Technical Note

DC3442 The Willows, Colchester – 20mph Speed Limit

Job Number:	**DC3442**
Doc Ref:	**Technical Note**
Author:	**Jamie Twinn**

Document History

Revision	Purpose	Originated	Checked	Approved	Date
N/A	Issued to HLO	JT	ADJ	CB	30/10/2015

1. Introduction

1.1 Project Background

The Colchester Local Highway Panel has supported the request for this scheme, which originated from Councillor Mudie and Councillor Barton and has the support of Rt Hon Sir Bob Russell MP. There are also reports of the local residents supporting the implementation of a 20mph speed limit on 'The Willows Estate'.

2. Existing Conditions

2.1 Location / Land Use

- 'The Willows Estate' is considered to be made up of The Willows, Holm Oak, Silverthorne Close, Snowberry Grove, Mayberry Walk, Wych Elm and Crosstree Walk.
- 'The Willows Estate' is located off B1025 Mersea Road, it is mainly a residential area with some neighbourhood shops located near its junction with Mersea Road.
- The estate has a green recreation area which could potentially lead to desire lines for pedestrians to cross the road throughout the site.

Location map	*Aerial imagery*
	

Fig 1.1 the location map and aerial imagery The Willows Estate, Colchester.

2.2 Site Observations

All the roads within the estate are at present 30mph by virtue of streetlighting, a summary of the main findings are below:

- May be difficult to combine new signs on all lamp columns at this site due to their nature of construction. As such potentially new posts will be required as appropriate.

2.3 Collision Data

There have been no recorded collisions at this location in the last 60 months

2.4 Statutory Undertakers Plant

There are known to be a number of statutory plant located at this location, these include:

- *British National Grid*
- *Essex and Suffolk Water*
- *BT Open Reach*
- *Gas Main - Low Pressure*
- *Anglian Water*
- *UKPN*

2.5 Speed Survey Data

A representative five day speed survey was conducted in June 2014 and has been inherited as part of the validation of this project; two additional seven day speed surveys were commissioned in May 2015 to further assess the feasibility of a reduction of the existing speed limit, the results are summarised below:

The Willows, Northern Link		
Eastbound	*Westbound*	*Combined*
17.1mph	*18.4mph*	*17.75mph*
The Willows, Southern Link		
Eastbound	*Westbound*	*Combined*
18.5mph	*17.3mph*	*17.9mph*
Wych Elm		
Eastbound	*South-westbound*	*Combined*
15.0mph	*16.7mph*	*15.85mph*

2.6 Photographs

Wych Elm j/w The Willows	*The Willows - looking North towards Willows Court*	*The Willows j/w Mersea Road*
		
The Willows – looking West at junction with Silverthorne Close	*Silverthorne Close – looking South*	*The Willows – concrete lamp columns*
		

3. Design Options

3.1 20mph Speed Limit

This would require terminal signs at the beginning and end of the restriction, as well as speed repeater signs at designated intervals

3.2 20mph Zone

This would require signs at the start of the limit only, although, would require some form of traffic calming feature every 50 metres to encourage vehicle speeds will keep to a minimum once a vehicle has entered the zone.

4. Recommendation

The speeds highlighted in Paragraph 2.5 indicate the proposed 20mph Speed Limit at this location can be achieved. The scheme meets the requirements of the Essex County Council Speed Management Strategy for a 20mph speed limit by order. This can be implemented without the need for traffic calming measures.

Appendix 2 of this report illustrates a design which may be implemented to provide assurance the scheme is buildable and enforceable. We have looked to utilise existing Lamp Columns where possible, where these are shown we have received approval from the Street Lighting team.

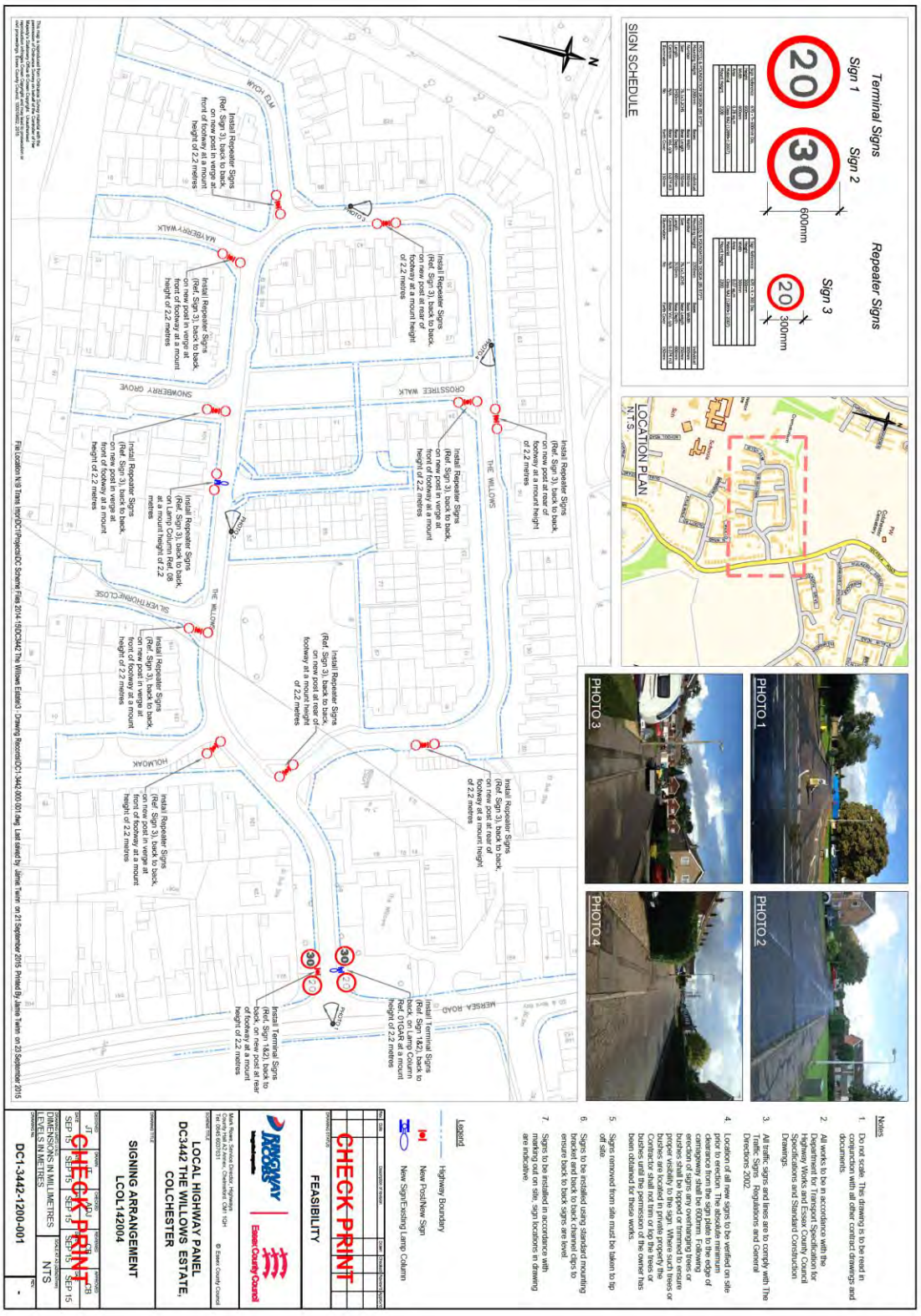
The implementation of the scheme would be subject to commissioning additional funds for the advertising, consultation and construction works and would be subject to the outcome of a statutory consultation procedure. We would recommend a budget of £10,000 is allocated.

Network Management have been consulted and have indicated their support of the scheme.

Appendix A: Highway Boundary Record


Map Showing Public Rights of Way
Footpaths
Bridleways
Restricted Byways
Byways
THE WILLOWS
COLCHESTER
2398370
N/A
FINAL
AS SHOWN
Essex County Council
SNOWBERRY GROVE
SILVERTHORNE CLOSE
HOLM OAK
WYCH ELM
THE WILLOWS
Willows Court
Car Park
Filling Station

Appendix B: Signing Arrangement (DC1-3442-1200-001)



Terminal Signs

Sign 1

Sign Reference	670 - T- 600mm Dia.
Height	600mm
Width	600mm
Area	0,28 sq.m
Material	Class RA2 (12899-1:2007)
Mount Height	2200

POST(S) & FOUNDATION DESIGN (BS 873*)			
Mounting Height	2200mm	Bases	Individual
Number	1	Base Width	350mm
Size	76.1x3.2CHS	Base Length	350mm
Length	3450mm	Base Depth	600mm
Centres	N/A	Base Vol. o/a	0,074 m3
Illumination	No	Earth Cover	150mm

Sign 2

600mm

Repeater Signs

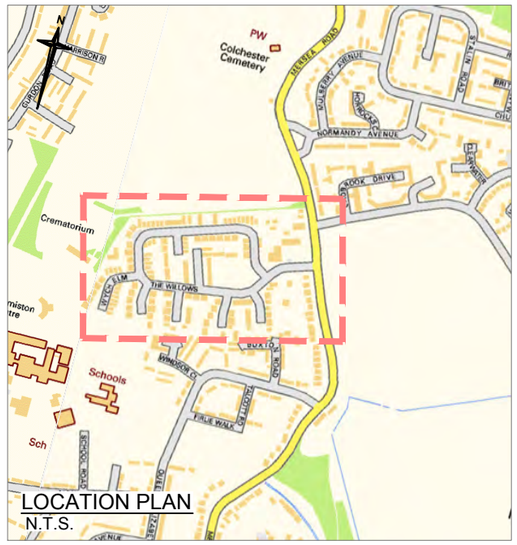
Sign 3

300mm

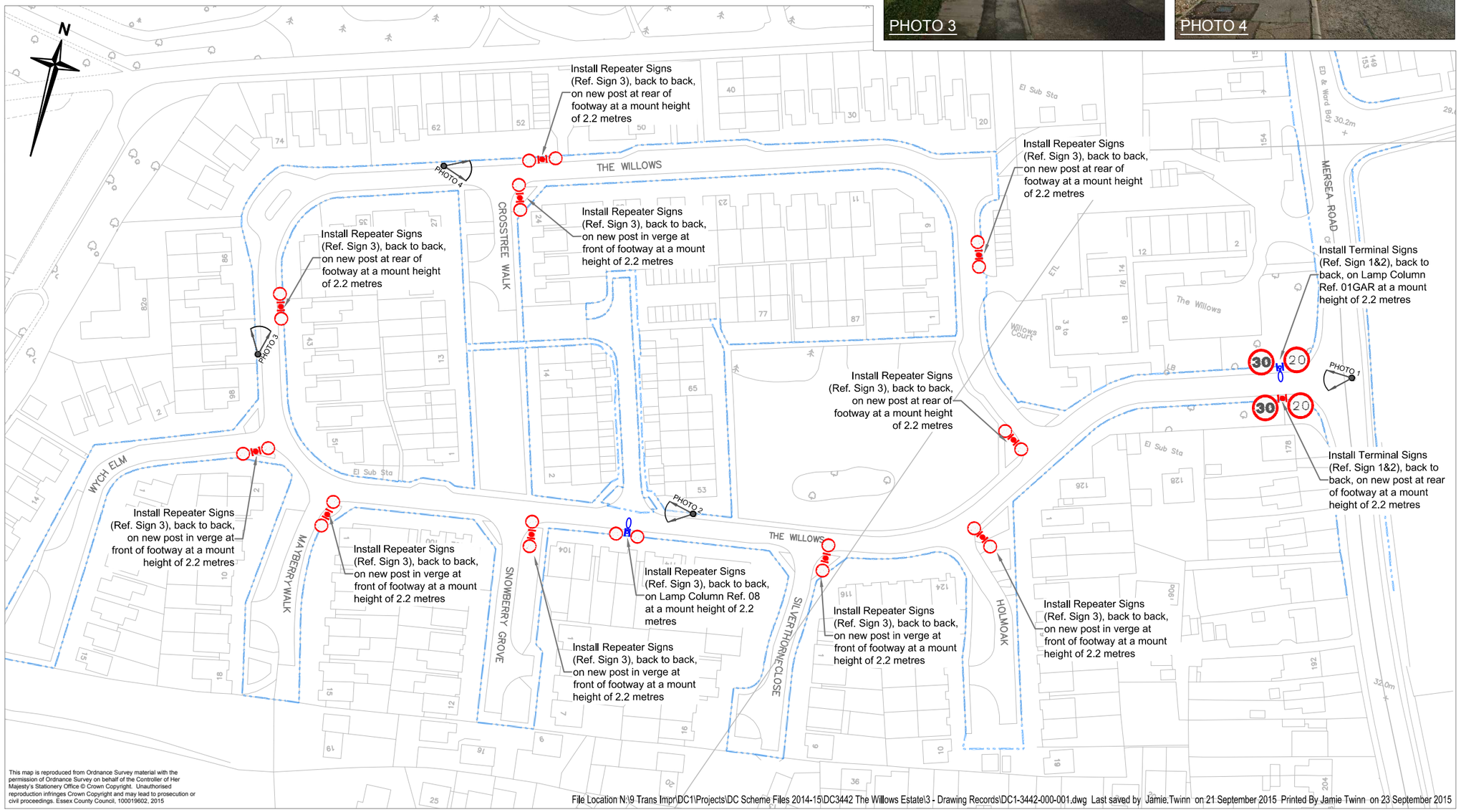
Sign Reference	670 - R - 300 Dia.
Height	300mm
Width	300mm
Area	0,07 sq.m
Material	Class RA2 (12899-1:2007)
Mount Height	2200

POST(S) & FOUNDATION DESIGN (BS 873*)			
Mounting Height	2200mm	Bases	Individual
Number	1	Base Width	350mm
Size	76.1x3.2CHS	Base Length	350mm
Length	3150mm	Base Depth	600mm
Centres	N/A	Base Vol. o/a	0,074 m3
Illumination	No	Earth Cover	150mm

SIGN SCHEDULE



LOCATION PLAN
N.T.S.



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Notes

1. Do not scale. This drawing is to be read in conjunction with all other contract drawings and documents.
2. All works to be in accordance with the Department for Transport Specification for Highway Works and Essex County Council Specifications and Standard Construction Drawings.
3. All traffic signs and lines are to comply with The Traffic Signs Regulations and General Directions 2002.
4. Location of all new signs to be verified on site prior to erection. The absolute minimum clearance from the sign plate to the edge of carriageway shall be 600mm. Following erection of signs any overhanging trees or bushes shall be lopped or trimmed to ensure proper visibility to the sign. Where such trees or bushes are located in private property the Contractor shall not trim or lop the trees or bushes until the permission of the owner has been obtained for these works.
5. Signs removed from site must be taken to tip off site.
6. Signs to be installed using standard mounting bracket and back to back channel clips to ensure back to back signs are level.
7. Signs to be installed in accordance with marking out on site, sign locations in drawing are indicative.

Legend

- Highway Boundary
- New Post/New Sign
- New Sign/Existing Lamp Column

Rev.	Date	Description of revision	Drawn	Checked	Reviewed	Approved

CHECK PRINT

DRAWING STATUS

FEASIBILITY

RINGWAY JACOBS integrated expertise

Essex County Council

Mark Rowe, Service Director, Highways
County Hall A2 Annex, Chelmsford. CM1 1QH
Tel: 0845 6037631

SCHEME TITLE

LOCAL HIGHWAY PANEL DC3442 THE WILLOWS ESTATE, COLCHESTER

DRAWING TITLE

SIGNING ARRANGEMENT LCOL142004

DESIGNED	DRAWN	CHECKED	REVIEWED	APPROVED
JT	JT	ADJ	CB	CB
DATE	DATE	DATE	DATE	DATE
SEP 15	SEP 15	SEP 15	SEP 15	SEP 15

CHECK PRINT

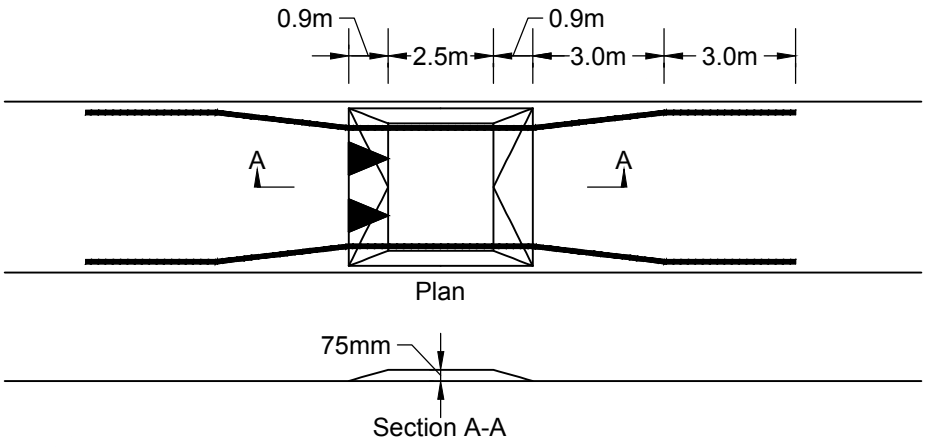
DRAWING UNITS U.N.O.
DIMENSIONS IN MILLIMETRES
LEVELS IN METRES

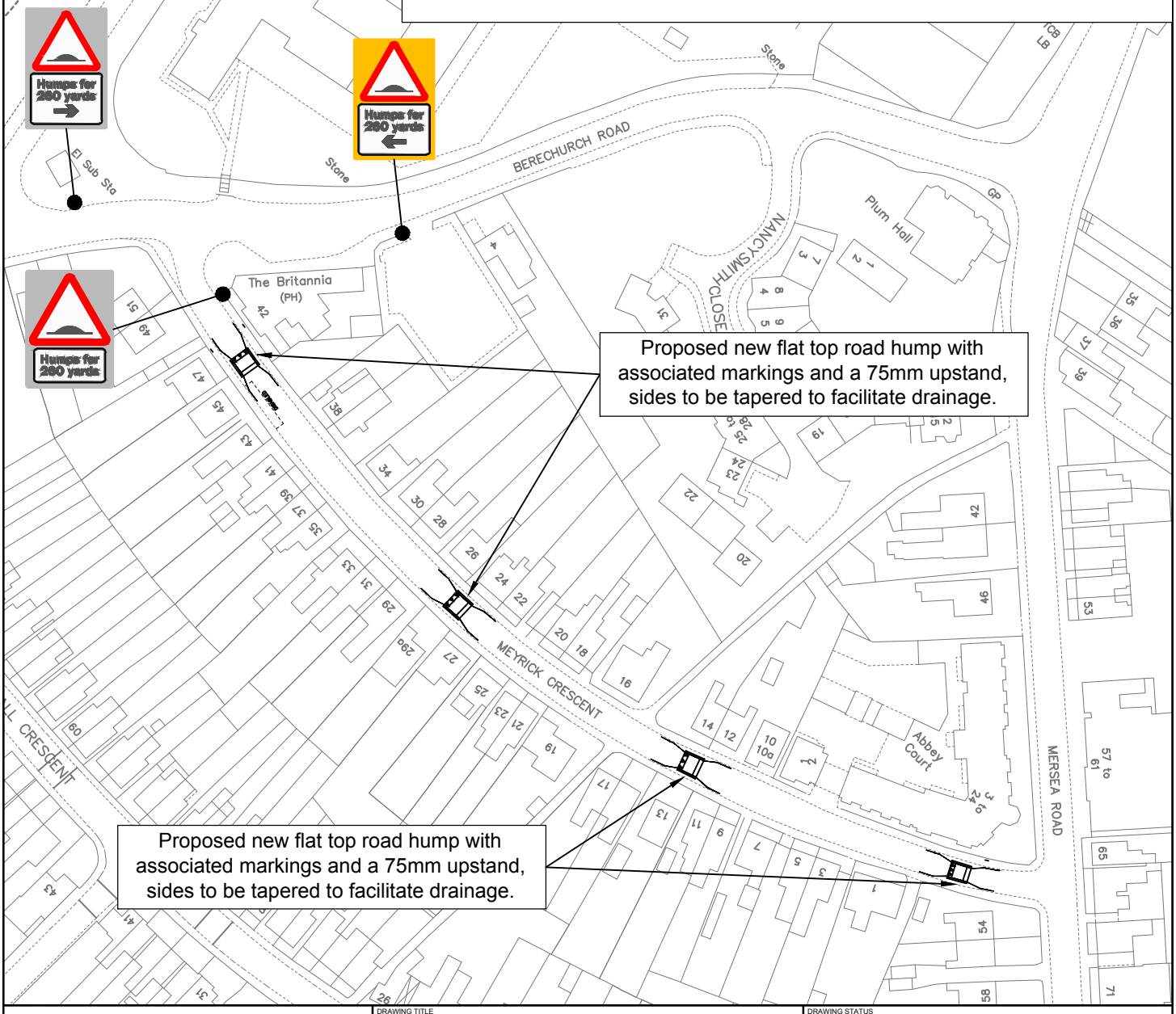
SCALE AT A3 (420x297mm)
NTS

DRAWING No.
DC1-3442-1200-001

REV.
-

ROAD HUMP DETAIL (NTS)





RINGWAY JACOBS
Integrated expertise

Essex County Council

Mark Rowe, Service Director, Highways
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Tel: 0845 6037631

File Location N:\9 Trans Impr\DC1\Projects\DC Scheme Files 2014-15\DC3336 Meyrick Crescent, Colchester\3 - Drawing Records\DC1_3336_00_02 (RA).dwg
Last saved by Richard Aveyard on 8 December 2015 Printed By Richard Aveyard on 8 December 2015

DRAWING TITLE

MEYRICK CRESCENT, COLCHESTER
LCOL142026

PROPOSED TRAFFIC CALMING GENERAL ARRANGEMENTS

DRAWING STATUS

FOR CONSULTATION

Rev.	Date	Description of revision	Drawn	Checked	Review'd	Approv'd

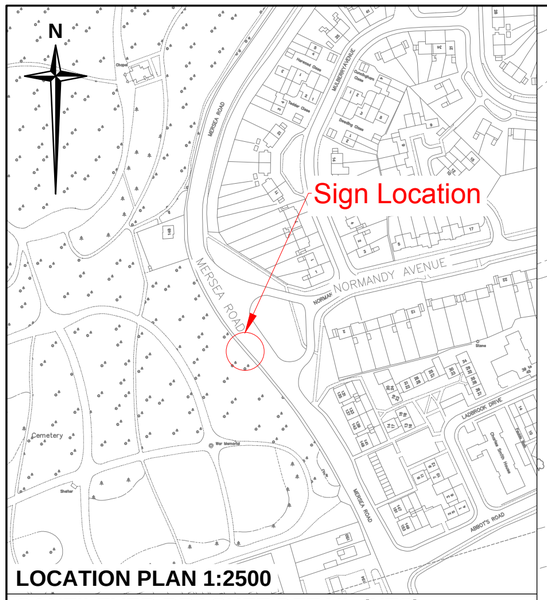
DESIGNED	DRAWN	CHECKED	REVIEWED	APPROVED
RDA	RDA	IHJ	RDA	NF
DATE 02/12/15	DATE 02/12/15	DATE 02/12/15	DATE 02/12/15	DATE 02/12/15

DRAWING UNITS U.N.O.: As Shown

SCALE AT A4 (210x297mm): 1:1250

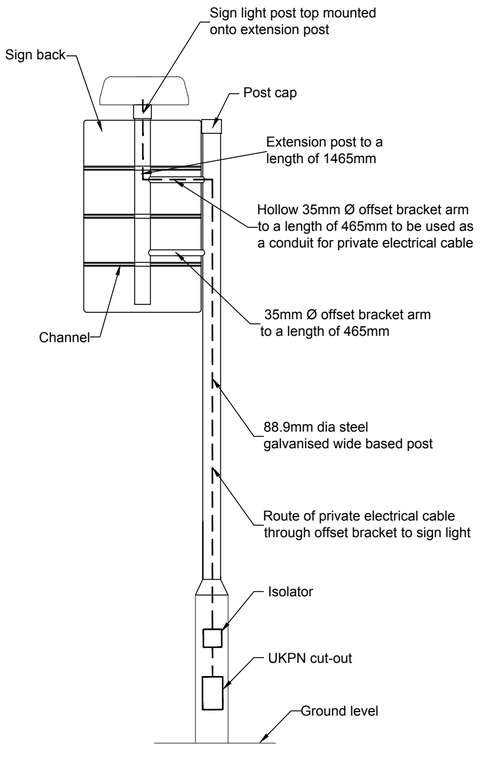
DRAWING No.: **DC1-3336-00-001**

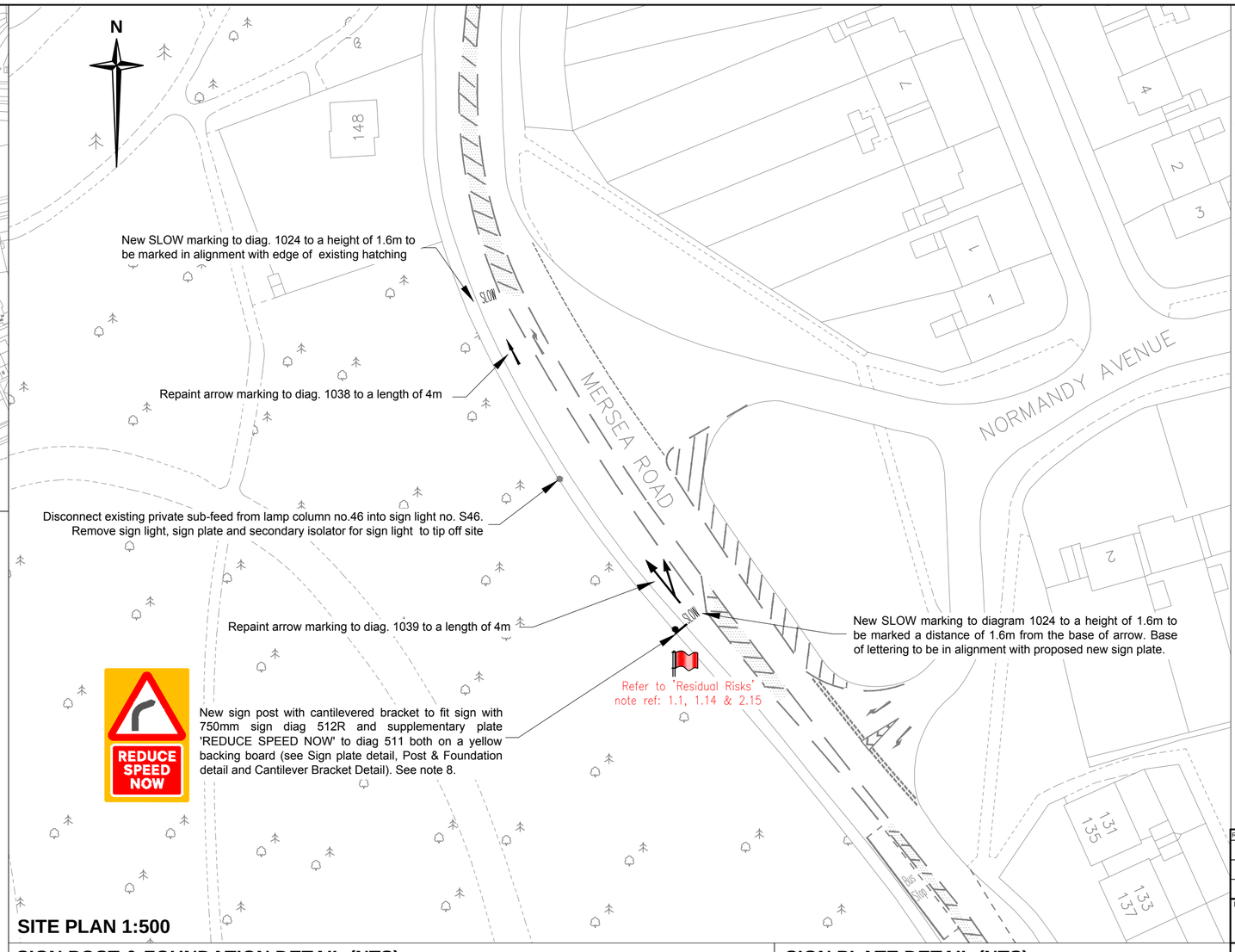
REV.: -



LOCATION PLAN 1:2500

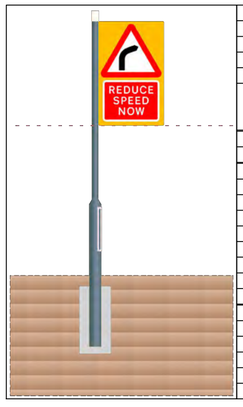
CANTILEVER BRACKET DETAIL (NTS)





SITE PLAN 1:500

SIGN POST & FOUNDATION DETAIL (NTS)



POST(S) & FOUNDATIONS	
Assembly Name	HI4167
Author	KJ
Reference	B1025 Mersea Rd Colchester
Scheme Reference	DC3501
Description	Cantilevered sign to diag. 512R & 511
Illumination	Yes
Mounting Height	2100
Post Manufacturer	(Unspecified)
Post Model	Round Steel Post with Housing/GenericS235CHS 168WBr3
Post Type	Steel/S235;S235J2H;A283D
further post info	
Post Shape	Circle
Post Size	88.9 diam x 4.0 thickness.
Number	1
Centres	-
Length	Total = 4712.5, above ground = 3713
No. of Foundations	1
Foundation Depth	950.0
Foundation Width	450.0
Foundation Length	450.0
Foundation Volume	0.192
Earth Cover	150.0

SIGN PLATE DETAIL (NTS)

Scheme Ref.	DC3501		
Sign Ref.	512R & 511	x-height	75.0
Letter colour	N/A	SIGN FACE	
Background	YELLOW	Width	925mm
Border	N/A	Height	1465mm
Material	Class RA2 (12899-1:2007)	Area	1.35sq.m

Notes

1. Do not scale.

2. This drawing is to be read in conjunction with all other contract drawings and documents.

3. All works to be in accordance with the Department for Transport's Specification for Highway Works and Essex County Council Specifications and Standard Construction Drawings.

4. All traffic signs and carriageway markings are to comply with the Traffic Signs Regulations and General Directions 2002 and it's subsequent amendments. Markings are to be white thermoplastic screed with applied solid glass beads unless otherwise stated.

5. Drawings of existing Statutory Undertakers' plant have been obtained and are included in the drawings provided to the Contractor. The Contractor shall be responsible for ensuring that all Statutory Undertakers' plant is located prior to commencing works and the protection of such plant is required.

6. Lateral clearance of all sign faces to be set back a minimum of 450mm from the edge of carriageway, unless otherwise stated.

7. Any disturbance to existing grassed areas is to be made good with topsoil and seed.

8. Sign post to be erected in accordance with the Essex County Council Street Lighting Operational Plan:
- Sign to have Signature Exlite Signlite EL-S428 sign light unit with 2x8w fluorescent lamps, integral control gear and miniature electronic photo electric cell.
- Sign to have new unmetered UKPN connection to be arranged by Design Technician.

HEALTH & SAFETY RESIDUAL RISKS:

For all residual risks highlighted below, refer to scheme Form CDM DHAZ3 for further details

Ref:	Hazard/Activity
1.1	Underground HV & LV electricity cables in footway.
1.14	Underground HV & LV electricity cables in footway.
2.15	Works adjacent brick wall to cemetery

Rev.	Date	Description of revision	Drawn	Checked	Review'd	Approv'd

DRAWING STATUS

FOR CONSTRUCTION

RINGWAY JACOBS integrated expertise

Essex County Council

Mark Rowe, Service Director, Highways
County Hall A2 Annex, Chelmsford. CM1 1QH
Tel: 0845 6037631

SCHEME TITLE

WARNING SIGN

DRAWING TITLE

MERSEA ROAD COLCHESTER LCOL151003

DESIGNED	DRAWN	CHECKED	REVIEWED	APPROVED
KJ	KJ	IHJ	KJ	NF
DATE 17/06/15	DATE 17/06/15	DATE 25/06/15	DATE 25/06/15	DATE 26/06/15

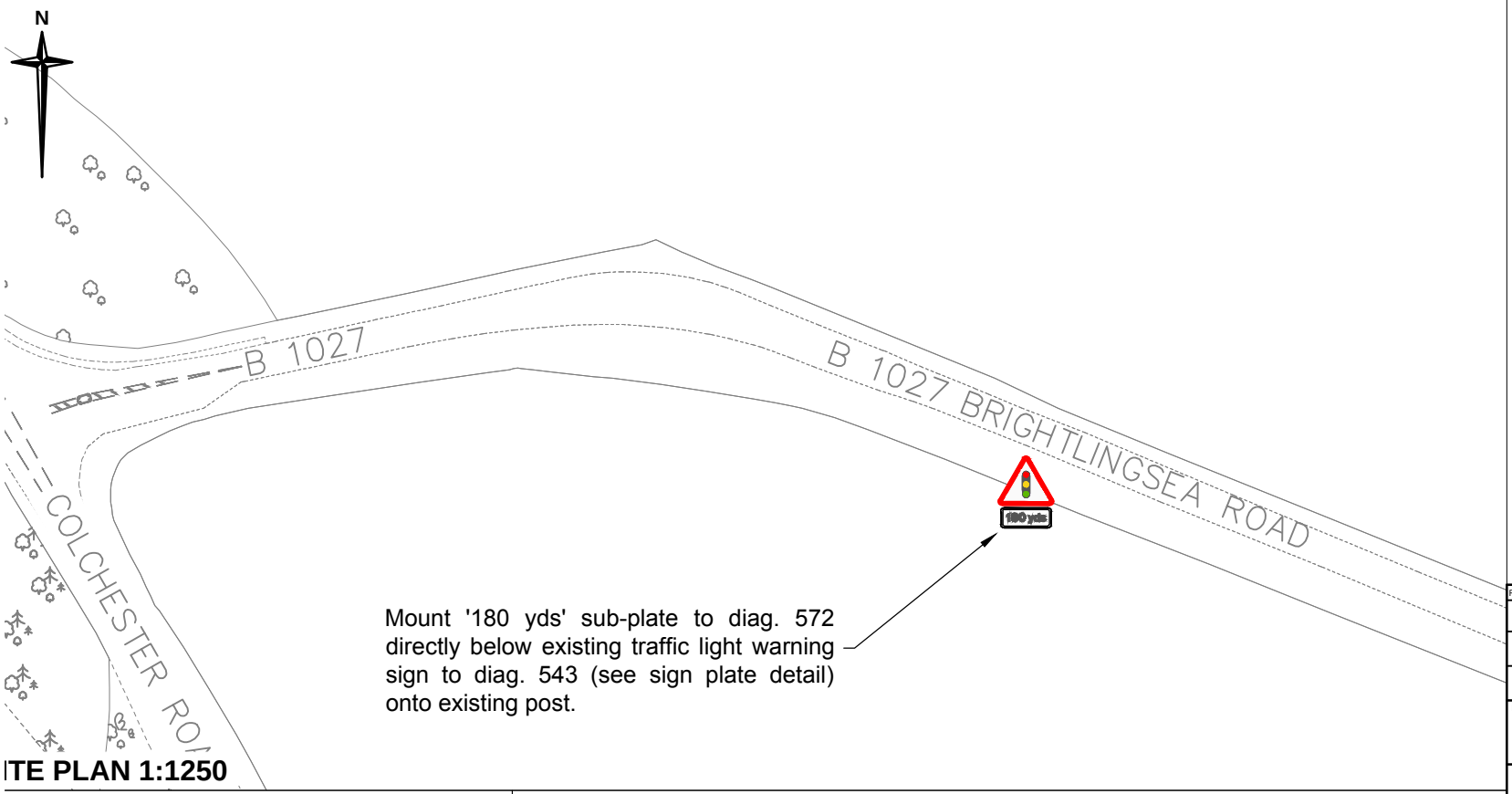
DRAWING UNITS U.N.O. DIMENSIONS IN MILLIMETRES LEVELS IN METRES

SCALE AT A2 (594x420mm) AS SHOWN

DRAWING No. **HI4167-12-001**

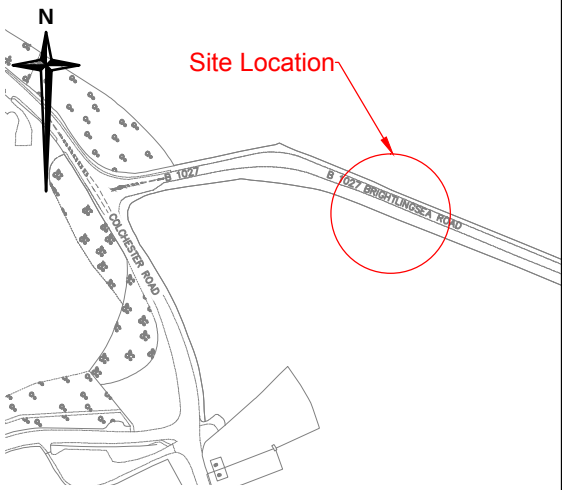
REV. **-**

File Location N:\9 Trans Impr\DC1\Projects\DC Scheme Files 2015-16\HI4167 Mersea Road Colchester WORKS\3 - Drawing Records\HI4167-12-001.dwg Last saved by karen.jenkins on 25 June 2015 Printed By Karen Jenkins on 26 June 2015



Mount '180 yds' sub-plate to diag. 572 directly below existing traffic light warning sign to diag. 543 (see sign plate detail) onto existing post.

ITE PLAN 1:1250



OCATION PLAN 1:5000

Scheme Ref.	DC3098		
Sign Ref.	572 – 180yds sub–plate	x–height	100.0
Letter colour	BLACK	SIGN FACE	
Background	WHITE	Width	930mm
Border	BLACK	Height	375mm
Material	Class RA2 (12899–1:2007)	Area	0.35sq.m

SIGN PLATE DETAIL (NTS)

Notes

1. Do not scale.

2. This drawing is to be read in conjunction with other contract drawings and documents including:
   - HI4166-12-001

3. All works to be in accordance with the Departmer of Transport's Specification for Highway Works and Essex County Council Specifications and Standard Construction Drawings.

4. All traffic signs are to comply with The Traffic Si Regulations and General Directions 2002.

5. Lateral clearance of all sign faces and st furniture to be set back a minimum of 450mm from edge of carriageway, unless otherwise stated.

6. This map is reproduced from Ordnance Sur material with the permission of Ordnance Survey behalf of the Controller of Her Majesty's Statior Office © Crown Copyright. Unauthorised reproduc infringes Crown Copyright and may lead prosecution or civil proceedings. Essex Cou Council, 100019602, 2015

Rev.	Date	Description of revision	Drawn	Checked	Review'd

DRAWING STATUS

FOR CONSTRUCTION

RINGWAY JACOBS Integrated expertise | Essex County Coun

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County Hall A2 Annex, Chelmsford. CM1 1QH
Tel: 0845 6037631

SCHEME TITLE

B1027 BRIGHTLINGSEA ROAD WIVENHOE LCOL151004

DRAWING TITLE

SIGN WORKS DRAWING 2 OF 2

DESIGNED	DRAWN	CHECKED	REVIEWED	APPROVED
KJ	KJ	RA	KJ	NF
DATE 3/9/15	DATE 3/9/15	DATE 24/9/15	DATE 24/9/15	DATE 7/10/

DRAWING UNITS U.N.O.
DIMENSIONS IN MILLIMETRES
LEVELS IN METRES

SCALE AT A4 (297x210mm)
AS SHOW

DRAWING No.
HI4166-12-002

REV.
-

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Feasibility study

Firs Chase, West Mersea – Freight & Speed Limit Signage

Job Number:	**HI4062**
Doc Ref:	**Feasibility Report**
Author:	**Jamie Twinn**

Document History

Revision	Purpose	Originated	Checked	Approved	Date
N/A	Issued to HLO	JT	SM	CB	31/OCT/15

1. Introduction

1.1 Project Background

The Colchester Local Highway Panel has supported the request for this scheme, which originated from West Mersea Town Council. It has been requested consideration is given to making a section of Firs Chase safer for all users and draw attention to hazards that may be presented along this section of road and the roads adjacent.

As part of the validation, the following comments were made:

'Firs Chase is narrow and in places two cars cannot pass which forms a natural calming feature and slow vehicles down. An unofficial give and take system is in place which seems to work.

The installation of a 20mph speed limit would not persuade or deter larger vehicles to use it.

Consideration could be given to placing a weight restriction on Firs Road which would stop all large vehicles using this route (if they do) perhaps gathering evidence on the amount of hgv's using this route should be sought. All hgv's should use B routes.

Suggest a feasibility study to determine whether a restriction could be installed and what effect it will have. Feasibility study should be undertaken providing the information on hgv's usage, look at a weight restriction.'

In order to clarify the brief a site meeting took place with a representative of the Town Council to define the requirements; it was confirmed that considering an enforceable weight restriction would not be beneficial at this location. It was also confirmed that the proposed 20mph speed limit extents should consider the inclusion of Coast Road, as this section of road is being considered by the Town Council for a future request.

2. Existing Conditions

2.1 Location / Land Use

As a result of the comments we received from the Town Council, we looked to assess the surrounding area rather than just Firs Chase.

- Firs Chase, Coast Road, City Road, Firs Hamlet, The Lane and Stonehill Way are all Local Roads;
- The area is mainly residential, with the exception of Coast Road which is of a more commercial land use;
- At present the roads in question are limited to 30mph by virtue of street lighting;

- The Lane is one way westbound from its junction with City Road to its junction with Coast Road, and has a width restriction (6ft) east of its junction with City Road; this restriction is backed up by the order 'The Colchester Borough (The Lane, West Mersea) (Prohibition of Entry) Order 1991'.

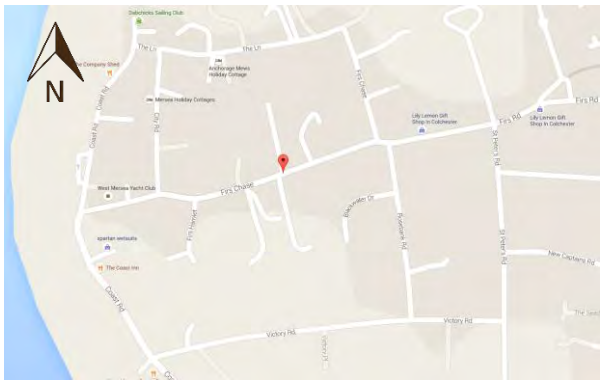
Location map	*Aerial imagery*
	

Fig 2.1 the location map and aerial imagery of West Mersea, Mersea Island.

2.2 Site Observations

A site assessment was undertaken on the 15th June 2015; the following observations were made:

- Waiting restrictions on Firs Chase are seasonal with the operational restriction 'No Waiting, 1 April - 30 September - 8am - 6pm';
- It may be difficult to mount signs to all lamp columns at this location due to the nature of their construction;
- Distinguishing the highway boundary at this location is extremely difficult, there are also very few areas of designated footway we may safely locate a sign without potentially obstructing vehicular traffic. At some areas of the site we have been unable to obtain conclusive evidence if
- areas of the site are owned by the highway or not, please see the below paragraph (2.3) for further details;
- Vehicle speeds are already very low, achieving the speed limit currently in placee would be very difficult considering the presence of natural traffic calming features in place, these take the form of - narrow roads, width restrictions, parked vehicles and bends in the roads forcing vehicles to drive at the desired limit;
- During the short time spent at the site there were no observations of HGVs travelling through the site;
- City Road has a top layer surface of gravel.

2.3 Highway Boundary Information

The Highway Improvement Design Team (HIDT) attempted obtain to highway boundary information for the entire area. Unfortunately we were unable to obtain full details location. We therefore undertook an initial design and requested the areas the scheme implementation would be dependent upon for success. These are provided and included in Appendix A, with the exception of one area. The area not provided was on Firs Chase between its junctions with Firs Hamlet and Stonehill Way. We were informed that due to inaccuracies in Ordnance Survey mapping it is very difficult to provide conclusive evidence of land ownership therefore we cannot advocate installing new sign posts here.

2.4 Statutory Undertakers

There are known to be a number of statutory undertakers plant located at this location, these include:

- UKPN
- Low Pressure - Gas Mains
- BT Openreach
- Anglian Water

2.5 Collision Analysis

One Personal Injury Collision (PIC) occurred in the applicable area within the previous 60 months data, the location of the collision and the area requested is indicated with the Red polygon annotated in Appendix 2. As a result of these statistics we can assume there are no reported collision patterns at this site.

Involving	Severity	Date/Time	Conditions	No. of Casualties	Comments
Car vs Pedestrian	1 Slight	30/07/2014 @ 17:30	Dry	1 Pedestrian	Pedestrian was impaired by Alcohol Car was parked

Table 2.1: 60 months PICs data, West Mersea.

2.6 Speed Survey Data

As part of the validation process a 7-day speed survey was undertaken in November 2014 on Firs Chase (between junctions with Firs Hamlet and Stonehill Way). Three additional speed surveys were conducted in September 2015, to fully assess the feasibility of implementing a speed limit which encompasses Firs Chase, Coast Road and adjacent roads with similar characteristics. The results are summarised below:

Firs Chase (between Firs Hamlet and Stonehill Way)	*Eastbound*	*Westbound*	***Combined***
	23.6 mph	*23.0 mph*	***23.3 mph***
Firs Chase (between Firs Road and The Lane)	*Southbound*	*Northbound*	***18.7 mph***
	18.2 mph	*19.2 mph*	
The Lane	*Eastbound*	*Westbound*	***12.4 mph***
	12.8 mph	*12.1 mph*	
Coast Road	*Southbound*	*Northbound*	***16.3 mph***
	16.2 mph	*16.3 mph*	

Table 2.2: Speed Survey Results - West Mersea

	% HGVs	Total Volume	Average Number of HGVs/day	% HGVs	Total Volume	Average number of HGVs/day
Firs Chase (between Firs Hamlet and Stonehill Way)	*Eastbound*			*Westbound*		
	0.5%	*3226*	*16*	*0.4%*	*3116*	*12*
Firs Chase (between Firs Road and The Lane)	*Southbound*			*Northbound*		
	0.4%	*1482*	*6*	*0.6%*	*1676*	*10*
The Lane	*Eastbound*			*Westbound*		
	0.3%	*333*	*1*	*0.2%*	*608*	*1*
Coast Road	*Southbound*			*Northbound*		
	0.4%	*5546*	*22*	*0.7%*	*5261*	*36*

Table 2.3: Vehicle Counts - West Mersea

The data above highlights the proportion of HGVs to be similar across the site, when vehicle counts are considered Coast Road would have the highest quantity of HGVs which would be expected due to this having a more commercial land use. Although there are some counts of HGV use on Firs Chase, these are relatively low. We may assume that the low count, below 1% throughout, would not have a significant impact on residents.

The counts in table 2.3 may contain potential inaccuracies. However there are known issues with being able to accurately designate vehicle classifications with Automatic Traffic Count (ATC) equipment when low speeds are returned. The concern with regards to accuracy is increased when we consider the number of vehicles being towed in the area, which may confuse the pneumatic tubes into thinking they're a different class of vehicle. These look likely to have led to vehicles being operated in a towing capacity being classified incorrectly as HGVs.

2.7 Photographs

Coast Road at junction with Firs Chase looking East	*Firs Chase - looking Westbound towards Coast Road*	*Lamp Column - The Lane at junction with City Road*
		
City Road looking Northbound at junction with Firs Chase	*Firs Chase at junction with Firs Chase looking North towards The Lane*	*The Lane - 6ft Width Restriction looking West*
		

3. 20mph Speed Limit Feasibility

Upon meeting with the Town Council it was requested that consideration is given to the feasibility of implementing a 20mph speed limit on Firs Chase and Coast Road. These roads are all Local Roads and are compliant with the requirements of the Essex County Council Speed Management Strategy in terms of speed survey results (Ref. Paragraph 2.6).

However, we have detailed below in bullets the main reasons we believe this scheme not to be feasible:

1. The main reason a 20mph speed limit is not feasible is due to the limitations observed with regards to physically installing the signage at the location. The scheme may only be implemented if we could utilise Lamp Columns to install the legally required speed limit terminal and repeater signs to warn drivers of the limit in place. Some of the Lamp Columns at this location are not suitable to install signs on. In other areas there are no lamp columns located within a reasonable distance of where they may be utilised.

2. In addition, the roads with similar characteristics put forward for inclusion in a 20mph limit would benefit from being grouped together as one 20mph limit. Unless there is a facility or feature which results in an increased level of vulnerable road users on a particular road (which does not seem to be the case at this site). As a result if we were to isolate a 20mph to certain roads and exclude others; we may expect a new lower limit not to have little impact on driver behaviour, this should be considered in conjunction with the additional dis-benefit of the visual intrusion the new signs may have. We would assume the scheme to have no benefit even if it could be physically installed.

When fully assessing the feasibility we should also reinstate what has been previously mentioned in the validation process, that being the implementation of a 20mph speed limit will not deter HGVs from using this section of road.

4. Weight Limit/Freight Warning Signs Feasibility

Upon meeting with the Town Council it was deemed Firs Chase would not be suitable for a Weight Restriction enforceable Traffic Regulation Order (TRO). Consideration could be given to installing Dia. 820a - 'Road unsuitable for heavy goods vehicles' at a suitable locations to warn of the areas freight vehicles will find it difficult to navigate.

At present there is a 'Road not suitable for HGVs' sign at the junction of Firs Chase and Firs Chase, shown in paragraph 2.7, at the time of visiting the site the sign was obscured by vegetation.

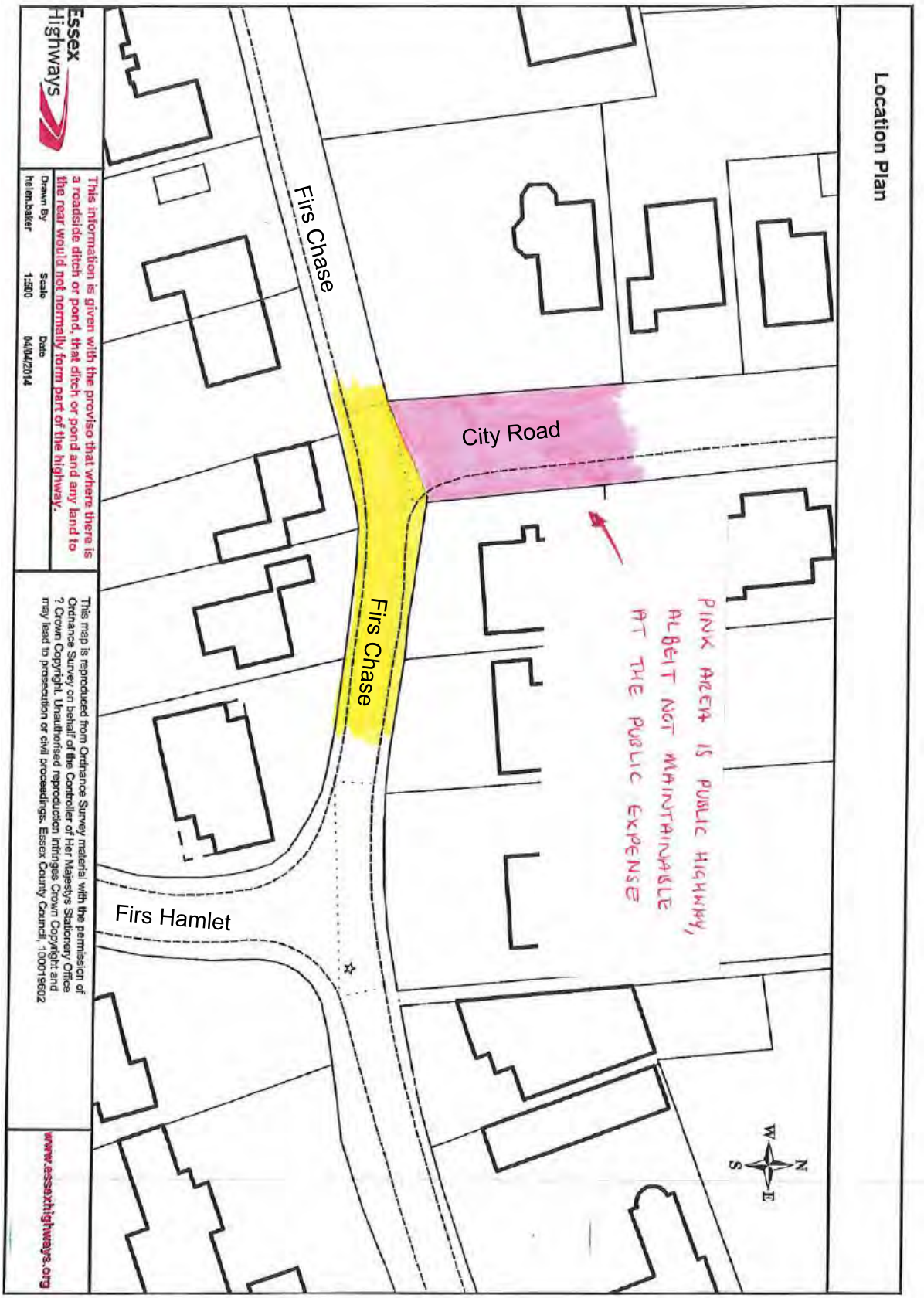
City Road would benefit from having a sign to Dia. 820a warning the road is not suitable for HGVs near its junction with Firs Chase, as HGVs will have difficulty exiting City Road. However, the highway boundary issues at this site make it very difficult to state with any confidence this can be installed. The plans shown in Appendix A, highlight at the junction of City Road and Firs Chase we would need to liaise with the resident with whom we would like to utilise the verge to install the sign. This land is marked as being Highway however not maintainable at the highways expense, which would lend itself towards careful negotiation, the fact signs have been removed from this location in the past does not view positively on the possibility of reinstating signage

It was previously suggested that we could look at the implementation of Dia. 820a on Firs Road near its junction with High Street North, with the intention to direct HGVs to the Coast Road to complete journeys. However, the roads prior to Firs Road junction with Firs Chase look to be suitable for freight traffic. Also deliveries to these residential addresses may be negatively affected by the proposed signage, and may be misleading at that point.

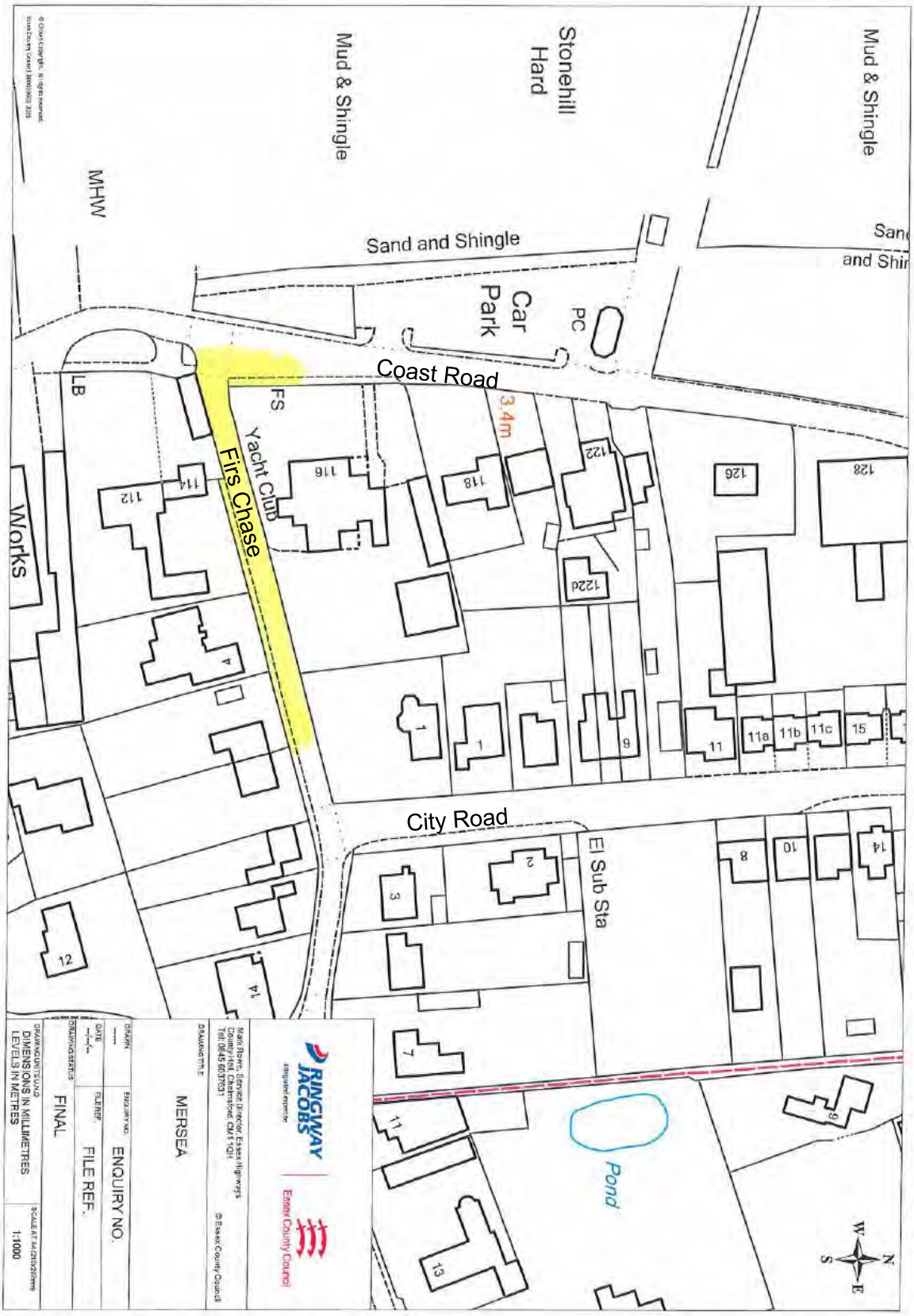
5. Recommendation

As outlined in Paragraphs 3 and 4 of this report, the implementation of a 20mph Speed Limit and Weight Restriction at this location are not feasible. The scheme brief originally requested looking at a speed limit on Firs Chase. However, as shown in Appendix A there is not a suitable location to install the speed limit terminal signs near the junction of Firs Chase and Coast Road. This should be combined with the concerns surrounding a suitable location for repeater signs due to the lack of designation the highway on Firs Chase between its junctions with Firs Hamlet and Stonehill Way.

Appendix A: Highway Boundary Plans

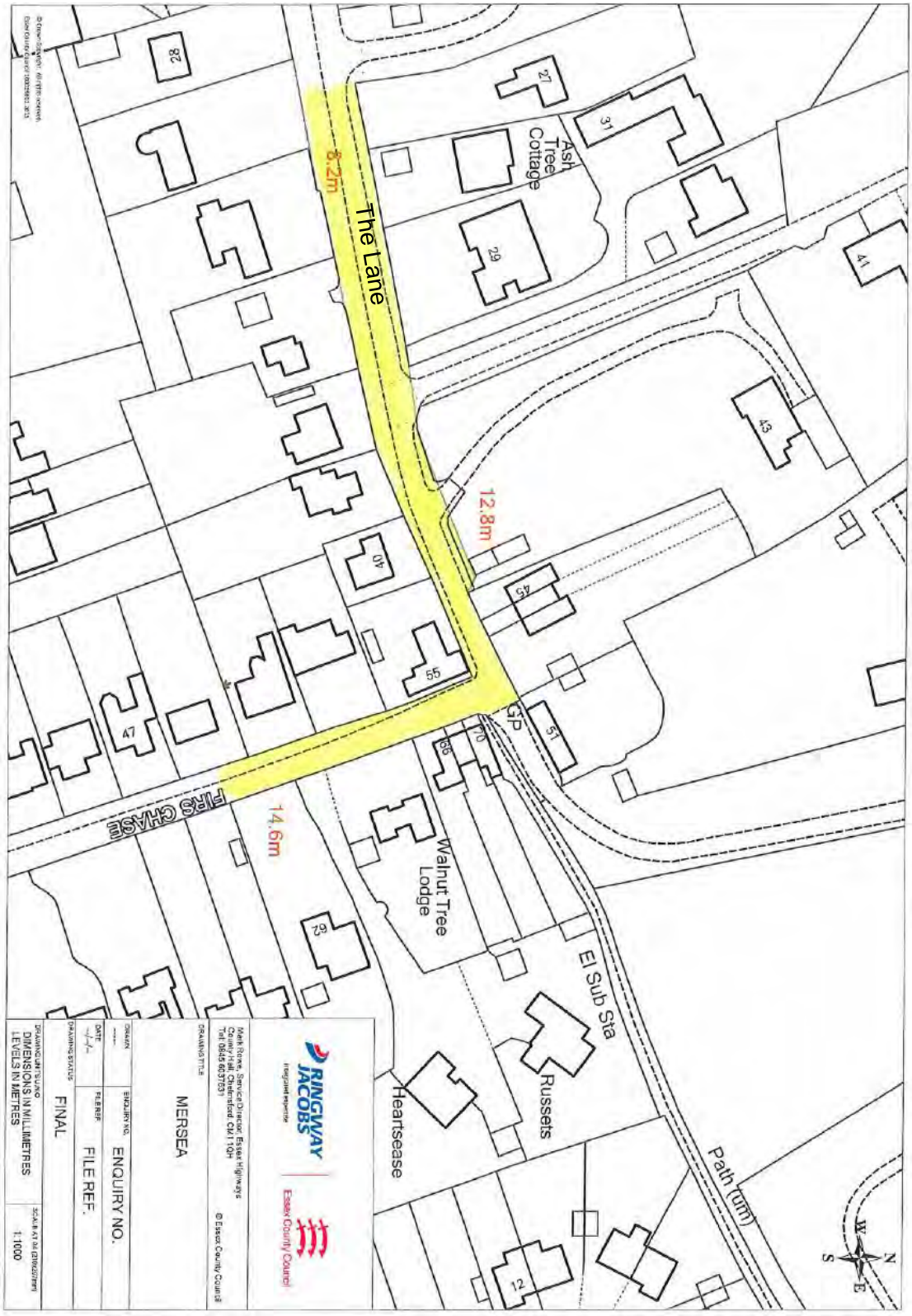


FEASIBILITY REPORT – HI4062




Dry Dock
4.9m
4.0m
4.0m
TCB
Victory Road
Coast Road
The Victory Hotel
Sub Sta
94
50
48a
48b
92
43
39
37a
37
38
45
N
W
E
S
RINGWAY JACOBS
Essex County Council
MERSEA
ENQUIRY NO.
FILE REF.
FINAL
DIMENSIONS IN MILLIMETRES
LEVELS IN METRES
1:1000

FEASIBILITY REPORT – HI4062



Appendix B: Collision Data Plot

Feasibility Report

HI4286 High St, High St North and Barfield Rd, West Mersea

1.0 **Brief**

West Mersea Town Council expressed concerned regarding the visibility of the junction and safety of pedestrians crossing to and from the Tesco Express at the junction of Barfield Road / High Street / High Street North.

Objectives are to:

- Reduce speed of traffic travelling north along High Street.
- Provide protection to pedestrians crossing lower part of High Street North.
- Improve safety for vehicles turning right from Barfield Road into High Street North.

2.0 **Site Description**

B1025 is the main road through the island from The Strood through Barfield Road, High Street and into Coast Road. The section of Barfield Road / High Street is wider than most parts of the road but as this junction is almost a right angle and High Street narrows to approx. 5.5m wide this width is probably justified to manoeuvre vehicles carrying large loads such as boats to the coast.

Barfield Road, High Street and High Street North are all street lit, have Highway drainage and in a 30mph speed limit. Tesco Express on the junction appears well used and has vehicle accesses in Barfield Road and High Street North. The Fire Station located in Barfield Road next to Tesco Express has two vehicle accesses onto Barfield Road and yellow “Keep Clear” road markings have been provided to keep these accesses clear. The business premises opposite all have off street parking and a 1.2m wide footway is provided between the parking and the carriageway. A wider footway is provided on the Tesco Express side but no dropped kerbs to cross High Street North until the junction with Mersea Ave. Footways are provided on both sides of High Street but these are quite narrow at 1.3m and are reduced in places to 1.1m by boundary hedge side growth, large trees and street furniture. The footway on the east side of High Street is more consistent in width at 1.3m and continues for a longer stretch than the west side.

Feasibility Report

3.0 **Site Location Plan**

4.0 **Site Observations**

An assessment of the 5 year collision data (01/10/2010 to 30/09/2015) in the area of the junction shows 2 collisions resulting in 1 serious and 1 slight casualty and are shown in more detail below. **These incidents show no clear trend or suggestion of poor Highway design**.

Barfield Road - Serious injury – 09Dec2011 12:20 = 20m east of the junction with High Street North.

1 Vehicle resulting in 1 pedestrian casualty.

Vehicle exited Tesco Express car park and turned left, struck pedestrian's trolley as she crossed the road.

Driver 96 year old male. Pedestrian 85 year old female. Road surface dry.

Police assessment of causation of incident = Driver's eyesight possibly defective and also failed to look properly.

High Street North – Slight injury – 25Jan2015 13:08 = junction with Barfield Road.

1 Vehicle resulting in 1 casualty.

Motor cycle between 50cc and 125cc turning east to north (Barfield Road to High Street North) rider lost control at low speed and fell from motorcycle.

Rider 48 year old male. Road surface wet/damp.

Police assessment of causation of incident = possible slippery surface.

Traffic survey results

A 7 day automatic Traffic count was carried-out on High Street commencing Tues 06 Jan 2015.

11,921 vehicles travelled southbound and 11,918 vehicles travelled northbound. The posted speed limit of 30mph was exceeded by 4.2% of southbound vehicles and 12.1% of northbound vehicles.

A 7 day automatic Traffic count was carried-out on High Street North commencing Tues 06 Jan 2015.

7,567 vehicles travelled southbound and 8,465 vehicles travelled northbound. The posted speed limit of 30mph was exceeded by 22.5% of southbound vehicles and 14.2% of northbound vehicles.

A 7 day automatic Traffic count was carried-out on Barfield Road commencing Tues 06 Jan 2015.

11,137 vehicles travelled eastbound and 12,639 vehicles travelled westbound. The posted speed limit of 30mph was exceeded by 10% of eastbound and 10.9% of westbound vehicles.

The surveys show very few vehicles exceeding the speed limit in Barfield Road and High Street possibly due to the sharp bend at the junction.

HIGH STREET - 78m NORTH OF CAPTAINS ROAD
COMBINED SOUTH AND NORTHBOUND TRAFFIC

Total recorded volume	**23,839.0**
Avg daily volume (based on 7 days)	3,405.6
Average daily speed (7 days)	25.2mph
Average daily 85%ile (7 days)	27.8mph
AADT (annual average daily traffic)	4,079
Avg weekday volume (Mon-Fri, 24hrs)	3,543.6
Avg weekday speed (Mon-Fri, 24hrs)	24.9mph
Avg 12hr weekday speed (Mon-Fri, 0700-1900)	23.8mph
Southbound % of vehicles exceeding 30mph	4.2%
Northbound % of vehicles exceeding 30mph	12.1%

HIGH STREET NORTH- 28m NORTH OF MERSEA AVE
COMBINED SOUTH AND NORTHBOUND TRAFFIC

Total recorded volume	**16,032.0**
Avg daily volume (based on 7 days)	2,290.3
Average daily speed (7 days)	25.9mph
Average daily 85%ile (7 days)	29.5mph
AADT (annual average daily traffic)	2,745
Avg weekday volume (Mon-Fri, 24hrs)	2,449.8
Avg weekday speed (Mon-Fri, 24hrs)	25.7mph
Avg 12hr weekday speed (Mon-Fri, 0700-1900)	24.7mph
Southbound % of vehicles exceeding 30mph	22.5%
Northbound % of vehicles exceeding 30mph	14.2%

BARFIELD ROAD - 73m EAST OF HIGH STREET
COMBINED EAST AND WESTBOUND TRAFFIC

Total recorded volume	**23,776.0**
Avg daily volume (based on 7 days)	3,396.6
Average daily speed (7 days)	25.3mph
Average daily 85%ile (7 days)	28.6mph
AADT (annual average daily traffic)	4,073
Avg weekday volume (Mon-Fri, 24hrs)	3,490.0
Avg weekday speed (Mon-Fri, 24hrs)	25.2mph
Avg 12hr weekday speed (Mon-Fri, 0700-1900)	24.1mph
Eastbound % of vehicles exceeding 30mph	10.9%
Northbound % of vehicles exceeding 30mph	10.9%

5.0 **Considerations**

The following options are considered in this report:

1) Reduce speed of traffic travelling towards junction

Provide mini roundabout at junction to bring all arms to a stop and improve advanced visibility of junction.
Provide warning signs in advance of the junction.

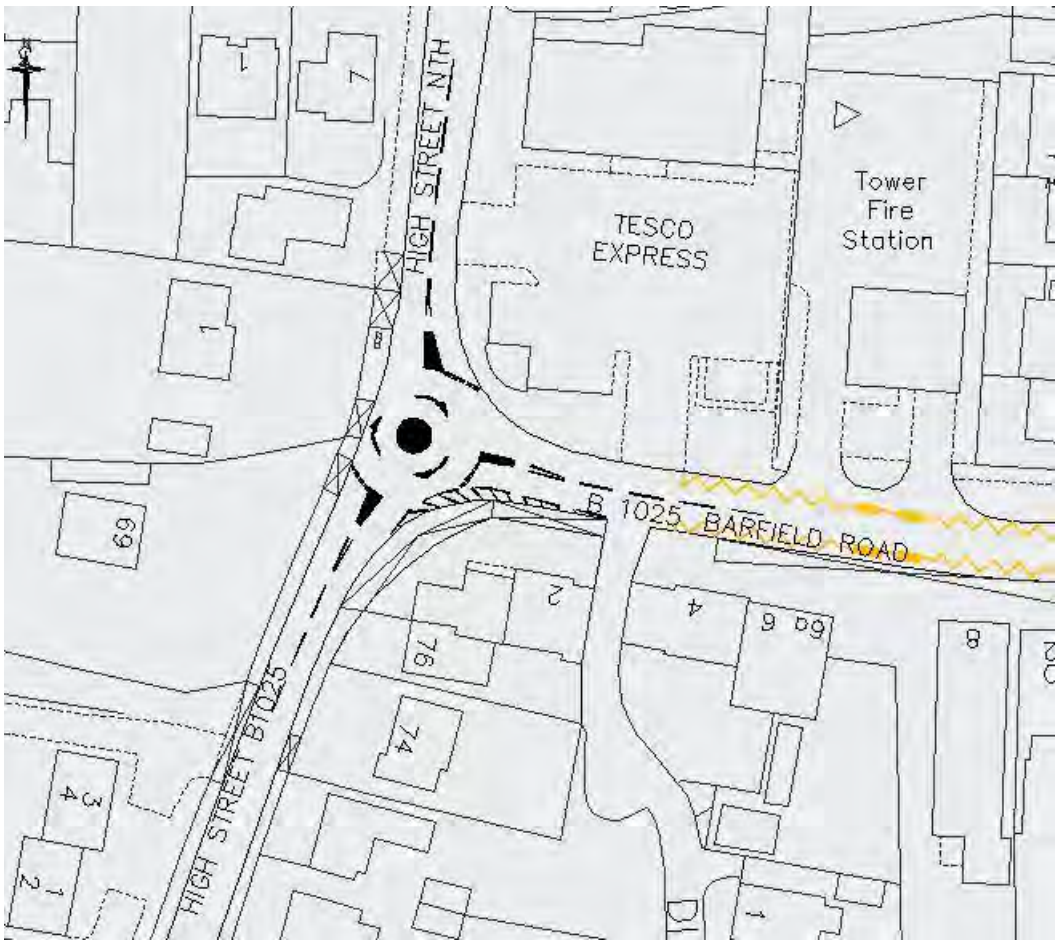
2) Improve pedestrian safety crossing Barfield Road and High Street North

Provide controlled or uncontrolled crossings at the junctions, consider pedestrian islands where carriageway widths are 11m and over.

3) Improve safety of vehicles turning right from Barfield Road to High Street North

Increase visibility for vehicles travelling north on High Street of vehicles waiting on Barfield Road to turn right.
Provide warning signs in advance of the junction.

Reduce speed of traffic travelling towards junction – using Mini Roundabout



The junction is used by large vehicles and is a Bus route so alterations to kerb alignment or road geometry should be avoided. Using white road markings to form a hatched area on the corner of Barfield Road will narrow the approach and there-by slow approaching vehicles but still allow large vehicles to over-run and make the turning manoeuvre. Installing a Mini-roundabout would allow large vehicles to over-run the central circle road marking and slow the approaching traffic as they would need to give way to traffic to their right. Due to the abundance of vehicle accesses (dropped kerbs) in the area the placing of upright signs to accompany the roundabout may be difficult on the southern corner.

Bringing all approaching vehicles to a stop at the junction will slow traffic through the area and aid vehicles turning from Barfield Road to High Street North. The reduced vehicle speed at the junction will allow pedestrians to cross more safely.

Improve pedestrian safety crossing Barfield Road and High Street North

Department for Transport Local Transport Note 2/95 states a desirable minimum visibility requirement of 65m and an absolute minimum visibility requirement of 50m for all types of pedestrian crossing. Due to the alignment of the junction any crossing would need to be at least 50m from the junction which would not be in the pedestrian desire line.

The footway on the west side of High Street is very narrow at 1.1m to 1.3m and ends at Captains Road. The footway width and existing vehicle accesses for the properties along High Street limit available locations for any new crossing.

The entire footway outside number 1 High Street North is dropped to allow vehicle access; this would prevent any new pedestrian crossing being installed as pedestrians could potentially be waiting to cross whilst vehicles attempt to access the parking areas. Visibility from High Street North into Barfield Road is restricted by the sculpture within the Tesco Express car park and so any new crossing would need to be at the Mersea Road junction. An existing tactile crossing has already been provided at this junction and this appears adequate.

The southern footway in Barfield Road is 1.2m wide and mostly dropped to allow access to the car parking areas in-front of the shops. There is a small area outside number 4 and opposite between the Tesco Express entrance and the Fire station this could accommodate a pedestrian dropped kerb area but this area would not meet the minimum visibility requirement. The site was visited 02Nov2015 and it was observed that number 4 Barfield Road is currently being developed and so this area is likely to become a vehicle access very soon.

Junction Warning signs could be provided on High Street and Barfield Road to improve awareness of the junction but would need to be positioned 45m from the junction. Looking at the assessment of the 5 year collision data it is not evident that lack of junction awareness is a problem.

Improve safety of vehicles turning right from Barfield Road to High Street North

Vehicles waiting to turn right from Barfield Road into High Street North have restricted visibility along High Street due to the geometry of the road, narrow footway on the east side and existing building lines of High Street. Equally vehicles travelling north along High Street will have limited visibility of the stationary vehicles. Due to the limited Highway land available it would not be possible to improve this sightline and therefore the only option would be to reduce the speed of the vehicles approaching the bend.

Although streetlighting is provided at the junction if it is felt that lighting is a concern then ECC streetlighting team could be commissioned to look at the lighting levels and make suggestions for improvement. Both recorded incidents occurred in daylight hours so lighting levels are unlikely to have been a factor.

Improving visibility of the junction by installing warning signs may slow traffic approaching the junctions if this is felt to be a problem? These signs would need to be illuminated and positioned 45m from the bend. Solar powered lighting units are available if preferred to mains power or these signs could be incorporated into Vehicle Activated Signs (VAS). Possible locations for these signs are shown in Appendix B

Warning signs required shown below:

Sign Reference	501 High St Nth
Height	600mm
Width	679mm
Area *	0.24 sq.m
Material	Class RA2 (12899-1:2007)
Mount Height	2300
* Area reduced for rounded corners.	

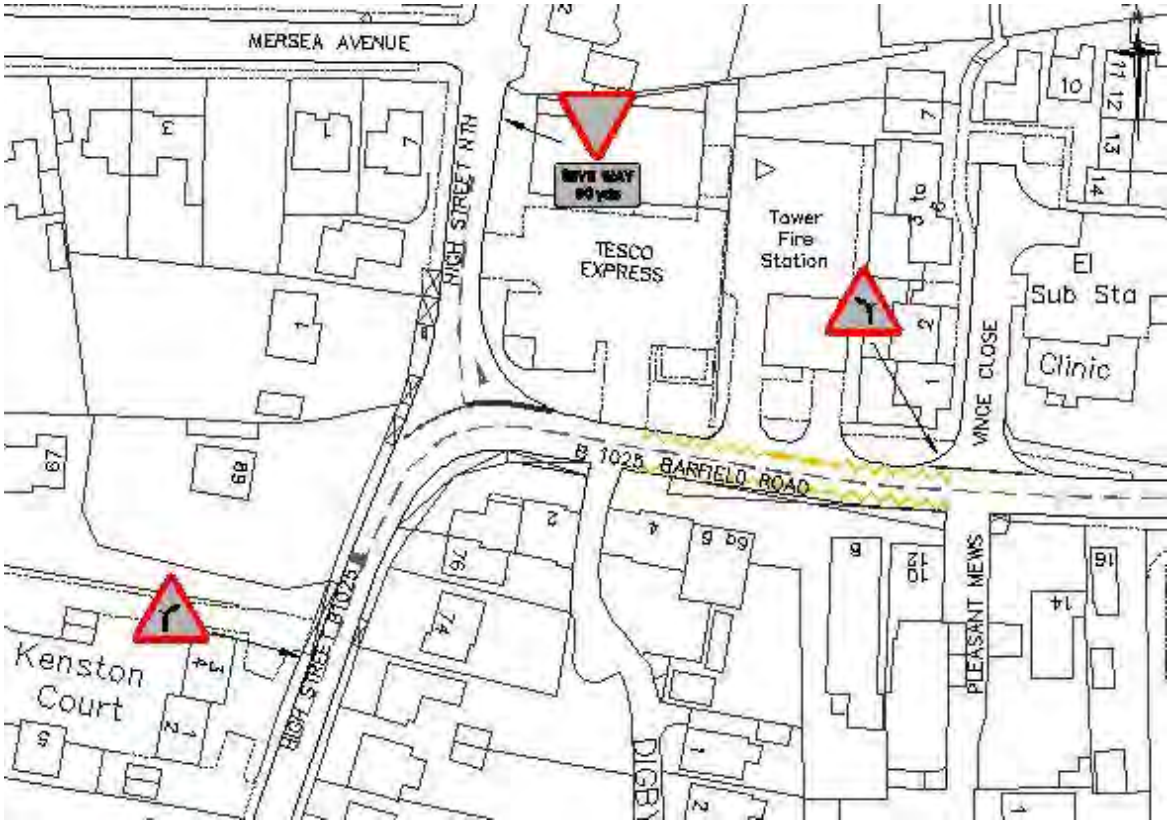
Scheme Ref.	HI4286		
Sign Ref.	503	x-height	62.5
Letter colour	BLACK	SIGN FACE	
Background	WHITE	Width	765mm
Border	BLACK	Height	390mm
Material	Class RA2 (12899-1:2007)	Area	0.30sq.m

Sign Reference	512-1R High St
Height	600mm
Width	679mm
Area *	0.24 sq.m
Material	Class RA2 (12899-1:2007)
Mount Height	2300
* Area reduced for rounded corners.	

Sign Reference	512-1 Barfield Rd
Height	600mm
Width	679mm
Area *	0.24 sq.m
Material	Class RA2 (12899-1:2007)
Mount Height	2300
* Area reduced for rounded corners.	

Solar powered light unit

Existing road layout showing possible warning sign locations – see *Appendix B*



Vehicle Activated Sign (VAS)

These can be any warning sign approved by the DfT and design/construction approved for use on the Highway. The sign can be powered by solar panels if in an open space, not shaded by trees or buildings or by mains electrical supply.

These signs are used to remind drivers of the speed limit or warn of approaching hazards where traditional signs may not be obvious due to other clutter or road geometry.

6.0 **Economic Analysis**

An analysis of possible costs is shown in the following table:

Scheme	Summary of works	Estimated costs
1) Warning signs x3 with electrical connections	Traffic Management Install new post + sign Electrical connection **Estimated Total**	**£6,000**
2) Warning signs x3 – solar powered	Traffic Management Install new post + sign Solar powered illumination units **Estimated Total**	**£7,000**
3) Vehicle activated signs (VAS) – Priced per sign	Traffic Management Install new post Electrical connection or solar unit Install VAS **Estimated Total**	**£8,000**
4) Mini roundabout	Traffic Management Removal of existing road markings New road markings Construction of raised central dome New warning signs and electrical connections **Estimated Total**	**£25,000**

7.0 **Recommendations**

From the assessment of the 5 year collision data and speed surveys it is not clear there is an actual problem at this location. This problem may only be a perceived problem due to the width of the carriageway and geometry of the junction. The site was visited on a Monday at approximately midday during school term time and traffic was noted as being light, travelling within the speed limit and pedestrians did not appear to be experiencing difficulty crossing the carriageway. With this in mind the recommendation would be to do nothing as there appears to be no improvements to be made at the junction.

If junction visibility was a problem then warning signs should be the first course of action. As there is no evidence of this extra signs would not be recommended.

VAS warning signs can only be installed if the site is identified by the Road Safety Team as a collision site in accordance with the collision site investigation criteria. As this site has not been identified as such a warning VAS would not be possible.

Neither the collision data nor the speed survey support the need for a Mini roundabout so this would not be justified. Typically vehicle speeds would be reduced in the area of the junction which could aid visibility for turning vehicles and pedestrians crossing at the junction but this would also impact on traffic flow.

Feasibility Report

Prepared by:	Jason McCloud	Date:	12th Nov 2015

Appendix A ***- SITE PHOTOGRAPHS***

High Street looking south

Barfield Road looking east

High Street North looking south

Junction Barfield Road / High Street / High Street North – Barfield Road looking west

Junction Barfield Road / High Street / High Street North – High Street looking north-east

Existing pedestrian crossing point – High Street North junction with Mersea Ave

Appendix B ***- Possible Warning Sign Locations***

High Street looking south – Possible Warning Sign location

High Street North looking south – Possible Warning Sign location

Barfield Road looking west – Possible Warning Sign location

Feasibility Report

	HI4285 Oxford Road junctions of Creffield Road and Gray Road
1.0	**Brief** High numbers of children using the area during peak morning and afternoon times. This Feasibility Report will consider if practical improvements can be made to the area to improve pedestrian safety for vulnerable pedestrians crossing the carriageway.
2.0	**Site Description** Oxford Road is a mainly residential street with Colchester High School and Lexden Montessori Nursery both on this road and Colchester Royal Grammar and Oxford House also in the immediate area. The main carriageway is wide at upto 9m and flanked on both sides with residents parking bays. Oxford Road runs between Lexden Road and Maldon Road and so is likely to be used as a through route. Oxford Road is within a Conservation area and as such any physical alterations need to be given extra consideration to ensure they are in keeping with the current surroundings. A system of street lighting is provided but being in a Conservation area this is low level. Highway drainage is provided and surface water flooding does not appear to be a problem. Footways are provided on both sides of the carriageway and at approx 2m wide are a good usable width and within a 30mph speed limit.

Feasibility Report

3.0 **Site Location Plan**

4.0 **Site Observations**

An assessment of the 5 year collision data (01/08/2010 to 31/07/2015) in the area of the junction shows 3 collisions resulting in 1 serious and 3 slight casualties and are shown in more detail below. These incidents show a trend developing in pedestrians either not being able to see approaching vehicles clearly before crossing or drivers not being able to see pedestrians before they step into the carriageway.

Oxford Road J/W Creffield Road – 2x Slight injuries – 20July2012 17:25

3 Vehicles resulting in 2 casualties.

Vehicle approached crossroads and failed to give way to major road, entered major road and collided with vehicle.

Driver 27 year old male. Casualties = Driver 54 year old male + 21 year old female passenger.

Road surface wet/damp.

Police assessment of causation of incident = Travelling too fast for conditions and also failed to look properly.

Oxford Road 50m north of Gray Rd – Slight injury – 27Jan2012 15:50

1 Vehicle resulting in 1 casualty.

Vehicle travelling from Lexden Road southbound. Pedestrian steps between parked cars into path of vehicle.

Driver 48 year old male. Casualty 10 year old female. Road surface dry.

Police assessment of causation of incident = Pedestrian masked by parked vehicles and failed to look properly.

Oxford Road J/W Gray Rd – Serious injury – 17Sep2013 15:40

1 Vehicle resulting in 1 casualty.

Vehicle travelling towards Lexden Road northbound. Pedestrian steps behind slow moving vehicle into path of passing vehicle.

Driver 45 year old female. Casualty 10 year old male. Road surface dry.

Police assessment of causation of incident = Pedestrian masked by stationary vehicle and failed to look properly.

Traffic survey results

A 7 day automatic Traffic count was carried-out on Oxford Road commencing Tues 23 Sep 2014.

7,097 vehicles travelled southbound and 10,387 vehicles travelled northbound. The posted speed limit of 30mph was exceeded by 4% of southbound vehicles and 5% of northbound vehicles.

The surveys show a low percentage of vehicles exceeding the speed limit after the peak evening times possibly due to the very wide and straight design of the road. At most other times the speed limit is observed.

A CDPV2 calculation was carried out using the 7 day survey and found this area not justified for a controlled crossing. The site may be reviewed on its merits with regard to local and/or special needs and it is suggested that as the two incidents are similar then this could constitute a trend.

Oxford Road junction with Gray Road – Southbound Traffic

Total recorded volume	**17,484**
Avg daily volume (based on 7 days)	2,497.7
Average daily speed (7 days)	21.1mph
Average daily 85%ile (7 days)	25.2mph
Avg weekday volume (Mon-Fri, 24hrs)	2,830
Avg weekday speed (Mon-Fri, 24hrs)	20.8mph
Avg 12hr weekday speed (Mon-Fri, 0700-1900)	19.6mph
Southbound % of vehicles exceeding 30mph	4%

Oxford Road junction with Gray Road – Northbound Traffic

Total recorded volume	**10,387.0**
Avg daily volume (based on 7 days)	1,483.9
Average daily speed (7 days)	21.5mph
Average daily 85%ile (7 days)	25.9mph
Avg weekday volume (Mon-Fri, 24hrs)	1,682.6
Avg weekday speed (Mon-Fri, 24hrs)	21.2mph
Avg 12hr weekday speed (Mon-Fri, 0700-1900)	25.2mph
Northbound % of vehicles exceeding 30mph	5%

5.0 **Considerations**

The following options are considered in this report:

1) Road Safety Education

Essex Road Safety Education team to educate pupils of schools in the vicinity in Road Safety.

2) Reduce speed of traffic travelling past Colchester High School at the junction of Oxford Road and Creffield Road

Provide junction table to slow vehicles at the junction and provided safe crossing points close to the school annex.

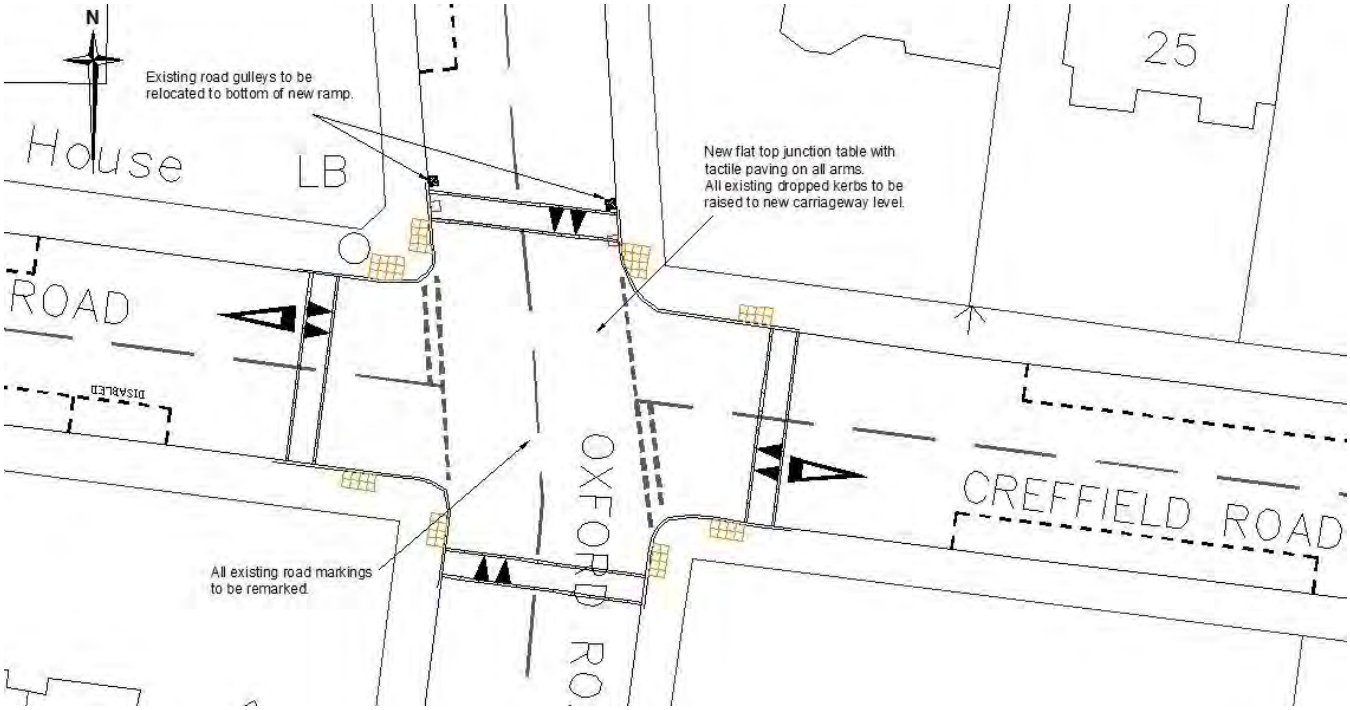
3) Improve pedestrian safety crossing Oxford Road close to Gray Road

Provide flat top carriageway table and remove parking bays to slow traffic and provide safe crossing point for pedestrians.

Road Safety Education

It appears the young pedestrians are partly to blame for the 2 incidents. Unfortunately the incident report from the Police does not indicate which school the 2 pupils attended. The ECC Road Safety Team have been into Colchester High School in Hospital Road to train the Year 5+6 pupils this year (2015) and contact the school every year to offer this service to new pupils. Colchester Royal Grammar School and Oxford House School are also in the vicinity of Oxford Road so may also benefit from this training. As a result of this Feasibility Report ECC Road Safety have been asked to contact both these schools to offer their services. Oxford House School does fall into the 3 to 11 year old range that this training is aimed at so would benefit. Colchester Royal Grammar pupils are aged 11+ so may not benefit as much.

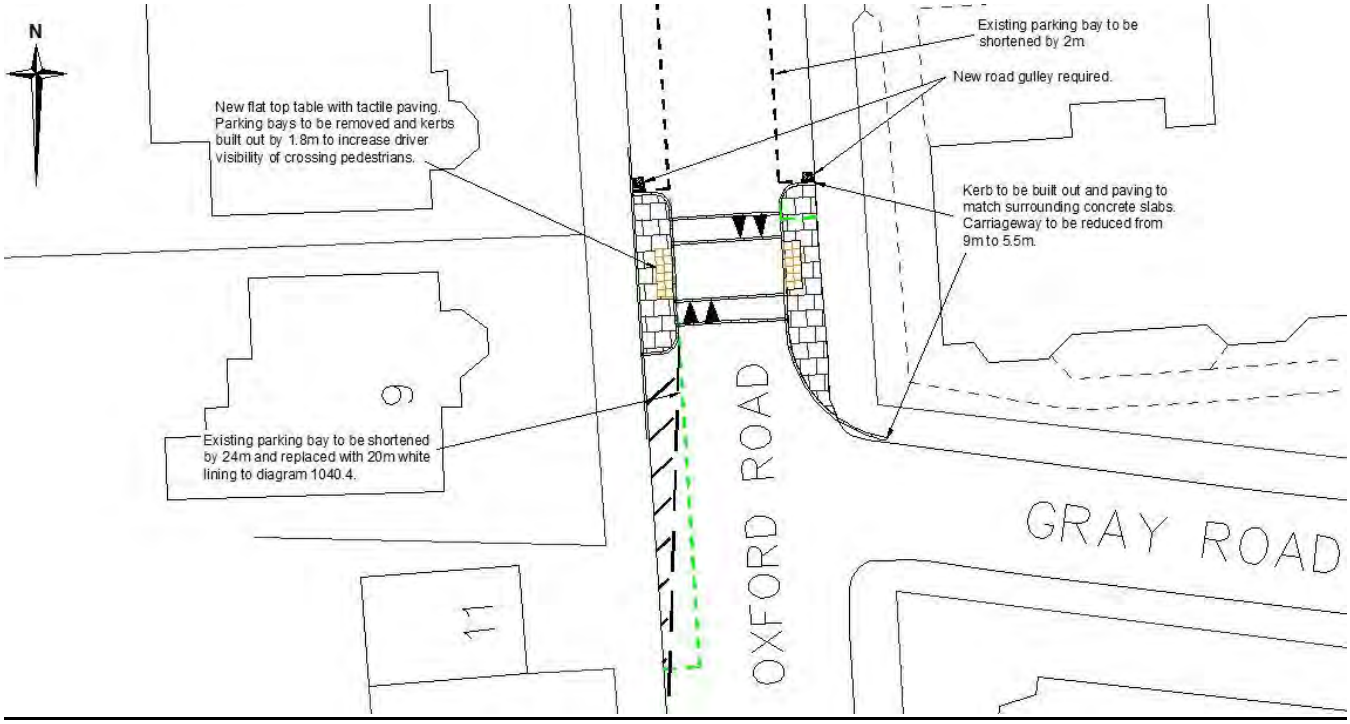
Reduce speed of traffic travelling past Colchester High School at the junction of Oxford Road and Creffield Road



This junction is wide at just over 9m for all arms so improvements could be made in the form of a junction table to provide a level surface to cross Oxford and Creffield Road and slow vehicles in the area of the crossroads. Colchester High School has an annex on the south-east corner but this is for age 16 + pupils so are possibly not the vulnerable pupils we are targeting?

Feasibility Report

Improve pedestrian safety crossing Oxford Road close to Gray Road



Both pedestrian injuries occurred in the vicinity of Gray Road as pedestrians attempted to cross Oxford Road. Oxford Road is 9m wide at this point with resident parking bays on both sides of the carriageway. Both pedestrian incidents occurred when pedestrians emerged between parked cars unseen by the driver suggesting there was no clear areas with better visibility to cross.

Building out the north-east kerb of Gray Road / Oxford Road would shorten the crossing distance and make waiting pedestrians more visible to approaching vehicles. Raising the carriageway surface to be level with the footway will slow approaching traffic and provide a level surface making crossing easier for persons with mobility difficulties. Removing existing Parking bays may not be popular with residents but will improve visibility of crossing pedestrians and shorten the crossing distance.

6.0 **Economic Analysis**

An analysis of possible costs is shown in the following table:

Scheme	Summary of works	Estimated costs
1) Road Safety Education	ECC Road Safety Team to educate year 5 + 6 pupils. **Estimated Total**	 **Zero**
2) Oxford Road junction with Creffield Road	Traffic Management Remove existing dropped kerbs and install full height kerbs Install tactile paving Relocated existing road gulleys x2 Build up carriageway levels Remark existing junction road markings Safety Audit **Estimated Total**	 **£25,000**
3) Oxford Road junction with Gray Road	Traffic Management Install new kerbs to create buildout Install new tactile paving Install 2x new road gulleys Build up and pave new footway area Remove existing parking bay road markings Adjustments to existing TRO Remark road markings and new markings Safety Audit **Estimated Total**	 **£20,000**

7.0 **Recommendations**

Both pedestrian injuries were a result of the pedestrians not looking properly before crossing the carriageway, the pedestrians were 10 years old which suggests they were inexperienced road users.

ECC Road Safety Team do already visit one of two local schools in the 3 to 11 year old age range and are contacting the other to offer Road Safety Training. The incidents were Jan 2012 and Sep 2013 so it is possible the training has already been effective and no more incidents will occur?

The junction of Creffield Rd is the site of the aged 16+ children (6th Form College) and as such these students are likely to be more experience at travelling independently and as such does not appear from the reported Road Traffic Incidents to be a problem area.

Both incidents occurred at the junction of Gray Road just before 4pm so school traffic would have reduced and lighting levels may not have been a contributing factor. It is feasible that both children walked from the rear exit of Colchester High School in Hospital Road via Gray Road to Oxford Road and as such the desire line at this junction would be a good point to improve. Due to the parking bays at the junction visibility for crossing pedestrians and for drivers approaching the junction is poor. Removing parking bays will not be popular with residents but will improve visibility which appears necessary at this junction. Building out the kerbs on both sides will shorten the crossing distance for the pedestrians and improve visibility and as the parking bays are already in situ the turning movement remains unchanged for vehicles. Raising the carriageway level to match the footway will slow vehicles on the approach and will aid pedestrians with mobility issues and parents pushing prams. The results of the speed survey do not show an issue with speeding traffic but if funding is available the other benefits out-weigh the small additional cost to the scheme.

Although the Gray Road junction improvements will result in greater benefit to pedestrians than the Creffield Road improvements it is recommended that both junctions are improved at the same time. Only improving one junction may result in vehicles braking heavily on the approaches to crossing point. It is hoped that by improving both junctions vehicle speeds will reduce along the whole stretch of the road.

Prepared by:	Jason McCloud	Date:	04th Jan 2016

Appendix A ***- SITE PHOTOGRAPHS***

Oxford Road junction with Creffield Road

Oxford Road junction with Gray Road