HyNet North West

Outline Construction Traffic Management Plan (Tracked Change)

HyNet Carbon Dioxide Pipeline DCO

Planning Act 2008

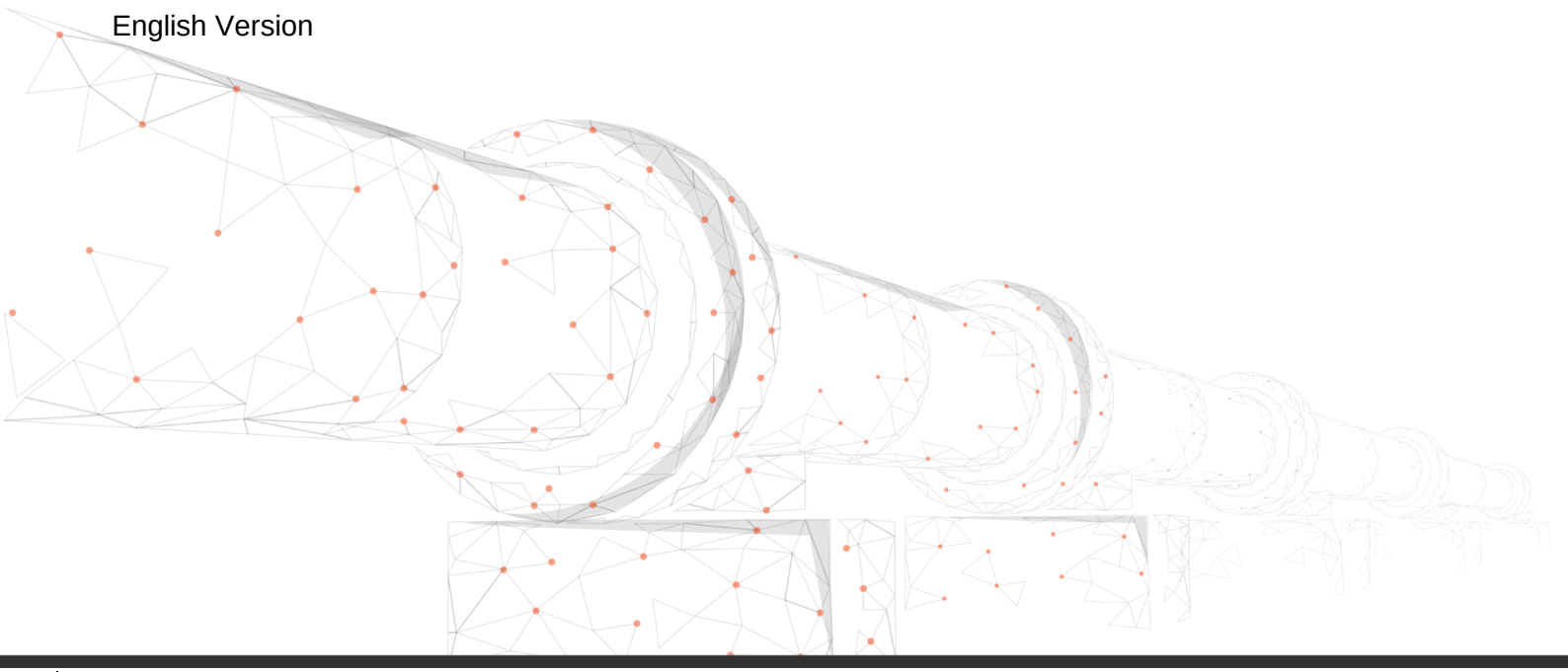
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulations 8(1)(c)

Document Reference Number 6.5.3

Applicant: Liverpool Bay CCS Limited

Inspectorate Reference: EN070007

English Version



REVISION: ~~B~~D

DATE: May 2023

DOCUMENT OWNER: WSP UK Ltd

PUBLIC

QUALITY CONTROL

Document Reference		D.6.5.3			
Document Owner		**WSP**			
Revision	**Date**	**Comments**	**Author**	**Checker**	**Approver**
A	September 2022	Submitted with DCO application	LP	AL	AV
B	March 2023	Updated for ES Addendum design change request 1	NT	AL	AV
C	May 2023	Updated for Deadline 2	RM	AL	AH
D	May 2023	Updated for Deadline 3	RM	AL	AH

TABLE OF CONTENTS

TABLES

ANNEXES

1. INTRODUCTION

1.1.1. This Outline Construction Traffic Management Plan (OCTMP) considers measures to mitigate the effects of constructing the DCO Proposed Development on the environment in respect of Traffic and Transport. This document should also be read alongside **Chapter 17 – Traffic and Transport (Volume II of the 2022 Environmental Statement (ES)) [APP-069]** and any subsequent addenda, as well as associated **Figures 17.1-17.7 (Volume IV) [CR1-089 – CR1-095]**.

1.1.2. This Revision B of the **Outline Construction Traffic Management Plan** replaces and supersedes **Revision A (APP-224**). The **Outline Construction Traffic Management Plan** (**Revision B**) has been updated in response to the proposed design changes as outlined in **Table i.i** of **Chapter I** of the **2023 ES Addendum Change Request 1.** Of the proposed design changes, the following five have been identified as having potential to require updates in comparison to **Revision A (APP-224):**

- Relocation of Cornist Lane BVS (PS01)
- Relocation of Northorp Hall AGI (PS03)
- Extension in construction working hours to include Saturday morning working (PS05)
- Extension of the Newbuild Infrastructure Boundary to enable access to Ince AGI from the adopted highway (PS06)
- Clarification of construction methodology for non-road mobile machinery (NRMM) crossing features at the surface at 19 trenchless crossings (PS15).

1.1.3. The Applicant intends to build and operate a new underground carbon dioxide (CO2) pipeline from Cheshire, England to Flintshire, Wales with necessary Above Ground Installations (AGIs) and Block Valve Stations (BVSs). It is classed as a Nationally Significant Infrastructure Project (NSIP) and will require a Development Consent Order (DCO) under the Planning Act 2008 ('PA2008') granted by the Secretary of State for Business, Energy and Industrial Strategy (BEIS) via the Planning Inspectorate (PINS).

1.1.4. The DCO Proposed Development will form part of HyNet North West ('the Project'), which is a hydrogen supply and Carbon Capture and Storage ('CCS') project. The goal of the Project is to reduce CO_2 emissions from industry, homes and transport and support economic growth in the North West of England and North Wales. The wider Project is based on the production of low carbon hydrogen from natural gas. It includes the development of a new hydrogen production plant, hydrogen distribution pipelines, hydrogen storage and the creation of CCS infrastructure. CCS prevents CO_2 entering the atmosphere by capturing it, compressing it and transporting it for safe, permanent storage.

1.1.5. The DCO Proposed Development is a critical component of HyNet North West which, by facilitating the transportation of carbon, enables the rest of the Project to be low carbon. The hydrogen production and CO_2 capture and storage elements of the Project do not form part of the DCO Proposed Development and will be delivered under separate consenting processes.

1.1.6. The DCO Application will seek consent for the construction, operation and maintenance of the following components which are part of the DCO Proposed Development, namely:

- **Ince Above Ground Installation (AGI) to Stanlow AGI Pipeline** – a section of new underground onshore pipeline (20" in diameter) to transport CO2;
- **Stanlow AGI to Flint AGI Pipeline** – a section of new underground onshore pipeline (36" in diameter) to transport CO2;
- **Flint AGI to Flint Connection Pipeline** – a section of new underground onshore pipeline (24" in diameter) to transport CO2;
- **Flint Connection to Point of Ayr (PoA) Terminal Pipeline** – a section of existing Connah's Quay to Point of Ayr (PoA) underground onshore pipeline (24" in diameter) which currently transports natural gas but would be repurposed to transport CO_2 as part of the DCO Proposed Development. No physical works would be required to facilitate the repurposing, with the exception of minor works at each end of the pipeline, and the construction of three new Block Valve Stations (BVSs) along the existing onshore pipeline;
- **Four AGIs** - Ince AGI, Stanlow AGI, Northop Hall AGI, and Flint AGI.
- **Six Block Valve Stations (BVSs)** - located along:
  - The new Stanlow AGI to Flint AGI Pipeline (three in total);
  - the existing Flint Connection to PoA Terminal Pipeline (three in total);
- Other above ground infrastructure, including Cathodic Protection (CP) transformer rectifier cabinets and pipeline marker posts;
- Utility Connection infrastructure, including power utilities and Fibre Optic Cable (FOC); and

- Temporary ancillary works integral to the construction of the Carbon Dioxide Pipeline, including Construction Compounds and temporary access tracks.

1.1.7. Further details of each element of the DCO Proposed Development are set out in **Chapter 3 – Description of the DCO Proposed Development (Volume II of the ES) [APP-055]** and any subsequent addenda**.**

1.1.8. This OCTMP is also accompanied by two drawings:

- **Centralised Compound Constraints Plan (Annex D)**
- **Centralised Compound Route Mitigation (Annex E)**

1.2. DOCUMENT PURPOSE

1.2.1. This OCTMP details the proposed mitigation measures which have been included within the Preliminary Design of the DCO Proposed Development and will be implemented to mitigate, so far as reasonably practicable, the potential effects of traffic during the Construction Stage of the DCO Proposed Development.

1.2.2. A full CTMP (and compliance with it) will be secured as a Requirement of the **Draft Development Consent Order (DCO) [REP1-004]** and will be included within the Construction Contractor's documentation to form a comprehensive construction traffic management package which will be adhered to by the appointed contractor.

1.3. OBJECTIVES

1.3.1. The objectives of the OCTMP are set out in **Table 1**.

Table 1 – OCTMP Objectives

Objective	Description
A	Ensure that movements of people, plant, and materials are achieved in a safe, efficient, and timely manner
B	Ensure that any impact to the local communities is reduced so far as reasonably practicable
C	Ensure construction traffic levels do not exceed an acceptable level during network peak periods
D	Reduce and control construction vehicle trips where practicable
E	Ensure strategies and mitigation measures are implemented and adhered to through continued monitoring, review, and improvement of the OCTMP

Objective	Description
F	Limit the effects of construction traffic on the Local Road Network.

1.4. SCOPING OPINION AND CONSULTATION

1.4.1. The DCO Proposed Development is located within England and North Wales in the administrative boundaries of Cheshire West and Chester Council (CWCC) and Flintshire County Council (FCC), who manage the local road network, and have been engaged with prior to the application submission. Construction traffic associated with the DCO Proposed Development will also use the Strategic Road Network (SRN) therefore engagement has also taken place with National Highways and Welsh Government Transport/North and Mid Wales Trunk Road Agent (NMWTRA).

1.4.2. An **EIA Scoping Opinion** (**Appendix 1.2, Volume III of the ES**) **[APP-075]** was received by the Applicant from the Inspectorate on 14 July 2021, including formal responses from Statutory Consultees. The responses from the ~~LPAs~~LPAs in relation to Traffic and Transport and how these requirements will be addressed by the Applicant are set out in **Appendix 1.3 - Scoping Opinion Responses (Volume III of the ES) [APP-076].**

1.4.3. **Table 2** provides a summary of the consultation undertaken to inform the Traffic and Transport assessment and development of this OCTMP to date.

Table 2 – Summary of Consultation Undertaken

Body/~~organisation~~Organisation	Meeting ~~dates~~Dates and ~~other forms~~Other Forms of ~~consultation~~Consultation	Summary of ~~outcome~~Outcome of ~~discussions~~Discussions
Cheshire West and Chester Council (CWCC)	Virtual Meeting 14 May 2021	Introduced the DCO Proposed Development and the Project, Traffic and Transport project team, discussed survey methodology, and contacts for specific enquiries, for example, road closure/diversions, and accident/ traffic flow data. Agreed in principle future meetings and likely timings of those.
Flintshire County council (FCC)	Virtual Meeting 12 May 2021	
North and Mid Wales Trunk Road Agent	Virtual Meeting 5 August 2021	Introduction to the DCO Proposed Development, discussion around scope of assessment, and moratorium on new road schemes in Wales. Traffic and Transport project team advised to consider status of road schemes at time of completing DCO assessment.
Cheshire West and Chester Council	Virtual Meeting 11 November 2021	Discussed the presence of works along the A5117, traffic management, and impact on Traffic and Transport surveys. CWCC advised that this was unlikely to affect the flows along this route.
Cheshire West and Chester Council	Virtual Meeting 24 March 2022	A meeting to provide an update on the status of the DCO Proposed Development and planned next steps with CWCC officers. Agreed that the next steps will be to confirm the scope of assessment and share road crossing locations and diversion routes.
Flintshire County Council - Highways	Virtual Meeting 4 April 2022	This meeting covered the DCO and DCO Applications. WSP provided an update on the progress of the Project and likely timescales associated with the finalisation of the Preliminary Design of the DCO Proposed Development. Confirmed that 1 June to 30 June will be the consultation period for the DCO documentation, following submission of the ES. Confirmed that the majority of DCO works are related to existing infrastructure, with the exception of the construction of the three Block Valve Stations.
Cheshire West and Chester Council	Virtual Meeting 19 May 2022	WSP provided an updated on DCO Proposed Development timescales for the DCO submission and construction programme and provided an overview of the latest Proposed Development design including construction activities at working locations and estimates of construction traffic volumes. The approach to traffic assessment and PRoW was also discussed.
Flintshire County Council – Highways	Virtual Meeting 30 May 2022	This meeting was held to discuss the scope of the transport documents for the Hynet NW project. WSP and EPUK provided an overview of construction activities at working locations and estimates of construction traffic volumes. The approach to traffic assessment and PRoW was also discussed.
Flintshire County Council – Public Rights of Way	Virtual Meeting 28 June 2022	WSP presented proposed PRoW diversions and discussed the approach in each location, confirming that all diversions will be temporary. FCC confirmed that they were broadly happy with the proposed approach but closures may be appropriate in some locations.
North and Mid Wales Trunk Road Agent	Virtual Meeting 29 July 2022	WSP provided summary of the Traffic and Transport assessment approach. Explained that the Flintshire Corridor scheme (based on outdated programme) meant that the DCO Proposed Development was likely to be operational prior to the commencement of construction of the Flintshire Corridor scheme. Given that, and the scale of traffic expected to be generated by Hynet, the assessment does not include strategic modelling or an assessment of the impact of the completed Flintshire Corridor scheme its Construction Stage. Requested an update on the status of the Flintshire Corridor scheme. Welsh Government Transport/NMWTRA clarified that the scheme is still on hold (per all road schemes in Wales) pending climate review by Welsh Ministers.

2. DCO PROPOSED DEVELOPMENT

2.1.1. This OCTMP considered in particular the following elements of the DCO Proposed Development. A summary of the vehicular movements associated with construction activities for these elements is set out below.

- **Newbuild Carbon Dioxide Pipeline;**
- **Above Ground Installations; and**
- **Block Valve Stations**

2.1.2. Further information on the DCO Proposed Development is found in **Chapter 3 - Description of the DCO Proposed Development (Volume II of the ES) [APP-055].**

NEWBUILD CARBON DIOXIDE PIPELINE

2.1.3. The majority of the Newbuild Carbon Dioxide Pipeline will be constructed via open cut trenching method with trenchless installation techniques used at locations such as road, rail and water crossings.

2.1.4. Construction works for open cut trenching will generally be contained within a fenced construction corridor, termed the Working Width. This would be established following the pre-construction activities and kept as narrow as possible to a maximum width of 32m where reasonably practicable (**D-PD-018** of the **REAC [REP1-015 and CR1-109]**. The Working Width would be executed in sections and would be clearly demarcated using temporary fencing for both safety and security. Activities within the working width would include vegetation clearance, removal and localised storage of topsoil, pipeline stringing and welding, excavation, pipeline installation (bedding, pipe lower and laying), backfilling and dewatering.

2.1.5. Materials will be required for bedding, padding, and backfilling of the Newbuild Carbon Dioxide Pipeline section. All pipe material will be delivered to the respective Centralised Compounds and stockpiled there. It will then be distributed to each of the local work-fronts by appropriate transport and strung out within the Working Width.

2.1.6. In order to avoid disruption to major highways and motorways, impact to major waterways or in localised congested areas such as those at Chester Road and Church Lane, it is proposed a trenchless tunnelling method is used to reduce construction impact. There are numerous methods to employ, depending on the soil structure at the location, among other factors. Localised Compounds will be required at these locations, with access taken from the Local Road Network (LRN) via temporary access locations. Construction traffic will include that associated with tunnelling plant and equipment, worker travel, and the transportation of bulk civils material.

2.1.7. Non-road mobile machinery (NRMM) used for pipeline installation techniques would generally move along the track within the working width. At non-sensitive locations where the pipeline is being installed under a feature using trenchless techniques, above ground construction access will be used to allow NRMM to cross from one side of the trenchless crossing to the other, providing there is no adverse impact on the environment. Further detail on these crossings is provided within **Chapter 3 - Description of the DCO Proposed Development (Volume II of the ES) [APP-055] Appendix 3.1 – Table of Trenchless Crossings [CR1-048].**

2.1.8. During the stringing activity, pipe sections will be distributed along the length of the route. Where possible, all pipeline sections, materials, plant, and equipment will be transported along the Working Width Where this is not feasible due to physical constraints (e.g. major waterways, roads, and rail lines), these items will be transported via the LRN.

BLOCK VALVE STATIONS

2.1.9. A total of six BVSs are required.

2.1.10. The following BVSs will be constructed and operated along the Newbuild Carbon Dioxide Pipeline:

- Rock Bank;
- Mollington; and
- Aston Hill;

2.1.11. The following BVSs will be constructed and operated along the existing Flint Connection to PoA Terminal Pipeline:

- Cornist Lane;
- Pentre Halkyn; and
- Babell.

ABOVE GROUND INSTALLATIONS

2.1.12. Installation of AGIs includes the provision of vehicular access for ongoing maintenance. During construction, these activities will generate vehicular movements by Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGVs), delivering plant and materials, and for staff working at the Site. Access may require the provision of temporary and permanent access tracks.

2.1.13. The following four AGIs are required:

- Ince;
- Stanlow;
- Northop Hall; and
- Flint.

2.2. DEVELOPMENT STAGES

2.2.1. In line with **Chapter 17 - Traffic and Transport (Volume II of the ES) [APP-069]**, and by definition, this OCTMP considers the Construction Stage of the DCO Proposed Development only.

2.2.2. During the Operational Stage there will be infrequent trips related to routine maintenance which are considered to be negligible.

2.2.3. The AGIs and BVSs will not require permanent staffing or personnel presence. Routine maintenance visits and activities will be undertaken. The anticipated maintenance and inspection activities and frequencies are shown in more detail within **Chapter 3 - Description of the DCO Proposed Development (Volume II of the ES) [APP-055].**

2.2.4. On this basis it is not considered necessary or appropriate to develop a Traffic Management Plan for the Operational Stage of the DCO Proposed Development.

2.2.5. During the Decommissioning Stage of the DCO Proposed Development it is anticipated that the effects will be significantly less than the Construction Stage as the Newbuild Infrastructure Pipeline will be left in situ. Activities associated with Decommissioning are shown in more detail within **Chapter 3 - Description of the DCO Proposed Development (Volume II of the ES) [APP-055].**

2.2.6. On this basis it is not considered necessary or appropriate to develop a Traffic Management Plan for the Decommissioning Stage of the DCO Proposed Development, at this stage.

2.3. CONSTRUCTION VEHICLE CLASSIFICATION

2.3.1. A wide variety of vehicle types will be used for the construction of the DCO Proposed Development. Vehicles will be required to transport people, equipment and materials.

2.3.2. Volumes of LGVs and HGVs associated with the Construction Stage of the DCO Proposed Development are detailed and assessed in **Chapter 17 – Traffic and Transport (Volume II of the ES) [APP-069].**

2.3.3. For the purposes of the Transport Assessment (TA), presented in **Appendix 17.13 - Transport Assessment (Volume III of the ES) [APP-151],** and EIA, the construction vehicles have been classified as follows, in accordance with the Driver and Vehicle Standards Agency Lorry types and weights guide:

- LGV: Vehicle 3.5 tonnes (t) or below in gross weight; and
- HGV: defined as any vehicle exceeding 3.5t gross weight

2.3.4. **Table 3** outlines the vehicle classification and typical vehicle types that will be required for the construction of the DCO Proposed Development.

Table 3 – Typical Construction Vehicle Classifications

LGVs	HGVS
Car, Van, 4x4 pick up, welfare van, Minibus	Excavator, soil compactor, HIAB/winch tractor, tractor and trailer,10m and 12m rigid vehicles, 20t tippers, concrete mixers, 14m and 16.5m articulated vehicles, low loaders, cranes

2.3.5. It should be noted that the list of vehicles is not exhaustive and that the precise type and composition of the fleet of construction vehicles used will be determined by the construction contractor(s).

2.4. ABNORMAL INDIVISIBLE LOAD ROUTES

2.4.1. The delivery of Abnormal Indivisible Loads (AILs) may be required at working locations. When 'D6' bulldozers (or similar) are being transported between working locations they will have the front blades attached. In this configuration they will exceed the defined wide load category and would fall in the abnormal load category (having a width of more than 2.90m). The transportation of D6 bulldozers is the only AILs that will be required for the DCO Proposed Development.

2.4.2. Should the construction contractor(s) require the use of these vehicles, then specific access requirements, potential impacts, and associated mitigation will be assessed under separate cover by a specialist AIL contractor.

2.5. DCO PROPOSED DEVELOPMENT TIMESCALES

2.5.1. At present it is anticipated that construction will commence in 2024 and last for approximately 16 months. Further information relating to timescales for the DCO Proposed Development is found in **Chapter 3 - Description of the DCO Proposed Development (Volume II of the ES) [APP-055].**

2.6. WORKING HOURS

2.6.1. Core working hours are proposed to be from 08.00 to 18.00 on weekdays and 08.00 to 13.00 on Saturdays (excluding bank holidays).

2.6.2. To maximise productivity within core working hours, the Construction Contractor(s) will require a period of up to one hour before and up to one hour after core working hours for the start-up and close-down of activities. This will include, but not be limited to, deliveries, movement to place of work, unloading, maintenance and general preparation works. It will not include the operation of any plant or machinery likely to cause disturbance to local residents or businesses. These periods will not be considered an extension of core working hours.

2.6.3. Core working hours may vary at locations where trenchless crossings are proposed according to the length of the pipe being installed, ground conditions, and the technique used. In such cases, continual 24-hour working may be required to allow the tunnelling activities to be completed as safely and quickly as possible. The duration of 24 hour working at the majority of trenchless crossings is not likely to exceed a period of days, though the longer crossings in difficult ground conditions are expected to last up to four weeks.

3. CONSTRUCTION TRAFFIC ACCESS

3.1. INTRODUCTION

3.1.1. In order to provide vehicular access and facilitate construction of the various elements of the DCO Proposed Development there are three types of road network to be utilised.

3.1.2. The routeing strategy is based on the following principles:

- Provide safe and efficient construction access for the DCO Proposed Development;
- Reduce as far as reasonably practicable, and mitigate to an acceptable level, disruption to the public;
- Where practical use the shortest route between the access point and the SRN;
- As far as reasonably practicable avoid sensitive receptors; and
- Use temporary off-road access tracks to reduce the impact on the LRN.

3.1.3. Construction routes have been identified based upon their suitability to accommodate HGV and LGV traffic.

3.1.4. For the purposes of assessment HGVs are defined as any vehicle exceeding 3.5t gross weight. As far as reasonably practicable, HGV routes maximise use of the SRN.

3.1.5. Proposed construction traffic routes for LGVs and HGVs are presented in **Figures 17.2 to 17.5 (Volume IV of the ES) [CR1-090 – CR1-093]** and are summarised in **Table 4**.

Table 4 – Construction Traffic Routes (CTRs)

Reference	Element of Works	SRN Junction	Links
CC CTR 1	Stanlow	J14 M56	A5117 1, B5132 Cryers Lane
CC CTR 2	Picton Lane	J10 M53	A5117 2, Little Stanney Lane, Picton Lane
CC CTR 3	Chorlton Lane	J10 M53	A5117 2, Rake Lane, Little Rake Lane, Chorlton Lane
CC CTR 4*	Sealand Central*	A494 Deeside Park	A548 Sealand Road
CC CTR 5	Wood Farm	A494 Deeside Park	A548 Sealand Road
CC CTR 6	River Dee	J36 A55	A5104, Manor Lane, B5129
CC CTR 7	Shotton Lane	A494/ B5125/ B5127 Roundabout	B5125 3
CC CTR 8a	Northop Hall	J33A A55	Brookside, B5125 1
CC CTR 8b	Northop Hall	J33 A55	B5125 2, B5126, A5119
AGI CTR 1	Ince AGI	J14 M56	A5117 1, Ince Lane, Ash Road, Pool Lane, Pool Lane North
AGI CTR 2	Stanlow AGI	J14 M56	A5117 1, Pool Lane
AGI CTR 3a	Northop Hall AGI	J33A A55	Brookside, B5125 1

Reference	Element of Works	SRN Junction	Links
AGI CTR 3b	Northop Hall AGI	J33 A55	B5125 2, B5126, A5119
AGI CTR 4	Flint AGI	J33 A55	A5119 2, Starkey Lane, Allt-Goch Lane
BVS CTR 1	Rock Bank BVS	J10 M53	A5117 2, Rake Lane, Little Rake Lane, Chorlton Lane
BVS CTR 2	Mollington BVS	A494 Deeside Park	A5117 4, A540, Overwood Lane
BVS CTR 3	Aston Hill BVS	A494/ B5125/ B5127 Roundabout	B5125 4, Upper Aston Hall Lane, Lower Aston Hall Lane
BVS CTR 4	Cornist Lane BVS	J32a A55	B5123, Bryntyrion Road, Lleprog Lane
BVS CTR 5	Pentre Halkyn BVS	J32a A55	B5123, Bryn Emlyn, Ffordd Groes, B5121
BVS CTR 6	Babell BVS	J31 A55	B5122, Racecourse Lane
**Sealand Road Centralised Compound would be used as an alternative if Wood Farm Centralised Compound cannot be used.*			

3.1.6. Proposed construction traffic routes provide access to working locations. Working locations are in turn served by access locations; both temporary and permanent. Consideration of access locations is presented in **Section 3.3** of this OCTMP.

3.2. CONSTRUCTION TRAFFIC ROUTE AND ACCESS RISK REGISTER

3.2.1. Site visits and audits have taken place along the proposed construction traffic routes and at temporary access points. Matters which have been identified and have informed the construction traffic route proposals are as follows:

- existing height and weight restrictions;
- existing highway classification;
- existing highway structures;
- existing highway layout (width and horizontal/vertical alignments);
- existing traffic calming measures;
- built environment indicators (BEIs) adjacent to the highway;
- existing visibility constraints;
- existing speed limits and surveyed traffic speeds;
- existing Public Rights of Way (PRoW); and
- other road users (pedestrians, cyclists and equestrians).

3.2.2. **Table 5** details the existing LRN constraints and considerations, how they have been mitigated at the route planning stage and further opportunities for mitigation during the construction stage.

3.2.3. Further discussion of proposed mitigation measures, in response to identified constraints/ risks, EIA outcomes, and stakeholder feedback is provided in **Section 5** of this OCTMP.

3.2.4. A **Construction Traffic Route Risk Register** and **Access Risk Register** have been developed and are presented in **Annex A** and **Annex B**, respectively.

Table 5 – Local Road Network Constraints and Considerations

Constraint/ Consideration	Stage of Mitigation	Potential Mitigation
Urban Areas and BEIs (villages, towns, schools)	Construction Traffic Route Planning	Proposed construction traffic routes avoid sensitive areas so far as reasonably practicable.
Narrow Local Roads	Construction Traffic Route Planning	Avoid unsuitable sections of the LRN.
Suitable traffic management to be implemented at locations where the impacts of physical works are disproportionate for the temporary nature of works.		
Geometric junction constraints	Construction Traffic Route Planning	Assign vehicle movement restrictions at access points e.g. left in/left out.
Existing Highways Conditions	Construction Traffic Route Planning and Construction Stage	Appropriate inspections and condition surveys to be agreed with Local Highways Authorities (LHA).
Existing Highway Structures	Construction Traffic Route Planning and Construction Stage	Structures identified and avoided where practical. If required, inspection surveys to be undertaken in agreement with LHAs.
Visibility at Access Points	Construction Traffic Route Planning and Construction Stage	Subject to speeds and road character, visibility based on Technical Advice Note (TAN) 18 or Manual for Streets requirements. Vegetation clearance, traffic management,

Constraint/ Consideration	Stage of Mitigation	Potential Mitigation
		and speed reduction measures implemented to achieve safe access.
Impacts on Pedestrians and Cyclists	Construction Traffic Route Planning and Construction Stage	Construction routes to avoid National Cycle Network where reasonably practicable.
Requirement for HGVs to be equipped with cycling safety measures (e.g. cycle mirrors)	Construction Traffic Route Planning and Construction Stage	Requirement for HGVs to be equipped with cycling safety measures (e.g. cycle mirrors)
Road Safety	Construction Traffic Route Stage	Selection of construction traffic routes and access design.

3.3. ACCESS LOCATIONS

3.3.1. A number of new and existing locations have been proposed to facilitate access to the construction of various elements of the DCO Proposed Development. Indicative access locations are presented in **Figure 17-5 - Access Locations (Volume IV of the ES) [CR1-093].**

3.3.2. **The Access and Rights of Way Plans Regulation 5(2)(k) [CR1-012]** should be referenced as the definitive record for the proposed access arrangements associated with the DCO Proposed Development.

3.3.3. All the proposed access locations are located on the LRN and have been identified to maximise use of existing access locations and meet the construction requirements of the DCO Proposed Development. The proposed access locations will provide a link from the existing LRN to the DCO Proposed Development via temporary access tracks.

3.3.4. In some locations, a permanent right of access will be required to enable occasional and periodic inspections and maintenance during the operation of the DCO Proposed Development. Traffic volumes associated with such activity will be negligible.

3.3.5. Temporary access locations will be designed and constructed to accommodate the most onerous vehicle type and manoeuvre required for construction. The temporary access points are dictated by the construction traffic routes and construction activity and will comprise the following types:

- Road Crossing (i.e. no turning movements for HGVs);
- Left in/ Right out;
- Right in/ Left Out; or
- All Movements.

3.3.6. In addition to this definition, access locations are also categorised as ‘Primary’ or ‘Secondary’. Primary Accesses include both temporary and permanent access locations. Secondary access locations are comprised of temporary access locations only. Primary access locations are those which will serve any of the below locations:

- Centralised Compounds;
- AGIs; or
- BVSs.

3.3.7. These are designated as such to reflect that they are key working locations across the DCO Proposed Development where construction traffic is likely to be of a relatively higher volume and sustained over a longer period of the construction programme.

3.3.8. All other access locations are designated as Secondary accesses. These are designated as such to reflect that at these locations construction traffic volumes are anticipated to be significantly lower and/or over a much shorter duration than the Primary Accesses.

3.3.9. Proposed temporary access locations are located directly off the LRN making use of existing accesses. Access points will provide direct construction vehicular access to and from the LRN. No direct access is proposed to be taken from the SRN. All access locations for the Construction Stage of the DCO Proposed Development are summarised in the **Access Risk Register (Annex B)**.

3.3.10. Construction traffic volumes have been estimated based on working experience of similar projects. Once a Construction Contractor is appointed, should any changes to estimated construction traffic arise they will be captured in the full CTMP.

3.3.11. For all working locations, construction traffic includes:

- Workforce Travel;
- LGV deliveries of construction materials and equipment;
- HGV deliveries of plant and equipment (e.g. pipe sections, cables, electrical equipment, valves); and
- HGV deliveries of bulk civils materials including aggregate and backfilling materials.

CONSTRUCTION COMPOUNDS

3.3.1. A series of construction compounds will be established along the Working Width; either ‘Centralised’, ‘Trenchless Crossing’ or ‘Localised’. All three types of temporary Construction Compound will have the following general characteristics:

- Enclosed using temporary security fencing (HERAS style or equivalent);
- All necessary signage advising of access restrictions and/or Public Right of Way (PRoW) diversions relevant for each compound will be clearly displayed;
- Comprise a material laydown area, yard, office trailer(s), mess room, toilets, first aid room, container storage and waste storage e.g., skips;
- Contain self-contained mobile welfare facilities, generators for power, and mobile communications;
- Parking provision for workers;
- All excavated material will be temporarily stored within the compound fence line;
- Construction lighting;

- Temporary access tracks;
- Temporary drainage solutions will be installed where required, including along temporary access tracks.

3.3.2. Further detail on the three types of Construction Compound are as follows.

Centralised Compounds

3.3.3. Seven Centralised Compounds will be established in locations close to the strategic road network before commencement of the main construction works. The area in which they will be sited is outlined in orange on **Figure 3.2 - DCO Proposed Development (Volume IV of the ES) [CR1-101]**. Although 8 centralised compounds have been assessed in the EIA, only 7 are expected to be implemented to facilitate construction of the DCO Proposed Development.

3.3.4. The Centralised Compounds will serve as points for accepting deliveries and storage of equipment, pipe and other material. From the Centralised Compounds, pipe sections and equipment will be transported directly to the storage areas within the various other compounds and Workfront's by appropriate transport.

3.3.5. Centralised Compounds will be in place for the duration of the construction programme.

3.3.6. Further to the general characteristics that all Construction Compounds will comprise, each of the Centralised Compounds will also include the following features:

- Security cabin;
- Temporary facility for storage of specific materials;
- Temporary workshops; and
- Concrete coverage may be used for entrance/access tracks, warehouses, and bunded refuelling areas, amongst other uses. This will be broken up and disposed of at the end of construction activities as part of the reinstatement activities.

Trenchless Crossing Compounds

3.3.7. Each trenchless crossing will require two dedicated construction compounds to facilitate the works at either side of the feature that is being crossed. A larger compound will be required on the “entrance” site and a smaller compound will be on the “exit” side.

3.3.8. The Trenchless Crossing Compounds will be in place for the duration of the works associated with the trenchless crossing according to the construction programme, which is expected to be no longer than 3 months per crossing. Following cessation of works out of the Trenchless Crossing Compound, it will be dismantled, and the land will be reinstated back to its former use.

3.3.9. The following features are common across all Trenchless Crossing Compounds:

- Provision for equipment yard, supervisor's office and laydown area;
- Provision for a crane movement area and staging laydown;
- Specialised trenchless crossing equipment; and
- HDD crossings will include provision for drilling rig and associated ancillaries (control cabinet, power packs, water and bentonite tanks, pumps).

Localised Compounds

3.3.10. Localised Compounds will be required to serve the construction works at AGI and BVS locations. There are also a number of open-cut trench crossings that will require a Localised Compound to facilitate the more complex construction works. This will include the crossings at Alltami Brook and the Northop Hall road.

3.3.11. Localised Compounds at the BVSs/AGIs are expected to be in place for the duration of the construction programme. At open cut trench locations they are expected to be in place for the duration for the works associated with that crossing according to the construction programme, which is expected to be no longer than 3 months.

3.3.12. Further to the general characteristics that all Construction Compounds will comprise, each of the Localised Compounds will have the following additional characteristics:

- Provision for equipment yard, supervisor's office and laydown area; and
- Provision included for a crane movement area and staging laydown.

3.4. TEMPORARY ACCESS TRACKS

3.4.1. Off road temporary access tracks will be provided alongside the Working Width and between the LRN and access locations. Their uses will be maximised, so far as reasonably practicable, in order to provide a connection between proposed HGV construction traffic routes, to reduce construction traffic effects on the LRN and to address the OCTMP Objectives in **Table 1**.

4. CONSTRUCTION WORKFORCE

4.1. CONSTRUCTION STAFF

4.1.1. The workforce for the DCO Proposed Development will primarily be of a migratory nature; travelling to the region and staying in local accommodation during the working week. Workers will travel from local accommodation to working locations each day. An **Interim Worker Travel Plan (IWTP)** has been developed and is presented in **Appendix 17.14 (Volume III of the ES) [APP-162].**

4.2. WORKING LOCATIONS

CENTRALISED COMPOUNDS

4.2.1. Staff will travel to the Centralised Compound at the start of each day and subsequently travel to working locations. It is typical for development of this nature that staff will be transported from Centralised Compounds to work-fronts by minibuses and pick-ups. **Table 6** shows an estimate of transport required per day for construction personnel between the Centralised Compound and the work fronts. This is an estimate based on best available information and estimated workforce numbers.

Table 6 – Estimated Transport for Construction Personnel

No. Required	Vehicle
14	15-seater minibuses
28	Double-cab pick-up

BLOCK VALVE STATIONS (BVSS) AND ABOVE GROUND INSTALLATIONS (AGIS)

4.2.2. For the construction of BVSs and AGIs it is anticipated that workers will not travel to the Centralised Compound and will instead travel directly to working locations. It will therefore be necessary for any car-sharing or minibus scheme to target worker accommodation locations. This is considered in the IWTP.

4.3. WORKFORCE NUMBERS

4.3.1. The preliminary workforce numbers per day associated with the pipeline installation work of the DCO Proposed Development are shown in **Table 7.**

Table 7 – Estimated Workforce Number Per Day

Average Workforce	230

Peak Workforce	630

5. TRAFFIC MANAGEMENT

5.1. INTRODUCTION

5.1.1. Traffic management methods will be used on the LRN and where physical mitigation measures prove to be not reasonably practicable or cannot be accommodated during the construction period of the DCO Proposed Development. Traffic Signs Manual Chapter 8 (**Ref. 1**) states:

> *"The complexity of traffic management arrangements varies from scheme to scheme but the primary objective is;*
>
> ~ *to maximise the safety of the workforce and the travelling public.*
>
> *The secondary objective is;*
>
> ~ *to keep traffic flowing as freely as possible".*

5.1.2. Traffic management on all highways and roads will comply with the UK Government's Code of Practice 'Safety at Streetworks and Roadworks' (DfT, 2013) (**Ref. 2**) or other relevant legislation and guidance as appropriate at the time of implementation. Traffic management will be agreed with the relevant LHA prior to the commencement of works.

5.1.3. Traffic management signage will be in accordance with the Traffic Signs Regulations and General Directions (TSRGD) 2016 (**Ref. 3**) and Traffic Signs Manual Chapter 8 (**Ref. 1**).

5.1.4. As part of the full CTMP detailed traffic management layouts, site specific risk assessments and method statements will be produced and agreed by the appointed contractor with FCC and CWCC for all traffic management and highways related construction activities.

5.2. CONSTRUCTION TRAFFIC ROUTES AND TEMPORARY ACCESS SIGNAGE

5.2.1. Temporary signs providing route information for contractors will be erected at key locations along the proposed construction traffic routes on the LRN and potentially the SRN. Project information boards will be erected and will include key information for the public and relevant contact details.

5.2.2. The design and location of route information signs and DCO Proposed Development information boards will be agreed with CWCC and FCC prior to installation. Within Wales, signs will be bi-lingual, with messages written in Welsh above English on the sign face (unless otherwise agreed with FCC).

5.2.3. Consistent signage at temporary access locations will be installed during use in order to provide relevant warnings and information to other road users of the presence of construction traffic.

5.3. TEMPORARY ACCESS ROAD SIGNAGE

5.3.1. The off road temporary access tracks associated with Construction Compounds will have signage in order to assist the Construction Contractor to operate safely and efficiently. Signage on the temporary access tracks will include information such as: safety messages; speed limits; typical and site-specific hazards; distance to the LRN; area of potential vehicle conflicts; and PRoW crossings.

5.3.2. Where a temporary access track intersects with a PRoW, the form and content of the signs will be agreed with the PRoW officers at FCC and CWCC.

5.4. CONSTRUCTION ACCESS TRAFFIC MANAGEMENT

5.4.1. In order to limit potential disruption to the LRN, traffic management will only be deployed as required. The type of traffic management required at each temporary access location is dependent on a number of factors including traffic speeds, road widths, visibility and site characteristics.

5.4.2. Traffic management at temporary access points could be traffic control by priority signs, stop/go boards or portable traffic signals along with additional approach signage to reduce speeds where required.

5.4.3. Temporary Traffic Regulation Orders (TTROs) will be implemented as part of the traffic management approach for the DCO Proposed Development where necessary. TTROs will include speed, access and waiting prohibition and restrictions. These will be agreed and implemented in liaison with FCC and CWCC prior to the commencement of works.

5.4.4. Construction Traffic Route and Access Risk Registers are presented in **Annex A** and **Annex B** of this OCTMP.

5.4.5. **Section 7** of this OCTMP considers site-specific traffic management measures that will be required, based on the outcomes of the EIA, site audits, stakeholder engagement, and risk registers.

5.5. ROAD CLOSURES AND DIVERSIONS

5.5.1. Open trench road crossings will necessitate the closure of roads and implementation of diversion routes. Road closures are anticipated to last a maximum of two weeks.

5.5.2. Proposed diversion routes have been discussed with CWCC and FCC officers.

5.5.3. These are presented in **Figure 17-7 - Road Diversions (Volume IV of the ES) [CR1-095]**.

6. PUBLIC RIGHTS OF WAY

6.1. INTRODUCTION

6.1.1. There are PRoW within the Zone of Influence **Figure 17.1 - Traffic and Transport Zone of Influence (Volume IV of the ES) [CR1-089]** comprising footpaths, bridleways, restricted byways and byways open to all traffic ('BOAT') that are expected to interact with the DCO Proposed Development.

6.1.2. There are a number of locations where PRoWs are crossed by the DCO Proposed Development in both Flintshire and Cheshire West and Chester.

6.1.3. The Applicant has discussed the approach to diversion and closures of PRoW with FCC and CWCC who have confirmed their agreement in principle for diversions.

6.1.4. They have however, stated that they may seek to agree temporary closures at locations depending on the construction contractors' site management and the duration of works. It is anticipated that these will be confirmed prior to construction once a contractor is appointed.

6.1.5. Proposed PRoW diversions are presented on **Figure 17.6 - PRoW Diversions (Volume IV of the ES) [CR1-095]**.

6.1.6. In these instances where PRoWs interact with proposed construction traffic routes, this is reflected in the link sensitivities applied in **Chapter 17 – Traffic and Transport (Volume II of the ES) [APP-069]** and subsequent assessment of environmental effects in these locations.

6.1.7. Accesses with adjacent PRoW are identified in the **Access Risk Register (Annex B)**. In these locations Traffic Marshalls and signage will be provided to manage the movements of PRoW users and ensure that they are accommodated safely during the Construction Stage of the DCO Proposed Development.

7. LOCATION SPECIFIC MITIGATION

7.1. INTRODUCTION

7.1.1. A range of mitigation measures for the DCO Proposed Development have been identified in **Table 8**. This section sets out the measures that will be implemented at each location. These measures have been identified taking into consideration the following matters:

- Site Audits;
- Outcomes of stakeholder engagement;
- Liaison with the Applicant's engineering team;
- Forecast environmental effects identified in **Chapter 17 - Traffic and Transport (Volume II of the ES) [APP-069]**; and
- The constraints and considerations in the CTR and Access Risk Registers.

7.1.2. The Construction Traffic Route Risk Register and Access Risk Register are presented in **Annex A** and **Annex B** of this OCTMP.

7.1.3. The Construction Contractor will liaise with local highway officers to ensure appropriate traffic management and mitigation measures are implemented so as to ensure safety on the LRN is not compromised and reduce, so far as reasonably practicable, any disturbance and inconvenience to residents and road users.

7.1.4. A proposed range of mitigation measures to be implemented by the Construction Contractor are summarised in **Table 8**. The **Register of Environmental Actions and Commitments (REAC) [REP1-015 and CR1-109]** also provides further detail on the commitments being made**.**

7.1.5. OCTMP Objectives in **Table 1** provides further explanation on the Objectives included within **Table 8.**

Table 8 – Mitigation Measures

Mitigation Measure	Ref.	Objective
Prescribed HGV and LGV Construction traffic routes Only proposed construction traffic routes are to be used for the construction of the DCO Proposed Development. Appropriate self-enforcement and monitoring measures to reduce the need for LHAs to enforce and monitor will be included within the conditions of contract and penalties will apply for non-compliance.	1	A/B
Access Principles Note (Annex C) An Access Principles Note has been produced and discussed with the LHAs which details temporary access design, traffic management requirements and monitoring.	2	A
Physical LRN Improvements Physical LRN improvements are not proposed as part of DCO Proposed Development.	3	F
Road Safety Information In consultation with the LHAs and emergency services, the construction contractor(s) will promote and publicise appropriate road safety information during the construction of the DCO Proposed Development.	4	A/B
Interim Worker Travel Plan (IWTP) An Interim Worker Travel Plan is included within the ES Chapter (**Appendix 17-14 Interim Worker Travel Plan [APP-162] (Volume III**)). Opportunities for car sharing, mini bus use and other sustainable travel measures are included in the IWTP	5	A
Community Engagement and Public Information Information regarding construction traffic activities and movements will be provided to the public. The means of communication could include online updates, letter drops, information boards and details of key contacts. The appointed contractor/ will manage a 24-hour free telephone hotline and a project website.	6	B/D
Traffic Management and Diversion Routes Where required, suitable traffic management will be implemented to ensure safe operation and to reduce as far as reasonably practicable the impact of construction vehicles on the LRN. Where road closures were required, diversions will be put in place with suitable signage and monitoring.	7	A/B/F
Temporary Traffic Regulation Orders Temporary Traffic Regulation Orders have been proposed to allow enforcement of reduced speed limits, road closures and parking restrictions.	8	A/B/F
Vegetation Management Where deemed hazardous, overgrown vegetation and grass verge encroachment onto the edge of carriageway along key construction traffic routes will be managed during construction traffic route use. This will benefit all motorists and other road users.	9	A/B/F
Wheel Cleaning Facilities Appropriate facilities will be installed at access locations to allow removal of debris from construction vehicles prior to use of the LRN.	10	F

Mitigation Measure	Ref.	Objective
Street Cleaning Schedule The use of road sweepers throughout the construction of the DCO Proposed Development will be agreed with the relevant LHAs.	11	F
Delivery Management System Delivery records will be kept at Centralised Compounds. Delivery records will allow vehicular activities to be recorded, monitored and managed throughout the construction of the DCO Proposed Development to ensure compliance with the OCTMP.	12	All
HGV Traffic Movement and Timing Restrictions These may be determined as necessary to mitigate potential traffic effects and could include: • Timing restrictions on routes with schools during school drop off and pick up times; • Restrictions within the AM or PM peak hour for certain movements at certain junctions linked to junction capacity assessment; and • Restriction of certain movements at certain locations to accommodate local special events. Details in terms of when and where restrictions may berequired will be determined as necessary and monitored during the construction of the DCO Proposed Development.	13	C/D/F
HGV Emissions and Safety Features Typical HGVs used for the construction of the Proposed Development will be to the required Euro Class and could have additional cycle friendly measures such as cameras, full length door windows, blind spot warning system and additional mirrors.	14	A/B
Abnormal Indivisible Loads (AILs) Temporary traffic management will be provided during AIL delivery where required, along with appropriate communications with the local community. Department for Transport ESDAL system will be used for notifications. Night deliveries will be undertaken where required, to reduce disruption and maintain safety on the LRN.	15	A/B/E/F
Traffic Marshals Suitably qualified personnel will be present at key locations and times during construction to guide traffic and to enhance safety.	16	All
Contractor Information Packs Contractors will be provided with: • –Details of prescribed Construction traffic routes; • –PIA Cluster Locations; • –Code of Good Practice; • –Traffic Incident Management Plan; • –Project/Local Authority/Emergency Contact Details - Delivery Management Systems and Vehicle Monitoring; and –HGV Timing Restrictions. •	17	F

Mitigation Measure	Ref.	Objective
Highway Condition Surveys, Maintenance and Repair A highway inspection, monitoring and repair strategy, to be deployed during the construction of the DCO Proposed Development, will be agreed in advance with the LHAs and included in the final CTMP.	18	F
Traffic Safety and Control Officer (TSCO) The construction contractor(s) will appoint a TSCO for the duration of the construction of the DCO Proposed Development to act as the main point of contact with the LHAs and emergency services and undertake the following duties : • –Check and approve all traffic management drawings prior to issue–; • –Ensure sufficient resource available to maintain traffic management on site–; • –Monitor traffic management to ensure effectiveness and safety to workers and public–; • –Communicate with LHA officers and emergency services–; and • –Provide a visible presence at site.	19	A/B/F

7.2. NEWBUILD CARBON DIOXIDE PIPELINE CONSTRUCTION: CENTRALISED COMPOUNDS

7.2.1. Proposed mitigation measures associated with each Centralised Compound are discussed under the subheadings below. Constraints and proposed mitigations identified on these routes are presented in **Centralised Compound Constraints Plan (Annex D)** and **Centralised Compound Route Mitigation (Annex E)**.

CC CTR 1 – STANLOW

7.2.2. The Stanlow Centralised Compound is located on a greenfield site just to the south the A5117. The A5117 provides direct access to the M56 junction 14 located to the east of the Site.

7.2.3. **Centralised Compound Route Mitigation (Annex E - Sheet 1)** presents the proposed mitigation associated with access to the compound.

7.2.4. HGVs will turn left into B5132 and then carry on the B5132/Cryer's Lane to south to enter the compound. Egress from the main compound access will be via the A5117 via B5132/ Cryer's Lane, using the same route.

CC CTR 2 -PICTON LANE

7.2.5. The Picton Centralised Compound is situated just to the south of the M56, but it is not directly accessible from this motorway. The most suitable route for HGVs will be from M53 Junction 10 turning left onto the A5117. Vehicles will then turn left on to Little Stanley Lane and continue on to Picton Lane which directly serves the compound access. Egress will be via the reverse of this route as Picton Lane to the south of the Construction Compound is unsuitable for HGV traffic.

7.2.6. The overall access route is 6 km. Little Stanley Lane and Picton Lane are generally adequate in terms of road width up to the point just after Picton Lane crosses over the M56. Here Picton Lane narrows and only has enough room for the passage of one HGV at a time. The final 0.64 km of access route has no adequate width (3.5 to 5.5m) for the passage of two HGVs.

7.2.7. There are low levels of traffic on Little Stanley Lane and Picton Lane. This will suggest that modifications to routing or partial road closures or Traffic management systems on Little Stanley Lane and Picton Lane will not have a significant impact, other than inconvenience to residents / commercial properties directly served by these roads.

7.2.8. Traffic management required for bend section to south of Bunbury Arms to cater for conflict of two HGVs passing. Automated traffic lights are not feasible due to inconvenience to residents. Traffic Management to be manned (either stop or go boards or manual controlled traffic lights). Considered that the conflict of HGVs at this location is low probability, but the risk needs to be managed. Other sections of conflict have good forward visibility and therefore will expect one of the HGVs will stop in advance to allow the other to pass on these narrow sections. The access and egress of HGVs to / from site will need to be co-ordinated to avoid this conflict and the traffic management will only be active when the scenario of two HGVs passing was planned to occur.

7.2.9. Introduce a one-way traffic management system for the section of Picton Lane between Ashwood Lane junction and the M56 overbridge to provide safe passage of HGVs to and from the site and avoid two-way traffic conflicts. While the rest of route along Picton Lane can be kept as two-way traffic. This will allow local residents on Picton Lane to gain access to Picton Lane via Ashwood Lane. Three-way traffic light control will be required to manage the junction. The traffic lights on Picton Lane will be positions at the Construction Compound and the M56 overbridge as these are the nearest locations where vehicles will be able to pass waiting traffic due to road width.

7.2.10. Picton Lane to the south of the Ashwood Drive Junction will be closed to the public and accessible to / from the north by site traffic only. The residents of Picton will be directed to travel south on Picton Lane through to Mickle Trafford which has good connectivity to the A56 or M53 should vehicles want to return north. Potential access / egress for farm delivery vehicles (i.e. Milk Tankers) to Picton may need to be maintained to and from the north on Picton Lane. In this scenario it could be arranged that these vehicles use the same route as the site HGVs.

7.2.11. Due to the forward visibility issues on certain areas along the section of Little Stanley Road and Picton Lane and potential conflict with residents egressing from properties a temporary speed limit of 30mph will be proposed.

7.2.12. Traffic light operation / deliveries to be undertaken outside peak hours (to avoid the school run, morning and evening commute)

CC CTR 3 – CHORLTON LANE

7.2.13. The Chorlton Lane Centralised Compound is situated remotely from the Strategic Highway Network and is constrained by the narrow rural lanes.

7.2.14. Access to the compound for HGVs from the south has been discounted. This will require the crossing of Pretty Bridge on the Shropshire Union Canal which has a 3.5 tonne weight restriction in place. Pretty Bridge provides access to Caughall Road which continues south westwards to re-join the A41 via the residential areas of Caughall and Upton Heath over a distance of 2.3km. This route will be suitable for car and mini-bus access.

7.2.15. A means of access / egress is proposed from the A5117 to the north via the northern section of Rake Lane. The A5117 is situated 3.2km north of the Construction Compound and provides direct access to Junction 10 of the M53.

7.2.16. Rake Lane and Caughall Road provide primary means of access to the rural communities however there are low levels of traffic on the roads connecting them (Chorlton Lane and Little Rake Lane). Modifications to routing or partial road closures on Chorlton Land and Little Rake Lane will not have a significant impact, other than inconvenience to residents / commercial properties directly served by these roads.

7.2.17. Access and egress to the site compound for HGV site traffic should be from /to the A5117 at Little Stanney via Rake Lane. This is the preferable route as minimises conflicts between vehicles on narrow sections of road with poor visibility.

7.2.18. To support access / egress from the north on Rake Lane a one-way system around Chorlton Lane, Little Rake Lane and the section of Rake Lane between the junctions of these roads will be introduced. Traffic accessing the Site from the A5117 heading southbound will turn onto Little Rake Lane (one-way operation southbound) and then turn left onto Chorlton Lane. Traffic exiting the site will continue on north on Chorlton Lane (one-way northbound) until the junction with Rake Lane and then turn right onto Rake Lane with the section of Rake Lane through to the Little Rake Lane junction being one-way northbound. Residents / through traffic travelling north on Chorlton Lane will still have the option to turn left at the junction with Rake Lane to continue through to the A41.

7.2.19. The short section of Chorlton Lane from the Little Rake Lane junction through to the site compound entrance will be closed to the public. Due to the restricted width of this road site traffic access and egress will be managed by two way traffic light system. The traffic lights will have to be manned, and manually operated as required to prevent the build-up of queuing traffic on Little Rake Lane. HGVs will have to wait at the southern end of Little Rake Lane to allow vehicles to pass on Chorlton Lane. Vehicles wishing to travel north on the Chorlton Lane from the compound will have to wait within the compound at a suitable location to allow oncoming site vehicles to pass.

7.2.20. Residents of the two properties located on the section of Chorlton lane subject to traffic management will need to be aware of the system operation. Similarly maintenance visitors to the disused industrial sites will need to be informed of the DCO Proposed Development.

7.2.21. Due to the visibility issues on the section of Chorlton Lane to be redesignated as one way and potential conflict with residents egressing from properties a temporary speed limit of 20mph will be proposed.

7.2.22. To manage one way traffic on the 100m section of Rake Lane north of the little Rake Lane junction two-way traffic lights will be used. This will eliminate potential conflicts between cars and HGVs. The traffic lights will be manned to avoid build-up of queues in either direction or for the co-ordination of HGV traffic as below.

7.2.23. On the same section of road, from the Little Rake Lane junction through to the bridge over the M56 (500m), it is not feasible for HGVs to pass one another. Two way movements for HGV deliveries will have to be co-ordinated to avoid the conflict on this section of road i.e. HGV drivers accessing the site to contact the operative at the traffic lights / site to ensure that passing of two HGVs will not occur on this road section.

7.2.24. Rake Lane will be closed to HGV through traffic from A5117 to A41, there is little evidence that this is used as a through route for HGV vehicles.

7.2.25. Site deliveries will also be undertaken during off-peak hours to avoid potential conflict with residents on Rake Lane during the morning and evening commute.

CC CTR 4 – SEALAND CENTRAL

7.2.26. The Sealand Road Centralised Compound is proposed as an alternative to Wood Farm Compound located to the southwest. The A548 Sealand Road provides direct access to the A494 located 2.46km to the west and it is proposed that access and egress from the compound will use this route.

7.2.27. Given the volume of traffic on the A548 at peak times the following mitigation is recommended:

- HGVs egress from the site to be scheduled outside peak hours.

CC CTR 5 – WOOD FARM

7.2.28. The Wood Farm Centralised Compound is accessible via the A548 Sealand Road from the junction with the A494 approximately 4.3km to the west. The Construction Compound is located on Deeside Lane which forms a loop (totalling 3km) and is served from two junctions onto Sealand Road. A minor road also connects the southeast corner of Deeside Lane through to Ferry Lane.

7.2.29. Deeside Lane serves a number of commercial / industrial properties, two farms and a limited number of residential properties concentrated at The Bowery and Deeside Crescent. The lane is narrow in nature however is regularly trafficked by Heavy Goods Vehicles accessing the commercial and industrial properties located along this road.

7.2.30. It is proposed that delivery vehicles will access and return to the A494 via A548 Sealand Road requiring a right turn operation on Sealand Road. Access from the east will be via Chester centre which is not preferred.

7.2.31. The strategy for the provision of a safe access route for residents, site operatives and delivery vehicles will require temporary modifications as follows;

- Introduction of one-way system around Deeside Lane with access from southern junction on A548 and egress via northern junction~~.~~;
- Temporary reinforcement of the southern verge on Deeside Lane at the junction with the A548 to allow Low Loaders to overrun~~.~~;
- The one-way system will operate during site hours and potentially could be suspended on evenings and weekends~~.~~;
- Confirm the structural condition of the two land drainage culverts crossed by Deeside Lane. As required implement temporary protection measures to accommodate the design vehicle loading~~.~~; and
- Schedule for site deliveries to be undertaken outside of peak morning and evening hours to avoid excessive waiting times for the execution of the right turn on A548 into Deeside Lane.

CC CTR 6 – RIVER DEE

7.2.32. The River Dee Centralised Compound is situated in close proximity to the A494 and accessible via the B5129 from the west. The overall route on the B1529 is 4.0km. The final 0.8km of access is via a private site road network of which the initial 0.5km section is from a macadam road of adequate width (6.5-8.0m) for the passage of two HGVs. This road is accessed via an existing enlarged bellmouth off the B5129 the layout of which favours access / egress from / to the west. The remaining 0.3km of access to the site will be via an existing access track (unmade) adjacent to the River Dee. This is only 2.5m in width and will need to be widened and provided with adequate surfacing for delivery vehicles.

7.2.33. The final 300m section of the access ideally will follow the existing unmade maintenance track which runs parallel with the river bank. This is currently of inadequate width to accept two way traffic and does not have a formal junction from the site access road. The current means of access to the track is constrained by security barriers which impair turning manoeuvres for large vehicles. The most southerly barrier will need to be removed to for continuation of the site access road through to the site compound. This will be best arranged as a sweeping bend and continuation of the access road rather than a junction. The final section of the existing access road only continues to the River Dee access ramp understood to be seldom used.

7.2.34. A new metalled 6.0m width access road will be provided through to the compound to allow passage of two HGV vehicles. Midway between the existing site access road and compound the track crosses a watercourse with overbridge. This has a width constraint of approximately 4.0m between the barriers and crossing will be restricted to a single vehicle at any one time (priority to vehicles accessing the site). The weight restriction of the bridge also needs to be verified. Finally a formal junction into the site access compound will have to be developed. Ideally this will be from the track running parallel to the river. The proposed access position shown on the Construction Compound diagram will be difficult to achieve with large vehicle turning manoeuvres.

7.2.35. No offsite highway works will be required however the river maintenance track through to the Construction Compound will need to be upgraded. An outline layout of proposed works is shown on **Centralised Compound Route Mitigation** (**Annex E - Sheet 5).**

CC CTR 7 - SHOTTON LANE

7.2.36. The Shotten Lane Centralised Compound is situated in close proximity to the A494 and accessible via the B5125 from the south. It is proposed to install a new dedicated access junction on the B5125 0.625km from the A494 junction for the site compound access rather than utilise the narrow Shotton Lane, which runs adjacent to the east side of the Construction Compound. As access will be from the A494 this will require vehicles to turn right from the B1525 into the site road, egress will involve a left turn out of the site. Routing for large delivery vehicles is preferred from the A494 considering the short travel distances involved.

7.2.37. From the roundabout at the A494 vehicles will initially join the B5127 before taking the first right turn onto the B5125. This junction does not have a separate right hand turn lane and therefore potentially results in queuing extending back to the A494 roundabout. Good forward visibility is available for right turners and vehicles existing the B5125 onto the B5127. Tracking analysis indicates that the design vehicle can accomplish the right turn.

7.2.38. The B5125 follows a relatively straight alignment with good forward visibility from the junction through to the proposed location of the site access. At the junction of Shotton Lane the speed restriction changes from 30 mph to National Speed Limit.

7.2.39. The following mitigation is proposed:

- Provision of a right turn ghost island and deceleration lane on the B5125. An indicative layout is shown in **Annex A**.;
- Should the Ghost Island not be feasible and access plan will have to be provided which requires small vehicles to access the site approaching from the west (via the A55) and arrangement for delivery vehicles to arrive at site outside of peak hours.;
- Provision of a new access junction to allow safe manoeuvres to and from the B5125. An indicative layout is shown in **Annex A**.;
- Management or closure of the adjacent PRoW; and
- Provision of a temporary access road through to the site compound via the fields. An indicative layout is shown in **Centralised Compound Route Mitigation (Annex E - Sheet 6).**

CC CTR 8A AND 8B – NORTHOP HALL

7.2.40. The Northop Hall Centralised Compound is located to the west of the village of Northop Hall and on the southside of the B5125.

7.2.41. Site access for deliveries is proposed from the A494 to the east via the B5125 a route totalling 4km. Deliveries will egress the site heading west on the B5125 through to the B5126. The route continues heading west on the B5126 before heading north on the A5119 through the centre of Northop village to reach the A55 (2.1km). This arrangement maintains the principals of a left turn in / left turn out at the site compound necessary due to the restricted visibility on the B5125.

7.2.42. Access for deliveries will also be permissible via the Junction 33A of the A55 at Northop Hall for east bound traffic on the A55 only.

7.2.43. The following mitigation is proposed:.;

- HGVs accessing site will be routed via the A55 / Brookside as the preferred route, this minimises traffic through residential areas with known constraints.;
- The speed limit on Brookside could temporarily be reduced to 30mph throughout with advance warning signs to indicate danger of turning vehicles for vehicles travelling south.;
- The speed limit on the B5125 be reduced from where it currently changes to national speed limit west of Brookside through to the junction with the B5126. A revised speed limit could be 30mph on this road section.;

- Advance warning signage will be provided on approaches to the site compound entrance warning of the concealed entrance and turning vehicles~~.~~;
- The B5125 between Northop Hall village and the B5126 shall be closed to other HGV vehicles other than those making deliveries on this road. HGVs to be diverted via the B5126 or A55~~.~~;
- Provision of convex safety mirror opposite the site access compound to allow site of vehicles approaching from the west on the B5125 to be seen by drivers exiting the compound~~.~~;
- Verification of the conflict for the vehicle turning out of the unnamed road onto the A5119 through topographical survey~~.~~; and
- Where the B5125/A5119 signalised junction is to be used for egress to A5119 the stop line to be relocated to avoid clash with the turning vehicle.

7.3. BLOCK VALVE STATIONS

BVS CTR 1 – ROCK BANK

7.3.1. Due to geographical proximity, please refer to the mitigation proposals for Chorlton Lane Centralised Compound (CC CTR 3) above.

BVS CTR 2 – MOLLINGTON

7.3.2. Access to Mollington BVS will be achieved via Overwood Lane. During the Construction Stage of the DCO Proposed Development.

7.3.3. Recorded 85th percentile speeds on Overwood Lane were in excess of the posted speed limit of 40mph.

7.3.4. The following mitigation is proposed:

- During the Construction Stage, advanced warning signage will be implemented to slow vehicle speeds on approach to construction accesses and warn other road users of site traffic
- Provision of Manual for Streets (MfS) compliant visibility splays with associated verge trimming and clearance; and
- Implementation of ‘Slow’ road markings on the eastbound approach to the permanent access location to reduce 85th percentile speeds during the Operation and maintenance Stage of the DCO Proposed Development.

BVS CTR 3 – ASTON HILL

7.3.5. Access to Aston Hill BVS will be achieved via Upper Aston Hall Lane. There is a height restricted bridge located on the route south of the BVS. There are narrow sections of carriageway that will not permit two HGVs to pass. Forwards visibility on this section is, however, good. There are a number of residential properties on Upper Aston Hall Lane and on-street parking.

7.3.6. Forwards visibility of right turning traffic into the site is limited due to its location on the left hand bend to Lower Aston Hall Lane.

7.3.7. The following mitigation measures are proposed:

- HGV deliveries to avoid peak drop off and collection times at Hawarden High School on the B5125
- Vehicles in excess of 3.9m to utilise the route via Lower Aston Hall Lane outside of the peak hours
- Hazard warning signage provided on the route, particularly along the section of Upper Aston Hall lane with no footways
- Temporary 20mph speed limit on the approach to the site access during the Construction Stage.

BVS CTR 4 - CORNIST LANE

7.3.8. Cornist Lane is a narrow single width road that is signed as being unsuitable for HGVs. Consequently, the route via Lleprog Lane has been identified for access to this BVS. Lleprog Lane is also a rural lane and largely single width. Daily traffic flows are very low (less than 100 AADT), and due to its use by Lleprog Farm around 5% of these were recorded as being HGVs. It will be necessary to manage vehicular movements to minimise disruption to Lleprog Farm and a private residential property.

7.3.9. Furthermore, the assessment contained within **Chapter 17 – Traffic and Transport (Volume II of the ES) [APP-069]** indicates that mitigation measures will be required to mitigate environmental effects on Cornist Lane.

7.3.10. Mitigation measures identified for Cornist Lane are summarised in **Annex A** and below:

- Maximise use of smaller plant and equipment, where possible;
- Radio communications between Traffic Marshalls at site access and arrivals on Lleprog Lane;
- Advanced dual-language hazard warning signage along the route;
- Engagement with Lleprog Farm prior to and throughout works; and
- Schedule works and deliveries outside of peak periods and times of day.

BVS CTR 5 - PENTRE HALKYN

7.3.11. Pentre Halkyn BVS will be accessed from the B5121. The assessment contained within **Chapter 17 – Traffic and Transport (Volume II of the ES) [APP-069]** indicates that mitigation measures will be required to mitigate environmental effects on the B5121.

7.3.12. Whilst the route is well suited to increases in HGV traffic in terms of its category and physical geometry, some measures may be required to minimise the impacts of activity at this location. These include the timings of large deliveries and presence of advanced hazard warning signage of the approaches to the site access.

7.3.13. Mitigation measures identified for Pentre Halkyn BVS are summarised in **Annex A** and below:

- Advanced dual-language hazard warning signage along the route;
- Schedule HGV deliveries and shift starts outside of peak times of day; and
- Introduce TTROs to reduce speeds at site access and deliver visibility splays in line with TAN 18 guidance.

BVS CTR 6 - BABELL

7.3.14. Babell BVS will be accessed from Racecourse Lane. The assessment contained within **Chapter 17 – Traffic and Transport (Volume II of the ES) [APP-069]** indicates that mitigation measures will be required to mitigate environmental effects on Racecourse Lane.

7.3.15. This route provides agricultural access and serves a small number of residential properties. Existing traffic flows are very low (approx. 50 AADT). Nonetheless due to the physical constraints of the route, including narrow sections and poor forwards visibility it will be necessary to implement controls on traffic movements during the construction of the BVS.

7.3.16. These measures will include maximising the use of small plant/equipment, and vehicles, as well as managing departures and arrivals into site suing radio controls at either end of Racecourse Lane. Other measures including advanced hazard warning signage, speed control measures, and engagement with local residents will ensure that disruption and inconvenience to local road users is minimised as far as reasonably practicable.

7.3.17. Mitigation measures identified for Babell BVS are summarised in **Annex A** and below:

- Maximise use of smaller plant and equipment, where possible;
- Radio communications between site access and arrivals on Racecourse Lane;
- Advanced dual-language hazard warning signage along the route;
- Engagement with local residents and agricultural interests prior to and throughout works;
- Schedule works and deliveries outside of peak periods and times of day; and
- Vegetation management.

7.4. ABOVE GROUND INSTALLATIONS

AGI CTR 1 – INCE

7.4.1. Access to Ince AGI is proposed to use the Encirc Glass access from Ash Road or the Grinsome Road roundabout access to the north. For the purposes of the assessment it has been assumed that both routes will be used in order to understand the potential impacts on the LRN. Given the existing use of both routes for HGV traffic it is considered that they are well suited for increases in HGV traffic and therefore no specific mitigation is proposed.

AGI CTR 2 – STANLOW

7.4.2. During construction, access to the Stanlow AGI will be achieved via Pool Lane. Subject to a separate planning application, a proposed upgraded access directly from the A5117 (8N) may also be used during operation and maintenance. Given the existing use of both routes for HGV traffic it is considered that they are well suited for increases in HGV traffic and therefore no specific mitigation is proposed.

AGI CTR 3A AND 3B – NORTHOP HALL

7.4.3. See mitigation proposals for Northop Hall Centralised Compound (CC CTR 8a and 8b).

AGI CTR 4 - FLINT

7.4.4. Access to the Flint AGI will be achieved via the A5119, Starkey Lane, and Allt-Goch Lane. Starkey Lane and Allt-Goch Lane are narrow rural roads with limited passing place. AADT flows on both roads is very low (approximately 300 on Starkey Lane and 150 on Allt-Goch Lane). Flows during the peak hours were recorded to be less than 30 vehicles, or one every two minutes.

7.4.5. Flows are high on the A5119 during the peak hours which could make egress from the Starkey Lane junction difficult during the peak hours.

7.4.6. The following mitigation is proposed:

- Hazard warning signage provided on Starkey Lane and Alt-Goch Lane to alert other road users to the presence of site traffic;
- Maximise use of smaller plant and equipment, where possible;
- Radio communications between Traffic Marshalls at site access and inbound vehicles;
- Scheduling of HGV departures outside of peak times on A5119; and
- Provision of MfS complaint visibility splays at the site access during the Operation and maintenance Stage.

8. MONITORING, REVIEW, AND IMPROVEMENT

8.1. COMMUNICATION

8.1.1. In order to ensure that the objectives and mitigation measures which are set out in this OCTMP are met, implemented as appropriate and effectively managed, a Transport Review Group would be put in place prior to and during the construction of the Proposed Development.

8.1.2. A Transport Review Group would likely be comprised of the Construction Contractor(s) and the local highway authorities and would have the following responsibilities:

- Communicate and monitor the CTMP and its mitigation measures;
- Ensure records of HGV movements are maintained and reported;
- Be the first point of contact for the public, stakeholders, and contractors;
- Hold regular update meetings with LHAs and relevant stakeholders;
- Record near misses, incidents, and hazards and resolve issues as informed by the contractors, stakeholders, and the public; and
- Monitor, review, and where necessary suggest revisions to the CTMP and associated mitigation measures.

8.1.3. It should be noted that the Transport Review Group is a consultee organisation rather than an organisation that will approve construction traffic management proposals.

8.1.4. Royal Mail will be invited to join as a stakeholder of the Transport Review Group. The Applicant will ensure that Royal Mail receives information on construction plans and Royal Mail will be pre-consulted by the Applicant or its Construction Contractor(s~~)~~). Construction Contractor(s) and the Applicant will provide not less than one month's notice to Royal Mail on the details of any proposed road closures, diversions and/or alternative access arrangements.

8.2. COMPLIANCE, ENFORCEMENT, AND CORRECTIVE MEASURES

8.2.1. The Applicant and the Construction Contractor will be committed to ensuring compliance with the full CTMP.

8.2.2. As a consequence, the following compliance methods are proposed to be adopted, as far as reasonably practicable;

- Traffic Safety and Control Officer to be appointed;
- Delivery Management System; and
- HGV Identification measures.

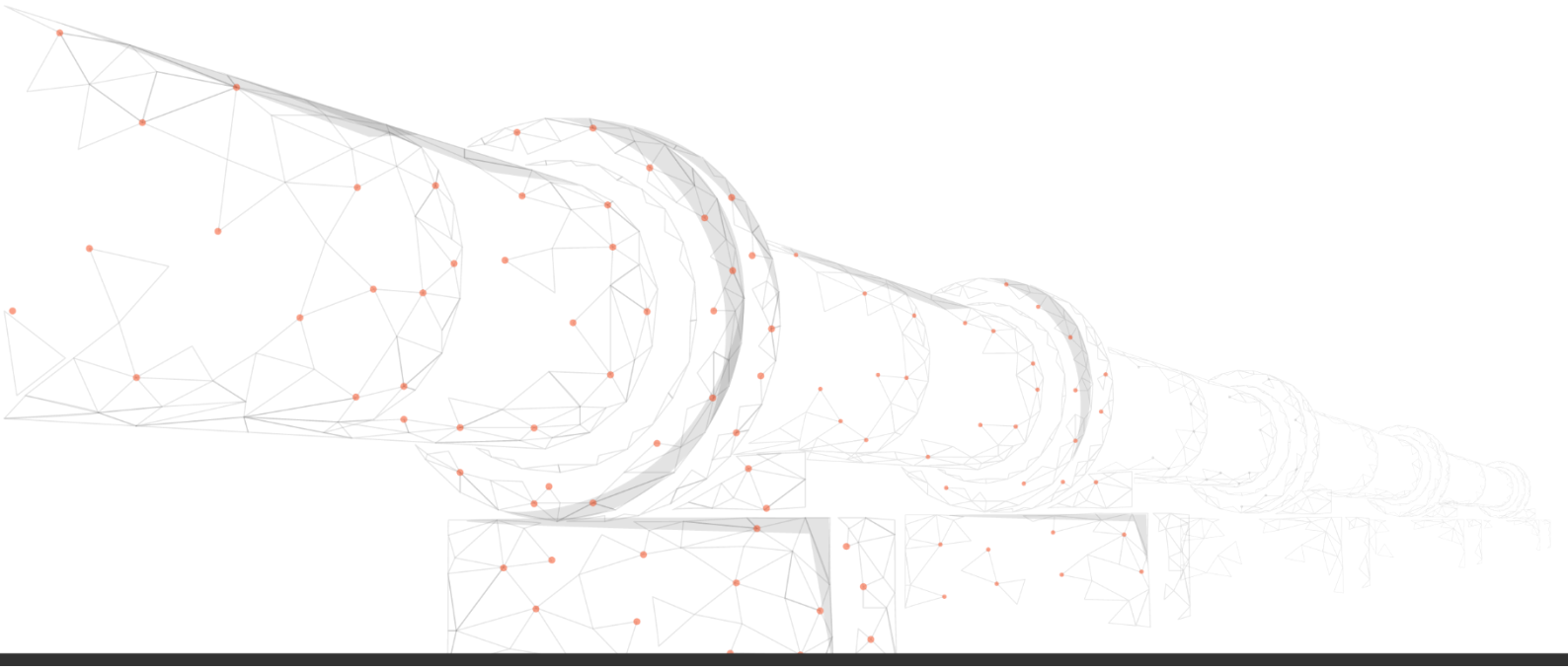
8.2.3. Compliance with the OCTMP will be part of the conditions of contract and mechanisms will be put in place to ensure compliance between the Applicant and the Construction Contractor.

8.2.4. A Transport Review Group will provide a platform to ensure that any issues are recorded, addressed and appropriate corrective measures are implemented.

9. REFERENCES

- **Ref. 1 –** Department for Transport. (2009). *Traffic Signs Manual Chapter 8 Road Works and Temporary Situations*. Retrieved from: https://www.gov.uk/government/publications/traffic-signs-manual
- **Ref. 2 –** Department for Transport. (2011). *Safety at Streetworks and Roadworks.* Retrieved from: https://www.gov.uk/government/publications/safety-at-street-works-and-road-works
- **Ref. 3 –** United Kingdom Government. (2016). *Traffic Signs Regulations and General Directions* (TSRGD). Retrieved from: https://www.legislation.gov.uk/uksi/2016/362/contents/made

Annexes



Annex A

CONSTRUCTION TRAFFIC ROUTE (CTR) RISK REGISTER

ANNEX A – CONSTRUCTION TRAFFIC ROUTE (CTR) RISK REGISTER

Construction Traffic Route	Element of Works	Image	Relevant EIA / TA Outcomes	Constraints	Mitigation Response
CC CTR 1	Stanlow		• –Increase in construction traffic • –Moderate signficiant effects for Severance, Pedestrian Delay, Fear and Intimidation, and Driver Delay calculated on B5132 Cryers Lane	• –7.5t Environmental Weight Limit on B5132 (exemption for access) • –Bridleway on Old Cryers Lane • –Residential Properties • –Local agricultural access requirements • –National speed limit road	• –**Centralised Compound Route Mitigation EN070007-D.6.5.4.3.2 (Sheet 1)**
CC CTR 2	Picton Lane		• –Increase in construction traffic • –Major signficiant effects calculated for Severance, Fear and Initmidation, Driver Delay on Little Stanney Lane and Picton Lane • –Moderate Signficiant Effects calculated for Pedestrian Delay on Little Stanney Lane	• –Narrow carriageway widths insufficient to allow two-way HGV movements on Picton Lane • –Residential Properties • –Through-route to A56 Mickle Trafford • –Local agricultural access requirements • –Potential for Verge damage • –Absence of pedestrian facilities • –Increased risk of collision	• –**Centralised Compound Route Mitigation EN070007-D.6.5.4.3.2 (Sheet 2)**

Construction Traffic Route	Element of Works	Image	Relevant EIA / TA Outcomes	Constraints	Mitigation Response
CC CTR 3	Chorlton Lane		• –Increase in construction traffic • –Identified PIA cluster at Rake Lane/ Little Rake Lane junction. • –Identified PIA cluster at A5117/ Rake Lane junction. –Moderate significant effects calculated for Severance, Fear and Intimidation, Driver Delay on Rake Lane and Chorlton Lane. •	• –Narrow carriageway widths insufficient to allow two-way HGV movements on Rake Lane, little Rake Lane, and Chorlton Lane • –Residential Properties • –Local agricultural access requirements • –Potential for Verge damage • –Absence of pedestrian facilities • –Increased risk of collision	• –**Centralised Compound Route Mitigation EN070007-D.6.5.4.3.2 (Sheet 3)** • –Maximise use of smaller plant and equipment, where possible. • –Advanced hazard warning signage along the route –Engagement with local residents prior to and throughout works •
CC CTR 4	Sealand Central*		• –Increase in construction traffic • –Moderate significant effects calculated for Pedestrian Delay on A548 Sealand Road	• –High volume of traffic on A548 • –Visibility from site access	• –Provision of visibility splays • –Advanced dual-language hazard warning signage along the route • –Temporary speed limit on A548 during Construction Stage

Construction Traffic Route	Element of Works	Image	Relevant EIA / TA Outcomes	Constraints	Mitigation Response
CC CTR 5	Wood Farm		• –Increase in construction traffic • –Moderate significant effects calculated for Pedestrian Delay on A548 Sealand Road	• –High volume of traffic on A548 • –Visibility from site access • –Narrow carriageway widths on Deeside Lane and Wood Farm Access Road • –Bridleway on Wood Farm Access Road	• –**Centralised Compound Route Mitigation EN070007-D.6.5.4.3.2 (Sheet 4)** • –Advanced dual-language hazard warning signage along the rout • –Hazard warning signage to alert users to rpesence of horseriders and site traffic along Deeside Lane and Wood Farm access road. –Engagement with local residents and businesses prior to and throughout works •
CC CTR 6	River Dee		• –Increase in construction traffic • –Moderate significant effects calculated on B5129 for Severance, Fear and Intimidation, and Driver Delay. • –Moderate significant effects calculated for Pedestrian Delay on B5129	• –Vehicle speeds on B5129 • –Residential properties on A5104	–**Centralised Compound Route Mitigation EN070007-D.6.5.4.3.2 (Sheet 5)** •

Construction Traffic Route	Element of Works	Image	Relevant EIA / TA Outcomes	Constraints	Mitigation Response
CC CTR 7	Shotton Lane		–Increase in construction traffic •	• –High volume of traffic on B5125 –Adjacent access and footpath •	• –**Centralised Compound Route Mitigation EN070007-D.6.5.4.3.2 (Sheet 6)** • –Potential for right turn ghost island • –HGV timing restriction (0800-0900 and 1700-1800) associated with congestion at B5125/ B5127/ A494 roundabout • –Use of traffic marshal at site access to manage HGV and pedestrian movements
CC CTR 8a	Northop Hall		• –Increase in construction traffic • –Moderate significant effects calculated for Pedestrian Delay on B5125 east of Northop Hall Compound	• –7.5t Environmental Weight Limit on Brookside (exemption for access) • –On-street parking on Brookside –Residential properties on Brookside •	• –**Centralised Compound Route Mitigation EN070007-D.6.5.4.3.2 (Sheet 7)** • –HGV timing restriction (0800-0900 and 1700-1800) • –Proposed one-way system via J33a A55/ Brookside

Construction Traffic Route	Element of Works	Image	Relevant EIA / TA Outcomes	Constraints	Mitigation Response
CC CTR 8b	Northop Hall		• –Increase in construction traffic • –Major significant effects calculated on B5125 west of Northop Hall Compound for Severance, Fear and Intimidation, and Driver Delay –Moderate significant effects calculated for Pedestrian Delay on B5125 west of Northop Hall Compound •	• –Traffic calming on B5125 on approach to Northop Hall • –Visibility at compound access • –Wedding venue opposite site access • –Forwards visibility restricted by hedgerows	• –Temporary speed limit on B5125 • –Visibility splays • –Proposed one-way system via J33 A55/ –**Centralised Compound Route Mitigation EN070007-D.6.5.4.3.2 (Sheet 7)** •
AGI CTR 1	Ince AGI		–Increase in construction traffic •	• –Local sensitivity regarding the use of Ash Road for HGVs	• –Use of Grinsome Road route via Pool Road for some, or all construction traffic associated with Ince AGI. –Advanced hazard warning signage along Ash Road •

Construction Traffic Route	Element of Works	Image	Relevant EIA / TA Outcomes	Constraints	Mitigation Response
AGI CTR 2	Stanlow AGI		• Increase in construction traffic	• No specific constraints identified. This route is used by HGV traffic associated with the Stanlow site.	• No specific mitigation proposed.
AGI CTR 3a	Northop Hall AGI		**See entry for CC CTR 8a**		

Construction Traffic Route	Element of Works	Image	Relevant EIA / TA Outcomes	Constraints	Mitigation Response
AGI CTR 3b	Northop Hall AGI		**See entry for CC CTR 8b**		
AGI CTR 4	Flint AGI		• –Increase in construction traffic • –Moderate significant effects calculated for Severance, Fear and Intimidation, and Driver Delay on along Starkey Lane and Allt-Goch Lane	• –Narrow carriageway widths insufficient to allow two-way HGV movements in places along Starkey Lane and Allt-Goch Lane. • –Residential Properties • –Local agricultural access requirements • –Potential for Verge damage • –Absence of pedestrian facilities • –Increased risk of collision –Peak hour flows on A5119 may cause difficulty for larger vehicles egressing from Starkey Lane •	• –Maximise use of smaller plant and equipment, where possible. • –Advanced dual-language hazard warning signage along the route • –Radio communications between Traffic Marshalls at site access and inbound vehicles –Schedule HGV departures outside of peak times on A5119 •

Construction Traffic Route	Element of Works	Image	Relevant EIA / TA Outcomes	Constraints	Mitigation Response
BVS CTR 1	Rock Bank BVS		**See entry for CC CTR 3**		
BVS CTR 2	Mollington BVS		• –Increase in construction traffic • –Moderate signficiant effects calculated on Overwood Lane for Severance, Pedestrian Amenity, Driver Delay. • –PIA accident cluster identified on A540/ Long Lane junction and	• –7.5t Environmental Weight Limit on Overwood Lane (exemption for access) –Peak hour flows on A540 may cause difficulty for larger vehicles egressing from Overwood Lane. •	• –Advanced dual-language hazard warning signage along the route –Schedule HGV departures outside of peak times on A540 •

Construction Traffic Route	Element of Works	Image	Relevant EIA / TA Outcomes	Constraints	Mitigation Response
BVS CTR 3	Aston Hill BVS		• –Increase in construction traffic • –Major signfiicant effects calculated on - Lower Aston Hall Lane for Severance, Pedestrian Amenity, and Driver Delay.	• –Hawarden High School Located on B5125 • –Height restricted railway bridge	• –HGV timing restriction (0800-0900 and 1700-1800) • –Use of route from A494/ Plough Lane for tall vehicles (only where essential due to residential and narrow nature of Lower Aston Hall Lane) • –Maximise use of smaller plant and equipment, where possible.
BVS CTR 4	Cornist Lane BVS		• –Increase in construction traffic • –Significant effects calculated for Severance, Fear and Intimidation, Pedestrian Amenity, and Driver Delay along Cornist Lane.	• –Narrow single carriageway • –Verge damage • –Increase risk of collision • –Absence of pedestrian facilities • –Agricultural access required	• –Maximise use of smaller plant and equipment, where possible. • –Radio communications between Traffic Marshalls at site access and arrivals on Lleprog Lane • –Advanced dual-language hazard warning signage along the route • –Engagement with Lleprog Farm prior to and throughout works • –Schedule works and deliveries outside of peak periods and times of day

Construction Traffic Route	Element of Works	Image	Relevant EIA / TA Outcomes	Constraints	Mitigation Response
BVS CTR 5	Pentre Halkyn BVS		• –Increase in construction traffic • –Significant effects calculated for Severance and Fear and Intimidation on B5121.	• –Increase risk of collision • –Absence of pedestrian facilities • –Agricultural access required • –Right turning vehicles blo northbound traffic • –Vehicle speeds	• –Advanced dual-language hazard warning signage along the route • –Schedule HGV deliveries and shift starts outside of peak times of day • –Introduce TTROs to reduce speeds at site access and deliver visibility splays in line with TAN 18 guidance.
BVS CTR 6	Babell BVS		• –Increase in construction traffic • –Significant effects calculated for Severance, Fear and Intimidation, Pedestrian Amenity, and Driver Delay along Racecourse Lane	• –Narrow single carriageway(Approx. 2.5m in places). • –Verge damage • –Increase risk of collision • –Absence of pedestrian facilities • –Agricultural/ residential access required	• –Maximise use of smaller plant and equipment, where possible. • –Radio communications between site access and arrivals on Racecourse Lane • –Advanced dual-language hazard warning signage along the route • –Engagement with local residents and agricultural interests prior to and throughout works • –Schedule works and deliveries outside of peak periods and times of day • –Vegetation management
***Sealand Central is a back-up compound that will be used if for example, Wood Farm is not available.**					

Annex B

ACCESS RISK REGISTER

ANNEX B – ACCESS RISK REGISTER

The **Access and Rights of Way Plans Regulation 5(2)(k) (Document Reference: D.2.5)** should be referenced as the definitive record for the proposed access arrangements associated with the DCO Proposed Development.

Access Reference	Category	X	Y	Road	Permanent Access Location	Risks/ Constraints
1E	Primary	-2.7963554	53.2776076	Unnamed Road 1	Ince AGI	• –Single track rural lane (Private) • –3rd Party Land Owner Activity • –Agricultural Access • –Existing access width unsuited to HGVs
2E	Secondary	-2.7984065	53.2771944	Unnamed Road 1	N/A	• –Single track rural lane (Private) • –3rd Party Land Owner Activity • –Agricultural Access • –Existing access width unsuited to HGVs
3E	Secondary	-2.7993889	53.2763140	Unnamed Road 2	N/A	• –Single track rural lane (Private) • –3rd Party Land Owner Activity • –Agricultural Access • –Existing access width unsuited to HGVs
4E	Secondary	-2.8074043	53.2699829	Ince Lane	N/A	• –Proximity of Ash Road Junction • –Agricultural Access • –Forward visibility northbound on Ince Lane • –Existing access width unsuited to HGVs
5E	Secondary	-2.8082267	53.2688372	A5117	N/A	• –left in/ left out only • –high speed/ volume of traffic on A5117
6E	Secondary	-2.8225091	53.2671252	Old Cryers Lane	N/A	• –Bridleway located on Old Cryers Lane • –Impact of hedgerows on visibility • –Residential property
7E	Primary	-2.8239336	53.2656842	Cryers Lane	N/A	• –Residential property opposite • –National Speed Limit Road • –Absence of turning facilities • –Impact of trees and vegetation west of access
8E	Secondary	-2.8243523	53.2657567	Cryers Lane	N/A	• –Residential property access adjacent • –National Speed Limit Road

Access Reference	Category	X	Y	Road	Permanent Access Location	Risks/ Constraints
9E	Secondary	-2.8253323	53.2638526	Cryers Lane	N/A	~~-~~National Speed Limit Road ~~-~~Impact of hedgerows on visibility
10E	Secondary	-2.8335836	53.2672448	A5117	N/A	~~- shared~~Shared footway/ cycleway on A5117 ~~- high~~High speed/ volume of traffic on A5117
11E	Secondary	-2.8329860	53.2561290	Thornton Green Lane	N/A	~~-~~Impact of hedgerows on visibility
12E	Secondary	-2.8296049	53.2548955	Thornton Green Lane	N/A	~~-~~Impact of hedgerows on visibility
13E	Secondary	-2.8272442	53.2546441	Cryers Lane	N/A	~~-~~Impact of hedgerows on visibility ~~-~~National Speed Limit Road
14E	Secondary	-2.8335687	53.2535541	Hallsgreen Lane	N/A	~~-~~National Speed Limit Road ~~-~~Existing access width unsuited to HGVs
15E	Secondary	-2.8587955	53.2484355	Picton Lane	N/A	~~-~~Private, rural lane ~~-~~Residential and agricultural access required ~~-~~Existing access width unsuited to HGVs
16E	Primary	-2.8545062	53.2451370	Picton Lane	N/A	~~-~~Impact of hedgerows on visibility ~~-~~Narrow carriageway widths ~~-~~Presence of local public footpaths ~~-~~Existing access width unsuited to HGVs
17E	Secondary	-2.8544724	53.2445431	Picton Lane	N/A	~~-~~Impact of hedgerows on visibility ~~-~~Narrow carriageway widths ~~-~~Presence of local public footpaths ~~-~~Existing access width unsuited to HGVs
1N	Secondary	-2.8499810	53.2380582	Picton Lane	N/A	~~-~~Impact of hedgerows on visibility ~~-~~Narrow carriageway widths ~~-~~Presence of local public footpaths ~~-~~Existing access width unsuited to HGVs
21E	Secondary	-2.8797404	53.2345221	Croughton Road	N/A	~~-~~Proximity of NCN5 ~~-~~Single width carriageway ~~-~~Located on bend resulting in limited visibility
11N	Secondary	-2.8773275	53.2377832	Croughton Road	N/A	~~-~~Impact of hedgerows on visibility

Access Reference	Category	X	Y	Road	Permanent Access Location	Risks/ Constraints
						~~-~~Existing access width unsuited to HGVs •
23E	Primary	-2.8820065	53.2355905	Chorlton Lane	N/A	• ~~-~~Impact of hedgerows and trees on visibility • ~~-~~Existing access width unsuited to HGVs
24E	Primary	-2.8827575	53.2357091	Chorlton Lane	Rock Bank BVS	• ~~-~~Impact of hedgerows and trees on visibility • ~~-~~Existing access width unsuited to HGVs
25E	Secondary	-2.9005500	53.2331335	A41	N/A	• ~~-~~Impact of hedgerows and trees on visibility • ~~-left~~Left in/ left out only • ~~-high~~High traffic volume and speeds • ~~-dual~~Dual carriageway road • ~~-~~HGV swept path uses both lanes
26E	Secondary	-2.9014981	53.2335517	A41	N/A	• ~~-left~~Left in/ left out only • ~~-high~~High traffic volume and speeds • ~~-dual~~Dual carriageway road
27E	Secondary	-2.9053650	53.2350310	Station Road	N/A	• ~~-~~Impact of hedgerows and trees on visibility • ~~-~~Existing access width unsuited to HGVs
28E	Secondary	-2.9148089	53.2330757	Station Road	N/A	• ~~-~~Impact of hedgerows and fenceline on visibility
29E	Secondary	-2.9171612	53.2321052	Station Road	N/A	• ~~-~~Impact of hedgerows and trees on visibility • ~~-~~Existing access width unsuited to HGVs
2N	Secondary	-2.9178466	53.2315556	Station Road	N/A	• ~~-~~Impact of hedgerows and trees on visibility • ~~-adjacent~~Adjacent 3rd party land/ residential properties
30E	Secondary	-2.9207214	53.2331274	Grove Road	N/A	• ~~-~~Impact of hedgerows and trees on visibility • ~~-adjacent~~Adjacent 3rd party land/ residential properties • ~~-~~St Oswalds School located to the south
31E	Secondary	-2.9260806	53.2283084	Townfield Lane	N/A	• - Existing access width unsuited to HGVs
32E	Secondary	-2.9259633	53.2279914	Townfield Lane	N/A	• ~~-~~Impact of hedgerows and trees on visibility • ~~-~~Existing access width unsuited to HGVs
33E	Secondary	-2.9267575	53.2269986	Overwood Lane	N/A	• ~~-~~Impact of hedgerows and trees on visibility • ~~-~~Existing access width unsuited to HGVs

Access Reference	Category	X	Y	Road	Permanent Access Location	Risks/ Constraints
34E	Secondary	-2.9273608	53.2267587	Overwood Lane	N/A	- Impact of hedgerows and trees on visibility - Existing access width unsuited to HGVs
35E	Secondary	-2.9297214	53.2255029	Overwood Lane	N/A	- Impact of hedgerows and trees on visibility - Existing access width unsuited to HGVs
36E	Secondary	-2.9270868	53.2234100	A540 Parkgate Road	N/A	- ~~proximity~~Proximity of bend to the north and hedgerows restrict visibility - ~~high~~High speed and volume of traffic on A540
37E	Secondary	-2.9495073	53.2183872	Hermitage Road	N/A	- Impact of hedgerows and trees on visibility - Existing access width unsuited to HGVs
38E	Secondary	-2.9504617	53.2185508	Hermitage Road	N/A	- Adjacent bus stop and residential acess - Impact of hedgerows on visibility - Existing access width unsuited to HGVs
3N	Primary	-2.9652777	53.2101724	A548 Sealand Road	N/A	- Impact of hedgerows, trees, and residential properties on visibility - Drainage ditch located between site and A548 - Level difference between site and A548
39E	Secondary	-2.9673372	53.2105934	Deeside Lane	N/A	- Speed and volume of traffic on A548 - Bus stop located west of the access - Access used by commercial/ agricultural interest as well as local residents - Poor state of repair of Deeisde Lane on approach to junction - Absence of footways on Deeside Lane on approach to junction
40E	Primary	-2.9542159	53.2042962	A548 Sealand Road	N/A	- Access used by commercial/ agricultural interest as well as local residents - Bridleway Located along Wood Farm Access road - Single width access road - Visibility restricted by adjacent hedgerows -
41E	Secondary	-2.9722072	53.2010925	Deeside Lane	N/A	- Single width access road - Footpath located along Deeside Lane - Impact of hedgerows on visibility

Access Reference	Category	X	Y	Road	Permanent Access Location	Risks/ Constraints
42E	Secondary	-2.9723257	53.2009453	Deeside Lane	N/A	• –Single width access road • –Footpath located along Deeside Lane • –Impact of hedgerows on visibility
43E	Primary	-2.9714782	53.1897537	B5129 Chester Road	N/A	• –Radii on east of junction unsuited to large HGVs • –Use by Airbus Broughton • –High speed and volume of traffic along B5129 • –Impact of hedgerows on visibility
44E	Secondary	-2.9810088	53.1889568	B5129 Chester Road	N/A	• –Use by agricultural/commercial interest • –High speed and volume of traffic along B5129 • –Impact of hedgerows on visibility
45E	Secondary	-2.9921406	53.1885837	B5129 Chester Road	N/A	• –High speed and volume of traffic along B5129 • –Impact of hedgerows on visibility
46E	Secondary	-3.0015344	53.1920491	Moor Lane	N/A	• –Existing access width unsuited to HGVs • –Impact of hedgerows on visibility • –Residential property opposite access
47E	Secondary	-3.0055313	53.1952657	Unnamed Road 3	N/A	• –Located along private road serving comemrcial interests. • –Single width carriageway • –Existing access width unsuited to HGVs
48E	Secondary	-3.0057657	53.1953593	Unnamed Road 3	N/A	• –Located along private road serving commercial interests. • –Single width carriageway • –Existing access width unsuited to HGVs
49E	Secondary	-3.0062339	53.1978790	Glendale Avenue	N/A	• –Existing car park/ 3rd party activity
50E	Secondary	-3.0095634	53.1989595	B5129 Chester Road	N/A	• –High volume of traffic at peak times • –Visibility restricted by hedgerows and adjacent residential properties • –Existing access width unsuited to HGVs
51E	Secondary	-3.0120297	53.2003751	B5129 Chester Road	N/A	• –Visibility restricted by hedgerows and trees • –Existing access width unsuited to HGVs
52E	Secondary	-3.0152166	53.2006023	Mancot Lane	N/A	• –Proximity to rear school entrance • –Visibility restricted by hedgerows and trees • –Existing access width unsuited to HGVs

Access Reference	Category	X	Y	Road	Permanent Access Location	Risks/ Constraints
53E	Secondary	-3.0164736	53.2011822	Willow Lane	N/A	• –Proximity to residential properties and rear school entrance • –Visibility restricted by hedgerows and trees • –Existing access width unsuited to HGVs
54E	Secondary	-3.0265731	53.1974194	A550	N/A	• –Volume and speed of trafic on A550
55E	Primary	-3.0351724	53.1942196	Lower Aston Hall Lane	Aston Hill BVS	• –Adjacent footpath and agricultural access • –Existing access width unsuited to HGVs
56E	Secondary	-3.0354104	53.1943990	Lower Aston Hall Lane	N/A	• –Very restricted visibility due to adjacent hedgerows and location on the inside of a bend • –Existing access width unsuited to HGVs
57E	Secondary	-3.0363224	53.1923405	Upper Aston Hall Lane	N/A	• –Very restricted visibility due to adjacent hedgerows and location on the inside of a bend • –Proximity of Bennett's Lane junction • –Existing access width unsuited to HGVs
58E	Secondary	-3.0367505	53.1953039	Lower Aston Hall Lane	N/A	• –Proximity to residential properties • –Single width carriageway on approaches
60E	Secondary	-3.0458254	53.1964366	Old Aston Hill	N/A	• –Left turn in/ right turn out only • –Very restricted width between two residential properties • –Unsuited to HGVs • –Gradient increases away from Old Aston Hill
61E	Secondary	-3.0472886	53.1952378	Church Lane	N/A	• –Footpath located along Church Lane • –Private road with access to residential properties
62E	Secondary	-3.0507711	53.1960146	Old Aston Hill	N/A	• –Promimity to agricultural access road to south • –~~bus~~Bus stops located to the north
63E	Secondary	-3.0513605	53.1946814	Old Aston Hill	N/A	• –On street parking impact on visibility and road widths • –Adjacent residential properties
64E	Secondary	-3.0556687	53.1984248	Shotton Lane	N/A	• –Existing access width unsuited to HGVs • –Single width carriageway on Shotton Lane
65E	Secondary	-3.0558987	53.1984377	Shotton Lane	N/A	• –Existing access width unsuited to HGVs • –Single width carriageway on Shotton Lane • –B5125/ Shotton Lane junction poorly suited to HGVs

Access Reference	Category	X	Y	Road	Permanent Access Location	Risks/ Constraints
66E	Primary	-3.0610697	53.1956511	B5125	N/A	• –High speed and volume of traffic on B5125 • –Absence of right turning facilities • –Adjacent footpath and agricultural access
12N	Secondary	-3.0635082	53.1965799	Castle Hall Farm Access Track	N/A	• –Single width agricultural access • –Existing access width unsuited to HGVs • –High speed and volume of traffic on B5125
4N	Secondary	-3.0637442	53.1963335	B5125	N/A	• –High speed and volume of traffic on B5125 • –Level difference between access and B5125 • –Impact of vegetation and location on inside of a bend on visibility • –Adjacent public footpath
68E	Secondary	-3.0667862	53.1920624	Green Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
69E	Secondary	-3.0684221	53.1907000	Green Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs • –Adjacent public footpath • –Level difference between access and Green Lane
70E	Secondary	-3.0708125	53.1905271	Green Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
13N	Secondary	-3.0710399	53.1906204	Green Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
72E	Secondary	-3.0898308	53.1973874	Northop Hall Services Access Road	N/A	• –Pedestrian and vechular movements associated with Northop Hall services
73E	Secondary	-3.0970068	53.1994162	Chester Road	N/A	• –Located adjacent J33A where vehicle speeds merging and diverging A55 are high
74E	Secondary	-3.0977146	53.1998273	Brookside	N/A	• –Located adjacent J33A where vehicle speeds merging and diverging A55 are high • –Impact of hedgerows and vegetation on visibility

Access Reference	Category	X	Y	Road	Permanent Access Location	Risks/ Constraints
75E	Secondary	-3.0992282	53.2000957	Brookside	N/A	• –Existing access width unsuited to HGVs • –Private on street parking
5N	Secondary	-3.1017229	53.2027746	B5125	N/A	• –Smithy Lane junction opposite • –Impact of existing wall, narrow footways and adjacent hedgerows on visibility
76E	Primary	-3.1088552	53.2036918	B5125	Northop Hall AGI	• –Wedding venue access opposite • –Adjacent footpath • –Impact of hedgerows on visibility at access and on forwards visibility on approaches
77E	Secondary	-3.1137751	53.2048115	B5125	N/A	• –Impact of hedgerows on visibility at access and on forwards visibility on approaches • –High speed section of B5125 • –Existing access width unsuited to HGVs
78E	Secondary	-3.1140865	53.2050905	B5125	N/A	• –Impact of hedgerows on visibility at access and on forwards visibility on approaches • –High speed section of B5125 • –Existing access width unsuited to HGVs
79E	Secondary	-3.1153120	53.2083883	B5126 Connahs Quay Road	N/A	• –Existing access width unsuited to HGVs • –Impact of hedgerows on visibility at access and on forwards visibility on approaches
80E	Secondary	-3.1154697	53.2085304	B5126 Connahs Quay Road	N/A	• –Existing access width unsuited to HGVs • –Impact of hedgerows on visibility at access and on forwards visibility on approaches
81E	Secondary	-3.1183151	53.2165049	Starkey Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
82E	Secondary	-3.1210185	53.2192781	Starkey Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
83E	Secondary	-3.1220623	53.2214075	Starkey Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs

Access Reference	Category	X	Y	Road	Permanent Access Location	Risks/ Constraints
84E	Secondary	-3.1259284	53.2268198	Alt-Goch Lane	N/A	• –Single width road • –Impact of hedgerows and tree on visibility • –Existing access width unsuited to HGVs
85E	Secondary	-3.1252290	53.2276288	Alt-Goch Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
86E	Secondary	-3.1246201	53.2283190	Alt-Goch Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
87E	Secondary	-3.1232408	53.2297762	Alt-Goch Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
88E	Secondary	-3.1748002	53.2446432	Cornist Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
89E	Primary	-3.2401159	53.2502940	B5121	Halkyn BVS	• –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs • –High traffic speeds on B5121
90E	Primary	-3.2795921	53.2615507	Racecourse Lane	Babell BVS	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
6N	Primary	-3.1239690	53.2289440	Allt-Goch Lane	Flint AGI	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
7N	Primary	-2.928909	53.225801	Overwood Lane	Mollington BVS	• –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs • –Speeds in excess of posted limit
91E	Primary	-2.8260667	53.271192	Pool Lane	Stanlow AGI	• –N/A

Access Reference	Category	X	Y	Road	Permanent Access Location	Risks/ Constraints
8N	Primary	-2.8326709	53.267513	A5117	Stanlow AGI	• –High speed and volume of traffic on A5117 • –Adjacent footway/cycleway • –Absence of right turning facilities
92E	Secondary	-3.0826186	53.195919	Pinfold Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
93E	Secondary	-3.0043504	53.196001	B5129 Chester Road	N/A	• –Volume of traffic along the B5129 at peak times • –Adjacent bus stops • –Commercial properties served from this private access road • –Presence of public footpath
95E	Secondary	-2.8036031	53.267501	J14 M56	N/A	• –High speed and volume of traffic at J14 M56
96E	Secondary	-2.8065509	53.281926	Grinsome Road	N/A	• –N/A
97E	Secondary	-2.8803840	53.234487	Chorlton Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
98E	Secondary	-3.0242023	53.1985431	Colliery Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
99E	Secondary	-3.1106657	53.2041295	B5125	N/A	• –Wedding venue access opposite • –Adjacent footpath • –Impact of hedgerows on visibility at access and on forwards visibility on approaches
100E	Secondary	-3.1707037	53.2437115	Cornist Lane	N/A	• –Single width road • –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
9N	Secondary	-2.8659068	53.2357772	Wervin Road	N/A	• –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs
10N	Secondary	-2.8662582	53.2357659	Wervin Road	N/A	• –Impact of hedgerows on visibility • –Existing access width unsuited to HGVs

Access Reference	Category	X	Y	Road	Permanent Access Location	Risks/ Constraints
14N	Secondary	-3.08322634	53.19553432	Pinfold Lane	N/A	• Single width road • Impact of hedgerows on visibility • Existing access width unsuited to HGVs
15N	Primary	-3.1718730	53.2440772	Cornist Lane	Cornist Lane BVS	• Single width road • Impact of hedgerows on visibility • Existing access width unsuited to HGVs

Annex C

ACCESS PRINCIPLES NOTE

Hynet North West CO_2 Pipeline DCO - Access Principles

DATE:	12 August 2022	**CONFIDENTIALITY:**	Confidential
SUBJECT:	HyNet CO2 Pipeline DCO- Access Principles		
PROJECT:	HyNet CO2 Pipeline DCO	**AUTHOR:**	LP/JO
CHECKED:	AL	**APPROVED:**	AL

INTRODUCTION

This Technical Note (TN) has been produced to establish key principles and methodology for location, type, design, and mitigation of access locations proposed as part of Liverpool Bay CCS Ltd HyNet North West CO_2 Pipeline Project, referred to henceforth as the Proposed Development. In particular it seeks to establish the approach to 'bellmouth' access design and visibility splays for the construction phase of the Proposed Development.

92no. access locations have been proposed to facilitate the construction of various elements of the Proposed Development. These are summarised in the Access Schedule (**Appendix A**). All the proposed access locations are located on the local road network (LRN) and have been identified to maximise use of existing access locations and meet the construction requirements of the Proposed Development. The proposed access locations will provide a link from the existing LRN to the Proposed Development via temporary access tracks.

Alongside this work, construction traffic routes are being identified which will facilitate the construction of the Proposed Development in a safe and efficient manner, utilising the best available construction traffic routes, reducing effects to local communities and businesses as far as reasonably practicable.

This TN will be submitted alongside the Scoping report issued to the Local Highway Authorities (LHAs) and ultimately be appended to the Outline Construction Traffic Management Plan (OCTMP) which would in turn be part of the Traffic and Transport assessment and mitigation accompanying the Environmental Statement (ES).

DEFINITIONS

This TN considers temporary and permanent access locations. Temporary access locations are those anticipated to be used for the construction phase of the Proposed Development only. These access locations would not need to be used to access the Proposed Development for operation and maintenance. Permanent accesses would be used for operation and maintenance. It should be noted that the design requirements for the construction, operation and maintenance phases may change to reflect the size and volume of traffic likely to require access. Consequently, there will be permanent access locations that require the construction of a larger temporary access design during the construction phase, before implementing a final, permanent access design for the operational and maintenance phase that is more appropriate to anticipated size and volume of vehicular traffic expected to use it.

Temporary access locations would be designed and constructed to accommodate the most onerous vehicle type and manoeuvre required for construction. The temporary access points are dictated by the construction traffic routes and construction activity and would comprise the following types:

- Road Crossing (i.e. no turning movements for HGVs)
- Left in/ Right out
- Right in/ Left Out; Or

- All Movements

The proposed turning movements required at each access point will be confirmed alongside the construction traffic routes to each access.

In addition to this definition, access locations are also categorised as 'Primary' or 'Secondary'. Primary access locations are those which will serve any of the below locations:

- Centralised Compounds;
- Above Ground Installations (AGIs); or
- Block Valve Stations

These are designated as such to reflect that they are key working locations across the Proposed Development where construction traffic is likely to be of a relatively higher volume and sustained over a longer period of the construction programme.

All other access locations are designated as Secondary accesses. These are designated as such to reflect that at these locations construction traffic volumes are anticipated to be lower and/or over a much shorter duration that the Primary Accesses.

Primary Accesses include both temporary and permanent access locations. Secondary access locations are comprised of temporary access locations only.

Primary and Secondary access locations are summarised in the proceeding sections. The referencing system applied for the Proposed Development uses either an 'E' or 'N' suffix. These refer to whether the access is existing or new, respectively.

Primary Access Locations

Table 1 summarises the Primary Access locations required for the Proposed Development. In total, there are 17no. Primary Access locations.

Table 1: Primary Access Locations

Ref.	Location	Permanent?	Serves
1E	Unnamed Road 1	Y	Ince AGI
7E	Cryers Lane	N	Stanlow Centralised Compound
16E	Picton Lane	N	Picton Lane Centralised Compound
23E	Chorlton Lane	N	Chorlton Lane Centralised Compound
24E	Chorlton Lane	Y	Rock Bank BVS
3N	A548 Sealand Road	N	Sealand Road Centralised Compound
40E	A548 Sealand Road	N	Wood Farm Centralised Compound

Hynet North West CO_2 Pipeline DCO - Access Principles

DATE:	12 August 2022	**CONFIDENTIALITY:**	Confidential
SUBJECT:	HyNet CO2 Pipeline DCO- Access Principles		
PROJECT:	HyNet CO2 Pipeline DCO	**AUTHOR:**	LP/JO
CHECKED:	AL	**APPROVED:**	AL

Ref.	Location	Permanent?	Serves
43E	B5129 Chester Road	N	River Dee Centralised Compound
55E	Lower Aston Hall Lane	Y	Aston Hall BVS
66E	B5125	N	Shotton Lane Centralised Compound
76E	B5125	Y	Northop Hall Centralised Compound/ AGI
88E	Cornist Lane	Y	Cornist Lane BVS
89E	B5121	Y	Halkyn BVS
90E	Racecourse Lane	Y	Babell BVS
6N	Alt Goch Lane	Y	Flint AGI
7N	Overwood Lane	Y	Mollington BVS

PRIMARY ACCESS DESIGN PRINCIPLES

In these 17no. locations it is proposed that the following principles would apply:

- Access Bellmouths would be provided to accommodate the largest anticipated HGV traffic during the construction phase;
- Where permanent access is required, and following the construction phase, construction access would be amended/reinstated to provide permanent access suited to operation and maintenance traffic;
- Visibility splays would be provided during the construction and operation and maintenance phases
- Where 85th% percentile speeds are in excess of 40mph, TAN18[1]/ DRMB Stopping Site Distances (SSDs) would apply;
- Where 85th percentile speeds are below this threshold, MfS/MfS2 SSDs would apply; and
- Where physical or environmental constraints restrict visibility, temporary traffic regulation orders (TTROs) (e.g. temporary speed limits) and Traffic Signs Manual Chapter 8 signage would be implemented

Further discussion on the geometric design of accesses is presented in subsequent sections of this TN.

Secondary Access Locations

The remaining 85no. access locations are defined as Secondary Access locations. These locations would only be used where access cannot be taken from the pipeline corridor ‘right of way’ due to physical constraints between centralised compounds and sections of the corridor e.g. watercourses, railway lines, and the strategic road network. It is anticipated that the use of these accesses would be limited to

[1] Applicable within Flintshire/Wales only

infrequent use to deliver, for example, pipeline sections to these areas over the course of a number of days, requiring very limited HGV movements.

In these locations it is proposed that the following principles would apply:

- Limited to essential access requirement, where it is not possible to deliver equipment and materials along off-highway sections of the pipeline corridor;
- Access Bellmouths would be provided to accommodate the largest anticipated HGV traffic during the construction phase;
- To minimise the impact on property and ecology where access is infrequent and subject to low traffic volumes over a short duration, formal visibility splays would not be provided to facilitate access;
- Instead, the use of Traffic Marshals and temporary traffic management (e.g. traffic signals, stop/go boards), as well as Chapter 8 signage would be implemented for the required duration of use.

ECOLOGY AND ARBORICULTURE PRINCIPLES

As referenced in the principles for Primary and Secondary accesses, the Proposed Development will seek to minimise the loss of trees and vegetation associated with visibility splays. This can be achieved by using TTROs to temporarily reduce speed limits during the construction phase (thereby reducing the extent of trees and vegetation within visibility splays) and secondly, by adopting methods of maintenance and management that seek to minimise loss of vegetation and trees. This note has therefore been developed with colleagues from the Ecology and Arboriculture teams.

Within proposed visibility splays it is assumed that alternative options would be considered prior to removal of trees or hedgerows. Most native species hedge plants (i.e. blackthorn, hawthorn, hazel, field maple) can tolerate heavy management such as side pruning, height reduction, layering and coppicing.

Once reduced in height the hedges could be managed at the required height to allow for appropriate visibility, which could be done manually either with hedge cutters or with larger equipment such as a tractor mounted side arm flail. With respect to large wide spreading hedges these could be side pruned to improve visibility and again managed to retain visibility. Trees may be either pruned to reduce the canopy spread or have the lower branches removed (crown lifting) to create visibility below the canopy line.

TEMPORARY ACCESS DESIGN

Design Vehicle

EniProgetti has advised that all temporary access locations – whether Primary or Secondary - would be required to accommodate a Low-Loader type vehicle, the dimensions of which are set out below. In particular this is to accommodate the delivery of plant and equipment, and the 20” and 36” pipeline sections which will be 12m in length.

The design vehicle used for the purposes of assessing construction traffic access is presented in **Appendix B**.

Access Layout

Indicative designs for temporary access locations are presented in **Appendix C** Swept path analysis has been used to identify the geometric requirements for these accesses. Indicative designs are presented assuming a 4m and 6m carriageway. Tracks were based on physical requirements to get the low loader into the site with vehicles overrunning the centreline on the main road and site access – requiring these movements to be undertaken with Traffic Marshalls.

It should be noted that these indicative designs assume that the access would be required to cater for 'all movement'; in the majority of instances access locations would operate, for example, left in/ right out arrangements to reflect the prescribed construction traffic routes. Further detail will be provided on this matter in the TA and OCTMP once construction traffic routes are confirmed.

STOPPING SIGHT DISTANCES AND VISIBILITY SPLAYS

Introduction

An integral part of the design of a temporary or permanent access is the provision of Stopping Sight Distances (SSD) and visibility splays. Guidance documents provide details on calculations and requirements for SSD and visibility splays.

This section outlines the following:

- relevant guidance documents;
- definition of SSD and visibility splays; and,
- proposed methodology for SSD and visibility splay provision.

There are several documents in England and Wales which provide guidance on the provision of SSD and visibility splays, these are listed in **Table 2** below.

Table 2: Visibility Splay and Stopping Sight Distance Guidance

Document	Description
Welsh Government Technical Advice Note 18 (TAN 18)	TAN 18 Annex B - Design standards for rural roads and roads in built up areas.
Design Manual for Roads and Bridges (DMRB)	Design standard for Trunk Roads and Motorways in England, Scotland, Wales and Northern Ireland.

Hynet North West CO_2 Pipeline DCO - Access Principles

DATE:	12 August 2022	**CONFIDENTIALITY:**	Confidential
SUBJECT:	HyNet CO2 Pipeline DCO- Access Principles		
PROJECT:	HyNet CO2 Pipeline DCO	**AUTHOR:**	LP/JO
CHECKED:	AL	**APPROVED:**	AL

Document	Description
Manual for Streets (MfS)	Focuses on lightly trafficked residential streets, but key principles can be applicable to other types of street, for example high streets and lightly trafficked lanes in rural locations.
Manual for Streets 2 (MfS2)	Builds on guidance in MfS1 and explores in detail how and where key principles can be applied to busier streets and non-trunk roads, thus helping to fill the perceived gap between MfS1 and DMRB. Where prevailing speeds are below 40mph, MfS/MfS2 principles should be the starting point for designers.

Stopping Sight Distance

SSD is defined in TAN 18 as:

'the minimum distance that drivers need to be able to see ahead of themselves, in order to stop if confronted by a hazard. SSD is usually related to the actual (for existing streets) or design (for new streets) 85th percentile wet weather speed of vehicles on the major link.'

Manual for Streets 2 explains how SSD is derived:

'It is calculated from the speed of the vehicle, the time required for a driver to identify a hazard and then begin to brake (the perception-reaction time), and the vehicle's rate of deceleration.'

The formula for calculating SSD (in metres) is:

SSD = vt + v2/2(d+0.1a)

v = speed (m/s)

t = driver perception-reaction time (seconds)

d = deceleration (m/s2)

a = longitudinal gradient (%) (+ for upgrades and – for downgrades)

Visibility Splay

A visibility splay is formed by an X distance and a Y distance. The X distance is the distance back along a minor arm of the junction. The Y distance is the distance that a driver exiting from a minor road can see to the left and right along the major road. The Y distance requirements are based on the SSD criteria. Within

this area it is necessary to remove obstructions, or maintain them to a height no greater than 600mm[2], as demonstrated in **Figure 1**.

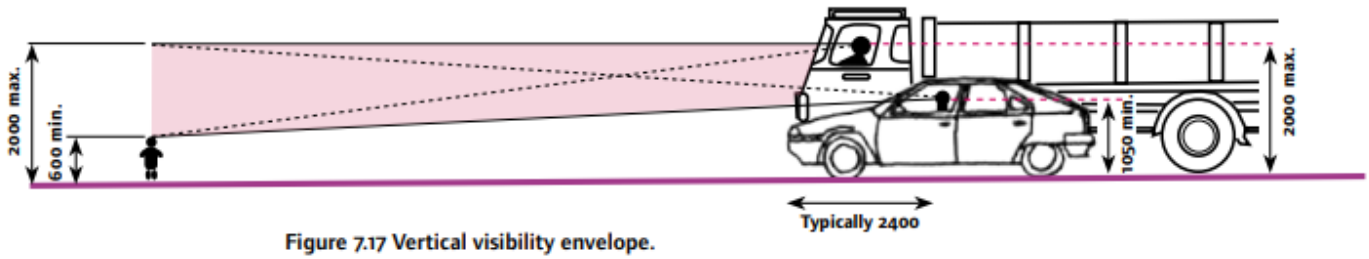


Figure 7.17 Vertical visibility envelope.

Figure 1: Vertical Visibility Envelope. Source: Manual for Streets

Methodology

The following options are available in order to determine and provide adequate SSDs for the proposed access locations:

- base SSDs on existing speed limit;
- undertake speed surveys to determine SSD requirements based on 85th percentile speeds;
- consider relocation of access;
- undertake physical works for example vegetation clearance, embankment re-profiling and wall removal to provide required SSD; or,
- reduce speeds and therefore SSD requirements by use of traffic management.

Each access would be reviewed at the detailed design stage to determine the SSD provision and suitable traffic calming measures so as to reduce as far as reasonably practicable the impact on property and ecology. The information provided in **Appendices C, D, and E** provide preliminary design information to inform the detailed design.

Appendix D sets out the SSD requirements for each Primary Access Location, the basis for determining the SSD (recorded speeds or posted limits), the relevant design guidance (i.e. one of the documents presented in **Table 2**), and any proposed speed reduction TTROs and mitigation measures necessary to reduce visibility splays extents.

Mitigation Measures

In accordance with the Construction Design and Management Regulations (CDM 2015) a designer has a duty to:

- eliminate foreseeable health and safety risks to anyone affected by the project (as far as is reasonably practicable); and
- take steps to reduce or control any risks that cannot be eliminated.

[2] Manual for Streets (2007) Paragraph 7.6.3

Hynet North West CO_2 Pipeline DCO - Access Principles

DATE:	12 August 2022	**CONFIDENTIALITY:**	Confidential
SUBJECT:	HyNet CO2 Pipeline DCO- Access Principles		
PROJECT:	HyNet CO2 Pipeline DCO	**AUTHOR:**	LP/JO
CHECKED:	AL	**APPROVED:**	AL

At this stage, the level of design information for temporary access locations is based on the principles as set out in the main body of this document and the schedules and plans contained within the Appendices. These outline the design measures adopted to eliminate, control, and/or reduce the risk associated with access.

Once a principal contractor is appointed, the OCTMP will be shared with the contractor. At that time there will be a further requirement to prepare detailed designs for all access locations and agree specific ways of working at each site with the relevant LHA.

This might include the need for Road Safety Audits, and details of TTROs and traffic management on a site specific basis.

CONCLUSIONS

This Technical Note has been prepared to establish key principles and methodology for location, type, design, mitigation and monitoring of access locations proposed as part of Liverpool Bay CCS Ltd's Hynet North West CO_2 Pipeline Project. In particular it summarises the proposed approach to access design and visibility, at a high level, to be presented to LHAs.

It is intended that this will ultimately be appended to the Outline Construction Traffic Management Plan which would in turn be part of the Traffic and Transport assessment and mitigation accompanying the Environmental Statement (ES).

This Technical Note is based on best available project design information developed for assessment work included within the DCO submission. The OCTMP is envisaged to be included as a key document within the tender package issued to prospective contractors. At the time a principal contractor is appointed there may be a further requirement to prepare detailed designs for all access locations and agree specific ways of working at each site with the relevant LHA. This might include the need for Road Safety Audits, and details of TTROs and traffic management on a site specific basis.

Hynet North West CO_2 Pipeline DCO - Access Principles

DATE:	12 August 2022	**CONFIDENTIALITY:**	Confidential
SUBJECT:	HyNet CO2 Pipeline DCO- Access Principles		
PROJECT:	HyNet CO2 Pipeline DCO	**AUTHOR:**	LP/JO
CHECKED:	AL	**APPROVED:**	AL

APPENDIX A: ACCESS SCHEDULE

Access Reference	Category	X	Y	Permanent Access	Road	Adopted	Permanent Access Location
1E	Primary	-2.7963554	53.2776076	Y	Unnamed Road 1	N	Ince AGI
2E	Secondary	-2.7984065	53.2771944	N	Unnamed Road 1	N	N/A
3E	Secondary	-2.7993889	53.2763140	N	Unnamed Road 2	N	N/A
4E	Secondary	-2.8074043	53.2699829	N	Ince Lane	Y	N/A
5E	Secondary	-2.8082267	53.2688372	N	A5117	Y	N/A
6E	Secondary	-2.8225091	53.2671252	N	Old Cryers Lane	Partial	N/A
7E	Primary	-2.8239336	53.2656842	N	Cryers Lane	Y	N/A
8E	Secondary	-2.8243523	53.2657567	N	Cryers Lane	Y	N/A
9E	Secondary	-2.8253323	53.2638526	N	Cryers Lane	Y	N/A
10E	Secondary	-2.8335836	53.2672448	N	A5117	Y	N/A
11E	Secondary	-2.8329860	53.2561290	N	Thornton Green Lane	Y	N/A
12E	Secondary	-2.8296049	53.2548955	N	Thornton Green Lane	Y	N/A
13E	Secondary	-2.8272442	53.2546441	N	Cryers Lane	Y	N/A
14E	Secondary	-2.8335687	53.2535541	N	Hallsgreen Lane	Partial	N/A
15E	Secondary	-2.8587955	53.2484355	N	Picton Lane	Y	N/A
16E	Primary	-2.8545062	53.2451370	N	Picton Lane	Y	N/A
17E	Secondary	-2.8544724	53.2445431	N	Picton Lane	Y	N/A
1N	Secondary	-2.8499810	53.2380582	N	Picton Lane	Y	N/A
18E	Secondary	-2.8659089	53.2357758	N	Wervin Road	Y	N/A
19E	Secondary	-2.8662569	53.2357649	N	Wervin Road	Y	N/A
20E	Secondary	-2.8801748	53.2333366	N	Caughall Road	Y	N/A
21E	Secondary	-2.8797404	53.2345221	N	Croughton Road	Y	N/A
22E	Secondary	-2.8773275	53.2377832	N	Croughton Road	Y	N/A
23E	Primary	-2.8820065	53.2355905	N	Chorlton Lane	Y	N/A
24E	Primary	-2.8827575	53.2357091	Y	Chorlton Lane	Y	Rock Bank BVS
25E	Secondary	-2.9005500	53.2331335	N	A41	Y	N/A

Hynet North West CO_2 Pipeline DCO - Access Principles

DATE:	12 August 2022	**CONFIDENTIALITY:**	Confidential
SUBJECT:	HyNet CO2 Pipeline DCO- Access Principles		
PROJECT:	HyNet CO2 Pipeline DCO	**AUTHOR:**	LP/JO
CHECKED:	AL	**APPROVED:**	AL

Access Reference	Category	X	Y	Permanent Access	Road	Adopted	Permanent Access Location
26E	Secondary	-2.9014981	53.2335517	N	A41	Y	N/A
27E	Secondary	-2.9053650	53.2350310	N	Station Road	Y	N/A
28E	Secondary	-2.9148089	53.2330757	N	Station Road	Y	N/A
29E	Secondary	-2.9171612	53.2321052	N	Station Road	Y	N/A
2N	Secondary	-2.9178466	53.2315556	N	Station Road	Y	N/A
30E	Secondary	-2.9207214	53.2331274	N	Grove Road	Y	N/A
31E	Secondary	-2.9260806	53.2283084	N	Townfield Lane	Y	N/A
32E	Secondary	-2.9259633	53.2279914	N	Townfield Lane	Y	N/A
33E	Secondary	-2.9267575	53.2269986	N	Overwood Lane	Y	N/A
34E	Secondary	-2.9273608	53.2267587	N	Overwood Lane	Y	N/A
35E	Secondary	-2.9297214	53.2255029	N	Overwood Lane	Y	N/A
36E	Secondary	-2.9270868	53.2234100	N	A540 Parkgate Road	Y	N/A
37E	Secondary	-2.9495073	53.2183872	N	Hermitage Road	Y	N/A
38E	Secondary	-2.9504617	53.2185508	N	Hermitage Road	Y	N/A
3N	Primary	-2.9652777	53.2101724	N	A548 Sealand Road	Y	N/A
39E	Secondary	-2.9673372	53.2105934	N	Deeside Lane	N	N/A
40E	Primary	-2.9542159	53.2042962	N	A548 Sealand Road	Y	N/A
41E	Secondary	-2.9722072	53.2010925	N	Deeside Lane	Y	N/A
42E	Secondary	-2.9723257	53.2009453	N	Deeside Lane	Y	N/A
43E	Primary	-2.9714782	53.1897537	N	B5129 Chester Road	Y	N/A
44E	Secondary	-2.9810088	53.1889568	N	B5129 Chester Road	Y	N/A
45E	Secondary	-2.9921406	53.1885837	N	B5129 Chester Road	Y	N/A
46E	Secondary	-3.0015344	53.1920491	N	Moor Lane	Y	N/A
47E	Secondary	-3.0055313	53.1952657	N	Unnamed Road 3	N	N/A
48E	Secondary	-3.0057657	53.1953593	N	Unnamed Road 3	N	N/A
49E	Secondary	-3.0062339	53.1978790	N	Glendale Avenue	Y	N/A
50E	Secondary	-3.0095634	53.1989595	N	B5129 Chester Road	Y	N/A
51E	Secondary	-3.0120297	53.2003751	N	B5129 Chester Road	Y	N/A

Hynet North West CO_2 Pipeline DCO - Access Principles

DATE:	12 August 2022	**CONFIDENTIALITY:**	Confidential
SUBJECT:	HyNet CO2 Pipeline DCO- Access Principles		
PROJECT:	HyNet CO2 Pipeline DCO	**AUTHOR:**	LP/JO
CHECKED:	AL	**APPROVED:**	AL

Access Reference	Category	X	Y	Permanent Access	Road	Adopted	Permanent Access Location
52E	Secondary	-3.0152166	53.2006023	N	Mancot Lane	Y	N/A
53E	Secondary	-3.0164736	53.2011822	N	Willow Lane	Y	N/A
54E	Secondary	-3.0265731	53.1974194	N	A550	Y	N/A
55E	Primary	-3.0351724	53.1942196	Y	Lower Aston Hall Lane	Y	Aston Hall BVS
56E	Secondary	-3.0354104	53.1943990	N	Lower Aston Hall Lane	Y	N/A
57E	Secondary	-3.0363224	53.1923405	N	Upper Aston Hall Lane	Y	N/A
58E	Secondary	-3.0367505	53.1953039	N	Lower Aston Hall Lane	Y	N/A
59E	Secondary	-3.0401873	53.1940187	N	Unnamed Road 4	N	N/A
60E	Secondary	-3.0458254	53.1964366	N	Old Aston Hill	Y	N/A
61E	Secondary	-3.0472886	53.1952378	N	Church Lane	N	N/A
62E	Secondary	-3.0507711	53.1960146	N	Old Aston Hill	Y	N/A
63E	Secondary	-3.0513605	53.1946814	N	Old Aston Hill	Y	N/A
64E	Secondary	-3.0556687	53.1984248	N	Shotton Lane	Y	N/A
65E	Secondary	-3.0558987	53.1984377	N	Shotton Lane	Y	N/A
66E	Primary	-3.0610697	53.1956511	N	B5125	Y	N/A
67E	Secondary	-3.0635082	53.1965799	N	Castle Hall Farm Access Track	N	N/A
4N	Secondary	-3.0637442	53.1963335	N	B5125	Y	N/A
68E	Secondary	-3.0667862	53.1920624	N	Green Lane	Y	N/A
69E	Secondary	-3.0684221	53.1907000	N	Green Lane	Y	N/A
70E	Secondary	-3.0708125	53.1905271	N	Green Lane	Y	N/A
71E	Secondary	-3.0710399	53.1906204	N	Green Lane	Y	N/A
72E	Secondary	-3.0898308	53.1973874	N	Northop Hall Services Access Road	N	N/A
73E	Secondary	-3.0970068	53.1994162	N	Chester Road	Y	N/A
74E	Secondary	-3.0977146	53.1998273	N	Brookside	Y	N/A
75E	Secondary	-3.0992282	53.2000957	N	Brookside	Y	N/A
5N	Secondary	-3.1017229	53.2027746	N	B5125	Y	N/A
76E	Primary	-3.1088552	53.2036918	Y	B5125	Y	Northop Hall AGI
77E	Secondary	-3.1137751	53.2048115	N	B5125	Y	N/A

Hynet North West CO_2 Pipeline DCO - Access Principles

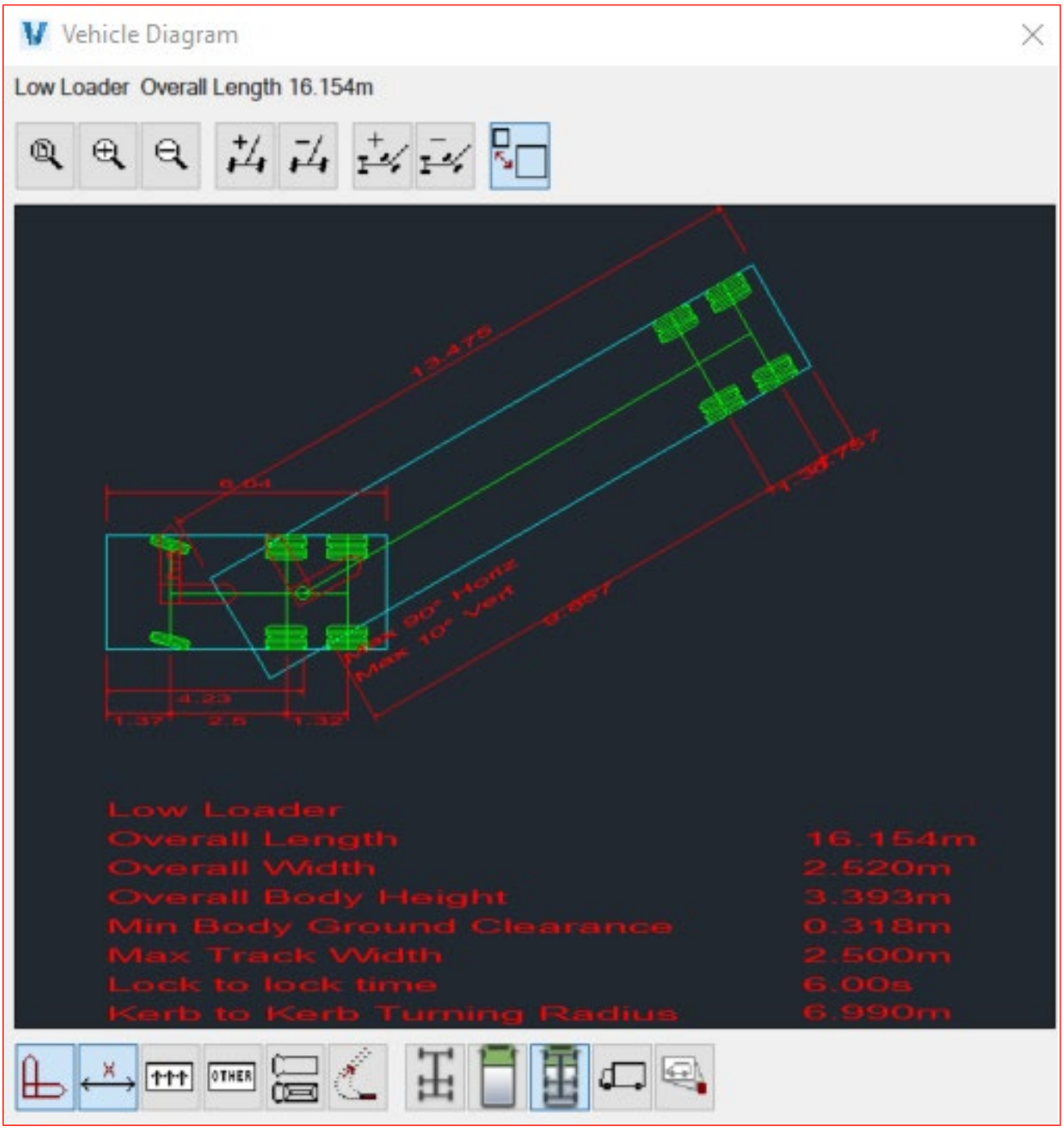
DATE:	12 August 2022	**CONFIDENTIALITY:**	Confidential
SUBJECT:	HyNet CO2 Pipeline DCO- Access Principles		
PROJECT:	HyNet CO2 Pipeline DCO	**AUTHOR:**	LP/JO
CHECKED:	AL	**APPROVED:**	AL

Access Reference	Category	X	Y	Permanent Access	Road	Adopted	Permanent Access Location
78E	Secondary	-3.1140865	53.2050905	N	B5125	Y	N/A
79E	Secondary	-3.1153120	53.2083883	N	B5126 Connahs Quay Road	Y	N/A
80E	Secondary	-3.1154697	53.2085304	N	B5126 Connahs Quay Road	Y	N/A
81E	Secondary	-3.1183151	53.2165049	N	Starkey Lane	Y	N/A
82E	Secondary	-3.1210185	53.2192781	N	Starkey Lane	Y	N/A
83E	Secondary	-3.1220623	53.2214075	N	Starkey Lane	Y	N/A
84E	Secondary	-3.1259284	53.2268198	N	Alt-Goch Lane	Y	N/A
85E	Secondary	-3.1252290	53.2276288	N	Alt-Goch Lane	Y	N/A
86E	Secondary	-3.1246201	53.2283190	N	Alt-Goch Lane	Y	N/A
87E	Secondary	-3.1232408	53.2297762	N	Alt-Goch Lane	Y	N/A
88E	Primary	-3.1748002	53.2446432	Y	Cornist Lane	Y	Cornist Lane BVS
89E	Primary	-3.2401159	53.2502940	Y	B5121	Y	Halkyn BVS
90E	Primary	-3.2795921	53.2615507	Y	Racecourse Lane	Y	Babell BVS
6N	Primary	-3.1239690	53.2289440	Y	Alt Goch Lane	Y	Flint AGI
7N	Primary	-2.928909	53.225801	Y	Overwood Lane	Y	Mollington BVS
91E	Primary	-2.8260667	53.271192		Pool Lane	Y	Stanlow AGI
8N	Primary	-2.8326709	53.267513		A5117	Y	N/A
92E	Secondary	-3.0826186	53.195919		Pinfold Lane	Y	N/A
93E	Secondary	-3.0043504	53.196001		B5129 Chester Road	Y	N/A
94E	Primary	-2.9624301	53.198096		Deeside Lane	Y	N/A
95E	Secondary	-2.8036031	53.267501		J14 M56	Y	N/A
96E	Secondary	-2.8065509	53.281926		Grinsome Road	N	N/A
97E	Secondary	-2.8803840	53.234487		Chorlton Lane	Y	Stanlow AGI

Hynet NW DCO Access Principles

DATE:	24 June 2022	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Hynet NW DCO Access Principles		
PROJECT:	Hynet NW DCO	**AUTHOR:**	LP/JO
CHECKED:	AL	**APPROVED:**	AL

APPENDIX B: DESIGN VEHICLE DIMENSIONS



Hynet NW DCO Access Principles

DATE:	24 June 2022	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Hynet NW DCO Access Principles		
PROJECT:	Hynet NW DCO	**AUTHOR:**	LP/JO
CHECKED:	AL	**APPROVED:**	AL

APPENDIX C: INDICATIVE TEMPORARY ACCESS DESIGN

Hynet NW DCO Access Principles

DATE:	24 June 2022	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Hynet NW DCO Access Principles		
PROJECT:	Hynet NW DCO	**AUTHOR:**	LP/JO
CHECKED:	AL	**APPROVED:**	AL

APPENDIX D: PRIMARY ACCESS SSD REQUIREMENTS

Access Reference	Longitude (X)	Latitude (Y)	Road	Speed (mph)	Vis Splay Requirement (m)	Permanent?	Temp Speed Limit Proposed (If Temporary)	Other Speed Mitigation	Vis Splay Requirement (m) with mitigation
1E	-2.7963554	53.2776076	Elton Lane	30	N/A - Private Road	Y	N/A	N/A	N/A
7E	-2.8239336	53.2656842	Cryers Lane	56.3	215	N	30mph	N/A	43
16E	-2.8545062	53.2451370	Picton Lane	33.9	51	N	No	N/A	51
23E	-2.8820065	53.2355905	Chorlton Lane	35.2	57	N	No	N/A	57
24E	-2.8827575	53.2357091	Chorlton Lane	25.2	57	Y	N/A	N/A	57
3N	-2.9652777	53.2101724	A548 Sealand Road	46.6	160	N	30mph	N/A	43
40E	-2.9542159	53.2042962	A548 Sealand Road	46.6	160	N	No	N/A	160
43E	-2.9714782	53.1897537	B5129 Chester Road	49.3	160	N	30mph	N/A	43
55E	-3.0351724	53.1942196	Lower Aston Hall Lane	32.3	48	Y	N/A	N/A	48
66E	-3.0610697	53.1956511	B5125 Northop Hall	36.1	45	N	No	N/A	45
76E	-3.1088552	53.2036918	B5125 Northop Hall	36.1	45	Y	N/A	N/A	45
88E	-3.1748002	53.2446432	Cornist Lane	25.4	43	Y	N/A	N/A	34
89E	-3.2401159	53.2502940	B5121	49.7	160	Y	N/A	N/A	160
90E	-3.2795921	53.2615507	Racecourse Lane	24.3	33	Y	N/A	N/A	33
6N	-3.1239690	53.2289440	Allt Goch Lane	38.9	63	Y	N/A	N/A	63
7N	-2.928909	53.225801	Overwood Lane	40.7	120	Y	N/A	Warning Signage, 'Slow' Road Markings	66

Speeds <40mph based on MfS2 HGVs/Buses below 60kph & speeds >40mph based on DMRB Desired minimum standards

Annex D

CENTRALISED COMPOUND CONSTRAINTS PLAN

N

A5117

A5117

DIAG. 506.1

WORKS ACCESS

DIAG. 7301

CRYER'S LANE SOUTH OF SUB-COMPOUND ACCESS CLOSED TO VEHICLES.

CRYER'S LANE

20

DIAG. 670

PASSING PLACE TO BE PROVIDED ON SITE COMPOUND TO ALLOW DELIVERY VEHICLES UNDER 1-WAY TRAFFIC CONTROL TO PASS WAITING VEHICLES

ROAD AHEAD CLOSED

DIAG. 7010.1

B5132

ROAD CLOSED

DIAG. 7010.1

ALL VEHICLES TO ENTER THE COMPOUND VIA SUB- COMPOUND ACCESS

SITE COMPOUND

ALL VEHICLES TO EXIT THE COMPOUND VIA MAIN COMPOUND ACCESS

LEGEND

TWO WAY TRAFFIC (PUBLIC VEHICLES)

REDESIGNATED ONE-WAY ROUTE PUBLIC / SITE VEHICLES

HyNet North West

DRAWING TITLE

CENTRALISED COMPOUND TEMPORARY WORKS SHEET 1 OF 7

DRAWING STATUS

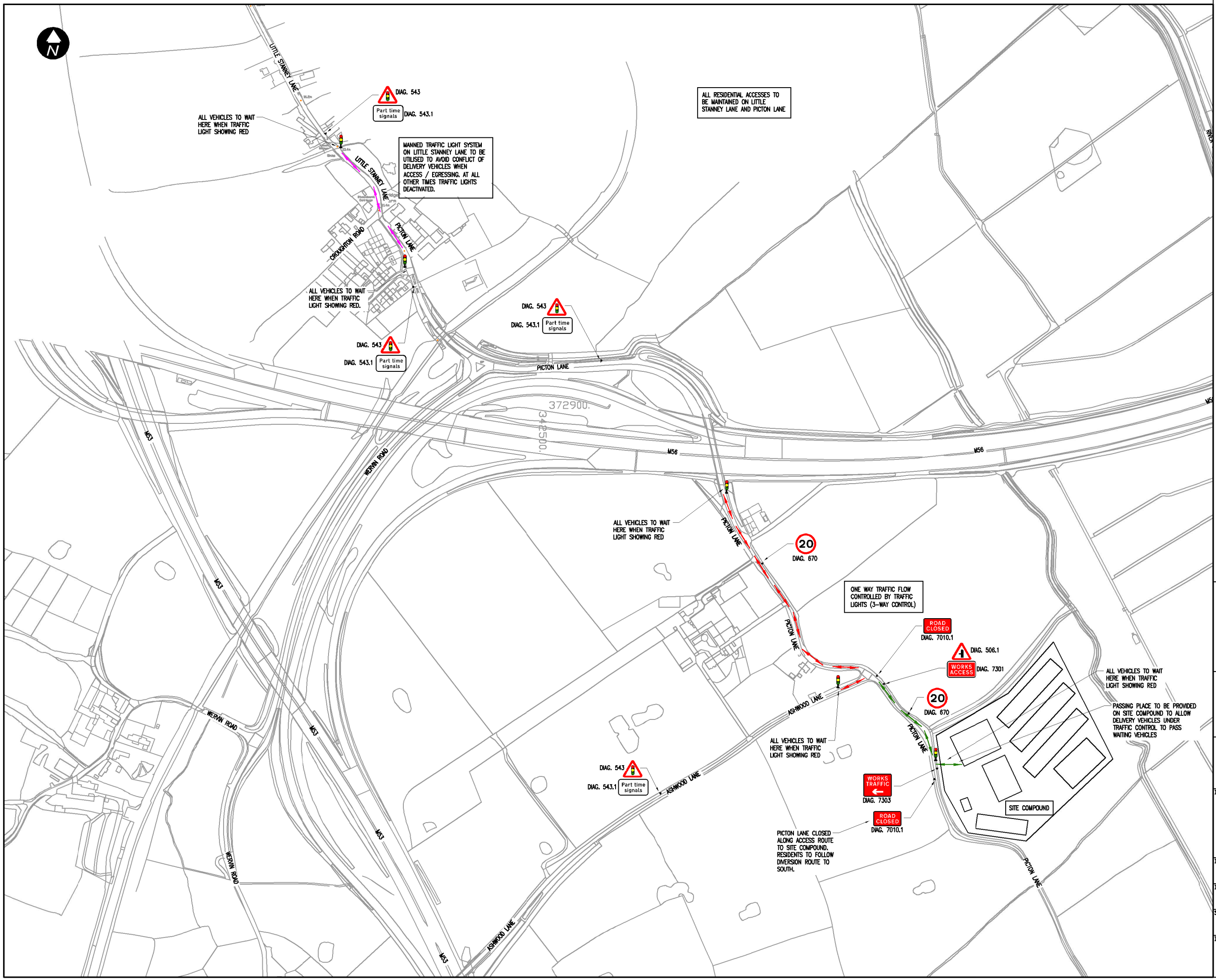
FOR COORDINATION

DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS

SCALE @ A3 SIZE	DATE	REVISION
1:2,500	AUGUST 22	P01

DRAWING NUMBER

EN070007-D.6.5.4.3.2-LAY



LEGEND

- ALTERNATE ONE WAY TRAFFIC PUBLIC / SITE VEHICLES MOVEMENTS CONTROLLED BY TRAFFIC LIGHTS (3-WAY CONTROL)
- ALTERNATE ONE WAY TRAFFIC PUBLIC / SITE VEHICLES MOVEMENTS UTILISED TO PREVENT DELIVERY VEHICLE CONFLICTS ONLY. AT OTHER TIMES DEACTIVATED.
- ALTERNATE ONE WAY TRAFFIC SITE VEHICLES ONLY MOVEMENTS CONTROLLED BY TRAFFIC LIGHTS

HyNet North West

DRAWING TITLE

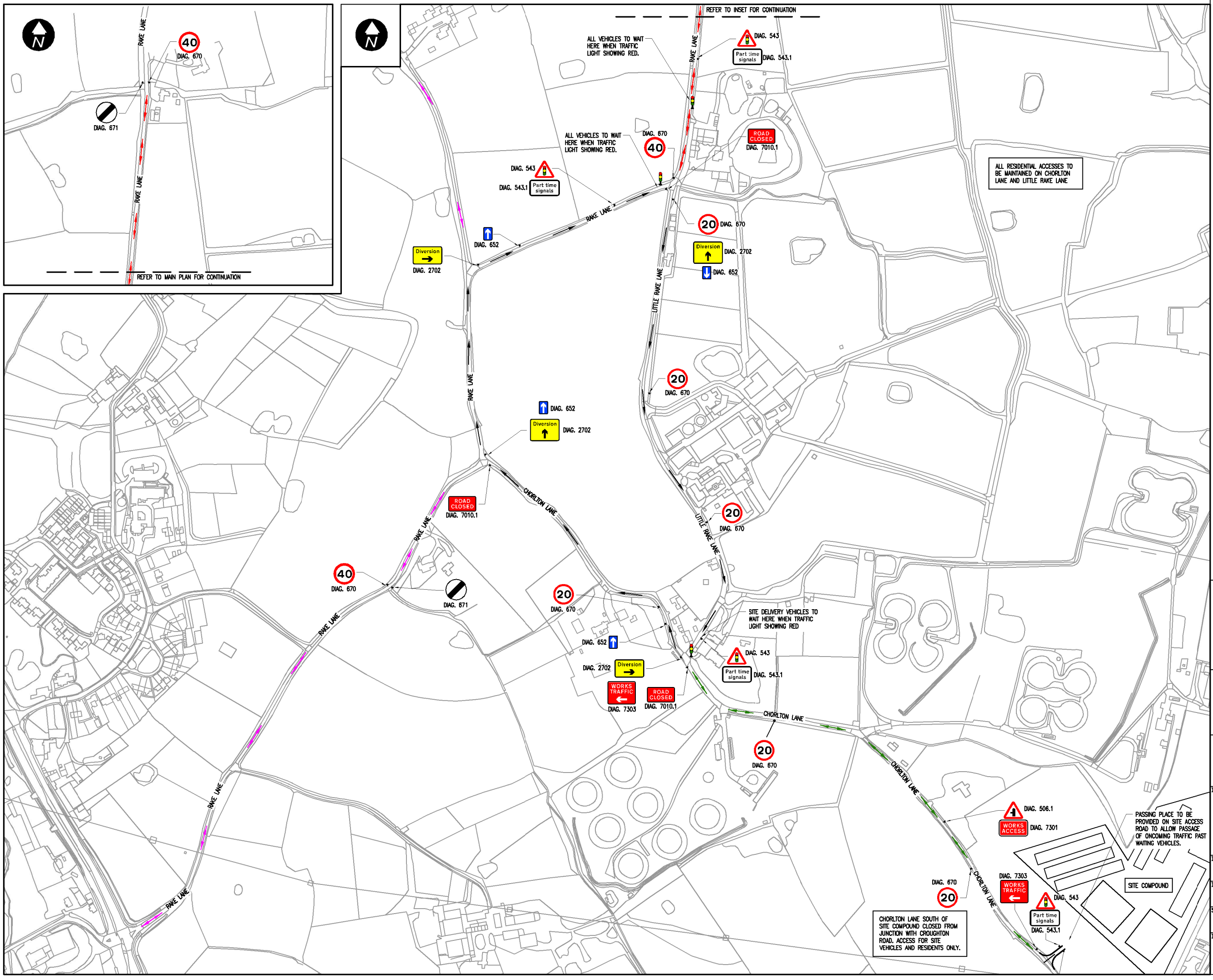
CENTRALISED COMPOUND TEMPORARY WORKS SHEET 2 OF 7

DRAWING STATUS: FOR COORDINATION

DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS

SCALE @ A3 SIZE	DATE	REVISION
1:5,000	AUGUST 22	P01

DRAWING NUMBER: EN070007-D.6.5.4.3.2-LAY



LEGEND

- TWO WAY TRAFFIC PUBLIC / SITE VEHICLES
- ALTERNATE ONE WAY TRAFFIC PUBLIC / SITE VEHICLES MOVEMENTS CONTROLLED BY TRAFFIC LIGHTS
- TWO WAY TRAFFIC (PUBLIC VEHICLES)
- ALTERNATE ONE WAY TRAFFIC SITE VEHICLES ONLY MOVEMENTS CONTROLLED BY TRAFFIC LIGHTS
- REDESIGNATED ONE-WAY ROUTE PUBLIC / SITE VEHICLES

HyNet North West

DRAWING TITLE

CENTRALISED COMPOUND TEMPORARY WORKS SHEET 3 OF 7

DRAWING STATUS

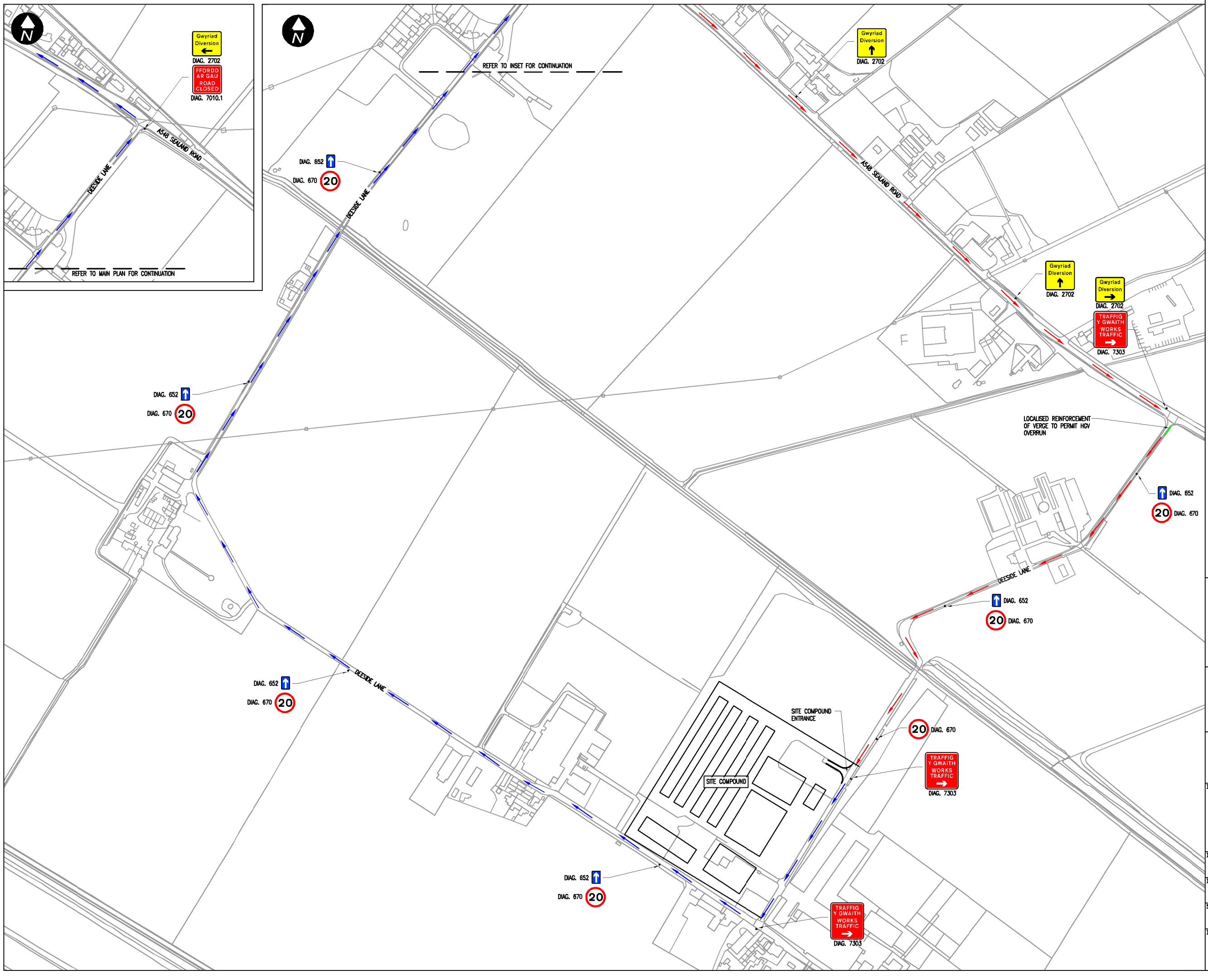
FOR COORDINATION

DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS

SCALE @ A3 SIZE	DATE	REVISION
1:5,000	AUGUST 22	P01

DRAWING NUMBER

EN070007-D.6.5.4.3.2-LAY



LEGEND

- SITE ACCESS ROUTE
- SITE EGRESS ROUTE

HyNet North West

DRAWING TITLE

CENTRALISED COMPOUND TEMPORARY WORKS SHEET 4 OF 7

DRAWING STATUS

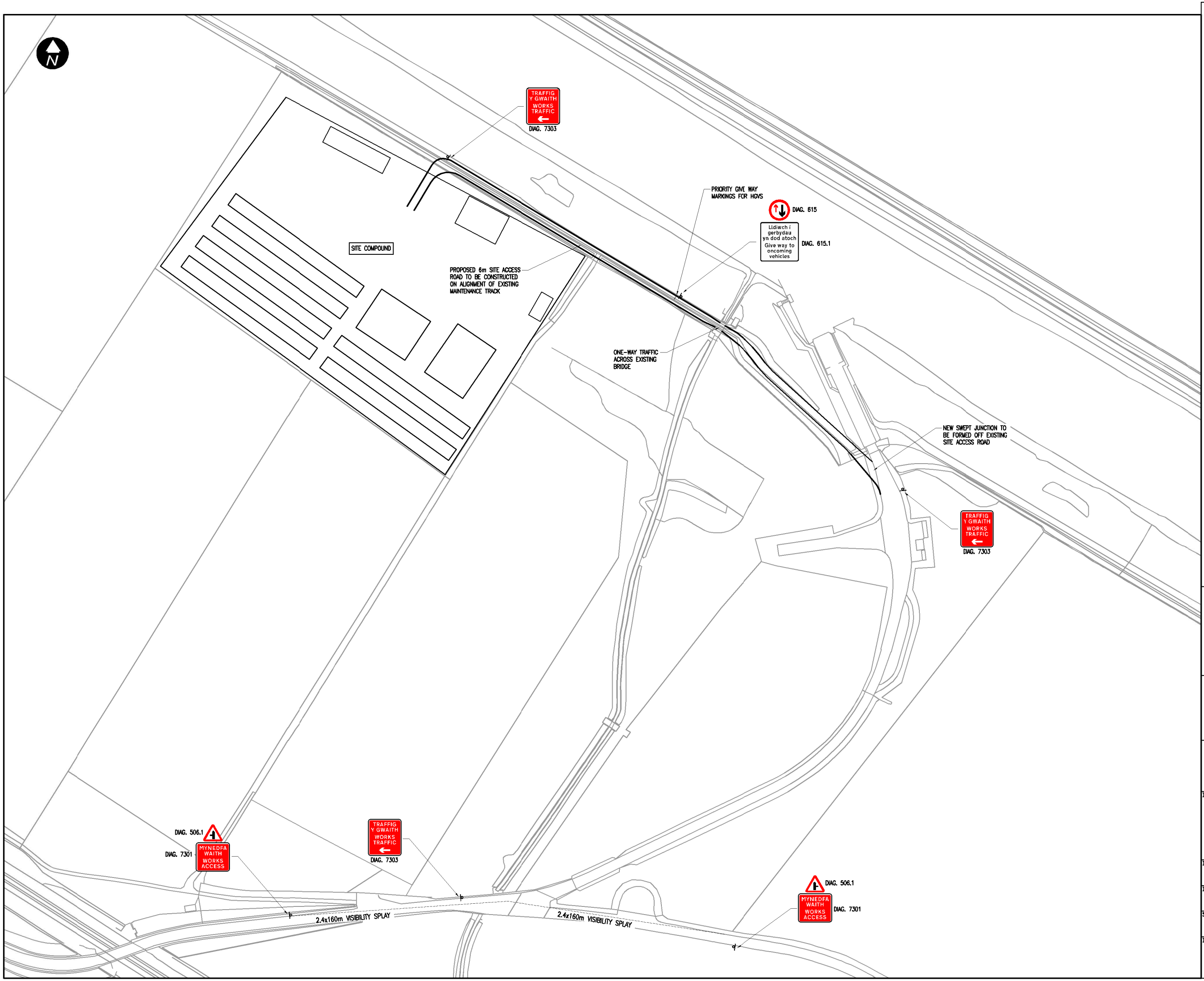
FOR COORDINATION

DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS

SCALE @ A3 SIZE	DATE	REVISION
1:5,000	AUGUST 22	P01

DRAWING NUMBER

EN070007-D.6.5.4.3.2-LAY



HyNet North West

DRAWING TITLE

CENTRALISED COMPOUND
TEMPORARY WORKS
SHEET 5 OF 7

DRAWING STATUS

FOR COORDINATION

DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS

SCALE @ A3 SIZE	DATE	REVISION
1:2,500	AUGUST 22	P01

DRAWING NUMBER

EN070007-D.6.5.4.3.2-LAY

N

EXISTING PUBLIC RIGHT OF WAY TO BE BE MAINTAINED

SITE COMPOUND

R35

R50

6.5

R37

R30

6.5

6

PROPOSED SITE COMPOUND ACCESS ROAD

DIAG. 615

PRIORITY GIVE WAY MARKINGS FOR HGVS

Lldiwch i gerbydau yn dod atoch
Give way to oncoming vehicles

DIAG. 615.1

R30

R45

6

DIAG. WO602

PROPOSED TEMPORARY GHOST ISLAND TO BE CREATED WITH REVISED LINING OVER EXISTING CARRIAGEWAY.

DIAG. 506.1

MYNEDFA WAITH
WORKS ACCESS

DIAG. 7301

B5125 HOLYWELL ROAD

AFAFWCH NAWR
REDUCE SPEED NOW

DIAG. 511

SKOTTON LANE

Contains OS data ©Crown Copyright and database right 2022

HyNet North West

DRAWING TITLE

CENTRALISED COMPOUND TEMPORARY WORKS SHEET 6 OF 7

DRAWING STATUS

FOR COORDINATION

DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS

SCALE @ A3 SIZE	DATE	REVISION
1:1,000	AUGUST 22	P01

DRAWING NUMBER

EN070007-D.6.5.4.3.2-LAY

N

TRAFFIG Y GWAITH WORKS TRAFFIC
DIAG. 7303

B5126 CONNAHS QUAY ROAD

30
DIAG. 670

EGRESS TO A55 JUNCTION 33 VIA A5117

30
DIAG. 670

30
DIAG. 670

B5125

DIAG. 506.1
DIAG. 7301
MYNEDFA WAITH WORKS ACCESS
GOFAL MYNEDFA I'R SAFLE CAUTION SITE ENTRANCE
MYNEDFA GUDD RHYBUDD CAUTION CONCEALED ENTRANCE

SITE COMPOUND

SITE ENTRANCE

30
DIAG. 670

30
DIAG. 670

30
DIAG. 670

DIAG. 506.1
DIAG. 7301
MYNEDFA WAITH WORKS ACCESS
GOFAL MYNEDFA I'R SAFLE CAUTION SITE ENTRANCE
MYNEDFA GUDD RHYBUDD CAUTION CONCEALED ENTRANCE

TEMPORARY SPEED RESTRICTIONS

1. BROOKSIDE 30mphRESTRICTION ZONE TO BE EXTENDED TO JUNCTION 33A
2. B5125 TO BE RESTRICTED TO 30mph FROM NORTHOP HALL CRICKET AND HOCKEY CLUB THROUGH TO JUNCTION WITH B5126

TRAFFIG Y GWAITH WORKS TRAFFIC
DIAG. 7303

GOFAL LORIAU'N TROI CAUTION LORRIES TURNING

30
DIAG. 670

BROOKSIDE

TRAFFIG Y GWAITH WORKS TRAFFIC
DIAG. 7303

A55 JUNCTION 33A

LEGEND

SITE ACCESS ROUTE
SITE EGRESS ROUTE

HyNet North West

DRAWING TITLE

CENTRALISED COMPOUND
TEMPORARY WORKS
SHEET 7 OF 7

DRAWING STATUS			
FOR COORDINATION			
DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS
SCALE @ A3 SIZE	DATE	REVISION	
1:5,000	AUGUST 22	P01	

DRAWING NUMBER

EN070007-D.6.5.4.3.2-LAY

Annex E

CENTRALISED COMPOUND ROUTE MITIGATION

N

A5117

A5117

DIAG. 506.1

WORKS ACCESS

DIAG. 7301

CRYER'S LANE SOUTH OF SUB-COMPOUND ACCESS CLOSED TO VEHICLES.

CRYER'S LANE

20

DIAG. 670

PASSING PLACE TO BE PROVIDED ON SITE COMPOUND TO ALLOW DELIVERY VEHICLES UNDER 1-WAY TRAFFIC CONTROL TO PASS WAITING VEHICLES

ROAD AHEAD CLOSED

DIAG. 7010.1

B5132

ROAD CLOSED

DIAG. 7010.1

ALL VEHICLES TO ENTER THE COMPOUND VIA SUB- COMPOUND ACCESS

SITE COMPOUND

ALL VEHICLES TO EXIT THE COMPOUND VIA MAIN COMPOUND ACCESS

LEGEND

TWO WAY TRAFFIC (PUBLIC VEHICLES)

REDESIGNATED ONE-WAY ROUTE PUBLIC / SITE VEHICLES

HyNet North West

DRAWING TITLE

CENTRALISED COMPOUND TEMPORARY WORKS SHEET 1 OF 7

DRAWING STATUS

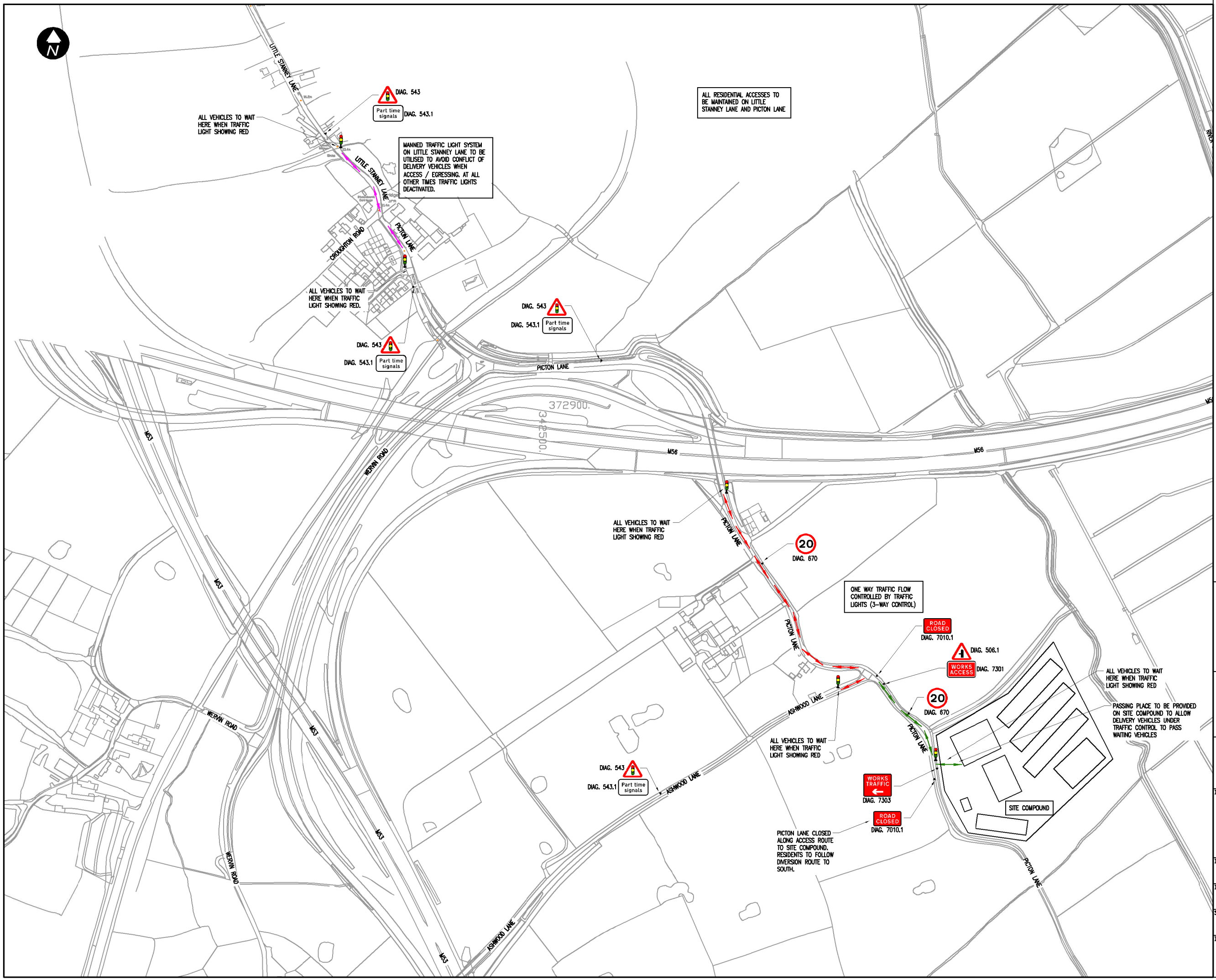
FOR COORDINATION

DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS

SCALE @ A3 SIZE	DATE	REVISION
1:2,500	AUGUST 22	P01

DRAWING NUMBER

EN070007-D.6.5.4.3.2-LAY



LEGEND

- ALTERNATE ONE WAY TRAFFIC PUBLIC / SITE VEHICLES MOVEMENTS CONTROLLED BY TRAFFIC LIGHTS (3-WAY CONTROL)
- ALTERNATE ONE WAY TRAFFIC PUBLIC / SITE VEHICLES MOVEMENTS UTILISED TO PREVENT DELIVERY VEHICLE CONFLICTS ONLY. AT OTHER TIMES DEACTIVATED.
- ALTERNATE ONE WAY TRAFFIC SITE VEHICLES ONLY MOVEMENTS CONTROLLED BY TRAFFIC LIGHTS

HyNet North West

DRAWING TITLE

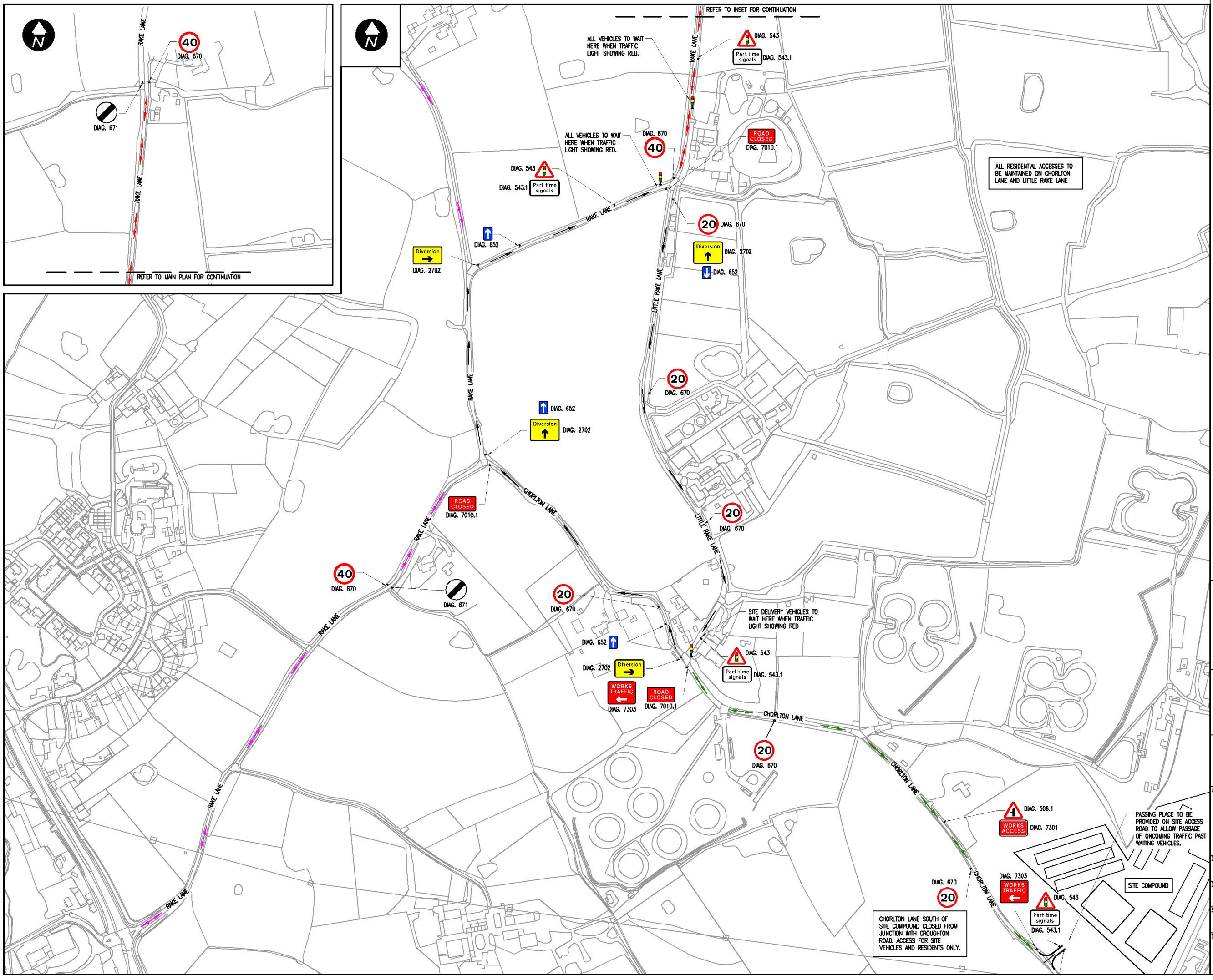
CENTRALISED COMPOUND TEMPORARY WORKS SHEET 2 OF 7

DRAWING STATUS: FOR COORDINATION

DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS

SCALE @ A3 SIZE	DATE	REVISION
1:5,000	AUGUST 22	P01

DRAWING NUMBER: EN070007-D.6.5.4.3.2-LAY



LEGEND

- TWO WAY TRAFFIC PUBLIC / SITE VEHICLES
- ALTERNATE ONE WAY TRAFFIC PUBLIC / SITE VEHICLES MOVEMENTS CONTROLLED BY TRAFFIC LIGHTS
- TWO WAY TRAFFIC (PUBLIC VEHICLES)
- ALTERNATE ONE WAY TRAFFIC SITE VEHICLES ONLY MOVEMENTS CONTROLLED BY TRAFFIC LIGHTS
- REDESIGNATED ONE-WAY ROUTE PUBLIC / SITE VEHICLES

HyNet North West

DRAWING TITLE

CENTRALISED COMPOUND TEMPORARY WORKS SHEET 3 OF 7

DRAWING STATUS

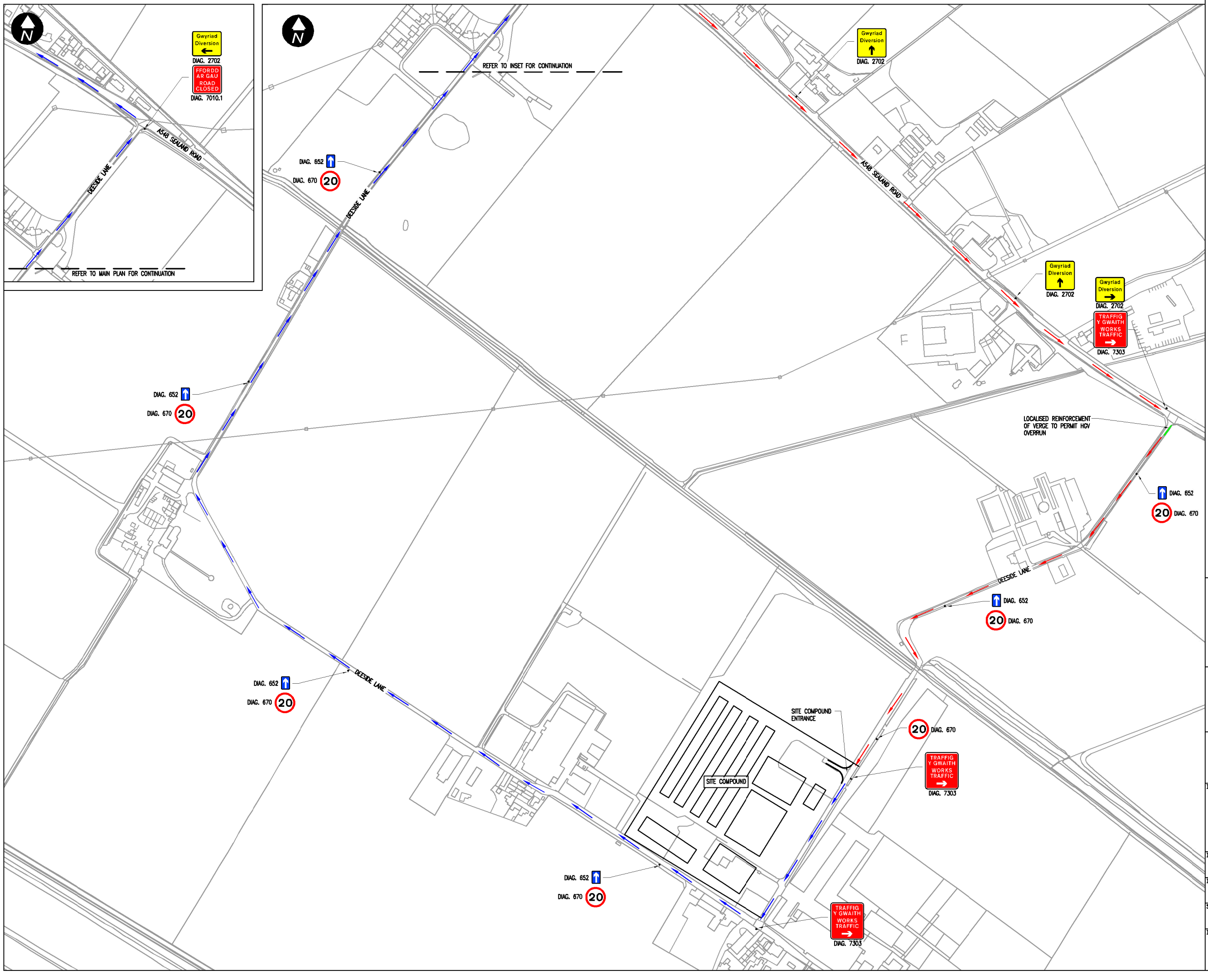
FOR COORDINATION

DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS

SCALE @ A3 SIZE	DATE	REVISION
1:5,000	AUGUST 22	P01

DRAWING NUMBER

EN070007-D.6.5.4.3.2-LAY



LEGEND

- SITE ACCESS ROUTE
- SITE EGRESS ROUTE

HyNet North West

DRAWING TITLE

CENTRALISED COMPOUND TEMPORARY WORKS SHEET 4 OF 7

DRAWING STATUS

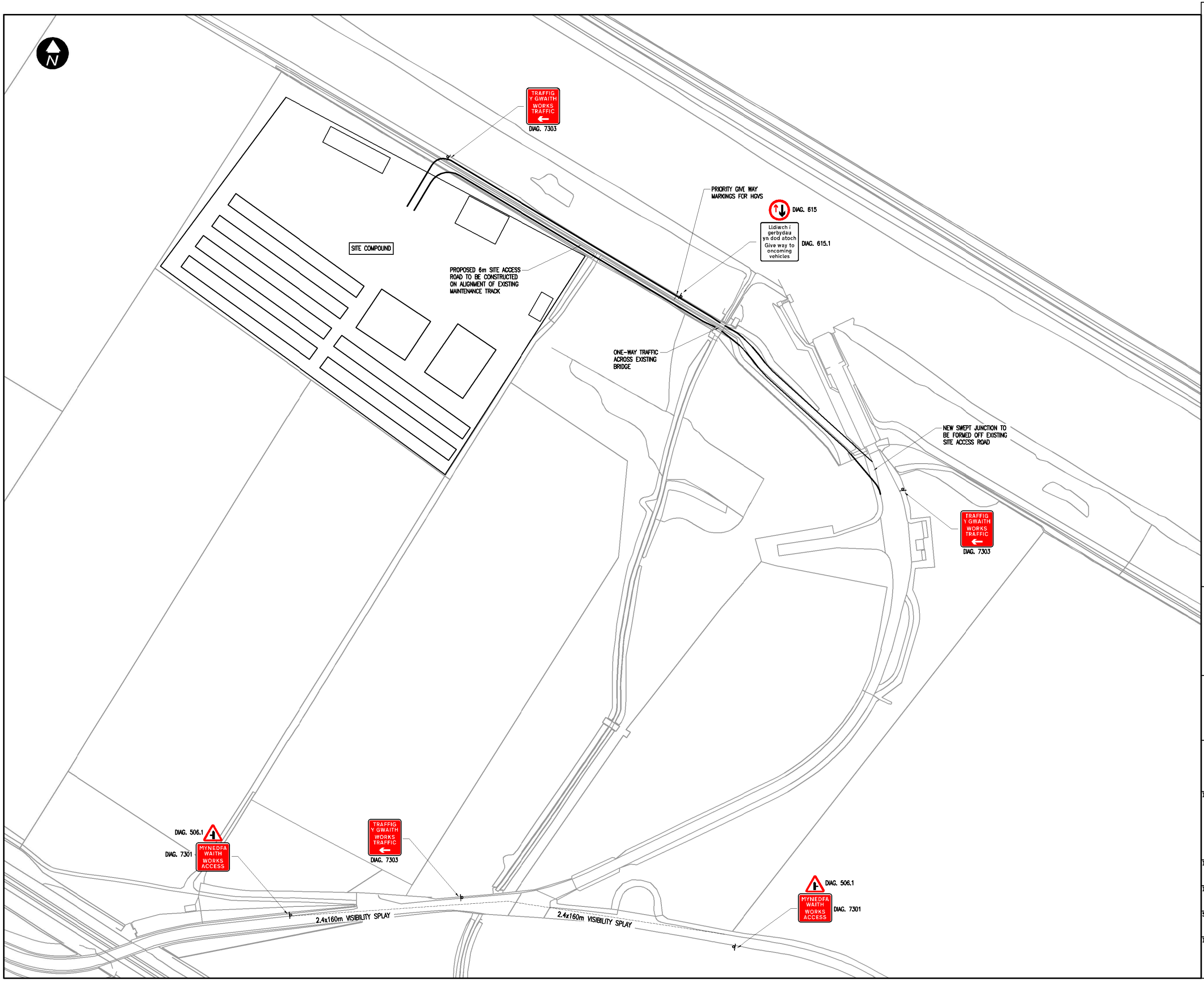
FOR COORDINATION

DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS

SCALE @ A3 SIZE	DATE	REVISION
1:5,000	AUGUST 22	P01

DRAWING NUMBER

EN070007-D.6.5.4.3.2-LAY



HyNet North West

DRAWING TITLE

CENTRALISED COMPOUND
TEMPORARY WORKS
SHEET 5 OF 7

DRAWING STATUS

FOR COORDINATION

DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS

SCALE @ A3 SIZE	DATE	REVISION
1:2,500	AUGUST 22	P01

DRAWING NUMBER

EN070007-D.6.5.4.3.2-LAY

N

EXISTING PUBLIC RIGHT OF WAY TO BE BE MAINTAINED

SITE COMPOUND

R35

R50

6.5

R37

R30

6.5

6

PROPOSED SITE COMPOUND ACCESS ROAD

DIAG. 615

PRIORITY GIVE WAY MARKINGS FOR HGVS

Lldiwch i gerbydau yn dod atoch
Give way to oncoming vehicles

DIAG. 615.1

R30

R45

6

DIAG. WO602

PROPOSED TEMPORARY GHOST ISLAND TO BE CREATED WITH REVISED LINING OVER EXISTING CARRIAGEWAY.

DIAG. 506.1

MYNEDFA WAITH
WORKS ACCESS

DIAG. 7301

B5125 HOLYWELL ROAD

AFAFWCH NAWR
REDUCE SPEED NOW

DIAG. 511

SKOTTON LANE

Contains OS data ©Crown Copyright and database right 2022

HyNet North West

DRAWING TITLE

CENTRALISED COMPOUND TEMPORARY WORKS SHEET 6 OF 7

DRAWING STATUS

FOR COORDINATION

DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS

SCALE @ A3 SIZE	DATE	REVISION
1:1,000	AUGUST 22	P01

DRAWING NUMBER

EN070007-D.6.5.4.3.2-LAY

N

TRAFFIG Y GWAITH WORKS TRAFFIC
DIAG. 7303

B5126 CONNAHS QUAY ROAD

30
DIAG. 670

EGRESS TO A55 JUNCTION 33 VIA A5117

30
DIAG. 670

30
DIAG. 670

B5125

DIAG. 506.1
DIAG. 7301
MYNEDFA WAITH WORKS ACCESS
GOFAL MYNEDFA I'R SAFLE CAUTION SITE ENTRANCE
MYNEDFA GUDD RHYBUDD CAUTION CONCEALED ENTRANCE

SITE COMPOUND

SITE ENTRANCE

30
DIAG. 670

30
DIAG. 670

30
DIAG. 670

DIAG. 506.1
DIAG. 7301
MYNEDFA WAITH WORKS ACCESS
GOFAL MYNEDFA I'R SAFLE CAUTION SITE ENTRANCE
MYNEDFA GUDD RHYBUDD CAUTION CONCEALED ENTRANCE

TEMPORARY SPEED RESTRICTIONS

1. BROOKSIDE 30mphRESTRICTION ZONE TO BE EXTENDED TO JUNCTION 33A
2. B5125 TO BE RESTRICTED TO 30mph FROM NORTHOP HALL CRICKET AND HOCKEY CLUB THROUGH TO JUNCTION WITH B5126

TRAFFIG Y GWAITH WORKS TRAFFIC
DIAG. 7303

GOFAL LORIAU'N TROI CAUTION LORRIES TURNING

30
DIAG. 670

BROOKSIDE

TRAFFIG Y GWAITH WORKS TRAFFIC
DIAG. 7303

A55 JUNCTION 33A

LEGEND

SITE ACCESS ROUTE
SITE EGRESS ROUTE

HyNet North West

DRAWING TITLE

CENTRALISED COMPOUND
TEMPORARY WORKS
SHEET 7 OF 7

DRAWING STATUS			
FOR COORDINATION			
DRAWN	CHECKED	APPROVED	AUTHORISED
MW	MT	NS	NS
SCALE @ A3 SIZE	DATE	REVISION	
1:5,000	AUGUST 22	P01	

DRAWING NUMBER

EN070007-D.6.5.4.3.2-LAY