

North Lanarkshire DPMTAG-based Appraisal – Bargeddie & Carnbroe LDP Clusters

Prepared by: 
Miriam Leonardo Fernandez/Stuart Tilston
Engineer

Approved by: 
Russell Henderson
Associate Director

Checked by: 
Jon Hassel
Principal Consultant

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| Rev No | Comments | Checked by | Approved by | Date |
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| 1 | Final | JH | RH | 10/05/17 |

1 Tanfield, Edinburgh, EH3 5DA
Telephone: 0131 301 8600 Website: <http://www.aecom.com>

Job No 60470585

Reference FINAL

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Table of Contents

| | | |
|----------|-------------------------------------------------------------------------------------------------------------------|-----------|
| 1 | Introduction..... | 2 |
| 1.1 | Introduction | 2 |
| 1.2 | Policy Context | 2 |
| 1.3 | Methodology | 2 |
| 1.4 | Scoping Discussions..... | 3 |
| 1.5 | Report Structure | 3 |
| 2 | Policy Context | 5 |
| 2.1 | National Planning Policy | 5 |
| 2.2 | Regional and Local Policy | 5 |
| 3 | Development Sites..... | 7 |
| 3.1 | Introduction | 7 |
| 3.2 | Bargeddie | 8 |
| 3.3 | Carnbroe..... | 8 |
| 4 | Demand Assessment | 11 |
| 4.1 | Introduction | 11 |
| 4.2 | Data Gathering | 11 |
| 4.3 | National Transport and Land Use Models | 13 |
| 4.4 | People Based Trip Assessment | 13 |
| 4.5 | Trip Distribution | 16 |
| 5 | Road Network Impact | 18 |
| 5.1 | Methodology | 18 |
| 5.2 | Study Road Network..... | 18 |
| 5.3 | Future Traffic Assessment Parameters | 18 |
| 5.4 | Development Trips Network Impact | 19 |
| 6 | Summary and Conclusions | 23 |
| 6.1 | Summary | 23 |
| 6.2 | Conclusions | 23 |
| | Table 1: Developments at Bargeddie | 8 |
| | Table 2: Developments at Carnbroe | 8 |
| | Table 3: Vehicular Trip Rates. <i>Source: TRICS</i> | 13 |
| | Table 4: Vehicular Trip Generation. <i>Source: TRICS</i> | 14 |
| | Table 5: Vehicular Trip Generation. <i>Source: Transport Assessments</i> | 14 |
| | Table 6: Transport to Place of Work or Study. <i>Source: Census 2011</i> | 15 |
| | Table 7: Transport Assessments used for the Developments Trips Distributions | 16 |
| | Table 8: Growth Factors | 19 |
| | Table 9: Bargeddie Threshold Assessment Results- All the proposed developments included | 20 |
| | Table 10: Carnbroe Threshold Assessment Results- All the proposed developments included | 20 |
| | Figure 1: Study Development Areas | 7 |
| | Figure 2: Development Sites at Bargeddie | 8 |
| | Figure 3: Development Sites at Carnbroe | 9 |
| | Figure 4: Estimated Modal Split Percentages for the Business Development Site 0002/10. <i>Source: TRICS</i> | 15 |

Introduction

Capabilities on project:
Transportation

1 Introduction

1.1 Introduction

AECOM have been commissioned by North Lanarkshire Council to undertake a Transport Appraisal based on the Development Planning and Management Transport Appraisal Guidance (DPMTAG) to support development of North Lanarkshire Council's Local Development Plan.

This DPMTAG-based Appraisal is being used to provide an initial understanding of a number of proposed development sites' cumulative impact on the road network to assist in the preparation of the North Lanarkshire Council's Local Development Plan in the following settlement areas:

- Bargeddie; and
- Carnbroe.

1.2 Policy Context

DPMTAG was published by Transport Scotland in 2011. It provides guidance on Transport Appraisal of potential interventions associated with developments to inform in the preparation of Development Plans.

Scottish Planning Policy (SPP), which was updated in June 2014, outlines how nationally important land use planning matters should be addressed across Scotland. It promotes consistency in the application of policy across Scotland whilst allowing sufficient flexibility to reflect local circumstances. The SPP highlights the requirement for DPMTAG appraisal of proposed Local Development Plans.

In this context, this study will be conducted to understand the future transport conditions and the potential development impacts and thus, recognise the necessary measures to address the possible matters.

1.3 Methodology

Discussion took place between officers at North Lanarkshire Council and Transport Scotland to agree the methodology of the assessment. It was agreed between the parties that a high-level threshold assessment should be undertaken initially in order to identify specific locations on the road network which would need to be considered in greater detail i.e. subject to junction capacity analysis.

The initial task in the process was a review of all the development sites to be included in the assessment, noting location, land use and size.

Following this, a data gathering exercise was required to understand the existing and potential future traffic conditions. This task included a review of transport assessment documentation supporting any relevant previous development planning applications for the identified sites, committed transport schemes and any other available information on previously considered transport interventions. Data relating to the predicted future traffic flows on the road networks at Bargeddie and Carnbroe were obtained from the Land Use and Transport Integration in Scotland (LATIS) models from Transport Scotland's incumbent planning and transport modelling consultants. The LATIS model used includes the infrastructure associated with the A8/M8/M74/M73 major trunk road improvement works and the effect it has on the local road network through the affected settlements.

The proposed developments were considered to estimate the number of trips that may be generated. The trip generation assessment was carried out using valid Transport Assessments used to support previous planning applications for the specific sites being considered which where the development content was similar to the proposed LDP land use allocation. Where this was not available use was made of the national Trip Rate Information Computer System (TRICS) database. Predicted development trips were distributed and assigned to the road network based on similar trip distributions from available Transport Assessment data in close proximity to the development site considered in each case. This was complemented with 2011 Census data relating to "travel to work or place of study" of persons aged 16-74, and the shortest travel route calculated using ArcGIS software.

A threshold assessment was carried out to estimate the cumulative development impact on the study network using worksheets developed in Microsoft Excel

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1.4 Scoping Discussions

Scoping discussions were undertaken between AECOM and North Lanarkshire Council's Strategic Planning team and Transport Officers. These discussions were undertaken at an inception meeting in June 2016. The meeting sought to agree the DPMTAG-based methodology to be undertaken and the settlements/developments to be included in the assessment of cumulative impacts.

1.5 Report Structure

The remainder of the TS report has been structured as follows:

- Chapter 2: Policy Context;
- Chapter 3: Development Sites;
- Chapter 4: Demand Assessment;
- Chapter 5: Road Network Impact; and
- Chapter 6: Summary and Conclusions.

Policy Context

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2 Policy Context

2.1 National Planning Policy

2.1.1 Development Planning and Management Transport Appraisal Guidance (2011)

Development Planning and Management Transport Appraisal Guidance (DPMTAG) was published by Transport Scotland in 2011. It provides guidance on Transport Appraisal to inform the preparation of development plans. It is recommended that the appraisal should be undertaken at an early stage of the development plan process, prior to the publication of the main issues report, where it can be most effective in helping to shape the spatial strategy and the way in which the spatial strategy will be delivered.

The Transport Appraisal should provide a clear understanding of the transport implications and any main issues related to the Strategic Transport Network.

2.1.2 Scottish Planning Policy (2014)

The most recent iteration of Scottish Planning Policy (SPP) was published in June 2014; the purpose of which was to set out national planning policies that reflect Scottish Ministers' priorities for planning new developments and the use of land. It sits in a suite of documents that includes the National Planning Framework 3, Creating Places, Designing Streets and various circulars, which cumulatively set out the requirements for creating successful places in Scotland. Although it is a non-statutory document, the Town and County Planning (Scotland) 1997 Act dictates that the content of SPP should be regarded as a material consideration that carries significant weight within the planning process.

The two fundamental principles of SPP are concerned with ensuring sustainability and the creation of high quality places. It reinforces the understanding that achieving a sustainable economy, promoting good governance and using established science responsibly are essential to the creation and maintenance of a strong, healthy and just society capable of living within environmental limits. The policy continues that the Scottish Government has a commitment to sustainable development reflected in its purpose of creating a more successful country with opportunities for Scotland to flourish through increasing sustainable economic growth.

SPP states in paragraph 274 the need of DPM TAG- based appraisals:

"In preparing development plans, planning authorities are expected to appraise the impact of the spatial strategy and its reasonable alternatives on the transport network, in line with Transport Scotland's DPMTAG guidance. This should include consideration of previously allocated sites, transport opportunities and constraints, current capacity and committed improvements to the transport network. Planning authorities should ensure that a transport appraisal is undertaken at a scale and level of detail proportionate to the nature of the issues and proposals being considered, including funding requirements. Appraisals should be carried out in time to inform the spatial strategy and the strategic environmental assessment. Where there are potential issues for the strategic transport network, the appraisal should be discussed with Transport Scotland at the earliest opportunity."

2.2 Regional and Local Policy

2.2.1 North Lanarkshire Local Development Plan, Main Issues Report (2015)

The Main Issues Report (MIR) sets out the main issues for North Lanarkshire and contains options to resolve these issues. It highlights the main changes that have taken place in North Lanarkshire since the adoption of the Local Plan in September 2012 and the approach to replacing it. Adoption of the Local Development Plan is expected in 2017.

The MIR is an opportunity to evaluate the land use planning strategy that the Council operates and to make sure its replacement is fit for purpose.

2.2.2 North Lanarkshire Council Local Transport Strategy (2010)

Within the Local Transport Strategy (LTS) for North Lanarkshire the principles of Scottish Transport Appraisal Guidance (STAG) have assisted in making informed choices between possible alternative strategies by appraising alternatives against five criteria: environment, safety, economy, integration and accessibility. The strategy has been developed to address current problems facing North Lanarkshire both today and in the future as well as to achieve the Council's broader objectives and transport vision.

Development Sites

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3 Development Sites

3.1 Introduction

The appraisal supports proposed development sites within two clusters in North Lanarkshire. The two clusters are listed below and illustrated in Figure 1:

- Bargeddie
- Carnbroe

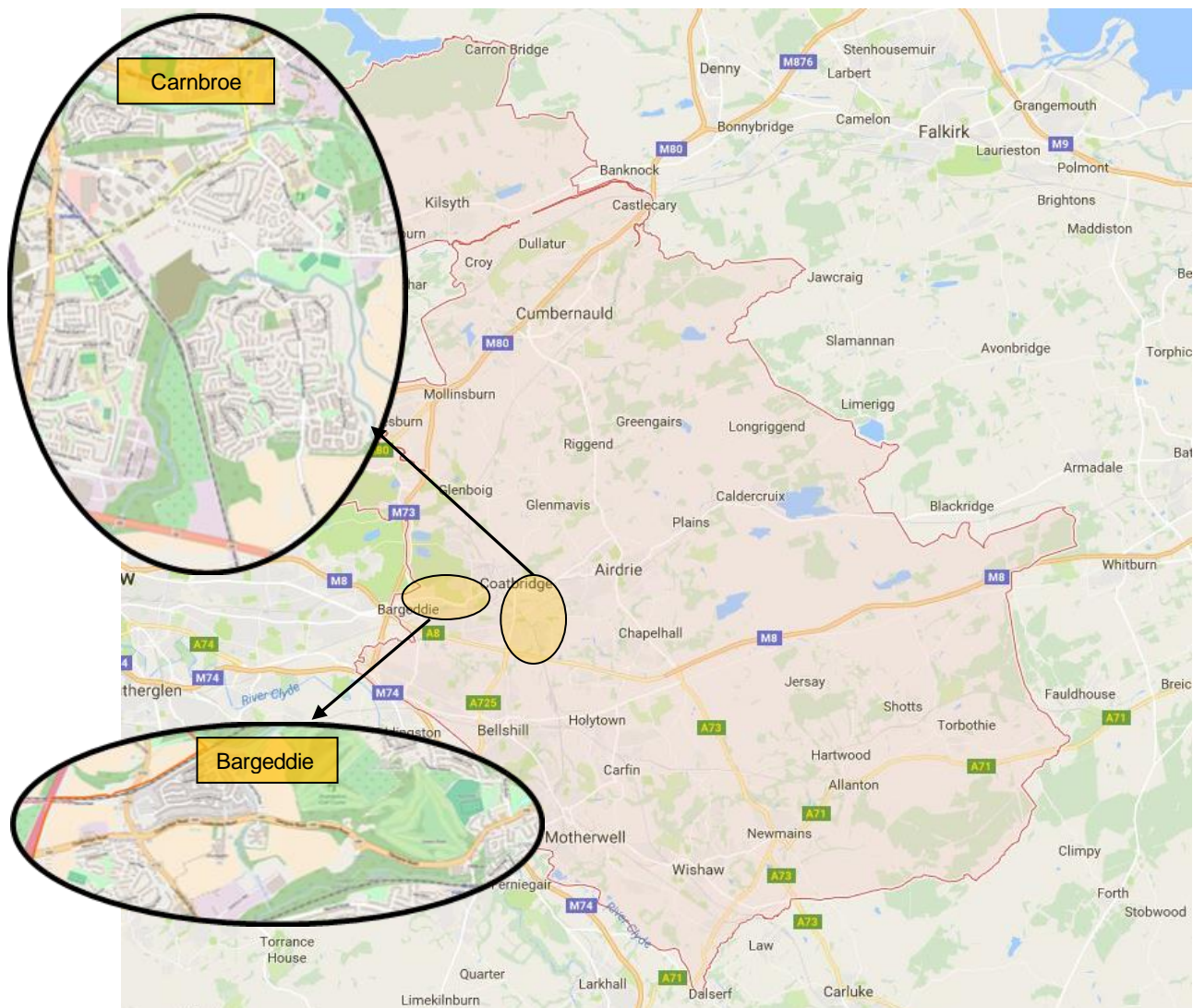


Figure 1: Study Development Areas

Information about the development sites was obtained from the North Lanarkshire Local Plan and are detailed in the following sections.

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3.2 Bargeddie

This development area is located to the west of North Lanarkshire near the border with the City of Glasgow council area; it is bound by the M8 to the south, the M73 to the west, Drumpellier Golf Course to the north and Coatbridge to the east. Within this area are 4 proposed residential developments. One of the developments is located to the north of Coatbridge Road and bound by the M73 to the east, Manse Road to the north and Gartcosh Road to the east. The other three developments are located to the south of Coatbridge Road and east of A752, one to the west of Drumpark School and the other two to the east.

Figure 2 and Table 1 below show the location, land use and size of the developments within Bargeddie. All the sites are of a large capacity with a total of 648 dwellings being proposed at this area.

Table 1: Developments at Bargeddie

| Site Ref. | Town | Location | Land Use | Site Area (Ha) | Capacity (Units) |
|-----------|-----------|-------------------------------|-------------|----------------|------------------|
| 0001/09 | Bargeddie | Coatbridge Road/Manse Road | Residential | 6.23 | 155 |
| 0002/09 | Bargeddie | Coatbridge Road/Langmuir Road | Residential | 8.21 | 205 |
| 0005/09 | Bargeddie | Drumpark School | Residential | 9.3 | 233 |
| 0006/09 | Bargeddie | Drumpellier | Residential | 2.18 | 55 |

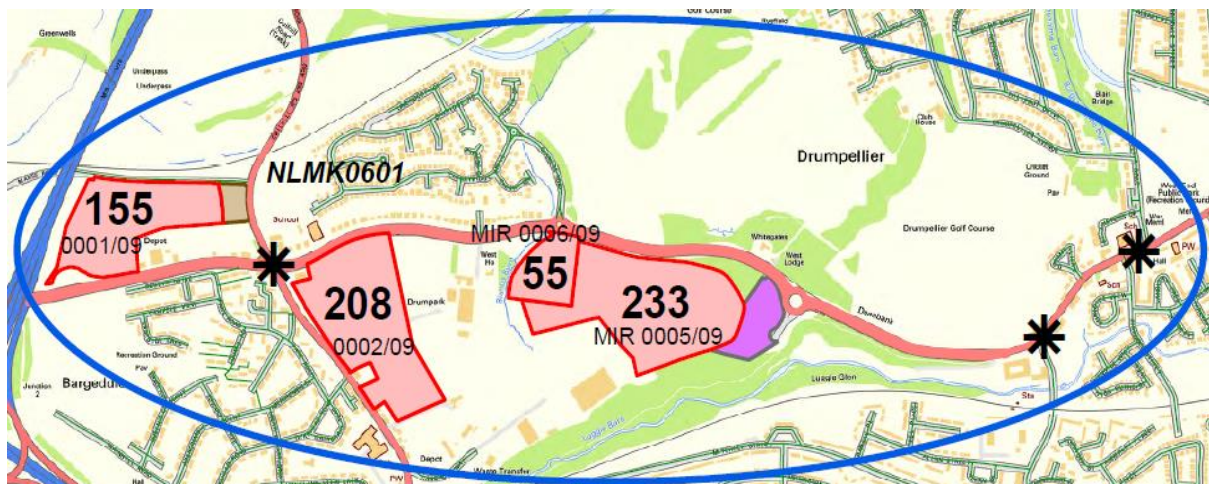


Figure 2: Development Sites at Bargeddie

3.3 Carnbroe

Carnbroe is bound by the A8 to the south, the A725 to the west, Coatbridge to the north and the North Calder Water to the east.

As illustrated in Figure 3 and shown in Table 2, there are 4 proposed development sites within this area. The Carnbroe Estate development is the biggest development at Carnbroe. It includes 500 residential units, 250m² medical facilities and 550m² GFA local retail facilities. A large business development, of 15.42Ha, to the west of the train line and in close proximity to the A8 is also proposed. Additionally, there are two residential developments, one as a continuation of the Carnbroe Estate, with capacity for 55 units, and the other one to the south of Sykeside Road, with capacity for 22 units.

Table 2: Developments at Carnbroe

| Site Ref. | Town | Location | Land Use | Site Area (Ha) | Capacity (Units) |
|-----------|----------|------------------------------------|-------------|----------------|------------------|
| 0001/10 | Carnbroe | Sweethill Terrace/Deanston Terrace | Residential | 2.21 | 55 |

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| | | | | | |
|---------|------------|-----------------|------------------------------------|-------|----|
| 0002/10 | Coatbridge | Carnbroe | Business | 15.42 | - |
| 0004/10 | Coatbridge | Carnbroe estate | Residential, Health Centre, Retail | 22.65 | - |
| 0007/11 | Airdrie | Sikeside Road | Residential | 0.87 | 22 |

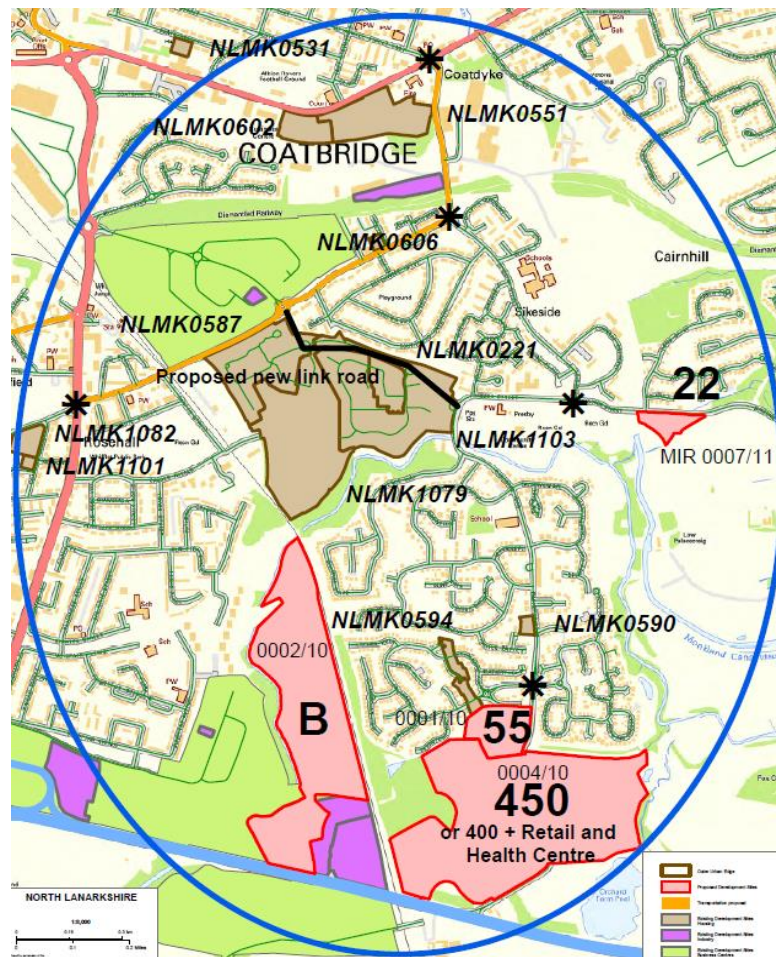


Figure 3: Development Sites at Carnbroe

Demand Assessment

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4 Demand Assessment

4.1 Introduction

The data available in both clusters; Bargeddie and Carnbroe is summarised in this section.

4.2 Data Gathering

In Bargeddie, counts undertaken in 2008 supplied data for A89 / Gartcosh Road / A752 roundabout and A89 / Blair Road signalised junction. Surveys from 2014 also supplied data for A89 / Woodside Road signalised junction as well as more current data for A89 / Gartcosh Road / A752 roundabout, and is summarised below.

| Location | Application Reference | Transport Assessment | Junctions Surveyed | Survey Year |
|-----------|-----------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------|
| Bargeddie | 16/00455/PPP | Residential Development between Oakridge Road and Drumpellier Golf Course | <ul style="list-style-type: none"> A89/ Gartcosh Rd/ A752 A89/ Woodside St | 2014 |
| | 09/00818/FUL | Erection of a Secondary School at Drumpellier Country Park | <ul style="list-style-type: none"> A89/ Gartcosh Rd/ A752 A89/ Blair Rd | 2008 |

In Carnbroe, survey data from 2005, 2014 and 2015 informed the analysis. The 2005 data was obtained from a Transport Assessment for a residential development at the former Sheffield Forgemasters and surveyed the A725 / B753 signalised junction, B753 / Main St Roundabout and Sikeside St / Paddock St Roundabout. The 2014 data was obtained from a Transport Assessment for a mixed use development at a site between Carnbroe Rd and the M8 and surveyed B753 / Sikeside St roundabout, B753 / Main St roundabout, Sikeside St / Paddock St roundabout and Sweethill Terrace / Carnbroe Rd roundabout. The 2015 data was obtained from a Transport Assessment for Columbia High School and surveyed A725 / B753 signalised junction and B753 / Main St Roundabout. All the sources are summarised overleaf.

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| Location | Application Reference | Transport Assessment | Junctions Surveyed | Survey Year |
|----------|-----------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Carnbroe | 15/01792/PPP | Mixed Use Development between Carnbroe Rd and M8 | <ul style="list-style-type: none"> • B753/ Sikeside St • B753/ Main St • Sikeside St/ Paddock St • Sweethill Terrace/ Carnbroe Rd | 2014 |
| | 11/00764/MSC | Residential Development at Sheffield Forgemasters | <ul style="list-style-type: none"> • A725/ B753 • B753/ Main St • Sikeside St/ Paddock St | 2005 |
| | - | Columba High School | <ul style="list-style-type: none"> • A725/ B753 • B753/ Main St | 2015 |

The map displays the Carnbroe area in North Lanarkshire, Scotland. It shows a network of roads including Main Street, B753, A725, and A8. Key locations marked with red circles and labels include:

- 07/01583/OUT (TA)**: Located near Whifflet, close to the A725/B753 junction.
- 15/01792/PPP (TA)**: Located near Carnbroe, close to the A725/B753 junction.
- 13/02079/PPP (TA)**: Located near Shawhead, close to the A725/B753 junction.

 Other labels on the map include 'ATC', 'JTC10039', 'NTC00935', and various street names such as Main Street, B753, A725, and A8. The map also shows green spaces, residential areas, and industrial sites like Sheffield Forgemasters.

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4.3 National Transport and Land Use Models

The national transport model, Transport Model for Scotland (TMfS) offers a generalised, multi-modal representation of travel demand and infrastructure supply for a base (2014) and future forecast years. The model has been used to extract the traffic demand for both clusters.

The National land-use model, TELMoS (Transport and Economic Land-use Model of Scotland), provides independent demographic, planning and economic forecasts which form the basis for future travel demands. The input data for this model has been reviewed to check that the proposed developments considered in this study had not been previously included.

4.4 People Based Trip Assessment

As TAG (2012) identifies, it is important that a people based assessment is undertaken for any new development site to provide an indication of the extent to which the development would be able to attract sustainable modes of travel.

There are numerous methods and sources by which estimations can be made of the likely number of people trips to a development; one of which uses the Trip Rate Information Computer System (TRICS) database. The TRICS database includes vehicular and multi-modal surveys of various types from existing developments around the UK.

In accordance with the TRICS Good Practice Guide, the most important data field in terms of site compatibility is the locational type and not the specific demographic characteristics of the region. For example, sites in a town centre with a good level of public transport access and a permeable walking environment would naturally achieve a more sustainable modal split than a development that is located within a rural area.

4.4.1 Vehicular Trip Assessment

The TRICS database was interrogated further to determine the vehicular trip rates for each development. Table 3 below shows the trip rates for the different location types and land uses within the study area.

Table 3: Vehicular Trip Rates. Source: TRICS

| Location Type | Land Use | Sub Land Use | Unit | Weekdays | | | | | | No. surveys |
|----------------------|-------------|-------------------|------------------------|--------------------|-------|-------|--------------------|-------|-------|-------------|
| | | | | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | | |
| | | | | IN | OUT | Total | IN | OUT | Total | |
| Edge of Town | Residential | Private Houses | per no. dwellings | 0.143 | 0.351 | 0.494 | 0.296 | 0.185 | 0.481 | 44 |
| Edge of Town | Business | Business Park | per 100sqm (GFA) | 1.329 | 0.230 | 1.559 | 0.161 | 1.048 | 1.209 | 11 |
| Edge of Town | Business | Industrial Estate | per 100sqm (Site area) | 0.134 | 0.079 | 0.214 | 0.037 | 0.116 | 0.154 | 21 |
| Edge of Town Centre | Residential | Private Houses | per no. dwellings | 0.143 | 0.351 | 0.494 | 0.296 | 0.185 | 0.481 | 44 |
| Edge of Town Centre | Business | Business Park | per 100sqm (GFA) | 1.329 | 0.230 | 1.559 | 0.161 | 1.048 | 1.209 | 11 |
| Edge of Town Centre | Business | Industrial Estate | per 100sqm (Site area) | 0.140 | 0.083 | 0.222 | 0.039 | 0.120 | 0.159 | 19 |
| Suburban Area | Residential | Private Houses | per no. dwellings | 0.143 | 0.351 | 0.494 | 0.296 | 0.185 | 0.481 | 44 |
| Suburban Area | Business | Business Park | per 100sqm (GFA) | 1.329 | 0.23 | 1.559 | 0.161 | 1.048 | 1.209 | 11 |
| Suburban Area | Business | Industrial Estate | per 100sqm (Site area) | 0.137 | 0.081 | 0.217 | 0.038 | 0.117 | 0.155 | 20 |
| Neighbourhood Centre | Residential | Private Houses | per no. dwellings | 0.140 | 0.361 | 0.501 | 0.310 | 0.183 | 0.493 | 38 |
| Neighbourhood | Business | Business | per 100sqm | 1.315 | 1.548 | 2.863 | 0.166 | 1.049 | 1.215 | 10 |

Capabilities on project:
Transportation

| Location Type | Land Use | Sub Land Use | Unit | Weekdays | | | | | | No. surveys |
|----------------------|----------|-------------------|------------------------|--------------------|-------|-------|--------------------|-------|-------|-------------|
| | | | | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | | |
| | | | | IN | OUT | Total | IN | OUT | Total | |
| Centre | | Park | (GFA) | | | | | | | |
| Neighbourhood Centre | Business | Industrial Estate | per 100sqm (Site area) | 0.136 | 0.080 | 0.216 | 0.035 | 0.116 | 0.151 | 16 |

An Excel spreadsheet has been developed to allow the selection of different location types, land uses and sub-land uses and gives as a result the number of trips for each development.

The location type *Edge of Town* has been considered for all the development sites.

Table 4 below shows the number of trips that each development site would generate.

Table 4: Vehicular Trip Generation. Source: TRICS

| | Site Ref. | Sub Land Use | Ha | Capacity | Vehicular trips - Weekdays | | | | | |
|-----------|-----------|-------------------|-------|----------|----------------------------|-----|-------|--------------------|-----|-------|
| | | | | | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | |
| | | | | | IN | OUT | Total | IN | OUT | Total |
| Bargeddie | 0001/09 | Private Houses | 6.23 | 155 | 23 | 54 | 77 | 46 | 29 | 75 |
| | 0002/09 | Private Houses | 8.21 | 205 | 29 | 72 | 101 | 61 | 38 | 99 |
| | 0005/09 | Private Houses | 9.3 | 233 | 33 | 82 | 115 | 69 | 43 | 112 |
| | 0006/09 | Private Houses | 2.18 | 55 | 8 | 19 | 27 | 16 | 10 | 26 |
| Carnbroe | 0001/10 | Private Houses | 2.21 | 55 | 8 | 19 | 27 | 16 | 10 | 26 |
| | 0002/10 | Industrial Estate | 15.42 | 1542 | 207 | 123 | 330 | 58 | 180 | 238 |
| | 0004/10 | Private Houses | 22.65 | 500 | 72 | 176 | 247 | 148 | 93 | 241 |
| | 0007/11 | Private Houses | 0.87 | 22 | 3 | 8 | 11 | 7 | 4 | 11 |

Table 5 below shows the trips for those development sites where Transport Assessments were available. The trips estimated in these reports have been used in this study.

Table 5: Vehicular Trip Generation. Source: Transport Assessments

| | Site Ref. | Sub Land Use | Ha | Capacity | Vehicular trips - Weekdays | | | | | |
|----------|-----------|---------------|-------|----------|----------------------------|-----|-------|--------------------|-----|-------|
| | | | | | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | |
| | | | | | IN | OUT | Total | IN | OUT | Total |
| Carnbroe | 0004/10 | Residential | | 500 | 125 | 300 | 425 | 300 | 125 | 425 |
| | | Health Centre | 0.025 | | 11 | 5 | 16 | 6 | 9 | 15 |
| | | Retail | 0.055 | | 24 | 21 | 45 | 21 | 20 | 41 |
| | | Total | 22.65 | 566 | 160 | 326 | 486 | 327 | 154 | 481 |

4.4.2 Mode Share

In order to develop multi-modal trip rates, 2011 Census data has been used to calculate the mode share for the residential development. Table DC7101SC Travel to Work has been utilised for the output areas where the development sites are located.

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Table 6 below shows the output areas selected and the mode splits for the development site **0002/09**.

Table 6: Transport to Place of Work or Study. Source: Census 2011

| Mode of Transport / Output Area | S00123553 | S00123554 | S00123556 | S00123557 | S00123558 | S00123549 | Total | Mode Share |
|---------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-------|------------|
| All people | 56 | 58 | 29 | 83 | 46 | 87 | 359 | |
| Work or study mainly from home | 3 | 6 | 5 | 10 | 1 | 7 | 32 | |
| Train | 4 | 1 | 0 | 2 | 2 | 9 | 18 | 6% |
| Bus, minibus or coach | 12 | 7 | 4 | 14 | 11 | 16 | 64 | 20% |
| Taxi or minicab | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 1% |
| Driving a car or van | 21 | 30 | 14 | 34 | 21 | 34 | 154 | 47% |
| Passenger in a car or van | 6 | 8 | 3 | 11 | 3 | 8 | 39 | 12% |
| Motorcycle, scooter or moped | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0% |
| Bicycle | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| On foot | 10 | 6 | 3 | 8 | 6 | 12 | 45 | 14% |
| Other | 0 | 0 | 0 | 2 | 0 | 1 | 3 | 1% |

Due to the large amount of information, the name and location of the outputs areas as well as the mode share for each development site are contained within Appendix A.

For the business developments, the mode share has been estimated using TRICS database. Figure 4 shows the mode share assumed for the business development site 0002/10.

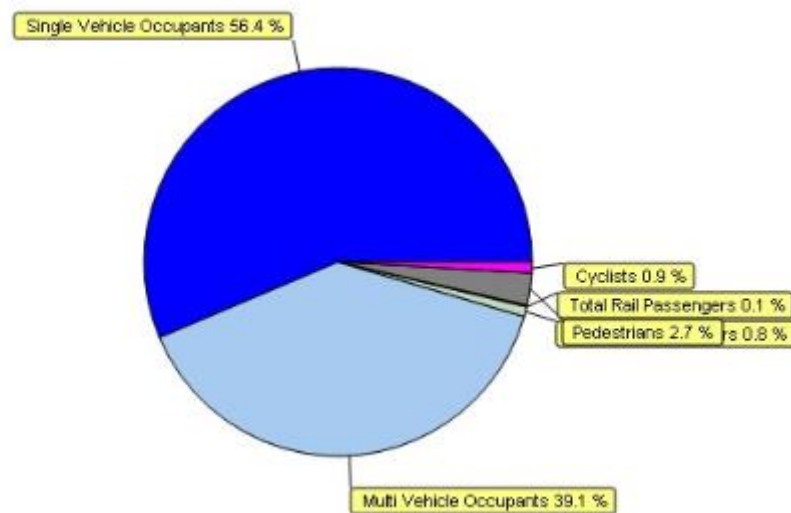


Figure 4: Estimated Modal Split Percentages for the Business Development Site 0002/10. Source: TRICS

4.4.3 Multi-modal People Trip Assessment

The modal splits percentages from Section 4.4.2 have been applied to the trip rates in Table 3 to derive people trip rates for each development site.

The multi-modal people based trips for each development site are contained within Appendix A.

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4.5 Trip Distribution

The trip distributions for the proposed developments have been based on trip distributions within Transport Assessments for existing planning applications. Table 7 shows the Transport Assessments that have been used for the trip distribution of the proposed developments.

Table 7: Transport Assessments used for the Developments Trips Distributions

| | Site Reference | Development used for the trip distribution | |
|------------------|----------------|--------------------------------------------|---------------------------------------------------------------------------|
| | | Application Reference | Transport Assessment |
| Bargeddie | 0001/09 | 16/00455/PPP | Residential Development between Oakridge Road and Drumpellier Golf Course |
| | 0002/09 | 16/00455/PPP | Residential Development between Oakridge Road and Drumpellier Golf Course |
| | 0005/09 | 16/00455/PPP | Residential Development between Oakridge Road and Drumpellier Golf Course |
| | 0006/09 | 16/00455/PPP | Residential Development between Oakridge Road and Drumpellier Golf Course |
| Carnbroe | 0001/10 | 15/01792/PPP | Mixed Use Development between Carnbroe Rd and M8 |
| | 0002/10 | 15/01792/PPP | Mixed Use Development between Carnbroe Rd and M8 |
| | 0004/10 | 15/01792/PPP | Mixed Use Development between Carnbroe Rd and M8 |
| | 0007/11 | 15/01792/PPP | Mixed Use Development between Carnbroe Rd and M8 |

Some of the development trip distributions from the Transport Assessments in Table 7 were adjusted to reflect the individual characteristics of the proposed development site. To make the adjustments, Census 2011 data from DataShine Scotland Commute website was used.

Due to the large amount of data, network flow diagrams illustrating the trip distribution for each of the proposed development is contained within Appendix B.

Road Network Impact

5 Road Network Impact

5.1 Methodology

A threshold assessment has been carried out to estimate the potential impact that trips generated by the proposed developments have on the study network.

5.2 Study Road Network

The following study network was identified through discussions with the North Lanarkshire Council. This network reflects the junctions which would be impacted upon by trips routing to and from the proposed development site allocations.

The road network considered in the analysis does not include any trunk road and is formed of the following local junctions:

- Bargeddie
 - A89 / Gartcosh Road / A752 Roundabout – 4 arm roundabout
 - A89 / Woodside Street – 3 arm signalised junction
 - A89 / Blair Road - 3 arm signalised junction
- Carnbroe
 - A725 / B753 – 4 arm signalised crossroads
 - B753 / Sikeside Street – 3 arm roundabout
 - B753 / Main Street - 4 arm roundabout
 - Sikeside Street / Paddock Street - 3 arm roundabout
 - Sweethill Terrace / Carnbroe Road - 4 arm roundabout

5.3 Future Traffic Assessment Parameters

5.3.1 Base Traffic Flows

Base flows have been calculated using the Transport Assessments from previous planning applications.

5.3.2 Assessment Years and Time Periods

As specified within TAG (2012), dates for the traffic impact assessment of the development should be undertaken for the year of opening to ensure that background traffic growth is incorporated within any assessment. It is assumed that the construction will begin following conclusion of the planning process which is considered to be 2020. Therefore the development is predicted to be constructed by 2022. National Road Traffic Forecast (NRTF) low growth factors have been used. Analysis of the performance of the road network has been undertaken in 2022 reflecting the opening of the development and 2027.

As specified within TAG (2012), road traffic impact analysis should focus on peak periods and the appraisal should incorporate days and times when the combination of development and non-development traffic would peak. In accordance with this requirement and based on the most up-to-date traffic data from the existing Transport Assessments, the weekday AM and PM peak hours for the road network surrounding the proposed development sites were found to be:

- Weekday AM Peak Hour: 08:00 – 09:00; and
- Weekday PM Peak Hour: 16:45 – 17:45.

5.3.3 Future Traffic Flows

Network traffic flows for the years 2022 and 2027 have been estimated using two approaches. The first approach was to use the Base traffic flows from Transport Assessments and then factor them up to the assessment years 2022 and 2027. National Road Traffic Forecast (NRTF) low growth factors were used and they are shown in

Capabilities on project:
Transportation

Table 8 overleaf.

Table 8: Growth Factors

| | Low Growth | |
|---------------|-------------|-------------|
| | 2016 - 2022 | 2016 - 2027 |
| Growth Factor | 1.047 | 1.074 |

However, this approach did not include any committed development within the area. Therefore, an alternative approach was used. This approach utilises the LATIS model to estimate the forecast traffic. Traffic data was extracted from the Transport Model for Scotland (TMfS) forecast models for 2022 and 2027. To ensure that the proposed development trips had not been included into the TMfS 2022 and 2027 models, the input data from the Transport and Economic Land-Use Model of Scotland (TELMoS) was requested and interrogated; i.e. double-counting trips generated by the proposed sites and therefore diluting their impact

After reviewing all the planning data considered in the model, it has been determined that none of the proposed development sites were included in TELMoS and, therefore, in the TMfS forecast models.

Network Flow Diagrams were produced for the development sites and are provided within Appendix B. They contain a conceptual layout of the road network for each cluster. They include:

- Base flows – from the Transport Assessments of previous planning applications and survey data;
- Forecast flows – base flows factored up to 2022 and 2027;
- Development trip distributions;
- Development trips;
- TMfS 2022 and 2027 traffic flows;
- Development traffic impact using the traffic flows from the Transport Assessments and surveyed data; and
- Development traffic impact using the traffic flows from the TMfS.

5.4 Development Trips Network Impact

5.4.1 Criteria

TAG (2012) states that, “the significance of traffic impact depends not only on the percentage increase but the available capacity.” Where existing traffic levels are low, any increase in traffic is likely to result in a predicted increase in traffic levels that exceed the threshold. Where this situation presents itself, it is important to consider any increase both in terms of its relative increase in respect of existing flows as well as the overall total flow in respect to the available capacity.

5.4.2 Results

The impact of the development trips with all the development sites included is shown in Tables 9-10. These results can also be observed graphically in Appendix B. Within the network impact diagrams and tables, junction approaches where the potential impact is less than 5% have been highlighted in green, 5%-10% in yellow and higher than 10% red. The results show a general green / yellow trend for the Bargeddie and Carnbroe sites.

As noted, the results that are presented in this report reflect the full cumulative impact of the proposed development sites. The Excel spreadsheets used in this assessment have been developed in such a way that they permit the user to select the developments to include in the analysis and automatically update the table and the network diagrams with the development traffic impact.

Capabilities on project:
Transportation

Table 9: Bargeddie Threshold Assessment Results- All the proposed developments included

| Name | Junction Type | Approach | TA flows | | | | TMfS14 flows | | | |
|----------------------------|---------------|-----------------|----------|----|------|----|--------------|----|------|----|
| | | | 2022 | | 2027 | | 2022 | | 2027 | |
| | | | AM | PM | AM | PM | AM | PM | AM | PM |
| A89 / Gartcosh Road / A752 | Roundabout | A89 West | 6% | 7% | 5% | 7% | 3% | 5% | 3% | 5% |
| | | Gartcosh Road | 2% | 4% | 2% | 3% | 2% | 2% | 2% | 2% |
| | | A89 East | 8% | 6% | 8% | 6% | 9% | 4% | 9% | 4% |
| | | A752 | 6% | 6% | 6% | 6% | 7% | 6% | 6% | 4% |
| A89 / Woodside Street | Signals | A89 West | 6% | 3% | 6% | 3% | 3% | 2% | 3% | 2% |
| | | A89 East | 2% | 3% | 2% | 3% | 2% | 3% | 2% | 3% |
| | | Woodside Street | 2% | 2% | 2% | 2% | - | - | - | - |
| A89 / Blair Road | Signals | A89 West | 4% | 2% | 4% | 2% | - | - | - | - |
| | | Blair Road | 0% | 0% | 0% | 0% | - | - | - | - |
| | | A89 East | 0% | 0% | 0% | 0% | - | - | - | - |

Table 10: Carnbroe Threshold Assessment Results- All the proposed developments included

| Name | Junction Type | Approach | TA flows | | | | TMfS14 flows | | | |
|----------------------------------|---------------|---------------------|----------|-----|------|-----|--------------|----|------|----|
| | | | 2022 | | 2027 | | 2022 | | 2027 | |
| | | | AM | PM | AM | PM | AM | PM | AM | PM |
| A725 / B753 | Signals | B753 West | 0% | 0% | 0% | 0% | - | - | - | - |
| | | A725 North | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| | | Calder Street | 9% | 3% | 8% | 3% | 7% | 3% | 7% | 3% |
| | | A725 South | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| B753 / Sikeside Street | Roundabout | B753 West | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| | | B753 North | 2% | 0% | 2% | 0% | 2% | 1% | 2% | 1% |
| | | Sikeside Street | 4% | 3% | 4% | 3% | - | - | - | - |
| B753 / Main Street | Roundabout | Main Street West | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| | | E Muirhall Street | 1% | 0% | 1% | 0% | - | - | - | - |
| | | Main Street East | 1% | 0% | 1% | 0% | 0% | 0% | 0% | 0% |
| | | B753 | 1% | 1% | 1% | 1% | 1% | 2% | 1% | 2% |
| Sikeside Street / Paddock Street | Roundabout | Paddock Street West | 7% | 10% | 6% | 10% | - | - | - | - |
| | | Sikeside Street | 0% | 0% | 0% | 0% | - | - | - | - |
| | | Paddock Street East | 4% | 2% | 4% | 2% | - | - | - | - |

Capabilities on project:
Transportation

| | | | | | | | | | | |
|-----------------------------------|------------|-------------------|-----|-----|-----|-----|---|---|---|---|
| Sweethill Terrace / Carnbroe Road | Roundabout | Drummore Avenue | 0% | 0% | 0% | 0% | - | - | - | - |
| | | Sweethill Terrace | 1% | 1% | 1% | 1% | - | - | - | - |
| | | Brambling Road | 0% | 0% | 0% | 0% | - | - | - | - |
| | | Carnbroe Road | 24% | 10% | 24% | 10% | - | - | - | - |

Summary and Conclusions

6 Summary and Conclusions

6.1 Summary

This DPMTAG-based Appraisal has been used to provide an initial understanding of a number of proposed development sites' cumulative impact on the road network to assist in the preparation of the North Lanarkshire Council's Local Development Plan.

Two clusters were considered in this appraisal: Bargeddie and Carnbroe. Data was gathered for each cluster to understand the existing and future road network conditions. The data gathering process included the review of all the Transport Assessments for applicable developments and traffic model output.

The demand that the proposed developments will have for all modes of transport was assessed through a people-based trip assessment. For those development sites identified for potential allocation where relevant Transport Assessments were available, the trips from these Transport Assessments were considered. For all other sites, people-based trip rates were obtained using the TRICS database.

In order to develop multi-modal trip rates, 2011 Census data was used to calculate the mode share for an identified residential development site allocation. Table DC7101SC Travel to Work data for the output areas where the development sites are located was used. For the business development land uses, the mode share was estimated using the TRICS database.

The trip distributions for the proposed developments were based on the trip distributions within the relevant Transport Assessments for existing planning applications in the proximity of each development site.

A threshold assessment was carried out to estimate the potential impact that trips generated by the proposed development allocations may have on the study network.

Base flows were calculated using the Transport Assessments from previous planning applications. Network traffic flows for the future years 2022 and 2027 were estimated considering two approaches. The first approach was to use the Base traffic flows from Transport Assessments and then factor them up to the assessment years 2022 and 2027 using growth factors. Since this approach does not include any committed development within the area, a second approach was undertaken which utilised the LATIS models to estimate the forecast traffic. Traffic data was extracted from the Transport Model for Scotland (TMfS) forecast models for 2022 and 2027. To ensure that the proposed development trips had not been previously included in the TMfS 2022 and 2027 forecast models, the input data from the Transport and Economic Land-Use Model of Scotland (TELMoS) was requested and interrogated.

Network Flow Diagrams were developed for the proposed development site allocations including:

- base traffic flows,
- forecast traffic flows,
- development trip distribution,
- development trips,
- TMfS 2022 and 2027 forecast traffic flows,
- development traffic impact using the traffic flows from the Transport Assessments and surveyed data, and
- development traffic impact using the traffic flows from the TMfS.

6.2 Conclusions

Results from this appraisal show low network traffic impact for the Bargeddie and Carnbroe sites.

The junction listed below demonstrated a percentage impact of higher than 10% at at least one of the two approaches used in the threshold appraisal and, thus, further detailed analysis is recommended.

Carnbroe cluster:

- Sweethill Terrace / Carnbroe Road

Capabilities on project:
Transportation

The following junctions showed a percentage impact between 5% and 10%, and therefore further detailed analysis may be required.

Bargeddie cluster:

- A89 / Gartcosh Road / A752
- A89 / Woodside Street

Carnbroe cluster:

- A725 / B753
- Sikeside Street / Paddock Street

Appendix A: People-based Trip Assessment

| | Site Ref. | Town | Location | Location Type | Land Use | Sub Lan Use | Ha | Capacity | TRICS | | | | | | TA - Planning Application | | | | | | Mode Share | |
|-----------|-----------|---------------|------------------------------------|---------------|----------------|-------------------|-------|----------|----------------------------|-----|-------|--------------------|-----|-------|----------------------------|-----|-------|--------------------|-----|---------|------------|--|
| | | | | | | | | | Vehicular trips - Weekdays | | | | | | Vehicular trips - Weekdays | | | | | | | |
| | | | | | | | | | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | | | |
| | | | | | | | | | IN | OUT | Total | IN | OUT | Total | IN | OUT | Total | IN | OUT | Total | | |
| Bargeddie | 0001/09 | Bargeddie | Coatbridge Road/Manse Road | Edge of Town | Residential | Private Houses | 6.23 | 155 | 22 | 54 | 77 | 46 | 29 | 75 | | | | | | | 0001/09 | |
| | 0002/09 | Bargeddie | Coatbridge Road/Langmuir Road | Edge of Town | Residential | Private Houses | 8.21 | 205 | 29 | 72 | 101 | 61 | 38 | 99 | | | | | | | 0002/09 | |
| | 0005/09 | Bargeddie | Drumpark School | Edge of Town | Residential | Private Houses | 9.3 | 233 | 33 | 82 | 115 | 69 | 43 | 112 | | | | | | | 0005/09 | |
| | 0006/09 | Bargeddie | Drumpellier | Edge of Town | Residential | Private Houses | 2.18 | 55 | 8 | 19 | 27 | 16 | 10 | 26 | | | | | | | 0006/09 | |
| Cambroee | 0001/10 | Cambroee | Sweethill Terrace/Deanston Terrace | Edge of Town | Residential | Private Houses | 2.21 | 55 | 8 | 19 | 27 | 16 | 10 | 26 | | | | | | | 0001/10 | |
| | 0002/10 | Coatbridge | Cambroee | Edge of Town | Business | Industrial Estate | 15.42 | 1542 | 207 | 123 | 330 | 58 | 180 | 238 | | | | | | | 0002/10 | |
| | 0004/10 | Coatbridge | Cambroee estate | Edge of Town | Residential | Private Houses | | 500 | 72 | 176 | 247 | 148 | 93 | 241 | 125 | 300 | 425 | 300 | 125 | 425 | TA | |
| | | | | | Health Centre | | 0.025 | | 0 | 0 | 0 | 0 | 0 | 11 | 5 | 16 | 6 | 9 | 15 | | | |
| | | | | | Retail | | 0.055 | | 0 | 0 | 0 | 0 | 0 | 24 | 21 | 45 | 21 | 20 | 41 | | | |
| | | | Total | | | 22.65 | 566 | 0 | 0 | 0 | 0 | 0 | 0 | 160 | 326 | 486 | 327 | 154 | 481 | | | |
| 0007/11 | Airdrie | Sikeside Road | Edge of Town | Residential | Private Houses | 0.87 | 22 | 3 | 8 | 11 | 7 | 4 | 11 | | | | | | | 0007/11 | | |

| Location Type | Land Use | Sub Land Use | Unit | Weekdays | | | | | | No. surveys | Notes |
|----------------------|-------------|----------------------|------------------------|--------------------|--------|---------|--------------------|---------|---------|-------------|--------------------------------------|
| | | | | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | | | |
| | | | | IN | OUT | Total | IN | OUT | Total | | |
| Edge of Town | Residential | Private Houses | per no. dwellings | 0.143 | 0.351 | 0.494 | 0.296 | 0.185 | 0.481 | 44 | |
| Edge of Town | Residential | Private Flats | per no. dwellings | 0.071 | 0.221 | 0.292 | 0.259 | 0.137 | 0.396 | 19 | |
| Edge of Town | Residential | Private Mixed | per no. dwellings | 0.129 | 0.405 | 0.534 | 0.324 | 0.188 | 0.512 | 9 | |
| Edge of Town | Residential | Afford Houses | per no. dwellings | 0.154 | 0.288 | 0.442 | 0.297 | 0.191 | 0.488 | 9 | |
| Edge of Town | Residential | Afford Flats | per no. dwellings | 0.07 | 0.091 | 0.161 | 0.106 | 0.098 | 0.204 | 8 | Peak times don't match with selected |
| Edge of Town | Residential | Afford Mixed | per no. dwellings | 0.121 | 0.207 | 0.328 | 0.293 | 0.276 | 0.569 | 3 | Peak times don't match with selected |
| Edge of Town | Residential | Private-Afford Mixed | per no. dwellings | 0.16 | 0.307 | 0.467 | 0.343 | 0.252 | 0.595 | 10 | |
| Edge of Town | Business | Business Park | per 100sqm (GFA) | 1.329 | 0.23 | 1.559 | 0.161 | 1.048 | 1.209 | 11 | |
| Edge of Town | Business | Industrial Estate | per 100sqm (Site area) | 0.13454 | 0.0797 | 0.21424 | 0.03761 | 0.11658 | 0.15419 | 21 | Peak times don't match with selected |
| Edge of Town Centre | Residential | Private Houses | per no. dwellings | 0.143 | 0.351 | 0.494 | 0.296 | 0.185 | 0.481 | 44 | |
| Edge of Town Centre | Residential | Private Flats | per no. dwellings | 0.066 | 0.206 | 0.272 | 0.251 | 0.143 | 0.394 | 20 | |
| Edge of Town Centre | Residential | Private Mixed | per no. dwellings | 0.129 | 0.405 | 0.534 | 0.324 | 0.188 | 0.512 | 9 | |
| Edge of Town Centre | Residential | Afford Houses | per no. dwellings | 0.157 | 0.299 | 0.456 | 0.263 | 0.196 | 0.459 | 7 | |
| Edge of Town Centre | Residential | Afford Flats | per no. dwellings | 0.067 | 0.08 | 0.147 | 0.083 | 0.067 | 0.15 | 8 | Peak times don't match with selected |
| Edge of Town Centre | Residential | Afford Mixed | per no. dwellings | 0.05 | 0.125 | 0.175 | 0.2 | 0.15 | 0.35 | 2 | Peak times don't match with selected |
| Edge of Town Centre | Residential | Private-Afford Mixed | per no. dwellings | 0.16 | 0.307 | 0.467 | 0.343 | 0.252 | 0.595 | 10 | |
| Edge of Town Centre | Business | Business Park | per 100sqm (GFA) | 1.329 | 0.23 | 1.559 | 0.161 | 1.048 | 1.209 | 11 | |
| Edge of Town Centre | Business | Industrial Estate | per 100sqm (Site area) | 0.140 | 0.083 | 0.222 | 0.039 | 0.120 | 0.159 | 19 | Peak times don't match with selected |
| Suburban Area | Residential | Private Houses | per no. dwellings | 0.143 | 0.351 | 0.494 | 0.296 | 0.185 | 0.481 | 44 | |
| Suburban Area | Residential | Private Flats | per no. dwellings | 0.071 | 0.221 | 0.292 | 0.259 | 0.137 | 0.396 | 19 | |
| Suburban Area | Residential | Private Mixed | per no. dwellings | 0.129 | 0.405 | 0.534 | 0.324 | 0.188 | 0.512 | 9 | |
| Suburban Area | Residential | Afford Houses | per no. dwellings | 0.154 | 0.288 | 0.442 | 0.297 | 0.191 | 0.488 | 9 | |
| Suburban Area | Residential | Afford Flats | per no. dwellings | 0.07 | 0.091 | 0.161 | 0.106 | 0.098 | 0.204 | 8 | Peak times don't match with selected |
| Suburban Area | Residential | Afford Mixed | per no. dwellings | 0.121 | 0.207 | 0.328 | 0.293 | 0.276 | 0.569 | 3 | Peak times don't match with selected |
| Suburban Area | Residential | Private-Afford Mixed | per no. dwellings | 0.16 | 0.307 | 0.467 | 0.343 | 0.252 | 0.595 | 10 | |
| Suburban Area | Business | Business Park | per 100sqm (GFA) | 1.329 | 0.23 | 1.559 | 0.161 | 1.048 | 1.209 | 11 | All location types selected |
| Suburban Area | Business | Industrial Estate | per 100sqm (Site area) | 0.137 | 0.081 | 0.217 | 0.038 | 0.117 | 0.155 | 20 | Peak times don't match with selected |
| Neighbourhood Centre | Residential | Private Houses | per no. dwellings | 0.14 | 0.361 | 0.501 | 0.31 | 0.183 | 0.493 | 38 | |
| Neighbourhood Centre | Residential | Private Flats | per no. dwellings | 0.084 | 0.272 | 0.356 | 0.315 | 0.152 | 0.467 | 12 | |
| Neighbourhood Centre | Residential | Private Mixed | per no. dwellings | 0.136 | 0.424 | 0.56 | 0.334 | 0.196 | 0.53 | 7 | |
| Neighbourhood Centre | Residential | Afford Houses | per no. dwellings | 0.152 | 0.28 | 0.432 | 0.297 | 0.185 | 0.482 | 8 | |
| Neighbourhood Centre | Residential | Afford Flats | per no. dwellings | 0.07 | 0.091 | 0.161 | 0.106 | 0.098 | 0.204 | 8 | Peak times don't match with selected |
| Neighbourhood Centre | Residential | Afford Mixed | per no. dwellings | 0.121 | 0.207 | 0.328 | 0.293 | 0.276 | 0.569 | 3 | Peak times don't match with selected |
| Neighbourhood Centre | Residential | Private-Afford Mixed | per no. dwellings | 0.16 | 0.307 | 0.467 | 0.343 | 0.252 | 0.595 | 10 | |
| Neighbourhood Centre | Business | Business Park | per 100sqm (GFA) | 1.315 | 1.548 | 2.863 | 0.166 | 1.049 | 1.215 | 10 | |
| Neighbourhood Centre | Business | Industrial Estate | per 100sqm (Site area) | 0.136 | 0.080 | 0.216 | 0.035 | 0.116 | 0.151 | 16 | Peak times don't match with selected |

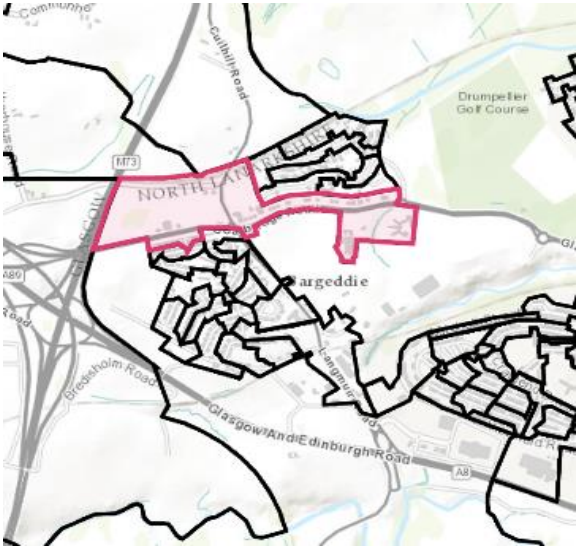
Table from Scotland Census 2011

| Transport to place of work or study | | All people | Work or study mainly at or from home | Underground, metro, light rail or tram | Train | Bus, minibus or coach | Taxi or minicab | Driving a car or van | Passenger in a car or van | Motorcycle, scooter or moped | Bicycle | On foot | Other |
|-------------------------------------|-----------|------------|--------------------------------------|----------------------------------------|-------|-----------------------|-----------------|----------------------|---------------------------|------------------------------|---------|---------|-------|
| 2011OutputArea | | | | | | | | | | | | | |
| | S00123559 | 100 | 13 | 0 | 6 | 15 | 2 | 47 | 10 | 0 | 1 | 6 | 0 |

Mode Share

| Transport to place of work or study | | | |
|----------------------------------------|--|-----|-----|
| All people | | 100 | |
| Work or study mainly at or from home | | 13 | |
| Underground, metro, light rail or tram | | 0 | |
| Train | | 6 | 7% |
| Bus, minibus or coach | | 15 | 17% |
| Taxi or minicab | | 2 | 2% |
| Driving a car or van | | 47 | 54% |
| Passenger in a car or van | | 10 | 11% |
| Motorcycle, scooter or moped | | 0 | 0% |
| Bicycle | | 1 | 1% |
| On foot | | 6 | 7% |
| Other | | 0 | 0% |

100%



| | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | |
|---------------|--------------------|-----|-------|--------------------|-----|-------|
| | In | Out | Total | In | Out | Total |
| 0001/09 | 22 | 54 | 77 | 46 | 29 | 75 |
| Train | 3 | 7 | 10 | 6 | 4 | 10 |
| Bus | 7 | 17 | 24 | 15 | 9 | 24 |
| Taxi | 1 | 2 | 3 | 2 | 1 | 3 |
| Car driver | 22 | 54 | 77 | 46 | 29 | 75 |
| Car passenger | 5 | 12 | 16 | 10 | 6 | 16 |
| Bicycle | 0 | 1 | 2 | 1 | 1 | 2 |
| On foot | 3 | 7 | 10 | 6 | 4 | 10 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

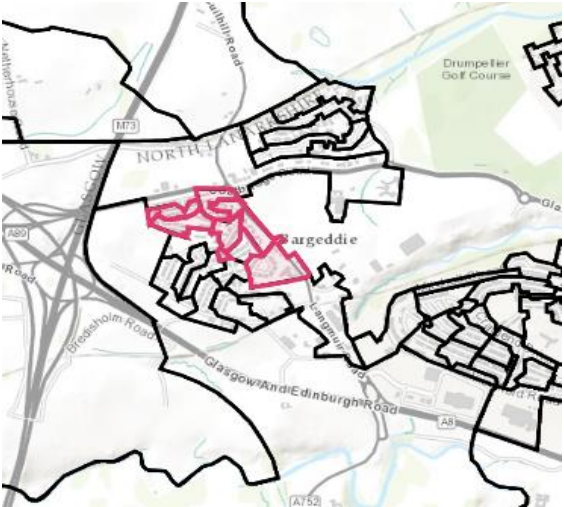
Table from Scotland Census 2011

| Transport to place of work or study | | All people | Work or study mainly at or from home | Underground, metro, light rail or tram | Train | Bus, minibus or coach | Taxi or minicab | Driving a car or van | Passenger in a car or van | Motorcycle, scooter or moped | Bicycle | On foot | Other |
|-------------------------------------|-----------|------------|--------------------------------------|----------------------------------------|-------|-----------------------|-----------------|----------------------|---------------------------|------------------------------|---------|---------|-------|
| 2011OutputArea | | | | | | | | | | | | | |
| | Total | 359 | 32 | 0 | 18 | 64 | 3 | 154 | 39 | 1 | 0 | 45 | 3 |
| | S00123553 | 56 | 3 | 0 | 4 | 12 | 0 | 21 | 6 | 0 | 0 | 10 | 0 |
| | S00123554 | 58 | 6 | 0 | 1 | 7 | 0 | 30 | 8 | 0 | 0 | 6 | 0 |
| | S00123556 | 29 | 5 | 0 | 0 | 4 | 0 | 14 | 3 | 0 | 0 | 3 | 0 |
| | S00123557 | 83 | 10 | 0 | 2 | 14 | 1 | 34 | 11 | 1 | 0 | 8 | 2 |
| | S00123558 | 46 | 1 | 0 | 2 | 11 | 2 | 21 | 3 | 0 | 0 | 6 | 0 |
| | S00123549 | 87 | 7 | 0 | 9 | 16 | 0 | 34 | 8 | 0 | 0 | 12 | 1 |

Mode Share

| | | |
|----------------------------------------|-----|-----|
| Transport to place of work or study | | |
| All people | 359 | |
| Work or study mainly at or from home | 32 | |
| Underground, metro, light rail or tram | 0 | |
| Train | 18 | 6% |
| Bus, minibus or coach | 64 | 20% |
| Taxi or minicab | 3 | 1% |
| Driving a car or van | 154 | 47% |
| Passenger in a car or van | 39 | 12% |
| Motorcycle, scooter or moped | 1 | 0% |
| Bicycle | 0 | 0% |
| On foot | 45 | 14% |
| Other | 3 | 1% |

100%



| | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | |
|---------------|--------------------|-----|-------|--------------------|-----|-------|
| | In | Out | Total | In | Out | Total |
| 0002/09 | 29 | 72 | 101 | 61 | 38 | 99 |
| Train | 3 | 8 | 12 | 7 | 4 | 12 |
| Bus | 12 | 30 | 42 | 25 | 16 | 41 |
| Taxi | 1 | 1 | 2 | 1 | 1 | 2 |
| Car driver | 29 | 72 | 101 | 61 | 38 | 99 |
| Car passenger | 7 | 18 | 26 | 15 | 10 | 25 |
| Bicycle | 0 | 0 | 0 | 0 | 0 | 0 |
| On foot | 9 | 21 | 30 | 18 | 11 | 29 |
| Other | 1 | 1 | 2 | 1 | 1 | 2 |

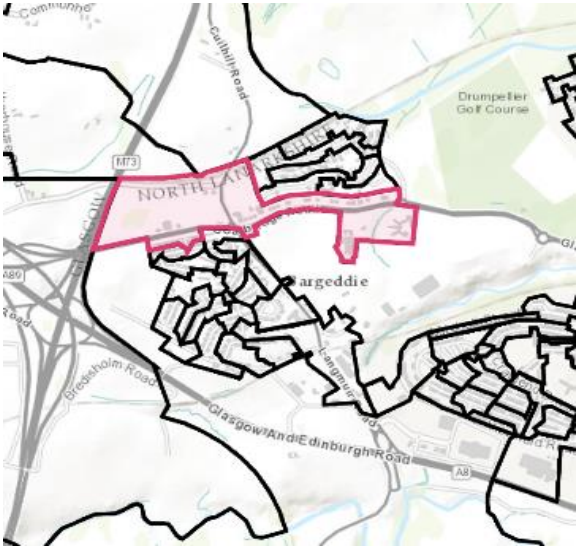
Table from Scotland Census 2011

| Transport to place of work or study | | All people | Work or study mainly at or from home | Underground, metro, light rail or tram | Train | Bus, minibus or coach | Taxi or minicab | Driving a car or van | Passenger in a car or van | Motorcycle, scooter or moped | Bicycle | On foot | Other |
|-------------------------------------|-----------|------------|--------------------------------------|----------------------------------------|-------|-----------------------|-----------------|----------------------|---------------------------|------------------------------|---------|---------|-------|
| 2011OutputArea | | | | | | | | | | | | | |
| | S00123559 | 100 | 13 | 0 | 6 | 15 | 2 | 47 | 10 | 0 | 1 | 6 | 0 |

Mode Share

| Transport to place of work or study | | | |
|----------------------------------------|--|-----|-----|
| All people | | 100 | |
| Work or study mainly at or from home | | 13 | |
| Underground, metro, light rail or tram | | 0 | |
| Train | | 6 | 7% |
| Bus, minibus or coach | | 15 | 17% |
| Taxi or minicab | | 2 | 2% |
| Driving a car or van | | 47 | 54% |
| Passenger in a car or van | | 10 | 11% |
| Motorcycle, scooter or moped | | 0 | 0% |
| Bicycle | | 1 | 1% |
| On foot | | 6 | 7% |
| Other | | 0 | 0% |

100%



| | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | |
|---------------|--------------------|-----|-------|--------------------|-----|-------|
| | In | Out | Total | In | Out | Total |
| 0005/09 | 33 | 82 | 115 | 69 | 43 | 112 |
| Train | 4 | 10 | 15 | 9 | 6 | 14 |
| Bus | 11 | 26 | 37 | 22 | 14 | 36 |
| Taxi | 1 | 3 | 5 | 3 | 2 | 5 |
| Car driver | 33 | 82 | 115 | 69 | 43 | 112 |
| Car passenger | 7 | 17 | 24 | 15 | 9 | 24 |
| Bicycle | 1 | 2 | 2 | 1 | 1 | 2 |
| On foot | 4 | 10 | 15 | 9 | 6 | 14 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

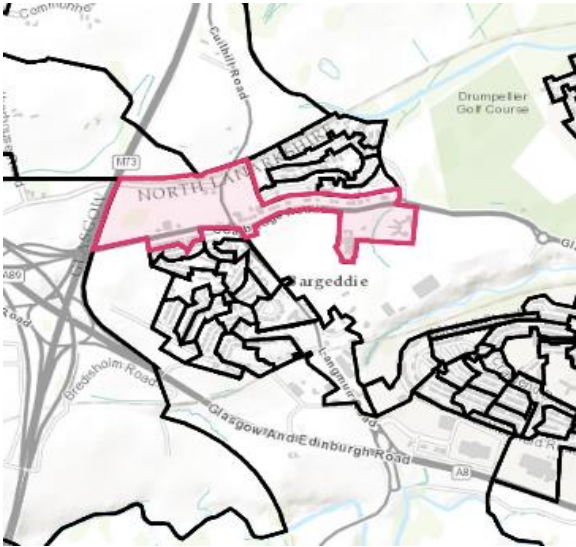
Table from Scotland Census 2011

| Transport to place of work or study | | All people | Work or study mainly at or from home | Underground, metro, light rail or tram | Train | Bus, minibus or coach | Taxi or minicab | Driving a car or van | Passenger in a car or van | Motorcycle, scooter or moped | Bicycle | On foot | Other |
|-------------------------------------|-----------|------------|--------------------------------------|----------------------------------------|-------|-----------------------|-----------------|----------------------|---------------------------|------------------------------|---------|---------|-------|
| 2011OutputArea | | | | | | | | | | | | | |
| | S00123559 | 100 | 13 | 0 | 6 | 15 | 2 | 47 | 10 | 0 | 1 | 6 | 0 |

Mode Share

| | | |
|----------------------------------------|-----|-----|
| Transport to place of work or study | | |
| All people | 100 | |
| Work or study mainly at or from home | 13 | |
| Underground, metro, light rail or tram | 0 | |
| Train | 6 | 7% |
| Bus, minibus or coach | 15 | 17% |
| Taxi or minicab | 2 | 2% |
| Driving a car or van | 47 | 54% |
| Passenger in a car or van | 10 | 11% |
| Motorcycle, scooter or moped | 0 | 0% |
| Bicycle | 1 | 1% |
| On foot | 6 | 7% |
| Other | 0 | 0% |

100%



| | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | |
|---------------|--------------------|-----|-------|--------------------|-----|-------|
| | In | Out | Total | In | Out | Total |
| 0006/09 | 8 | 19 | 27 | 16 | 10 | 26 |
| Train | 1 | 2 | 3 | 2 | 1 | 3 |
| Bus | 3 | 6 | 9 | 5 | 3 | 8 |
| Taxi | 0 | 1 | 1 | 1 | 0 | 1 |
| Car driver | 8 | 19 | 27 | 16 | 10 | 26 |
| Car passenger | 2 | 4 | 6 | 3 | 2 | 6 |
| Bicycle | 0 | 0 | 1 | 0 | 0 | 1 |
| On foot | 1 | 2 | 3 | 2 | 1 | 3 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

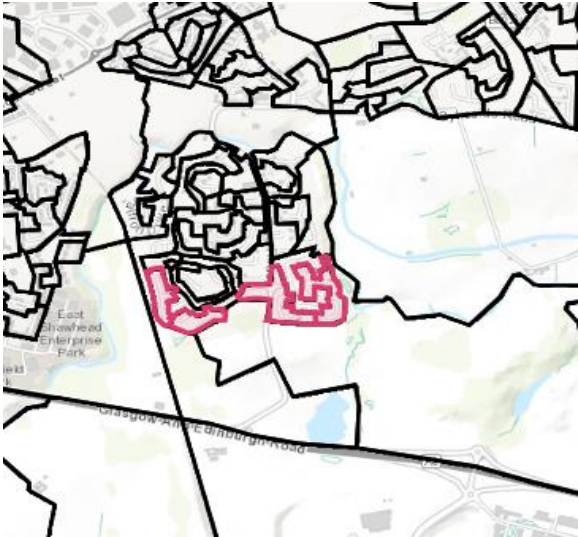
Table from Scotland Census 2011

| Transport to place of work or study | | All people | Work or study mainly at or from home | Underground, metro, light rail or tram | Train | Bus, minibus or coach | Taxi or minicab | Driving a car or van | Passenger in a car or van | Motorcycle, scooter or moped | Bicycle | On foot | Other |
|-------------------------------------|-----------|------------|--------------------------------------|----------------------------------------|-------|-----------------------|-----------------|----------------------|---------------------------|------------------------------|---------|---------|-------|
| 2011OutputArea | | | | | | | | | | | | | |
| | Total | 548 | 58 | 0 | 29 | 42 | 7 | 301 | 78 | 0 | 1 | 28 | 4 |
| | S00123873 | 128 | 13 | 0 | 5 | 7 | 2 | 66 | 24 | 0 | 1 | 9 | 1 |
| | S00125510 | 152 | 10 | 0 | 11 | 13 | 3 | 85 | 22 | 0 | 0 | 7 | 1 |
| | S00125511 | 168 | 22 | 0 | 8 | 8 | 1 | 94 | 25 | 0 | 0 | 8 | 2 |
| | S00125513 | 100 | 13 | 0 | 5 | 14 | 1 | 56 | 7 | 0 | 0 | 4 | 0 |

Mode Share

| | | |
|----------------------------------------|-----|-----|
| Transport to place of work or study | | |
| | | |
| All people | 548 | |
| Work or study mainly at or from home | 58 | |
| Underground, metro, light rail or tram | 0 | |
| Train | 29 | 6% |
| Bus, minibus or coach | 42 | 9% |
| Taxi or minicab | 7 | 1% |
| Driving a car or van | 301 | 61% |
| Passenger in a car or van | 78 | 16% |
| Motorcycle, scooter or moped | 0 | 0% |
| Bicycle | 1 | 0% |
| On foot | 28 | 6% |
| Other | 4 | 1% |

100%



| | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | |
|---------------|--------------------|-----|-------|--------------------|-----|-------|
| | In | Out | Total | In | Out | Total |
| 0001/10 | 8 | 19 | 27 | 16 | 10 | 26 |
| Train | 1 | 2 | 3 | 2 | 1 | 3 |
| Bus | 1 | 3 | 4 | 2 | 1 | 4 |
| Taxi | 0 | 0 | 1 | 0 | 0 | 1 |
| Car driver | 8 | 19 | 27 | 16 | 10 | 26 |
| Car passenger | 2 | 5 | 7 | 4 | 3 | 7 |
| Bicycle | 0 | 0 | 0 | 0 | 0 | 0 |
| On foot | 1 | 2 | 3 | 2 | 1 | 2 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

Table from Scotland Census 2011

| Transport to place of work or study | | All people | Work or study mainly at or from home | Underground, metro, light rail or tram | Train | Bus, minibus or coach | Taxi or minicab | Driving a car or van | Passenger in a car or van | Motorcycle, scooter or moped | Bicycle | On foot | Other |
|-------------------------------------|-----------|------------|--------------------------------------|----------------------------------------|-------|-----------------------|-----------------|----------------------|---------------------------|------------------------------|---------|---------|-------|
| 2011OutputArea | | | | | | | | | | | | | |
| | S00123872 | 78 | 12 | 0 | 1 | 7 | 3 | 17 | 19 | 0 | 0 | 19 | 0 |

Mode Share

| | | |
|----------------------------------------|----|-----|
| Transport to place of work or study | | |
| All people | 78 | |
| Work or study mainly at or from home | 12 | |
| Underground, metro, light rail or tram | 0 | |
| Train | 1 | 2% |
| Bus, minibus or coach | 7 | 11% |
| Taxi or minicab | 3 | 5% |
| Driving a car or van | 17 | 26% |
| Passenger in a car or van | 19 | 29% |
| Motorcycle, scooter or moped | 0 | 0% |
| Bicycle | 0 | 0% |
| On foot | 19 | 29% |
| Other | 0 | 0% |

100%



| | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | |
|---------------|--------------------|-----|-------|--------------------|-----|-------|
| | In | Out | Total | In | Out | Total |
| 0002/10 | 207 | 123 | 330 | 58 | 180 | 238 |
| Train | 12 | 7 | 19 | 3 | 11 | 14 |
| Bus | 85 | 51 | 136 | 24 | 74 | 98 |
| Taxi | 37 | 22 | 58 | 10 | 32 | 42 |
| Car driver | 207 | 123 | 330 | 58 | 180 | 238 |
| Car passenger | 232 | 137 | 369 | 65 | 201 | 266 |
| Bicycle | 0 | 0 | 0 | 0 | 0 | 0 |
| On foot | 232 | 137 | 369 | 65 | 201 | 266 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

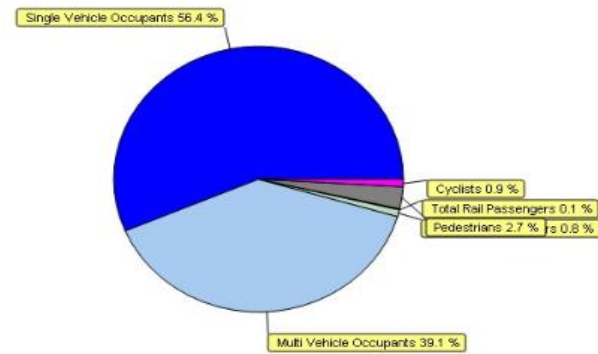
Table from TRICS

Mode Share

| | | |
|----------------------------------------|------|-----|
| Transport to place of work or study | | |
| All people | | |
| Work or study mainly at or from home | | |
| Underground, metro, light rail or tram | | |
| Train | 0.1 | 0% |
| Bus, minibus or coach | 0.8 | 1% |
| Taxi or minicab | 0 | 0% |
| Driving a car or van | 56.4 | 56% |
| Passenger in a car or van | 39.1 | 39% |
| Motorcycle, scooter or moped | 0 | 0% |
| Bicycle | 0.9 | 1% |
| On foot | 2.7 | 3% |
| Other | 0 | 0% |

100%

Modal Split Percentages



| | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | |
|---------------|--------------------|-----|-------|--------------------|-----|-------|
| | In | Out | Total | In | Out | Total |
| 0002/10 | 207 | 123 | 330 | 58 | 180 | 238 |
| Train | 1 | 0 | 1 | 0 | 1 | 1 |
| Bus | 6 | 4 | 10 | 2 | 6 | 7 |
| Taxi | 0 | 0 | 0 | 0 | 0 | 0 |
| Car driver | 454 | 269 | 723 | 127 | 394 | 521 |
| Car passenger | 315 | 187 | 501 | 88 | 273 | 361 |
| Bicycle | 7 | 4 | 12 | 2 | 6 | 8 |
| On foot | 22 | 13 | 35 | 6 | 19 | 25 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

Table from Scotland Census 2011

| Transport to place of work or study | | All people | Work or study mainly at or from home | Underground, metro, light rail or tram | Train | Bus, minibus or coach | Taxi or minicab | Driving a car or van | Passenger in a car or van | Motorcycle, scooter or moped | Bicycle | On foot | Other |
|-------------------------------------|-----------|------------|--------------------------------------|----------------------------------------|-------|-----------------------|-----------------|----------------------|---------------------------|------------------------------|---------|---------|-------|
| 2011OutputArea | | | | | | | | | | | | | |
| | Total | 442 | 23 | 1 | 46 | 47 | 5 | 224 | 70 | 0 | 1 | 25 | 0 |
| | S00125429 | 118 | 11 | 0 | 17 | 7 | 1 | 59 | 12 | 0 | 1 | 10 | 0 |
| | S00125430 | 152 | 8 | 0 | 13 | 18 | 1 | 84 | 19 | 0 | 0 | 9 | 0 |
| | S00125431 | 65 | 2 | 0 | 7 | 3 | 0 | 31 | 20 | 0 | 0 | 2 | 0 |
| | S00125432 | 107 | 2 | 1 | 9 | 19 | 3 | 50 | 19 | 0 | 0 | 4 | 0 |

Mode Share

| | | |
|----------------------------------------|-----|-----|
| Transport to place of work or study | | |
| | | |
| All people | 442 | |
| Work or study mainly at or from home | 23 | |
| Underground, metro, light rail or tram | 1 | |
| Train | 46 | 11% |
| Bus, minibus or coach | 47 | 11% |
| Taxi or minicab | 5 | 1% |
| Driving a car or van | 224 | 54% |
| Passenger in a car or van | 70 | 17% |
| Motorcycle, scooter or moped | 0 | 0% |
| Bicycle | 1 | 0% |
| On foot | 25 | 6% |
| Other | 0 | 0% |

100%



| | AM (08:00 - 09:00) | | | PM (17:00 - 18:00) | | |
|---------------|--------------------|-----|-------|--------------------|-----|-------|
| | In | Out | Total | In | Out | Total |
| 0007/11 | 3 | 8 | 11 | 7 | 4 | 11 |
| Train | 1 | 2 | 2 | 1 | 1 | 2 |
| Bus | 1 | 2 | 2 | 1 | 1 | 2 |
| Taxi | 0 | 0 | 0 | 0 | 0 | 0 |
| Car driver | 3 | 8 | 11 | 7 | 4 | 11 |
| Car passenger | 1 | 2 | 3 | 2 | 1 | 3 |
| Bicycle | 0 | 0 | 0 | 0 | 0 | 0 |
| On foot | 0 | 1 | 1 | 1 | 0 | 1 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

Appendix B: Network Flow Diagrams

GROWTH FACTORS

| | | | | | | | |
|-------------|-------|-------|-------|-------|------|------|------|
| Future Year | 2016 | 2016 | 2022 | 2027 | | | |
| Base Year | 2014 | 2008 | 2016 | 2016 | | | |
| Low Growth | 1.023 | 1.095 | 1.047 | 1.074 | #N/A | #N/A | #N/A |
| High Growth | 1.036 | 1.153 | 1.090 | 1.157 | #N/A | #N/A | #N/A |

NETWORK FLOW DIAGRAMS

| INDEX | SOURCE |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2008 AM Base'IA1 | 09_00818_FUL-Transport_Assessment_-_Oct_2008-46522.pdf |
| 2008 PM Base'IA1 | 09_00818_FUL-Transport_Assessment_-_Oct_2008-46522.pdf |
| 2014 AM Base'IA1 | 16_00455_PPP-TRANSPORT_ASSESSMENT_PART_2-674799.pdf |
| 2014 PM Base'IA1 | 16_00455_PPP-TRANSPORT_ASSESSMENT_PART_2-674799.pdf |
| AM Dev Flows 16-00455'IA1 | 16_00455_PPP-TRANSPORT_ASSESSMENT_PART_2-674799.pdf |
| PM Dev Flows 16-00455'IA1 | 16_00455_PPP-TRANSPORT_ASSESSMENT_PART_2-674799.pdf |
| 16-00455 AM Dev Proportions'IA1 | AM Dev Flows 16-00455'IA1 |
| 0001_09 Development AM Flows'IA1 | The development trips have been distributed using the same proportions than the trip distribution for the development flows from 16/00455/PPP |
| 0002_09 Development AM Flows'IA1 | |
| 0005_09 Development AM Flows'IA1 | |
| 0006_09 Development AM Flows'IA1 | |
| 16-00455 PM Dev Proportions'IA1 | PM Dev Flows 16-00455'IA1 |
| 0001_09 Development PM Flows'IA1 | The development trips have been distributed using the same proportions than the trip distribution for the development flows from 16/00455/PPP |
| 0002_09 Development PM Flows'IA1 | |
| 0005_09 Development PM Flows'IA1 | |
| 0006_09 Development PM Flows'IA1 | |
| AM Developments Flows'IA1 | This NFDs only include the developments selected below |
| PM Developments Flows'IA1 | |
| 2016 AM Base'IA1 | 2014 factored flows. The trips at A89 Bank Street/Blair Road junction have been distributed using the same proportions than the 2008 background flows from 09/00818/PPP |
| 2016 PM Base'IA1 | |
| 2022 AM Base'IA1 | |
| 2022 PM Base'IA1 | |
| 2027 AM Base'IA1 | |
| 2027 PM Base'IA1 | |
| TMfS14 - AM Base flows'IA1 | TMfS14 flows.xlsx |
| TMfS14 - PM Base flows'IA1 | |
| TMfS14 - AM 2022 flows'IA1 | |
| TMfS14 - PM 2022 flows'IA1 | |
| TMfS14 - AM 2027 flows'IA1 | |
| TMfS14 - PM 2027 flows'IA1 | |

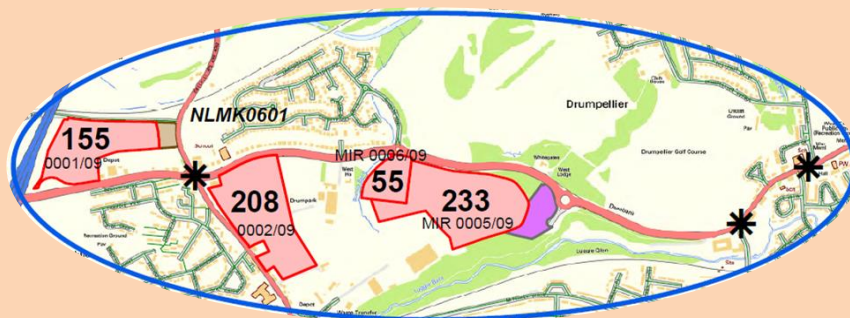
THRESHOLD ASSESSMENT

Select developments:

- ☒ 0001/09
☒ 0002/09
☒ 0005/09
☒ 0006/09

Graphical Results

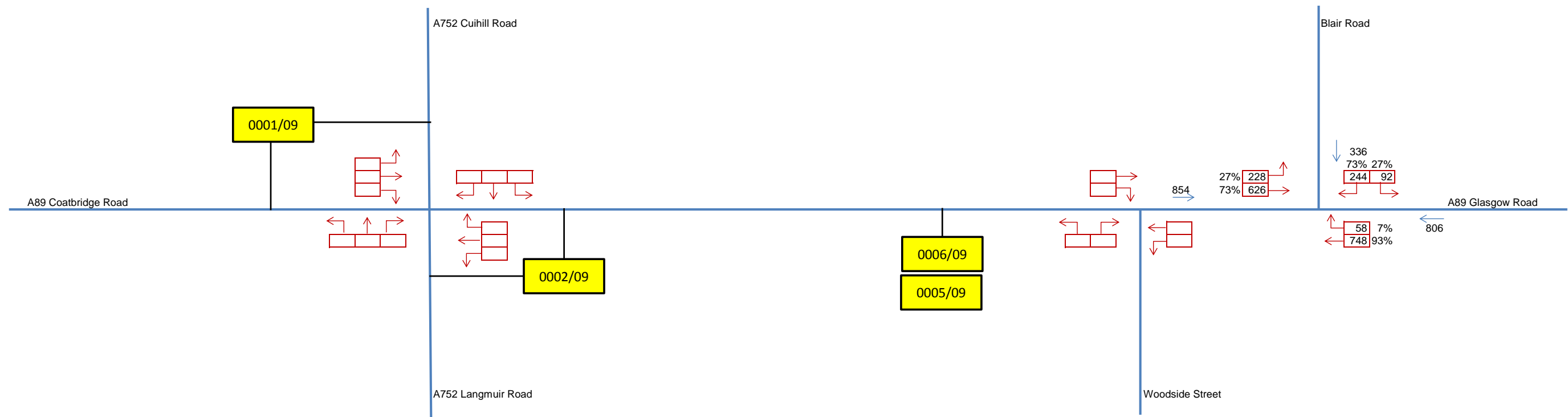
| |
|------------------------------------------------------|
| 2022 AM Development Impact - IA1A1 |
| 2014 PM Development Impact - IA1A1 |
| 2014 AM Development Impact - IA1A1 |
| 2017 PM Development Impact - IA1A1 |
| 2022 AM Development Impact - TMfS1A1 |
| 2022 PM Development Impact - TMfS1A1 |
| 2027 AM Development Impact - TMfS1A1 |
| 2027 PM Development Impact - TMfS1A1 |



Results

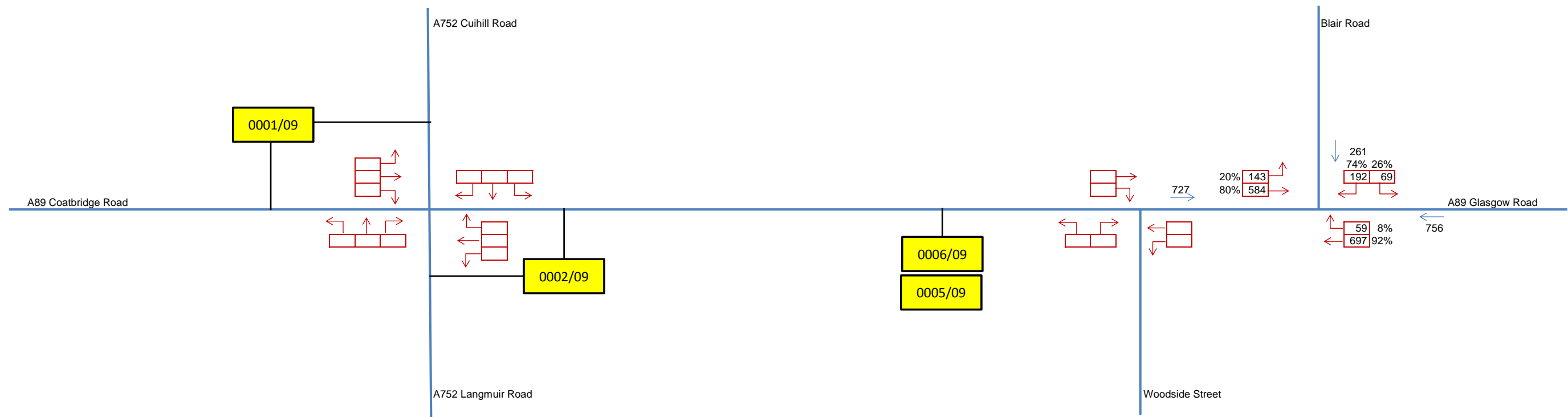
| Name | Junction Type | Approach | TA flows | | | | TMfS14 flows | | | | | |
|----------------------------|---------------|-----------------|----------|----|------|----|--------------|----|------|----|----|----|
| | | | 2022 | | 2027 | | 2022 | | 2027 | | | |
| | | | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| A89 / Gartcosh Road / A752 | Roundabout | A89 West | 6% | 7% | 5% | 7% | 3% | 5% | 3% | 5% | 3% | 5% |
| | | Gartcosh Road | 2% | 4% | 2% | 3% | 2% | 2% | 2% | 2% | 2% | 2% |
| | | A89 East | 8% | 6% | 8% | 6% | 9% | 4% | 9% | 4% | 9% | 4% |
| | | A752 | 6% | 6% | 6% | 6% | 7% | 6% | 6% | 6% | 6% | 4% |
| A89 / Woodside Street | Signals | A89 West | 6% | 3% | 6% | 3% | 3% | 2% | 3% | 2% | 3% | 2% |
| | | A89 East | 2% | 3% | 2% | 3% | 2% | 3% | 2% | 3% | 2% | 3% |
| | | Woodside Street | 2% | 2% | 2% | 2% | - | - | - | - | - | - |
| A89 / Blair Road | Signals | A89 West | 4% | 2% | 4% | 2% | - | - | - | - | - | - |
| | | Blair Road | 0% | 0% | 0% | 0% | - | - | - | - | - | - |
| | | A89 East | 0% | 0% | 0% | 0% | - | - | - | - | - | - |

Source: [09_00818_FUL-Transport_Assessment_-_Oct_2008-46522.pdf](#)



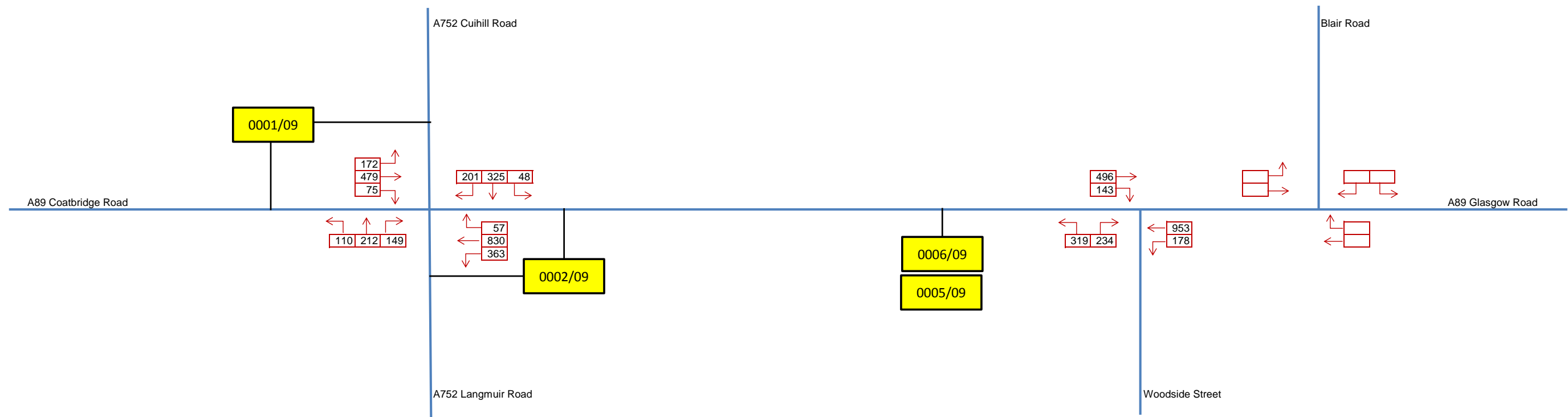
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|---------|---------------------------|---------------------------------------------------------------------------------------|--|----------|----------|---------|---------------------------------------------|--|
| Client | North Lanarkshire Council |  | | Title | | | Bargeddie - 2008 AM Peak Base (08:00-09:00) | |
| Project | LDP DPMTAG | | | Job No. | Produced | Checked | Date | |
| | | | | 60470585 | MLF | | 06/07/2016 | |

Source: [09_00818_FUL-Transport_Assessment_-_Oct_2008-46522.pdf](#)



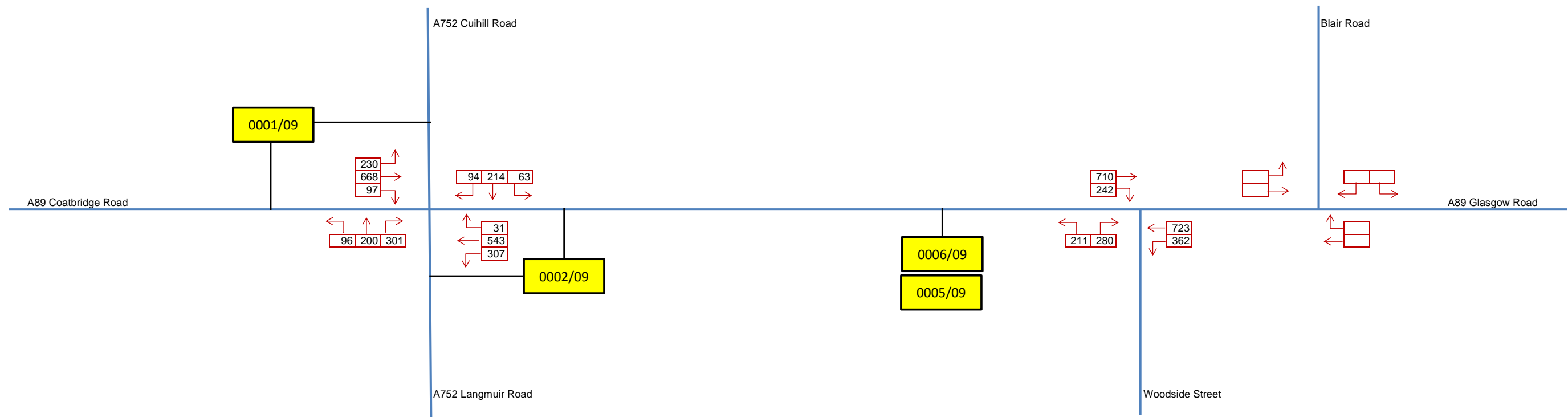
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|---------|---------------------------|---------------------------------------------------------------------------------------|--|----------|----------|---------|---------------------------------------------|--|
| Client | North Lanarkshire Council |  | | Title | | | Bargeddie - 2008 PM Peak Base (15:00-16:00) | |
| Project | LDP DPMTAG | | | Job No. | Produced | Checked | Date | |
| | | | | 60470585 | MLF | | 06/07/2016 | |

Source: [16_00455_PPP-TRANSPORT_ASSESSMENT_PART_2-674799.pdf](#)

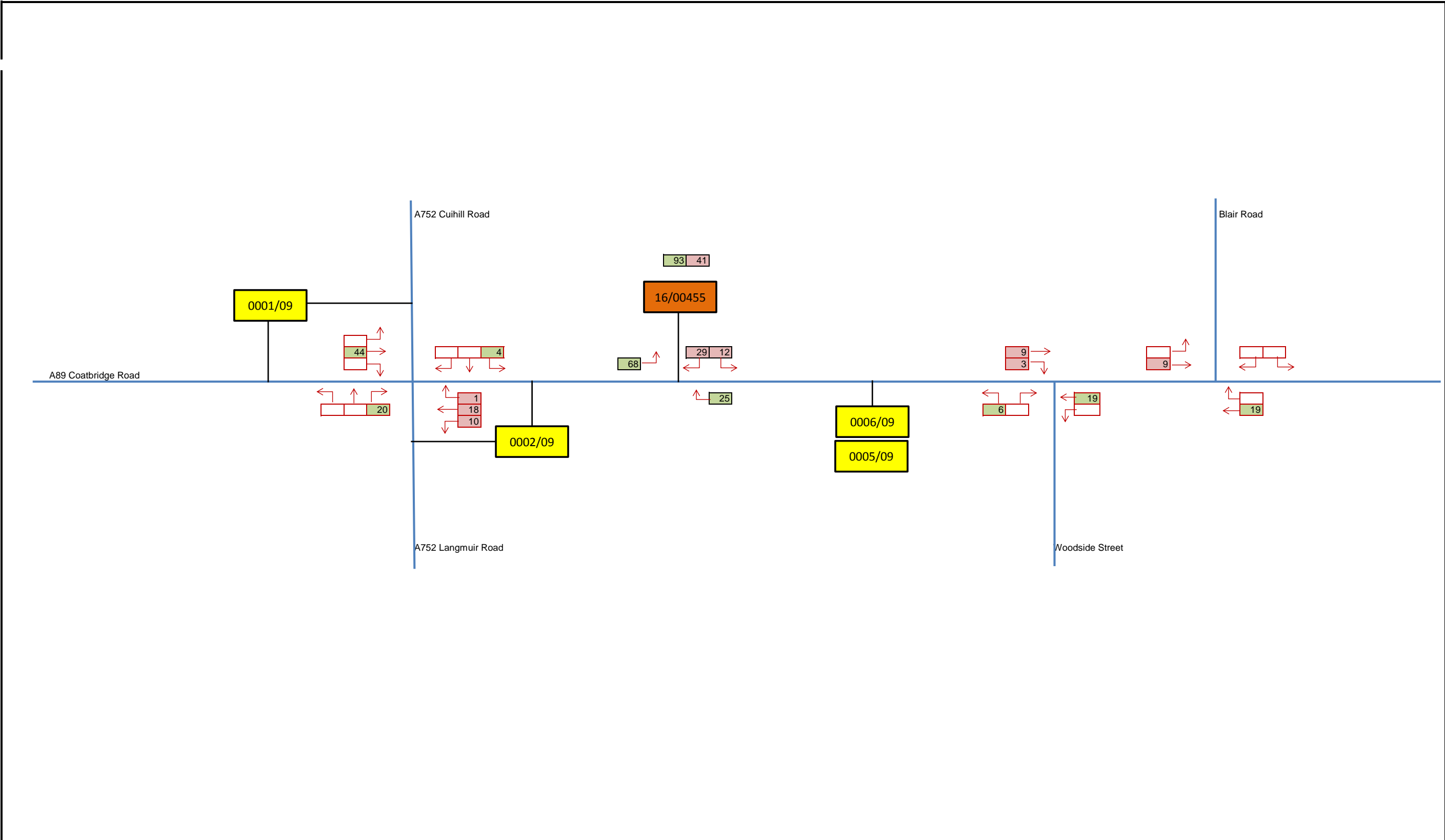


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|---------|---------------------------|---------------------------------------------------------------------------------------|--|----------|----------|---------|---------------------------------------------|--|
| Client | North Lanarkshire Council |  | | Title | | | Bargeddie - 2014 AM Peak Base (08:00-09:00) | |
| Project | LDP DPMTAG | | | Job No. | Produced | Checked | Date | |
| | | | | 60470585 | MLF | | 06/07/2016 | |

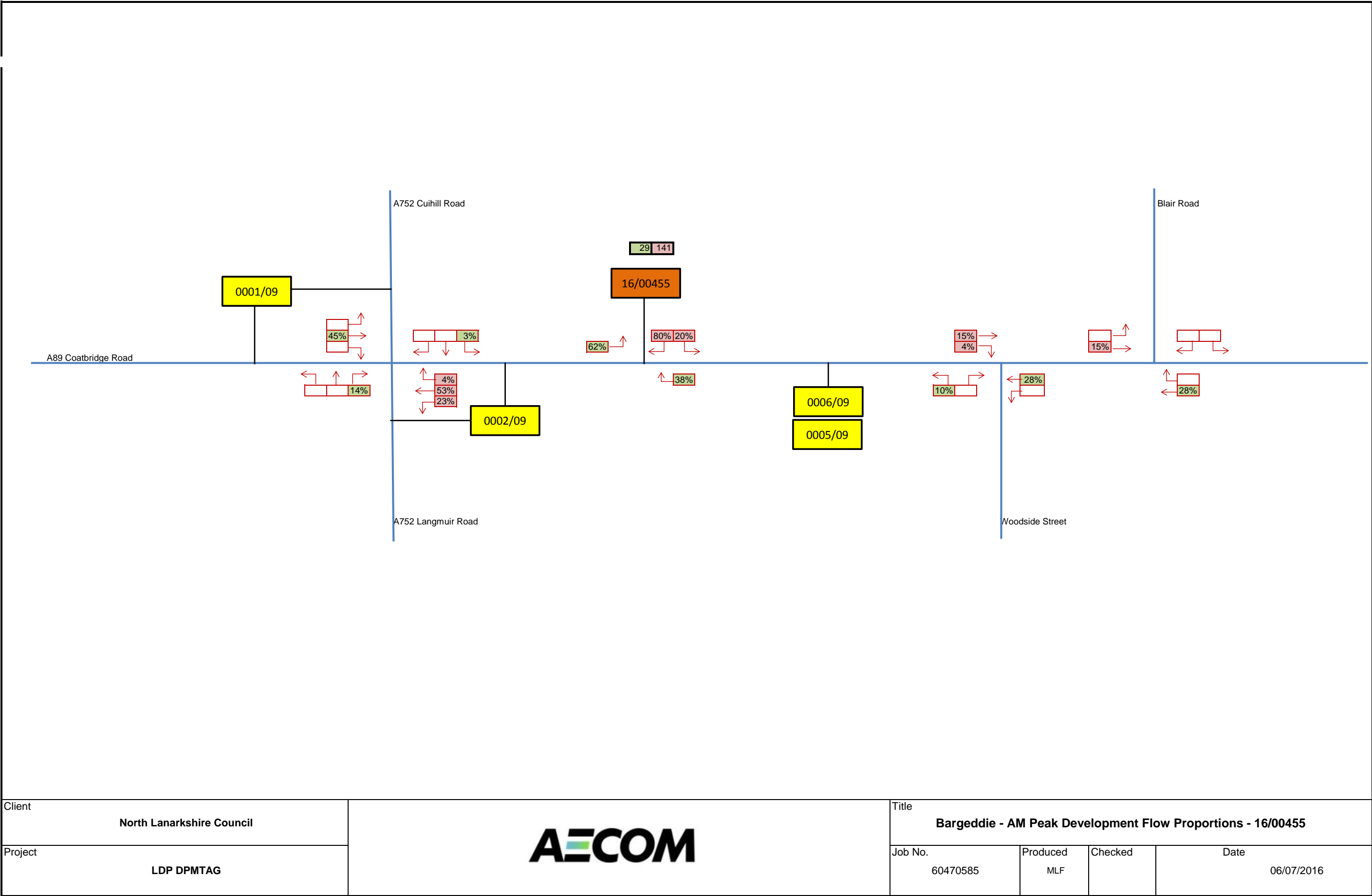
Source: [16_00455_PPP-TRANSPORT_ASSESSMENT_PART_2-674799.pdf](#)



| | | | | | | |
|---------|---------------------------|---------------------------------------------------------------------------------------|--|------------|----------|---------|
| Client | North Lanarkshire Council |  | | Title | | |
| Project | LDP DPMTAG | | | Job No. | Produced | Checked |
| | | | | 60470585 | MLF | Date |
| | | | | 06/07/2016 | | |



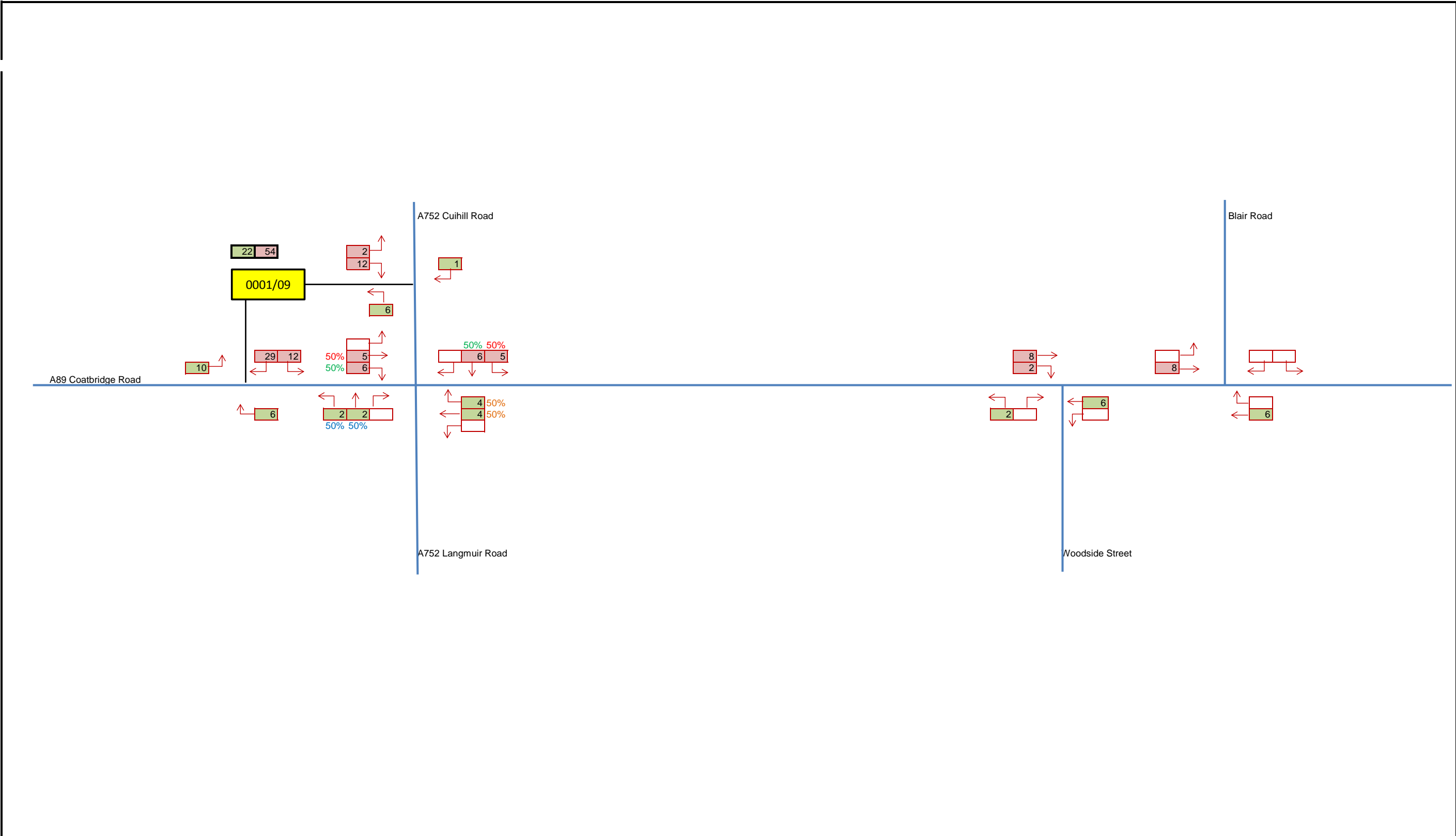
| | | | | | | |
|---------|---------------------------|---------------------------------------------------------------------------------------|--|-----------------------------------------------------------|-----------------|-------------------------------|
| Client | North Lanarkshire Council |  | | Title Bargeddie - AM Peak Development Flows - 16/00455 | | |
| Project | LDP DPMTAG | | | Job No. 60470585 | Produced MLF | Checked Date 06/07/2016 |



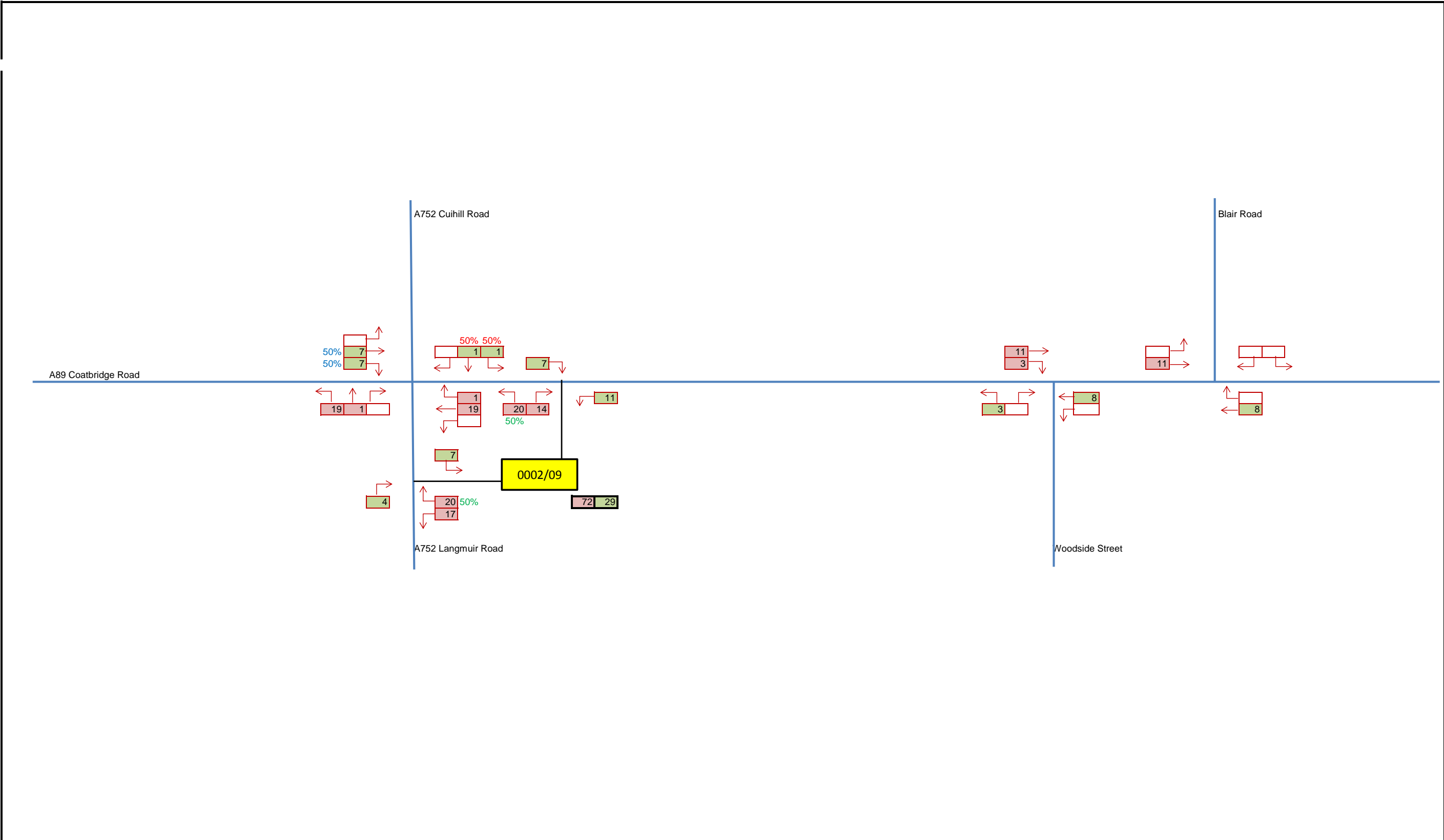
| | |
|---------|---------------------------|
| Client | North Lanarkshire Council |
| Project | LDP DPMTAG |



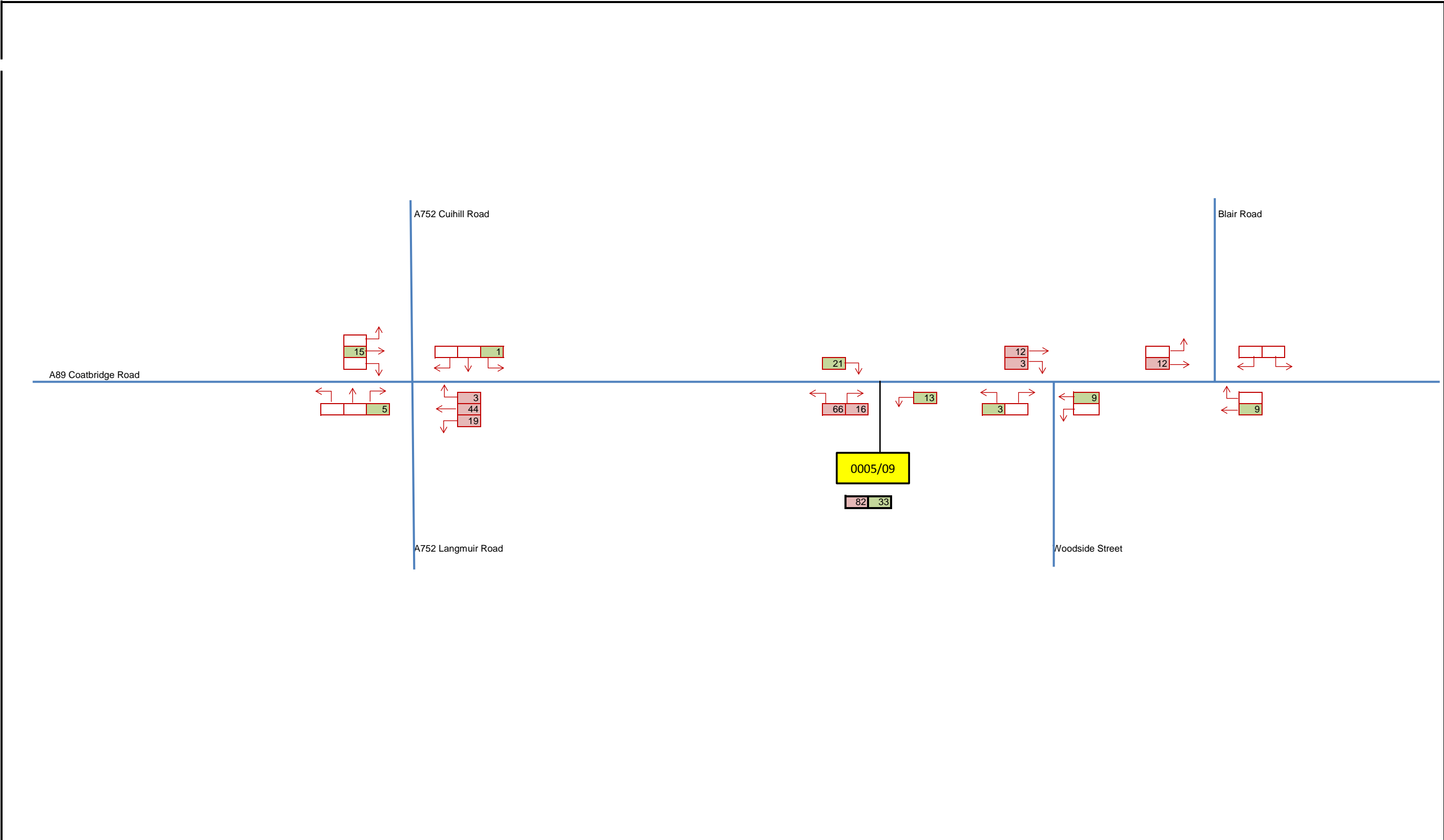
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|-------------------------------------------------------------|----------|---------|------------|
| Title | | | |
| Bargeddie - AM Peak Development Flow Proportions - 16/00455 | | | |
| Job No. | Produced | Checked | Date |
| 60470585 | MLF | | 06/07/2016 |



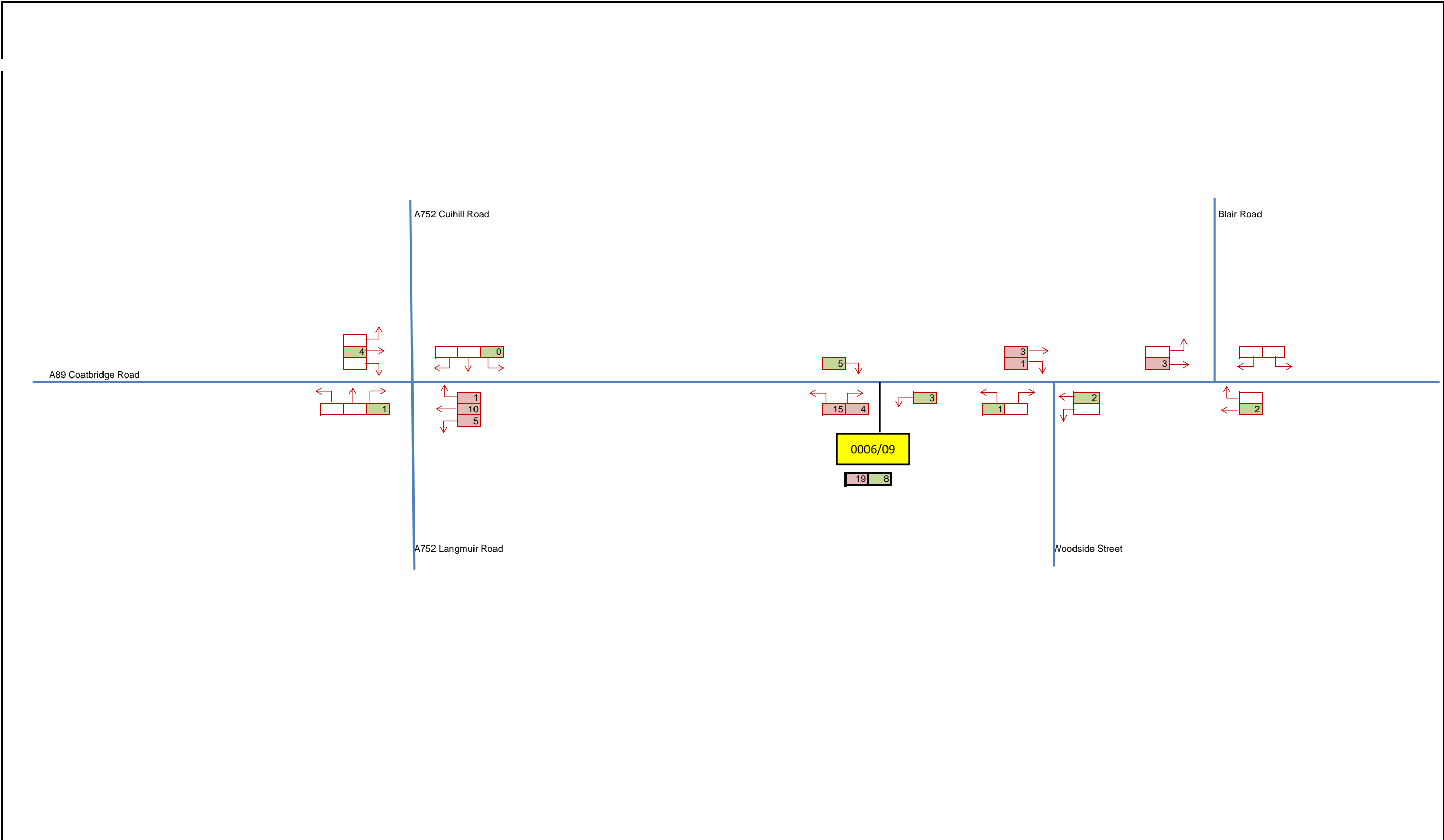
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|---------|---------------------------|------------------|--|----------------------------------------------------------|-----------------|---------|--------------------|
| Client | North Lanarkshire Council | <div>AECOM</div> | | Title Bargeddie - AM Peak Development Flows - 0001/09 | | | |
| Project | LDP DPMTAG | | | Job No. 60470585 | Produced MLF | Checked | Date 06/07/2016 |



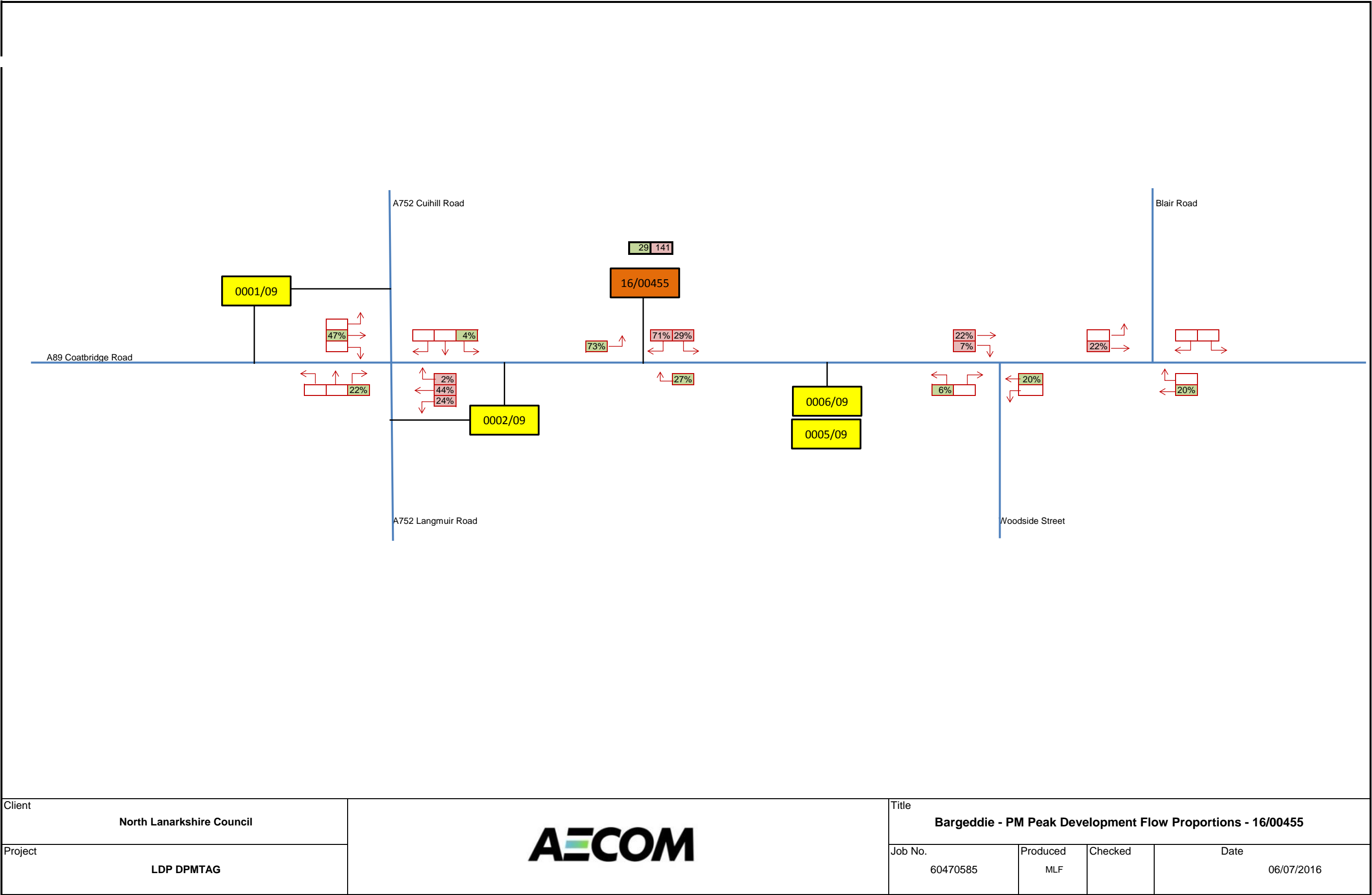
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| Project | LDP DPMTAG | | | Job No. 60470585 | Produced MLF | Checked | Date 42557 |



| | | | | | | | |
|---------|---------------------------|---------------------------------------------------------------------------------------|--|----------------------------------------------------------|-----------------|---------|--------------------|
| Client | North Lanarkshire Council |  | | Title Bargeddie - AM Peak Development Flows - 0005/09 | | | |
| Project | LDP DPMTAG | | | Job No. 60470585 | Produced MLF | Checked | Date 06/07/2016 |

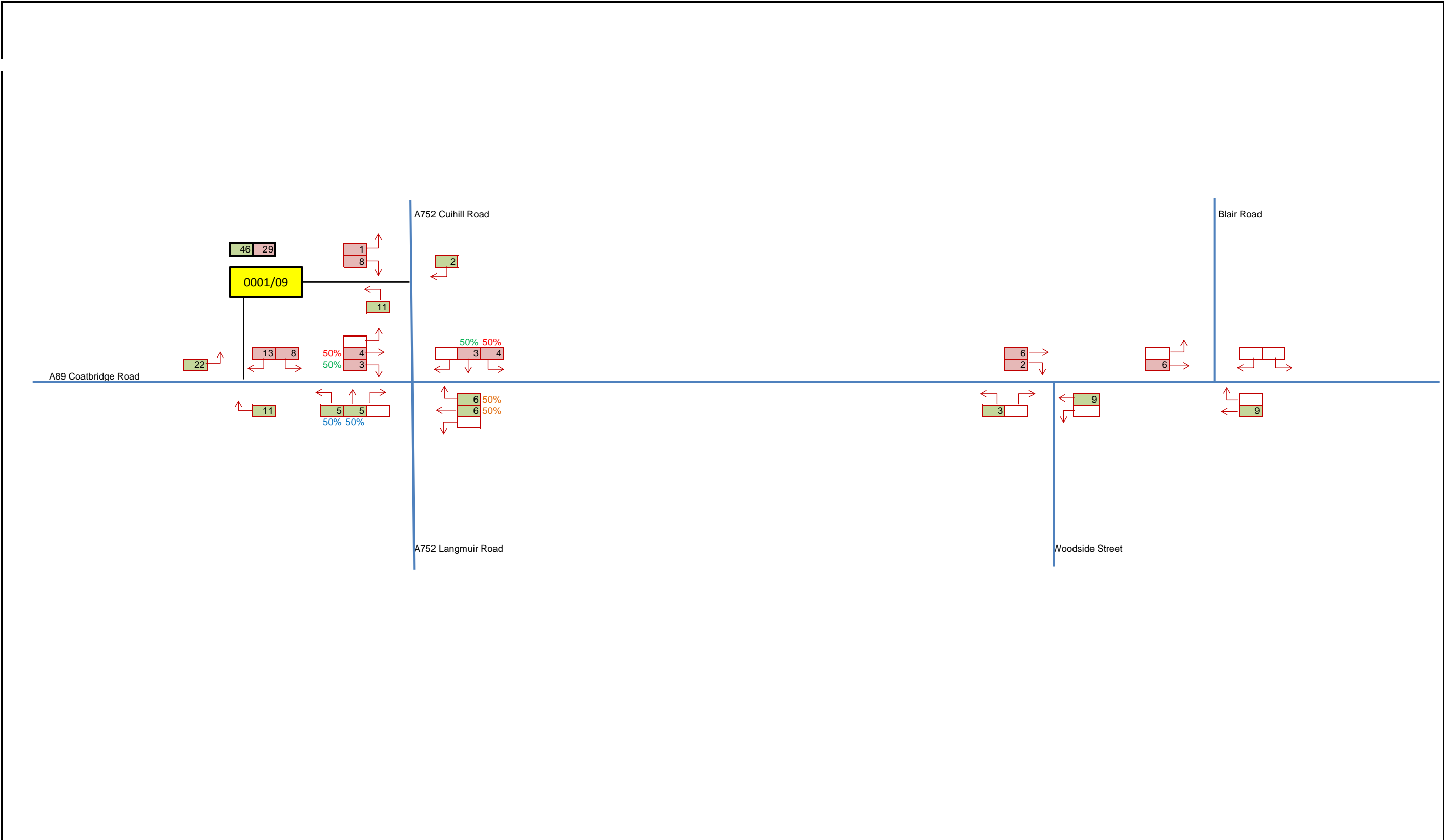


| | | | | | | | |
|---------|---------------------------|------------------|--|----------------------------------------------------------|-----------------|---------|--------------------|
| Client | North Lanarkshire Council | <div>AECOM</div> | | Title Bargeddie - AM Peak Development Flows - 0006/09 | | | |
| Project | LDP DPMTAG | | | Job No. 60470585 | Produced MLF | Checked | Date 06/07/2016 |

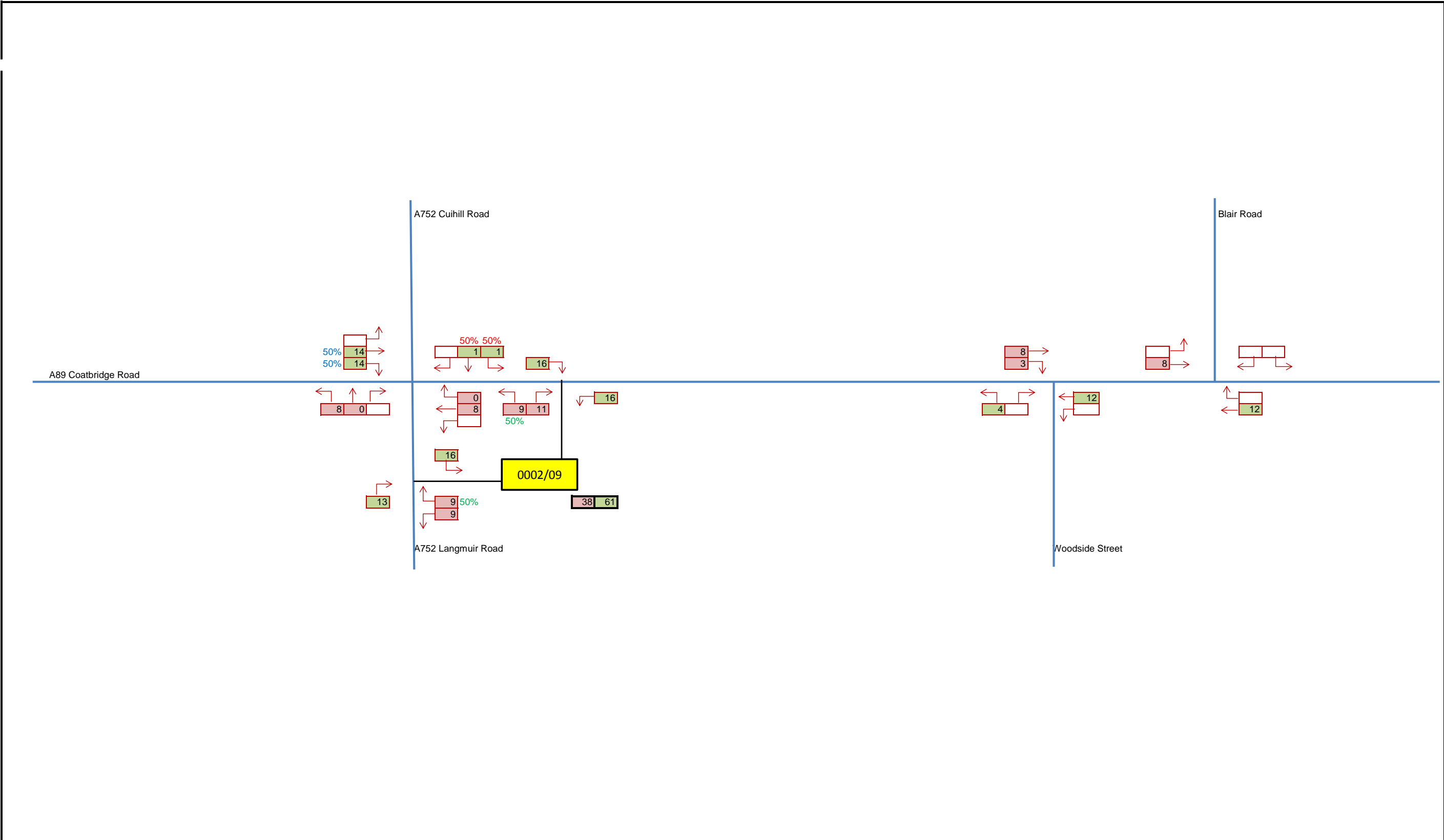


| | |
|---------|---------------------------|
| Client | North Lanarkshire Council |
| Project | LDP DPMTAG |

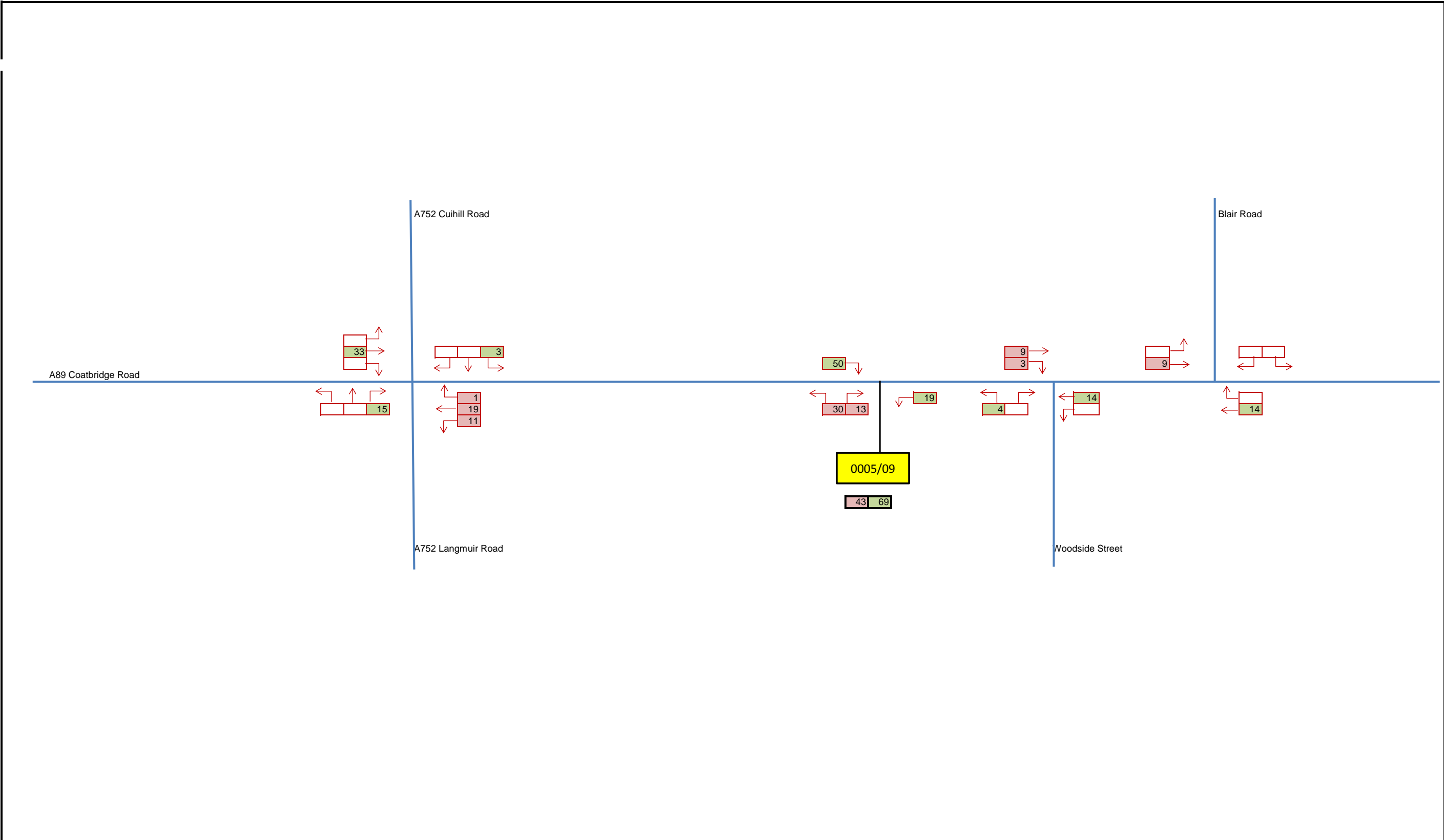
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|-------------------------------------------------------------|----------|---------|------------|
| Title | | | |
| Bargeddie - PM Peak Development Flow Proportions - 16/00455 | | | |
| Job No. | Produced | Checked | Date |
| 60470585 | MLF | | 06/07/2016 |



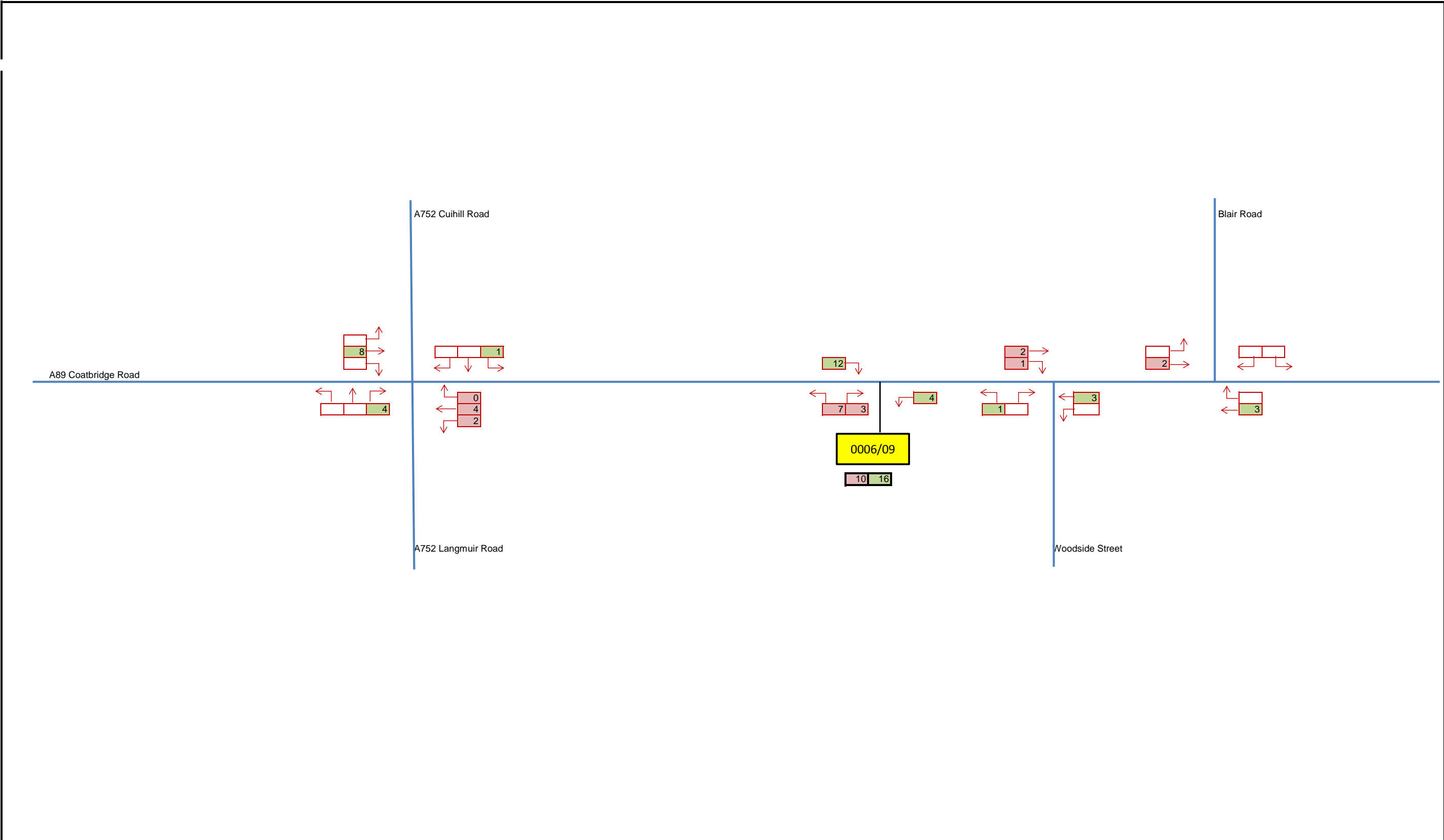
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|---------|---------------------------|------------------|--|----------------------------------------------------------|-----------------|---------|--------------------|
| Client | North Lanarkshire Council | <div>AECOM</div> | | Title Bargeddie - PM Peak Development Flows - 0001/09 | | | |
| Project | LDP DPMTAG | | | Job No. 60470585 | Produced MLF | Checked | Date 06/07/2016 |



| | | | | | | | |
|---------|---------------------------|---------------------------------------------------------------------------------------|--|----------------------------------------------------------|-----------------|---------|---------------|
| Client | North Lanarkshire Council |  | | Title Bargeddie - PM Peak Development Flows - 0002/09 | | | |
| Project | LDP DPMTAG | | | Job No. 60470585 | Produced MLF | Checked | Date 42557 |



| | | | | | | | |
|---------|---------------------------|---------------------------------------------------------------------------------------|--|----------------------------------------------------------|-----------------|---------|--------------------|
| Client | North Lanarkshire Council |  | | Title Bargeddie - PM Peak Development Flows - 0005/09 | | | |
| Project | LDP DPMTAG | | | Job No. 60470585 | Produced MLF | Checked | Date 06/07/2016 |



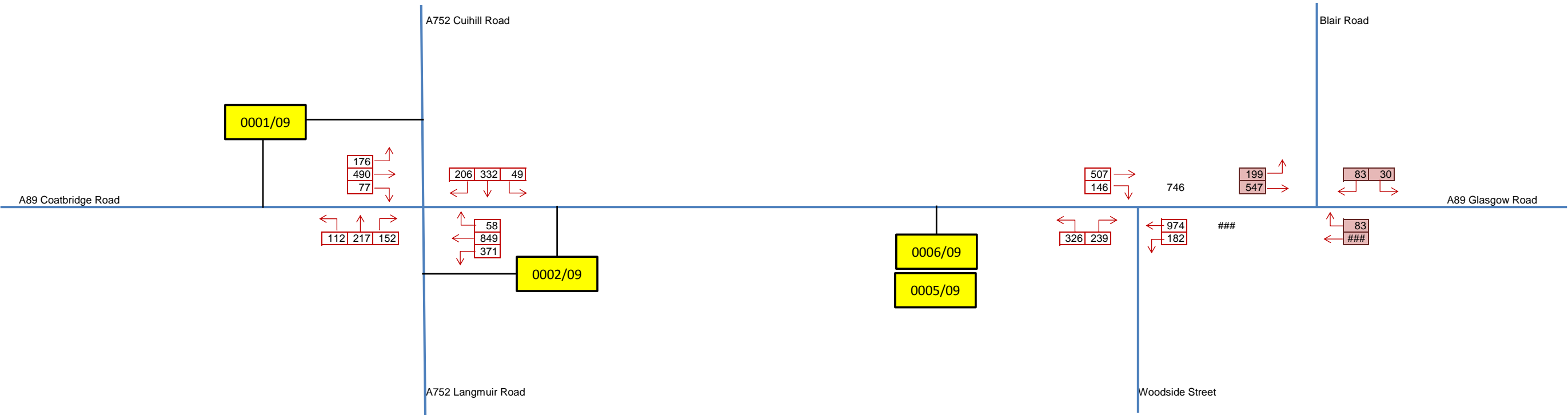
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|---------|---------------------------|--------------------------------------------------------------------------------------------------|--|----------------------------------------------------------|-----------------|---------|--------------------|
| Client | North Lanarkshire Council | <div></div> | | Title Bargeddie - PM Peak Development Flows - 0006/09 | | | |
| Project | LDP DPMTAG | | | Job No. 60470585 | Produced MLF | Checked | Date 06/07/2016 |

Factored 2014 flows from

Turning proportions taken from

16_00455_PPP-TRANSPORT_ASSESSMENT_PART_2-674799.pdf

09_00818_FUL-Transport_Assessment_-_Oct_2008-46522.pdf



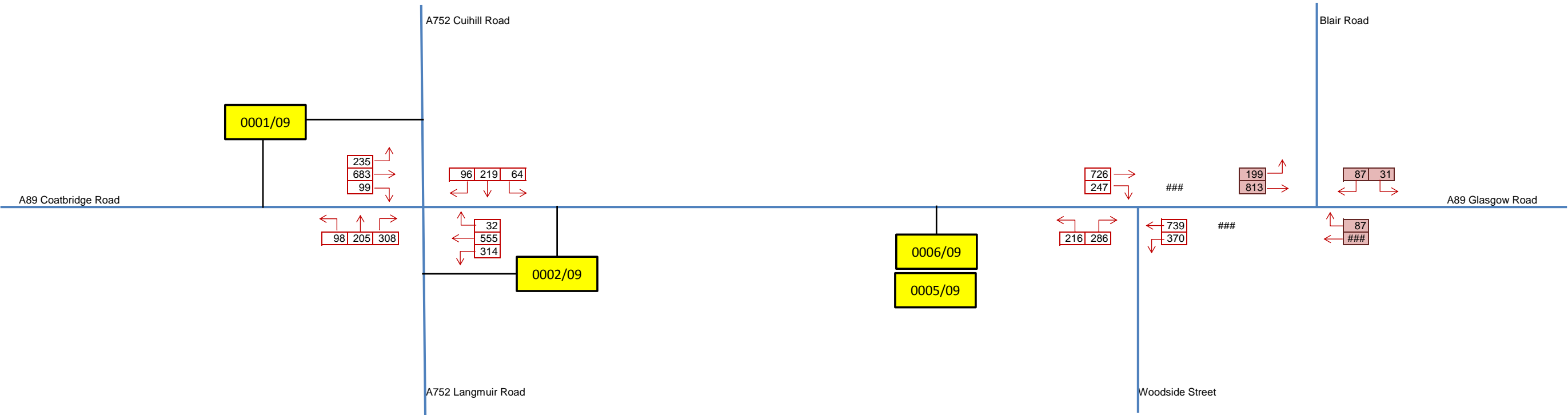
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| Project | LDP DPMTAG | | | Job No. | Produced | Checked | Date | |
| | | | | 60470585 | MLF | | 06/07/2016 | |

Factored 2014 flows from

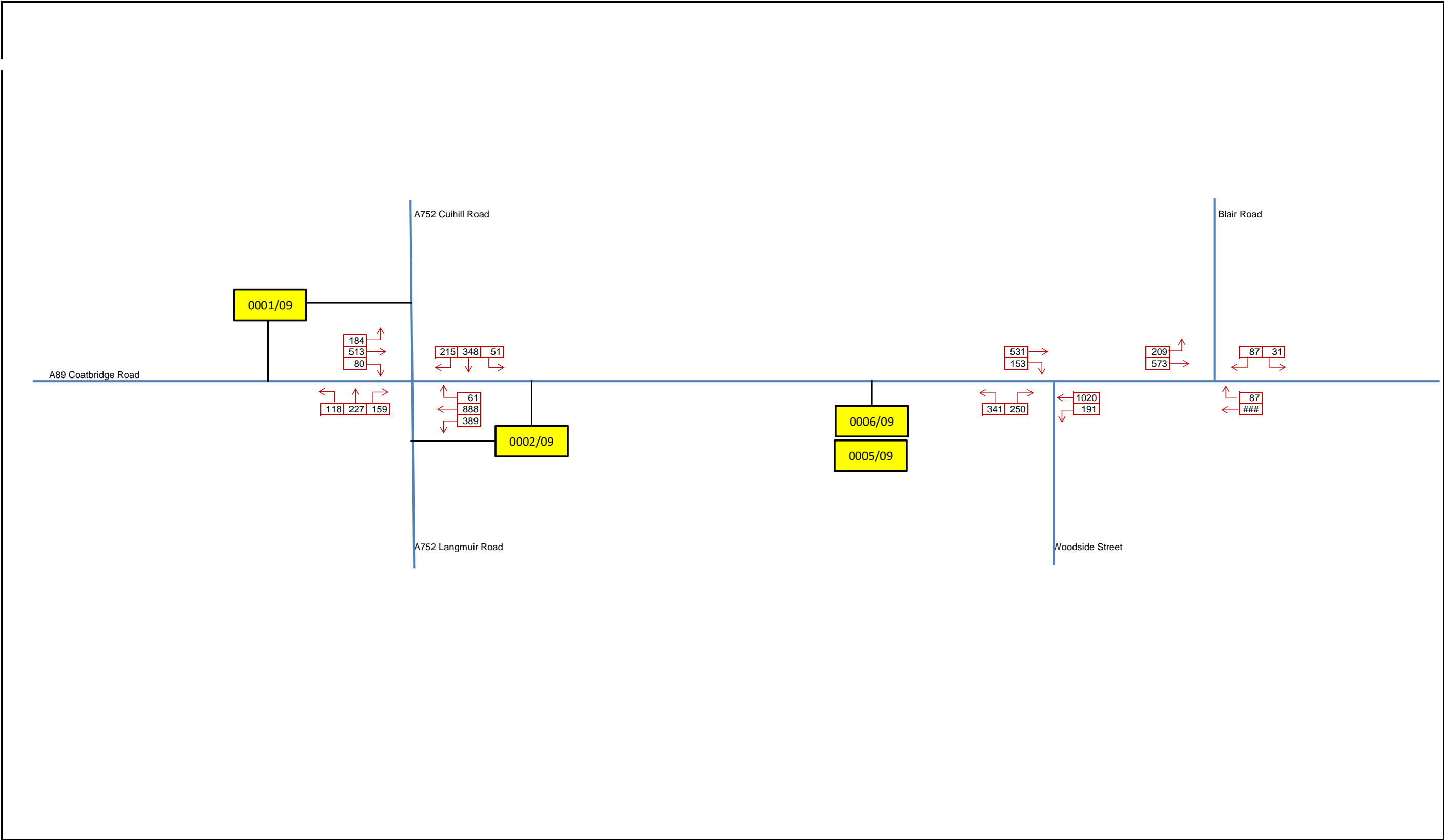
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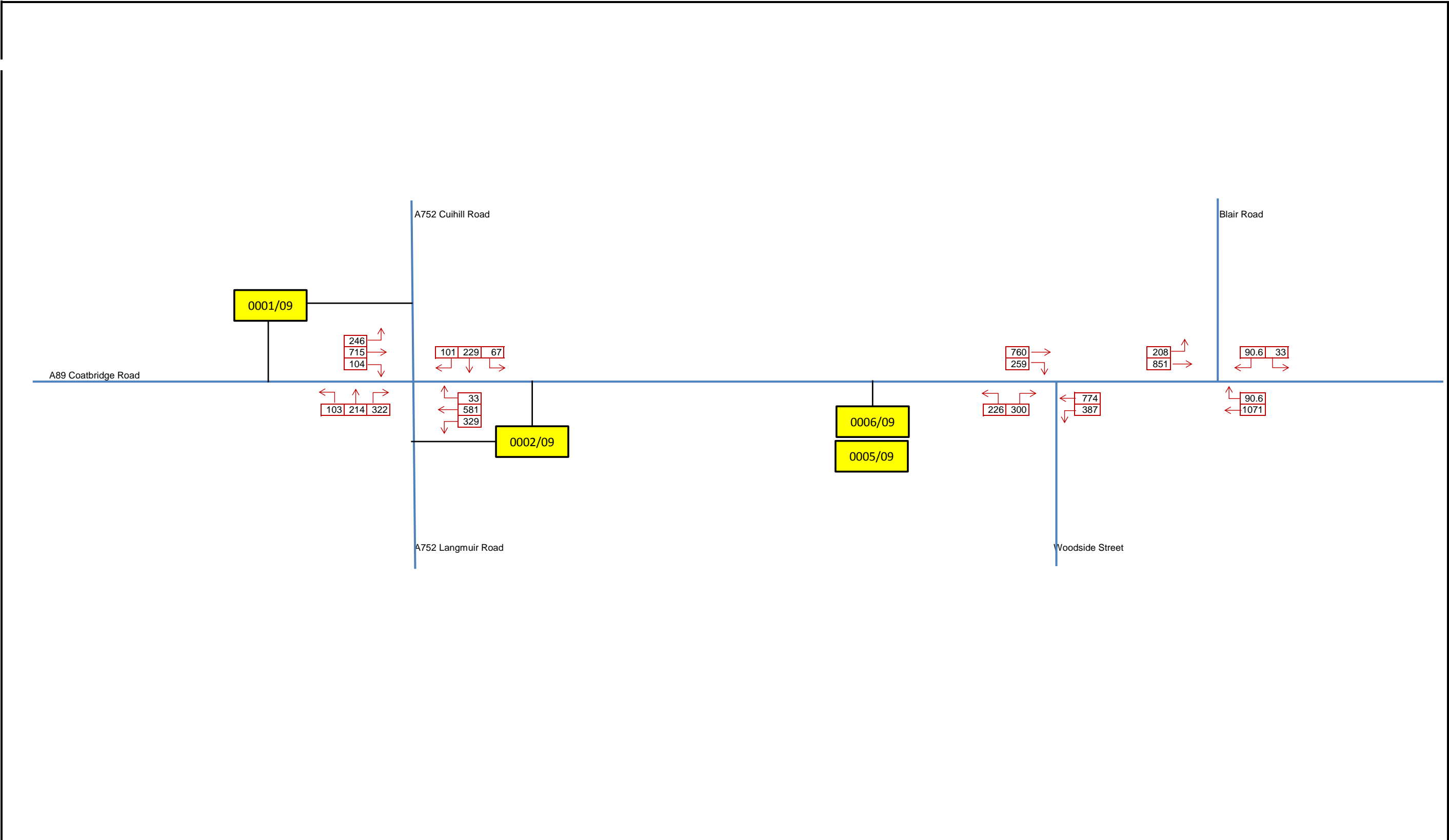
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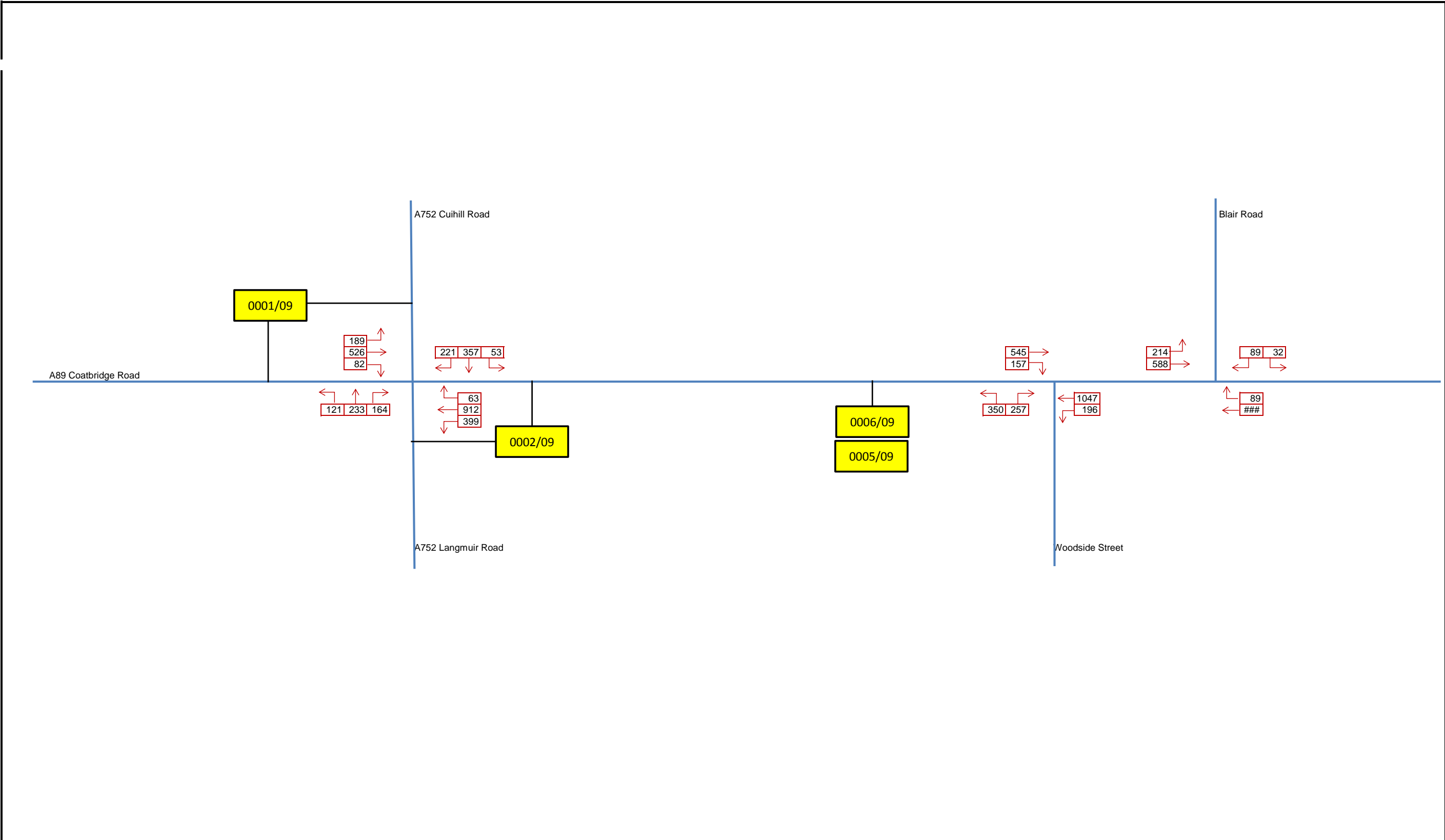
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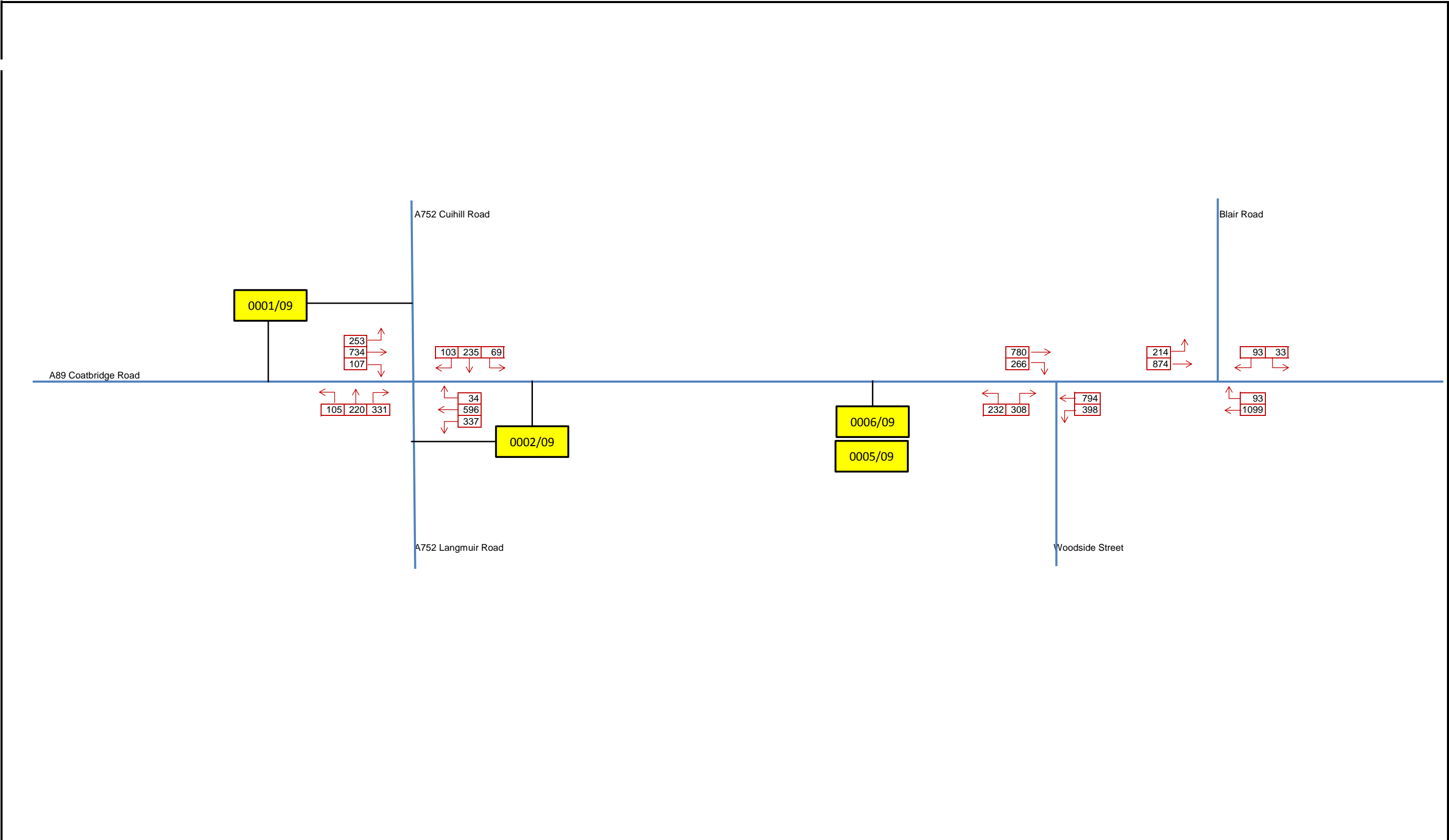
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| | | | | 60470585 | MLF | | 06/07/2016 | |



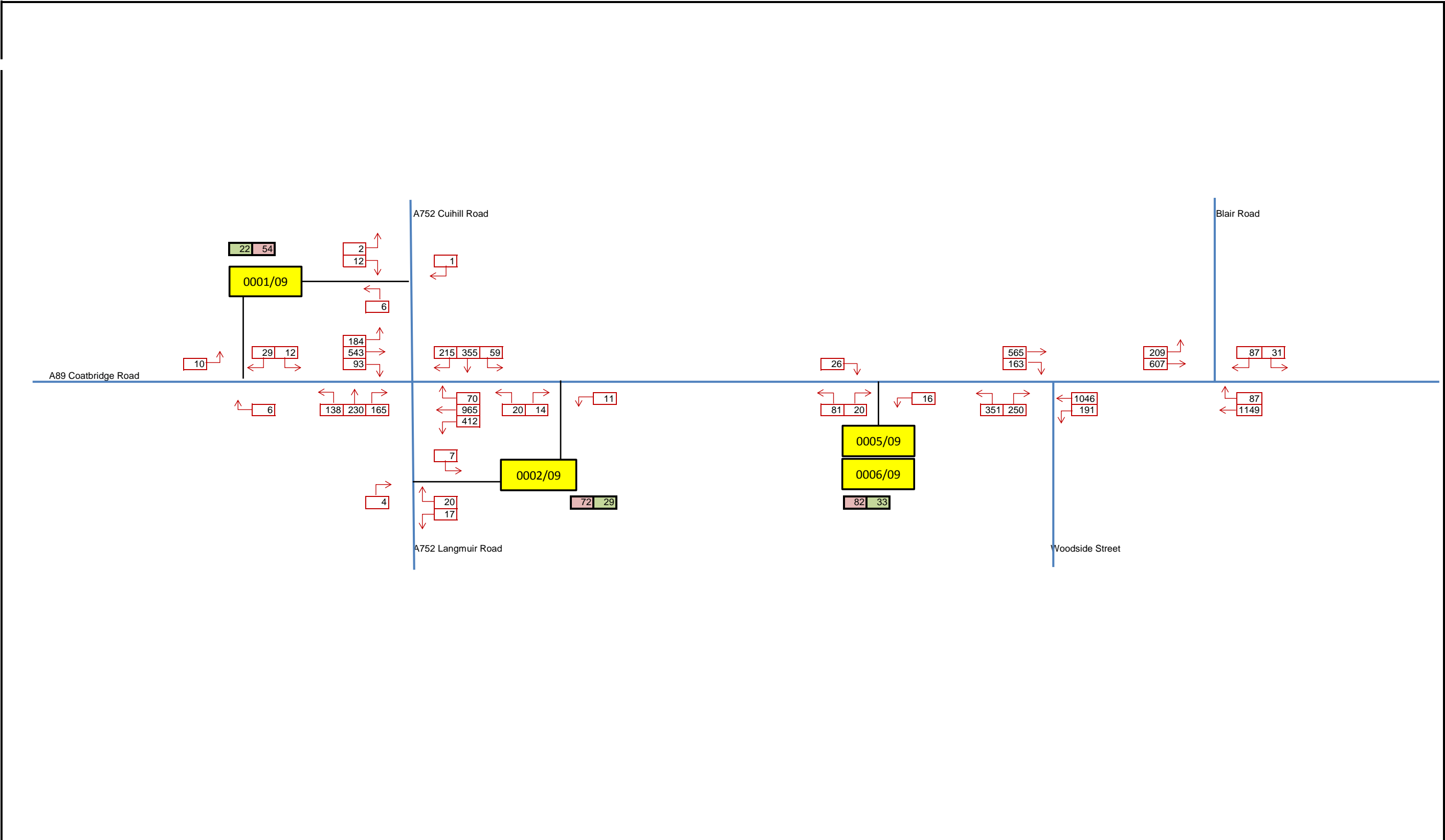
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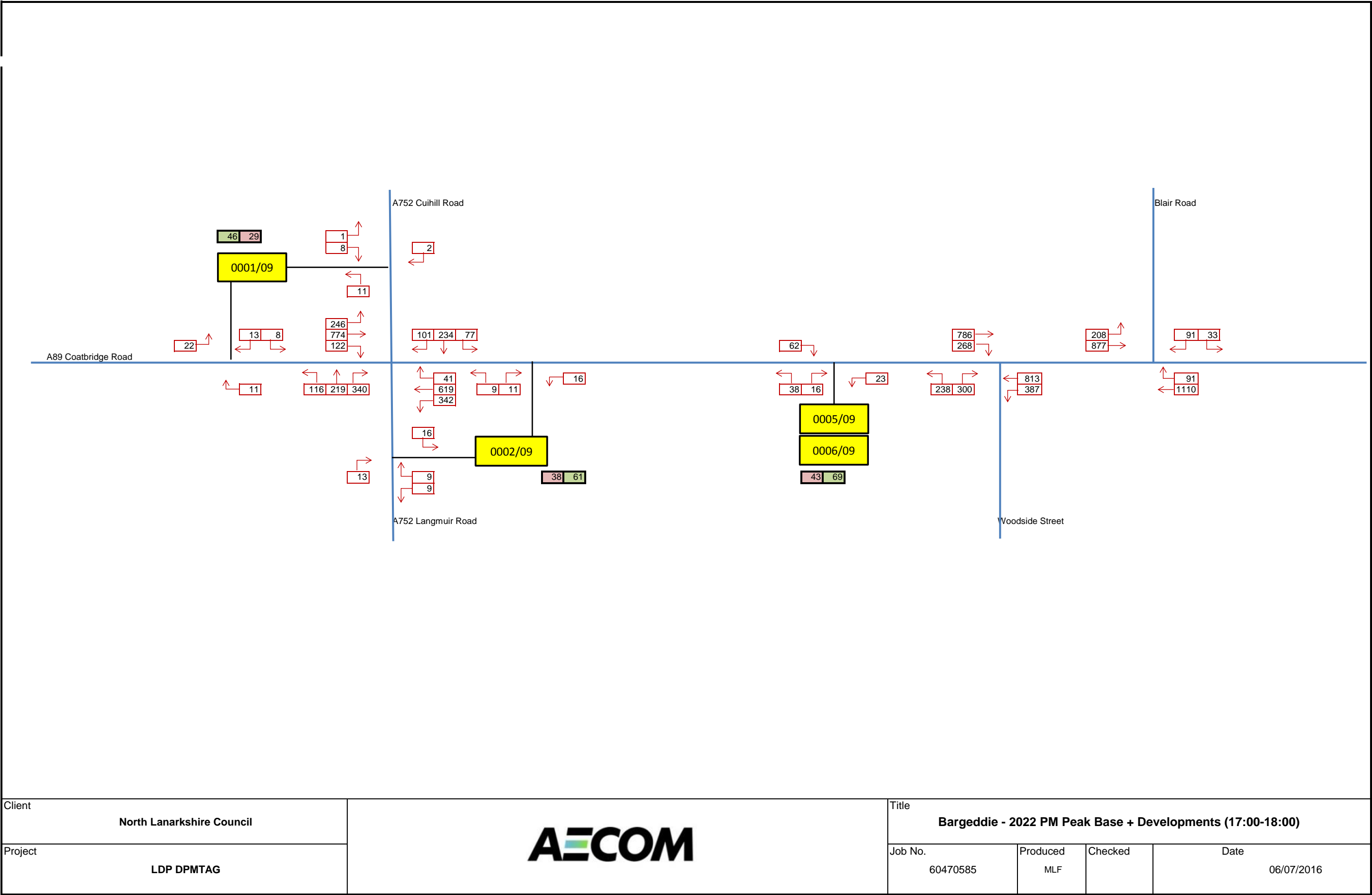
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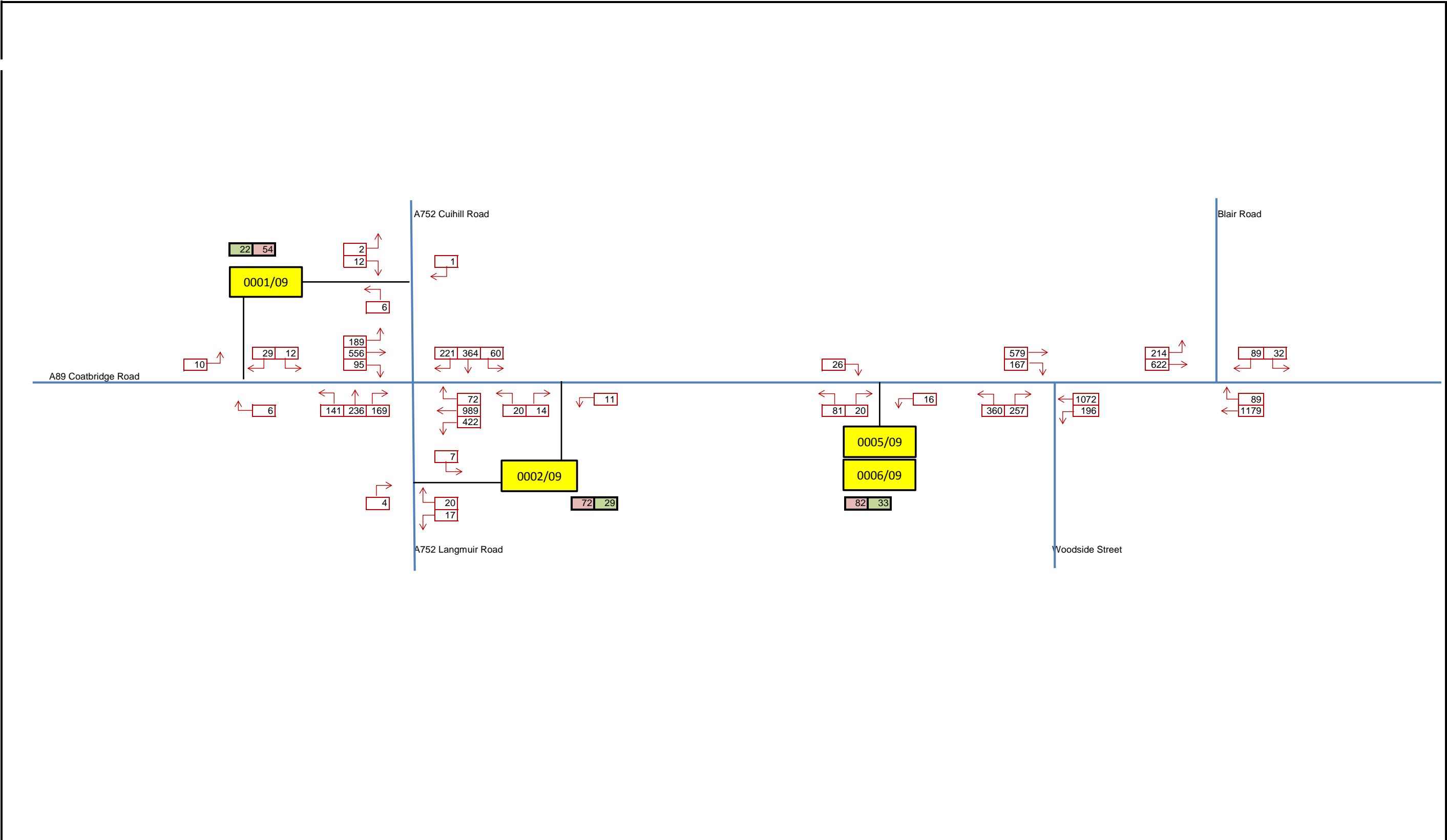


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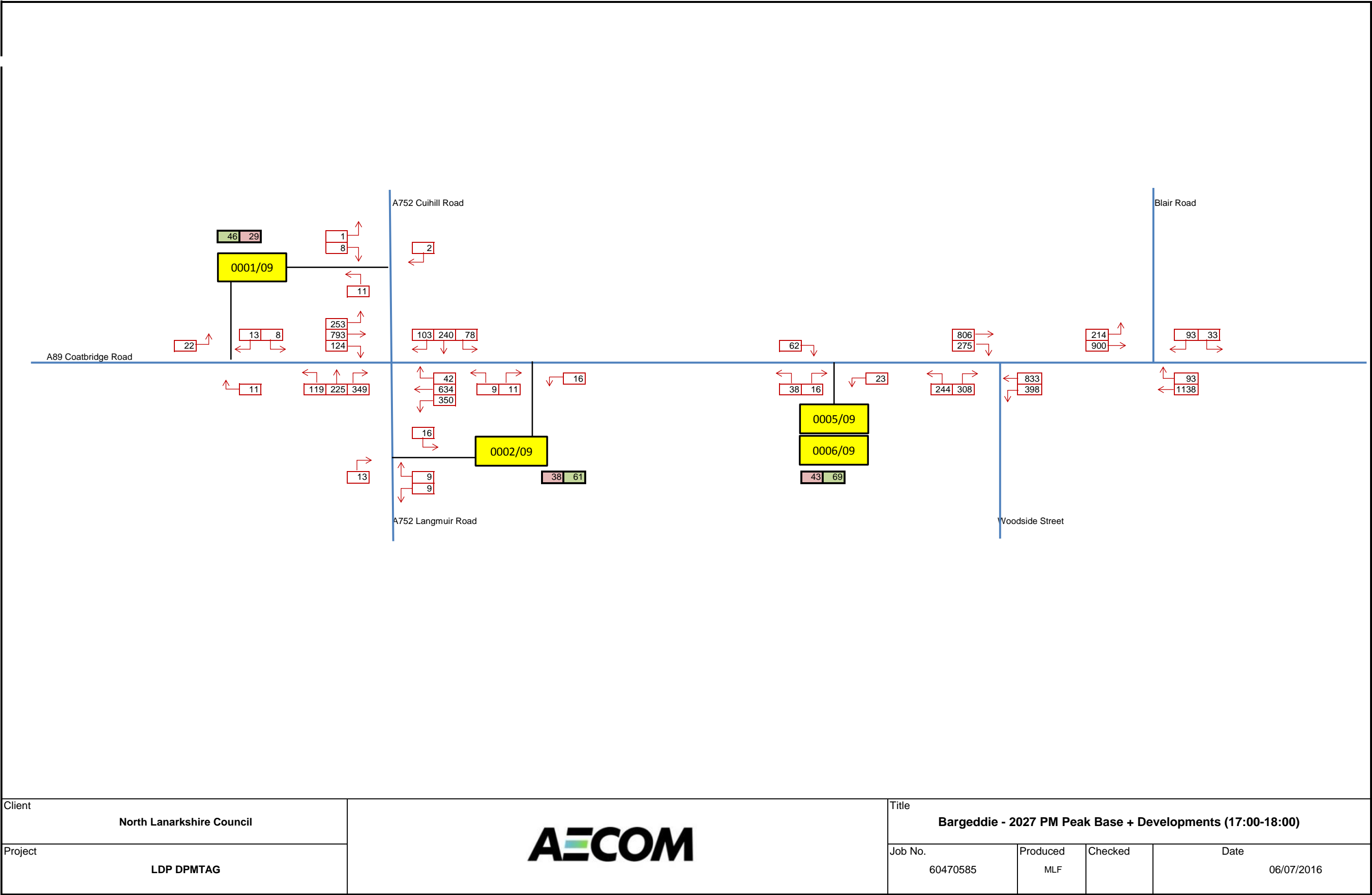


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| Project | LDP DPMTAG |

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| Job No. | Produced | Checked | Date |
| 60470585 | MLF | | 06/07/2016 |



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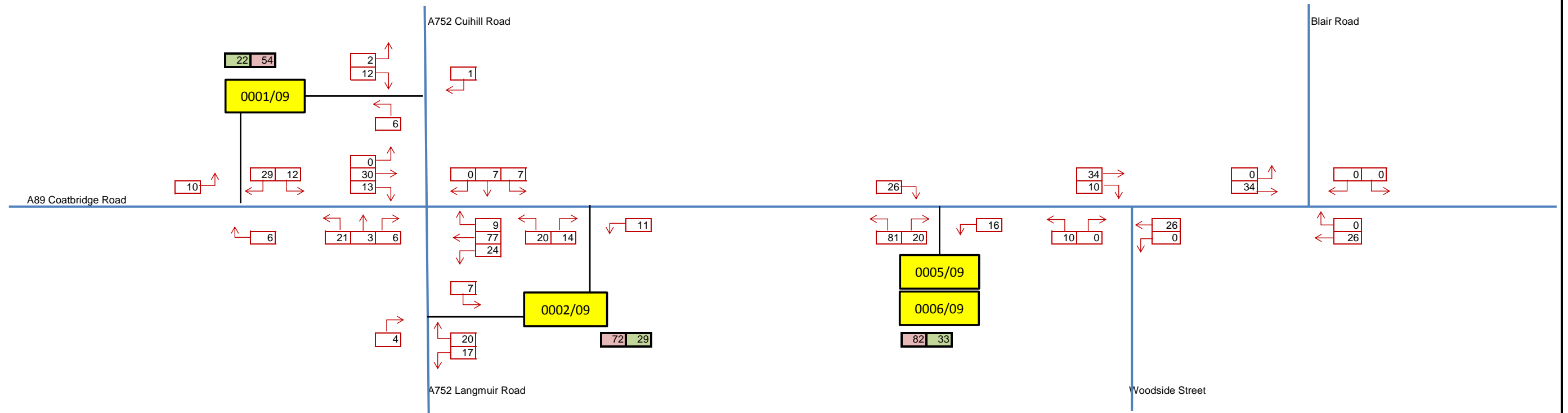
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| Project | LDP DPMTAG |



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| 60470585 | MLF | | 06/07/2016 |

Developments Considered

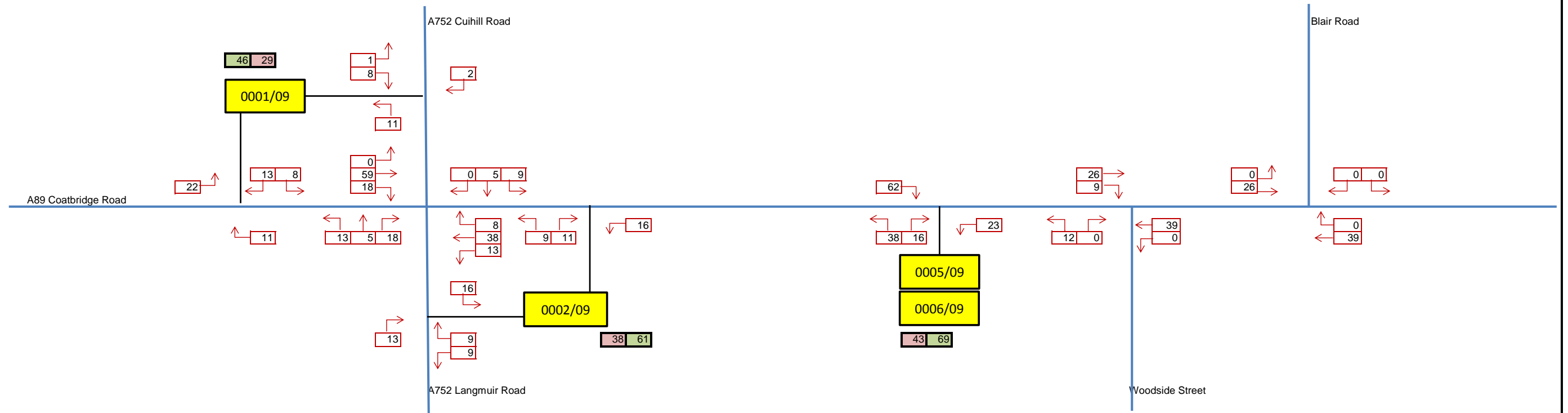
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Developments Considered

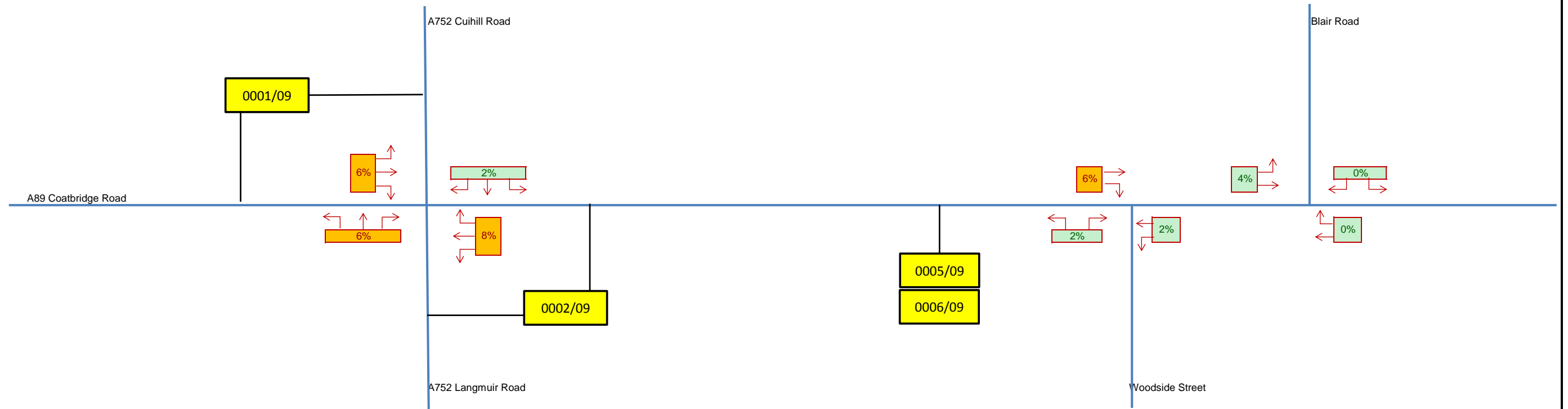
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Developments Considered

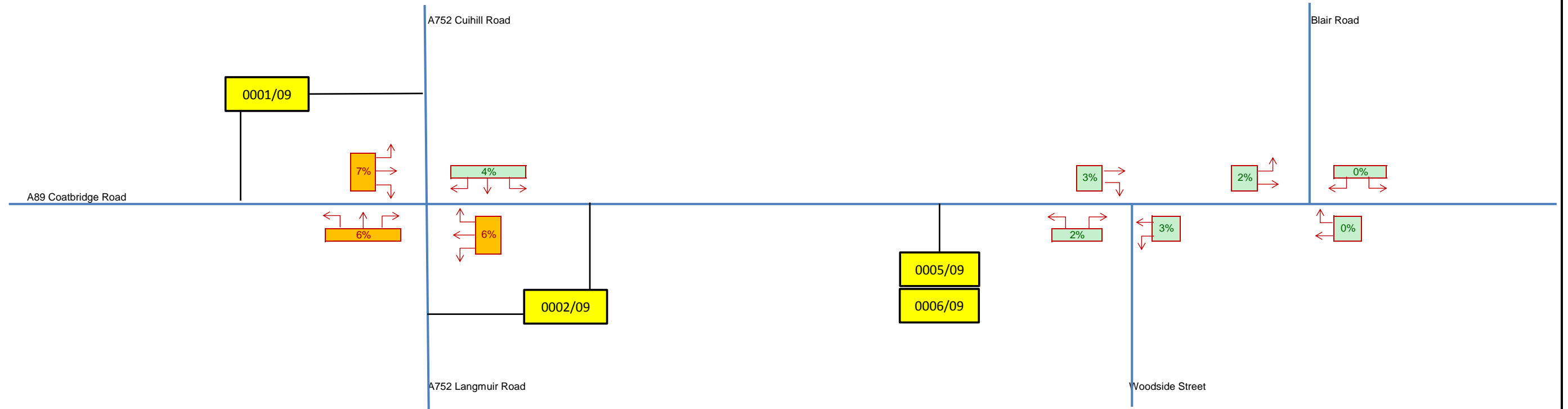
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| Client | North Lanarkshire Council |  | | Title | | | Bargeddie - AM 2022 Development Impact | |
| Project | LDP DPMTAG | | | Job No. | Produced | Checked | Date | |
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Developments Considered

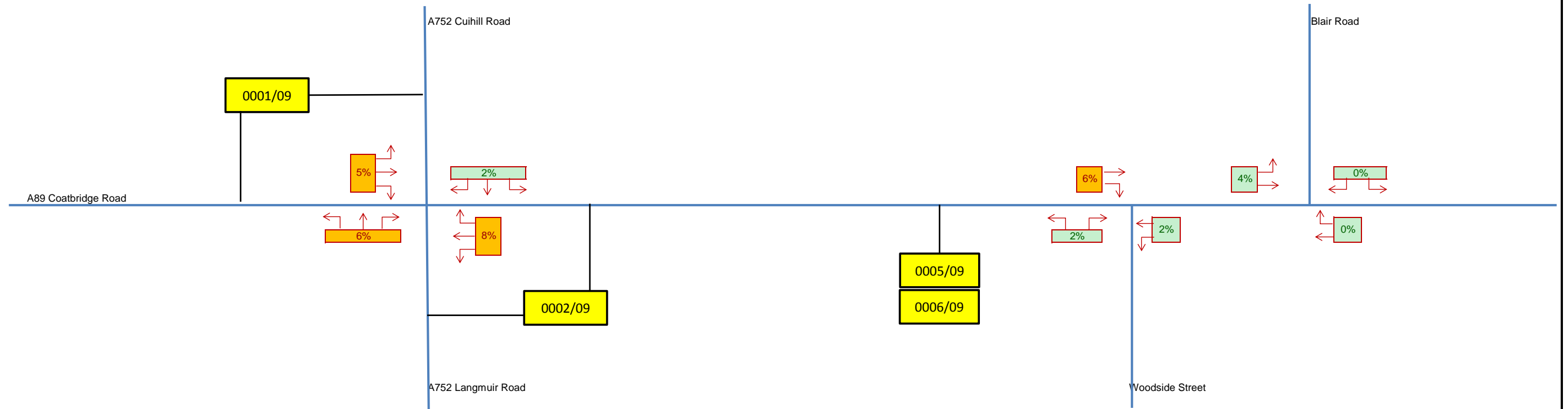
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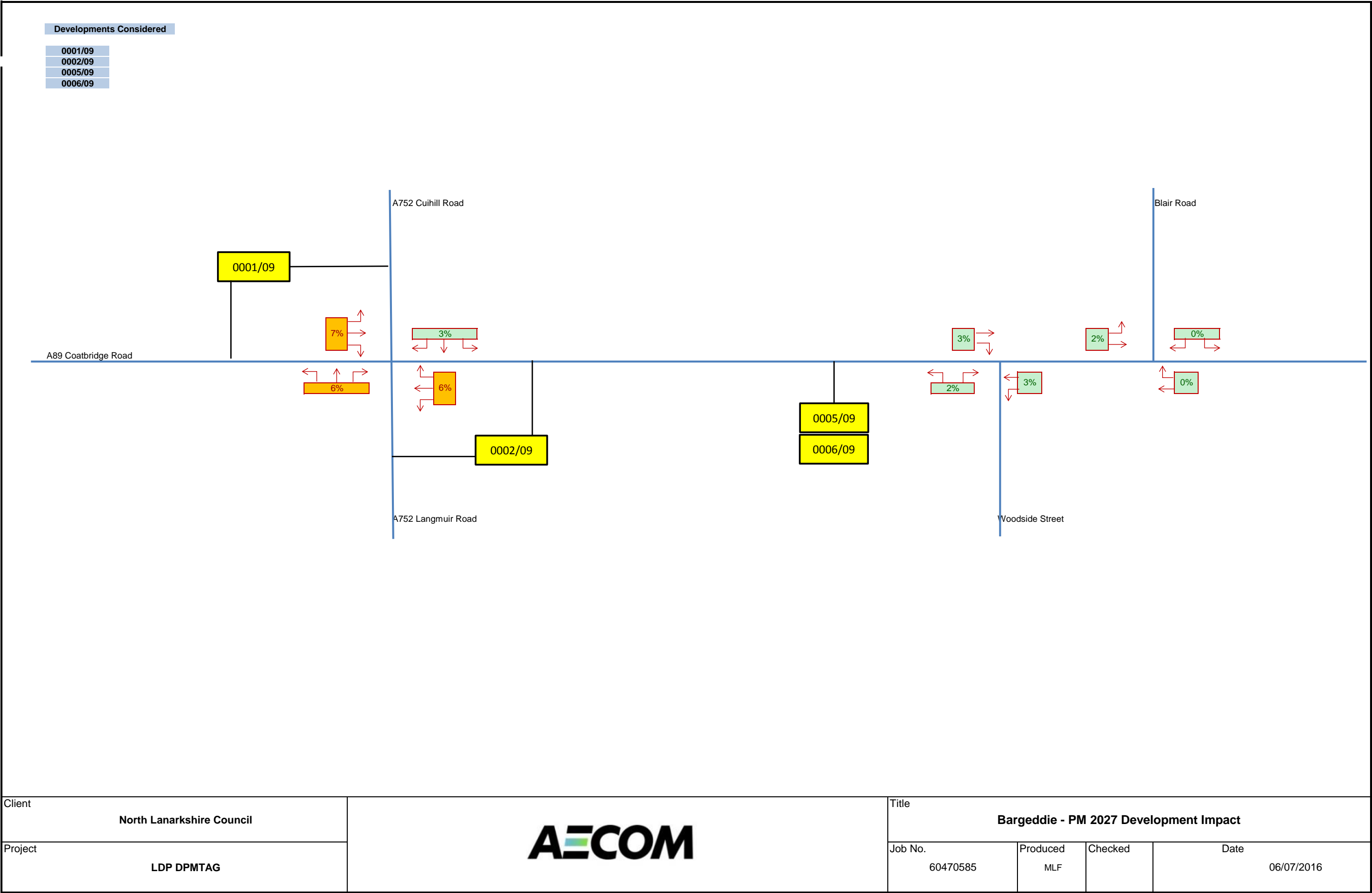
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| | | | | Job No. | Produced | Checked |
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Developments Considered

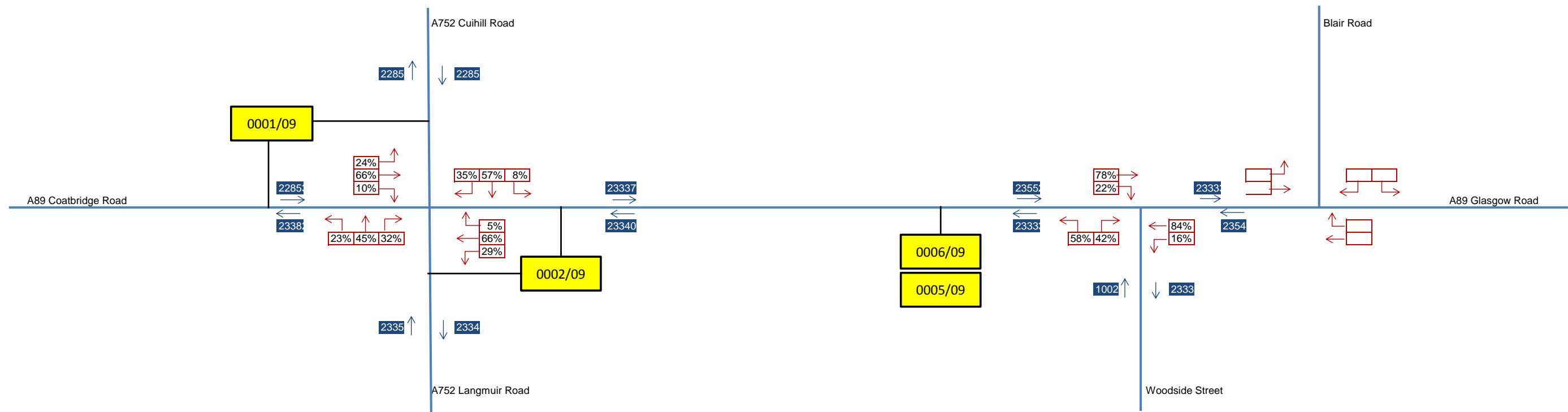
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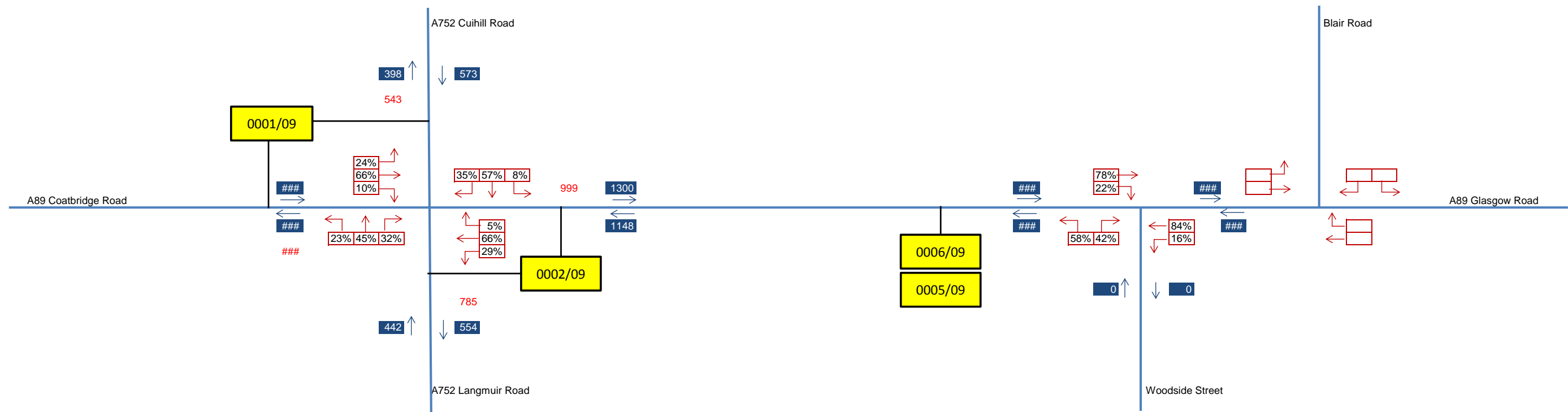


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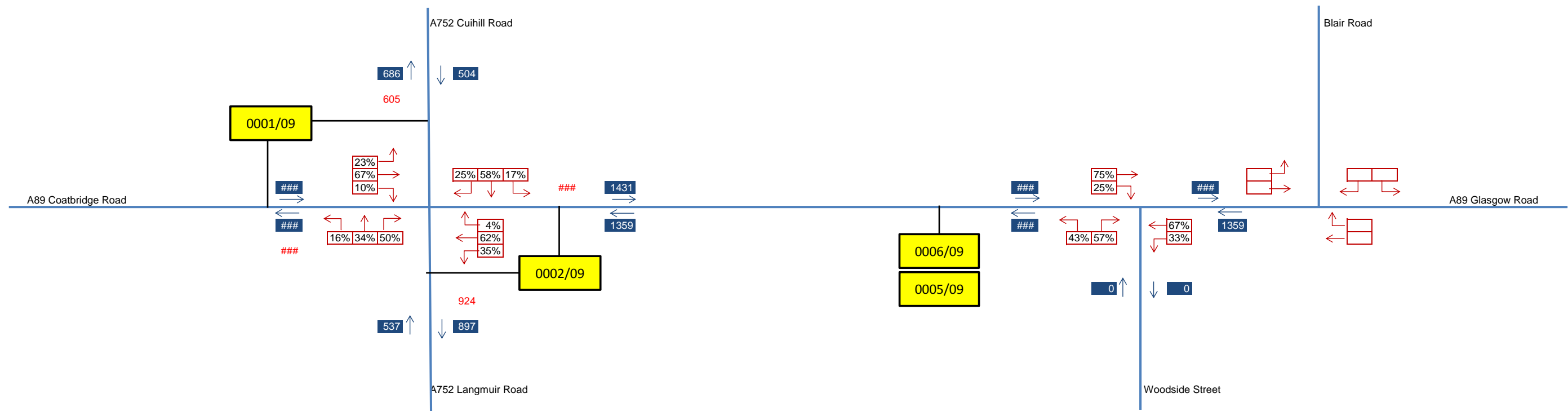


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| Project | LDP DPMTAG |



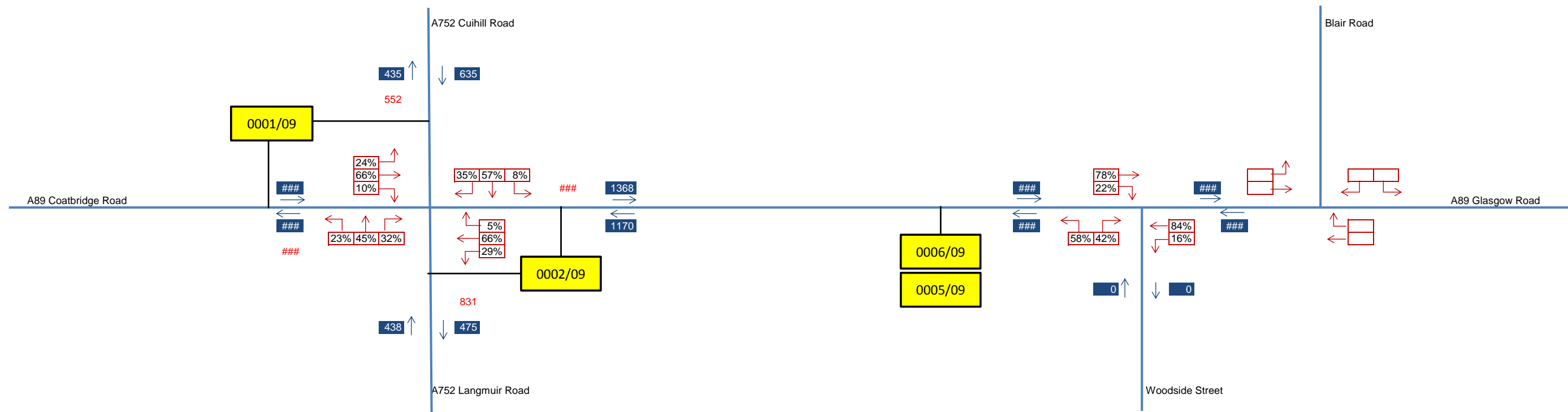
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Source:



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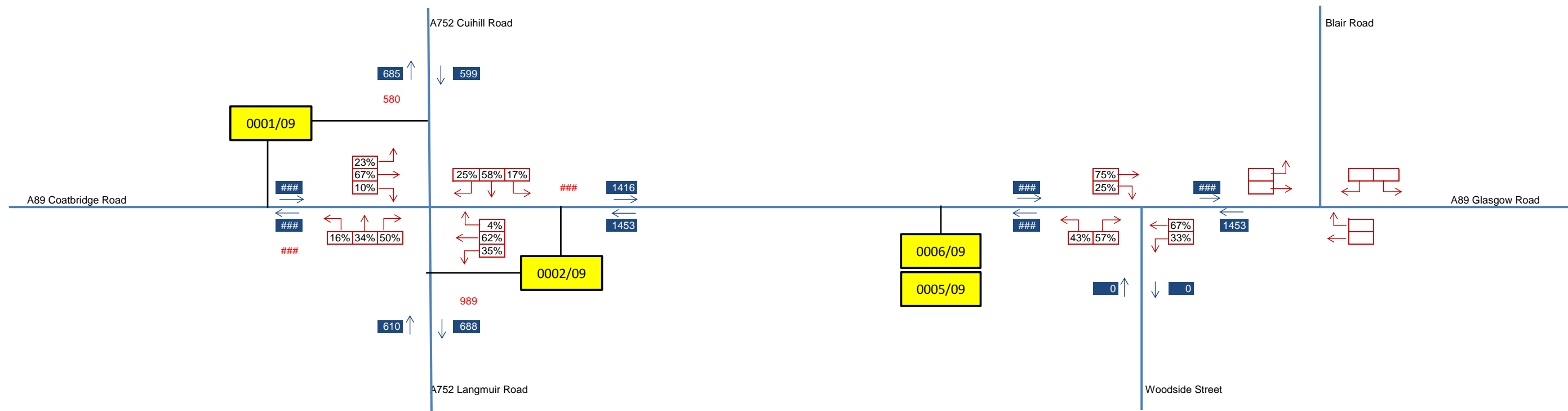


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| Project | LDP DPMTAG |



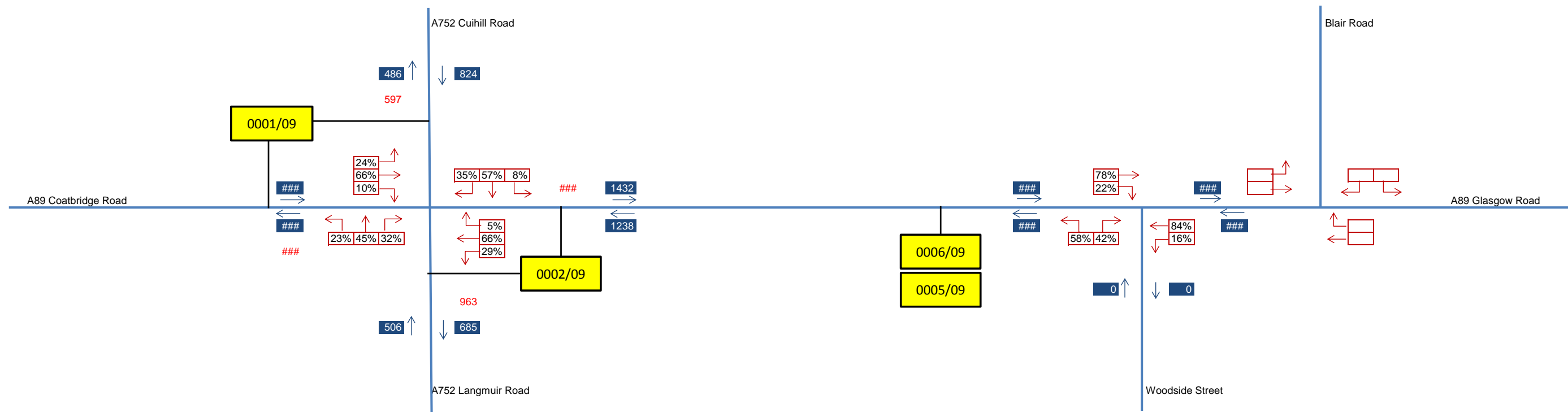
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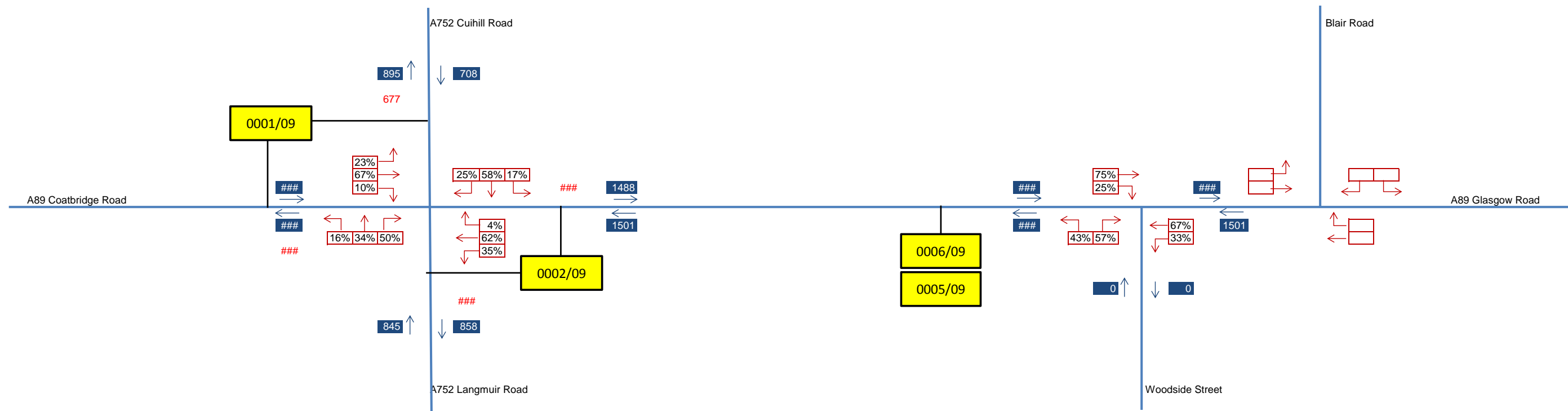


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| Project | LDP DPMTAG |



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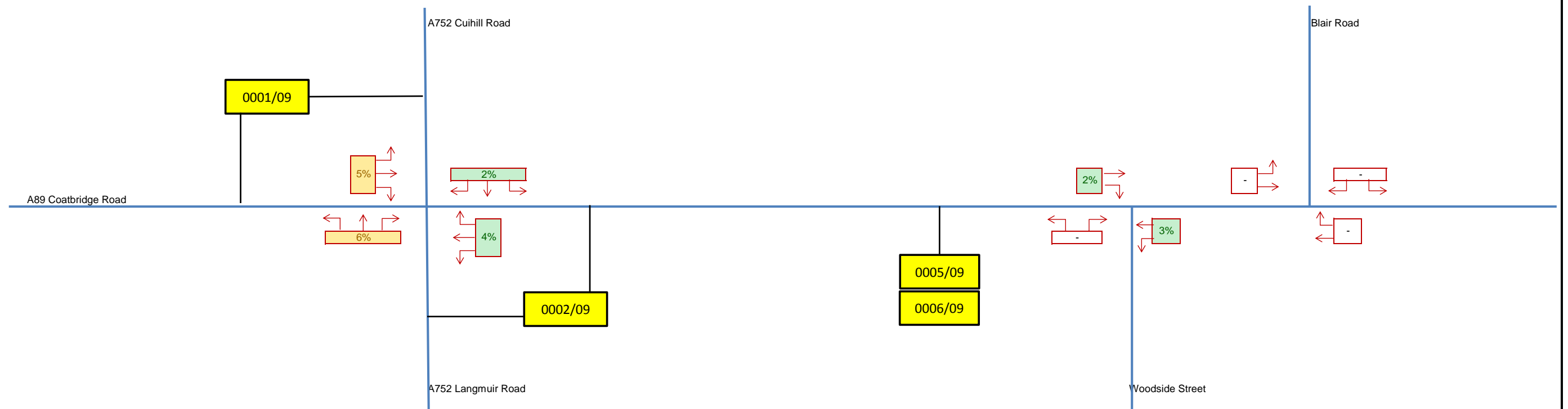
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| | | | Job No. | Produced | Checked | Date |
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Developments Considered

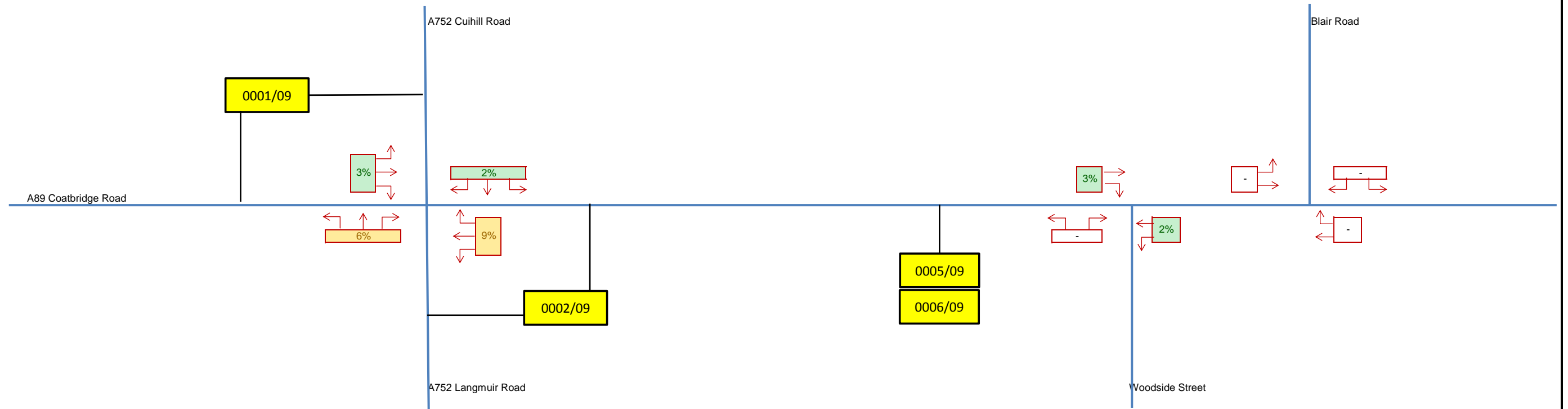
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Developments Considered

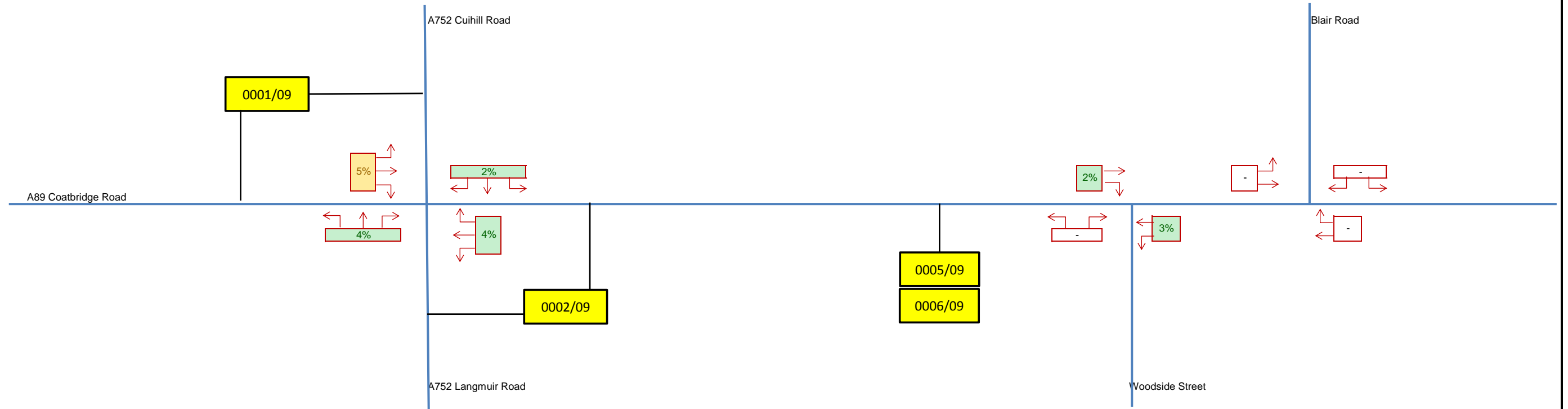
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| | | | | 06/07/2016 | | |

Developments Considered

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- 0002/09
- 0005/09
- 0006/09



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| Client | North Lanarkshire Council |  | | Title | | |
| Project | LDP DPMTAG | | | Bargeddie - PM 2027 Development Impact - TMfS14 Flows | | |
| | | | | Job No. | Produced | Checked |
| | | | | 60470585 | MLF | |
| | | | | Date | | |
| | | | | 06/07/2016 | | |

GROWTH FACTORS

| Future Year | 2022 | 2027 | 2022 | 2027 | | | |
|-------------|-------|-------|-------|-------|------|------|------|
| Base Year | 2014 | 2014 | 2015 | 2015 | | | |
| Low Growth | 1.070 | 1.098 | 1.058 | 1.086 | #N/A | #N/A | #N/A |
| High Growth | 1.129 | 1.199 | 1.109 | 1.178 | #N/A | #N/A | #N/A |

NETWORK FLOW DIAGRAMS

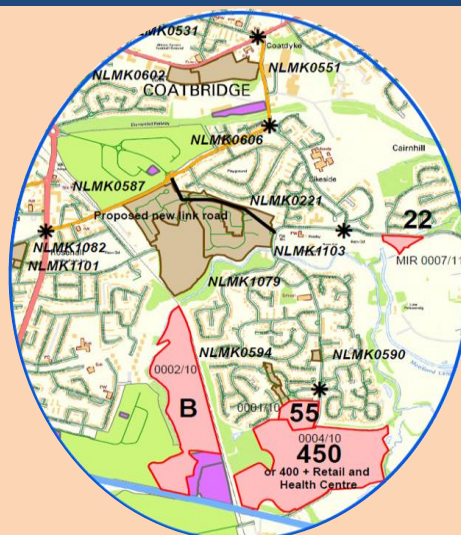
| INDEX | SOURCE |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| AM Base\A1 | 15_01792 PPP-Transportation_Assessment_July_2014-511900.pdf |
| PM Base\A1 | Columba High School Draft TA 050216.pdf |
| 15-01792 Dev Proportions\A1 | Columba High School Draft TA 050216.pdf |
| 0004-10 AM Development trips\A1 | The development trips have been distributed using the same proportions than the trip distribution for the development flows from 15/01792/PPP |
| 0004-10 PM Development trips\A1 | |
| 0001-10 AM Development trips\A1 | |
| 0001-10 PM Development trips\A1 | |
| 15-01792 Dev Proportions (2)\A1 | |
| 0007-11 AM Development Trips\A1 | |
| 0007-11 PM Development Trips\A1 | |
| 15-01792 Dev Proportions (3)\A1 | |
| 0002-10 AM Development Trips\A1 | This NFDs only include the developments selected below |
| 0002-10 PM Development Trips\A1 | |
| AM Development Trips\A1 | |
| PM Development Trips\A1 | Factored Flows. |
| 2022 AM Base\A1 | |
| 2022 PM Base\A1 | |
| 2027 AM Base\A1 | |
| 2027 PM Base\A1 | TMfS14 flows.xlsx |
| TMfS14 - AM 2022 flows\A1 | |
| TMfS14 - PM 2022 flows\A1 | |
| TMfS14 - AM 2027 flows\A1 | |
| TMfS14 - PM 2027 flows\A1 | |

THRESHOLD ASSESSMENT

| Select developments: | |
|----------------------|-------------------------------------|
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| 0001/10 | <input checked="" type="checkbox"/> |
| 0002/10 | <input checked="" type="checkbox"/> |
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Graphical Results

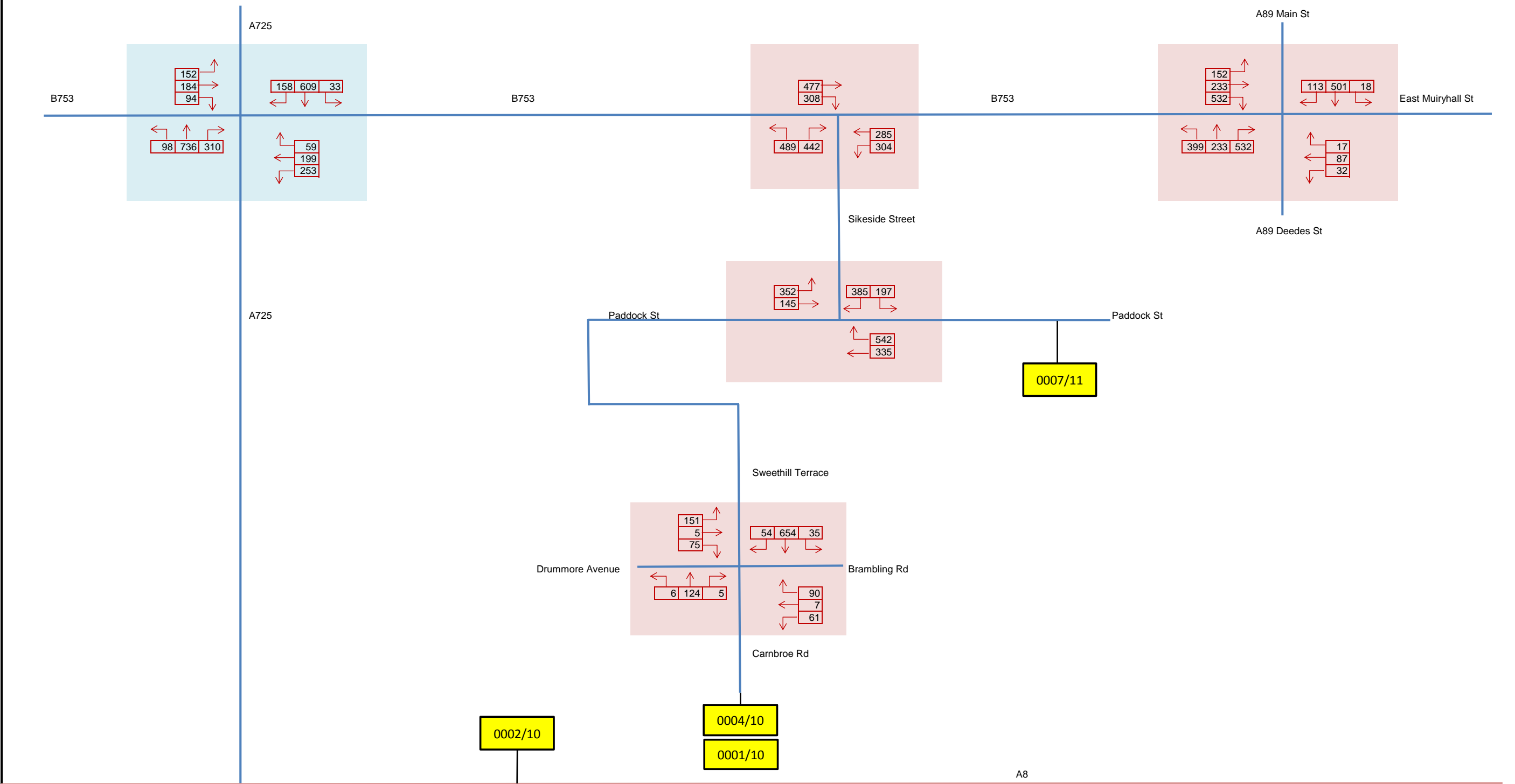
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| 2002 PM Development Impact | TA1A1 |
| 2002 PM Development Impact | TA1A1 |
| 2007 PM Development Impact | TA1A1 |
| 2007 PM Development Impact | TA1A1 |
| 2002 PM Development Impact | TM5A1 |
| 2002 PM Development Impact | TM5A1 |
| 2007 PM Development Impact | TM5A1 |
| 2007 PM Development Impact | TM5A1 |



| Results | TA flows | TMFS14 flows |
|---------|----------|--------------|
|---------|----------|--------------|

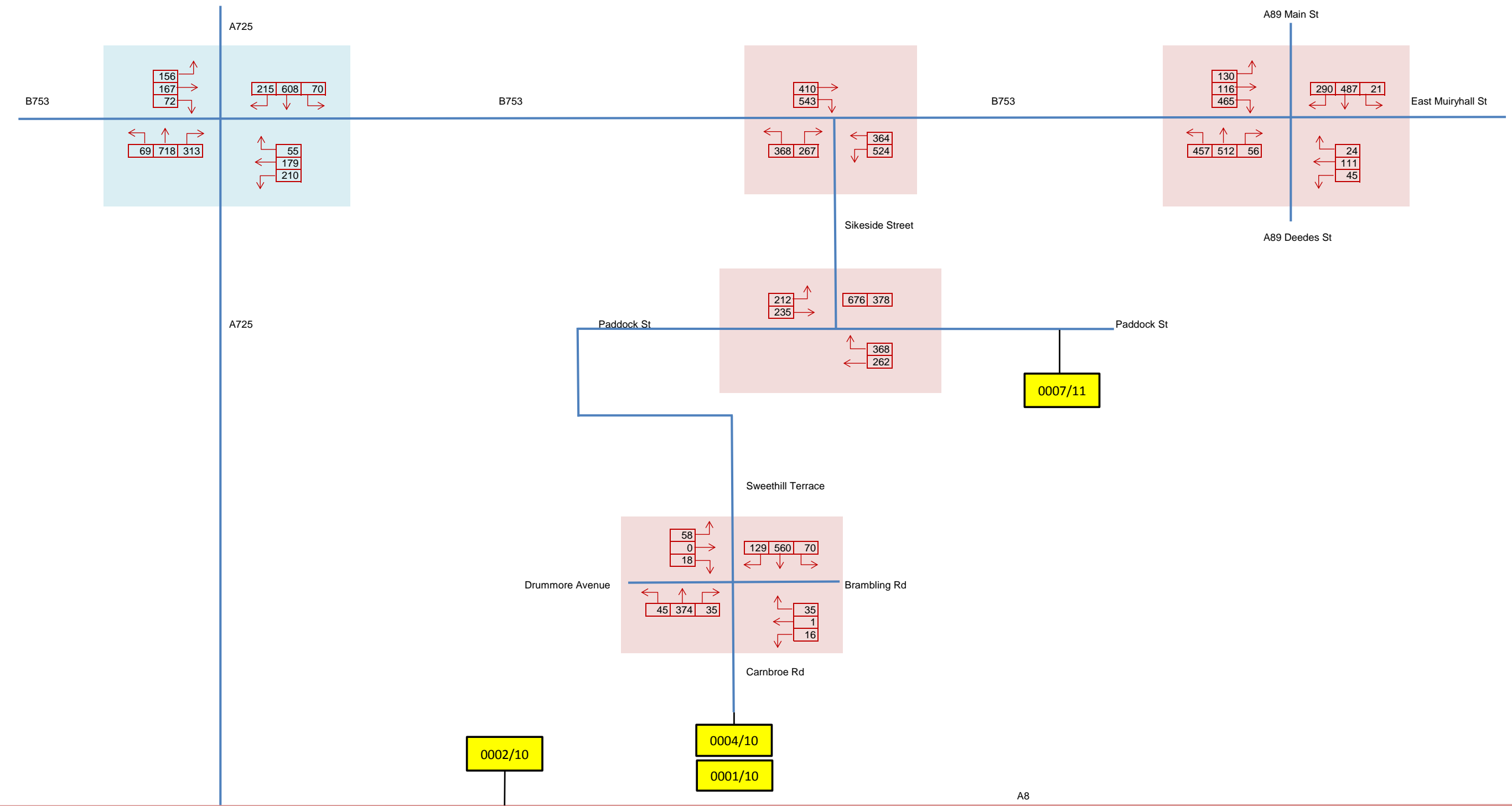
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| | | | 2022 | | 2027 | | 2022 | | 2027 | |
| Name | Junction Type | Approach | AM | PM | AM | PM | AM | PM | AM | PM |
| A725 / B753 | Signals | B753 West | 0% | 0% | 0% | 0% | - | - | - | - |
| | | A725 North | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| | | Calder Street | 9% | 3% | 8% | 3% | 7% | 3% | 7% | 3% |
| B753 / Sikeside Street | Roundabout | A725 South | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| | | B753 West | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| | | B753 North | 2% | 0% | 2% | 0% | 2% | 1% | 2% | 1% |
| B753 / Main Street | Roundabout | Sikeside Street | 4% | 3% | 4% | 3% | - | - | - | - |
| | | Main Street West | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| | | E Muirhall Street | 1% | 0% | 1% | 0% | - | - | - | - |
| | | Main Street East | 1% | 0% | 1% | 0% | 0% | 0% | 0% | 0% |
| Sikeside Street / Paddock Street | Roundabout | B753 | 1% | 1% | 1% | 1% | 1% | 2% | 1% | 2% |
| | | Paddock Street West | 7% | 10% | 6% | 10% | - | - | - | - |
| | | Sikeside Street | 0% | 0% | 0% | 0% | - | - | - | - |
| Sweethill Terrace / Cambroe Road | Roundabout | Paddock Street East | 4% | 2% | 4% | 2% | - | - | - | - |
| | | Drummore Avenue | 0% | 0% | 0% | 0% | - | - | - | - |
| | | Sweethill Terrace | 1% | 1% | 1% | 1% | - | - | - | - |
| | | Brambling Road | 0% | 0% | 0% | 0% | - | - | - | - |
| | | Carnbroe Road | 24% | 10% | 24% | 10% | - | - | - | - |

Sources: 2015 [Columba High School Draft TA 050216.pdf](#)
2014 [15_01792_PPP-Transportation_Assessment_July_2014-511900.pdf](#)

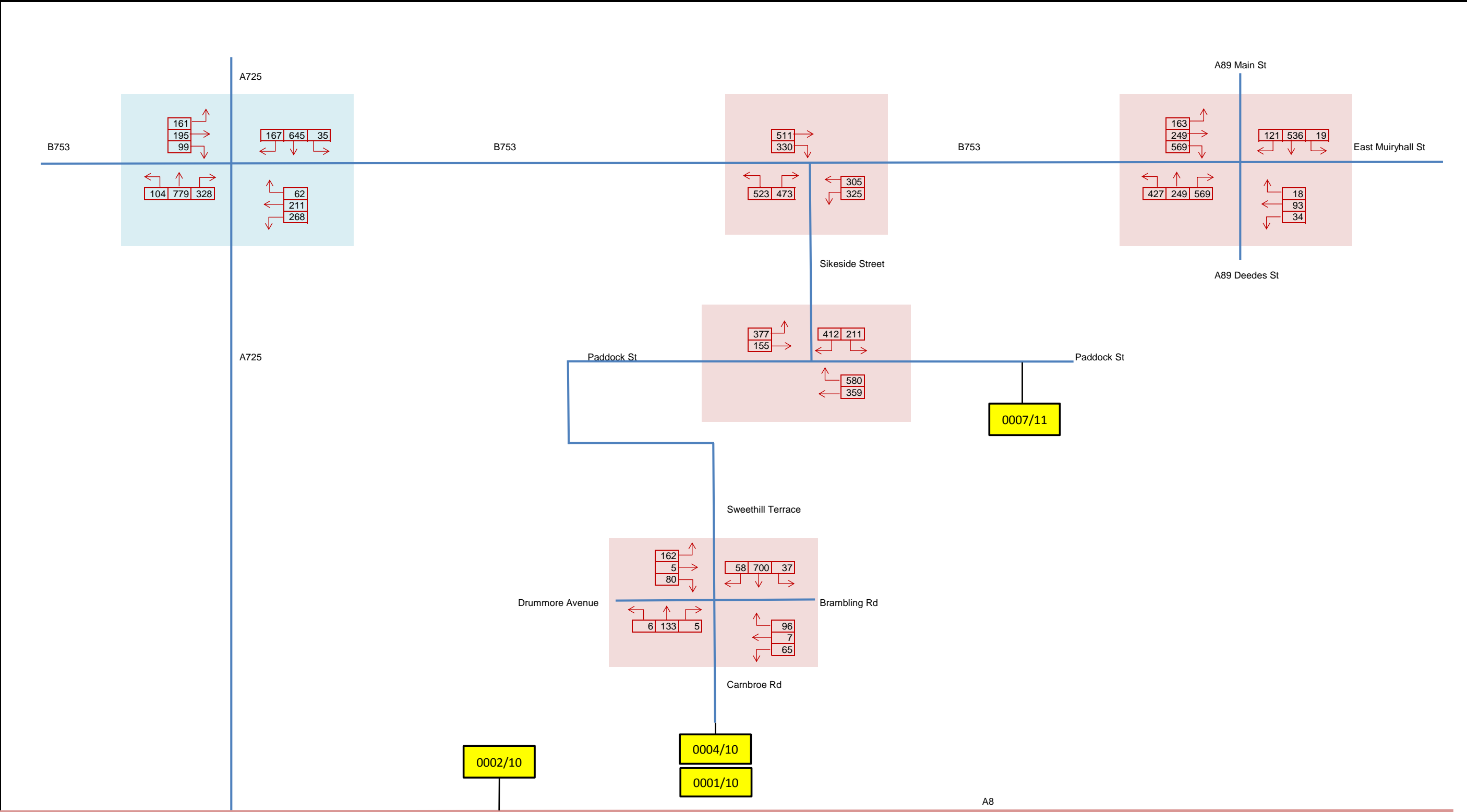


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| Client | North Lanarkshire Council |  | Title | | | |
| Project | LDP DPMTAG | | Job No. | Produced | Checked | Date |
| | | | 60470585 | MLF | | 03/08/2016 |

Sources: 2015 [Columba High School Draft TA 050216.pdf](#)
2014 [15_01792_PPP-Transportation_Assessment_July_2014-511900.pdf](#)

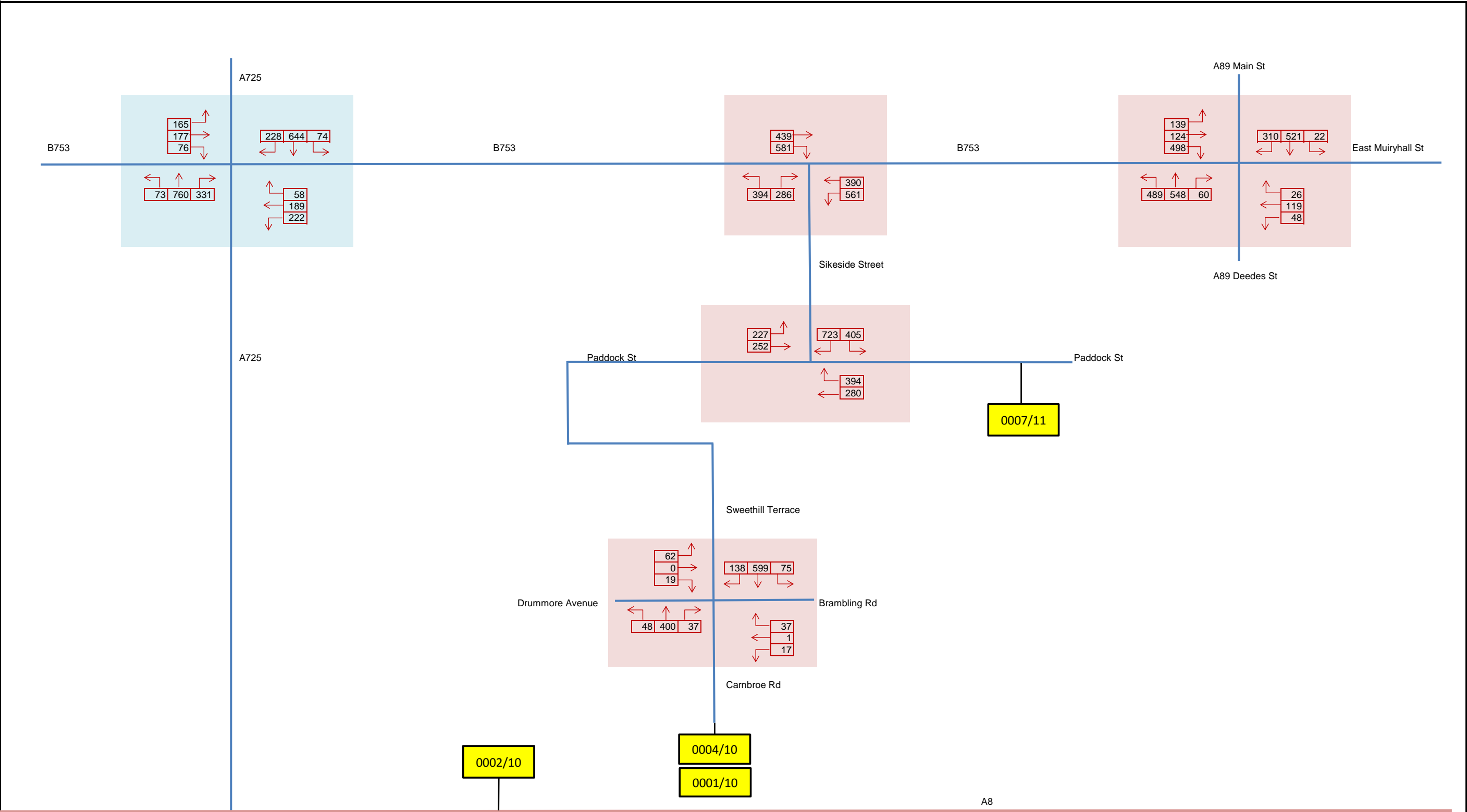


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| Project | LDP DPMTAG | | | Job No. 60470585 | Produced MLF | Checked | Date 03/08/2016 |

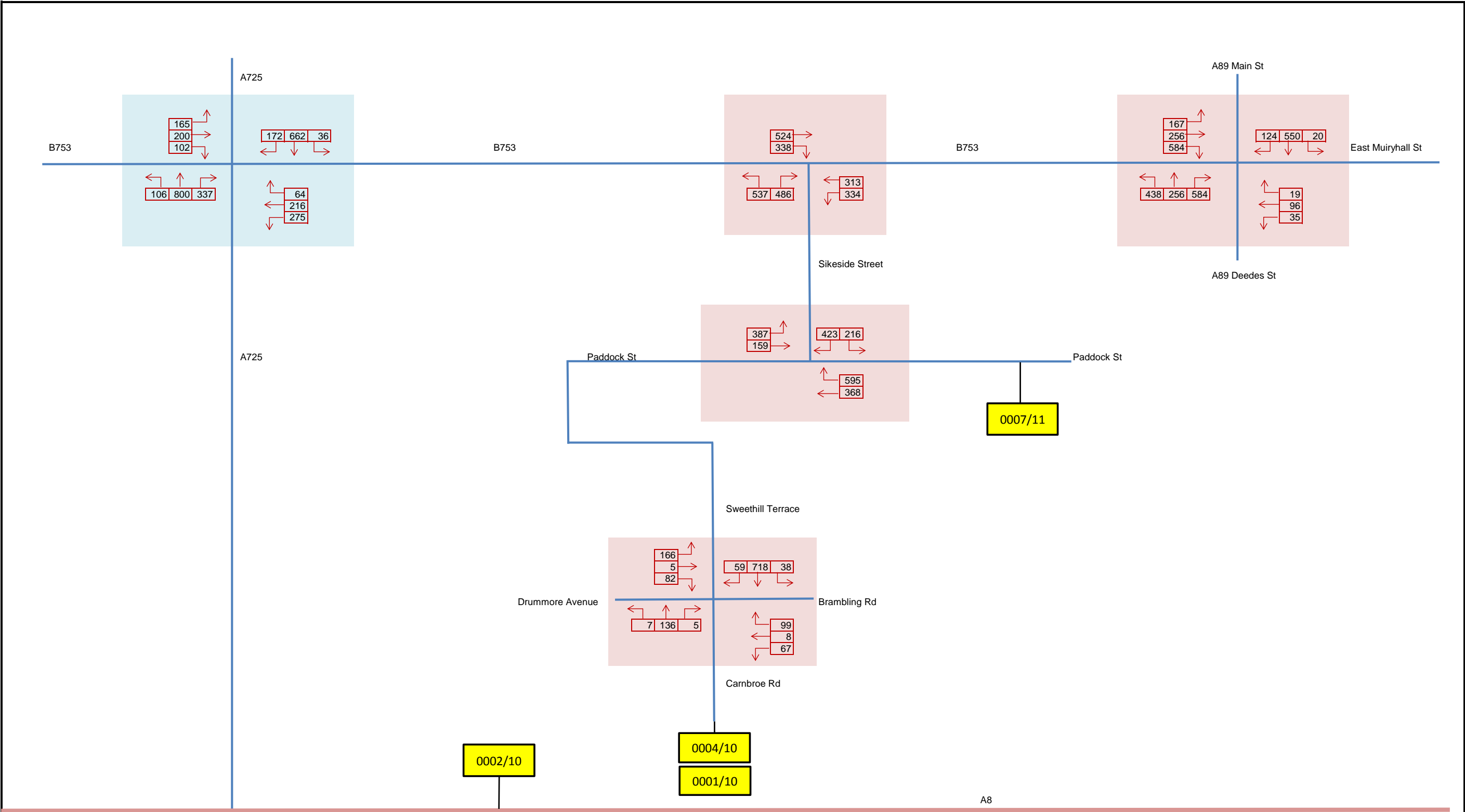


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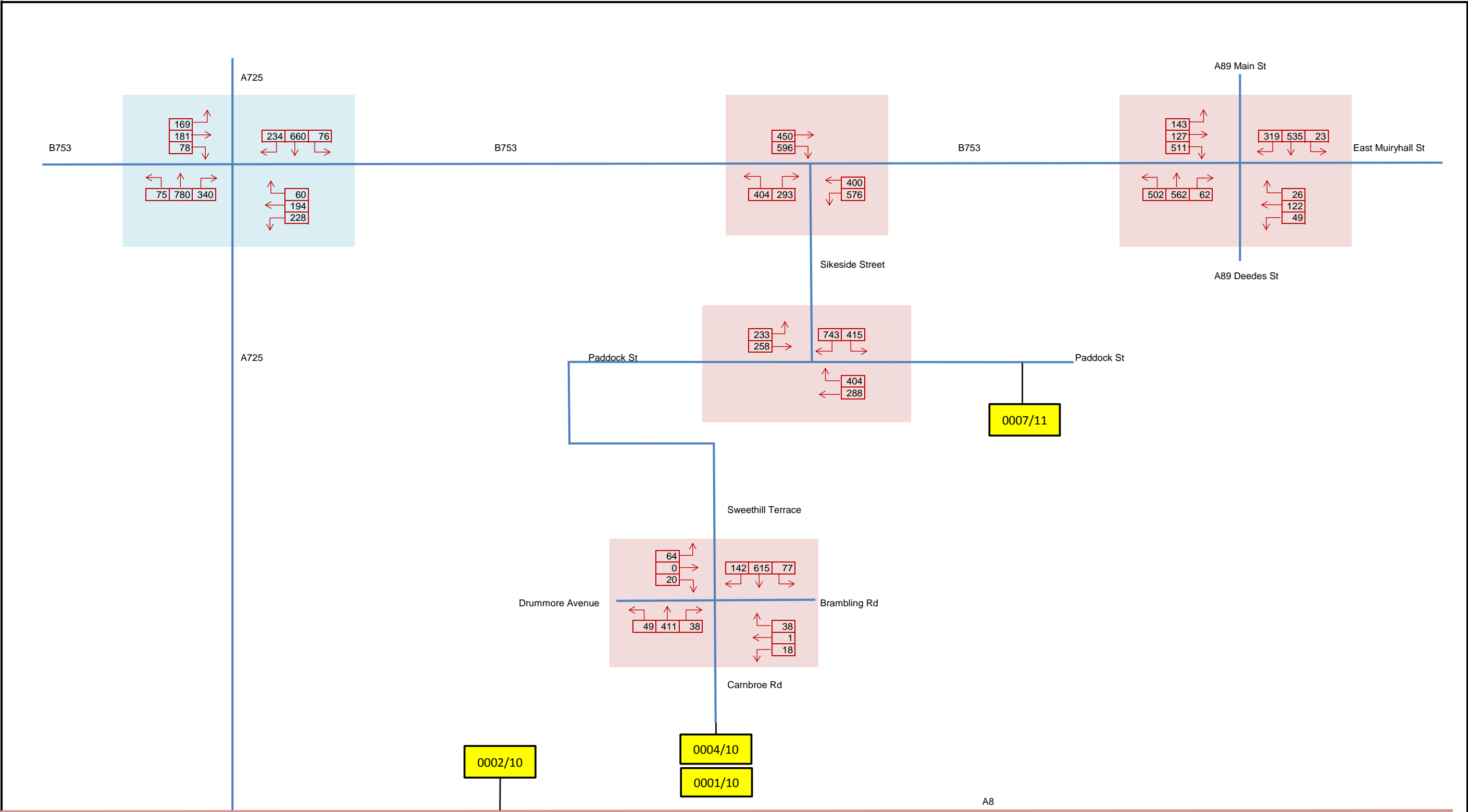
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| Project | LDP DPMTAG | | | Job No. | Produced | Checked | Date |
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| Project | LDP DPMTAG | | | Job No. 60470585 | Produced MLF | Checked | Date 03/08/2016 |



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| Client | North Lanarkshire Council |  | | Title | | | |
| Project | LDP DPMTAG | | | Job No. | Produced | Checked | Date |
| | | | | 60470585 | MLF | | 03/08/2016 |

Source: 2015 [Columba High School Draft TA 050216.pdf](#)

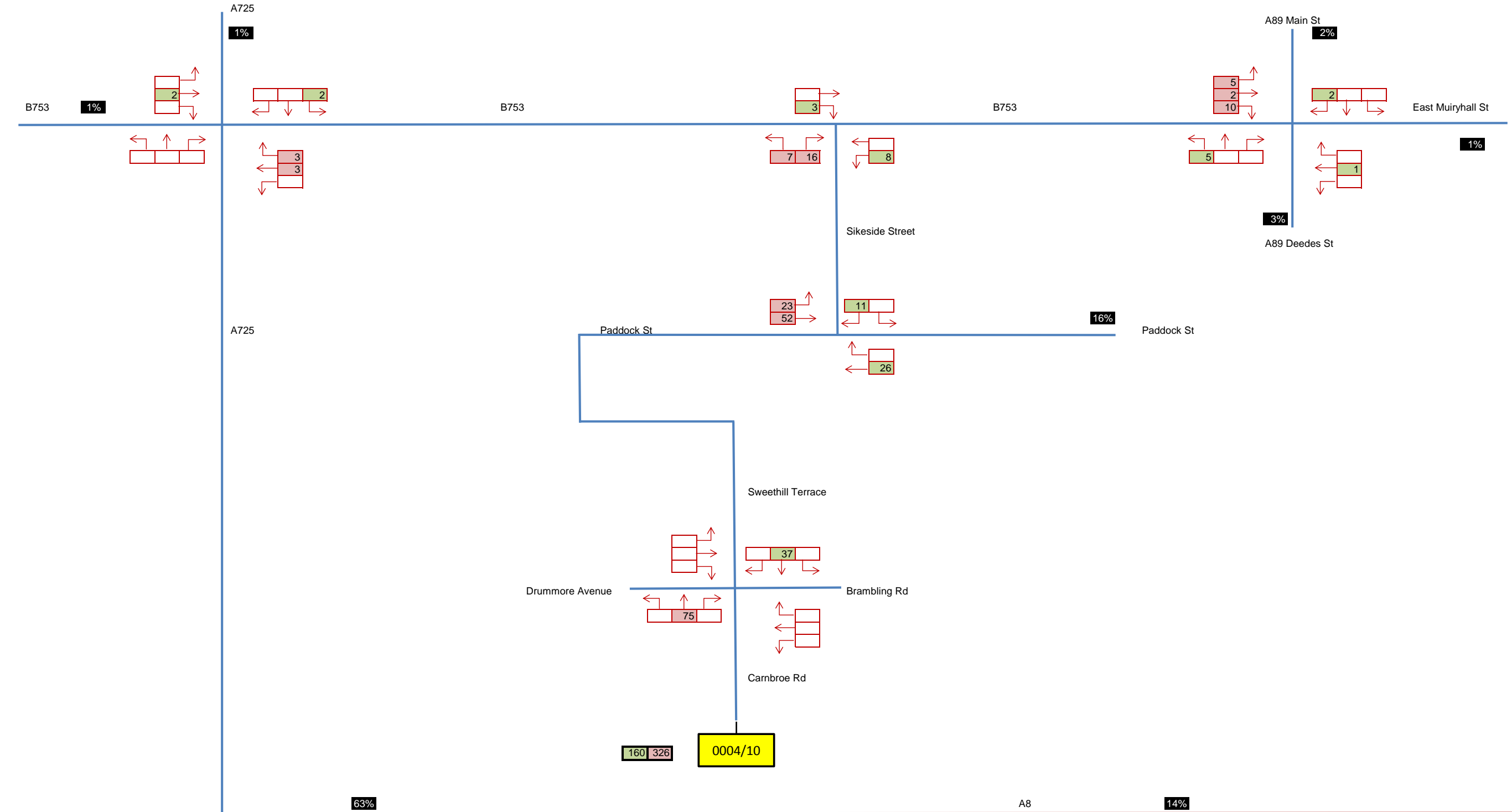
The diagram illustrates the traffic flow at the intersection of B753 and A725. The main roads are B753 (horizontal) and A725 (vertical). Other streets shown include Sikeside Street, Paddock St, Sweetthill Terrace, Drummore Avenue, Brambling Rd, Carnbroe Rd, A89 Main St, A89 Deedes St, and East Muirhall St. The diagram includes various traffic signals and vehicle counts in boxes, indicating the percentage of traffic in each direction.

Key features and data points:

- B753/A725 Intersection:**
 - Northbound A725: 1% (black box)
 - Southbound A725: 63% (black box)
 - Eastbound B753: 1% (black box)
 - Westbound B753: 1% (black box)
- Sikeside Street:**
 - Northbound: 2% (green box), 5% (red box)
 - Southbound: 5% (green box)
- Paddock St:**
 - Northbound: 7% (green box), 16% (red box)
 - Southbound: 16% (green box)
- Sweetthill Terrace:**
 - Northbound: 23% (green box)
 - Southbound: 23% (red box)
- Drummore Avenue:**
 - Northbound: 23% (green box)
 - Southbound: 23% (red box)
- Brambling Rd:**
 - Northbound: 23% (green box)
 - Southbound: 23% (red box)
- Carnbroe Rd:**
 - Northbound: 23% (green box)
 - Southbound: 23% (red box)
- A89 Main St:**
 - Northbound: 2% (green box), 1% (red box), 3% (red box)
 - Southbound: 3% (green box)
- A89 Deedes St:**
 - Northbound: 2% (green box), 1% (red box)
 - Southbound: 1% (green box)
- East Muirhall St:**
 - Northbound: 2% (green box)
 - Southbound: 1% (black box)
- A8:**
 - Northbound: 14% (black box)
 - Southbound: 14% (black box)

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Source: 2015 [Columba High School Draft TA 050216.pdf](#)

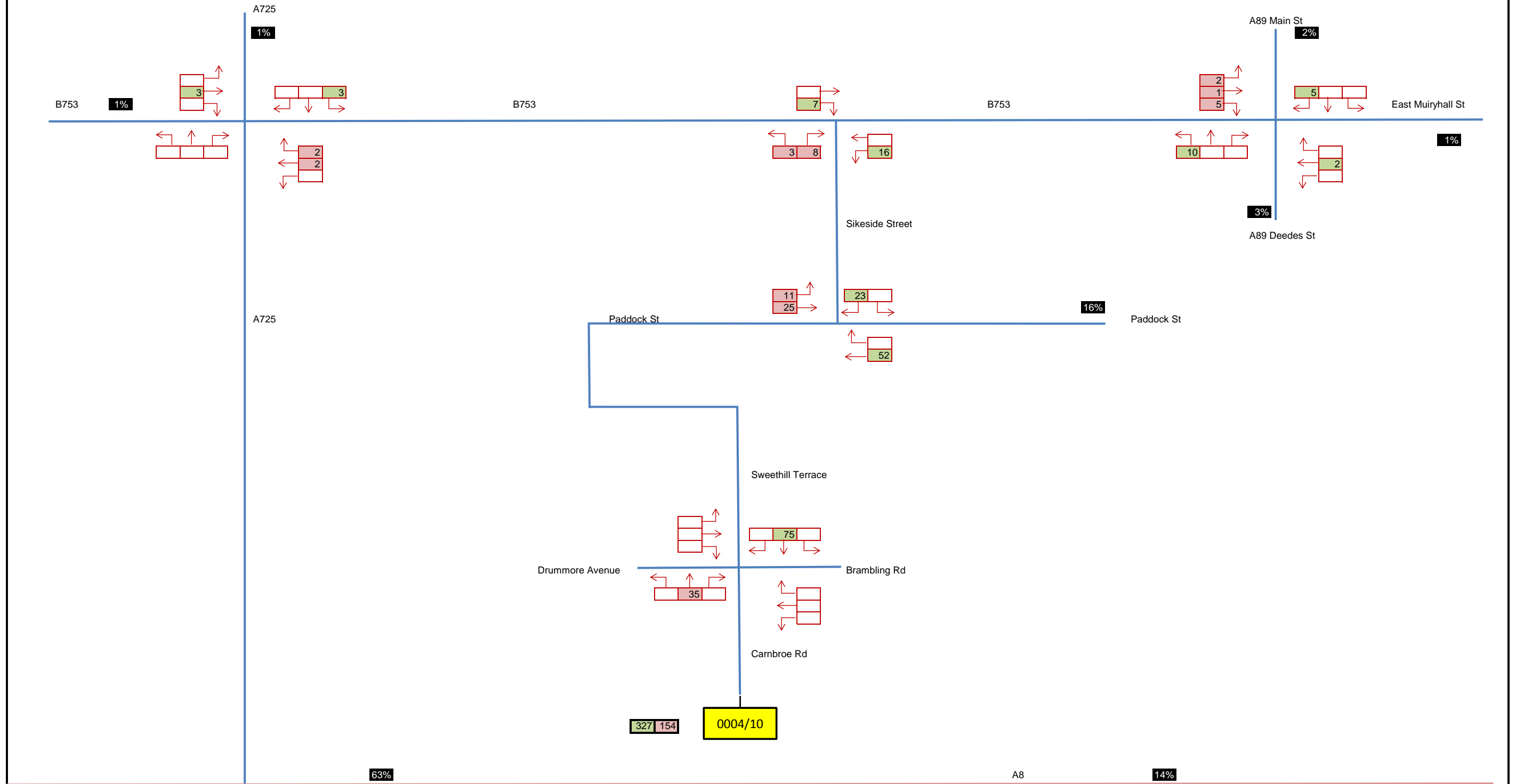


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| Project | LDP DPMTAG |



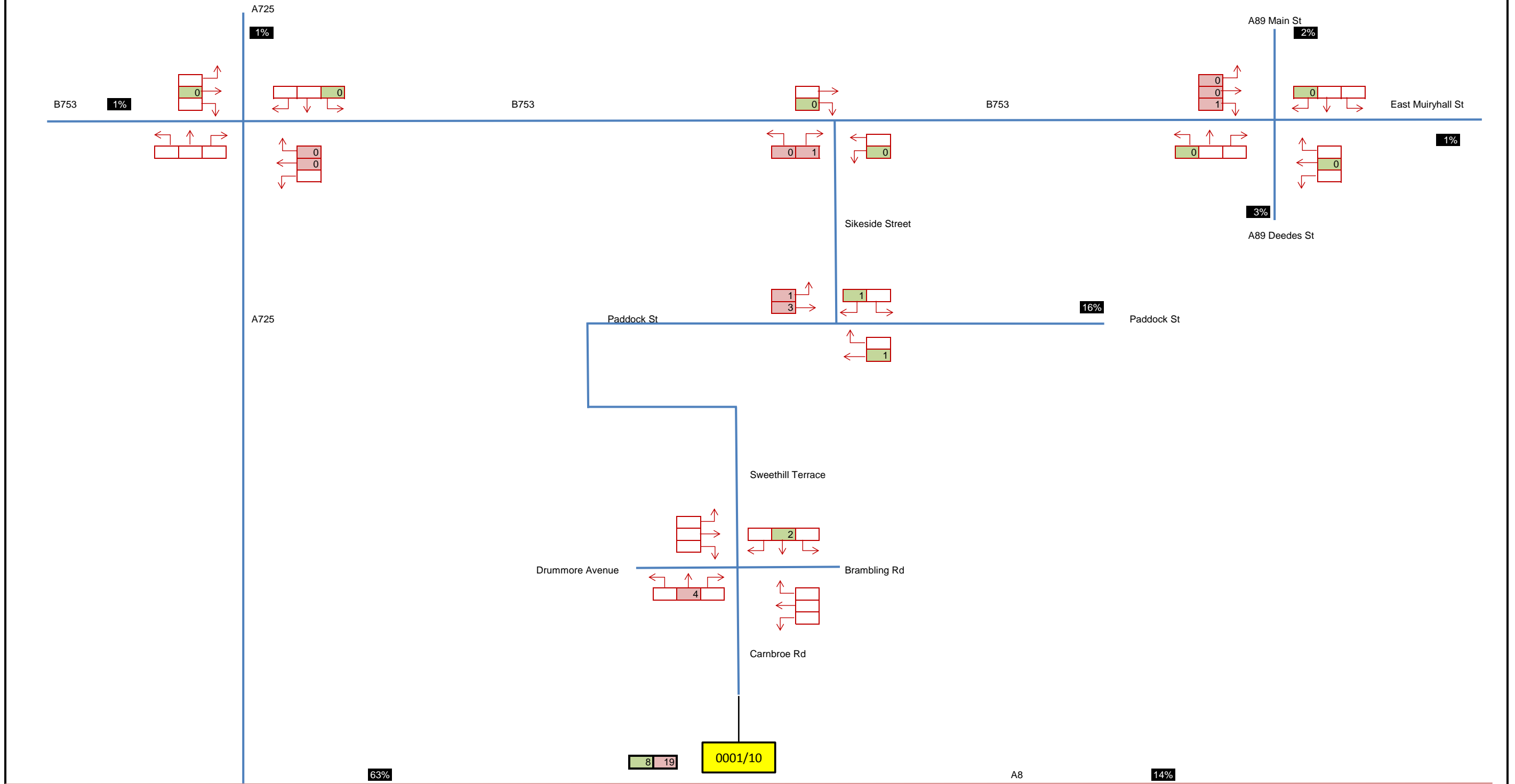
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Source: 2015 [Columba High School Draft TA 050216.pdf](#)



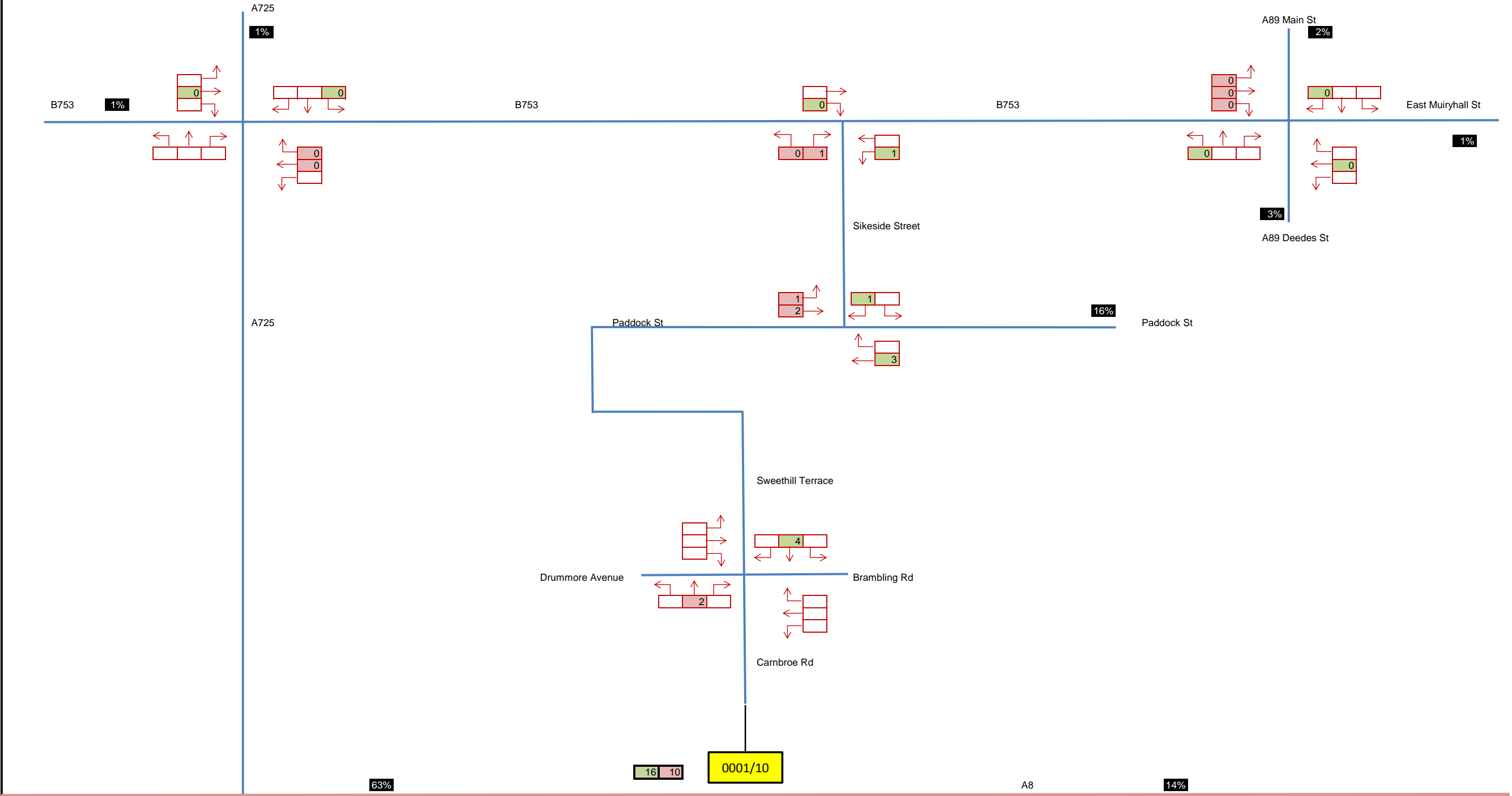
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Source: 2015 [Columba High School Draft TA 050216.pdf](#)



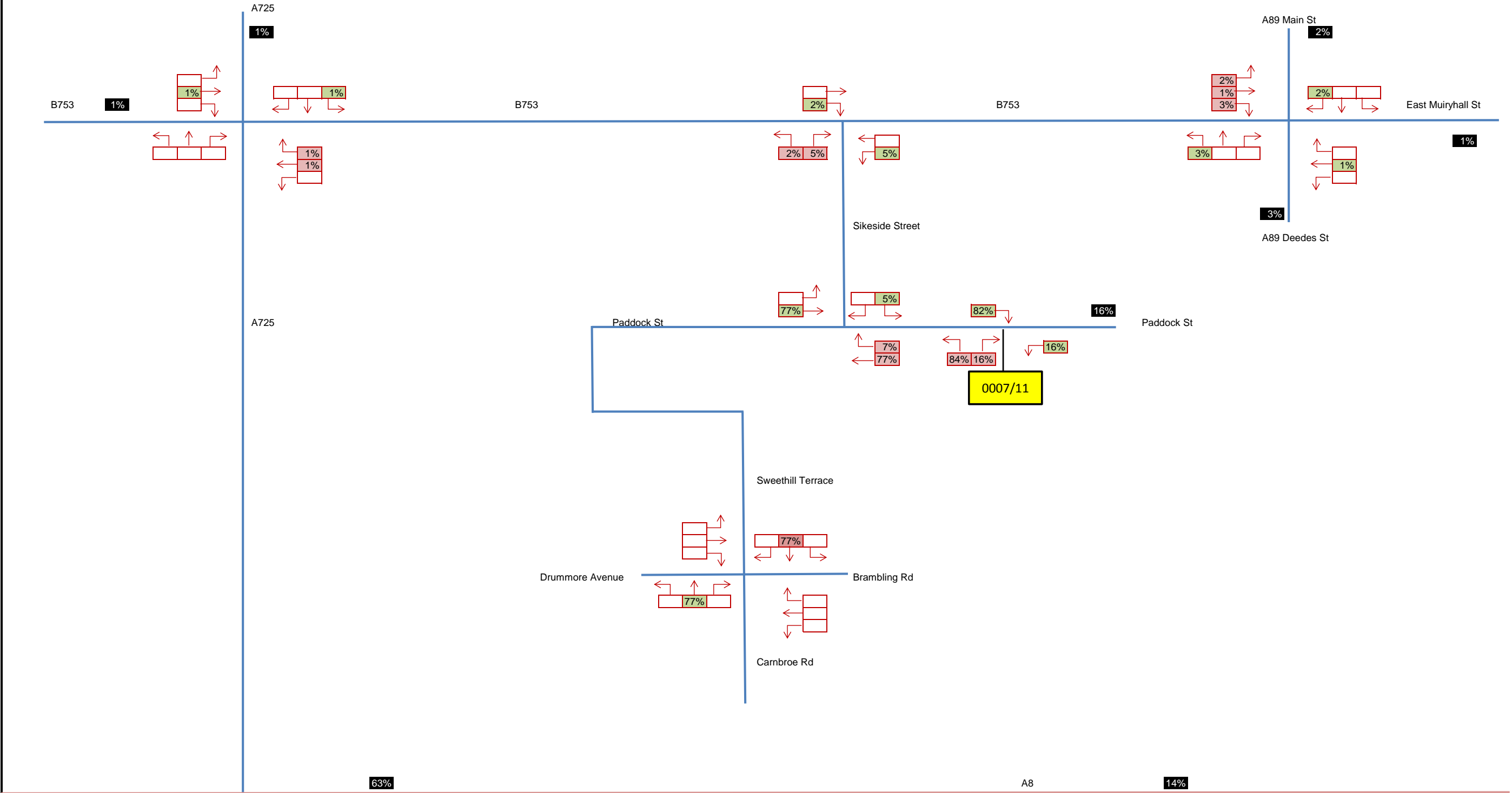
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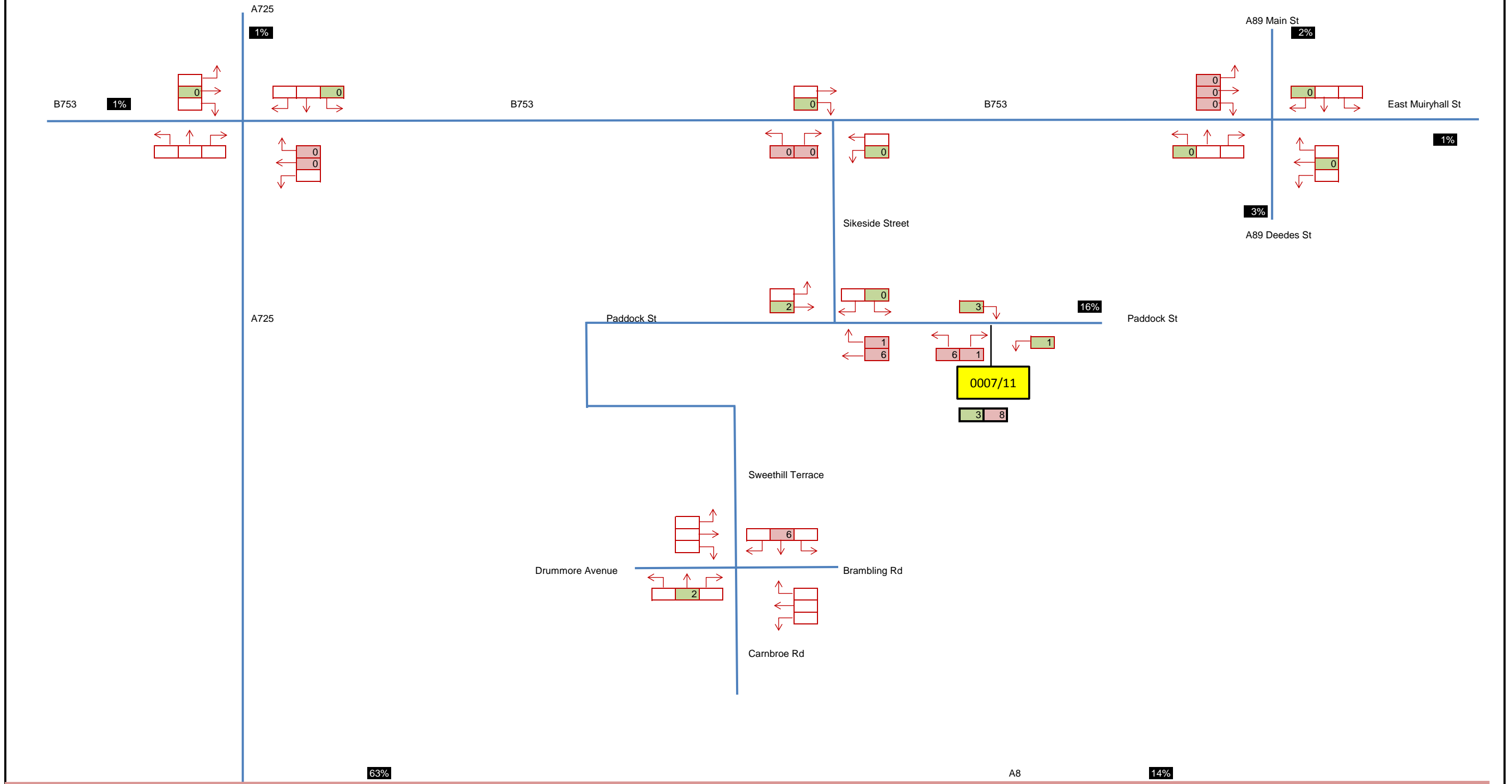
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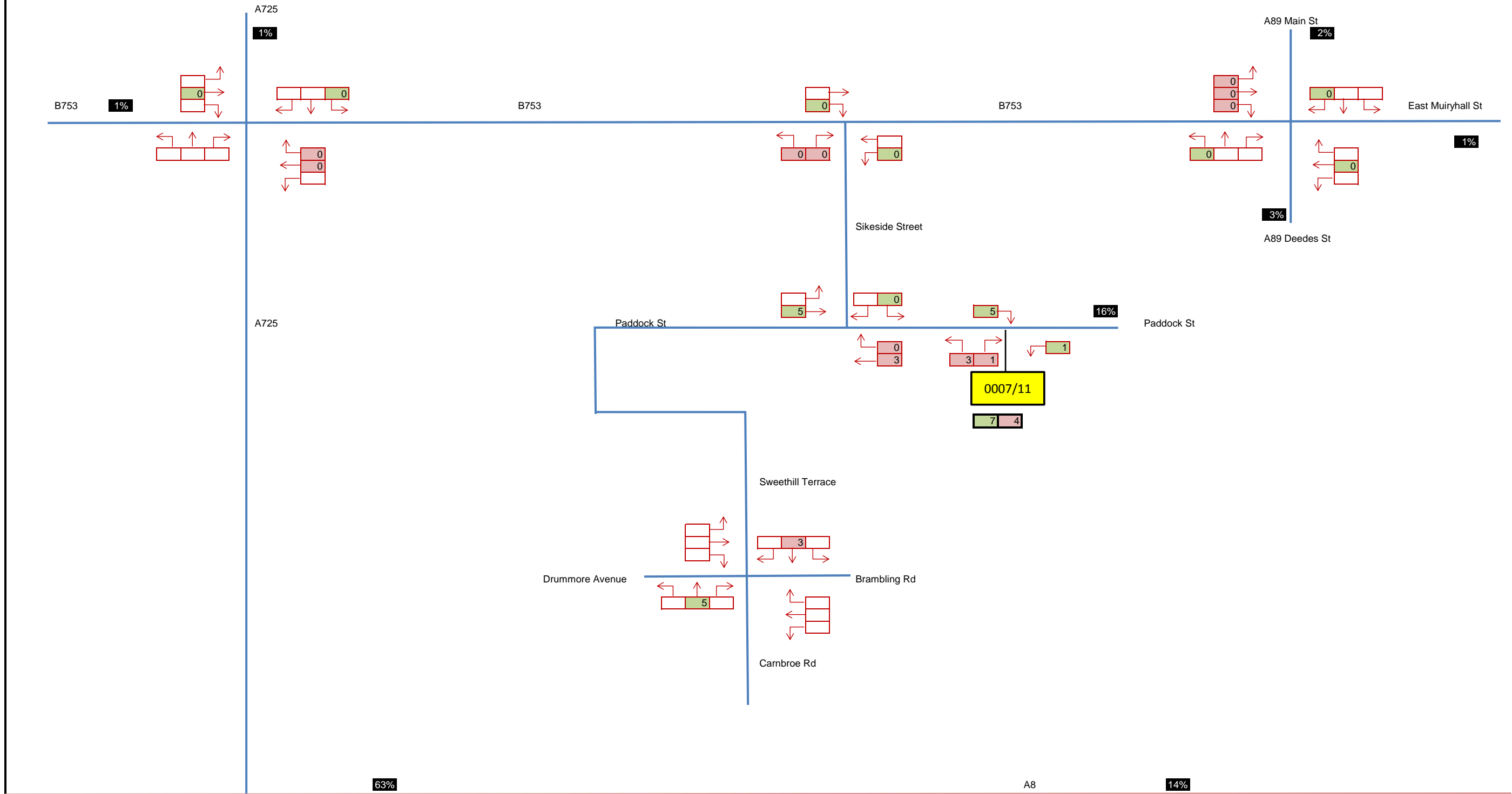
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| Project | LDP DPMTAG | | | Job No. | Produced | Checked | Date |
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| Client | North Lanarkshire Council | | | Title Carnbroe - AM Development Trips - 0007/11 | | | |
| Project | LDP DPMTAG | | | Job No. 60470585 | Produced MLF | Checked | Date 03/08/2016 |

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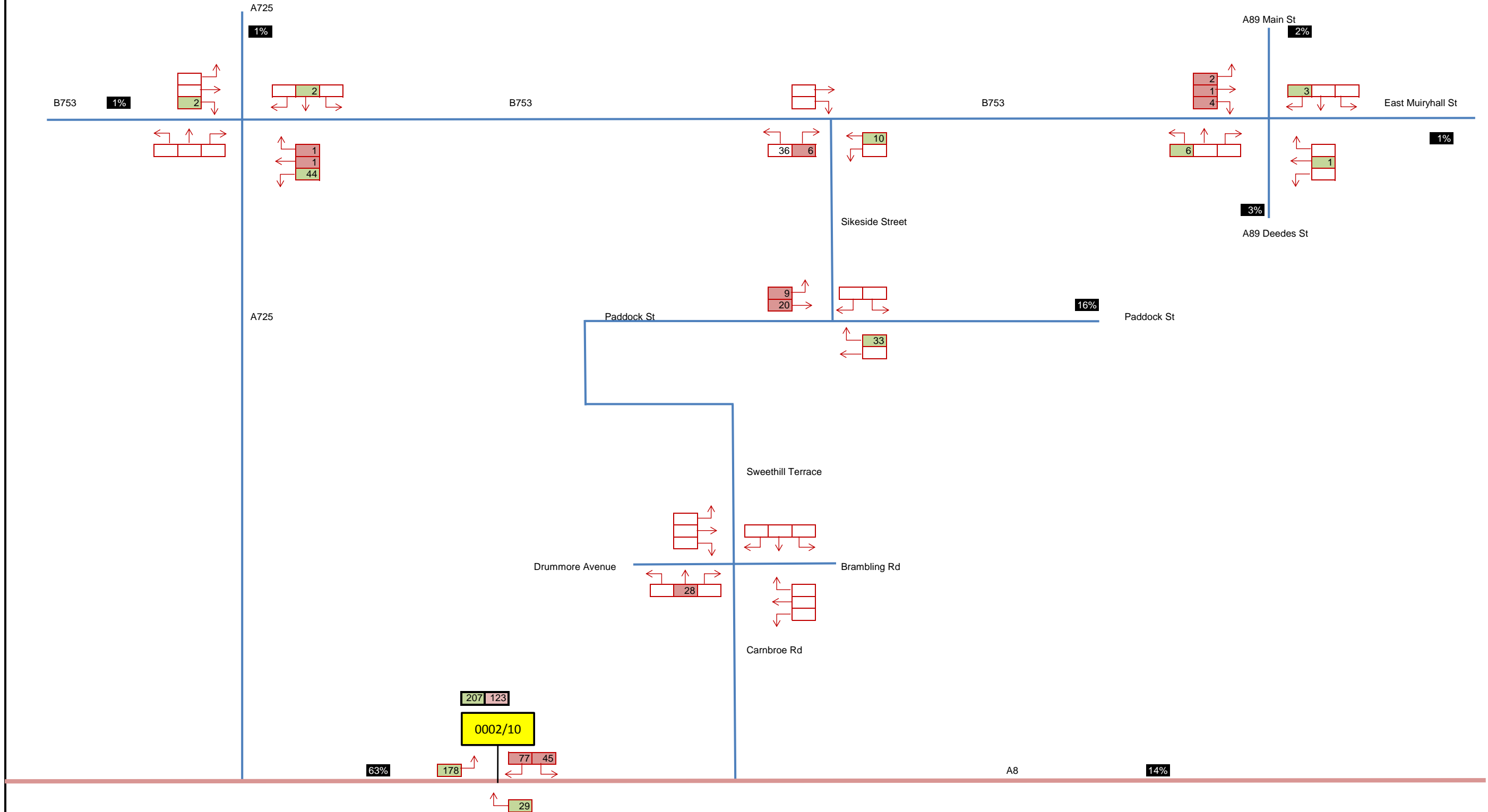
Source: 2015 [Columba High School Draft TA 050216.pdf](#)

The diagram illustrates the proposed site layout and surrounding infrastructure for Columba High School. Key features include:

- Proposed Site:** Indicated by a yellow box labeled "0002/10" at the bottom center.
- Surrounding Roads:**
 - A725:** A major road running vertically on the left side, with a 1% grade.
 - B753:** A major road running horizontally across the top, with a 1% grade.
 - A8:** A major road running horizontally at the bottom, with a 14% grade.
 - Local Roads:** Paddock St, Sikeside Street, Sweetthill Terrace, Brambling Rd, and Cambroe Rd are shown as minor roads.
- Traffic Flow:** Arrows indicate the direction of traffic flow for all approaches to the intersection.
- Grades:** Percentages (e.g., 1%, 2%, 3%, 5%, 7%, 16%, 23%, 63%, 86%, 14%) are shown near the roads, indicating the proposed or existing grades.
- Other Labels:** "0007/11" is labeled near the intersection of Paddock St and B753. "East Muirhall St" is labeled on the right side.

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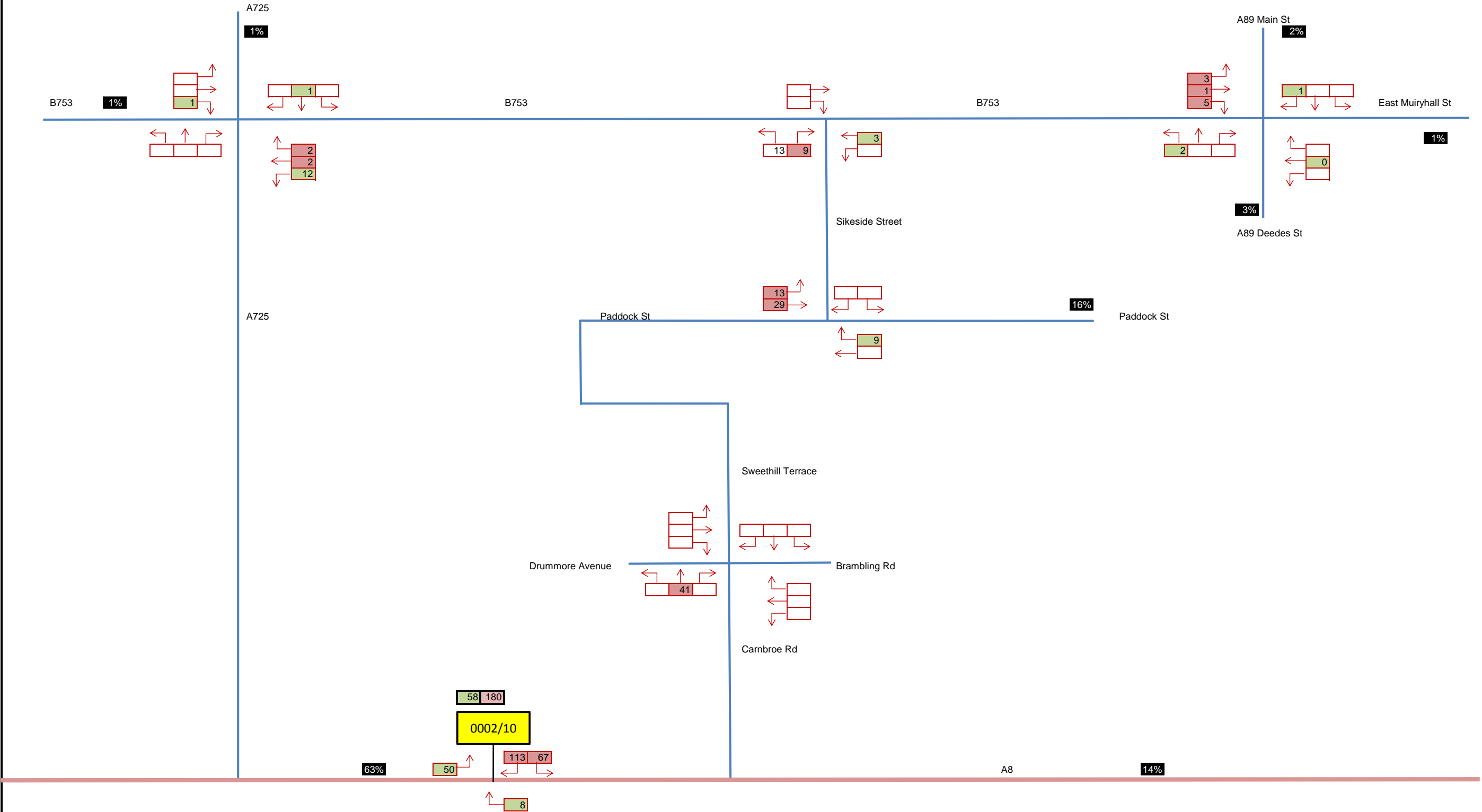


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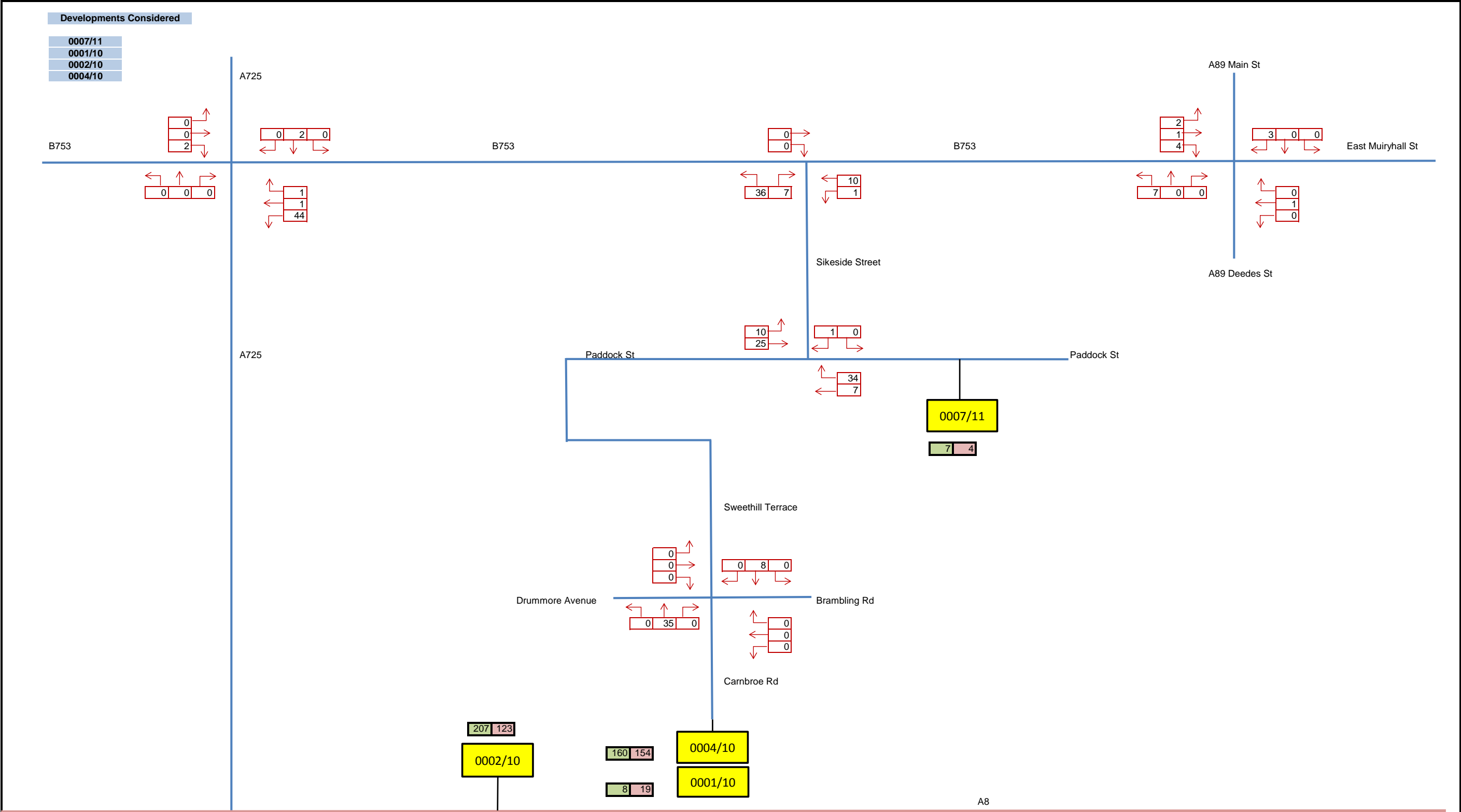
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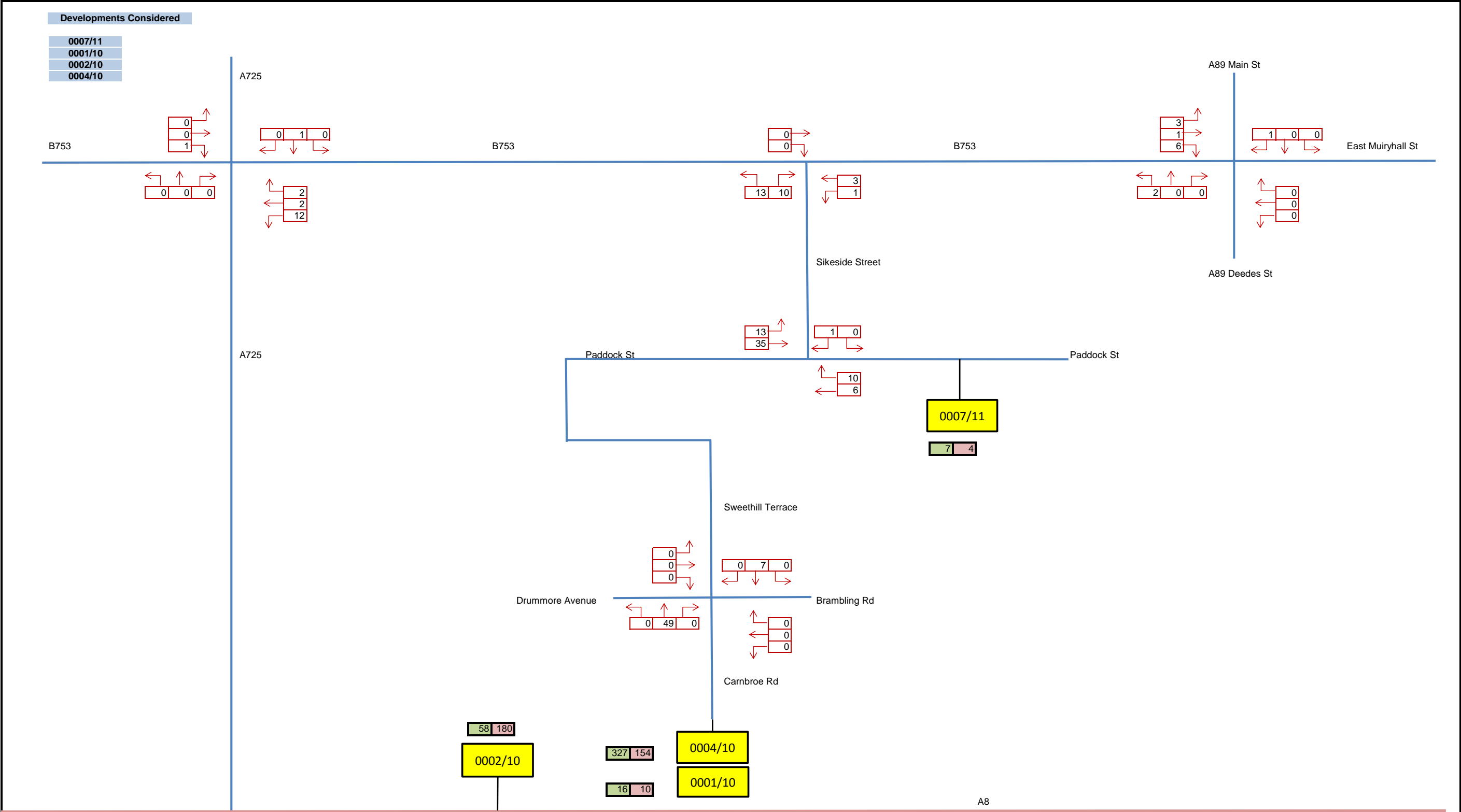
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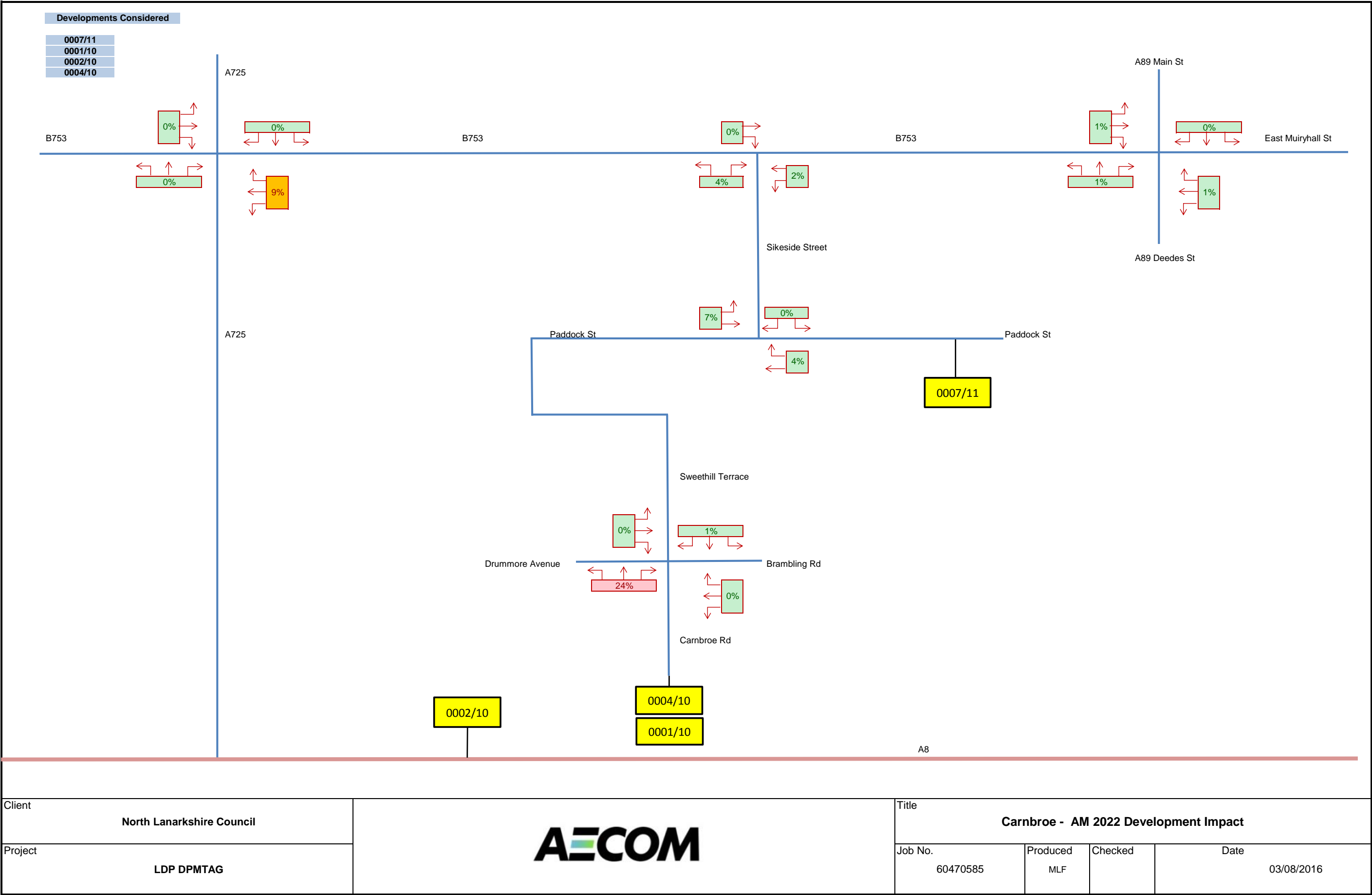


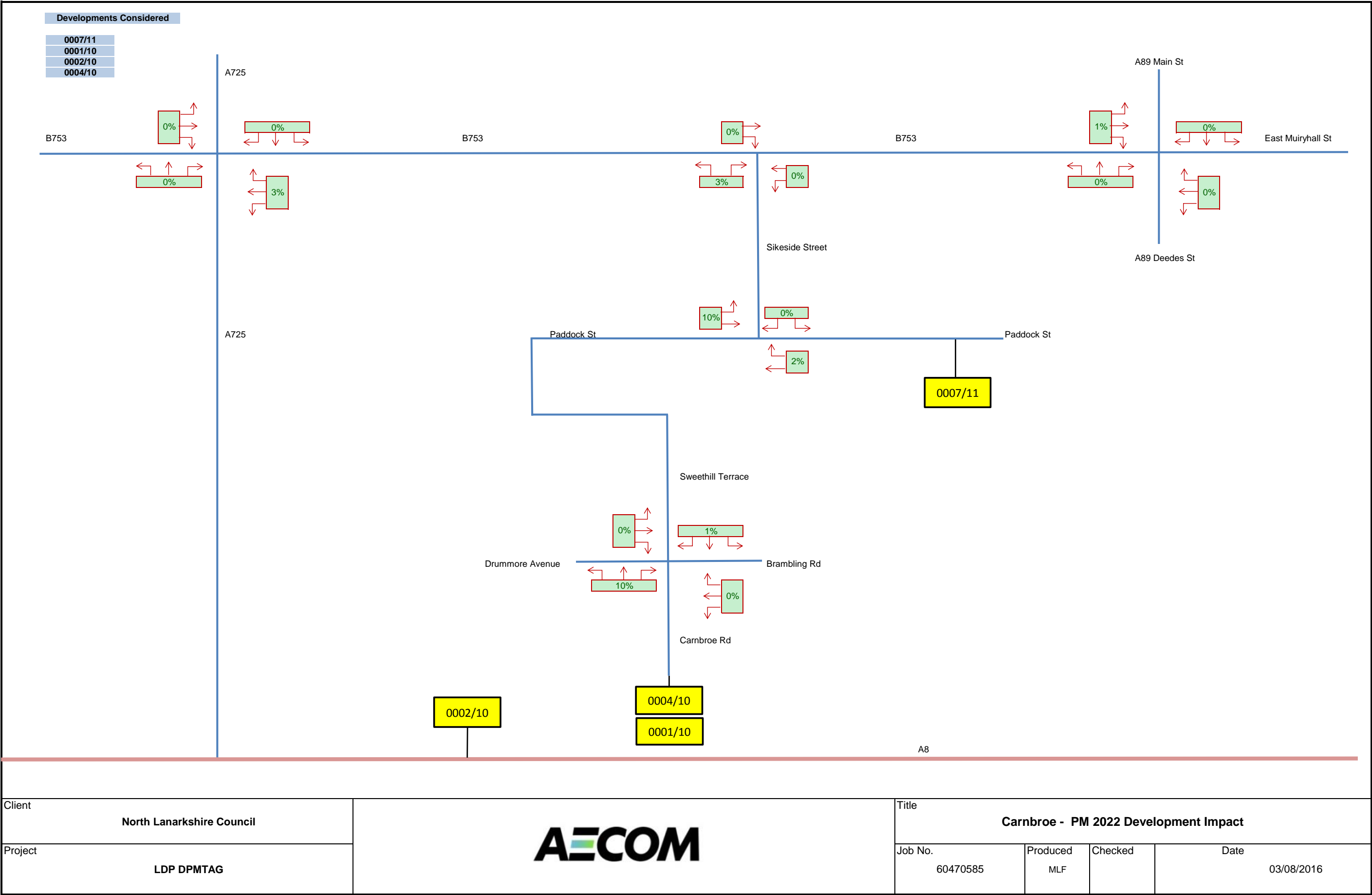
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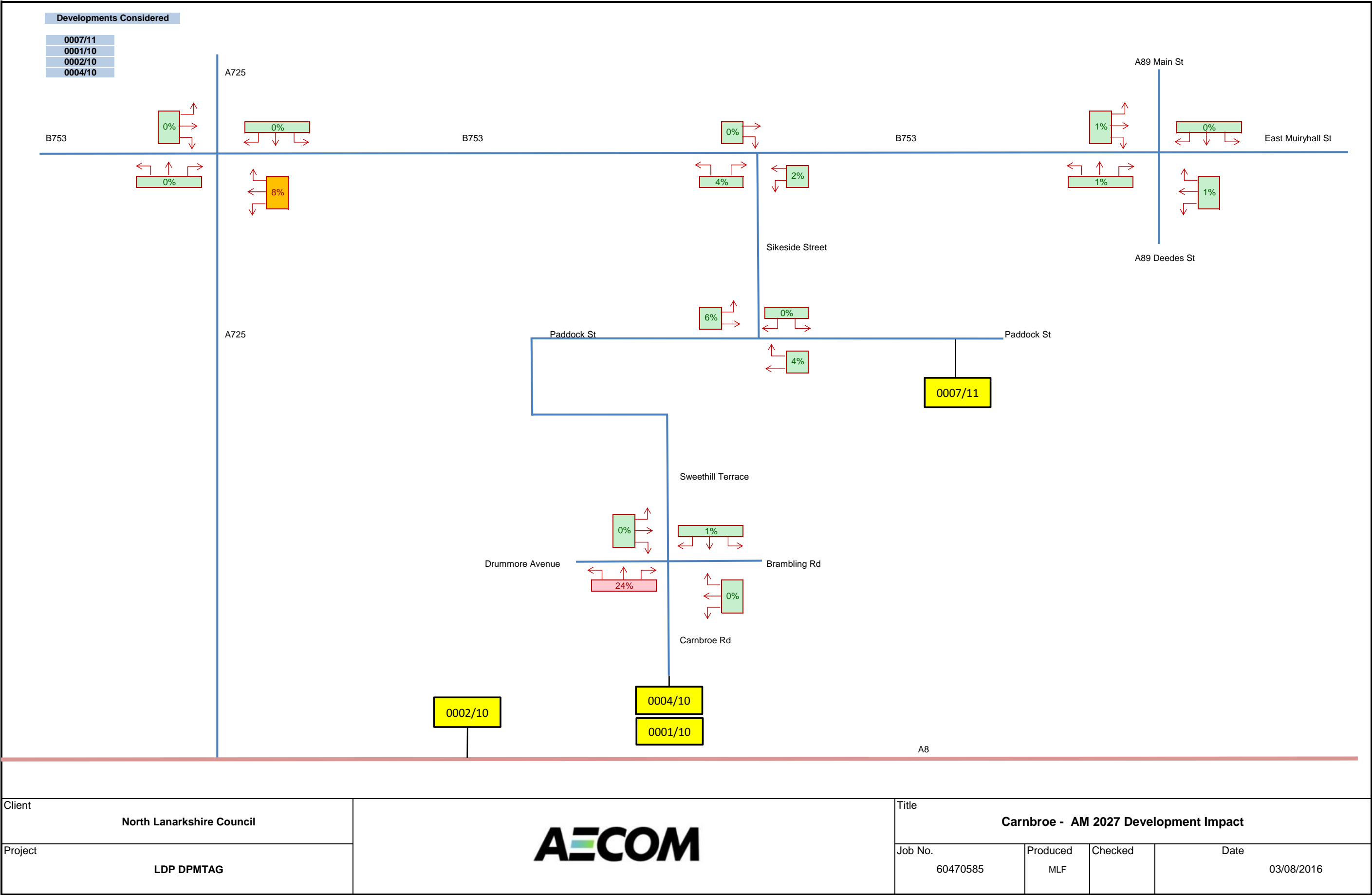


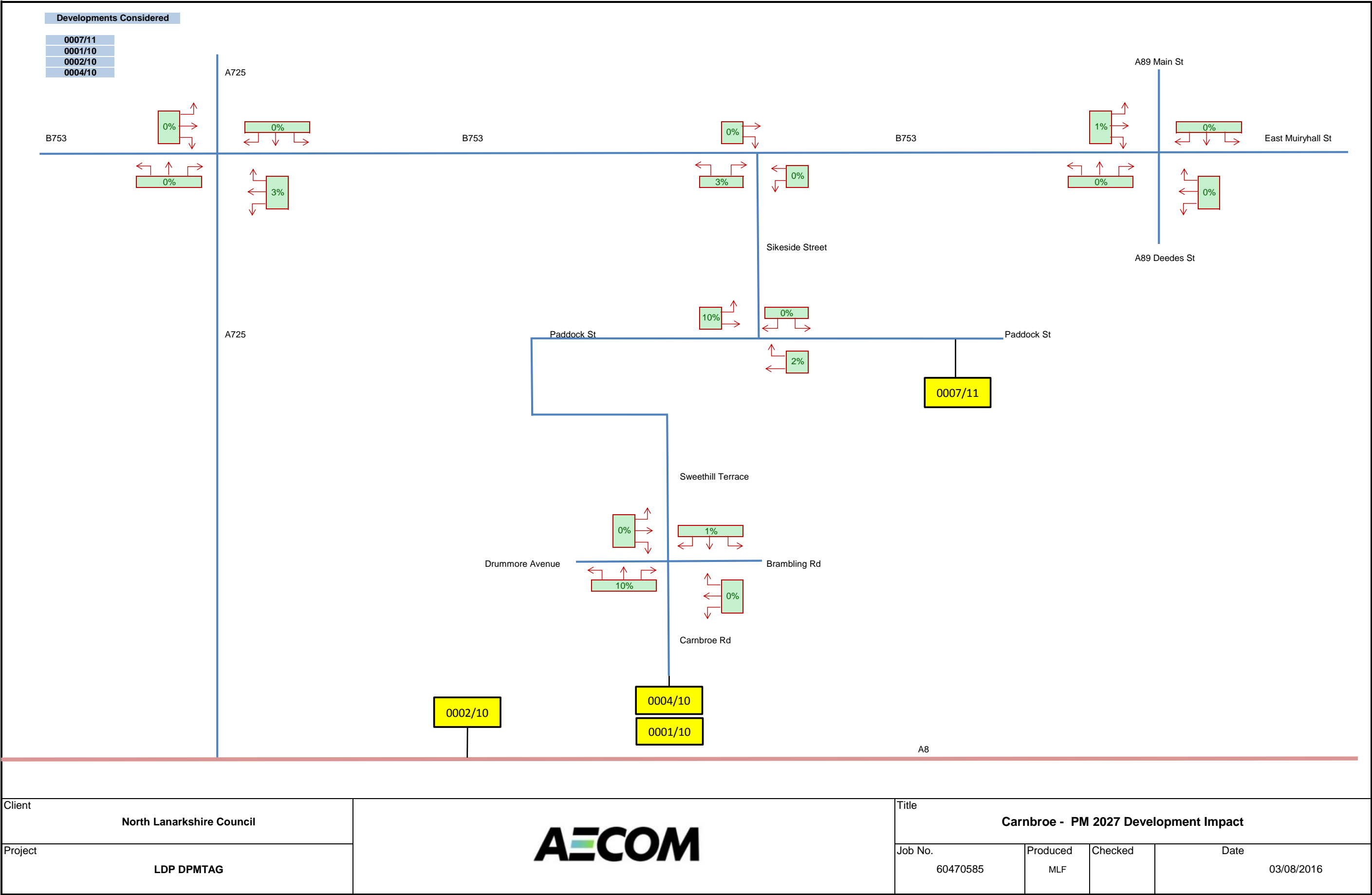


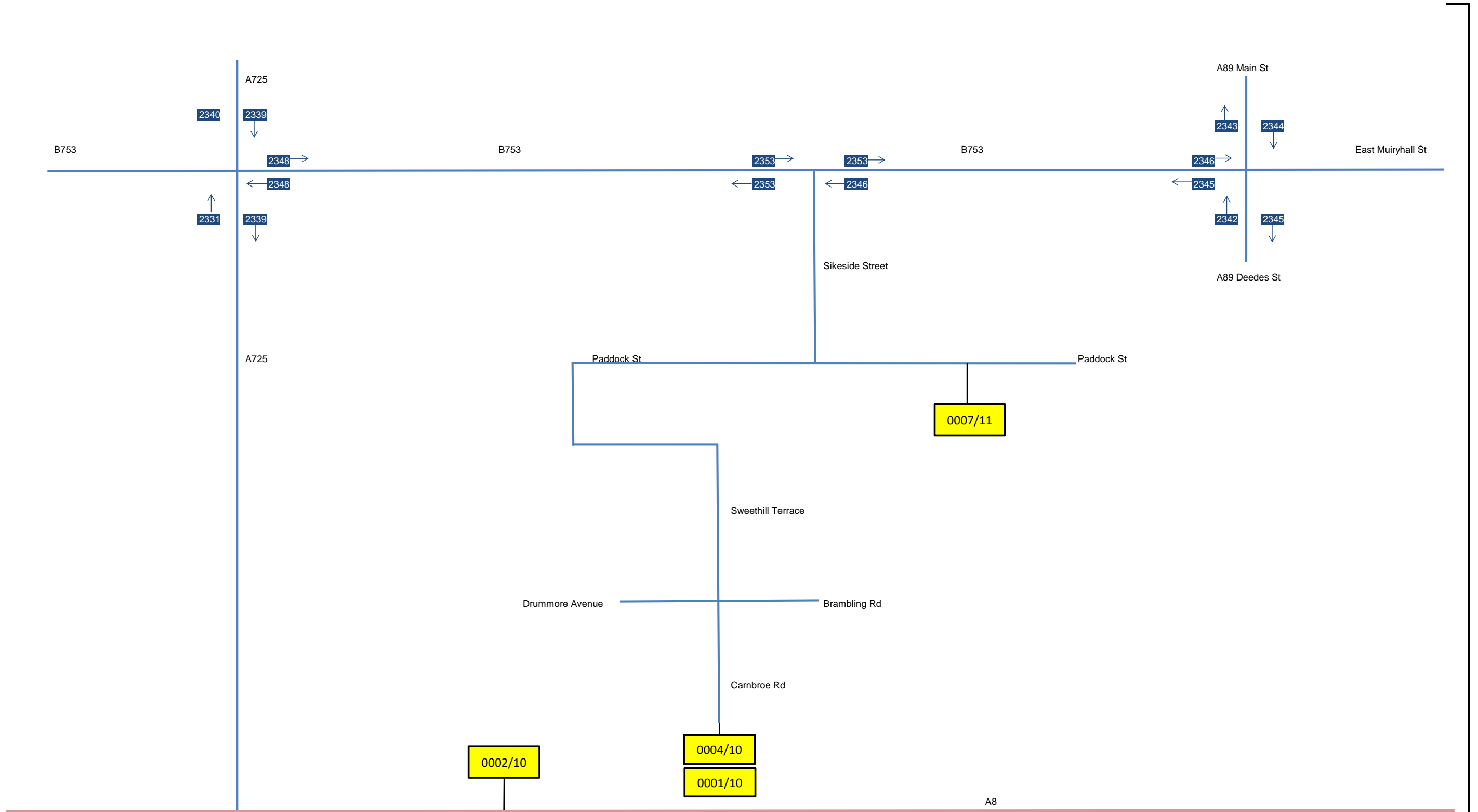
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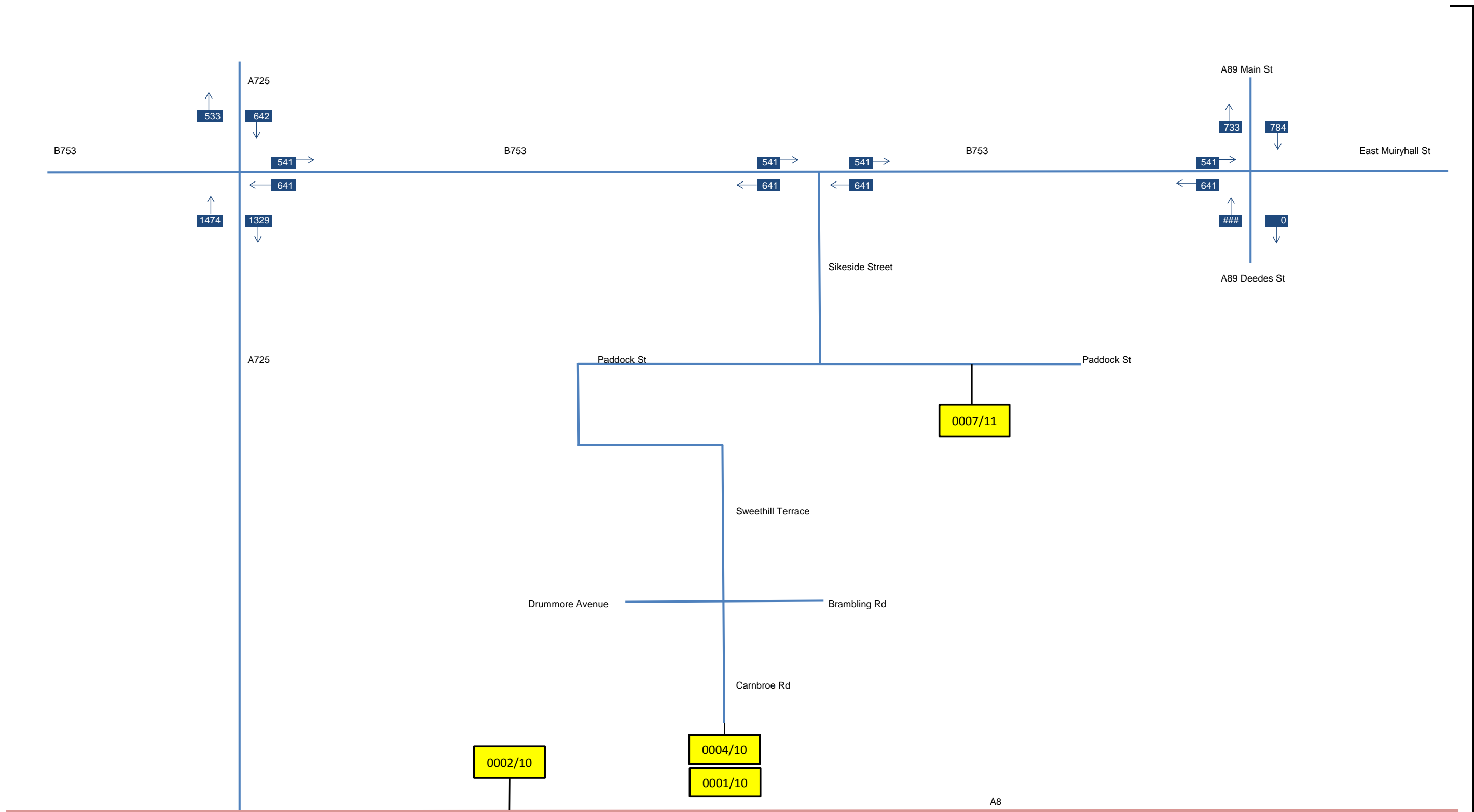
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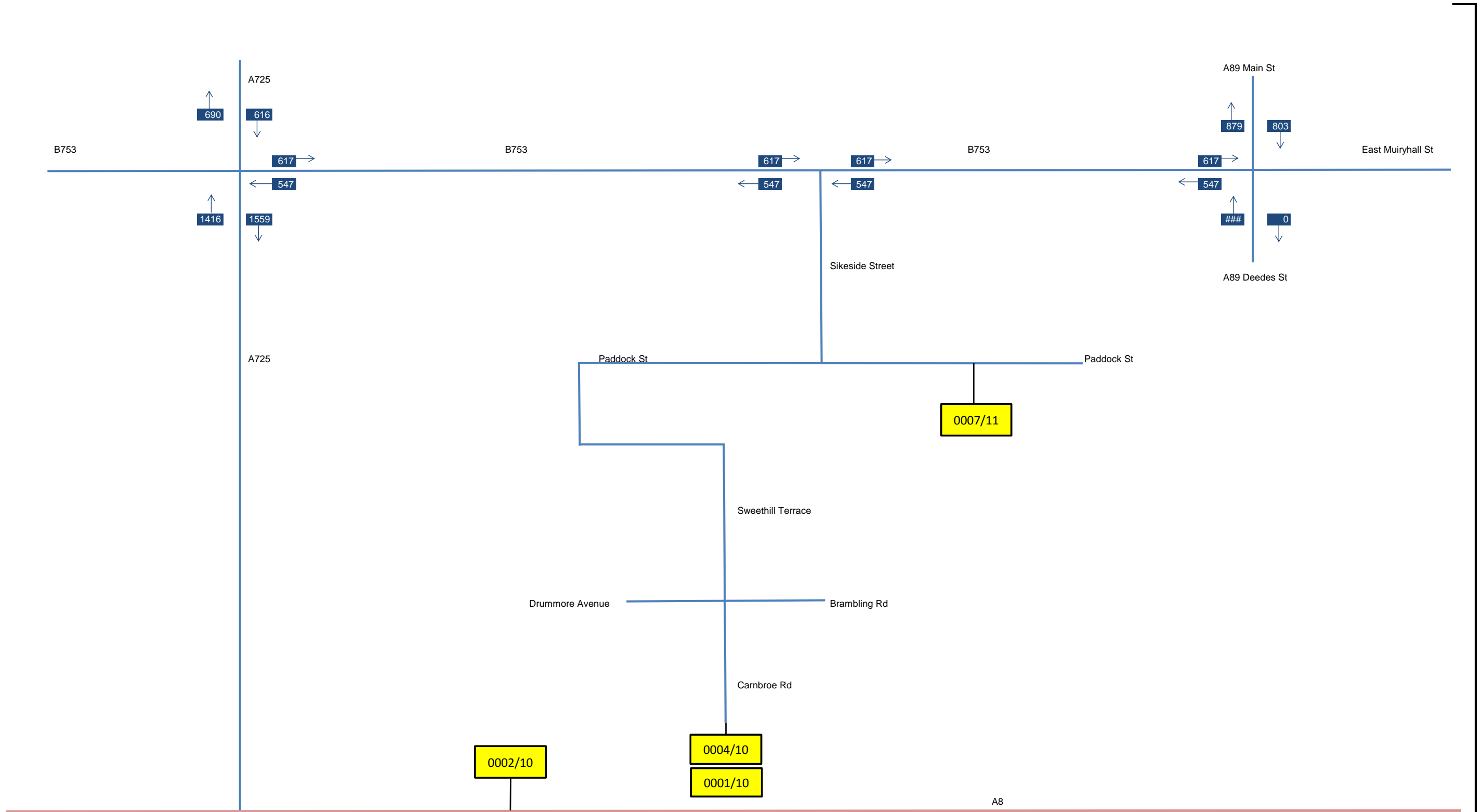




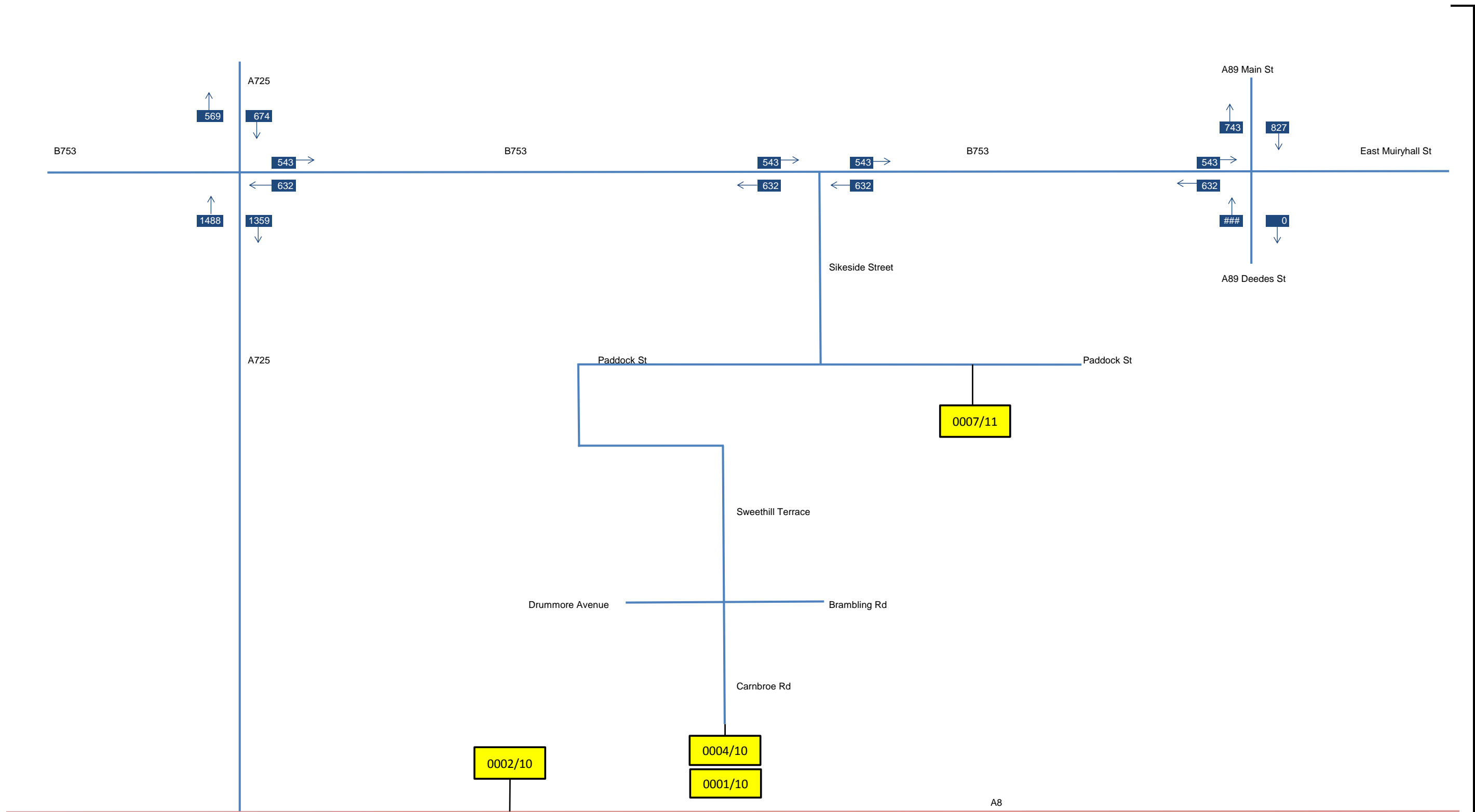
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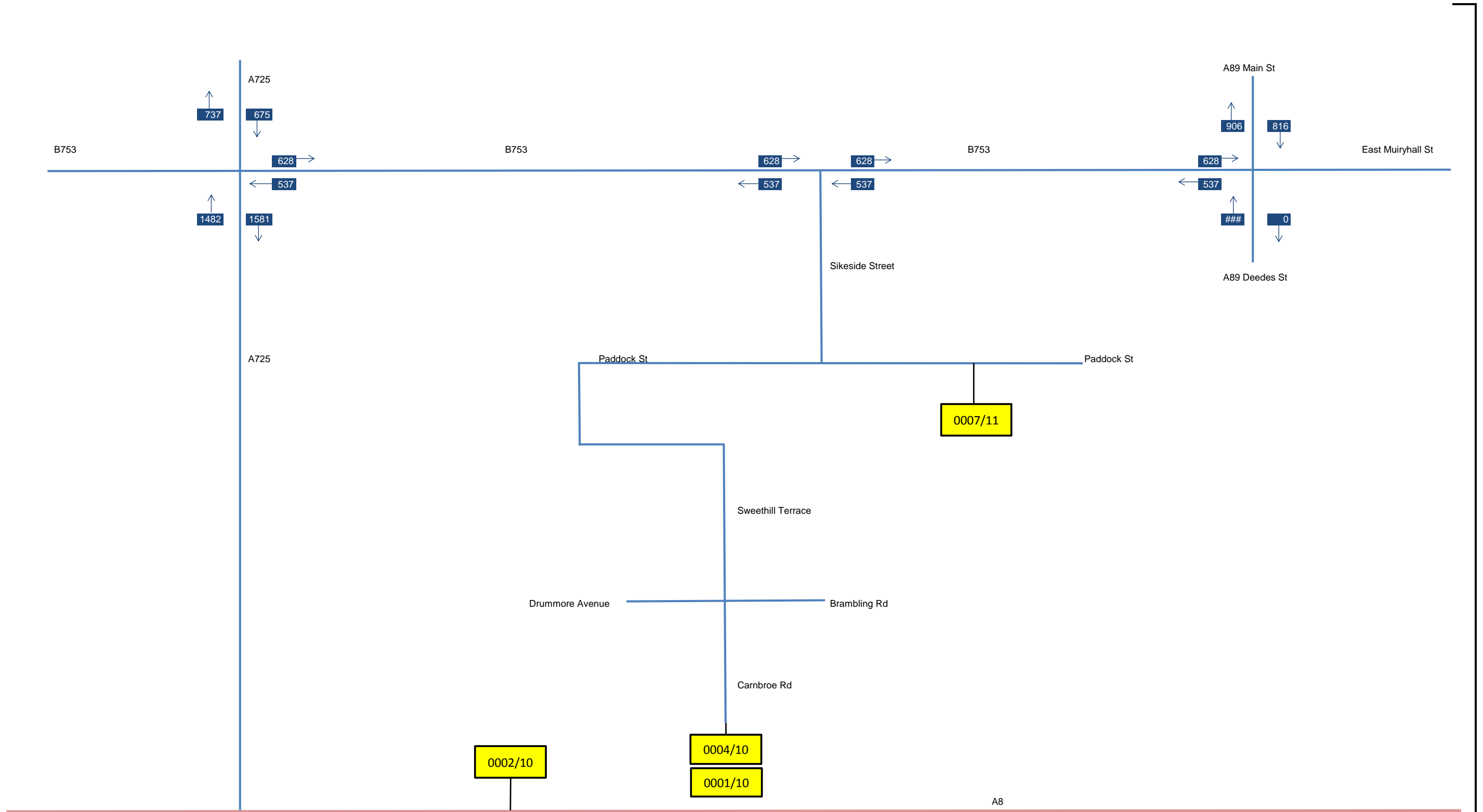
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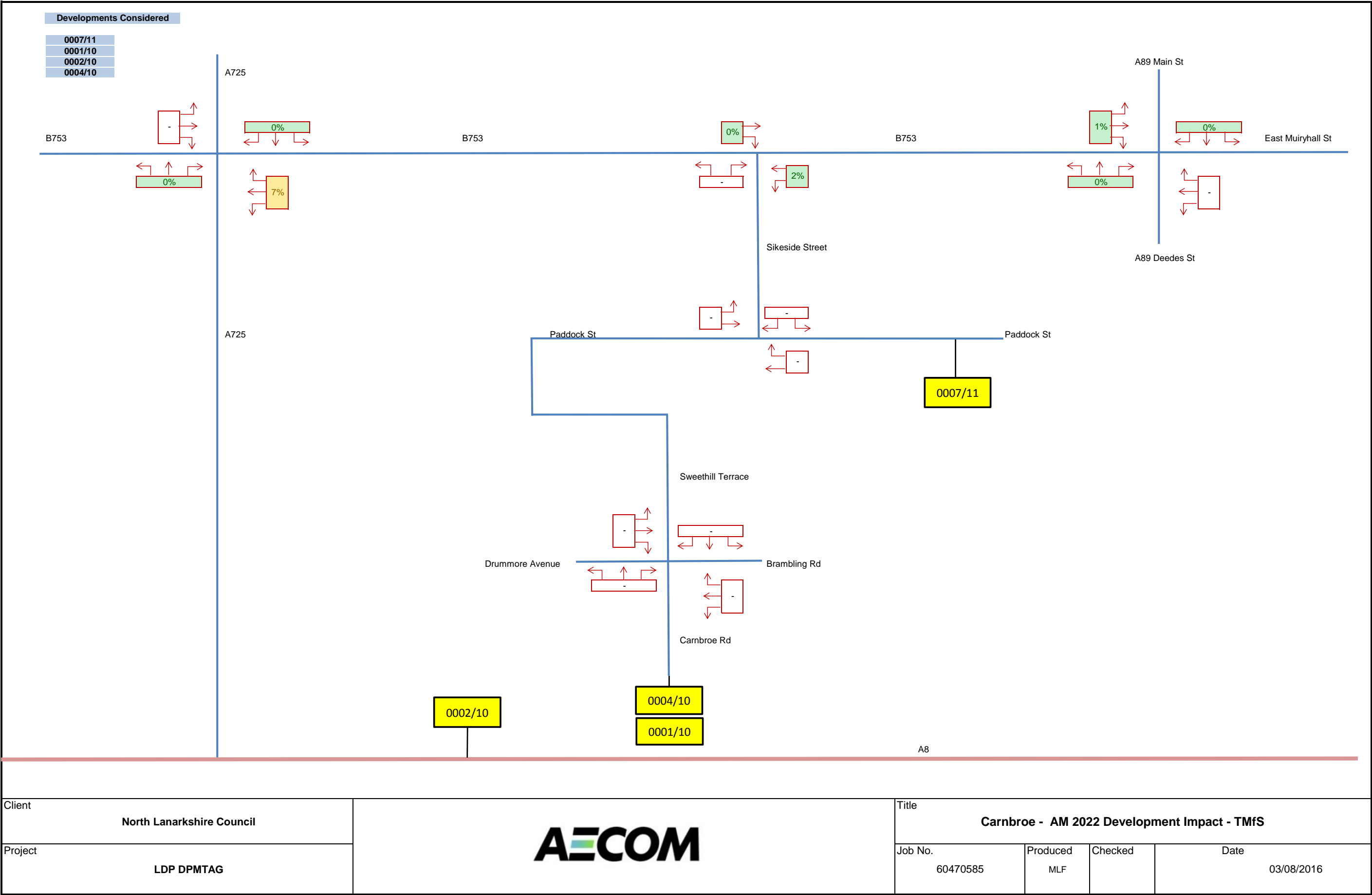
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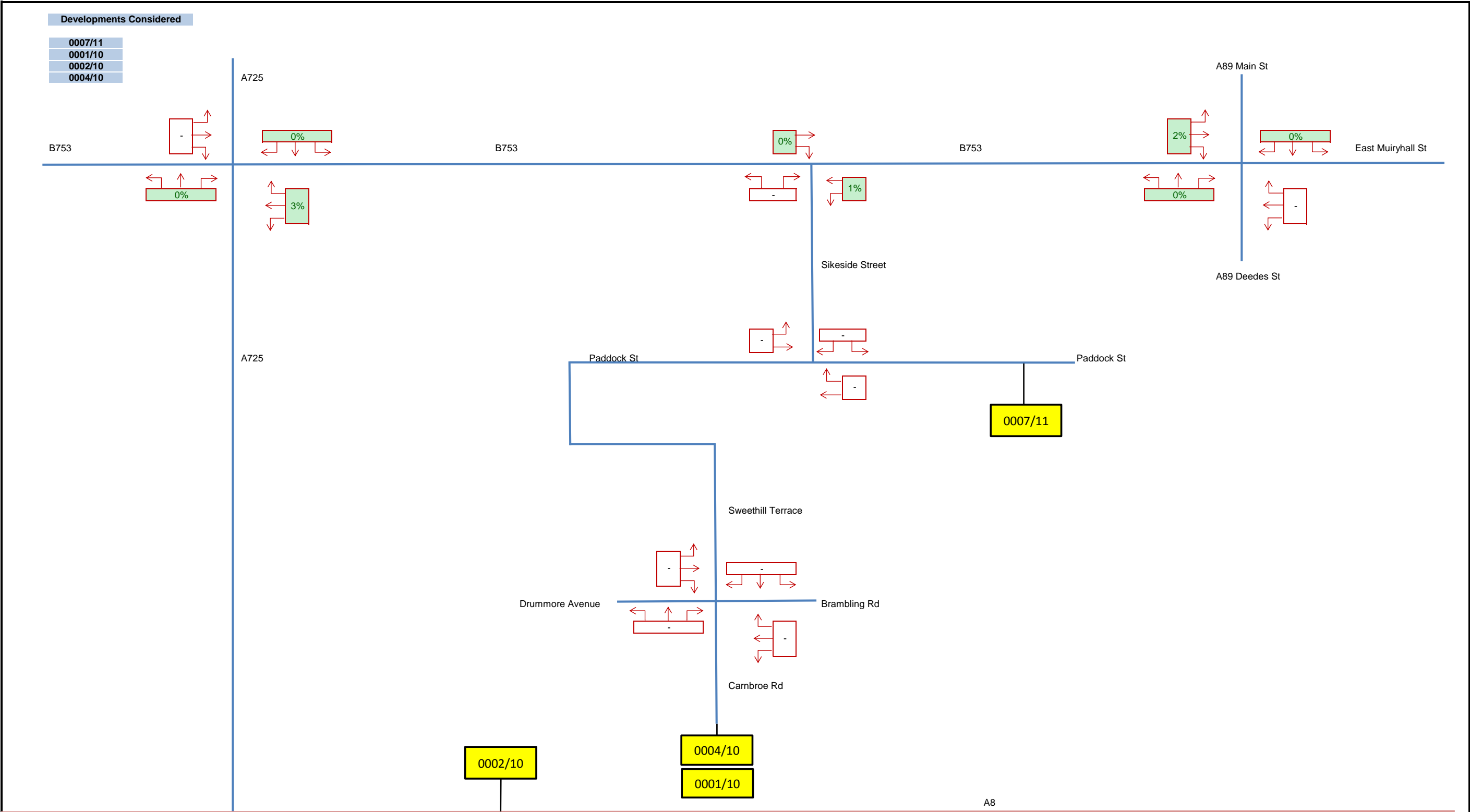


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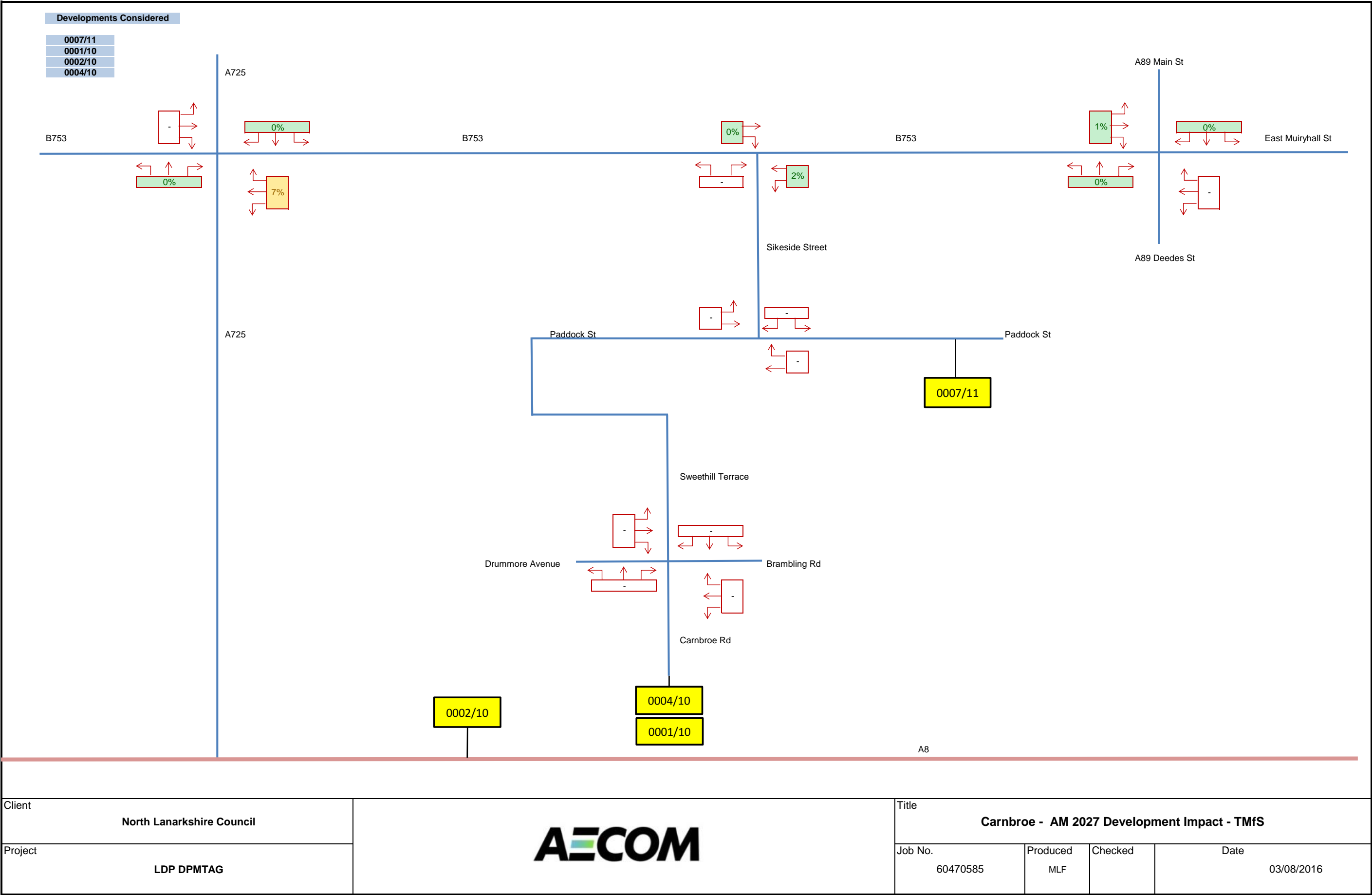


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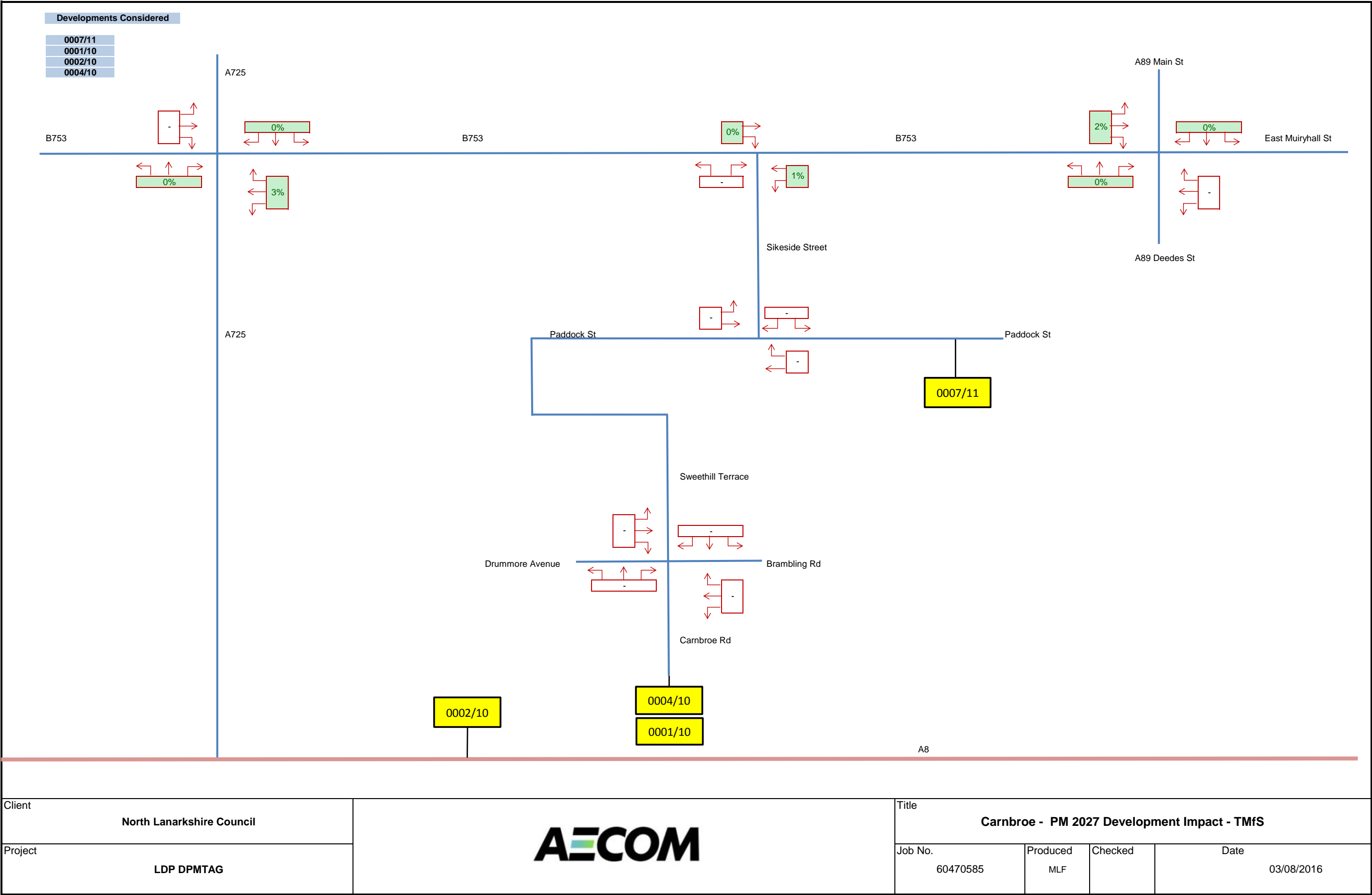
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