

Cambridge Waste Water Treatment Plant Relocation Project Anglian Water Services Limited

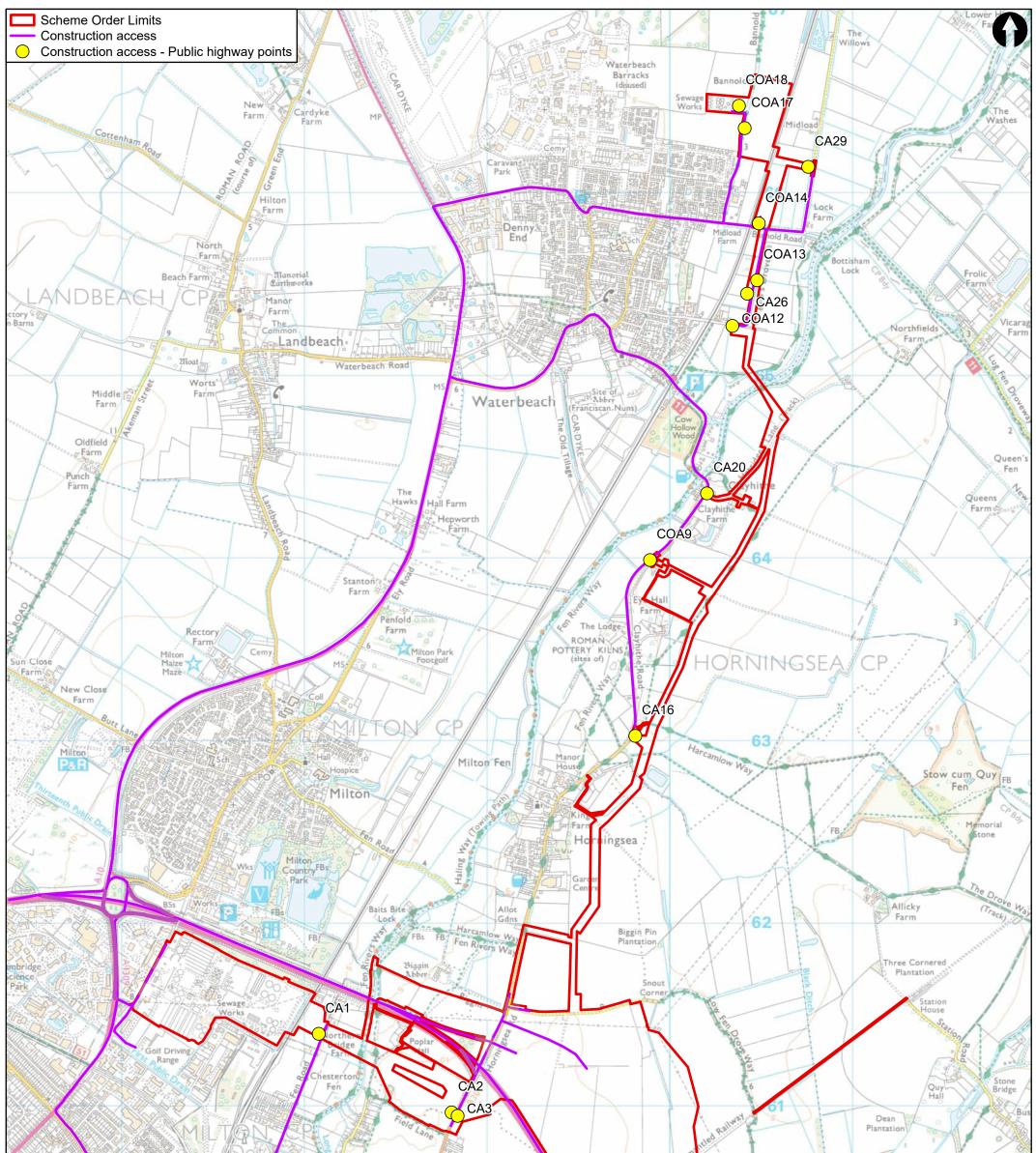
# Appendix 19.3: Transport Assessment Part 2

Application Document Reference: 5.4.19.3 PINS Project Reference: WW010003 APFP Regulation No. 5(2)a

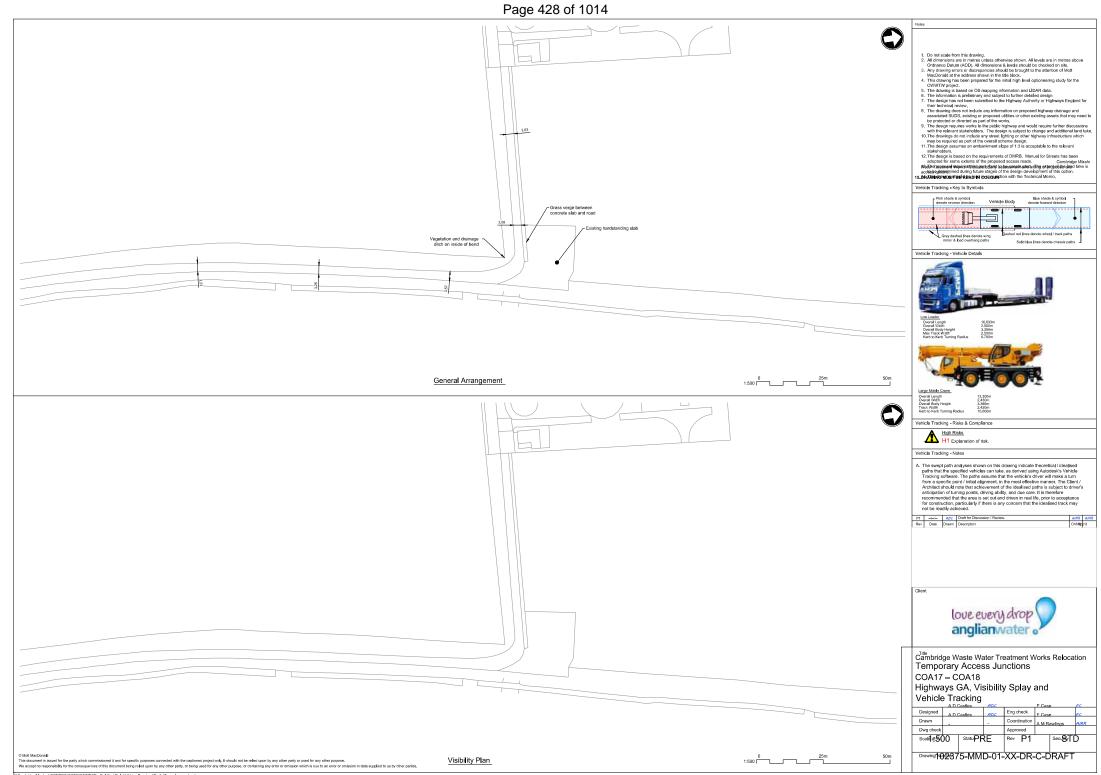
Revision No. 04 18 December 2023

# **Appendix G: Swept Path Analysis**

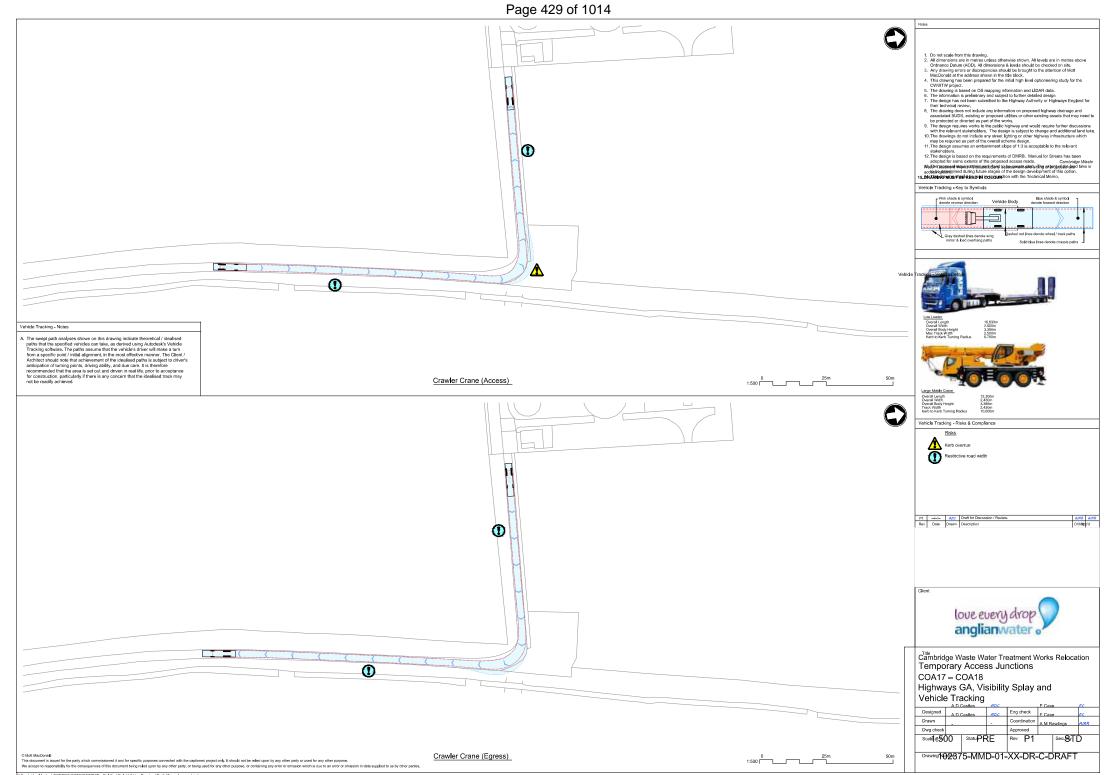
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M MOTT MACDONALD	22 Station Road Cambridge CB1 2JD United Kingdom T +44 (0)20 8774 2000 F +44 (0)20 8681 5706	love every drop						Title Cambridge Waste Water Treatment Plant Relocation Project Transport Assessment	DrawnKLCheckedWTApprovedCSScale at A3		Т
		Rev	Date	Drawn	Description	Ch'k'd	App'd	Construction route and access points	1:20,00	00	
	W mottmac.com	P1 P2	31/10/22 18/12/23	KL CC	First Draft Revision 01	WT WT	CS GW	Drawing Number WW01003-CAMEST-MOT-05-XX-DR-X-0697	Security STD	Status PRE	Rev P2



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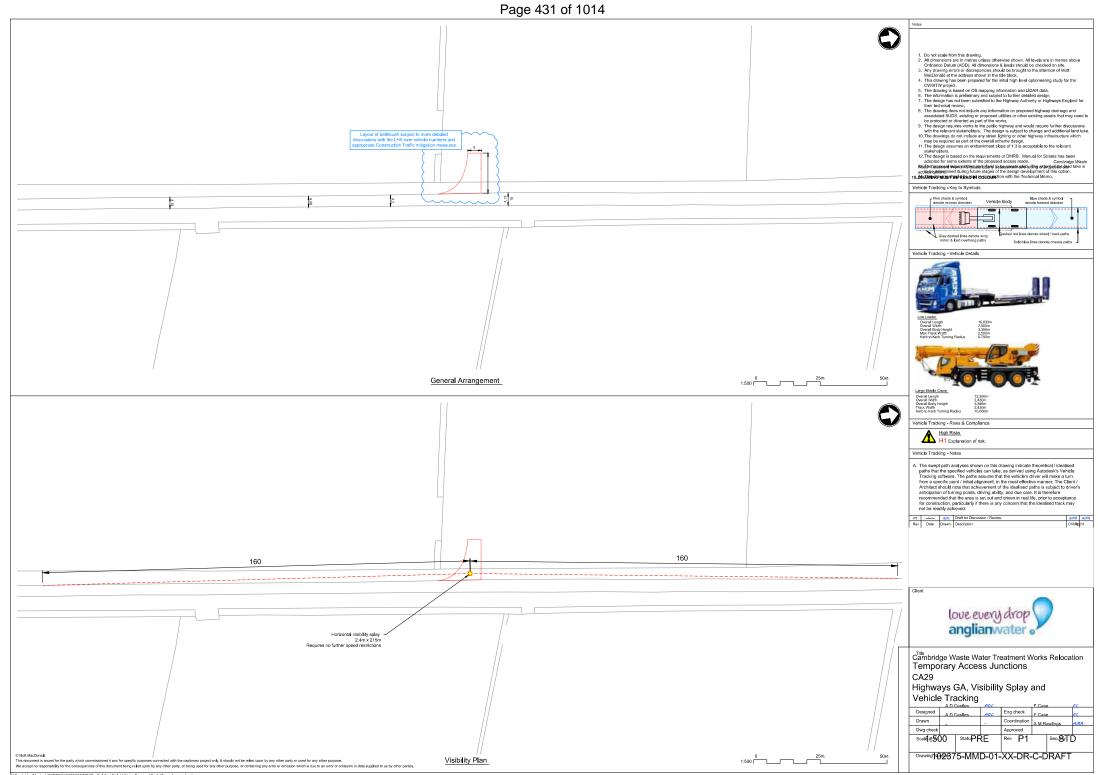


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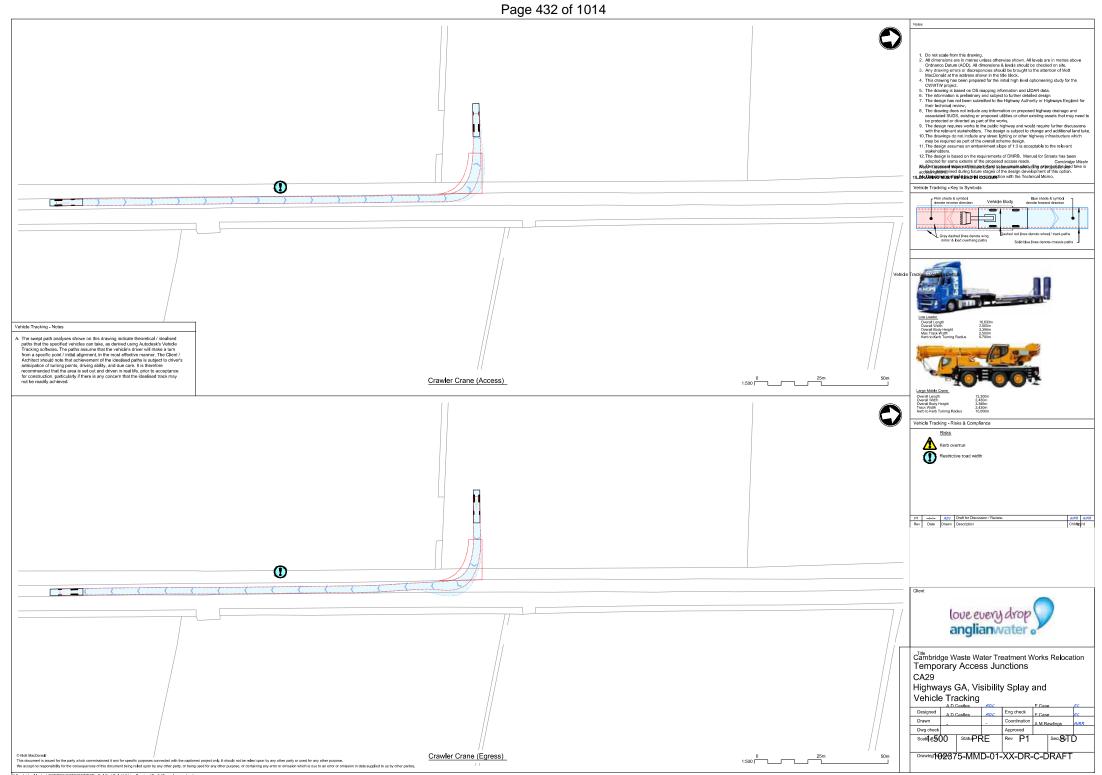
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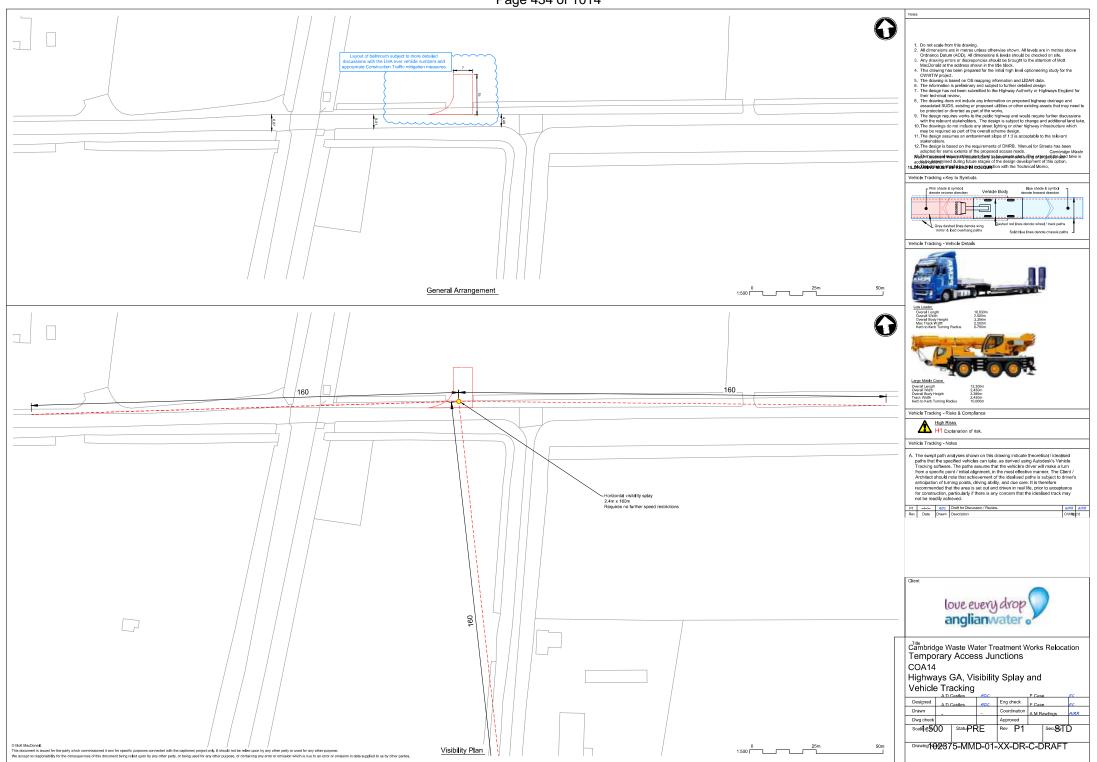


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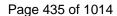


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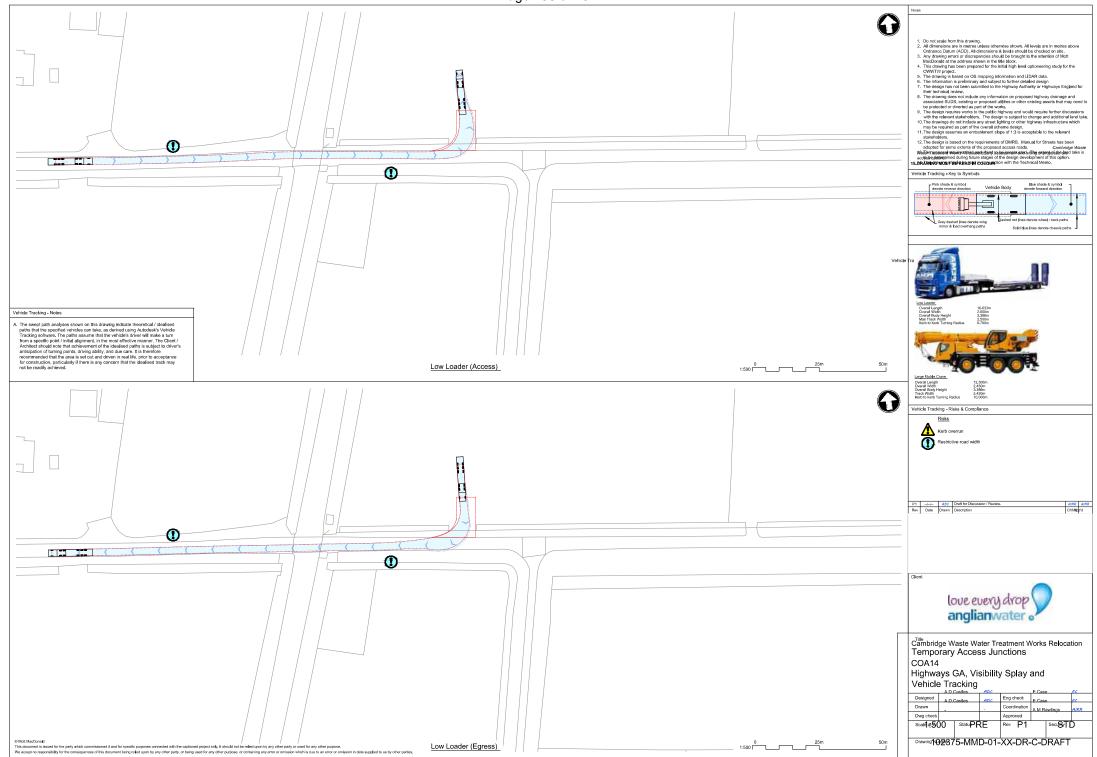
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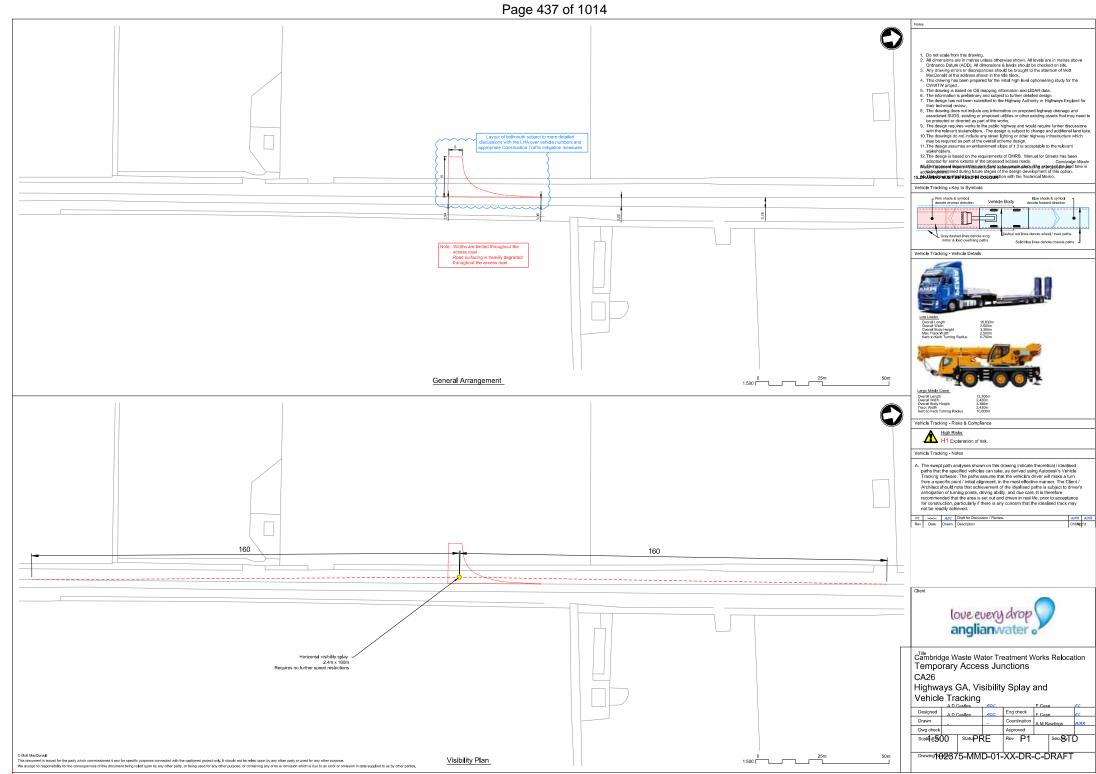


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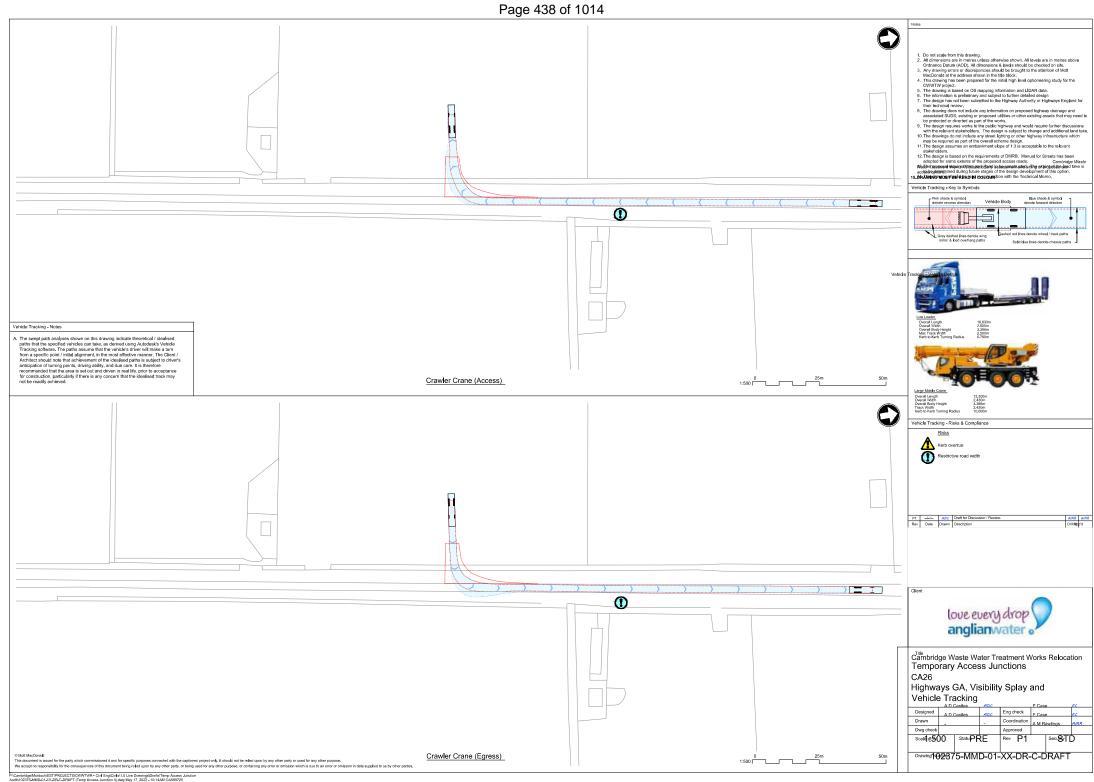
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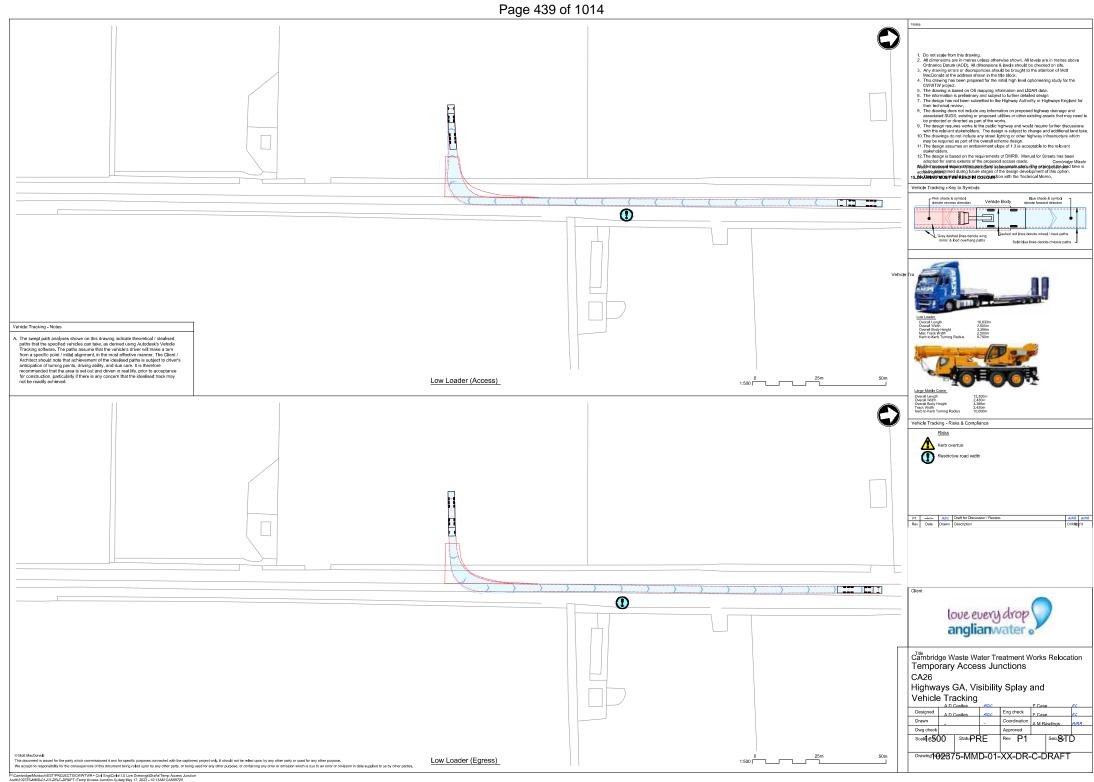


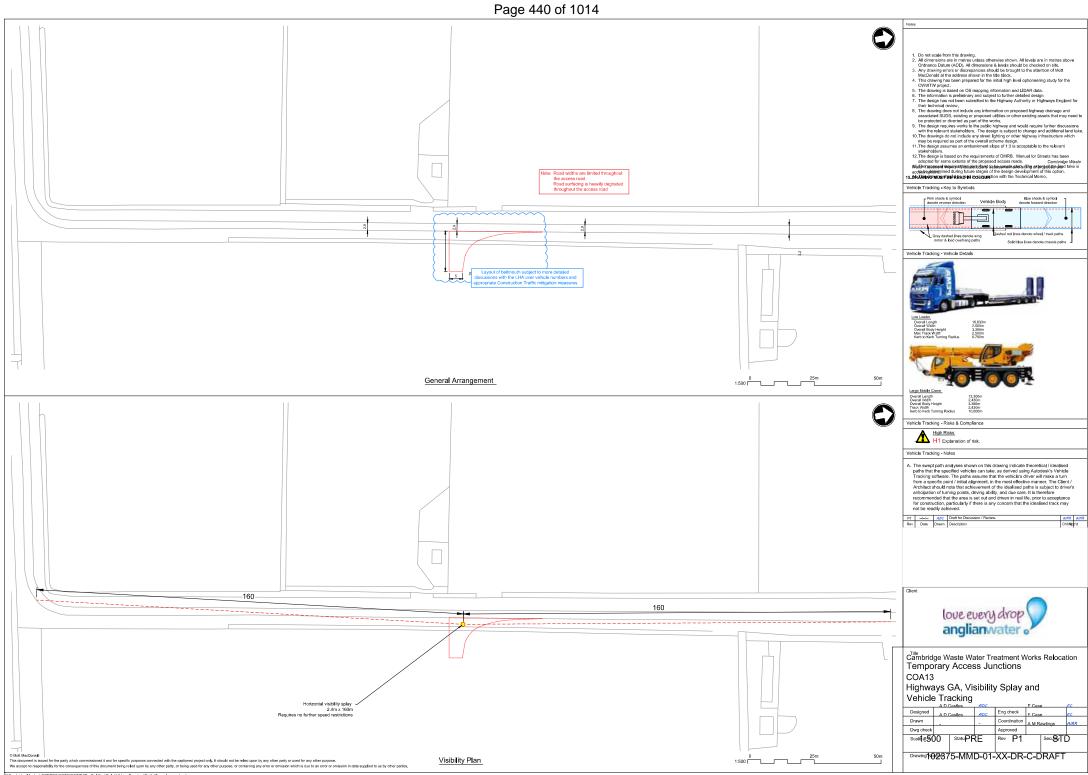
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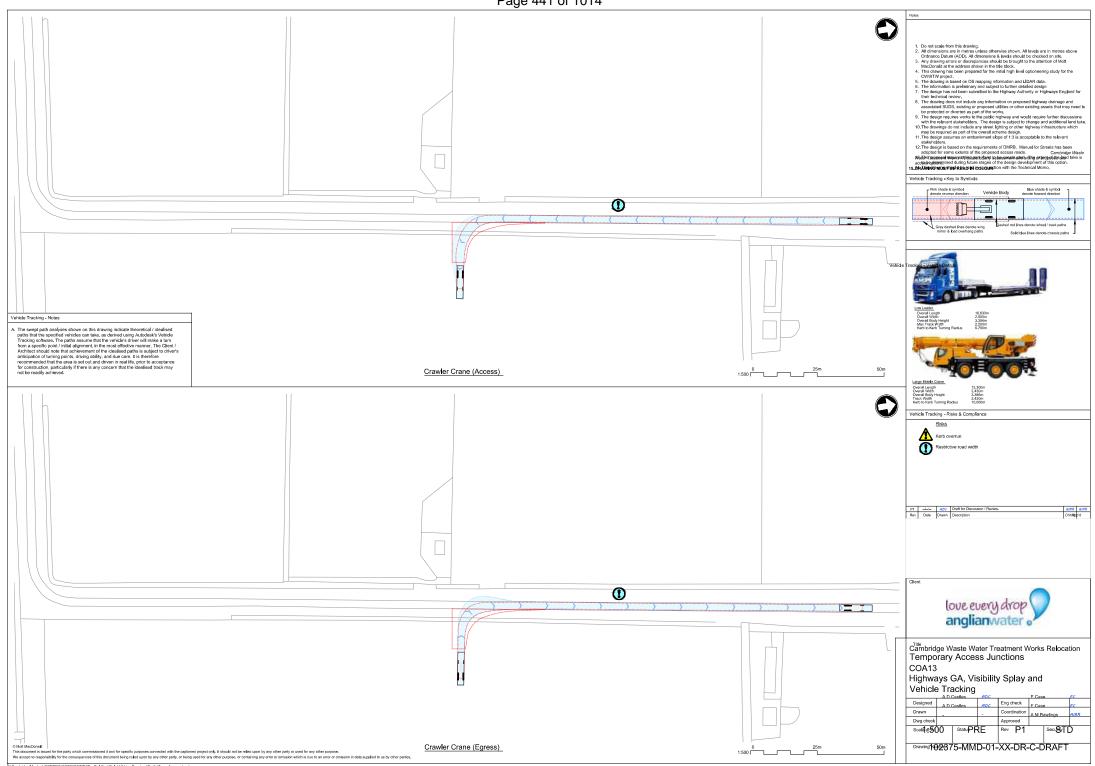






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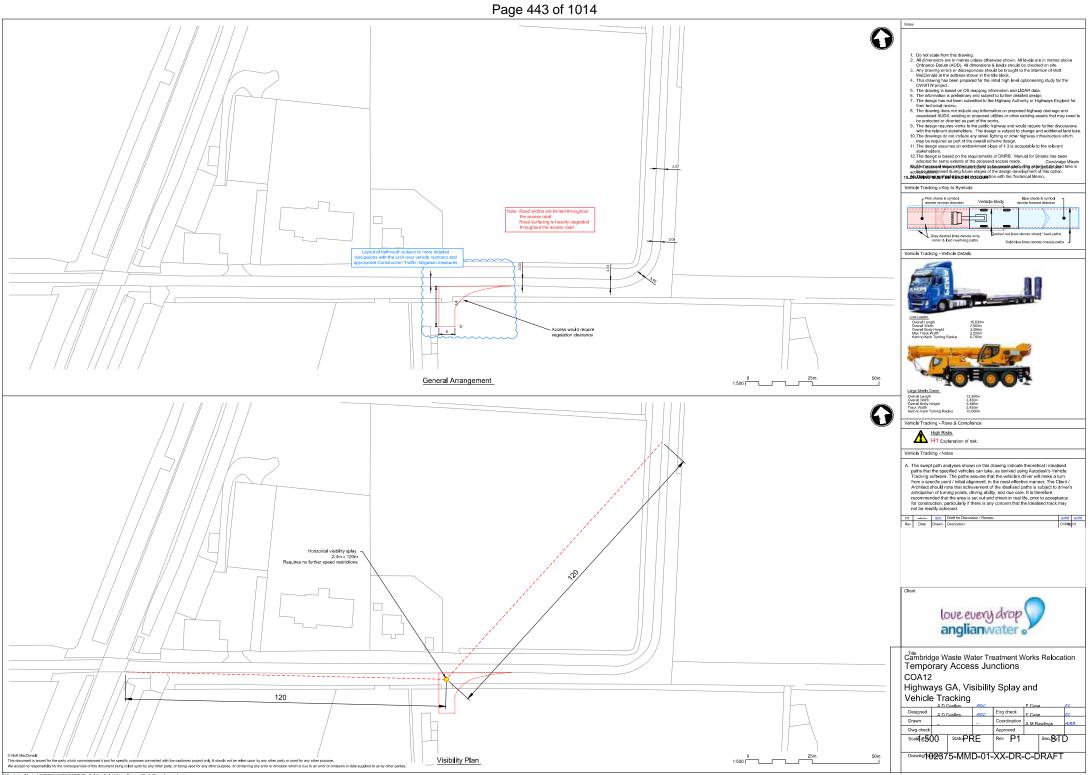


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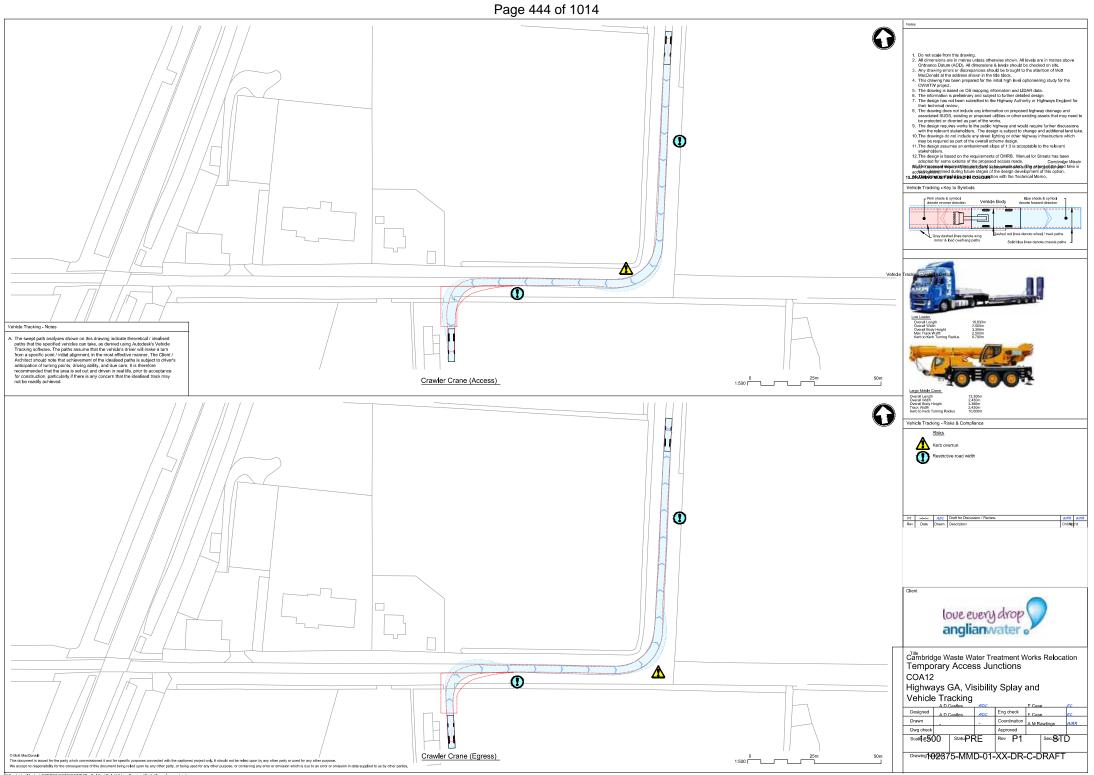
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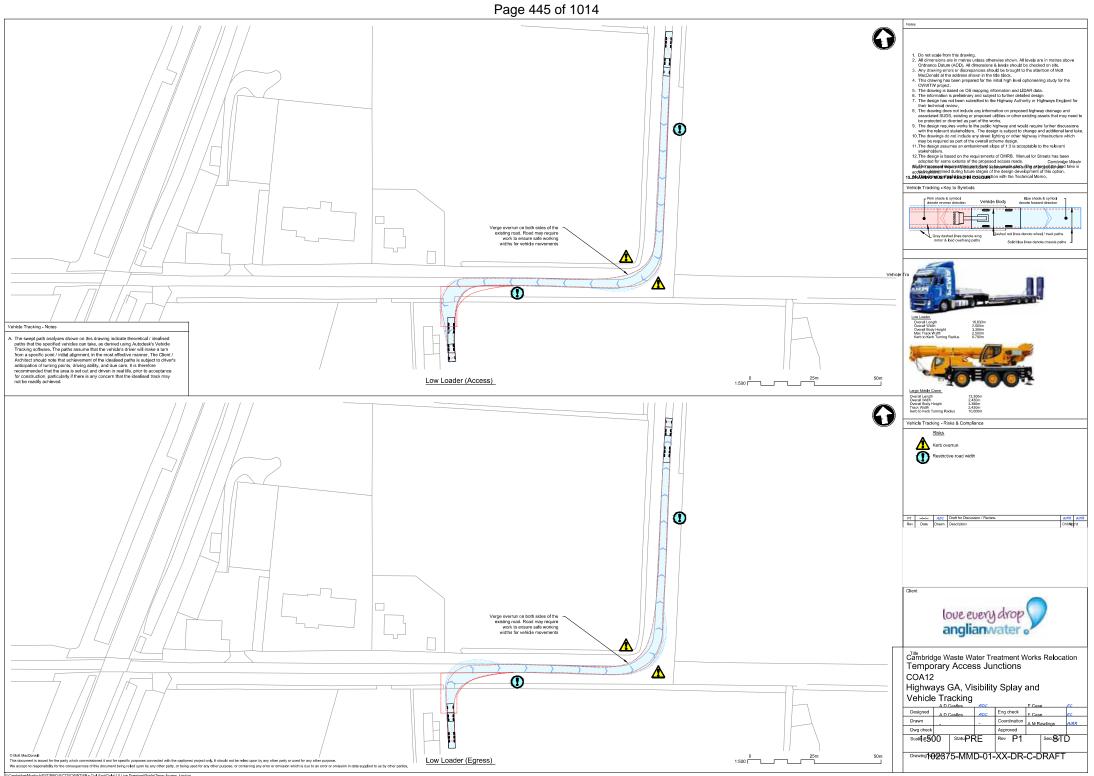
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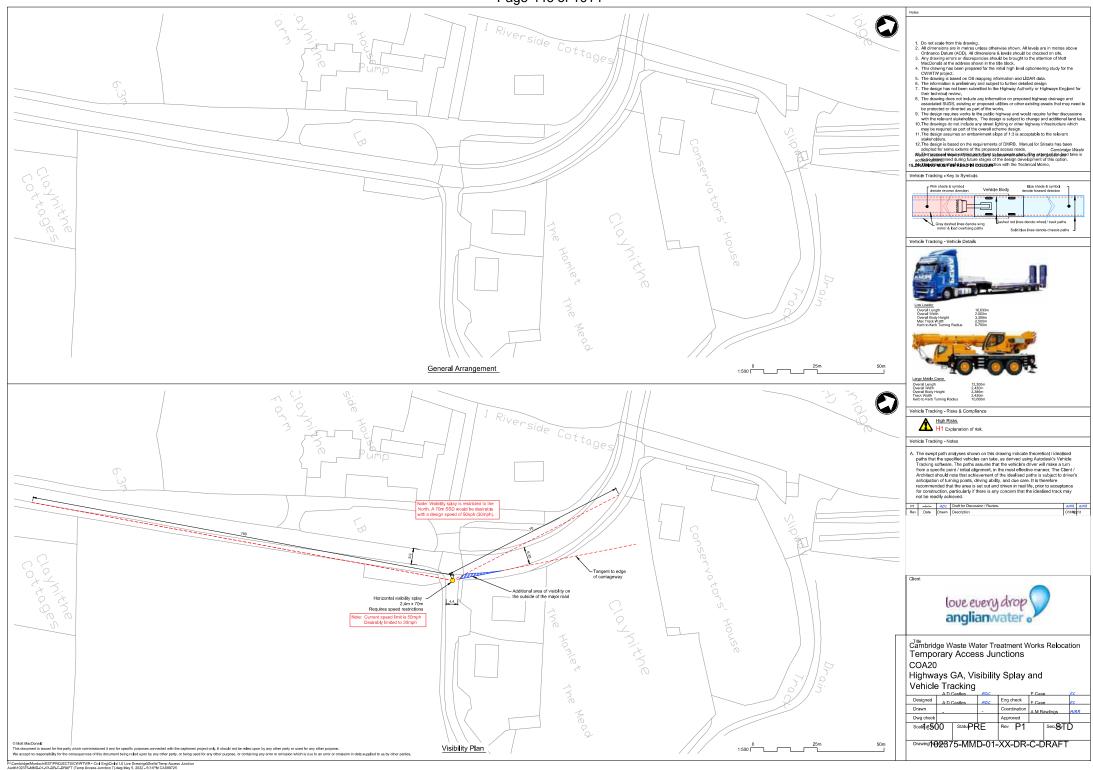


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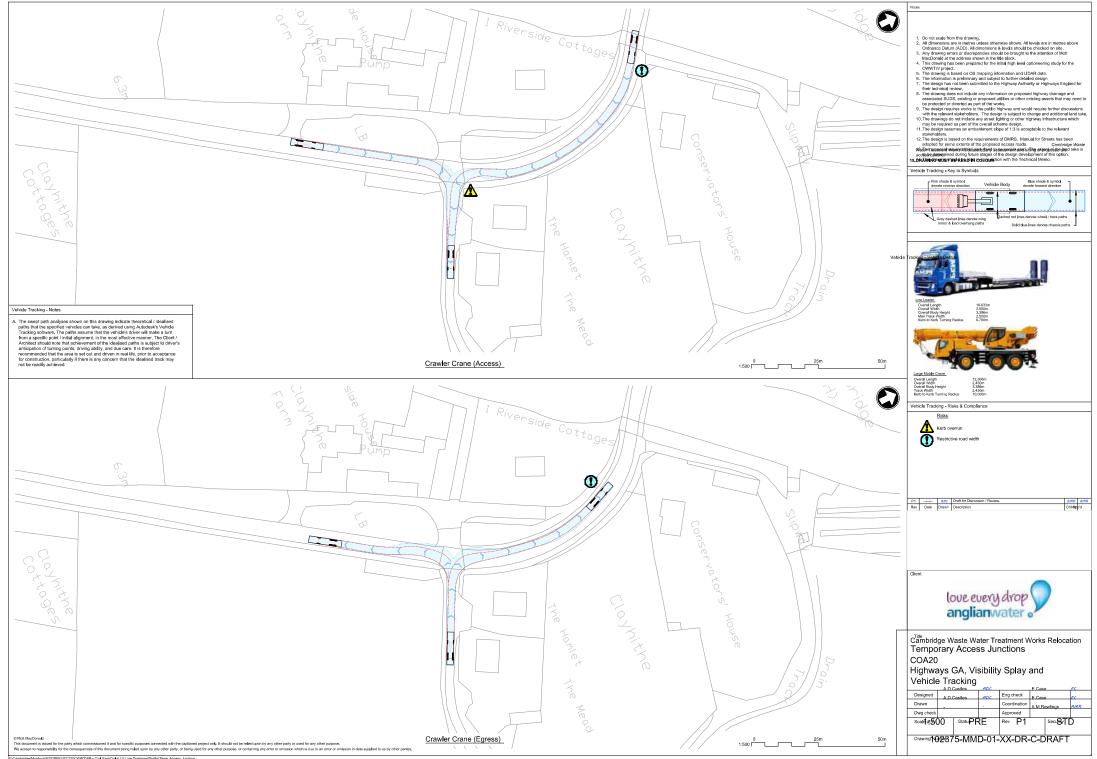


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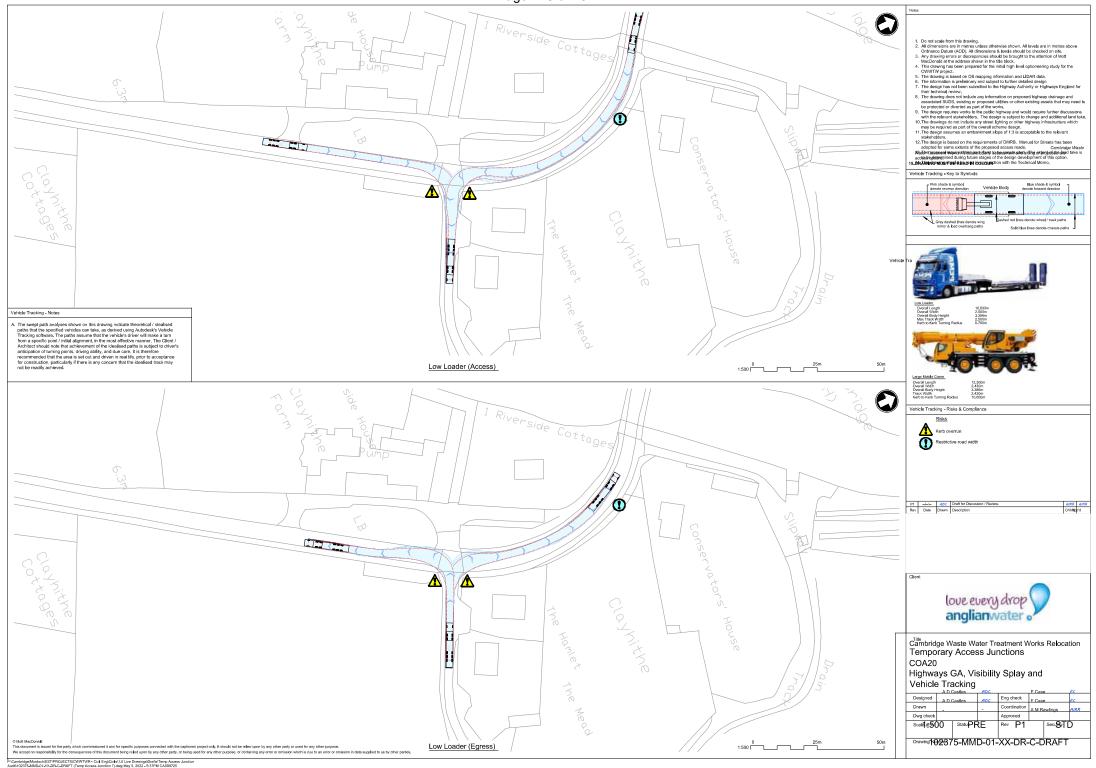


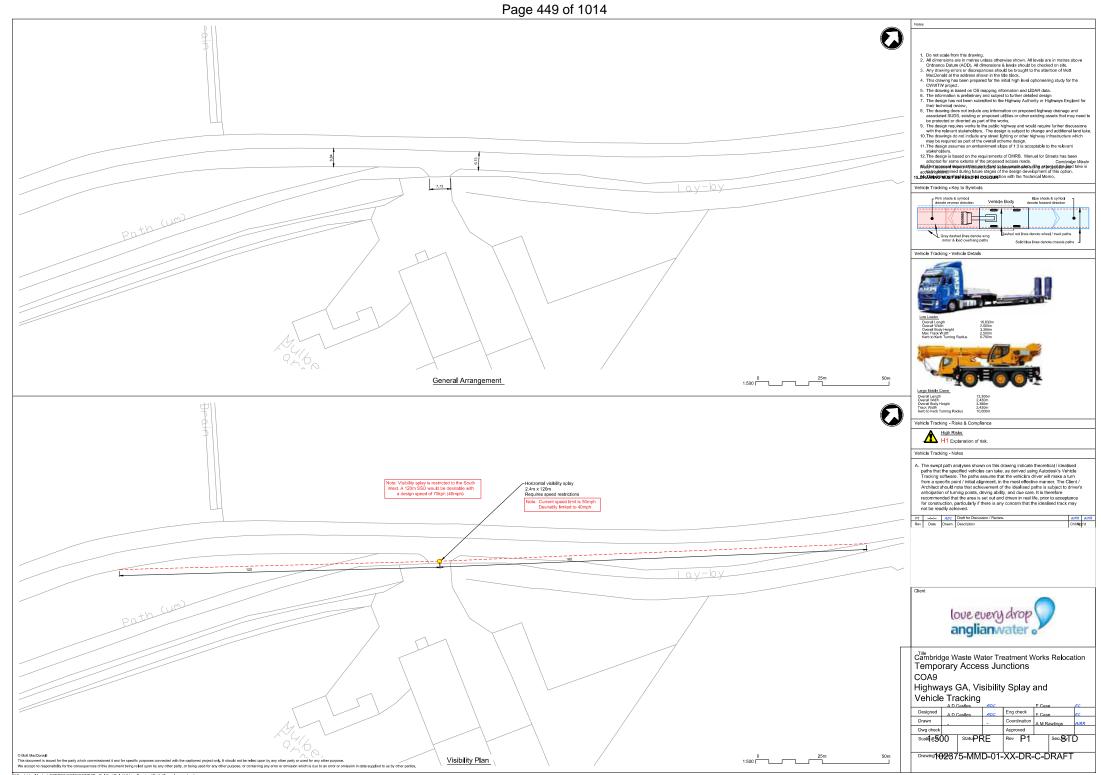
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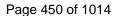
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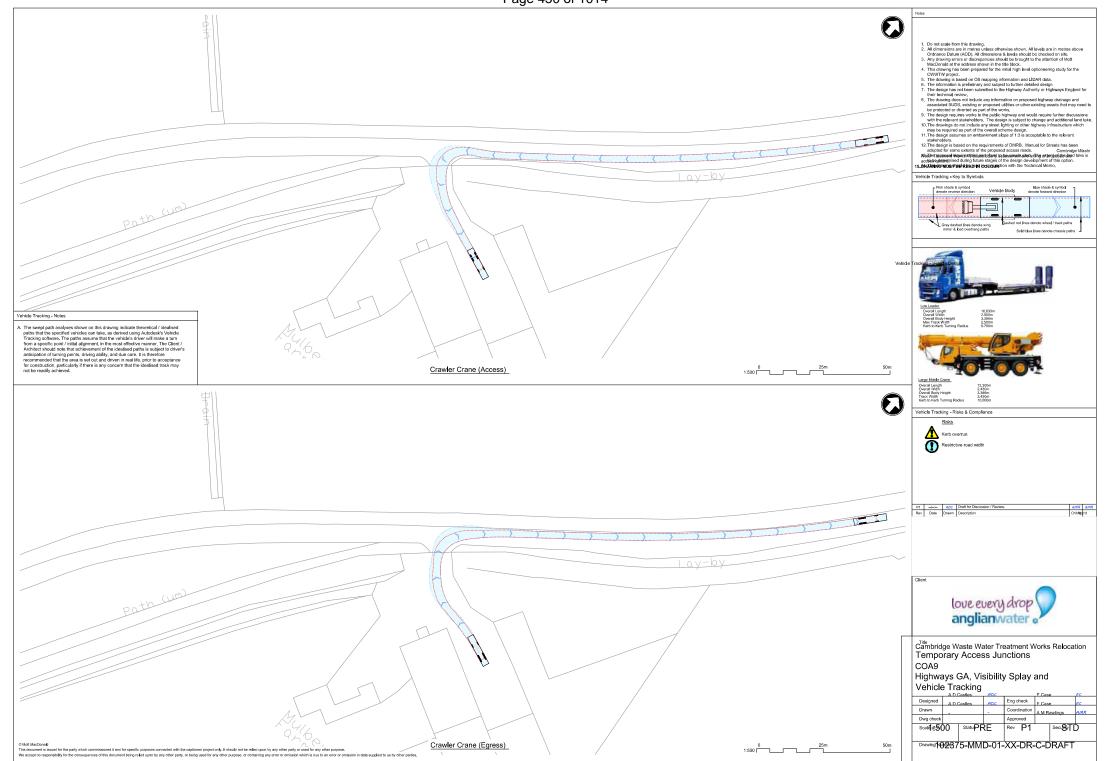
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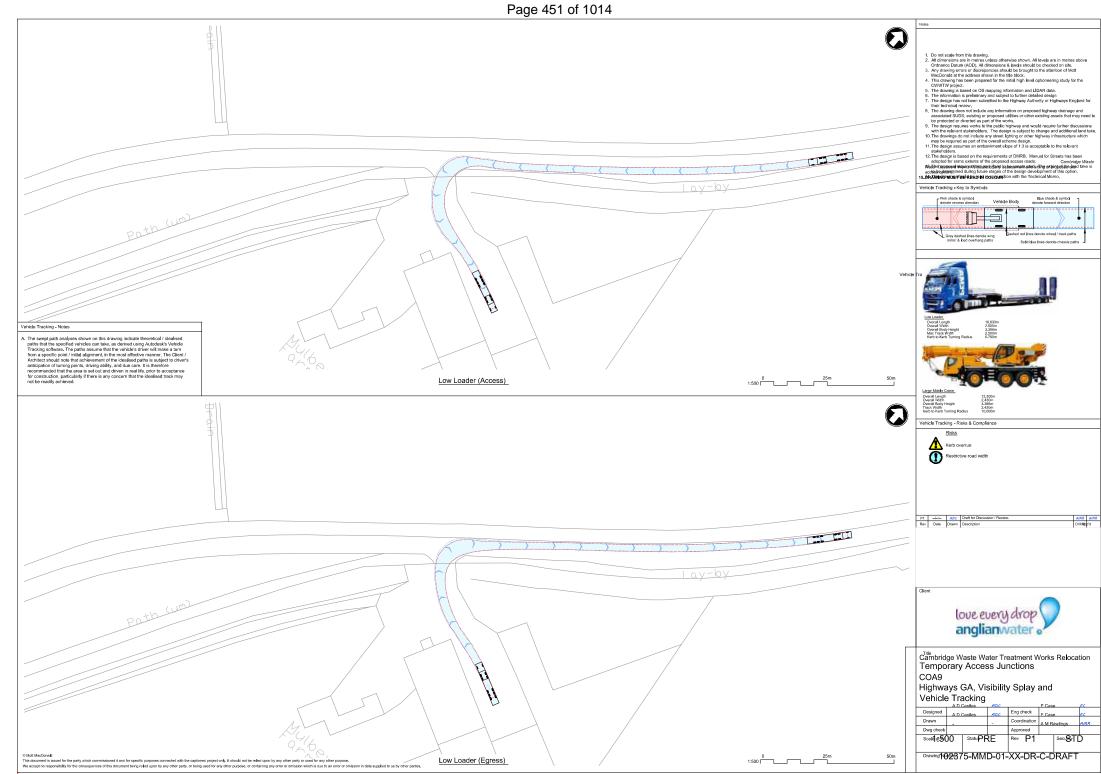


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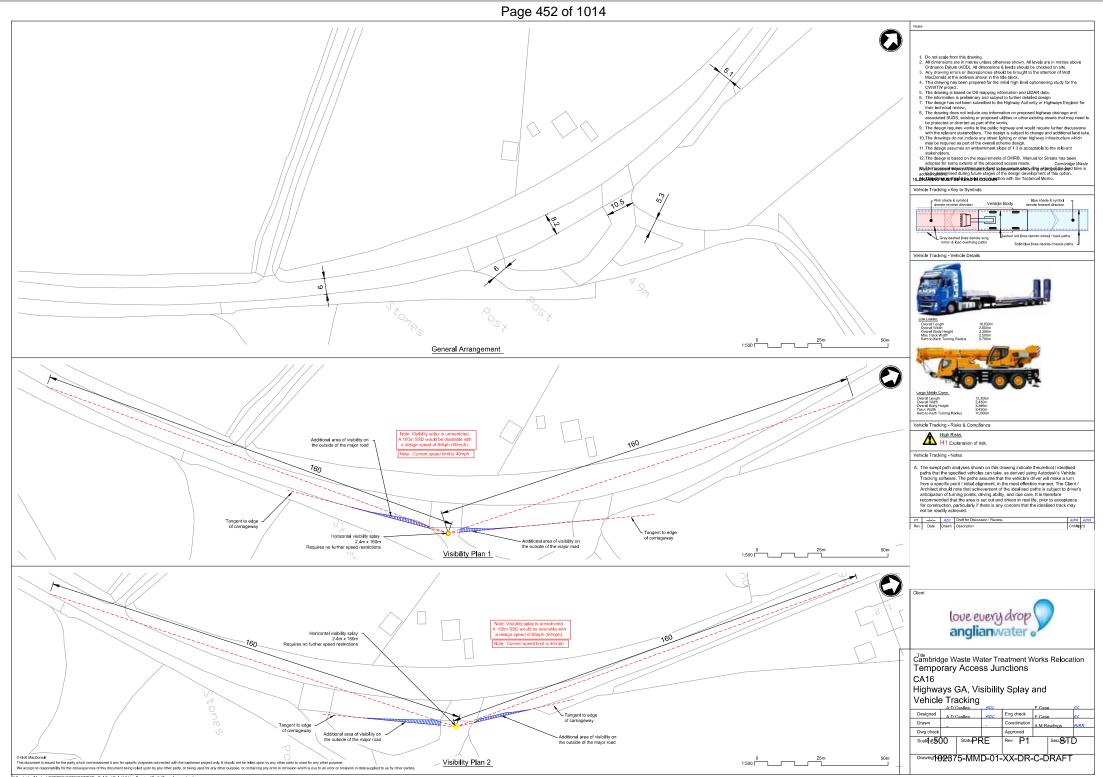




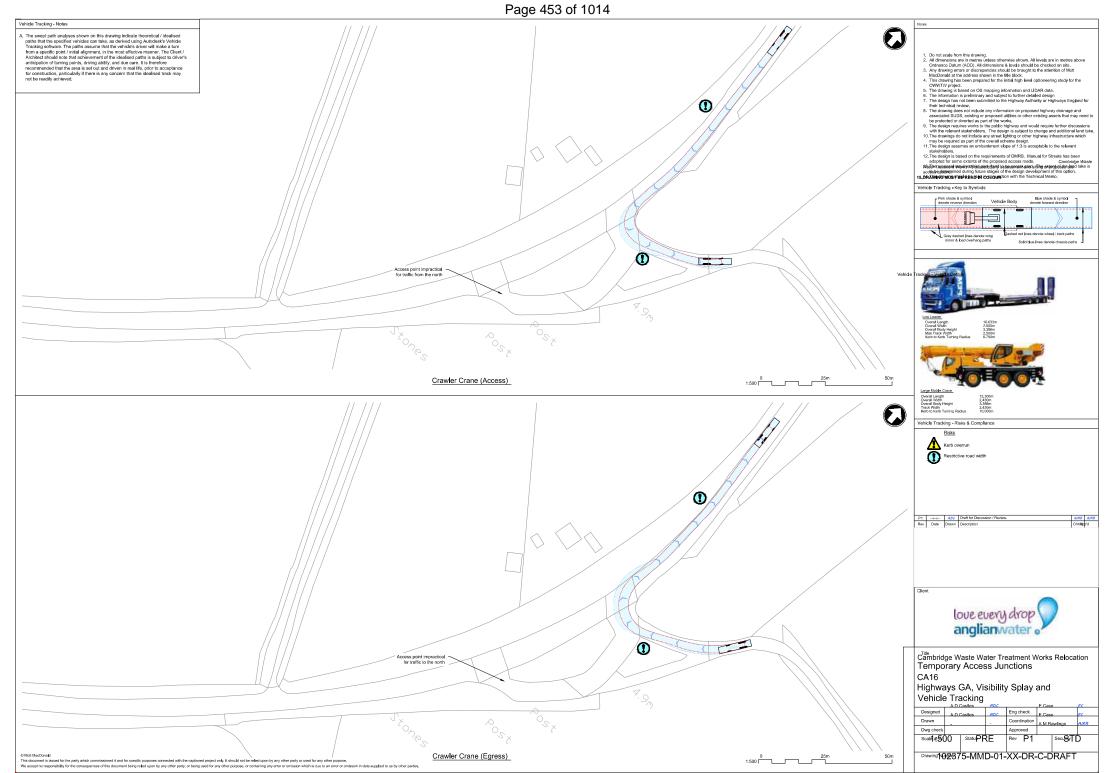
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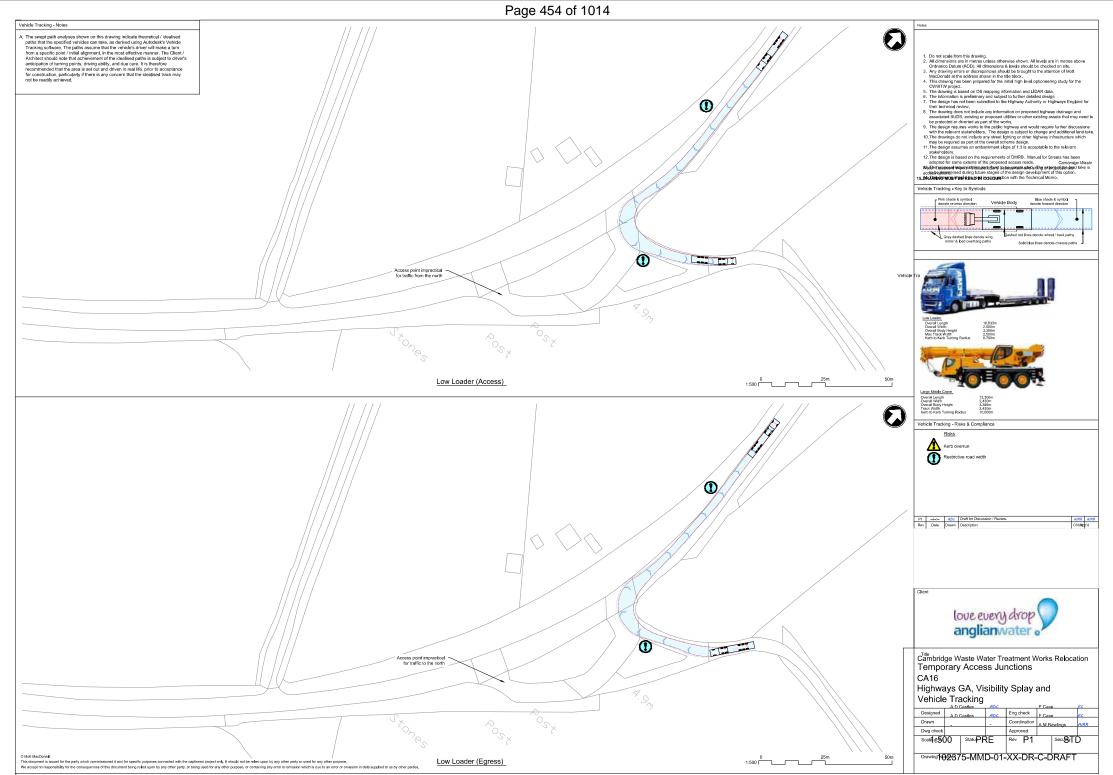
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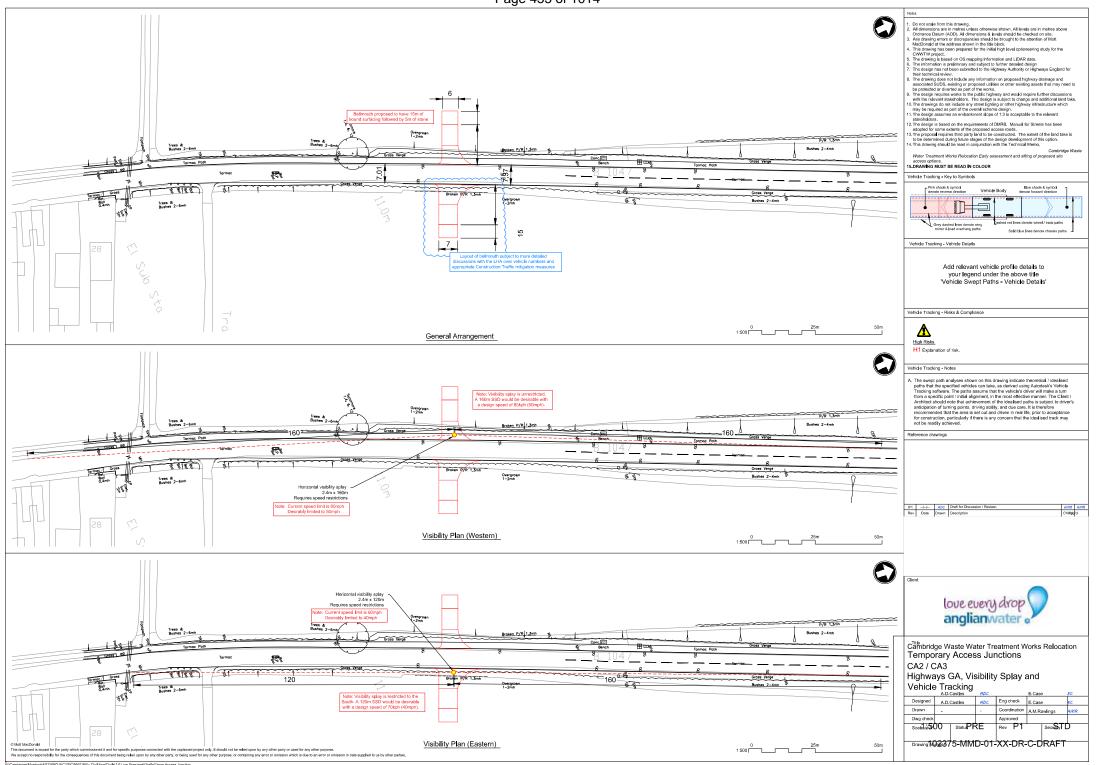
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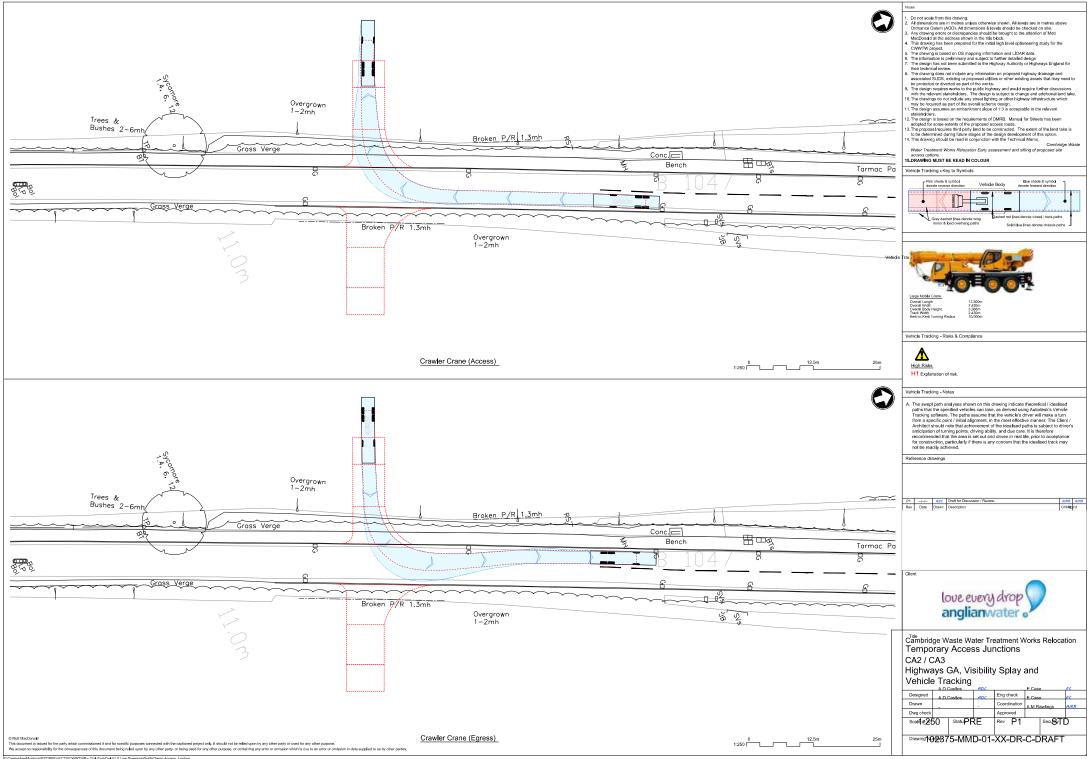


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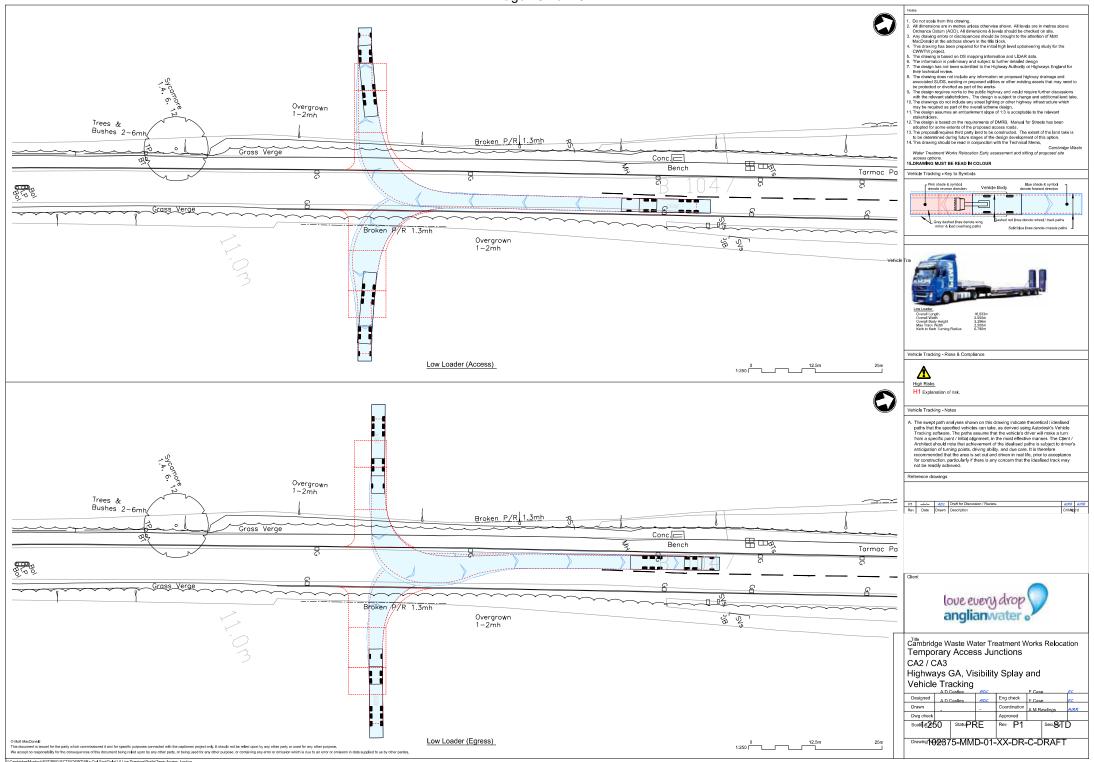
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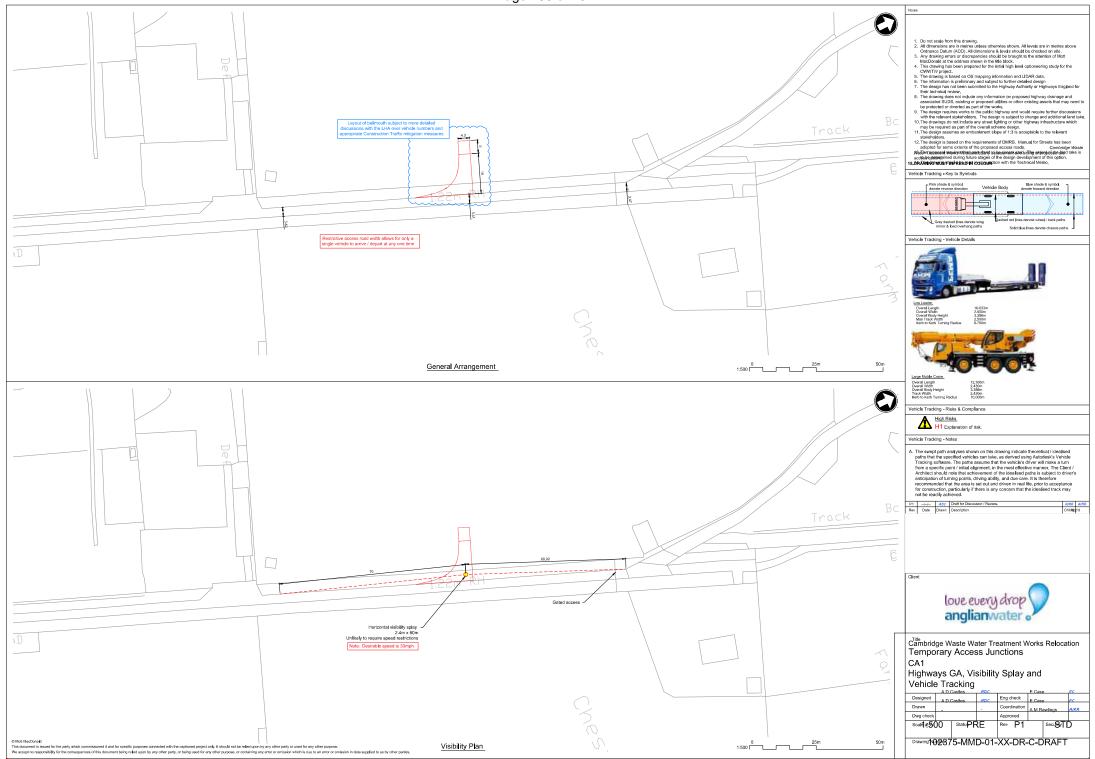
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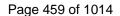


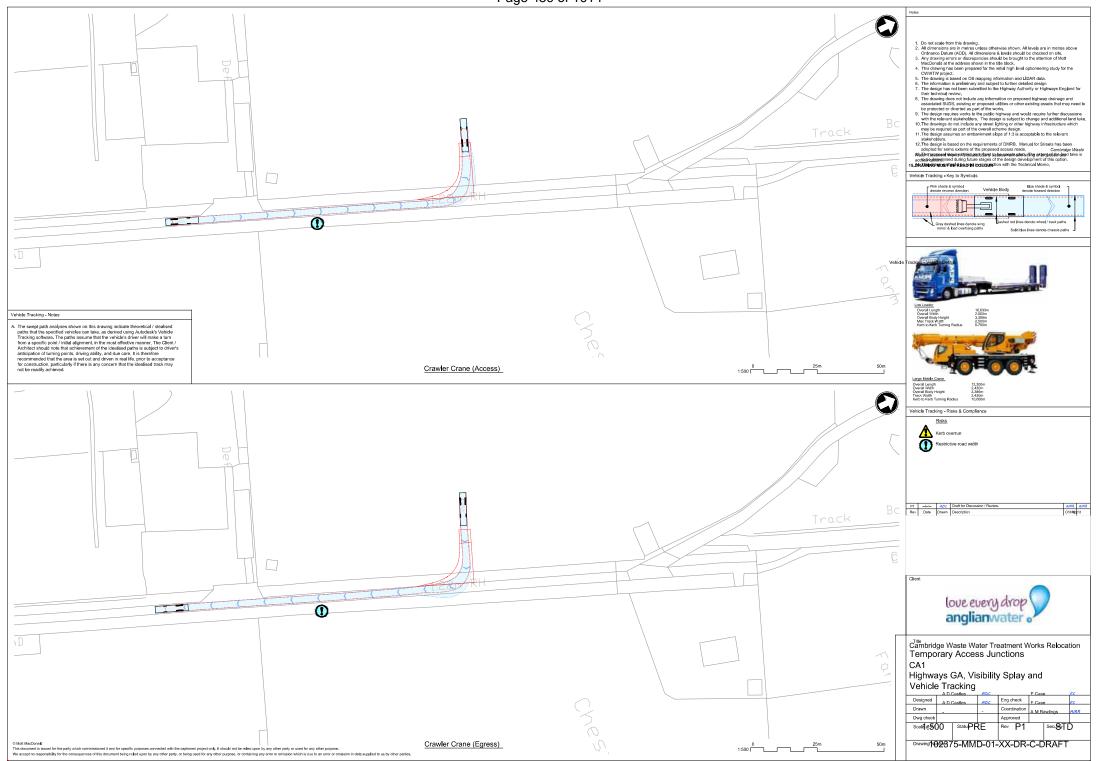
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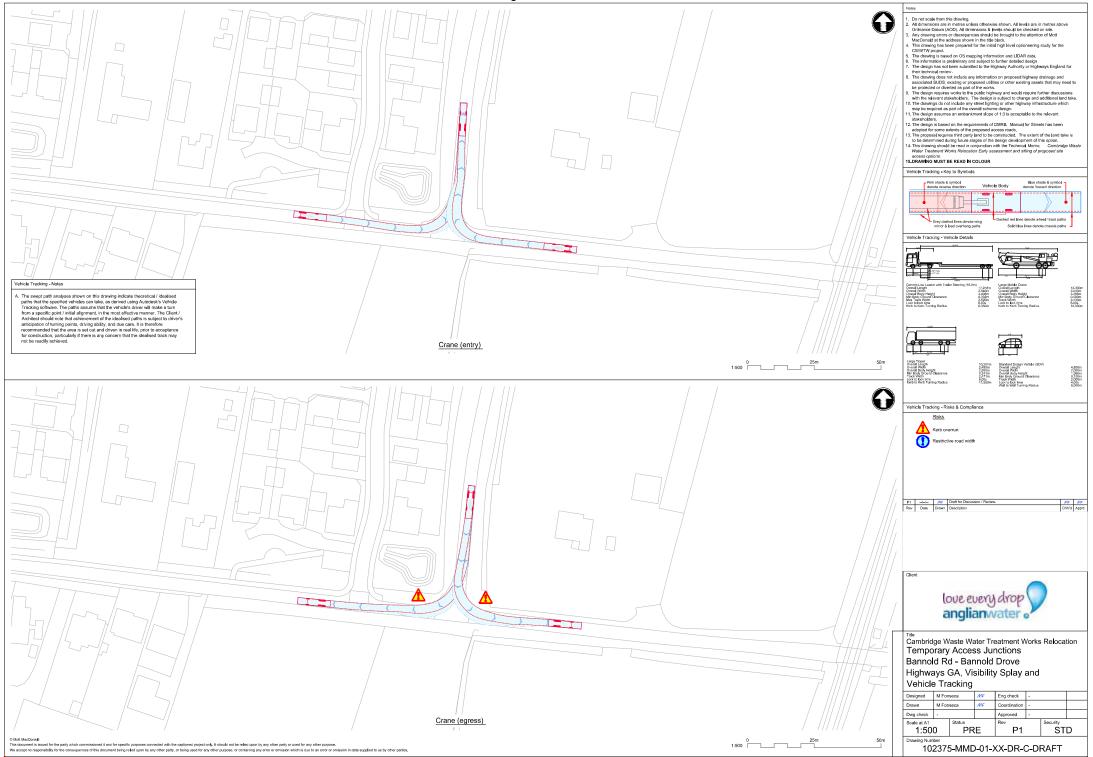


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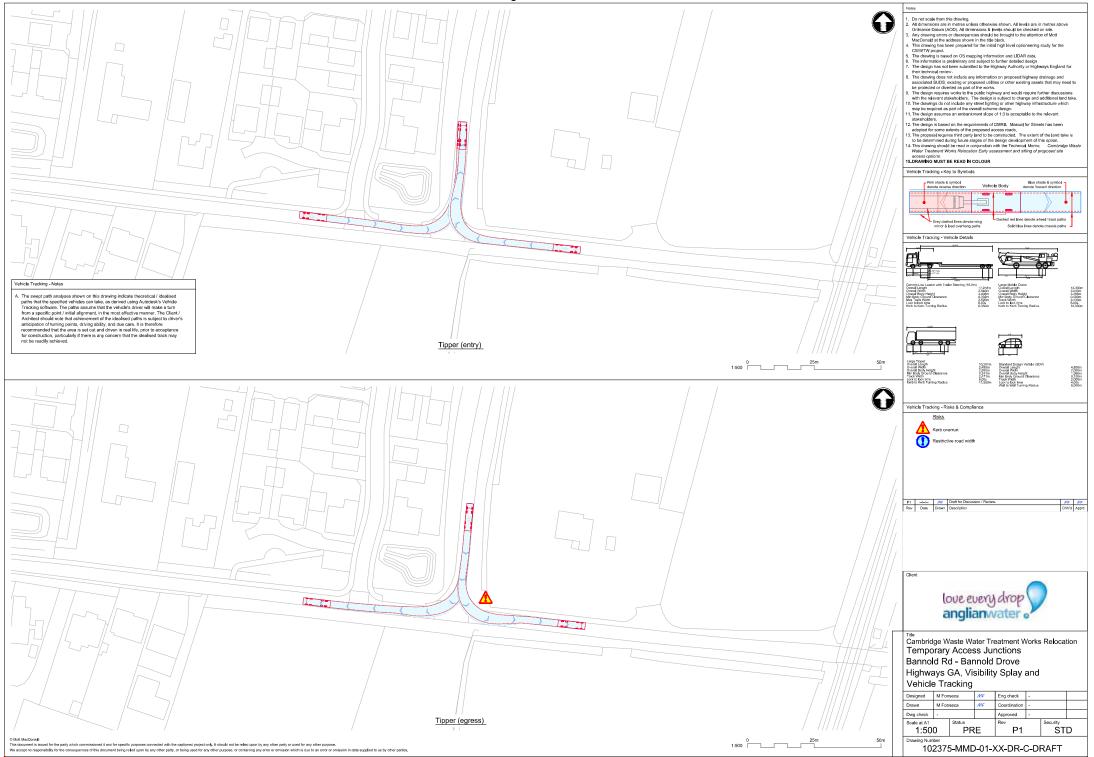
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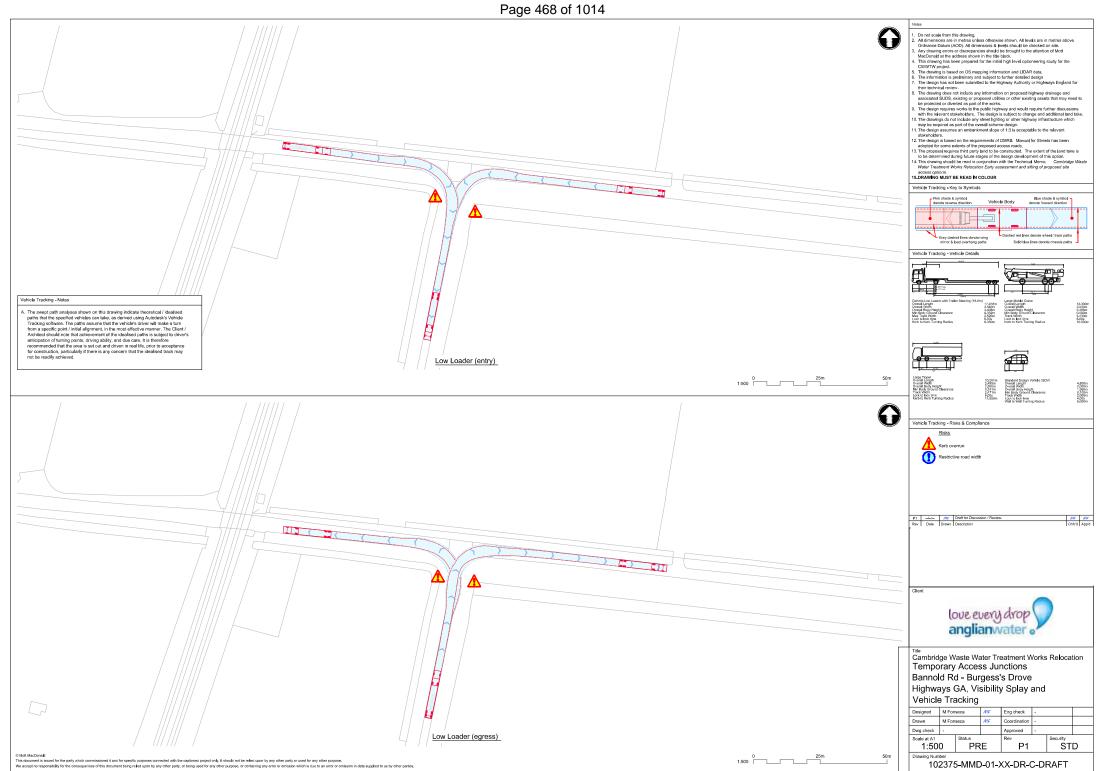


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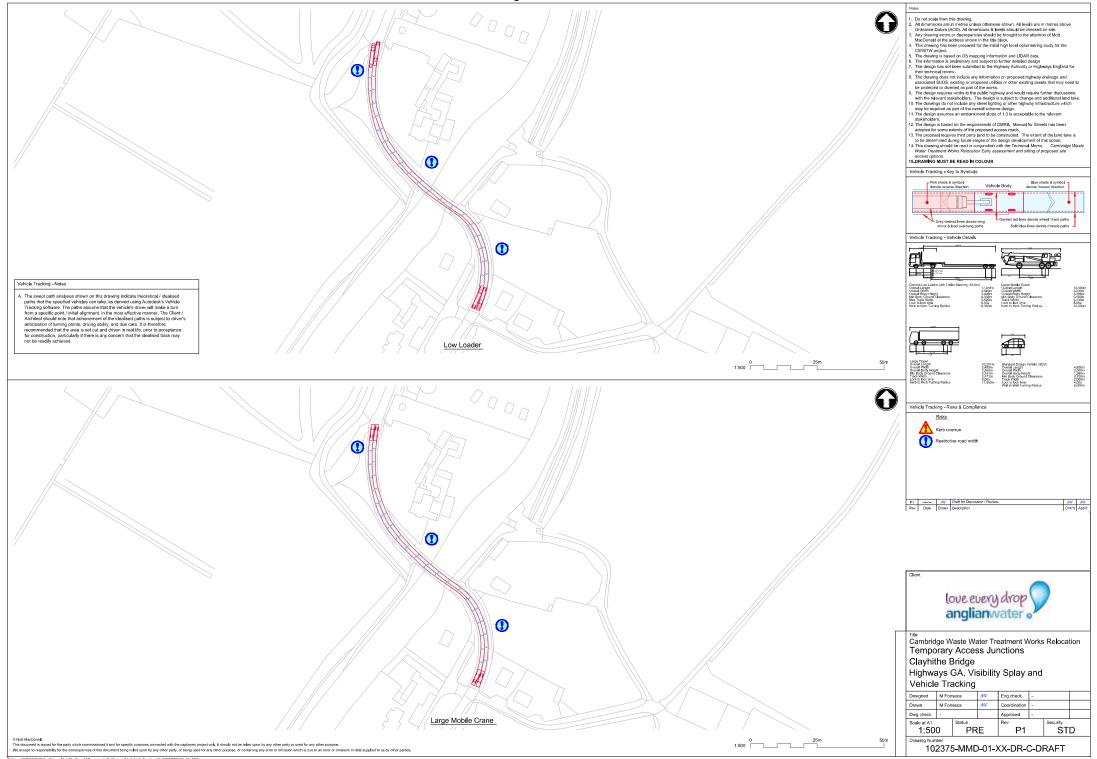


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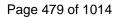


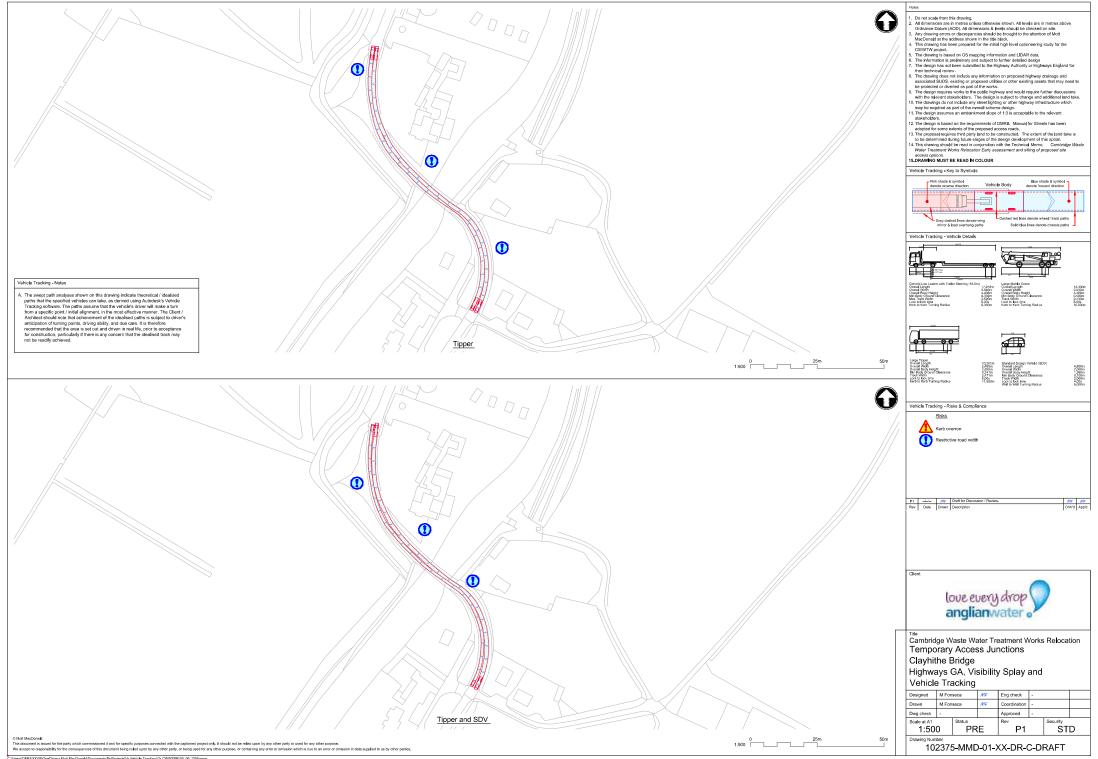


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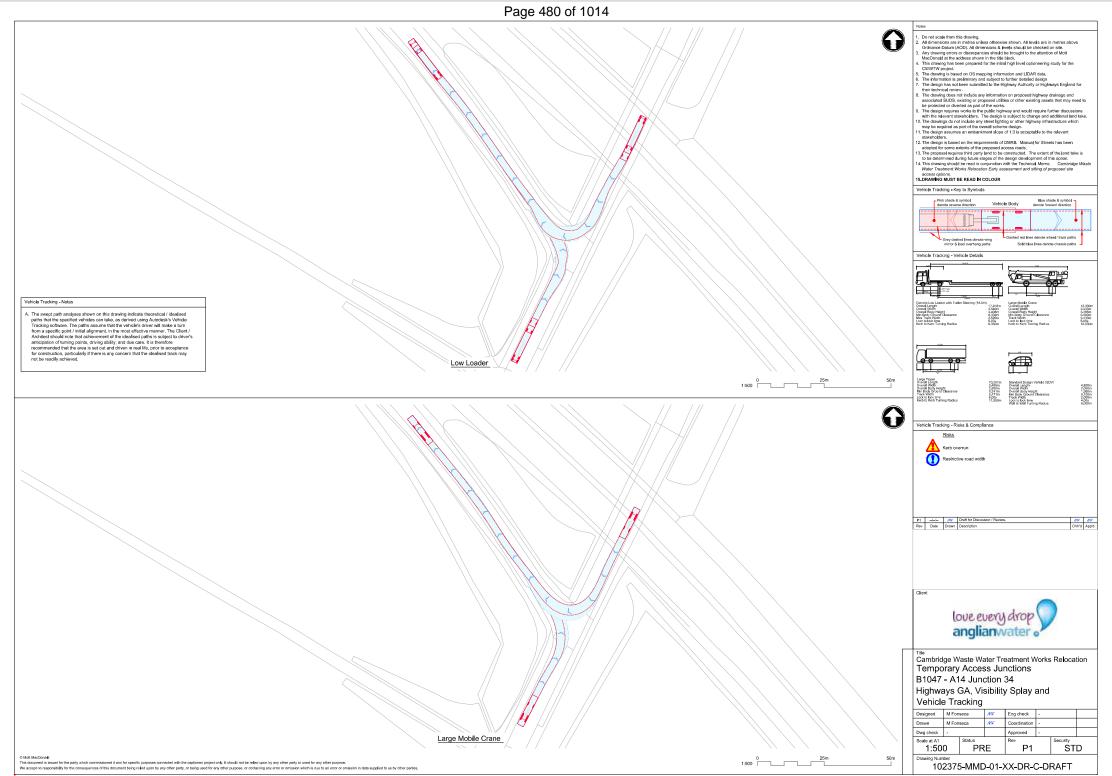


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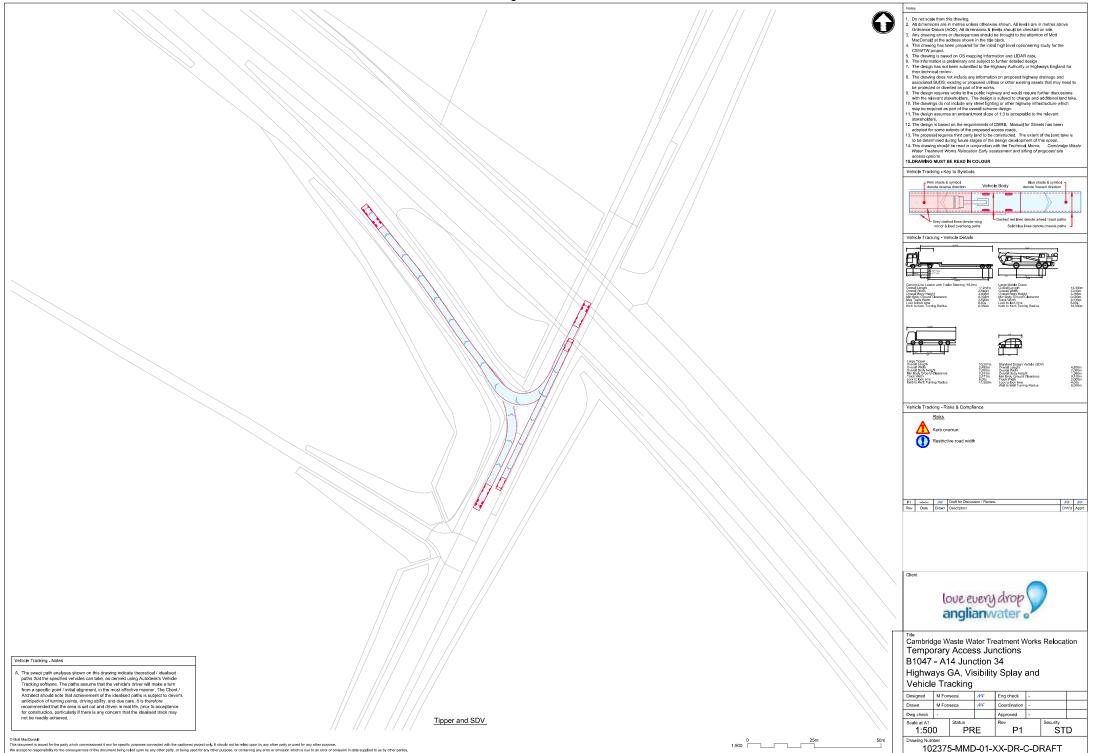


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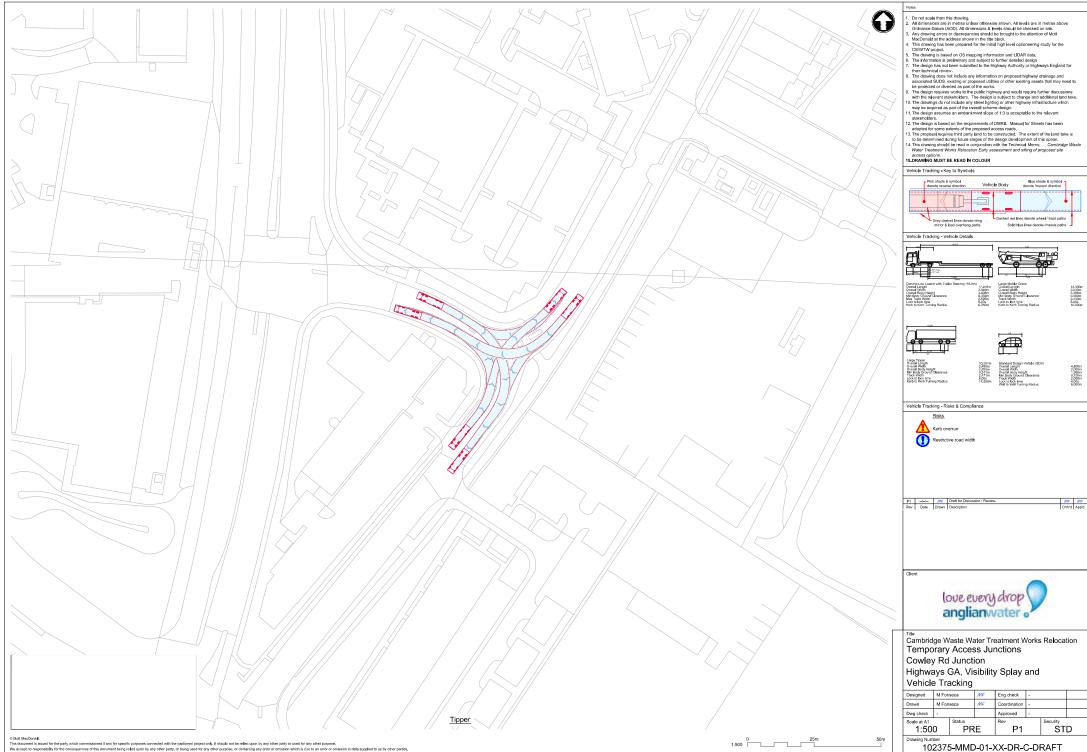


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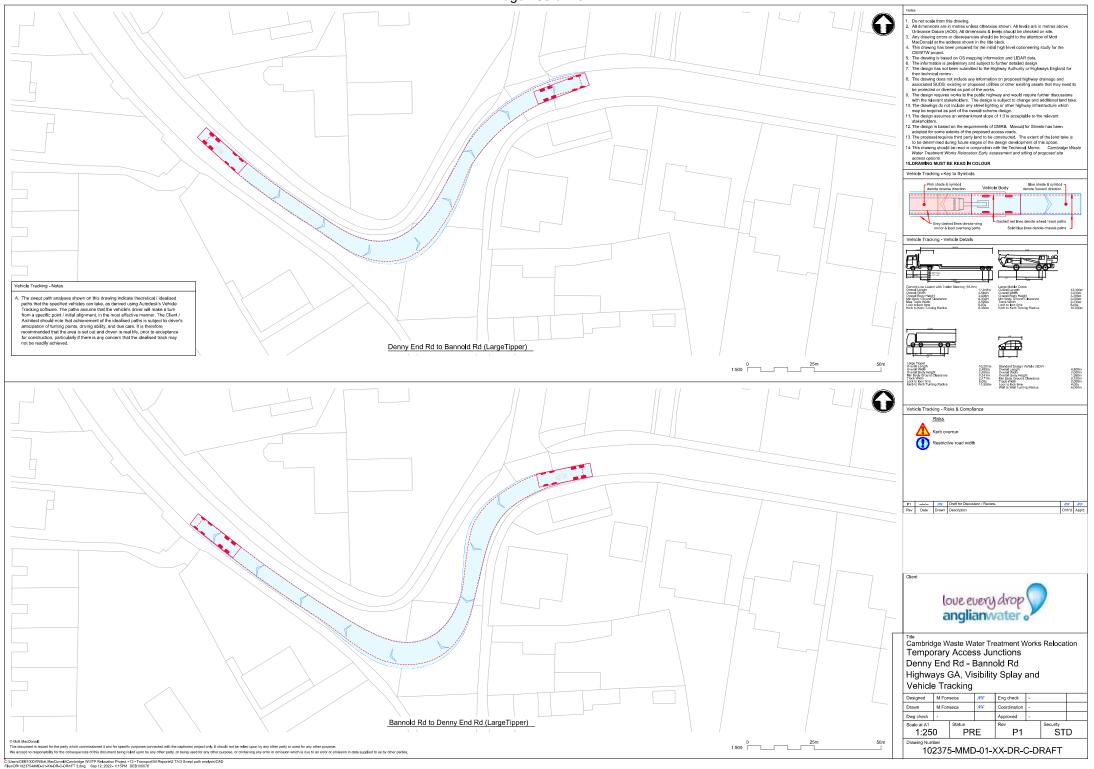


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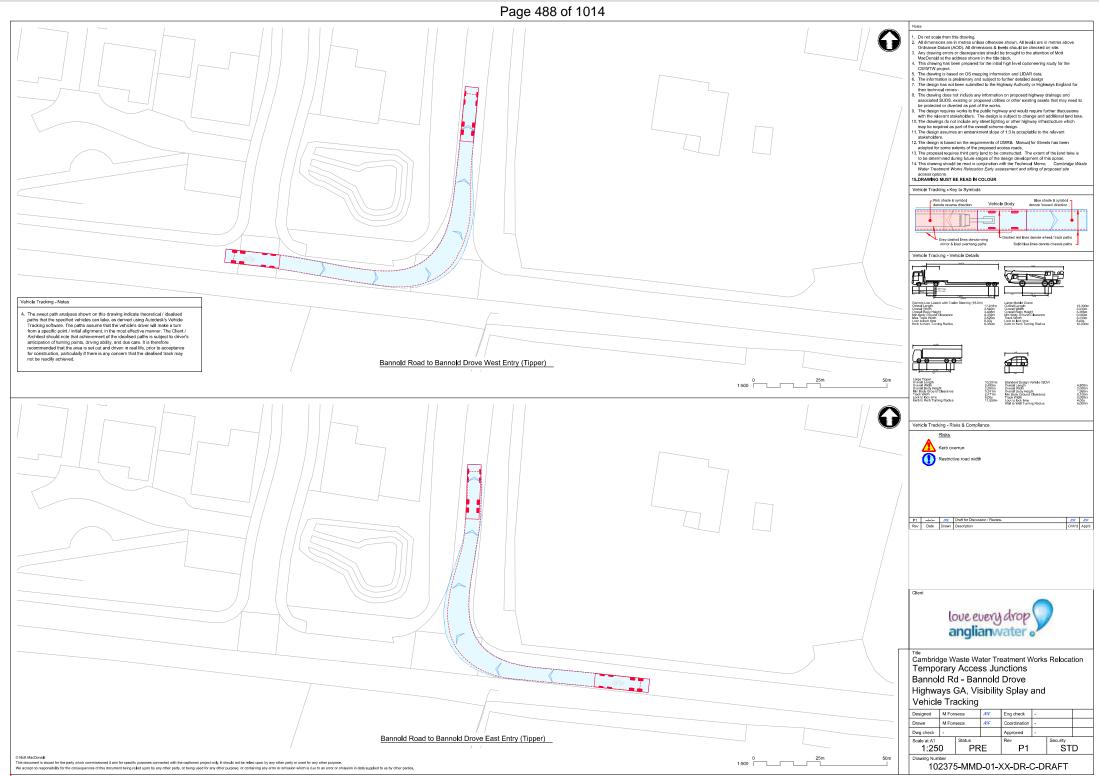




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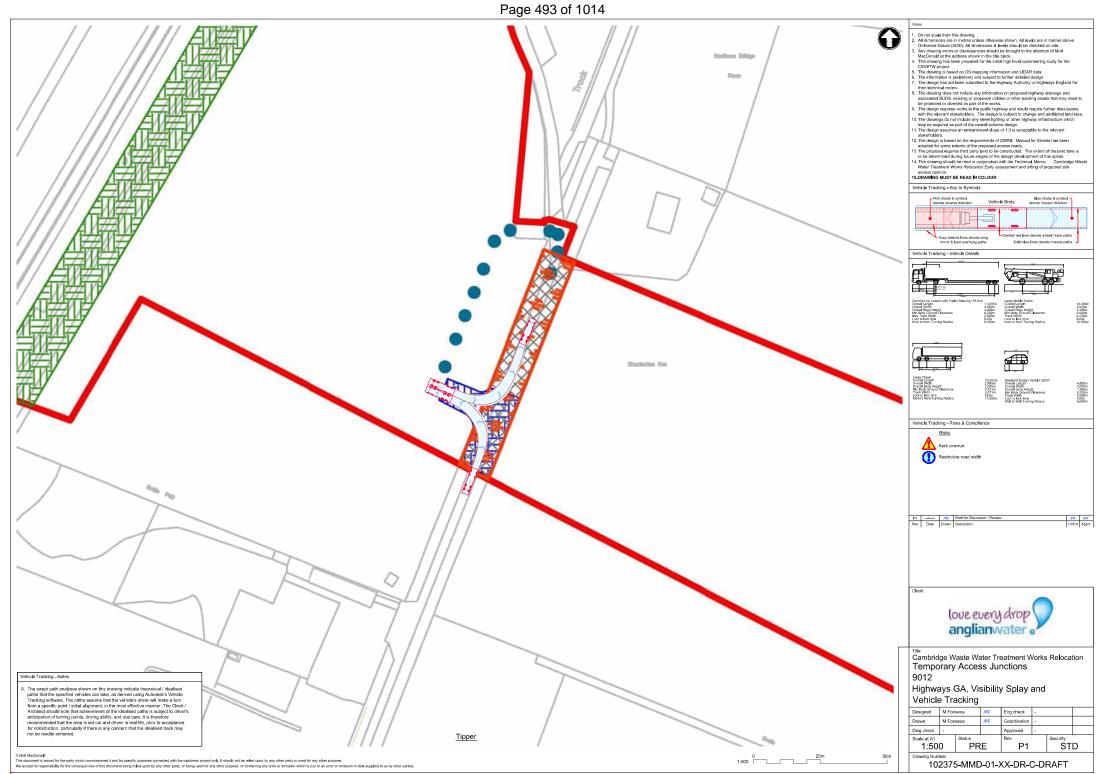
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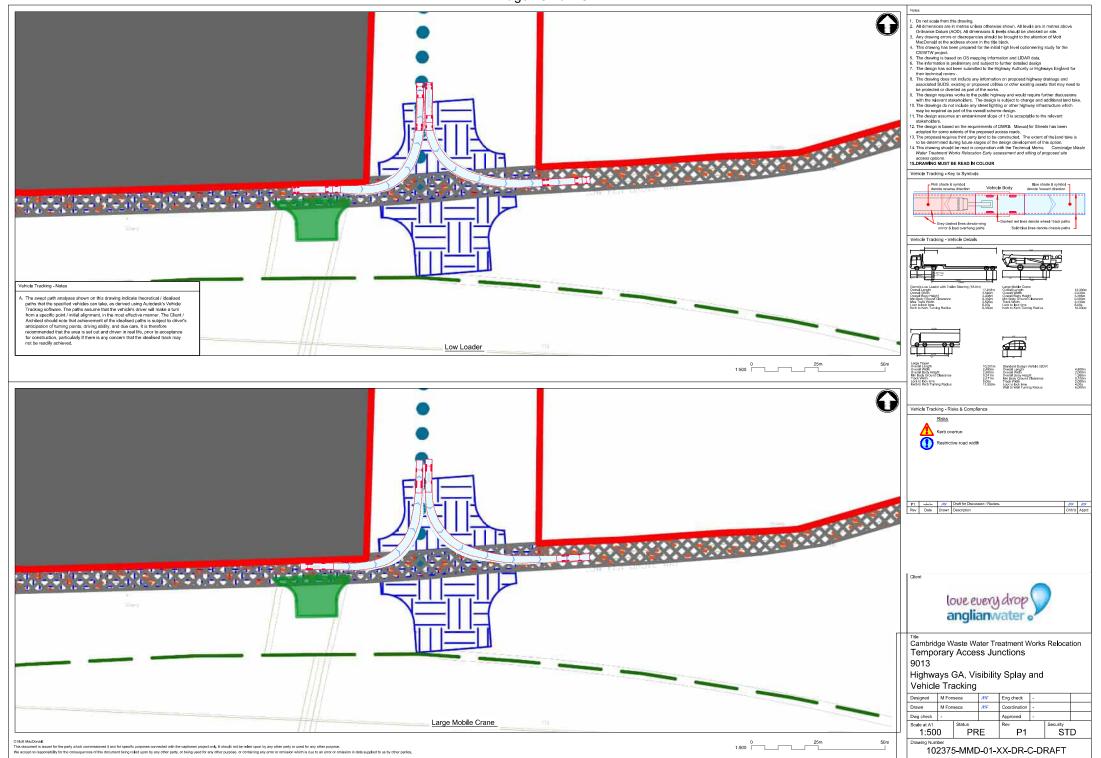


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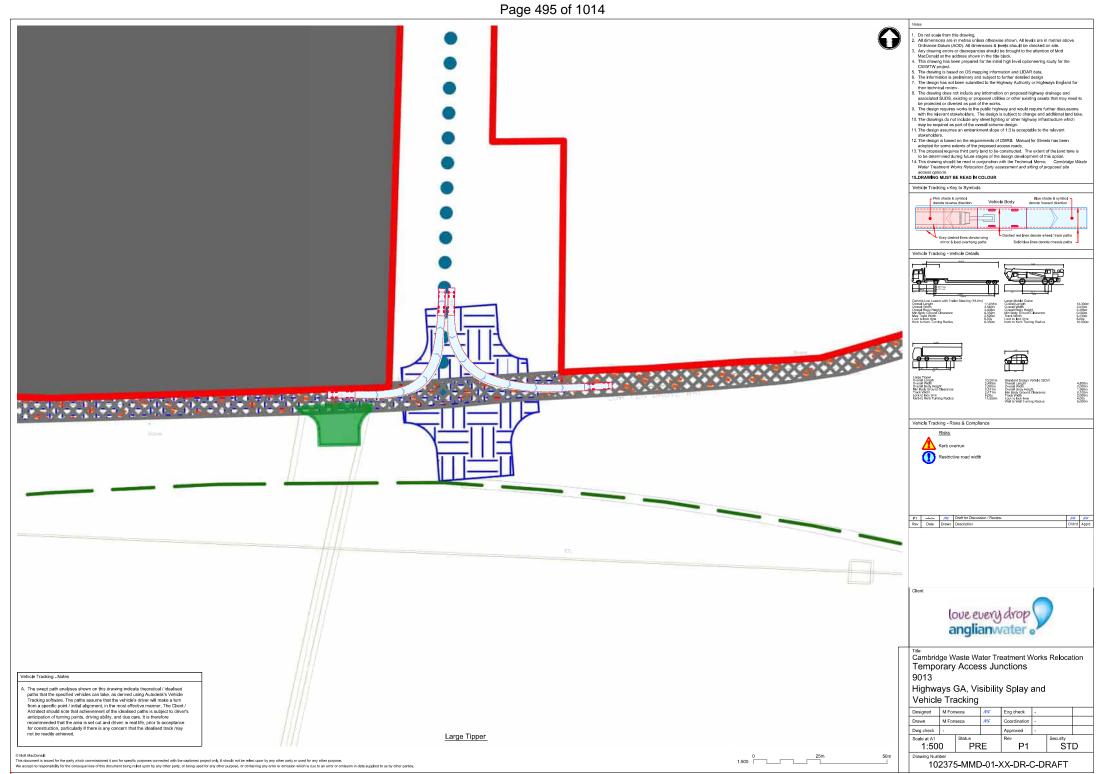


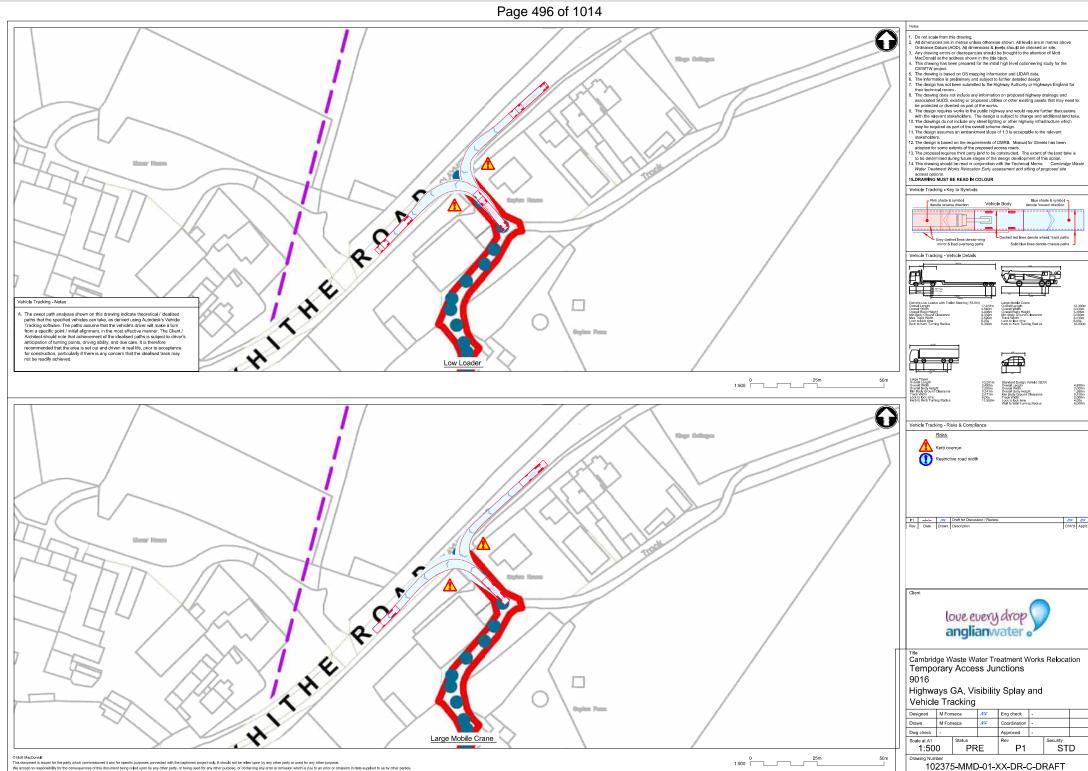


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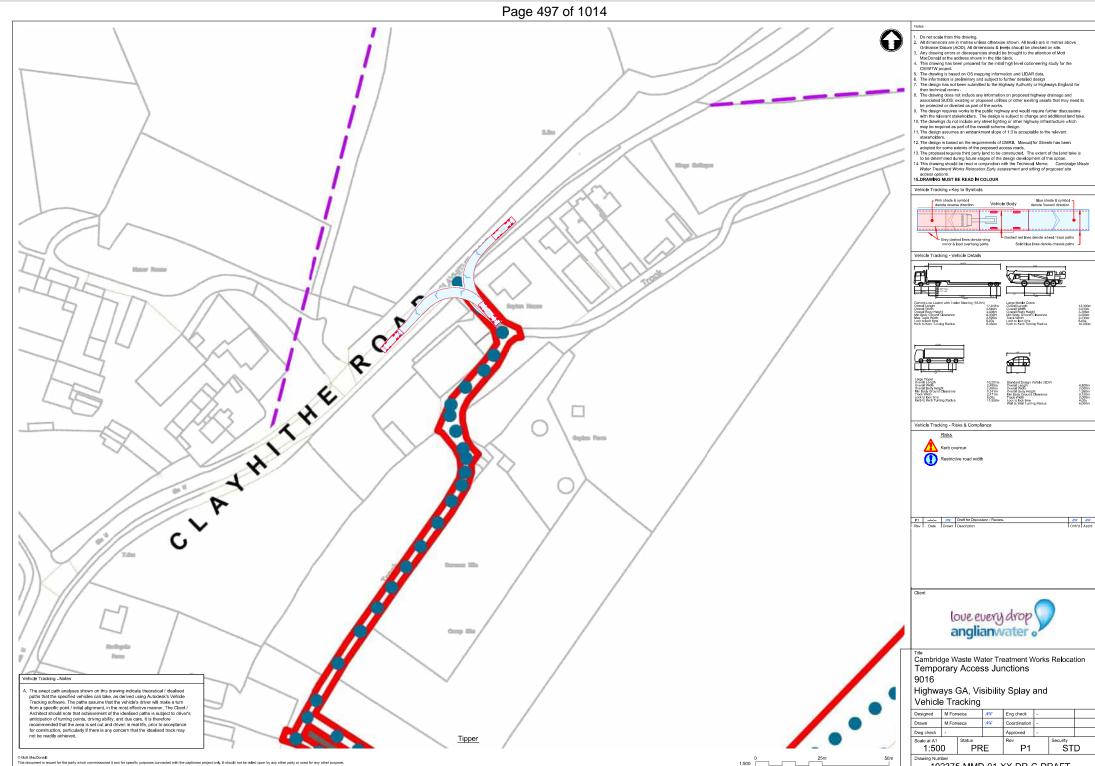


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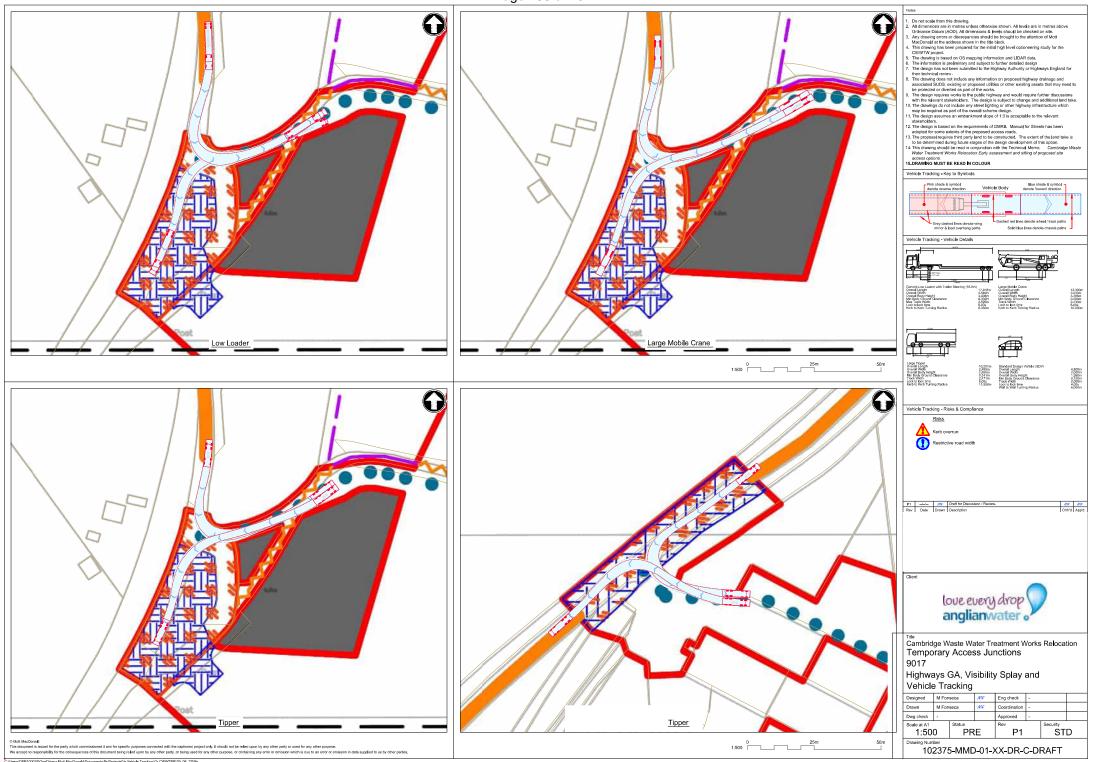


102375-MMD-01-XX-DR-C-DRAFT

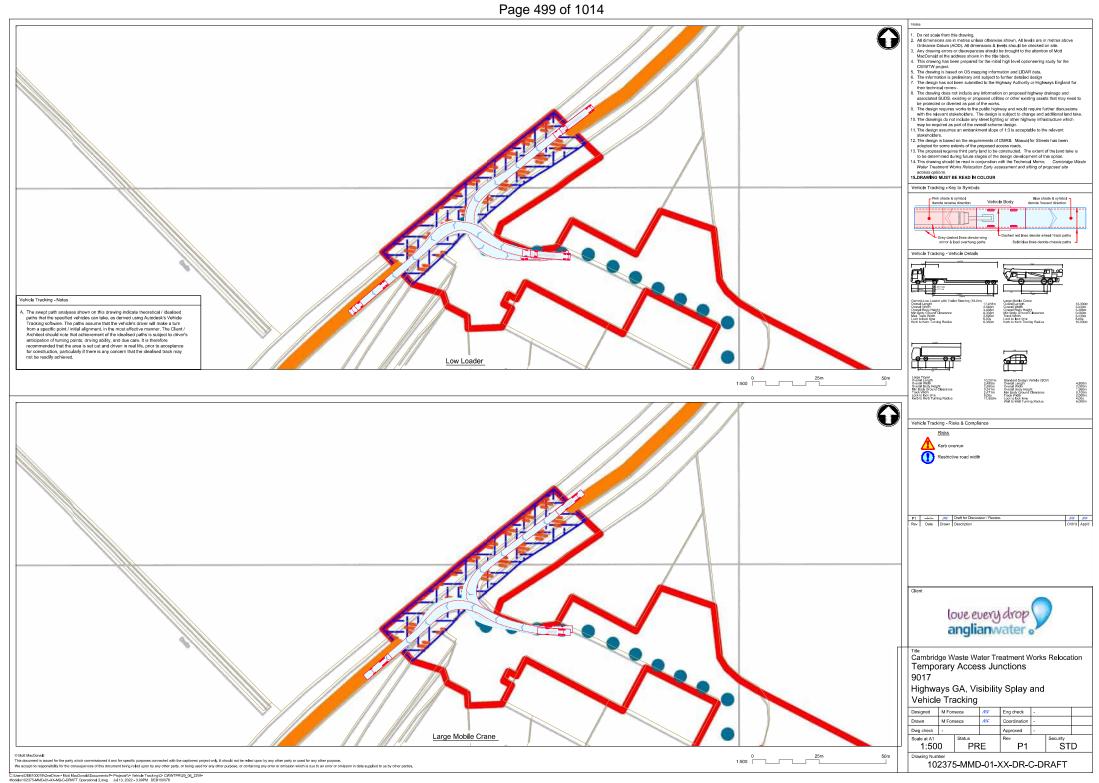
• vice macrosmu This document is seaded on the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any alter purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

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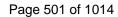
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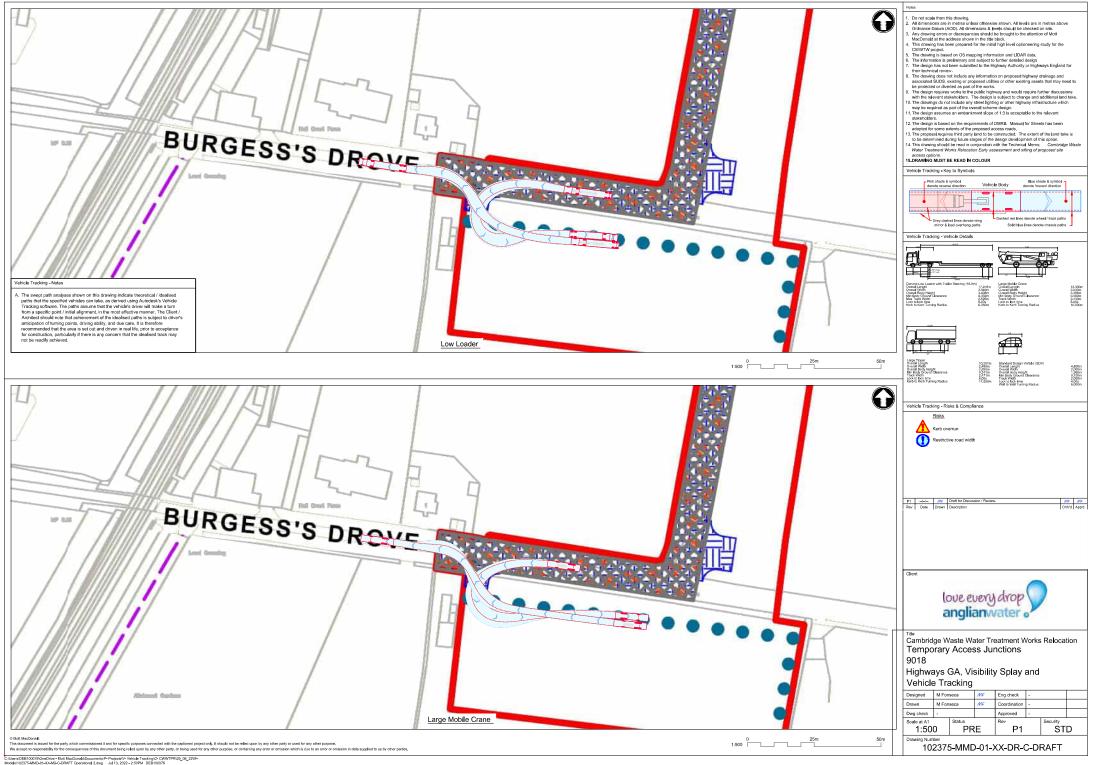


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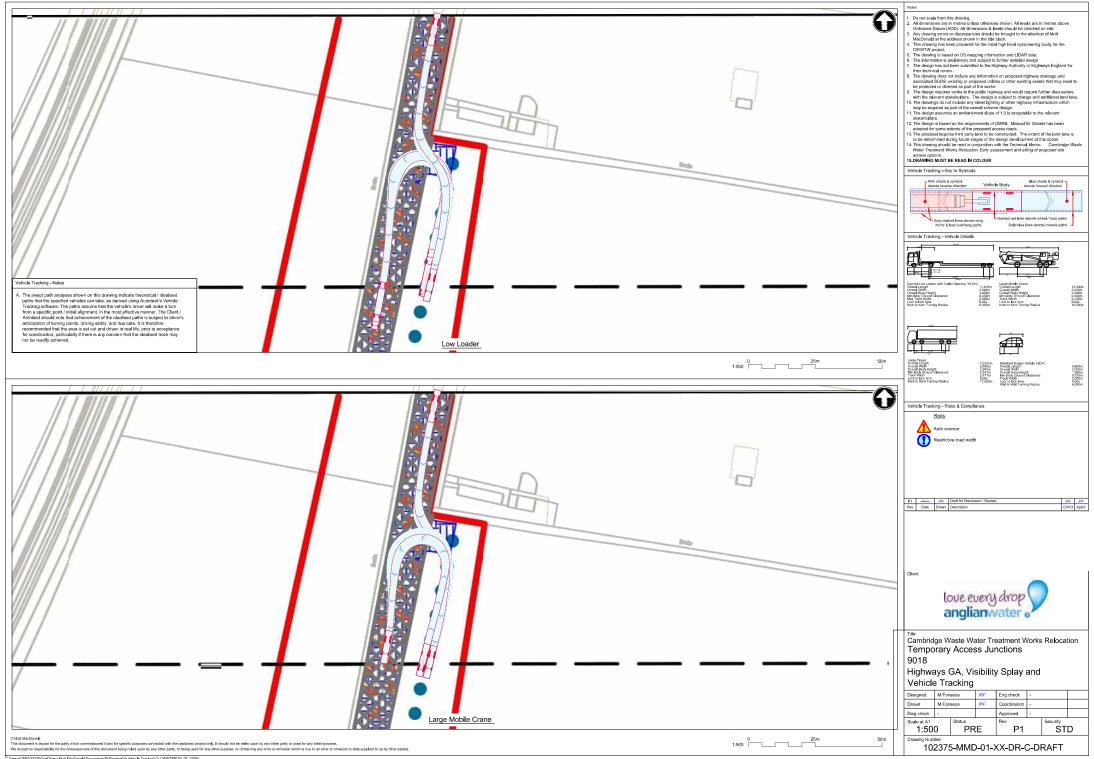


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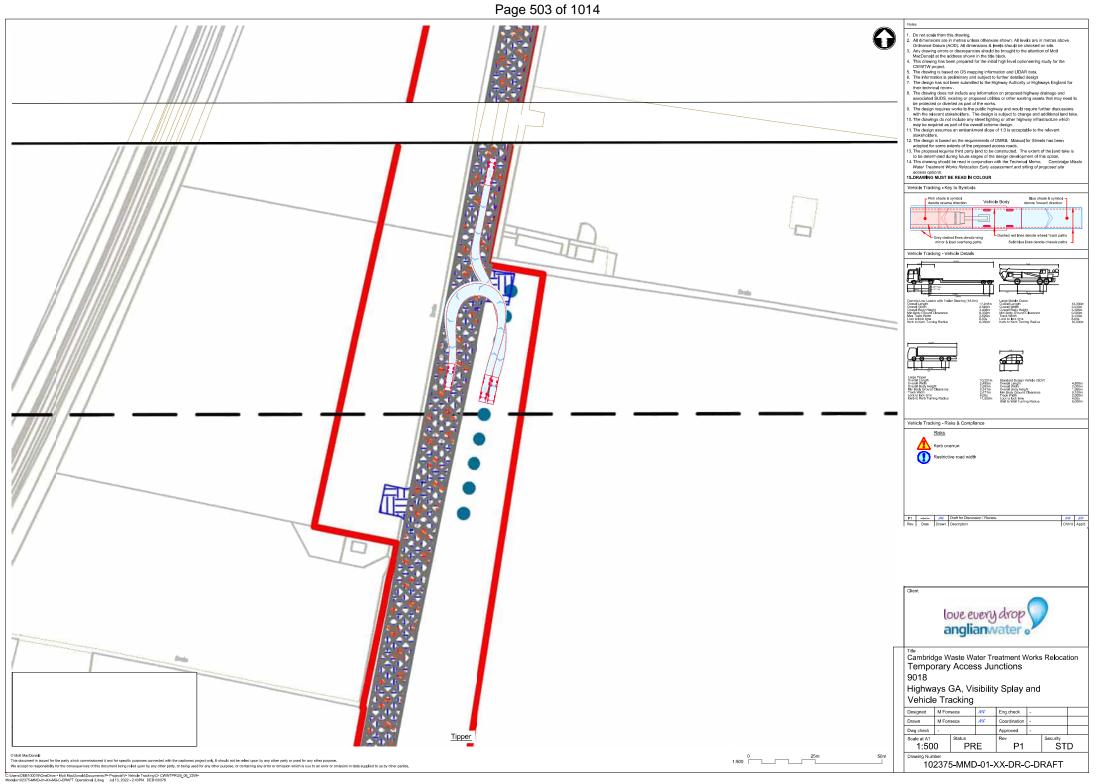




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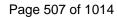
Construction traffic routes - safety

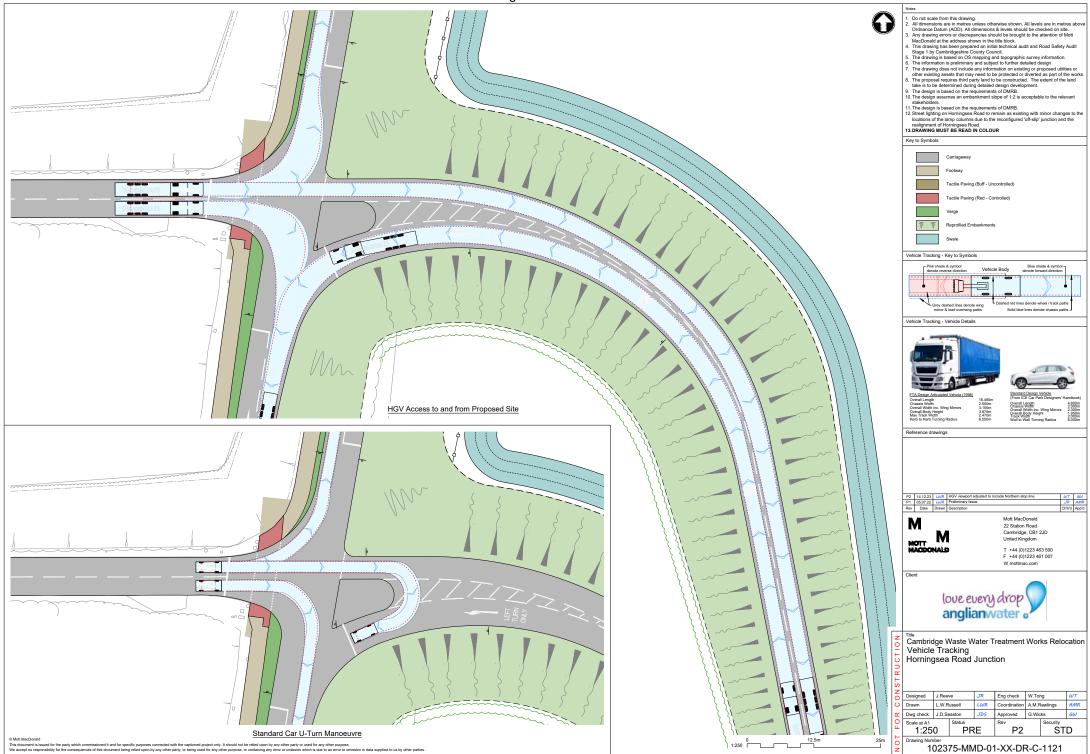
At Appendix G of the TA [AS-108] there are swept path analyses of the J34 on-slip. Please provide:

- a. a swept path analysis for the off-slip junction with the A14 overbridge, including for tipper trucks; and
- b. commentary on whether construction vehicles would be able to safely turn left or right from the J34 off-slip in the event that southbound queuing to the J34 on-slip extends close to or beyond (to the north of) the junction of the J34 off-slip and the A14 overbridge (for example when concrete pouring / directional drilling works take place during the peak periods).

The Applicant has produced these drawings. The Applicant's commentary for these swept paths is as follows:

There are no issues noted for an articulated vehicle (maximum vehicle size expected at site) to complete the left and right turn from the offslip onto Horningsea Road. It is noted that for both manoeuvres, articulated vehicles would need to encroach slightly into the opposite lane to complete the manoeuvres. In spite of this, there is no risk of collision with vehicles from opposite lanes when turning from the offslip as the traffic signal sequence at the junction ensures that when the traffic signals on the offslip are green, traffic signals on other arms would be red. In the event that southbound queuing on A14 overbridge from the on-slip extends close to or beyond the junction of the J34 offslip and the A14 overbridge, articulated vehicles would not be able to complete the right turn from the offslip due to lack of space. The left turn from the offslip onto Horningsea Road northbound north of J34 can be completed as vehicles are not expected to queue in front of the stop line on Horningsea Road southbound leading towards the offslip/A14 overbridge. Therefore, even if an articulated vehicle were to encroach on the opposite lane, there would be no traffic present on that lane owing to the location of the stop line.





CiUsers/RUS46666/Mott MacDonald/CWWTWR Highway Access - Project - CAD (Civils Design)/2.1 Issued Drawings (Main Site Works)/102376-MMD-01-XX-DR-C-1121\_P2.dwg Dec 14, 2023 - 2:20AM RUS46666



C. (Users/RUS46566/Mot MacDonaldC/WWTWR Highway Access - Project - CAD (Civils Design)/2.1 Issued Drawings (Main Site Works)/102375-MMD-01-XX-DR-C-1142\_P1.dwg Dec 14, 2023 - 2:23AAI RUS46566

# Appendix H: Discovery Centre TRICS<sup>®</sup> Data

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	Page 510 of 1014	
CS 7.9.2 180622 B20.49	Database right of TRICS Consortium Limited, 2022. All rights reserved	Thursday 04/08/22 Page 1
MacDonald Fleet Place	London	Licence No: 704113
TRIP RATE CALCULA	Calculation Reference: AI	UDIT-704113-220804-0830
Land Use : 07 - LE	ISURF	
	GALLERIES/MUSEUMS/EXHIBITIONS	
Selected regions and a		
16 ULSTER (REPUE DN DONEGAL	BLIC OF IRELAND) . 1 days	
This section displays th	he number of survey days per TRICS® sub-region in the selected set	
Primary Filtering sele	ection:	
This data displays the o are included in the trip	chosen trip rate parameter and its selected range. Only sites that fall within th rate calculation.	he parameter range
Parameter:	Gross floor area	
Actual Range: Range Selected by Use	750 to 750 (units: sqm) r: 200 to 5000 (units: sqm)	
Parking Spaces Range:	All Surveys Included	
Public Transport Provisi		
Selection by:	Include all surveys	
Date Range: 01	/01/14 to 23/11/19	
This data displays the i included in the trip rate	range of survey dates selected. Only surveys that were conducted within this e calculation.	date range are
<u>Selected survey days:</u>		
Wednesday	1 days	
This data displays the i	number of selected surveys by day of the week.	
Selected survey types:		
Manual count	1 days	
Directional ATC Count	0 days	
	number of manual classified surveys and the number of unclassified ATC surv er of surveys in the selected set. Manual surveys are undertaken using staff, machines.	
Selected Locations:		
Edge of Town Centre	1	
This data displays the i consist of Free Standin Not Known.	number of surveys per main location category within the selected set. The ma g, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centr	ain location categories re, Town Centre and
<u>Selected Location Sub</u> High Street	<u>C'ategories:</u> 1	

High Street

1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

<u>*Use Class:*</u> F1(c)

1 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range: All Surveys Included

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TRICS 7.9.2 180622 B20.49	Database right of TRICS Consortium Limited, 2022. All rights reserved	Thursday 04/08/22 Page 2
Mott MacDonald Fleet Place	London	Licence No: 704113
Secondary Filtering	selection (Cont.):	
<u>Population within 1 mi</u> 1,001 to 5,000	<i>ile:</i> 1 days	
This data displays the	number of selected surveys within stated 1-mile radii of population.	
<i>Population within 5 mi</i> 5,001 to 25,000	<i>iles:</i> 1 days	
This data displays the	number of selected surveys within stated 5-mile radii of population.	
<u>Car ownership within s</u> 0.6 to 1.0	<u>5 miles:</u> 1 days	
, 5	number of selected surveys within stated ranges of average cars owned per iles of selected survey sites.	residential dwelling,
<u>Travel Plan:</u> No	1 days	
	number of surveys within the selected set that were undertaken at sites with veys that were undertaken at sites without Travel Plans.	h Travel Plans in place,

<u>PTAL Rating:</u> No PTAL Present

1 days

This data displays the number of selected surveys with PTAL Ratings.

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TRICS 7.9.2 180622 B20.49	Database right of TRICS Consor	tium Limited, 2022. All rights reserved	Thursday 04/08/22
			Page 3
Mott MacDonald Fleet Place	London		Licence No: 704113
LIST OF SITES relevan	<u>nt to selection parameters</u>		
1 DN-07-I-02	COUNTY MUSEUM	DONEGAL	
HIGH ROAD			
LETTERKENNY			
BALLYBOE GLEN	CAR		
Edge of Town Ce	entre		
High Street			

High StreetTotal Gross floor area:750 sqmSurvey date:WEDNESDAY10/10/18

Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

### MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection	
DU-07-I-01	Location unsuitable	
ES-07-I-01	Location unsuitable	

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#### Mott MacDonald Fleet Place London

TRIP RATE for Land Use 07 - LEISURE/I - ART GALLERIES/MUSEUMS/EXHIBITIONS MULTI-MODAL TOTAL VEHICLES Calculation factor: 100 sqm BOLD print indicates peak (busiest) period Total People to Total Vehicles ratio (all time periods and directions): 1.88

		ARRIVALS			DEPARTURES			TOTALS	
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	750	0.267	1	750	0.133	1	750	0.400
10:00 - 11:00	1	750	0.000	1	750	0.133	1	750	0.133
11:00 - 12:00	1	750	0.000	1	750	0.000	1	750	0.000
12:00 - 13:00	1	750	0.133	1	750	0.000	1	750	0.133
13:00 - 14:00	1	750	0.133	1	750	0.133	1	750	0.266
14:00 - 15:00	1	750	0.400	1	750	0.267	1	750	0.667
15:00 - 16:00	1	750	0.533	1	750	0.267	1	750	0.800
16:00 - 17:00	1	750	0.133	1	750	0.667	1	750	0.800
17:00 - 18:00	1	750	0.000	1	750	0.133	1	750	0.133
18:00 - 19:00									
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.599			1.733			3.332

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

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#### Parameter summary

Trip rate parameter range selected:	750 - 750 (units: sqm)
Survey date date range:	01/01/14 - 23/11/19
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	2

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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#### Mott MacDonald Fleet Place London

### TRIP RATE for Land Use 07 - LEISURE/I - ART GALLERIES/MUSEUMS/EXHIBITIONS MULTI-MODAL VEHICLE OCCUPANTS Calculation factor: 100 sqm BOLD print indicates peak (busiest) period

		ARRIVALS			DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip	
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	Rate	
00:00 - 01:00										
01:00 - 02:00										
02:00 - 03:00										
03:00 - 04:00										
04:00 - 05:00										
05:00 - 06:00										
06:00 - 07:00										
07:00 - 08:00										
08:00 - 09:00										
09:00 - 10:00	1	750	0.267	1	750	0.133	1	750	0.400	
10:00 - 11:00	1	750	0.000	1	750	0.133	1	750	0.133	
11:00 - 12:00	1	750	0.000	1	750	0.000	1	750	0.000	
12:00 - 13:00	1	750	0.133	1	750	0.000	1	750	0.133	
13:00 - 14:00	1	750	0.267	1	750	0.133	1	750	0.400	
14:00 - 15:00	1	750	0.533	1	750	0.533	1	750	1.066	
15:00 - 16:00	1	750	0.933	1	750	0.533	1	750	1.466	
16:00 - 17:00	1	750	0.133	1	750	0.800	1	750	0.933	
17:00 - 18:00	1	750	0.000	1	750	0.133	1	750	0.133	
18:00 - 19:00										
19:00 - 20:00										
20:00 - 21:00										
21:00 - 22:00										
22:00 - 23:00										
23:00 - 24:00										
Total Rates:			2.266			2.398			4.664	

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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#### Mott MacDonald Fleet Place London

### TRIP RATE for Land Use 07 - LEISURE/I - ART GALLERIES/MUSEUMS/EXHIBITIONS MULTI-MODAL PEDESTRIANS Calculation factor: 100 sqm BOLD print indicates peak (busiest) period

		ARRIVALS		[	DEPARTURES			TOTALS	
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	750	0.000	1	750	0.000	1	750	0.000
10:00 - 11:00	1	750	0.400	1	750	0.400	1	750	0.800
11:00 - 12:00	1	750	0.000	1	750	0.000	1	750	0.000
12:00 - 13:00	1	750	0.000	1	750	0.000	1	750	0.000
13:00 - 14:00	1	750	0.400	1	750	0.133	1	750	0.533
14:00 - 15:00	1	750	0.000	1	750	0.000	1	750	0.000
15:00 - 16:00	1	750	0.000	1	750	0.267	1	750	0.267
16:00 - 17:00	1	750	0.000	1	750	0.000	1	750	0.000
17:00 - 18:00	1	750	0.000	1	750	0.000	1	750	0.000
18:00 - 19:00									
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.800			0.800			1.600

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

### Page 516 of 1014

#### Mott MacDonald Fleet Place London

Thursday 04/08/22 Page 7 Licence No: 704113

### TRIP RATE for Land Use 07 - LEISURE/I - ART GALLERIES/MUSEUMS/EXHIBITIONS MULTI-MODAL TOTAL PEOPLE Calculation factor: 100 sqm BOLD print indicates peak (busiest) period Total People to Total Vehicles ratio (all time periods and directions): 1.88

		ARRIVALS			DEPARTURES			TOTALS	
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	750	0.267	1	750	0.133	1	750	0.400
10:00 - 11:00	1	750	0.400	1	750	0.533	1	750	0.933
11:00 - 12:00	1	750	0.000	1	750	0.000	1	750	0.000
12:00 - 13:00	1	750	0.133	1	750	0.000	1	750	0.133
13:00 - 14:00	1	750	0.667	1	750	0.267	1	750	0.934
14:00 - 15:00	1	750	0.533	1	750	0.533	1	750	1.066
15:00 - 16:00	1	750	0.933	1	750	0.800	1	750	1.733
16:00 - 17:00	1	750	0.133	1	750	0.800	1	750	0.933
17:00 - 18:00	1	750	0.000	1	750	0.133	1	750	0.133
18:00 - 19:00									
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.066			3.199			6.265

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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#### Mott MacDonald Fleet Place London

### TRIP RATE for Land Use 07 - LEISURE/I - ART GALLERIES/MUSEUMS/EXHIBITIONS MULTI-MODAL CARS Calculation factor: 100 sqm BOLD print indicates peak (busiest) period

		ARRIVALS		[	DEPARTURES			TOTALS	
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	750	0.267	1	750	0.133	1	750	0.400
10:00 - 11:00	1	750	0.000	1	750	0.133	1	750	0.133
11:00 - 12:00	1	750	0.000	1	750	0.000	1	750	0.000
12:00 - 13:00	1	750	0.133	1	750	0.000	1	750	0.133
13:00 - 14:00	1	750	0.133	1	750	0.133	1	750	0.266
14:00 - 15:00	1	750	0.400	1	750	0.267	1	750	0.667
15:00 - 16:00	1	750	0.533	1	750	0.267	1	750	0.800
16:00 - 17:00	1	750	0.133	1	750	0.667	1	750	0.800
17:00 - 18:00	1	750	0.000	1	750	0.133	1	750	0.133
18:00 - 19:00									
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.599			1.733			3.332

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

TRIP RATE for Land Use 07 - LEISURE/I - ART GALLERIES/MUSEUMS/EXHIBITIONS Calculation Factor: 100 sqm Count Type: TOTAL VEHICLES

						DEPAR	TURE		TOTAL
			ARRIVALS			S		Ave	S
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	Rate
00:00-01:00	•						,		
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00									
06:00-07:00									
07:00-08:00									
08:00-09:00									
09:00-10:00	1	750	0.267	1	750	0.133	1	750	0.4
10:00-11:00	1	750	0	1	750	0.133	1	750	0.133
11:00-12:00	1	750	0	1	750	0	1	750	0
12:00-13:00	1	750	0.133	1	750	0	1	750	0.133
13:00-14:00	1	750	0.133	1	750	0.133	1	750	0.266
14:00-15:00	1	750	0.4	1	750	0.267	1	750	0.667
15:00-16:00	1	750	0.533	1	750	0.267	1	750	0.8
16:00-17:00	1	750	0.133	1	750	0.667	1	750	0.8
17:00-18:00	1	750	0	1	750	0.133	1	750	0.133
18:00-19:00									
19:00-20:00									
20:00-21:00									
21:00-22:00									
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			1.599			1.733			3.332

TRIP RATE for Land Use 07 - LEISURE/I - ART GALLERIES/MUSEUMS/EXHIBITIONS Calculation Factor: 100 sqm Count Type: VEHICLE OCCUPANTS

		ARRIVALS			DEPAR S	TURE		TOTAL S	
			ANNIVALS			5		Ave	5
	No.	Ave.	Trip	No.	Ave.	Trip	No.		Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	Rate
00:00-01:00									
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00									
06:00-07:00									
07:00-08:00									
08:00-09:00									
09:00-10:00	1	750	0.267	1	750	0.133	1	750	0.4
10:00-11:00	1	750	0	1	750	0.133	1	750	0.133
11:00-12:00	1	750	0	1	750	0	1	750	0
12:00-13:00	1	750	0.133	1	750	0	1	750	0.133
13:00-14:00	1	750	0.267	1	750	0.133	1	750	0.4
14:00-15:00	1	750	0.533	1	750	0.533	1	750	1.066
15:00-16:00	1	750	0.933	1	750	0.533	1	750	1.466
16:00-17:00	1	750	0.133	1	750	0.8	1	750	0.933
17:00-18:00	1	750	0	1	750	0.133	1	750	0.133
18:00-19:00									
19:00-20:00									
20:00-21:00									
21:00-22:00									
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			2.266			2.398			4.664

TRIP RATE for Land Use 07 - LEISURE/I - ART GALLERIES/MUSEUMS/EXHIBITIONS Calculation Factor: 100 sqm Count Type: PEDESTRIANS

			ARRIVALS			DEPAR S	TURE		TOTAL S
			/			5		Ave	5
	No.	Ave.	Trip	No.	Ave.	Trip	No.		Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	Rate
00:00-01:00									
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00									
06:00-07:00									
07:00-08:00									
08:00-09:00									
09:00-10:00	1	750	0	1	750	0	1	750	0
10:00-11:00	1	750	0.4	1	750	0.4	1	750	0.8
11:00-12:00	1	750	0	1	750	0	1	750	0
12:00-13:00	1	750	0	1	750	0	1	750	0
13:00-14:00	1	750	0.4	1	750	0.133	1	750	0.533
14:00-15:00	1	750	0	1	750	0	1	750	0
15:00-16:00	1	750	0	1	750	0.267	1	750	0.267
16:00-17:00	1	750	0	1	750	0	1	750	0
17:00-18:00	1	750	0	1	750	0	1	750	0
18:00-19:00									
19:00-20:00									
20:00-21:00									
21:00-22:00									
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			0.8			0.8			1.6

TRIP RATE for Land Use 07 - LEISURE/I - ART GALLERIES/MUSEUMS/EXHIBITIONS Calculation Factor: 100 sqm Count Type: TOTAL PEOPLE

						DEPAR	TURE		TOTAL S
			ARRIVALS			S		Ave	5
	No.	Ave.	Trip	No.	Ave.	Trip	No.		Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	Rate
00:00-01:00									
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00									
06:00-07:00									
07:00-08:00									
08:00-09:00									
09:00-10:00	1	750	0.267	1	750	0.133	1	750	0.4
10:00-11:00	1	750	0.4	1	750	0.533	1	750	0.933
11:00-12:00	1	750	0	1	750	0	1	750	0
12:00-13:00	1	750	0.133	1	750	0	1	750	0.133
13:00-14:00	1	750	0.667	1	750	0.267	1	750	0.934
14:00-15:00	1	750	0.533	1	750	0.533	1	750	1.066
15:00-16:00	1	750	0.933	1	750	0.8	1	750	1.733
16:00-17:00	1	750	0.133	1	750	0.8	1	750	0.933
17:00-18:00	1	750	0	1	750	0.133	1	750	0.133
18:00-19:00									
19:00-20:00									
20:00-21:00									
21:00-22:00									
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			3.066			3.199			6.265

TRIP RATE for Land Use 07 - LEISURE/I - ART GALLERIES/MUSEUMS/EXHIBITIONS Calculation Factor: 100 sqm Count Type: CARS

						DEPARTURE			TOTAL
			ARRIVALS			S		Ave	S
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	Rate
00:00-01:00	•						,		
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00									
06:00-07:00									
07:00-08:00									
08:00-09:00									
09:00-10:00	1	750	0.267	1	750	0.133	1	750	0.4
10:00-11:00	1	750	0	1	750	0.133	1	750	0.133
11:00-12:00	1	750	0	1	750	0	1	750	0
12:00-13:00	1	750	0.133	1	750	0	1	750	0.133
13:00-14:00	1	750	0.133	1	750	0.133	1	750	0.266
14:00-15:00	1	750	0.4	1	750	0.267	1	750	0.667
15:00-16:00	1	750	0.533	1	750	0.267	1	750	0.8
16:00-17:00	1	750	0.133	1	750	0.667	1	750	0.8
17:00-18:00	1	750	0	1	750	0.133	1	750	0.133
18:00-19:00									
19:00-20:00									
20:00-21:00									
21:00-22:00									
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			1.599			1.733			3.332

# Mode split

Mode	Total number of trips	Mode split
Taxis	0	0.0%
OGVs	0	0.0%
PSVs	0	0.0%
LGVs	0	0.0%
Cars	7	34.7%
Cyclists	0	0.0%
Pedestrians	13	65.3%
Bus	0	0.0%
Rail	0	0.0%
Motorcycles	0	0.0%
Total	20	100.0%

# Total people Calculation factor: 100sqm

		AR	RIVALS			[	DEPARTURES	TOTALS				
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for s	No. Days2	Ave. GFA3	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA4	Trip Rate2	Trip Rate2
00:00-01:00												
01:00-02:00												
02:00-03:00												
03:00-04:00												
04:00-05:00												
05:00-06:00												
06:00-07:00												
07:00-08:00				0				C	)			0
08:00-09:00				0				C	)			0
09:00-10:00		1 75	0 0.267	1		1 75	0.133	C C		1 75	0 0.4	1
10:00-11:00		1 75	0 0.4	1		1 75	0 0.533	3 1		1 75	0 0.933	2
11:00-12:00		1 75	0 0	0		1 75	io (	) C		1 75	0 0	
12:00-13:00		1 75	0 0.133	0		1 75	60 C	) C		1 75	0 0.133	0
13:00-14:00		1 75	0 0.667	1		1 75	0 0.267	/1	-	1 75	0 0.934	2
14:00-15:00		1 75	0 0.533	1		1 75	0 0.533	3 1		1 75	0 1.066	2
15:00-16:00		1 75	0 0.933	2		1 75	0.8	3 2	2	1 75	0 1.733	
16:00-17:00		1 75	0 0.133	0		1 75	0.8	3 2	2	1 75	0 0.933	2
17:00-18:00		1 75	0 0	0		1 75	0.133	S <mark>.</mark> C		1 75	0 0.133	0
18:00-19:00				0				С				0
19:00-20:00												
20:00-21:00												
21:00-22:00												
22:00-23:00												
23:00-24:00												
Daily Trip Rates:			3.066	6			3.199	7	<b>'</b>		6.265	13

		100sqm	
Total proposed	209	conversion	2.09
floorspace (sqm)		factor	



# Total vehicles

			ARRIVALS			C	EPARTURES			TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for site	No. Days2	Ave. GFA3	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA4	Trip Rate2	Tr	
00:00-01:00													
01:00-02:00													
02:00-03:00													
03:00-04:00													
04:00-05:00													
05:00-06:00													
06:00-07:00													
07:00-08:00				0				(	<mark>)</mark>				
08:00-09:00				0				(	ס				
09:00-10:00		1 75	0 0.267	1		1 75	0 0.133	(	<mark>)</mark>	1 75	0 0.4		
10:00-11:00		1 75	0 0	0		1 75	0 0.133	(	<mark>)</mark>	1 75	0 0.133		
11:00-12:00		1 75	0 0	0		1 75	0 0	(	<mark>ו</mark>	1 75	0 0		
12:00-13:00		1 75	0 0.133	0		1 75	0 0	(	<mark>)</mark>	1 75	0 0.133		
13:00-14:00		1 75	0 0.133	0		1 75	0 0.133	(	<mark>)</mark>	1 75	0 0.266		
14:00-15:00		1 75	0 0.4	1		1 75	0 0.267	1	L	1 75	0 0.667		
15:00-16:00		1 75	0 0.533	1		1 75	0 0.267	1	L	1 75	0 0.8		
16:00-17:00		1 75	0 0.133	0		1 75	0 0.667	1	L	1 75	0 0.8		
17:00-18:00		1 75	0 0	0		1 75	0 0.133	C	ס	1 75	0 0.133		
18:00-19:00				0				(	<mark>)</mark>				
19:00-20:00													
20:00-21:00													
21:00-22:00													
22:00-23:00													
23:00-24:00													
Daily Trip Rates:			1.599	3			1.733	4	1		3.332		

Total proposed	209
floorspace (sqm)	
100sqm	
conversion	2.09
factor	

Trip Ra	ite2
	0
	0
	1
	0
	0
	0
	1
	1
	2
	2
	0
	0
	7
	/

# Taxis

			ARRIVALS			C	EPARTURES		TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for site	No. Days2	Ave. GFA3	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA4 Trip Rate2	Trip rate for site22	
00:00-01:00												
01:00-02:00												
02:00-03:00												
03:00-04:00												
04:00-05:00												
05:00-06:00												
06:00-07:00												
07:00-08:00				C	)			0			0	
08:00-09:00				0	)			0			0	
09:00-10:00				C	)			0			0	
10:00-11:00				C	)			0			0	
11:00-12:00				C	)			0			0	
12:00-13:00				C	)			0			0	
13:00-14:00				C	)			0			0	
14:00-15:00				C	)			0			0	
15:00-16:00				C	)			0			0	
16:00-17:00				C	)			0			0	
17:00-18:00				C	)			0			0	
18:00-19:00				C	)			0			0	
19:00-20:00												
20:00-21:00												
21:00-22:00												
22:00-23:00												
23:00-24:00												
Daily Trip Rates:				C	)			0			0	

Total proposed	209
floorspace (sqm)	
100sqm	
conversion	2.09
factor	

# Vehicle occupants

			ARRIVALS			[	DEPARTURES		TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for site	No. Days2	Ave. GFA3	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA4	Trip Rate2	Tri
00:00-01:00												
01:00-02:00												
02:00-03:00												
03:00-04:00												
04:00-05:00												
05:00-06:00				0				0	)			
06:00-07:00				0				0	)			
07:00-08:00				0				C	)			
08:00-09:00				0				C				
09:00-10:00		1 75	0.267	1		1 75	0 0.133	0	)	1 75	0 0	.4
10:00-11:00		1 75	50 C	0		1 75	0 0.133	0	)	1 75	0 0.13	3
11:00-12:00		1 75	50 C	0		1 75	0 0	C		1 75	0	0
12:00-13:00		1 75	0.133	0		1 75	0 0	C		1 75	0 0.13	3
13:00-14:00		1 75	0.267	1		1 75	0 0.133	0		1 75	0 0	.4
14:00-15:00		1 75	0.533	1		1 75	0 0.533	1		1 75	0 1.06	i6
15:00-16:00		1 75	0.933	2		1 75	0 0.533	1		1 75	0 1.46	i6
16:00-17:00		1 75	0.133	0		1 75	0 0.8	2	2	1 75	0 0.93	3
17:00-18:00		1 75	60 C	0		1 75	0 0.133	0		1 75	0 0.13	<mark>3</mark>
18:00-19:00				0				0				
19:00-20:00				0				C				
20:00-21:00				0				0				
21:00-22:00												
22:00-23:00												
23:00-24:00												
Daily Trip Rates:			2.266	5			2.398	5	5		4.66	54

Total proposed	209
floorspace (sqm)	
100sqm	
conversion	2.09
factor	

ip Ra	
рка	atez
	0
	0
	0
	0
	1
	0
	0
	0
	1
	2
	3
	2
	0
	0
	0
	0
	10

# Cars

	ARRIVALS					۵	EPARTURES		TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for site	No. Days2	Ave. GFA3	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA4	Trip Rate2	Trip rate for site3
00:00-01:00												
01:00-02:00												
02:00-03:00												
03:00-04:00												
04:00-05:00												
05:00-06:00				0				0	)			0
06:00-07:00				0				0	•			0
07:00-08:00				0				0	)			0
08:00-09:00				0				0				0
09:00-10:00		1 7.	50 0.26	/ 1		1 75	0 0.133	0	)	1 75	0 0.4	1
10:00-11:00		1 7.	50 (	) 1		1 75	0 0.133	0		1 75	0 0.133	8 0
11:00-12:00		1 7.	50 (	) 1		1 75	0 0	0		1 75	0 0	0
12:00-13:00		1 7.	50 0.133	3 1		1 75	0 C	0	•	1 75	0 0.133	3 <mark>0</mark>
13:00-14:00		1 7.	50 0.133	3 1		1 75	0 0.133	0		1 75	0 0.266	5 1
14:00-15:00		1 7.	50 0.4	l <mark>1</mark> 1		1 75	0 0.267	1		1 75	0 0.667	1
15:00-16:00		1 7.	50 0.533	3 1		1 75	0 0.267	1		1 75	0.0	3 2
16:00-17:00		1 7.	50 0.133	3 1		1 75	0 0.667	1		1 75	0.0	3 2
17:00-18:00		1 7.	50 (	) <mark>1</mark>		1 75	0 0.133	0		1 75	0 0.133	<mark>8</mark> 0
18:00-19:00				0				0				0
19:00-20:00				0				0				0
20:00-21:00				0				0				0
21:00-22:00												
22:00-23:00												
23:00-24:00												
Daily Trip Rates:			1.599	3			1.733	4			3.332	2 7

Total proposed	209
floorspace (sqm)	
100sqm	
conversion	2.09
factor	

# Pedestrians

	ARRIVALS						DEPARTURES		TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for site	No. Days2	Ave. GFA2	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA3	Trip Rate2	Trip rate for site3
00:00-01:00												
01:00-02:00												
02:00-03:00												
03:00-04:00												
04:00-05:00												
05:00-06:00												
06:00-07:00												
07:00-08:00				(	)			(	)			0
08:00-09:00				(	)			(				0
09:00-10:00		1 75	50	0 (	)	1 7	50 (	) (	)	1 75	0 0.4	- 1
10:00-11:00		1 75	50 0.	4 1		1 7	50 0.4	1	L	1 75	0 0.933	8 2
11:00-12:00		1 75	50	0 (	)	1 7	50 (	) (	)	1 75	0 0	) 0
12:00-13:00		1 75	50	0 (	)	1 7	50 (	) (	)	1 75	0 0.133	8 0
13:00-14:00		1 75	50 0.	4 1	_	1 7	50 0.133	8	)	1 75	0 0.934	. 2
14:00-15:00		1 75	50	0 (	)	1 7	50 (	) (	)	1 75	0 1.066	5 2
15:00-16:00		1 75	50	0 (	)	1 7	50 0.267	7	L	1 75	0 1.733	8 4
16:00-17:00		1 75	50	0 (	)	1 7	50 (	) (	)	1 75	0 0.933	8 2
17:00-18:00		1 75	50	<mark>0</mark> (		1 7	50 (	) (		1 75	0 0.133	<mark>.</mark> 0
18:00-19:00				(	<mark>)</mark>			(	<mark>)</mark>			0
19:00-20:00												
20:00-21:00												
21:00-22:00												
22:00-23:00												
23:00-24:00												
Daily Trip Rates:			0.	8 2	2		0.8	3	2		6.265	5 <mark>13</mark>

209
209
2.09
2.09

# OGVs

	ARRIVALS					C	DEPARTURES				TOTALS	
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for site	No. Days2	Ave. GFA3	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA4	Trip Rate2	Trip rate for site3
00:00-01:00												
01:00-02:00												
02:00-03:00												
03:00-04:00												
04:00-05:00												
05:00-06:00												
06:00-07:00												
07:00-08:00				0				C	)			0
08:00-09:00				0				C				0
09:00-10:00				0				0	)			0
10:00-11:00				0				C	•			0
11:00-12:00				0				C	)			0
12:00-13:00				0				C	•			0
13:00-14:00				0				C				0
14:00-15:00				0				C				0
15:00-16:00				0				C				0
16:00-17:00				0				C				0
17:00-18:00				0				0				0
18:00-19:00				0				0				0
19:00-20:00												
20:00-21:00												
21:00-22:00												
22:00-23:00												
23:00-24:00												
Daily Trip Rates:				0				C				0

Total proposed	209
floorspace (sqm)	
100sqm	
conversion	2.09
factor	

# PSVs

	ARRIVALS					D	EPARTURES		TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for site	No. Days2	Ave. GFA3	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA4	Trip Rate2	Trip rate for site3
00:00-01:00												
01:00-02:00												
02:00-03:00												
03:00-04:00												
04:00-05:00												
05:00-06:00												
06:00-07:00												
07:00-08:00				0				C	)			0
08:00-09:00				0				C	)			0
09:00-10:00				0	•			C	)			0
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11:00-12:00				0				C	<mark>)</mark>			0
12:00-13:00				0				C	<mark>)</mark>			0
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14:00-15:00				0				C	<mark>)</mark>			0
15:00-16:00				0				C	<mark>)</mark>			0
16:00-17:00				0				C	<mark>)</mark>			0
17:00-18:00				0				C	)			0
18:00-19:00				0				C	<mark>)</mark>			0
19:00-20:00												
20:00-21:00												
21:00-22:00												
22:00-23:00												
23:00-24:00												
Daily Trip Rates:				0			(	C	)			0

Total proposed	209
floorspace (sqm)	
100sqm	
conversion	2.09
factor	

# LGVs

	ARRIVALS					۵	DEPARTURES		TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for site	No. Days2	Ave. GFA3	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA4	Trip Rate2	Trip rate for site3
00:00-01:00												
01:00-02:00												
02:00-03:00												
03:00-04:00												
04:00-05:00												
05:00-06:00				0				C	)			0
06:00-07:00				0				C	)			0
07:00-08:00				0				C	)			0
08:00-09:00				0				C				0
09:00-10:00				0				0	)			0
10:00-11:00				0				C	•			0
11:00-12:00				0				C	)			0
12:00-13:00				0				C	•			0
13:00-14:00				0				C				0
14:00-15:00				0				C	•			0
15:00-16:00				0				C	)			0
16:00-17:00				0				C	•			0
17:00-18:00				0				0				0
18:00-19:00				0				C	•			0
19:00-20:00				0				C	)			0
20:00-21:00				0				C	)			0
21:00-22:00												
22:00-23:00												
23:00-24:00												
Daily Trip Rates:				0				C				0

Total proposed	209
floorspace (sqm)	
100sqm	
conversion	2.09
factor	

#### Bus passengers

Calculation factor: 100sqm

	ARRIVALS				D	EPARTURES				TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for site	No. Days2	Ave. GFA2	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA3	Trip Rate2	Trip rate for site3
00:00-01:00												
01:00-02:00												
02:00-03:00												
03:00-04:00												
04:00-05:00												
05:00-06:00												
06:00-07:00												
07:00-08:00				0				0				0
08:00-09:00				0				0				0
09:00-10:00				0				0				0
10:00-11:00				0				0				0
11:00-12:00				0				0				0
12:00-13:00				0				0				0
13:00-14:00				0				0				0
14:00-15:00				0				0				0
15:00-16:00				0				0				0
16:00-17:00				0				0				0
17:00-18:00				0				0				0
18:00-19:00				0				0				0
19:00-20:00												
20:00-21:00												
21:00-22:00												
22:00-23:00												
23:00-24:00												
Daily Trip Rates:				0				0				0

#### Total proposed floorspace (sqm) 100sqm conversion

0

factor

#### Cyclists

Calculation factor: 100sqm

	ARRIVALS			DEPARTURES				TOTALS				
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for site	No. Days2	Ave. GFA3	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA4	Trip Rate2	Trip rate for site3
00:00-01:00												
01:00-02:00												
02:00-03:00												
03:00-04:00												
04:00-05:00												
05:00-06:00				0				C	•			0
06:00-07:00				0				C	•			0
07:00-08:00				0				C	•			0
08:00-09:00				0				C				0
09:00-10:00				0				C	•			0
10:00-11:00				0				C	•			0
11:00-12:00				0				C	•			0
12:00-13:00				0				C	•			0
13:00-14:00				0				C				0
14:00-15:00				0				C				0
15:00-16:00				0				C				0
16:00-17:00				0				C				0
17:00-18:00				0				0				0
18:00-19:00				0				C				0
19:00-20:00				0				C	•			0
20:00-21:00				0				C				0
21:00-22:00												
22:00-23:00												
23:00-24:00												
Daily Trip Rates:				0				C				0

Total proposed	209
floorspace (sqm)	
100sqm	
conversion	2.09
factor	

#### Motorcyclists

Calculation factor: 100sqm

	ARRIVALS				D	EPARTURES		TOTALS				
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for site	No. Days2	Ave. GFA2	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA3	Trip Rate2	Trip rate for site3
00:00-01:00												
01:00-02:00												
02:00-03:00												
03:00-04:00												
04:00-05:00												
05:00-06:00				0				C	)			0
06:00-07:00				0				C				0
07:00-08:00				0				C				0
08:00-09:00				0				0				0
09:00-10:00				0				C				0
10:00-11:00				0				C				0
11:00-12:00				0				C				0
12:00-13:00				0				C				0
13:00-14:00				0				C				0
14:00-15:00				0				C				0
15:00-16:00				0				C				0
16:00-17:00				0				C				0
17:00-18:00				0				0				0
18:00-19:00				0				0				0
19:00-20:00				0				C				0
20:00-21:00				0				0				0
21:00-22:00												
22:00-23:00												
23:00-24:00												
Daily Trip Rates:				0				C				0

Total proposed209floorspace (sqm)100sqmconversion2.09factor100sqm

#### Rail passengers

Calculation factor: 100sqm

	ARRIVALS			DEPARTURES				TOTALS				
Time Range	No. Days	Ave. GFA	Trip Rate	Trip rate for site	No. Days2	Ave. GFA2	Trip Rate3	Trip rate for site2	No. Days3	Ave. GFA3	Trip Rate2	Trip rate for site3
00:00-01:00												
01:00-02:00												
02:00-03:00												
03:00-04:00												
04:00-05:00												
05:00-06:00												
06:00-07:00												
07:00-08:00				0				0				0
08:00-09:00				0				0				0
09:00-10:00				0				0				0
10:00-11:00				0				0				0
11:00-12:00				0				0				0
12:00-13:00				0				0				0
13:00-14:00				0				0				0
14:00-15:00				0				0				0
15:00-16:00				0				0				0
16:00-17:00				0				0				0
17:00-18:00				0				0				0
18:00-19:00				0				0				0
19:00-20:00												
20:00-21:00												
21:00-22:00												
22:00-23:00												
23:00-24:00												
Daily Trip Rates:				0				0				0

#### Total proposed floorspace (sqm) 100sqm conversion

0

factor

# **Appendix I: MCC and ATC comparisons**



### **Document Control**

<b>Document title</b>	5.4.19.13 ATC to MCC Comparison
Version No.	1
Date Approved	17 October 2022
Date 1 <sup>st</sup> Issued	

# **Version History**

Version	Date	Author	Checked	Approved	<b>Description of change</b>
1		—	—	—	Final



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## **Tables**

Table 1.1: Summary of sites surveyed	1
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# **1** Sites surveyed

#### 1.1 Overview

#### Table 1.1: Summary of sites surveyed

Road name	%	Summary
	difference	
Denny End Road	8.0%	ATC is around 8% higher than MCC counts in both AM and PM peak. A possible explanation for the higher ATC figures than MCC is that the ATC captures traffic accessing and egressing the construction site access point along Denny End Lane at the Cambridgeshire Army Cadets Force from the Waterbeach direction whereas the MCC does not as the MCC is placed at the A10/Denny End Lane junction. Traffic could choose to egress from the construction site by turning left as there are queues on the right hand turn towards the A10 from the site construction access point and the MCC would not capture this movement.
Car Dyke Road	1.1%	MCC is 10% higher than ATC in AM Peak, However ATC is 7% higher than MCC in the PM peak
Clayhithe Road	Comparable location not available	N/A
Bannold Road	3.5%	ATC is 2% higher than MCC in AM Peak and around 5% higher in the PM peak
Horningsea Road	1.0%	MCC is around 109% higher than ATC counts in AM peak and 91% higher in PM peak
Miltom Road	0.4%	MCC is 4% higher than ATC counts in AM peak, however ATC is 3% higher in PM peak
Fen Road	Comparable location not available	N/A
Green End Road	3.1%	MCC is 11% higher than ATC counts in AM peak, however ATC is 5% higher in PM peak
Water	10.5%	MCC is around 14% higher than ATC counts in AM peak and around 8% higher in PM peak
Street		Aivi peak and around 670 mgner in Fivi peak
	Road name Denny End Road Car Dyke Road Clayhithe Road Bannold Road Bannold Road Horningsea Road Miltom Road Fen Road Fen Road	differenceDenny End8.0%Road1.1%Samola1.1%Car Dyke1.1%Road1.1%ClayhitheComparable location not availableBannold3.5%Road1.0%Horningsea1.0%Road3.5%Fen Road0.4%Fen Road3.1%Green End3.1%Road3.1%Water10.5%



## 1.2 ATC Site – Denny End Road

	3-day Average (Tue-Thur)			Summary
	ATC	мсс	Percentage Difference	ATC is around 8% higher than MCC counts in both AM and PM peak. A possible explanation for the higher ATC figures than MCC is that
7000-1000	1472	1359	8.3%	the ATC captures traffic accessing and egressing the construction site access point along Denny End Lane at the Cambridgeshire Army
1600-1800	1494	1388	7.6%	Cadets Force from the Waterbeach direction whereas the MCC does not as the MCC is placed at the A10/Denny End Lane junction. Traffic could choose to egress from the construction site by turning left as there are queues on the right hand turn towards the A10 from the site construction access point and the MCC would not capture this
Total	2966	2747	8.0%	movement.

ATC Site 1 location





ATC location



MCC location





## **1.3** ATC Site 2 – Car Dyke Road

	3-day	Average	e (Tue-Thur)	Summary
	ATC	МСС	Percentage difference	MCC is 10% higher than ATC in AM
7000-1000	1067	1176	10.2%	Peak, However ATC is 7% higher
1600-1800	1205	1121	7.4%	than MCC in the PM peak
Total	2272	2297	1.1%	

## 1.4 ATC Site 3 – Clayhithe Road

3-day Average (Tue-			ge (Tue-Thur)
	ATC	мсс	Percentage difference
7000-1000	908		NA
1600-1800	1025		NA
Total	1933	0	Comparable location not available

## 1.5 ATC Site 4 – Clayhithe Road

	3-day	Averag	ge (Tue-Thur)	Summary
	ATC	мсс	Percentage difference	ATC is 2% higher than MCC in AM
7000-1000	628	615	/•	Peak and around 5% higher in the
1600-1800	722	689	4.7%	PM peak
Total	1350	1304	3.5%	



## **1.6** ATC Site 5 – Horningsea Road

	3-day Average (Tue-Thur)			Summary
	ATC	мсс	Percentage difference	MCC is around 109% higher than ATC counts in AM peak and 91% higher in PM peak
7000-1000	1108	1147	3.5%	
1600-1800	1206	1144	5.4%	
Total	2314	2291	1.0%	

### 1.7 ATC Site 6 - Milton Road

3-day Average (Tue-Thur)			Summary	
	ATC	МСС	Percentage difference	MCC is 4% higher than ATC
7000-1000	4369	4542	4.0%	counts in AM peak, however
1600-1800	4269	4132	3.3%	ATC is 3% higher in PM peak
Total	8639	8674	0.4%	

### **1.8** ATC Site 7 – Fen Road

	3-day Average	e (Tue-Thur)	
	ATC (Fen Road)	MCC (Water Lane)	Percentage Difference
7000-1000	521		
1600-1800	600		
Total	1121		Comparable location not
			available

### 1.9 ATC Site 8 – Green End Road

	3-day Average (Tue	-Thur)		Summary
	ATC (Green End Road)	MCC (Green End Road) (NE)	Percentage Difference	MCC is 11% higher than ATC counts in
7000-	1848	2055	11.2%	AM peak, however
1000				ATC is 5% higher in
1600-	1862	1768	5.3%	PM peak
1800				
Total	3710	3823	3.1%	



## 1.10 ATC Site 9 – Water Street

	3-day A	verage (Tue-1	Րhur)	Summary
	ATC (Water Street)	MCC (Site 20 Water Lane) (SE)	Percentage difference	MCC is around 14% higher than ATC counts in AM peak and around 8% higher in PM peak
7000-	998	1135	13.7%	nigher in Pivi peak
1000				
1600-	1100	1183	7.6%	
1800				
Total	2098	2318	10.5%	

# **Appendix J: Consultation 2 Stakeholder Feedback**



Date	Consultee	Points raised	How and where addressed
18/08/21	Cambridge Past, Present & Future (CPPF)	The main area of uncertainty is the vehicle access. CPPF strongly objects to any proposals to provide vehicular access into the site from the farm access bridge at Honey Hill via Junction 35 (Option 2).	Option 2 was not selected, the access within the Proposed Development is Option 1b, which does not interact directly with Junction 35. The selection of vehicle access and consideration of all options is discussed further within Chapter 3: Site Selection and Alternatives (Application Document Reference 5.2.3). The assessment provided in Section 4 (Assessment of Effects) of this chapter assesses Option 1b.
12 August 2021	National Highways	Access option 1a remains National Highways' preferred option, closely followed by Option 1b. Access option 3 would be contrary to policy 'The Strategic Road Network and the delivery of sustainable development' and therefore National Highways object to this proposal.	Option 3 has not been selected on account of technical issues around creating a new junction off the A14 based on National Highways' feedback – the access is Option 1b. The selection of vehicle access and consideration of all options is discussed in further within Chapter 3: Alternatives Considered. The assessment provided in Section 4 (Assessment of Effects) of this chapter assesses Option 1b.
12 August 2021	National Highways	The TA should also consider any other development that makes up part of the application, such as the proposed recreation facilities.	Noted and accepted. The Transport Assessment Application Document Reference 5.4.19.3) covers all aspects of Proposed Development, including the proposed visitor centre.
13 August 2021	East Cambridge District Council	Most acceptable options are options 1a and 1b. To create an additional access from the A14 is unlikely to be acceptable.	The preferred access option is Option 1b.
18 August 2021	Urban and Civic	U&C offers a preliminary view that a new junction off the A14 appears, without the benefit of the detailed assessments that will follow, to be preferrable and justified given the strategic importance of the proposed facility.	Noted. Option 3 has not been selected on account of technical issues around creating a new junction off the A14 based feedback provided by National Highways– the access is Option 1b. The selection of vehicle access and consideration of all options is discussed in further detail within Chapter 3: Site Selection and Alternatives (Application Document Reference 5.2.3). The assessment provided in Section 4 (Assessment of Effects) of this chapter assesses Option 1b.
16 August 2021	Natural England	Access assessment needs to include air quality assessment. A CEMP is also needed.	Noted. An air quality assessment has been undertaken as part of Chapter 7: Air Quality (Application Document Reference 5.2.7). The CoCP Part A and B (Application Document Reference. 5.4.2.1, 5.4.2.2) requires a CEMP to be produced prior to any works commencing on site.



Date	Consultee	Points raised	How and where addressed
17 August 2021	Cambridgeshire County Council	Cambridgeshire County Council (CCC) has worked with the applicant to ensure that this junction (junction 34 of the A14) has been modelled in accordance with CCC requirements and the modelling done so far shows that this junction will operate within capacity. This is subject to further work on the flows and so is the preliminary findings of the modelling. The assessment will need to include the construction traffic as well as the operational, and visitor traffic once built. Improvements are proposed to the cycle and pedestrian route on the north and south of the proposed Waste Water Treatment Plant site access. The Applicant is asked to continue to ensure that the drawings for this area are coordinated with the Greater Cambridge Partnership and the Horningsea Greenway project.	Noted and accepted. As stated, Junction 34 of the A14 has been modelling in accordance with CCC requirements, whereby preliminary findings show that the junction works within capacity. The Transport Assessment (Application Document Reference. 5.4.19.3) includes information on modelling during construction, operation (including visitor traffic) and decommissioning. Mitigation proposals and drawings for Horningsea Road have taken into account the Horningsea Greenway project.
17 August 2021	South Cambridge District Council	If Option 1b remains, the District Council will expect to see within the DCO, carefully detailed designs for the junction and details of control systems to prevent vehicles travelling to and from the site using any access routes other than the A14 during the construction and operation stages. Given the rationale presented by Anglian Water for the choice of Option 1b, the District Council's recommendation again if this remains the proposed option, it should also deliver enhanced pedestrian and cycle access, cycling facilities. Importantly, details indicating how access to the site would not compromise cycling safety along Horningsea Road, in the vicinity of the new junction/4th arm will be required as part of the DCO. In addition, the District Council considers that measures to avoid traffic queuing/congestion on Denny End Road and Bannold Road need to be incorporated into the DCO proposals as this route is prone to congestion. The District Council remains of the opinion that direct access from the A14 would be the preferred option rather than Option 1b and asks Anglian Water to reconsider.	Option 1b-has been selected and taken forward into the Proposed Development. Option 3 has not been selected on account of technical issues around creating a new junction off the A14 based on feedback provided by National Highways. The Transport Assessment (Application Document Reference 5.4.19.3) provides details on the mitigation measures on Horningsea Road, which is also summarised in the section 2.8 of this chapter. These mitigation measures ensure that access to the site does not compromise safety along Horningsea Road The Transport Assessment Application Document Reference. 5.4.19.3) includes a review of the junctions with the A10 / Denny End Road and A10 / Car Dyke Lane to assess capacity and delay during the construction works. Bannold Road at its junction with Denny End Road is noted as narrow (Application Document Reference. 5.4.19.3) and mitigation will be in place to prevent parking on that corner to minimise traffic conflicts. The CTMP (Application Document Reference. 5.4.19.7) and CoCP (Application Document Reference. 5.4.2.1, 5.4.2.2) set out the construction route to and from the proposed WWTP site.



Date	Consultee	Points raised	How and where addressed
17 August 2021	Fen Ditton Parish Council	<ul> <li>FDPC considers extra mitigation is required and should include:</li> <li>Commitment to model overall traffic performance with historic data as a baseline and not rely on AWS surveys since these were at a time when traffic into Cambridge was below historic levels.</li> </ul>	The modelling approach and use of survey information has been discussed and agreed with CCC. This includes checks to ensure survey results provided by AWS are not abnormal due to the Covid-19 pandemic. The Transport Assessment (Application Document Reference 5.4.19.3) is supported by additional surveys completed to verify the data used.
24 August 2021	Horningsea Parish Council	HPC is not aware of any evaluation assessment material being published by AWS and would like to request this information to allow HPC a full understanding of the relevant facts. We also request a copy of the determination by Highways that found it was not possible to access the site from the A14, Option 3.	Chapter 3: Site Selection and Alternatives (Application Document Reference 5.2.3) provides details of the access options considered for the project. Option 3 has not been selected on account of technical issues around creating a new junction off the A14 based on feedback from National Highways.
24 August 2021	Horningsea Parish Council	We fear that the traffic volume has been underestimated. We would like to see this analysis including all of the access routes into the site; including A14 westbound and A14 eastbound.	The modelling approach and use of survey information has been discussed and agreed with CCC. This includes checks to ensure that survey results provided by AWS are not abnormal due to the Covid-19 pandemic. The Transport Assessment (Application Document Reference. 5.4.19.3) is supported by additional surveys completed to verify the data used.
24 August 2021	Horningsea Parish Council	HPC also supports reduced speed limits on Horningsea Road. Suggest reduce to 30mph and 20mph in the village and enforce with speed cameras and traffic calming measures. We also want confirmation that this mitigation is within the control of AWS.	A set of mitigation measures for Horningsea Road have been included in the design and are outlined in mitigation measures adopted as part of the Proposed Development.
24 August 2021	Horningsea Parish Council	It is a significant concern that we believe AWS has failed to factor in the cumulative traffic impact of previous recorded congestion at junction 34, reduction in traffic flows (due to Covid) during the 2021 AWS surveys, CWWTP Construction traffic, CWWTP operational traffic, the proposed additional J34 arm, Waterbeach New Town, Marleigh, development at Fulbourn, dualling of the A10, general traffic growth and the pending development of the airport site.	The modelling approach and use of survey information has been discussed and agreed with CCC. This includes checks to ensure survey results provided by the Applicant are not abnormal due to the Covid- 19 pandemic. The Transport Assessment (Document Reference 5.4.19.3) is supported by additional surveys completed to verify the data used. Impacts associated with committed developments in the area are accounted for within the TEMPro growth factors used, which has been agreed with CCC.
24 August 2021	Horningsea Parish Council	We request forecast operational HGV movements. Most of the movements are liquid sludge imports and septic tank	The Transport Assessment (Application Document Reference. 5.4.19.3) provides information on operational HGV movements. The routing of



Date	Consultee	Points raised	How and where addressed
		movements, why are these being trucked here from	HGVs in operation has been based on sludge imports at the existing
		destinations such as Ely and Huntingdon? We request	Cambridge WWTP. A technical note (Appendix C, Application
		forecast for operational HGV movements and an alternativ	ve Document Ref: 5.4.19.3) outlines the origins of sludge imports during
		plan for the movement of sludge lorries to more	operation in 2020 at the existing Cambridge WWTP.
		appropriate sites.	

# **Appendix K: TEMPro Growth Factor Technical Note**

Cambridge Waste Water Treatment Relocation Project 5.4.19.13 - Appendix K



### **Document Control**

Document title	Technical Note:Modelkling Overview and TEMPro Growth Factor
Version No.	0
Date Approved	
Date 1 <sup>st</sup> Issued	

## **Version History**

Version	Date	Author	Description of change	
0	12/01/2022	-	Technical note at PEI	



# 1 Technical Note: Modelling Overview and TEMPro Growth Factors

### **1.1 Preliminary modelling overview**

- 1.1.1 Each option has been assessed using the industry-standard software of either Junctions 9 (PICADY) or LinSig (Version 3) to anticipate if the proposed junction designs would be predicted to operate within capacity.
- 1.1.2 Junctions9 software measures performance as the ratio of flow to capacity (RFC). An RFC value is greater than one means that a turning movement has a higher level of traffic flow than its theoretical capacity. As a result, queues may occur. An RFC below 0.85 is considered acceptable as there is still scoped to accommodate future growth.
- 1.1.3 LinSig is a computer software package for assessing and designing traffic signal junctions either individually or as a network comprised of several junctions. It is used by traffic engineers to construct a model of the junction or network which can then be used to assess different designs and methods of operation. LinSig v3 software measures performance as the degree of saturation (DoS). A DoS value of greater than 100% means that a lane movement has a higher level of traffic flow than its theoretical capacity. As a result, queues may occur. A DoS below 90% is considered acceptable as there is still coped to accommodate future growth.

## **1.2 Survey and TEMPro growth factors**

1.2.1 Survey (December 2021) data has been used to inform the base years. To estimate the future 2025 base, a TEMPro 7.2 growth factors for Cambridgeshire have been applied to the base flows. The applied factors are outlined in the table below:

Base Year to Scenario Year	TEMPro growth factors	
2021 – 2025	1.0451	
2021 – 2028	1.0726	
2021 – 2038	1.1464	

1.2.2 To predict future growth as accurate as possible, TEMPro 7.2 reflects all planned growth in the area. TEMPro 7.2 growth factors are in line with the most recent Road Traffic Forecast (2018). However, as land use developments are a source of uncertainty, TEMPro 7.2 growth factors are blanket, and they do not predict where exactly growth will appear.

Cambridge Waste Water Treatment Relocation Project 5.4.19.13 - Appendix K



- 1.2.3 It is suggested to apply unadjusted growth factors to estimate the future base as the Cambridge Wastewater Treatment plant will not generate a significant number of homes or jobs in the area.
- 1.2.4 However, if any significant developments appear in the area, forecasted trips could be excluded from the growth to avoid double counting. In this case, the developments and the number of excluded trips should be agreed with CCC. The factors after 8,000 dwellings adjustment:

Base Year to Scenario Year	<b>TEMPro growth factors</b>	Adjusted factors
2021 – 2025	1.0451	1.0353
2021 – 2028	1.0726	1.0586
2021 – 2038	1.1464	1.1211



# Get in touch

#### You can contact us by:



Emailing at info@cwwtpr.com

Calling our Freephone information line on **0808 196 1661** 

Writing to us at Freepost: CWWTPR

You can view all our DCO application documents and updates on the application on The Planning Inspectorate website:

https://infrastructure.planninginspectorate.gov.uk/projects/eastern/cambri dge-waste-water-treatment-plant-relocation/

