

Ellie Thornhill
Kirklees Metropolitan Borough Council
Development Management
01st August 2024
Your Ref: 2023/92490

Dear Ellie,

An objection to the development at Dowker Street (planning application 2203/92490) was received by AJP on the 27th June 2024 by the Environment Agency (EA). Below is the objection that this letter is commenting on (found in italics). Our answer is in normal type.

We note the applicant has included information regarding modeling the blockage scenario using the 1 in 100-year event plus climate change model and included a 50% blockage of the total surface area at Node 10. The FRA needs to assess the potential worst-case scenario. As such we expect a 100% blockage scenario to be assessed, not a 50%. If the applicant plans on keeping the 50%, we need justification as to why.

Please find below our reasons for using a 50% sized culvert.

The 1 in 100 year event plus climate change event does not overtop the culvert on site. The 1 in 100 year event plus climate change is in accordance with NPPF, the standard that all flood risk assessments are set. Furthermore, this is indicated on the Environment Agency flood maps, which indicate that the site is within Flood Zone 2. (area at risk of flooding between the 1 in 100 year event and the 1 in 1000 year event).

It should be noted, the standing advice from the Environment Agency is that they should not be reviewing sites within Flood Zone 2, as it is outside of their remit agreed by DEFRA.

Therefore, the site is flood free in a 1 in 100 year event plus climate change. The site is only at risk of flooding in more extreme events than the 1 in 100 year event plus climate change. Under NPPF, this is residual risk.

Please see below what is advised to happen in more extreme events, according to NPPF guidance:

Mitigate

- Use flood resistance and resilience measures to address any residual risks remaining after the use of the avoidance and control measures described above. Passive measures should be prioritised over active measures as they are likely to be more effective and more reliable. See [What is flood resistance and resilience?](#)

Manage residual risk

- Consider further management measures to deal with any residual risk remaining after avoidance, control and mitigation have been utilised. Provide safe access and escape routes.
- Consider whether adequate flood warning would be available to people using the development. Residual risks will need to be safely managed to ensure people are not exposed to hazardous flooding. See [What is needed to ensure safe evacuation and flood response procedures are in place?](#)

Therefore, this is a more extreme event and NPPF makes allowance for this by allowing flooding on the site, which can be mitigated by flood proofing and safe access and egress. The letter of 27th March indicated that the site has safe access and egress and includes flood proofing.

It is believed that 50% blockage is acceptable because it is proposed that the culvert will be reinforced, this reduces the likelihood of collapse within the culvert, from the existing situation. Furthermore, this culvert is approximately 2m in diameter, a total blockage is extremely unlikely because the cover above the culvert is less than 1m. Therefore, a total collapse would only fill the culvert up to 50%. A 50% blockage would also be assuming that the smaller particles would not be washed downstream into the river. Please see below an extract of the drainage survey indicating the size of the culvert.

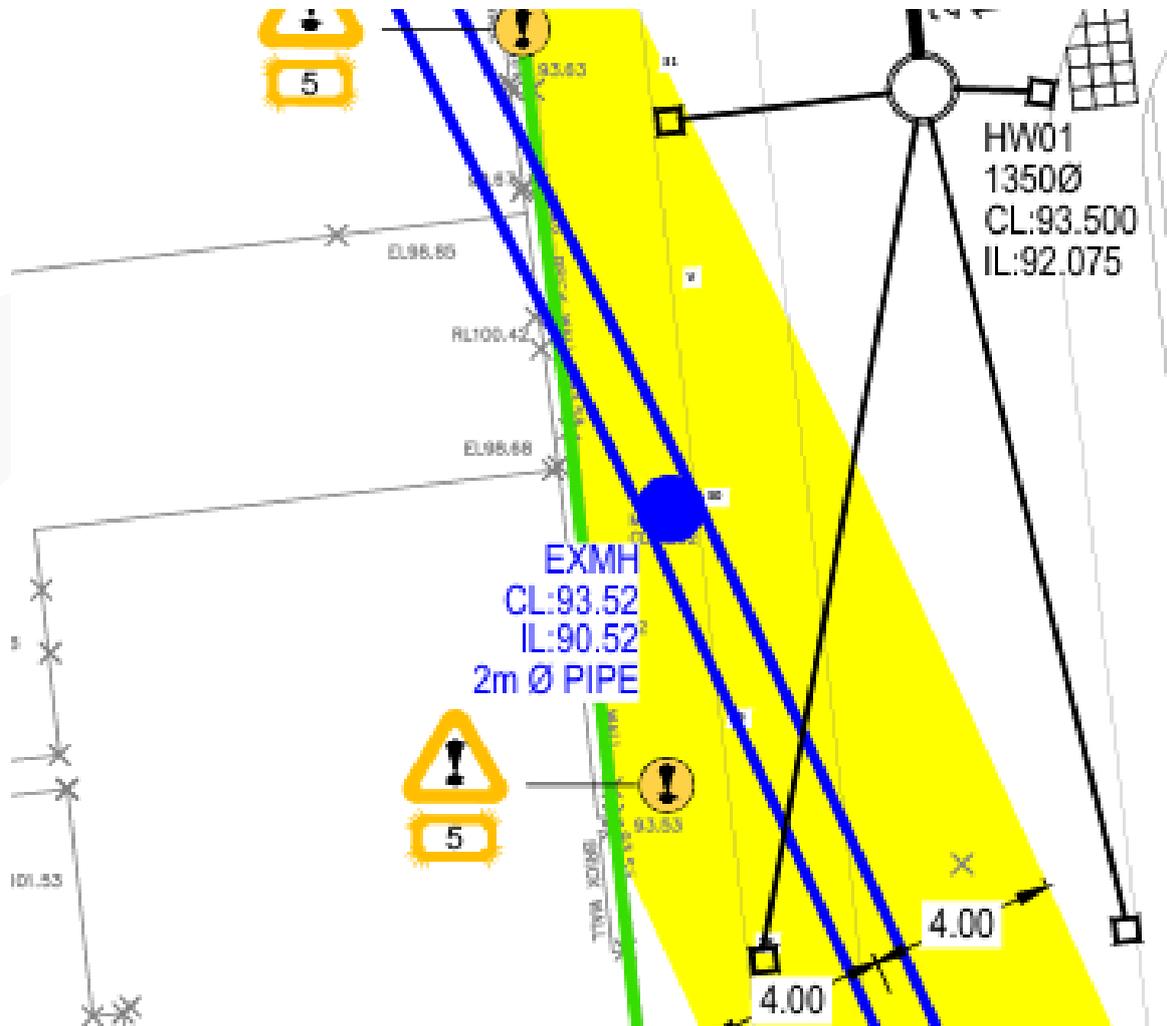


Figure 1: Extract of the drainage strategy

Blockage is very unlikely due to maintenance, because the culvert is over 12m² in area and has a slope of more than 1 in 100.

‘Sewer for Adoption’ recommends that a surface water sewer should have a gradient of more than 1 in 100, to enable self-cleansing. Therefore, this culvert is very unlikely to be blocked by sediment.

The submitted documents present finished floor levels relative to ground levels. Finished floor levels need to be presented in metres above Ordnance Datum (mAOD) so that this can be compared to the design flood level to show that the development is set a suitable height above the flood level.

Please note all the finished floor levels are to mAOD. Please review in Appendix A the resubmitted drawing, indicating the floor levels.

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AJP's response states "At present, there is no road access to the culvert and if the culvert needs maintenance, it is difficult to get to, as it is on multiple levels and cannot be accessed vehicularly. With inclusion of the development, the culvert will have vehicular access".

Our concern is not how to get to the location of the culvert from a vehicular access point of view, but once the proposed development is in place, will this make it harder to access the culvert itself, ie will the concrete slab get in the way of accessing the culvert for repairs or will any existing access points such as manholes be affected? The applicant must demonstrate in their revised FRA that maintenance access will not be compromised. Please note that we have assumed if maintenance is needed, machinery and vehicles or maintenance personnel can already access to the location of the culvert. Therefore, we need clarification on the above.

As per the drainage survey there are already access points to the watercourse, these are already reinforced. Please see attached survey drawing indicating said manhole within the site boundary.

As indicated in Appendix B, the manhole is made of reinforced concrete and is unlikely to require more enforcement.

It is the intention of the proposed development to only reinforce the culvert itself and not the manhole, as the manholes are reinforced. Therefore, access will still be there once the sewer is built.

There is no technical drawing of the culvert line based on survey. We appreciate the submission of the condition survey in Appendix C, however, this has not provided a culvert location survey, which was requested in our last response and therefore has not met our requirement to remove our objection.

Please see the long sections and the technical drawing of the culvert in Appendix C.

If you wish to discuss this with me, please call me on

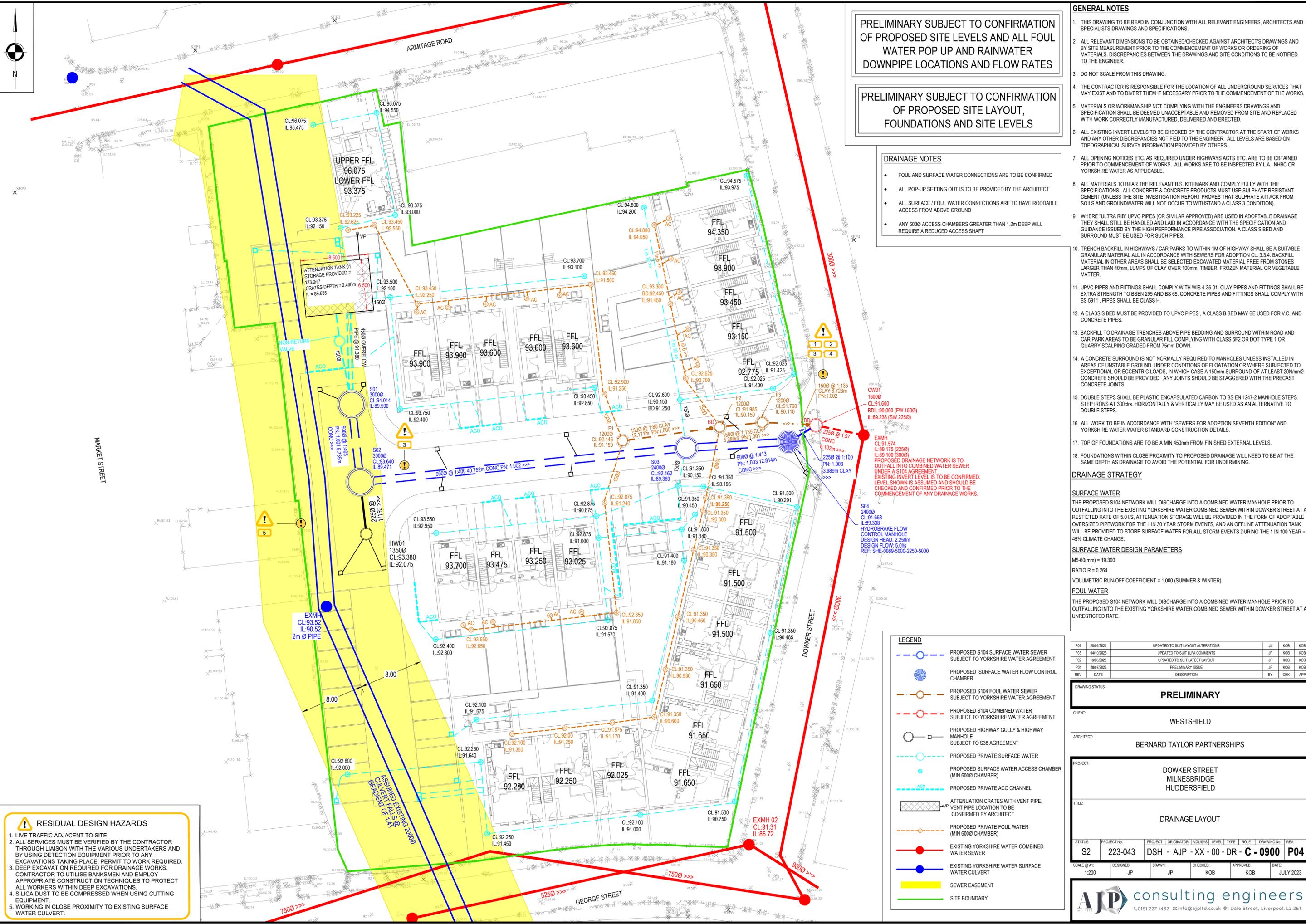
Yours sincerely,

Appendix A: Finished floor level drawing
Appendix B: SEP GPRS Survey
Appendix C: Technical drawing of the culvert

Appendix A: Finished Floor Drawing



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PRELIMINARY SUBJECT TO CONFIRMATION OF PROPOSED SITE LEVELS AND ALL FOUL WATER POP UP AND RAINWATER DOWNPIPE LOCATIONS AND FLOW RATES

PRELIMINARY SUBJECT TO CONFIRMATION OF PROPOSED SITE LAYOUT, FOUNDATIONS AND SITE LEVELS

- DRAINAGE NOTES**
- FOUL AND SURFACE WATER CONNECTIONS ARE TO BE CONFIRMED
 - ALL POP-UP SETTING OUT IS TO BE PROVIDED BY THE ARCHITECT
 - ALL SURFACE / FOUL WATER CONNECTIONS ARE TO HAVE RODDABLE ACCESS FROM ABOVE GROUND
 - ANY 6000 ACCESS CHAMBERS GREATER THAN 1.2m DEEP WILL REQUIRE A REDUCED ACCESS SHAFT

- GENERAL NOTES**
- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS, ARCHITECTS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
 - ALL RELEVANT DIMENSIONS TO BE OBTAINED/CHECKED AGAINST ARCHITECTS DRAWINGS AND BY SITE MEASUREMENT PRIOR TO THE COMMENCEMENT OF WORKS OR ORDERING OF MATERIALS. DISCREPANCIES BETWEEN THE DRAWINGS AND SITE CONDITIONS TO BE NOTIFIED TO THE ENGINEER.
 - DO NOT SCALE FROM THIS DRAWING.
 - THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION OF ALL UNDERGROUND SERVICES THAT MAY EXIST AND TO DIVERT THEM IF NECESSARY PRIOR TO THE COMMENCEMENT OF THE WORKS.
 - MATERIALS OR WORKMANSHIP NOT COMPLYING WITH THE ENGINEERS DRAWINGS AND SPECIFICATION SHALL BE DEEMED UNACCEPTABLE AND REMOVED FROM SITE AND REPLACED WITH WORK CORRECTLY MANUFACTURED, DELIVERED AND ERECTED.
 - ALL EXISTING INVERT LEVELS TO BE CHECKED BY THE CONTRACTOR AT THE START OF WORKS AND ANY OTHER DISCREPANCIES NOTIFIED TO THE ENGINEER. ALL LEVELS ARE BASED ON TOPOGRAPHICAL SURVEY INFORMATION PROVIDED BY OTHERS.
 - ALL OPENING NOTICES ETC. AS REQUIRED UNDER HIGHWAYS ACTS ETC. ARE TO BE OBTAINED PRIOR TO COMMENCEMENT OF WORKS. ALL WORKS ARE TO BE INSPECTED BY L.A., NHBC OR YORKSHIRE WATER AS APPLICABLE.
 - ALL MATERIALS TO BEAR THE RELEVANT B.S. KITEMARK AND COMPLY FULLY WITH THE SPECIFICATIONS. ALL CONCRETE & CONCRETE PRODUCTS MUST USE SULPHATE RESISTANT CEMENT (UNLESS THE SITE INVESTIGATION REPORT PROVES THAT SULPHATE ATTACK FROM SOILS AND GROUNDWATER WILL NOT OCCUR TO WITHSTAND A CLASS 3 CONDITION).
 - WHERE "ULTRA RIB" UPVC PIPES (OR SIMILAR APPROVED) ARE USED IN ADOPTABLE DRAINAGE THEY SHALL STILL BE HANDLED AND LAID IN ACCORDANCE WITH THE SPECIFICATION AND GUIDANCE ISSUED BY THE HIGH PERFORMANCE PIPE ASSOCIATION. A CLASS S BED AND SURROUND MUST BE USED FOR SUCH PIPES.
 - TRENCH BACKFILL IN HIGHWAYS / CAR PARKS TO WITHIN 1M OF HIGHWAY SHALL BE A SUITABLE GRANULAR MATERIAL ALL IN ACCORDANCE WITH SEWERS FOR ADOPTION CL. 3.3.4. BACKFILL MATERIAL IN OTHER AREAS SHALL BE SELECTED EXCAVATED MATERIAL FREE FROM STONES LARGER THAN 40mm, LUMPS OF CLAY OVER 100mm, TIMBER, FROZEN MATERIAL OR VEGETABLE MATTER.
 - UPVC PIPES AND FITTINGS SHALL COMPLY WITH WIS 4-35-01. CLAY PIPES AND FITTINGS SHALL BE EXTRA STRENGTH TO BSEN 295 AND BS 85. CONCRETE PIPES AND FITTINGS SHALL COMPLY WITH BS 5911. PIPES SHALL BE CLASS H.
 - A CLASS S BED MUST BE PROVIDED TO UPVC PIPES, A CLASS B BED MAY BE USED FOR V.C. AND CONCRETE PIPES.
 - BACKFILL TO DRAINAGE TRENCHES ABOVE PIPE BEDDING AND SURROUND WITHIN ROAD AND CAR PARK AREAS TO BE GRANULAR FILL COMPLYING WITH CLASS 6F2 OR DOT TYPE 1 OR QUARRY SCALPING GRADED FROM 75mm DOWN.
 - A CONCRETE SURROUND IS NOT NORMALLY REQUIRED TO MANHOLES UNLESS INSTALLED IN AREAS OF UNSTABLE GROUND, UNDER CONDITIONS OF FLOATION OR WHERE SUBJECTED TO EXCEPTIONAL OR ECCENTRIC LOADS, IN WHICH CASE A 150mm SURROUND OF AT LEAST 20N/mm² CONCRETE SHOULD BE PROVIDED. ANY JOINTS SHOULD BE STAGGERED WITH THE PRECAST CONCRETE JOINTS.
 - DOUBLE STEPS SHALL BE PLASTIC ENCAPSULATED CARBON TO BS EN 1247-2 MANHOLE STEPS. STEP IRONS AT 300c/c. HORIZONTALLY & VERTICALLY MAY BE USED AS AN ALTERNATIVE TO DOUBLE STEPS.
 - ALL WORK TO BE IN ACCORDANCE WITH "SEWERS FOR ADOPTION SEVENTH EDITION" AND YORKSHIRE WATER WATER STANDARD CONSTRUCTION DETAILS.
 - TOP OF FOUNDATIONS ARE TO BE A MIN 450mm FROM FINISHED EXTERNAL LEVELS.
 - FOUNDATIONS WITHIN CLOSE PROXIMITY TO PROPOSED DRAINAGE WILL NEED TO BE AT THE SAME DEPTH AS DRAINAGE TO AVOID THE POTENTIAL FOR UNDERMINING.

DRAINAGE STRATEGY

SURFACE WATER
 THE PROPOSED S104 NETWORK WILL DISCHARGE INTO A COMBINED WATER MANHOLE PRIOR TO OUTFALLING INTO THE EXISTING YORKSHIRE WATER COMBINED SEWER WITHIN DOWKER STREET AT A RESTRICTED RATE OF 5.0 L/S. ATTENUATION STORAGE WILL BE PROVIDED IN THE FORM OF ADOPTABLE OVERSIZED PIPEWORK FOR THE 1 IN 30 YEAR STORM EVENTS, AND AN OFFLINE ATTENUATION TANK WILL BE PROVIDED TO STORE SURFACE WATER FOR ALL STORM EVENTS DURING THE 1 IN 100 YEAR - 45% CLIMATE CHANGE.

SURFACE WATER DESIGN PARAMETERS
 M5-60(mm) = 19.300
 RATIO R = 0.264
 VOLUMETRIC RUN-OFF COEFFICIENT = 1.000 (SUMMER & WINTER)

FOUL WATER
 THE PROPOSED S104 NETWORK WILL DISCHARGE INTO A COMBINED WATER MANHOLE PRIOR TO OUTFALLING INTO THE EXISTING YORKSHIRE WATER COMBINED SEWER WITHIN DOWKER STREET AT A UNRESTRICTED RATE.

- LEGEND**
- PROPOSED S104 SURFACE WATER SEWER SUBJECT TO YORKSHIRE WATER AGREEMENT
 - PROPOSED SURFACE WATER FLOW CONTROL CHAMBER
 - PROPOSED S104 FOUL WATER SEWER SUBJECT TO YORKSHIRE WATER AGREEMENT
 - PROPOSED S104 COMBINED WATER SUBJECT TO YORKSHIRE WATER AGREEMENT
 - PROPOSED HIGHWAY GULLY & HIGHWAY MANHOLE SUBJECT TO S38 AGREEMENT
 - PROPOSED PRIVATE SURFACE WATER
 - PROPOSED SURFACE WATER ACCESS CHAMBER (MIN 6000 CHAMBER)
 - PROPOSED PRIVATE ACO CHANNEL
 - ATTENUATION CRATES WITH VENT PIPE. VENT PIPE LOCATION TO BE CONFIRMED BY ARCHITECT
 - PROPOSED PRIVATE FOUL WATER (MIN 6000 CHAMBER)
 - EXISTING YORKSHIRE WATER COMBINED WATER SEWER
 - EXISTING YORKSHIRE WATER SURFACE WATER CULVERT
 - SEWER EASEMENT
 - SITE BOUNDARY

- RESIDUAL DESIGN HAZARDS**
- LIVE TRAFFIC ADJACENT TO SITE.
 - ALL SERVICES MUST BE VERIFIED BY THE CONTRACTOR THROUGH LIAISON WITH THE VARIOUS UNDERTAKERS AND BY USING DETECTION EQUIPMENT PRIOR TO ANY EXCAVATIONS TAKING PLACE, PERMIT TO WORK REQUIRED.
 - DEEP EXCAVATION REQUIRED FOR DRAINAGE WORKS. CONTRACTOR TO UTILISE BANKSMEN AND EMPLOY APPROPRIATE CONSTRUCTION TECHNIQUES TO PROTECT ALL WORKERS WITHIN DEEP EXCAVATIONS.
 - SILICA DUST TO BE COMPRESSED WHEN USING CUTTING EQUIPMENT.
 - WORKING IN CLOSE PROXIMITY TO EXISTING SURFACE WATER CULVERT.

REV	DATE	DESCRIPTION	BY	CHK	APP
P04	20/06/2024	UPDATED TO SUIT LAYOUT ALTERATIONS	JJ	KOB	KOB
P03	04/10/2023	UPDATED TO SUIT LIFA COMMENTS	JP	KOB	KOB
P02	16/08/2023	UPDATED TO SUIT LATEST LAYOUT	JP	KOB	KOB
P01	28/07/2023	PRELIMINARY ISSUE	JP	KOB	KOB

DRAWING STATUS: **PRELIMINARY**

CLIENT: WESTSHIELD

ARCHITECT: BERNARD TAYLOR PARTNERSHIPS

PROJECT: DOWKER STREET MILNESBRIDGE HUDDERSFIELD

TITLE: DRAINAGE LAYOUT

STATUS:	PROJECT No:	PROJECT ORIGINATOR:	VOL/S/L:	LEVEL:	TYPE:	ROLE:	DRAWING No.:	REV.:
S2	223-043	DSH - AJP - XX - 00 - DR - C - 0900				P04		

SCALE @:	DESIGNED:	DRAWN:	CHECKED:	APPROVED:	DATE:
1:200	JP	JP	KOB	KOB	JULY 2023



Appendix B: SEP GPRS Survey



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NOTES
 The geophysical results have been overlaid onto Survey and Engineering Projects topographic survey. Drawing reference '23364-1_2D'.
 It should be appreciated that the culvert chainage has been approximated using Photo 22 as the reference starting point.
 The Ground Penetrating Radar (GPR) technique was collected using the GSSI 200MHz hyperbolic antenna. Anomalous areas have been picked by interrogating the data in profile form - examples are displayed in Figure 1. All depths are to the top of interpreted features and displayed in metres (m).
 It is recommended that an internal tracing survey is completed from the manhole in the north west of site to the outfall in the south.
 Features annotated as GPR indicate a series of consistent subsurface anomalies located using the Ground Penetrating Radar technique. They have been identified as localised changes in dielectric properties within the dataset which, although of reasonable size has not been undertaken during the data processing and interpretation. SEP Geophysical cannot guarantee that every feature has been identified.

File Name: G-22-161 DOWKER STREET-FIGURE 1

LEGEND

- CHAINAGE TAKEN FROM CONDITION SURVEY
- LIKELY FOUL WATER
- CULVERT
- ASSUMED/RECORD POSITION OF CENTRAL POINT OF CULVERT (UNKNOWN DIAMETER), ALIGNED USING MANHOLE WHICH LIKELY RELATES TO CULVERT & OUTFALL POSITION.
- GPR SURVEY BOUNDARY
- A. GPR DETECTED ANOMALY INDICATIVE OF AN POSSIBLE CHANGE IN GROUND CONDITIONS RELATING TO THE POSITION OF THE CULVERT. [HIGHER CONFIDENCE DETECTION]
- B. GPR DETECTED ANOMALY INDICATIVE OF AN POSSIBLE CHANGE IN GROUND CONDITIONS RELATING TO THE POSITION OF THE CULVERT. [LOWER CONFIDENCE DETECTION]



REV	DATE	DESCRIPTION
01	29/07/22	SECOND VISIT INFORMATION APPENDED

Client

Project Title
 SAVILLE STREET CULVERT,
 DOWKER STREET,
 HUDDERSFIELD

Drawing Title
 GEOPHYSICAL RESULTS:
 GPR INTERPRETATION

Surveyed	Drawn	Checked
JC	JC	TS
Scale	Date	Drawing Ref
1:100	29/07/22	FIGURE.1-REV.01
No	Site	Rev
01	A0	--

Photo 1 - Taken facing west.



Photo 2 - Taken facing west. Internal structure shows good correlation with photo 22 of culvert condition report.



Photo 2 - Taken facing west. Internal structure shows good correlation with photo 22 of culvert condition report.



Unable to GPR survey area to due surface ground conditions

Manhole lifted during survey works. Asset most likely relates to Saville culvert. Internal structure seems to match photo 22 in 'Longwood Brook Culvert Survey 2014'.
 MH - Culvert
 CL=93.82
 IL=90.52 (A)
 SOF=1.0d(A)
 Unable to determine chamber extents

Approximate Chainage 110m

Unable to GPR survey due to vegetation & uneven surface conditions

Approximate Chainage 125m

1.10d - 1.25d

Culvert condition report indicates widening of masonry arch

Unable to GPR survey due to vegetation & uneven surface conditions

GPR detected reinforcement throughout survey area - this has limited the detection of features in this area.

GPR detected reinforcement throughout survey area - this has limited the detection of features in this area.

Unable to GPR survey due to vegetation & uneven surface conditions

Unable to GPR survey due to vegetation & uneven surface conditions

Approximate Chainage 150m

Photo 25 in condition report seems to indicate the culvert may turn at this point. Also material change to steel/concrete soffit

MH - FW?
 CL=92.11
 IL=88.31
 (Approximate)

- Manhole lifted during a second visit.
- No flow rate and debris within chamber. Suggesting possibly redundant storm water.

- Manhole lifted during a second visit.
- Direction and flow rate suggests a different drainage system to culvert - possibly foul water.

Outfall location - IL=89.10 SOF=90.87

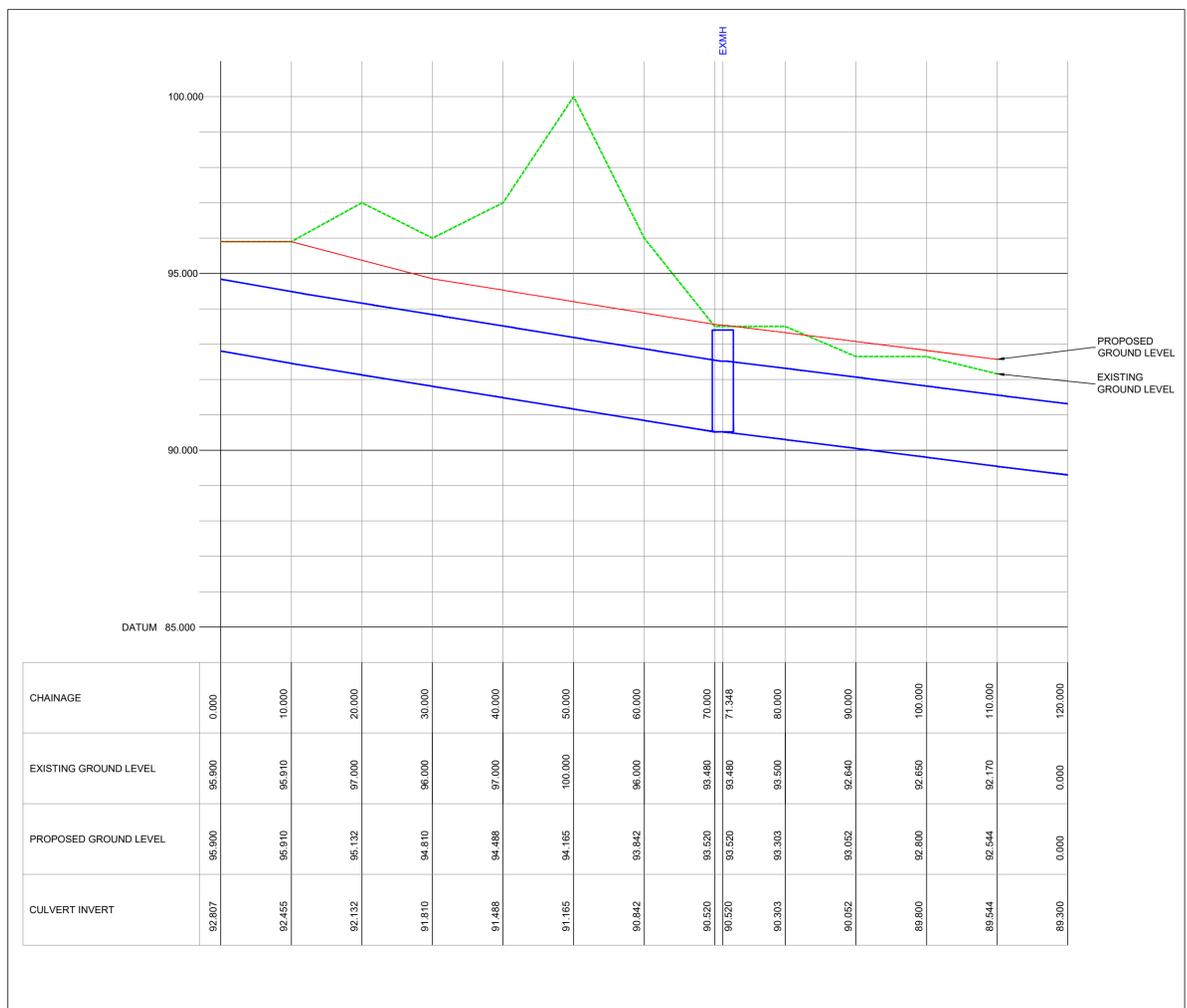


Appendix C: Technical drawing of the culvert





PLAN
SCALE 1:250



LONGSECTION
SCALE: H-1:100 V-1:500

GENERAL NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS, ARCHITECTS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
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3. DO NOT SCALE FROM THIS DRAWING.

PD1	01/08/2024	PRELIMINARY ISSUE	JP	KOB	KOB
REV	DATE	DESCRIPTION	BY	CHK	APP

DRAWING STATUS: **PRELIMINARY**

CLIENT: WESTSHIELD

ARCHITECT: BERNARD TAYLOR PARTNERSHIPS

PROJECT: DOWKER STREET
MILNESBRIDGE
HUDDERSFIELD

TITLE: EXISTING CULVERT
LONGSECTION

STATUS	PROJECT No.	PROJECT	ORIGINATOR	VOL/SYS/LEVEL	TYPE	ROLE	DRAWING No.	REV.
S2	223-043	DSH - AJP - ZZ - 00 - DR - C - 3000	P01					

SCALE @ A1:	DESIGNED:	DRAWN:	CHECKED:	APPROVED:	DATE:
AS SHOWN	JP	JP	KOB	KOB	AUG 2024