Technical Note

Project: **Cheswick Green Primary School, Cheswick Green**

Subject: **Cheswick Green Primary School - SMBC Highway Response (Construction Access)**

Client:	Solihull Metropolitan Borough Council (SMBC)	**Version:**	A
Project No:	05214	**Author:**	JO
Date:	26th January 2022	**Approved:**	CS

1 Introduction

1.1 Background

1.1.1 PJA has been commissioned by Solihull Metropolitan Borough Council (SMBC) to provide transport advice in relation to a planning application for a one form entry (1FE) expansion of Cheswick Green Primary School, Solihull.

1.1.2 A planning application for the expansion was submitted in May 2021 (planning reference: PL/2021/01418/PPFL). PJA prepared a Transport Assessment (TA), dated May 2021, that was submitted with the application.

1.1.3 SMBC, in their capacity as local highway authority was submitted comments on the TA, dated 22nd July 2021. This response concluded further information was required.

1.2 Note Purpose

1.2.1 This Technical Note provides a response to comments provided by SMBC Highways, specifically in relation to the construction access arrangements.

2 Construction Access

SMBC Highways Comment:

"The Highway Authority requires an access drawing to be submitted for the proposed temporary construction access, which should include details of the geometry of the vehicular access, and demonstrate that visibility splays commensurate with a 40mph speed limit (2.4 x 120m) can be achieved in both directions to the near side edge of the carriageway. Vehicle

tracking drawings should also be provided to demonstrate that two-way vehicle movements can occur within the vehicular access onto the public highway, and also along the access road"

PJA Response

2.1.1 Drawings have been prepared of the proposed temporary construction access detailing:

- The geometry of the vehicular access;
- The visibility splays based on a posted speed limit of 40mph; and
- Tracking of the largest anticipated vehicles for the construction site.

2.1.2 As shown on the drawings contained in **Appendix A,** it is proposed to provide temporary construction access to the site compound, via Creynolds Lane. It is proposed to widen the existing access (4m) to 7m, and the dropped kerb width to 15m. It is assumed that a banksman will be present to guide large construction vehicles in, and out of the junction to ensure that vehicles are able to manoeuvre in and out the access

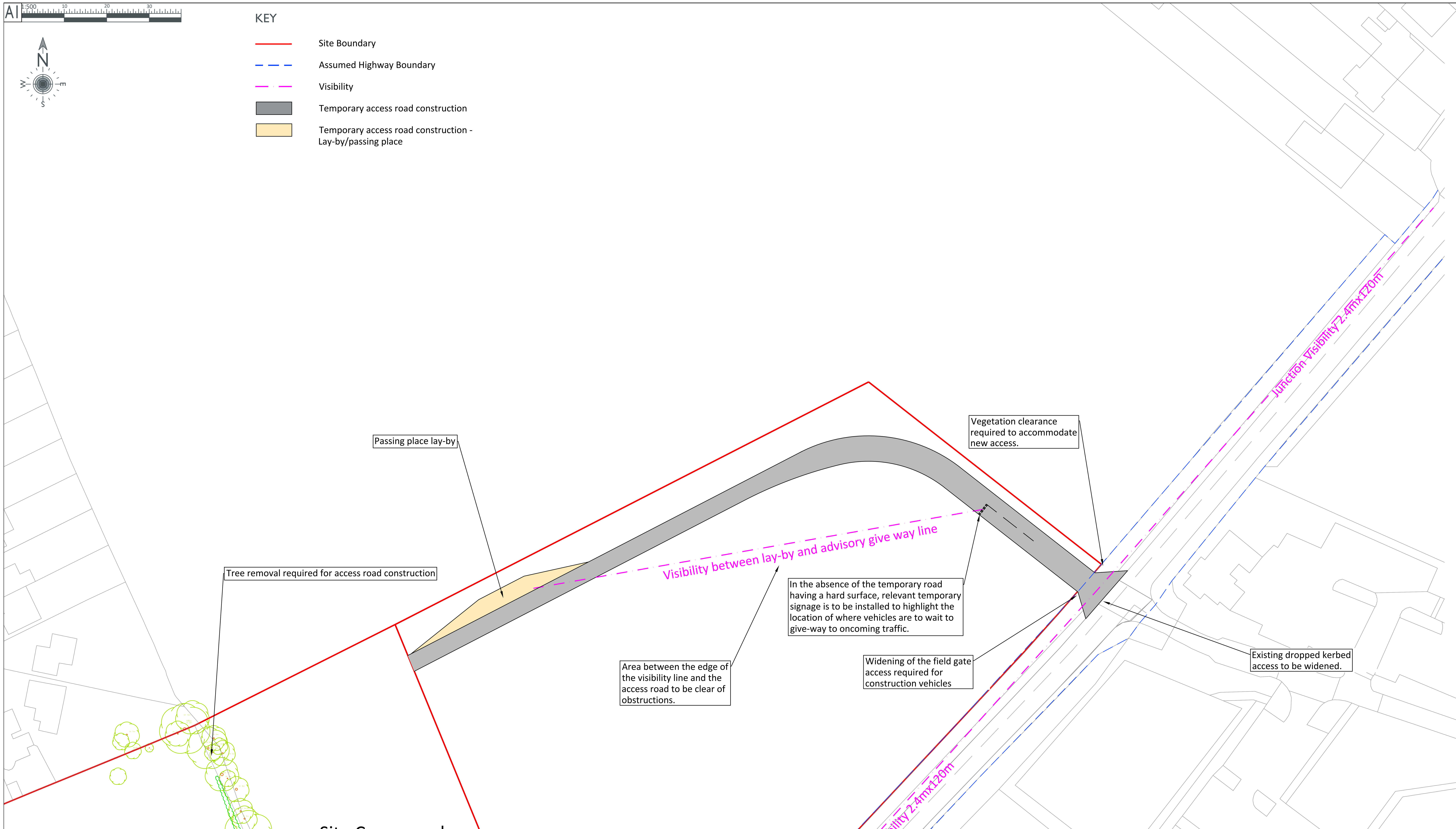
2.1.3 The site is not expected to generate significant volumes of construction traffic, with infrequent demand for two-way traffic. Therefore, a two-way 6m section of access has been designed at the access/egress point from Creynolds Lane, which then reduces to single track after the left-turn towards the school grounds.

2.1.4 Vehicles entering the site will be required to give way to vehicles exiting the site, as shown by the give-way line markings on the Drawing 05214-A-0002-P0. In the absence of the temporary road having a hard surface to formally demarcate this give-way line, relevant temporary signage will be installed to highlight the location of where vehicles are required to wait to give-way to oncoming traffic. A passing place lay-by has also been provided to the north of the access track, which will allow for vehicles exiting the site to pull over in the event another vehicle is travelling in the opposite direction. It is assumed that the visibility between the proposed give-way line and passing place layby will not be restricted. This arrangement has been designed to minimise the impact on the existing agricultural land, given the temporary nature of the access requirements.

2.1.5 Drawing 05214-A-0002-P0 demonstrates that visibility splays of 120m can be achieved in both directions, based on the posted speed limit of 40mph.

2.1.6 **Appendix A** also contains vehicle tracking for a range of typical construction vehicles.

Appendix A Construction Access Drawings



NOTES

These drawings have been produced with reference to the CDM Regulations 2015. Please note that these are pre-construction phase drawings and should be subject to further design risk management as required in accordance with Regulation 9

1. Do not scale from this drawing.
2. All dimensions are in metres unless stated otherwise.
3. This drawing is based on Ordnance Survey. All works are proposed to be within the highway boundary or Developer owned land.
4. This drawing is to be read in conjunction with all other relevant Engineering drawing and details.
5. This drawing is not to be reproduced in any part or form without consent of PJA Civil Engineering Ltd. All copyright reserved.
6. Reproduction from the Ordnance Survey map with permission of the controller of Her Majesty's Stationary Office.
7. The design details presented must be reviewed in conjunction with the wider site information and site constraints which may not be evident on drawing and must be requested if not already provided.
8. The drawing details have been composed for access viability purposes only. The drawing should not be used for tendering or construction purposed. The information is subject to change during the detailed design and understand of highway authority preferences, which vary between authorities.
9. Site specific detailed surveys need to be carried out to confirm design information which may impact the outline design proposals. These include, but are not limited to ground conditions (geotechnical and geo-environmental), groundwater levels, buried services, remnant obstructions, ecology, tree protection and topography.
10. Impacts relating to other civils features; namely: fencing, drainage, pavement, kerbing, footway construction, have not been detailed and are subject to detailed design.
11. The Engineer shall be notified immediately, in writing, should any errors or discrepancies be found.
12. Any existing details which are shown on this drawing are for guidance only and are to be checked on site. The impact on existing street furniture, road signs, utilities etc has not been highlighted and will be subject to a detailed design review.
13. Highways boundary extent will need to be confirmed to ensure visibility lines can be maintained.
14. The junction has been designed to allow the swept paths of the design vehicle access and egress the proposed development.
15. The existing road widths are based upon the Ordnance Survey information.
16. The design speed of the roads have been assumed. However, this is subject to a speed survey to verify the design speed of the road based on 85th percentile speed.
17. The proposals outlined are subject to a Road Safety Audit.
18. Design speed
    - Creynolds Lane - 70kph assumed based on existing road speed limit (40mph), subject to ATC peed data for the 85th percentile.
    - Access Road - 10mph subject to confirmation by the client.
19. Ordnance survey, site extents and proposed site layout received from Solihull Metropolitan Borough Council on 24 August 2021.

Until Technical Approval has been obtained from the relevant Local Authorities or Statutory Bodies, it should be understood that all drawings are issued as preliminary and NOT for Construction. Should the Contractor and / or Employer commence work prior to approval being given, it is entirely at their own Risk

PRELIMINARY SCHEME
For comment and review only.
Design is based upon information available at the time.
Design is subject to full review as additional information becomes available.
Design is subject to full review upon receipt of comments from
- Development Control
- LA Planning Authority
- Environment Agency
- LA Highways Department
- Sewerage Undertaker

Design Assumptions

Location of the existing field gate access assumed from OS mapping and Google Maps. Topographical Survey required to confirm precise location and dimension of the existing access.

Temporary access is assumed to be used by construction traffic only as shown on drawing 05214-A-0003. It is assumed no emergency service vehicles or refuse vehicles will access the site via the new proposed access.

The presence of the works traffic access is assumed to be signed accordingly as part of the traffic management design of the Principal Contractor. It is assumed that a banksman will be present to guide large construction vehicles in and out of the junction, therefore being able to manoeuvre in and out of the access while utilising the full width of Creynolds Lane.

Design considerations

Following the swept path analysis, as shown on drawing 05214-A-0003, it was determined that the existing width of the field access (appx. 4m) is insufficient to accommodate the manoeuvres of the construction vehicles and requires widening. The entrance width has been increase to 7m and the dropped kerb length to 15m.

- To minimise the impact on the farmers field, the access road has been designed as a single track after negotiating the left turn towards the school grounds. The left turning width has been designed to vehicle swept paths and a passing place lay-by has been proposed along the single track temporary access.
- A two-way 6m section road has been design at the access/egress location from the highway. The road narrows around the bend to a single track road. Single way road has been designed between the bend and school access to limit the extend of the temporary route to the school.
- 6m wide track road has been designed on the straight stretch between the bend and the access to ensure the construction vehicles have sufficient width on the approach and exit manouvres from the bend and access.
- Bend of the access road was designed with a radius of 32m to accommodate the construction vehicle swept paths. The proposed radii of the temporary road attempts to keep construction traffic aligned to the perimeter of the existing field.
- 4m wide track road has been proposed between the access bend and the school to minimise the impact on the adjacent field. A passing place lay-by is proposed to allow vehicles to give-way to one another along the straight access road.
- The passing place lay-by location has been determined assuming that the visibility will not be restricted between the proposed give-way line and the proposed passing place lay-by. The lay-by will allow for vehicles entering the field to pull over in the event that another vehicle is traveling in the opposing direction.

REV	DATE	REVISION NOTE	BY
P1	10/09/2021	Notes amended	DO
P0	27/08/2021	Initial Issue	DO

PJA
Seven House ▫ High Street
Longbridge ▫ Birmingham
B31 2UQ ▫ Tel: 0121 475 0234
Birmingham ▫ Bristol
Exeter ▫ London ▫ Reading
pja.co.uk

CLIENT
Solihull Metropolitan Borough Council

PROJECT
Cheswick Green Primary School Temporary Site Access

DRAWING TITLE
General Arrangment

DRAWING ISSUE STATUS
INFORMATION

PJA JOB No.	SUB-CODE	DRAWING NO.	REVISION
05214	A	0001	P1

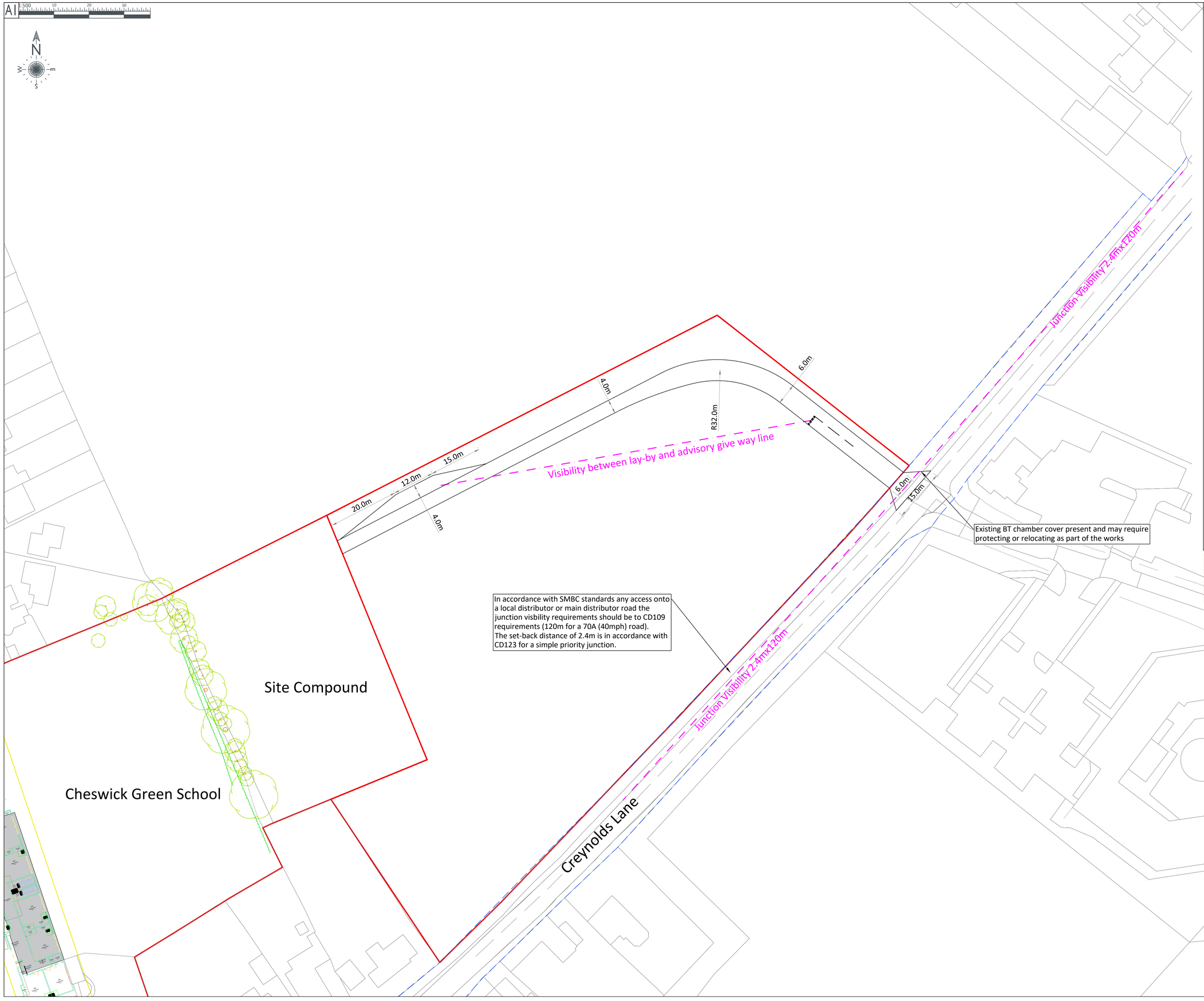
Revision Letter : P - Prelim / A - Approval / T - Tender / C - Construction

BIM DRAWING REFERENCE

SCALE	DRAWN	REVIEWED	DATE
A1@1:500	DO		10/09/2021

Copyright © Phil Jones Associates Ltd / PJA Civil Engineering Ltd

A1 1:500 10 20 30



NOTES

These drawings have been produced with reference to the CDM Regulations 2015. Please note that these are pre-construction phase drawings and should be subject to further design risk management as required in accordance with Regulation 9

1. Do not scale from this drawing.
2. All dimensions are in metres unless stated otherwise.
3. This drawing is based on Ordnance Survey. All works are proposed to be within the highway boundary or Developer owned land.
4. This drawing is to be read in conjunction with all other relevant Engineering drawing and details.
5. This drawing is not to be reproduced in any part or form without consent of PJA Civil Engineering Ltd. All copyright reserved.
6. Reproduction from the Ordnance Survey map with permission of the controller of Her Majesty's Stationary Office.
7. The design details presented must be reviewed in conjunction with the wider site information and site constraints which may not be evident on drawing and must be requested if not already provided.
8. The drawing details have been composed for access viability purposes only. The drawing should not be used for tendering or construction purposed. The information is subject to change during the detailed design and understand of highway authority preferences, which vary between authorities.
9. Site specific detailed surveys need to be carried out to confirm design information which may impact the outline design proposals. These include, but are not limited to ground conditions (geotechnical and geo-environmental), groundwater levels, buried services, remnant obstructions, ecology, tree protection and topography.
10. Impacts relating to other civils features; namely: fencing, drainage, pavement, kerbing, footway construction, have not been detailed and are subject to detailed design.
11. The Engineer shall be notified immediately, in writing, should any errors or discrepancies be found.
12. Any existing details which are shown on this drawing are for guidance only and are to be checked on site. The impact on existing street furniture, road signs, utilities etc has not been highlighted and will be subject to a detailed design review.
13. Highways boundary extent will need to be confirmed to ensure visibility lines can be maintained.
14. The junction has been designed to allow the swept paths of the design vehicle access and egress the proposed development.
15. The existing road widths are based upon the Ordnance Survey information.
16. The design speed of the roads have been assumed. However, this is subject to a speed survey to verify the design speed of the road based on 85th percentile speed.
17. The proposals outlined are subject to a Road Safety Audit.
18. Design speed
    - Creynolds Lane - 70kph assumed based on existing road speed limit (40mph), subject to ATC peed data for the 85th percentile.
    - Access Road - 10mph subject to confirmation by the client.
19. Ordnance survey, site extents and proposed site layout received from Solihull Metropolitan Borough Council on 24 August 2021.

Until Technical Approval has been obtained from the relevant Local Authorities or Statutory Bodies, it should be understood that all drawings are issued as preliminary and NOT for Construction. Should the Contractor and / or Employer commence work prior to approval being given, it is entirely at their own Risk

PRELIMINARY SCHEME
For comment and review only.
Design is based upon information available at the time.
Design is subject to full review as additional information becomes available.
Design is subject to full review upon receipt of comments from
- Development Control
- LA Planning Authority
- Environment Agency
- LA Highways Department
- Sewerage Undertaker

REV	DATE	REVISION NOTE	BY

PJA
Seven House - High Street
Longbridge - Birmingham
B31 2UQ - Tel: 0121 475 0234
Birmingham - Bristol
Exeter - London - Reading
pja.co.uk

CLIENT
Solihull Metropolitan Borough Council

PROJECT
Cheswick Green
Primary School
Temporary Site Access

DRAWING TITLE
Geometry

DRAWING ISSUE STATUS
INFORMATION

PJA JOB No.	SUB-CODE	DRAWING NO.	REVISION
05214	A	0002	P0

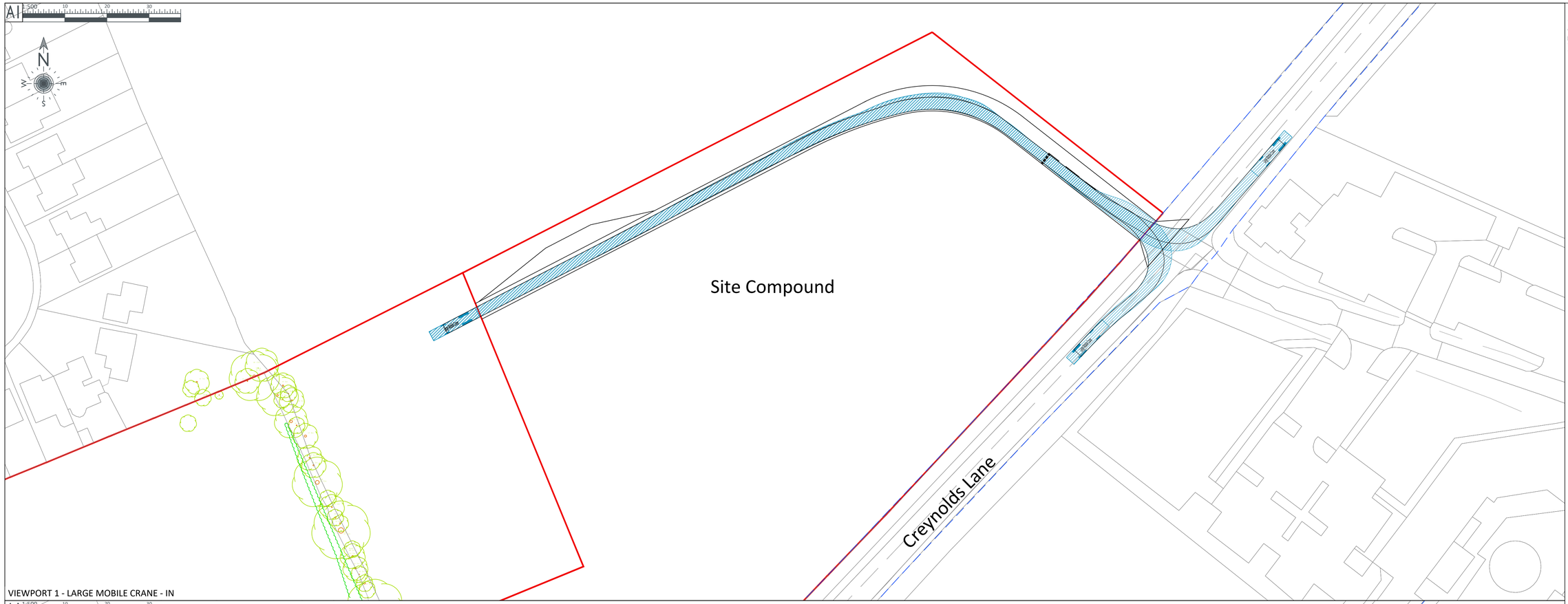
Revision Letter : P - Prelim / A - Approval / T - Tender / C - Construction

BIM DRAWING REFERENCE

SCALE	DRAWN	REVIEWED	DATE
A1@1:500	DO		27/08/2021

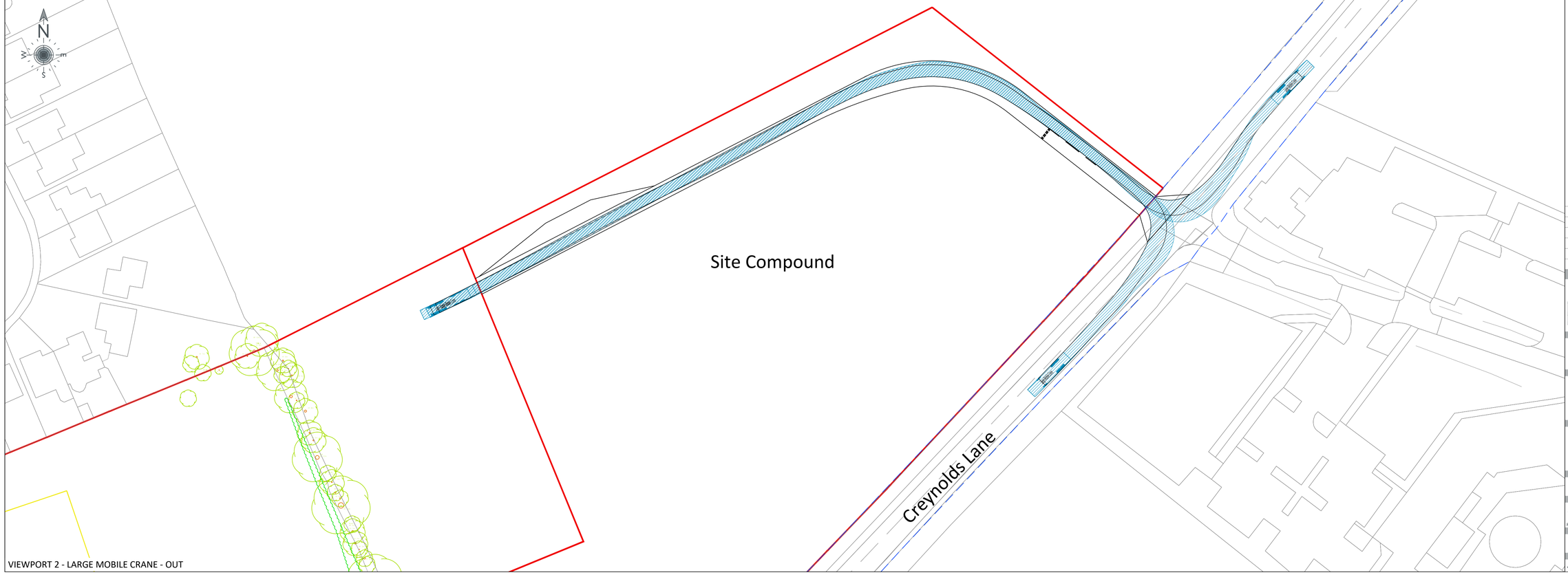
© Copyright and intellectual property rights reserved

A1 1:500 10 20 30



VIEWPORT 1 - LARGE MOBILE CRANE - IN

A1 1:500 10 20 30



VIEWPORT 2 - LARGE MOBILE CRANE - OUT

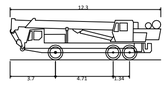
NOTES

These drawings have been produced with reference to the CDM Regulations 2015. Please note that these are pre-construction phase drawings and should be subject to further design risk management as required in accordance with Regulation 9

SWEPT PATH ANALYSIS NOTES:

1. This drawing is to be read in conjunction with all other relevant Engineering and Architect's details.
2. The purpose of this drawing is to display the various design vehicle swept paths maneuvering through the proposed junction. The drawing is for discussion purposes only, with the design subject to further design development, modeling assessment, data collection and consideration of constraints.
3. The concept design is based on OS mapping, received on 24 August 2021, from Metropolitan Borough Council.
4. The concept alignment and junction has been based on existing road conditions and the vehicle swept paths presented have informed/validated the proposed geometry of the junction.
5. The design geometrical parameters are presented on the supporting geometry plan with drawing reference 05214-A-0002.
6. The design vehicles that have been considered in the swept path analysis have been listed below and the relevant vehicle profiles are included to highlight the vehicle dimensions. The vehicle profiles selected below have been assumed and need to be confirmed by the Client, Contractor and/or Local Authority.

   Design Vehicles
   - Large Tipper
   - Large Mobile Crane
7. The speeds at which vehicle swept paths have been tracked have been summarised below;
   - Large Tipper 10mph
   - Large Mobile Crane 10mph
11. Design approach/summary/assumptions;
   - To minimise the impact on the farmers field, the access road has been designed as a single track after negotiating the left turn towards the school grounds. The left turning width has been designed to vehicle swept paths and a passing place lay-by has been proposed along the single track temporary access.
   - A two-way 6m section road has been design at the access/egress location from the highway. The road narrows around the bend to a single track road. Single way road has been designed between the bend and school access to limit the extend of the temporary route to the school.
   - 6m wide track road was designed on the straight stretch between the bend and the access to ensure the construction vehicles have sufficient width on the approach and exit manouvres from the bend and access.
   - Bend of the access road was designed with a radius of 32m to accommodate the construction vehicle swept paths. This has allowed to keep the access road as close to the perimeter of the designated farmers field as possible, minimising the impact on the south side of the field.
   - 4m wide track road was designed between the bend and the site compound due to the stretch of the road being sufficiently long for construction vehicles to finish the manouver around the bend and being able to travel in a straight line minimising the impact on the south side of the field.
   - The passing place lay-by location has been determined assuming that the visibility will not be restricted between the proposed give-way line and the proposed passing place lay-by. The lay-by will allow for vehicles entering the field to pull over in the event that another vehicle is traveling in the opposing direction.



Large Mobile Crane	
Overall Length	12.300m
Overall Width	2.430m
Overall Body Height	3.386m
Min Body Ground Clearance	0.590m
Track Width	2.430m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	10.000m

PRELIMINARY SCHEME
For comment and review only.
Design is based upon information available at the time.
Design is subject to full review as additional information becomes available.
Design is subject to full review upon receipt of comments from
- Development Control
- LA Planning Authority
- Environment Agency
- LA Highways Department
- Sewerage Undertaker

REV	DATE	REVISION NOTE	BY

PJA
Seven House - High Street
Longbridge - Birmingham
B31 2UQ - Tel: 0121 475 0234
Birmingham - Bristol
Exeter - London - Reading
pja.co.uk

CLIENT
Solihull Metropolitan Borough Council

PROJECT
Cheswick Green
Primary School
Temporary Site Access

DRAWING TITLE
Vehicle Tracking
Large Mobile Crane

DRAWING ISSUE STATUS
INFORMATION

PJA JOB NO.	SUB-CODE	DRAWING NO.	REVISION
05214	A	0003	P0

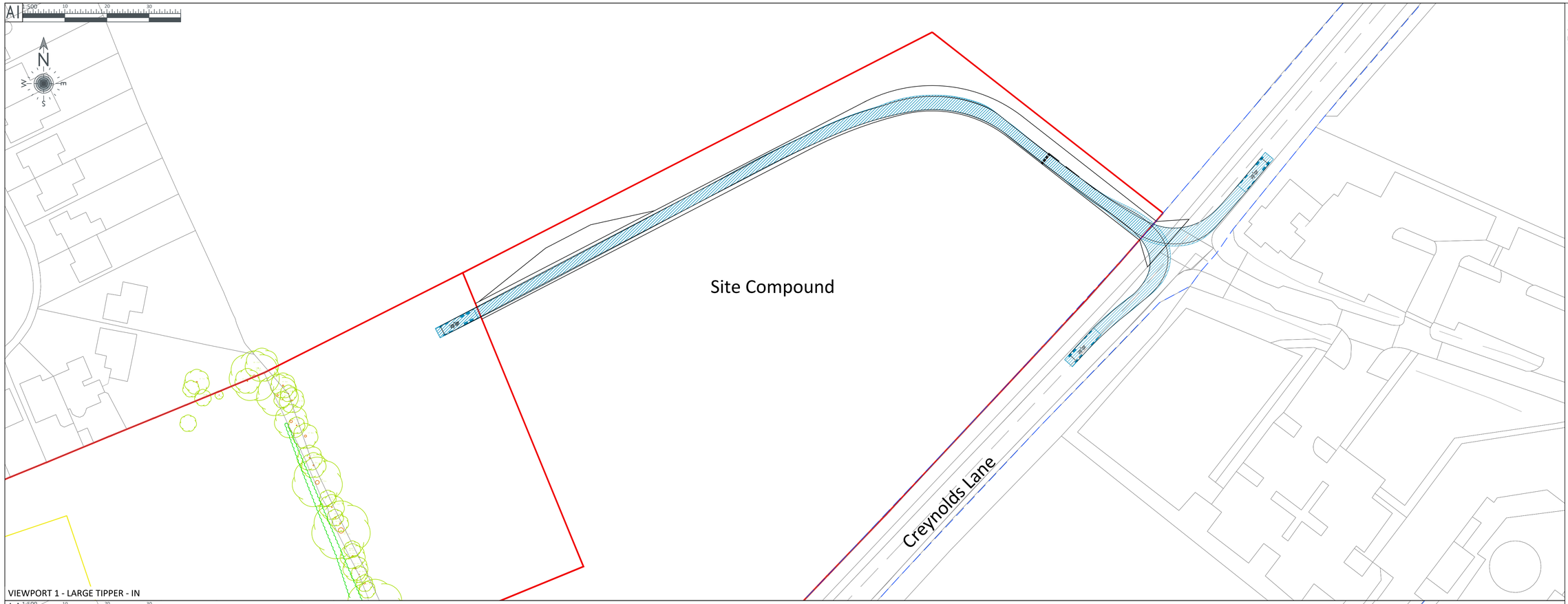
Revision Letter : P - Prelim / A - Approval / T - Tender / C - Construction

BIM DRAWING REFERENCE

SCALE	DRAWN	REVIEWED	DATE
A1@1:500	DO		27/08/2021

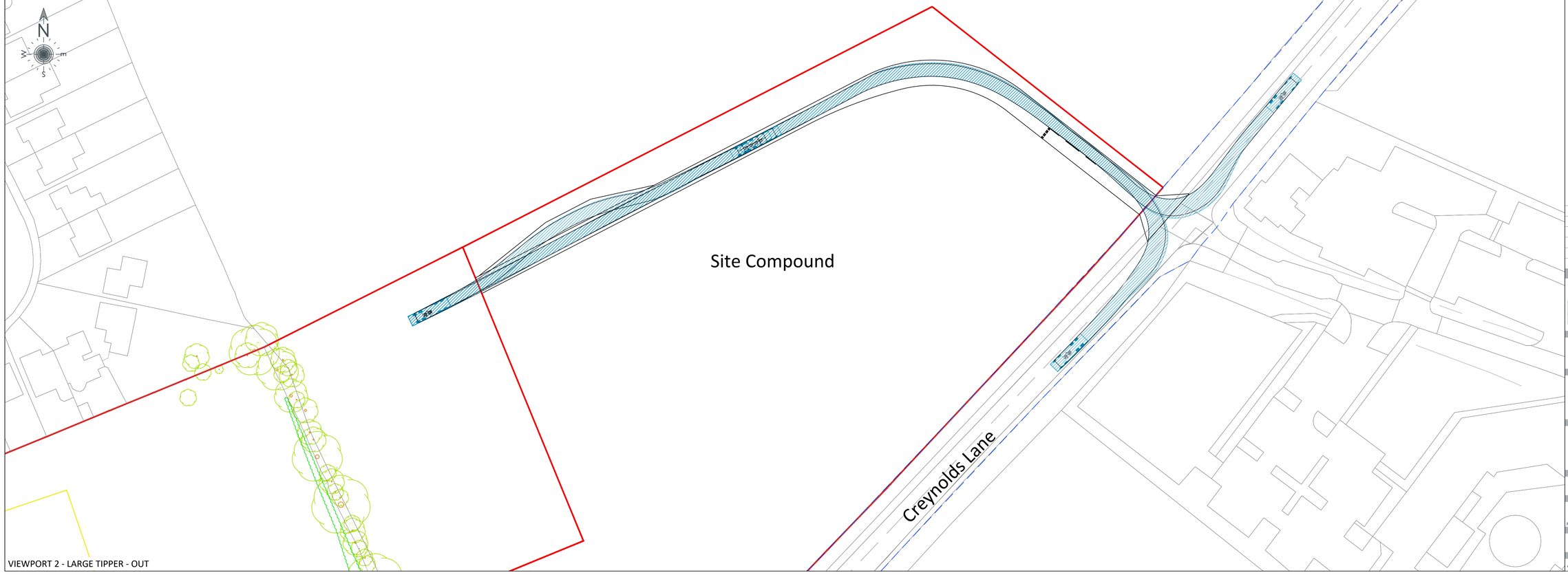
Copyright PJA. Do not reproduce without permission

A1 1:500



VIEWPORT 1 - LARGE TIPPER - IN

A1 1:500



VIEWPORT 2 - LARGE TIPPER - OUT

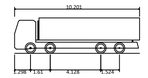
NOTES

These drawings have been produced with reference to the CDM Regulations 2015. Please note that these are pre-construction phase drawings and should be subject to further design risk management as required in accordance with Regulation 9

SWEPT PATH ANALYSIS NOTES:

1. This drawing is to be read in conjunction with all other relevant Engineering and Architect's details.
2. The purpose of this drawing is to display the various design vehicle swept paths maneuvering through the proposed junction. The drawing is for discussion purposes only, with the design subject to further design development, modeling assessment, data collection and consideration of constraints.
3. The concept design is based on OS mapping, received on 24 August 2021, from Metropolitan Borough Council.
4. The concept alignment and junction has been based on existing road conditions and the vehicle swept paths presented have informed/validated the proposed geometry of the junction.
5. The design geometrical parameters are presented on the supporting geometry plan with drawing reference 05214-A-0002.
6. The design vehicles that have been considered in the swept path analysis have been listed below and the relevant vehicle profiles are included to highlight the vehicle dimensions. The vehicle profiles selected below have been assumed and need to be confirmed by the Client, Contractor and/or Local Authority.

   Design Vehicles
   - Large Tipper
   - Large Mobile Crane
7. The speeds at which vehicle swept paths have been tracked have been summarised below;
   - Large Tipper 10mph
   - Large Mobile Crane 10mph
11. Design approach/summary/assumptions;
   - To minimise the impact on the farmers field, the access road has been designed as a single track after negotiating the left turn towards the school grounds. The left turning width has been designed to vehicle swept paths and a passing place lay-by has been proposed along the single track temporary access.
   - A two-way 6m section road has been design at the access/egress location from the highway. The road narrows around the bend to a single track road. Single way road has been designed between the bend and school access to limit the extend of the temporary route to the school.
   - 6m wide track road was designed on the straight stretch between the bend and the access to ensure the construction vehicles have sufficient width on the approach and exit manouvres from the bend and access.
   - Bend of the access road was designed with a radius of 32m to accommodate the construction vehicle swept paths. This has allowed to keep the access road as close to the perimeter of the designated farmers field as possible, minimising the impact on the south side of the field.
   - 4m wide track road was designed between the bend and the site compound due to the stretch of the road being sufficiently long for construction vehicles to finish the manouver around the bend and being able to travel in a straight line minimising the impact on the south side of the field.
   - The passing place lay-by location has been determined assuming that the visibility will not be restricted between the proposed give-way line and the proposed passing place lay-by. The lay-by will allow for vehicles entering the field to pull over in the event that another vehicle is traveling in the opposing direction.



Large Tipper	
Overall Length	10.201m
Overall Width	2.495m
Overall Body Height	2.890m
Min Body Ground Clearance	0.341m
Track Width	2.471m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	11.550m

PRELIMINARY SCHEME
For comment and review only.
Design is based upon information available at the time.
Design is subject to full review as additional information becomes available.
Design is subject to full review upon receipt of comments from
- Development Control
- LA Planning Authority
- Environment Agency
- LA Highways Department
- Sewerage Undertaker

REV	DATE	REVISION NOTE	BY

PJA
Seven House - High Street
Longbridge - Birmingham
B31 2UQ - Tel: 0121 475 0234
Birmingham - Bristol
Exeter - London - Reading
pja.co.uk

CLIENT
Solihull Metropolitan Borough Council

PROJECT
Cheswick Green
Primary School
Temporary Site Access

DRAWING TITLE
Vehicle Tracking
Large Tipper

DRAWING ISSUE STATUS
INFORMATION

PJA JOB No.	SUB-CODE	DRAWING NO.	REVISION
05214	A	0004	P0

Revision Letter : P - Prelim / A - Approval / T - Tender / C - Construction

BIM DRAWING REFERENCE

SCALE	DRAWN	REVIEWED	DATE
A1@1:500	DO		27/08/2021

Copyright PJA. Do not scale from this drawing.