

SAMLESBURY QUARRY, SAMLESBURY, PRESTON

PROPOSED ACCESS ROAD

INFRASTRUCTURE DESIGN STATEMENT

CLIENT

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INTRODUCTION

JRC Consulting Engineers Ltd, were appointed by Mineral & Resource Planning Associates Ltd to undertake the outline civil infrastructure design proposals associated with providing a new access from the A59 to a proposed sand and gravel quarry at Samlesbury, Preston for Harleyford Aggregates Ltd.

The new access will be a temporary 'left-in/ left-out' feature during the operation of the quarry. The access will be used by an average of 25 hgvs collecting aggregate and 5 other vehicles on a daily basis over a 10 hour day, producing 30 movements from the A59 and 30 movements joining the A59. The access will be closed outside operating hours.

This design statement generally identifies the design specification, legislation, guidance and design parameters which have informed the civil infrastructure proposals.

HIGHWAY

The proposed access onto the A59 has been designed in accordance with DMRB Volume 6 Section 2 Part 6 TD42/95. The relevant section of the A59 forms the eastbound carriageway of a dual 2-lane road subject to a speed limit of 50 mph.

The design is compliant with Figure 7/6 (Dual Carriageway Major/Minor Priority Junction) of TD 42/95, except that there is no requirement to allow for movements crossing the east bound carriageway from and to the west bound carriageway as provided in that figure. Elements relevant to such turning movements in Figure 7/6 are therefore excluded from the design. In essence the design also complies with Figure 7/18 (Local Grade Separation T-Junction) of TD 42/95, which is the design for left-in/left-out connections for a grade separated junction, and the relevant provisions of paragraph 7.70-7.75. The design is compliant with all the subsequent detailed provisions set out in the relevant chapters of TD 42/95.

For the purposes of TD 42/95 the A59 is the major road and the new access road is the minor road. The junction design is a simple junction without ghost or physical islands in the major road as such design elements are not required given the removal of crossing and carriageway turning movements. A channelling island is provided on the minor road. The design therefore complies with paragraph 2.15 and the requisite requirements related to Figure 7/6 as set out in paragraphs 7.20-7.48.

At 60 movements per 10 hour day the design is well below the upper limit as noted in paragraph 2.26 of TD 42/95 for minor road flows (about 3,000 vehicles AADT 2-way) for a major/minor junction on a continuous D2AP road in a rural area.

The relevant visibility distance for the junction at this 50 mph major road is 160 metres (Table 7/1). Given the geometry of the existing A59 at this location, the visibility splays are naturally achieved to in excess of 295m.

In accordance with the provisions of paragraphs 7.49-7.57, diverging tapers are not provided from the major road as the requirement thresholds for diverging tapers are significantly higher than proposed and are therefore not reached, matched or exceeded.

In accordance with the provisions of paragraphs 7.58-7.62 merging tapers are not provided to the major road as the requirement thresholds for merging tapers are significantly higher than proposed and are therefore not reached, matched or exceeded.

An appropriate vehicle swept path analysis has been undertaken and is indicated on JRC Consulting Engineers Ltd drawing reference 1037/502. This has further information on the position of the splitter island and turning requirements.

The existing pedestrian footpath which runs to the north of the A59 has been maintained with the appropriate provision of an uncontrolled crossing, maintaining the link. Appropriate visibility splays are provided for pedestrian movements. It is envisaged that during the next further detailed design stage, an appropriate signing scheme can be procured further informed by a Stage 1/ 2 Road Safety Audit.

The proposed private access road has been provided based upon Client requirements but also meets those parameters expected for a commercial access road. The first 200m of the access road from the junction have been maintained at minimum 7.3m width in order to ensure vehicles can safely pass with ease and mitigate the likelihood of traffic being forced to slow on the A59 (not that traffic flows are expected to be an issue in this respect).

Narrowing's and passing places are then provided on the private elements of the access road. These provide natural speed calming features whilst also reducing the impact of the access road both visually and in terms of surface water run-off.

At chainage 650 to 770 an appropriate bund has been introduced which will also offer visual and noise impact mitigation benefits.

Generally, local water features/ issues can be accommodated by providing appropriately designed minimum 600m diameter concrete drainage pipes in order to ensure that current flow paths are not interrupted as a result of the access road. However, a more robust structure is required at the crossing point of the Bezza Brook.

The Bezza Brook crossing structure is approximately 14m long and 10.5m wide. Given latest Environment Agency guidance, an appropriate clear spanning structure is proposed in order to ensure that the existing stream channel is left intact and undisturbed. The structure will have a design life of 120 years. Generally, no significant maintenance is necessary nor expected for a structure of this type. However, we expect that during detailed design the MPA may require wildlife enhancing features which would require ongoing care and maintenance. We would envisage this to be undertaken via a condition to any consent.

In constructing this structure, the activities are likely to include but not limited to:

- Provision of strip foundations which will need to bear on the existing rock strata approximately to be confirmed by intrusive site investigation.
- No works within the stream bed will be required as part of these works
- The sections will be lifted into place via a crane.
- Concrete abutments will be required to receive the single span structure

- The road sub base construction is then filled over the structure followed by the running construction in accordance with JRC Consulting Engineers Ltd road specification.

All works will be undertaken in strict accordance with the Environment Agency Requirement for Work Undertaken In or Near Watercourses and PPG5. Specifically

- The site falls within a major flood plain and therefore the Contractor will be required to be registered on the EA Floodline Warning Service so that in cases of extreme circumstances any materials likely to be affected can be re-located.
- The bridge will fully span the Bezza Brook.
- The bridge will be designed to pass in excess of the a 1 in 100 year flood event and provide an appropriate wildlife corridor as required by the EA with the necessary head clearance.
- Existing stream banks will be retained as far as practical within the curtilage of the structure, however it is anticipated that as part of the installation of the abutment walls and to protect against scouring some local regrading may be required particularly on the upstream side of the structure.
- The works will not involve the placement of cement or other harmful pollutants within the vicinity of the watercourse.
- All works will be undertaken from the bank and not from within the watercourse.
- No material will be stock piled within 10m of the watercourses.
- The bank or bed shall remain undisturbed apart from within the curtilage of the proposed structure where only the bank may be regraded to accommodate the wildlife corridor – the bed will not be disturbed.
- All plant will be well maintained with any fuel or oil drips attended to on an on-going basis. All vehicles should carry spill kits and operators trained in their use.
- Should any incident occur the situation will be dealt with and co-ordinated by the nearest supervisor or Engineer who will be responsible for instruction issued and the EA notified.
- Work will be undertaken during daylight hours, starting no earlier than 2 hours after dawn and finishing no later than 2 hours before dusk to prevent disturbance to migratory fish during those months stipulated as important in this respect by the EA subject to local knowledge.

SURFACE WATER DRAINAGE STRATEGY

The drainage strategy associated with the proposals for the provision of an access road to Samlesbury Quarry have been procured in accordance with CIRIA 753 and Best Practice.

The site does partly fall within the critical Flood Zones as defined on the Environment Agency online flood mapping service (Fig 1)

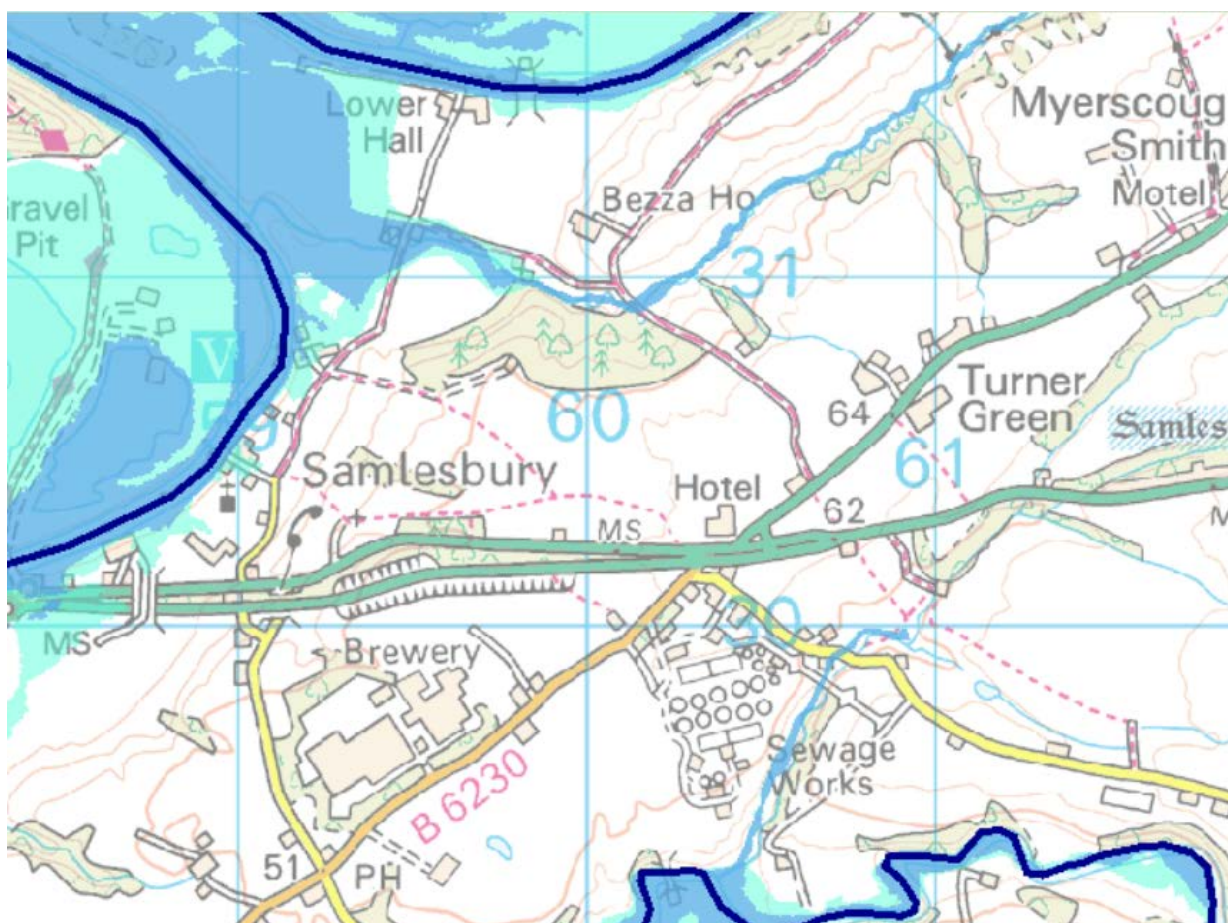


FIG 1

Environment Agency Online Flood Map Extract

Given the results of the detailed intrusive site investigation as part of the assessment of soils and given the local environment it is anticipated that infiltration is an unlikely means of primary surface water management. On this basis, the strategy proposes to formally collect the run off generated by the proposed access and road, attenuate by means of open natural systems before controlling the discharge to the appropriate greenfield run off rate as defined on the JRC Consulting Engineers Ltd drawing reference 1037/510.

By providing open natural means of collecting and treating the surface water run off, it is expected that the proposals can offer wider ecological benefits whilst also improving existing surface water management, providing means of treatment control and ensure existing exceedance routes are kept and easy maintenance regimes can be employed and maintained.