

## APPENDIX K: ReFH FLOW ESTIMATES

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JOB TITLE: WARDON VIEW, CLITHEROE

**FLOW RATES FOR MEC-RAS MODEL**

Primary Watercourse		Urban Area Imp Catchment = 21630 sqm (2.163)ha	
Peak Rainfall	1yr	10.2 mm/hr	$Q_1 = 61.3 \text{ l/s}$
	100yr	33.0 mm/hr	$Q_{100} = 198.3 \text{ l/s}$
	100+30%*	42.9 mm/hr	$Q_{100+30\%} = 257.8 \text{ l/s}$
	1000yr	59.5 mm/hr	$Q_{1000} = 357.5 \text{ l/s}$

[\*30%cc]

Greenfield Area Catchment = 35436 sqm (3.544ha)

SARR = 1222 mm / SPR = 30.35

$Q_1 = 11.1 \text{ l/s}$

$Q_{100} = 26.5 \text{ l/s}$

$Q_{100+30\%} = 31.8 \text{ l/s}$

$Q_{1000} = 38.8 \text{ l/s}$

[+20%cc]

Total Flow (peak) rates:  
Urban & Greenfield

$Q_1 = 72.4 \text{ l/s}$	0.0724
$Q_{100} = 224.8 \text{ l/s}$	0.2248
$Q_{100+30\%} = 289.6 \text{ l/s}$	0.2896
$Q_{1000} = 396.3 \text{ l/s}$	0.3963

Secondary tributary

Greenfield Area Catchment = 56578 sqm (5.652)ha

Total Flow (peak) rates:

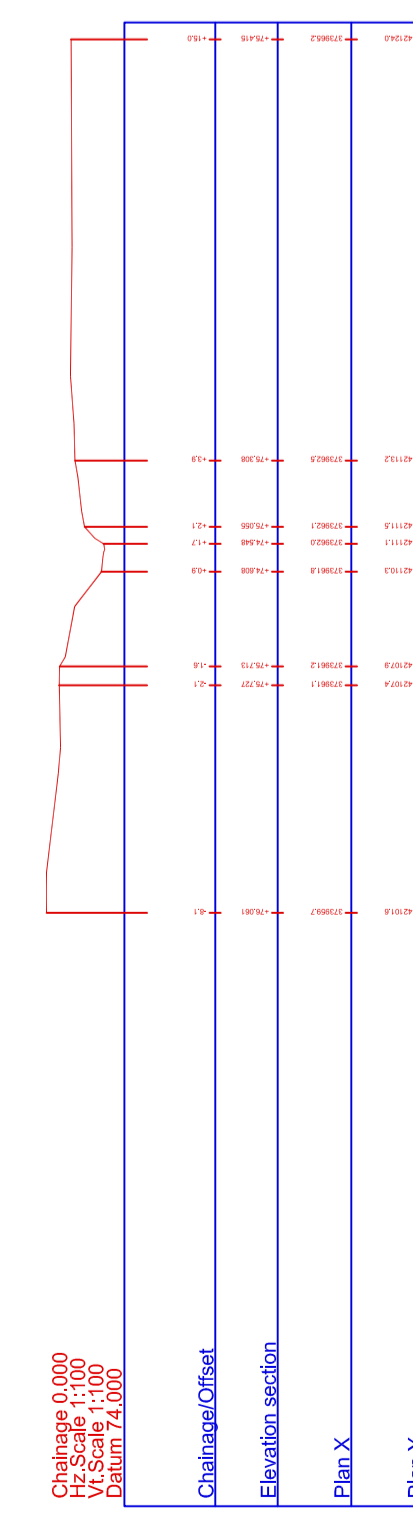
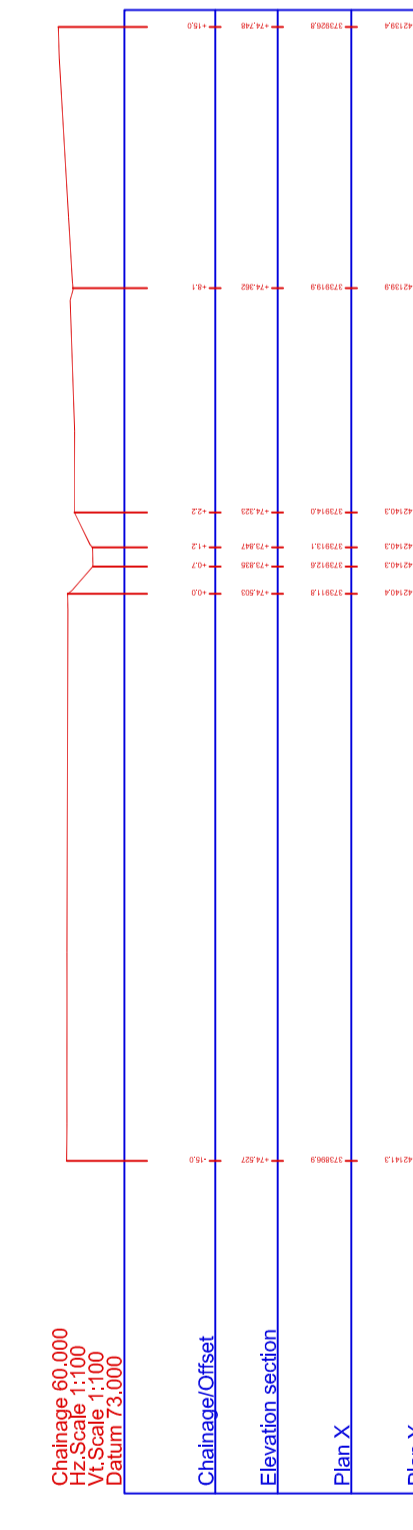
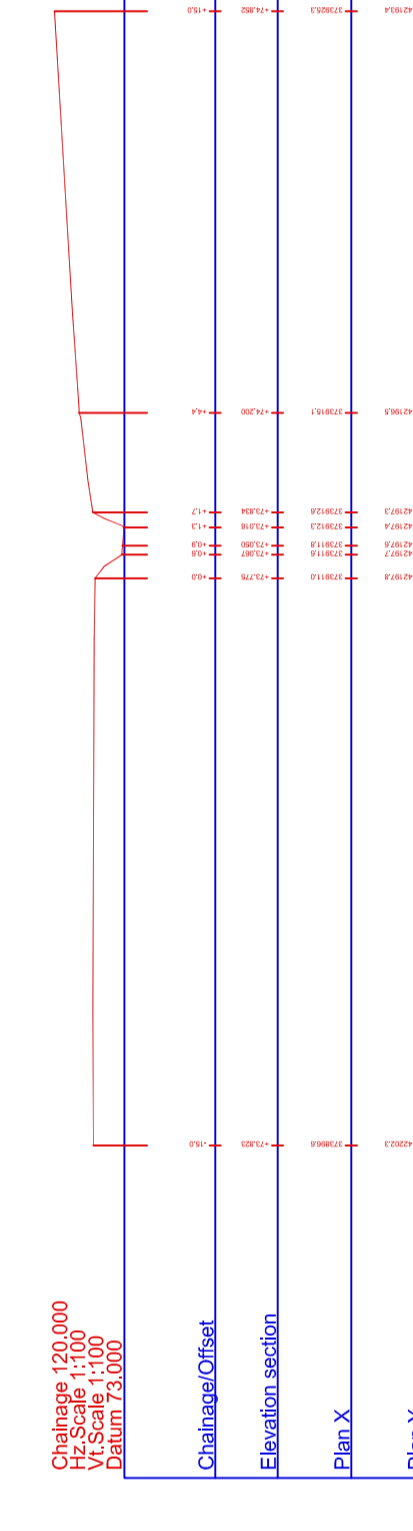
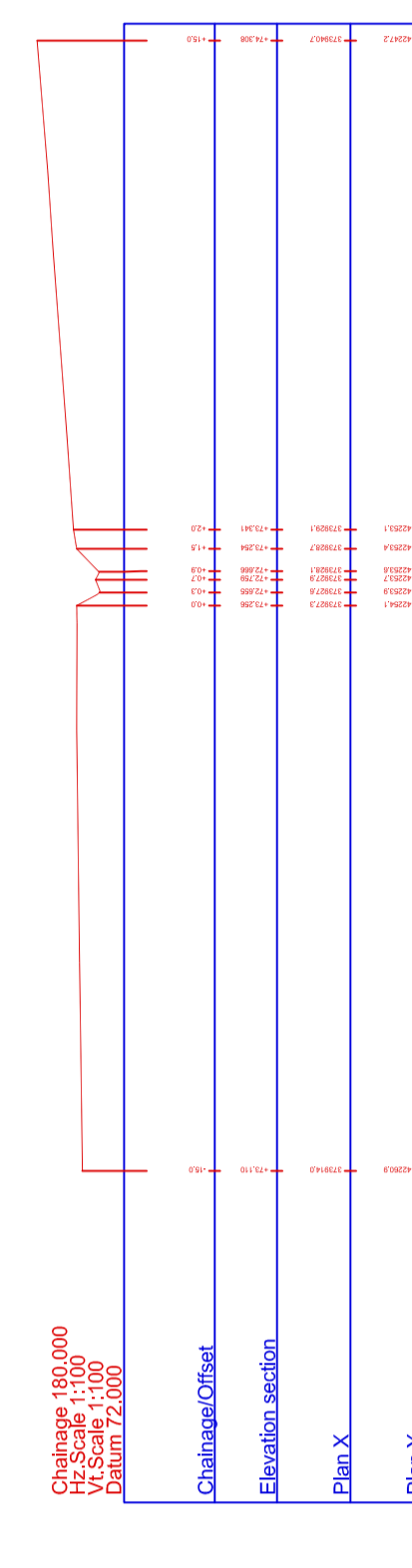
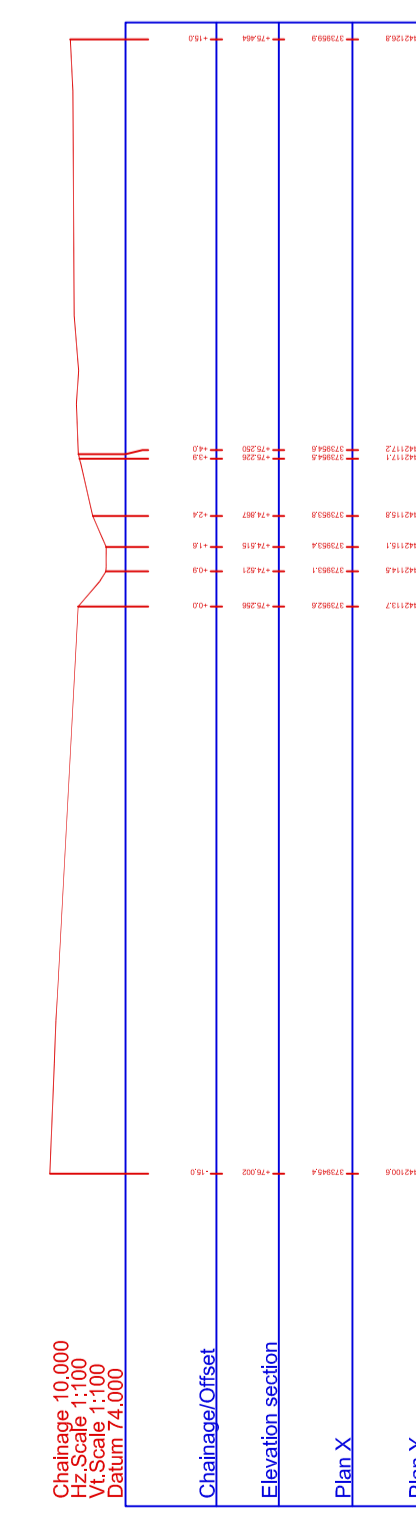
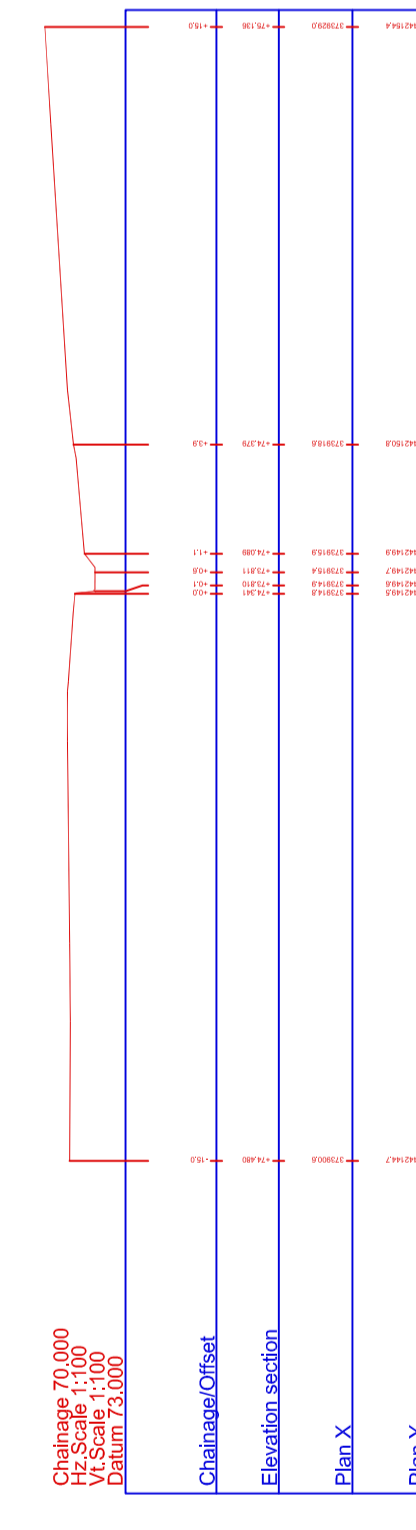
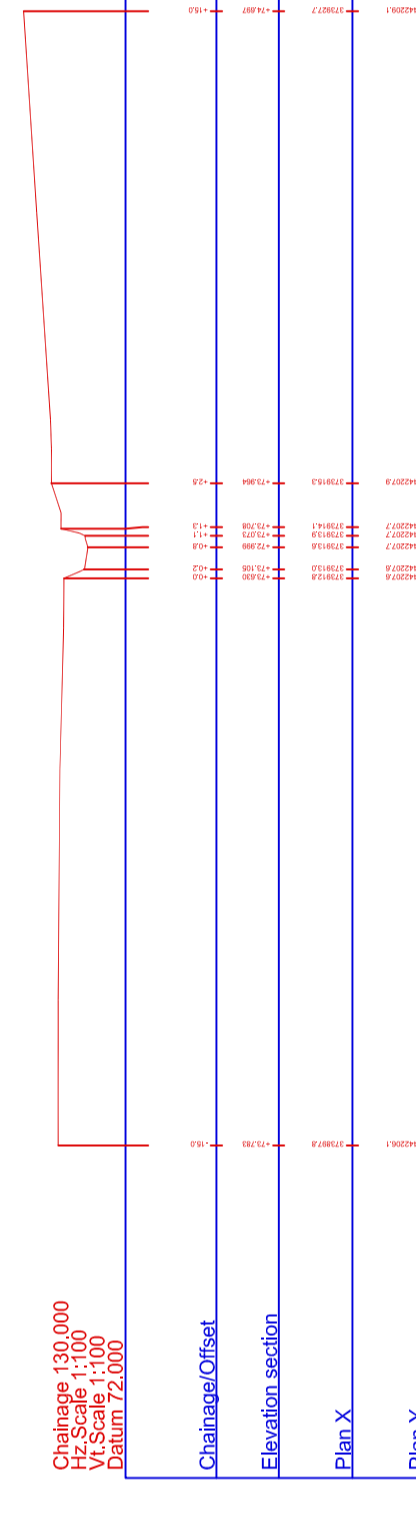
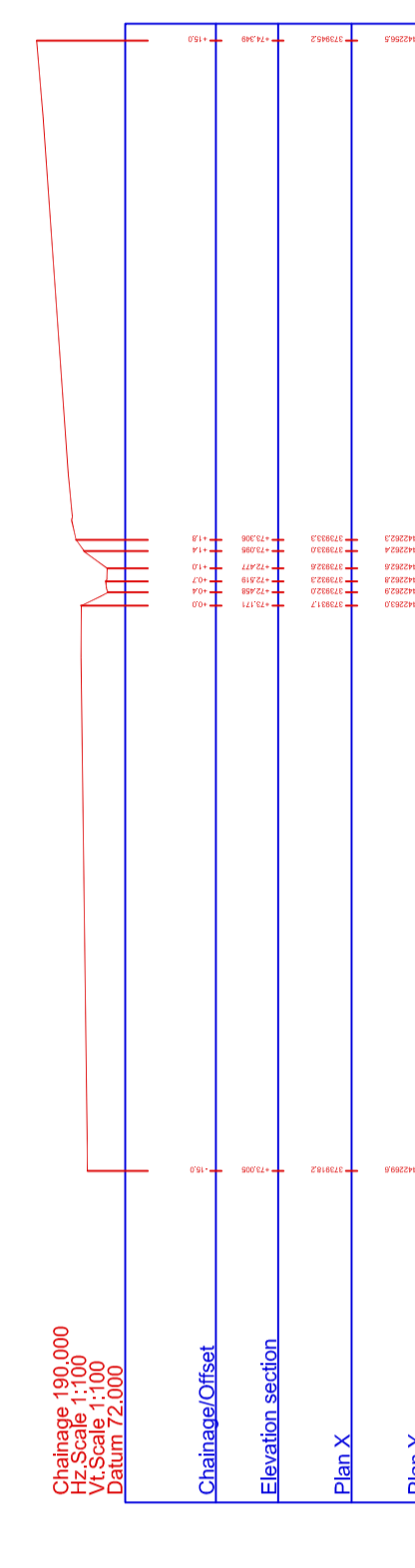
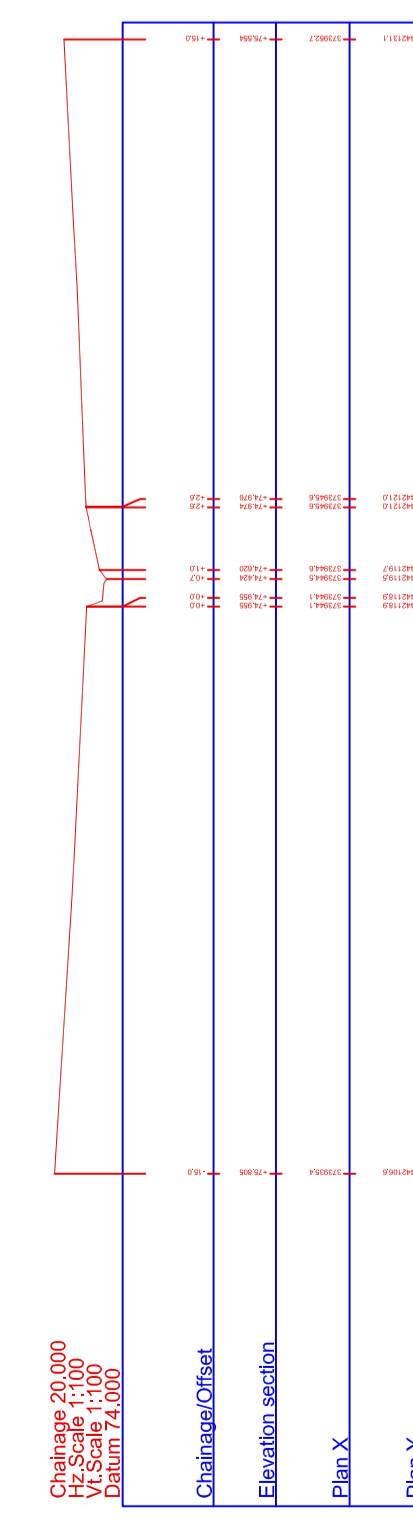
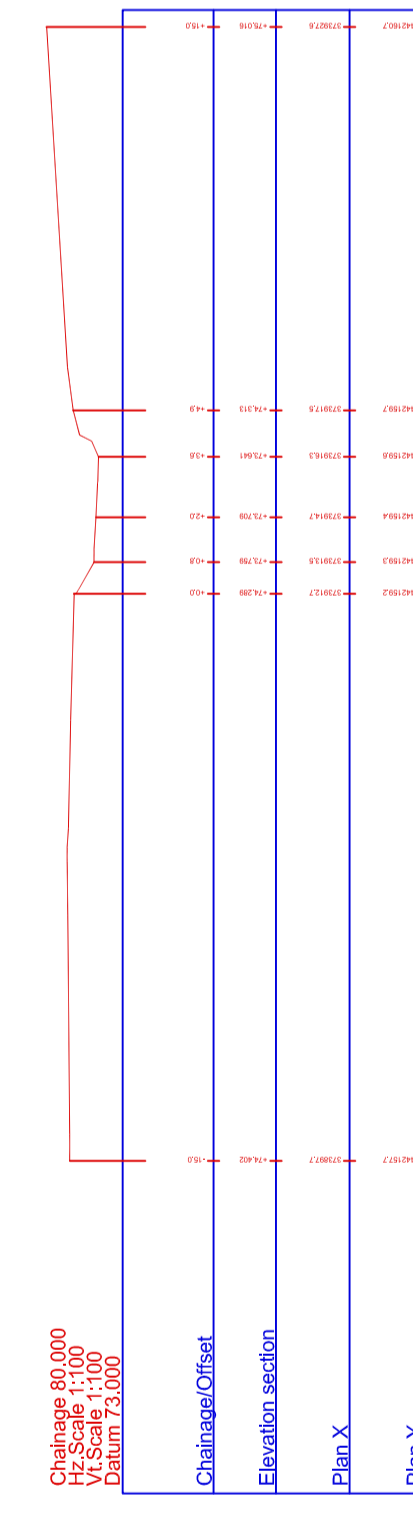
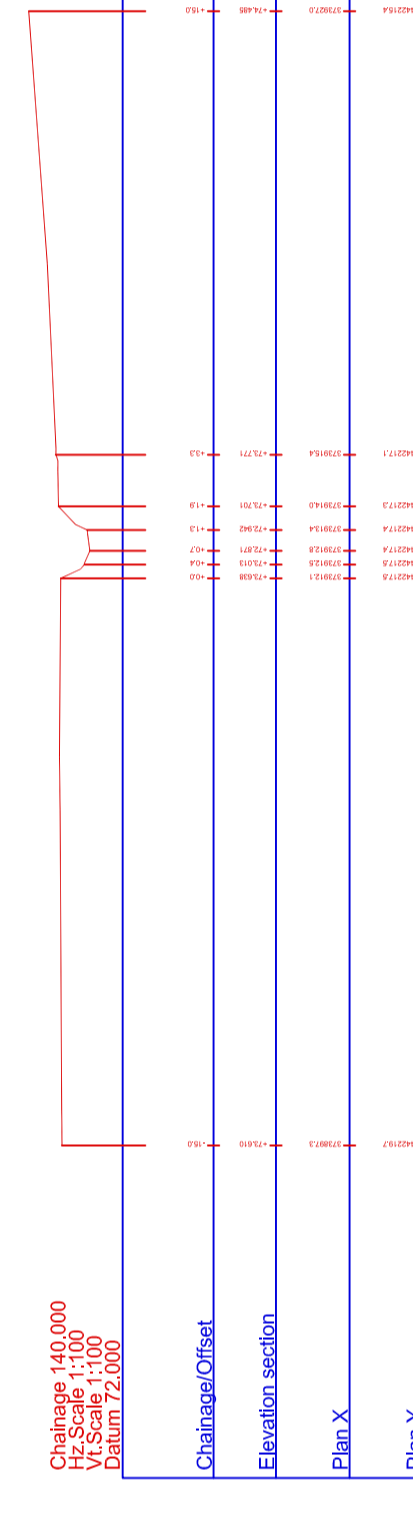
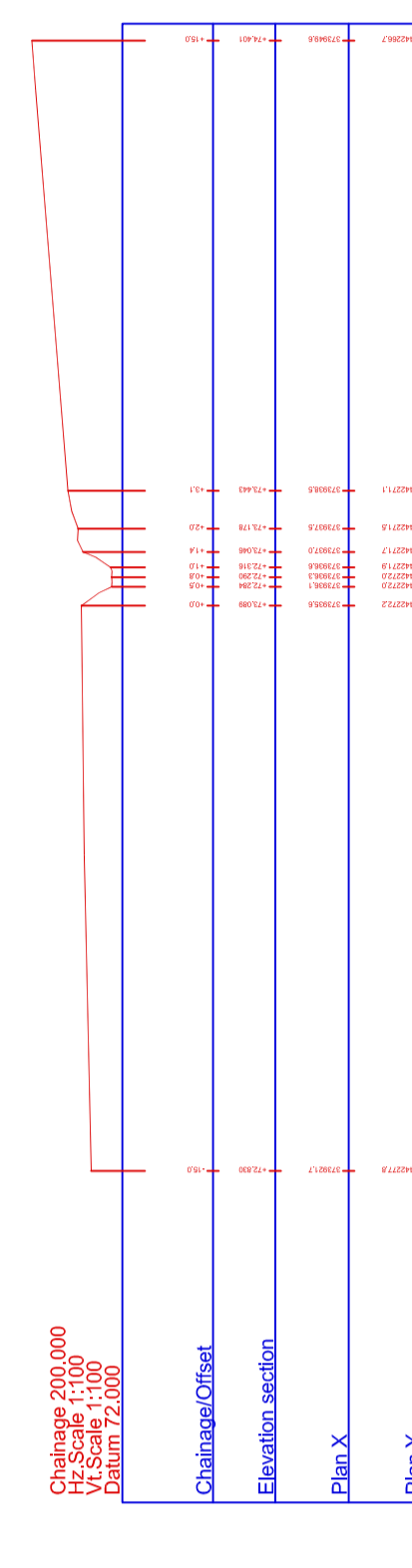
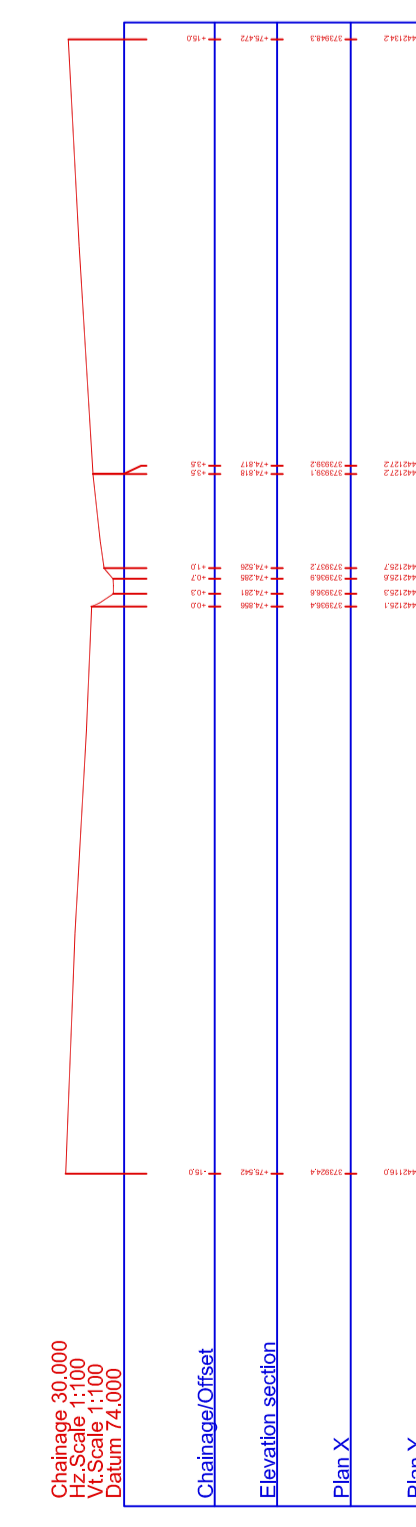
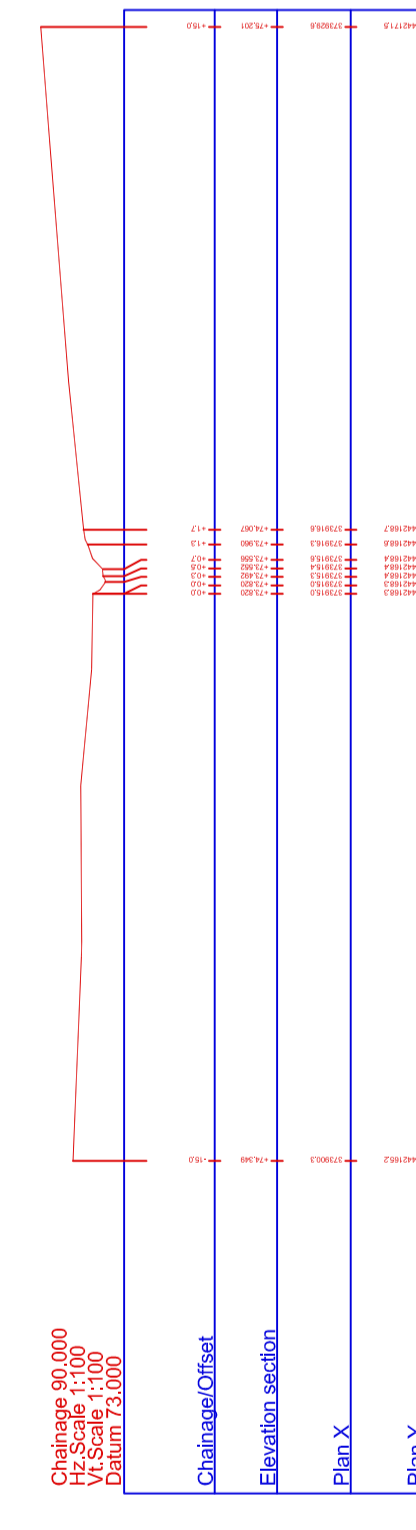
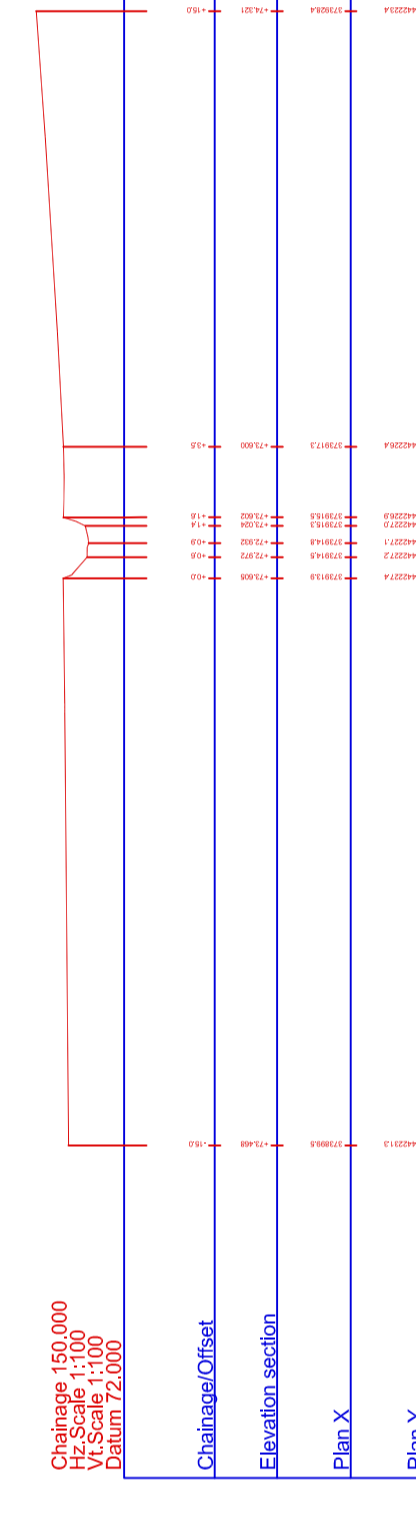
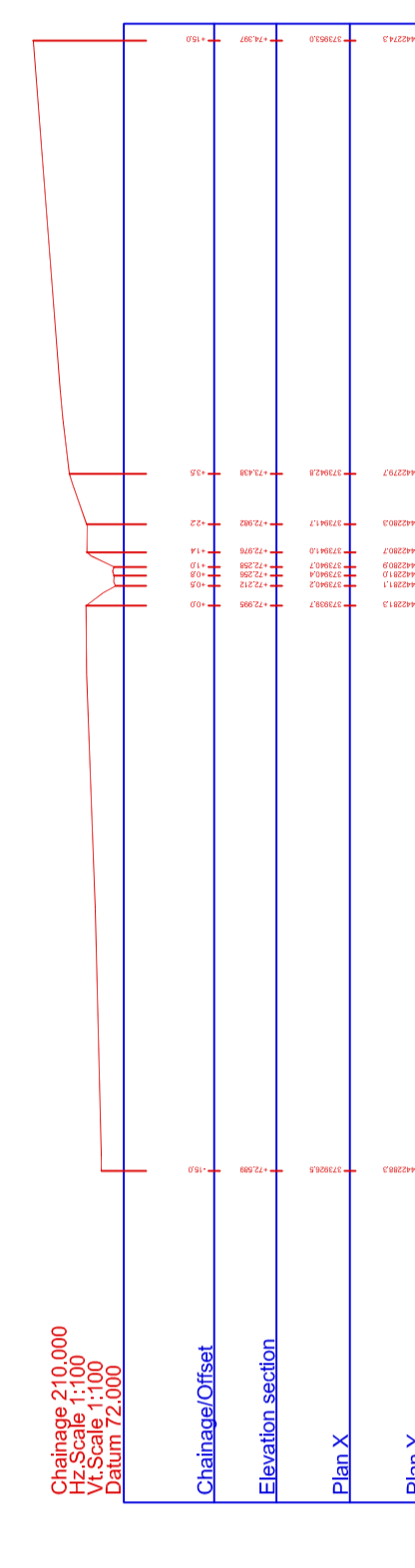
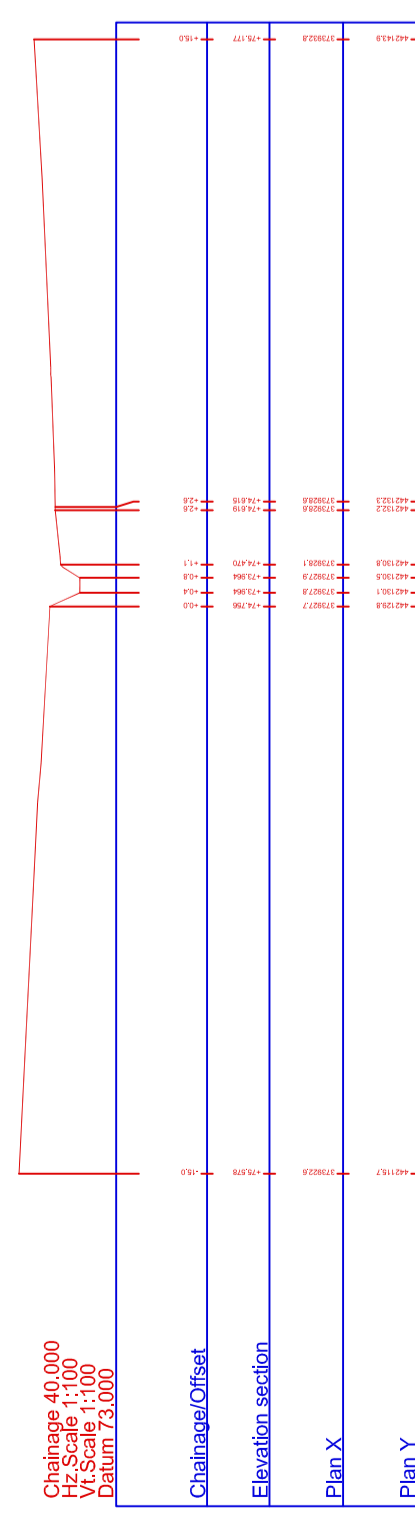
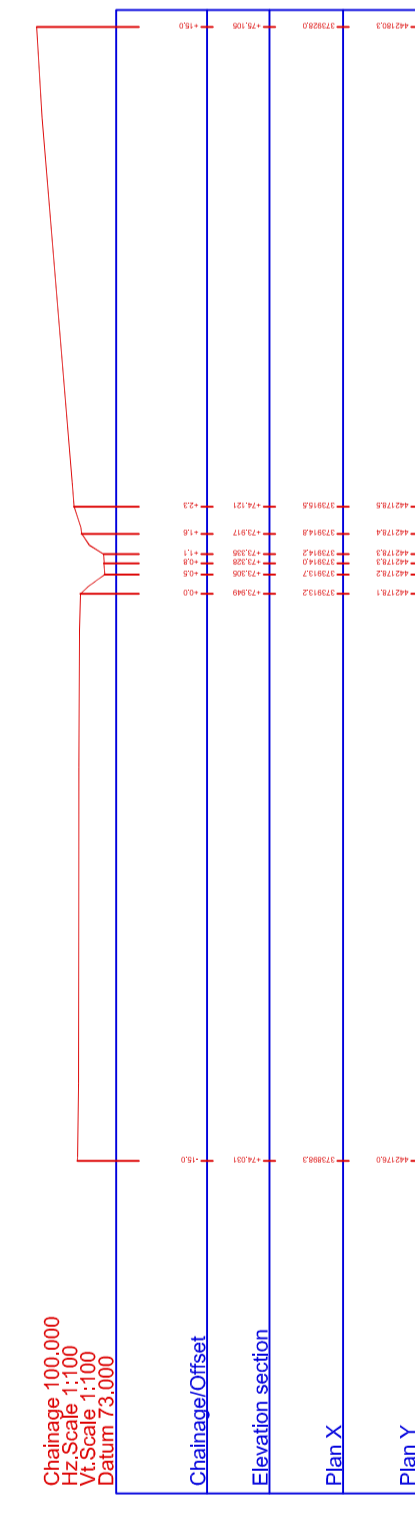
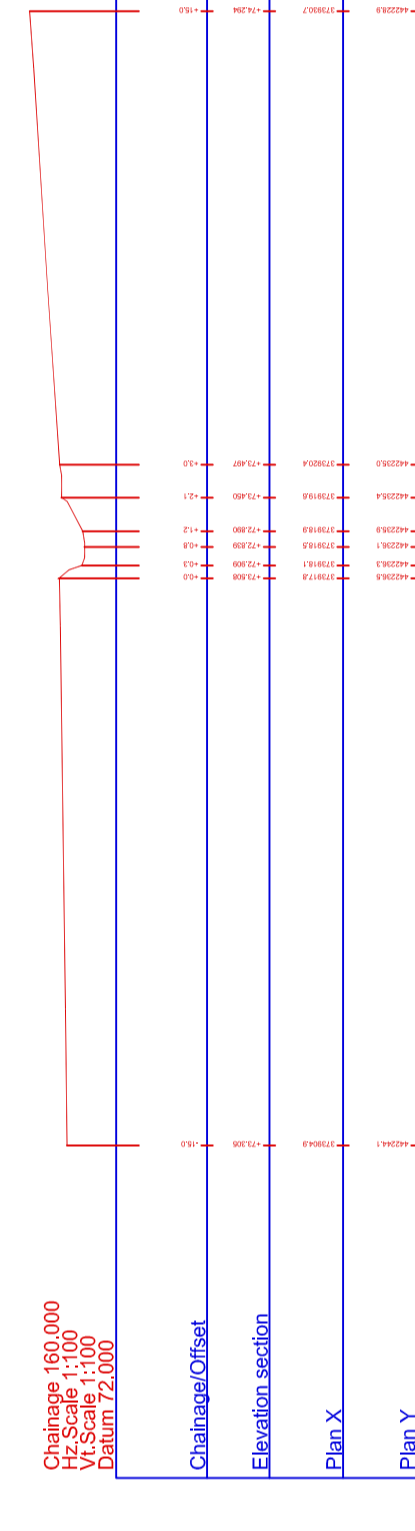
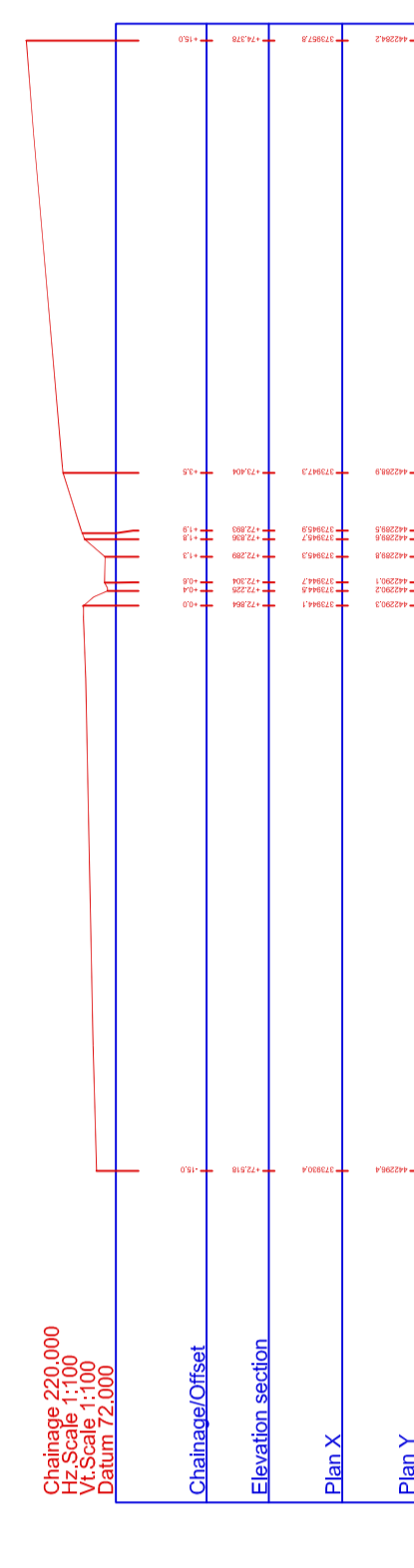
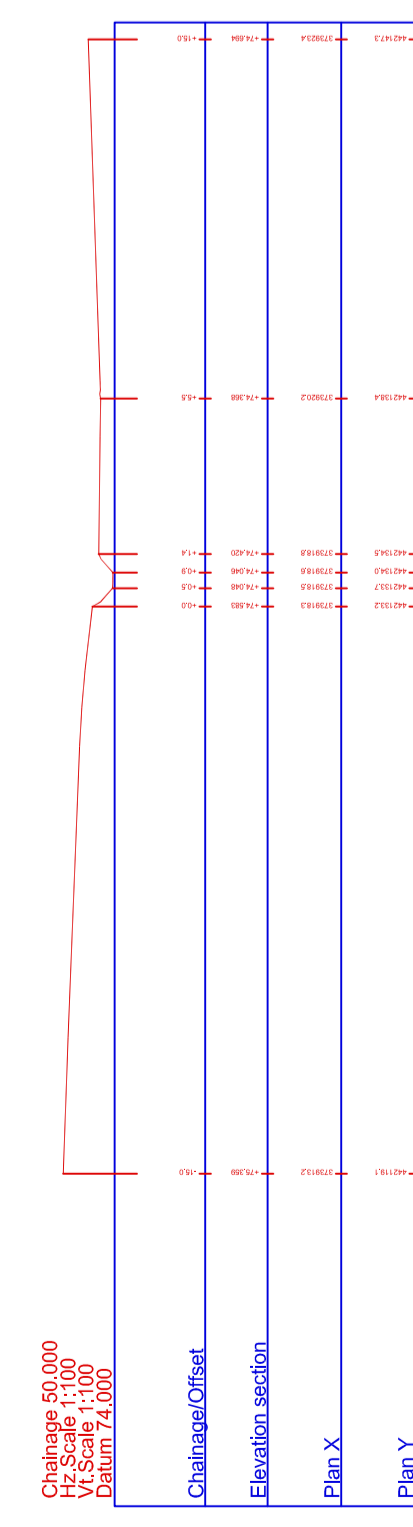
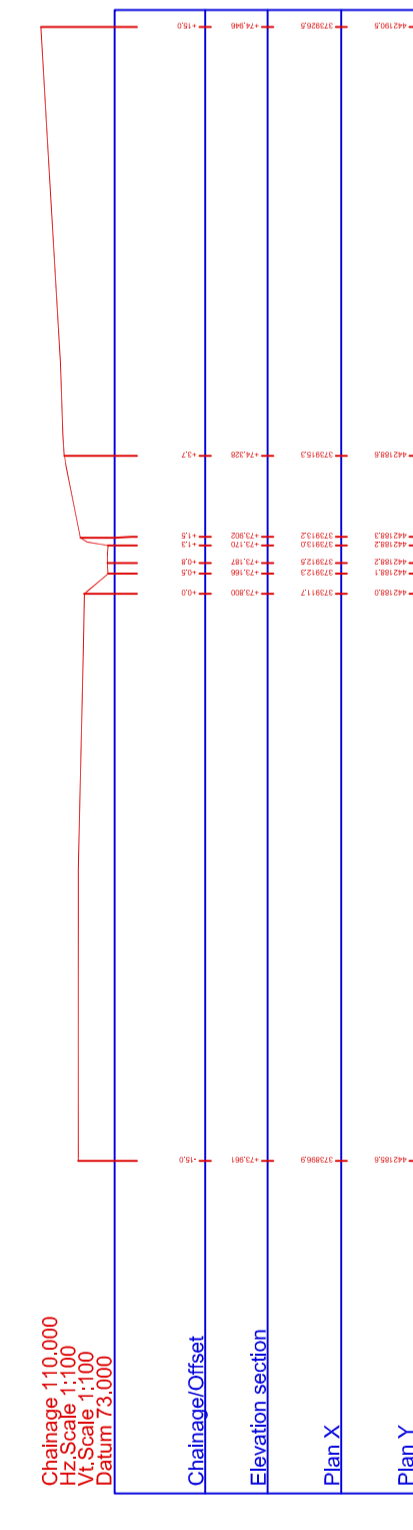
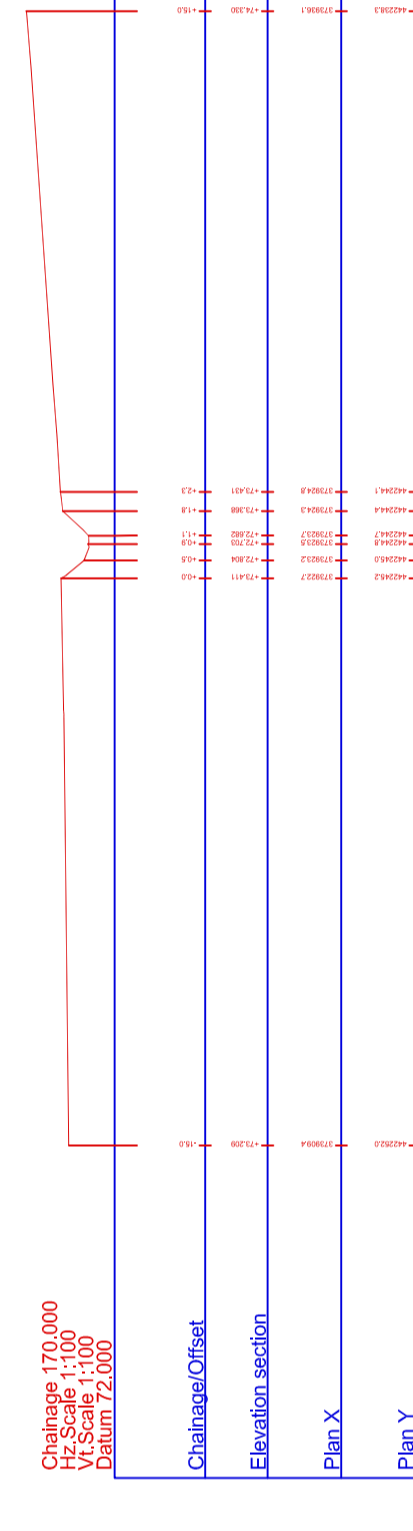
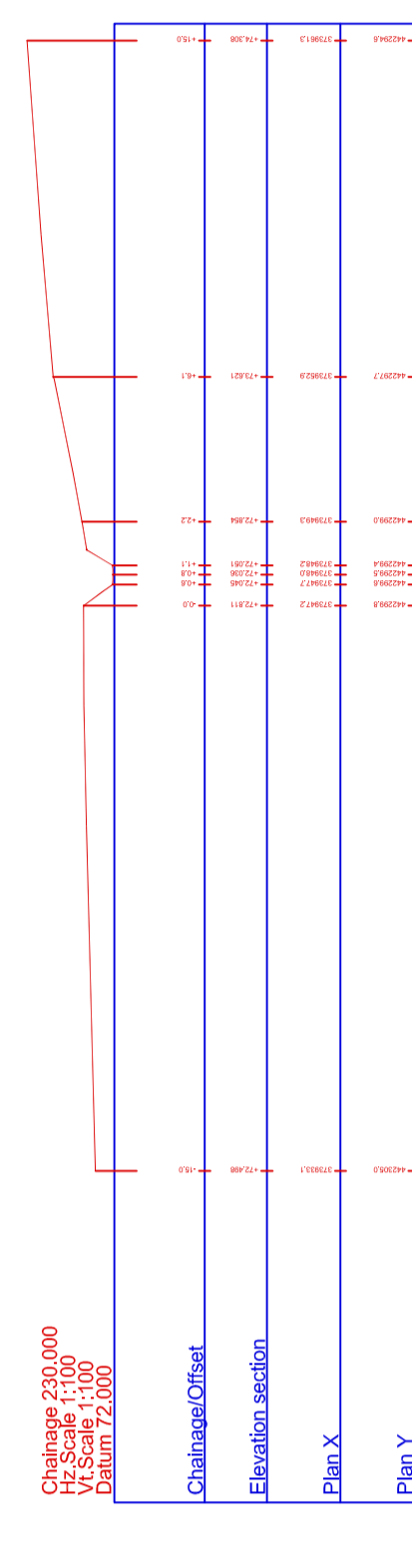
$Q_1 = 17.7 \text{ l/s}$	0.0077
$Q_{100} = 42.3 \text{ l/s}$	0.0423
$Q_{100+30\%} = 50.8 \text{ l/s}$	0.0508
$Q_{1000} = 61.8 \text{ l/s}$	0.0618

[+20%cc]

## APPENDIX L: CROSS-SECTIONS THROUGH THE WATERCOURSE

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# WATERCOURSE 1

Disclaimer  
 All dimensions to be checked on site prior to any works commencing.  
 The information contained herein is for information only and is not intended to be used for any other purpose.  
 The information contained herein is the property of Geomatic Surveys Ltd and is not to be used for any other purpose without the written consent of Geomatic Surveys Ltd.

REV	DATE	DESCRIPTION	BY	APP
		Sheet Layout		

Sheet 1

Survey information:  
 related to Ordnance Survey Datum.  
 Refer to Topographical Survey for details.

**Geomatic Surveys Ltd**  
 LAND SURVEYORS AND CONSULTING ENGINEERS  
 Bank House, The Padlock  
 Winslow Road  
 Winslow, Warwickshire  
 CV32 9JH  
 01455 521405  
 Email: info@geomaticsurveys.co.uk  
 Web: www.geomaticsurveys.co.uk

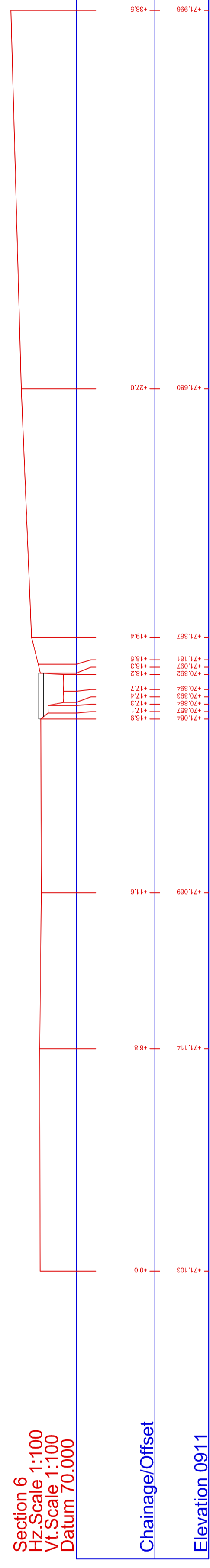
Client:  
**BETTS ASSOCIATES**

Project Title  
**WADDOW VIEW  
 BACK COMMONS  
 CLITHEROE**

Drawing Title			
SECTIONS			
Drawn	DCW	Checked	RH
Date	28/02/2012	Scale	1:200 @ A0
Drawn By	Sheet No.		SHEET 1 OF 3
Drawn By	Rev		0911/Sections



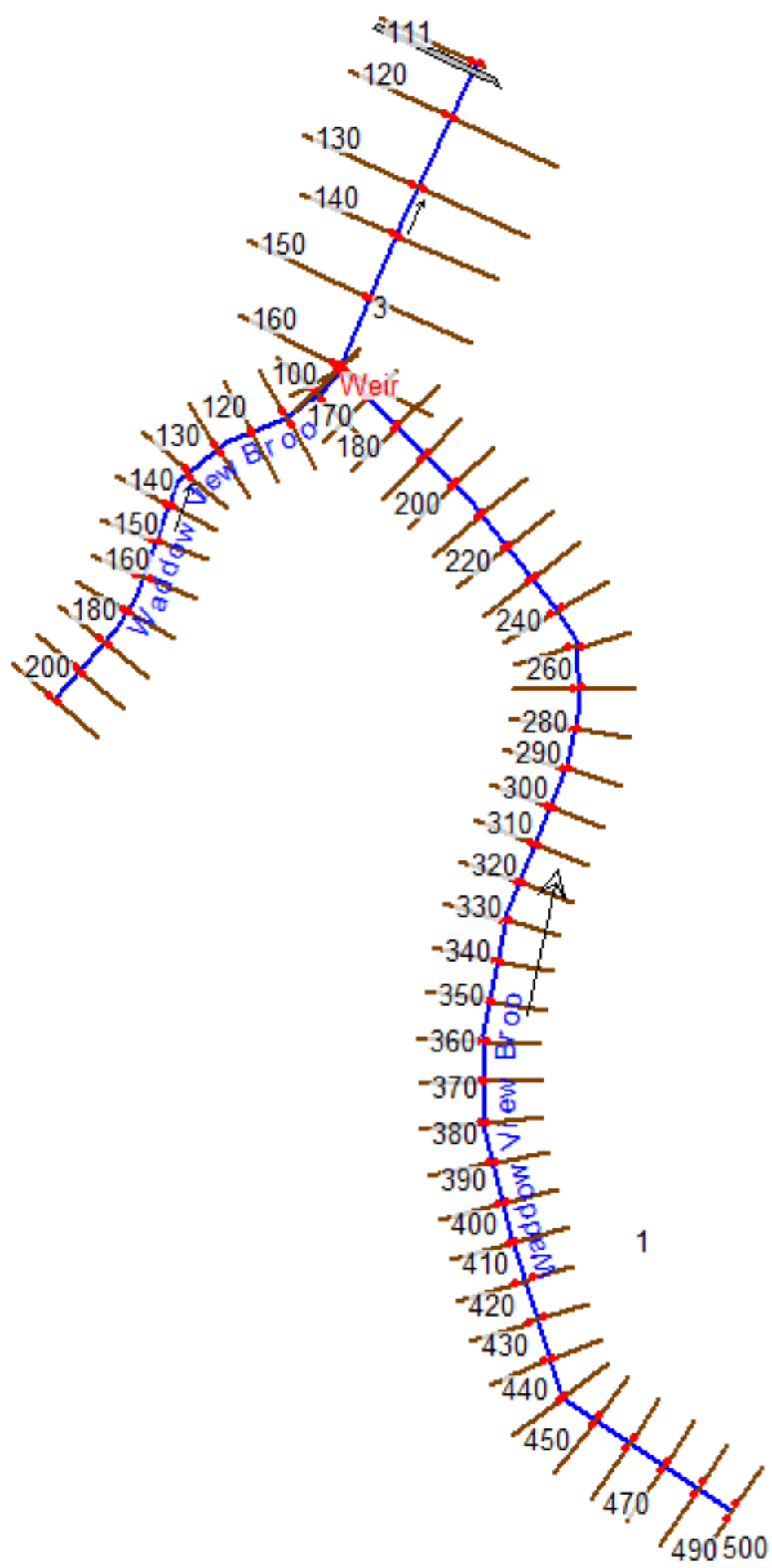
Section 6  
 HZ Scale 1:100  
 VT Scale 1:100  
 Datum 70.000



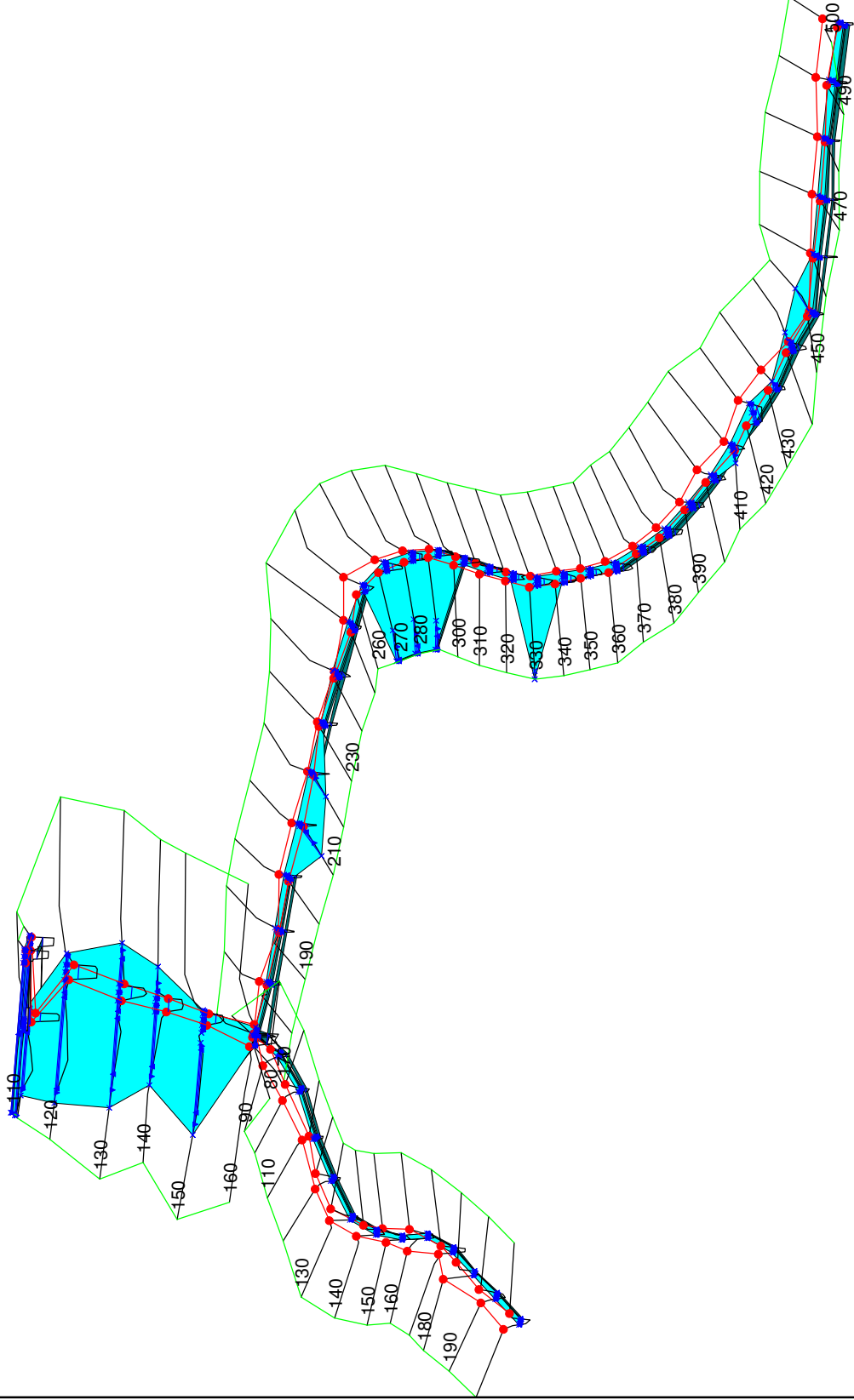
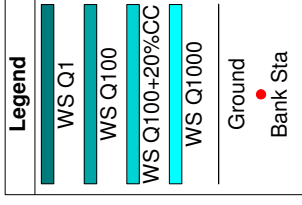
## APPENDIX M: HEC-RAS SCHEMATIC PLAN, PROFILE AND CROSS-SECTIONS

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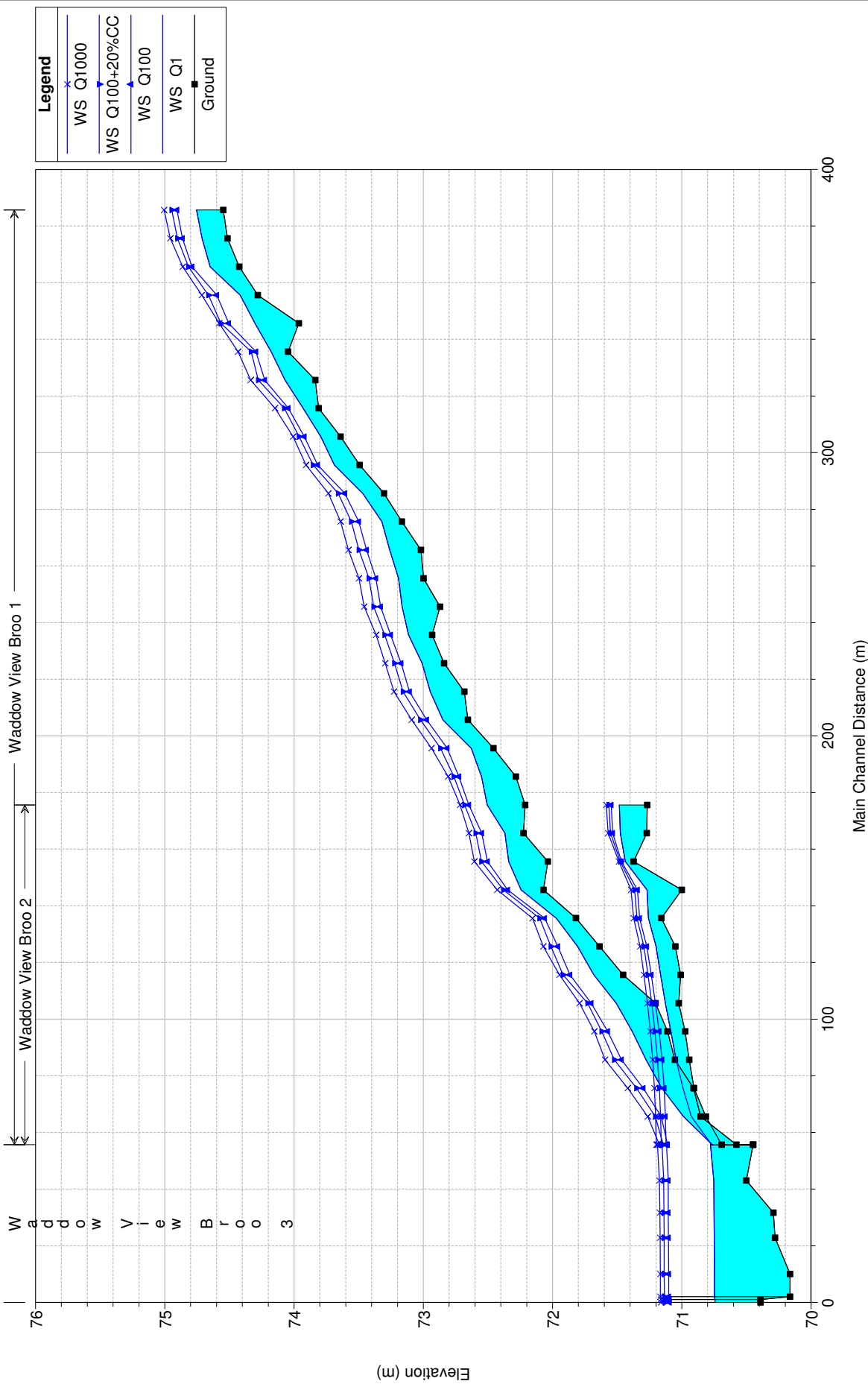
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2



Waddow View Plan: Plan 01 18/04/2012



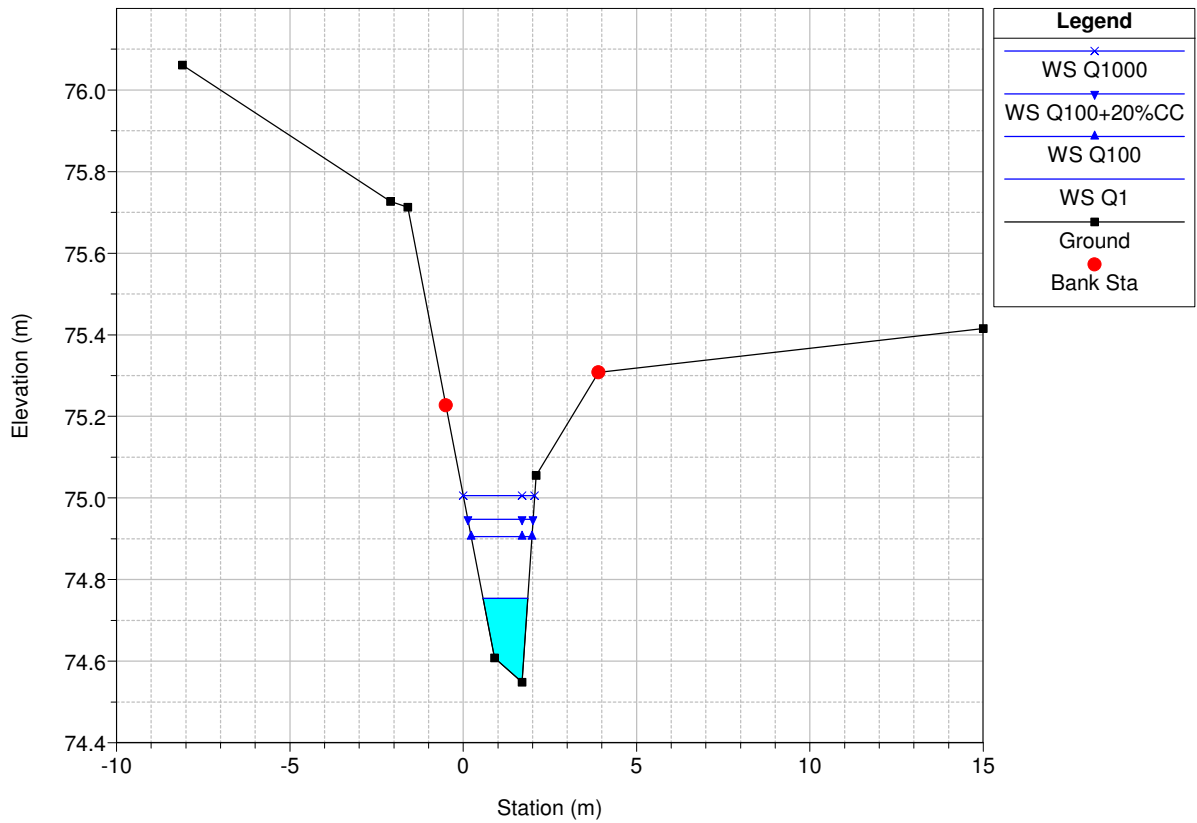
W a d d o w V i e w B r o o 3

Waddow View Broo 2

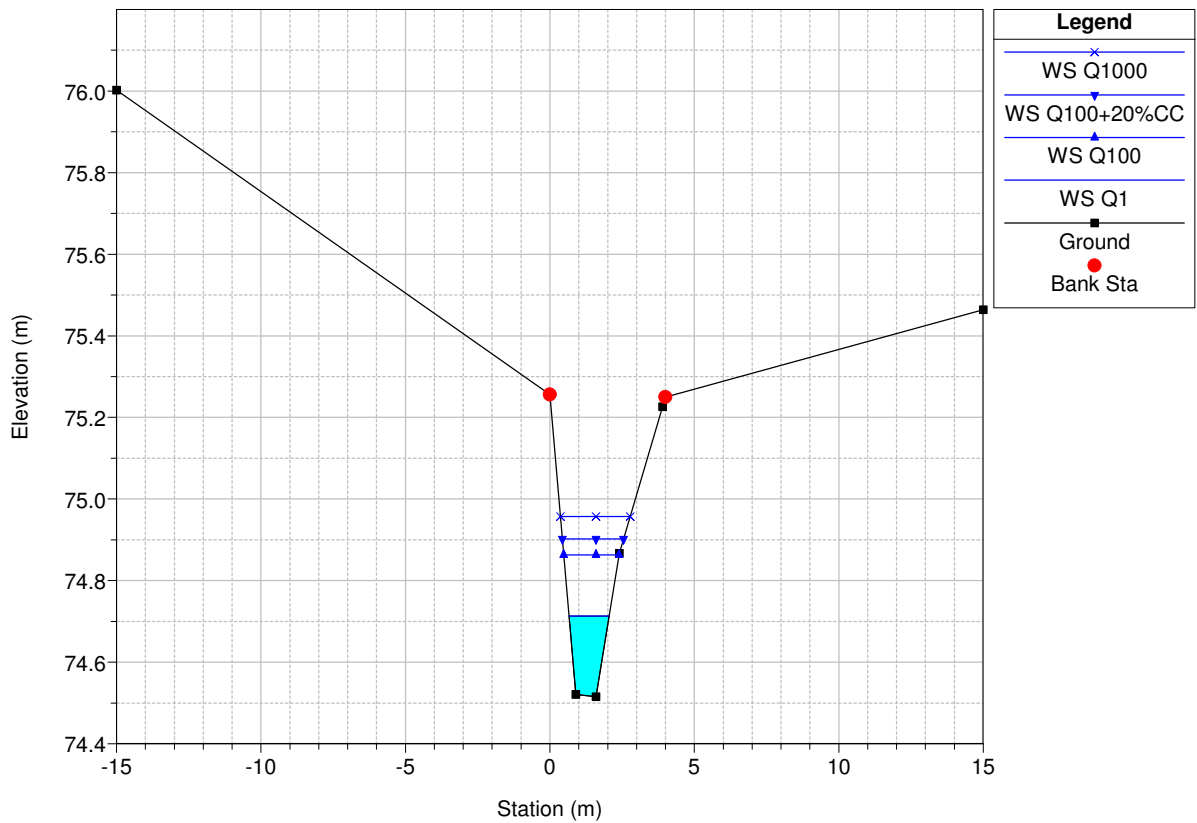
Waddow View Broo 1

Legend	
WS Q1000	Blue line with 'x' markers
WS Q100+20%CC	Blue line with upward-pointing triangle markers
WS Q100	Blue line with leftward-pointing triangle markers
WS Q1	Blue line with rightward-pointing triangle markers
Ground	Black line with square markers

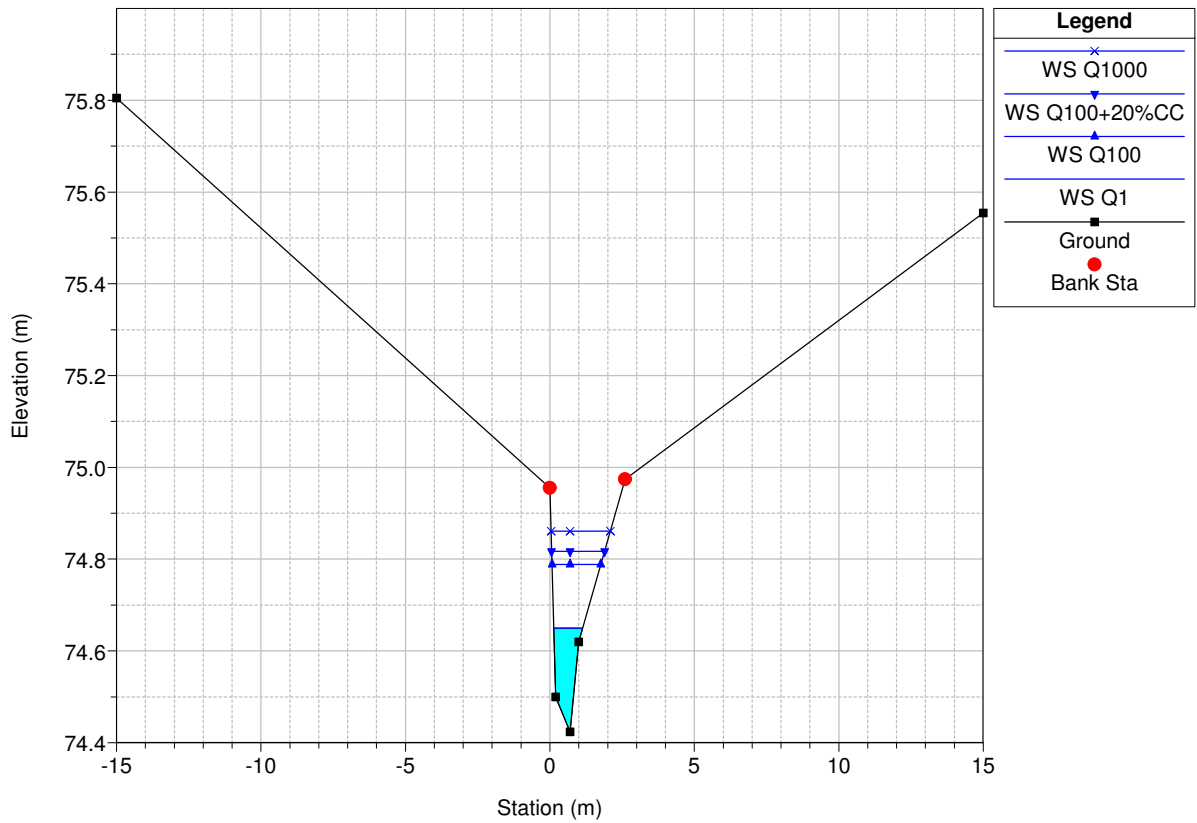
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 River = Waddow View Broo Reach = 1 RS = 500 (W1-CH0)



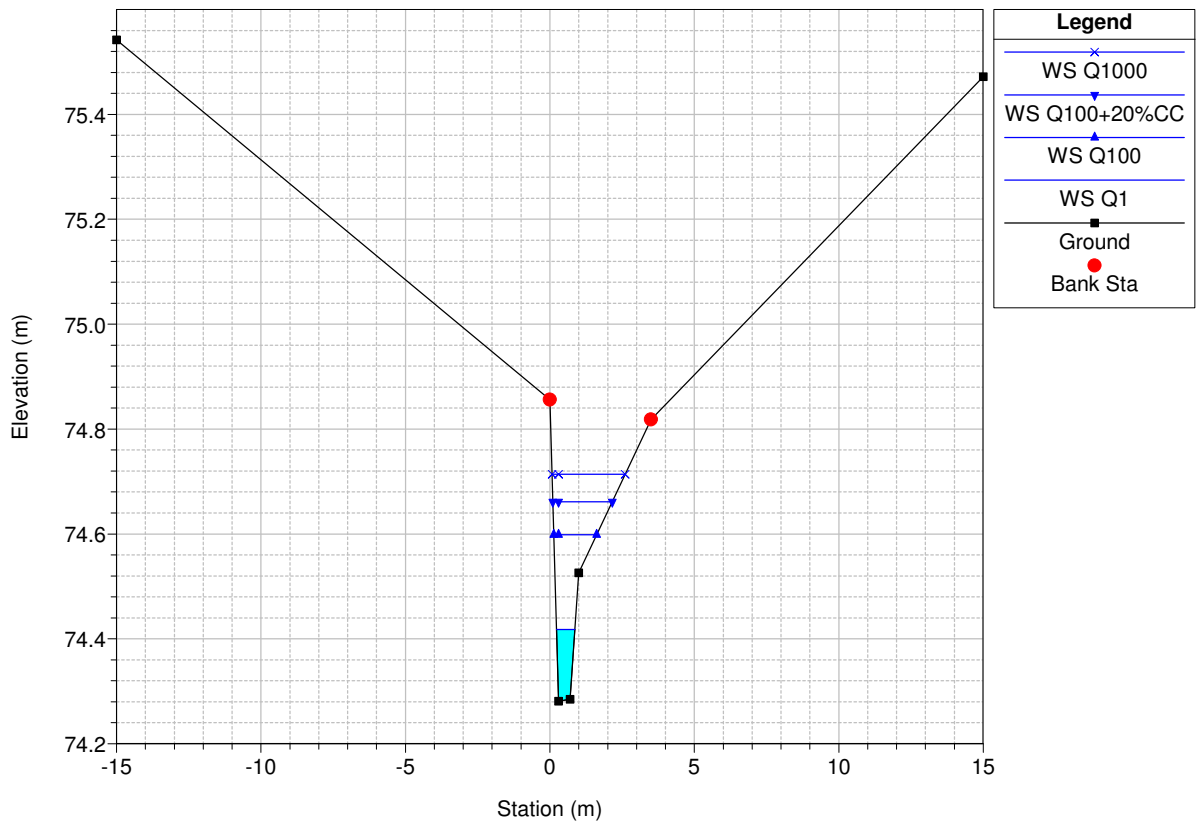
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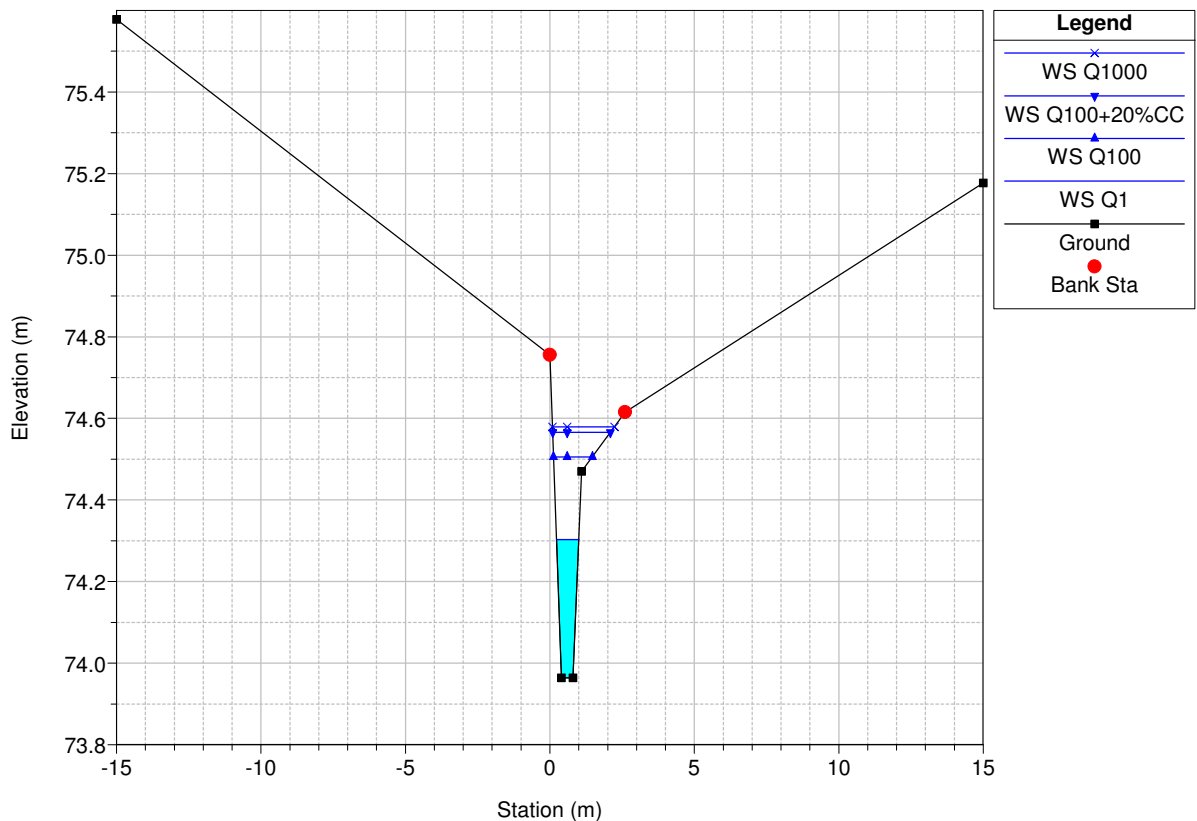
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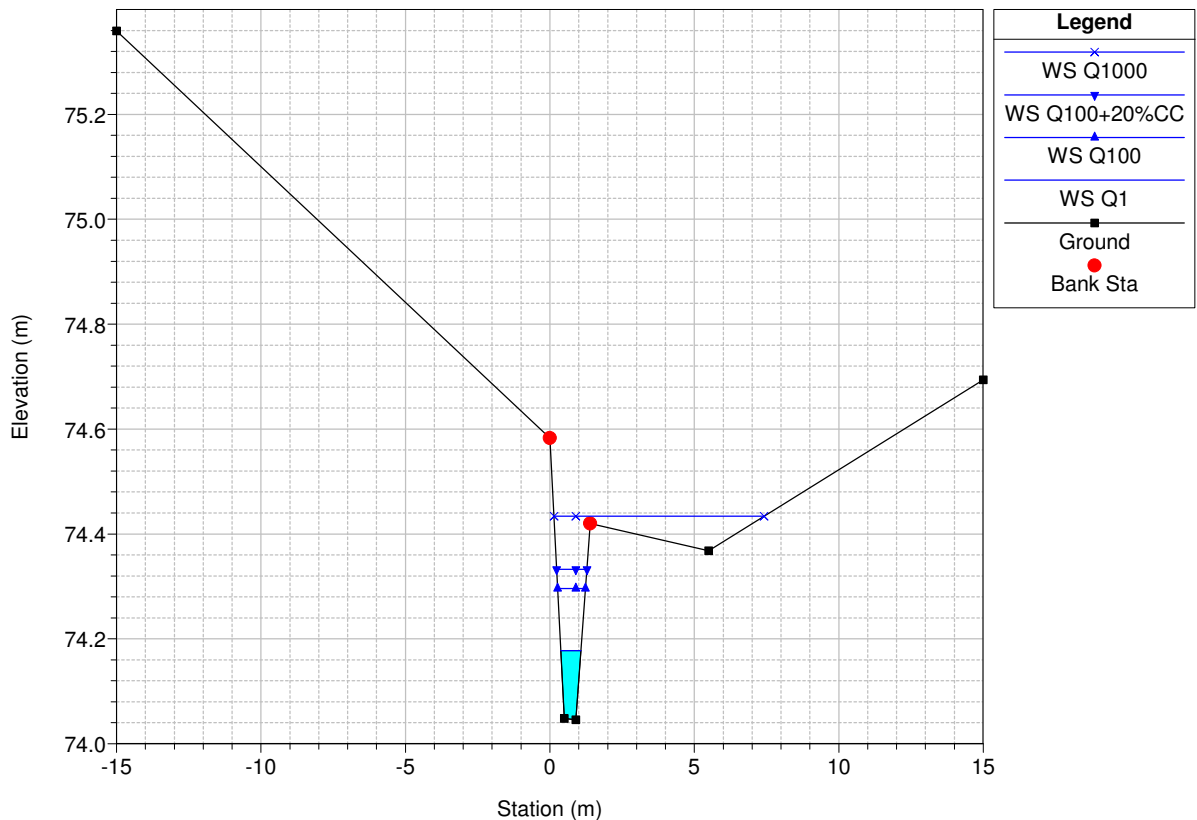
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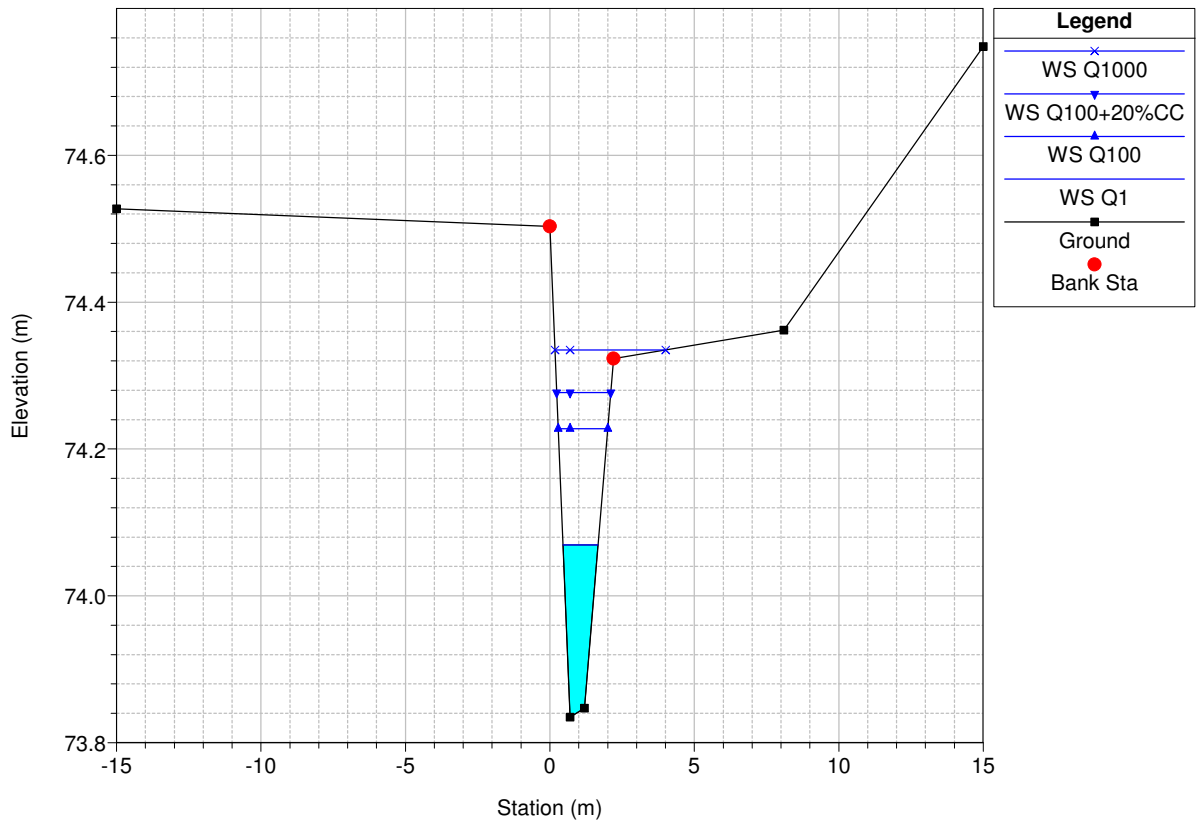
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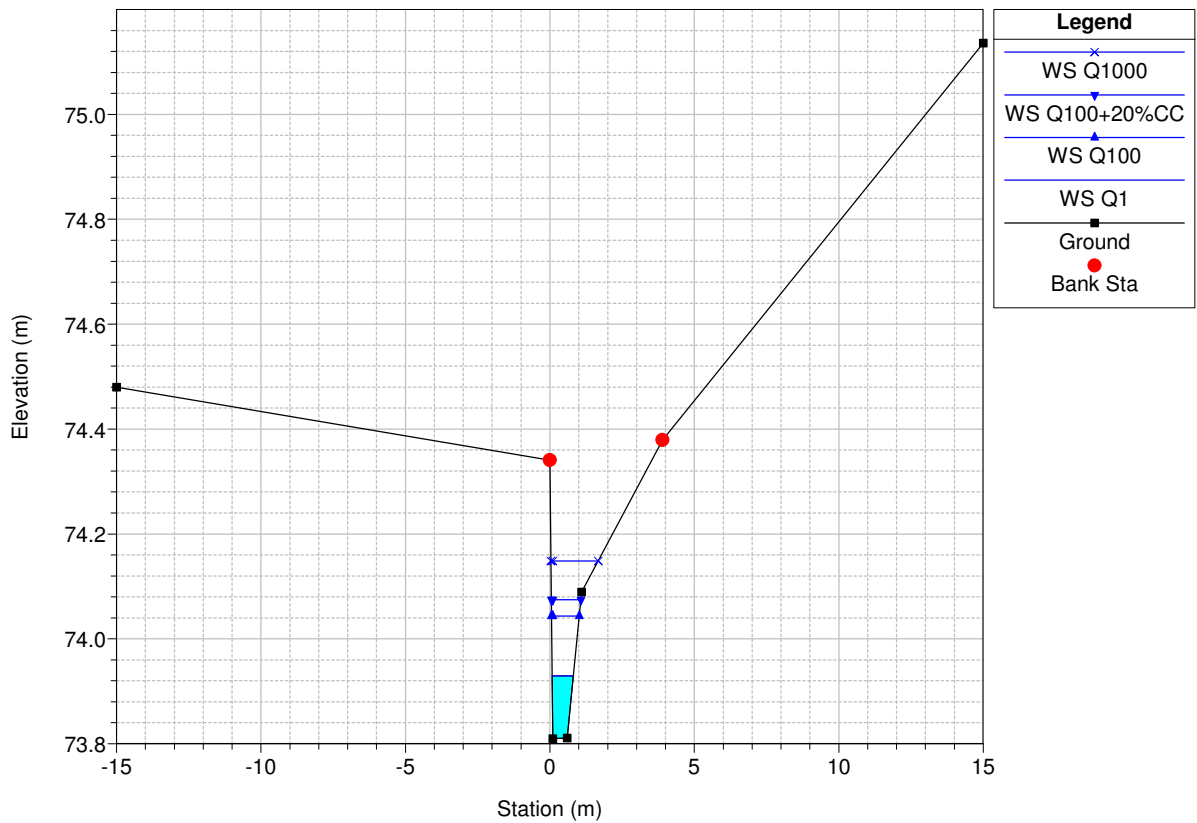
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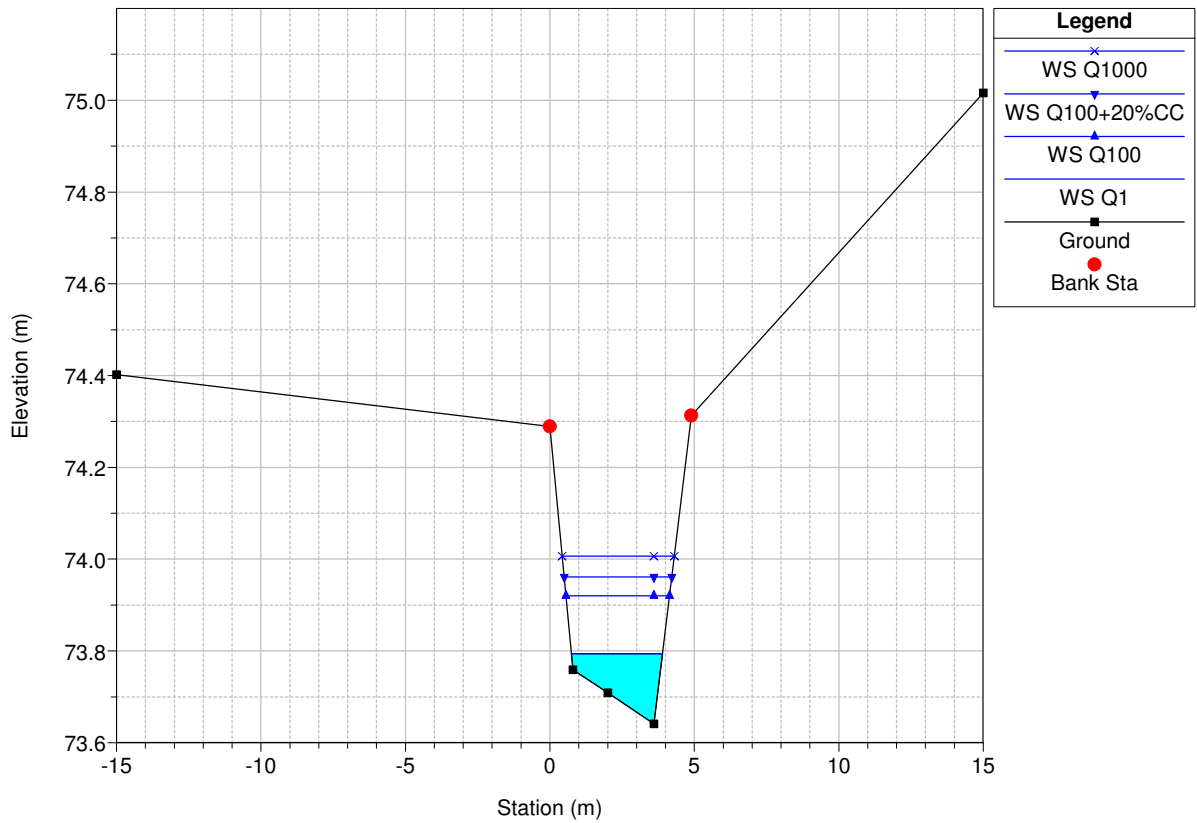
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 River = Waddow View Broo Reach = 1 RS = 440 (W1-60)



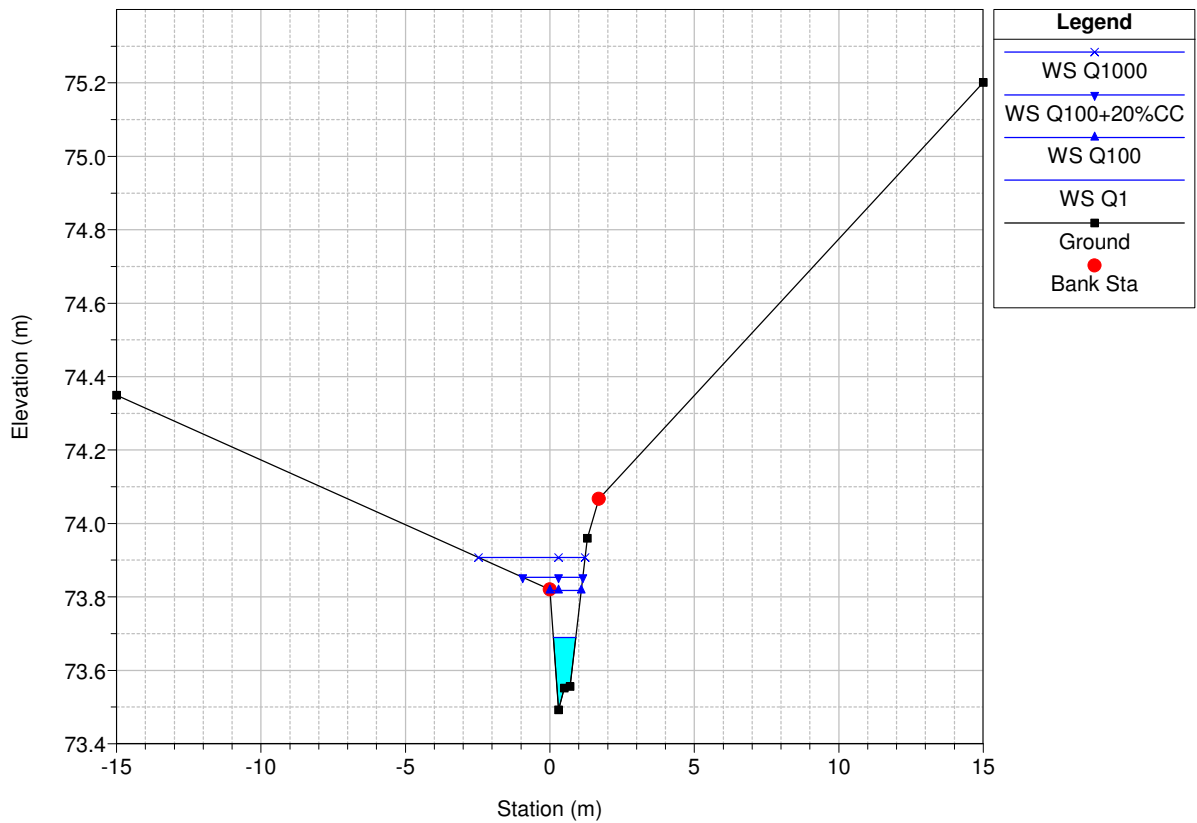
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 River = Waddow View Broo Reach = 1 RS = 430 (W1-70)



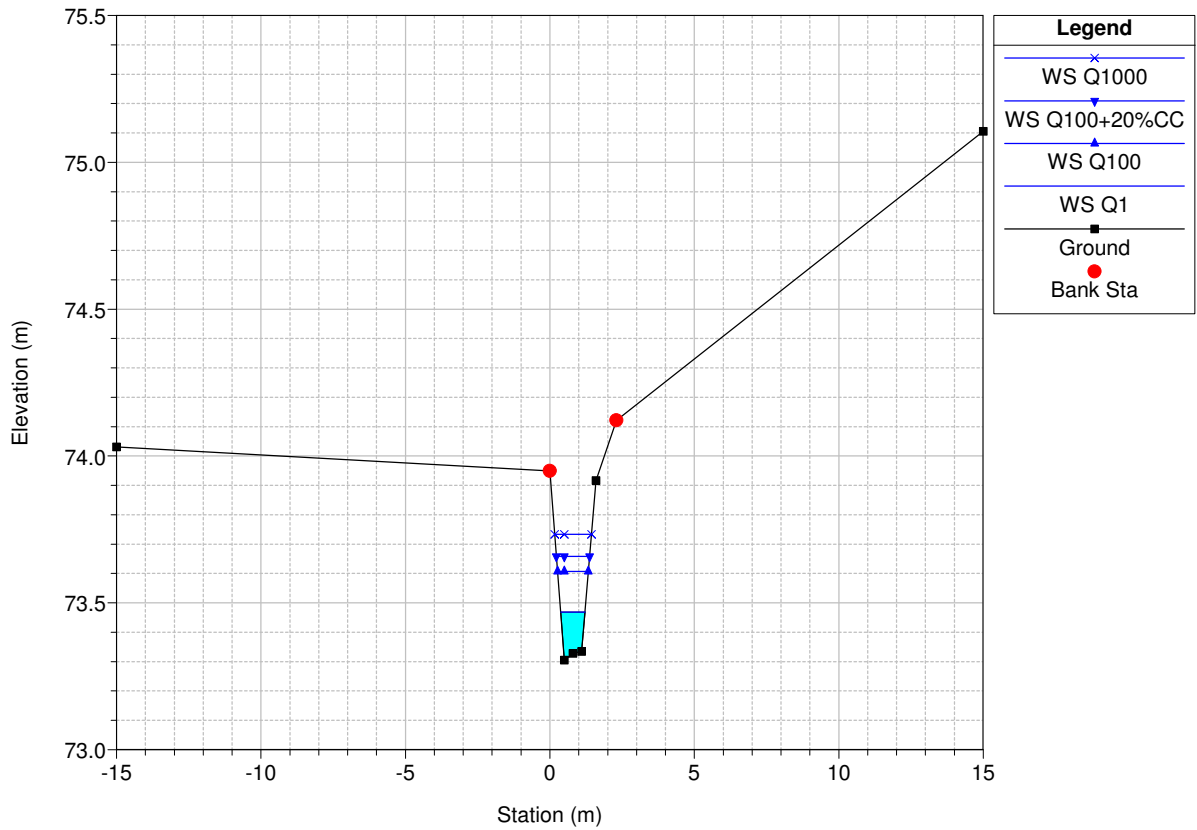
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 River = Waddow View Broo Reach = 1 RS = 420 (W1-80)



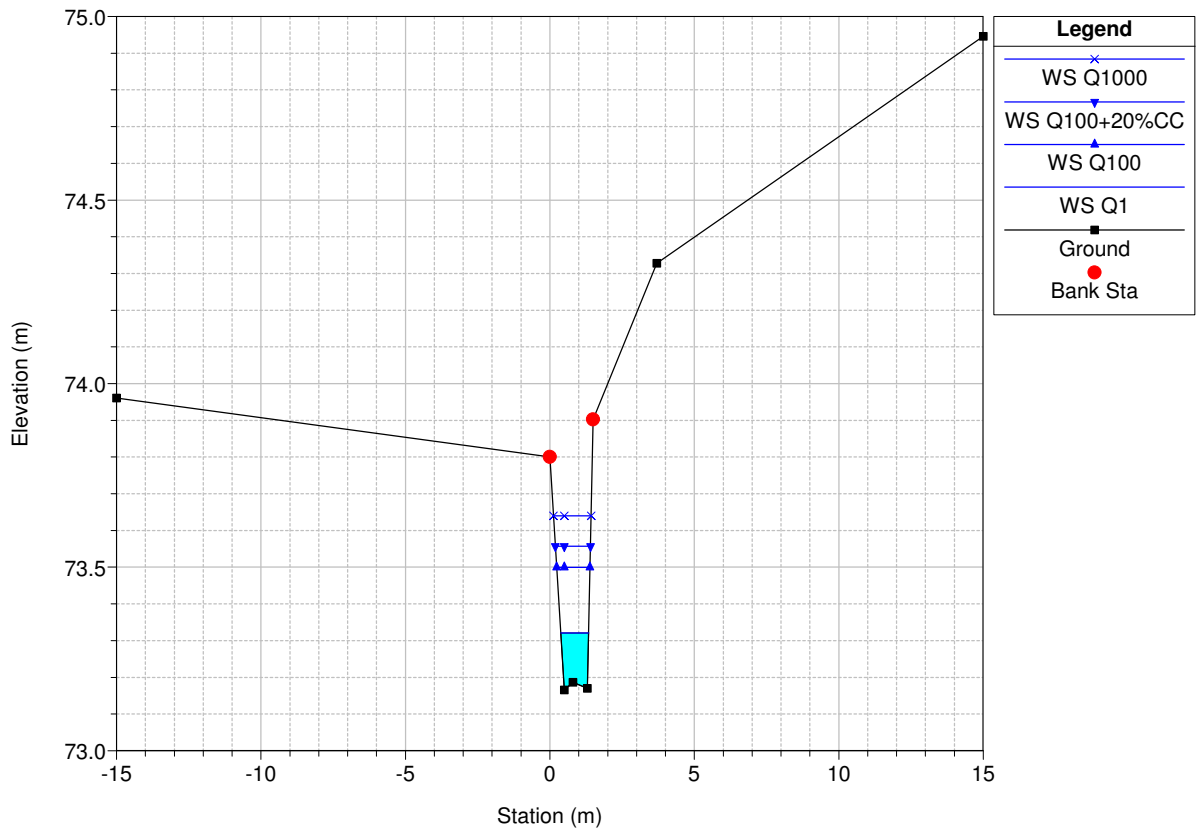
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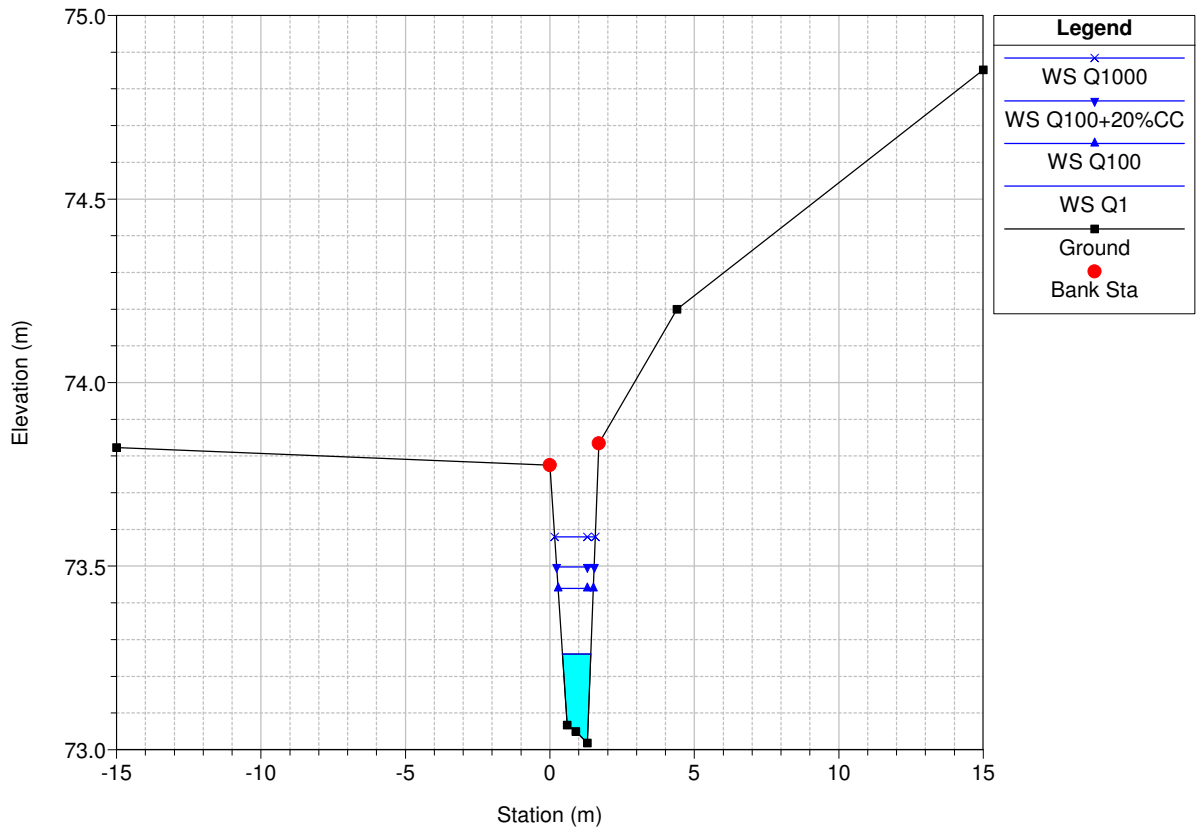
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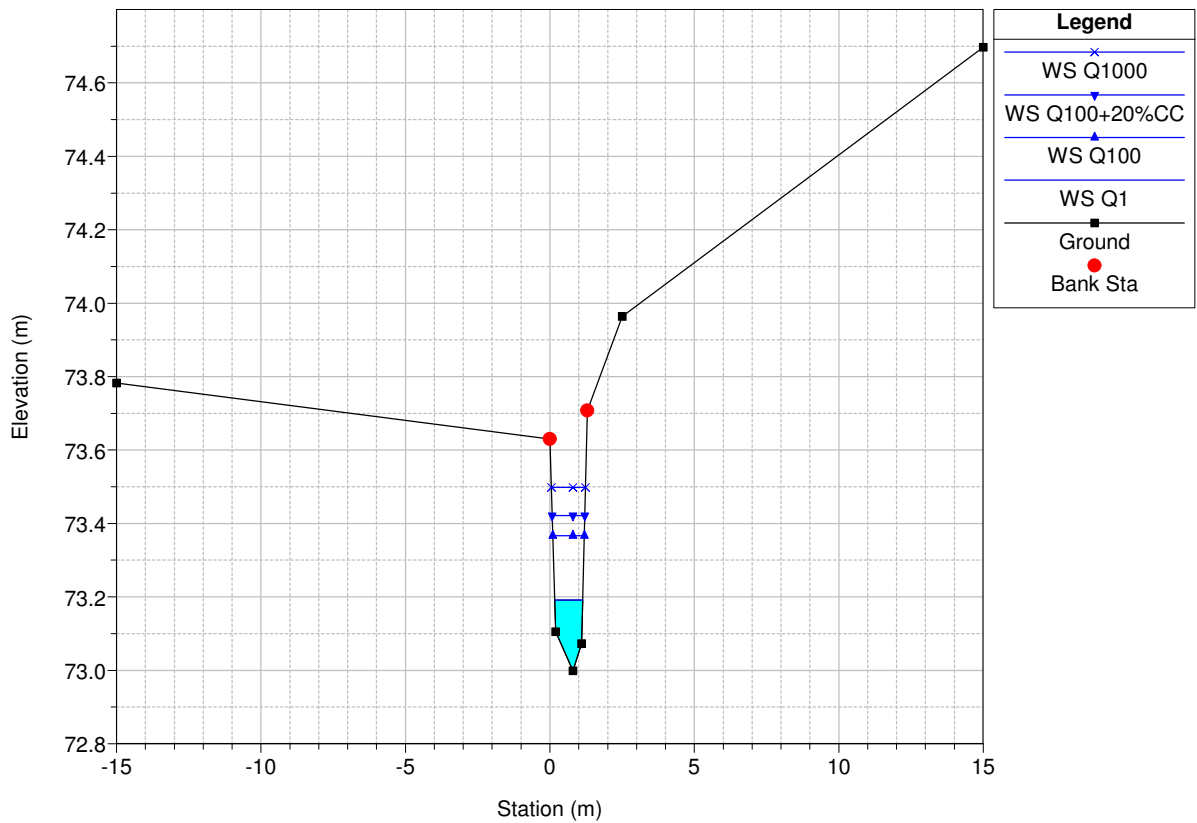
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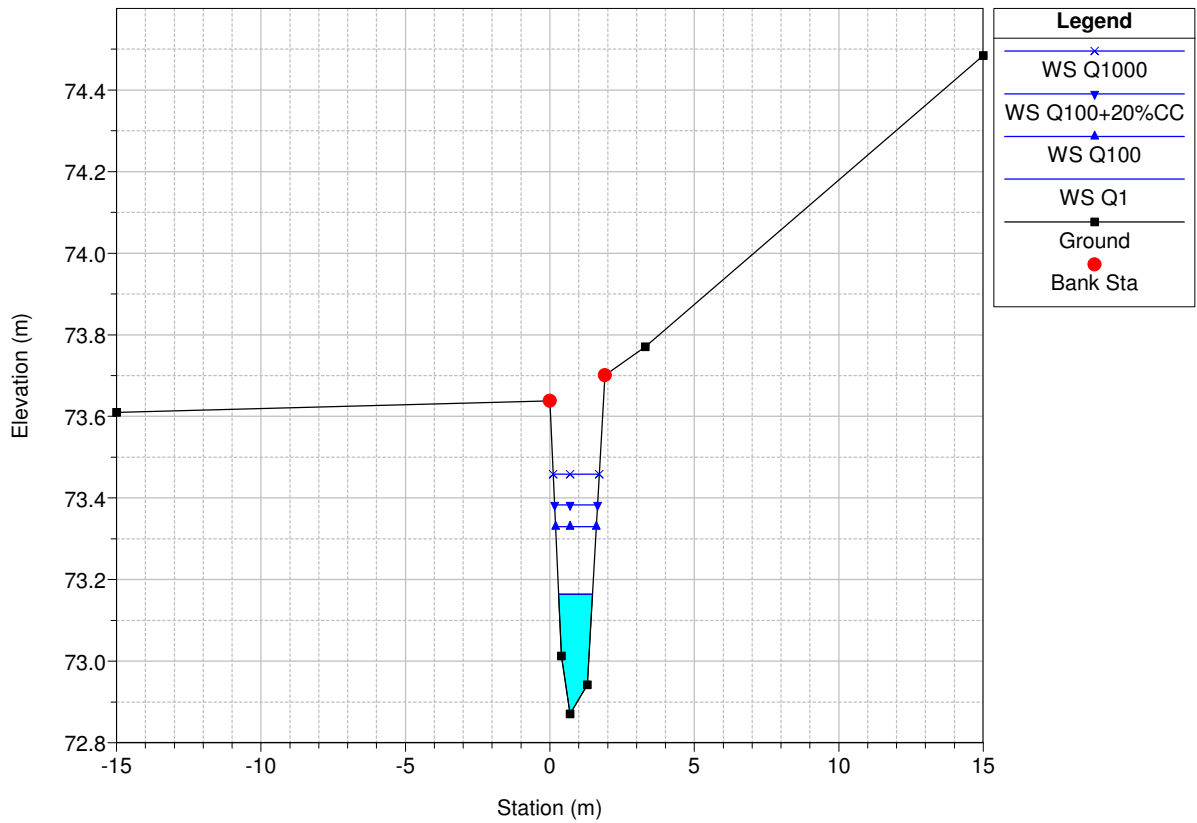
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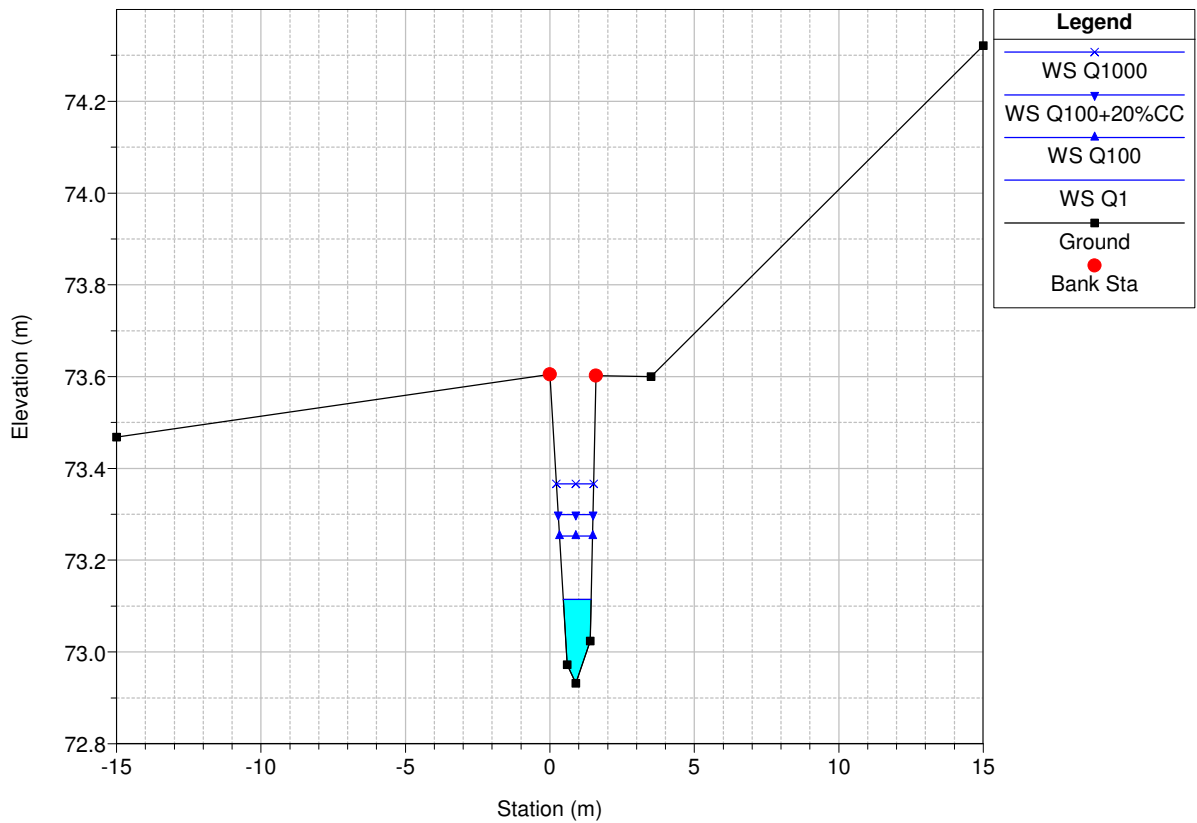
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 River = Waddow View Broo Reach = 1 RS = 370 (W1-130)



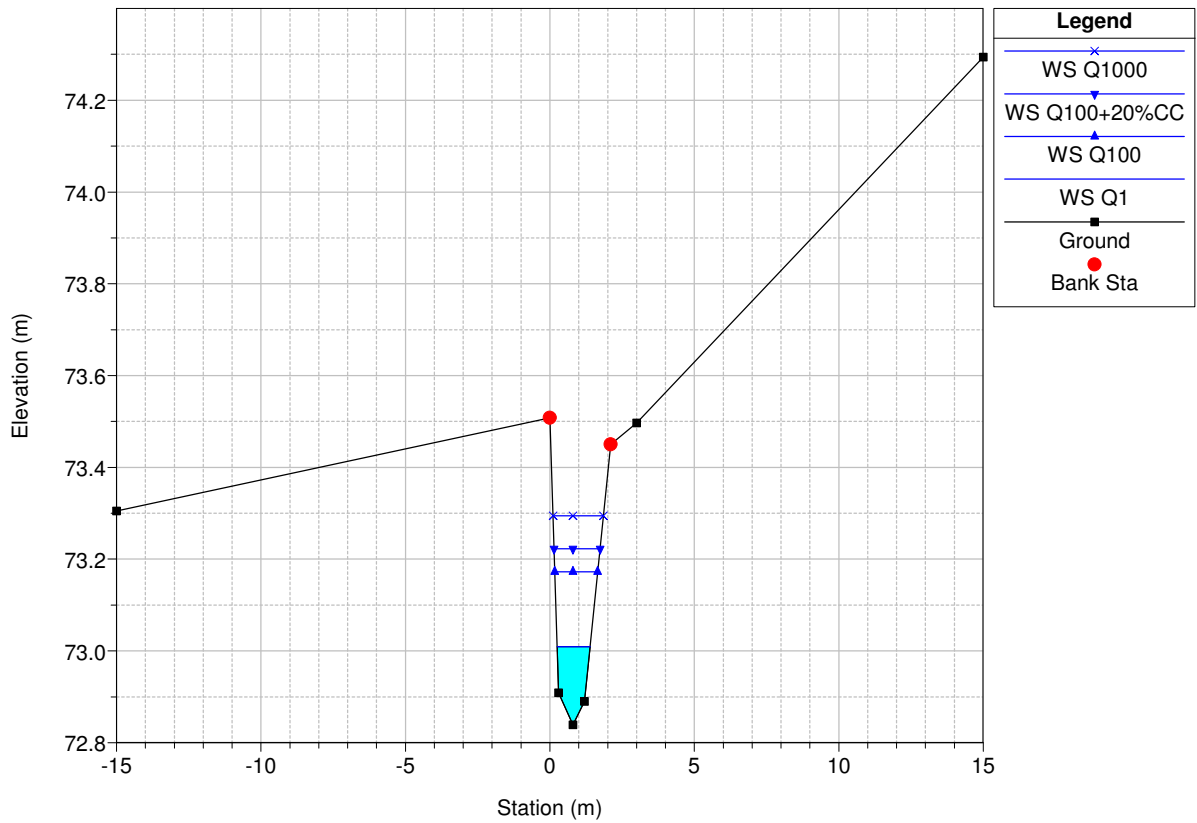
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 River = Waddow View Broo Reach = 1 RS = 360 (W1-140)



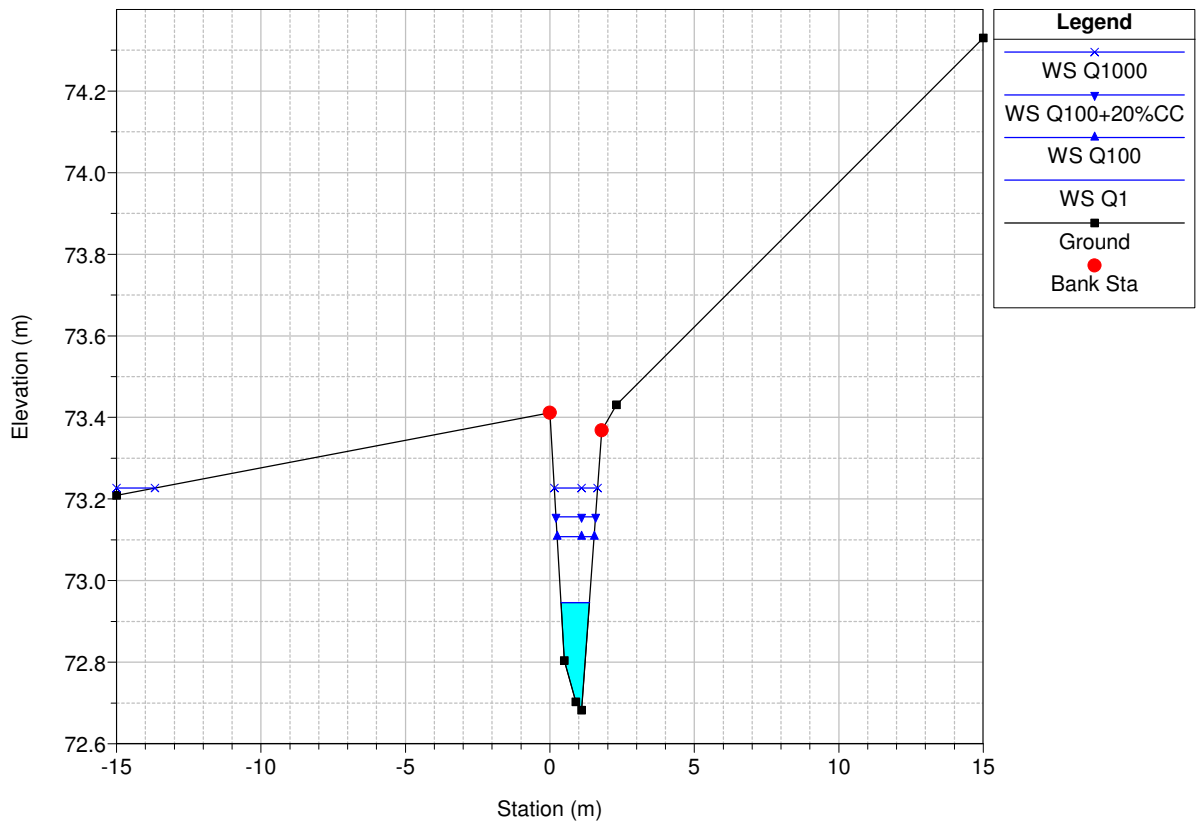
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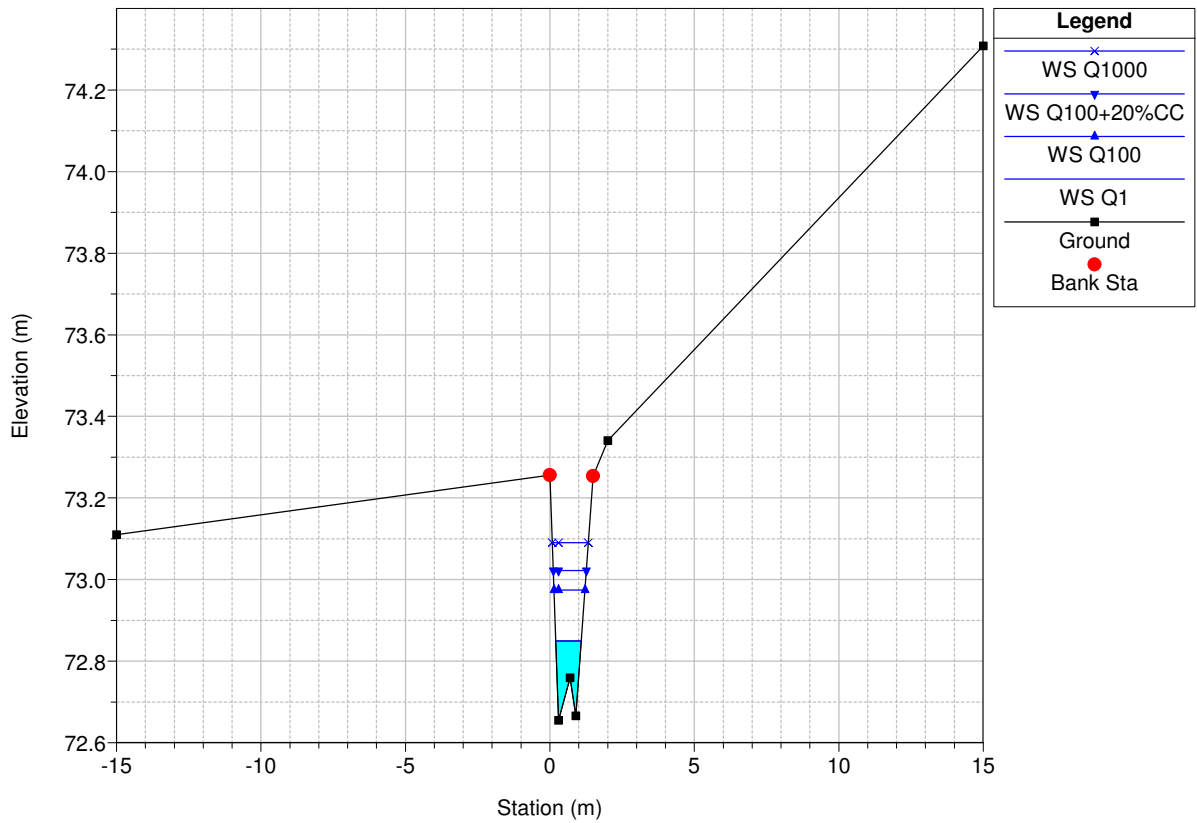
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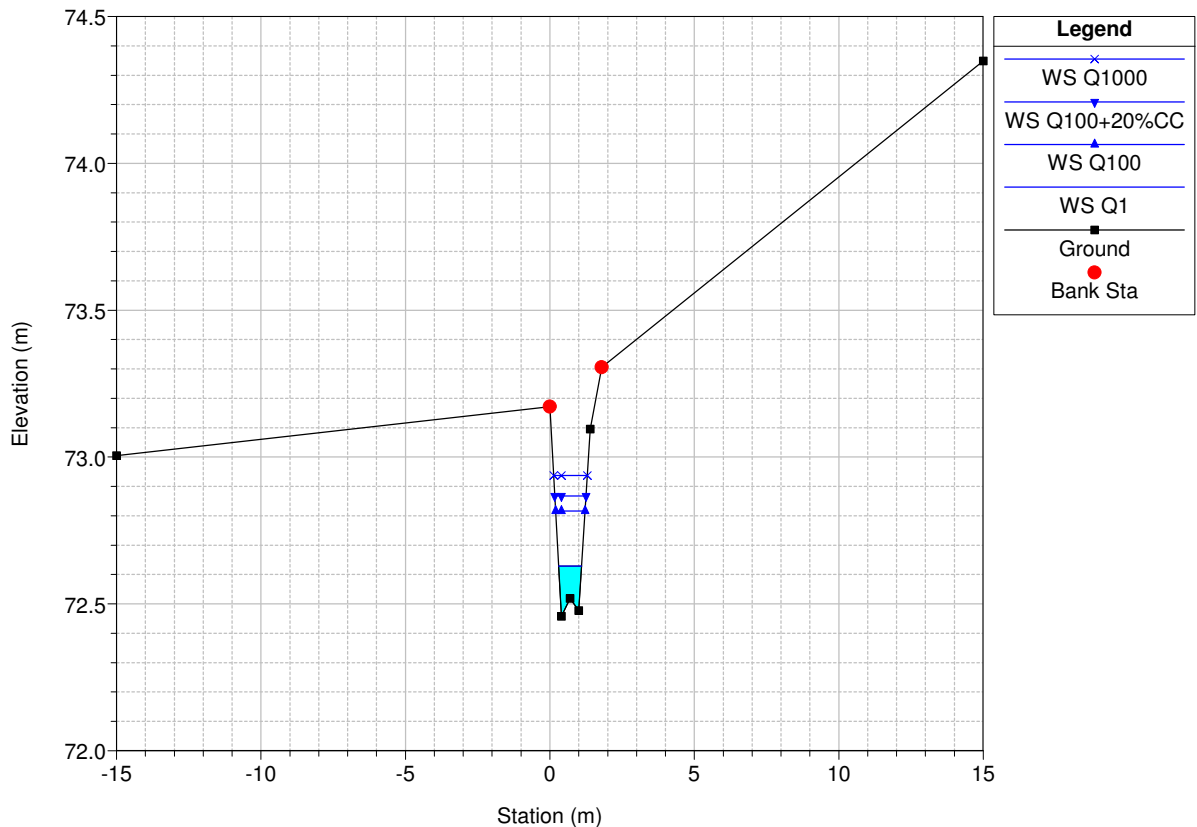
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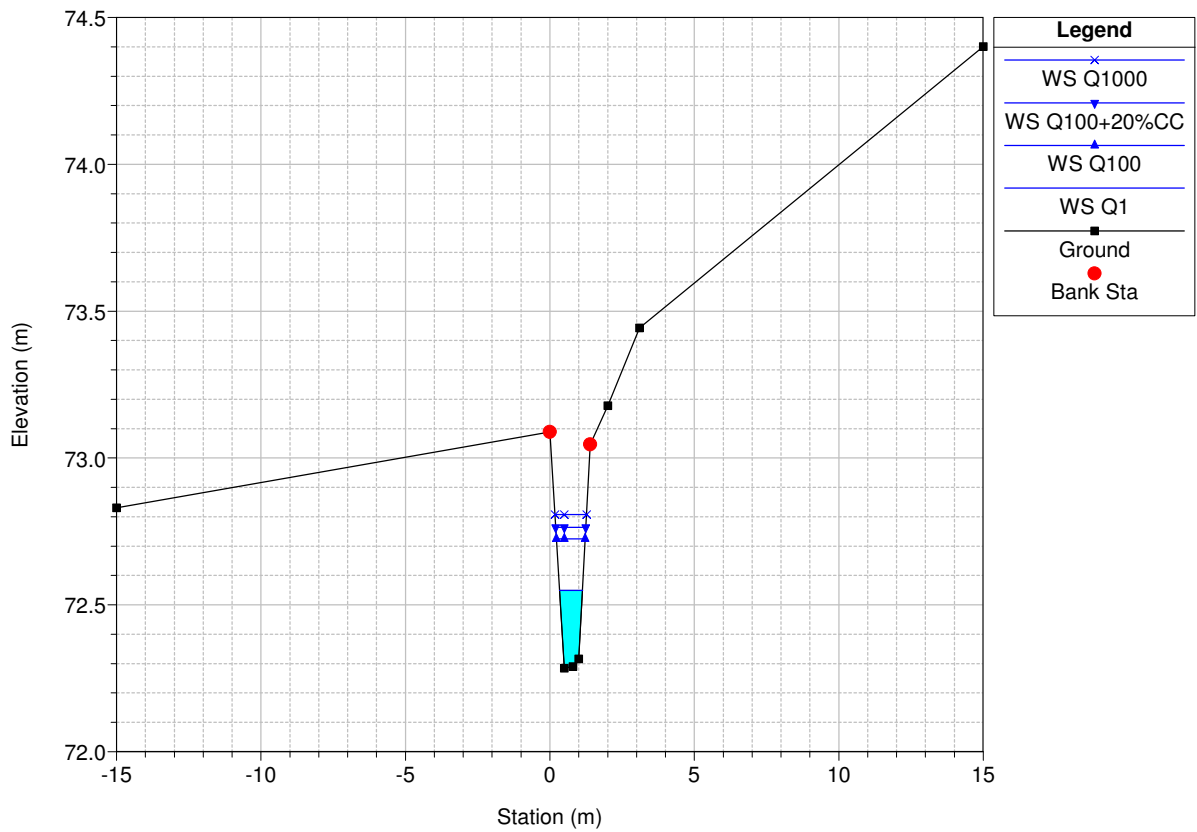
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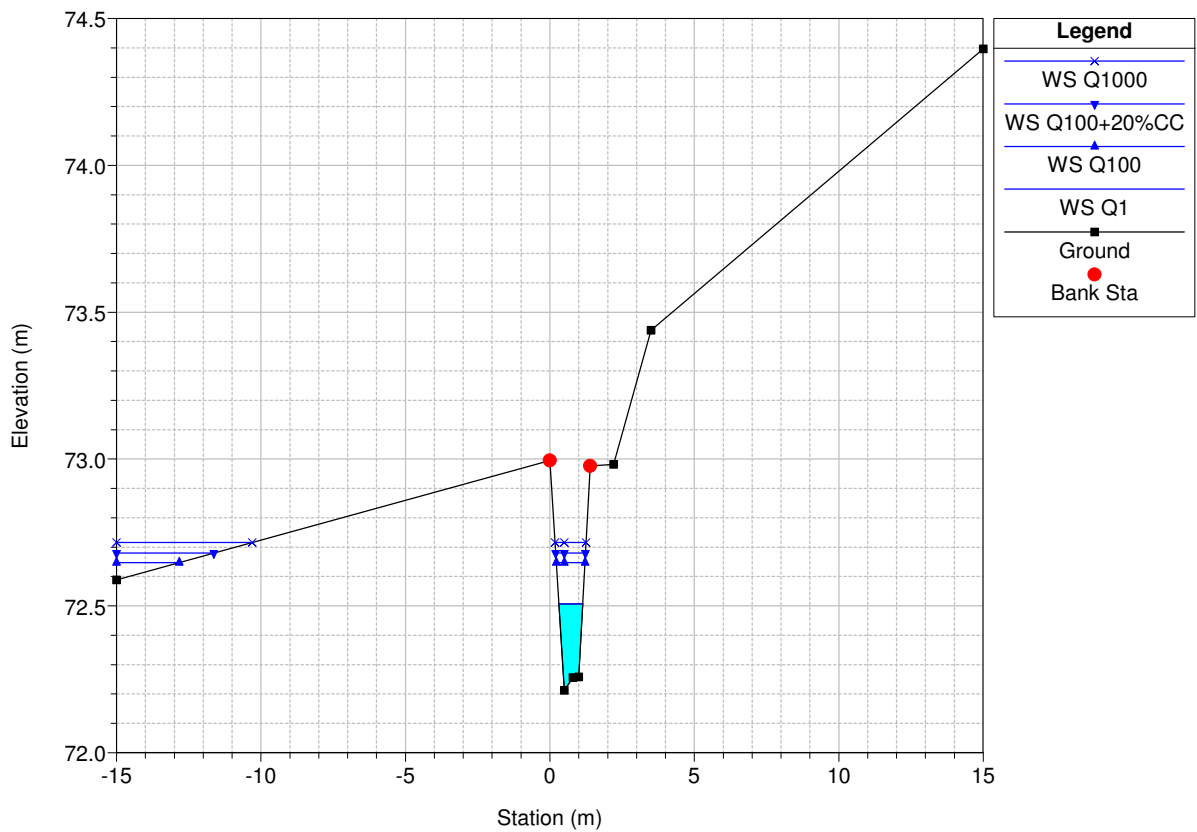
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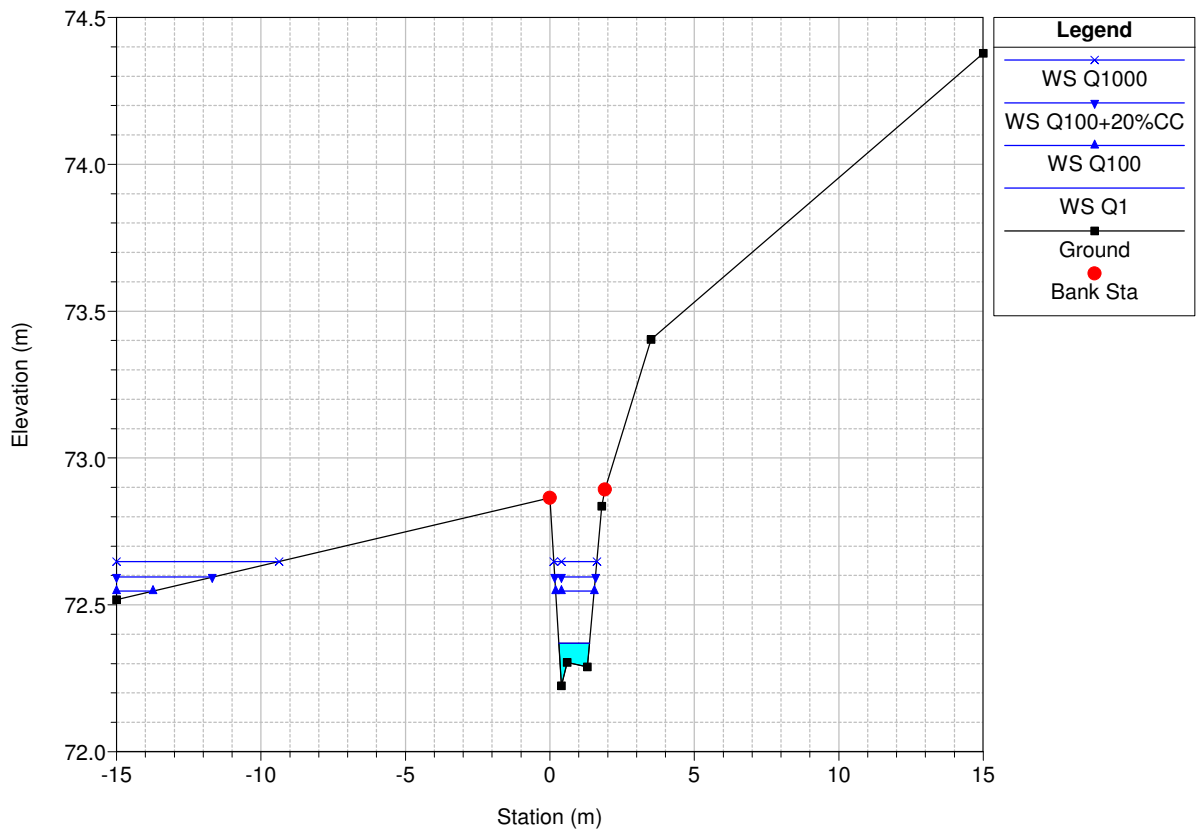
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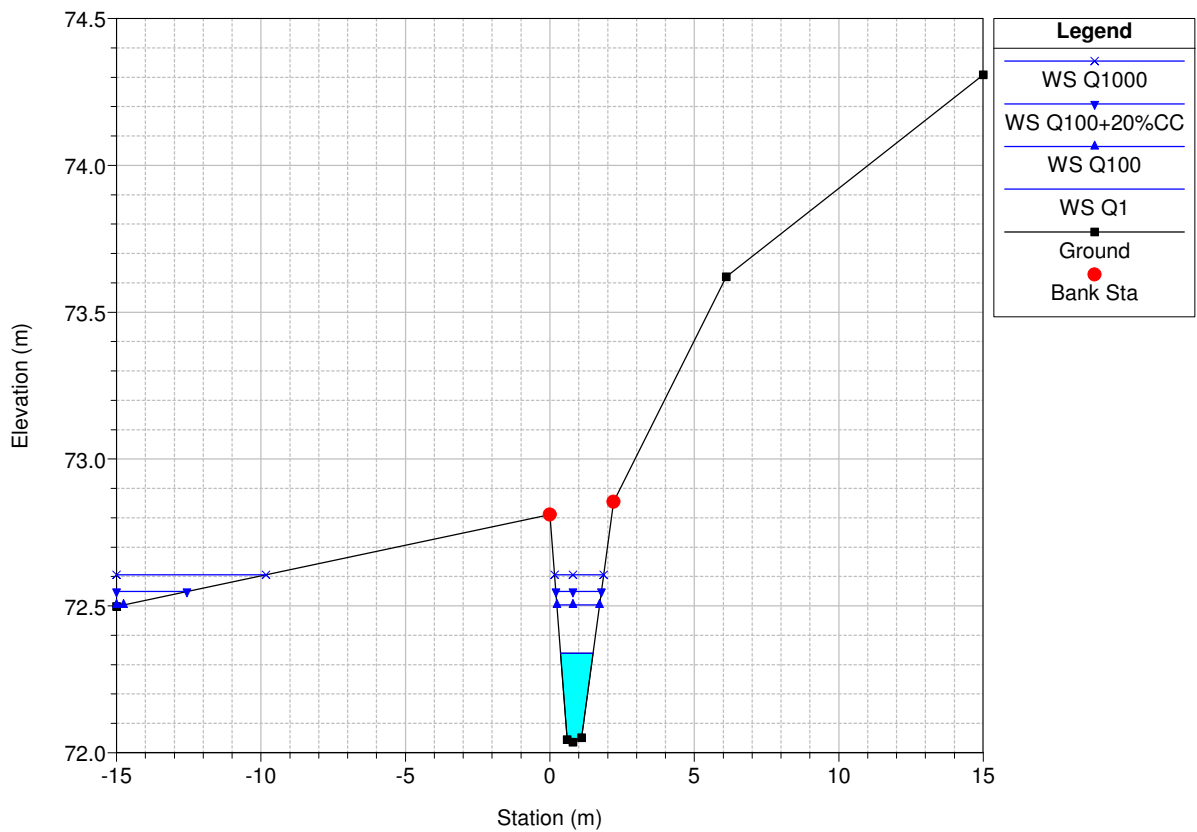
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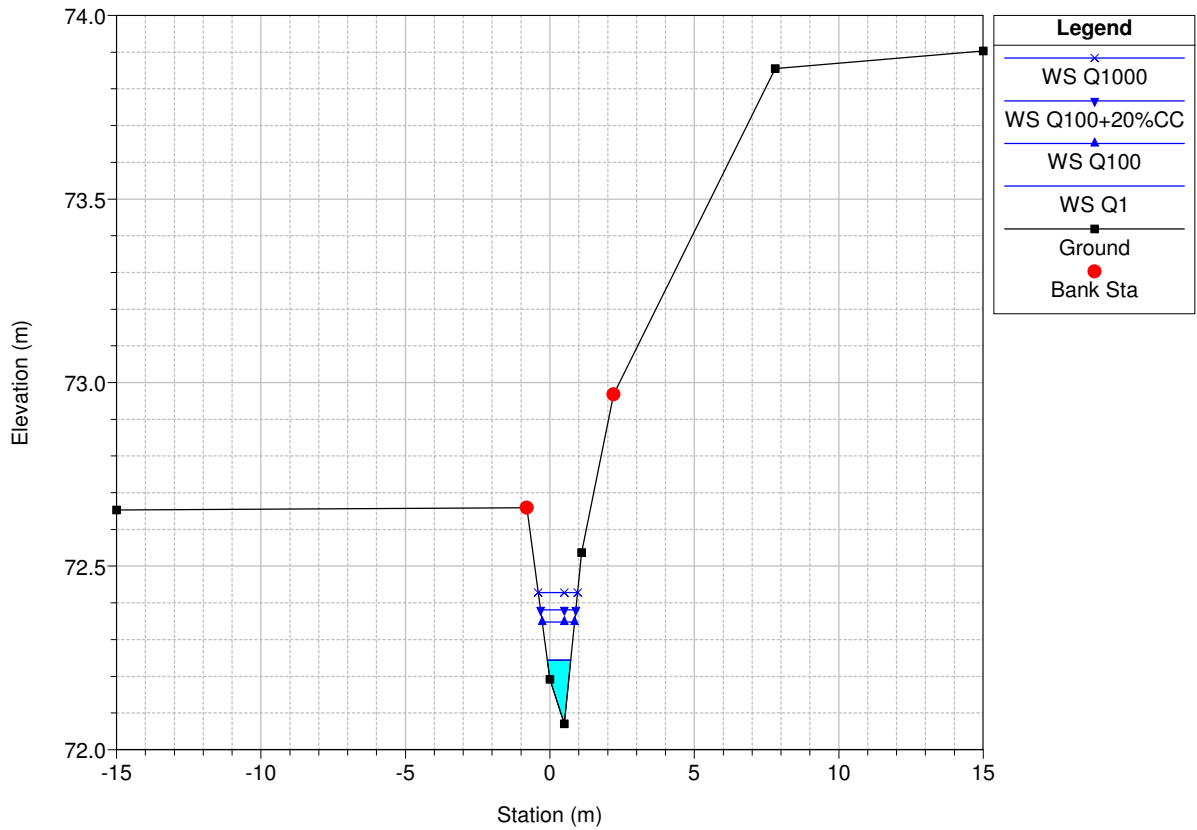
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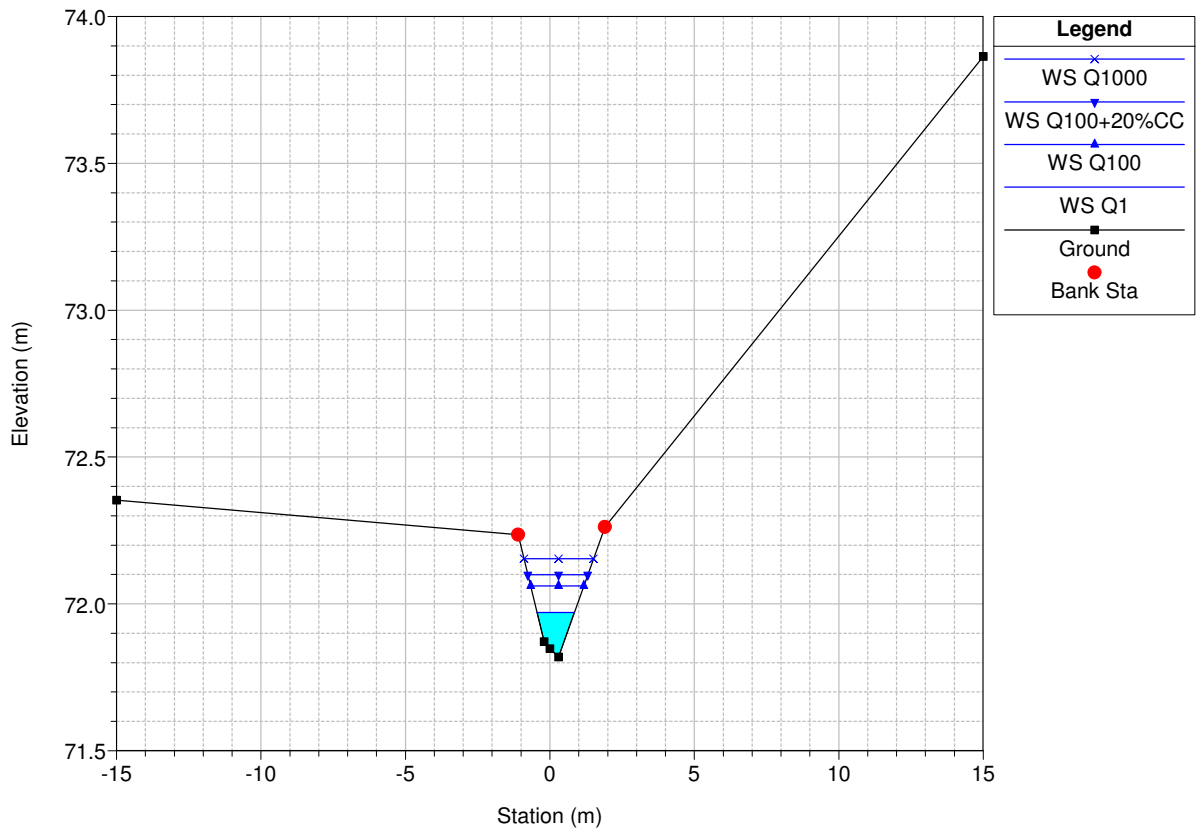
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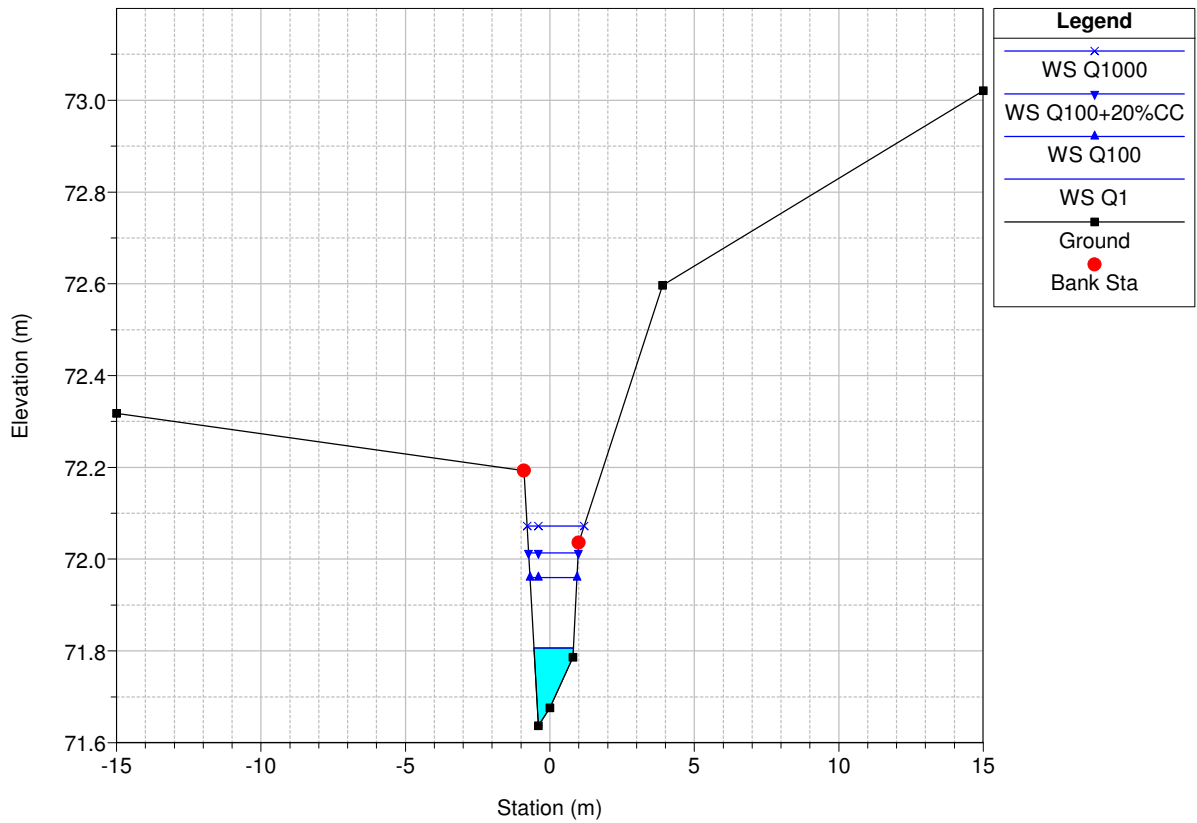
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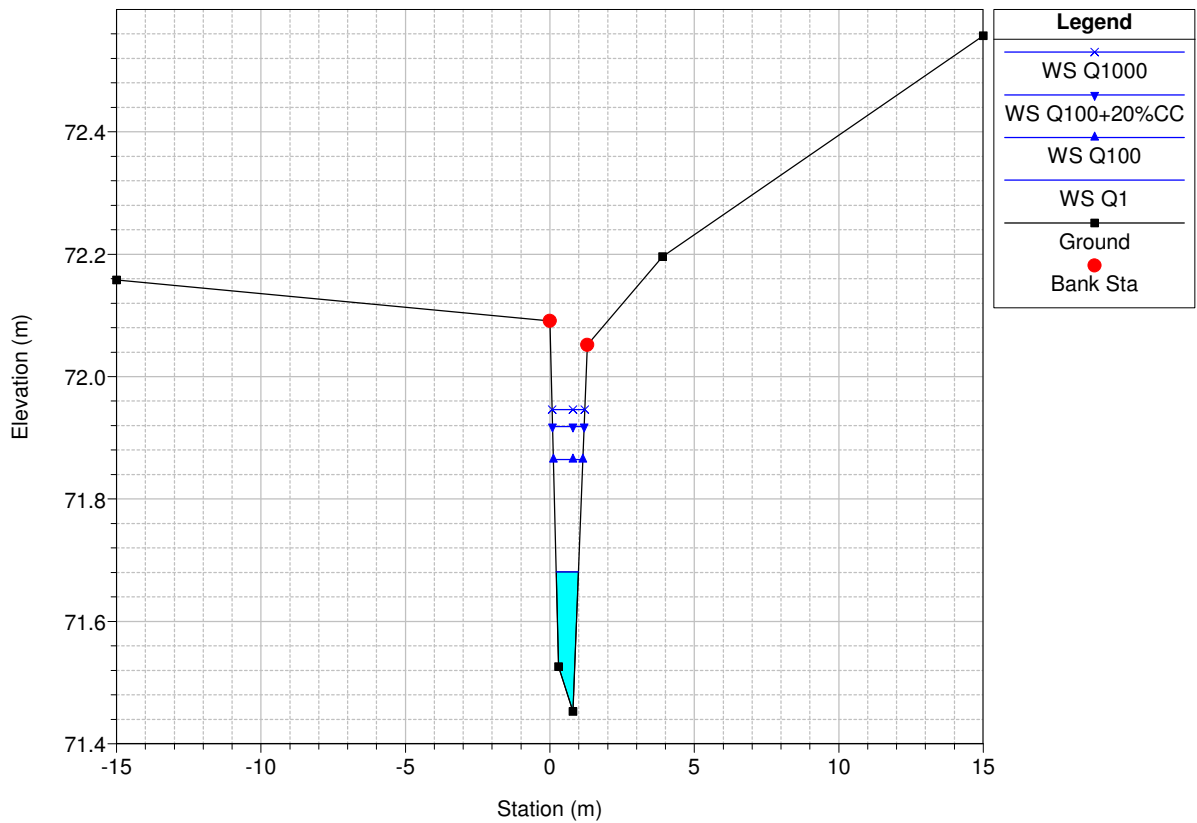
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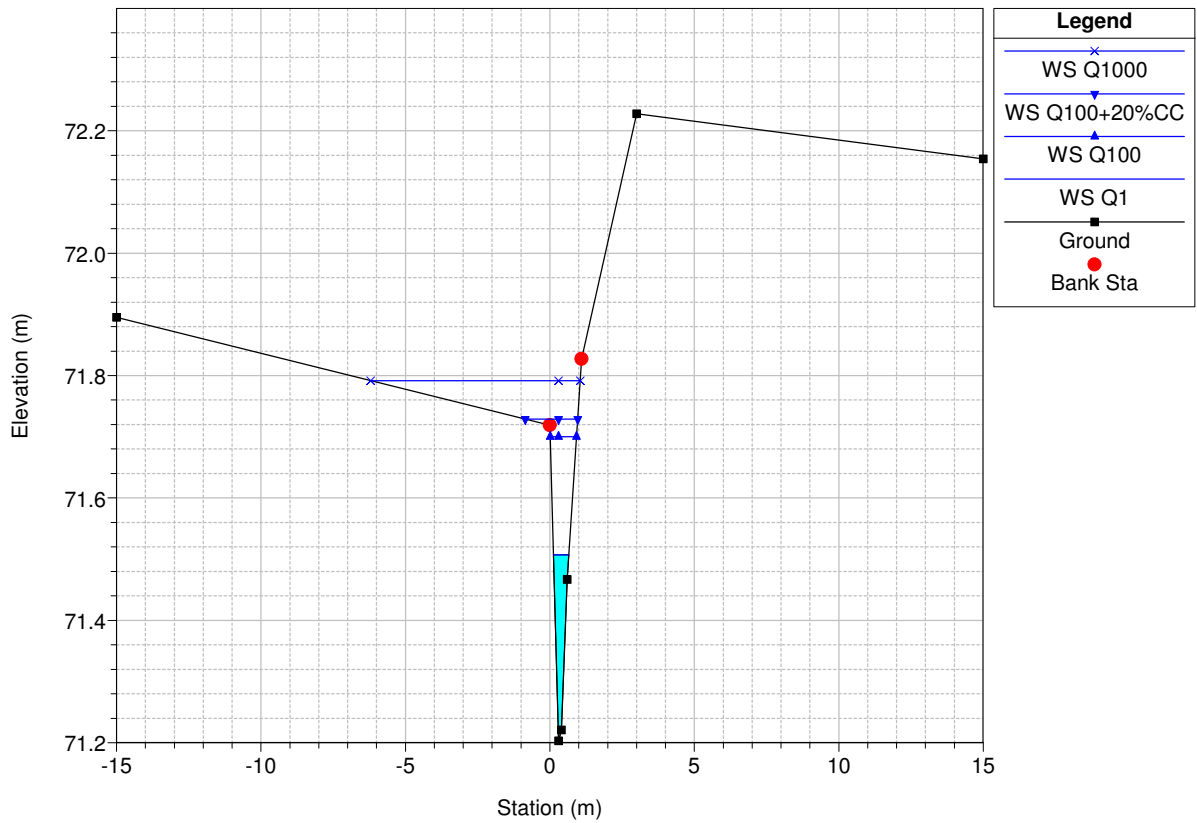
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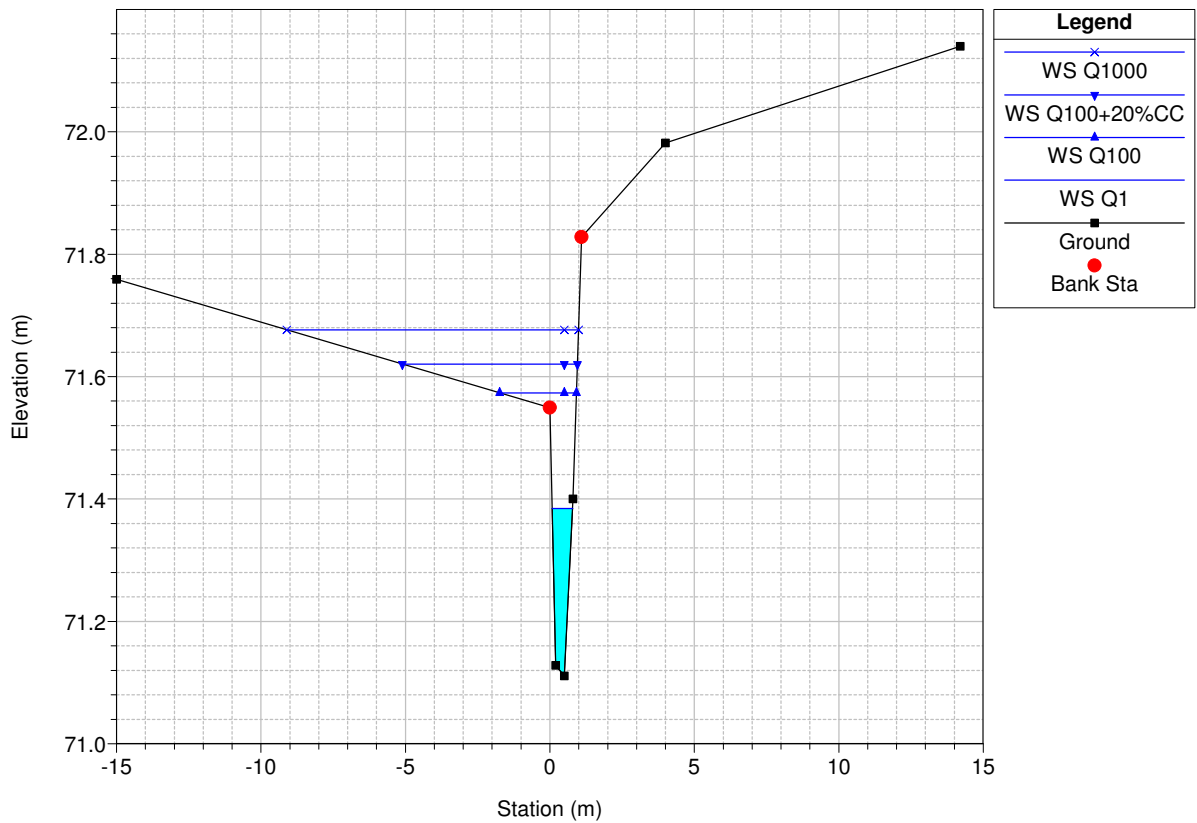
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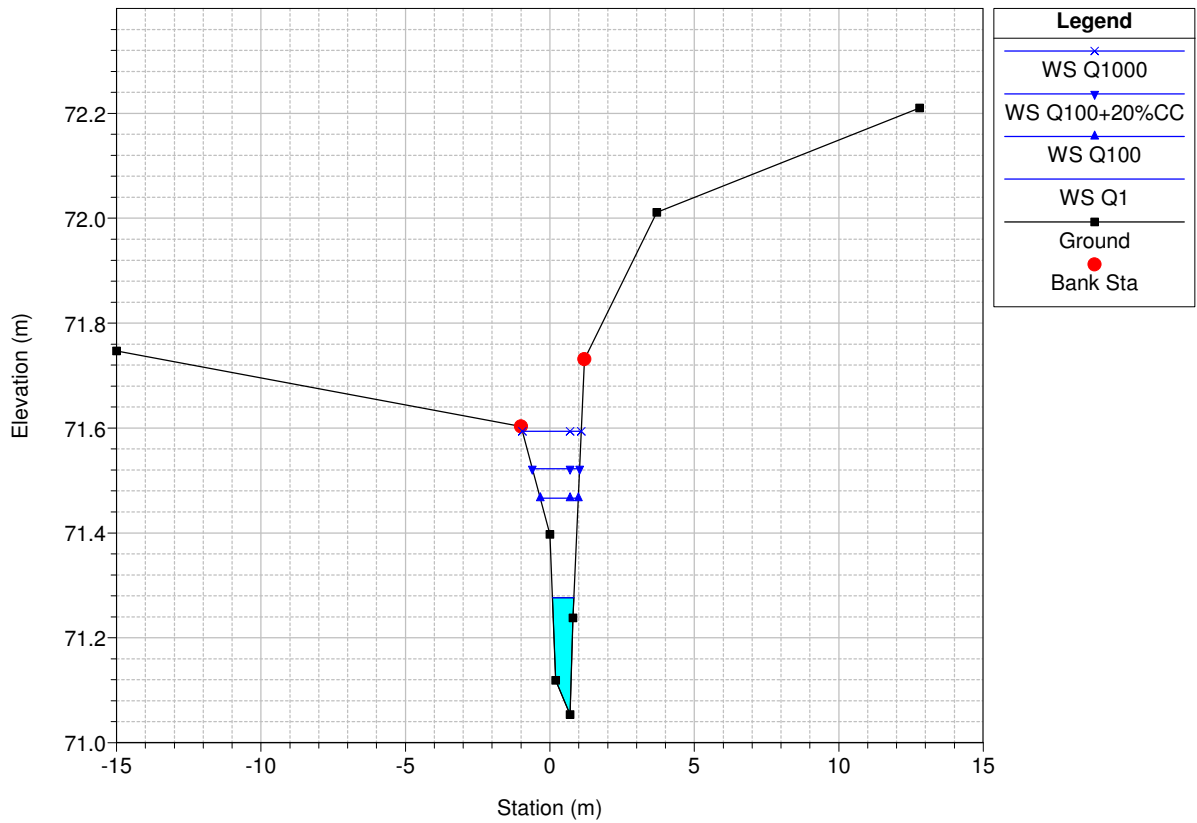
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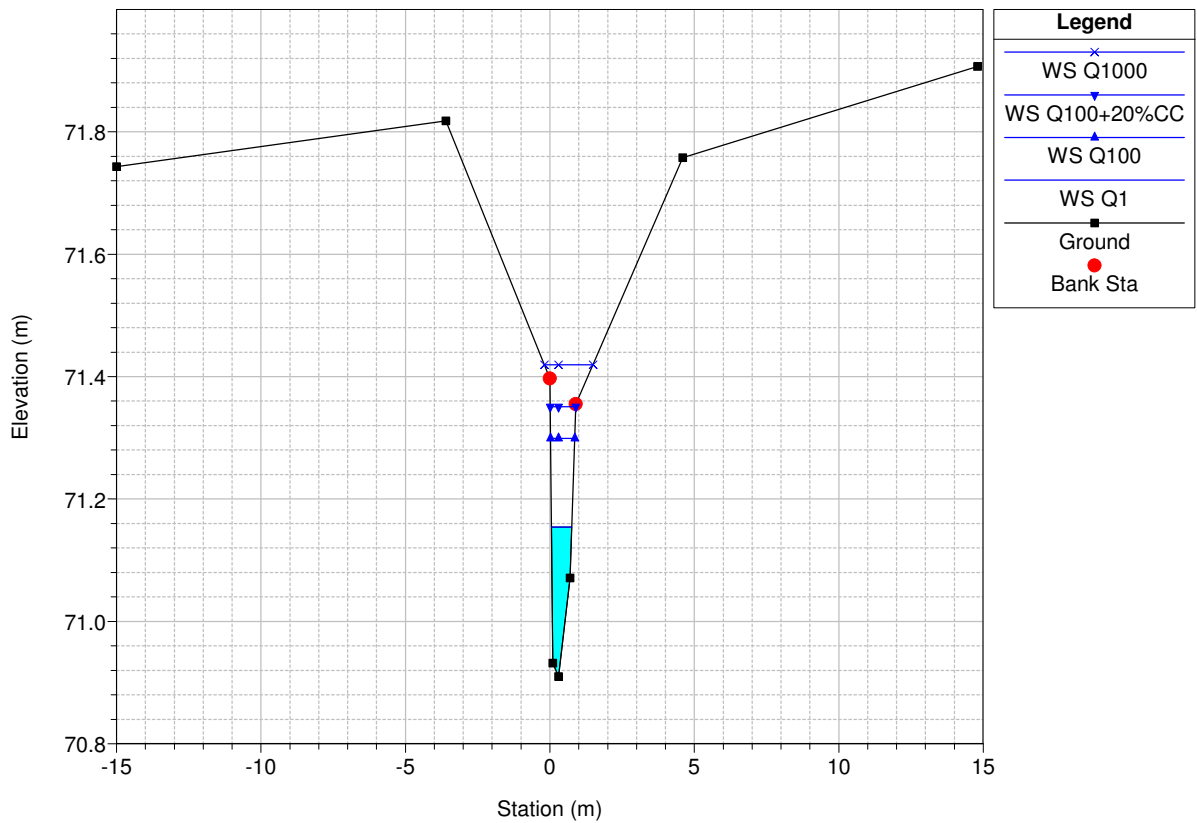
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 River = Waddow View Broo Reach = 1 RS = 210 (W3-20)



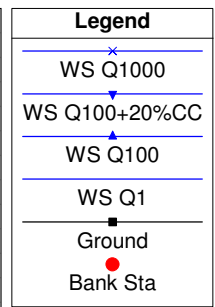
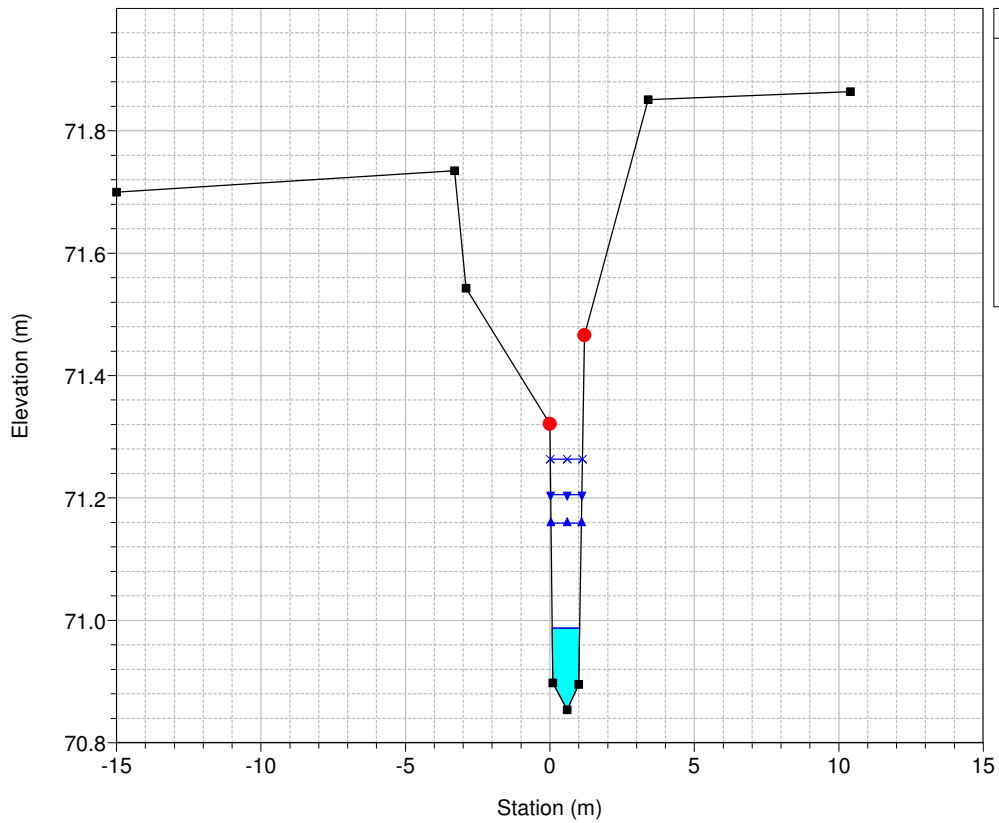
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 River = Waddow View Broo Reach = 1 RS = 200 (W3-30)



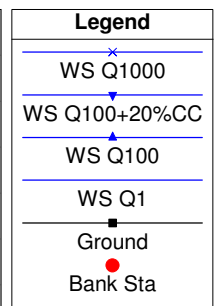
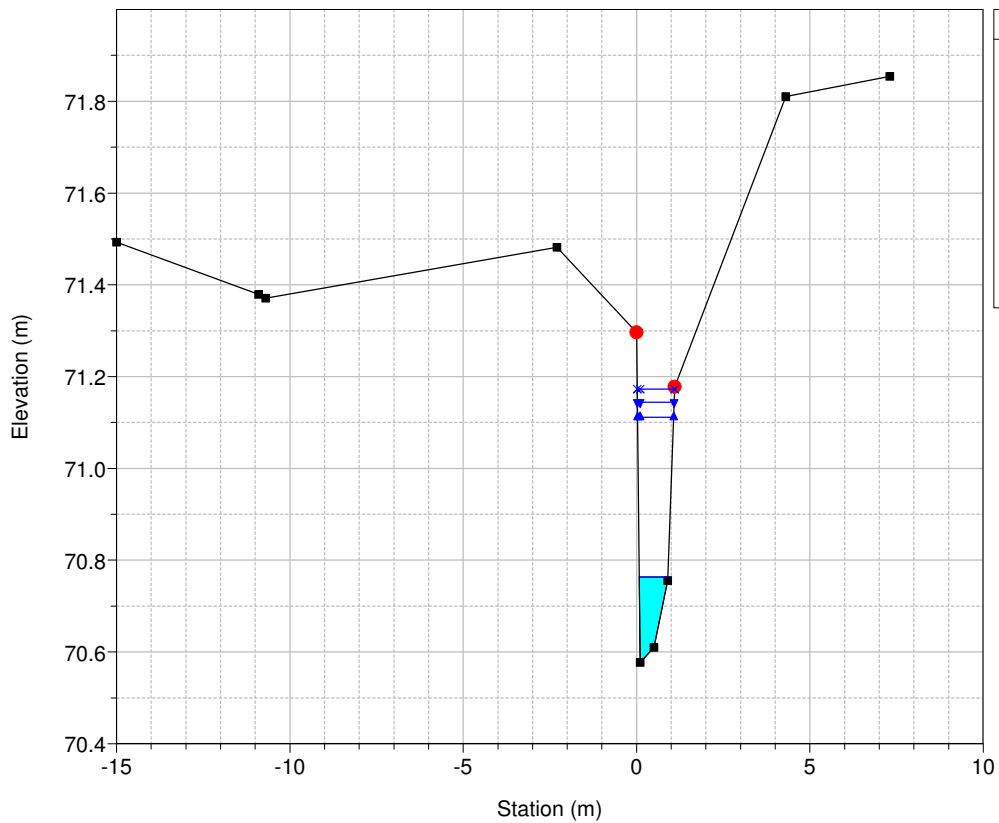
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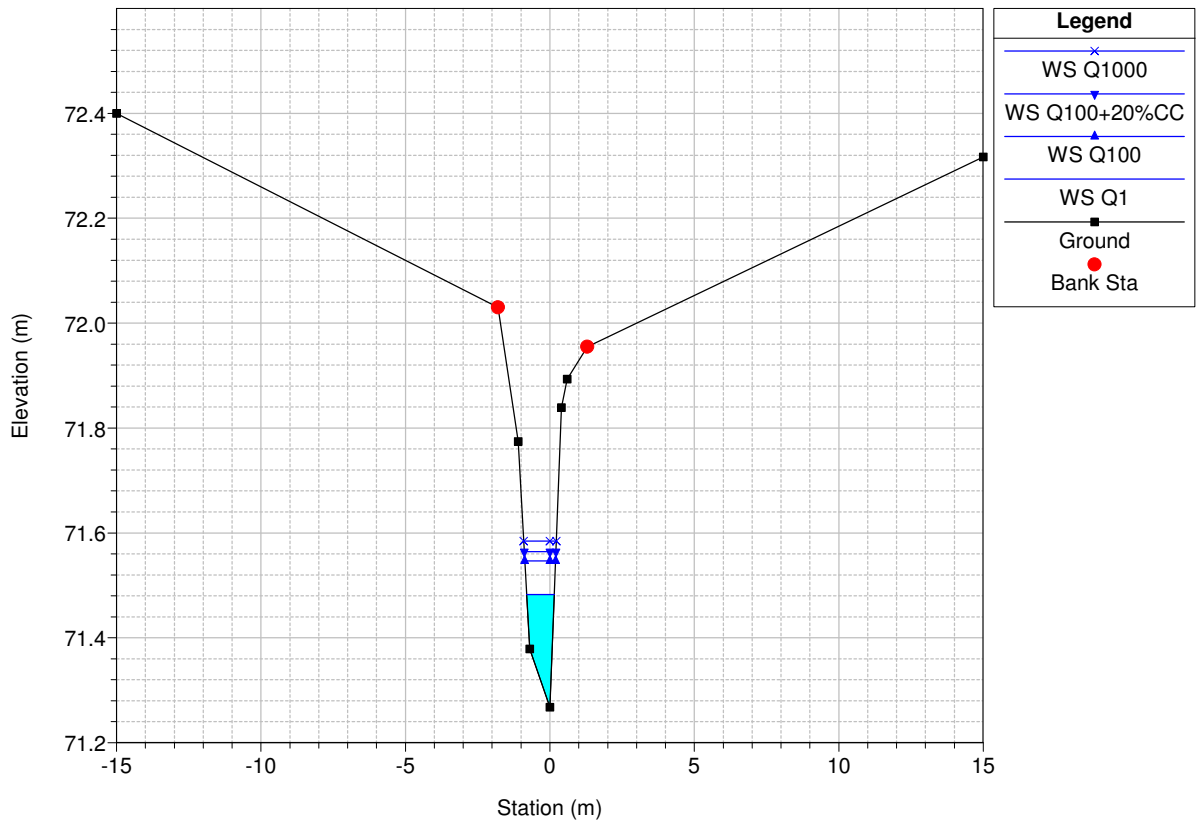
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 River = Waddow View Broo Reach = 1 RS = 180 (W3-50)



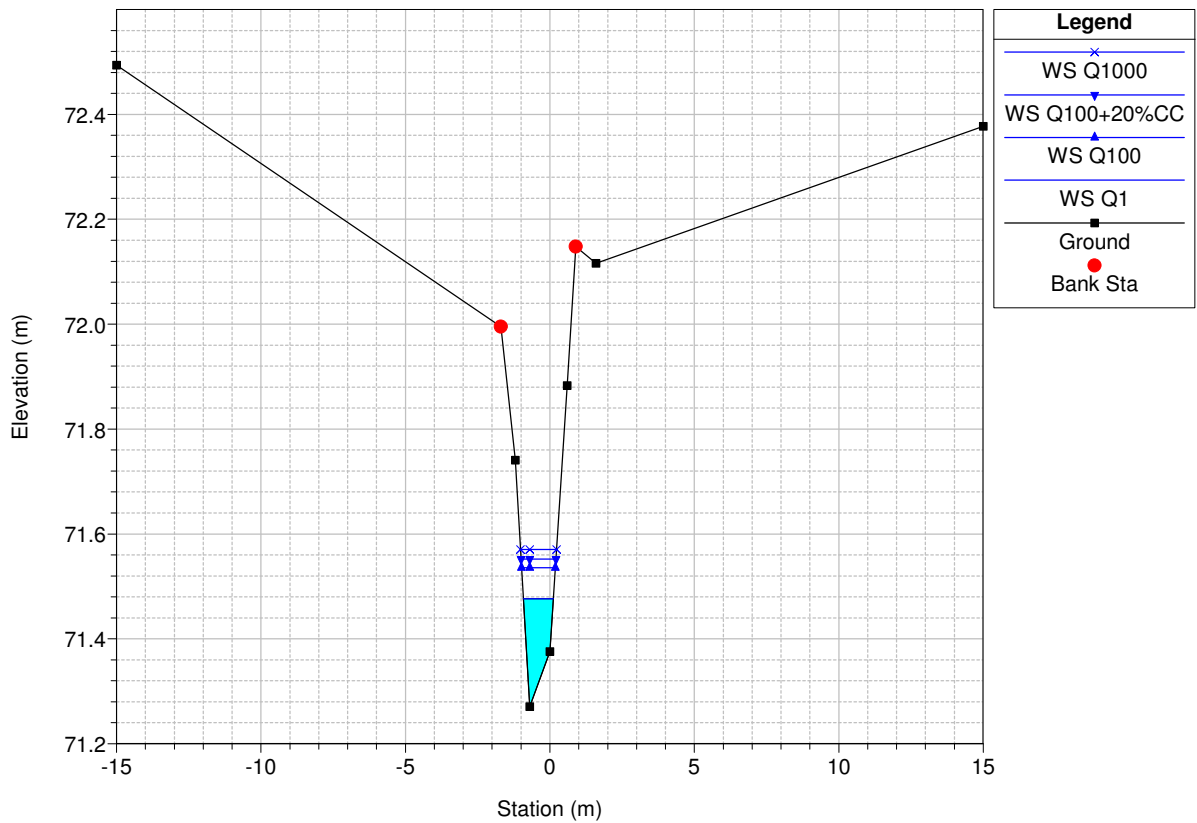
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 1 RS = 170 (W3-60)



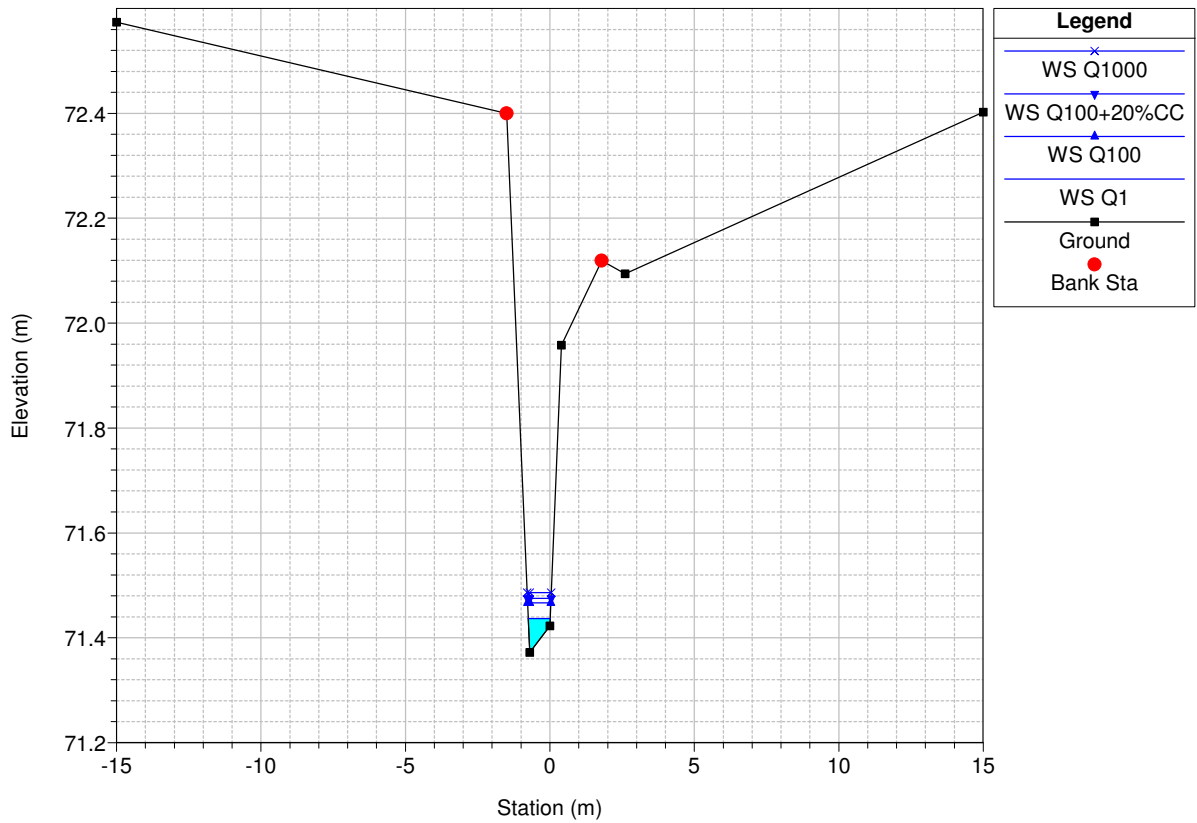
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 River = Waddow View Broo Reach = 2 RS = 200 (W4-CH20)



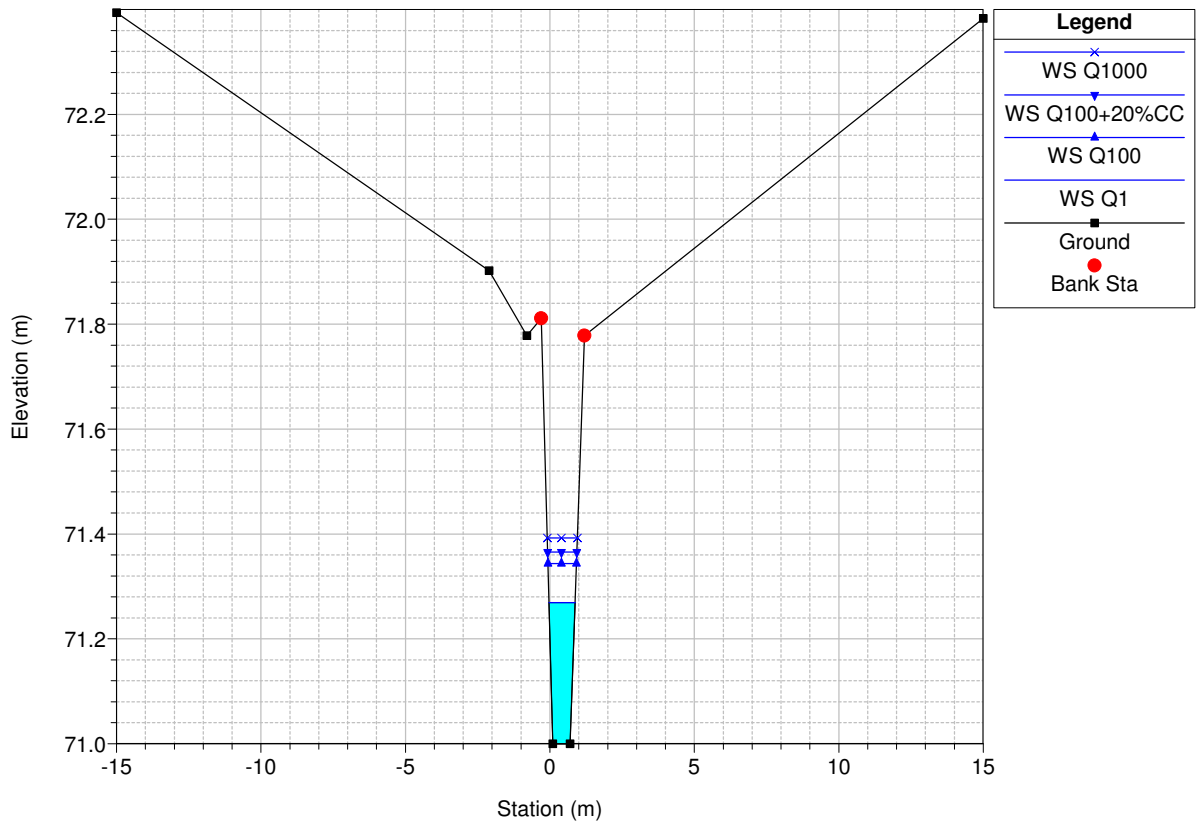
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 2 RS = 190 (W4-CH10)



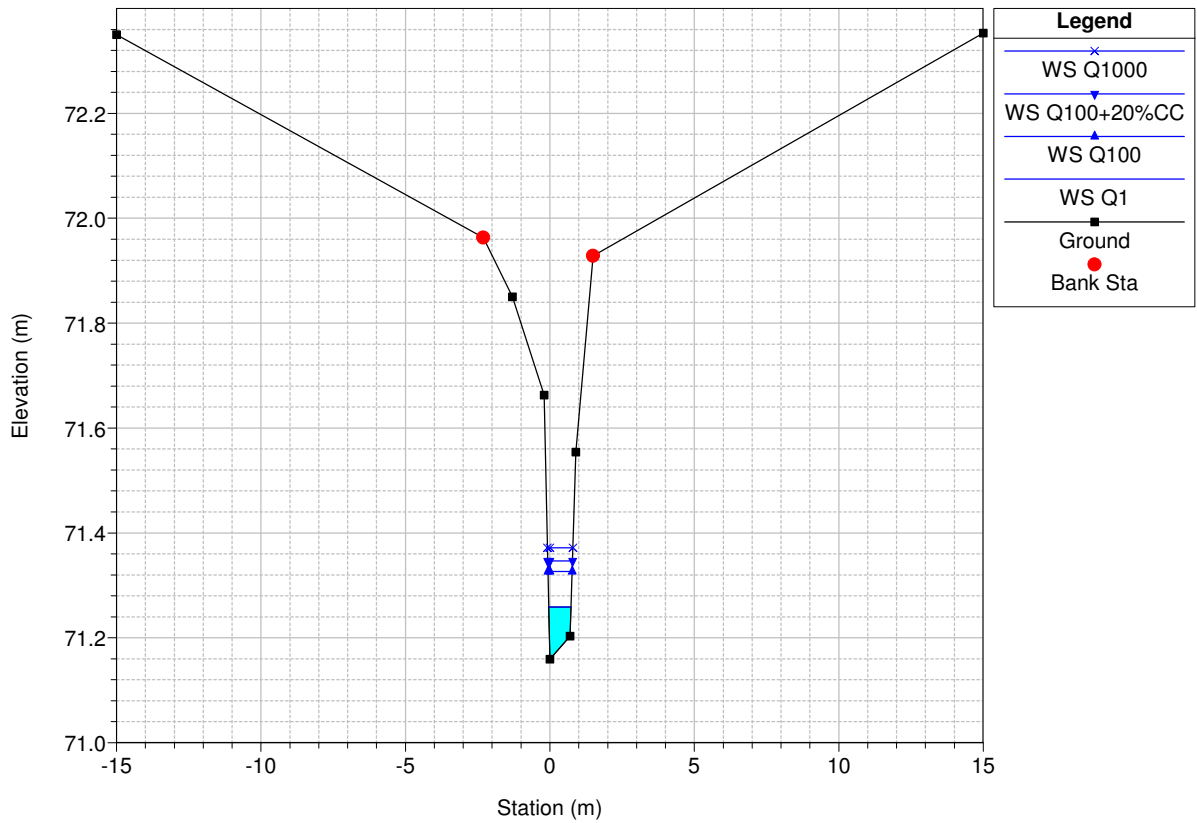
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 2 RS = 180 (W4-CH0)



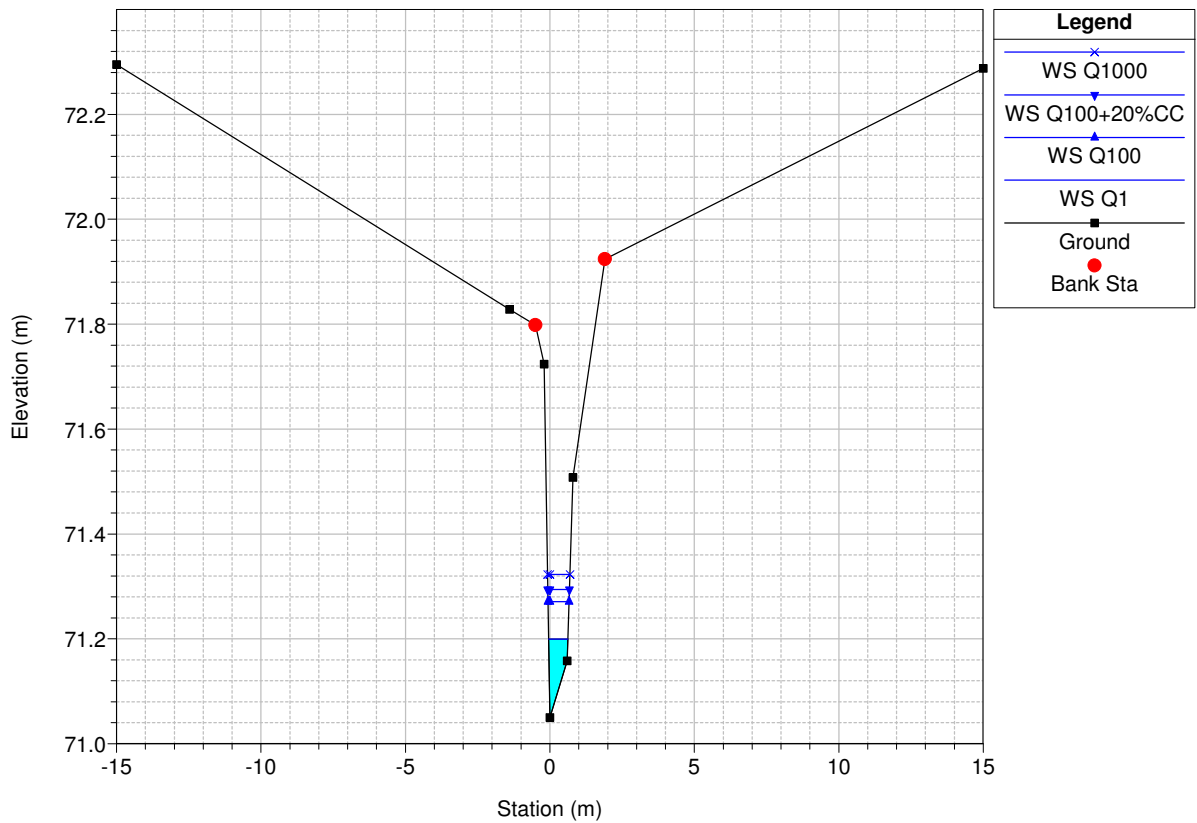
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 2 RS = 170 (W5a-CH0)



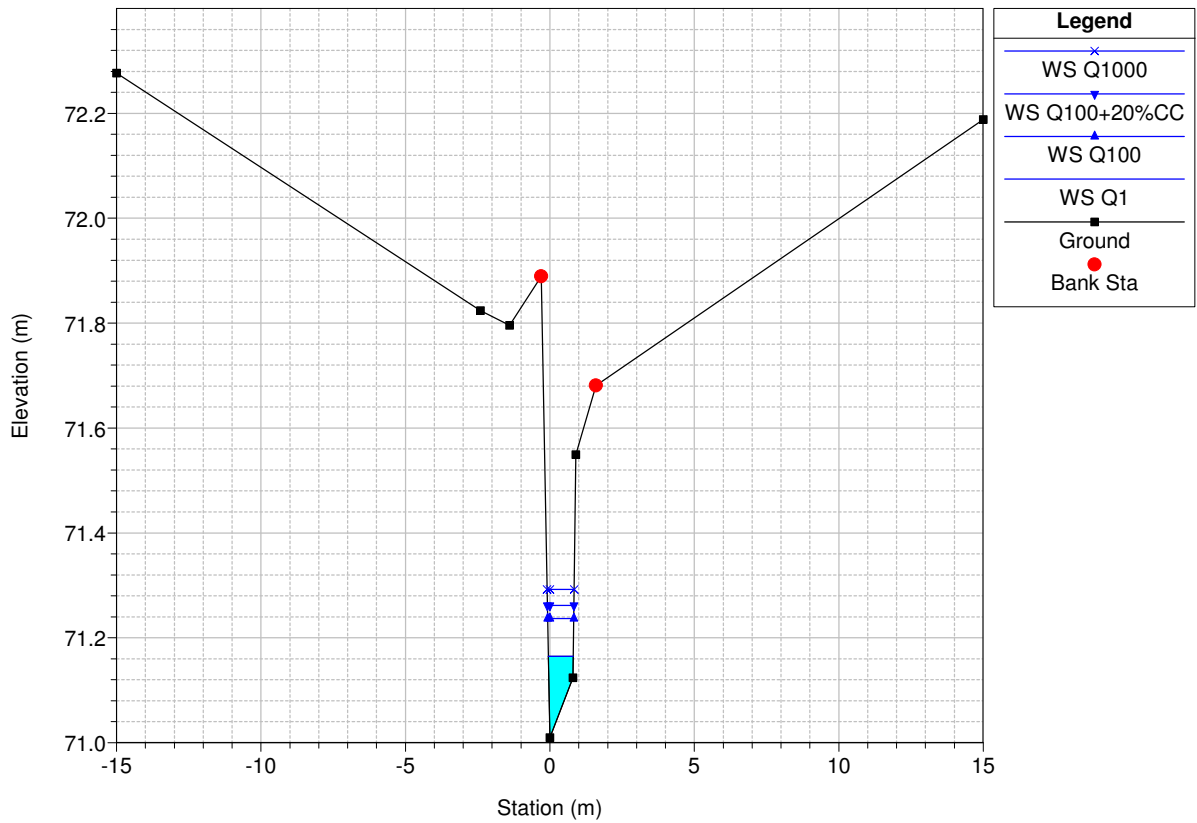
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 2 RS = 160 (W5a-CH10)



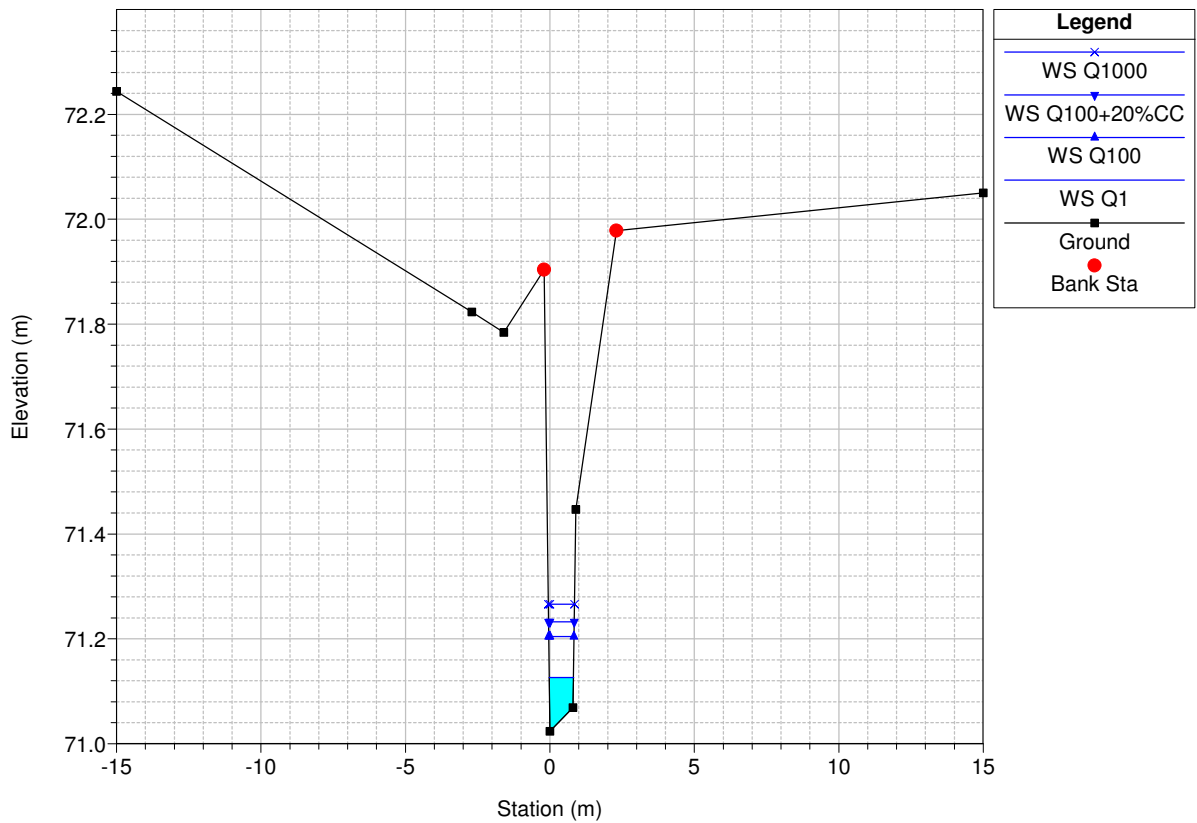
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 2 RS = 150 (W5a-CH20)



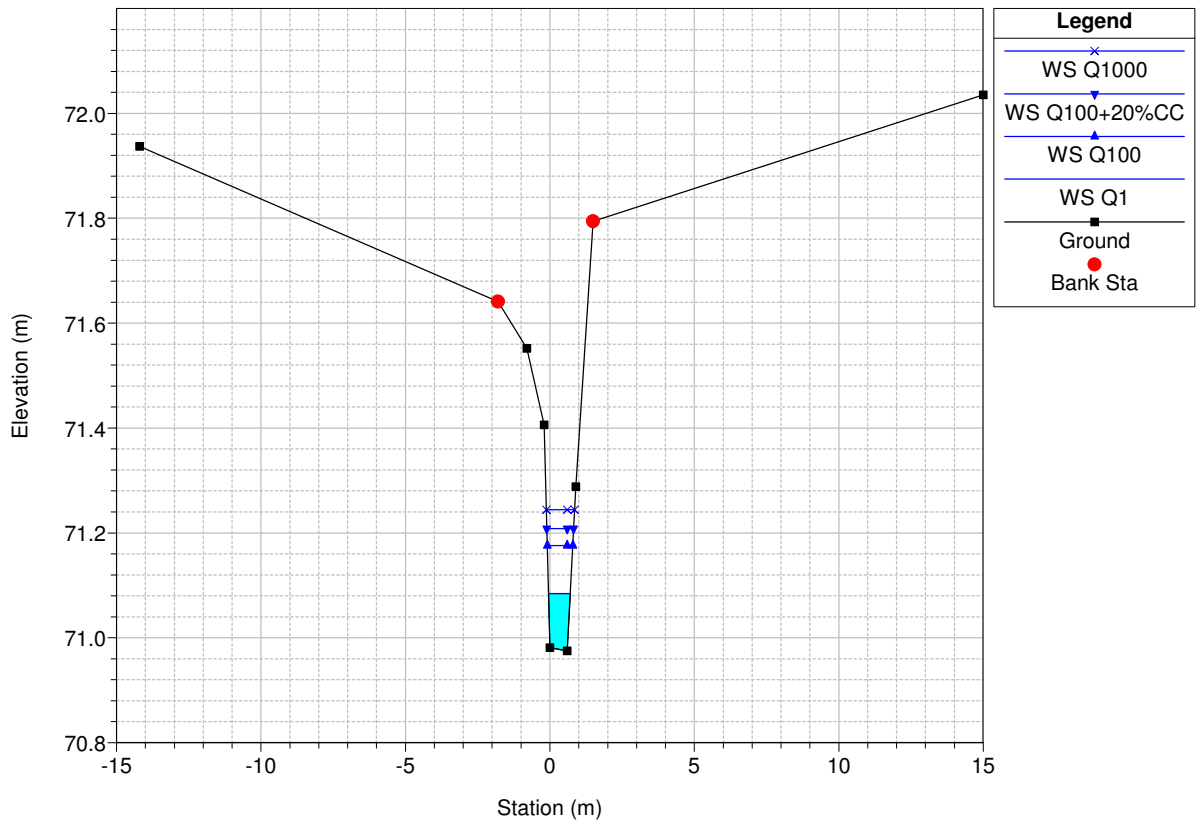
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 2 RS = 140 (W5a-CH30)



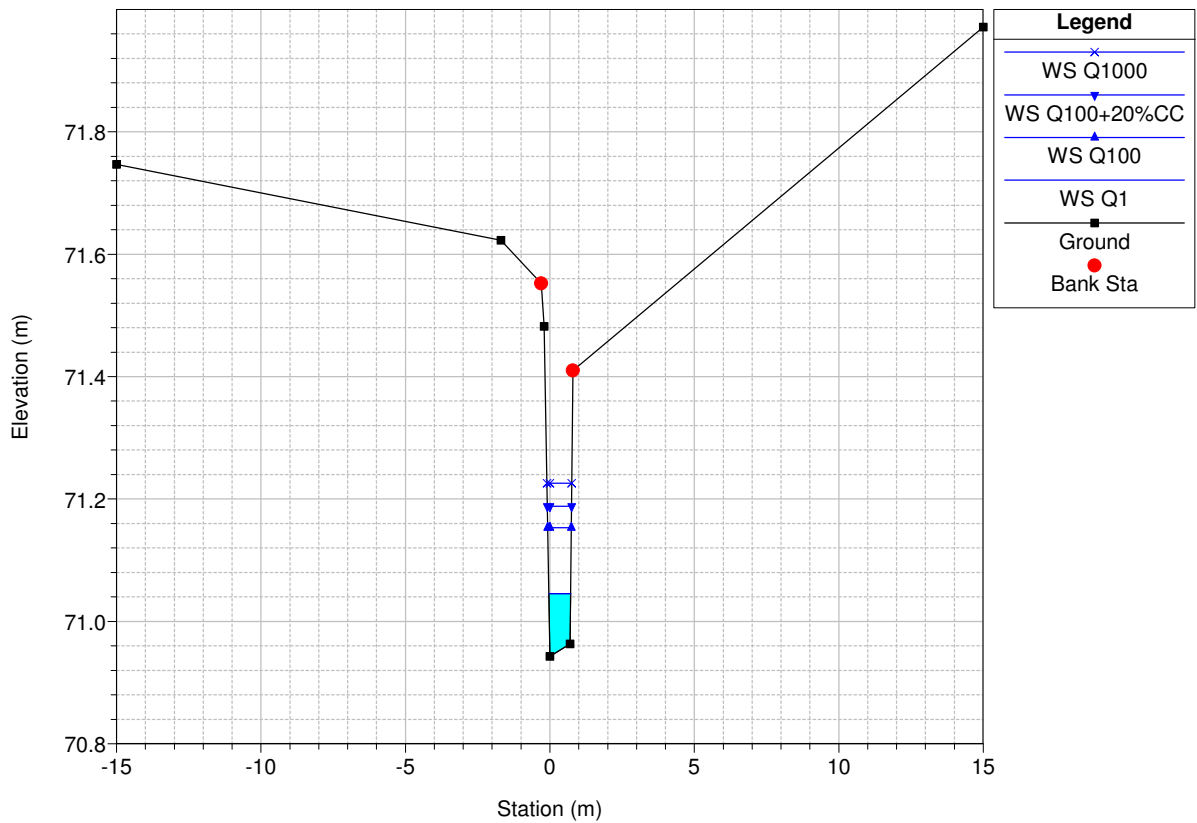
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 2 RS = 130 (W5a-CH40)



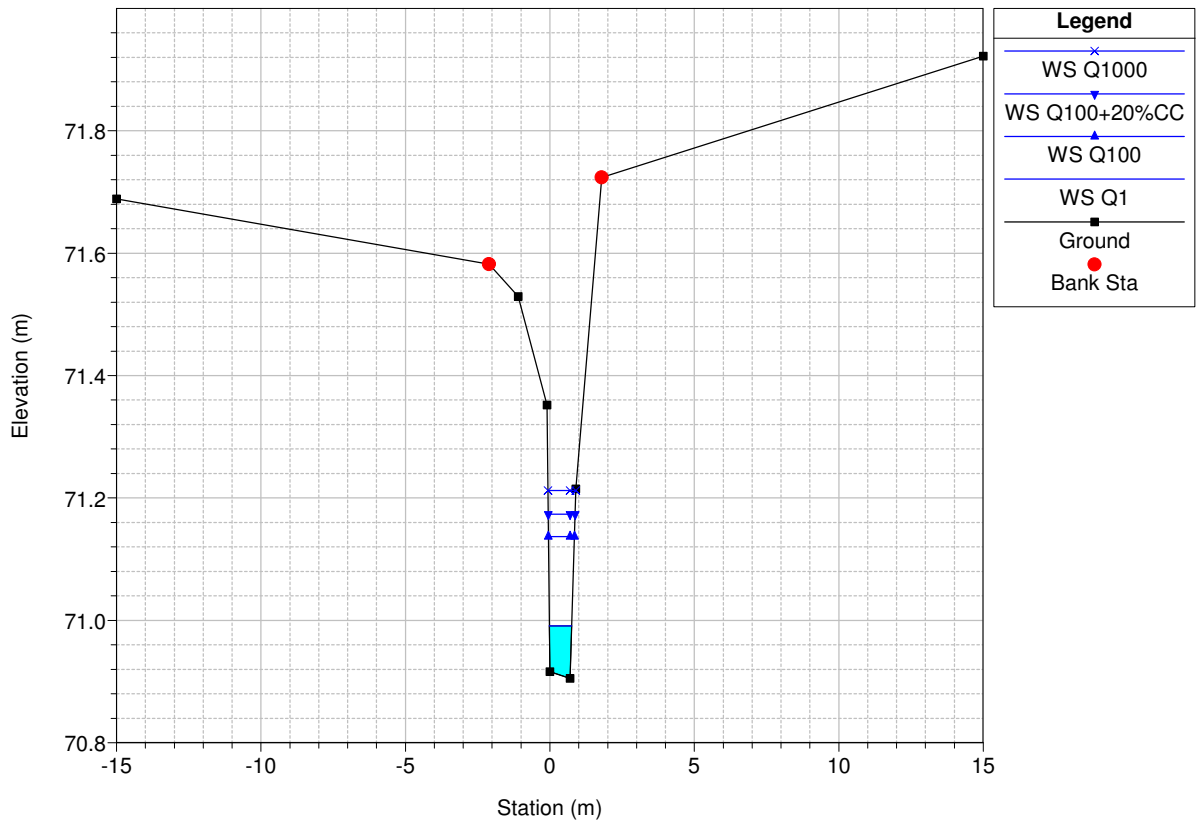
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 2 RS = 120 (W5a-CH50)



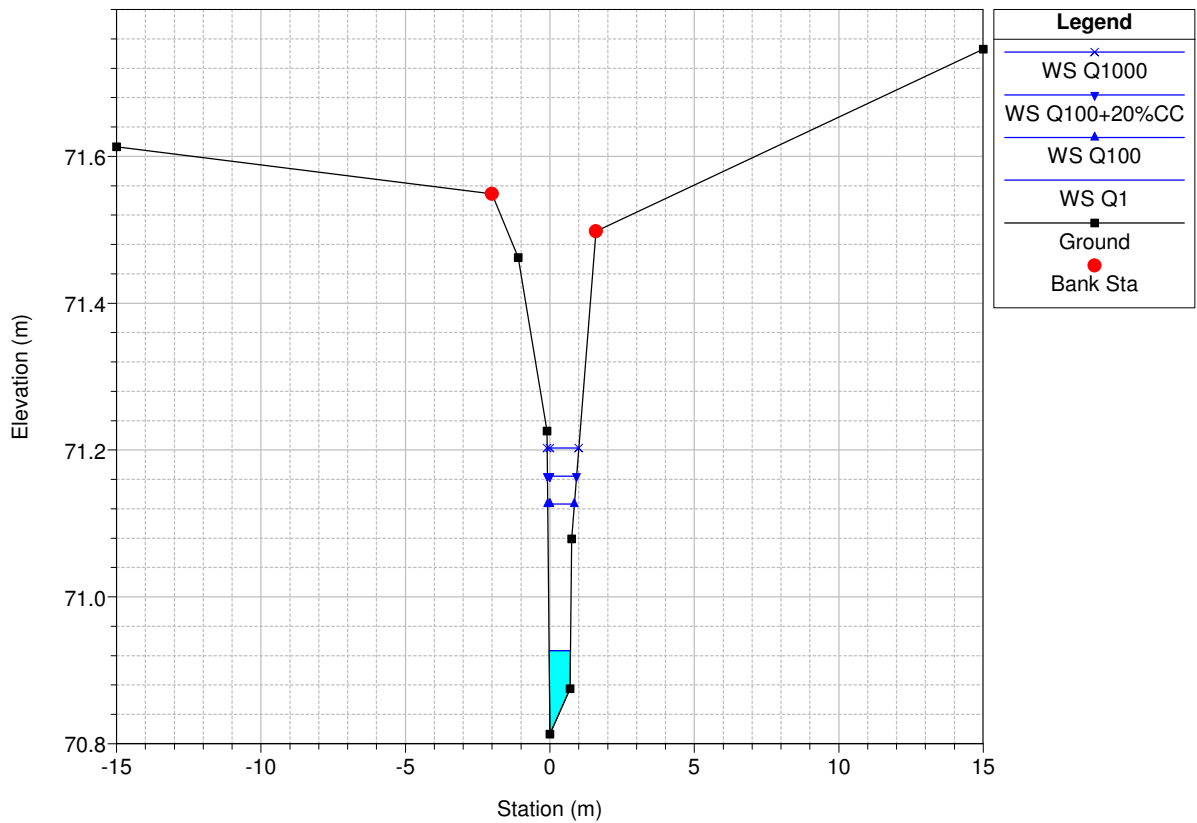
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 2 RS = 110 (W5a-CH60)



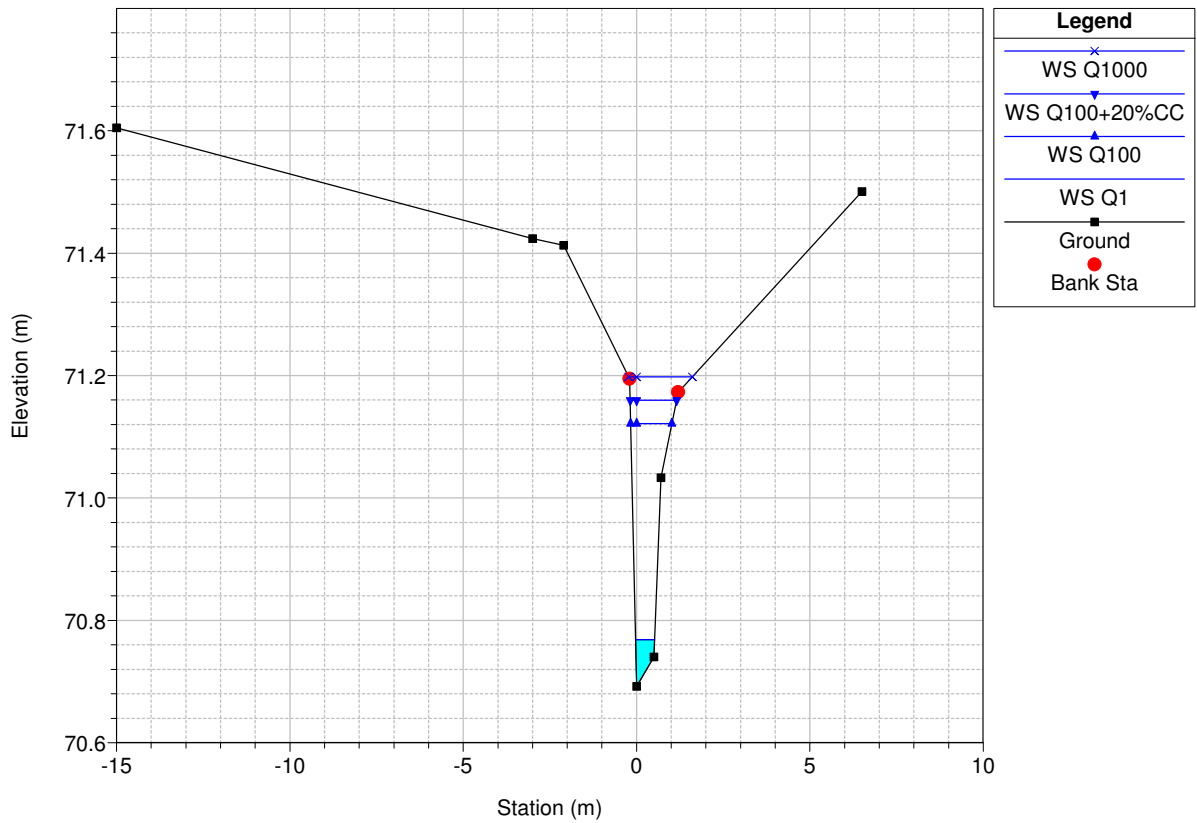
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 2 RS = 100 (W5a-CH70)



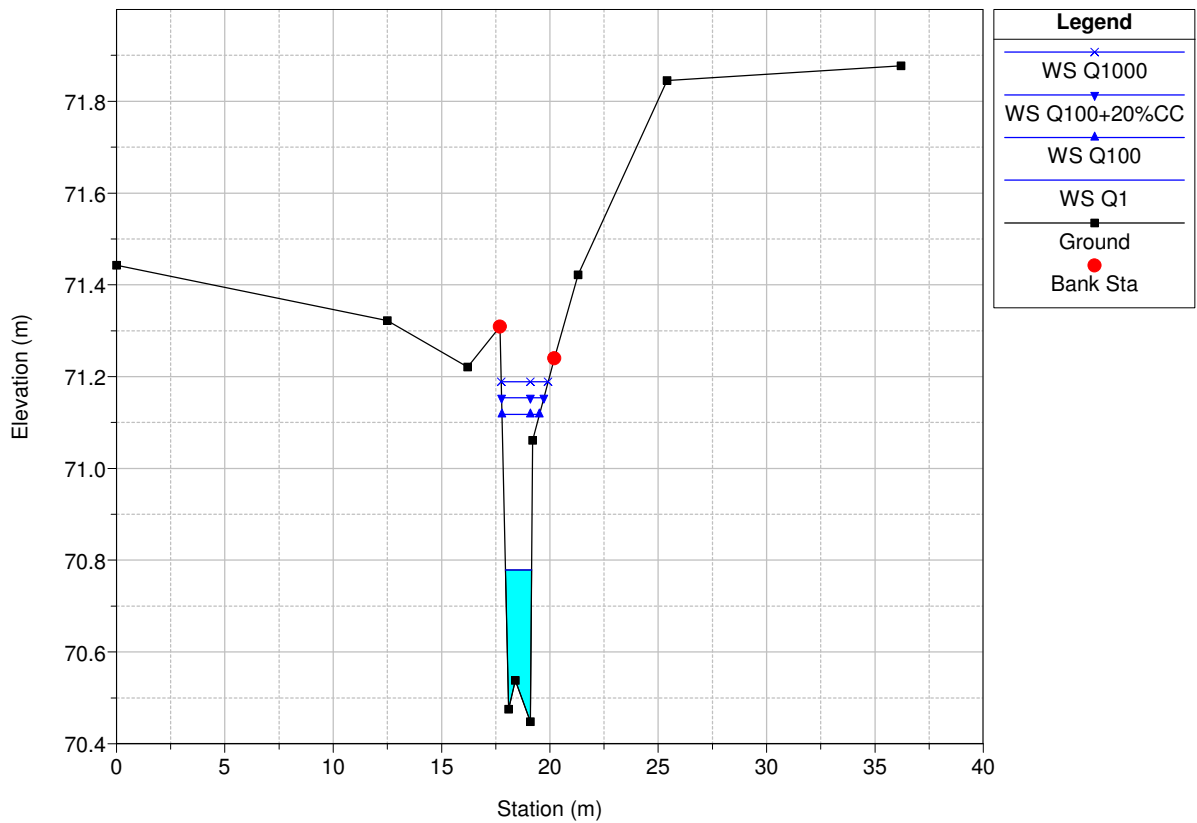
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 2 RS = 90 (W5a-CH80)



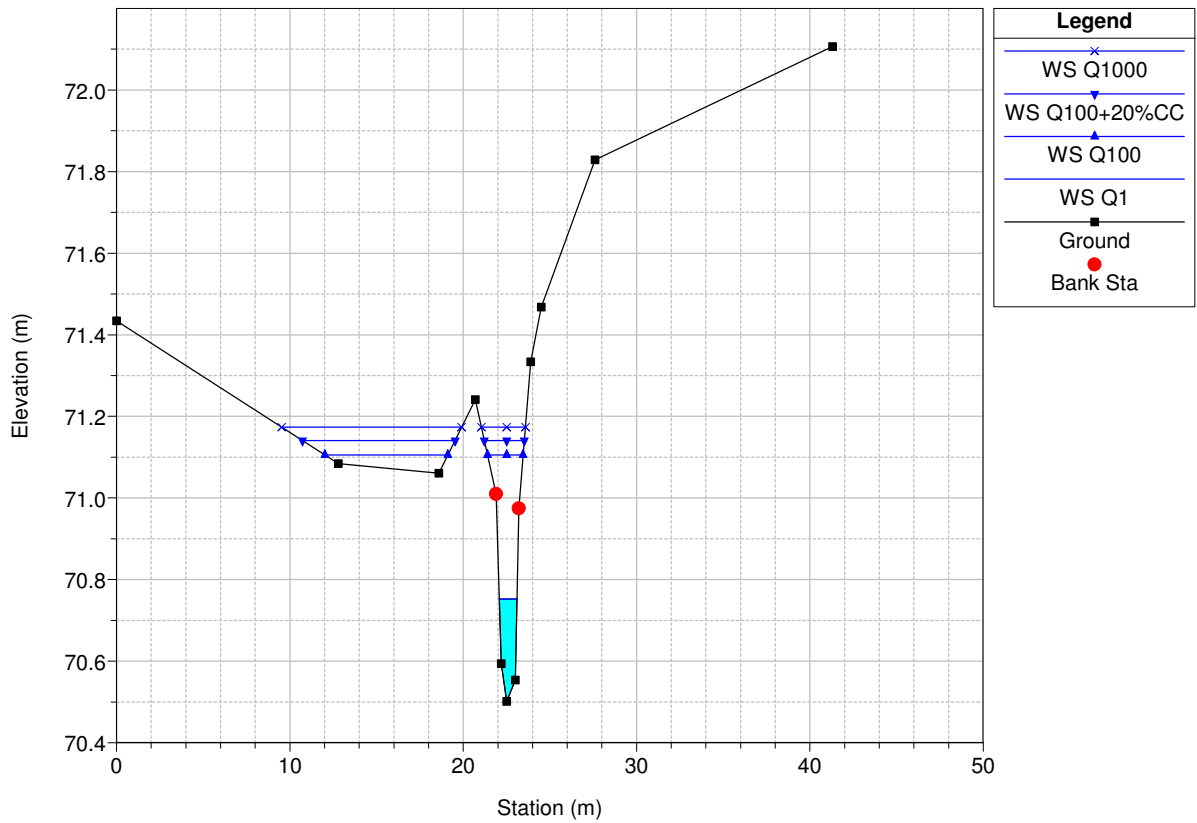
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 2 RS = 80 (W5a-CH90)



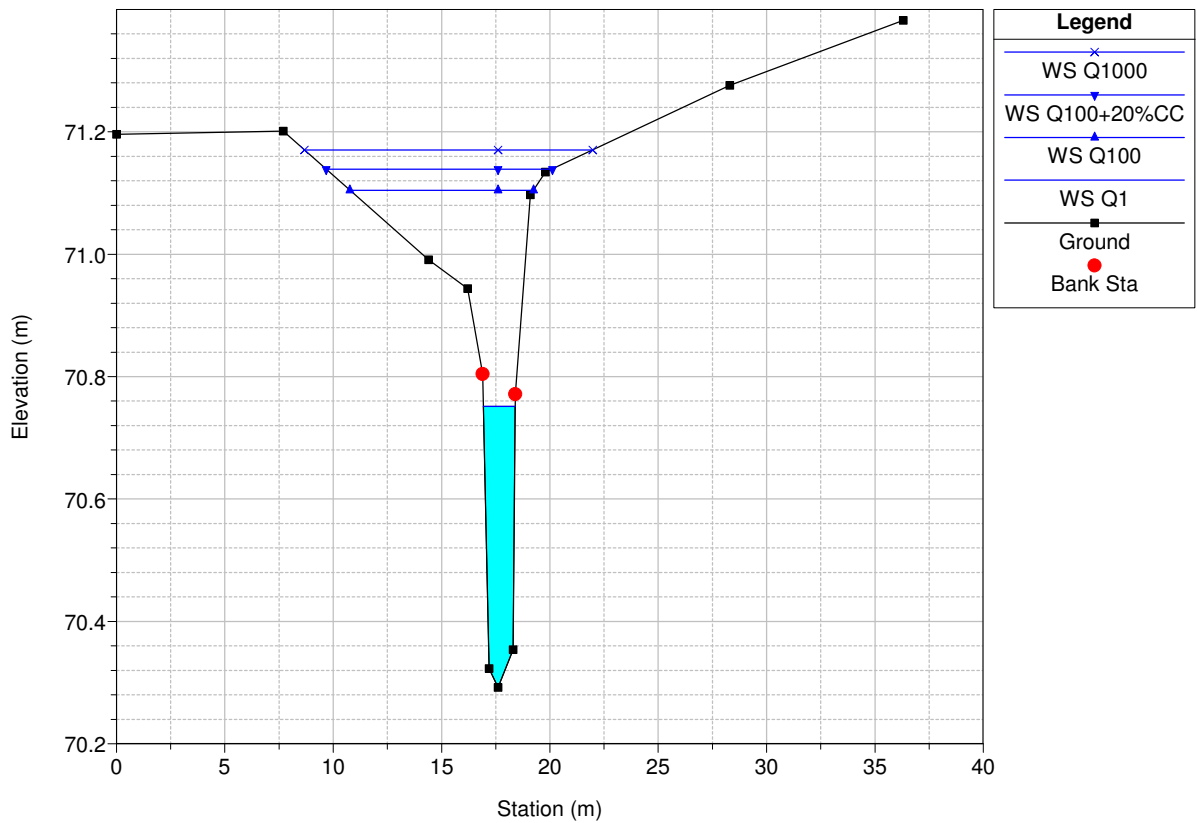
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 3 RS = 160 (W5b-S1)



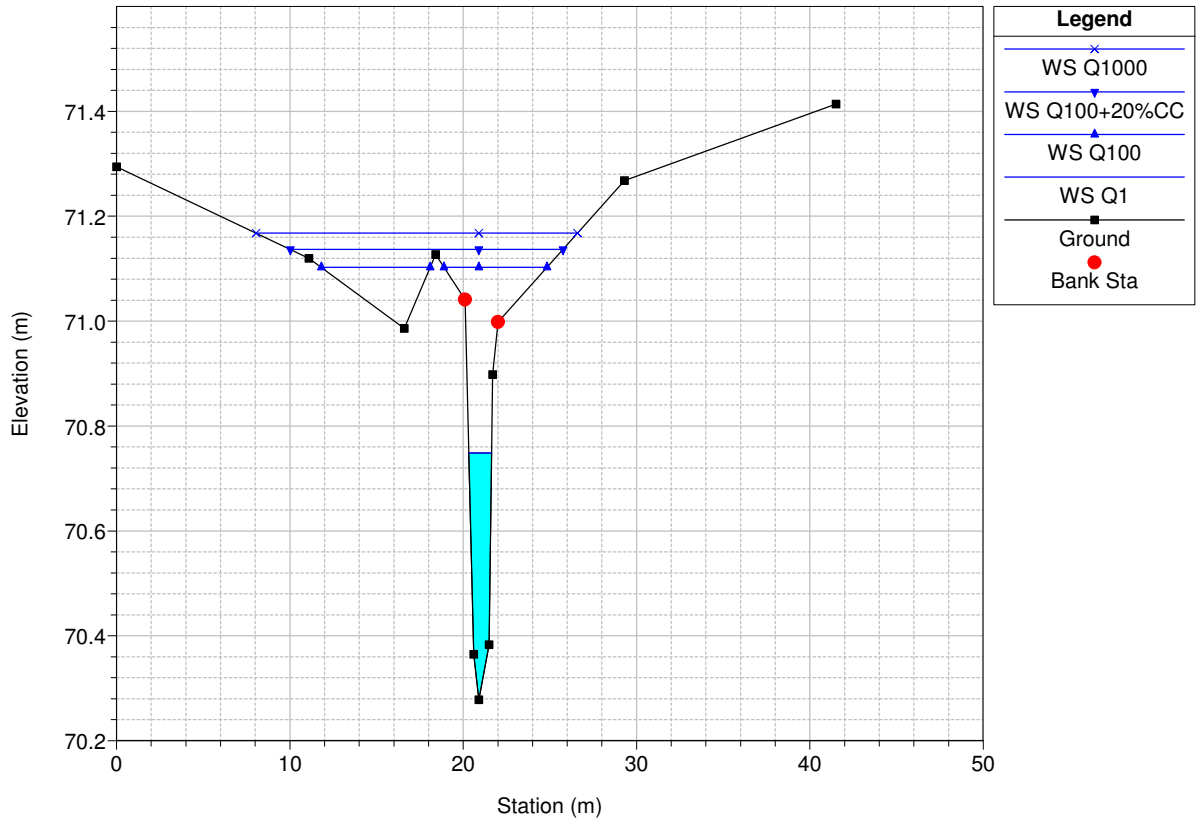
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 3 RS = 150 (W5b-S2)



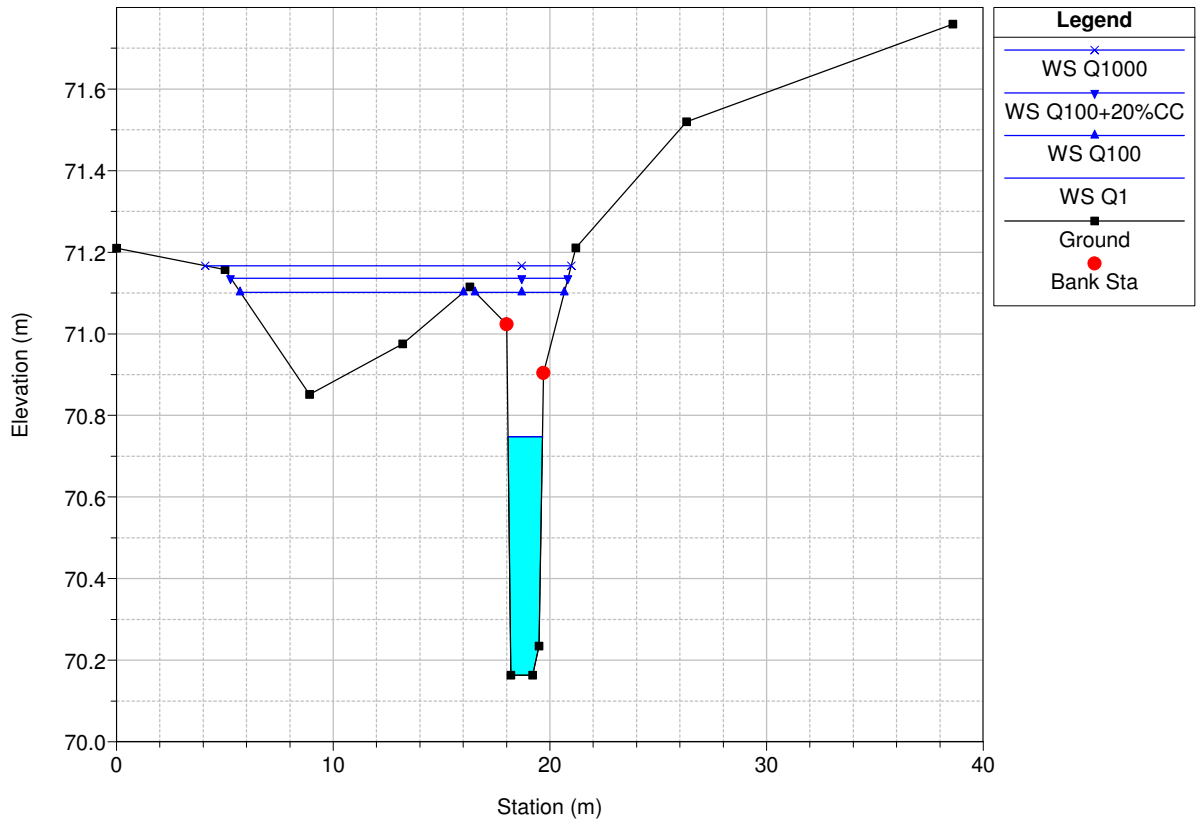
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 3 RS = 140 (W5b-S3)



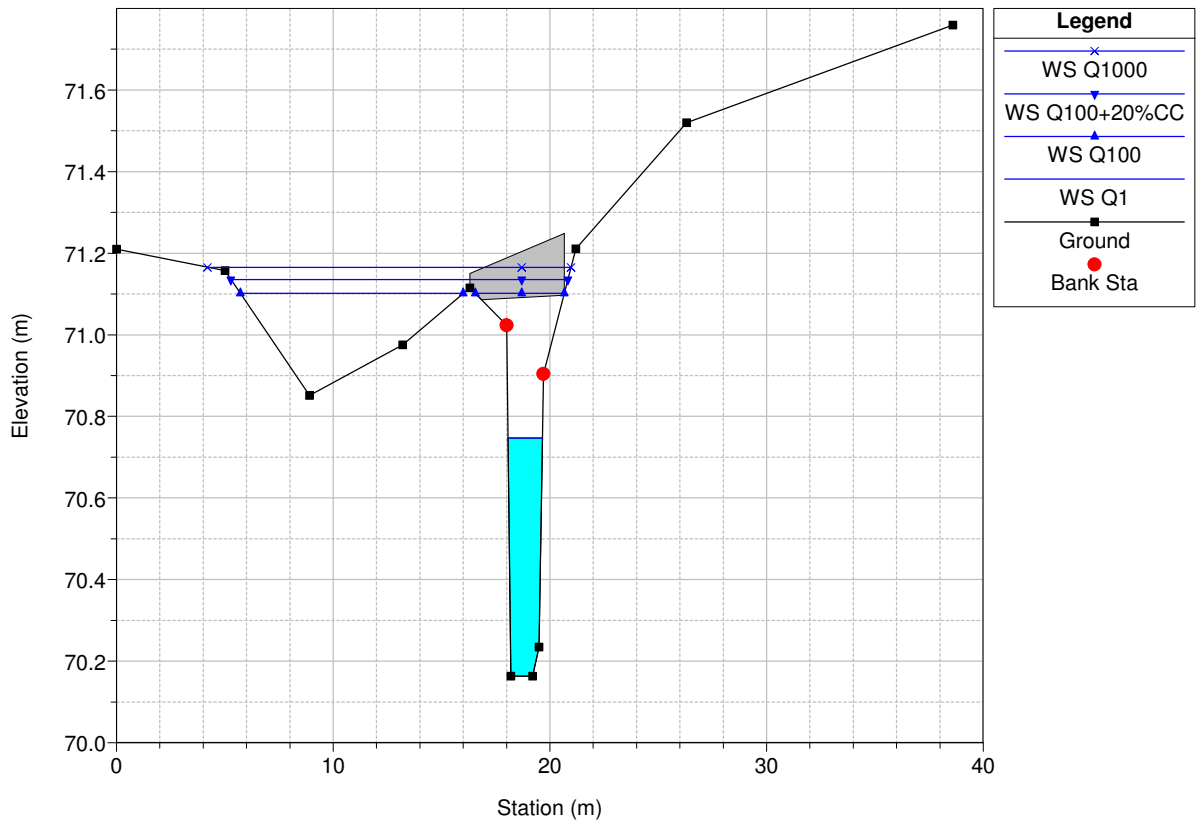
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 3 RS = 130 (W5b-S4)



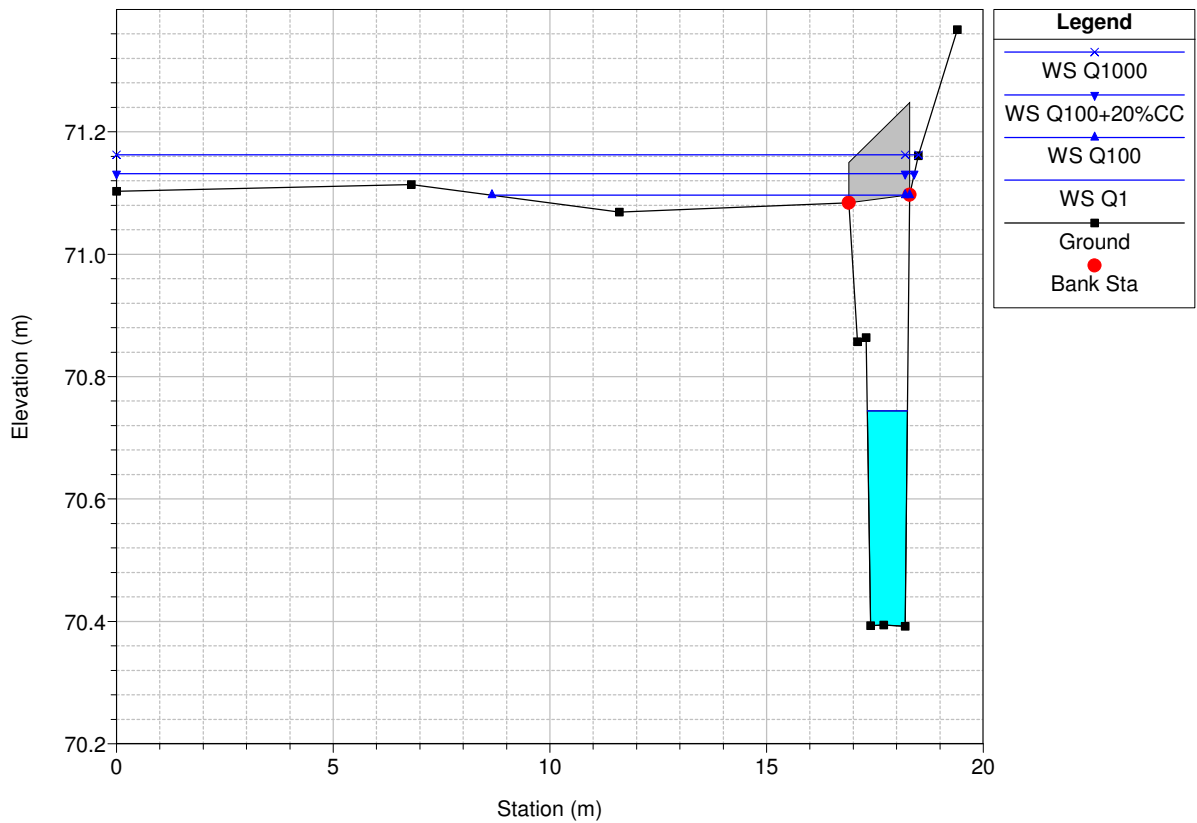
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 3 RS = 120 (W5b-S5)



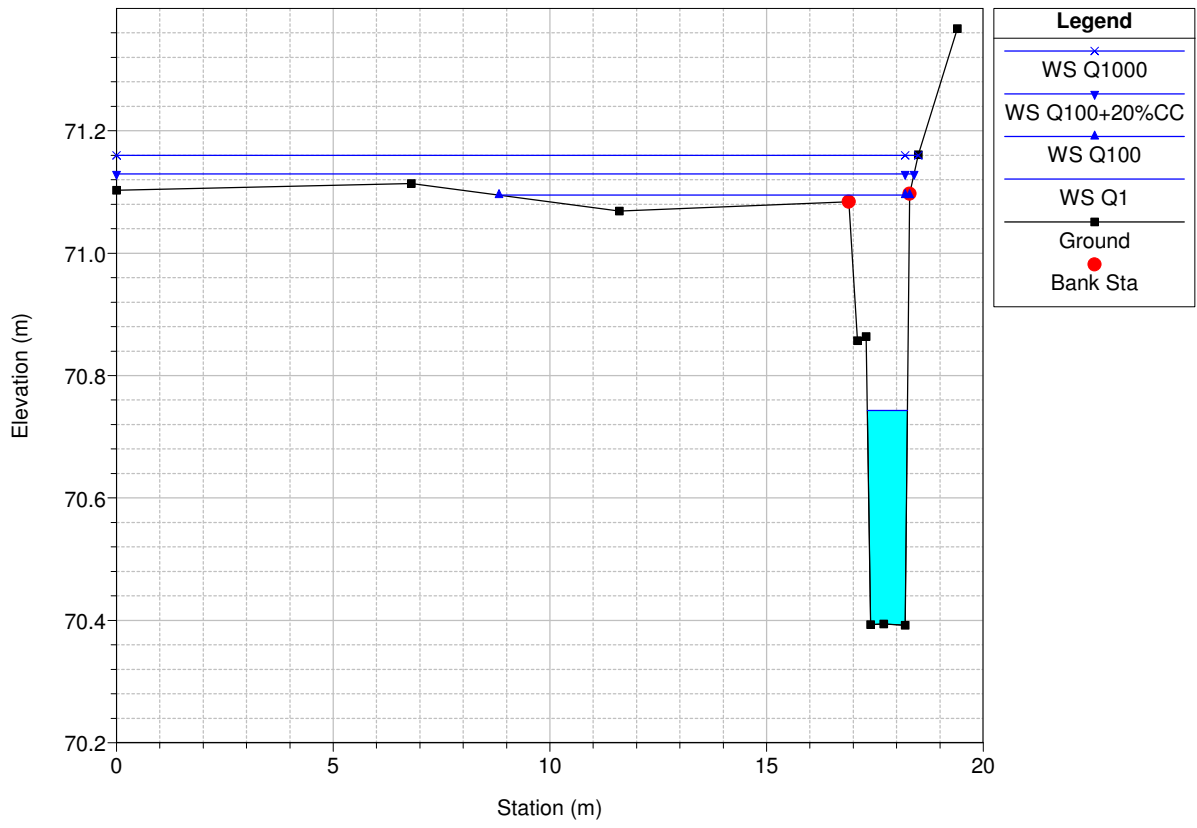
Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 3 RS = 111 BR



Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 3 RS = 111 BR



Waddow View Plan: Plan 01 18/04/2012  
 River = Waddow View Broo Reach = 3 RS = 110 (W5b-S6)



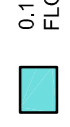
## APPENDIX N: FLOODPLAIN PLAN

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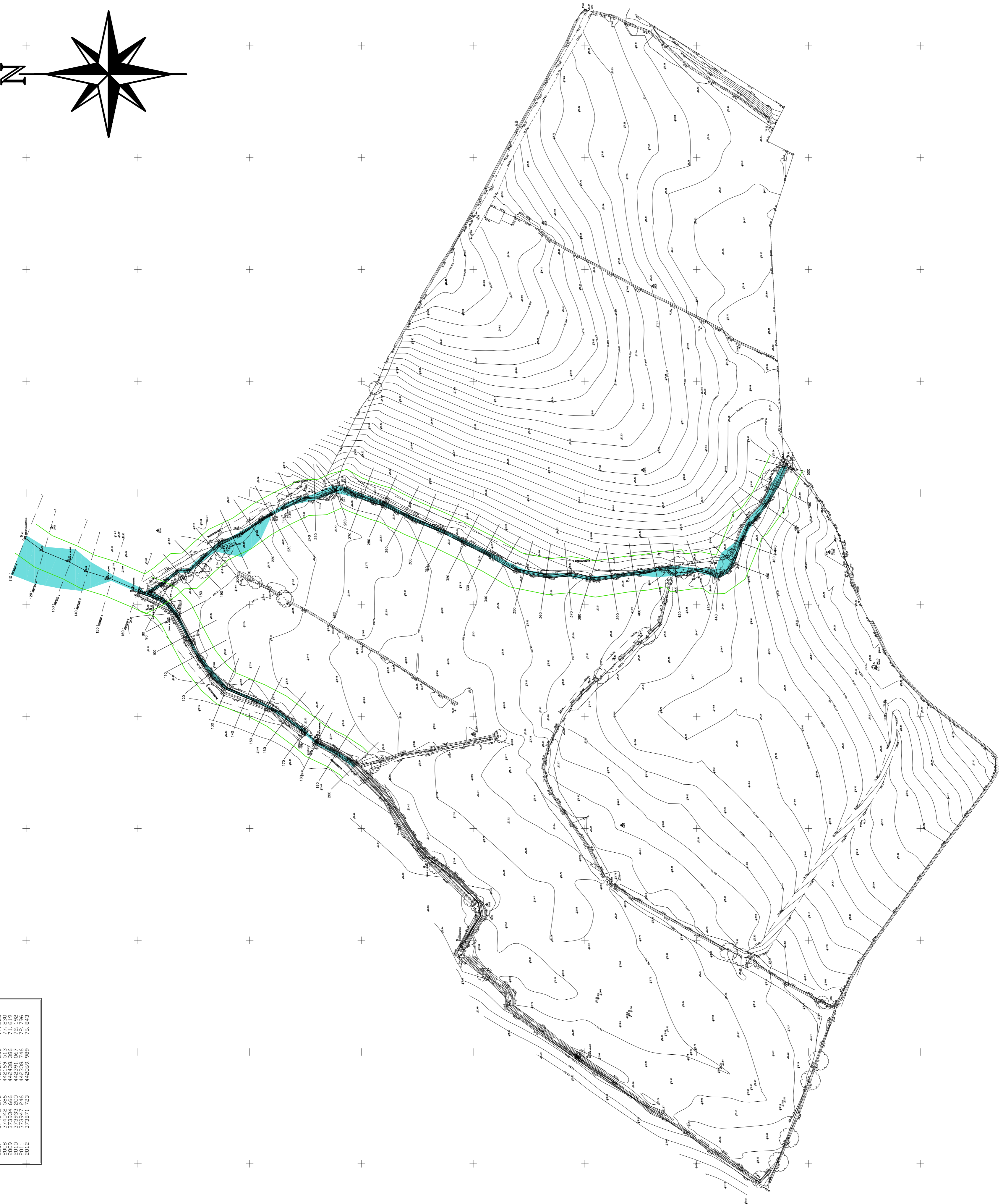
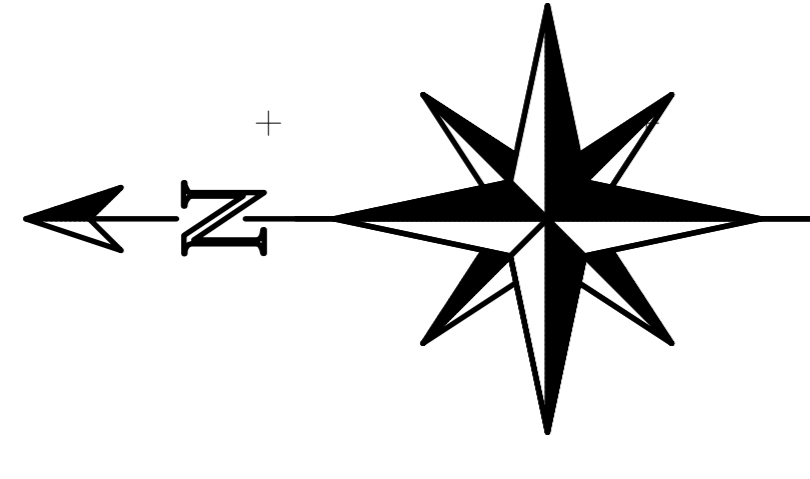
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DO NOT SCALE

LEGEND  
0.1% AEP (16/100yr EVENT)  
FLOODING EXTENTS



SURVEY CONTROL STATIONS		
STN	EASTING	NORTHING
R001	372802.606	442090.217
R002	372805.952	442093.858
R003	372809.300	442097.500
R004	372812.646	442101.141
R005	372816.000	442104.782
R006	372819.346	442108.423
R007	372822.700	442112.064
R008	372826.046	442115.705
R009	372829.400	442119.346
R010	372832.746	442122.987
R011	372836.100	442126.628
R012	372839.446	442130.269



REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS: PRELIMINARY



PROJECT:  
 THE HUNTROYDE ESTATE  
 AND  
 CLITHEROE AUCTION MART

TITLE:  
 WADDOW VIEW  
 CLITHEROE

TITLE:  
 FLOOD PLAIN PLAN

DATE: APRIL 2012	SCALE & SIZE: A1	DRAWN: RON	CHECKED: RA
PROJECT No: SEA14	DRAWING No: 100	REV: P1	

## APPENDIX O: PHOTOGRAPHS

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## APPENDIX P: NOTES OF LIMITATIONS

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The data essentially comprised a study of available documented information from various sources together with discussions with relevant authorities and other interested parties. There may also be circumstances at the site that are not documented. The information reviewed is not exhaustive and has been accepted in good faith as providing representative and true data pertaining to site conditions. If additional information becomes available which might impact our conclusions, we request the opportunity to review the information, reassess the potential concerns and modify our opinion if warranted.

It should be noted that any risks identified in this report are perceived risks based on the available information.

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