Accidents between dates **01/08/2012** **and** **31/07/2017** (60) months

Selection:
Selected using Pre-defined Query :

Notes:
M1 jnc 14, Northfield Rbt.

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Monday 01/08/2016 Time 0240 Slight at M1 MOTORWAY, NORTHBND C/WAY, MARKER POST 802, BROOK FURLONG, MK
E: N: Junction Detail: 0 Control
Fine without high winds Road surface Dry Darkness: street lights present and lit
C1 & GV2 TRAV NORTH, C1 COLL WITH REAR GV2.
Road Type Dual carriageway Vehicles 2 Casualties 1 Police Ref. 160254361 Speed limit 70
Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: 802 Accident Type(s) NB

Causation

	Factor:	Participant:	Confidence:
1st:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely
2nd:	Fatigue	Vehicle 1	Possible
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from SE to N Going ahead other Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Front Parts damaged: 0 0 0 Age of Driver 33 Sex of Driver Male Breath test Negative

Casualty Reference: 1 Age: 33 Male Driver/rider Severity: Slight Injured by vehicle: 1

Seatbelt: Worn but not independently Cycle helmet Not a cyclist
Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates **01/08/2012** **and** **31/07/2017** (60) months

Selection:
Selected using Pre-defined Query :

Notes:
M1 jnc 14, Northfield Rbt.

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Goods 7.5 tonnes mgw and over Moving from SE to N Going ahead other Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Back Parts damaged: 0 0 0 Age of Driver 39 Sex of Driver Male Breath test Negative

Accidents between dates **01/08/2012** **and** **31/07/2017** (60) months

Selection:
Selected using Pre-defined Query :

Notes:
M1 jnc 14, Northfield Rbt.

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Friday 18/11/2016 Time 1502 Slight at A509 ROUNDABOUT OVER M1 JNC 14, PINEHAM, MK
E: N: Junction Detail: 1 Control 2
Fine without high winds Road surface Dry Daylight
GV1 (FORGN REG L/H DRIVE) NEG RBT IN LN 1, C2 TRAV ALONGSIDE IN LN 2, GV1 MOVED INTO LN 2 & CLIPPED C2 CAUSING C2 TO SPIN.
Road Type Roundabout Vehicles 2 Casualties 1 Police Ref. 160334932 Speed limit 60
Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) MD

Causation

	Factor:	Participant:	Confidence:
1st:	Vehicle blind spot	Vehicle 1	Very Likely
2nd:	Poor turn or manoevre	Vehicle 1	Possible
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Goods 7.5 tonnes mgw and over Moving from S to N Changing lane to right Left hand drive: Yes

On main carriageway No skidding, jack-knifing or overturning
First point of impact Front Parts damaged: 0 0 0 Age of Driver 43 Sex of Driver Male Breath test Negative

Accidents between dates **01/08/2012** **and** **31/07/2017** (60) months

Selection:
Selected using Pre-defined Query :

Notes:
M1 jnc 14, Northfield Rbt.

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from S to N Going ahead other Left hand drive: No

On main carriageway
First point of impact Nearside Parts damaged: 0 0 0 Age of Driver 75 Sex of Driver Female No skidding, jack-knifing or overturning Breath test Negative

Casualty Reference: 1 Age: 75 Female Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Unknown Cycle helmet Not a cyclist
Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates **01/08/2012** **and** **31/07/2017** (60) months

Selection:
Selected using Pre-defined Query :

Notes:
M1 jnc 14, Northfield Rbt.

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Sunday 26/03/2017 Time 1600 Slight at A509 / M1 JNC 14 ROUNDABOUT, BROOK FURLONG, MK
E: N: Junction Detail: 1 Control 2
Fine without high winds Road surface Dry Daylight
C1 & PC2 NEG RBT TWDS A509 S/BND EXIT, ATS CHANGE TO GREEN, C1 & PC2 MOVE OFF TOGETHER & COLL.
Road Type Dual carriageway Vehicles 2 Casualties 1 Police Ref. 170112017 Speed limit 70
Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) CO

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Possible
2nd:	Failed to look properly	Vehicle 2	Possible
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from NE to S Starting Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Nearside Parts damaged: 0 0 0 Age of Driver 51 Sex of Driver Female Breath test Negative

Accidents between dates **01/08/2012** **and** **31/07/2017** (60) months

Selection:
Selected using Pre-defined Query :

Notes:
M1 jnc 14, Northfield Rbt.

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Pedal Cycle Moving from NE to S Starting Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Offside Parts damaged: 0 0 0 Age of Driver 58 Sex of Driver Male Breath test Not applicable

Casualty Reference: 1 Age: 58 Male Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Not Applicable Cycle helmet Yes
Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates **01/08/2012** **and** **31/07/2017** (60) months

Selection:
Selected using Pre-defined Query :

Notes:
M1 jnc 14, Northfield Rbt.

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Saturday 15/07/2017 Time 1830 Slight at A509 JNC COACHWAY ACCESS ROADThe raw accident data and a plan showing the location of the
E: N: Junction Detail: 3 Control 4
Fine without high winds Road surface Dry Daylight
C1 TRAV S/W ON A509 FROM JNC 14 IN LN 1, C2 TRAV S/W IN LN 2 CUTS ACROSS PATH C1 & TURNS LEFT INTO COACHWAY, C2 COLL WITH C1 THEN FAILS TO STOP.
Road Type Dual carriageway Vehicles 2 Casualties 1 Police Ref. 170214319 Speed limit 70
Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) EB

Causation

	Factor:	Participant:	Confidence:
1st:	Poor turn or manoevre	Vehicle 1	Very Likely
2nd:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from NE to S Going ahead other Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Back Parts damaged: 0 0 0 Age of Driver 25 Sex of Driver Female Breath test Negative

Casualty Reference: 1 Age: 25 Female Driver/rider Severity: Slight Injured by vehicle: 1
Seatbelt: Worn but not independently Cycle helmet Not a cyclist
Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates **01/08/2012** **and** **31/07/2017** (60) months

Selection:
Selected using Pre-defined Query :

Notes:
M1 jnc 14, Northfield Rbt.

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from NE to SE Turning left Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Front Parts damaged: 0 0 0 Age of Driver Sex of Driver Unknown Breath test Driver not contacted

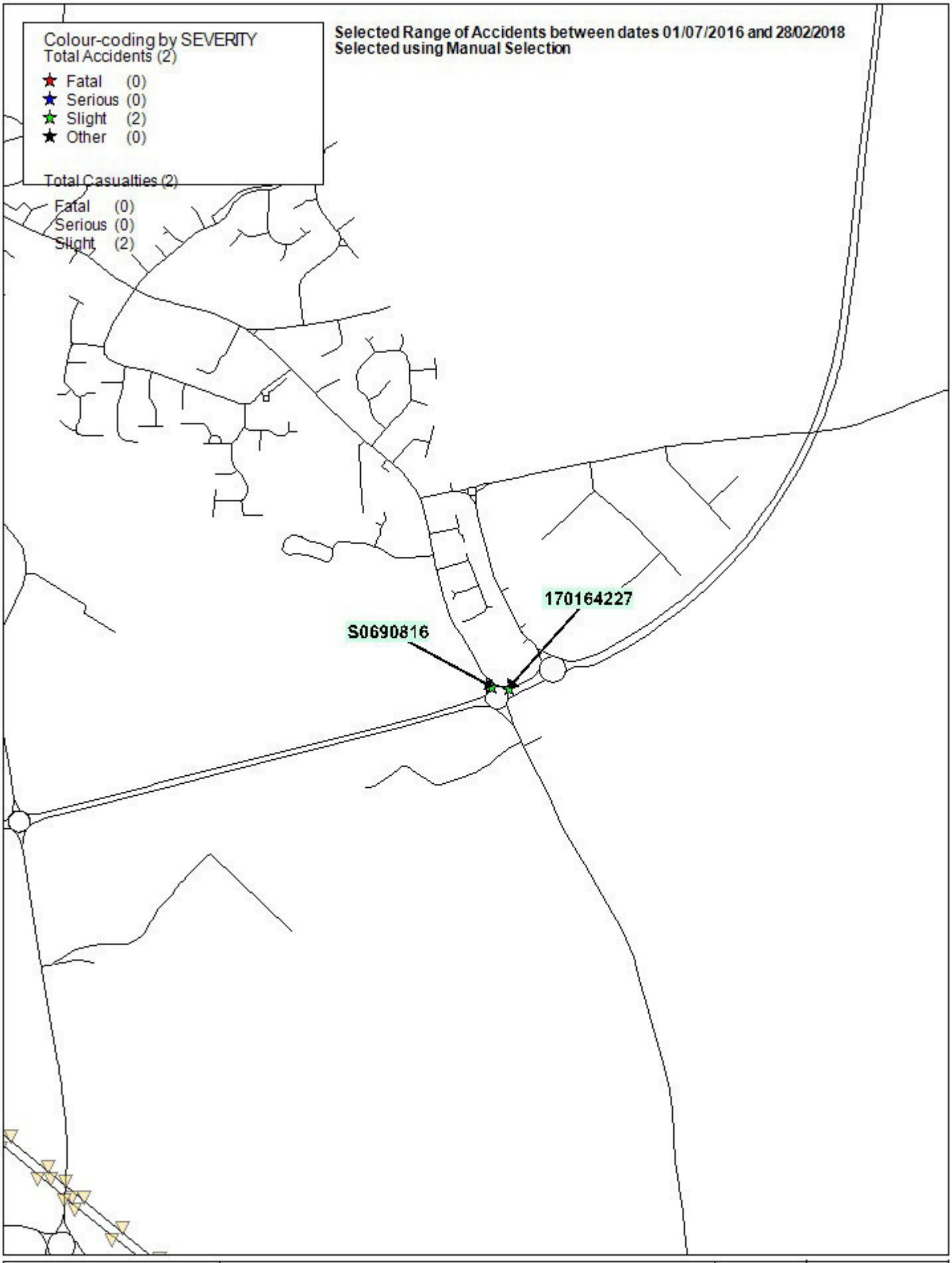
Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	3	37	40
2-wheeled motor vehicles	0	1	3	4
Pedal cycles	0	0	1	1
Horses & other	0	0	0	0
Total	0	4	41	45

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	2	39	41
Passenger	0	1	29	30
Motorcycle rider	0	1	2	3
Cyclist	0	0	1	1
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	4	71	75

Number of casualties meeting the criteria: **75**



BUCHANAN COMPUTING

Selected map area

SCALE	1 : 10570
DATE	24/05/2018
DRAWING No.	
DRAWN BY	

TRAFFMAP **INTERPRETED LISTING** **Run on:** **24/ 05/2018**
AccsMap - Accident Analysis System

Accidents between dates **01/07/2016** **and** **28/02/2018** (20) months

Selection: **Notes:**
Selected using Pre-defined Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Wednesday	17/08/2016	Time	1920	Slight	at	A509 JNC LONDON ROAD, TICKFORD ROUNDABOUT, NEWPORT PAGNELL, MK									
E:	488707	N:	242892	Junction Detail:	1	Control	4								
Fine without high winds			Road surface	Dry		Daylight									

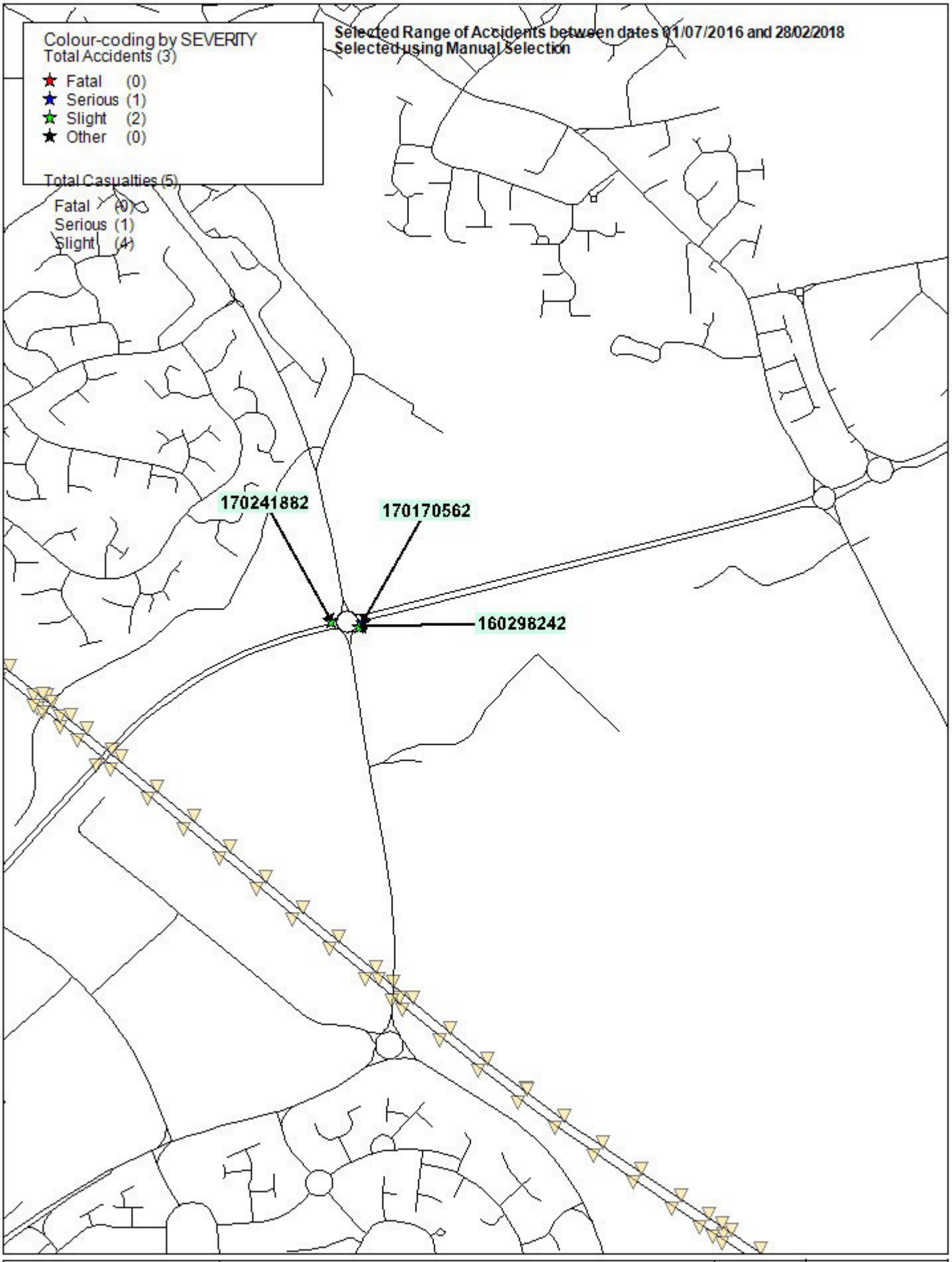
GV1 WITH TRAILER LOADED WITH STRAW BAILS NEG RBT TO EXIT N/E ONTO A509, TRAILER MOUNTED CENT ISLND CAUSING IT TO ROLL ONTO SIDE.

Road Type	Dual carriageway				Vehicles	1	Casualties	1	Police Ref.	S0690816	Speed limit	70			
Crossing: Control	0	Facilities	0	Local Authority:	E06000042	Parish:	1938	Road Section:		Accident Type(s	SG				
Vehicle Referen	Goods 7.5 tonnes mgw and over					Moving from	S	to	Turning right	Left hand drive: No					
On main carriageway								Overturned							
First point of impact	Offside			Parts damaged:	0	0	0	31	Male	Negative					
					31	Male	Casualty Reference:		1		Age:	Slight		Injured by vehicl	1
	Seatbelt: Not worn					Cycle helmet	Not a cyclist								
	Ped. Location			Ped. Movement		Ped. Direction		Ped. Injury		School pupil:					0

Thursday		25/05/2017	Time	2021	Slight	at	A422 JNC LONDON RD, TICKFORD ROUNDABOUT, NEWPORT PAGNELL, MK										
E:		488743	N:	242890	Junction Detail:	1	Control	4									
Fine without high winds				Road surface	Dry		Daylight										
C2 EXITED RBT TRAV N/E ONTO A509 IN LN2, C1 TRAV SAME DIR IN LN1, C1 THEN COLL WITH N/SIDE C2. VEHS STOP THEN C1 DRIVES OFF.																	
Road Type		Dual carriageway				Vehicles		2	Casualties		1	Police Ref.	170164227	Speed limit	70		
Crossing: Control		0	Facilities	0		Local Authority:	E06000042	Parish:	1938	Road Section:		Accident Type(s	MD				
		Vehicle Referenc	Car				Moving from	SW	to	Changing lane t	Left hand drive: No						
		On main carriageway							No skidding, jack-knifing or overturning								
			Offside			0	0	0	30	Female	Driver not contacted						
		First point of impact			Parts damaged:		Age of Driver	Sex of Driver			Breath test						
		Vehicle Referenc	Car				Moving from	SW	to	NE	Going ahead ot	Left hand drive: No					
		On main carriageway							No skidding, jack-knifing or overturning								
			Nearside			0	0	0	30	Female	Driver not contacted						
		First point of impact			Parts damaged:		Age of Driver	Sex of Driver			Breath test						
						30	Female	Casualty Reference:		1			Age:	Slight		Injured by vehicl	2
			Seatbelt: Unknown				Cycle helmet	Not a cyclist									
			Ped. Location		Ped. Movement		Ped. Direction		Ped. Injury		School pupil:						0

Accidents involving:					Casualties:				
	Fatal	Serious	Slight	Total		Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)									
					Vehicle driver	0	0	2	2
	0	0	2	2					
					Passenger	0	0	0	0
2-wheeled motor vehicles									
	0	0	0	0	Motorcycle rider	0	0	0	0
Pedal cycles	0	0	0	0	Cyclist	0	0	0	0
					Pedestrian	0	0	0	0
Horses & other	0	0	0	0					
					Other	0	0	0	0
					Total	0	0	2	2
Total	0	0	2	2					

Number of casualties meeting the criteria: **2**



BUCHANAN COMPUTING

Selected map area

SCALE	1 : 10570
DATE	24/05/2018
DRAWING No.	
DRAWN BY	

TRAFFMAP **INTERPRETED LISTING** **Run on:** **24/ 05/2018**
AccsMap - Accident Analysis System

Accidents between dates **01/07/2016** **and** **28/02/2018** (20) months

Selection: **Notes:**
Selected using Pre-defined Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Tuesday	13/09/2016	Time	1850	Slight	at	A422 JNC WILLEN ROAD, MARSH END RBT, NEWPORT PAGNELL, MK									
E:	487736	N:	242599	Junction Detail:	1	Control	4								
Fine without high winds			Road surface	Dry		Daylight									

PC2 TRAV S ON WILLEN RD NEG RBT, C1 TRAV S/W ON A422 ENTERD RBT INTO PATH PC2, PC2 COLL WITH O/SIDE C1.

Road Type	Dual carriageway				Vehicles	2	Casualties	1	Police Ref.	160298242	Speed limit	70			
Crossing: Control	0	Facilities	0	Local Authority:	E06000042	Parish:	1938	Road Section:		Accident Type(s	CM				

Vehicle Referen	Car				Moving from	E	to		Going ahead otl	Left hand drive: No					
On main carriageway							No skidding, jack-knifing or overturning								
Offside				0	0	0	21	Male	Not requested						
First point of impact		Parts damaged:			Age of Driver	Sex of Driver			Breath test						
Vehicle Referen	Pedal Cycle				Moving from	N	to	S	Going ahead otl	Left hand drive: No					
On main carriageway							No skidding, jack-knifing or overturning								
Front				0	0	0	34	Male	Not applicable						
First point of impact		Parts damaged:			Age of Driver	Sex of Driver			Breath test						
				34	Male	Casualty Reference:		1			Age:	Slight		Injured by vehicl	2
	Seatbelt: Not Applicable				Cycle helmet	Yes									
	Ped. Location		Ped. Movement		Ped. Direction		Ped. Injury		School pupil:						0

Monday		05/06/2017	Time	1842	Serious	at	A422 JNC WILLEN ROAD, MARSH END RBT, NEWPORT PAGNELL, MK									
E:		487745	N:	242607	Junction Detail:	1	Control	4								
Raining with high winds				Road surface	Wet/Damp		Daylight									

MC1 & MC2 TRAV WEST ON A422 APPR RBT, C1 BRAKED & LOST GRIP ON SURFACE CAUSING RIDER TO FALL, MC2 FOLL LOST CONTRL & RIDER FELL.

Road Type	Dual carriageway				Vehicles	2	Casualties		2	Police Ref.	170170562	Speed limit	70
Crossing: Control	0	Facilities	0	Local Authority:	E06000042	Parish:	1983	Road Section:		Accident Type(s)	NC		

Vehicle Referenc	Motorcycle 50cc and under				Moving from	E	to	Stopping	Left hand drive: No					
On main carriageway							Skidded							
	Did not impact		0	0	0		16	Male	Negative					
First point of impact		Parts damaged:		Age of Driver	Sex of Driver				Breath test					
			16	Male	Casualty Reference:		1			Age:	Slight		Injured by vehicl	1
	Seatbelt: Not Applicable			Cycle helmet	Not a cyclist									
	Ped. Location	Ped. Movement		Ped. Direction		Ped. Injury			School pupil:					0
Vehicle Referenc	Motorcycle 50cc and under				Moving from	E	to	W	Stopping	Left hand drive: No				
On main carriageway							Skidded							
	Did not impact		0	0	0		17	Male	Negative					
First point of impact		Parts damaged:		Age of Driver	Sex of Driver				Breath test					
			17	Male	Casualty Reference:		2			Age:	Serious		Injured by vehicl	2
	Seatbelt: Not Applicable			Cycle helmet	Not a cyclist									
	Ped. Location	Ped. Movement		Ped. Direction		Ped. Injury			School pupil:					0

Saturday		05/08/2017	Time	1350	Slight	at	A422 JNC WILLEN ROAD, MARSH END ROUNDABOUT, NEWPORT PAGNELL, MK									
E:		487678	N:	242609	Junction Detail:	1	Control	4								
Raining without high winds				Road surface	Wet/Damp		Daylight									
C2 & C1 TRAV EAST ON A422 APPR RBT, C1 COLL WITH REAR C2.																
Road Type	Dual carriageway					Vehicles	2	Casualties	2	Police Ref.	170241882	Speed limit	70			
Crossing: Control	0	Facilities	0	Local Authority:	E06000042		Parish:	1938	Road Section:		Accident Type(s	NB				
	Vehicle Referenc	Car					Moving from	W	to	Going ahead ot	Left hand drive: No					
	On main carriageway								No skidding, jack-knifing or overturning							
		Front			0		0	0	50	Female	Negative					
	First point of impact			Parts damaged:			Age of Driver	Sex of Driver			Breath test					
					50		Female	Casualty Reference:		1			Age:	Slight	Injured by vehicl	1
		Seatbelt: Worn but not independently confirmed					Cycle helmet	Not a cyclist								
		Ped. Location		Ped. Movement			Ped. Direction		Ped. Injury		School pupil:					0
					71		Female	Casualty Reference:		2			Age:	Slight	Injured by vehicl	1
		Seatbelt: Worn but not independently confirmed					Cycle helmet	Not a cyclist								
		Ped. Location		Ped. Movement			Ped. Direction		Ped. Injury		School pupil:					0
	Vehicle Referenc	Car					Moving from	W	to	E	Stopping	Left hand drive: No				
	On main carriageway								No skidding, jack-knifing or overturning							
		Back			0		0	0	26	Male	Negative					
	First point of impact			Parts damaged:			Age of Driver	Sex of Driver			Breath test					

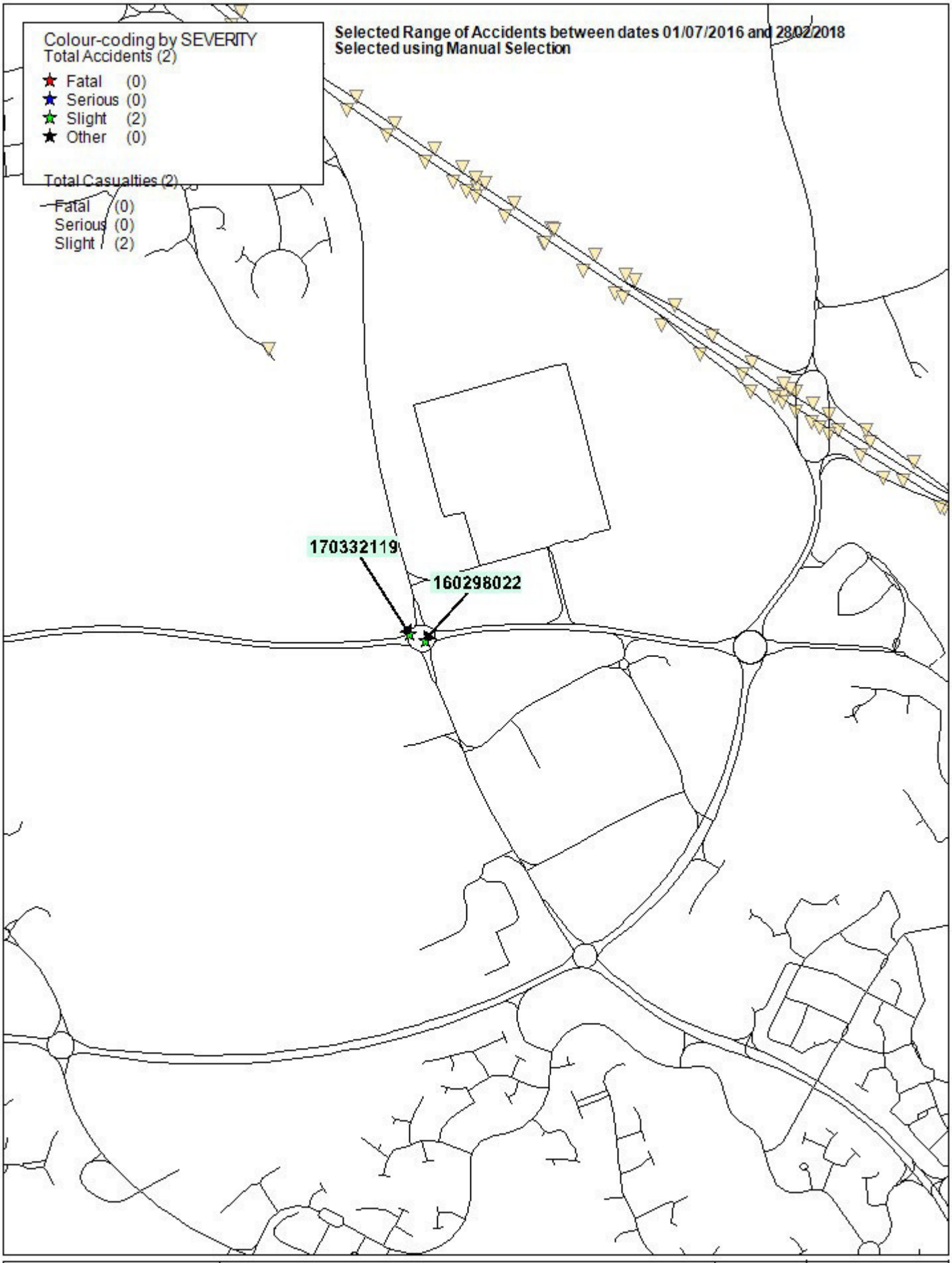
Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	1	0	1
Pedal cycles	0	0	1	1
Horses & other	0	0	0	0
Total	0	1	2	3

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	1	1
Motorcycle rider	0	1	1	2
Cyclist	0	0	1	1
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	1	4	5

Number of casualties meeting the criteria: 5



BUCHANAN COMPUTING

Selected map area

SCALE	1 : 10570
DATE	24/05/2018
DRAWING No.	
DRAWN BY	

TRAFFMAP **INTERPRETED LISTING** **Run on:** **24/ 05/2018**
AccsMap - Accident Analysis System

Accidents between dates **01/07/2016** **and** **28/02/2018** (20) months

Selection: **Notes:**
Selected using Pre-defined Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Tuesday 18/10/2016 Time 1521 Slight at H5 JNC V11 PINEHAM ROUNDABOUT, PINEHAM, MK
E: 488397 N: 240368 Junction Detail: 1 Control 4

Fine without high winds Road surface Dry Daylight

PSV2 STAT AT RBT ENTRY & MOVED OFF TO ENTER RBT, DIR TRAV NOT KNOWN, C1 NEG RBT CHANGED DIR ON RBT CAUSING PSV2 TO BRAKE, PASS ON PSV2 SLIPPED OFF SEAT.

Road Type Dual carriageway Vehicles 2 Casualties 1 Police Ref. 160298022 Speed limit 70

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) ZZ

Vehicle Referen Bus or coach Moving from Unknown to Starting Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
Did not impact 0 0 0 50 Male Driver not contacted
First point of impact Parts damaged: Age of Driver Sex of Driver Breath test

Female Casualty Reference: 1 Age: Slight Injured by vehicl 1

Seatbelt: Not Applicable Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Vehicle Referen Car Moving from Unknown to Unknown Going ahead ot Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
Did not impact 0 0 0 Not traced Driver not contacted
First point of impact Parts damaged: Age of Driver Sex of Driver Breath test

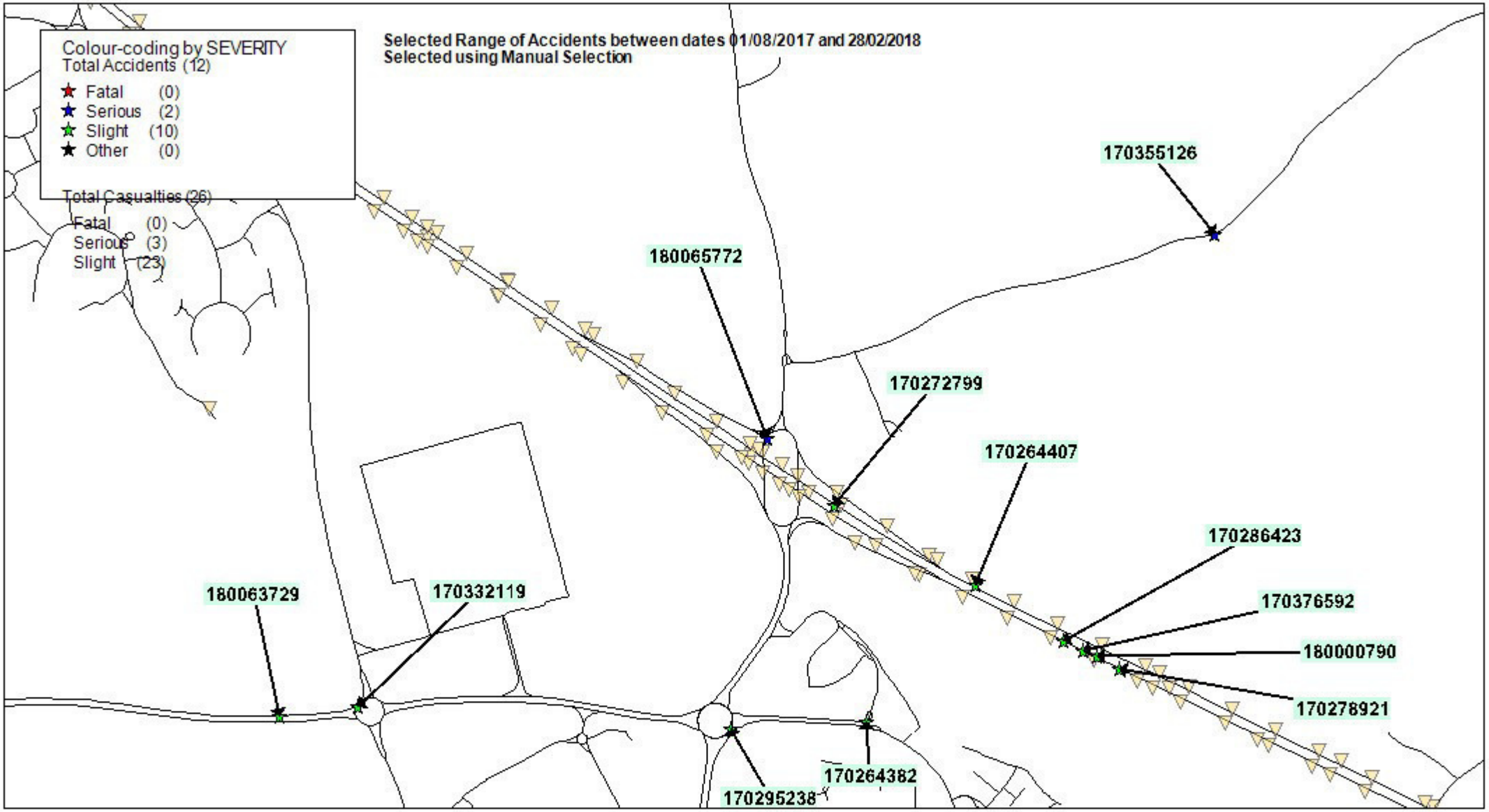
Monday		30/10/2017	Time	1054	Slight	at	H5 JNC V11 PINEHAM ROUNDABOUT, WILLEN, MK										
E:		488363	N:	240382	Junction Detail:	1	Control	4									
Fine without high winds				Road surface	Dry		Daylight										

GV1 TRAV E ON H5 ENTERS RBT IN MIDDLE LN, C2 TRAV SAME DIR ENTERS RBT IN O/S LN, GV1 CUTS ACROSS RBT & COLL WITH C2 PUSHING C2 ONTO CENT ISLND.

Road Type	Dual carriageway				Vehicles	2	Casualties	1	Police Ref.	170332119	Speed limit	70		
Crossing: Control	0	Facilities	0	Local Authority:	E06000042	Parish:	1983	Road Section:		Accident Type(s	CO			
	Vehicle Referenc	Goods vehicle - unknown weight				Moving from	W	to	Going ahead ot	Left hand drive: No				
	On main carriageway							No skidding, jack-knifing or overturning						
		Offside			0	0	0	51	Male	Negative				
	First point of impact			Parts damaged:		Age of Driver	Sex of Driver			Breath test				
	Vehicle Referenc	Car				Moving from	W	to	E	Going ahead ot	Left hand drive: No			
	On main carriageway							No skidding, jack-knifing or overturning						
		Nearside			0	0	0	29	Female	Negative				
	First point of impact			Parts damaged:		Age of Driver	Sex of Driver			Breath test				
					29	Female	Casualty Reference:		1			Age:	Slight	Injured by vehicl 2
		Seatbelt: Unknown				Cycle helmet	Not a cyclist							
		Ped. Location		Ped. Movement		Ped. Direction		Ped. Injury		School pupil:				0

Accidents involving:					Casualties:				
	Fatal	Serious	Slight	Total		Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)					Vehicle driver	0	0	1	1
	0	0	2	2					
					Passenger	0	0	1	1
2-wheeled motor vehicles									
	0	0	0	0	Motorcycle rider	0	0	0	0
Pedal cycles	0	0	0	0	Cyclist	0	0	0	0
					Pedestrian	0	0	0	0
Horses & other	0	0	0	0					
					Other	0	0	0	0
					Total	0	0	2	2
Total	0	0	2	2					

Number of casualties meeting the criteria: **2**



BUCHANAN COMPUTING

Selected map area

SCALE	1 : 10570
DATE	21/05/2018
DRAWING No.	
DRAWN BY	

TRAFFMAP **INTERPRETED LISTING** **Run on:** **21/ 05/2018**
AccsMap - Accident Analysis System

Accidents between dates **01/08/2017 and** **28/02/2018** (7) months

Selection: **Notes:**
Selected using Pre-defined Query :

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Monday 28/08/2017 Time 2039 Slight at NEWPORT ROAD JNC COACHWAY ACCESS ROAD, BROOK FURLONG, MK
E: 489381 N: 240350 Junction Detail: 3 Control 2

Fine without high winds Road surface Dry Darkness: street lights present and lit

C2 TRAV EAST ON NEWPRT RD APPR JNC, C1 TRAV OPP DIR TURNS RIGHT TWDS COACHWAY ACROSS PATH C2, COLL OCC.

Road Type Single carriageway Vehicles 2 Casualties 2 Police Ref. 170264382 Speed limit 30

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s JS

Vehicle Referen Car Moving from E to Turning right Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
Front 0 0 0 49 Male Negative
First point of impact Parts damaged: Age of Driver Sex of Driver Breath test

49 Male Casualty Reference: 1 Age: Slight Injured by vehicl 1

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Vehicle Referen Car Moving from W to E Going ahead ot Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
Front 0 0 0 23 Female Negative
First point of impact Parts damaged: Age of Driver Sex of Driver Breath test

23 Female Casualty Reference: 2 Age: Slight Injured by vehicl 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Tuesday	29/08/2017	Time	1633	Slight	at	M1 MOTORWAY, SOUTHBND C/WAY, ENTRY SLIP RD FOM JNC 14 RBT, BROOK FURLONG, MK										
E:	489600	N:	240625	Junction Detail:	5	Control	4									
Fine without high winds			Road surface	Dry		Daylight										

C2 TRAV S IN LN 1, GV1 (FORGN REG, L/H DR) ENTERNG LN 1 FROM SLIP LN & COLL WITH N/SIDE C2 CAUSING C2 TO SPIN.

Road Type	Dual carriageway				Vehicles	2	Casualties	1	Police Ref.	170264407	Speed limit	70	
Crossing: Control	0	Facilities	0	Local Authority:	E06000042	Parish:	1983	Road Section:	799	Accident Type(s)	ZZ		

Vehicle Referen	Goods 7.5 tonnes mgw and over			Moving from	NW	to	Going ahead ot	Left hand drive: Yes	
On main carriageway						No skidding, jack-knifing or overturning			
	Offside		0	0	0	53	Male	Negative	
First point of impact		Parts damaged:		Age of Driver	Sex of Driver			Breath test	
Vehicle Referen	Car			Moving from	NW	to	SE	Going ahead ot	Left hand drive: No
On main carriageway						Skidded			
	Nearside		0	0	0	18	Male	Not provided (medical reasons)	
First point of impact		Parts damaged:		Age of Driver	Sex of Driver			Breath test	

18	Male	Casualty Reference:	1	Age:	Slight	Injured by vehicl	2	
Seatbelt: Worn but not independently confirmed	Cycle helmet	Not a cyclist						
Ped. Location	Ped. Movement	Ped. Direction	Ped. Injury	School pupil:			0	

Wednesday 30/08/2017 Time 1250 Slight at M1 MOTORWAY, SOUTHBND C/WAY, MARKER POST 802, BROOK FURLONG, MK
E: 489318 N: 240783 Junction Detail: 0 Control

Raining without high winds Road surface Wet/Damp Daylight

C2, C1, GV3 (VAN) & C4 ALL TRAV S IN LN 3, C2 BRAKES HARD DUE TO 'DEBRIS' IN RD AHEAD, C1 COLL WITH REAR C2, GV3 COLL WITH REAR C1, C4 COLL WITH REAR GV3.

Road Type Dual carriageway Vehicles 4 Casualties 4 Police Ref. 170272799 Speed limit 70

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: 802 Accident Type(s NB

Vehicle Referen Car Moving from NW to Going ahead ot Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
Front 0 0 0 20 Male Negative
First point of impact Parts damaged: Age of Driver Sex of Driver Breath test

20 Male Casualty Reference: 1 Age: Slight Injured by vehicl 1

Seatbelt: Worn but not independently confirmed Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Vehicle Referen Car Moving from NW to SE Stopping Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
Back 0 0 0 32 Female Negative
First point of impact Parts damaged: Age of Driver Sex of Driver Breath test

32 Female Casualty Reference: 2 Age: Slight Injured by vehicl 2

Seatbelt: Worn but not independently confirmed Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Vehicle Referen Van or Goods 3.5 tonnes mgw and under Moving from NW to SE Going ahead ot Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
Front 0 0 0 40 Male Negative
First point of impact Parts damaged: Age of Driver Sex of Driver Breath test

40 Male Casualty Reference: 3 Age: Slight Injured by vehicl 3

Seatbelt: Worn but not independently confirmed Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Vehicle Referenc	Car		Moving from	NW	to	SE	Going ahead ot	Left hand drive:	No		
On main carriageway					No skidding, jack-knifing or overturning						
Front		0	0	0	23	Male	Negative				
First point of impact		Parts damaged:	Age of Driver	Sex of Driver			Breath test				
		23	Male	Casualty Reference:		4		Age:	Slight	Injured by vehicl	4
	Seatbelt: Worn but not independently confirmed		Cycle helmet	Not a cyclist							
	Ped. Location	Ped. Movement	Ped. Direction		Ped. Injury		School pupil:				0

Wednesday 13/09/2017 Time 0800 Slight at M1 MOTORWAY, NORTHBND C/WAY, MARKER POST 795, BROOKLANDS, MK
E: 489888 N: 240456 Junction Detail: 0 Control

Fine without high winds Road surface Dry Daylight

C3 & GV2 (VAN) TRAV N IN LN 1 STAT IN QUEUE, C1 TRAV N IN LN 1 FAILS TO REACT, BRAKES & SKIDS COLL WITH REAR GV2 PUSHING IT INTO REAR C3.

Road Type Dual carriageway Vehicles 3 Casualties 3 Police Ref. 170278921 Speed limit 70

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1056 Road Section: 795 Accident Type(s) NB

Vehicle Referen Car Moving from SE to Going ahead ot Left hand drive: No

On main carriageway Skidded
Front 0 0 0 23 Female Negative
First point of impact Parts damaged: Age of Driver Sex of Driver Breath test

23 Female Casualty Reference: 1 Age: Slight Injured by vehicl 1

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Vehicle Referen Van or Goods 3.5 tonnes mgw and under Moving from SE to NW Going ahead bu Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
Back 0 0 0 47 Male Negative
First point of impact Parts damaged: Age of Driver Sex of Driver Breath test

47 Male Casualty Reference: 2 Age: Slight Injured by vehicl 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

53 Male Casualty Reference: 3 Age: Slight Injured by vehicl 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Vehicle Referen Car Moving from SE to NW Going ahead bu Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
Back 0 0 0 22 Male Negative
First point of impact Parts damaged: Age of Driver Sex of Driver Breath test

Thursday	21/09/2017	Time	0847	Slight	at	M1 MOTORWAY, NORTHBND C/WAY, MARKER POST 797, BROOKLANDS, MK											
E:	489776	N:	240513	Junction Detail:	0	Control											
Fine without high winds			Road surface	Dry		Daylight											
C2 & GV1 (VAN) TRAV NORTH IN LN 1 IN HEAVY SLOW MOVING TRAFFIC, GV1 COLL WITH REAR C2.																	
Road Type	Dual carriageway				Vehicles	2	Casualties		2	Police Ref.	170286423	Speed limit	70				
Crossing: Control	0	Facilities	0	Local Authority:	E06000042	Parish:	1056	Road Section:	797	Accident Type(s)	NB						
	Vehicle Referenc	Van or Goods 3.5 tonnes mgw and under				Moving from	SE	to		Going ahead ot	Left hand drive: No						
	On main carriageway							Skidded									
		Front			0	0	0	25	Male	Negative							
	First point of impact			Parts damaged:		Age of Driver	Sex of Driver			Breath test							
					25	Male	Casualty Reference:		1			Age:	Slight		Injured by vehicl	1	
		Seatbelt: Worn but not independently confirmed				Cycle helmet	Not a cyclist										
		Ped. Location		Ped. Movement		Ped. Direction		Ped. Injury		School pupil:						0	
	Vehicle Referenc	Car				Moving from	SE	to	NW	Stopping	Left hand drive: No						
	On main carriageway							No skidding, jack-knifing or overturning									
		Back			0	0	0	51	Male	Negative							
	First point of impact			Parts damaged:		Age of Driver	Sex of Driver			Breath test							
					51	Male	Casualty Reference:		2			Age:	Slight		Injured by vehicl	2	
		Seatbelt: Worn but not independently confirmed				Cycle helmet	Not a cyclist										
		Ped. Location		Ped. Movement		Ped. Direction		Ped. Injury		School pupil:						0	

Monday	25/09/2017	Time	1445	Slight	at	H5 JNC H6 NORTHFIELD ROUNDABOUT, NORTHFIELD, MK										
E:	489111	N:	240336	Junction Detail:	1	Control	2									
Fine without high winds			Road surface	Dry		Daylight										
C2 NEG RBT SOUTH DIR IN CENT LN FOLL BY C1, OTHER VEH AHEAD BRAKES & SUDD CHANGES DIR CAUSING C2 TO BRAKE, C1 FAILS TO REACT & COLLS WITH REAR C2.																
Road Type	Dual carriageway				Vehicles		2	Casualties	2	Police Ref.	170295238	Speed limit	70			
Crossing: Control	0	Facilities	0	Local Authority:	E06000042	Parish:	1983	Road Section:		Accident Type(s)	NB					
	Vehicle Referenc	Car				Moving from	N	to	Going ahead ot	Left hand drive: No						
	On main carriageway							No skidding, jack-knifing or overturning								
		Front			0	0	0	38	Female	Negative						
	First point of impact			Parts damaged:		Age of Driver	Sex of Driver			Breath test						
					38	Female	Casualty Reference:		1			Age:	Slight		Injured by vehicl	1
		Seatbelt: Unknown				Cycle helmet	Not a cyclist									
		Ped. Location		Ped. Movement		Ped. Direction		Ped. Injury		School pupil:						0
	Vehicle Referenc	Car				Moving from	N	to	S	Going ahead ot	Left hand drive: No					
	On main carriageway							No skidding, jack-knifing or overturning								
		Back			0	0	0	32	Male	Negative						
	First point of impact			Parts damaged:		Age of Driver	Sex of Driver			Breath test						
					32	Male	Casualty Reference:		2			Age:	Slight		Injured by vehicl	2
		Seatbelt: Unknown				Cycle helmet	Not a cyclist									
		Ped. Location		Ped. Movement		Ped. Direction		Ped. Injury		School pupil:						0

Monday		30/10/2017	Time	1054	Slight	at	H5 JNC V11 PINEHAM ROUNDABOUT, WILLEN, MK										
E:		488363	N:	240382	Junction Detail:	1	Control	4									
Fine without high winds				Road surface	Dry		Daylight										

GV1 TRAV E ON H5 ENTERS RBT IN MIDDLE LN, C2 TRAV SAME DIR ENTERS RBT IN O/S LN, GV1 CUTS ACROSS RBT & COLL WITH C2 PUSHING C2 ONTO CENT ISLND.

Road Type	Dual carriageway				Vehicles	2	Casualties		1	Police Ref.	170332119	Speed limit	70		
Crossing: Control	0	Facilities	0	Local Authority:	E06000042	Parish:	1983	Road Section:		Accident Type(s	CO				
	Vehicle Referen	Goods vehicle - unknown weight				Moving from	W	to	Going ahead ot	Left hand drive: No					
	On main carriageway							No skidding, jack-knifing or overturning							
		Offside			0	0	0	51	Male	Negative					
	First point of impact			Parts damaged:		Age of Driver	Sex of Driver			Breath test					
	Vehicle Referen	Car				Moving from	W	to	E	Going ahead ot	Left hand drive: No				
	On main carriageway							No skidding, jack-knifing or overturning							
		Nearside			0	0	0	29	Female	Negative					
	First point of impact			Parts damaged:		Age of Driver	Sex of Driver			Breath test					
					29	Female	Casualty Reference:		1			Age:	Slight	Injured by vehicl	2
		Seatbelt: Unknown				Cycle helmet	Not a cyclist								
		Ped. Location		Ped. Movement		Ped. Direction		Ped. Injury		School pupil:					0

Tuesday 21/11/2017 Time 1900 Serious at NEWPORT ROAD, 320M WEST OF MOULSOE, MILTON KEYNES
E: 490077 N: 241327 Junction Detail: 0 Control

Raining without high winds Road surface Wet/Damp Darkness: no street lighting

PSV2 TRAV S/W NEG R/H BEND, C1 TRAV N/E APPR L/H BEND AT SPEED, DRVR C1 LOST CONTRL ON BEND & C1 CROSSED INTO OPP LN COLL WITH FRONT PSV2.

Road Type Single carriageway Vehicles 2 Casualties 7 Police Ref. 170355126 Speed limit 40

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1190 Road Section: Accident Type(s NN

Vehicle Referen Car Moving from W to Going ahead le Left hand drive: No

On main carriageway Skidded
Front 0 0 0 23 Male Negative
First point of impact Parts damaged: Age of Driver Sex of Driver Breath test

23 Male Casualty Reference: 1 Age: Serious Injured by vehicl 1

Seatbelt: Worn but not independently confirmed Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Vehicle Referen Bus or coach Moving from NE to W Going ahead ri Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
Front 0 0 0 46 Male Negative
First point of impact Parts damaged: Age of Driver Sex of Driver Breath test

46 Male Casualty Reference: 2 Age: Serious Injured by vehicl 2

Seatbelt: Not worn Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

23 Female Casualty Reference: 3 Age: Slight Injured by vehicl 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

28 Male Casualty Reference: 4 Age: Slight Injured by vehicl 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

29 Female Casualty Reference: 5 Age: Slight Injured by vehicl 2

Seatbelt: Unknown Cycle helmet Not a cyclist

	Ped. Location	Ped. Movement		Ped. Direction		Ped. Injury		School pupil:					0
			62	Female	Casualty Reference:		6		Age:		Slight	Injured by vehicl	2
	Seatbelt: Unknown			Cycle helmet	Not a cyclist								
	Ped. Location	Ped. Movement		Ped. Direction		Ped. Injury		School pupil:					0
			34	Male	Casualty Reference:		7		Age:		Slight	Injured by vehicl	2
	Seatbelt: Unknown			Cycle helmet	Not a cyclist								
	Ped. Location	Ped. Movement		Ped. Direction		Ped. Injury		School pupil:					0

Wednesday	13/12/2017	Time	2205	Slight	at	M1 MOTORWAY, NORTHBND C/WAY APPROACH TO EXIT SLIP RD TO JNC 14, BROOKLANDS, MK							
E:	489816	N:	240492	Junction Detail:	0	Control							
Fine without high winds		Road surface		Wet/Damp		Darkness: no street lighting							

C2 TRAV NORTH IN LN 1, C1 TRAV NORTH IN LN 3 AT EXCESS SPEED MOVES INTO LN 1 TO EXIT AT JNC 14 & COLL INTO C2. VEHS SPUN & LEFT C/WAY ONTO HARDSHLDR.

Road Type	Dual carriageway				Vehicles	2	Casualties	1	Police Ref.	170376592	Speed limit	70	
Crossing: Control	0	Facilities	0	Local Authority:	E06000042	Parish:	1983	Road Section:		Accident Type(s	MS		

	Vehicle Referen	Car				Moving from	SE	to		Changing lane t	Left hand drive: No		
	On main carriageway							No skidding, jack-knifing or overturning					
	Nearside				0	0	0	32	Male	Negative			
	First point of impact			Parts damaged:		Age of Driver	Sex of Driver			Breath test			
	Vehicle Referen	Car				Moving from	SE	to		NW	Going ahead ot	Left hand drive: No	
	On main carriageway							No skidding, jack-knifing or overturning					
	Offside				0	0	0	29	Female	Negative			
	First point of impact			Parts damaged:		Age of Driver	Sex of Driver			Breath test			
					29	Female	Casualty Reference:		1		Age:	Slight	Injured by vehicl 2
	Seatbelt: Worn but not independently confirmed					Cycle helmet	Not a cyclist						
	Ped. Location	Ped. Movement				Ped. Direction		Ped. Injury		School pupil:			0

Tuesday	19/12/2017	Time	1645	Slight	at	M1 MOTORWAY, NORTHBND C/WAY, MARKER POST 796, BROOKLANDS, MK	
E:	489844	N:	240482	Junction Detail:	0	Control	
Raining without high winds			Road surface	Wet/Damp		Darkness: no street lighting	

C3, C2 & GV1 TRAV N IN LN 3, CONGESTION AHEAD SO C3 & C2 SLOWED, GV1 COLL WITH REAR C2 PUSHING C2 INTO REAR C3.

Road Type	Dual carriageway			Vehicles	3	Casualties	1	Police Ref.	180000790	Speed limit	70
Crossing: Control	0	Facilities	0	Local Authority:	E06000042	Parish:	1983	Road Section:	796	Accident Type(s)	NB

Vehicle Referenc	Van or Goods 3.5 tonnes mgw and under			Moving from	SE	to		Going ahead ot	Left hand drive: No					
On main carriageway						No skidding, jack-knifing or overturning								
	Front		0	0	0	19	Male	Negative						
First point of impact		Parts damaged:		Age of Driver	Sex of Driver			Breath test						
			27	Male	Casualty Reference:		1			Age:	Slight		Injured by vehicl	1
	Seatbelt: Worn but not independently confirmed			Cycle helmet	Not a cyclist									
	Ped. Location	Ped. Movement		Ped. Direction		Ped. Injury		School pupil:						0
Vehicle Referenc	Car			Moving from	SE	to	NW	Going ahead ot	Left hand drive: No					
On main carriageway						No skidding, jack-knifing or overturning								
	Back		0	0	0	45	Male	Negative						
First point of impact		Parts damaged:		Age of Driver	Sex of Driver			Breath test						
Vehicle Referenc	Car			Moving from	SE	to	NW	Going ahead ot	Left hand drive: No					
On main carriageway						No skidding, jack-knifing or overturning								
	Back		0	0	0	42	Male	Negative						
First point of impact		Parts damaged:		Age of Driver	Sex of Driver			Breath test						

Saturday	24/02/2018	Time	1549	Serious	at	A509 JNC 14 M1 ROUNDABOUT, BROOK FURLONG, MK									
E:	489182	N:	240919	Junction Detail:	1	Control	2								
Fine without high winds		Road surface		Dry		Daylight									

C2 TRAV N ON RBT & STAT AT RED ATS, GV1 (VAN WITH TRAILER) TRAV N ON RBT, DRVR GV1 FAILS TO SEE STAT C2 AHEAD, GV1 COLL WITH REAR C2 THEN CAREERS ACROSS S/BND SLIP RD & COLL WITH TRAFF SIGNALS & TWO STAT VEHS ON SLIP RD.

Road Type	Roundabout				Vehicles	2	Casualties	1	Police Ref.	180065772	Speed limit	40			
Crossing: Control	0	Facilities	0	Local Authority:	E06000042	Parish:	1983	Road Section:		Accident Type(s	NB				

Vehicle Referen	Van or Goods 3.5 tonnes mgw and under					Moving from	S	to		Going ahead ot	Left hand drive: No				
On main carriageway								Skidded and overturned							
Front				0	0	0	29	Male	Negative						
First point of impact		Parts damaged:		Age of Driver		Sex of Driver			Breath test						
				29	Male	Casualty Reference:		1		Age:	Serious		Injured by vehicl	1	
	Seatbelt: Unknown					Cycle helmet	Not a cyclist								
	Ped. Location		Ped. Movement			Ped. Direction		Ped. Injury		School pupil:					0

Vehicle Referen	Car					Moving from	S	to	N	Going ahead bu	Left hand drive: No				
On main carriageway								No skidding, jack-knifing or overturning							
Back				0	0	0	58	Female	Negative						
First point of impact		Parts damaged:		Age of Driver		Sex of Driver			Breath test						

Wednesday	28/02/2018	Time	0525	Slight	at	H5 PORTWAY, 150M WEST OF JNC V11 PINEHAM RBT, WILLEN, MK	
E:	488209	N:	240361	Junction Detail:	0	Control	
Fine without high winds			Road surface	Frost/Ice		Darkness: street lights present and lit	

PC1 TRAV EAST ON H5 IN LN 1, C2 TRAV EAST IN LN 2, PC1 MOVED INTO LN 2 & INTO PATH C2, C2 COLL WITH REAR PC1.

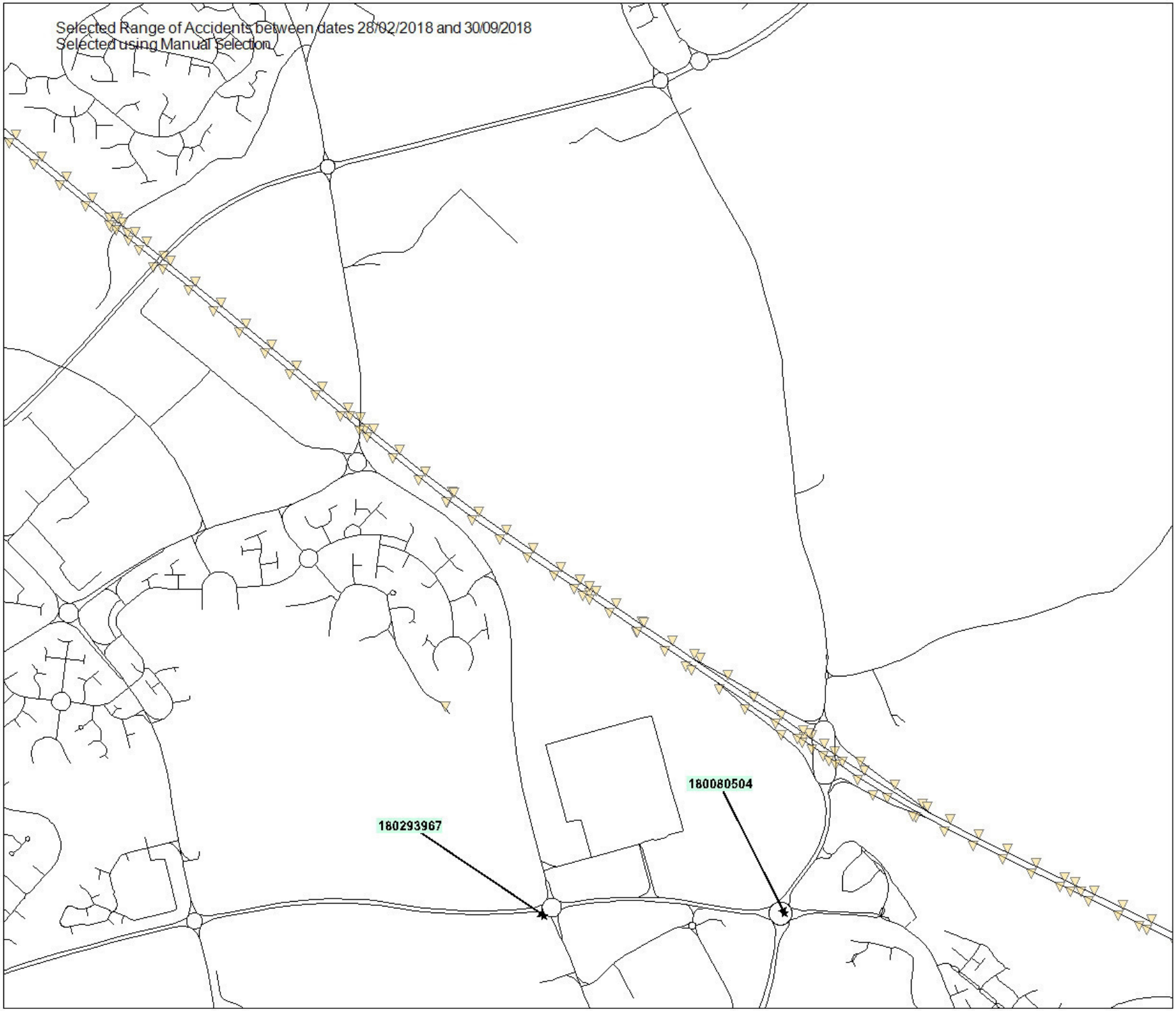
Road Type	Dual carriageway			Vehicles	2	Casualties	1	Police Ref.	180063729	Speed limit	70
Crossing: Control	0	Facilities	0	Local Authority:	E06000042	Parish:	1983	Road Section:		Accident Type(s)	MD

Vehicle Referenc	Pedal Cycle			Moving from	W	to	Changing lane t	Left hand drive: No	
On main carriageway						No skidding, jack-knifing or overturning			
	Back		0	0	0	27	Male	Not applicable	
First point of impact		Parts damaged:		Age of Driver	Sex of Driver			Breath test	
			27	Male	Casualty Reference:		1	Age:	Slight	Injured by vehicl 1
	Seatbelt: Not Applicable			Cycle helmet	Yes				
	Ped. Location	Ped. Movement		Ped. Direction		Ped. Injury		School pupil:	0

Vehicle Referenc	Car			Moving from	W	to	E	Going ahead ot	Left hand drive: No
On main carriageway						No skidding, jack-knifing or overturning			
	Front		0	0	0	65	Female	Negative	
First point of impact		Parts damaged:		Age of Driver	Sex of Driver			Breath test	

Accidents involving:					Casualties:				
	Fatal	Serious	Slight	Total		Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)					Vehicle driver	0	3	15	18
	0	2	9	11					
					Passenger	0	0	7	7
2-wheeled motor vehicles									
	0	0	0	0	Motorcycle rider	0	0	0	0
Pedal cycles	0	0	1	1	Cyclist	0	0	1	1
					Pedestrian	0	0	0	0
Horses & other	0	0	0	0					
					Other	0	0	0	0
					Total	0	3	23	26
Total	0	2	10	12					

Number of casualties meeting the criteria: **26**



N

BUCHANAN COMPUTING

DRAWING TITLE

Selected map area

SCALE	1 : 10000
DATE	14/01/2019
DRAWING No.	
DRAWN BY	

APPENDIX E

HIGHWAY DRAWINGS, DESIGN STATEMENTS
STAGE 1 ROAD SAFETY AUDIT & RESPONSE REPORT

HIGHWAY DRAWINGS

38748/100/007 Rev A – Proposed Site Access Signalised Junction – General Arrangement

38748/100/008 Rev A – Proposed Marsh End Signalised Roundabout – General Arrangement

38748/100/015 Rev A – Proposed Highway Cross Sections

38748/100/016 Rev A – Proposed Highway Longitudinal Sections

38748/100/017 Rev A – Swept Path Analysis (Sheet 1 of 2)

38748/100/018 Rev A – Swept Path Analysis (Sheet 2 of 2)

38748/500/001 Rev A – Proposed Highway Drainage Pond Option 1

38748/1300/001 Rev A – Street Lighting (Sheet 1 of 2)

38748/1300/002 Rev A – Street Lighting (Sheet 2 of 2)

FOR CONTINUATION REFER TO DRAWING 38748/100/008

SUPPORTING EARTHWORKS GRADIENT LOCALLY INCREASED TO 1 IN 2.5 TYPICAL EARTHWORKS HEIGHT = 0.7m

2.5m WIDE VERGE TO ACCOMMODATE PROPOSED UTILITIES

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE

ON SITE ROAD LAYOUT TAKEN FROM PHP DRAWING 4179-1-SK015 P36 - 'MASTER PLAN'

PROPOSED 2m WIDE FOOTWAY ONLY

CALDECOTE FARM ACCESS TO BECOME 'LEFT IN, LEFT OUT' STYLE JUNCTION WITH GHOST ISLAND RIGHT TURN LANE

CALDECOTE FARM

LAY-BY STYLE BUS STOP WITH OFFLINE REDWAY FORMING A 'FLOATING BUS STOP'

PROPOSED LAY-BY STYLE BUS STOP

PROPOSED EARTHWORKS RESPOND TO EXISTING TOPOGRAPHICAL SURVEY WHICH INCLUDES EXISTING EARTHWORK MOUNDS

PROPOSED 2.5m GRASSED VERGE

QUARRY ACCESS TO BECOME 'LEFT IN, LEFT OUT' STYLE JUNCTION

PROPOSED EARTHWORKS RESPOND TO EXISTING TOPOGRAPHICAL SURVEY WHICH INCLUDES EXISTING EARTHWORK MOUNDS

EXISTING QUARRY ACCESS

ADVANCE DIRECTIONAL SIGN TO BE ERECTED IN ORDER TO PROVIDE MOTORIST WITH AWARENESS OF THE GEOMETRIC LAYOUT OF THE PROPOSED JUNCTION AND DEVELOPMENT ACCESS

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE

WILLEN ROAD

FOR CONTINUATION REFER RIGHT

FOR CONTINUATION REFER LEFT

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE

EXISTING LIGHTING COLUMN TO BE RELOCATED OUTSIDE OF PROPOSED FOOTWAY / CYCLE TRACK AND BT COVER RAISED TO LEVEL OF PROPOSED FOOTWAY / CYCLE TRACK

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH NO BUFFER ZONE ACROSS EXISTING OVERBRIDGE

NEW ROAD RESTRAINT SYSTEM ALIGNED AND EXTENDED TO ACCOMMODATE SHARED USE FOOTWAY / CYCLE TRACK

EXISTING BRIDGE PARAPET HEIGHT 1m. DESIRABLE MINIMUM FOR CYCLE USE 1.4m AS PER IAN 195/16, TABLE 2.5.6. NEW 1.4m HIGH BRIDGE PARAPET TO BE PROVIDED. THESE WORKS MAY REQUIRE AN AIP (APPROVAL IN PRINCIPLE)

EXISTING POST AND RAIL FENCE TO BE RELOCATED OUTSIDE OF THE WORKING WIDTH OF THE NEW ROAD RESTRAINT SYSTEM WHERE POSSIBLE

NEW ROAD RESTRAINT SYSTEM ALIGNED AND EXTENDED TO ACCOMMODATE SHARED USE FOOTWAY / CYCLE TRACK

EXISTING FINGER POST SIGN TO BE RELOCATED AND BT COVER RAISED TO LEVEL OF PROPOSED FOOTWAY / CYCLE TRACK

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK TIES INTO EXISTING REDWAY NETWORK

DANSTEED ROAD

DANSTEED WAY

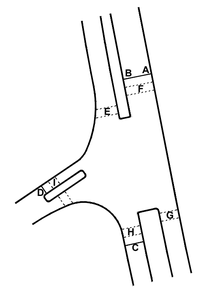
TONGWELL ROUNDABOUT

TONGWELL STREET

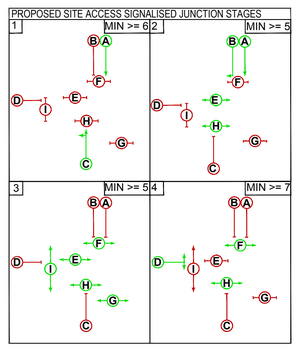
M1

WILLEN ROAD

PROPOSED SIGNALISED SITE ACCESS JUNCTION STAGING



PROPOSED SITE ACCESS SIGNALISED JUNCTION STAGES



KEY:-

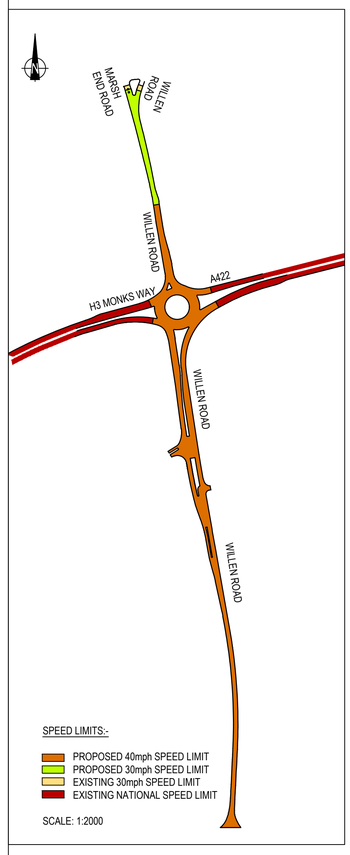
- HIGHWAYS ENGLAND HIGHWAY BOUNDARY
- MILTON KEYNES COUNCIL HIGHWAY BOUNDARY
- PROPOSED FULL HEIGHT SAFETY BARRIER
- PROPOSED ROAD RESTRAINT TERMINAL
- PROPOSED TRAFFIC SIGNALS
- PROPOSED TRAFFIC SIGNAL CONTROL BOX WITH MAINTENANCE ACCESS BAY FORMED USING PERMEABLE PAVING
- JUNCTION INTERVISIBILITY ZONE
- FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 120m SSD - DESIGN SPEED 70kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 120m SSD - DESIGN SPEED 70kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 45m SSD - DESIGN SPEED 40kph

NOTES:-

1. ALIGNMENT OF MILTON KEYNES COUNCIL HIGHWAY BOUNDARY BASED ON HIGHWAY BOUNDARY INFORMATION PROVIDED BY MILTON KEYNES COUNCIL INTERPOLATED AND ALIGNED TO PHYSICAL FEATURES ON THE TOPOGRAPHICAL SURVEY. HIGHWAYS ENGLAND HIGHWAY BOUNDARY BASED ON HIGHWAYS ENGLAND GIS OPEN DATA DATED 28.10.2016.
2. MKC'S DRAFT 'A HIGHWAY GUIDE FOR MILTON KEYNES' DOCUMENT (DATED SEPTEMBER 2018), FIG 1 - 'HIGHWAY NETWORK PLAN' AND TABLE 3.12 - 'TABLE OF LAYOUT STANDARDS' INDICATE THAT THE DESIGN STANDARDS FOR WILLEN ROAD SHOULD BE BASED ON THE DESIGN MANUAL FOR ROADS AND BRIDGES DESIGN STANDARDS.
3. EXISTING POSTED SPEED LIMIT OF WILLEN ROAD IS NATIONAL SPEED LIMIT (60mph). MKC HAVE CONFIRMED THAT A TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT TO 40mph. THEREFORE, THE DESIGN SPEED FOR THIS JUNCTION WILL BE 70kph.
4. THE DESIGN OF THE SIGNALISED JUNCTION HAS BEEN BASED ON ADC INFRASTRUCTURE LINSIG MODEL - 'App XX - PROPOSED ACCESS AND MARSH END MITIGATION v5.lsg3x'.
5. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH:-
   - PBA TECHNICAL NOTE TN2003/001 - 'WILLEN ROAD, SIGNALISED JUNCTION DEVELOPMENT ACCESS';

DESIGN RISK

TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT OF WILLEN ROAD AND REINFORCE THE 70kph DESIGN SPEED. A TRO MAY NOT BE GRANTED, AND THIS PROCESS IS SEPARATE TO THE PLANNING PROCESS.



SPEED LIMITS:-

- PROPOSED 40mph SPEED LIMIT
- PROPOSED 30mph SPEED LIMIT
- EXISTING 30mph SPEED LIMIT
- EXISTING NATIONAL SPEED LIMIT

SCALE: 1:2000

Rev.	Description	Drawn	Date	Chkd
A	REVISED TO REFLECT CLIENT COMMENTS & STAGE 1 RSA	DL	21.05.19	JSH

LAND AT CALDECOTE FARM NEWPORT PAGNELL

SEGRO NEWPORT PAGNELL LTD

PETER BRETT ASSOCIATES LLP

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PROPOSED SITE ACCESS SIGNALISED JUNCTION - GENERAL ARRANGEMENT

Drawing Status:	PRELIMINARY
CAD Reference:	38748/100/007
Drawn:	DL
Date:	05.07.2018
Scale: 1: @ A0	1:500 & 1:2000

Project No:	Drawing No:	Rev:
38748	100/007	A

FOR CONTINUATION SEE INSET 1

INSET 1

FOR CONTINUATION SEE RIGHT

MARSH END ROAD

TONGWELL BROOK

WILLEN ROAD

PROPOSED UNCONTROLLED CROSSING TO CONNECT FOOTWAY / CYCLE TRACK TO EXISTING SHARED USE FOOTWAY / CYCLE TRACK

TONGWELL BROOK

TONGWELL LANE

WILLEN ROAD SPORTS GROUND

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE NARROWS TO CONNECT WITH EXISTING SHARED USE FOOTWAY / CYCLE TRACK

PROPOSED UNCONTROLLED CROSSING TO CONNECT FOOTWAY / CYCLE TRACK TO EXISTING TRAFFIC FREE ROUTE 'TONGWELL LANE' WITH CONNECTIONS TO WIDER REDWAY NETWORK

WILLEN ROAD

L Twr

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE

L Twr

Cricket Field

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 0.75m WIDE BUFFER ZONE FORMED WITH ROAD MARKING

WILLEN ROAD

1m WIDE VERGE

NEW ROAD RESTRAINT SYSTEM ALIGNED TO SUIT NEW CENTRAL RESERVE ALIGNMENT AND TIED INTO EXISTING ROAD RESTRAINT SYSTEM

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE (MINIMUM) BUFFER ZONE

0.5m WIDE VERGE

2.5m WIDE VERGE

A422

FOR CONTINUATION SEE BELOW

EXISTING LAY-BY TO BE REMOVED

2.5m WIDE VERGE

2.5m WIDE VERGE

EXISTING LAY-BY TO BE REMOVED

NEW ROAD RESTRAINT SYSTEM ALIGNED TO SUIT NEW CENTRAL RESERVE LAYOUT AND TIED INTO EXISTING ROAD RESTRAINT SYSTEM AT M1 OVERBRIDGE TO THE WEST

H3 MONKS WAY

2.5m WIDE VERGE

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE

ADVANCE DIRECTIONAL SIGN TO BE ERECTED IN ORDER TO PROVIDE MOTORIST WITH AWARENESS OF THE GEOMETRIC LAYOUT OF THE PROPOSED JUNCTION AND DEVELOPMENT ACCESS

WILLEN ROAD

FOR CONTINUATION REFER TO DRAWING 38748/100/007

A422

FOR CONTINUATION SEE ABOVE

A422

EXISTING LAY-BY TO BE REMOVED

2.5m WIDE VERGE

KEY:-

- HIGHWAYS ENGLAND HIGHWAY BOUNDARY
- MILTON KEYNES COUNCIL HIGHWAY BOUNDARY
- PROPOSED FULL HEIGHT SAFETY BARRIER
- PROPOSED ROAD RESTRAINT TERMINAL
- PROPOSED TRAFFIC SIGNALS
- PROPOSED TRAFFIC SIGNAL CONTROL BOX WITH MAINTENANCE ACCESS BAY FORMED USING PERMEABLE PAVING
- JUNCTION INTERVISIBILITY ZONE
- FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 120m SSD - DESIGN SPEED 70kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 120m SSD - DESIGN SPEED 70kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 295m SSD - DESIGN SPEED 120kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 295m SSD - DESIGN SPEED 120kph

NOTES:-

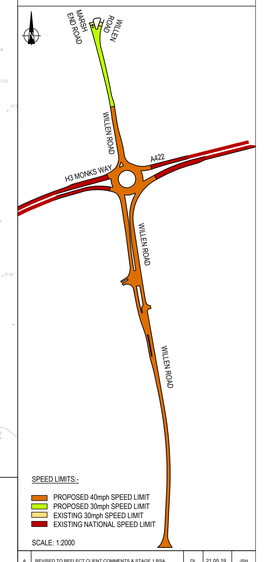
1. ALIGNMENT OF MILTON KEYNES COUNCIL HIGHWAY BOUNDARY BASED ON HIGHWAY BOUNDARY INFORMATION PROVIDED BY MILTON KEYNES COUNCIL INTERPOLATED AND ALIGNED TO PHYSICAL FEATURES ON THE TOPOGRAPHICAL SURVEY. HIGHWAYS ENGLAND HIGHWAY BOUNDARY BASED ON HIGHWAYS ENGLAND GIS OPEN DATA DATED 28.10.2016.
2. MKC'S DRAFT 'A HIGHWAY GUIDE FOR MILTON KEYNES' DOCUMENT (DATED SEPTEMBER 2018), FIG 1 - 'HIGHWAY NETWORK PLAN' AND TABLE 3.12 - 'TABLE OF LAYOUT STANDARDS' INDICATE THAT THE DESIGN STANDARDS FOR WILLEN ROAD SHOULD BE BASED ON THE DESIGN MANUAL FOR ROADS AND BRIDGES DESIGN STANDARDS.
3. EXISTING POSTED SPEED LIMIT OF WILLEN ROAD AND MONKS WAY IS NATIONAL SPEED LIMIT (60mph). MKC HAVE CONFIRMED THAT A TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT TO 40mph ON APPROACH TO THE ROUNDABOUT. THEREFORE, THE DESIGN SPEED FOR THIS JUNCTION WILL BE 70kph.
4. THE DESIGN OF THE SIGNALISED ROUNDABOUT HAS BEEN BASED ON ADC INFRASTRUCTURE LINSIG MODEL - 'App XX - PROPOSED ACCESS AND MARSH END MITIGATION v5.lsg3x'.
5. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH:-
   - PBA TECHNICAL NOTE TN2003/002 - 'A422, SIGNALISED ROUNDABOUT';

DESIGN RISK

TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT ON APPROACH TO MARSH END ROUNDABOUT FROM MONKS WAY WESTBOUND AND EASTBOUND AND REINFORCE THE 70kph DESIGN SPEED. A TRO MAY NOT BE GRANTED, AND THIS PROCESS IS SEPARATE TO THE PLANNING PROCESS.

THE EXISTING LAY-BYS ADJACENT TO H3 MONKS WAY AND THE A422 ARE TO BE REMOVED BY THE SCHEME PROPOSALS AND NOT REPLACED (AS DISCUSSED AND AGREED WITH MKC DATED 20th JUNE 2018). HOWEVER, IF THE HIGHWAY AUTHORITY REQUIRE THESE LAY-BYS TO BE REINSTATED IN ACCORDANCE WITH CURRENT DMRB STANDARDS, THIS WOULD REQUIRE AN ALTERATION TO THE PROPOSED PRELIMINARY DESIGN.

THE EXISTING CROSS SECTION OF H3 MONKS WAY DOES NOT PROVIDE ROAD RESTRAINT SYSTEMS (RRS) WITHIN THE CENTRAL RESERVE. MKC HAVE INSTRUCTED RRS TO BE PROVIDED WITHIN THIS CENTRAL RESERVE. PLEASE NOTE, WE HAVE REVIEWED THE VERTICAL PROFILE AND VISIBILITY ON THE IMMEDIATE APPROACH TO THE PROPOSED JUNCTION AND CAN CONFIRM THAT DESIRABLE MINIMUM STOPPING SIGHT DISTANCE OF 295m (DESIGN SPEED 120kph) IS NOT RESTRICTED TO THE 'OBJECT HEIGHT' BY THE PROPOSED RRS.

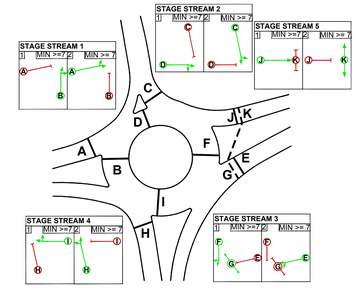


SPEED LIMITS:-

- PROPOSED 40mph SPEED LIMIT
- PROPOSED 30mph SPEED LIMIT
- EXISTING 30mph SPEED LIMIT
- EXISTING NATIONAL SPEED LIMIT

SCALE: 1:2000

PROPOSED MARSH END SIGNALISED ROUNDABOUT STAGES



Rev.	Description	Drawn	Date	Chkd
A	REVISED TO REFLECT CLIENT COMMENTS & STAGE 1 RSA	DL	21.05.19	JSH

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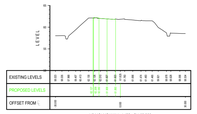
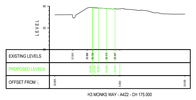
PROPOSED MARSH END SIGNALISED ROUNDABOUT - GENERAL ARRANGEMENT

Drawing Status:	PRELIMINARY
CAD Reference:	38748/100/008
Drawn:	DL
Date:	05.07.2018
Scale: 1: @ A0	1:500 & 1:2000

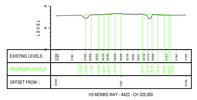
Project No: 38748 | Drawing No: 100/008 | Rev: A



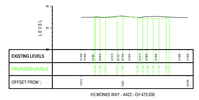
H3 MONKS WAY - A422 - CH 50.000



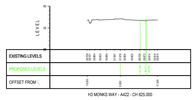
H3 MONKS WAY - A422 - CH 175.000



H3 MONKS WAY - A422 - CH 325.000

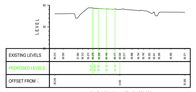


H3 MONKS WAY - A422 - CH 475.000

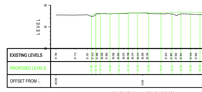


H3 MONKS WAY - A422 - CH 625.000

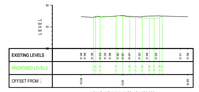
H3 MONKS WAY - A422 - CH 75.000



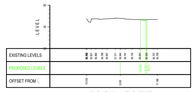
H3 MONKS WAY - A422 - CH 225.000



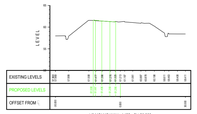
H3 MONKS WAY - A422 - CH 375.000



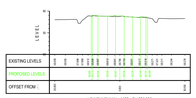
H3 MONKS WAY - A422 - CH 525.000



H3 MONKS WAY - A422 - CH 675.000



H3 MONKS WAY - A422 - CH 100.000



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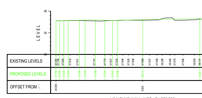
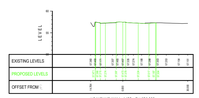
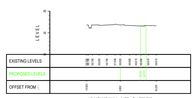


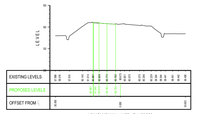
H3 MONKS WAY - A422 - CH 400.000



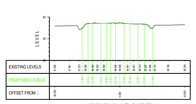
H3 MONKS WAY - A422 - CH 550.000



H3 MONKS WAY - A422 - CH 700.000



H3 MONKS WAY - A422 - CH 125.000



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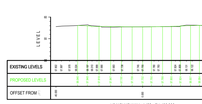

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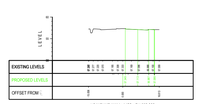
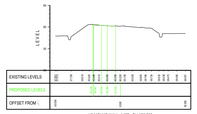


H3 MONKS WAY - A422 - CH 575.000



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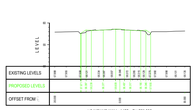
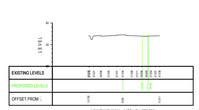


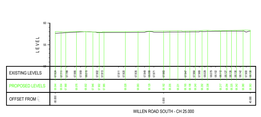
H3 MONKS WAY - A422 - CH 300.000

H3 MONKS WAY - A422 - CH 450.000

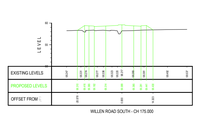


H3 MONKS WAY - A422 - CH 600.000

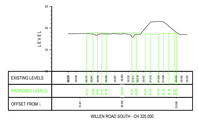
CROSS SECTION FOR MONKS WAY



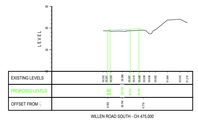
WILLEN ROAD SOUTH - CH 25.000



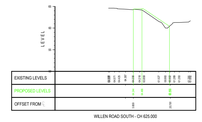
WILLEN ROAD SOUTH - CH 175.000



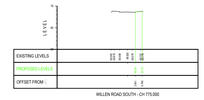
WILLEN ROAD SOUTH - CH 325.000



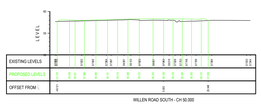
WILLEN ROAD SOUTH - CH 475.000



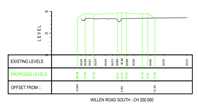
WILLEN ROAD SOUTH - CH 625.000



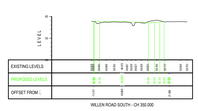
WILLEN ROAD SOUTH - CH 775.000



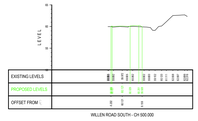
WILLEN ROAD SOUTH - CH 50.000



WILLEN ROAD SOUTH - CH 200.000



WILLEN ROAD SOUTH - CH 350.000



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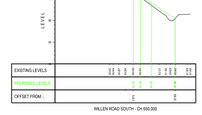

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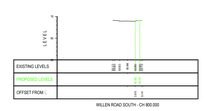

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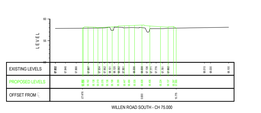

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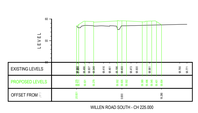

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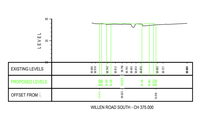

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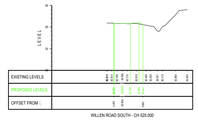

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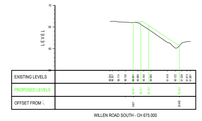

WILLEN ROAD SOUTH - CH 675.000

WILLEN ROAD SOUTH - CH 825.000

WILLEN ROAD SOUTH - CH 100.000

WILLEN ROAD SOUTH - CH 250.000

WILLEN ROAD SOUTH - CH 400.000

WILLEN ROAD SOUTH - CH 550.000

WILLEN ROAD SOUTH - CH 700.000

WILLEN ROAD SOUTH - CH 850.000

WILLEN ROAD SOUTH - CH 125.000

WILLEN ROAD SOUTH - CH 275.000

WILLEN ROAD SOUTH - CH 425.000

WILLEN ROAD SOUTH - CH 575.000

WILLEN ROAD SOUTH - CH 725.000

WILLEN ROAD SOUTH - CH 150.000

WILLEN ROAD SOUTH - CH 300.000

WILLEN ROAD SOUTH - CH 450.000

WILLEN ROAD SOUTH - CH 600.000

WILLEN ROAD SOUTH - CH 750.000

CROSS SECTIONS FOR WILLEN ROAD - SOUTH

WILLEN ROAD NORTH - CH 0.000

WILLEN ROAD NORTH - CH 75.000

WILLEN ROAD NORTH - CH 25.000

WILLEN ROAD NORTH - CH 100.000

WILLEN ROAD NORTH - CH 50.000

WILLEN ROAD NORTH - CH 125.000

CROSS SECTIONS FOR WILLEN ROAD - NORTH

LOCATION PLAN
SCALE 1:2500

DEVELOPMENT ACCESS - CH 36.500

CROSS SECTION FOR DEVELOPMENT ACCESS

Rev.	Description	Drawn	Date	Chkd
A	REVISED TO REFLECT NEW DEVELOPMENT ACCESS LOCATION	DL	21-05-19	JSH

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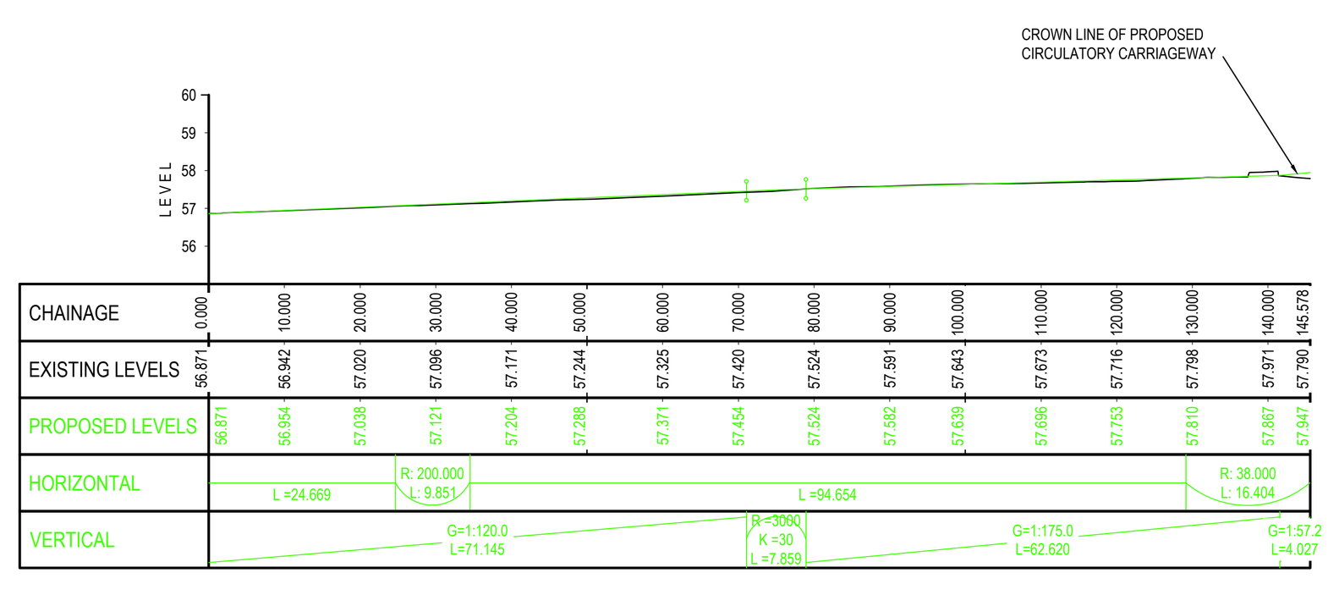
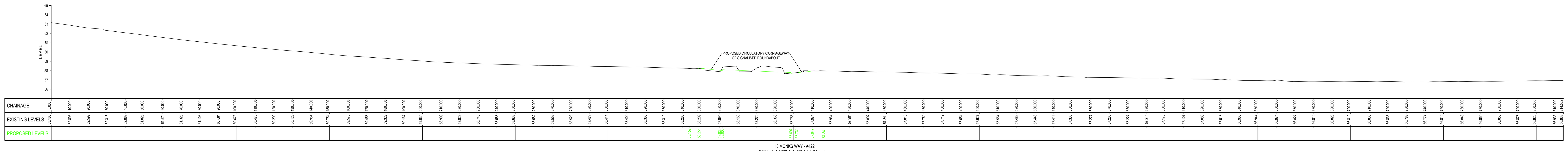
PROPOSED HIGHWAY
CROSS SECTIONS

Drawing Status:	PRELIMINARY
CAD Reference:	38748/100/015
Drawn:	DL
Date:	04.07.18
Scale: 1: @ A0	H1:1000 V1:500 & 1:2500

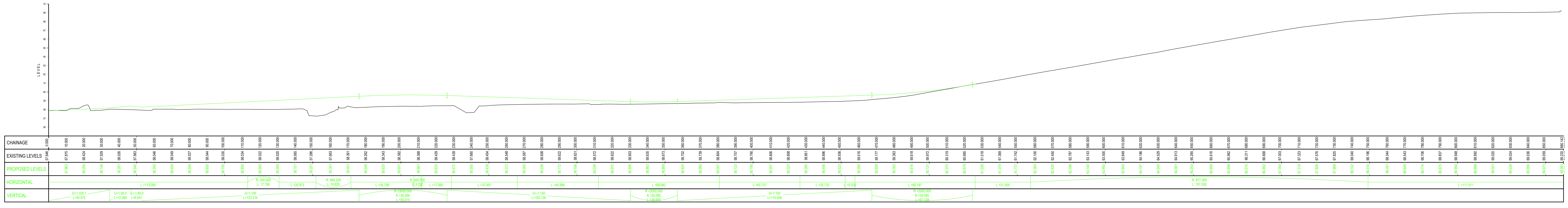
Project No:	Drawing No:	Rev:
38748	100/015	A



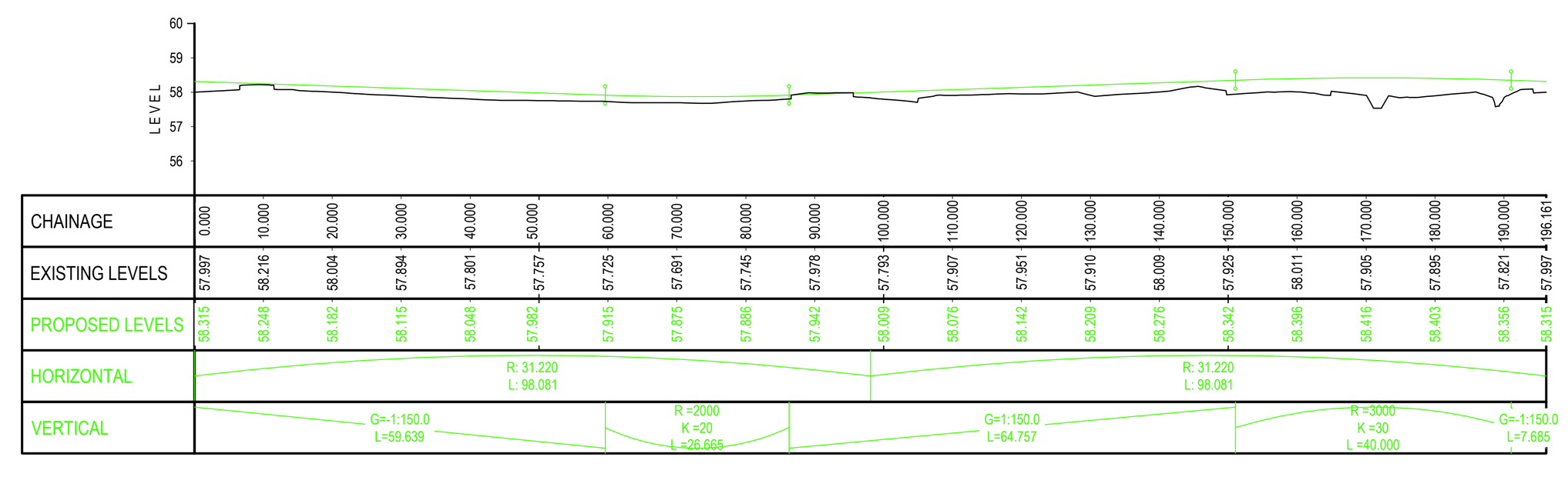
WILLEN ROAD NORTH
SCALE: H 1:1000, V 1:200. DATUM: 55.000



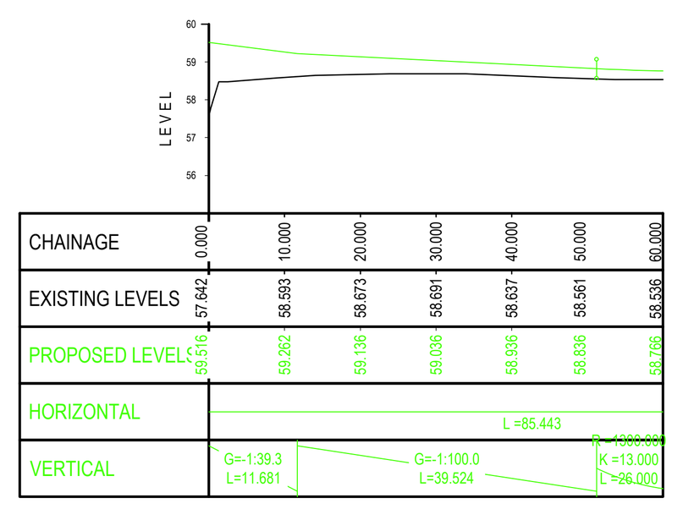
H3 MONKS WAY - A422
SCALE: H 1:1000, V 1:200. DATUM: 55.000



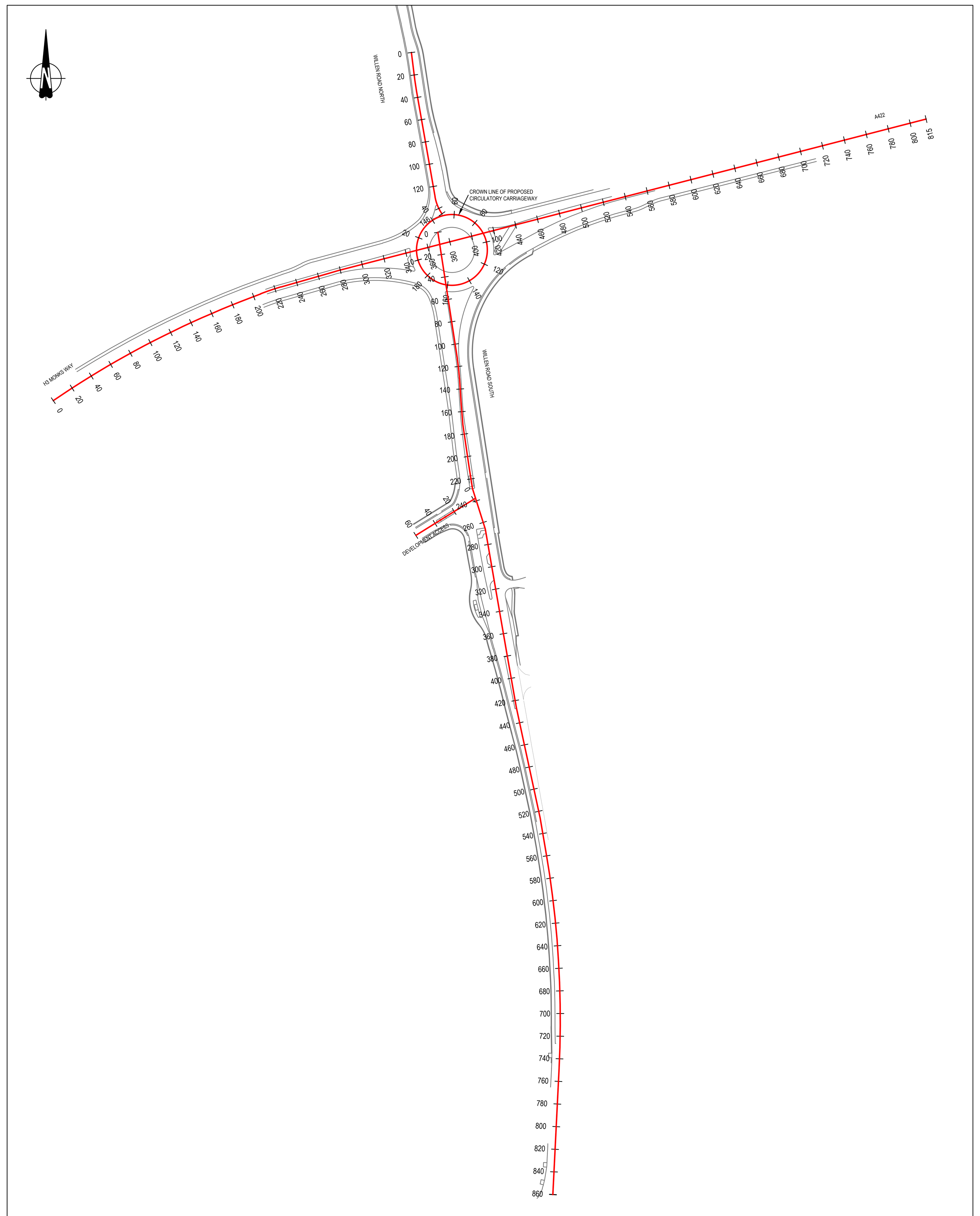
WILLEN ROAD SOUTH
SCALE: H 1:1000, V 1:200. DATUM: 55.000



CROWN LINE OF PROPOSED CIRCULATORY CARRIAGEWAY
SCALE: H 1:1000, V 1:200. DATUM: 55.000



DEVELOPMENT ACCESS
SCALE: H 1:1000, V 1:200. DATUM: 55.000



LOCATION PLAN
SCALE 1:2500

Rev.	Description	Drawn	Date	Chkd
A	REVISED TO REFLECT NEW DEVELOPMENT ACCESS LOCATION	DL	21.05.19	JSH

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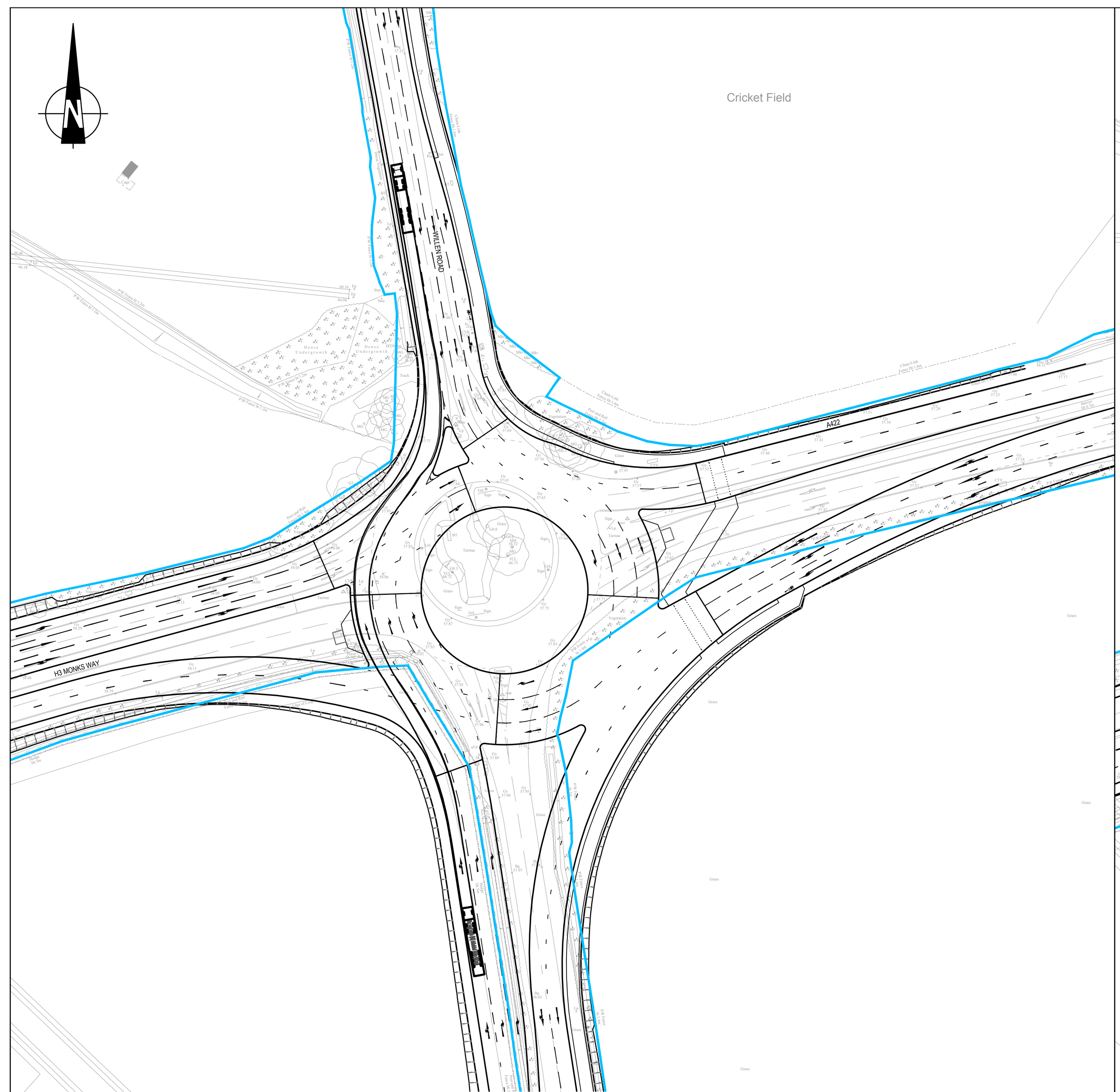
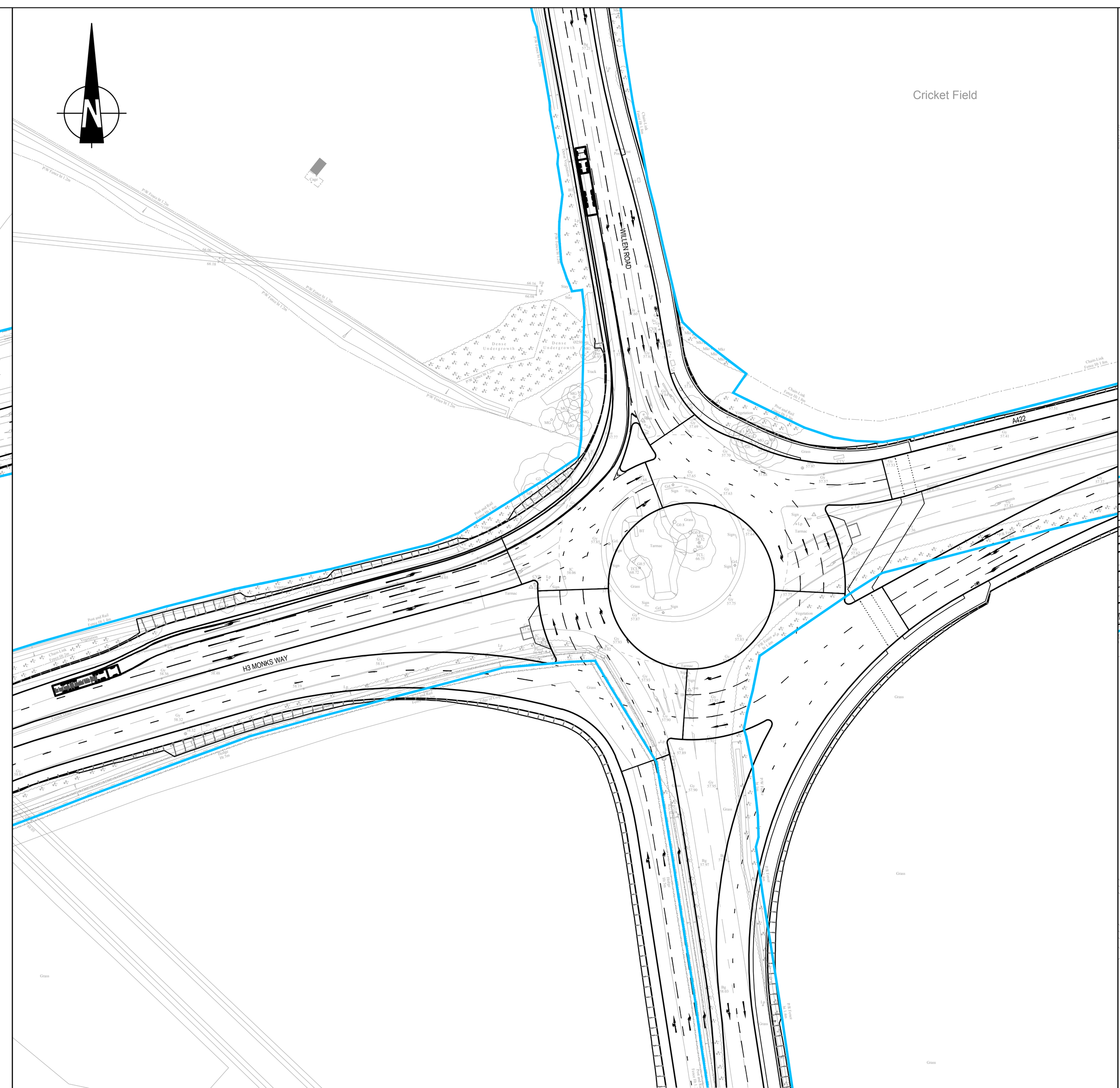
PROPOSED HIGHWAY
LONGITUDINAL SECTIONS

Drawing Status:	PRELIMINARY
CAD Reference:	38748/100/016
Drawn:	DL
Date:	04.07.18
Scale: 1: @ A0	H1:1000 V1:500 & 1:2500

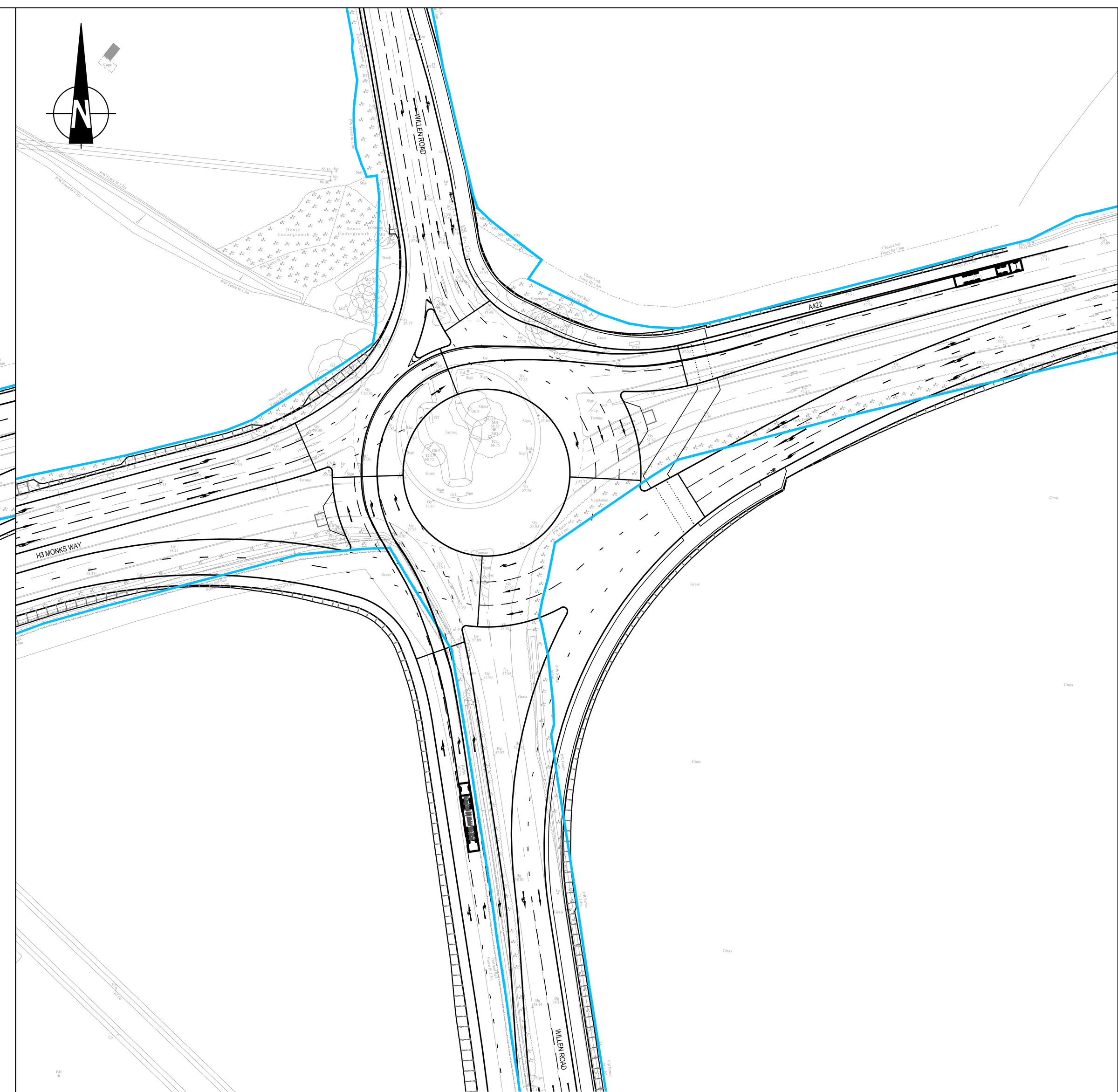
Project No:	Drawing No:	Rev:
38748	100/016	A



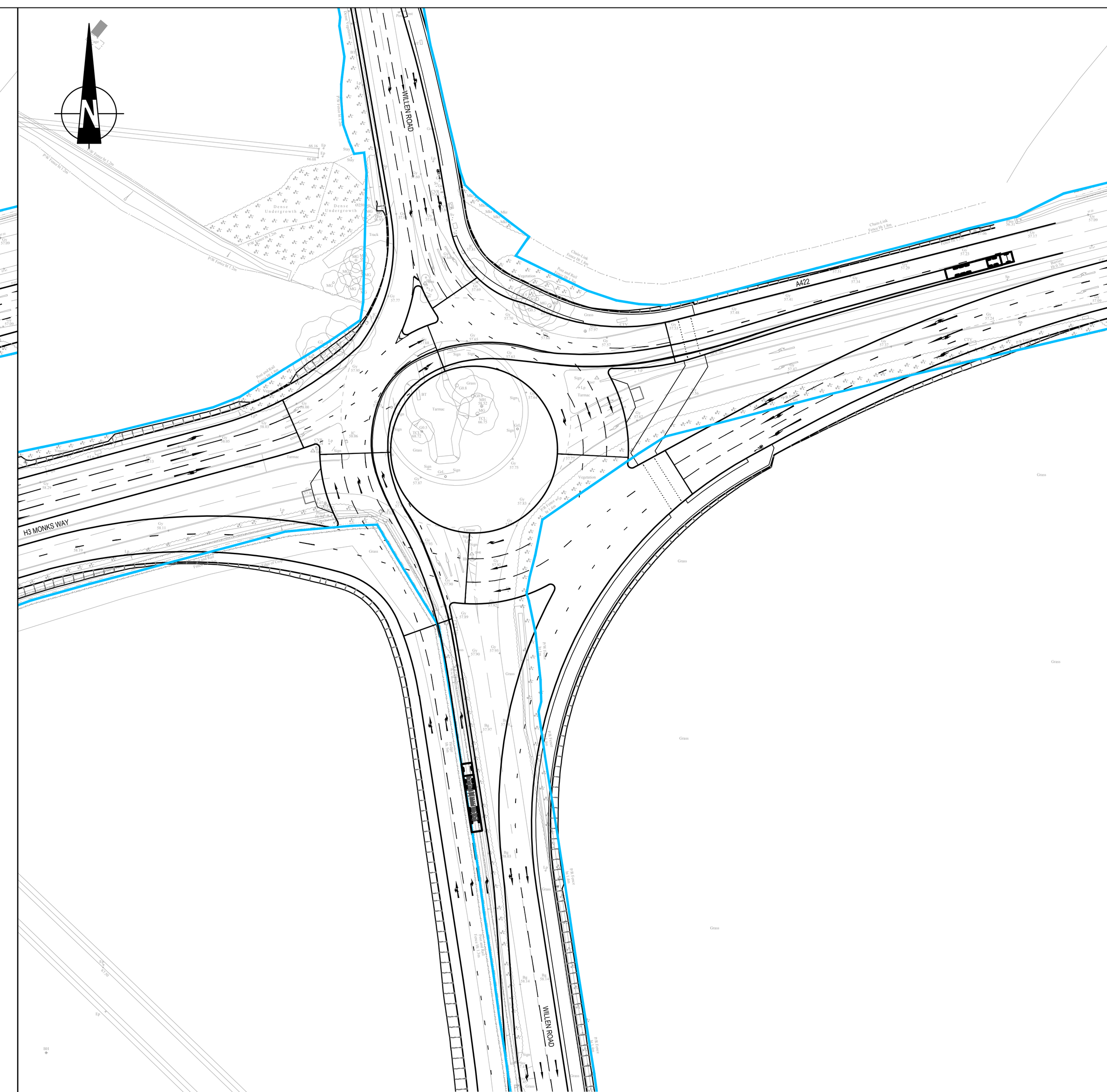
WILLEN ROAD LANE 1 STRAIGHT AHEAD NORTHBOUND



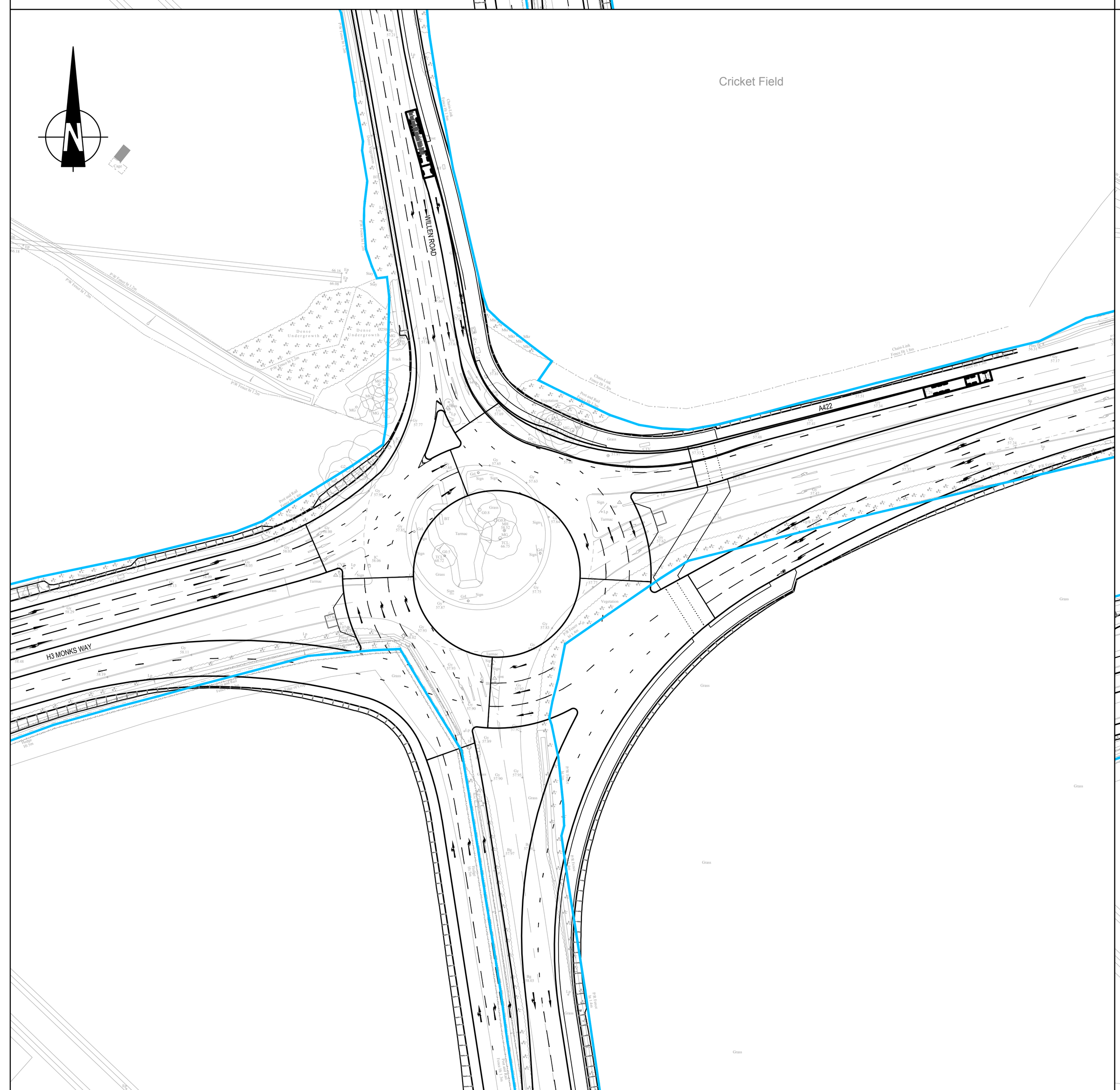
H3 MONKS WAY LANE 1 LEFT IN TO WILLEN ROAD NORTHBOUND



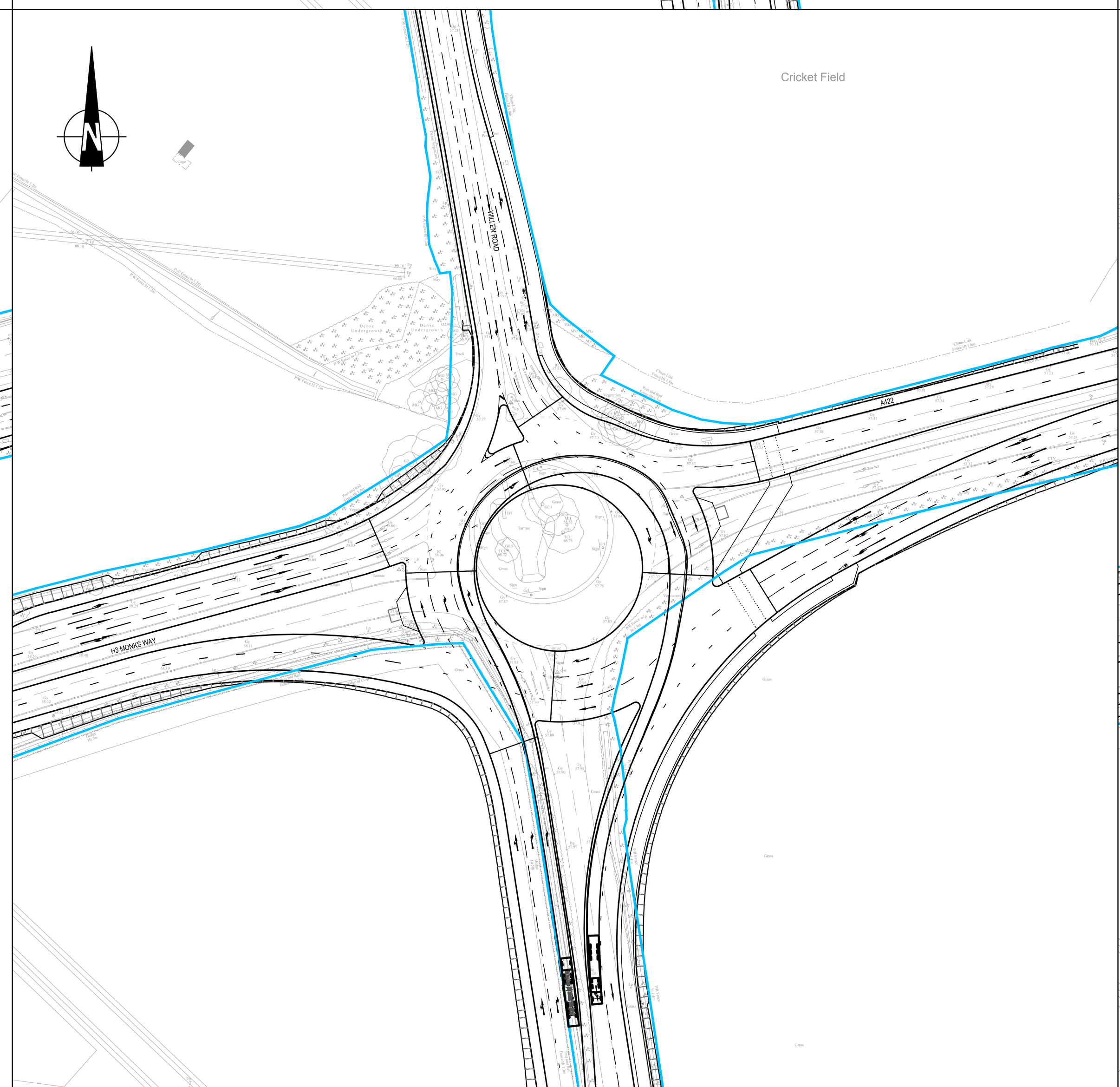
WILLEN ROAD LANE 2 TURNING RIGHT TO A422 EASTBOUND



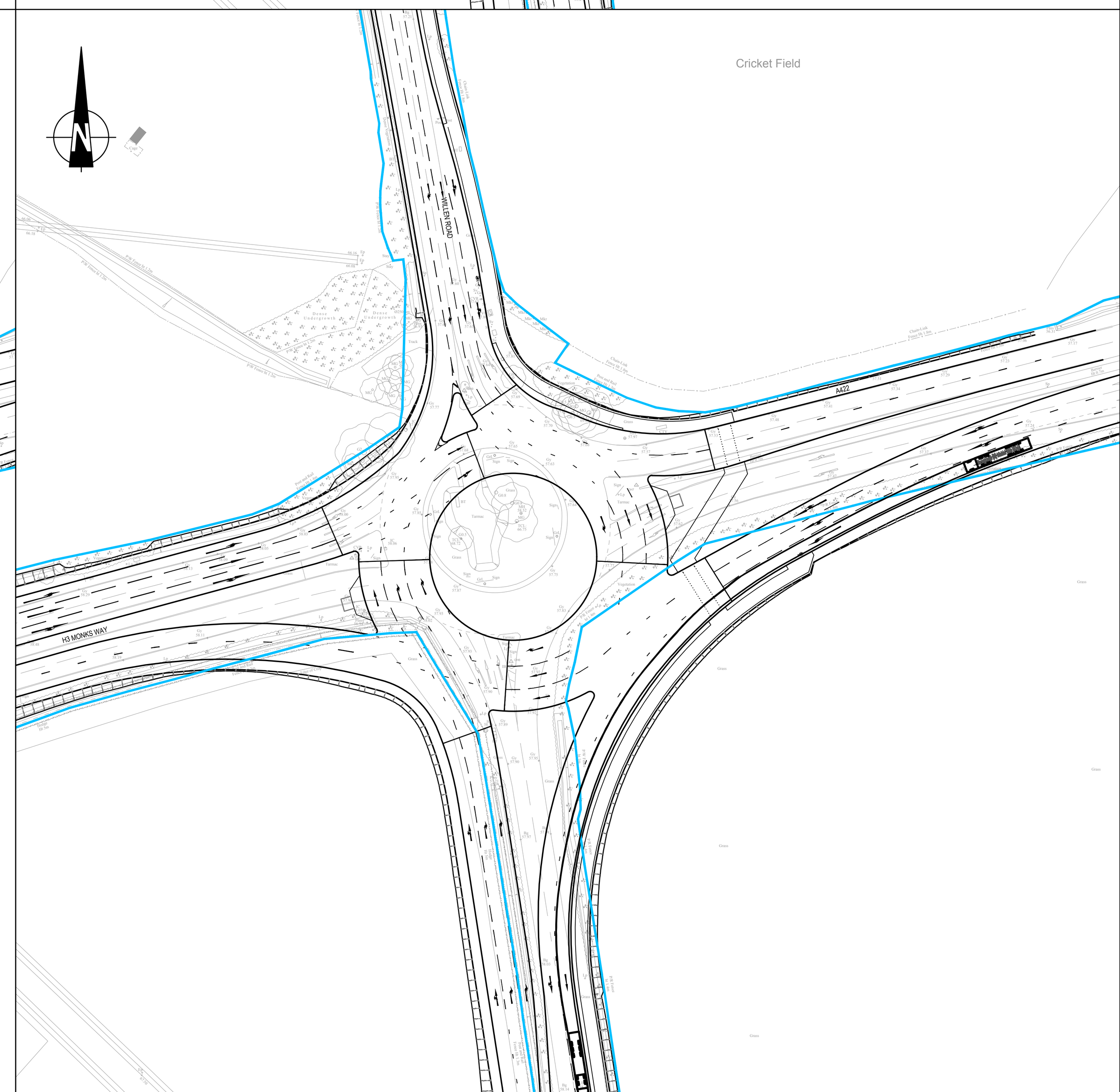
WILLEN ROAD LANE 3 TURNING RIGHT TO A422 EASTBOUND



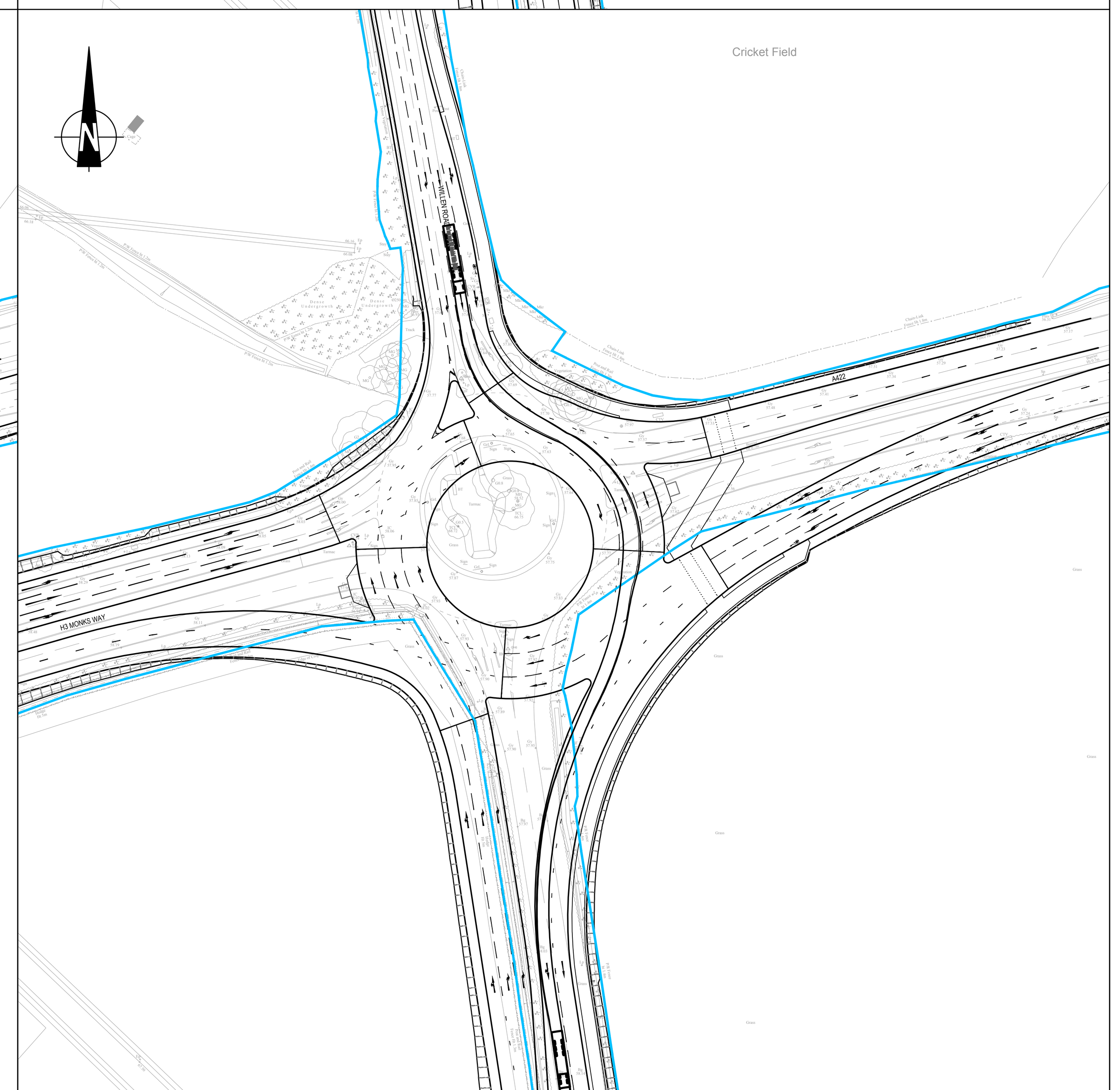
WILLEN ROAD LANE 1 IN TO A422 EASTBOUND



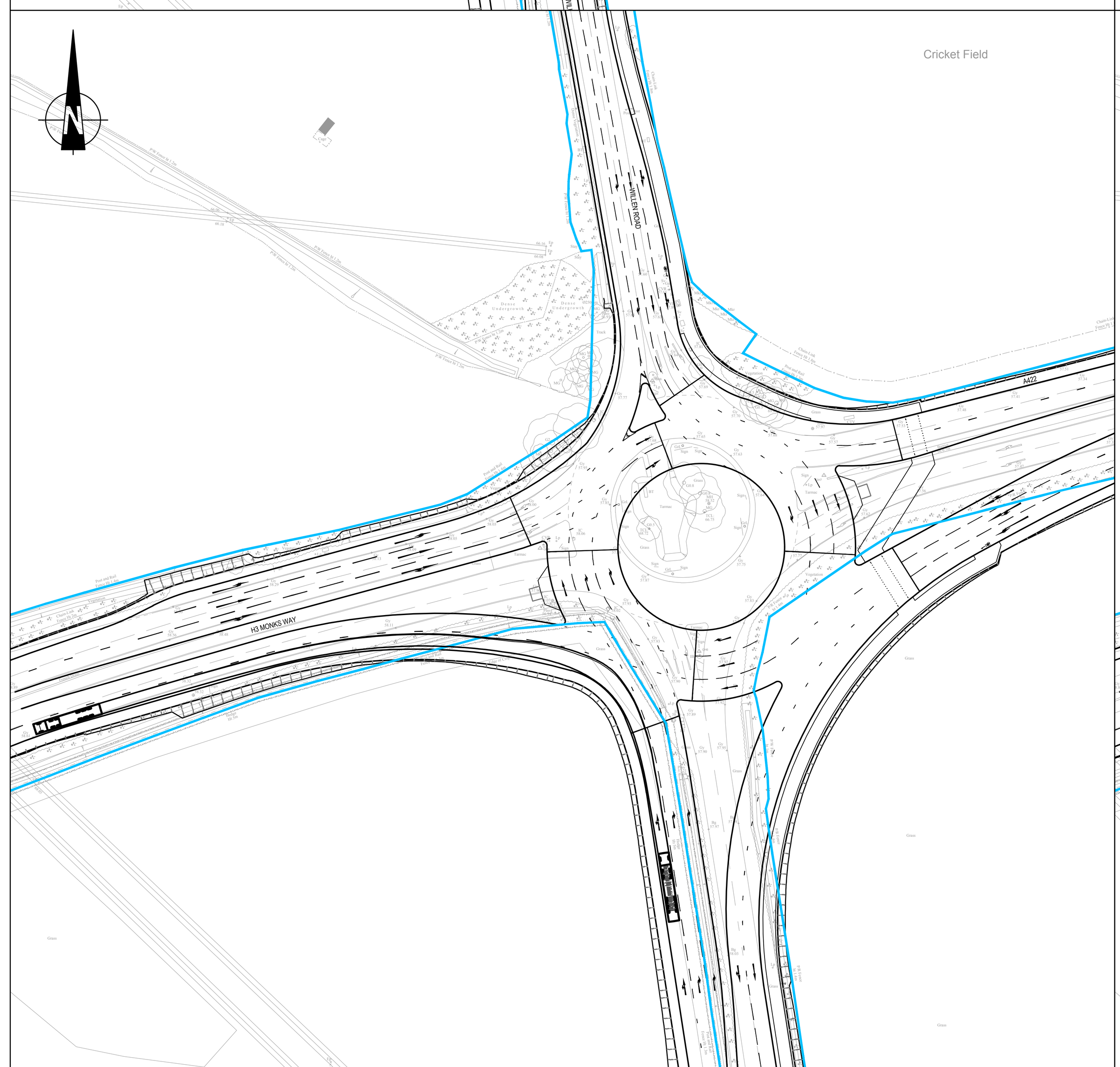
WILLEN ROAD LANE 3 CIRCULATING CENTRAL ISLAND AND HEADING SOUTHBOUND



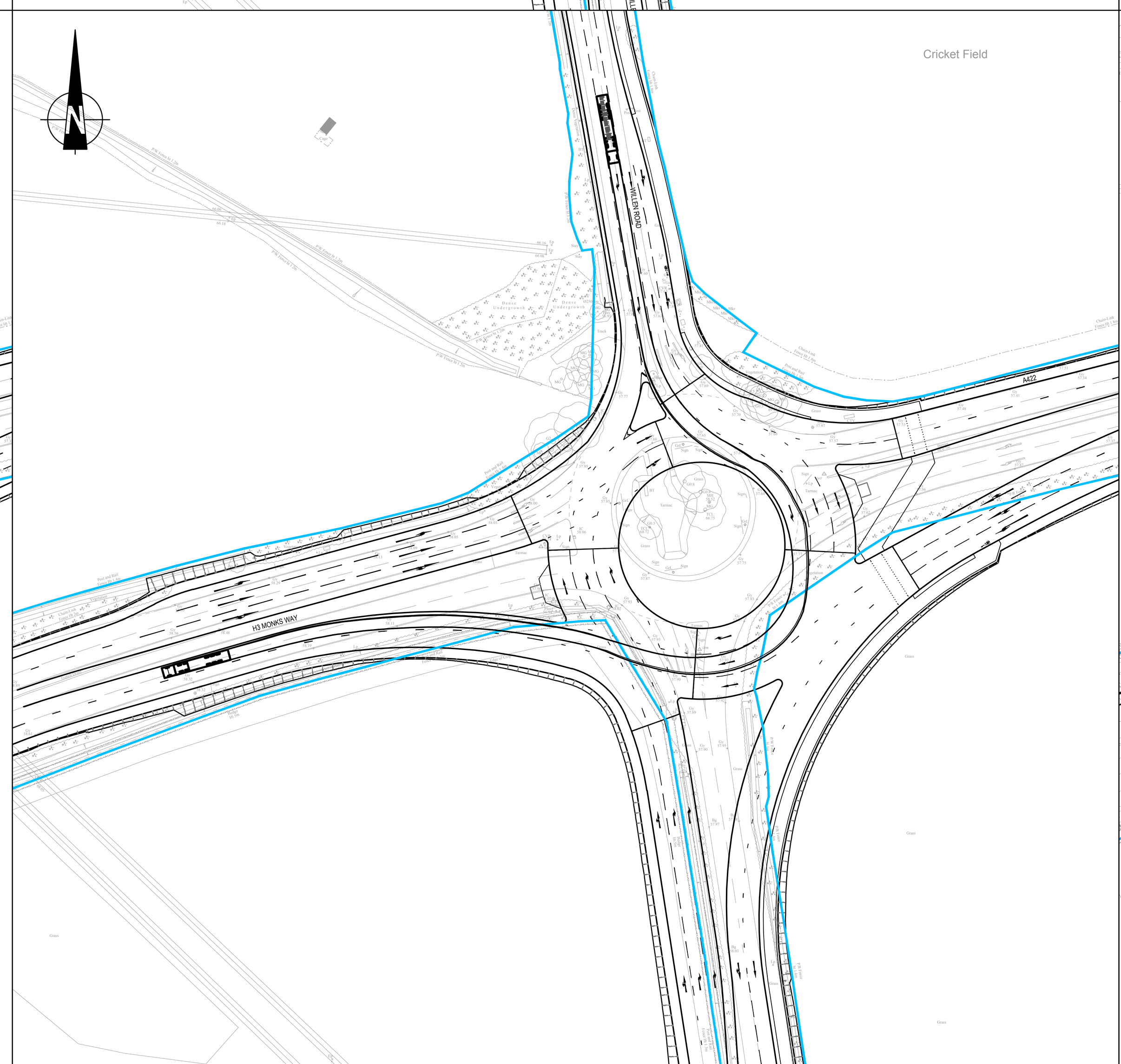
A422 LANE 1 LEFT IN TO WILLEN ROAD SOUTHBOUND



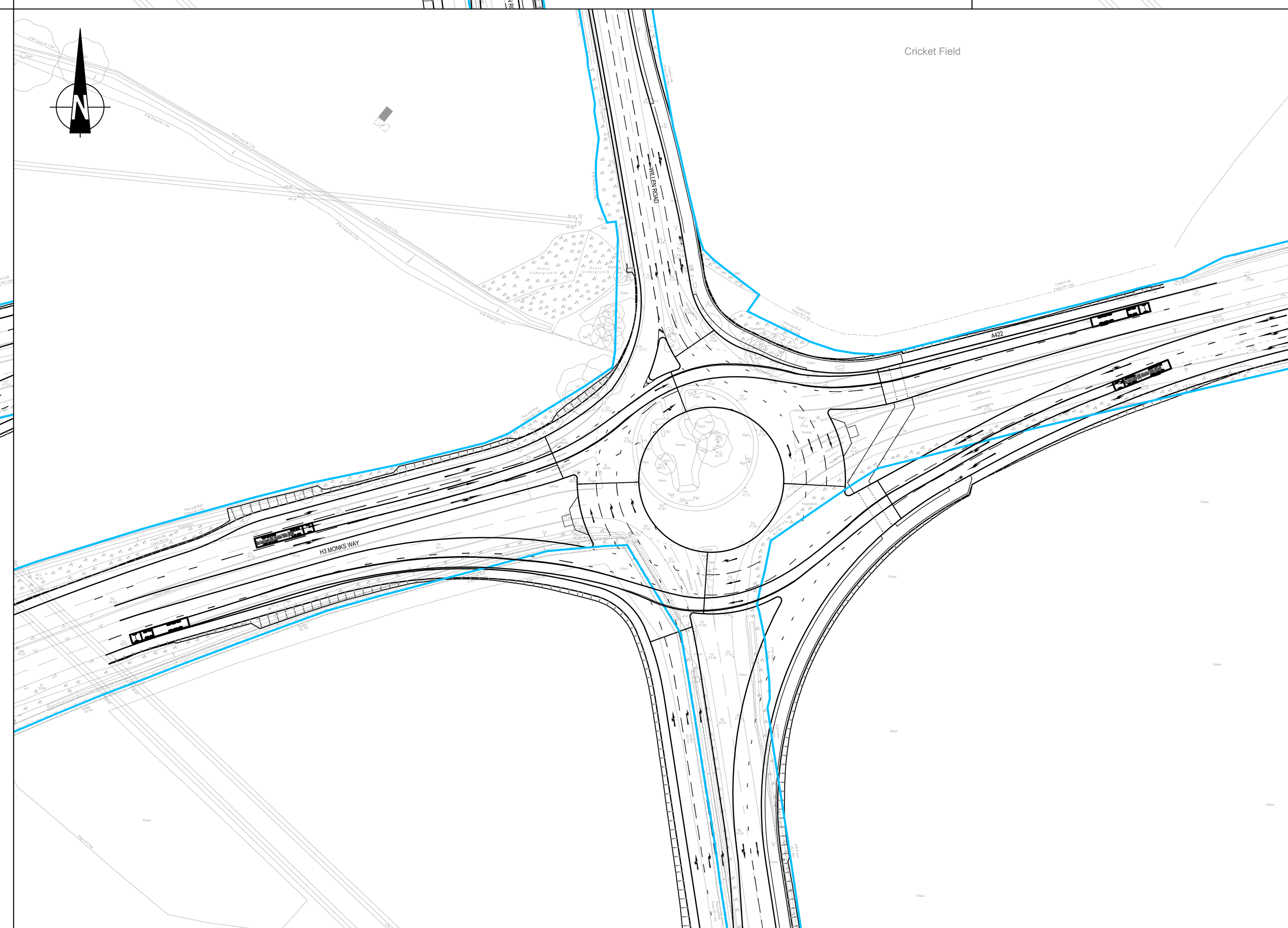
WILLEN ROAD LANE 2 STRAIGHT AHEAD SOUTHBOUND



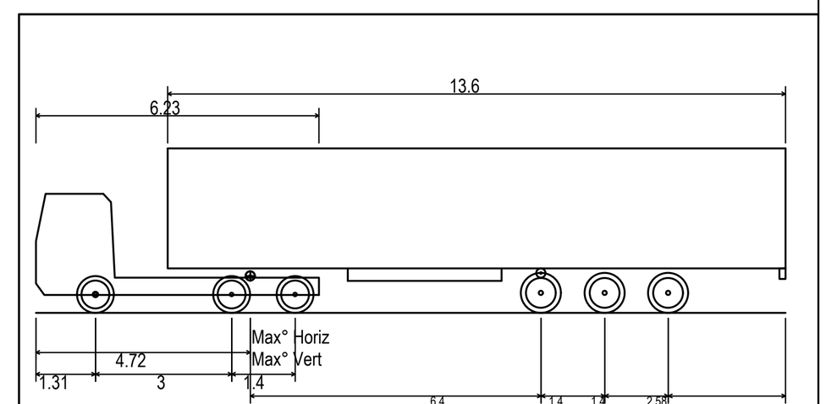
WILLEN ROAD LANE 1 LEFT IN TO H3 MONKS WAY WESTBOUND



WILLEN ROAD LANE 3 TURNING RIGHT IN TO H3 MONKS WAY WESTBOUND



H3 MONKS WAY LANE 2 STRAIGHT AHEAD TO A422 EASTBOUND AND A422 LANE 2 STRAIGHT AHEAD TO H3 MONKS WAY WESTBOUND



MAX LEGAL LENGTH (UK) ARTICULATED VEHICLE (16.5m)

OVERALL LENGTH	16.500m
OVERALL WIDTH	2.550m
OVERALL BODY HEIGHT	3.632m
MIN BODY GROUND CLEARANCE	0.396m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
KERB TO KERB TURNING RADIUS	6.870m

KEY:-

EXISTING HIGHWAY BOUNDARY

NOTES:-

1. ALL SWEPT PATH MANOEUVRES UNDERTAKEN MAINTAINING A SPEED OF 15mph.

Rev.	Description	Drawn	Date	Chkd
A	SWEPT PATH UPDATED	PKJ	21.05.19	JSH

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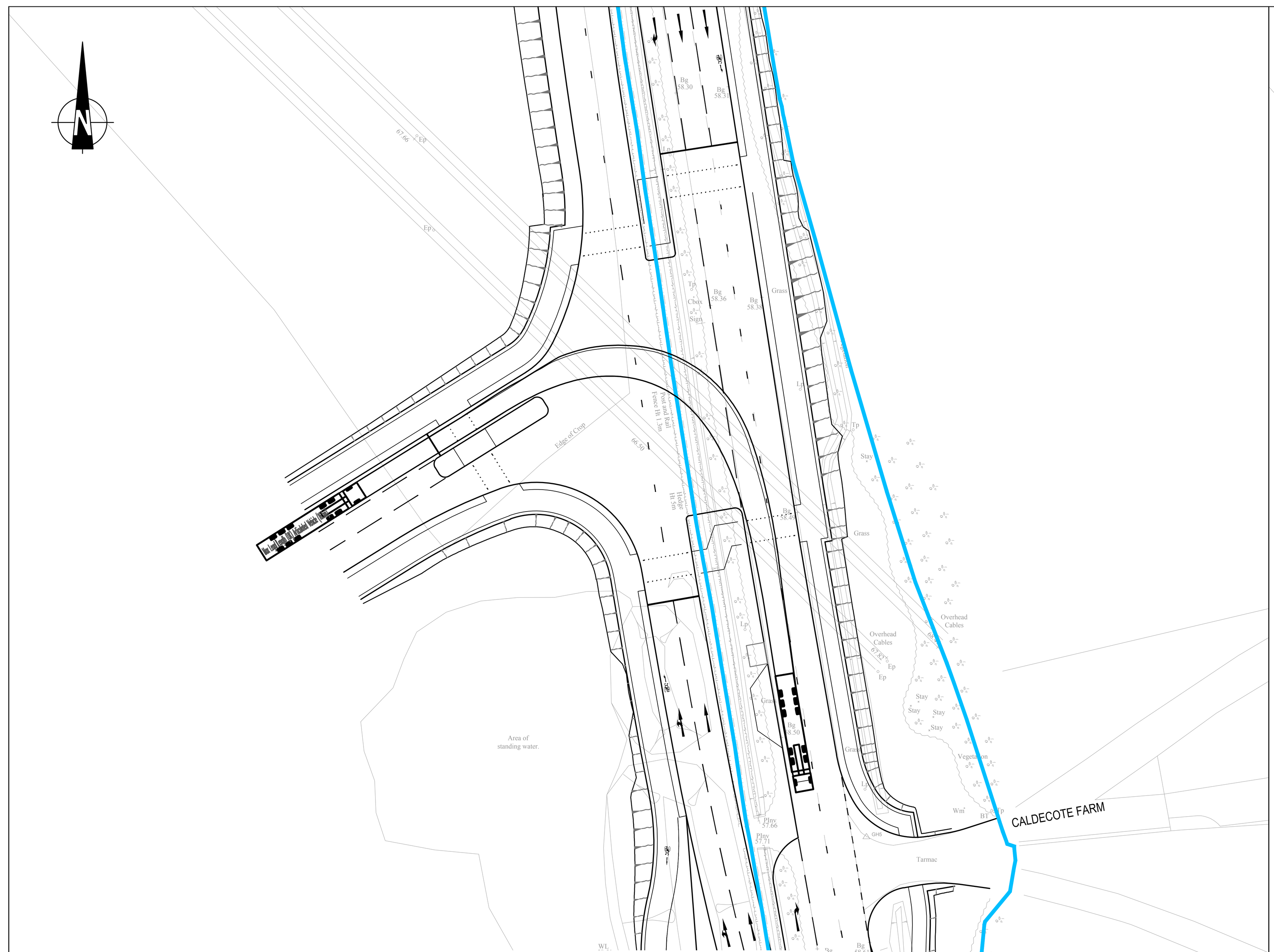
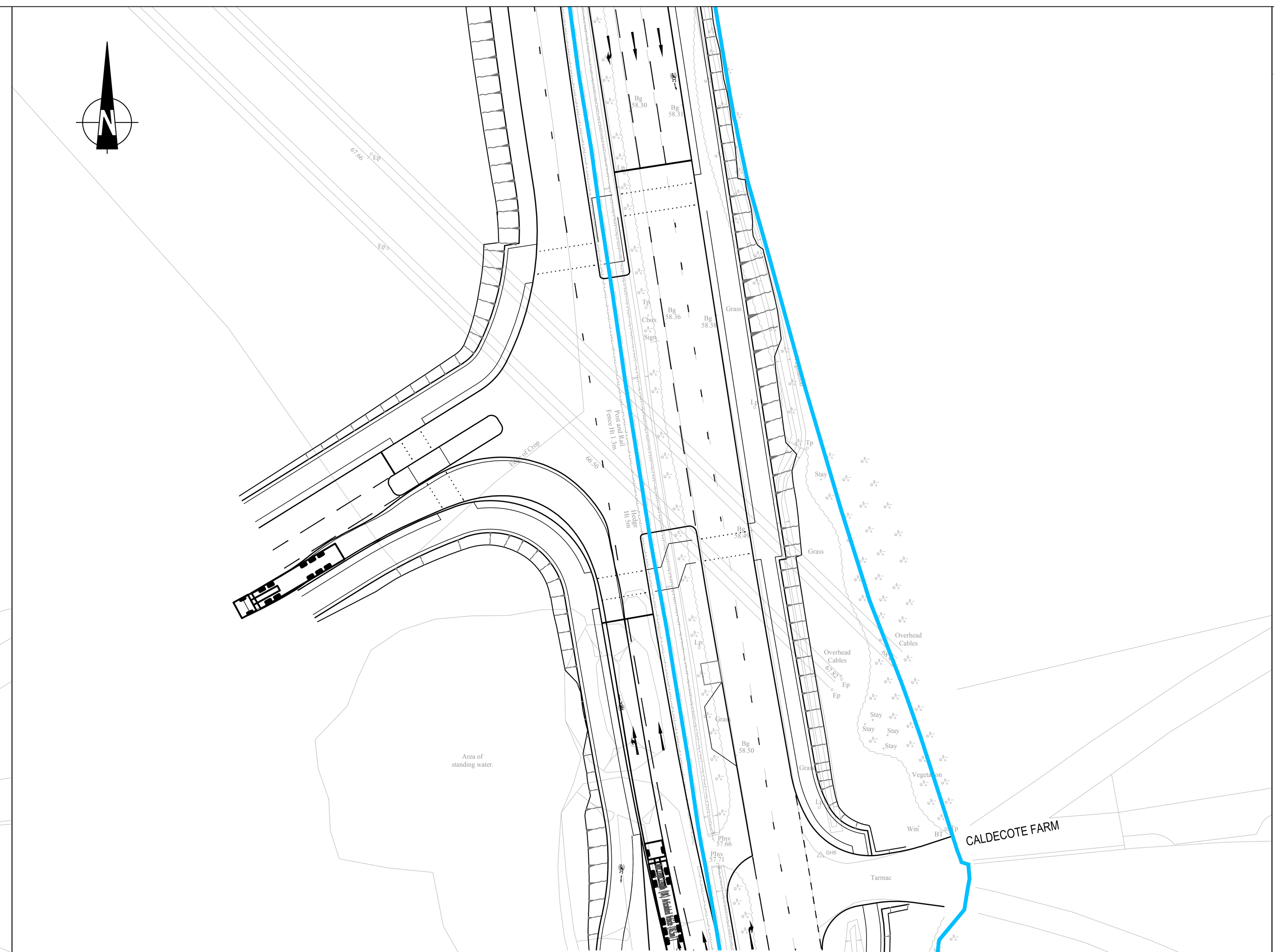
PROPOSED MARSH END SIGNALISED ROUNDABOUT SWEPT PATH ANALYSIS

Drawing Status:	PRELIMINARY
CAD Reference:	38748/100/017
Drawn:	SW
Date:	04.07.18
Scale: 1: @ A0	1:1000

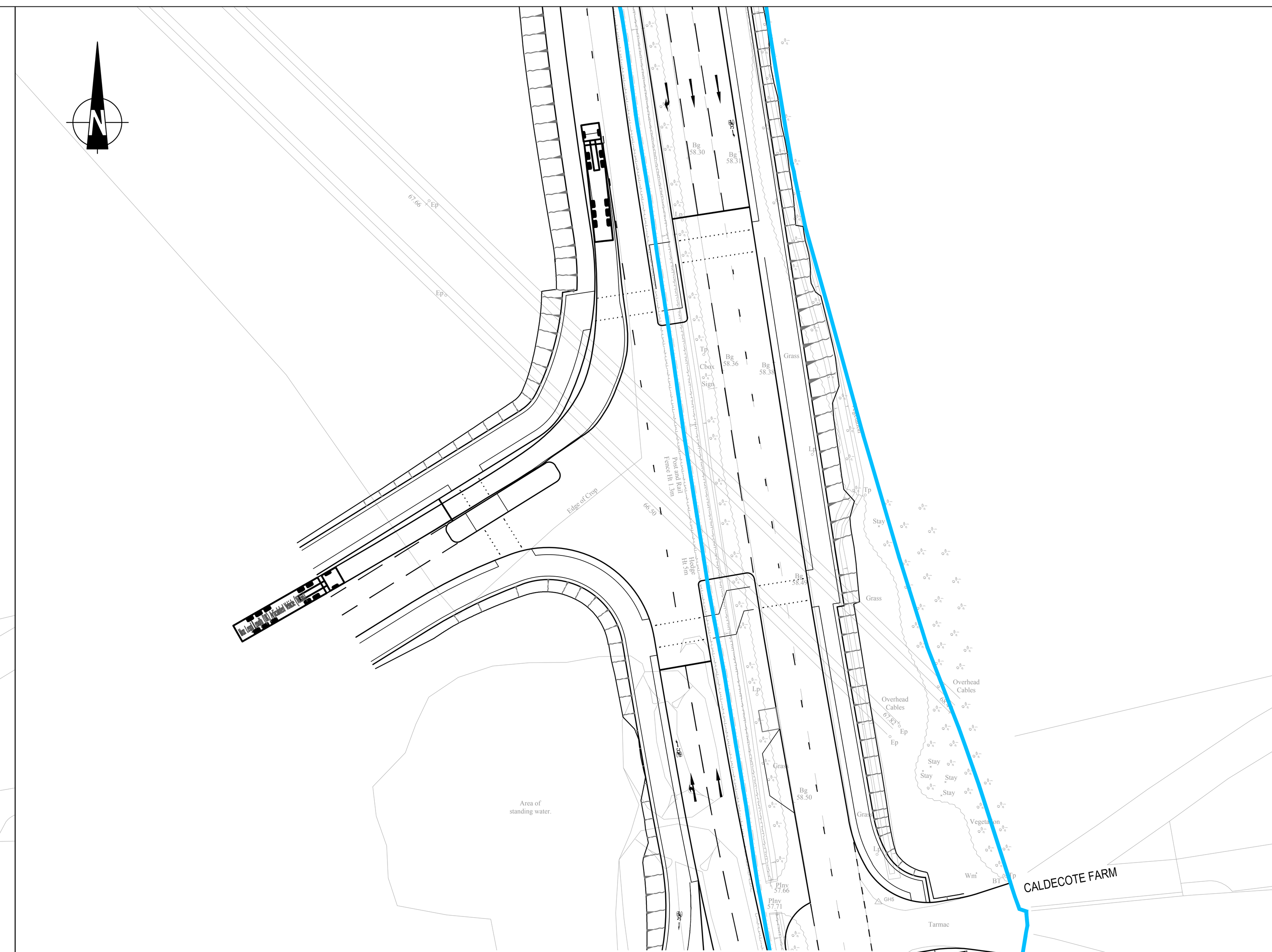
Project No:	Drawing No:	Rev:
38748	100/017	A



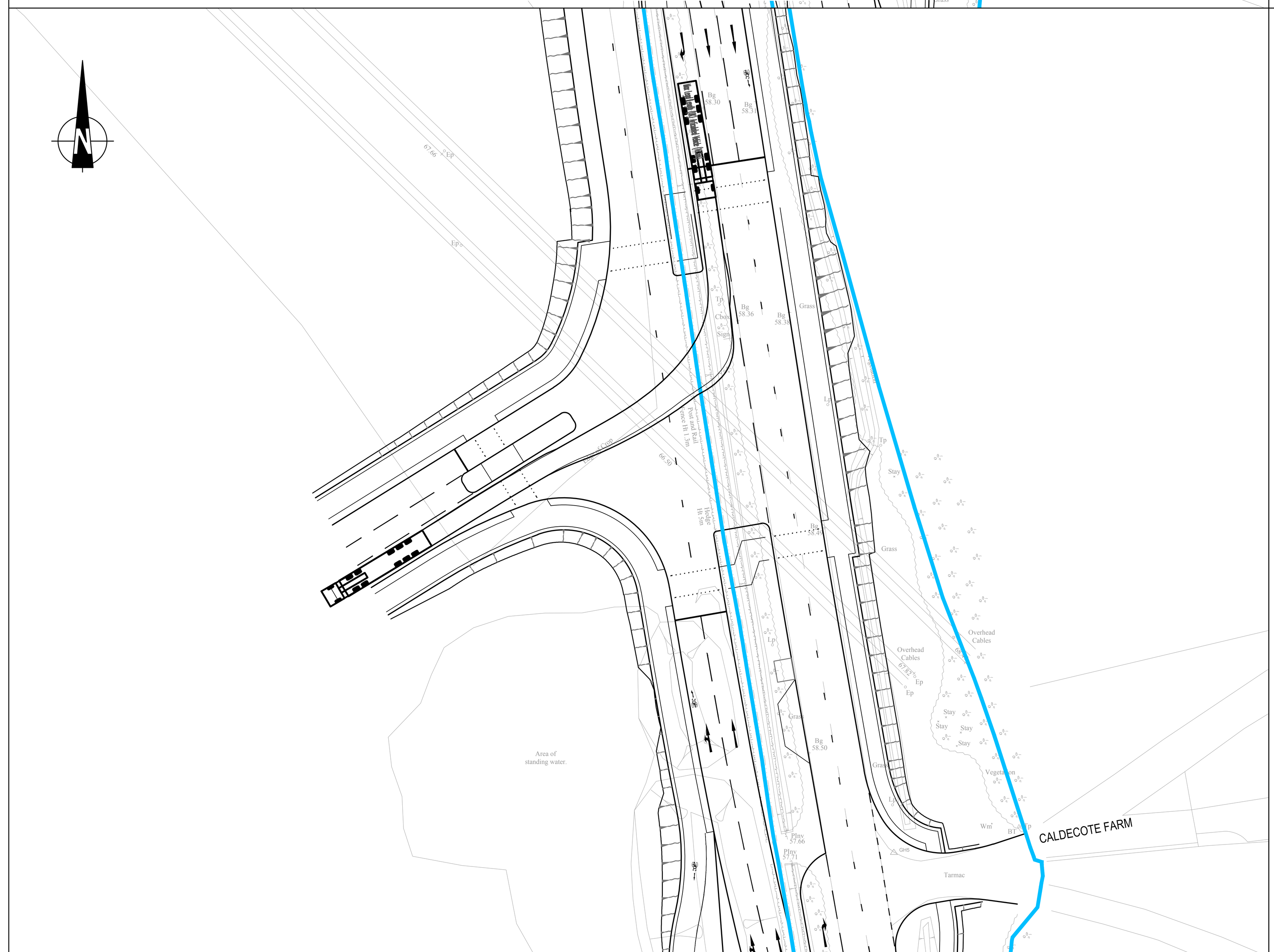
RIGHT TURN EXITING DEVELOPMENT INTO WILLEN ROAD SOUTHBOUND



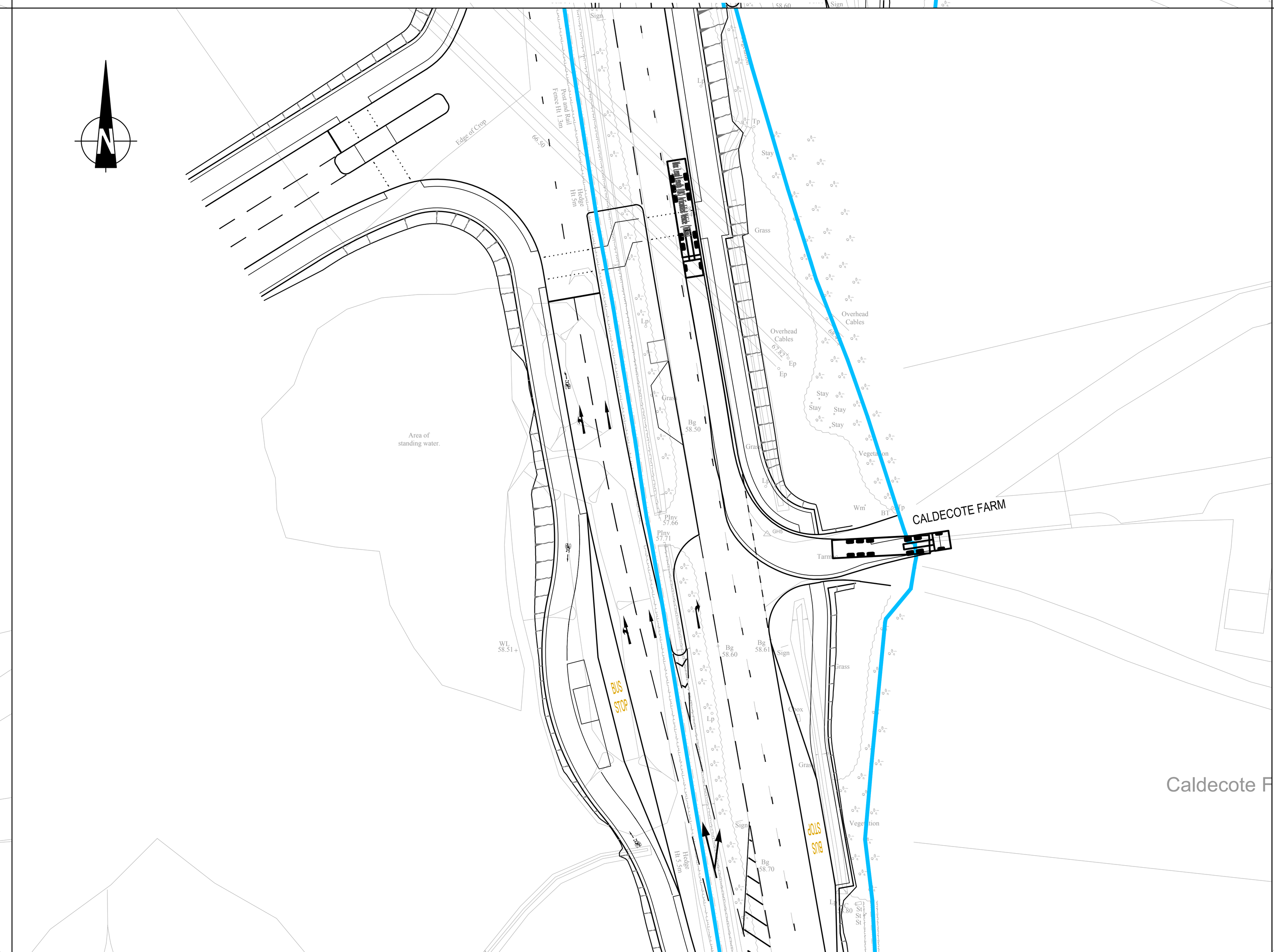
LEFT TURN EXITING WILLEN ROAD LEFT INTO DEVELOPMENT



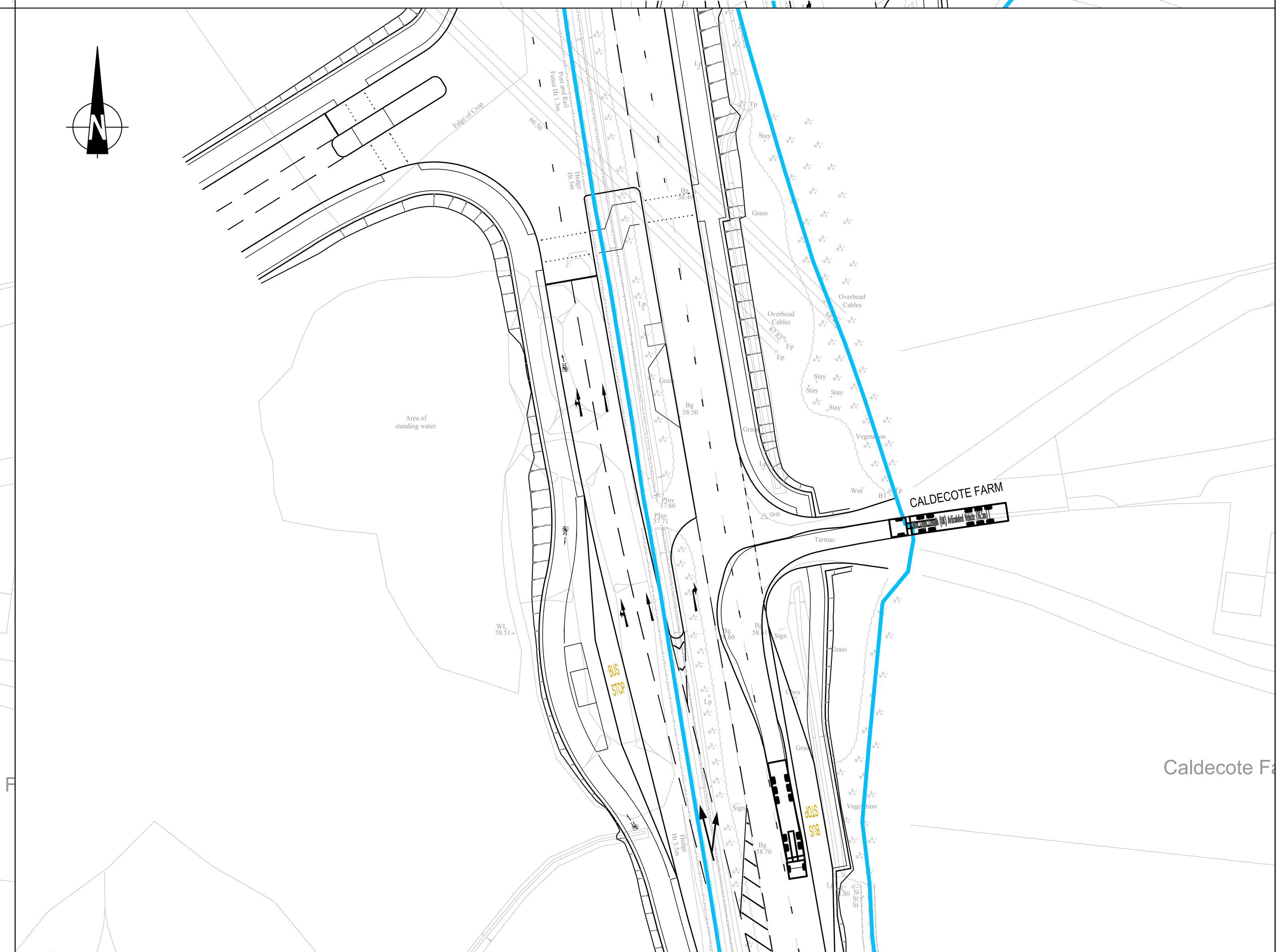
EXITING PROPOSED DEVELOPMENT LEFT TURN INTO WILLEN ROAD NORTHBOUND



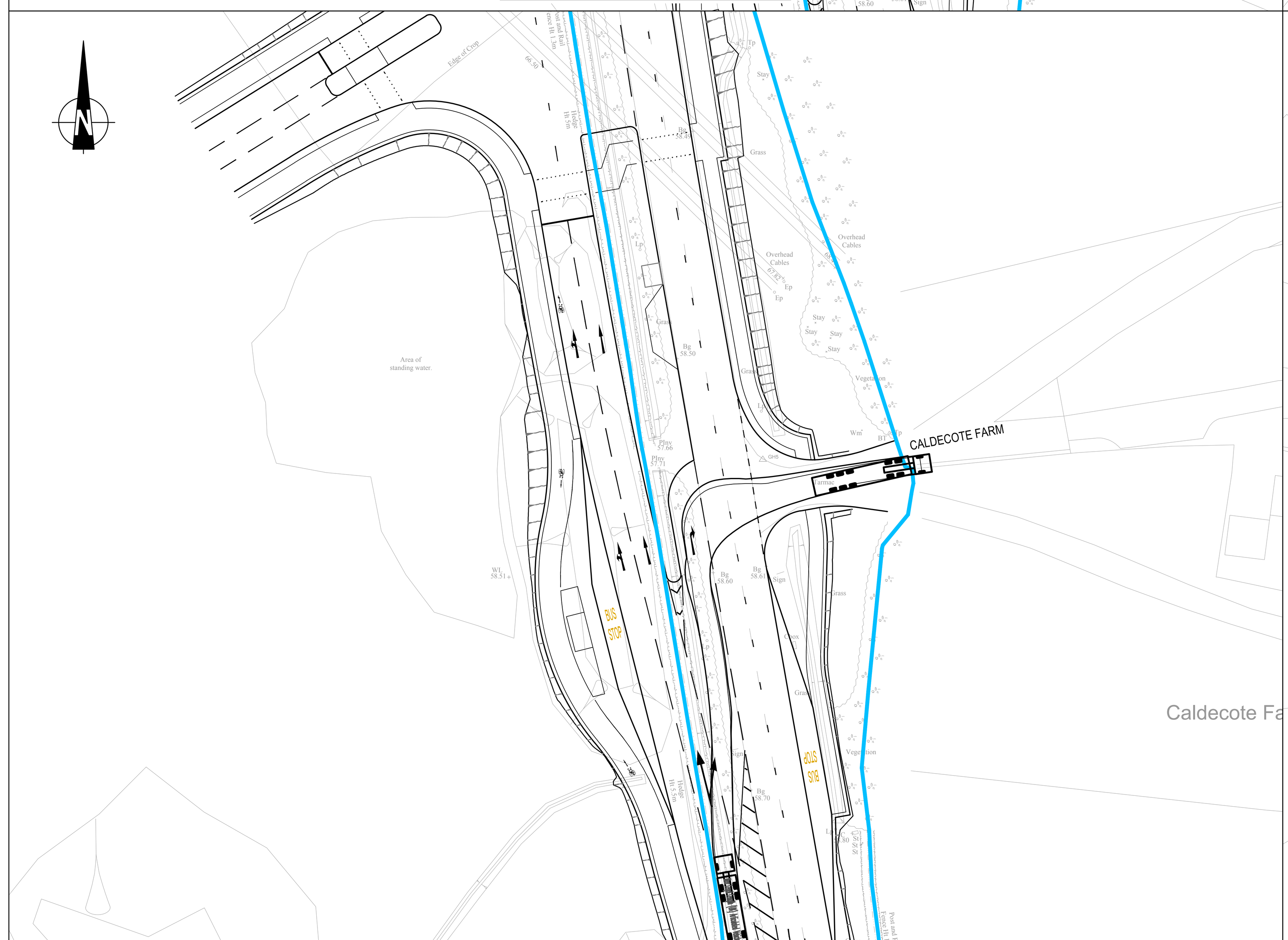
EXITING WILLEN ROAD RIGHT TURN INTO DEVELOPMENT



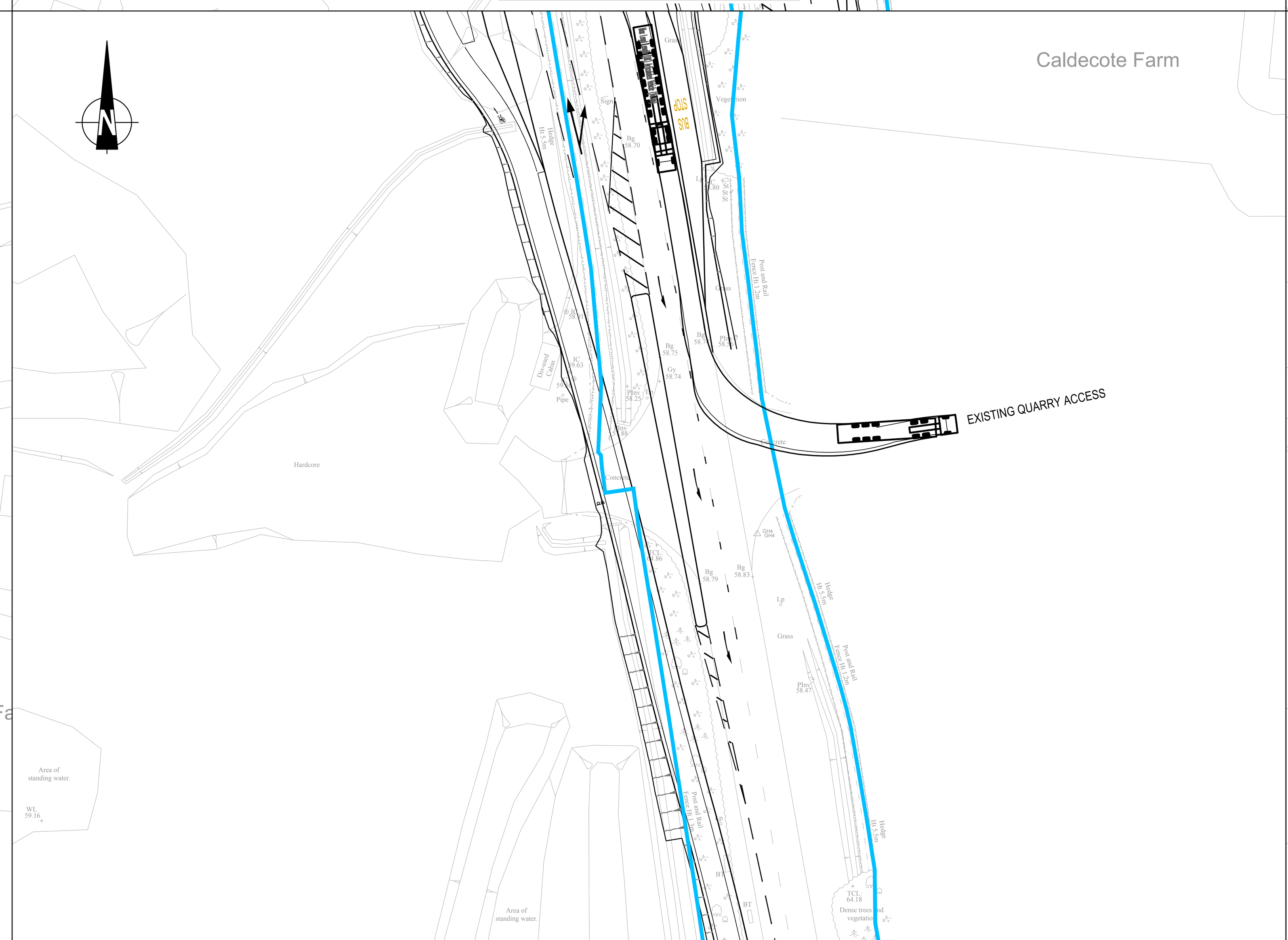
EXITING WILLEN ROAD LEFT TURN INTO CALDECOTE FARM



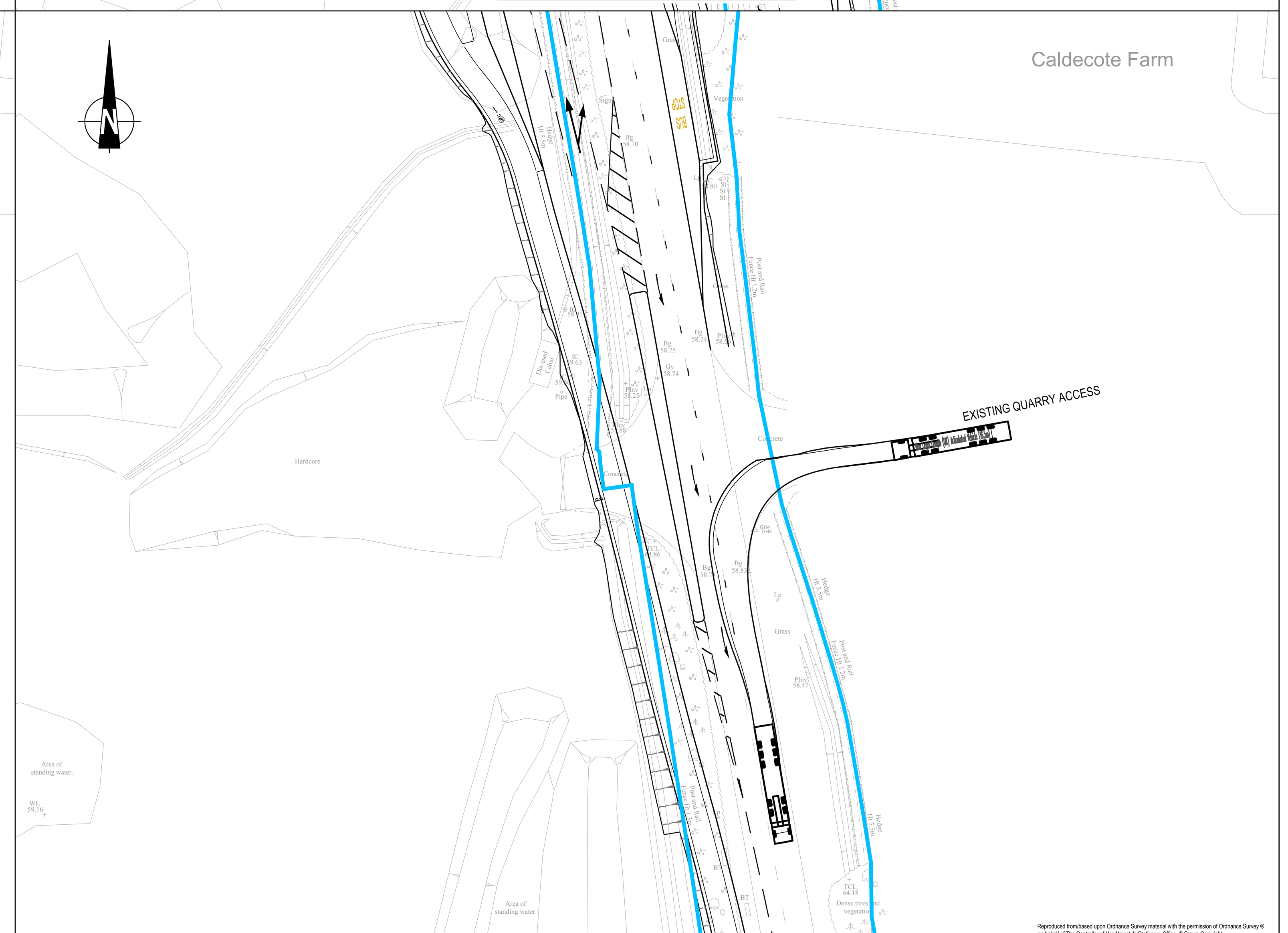
EXITING CALDECOTE FARM LEFT TURN INTO WILLEN ROAD



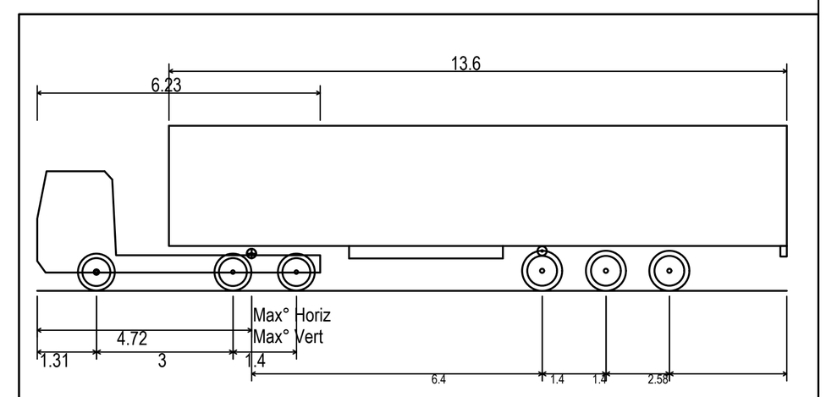
EXITING WILLEN ROAD RIGHT TURN INTO CALDECOTE FARM



EXITING WILLEN ROAD LEFT TURN INTO EXISTING QUARRY ACCESS



EXITING QUARRY ACCESS LEFT TURN INTO WILLEN ROAD



MAX LEGAL LENGTH (UK) ARTICULATED VEHICLE (16.5m)

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TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
KERB TO KERB TURNING RADIUS	6.870m

KEY:-

EXISTING HIGHWAY BOUNDARY

NOTES:-

1. ALL SWEPT PATH MANOEUVRES UNDERTAKEN MAINTAINING A SPEED OF MINIMUM OF 10mph AND MAXIMUM OF 15mph.

Rev.	Description	Drawn	Date	Chkd
A	REVISED TO REFLECT NEW LAYOUT	PKJ	21.05.19	JSH

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PROPOSED MARSH END SIGNALISED ROUNDABOUT SWEPT PATHS ANALYSIS

Drawing Status:	PRELIMINARY
CAD Reference:	38748/100/018
Drawn:	SW
Date:	04.07.18
Scale: 1: @ A0	1:500

Project No:	Drawing No:	Rev:
38748	100/018	A

A422

WILLEN ROAD

EXISTING MANHOLE 'MH301 (A)'
(LOCATION TO BE CONFIRMED)
EX IL: 56.020m AOD
PROPOSED IL: 55.95m AOD
TAKEN FROM AS-BUILT RECORDS
PROVIDED BY MKC

GATED ACCESS WILL BE PROVIDED
TO ALLOW MAINTENANCE ACCESS

PROPOSED DITCHCOURSE

SHORT LENGTH OF DITCHCOURSE TO BE
CULVERTED TO ACCOMMODATE MAINTENANCE
VEHICULAR ACCESS AROUND PERIMETER OF POND

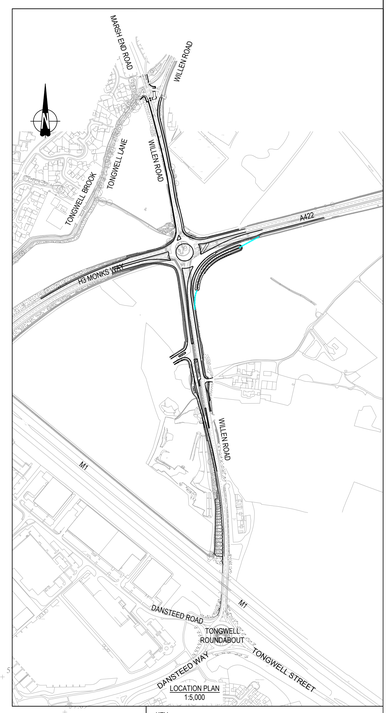
POND OPTION 1
IL: 56.0m AOD
APPROXIMATE FOOTPRINT: 1,940m²
APPROXIMATE VOLUME: 1,015m³
DEPTH: 1.5m
FREEBOARD: 0.3m
1:2.5 SIDE SLOPES
ESTIMATED IMPERMEABLE AREA: 1.240ha

INDICATIVE PROPOSED
HIGHWAY BOUNDARY

SHORT LENGTH OF DITCHCOURSE TO BE
CULVERTED TO ACCOMMODATE MAINTENANCE
VEHICULAR ACCESS AROUND PERIMETER OF POND

EXISTING DITCHCOURSE
TO BE REPROFILED

PLAN
1:250



LOCATION PLAN
1:5,000

KEY:-

MILTON KEYNES COUNCIL HIGHWAY BOUNDARY

PLANNING BOUNDARY

NOTES:-

1. PROPOSED FOUL AND SURFACE WATER DRAINAGE STRATEGY IS PRELIMINARY AND SUBJECT TO DETAILED DESIGN.
2. FOR GUIDANCE ONLY (SUBJECT TO FINAL DRAINAGE NETWORK DEPTHS AND DETAILED DESIGN).
3. HIGHWAY DRAINAGE SHALL BE DESIGNED AND CONSTRUCTED IN FULL COMPLIANCE WITH MILTON KEYNES COUNCIL'S HIGHWAY ADOPTION STANDARDS.

THE PURPOSE OF THIS DRAWING IS TO INFORM DISCUSSIONS BETWEEN THE DEVELOPER AND THE LANDOWNER WITH REGARDS TO THE POTENTIAL 3RD PARTY LAND REQUIRED TO ACCOMMODATE THE PROPOSED HIGHWAY IMPROVEMENTS ASSOCIATED WITH THE ADJACENT COMMERCIAL DEVELOPMENT. IT SHOULD BE NOTED THAT DISCUSSION ARE STILL TO BE UNDERTAKEN WITH THE LOCAL HIGHWAY AUTHORITY.

Rev	Description	Drawn	Date	Chkd
A	UPDATED TO REFLECT LATEST DEVELOPMENT PROPOSALS	JR	21.05.18	JSH

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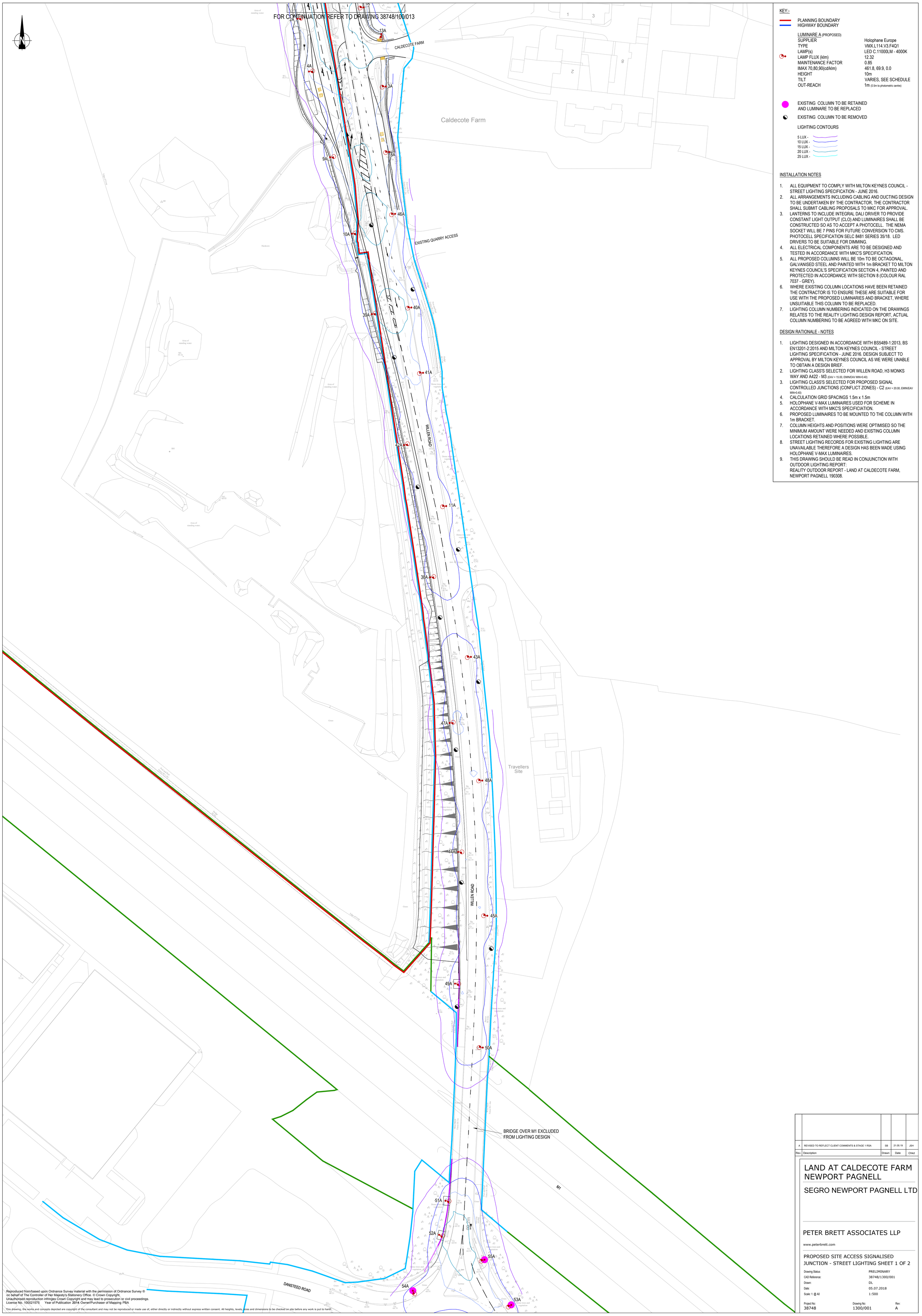
PROPOSED HIGHWAY DRAINAGE
POND OPTION 1

Drawing Status:	PRELIMINARY
CAD Reference:	38748/500/001
Drawn:	DL
Date:	05.07.18
Scale @A0:	1:250 & 1:5000

Project No:	Drawing No:	Rev:
38748	500/001	A



KEY:-

PLANNING BOUNDARY
HIGHWAY BOUNDARY

LUMINARE A (PROPOSED)

SUPPLIER	Holophane Europe
TYPE	VMX.L114.V3.F4Q1
LAMP(s)	LED C.11000LM - 4000K
LAMP FLUX (klm)	12.32
MAINTENANCE FACTOR	0.85
IMAX 70,80,90(cd/klm)	461.8, 69.9, 0.0
HEIGHT	10m
TILT	VARIES, SEE SCHEDULE
OUT-REACH	1m (0.5m to photometric centre)

EXISTING COLUMN TO BE RETAINED AND LUMINARE TO BE REPLACED

EXISTING COLUMN TO BE REMOVED

LIGHTING CONTOURS

5 LUX -
10 LUX -
15 LUX -
20 LUX -
25 LUX -

INSTALLATION NOTES

1. ALL EQUIPMENT TO COMPLY WITH MILTON KEYNES COUNCIL - STREET LIGHTING SPECIFICATION - JUNE 2016.
2. ALL ARRANGEMENTS INCLUDING CABLING AND DUCTING DESIGN TO BE UNDERTAKEN BY THE CONTRACTOR, THE CONTRACTOR SHALL SUBMIT CABLING PROPOSALS TO MKC FOR APPROVAL.
3. LANTERNS TO INCLUDE INTEGRAL DALI DRIVER TO PROVIDE CONSTANT LIGHT OUTPUT (CLO) AND LUMINAIRES SHALL BE CONSTRUCTED SO AS TO ACCEPT A PHOTOCELL. THE NEMA SOCKET WILL BE 7 PINS FOR FUTURE CONVERSION TO CMS. PHOTOCELL SPECIFICATION SELC 8481 SERIES 35/18. LED DRIVERS TO BE SUITABLE FOR DIMMING.
4. ALL ELECTRICAL COMPONENTS ARE TO BE DESIGNED AND TESTED IN ACCORDANCE WITH MKC'S SPECIFICATION.
5. ALL PROPOSED COLUMNS WILL BE 10m TO BE OCTAGONAL, GALVANISED STEEL AND PAINTED WITH 1m BRACKET TO MILTON KEYNES COUNCIL'S SPECIFICATION SECTION 4, PAINTED AND PROTECTED IN ACCORDANCE WITH SECTION 8 (COLOUR RAL 7037 - GREY).
6. WHERE EXISTING COLUMN LOCATIONS HAVE BEEN RETAINED THE CONTRACTOR IS TO ENSURE THESE ARE SUITABLE FOR USE WITH THE PROPOSED LUMINARIES AND BRACKET, WHERE UNSUITABLE THIS COLUMN TO BE REPLACED.
7. LIGHTING COLUMN NUMBERING INDICATED ON THE DRAWINGS RELATES TO THE REALITY LIGHTING DESIGN REPORT, ACTUAL COLUMN NUMBERING TO BE AGREED WITH MKC ON SITE.

DESIGN RATIONALE - NOTES

1. LIGHTING DESIGNED IN ACCORDANCE WITH BS5489-1:2013, BS EN13201-2:2015 AND MILTON KEYNES COUNCIL - STREET LIGHTING SPECIFICATION - JUNE 2016. DESIGN SUBJECT TO APPROVAL BY MILTON KEYNES COUNCIL AS WE WERE UNABLE TO OBTAIN A DESIGN BRIEF.
2. LIGHTING CLASS'S SELECTED FOR WILLEN ROAD, H3 MONKS WAY AND A422 - M3 (EAV = 15.00, EMIN/EAV MIN=0.40)
3. LIGHTING CLASS'S SELECTED FOR PROPOSED SIGNAL CONTROLLED JUNCTIONS (CONFLICT ZONES) - C2 (EAV = 20.00, EMIN/EAV MIN=0.40)
4. CALCULATION GRID SPACINGS 1.5m x 1.5m
5. HOLOPHANE V-MAX LUMINAIRES USED FOR SCHEME IN ACCORDANCE WITH MKC'S SPECIFICIATION.
6. PROPOSED LUMINAIRES TO BE MOUNTED TO THE COLUMN WITH 1m BRACKET.
7. COLUMN HEIGHTS AND POSITIONS WERE OPTIMISED SO THE MINIMUM AMOUNT WERE NEEDED AND EXISTING COLUMN LOCATIONS RETAINED WHERE POSSIBLE.
8. STREET LIGHTING RECORDS FOR EXISTING LIGHTING ARE UNAVAILABLE THEREFORE A DESIGN HAS BEEN MADE USING HOLOPHANE V-MAX LUMINAIRES.
9. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH OUTDOOR LIGHTING REPORT:
REALITY OUTDOOR REPORT - LAND AT CALDECOTE FARM, NEWPORT PAGNELL 190308.

Rev.	Description	Drawn	Date	Chkd
A	REVISED TO REFLECT CLIENT COMMENTS & STAGE 1 RSA	SB	21.05.19	JSH

LAND AT CALDECOTE FARM NEWPORT PAGNELL

SEGRO NEWPORT PAGNELL LTD

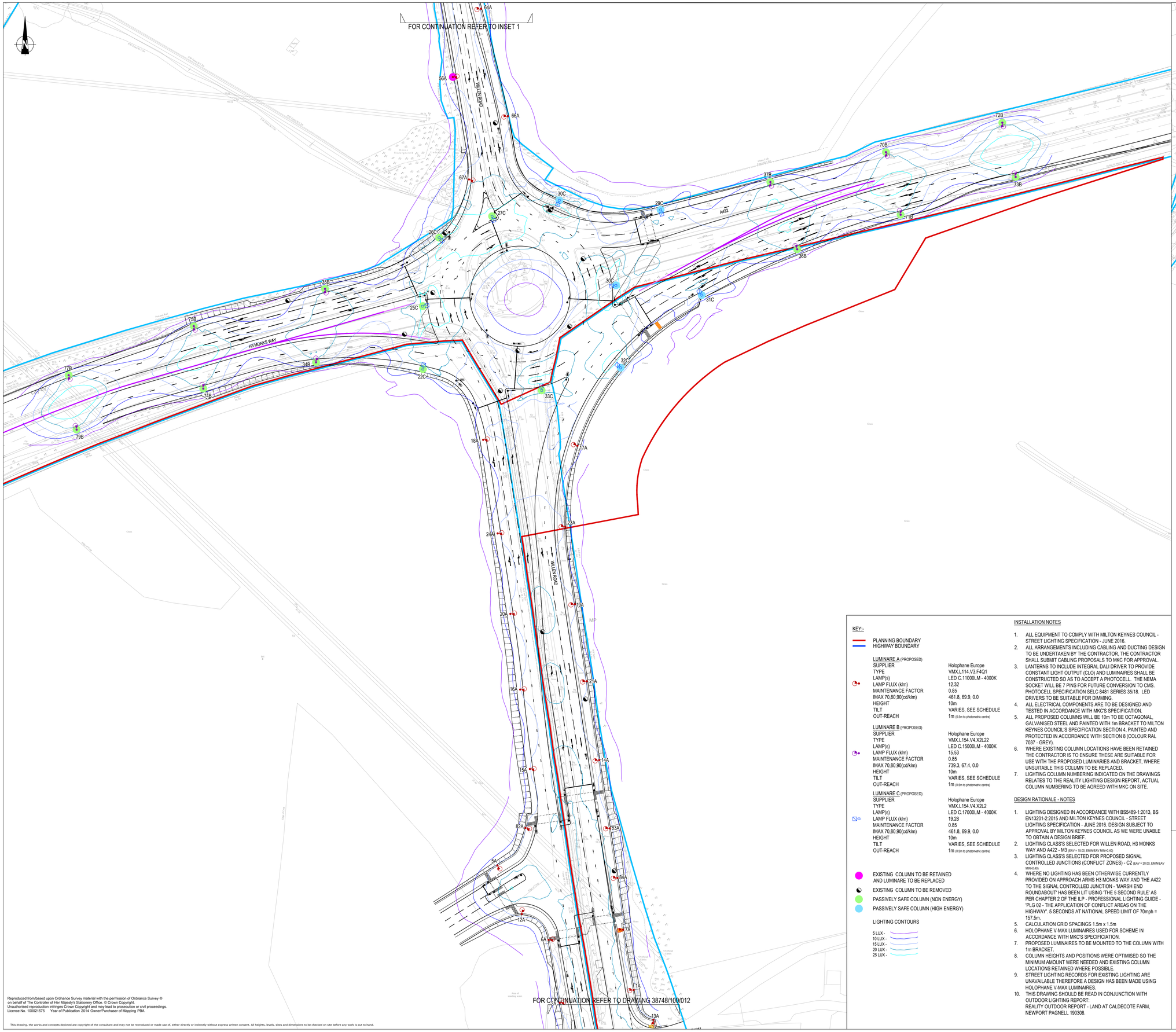
PETER BRETT ASSOCIATES LLP

www.peterbrett.com

PROPOSED SITE ACCESS SIGNALISED JUNCTION - STREET LIGHTING SHEET 1 OF 2

Drawing Status:	PRELIMINARY
CAD Reference:	38748/1300/001
Drawn:	DL
Date:	05.07.2018
Scale: 1: @ A0	1:500

Project No:	Drawing No:	Rev:
38748	1300/001	A



KEY:-

PLANNING BOUNDARY
HIGHWAY BOUNDARY

LUMINARE A (PROPOSED)

SUPPLIER	Holophane Europe
TYPE	VMX.L114.V3.F4Q1
LAMP(s)	LED C.11000LM - 4000K
LAMP FLUX (klm)	12.32
MAINTENANCE FACTOR	0.85
IMAX 70,80,90(cd/klm)	461.8, 69.9, 0.0
HEIGHT	10m
TILT	VARIES, SEE SCHEDULE
OUT-REACH	1m (0.5m to photometric centre)

LUMINARE B (PROPOSED)

SUPPLIER	Holophane Europe
TYPE	VMX.L154.V4.X2L22
LAMP(s)	LED C.15000LM - 4000K
LAMP FLUX (klm)	15.53
MAINTENANCE FACTOR	0.85
IMAX 70,80,90(cd/klm)	739.3, 67.4, 0.0
HEIGHT	10m
TILT	VARIES, SEE SCHEDULE
OUT-REACH	1m (0.5m to photometric centre)

LUMINARE C (PROPOSED)

SUPPLIER	Holophane Europe
TYPE	VMX.L154.V4.X2L2
LAMP(s)	LED C.17000LM - 4000K
LAMP FLUX (klm)	19.28
MAINTENANCE FACTOR	0.85
IMAX 70,80,90(cd/klm)	461.8, 69.9, 0.0
HEIGHT	10m
TILT	VARIES, SEE SCHEDULE
OUT-REACH	1m (0.5m to photometric centre)

EXISTING COLUMN TO BE RETAINED AND LUMINARE TO BE REPLACED
EXISTING COLUMN TO BE REMOVED
PASSIVELY SAFE COLUMN (NON ENERGY)
PASSIVELY SAFE COLUMN (HIGH ENERGY)

LIGHTING CONTOURS

5 LUX -
10 LUX -
15 LUX -
20 LUX -
25 LUX -

INSTALLATION NOTES

1. ALL EQUIPMENT TO COMPLY WITH MILTON KEYNES COUNCIL - STREET LIGHTING SPECIFICATION - JUNE 2016.
2. ALL ARRANGEMENTS INCLUDING CABLING AND DUCTING DESIGN TO BE UNDERTAKEN BY THE CONTRACTOR, THE CONTRACTOR SHALL SUBMIT CABLING PROPOSALS TO MKC FOR APPROVAL.
3. LANTERNS TO INCLUDE INTEGRAL DALI DRIVER TO PROVIDE CONSTANT LIGHT OUTPUT (CLO) AND LUMINAIRES SHALL BE CONSTRUCTED SO AS TO ACCEPT A PHOTOCELL. THE NEMA SOCKET WILL BE 7 PINS FOR FUTURE CONVERSION TO CMS. PHOTOCELL SPECIFICATION SELC 8481 SERIES 35/18. LED DRIVERS TO BE SUITABLE FOR DIMMING.
4. ALL ELECTRICAL COMPONENTS ARE TO BE DESIGNED AND TESTED IN ACCORDANCE WITH MKC'S SPECIFICATION.
5. ALL PROPOSED COLUMNS WILL BE 10m TO BE OCTAGONAL, GALVANISED STEEL AND PAINTED WITH 1m BRACKET TO MILTON KEYNES COUNCIL'S SPECIFICATION SECTION 4, PAINTED AND PROTECTED IN ACCORDANCE WITH SECTION 8 (COLOUR RAL 7037 - GREY).
6. WHERE EXISTING COLUMN LOCATIONS HAVE BEEN RETAINED THE CONTRACTOR IS TO ENSURE THESE ARE SUITABLE FOR USE WITH THE PROPOSED LUMINARIES AND BRACKET, WHERE UNSUITABLE THIS COLUMN TO BE REPLACED.
7. LIGHTING COLUMN NUMBERING INDICATED ON THE DRAWINGS RELATES TO THE REALITY LIGHTING DESIGN REPORT, ACTUAL COLUMN NUMBERING TO BE AGREED WITH MKC ON SITE.

DESIGN RATIONALE - NOTES

1. LIGHTING DESIGNED IN ACCORDANCE WITH BS5489-1:2013, BS EN13201-2:2015 AND MILTON KEYNES COUNCIL - STREET LIGHTING SPECIFICATION - JUNE 2016. DESIGN SUBJECT TO APPROVAL BY MILTON KEYNES COUNCIL AS WE WERE UNABLE TO OBTAIN A DESIGN BRIEF.
2. LIGHTING CLASS'S SELECTED FOR WILLEN ROAD, H3 MONKS WAY AND A422 - M3 (EAV = 15.00, EMIN/EAV MIN=0.40)
3. LIGHTING CLASS'S SELECTED FOR PROPOSED SIGNAL CONTROLLED JUNCTIONS (CONFLICT ZONES) - C2 (EAV = 20.00, EMIN/EAV MIN=0.40)
4. WHERE NO LIGHTING HAS BEEN OTHERWISE CURRENTLY PROVIDED ON APPROACH ARMS H3 MONKS WAY AND THE A422 TO THE SIGNAL CONTROLLED JUNCTION - 'MARSH END ROUNDABOUT' HAS BEEN LIT USING 'THE 5 SECOND RULE' AS PER CHAPTER 2 OF THE ILP - PROFESSIONAL LIGHTING GUIDE - "PLG 02 - THE APPLICATION OF CONFLICT AREAS ON THE HIGHWAY". 5 SECONDS AT NATIONAL SPEED LIMIT OF 70mph = 157.5m.
5. CALCULATION GRID SPACINGS 1.5m x 1.5m
6. HOLOPHANE V-MAX LUMINAIRES USED FOR SCHEME IN ACCORDANCE WITH MKC'S SPECIFICIATION.
7. PROPOSED LUMINAIRES TO BE MOUNTED TO THE COLUMN WITH 1m BRACKET.
8. COLUMN HEIGHTS AND POSITIONS WERE OPTIMISED SO THE MINIMUM AMOUNT WERE NEEDED AND EXISTING COLUMN LOCATIONS RETAINED WHERE POSSIBLE.
9. STREET LIGHTING RECORDS FOR EXISTING LIGHTING ARE UNAVAILABLE THEREFORE A DESIGN HAS BEEN MADE USING HOLOPHANE V-MAX LUMINAIRES.
10. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH OUTDOOR LIGHTING REPORT: REALITY OUTDOOR REPORT - LAND AT CALDECOTE FARM, NEWPORT PAGNELL 190308.

Rev	Description	Drawn	Date	Chkd
A	REVISED TO REFLECT CLIENT COMMENTS & STAGE 1 RSA	SB	21.05.19	JSH

LAND AT CALDECOTE FARM NEWPORT PAGNELL

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PROPOSED SITE ACCESS SIGNALISED JUNCTION - STREET LIGHTING SHEET 2 OF 2

Drawing Status:	PRELIMINARY
CAD Reference:	38748/1300/002
Drawn:	DL
Date:	05.07.2018
Scale: 1: @ A0	1:500

Project No:	Drawing No:	Rev:
38748	1300/002	A

DESIGN STATEMENTS

TN2003/001 Rev A – Design Statement – Willen Road / Development Access Signalised Juct

TN2003/002 Rev A – Design Statement – Willen Road / H3 Monks Way / A422 Signalised Roundabout Juct

TECHNICAL NOTE

Job Name: Caldecote Farm, Newport Pagnell

Job No: 38748

Note No: TN2003/001 Rev A

Date: 3rd July 2018 – Updated 21st May 2019

Prepared By: Douglas Pielage

Subject: Design Statement – Willen Road / Development Access Signalised Junction

Item	Subject
1,	**Introduction** This note has been prepared by Peter Brett Associates LLP (PBA) to detail the design parameters, constraints and assumptions used to prepare the planning design of a signalised junction that will provide access into the proposed commercial development at Newport Pagnell being promoted by Newlands Developments. This 3-arm signalised junction is to be provided on Willen Road, and includes provisions for pedestrians and cyclists to access the development via off carriageway shared use footway / cycle track, referred to as a 'Redway' in Milton Keynes. The new 'Redway' facility is also to be provided north and south along the length of Willen Road. The junction will incorporate 2No. new Bus Stops required to serve the development. Willen Road is a rural, single carriageway, bound on both sides by grassed verges. It is subject to the national speed limit and illuminated by a system of street lighting. There are 2No. existing on-carriageway bus stops along Willen Road, located to the south of the proposed junction that are unaffected by this scheme. The Local Highway Authority is Milton Keynes Council (MKC), who have stipulated that a 40mph speed limit is put in place for Willen Road to support the development access. This note should be reviewed in conjunction with Drawing 38748/100/007 Rev A – 'Proposed Site Access Signalised Junction – General Arrangement'.

2,	**Design Standards**
	
	MKC does not currently have its own published highway design guide / standards. However, the Client's Design Team have provided PBA with a Draft copy of MKC's 'A Highway Guide for Milton Keynes – September 2018'. Fig 1 and Table 3.12 within this document, have classified this road as a 'District Distributor', and the appropriate Design Standards as the Design Manual for Roads and Bridges.
	
	The design parameters of the proposed junction have been determined following a review of the following documents:-
	
	• Design Manual for Roads and Bridges (DMRB):-
	  ○ TD 9/93 Amendment No.1 – 'Highway Link Design';
	  ○ TD 16/07 – 'The Geometric Design of Roundabouts';
	  ○ TD 19/06 – 'Requirement for Road Restraint Systems';
	  ○ TD 27/05 – 'Cross-Sections and Headrooms';
	  ○ TD 42/95 – 'Geometric Design of Major / Minor Priority Junctions';

<table>
<tr><th>Item</th><th>Subject</th></tr>
<tr><td></td><td>

TD 50/04 – ‘The Geometric Layout of Signal-Controlled Junctions and Signalised Roundabouts’;
TA 90/05 – ‘The Geometric Design of Pedestrian, Cycle and Equestrian Routes’;
TA 91/05 – ‘Provision for Non-Motorised Users’;
Interim Advice Note 195/16 – ‘Cycle Traffic and the Strategic Road Network’;

Local Transport Note 2/95 – ‘The Design of Pedestrian Crossings’;
Local Transport Note 1/12 – ‘Shared Use Routes for Pedestrians and Cyclist’;
Local Transport Note 1/94 – ‘The Design and Use of Directional Informatory Signs’;
Traffic Signs Regulations and General Directions 2016 and associated Traffic Signs Manuals;
DfT‘s Guidance on the Use of Tactile Paving Surfaces;
A Highway Guide for Milton Keynes – September 2018 DRAFT;

</td></tr>
<tr><td>3,</td><td>
Speed Survey

A vehicular traffic speed has been commissioned by ADC Infrastructure Limited. Vehicle speeds have been determined using Automatic Traffic Counts (ATC). We have confirmed with MKC, that ATCs are an acceptable survey method to determine the Design Speed for our scheme (rather than having due regard to TA 22/81 – ‘Vehicle Speed Measurement on All Purpose Roads’).

The speed survey was undertaken from 30th October 2017 to 8th November 2017 on Willen Road at the approximate location of the proposed signalised junction, in both the southbound and northbound directions.

The weather on these days is unknown. A summary of the results is provided below in Table 1.

<table>
<tr><th colspan="2">Site</th><th>Mean Average Speed</th><th>85th Percentile Speeds</th><th>Speed Limit</th></tr>
<tr><td rowspan="2">Willen Road</td><td>Northbound</td><td>40</td><td>49</td><td rowspan="2">National Speed Limit (60mph)</td></tr>
<tr><td>Southbound</td><td>41</td><td>49.5</td></tr>
</table>
Table 1 – Speed Survey Results Willen Road

The results indicate that the average speeds, and 85th percentile speeds are below the current national speed limit (60mph). This suggests that there is not a significant speeding issue along Willen Road.
</td></tr>
</table>

Item	Subject

4,	**2D Design Elements**
	
	• Northern and Southern Arms (Major) = Willen Road;
	• Western Arm (Minor) = Development Access Road;
	• Posted speed limit of Willen Road = National Speed Limit (60mph). Traffic Regulation Order (TRO) to be put in place to reduce the speed limit to 40mph – Design Risk if TRO is not granted;
	• Design Speed for the Major Road = 70kph (TD 9/93, Table 2);
	• Design Speed for the Minor Road (Western Arm) = 40kph (A Highway Guide for Milton Keynes – September 2018 DRAFT, Table 3.12 – Road Type 4 (Industrial Access));
	• Desirable Minimum Stopping Sight Distance Major Roads = 120m (TD 9/93, Table 3. TD 50/04 mandatory para 2.6 and 2.7);
	• Desirable Minimum Stopping Site Distance Minor Road (Western Arm = 45m (A Highway Guide for Milton Keynes – September 2018 DRAFT, Table 3.12 – Road Type 4 (Industrial Access));
	• Intervisibility Zone as per TD 50/04, Fig 2/3;
	• Design Vehicle = 16.5m long articulated vehicle (TD 50/04, para 2.34). Swept path analysis to be undertaken at speeds no greater than 15mph (TD 16/07, para 5.33);
	• Existing longitudinal gradient of Willen Road:-
	  ○ Slopes from the Tongwell Roundabout (at the southern end of Willen Road) downhill to the existing access at Caldecote Farm, ranging in gradient from 1 in 30 to 1 in 330;
	  ○ Willen Road continues to slope downhill to the A422 Roundabout at the northern end, ranging in gradient from 1 in 336 to 1 in 393;
	  ○ Gradient taken from topographical survey;
	
	Corner Radii and Taper
	
	Western Arm Development Access Road
	
	Major to Minor
	R = 15m, 1 in 10 Taper, A = 25m (TD 50/04, Table 2/1 (Rural), Fig 2/6)) and informed by Fig 2/12;
	
	Minor to Major
	R = 10m, 1 in 5 Taper, B = 30m (TD 50/04, Table 2/1 (Urban), Fig 2/7)) and informed by Fig 2/12;
	
	Carriageway Width (Entry Width)
	
	Northern and Southern Arms
	3.65m (TD 50/04, para 2.22);
	
	Western Arm Development Arm
	3.65m (TD 50/04, para 2.22);
	
	Approach Layout
	Northern and Southern Arms
	Storage Length determined by ADC Transport Assessment. 1 in 15 Taper, Minimum length 15m (TD 50/04, Fig 2/8 and Fig 2/9);
	
	Western Arm
	Storage Length determined by ADC Transport Assessment;

Item	Subject
	Lane Reduction Southern Arm 100m Minimum (TD 50/04, para 2.31 and Fig 2/11) **NB** starting from when 2 lanes start to reduce; **Horizontal Clearance of Signals** 0.45m Minimum (TD 50/04, para 2.39); **Distance between Stop Line and Primary Signal** 2.5m (TSM Chapter 5, para 9.4); **Secondary Signal** Within 50m of stop line (TD 50/04, para 2.64), located within 30° (TD 50/04, Fig 2/19); **Maintenance** Traffic signals maintenance access bay to be provided (TD 50/04, para 2.69); **Controlled Crossings (Toucan Style)** Crossing Width Northern, Southern and Western Arms = 3.2m minimum (TD 50/04, para 4.15, Fig 4/1); Stagger (when provided) Left / Right stagger, stagger distance = 3m when refuge island is less than 5m; Refuge Island Width Minimum 3m wide as per 2.4.7 of IAN 195/16; Distance between Primary Signal and 1st set of Crossing Studs 0.5m (TSM Chapter 5, para 9.1); **Carriageway Cross Section** Figure 4-4a: Dimensions of Cross-Section Components for Urban All-Purpose Roads Mainline (TD 27/05);
5,	**3D Design Elements** The vertical alignment of Willen Road South has been designed to comply with TD 9/93, particularly Table 3:- • Design Speed = 70kph; • Desirable Minimum Crest K Value = 30; • Absolute Minimum Sag K Value = 20; • Gradient Max = 1 in 28.5 (Existing); • Gradients Min = 1 in 150; • Crossfall = 1 in 40;
6,	**Collision Data** Recorded Injury Collision (RIC) data has been obtained from the CrashMap for 4½ years (2014 to 2018 (first 6 months)). During this period, 1 RIC has been recorded along Willen Road. A review of this RIC has indicated that the collision (slight) occurred during the early evening in January 2014, when the road surface was dry and the weather fine. The RIC appears to be a shunt type collision (potentially during queuing traffic) when a bus drove into the back of a car, with the knock on effect involving to 2 more vehicles.

Item	Subject
	It is considered that 1 RIC in 4½ years does not constitute a significant collision problem at this location with the current national speed limit in place. Driver error, accompanied with excessive speeds, appears to be the main contributing factor in the above collision. A new surface course with appropriate PSV, street lighting, along with a reduced speed limit, as well as the signalised junction itself, are proposals that could reduce the number of recorded collisions. This has informed the design of the junction.
7,	**Proposed Non-Motorised User facilities** Shared use footway / cycle track = 3m wide (TD 90/05, para 7.16); Footway Only = 2m wide (TD 90/05, para 7.4, Table 7.1); Buffer Zone = 1m wide – TA 90/05 states that it is desirable to provide physical separation between Non-Motorised User (NMU) routes and carriageways. Para 7.22 states that the recommended preferred separation between NMU routes and the carriageway is 1.5m, with an acceptable separation of 0.5m. There should be no street furniture or vegetation (except grass) within the separation distance.
8,	**Relation to Existing Access Points** The proposed development access has been located on the western side of Willen Road, 70m (approx.) to the north of the existing access serving the Caldecote Farm development (eastern side of Willen Road) and an existing gated access to the plot. There is a number of existing gated access points into the plot, however, they do not appear to be in use. The Caldecote Farm access is approximately at the midpoint of Willen Road along the eastern side. On the eastern side of Willen Road, 90m (approx.) south of Caldecote Farm access is an access for a Sand and Gravel extraction site. 240m (approx.) south of the Caldecote Farm access is an access to a permanent Traveller Site. As part of these scheme proposals, the existing Caldecote Farm development, and the Sand and Gravel Quarry, are to be served by Left In / Left Out (LILO) style junctions.
9,	**Traffic Signs** Advance Direction Signs (ADS) as well as Flag type directional signs shall be provided on the Willen Road approaches to the junction in accordance with LTN 1/94 – 'The Design and Use of Directional Informatory Signs' (particularly Appendix A) as well as the Traffic Signs Regulations and General Directions 2016 (TRSGD) and associated Traffic Signs Manuals. These signs will incorporate existing destinations as well as signing the development. Care has been taken with the positioning, as well as the size of these signs so that they do not interfere with driver's visibility requirements. A 2m mounting height will be provided to Flag type signs to ensure visibility is not restricted (TD 16/07 mandatory para 8.2). The 'x'-heights for these directional signs will be informed by the proposed 40mph speed limit being imposed by MKC, as well as any further comments received from MKC.

Item	Subject
	Road Markings The existing road markings have been provided in response to the current national speed limit (60mph). The proposed reduction in speed limit (40mph) will require all affected road markings to be amended to reflect this lower limit. All required road marking amendments have been informed by Traffic Signs Manual Chapter 5.
10,	**Road Restraint Systems (RRS)** The existing length of Willen Road is subject to the national speed limit (60mph). The following road side hazards are present and adjacent to the carriageway:- • Ditchcourses, including headwalls; • Vegetation, including large mature trees; • Sign posts, street lighting, telegraph poles and feeder pillars; • Embankments; • Bridge structure over the M1; Currently, RRS have only been provided along a small length of Willen Road, on the approaches to the bridge over the M1 at the southern end of Willen Road. The scheme proposals will reduce the speed limit along Willen Road to 40mph. Heading northbound, after exiting the Tongwell Roundabout, motorists will be informed of the change to the road layout by the provision of:- • 2No. x 40mph speed terminal signs (sized in accordance with Traffic Signs Manual Chapter 3) at the southern end of Willen Road; • 40mph speed repeater signs along the length of Willen Road; • Advanced Directional Map Type Signs (ADS) which indicates the new road layout and provides warning of the proposed junction ahead; • Full and unrestricted visibility to primary traffic signals and associated stop line; • Full and unrestricted visibility on the immediate approach to the junction; • Street lighting to the appropriate illumination class along the length of Willen Road; • New surface course with increased Polished Stone Value (PSV) on the approach to the junction and within the extent of the junction itself; • Road markings appropriate to the new reduced speed limit; It is considered by the Design Team that the above measures are sufficient to mitigate against casual and inappropriate speeding. Taking the above into account, and in accordance mandatory para 1.22 and para 1.23 of TD 19/06, RRS is not required along Willen Road (bar the M1 overbridge). **Passively Safe Systems** As the speed limit for Willen Road will be reduced to 40mph, Passively Safe Systems are not considered to be required along this section of the scheme.
11,	**Highway Boundary** The location of the existing highway boundary has been determined using plans provided by Milton Keynes Council (MKC) which has then been transferred onto topographical survey data.

Item	Subject
	The design of this signalised junction requires additional carriageway width and adjacent NMU facilities. The widening will primarily be undertaken on the western side of Willen Road so that no works encroach onto 3rd party land that is not within the control of the Developer or Highway Authority.
12,	**Surface Water Drainage** Refer to Technical Note TN2015/001 Rev A – 'Preliminary Surface Water Drainage Strategy'.
13,	**Utilities** The affect this proposed junction may have on the existing utilities within the highway is currently being determined as part of the design of the junction. Utility records indicate that the following services are laid within Willen Road and adjacent grassed verges:- • Anglian Water – Potable Water Main; • BT – Fibre Infrastructure; • 2 No. HV Overhead Cables; • 1 No. HV Underground Cable; Any new supplies or diversions / protection of existing utilities is to be undertaken by the Client's Utility Consultant.
14,	**Street Lighting** A Street Lighting design has been undertaken for Willen Road South in accordance with Milton Keynes Council's Street Lighting Specification March 2016. The Street Lighting layout has been designed to Class C2 for Conflict Zones and M3 outside of conflict zones on Willen Road. Please refer to Street Lighting Design Drawing 38748/1300/0001 Rev A for details, to be read in conjunction with Roadway Lighting Reports and Outdoor Reality Report.
15,	**Bus Stops** The Bus Stops to be located north and south of the signalised junction are required in order to serve the development. It is noted that Page 43 of MKC's Draft 'A Highway Guide for Milton Keynes' document states:- *"Bus stops that are required to be sited on primary and **district distributor roads**, (which include Milton Keynes' Grid Roads) will **usually** be located in laybys and should be discussed at an early stage with the Council's Development Management and Passenger Transport Officers."* Following liaison with MKC's Public Transport, and subsequently Road Safety Team, lay-by style Bus Stops as per 'Bus Stop Scheme Layout SS3' of MKC's Draft 'A Highway Guide for Milton Keynes' - September 2018 (Page 107), including bus shelters, are to be provided. Following liaison with MKC's Senior Transport Planner - Cycling and Events Management, the scheme proposals indicate the alignment of the Redways being taken around the back of the Bus Shelters, in order to reduce the potential for conflict between Cyclists, and Pedestrians entering / exiting buses.

DOCUMENT ISSUE RECORD

Technical Note No	Rev	Date	Prepared	Checked	Reviewed (Discipline Lead)	Approved (Project Director)
38748/TN2003/001	-	03/07/18	DP	JSH	JSH	-
38748/TN2003/001	A	21/05/19	JB	JSH	JSH	-

Peter Brett Associates LLP 11 Prospect Court, Courteenhall Road, Blisworth, Northampton NN7 3DG

TECHNICAL NOTE

Job Name: Caldecote Farm, Newport Pagnell

Job No: 38748

Note No: TN2003/002 Rev A

Date: 3rd July 2018 – Updated 21st May 2019

Prepared By: Douglas Pielage

Subject: Design Statement – Willen Road / H3 Monks Way / A422 Signalised Roundabout Junction

Item	Subject
1,	**Introduction** This note has been prepared by Peter Brett Associates LLP (PBA) to detail the design parameters, constraints and assumptions used to prepare the planning design of an improvement scheme to alter the layout of an existing 4-arm roundabout (referred to as Marsh End Road Roundabout) in order to accommodate the likely increase in traffic flows generated by a proposed commercial development at Newport Pagnell being promoted by Newlands Developments. The existing roundabout is to be increased in size and signalised. This 4-arm signalised roundabout junction is to be provided on Willen Road / H3 Monks Way / A422 and includes provisions for pedestrians and cyclists on the eastern side of the junction in the form of off carriageway shared use footway / cycle track, referred to as a 'Redway' in Milton Keynes, and Toucan Style controlled crossing points. Willen Road is a rural, single carriageway, bound on both sides by grassed verges. It is subject to the national speed limit (60mph) and illuminated by a system of street lighting. H3 Monks Way and A422 are rural, dual carriageways, bound on both sides by grassed verges. They are subject to the national speed limit (70mph) and only illuminated by a system of street lighting at the Marsh End Roundabout. This note should be reviewed in conjunction with Drawing 38748/100/008 Rev A – 'Proposed Marsh End Signalised Roundabout General Arrangement'.
2,	**Design Standards** MKC does not currently have its own published highway design guide / standards. However, the Client's Design Team have provided PBA with a Draft copy of MKC's 'A Highway Guide for Milton Keynes – September 2018'. Fig 1 and Table 3.12 within this document, have classified this road as a 'Primary Distributor', and the appropriate design standards as the Design Manual for Roads and Bridges. The design parameters of the proposed junction have been determined following a review of the following documents:- • Design Manual for Roads and Bridges (DMRB):- o TD 9/93 Amendment No.1 – 'Highway Link Design'; o TD 16/07 – 'The Geometric Design of Roundabouts'; o TD 19/06 – 'Requirement for Road Restraint Systems'; o TD 27/05 – 'Cross-Sections and Headrooms'; o TD 42/95 – 'Geometric Design of Major / Minor Priority Junctions';

Item	Subject
	○ TD 50/04 – 'The Geometric Layout of Signal-Controlled Junctions and Signalised Roundabouts'; ○ TA 90/05 – 'The Geometric Design of Pedestrian, Cycle and Equestrian Routes'; ○ TA 91/05 – 'Provision for Non-Motorised Users'; ○ Interim Advice Note 195/16 – 'Cycle Traffic and the Strategic Road Network'; • Local Transport Note 2/95 – 'The Design of Pedestrian Crossings'; • Local Transport Note 1/12 – 'Shared Use Routes for Pedestrians and Cyclist'; • Local Transport Note 1/94 – 'The Design and Use of Directional Informatory Signs'; • Traffic Signs Regulations and General Directions 2016 and associated Traffic Signs Manuals; • DfT's Guidance on the Use of Tactile Paving Surfaces; • A Highway Guide for Milton Keynes – September 2018 DRAFT;
3,	**Speed Survey** A vehicular traffic speed has been commissioned by ADC Infrastructure Limited. Vehicle speeds have been determined using Automatic Traffic Counts (ATC). We have confirmed with MKC, that ATCs are an acceptable survey method to determine the Design Speed for our scheme (rather than having due regard to TA 22/81 – 'Vehicle Speed Measurement on All Purpose Roads'). The speed survey was undertaken from 30th October 2017 to 8th November 2017 on:- • A422 (Eastern Arm) – 250m (approx.) east of the existing Marsh End Road roundabout – in both the eastbound and westbound directions; • Willen Road (Northern Arm) – Halfway between the Willen Road / Marsh End Road junction and the existing Marsh End Road roundabout – in both the southbound and northbound directions; • Willen Road (Southern Arm) – 300m (approx.) south of the existing Marsh End Road roundabout – in both the southbound and northbound directions;

Item	Subject

The weather on these days is unknown. A summary of the results is provided below in Table 1.

Site		Mean Average Speed	85th Percentile Speeds	Speed Limit
A422 (Eastern Arm)	Eastbound	47	54	National Speed Limit (70mph)
	Westbound	52	64	
Willen Road (Northern Arm)	Northbound	36	41	National Speed Limit (60mph)
	Southbound	33	41	
Willen Road (Southern Arm)	Northbound	40	49	National Speed Limit (60mph)
	Southbound	41	49.5	

Table 1 – Speed Survey Results A422 and Willen Road

The results indicate that the average speeds, and 85th percentile speeds are below the current national speed limits. This suggests that there is not a significant speeding issue along the A422 and Willen Road.

Item	Subject

4,	**2D Design Elements**
	
	• Western Arm:-
	  ○ H3 Monks Way;
	  ○ Dual carriageway;
	  ○ National Speed Limit;
	  ○ 120kph Design Speed (TD 9/93, Table 2);
	  ○ 295m Desirable Minimum Stopping Sight Distance (TD 9/93, Table 3. TD 50/04 mandatory para 2.6 and 2.7);
	
	• Eastern Arm:-
	  ○ A422;
	  ○ Dual carriageway;
	  ○ National Speed Limit;
	  ○ 120kph Design Speed (TD 9/93, Table 2);
	  ○ 295m Desirable Minimum Stopping Sight Distance (TD 9/93, Table 3. TD 50/04 mandatory para 2.6 and 2.7);
	
	• Northern Arm:-
	  ○ Willen Road (North) leading to Marsh End Road;
	  ○ Single carriageway;
	  ○ Existing National Speed Limit / Proposed 40mph Speed Limit;
	  ○ 70kph Design Speed (TD 9/93, Table 2);
	  ○ 120m Desirable Minimum Stopping Sight Distance (TD 9/93, Table 3. TD 50/04 mandatory para 2.6 and 2.7);
	
	• Southern Arm:-
	  ○ Willen Road (South);
	  ○ Existing Single carriageway / Proposed Dual carriageway;
	  ○ Existing National Speed Limit / Proposed 40mph Speed Limit;
	  ○ 70kph Design speed (TD 9/93, Table 2);
	  ○ 120m Desirable Minimum Stopping Sight Distance (TD 9/93, Table 3. TD 50/04 mandatory para 2.6 and 2.7);
	
	• Intervisibility Zone as per TD 50/04, mandatory para 6.11 and Fig 6/1;
	• Design Vehicle = 16.5m long articulated vehicle (TD 50/04, para 2.34). Swept path analysis to be undertaken at speeds no greater than 15mph (TD 16/07, para 5.33);
	• Existing longitudinal gradients:-
	  ○ H3 Monks Way Eastbound – ranging from 1 in 35 to 1 in 130;
	  ○ H3 Monks Way Westbound – ranging from 1 in 90 to 1 in 145;
	  ○ A422 Eastbound - ranging from 1 in 190 to 1 in 340;
	  ○ A422 Westbound - ranging from 1 in 190 to 1 in 480;
	  ○ Willen Road (North) ranging from 1 in 115 to 1 in 380;
	  ○ Willen Road (South) – Slopes downhill to the A422 Roundabout ranging in gradient from 1 in 336 to 1 in 415;
	  ○ Gradients taken from topographical survey;

Item	Subject
	Carriageway Width at Stop Line for External Approaches • Western Arm = 12.5m; • Eastern Arm = 12.3m; • Northern Arm = 13m • Southern Arm = 12.3m; **Circulatory Carriageway Width at Stop Line for Internal Approaches** • Western Side = 17m; • Eastern Side = 17m; • Northern Side = 11.8m; • Southern Side = 17m; **Length of External Approaches** Storage Length determined by ADC Transport Assessment. **Length of Internal Approaches** Storage Length determined by ADC Transport Assessment – Minimum 15m as per TD 50/04, para 6.26. **Lane Reduction** • Western Arm = 2 lane exit not reducing; • Eastern Arm = 2 lane exit not reducing; • Northern Arm = single lane exit; • Southern Arm = 2 land exit not reducing; **Horizontal Clearance of Signals** 0.45m minimum (TD 50/04, para 2.39); 0.6m on high speed approaches (Traffic Signs Manual Chapter 1 Para 1.48); **Distance between Stop Line and Primary Signal** 2.5m (TSM Chapter 5, para 9.4); **Secondary Signal** Within 50m of stop line (TD 50/04, para 2.64 and para 6.10), located within 30° (TD 50/04, Fig 2/19); **Maintenance** 2No. Traffic signals maintenance access bays have been provided (TD 50/04, para 2.69); **Controlled Crossings (Toucan Style)** Width of Crossings Eastern Arm = 3.2m minimum (TD50/04, para 4.15, Fig 4/1); Toucan on A422 Eastern Arm Exit The location of this Toucan on this exit has been determined by TD16/07, para 5.7, 5.8 and Fig 5/1; Distance between Primary Signal and 1st set of Crossing Studs 0.5m (TSM Chapter 5, para 9.1);

Item	Subject
	Carriageway Cross Section Eastern and Western Arms Figure 4-3a: Dimensions of Cross-Section Components for Rural All-Purpose Roads Mainline (TD 27/05). **NB** 1m hardstrips are not provided on approaches to the junction and also to tie in with existing carriageway cross section; Southern and Northern Arms Figure 4-4a: Dimensions of Cross-Section Components for Urban All-Purpose Roads Mainline (TD 27/05);
5,	**3D Design Elements** The vertical alignment of Willen Road has been designed to comply with TD 9/93, particularly Table 3:- • Design Speed = 70kph; • Desirable Minimum Crest K Value = 30; • Absolute Minimum Sag K Value = 20; • Gradient Max = 1 in 28.5 (Existing); • Gradients Min = 1 in 150; • Crossfall = 1 in 40; The vertical alignment of H3 Monks Way and A422 has been designed to comply with TD 9/93, particularly Table 3:- • Design Speed = 120kph; • Desirable Minimum Crest K Value = 182; • Absolute Minimum Sag K Value = 37; • Gradient Max = 1 in 36; • Gradients Min = 1 in 150; • Crossfall = 1 in 40;

6,	**Collision Data**
	
	Recorded Injury Collision (RIC) data has been obtained from the CrashMap for 4½ years (2014 to 2018 (first 6 months) – Refer to Appendix A.
	
	Marsh End Road Roundabout
	
	Within the past 4½ years, 8 RICs (2 serious, 6 slight) have been recorded at this existing roundabout:-
	
	• A422 Approach:-
	  ○ 5No collisions, 1 occurred in the wet, 1 occurred during the hours of darkness;
	  ○ 3No. RICs involved Cyclists being struck by vehicles failing to Give Way;
	  ○ 1No. Shunt type collision involved 2No. 50cc motorbikes at the junction;
	  ○ 1No. Shunt type collision on the immediate approach;
	
	• H3 Monks Way Approach:-
	  ○ 1No. Shunt type collision, occurred in the wet at the junction;

Item	Subject

	• Willen Road (Southern Arm) Approach:-
	  ○ 2No collisions, both when the road was dry and during daylight hours;
	  ○ 1No. Failed to Give Way;
	  ○ 1No. Single vehicle collision (colliding with a tree);
	
	It is considered that 8 RICs in 4½ years does not constitute a significant collision problem at these locations with the current national speed limits in place. However, it is noted that 3No. of these collisions involved Cyclists on the circulatory carriageway being struck by motorists entering the roundabout. The proposed design would look to provide facilities to reduce the likelihood of these collisions occurring.
	
	A new surface course with appropriate PSV, street lighting, along with a reduced speed limit, as well as signalising the roundabout itself, are proposals that could reduce the number of recorded collisions. This has informed the design of the junction.

7,	**Proposed Non Motorised User facilities** Shared use footway / cycle track = 3m wide (TD 90/05, para 7.16); Footway Only = 2m wide (TD 90/05, para 7.4, Table 7.1); Buffer Zone = 1m wide – TA 90/05 states that it is desirable to provide physical separation between Non-Motorised User (NMU) routes and carriageways. Para 7.22 states that the recommended preferred separation between NMU routes and the carriageway is 1.5m, with an acceptable separation of 0.5m. There should be no street furniture or vegetation (except grass) within the separation distance.
8,	**Relation to Existing Access Points** Willen Road / Marsh End Road Priority junction with ghost island right turn land is located 330m (approx.) north of the Marsh End Road roundabout. A gated field access is located on the western side of Willen Road (North), 20m (approx.) north of the Marsh End Road roundabout. Maintenance access to the central island of the proposed signalised roundabout will be provided. Lay-bys are provided adjacent to the H3 Monks Way approach and A422 approach, both 110m (approx.) from the Marsh End Road roundabout – refer to Section 15.
9,	**Traffic Signs** Advance Direction Signs (ADS) as well as Flag type directional signs shall be provided on the Willen Road approaches to the junction in accordance with LTN 1/94 – 'The Design and Use of Directional Informatory Signs' (particularly Appendix A) as well as the Traffic Signs Regulations and General Directions 2016 (TRSGD) and associated Traffic Signs Manuals. These signs will incorporate existing destinations as well as signing the development. Care has been taken with the positioning, as well as the size of these signs so that they do not interfere with driver's visibility requirements. A 2m mounting height will be provided to Flag type signs to ensure visibility is not restricted (TD 16/07 mandatory para 8.2). The 'x'-heights for these directional signs will be informed by:-

Item	Subject
	• The proposed 40mph speed limit being imposed by MKC for Willen Road; • 85th percentile speeds for A422 and H3 Monks Way; • as well as any further comments received from MKC; **Road Markings** The existing road markings have been provided in response to the current national speed limits. The proposed reduction in speed limit (40mph) will require all affected road markings to be amended to reflect this lower limit. All required road marking amendments have been informed by Traffic Signs Manual Chapter 5.
10,	**Road Restraint Systems (RRS)** Willen Road The existing length of Willen Road is subject to the national speed limit (60mph). The following road side hazards are present adjacent to the carriageway:- • Ditchcourses, including headwalls; • Vegetation, including large mature trees; • Sign posts, street lighting, telegraph poles and feeder pillars; • Embankments; Currently, RRS has not been provided along the length of Willen Road affected by this proposed junction. The scheme proposals will reduce the speed limit along Willen Road to 40mph. Motorists will be informed of the change to the road layout by the provision of:- • 2No. x 40mph speed terminal signs (sized in accordance with Traffic Signs Manual Chapter 3); • 40mph speed repeater signs along the length of Willen Road; • Advanced Directional Map Type Signs (ADS) which indicates the new road layout and provides warning of the proposed junction ahead; • Full and unrestricted visibility to primary traffic signals and associated stop line; • Full and unrestricted visibility on the immediate approach to the junction; • Street lighting to the appropriate illumination class along the length of Willen Road; • New surface course with increased Polished Stone Value (PSV) on the approach to the junction and within the extent of the junction itself; • Road markings appropriate to the new reduced speed limit; It is considered by the Design Team that the above measures are sufficient to mitigate against casual and inappropriate speeding. Taking the above into account, and in accordance mandatory para 1.22 and para 1.23 of TD 19/06, RRS is not required along Willen Road. As the speed limit for Willen Road will be reduced to 40mph, Passively Safe Systems are not considered to be required along this section of the scheme.

Item	Subject
	H3 Monks Way / A422 The need for RRS within the verges of the eastbound and westbound approaches and exits of H3 Monks Way and A422 arms has been reviewed using the 'Road Restraint Risk Assessment Process' (RRRAP) detailed within TD 19/06. This process has identified that the existing trees adjacent to the verges are road side hazards where the risk of not providing a RRS is unacceptable. However, as the scheme proposals do not introduce any road side hazards which cannot be erected on passively safe systems e.g. traffic sign posts, street lighting, traffic signals (subject to detailed design), then the need to provide RRS to protect trees, as well as the lengths of RRS beyond the extents of the scheme, is considered to be the responsibility of MKC. It should be noted that the existing RRS within the central reserve of the A422 arm is being retained (but realigned). However, currently MKC have not provide any RRS within the central reserve of the H3 Monks Way. Following a meeting with MKC (dated 14th June 2018), MKC have confirmed that RRS is required within the central reserve. PBA have updated their proposals to include RRS, from the proposed Marsh End Road Signalised Roundabout, to the existing RRS within the vicinity of the existing M1 overbridge, a length of 500m (approx.). PBA have also reviewed the vertical profile of H3 Monks Way on the immediate approach to the proposed junction (i.e. over a distance of 1.5 x SSD), and can confirm that forward visibility of 295m (appropriate for a 120kph Design Speed) is not restricted to the 'object height' by the proposed RRS.
11,	**Highway Boundary** The location of the existing highway boundary has been determined using plans provided by Milton Keynes Council (MKC) which has then been transferred onto topographical survey data. The design of this signalised junction requires additional carriageway width and adjacent NMU facilities. The widening will primarily be undertaken on the western side of Willen Road so that no works encroach onto 3rd party land which is not within the control of the Developer or Highway Authority.
12,	**Surface Water Drainage** Refer to Technical Note TN2015/001 Rev A – 'Preliminary Surface Water Drainage Strategy'.
13,	**Utilities** The affect this proposed signalised roundabout junction may have on the existing utilities within the highway is currently being determined as part of the design of the junction. Utility records indicate that the following services could be affected by the proposed junction improvements:- • Virgin Media; • Vodaphone; • BT (optic); • Anglian Water Services (Potable Water); • 1 No. 33kV Underground Cable; • 1 No. 11kV Underground Cable; Any new supplies or diversions / protection of existing utilities is to be undertaken by the Client's Utility Consultant.

Item	Subject
14,	**Street Lighting** A Street Lighting design has been undertaken for Marsh End Road Signalised Roundabout in accordance with Milton Kenyes Council's Street Lighting Specification Marsh 2016. The Street Lighting layout has been designed to Class C2 for Conflict Zones and M3 outside of conflict zones. Please refer to Street Lighting Design Drawing 38748/1300/002 Rev A for details, to be read in conjunction with Roadway Lighting Reports and Outdoor Reality Report.
15,	**Lay-bys** Further to Section 8, there are 2No. existing lay-bys adjacent to the H3 Monks Way and A422 approaches to the junction. These existing lay-bys are affected by the proposed additional running lanes on these approaches. Following a meeting with MKC (dated 14th June 2018), MKC have confirmed that these existing lay-bys do not need to be relocated or replaced.

DOCUMENT ISSUE RECORD

Technical Note No	Rev	Date	Prepared	Checked	Reviewed (Discipline Lead)	Approved (Project Director)
38748/TN2003/002	-	03/07/18	DP	JSH	JSH	-
38748/TN2003/002	A	21/05/19	JB	JSH	JSH	-

Peter Brett Associates LLP 11 Prospect Court, Courteenhall Road, Blisworth, Northampton NN7 3DG

STAGE 1 ROAD SAFTEY AUDIT

now part of

Stantec

Caldecote Farm, Newport Pagnell

Stage 1 Road Safety Audit

On behalf of **Segro Newport Pagnell Ltd**

Project Ref: 38748/2022 | Rev: - | Date: 10th August 2018

Office Address: 11 Prospect Court, Courteenhall Road, Blisworth, Northampton NN7 3DG
T: +44 (0)1604 878300 E: northampton@peterbrett.com

Document Control Sheet

Project Name: **Caldecote Farm, Newport Pagnell**
Project Ref: **38748/2022**
Report Title: **Stage 1 Road Safety Audit**
Doc Ref: **001**
Date: **10th August 2018**

	Name	Position	Signature	Date
Prepared by:	Philip Edwards	Principal Engineer	[redacted]	10th August 2018
Reviewed by:	Bryn Kemp	Principal Engineer		10th August 2018
Approved by:	Steve Hagreen	Associate		10th August 2018
For and on behalf of Peter Brett A				

Revision	Date	Description	Prepared	Reviewed	Approved

This report has been prepared by Peter Brett Associates LLP ('PBA') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which PBA was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). PBA accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

Contents

1 Introduction

1.1 Peter Brett Associates LLP have been commissioned by Segro Newport Pagnell Ltd to undertake a Stage 1 Road Safety Audit (RSA) on the proposed Highway Works associated with the commercial development of land off Willen Road, Newport Pagnell.

1.2 The proposed Highway Works are as follows.

Willen Road / Development Access Signalised Junction

- New 4 arm signalised junction is to be provided on Willen Road with associated maintenance access bay.
- Includes provisions for pedestrians and cyclists to access the development via off carriageway shared use footway / cycle track, referred to as a 'Redway' in Milton Keynes.
- The new 'Redway' facility is also to be provided north and south along the length of Willen Road.
- 2No. Toucan style controlled crossings.
- The junction will incorporate 2No. new bus stops required to serve the development.

Willen Road / H3 Monks Way / A422 Signalised Roundabout Junction

- An existing 4 arm roundabout is to be increased in size and signalised, and provided with 2No. associated maintenance access bays.
- Includes a 'Redway' on the eastern side of the junction with 2No. Toucan style controlled crossings across the A442.

1.3 Willen Road in the vicinity of the proposed development access is a single carriageway all-purpose road, with verges along both sides. The road is lit, but subject to the national speed limit. There are no footways. Approximately 60m south of the proposed signalised junction, on the eastern side of Willen Road, there is an access to sand and gravel quarry. This was observed to be in use by large vehicles. There are existing bus stops on both sides of the road approximately 200m south of the proposed signalised junction.

At the Willen Road / A422 / H3 Monks Way Marsh End Road roundabout, the A422 and H3 Monks Way are all-purpose dual carriageways, with verges along both sides. The roads are lit, but subject to the national speed limit. There are no footways.

Just south of the junction of Willen Road and March End Road, which is at the edge of the existing urban development of Newport Pagnell, the speed limit changes from national speed limit to 30mph.

1.4 The RSA Team Membership was as follows:-

RSA Team Leader:-

Philip Edwards	Peter Brett Associates LLP, Northampton BSc(Hons).

RSA Team Member:-

Bryn Kemp	Peter Brett Associates LLP, Ashford – Principal Engineer MCIHT, MSoRSA Certificate of Competency in Road Safety Audit

The RSA Team are independent of the Design Team.

1.5 The RSA took place during July 2018. The RSA Team visited the site on 23rd July 2018 between 14:30 and 16:00. The weather during the site visit was hot and dry.

1.6 During the site visit 3No. cyclists and no pedestrians were observed using Willen Road south of the Marsh End Road Roundabout. No pedestrians or cyclists were observed using the A422.

1.7 The terms of reference of the RSA are as described in HD 19/15, and the RSA Brief dated 10th July 2018 which required the following exceptions:-

- Mandatory Item 2.59 – The RSA Report will be finalised and issued to the Design Team in order to prepare the RSA Response Report. MKC will not be issued the RSA Report in draft;

- Mandatory Item 3.3 – The RSA Response Report will be prepared and finalised by the Design Team and issued to MKC. MKC will not be issued the RSA Response Report in draft;

Following the completion of the RSA Report and the RSA Response Report, both documents will be issued to MKC.

1.8 The RSA comprises of an examination of the documents listed in Appendix A. The RSA Brief issued to the RSA Team states that no formal Departure from Standards document has been identified.

1.9 1 No. strategic decision has been stated within the approved RSA Brief (reference Item 7.1):-

- MKC have indicated that in order to promote the signalised junction serving the development, the speed limit on Willen Road would need to be reduced from national speed limit (60mph) to 40mph. A Traffic Regulation Order will be required to impose any reduction to the existing speed limit.

Therefore, in accordance with mandatory item 2.21 of HD 19/15, this RSA Report does not provide recommendations which require major changes to the above Strategic Decision. The RSA Team consider that this proposed change in speed limit to 40mph is appropriate as part of the scheme.

1.10 The RSA Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

1.11 Recorded Injury Collision (RIC) data for 4 years, 2014 to 2017, provided by the Design Team has been reviewed. It is noted that 3No collisions have involved cyclists on the eastern side of the Marsh End Road roundabout circulatory carriageway being struck by a vehicle. The scheme proposals to provide a Toucan crossing of the A422 should mitigate this hazard. The collision records did not indicate any other particular collision problem in the vicinity of the proposed scheme.

1.12 Problems identified in the report are indicated by location and are shown on the site reference plans in Appendix B.

2 Items Raised from this Stage 1 Road Safety Audit

2.1 Problem

Location - Willen Road Signalised Junction

Summary - Direction Signage Requirements may not be achievable – insufficient driver information and potential vehicle impact with signs

It is noted from the Design Statement (TN2003/001) that it is proposed to provide Advance Direction Signs (ADS) and Flag direction signs relating to the proposed traffic signal junction on Willen Road. The location for one ADS is indicated for northbound traffic approximately 60m from the traffic signal stop line. This location is after the carriageway has already widened from 1 to 3 lanes, and not sufficiently in advance of the junction to inform drivers. No other ADS or direction signs are indicated on the drawings.

The existing verges of Willen Road are heavily vegetated, and it is proposed that there will be a 3m wide Redway. Therefore, it cannot be assumed that the necessary signs can accommodated and adequate visibility can be achieved without difficulty.

In view of the 3 lane approaches to the junction along Willen Road, clear signage will be needed in advance of the junction such that drivers will position themselves in the correct lane. Otherwise there is a risk of late and unexpected lane changes, which may result in collisions between vehicles approaching the junction.

Recommendation

The proposed signing for the junction should be determined in more detail before the preliminary design is completed. Locations and sign widths should be investigated to ensure that adequate advance direction signage can be achieved with suitable lateral clearance from the edge of the carriageway, and with the appropriate mounting heights in relation to the proposed cycle route.

2.2 Problem

Location - Willen Road Signalised Junction, northbound approach

Summary - Development of right turning lane – potential side swipe collisions associated with lane changes

On the northbound approach to Willen Road traffic signals, the carriageway widens from a single northbound lane to 3 lanes. The road markings indicated will tend to encourage a large proportion of traffic to approach the junction in the offside lane. But this lane is intended to just serve right turning traffic, for which numbers are expected to be low. Vehicles may naturally tend to enter the right turning lane and then have to change lanes for the ahead movement, which will introduce un-necessary conflict and increase the risk of collision.

Recommendation

The layout of road markings on the northbound approach should be amended such that most traffic naturally enters the ahead lanes and the right turning lane is developed nearer to the stop line.

2.3 Problem

Location	-	Willen Road Signalised Junction, northbound approach
Summary	-	No provision for existing sand and gravel works – potential conflict with turning vehicles

The proposals do not indicate any provision for the existing access to Caldecote Farm Sand and Gravel Works. Large vehicles use this access and currently all turning movements are permitted. The proposals will see Willen Road widened to 5 traffic lanes (3 northbound and 2 southbound) with central ghost-island hatching. There is no provision within the hatching for right turning vehicles to access to the sand and gravel works.

It is not clear how the scheme will accommodate vehicles turning right into and out from the sand and gravel works access. There will be conflict and risk of collision between right turning vehicles at the sand and gravel works and other traffic using the multiple lanes on Willen Road.

Willen Road – Large vehicle exiting from the sand and gravel works

Recommendation

The scheme proposals should recognise the existing access which is used by large / heavy vehicles. It is recommended that, in association with Problem 2.2 above, the sand and gravel works access is provided with a right turn lane or becomes left in / left out, with vehicles being able to U-turn at the Tongwell and the Marsh End Road roundabouts.

2.4 Problem

Location	-	Willen Road Signalised Junction, bus stops
Summary	-	Location of bus stops may cause confusion to drivers following buses leading to shunt type collisions

It is proposed to locate on-line northbound and southbound bus stops for Willen Road, in advance of the stop line of the traffic signals.

The close proximity of the bus stops, to the stop line (20 to 30m) may cause some confusion. For a bus signalling left and slowing to use the bus stop, a following vehicle may assume that the bus is intending to turn left at the traffic signals. The following vehicle may then have to stop suddenly and there may be a risk of shunt type collisions. Also, when a bus is stationary at the bus stop, there is not sufficient space for a left turning vehicle to pass the bus and re-enter the nearside lane before the traffic signals. There is also the risk that a stationary bus will mask the primary signal for approaching traffic.

Recommendation

The bus stop locations should be reviewed to avoid the hazards described above. For example, the northbound stop location could be positioned downstream of the junction.

2.5 Problem

Location	-	Willen Road Signalised Junction
Summary	-	Lack of clarity for separately phased manoeuvres leading to vehicle to vehicle conflicts

It is proposed that right turns from Willen Road southbound (phase b) and Willen Road northbound (phase d) are separately phased from the ahead and left turn movements on these arms. It is not clear from the preliminary design that the location of the secondary signal heads will clear enough to approaching drivers, especially given that these are 3-lane approaches. There is a risk of drivers responding to the wrong traffic signal and in the case of right-turning traffic, turning across the path of oncoming vehicles.

Recommendation

The detailed design should ensure that signal heads are positioned to ensure that they are not misinterpreted and indicative arrows are used as appropriate.

2.6 Problem

Location	-	Willen Road Signalised Junction, development access road
Summary	-	Side road layout - increased vehicle to vehicle conflict

The proposed on-site layout indicates a left / right staggered junction and a sharp bend within approximately 30 to 50m from the traffic signal junction with Willen Road. This gives rise to a generally increased level of conflict and complicated vehicle manoeuvres, which may lead to collisions between vehicles:-

- There is a right turn lane from the development access road into a development parcel to the south. The right turn lane may be confused as a right turn lane on the approach to the traffic signals;
- Vehicles queuing from the traffic signals may obstruct these side road accesses / junctions;
- The access to the development parcel to the north is on the inside of a bend where visibility may be restricted, especially considering drivers of vans and lorries whose “over-the shoulder” visibility is blocked;
- The geometry of this access also appears tight and may not be suitable to accommodate large vehicles turning;

Recommendation

The internal layout should be amended to provide increased separation between the Willen Road traffic signal junction and the on-site accesses. On-site access roads should be subject to their own road safety audit.

2.7 Problem

Location	-	Marsh End Road roundabout
Summary	-	Road markings may not correctly guide circulating vehicles leading to side swipe collisions

The proposed lane markings at signalised Marsh End Road roundabout do not guide vehicles in the offside right turn lanes into an appropriate lane to exit from the junction at the next node. The “tracer” road markings of some of the ahead lanes guides vehicles to continue circulating to the right. There may be conflict and side swipe collisions between vehicles circulating the junction in adjacent lanes. This is a particular problem for southbound traffic entering the roundabout from Willen Road turning right H3 Monks Way

Recommendation

Road markings should be reviewed to ensure they provide correct guidance for the intended paths of vehicles using each lane.

2.8 Problem

Location - Marsh End Road roundabout

Summary - Coordination of traffic signal phases not clear

The stage diagram for Marsh End Road roundabout traffic signals just provides the staging for each node. However, it does not indicate how each node will be coordinated / linked with the other nodes, including the Toucan crossing on the A422 eastbound exit. In some locations, it is possible that a driver may see traffic signals relating to more than one phase which may be showing different aspects. Drivers may be confused and fail to stop at a stop line when required, or may stop unexpectedly when not required to do so.

Recommendation

The configuration of the traffic signals should be developed in more detail. When there is an understanding of how the nodes may be linked, the design should be reviewed to ensure that drivers will have clear sight of the relevant traffic signals, and that misleading signals are relocated, or masked.

2.9 Problem

Location - Marsh End Road Roundabout

Summary - Limited provision for cyclists to access and exit Redway

The scheme provides an off carriageway shared footway / cycle track Redway along Willen Road which is accessible for cyclists at the south and north of the scheme. However, at the Marsh End Road roundabout, there is no provision for cyclists on the A422 / H3 Monks Way to leave the carriageway and joint the Redway. Cyclists may remain on the carriageway where they will be at increased risk of being struck by a vehicle.

Conversely, there appears to be no provision for cyclists to leave the Redway and safely join the carriageway e.g. no facility for cyclists to access H3 Monks Way westbound from the Redway.

Recommendation

Ensure cyclists can enter / exit the Redway at the earliest opportunity from A422 / H3 Monks Way and reinforce the intended route for cyclists with the provision of appropriate signing.

2.10 Problem

Location	-	Marsh End Road roundabout
Summary	-	Proposed alignment of Road Restraint System may not provide protection to vulnerable users within the central reserve

It is proposed to provide a new section of Road Restraint System in the central reserve of A422, east of the Marsh End Road roundabout, tying into the existing safety fencing. However, the alignment indicated would not provide any protection to the footway / cycle track Redway within the central reserve, and it may tend to redirect any errant vehicle towards the Redway. This would increase the risk of a pedestrian or cyclist being struck by a vehicle.

Recommendation

The proposed Road Restraint System should be aligned to provide more protection to the Redway within the central reserve.

2.11 Problem

Location	-	Willen Road / Marsh End Road junction
Summary	-	Location of 30mph speed limit and signage conflicts with Unclear / disjointed cycle facilities potential vehicle/cycle conflicts

At the junction of Willen Road and Marsh End Road, the proposed Redway will have a crossing points of Marsh End Road and Willen Road. These crossing points coincide with the start / finish of the existing 30mph speed limit for traffic entering Newport Pagnell. Vehicles may not have reduced speed at the location of the crossing points and so pedestrians and cyclists may be at increased risk of injury if struck by a vehicle. Also, the sign posts associated with the speed limit signage at the crossing points may impede pedestrians and cyclists and could partially restrict intervisibility with approaching vehicles.

Recommendation

In conjunction with providing a 40mph speed limit on Willen Road, the 30mph speed limit should start further south, possible coinciding with the “Welcome to Newport Pagnell” sign such that the existing junction and proposed crossing points are entirely within the 30mph speed limit.

2.12 Problem

Location	-	Willen Road / Marsh End Road junction
Summary	-	Visibility to crossing point restricted - potential pedestrian / cycle and vehicle conflicts

It is proposed to provide new sections of Redway at the Willen Road / Marsh End Road junction. This includes an uncontrolled crossing of the short link on the northern side of the junction in the fork of the 2 roads. The proposed crossing point is obscured by vegetation which is growing along the Tongwell Brook. A pedestrian or cyclist crossing the carriageway may be unsighted and struck by a vehicle turning left from Marsh End Road.

Recommendation

Vegetation should be removed to improve visibility at this location.

2.13 Problem

Location	-	Marsh End Road / Tongwell Lane junction
Summary	-	Unclear / disjointed cycle facilities - potential pedestrian / cycle and vehicle conflicts

At the junction of Willen Road and Marsh End Road, the proposed Redway will have a crossing point of Marsh End Road, connecting with Tongwell Lane (Tongwell Lane having a prohibition of motor vehicle sign and bollards to prevent vehicular access). The existing road layout includes a junction bellmouth for Tongwell lane, which is redundant, but its appearance “invites” drivers to turn in potentially leading to vehicular conflict with pedestrians and cyclists.

Recommendation

Clearly define the route at the entrance of Tongwell Lane for cyclists reducing the redundant bellmouth junction potentially providing a vehicle crossover for access.

3 Road Safety Audit Team Statement

We certify that this Road Safety Audit has been undertaken in accordance with HD 19/15, with the exceptions as detailed in Section 1 of this report.

RSA Team Leader:

Name:	Philip Edwards	Signed: [redacted]
Position:	Principal Engineer BSc (Hons)	Date: 10th August 2018
Organisation:	Peter Brett Associates LLP	
Address:	11 Prospect Court Courteenhall Road Blisworth Northamptonshire	

RSA Team Member:

Name:	Bryn Kemp	Signed: [redacted]
Position:	Principal Engineer MCIHT Certificate of Competency in Road Safety Audit	Date: 10th August 2018
Organisation:	Peter Brett Associates LLP	
Address:	Calgarth House 39/41 Bank Street Ashford Kent T23 1DQ Courteenhall Road Blisworth Northamptonshire NN7 3DG	

Appendix A

Appendix A

Information Utilised in this Stage 1 Road Safety Audit:-

Documents

- Stage 1 RSA Brief;
- TN2003/001 – 'Design Statement – Willen Road / Development Access Signalised Junction;
- TN2003/002 – 'Design Statement – Willen Road / H3 Monks Way / A422 Signalised Roundabout Junction';
- Caldecote Farm, Newport Pagnell – Walking, Cycling & Horse-Riding Assessment Report – Dated 25th June 2018;
- Speed survey was undertaken from 30th October to 8th November 2017;
- Collision Data
- ADC Transport Assessment – July 2018;
- ADC Framework Travel Plan – July 2018;

Drawings

- 38748/100/004 Rev A – 'Location Plan';
- 38748/100/007 – 'Proposed Site Access Signalised Junction General Arrangement';
- 38748/100/008 – 'Proposed Marsh End Signalised Roundabout General Arrangement';
- 38748/100/015 – 'Proposed Highway Cross Sections';
- 38748/100/016 – 'Proposed Highway Longitudinal Sections';
- 38748/100/017 – 'Swept Path Analysis (Sheet 1 of 2)';
- 38748/100/018 – 'Swept Path Analysis (Sheet 2 of 2)';
- 38748/500/001 – 'Proposed Highway Drainage Pond Option 1';
- 38748/1300/001 – 'Street Lighting (Sheet 1 of 2)'
- 38748/1300/002 – 'Street Lighting (Sheet 2 of 2)'

Appendix B

Site Reference Plans

Figure 1 & Figure 2

FOR CONTINUATION REFER TO DRAWING 38748/100/008

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE

ADVANCE DIRECTIONAL SIGN TO BE ERECTED IN ORDER TO PROVIDE MOTORIST WITH AWARENESS OF THE GEOMETRIC LAYOUT OF THE PROPOSED JUNCTION AND DEVELOPMENT ACCESS

2.4

2m WIDE VERGE TO ACCOMMODATE PROPOSED UTILITIES

7.3m WIDE CARRIAGEWAY

PROPOSED BUS STOP AS PER HIGHWAY GUIDE FOR MILTON KEYNES, BUS STOP SCHEME LAYOUT SS2

OFFLINE REDWAY FORMING A 'FLOATING BUS STOP'

2.6

PROPOSED 2m WIDE FOOTWAY

2.5

PROPOSED TRAFFIC SIGNAL MAINTENANCE ACCESS BAY FORMED USING PERMEABLE PAVING

ON SITE ROAD LAYOUT TAKEN FROM PHP DRAWING 4179-SK015-P25 - 'PROPOSED MASTER PLAN INDICATIVE FOR ZONE 2'

2.4

GRASSED VERGE

2.3

PROPOSED BUS STOP AS PER HIGHWAY GUIDE FOR MILTON KEYNES, BUS STOP SCHEME LAYOUT SS2

OFFLINE REDWAY FORMING A 'FLOATING BUS STOP'

ADVANCE DIRECTIONAL SIGN TO BE ERECTED IN ORDER TO PROVIDE MOTORIST WITH AWARENESS OF THE GEOMETRIC LAYOUT OF THE PROPOSED JUNCTION AND DEVELOPMENT ACCESS

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE

2.2

WILLEN ROAD

2.1 PROVISION OF ADS - SIGNS

FOR CONTINUATION REFER RIGHT

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE

EXISTING LIGHTING COLUMN TO BE RELOCATED OUTSIDE OF PROPOSED FOOTWAY / CYCLE TRACK AND BT COVER RAISED TO LEVEL OF PROPOSED FOOTWAY / CYCLE TRACK

WILLEN ROAD

WILLEN ROAD

FOR CONTINUATION REFER LEFT

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE

EXISTING LIGHTING COLUMN TO BE RELOCATED OUTSIDE OF PROPOSED FOOTWAY / CYCLE TRACK AND BT COVER RAISED TO LEVEL OF PROPOSED FOOTWAY / CYCLE TRACK

WILLEN ROAD

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH NO BUFFER ZONE ACROSS EXISTING OVERBRIDGE

NEW ROAD RESTRAINT SYSTEM ALIGNED AND EXTENDED TO ACCOMMODATE SHARED USE FOOTWAY / CYCLE TRACK

M1

EXISTING BRIDGE PARAPET HEIGHT 1m. DESIRABLE MINIMUM FOR CYCLE USE 1.4m AS PER IAN 195/16, TABLE 2.5.6. NEW 1.4m HIGH BRIDGE PARAPET TO BE PROVIDED. THESE WORKS MAY REQUIRE AN AIP (APPROVAL IN PRINCIPLE)

EXISTING POST AND RAIL FENCE TO BE RELOCATED OUTSIDE OF THE WORKING WIDTH OF THE NEW ROAD RESTRAINT SYSTEM WHERE POSSIBLE

NEW ROAD RESTRAINT SYSTEM ALIGNED AND EXTENDED TO ACCOMMODATE SHARED USE FOOTWAY / CYCLE TRACK

EXISTING FINGER POST SIGN TO BE RELOCATED AND BT COVER RAISED TO LEVEL OF PROPOSED FOOTWAY / CYCLE TRACK

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK TIES INTO EXISTING REDWAY NETWORK

69.2m

DANSTEED ROAD

Tongwell Roundabout

TONGWELL ROUNDABOUT

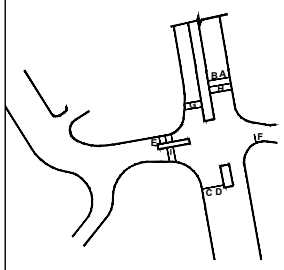
68.3m

Subway

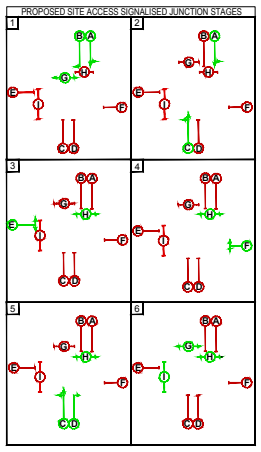
DANSTEED WAY

Travellers Site

PROPOSED SIGNALISED SITE ACCESS JUNCTION STAGING



PROPOSED SITE ACCESS SIGNALISED JUNCTION STAGES



KEY:-

- PLANNING BOUNDARY
- HIGHWAYS ENGLAND HIGHWAY BOUNDARY
- MILTON KEYNES COUNCIL HIGHWAY BOUNDARY
- PROPOSED FULL HEIGHT SAFETY BARRIER
- PROPOSED ROAD RESTRAINT TERMINAL
- PROPOSED TRAFFIC SIGNALS
- SIGNAL CONTROL BOX
- JUNCTION INTERVISIBILITY ZONE
- FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 120m SSD - DESIGN SPEED 70kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 120m SSD - DESIGN SPEED 70kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 45m SSD - DESIGN SPEED 40kph

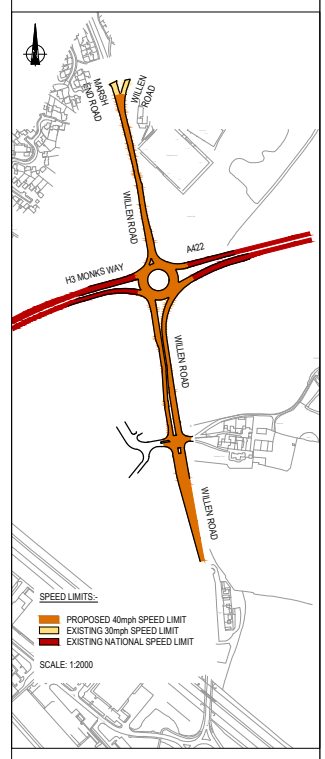
NOTES:-

1. ALIGNMENT OF MILTON KEYNES COUNCIL HIGHWAY BOUNDARY BASED ON HIGHWAY BOUNDARY INFORMATION PROVIDED BY MILTON KEYNES COUNCIL INTERPOLATED AND ALIGNED TO PHYSICAL FEATURES ON THE TOPOGRAPHICAL SURVEY. HIGHWAYS ENGLAND HIGHWAY BOUNDARY BASED ON HIGHWAYS ENGLAND GIS OPEN DATA DATED 28.10.2016.
2. MKC'S DRAFT 'A HIGHWAY GUIDE FOR MILTON KEYNES' DOCUMENT, FIG 1 - 'HIGHWAY NETWORK PLAN' AND TABLE 3.12 - 'TABLE OF LAYOUT STANDARDS' INDICATE THAT THE DESIGN STANDARDS FOR WILLEN ROAD SHOULD BE BASED ON THE DESIGN MANUAL FOR ROADS AND BRIDGES DESIGN STANDARDS.
3. EXISTING POSTED SPEED LIMIT OF WILLEN ROAD IS NATIONAL SPEED LIMIT (60mph). MKC HAVE CONFIRMED THAT A TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT TO 40mph. THEREFORE, THE DESIGN SPEED FOR THIS JUNCTION WILL BE 70kph.
4. THE DESIGN OF THE SIGNALISED JUNCTION HAS BEEN BASED ON ADC INFRASTRUCTURE LINSIG MODEL - '180213 PROPOSED ACCESS AND MITIGATION.lsg3x'.
5. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH:-
   - PBA TECHNICAL NOTE TN2003/001 - 'WILLEN ROAD, SIGNALISED JUNCTION DEVELOPMENT ACCESS';

DESIGN RISK

TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT OF WILLEN ROAD AND REINFORCE THE 70kph DESIGN SPEED. A TRO MAY NOT BE GRANTED, AND THIS PROCESS IS SEPARATE TO THE PLANNING PROCESS.

THE 'SITE ACCESS SIGNALISED JUNCTION' WOULD REQUIRE INDUCTIVE LOOPS ON THE NORTHERN, SOUTHERN AND WESTERN ARMS. MICROWAVE VEHICLE DETECTORS (MVD) COULD BE USED ON THE EASTERN ARM. PLEASE NOTE THAT DUE TO THE PROPOSED LAYOUT OF THE WESTERN DEVELOPMENT ARM I.E. CURVED ACCESS ROAD, WITH T-JUNCTIONS AND ASSOCIATED RIGHT TURN LANES IN CLOSE PROXIMITY TO THE SIGNALLED JUNCTION, IT WOULD NOT BE APPROPRIATE FOR MVD TO BE USED. INDUCTION LOOPS, EXTENDING NO MORE THAN 80m INTO THE DEVELOPMENT ACCESS, WOULD NEED TO BE USED. LIAISON HAS BEEN UNDERTAKEN WITH MKC WHO HAVE AGREED THAT THESE LOOPS CAN BE LOCATED BEYOND THE EXTENT OF THE PROPOSED HIGHWAY BOUNDARY.



Mark	Revision	Date	Drawn	Chkd	Appd

SCALING NOTE: Do not scale from this drawing. If in doubt, ask.

UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty to this is expressed or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake their own investigation where the presence of any existing sewers, services, plant or apparatus may affect their operations.

Drawing Issue Status

ROAD SAFETY AUDIT

LAND AT CALDECOTE FARM
NEWPORT PAGNELL
STAGE 1 SAFETY AUDIT
SITE REFERENCE PLAN

Client

SEGRO NEWPORT PAGNELL LTD

Date of 1st Issue	Designed	Drawn
03.08.2018	-	ST
A0 Scale	Checked	Approved
1:500	PE	PE
Drawing Number		Revision
FIGURE 1		-

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2.7 ROUNDABOUT ROAD MARKINGS

2.8 COORDINATION OF TRAFFIC SIGNAL PHASES

2.9 ACCESS TO REDWAY FROM A422 / H3 MONKS WAY

KEY:-

- PLANNING BOUNDARY
- MILTON KEYNES COUNCIL HIGHWAY BOUNDARY
- PROPOSED FULL HEIGHT SAFETY BARRIER
- PROPOSED ROAD RESTRAINT TERMINAL
- PROPOSED TRAFFIC SIGNALS
- SIGNAL CONTROL BOX
- JUNCTION INTERVISIBILITY ZONE
- FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 120m SSD - DESIGN SPEED 70kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 120m SSD - DESIGN SPEED 70kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 295m SSD - DESIGN SPEED 120kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 295m SSD - DESIGN SPEED 120kph

NOTES:-

1. ALIGNMENT OF MILTON KEYNES COUNCIL HIGHWAY BOUNDARY BASED ON HIGHWAY BOUNDARY INFORMATION PROVIDED BY MILTON KEYNES COUNCIL INTERPOLATED AND ALIGNED TO PHYSICAL FEATURES ON THE TOPOGRAPHICAL SURVEY. HIGHWAYS ENGLAND HIGHWAY BOUNDARY BASED ON HIGHWAYS ENGLAND GIS OPEN DATA DATED 28.10.2016.
2. MKC'S DRAFT 'A HIGHWAY GUIDE FOR MILTON KEYNES' DOCUMENT, FIG 1 - 'HIGHWAY NETWORK PLAN' AND TABLE 3.12 - 'TABLE OF LAYOUT STANDARDS' INDICATE THAT THE DESIGN STANDARDS FOR WILLEN ROAD SHOULD BE BASED ON THE DESIGN MANUAL FOR ROADS AND BRIDGES DESIGN STANDARDS.
3. EXISTING POSTED SPEED LIMIT OF WILLEN ROAD AND MONKS WAY IS NATIONAL SPEED LIMIT (60mph). MKC HAVE CONFIRMED THAT A TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT TO 40mph ON APPROACH TO THE ROUNDABOUT. THEREFORE, THE DESIGN SPEED FOR THIS JUNCTION WILL BE 70kph.
4. THE DESIGN OF THE SIGNALISED ROUNDABOUT HAS BEEN BASED ON ADC INFRASTRUCTURE LINSIG MODEL - '180213 PROPOSED ACCESS AND MITIGATION.lsg3x'.
5. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH:-
   - PBA TECHNICAL NOTE TN2003/002 - 'A422, SIGNALISED ROUNDABOUT';

DESIGN RISK

TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT ON APPROACH TO MARSH END ROUNDABOUT FROM MONKS WAY WESTBOUND AND EASTBOUND AND REINFORCE THE 70kph DESIGN SPEED. A TRO MAY NOT BE GRANTED, AND THIS PROCESS IS SEPARATE TO THE PLANNING PROCESS.

THE EXISTING LAY-BYS ADJACENT TO H3 MONKS WAY AND THE A422 ARE BEING AFFECTED BY THE SCHEME PROPOSALS. LIAISON HAS BEEN UNDERTAKEN WITH MKC WHO HAVE CONFIRMED THAT THESE LAY-BYS DO NOT NEED TO BE RELOCATED OR REINSTATED ELSEWHERE.

THE EXISTING CROSS SECTION OF H3 MONKS WAY DOES NOT PROVIDE ROAD RESTRAINT SYSTEMS (RRS) WITHIN THE CENTRAL RESERVE. THE PROPOSED PRELIMINARY DESIGN MAINTAINS THE MINIMUM WIDTH OF THE EXISTING CENTRAL RESERVE. LIAISON HAS BEEN UNDERTAKEN WITH MKC WHO HAVE CONFIRMED THAT RRS WILL NEED TO BE PROVIDED WITHIN THE CENTRAL RESERVE OF H3 MONKS WAY. OUR REVIEW OF STOPPING SIGHT DISTANCE (295m) ON THE IMMEDIATE APPROACH TO THE PROPOSED JUNCTION (i.e. 1.5 x 295m) CONFIRMS SSD WOULD NOT BE RESTRICTED, MEASURED TO THE 'OBJECT HEIGHT', DUE TO THE HEIGHT OF THE PROPOSED RRS.

PROPOSED UNCONTROLLED CROSSING TO CONNECT FOOTWAY / CYCLE TRACK TO EXISTING SHARED USE FOOTWAY / CYCLE TRACK

PROPOSED UNCONTROLLED CROSSING TO CONNECT FOOTWAY / CYCLE TRACK TO EXISTING TRAFFIC FREE ROUTE 'TONGWELL LANE' WITH CONNECTIONS TO WIDER REDWAY NETWORK

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE NARROWS TO CONNECT WITH EXISTING SHARED USE FOOTWAY / CYCLE TRACK

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 0.75m WIDE BUFFER ZONE FORMED WITH ROAD MARKING

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE (MINIMUM) BUFFER ZONE

PROPOSED 3m WIDE FOOTWAY / CYCLE TRACK WITH 1m WIDE BUFFER ZONE

NEW ROAD RESTRAINT SYSTEM ALIGNED TO SUIT NEW CENTRAL RESERVE ALIGNMENT AND TIED INTO EXISTING ROAD RESTRAINT SYSTEM

NEW ROAD RESTRAINT SYSTEM ALIGNED TO SUIT NEW CENTRAL RESERVE LAYOUT AND TIED INTO EXISTING ROAD RESTRAINT SYSTEM AT M1 OVERBRIDGE TO THE WEST

EXISTING LAY-BY TO BE REMOVED

1m WIDE VERGE

0.5m WIDE VERGE

2.5m WIDE VERGE

WILLEN ROAD SPORTS GROUND

Cricket Field

TONGWELL BROOK

TONGWELL LANE

MARSH ROAD

WILLEN ROAD

H3 MONKS WAY

A422

L Twr

2.10

2.11

2.12

2.13

INSET 1

FOR CONTINUATION SEE INSET 1

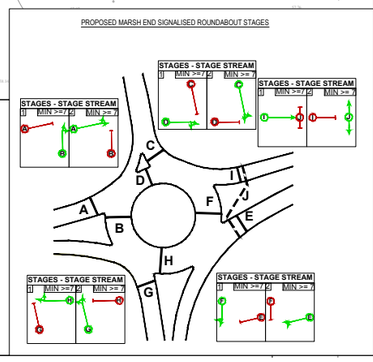
FOR CONTINUATION SEE RIGHT

FOR CONTINUATION SEE BELOW

FOR CONTINUATION SEE ABOVE

FOR CONTINUATION REFER TO DRAWING 38748/100/007

PROPOSED MARSH END SIGNALISED ROUNDABOUT STAGES



SPEED LIMITS:-

- PROPOSED 40mph SPEED LIMIT
- EXISTING 30mph SPEED LIMIT
- EXISTING NATIONAL SPEED LIMIT

SCALE: 1:2000

Mark	Revision	Date	Drawn	Chkd	Appd

SCALING NOTE: Do not scale from this drawing. If in doubt, ask.
UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty to this is expressed or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake their own investigation where the presence of any existing sewers, services, plant or apparatus may affect their operations.

Drawing Issue Status

ROAD SAFETY AUDIT

LAND AT CALDECOTE FARM
NEWPORT PAGNELL
STAGE 1 SAFETY AUDIT
SITE REFERENCE PLAN

Client

SEGRO
NEWPORT PAGNELL
LTD

Date of 1st Issue	Designed	Drawn
03.08.2018	-	ST
A0 Scale	Checked	Approved
1:500 & 1:2000	PE	PE

Drawing Number: FIGURE 2

Revision: -

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STAGE 1 ROAD SAFETY AUDIT RESPONSE REPORT

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Caldecote Farm, Newport Pagnell

Stage 1 Road Safety Audit Response Report

On behalf of **Segro Newport Pagnell Ltd**

Project Ref: 38748/2005 | Rev - | Date: 21st May 2019

Office Address: 11 Prospect Court, Courteenhall Road, Blisworth, Northampton NN7 3DG
T: 01604 878 300 E: northamptonusers@peterbrett.com

Document Control Sheet

Project Name: **Caldecote Farm, Newport Pagnell**

Project Ref: **38748/2005**

Report Title: **Stage 1 Road Safety Audit Response Report**

Doc Ref: **001**

Date: **21st May 2019**

	Name	Position	Signature	Date
Prepared by:	Dean Lucas	Engineer	*D Lucas*	21st May 2019
Reviewed by:	J Horne	Associate	[redacted]	21st May 2019
Approved by:	J Horne	Associate		21st May 2019
For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved

Contents

Appendices

Appendix A – Site Reference Plans;

1 Introduction

1.1 This Road Safety Audit (RSA) Response Report relates to the Stage 1 RSA Report on the Proposed signalised junction, and associated infrastructure, including Non-Motorised User (NMU) facilities, to provide access to proposed commercial development. Proposed signalised roundabout junction, and associated infrastructure, including NMU facilities, required to accommodate the likely increase in traffic flows generated by a proposed commercial development. The RSA Brief comprised of a set of drawings and document assembled by the Design Team for the scheme and approved by Milton Keynes Highways. The RSA Report was prepared and issued by the RSA Team Leader, Philip Edwards of Peter Brett Associates LLP.

1.2 The scheme comprises of:-

- Willen Road / Development Access Signalised Junction;
- Willen Road / H3 Monks Way / A422 Signalised Roundabout Junction;
- Associated Non-Motorised User facilities to serve the development.

1.3 The Design Team have carefully considered the problems and recommendations in the Stage 1 RSA Report undertaken in August 2018. This Stage 1 RSA was undertaken in accordance with HD 19/15 – 'Road Safety Audit', which was the current Standard at the time. Therefore, this RSA Response Report has also been prepared in accordance to HD 19/15, rather than subsequently released GG 119 and GG 119 Rev 1. The RSA Team examined and reported only on the road safety implications of the scheme as presented and have not examined or verified the compliance of the design to any other criteria. This RSA Response Report includes all of the problems and recommendations raised by the RSA Team, as well as the Design Team's response to these issues.

1.4 <u>Key Personnel</u>

Overseeing Organisation
Milton Keynes Highways (MKC) – Kevan Paradine (Senior Road Safety Engineer)

Road Safety Audit Team
RSA Team Leader – Philip Edwards (Peter Brett Associates LLP – Principal Engineer)
RSA Team Member – Bryn Kemp (Peter Brett Associates LLP – Principal Technician)

Design Organisation
Design Team Leader – James Horne (Peter Brett Associates LLP – Principal Engineer)

1.5 This report lists the problems identified by the Stage 1 RSA. The responses from the Design Team are shown in bold typeface.

1.6 Problems identified in this report are indicated by location and are shown on the site reference plans in Appendix A

2 Designer's Response to the Items Raised from this Stage 1 Road Safety Audit

2.1 Problem

Location	-	Willen Road Signalised Junction
Summary	-	Direction Signage Requirements may not be achievable – insufficient driver information and potential vehicle impact with signs

It is noted from the Design Statement (TN2003/001) that it is proposed to provide Advance Direction Signs (ADS) and Flag direction signs relating to the proposed traffic signal junction on Willen Road. The location for one ADS is indicated for northbound traffic approximately 60m from the traffic signal stop line. This location is after the carriageway has already widened from 1 to 3 lanes, and not sufficiently in advance of the junction to inform drivers. No other ADS or direction signs are indicated on the drawings.

The existing verges of Willen Road are heavily vegetated, and it is proposed that there will be a 3m wide Redway. Therefore, it cannot be assumed that the necessary signs can accommodated and adequate visibility can be achieved without difficulty.

In view of the 3 lane approaches to the junction along Willen Road, clear signage will be needed in advance of the junction such that drivers will position themselves in the correct lane. Otherwise there is a risk of late and unexpected lane changes, which may result in collisions between vehicles approaching the junction.

Recommendation

The proposed signing for the junction should be determined in more detail before the preliminary design is completed. Locations and sign widths should be investigated to ensure that adequate advance direction signage can be achieved with suitable lateral clearance from the edge of the carriageway, and with the appropriate mounting heights in relation to the proposed cycle route.

Design Team Response
We have reviewed the potential sizes of the Advanced and Flag type Directional Signs and can confirm that:-

- **These signs can be located within the proposed and existing highway boundary;**
- **Provided with appropriate lateral clearance from the kerbline or footway / cycle track;**
- **Positioned to ensure unrestricted visibility is provided to the sign plates;**
- **This review has been based on an 85th percentile approach speed between 30 to 40mph and in line with the design guidance provided by Appendix A of LTN 1/94 – 'The Design and Use of Directional Informatory Signs';**

2.2 Problem

Location	-	Willen Road Signalised Junction, northbound approach
Summary	-	Development of right turning lane – potential side swipe collisions associated with lane changes

On the northbound approach to Willen Road traffic signals, the carriageway widens from a single northbound lane to 3 lanes. The road markings indicated will tend to encourage a large proportion of traffic to approach the junction in the offside lane. But this lane is intended to just serve right turning traffic, for which numbers are expected to be low. Vehicles may naturally tend to enter the right turning lane and then have to change lanes for the ahead movement, which will introduce un-necessary conflict and increase the risk of collision.

Recommendation

The layout of road markings on the northbound approach should be amended such that most traffic naturally enters the ahead lanes and the right turning lane is developed nearer to the stop line.

Design Team Response

In response to other external factors, the proposed junction has now been relocated further north and has become a 3-arm signalised junction. The existing Caldecote Farm development, and the Sand and Gravel Quarry, are now to be served by Left In / Left Out (LILO) junctions. This design change has also removed the road safety problem identified above.

2.3 Problem

Location	-	Willen Road Signalised Junction, northbound approach
Summary	-	No provision for existing sand and gravel works – potential conflict with turning vehicles

The proposals do not indicate any provision for the existing access to Caldecote Farm Sand and Gravel Works. Large vehicles use this access and currently all turning movements are permitted. The proposals will see Willen Road widened to 5 traffic lanes (3 northbound and 2 southbound) with central ghost-island hatching. There is no provision within the hatching for right turning vehicles to access to the sand and gravel works.

It is not clear how the scheme will accommodate vehicles turning right into and out from the sand and gravel works access. There will be conflict and risk of collision between right turning vehicles at the sand and gravel works and other traffic using the multiple lanes on Willen Road.

Willen Road – Large vehicle exiting from the sand and gravel works

Recommendation

The scheme proposals should recognise the existing access which is used by large / heavy vehicles. It is recommended that, in association with Problem 2.2 above, the sand and gravel works access is provided with a right turn lane or becomes left in / left out, with vehicles being able to U-turn at the Tongwell and the Marsh End Road roundabouts.

Design Team Response

As detailed in the response to Problem 2.2, the scheme proposals have been updated to indicate the existing Quarry access being upgraded to provide a LILO style junction. However, this upgraded junction will only be provided if the remaining lifespan of the Sand and Gravel Quarry extends beyond the construction period of the development.

2.4 Problem

Location	-	Willen Road Signalised Junction, bus stops
Summary	-	Location of bus stops may cause confusion to drivers following buses leading to shunt type collisions

It is proposed to locate on-line northbound and southbound bus stops for Willen Road, in advance of the stop line of the traffic signals.

The close proximity of the bus stops, to the stop line (20 to 30m) may cause some confusion. For a bus signalling left and slowing to use the bus stop, a following vehicle may assume that the bus is intending to turn left at the traffic signals. The following vehicle may then have to stop suddenly and there may be a risk of shunt type collisions. Also, when a bus is stationary at the bus stop, there is not sufficient space for a left turning vehicle to pass the bus and re-enter the nearside lane before the traffic signals. There is also the risk that a stationary bus will mask the primary signal for approaching traffic.

Recommendation

The bus stop locations should be reviewed to avoid the hazards described above. For example, the northbound stop location could be positioned downstream of the junction.

Design Team Response
With the proposed junction moved further north, we have been able to provide the following:-

Northbound Bus Stop
- **This Bus Stop has remained upstream of the junction, but is now being provided with an off carriageway lay-by in order to retained 2No. northbound running lanes;**

Southbound Bus Stop
- **Bus Stop has been relocated 80m (approx.) downstream of the junction;**
- **An off carriageway lay-by style Bus Stop is now being proposed in order to retained 2No. southbound running lanes;**

2.5 Problem

Location	-	Willen Road Signalised Junction
Summary	-	Lack of clarity for separately phased manoeuvres leading to vehicle to vehicle conflicts

It is proposed that right turns from Willen Road southbound (phase b) and Willen Road northbound (phase d) are separately phased from the ahead and left turn movements on these arms. It is not clear from the preliminary design that the location of the secondary signal heads will clear enough to approaching drivers, especially given that these are 3-lane approaches. There is a risk of drivers responding to the wrong traffic signal and in the case of right-turning traffic, turning across the path of oncoming vehicles.

Recommendation

The detailed design should ensure that signal heads are positioned to ensure that they are not misinterpreted and indicative arrows are used as appropriate.

Design Team Response

The proposed junction is now a 3-arm signalised junction rather than a 4-arm i.e. a simpler layout. However, during the detailed design stage, appropriate positioning, additional cowling, indicative arrows, etc. will be detailed in order to mitigate against potential misinterpretation.

2.6 Problem

Location - Willen Road Signalised Junction, development access road

Summary - Side road layout - increased vehicle to vehicle conflict

The proposed on-site layout indicates a left / right staggered junction and a sharp bend within approximately 30 to 50m from the traffic signal junction with Willen Road. This gives rise to a generally increased level of conflict and complicated vehicle manoeuvres, which may lead to collisions between vehicles:-

- There is a right turn lane from the development access road into a development parcel to the south. The right turn lane may be confused as a right turn lane on the approach to the traffic signals;
- Vehicles queuing from the traffic signals may obstruct these side road accesses / junctions;
- The access to the development parcel to the north is on the inside of a bend where visibility may be restricted, especially considering drivers of vans and lorries whose "over-the shoulder" visibility is blocked;
- The geometry of this access also appears tight and may not be suitable to accommodate large vehicles turning;

Recommendation

The internal layout should be amended to provide increased separation between the Willen Road traffic signal junction and the on-site accesses. On-site access roads should be subject to their own road safety audit.

Design Team Response

The internal road layout of the development site has been updated in response to the 3-arm signalised junction. This has increased the separation between internal and external junction.