



STOCKTONS, MANCHESTER

**SHOOTERS BROOK
DIVERSION PROPOSALS**

Project No 2301-06

July 2026

Rev:P03

STO-REN-XX-XX-RP-C-00003

This report has been prepared for the sole benefit, use and information of **Liquid Business (Manchester) Limited** for the purposes set out in the report or instructions commissioning it. The liability of **renaissance** in respect of the information contained in the report will not extend to any third party. This document should not be used in whole or part by any third parties without the express written permission of **renaissance**. If any unauthorised third party comes into possession of this report, they rely on it at their own risk and renaissance do not owe them any Duty of Care.

author	Kevin Gilsenan FIStructE, CEng, BEng, MSc, DIC
date	09.10.2025
approved	Andrew Ishwerwood BEng CEng MStructE
date	09.10.2025

Contact Details:

2nd Floor Tribeca House
21-27 Dale Street
Manchester M1 1EY
t: 0161 393 6509

Rev.	Description	Author	Checked	Date
P03	Revised Planning Issue	J Albert	A Isherwood	22.07.26
P02	Updated for LLFA Comments	K Gilsenan	A. Isherwood	09.10.25
P01	Stage 2	N.Amer	A. Isherwood	01.07.25

CONTENTS

1.	INTRODUCTION.....	2
2.	SHOOTERS BROOK.....	3
3	SHOOTERS BROOK OBLIGATIONS	5
4	DIVERSION PROPOSALS	6
5	CONSTRUCTION METHODOLOGY.....	9
6	SUMMARY & NEXT STEPS.....	12

1. INTRODUCTION

This report presents the findings and diversion proposals for the culverted Shooters Brook watercourse. The proposals form part of the wider Stockton site redevelopment. The report is structured to provide:

- An overview of the history of Shooters Brook and its culverting across the proposed development site.
- A summary of the culvert location, general condition and requirement for further intrusive investigation works.
- Proposed easement, oversailing, repair and ongoing inspection and maintenance requirements for the diverted culvert, which are to be agreed with the Manchester City Council as the Lead Local Flood Authority (LLFA).
- An indicative construction methodology demonstrating how the culvert would be diverted, subject to confirmation by the contractor.

The site is currently developed, with a warehouse building to the western half of the site and a surface grade car park to the eastern half. The Shooters Brook watercourse traverses the site from east to southwest, culverted for the full length beneath the car park and warehouse building.

The proposed development comprises the construction of a 44-storey above ground residential tower and 24-storey residential block with commercial space. In total the scheme provides 723 apartments, commercial and coworking floor space plus a large area of public realm.

To allow for the redevelopment of the site, the proposals are to divert the culverted watercourse within the public realm, providing improved access and easement zone to allow for future maintenance and repair. A small area of Block A and B oversail the culvert easement zone. To ensure access for future works, a clear height of over 6m is proposed in these areas.

The information within this report is based upon on available records and detailed surveys. Reference should be made to detailed surveys for full information of the culverts current condition and alignment.

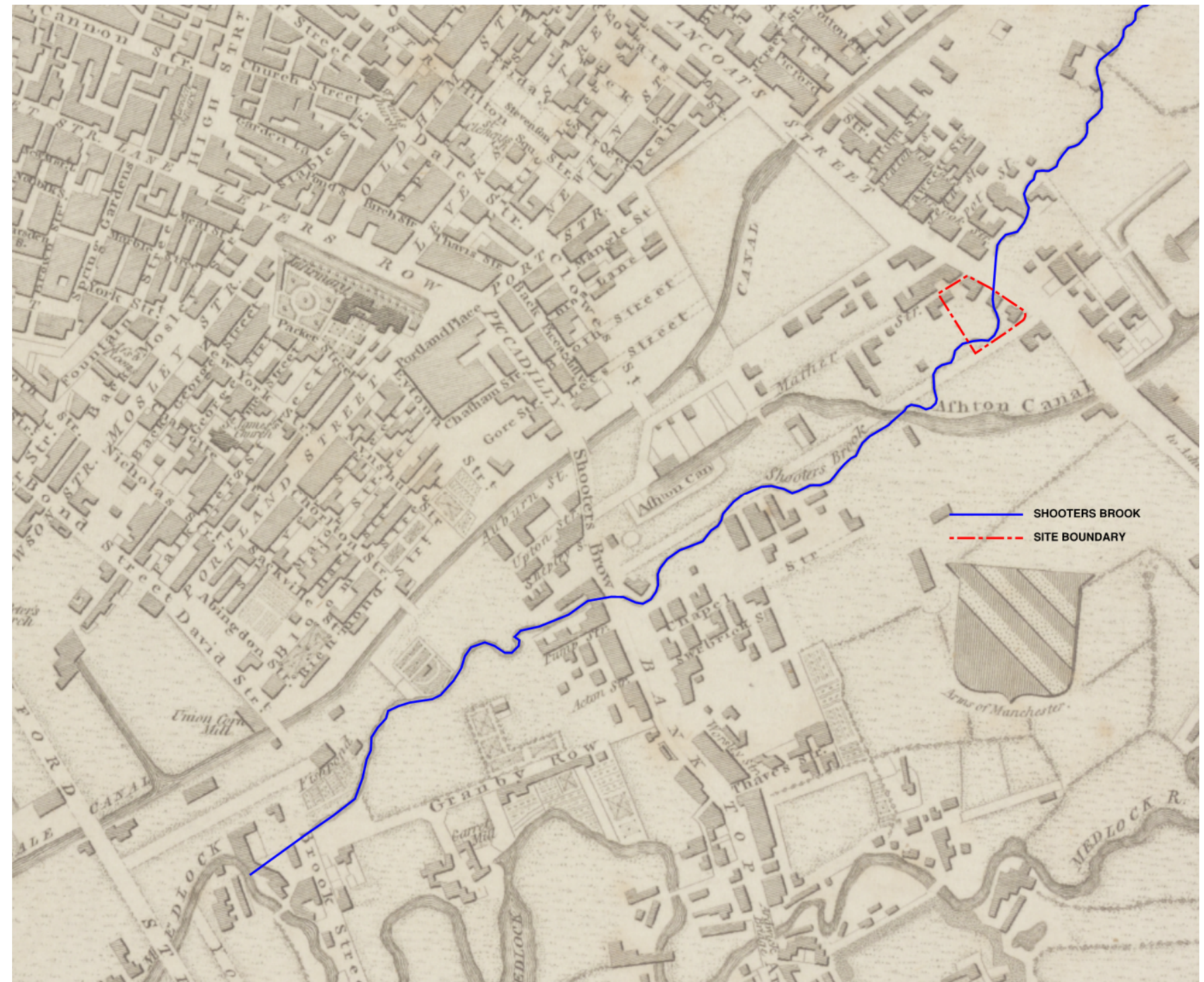


Figure 1.1 Extract from 1807 Roper's Map of Manchester

2. SHOOTERS BROOK

This section provides: A summary of the desk top study to understand the history of the watercourse; A summary of the culvert survey findings, including the culvert location, construction, and condition and; Proposals for further survey.

2.1 History of the Watercourse

Shooters Brook rises in Newton Heath circa 2km to the north-east of the site and discharges into the River Medlock circa 1km to the south-west.

A review of archive maps of Manchester indicates the history of the watercourse as follows:

- **1807 Roper Map** - indicates Shooters Brook as an open watercourse with localised sections of culverting along its length. A small section of Shooters Brook appears to have been culverted where it enters the site from Great Ancoats Street.
- **1824 Swire Map** - shows a section of Shooters Brook to the north-east section of the site as culverted, with the remaining section across the site as an open watercourse. The Brook has also been culverted downstream along Store Street for circa 500m and upstream for circa 400m.
- **1848 OS 1-to-6-inch map** - indicates Shooters Brook as culverted across the site. It is also culverted for most of its length downstream.
- **1891 OS 1-to-6-inch map** - show Shooters Brook has been culverted for most of its length, both up and downstream, with limited section of open watercourse remaining.
- **1909 OS 1-to-6-inch map** - Shooters Brook appears to have been culverted its full length with only street and building names indicating its previous presence above ground.

Based on the historic maps Shooters Brook was culverted across the site in three stages. The top section appears to have been culverted prior to 1807, before being extended in the circa 1830's as the eastern quarter of the site was developed with housing. The remaining section of the watercourse appears to have been culverted in the early 1840's as the remainder of the site was developed with warehouses.

1966 Archive photographs of Great Ancoats Street and the Fairburn Buildings, which occupied the eastern quarter of the site, indicate the buildings on the site were three storeys high with basements. This would indicate that the culvert depth is a minimum circa 3.5m in depth, with the potential to be deeper.

As the site has undergone various phases of development the culvert alignment and form of construction may have been altered. However, based on the historic maps sections, the culvert could be 180 years to over 200 years old.

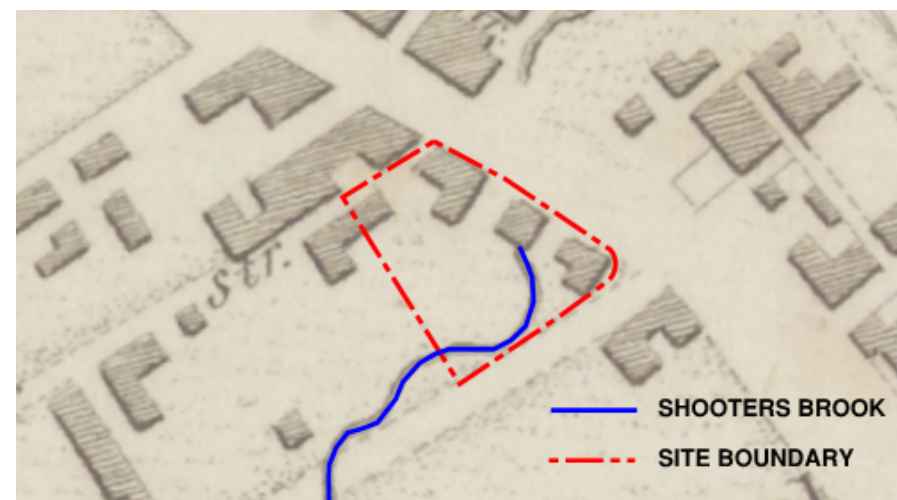


Figure 2.1 - Extract from 1807 Roper Map of Manchester

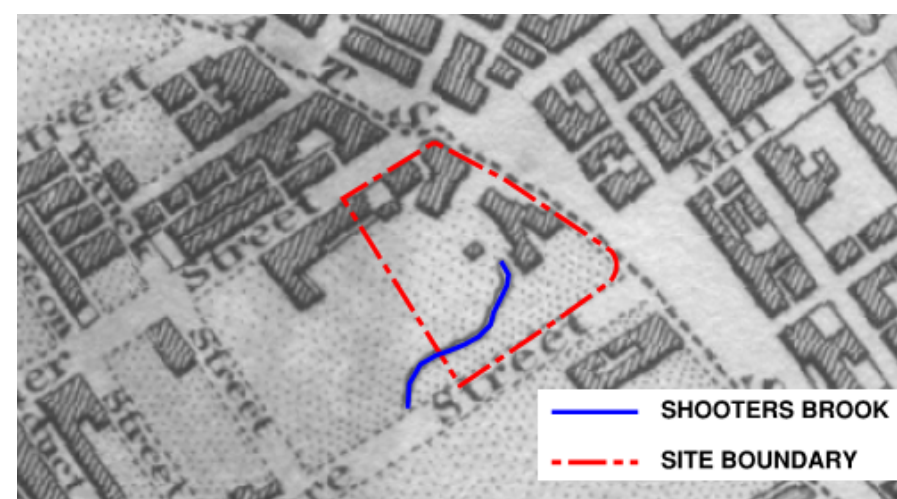


Figure 2.2 - Extract from 1824 Swire Map of Manchester



Figure 2.3 - Extract from 1846 OS Map

2.2 United Utilities Sewer Records

The United Utilities Sewer plan indicates a surface water drain crossing from north to south across the site, prior to running along Store Street. This approximately correlates with the alignment of the culverted Shooters Brook indicated on the 1807 Roper map.



Figure 2.4 - United Utilities Sewer Records

2.3 Surveyed Culvert Alignment

A detailed culvert 3D survey was undertaken by Murphy Geospatial in October 2023 and reference should be made to drawing MGS55608-Culvert, Revision A, 28 October 2023. The plan and views are shown on drawings STO-REN-XX-XX-DR-C-01150 & 1151.

Figure 2.5 shows the culvert alignment and corresponds with the original watercourse alignment noted in Section 2.1. The section of culvert within the site is circa 78m in length, with 62m accessible. The eastern 16m was not accessible due to heavy silting, with the culvert location shown indicatively. CCTV images indicate that the eastern section of culvert might curve to the north and this will need to be confirmed by a further survey.

Access to the culvert was from a side entry manhole in Store Street to the southwest of the site. No points of access to the culvert are present within the site. To survey the eastern section of culvert, intrusive works will be required to excavate over the top of the culvert and form an entry. The proposals for this would need to be developed with a Contractor and agreed with the LLFA before commencing works.

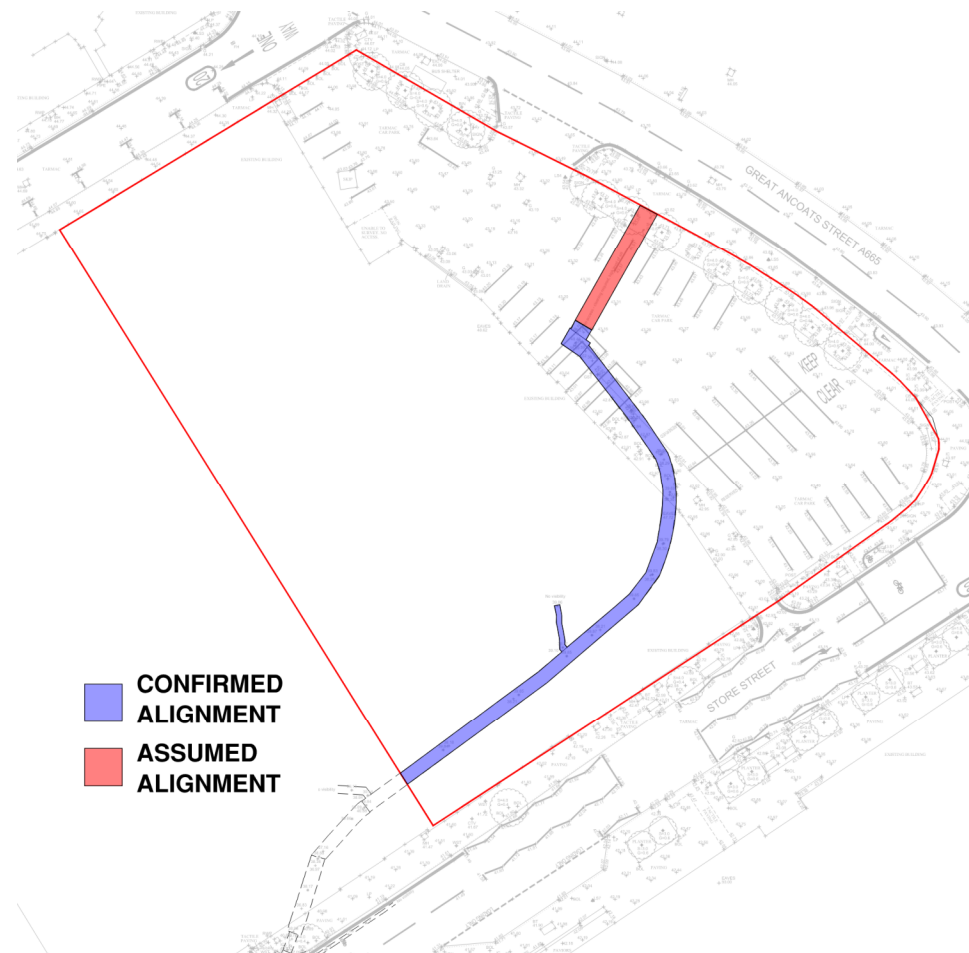


Figure 2.5 Surveyed Culvert Alignment

The 62m of culvert is of brick barrel arch construction as indicated in figure 2.6. The culvert dimensions are relatively consistent and circa 1375mm wide by 1665mm high. The eastern section of culvert that could not be surveyed appears to be of segmental arch masonry construction with a circa 900mm height and 2000mm width (Figure 2.8).

The culvert invert is circa 38.38m at the junction with the non-accessible section of culvert to the east, decreasing to 38.12m at the western site boundary. The average fall is circa 1:240. The culvert depth varies from circa 4.8m at the non-accessible section to 4m at the eastern site boundary.

The ground conditions are to be confirmed during a detailed site investigation. British Geological borehole logs indicate that the area around the site is typically made ground over stiff clays. Bedrock is at a depth of circa 15-20m. A preliminary ground investigation within the car park area undertaken in 2022 confirmed up to circa 4.4m of made ground over stiff gravelly clays. The culvert is therefore located within the top of the clay strata across the site.

An incoming entry is indicated beneath the warehouse. This is to be surveyed following demolition of the warehouse building to confirm the extent and determine if it can be abandoned or diverted.

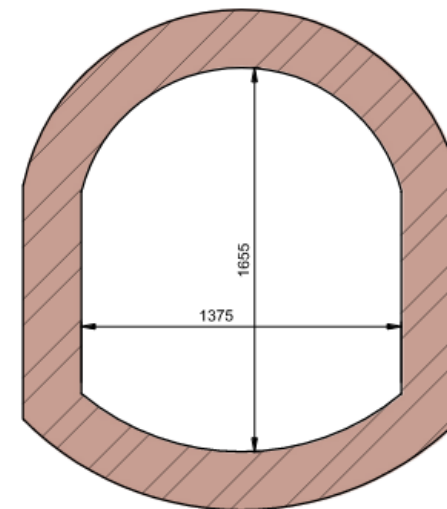


Figure 2.6 – Existing Culvert Cross Section

2.4 Culvert Condition

The survey indicates that the 62m long section of brick barrel culvert is generally in reasonable conditions with localised areas of repointing and brick replacement required (Figure 2.7).



Figure 2.7 – Typical Section of Brick Barrel Culvert

The junction to the non-accessible section of culvert (Figure 2.8) is generally in reasonable conditions with localised areas of repointing and brick replacement required.

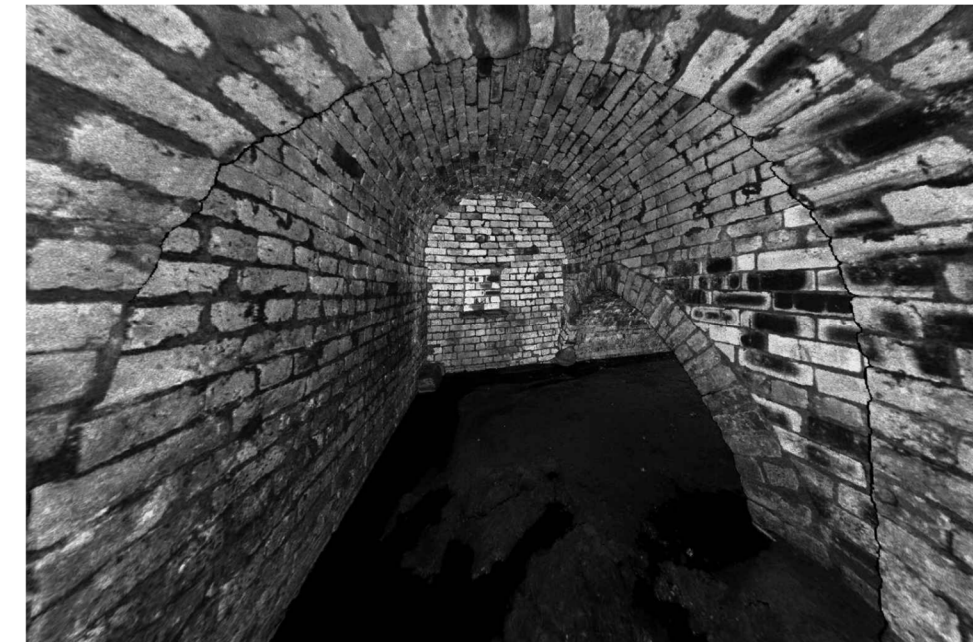


Figure 2.8 – Junction with Segmental Culvert

The junction to the non-accessible section of culvert (Figure 2.9) is heavily silted, which is likely to be due to the abrupt change in culvert alignment. The masonry and pointing are in poor condition, with localised areas of missing and displaced brickwork.

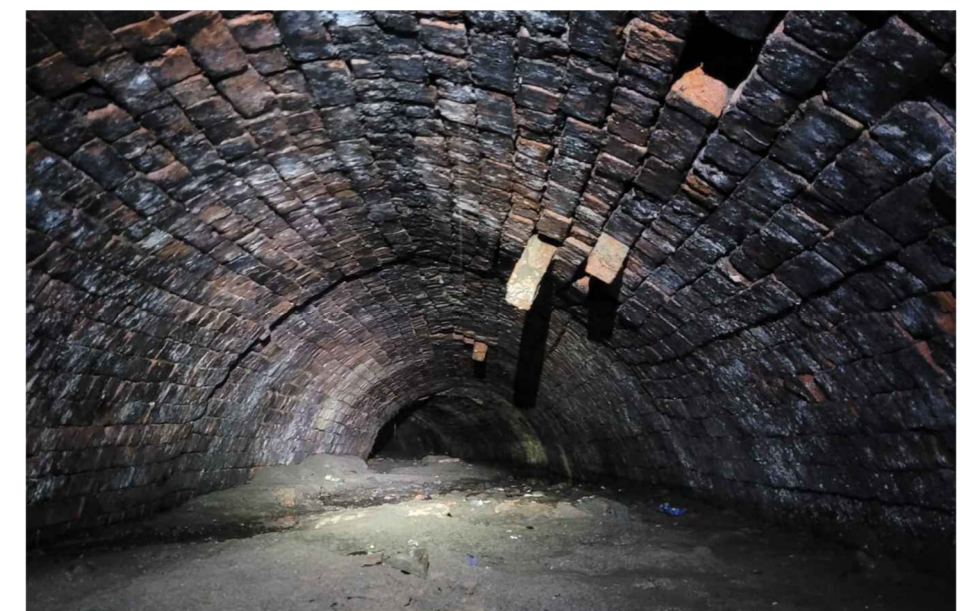


Figure 2.9 – Non-accessible Section of Segmental Culvert

3 SHOOTERS BROOK OBLIGATIONS

This section outlines the Client's responsibilities as a Riparian Owner of the Shooters Brook watercourse and the easement requirements that will impact on future development.

3.1 Riparian Ownership

A watercourse is any natural or artificial channel above or below ground through which water flows, such as a river, brook, beck, ditch, mill stream or culvert (excluding public sewers). Shooters Brook is therefore considered as a watercourse.

Where a watercourse is present across a site the landowner is responsible for it and is termed the 'riparian owner' under the Land Drainage Act. The main obligations as riparian owner for the section of Shooters Brook crossing the site include:

- Allow the flow of water to pass without obstruction.
- Accept flood flows through your land, even if these are caused by an inadequate capacity downstream.
- Maintain the bed and banks of the watercourse even where it runs through a culvert.
- Keep any structures, such as culverts clear of debris;
- Notify the relevant local authority before building or altering any structure that obstructs a watercourse, e.g. culverts.
- Manage your own flood risk.

In summary, the condition and maintenance of the culvert is the responsibility of the landowner as riparian owner. If the culvert is not maintained then Manchester City Council as Lead Local Flood Authority (LLFA) may request works to be undertaken, or to do it themselves and then re-charge the landowner. In addition, failure to maintain the culvert could result in liability for any damage caused as a result of blockage or collapse and associated flooding.

As Riparian owner, it is recommended that the Client undertakes the following:

- Undertake a detailed culvert survey to determine the condition and repair works required to maintain the culvert in good condition.
- Install access points to the culvert within the site development to allow future access and maintenance and complete repair works.
- Undertake condition surveys during the redevelopment works. This should include, post demolition of the warehouse, completion of the diversion works, and upon completion and handover of the buildings and public realm. All survey should be provided by the Contractor undertaking the works and must demonstrate that the culvert is in good condition and any damage is repaired.
- Undertake ongoing condition surveys on a maximum 5-year cycle, with timescales reviewed following each survey. Additional inspections and/or maintenance and repair works should be undertaken as required to ensure the culvert remains in good condition.

3.2 Easement

An easement is required to the culverted watercourse to allow future access to the Authority. This could include maintenance, repair, replacement or upgrading as part of a wider flood alleviation program.

The easement requirements are to be agreed with the LLFA. The easement zone depends upon the culvert depth and size and are agreed on a project specific basis. The easements zones outlined in Sewers for Adoption (see Table 3.1) are typically used to inform initial discussions. Where site constraints dictate a reduction in easement is typically agreed subject to confirmation of construction strategy and agreement with the LLFA.

Depth to invert of sewer (m)	Sewer Diameter / size (mm)			
	1001-1124	1125-1399	1400 or greater	Box Culvert
<3.0	5.0	5.0	5.0	4.0m from centreline or 2.0m from outside edge
3.0 to 4.0	5.0	5.0	5.0	5.0m from centreline or 2.5m from outside edge
4.0 to 5.0	6.5	6.5	6.5	6.0m from centreline or 2.5m from outside edge
5.0 to 6.0	6.5	6.5	6.5	6.0m from centreline or 2.5m from outside edge
6.0 to 7.5	6.5	6.5	6.5	6.0m from centreline or 2.5m from outside edge
> 7.5	5.0	5.0	6.0	6.0m from centreline or 2.5m from outside edge

Table 3.1 Minimum Easement from Buildings/Structure

To make the site feasible for development, the proposals are to divert the culvert with a 1.5m wide precast concrete box culvert as present in section 4.0. The culvert has been located to remain outside the zone of influence of the proposed building foundations.

The culvert depth varies from 5.6m at the Great Ancoats Street site boundary to 3.9m at the western site boundary with Diecast. A minimum 7.0m easement is therefore proposed to provide a 2.5m easement from the outside edge of the box culvert.

3.3 Building Over

The project has been developed by the team to avoid building over the culvert and easements zone where feasible. However, localized areas of overbuild will be required to Block A and Block B.

Typical practice where overbuilds are required is to ensure a minimum 6m clear height to allow for future access for replacement. All adjacent structures are also typically isolated to ensure load is not transferred into the culvert. All build-over proposals will be subject to agreement with the LLFA.

3.4 Proposed Easement & Build Over Envelope

A summary of the proposed easement and localized build-over envelope is indicated in Figure 3.1. Note that this is indicative at this stage and is subject to negotiation and agreement with the LLFA.

For details of proposed easement and build-over zones refer to drawing STO-REN-XX-XX-DR-C-01152.

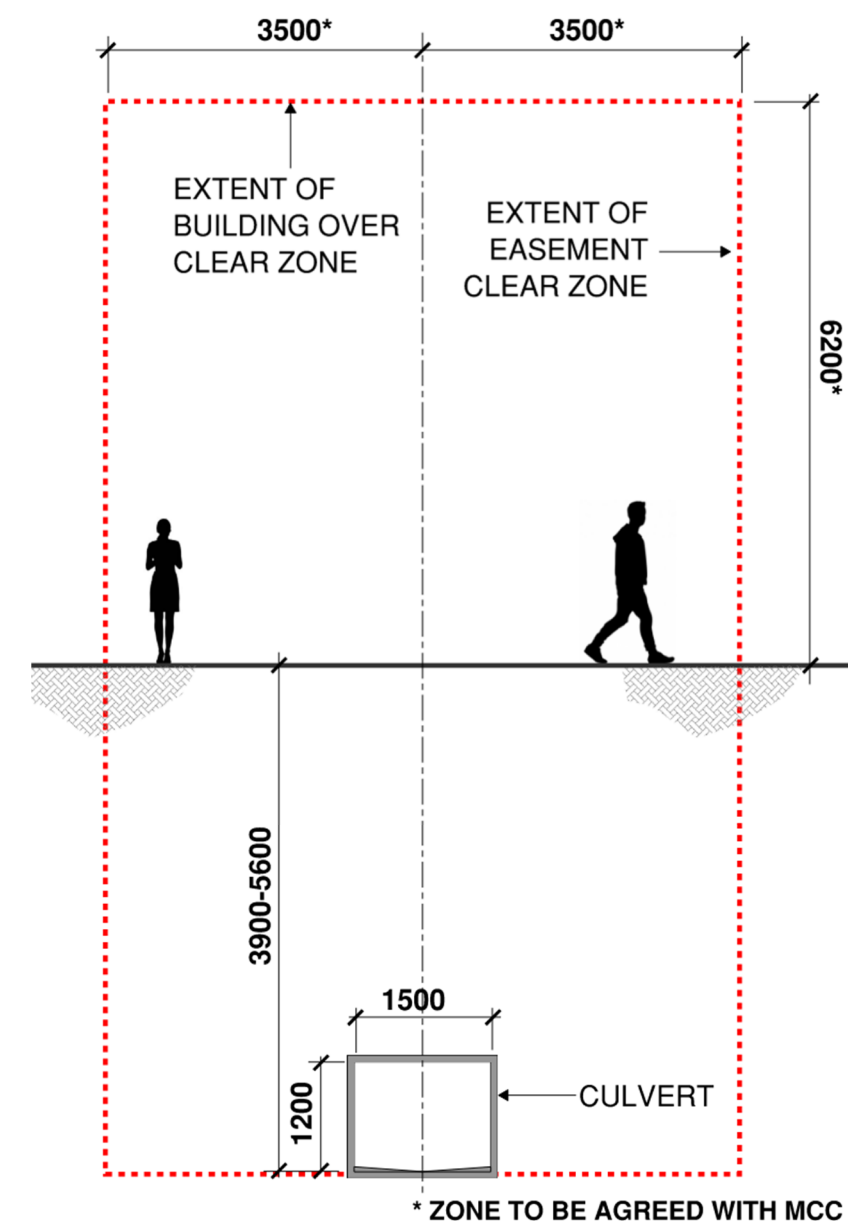


Figure 3.1 – Proposed Easement & Build-over Envelope

An outline methodology to demonstrate how the culvert can be accessed, maintained, inspected, repaired, and replaced within the proposed easement and build-over zone is presented in Section 5.0.

4 DIVERSION PROPOSALS

Due to the location and depth of the culvert, various options to maintain and build-over the culvert were initially considered. However, these were discounted due to the restriction they would impose on the scale of development and risk of damage to the existing culvert.

The proposals are to therefore divert and replace the sections of culvert across the site as indicated in Figure 4.1. Reference should be made to the following drawings for full details of the diversion proposals:

- STO-REN-XX-XX-DR-C-01150 – Culvert Location Plan
- STO-REN-XX-XX-DR-C-01151 – Existing Culvert Plan
- STO-REN-XX-XX-DR-C-01152 – Proposed Diversion Plan
- STO-REN-XX-XX-DR-C-01153 – Culvert Abandonment Plan
- STO-REN-XX-XX-DR-C-03150 – Proposed Culvert Diversion Details

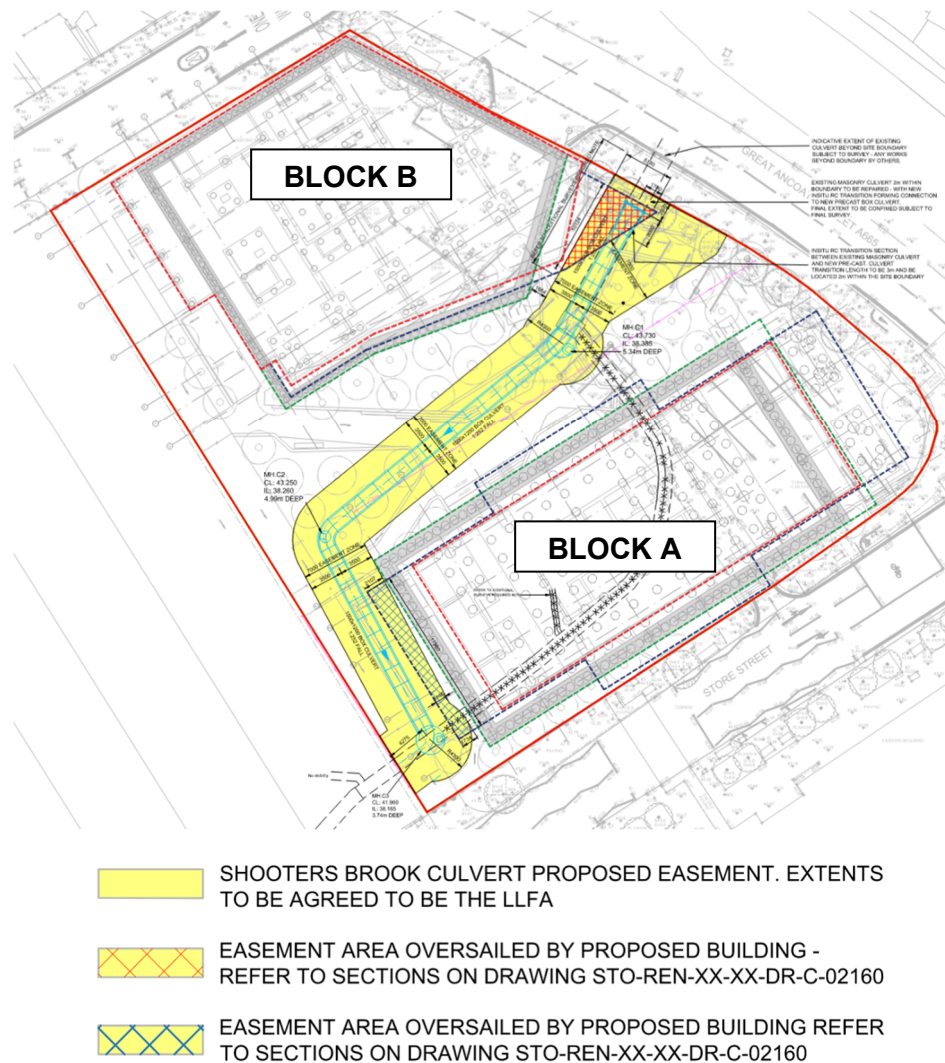


Figure 4.1 – Proposed Culvert Diversion & Replacement

4.1 Culvert Alignment & Access

The proposed culvert diversion alignment has been designed to be of comparable length to the existing culvert, whilst removing the abrupt changes in alignment which has caused heavy silting to the eastern section of culvert. The culvert has also been located to maximise the distance from the proposed buildings so their impact on the culvert is minimised.

To provide access for periodic inspection, maintenance and repair, three manhole access points have been provided within the site curtilage. These access points have been located at changes in alignment to provide clear line of sight along the culvert within the site for operative safety. They also provide access for maintenance if blockages occur.

4.2 Culvert Construction

A 1.5m wide x 1.2m high box culvert is currently proposed as this has a comparable hydraulic performance to the existing culvert (see section 4.6). It also minimises the easement requirements, facilitating the redevelopment of the site.

Due to the relatively low flows observed during the survey, and to mimic the low flow performance of the existing culvert, the box culvert is to include a dry weather flow channel to minimise the risk of blockage. The typical culvert cross section is indicated in Figure 4.1

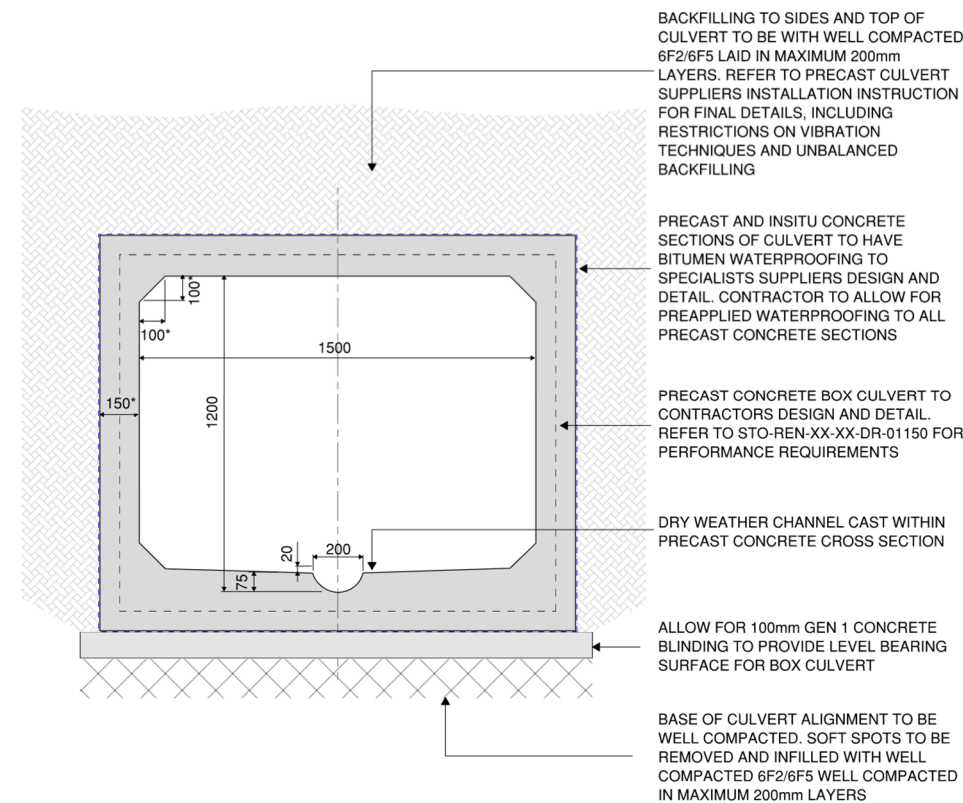


Figure 4.2 – Proposed Culvert Section

Precast concrete box culverts are supplied in up to 2m lengths and are jointed to allow for ground movements. The proposed joint detail is indicated in Figure 4.3. This allows for a nominal 10-30mm joint and flexible waterproofing. Combined with the 2m culvert sections, this provides a culvert that is not susceptible to ground movements and can comfortably accommodate the anticipated movements associated with the buildings, as discussed in section 4.5.

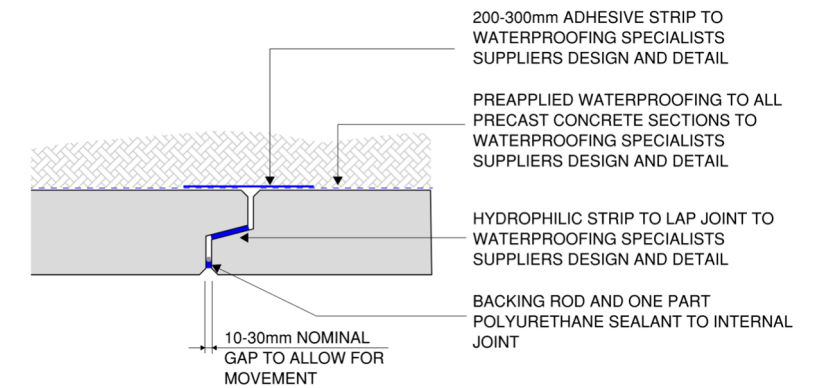


Figure 4.3 – Culvert Section Typical Lap Joint

The final design and detail of the precast concrete box culvert will be to the Contractor's design and details. Details can be provided when the RIBA Stage 4 technical design is undertaken following confirmation of Planning for the proposed development. If calculations and details are required by the LLFA, these should be applied as a pre-commencement planning condition.

4.3 Proposed Easement

The culvert alignment provides a 7.0m wide easement zone, complying with the minimum required presented in Section 3.2. Access is also provided along the full length of the culvert with access available from Great Ancoats Street and Store Street. An outline methodology to demonstrate how the culvert can be accessed, maintained, inspected, repaired, and replaced within the proposed easement and build-over zone is presented in Section 5.0.

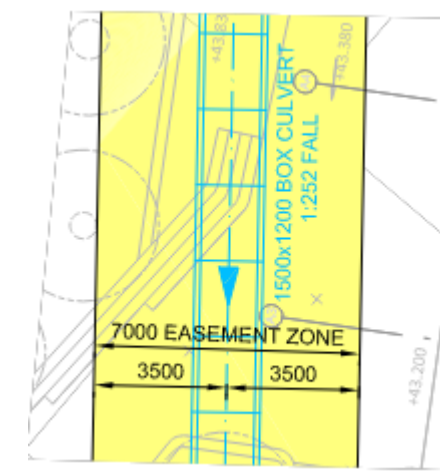


Figure 4.4 – Proposed Easement Zone

Page 7

Where the build-over foundation is proposed for Block B, a compressible board is provided beneath the foundation and the piles are sleeved to below the influence of the culvert. This will ensure no load transfer occurs to the culvert.

The sections indicate that the culvert will therefore not be loaded by the proposed structures and foundation for Blocks A and B. No additional loading requirements to the culvert, over than normal highway loading, is therefore required.

Ground movement will occur due to construction of the building in both the temporary and permanent case. This will comprise both vertical and horizontal movements.

Both buildings are supported on piled foundations at basement level and perimeter contiguous piled walls. The ground beneath and around the buildings will 'dish' as the buildings are constructed, however as the buildings are on piles, the vertical ground movement at the perimeter of the building will be circa 10mm or less. At the culvert locations the vertical ground movement will be less and any changes in ground slope will be gradual.

Horizontal ground movement will occur during the basement excavation. Due to the depth and location of the culvert, this movement will be insignificant and less than circa 5mm.

As noted in section 4.2 the precast box culverts will be constructed in 2m lengths and all joints will be detailed with nominal 10-30mm gaps. This detail allows for the sections to 'rock' as normal practice to accommodate ground movements post installation. The anticipated magnitude of movements at the culvert location due to the construction of the building is negligible and will not adversely affect the performance of the box culverts. In the permanent case, the walls are propped by the ground floor slabs and any horizontal ground movements around the culvert from the buildings will be negligible.

Should movement occur, it will be gradual and would be accommodated with the joints between the precast units. As the culvert is to be inspected following completion of the building, should movement occur that result in water ingress through the joints this can be remediated prior to completion of the works.

The design of the piled foundations, transfer structure and ground movement assessment will be undertaken during RIBA Stage 4 (Technical Design). This requires input from the Contractor and these specialists and would not be undertaken until planning is achieved. If these calculations are required by the LLFA they can be provided at the appropriate stage of design and should be conditioned within the planning approval.

4.6 Culvert Hydraulic Assessment

The proposed culvert size has been selected to provide an equivalent hydraulic performance and storage capacity to the existing culvert.

The existing culvert has a fall of circa 1:240 and the proposed culvert diversion has a fall of 1:252. To provide similar hydraulic performance and minimise silting, the base of the precast box culvert is to include a dry weather flow channel. The existing brick culvert has a cross-sectional area of $A = 1.98\text{m}^2$ and wetted perimeter $P = 5.11\text{m}$.

The proposed precast concrete culvert with a dry weather channel has a cross-sectional area of circa $A = 1.67\text{m}^2$ and wetted perimeter $P = 5.06\text{m}$. Brick culverts typically have a roughness coefficient of 0.013-0.17 with $n = 0.15$ taken for design. Precast concrete box culvert typically has a lower roughness coefficient of $n = 0.01$.

The culvert capacity is given by

$$Q = A R^{2/3} \sqrt{s} / n$$

where Q = Culvert Capacity (m^3/s)
 A = Culvert cross sectional area (m^2)
 R = Hydraulic radius (m) = A/P
 P = Perimeter (m)
 s = slope of culvert (m/m)
 n = manning roughness (m)

Parameter	Brick Culvert	PC Box Culvert
A - Area (m^2)	1.98	1.67
P – Perimeter (m)	5.11	5.06
R – Hyd Radius (m)	0.387	0.330
s – slope (m/m)	0.00417	0.00397
n – manning No.	0.015	0.010
Culvert Flow Q (m^3/s)	4.52	5.02

Table 4.1 Existing & Proposed Culvert Flow Comparison

As shown in Table 4.1 the proposed 1.5m x 1.2m box culvert has a comparable flow capacity with a circa 11% improvement.

The existing culvert has a surface water storage capacity of circa 152.2m^3 , based on:

Barrel Culvert	$60 \times 1.98 =$	118.8m^3
Junction	$2.6\text{L} \times 1.83\text{W} \times 2.07\text{H} =$	9.8m^3
Segmental Culvert	$15 \times \pi \times 2^2/8 =$	23.6m^3

The proposed culvert has a storage capacity of circa 164.9m^3 , based on:

Barrel Culvert	$2.8 \times 1.98 =$	5.5m^3
Box Culvert	$71 \times 1.67 =$	128.6m^3
2No 3m Dia Manhole	$2 \times 2 \times \pi \times 3^2/4 =$	28.3m^3
3No 1.2m Dia Manholes	$3 \times 1.5 \times \pi \times 1.2^2/8 =$	2.5m^3

The new culvert provides a circa 8% increase in on site surface water storage capacity in the event of the culvert flooding.

Based on the above the assessment the proposed culvert size provides a circa 14% increase in flow capacity and 8% increase in on site storage capacity. The proposed 1.5m wide x 1.2m box culvert section is therefore considered suitable for the diversion works.

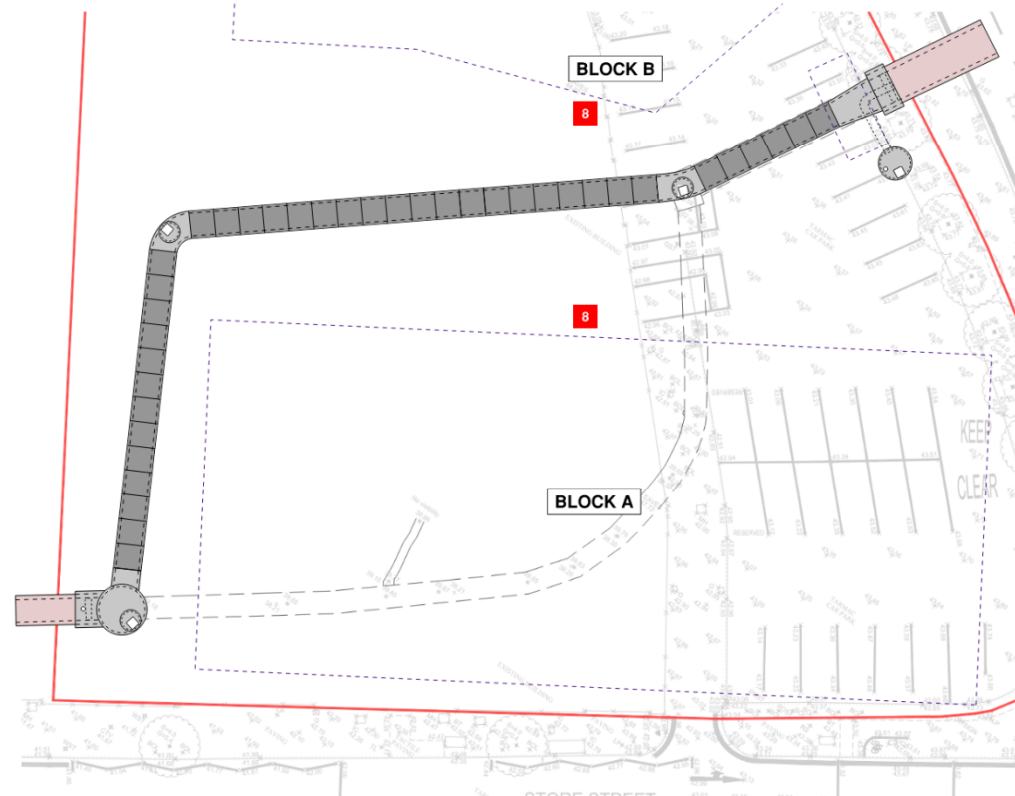




Figure 5.2 – Removal of Section of Culvert



Figure 5.3 – Temporary Diversion of Flow



Figure 5.4 – Temporary Bung

5.3 Future Replacement

The diverted culvert is to have a 100-year design life and with appropriate maintenance will remain operational for significantly longer. However, in the unlikely event that replacement or upgrading is undertaken by the LLFA, the information below demonstrates how the works could be undertaken. The construction methodology will adapt over time to reflect improvements in working practices and developments in plant. However, based on current technology, the replacement work could be undertaken as outlined below.

The culvert is circa 80m long across the site and would be replaced in localised sections. Due to the depth of the culvert, trench boxes would be adopted as indicated in Figure 5.5 to allow for excavation of material over and around the existing culvert. This approach would allow circa 7-8m sections of culvert to be exposed and replaced depending on the final specification of the trench boxes. This approach allows the width of excavation and associated arisings to be kept to a minimum. The trench boxes are typically 2.5-2.8m high and, with lifting apparatus and an excavator or HIAB, would require an installation height of less than 6m.



Figure 5.5 – Culvert Installation with Trench Boxes

As the easement is accessible from Store Street and Great Ancoats Street, it is possible to have access to either end of the culvert being replaced. Operations to remove and replace the culvert would include:

- Excavation of backfill
- Temporary removal of backfill material
- Lifting out existing sections of culvert
- Installation of blinding material and compaction
- Lifting in new sections of culvert
- Backfilling and compacting

The excavation of the trench would typically be undertaken using a vacuum excavator as shown in Figure 5.6. This would then transfer the material to a tipper truck. Both machines are typically up to circa 2.4m wide x 9m long and 3.2m high. The operating height is less than 6m so will be below the proposed overbuild zones to Blocks A and B.



Figure 5.6 – Vacuum Excavator Truck

The delivery of replacement precast units could be undertaken with a rigid HGV lorry with a HIAB as shown in Figure 5.7. These are typically circa 2.4m wide x 8.5m long with a height of up to 3.8m. With outriggers extended the width is up to 6.5m



Figure 5.7 – HGV Rigid Lorry with HIAB

The excavation, lifting of precast units into the excavation, and backfilling would be undertaken with a circa 25-tonne excavator as shown in Figure 5.8. This has a working width of circa 3m, length of 4.5m, and height of 3.3m. The slewing radius is circa 4m so would remain within the proposed easement zone. As shown in Figure 5.8, the excavator can reach the bottom of the deepest excavation on site and with arm folded has a working height of up to 8m. For a lower working height of 6.2m, and restrictor, the slewing radius would increase to circa 7.5m. The only location where the working height would be restricted to less than 8m is the overbuild area to Block B. In this location the proposed easement has been increased from the proposed 7.0m from the face of the over sailing building above.



Figure 5.8 – 25-Tonne Excavator

Figure 5.9 demonstrates how the temporary support and plant could be arranged to allow for replacement of the culvert within the easement zone proposed.

For the section of overbuild, a column and transfer slab are proposed within the easement. This covers a relatively small area of circa 4m and is fully accessible from both sides. The easement zone has also been extended to maintain a minimum 6.8m easement from the oversailing building line. The transfer structure and piles will be designed to allow for excavation beneath the slab and between the piles should the culvert require replacement in the future as shown in Figure 4.8.

The above consideration of easement zone and plant required to undertake the works verifies that the proposed easement of 7.0m is sufficient. The use of trench boxes for the excavation also ensures the surrounding ground remains stable for the works and that there is no adverse impact on the adjacent building foundations.

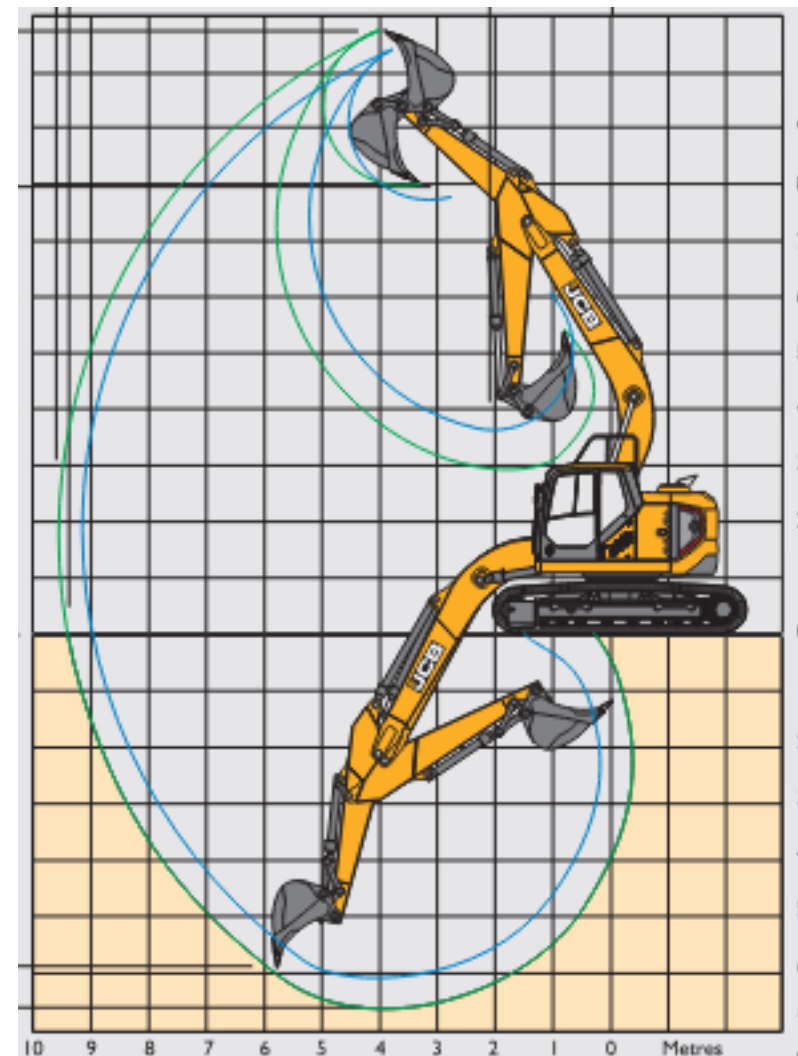


Figure 5.9 – 25 Tonne Excavator

6 SUMMARY & NEXT STEPS

In summary, the proposals are to divert the culverted Shooters Brook watercourse to facilitate the redevelopment of the site. By diverting the culvert within the public realm, a suitable easement can be provided with only localised areas of build-over required. Access for future maintenance and repair will also be improved. The diverted culvert provides improved hydraulic performance reducing the risk of blockage and increasing storage capacity in the event of flooding.

The next steps to be undertaken, subject to a successful planning application are:

- Undertake intrusive survey works to eastern section of culvert and trace incoming spurs subject to LLFA approval.
- Finalise diverted culvert alignment, easement and build-over requirement to eastern section of culvert following survey.
- Finalise Block B bridging foundation solution.
- Obtain Contractor input on diversion works and final specification and detail of precast concrete box culvert proposals.
- Finalise diversion drawings and specifications for LLFA approval.
- Client to formalise land drainage consents, easement, and build over agreement with LLFA
- Contractor to produce detailed culvert diversion construction method statement and details for LLFA approval.