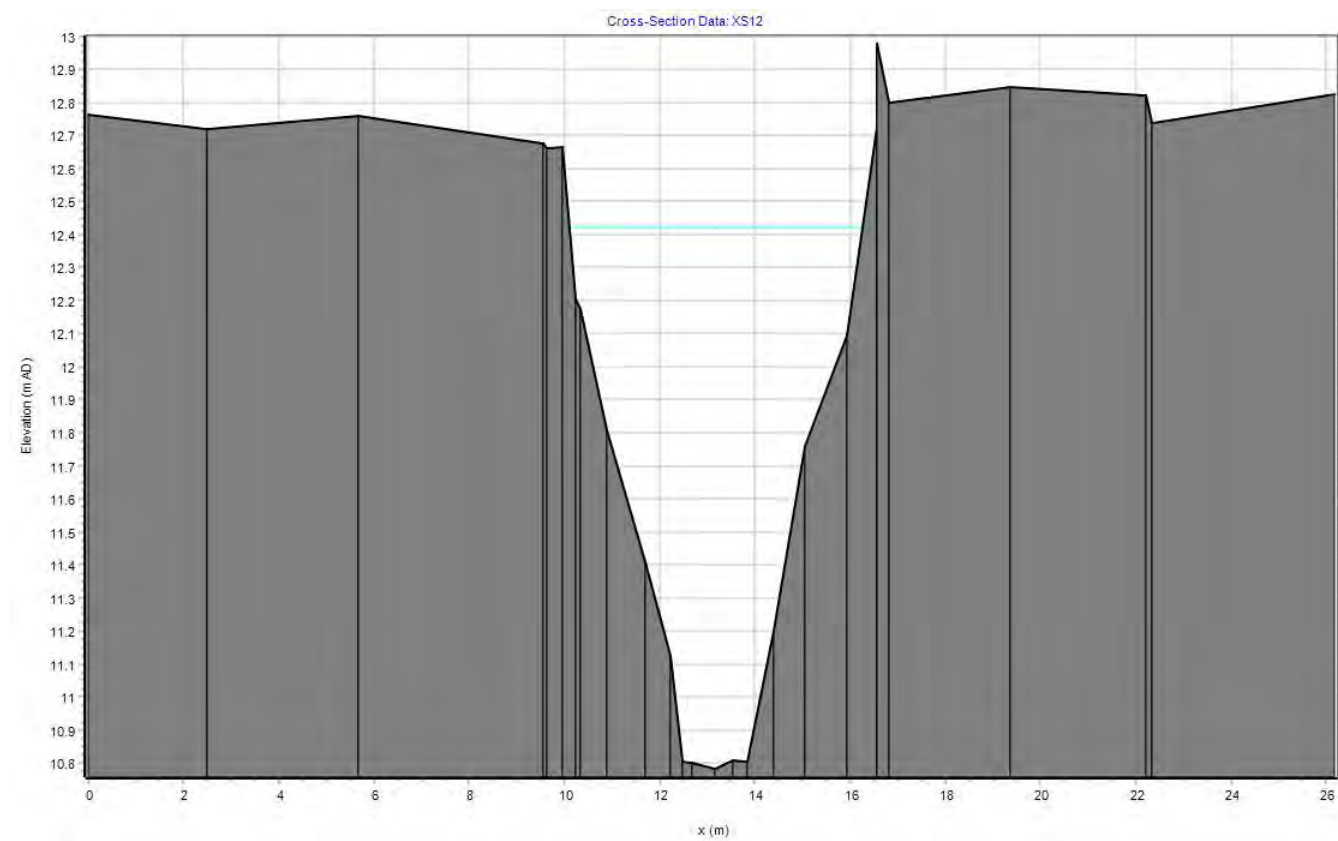
Label	Max Stage	Time (hr)mx2	Max Flow	Time (hr)mx1	Max Velocity	Time (hr)mx4
XS3	13.719	1.417	0.442	1.083	0.573	0.500
XS4	13.717	1.417	0.413	1.083	0.161	0.000
XS5	13.716	1.500	0.375	1.333	0.286	0.000
XS6	13.713	1.417	0.486	1.833	0.234	0.000
XS6_C1	13.709	1.417	0.486	1.833	0.404	1.833
XS6_C2	13.629	1.333	0.487	1.833	1.699	1.833
XS7	13.618	1.333	0.925	1.333	0.602	2.000
XS8	13.571	1.333	1.043	1.500	0.523	1.750
XS8_C1	13.450	1.333	2.150	1.167	2.075	0.833
XS8_C2	12.773	1.417	2.144	1.167	1.749	1.167
XS9	12.675	1.583	2.144	1.167	1.032	1.000
XS10	12.599	1.583	2.125	1.250	0.651	1.083
XS10_C1	12.524	1.583	2.125	1.250	1.364	1.167
XS10_C2	12.523	1.583	2.124	1.250	1.307	1.167
XS11	12.446	1.583	2.124	1.250	0.964	0.833
XS12	12.423	1.583	2.079	1.333	0.522	0.833
XS12_C1	12.368	1.583	2.079	1.333	1.232	0.917
XS12_C2	12.358	1.583	2.079	1.333	1.183	1.167
XS13	12.305	1.583	2.071	1.333	0.600	0.583
XS14	12.302	1.583	2.071	1.333	0.569	0.583
XS15	12.292	1.583	1.959	1.500	0.307	1.000
XS16	12.254	1.583	1.959	1.500	0.286	1.083
XS17	12.246	1.583	1.926	1.583	0.305	0.917
XS18	12.184	1.667	1.934	1.750	0.248	2.250
XS19	12.144	1.583	1.934	1.750	0.240	2.250
XS20	12.141	1.583	1.972	1.750	0.340	2.250
XS21	12.077	1.583	1.972	1.750	0.300	2.250
XS22	12.038	1.583	3.753	1.417	0.662	1.000
XS23	11.894	1.667	3.753	1.417	0.768	1.000
XS24	11.798	1.667	3.560	1.583	1.008	0.917
XS24B	11.766	1.667	3.560	1.583	1.008	0.917
XS25	11.733	1.667	3.520	1.667	0.724	0.750
XS25_C1	11.699	1.667	3.520	1.667	1.124	1.667
XS25_C2	11.357	1.750	3.519	1.667	1.125	1.667
XS26(B)	11.315	1.750	3.519	1.667	0.531	1.000
XS27	11.242	1.750	3.521	1.833	0.406	2.167
XS28	11.121	1.667	3.521	1.833	0.485	2.083
XS29	10.883	1.833	4.668	1.500	0.591	1.333
XS30	10.808	1.833	4.668	1.500	0.543	1.333
XS31	10.666	1.917	4.947	1.667	0.814	1.083
XS32	10.611	1.917	4.947	1.667	0.505	1.000
XS33	10.590	1.917	4.857	1.750	0.735	1.167
XS34	10.344	1.917	4.857	1.750	0.765	1.167
XS34B	10.085	2.000	4.740	2.000	0.760	1.000
XS34_C1	10.055	2.000	4.740	2.000	1.436	0.917
XS34_C2	10.027	2.000	4.740	2.000	0.673	2.000
XS35	10.007	2.000	4.740	2.000	0.458	1.250
XS36	10.005	2.000	4.740	2.000	0.457	3.417

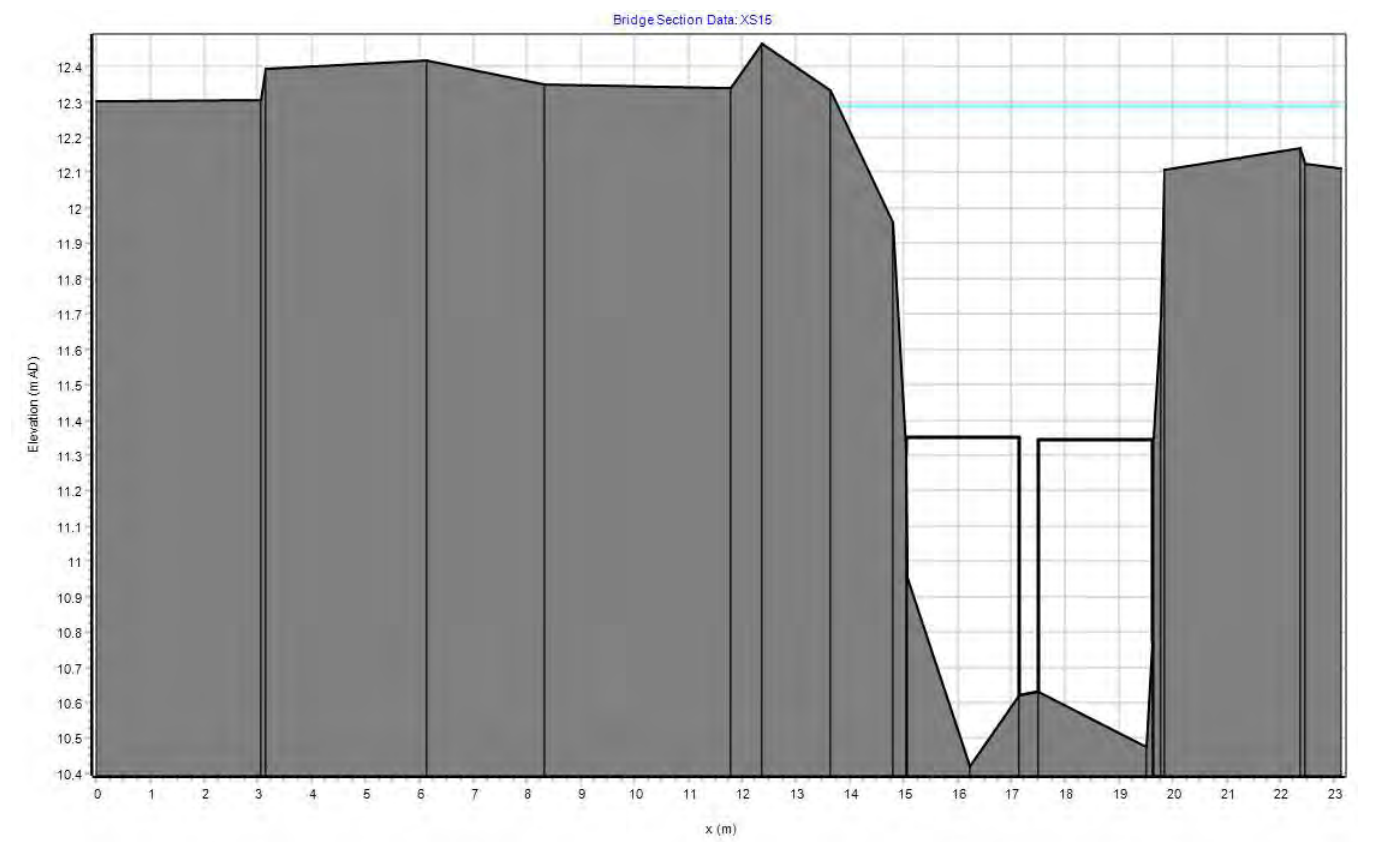
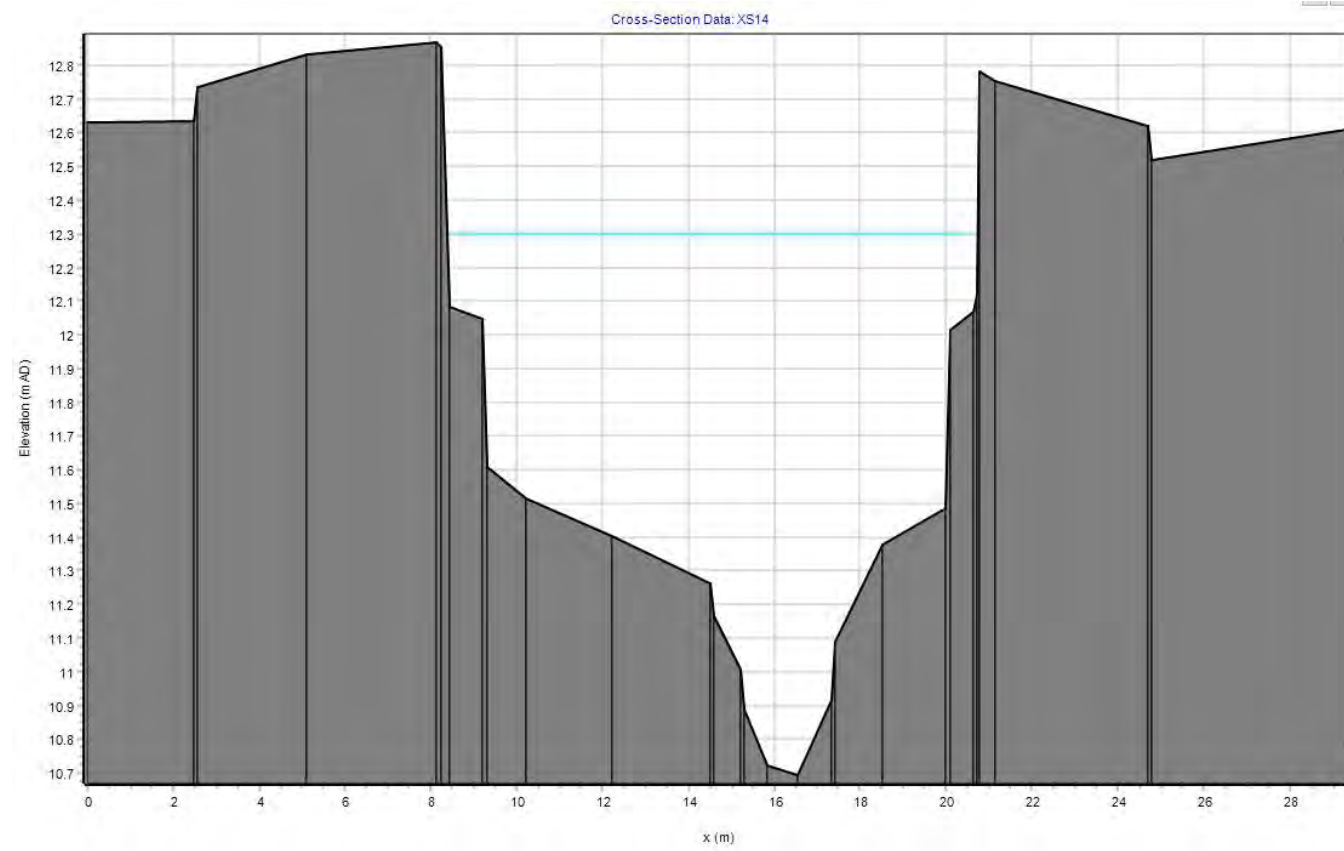
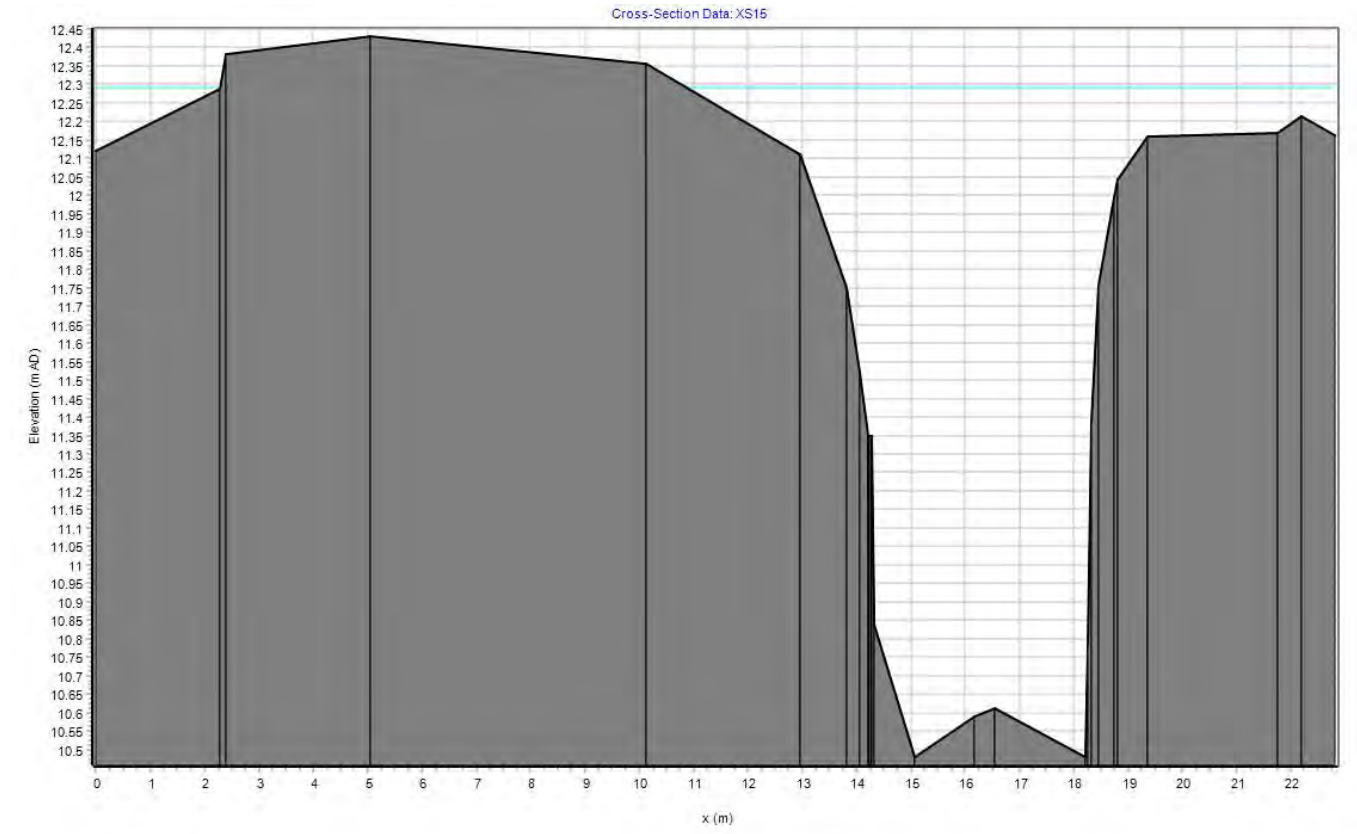
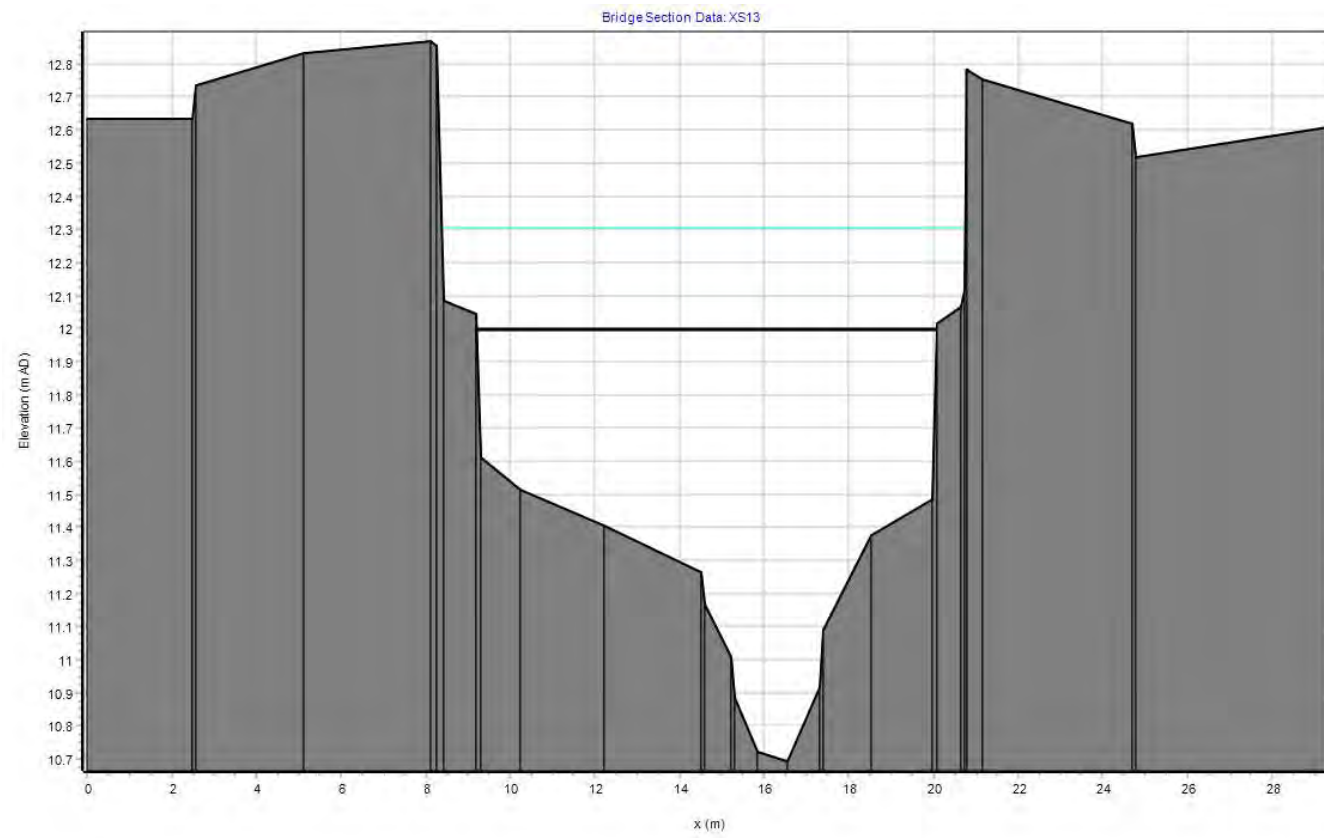


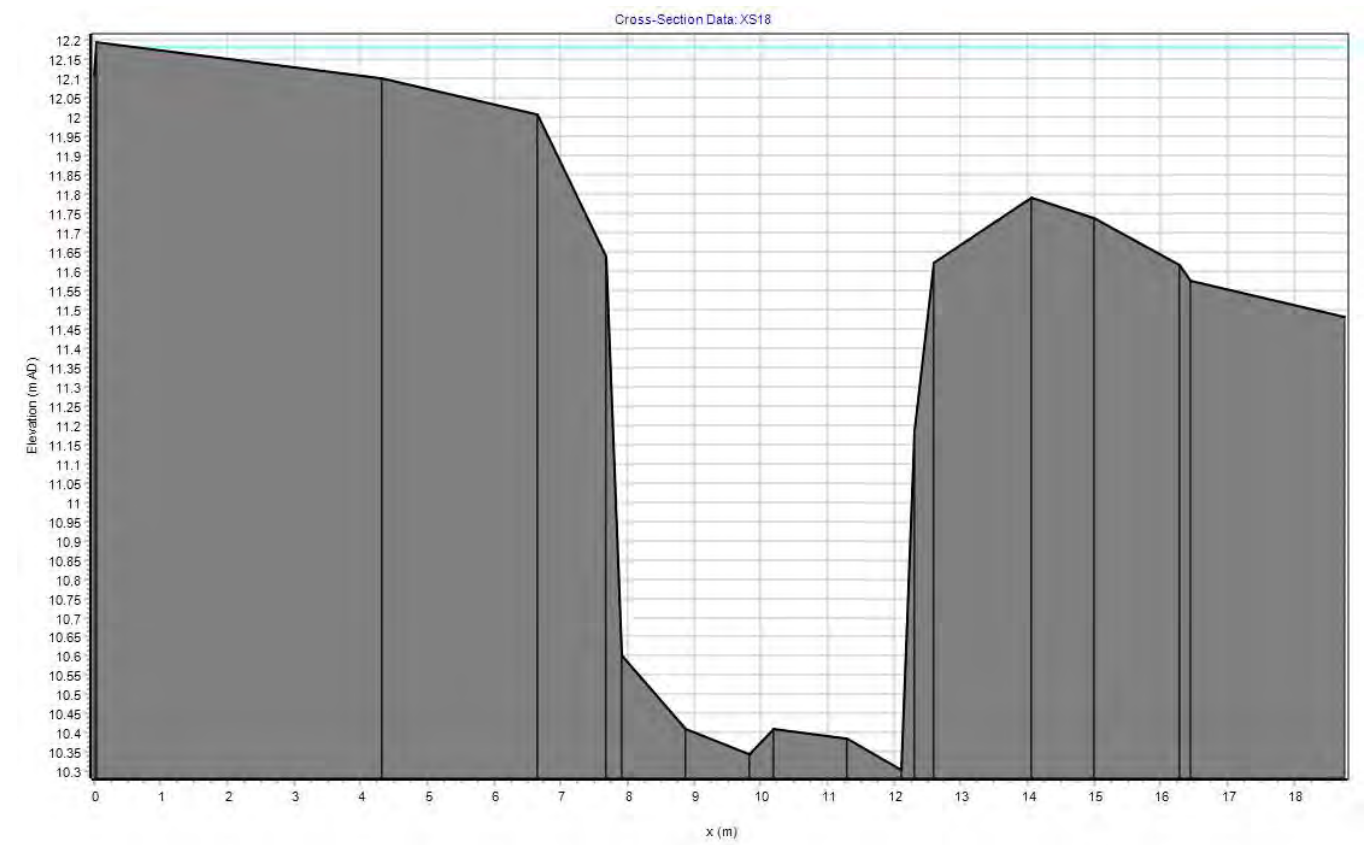
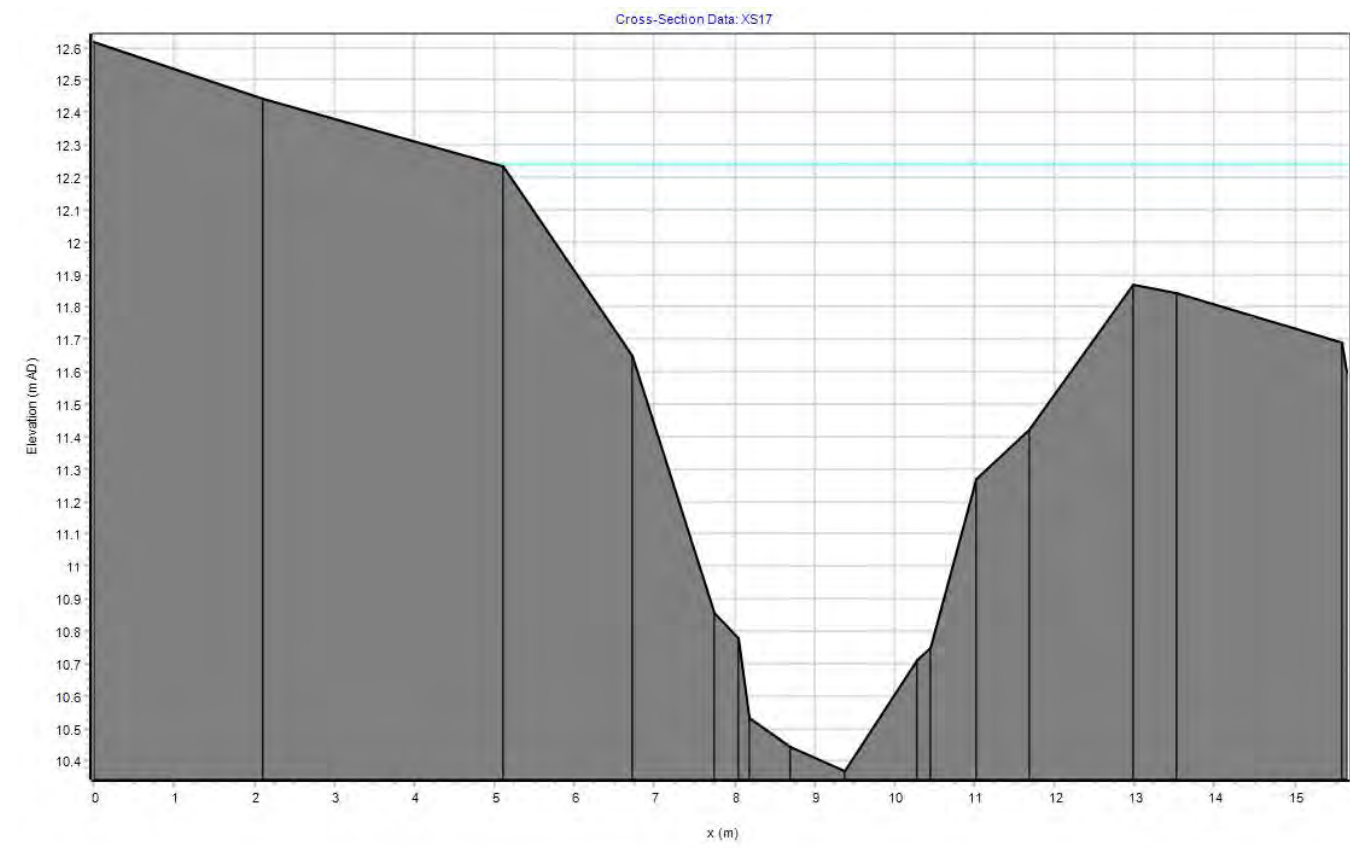
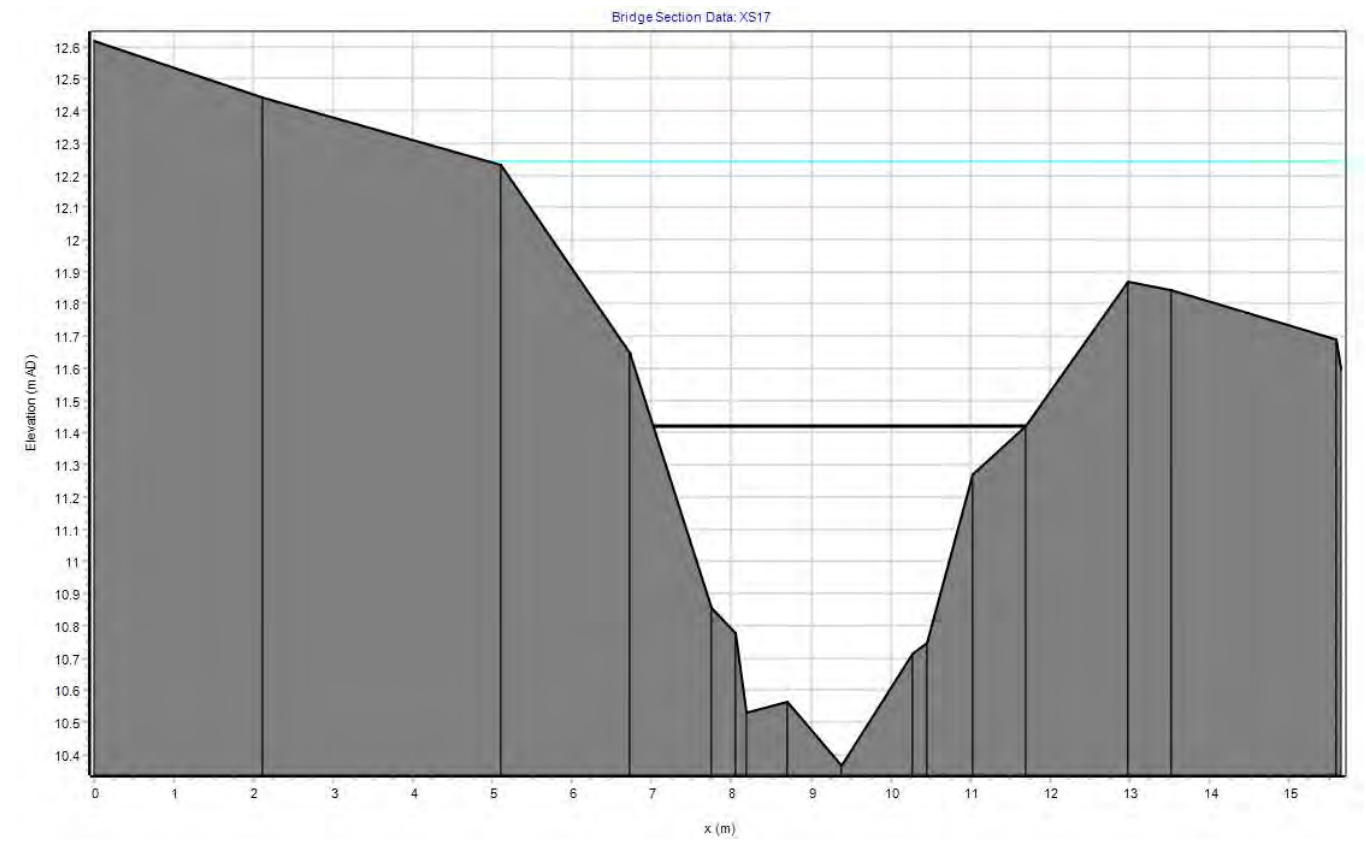
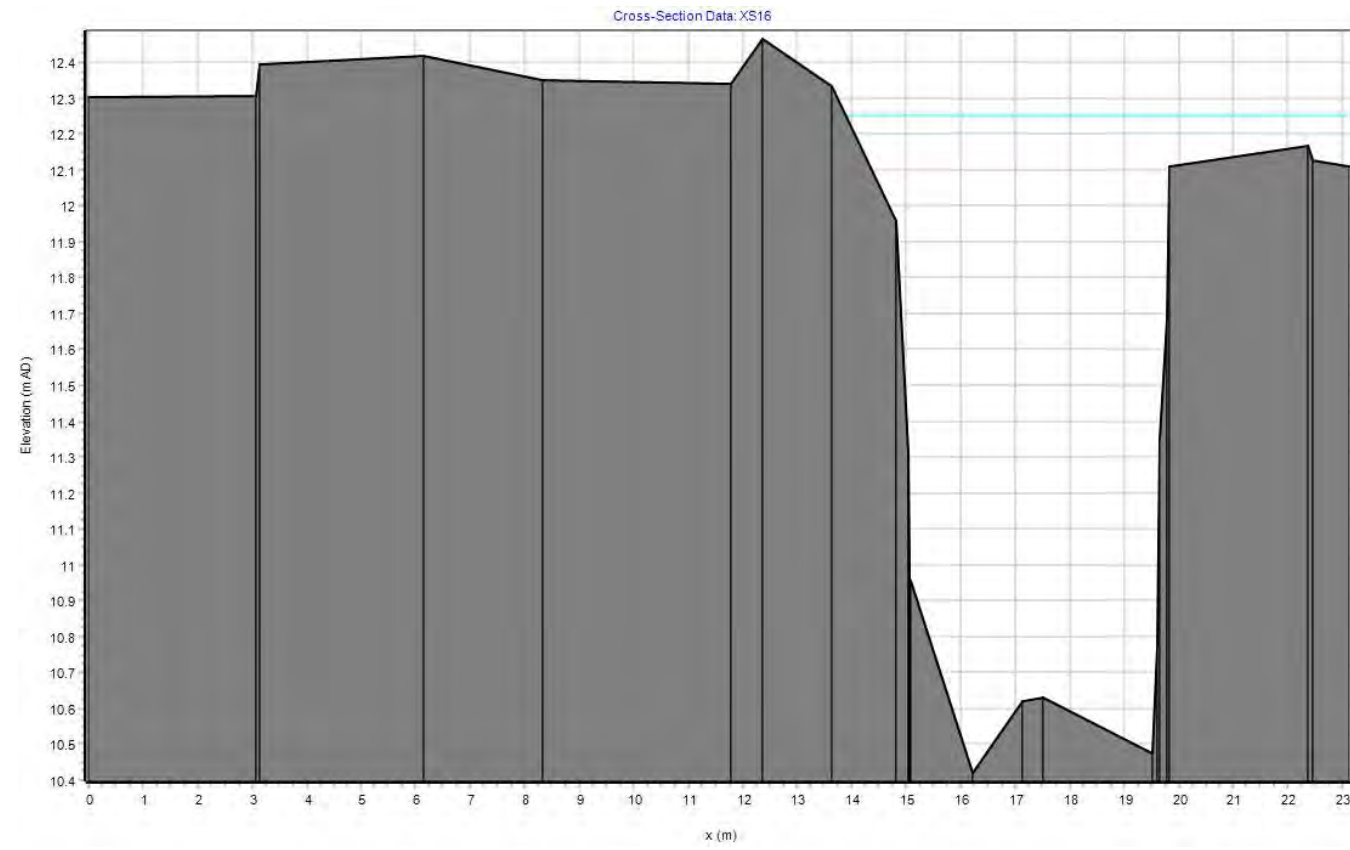


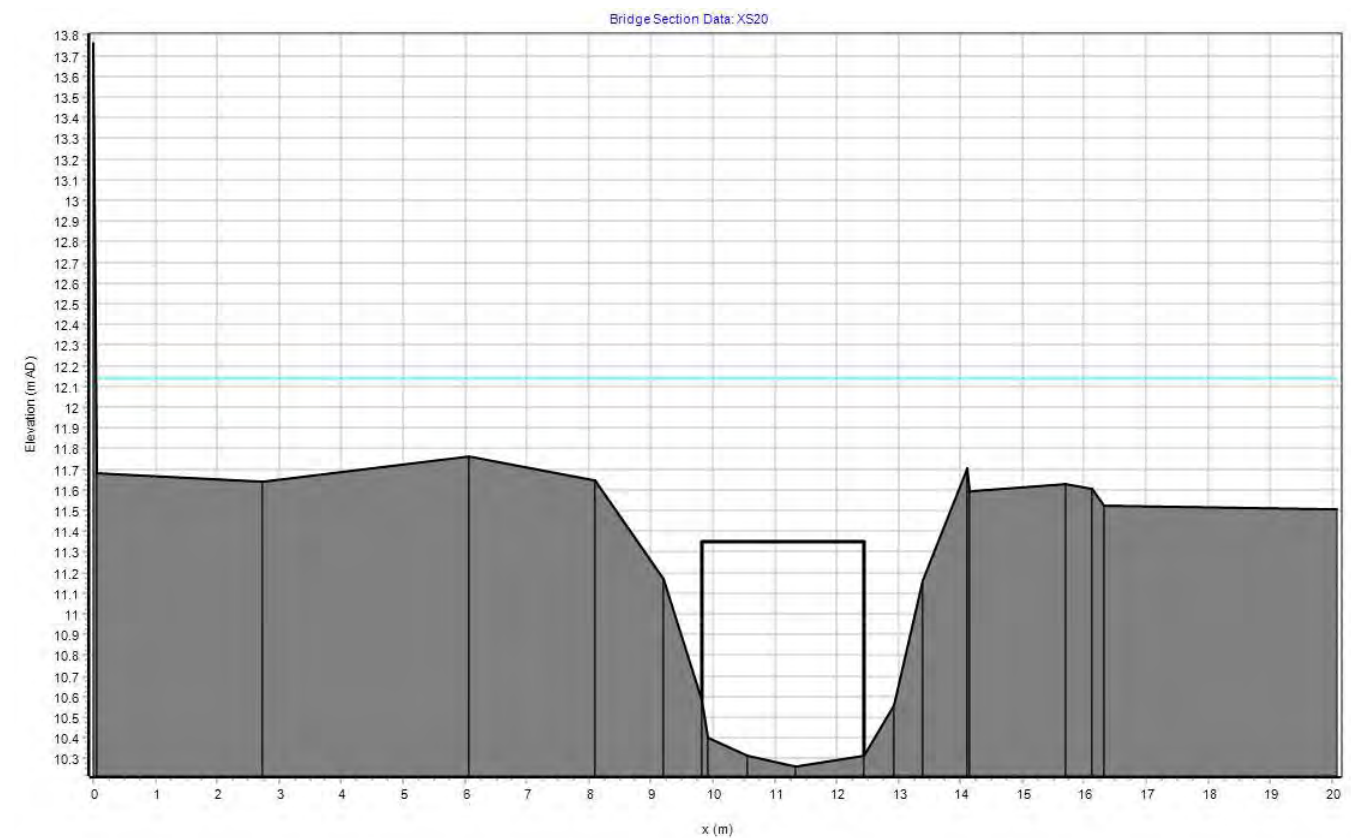
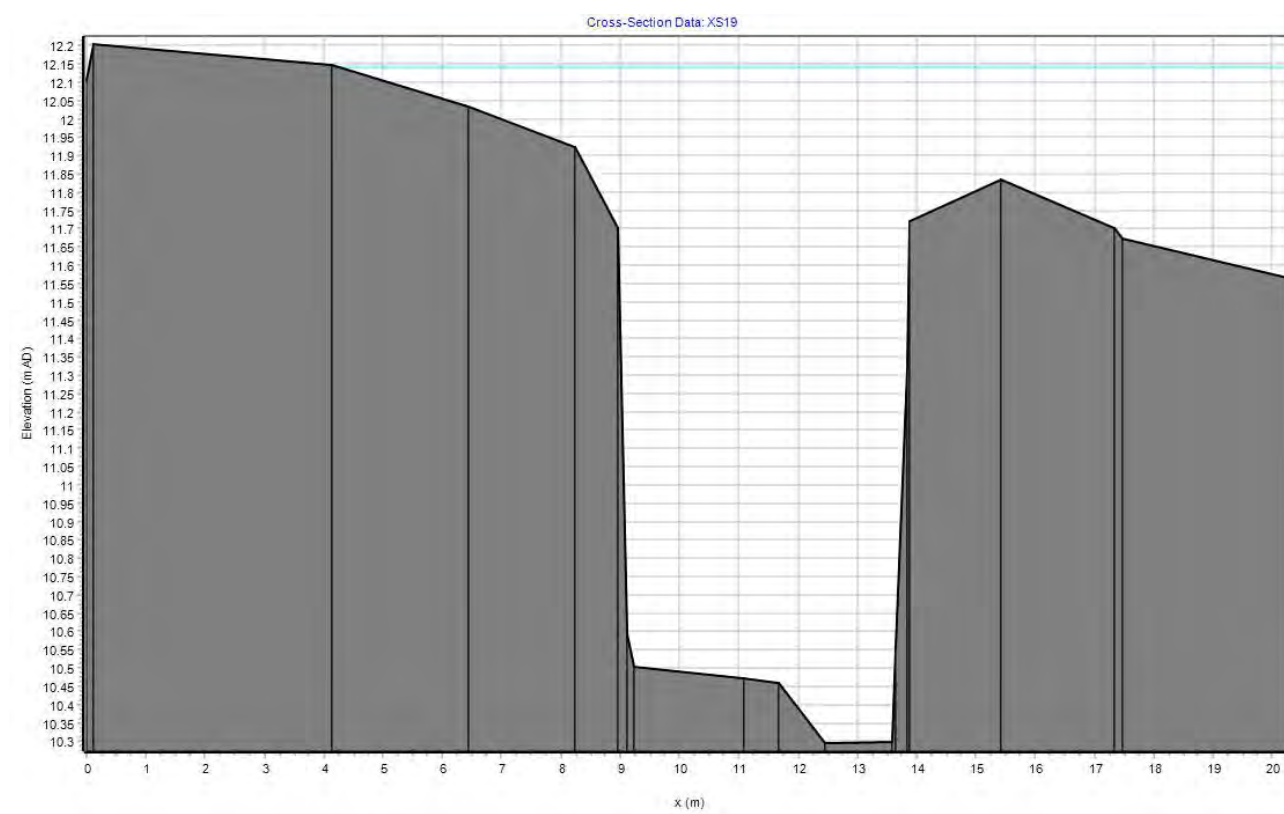
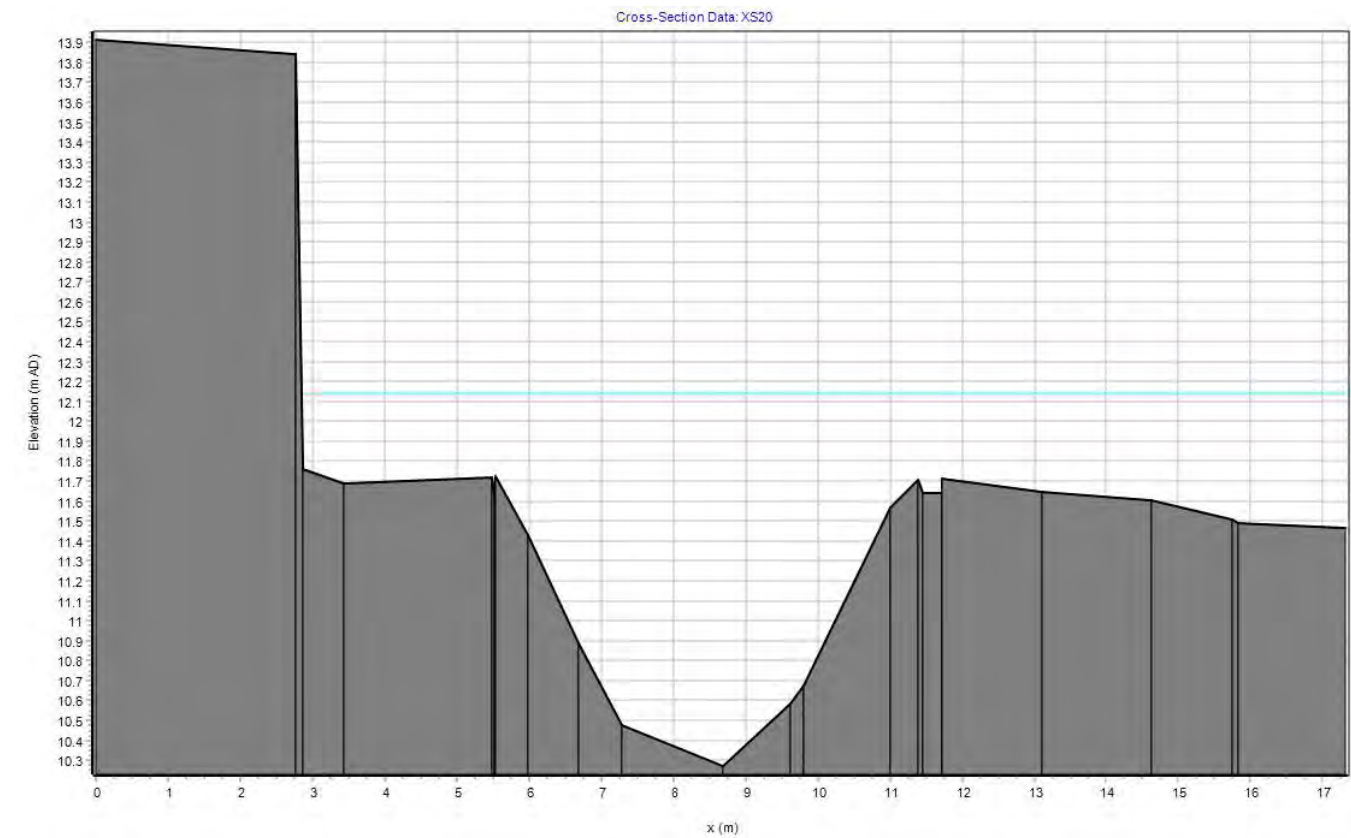
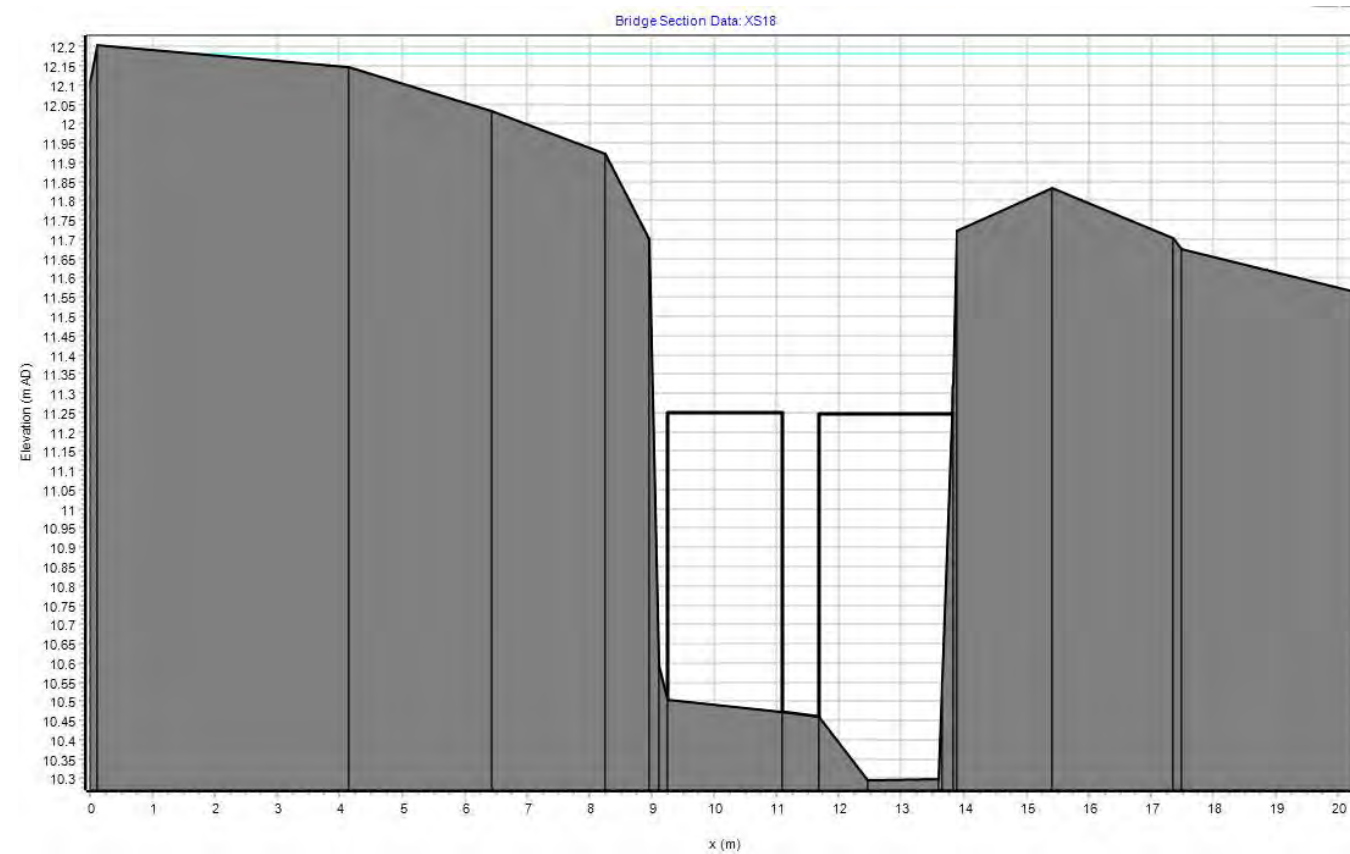


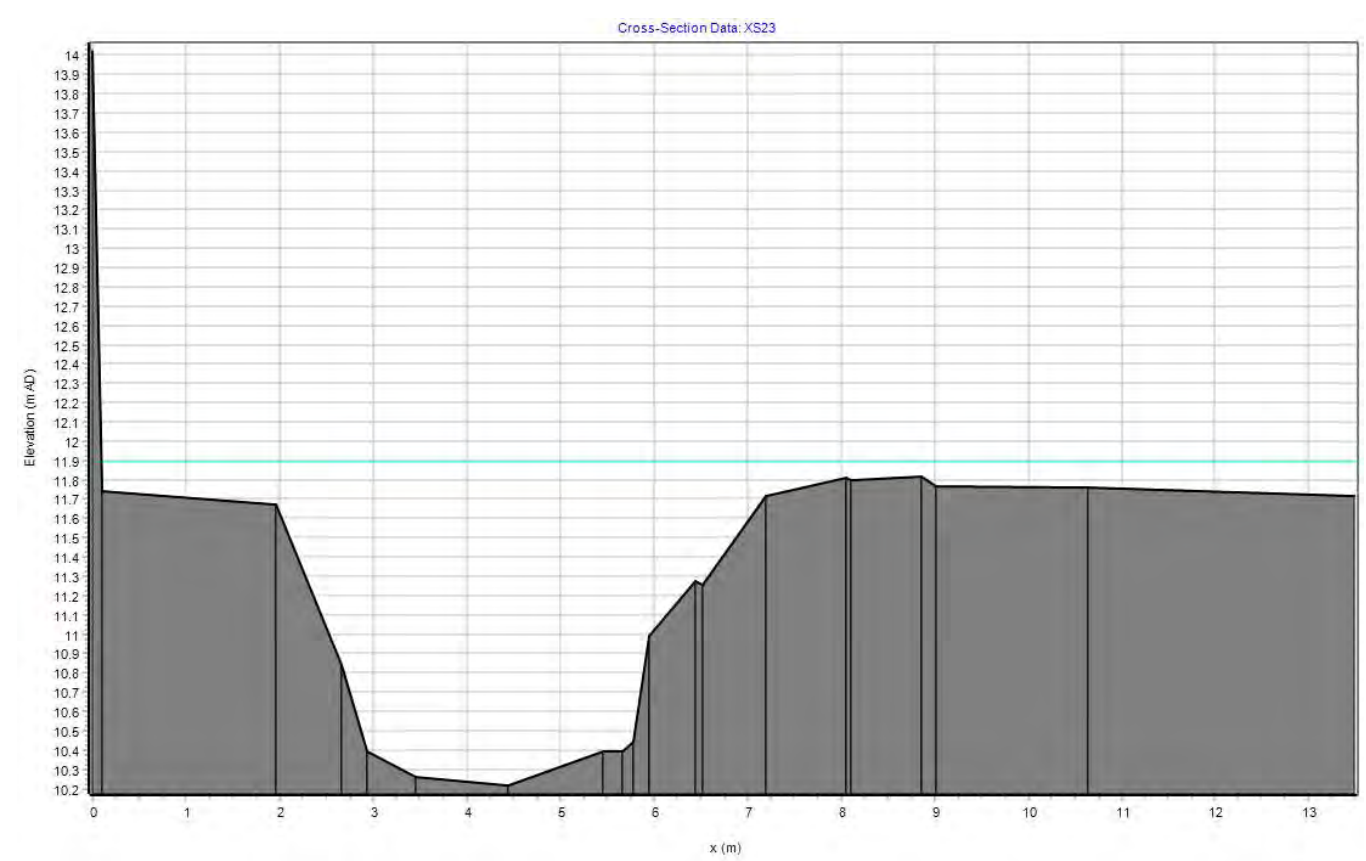
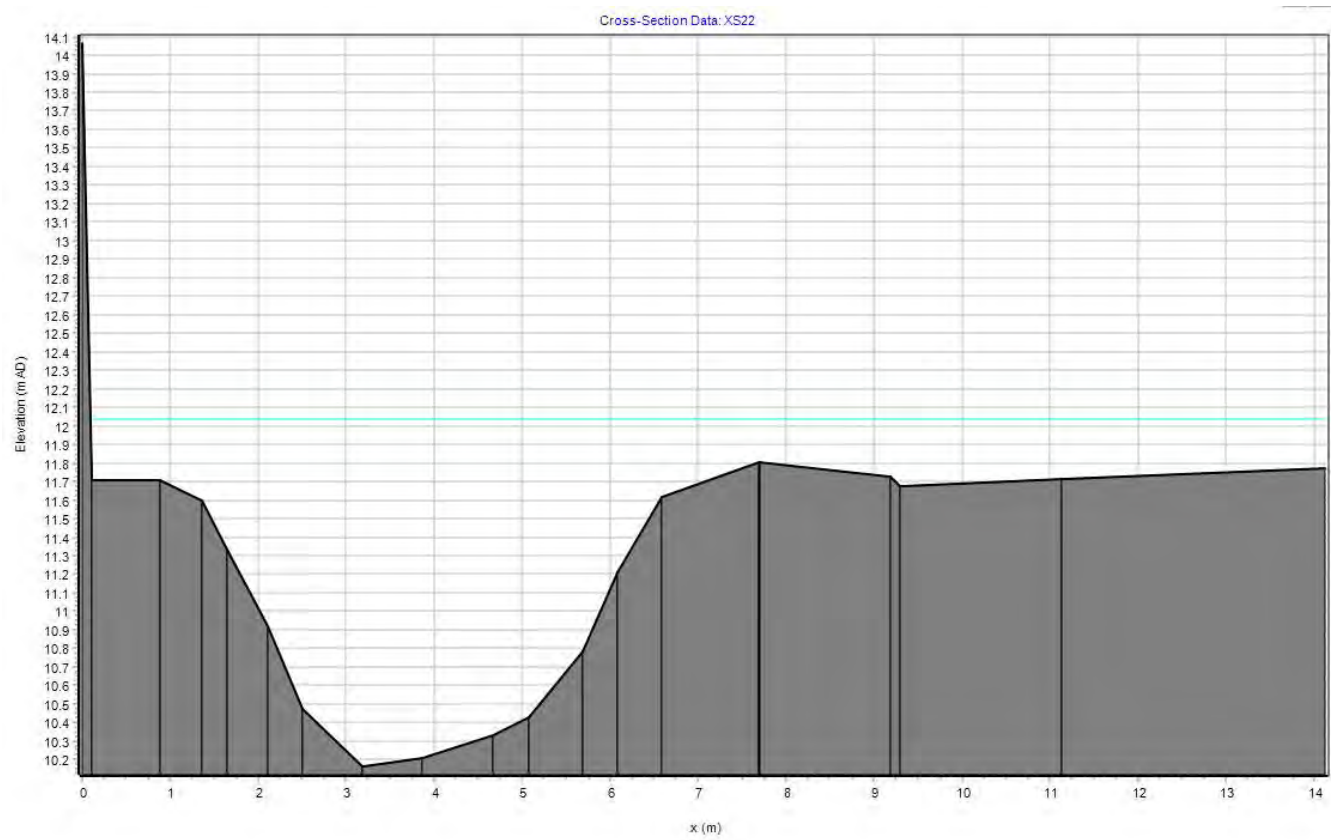
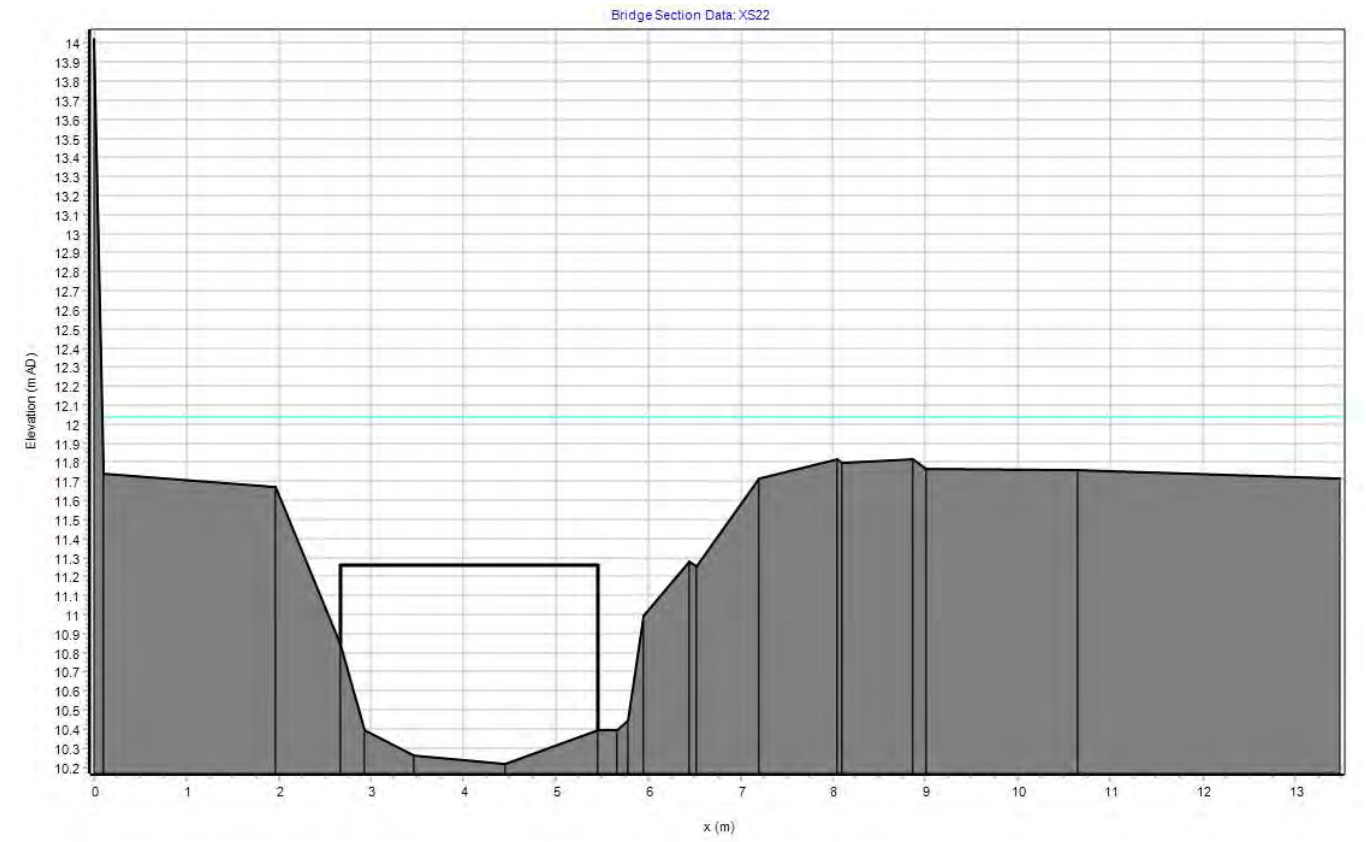
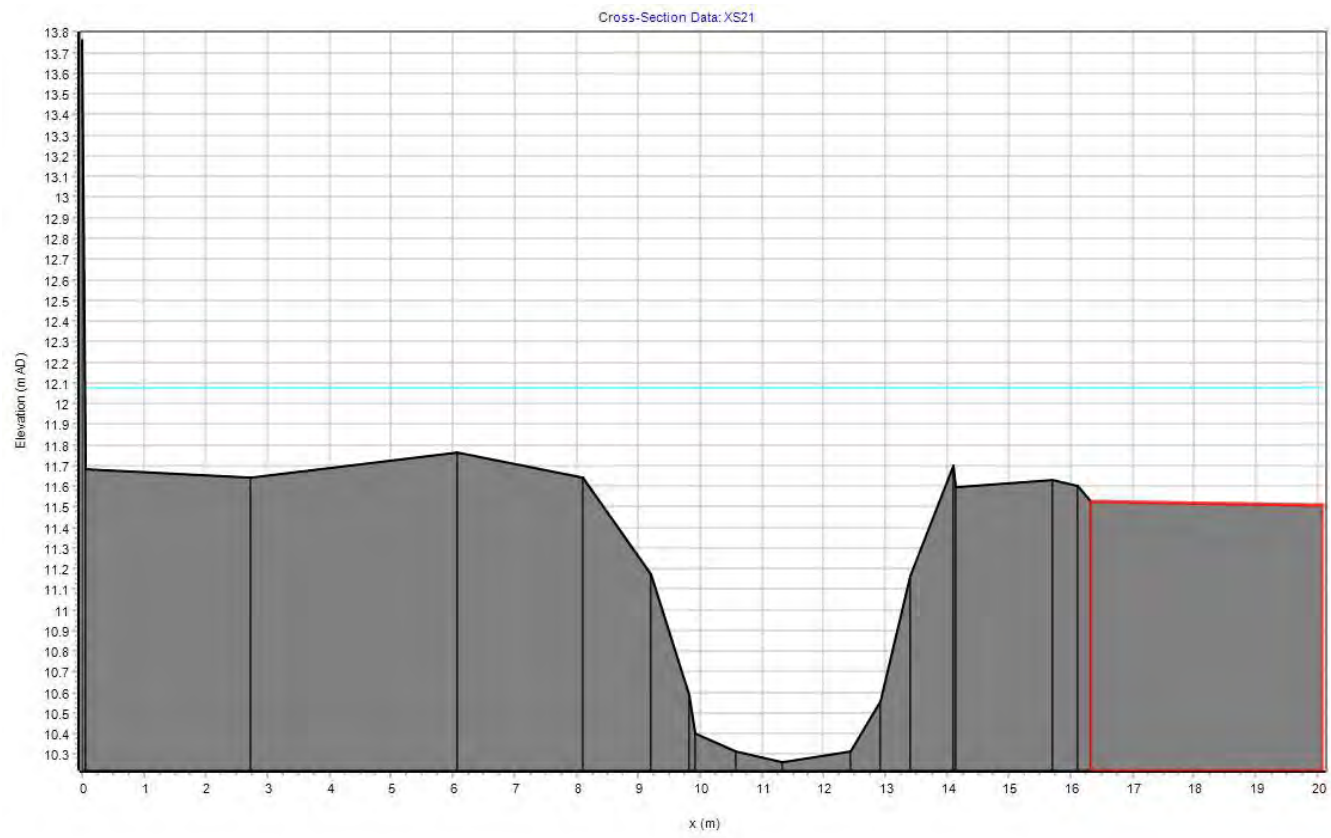


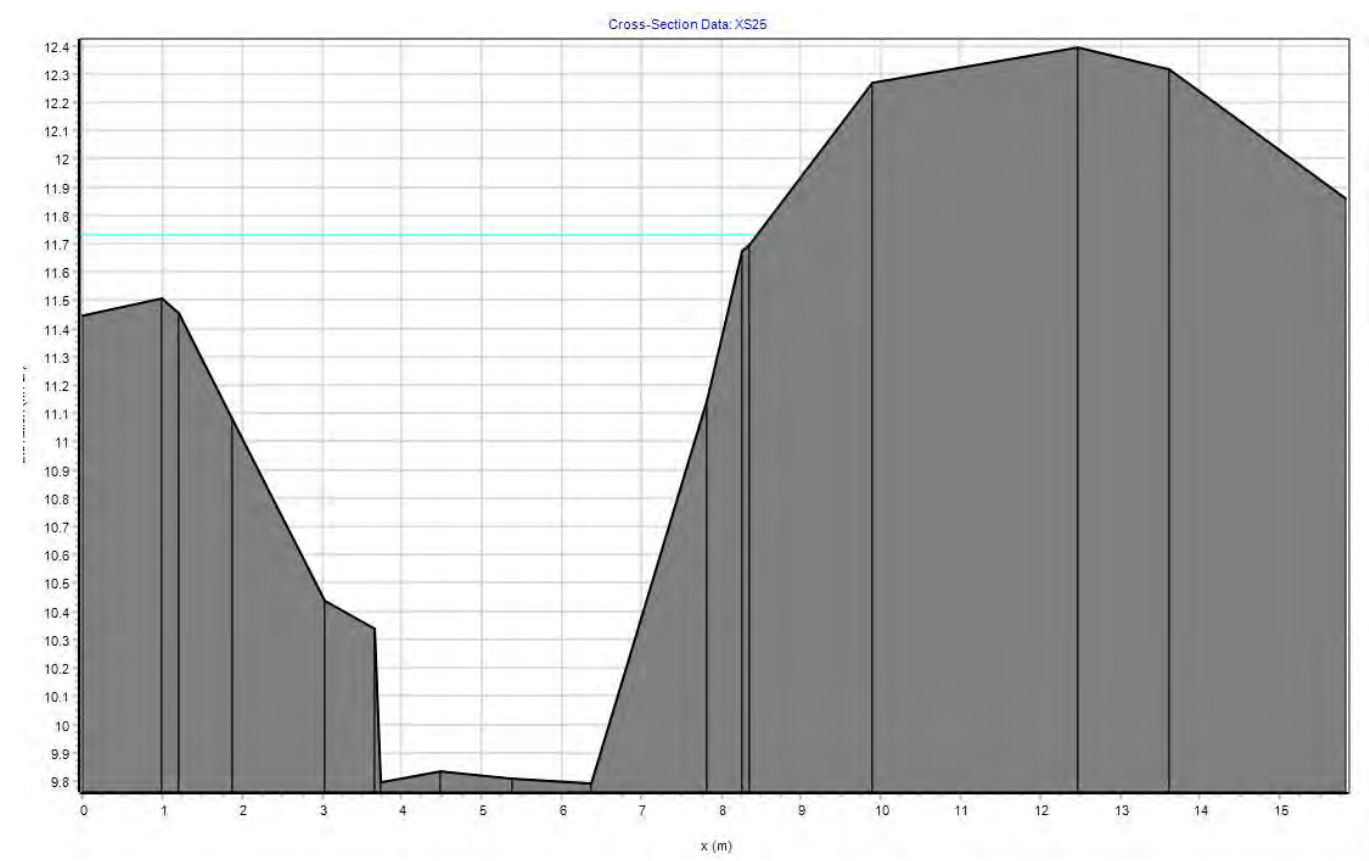
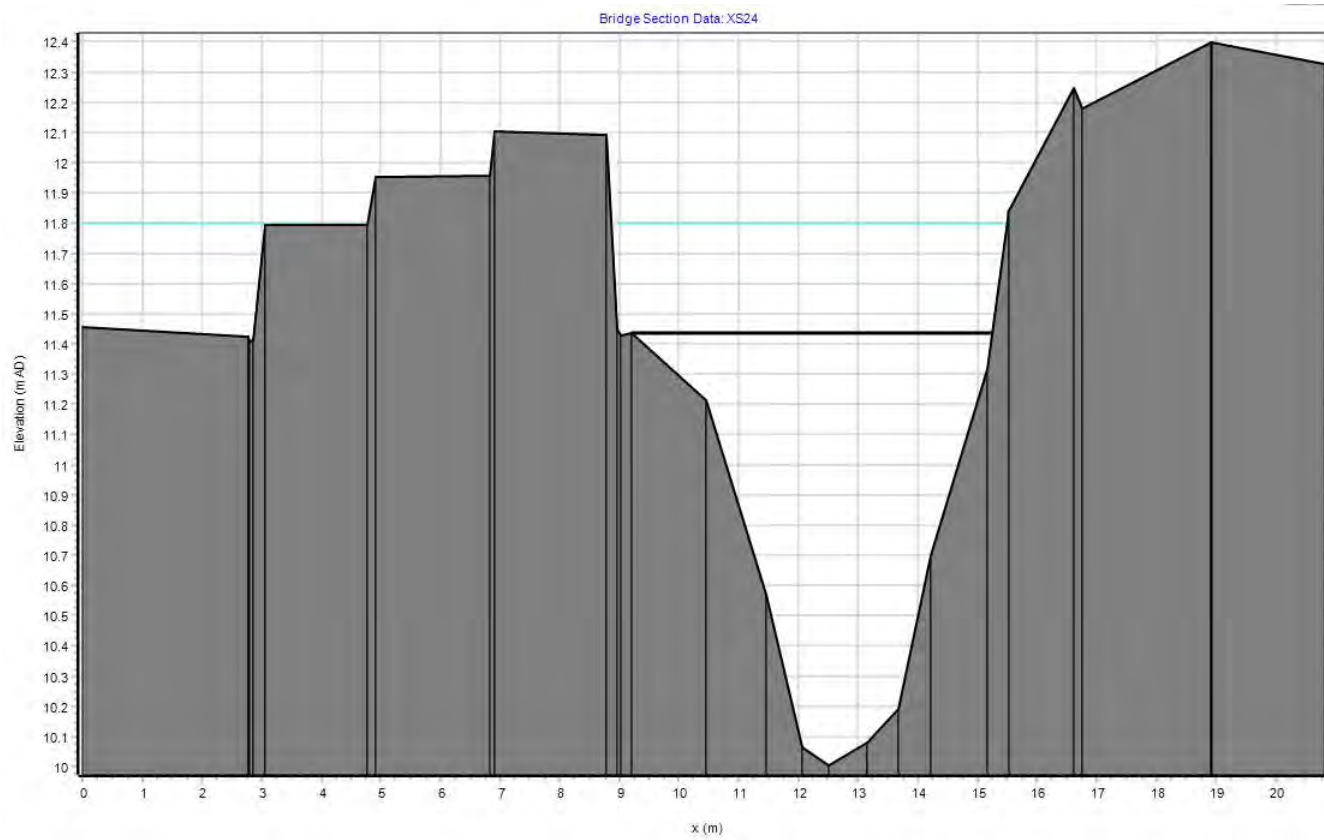
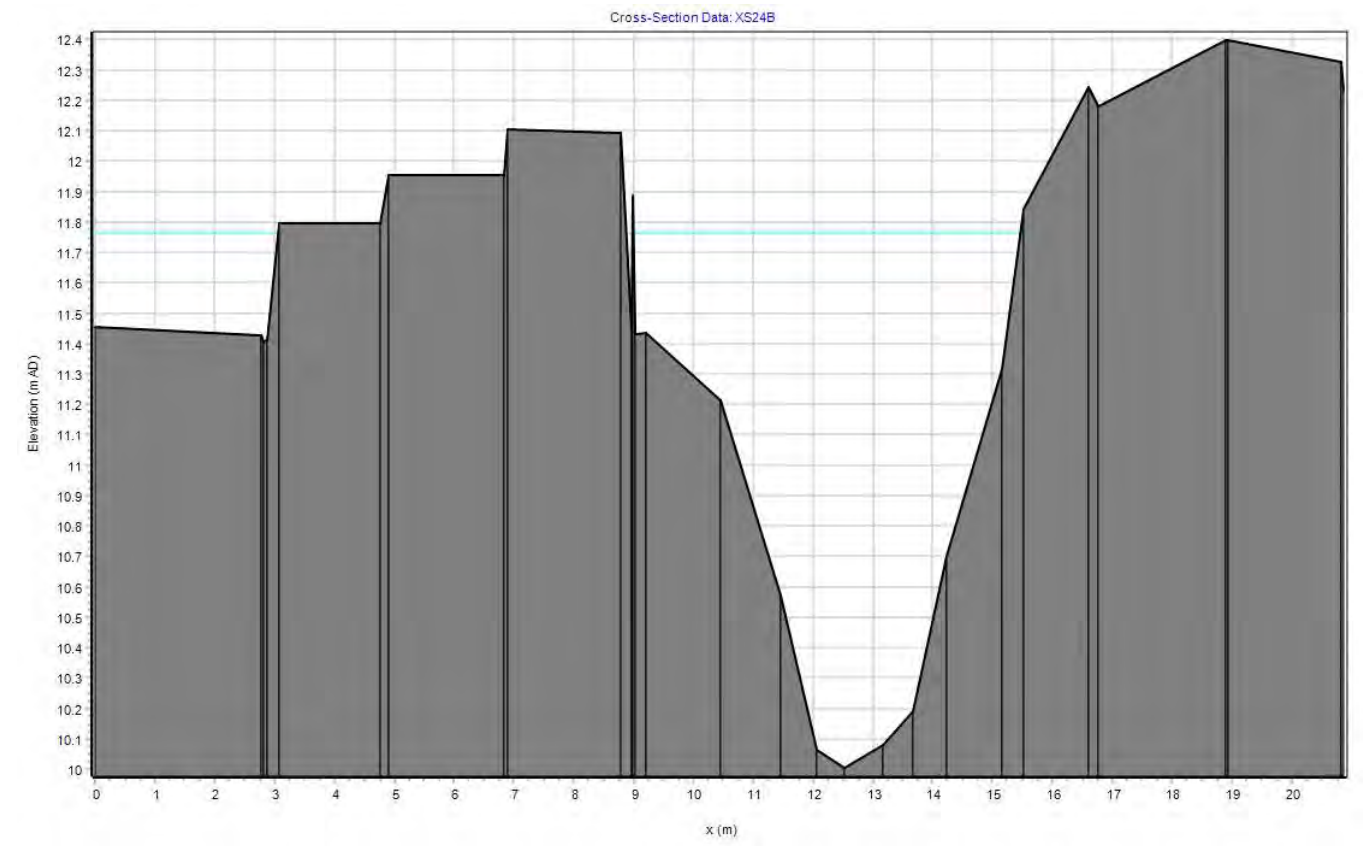
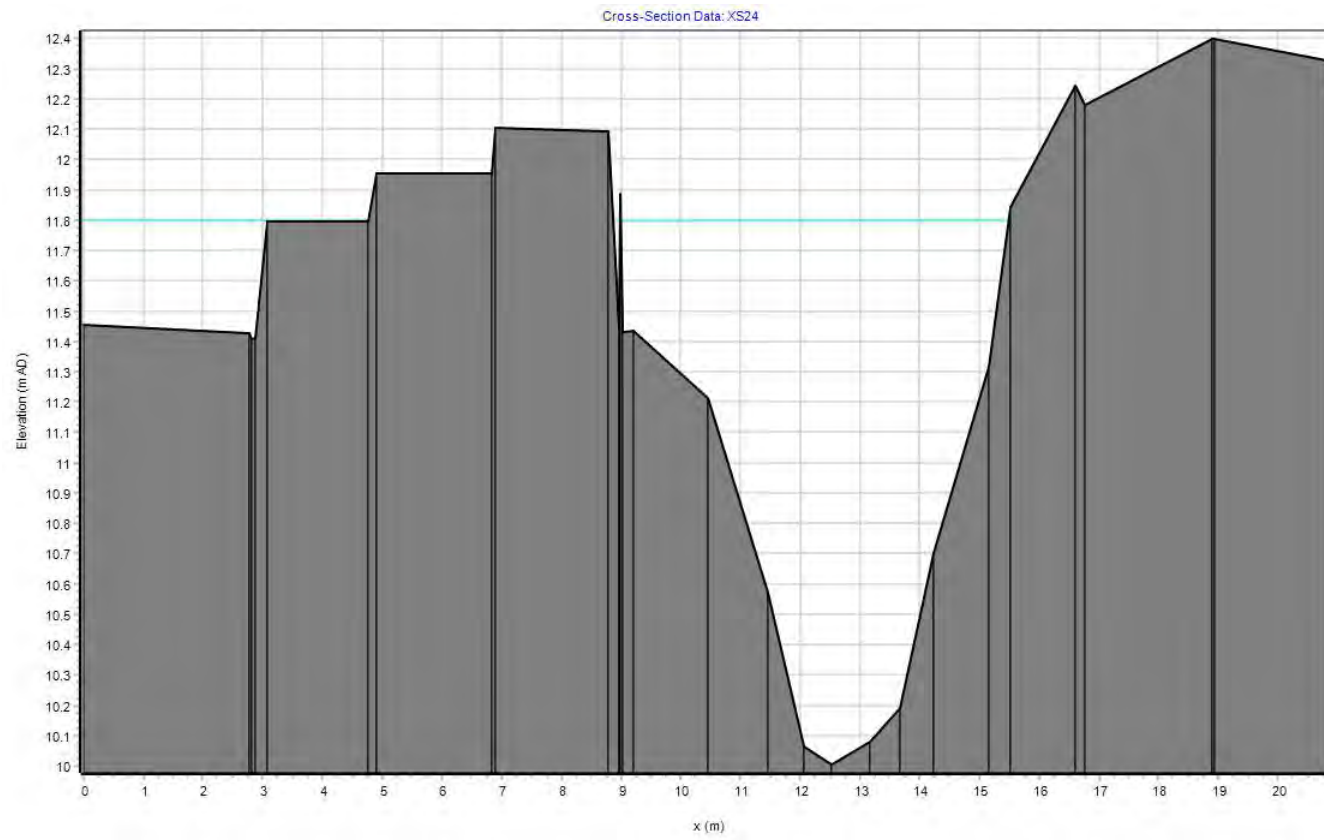


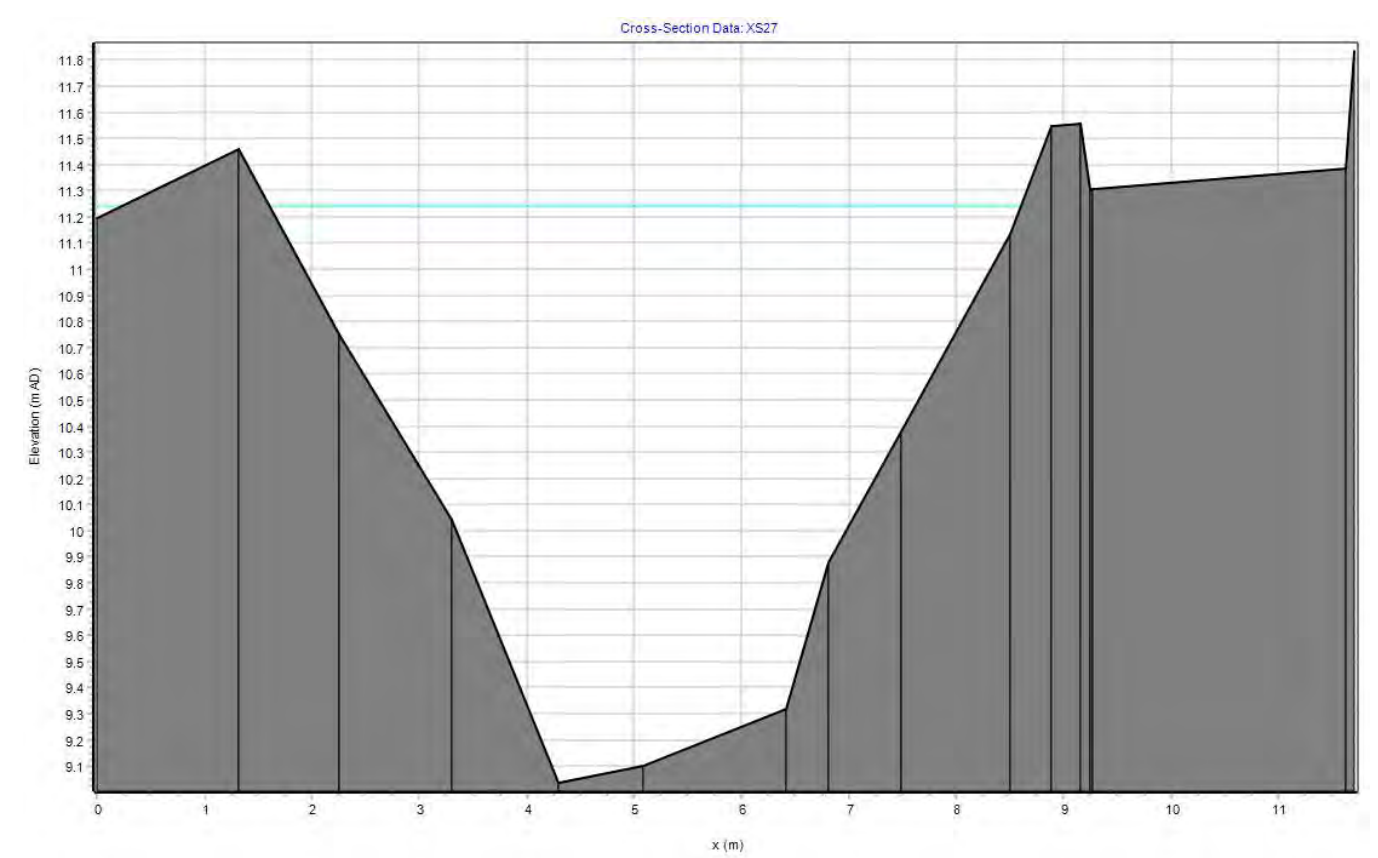
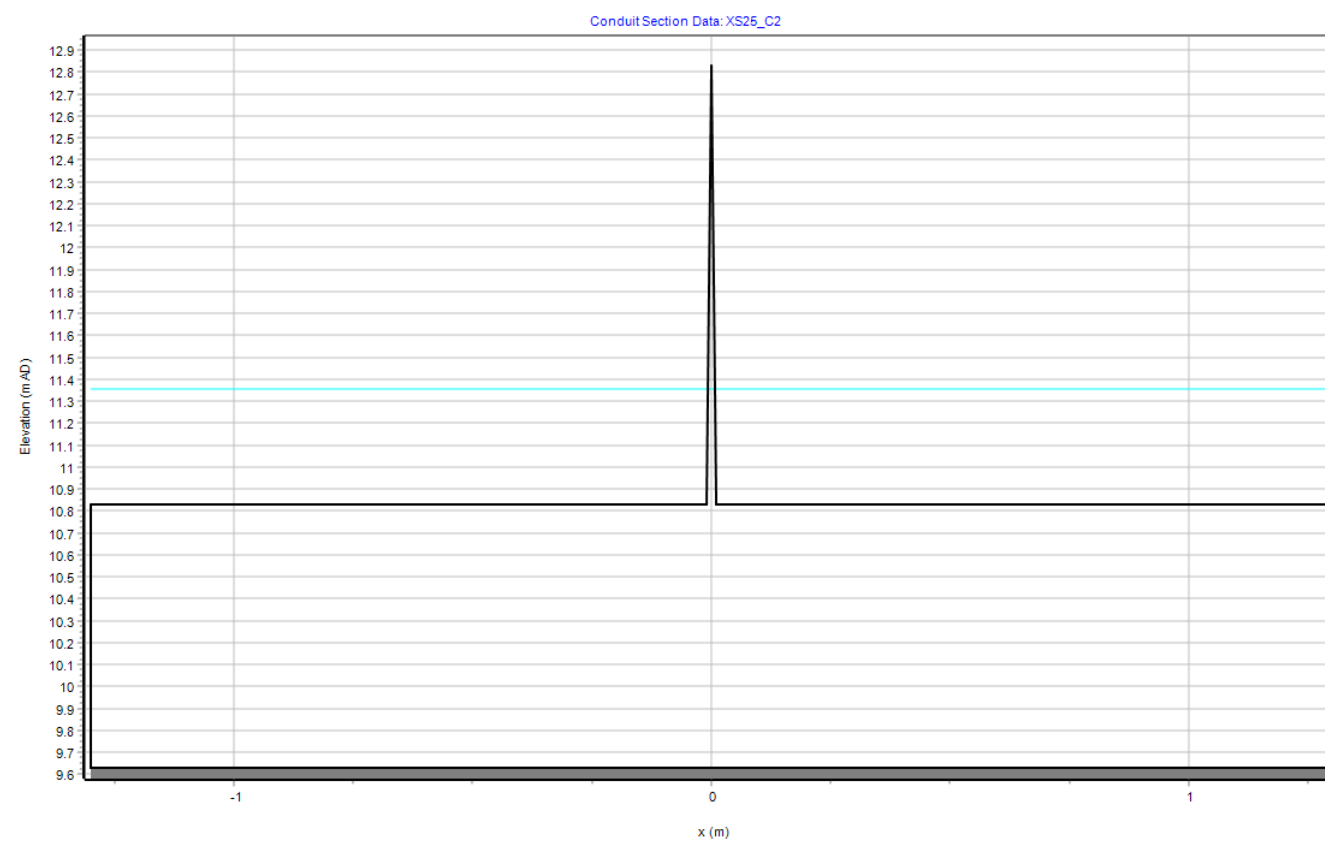
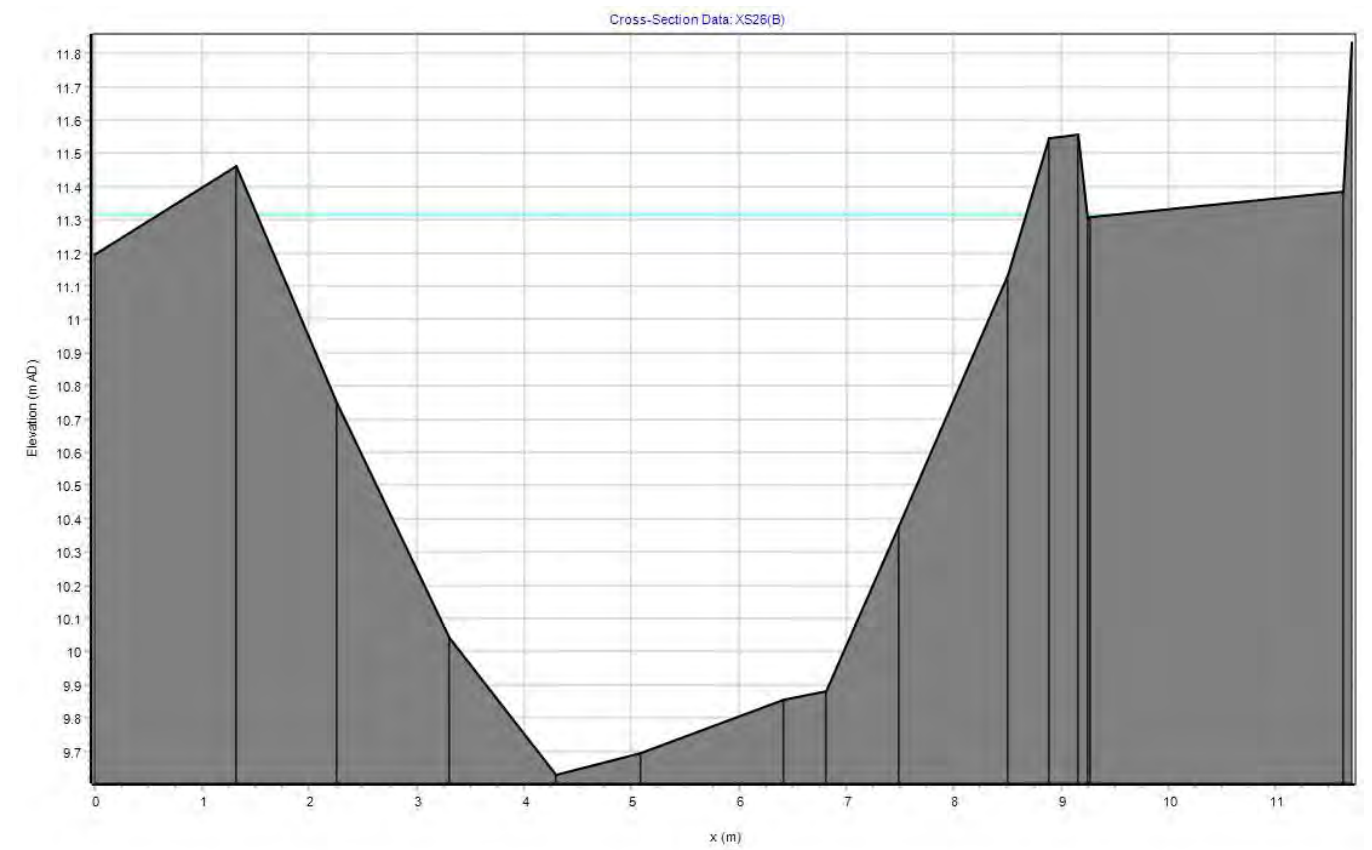
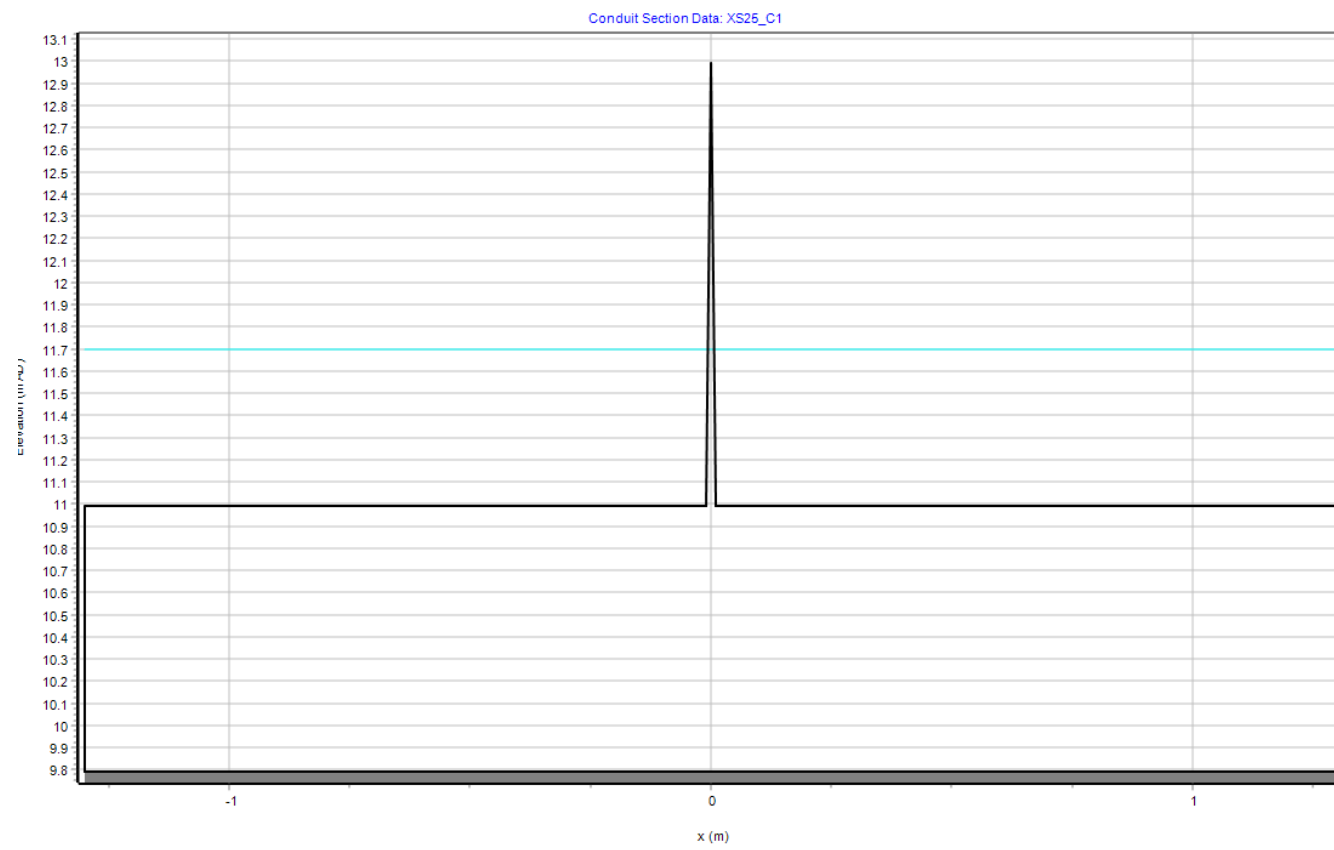


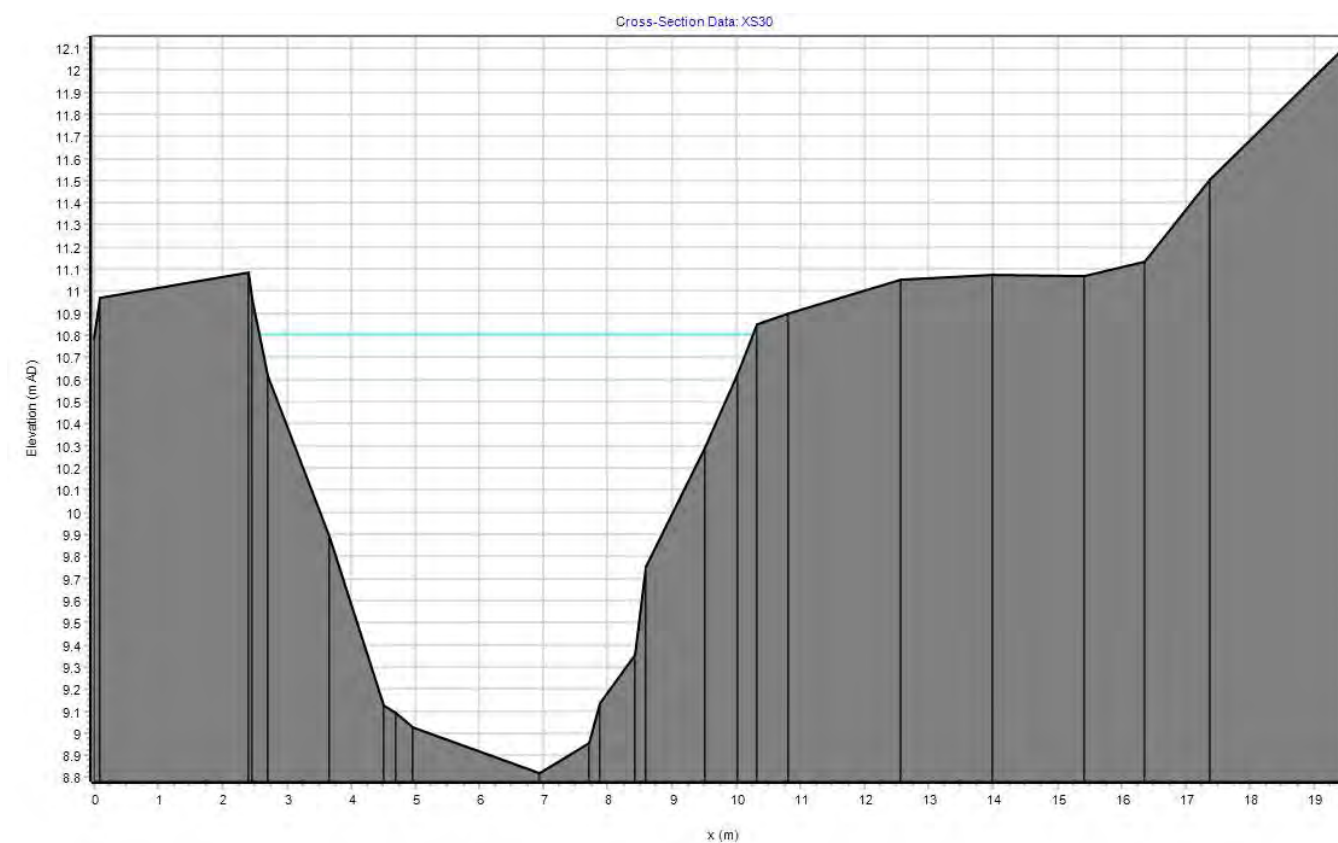
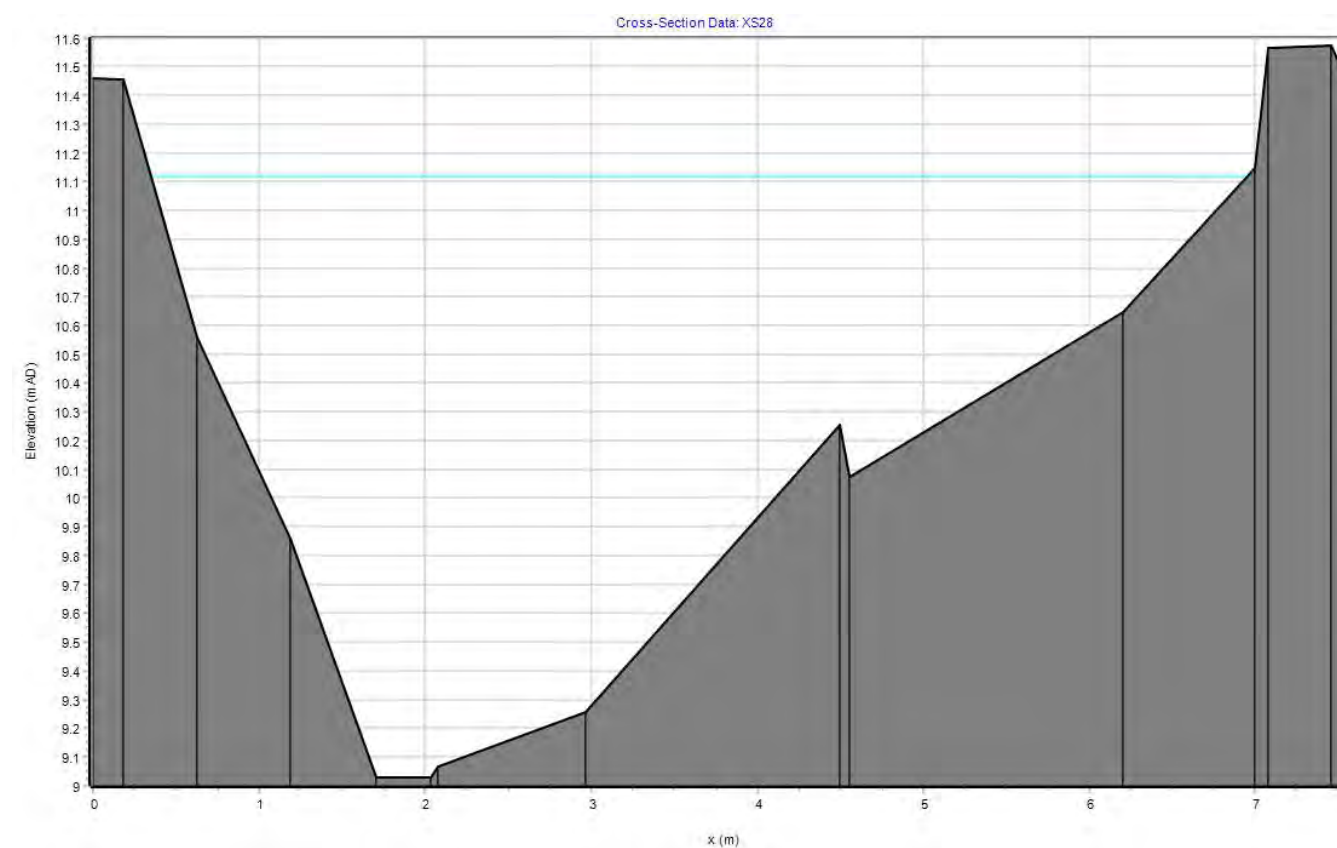
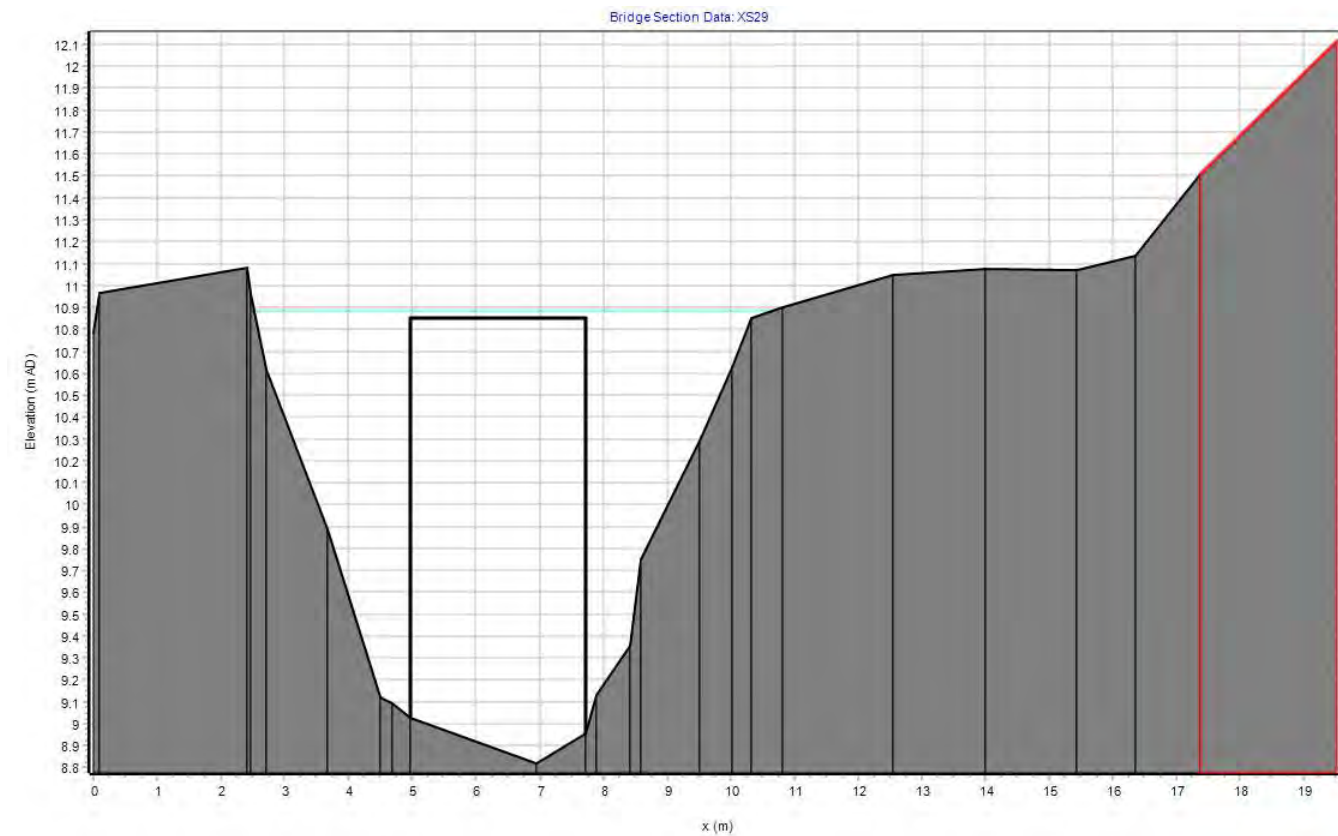
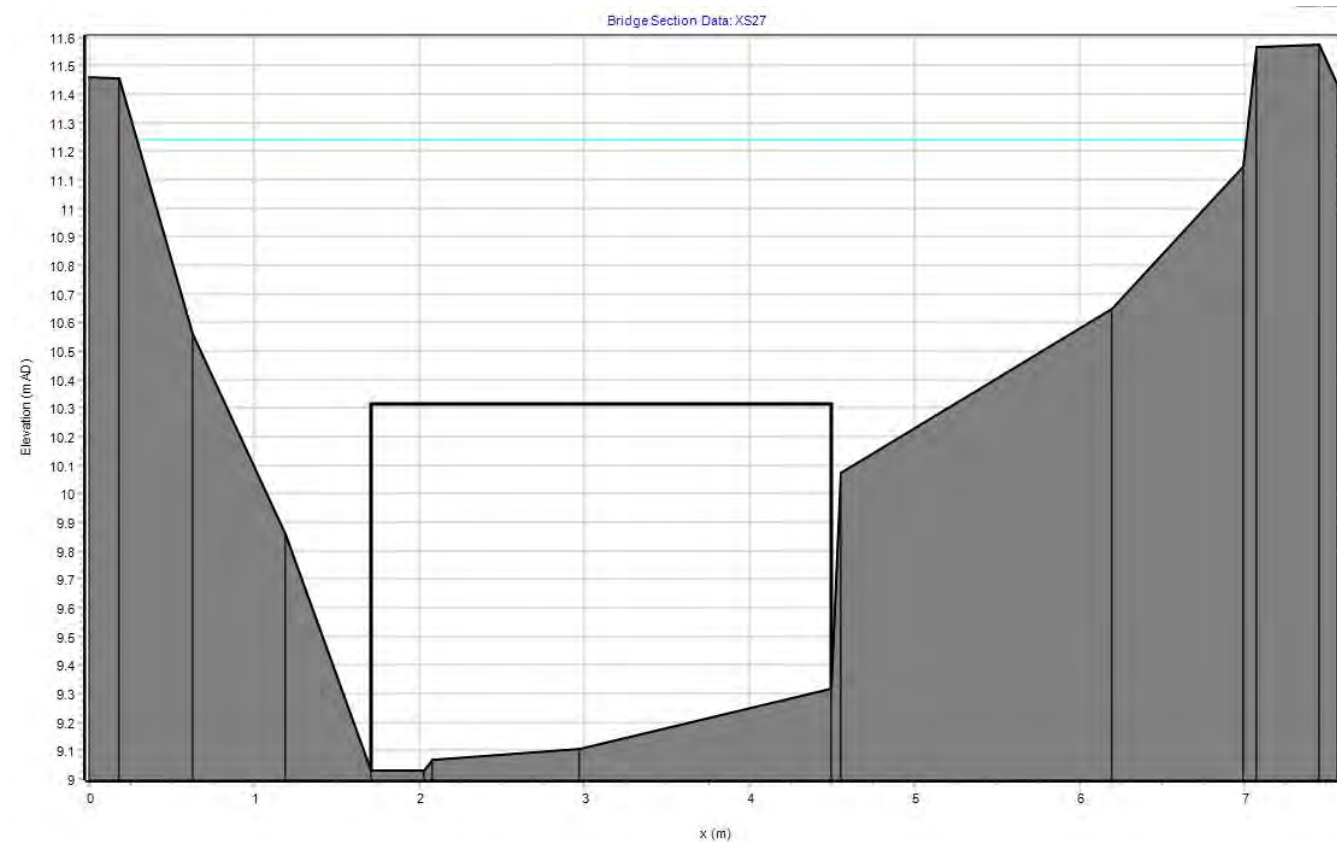


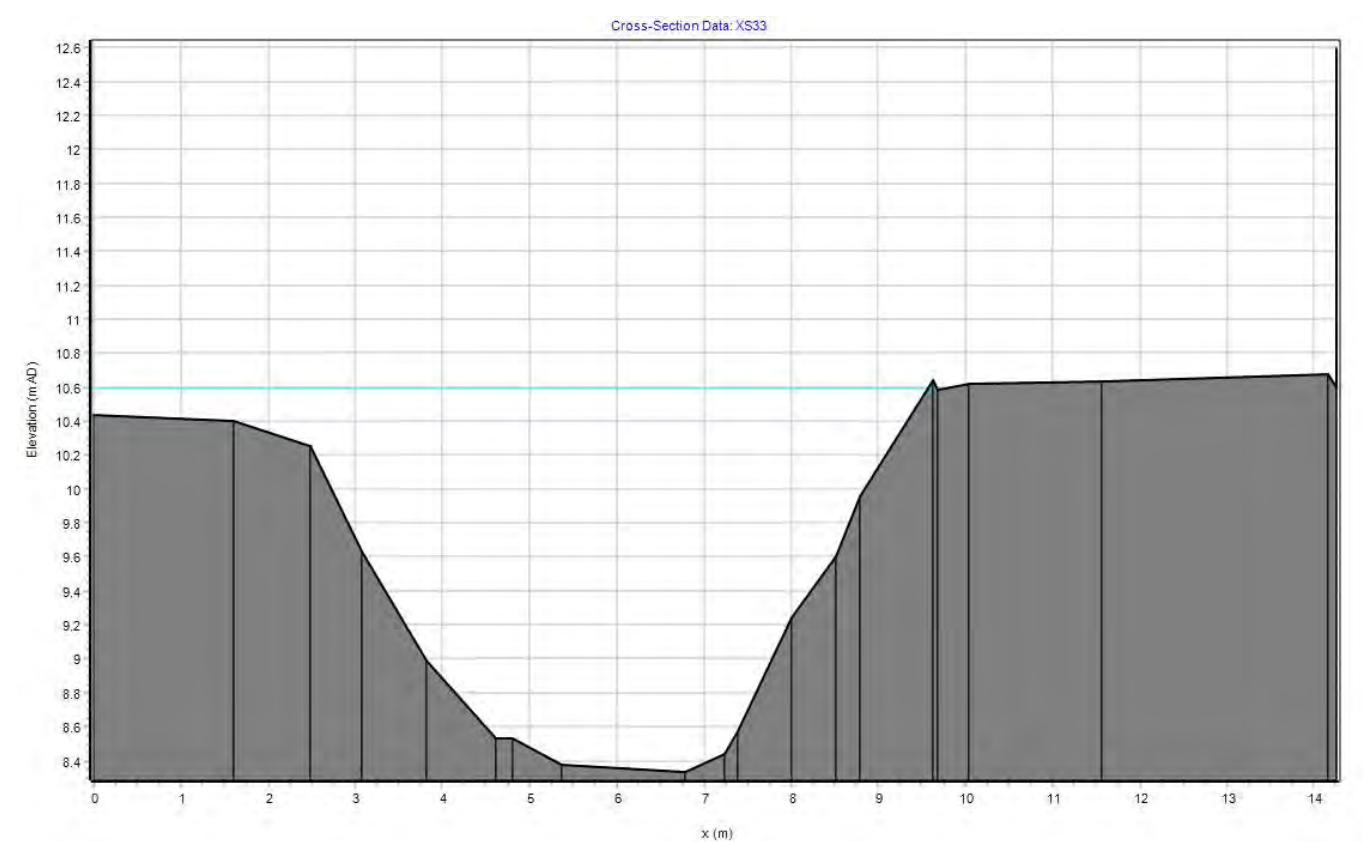
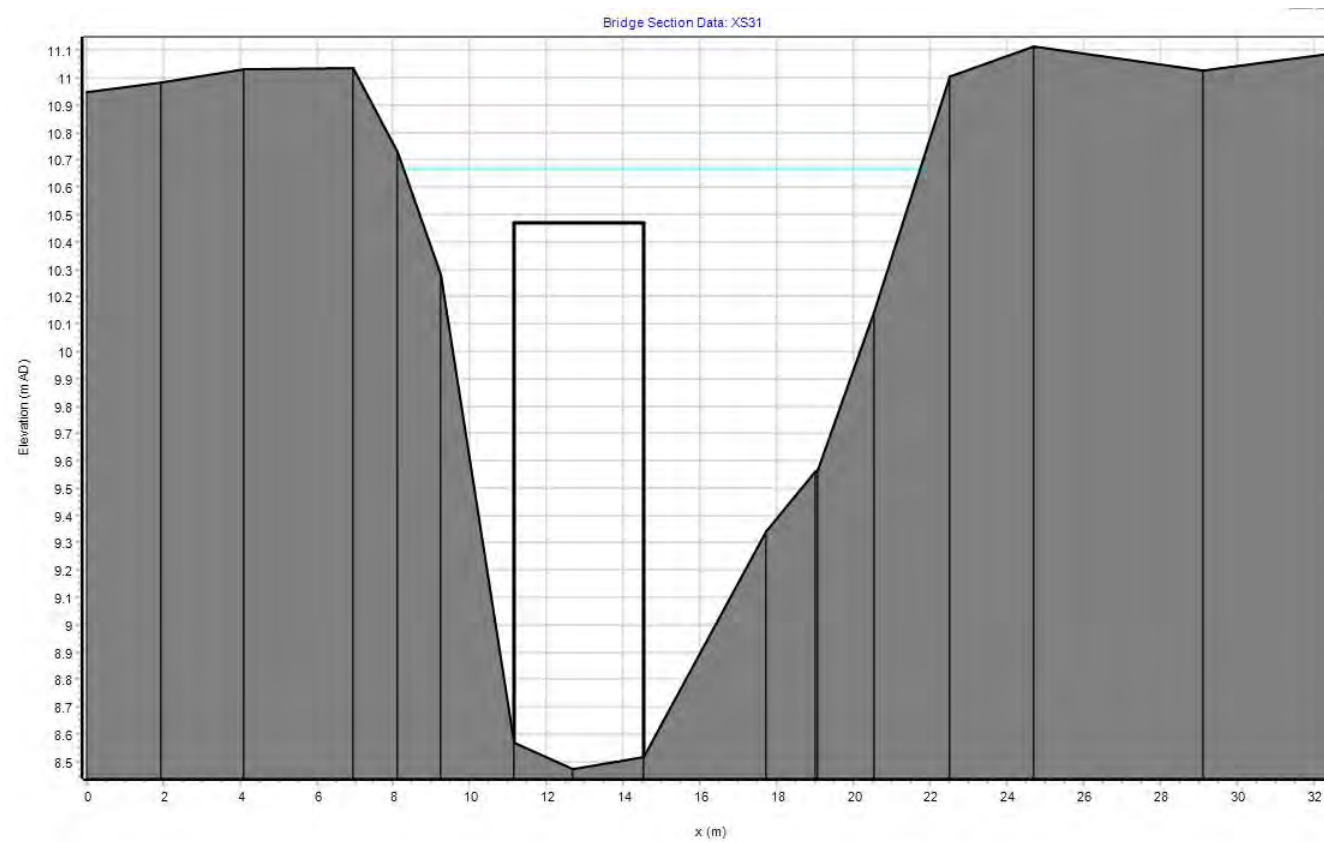
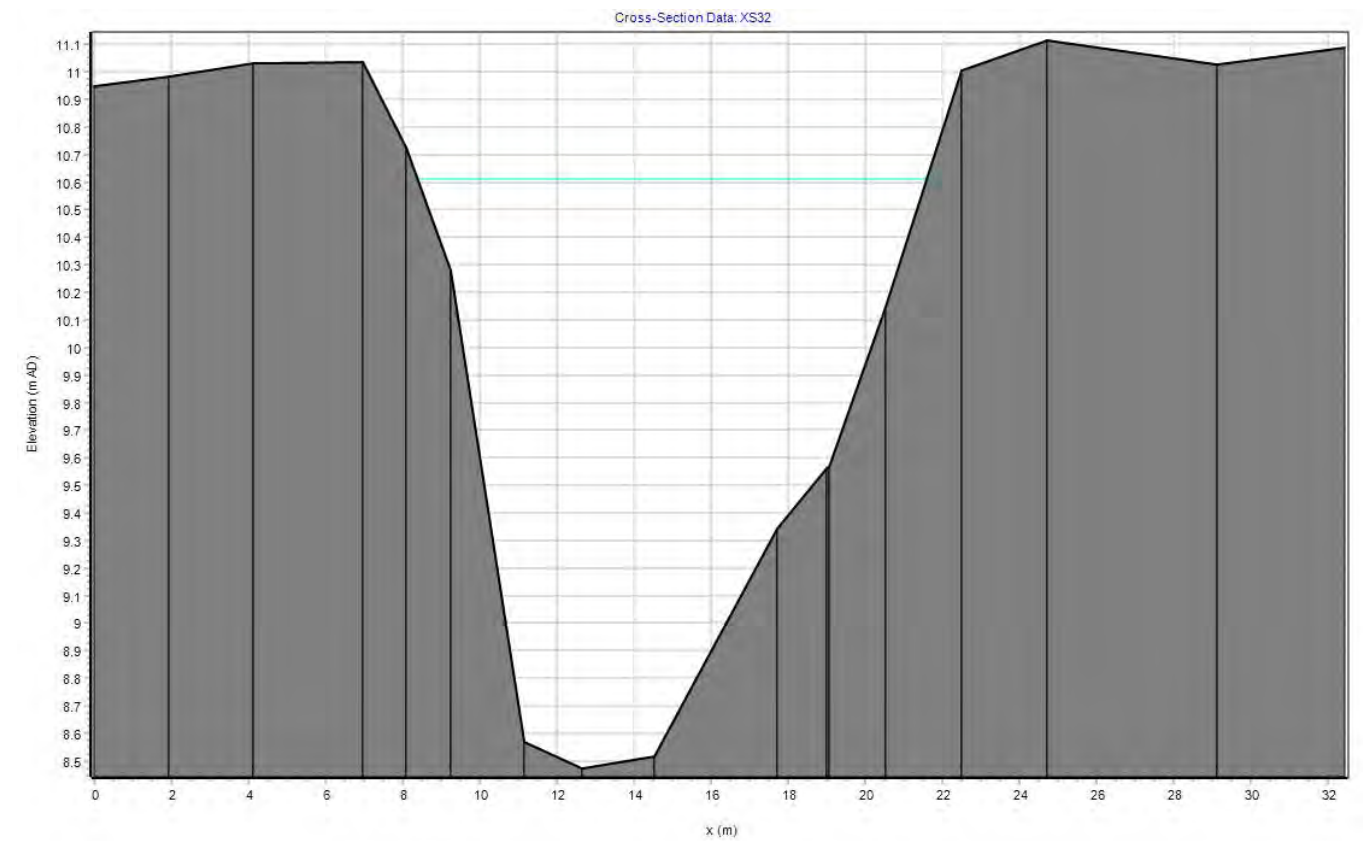
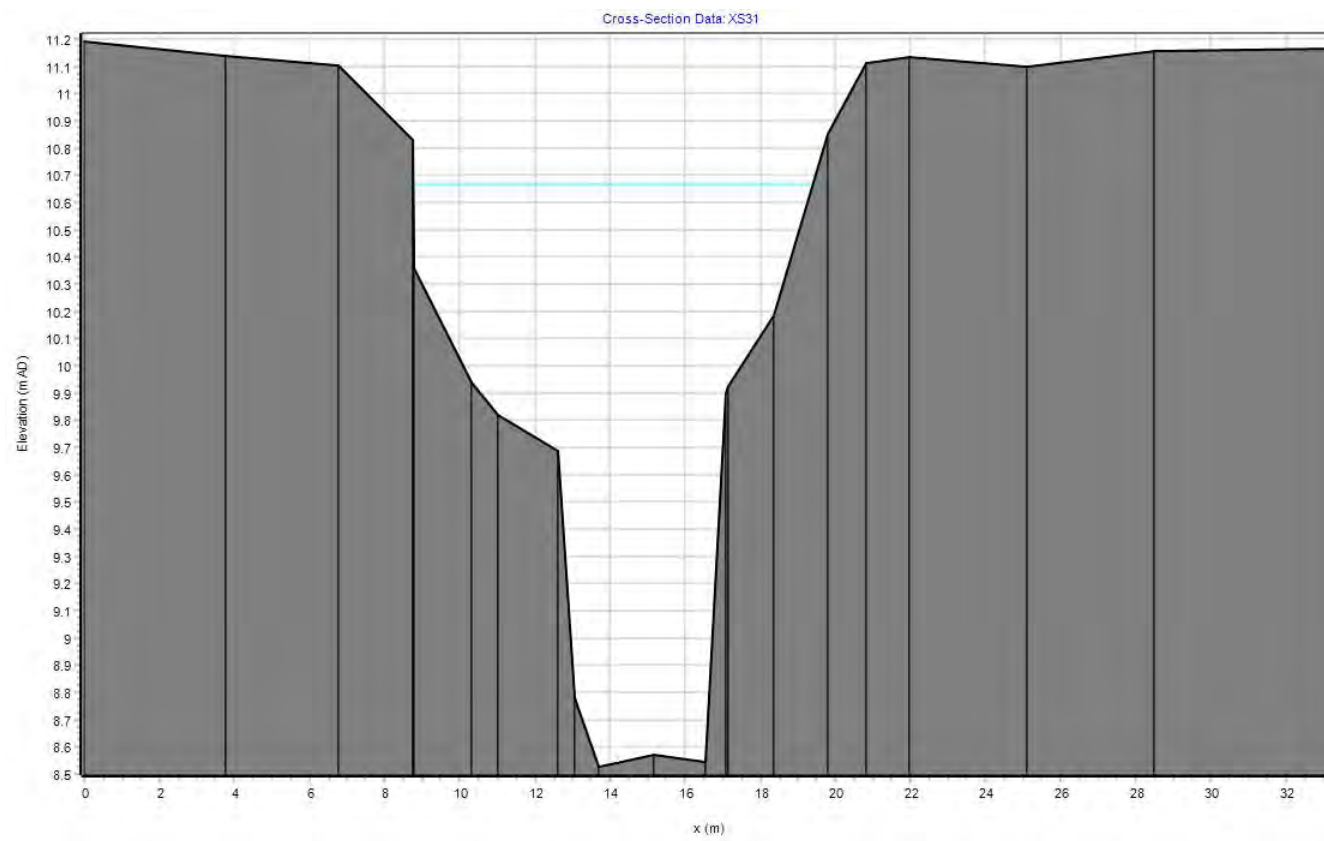


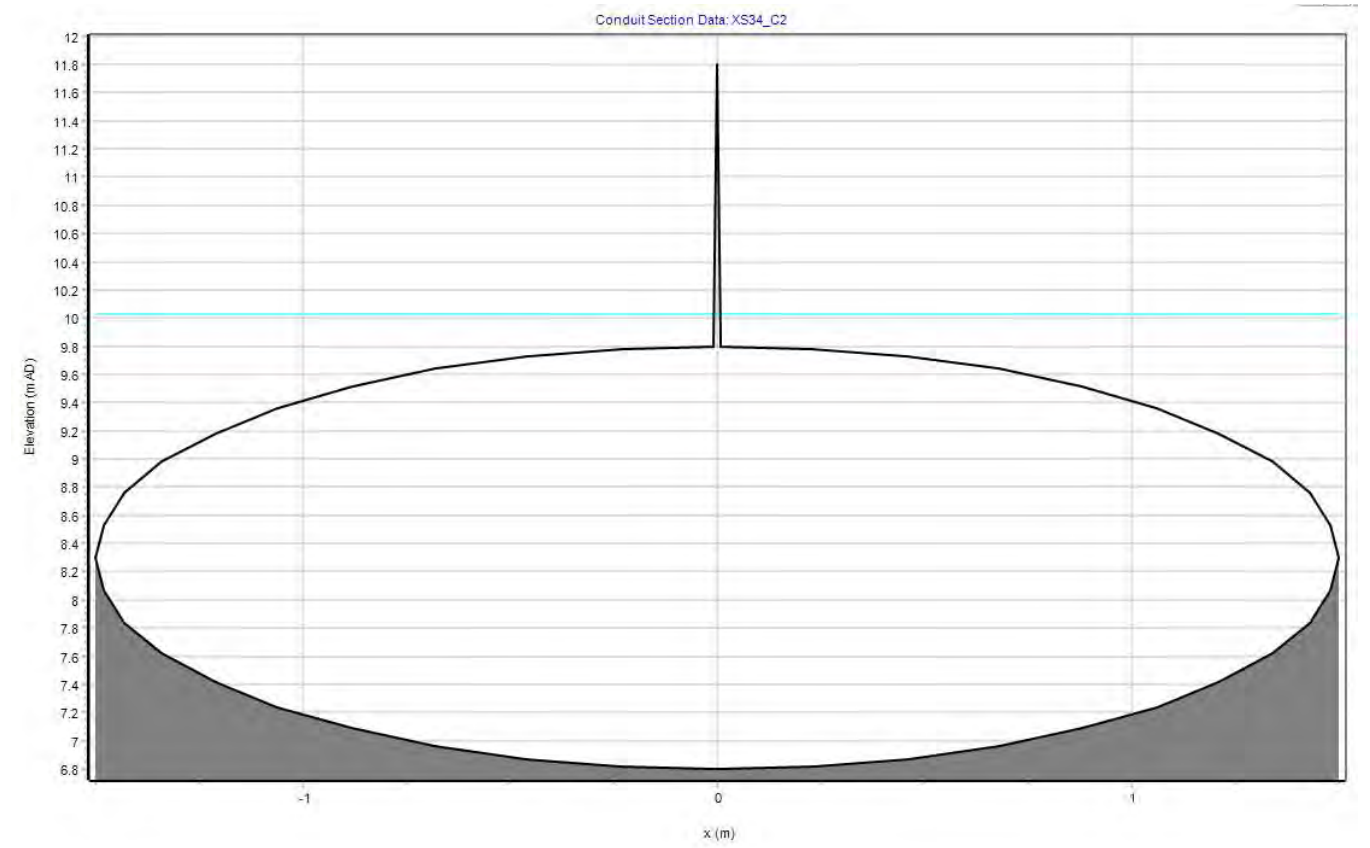
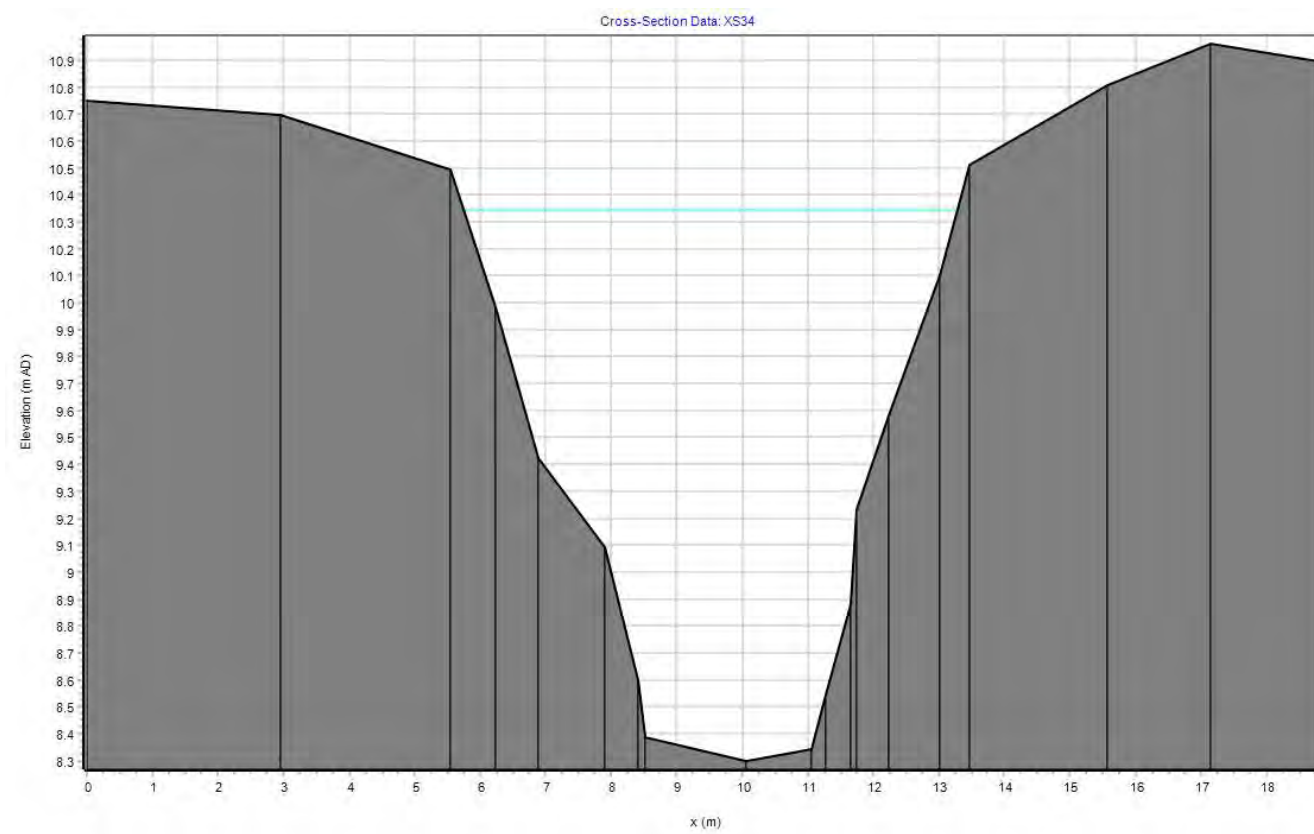
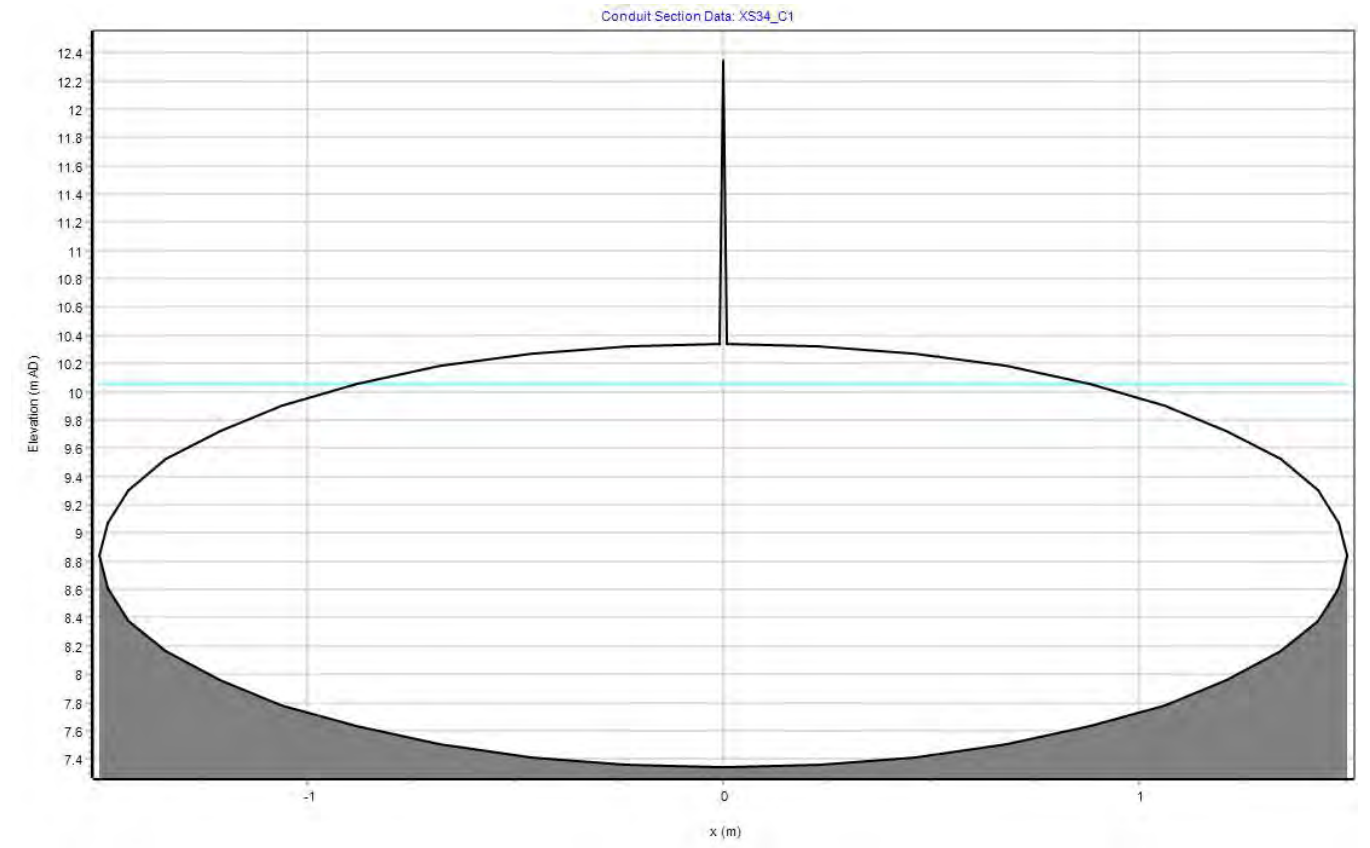
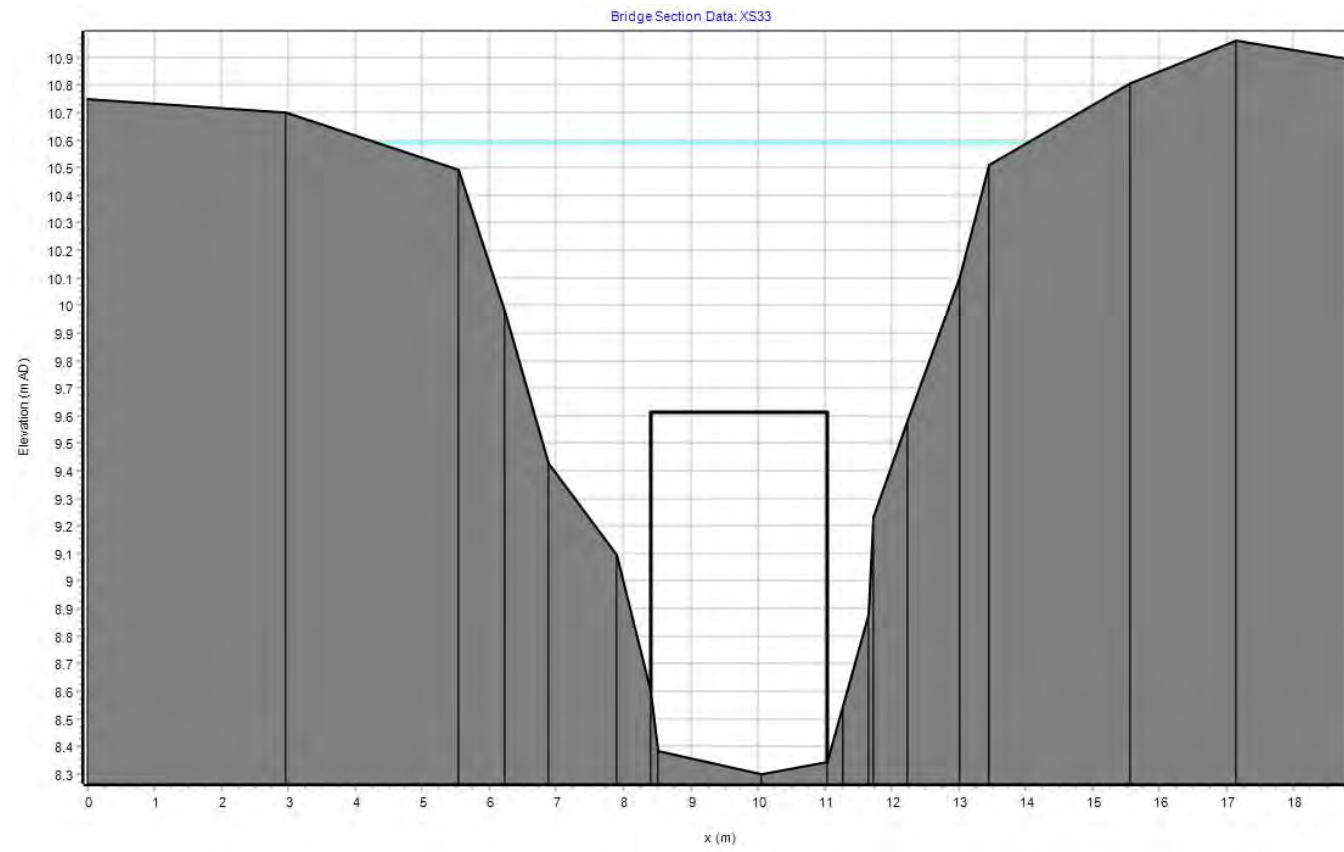


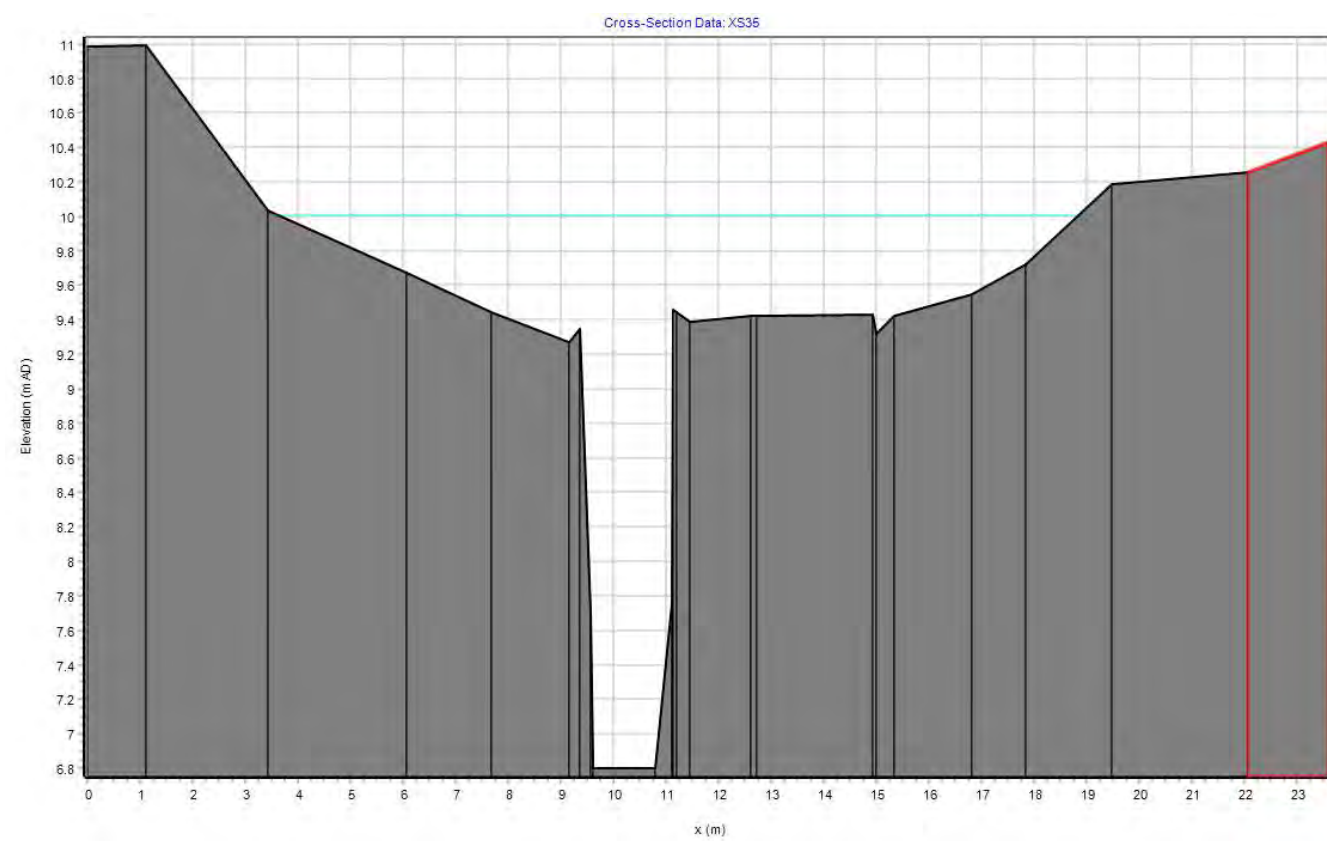
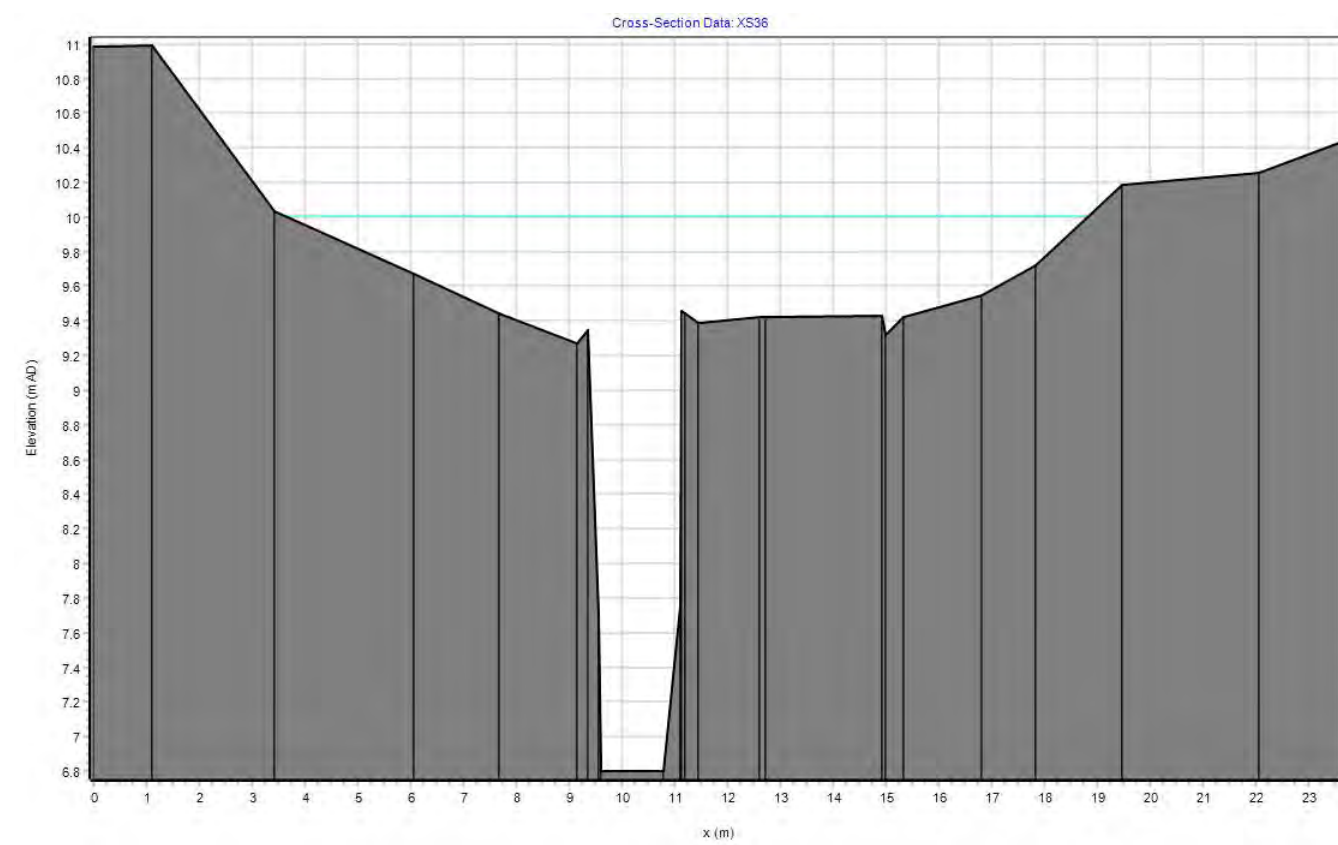
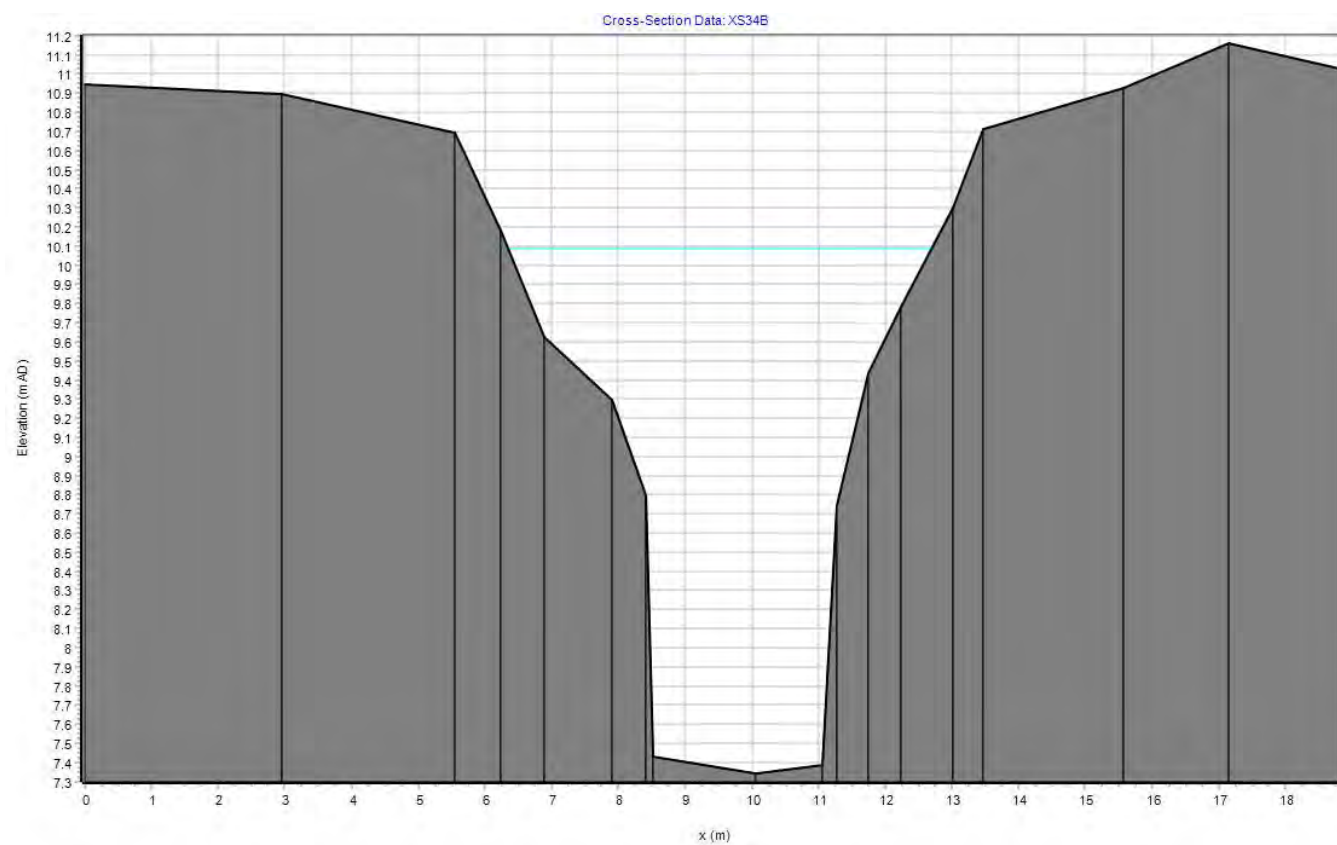




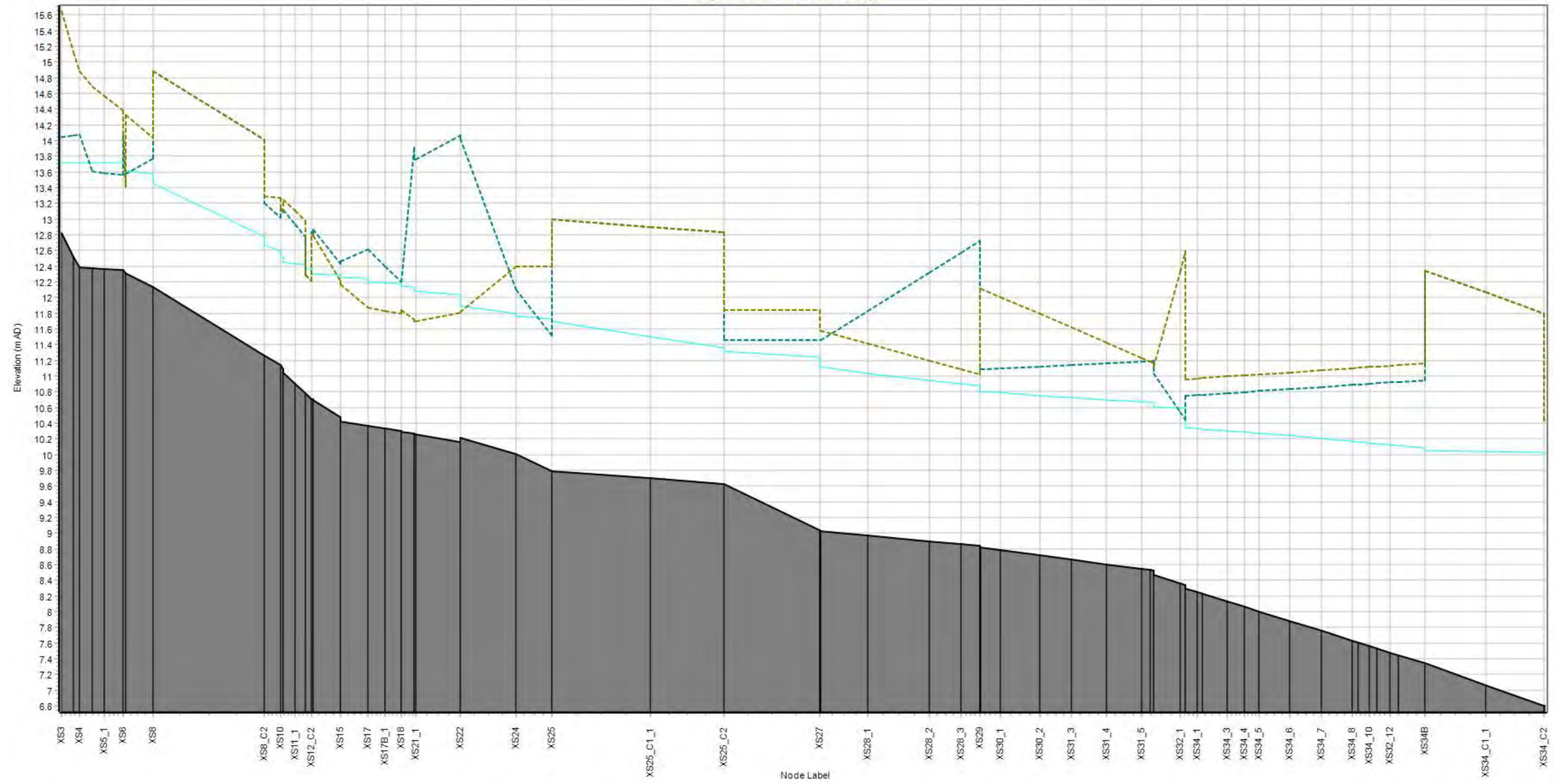






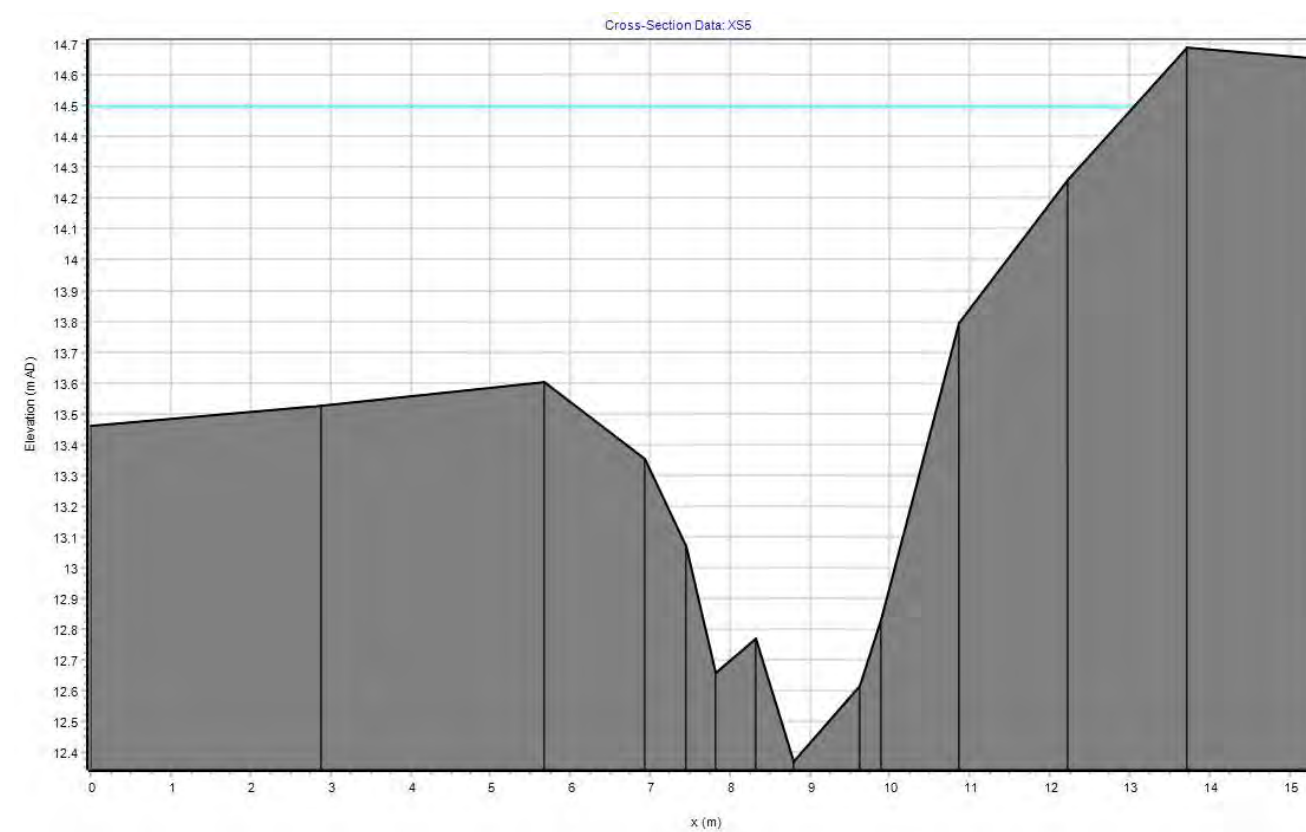
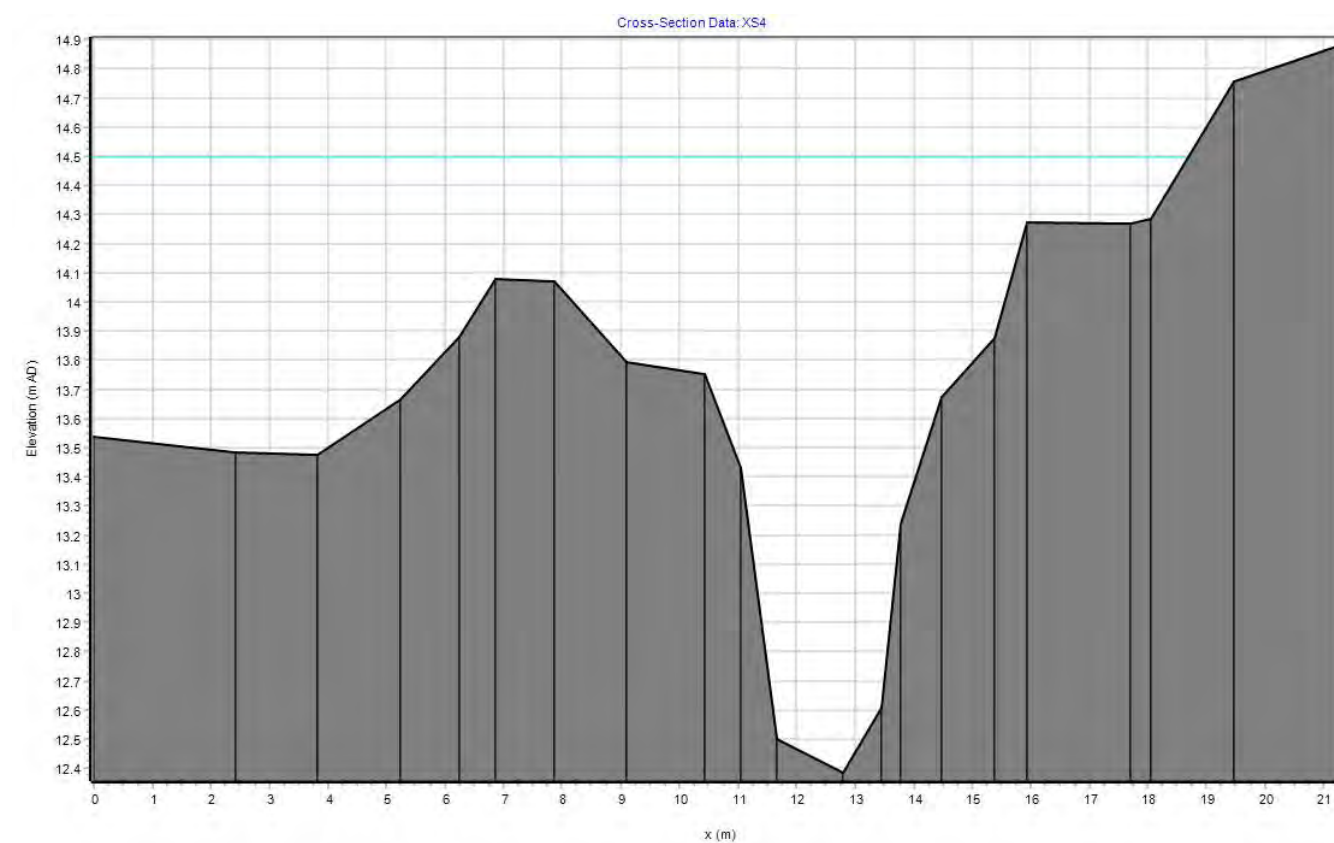
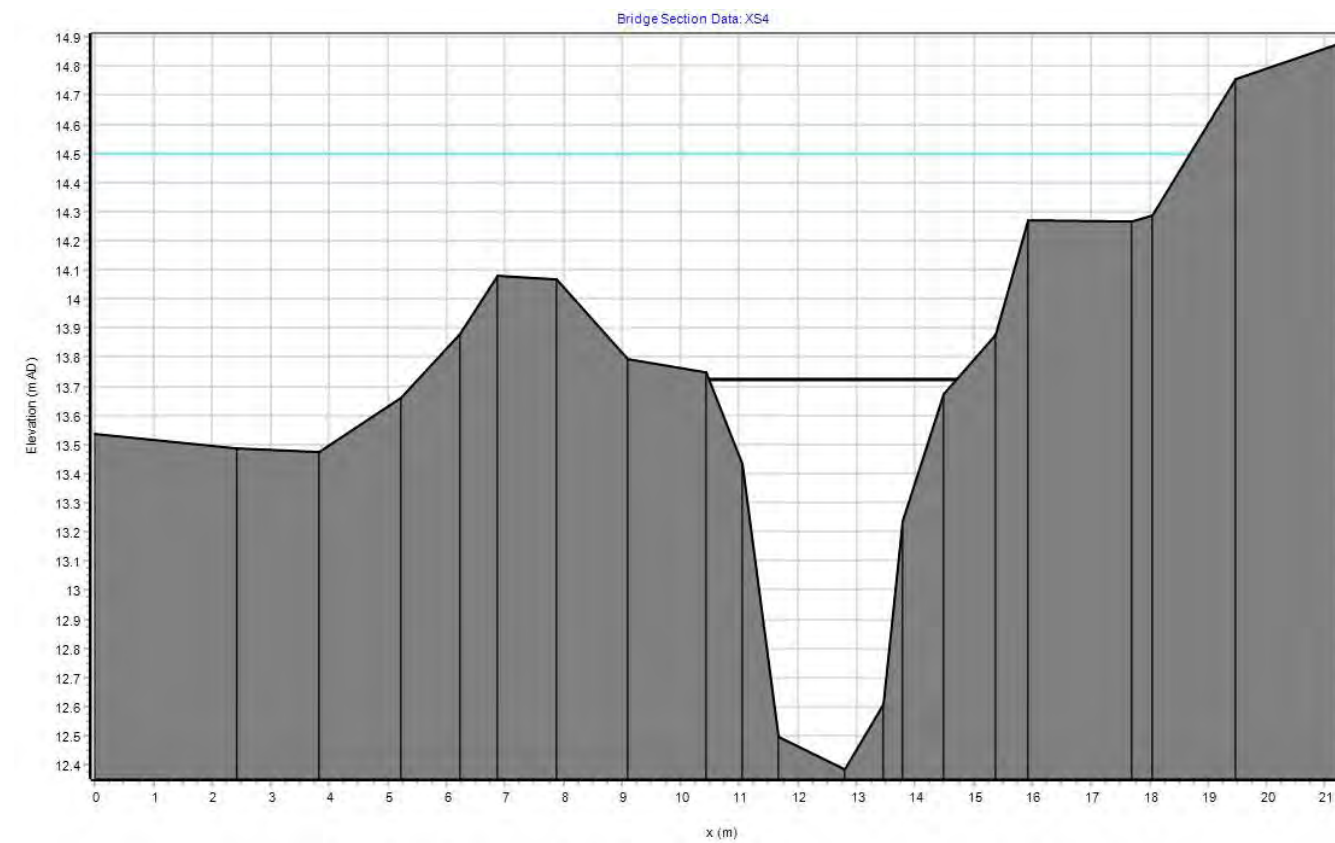
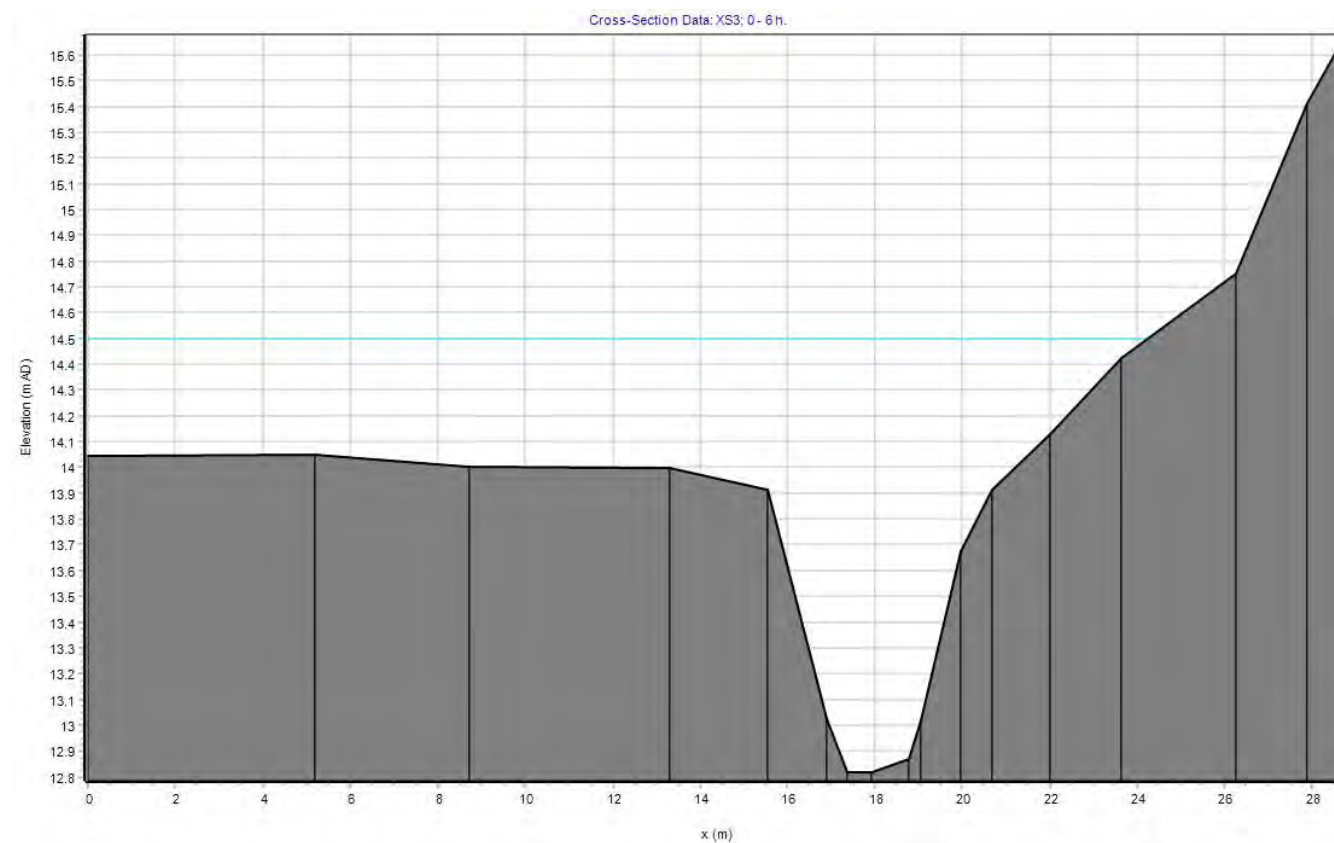


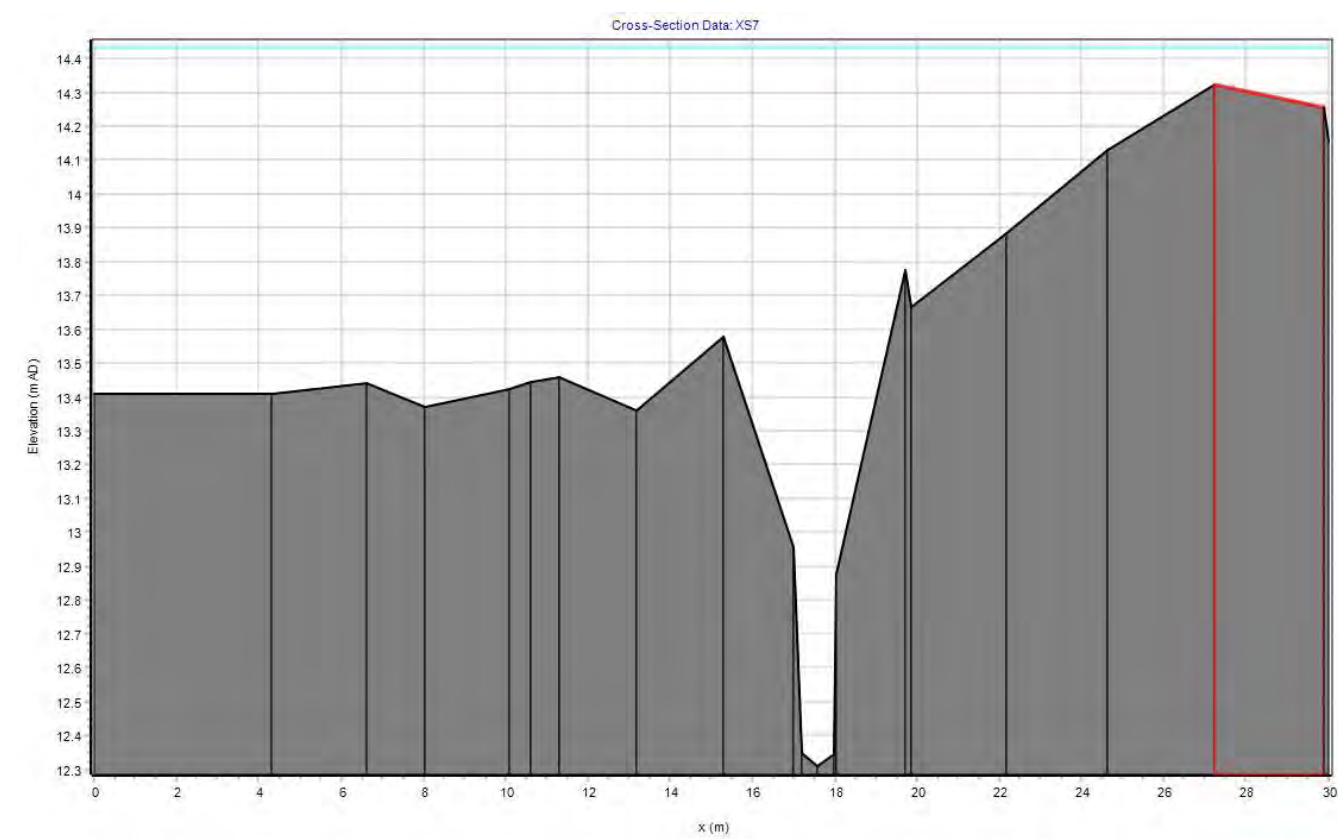
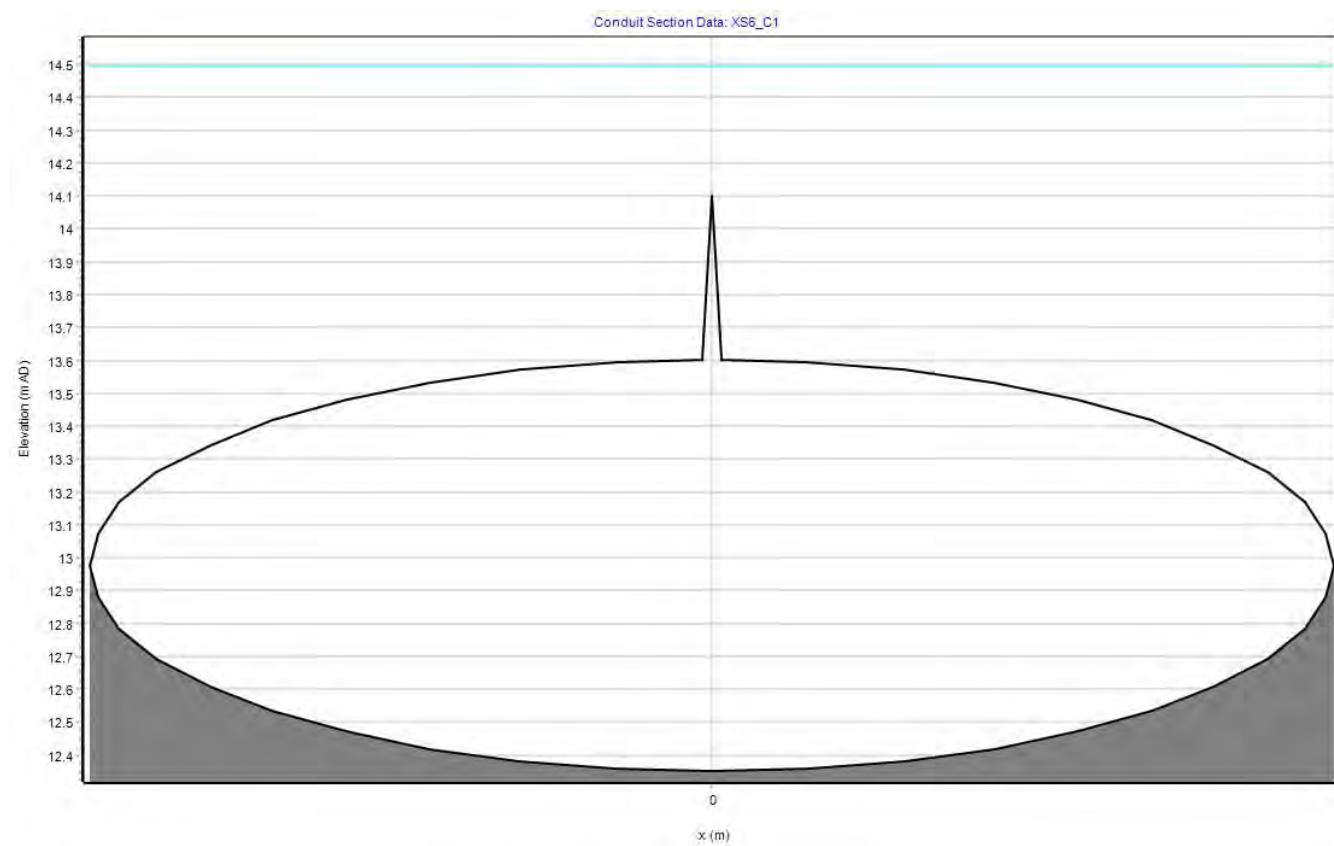
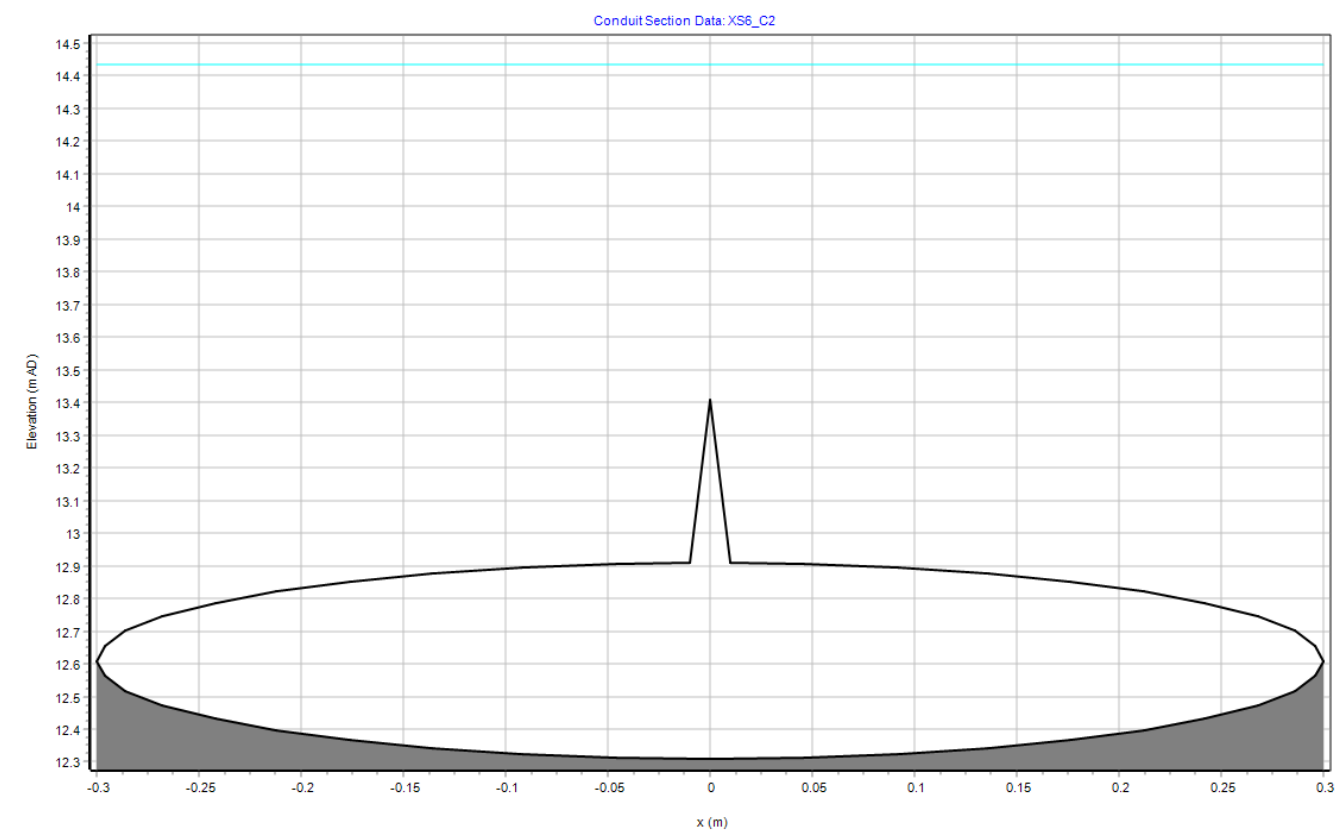
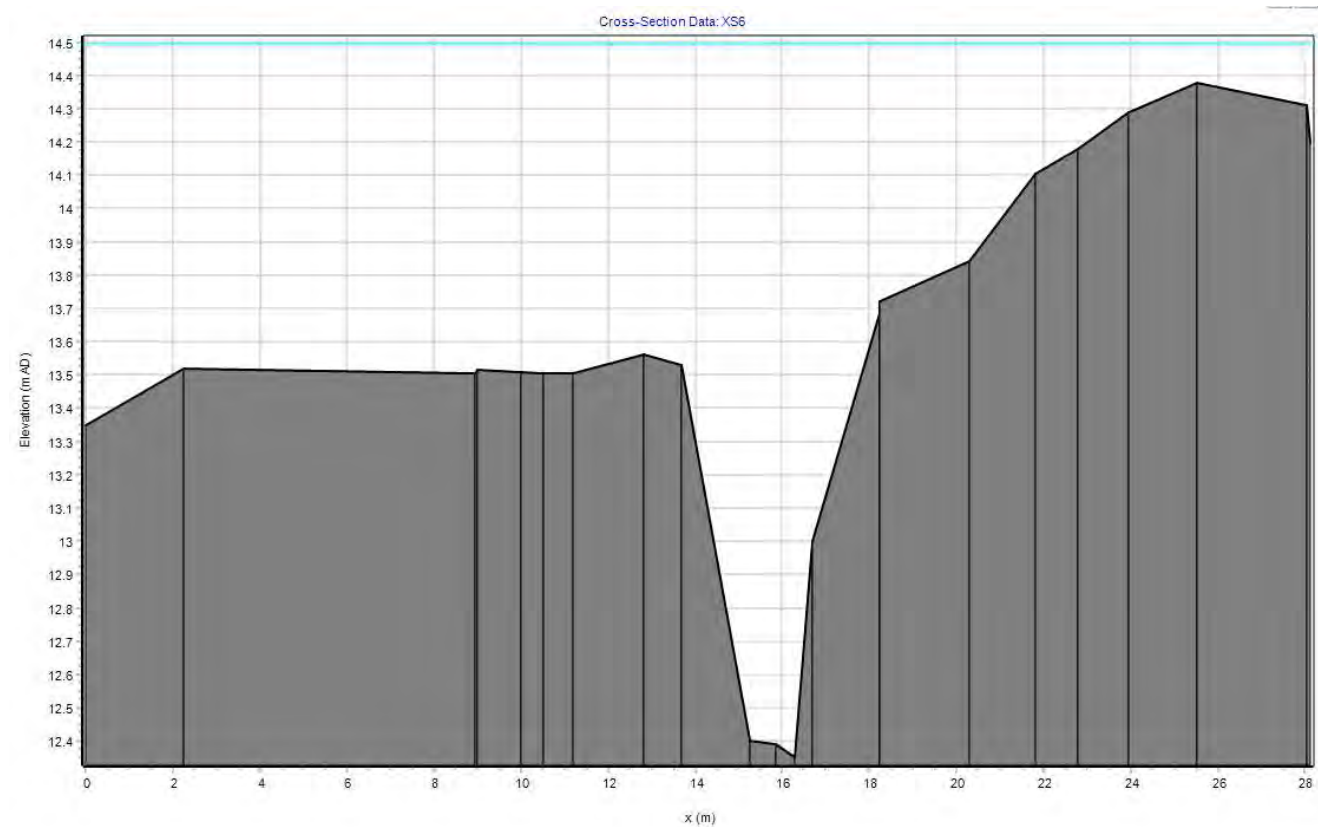
Long Section: XS3 - XS36 - Maximum Stage

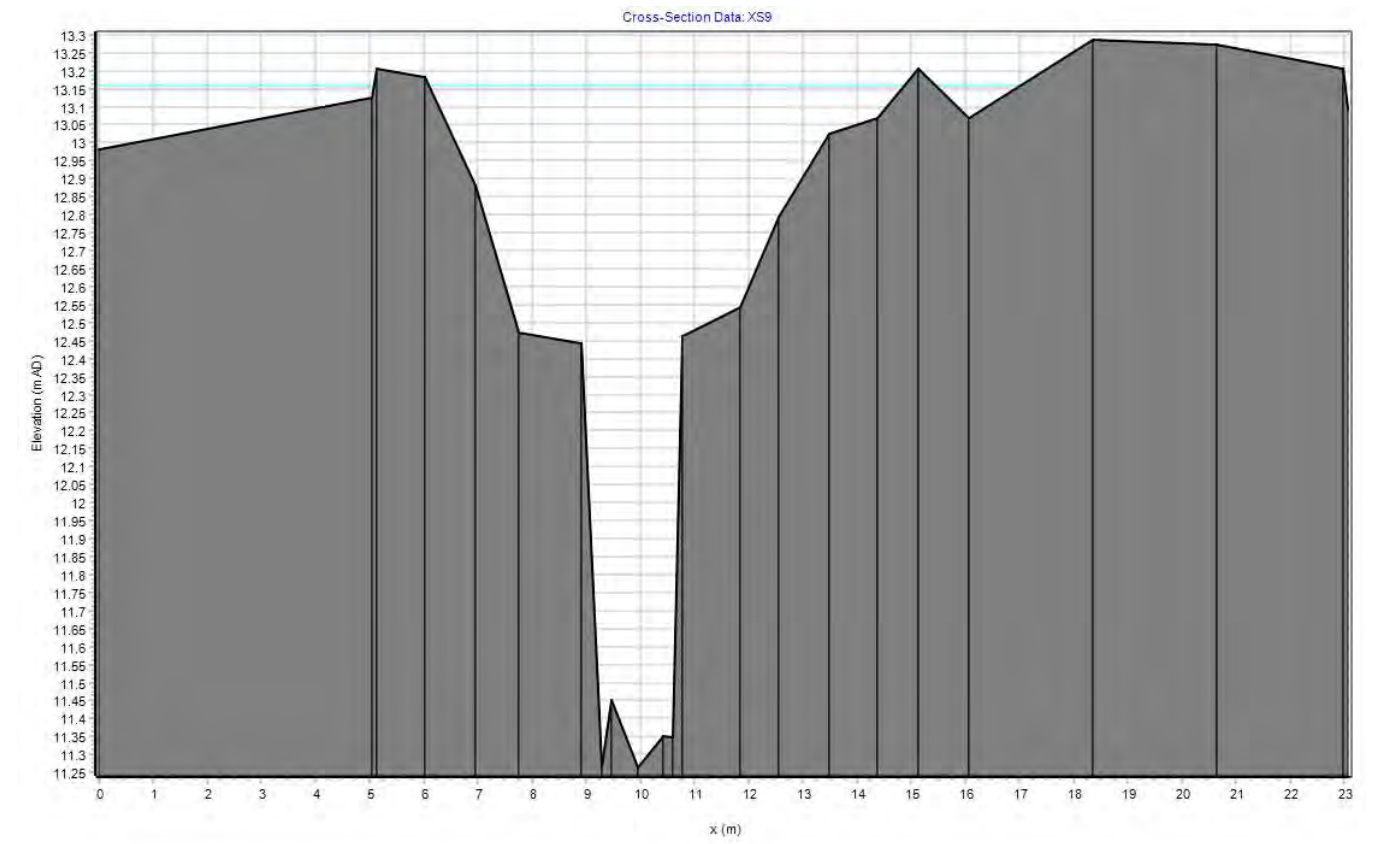
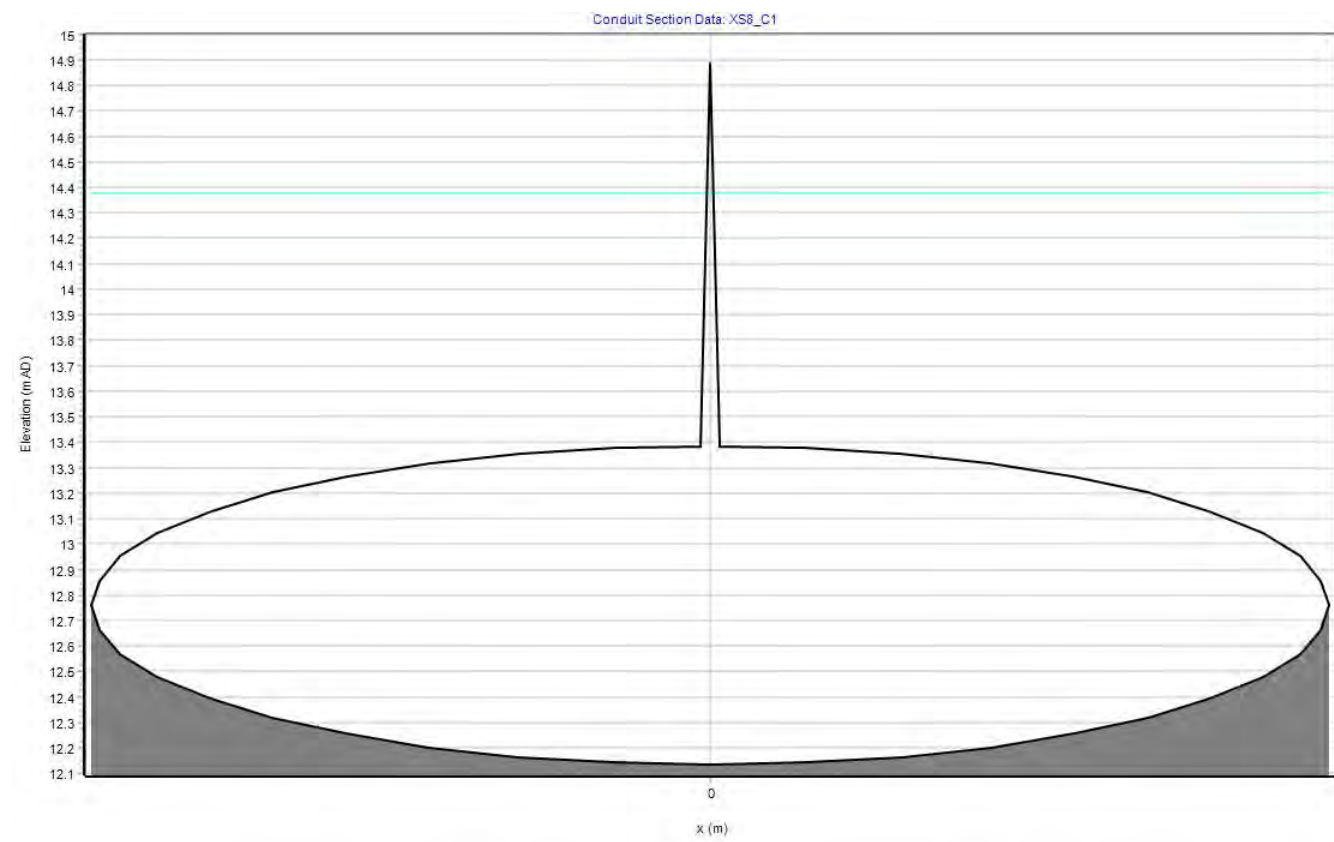
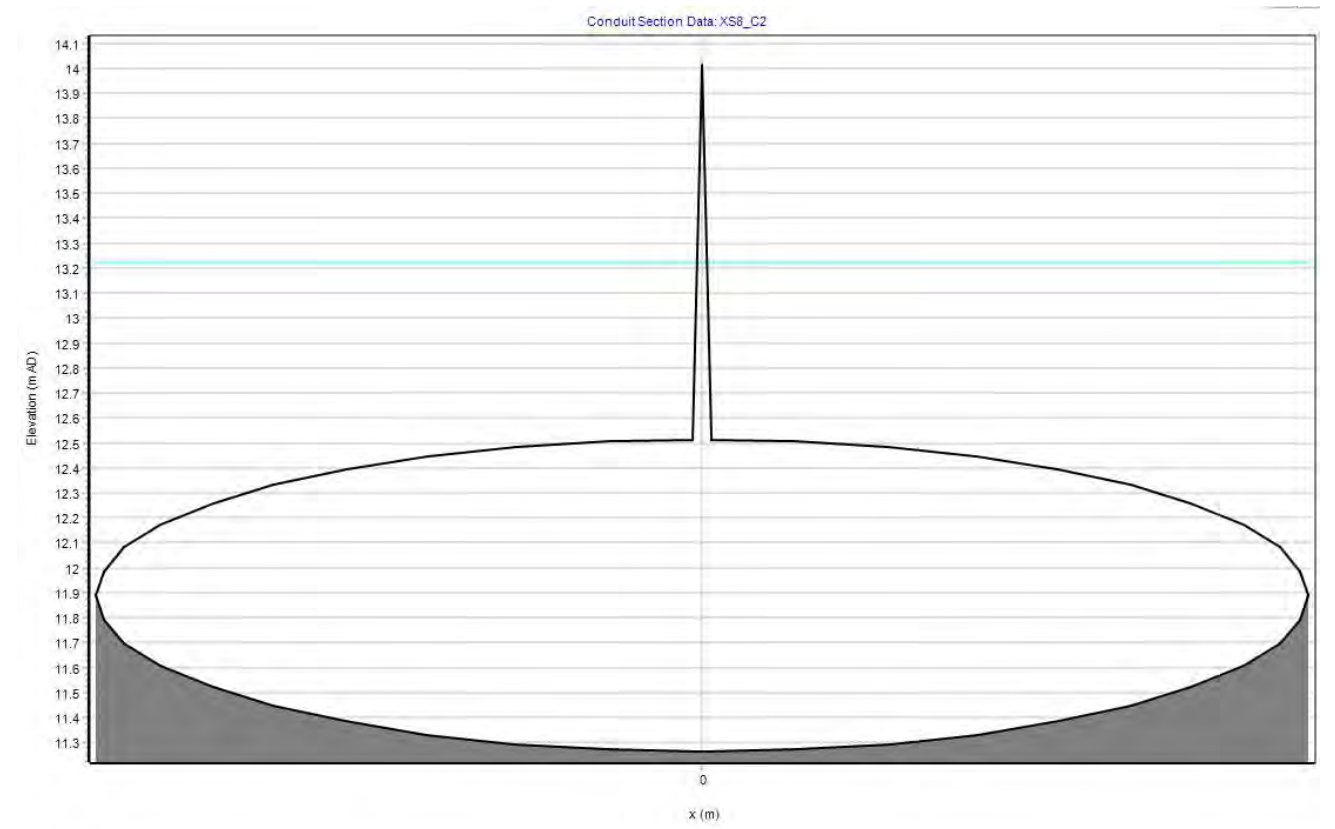
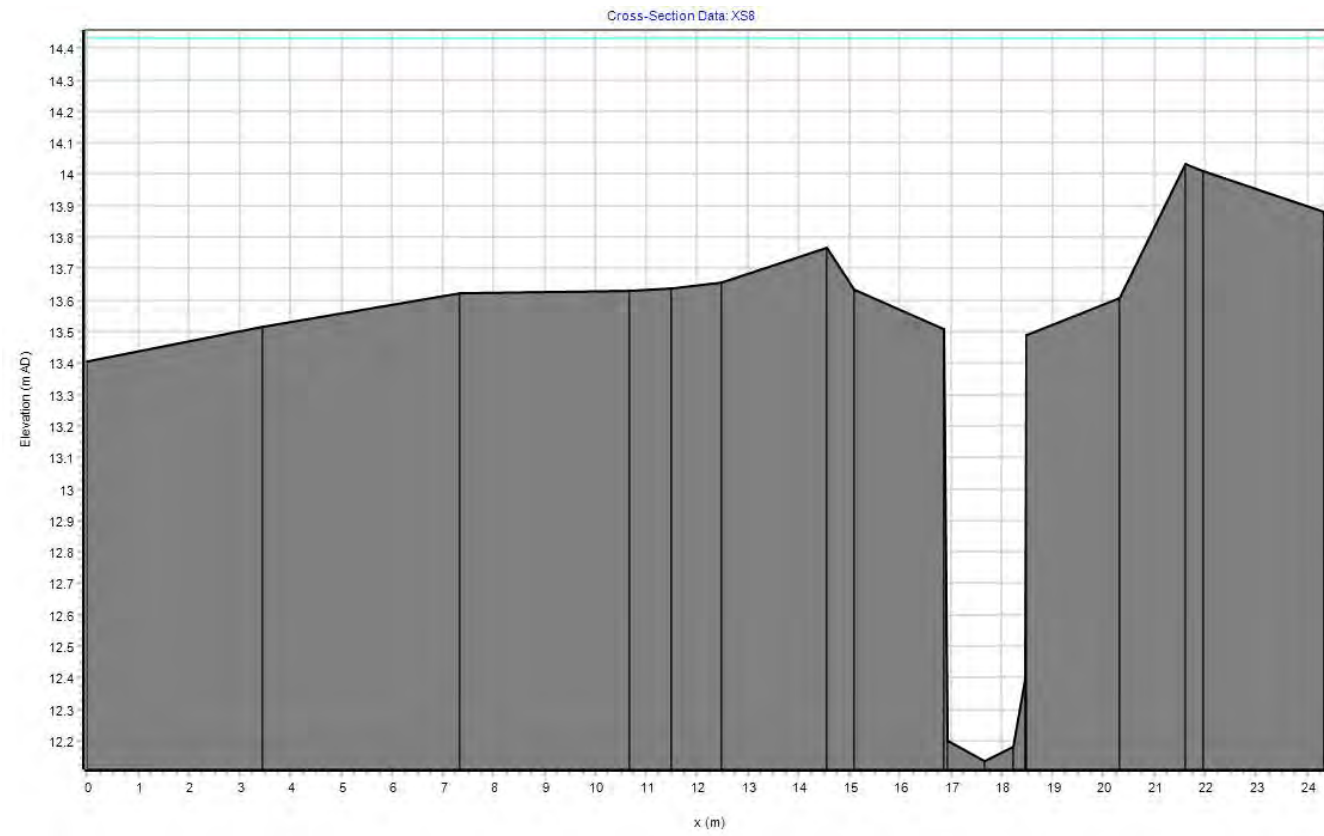


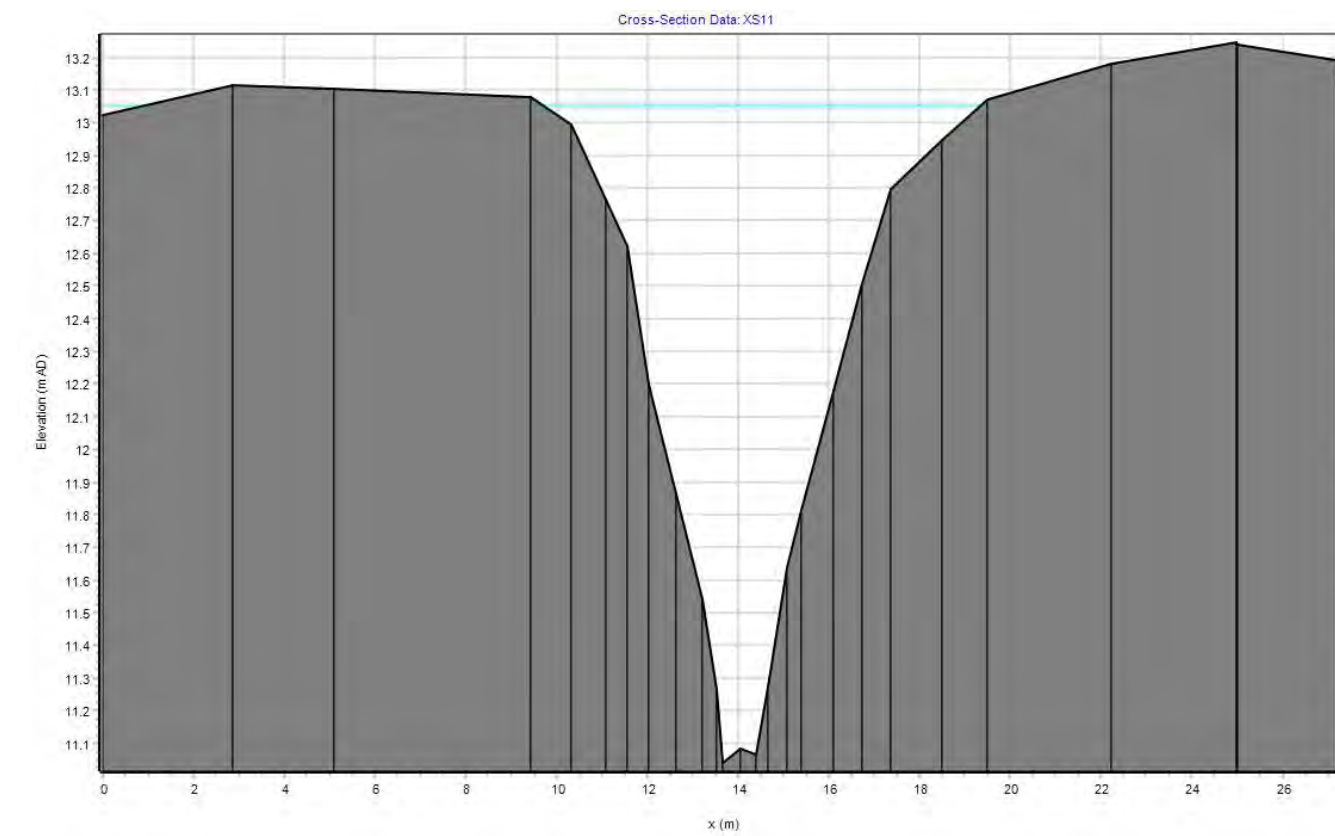
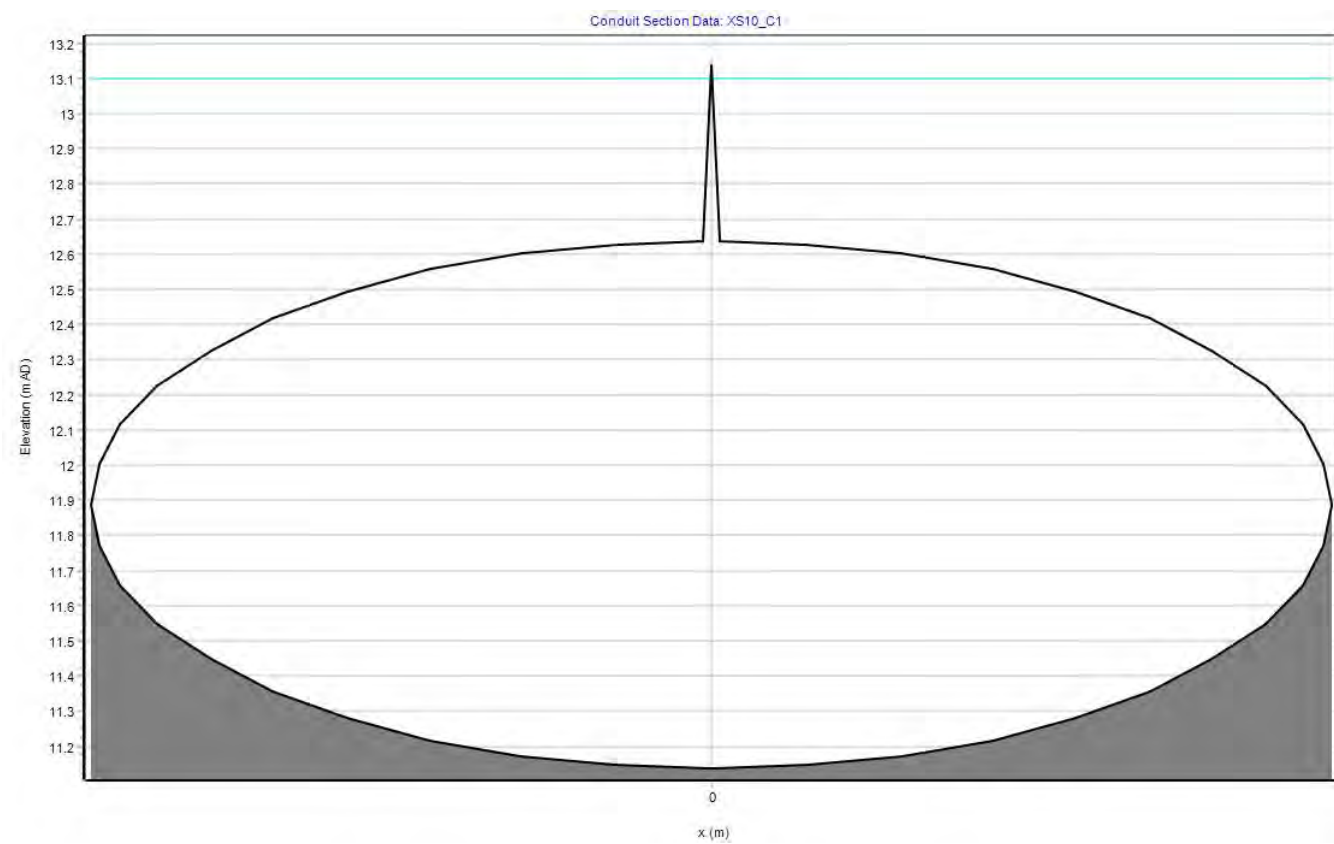
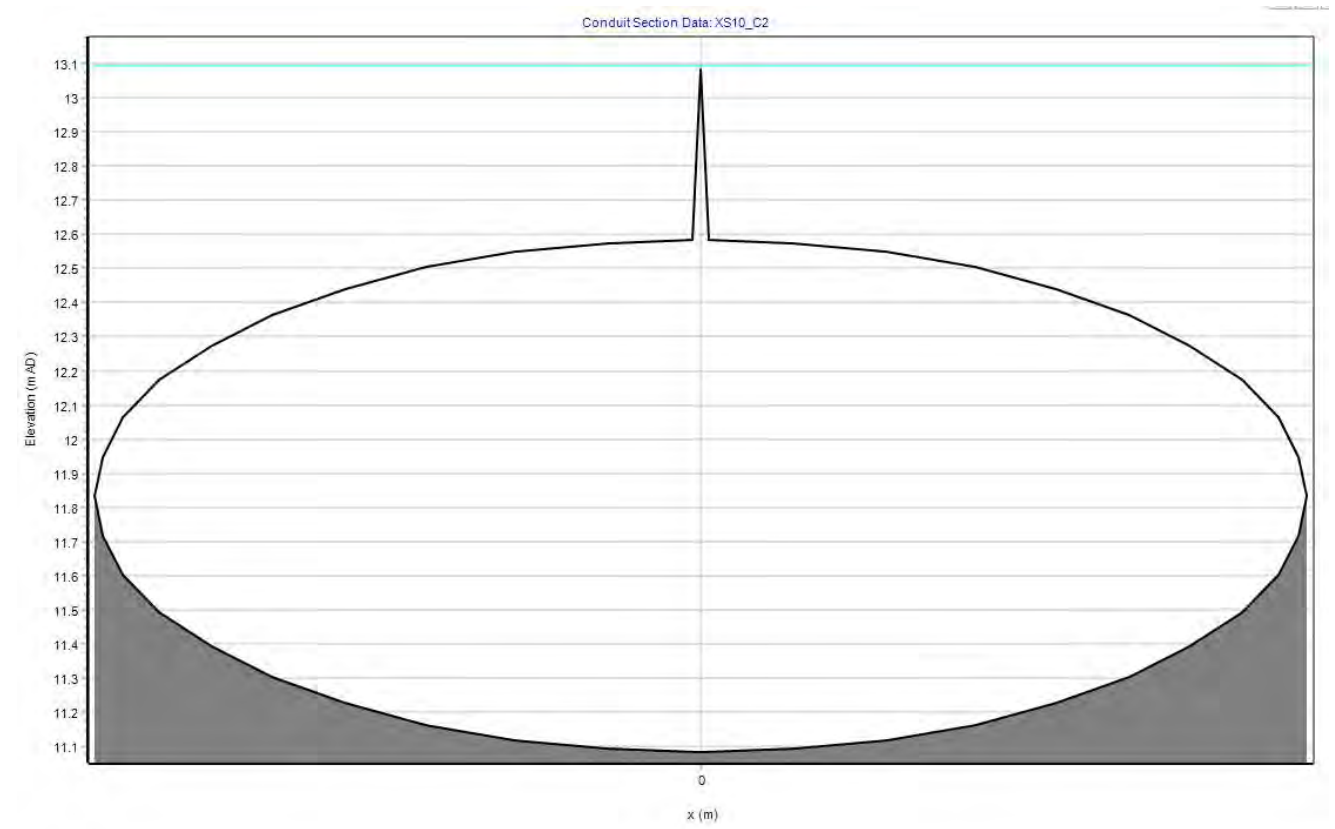
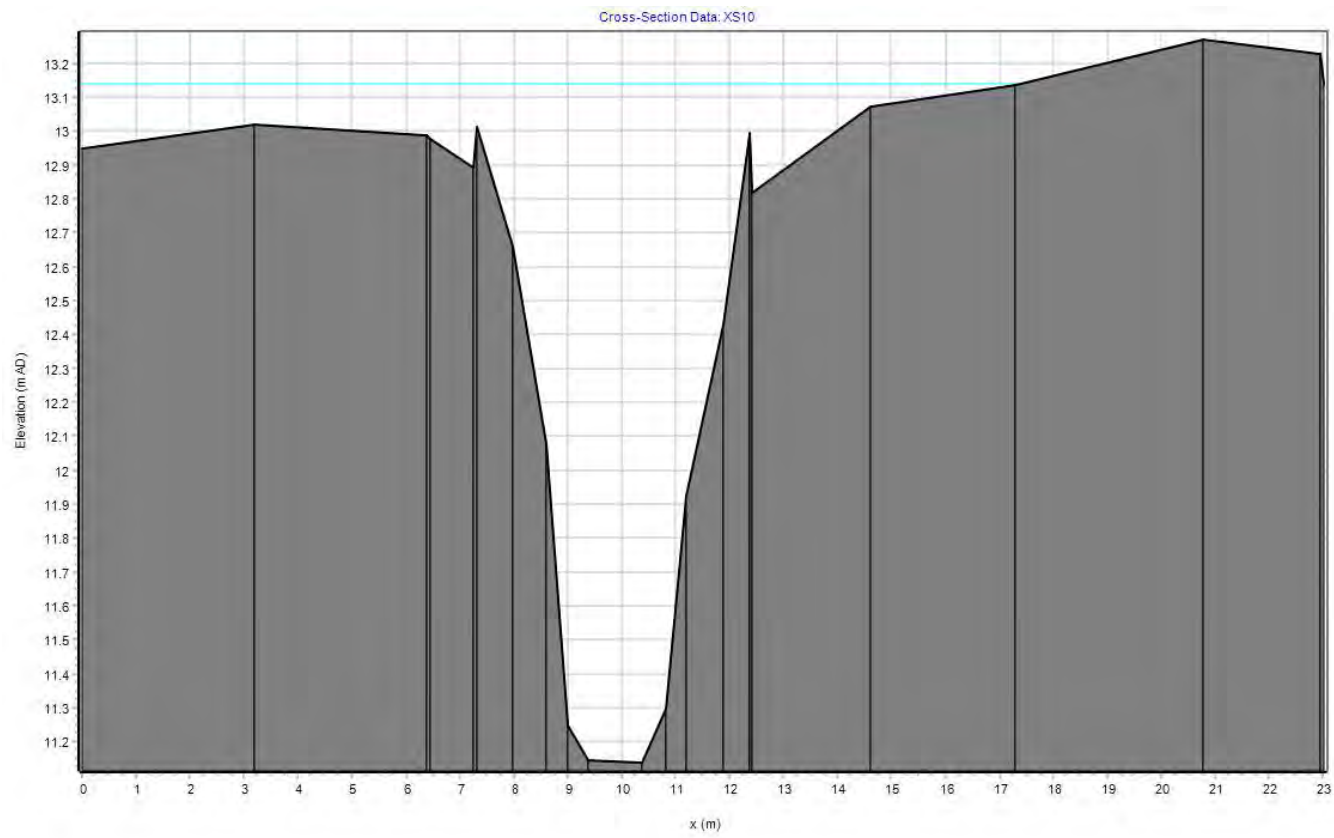
Appendix K – Tyock Burn, Pre development scenario.1 in 200 year event + 30% Climate Change Results

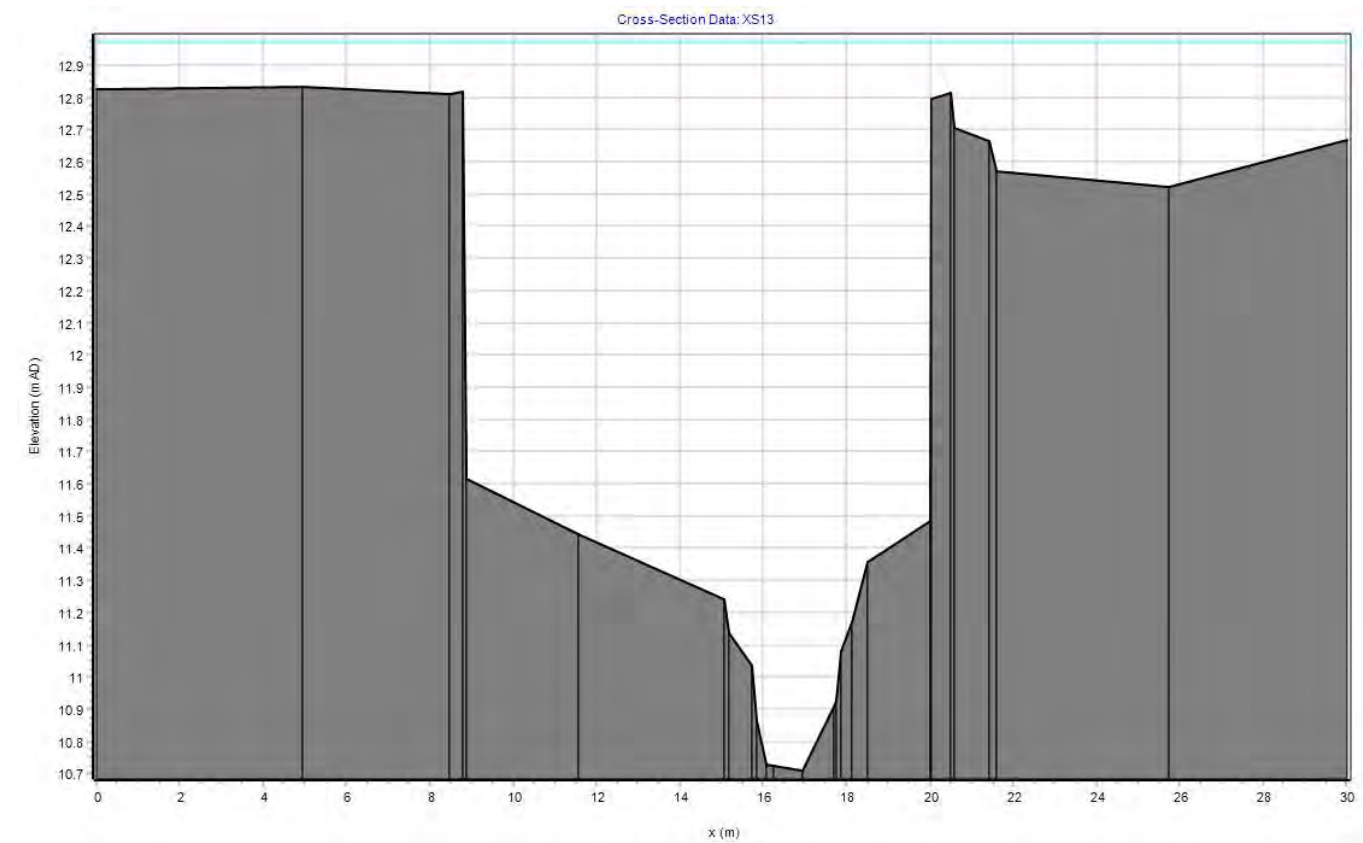
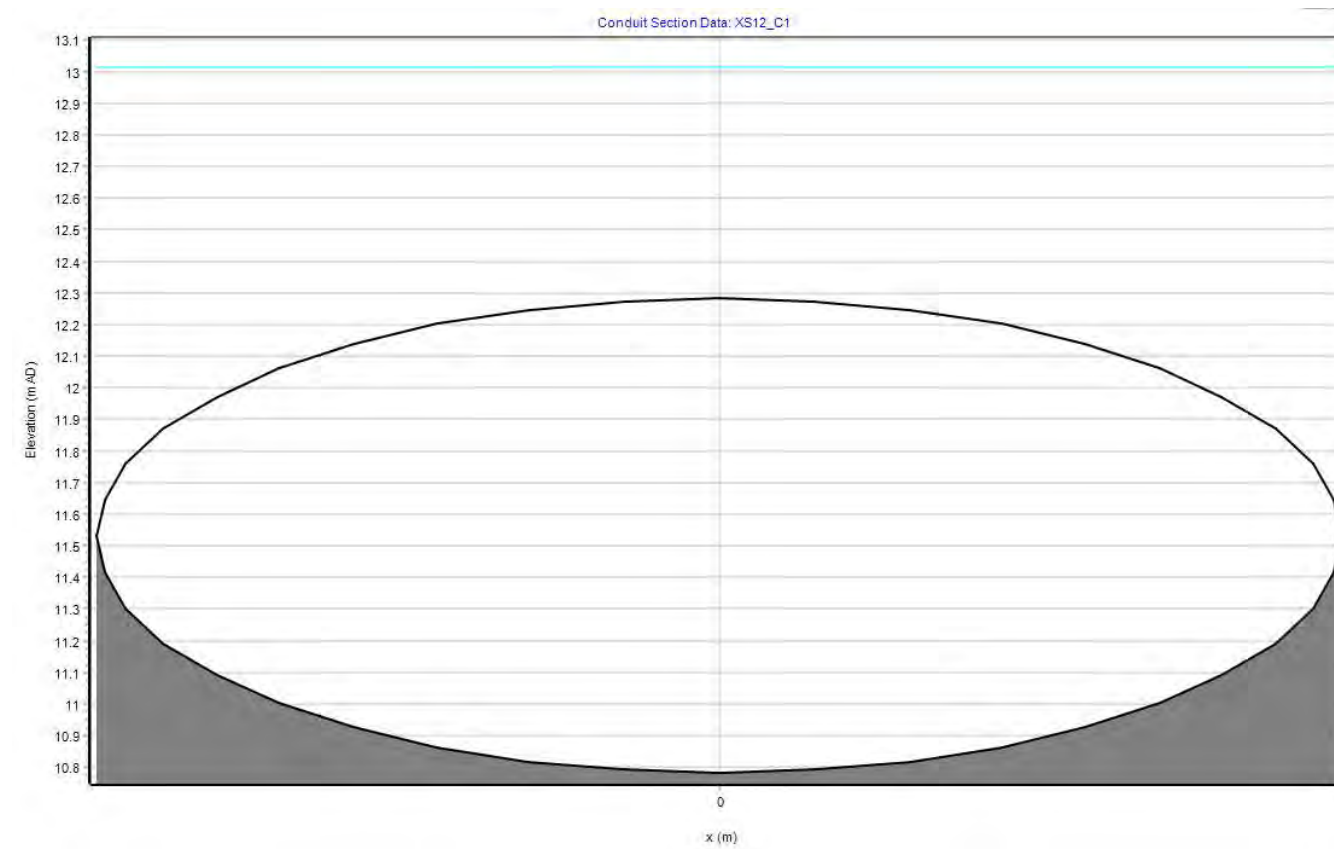
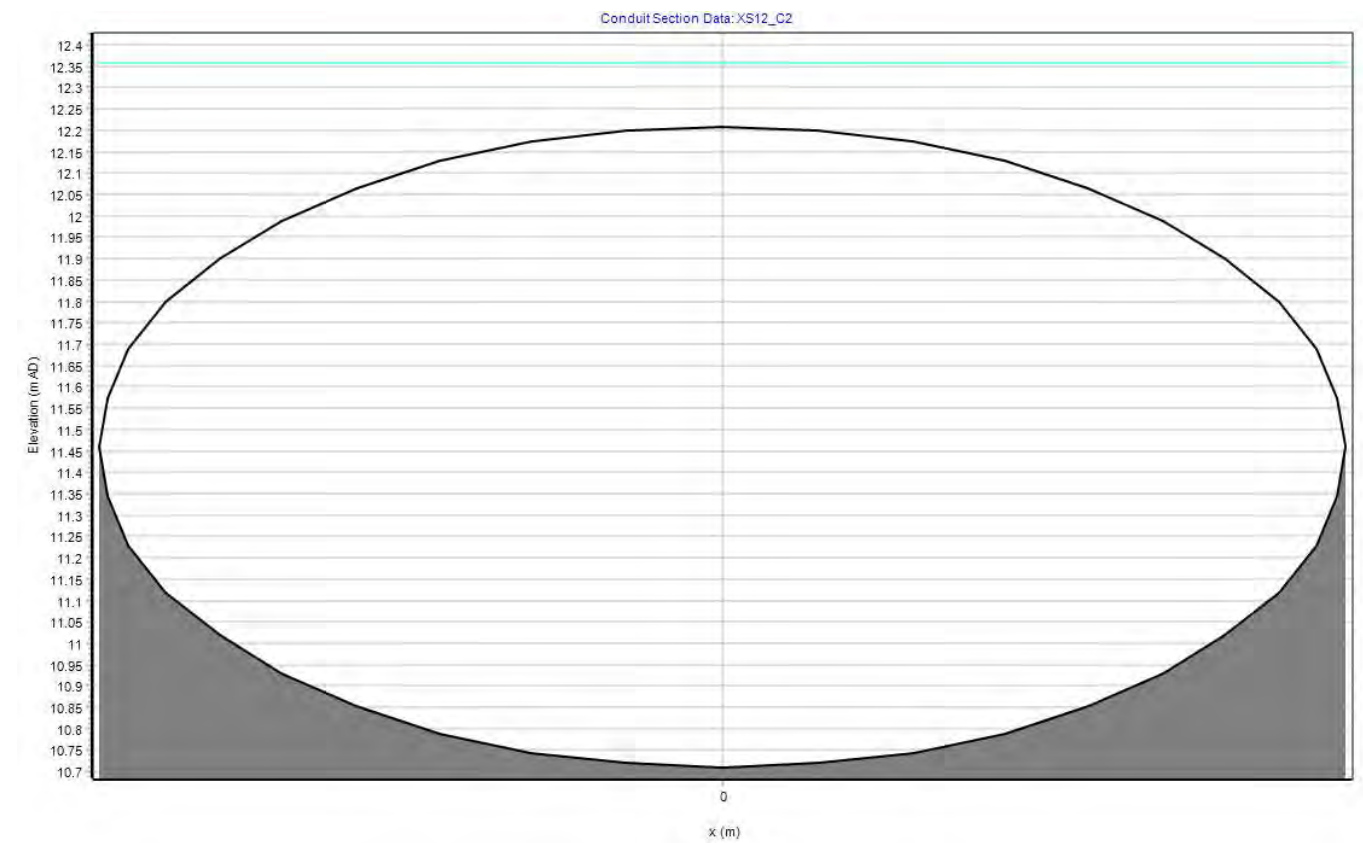
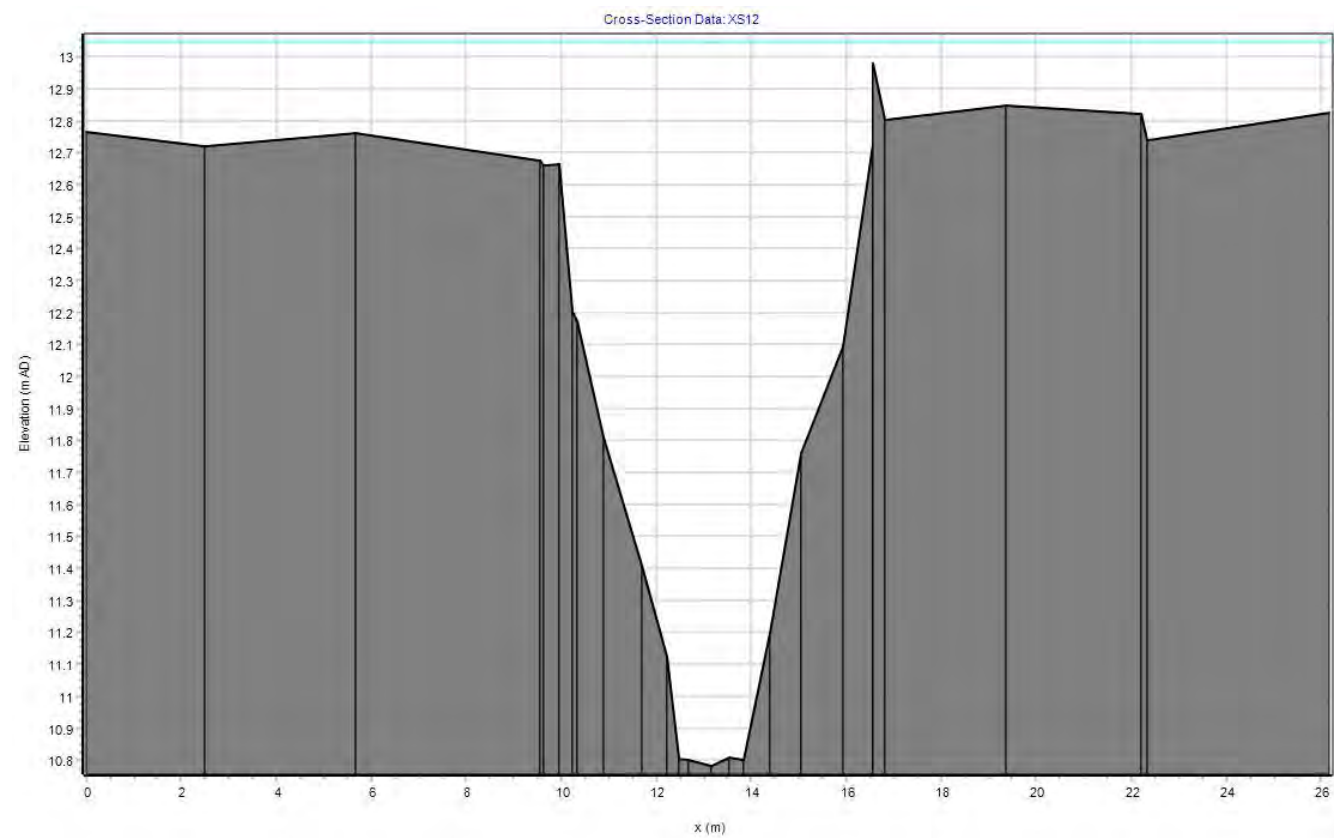
Label	Max Stage	Time (hr)mx2	Max Flow	Time (hr)mx1	Max Velocity	Time (hr)mx4
XS3	14.498	1.750	0.703	1.083	0.566	0.417
XS4	14.498	1.750	1.498	1.167	0.161	0.000
XS5	14.496	1.750	1.524	1.167	0.286	0.000
XS6	14.496	1.750	0.842	2.333	0.288	2.750
XS6_C1	14.495	1.750	0.842	2.333	0.686	2.333
XS6_C2	14.434	1.583	0.842	2.333	2.938	2.333
XS7	14.432	1.583	1.778	1.167	0.751	2.500
XS8	14.432	1.583	1.547	2.083	0.704	2.333
XS8_C1	14.377	1.583	2.451	1.333	2.106	0.667
XS8_C2	13.225	1.833	2.451	1.333	1.991	1.333
XS9	13.161	1.917	2.451	1.333	1.040	0.750
XS10	13.142	1.917	2.403	1.333	0.655	0.917
XS10_C1	13.100	1.917	2.403	1.333	1.416	0.917
XS10_C2	13.094	1.917	2.403	1.333	1.365	0.917
XS11	13.052	1.917	2.403	1.333	0.980	0.667
XS12	13.046	1.917	2.282	1.333	0.528	0.750
XS12_C1	13.014	1.917	2.282	1.333	1.300	0.917
XS12_C2	13.002	1.917	2.282	1.333	1.297	1.333
XS13	12.971	1.917	2.257	1.333	0.605	0.500
XS14	12.962	1.917	2.257	1.333	0.572	0.500
XS15	12.961	1.917	2.211	2.167	0.312	0.917
XS16	12.886	1.917	2.211	2.167	0.293	0.917
XS17	12.884	1.917	2.394	2.250	0.285	0.833
XS18	12.795	1.833	2.625	2.333	0.248	2.917
XS19	12.732	1.750	2.625	2.333	0.240	2.917
XS20	12.731	1.750	2.726	2.333	0.343	2.917
XS21	12.657	1.667	2.726	2.333	0.303	2.917
XS22	12.650	1.667	4.414	1.083	0.676	0.917
XS23	12.348	1.833	4.414	1.083	0.813	0.917
XS24	12.324	1.833	3.983	1.417	1.069	0.917
XS24B	12.249	1.833	3.983	1.417	1.069	0.917
XS25	12.235	1.833	3.836	1.917	0.748	0.667
XS25_C1	12.210	1.833	3.836	1.917	1.223	1.917
XS25_C2	11.750	1.833	3.836	1.917	1.224	1.917
XS26(B)	11.717	1.833	3.836	1.917	0.536	0.917
XS27	11.674	1.833	4.105	2.167	0.415	2.750
XS28	11.503	1.750	4.105	2.167	0.503	2.667
XS29	11.344	1.750	5.508	1.250	0.609	1.167
XS30	11.222	1.833	5.508	1.250	0.551	1.167
XS31	11.102	1.833	6.125	1.667	0.848	0.917
XS32	10.994	1.917	6.125	1.667	0.525	0.917
XS33	10.978	1.917	6.045	1.750	0.761	1.000
XS34	10.561	1.917	6.045	1.750	0.807	1.083
XS34B	10.246	2.000	5.959	2.000	0.813	0.917
XS34_C1	10.205	2.000	5.959	2.000	1.514	0.833
XS34_C2	10.155	2.000	5.959	2.000	0.846	2.000
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XS36	10.123	2.000	5.959	2.000	0.460	2.000

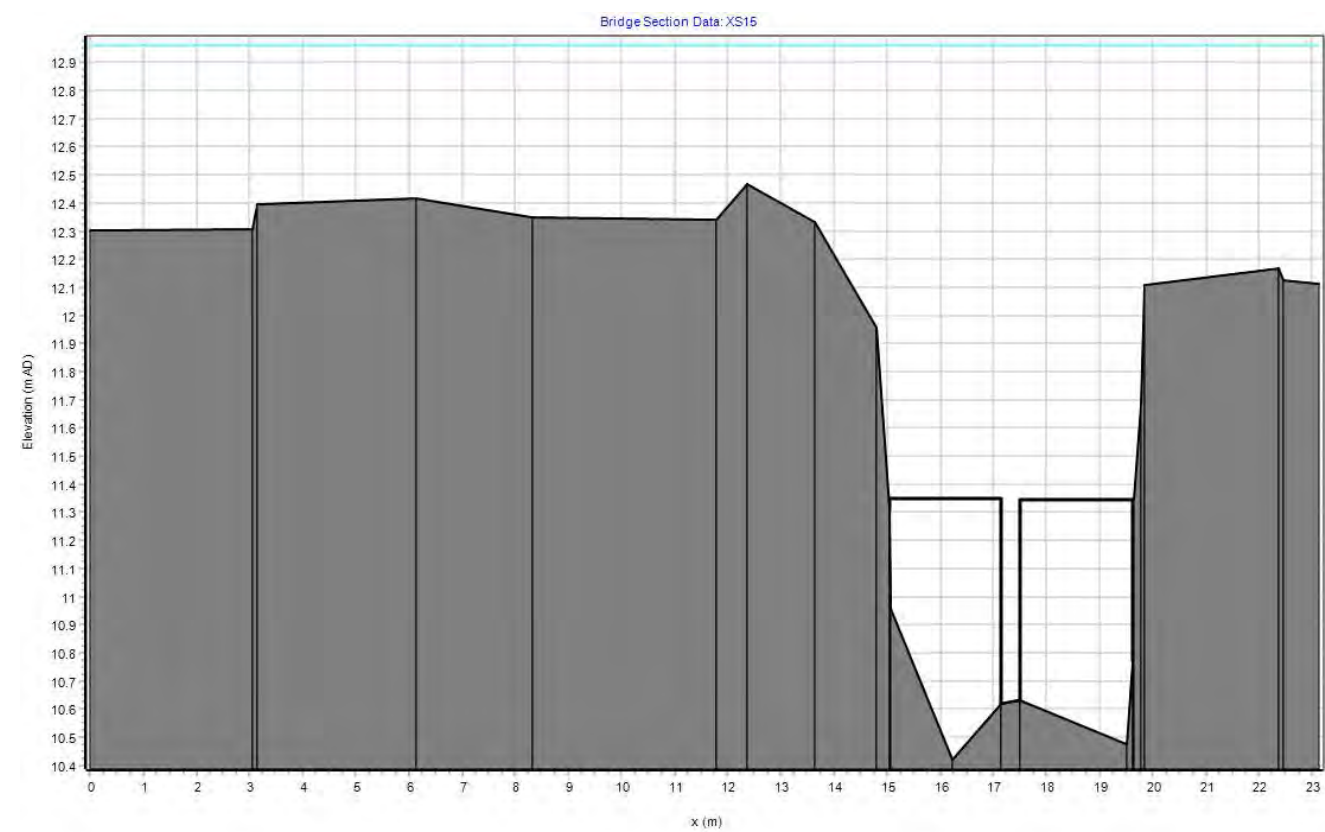
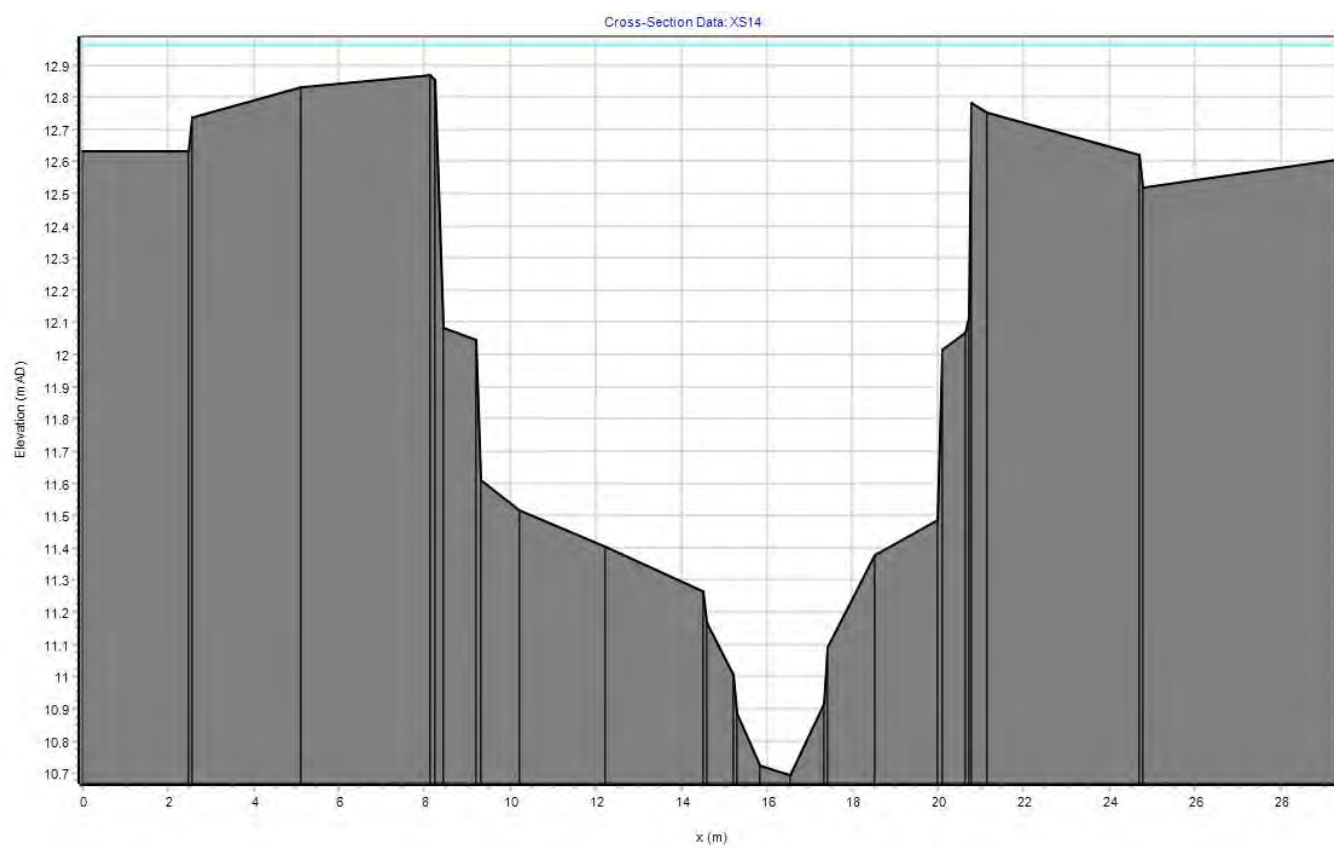
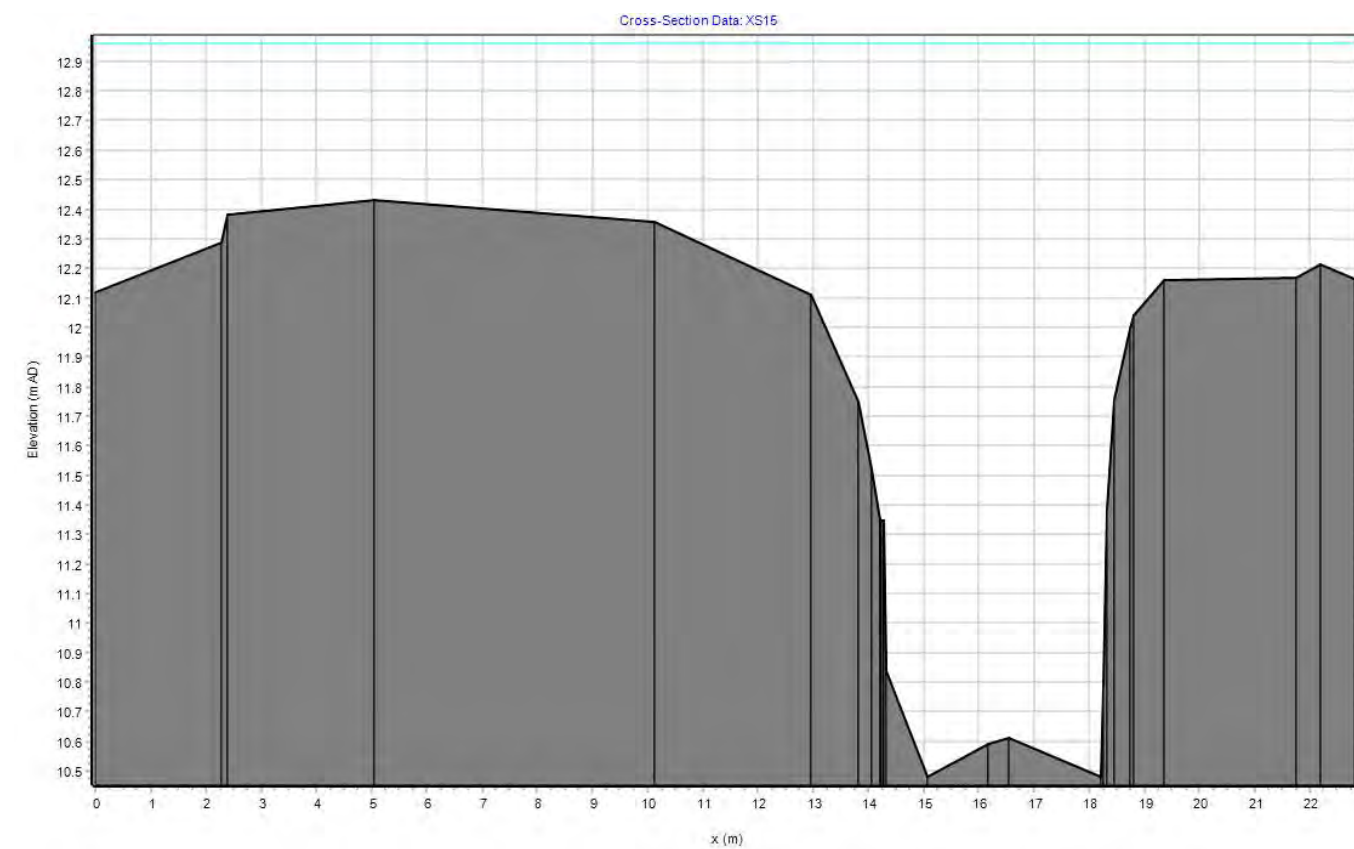
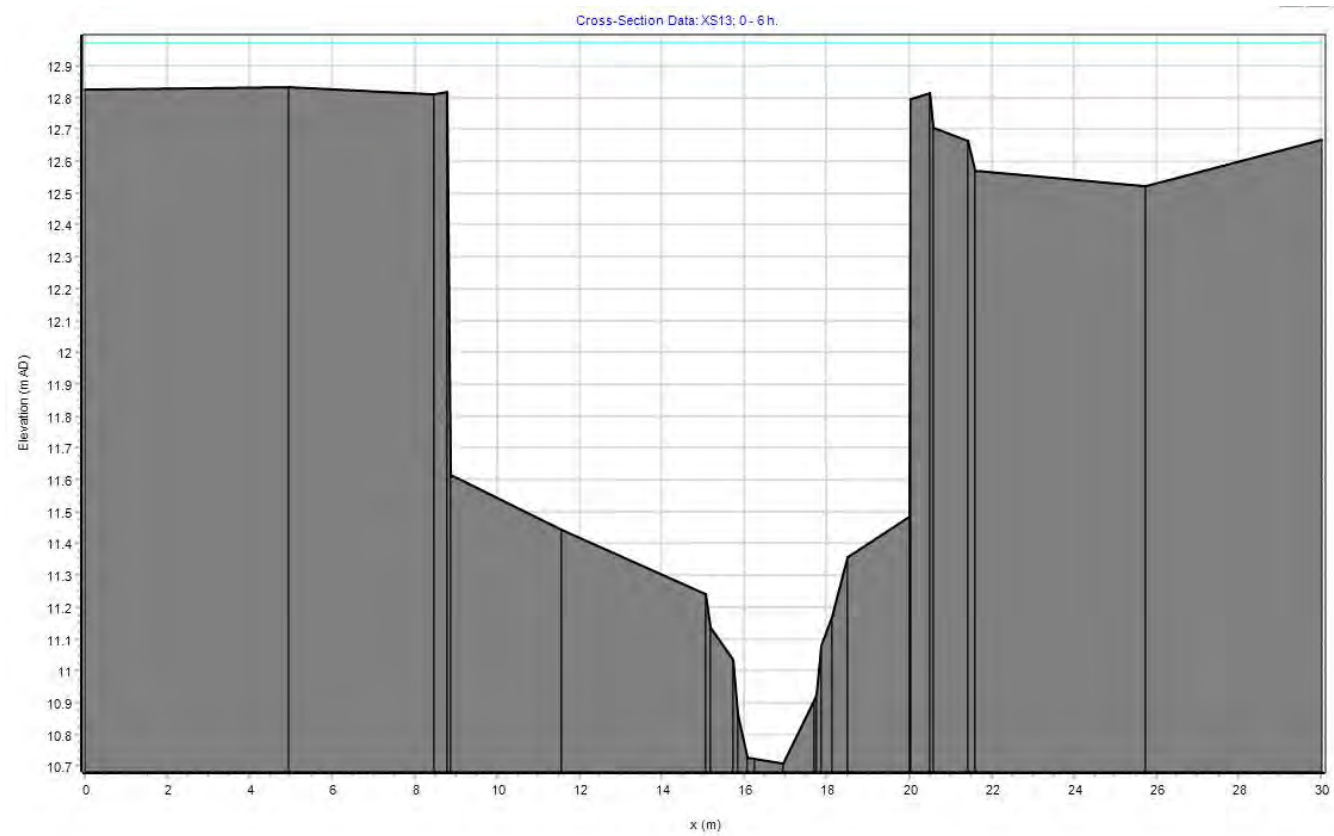


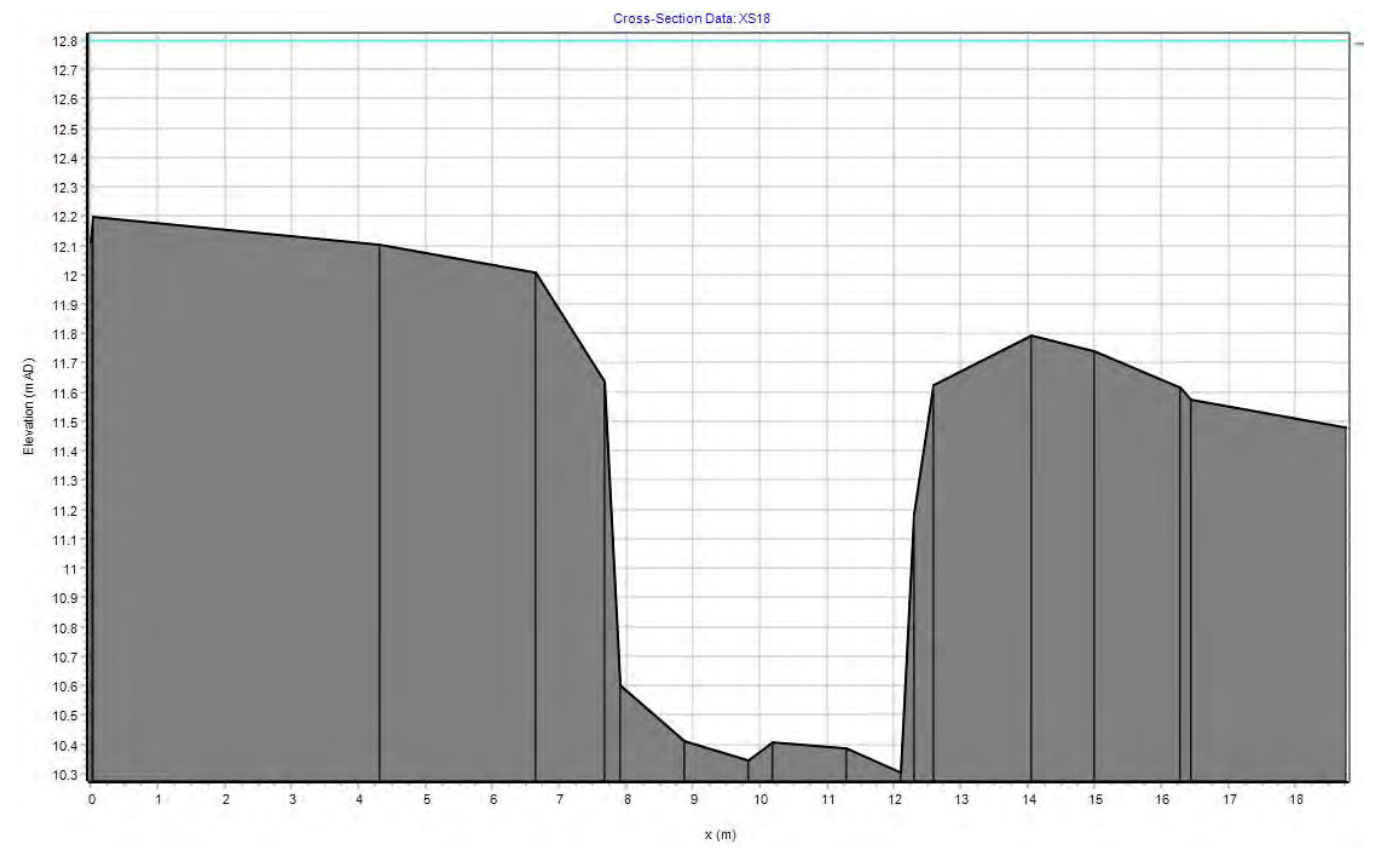
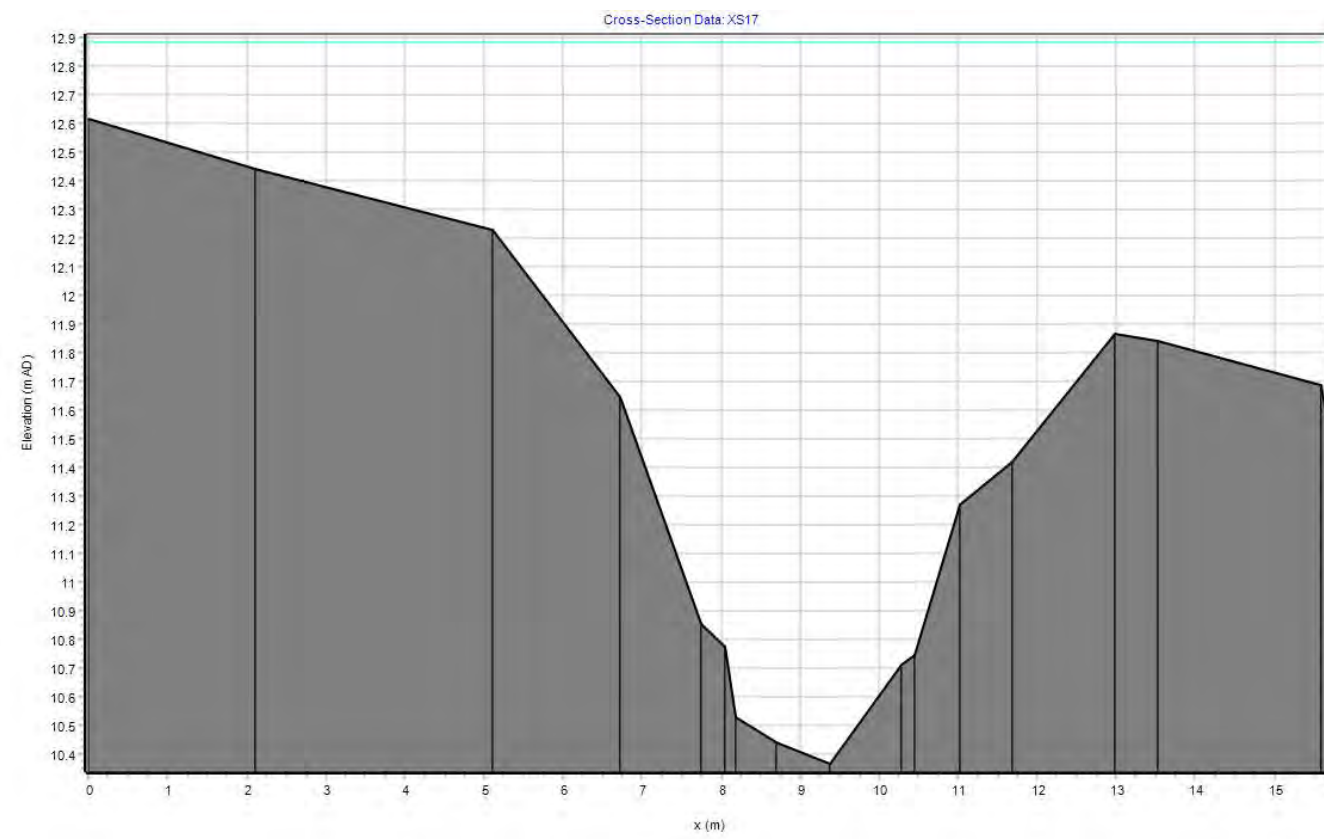
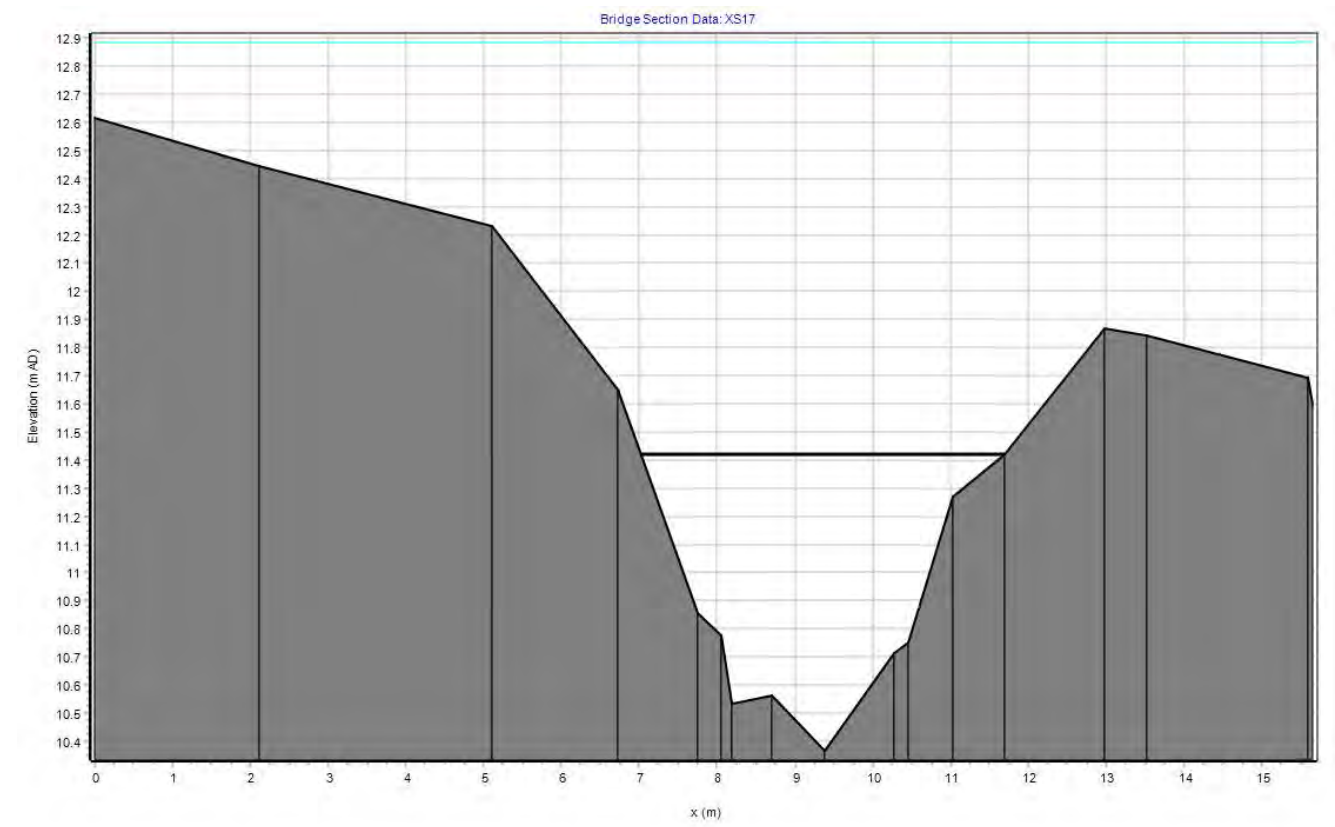
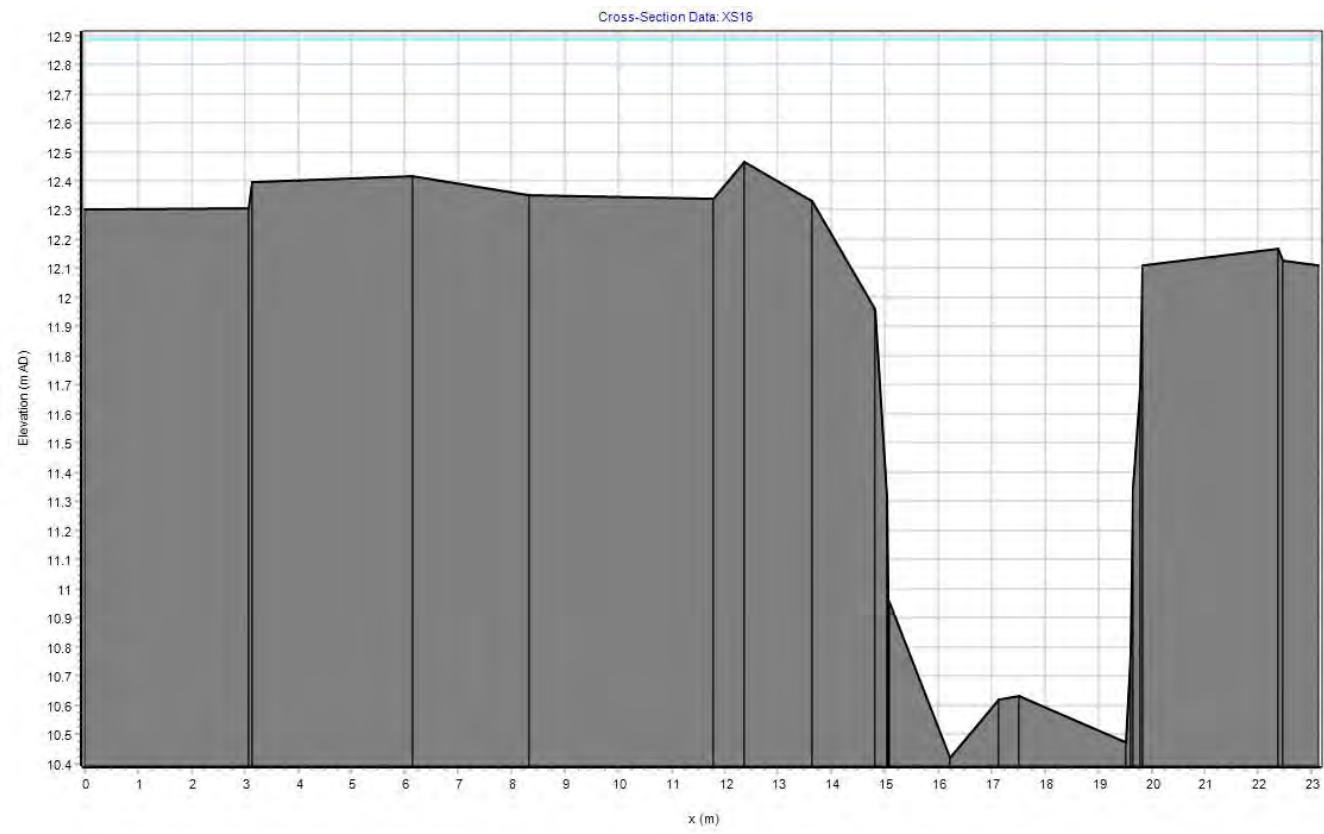


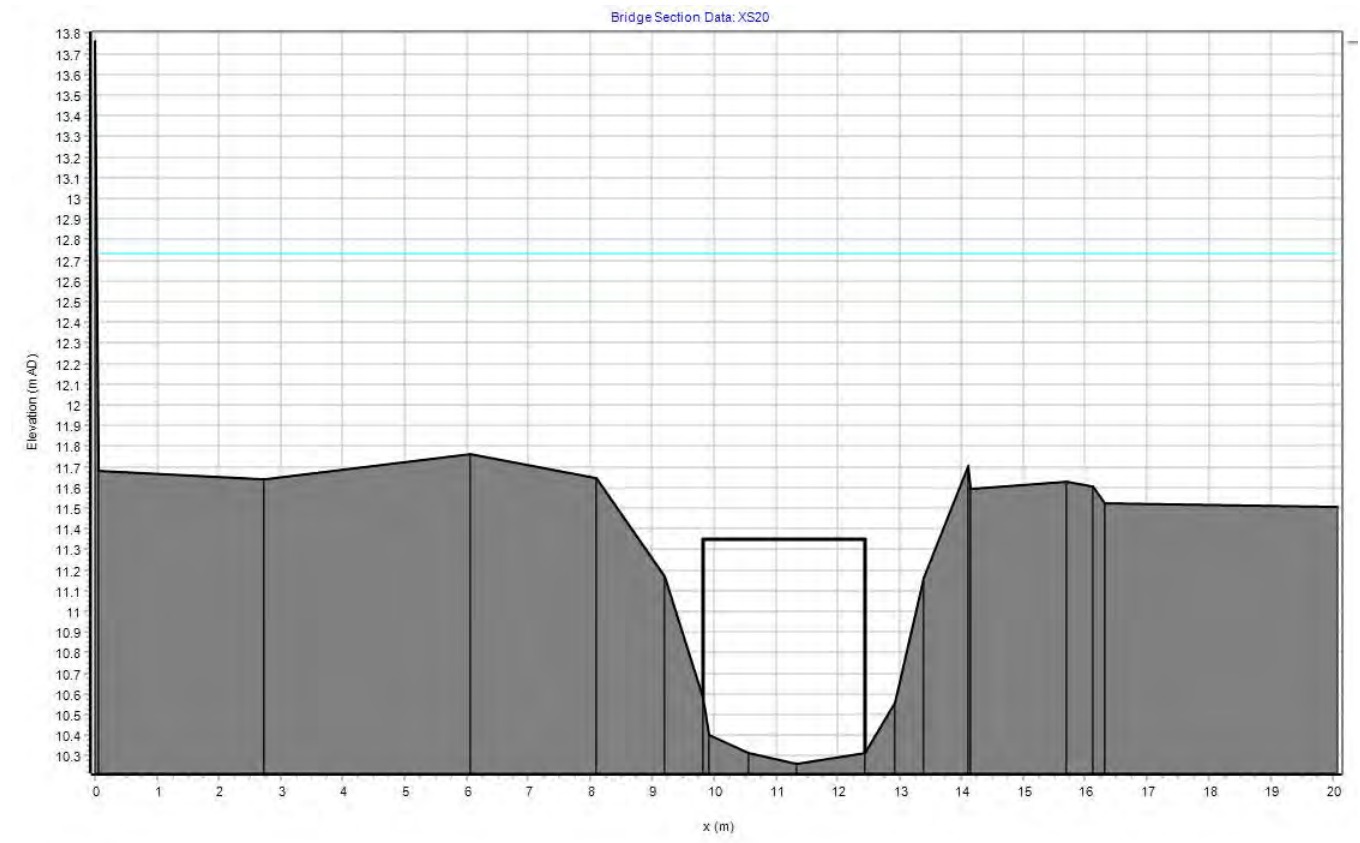
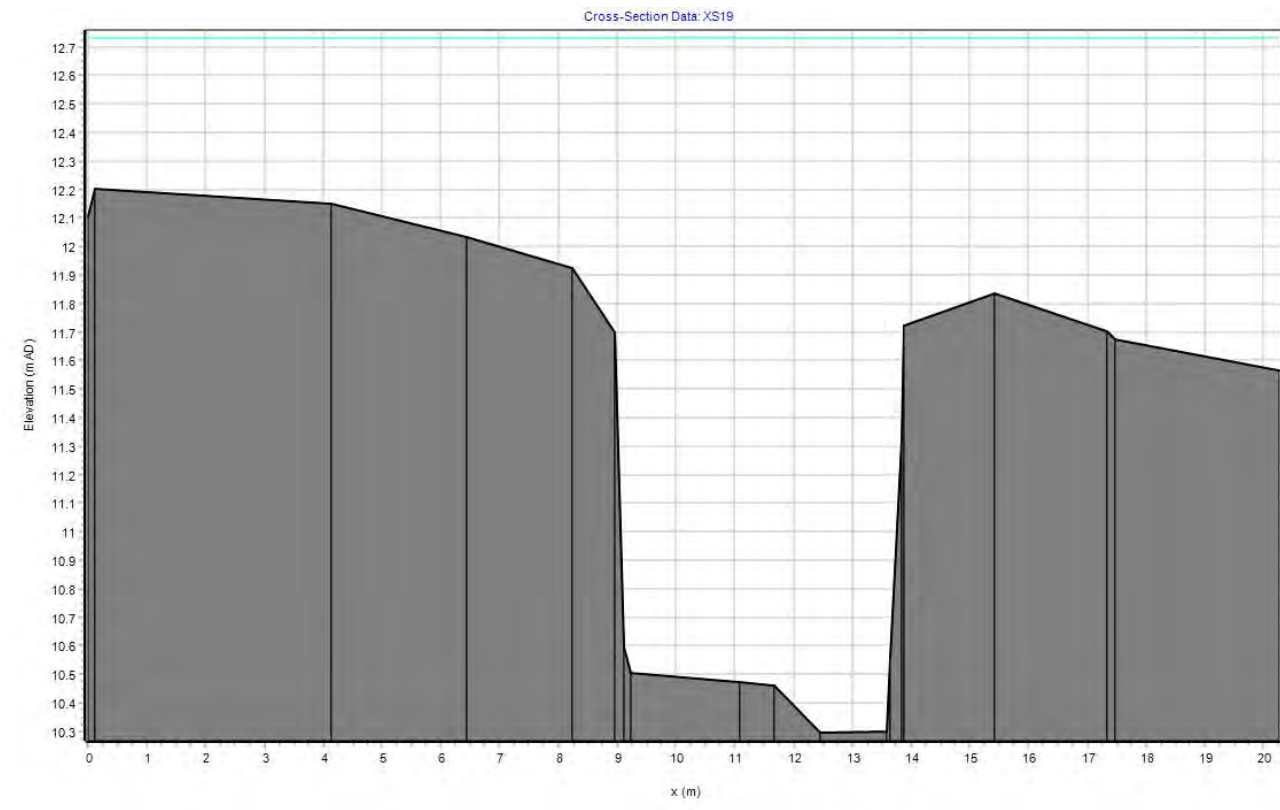
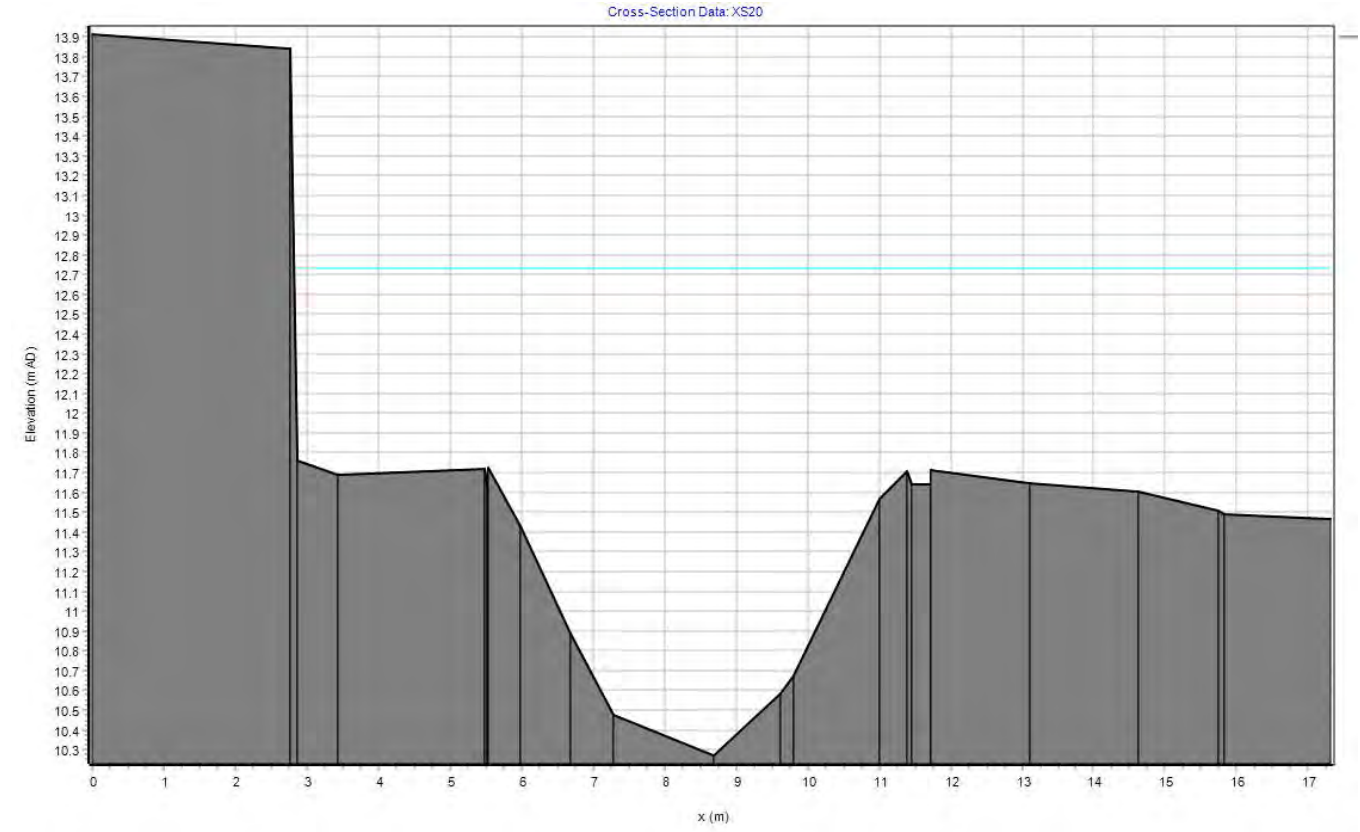
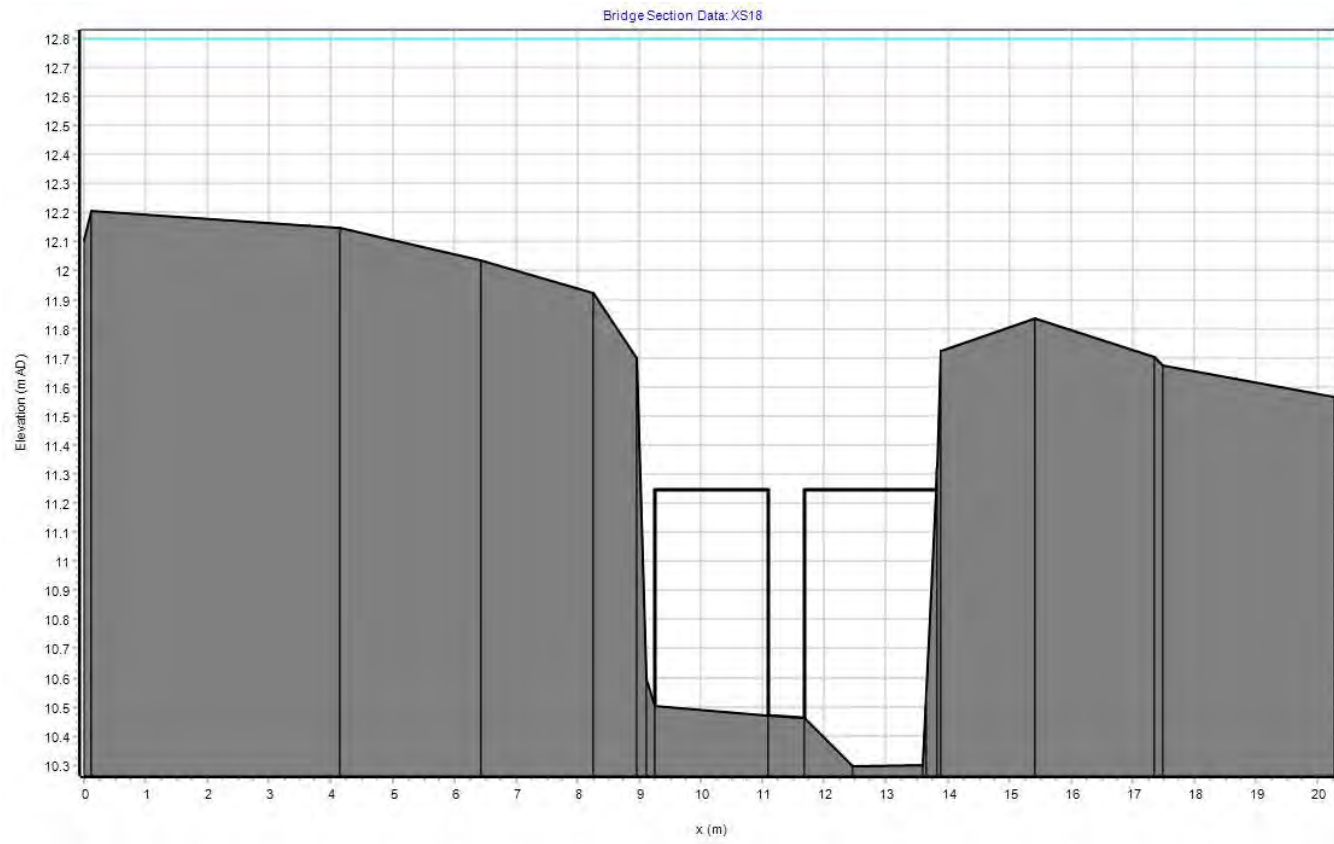


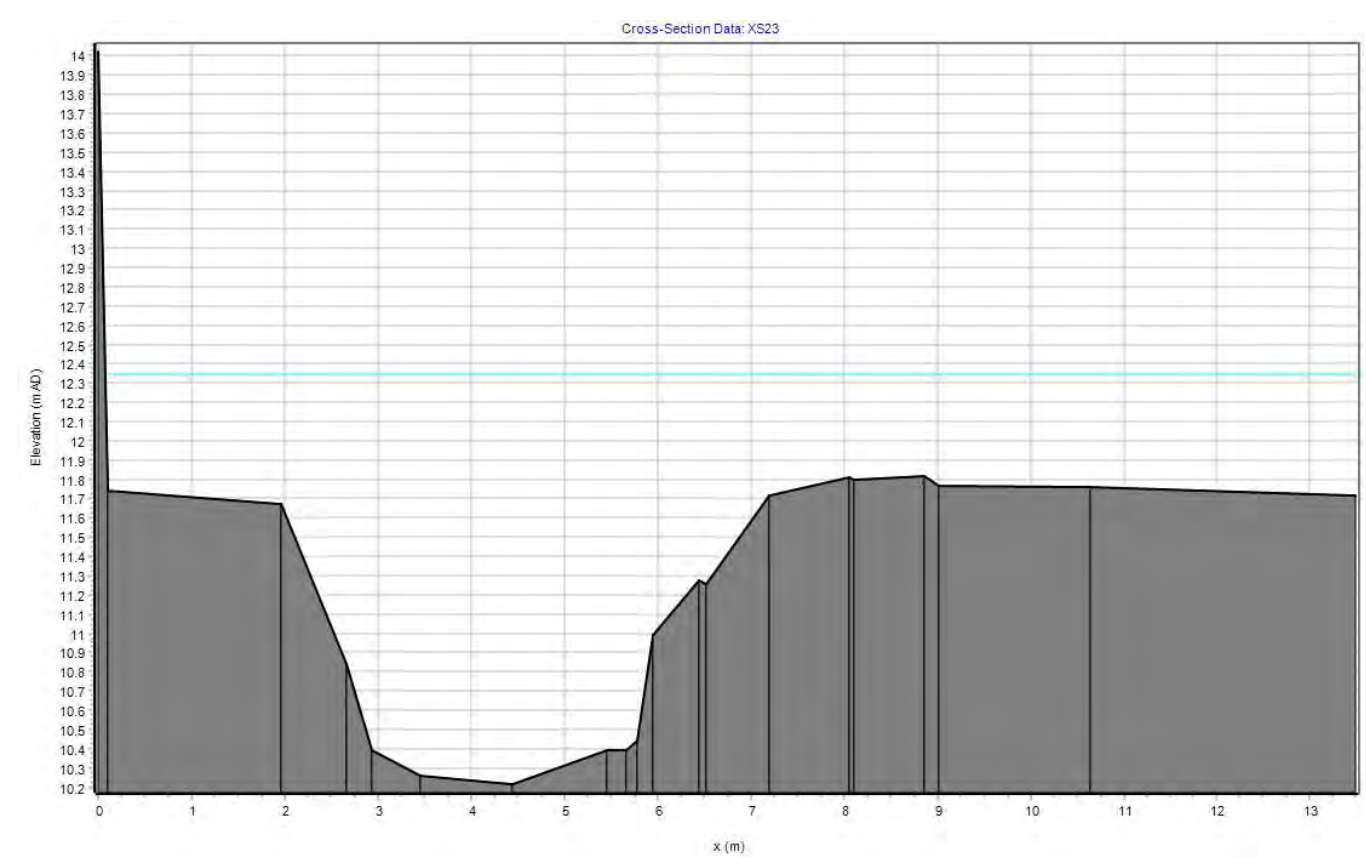
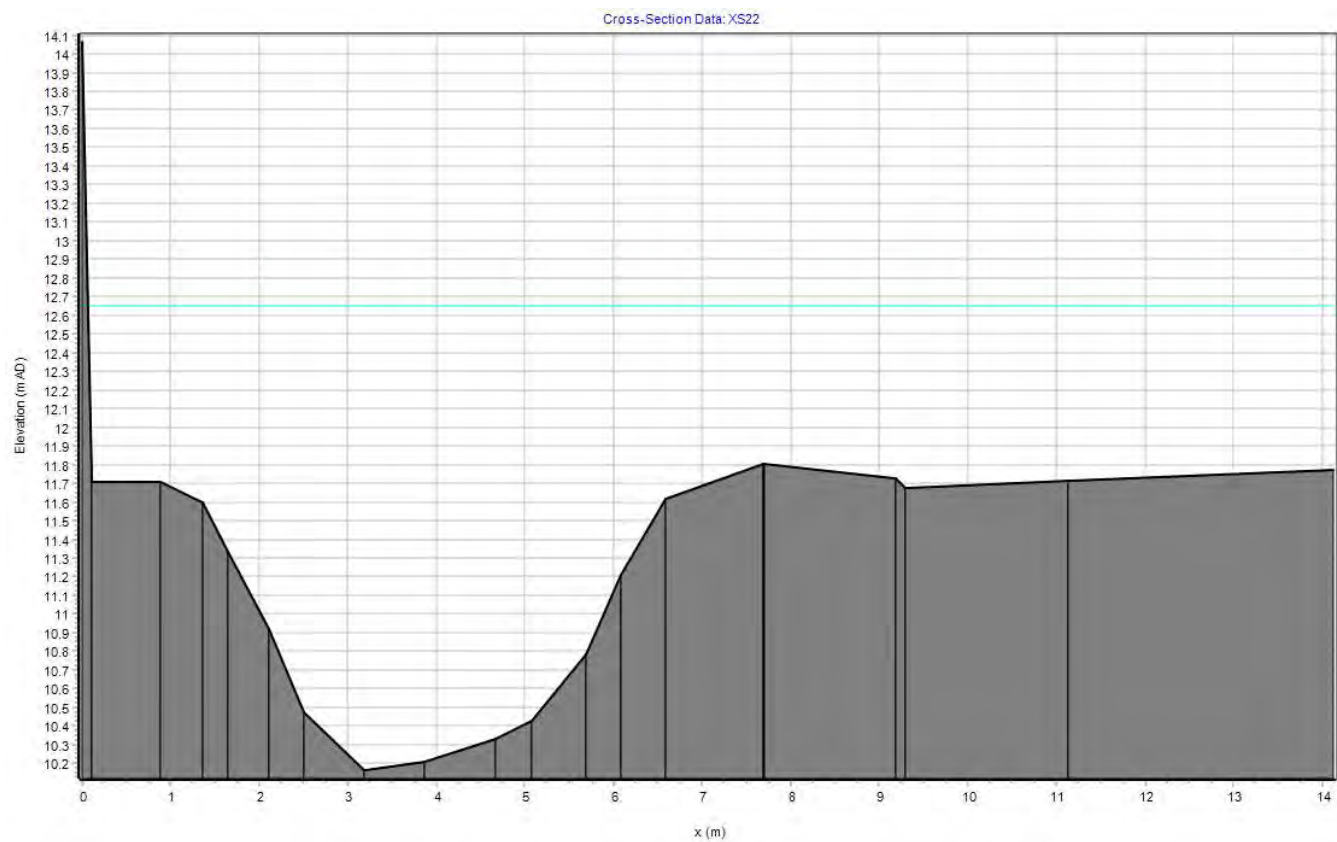
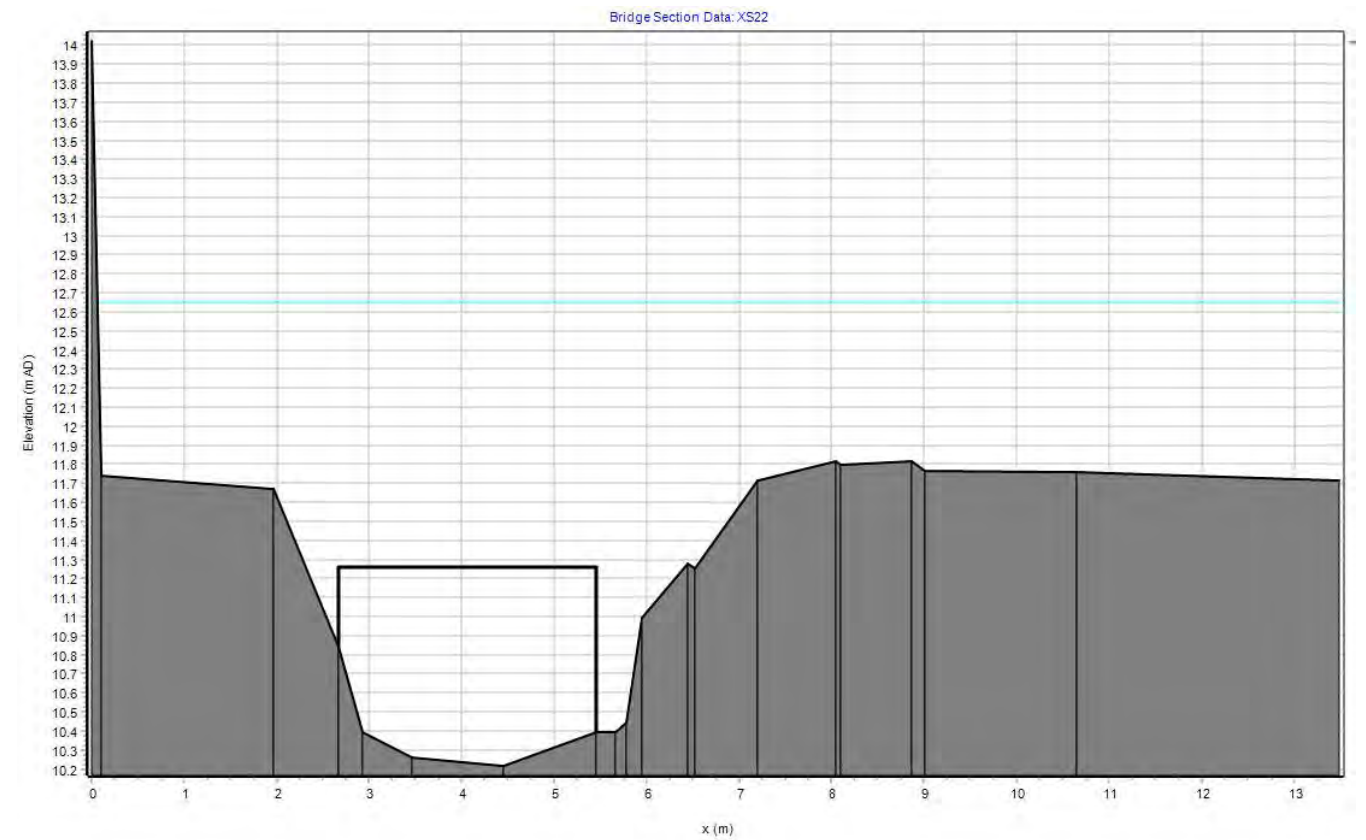
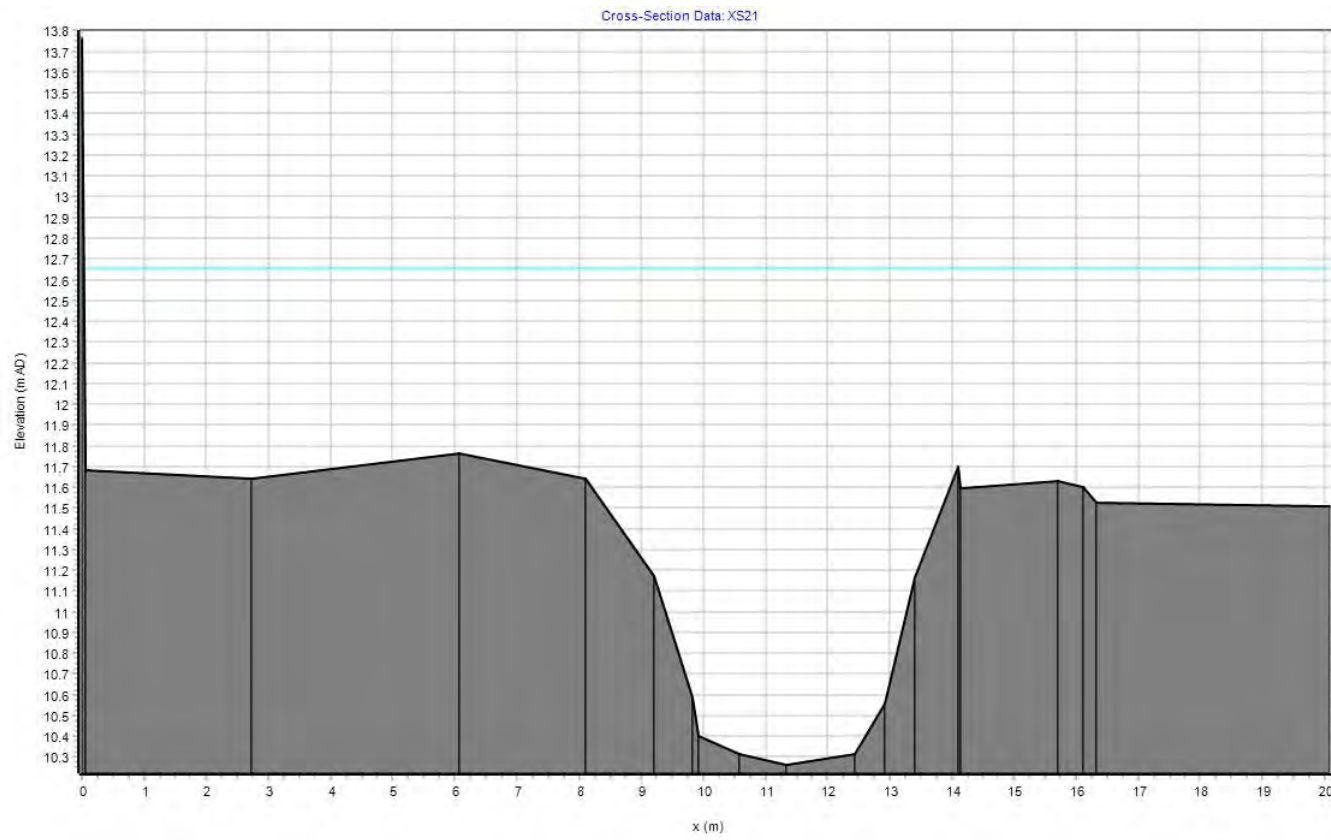


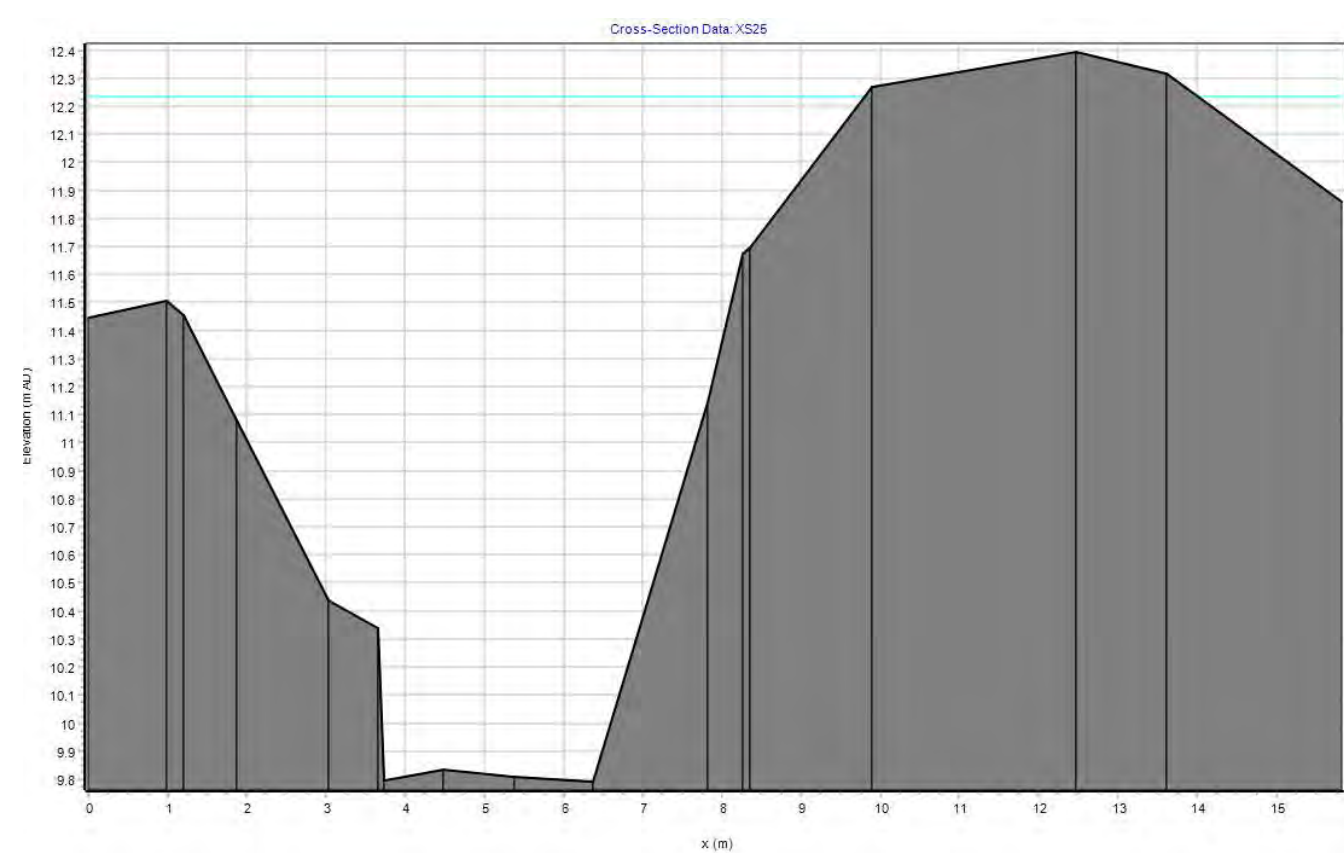
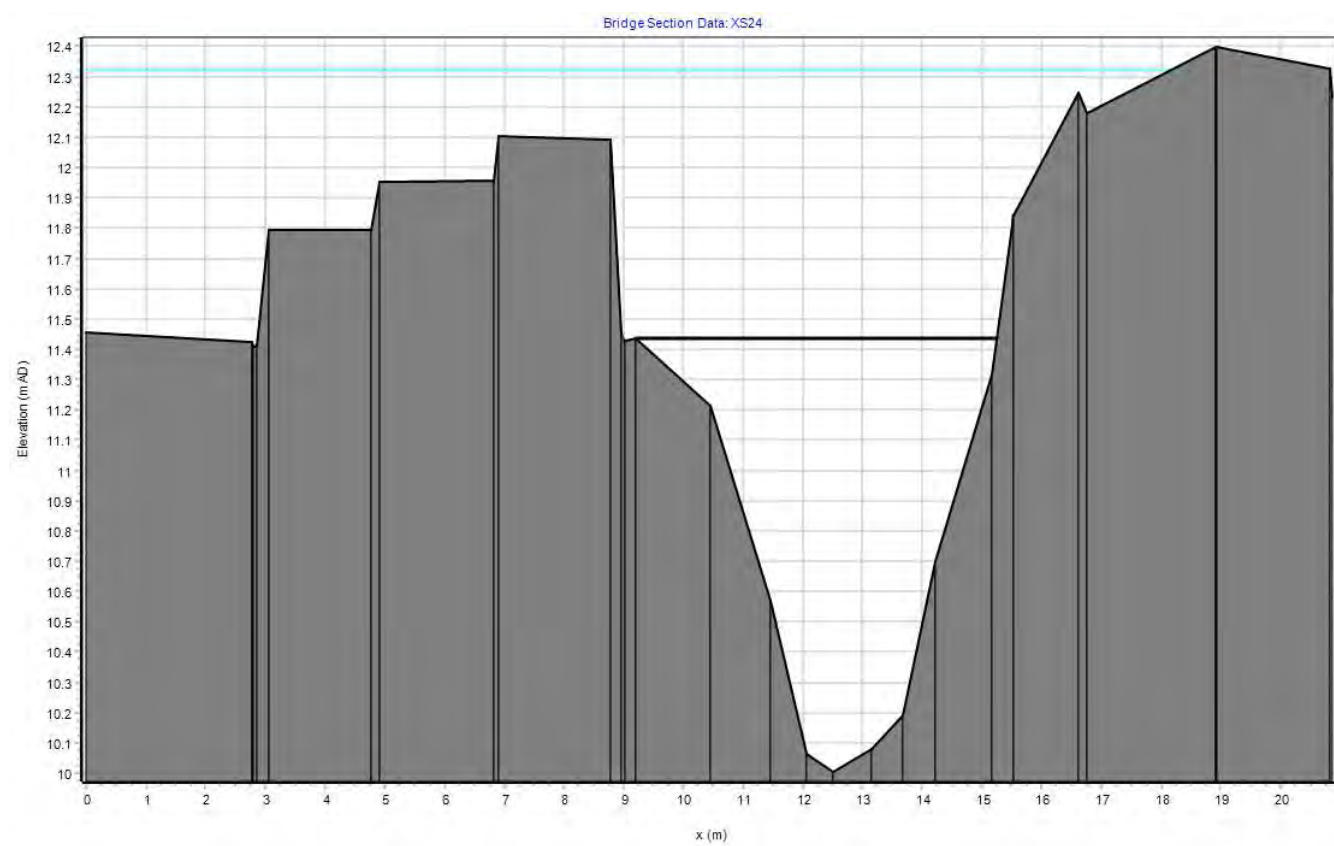
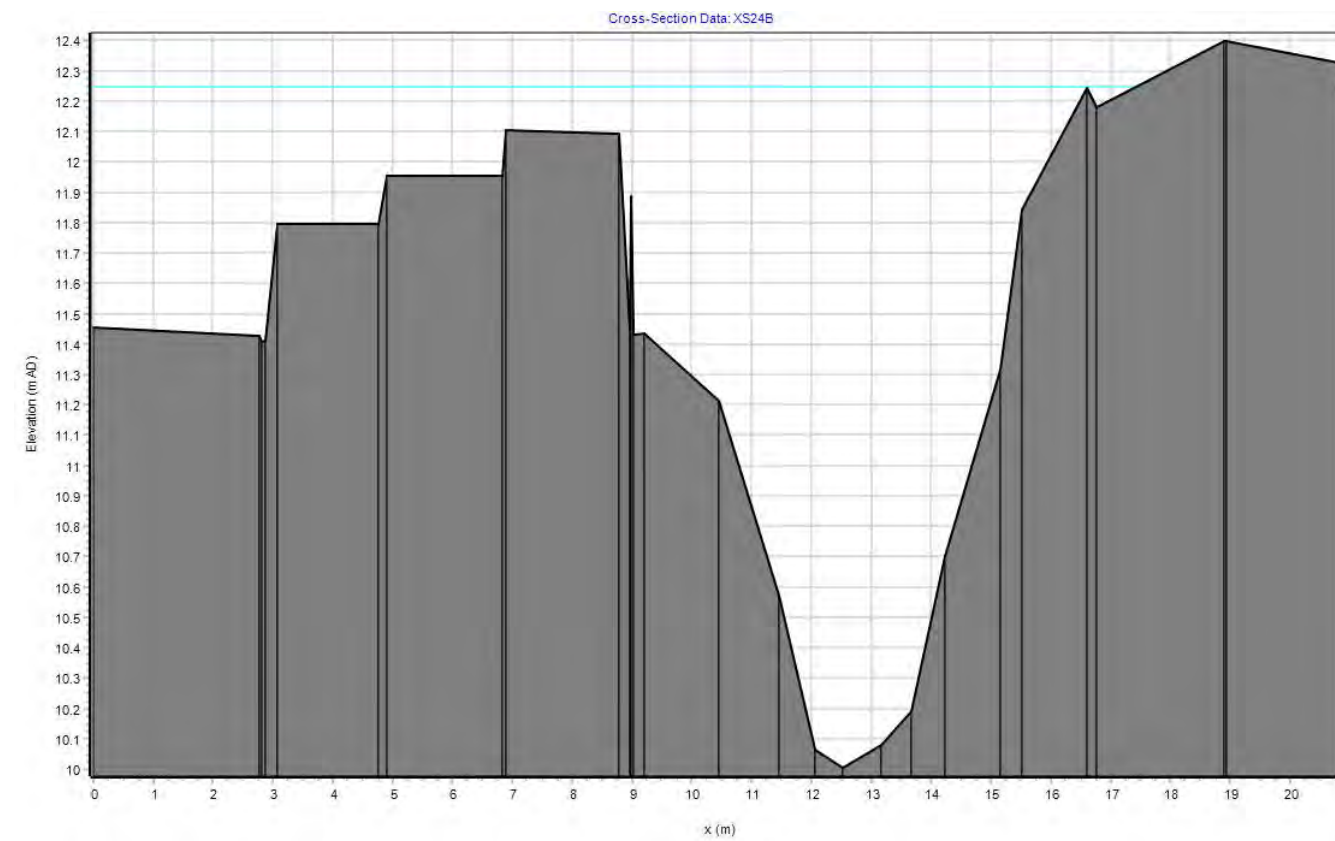
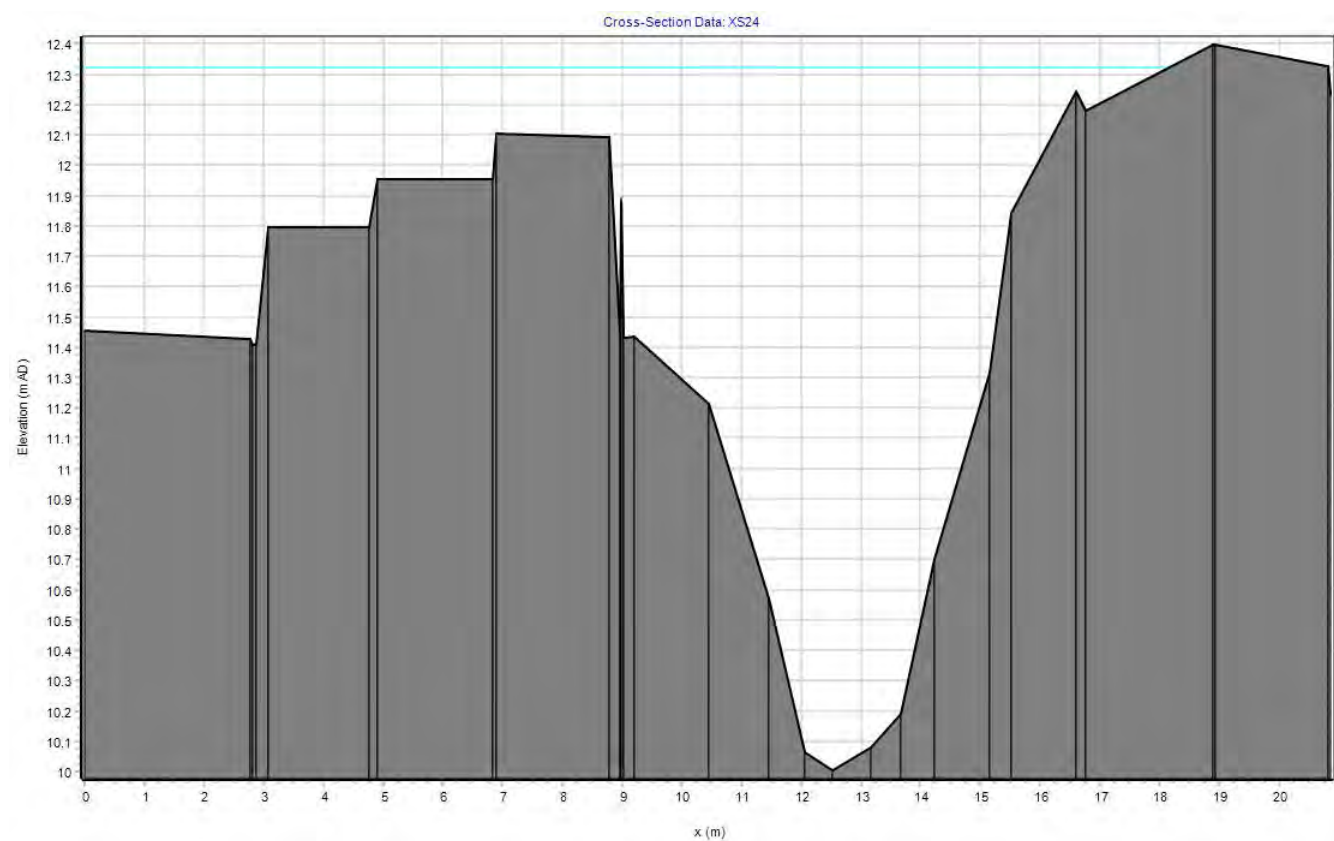


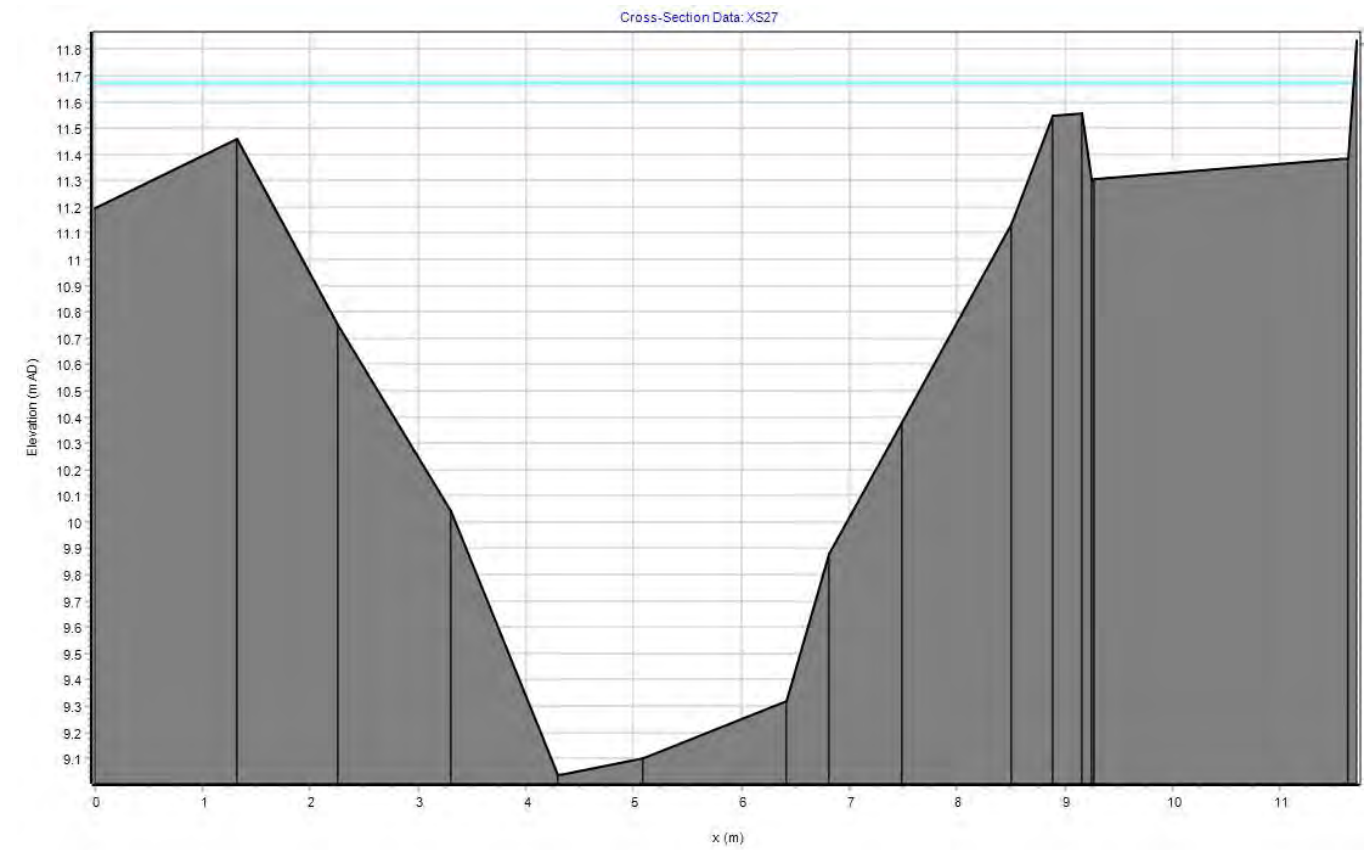
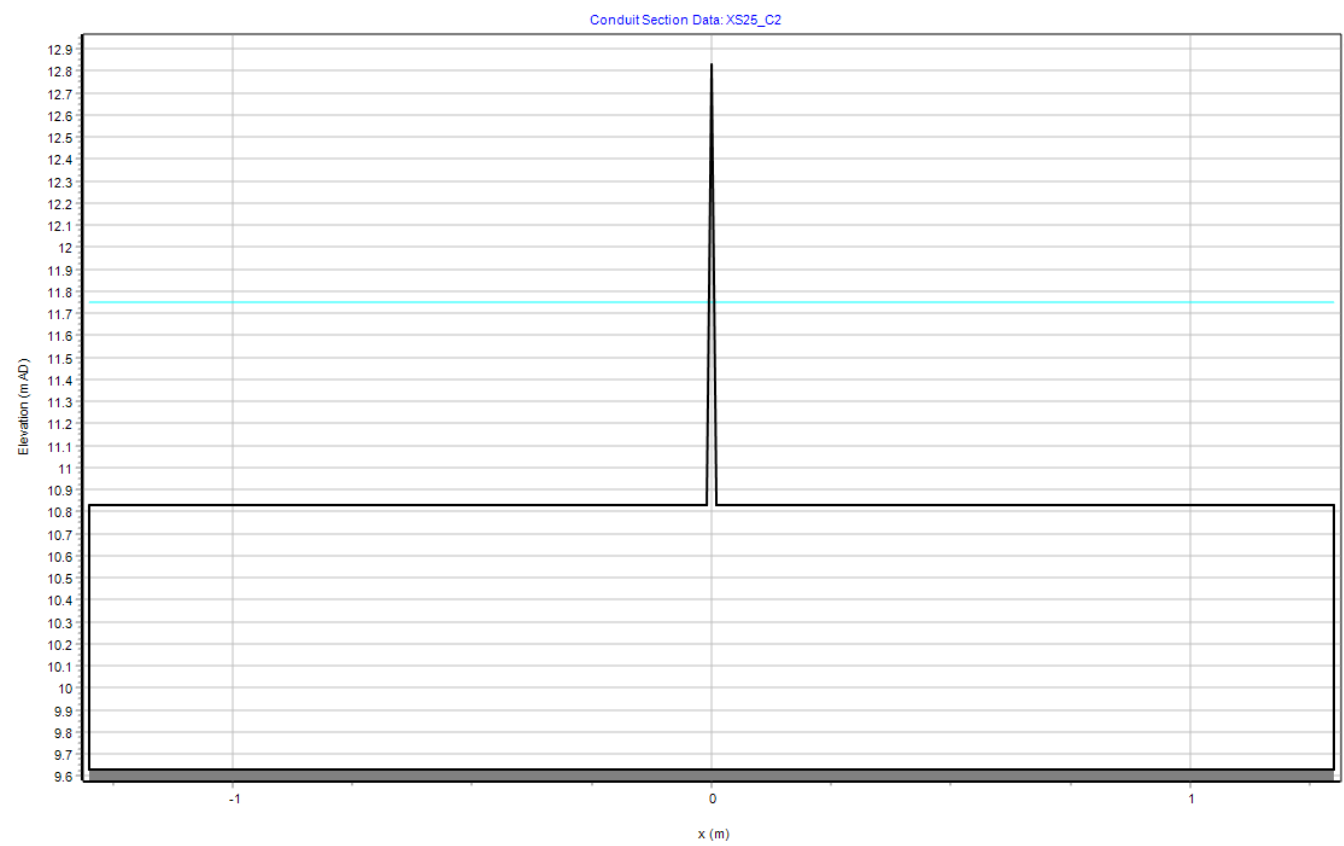
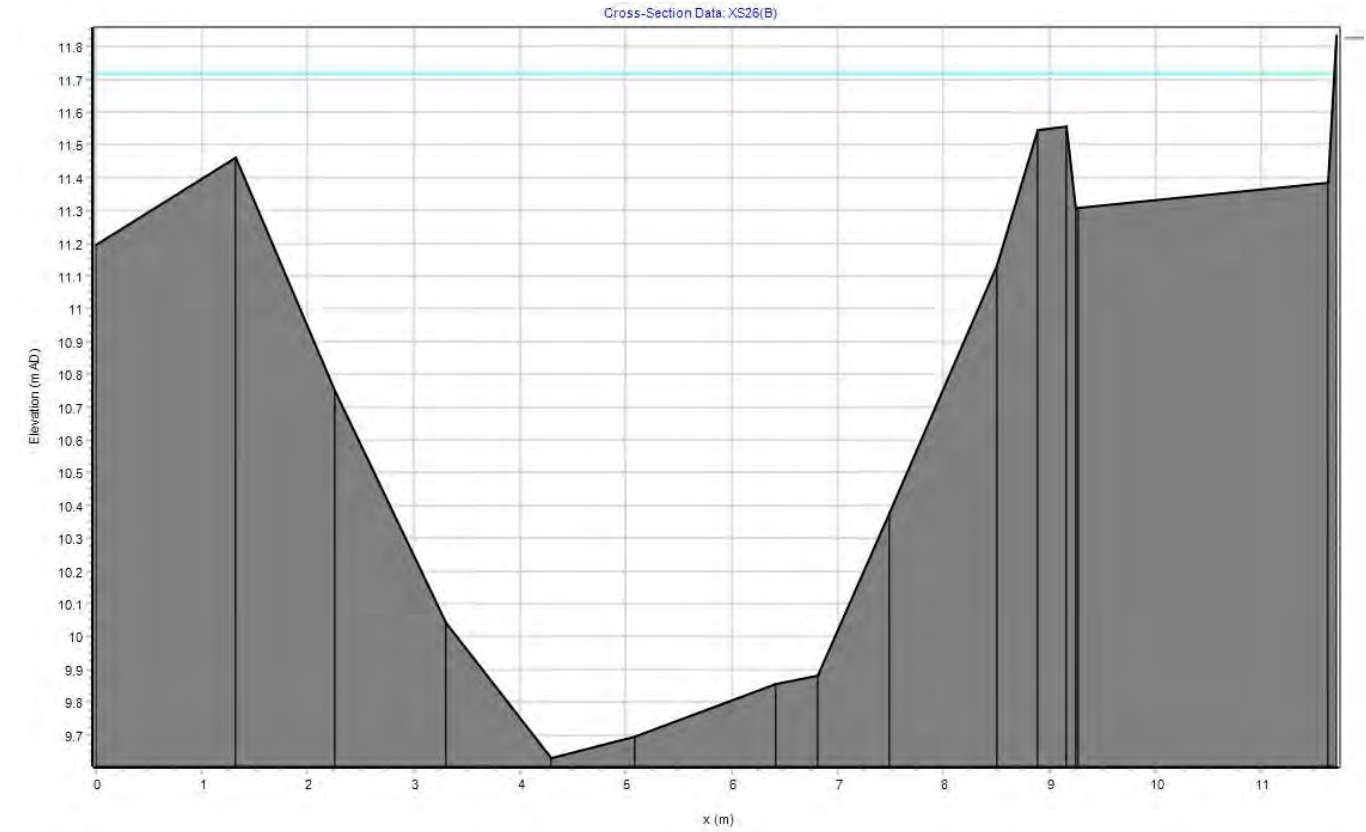
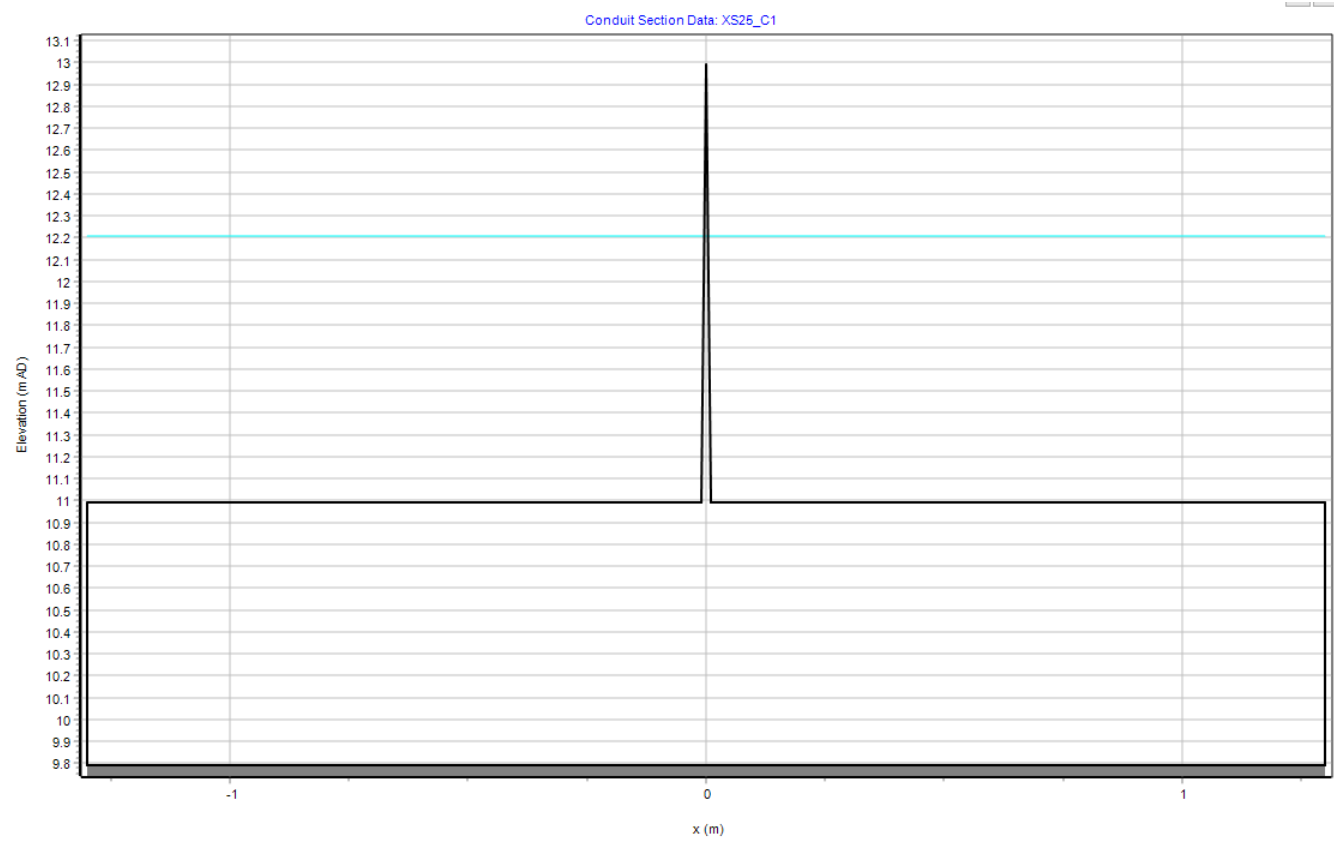


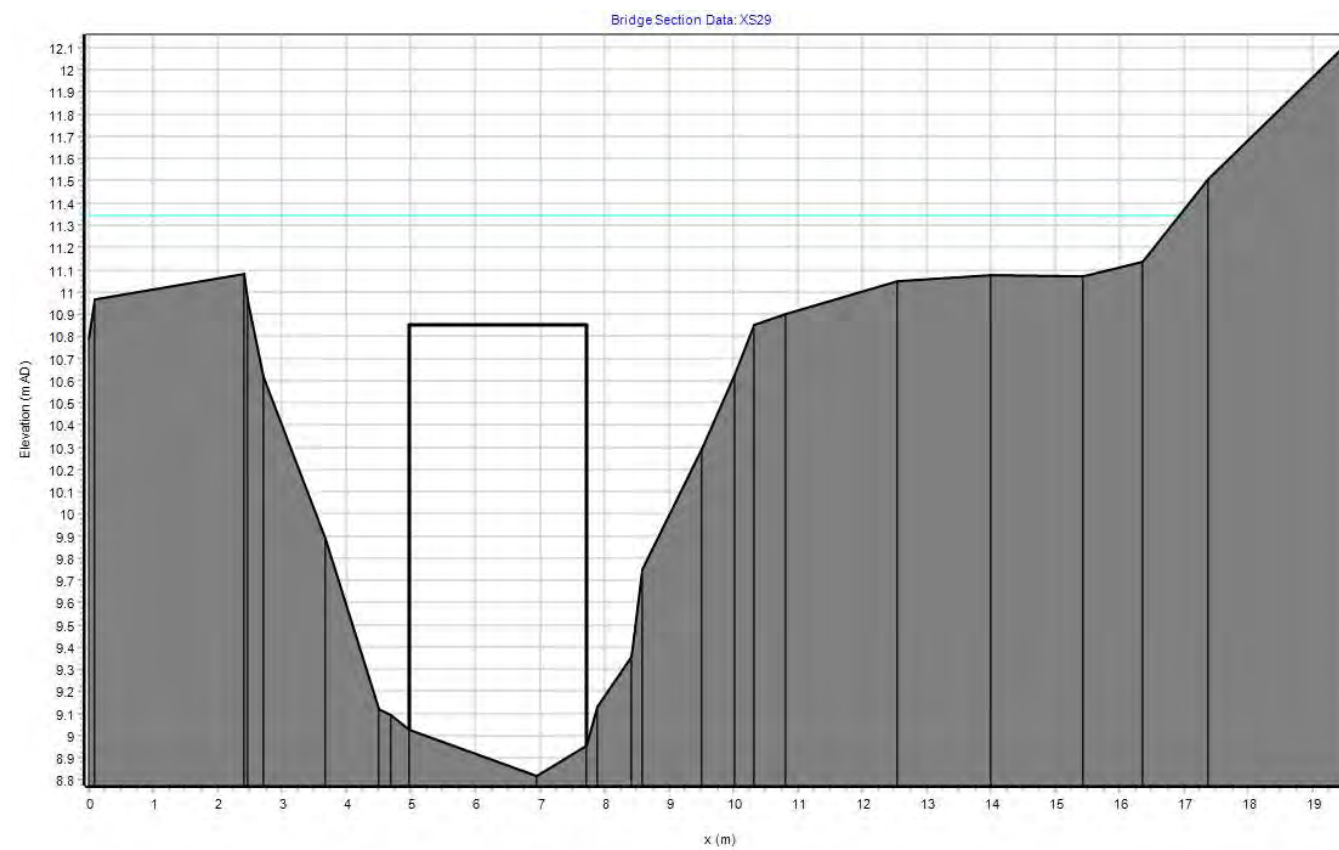
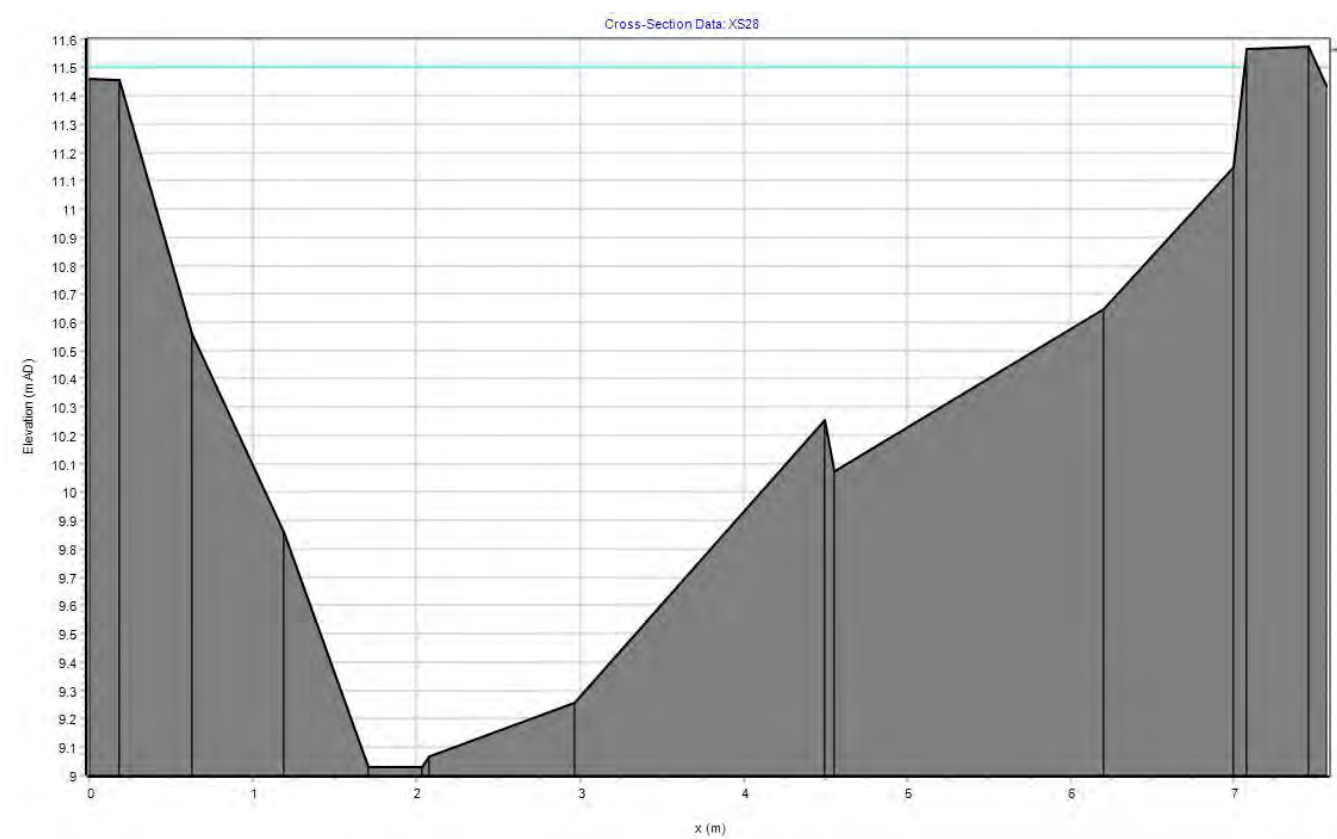
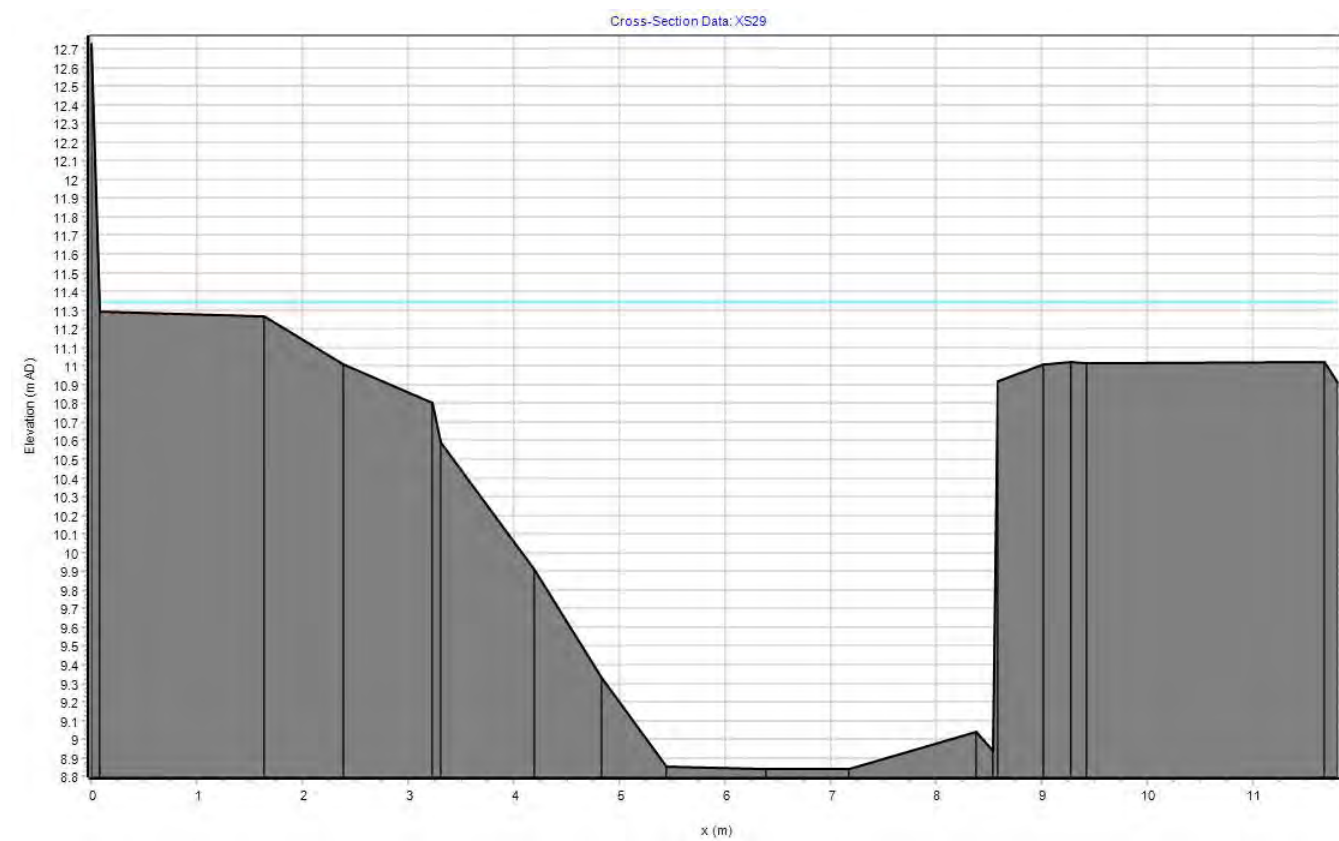
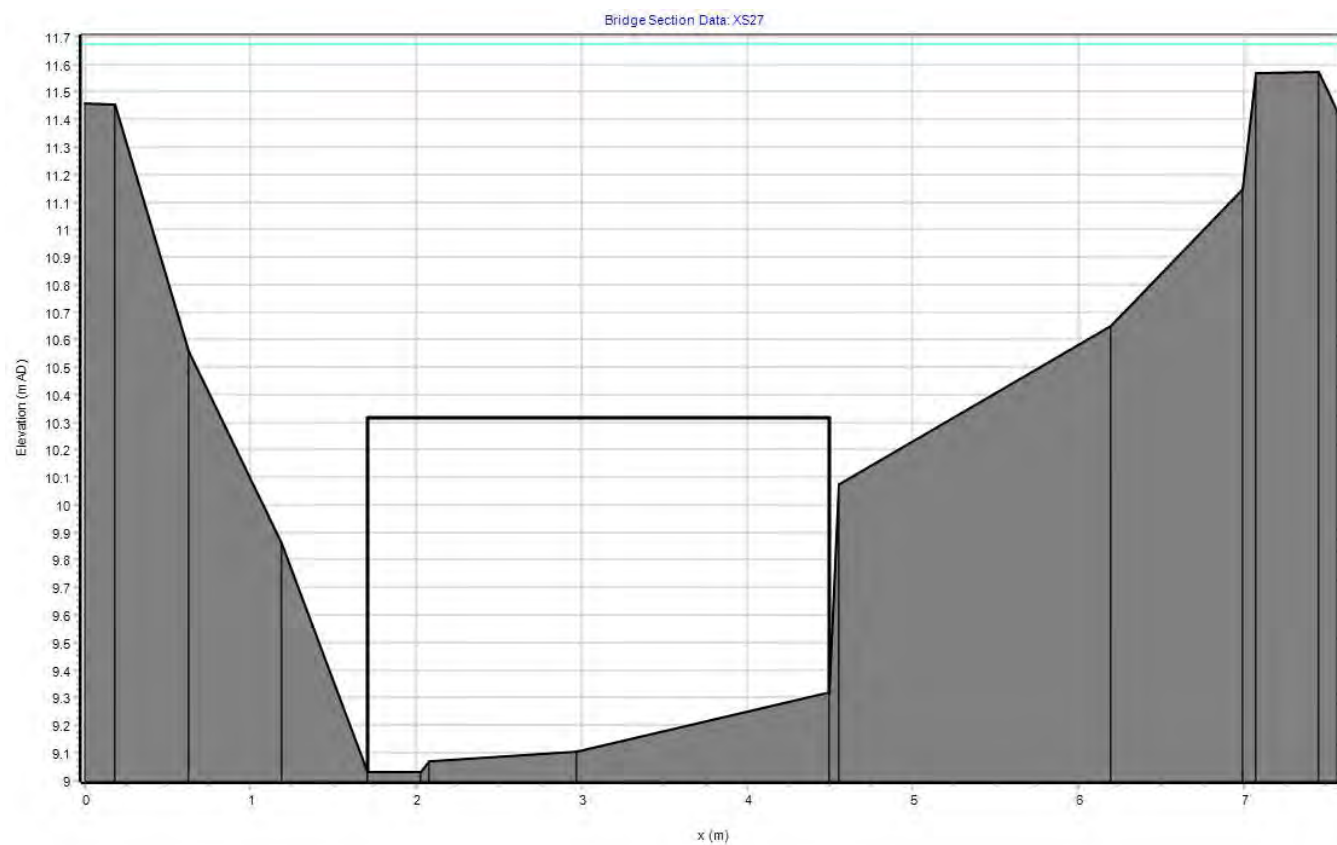


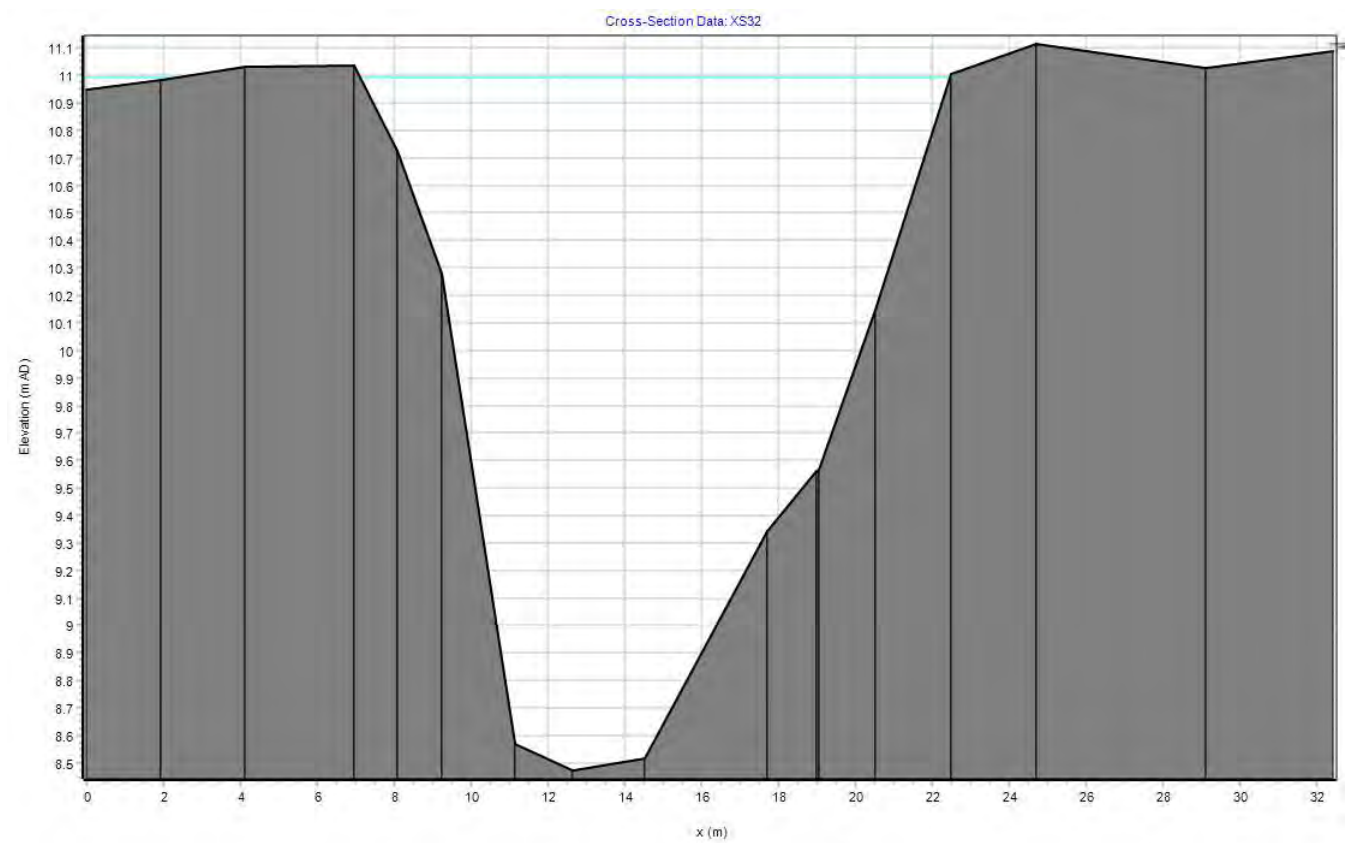
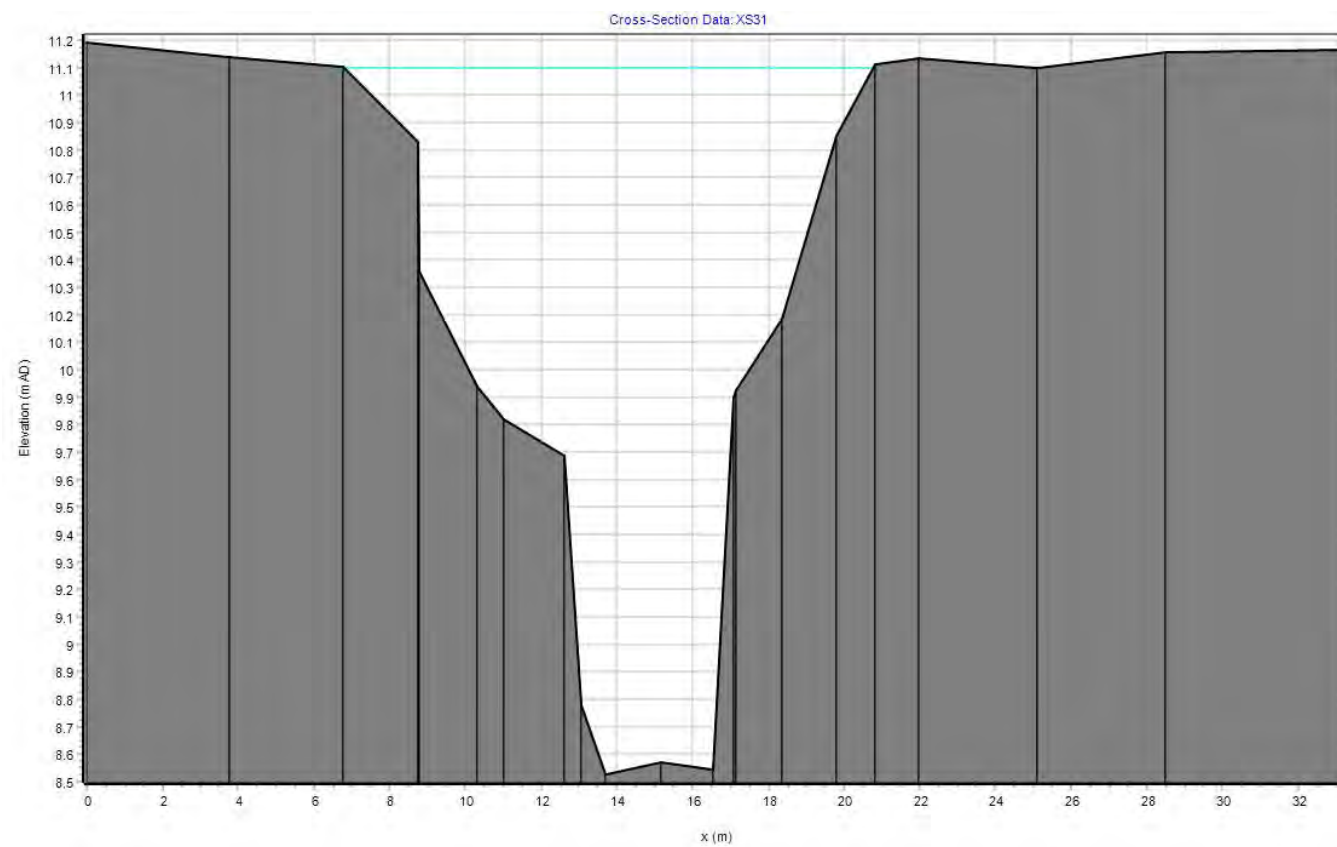
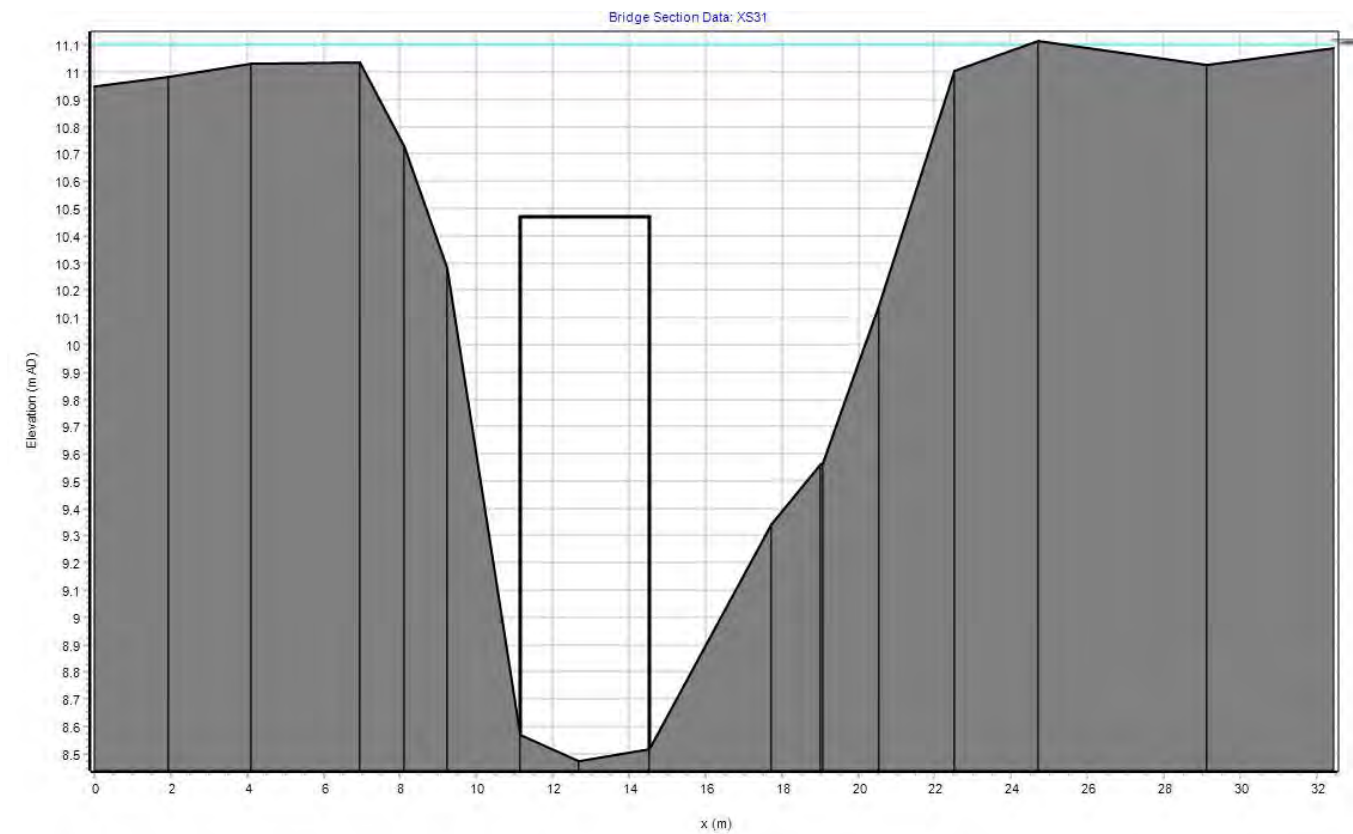
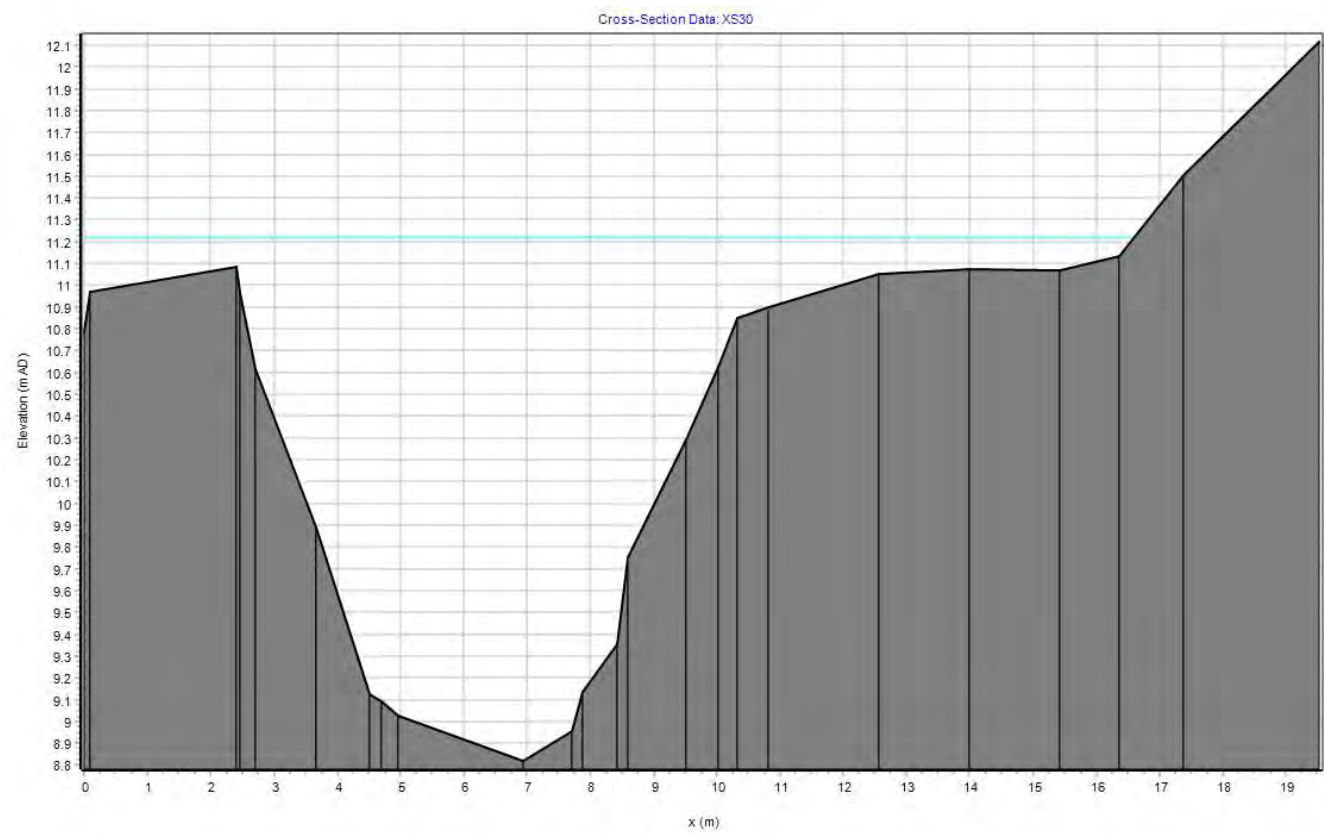


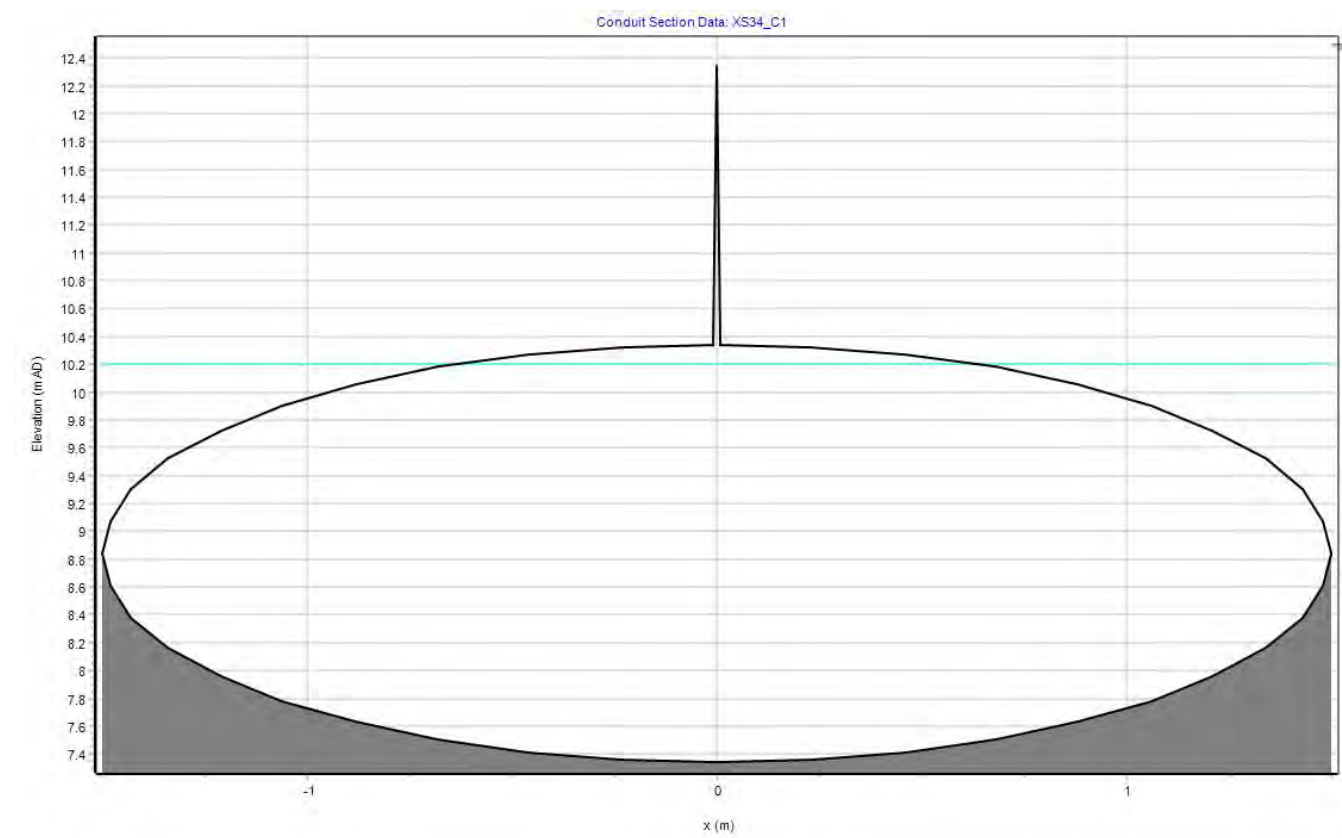
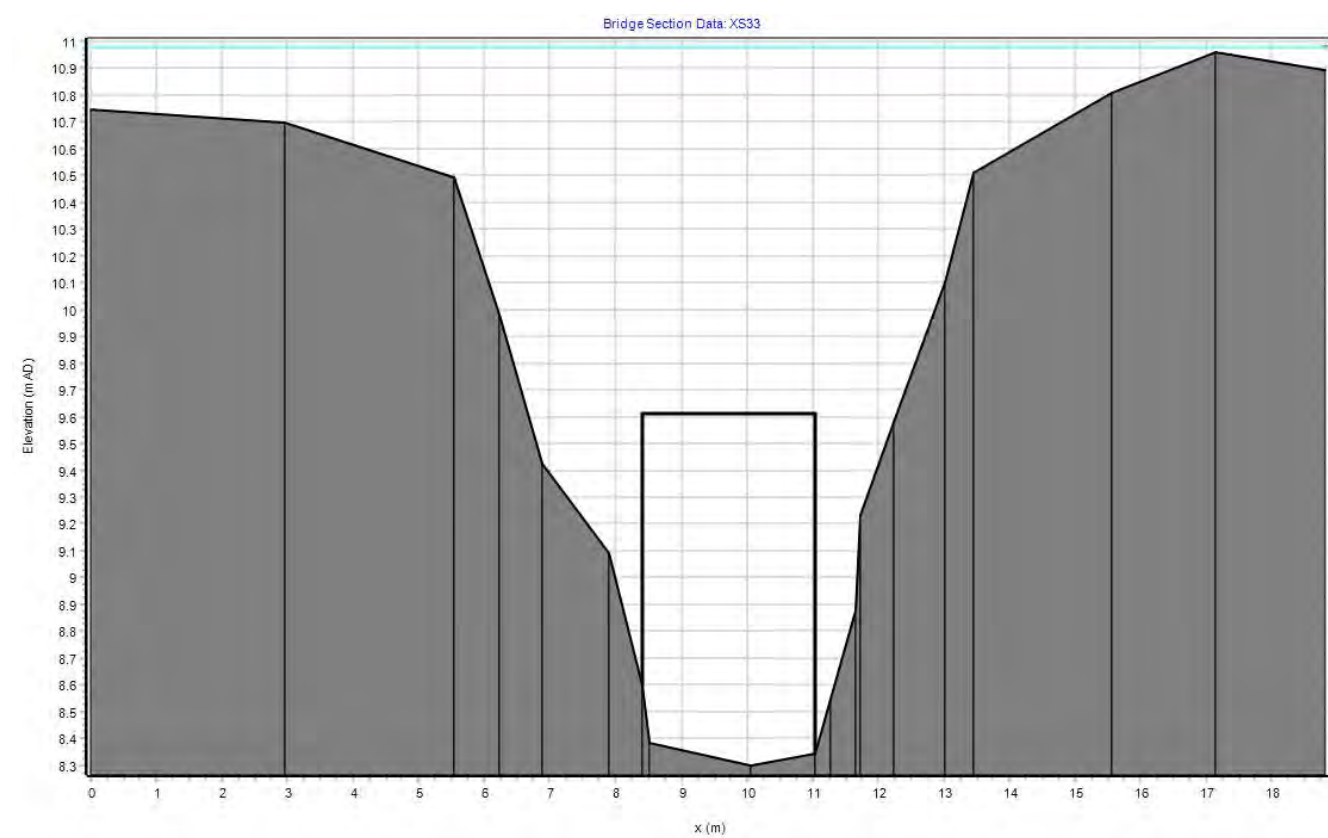
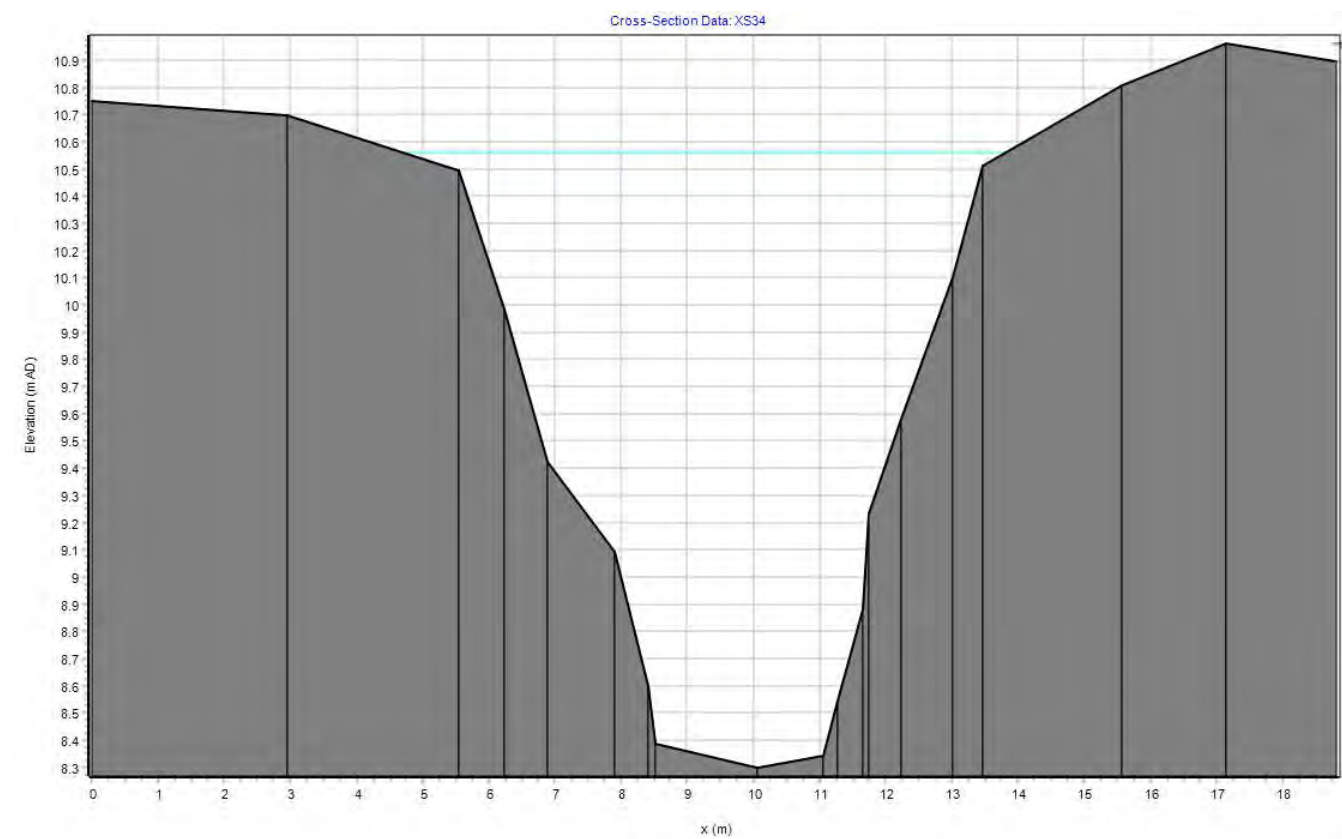
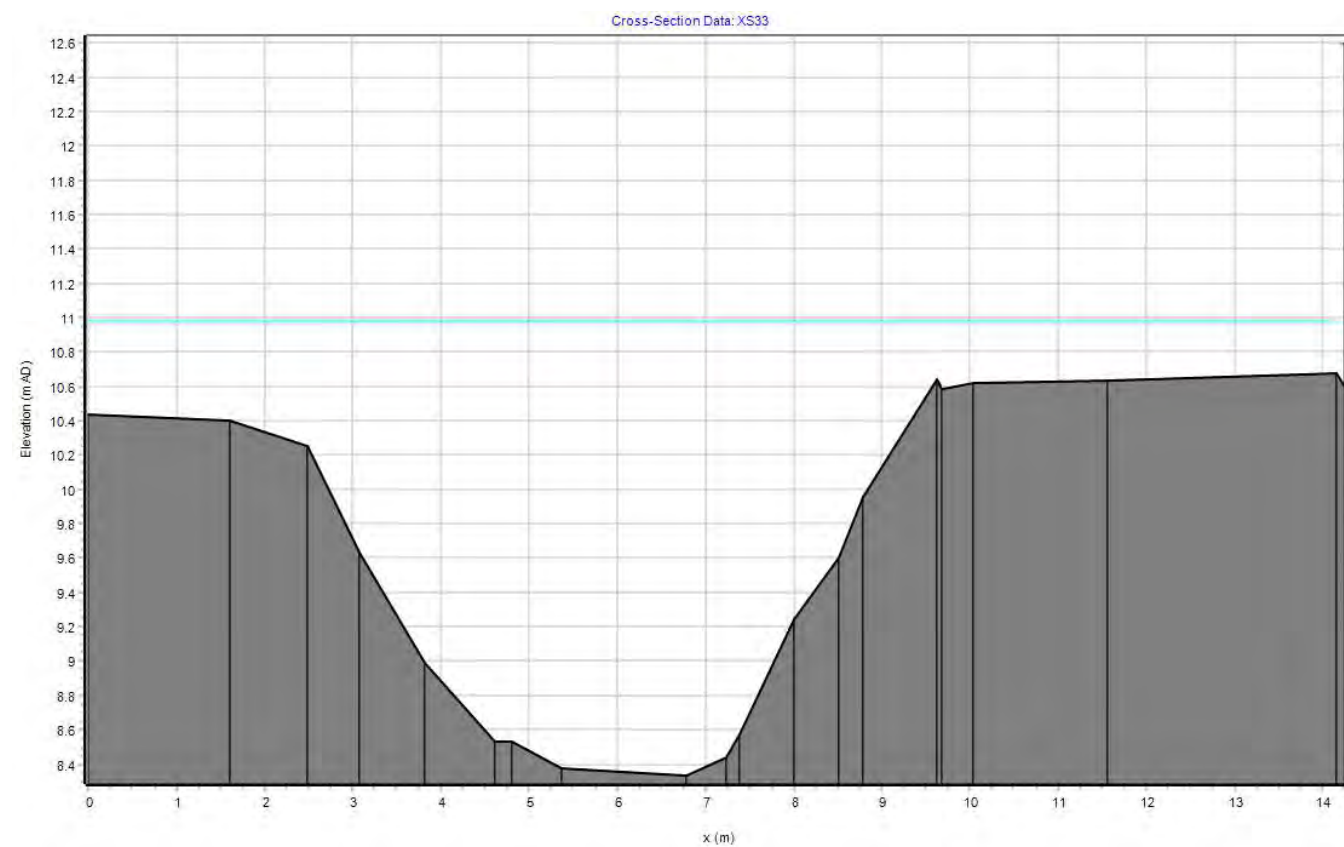


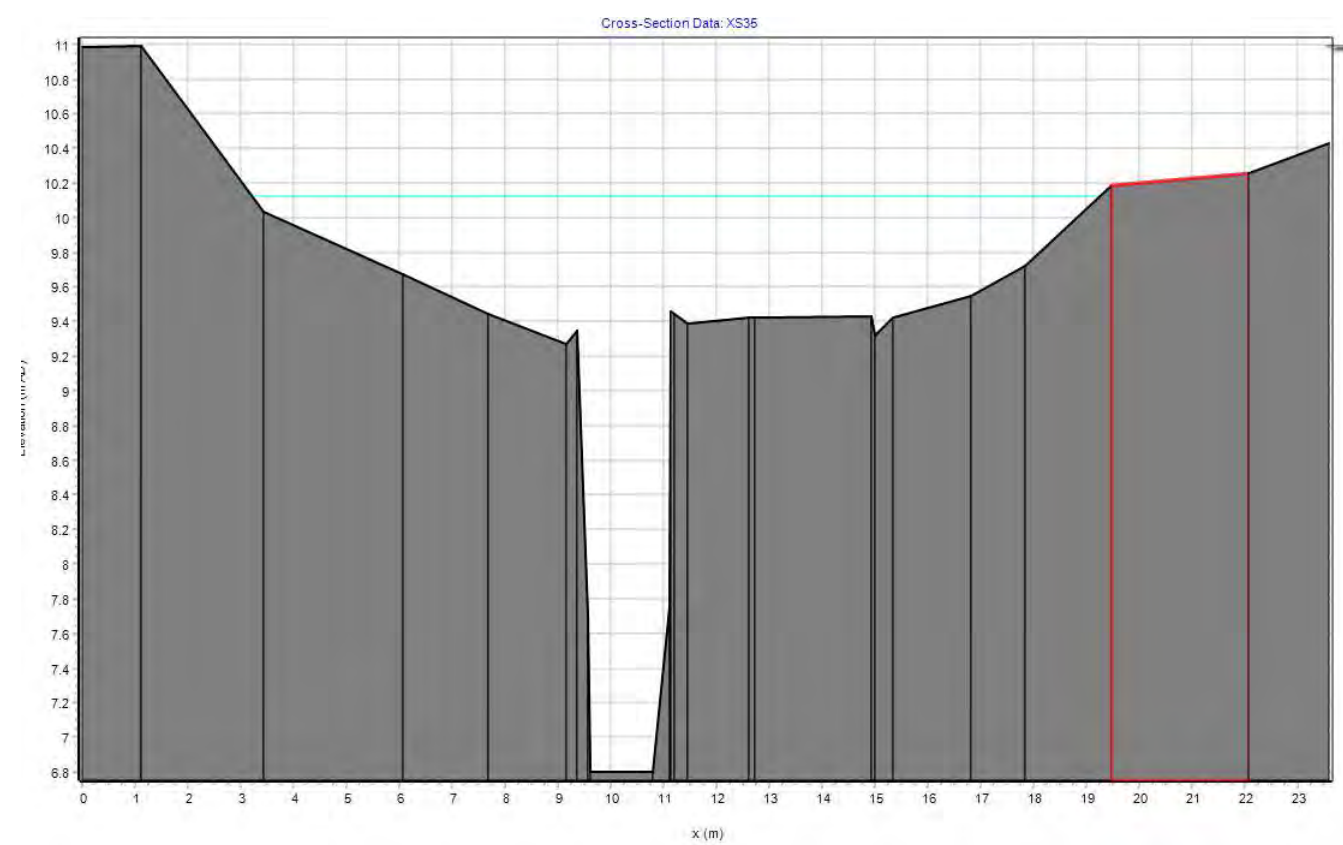
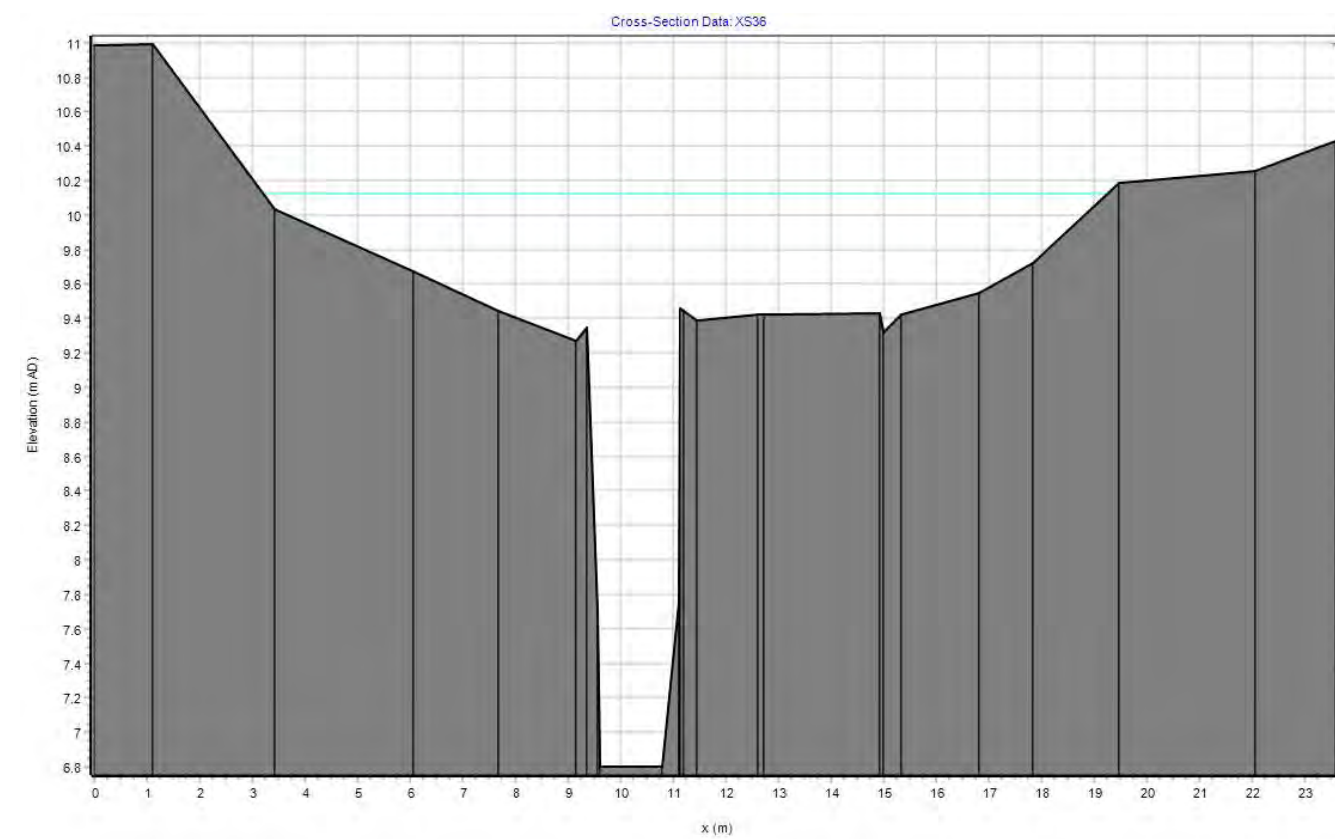
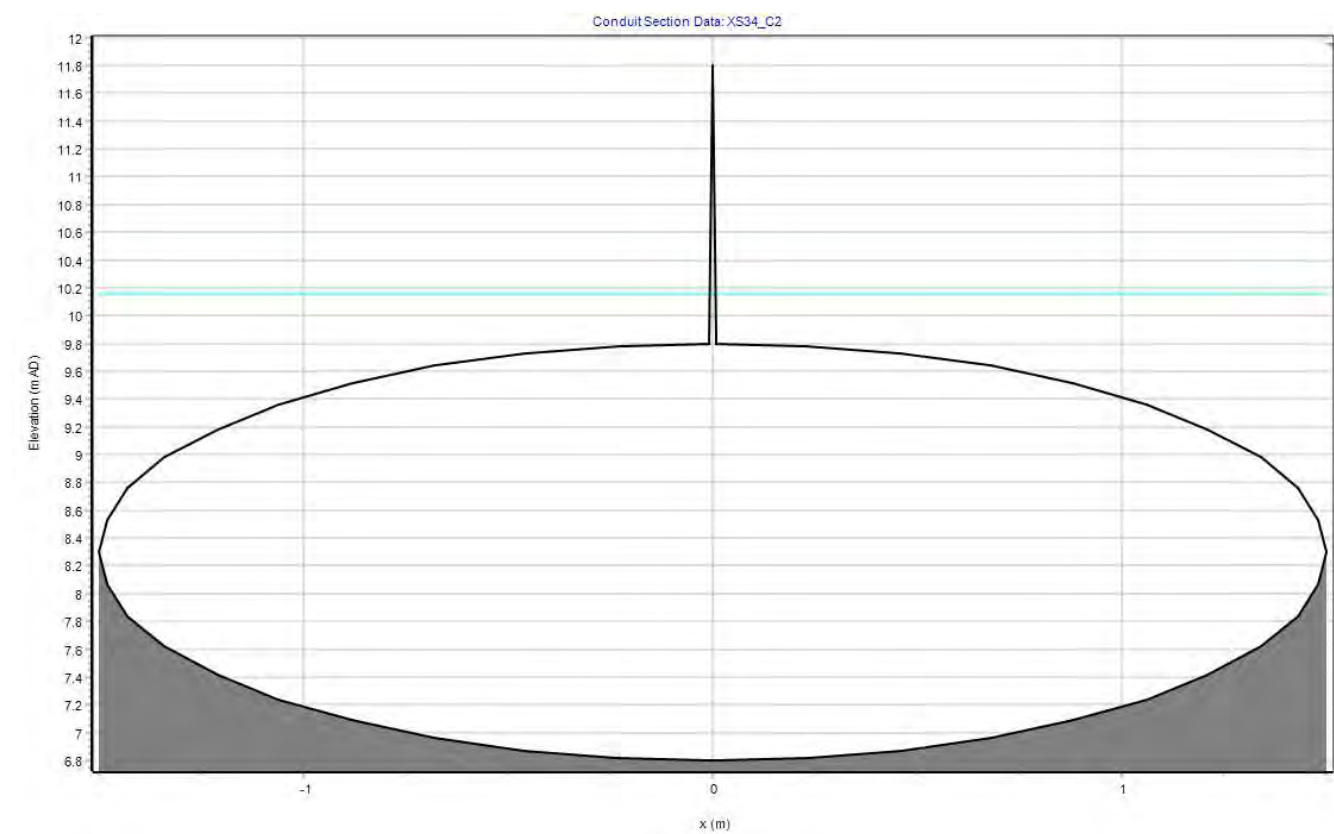




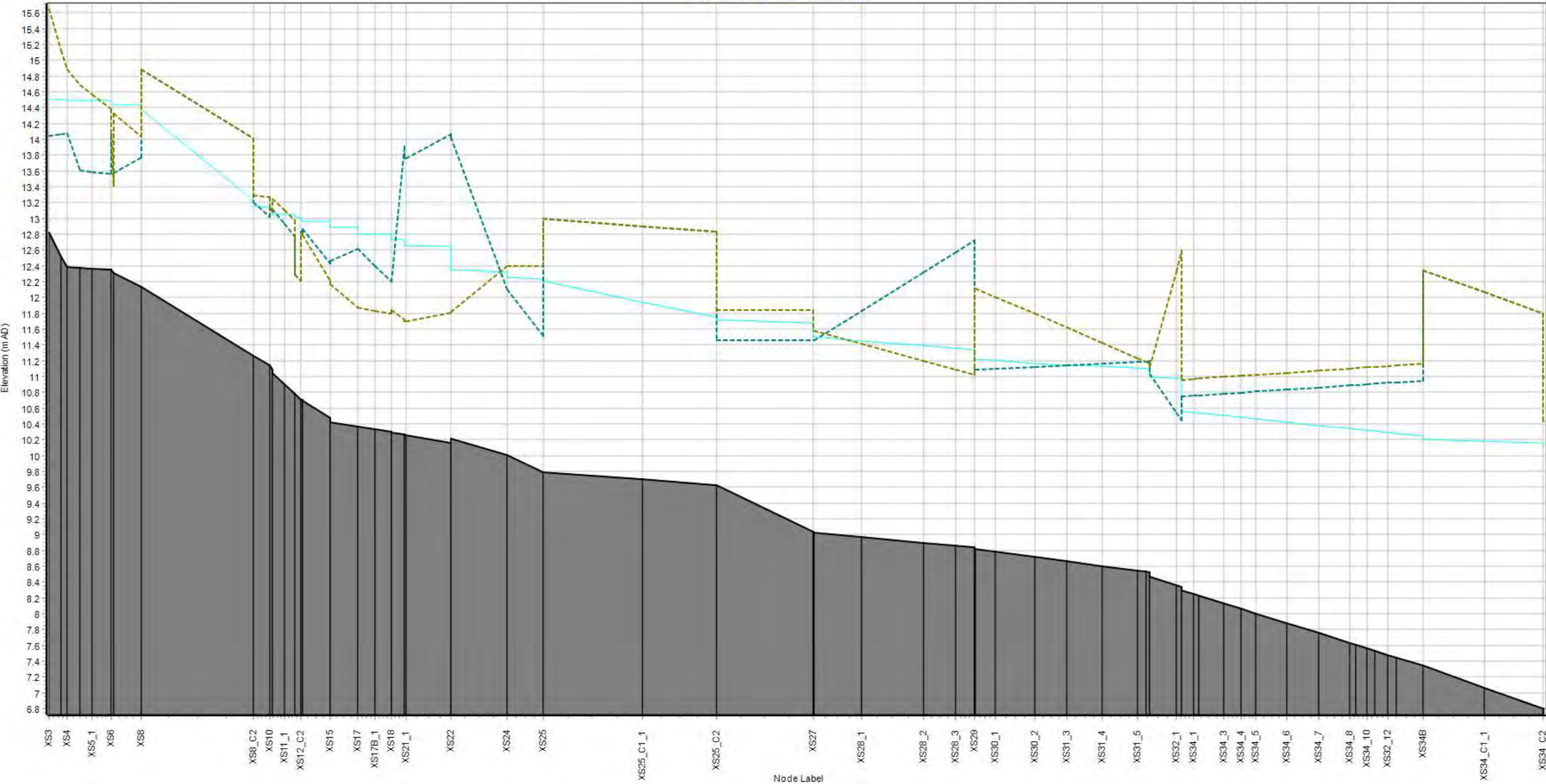






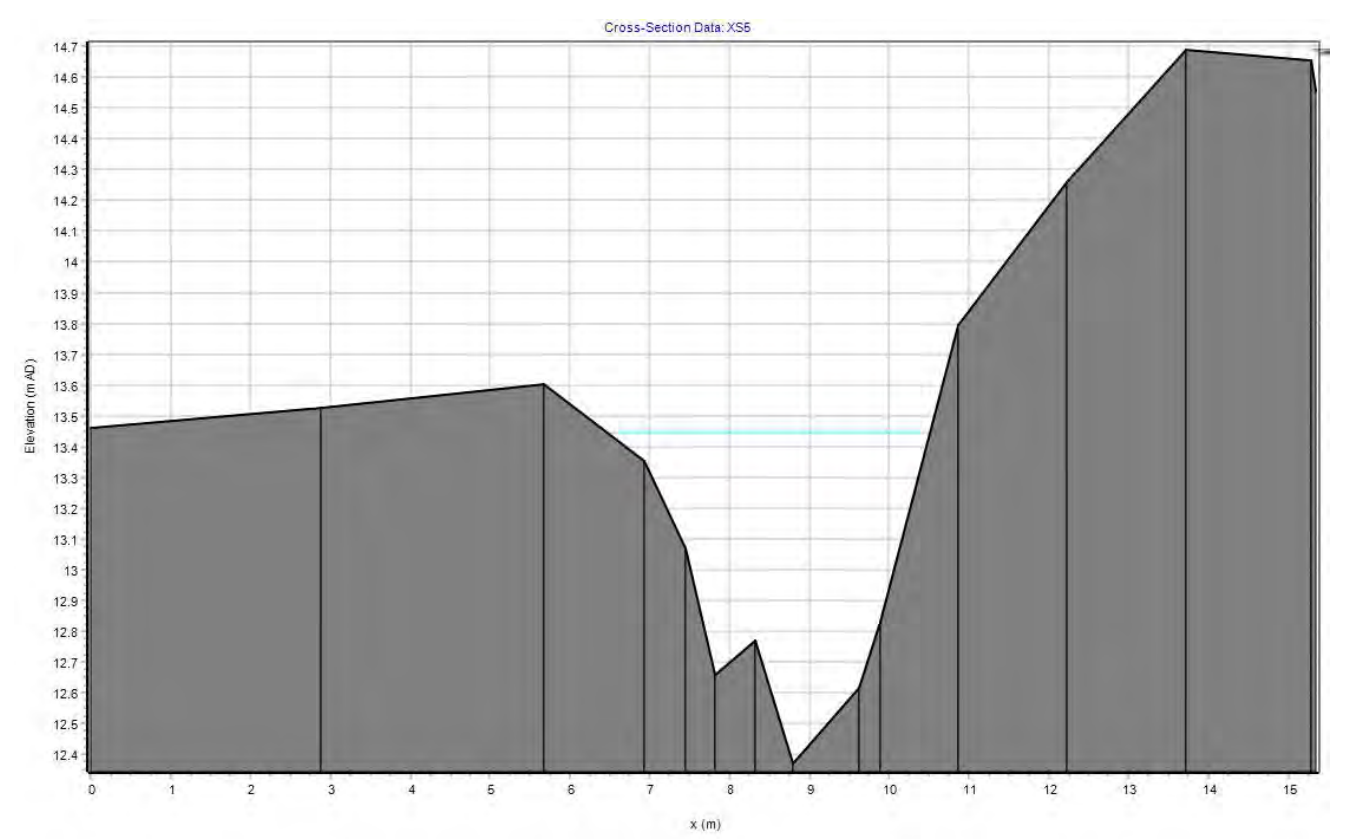
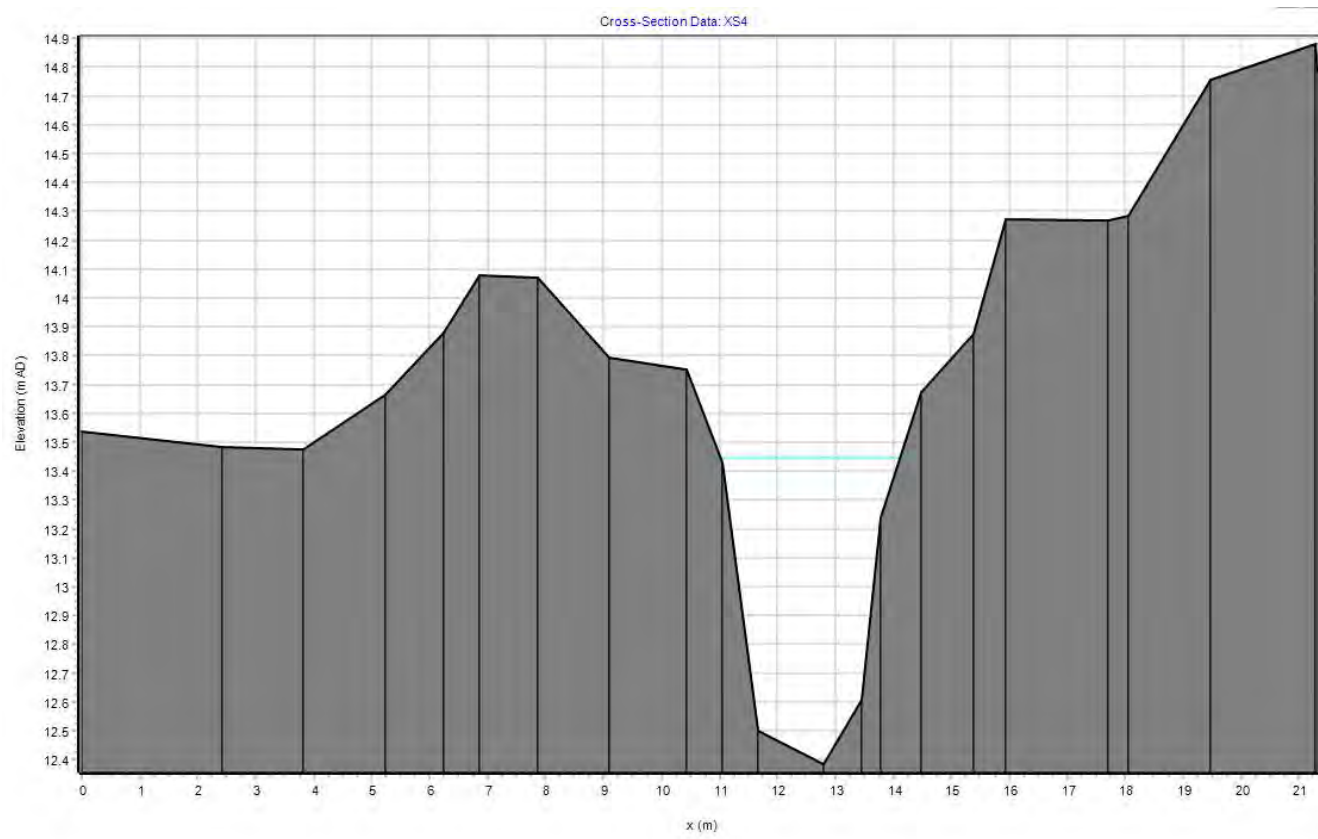
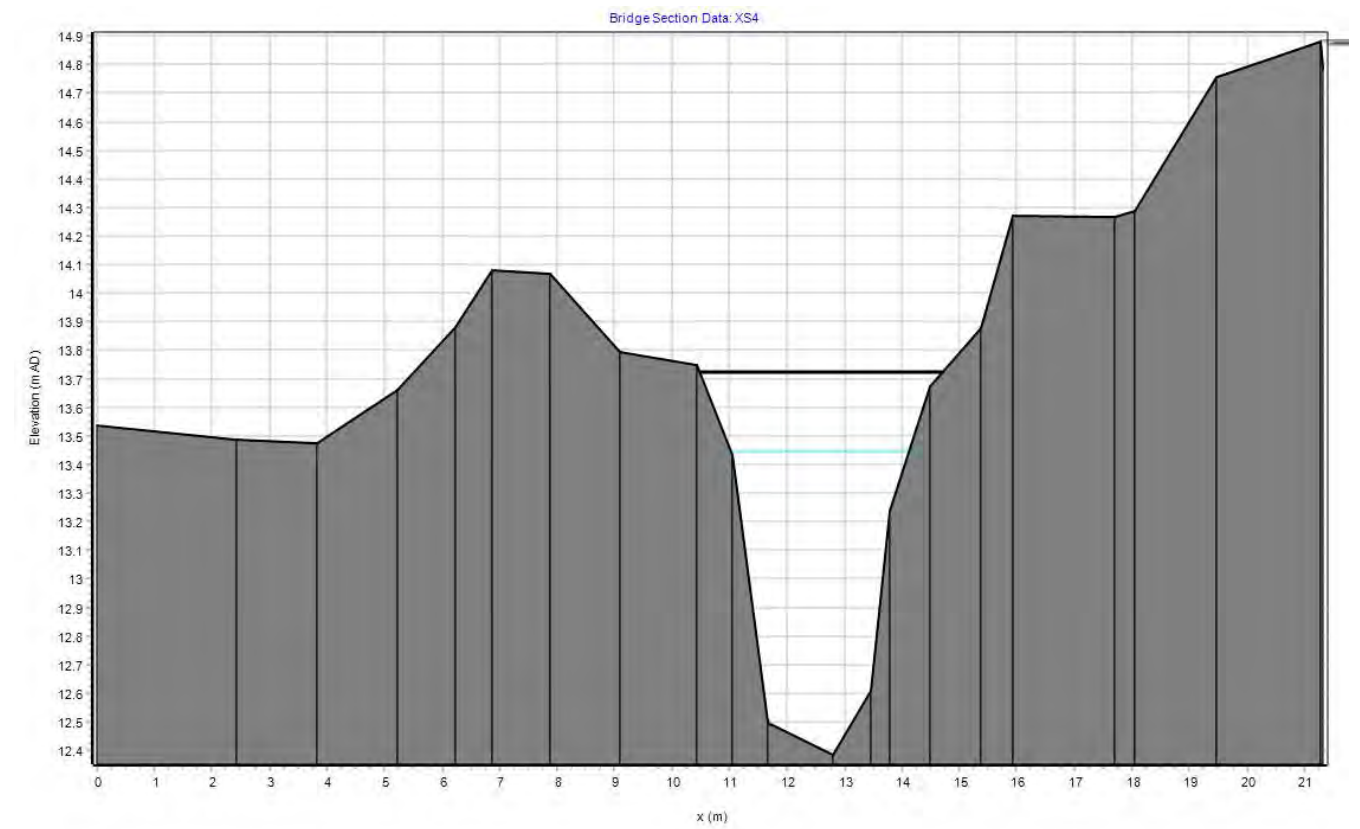
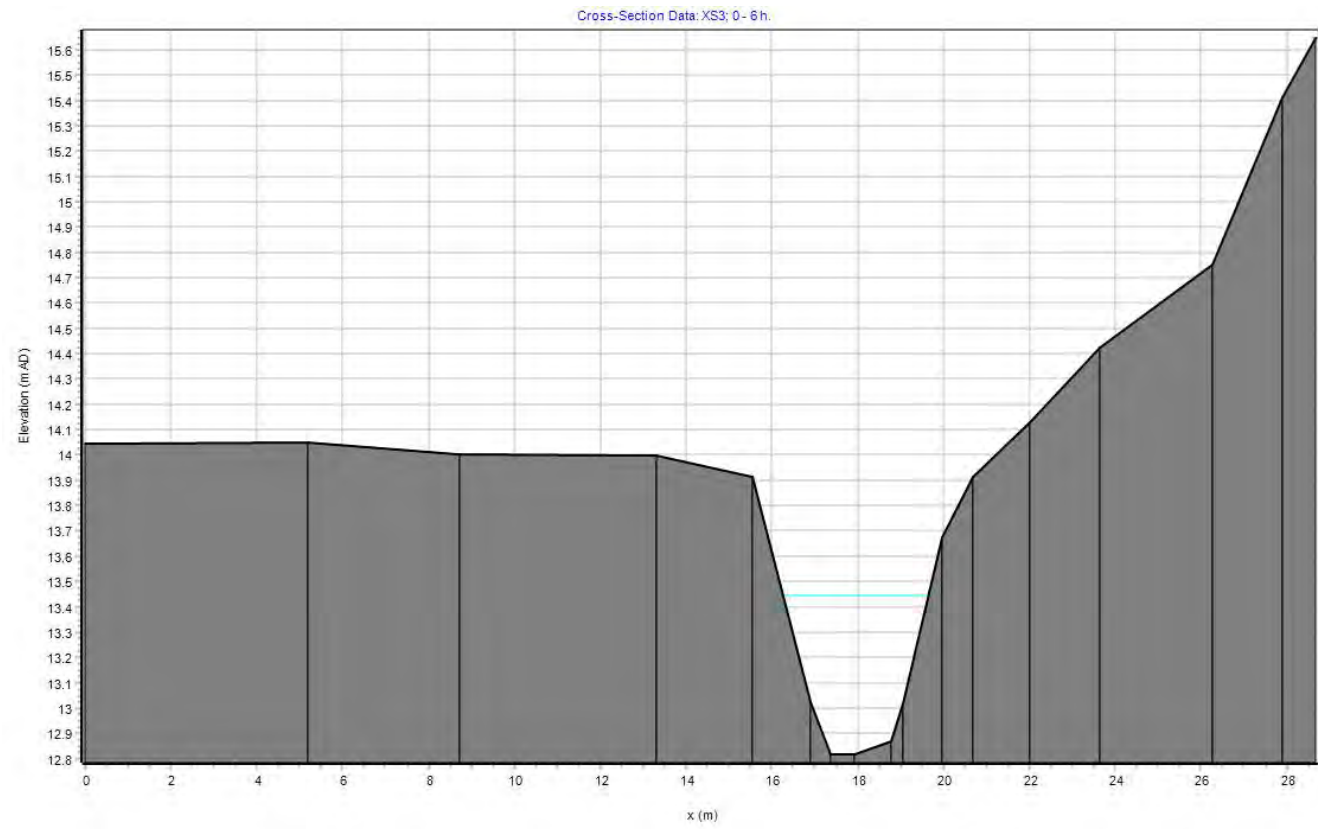


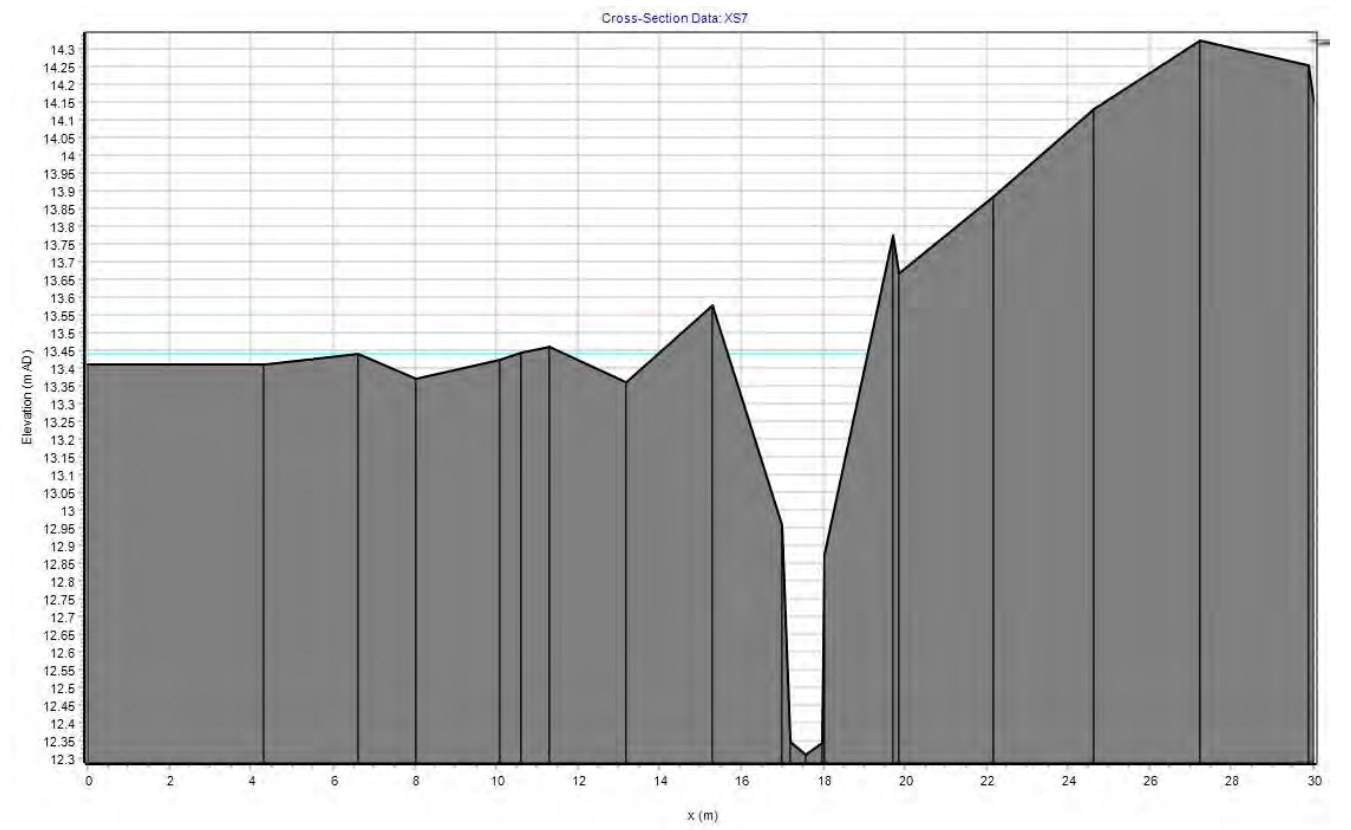
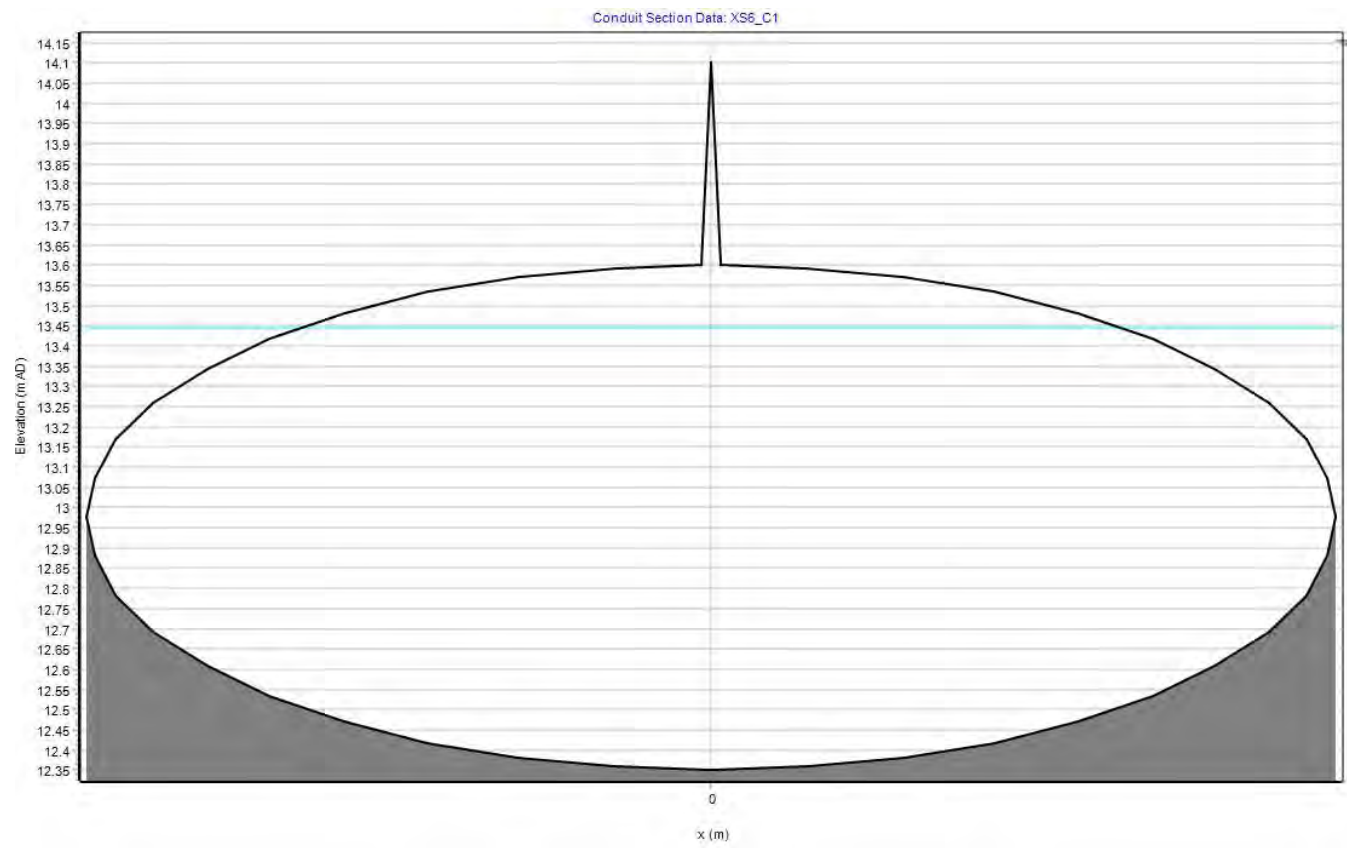
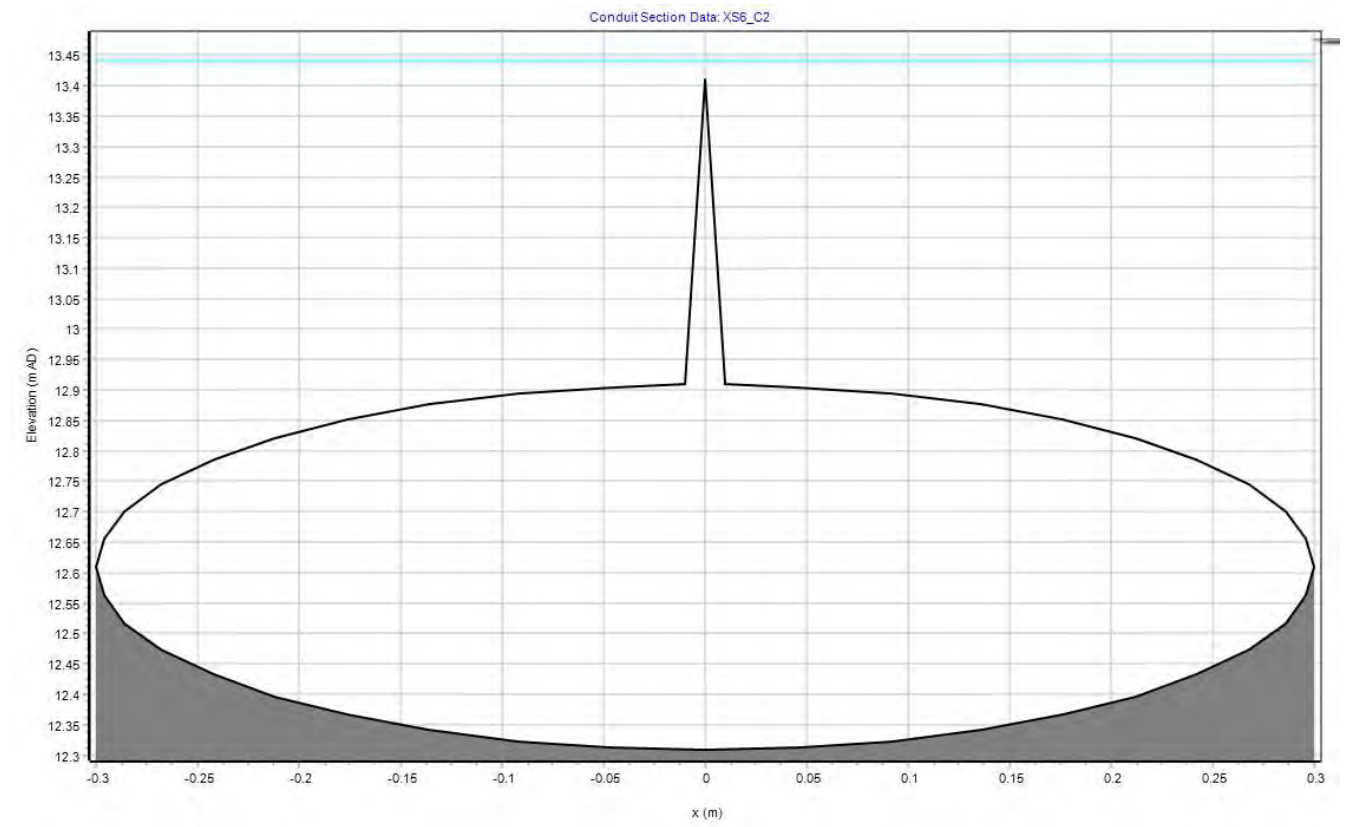
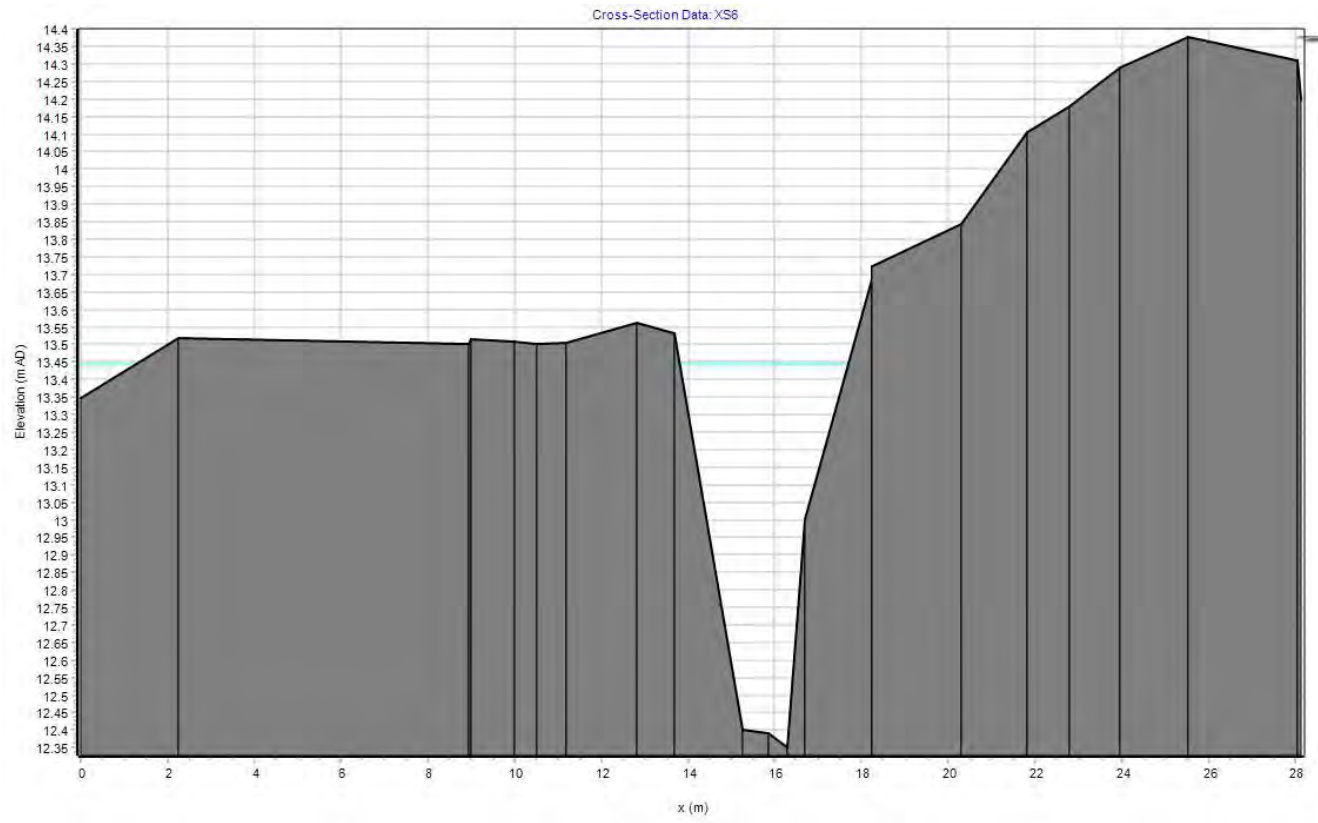
Long Section: XS3 - XS36 - Maximum Stage

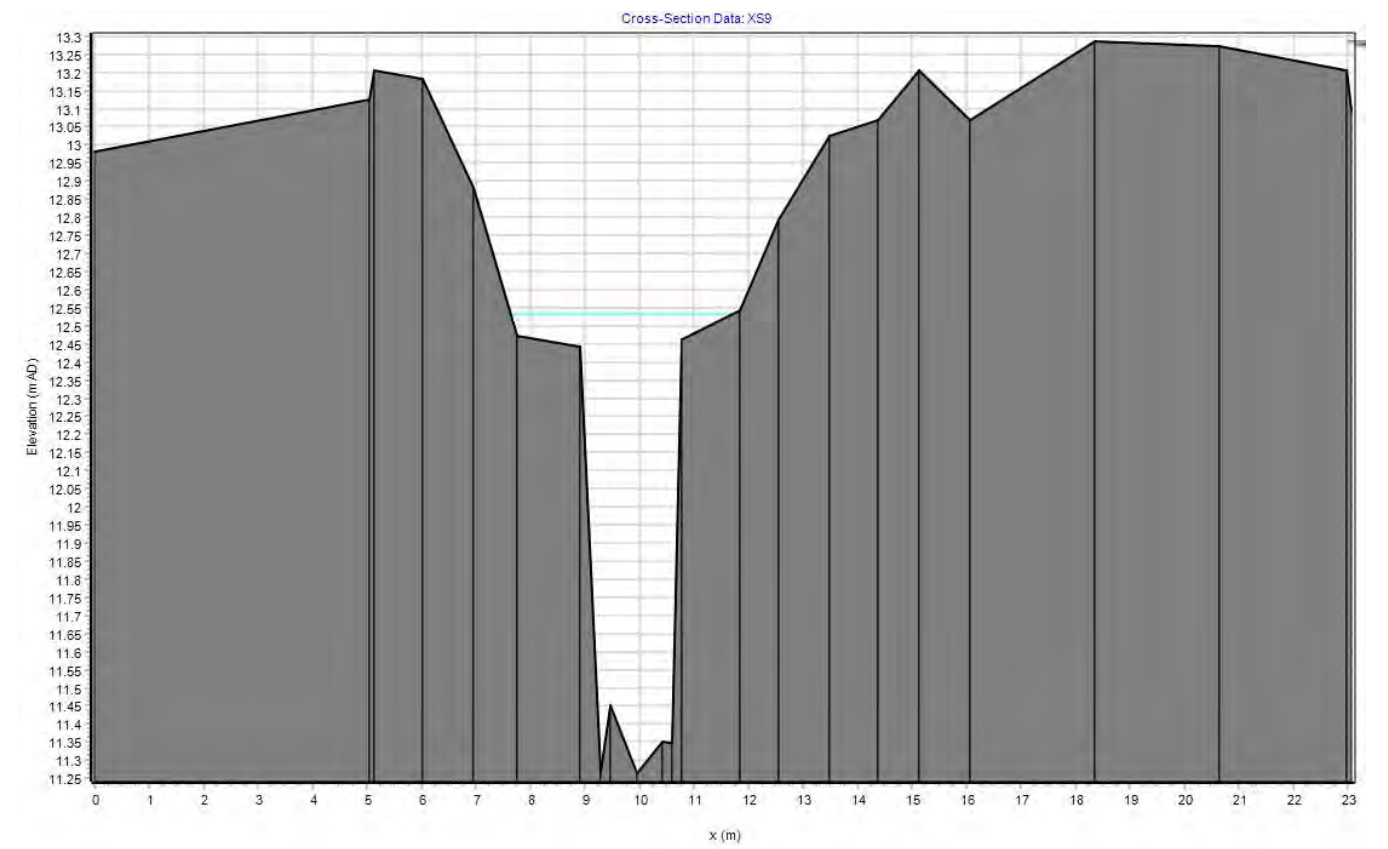
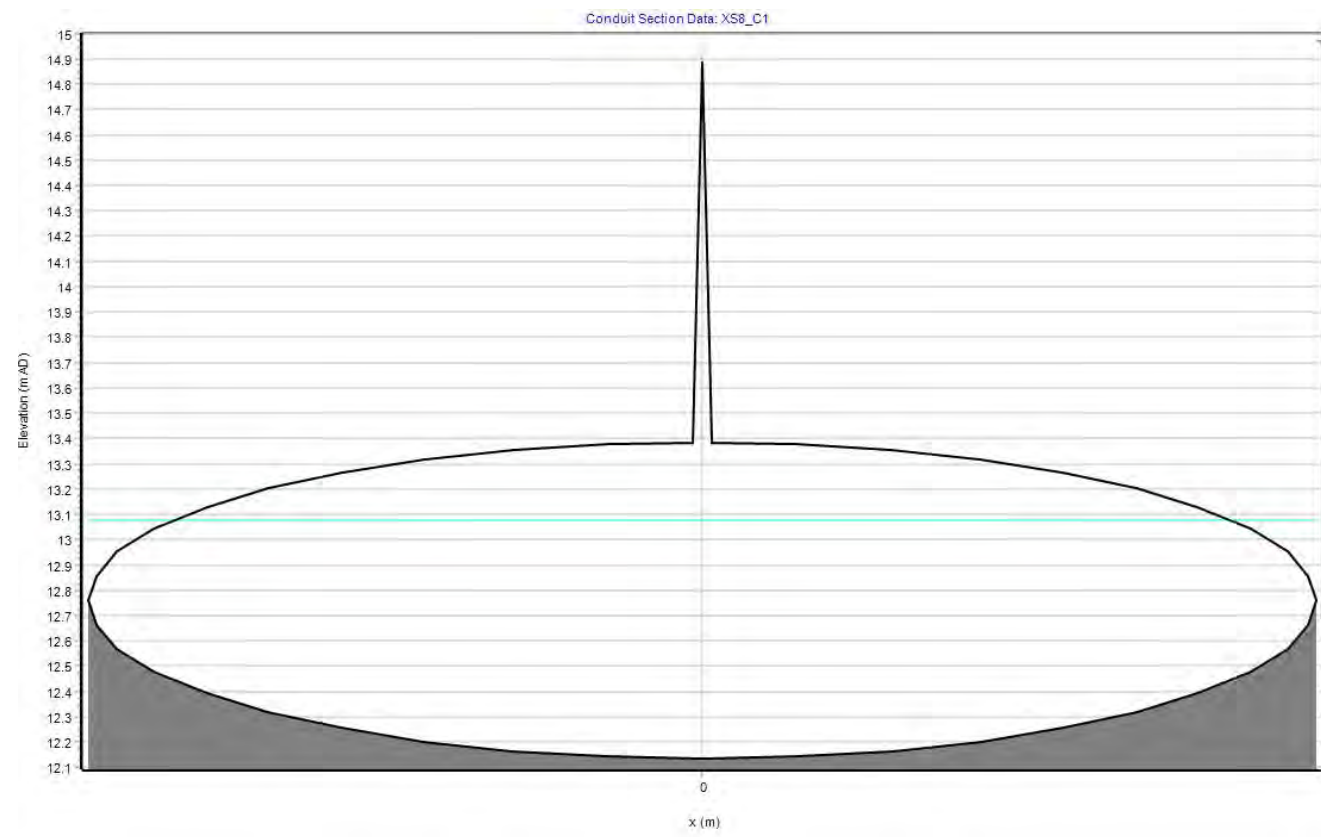
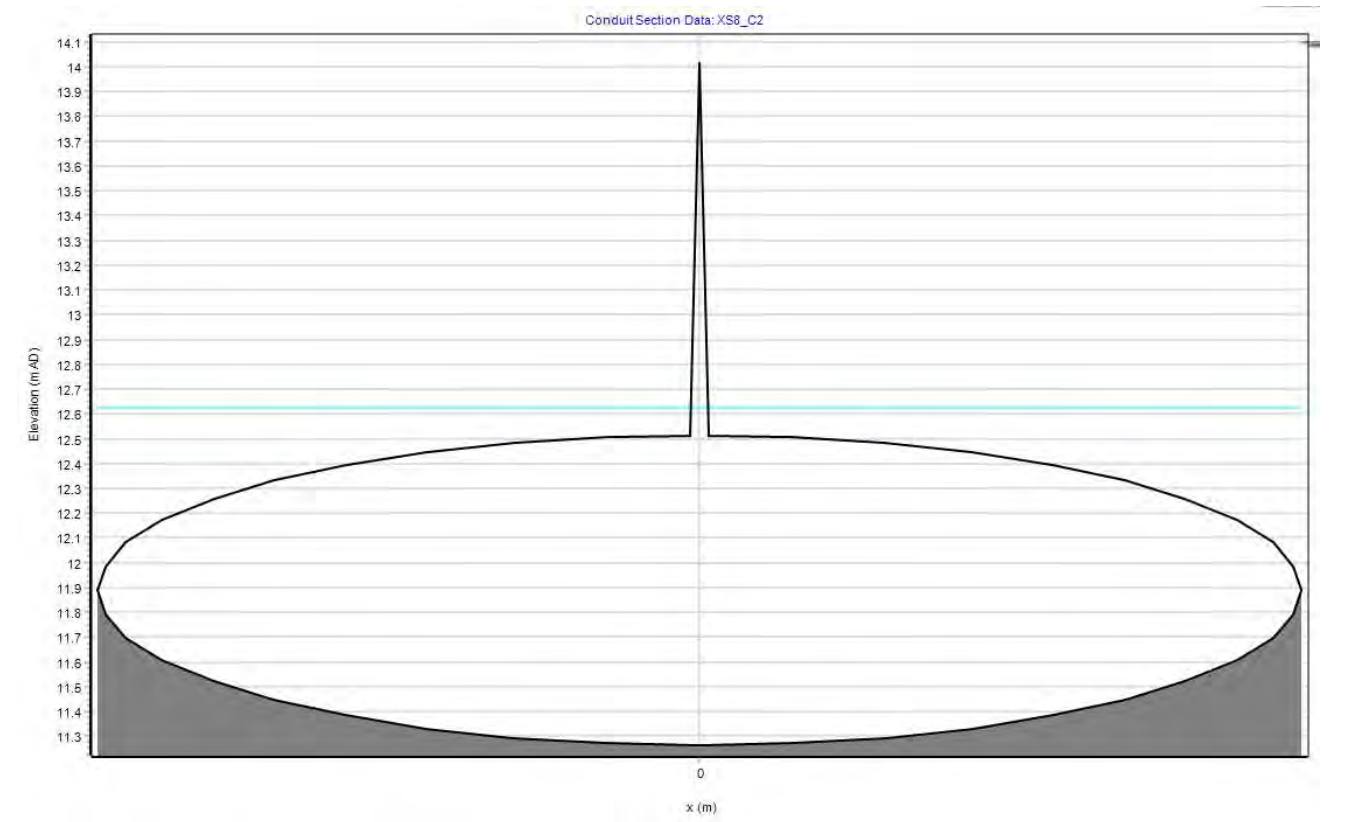
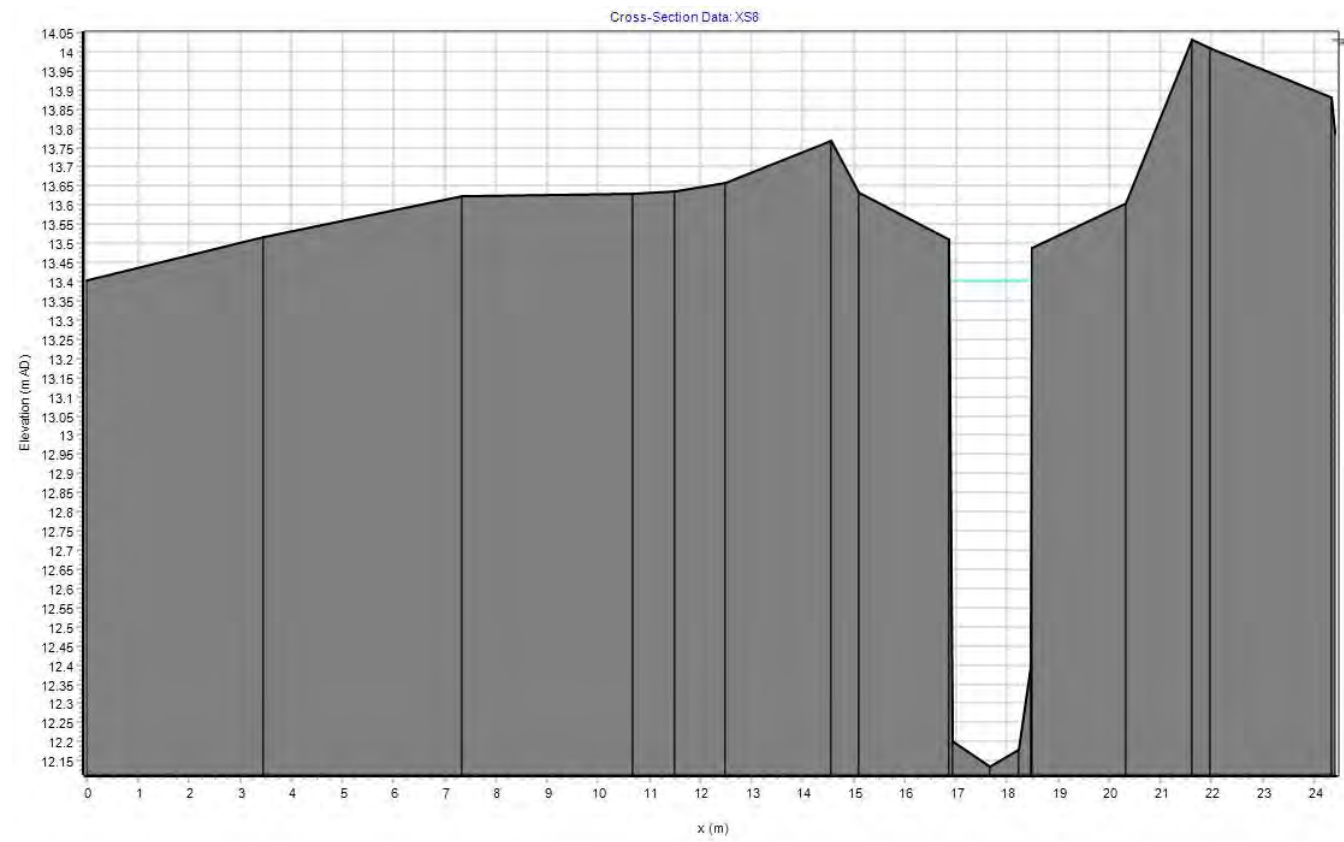


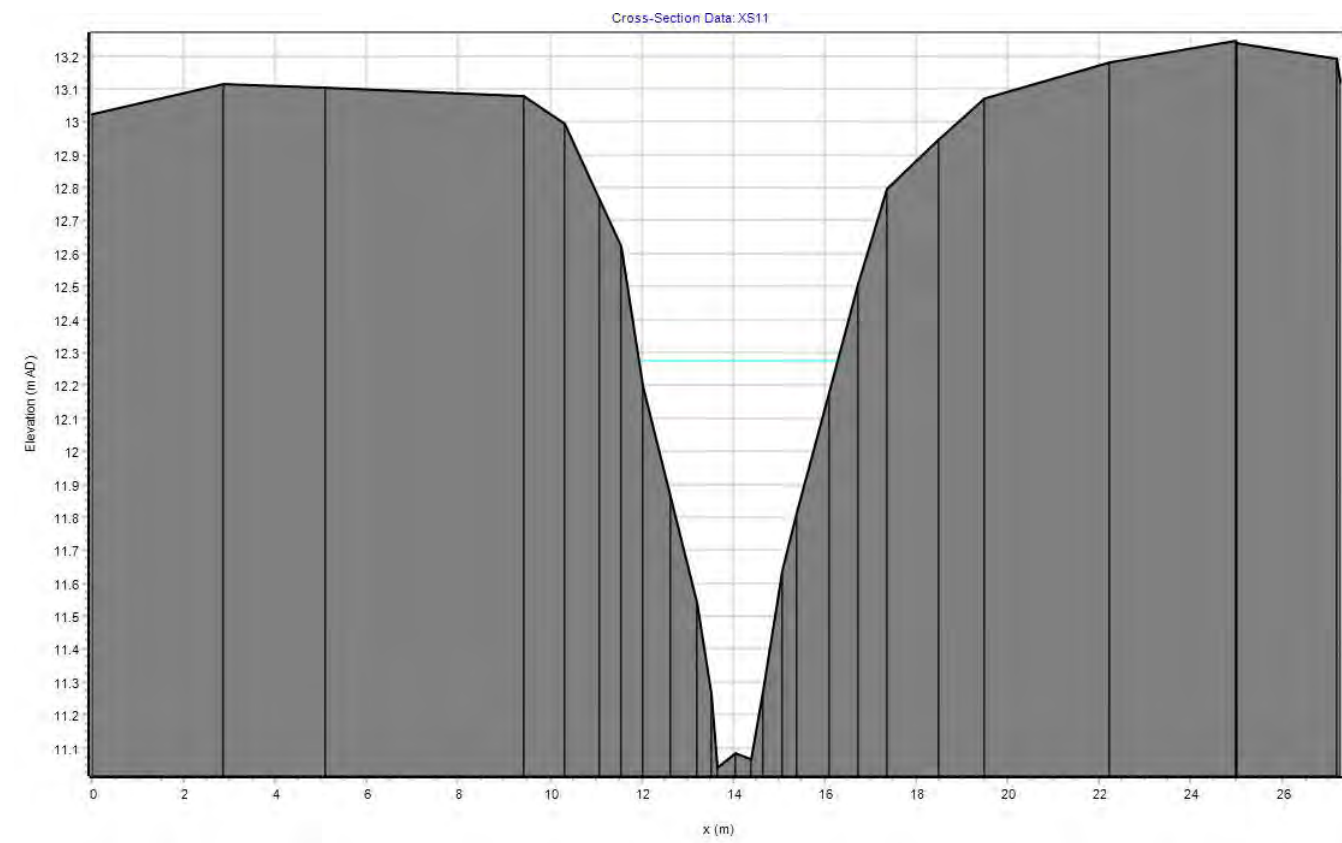
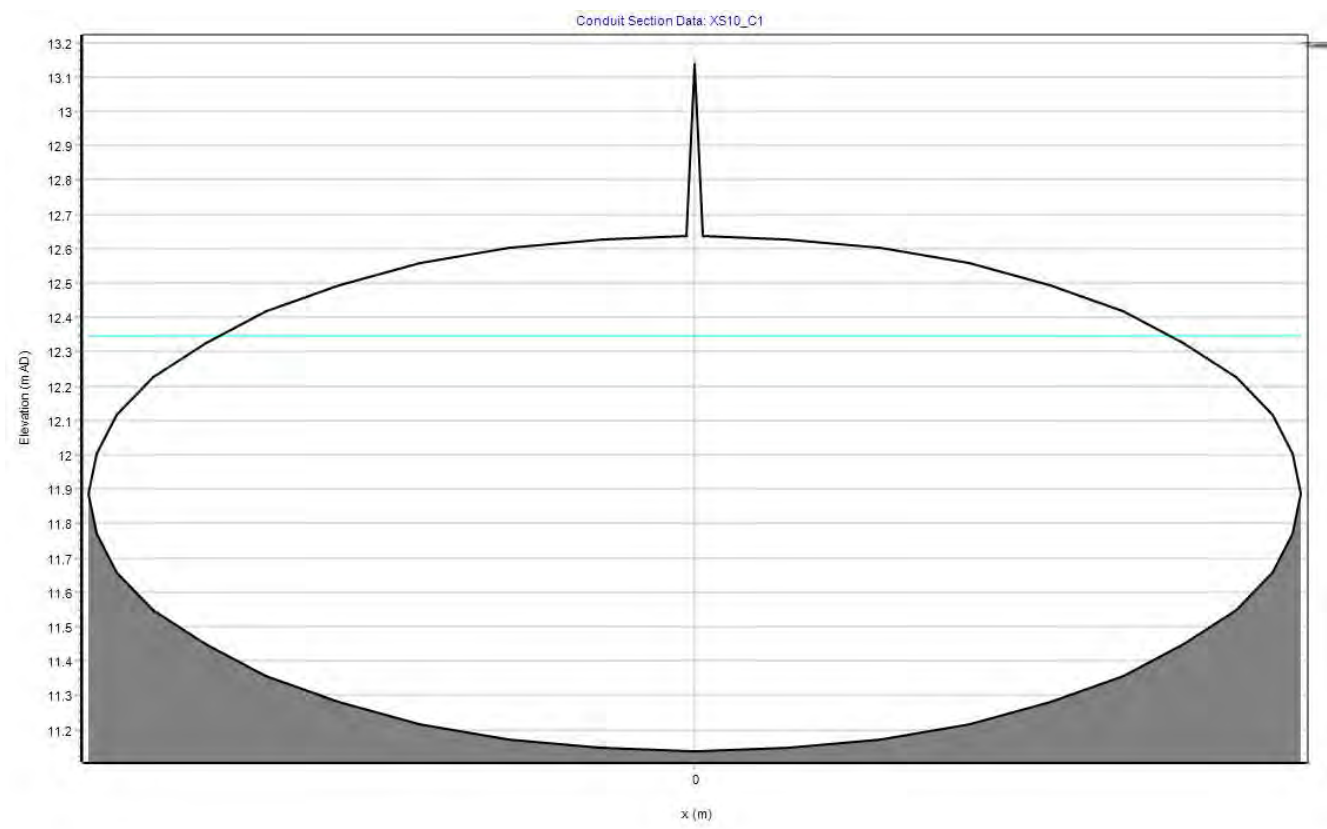
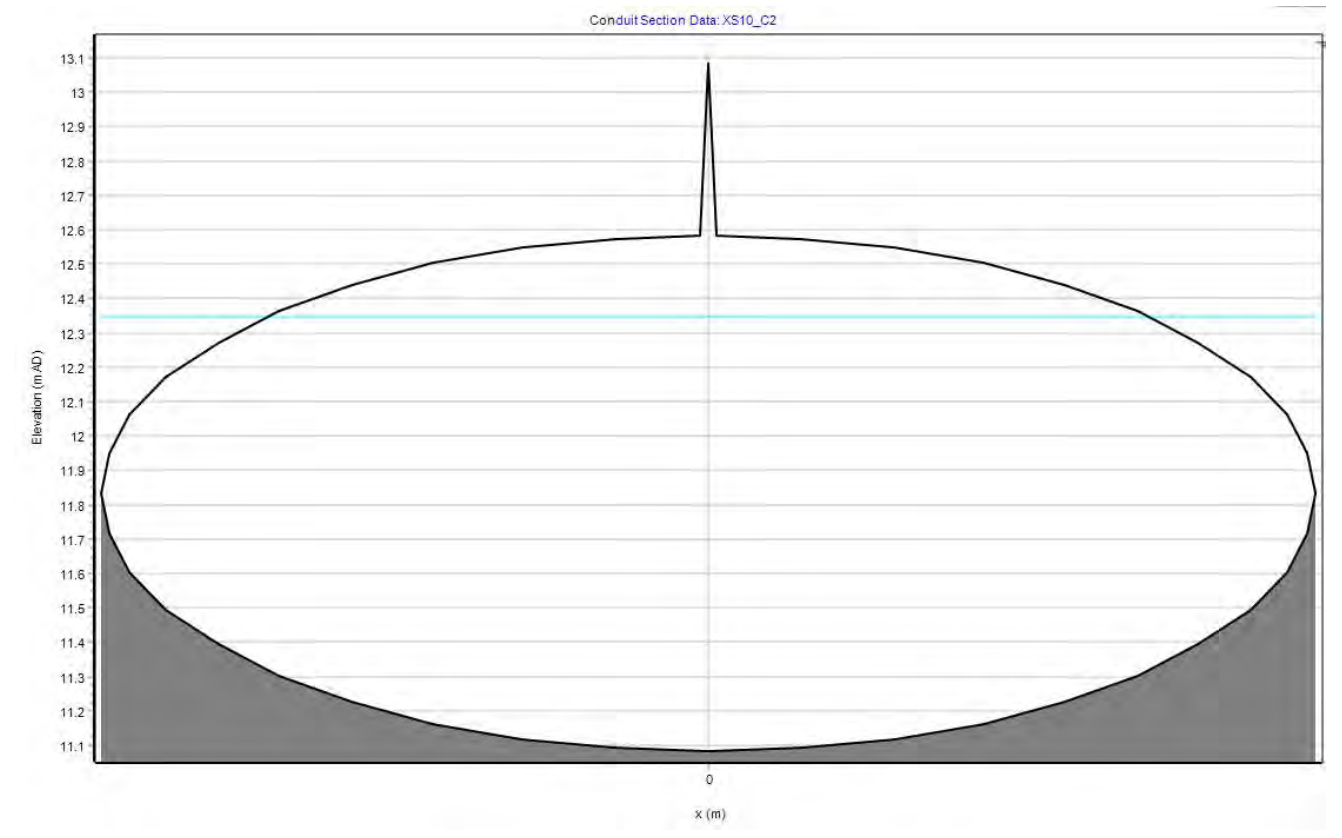
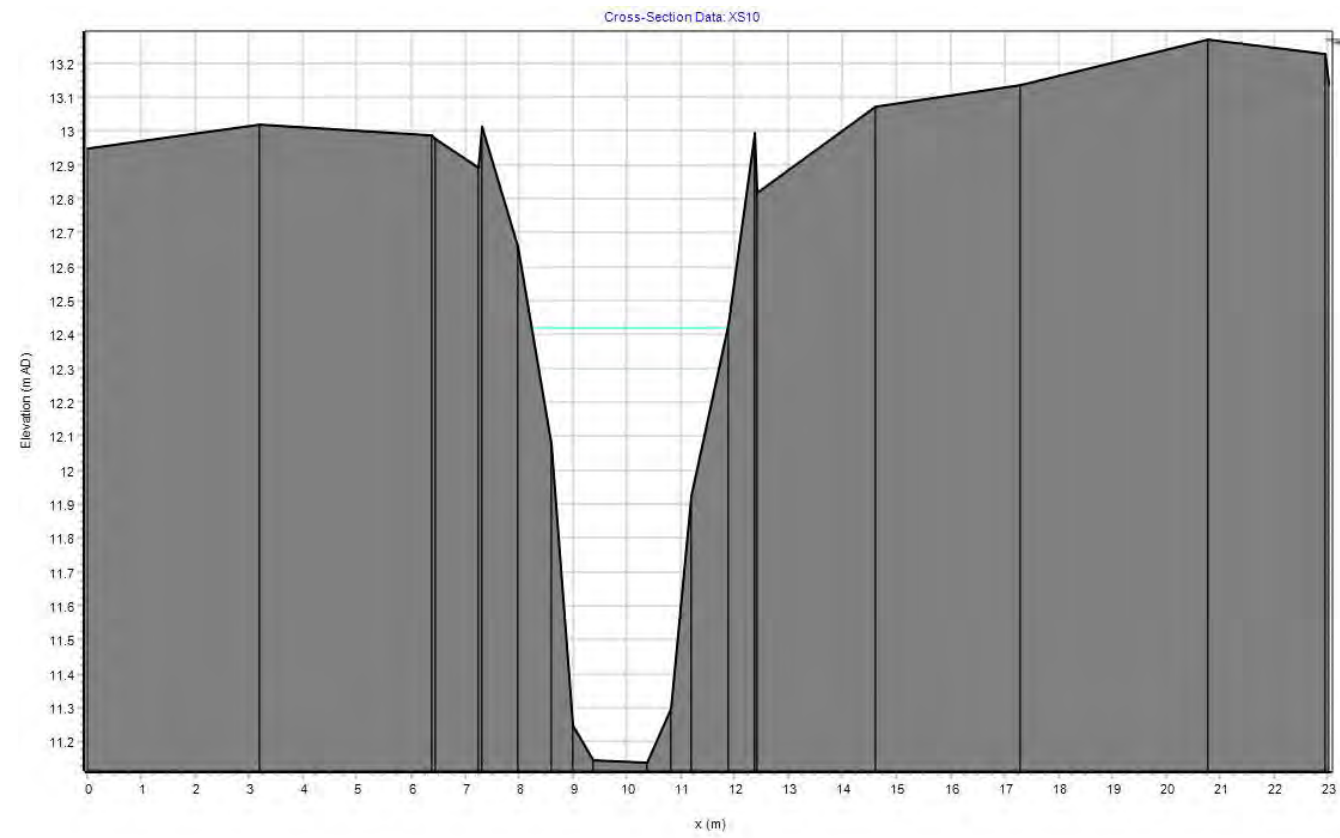
Appendix L – Tyock Burn, Post development scenario.1 in 30 year event + 30% Climate Change Results

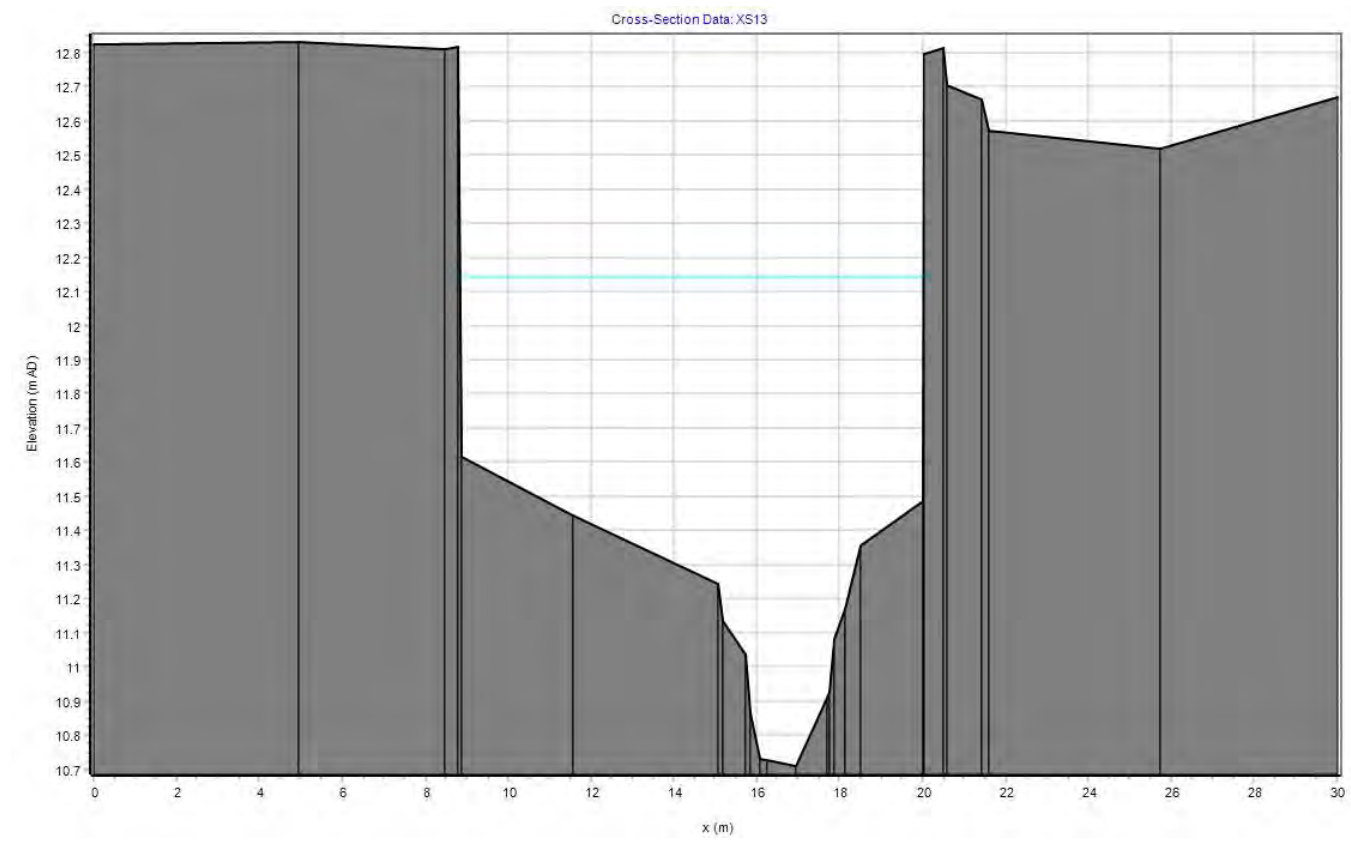
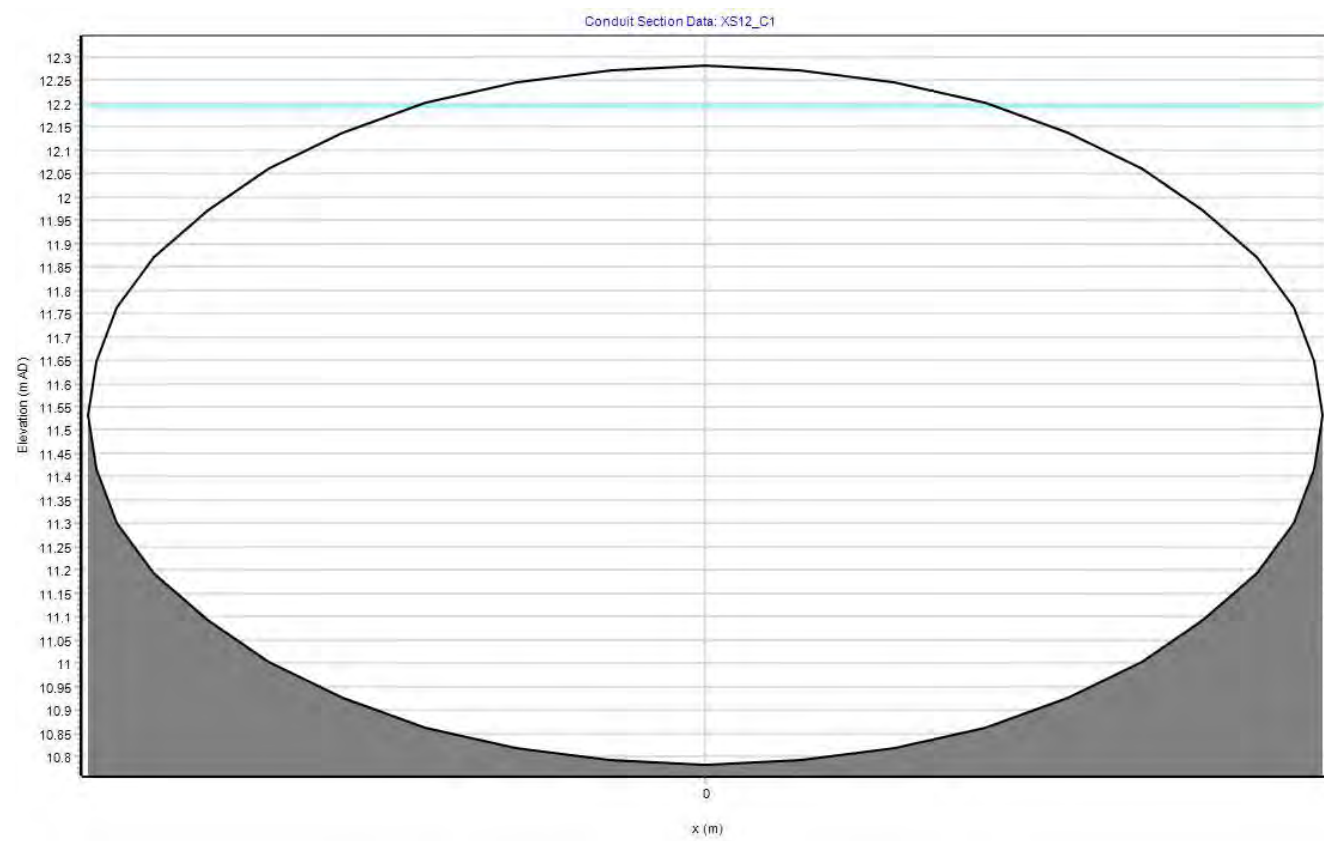
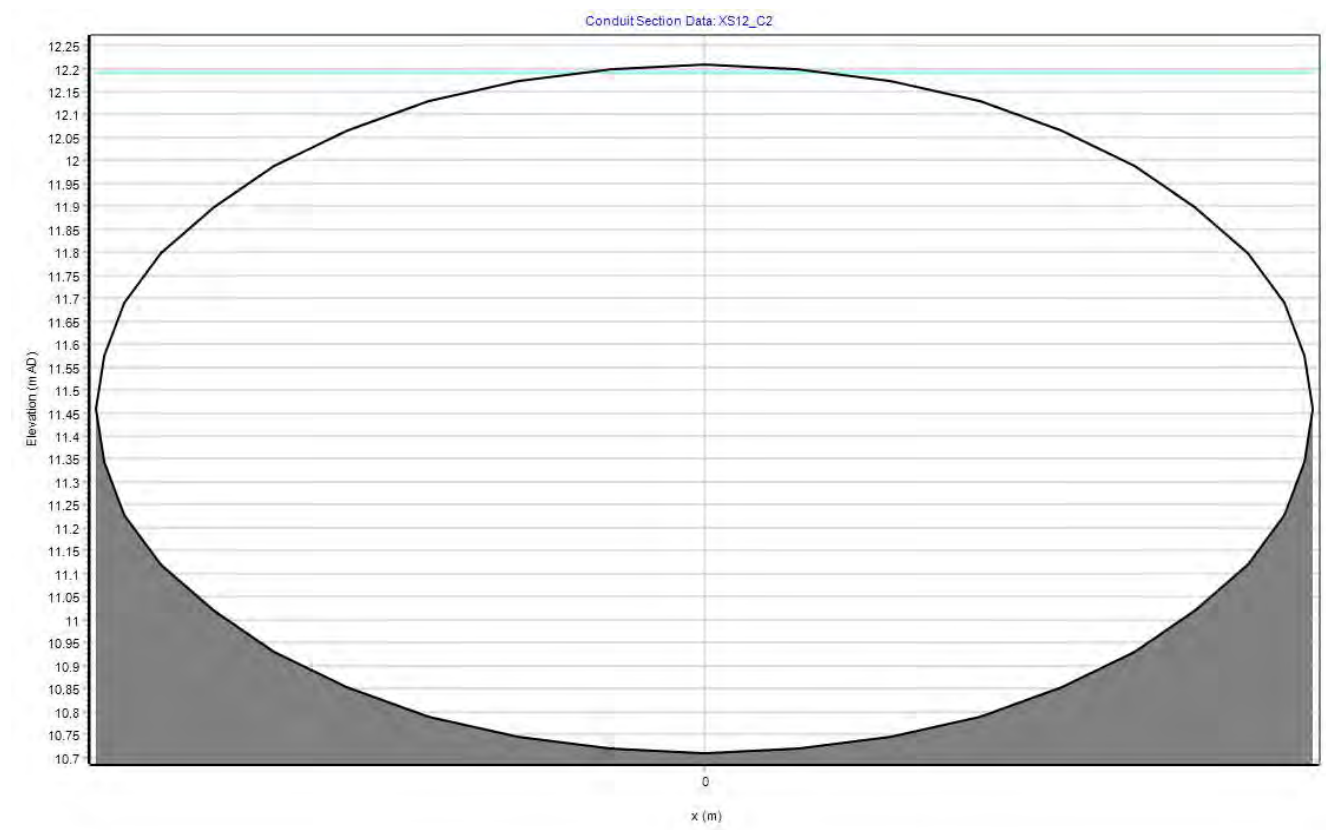
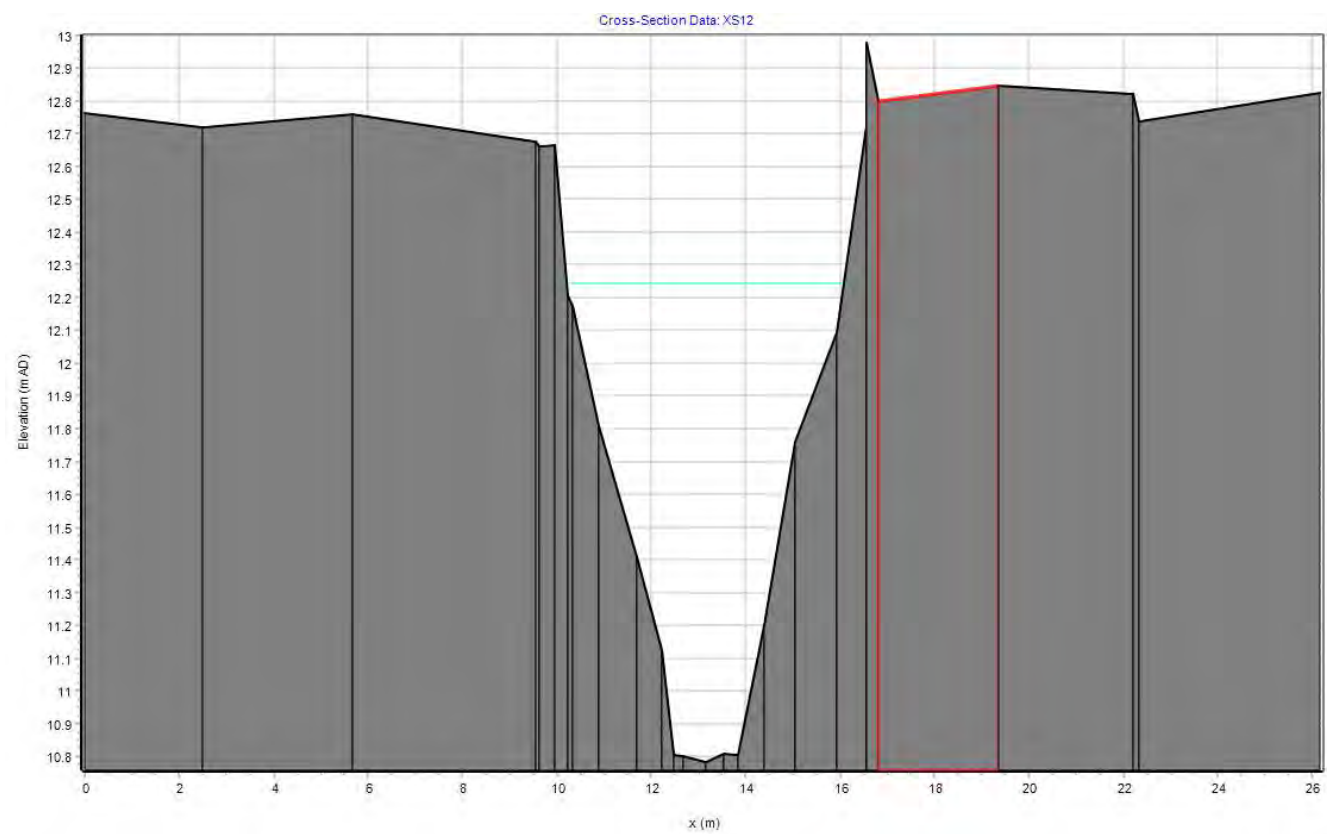
Label	Max Stage	Time (hr)mx2	Max Flow	Time (hr)mx1	Max Velocity	Time (hr)mx4
XS3	13.447	1.250	0.087	1.083	0.516	0.000
XS4	13.447	1.250	0.091	1.417	0.125	0.000
XS5	13.447	1.250	0.106	1.500	0.252	0.000
XS6	13.446	1.250	0.151	1.583	0.207	0.000
XS6_C1	13.446	1.250	0.151	1.583	0.341	0.000
XS6_C2	13.441	1.250	0.152	1.583	0.532	1.583
XS7	13.440	1.250	0.546	1.333	0.488	2.000
XS8	13.404	1.250	0.593	1.417	0.321	1.417
XS8_C1	13.078	1.333	1.818	1.250	2.054	1.000
XS8_C2	12.629	1.333	1.809	1.250	1.478	1.250
XS9	12.535	1.417	1.809	1.250	1.019	1.083
XS10	12.421	1.417	1.797	1.250	0.641	1.083
XS11	12.275	1.500	1.796	1.250	0.928	0.833
XS12	12.243	1.500	1.760	1.333	0.493	0.750
XS12_C1	12.194	1.500	1.760	1.333	1.127	1.083
XS12_C2	12.190	1.500	1.759	1.333	1.063	1.167
XS13	12.144	1.500	1.751	1.333	0.579	0.583
XS14	12.143	1.500	1.751	1.333	0.549	0.583
XS15	12.134	1.500	1.667	1.417	0.280	1.083
XS16	12.108	1.583	1.667	1.417	0.257	1.167
XS17	12.101	1.583	1.614	1.417	0.296	2.250
XS18	12.063	1.583	1.576	1.583	0.239	2.167
XS19	12.039	1.583	1.576	1.583	0.231	2.167
XS20	12.036	1.583	1.598	1.667	0.330	2.167
XS21	11.996	1.583	1.598	1.667	0.286	2.167
XS22	11.945	1.583	3.539	1.333	0.660	1.083
XS23	11.819	1.583	3.539	1.333	0.759	1.083
XS24	11.704	1.667	3.383	1.500	0.991	0.917
XS24B	11.682	1.667	3.383	1.500	0.991	0.917
XS25	11.644	1.667	3.343	1.583	0.708	0.750
XS25_C1	11.610	1.667	3.343	1.583	1.068	1.583
XS25_C2	11.308	1.667	3.343	1.583	1.069	1.583
XS26(B)	11.267	1.667	3.343	1.583	0.515	1.083
XS27	11.194	1.667	3.332	1.750	0.391	2.000
XS28	11.087	1.667	3.332	1.750	0.464	2.000
XS29	10.846	1.750	4.554	1.417	0.584	1.333
XS30	10.774	1.833	4.554	1.417	0.537	1.333
XS31	10.626	1.833	4.862	1.417	0.809	1.083
XS32	10.574	1.833	4.862	1.417	0.503	1.000
XS33	10.553	1.917	4.751	1.750	0.731	1.167
XS34	10.321	1.917	4.751	1.750	0.760	1.167
XS34B	10.068	2.000	4.625	2.000	0.759	1.000
XS34_C1	10.039	2.000	4.625	2.000	1.441	0.917
XS34_C2	10.013	2.000	4.625	2.000	0.657	2.000
XS35	9.993	2.000	4.625	2.000	0.458	1.333
XS36	9.991	2.000	4.625	2.000	0.457	1.333

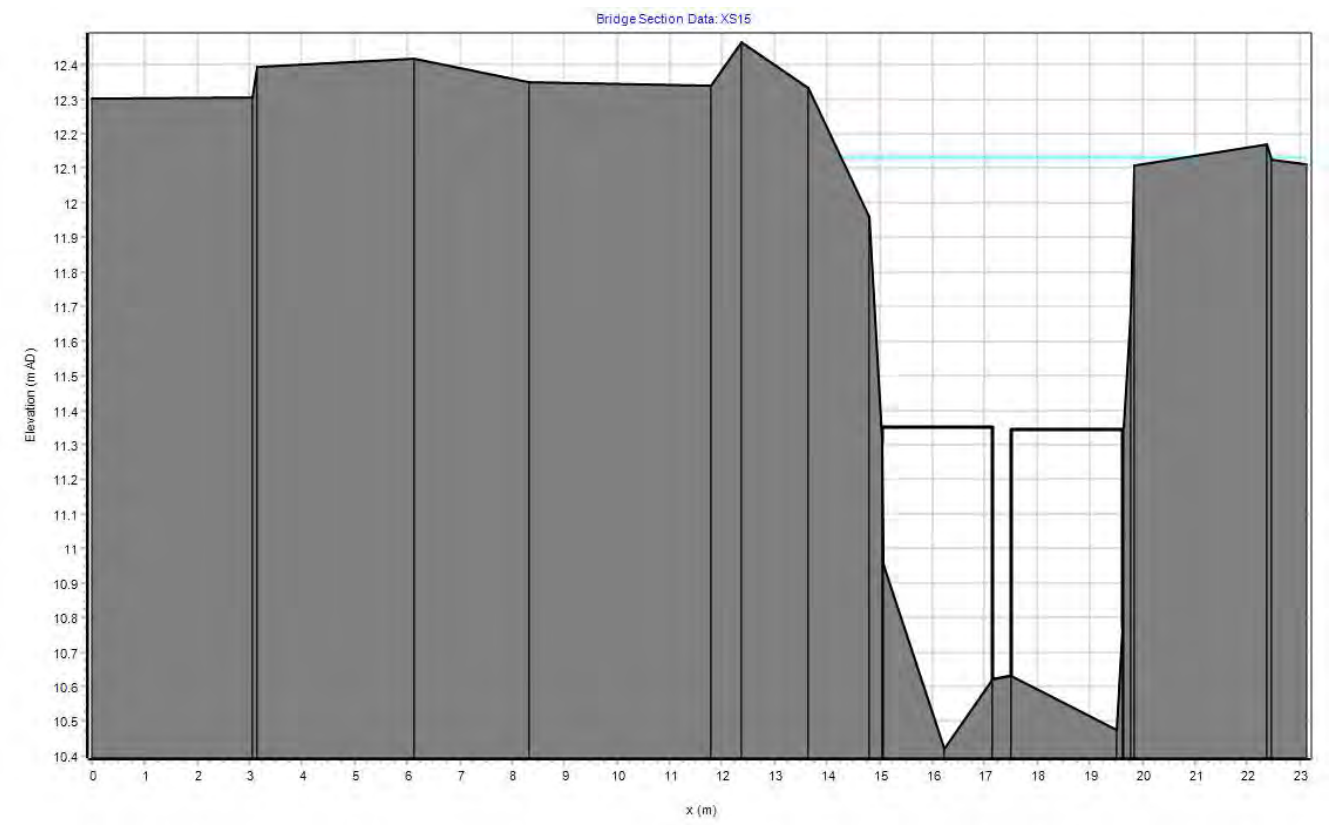
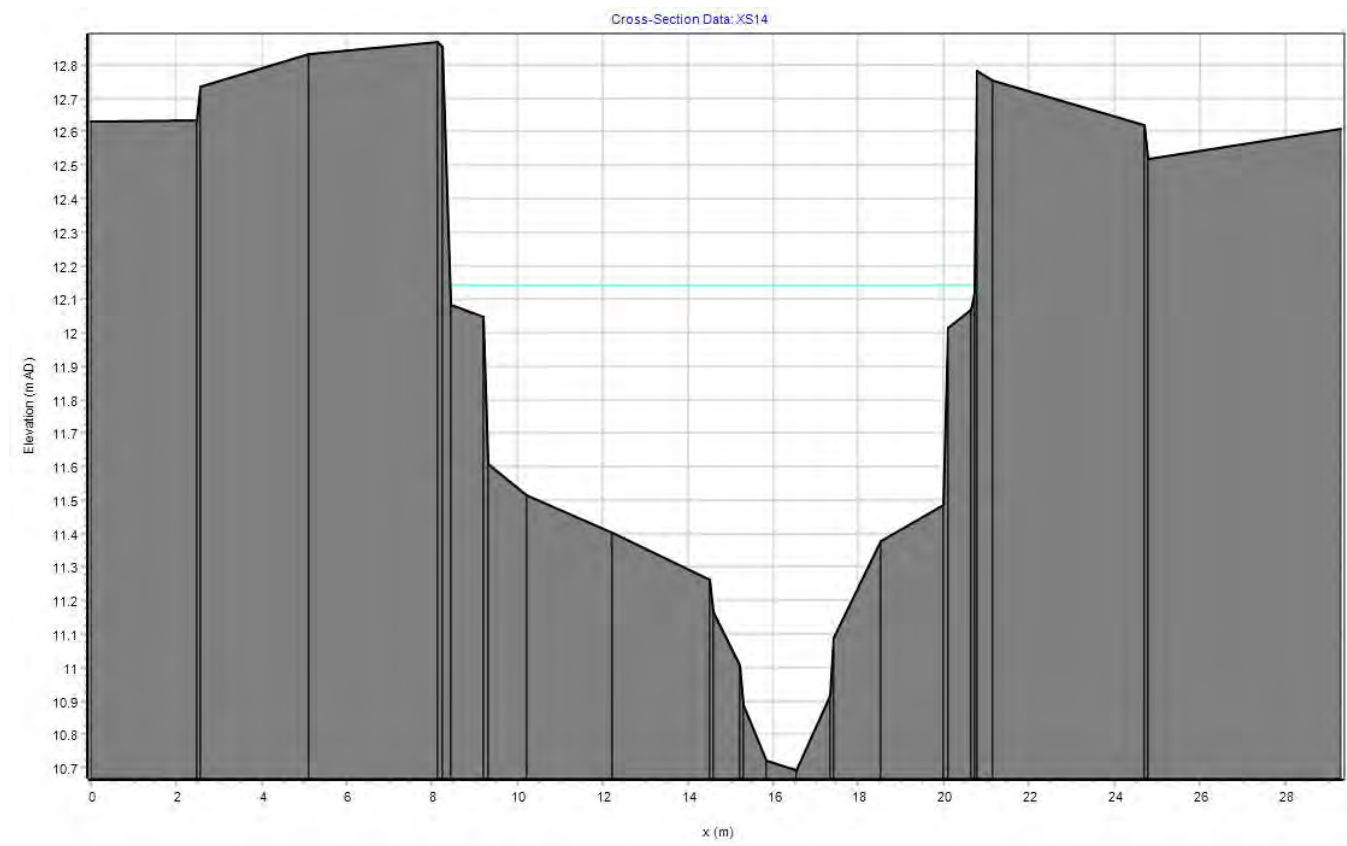
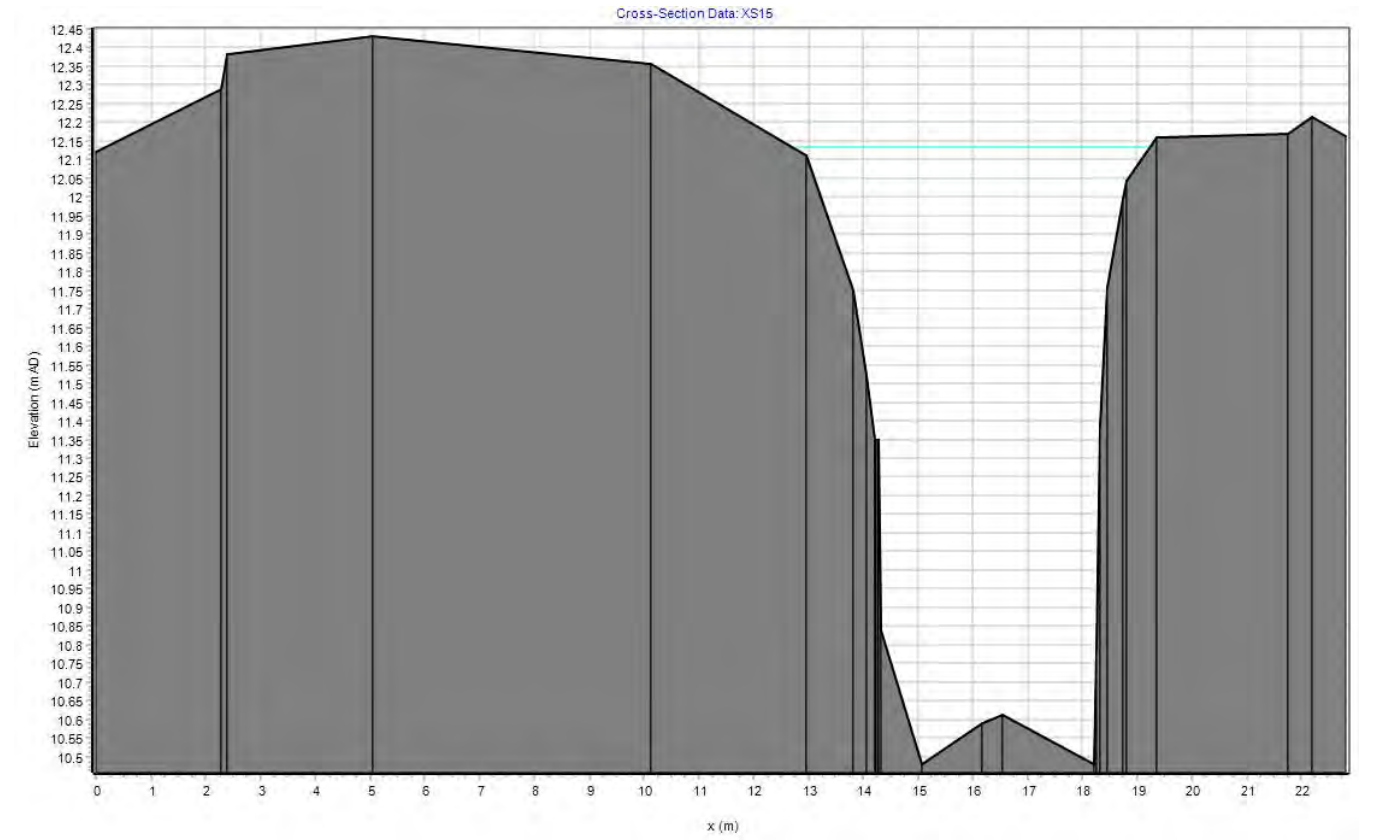
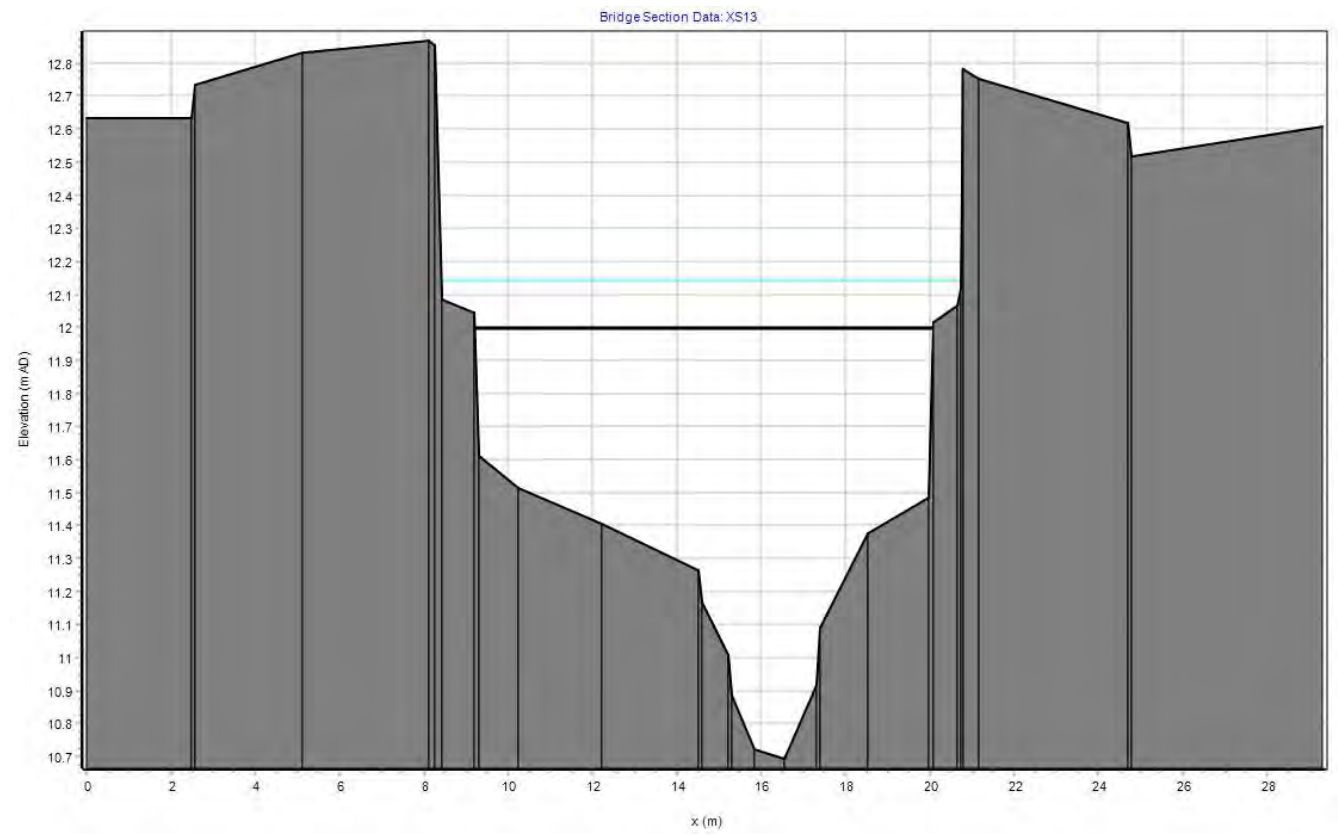


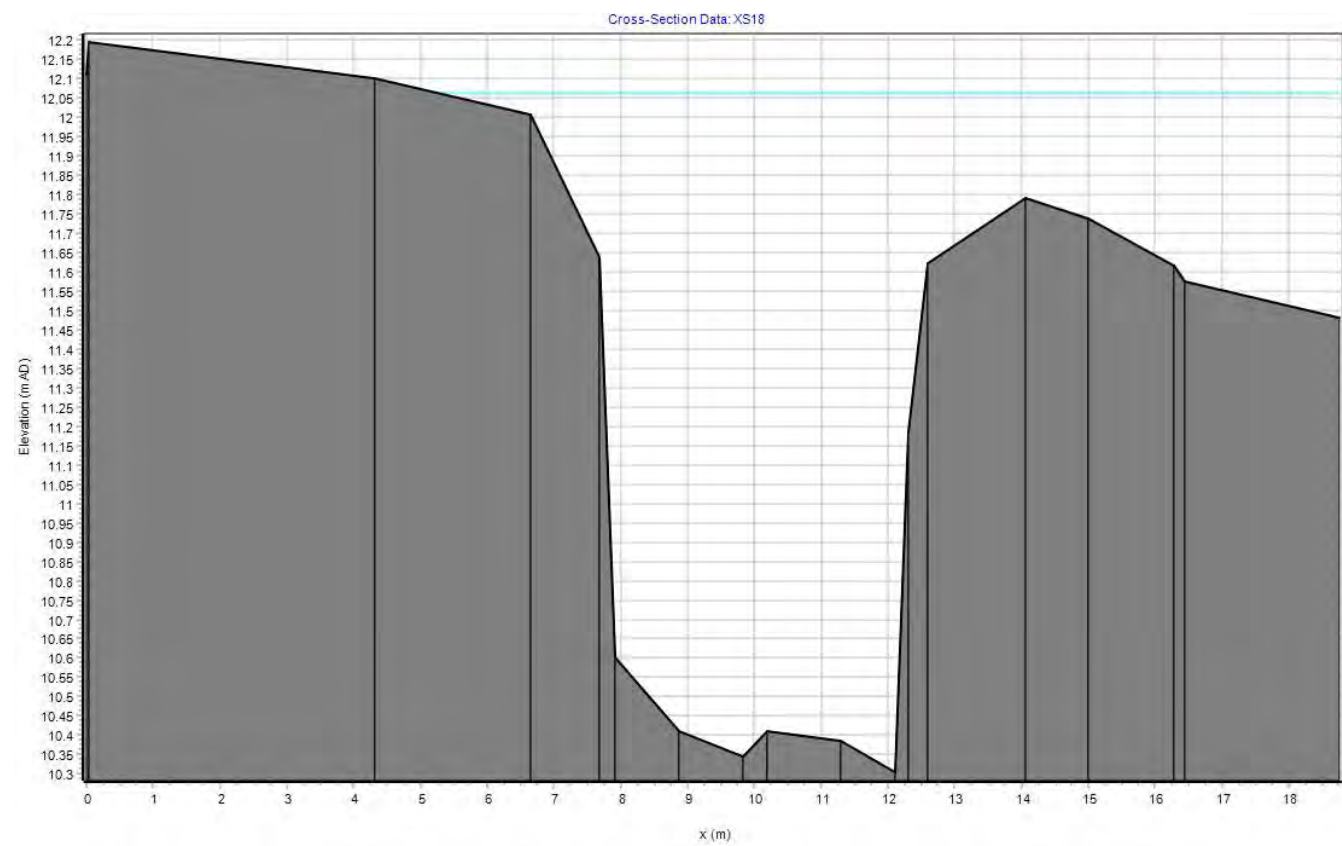
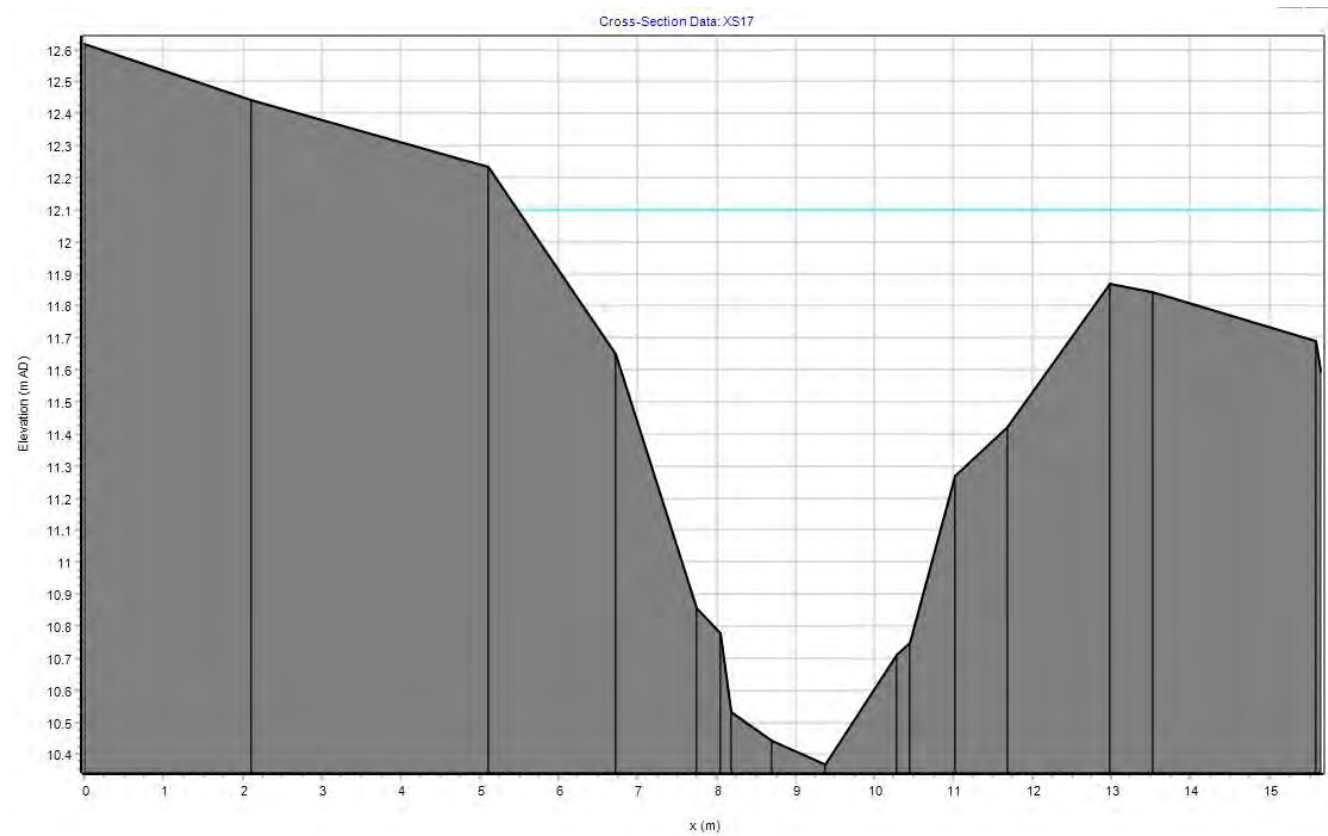
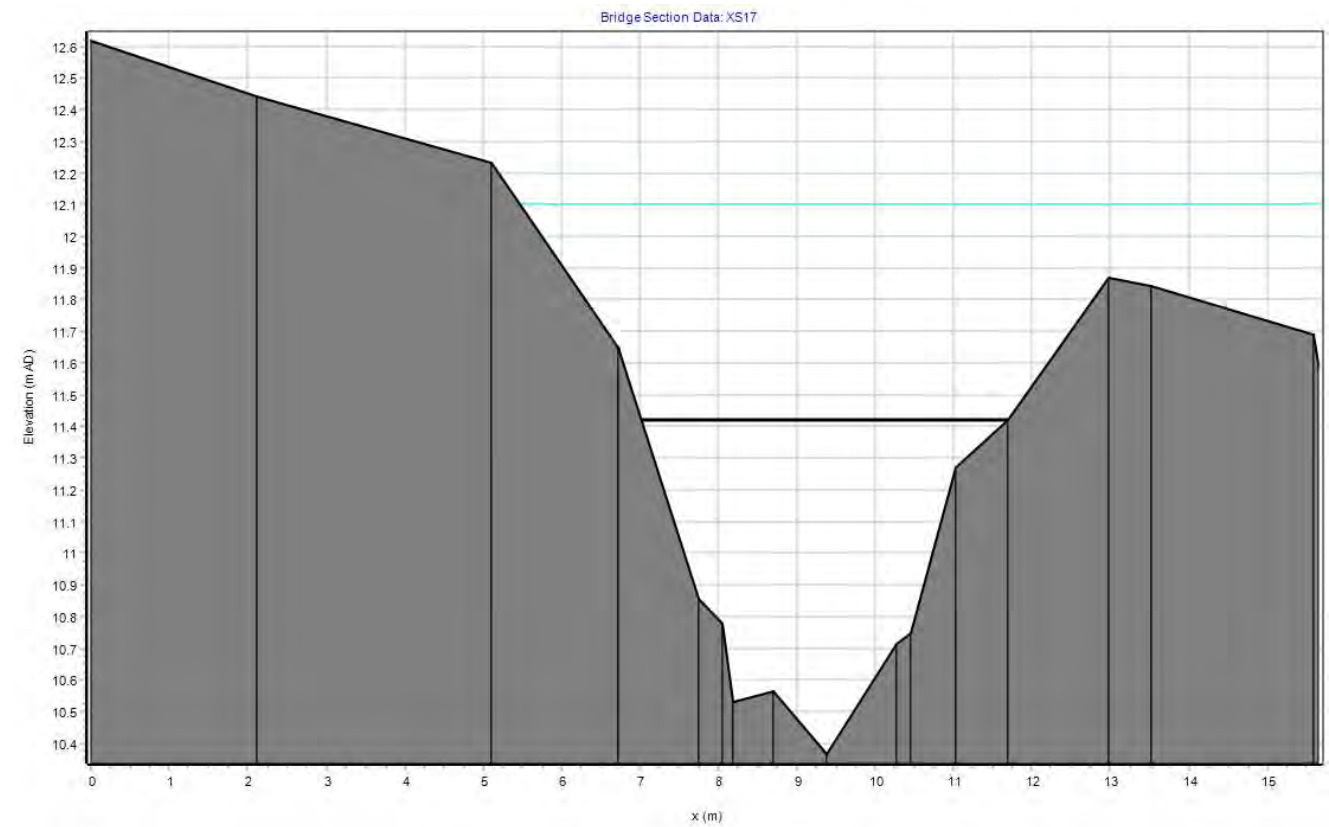
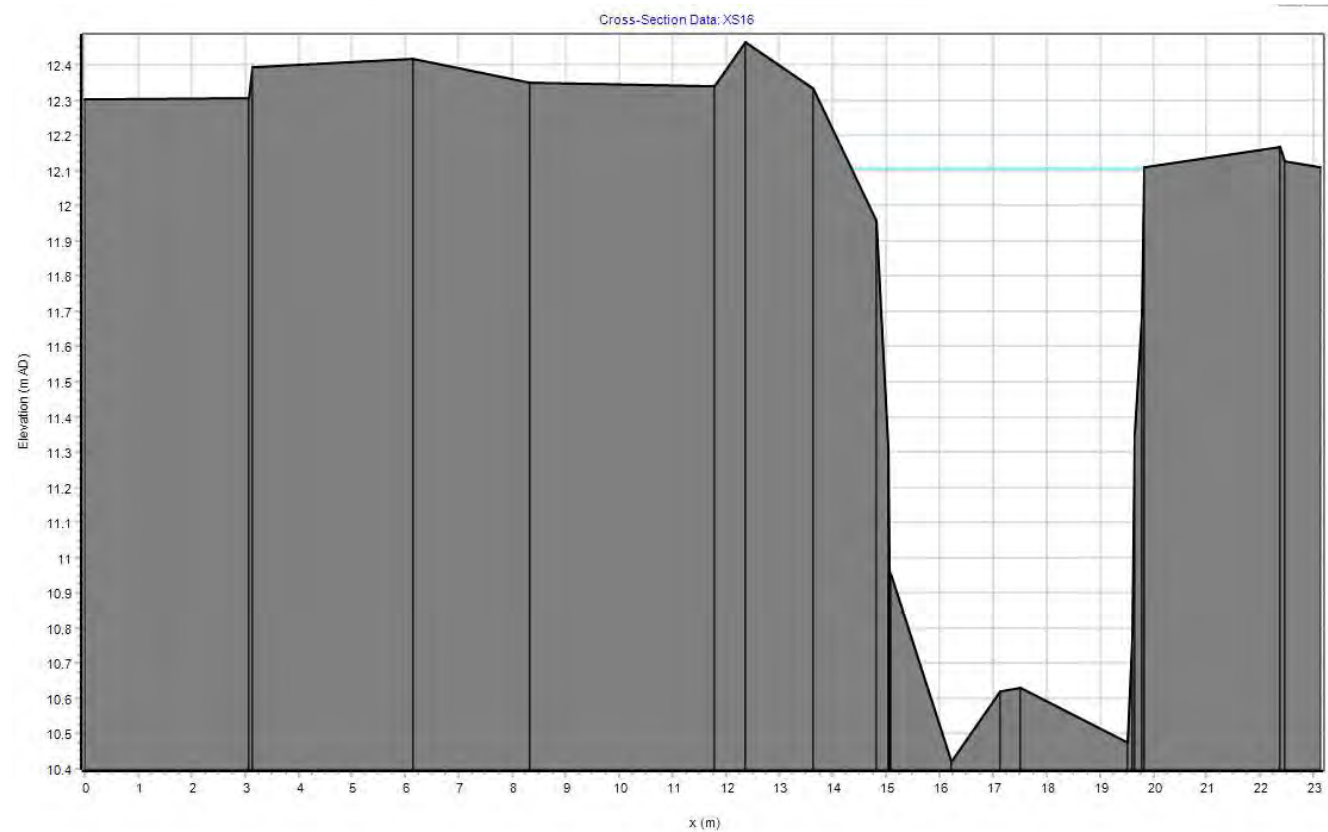


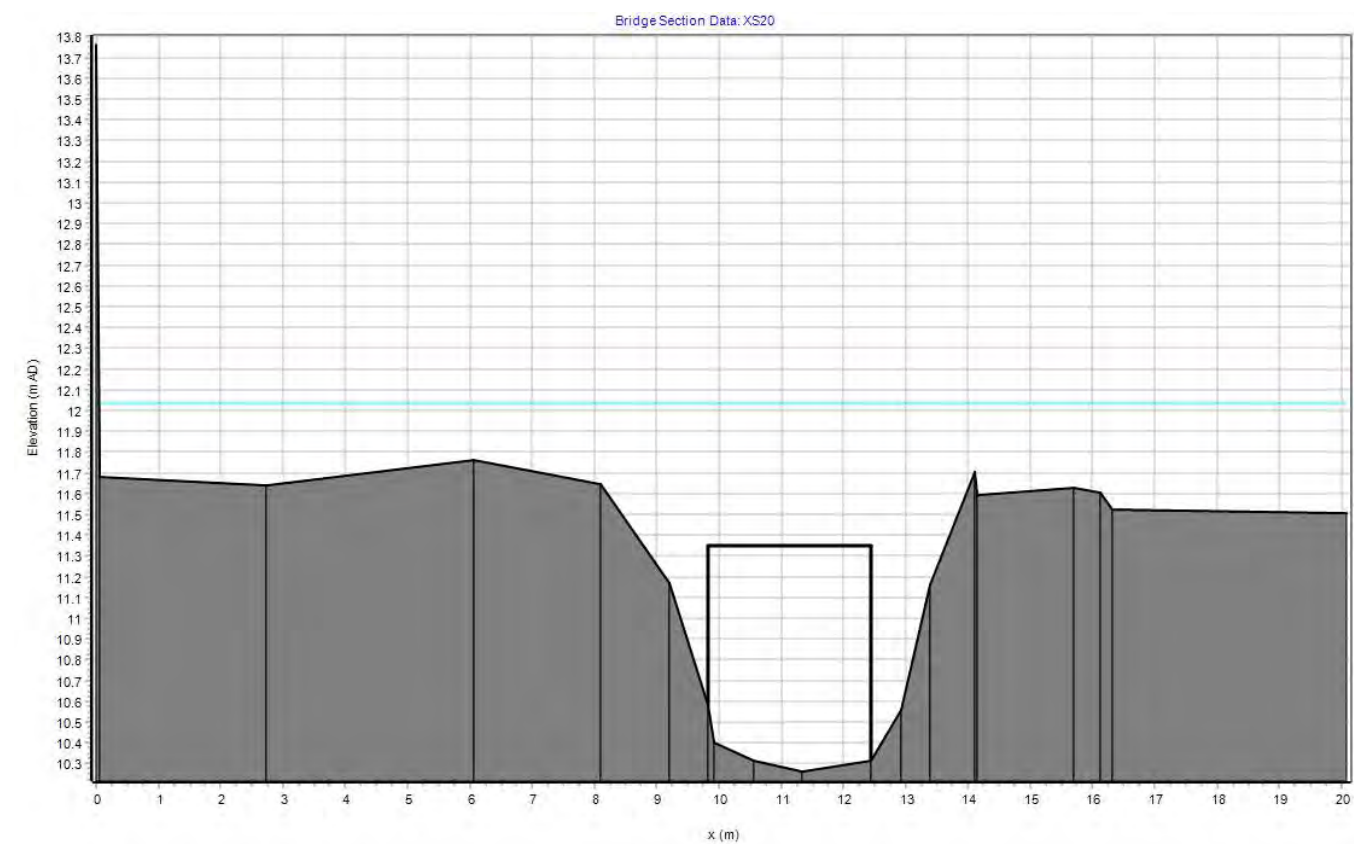
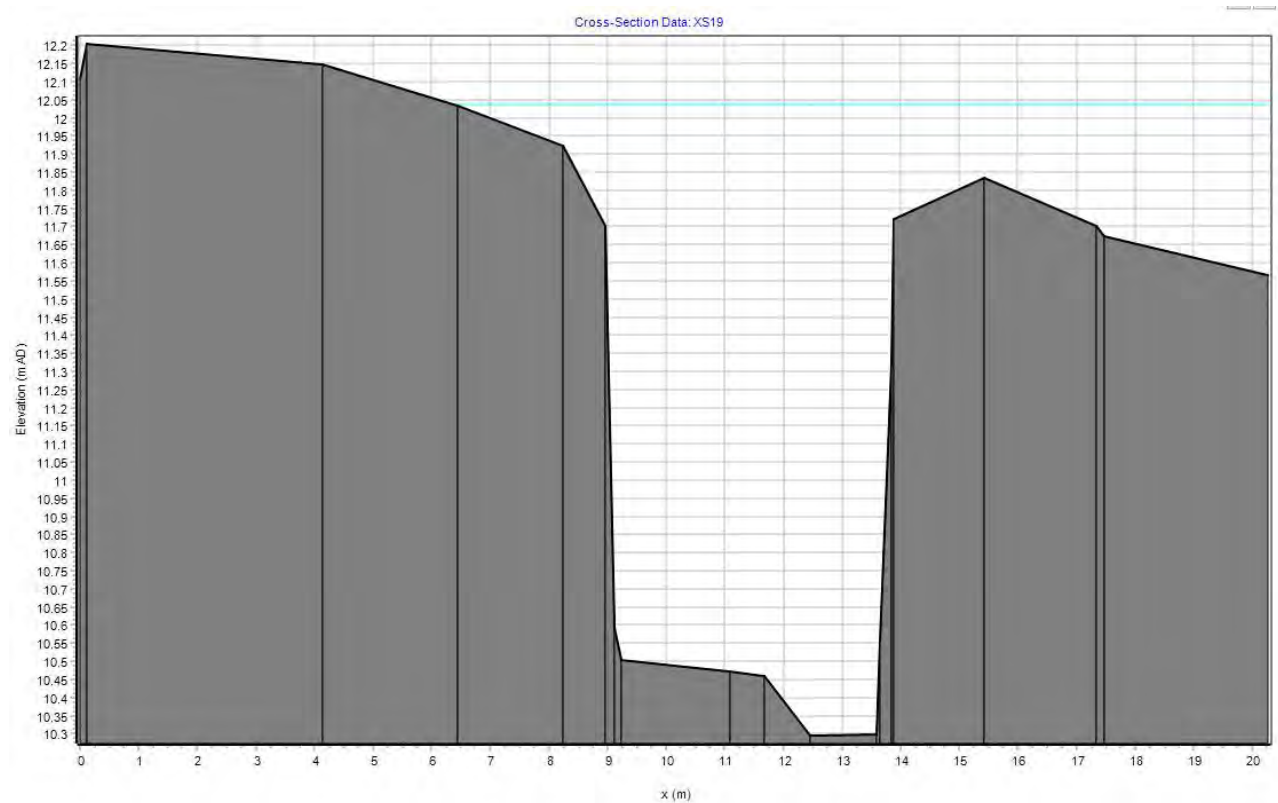
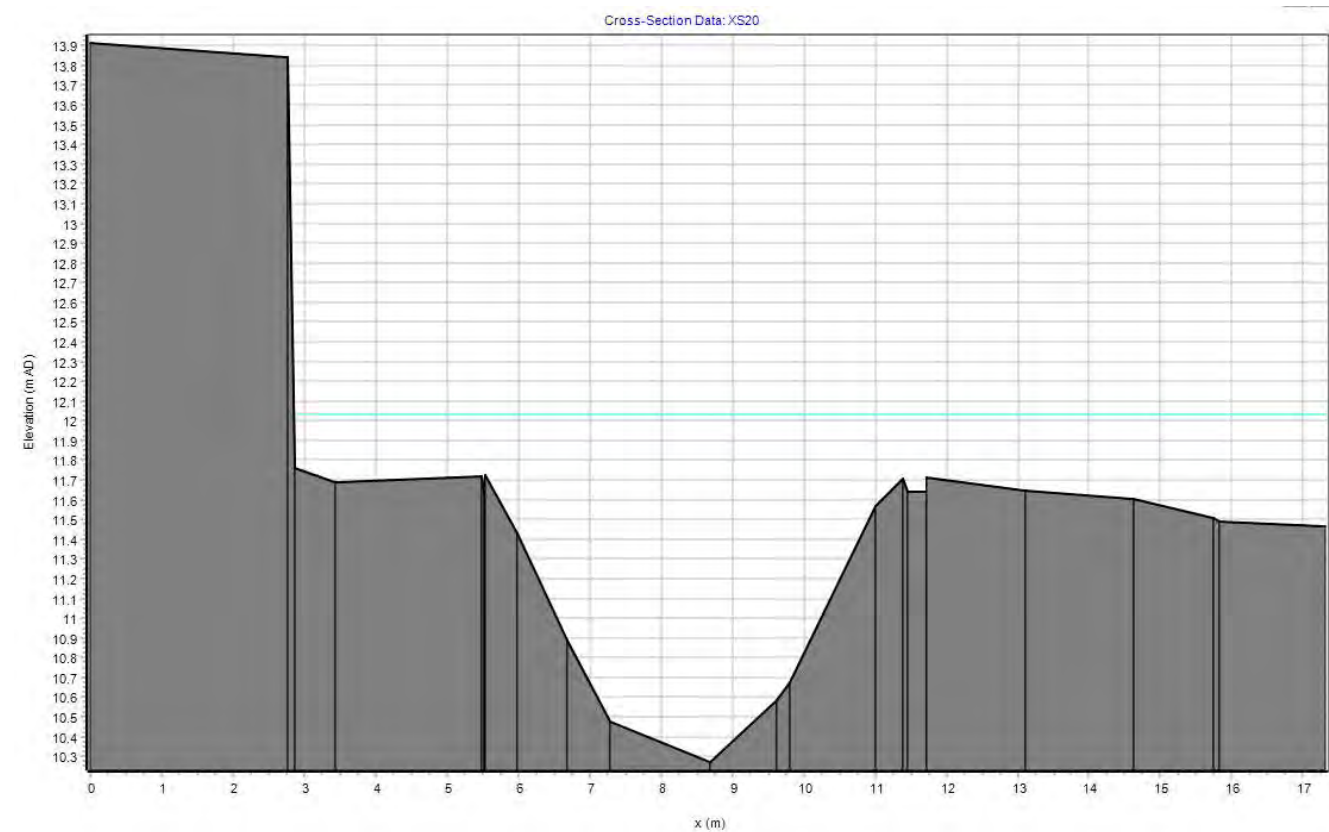
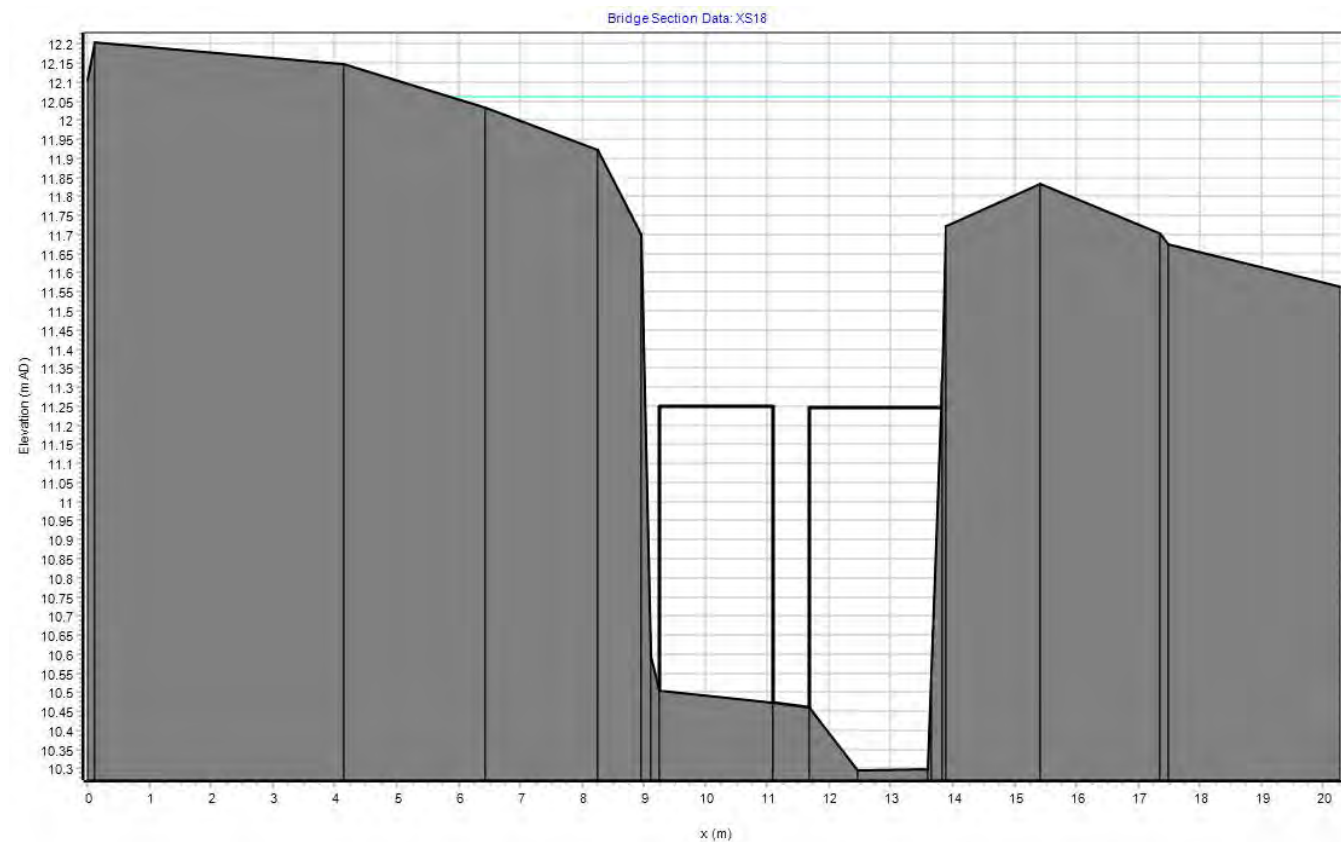


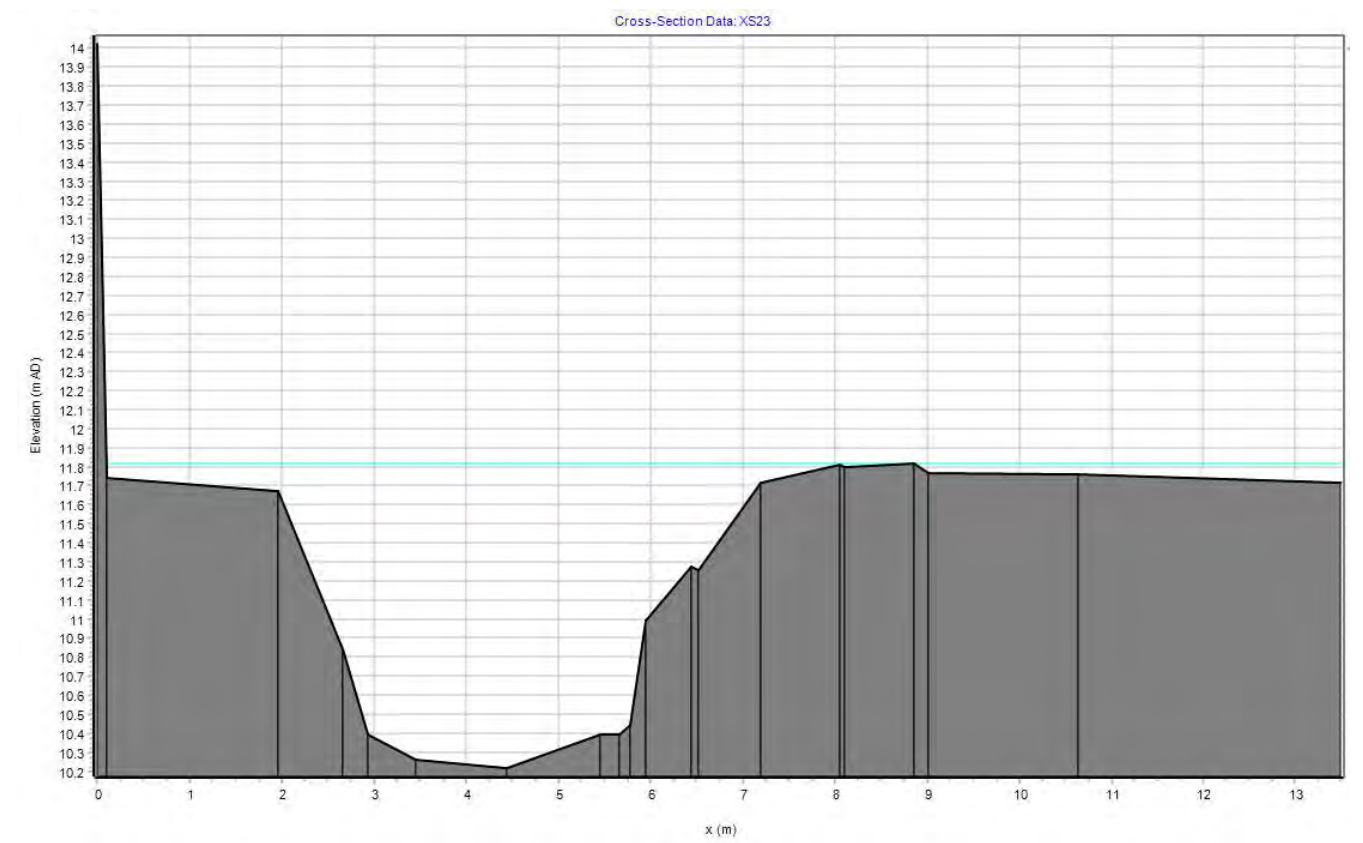
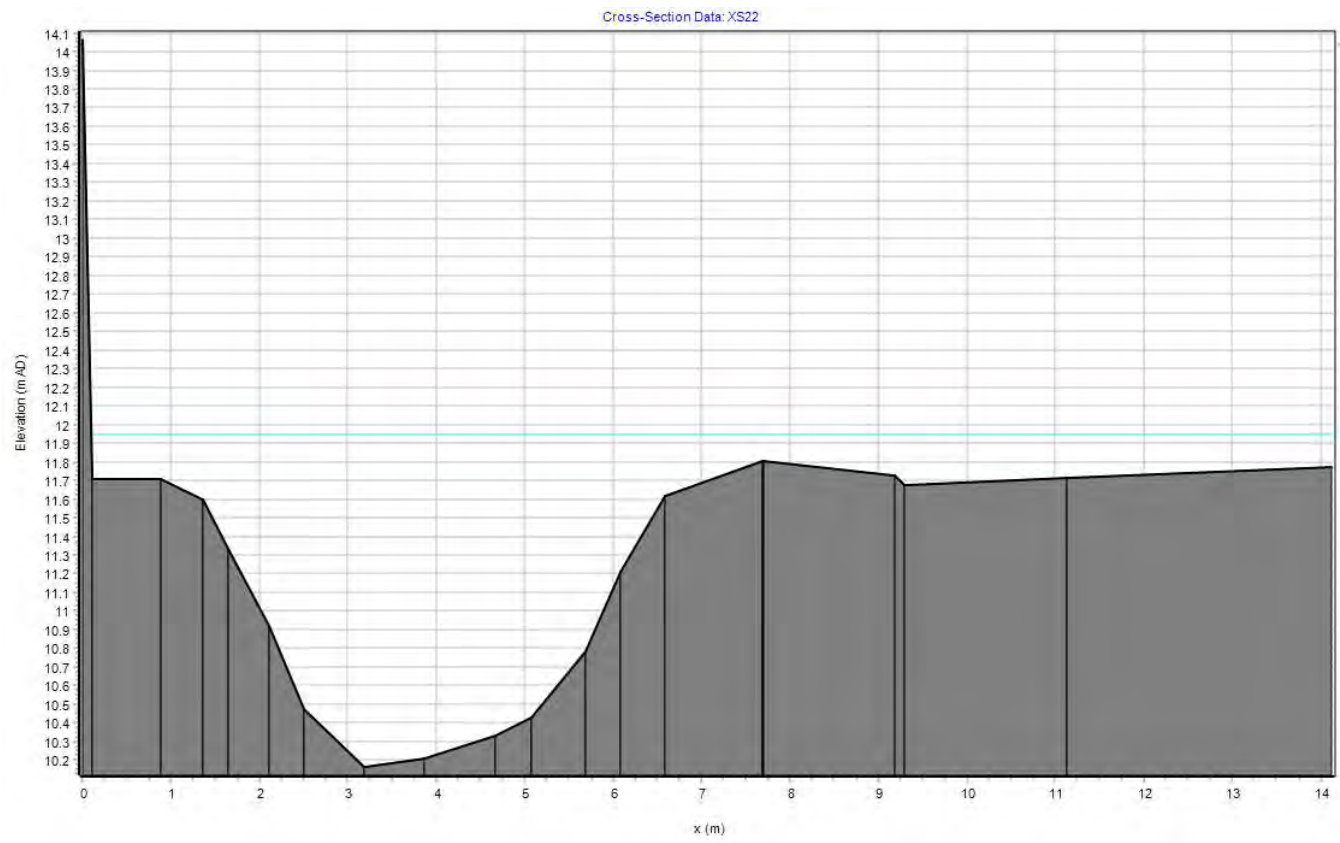
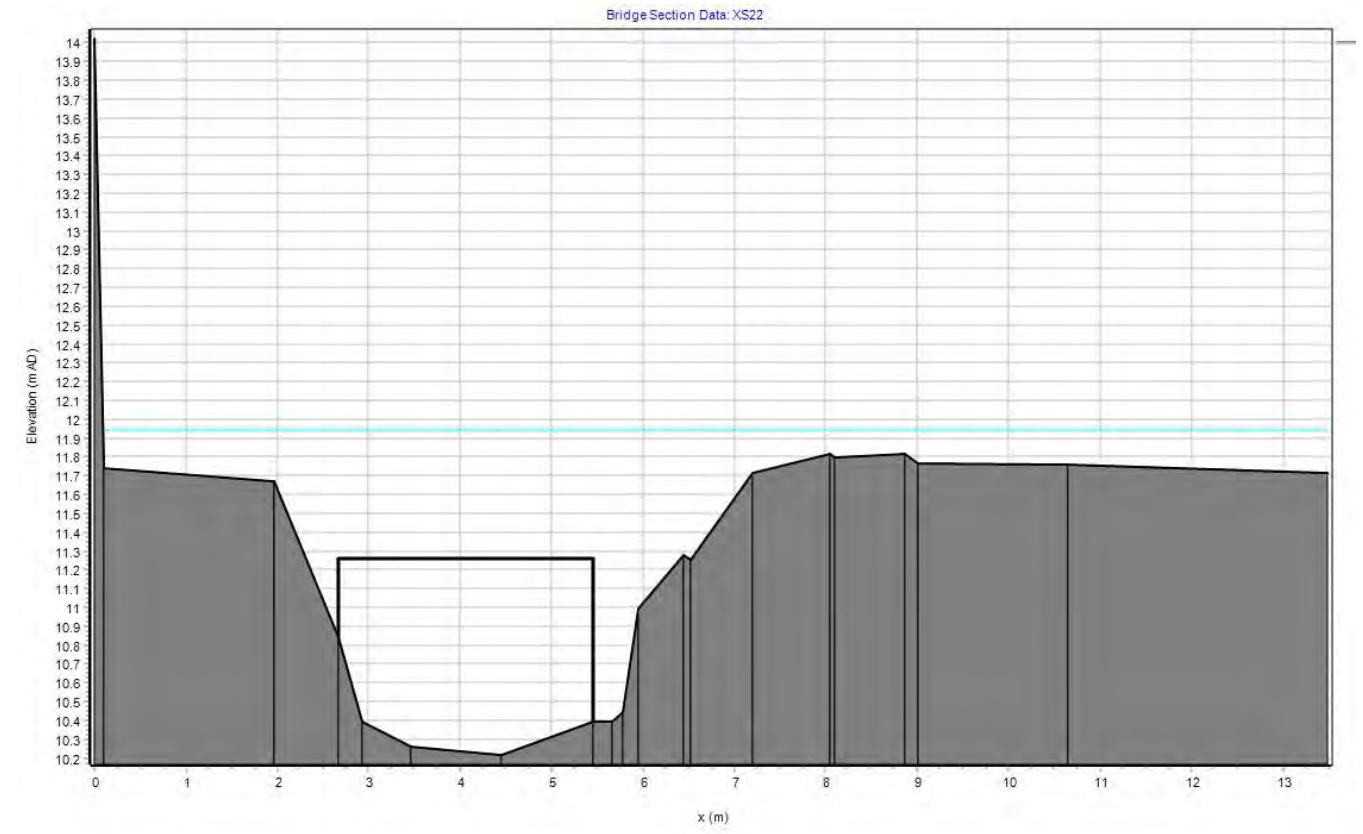
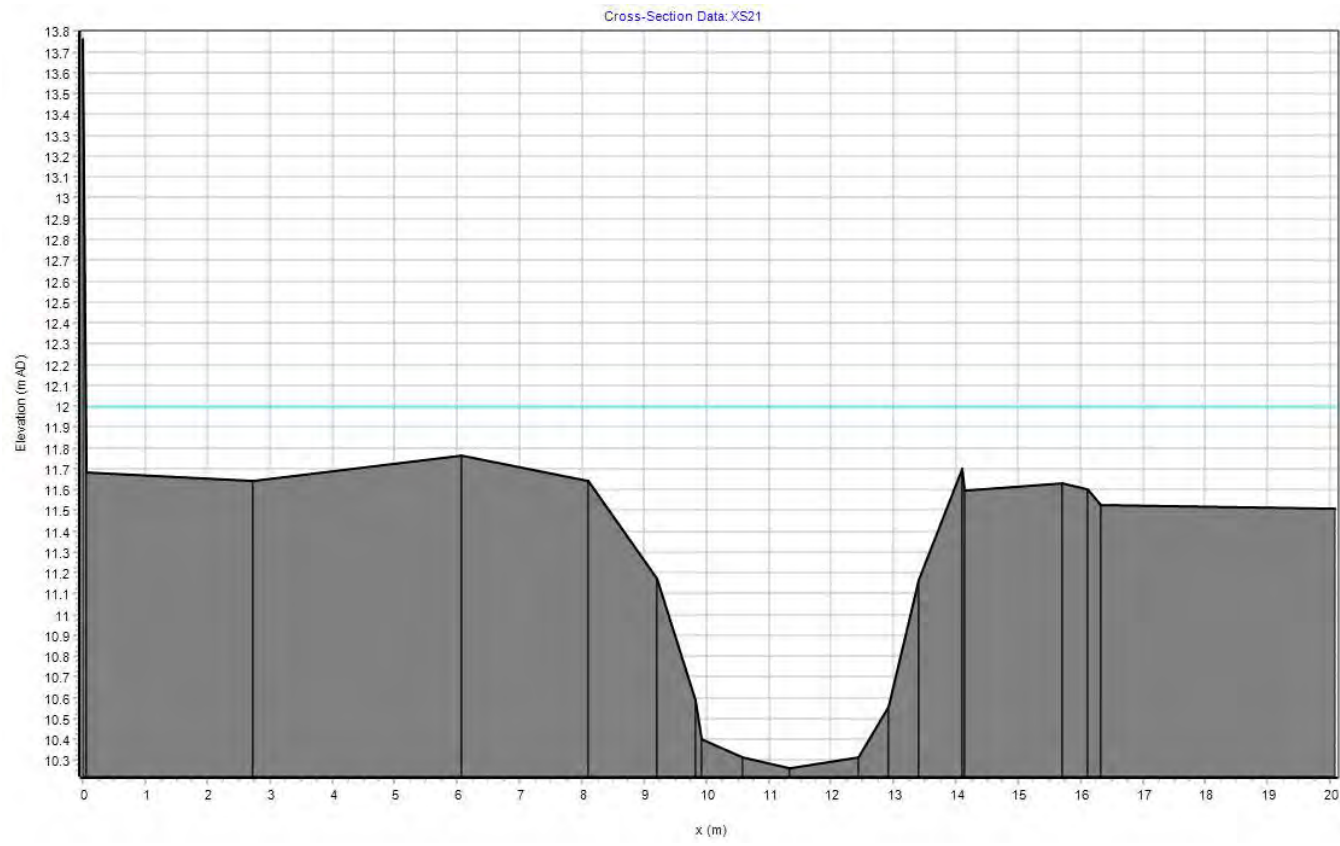


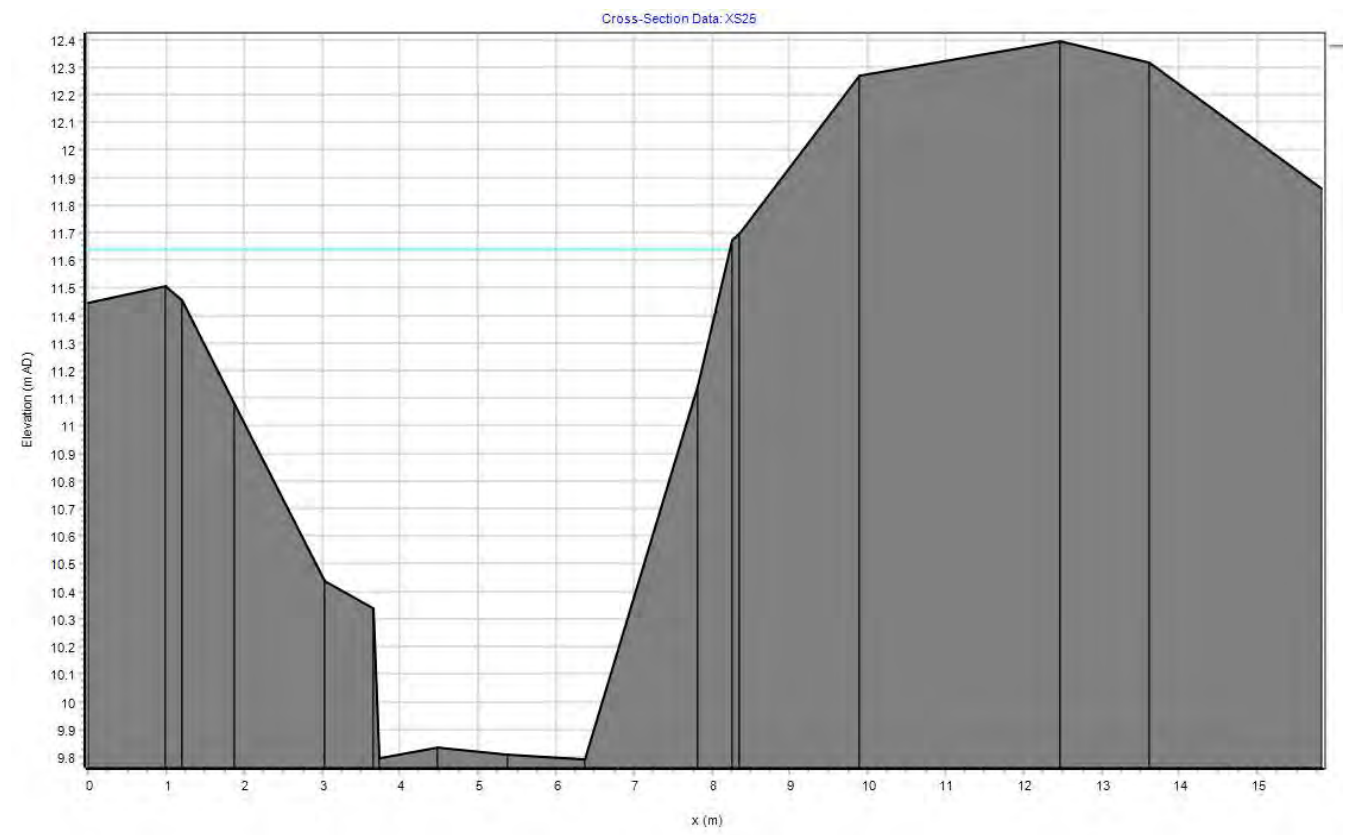
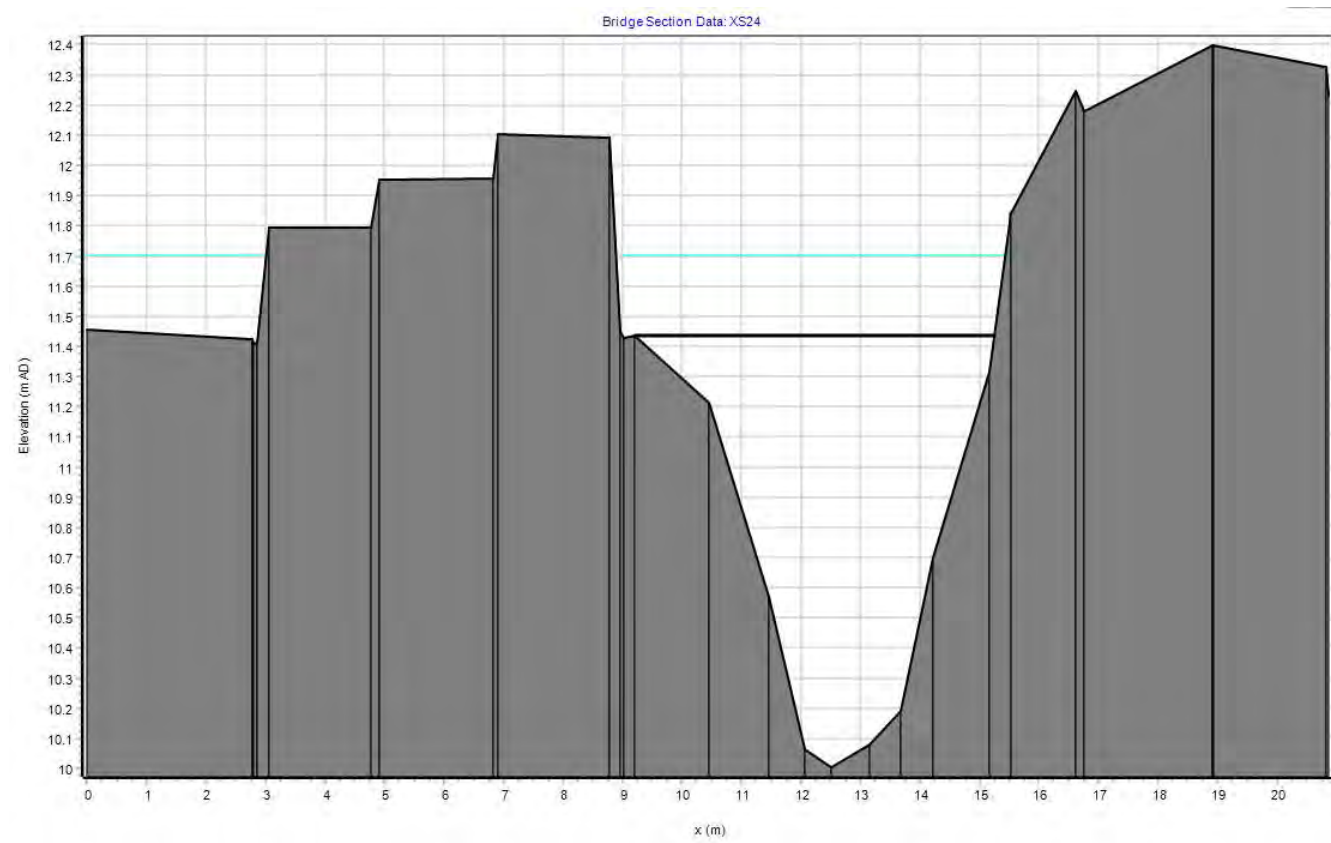
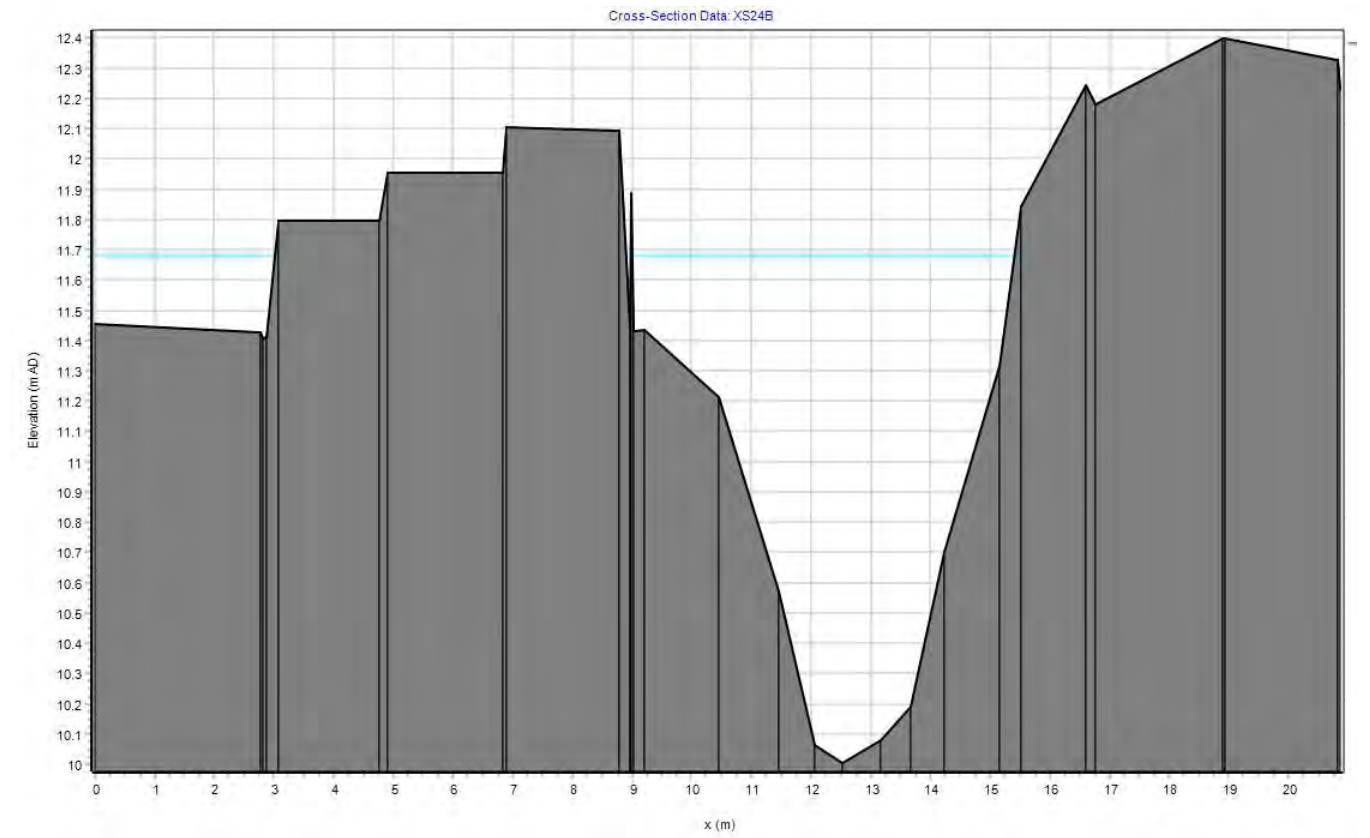
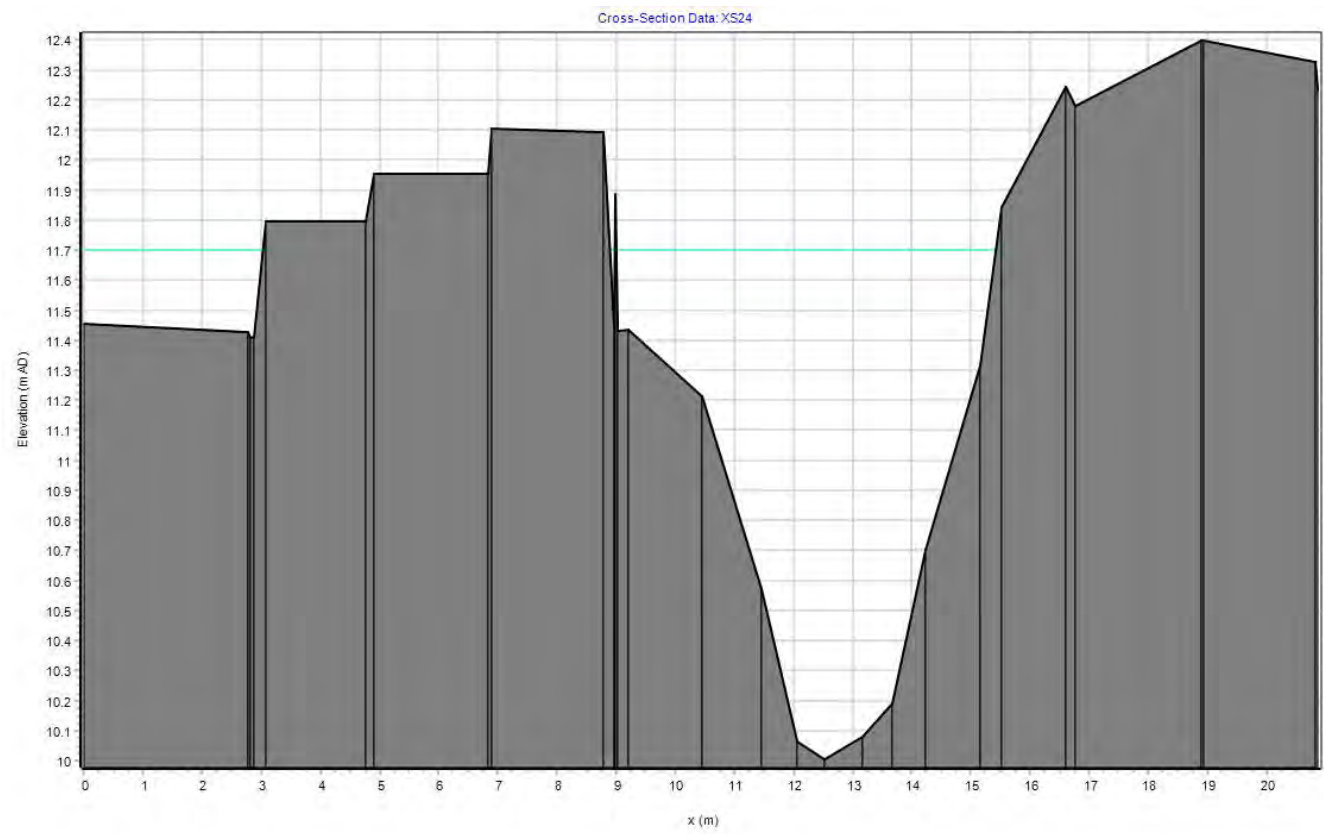


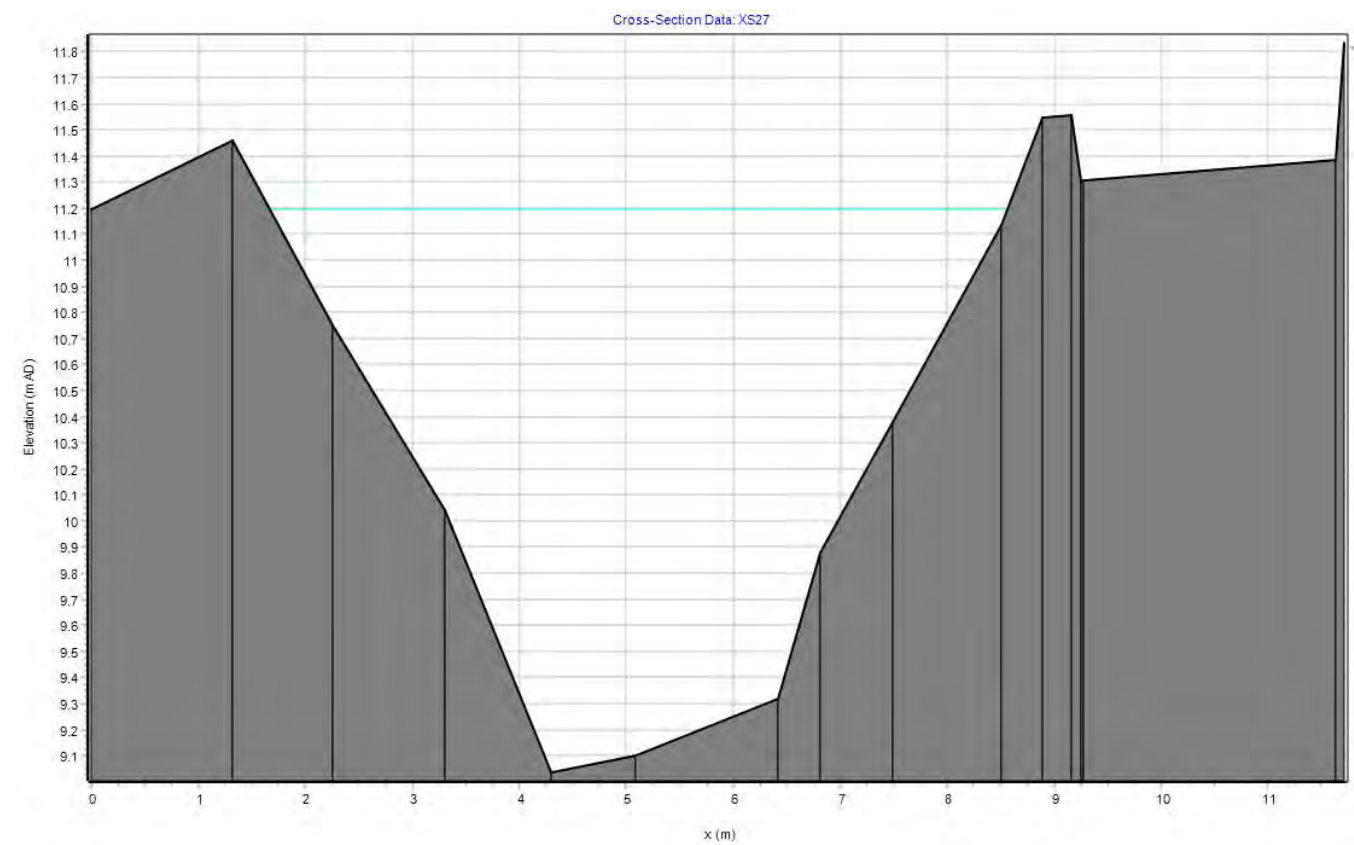
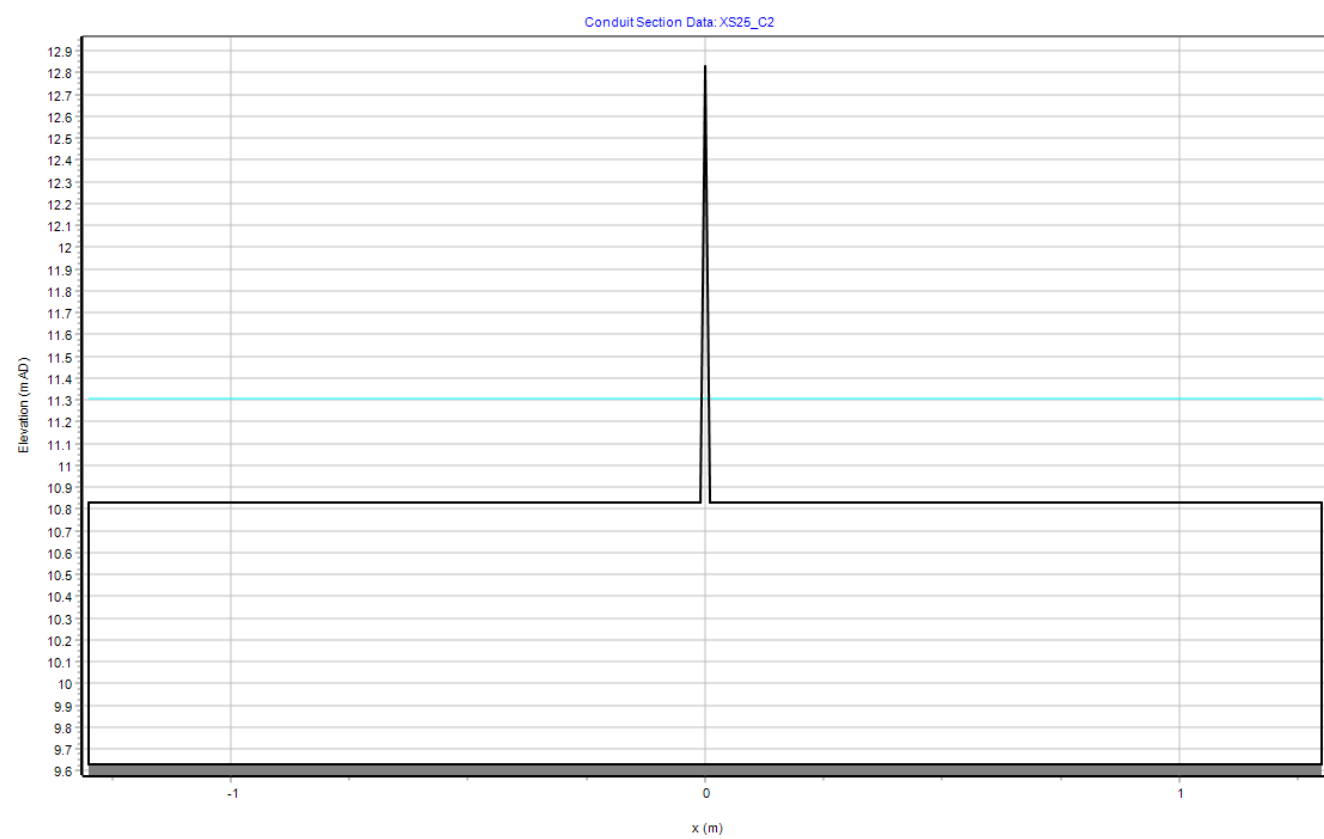
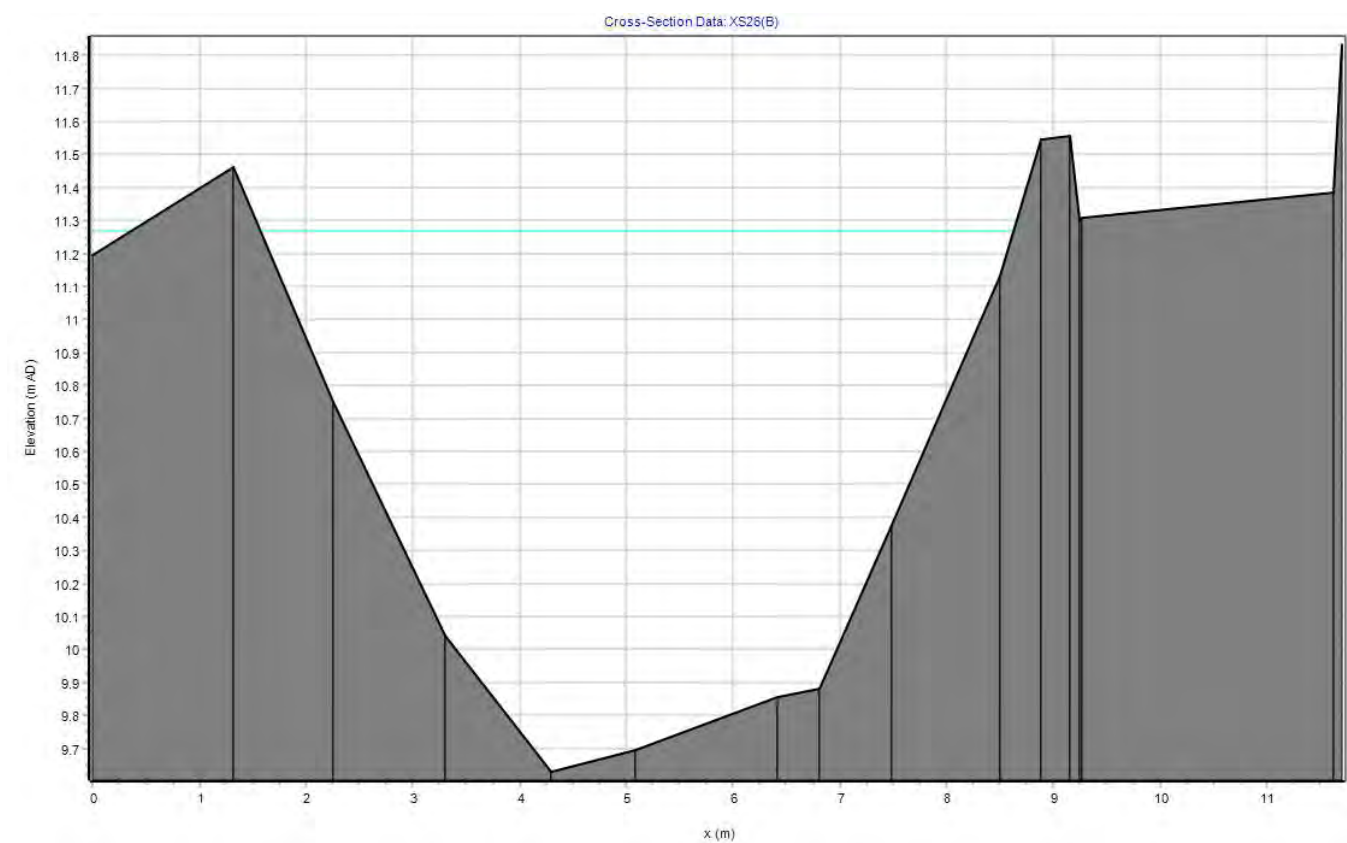
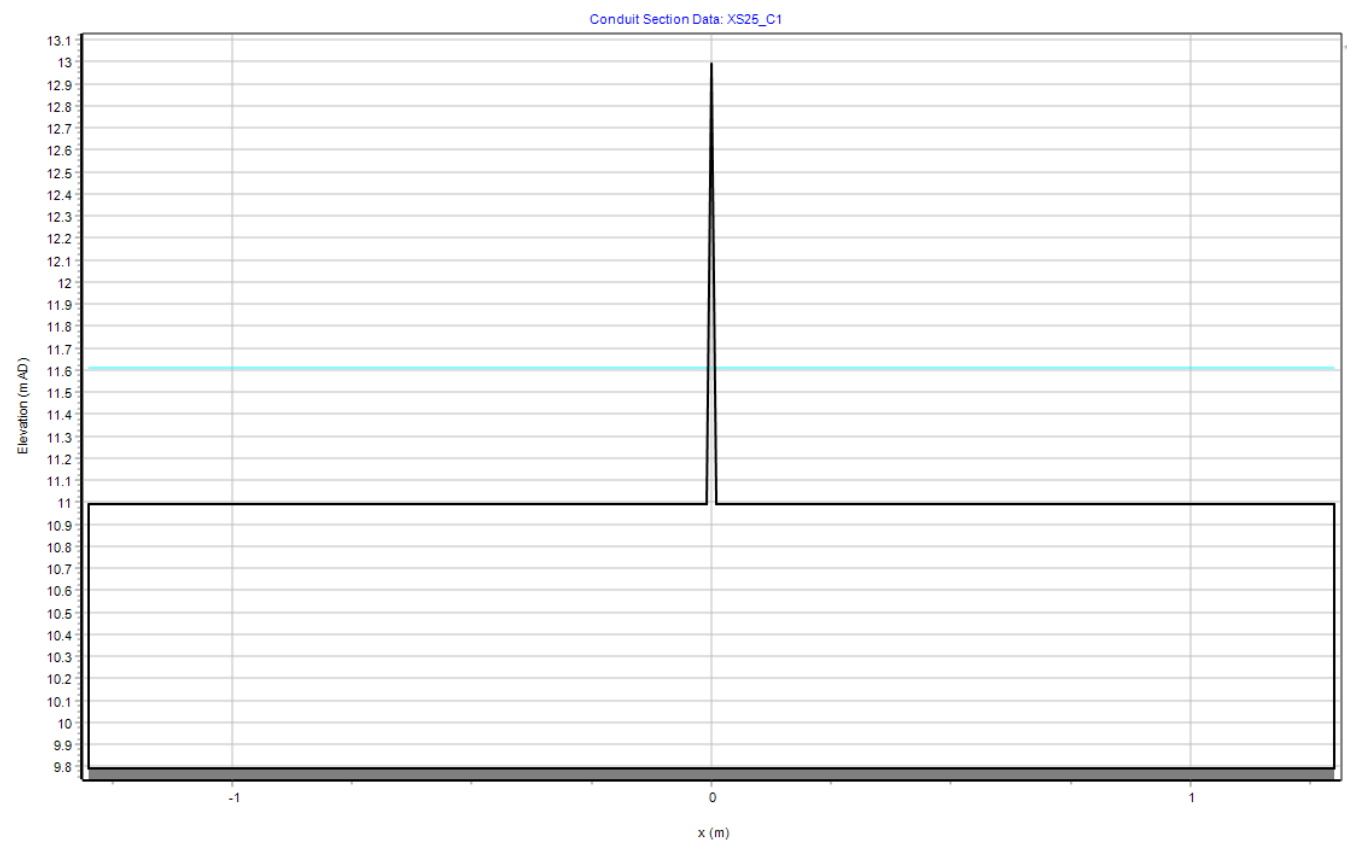


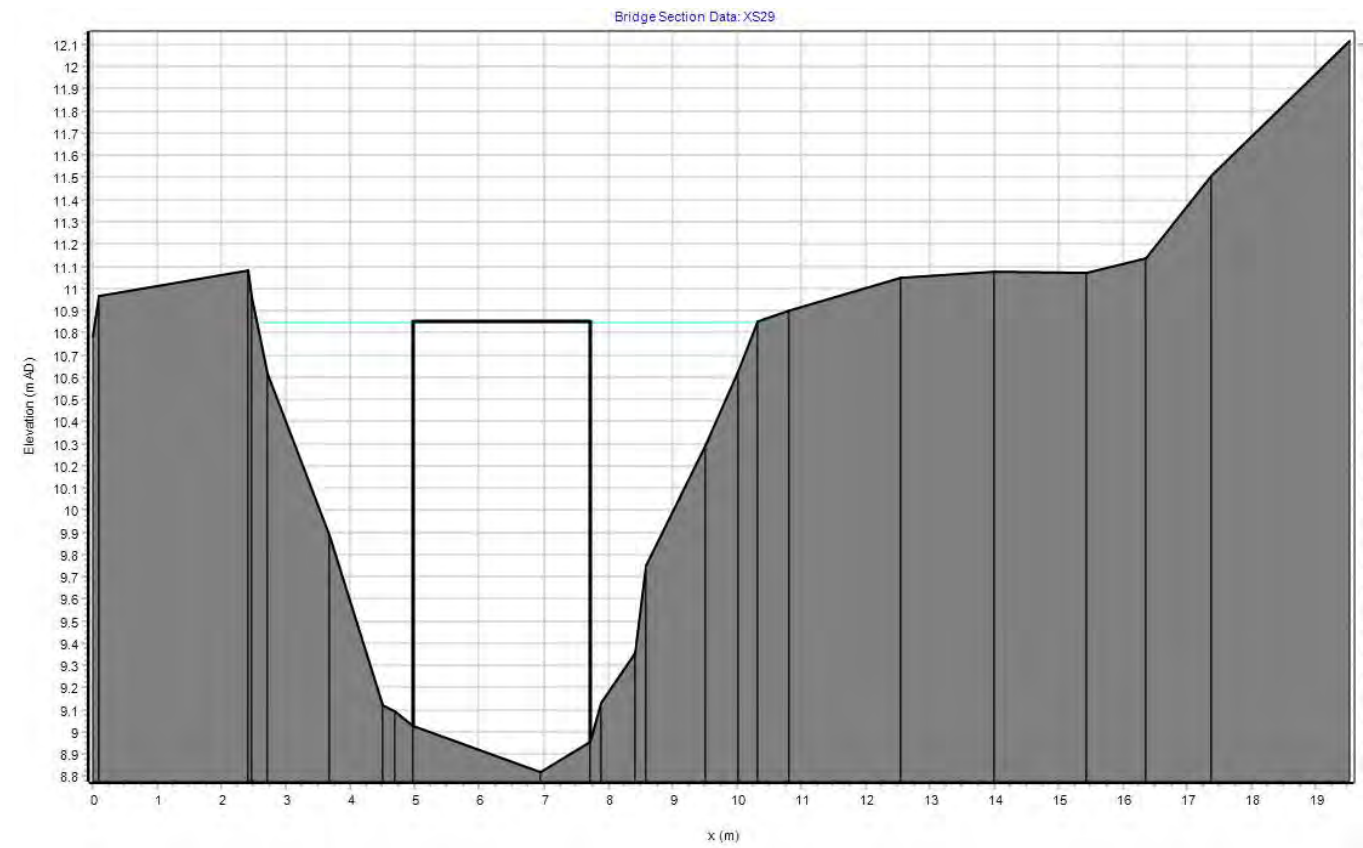
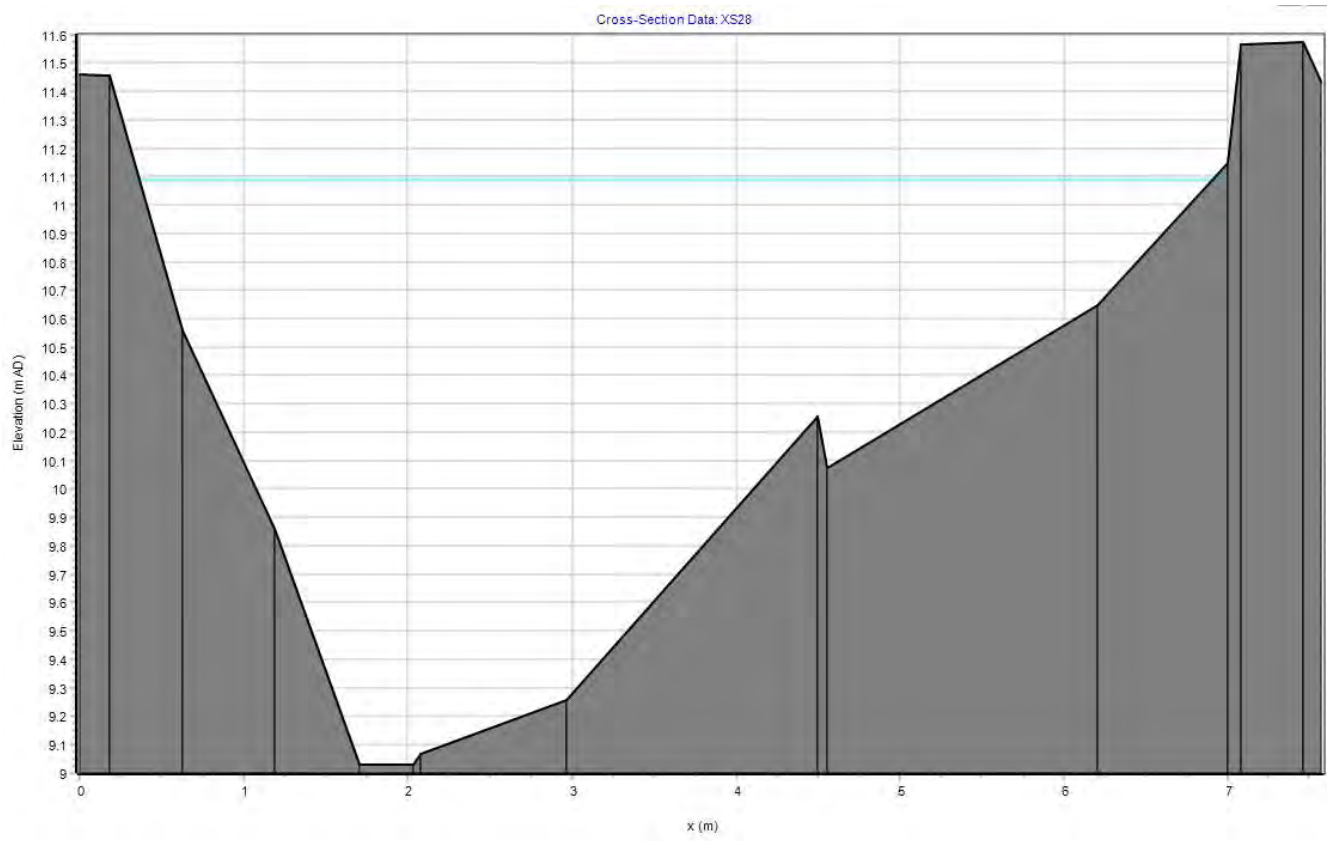
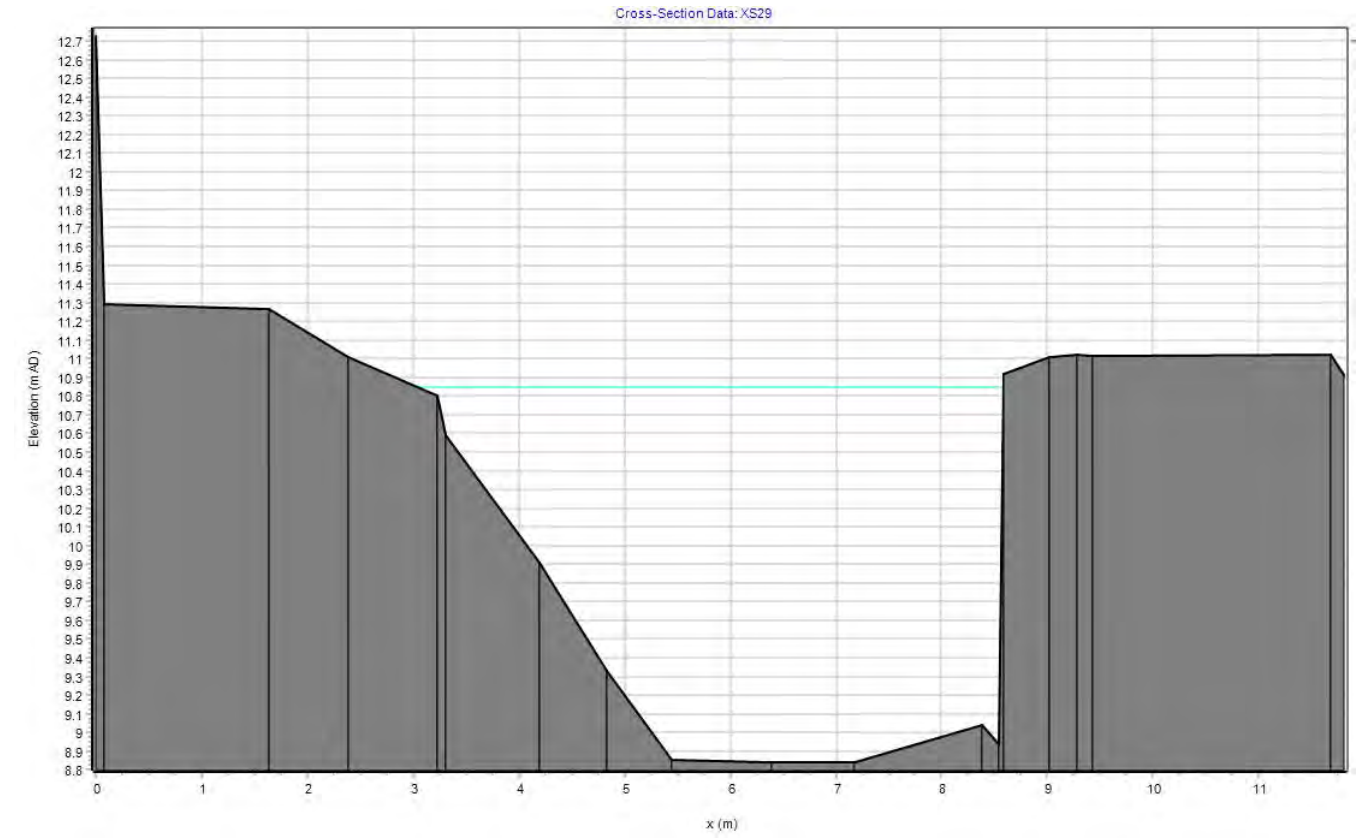
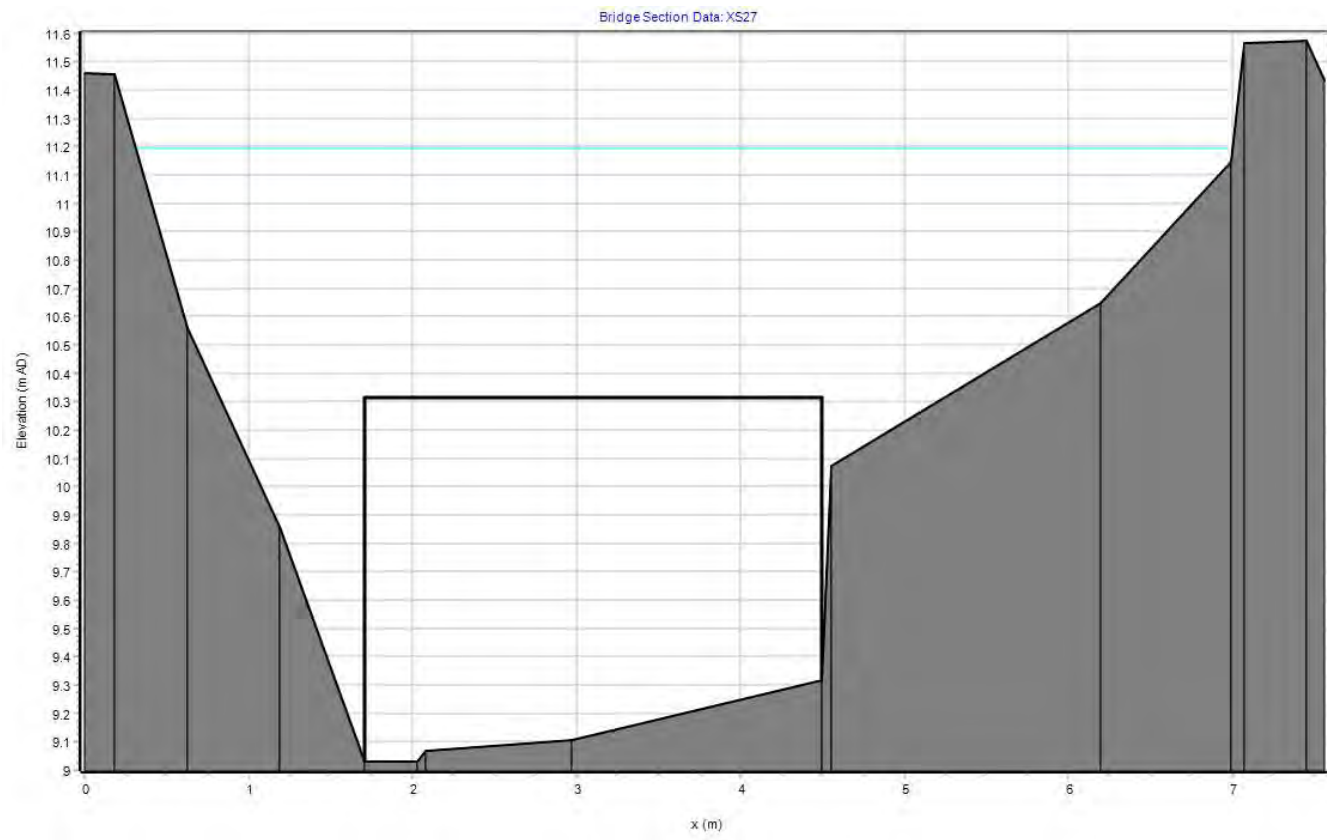


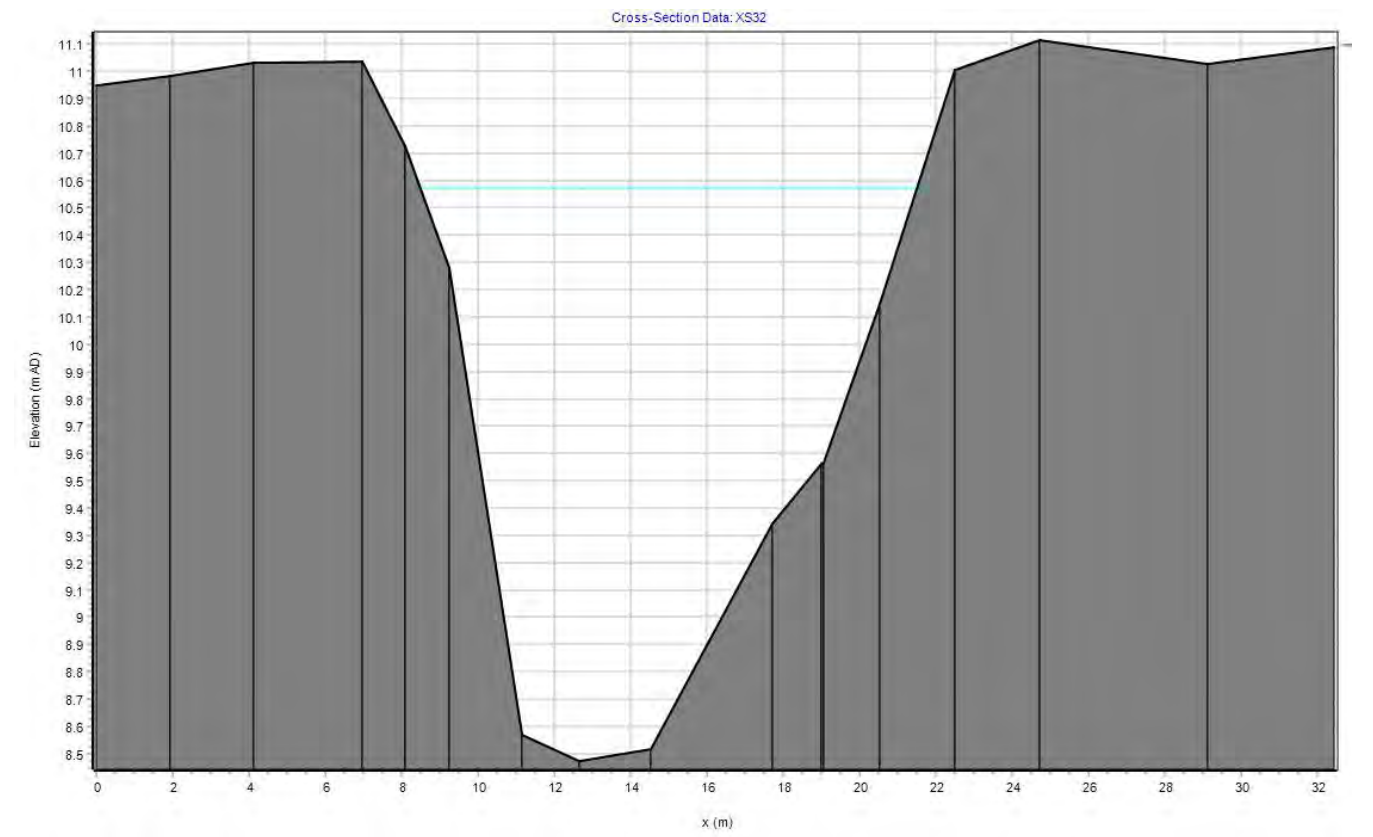
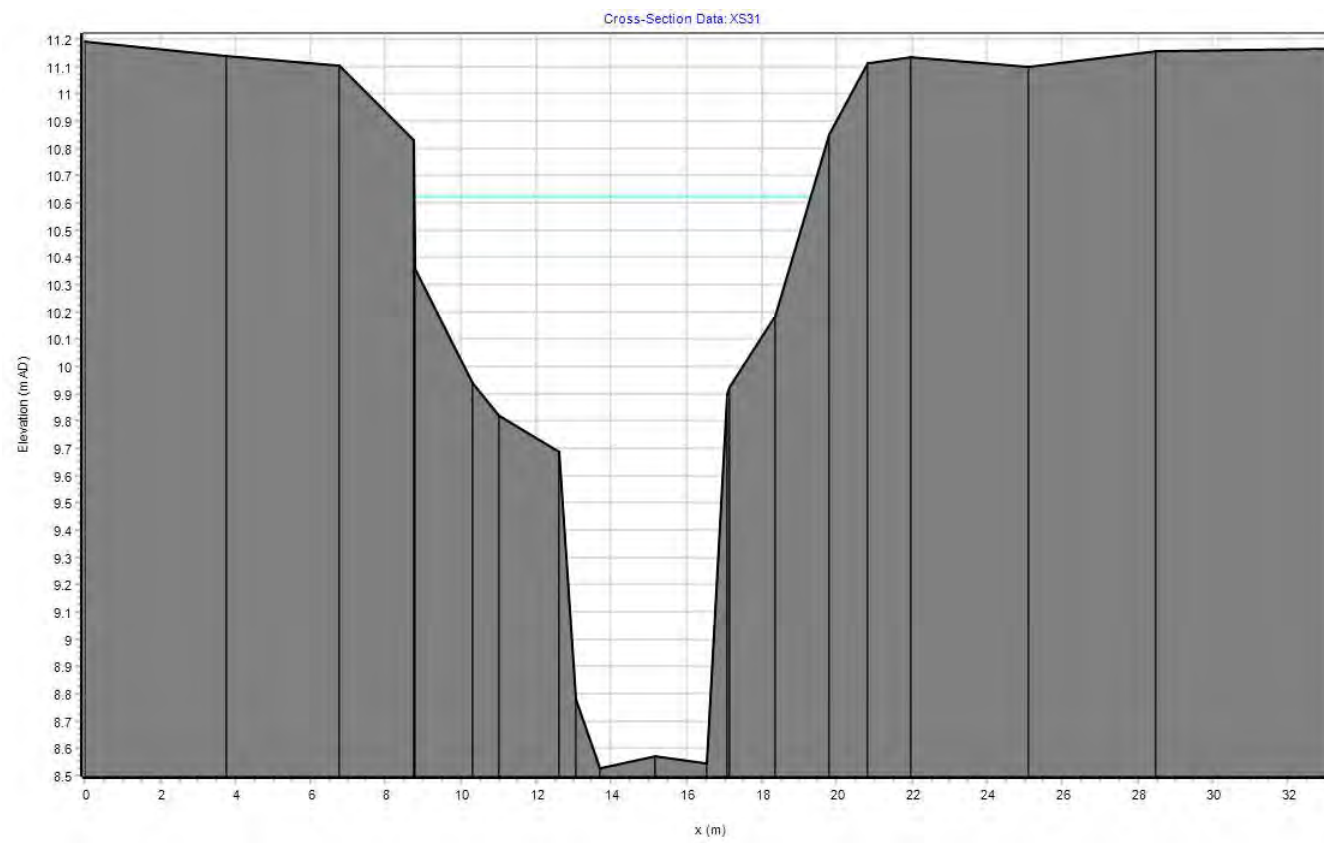
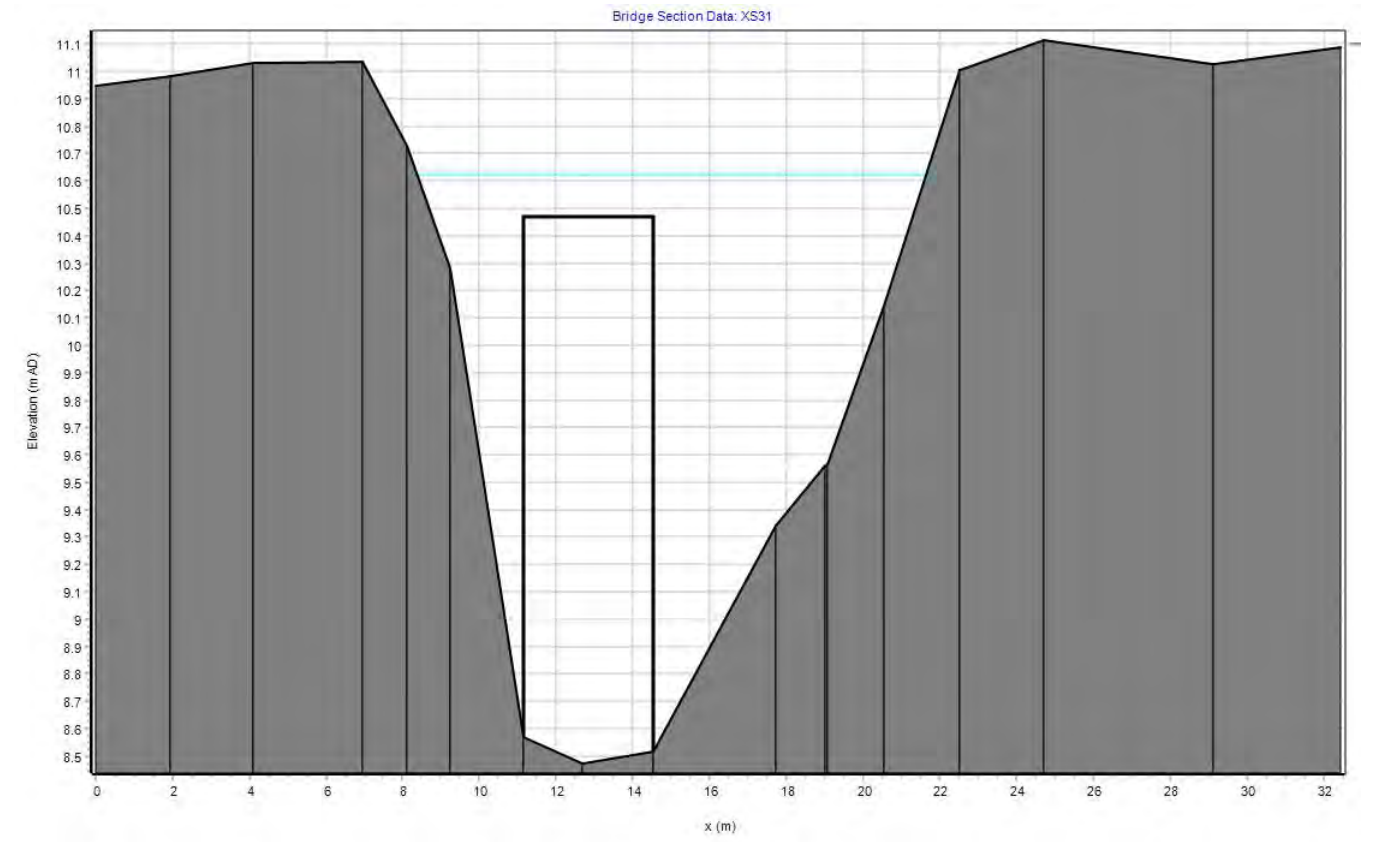
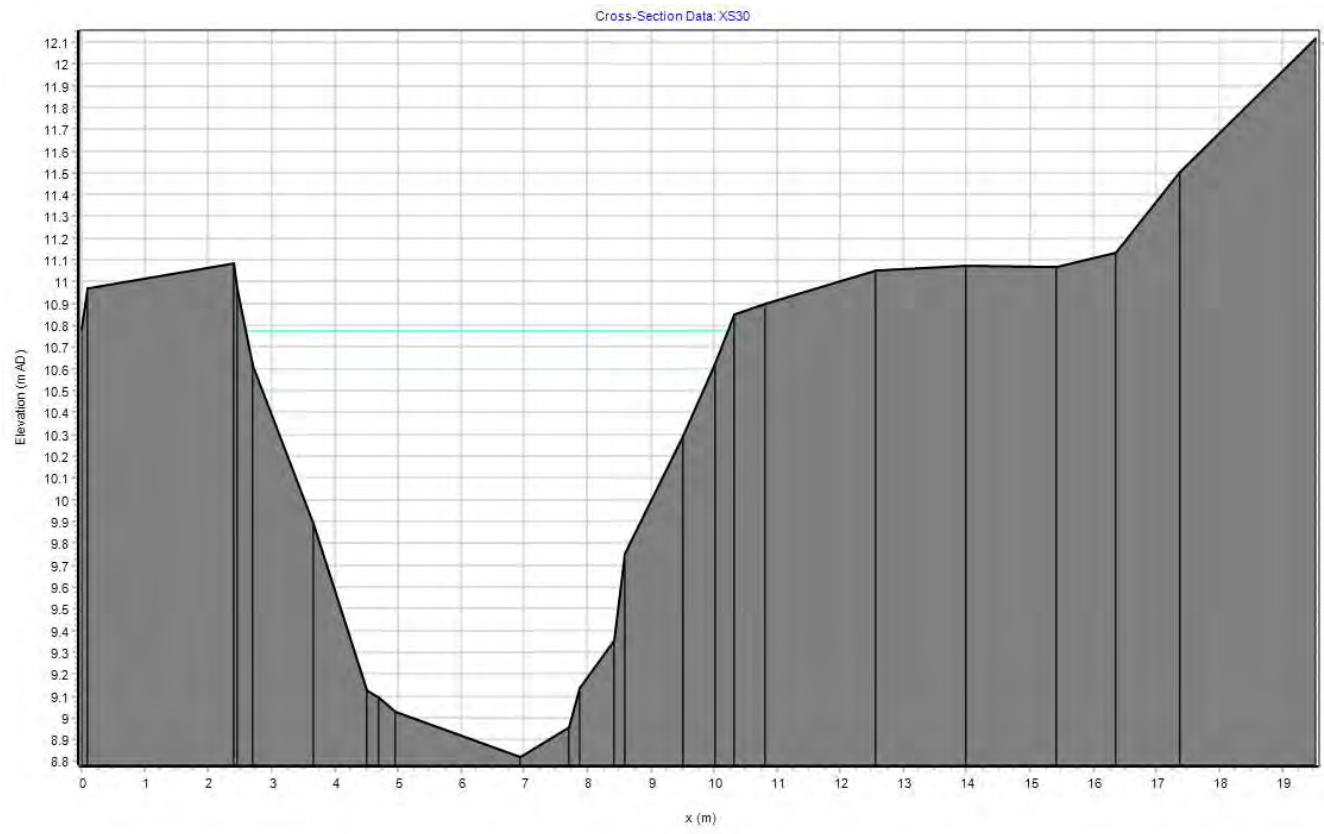


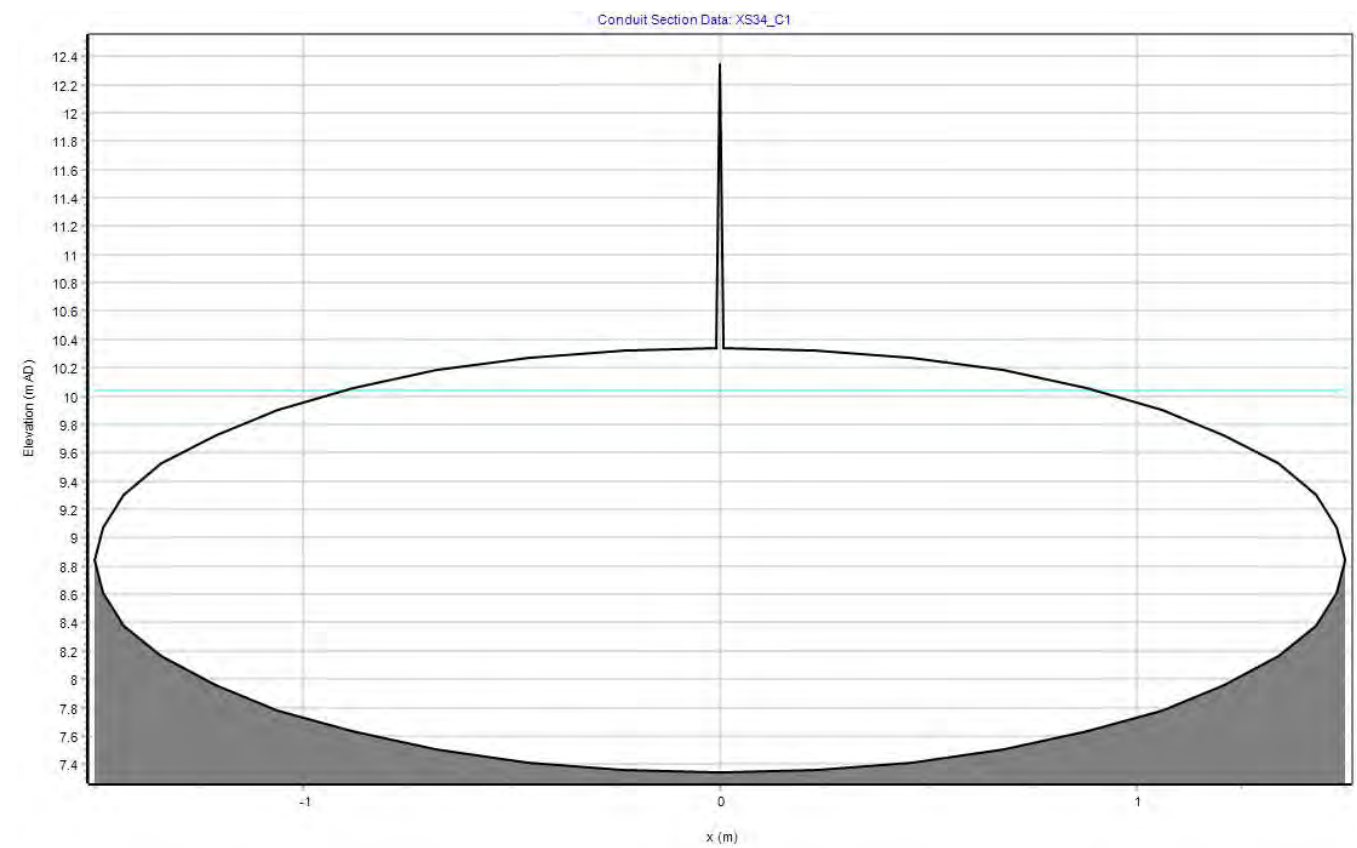
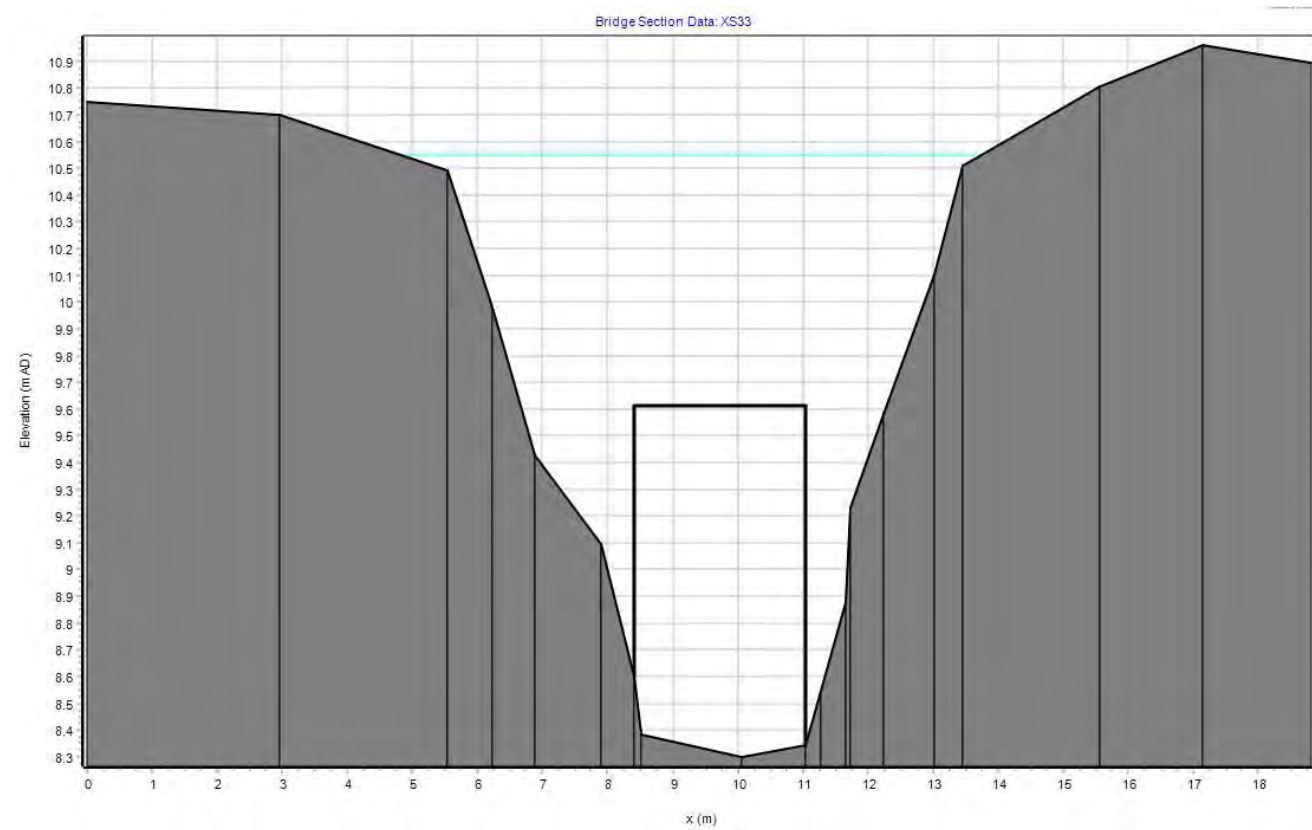
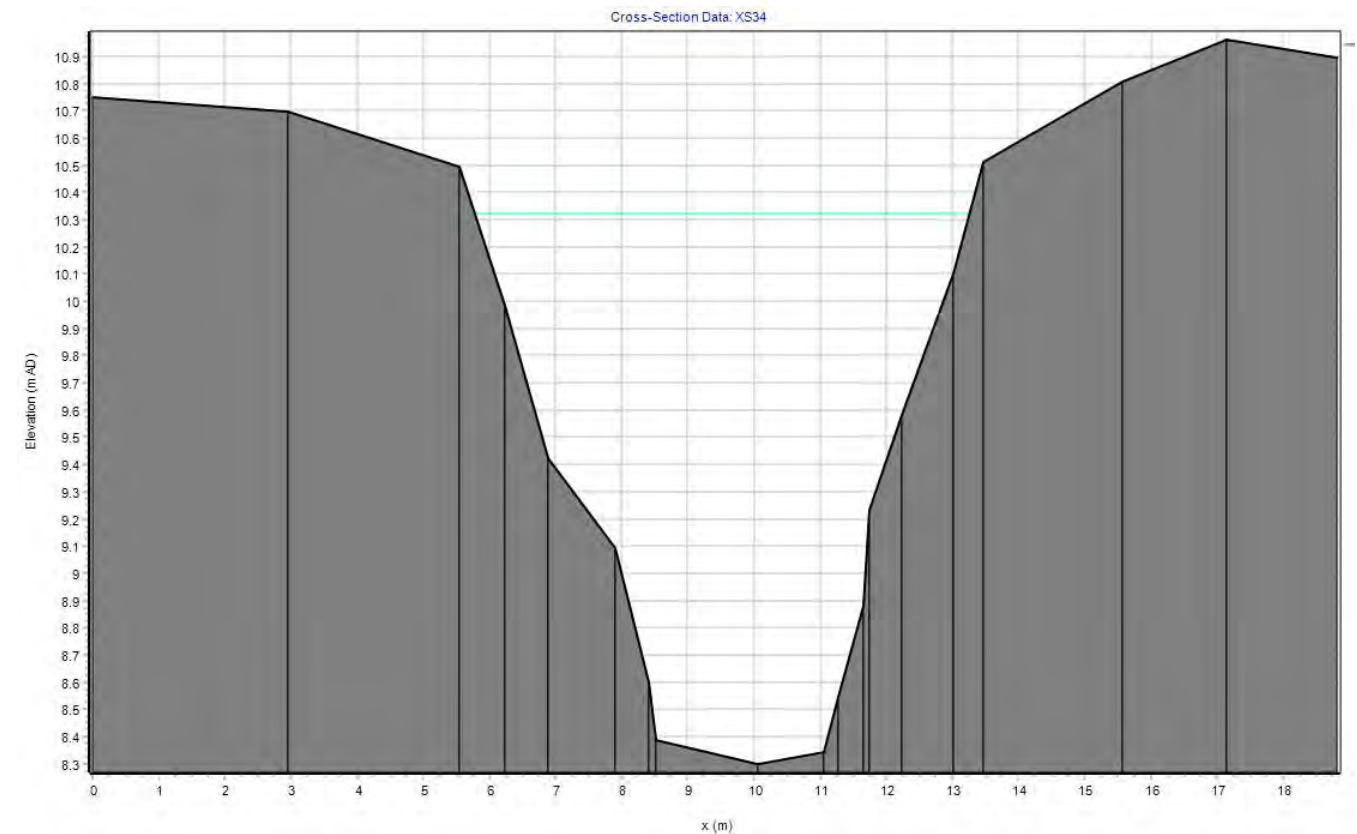
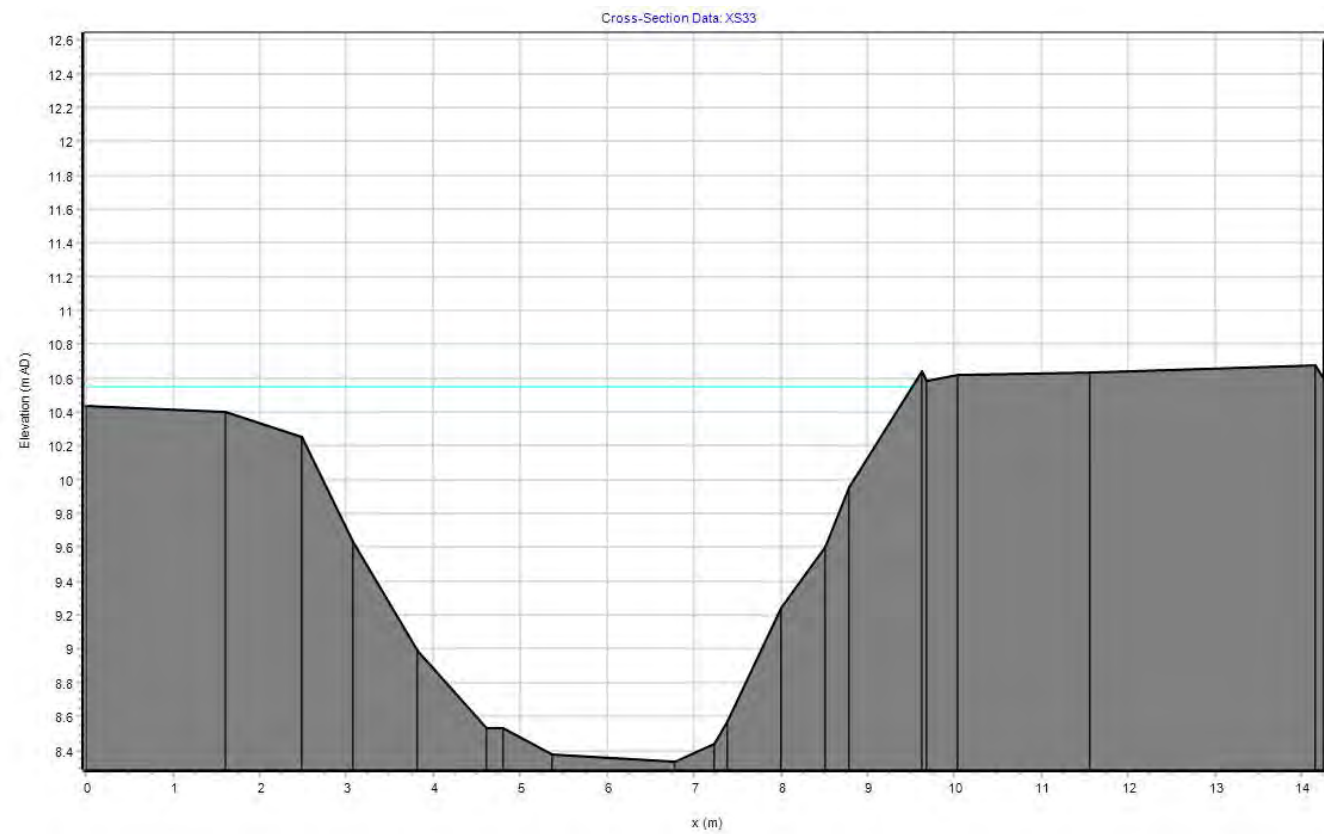


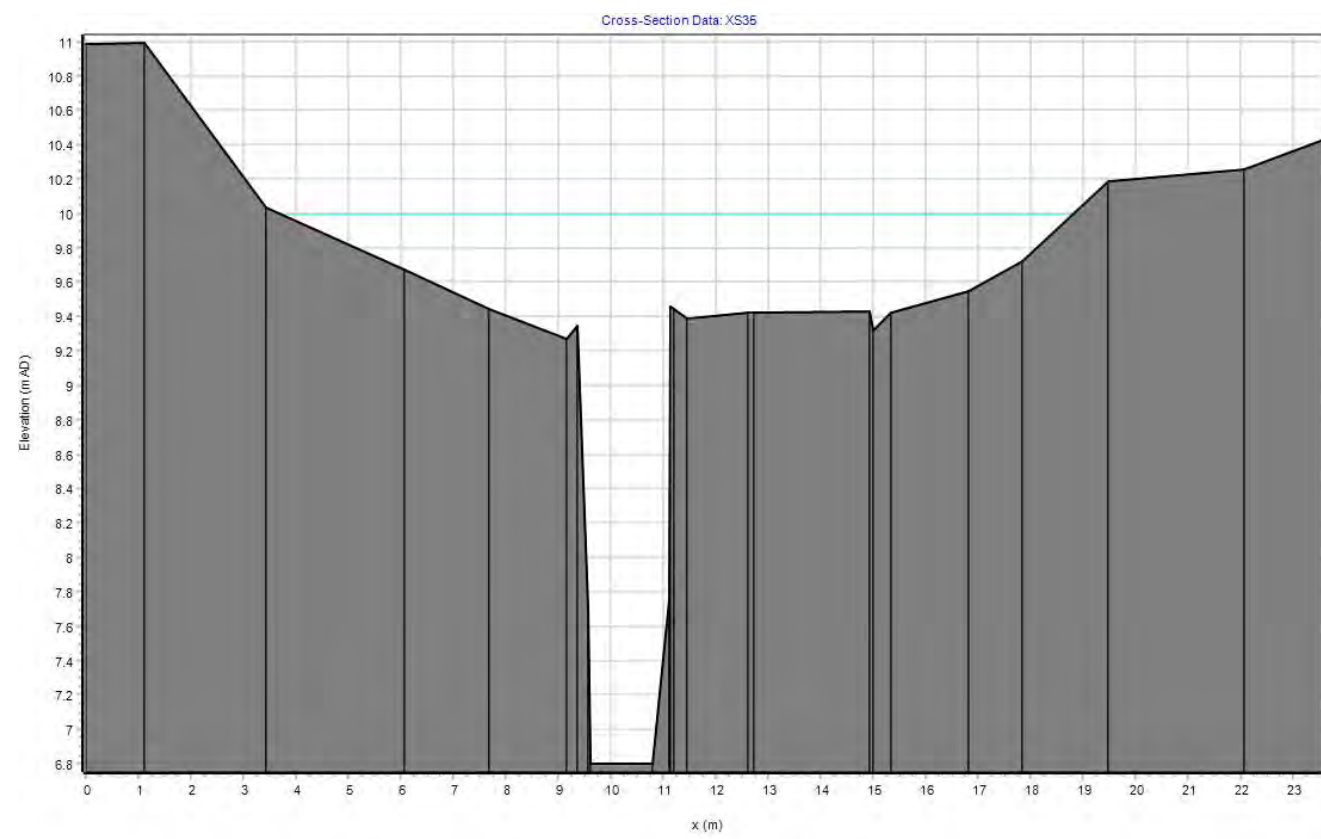
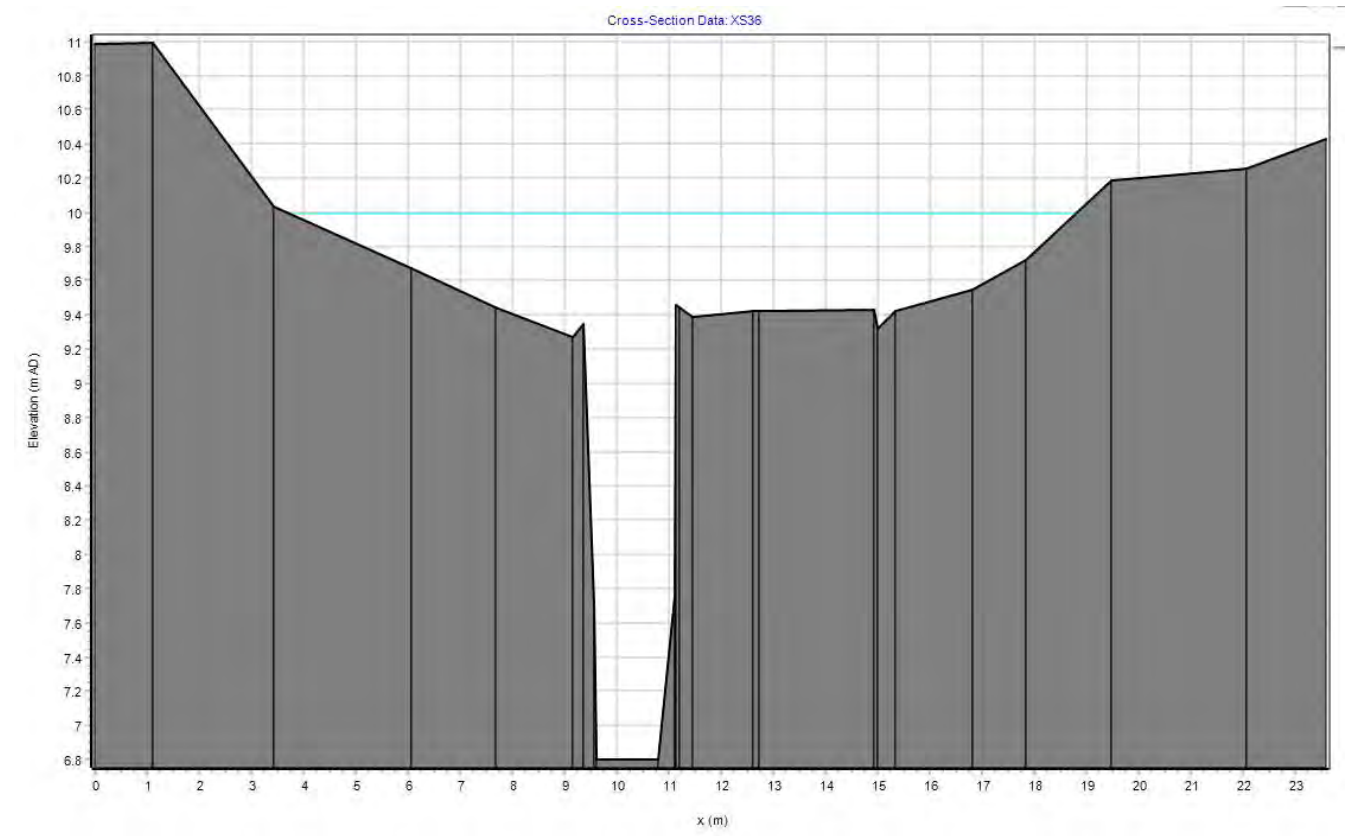
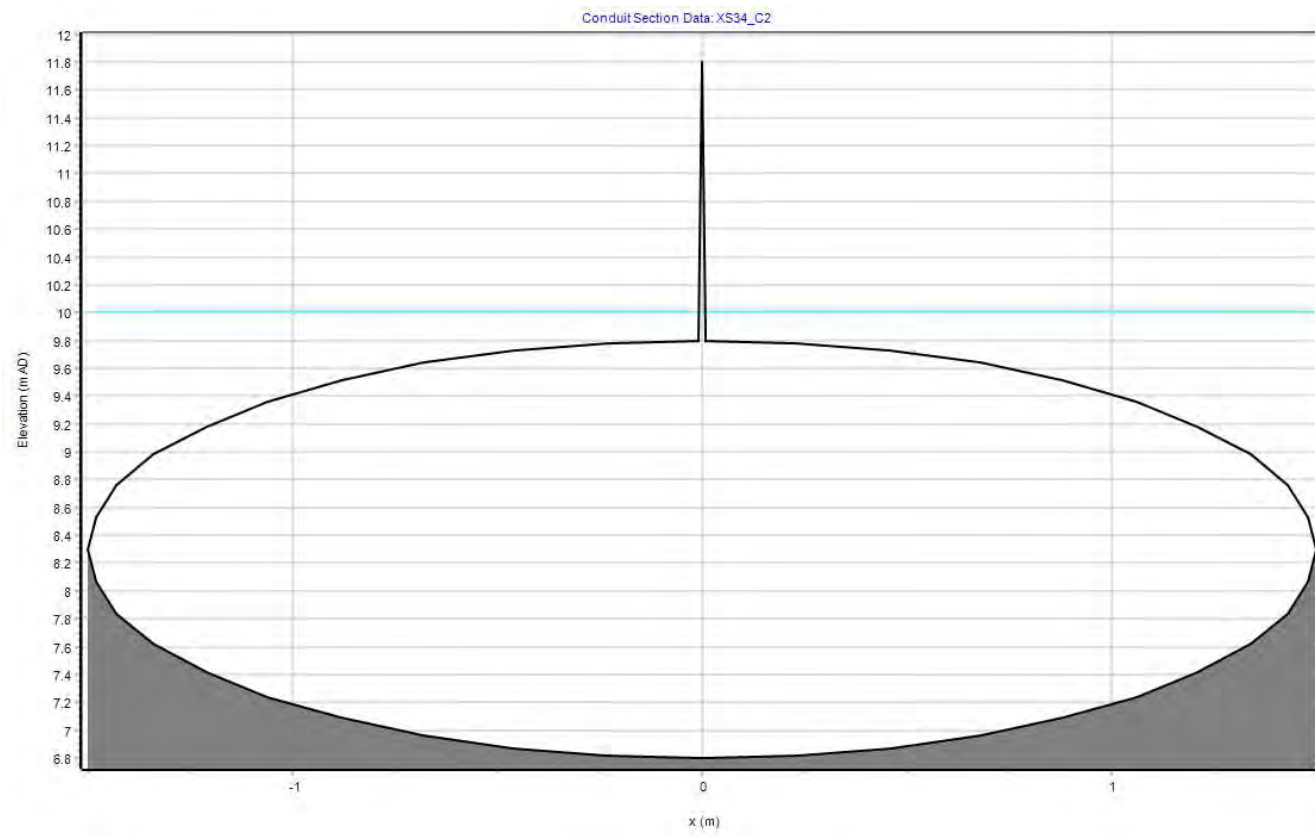




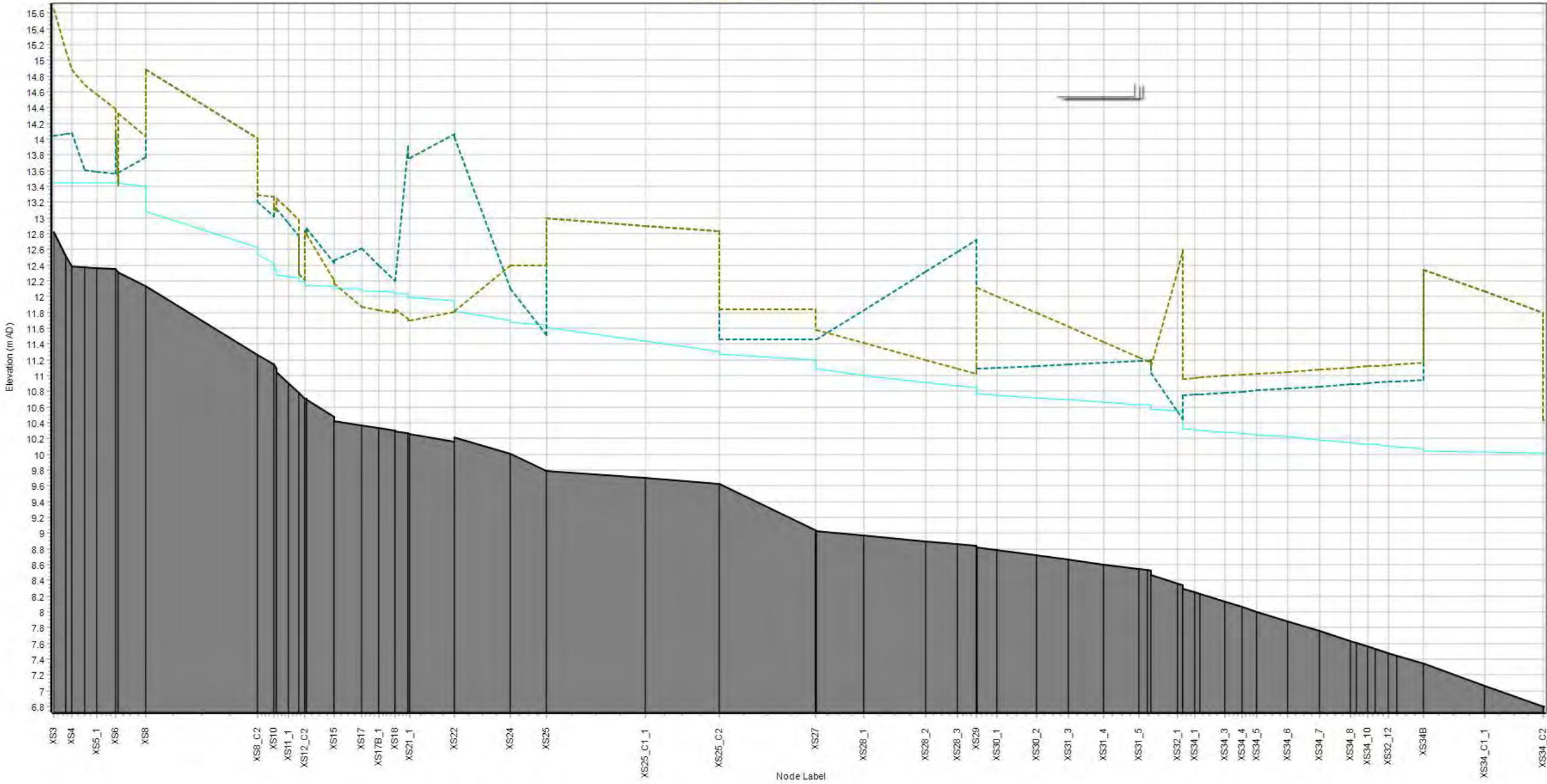






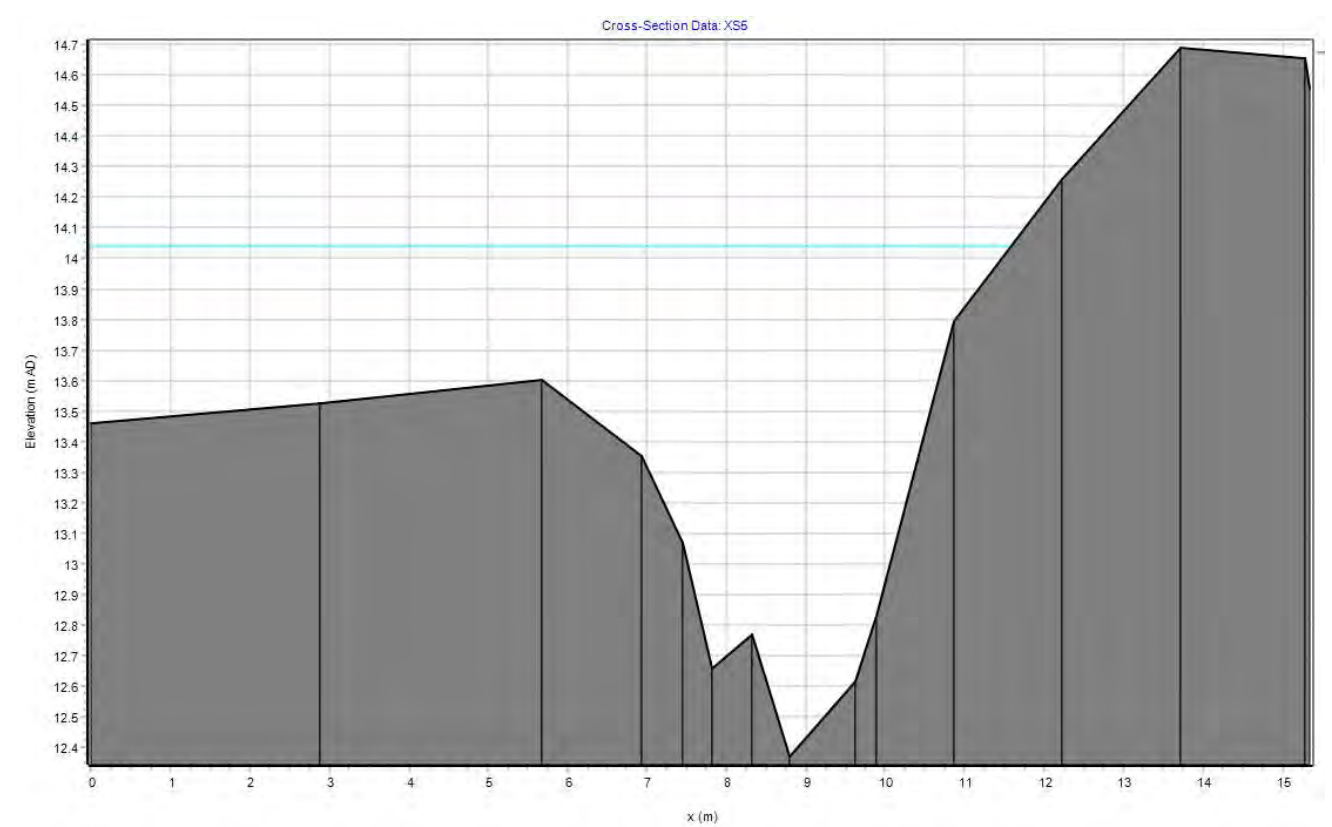
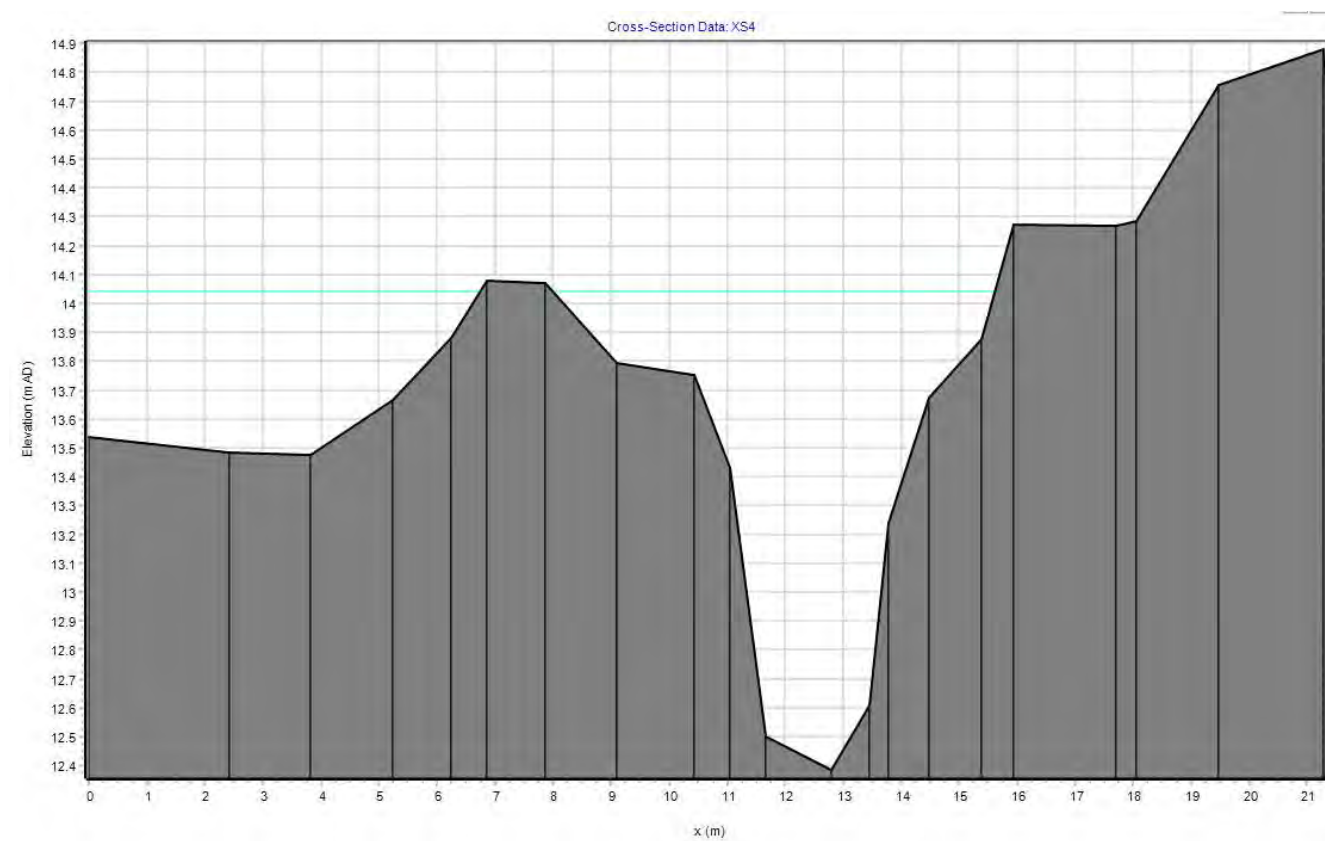
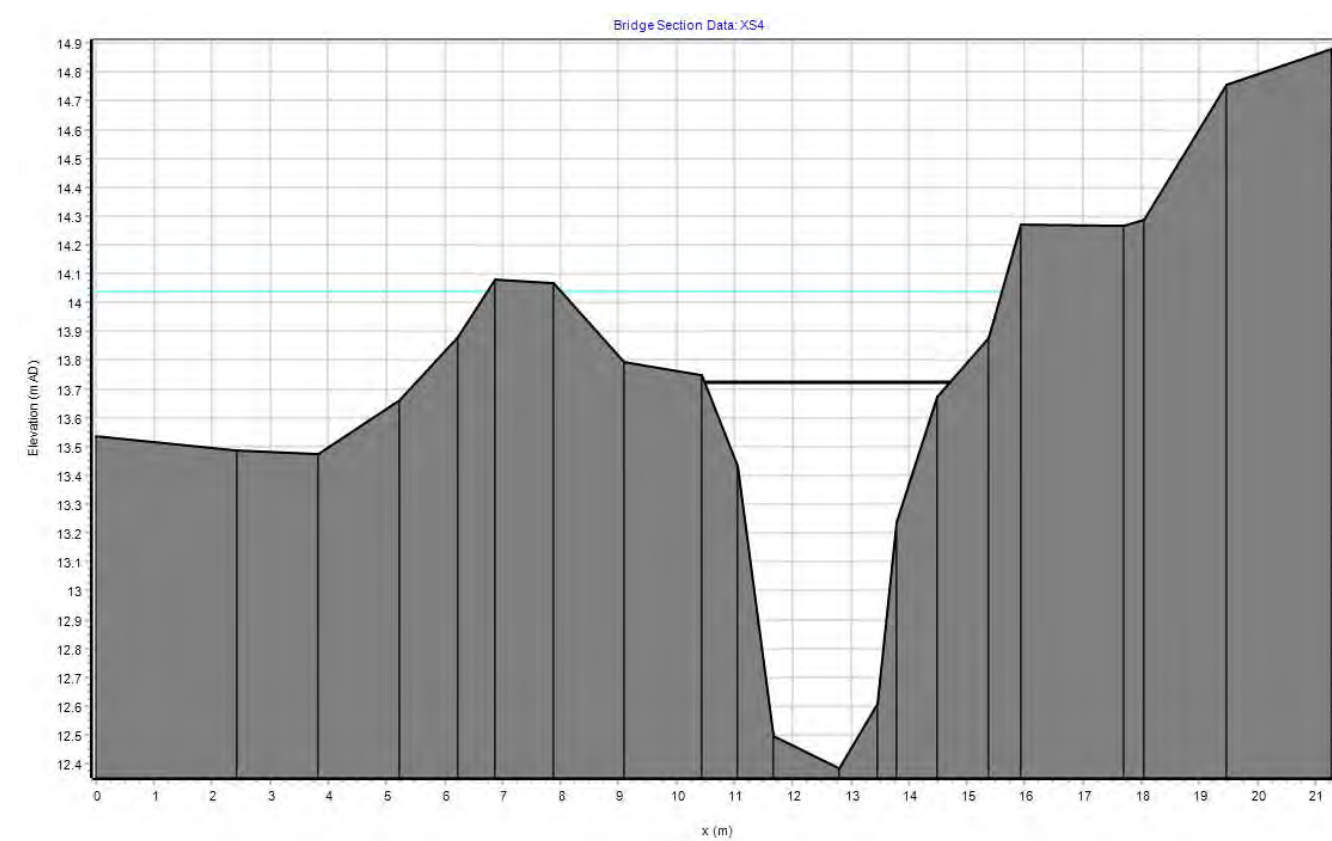
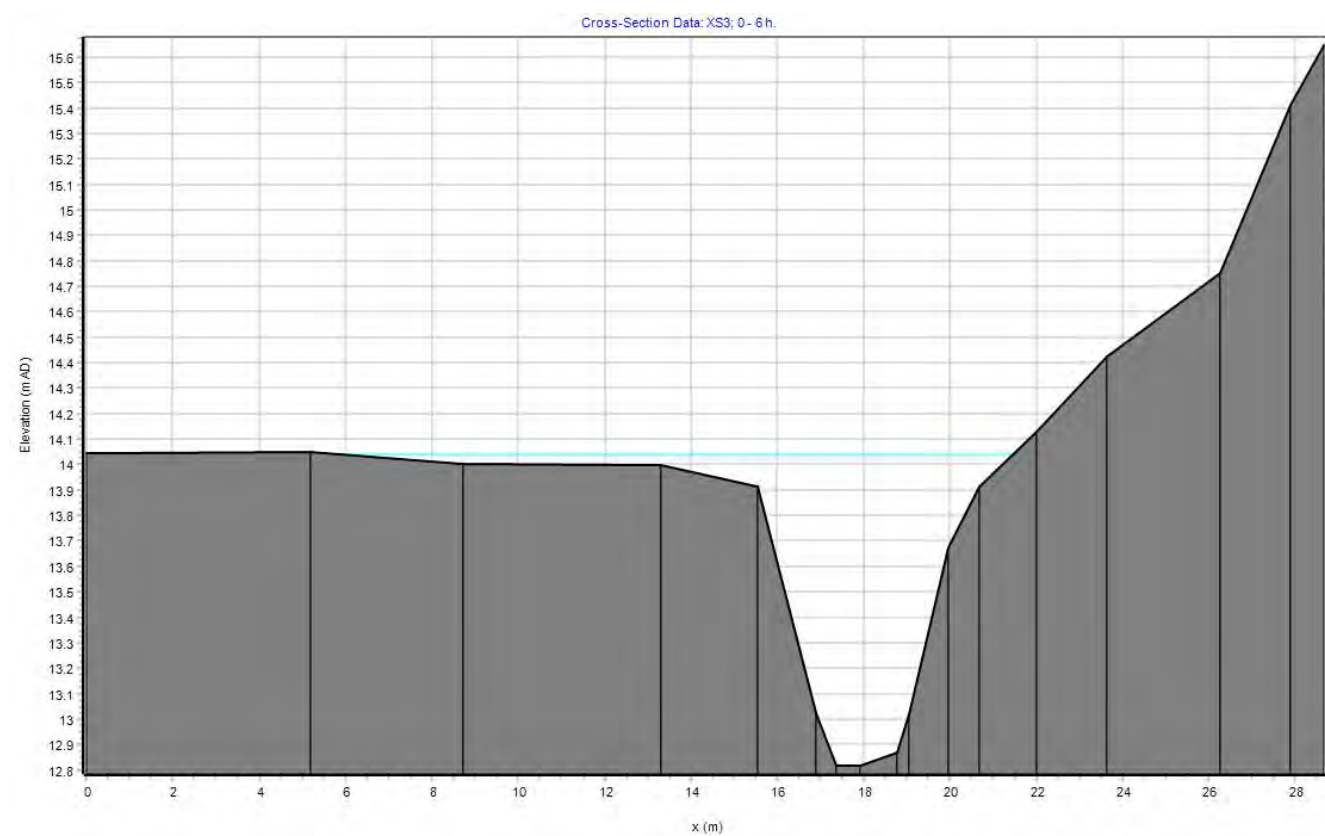


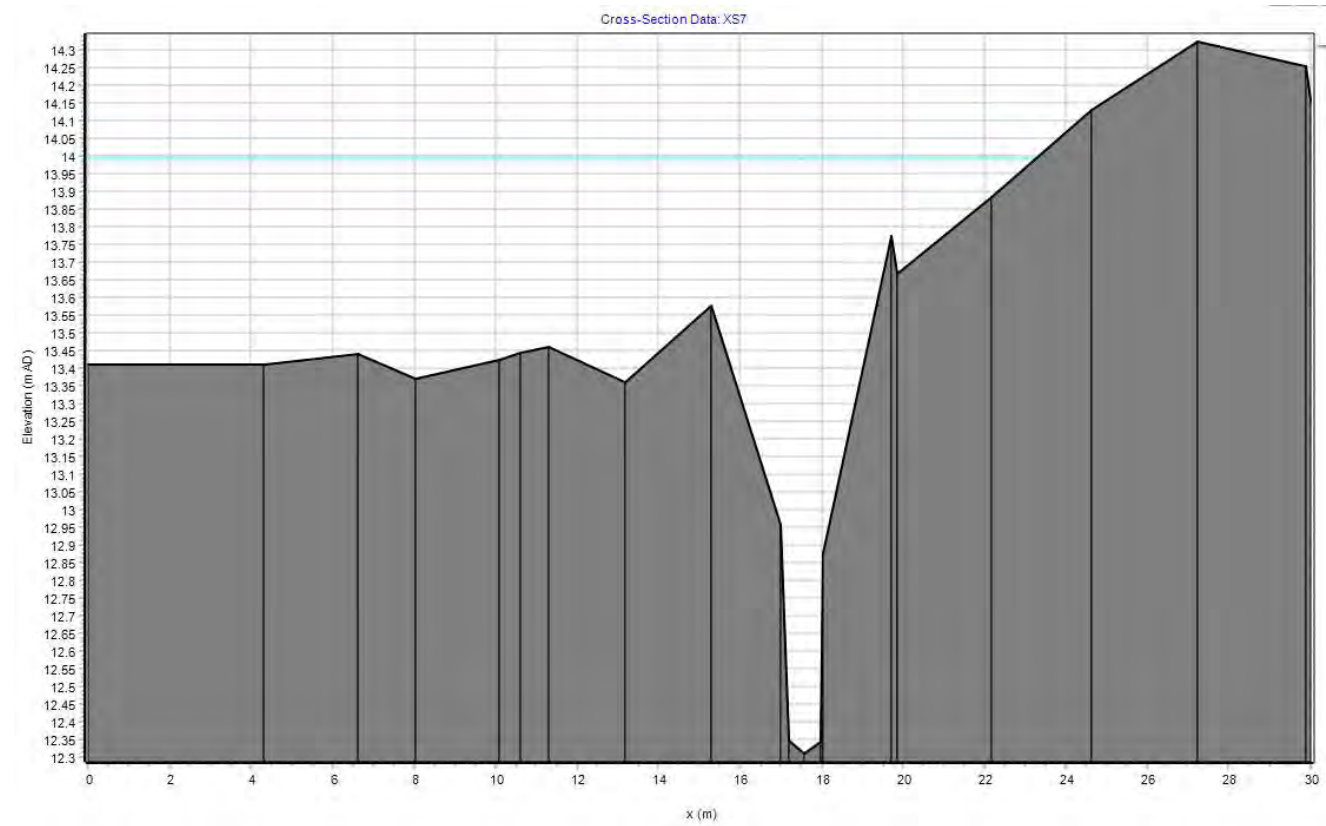
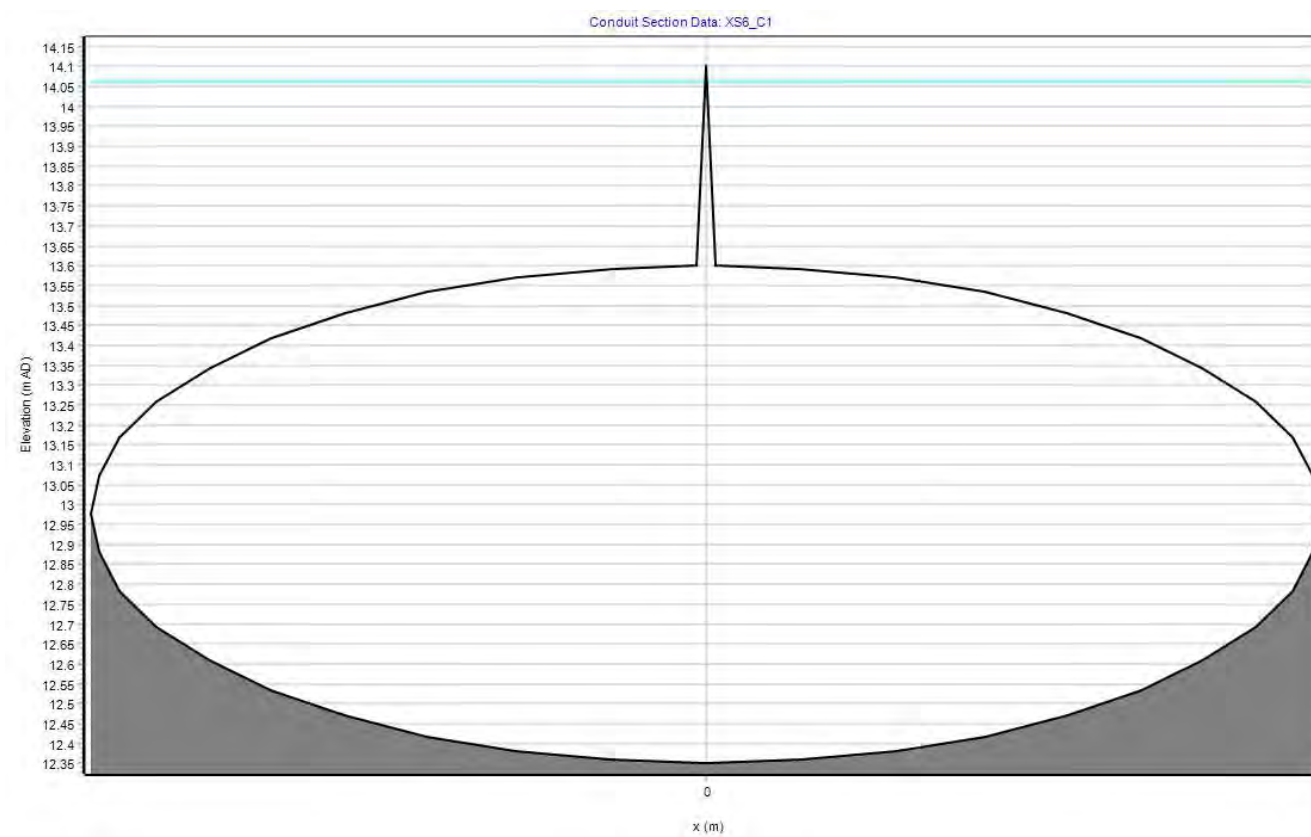
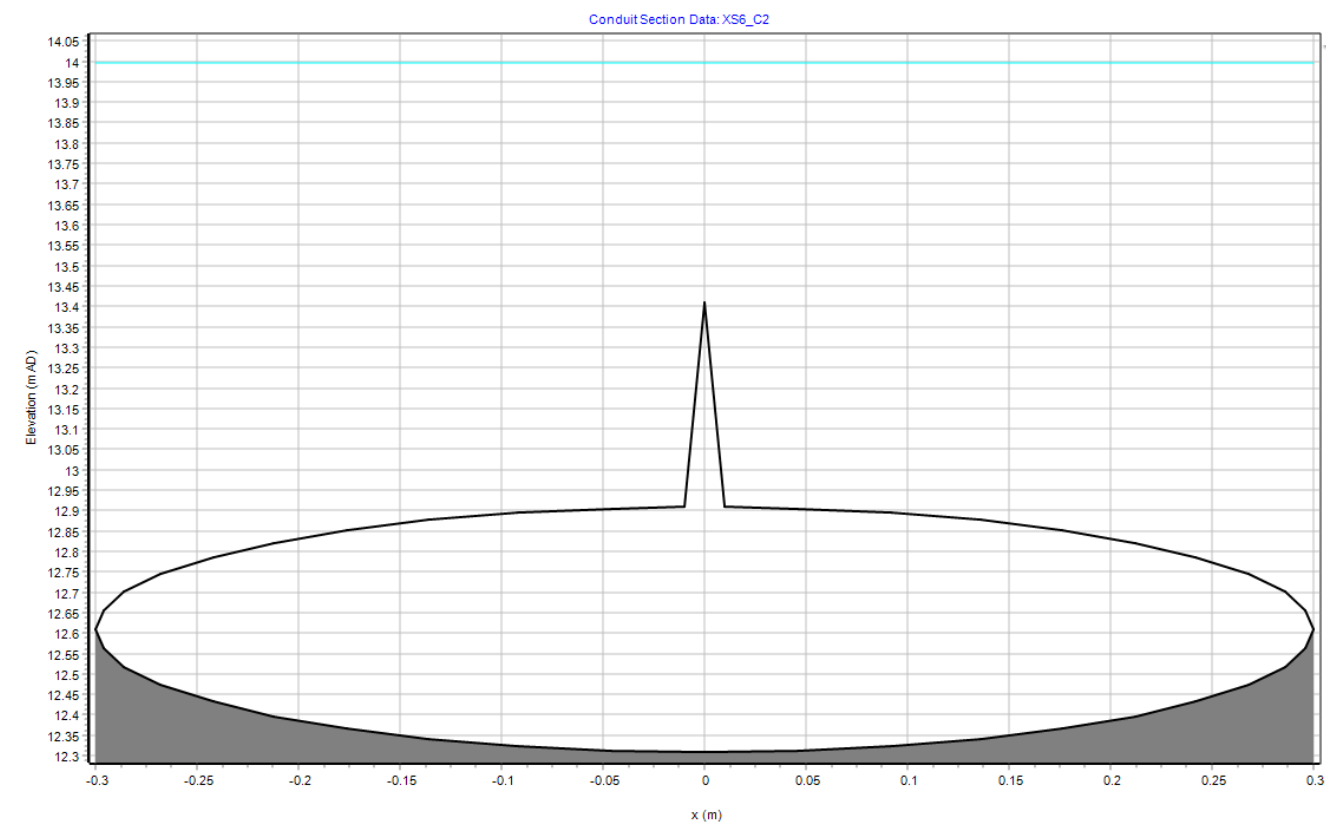
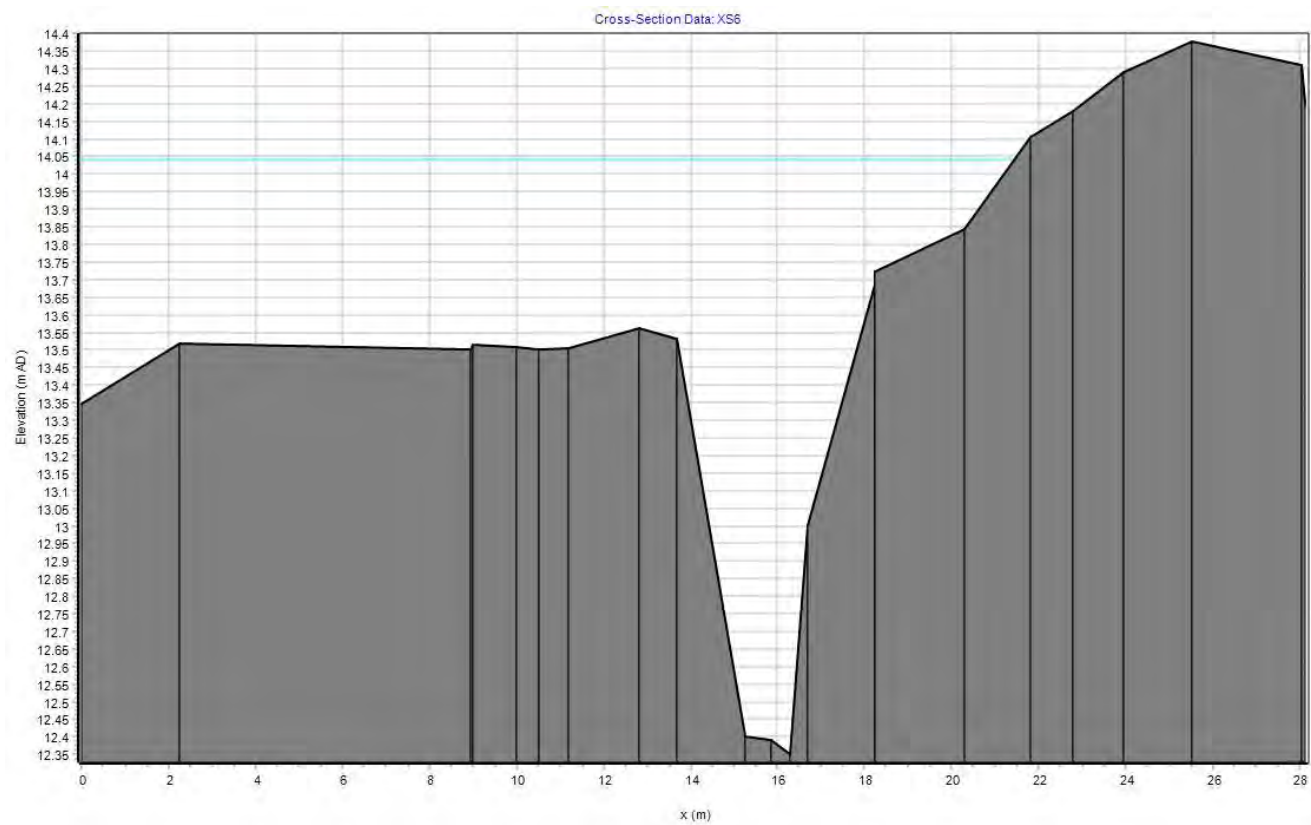
Long Section: XS3 - XS36 - Maximum Stage

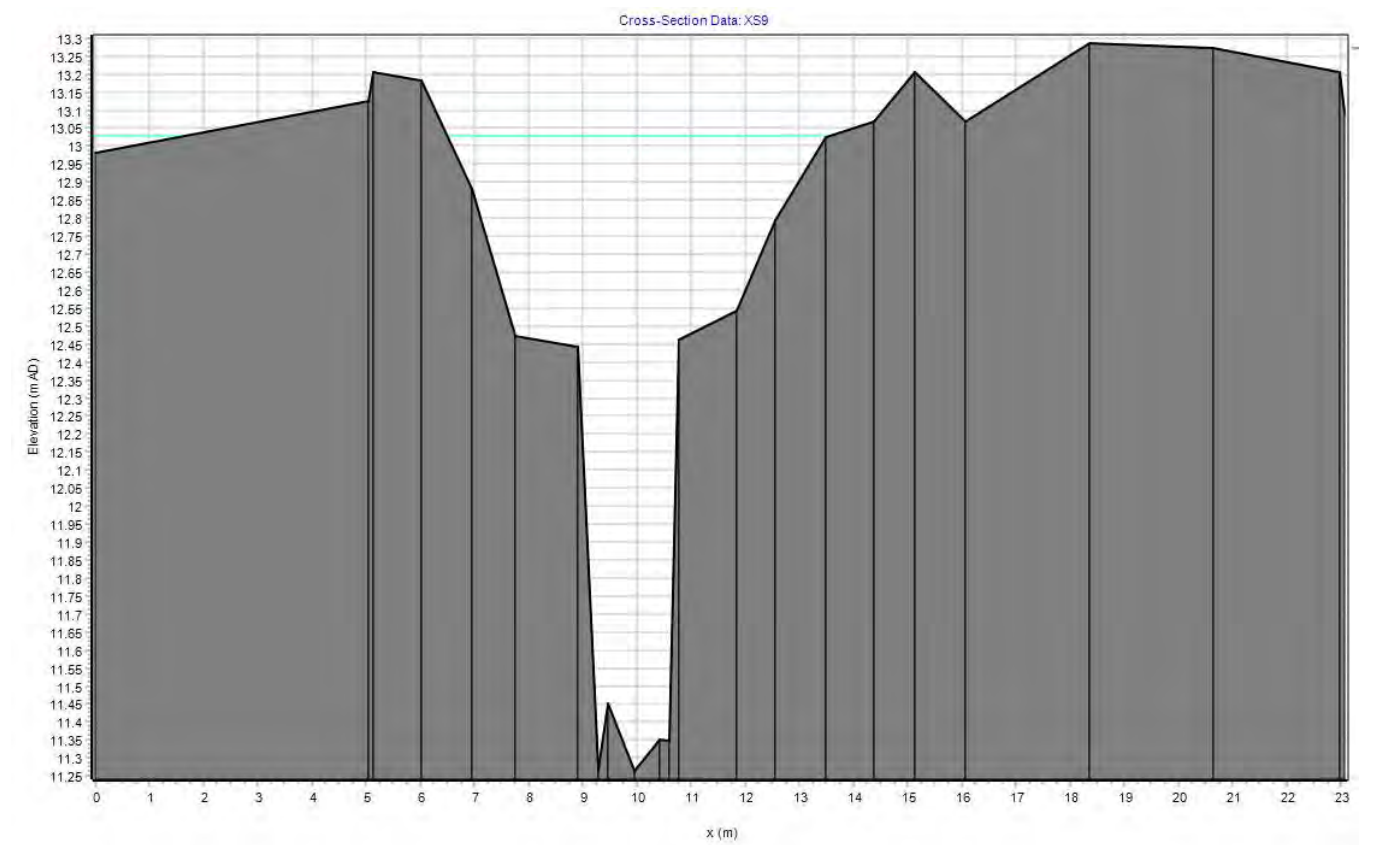
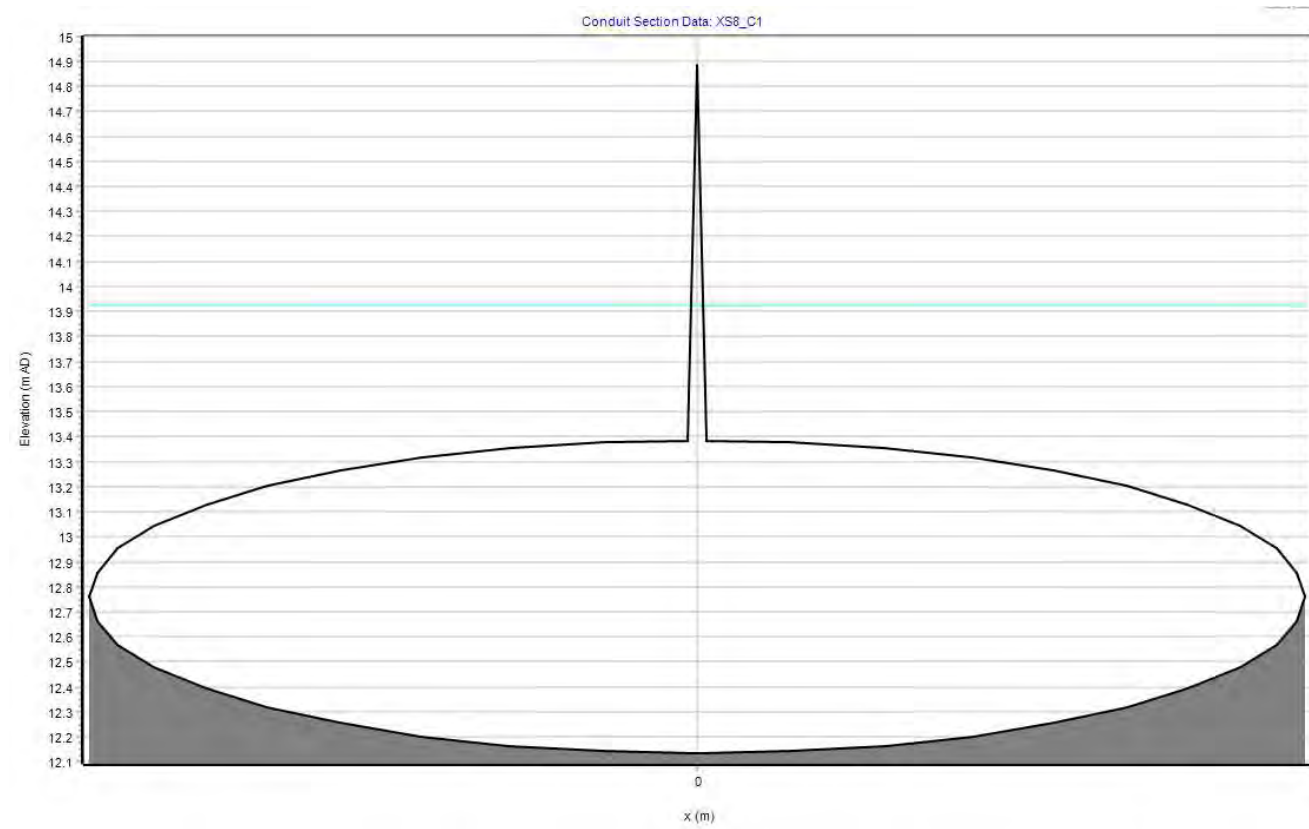
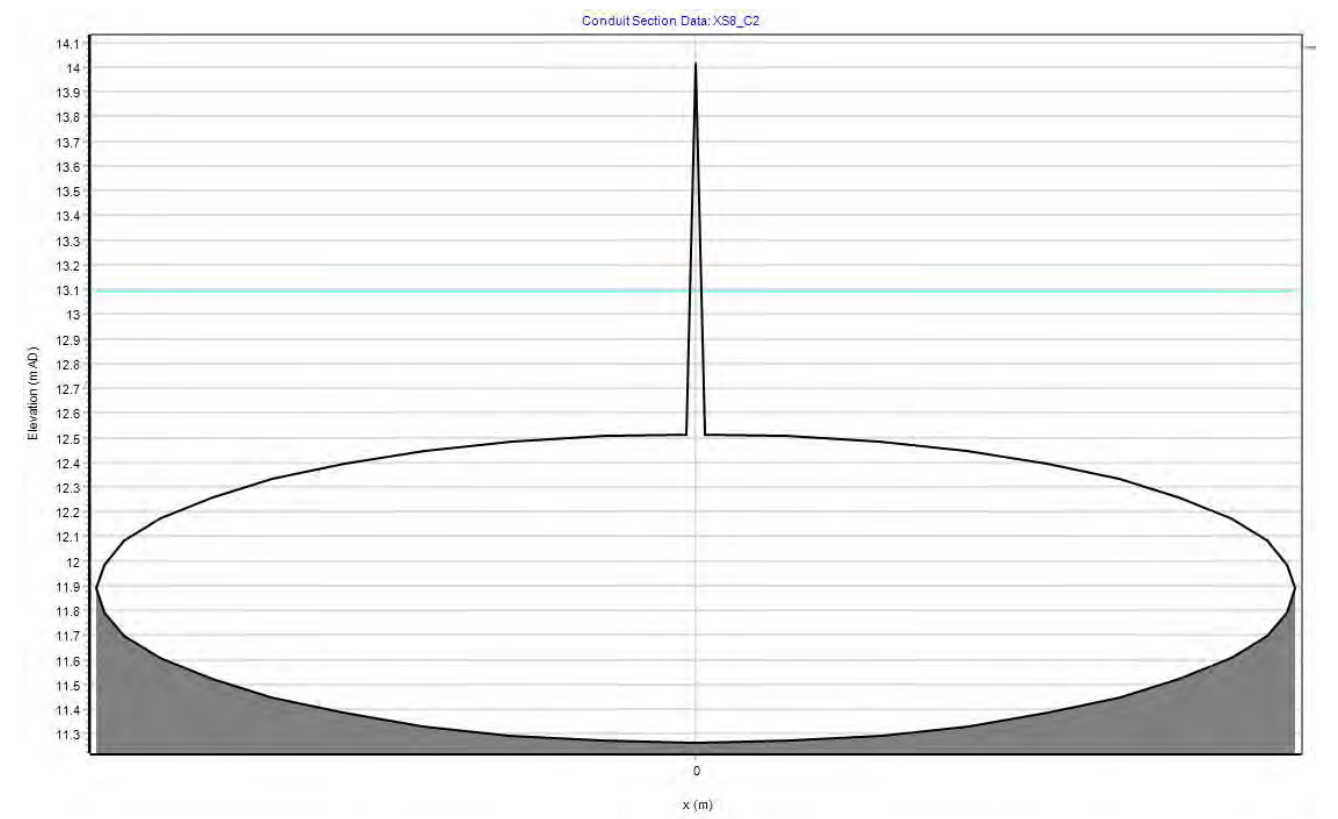
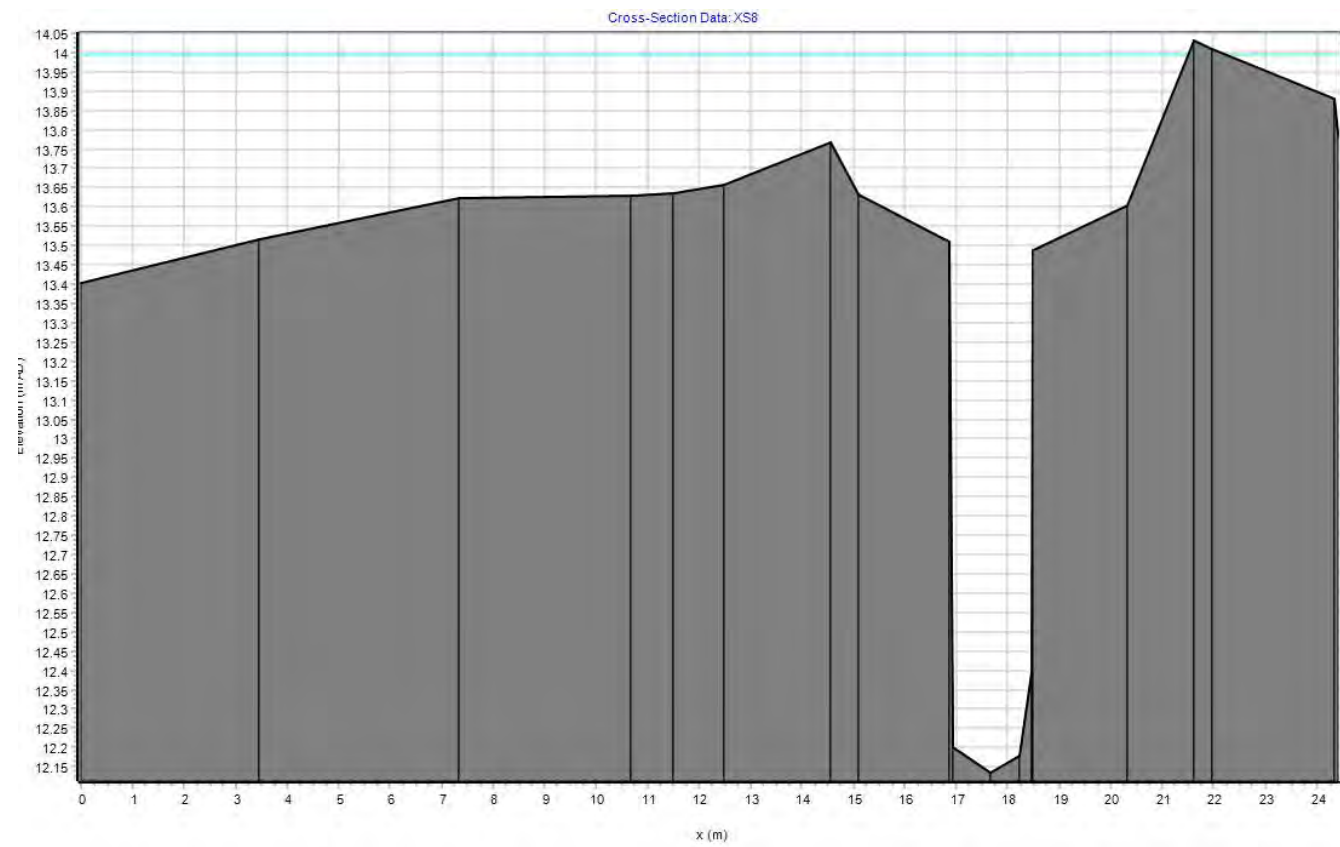


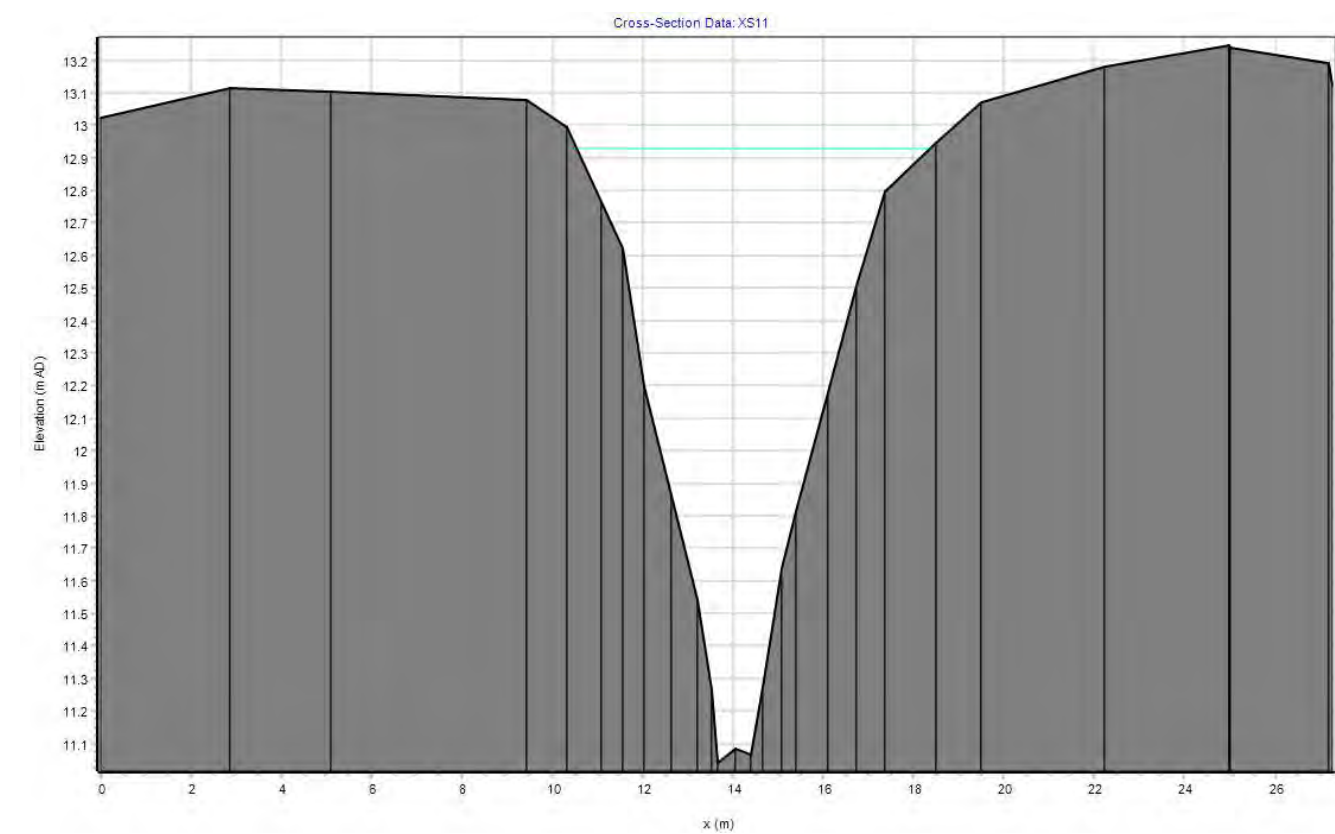
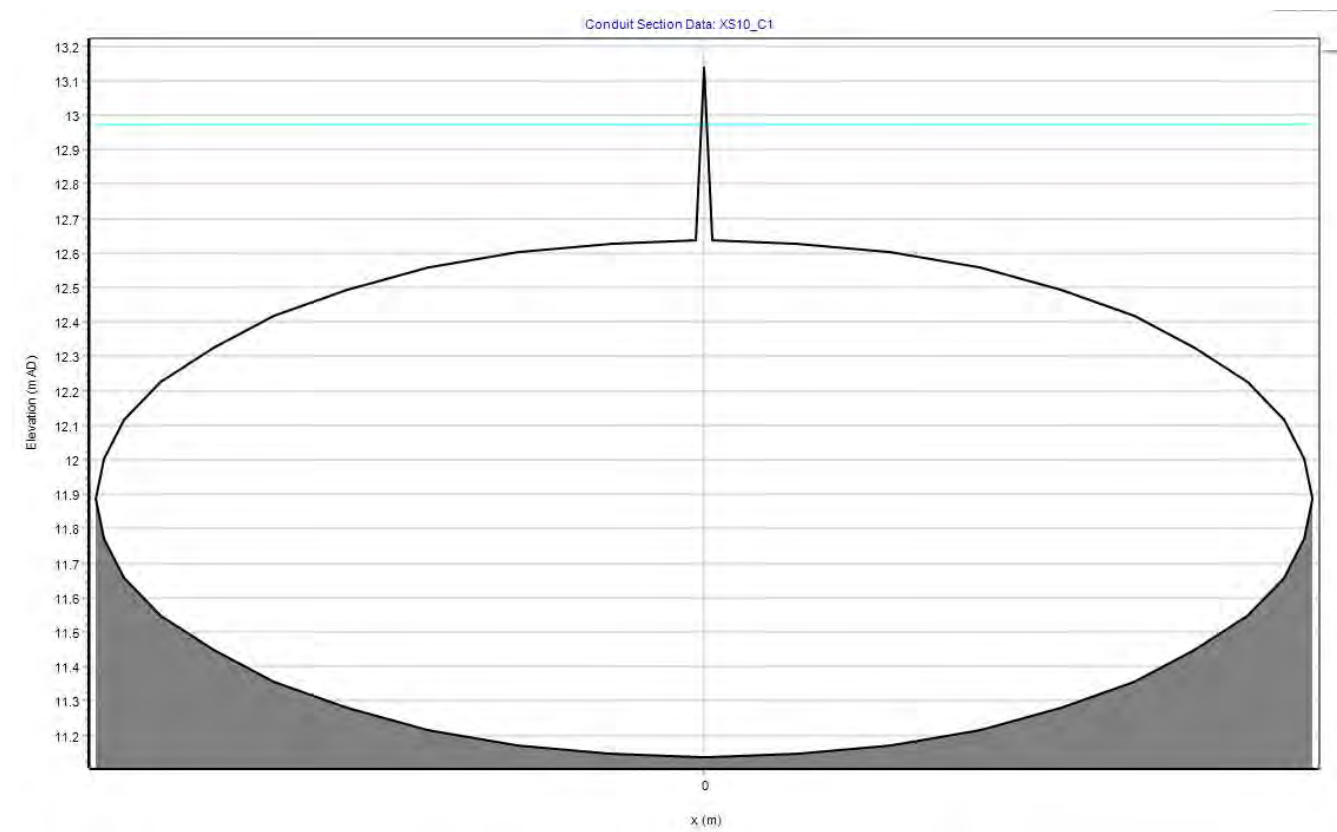
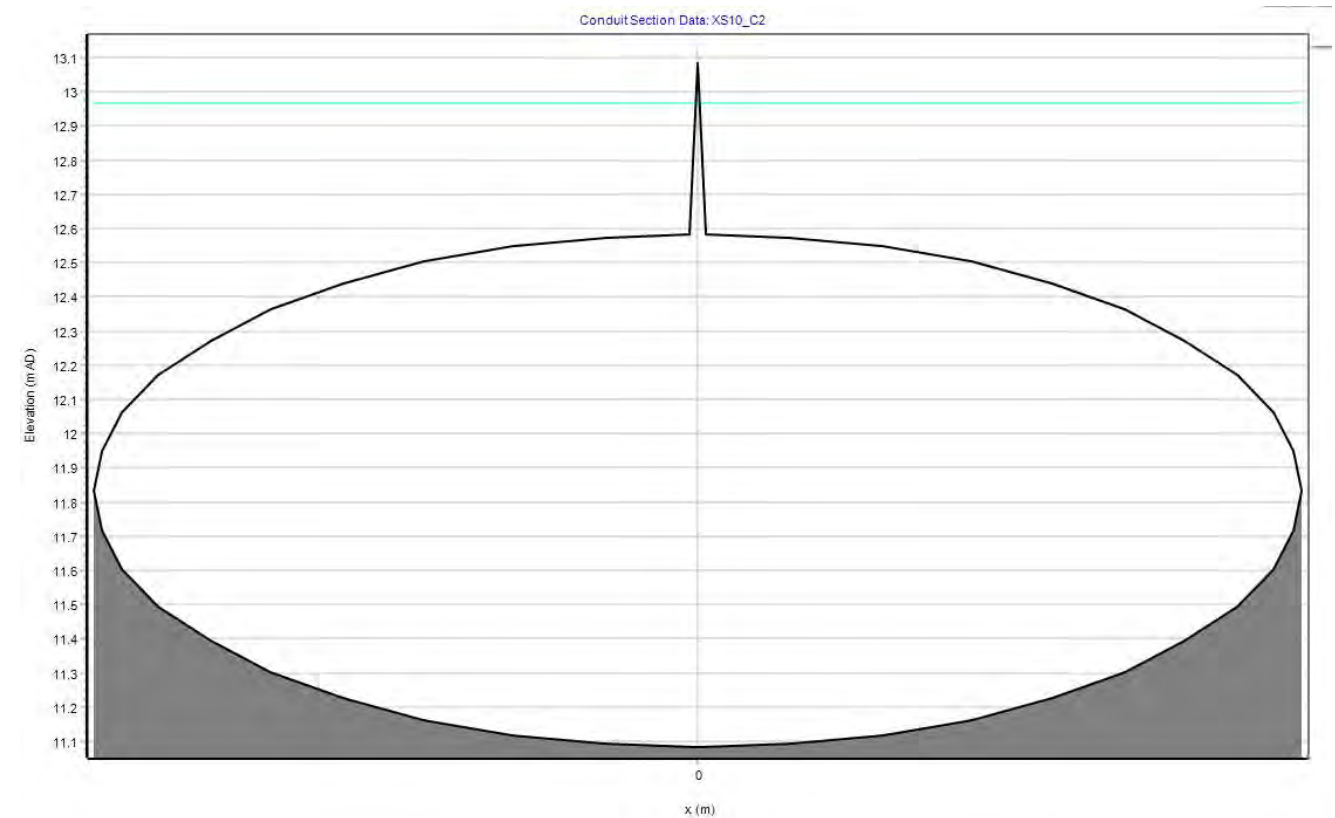
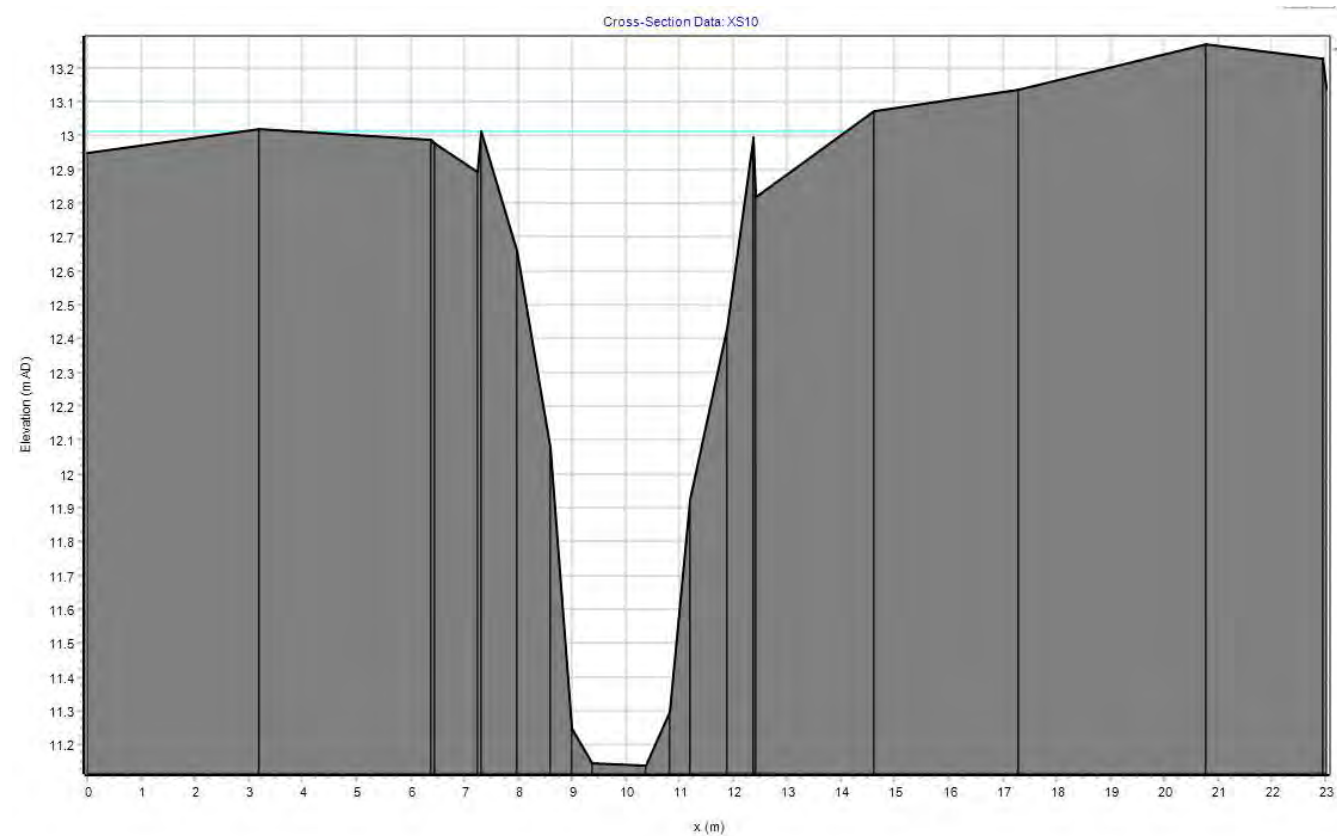
Appendix M – Tyock Burn, Post development scenario.1 in 200 year event + 30% Climate Change Results

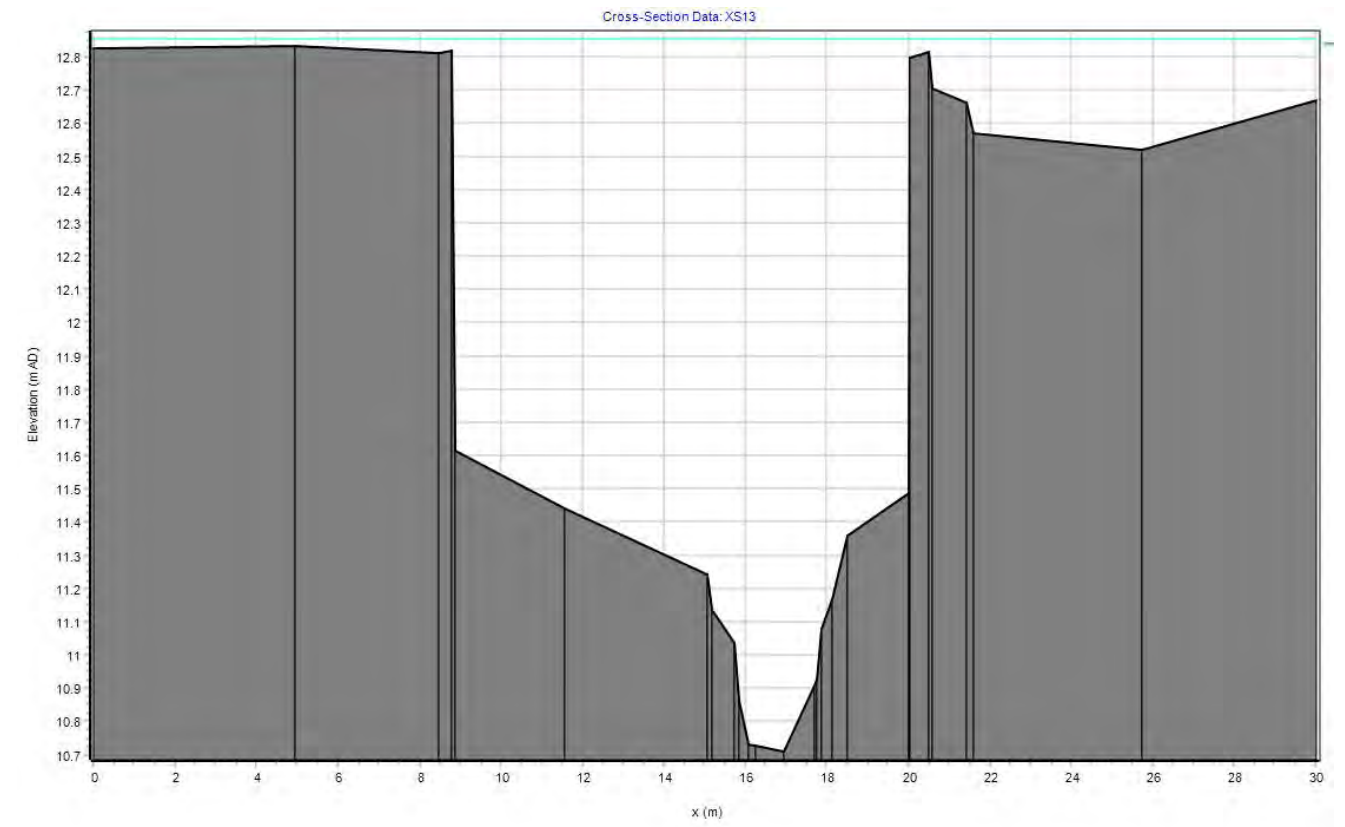
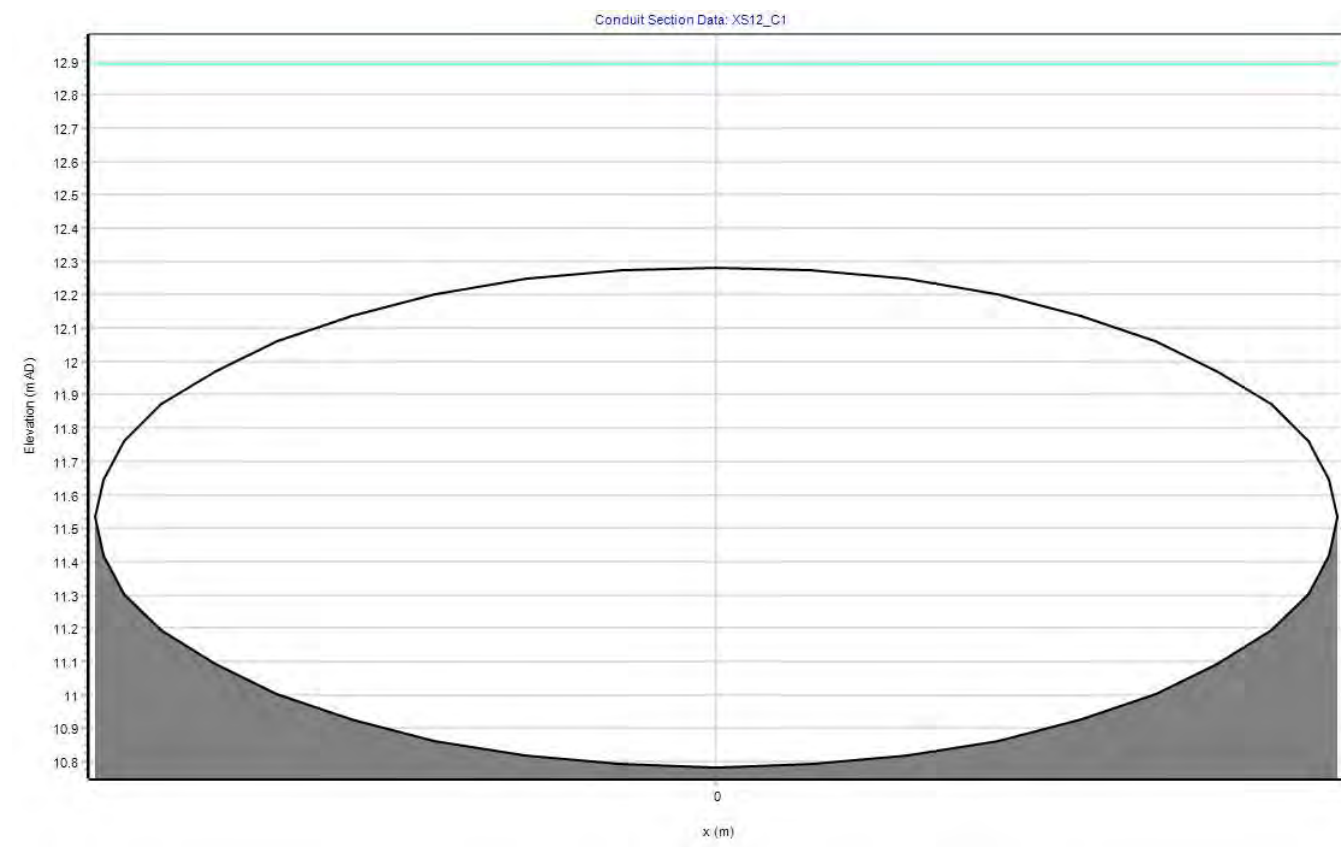
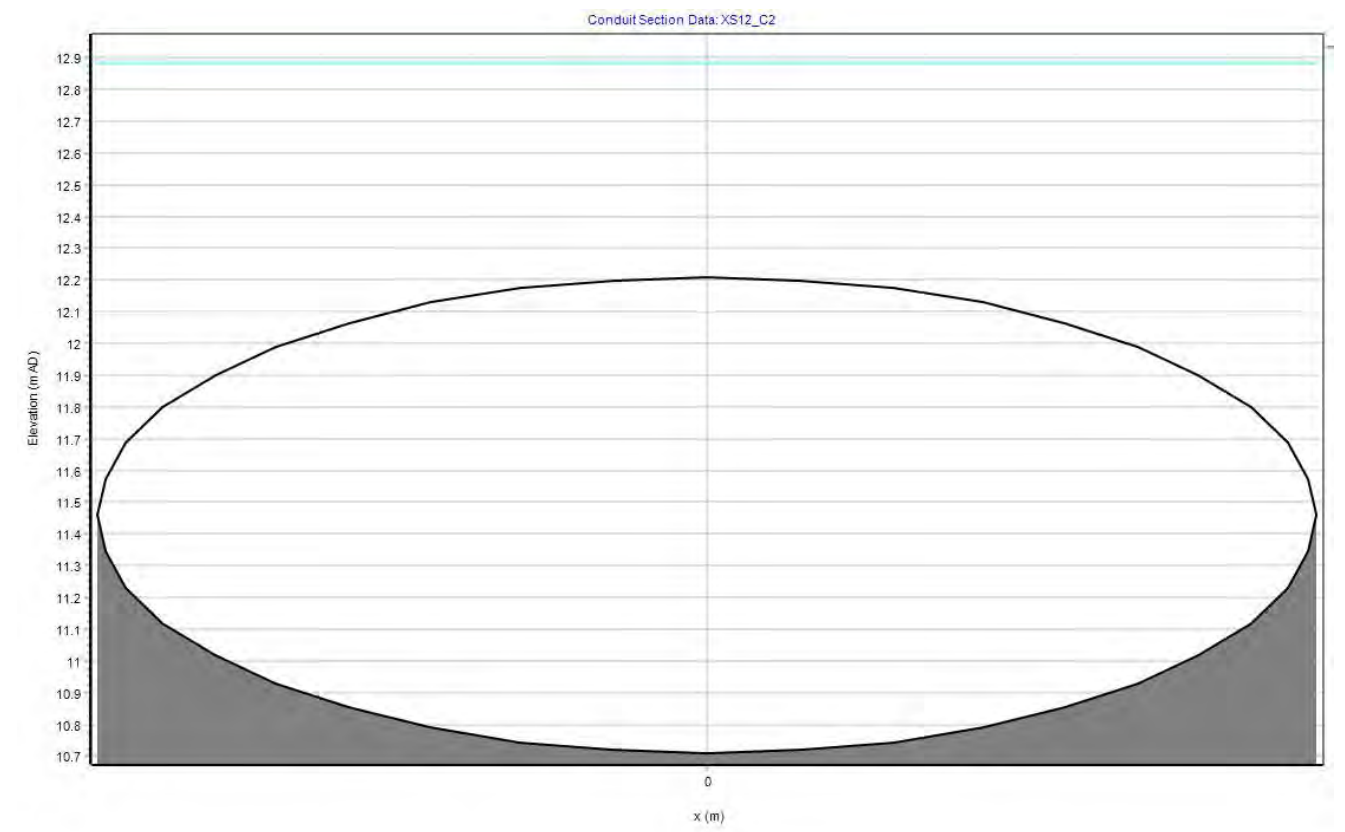
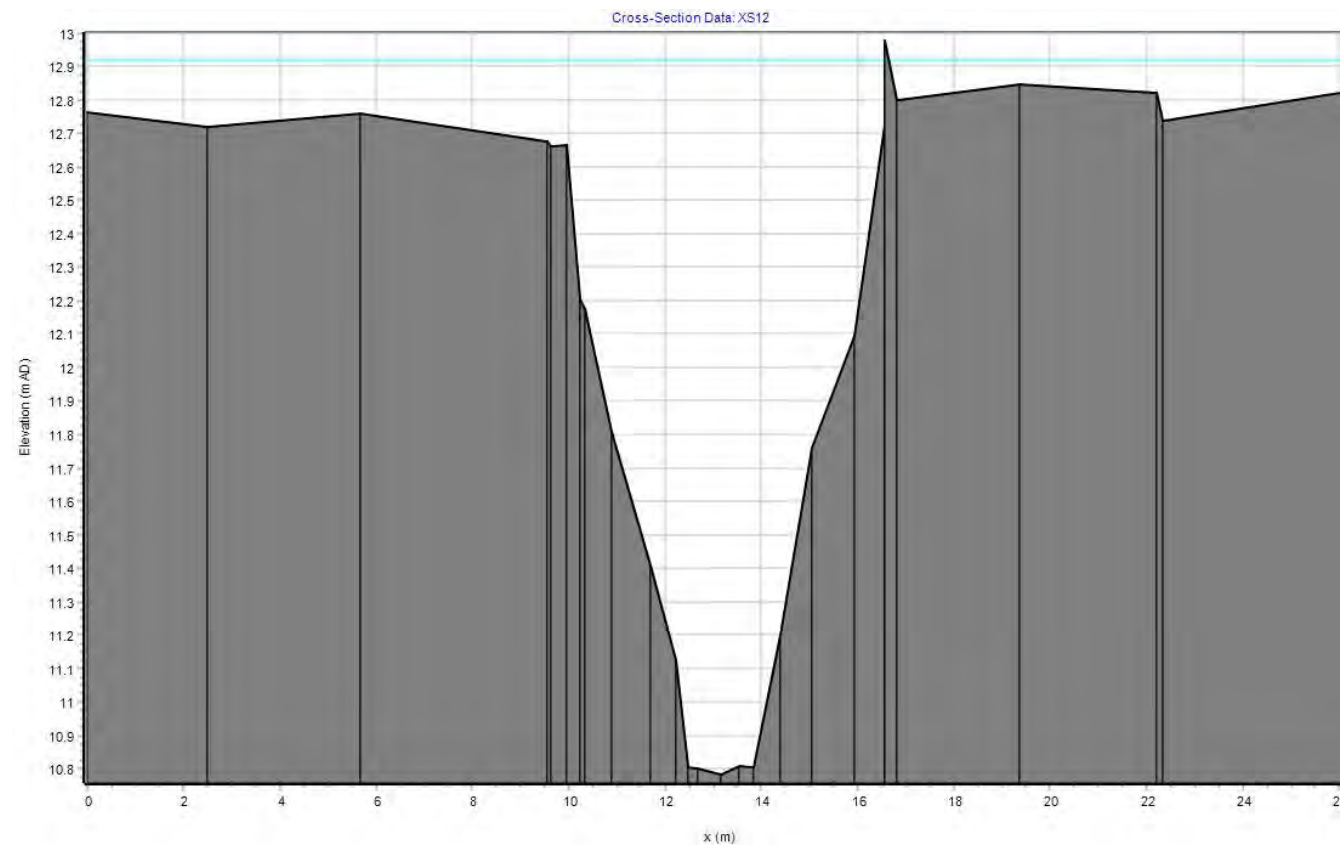
Label	Max Stage	Time (hr)mx2	Max Flow	Time (hr)mx1	Max Velocity	Time (hr)mx4
XS3	14.119	1.333	0.138	1.083	0.516	0.000
XS4	14.107	1.333	1.094	1.333	0.163	1.083
XS5	14.104	1.333	1.062	1.167	0.252	0.000
XS6	14.082	1.417	0.662	1.333	0.269	2.333
XS6_C1	14.099	1.333	0.662	1.333	0.540	1.333
XS6_C2	13.998	1.583	0.662	1.333	2.312	1.333
XS7	13.997	1.583	1.352	1.333	0.684	2.250
XS8	13.996	1.583	1.144	1.917	0.580	2.167
XS8_C1	13.926	1.583	2.336	1.250	2.092	0.833
XS8_C2	13.093	1.750	2.334	1.250	1.874	1.250
XS9	13.031	1.750	2.334	1.250	1.038	0.833
XS10	13.012	1.833	2.246	1.250	0.650	0.917
XS11	12.928	1.833	2.244	1.250	0.947	0.667
XS12	12.921	1.833	2.130	1.250	0.500	0.667
XS12_C1	12.892	1.833	2.130	1.250	1.211	1.250
XS12_C2	12.882	1.833	2.130	1.250	1.211	1.250
XS13	12.854	1.833	2.115	1.250	0.589	0.500
XS14	12.849	1.833	2.115	1.250	0.557	0.500
XS15	12.847	1.833	1.931	1.917	0.281	0.917
XS16	12.788	1.833	1.931	1.917	0.264	0.917
XS17	12.786	1.833	2.057	2.083	0.278	0.000
XS18	12.716	1.833	2.279	2.167	0.232	2.750
XS19	12.664	1.750	2.279	2.167	0.224	2.750
XS20	12.663	1.750	2.394	2.167	0.324	2.750
XS21	12.600	1.667	2.394	2.167	0.283	2.750
XS22	12.592	1.667	4.349	1.083	0.679	0.917
XS23	12.306	1.750	4.349	1.083	0.805	0.917
XS24	12.280	1.833	3.912	1.500	1.043	0.917
XS24B	12.211	1.833	3.912	1.500	1.044	0.917
XS25	12.196	1.833	3.766	1.833	0.734	0.667
XS25_C1	12.171	1.833	3.766	1.833	1.201	1.833
XS25_C2	11.731	1.833	3.766	1.833	1.202	1.833
XS26(B)	11.698	1.833	3.766	1.833	0.520	0.917
XS27	11.655	1.833	4.016	2.167	0.396	2.667
XS28	11.490	1.750	4.016	2.167	0.479	2.583
XS29	11.329	1.750	5.470	1.250	0.606	1.167
XS30	11.211	1.833	5.470	1.250	0.548	1.167
XS31	11.089	1.833	6.087	1.667	0.844	0.917
XS32	10.983	1.833	6.087	1.667	0.523	0.833
XS33	10.967	1.917	6.010	1.750	0.758	1.000
XS34	10.555	1.917	6.010	1.750	0.804	1.083
XS34B	10.241	2.000	5.922	2.000	0.811	0.917
XS34_C1	10.200	2.000	5.922	2.000	1.517	0.833
XS34_C2	10.151	2.000	5.922	2.000	0.841	2.000
XS35	10.122	2.000	5.922	2.000	0.459	1.167
XS36	10.120	2.000	5.922	2.000	0.459	2.000

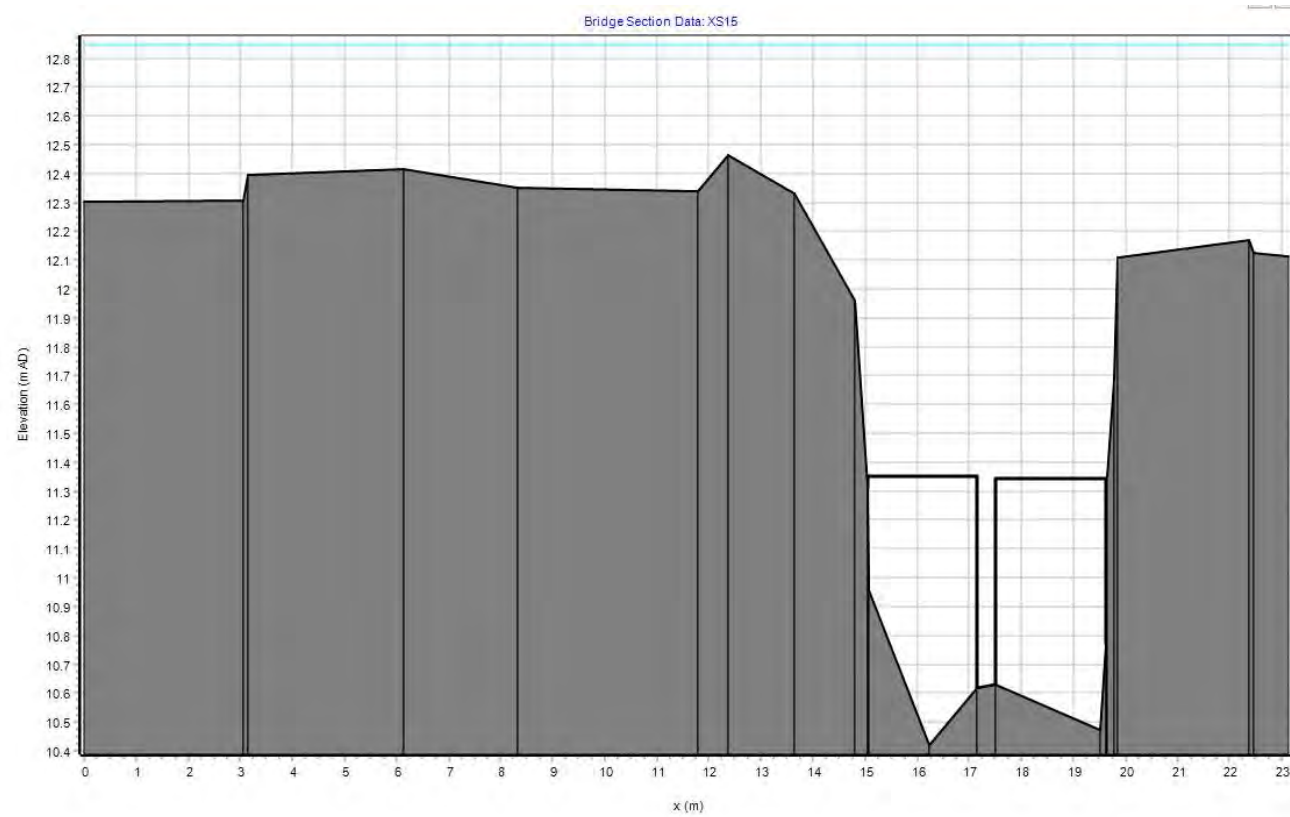
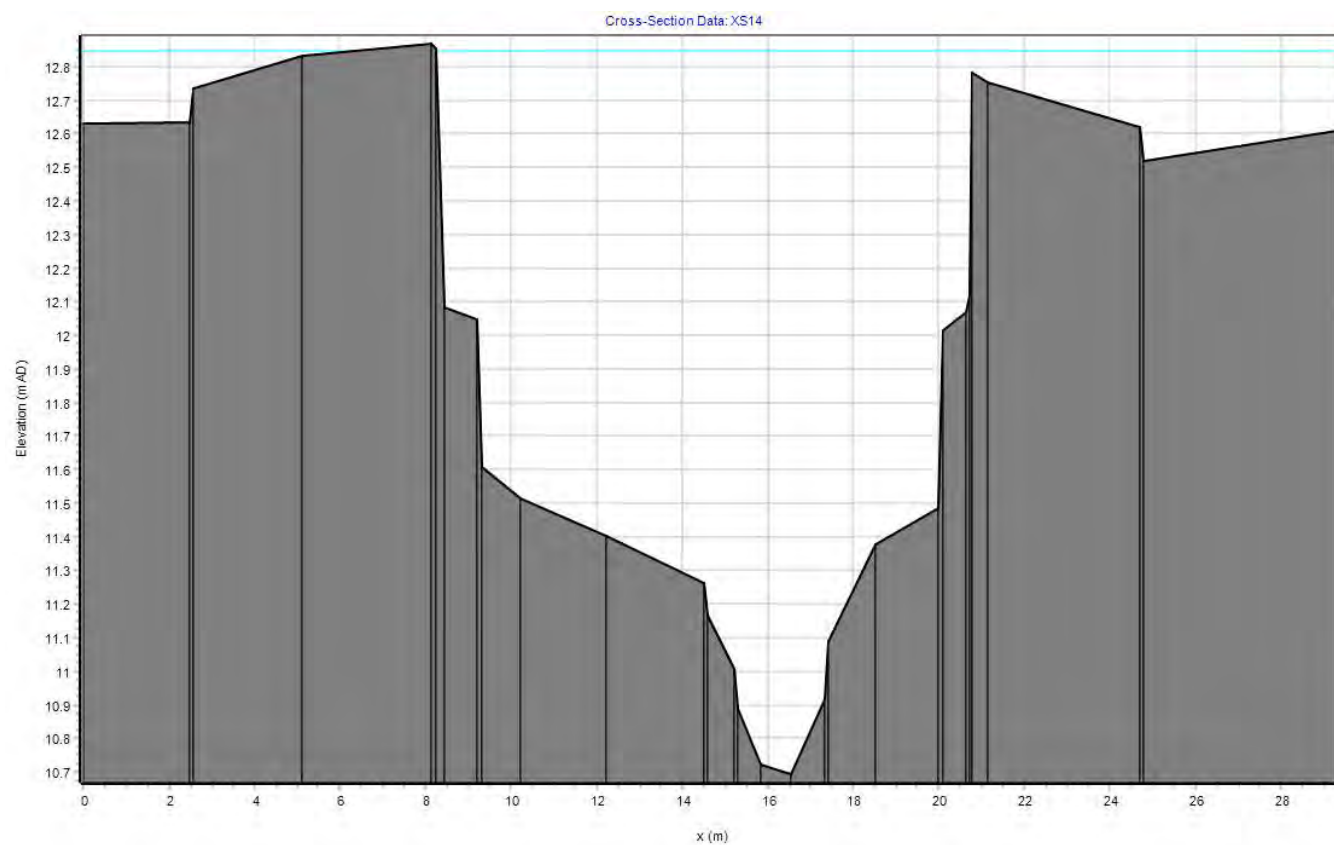
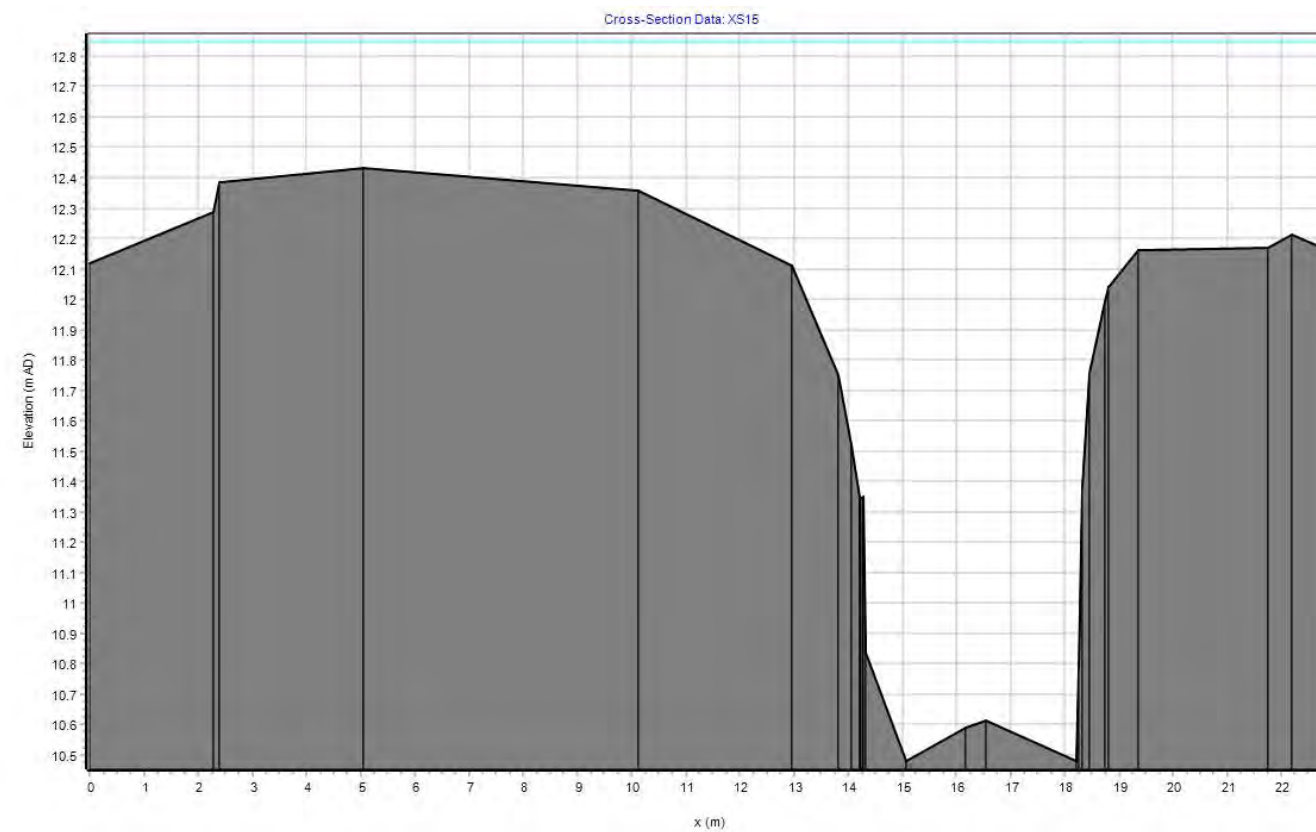
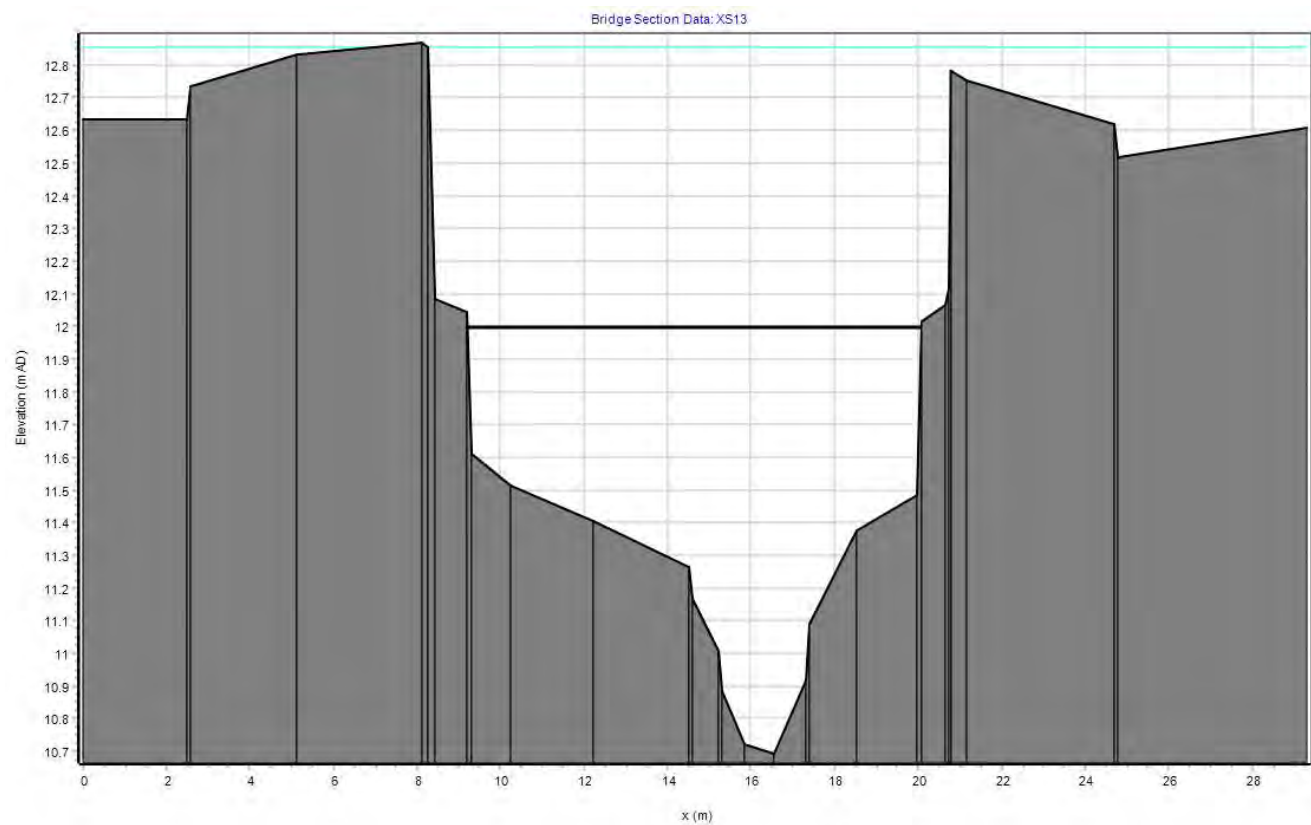


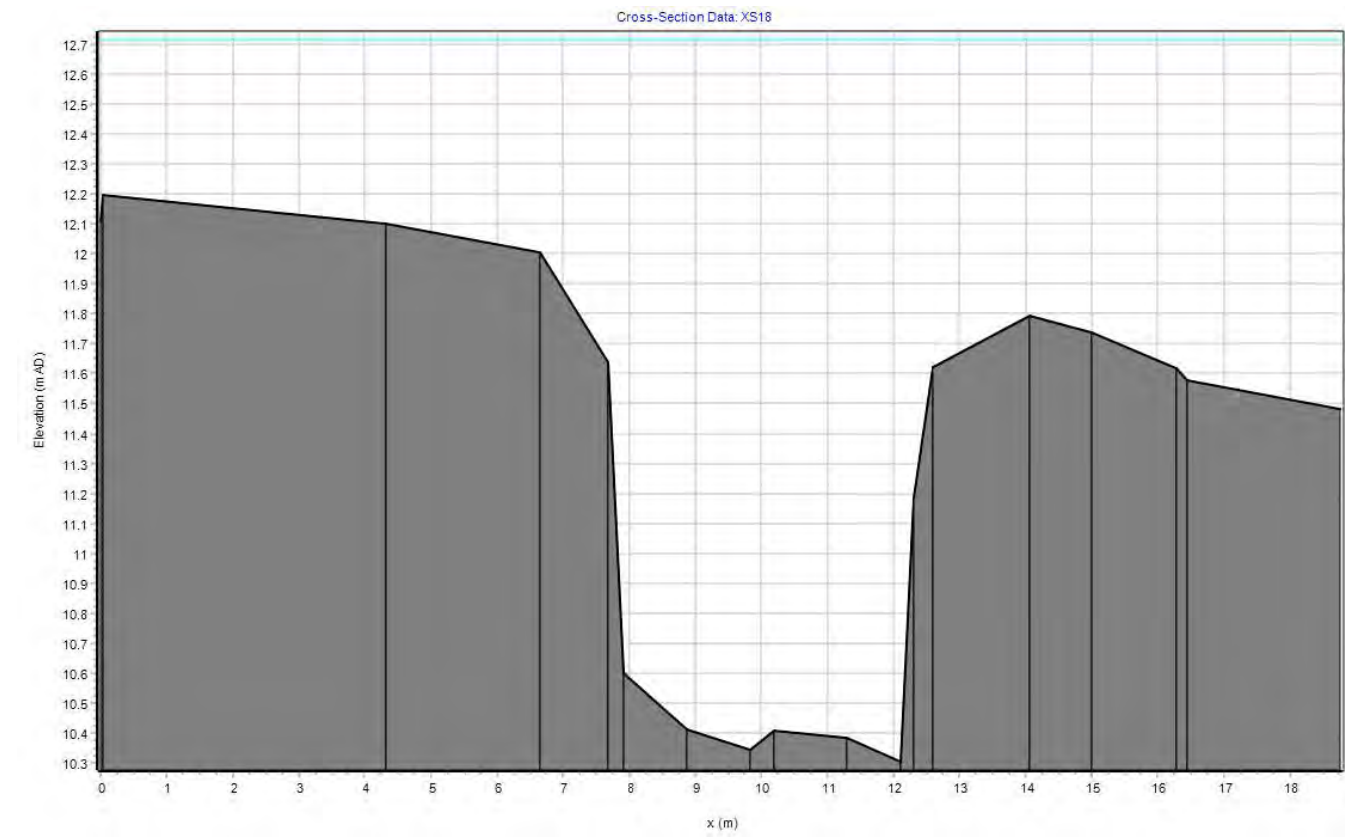
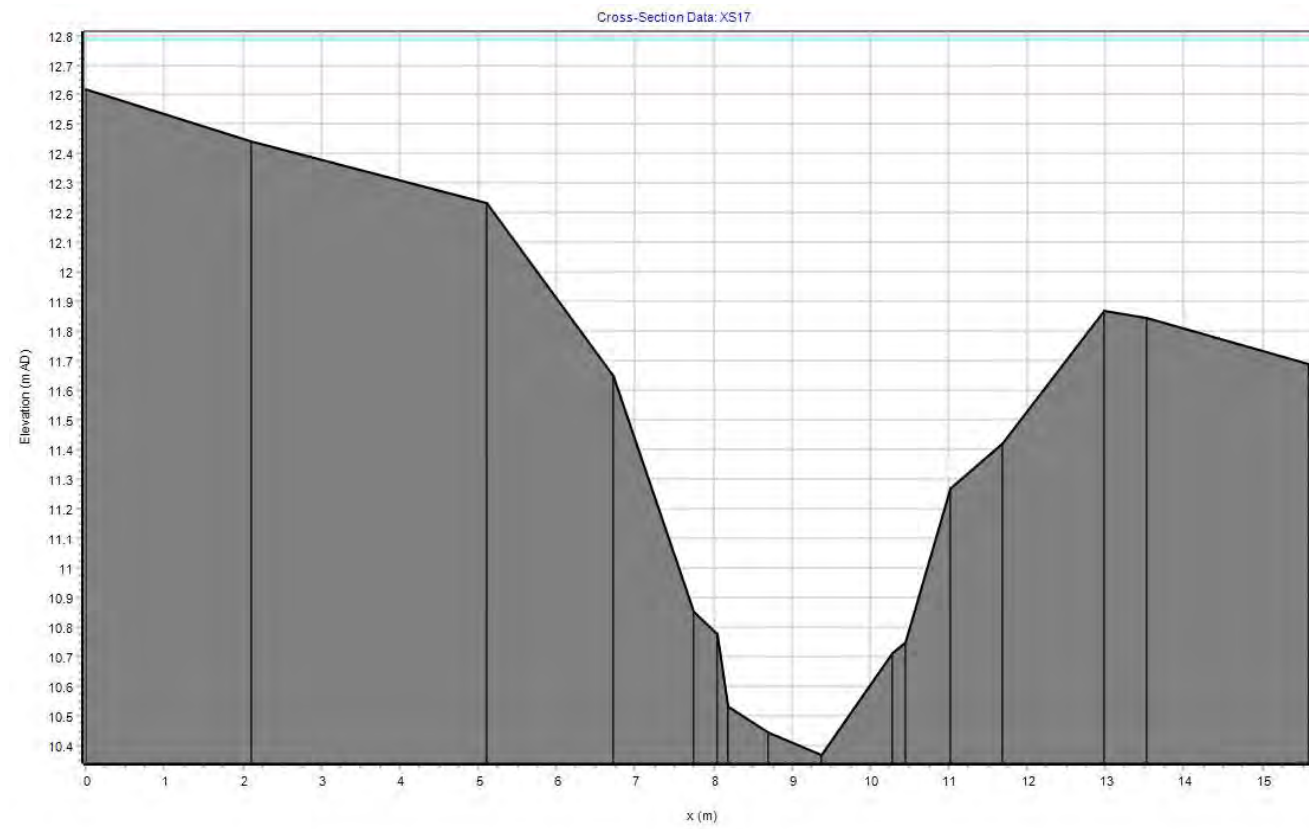
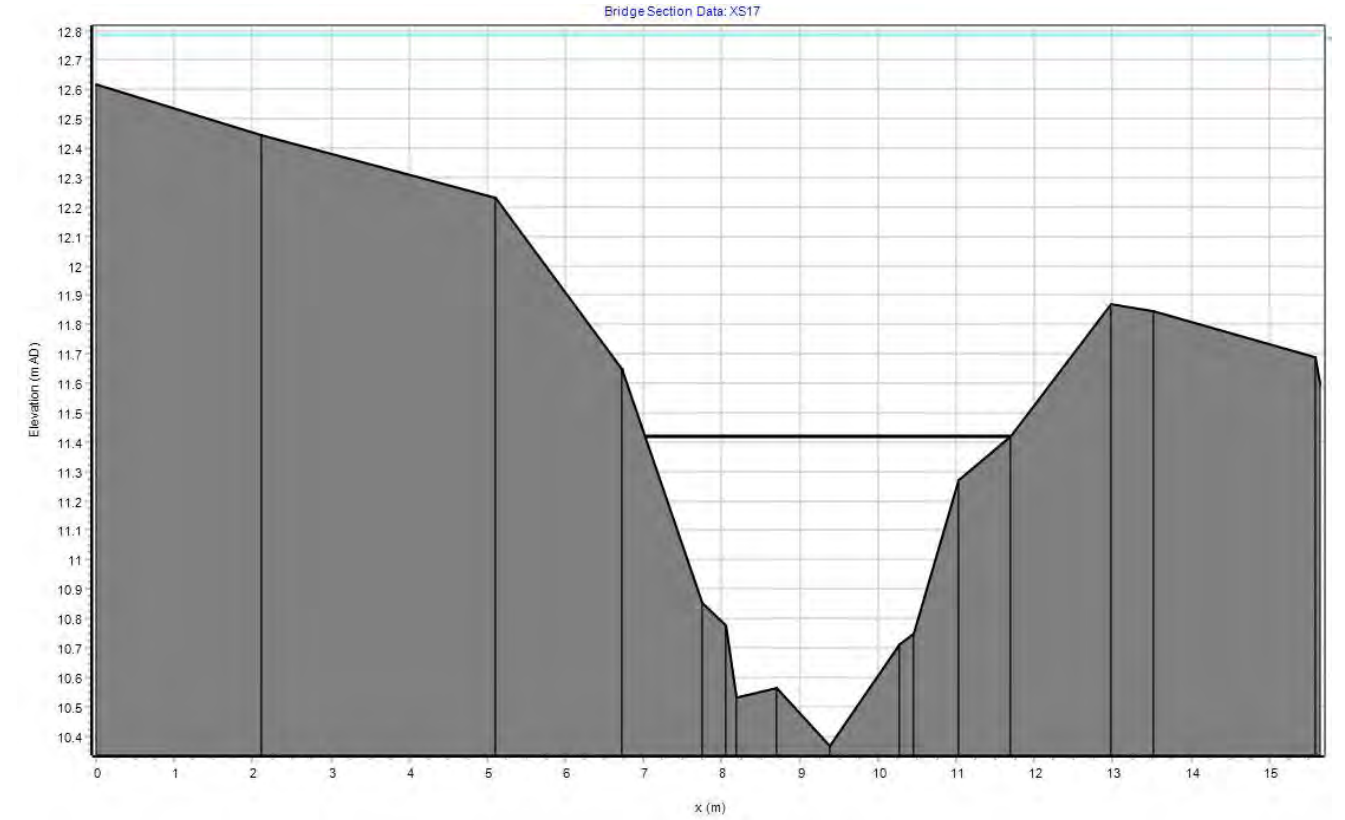


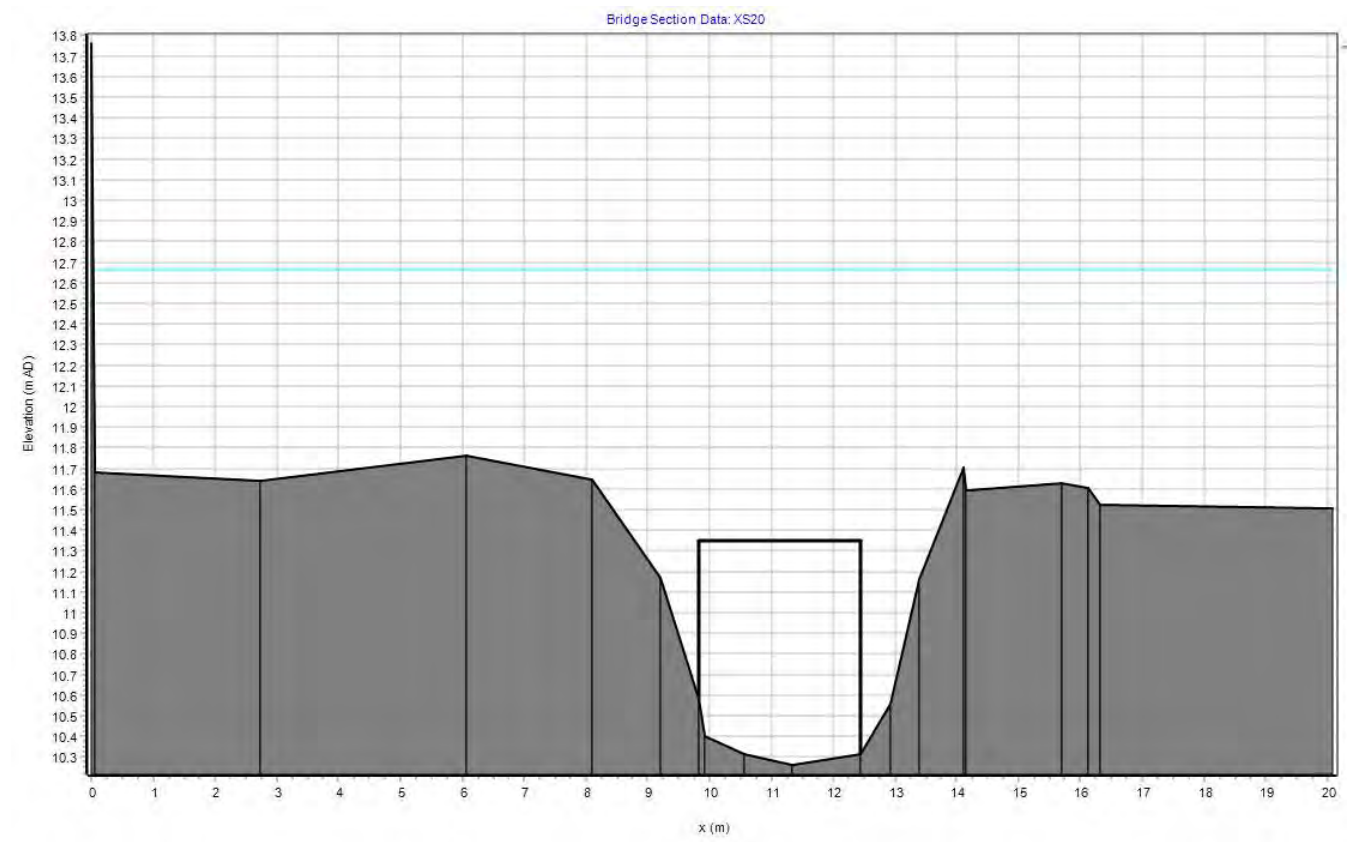
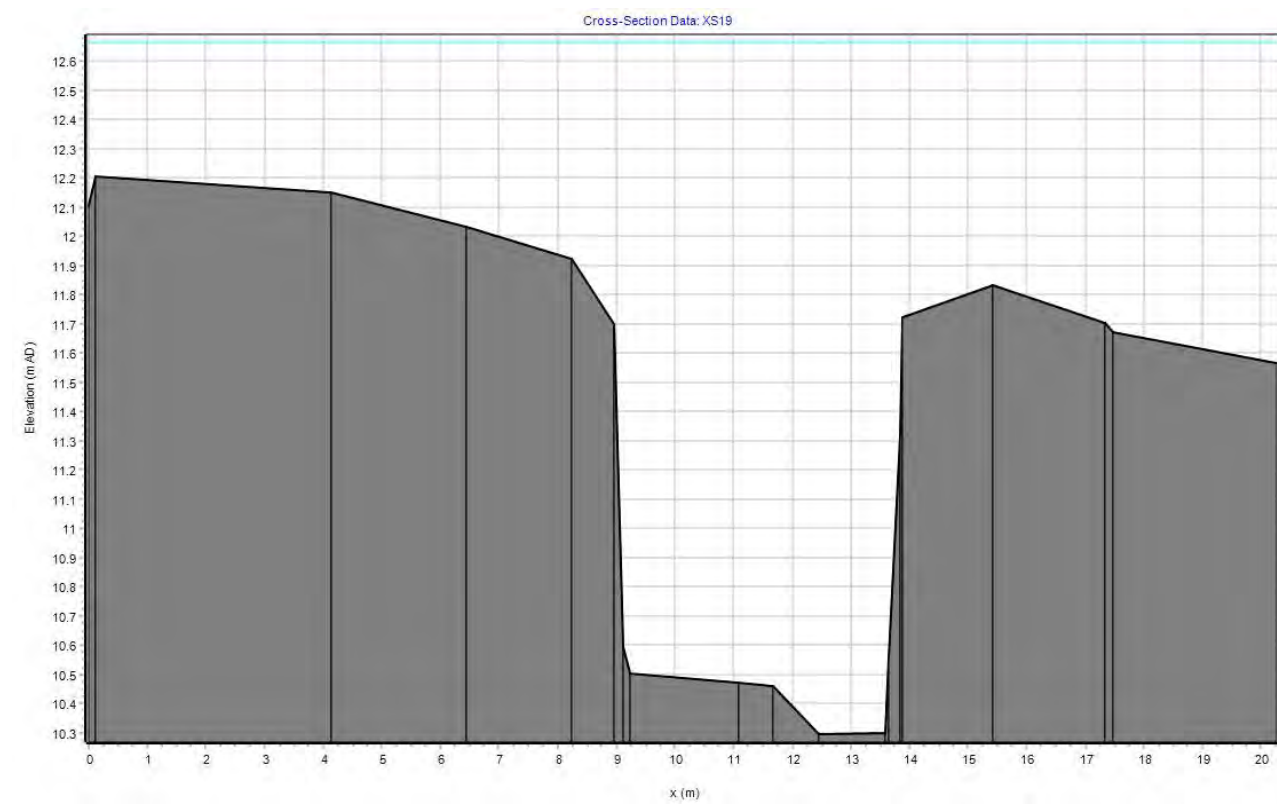
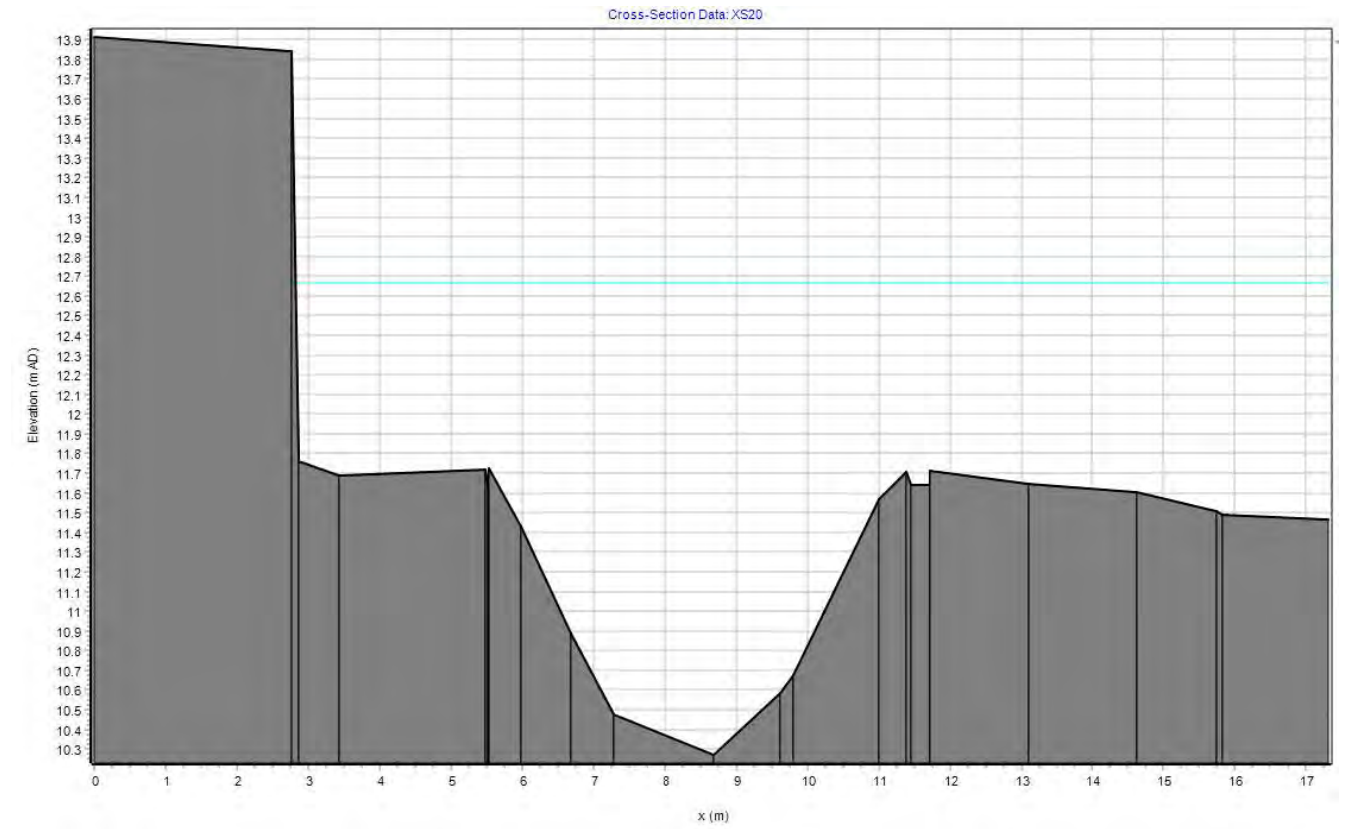
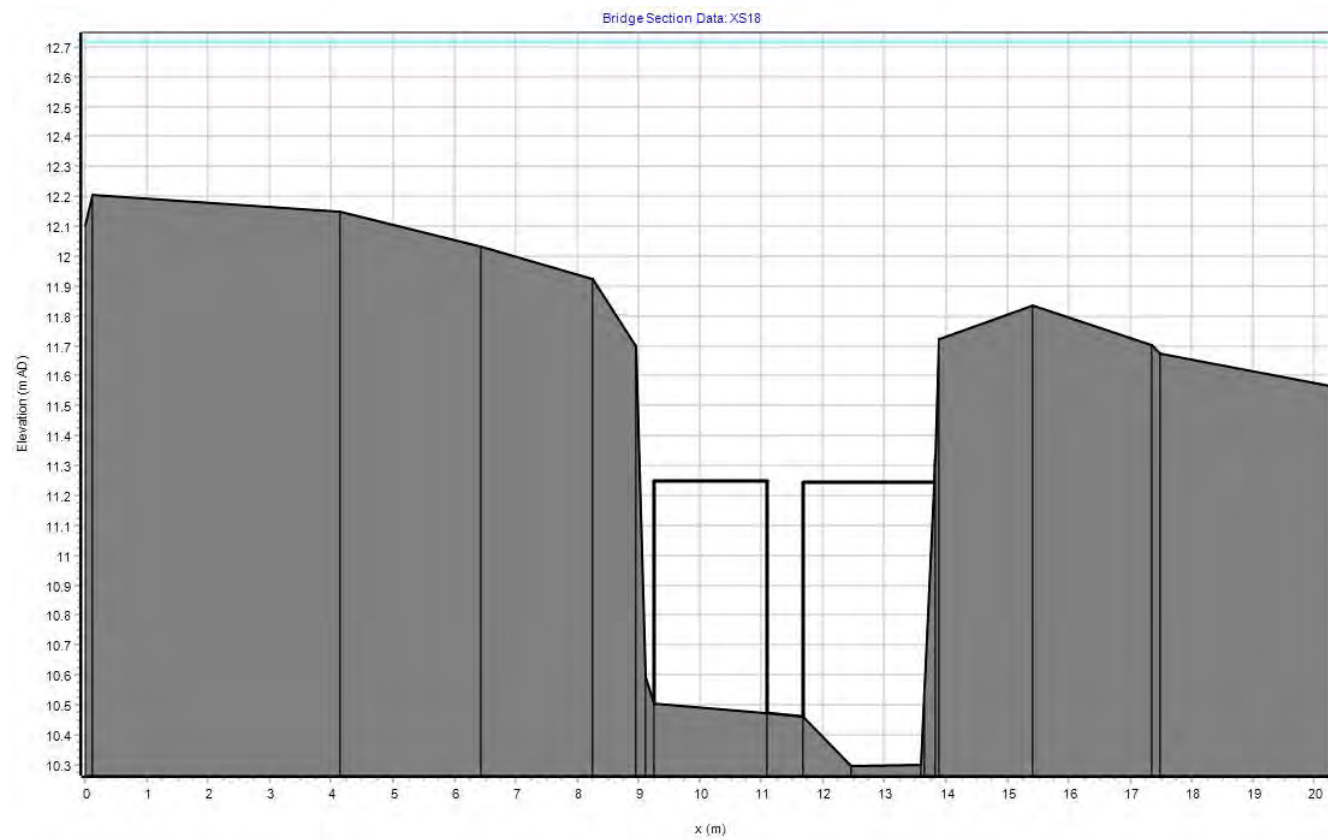


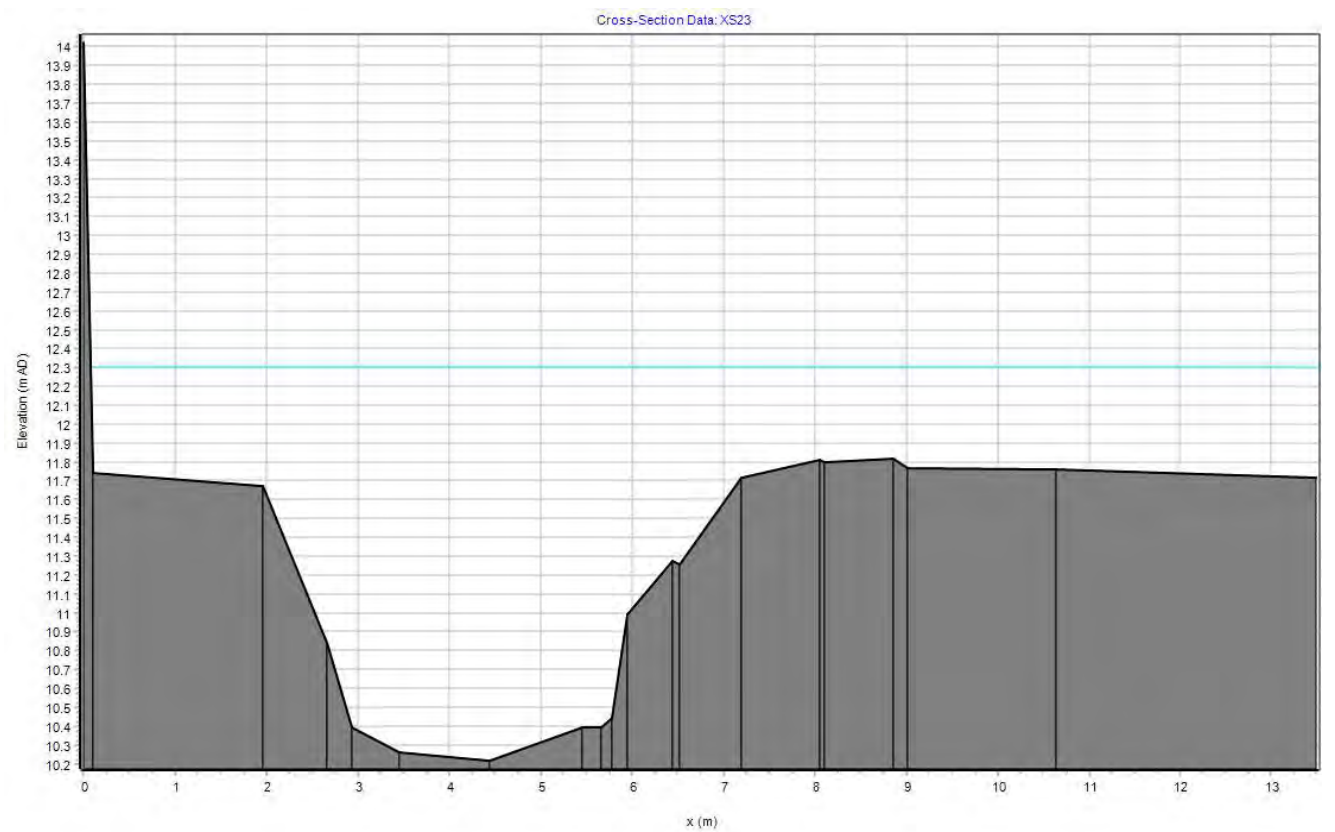
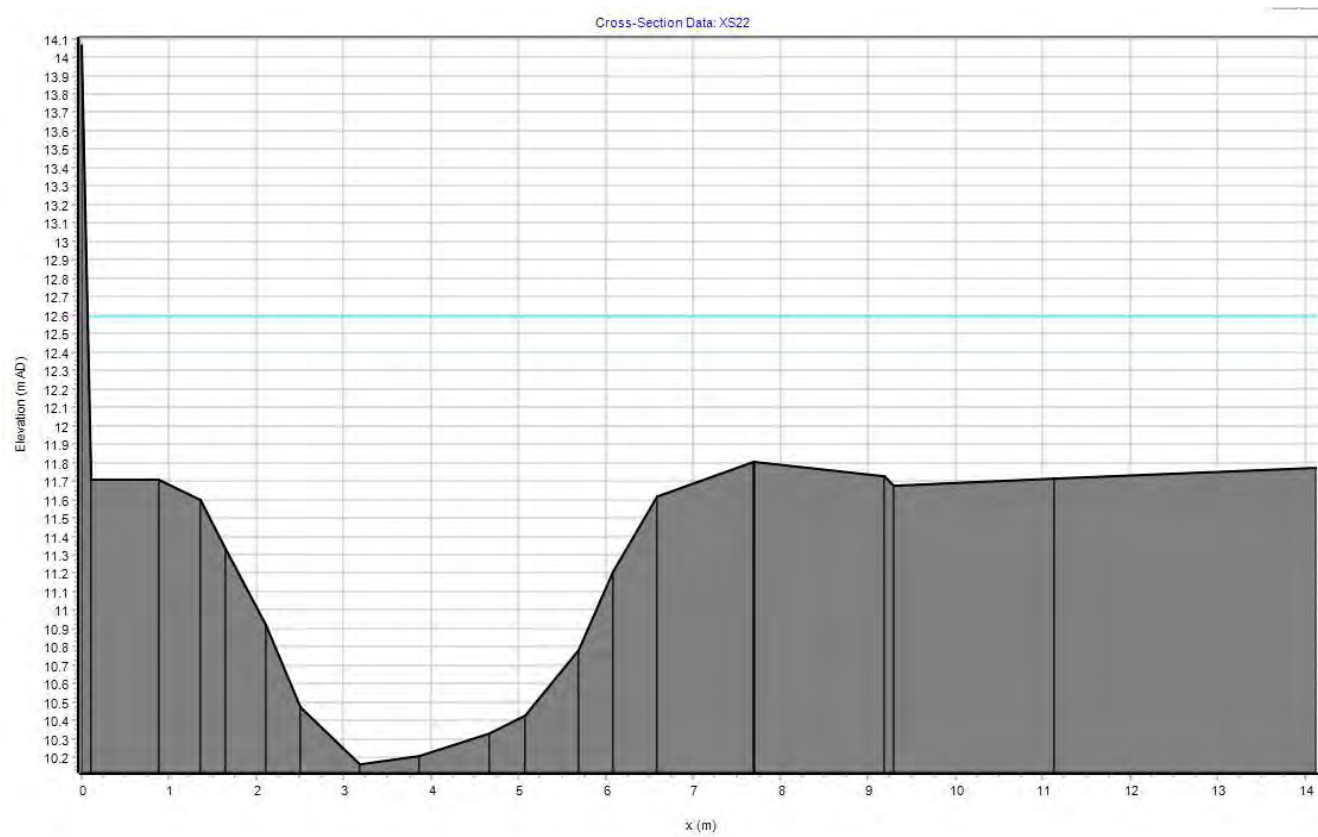
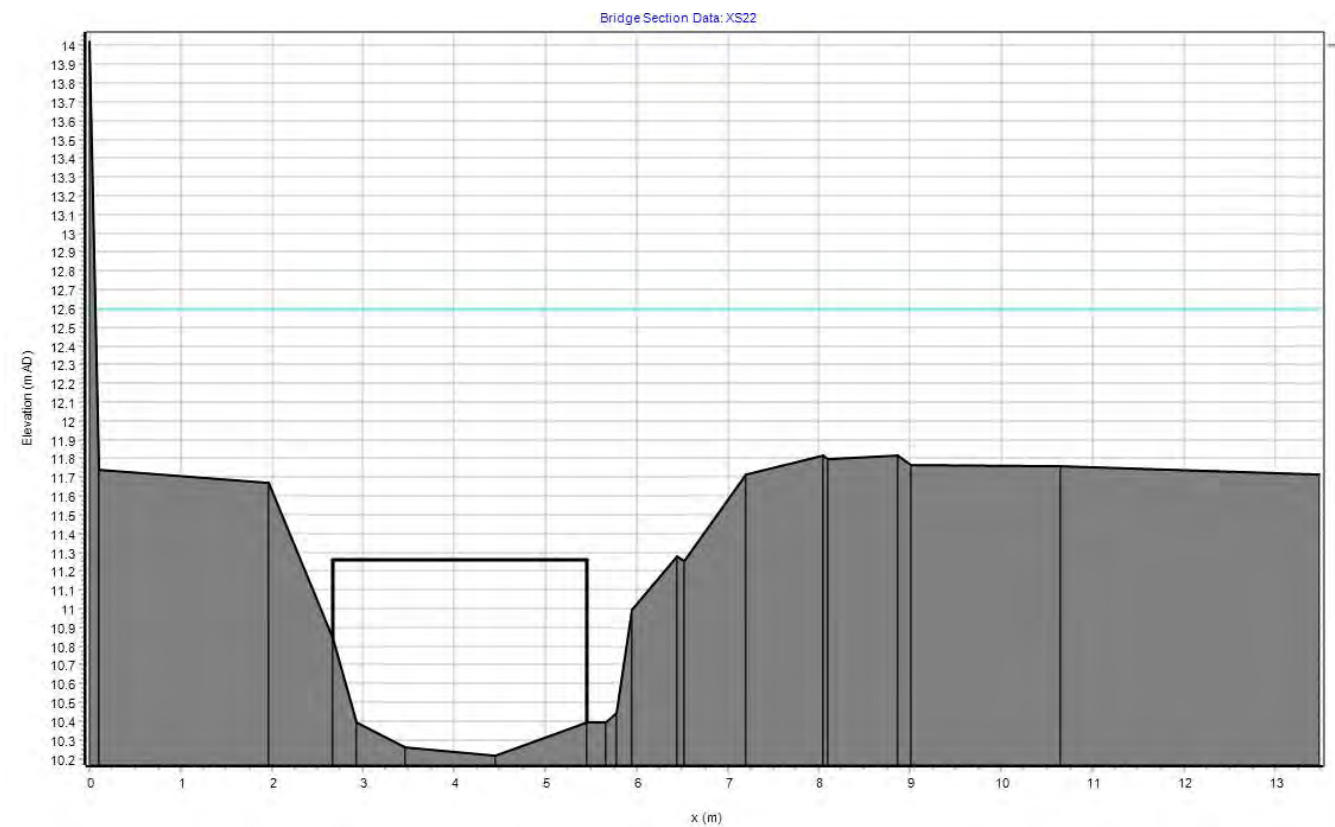
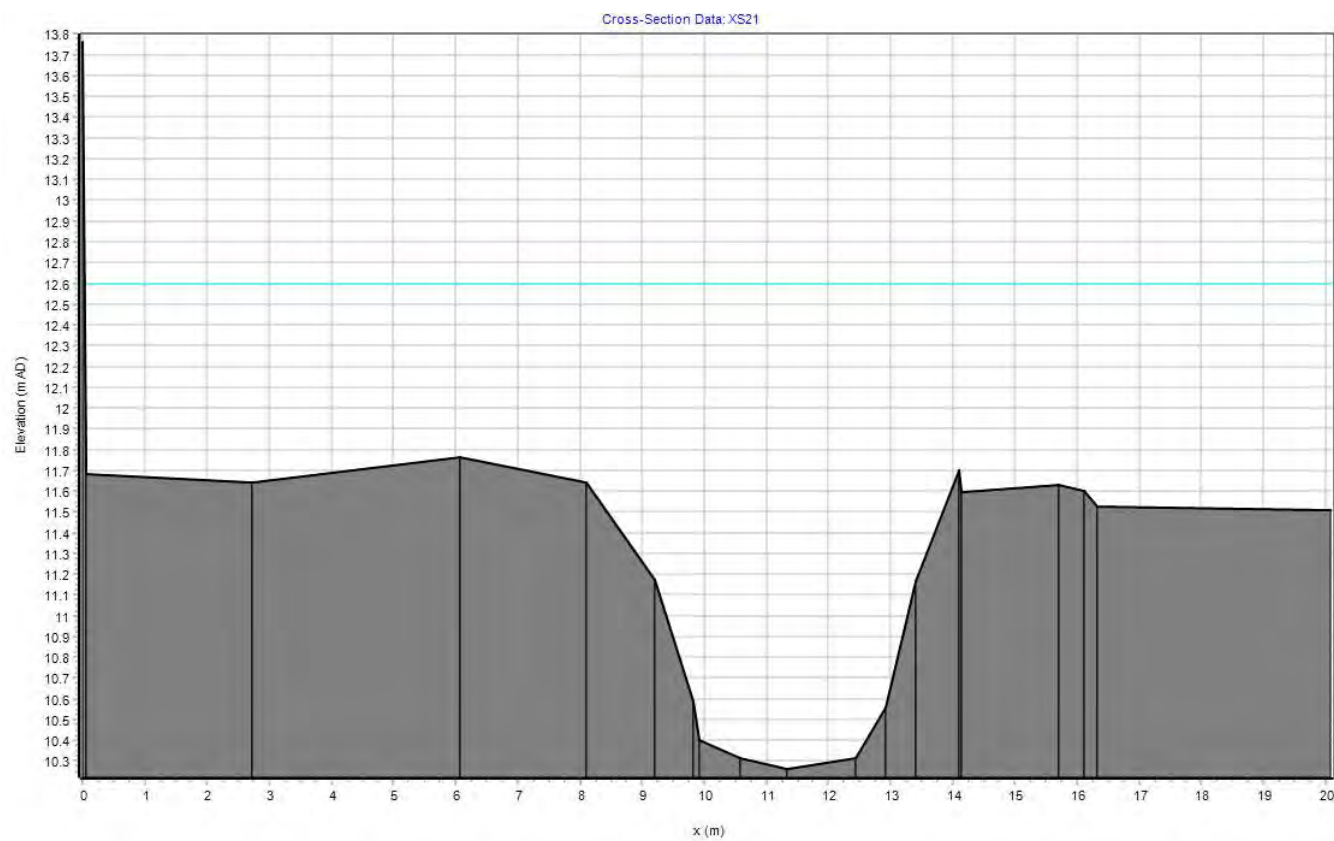


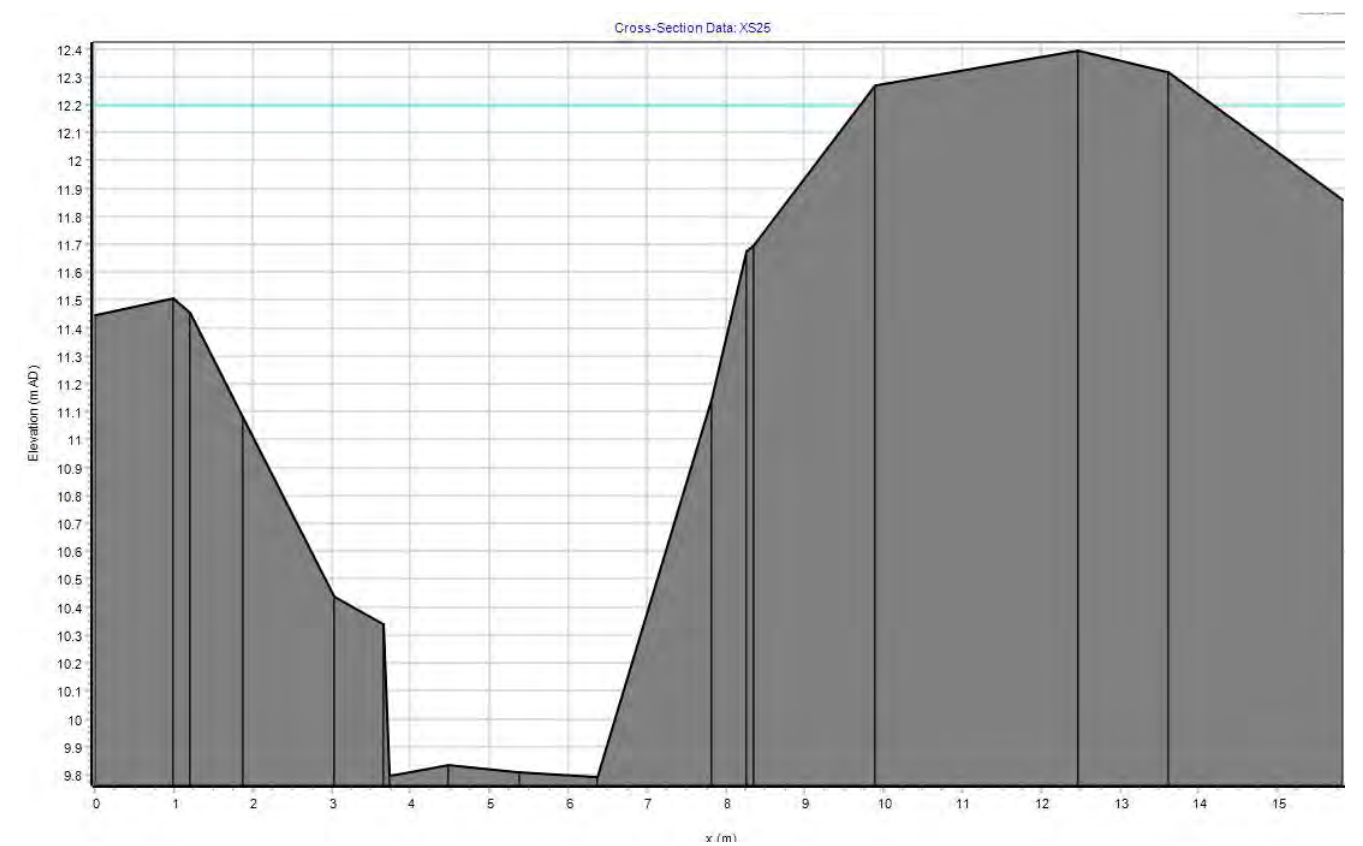
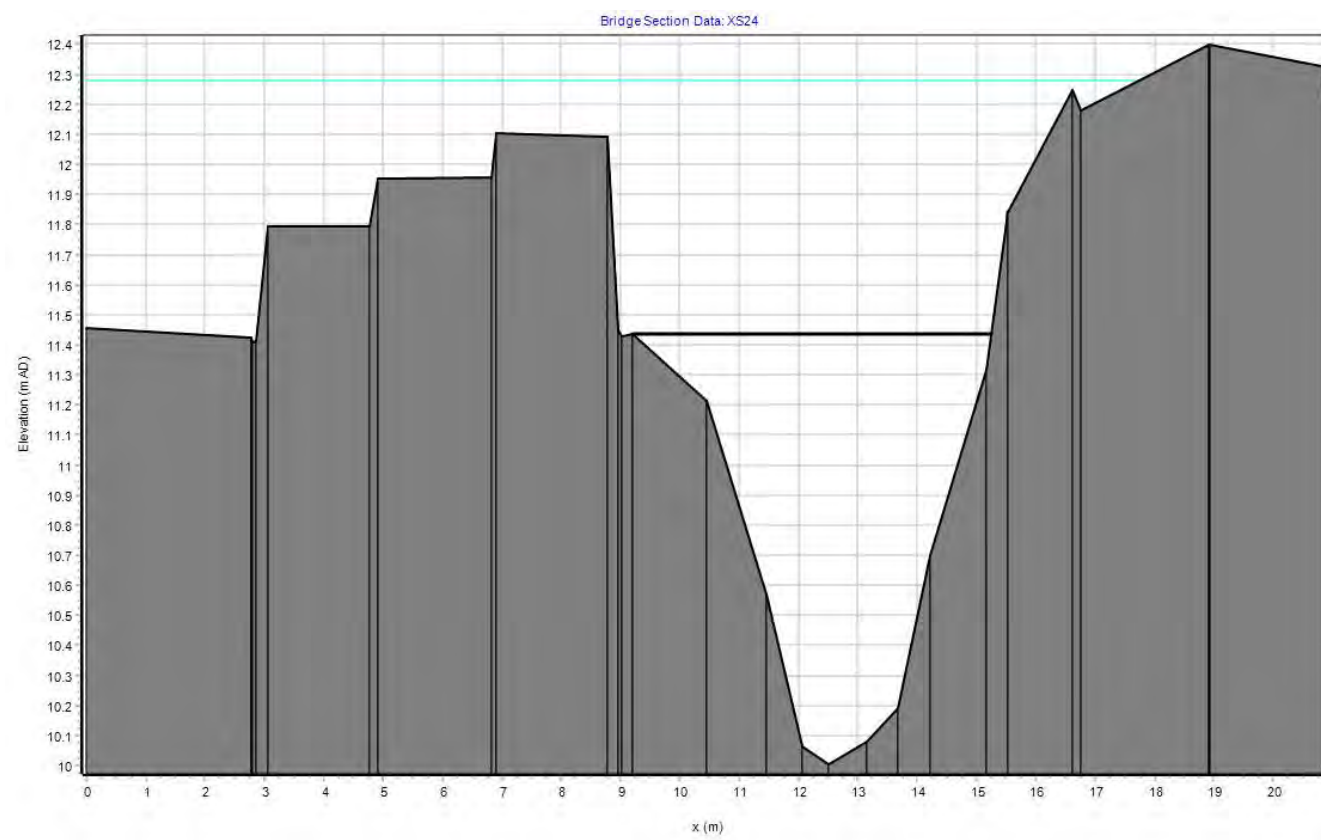
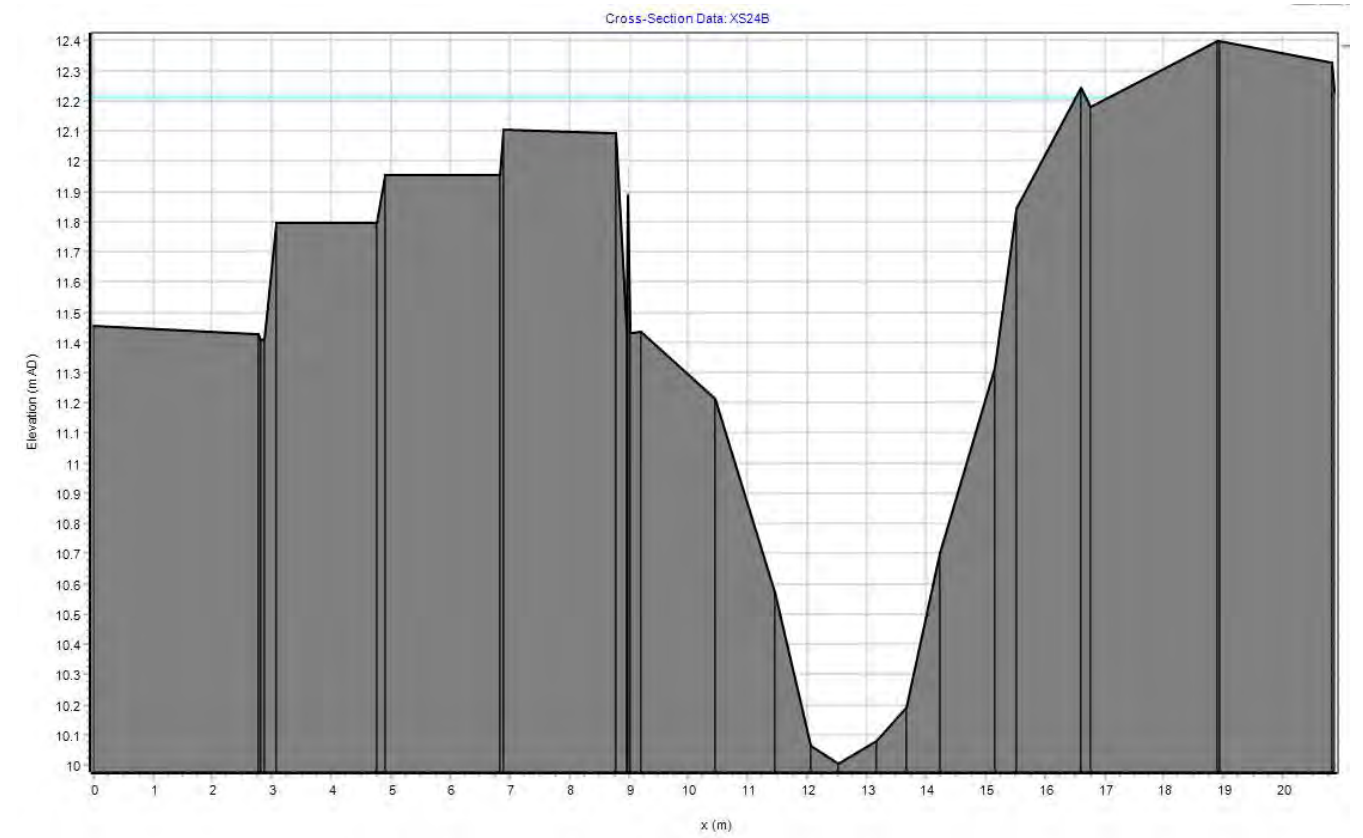
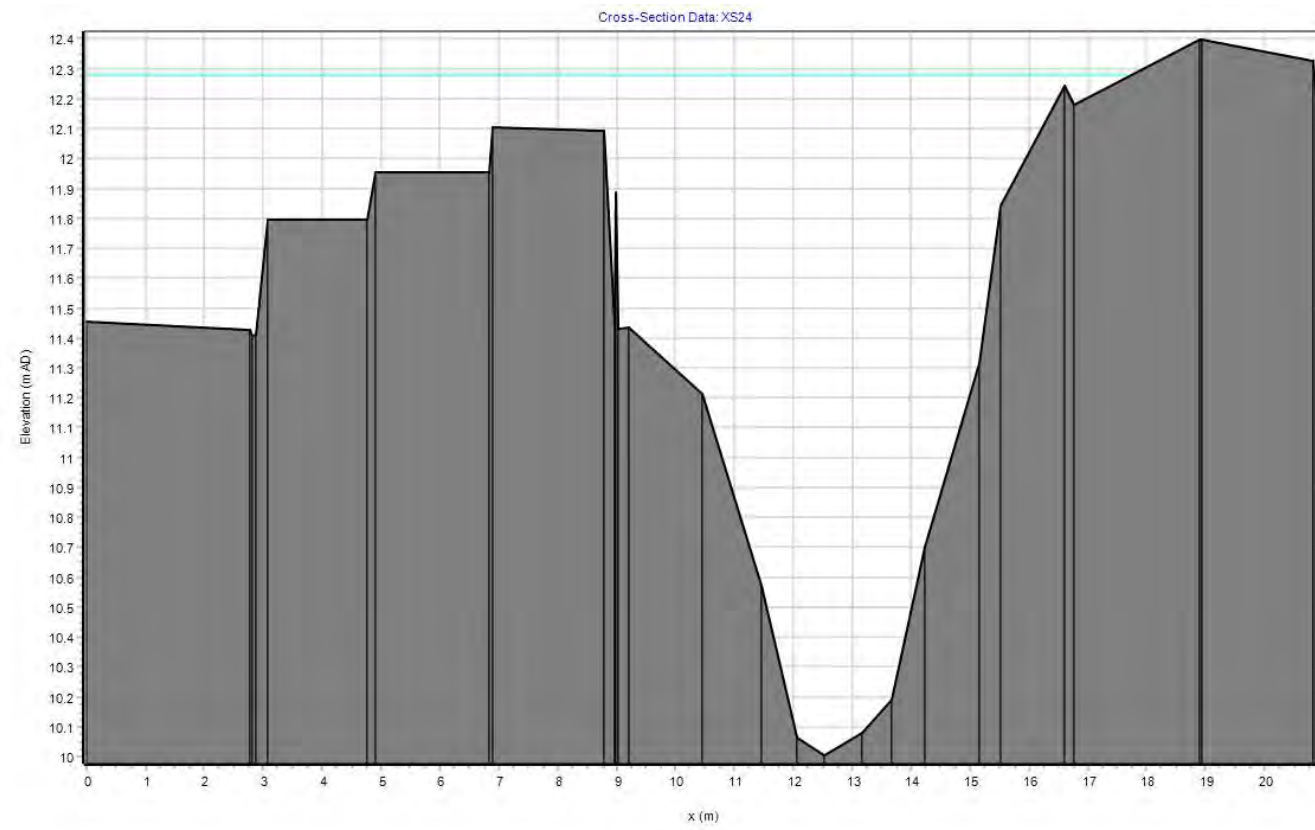


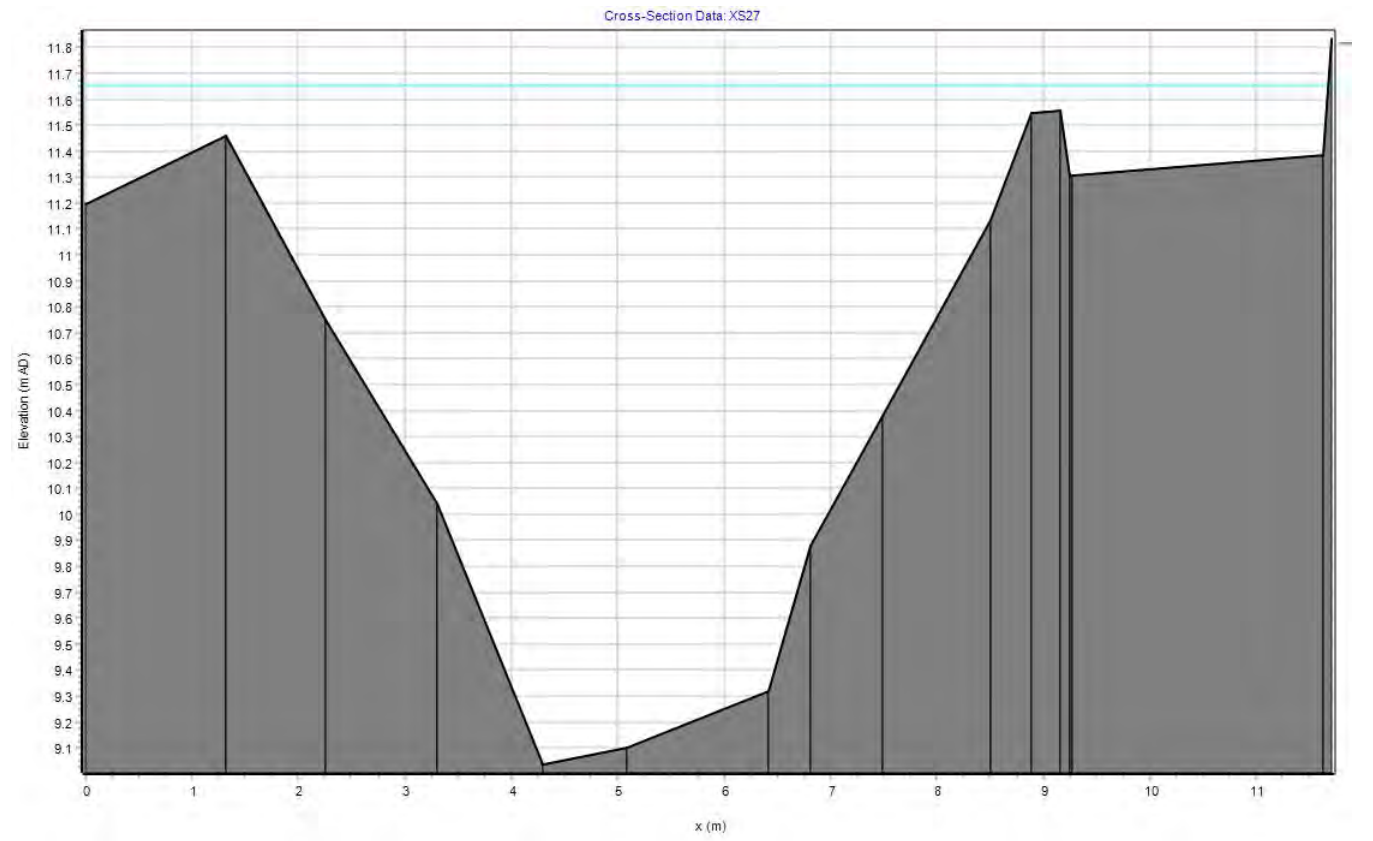
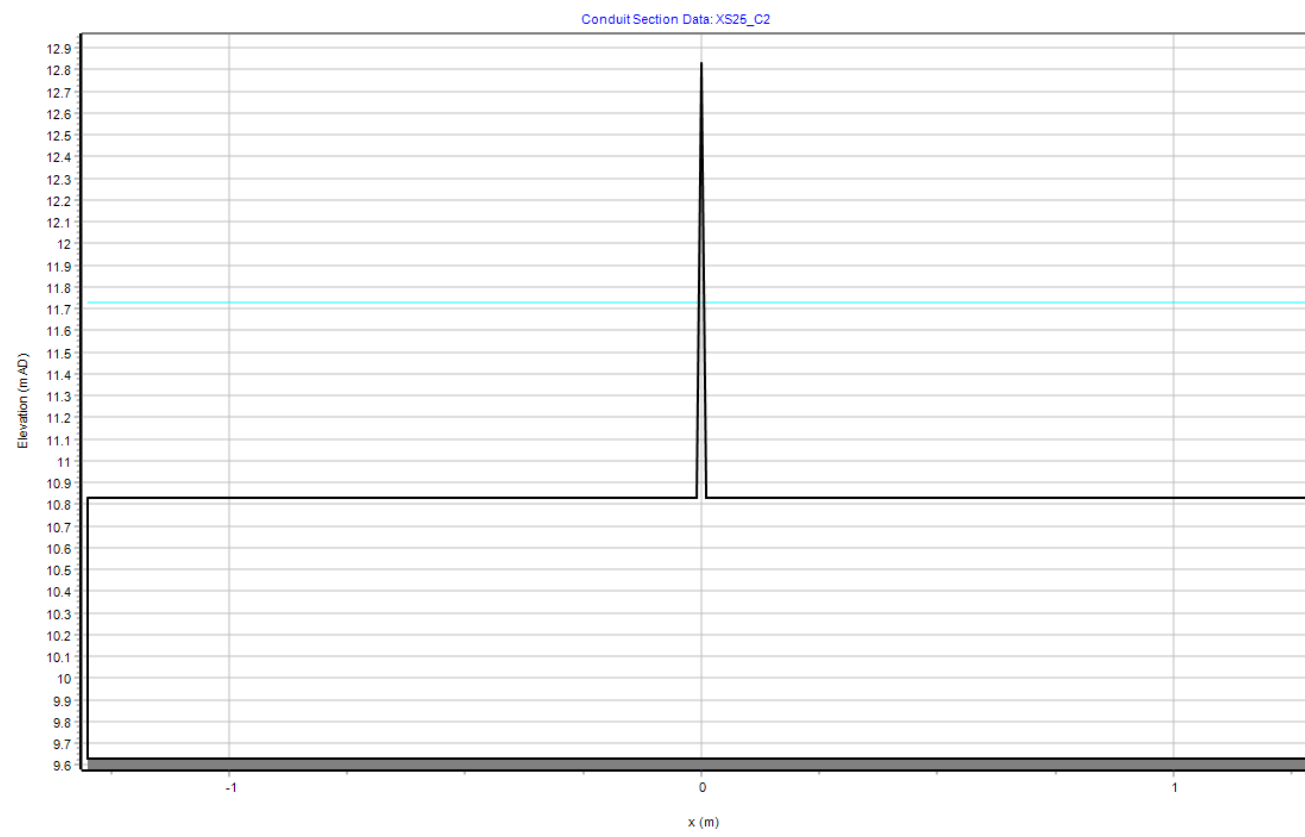
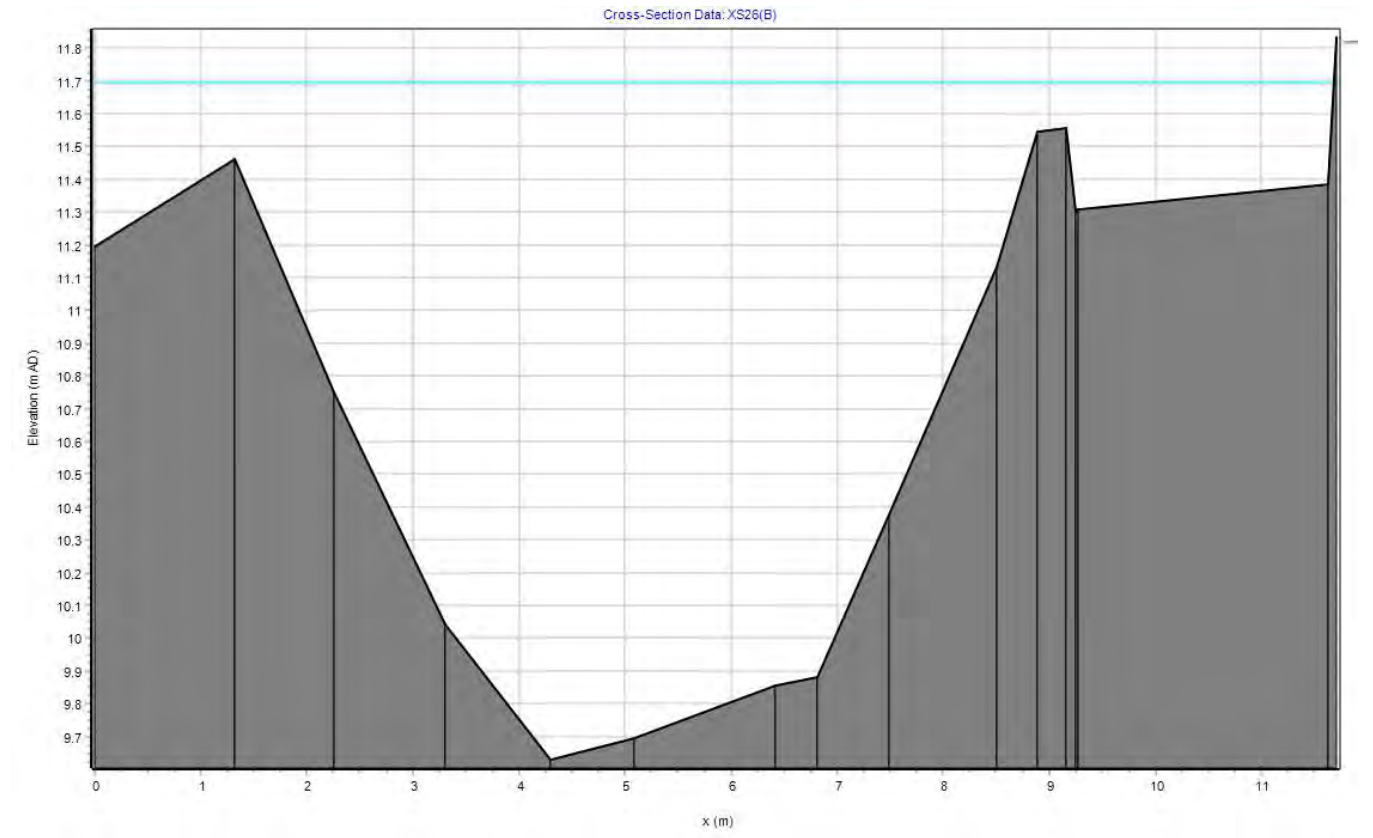
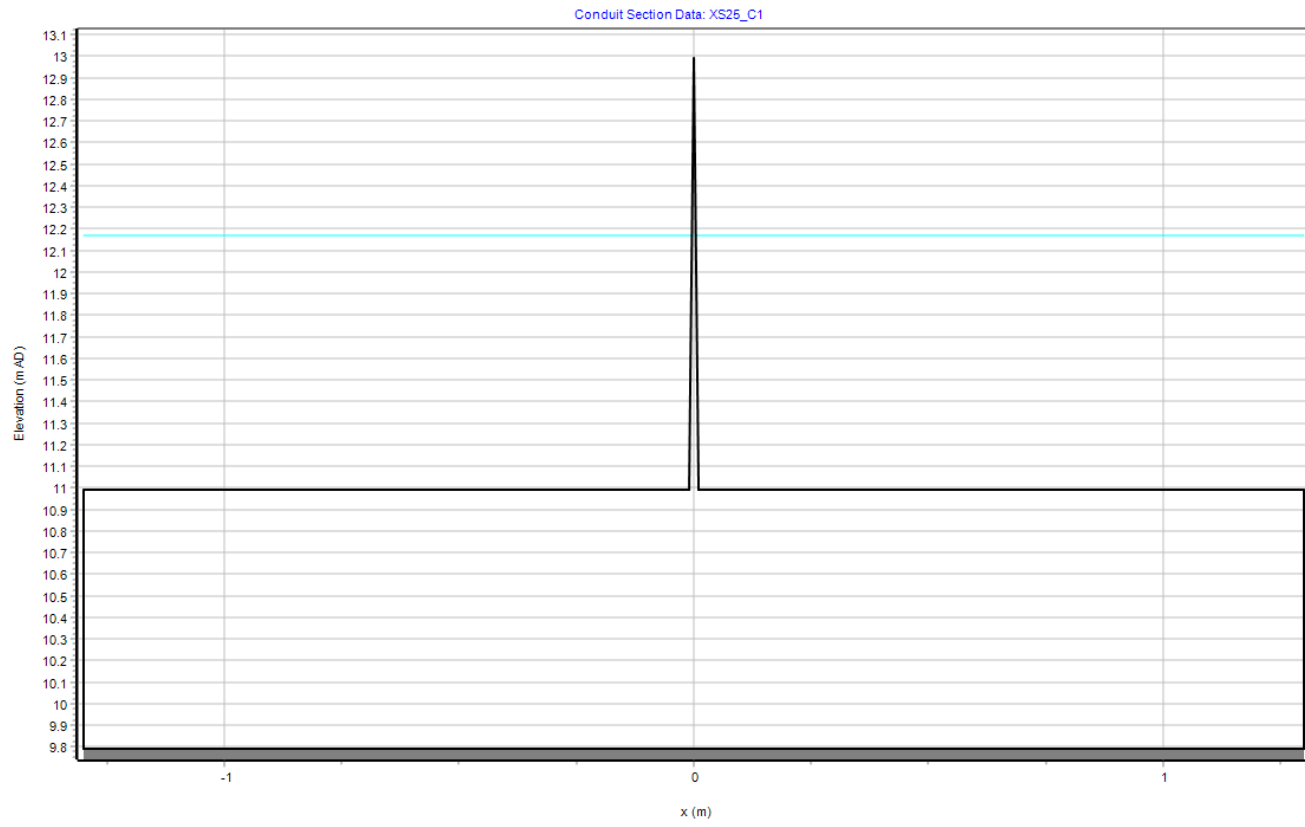


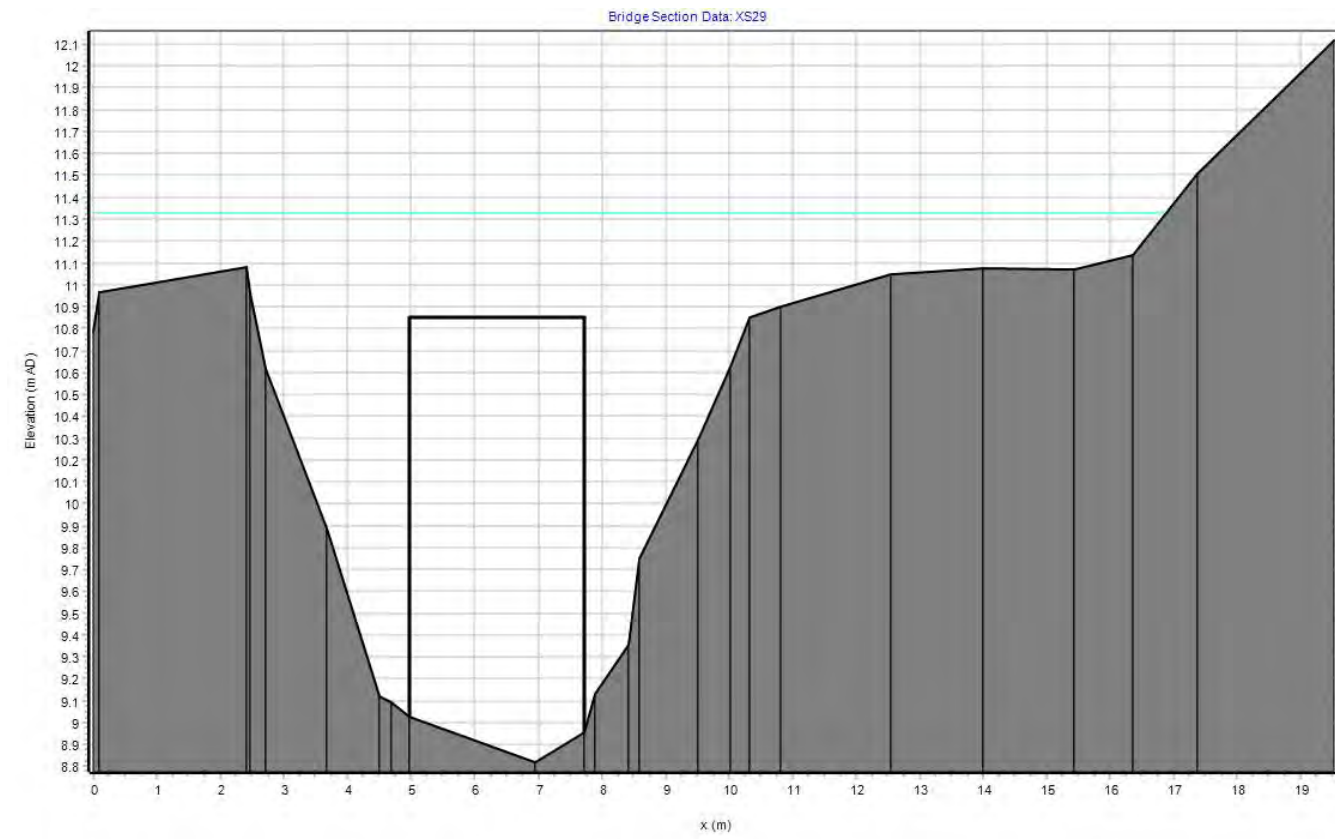
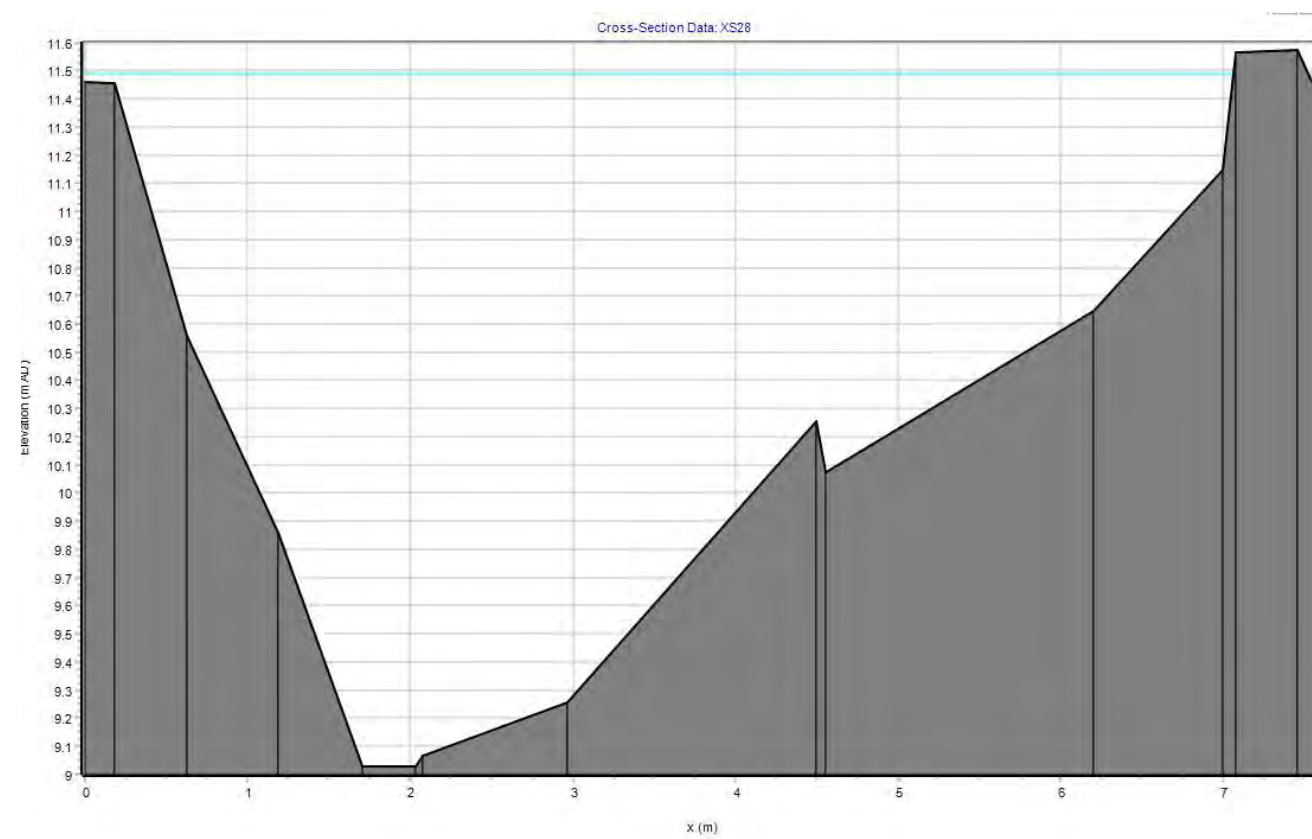
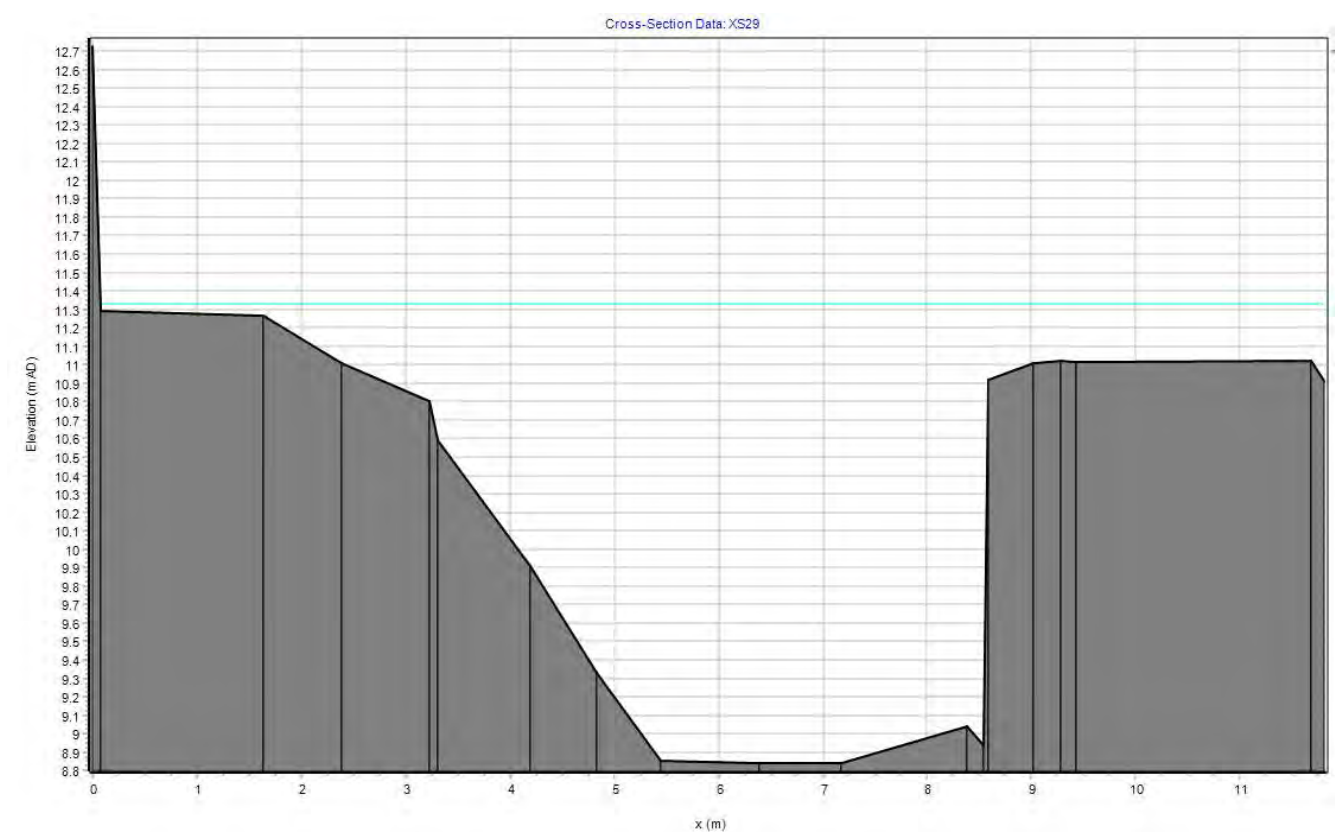
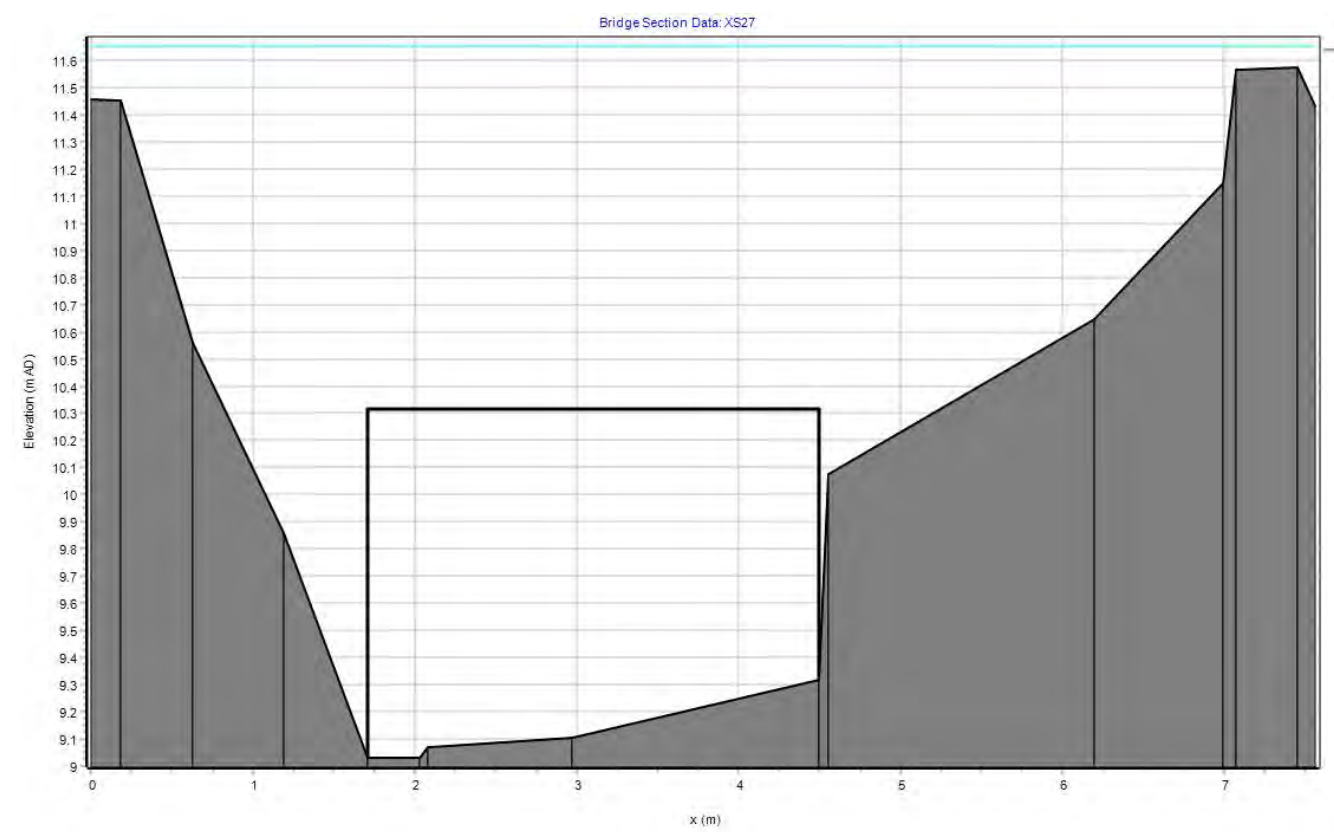


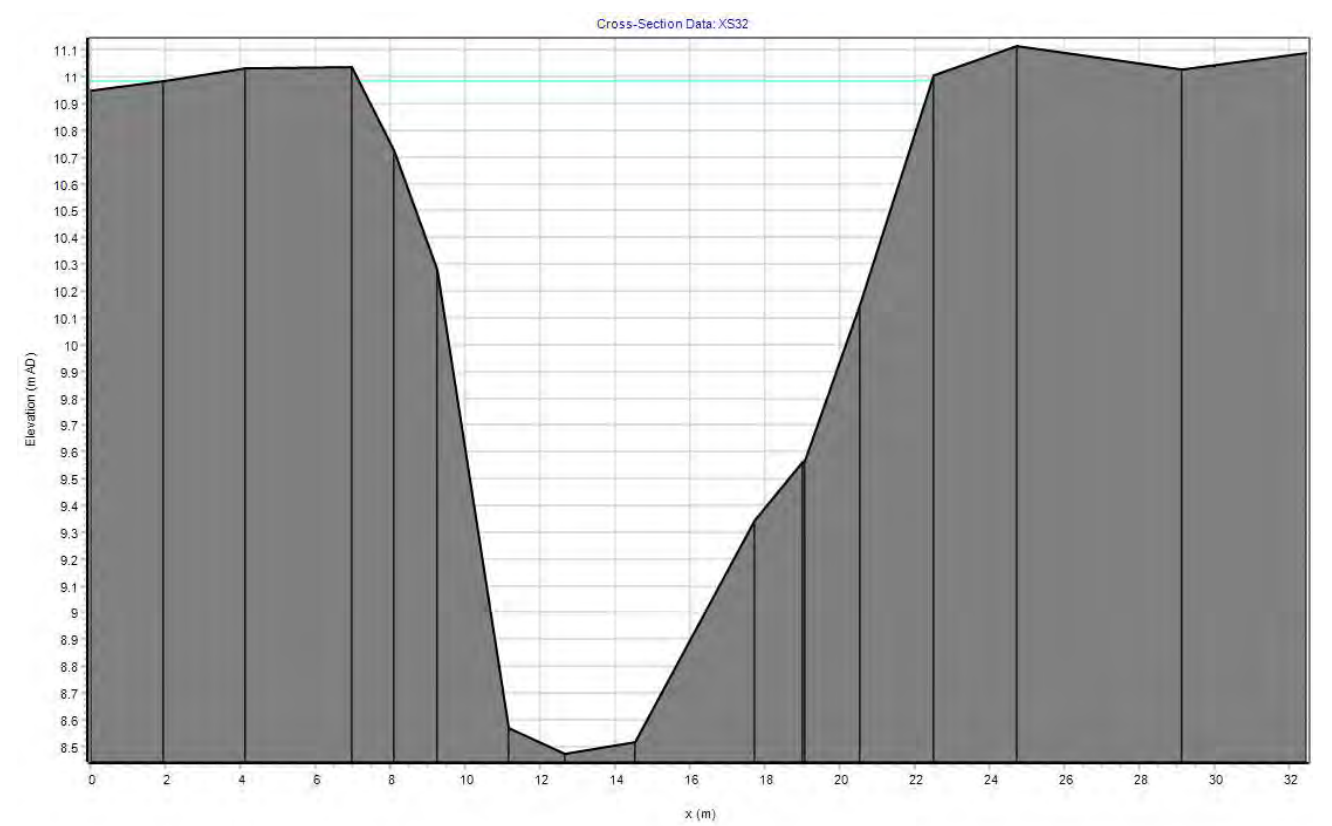
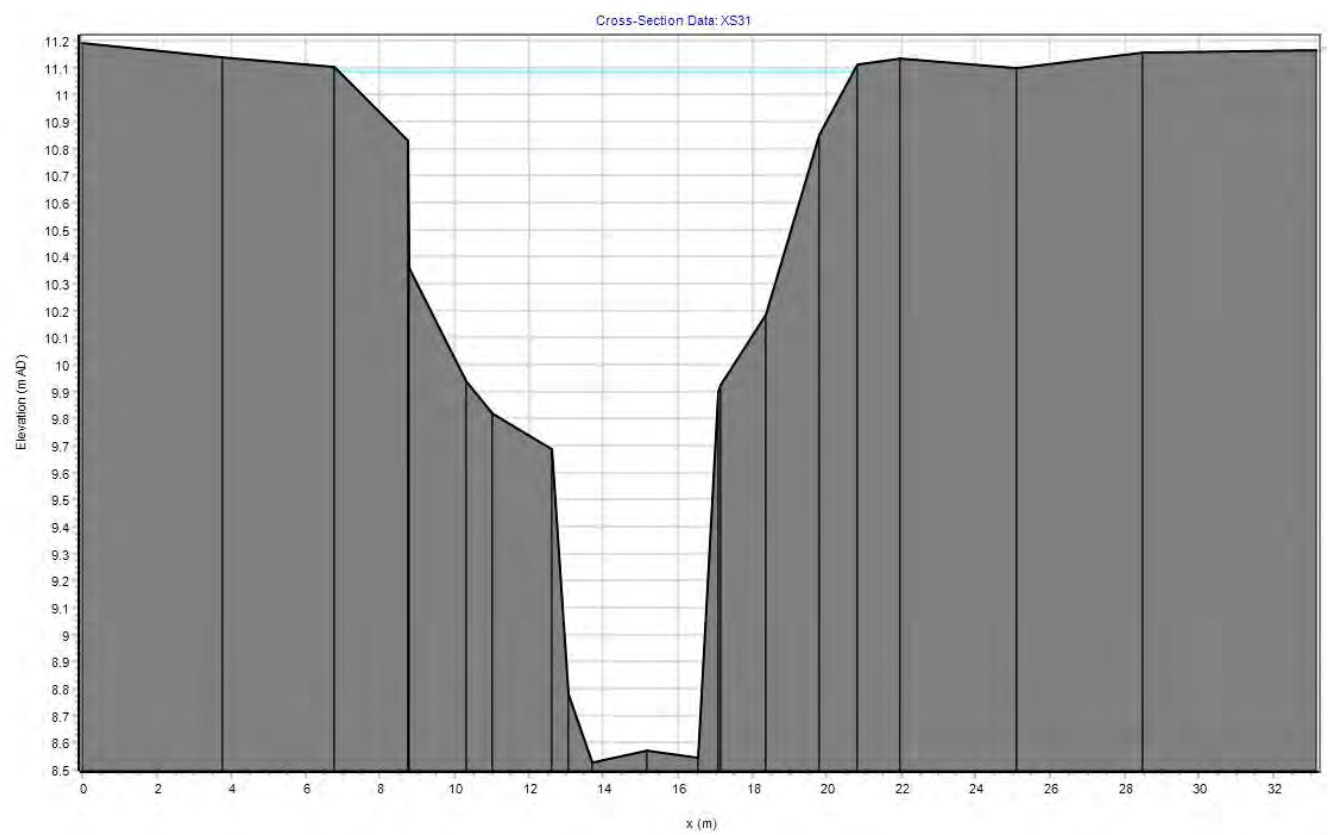
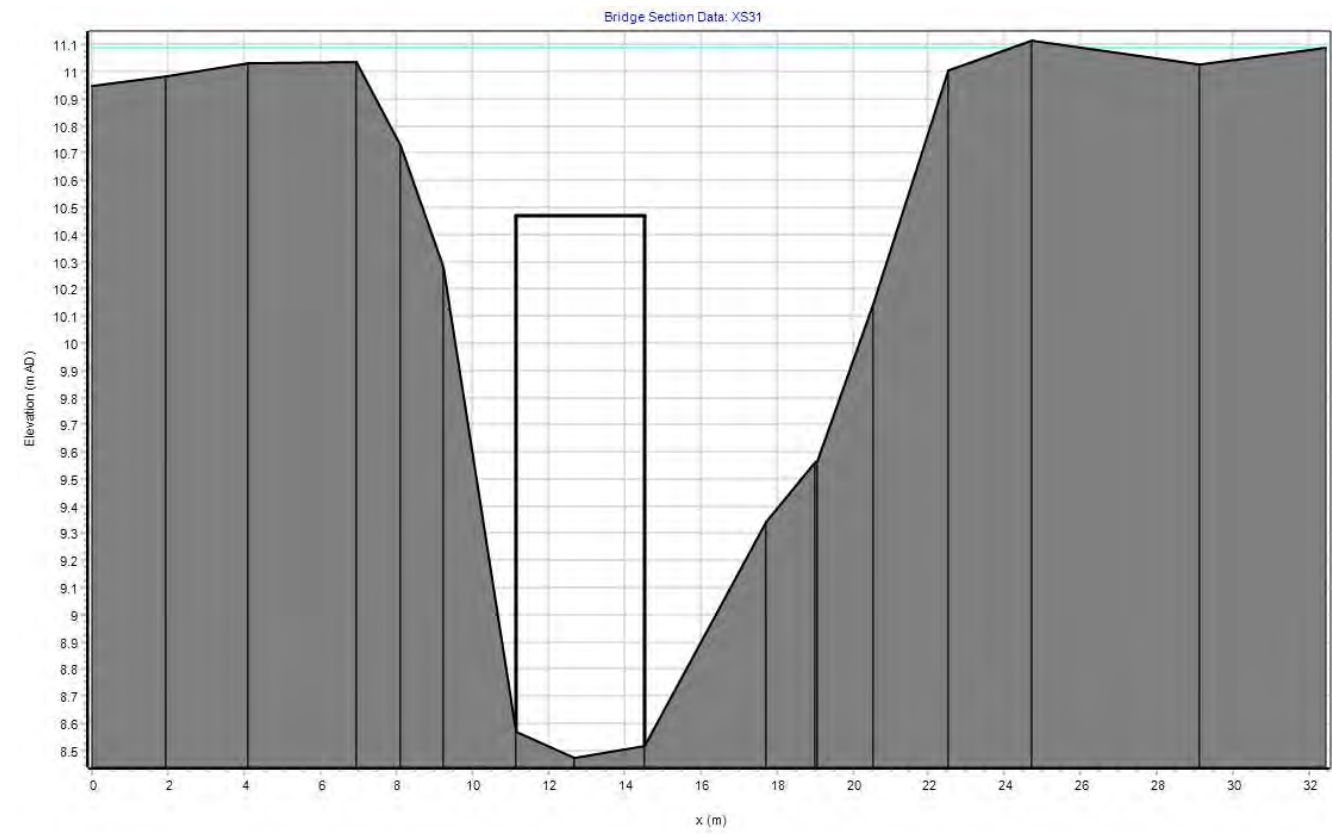
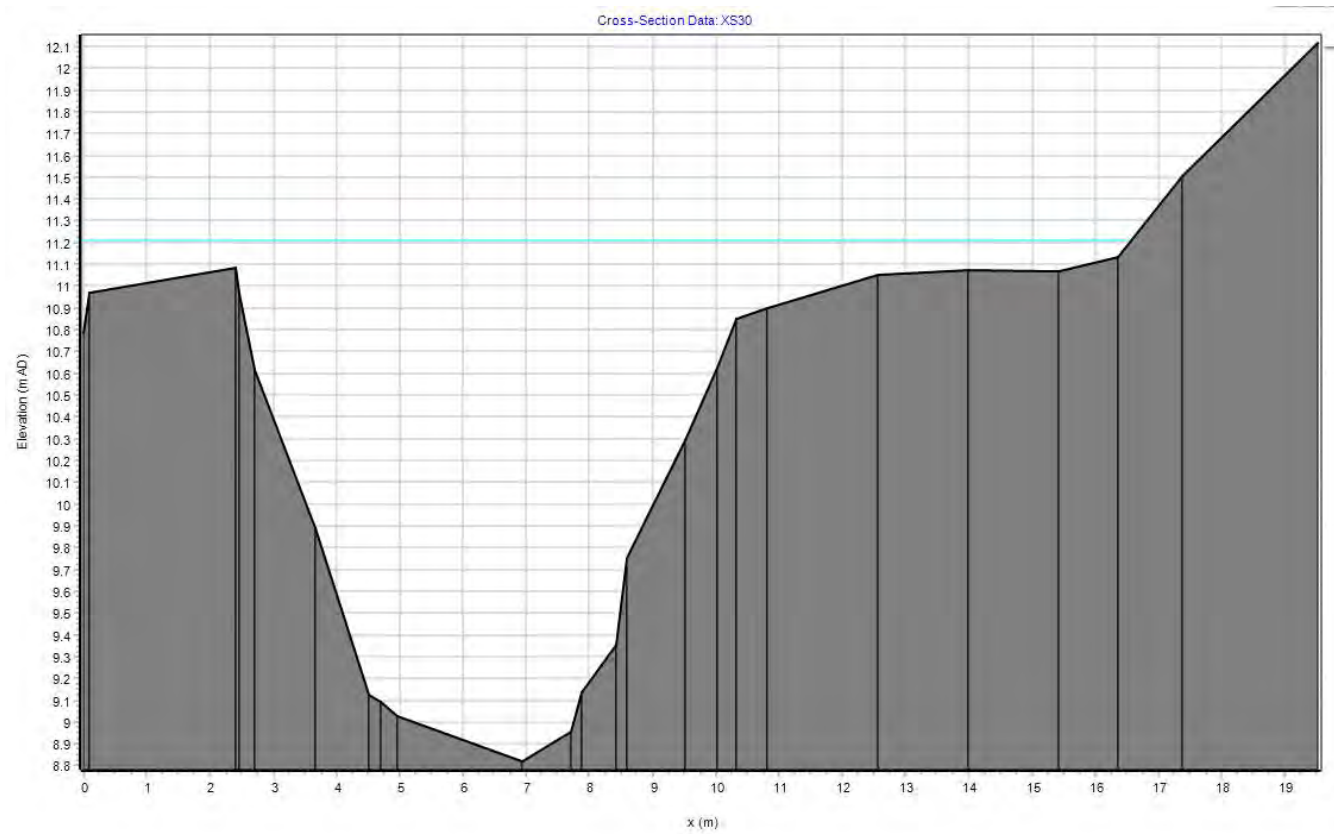


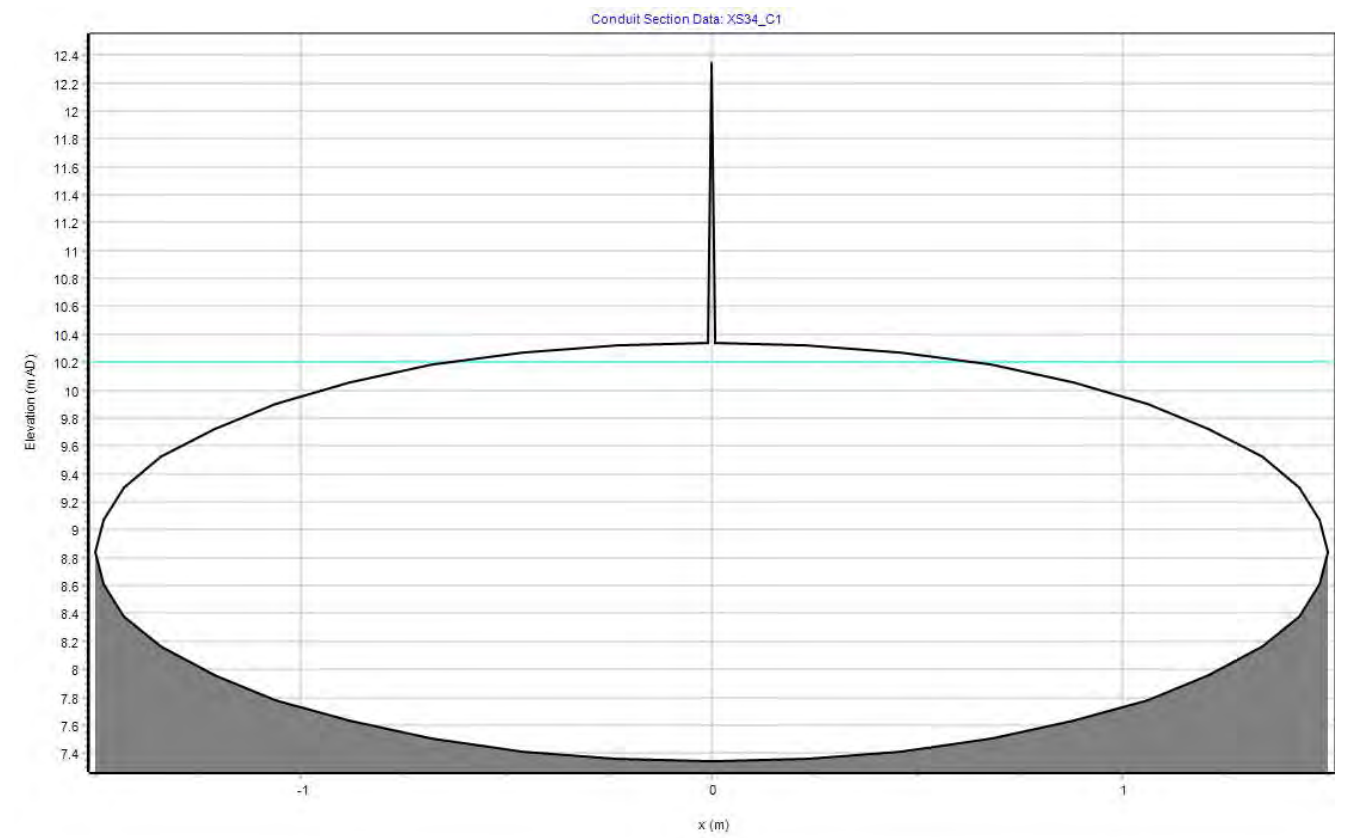
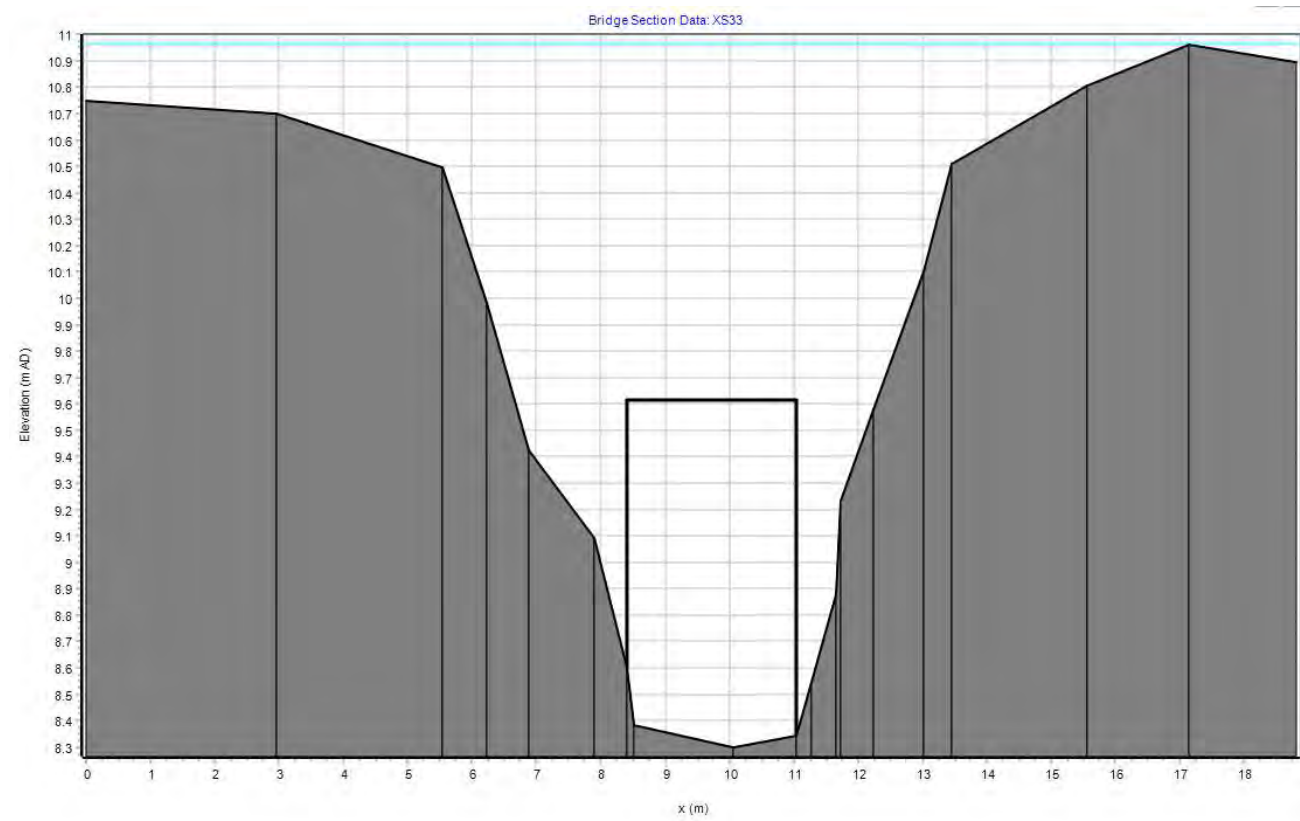
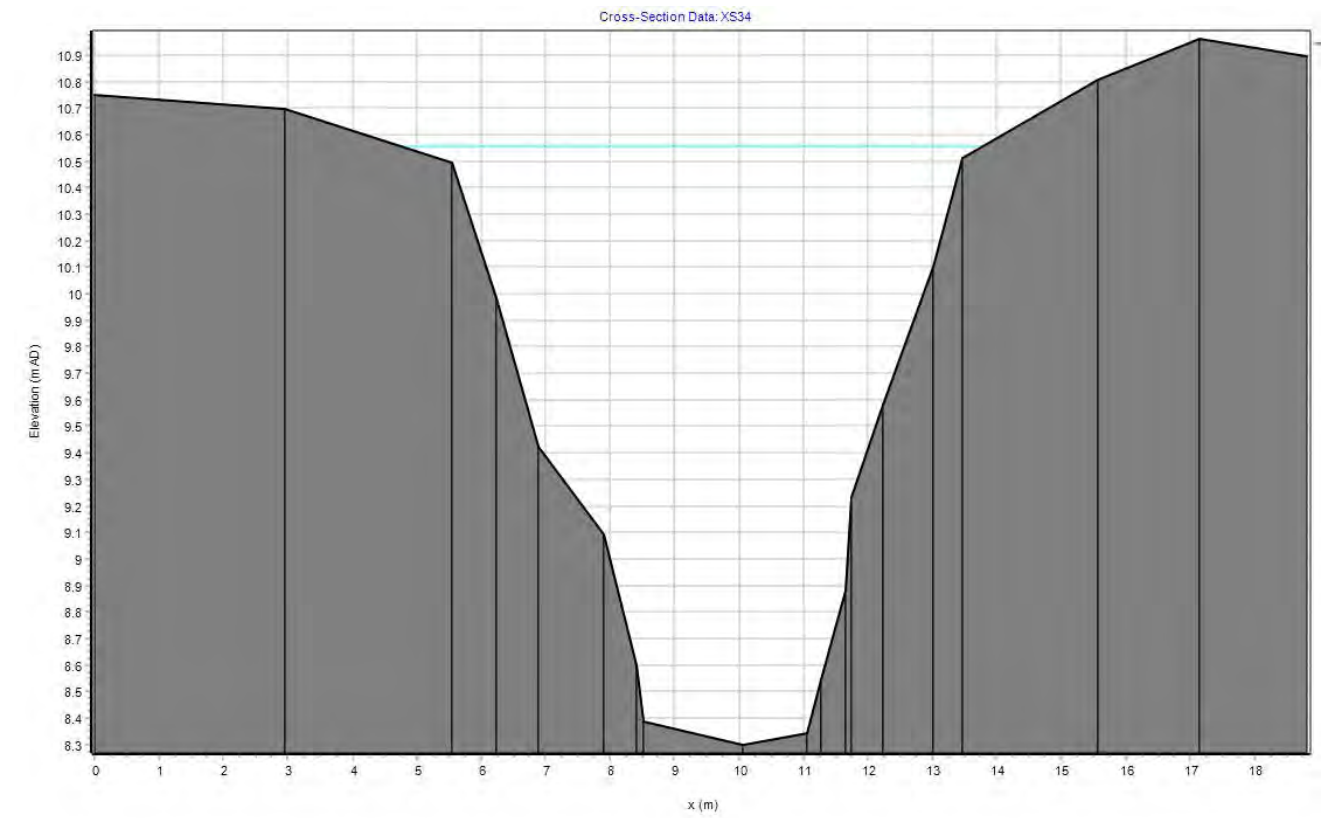
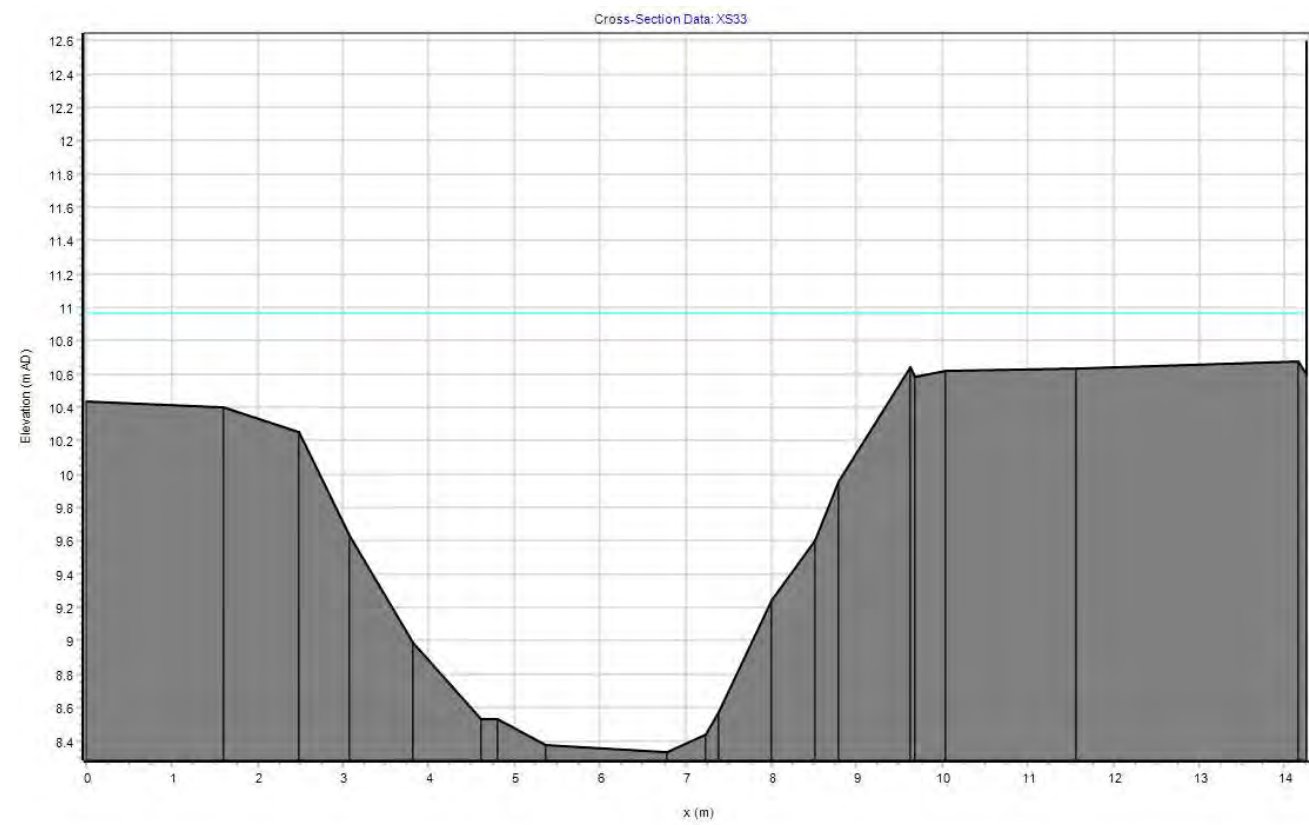


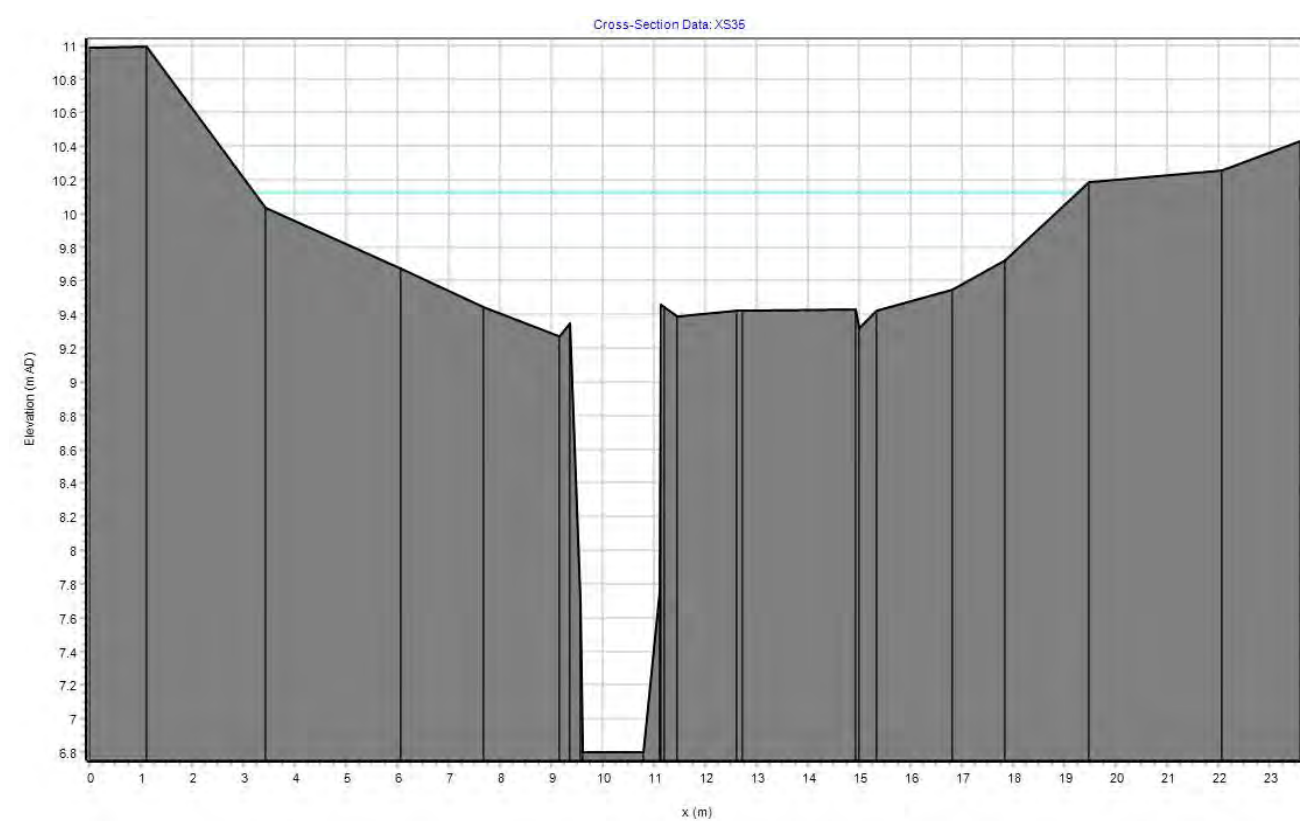
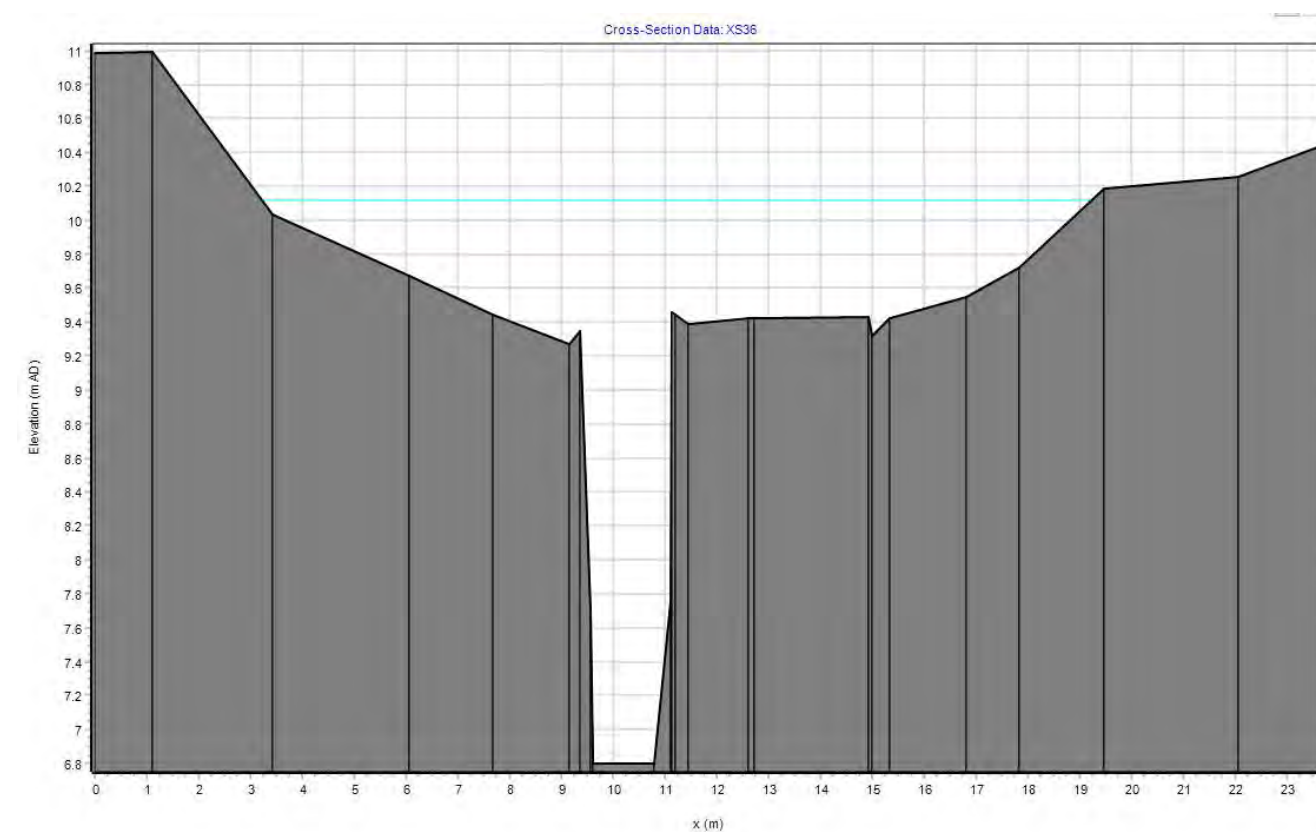
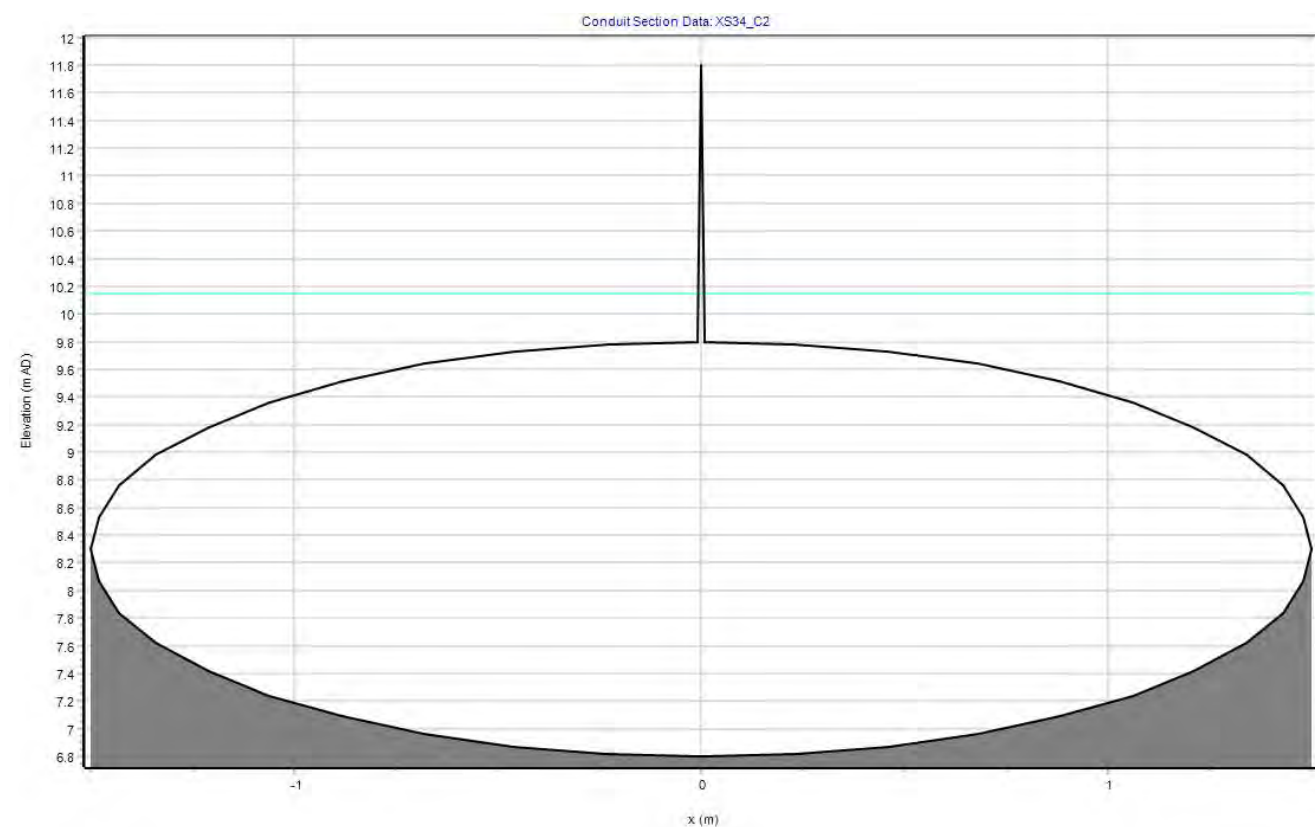




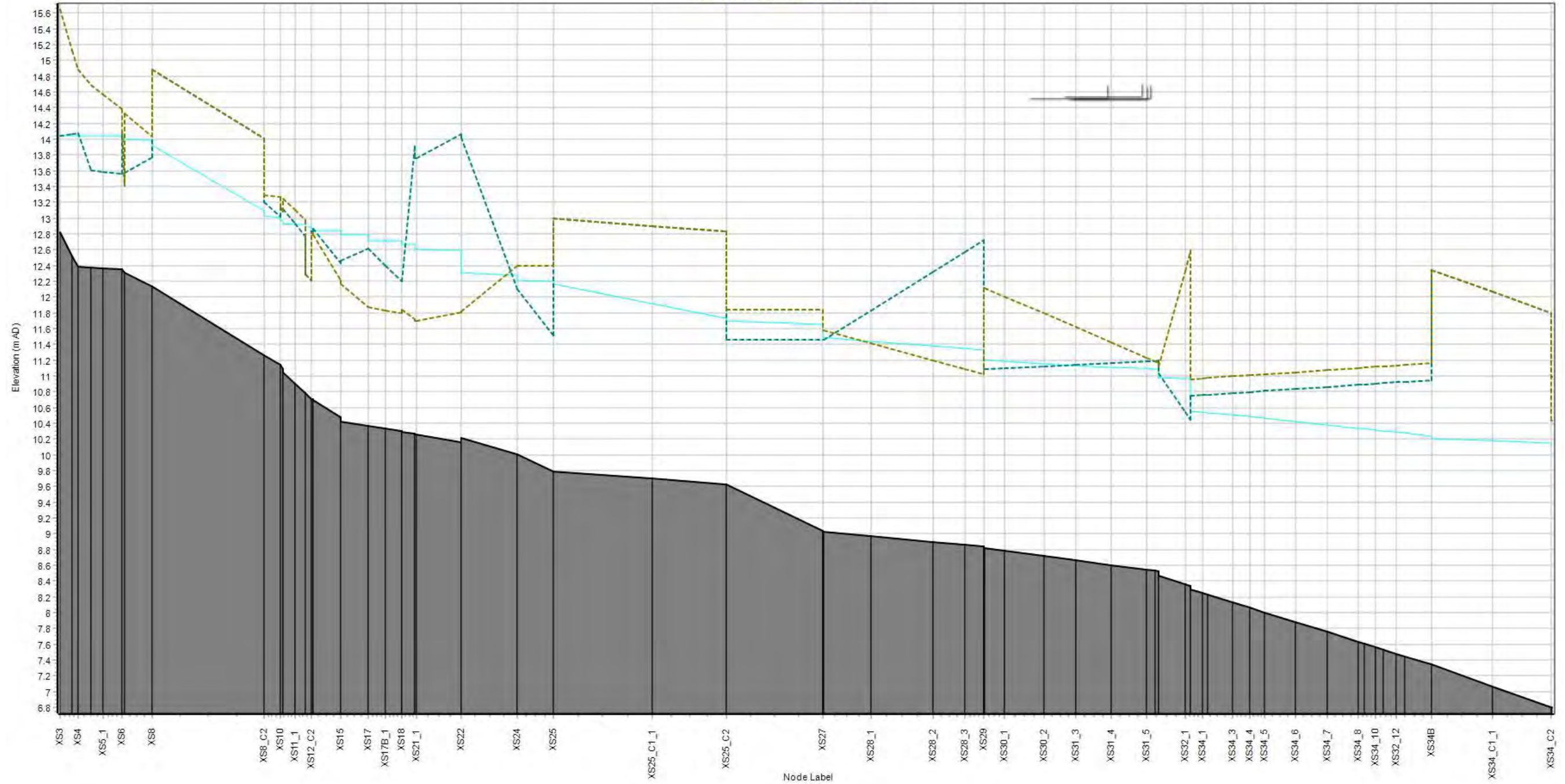








Long Section: XS3 - XS36 - Maximum Stage



Appendix N – Tyock Burn. Pre development scenario, 1 in 200 year event + 30% Climate Change + 40% Blockage scenario result

Label	Max Stage	Time (hr)mx2	Max Flow	Time (hr)mx1	Max Velocity	Time (hr)mx4
XS3	14.509	1.750	0.703	1.083	0.566	0.417
XS4	14.509	1.750	1.508	1.167	0.159	0.000
XS5	14.507	1.750	1.533	1.167	0.303	0.000
XS6	14.507	1.750	0.818	2.417	0.288	2.833
XS6_C1	14.506	1.750	0.818	2.417	0.667	2.417
XS6_C2	14.447	1.583	0.818	2.417	2.856	2.417
XS7	14.445	1.583	1.778	1.167	0.746	2.583
XS8	14.445	1.583	1.497	2.083	0.659	2.583
XS8_C1	14.393	1.583	2.427	1.333	2.106	0.667
XS8_C2	13.284	1.917	2.426	1.333	1.971	1.333
XS9	13.229	1.917	2.426	1.333	1.040	0.750
XS10	13.215	1.917	2.369	1.333	0.655	0.917
XS10_C1	13.179	1.917	2.369	1.333	1.417	0.917
XS10_C2	13.174	1.917	2.368	1.333	1.366	0.917
XS11	13.139	1.917	2.368	1.333	0.980	0.667
XS12	13.133	2.000	2.227	1.083	0.528	0.750
XS12_C1	13.106	2.000	2.227	1.083	1.305	0.917
XS12_C2	13.095	2.000	2.227	1.083	1.266	1.083
XS13	13.070	2.000	2.207	1.083	0.598	0.500
XS14	13.061	2.000	2.207	1.083	0.566	0.500
XS15	13.060	2.000	2.095	2.167	0.310	0.917
XS16	12.991	1.917	2.095	2.167	0.292	0.917
XS17	12.990	1.917	2.251	2.250	0.291	0.000
XS18	12.907	1.917	2.466	2.333	0.223	3.167
XS19	12.848	1.833	2.466	2.333	0.215	3.167
XS20	12.848	1.833	2.566	2.417	0.384	0.000
XS21	12.779	1.750	2.566	2.417	0.273	3.167
XS22	12.774	1.750	4.080	1.083	0.648	0.833
XS23	12.505	1.833	4.080	1.083	0.772	0.917
XS24	12.493	1.833	3.608	1.500	0.962	0.750
XS24B	12.418	1.833	3.608	1.500	0.962	0.750
XS25	12.410	1.833	3.555	2.167	0.593	0.667
XS25_C1	12.009	1.833	3.555	2.167	1.134	2.167
XS25_C2	11.639	1.833	3.556	2.167	1.135	2.167
XS26(B)	11.608	1.750	3.556	2.167	0.510	0.917
XS27	11.565	1.750	3.865	2.333	0.441	2.917
XS28	11.427	1.750	3.865	2.333	0.529	2.917
XS29	11.264	1.750	5.287	1.250	0.593	1.167
XS30	11.163	1.750	5.287	1.250	0.536	1.167
XS31	11.030	1.833	5.952	1.250	0.846	0.917
XS32	10.932	1.833	5.952	1.250	0.525	0.917
XS33	10.916	1.833	5.845	1.750	0.759	1.000
XS34	10.526	1.917	5.845	1.750	0.801	1.083
XS34B	10.220	2.000	5.760	2.000	0.813	0.917
XS34_C1	10.160	2.000	5.760	2.000	1.514	0.833
XS34_C2	10.135	2.000	5.760	2.000	0.818	2.000
XS35	10.107	2.000	5.760	2.000	0.459	1.167
XS36	10.105	2.000	5.760	2.000	0.457	4.250

Appendix O – Tyock Burn. Post development scenario, 1 in 200 year event + 30% Climate Change + 40% Blockage scenario result

Label	Max Stage	Time (hr)mx2	Max Flow	Time (hr)mx1	Max Velocity	Time (hr)mx4
XS3	14.127	1.333	0.138	1.083	0.514	0.000
XS4	14.114	1.333	1.101	1.333	0.163	1.083
XS5	14.112	1.333	1.065	1.167	0.253	0.000
XS6	14.090	1.417	0.665	1.333	0.271	2.417
XS6_C1	14.109	1.333	0.665	1.333	0.542	1.333
XS6_C2	14.012	1.583	0.665	1.333	2.323	1.333
XS7	14.012	1.583	1.354	1.333	0.641	2.333
XS8	14.011	1.583	1.111	2.000	0.540	2.083
XS8_C1	13.944	1.583	2.333	1.250	2.092	0.833
XS8_C2	13.149	1.833	2.358	1.250	1.859	1.250
XS9	13.097	1.833	2.358	1.250	1.038	0.833
XS10	13.079	1.833	2.230	1.250	0.651	0.917
XS10_C1	13.046	1.833	2.230	1.250	1.367	1.000
XS10_C2	13.042	1.833	2.226	1.250	1.315	1.000
XS11	13.010	1.917	2.226	1.250	0.947	0.750
XS12	13.004	1.917	2.090	1.250	0.499	0.667
XS12_C1	12.981	1.917	2.090	1.250	0.582	0.417
XS12_C2	12.972	1.917	2.090	1.250	0.551	0.500
XS13	12.949	1.917	2.072	1.250	0.279	0.917
XS14	12.943	1.917	2.072	1.250	0.262	0.917
XS15	12.942	1.917	1.825	2.000	0.293	0.000
XS16	12.889	1.917	1.825	2.000	0.221	2.917
XS17	12.887	1.917	1.944	2.083	0.212	2.917
XS18	12.822	1.833	2.158	2.167	0.383	0.000
XS19	12.775	1.833	2.158	2.167	0.271	3.000
XS20	12.775	1.833	2.265	2.250	0.383	0.000
XS21	12.718	1.750	2.265	2.250	0.271	3.000
XS22	12.713	1.750	4.029	1.083	0.646	0.833
XS23	12.456	1.833	4.029	1.083	0.767	0.917
XS24	12.443	1.833	3.547	1.500	0.947	0.750
XS24B	12.375	1.833	3.547	1.500	0.947	0.750
XS25	12.366	1.833	3.481	2.083	0.585	0.667
XS25_C1	11.978	1.833	3.481	2.083	1.111	2.083
XS25_C2	11.772	1.833	3.482	2.083	1.112	2.083
XS26(B)	11.592	1.750	3.482	2.083	0.496	0.917
XS27	11.550	1.750	3.789	2.250	0.424	2.750
XS28	11.417	1.667	3.789	2.250	0.507	2.667
XS29	11.252	1.750	5.253	1.250	0.591	1.167
XS30	11.154	1.750	5.253	1.250	0.533	1.167
XS31	11.019	1.833	5.919	1.250	0.843	0.917
XS32	10.923	1.833	5.919	1.250	0.523	0.833
XS33	10.906	1.833	5.814	1.750	0.757	1.000
XS34	10.521	1.917	5.814	1.750	0.799	1.083
XS34B	10.216	2.000	5.729	2.000	0.811	0.917
XS34_C1	10.177	2.000	5.729	2.000	1.516	0.833
XS34_C2	10.132	2.000	5.729	2.000	0.814	2.000
XS35	10.104	2.000	5.729	2.000	0.459	1.167
XS36	10.102	2.000	5.729	2.000	0.457	4.083

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