The background is a vibrant red color. It features several abstract geometric shapes: a large white circle with a blue border in the upper right; a smaller white circle with a blue border in the top right corner; a green semi-circle in the top left; a blue semi-circle with a white border in the bottom left; a large green semi-circle in the bottom right; and a white semi-circle with a blue border in the bottom right. The text is centered on the left side of the page.

Appendix F2
Structural Survey Report -
Clondalkin to Drimnagh



Structural Audit Report

Tallaght / Clondalkin to City Centre CBC08
BCIDA-ACM-STR_ZZ-0008_XX-RP-SS-0001

Client – National Transport Authority
Stage – Stage 2

Project reference: BusConnects Package A
Project number: 60599123
BCIDA-ACM-STR_ZZ_0008_XX-RP-SS-0001

Date: 10 July 2020

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1. Introduction

AECOM have been commissioned by the National Transport Authority (NTA) to carry out a Structural Assessment of structures across Core Bus Corridor (CBC) routes as per Section 3.18 in the 'Tender and Schedule' which states:

'The ED shall compile an inventory of all structures (buildings including boundary walls/fences, bridges, culverts, retaining walls, manholes, and any other relevant structures) on the route of the Scheme and those crossing the Scheme. The ED shall determine any structural design requirements for the Scheme and shall design all structures required for the Scheme in accordance with the relevant standards and in accordance with good industry practice.'

'The ED shall inspect all relevant existing structures and, following such inspection, shall identify those structures requiring a structural assessment to ensure that they can safely accommodate a revised lane configuration. Due to the proximity of the Scheme improvements to residential and business properties this shall include requirements for a property structural condition survey. In respect of those identified structures, the ED shall carry out a structural assessment in accordance with good engineering practice and shall either confirm the adequacy of the structure to accommodate the Scheme or shall identify and design any remedial or replacement works necessary to meet the Scheme requirements.'

This Report is a desktop inventory of existing structures along the route and looks at the likely impact of the proposed scheme on the structures within the proposed scheme extents or adjacent to the permanent or temporary works. This report does not capture the structural assessment of the individual structures affected by the proposed works, which will be captured separately when the design of the proposed works has sufficiently progressed.

2. Project Overview

The Tallaght / Clondalkin to City Centre (formally Clondalkin to Drimnagh) CBC08 commences on the R134 New Nangor Road at the junction with Woodford Walk and is routed via the R134 along the New Nangor Road as far as the junction with the Naas Road. From here it is routed along Naas Road as far as the junction with Walkinstown Avenue. The corridor continues down Walkinstown Avenue on to the R110 Long Mile Road to the junction with Walkinstown Road, where it joins the Greenhills Core Bus Corridor (CBC09).

The CBC is approximately 4km in length and will reduce bus journey times from 21 minutes down to 14 minutes. It is intended that CBC 8 will provide a high-quality transport system where priority for buses will be provided along the entire route, consisting primarily of dedicated bus lanes in both directions, with alternative measures proposed at particularly constrained locations.

Dedicated cycle facilities are provided in each direction along the length of the corridor. Along the R134 New Nangor Road, between Woodford Walk and the junction with Naas Road the corridor follows the GDA Cycle Network Plans secondary cycle route 8C2, then secondary cycle route 7D along Naas Road. The CBC then follows secondary cycle route S04 along Walkinstown Avenue, and secondary cycle route 8C along Long Mile Road. The CBC also connects with the N10 Grand Canal Greenway at the Woodford Walk junction. It is also proposed to divert the proposed cycle facilities via the greenway at the M50 overbridge.

It should be noted the road networks on the scheme fall under the jurisdiction of the regional councils (Dublin City Council and South Dublin County Council) for regional road networks. The M50 overbridge crossing the R134 New Nangor Road falls under the jurisdiction of Transport Infrastructure Ireland (TII) for national road networks.

3. Methodology – Desktop Study

The initial stage employed the topographical survey to identify the critical structural infrastructure along the routes. Note that the desktop study for sheets 8-9 has not been included in the report due to topographical survey data for these areas being unavailable. Structures identified in the topographical survey were highlighted and given a line type to denote their classification. The structures identified from the topographical survey study are presented in the drawing series in Table 1.

Figure 1 is the key used to classify the structures identified.

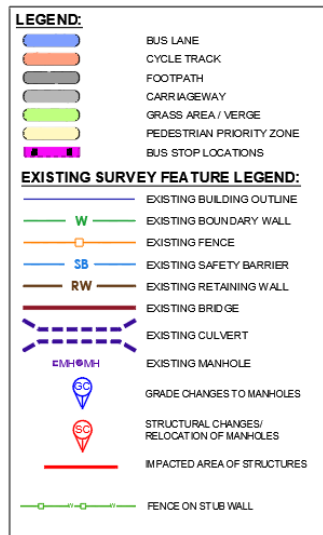


Figure 1 - Structural Assessment Drawing Key

Upon completion of this task a virtual walk through using Google Earth was used to verify the accuracy of the topographical survey & identify any errors, e.g. the mislabelling of structures or any missing structures.

Once an accurate record of the structures along the routes was established, an assessment of the impact of the proposed CBC could be made by overlaying the proposed scheme on top of the identified structures. This clearly showed the impact on above ground structures; however, reviewing structural records/ undertaking further investigations may be required to fully understand the impact of the scheme on the structure foundations/ substructure. The impact on manholes and utility chambers has also been identified, assessing whether the impact is a:

- Grade change (a change in the existing level);
- Structural change (a change in the loading, e.g. pedestrian footway to bus lane); or
- Relocation of the manhole/inspection chamber.

Table 1 - Drawing No

Drawing No.	Drawing Title
BCD-0000-STR_ZZ-08_XX_0000-DR-CR-0001	Route 08 Clondalkin to Drimnagh to City Centre Structural Assessment Plan – Sheets 1 to 12

Table 2 - Structure Classification

Element	Classification
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Building Structures	<ul style="list-style-type: none"> • Property boundaries • Basement boundaries • Culverts & headwalls
Walls/Fences	<ul style="list-style-type: none"> • Walls • Retaining walls • Fences on stub walls • Fences
Safety Barriers	<ul style="list-style-type: none"> • Concrete and steel road safety barriers
Existing Bridges	<ul style="list-style-type: none"> • Bridge deck extents and accompanying retaining structures
Gantry Structures	<ul style="list-style-type: none"> • Gantry columns and gantry extents
Manholes	<ul style="list-style-type: none"> • Utility chambers • Drainage manholes

4. Existing Structures

4.1 Building Structures

4.1.1 Property (Building) Structures

The Clondalkin to Drimnagh route has limited impact on building structures.

A possible conflict occurs at one location:

- Sheet 03 – ADCO Contracting Building (14 New Nangor Road) – Impact need to be reviewed due to the proposed proximity of road to the front of the building.

4.1.3 Culverts

The Grand Canal and Cammock River run parallel to the scheme with various culverts within the scheme boundary.

The potential impact on the culverts running under the scheme needs to be verified when the design has been further progressed at locations;

- Sheet 01 – Unknown culvert – An unknown watercourse runs under Nangor Road through an assumed 1500mm culvert. Additional topographical survey has been commissioned and impact to be assessed.
- Sheet 03 – Oak Road culvert – impact needs to be verified due to the headwall’s proximity to the widening of the junction.

4.2 Walls & Fences

4.2.1 Boundary Wall and Fences

A review of the topographical survey and google earth have identified many types of boundary structures, notably boundary walls, fences and fences on stub walls. The assessment has identified if the structure will need to be removed or replaced to accommodate the proposed works.

Boundary Walls impacted by the proposed works are listed below:

- Sheet 07 – Existing boundary wall sections likely to be affected by the proposed pedestrian bridge, the proposed layout of which is at option development stage.
- Sheet 10 – Blockwork wall to be relocated to the rear of the footway to accommodate widening.

Fencing impacted by the proposed works are listed below:

- Sheet 01 – Fencing will need to be relocated behind proposed safety barriers to accommodate cycle track and footway.
- Sheet 03 – Security fencing and low stone wall to be relocated to the rear of the footway to accommodate junction widening.
- Sheet 04 – Security fencing to be relocated to the rear of the footway to accommodate junction widening.
- Sheet 04 – Security fencing and low stoned wall modifications to be reviewed to accommodate widening.
- Sheet 05 – Fencing on Willow Road to be relocated into the proposed verge to accommodate junction widening.
- Sheet 05 – Fencing to be relocated to the proposed Diego Baileys Entrance to accommodate junction widening.
- Sheet 05 – Fencing needs to be relocated to the rear of the footway to accommodate the proposed alignment.
- Sheet 06 – Security fencing needs to be relocated to the rear of the footway to accommodate cycle track and footway.
- Sheet 07 – Security fencing needs to be relocated to the rear of the footway to accommodate widening, cycle track and footway.
- Sheet 10 – Fencing and low brick wall needs to be relocated to the rear of the footway

4.3 Safety Barriers

Safety barriers across the scheme include both single and double-sided steel safety barriers and slip-form/pre-cast concrete safety barriers. These safety barriers are located both in the median and at the carriageway edge with appropriate setbacks. Where required to widen or reconfigure the current roadway assignment the safety barrier requirement will have to be revisited to assess the requirements of the proposed configuration.

- Sheet 01 – Safety Barrier to be removed and replaced in proposed verge.
- Sheet 02 – Safety Barrier under M50 overbridge is to be removed and replaced.
- Sheet 07 – Safety Barrier relocated to proposed island.

4.4 Existing Bridges

The M50 overbridge (Sheet 02) may be affected by the proposed changes along the route. The impact on the bridge to be reviewed by structures.

4.5 Proposed Bridges

A new pedestrian and cyclist bridge is proposed across the Nangor Road / Naas Road / Long Mile Road junction (Sheet 07). Its layout is subject to option development.

4.6 Gantry Structures

An existing gantry structure is located at the junction of New Nangor Road and Naas Road. The impacted gantry structure, and current implications are listed below.

- Sheet 07 – E/B cantilever gantry may require relocation - to be confirmed following review.

4.7 Manholes

Manholes and utility chambers are located throughout the scheme. The impact on the manholes and utility chambers has been identified, assessing whether the impact is:

- Grade change (a change in the existing level); or
- Structural change (a change in the loading, e.g. pedestrian footway to bus lane); or
- Required relocation of the manhole/inspection chamber.

