

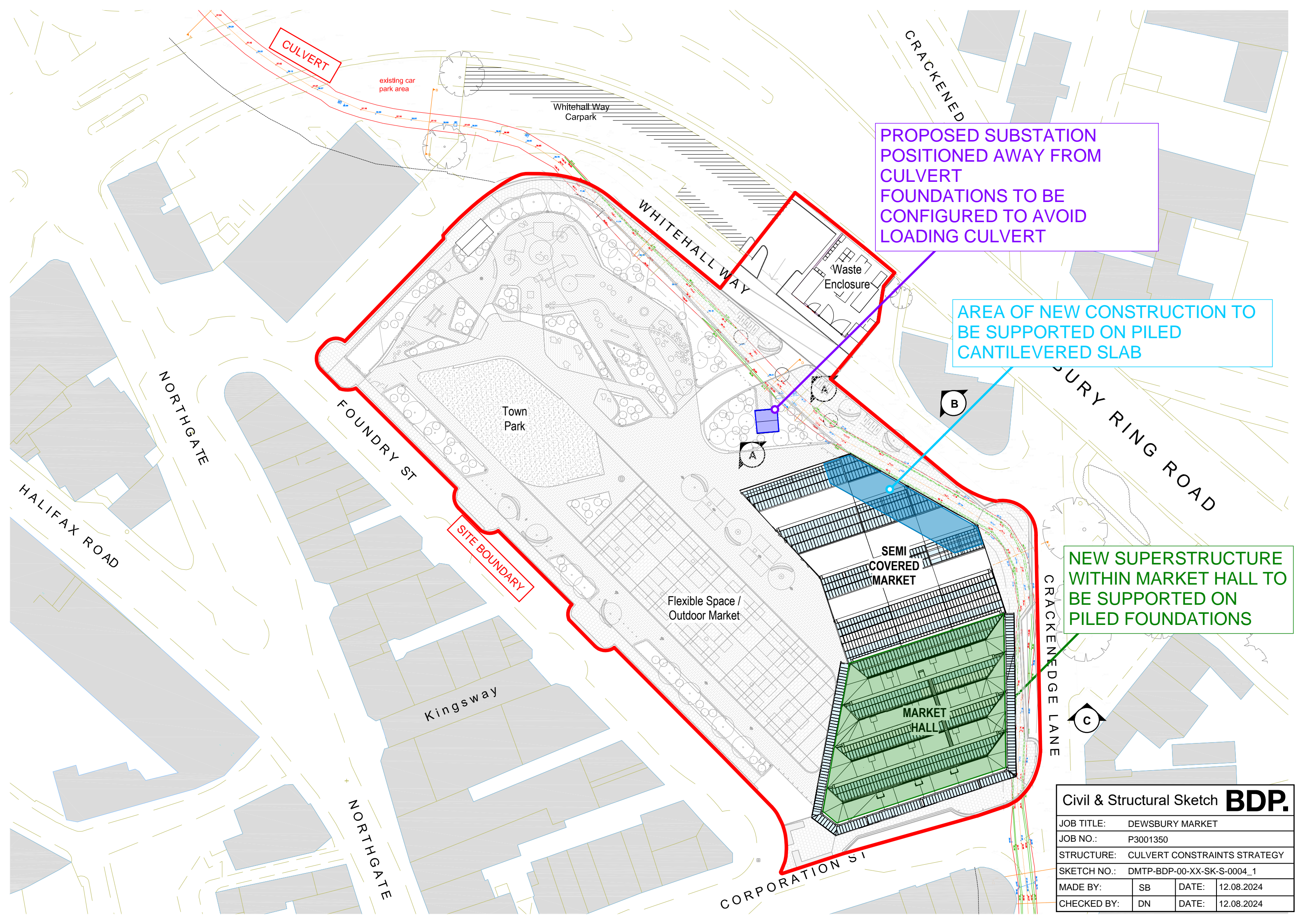
DEWSBURY MARKET

Sketchbook 4: CULVERT CONSTRAINTS STRATEGY

DMTP-BDP-00-XX-SK-S-0004

BDP.

<i>Revision</i>	<i>Date</i>	<i>Drafted by</i>	<i>Checked by</i>	<i>Approved by</i>
P03	14/01/2025	SB	DN	DN



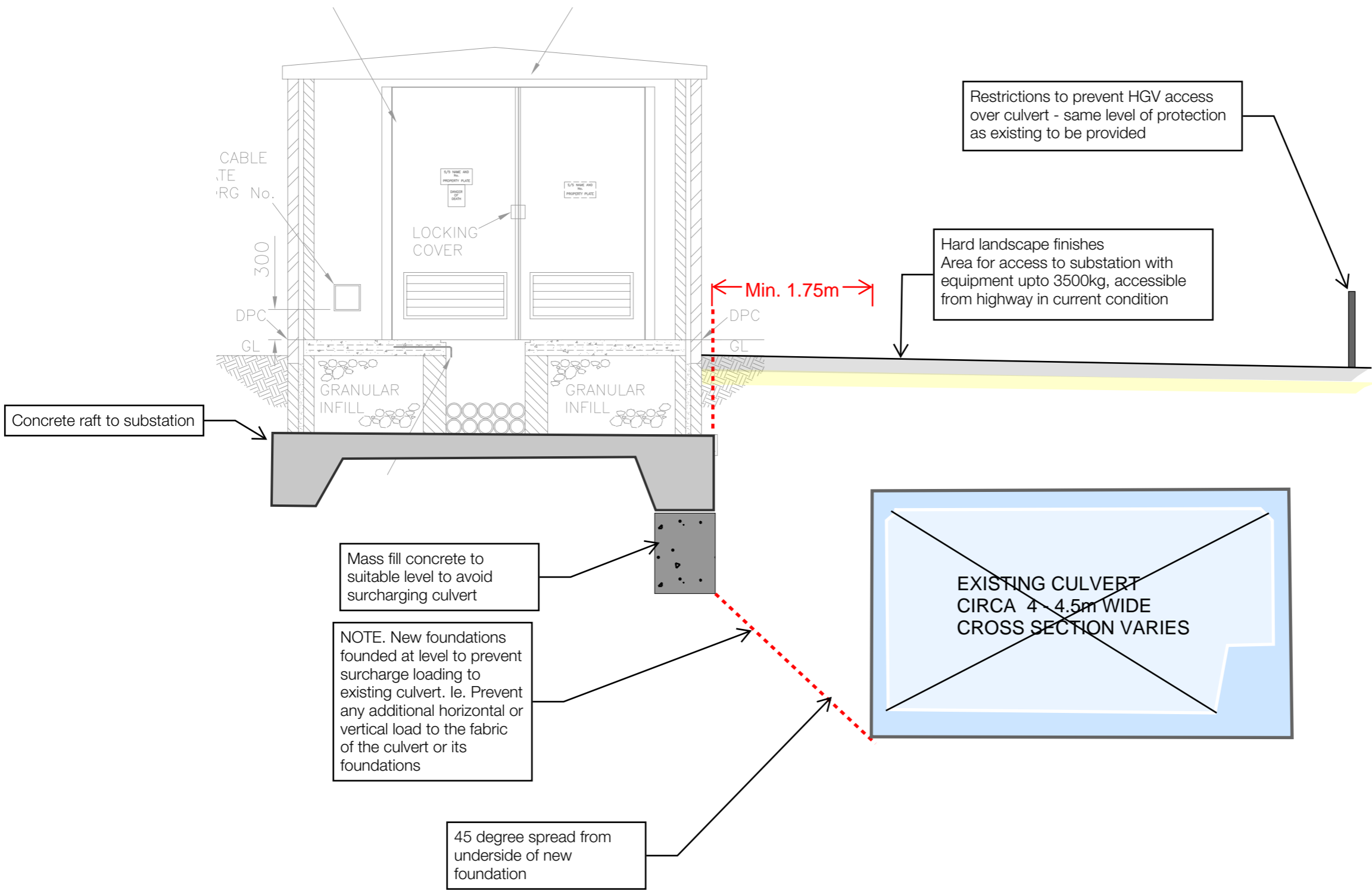
PROPOSED SUBSTATION
 POSITIONED AWAY FROM
 CULVERT
 FOUNDATIONS TO BE
 CONFIGURED TO AVOID
 LOADING CULVERT

AREA OF NEW CONSTRUCTION TO
 BE SUPPORTED ON PILED
 CANTILEVERED SLAB

NEW SUPERSTRUCTURE
 WITHIN MARKET HALL TO
 BE SUPPORTED ON
 PILED FOUNDATIONS

Civil & Structural Sketch **BDP.**

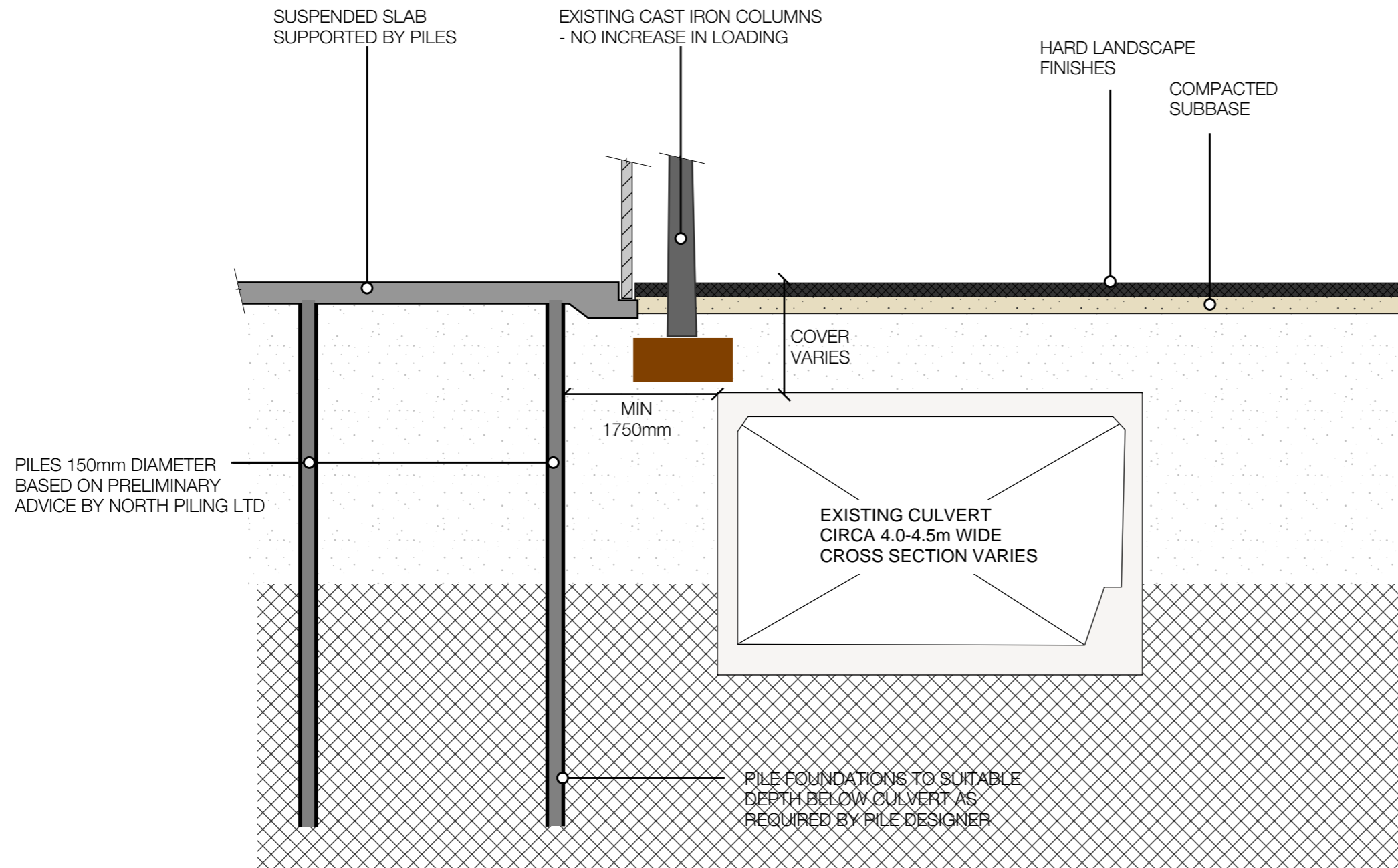
JOB TITLE:	DEWSBURY MARKET		
JOB NO.:	P3001350		
STRUCTURE:	CULVERT CONSTRAINTS STRATEGY		
SKETCH NO.:	DMTP-BDP-00-XX-SK-S-0004_1		
MADE BY:	SB	DATE:	12.08.2024
CHECKED BY:	DN	DATE:	12.08.2024



- GENERAL NOTES:-**
1. PRELIMINARY MITIGATION PROPOSAL SUBJECT TO DETAILED DESIGN.
 2. CONSTRUCTION SEQUENCE OF NEW FOUNDATION TO BE SUCH THAT EXISTING CULVERT CONSTRUCTION IS NOT SUBJECTED TO INCREASED LOADING CONDITIONS. EXCAVATIONS TO BE CONSTRUCTED IN "HIT AND MISS" ORDER IF NECESSARY TO PREVENT UNCOVERING ONE SIDE OF CULVERT COMPLETELY AND CAUSING UNEVEN LATERAL EARTH PRESSURES.
 3. REFER TO EXTRACTS OF AVAILABLE INTERNAL CULVERT SURVEY WITHIN THIS SKETCHBOOK.
 4. COVER TO THE CULVERT VARIES ACROSS SITE. SOLUTION TO BE SPECIFIC TO CULVERT CONDITIONS AT EACH LOCATION.
 5. THE THICKNESS OF THE CULVERT IS SHOWN INDICATIVELY, HOWEVER THE PRINCIPLES SHOWN WILL REMAIN AND BE ADJUSTED TO SUIT THE CULVERT THICKNESS AND ANY VARIATION IN THICKNESS UPON RECEIPT OF THE CULVERT SURVEY.

SECTION A - TYPICAL SECTION THROUGH CULVERT AND SUBSTATION

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SECTION B - CRITICAL SECTION THROUGH CULVERT AND SEMI-COVERED MARKET FOUNDATIONS

GENERAL NOTES:-

1. PRELIMINARY MITIGATION PROPOSAL SUBJECT TO DETAILED DESIGN.
2. PILED FOUNDATION SOLUTION BASED ON PRELIMINARY ADVICE OBTAINED FROM NORTH PILING LTD. FINAL FOUNDATION SOLUTION TBC.
3. REFER TO EXTRACTS OF AVAILABLE INTERNAL CULVERT SURVEY WITHIN THIS SKETCHBOOK.
4. COVER TO THE CULVERT VARIES ACROSS SITE. SOLUTION TO BE SPECIFIC TO CULVERT CONDITIONS AT EACH LOCATION.
5. THE THICKNESS OF THE CULVERT IS SHOWN INDICATIVELY, HOWEVER THE PRINCIPLES SHOWN WILL REMAIN AND BE ADJUSTED TO SUIT THE CULVERT THICKNESS AND ANY VARIATION IN THICKNESS UPON RECEIPT OF THE CULVERT SURVEY.

NOTE:

USE OF PILED FOUNDATIONS WILL AVOID ANY HORIZONTAL OR VERTICAL LOADING SURCHARGE THE CULVERT IN THE PERMANENT CASE. DUE TO THE NATURE OF THE PILES, IN THE TEMPORARY CASE THERE MAY BE VIBRATION IMPARTED ON THE GROUND AND THEREFORE POTENTIALLY THE CULVERT. HOWEVER, PRELIMINARY CALCULATIONS CARRIED OUT BY DEEP FOUNDATIONS SPECIALISTS LTD ON BEHALF OF NORTH PILING LTD SUGGEST THAT EVEN WITH A DRIVEN PILE INSTALLATION TECHNIQUE THERE IS NO RISK OF POTENTIAL DAMAGE TO THE EXISTING CULVERT. THE FINAL PILE SOLUTION WILL BE SUBJECT TO DETAILED VIBRATION CALCULATIONS AND GEOTECHNICAL DESIGN BY THE PILING SUBCONTRACTOR, SUCH THAT THERE IS NO ADVERSE IMPACT ON THE CULVERT.

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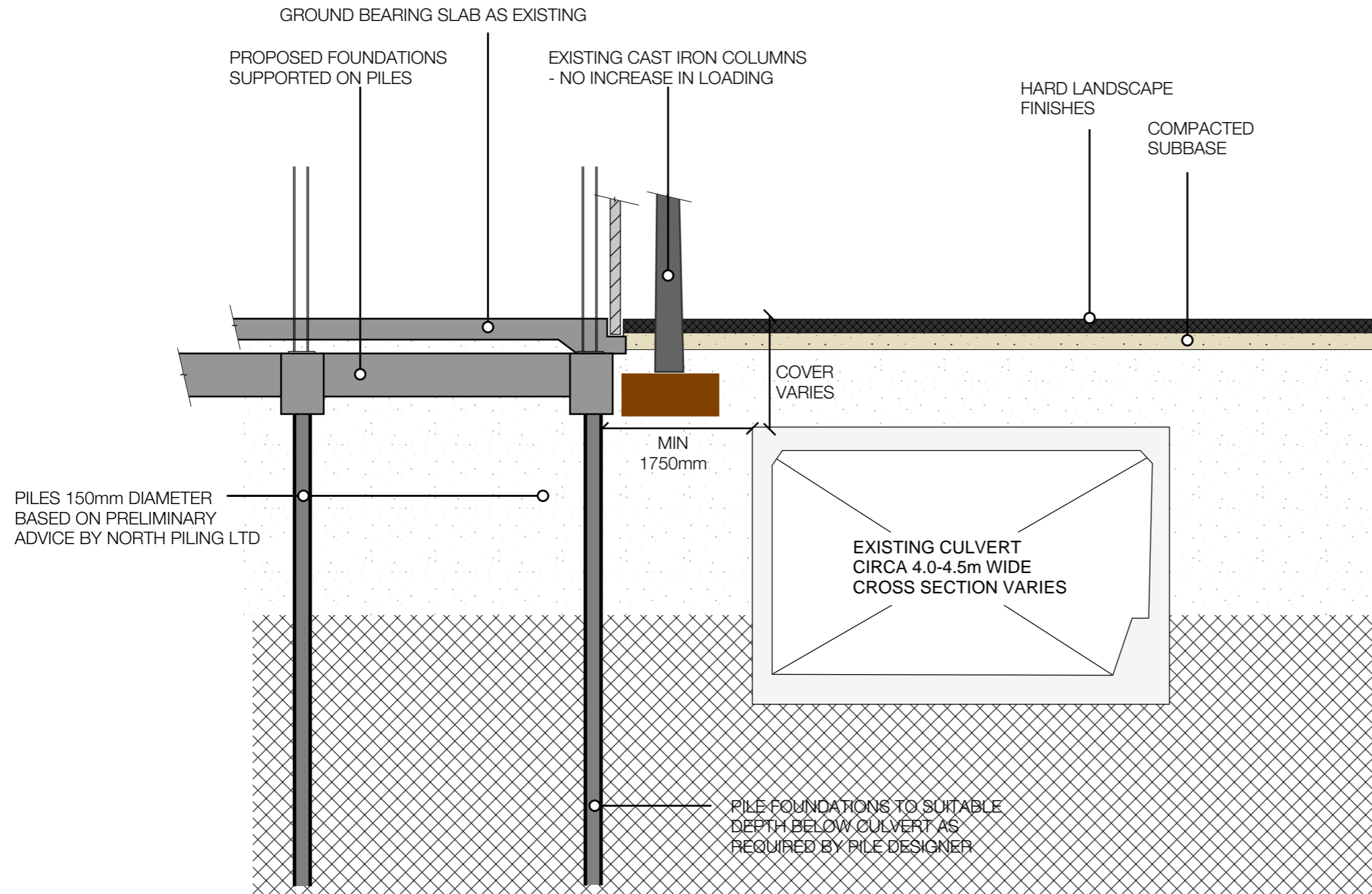
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STRUCTURE CULVERT CONSTRAINTS STRATEGY

SKETCH NUMBER DMTP-BDP-00-XX-SK-S-0004_3

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SECTION C - CRITICAL SECTION THROUGH CULVERT AND MARKET HALL FOUNDATIONS

GENERAL NOTES:-

1. PRELIMINARY MITIGATION PROPOSAL SUBJECT TO DETAILED DESIGN.
2. PILED FOUNDATION SOLUTION BASED ON PRELIMINARY ADVICE OBTAINED FROM NORTH PILING LTD. FINAL FOUNDATION SOLUTION TBC.
3. REFER TO EXTRACTS OF AVAILABLE INTERNAL CULVERT SURVEY WITHIN THIS SKETCHBOOK.
4. COVER TO THE CULVERT VARIES ACROSS SITE. SOLUTION TO BE SPECIFIC TO CULVERT CONDITIONS AT EACH LOCATION.
5. THE THICKNESS OF THE CULVERT IS SHOWN INDICATIVELY, HOWEVER THE PRINCIPLES SHOWN WILL REMAIN AND BE ADJUSTED TO SUIT THE CULVERT THICKNESS AND ANY VARIATION IN THICKNESS UPON RECEIPT OF THE CULVERT SURVEY.

NOTE:

USE OF PILED FOUNDATIONS WILL AVOID ANY HORIZONTAL OR VERTICAL LOADING SURCHARGE THE CULVERT IN THE PERMANENT CASE. DUE TO THE NATURE OF THE PILES, IN THE TEMPORARY CASE THERE MAY BE VIBRATION IMPARTED ON THE GROUND AND THEREFORE POTENTIALLY THE CULVERT. HOWEVER, PRELIMINARY CALCULATIONS CARRIED OUT BY DEEP FOUNDATIONS SPECIALISTS LTD ON BEHALF OF NORTH PILING LTD SUGGEST THAT EVEN WITH A DRIVEN PILE INSTALLATION TECHNIQUE THERE IS NO RISK OF POTENTIAL DAMAGE TO THE EXISTING CULVERT. THE FINAL PILE SOLUTION WILL BE SUBJECT TO DETAILED VIBRATION CALCULATIONS AND GEOTECHNICAL DESIGN BY THE PILING SUBCONTRACTOR, SUCH THAT THERE IS NO ADVERSE IMPACT ON THE CULVERT.

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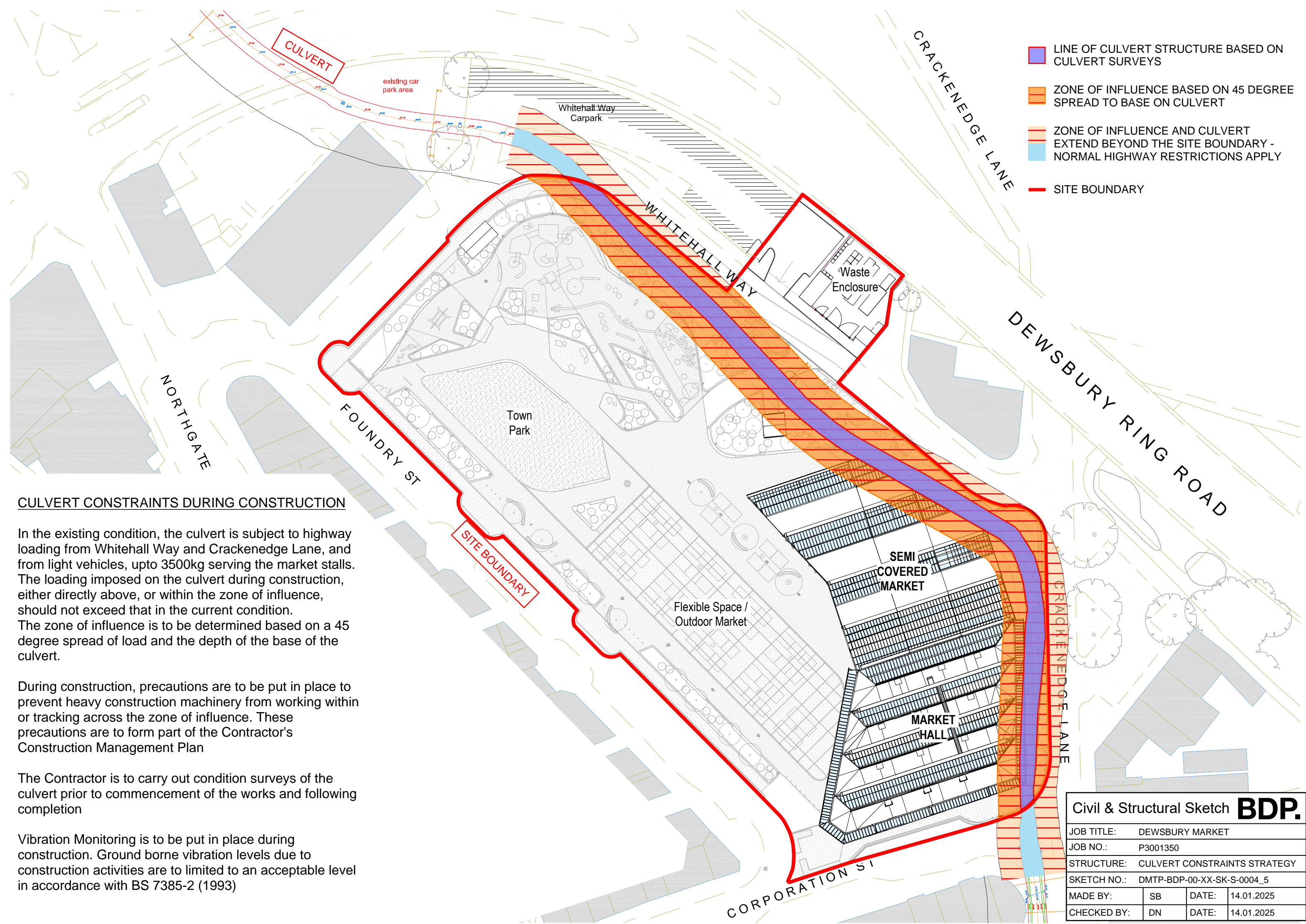
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STRUCTURE CULVERT CONSTRAINTS STRATEGY

SKETCH NUMBER DMTP-BDP-00-XX-SK-S-0004_4

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- LINE OF CULVERT STRUCTURE BASED ON CULVERT SURVEYS
- ZONE OF INFLUENCE BASED ON 45 DEGREE SPREAD TO BASE ON CULVERT
- ZONE OF INFLUENCE AND CULVERT EXTEND BEYOND THE SITE BOUNDARY - NORMAL HIGHWAY RESTRICTIONS APPLY
- SITE BOUNDARY

CULVERT CONSTRAINTS DURING CONSTRUCTION

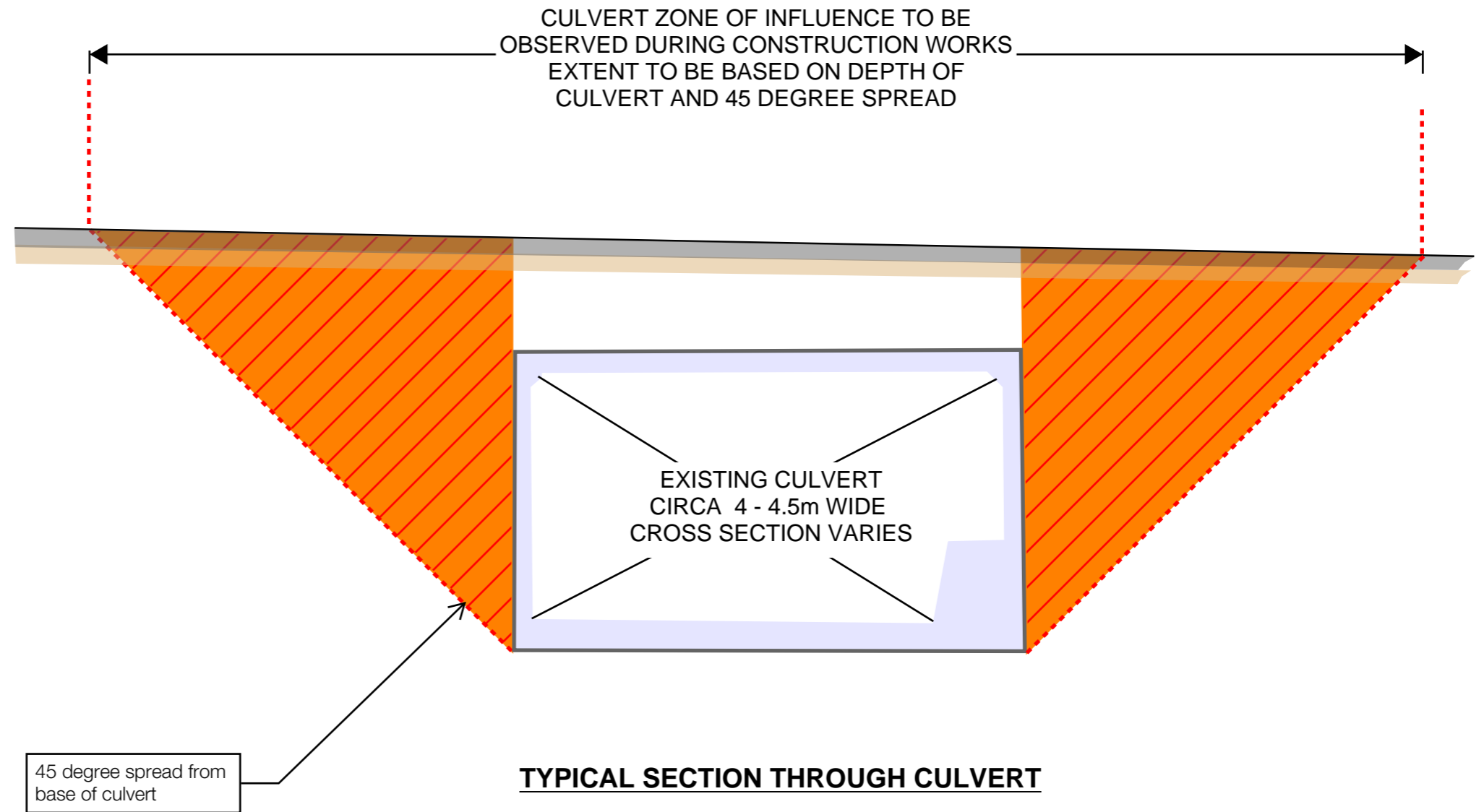
In the existing condition, the culvert is subject to highway loading from Whitehall Way and Crackenedge Lane, and from light vehicles, upto 3500kg serving the market stalls. The loading imposed on the culvert during construction, either directly above, or within the zone of influence, should not exceed that in the current condition. The zone of influence is to be determined based on a 45 degree spread of load and the depth of the base of the culvert.

During construction, precautions are to be put in place to prevent heavy construction machinery from working within or tracking across the zone of influence. These precautions are to form part of the Contractor's Construction Management Plan

The Contractor is to carry out condition surveys of the culvert prior to commencement of the works and following completion

Vibration Monitoring is to be put in place during construction. Ground borne vibration levels due to construction activities are to limited to an acceptable level in accordance with BS 7385-2 (1993)

Civil & Structural Sketch BDP.			
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