



Russells South Heywood (Residential) Ltd

SOUTH HEYWOOD ENABLING WORKS

DRAINAGE NOTE





Russells South Heywood (Residential) Ltd

SOUTH HEYWOOD ENABLING WORKS

DRAINAGE NOTE

TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO. 70089657

OUR REF. NO. 70089657/DI/R/003

DATE: DECEMBER 2024

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QUALITY CONTROL

Issue/revision	Revision 1	Revision 2	Revision 3	Revision 4
Remarks	Rev B	Rev C	Rev D	Rev E
Date	26/07/2024	10/09/2024	17/12/2024	19/12/2024
Prepared by	S. Raja	S. Raja	K.Cloete	K.Cloete
Signature				Digitally signed by Kyle.Cloete@wsp.com DN: cn=Kyle.Cloete@wsp.com Reason: I am the author of this document Date: 2024.12.19 10:59:49
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Authorised by	D.Waters	D. Waters	D. Waters	D. Waters
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Project number	70089657	70089657	70089657	70089657
Report number	70089657/DI/R/003	70089657/DI/R/003	70089657/DI/R/003	70089657/DI/R/003
File reference				



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1 INTRODUCTION

1.1 APPOINTMENT AND BRIEF

- 1.1.1. WSP UK Ltd has been commissioned by Russells South Heywood (Residential) Ltd to provide a drainage note to support the enabling works associated with the proposed Electricity North West (ENW) primary substation as part of the South Heywood Commercial development.
- 1.1.2. A site location plan is shown in Figure 1 below and also included in **Appendix A**.

1.2 PROPOSED DEVELOPMENT

- 1.2.1. The proposed scheme comprises enabling works to facilitate future development. The key elements are as follows:
- Bulk earthworks cut and fill;
 - Removal of excess or unsuitable materials;
 - Diversion of 750mm Surface Water Drain and removal of existing drain
 - Culverting of a section of open watercourse and replacement of existing section of culvert
 - A 5m drainage easement for access and maintenance by Rochdale Borough Council into the existing highway drainage pond.

1.3 STUDY OBJECTIVES

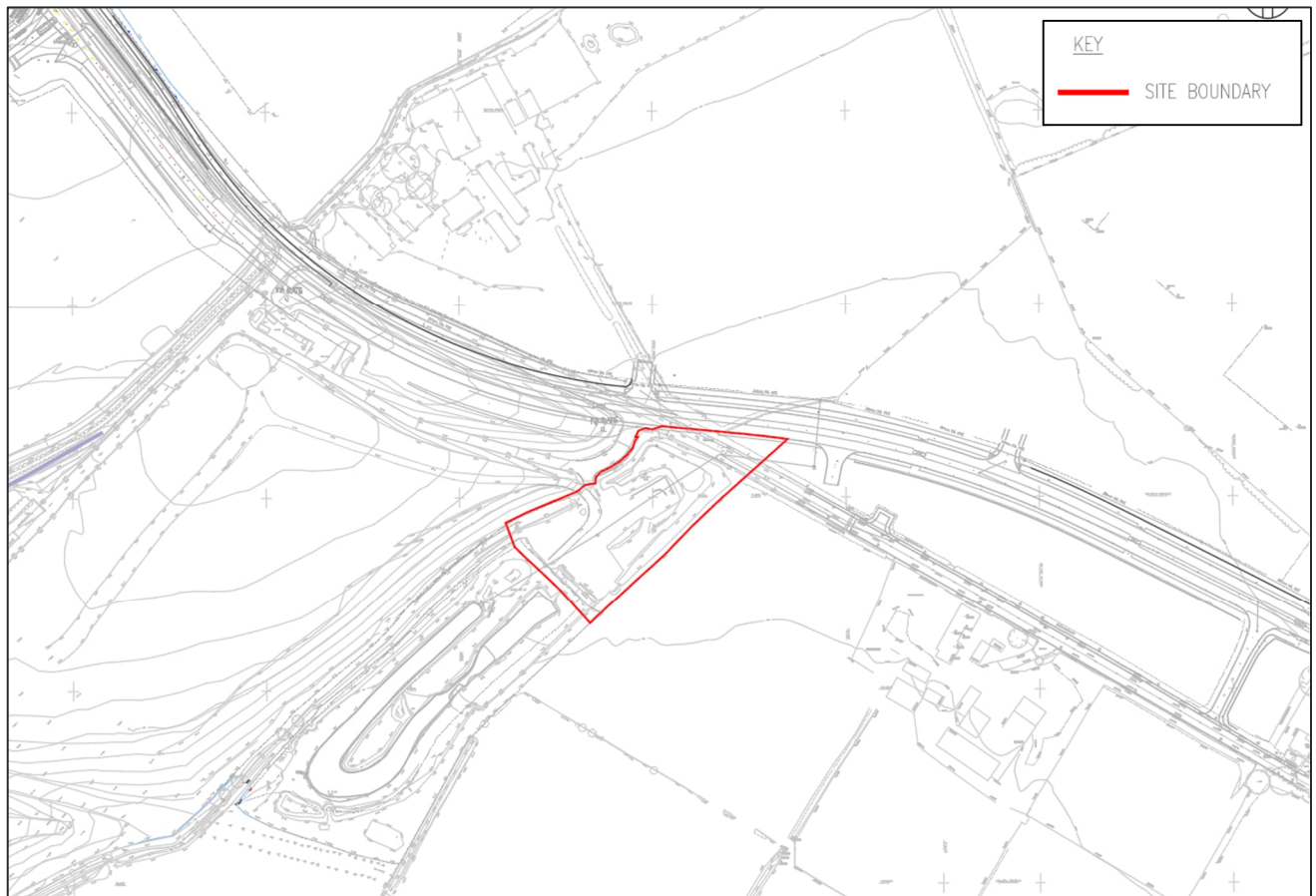
- 1.3.1. The objective of this study is to provide information relating to the following:
- The existing highway surface water drainage serving Queen Elizabeth II Way (QE2 Way) and Hareshill Road.
 - Identify a suitable highway drainage diversion route to facilitate future development, and new connection into the existing pond.
 - Overview of the existing watercourse condition.
 - Works to infill part of the watercourse and associated works to provide future connectivity for development to the north of QE2 Way.

2 CONTEXT & SETTING

2.1 SITE LOCATION

- 2.1.1. The application site is in South Heywood, Rochdale, approximately 2km northwest of Junction 19 of the M62 motorway. The nearest postcode is OL10 2TB and the OS grid reference for the centre of the application site is 385095, 409097.
- 2.1.2. The site location and red line boundary is shown in Figure 2-1 below and included in **Appendix A**.

Figure 2-1 - Site Location Plan



2.2 SITE DESCRIPTION

2.2.1. Table 2-1 below describes the general site characteristics.

Table 2-1 - Characteristics of the Site

Characteristic	Description
Area	Overall area within the red line 0.63Ha
Existing Use	Greenfield, currently unused
Boundaries	North: South Heywood commercial development East: Queen Elizabeth II Way South: Agricultural land Under Option by Applicant West: Existing highway pond
Topography	Topographic levels across the application site vary within the boundary of the site. There is a mound present towards the north of the site around which levels range from 125.32m AOD to 120.45m AOD.
Access	The site is accessed from QE2 Way.

2.2.2. The application site lies within Rochdale Borough Council.

2.3 TOPOGRAPHY

- 2.3.1. A Topographic Survey was undertaken by Survey Ops in September 2020.
- 2.3.2. The survey indicates a high point on the mound near the north of the site at 125.32m AOD but the surrounding levels in this area vary significantly. Levels generally are higher to the northeast of the site near Hareshill Road (125.15m AOD) and fall to the southwest towards the pond to around 122.02m AOD.
- 2.3.3. An extract of the topographical survey is included in **Appendix B**.

3 HIGHWAY DRAINAGE

3.1 EXISTING ARRANGEMENT

- 3.1.1. The existing highway drainage in the vicinity of the development site has been designed to pick up surface water discharge primarily from QE2 Way which was recently constructed and opened in 2022 as part of the wider area development.
- 3.1.2. The highway drainage system briefly comprises the following elements as shown on drawing 'SOHW-WSP-PSS-ENAB-DR-D-0001 – Existing Site Plan' in **Appendix C**.
- Flows from the newly constructed QE2 Way and the legacy drainage from Hareshill Road converge at MH13C, located towards the northeast corner of the site.
 - Downstream of MH13C the flow travels southwest approximately 75m to MH13D.
 - From MH13D the flow is directed a further 70m southwest through the proposed development site and discharges into the existing highway drainage pond via a precast concrete headwall.
 - The pond discharges into the ordinary watercourse immediately to the west via a 450mm diameter pipe.
- 3.1.3. To facilitate future development it is therefore proposed to divert the existing highway drainage between MH13C and the existing pond headwall around the footprint of the site.

3.2 PROPOSED ARRANGEMENT

Options Considered

- 3.2.1. Two alternative routes have been considered for the highway drainage diversion as follows:
- Diversion around the northern perimeter of the development site
 - Diversion around the southern perimeter of the development site
- 3.2.2. Diverting the highway drainage around the northern perimeter of the site has been identified as the preferred option as this does not restrict future development to the south.

Constraints

- 3.2.3. There are a number of constraints along the northern perimeter of the site which have influenced the alignment of the proposed highway drainage diversion as follows:
- An existing ordinary watercourse which has been identified as a tributary of Brightley Brook commences immediately to the south of QE2 Way and flows in a south-westerly direction.
 - A Public Right of Way HEYFP74 is located immediately to the south of the existing watercourse and is to be retained as part of the proposed scheme.
 - The need to maximise developable area between proposed dimensions of the indicative future primary substation compound is 22m x 36m and will comprise a perimeter fence. In addition, ENW have specified a 2m easement corridor beyond this to enable inspection/ maintenance of the boundary fence.

- Rochdale Borough Council have requested that a 5m easement is provided between QE2 Way and the existing pond. This is required to undertake routine inspections and maintenance.
- Rochdale Borough Council have confirmed that for a 750mm diameter a pipe, a 2.5m wide easement either side of the pipe centreline is required to provide access for future maintenance.

Proposed Alignment

- 3.2.4. The proposed alignment comprises of the following elements as shown on drawing 'SOHW-WSP-PSS-ENAB-DR-D-0002 – Enabling Works Proposed Site Plan' in **Appendix D**:
- The existing drainage infrastructure between MH13C and the pond is to be abandoned and new drainage runs totalling 160m in length are proposed.
 - Highway drainage downstream of MH13C will be diverted west towards the start of the existing watercourse through a 750mm diameter pipe at a 1:317 gradient into a new manhole HD.01.
 - Downstream of HD.01 the highway drainage will be diverted southwest following the alignment of the proposed ENW easement corridor, again via 750mm diameter pipes at a consistent gradient of 1:340, with an additional 3no. manholes proposed.
 - The diverted highway drainage will discharge into the pond via a new precast concrete headwall.
- 3.2.5. There is a gated access at the northeastern corner of the pond which is to be retained. To maintain access a 5m easement is proposed along the alignment of the diverted highway drainage. This corridor will also provide access to the highway drainage should remedial works be required in the future.

3.3 CONSULTATION

- 3.3.1. Rochdale Borough Council have been consulted throughout the design process and have been issued a copy of drawing SOHW-WSP-PSS-ENAB-DR-D-0002, included in **Appendix D**.
- 3.3.2. The Council has confirmed that they have no objections to the proposed diversion of existing highway drainage and that the proposed diversion route is acceptable in principle.
- 3.3.3. Full correspondence can be found in **Appendix E**.

4 WATERCOURSE DIVERSION & ASSOCIATED WORKS

4.1 EXISTING ARRANGEMENT

Existing Watercourse

- 4.1.1. The watercourse commences within the site boundary, just south of the intersection between QE2 Way and Hareshill Road. The head of the watercourse comprises approximately 35m of open channel and is connected to the main watercourse by a 15m long 300mm diameter pipe. This connection is in a relatively poor condition and is without headwalls on either side.
- 4.1.2. This watercourse is designated as an ordinary watercourse and is a tributary of Brightley Brook which is situated further to the west.

Existing Culvert for future development

- 4.1.3. A 450mm diameter pipe was installed as part of the QE2 Way highway improvement scheme to serve a potential future housing development immediately to the north of the new carriageway. 1500mm diameter manholes were provided at either end to provide a point of access.
- 4.1.4. The manhole to the north of the carriageway is positioned 15m east of the bell-mouth constructed as the access road into the future development to the north. The southern manhole is immediately to the east of the head of the existing watercourse.
- 4.1.5. It is anticipated that any surface water generated by future development will be attenuated at source and therefore the discharge rate through the culvert is expected to be at greenfield rates. For a potential development area of up to 13 Ha there are no concerns regarding the capacity of this pipe to serve a future development.
- 4.1.6. Currently this pipe is unused.

4.2 PROPOSED ARRANGEMENT

- 4.2.1. As part of the enabling works, it is proposed to formalise the interface between the cross-carriageway culvert and the existing watercourse. This will be achieved by undertaking the following works:
 - Infill the watercourse over a length of approximately 35m from the head of the watercourse.
 - Demolish the existing 300mm pipe of 15m length beneath the public right of way.
 - Demolish manhole chamber SWMH-CU-01 and construct a new 1500mm diameter chamber (MH.01) approximately 5m upstream. A further chamber (MH.02) is to be constructed 5m west of MH.01.
 - Construct a new precast concrete headwall at the outfall into the watercourse, downstream of the public right of way crossing.
 - Construct a new 450mm diameter pipe from MH.02 to the precast concrete headwall where it will discharge into the watercourse via the headwall described above.

- 4.2.2. Based on the surveyed levels of the watercourse, a 450mm pipe at the proposed gradient equates to a full-bore velocity of ~1.3m/s, which meets the requirements for self-cleansing.
- 4.2.3. The watercourse alignment downstream from the proposed headwall will remain as existing.

4.3 CONSULTATION

- 4.3.1. The Rochdale Borough Council Lead Local Flood Authority team have been engaged throughout the development of the proposed drainage strategy.
- 4.3.2. The Council have confirmed that in principle they have no objections to the modifications to the existing watercourse as shown in the Proposed Site Plan drawing in **Appendix D**. Full correspondence can be found in **Appendix E**.
- 4.3.3. The proposed works are subject to the approval of an Ordinary Watercourse Land Drainage Consent. This application will be made following the approval of planning permission for the proposed development and prior to undertaking any works to modify the watercourse.

5 CONCLUSION

- 5.1.1. This Drainage Note has been written to support a planning application for enabling works for the proposed primary substation as part of the South Heywood development.

Highway Drainage

- 5.1.2. The existing highway drainage in the vicinity of the development site has been designed to pick up surface water discharge primarily from QE2 Way. The current highway drainage alignment directly crosses the footprint for the proposed primary substation and drains into the pond to the southwest of the proposed site. From here it drains into the ordinary watercourse to the west which is a tributary of Brightley Brook.
- 5.1.3. To facilitate the proposed primary substation, it is proposed to divert the existing highway drainage between MH13C and the existing pond headwall around the footprint of the site.
- 5.1.4. Two routes have been considered for the highway drainage diversion. Diverting the highway drainage around the northern perimeter of the site has been identified as the preferred option as this does not restrict future development to the south of the future proposed primary substation.
- 5.1.5. The proposed alignment comprises of the following elements:
- The abandonment of existing drainage infrastructure between MH13C and the pond and new drainage runs totalling 160m in length and 4no. new manholes are proposed.
 - The highway drainage will be diverted southwest following the alignment of the proposed ENW easement corridor, again via 750mm diameter pipes at a consistent gradient of approximately 1:340.
 - The diverted highway drainage will discharge into the pond via a new precast concrete headwall.
- 5.1.6. To maintain access to the pond a 5m easement is proposed along the alignment of the diverted highway drainage. This corridor will also provide access to the drainage pipe should remedial works be required in the future.

Watercourse Diversion

- 5.1.7. The existing ordinary watercourse commences within the site boundary, just south of the intersection between QE2 Way and Hareshill Road. The head of the existing watercourse is a 35m run which runs southwest and is connected into the main watercourse through a 300mm diameter pipe over a distance of 15m.
- 5.1.8. A 450mm diameter pipe with 1500mm diameter manholes at either end were installed as part of the QE2 Way highway improvement scheme to serve a potential future housing development immediately to the north of the new carriageway. Currently this pipe remains unused.
- 5.1.9. As part of the enabling works for the future primary substation, it is proposed to formalise the interface between the cross-carriageway culvert and the watercourse. This will be achieved by undertaking the following works:
- Infill the watercourse over a length of approximately 35m from the head of the watercourse.
 - Demolish the existing 300mm pipe of 15m length beneath the public right of way.

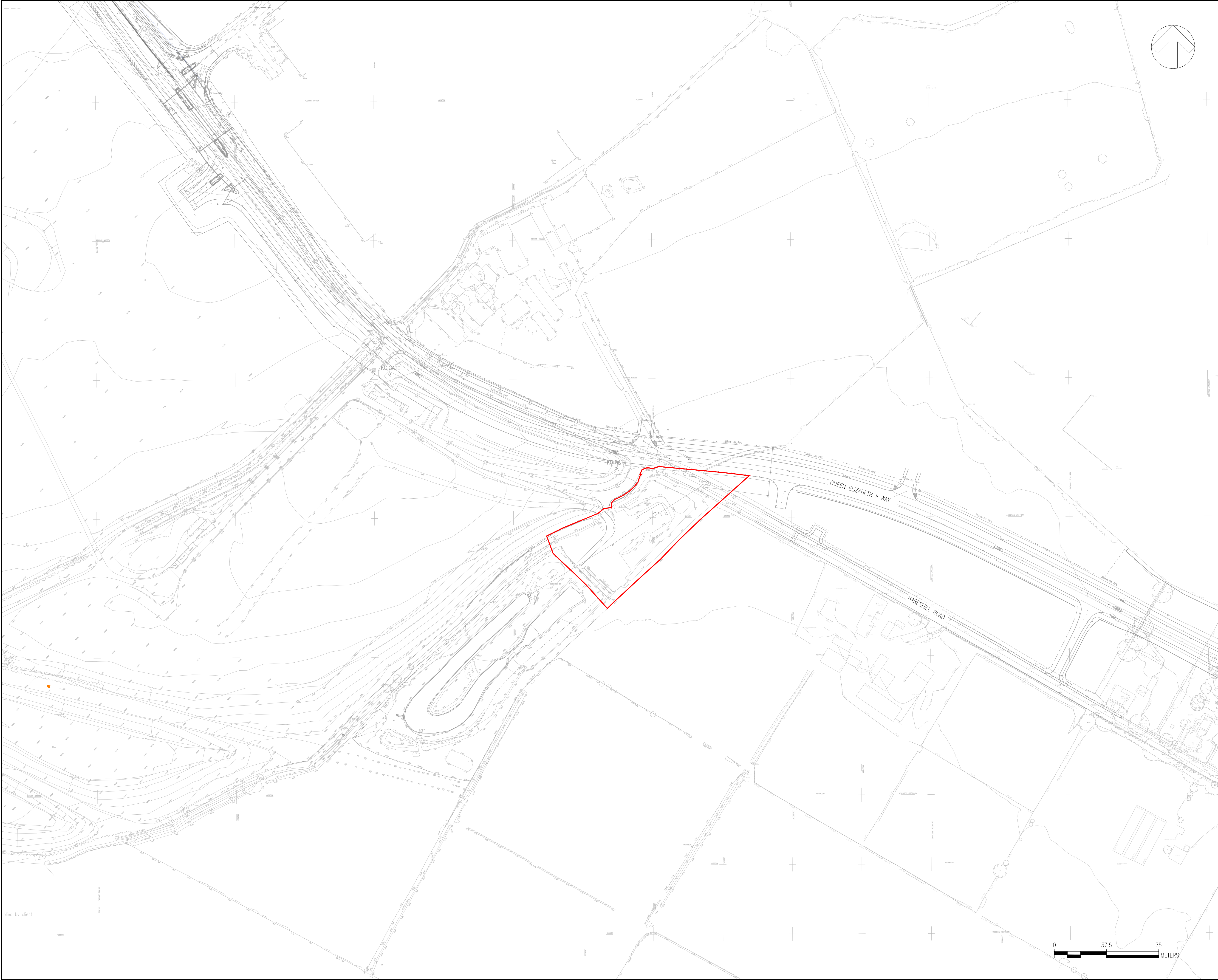
- Demolish the 1500mm diameter manhole south of QE2 Way and construct a new 1500mm diameter chamber 5m upstream along the 450mm pipe.
- Construct a new precast concrete headwall at the outfall, downstream of the public right of way crossing.
- Construct a new 450mm diameter pipe from MH.02 to the precast concrete headwall where it will discharge into the watercourse.

5.1.10. The watercourse alignment downstream from the proposed headwall will remain as existing.

Appendix A

SITE LOCATION PLAN





DO NOT SCALE

NOTES

- DO NOT SCALE FROM THIS DRAWING.
- DRAWING TO BE PRINTED IN COLOUR.
- ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
- THE TOPOGRAPHICAL SURVEY UPON WHICH THIS DESIGN IS BASED HAS BEEN PROVIDED BY A THIRD PARTY AND SHOULD BE CHECKED ON SITE FOR ACCURACY.
- FOR INFORMATION ON EXISTING STATUTORY UNDERTAKERS' EQUIPMENT REFER TO UTILITY DRAWINGS. CONTRACTOR TO CONFIRM LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

KEY

— SITE BOUNDARY

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

P05	16/12/2024	KC	AMENDED TO SUIT PLANNER'S COMMENTS	DW	DW
P04	16/12/2024	KC	PERMITTED LAND BOUNDARY REMOVED	DW	DW
P03	21/11/2024	DS	RETAINING WALL AMENDED	DW	DW
P02	11/07/2024	KC	UPDATED RED LINE BOUNDARY	DW	DW
P01	20/05/2024	SS	FIRST ISSUE	DW	DW
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS:	S2 - FOR INFORMATION
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8 First Street, Manchester, M15 4GU, UK
T+ 44 (0) 161 200 5000
wsp.com

CLIENT:	RUSSELLS SOUTH HEYWOOD LIMITED
---------	--------------------------------

ARCHITECT:	AEW ARCHITECTS
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SITE/PROJECT:	SOUTH HEYWOOD PRIMARY SUBSTATION
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TITLE:	ENABLING WORKS SITE LOCATION PLAN
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SCALE @ A1:	CHECKED:		APPROVED:
1:1250	DW		DW
PROJECT NO:	DESIGNED:	DRAWN:	DATE:
70103659	SS	SS	November 24

DRAWING No:	REV:
SOHW-WSP-PSS-ENAB-DR-D-0101	P05

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Appendix B

TOPOGRAPHICAL SURVEY





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P01	24/05/2024	SS	FIRST ISSUE	DW	DW
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S2 - FOR INFORMATION



8 First Street, Manchester, M15 4GU, UK
T+ 44 (0) 161 200 5000
wsp.com

CLIENT: RUSSELLS SOUTH HEYWOOD LIMITED

ARCHITECT: AEW ARCHITECTS

SITE/PROJECT: SOUTH HEYWOOD
PRIMARY SUBSTATION

TITLE: TOPOGRAPHICAL SURVEY EXTRACT

SCALE @ A1: 1:1000	CHECKED: DW	APPROVED: DW
PROJECT NO: 70103659	DESIGNED: SS	DRAWN: SS DATE: May 24

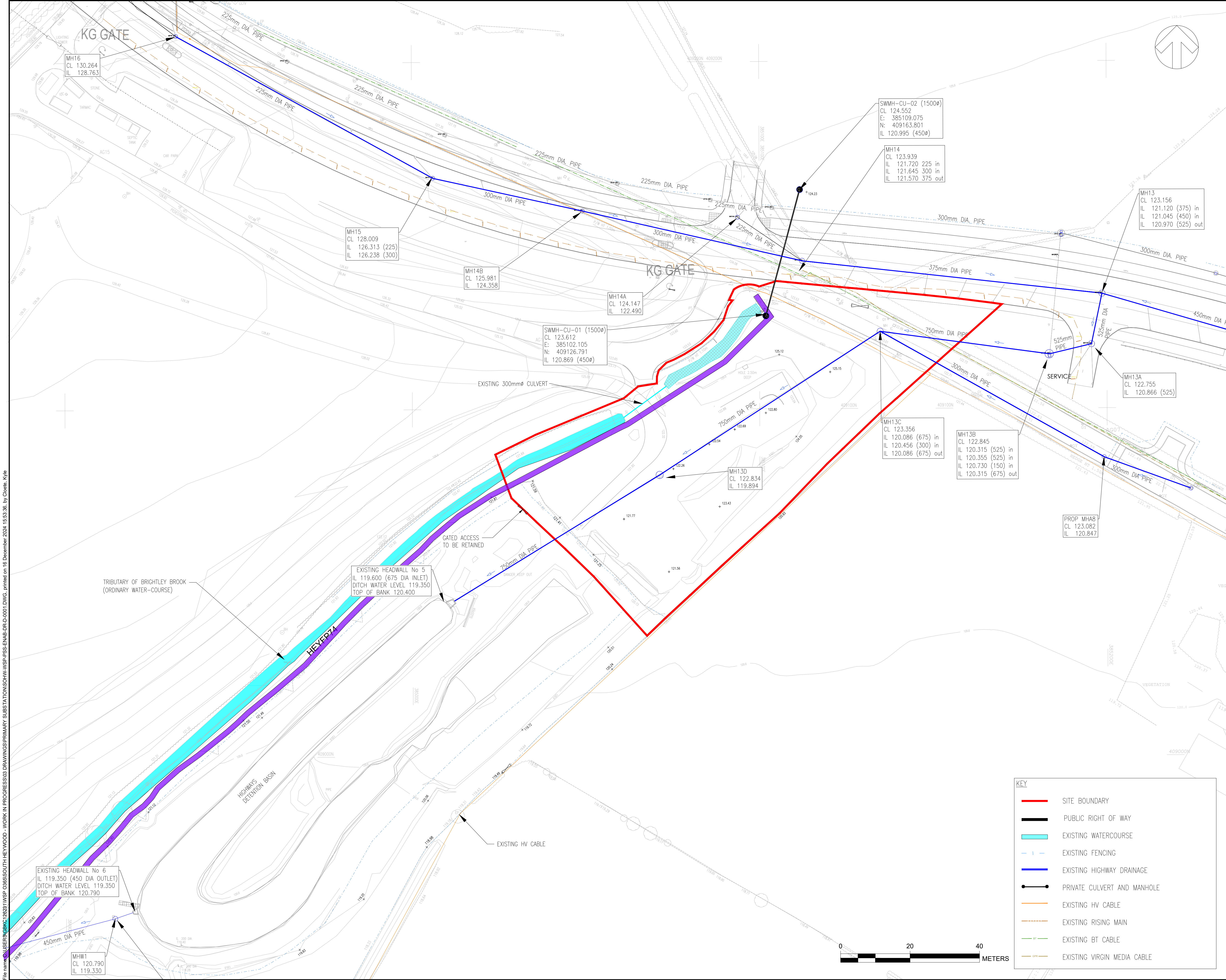
DRAWING NO: SOHW-WSP-PSS-ENAB-SK-D-0007	REV: P01
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Appendix C

EXISTING SITE PLAN





DO NOT SCALE

NOTES

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- THE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH DESIGN MANUAL FOR ROADS AND BRIDGES SPECIFICATION FOR HIGHWAY WORKS.
- FOR INFORMATION ON EXISTING STATUTORY UNDERTAKERS EQUIPMENT REFER TO UTILITY DRAWINGS. CONTRACTOR TO CONFIRM LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- DRAWING TO BE READ IN CONJUNCTION WITH THE SCHEME 2 S278 DRAWINGS.

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

P11	16/12/2024	KC	SCALE BAR ADDED	DW	DW
P10	16/12/2024	KC	PERMITTED AREA BOUNDARY REMOVED	DW	DW
P09	18/11/2024	DS	RETAINING WALL LOCATION UPDATED	DW	DW
P08	10/09/2024	SR	PUBLIC RIGHT OF WAY UPDATED	DW	DW
P07	18/07/2024	KC	UPDATED RED LINE BOUNDARY	DW	DW
P06	21/03/2024	DS	SUBSTATION DIMENSIONS UPDATED	DW	DW
P05	15/02/2024	DS	SUBSTATION LOCATION UPDATED	DW	DW
P04	13/09/2023	BO	EXISTING CABLES AMENDED AS REQUESTED	DW	DW
P03	11/09/2023	BO	HV CABLE ROUTE AMENDED AS REQUESTED	DW	DW
P02	04/09/2023	BO	DRAWING UPDATED AS REQUESTED	DW	DW
P01	18/08/2023	SS	FIRST ISSUE	DW	DW
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S2 - FOR INFORMATION

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CLIENT: RUSSELLS SOUTH HEYWOOD LIMITED

ARCHITECT: AEW ARCHITECTS

SITE/PROJECT: SOUTH HEYWOOD

TITLE: PRIMARY SUBSTATION
EXISTING SITE PLAN

SCALE @ A1: 1:500	CHECKED: DW	APPROVED: DW
PROJECT NO: 70103659	DESIGNED: SS	DRAWN: SS
DATE: NOVEMBER 24		REV: P11

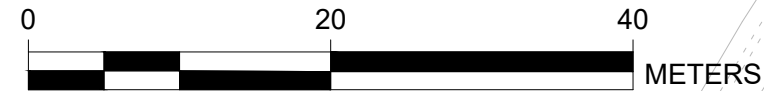
DRAWING NO: SOHW-WSP-PSS-ENAB-DR-D-0001

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Appendix D

PROPOSED SITE PLAN





UNLESS TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

- KEY**
-  SITE BOUNDARY
 -  PUBLIC RIGHT OF WAY
 -  EXISTING WATERCOURSE
 -  EXISTING WATERCOURSE TO BE INFILLED
 -  PROPOSED BUILDING ENVELOPE
 -  PROPOSED HIGHWAY DRAINAGE EASEMENT
 -  PROPOSED SURFACE WATER DRAINAGE
 -  PROPOSED HIGHWAY DRAINAGE
 -  PROPOSED PRIMARY SUBSTATION (39mx26m)
 -  SUBSTATION COMPOUND BOUNDARY (36mx22m)
 -  PROPOSED HEADWALL
 -  EXISTING FENCING
 -  EXISTING HIGHWAY DRAINAGE
 -  EXISTING CULVERT AND MANHOLE
 -  EXISTING HV CABLE
 -  EXISTING RISING MAIN
 -  EXISTING HIGHWAY DRAINAGE TO BE ABANDONED

Appendix E

STAKEHOLDER CONSULTATION



Waters, David

From: Stephen McCann <[REDACTED]>
Sent: 18 December 2023 13:37
To: Waters, David
Cc: Chris Woods; Joe Freeman; Ryan Holland; Olufon, Bolu
Subject: RE: Culverting of stream for >60m for Elec Substn off Queen Eliz. 2 Way - SMcC notes

Afternoon David,

I noticed that you'd asked me about this on 8th Dec. but I'd not replied; apologies.

Following my site visit with you to discuss the arrangements, I have no objection to the modifications to the existing pipework on your South Hywood Primary Substation – Enable Works GA drawing SOHW-WSP-PSS-ENAB-DR-D-000/P03 dated 8 Dec 2023.

regards

Stephen McCann

Drainage & Flooding Engineer

Network Improvement/Development/Flooding



Rochdale Borough Council
Floor 2, Number One Riverside
Smith Street, Rochdale, OL16 1XU

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Please consider the environment before printing this email.

From: Waters, David [REDACTED]
Sent: 18 December 2023 13:24
To: Stephen McCann [REDACTED]
Cc: Chris Woods [REDACTED]; Joe Freeman [REDACTED]; Ryan Holland [REDACTED]; Olufon, Bolu [REDACTED]
Subject: RE: Culverting of stream for >60m for Elec Substn off Queen Eliz. 2 Way - SMcC notes

You don't often get email from [REDACTED]

Hi Stephen,

Further to the trailing email, please can you confirm that you have no objection to the proposed partial infilling of the existing watercourse as discussed on site with Ryan and as per the attached sketch.

Welcome any comments you may have.

Regards

David



David Waters
Associate Director
BEng (Hons), CEng MICE



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Manchester, M15 4GU

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From: Waters, David

Sent: Friday, December 8, 2023 4:15 PM

To: Stephen McCann [REDACTED]

Cc: Chris Woods [REDACTED]; Joe Freeman [REDACTED]; Ryan Holland [REDACTED]

[REDACTED]; Olufon, Bolu [REDACTED] >

Subject: RE: Culverting of stream for >60m for Elec Substn off Queen Eliz. 2 Way - SMcC notes

Stephen,

Further to your site meeting with Ryan Holland a few weeks ago, I understand that you are amenable to partial culverting of the watercourse subject to some rationalisation of the upstream pipe network. Please see attached an updated General Arrangement for the proposed enabling works.

I should be grateful if you would confirm that the proposed arrangement is acceptable in principle and if you could also advise what additional information you would require in order to approve an ordinary watercourse consent application. If you require any further amendments, please let me know and I will be happy to incorporate these where possible.

I look forward to hearing from you.

Regards
David



David Waters
Associate Director
BEng (Hons), CEng MICE



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Manchester, M15 4GU

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From: Stephen McCann <[REDACTED]>
Sent: Friday, October 27, 2023 10:44 AM
To: Waters, David <[REDACTED]>
Cc: Olufon, Bolu <[REDACTED]>; Chris Woods <[REDACTED]>; Joe Freeman <[REDACTED]>
Subject: RE: Culverting of stream for >60m for Elec Substn off Queen Eliz. 2 Way - SMcC notes

Morning David,

The drawing that you sent 23 Oct. is a bit better in showing your proposed highway and culvert diversions. I will go and have another look next week, Wednesday. I still don't see why you need to culvert a full 60m – see appended notes. The WSP drawing does not really clarify the access road to the sub-stn. Can that be shown?

As I mentioned before, culverts can leave problems for those who have to maintain, which is my reason for minimising approvals and minimising lengths. It is better to have a ditch before a culvert so that the drainage is not 'out of mind' and maintenance is more likely to happen. A 1:240 slope with hardly any flow will silt up until such time as a development takes place on the north side of the road and flows increase.

I'm happy to meet anyone on site to look at discuss... although perhaps look at my comments first.

Stephen McCann

Drainage & Flooding Engineer
Network Improvement/Development/Flooding



Rochdale Borough Council
Floor 2, Number One Riverside
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From: Waters, David <[REDACTED]>
Sent: 23 October 2023 15:26
To: Stephen McCann <[REDACTED]>
Cc: Ryan Holland <[REDACTED]>; Olufon, Bolu <[REDACTED]>; Chris Woods <[REDACTED]>; Joe Freeman <[REDACTED]>
Subject: RE: Culverting of stream for >60m for Elec Substn off Queen Eliz. 2 Way - PROBLEM issue

Morning Stephen,

Thank you for your considered response. We remain of the view that there is merit to culverting this section of watercourse, however I accept that the previous drawing did not show our intentions particularly clearly. Please see attached an updated drawing and I have added responses to your comments below in red.

I should be grateful if you would review your previous comments and advise whether the updated proposal is likely to be approved should a formal application be submitted.

Regards
David



David Waters
Associate Director
BEng (Hons), CEng MICE



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Manchester, M15 4GU

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From: Stephen McCann [REDACTED]
Sent: Friday, October 6, 2023 4:44 PM
To: Waters, David [REDACTED]
Cc: Ryan Holland [REDACTED]; Olufon, Bolu [REDACTED]; Chris Woods [REDACTED]; Joe Freeman [REDACTED]
Subject: Culverting of stream for >60m for Elec Substn off Queen Eliz. 2 Way - PROBLEM issue

Dear David,

I went to have a look on 4th Oct. As LLFA officer, if this application of culverting some 60m of stagnant stream, I would reject it because:-

- a) There is no apparent justification for covering long lengths of stream-ditch which is currently stagnant and hardly moves. Culverting will make it worse. I append a photo of a current culvert present in this vicinity that is about 80% silted up. The existing watercourse adjacent to the district centre is currently split into two separate lengths by the existing access that will be retained as part of the development. We have reviewed our proposal such that that only the eastern section would need culverting over a length of approximately 35m. As part of the works we would replace the pipe connecting the two sections of watercourse with a 450mm diameter pipe with a formalised headwall connection into the watercourse. Based on the surveyed levels of the watercourse, we believe that a pipe can be installed at a gradient of 1:240. For a 450mm dia pipe, this equates to a full bore velocity of ~1.3m/s, which is well within the requirements for self-cleansing.
- b) If water is to come from future development on the north side of the Queen Elizabeth 2 way, more flow will come through this ditch. I couldn't actually find the inlet on the north side of the road. The Chamber cover must be grown over, if it is present. However, a ditch is far more maintainable than a buried pipe. Our understanding is that the ordinary watercourse was severed as part of the works to construct QE2 Way. The area to the north of QE2 Way therefore forms part of the natural catchment for this watercourse, hence the installation of a cross carriageway culvert to facilitate future development to the north. Whilst I accept that the chamber to the north is difficult to locate, the as-built position has been surveyed so it will be possible

to locate in the future. Any future development to the north of QE2 Way would be designed and attenuated back to greenfield runoff rates, restoring flow through the watercourse and minimising the risk of stagnation.

- c) It is not just me; the Council has numerous issues with streams which have been culverted in the past without any thought to future maintenance. Maintenance requirements have been fully considered within the attached proposal. The proposed pipe size is significantly larger than the greenfield flows that will be permitted. This allows for sediment build up within the pipe without impeding flows. However, as noted above, self-cleansing velocities can be achieved which will minimise the risk of sediment building up within the pipe. A formal headwall will be constructed at the outfall into the ditch and manholes will be provided at changes of direction.
- d) The only justification for a short length of culvert is when an access road crosses the ditch. Generally I would agree with this sentiment. However, in this instance the length of watercourse we are proposing to culvert is located at the very top of the catchment, is of low quality, and culverting will not introduce any flood risks. Maintaining this section of watercourse has a disproportionate affect on the proposed district centre development due to the shape of the plot.

We have reviewed and updated our previous proposal that significantly reduces the length of watercourse we are seeking to replace with a buried pipe. I should therefore be grateful if you would review and comment on our revised submission in advance of a formal permit application.

There must be someone at the Council who is involved in discussions with you on Utilities, but I don't know who this is? As part of the primary substation enabling works we will need to divert the highway drainage between QE2 Way and the attenuation basin. However, we are waiting until we have an agreed position from yourself regarding the watercourse.

I've therefore cc'd Chris Woods, who is on the Highways management side and Joe Freeman who has worked on the Queen Elizabeth 2 Way.

I'm happy to meet anyone on site to look at the issue.

regards

Stephen McCann

Drainage & Flooding Engineer

Network Improvement/Development/Flooding



Rochdale Borough Council
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From: Waters, David

Sent: 03 October 2023 16:32

To: Stephen McCann <

Cc: Ryan Holland [REDACTED]; Olufon, Bolu [REDACTED]
Subject: RE: CONSENT: South Heywood Spine Road Outfall Permit Application

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Hi Stephen,

Further to our brief discussion and as you may be aware, Russell Group are in the process of delivering a primary substation as part of the South Heywood development. This will be located at the northern end of the district centre, to the northeast of the existing highway drainage basin. As part of the enabling works for the primary substation we are seeking to establish a clearly defined utilities corridor along the boundary of the substation and supermarket, and as part of these works we propose to infill the existing ordinary watercourse over a length of approximately 85m. As part of the QE2 Way works, a culvert has been installed to provide a point of connection for future development. This will be extended to interface with the amended watercourse as part of the package of enabling works.

Our proposed works to amend the watercourse are shown indicatively on drawing SHOW-WSP-PSS-ENAB-DR-D-0002 P01, a copy of which is attached for your information. The key considerations of our proposal are as follows:

- The length of watercourse to be abandoned is at the head of the ordinary watercourse and currently only receives runoff from a very localised catchment. The watercourse is currently severed by the public right of way/ field access and it is not known how the two sections of watercourse are connected, or the integrity of any connection that may exist.
- The existing culvert has been provided to serve future development to the north of QE2 Way. Surface water will be attenuated at source and therefore the discharge rate through the culvert is expected to be at greenfield rates for the catchment area to the north. As part of the enabling works for the primary substation, we propose to formalise the interface between the culvert and the watercourse through the installation of a headwall at what will become the head of the watercourse.
- The existing watercourse is poorly defined, with a footprint that is much larger than necessary to convey the volumes of water that are anticipated from the future development. Site levels are such that reducing the footprint of the ordinary watercourse to enable it to be retained will not be possible.
- The package of enabling works for the substation will require a diversion of existing highway drainage into the attenuation basin. Electricity North West will also require a corridor of approximately 5m to convey the HV cables serving the primary substation. In order to keep the utilities corridor as compact as possible, we consider that it will be beneficial to infill the existing open watercourse over this short length.

I should be grateful if you would confirm, that in principle, Rochdale Council have no objections to the proposal and will be amenable to a formal ordinary watercourse consent application for these works? If you can also advise what additional information you would require, that would be extremely helpful. If you would like a short meeting to discuss our proposals in more detail, please let me know your availability and I will be happy to coordinate this.

I look forward to hearing back from you in due course.

Regards
David



David Waters
Associate Director
BEng (Hons), CEng MICE



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Manchester, M15 4GU

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Waters, David

From: Chris Woods [REDACTED]
Sent: 08 April 2024 16:28
To: Ryan Holland
Cc: Gareth Street; Waters, David; Joe Freeman
Subject: RE: Primary Sub - Amended GA Plan for Discussion

Hi Ryan,

Thank you for the attached. As it is subject to a future planning application, no objection in principle to the proposal.

Regards,

Chris

Chris Woods

Senior Highways Officer (Strategy)
Capital Projects & Highways



Rochdale Borough Council
Floor 2, Number One Riverside
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From: Ryan Holland [REDACTED]
Sent: 08 April 2024 15:52
To: Chris Woods [REDACTED]
Cc: Gareth Street [REDACTED]; Waters, David [REDACTED]; Joe Freeman [REDACTED]
Subject: FW: Primary Sub - Amended GA Plan for Discussion

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Chris,

As discussed on the teams call this morning, please find attached the plan you approved for the diversion of the SW drain around the primary substation.

We would appreciate your written confirmation that this scheme is acceptable, in advance of us submitting the drawing for within a planning application within the coming months.

Thanks

Ryan



Ryan Holland
Associate Design Director

13 Westpoint Enterprise Park, Clarence Avenue, Trafford Park, Manchester, M17 1QS

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From: Ryan Holland
Sent: Wednesday, March 27, 2024 12:03 PM
To: Chris Woods [REDACTED]; Joe Freeman [REDACTED]
Cc: Gareth Street [REDACTED]; Waters, David [REDACTED]
Subject: Primary Sub - Amended GA Plan for Discussion

Hi Chris, Joe,

Further to our last teams call a few weeks ago when we discussed the primary substation plans and surface water diversion, we now have an updated design from WSP we'd like to share with you.

I've attached the GA plan.

The SW diverted drain has a 5m wide easement corridor (shown in green). There is a minor clash with the primary sub area, but to confirm this is only a right of access zone for ENWL to maintain their fence (the blue line). There are no structures within the easement corridor itself.

Joe - the access to the pond for maintenance would be along the same 5m wide corridor.

Joe – do you have an update regarding the as-built details of MH13C?

It will be helpful to have another quick teams call if there are any points to discuss. If required, can you please let me know by filling in the table below when you're available this week / next week.

Name	Wed 27 th	Thu 28 th	Fri 29 th	Mon 1 st	Tue 2 nd	Wed 3 rd
Ryan Holland	From 3pm	All Day	Bank hol	Bank hol	All Day	Up to 1pm, after 3pm
Gareth Street	---	---				
Chris Woods						
Joe Freeman						
David Waters						

Also to make you aware if you are not already, Stephen McCann has confirmed in writing to ENWL [attached email] that they are able to discharge SW directly into the U-shaped pond due to the low flows (5l/s) associated with the 36m x 22m compound. ENWL have suggested they utilise the existing 750mm drain to

[illegible]

13 Westpoint Enterprise Park, Clarence Avenue, Trafford Park, Manchester, M17 1QS

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Waters, David

From: Stephen McCann [REDACTED]
Sent: 18 December 2023 13:37
To: Waters, David
Cc: Chris Woods; Joe Freeman; Ryan Holland; Olufon, Bolu
Subject: RE: Culverting of stream for >60m for Elec Substn off Queen Eliz. 2 Way - SMcC notes

Afternoon David,

I noticed that you'd asked me about this on 8th Dec. but I'd not replied; apologies.

Following my site visit with you to discuss the arrangements, I have no objection to the modifications to the existing pipework on your South Hywood Primary Substation – Enable Works GA drawing SOHW-WSP-PSS-ENAB-DR-D-000/P03 dated 8 Dec 2023.

regards

Stephen McCann

Drainage & Flooding Engineer

Network Improvement/Development/Flooding



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From: Waters, David [REDACTED]
Sent: 18 December 2023 13:24
To: Stephen McCann [REDACTED]
Cc: Chris Woods [REDACTED]; Joe Freeman [REDACTED]; Ryan Holland [REDACTED]; Olufon, Bolu [REDACTED]
Subject: RE: Culverting of stream for >60m for Elec Substn off Queen Eliz. 2 Way - SMcC notes

You don't often get email from [REDACTED]

Hi Stephen,

Further to the trailing email, please can you confirm that you have no objection to the proposed partial infilling of the existing watercourse as discussed on site with Ryan and as per the attached sketch.

Welcome any comments you may have.

Regards



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Manchester
M15 4RP

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