Pobl Group

# Swept-Path analysis of several construction Vehicles, Travelling from Caerleon Rd (B4596) to the site access, Herbert Road, Newport

**TRANSPORT STATEMENT**

March 2018

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| **Project no**: | T17.119 |
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| **Document issue date:** | **March 2018** |
| **Project name**: | Herbert Road Swept Path Analysis |

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**CONTENTS**



**Figures**

# 1.0 INTRODUCTION

## 1.1 Background

1.1.1 Asbri Transport Ltd have been commissioned by Pobl Group to perform a vehicle tracking swept-path analysis exercise for several construction vehicles from Caerleon Road (B4596) to the site access off Herbert Rd via two separate routes.

1.1.2 This report focuses on two routes as outlined below:

1.1.3 One route (A) will access the site by turning right off Caerleon Road onto Turner St, under the railway line via an underpass and immediately right onto Herbert Rd which leads into the site. This route will be denoted as the 'via Turner Street' Route. It is important to note that the underpass is 4.74m wide and 3.1m high as shown in the image below.


*Image of 3.1m height restriction on Route A*

1.1.4 The second route (B) will access the site by turning right off Caerleon Road onto East Usk Road and via the Railway underpass. Immediately after the underpass the vehicle will turn right onto Tregare St, it will carry down the Street for approximately 150m.

1.1.5 After this point the vehicle will turn left onto Corelli St follow this for approximately 100m and take the first right onto Clayton Street. The vehicle will then follow Clayton Street for 90m and turn right onto Turner St. After approximately 100m the vehicle will turn left onto Herbert Rd and follow the street until it reaches the site. This will be denoted as the 'via E Usk Rd route'. It is important to note that the underpass on this route is 8.55m wide and 3.8m high.


*Image of 3.8m height restriction on route B*

1.1.6 The routes manoeuvre through residential streets. Banksmen and measures that ensure the suspension of on street parking will need to be put in place across both routes.

1.1.7 The tracking exercise in this report uses the Auto Track software on AutoCAD. It is a computer-generated simulation that uses OS data as boundary points.

## 1.2 Vehicles Used

The Low-loader

1.2.1 A low-loader has been tracked around both routes mentioned previously in this report. The vehicle has a total length of 18m and maximum width of 2.540m and height of 3.408m. The tractor has 1 front and one rear axle. The trailer has two axles to the rear that can steer.

1.2.2 The full specification of the vehicle is shown in **figure 1.1.**

The 12m Rigid Truck

1.2.3 In addition to the low loader a 12m rigid hgv has been tracked around both routes. As the name suggests the truck is 12m long and has a maximum width of 2.5m and height of 3.928m The vehicle has two front axles and two rear axles.

1.2.4 The full specification of the vehicle is shown in **figure 1.2.**

Excavator

1.2.5 An excavator has been tracked exclusively via East Usk Rd route due to the larger height restrictions present on this route. The excavator is 6.14m long, 2.44m in width and 3.8m in height.

1.2.6 The full specification of the vehicle is shown in **figure 1.3.**

## 2.0 Routes assessed

2.1.1 This section of the report analyses the two routes separately, with relevant figures showing the tracking undertaken for the Low Loader and 12m Rigid.

**Via Turner Street (Route A).**

2.1.2 On this route vehicles, must negotiate 2 separate turnings/junctions as shown in figure 2.1.

2.1.3 It is important to note that all the vehicles used in this analysis exceed the 3.1m height restriction at the underpass, instead it will be used for vehicles under 3.1m high.

**The route via East Usk Road (Route B)**

2.1.4 The underpass below the railway is wider on this route as well as having a greater vertical clearance so was analysed with all three vehicles.

2.1.5 On this route both vehicles must negotiate 6 separate turnings/junctions as shown in figure 3.1.

2.1.6 However, there is a considerable volume of on-street parking on the route within a dense residential setting. It will need parking management measures in place to ensure that vehicles can manoeuvre around it and banksmen to supervise the route.

2.1.7 The swept-path analysis for the Low-loader can be seen in figures 3.2, 3.3 and 3.4. The swept path analysis for the 12m rigid hgv can be seen in figures 3.5, 3.6 and 3.7.

2.1.8 Attention should be paid to figures 3.2 and 3.5, both figures show the Low Loader and 12m rigid crossing a OS boundary line on the Turner Rd/Herbert Rd junction respectively.

2.1.9 The low-loader and 12m rigid hgv encounter difficulty manoeuvring through the route in the tracking exercise, however, as a test a 12m rigid vehicle navigated the route without any issues. The swept-path analysis uses OS sourced data as its base and both vehicles cross a boundary line when turning left around the bend.

2.1.10 Asbri Transport have liaised with the client who have advised that a 12m rigid has been able to navigate the route via East Usk Road with no issues. In light of this, it remains important to consider that the tracking exercise is a computer simulation exercise that relies upon Ordnance Survey mapping data.

2.1.11 The excavator can easily navigate around the route. This is presented in figures 3.8, 3.9 and 3.10.

2.1.12 This route will be typically used for vehicles over 3.1m and below 3.8m high such as lorries, and 12m rigids.

## 3.0 Conclusion

3.1.1 Asbri Transport Ltd have been commissioned by Pobl Group to perform a vehicle tracking swept-path analysis exercise for several construction vehicles following two separate routes from Caerleon Road (B4596) to the site access off Herbert Rd via two separate routes.

3.1.2 None of the vehicles tracked will be able to navigate route A via Turner Street due to the 3.1m height restriction. Vehicles below 3.1m will use this route to the site.

3.1.3 The 12m rigid and the low-loader hgv encounter difficulty on a number of turns on the route via east Usk Road (Route B). Most notably at the Turner Rd/Herbert Rd junction. Asbri Transport has liaised with the client who have advised that a 12m rigid hgv has been able to navigate the route via East Usk Road. Considering this, it remains important to consider that the tracking exercise is computer simulation that relies upon OS data as the base mapping. It is also important to consider the 3.8m height restrictions on this route. The excavator can successfully navigate the route via East Usk Road with no issues.

3.1.4 Route B will be used for site vehicles that are over 3.1m high. Vehicles below 3.1m in height will utilise route A.

# Figures

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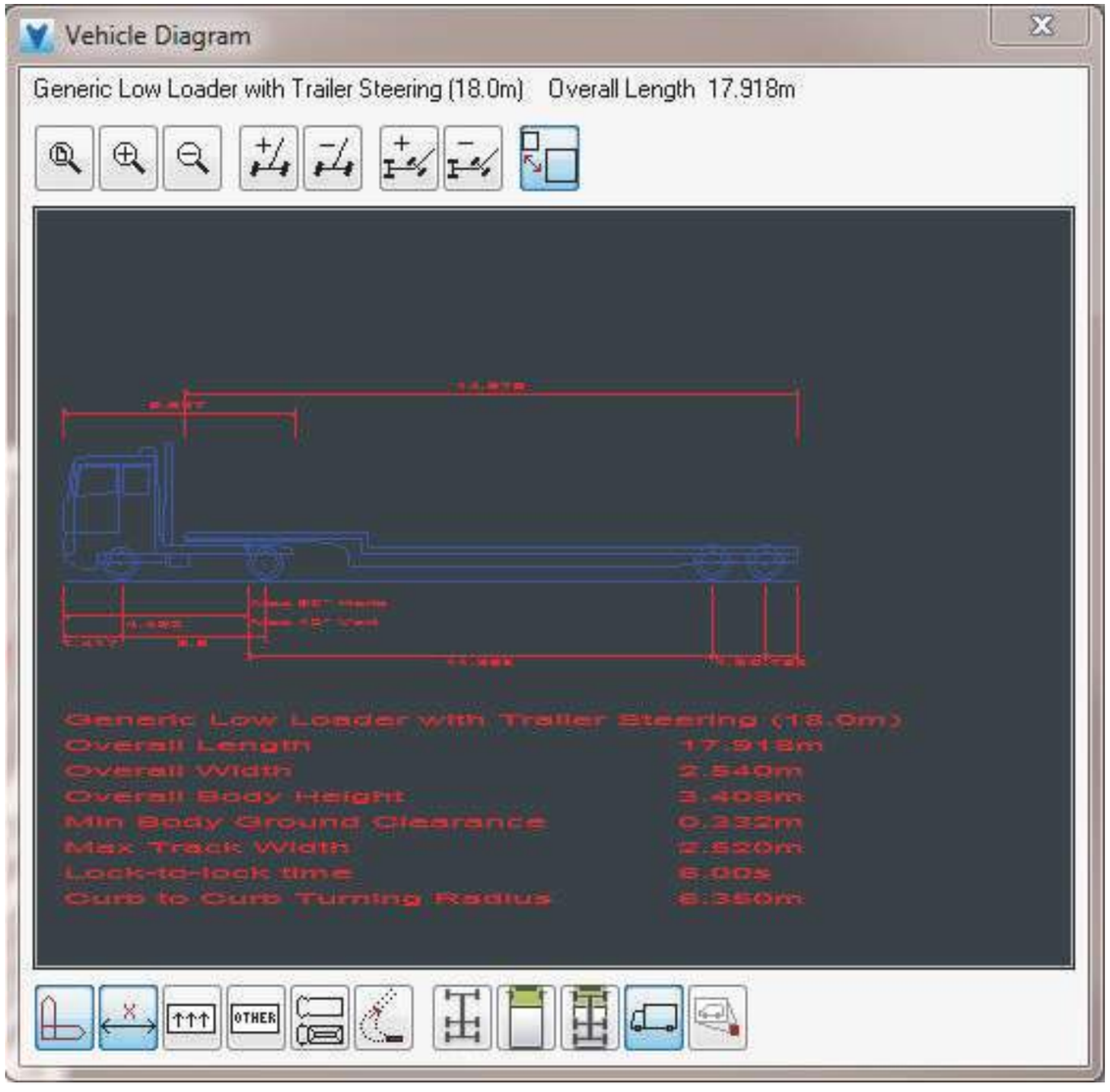




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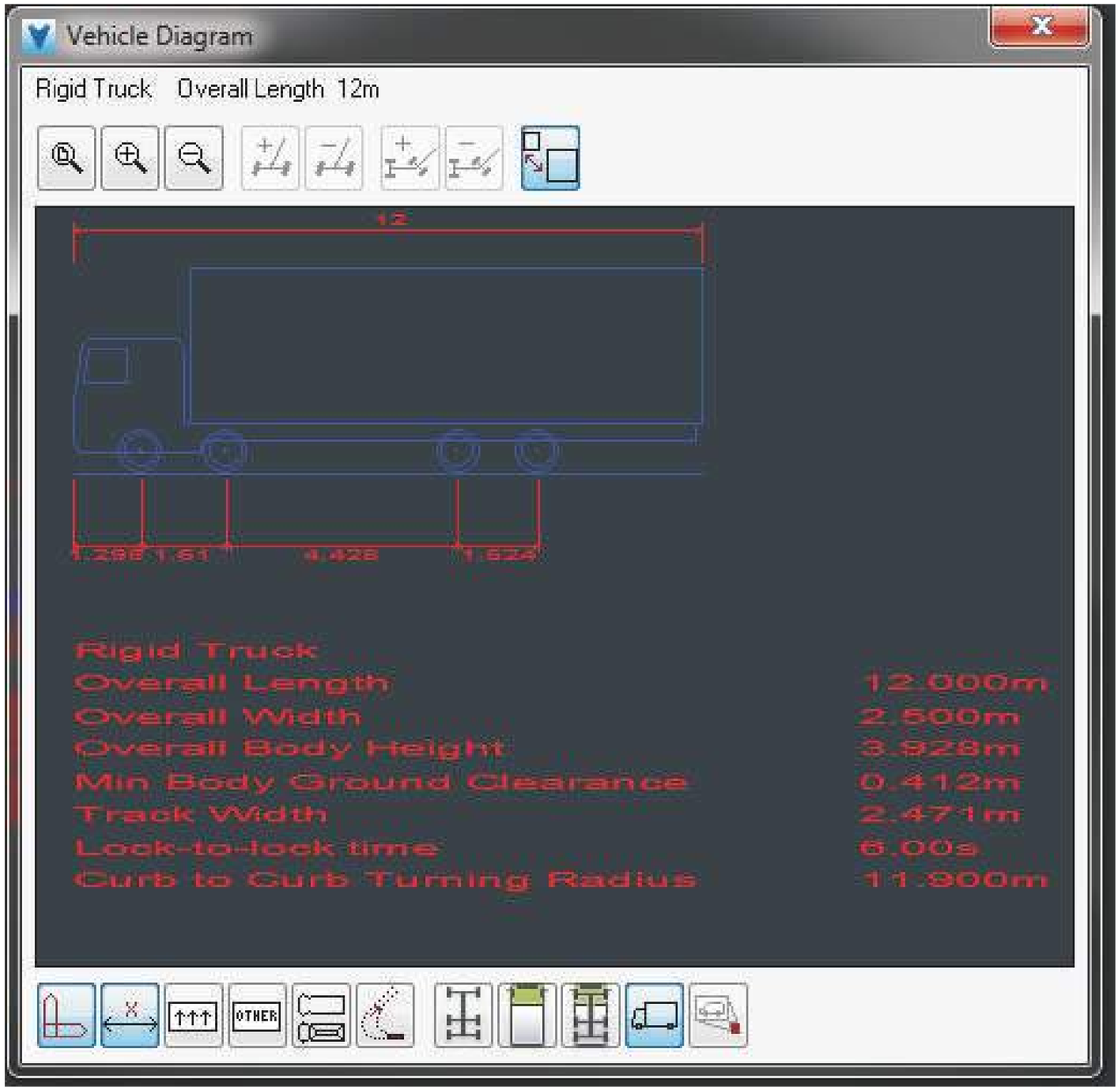


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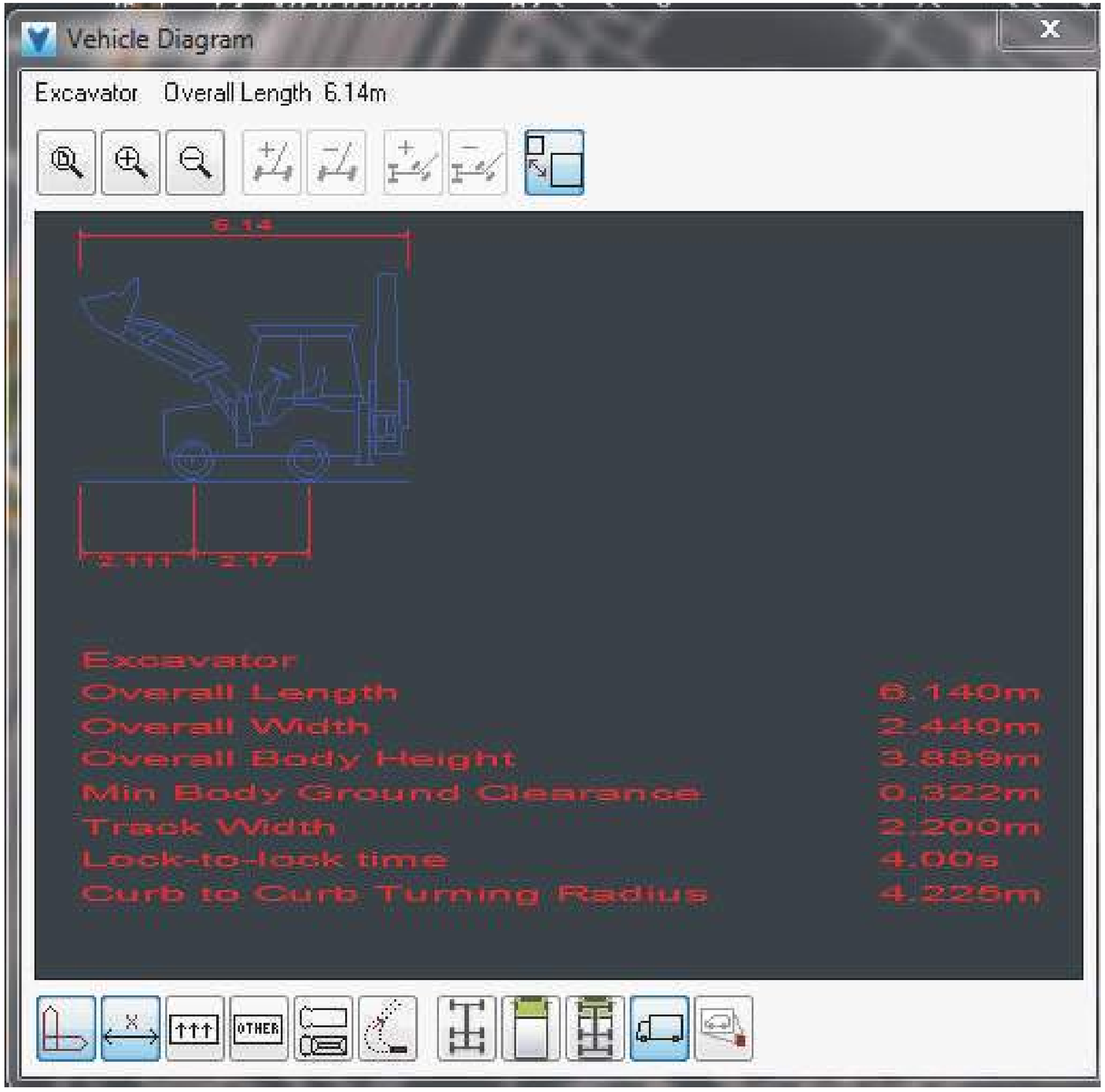


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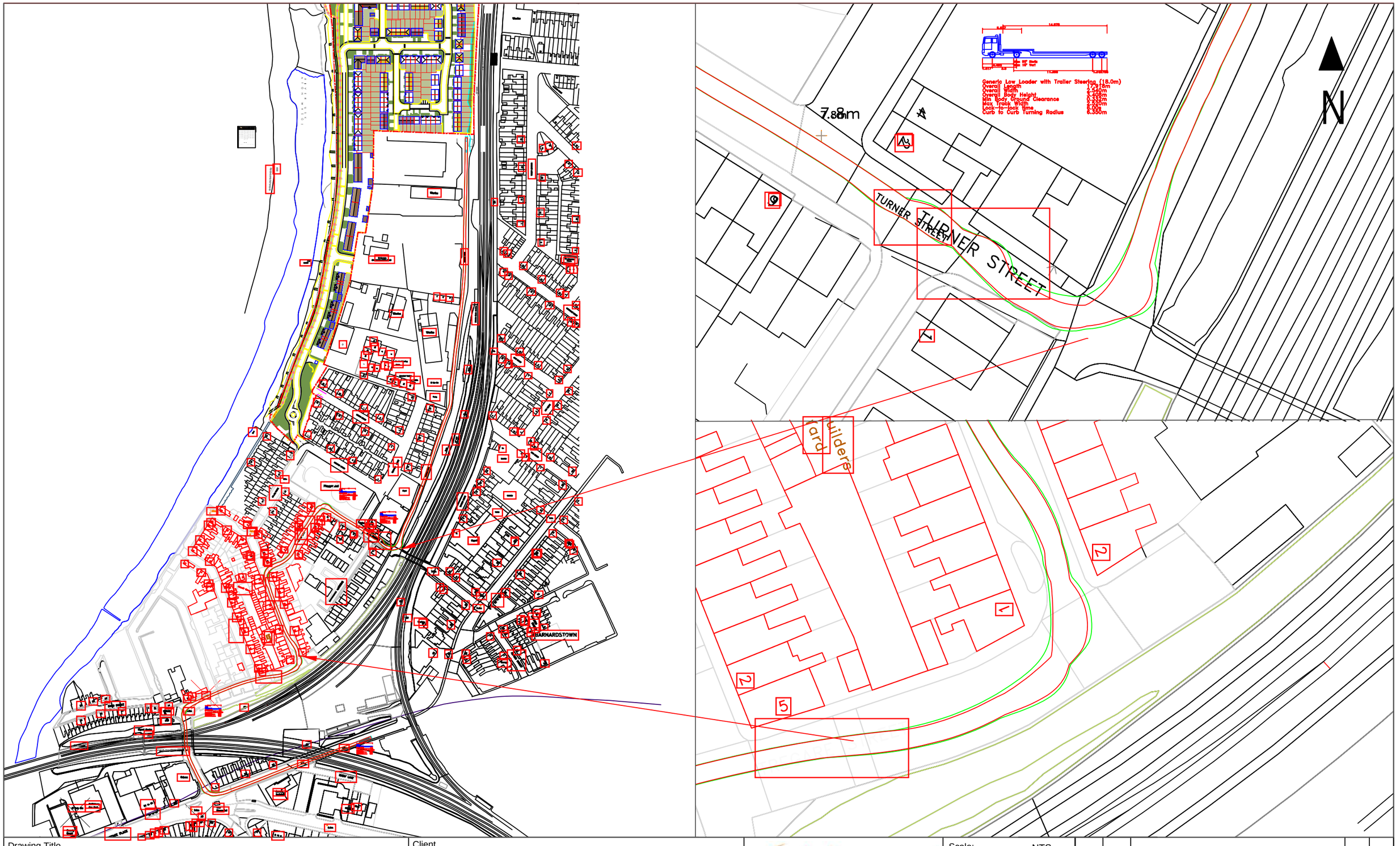


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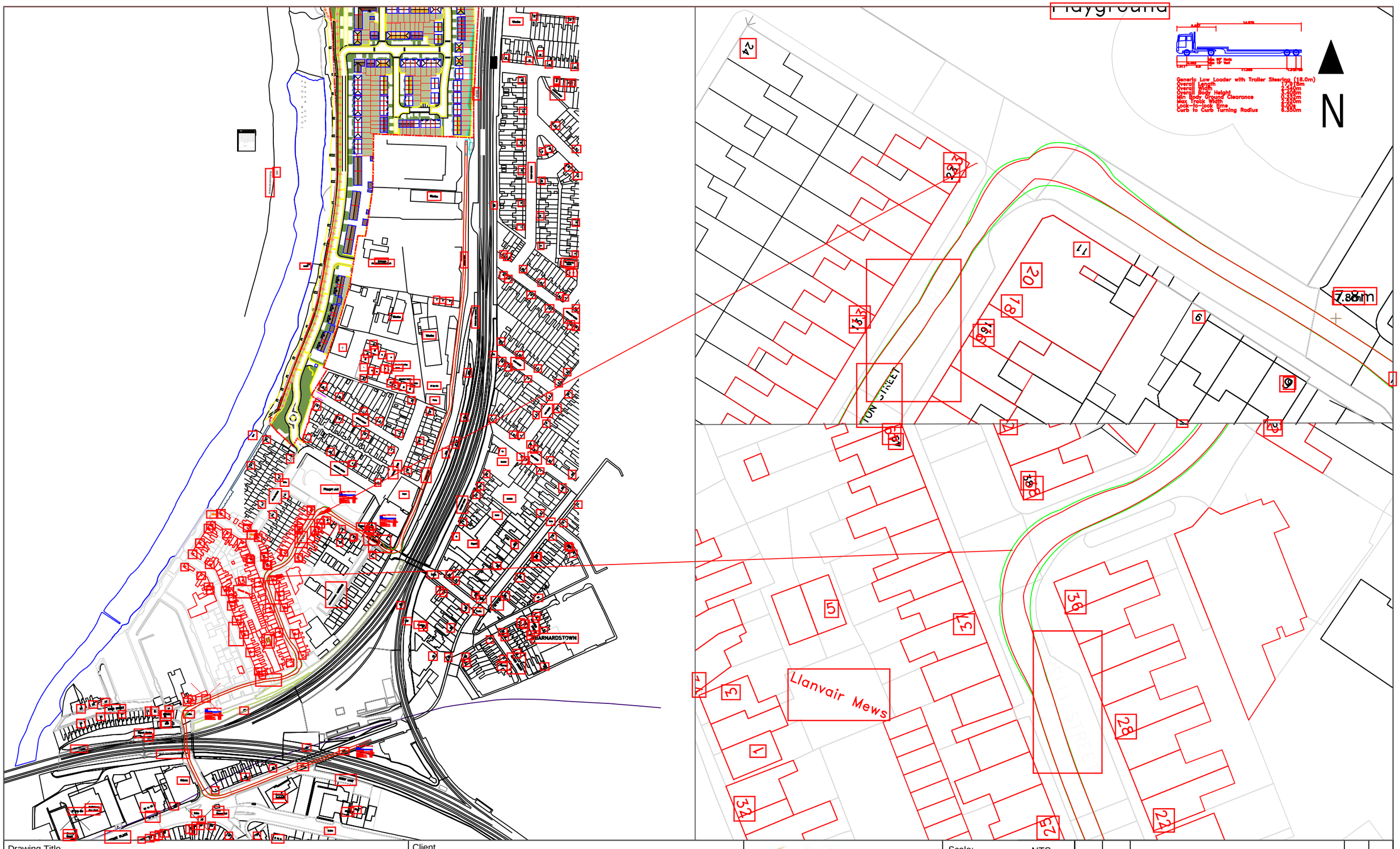


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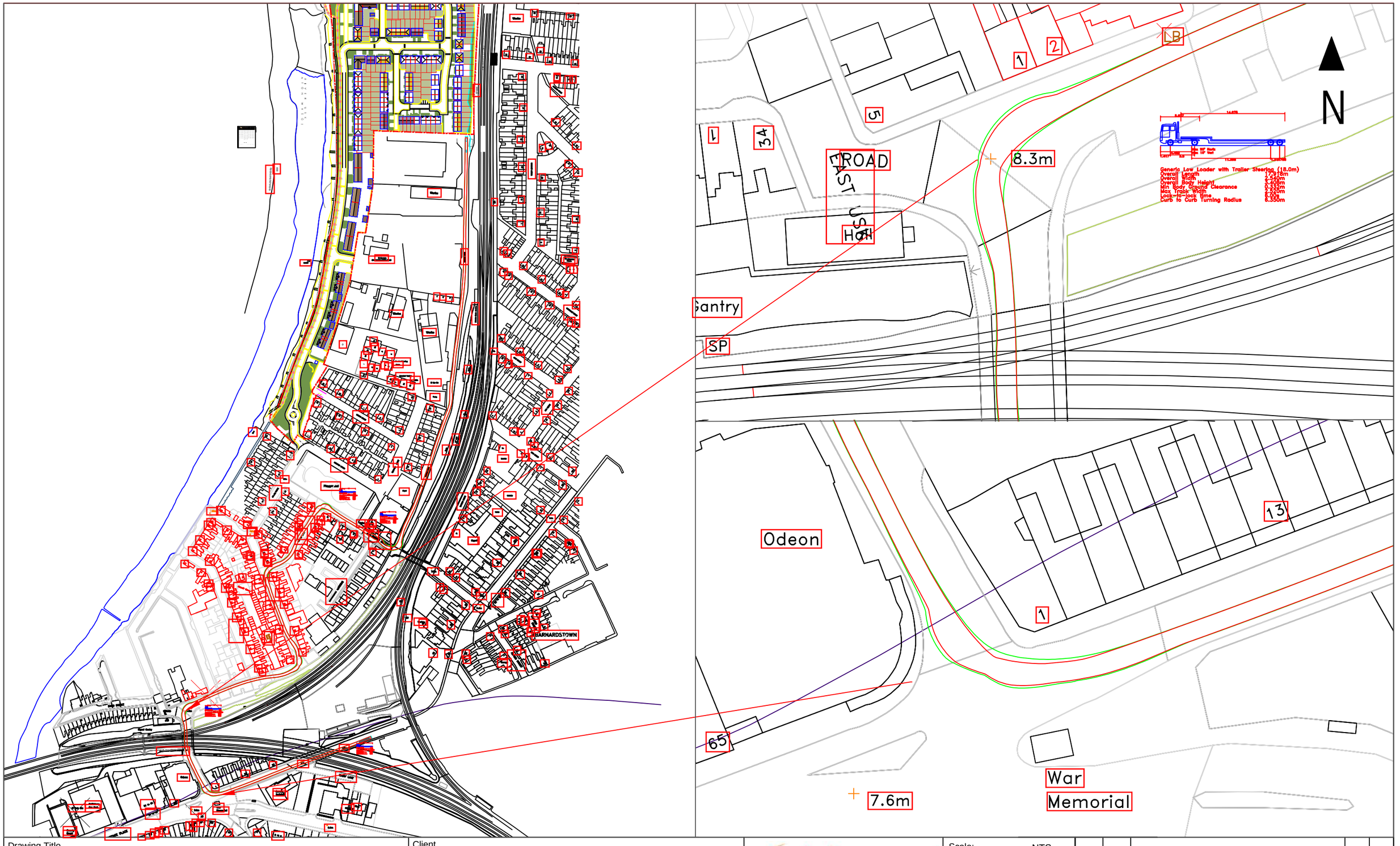


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Swept-path analysis of a 17.9m Low Loader
Via Usk E Rd

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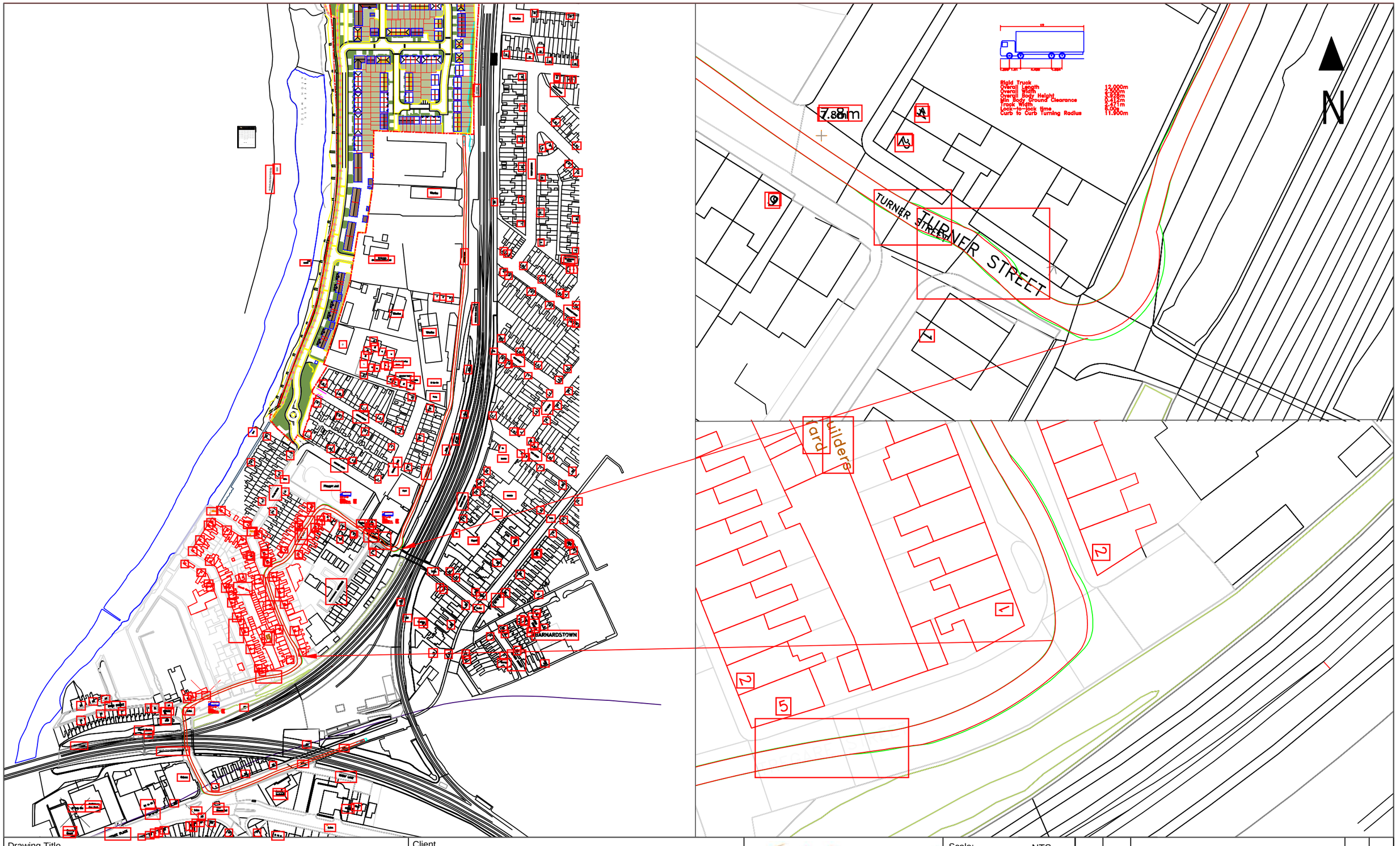


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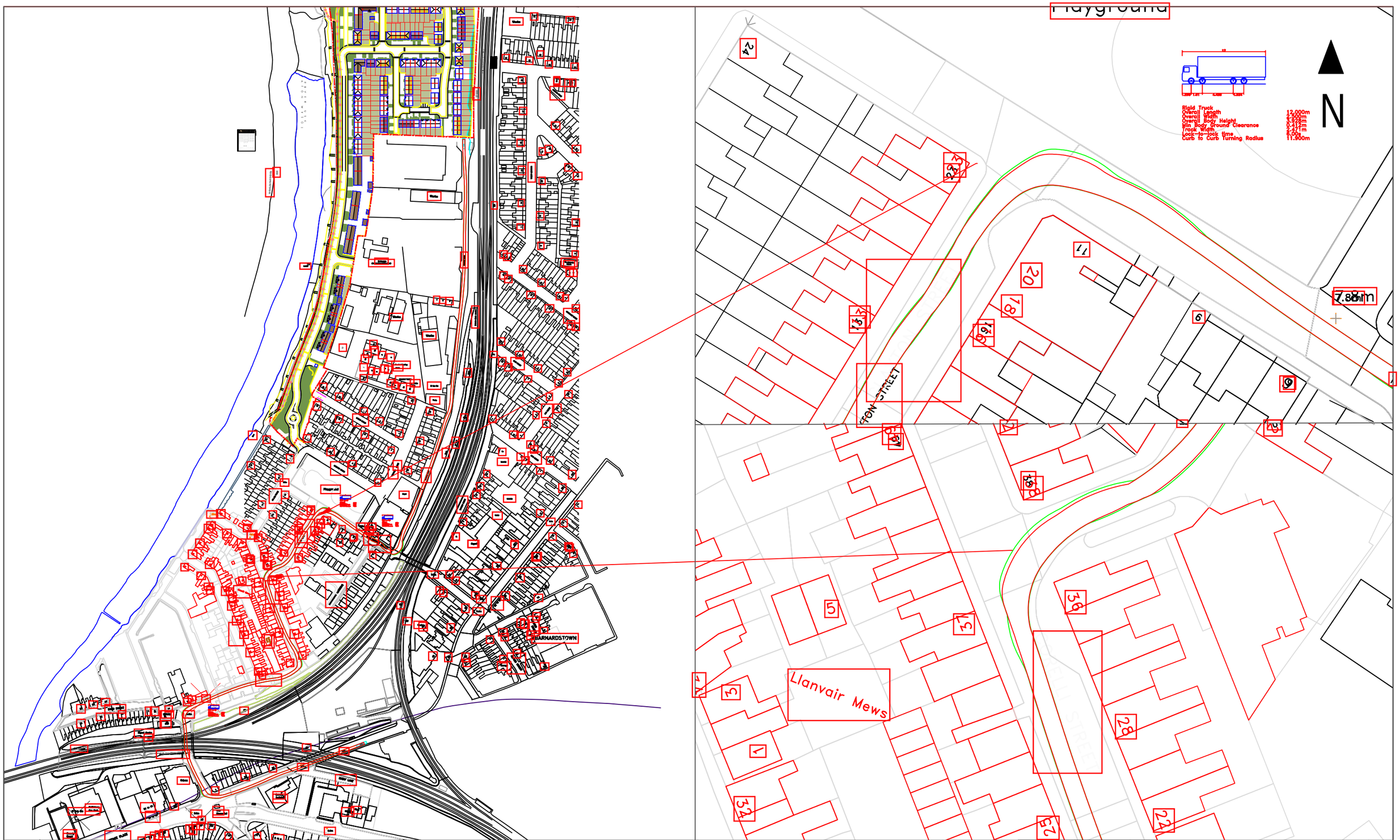


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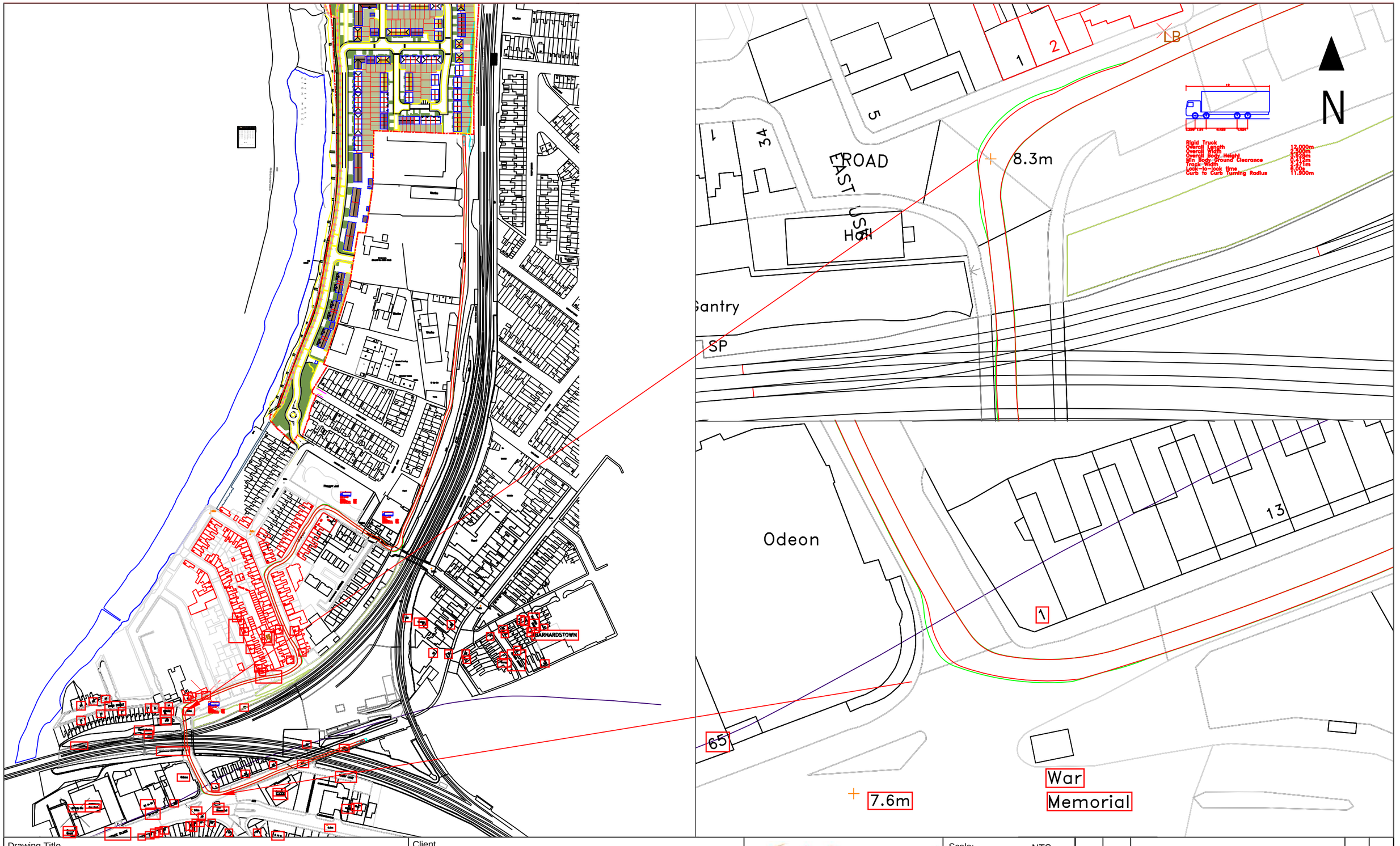


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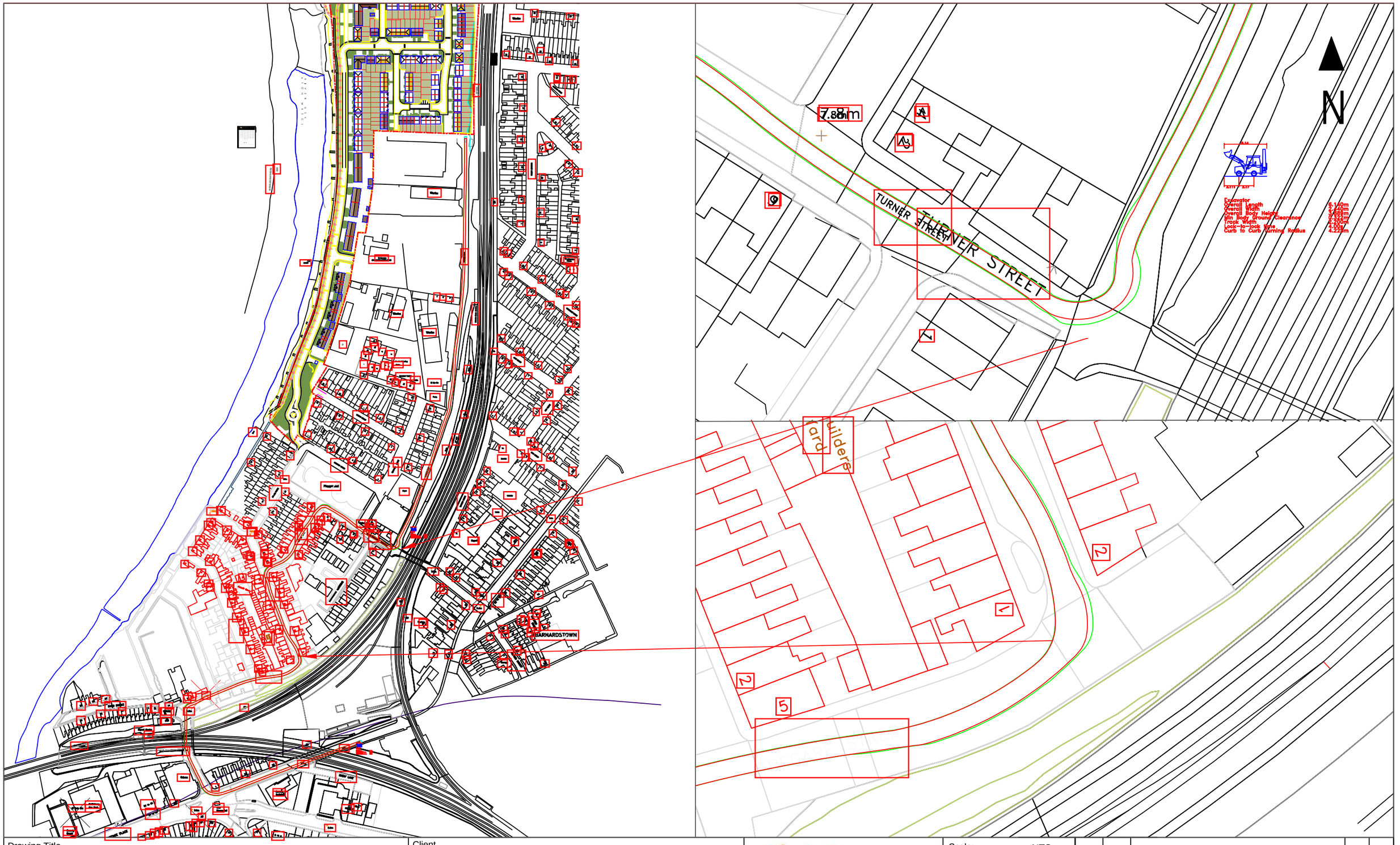


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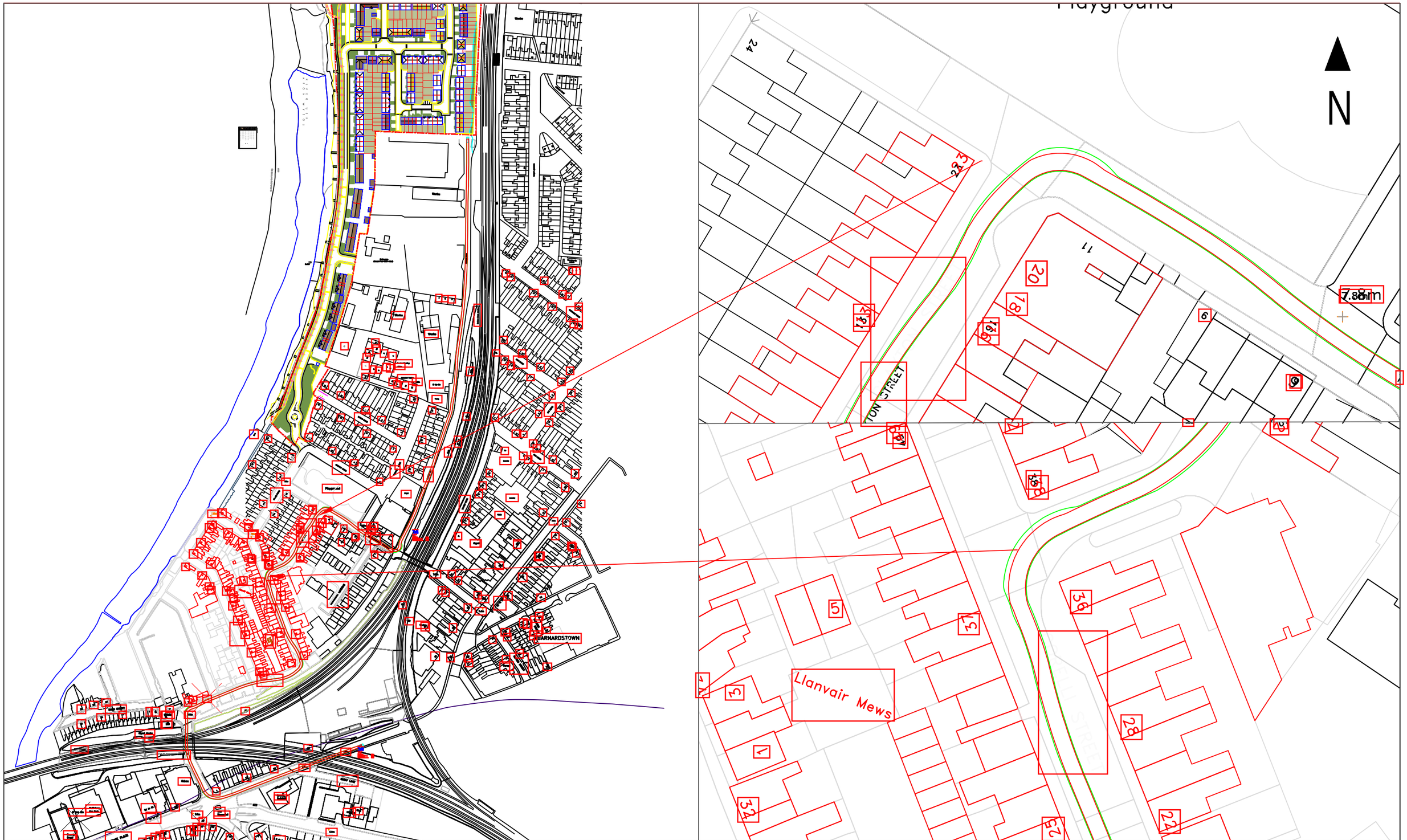


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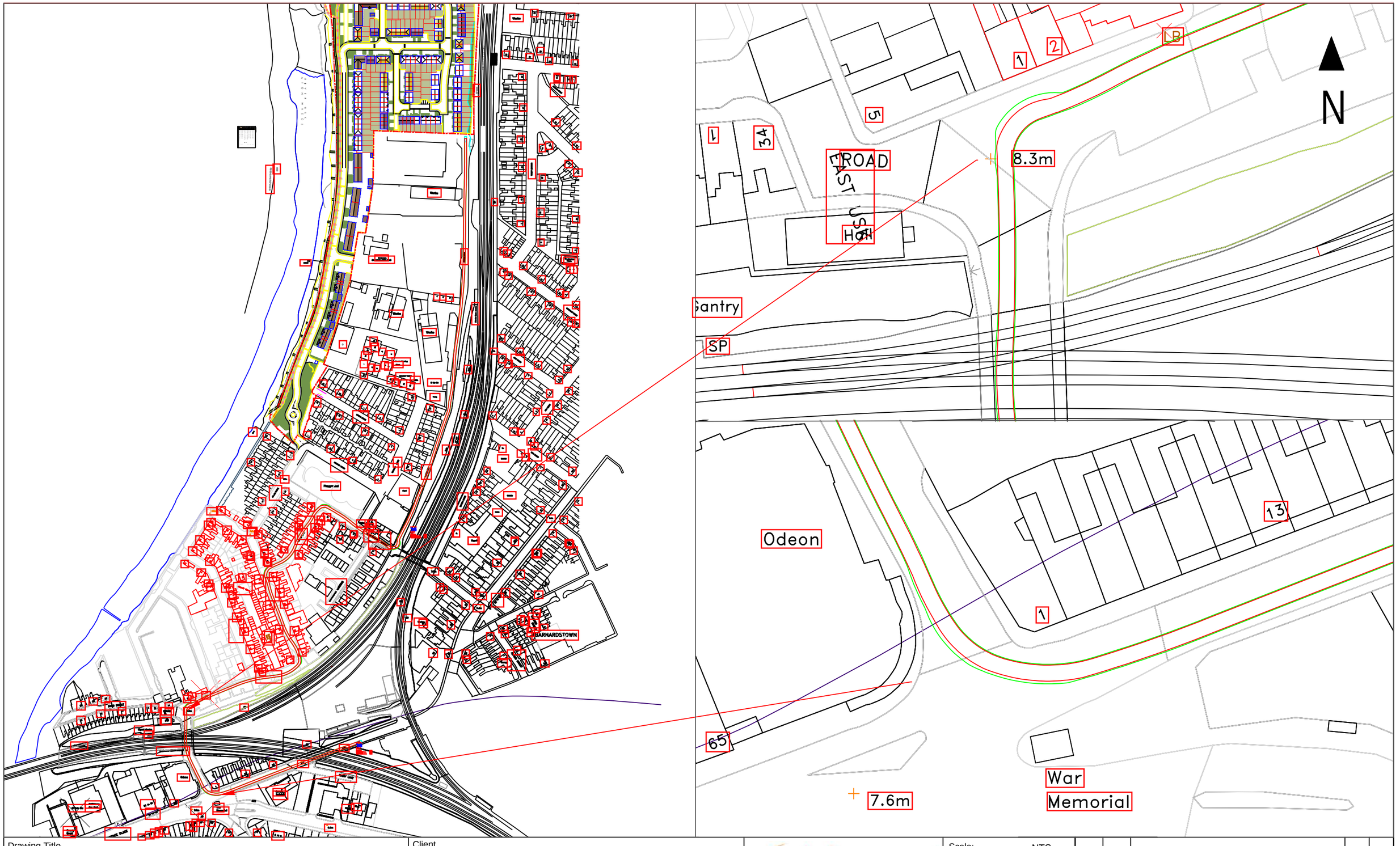


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