Herefordshire Council

WORKS INFORMATION PACK

BB0376 Adforton Bridge

70077103-WSP-SBR-WI-RP-CB-00201
MARCH 2021

CONFIDENTIAL

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TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO. 70077103

OUR REF. NO. 70077103-WSP-SBR-WI-RP-CB-00201

DATE: MARCH 2021

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	Client Review			
Date	24/03/2021			
Prepared by	Ben Parr			
Signature				
Checked by	Toby Walker			
Signature				
Authorised by	Toby Walker			
Signature				
Project number	70077103			
Report number	70077103-WSP-SBR-WI-RP-CB-00201			
File reference				

CONTENTS

TABLES

FIGURES

APPENDICES

1 WORKS INFORMATION

1.1 WORKS DESCRIPTION

For details set out within the works description please refer to drawing number 70077103-WSP-SBR-SWI-DE-CB-00202 Proposed General Arrangement located within Appendix A.

TEMPORARY / PRELIMINARY WORKS

Road Closure / Welfare Facilities:

The works will involve the establishment of a road closure with accompanying traffic management signs, in accordance with Chapter 8. Once the traffic management is in place, the welfare facilities and site cabins will be erected for the duration of the works.

Footbridge / Working Platform:

Preliminary works will be carried out prior to the saddle strengthening, which include installing a temporary pedestrian footbridge (if required). The temporary footbridge is to be confirmed by the Principal Contractor prior to commencing work. Any platforms erected are to be above the existing barrel intrados, to ensure the hydraulic capacity is maintained.

Arch Supports:

Temporary supporting of the arch barrel will be required where possible, however, due to low level soffit, this may not be possible.

The spandrel wall will require propping to ensure the stability during excavation and concrete pour operations.

All temporary supports to be designed by the Contractor.

Ecology / Ordinary Watercourse Consent:

To meet Ordinary Watercourse Consent requirements, a sheet system should be installed during placement of wet concrete, however due to difficult access beneath the bridge, this may not be possible, therefore, all gaps on the extrados are to be sealed to prevent any concrete entering the watercourse. A temporary environmental pollution boom will be installed downstream of the structure and monitored during high flows.

An ecologist is to review the potential of nesting birds prior to commencement of work. These should be confirmed prior to the construction works start date. If instream working is planned between the 1st October and 31st May, consultation will be required. No working between 1st March and 31st August unless searches for nesting birds are undertaken immediately prior to works commencing. Otters will occasionally use the watercourse and dormice are present approximately 500m away, but neither species are considered a constraint on the works.

The works may proceed under good practices for otter and dormice but Reasonable Avoidance Measures (RAMs) will be required informing by a detailed method of working supplied by the Contractor.

Services:

All services are to be positively identified, located, and marked out. Known services include British Telecommunication (BT) (underground and overhead), Western Power Distribution (WPD) (underground and overhead), and Welsh Water (WW) (underground). Additional consultation and liaison will be required with BT, WPD and WW to ascertain the exact location of the services, the proposed temporary supporting/or diversion routes for underground services, the requirements for diverting overhead cables and cost estimates prior to commencement of any construction works.

Pointing:

Raking out any loose pointing and then repointing of the spandrel walls, parapet and downstream arch barrel intrados (approx. 1m from downstream exit), will be carried out prior to the main strengthening works.

MAIN WORKS (SADDLE STRENGTHENING)

Once the central island, footpath and surfacing material has been removed, the location of the upstream spandrel wall will need to be positively located, the fill material is to be excavated in a controlled, balanced sequence, either side of the arch barrel down to the top of the abutments, with a 250mm maximum level difference either side, at any time **(Significant Risk Identified).**

All excavations are to be benched (stepped) back at a safe angle, to provide a safe working zone. Once complete, the exposed abutments and arch barrel are to be inspected by the supervising engineer for suitability. Excavation may be required behind the existing abutments, further than the proposed excavation shown on the sequence of excavation drawing, to provide better founding for the proposed concrete saddle. This will need to be carried out in 'hit and miss' bays, maximum 1m wide and backfilled with ST2 concrete, to ensure no movement of the abutments and therefore, prevent arch collapse **(Significant Risk Identified).**

Once the excavation works are complete, the extrados of the arch barrel is to be reviewed, and mortar pointing undertaken where gaps are found. Large gaps will require stone and mortar. Ancon Staifix starter wall ties (or similar approved) are to be installed into the inside face of the exposed spandrel walls, at 250mm by 250mm horizontal/vertical spacing, using Fosroc Lokfix S40 polyester resin anchor grout (or similar approved).

The A393 mesh will then be laid over the arch extrados and top of proposed saddle, with minimum cover (Cmin) 40mm, and nominal cover (Cnom) 50mm (Cnom = Cmin + $\triangle$c (10mm)). The cover may be increased due to the irregularities of the stone extrados. The in-situ concrete saddle will then be cast, using lightweight concrete grade LC 32/35. This will follow a controlled balanced sequence of works, with maximum lifts of 250mm and a maximum difference in level either side of the arch of 250mm **(Significant Risk Identified).** 250mm Level lines will be marked out on the inside face of the spandrel wall for concrete pour level guide.

25mm chamfers will be formed on all the horizontal saddle edges, with a top U4 surface finish. The thickness of the saddle over the extrados, shall be 120mm.

Once the concrete has cured, the exposed concrete of the saddle will be prepped, and waterproofed with a spray applied HE/BBA approved waterproofing system over the top and sides where possible.

20mm thick hot rolled asphalt (HRA) bridge protection course is to be laid over the waterproofing and then a fluorescent orange indicator mesh (or similar approved) will be laid over the top.

New kerbs are to be installed where required, resurfacing will then be carried out to the carriageway and footpath, along with a new kerbed central island. The road will then be reopened. The environmental spill boom will then be removed.

The possible suggested sequence of construction is: -

Temporary / Preliminary Works:

- Set up advanced notice signing (2 weeks prior to works);
- Set up of traffic management, road closure and accompanying signs;
- Ecological walkover prior to works;
- Set up site compound and offices;
- Erect temporary footbridge (if required);
- Erect temporary working platforms;
- Install temporary propping system – Spandrel Walls;
- Review and abide by Ordinary Watercourse Consent and RAMS within the Ecological Report;
- Install temporary environmental pollution boom;
- Positively identify, and mark out all services (hand dig);
- Temporary support / divert services (if required);
- Goal post to be erected to all overhead services (if required);
- Rake out and repoint loose areas of mortar located at the spandrel, parapet, and downstream section; and,
- Point areas of missing mortar where easily reachable.

Main Works (Saddle Strengthening):

- Excavate arch to expose arch barrel, excavation undertaken following a controlled balanced sequence of works;
- Point gaps within exposed arch barrel;
- Drill and fix Ancon Staifix Starter Ties (or similar approved);
- Excavate behind abutment (if required) in 1m wide ‘Hit and Miss’ Bays – depth 250mm;
- Install A393 mesh reinforcement;
- Cast lightweight LC32/35 concrete in controlled sequence. Installed in lifts, max 250mm difference either side;
- Apply HE/BBA approved waterproofing system;
- Apply fluorescent orange indicator mesh or similar approved over 20mm thick HRA;
- Install new HB3 kerbs with ST2 concrete backing;
- Re-lay carriageway and footpath surfacing;
- Construction new central island with bollards;
- Remove environmental spill boom;
- Remove traffic management and site welfare; and,
- Open road to public.

The above possible suggested sequence of works is a potential sequence, and the overall final sequence of works is down to the Contractor and identified within their Construction Phase Plan.

1.2 DRAWINGS

The list of drawings below can be found in Appendix A.

Number	Title	Originated from	Rev/Date
70077103-WSP-SBR-SWI-DE-CB-00201	Existing General Arrangement	WSP	
70077103-WSP-SBR-SWI-DE-CB-00202	Proposed General Arrangement	WSP	

1.3 SPECIFICATION

Refer to Specification in Appendix B.

1.4 SITE SPECIFIC REQUIREMENTS

The following site-specific requirements are to be adhered to during the works: -

1. The burning of materials on site is not permitted;
2. Any works left unfinished, for any period of time, shall be left in a safe manner;
3. Road closure and traffic management to be in accordance with the Traffic Signs Manual (Chapter 8) and maintained throughout the closures;
4. Provide adequate signage for the direction of materials, plant and labour to the work site;
5. Waste materials shall not be stored on site; and,
6. Location of all buried services to be positively located, identified, and marked out prior to the commencement of work and diverted/protected.

2 BILL OF QUANTITIES

2.1 BILL OF QUANTITIES

Based on 8 total weeks work duration

Operation	Description	Quantity	Unit
	SERIES 100 - PRELIMINARIES		
	Temporary Accommodation		
	Erection of the offices and messes	1	Occ
	Servicing of offices and messes	40	op.day
	Dismantling of offices and messes	1	Occ
	Information Board Type 3A	2	no.
	Additional diversion advisory sign	20	no.
	Temporary closure, description, of road with provision of up to 8 no. diversion signs in accordance with Appendix 1/18	1	Occ
	Maintenance of temporary closure of road	40	op.day
	SERIES 200 - SITE CLEARANCE		
	Take up and dispose off site Concrete Kerb and alike	17	m
	Take up and dispose of hazard marker bollards	2	No.
	Take up and set aside for reuse timber post and rail	8	m
	Take up and set aside for reuse road gully grate and support	1	No.
	SERIES 600 - EARTHWORKS		
	Excavation of acceptable material excluding class 5A in any other excavation	55	m^3
	Excavation of unacceptable material in any other excavation	14	m^3
	Extra over for excavation in hard material in structural foundations of any other exc.	7	m^3
	Breaking up of redundant flexible pavement or paved area up to 200mm deep	144	m^2
	Disposal of material acceptable/unacceptable material	90	m^3
	SERIES 700 - PAVEMENTS		
	AC 32 dense base 100/150	7	m^3
	AC 20 dense bin 100/150 thickness - 60mm	144	m^2
	Close graded macadam with 14mm agg wearing course 40mm thick min PSV54	144	m^2
	Granular type 1 sub-base	20	m^3
	Waterproof protection 20mm thick. HRA	74	m^2
	Footway binder course HRA 55/14 50mm thick	5	m^2
	Footway surface course HRA 15/10F 40/60 20mm thick	5	m^2
	SERIES 1100 - KERBS, FOOTWAYS AND PAVED AREAS		
	HB3 Kerbs	17	No.
	HB Quadrant Kerb	4	No.
	SERIES 1700 - STRUCTURAL CONCRETE		
	ST2 kerb backing	0.4	m^3
	ST2 Concrete Island	0.8	m^3
	In situ concrete mix LC32/35 (Saddle)	42	m^3
	Tensile steel type 2 bar reinforcement 16mm and under (A393 mesh)	0.60	t
	SERIES 2000 - WATERPROOFING FOR STRUCTURES		
	BBA/HE Bridge deck waterproofing system (top)	74	m^2
	SERIES 2400 - BRICKWORK, BLOCKWORK AND STONEWORK		
	Rake out mortar joints size 0-100mm (weak mortar in spandrel)	10	m^2
	Pointing of joints with lime mortar	10	m^2
	MISC		
	Masonry ties - Ancon starter cavity ties - staifix	46	No.
	Orange indicator mesh	74	m^2
	Heras Fencing (site security)	100	m
	Environment pollution boom	1	No.
	Grout - Fosroc Lokfix S40 resin	0.05	m^3
	Temporary propping supports where required	5	m^2
	Traffic Hazard Bollard (similar as existing)	2	No.

Operation	Description	Quantity	Unit
	Unscheduled		
	Contingencies	10%	
	Plant	sum	

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Appendix A

DRAWINGS

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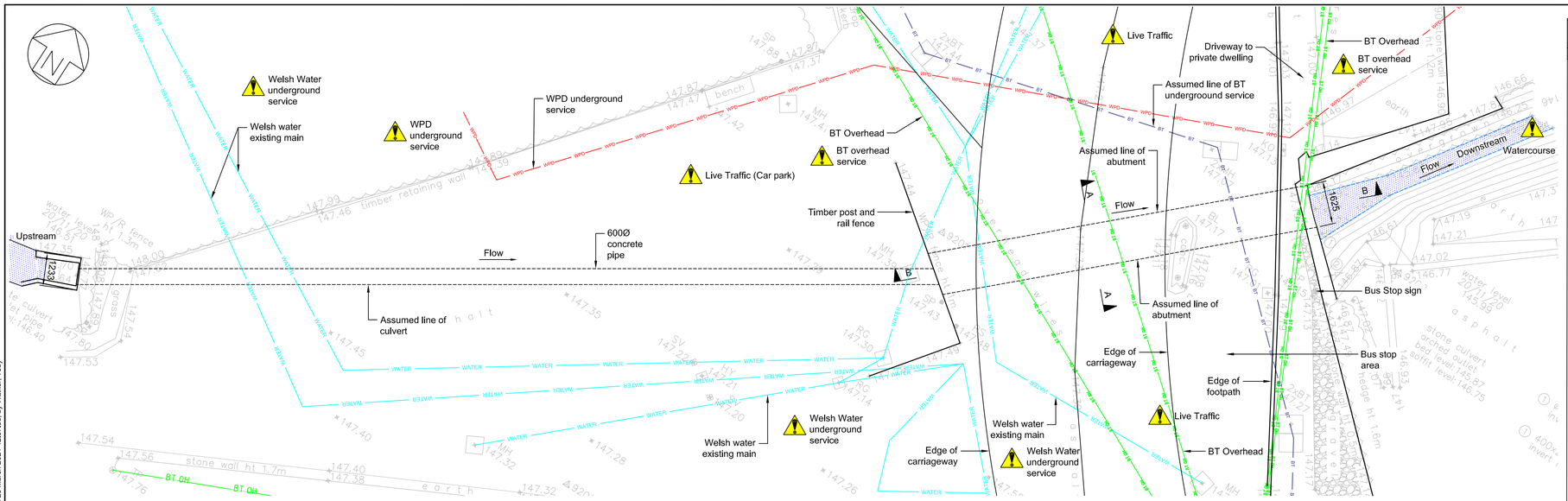

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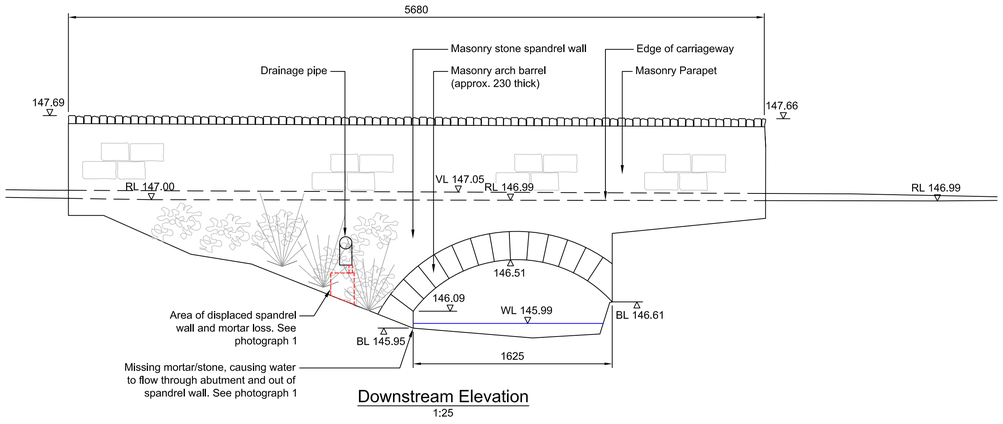
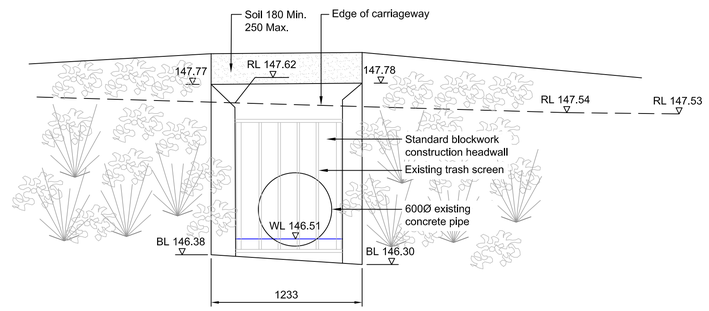


Downstream Elevation
1:25



Upstream Elevation
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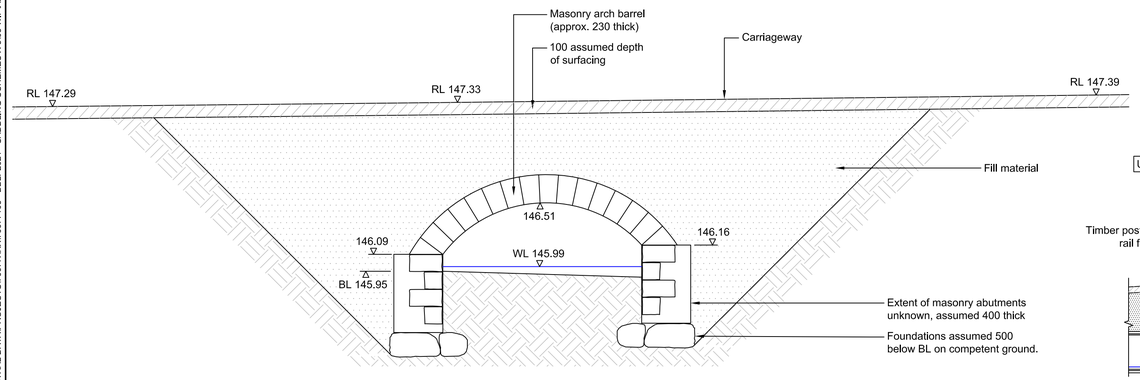

Section A-A
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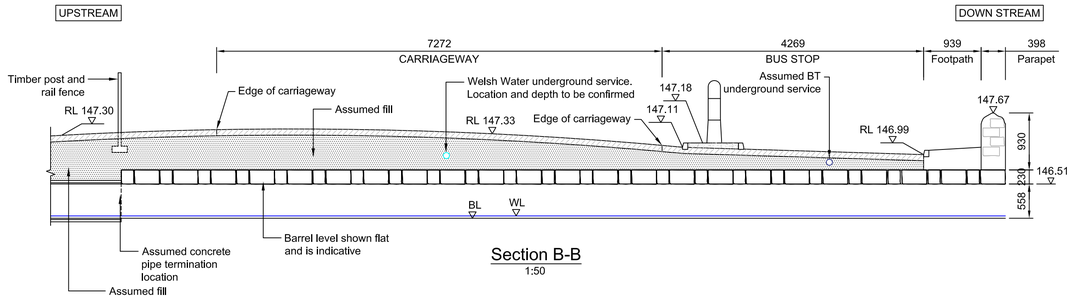


Section B-B
1:50

HEALTH AND SAFETY INFORMATION

CONSTRUCTION PHASE

1. PLEASE REFER TO THE DESIGN RISK MANAGEMENT SCHEDULE AND THE MAINTENANCE AND REPAIR STRATEGY FOR DETAILS OF THE RISKS ASSOCIATED WITH THE MAINTENANCE, OPERATION, DECOMMISSIONING AND DEMOLITION PHASES.
2. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE HEALTH AND SAFETY FILE(S) PRODUCED AND HANDED OVER ON COMPLETION OF THIS PROJECT.

RESIDUAL HAZARDS ARE LISTED HERE

EXISTING HAZARDS

- LIVE TRAFFIC - ROAD CLOSURE TO BE IMPLEMENTED IN ACCORDANCE WITH CHAPTER 8. SITE MOVEMENTS TO HAVE DESIGNATED ROUTES, BANKSMEN WHEN REVERSING, AND DESIGNATED AREAS AT TIMES OF SPECIFIC ACTIVITIES. METHOD STATEMENTS AND PLANNED CONSTRUCTION SEQUENCES TO BE PREPARED, REVIEWED AND AGREED.
- WATERCOURSE - WATERCOURSE TO BE IDENTIFIED ON SITE, NO ACCESS TO THE WATERCOURSE UNLESS METHOD STATEMENT HAS BEEN PRODUCED. DO NOT ENTER THE WATERCOURSE UNLESS SUPERVISED AND VISUAL CONTACT MAINTAINED BETWEEN THE WORKFORCE.

  WEILS DISEASE/ HARDJO (LEPTOSPIROSIS) IS CONTRACTIBLE THROUGH INFECTED CATTLE OR RAT URINE. SEEK MEDICAL ADVICE IF FLU-LIKE ILLNESS DEVELOP. WORK FORCE TO BE GIVEN LEPTOSPIROSIS AWARENESS CARDS.
- STATUTORY SERVICES/KNOWN SERVICES - NRSWA C2 RETURNS ARE CONTAINED WITH THE PCI, AND ARE SHOWN ON THIS DRAWING. THE SERVICES ARE IN ASSUMED LOCATIONS AND DEPTHS ARE UNKNOWN. NO EXCAVATION OR PLANT IS TO BE USED UNTIL ALL SERVICES HAVE BEEN IDENTIFIED.
- BT, WPD AND WELSH WATER UNDERGROUND RUNS BENEATH THE SURFACING. THE DEPTH AND LOCATION ARE ASSUMED. ADDITIONAL INFORMATION WILL BE REQUIRED.
- WORKING AT HEIGHT - PERSONNEL TO STAY CARRIAGEWAY SIDE OF PARAPET AND FENCING TO AVOID FALLING FROM HEIGHT.

FIRST AID: NEAREST A&E: HEREFORD COUNTY HOSPITAL, STONEBOW ROAD, HEREFORD, HR1 2ER. TEL: 01432 355444.

THE CONTRACTOR SHALL REFER TO STATUTORY UNDERTAKERS LAYOUT DRAWINGS AND IDENTIFY LOCATIONS OF EXISTING UNDERGROUND AND OVERHEAD SERVICES PRIOR TO CARRYING OUT EXCAVATION WORKS.

KEY

Verge Level	VL
Bed Level	BL
Water Level	WL
Road Level	RL
Centreline	C/L
Welsh Water Existing Main	WATER
BT Overhead	BT OH
WPD service	WPD
BT - Underground	BT

Photograph 1 - Displaced spandrel wall and missing mortar

DO NOT SCALE

1. All dimensions are in millimeters unless otherwise stated.
2. Do not scale off this drawing.
3. Dimensions are based on reference Adforton topo 'WS3873-09-2D,WS3873-09-3D & WS3873-10-Elevations'.
4. Service locations based on C2 information.Exact location of services unknown. Approximate locations shown for information's only.
5. Section A-A bridge element levels are assumed and based on the downstream visible levels.

REV	DATE	BY	DESCRIPTION	CHK	APP
P01	24/03/2021	RN	FIRST ISSUE	TW	BP

DRAWING STATUS: S4 - FOR CONSTRUCTION APPROVAL

11 High Cross, Truro, TR1 2AJ, UK
T+ 44 (0) 187 224 5860
wsp.com

CLIENT: Balfour Beatty Living Places

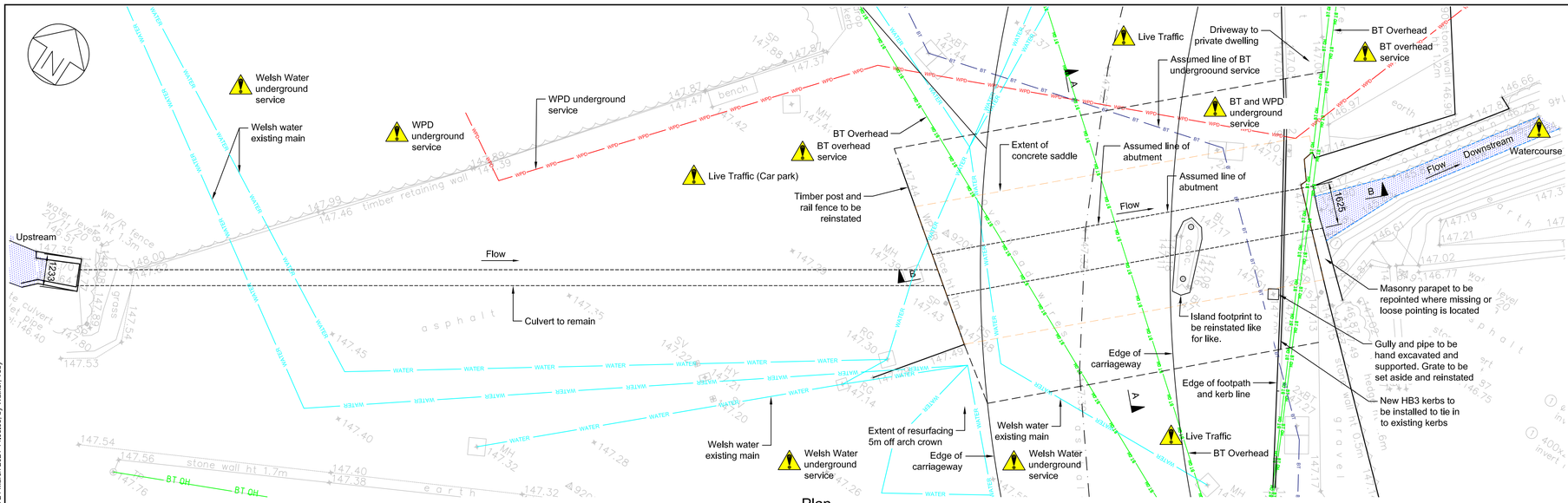
ARCHITECT:

SITE/PROJECT: Adforton bridge

TITLE: Existing General Arrangement

SCALE @ A1:	CHECKED:		APPROVED:
AS SHOWN	T. Walker		B. Parr
PROJECT NO:	DESIGNED:	DRAWN:	DATE:
70077103	T. Walker	R. Negi	March 2021

DRAWING No: 70077103-WSP-SBR-SWI-DR-CB-00201 REV: P01



Plan
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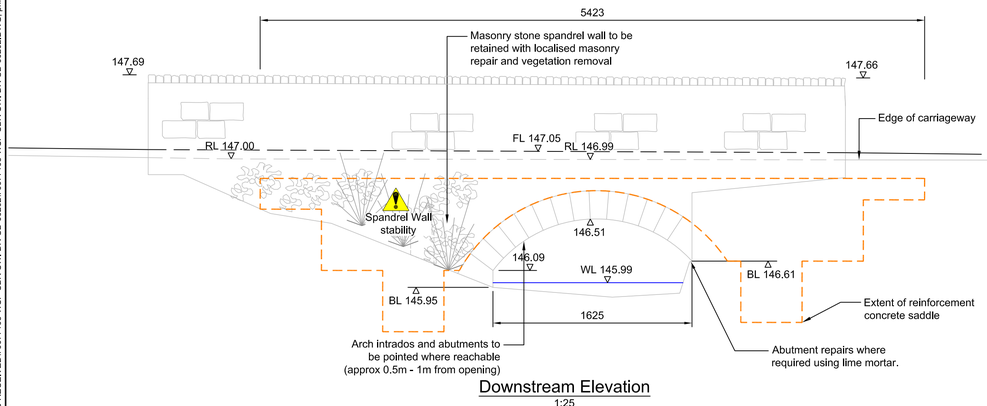
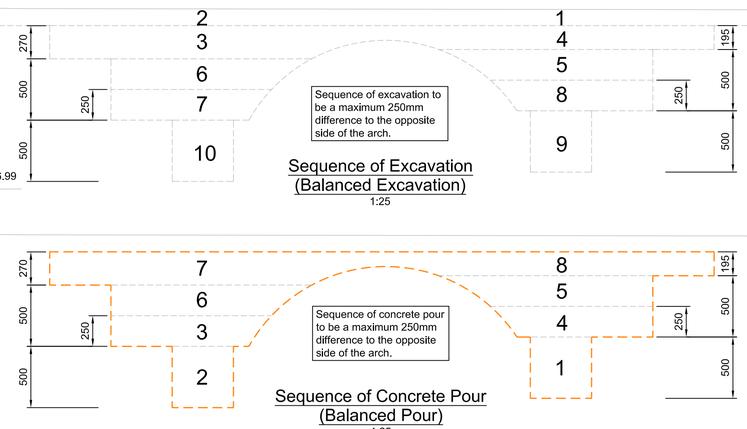
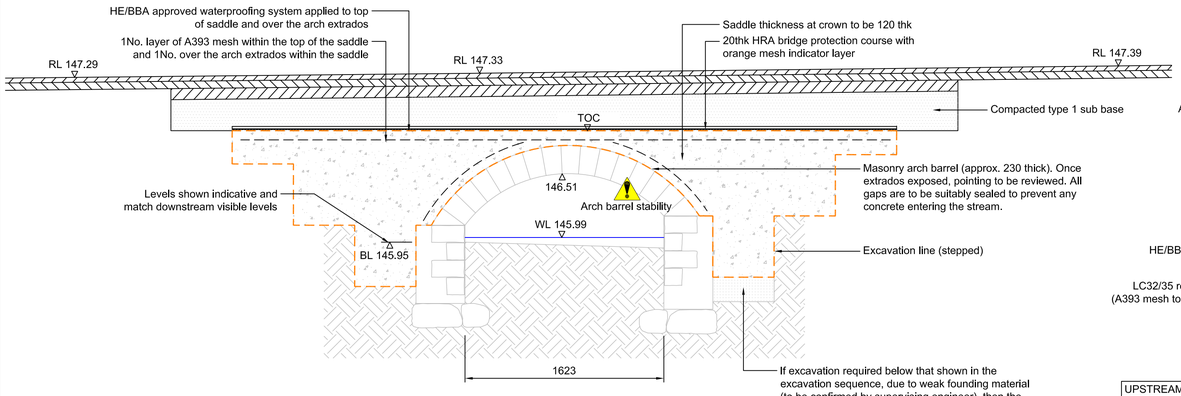


Downstream Elevation
1:25

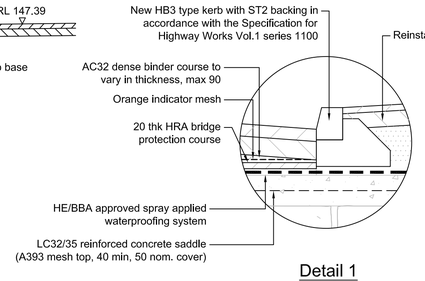


Sequence of Excavation (Balanced Excavation)
1:25

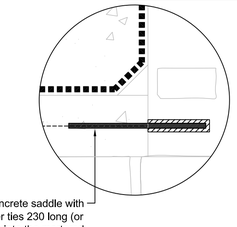
Sequence of Concrete Pour (Balanced Pour)
1:25



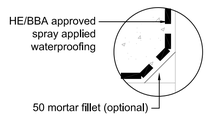
Section A-A
1:25



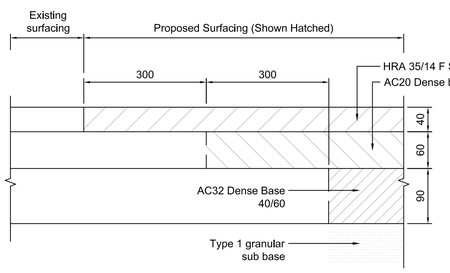
Detail 1
1:10



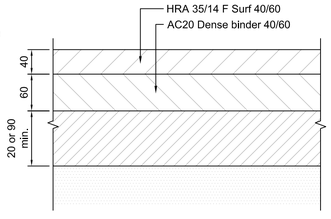
Detail 2
1:5



Detail 3
1:5

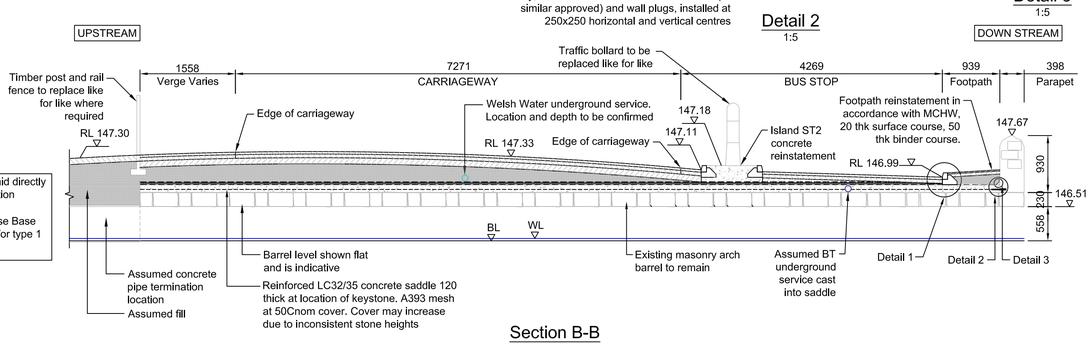


Surfacing Detail (interface with existing)
1:5



Surfacing Detail (over length of worksite)
1:5

At concrete haunch: Surfacing laid directly over 20 thick HRA bridge protection course/indicator mesh.
Off concrete haunch: AC32 Dense Base 40/60 over concrete backfill and/or type 1 sub base.



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1:50

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- BT, WPD AND WELSH WATER UNDERGROUND RUNS BENEATH THE SURFACING. THE DEPTH AND LOCATION ARE ASSUMED. ADDITIONAL INFORMATION WILL BE REQUIRED.
- SPANDREL WALL AND PARAPET STABILITY DURING EXCAVATION. SPANDREL AND PARAPET TO BE SUPPORTED DURING WORKS.
- WORKING AT HEIGHT - PERSONNEL TO STAY CARRIAGEWAY SIDE OF PARAPET AND FENCING TO AVOID FALLING FROM HEIGHT.
- ARCH BARREL COLLAPSE - METHOD STATEMENT TO BE PROVIDED AND REVIEWED FOR THE WORKS SEQUENCE OF REMOVING THE SURFACING AND FILL MATERIAL OVER THE ARCH BARREL, AND THE NEW CONCRETE PLACEMENT, A SYSTEMATIC APPROACH IS REQUIRED TO ENSURE THAT ONE SIDE OF THE ARCH IS NOT LOADED MORE THAN THE OTHER. SUPERVISING CIVIL ENGINEER IS TO BE PRESENT AT THE TIME OF EXCAVATION.
- CONCRETE - IN-SITU CONCRETE TO BE CAST IN A CONTROLLED MANNER TO PREVENT SPLASHING. CONTRACTOR INDUCTION TO INCLUDE USE OF GLOVES AND EYE SEALED PRIOR TO CASTING CONCRETE.

FIRST AID; NEAREST A&E: HEREFORD COUNTY HOSPITAL, STONEBOW ROAD, HEREFORD, HR1 2ER. TEL: 01432 355444.

THE CONTRACTOR SHALL REFER TO STATUTORY UNDERTAKERS LAYOUT DRAWINGS AND IDENTIFY LOCATIONS OF EXISTING UNDERGROUND AND OVERHEAD SERVICES PRIOR TO CARRYING OUT EXCAVATION WORKS.

KEY

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Water Level	WL
Road Level	RL
Centreline	C/L
Welsh Water Existing Main	WATER
BT Overhead	BT OH
WPD service	WPD
BT - Underground	BT

DO NOT SCALE

NOTES:

1. All dimensions are shown in millimetres unless otherwise stated.
2. Do not scale off this drawing.
3. Dimensions are based on reference Adforton topo 'WS3873-09-2D,WS3873-09-3D & WS3873-10-Elevations'.
4. Dimensions are based on the survey association drawing
5. Service locations based on C2 information. Exact location of services unknown. Approximate locations shown for information only.
6. Additional consultation is required with WPD, BT and Welsh Water to ascertain the exact location of the services and the requirements for diverting the affected services. No construction work is to be undertaken until the necessary works have been completed to divert the services away from the works area.
7. Excavation and concrete pour is to be undertaken in a balanced sequence and have a max level difference either side of 250mm.
8. Concrete and reinforcement specified in accordance with Eurocode execution.
9. All horizontal exposed arris have 25 x 25 chamfer, unless stated otherwise.
10. All reinforcement is grade B500B or B500C steel conforming to BS4449, bent and cut to BS8666.
11. Plastic cover blocks are not to be used.
12. All tie wire is 1.2mmØ stainless steel in accordance with Specification for Highway Works clause 1714.
13. Concrete Specification

    Exposure Class = XC3/4

    Cement/Combination = All in table A6 of BS8500-1 except IVB-V

    Concrete Saddle

    Strength Class = LC32/35

    Max. w/c = 0.40

    Min. Cement = 300kg/m^3

    Cover, Cnom = 50mm for fixing tolerances (Δc=10mm)

    Cover, Cmin = 40mm

    Finishes = U4 to top of saddle, F2 to sides.

    Concrete Island

    ST2 concrete

    Finishes U2

Contractor Design:

Formwork	-	Mass concrete saddle
Centering	-	Support of arch barel during construction state
Footbridge	-	Access for pedestrians
Services	-	Diverted/supported during works
Ground	-	Ground support/stability checks

REV	DATE	BY	DESCRIPTION	CHK	APP
P01	24/03/2021	RN	FIRST ISSUE	TW	BP

DRAWING STATUS: S4 - FOR CONSTRUCTION APPROVAL

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CLIENT: Balfour Beatty Living Places

ARCHITECT:

SITE/PROJECT: Adforton bridge

TITLE: Proposed General Arrangement

SCALE @ A1:	CHECKED:		APPROVED:
AS SHOWN	T. Walker		B. Parr
PROJECT NO: 70077103	DESIGNED: T. Walker	DRAWN: R. Negi	DATE: March 2021

DRAWING No: 70077103-WSP-SBR-SWI-DR-CB-00202 REV: P01

Appendix B

SPECIFICATION

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Herefordshire Council

SPECIFICATION

BB0376 Adforton Bridge

70077103-WSP-SBR-SPC-RP-CB-00201
MARCH 2021

CONFIDENTIAL

Herefordshire Council

SPECIFICATION

BB0376 Adforton Bridge

TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO. 70077103

OUR REF. NO. 70077103-WSP-SBR-SPC-RP-CB-00201

DATE: MARCH 2021

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	Client Review			
Date	24/03/2021			
Prepared by	Ben Parr			
Signature				
Checked by	Toby Walker			
Signature				
Authorised by	Toby Walker			
Signature				
Project number	70077103			
Report number	70077103-WSP-SBR-SPC-RP-CB-00201			
File reference				

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TABLES

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FIGURES

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APPENDICES

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1 SPECIFICATION

1.1 CONCRETE

Appendix 17/1: Concrete

Reference	
Location	Saddle
Nominal Cover to reinforcement	40+ ∆c (10mm)
Minimum Cement Content (kg/m^3)	300
Maximum Cement Content (kg/m^3)	550
Compressive Strength Class of Concrete	LC32/35
Max. Agg. Size	20
Exposure Class	XC3/4
Chloride Content Class	Cl 0,40
Structural Performance	High
DC Class	DC-1
Maximum Water / Cement Ratio	0.55
Consistency class	S3
Required Group or Type and Class of Cement	All in table A.6 except IVB-V
Required Source/Special Type of Aggregate	All aggregates shall be non-reactive A, B or C
Required Admixture	No
Air Entrainment Required	No
Sampling and Testing	See Appendix 17/1 – 1.
Other Requirements – Lightweight density class	1.8

Appendix 17/1 - 1: Concrete – Sampling and Testing

1. All batches are to be slump tested by Contractor. The contractor is also required to take 8 cubes in total for testing. Two cubes to be tested at 3 days, 7 days and 4No. at 28 days or at other dates as approved by the Overseeing Organisation.
2. The concrete shall conform to BS8500-1-2015.

Appendix 17/03: Concrete – Surface Finishes

1. Class U4 finish to top of saddle and U2 finish to top of island.
    - Class U2 finish - The concrete shall be levelled and screeded to produce a uniform surface to the profile shown on the drawings. No further work shall be applied to the surface unless it is used as a first stage for another class of finish. After the concrete has hardened sufficiently, the Class U1 finish shall be floated by hand or machine sufficiently only to produce a uniform surface free from screed marks.

    - Class U4 finish - The concrete shall be levelled and screeded to produce a uniform surface. When the concrete has sufficiently hardened, and the bleed water evaporated the surface shall be trowelled to produce a hard-dense surface free from screed marks and exposed aggregate. Finally, the surface shall be lightly textured with a wooden float or equivalent. Alternatively, the concrete shall be levelled, screeded and floated to produce a uniform surface and immediately before the waterproofing operation this surface shall receive surface preparation by water jetting or grit blasting to provide a lightly textured finish. The finished surface shall not deviate from the required profile by more than 10 mm over a 3 m gauge length or have any abrupt irregularities more than 3 mm.

Concrete Finishes:

- Concrete edges to have horizontal 25mm chamfer.
- U2 finish to central island

Ancillary Concrete:

- Kerb backing – ST2 mix concrete with a consistency class of S1
- Central Island – ST2 mix concrete with a consistency class of S3

1.2 REINFORCEMENT AND MASONRY TIES

Reinforcement:

- Reinforcement to conform to BS EN 10080:2005 and BS 4449: 2005 (Grade B500A, B500B or B500C) with characteristic yield strength of 500N/mm^2 – A393 mesh.

Masonry ties:

- Ancon Staifix Starter Tie (or similar approved) applied at 250x250 centres.
- Fixing with Fosroc Lokfix S40 polyester resin anchor grout or similar approved.

1.3 STONEWORK, PARAPETS, MORTAR

Stonework shall be 'like for like' and sourced locally.

Mortar:

- Lime mortar shall consist of one part by volume of hydrated lime conforming to BS EN 459-1 to 2.5 parts by volume of sand, NHL5: Aggregate;
- Aggregate to match existing;
- Colour to match existing; and,
- Sample to be provided and final mix to be agreed prior to commencing masonry works.

1.4 WATERPROOFING

Waterproofing:

- HE/BBA approved waterproofing system, (GCP Eliminator system or similar approved) applied to saddles exposed vertical and horizontal sides.

Indicator layer:

- 20mm thick HRA 0/2 F surf 40/60 bridge protection layer, with fluorescent orange indicator mesh, or similar approved.

1.5 SURFACING, KERBING AND CENTRAL ISLAND

Surfacing material:

- Work to be in accordance with BS EN 594987.
- Granular sub base type 1.
- 90mm thick AC32 dense base 40/60
- 60mm thick AC20 dense base 40/60.
- 40mm thick HRA 35/14 F surf 40/60, PSV 55, AAV 14.

Footpath

- In accordance with Asphalt DMRB CD 239
- 20mm thick surface course HRA 55/14
- 50mm thick binder course HRA 15/10/F 40/60
- Granular sub base type 1

Central Island

- 2No hazard marker post as existing (or similar approved)

Kerbs:

- HB3 (H 150mm, W 125mm, L 914mm). 38kg approx. Aggregate supplier (or similar approved).

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