

# Annex A: Lendal Right Turn Facility - Design Options

June 2013



# 1 Option 1 - Existing Layout (do nothing)

## Description

Pedestrian refuge island in front of Museum Gardens with keep clear road markings and bus stop.

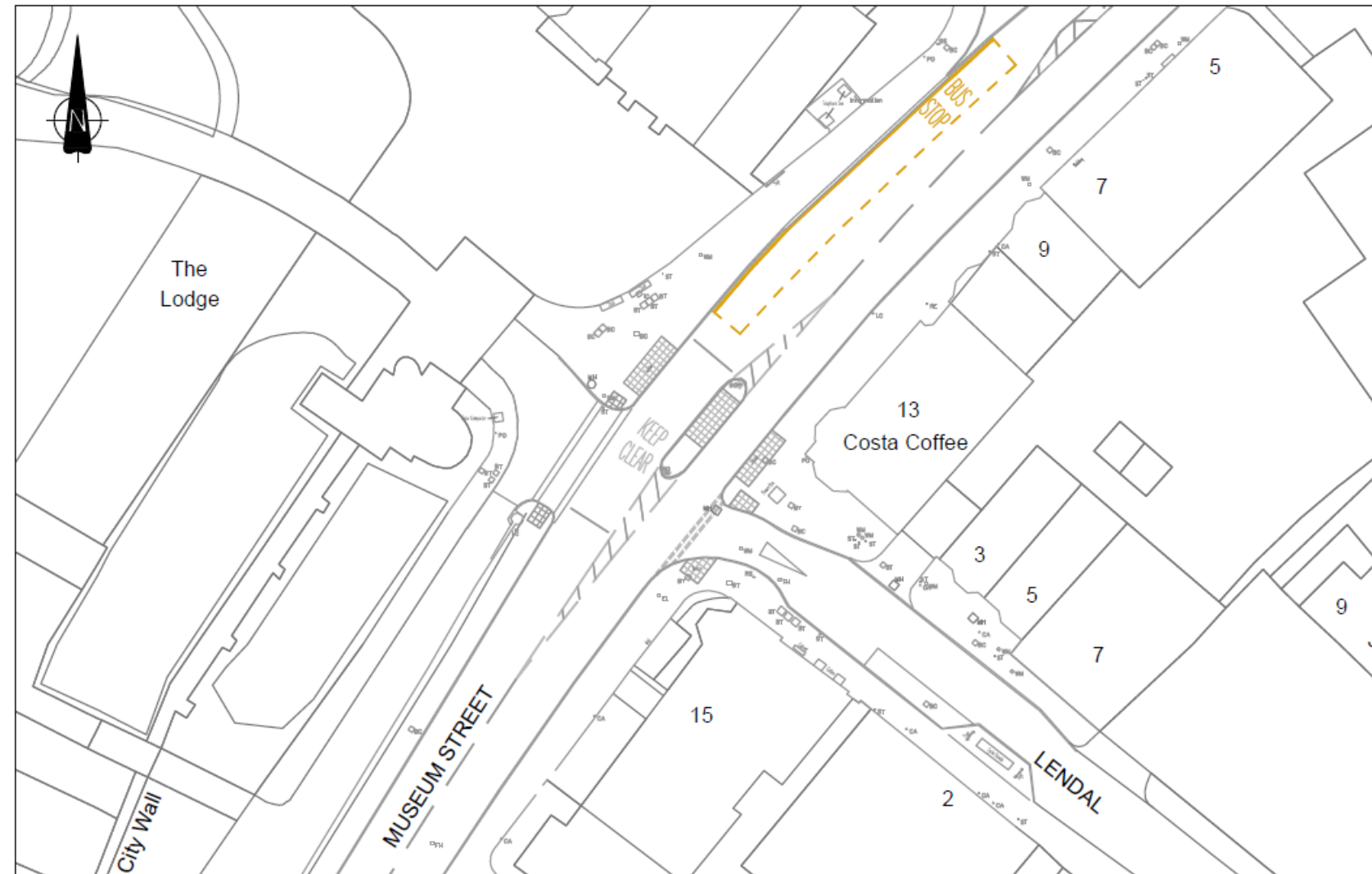
## Advantages

- Minimum cost– no physical works required other than sign changes
- Pedestrian crossing facility will be retained

## Disadvantages

- Vehicles larger than a car turning right from Lendal will encroach onto the pedestrian refuge island and/or footway bringing them into conflict with pedestrians

**Estimated Construction Cost;** None except for signage costs



# 2 Option 2 – Minor Works Option

## Description

Kerbing realignment on Lendal

Relocation of bollard on existing refuge island on Museum St

Reduction in size of the refuge island on Museum St

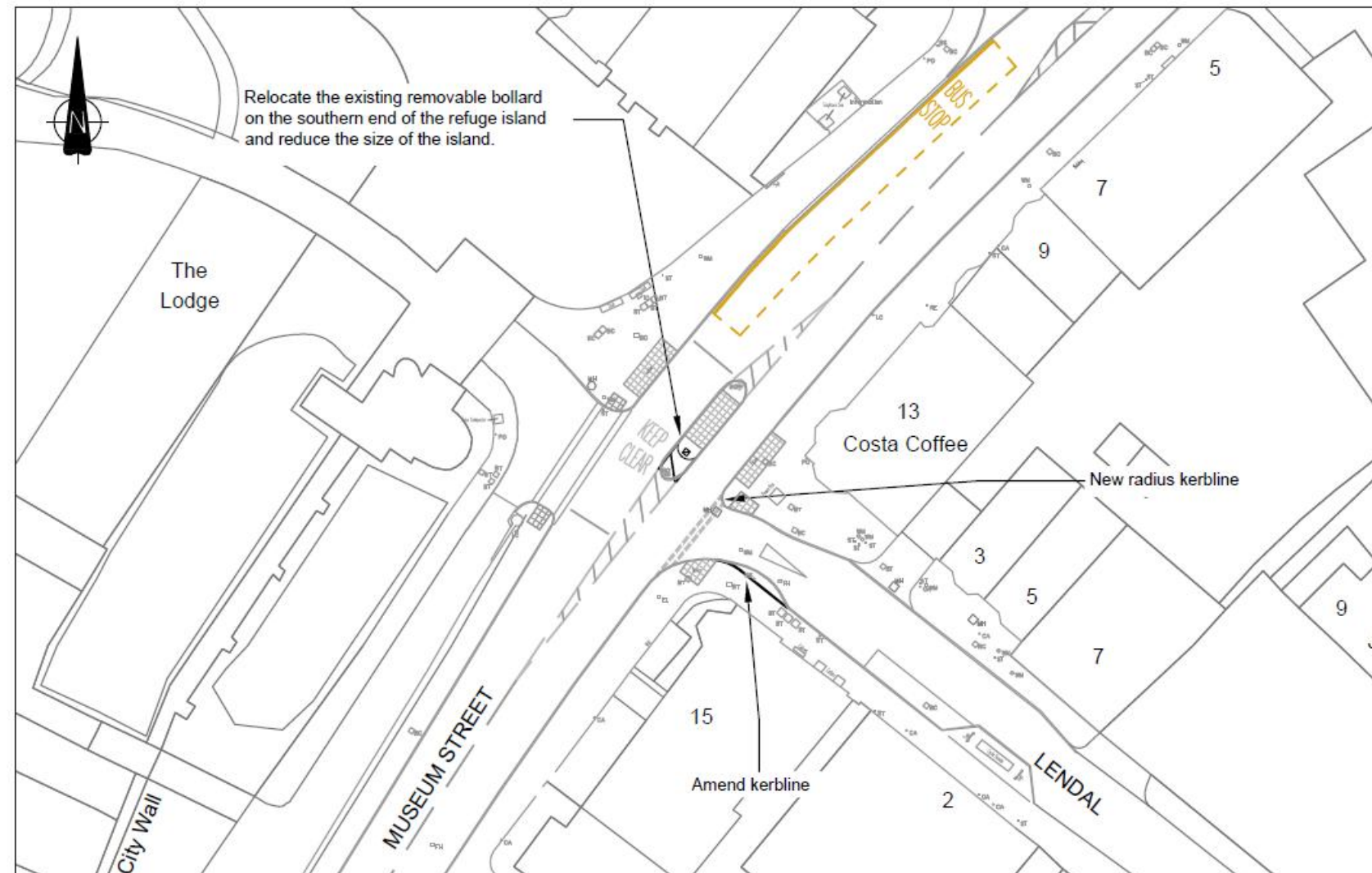
## Advantages

- Low cost option
- Quick installation
- Pedestrian crossing facility will be retained

## Disadvantages

- Right turning vehicles over 7.5t from Lendal would encroach onto footways bring vehicles into conflict with the pedestrian crossing users.

**Estimated Construction Cost;** £15K to £20K Approx



# 3 Option 3 – Remove Refuge Island on Museum Street

## Description

- Introduction of hazard warning centre line road markings
- Removal of central refuge island
- Kerbing/footway realignment of Lendal
- Relocation of pedestrian crossing points
- Introduction of uncontrolled crossing point to the south west of Museum Street/Lendal junction

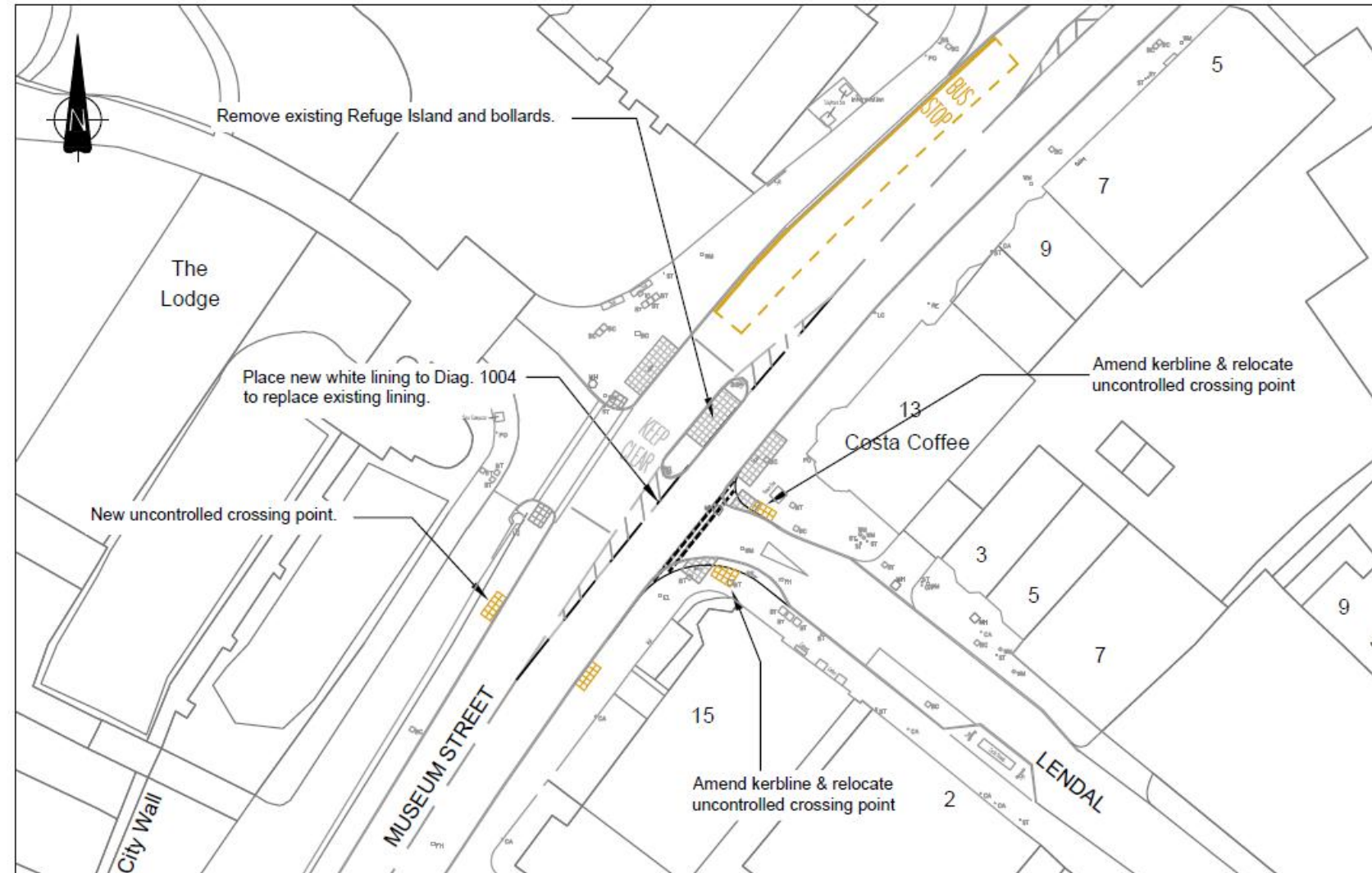
## Advantages:

- A low cost option
- Quick installation
- Kerbing realignment and relocation of pedestrian crossing points will reduce the possibility of vehicles overrunning the footway

## Disadvantages:

- Existing pedestrian refuge island will not be retained
- Removal of pedestrian refuge island will introduce poor lane discipline and vehicles could use the wider lane width to overtake other traffic, particularly PSVs at the bus stop and create additional conflict with pedestrians wishing to cross in the vicinity
- Traffic speeds could increase due to wider carriageway lanes and the removal of the pedestrian refuge island

**Estimated Construction Cost;** £20 to £25K Approx





# 4 Option 4 – Zebra Crossing

## Description

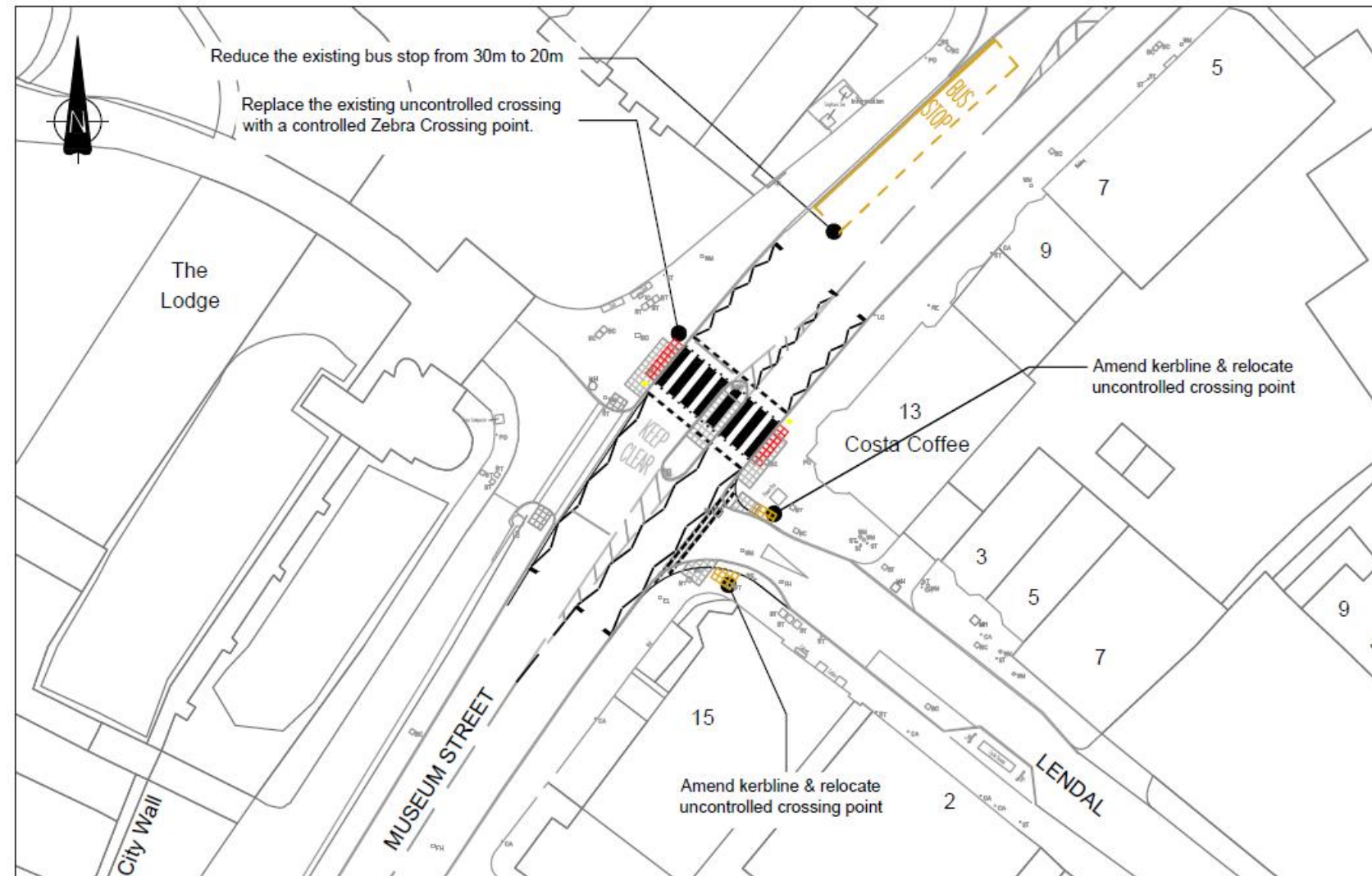
- Installation of a zebra crossing
- Removal of central refuge island
- Kerbing/footway realignment of Lendal
- Reduction in the overall size of bus stop road markings.

## Advantages

- Introduction of a formal controlled crossing facility
- Kerbing realignment and the careful positioning of the zebra crossing will reduce the possibility of vehicles overrunning the footway
- Shortened bus cage will reduce possibility of conflict between stationary PSVs and right turning vehicles (larger than a car) from Lendal.

## Disadvantages

- Formal crossing point is too close to Museum Street/Lendal junction
- Pedestrians are likely to take less care in using the crossing as they have priority over other road users
- Vehicle drivers turning right from Lendal might not see the pedestrians stepping onto the controlled crossing
- Traffic flows will be impeded. At busy times (e.g. school holidays) high pedestrian flows using this crossing could cause vehicular congestion and disruption to vehicular traffic
- Disruptions to bus services are inevitable
- At the end of the trial period it would be difficult to remove the zebra crossing due to high public expectation
- Potential objections from York Civic Trust - the introduction of a zebra crossing could have a negative impact on the vista of the York Minster and on the immediate area outside the Museum Gardens entrance
- Bus stop will be too short.



**Estimated Construction Cost;** £35 to £40K Approx

# 5 Option 5 – Raised Junction Table

## Description

- Introduction of a raised table junction
- Removal of central refuge island
- Kerbing/footway realignment of Lendal
- Reduction in the overall size of bus stop road markings
- Relocation of pedestrian crossing points
- Introduction of uncontrolled crossing point to the south west of Museum Street/Lendal junction

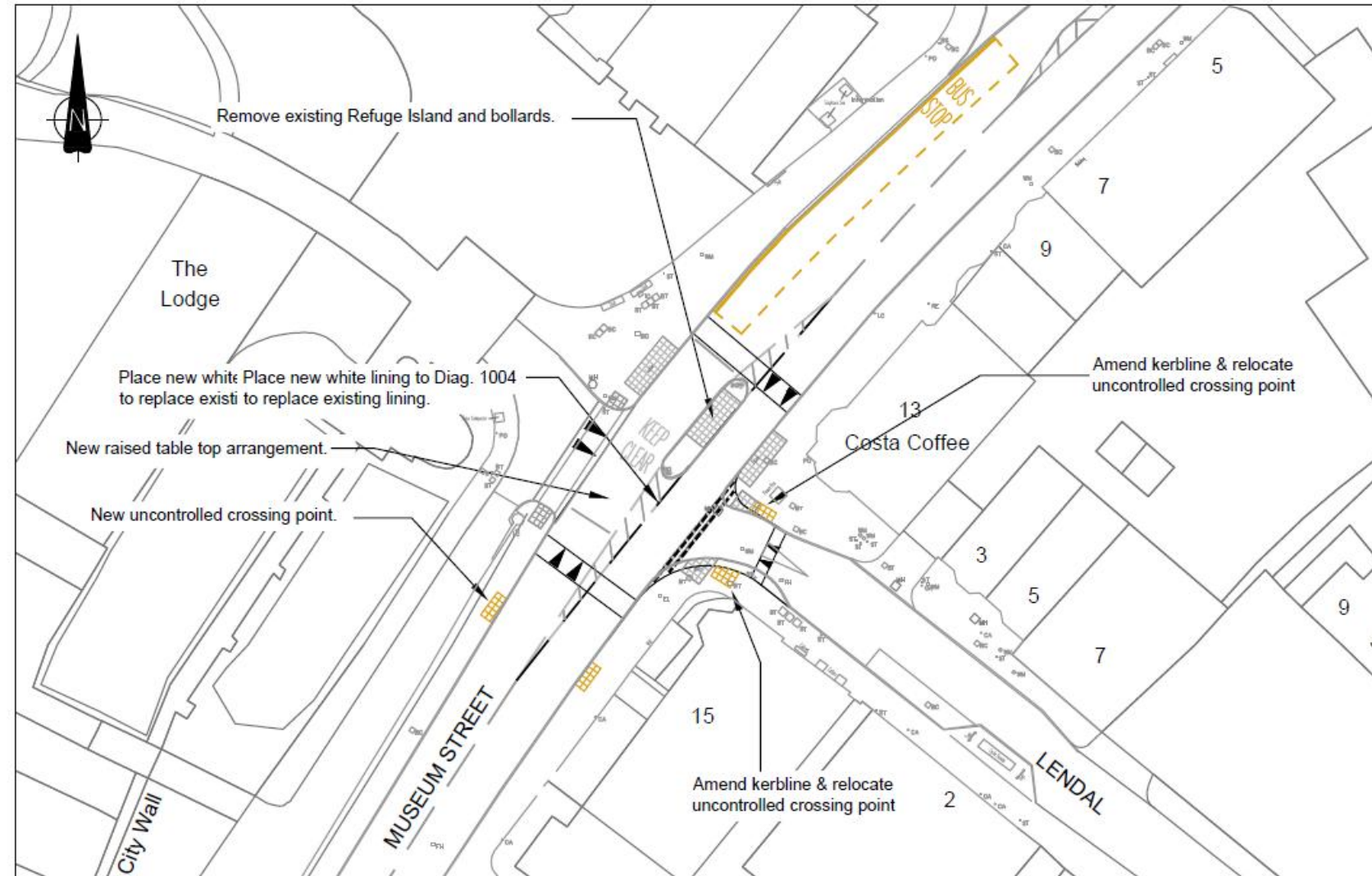
## Advantages

- Vehicular speeds would reduce
- At the end of the trial period this traffic calming feature could be left in-situ as a pedestrian facility without significantly affecting traffic flows
- Kerbing realignment and relocation of pedestrian crossing points will reduce the possibility of vehicles overrunning the footway

## Disadvantages

- Existing pedestrian refuge island will not be retained
- Expensive
- Lengthy installation period
- Visually impaired pedestrians would find it difficult to locate crossing points
- Likely to be unpopular with bus operators and emergency services
- Not standard practice to introduce traffic calming features of this nature on the Inner Ring Road

**Estimated Construction Cost;** £55 to £60K Approx





# 6 Option 6 – Traffic Signalised Junction

## Description

- Traffic signal controlled junction incorporating pedestrian crossing facilities
- Removal of central refuge island
- Kerbing/footway realignment of Lendal
- Reduction in the overall size of bus stop road markings
- Relocation of pedestrian crossing points

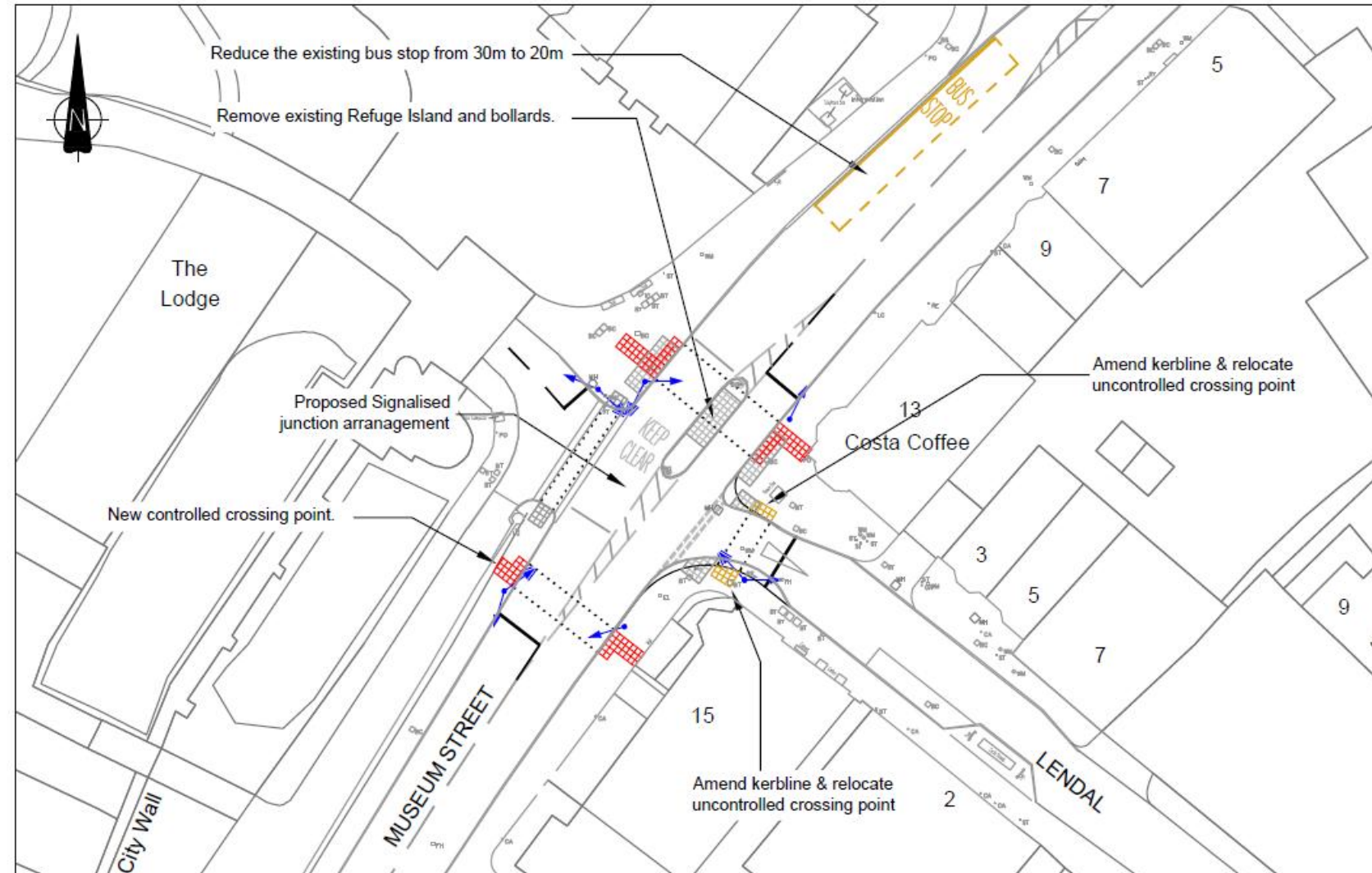
## Advantages

- Formal pedestrian crossing facilities would be provided
- Traffic and pedestrians would be separated and independently controlled
- Right turn manoeuvres out of Lendal onto Museum Street could be negotiated without encroaching onto the surrounding footways

## Disadvantages

- Expensive
- Lengthy installation period
- Traffic flows will be impeded. At busy times (e.g. school holidays) high pedestrian flows using this crossing could cause additional vehicular congestion and disruption to vehicular traffic;
- After the trial period has ended and Lendal bridge re-opened the signals would have to be removed due to traffic flows and volumes
- Proximity of the proposed signals to the Museum St / St. Leonard's Place junction – unless carefully managed traffic could back up on the network causing gridlock and thus negating any advantage to buses and emergency vehicles
- Disruption to bus services are inevitable
- At the end of the trial period it would be difficult to remove the traffic signals due to high public expectation
- Potential objections from York Civic Trust - the introduction of a signalised junction could have a negative impact on the vista of the York Minster and on the immediate area outside the Museum Gardens entrance
- Traffic delays/congestion outside hours of trial period particularly the morning peak period

**Estimated Construction Cost;** £70 to £75K Approx



# 7 Option 7 – Mini Roundabout

## Description

- Mini roundabout
- Removal of central refuge island
- Kerbing/footway realignment of Lendal
- Reduction in the overall size of bus stop road markings
- Relocation of pedestrian crossing points

## Advantages

- Quick installation
- Kerbing realignment and relocation of pedestrian crossing points will reduce the possibility of vehicles overrunning the footway
- Shortened bus cage will reduce possibility of conflict between stationary PSV's and right turning vehicles (larger than a car) from Lendal

## Disadvantages

- Difficult to achieve any deflection on the approaches due to land constraints
- Historically roundabouts have a poor safety record for pedestrians
- This road layout could give an impression that there is a right turn from Museum Street into Lendal
- There is a potential collision risk for vehicles exiting Lendal - traffic flows emerging from Lendal are light compared to those of Museum Street and such a manoeuvre may not be anticipated
- Could be perceived as a 'U' turn facility for vehicles erroneously driving towards Lendal bridge but only cars would be able to complete this manoeuvre – as there physically is not enough available space
- Existing pedestrian refuge island will not be retained
- Kerbing realignment and relocation of pedestrian crossing points will reduce the possibility of vehicles overrunning the footway
- Shortened bus cage will reduce possibility of conflict between stationary PSVs and right turning vehicles (larger than a car) from Lendal.

▪**Estimated Construction Cost;** £25 to £30K Approx

