

WELBECK SOLAR FARM, MEDEN VALE

TECHNICAL NOTE DEALING WITH SITE ACCESS

1. Introduction

- 1.1. This Technical Note has been produced by PFA Consulting on behalf of Lightsource BP in respect of potential site access from the A60 to Welbeck Solar Farm, Meden Vale.
- 1.2. Welbeck Solar Farm is an existing solar farm on part of the former Welbeck Colliery, which received planning permission (Ref: 2012/0557/NT) in 2012. Access to the Solar Farm is from the existing colliery access with Elkesley Road.
- 1.3. This Technical Note considers provision of a new access for the solar farm directly off the A60 to replace the existing access, as identified in **Figure 1**. The benefit of a site access directly from the A60 is that no vehicles accessing the Solar Farm need to route through Meden Vale. However it should also be noted that operational traffic for a solar farm, are minimal, with one or two movements a month by a small van or 4x4 vehicles.

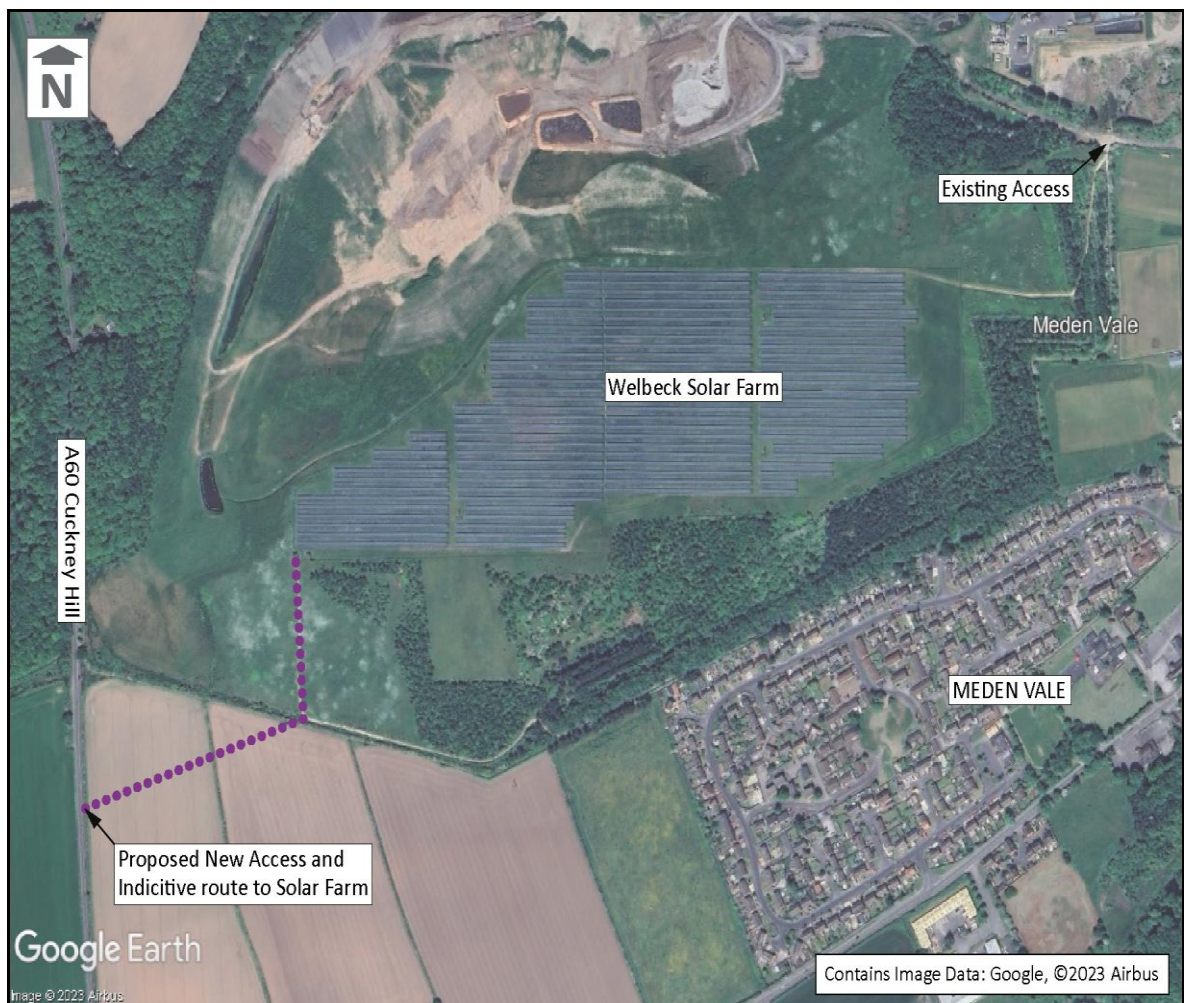


Figure 1: Context Plan

2. Site Access Proposals

Traffic Data

- 2.1. The A60 Cuckney Hill, in the context of the site connects Mansfield to the south with Worksop to the north and is subject to a 50mph speed limit.
- 2.2. Automatic Traffic Count (ATC) surveys were undertaken for a 7-day period between 17-23 May 2023. The surveys were undertaken approximately 160m either side of the proposed site access. Site 1 is to the north of the proposed site access and Site 2 to the south. The ATC results are summarised in **Table 2.1**, with the full outputs reproduced at **Appendix A**.

Table 2.1: ATC Summary – A60 Cuckney Hill

	Site 1		Site 2	
	Northbound	Southbound	Northbound	Southbound
AM Peak Hour 08:00-09:00 5-Day average weekday Traffic Flow	317	331	314	316
PM Peak Hour 17:00-18:00 5-Day average weekday Traffic Flow	287	347	258	337
12-Hour 07:00-19:00 5-Day average weekday Traffic Flow	3,058	3,270	3,052	3,127
AADT	3,558	3,707	3,554	3,564
Mean Traffic Speed (mph)	41.9	43.5	41.3	40.4
85%ile Traffic Speed (mph)	47.2	48.6	46.9	45.7

- 2.3. As recorded by the ATCs the actual vehicle speeds can be seen to fall within the 50mph speed limit.

Proposed Site Access

- 2.4. Drawing L520/01, reproduced at **Appendix B** sets out a preliminary layout for the site access, based on topographical survey. A simple priority junction is proposed given the low level of traffic movements associated with servicing the solar farm site. Visibility has been applied based on the speed limit of 50mph, with exit visibility splays of 2.4x160m to both the north and south.
- 2.5. NCC Design Guide paragraph 3.3.14 states:

“It is accepted that a visibility splay may be more accurately plotted by measuring the Y-distance along the inside wheel track. The likely position of the wheel track from the edge of the carriageway will vary depending on the width of the carriageway and roadside features. This must not be overestimated.”

- 2.6. Exit visibility splays have therefore been plotted to the inside vehicle track, as shown on drawing L520/01.

- 2.7. NCC Design Guide states in notes for paragraph 3.3.9:

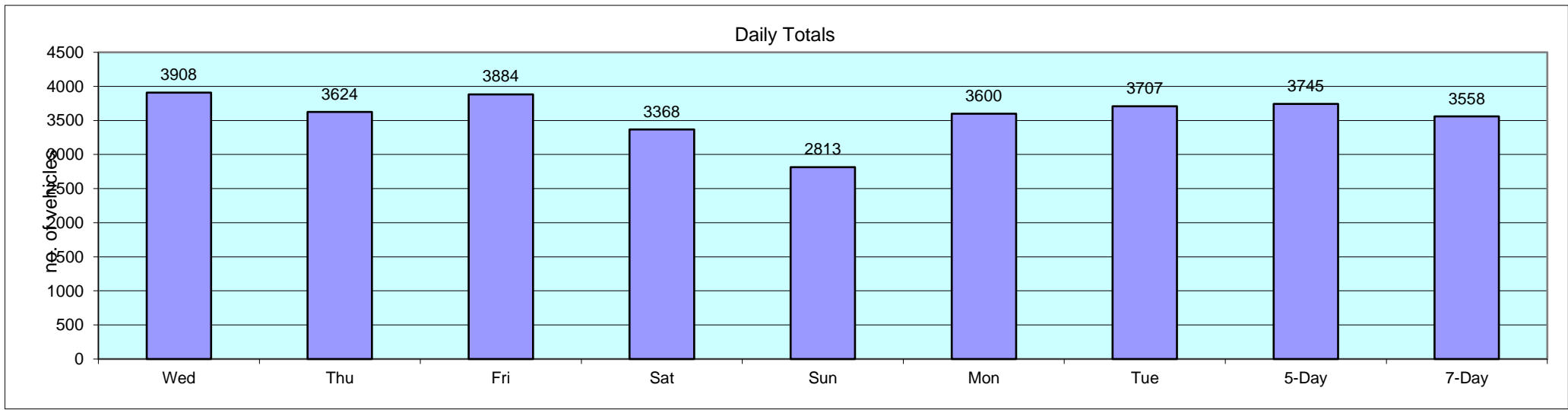
“Visibility splays must be either within the public highway or over land in the control of the developer to ensure that they remain free from obstruction whilst ever the development remains in existence. Hedges should not be planted within 1.0m of the visibility splay as there is potential for the visibility splay to be encroached upon by vegetation during periods of rapid growth.”

- 2.8. The proposed exit visibility splays can be seen to be achievable, subject to hedgerow removal. Indicative hedgerow removal is identified on drawing L520/01.
- 2.9. NCC Design Guide paragraph 3.3.13 identifies that if there is doubt that the visibility splays cannot be achieved, then long sections of the visibility splay may be necessary. Drawing L520/01 therefore has included the following visibility long sections due to the elevation and the crest in the road to the north of the proposed site access:
- Exit visibility to the north from the proposed site access
 - Forward visibility from a vehicle turning right at the site access towards a vehicle travelling southbound on the mainline
 - Forward visibility splay from a southbound vehicle on the mainline towards a vehicle waiting to turn right at the site access.
- 2.10. It can be seen that all visibility splays are achievable for the eye and object heights required by the NCC Design Guide at paragraph 3.3.12.
- 2.11. Drawing L520/01 also includes swept paths of an articulated HGV for the tightest movements, being left in/out, which can be seen to be achievable, without impacting on the other side of the carriageway. However it should be highlighted that the proposed site access is for all movements with the intended use being for operation traffic associated with the solar farm which will mainly be light vans or 4x4 vehicles.
3. **Summary**
- 3.1. It can be seen that a safe and suitable site access can be achieved from the A60 Cuckney Hill subject to hedgerows being removed to provide the necessary visibility splays.

12323 MEDEN VALE										
MAY 2023										
Site	Location	Direction	Start Date	End Date	Posted Speed Limit (PSL)	Total Vehicles	5 Day Ave.	7 Day Ave.	Average 85%ile Speed	Average Mean Speed
Site No: 12323001	Site 1 - A60, Meden Vale 53.22114, -1.15207	Channel: Northbound	Wed 17-May-23	Tue 23-May-23	50	24904	3745	3558	47.2	41.9
		Channel: Southbound	Wed 17-May-23	Tue 23-May-23		25949	3899	3707	48.6	43.5

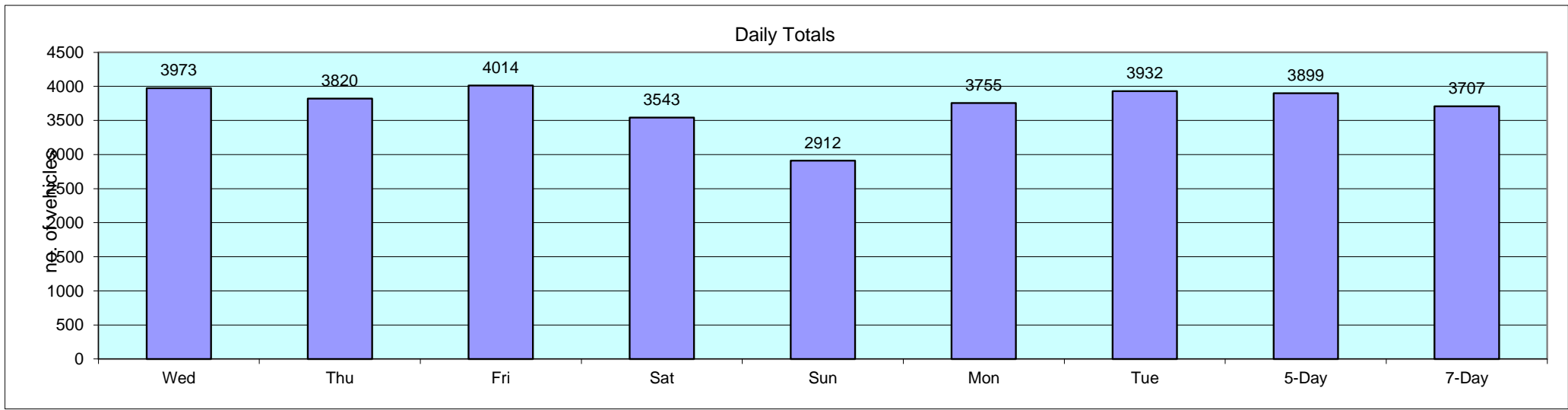
12323	MEDEN VALE		Site No: 12323001		Location		Site 1 - A60, Meden Vale			
	Channel: Northbound									
TIME PERIOD	Wed 17/05/2023	Thu 18/05/23	Fri 19/05/23	Sat 20/05/23	Sun 21/05/23	Mon 22/05/23	Tue 23/05/23	5-Day Av	7-Day Av	
Week Begin: 17-May-23										
00:00	12	14	13	23	19	11	8	12	14	
01:00	10	5	12	17	13	9	6	8	10	
02:00	4	5	8	4	12	4	8	6	6	
03:00	10	9	9	9	5	7	11	9	9	
04:00	28	21	31	28	20	25	30	27	26	
05:00	100	97	98	32	23	93	97	97	77	
06:00	177	154	137	63	38	164	179	162	130	
07:00	332	340	310	95	62	320	326	326	255	
08:00	327	319	325	171	101	312	303	317	265	
09:00	243	210	243	253	205	211	245	230	230	
10:00	213	216	229	297	253	199	223	216	233	
11:00	266	211	245	298	266	200	264	237	250	
12:00	241	204	246	284	302	214	212	223	243	
13:00	236	197	237	283	291	185	195	210	232	
14:00	216	235	290	303	225	239	240	244	250	
15:00	259	273	310	265	208	275	244	272	262	
16:00	341	265	276	227	183	257	289	286	263	
17:00	282	312	265	218	164	309	266	287	259	
18:00	219	194	207	148	145	206	221	209	191	
19:00	133	108	145	122	104	132	122	128	124	
20:00	117	86	82	75	58	90	99	95	87	
21:00	66	62	68	62	56	77	66	68	65	
22:00	44	54	43	47	37	35	25	40	41	
23:00	32	33	55	44	23	26	28	35	34	
12H,7-19	3175	2976	3183	2842	2405	2927	3028	3058	2934	
16H,6-22	3668	3386	3615	3164	2661	3390	3494	3511	3340	
18H,6-24	3744	3473	3713	3255	2721	3451	3547	3586	3415	
24H,0-24	3908	3624	3884	3368	2813	3600	3707	3745	3558	
Am	07:00	07:00	08:00	11:00	11:00	07:00	07:00			
Peak	332	340	325	298	266	320	326			
Pm	16:00	17:00	15:00	14:00	12:00	17:00	16:00			
Peak	341	312	310	303	302	309	289			

12323	MEDEN VALE		Site No: 12323001	Location	Site 1 - A60, Meden Vale				
			Channel: Northbound						
TIME PERIOD	Wed	Thu	Fri	Sat	Sun	Mon	Tue	5-Day	7-Day
	17/05/2023	18/05/23	19/05/23	20/05/23	21/05/23	22/05/23	23/05/23	Av	Av



12323	MEDEN VALE		Site No: 12323001		Location		Site 1 - A60, Meden Vale		
	Channel: Southbound								
TIME PERIOD	Wed 17/05/2023	Thu 18/05/23	Fri 19/05/23	Sat 20/05/23	Sun 21/05/23	Mon 22/05/23	Tue 23/05/23	5-Day Av	7-Day Av
Week Begin: 17-May-23									
00:00	14	12	32	15	26	15	24	19	20
01:00	6	7	7	17	12	14	8	8	10
02:00	14	9	5	12	8	7	10	9	9
03:00	9	7	7	4	4	2	5	6	5
04:00	16	14	16	4	12	19	16	16	14
05:00	65	54	59	45	26	74	63	63	55
06:00	104	102	92	37	35	92	99	98	80
07:00	293	222	244	91	55	245	259	253	201
08:00	319	359	320	131	83	319	337	331	267
09:00	212	189	208	209	125	224	201	207	195
10:00	179	172	214	252	186	195	195	191	199
11:00	201	204	217	285	269	221	224	213	232
12:00	225	247	252	376	284	225	241	238	264
13:00	263	236	307	286	272	220	219	249	258
14:00	332	329	350	293	257	260	360	326	312
15:00	338	301	345	303	261	287	338	322	310
16:00	387	368	340	286	277	363	400	372	346
17:00	330	358	327	268	194	378	341	347	314
18:00	228	204	243	182	168	229	205	222	208
19:00	150	161	143	141	139	137	140	146	144
20:00	147	101	87	104	101	100	101	107	106
21:00	69	76	90	101	55	69	88	78	78
22:00	40	48	68	66	39	38	40	47	48
23:00	32	40	41	35	24	22	18	31	30
12H,7-19	3307	3189	3367	2962	2431	3166	3320	3270	3106
16H,6-22	3777	3629	3779	3345	2761	3564	3748	3699	3515
18H,6-24	3849	3717	3888	3446	2824	3624	3806	3777	3593
24H,0-24	3973	3820	4014	3543	2912	3755	3932	3899	3707
Am	08:00	08:00	08:00	11:00	11:00	08:00	08:00		
Peak	319	359	320	285	269	319	337		
Pm	16:00	16:00	14:00	12:00	12:00	17:00	16:00		
Peak	387	368	350	376	284	378	400		

12323	MEDEN VALE		Site No: 12323001	Location	Site 1 - A60, Meden Vale				
	Channel: Southbound								
TIME PERIOD	Wed	Thu	Fri	Sat	Sun	Mon	Tue	5-Day	7-Day
	17/05/2023	18/05/23	19/05/23	20/05/23	21/05/23	22/05/23	23/05/23	Av	Av



12323 MEDEN VALE										
MAY 2023										
Site	Location	Direction	Start Date	End Date	Posted Speed Limit (PSL)	Total Vehicles	5 Day Ave.	7 Day Ave.	Average 85%ile Speed	Average Mean Speed
Site No: 12323002	Site 2 - A60, Meden Vale 53.21748, -1.15156	Channel: Northbound	Wed 17-May-23	Tue 23-May-23	50	24875	3740	3554	46.9	41.3
		Channel: Southbound	Wed 17-May-23	Tue 23-May-23		24948	3731	3564	45.7	40.4



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For Planning
This drawing is produced for the purposes of supporting a planning application and should not be relied upon for tender, pricing, or construction purposes.

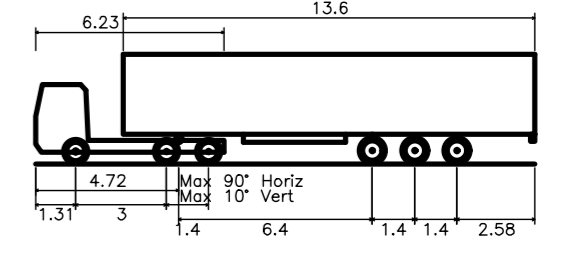
NOTES

1. This drawing is based on topographical survey information supplied by Tower Surveys, Project Title Land adjacent to A50 Cuckney Hill Meden Vale Mansfield, Drawing Number TSA-23-2226/201, dated June 2023.
2. Land ownership has been based on a Land Registry map search, and should be considered indicative only, as no detailed information has been provided by Lightsource BP.
3. The area highlighted Public Highway is the best interpretation, given the detail provided, of the land identified by Nottinghamshire County Council, that they believe to be highway maintainable at public expense.

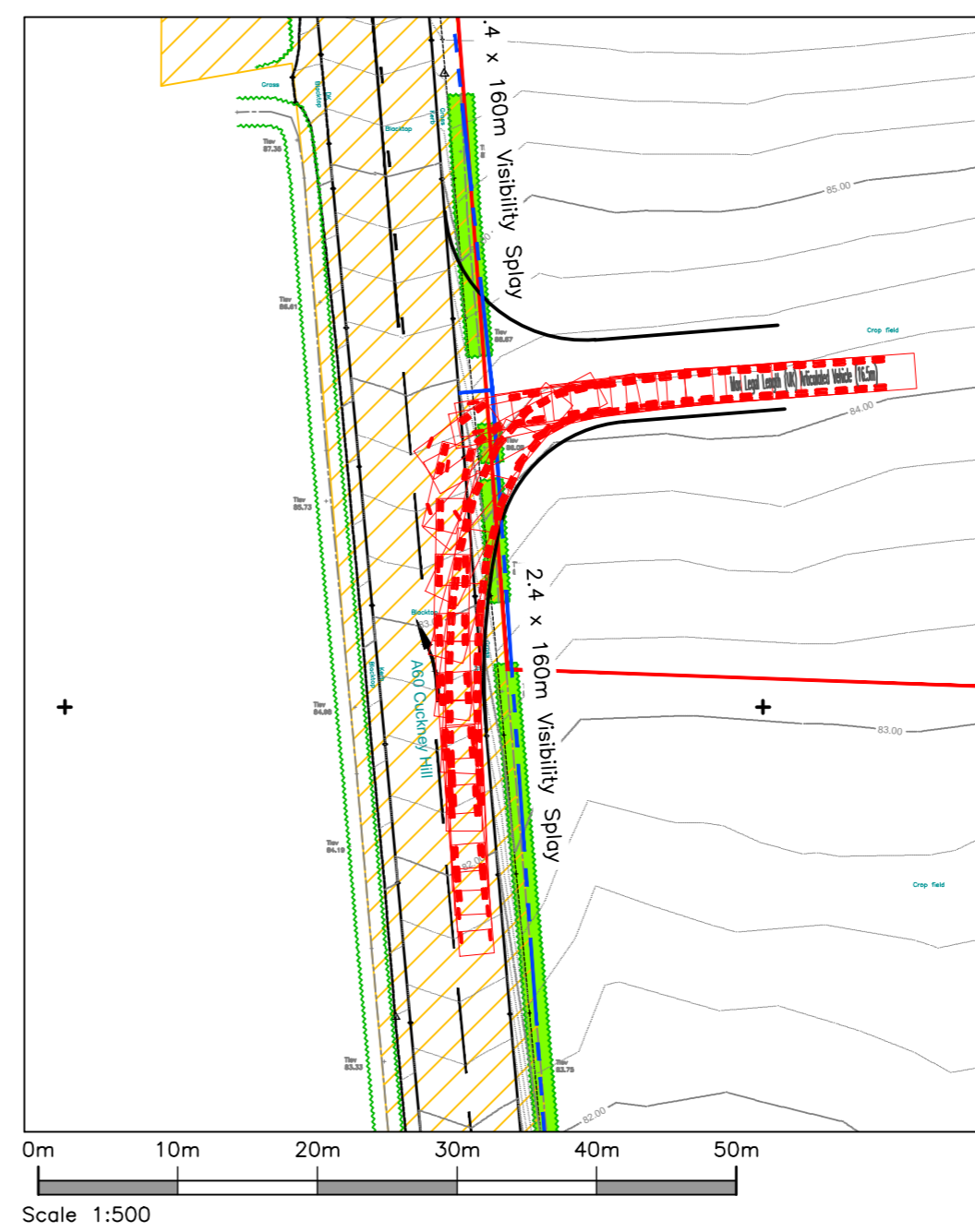
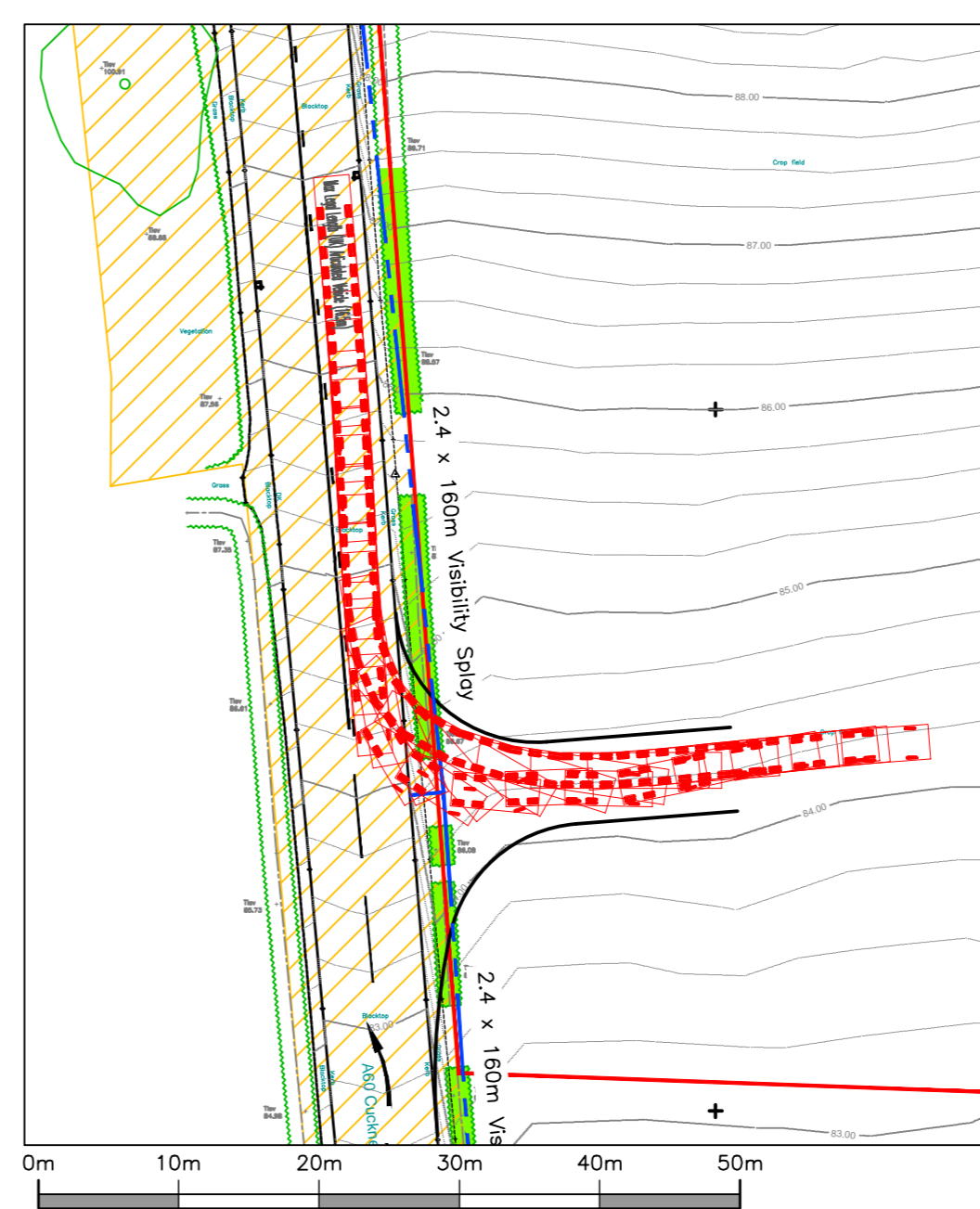
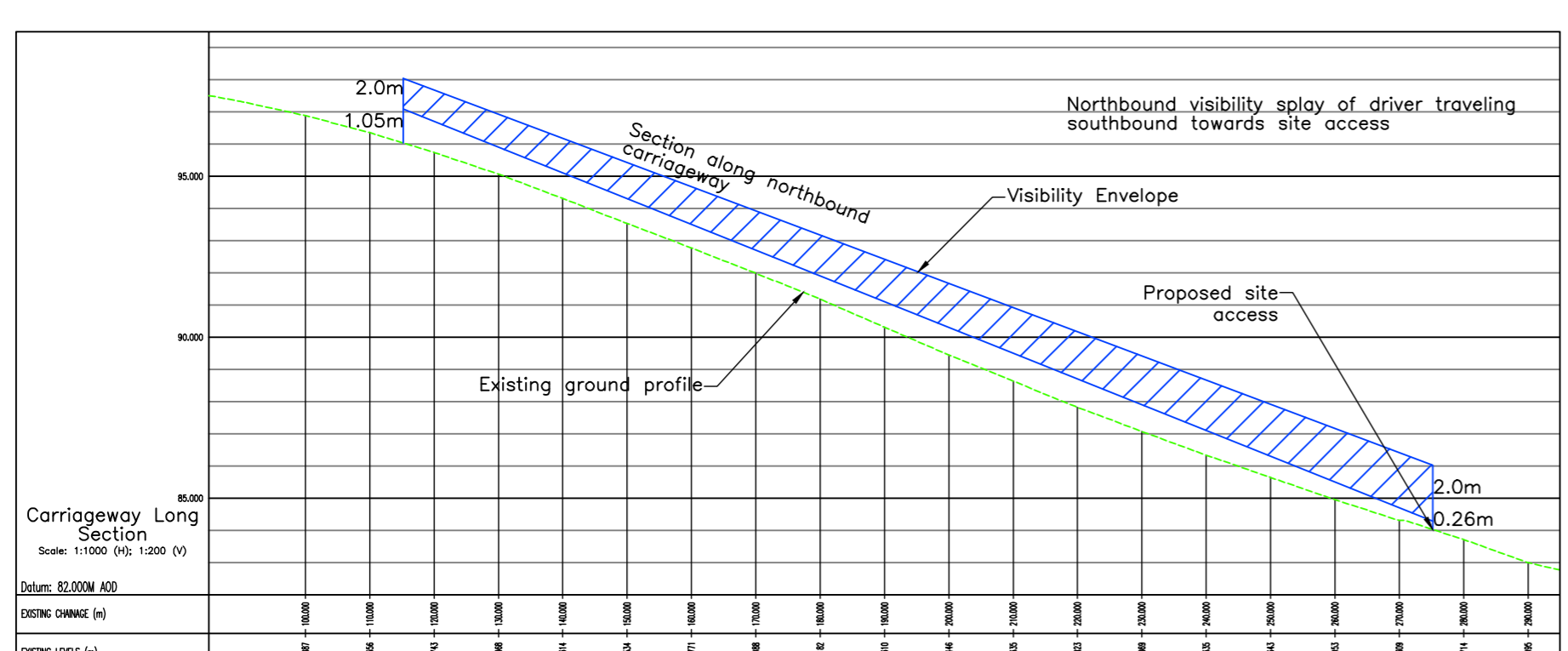
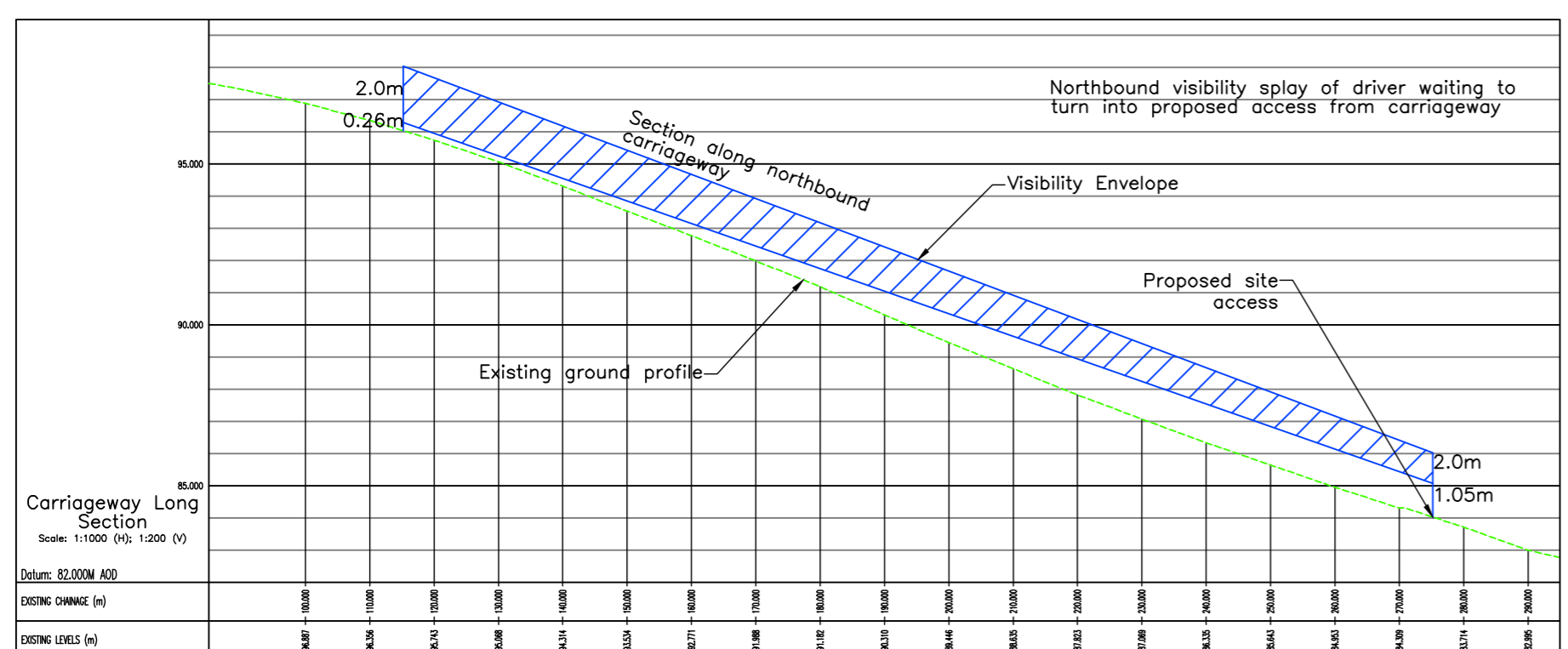
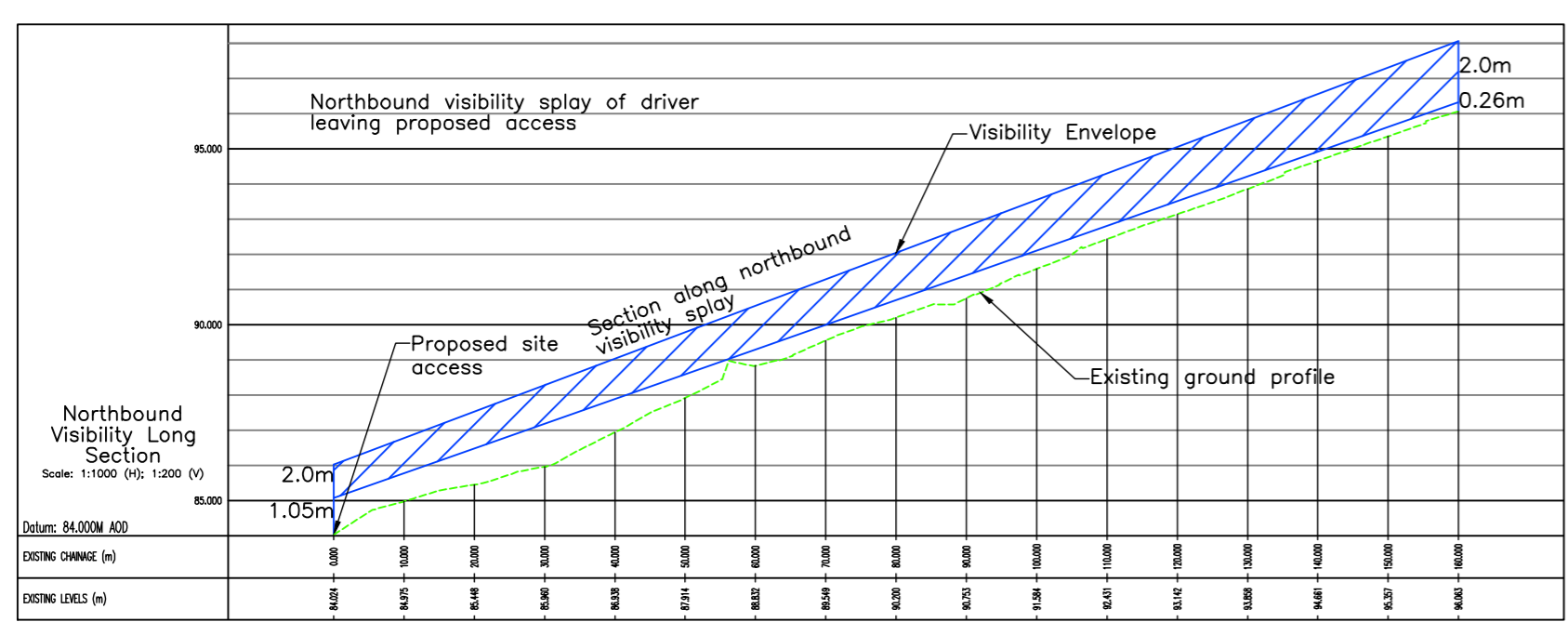
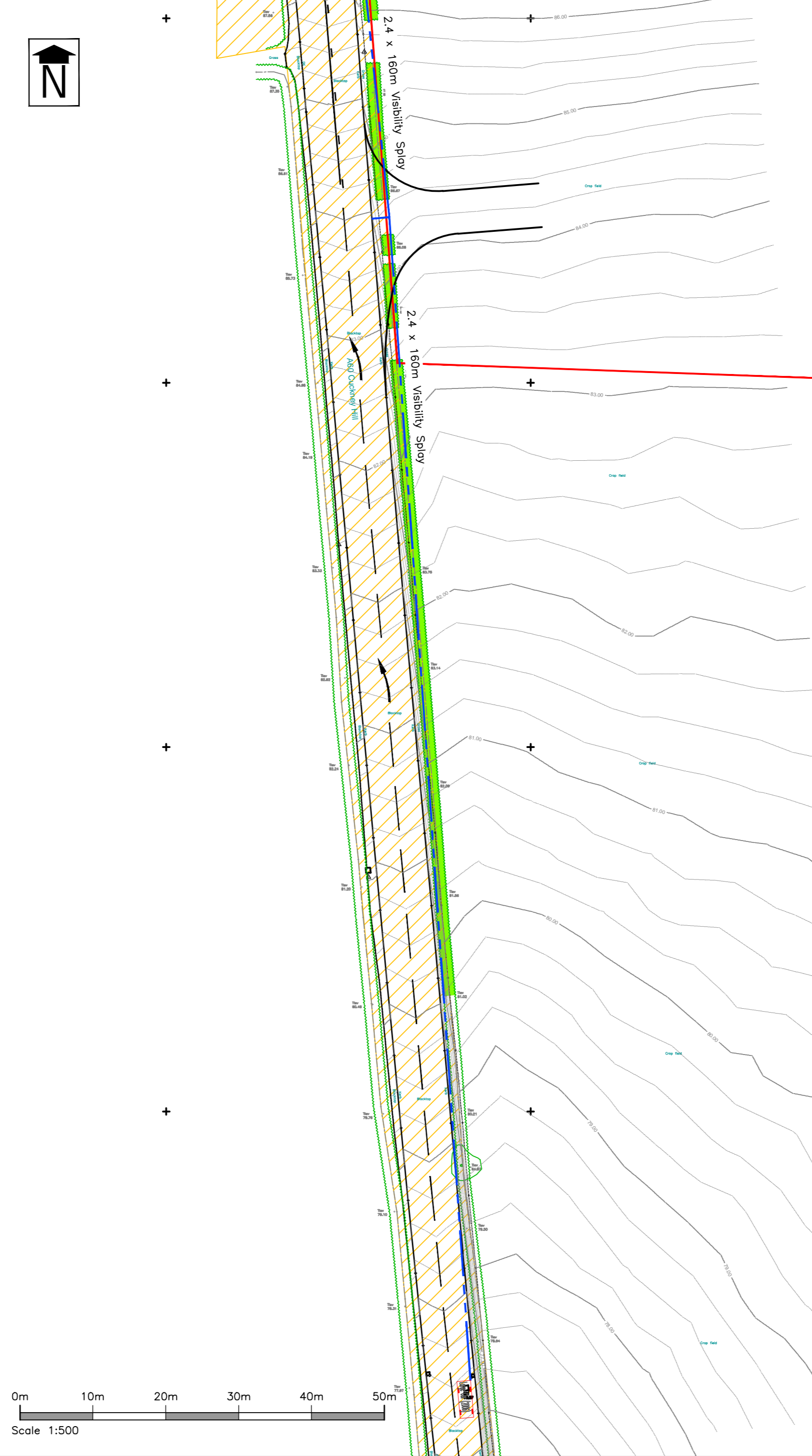
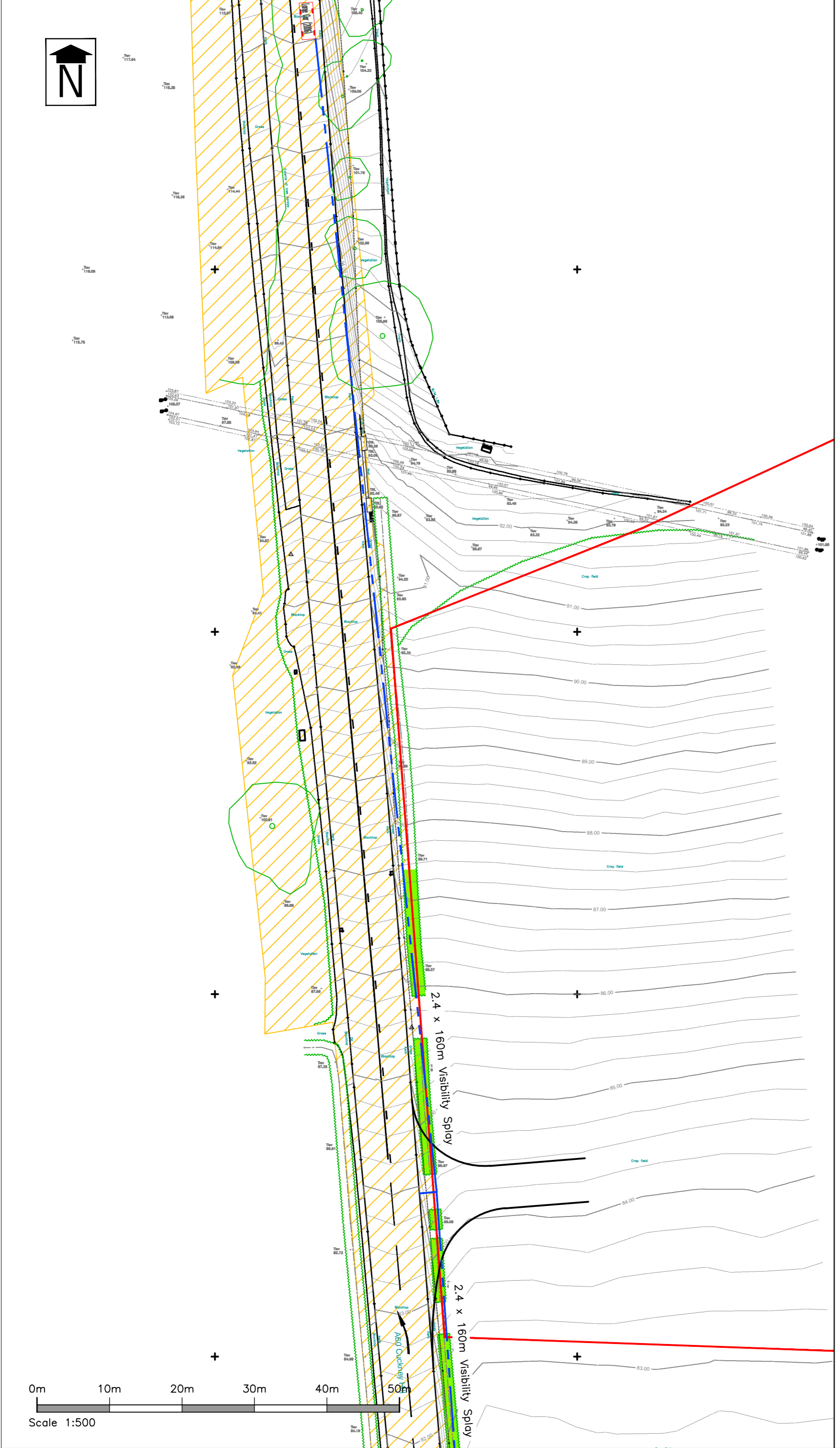
KEY

- Land Ownership Boundary
- - - 2.4 x 160m Visibility Splay
- Public Highway Land
- Area of Hedgerow impacted

VEHICLE KEY



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 0.336m
Max Track Width 2.300m
Lock to lock time 6.09s
Kerb to kerb Turning Radius 6.670m



Rev	Date	Description	Drawn	Check
#	03/07/23	First Issue	JIM	PK

Status: **FOR PLANNING**

Client: Lightsource BP

Project: Welbeck Solar Farm, Meden Vale

Drawing Title: Proposed Site Access Visibility

Drawing No. L520/01

Date: June 2023 Scale: As Shown @ A1

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