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DMURS ASSESSMENT REPORT

to accompany Detailed Planning Application

Proposed Residential and Commercial Development
at Carcur Park, Wexford

August 2020

Prepared by
Roadplan Consulting

ROADPLAN
CONSULTING

20080-01-001

Proposed Residential Development at Carcur Park, Wexford Town

DMURS Evaluation Matrix

for

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August 2020



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TABLE OF CONTENTS

1	INTRODUCTION	1
2	CONTEXT.....	2
	DMURS EVALUATION – DRAFT 1	8
	APPENDIX 1 – TABLE 1	1
1.1	CONTEXT AND STREET NETWORK	1
1.2	SPEEDS & STOPPING DISTANCES	1
1.3	FOOTWAYS, STRIPS AND VERGES	2
1.4	JUNCTIONS AND CROSSING POINTS.....	2
1.5	CORNER RADII.....	3
1.6	SHARED SURFACES	4
1.7	VISUALLY IMPAIRED STREET USERS	4
1.8	CYCLE FACILITIES.....	5
1.9	CARRIAGEWAY WIDTHS AND SURFACES	5
1.10	VISIBILITY SPLAYS	6
1.11	HORIZONTAL AND VERTICAL DEFLECTIONS	7
1.12	KERBS.....	7
1.13	ON-STREET PARKING.....	8
	APPENDIX 2 – DRAWINGS	1

1 Introduction

Roadplan Consulting has been commissioned by the Client to assess if the proposed Carcur Park residential development at Carcur, Wexford Town is in compliance with DMURS requirements. In the Table 1 attached in Appendix 1, all components of the design have been compared against DMURS and observations are shown in the right column.

1.1 The Client brief is to provide

"a report demonstrating compliance with the requirements of the Design Manual for Urban Roads and Streets and the National Cycle Manual, as well as a map illustrating pedestrian, cycle and vehicular links through the site."

The map of pedestrian, cycle and vehicular links through the site is being prepared for the Client by his Architect.

1.2 The following drawings were provided by the client. These are the only drawings used in compiling this report, attached in Appendix 2.

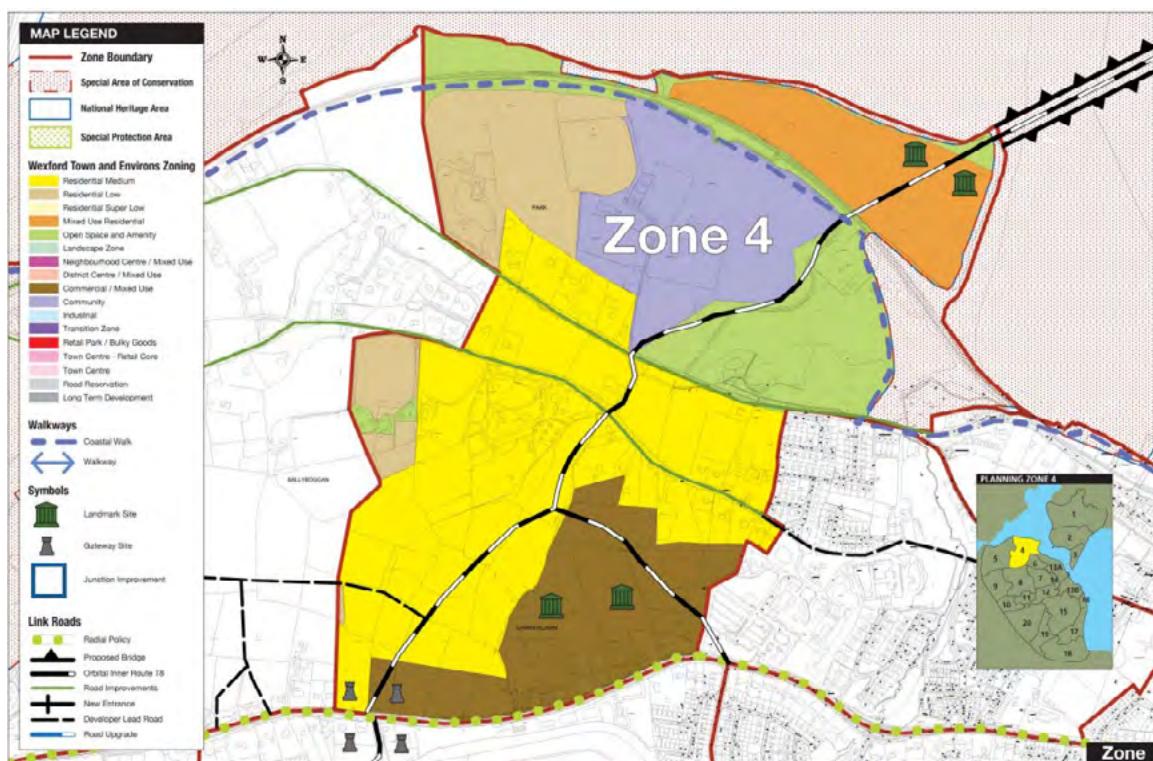
- a) Proposed Master Plan layout by Reddy architecture
- b) Site overview by Arthur Murphy and Company
- c) Road layout sections by Arthur Murphy and Company
- d) Site services plans 1 of 2 by Arthur Murphy and Company
- e) Site services plans 2 of 2 by Arthur Murphy and Company

Drawing Title	Drawing Number	Rev
Proposed Master Plan Layout	P15-209K-RAU-ZZ-ZZ-DR-A-31006	P03.01
Site Overview	PL 01	F
Road Long Sections	PL 04	A
Site Services Plans (1of 2)	PL 02	F
Site Services Plans (2 of 2)	PL 03	F

1.3 In this report, the naming convention for roads uses the junction numbering system on drawing b listed above. A road link is therefore identified by its terminal junction numbers: for example, Road J19 – J20.

2 Context

- 2.1** The area is on the periphery of the northern suburbs of Wexford town. It is largely undeveloped but has as mixed uses nearby comprising of sports facilities, public offices and community and recreational areas.
- 2.2** The proposed development is residential
- 2.3** The development area is quite large. It has a unique setting: it is bounded by the river Slaney on its north and east sides and by the Dublin – Rosslare Harbour railway to the south and west. Sole access is via a bridge over the railway. Unless and until the new Slaney Bridge is construction the proposed development would rely completely on this one access.
- 2.4** A road has been constructed from the R769 New Ross Road to the railway but does not cross it. It is part of a road network in development on the east side of the town referred to in local plans as the Orbital Inner Route. The overall route will extend from the R730 Rosslare Road on the south side of the town to R741 on the north side and is shown to cross the Slaney. It is listed as Objective T8 of the Wexford Development Plan 2009 to 2015.



Portions of the road are constructed: Sinnottstown Lane, Moorefields, Clonard, Cois Carraig, and the section to the railway at the Carcur site. These road sections link the radial routes on the west side of the town: R730, R769, R733, R730.

- 2.5** The movement function of an urban road is described using a classification system. The DMURS guide contains the following classes:

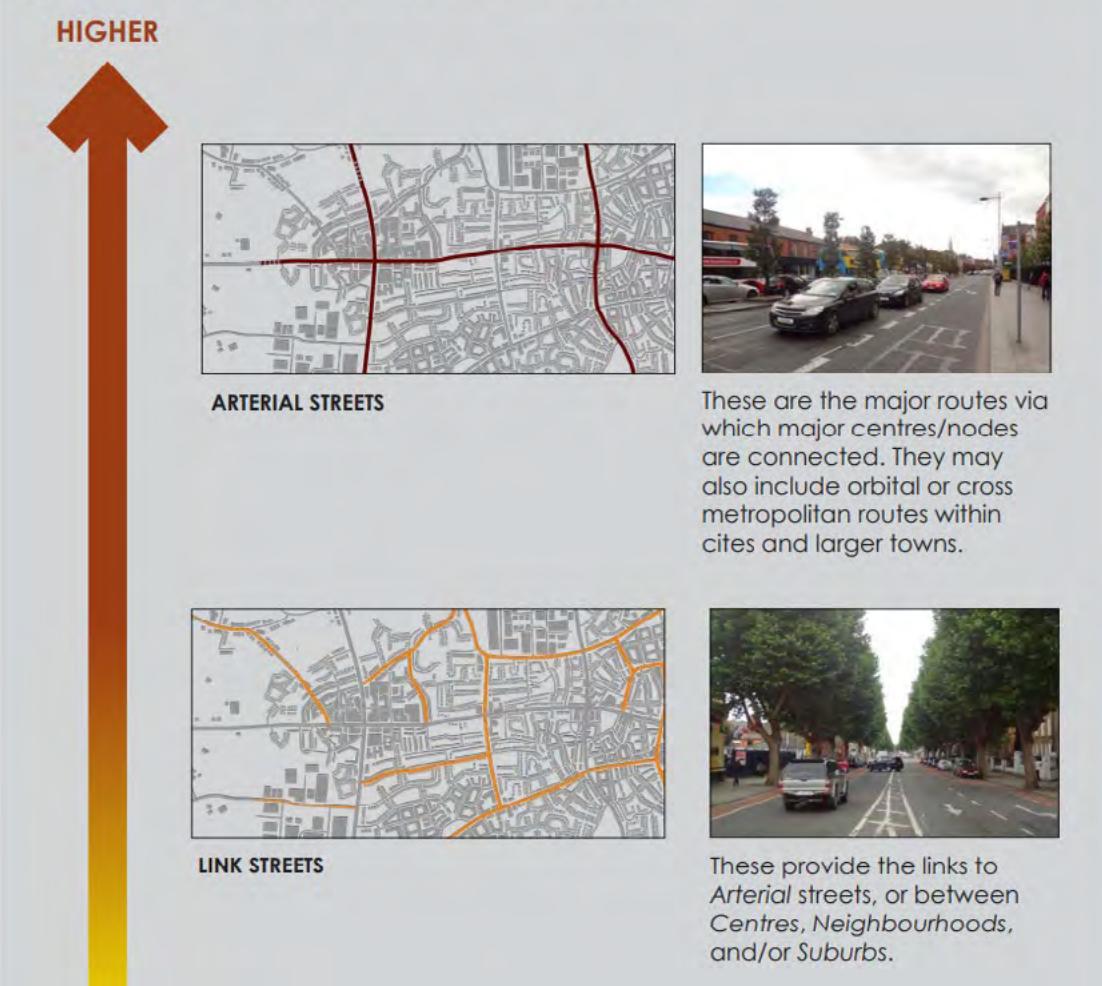
- Arterial Streets
- Link Streets
- Local Streets

Greater levels of connectivity are required between significant destinations, particularly those generating or attracting large volumes of traffic.

Table 3.1 of the Design Manual for Urban Roads and Streets (DMURS) is used for the classification of urban roads.

The Orbital Inner Route would certainly not be classified as a Local road. It is either Arterial or Link. DMURS Figure 3.3 gives the following pictorial and text guidance:

Figure 3.3: FUNCTION AND THE IMPORTANCE OF MOVEMENT



DMURS Figure 3.3

The pictorial representation showing examples of Arterial Streets would suggest that the Orbital Inner Route would fit into that classification; however, the text descripts refer to “connection to major centres” which is not really the case: the

Orbital Inner Route connects roads of regional classification and connects north County Wexford to the town and beyond. Table 3.1 would suggest that a road connecting regional roads would have Link classification.

DMURS Description	Roads Act/ DN-GEO-03031	Traffic Management Guidelines	National Cycle Manual
Arterial	National	Primary Distributor Roads	Distributor
Link	Regional (see note 1)	District Distributor Local Collector (see Notes 1 and 2)	Local Collector
Local	Local	Access	Access

Table 3.1: Terminology used within this Manual compared with other key publications.

That makes it uncertain whether the Orbital Inner Route should be classified as Arterial or Link.

Additional clarity would appear to be provided by Note 1 to Table 3.1. It contains the following text:

"Larger Regional/District Distributors may fall into the category of Arterial where they are the main links between major centres (i.e. towns) or have an orbital function.

The Orbital Inner Road clearly has an orbital function, and the section at Carcur could be strategic in nature and could be heavily trafficked given that it would be the crossing of choice for many travelling between the north and south sides of the town.

For that reason it is considered that the section of the orbital inner Route from the Slaney crossing to the R769 New Ross Road would be classified Arterial.

For the purposes of assessment under the national Cycle Manual (NCM) its classification would be Distributor.

The other road links within the development are considered to be of Local class in accordance with DMURS, and of Access class in accordance with the NCM

- 2.6** The river bridge would be quite long – 450m minimum crossing distance. There are many considerations in planning such a large bridge and ensuring the feasibility of its intended position and elevation. The height by which the bridge must be elevated above the river is influenced by many factors such as flooding and the impact of bridge piers and embankments on flood levels; the need for

minimum clearances for navigation, which is already restricted at the R741 Wexford Bridge, (if any); the need for side spans to cater for bankside environmental factors. The exact position of the bridge is dependent on ground conditions and achieving adequate bearing capacity for foundations.

Notwithstanding the above, for the purposes of this report, it is assumed that the bridge layout shown on the drawings is a feasible and viable one.

2.7 What is the design speed of the street?

The existing section of Inner Orbital Route has a speed limit of 60km/hr. This is considered correct, given the absence of development at present. Other roads in the area have the same speed limit. Table 4.1, reproduced below, contains a Design speed selection matrix indicating the links between place, movement and speed that need to be considered in order to achieve effective and balanced design solutions.

FUNCTION	PEDESTRIAN PRIORITY			VEHICLE PRIORITY	
	ARTERIAL	30-40 KM/H	40-50 KM/H	40-50 KM/H	50-60 KM/H
LINK	30 KM/H	30-50 KM/H	30-50 KM/H	50-60 KM/H	60-80 KM/H
LOCAL	10-30 KM/H	10-30 KM/H	10-30 KM/H	30-50 KM/H	60 KM/H
	CENTRE	N'HOOD	SUBURBAN	BUSINESS/ INDUSTRIAL	RURAL FRINGE
CONTEXT					

Table 4.1

Use of this table suggests that the Inner Orbital Route should have a Design Speed of 60km/h since it passes through a rural fringe area at present. The section of Inner Orbital Route to the south has a layout that is consistent with that design speed. It has few roadside accesses and little roadside development. The proposed Slaney Bridge is a 450m long straight bridge on which it would be difficult to constrain speeds to below that level.

The recommendation is:

60km/h for the Inner Orbital Route.
All other local streets 10-30km/h.

If the residential development is constructed in advance of the bridge, traffic calming would be needed on entry to the residential cul-de-sac to restrict speeds into the housing estate. The traffic calming would best be located on the on the rise to the railway bridge.

2.8 Horizontal alignment

In assessing the minimum radius it is assumed that super elevation would be applied where required.

- For 60 km/h the minimum radius is 136m
- For 30 km/h the minimum radius is 22m
- For 20 km/h the minimum radius is 11m

In relation to the streets that will form the Inner Orbital Rd there is an abrupt change in direction of the alignment at Junction 17. The quality of alignment is in marked contrast to the designed alignment of the existing section of inner orbital Rd that runs to the railway. The section through the development site should be designed, at construction stage, to comply with DMURS.

On the local streets the following sections should be checked in detail, adjustments may need to be made to the radius of curvature or to the carriageway width at the bends:

- Bend at J3 – which arms form the mainline?
- Bend on link J6 to J7
- Bend on link J7 to J8
- Bend on link J8 to J18

2.9 Vertical Alignment

Maximum gradient of 5% is recommended. All roads comply with this. A minimum gradient of a half percent is recommended. All roads comply with this.

For the inner orbital route, the minimum crest K value is 8.2 and the minimum sag K value is 9.2. The crest value may be reduced to 6.5 by taking a two-step design standard relaxation as permitted by the Design Manual for Roads and Bridges. The vertical curves at these locations should be redesigned at construction stage.

The minimum sag curve K value is 2.3 for 30 km/h. All roads (Local) comply.

2.10 Crossfall

Camber of 2.5% is shown (on the typical cross-section) to be provided. This is adequate.

2.11 Visibility

- Stopping sight distance:

The following Stop Sight Distances (SSD), apply:

SSD STANDARD	
Design Speed (km/h)	SSD Standard (metres)
10	7
20	14
30	23
40	33
50	45
60	59

Forward Visibility

Stopping sight distance is not constrained on the inner orbital Rd. on the local roads stopping sight distance should be checked and provided at two bends on link J8-J18

- Junction sight distance:

There is roadside parking along the Inner Orbital Route. When in use the sightlines relating to the minor roads of the three crossroads junctions will be obstructed. The parking shall be omitted where it would obstruct visibility splays.

Roadside parking will also obstruct junction sightlines at many of the Local streets within the development. The speed and volume of traffic will be low, and this is not considered a significant issue. The drawings appear to indicate that table junctions are to be provided throughout. This would assist in the safe interaction of turning traffic. The DMRB permits “minor encroachments”. Junctions should be checked to ensure that this is the case, and the layout amended if not.

These minor issues can be easily addressed at the detailed design stage to ensure all parking and junction visibility is constructed in a compliant manner.

DMURS EVALUATION – Draft 1

Component	Notes											
Context and street network												
<p>1 What is the nature of existing and planned development in the area?</p> <p>2 Proposed development type</p> <table border="1" data-bbox="382 83 441 2106"> <tr> <td>New</td> <td>Retro-fit - infill</td> </tr> </table> <p>3 Street types</p> <table border="1" data-bbox="441 83 500 2106"> <tr> <td>a. Arterial {For discussion}</td> <td>b. Link { Yes }</td> <td>c. Local { Yes }</td> </tr> </table> <p>4 What type of place is the development located in?</p> <table border="1" data-bbox="500 83 679 2106"> <tr> <td>a. Centre { }</td> <td>b. Neighbourhood { }</td> <td>c. Suburbs {X}</td> <td>d. Business Park/ Industrial Estate { }</td> </tr> </table> <p>5 Is the street highly connected, maximising pedestrian and cycling routes?</p> <table border="1" data-bbox="679 83 817 2106"> <tr> <td>a. Yes</td> <td>b. No {X }</td> </tr> </table> <p>6 Are dead-end cul-de-sacs proposed?</p>	New	Retro-fit - infill	a. Arterial {For discussion}	b. Link { Yes }	c. Local { Yes }	a. Centre { }	b. Neighbourhood { }	c. Suburbs {X}	d. Business Park/ Industrial Estate { }	a. Yes	b. No {X }	<p>See attached report</p> <p>See attached report</p> <p>See attached report</p> <p>The Place Context of the proposed development is at present Rural Fringe as classified in 3.2.2 of DMURS, although this would be likely to change to Suburban as the whole Cárcur area becomes developed.</p> <p>The site is bounded by very strong severance lines (river and rail) rendering the provision of high connectivity impossible. All modes of travel must channel to a single site access point until the Slaney crossing is constructed.</p> <p>Given the severance and resulting restrictions to access options described above, it is difficult to avoid use of some cul-de-sac ends. Most of the development is in blocks with bounding loop roads. There are seven cul-des sac ends.</p>
New	Retro-fit - infill											
a. Arterial {For discussion}	b. Link { Yes }	c. Local { Yes }										
a. Centre { }	b. Neighbourhood { }	c. Suburbs {X}	d. Business Park/ Industrial Estate { }									
a. Yes	b. No {X }											

<input type="checkbox"/> a. Yes {X}	<input type="checkbox"/> b. No { }
7 Is the overall street layout	
<input type="checkbox"/> a. Orthogonal {X}	<input type="checkbox"/> b. Curvilinear { }
<input type="checkbox"/> b. Set 1. a. Open Network { }	<input type="checkbox"/> c. Organic { }
<input type="checkbox"/> b. Set 2. a. Off-set Network { }	<input type="checkbox"/> c. Filtered Permeability Network { }
8 Has a permeable network been created or cultivated from the existing	As previously stated, the surrounding severance features do not facilitate permeability. Along the north
<input type="checkbox"/> a. Yes { }	<input type="checkbox"/> b. No { }
9 Are the block sizes used in the surroundings of the development appropriate?	and east sides there is nowhere to permeate to.
<input type="checkbox"/> a. Yes {X}	<input type="checkbox"/> b. No { }
10 If the development is a new build, does the street promote the use of sustainable	Blocks are sized in line with DMURS standards for a residential area.
<input type="checkbox"/> a. Yes {X}	<input type="checkbox"/> b. No { }
Enclosure & Intimacy	
11 What is the rate of enclosure?	unknown
Speeds & Stopping Distances	
12 What is the design speed of the street?	See attached report
13 Have the SSD standards been implemented?	See attached report
<input type="checkbox"/> a. Yes { }	<input type="checkbox"/> b. No { }

Street Trees		
14	Street tree planting and spacing and SuDS.	To be considered at detail design stage
Street Edges		
15	Active street edges	To be considered at detail design stage
Street Furniture		
16	Street lighting	To be considered at detail design stage
17	BENCHES AND BINS	To be considered at detail design stage
Materials and Finishes		
18	Change in material or finish	Although no significant change in area function/land use proposed in this area, it should be noted that a change in material or finish is shown to be used at junctions and quiet road links.
Footways, Strips and Verges		
19	Footway widths	A typical road cross-section is provided. It shows what appears to be a footpath of 1800mm typically. This is acceptable as a minimum width and should be provided on all footpaths. Footpaths appear to be provided throughout
20	Footway verges	On Arterial and Link streets with no on street parking a verge of 1.5-2m should be provided as a buffer and to facilitate the planting of large street trees and items of street furniture. The Inner Orbital should therefore have a verge (where on-street parking is not provided). It is noted however that the existing section of Inner Orbital does not have a verge.
21	Privacy strips	To be considered at detail design stage
Junctions and Crossing Points		
22	Pedestrian facilities at junctions	No crossings of the Inner Orbital Route shown. Controlled crossings should be provided. Uncontrolled crossings should be provided on Local roads where desire exists (typically at junctions)

		At junctions, crossing facilities should be provided at each arm of the junction. Buildouts can be used to reduce the crossing distance.
23	Additional crossing points	Details must be included at detailed design stage. Concept indicates the location of additional crossing points. Additional crossing points should be provided if there is a distance greater than 120m between junctions.
24	Directness of crossing points	To be considered at detail design stage
25	Pedestrian cycle time at crossing points	To be considered at detail design stage, if applicable.
26	Width of crossing points provided	To be considered at detail design stage
Corner Radii		
27	Corner radii included in the street	At junctions between Arterial/ Link streets and Local streets, a max. corner radius of 4.5m should be applied. The corners appear to comply with this requirement. In areas with low vehicular movements and activity and where design speeds are low, corner radii are to be reduced to between 1-3m. Many corners have a larger dimension and should be reduced. However, if a town bus is to serve the development, it should be able to turn by circulating with ease around a block.
Shared Surfaces		
28	Is there a shared surface on the street?	Shared surface may be proposed in the home zones. A shared surface should use a variety of materials and finishes to clarify the boundaries of the pedestrian zone from the shared zone.
Visually Impaired Street Users		
29	Have measures been added to the street, which help visually impaired street users to navigate the street?	In order to aid and enhance clarity for visually impaired street users, the following measures should be included in the design: <ul style="list-style-type: none"> ● Tactile paving sections; ● Distinctive pedestrian zones, using contrasting materials and finishes at kerbs, street edges to clearly define the boundaries of the zone.
Cycle Facilities		
30	Provision of cycle facilities	Cycle facilities are provided. These facilities on the Inner orbital should be segregated. <p>Elsewhere, there is a looped cycle facility on Local streets. One-way cycle loops within the development areas each side of the Inner Orbital Road: an anticlockwise loop on the west side and a clockwise one on the east. These would be very indirect paths for cyclists and unlikely to be used as intended.</p>

<i>Carriageway Widths and Surfaces</i>	
31	Carriageway width The carriageway width of the existing in Outer Orbital route is 6.5 meters. In new designs the standard lane width on Arterial and Link Streets should lie in the range of 2.75m to 3.5m. The width stated on the drawing is 7m, so that is compliant. The width tapers on the approach to the railway bridge to tie-in with the proposed carriageway width on the bridge. The standard carriageway width on Local streets should be between 5.5-5.5m (i.e. with lane widths of 2.5-2.75m). the Local Streets appear to vary between 5.5m and 6m (6m is used often when there is roadside parking).
32	Lower speed limit areas Any changes in speed limit areas should be signalled by a change in material or finish. Asphalt should be used as the surface for streets with moderate to high speed limits; 40-80 km/h. A change in material should be used to signal/ identify streets with low speed limits.
<i>Visibility Splays</i>	
33	Visibility splays at junctions with any intersecting carriageways Visibility splays, clear of any obstructions, should be applied at priority junctions.
<i>Alignment and Curvature</i>	
34	Changes in horizontal alignment of the street See attached report

APPENDIX 1 – Table 1

Table 1:

Component		Notes																									
1.1 Context and street network																											
1.1.1 Street type	The street type proposed within the development are Link Street and Local Streets which simply link a neighbourhood to the broader street network.																										
1.2 Speeds & Stopping Distances																											
1.2.1 The design speed of the street	DMURS Provision: The following design speed should be applied in line with the street type:	<table border="1"> <thead> <tr> <th colspan="2">PEDESTRIAN PRIORITY</th><th colspan="2">VEHICLE PRIORITY</th></tr> </thead> <tbody> <tr> <td>ARTERIAL</td><td>30-40 KM/H</td><td>40-50 KM/H</td><td>50-60 KM/H</td></tr> <tr> <td>LINK</td><td>30 KM/H</td><td>30-50 KM/H</td><td>50-60 KM/H</td></tr> <tr> <td>LOCAL</td><td>10-30 KM/H</td><td>10-30 KM/H</td><td>30-50 KM/H</td></tr> <tr> <td>CENTRE</td><td>N'HOOD</td><td>SUBURBAN</td><td>BUSINESS/ INDUSTRIAL</td></tr> <tr> <td colspan="2">CONTEXT</td><td colspan="2">RURAL FRINGE</td></tr> </tbody> </table>		PEDESTRIAN PRIORITY		VEHICLE PRIORITY		ARTERIAL	30-40 KM/H	40-50 KM/H	50-60 KM/H	LINK	30 KM/H	30-50 KM/H	50-60 KM/H	LOCAL	10-30 KM/H	10-30 KM/H	30-50 KM/H	CENTRE	N'HOOD	SUBURBAN	BUSINESS/ INDUSTRIAL	CONTEXT		RURAL FRINGE	
PEDESTRIAN PRIORITY		VEHICLE PRIORITY																									
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CENTRE	N'HOOD	SUBURBAN	BUSINESS/ INDUSTRIAL																								
CONTEXT		RURAL FRINGE																									
Comments: The existing road which will provide access to the development is governed by a 60km/h speed limit. There is a future proposal to provide a future bridge connection over the river Staney which will connect to the main internal spine road within the proposed development. A speed limit of 50km/h should be provided on the connector road. A 30km/h speed limit should be provided on all other internal links roads within the development.																											

Component	Notes																								
1.2.2 Stopping Sight Distance standards	<p>DMURS Provision: The following Stop Sight Distances (SSD), standards should be applied in line with the design speed for the street:</p> <table border="1" data-bbox="285 336 619 1190"> <thead> <tr> <th colspan="3">SSD STANDARDS</th> </tr> <tr> <th>Design Speed (km/h)</th> <th>SSD Standard (metres)</th> <th>SSD Standard (metres)</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>7</td> <td>8</td> </tr> <tr> <td>20</td> <td>14</td> <td>15</td> </tr> <tr> <td>30</td> <td>23</td> <td>24</td> </tr> <tr> <td>40</td> <td>33</td> <td>36</td> </tr> <tr> <td>50</td> <td>45</td> <td>49</td> </tr> <tr> <td>60</td> <td>59</td> <td>65</td> </tr> </tbody> </table> <p style="text-align: right;">Forward Visibility on Bus Routes</p>	SSD STANDARDS			Design Speed (km/h)	SSD Standard (metres)	SSD Standard (metres)	10	7	8	20	14	15	30	23	24	40	33	36	50	45	49	60	59	65
SSD STANDARDS																									
Design Speed (km/h)	SSD Standard (metres)	SSD Standard (metres)																							
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20	14	15																							
30	23	24																							
40	33	36																							
50	45	49																							
60	59	65																							
1.3 Footways, Strips and Verges	<p>DMURS Provision: Footway widths must be 1.8m or greater and widths should increase incrementally depending on the levels of activity land location of the street.</p> <p>Designers Provision: The proposed site layout indicates a footpath wide of 1.8m throughout the development.</p>																								
1.3.1 Footway widths	<p>DMURS Provision: Local streets have no requirement for same, or a minimum width, however, some form of street furniture or planting should be included in the design in order to avoid encroachment and visual dominance of vehicles.</p> <p>A verge (minimum of 0.3m) should be provided in areas of perpendicular parking where vehicles may overhang the footway.</p> <p>Designers Provision: Perpendicular parking is provided adjacent to the footways. Measures will be put in place to prevent overhang of the footpath.</p>																								
1.3.2 Footway verges																									

1.4 Junctions and Crossing Points

1.4.1	Pedestrian facilities at junctions	DMURS Provision:
Component		Notes
		<p>Local streets, due to their lightly-trafficked/ low-speed nature, generally do not require the provision of controlled crossings. The provision of drop kerbs and tactile paving will generally suffice. The location and frequency of crossings should align with key desire lines for pedestrians.</p> <p>Designers Provision: The locations of pedestrian crossing points are not indicated on the drawings.</p> <p>Comments: The provision of dropped kerbs and tactile paving should be provided at the location of pedestrian crossing points. The provision of controlled crossing points is not required.</p>
1.4.2	Location of crossing points	<p>DMURS Provision: Direct crossing points should be provided for pedestrians and avoid staggered/ staged crossings.</p> <p>Designers Provision: The location of pedestrian crossing are indicated on Site Layout plans.</p> <p>Comments: Ensure direct crossing points are provided</p>
1.4.3	Width of crossing points provided	<p>DMURS Provision: Pedestrian crossing points on local streets should be a minimum width of 2m with a suggested max width of 3m.</p> <p>Designers Provision: The pedestrian crossing are a minimum of 2m on streets and 3m on the main orbital road.</p> <p>Comments: Ensure pedestrian crossing points have a minimum width of 2m.</p>
1.5 Corner Radii		DMURS Provision: At junctions between Arterial and Link streets, a maximum corner radius of 6m should be applied. At junctions between Arterial/ Link streets and Local streets, a maximum corner radius of 4.5m should be applied. In areas with low vehicular movements and activity and where design speeds are low, corner radii are to be reduced to between 1m-3m. Where larger vehicles are constantly turning, a maximum corner radii of up to 9m should be applied.
1.5.1	Corner radii included in the street	

Component	Notes
	<p>Designers Provision: The designer provides a max corner radius of 6m along the main access roads and is reduced to a 4m corner radius along the minor access roads.</p> <p>Comments: The corner radii within the development are in compliance with the DMURS.</p>
<p>1.6 Shared Surfaces</p> <p>1.6.1 Shared surface on the street</p>	<p>DMURS Provision: Shared surface may be proposed in the home zones. Note: In a shared surface, a speed limit of 20km/h should be put in place. A shared surface must use a variety of materials and finishes to clarify the boundaries of the pedestrian zone from the shared zone. There should be no raised kerbs. The carriageway and corner radii should be minimised thus reducing vehicular speed.</p> <p>Designers Provision: Home zones are provided within the proposed development. However, a shared surface is not provided at these locations.</p> <p>Comments: At the location of the home zones a footpath is provided to cater for pedestrians. The carriageway width at the home zone locations is adequate to cater for cyclists.</p>
<p>1.7 Visually Impaired Street Users</p> <p>1.7.1 Measures which help visually impaired street users to navigate the street.</p>	<p>DMURS Provision: In order to aid and enhance clarity for visually impaired street users, the following measures should be present in the design:</p> <ul style="list-style-type: none"> • Tactile paving sections; • If a shared surface is proposed distinctive pedestrian zones, using contrasting materials and finishes at kerbs and street edges will clearly define the boundaries of the zone. <p>Designers Provision: The general approach and location is clearly indicated on the RAU site layout plan and highlighted in the accompanying drawing.</p>

Component	Notes
1.8 Cycle Facilities	
1.8.1 Provision of cycle facilities.	<p>Comments: Ensure tactile paving at all crossing locations is provided to aid visually impaired street users.</p> <p>1.8 Cycle Facilities</p> <p>DMURS / Cycle Manual Provision: The cycle manual indicates that the cycle lane should be 1.5m wide. The cyclist should be brought through the mouth of the junction. Red surfacing to commence 20m in advance of the side road. Where parking is provided on the street, the cycle facilities should be sent behind the parking facilities and given a separation distance of between 0.75m and 1m from the parking facilities.</p> <p>Comments: A 1.5m cycle track is provided in accordance with the Cycle Manual. The cycle track is shown to be brought to the back of the junction mouths. The cycle track should be brought through the junction mouth as indicated on figure 4.9.2 of the Cycle Manual. Red surfacing should be provided as per figure 4.9.9 of the Cycle Manual. A buffer zone should be provided between the cycle track and the on-street parking facilities.</p>
1.9 Carriageway Widths and Surfaces	<p>1.9.1 Carriageway width</p> <p>DMURS Provision: The standard carriageway width on Link streets for low to moderate design speeds should be between 5.5 – 6.5m. The standard carriageway width on Local streets should be between 5 – 5.5m.</p> <p>Designers Provision: Carriageway widths within the proposed development are generally between 5.5m wide and 6m wide. The carriageway width of the overbridge is 5.1m wide and connects to an internal access road which is 7.2m wide.</p> <p>Comments: The carriageway width should be no greater than 6.5m wide.</p>

Component	Notes																											
1.10 Visibility Splays																												
1.10.1 Visibility splays at junctions with any intersecting carriageways	<p>DMURS Provision: The following visibility splays at junctions and inter-visibility at bends standards should be applied in line with the design speed for the street:</p> <table border="1" data-bbox="357 348 695 1201"> <thead> <tr> <th colspan="3" data-bbox="357 348 695 393">SSD STANDARDS</th> </tr> <tr> <th data-bbox="357 393 452 437">Design Speed (km/h)</th><th data-bbox="452 393 547 437">SSD Standard (metres)</th><th data-bbox="547 393 695 437">SSD Standard (metres)</th></tr> </thead> <tbody> <tr> <td data-bbox="357 437 452 482">10</td><td data-bbox="452 437 547 482">7</td><td data-bbox="547 437 695 482">8</td></tr> <tr> <td data-bbox="357 482 452 527">20</td><td data-bbox="452 482 547 527">14</td><td data-bbox="547 482 695 527">15</td></tr> <tr> <td data-bbox="357 527 452 572">30</td><td data-bbox="452 527 547 572">23</td><td data-bbox="547 527 695 572">24</td></tr> <tr> <td data-bbox="357 572 452 617">40</td><td data-bbox="452 572 547 617">33</td><td data-bbox="547 572 695 617">36</td></tr> <tr> <td data-bbox="357 617 452 662">50</td><td data-bbox="452 617 547 662">45</td><td data-bbox="547 617 695 662">49</td></tr> <tr> <td data-bbox="357 662 452 707">60</td><td data-bbox="452 662 547 707">59</td><td data-bbox="547 662 695 707">65</td></tr> <tr> <td colspan="3" data-bbox="357 707 452 752" style="text-align: right;">Forward Visibility Routes</td></tr> </tbody> </table> <p>Comments: A design speed of 30km/h is recommended along the internal roads within the proposed residential development. Therefore a visibility splay of 23m at a set-back of 2.4m should be provided at each junction. Generally, the visibility splay have been achieved. These should be further reviewed at detailed design stage to ensure there is no conflict between visibility splays for road users with landscaping, boundary walls or parking.</p>	SSD STANDARDS			Design Speed (km/h)	SSD Standard (metres)	SSD Standard (metres)	10	7	8	20	14	15	30	23	24	40	33	36	50	45	49	60	59	65	Forward Visibility Routes		
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1.10.2 Inter-visibility Splays	<p>DMURS Provision: The following inter-visibility splays at pedestrian / cycle crossing locations should be applied in line with the design speed for the street:</p> <table border="1" data-bbox="357 348 695 1201"> <thead> <tr> <th colspan="3" data-bbox="357 348 695 393">SSD STANDARDS</th> </tr> <tr> <th data-bbox="357 393 452 437">Design Speed (km/h)</th><th data-bbox="452 393 547 437">SSD Standard (metres)</th><th data-bbox="547 393 695 437">SSD Standard (metres)</th></tr> </thead> <tbody> <tr> <td data-bbox="357 437 452 482">10</td><td data-bbox="452 437 547 482">7</td><td data-bbox="547 437 695 482">8</td></tr> <tr> <td data-bbox="357 482 452 527">20</td><td data-bbox="452 482 547 527">14</td><td data-bbox="547 482 695 527">15</td></tr> <tr> <td data-bbox="357 527 452 572">30</td><td data-bbox="452 527 547 572">23</td><td data-bbox="547 527 695 572">24</td></tr> <tr> <td data-bbox="357 572 452 617">40</td><td data-bbox="452 572 547 617">33</td><td data-bbox="547 572 695 617">36</td></tr> <tr> <td data-bbox="357 617 452 662">50</td><td data-bbox="452 617 547 662">45</td><td data-bbox="547 617 695 662">49</td></tr> <tr> <td data-bbox="357 662 452 707">60</td><td data-bbox="452 662 547 707">59</td><td data-bbox="547 662 695 707">65</td></tr> <tr> <td colspan="3" data-bbox="357 707 452 752" style="text-align: right;">Forward Visibility Routes</td></tr> </tbody> </table>	SSD STANDARDS			Design Speed (km/h)	SSD Standard (metres)	SSD Standard (metres)	10	7	8	20	14	15	30	23	24	40	33	36	50	45	49	60	59	65	Forward Visibility Routes		
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Component	Notes
	<p>Comments: A design speed of 30km/h is recommended along the internal roads within the proposed residential development. Therefore an inter-visibility splay of 23m between drivers of vehicles approaching the pedestrian / cycle crossing locations should be provided.</p> <p>There are a number of locations within the proposed development where the required inter-visibility between drivers of vehicles approaching the pedestrian / cycle crossing points is not achieved. These should be further reviewed at detailed design stage to ensure there is no conflict between visibility splays for road users with landscaping, boundary walls or parking.</p> <p>1.11 Horizontal and Vertical Deflections</p> <p>1.11.1 Horizontal or vertical deflections</p> <p>DMURS Provision: Horizontal and vertical deflections should be considered where the following scenarios are present;</p> <ul style="list-style-type: none"> • On straights where there is a distance of 70m or greater between junctions. • At equal priority junctions. • As entrance treatments, where Link streets join with Local streets. • Around focal points or civic areas of importance. • At crossing points. <p>Designers Provision: Raised tables are provided at internal junctions along straight sections.</p>
	<p>1.12 Kerbs</p> <p>1.12.1 Height of kerbs</p> <p>DMURS Provision: The general height of standard kerbs should be 125mm. In areas of higher pedestrian activity, lower kerbs are more appropriate. Lower kerbs should have a height of between 50-75mm. Kerbs should not be used in shared surfaces (such as home zones or pedestrian priority areas), instead a drainage channel should be implemented as it has the double positive of aiding street run-off and providing an indicator of the boundary of the pedestrian zone to all street users.</p>

Component	Notes
<p>1.13 On-Street Parking</p> <p>1.13.1 Design of the parking spaces</p>	<p>Comments: Proposed kerb heights are included with the appendices of this document.</p> <p>1.13 On-Street Parking</p> <p>DMURS Provision: The number of parking spaces per bay must be at most three spaces if the spaces are parallel spaces or at most six spaces if the spaces are perpendicular spaces. Parallel spaces should be 2.4m in width and 6m in length. Perpendicular spaces should be 2.4m in width and 4.8m in depth with 0.3m of an overhang. Angular parking spaces should be 2.4m in width and 4.2m in depth for a 60 degree space. 45 degree spaces should be a width of 2.4m and a depth of 3.6m.</p> <p>Designers Provision: Perpendicular parking and parallel parking is provided within the proposed development. Perpendicular parking bays are 5m in depth and 2.5m wide. Parallel parking bays are 2.8m wide and 6m in length.</p> <p>Comments: Parking proposals are in alignment with DMURS principles as per the Proposed Site Layout plans.</p>

APPENDIX 2 – Drawings

RAU Site Layout Plan
P15-209K-RAU-ZZ-ZZ-DR-A-31006

3.0 PLANNING

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CARCOURT PARK

UNIT 201, WILLIAM NEVILLE & SONS

TITLE **EDWARD CHRISTIE** **EDWARD CHRISTIE**

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KILKENNY,	
IRELAND.	
Tel : +353 (56) 776 269 7777	
www.eddyarchitecture.co.uk	
DATE 30/06/2017	SCALE 1:1000
DEN B/R	CHECKED NK
DRAWING NUMBER P16-206K RAU-ZZ-ZZ-DRA-3106	
REF/ISON P03.08	

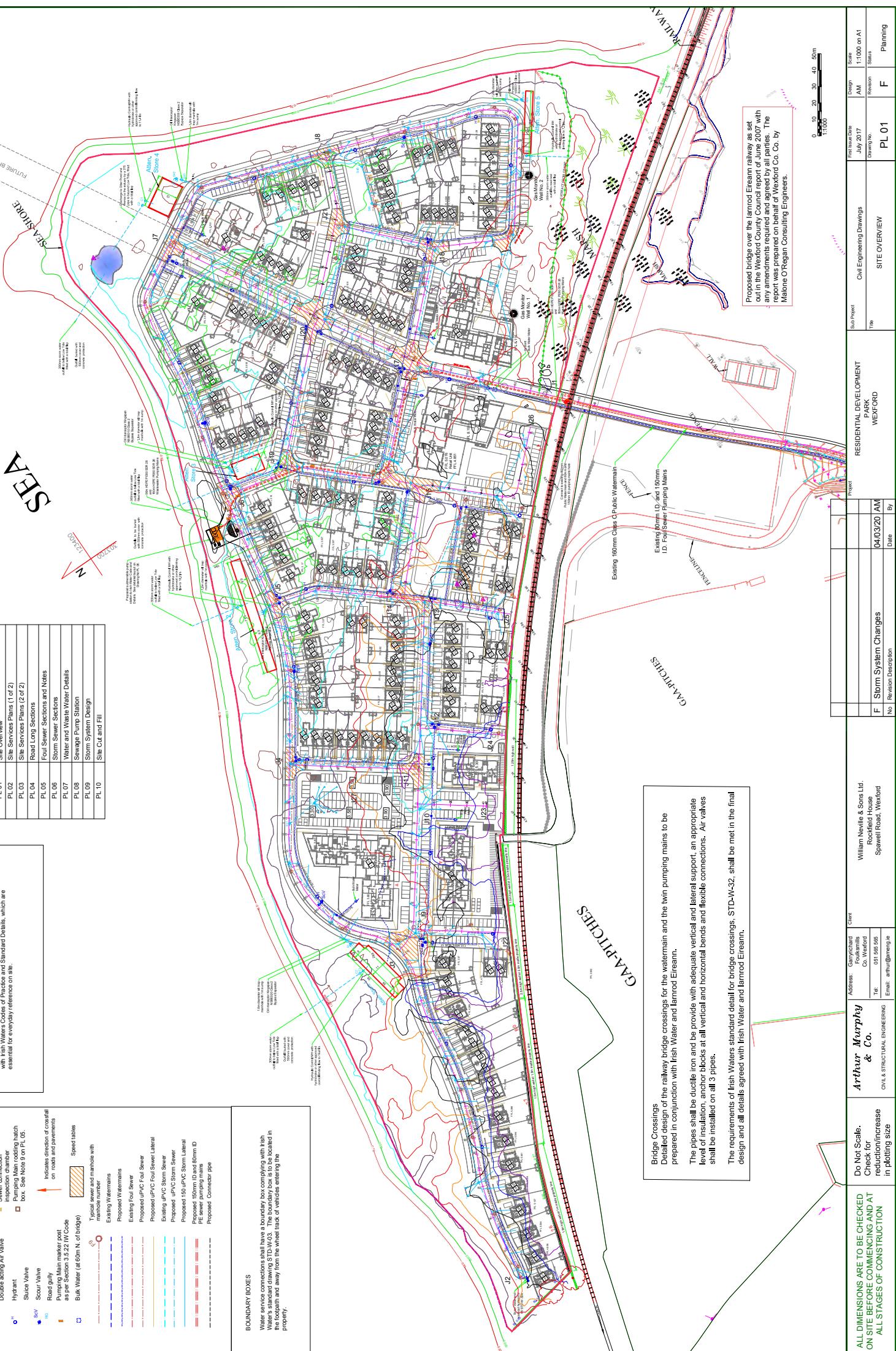
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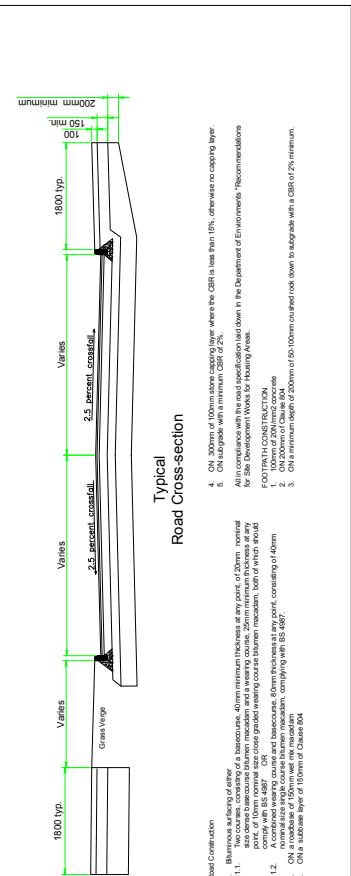
This site plan illustrates a proposed development area, likely a residential or mixed-use complex, situated adjacent to a golf course. The plan includes several key features and boundary indicators:

- LOCATION OF SITE NOTICE:** Two locations are marked with dashed lines and arrows:
 - A purple dashed line near the top center, labeled "LOCATION OF SITE NOTICE".
 - A red dashed line on the right side, labeled "LOCATION OF SITE NOTICE".
- Golf Course Areas:** Labeled "GOLF COURSE" and "GOLF COURSE" with arrows pointing to specific areas.
- Playing Pitch:** Several areas labeled "PLAYING PITCH" are indicated by arrows, including one near the bottom center and another on the right side.
- Proposed Development:** A large, light-colored rectangular area representing the proposed development, which includes:
 - A central building footprint with multiple windows.
 - Surrounding infrastructure such as roads, parking lots, and utility structures.
 - Landscaping areas marked with green shading.
- Topographic Features:** Contour lines and elevation markers provide a sense of the terrain's slope and height.
- Neighboring Properties:** Other land parcels and developments are shown in the background, including a green area labeled "RESIDENTIAL" and a building labeled "COMMERCIAL".

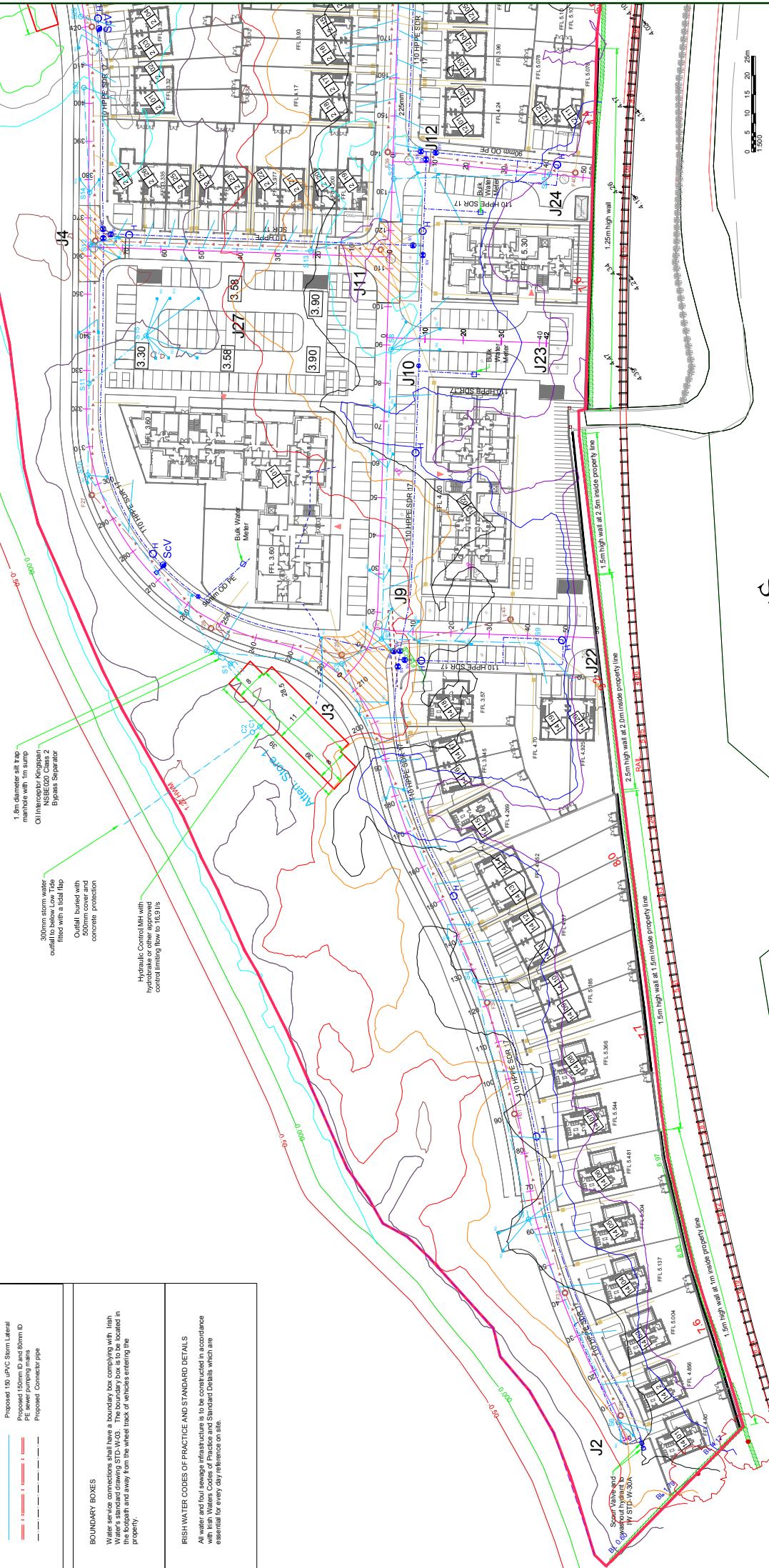
Arthur Murphy & Co.

PL - 01 Site Overview





Legend	
Double acting Air Valve	Sewer connection
Hydrant	Inpection chamber
Sluice Valve	Pumping Main rodding hatch box. See Note 9 on PL 05
Scour Valve	Indicates direction of crossfall on roads and pavements
Scour Valve	Speed tables
Scour Valve	Typical sewer and manhole with number
Scour Valve	Existing Water mains
Scour Valve	Proposed Water mains
Scour Valve	Existing Foul Sewer
Scour Valve	Proposed uPVC Foul Sewer Lateral
Scour Valve	Existing uPVC Stem Sewer
Scour Valve	Proposed uPVC Stem Sewer
Scour Valve	Proposed 150mm D and 80mm ID
Scour Valve	PE sewer pumping mains
Scour Valve	Proposed Connector pipe
BOUNDARY BOXES	
Water service connections shall have a boundary box complying with Irish Water's standard drawing TD-W03. The boundary box is to be located in the bogbank and away from the wheel track of vehicles entering the property.	
IRISH WATER CODES OF PRACTICE AND STANDARD DE AELS	
All water and foul sewage infrastructure is to be constructed in accordance with Irish Water's Codes of Practice and Standard Details which are essential for every day reference on site.	



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PL - 03 Site Services 2/2

177

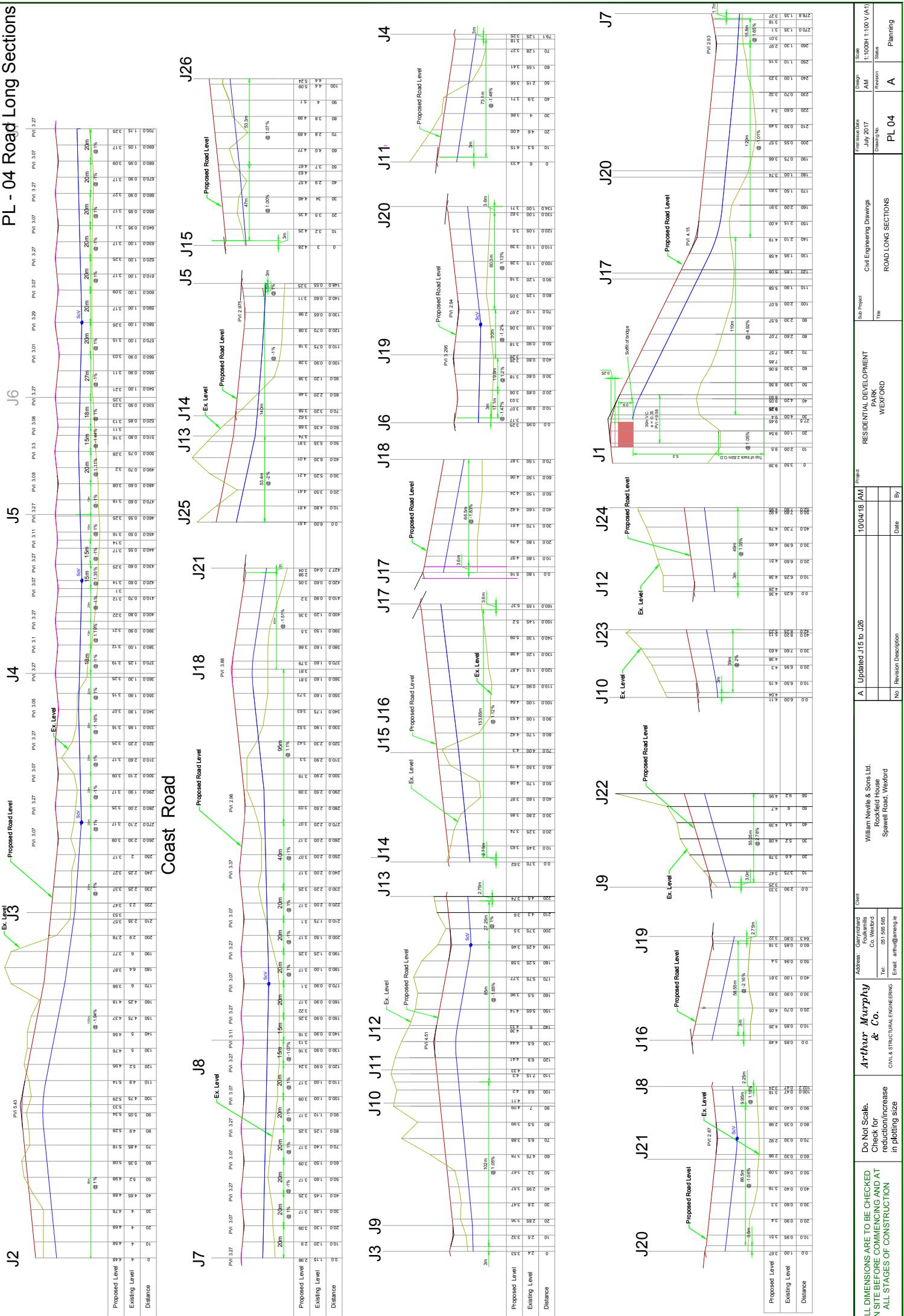
Oil Interceptor Kingspan
NSBE010 Class 2
Bypass Separator

Discharge to Otter Pond and
fence to the estuary by a 37
/ pipe to beyond Low Tide, filter
with a tidal flap

Legend



Arthur Murphy & Co.
PL - 04 Road Long Sections



ALL DIMENSIONS ARE TO BE CHECKED
ON SITE BEFORE COMMENCING AND AT
ALL STAGES OF CONSTRUCTION

Project		Residential Development Park	
Sub Project	Site Name	Reason	Date
PL 04	Rockwell House, Spawell Road, Wexford	A	By

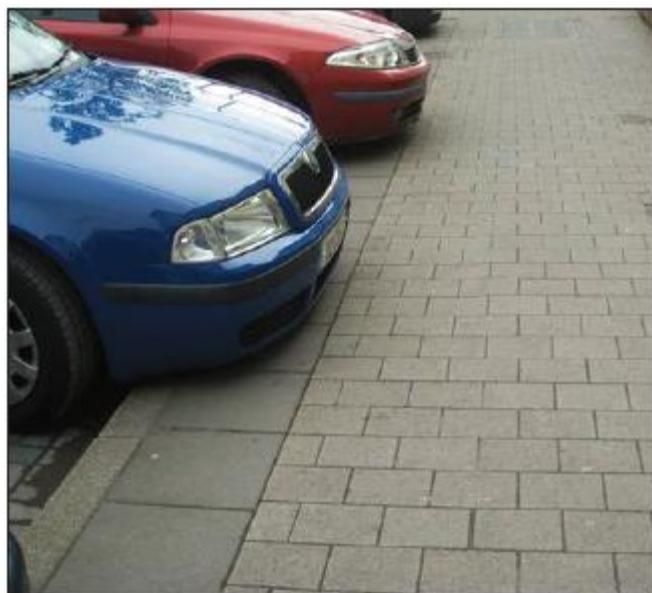
Scale: 1:1000H:1:100 (A1)
First Issue Date: July 2017
Drawing No.: ROAD LONG SECTIONS
Drawing AM

Design Reason Planning

Appendix 3 – Typical Details

01-Cycle facilities & Footpath verges

The cycle facility and the footpath will be separated by a distance that will allow for the overhang of the vehicle and a verge (minimum of 0.30m will be provided in areas of perpendicular parking where vehicles may overhang the footway).



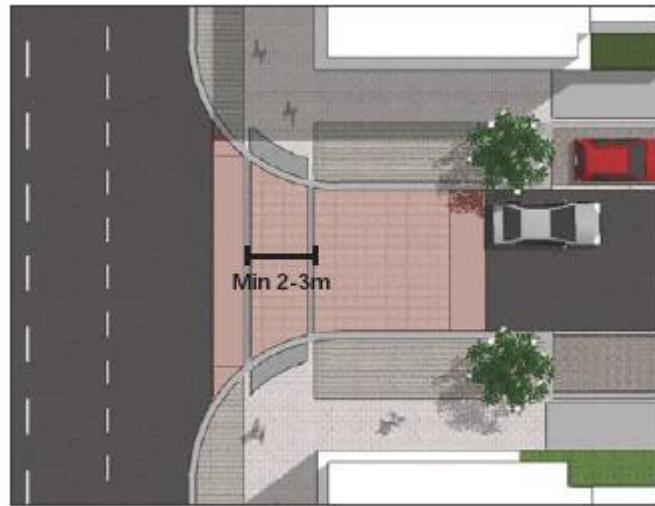
- 01- An example where a narrow verge is provided to ensure that vehicle overhangs do not intrude on the footway (Figure 4.36 DMURS)

02-Width of crossing points provided

All the pedestrian crossing point will have a minimum of 2m or 3m alongside the main boulevard.



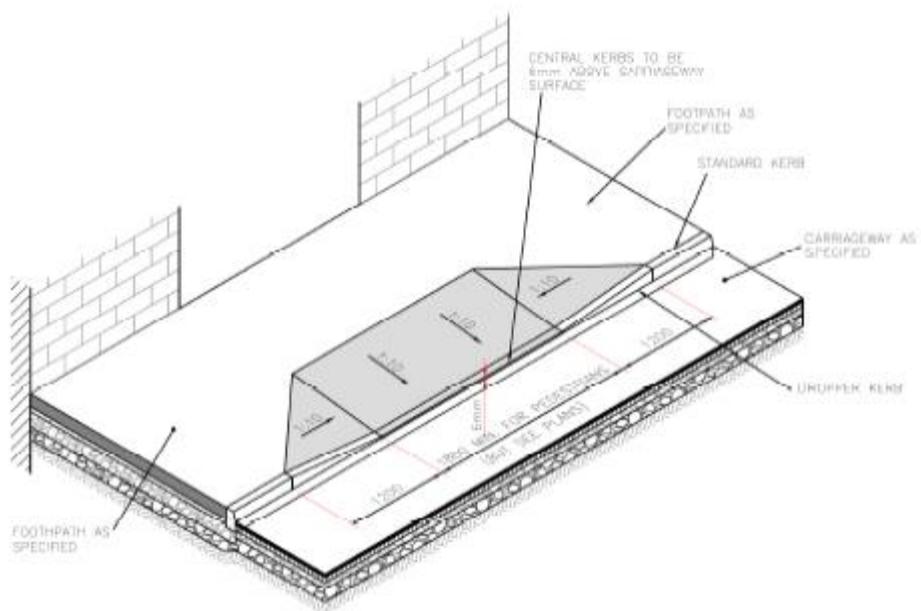
- 03- Example of an informal "courtesy" crossing in Westport, Co. Mayo. Drivers stop and wait for pedestrians to cross as a courtesy (Figure 4.38 DMURS)



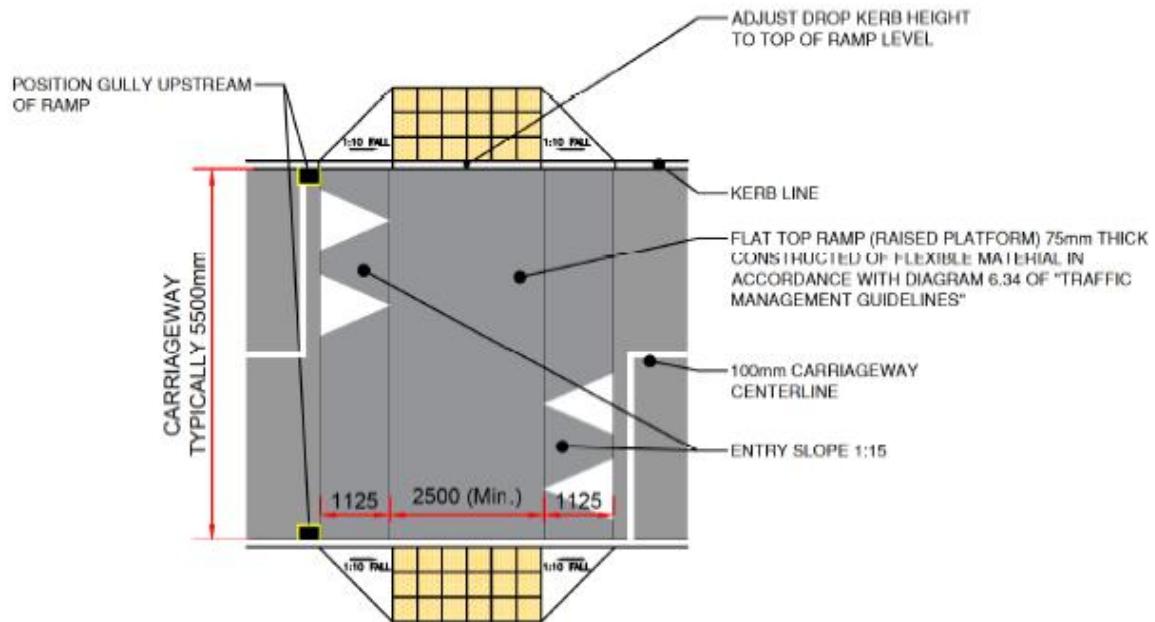
03 - Standard crossing widths to be used in most circumstances across the main carriageway and across side junctions with Local streets. (Figure 4.41 DMURS)

03-Junctions and Crossing Point

The provision of dropped kerbs and tactile paving will be provided at the location of pedestrian crossing points to aid accessibility and visual impairment.



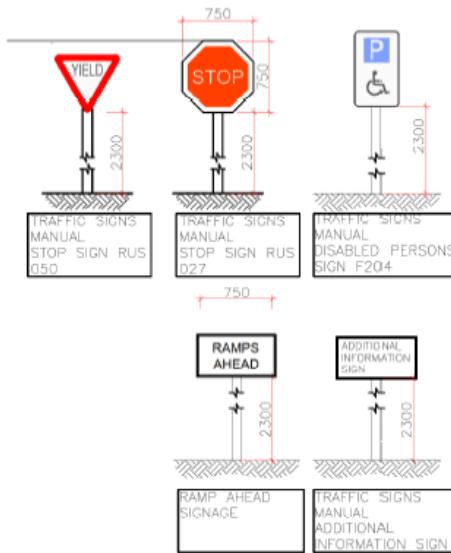
04 - Combined Ramp and Pedestrian Crossing



05 - Combined Ramp and Pedestrian Crossing

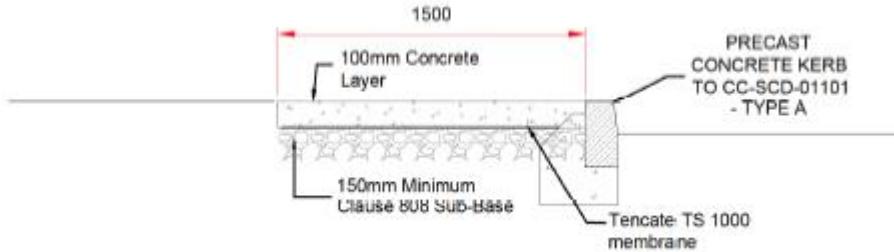
03-Traffic sign

The provision of the following sign will contribute to regulate traffic on site and to increase road / street safety.



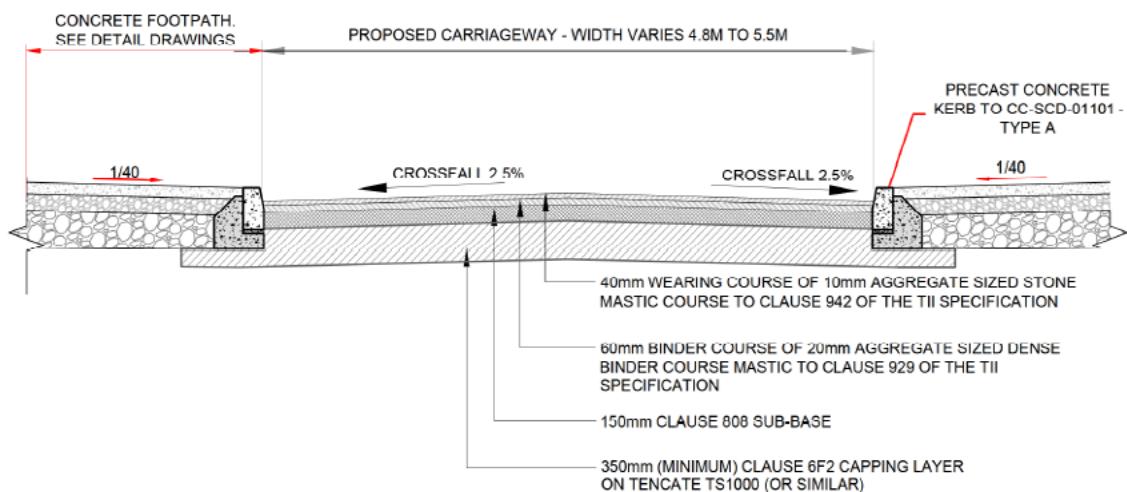
06 - Traffic Sign

04-Typical Concrete Footpath/ Road cross section and typical shared road surface



07 - Typical Concrete Footpath

NOTE: Footpaths are 1.8 – 2m wide through Proposed Scheme.



08 - Typical Road Cross Section

RAU SITE LAYOUT PLAN
using general DMURS criteria

indicating general DMURS criteria
P15-209K-RAU-ZZ-ZZ-DR-A-31006

Refer to Site Plan for further detailed locations: P15



