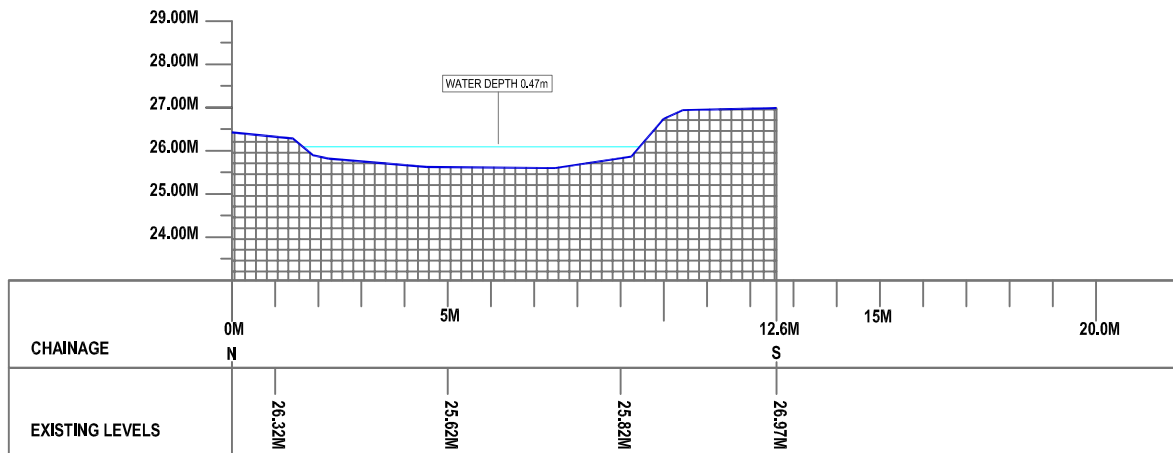
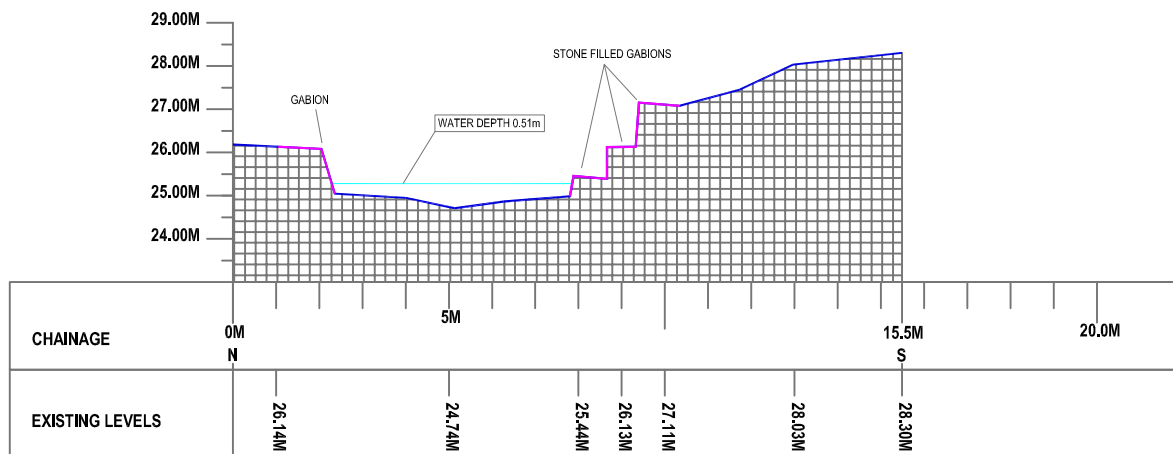


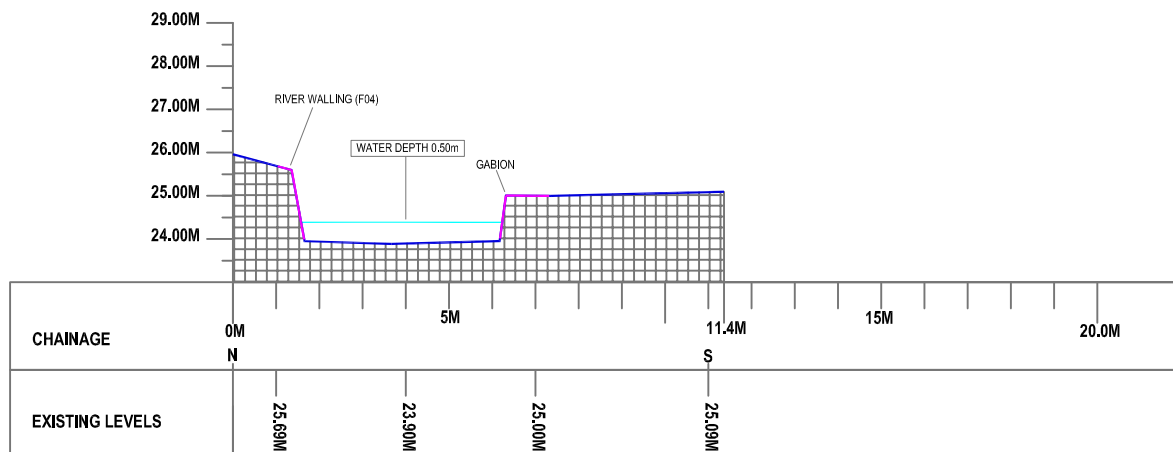
## PROFILE 1



## PROFILE 2



## PROFILE 3



# ADCO

**Client**  
Ryan Hanley Consulting Engineers

**Notes**  
Profiles gathered using DGPS & Total Station Recording

**Title**  
Figure 20- River Profiles P1-P3.  
[See Figure11 for profile locations].

**Project**  
River Bride (Blackpool) Drainage Scheme

**Job/Exc No.**  
16D0044

**Compiled by**  
R.Bangerter

**CAD reference**  
RiverBrideFRS

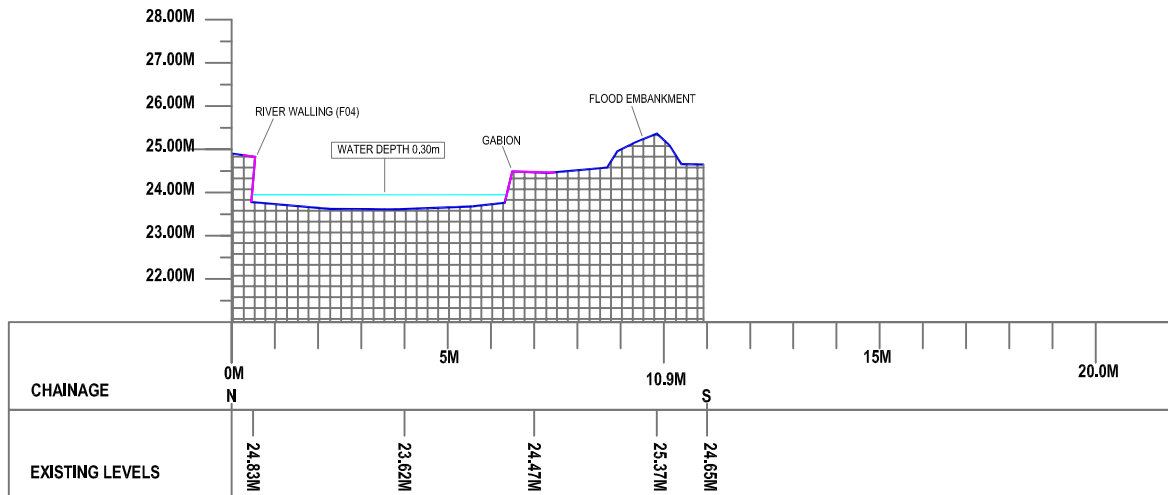
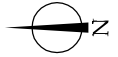
**Date**  
29.04.16

**Scale**  
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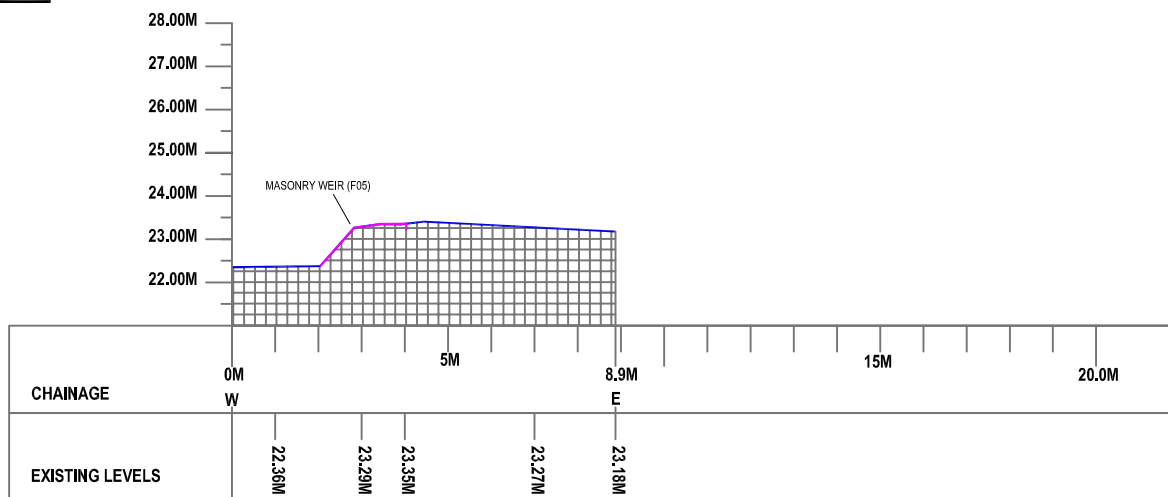
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Figure 20

A4

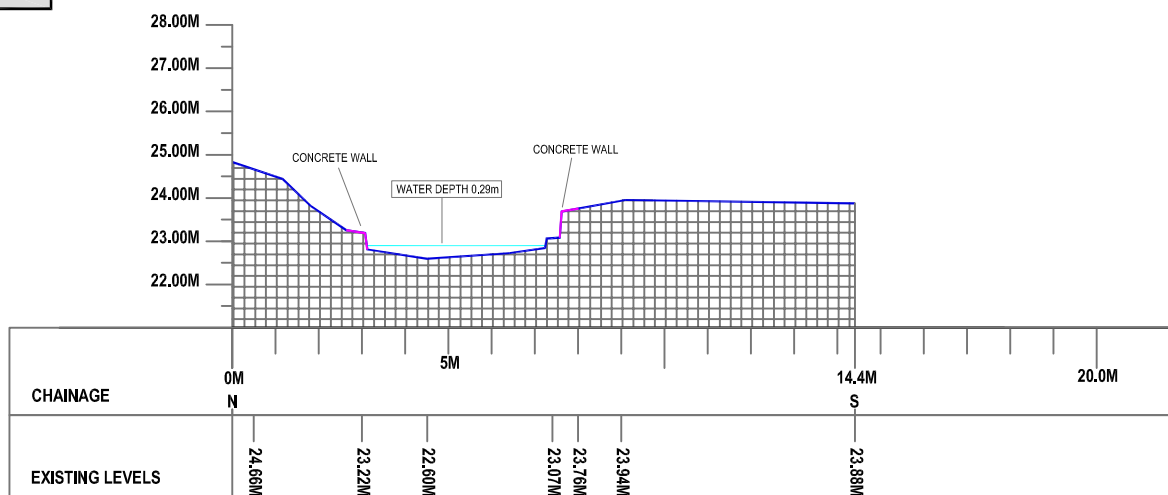
## PROFILE 4



## PROFILE 5



## PROFILE 6



# ADCO

**Client**  
Ryan Hanley Consulting Engineers

**Project**  
River Bride (Blackpool) Drainage Scheme

**Notes**  
Profiles gathered using DGPS & Total Station Recording

**Job/Exc No.**  
16D0044

**Compiled by**  
R.Bangerter

**CAD reference**  
RiverBrideFRS

**Title**  
Figure 21- River Profiles P4-P6  
[See Figure11 for profile locations].

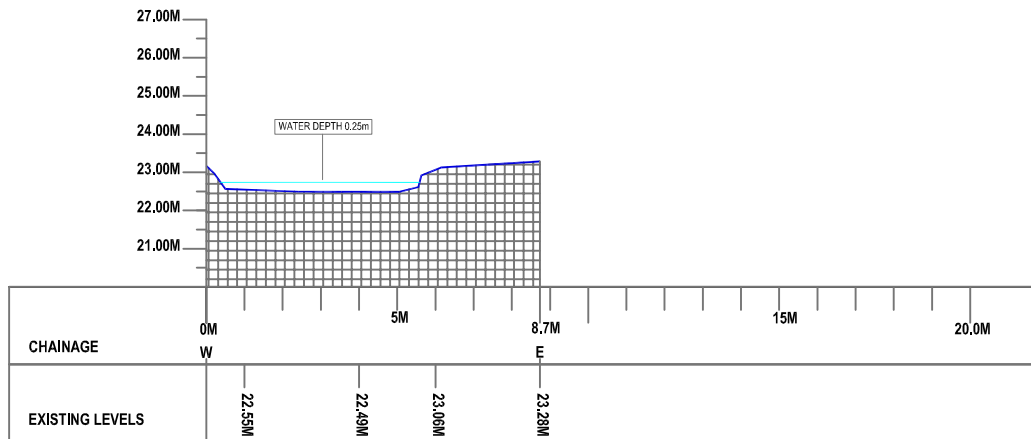
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29.04.16

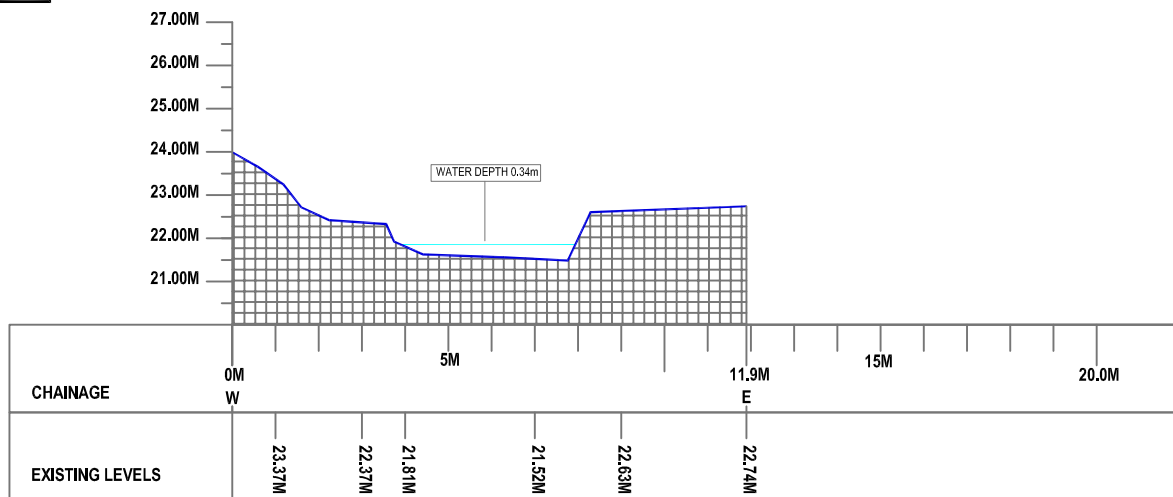
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Figure 21

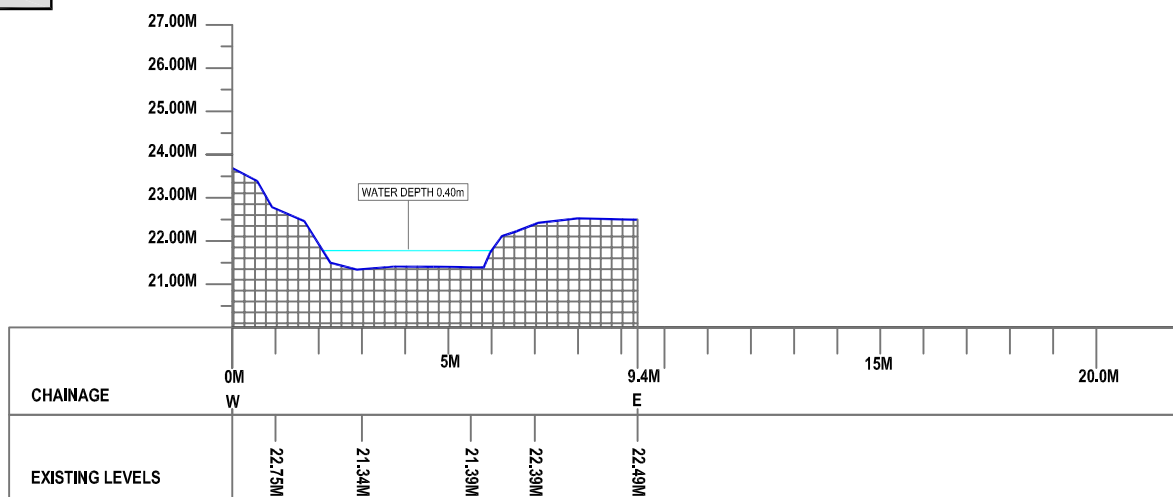
## PROFILE 7



## PROFILE 8



## PROFILE 9



# ADCO

**Client**  
Ryan Hanley Consulting Engineers

**Project**  
River Bride (Blackpool) Drainage Scheme

**Notes**  
Profiles gathered using DGPS & Total Station Recording

**Job/Exc No.**  
16D0044

**Compiled by**  
R.Bangerter

**CAD reference**  
RiverBrideFRS

**Title**  
Figure 22- River Profiles P7-P9.  
[See Figures 11-12 for profile locations].

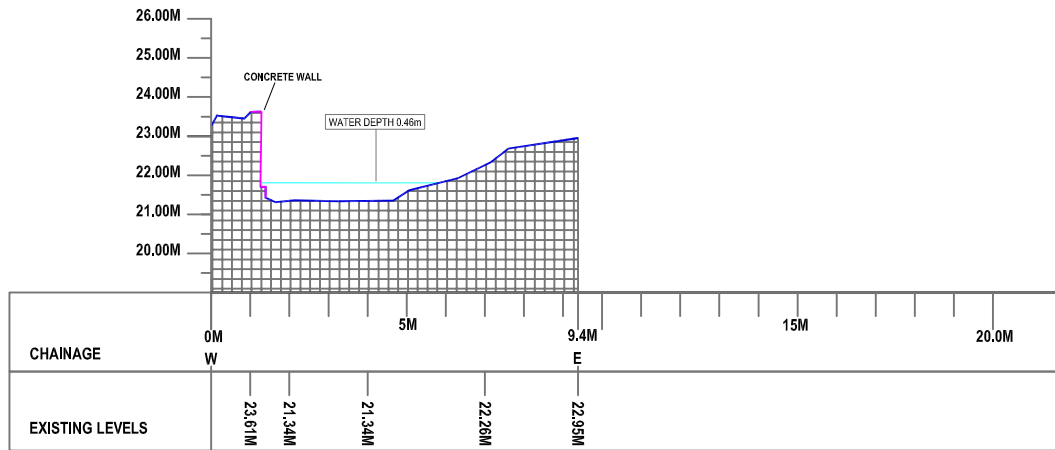
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**Date**  
29.04.16

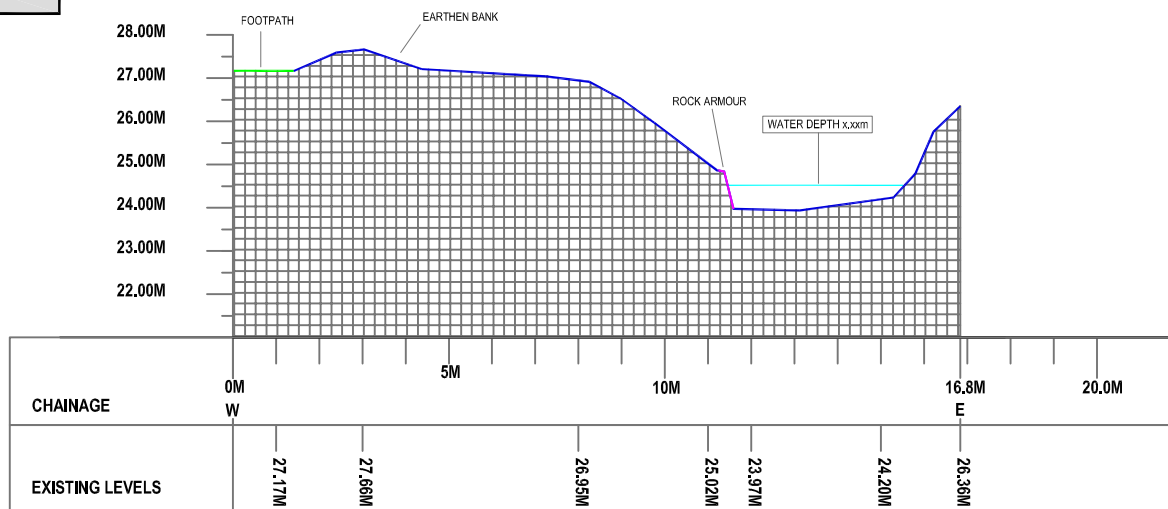
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Figure 22

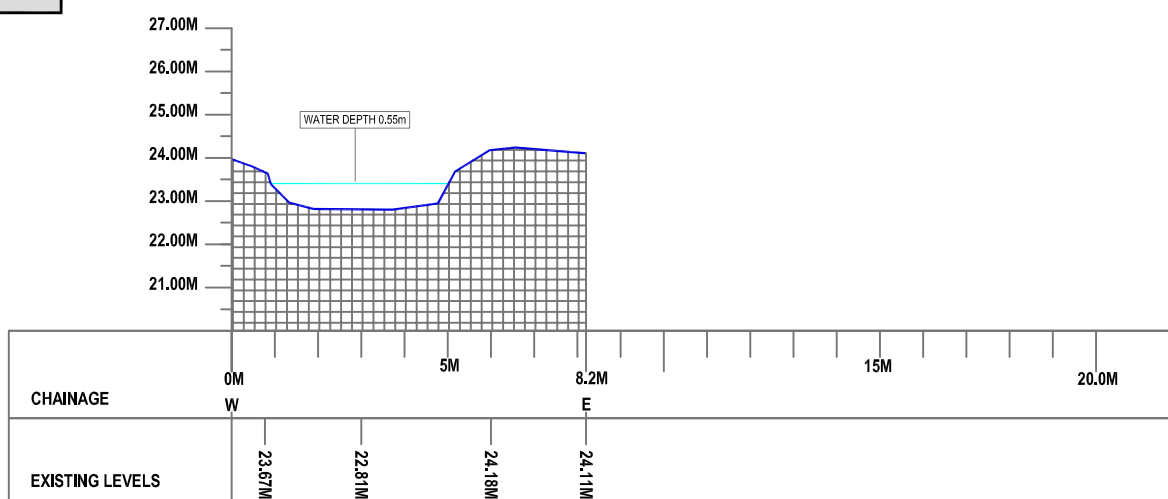
## PROFILE 10



## PROFILE 11



## PROFILE 12



Client  
Ryan Hanley Consulting Engineers

Notes  
Profiles gathered using DGPS & Total Station Recording

Title  
Figure 23- River Profiles P10-P12.  
[See Figure 12 for profile locations].

A4

Project  
River Bride (Blackpool) Drainage Scheme

Job/Exc No.  
16D0044

Compiled by  
R.Bangerter

CAD reference  
RiverBrideFRS

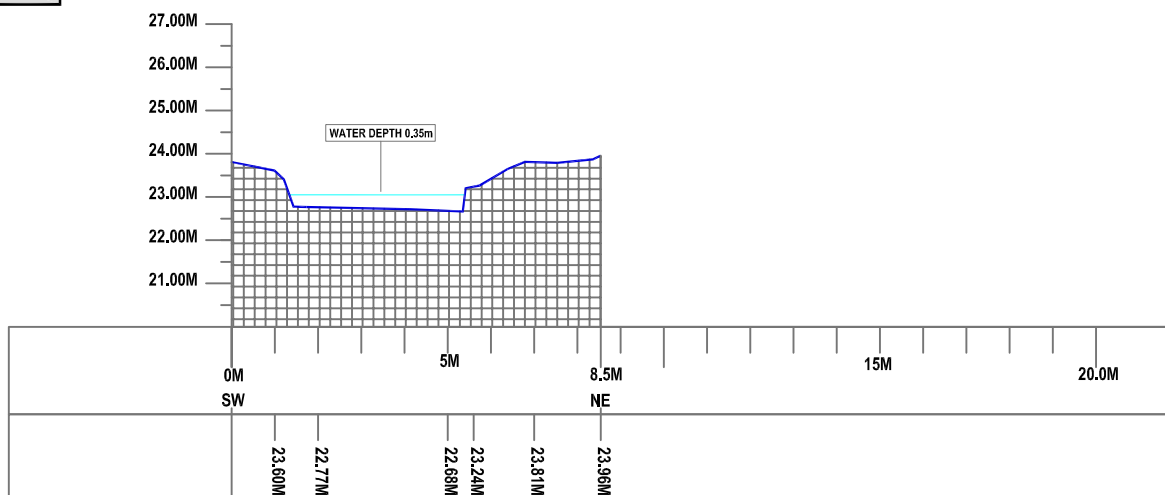
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29.04.16

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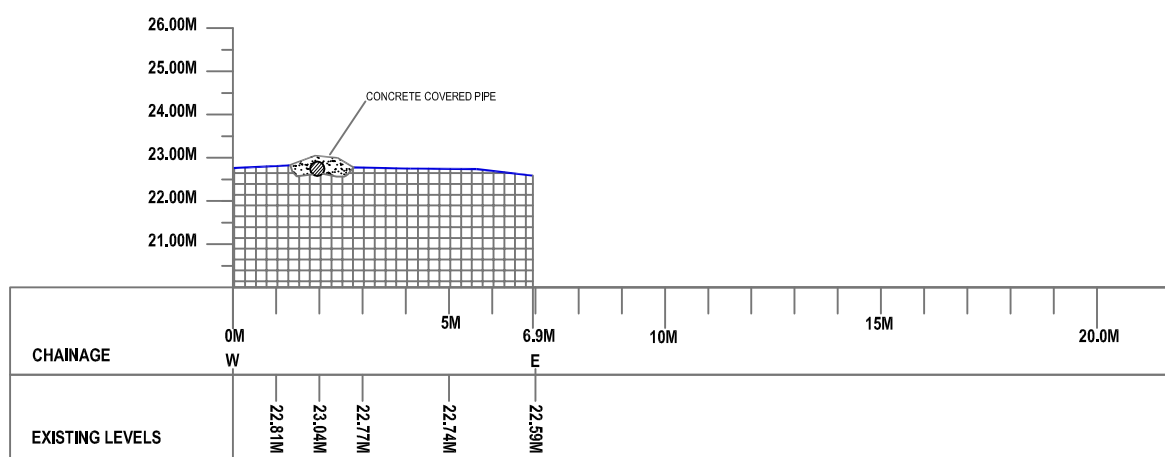
Drawing No.  
Figure 23



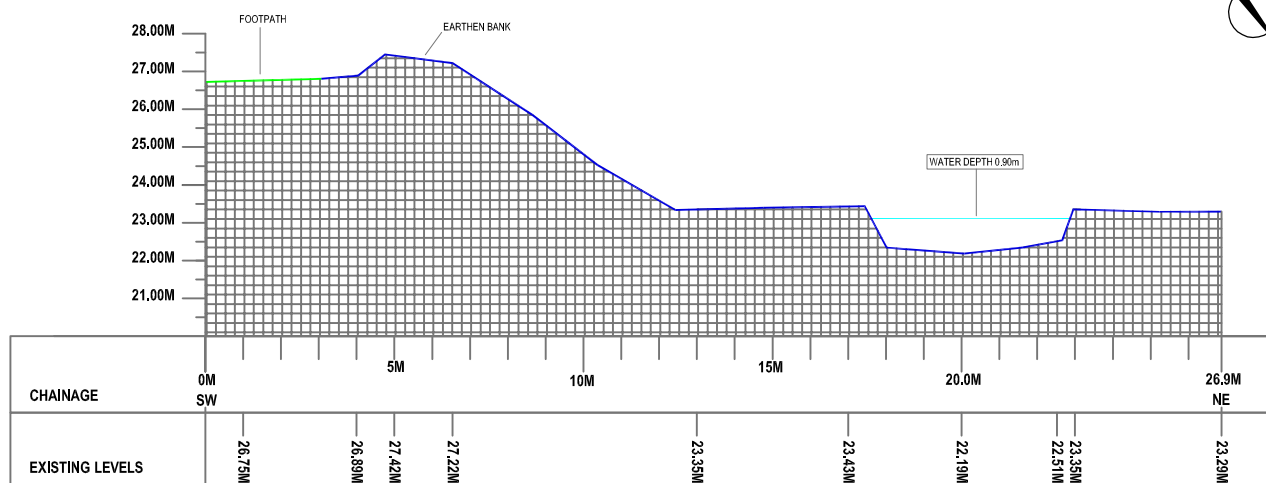
# PROFILE 13



# PROFILE 14



# PROFILE 15



**ADCO**

Client  
Ryan Hanley Consulting Engineers

Project  
River Bride (Blackpool) Drainage Scheme

Notes  
Profiles gathered using DGPS & Total Station Recording

Title  
Figure 24- River Profiles P13-P15.  
[See Figure 12-13 for profile locations].

A4

Job/Exc No.  
16D0044

Compiled by  
R.Bangerter

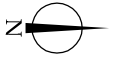
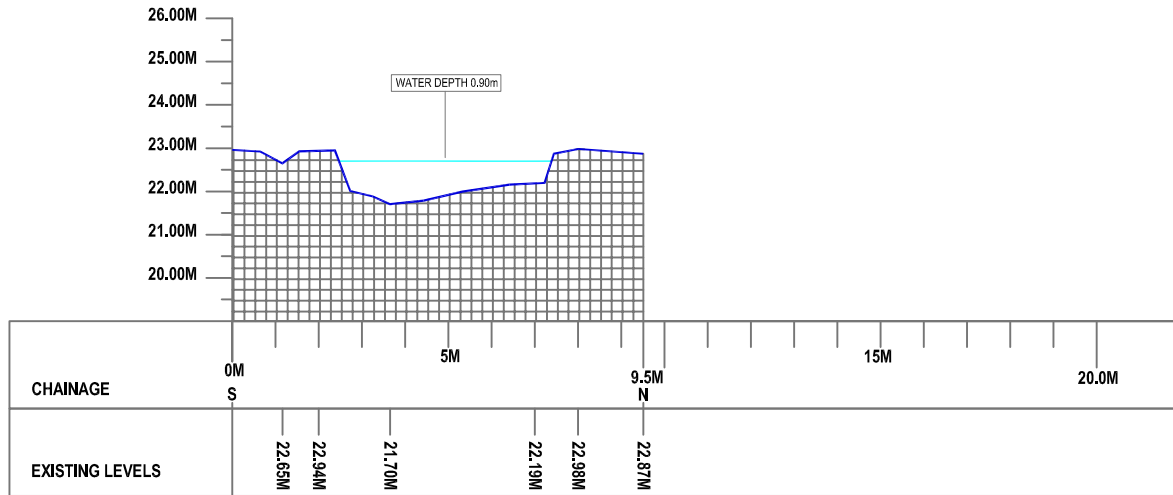
CAD reference  
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Date  
30.04.16

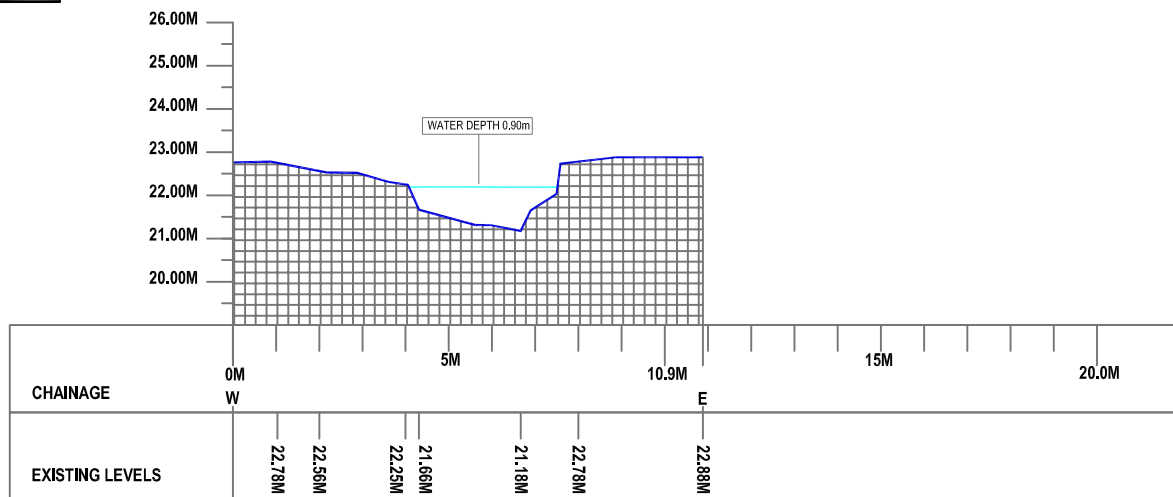
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Drawing No.  
Figure 24

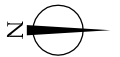
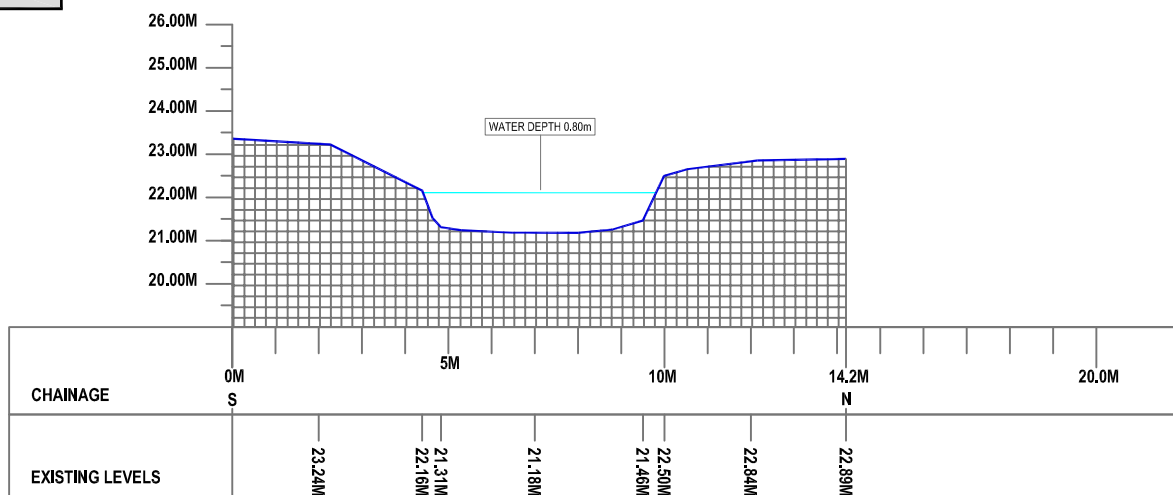
## PROFILE 16



## PROFILE 17



## PROFILE 18



**Client**  
Ryan Hanley Consulting Engineers

**Project**  
River Bride (Blackpool) Drainage Scheme

**Notes**  
Profiles gathered using DGPS & Total Station Recording

**Job/Exc No.**  
16D0044

**Compiled by**  
R.Bangerter

**CAD reference**  
RiverBrideFRS

**Title**  
Figure 25- River Profiles P16-P18.  
[See Figure 13 for profile locations].

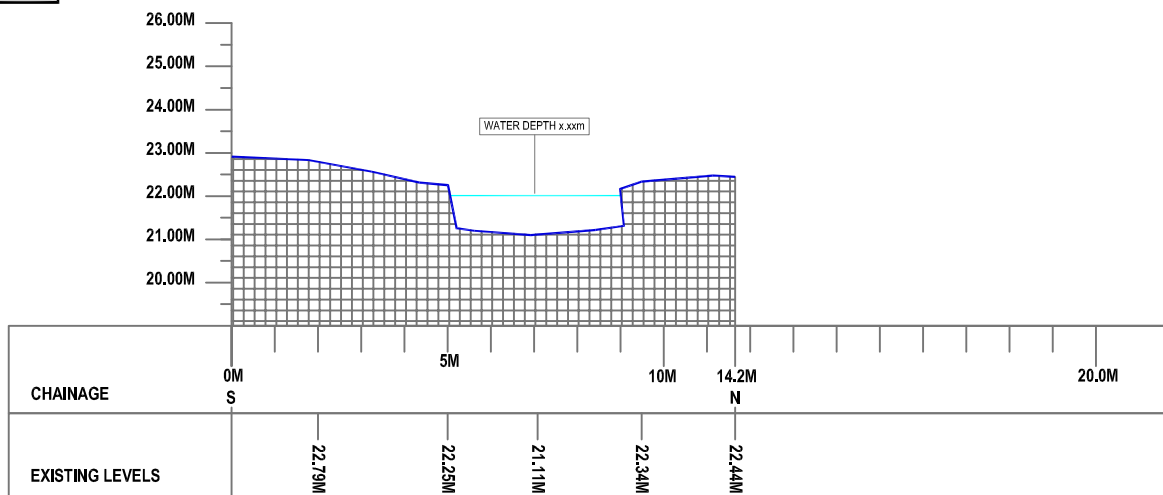
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**Date**  
30.04.16

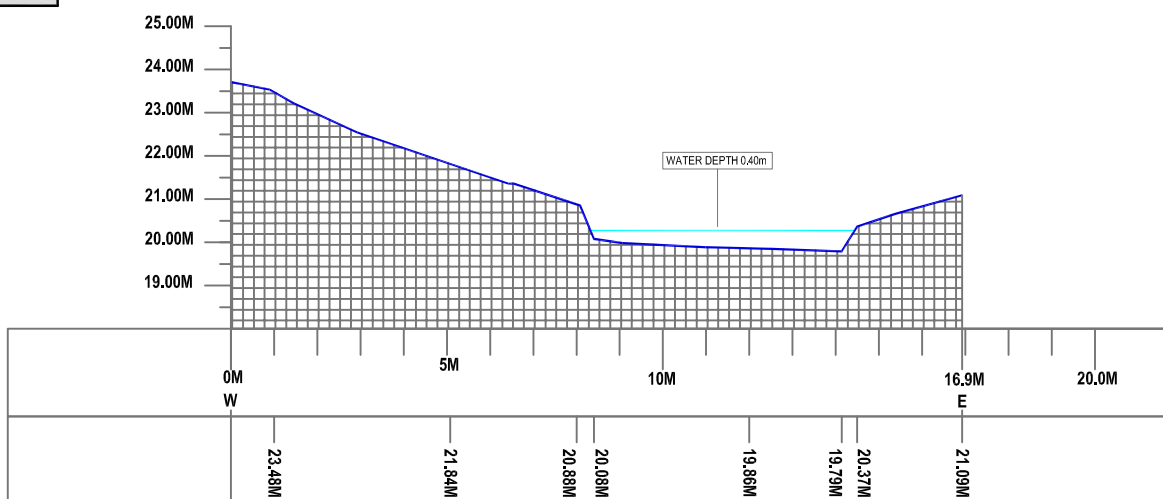
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Figure 25

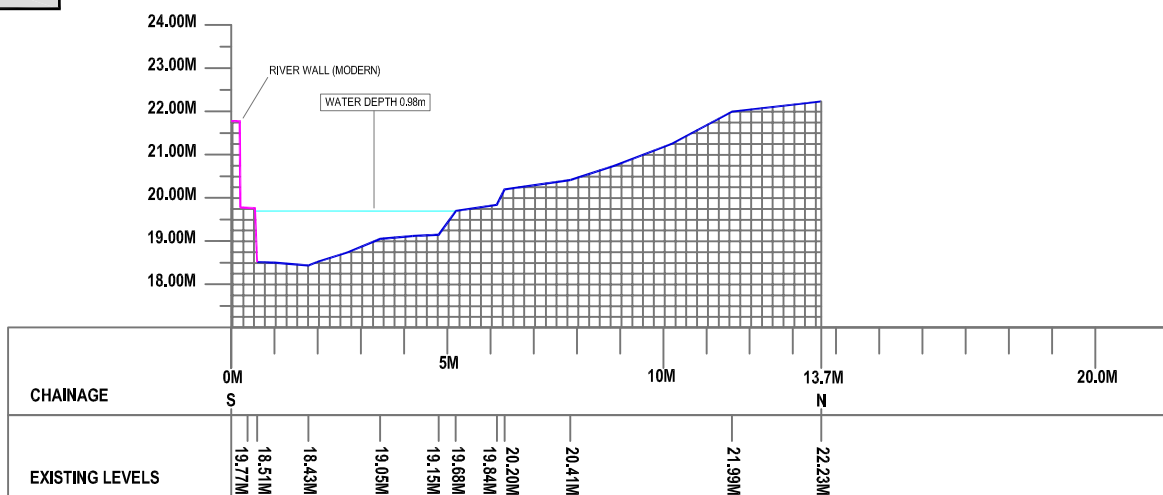
# PROFILE 19



# PROFILE 20



# PROFILE 21



Client  
Ryan Hanley Consulting Engineers

Notes  
Profiles gathered using DGPS & Total Station Recording

Title  
Figure 26- River Profiles P19-P21.  
[See Figures 13 for profile locations].

Project  
River Bride (Blackpool) Drainage Scheme

Job/Exc No.  
16D0044

Compiled by  
R.Bangerter

CAD reference  
RiverBrideFRS

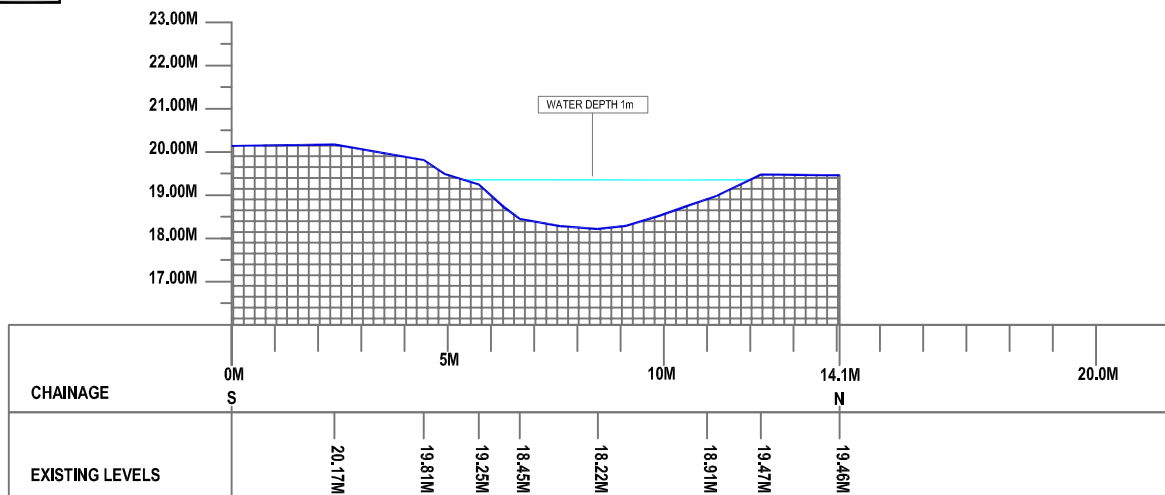
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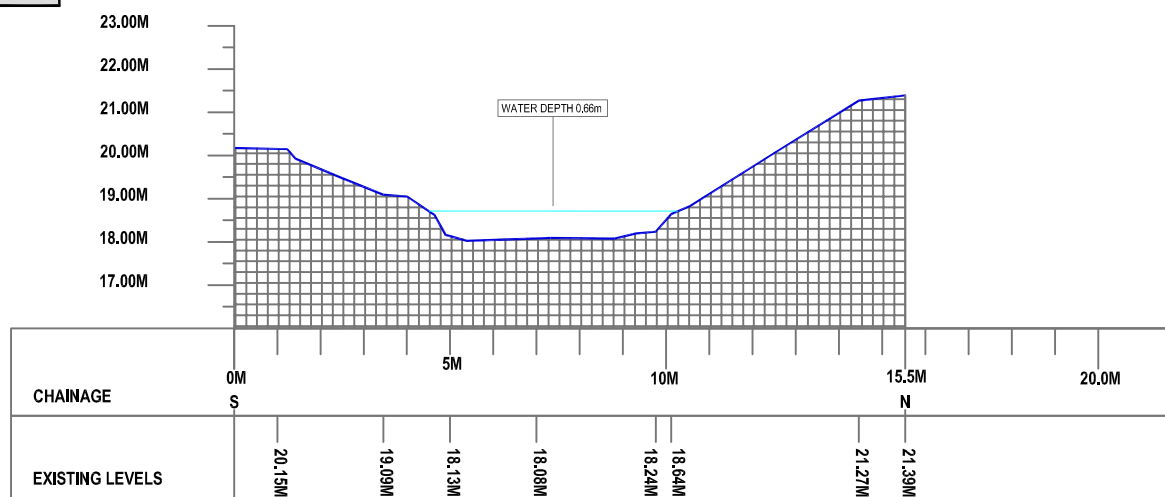
Drawing No.  
Figure 26

A4

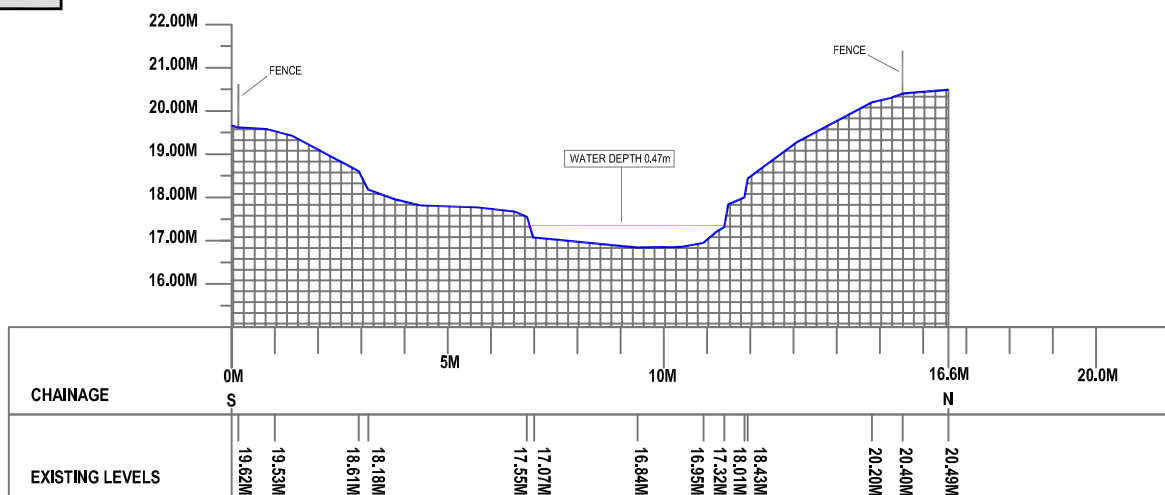
## PROFILE 22



## PROFILE 23



## PROFILE 24



# ADCO

Client  
Ryan Hanley Consulting Engineers

Project  
River Bride (Blackpool) Drainage Scheme

Notes  
Profiles gathered using DGPS & Total Station Recording

Title  
Figure 27- River Profiles P22-P24.  
[See Figure 14 for profile locations].

A4

Job/Exc No.  
16D0044

Compiled by  
R.Bangerter

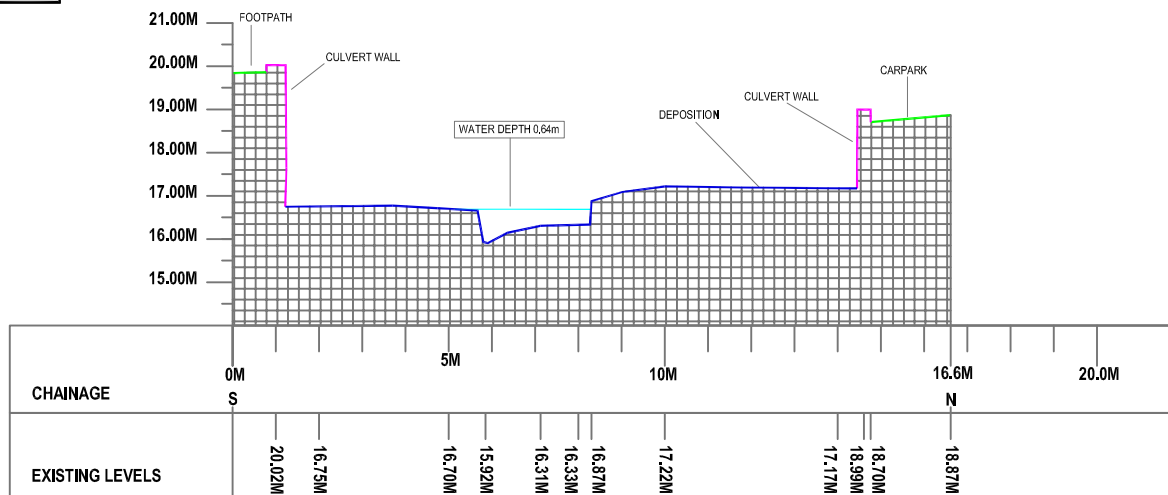
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Date  
02.05.16

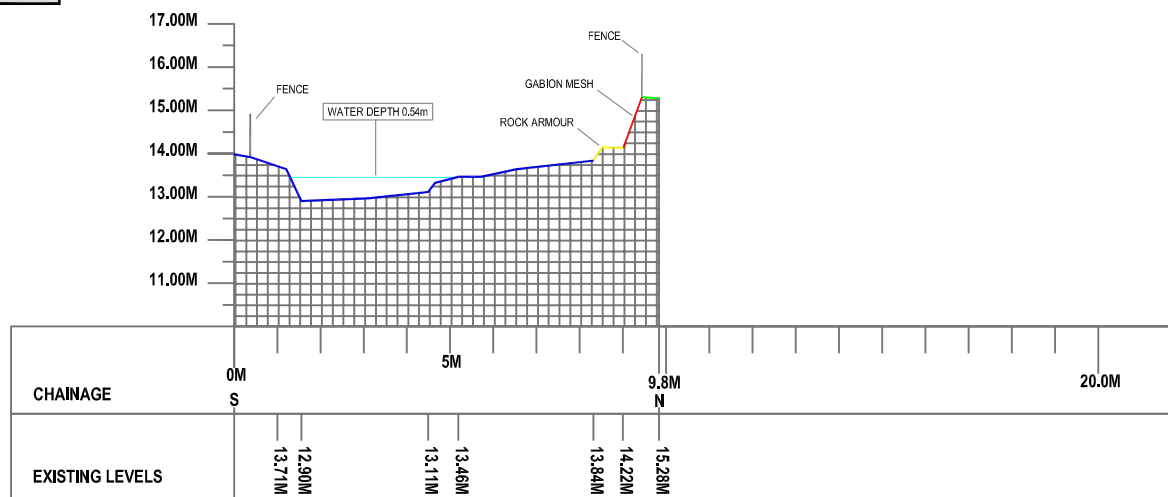
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Drawing No.  
Figure 27

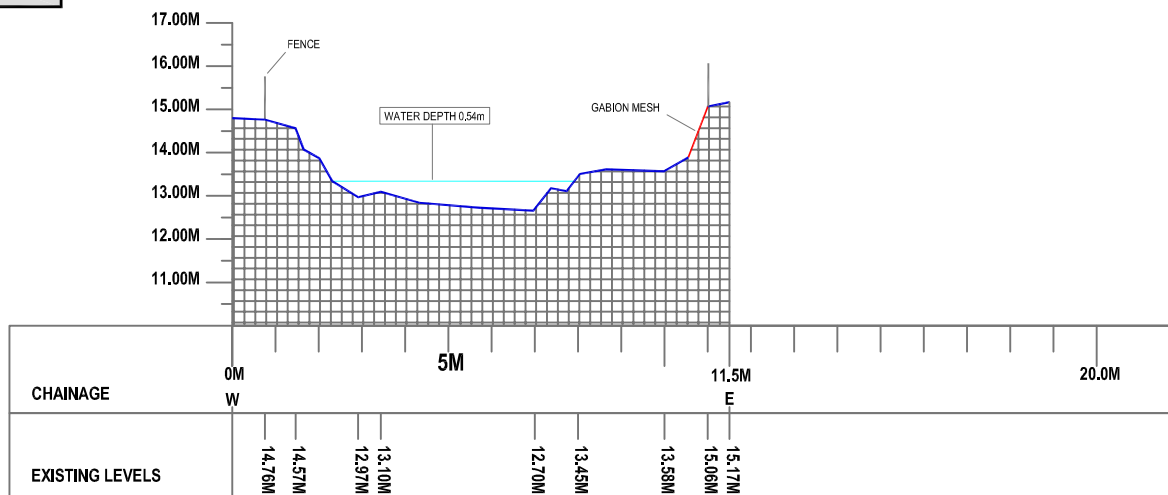
## PROFILE 25



## PROFILE 26



## PROFILE 27



Client  
Ryan Hanley Consulting Engineers

Project  
River Bride (Blackpool) Drainage Scheme

Notes  
Profiles gathered using DGPS & Total Station Recording

Title  
Figure 28- River Profiles P25-P27.  
[See Figure 14 & 16 for profile locations].

A4

Job/Exc No.  
16D0044

Compiled by  
R.Bangerter

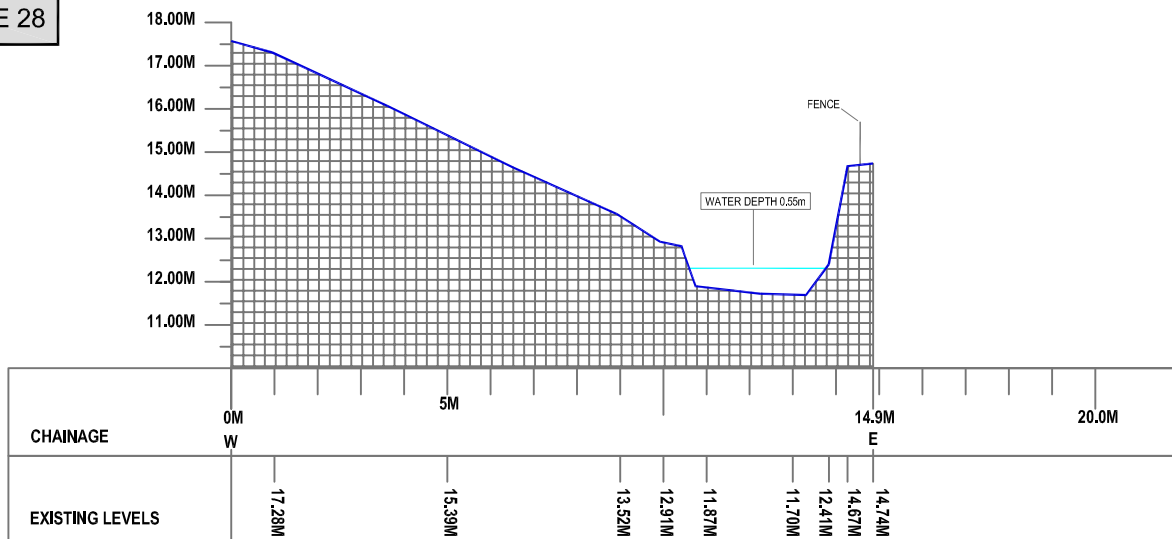
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Date  
02.05.16

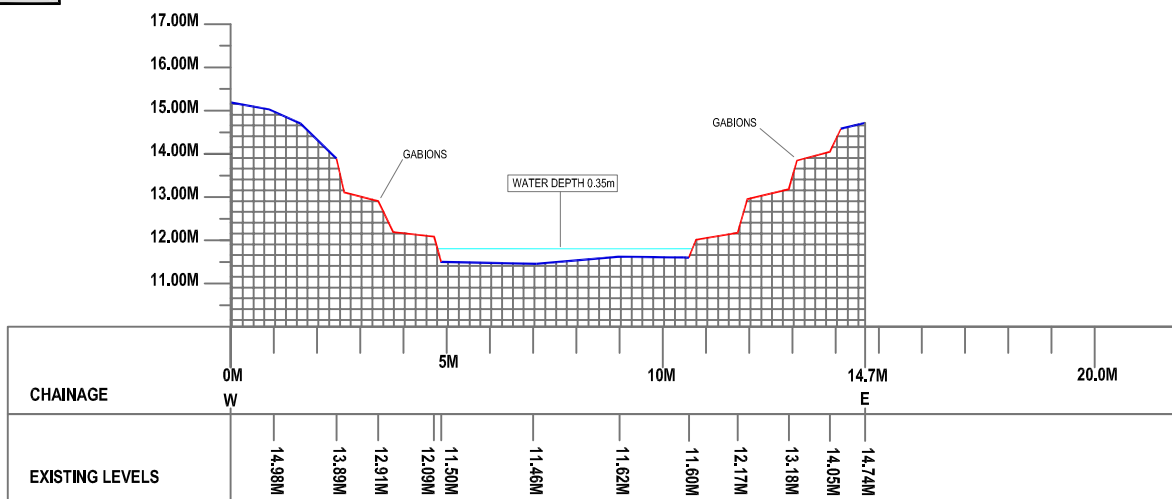
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Drawing No.  
Figure 28

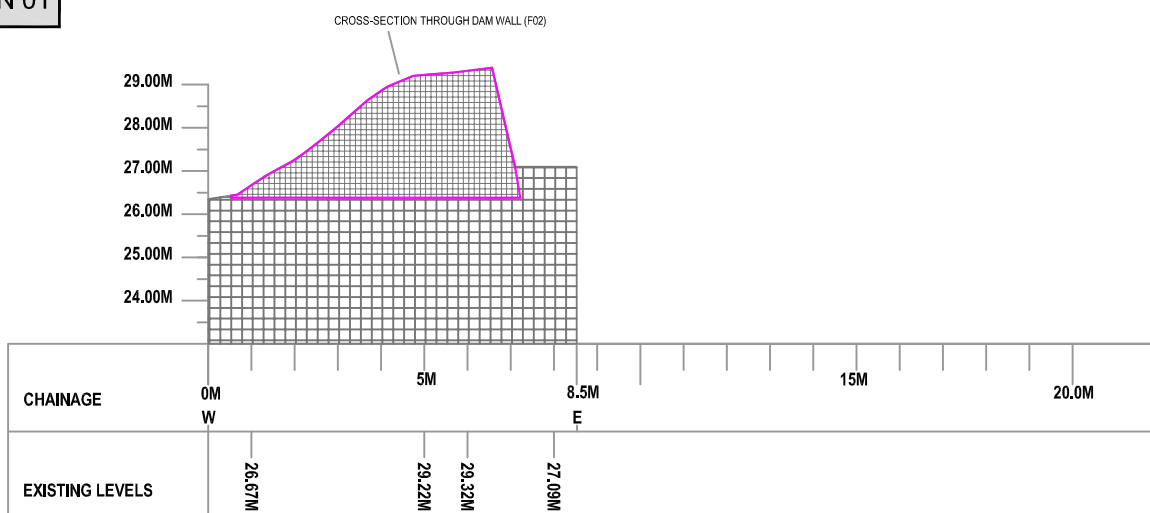
## PROFILE 28



## PROFILE 29



## SECTION 01



# ADCO

Client  
Ryan Hanley Consulting Engineers

Project  
River Bride (Blackpool) Drainage Scheme

Notes  
Profiles gathered using DGPS & Total Station Recording

Job/Exc No.  
16D0044

Compiled by  
R.Bangerter

CAD reference  
RiverBrideFRS

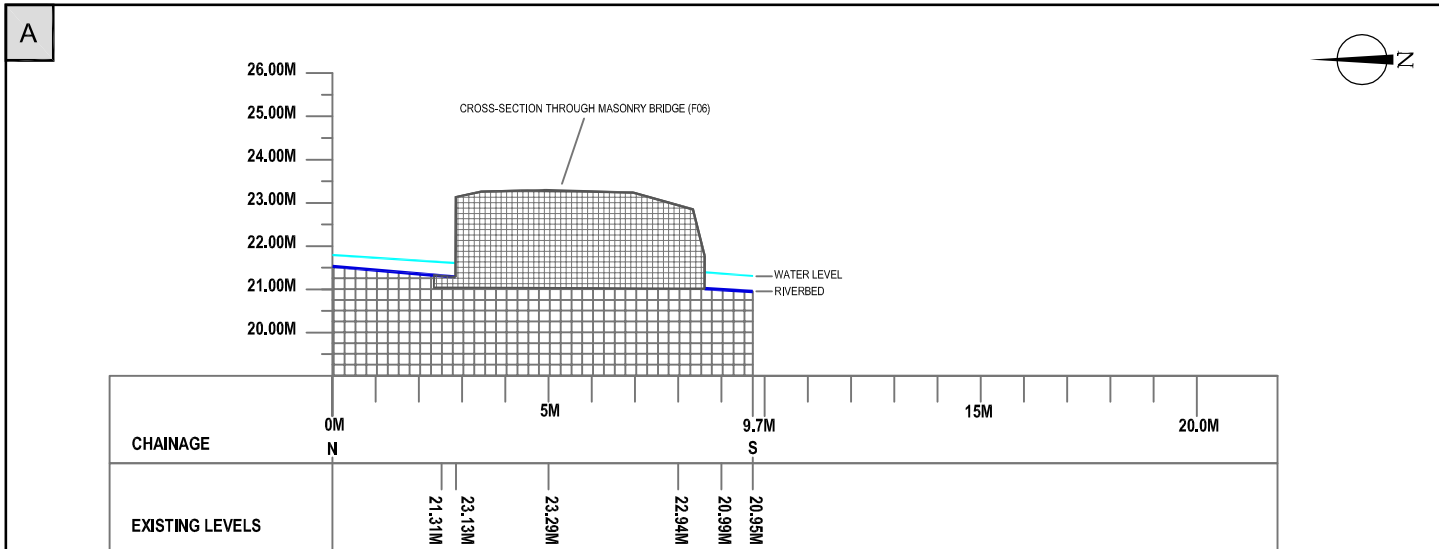
Title  
Figure 29- River Profiles P28-P29 and Section 01.  
[See Figure 16 for profile locations].  
[See Figure 11 for cross-section location].

A4

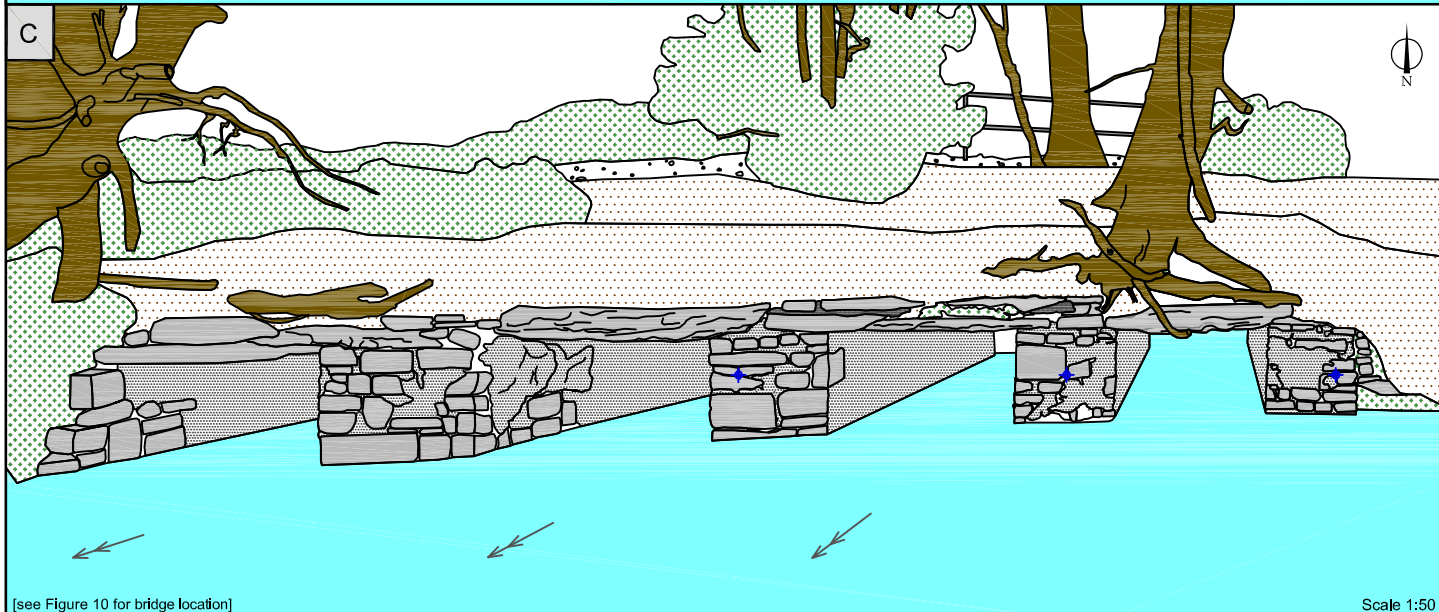
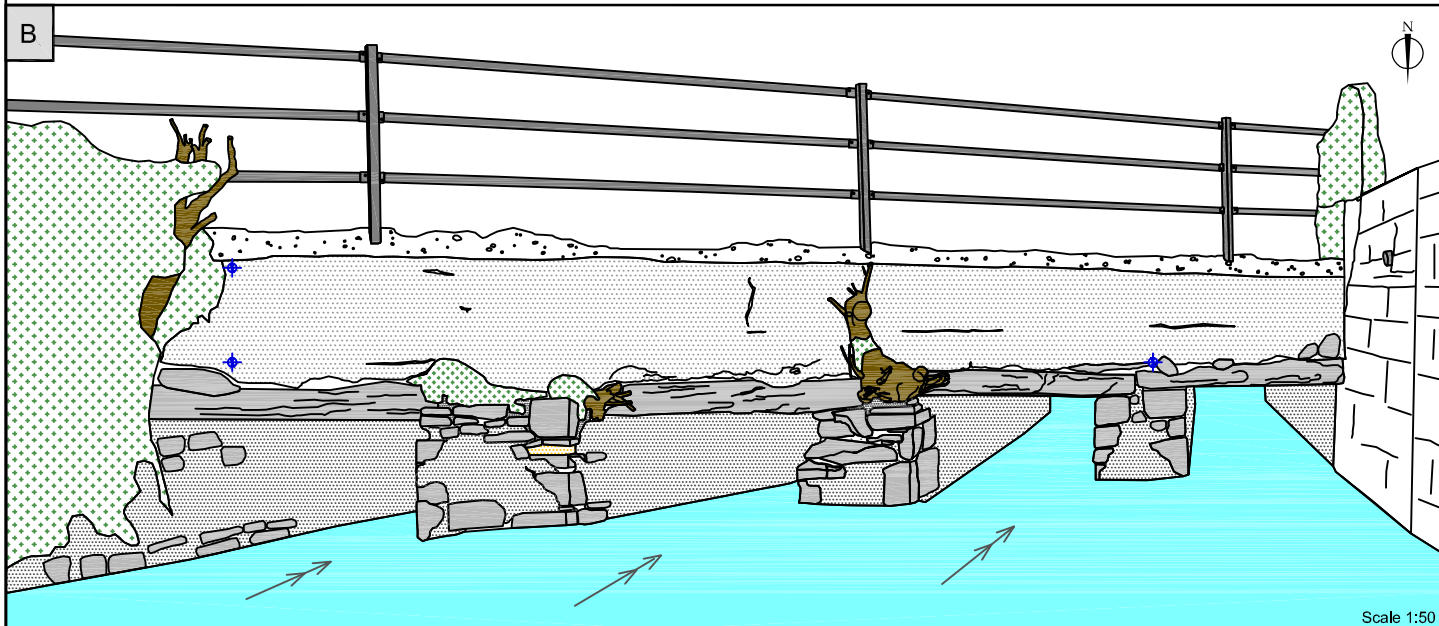
Date  
02.05.16

Scale  
1:175

Drawing No.  
Figure 29



Scale 1:175



[see Figure 10 for bridge location]

**ADCO**

Client  
Ryan Hanley Consulting Engineers

Project  
River Bride (Blackpool) Drainage Scheme

**KEY**

- Vegetation
- Earthen Bank
- Poured Mass Concrete
- Concrete Render/ Masonry
- Limestone Masonry
- Survey Datum Point

Note  
[do not scale]

Job/Exc No.  
16D0044

Compiled by  
R.Bangerter

CAD reference  
RiverBrideFRS

Title  
Figure 30-  
A) Cross-section through Masonry Access Bridge,  
Feature F07, at entrance to Kilnap Glen House.  
B) Perspective drawing showing upstream facade.  
C) Perspective drawing showing downstream facade.

A4

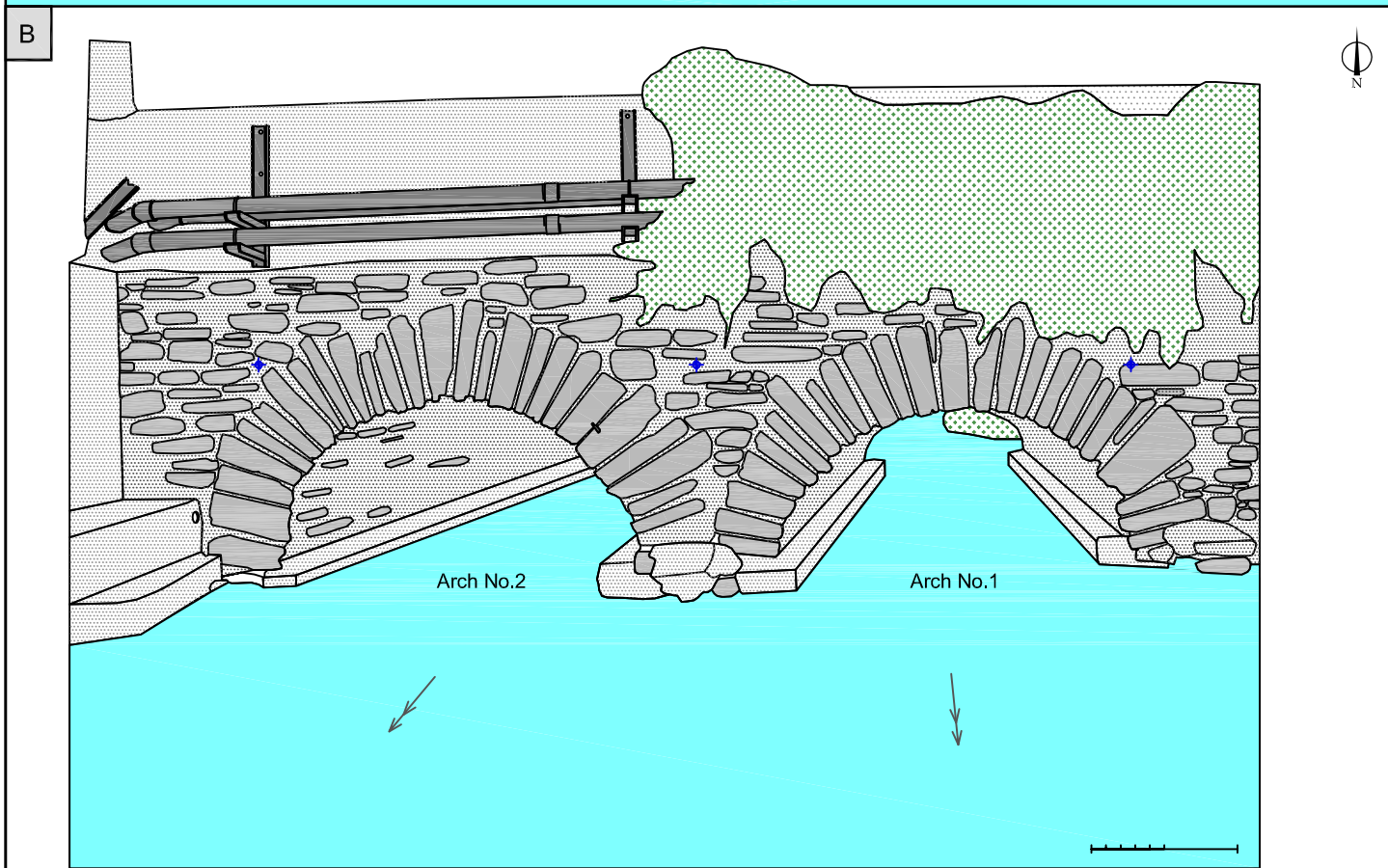
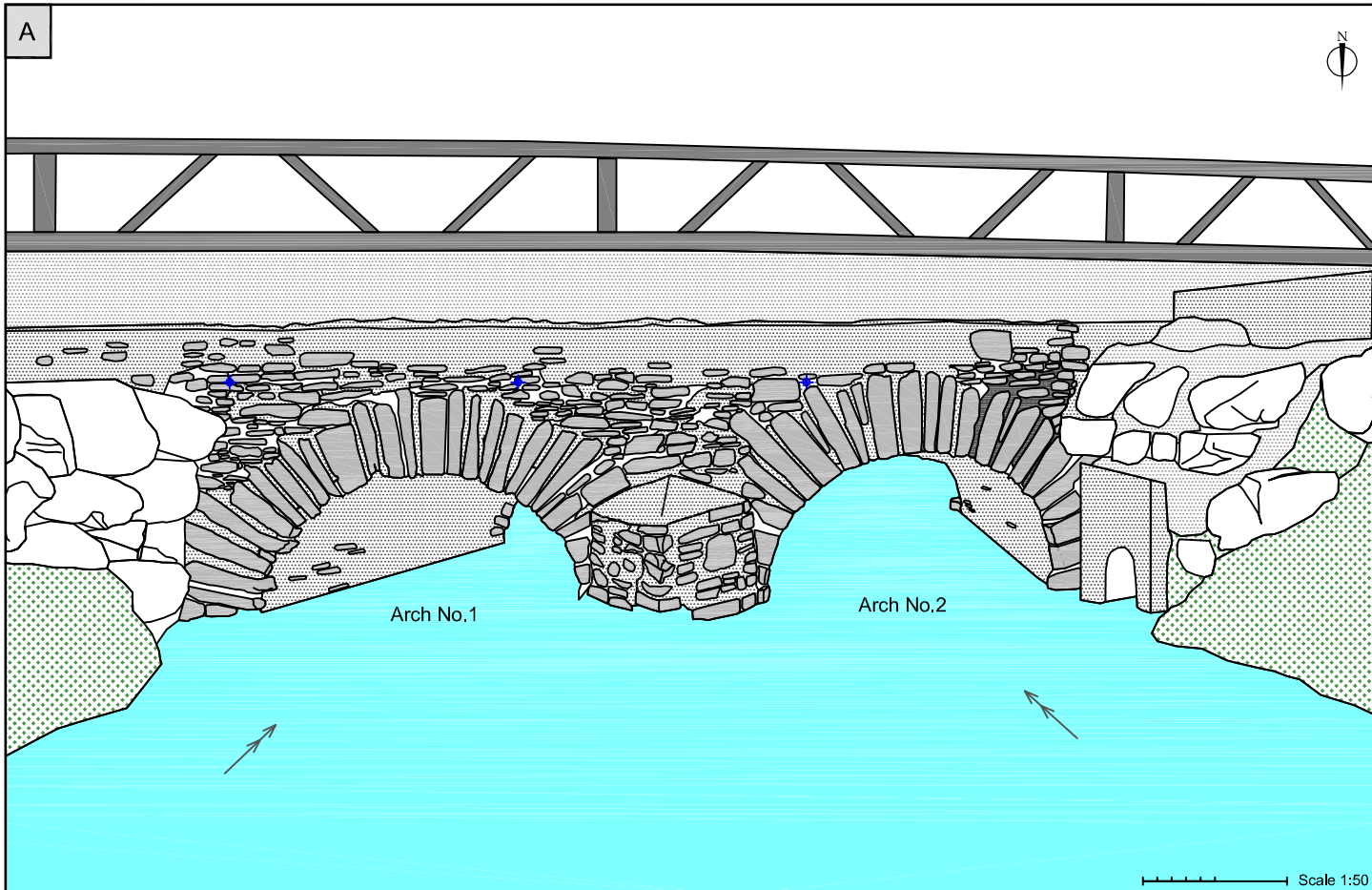
[FRS Interference Reference No. C08\_B01].

Date  
02.05.16

Scale  
1:175/ 1:50

Drawing No.  
Figure 30





**Client**  
Ryan Hanley Consulting Engineers

**Project**  
River Bride (Blackpool) Drainage Scheme

**KEY**

Vegetation

Earthen Bank

Survey Datum Point

Concrete Render/ Masonry

Limestone Masonry

[see Figure 12 for bridge location]

**Title**

Figure 31-

**A)** Perspective drawing showing upstream facade of Masonry Bridge at Fitz's Boreen (Feature F09).

**B)** Perspective drawing showing downstream facade of Masonry Bridge at Fitz's Boreen (Feature F09).

[FRS Interference Reference No. C06\_B01].

**A4**

**Date**  
02.05.16

**Scale**  
1:50

**Drawing No.**  
Figure 31

**Note**  
[do not scale]

**Job/Exc No.**  
16D0044

**Compiled by**  
R.Bangerter

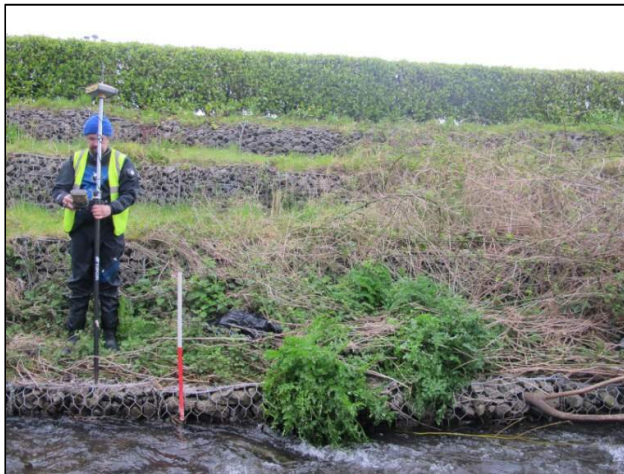
**CAD reference**  
RiverBrideFRS







**Plate 1:** Working shot of DGPS being used to record a river profile, River Area 3.



**Plate 2:** Working shot of DGPS being used to record a bank profile, River Area 3 (1m scale).



**Plate 3:** Northeast-facing view of Glenamought River at survey start point.



**Plate 4:** Example of material forming riverbed upstream of Kilnap Bridge.



**Plate 5:** Exposed section of bank structure located on north side of river, located on upstream side of Kilnap Bridge (1m scale).



**Plate 6:** Exposed section of bank structure located on south side of river, located on downstream side of Kilnap Bridge (1m scale).





**Plate 7:** Clay bank delineating the south side of the Glenamought River downstream of Kilnap Bridge (1m scale).



**Plate 8:** Southwest-view of the river between Kilnap Bridge and Kilnap Viaduct, note use of rock armour on south side of channel (1m scale).



**Plate 9:** Rock armour incorporating masonry from Kilnap Viaduct (1m scale).



**Plate 10:** Southwest-facing view of river channel immediately upstream of Kilnap Viaduct, note channel delineated by stone-filled gabions (1m scale).



**Plate 11:** Southwest-facing view of river channel beneath of Kilnap Viaduct, note use of delineated by stone-filled gabions (1m scale).



**Plate 12:** Southwest-facing view of river channel downstream of Kilnap Viaduct (1m scale).





**Plate 13:** Masonry pieces, CS12, located within the river channel; see Figure 11 for location (1m scale).



**Plate 14:** Masonry piece, CS11, located on the south side of the river channel; see Figure 11 for location (15cm scale).



**Plate 15:** Northwest-facing view of masonry, CS14, located on the north side of channel; see Figure 11 for location (1m scale).



**Plate 16:** Detail shot of incised letter 'T' on masonry piece CS14 (15cm scale).



**Plate 17:** North-facing view of the river from a point adjacent to Kilnap Glan House, note small flood embankment on east side of river (1m scale).



**Plate 18:** Example of riverbed composition upstream of Feature F05 (Weir).





**Plate 19:** South-facing view of weir feature F05 (1m scale).



**Plate 20:** North-facing view of weir feature F05 (1m scale).

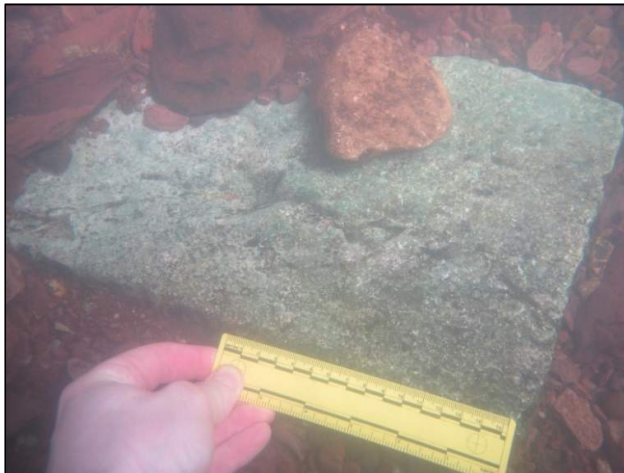


**Plate 21:** Northeast-facing view of stepped water feature located short distance downstream of Feature F05 (Weir).





**Plate 22:** Northwest-facing view of exposed sections of bedrock located on the north side of the river (1m scale).



**Plate 23:** Example of limestone masonry buried within the riverbed deposits (15cm scale).



**Plate 24:** Limestone Masonry fragment recovered from the riverbed, downstream of Feature F05 (15cm scale).



**Plate 25:** Southwest-facing view of river, downstream of Kilnap Glen House (1m scale).



**Plate 26:** South-facing view of river channel downstream of Feature F04B (River Walling).



**Plate 27:** South-facing view of river channel on its approach to the access bridge to Kilnap Glen House (Feature F07).





**Plate 28:** River channel on upstream of Feature F07, note concrete retaining wall on west side of channel (1m scale).



**Plate 29:** View of Glenamought River on upstream side of Kilnap Glen House access bridge (Feature F07).



**Plate 30:** Example of riverbed composition on downstream side of Kilnap Glen House access bridge (Feature F07).



**Plate 31:** South-facing view of overgrown millrace (Feature F06) which conjoins with the Glenamought River at the entrance to the grounds of Kilnap Glen House.



**Plate 32:** North-facing view of the river channel on the downstream side of Kilnap Glen House access bridge (Feature F07).



**Plate 33:** Example of riverbed composition across area of deposition located downstream of Feature F07 (15cm scale).





**Plate 34:** Example of riverbed composition across area of deposition located downstream of Feature F07 (15cm scale).



**Plate 35:** South-facing view of river channel as it flows adjacent to the N20 access round-a-bout (1m scale).



**Plate 36:** Upstream façade of modern culvert providing access to the North Point Business Park (1m scale).



**Plate 37:** Downstream façade of modern culvert providing access to the North Point Business Park (1m scale).



**Plate 38:** East-facing view along Rathpeacon stream at western limit of visible watercourse (1m scale).



**Plate 39:** East-facing view along Rathpeacon stream at eastern limit of visible watercourse.





**Plate 40:** Concrete Culvert and deflector located halfway along visible extent of Rathpeacon Stream (1m scale).



**Plate 41:** West-facing view of River Bride adjacent to Rose Cottage (1m scale).



**Plate 42:** East-facing view of River Bride adjacent to Rose Cottage (1m scale).



**Plate 43:** Concrete culvert that channels river-flow beneath the N20 roadway and associated slip-roads (1m scale).



**Plate 44:** Point at which the River Bride emerges from a concrete culvert on the east side of the N20 roadway to conjoin with the Glenamought River (1m scale).



**Plate 45:** Southeast-facing view of River Bride as its flows between the North Point Business Park and the N20 roadway (1m scale).





**Plate 46:** Example shot showing composition of north bank the River Bride (1m scale).



**Plate 47:** South-east-facing view of the River Bride, c 150m upstream from the Commons Inn Hotel (1m scale).



**Plate 48:** Area of deposition on inner side of river meander (1m scales); see Figure 12 for location.



**Plate 49:** View of River Bride as it splits to flow around a small island on, located on the upstream side of the Commons Inn Hotel (1m scale).

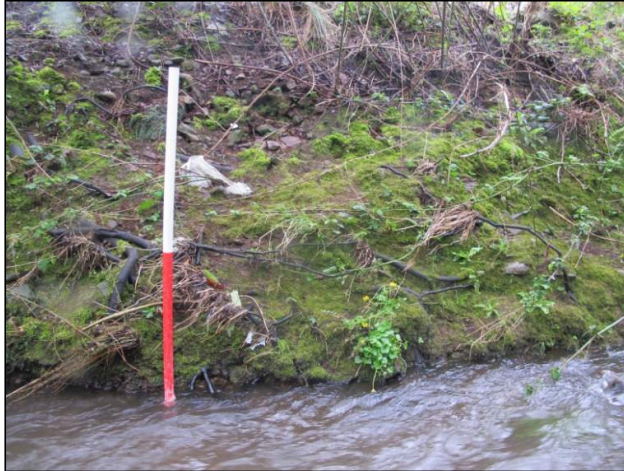


**Plate 50:** Southeast-facing view of the River Bride as it flows past the Commons Inn Hotel (1m scale).



**Plate 51:** Southeast-facing view of the River Bride as it flows past the Commons Inn Hotel Car Park (1m scale).





**Plate 52:** Example of riverbank composition on the south side of the river channel as it flows past the Commons Inn Hotel (1m scale).



**Plate 53:** Example of riverbank composition on the north side of the river channel as it flows past the Commons Inn Hotel (1m scale).



**Plate 54:** View of river channel as short distance downstream of the Commons Inn Hotel Carpark (1m scale).



**Plate 55:** Piece of limestone Masonry (CS16) located on southern bank of the River Bride (1m scale); see Figure 13 for location.



**Plate 56:** South-facing view of area of rapids located along the River Bride (1m scale); see Figure 13 for location.



**Plate 57:** East-facing view of Fairhill Stream at its confluence with the River Bride (1m scale).





**Plate 58:** Modern river-walling delineating south side of the river, placed to protect adjacent dwellings (1m scale).



**Plate 59:** Modern river-walling delineating south side of the river, placed to protect adjacent dwellings (1m scale).



**Plate 60:** Southeast-facing view of River Bride as it flows adjacent to the commons Road (1m scale).



**Plate 61:** Example of eroded bank structure on north side of the River Bride as it flows adjacent to the Commons Road (1m scale).



**Plate 62:** South-facing view of deposition on inner side of river meander (1m scales); see Figure 14 for location.



**Plate 63:** Southeast-facing view of River Bride as it flows past Noel Deasy Cars (1m scale).





**Plate 64:** Southeast-facing view of River Bride as it flows past Noel Deasy Cars and Topaz Filling Station (1m scale).



**Plate 65:** Rock-armour placed to protect the adjacent filling station (1m scale).



**Plate 66:** Concrete encased pipe that extends across the river channel (1m scale); see Figure 14 for location.



**Plate 67:** Concrete culvert located on downstream side of adjacent filling station (1m scale).



**Plate 68:** Upstream side of concrete culvert placed to accommodate access to McDonald's Restaurant (1m scale).



**Plate 69:** Upstream view of Masonry Bridge, Feature F09, which accommodates Fitz's Boreen (1m scale); see Figure 14 for location.





**Plate 70:** Downstream side of concrete culvert placed to accommodate access to McDonald's Restaurant (1m scale).



**Plate 71:** Example of riverbed composition, upstream of Masonry Bridge at Fitz's Boreen (Feature F09).



**Plate 72:** Southeast-facing view of river channel on downstream side of Masonry Bridge Feature F09 (1m scale).



**Plate 73:** North-facing view of River Bride showing the height of the concrete retaining walls that delineate the channel as it flows through the Dulux Factory site (1m scale).



**Plate 74:** Modern bridge culvert providing vehicular access between factory units (first of two such culverts)



**Plate 75:** Modern bridge culvert providing vehicular access between factory units (second of two such culverts).



**Plate 76:** Example of riverbed composition as the watercourse flows through the Dulux Factory site (1m scale); see Figure 14 for location.



**Plate 77:** Section of exposed bedrock located beneath the first of two bridge culverts with the Dulux Factory site (1m scale); see Figure 14 for location.



**Plate 78:** Example shot showing grass-covered areas of deposition along the river channel (1m scale).





**Plate 79:** Example shot showing grass-covered areas of deposition along the river channel (1m scale).



**Plate 80:** Example shot showing grass-covered areas of deposition along the river channel (1m scale).



**Plate 81:** Example shot showing internal composition of the deposition areas located in the river channel as it flow through the Dulux factory site.



**Plate 82:** Southeast-facing view of river channel as it approaches a modern weir located at a point c. 50m from the most southerly limit of the Dulux factory complex (1m scale).



**Plate 83:** View of modern weir and disused pedestrian footbridge located within the Dulux Factory complex; see Figure 15 for location.



**Plate 84:** Northwest-facing view of river channel downstream of modern weir located within the Dulux Factory complex.





**Plate 85:** River channel on upstream side of the sunbeam Industrial Estate (1m scale).



**Plate 86:** Upstream side of 70m long concrete culvert which accommodates river-flow past the sunbeam Industrial Estate (1m scale).



**Plate 87:** View from inside the culvert showing box-section concrete used in its construction.





**Plate 88:** Southeast-facing view of the exposed section of river channel running between two modern culverts located to the north of the Sunbeam Industrial Estate (1m scale).



**Plate 89:** Internal shot from 9m-long section of modern culvert that provides access to the Sunbeam Industrial Estate.



**Plate 90:** North-facing view of river channel on downstream of modern culvert that accommodates access to the Sunbeam Industrial Estate.



**Plate 91:** South-facing view of the River Bride as it flows through parkland adjacent to the Blackpool Retail Park (1m scale).



**Plate 92:** North-facing view of River Bride, as it flows adjacent to the Blackpool Retail Park, showing the artificial nature of the attendant bank structures.



**Plate 93:** View of river on the upstream side of a foot-bridge crossing the channel within the parkland area (1m scale).