DATED 13 June 2024

SUFFOLK COUNTY COUNCIL (1)

- and –

CREST NICHOLSON (OPERATIONS) LIMITED (2)

AGREEMENT

made pursuant to Sections 278 and 38 of the Highways Act 1980
and any other enabling power relating to
the development of land at Diaper Farm, Stowmarket, Suffolk

Nigel Inniss
Head of Governance
Suffolk County Council
8 Russell Road Ipswich
Suffolk IP1 2BX

Ref: AW/80614

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THIS AGREEMENT is made the 13 day of June 2024

BETWEEN the following parties :-

(1) SUFFOLK COUNTY COUNCIL of Endeavour House 8 Russell Road Ipswich Suffolk IP1 2BX ("the County Council")

(2) CREST NICHOLSON (OPERATIONS) LIMITED (company number 01168311) of 500 Dashwood Lang Road, Bourne Business Park, Addlestone, Surrey, United Kingdom, KT15 2HJ ("the Developer")

RECITALS AND DEFINITIONS

(A) In this Agreement unless the context otherwise requires the following words shall have the following meanings :-

"1980 Act"	Means the Highways Act 1980 (as amended)
"Approved Contractor"	Means the contractor(s) approved by the County Council for carrying out the Highway Works of the value and complexity proposed
"Approved Sub-Contractor"	Means the sub-contractor(s) approved by the County Council for carrying out the Highway Works of the value and complexity proposed
"CDM Regulations"	Means the Construction (Design and Management) Regulations 2015 (SI 2015/51)
"Certificate of Final Completion"	Means any of the certificates referred to in paragraph 15.3 of Schedule I
"Certificate of Substantial Completion"	Means any of the certificates referred to in paragraph 14.2 of Schedule I
"Commuted Sums"	Means the sum of £40,514.24 (forty thousand five hundred and fourteen pounds and twenty-four pence) which is calculated, as set out in paragraph 18.1 on Schedule I towards the cost of the County Council's future maintenance liability of the Highway Works

"Compensation Assessed Figure"	Means the amount which a report by an independent surveyor reasonably considers sufficient to meet the likely cost of settling claims and connected costs under Part I of the Land Compensation Act 1973
"Compensation Cash Deposit"	Means the cash deposit to be held by the County Council to meet the likely cost of settling claims and connected costs under Part I of the Land Compensation Act 1973 originally in the sum of the Compensation Initial Figure but subject to any sums to be further paid by the Developer or released by the County Council in order that the sum held matches the Compensation Assessed Figure
"Compensation Initial Figure"	Means the sum of £39,000 (thirty-nine thousand pounds) which is the amount which the Director reasonably considers sufficient to meet the likely cost of settling claims and connected costs under Part I of the Land Compensation Act 1973
"Contract"	Means the contract or contracts in respect of each and all of the Highway Works
"Contractor"	Means the contractor or contractors who have been awarded the Contract to execute the Highway Works. For the avoidance of doubt the aforementioned definition does not include any subcontractor
"Development"	Means the development to be carried out pursuant to the Permission
"Director"	Means the County Council's Executive Director of Growth, Highways and Infrastructure or other officers of the County Council acting under his hand
"Highway Works"	Means the works collectively or individually as the context requires which are set out in Schedule III of this Agreement and shown in the Works Drawings
"Highway Structure"	Means any bridge, subway, culvert, pipe, tunnel, or other structure built in, over, under or adjacent to any part of the

	highway
"Performance Bond"	Means the bond with the Performance Bond Surety for each and all of the Highway Works, such bond to be in the form set out in Schedule II.A, to the effect that should the Developer default in the execution of its obligations to carry out the Highway Works and to maintain the same in accordance with the provisions of this Agreement then the County Council will call upon the Performance Bond Surety to provide the full value of the Performance Bond (subject to the provisions hereinafter contained) to carry out the Highway Works and maintain the same as aforesaid
"Performance Figure"	Means the sum of £303,401.84 (three hundred and three thousand four hundred and one pounds and eighty-four pence) being the Tender Sum plus 10 per cent in respect of the Highway Works and as set out in each of the Contracts
"Performance Bond Surety"	Means National House Building Council
"Permission"	Means the planning permission granted by Mid Suffolk District Council dated 14 June 2021 granted with reference number DC/21/03287 in respect of the Site together with any modification of it
"Road Safety Audit"	Means the evaluation of each and all of the Highway Works during design and at the end of construction to identify potential road safety problems that may affect any users of the highway and to suggest measures to eliminate or mitigate those problems in accordance with Department for Transport standards or by the County Council as agreed by the Director
"Site"	Means land situated at Diaper Farm, Stowmarket, Suffolk shown edged green for identification only on the attached plan no 2010-500-287C – Site Location Plan
"Specification"	The County Council's "Specification for Estate Roads" dated May 2007 (or later amendment current at the date of this Agreement) so far as this is consistent with the Works

	Drawings and description in Schedule III (subject to any variations agreed in writing by the Director)
"Sub-contractor"	Means the sub-contractor(s) working for the Contractor(s) who have been contracted to execute the Highway Works
"Substantial Completion"	Means complete to the reasonable satisfaction of the Director and so that the Highway Works can be used for the purpose and operate in the manner for which they were designed
"Technical Standards"	Means the standards necessary to ensure complete conformity with all UK primary and secondary legislation (including by-laws) all guidance standards and codes of practice issued by the Department for Transport the County Council statutory undertakers and relevant professional institutes the Road Safety Audit and formal instructions issued by the Director from time to time during the design and implementation of the Highway Works and for the avoidance of doubt this shall include the Traffic Signs Regulations and General Directions 2016 and BS5489 in relation to the design of any street lighting
"Tender Sum"	Means the sum of £275,819.85 (two hundred and seventy-five thousand eight hundred and nineteen pounds and eighty-five pence) (including the costs associated with statutory undertakers work and traffic management) agreed by the Director for carrying out the Contract by the Contractor
"Works Drawings"	Means the attached drawings bearing the numbers referred to in Schedule IV or any subsequent revision of them which has been approved or requested by the Director and which relate to the Highway Works

(B) In this Agreement unless the context otherwise requires :-

(i) Words importing the singular meaning where the context so admits include the plural meaning and vice versa; and

(ii) Words of the masculine gender include the feminine and neuter genders and words denoting actual persons include companies, corporations and firms and all such words shall be construed interchangeably in that manner; and

(iii) "party" or "parties" means a party or parties to this Agreement; and

(iv) references to any party shall include the successors in title and assigns of that party; and in the case of the County Council the successors to its statutory functions; and

(v) where a party includes more than one person any obligations of that party can be enforced against all of them jointly and severally unless there is an express provision otherwise; and

(vi) the headings and contents list in this Agreement shall not form part of or affect its construction; and

(vii) references to clauses schedules and paragraphs are references to clauses in and schedules to this Agreement and paragraphs in schedules to this Agreement; and

(viii) where a party or any officer or employee is required to give its consent approval or agreement to any specific provision in this Agreement such consent approval or agreement shall not be unreasonably withheld or delayed; and

(ix) any mention herein of any act or of any section regulation or statutory instrument shall be deemed to refer to the same source as at any time amended and where such act section regulation or statutory instrument has been replaced consolidated or re-enacted with or without amendment such mention shall be deemed to refer to the relevant provision of the updating consolidating or re-enacting act or section or regulation or statutory instrument

(C) The County Council is the highway authority (except for trunk roads) for the purposes of the 1980 Act for the area within which the Site is situated and the Highway Works will be carried out

(D) The Developer has the benefit of the Permission

(E) The Developer is the registered proprietor with title absolute of the Site in so far as it is registered at the Land Registry under Title Numbers SK346988 and SK350060

(F) The Developer wishes to dedicate as public highway that part of the Site upon which the Highway Works are to be constructed which does not currently form part of the public highway and the County Council agrees to accept such dedication and adopt that part of the Site and the Highway Works as highway maintainable at public expense on the terms and conditions hereinafter contained

(G) Having regard to the development plan and other material considerations the County Council considers it expedient in the interests of the proper planning of their area that the Highway Works need to be carried out to facilitate the Development and that entering into this Agreement will be of benefit to the public

NOW THIS DEED WITNESSES as follows:-

1 LEGAL EFFECT

1.1. This Agreement and the covenants that appear hereinafter are made pursuant to Sections 38 72 and 278 of the 1980 Act Section 111 of the Local Government Act 1972 and Section 1 of the Localism Act 2011 and all other enabling powers to the intent that the provisions of this Agreement shall bind the Site and the parties hereto and all persons deriving title through or under them

1.2. This Agreement is a Deed. Any financial default under this Agreement will be registered as a Local Land Charge under section 278(5)(c) of the 1980 Act

1.3. No waiver (whether express or implied) by the County Council of any breach or default by the Developer in the performance or observance of any of the covenants, terms or obligations in this Agreement shall constitute a continuing waiver and no such waiver shall prevent the County Council from enforcing any of the covenants, terms or obligations or from acting upon any subsequent breach or default in respect thereof

1.4. Any provision of this Agreement which is or may be unlawful void or unenforceable shall to the extent of such unlawfulness invalidity or unenforceability be deemed severable and shall not affect any other provision of this Agreement

1.5. This Agreement is governed by and interpreted in accordance with English law and shall be determined in the Courts of England

2 NOTICES

2.1. Any notices or other written communication to be served or given by one party upon or to any other party under the terms of this Agreement shall be deemed to have been validly served or given if delivered by hand or sent by recorded delivery post or sent by the DX service to the party upon whom it is to be served or to whom it is to be given or as otherwise notified for the purpose by notice in writing provided that the notice or other written communication is addressed and delivered by hand or by recorded delivery post or by the DX service to the address of the party concerned as nominated in sub-clause 2.2. below

2.2. The address for any notice or other written communication in the case of each party to this Agreement shall be as follows:-

The County Council	Suffolk County Council Endeavour House 8 Russell Road Ipswich IP1 2BX marked for the attention of the Assistant Director of Governance, Legal and Assurance (or where the context requires the Executive Director of Growth, Highways and Infrastructure, Endeavour House 8 Russell Road Ipswich IP1 2BX)
The Developer	marked for the attention of the Managing Director at Crest Nicholson Operations Limited Academy Place 1-9 Brook Street Brentwood CM14 5NQ

2.3. Any notice or other written communication to be given by the County Council shall be deemed to be valid and effective if on its face it is signed on behalf of the County Council by a duly authorised officer

3 GENERAL

3.1. All works and activities to be carried out under the terms of this Agreement (including for the avoidance of doubt such works as are of a preparatory ancillary or of a maintenance nature) are (save where expressly provided otherwise) to be at the sole expense of the Developer and at no cost to the County Council

3.2. All consideration given and payments made in accordance with the provisions of this Agreement shall be exclusive of any VAT properly payable in respect thereof and in the event of VAT becoming chargeable at any time in respect of any supply made in accordance with the terms of this Agreement then to the extent that VAT had not previously been charged in respect of that supply the person making the supply shall raise a VAT invoice to the person to whom the supply was made and the VAT shall be paid accordingly

3.3. The County Council and their respectively duly authorised officers and agents may enter upon the land on which the Highway Works are being carried out at any reasonable time to ascertain whether the terms of the Agreement are being or have been complied with

4 ARBITRATION

4.1. Any dispute or difference arising between the parties as a result of this Agreement may be referred to the arbitration of a single arbitrator to be agreed upon between the parties or failing agreement within fourteen days after either of the parties has given to the other a written request requiring the appointment of an arbitrator to a person to be appointed at the request of either of the parties by the President for the time being of The Institution of Civil Engineers

4.2. Any reference to arbitration shall be undertaken in accordance with and subject to the provisions of the Arbitration Act 1996 save as follows:-

(a) the seat of the arbitration shall be at the County Council's offices in Ipswich Suffolk

(b) where appropriate the arbitrator may consolidate arbitral proceedings

(c) with the parties' agreement the arbitrator may appoint experts or legal advisers

4.3 A party wishing to refer any such dispute or difference to arbitration shall notify the other party in writing of such intention without delay

4.4 The arbitrator shall act as a referee and not as an expert except in any case where the parties to a dispute or difference agree on the arbitrator when such parties may also agree that such arbitrator shall act as an expert

4.5 Subject to Sections 67 68 and 69 of the Arbitration Act 1996 the parties agree to be bound by the decision of the arbitrator

5 COVENANTS

5.1 The Developer covenants and warrants to the County Council that they have full power to enter into this Agreement and there is no other person having a charge over or any other interest in the Site whose consent is necessary for the Developer to enter into this Agreement and to comply with the obligations set out at paragraph 14.3 of Schedule I

5.2 The Developer hereby covenants and undertakes with the County Council that from the date of this Agreement it will (unless otherwise agreed by the County Council) carry out and comply with the obligations set out in Schedule I and the details set out in Schedules III and IV hereto

5.3 The County Council without prejudice to its statutory powers and duties hereby appoints the Developer to act as its agent and gives to the Developer licence (in so far as is reasonably necessary for the Developer to perform the obligations under the terms of this Agreement) to enter into and upon and remain upon the highway to carry out the construction of the Highway Works within the timescales referred to in Schedule III hereto or such other period as may be agreed in writing by the Director, provided that this licence shall not extend to the Developer's successors in title or assigns unless otherwise agreed in writing by the Director prior to that successor or assignee commencing work in the public highway

5.4 The Developer covenants with the County Council not to commence the Highway Works set out in Schedule III unless road space has first been booked with the County Council

5.5 The Developer covenants with the County Council as highway authority to give written notice not less than three calendar months (or such other time as may be agreed by the parties) prior to works commencing, in order that the County Council as highway authority has sufficient time to ensure that the commencement of works will cause the least disruption possible to road users and the County Council reserves the right to refuse consent and/or to stop or require the stopping of works under the terms of this Agreement and relevant legislation where the aforesaid notice period is not complied with

5.6 The Developer covenants with the County Council as highways authority to comply with the provisions of the New Roads and Street Works Act 1991, the Traffic Management Act 2004 and any amendments thereof

5.7 The County Council covenants with the Developer that on the date of issue of the Certificate of Final Completion the roads subject to the Highway Works shall thenceforth be, to the extent they are not already, adopted as highways maintainable at the public expense

6 THIRD PARTY RIGHTS

6.1 It is hereby agreed and declared that the provisions of Contracts (Rights of Third Parties) Act 1999 shall not apply to this Agreement

7 LAPSE

7.1 If the Highway Works have not been commenced within one (1) year from the date of this Agreement, save as this period is otherwise extended in writing by the Director at his discretion, then this Agreement shall lapse and be of no further effect (save to the extent already complied with) and the Developer agrees to pay to the County Council any costs properly incurred by the County Council prior to the lapse of this Agreement (which have not already been paid) including but not limited to those costs set out in paragraph 19 of Schedule I to this Agreement

7.2 Where, in accordance with clause 7.1 above the Director, at his discretion, agrees in writing to an extension to the period of one (1) year after which this Agreement shall lapse, this Agreement shall lapse at the end of such period as agreed in writing by the Director where the Highway Works have not been commenced by the expiry of that extension period

In witness whereof this Agreement has been executed and delivered as a Deed on the date first written above

The COMMON SEAL of)
SUFFOLK COUNTY COUNCIL)
was hereunto affixed)
in the presence of)

.....
A Duly Authorised Officer

EXECUTED AS A DEED by)
CREST NICHOLSON)
(OPERATIONS) LIMITED acting by)
[redacted])
an attorney in the presence of:)

[redacted]

Witness Signatu[redacted]

Witness Name

Witness Address

[redacted]

SCHEDULE I

1 THE DESIGN OF THE HIGHWAY WORKS

1.1 The design of the Highway Works shall be to the satisfaction of the Director with due consideration of the Technical Standards

1.2 No work on any of the Highway Works shall commence and no Contract for their construction shall be let until

1.2.1 full details of the design of the Highway Works to be commenced in the form of plans, drawings, specifications and other materials have been submitted to the Director together with the name of the principal designer (whom the Developer shall appoint for the full duration of the design and construction of each and all of the Highway Works) in accordance with the CDM Regulations and any codes of practice referred to therein

1.2.2 the Director has given his written approval to the Highway Works to be commenced and such approval shall not be given if the said plans, drawings, specifications and other documentation have not adequately addressed the issues raised in the pre-construction stages of the Road Safety Audit process and if given shall lapse if the Highway Works are not commenced within twelve (12) months of the date of the said Director's approval

1.2.3 preliminary proposals, detailed contract drawings, schedules and specifications for Highway Structures have been prepared by the Developer and submitted for written approval to the Director's Structures Team in accordance with Department for Transport Document BD2/12 (or any other equivalent successor document) and the structural design and checking procedure has been carried out by an incorporated or chartered engineer familiar with Department for Transport Codes of Practice and experienced in the design of Highways Structures. The documents are to be agreed as applicable with the Director before the design is commenced and details are submitted for approval

1.3 If the Director does not propose to give his approval in relation to those matters referred to in paragraph 1.2 of this Schedule he shall in each case as soon as possible in writing inform the Developer and if the Director requires amendments or additions to the plans drawings specifications and other materials referred to in paragraph 1.2 of this Schedule these amendments shall be undertaken by the Developer at his own expense and a revised set of updated documents shall be re-submitted to the Director for his approval

1.4 Without prejudice to paragraph 1.2 of this Schedule, the Director shall not give his approval as referred therein until the Developer has paid the sum referred to in paragraph 19.1.3 towards the cost of checking the design of the Highway Works and inspecting the Highway Works. The Highway Works at all times shall be carried out in accordance with the plans, drawings, specifications and other materials which have received the Director's approval referred to in paragraph 1.2 of this Schedule and the Developer shall in the execution of the Highway Works comply or ensure that the Contractor complies with the Technical Standards

2 LETTING OF THE CONTRACT

2.1 No Contract shall be let until all traffic management measures have been prepared by the Developer and approved in writing by the Director ("the approved programme") and thereafter each of the Contracts will be offered to an Approved Contractor

2.2 The Contract to be let under paragraph 2.1 of this Schedule shall be let under NEC3 suite of contracts (and any amendments thereto shall be approved by the Director) and the Developer shall obtain the agreement of the Contractor to be bound by the agreed drawings in Schedule IV

2.3 The Contract shall be awarded by the Developer subject to the Director having first given his written approval to the proposed chartered engineer(s) or other suitably qualified person(s) who shall be independent of the Contractor and will supervise the execution of the Highway Works by the Contractor

2.4 The Developer shall not award the Contract unless the Approved Contractor and the Approved Sub-Contractor/s concerned are insured throughout the period of the Contract (such period to include the

maintenance period detailed in paragraph 15.1 of this Schedule) for public liability risks in the sum of at least ten million pounds (£10,000,000) in respect of any single claim and the Developer shall ensure that the Contractor remains so insured throughout the period of the Contract and prior to the commencement of each or all of the Highway Works or any maintenance works carried out in accordance with paragraph 15.1 of this Schedule the Developer shall produce to the Director insurance policies fully covering the Developer's liability in respect of the matters set out in this Agreement

2.5 The Developer shall not sub-contract or assign the Contract without the written approval of the Director and any sub-contractor shall be an Approved Sub-Contractor

3 INSPECTION OF THE HIGHWAY WORKS

3.1 The Developer shall provide the Director with not less than twenty-four (24) hours nor more than seventy-two (72) hours' notice (excluding weekends and bank holidays) of any intended execution of the Highway Works specifying the tasks to be carried out in accordance with the approved programme referred to in paragraph 2.1 of this Schedule

3.2 Without prejudice to the approved programme the Developer shall notify the Director in writing at least twenty-eight (28) days prior (or such other shorter time as may be agreed by the parties) to the commencement of any work connected with statutory undertaker's equipment

3.3 Without prejudice to the approved programme the Developer shall notify the Structures Team and the Director in writing at least seventy-two (72) hours prior to the commencement of each and every stage of excavation and concrete operations associated with any Highway Structures

3.4 The Developer shall during the progress of each and all of the Highway Works give to or procure for the Director and any person or persons duly authorised by him free access to every part of the Highway Works and the Site and permit him or them to inspect the same as they proceed and all materials used or intended to be used therein and shall give effect to any reasonable and proper requirements made or reasonable and proper directions given by the Director to conform to the approved detailed plans

Works Drawings and specification referred to in paragraph 1.2 of this Schedule

3.5 The Developer shall not cover up or put out of view any works forming part of the Highway Works without the approval of the Director and shall afford full opportunity for the Director to examine and measure any work which is about to be covered up or put out of view and to examine foundations before permanent work is placed thereon and shall give at least seventy-two (72) hours' notice to the Director whenever any such work or foundations is or are ready or about to be ready for examination

3.6 The Director shall without unreasonable delay, unless she considers it unnecessary and advises the Developer accordingly, attend when required by the Developer for the purpose of examining such works or of examining such foundations

3.7 The Director shall for the purposes of paragraphs 3.1 to 3.6 be allowed reasonable access and admission to the Highway Works or the places where materials or plant for the Highway Works may be stored or in the course of preparation manufacture or use (unless such access or admission is refused due to circumstances beyond the control of the Developer)

4 TESTING OF MATERIALS

4.1 The Developer shall reimburse the County Council for all reasonable costs and expenses whatsoever arising from the operation of paragraphs 4.2 to 4.5

4.2 The Director shall require the testing of materials plant and workmanship used or proposed to be used in the Highway Works and in his reasonable discretion have the power to reject any materials plant or workmanship so tested which he may reasonably and properly find to be not in accordance with the approved detailed plans Works Drawings and specification referred to in paragraph 1.2 of this Schedule and in relation to Highways Structures the Director will require a schedule of testing to be agreed prior to the commencement of works or any part thereof

4.3 The Developer shall as soon as is reasonably practicable replace or repair any materials plant or workmanship which have been found to be

not in accordance with the approved detailed plans Works Drawings and specification referred to in paragraph 1.2 of this Schedule

4.4 The Director shall for the purposes of paragraphs 4.2 to 4.5 be allowed reasonable access and admission to the Highway Works or the places where materials or plant for the Highway Works may be stored or in the course of preparation manufacture or use (unless such access or admission is refused due to circumstances beyond the control of the Developer)

4.5 The Developer shall as soon as is reasonably practicable remove such materials and plant as are rejected by the Director pursuant to paragraph 4.2. of this Schedule which are not capable of repair or remedy from the Site and if the Developer shall wish to continue to store such rejected materials and plant on the Site they shall be stored separately from those materials and plant which have not been so rejected or which the Developer shall wish in future to use in execution of the Highway Works

5 OPENING OF THE HIGHWAY WORKS

5.1 During the construction of each and all of the Highway Works and prior to the issue of the Certificate of Substantial Completion:

(a) the Director may issue instructions to the Developer to open or expose any of the Highway Works which has been covered up without previously being inspected by the Director

(b) should the Developer fail to comply with any such instructions the County Council may so take up or expose the relevant part of the Highway Works causing as little damage or inconvenience as is possible in respect of any other part or parts of the Highway Works the reasonable and proper cost of such taking up or exposure and reinstatement to be met by the Developer

PROVIDED THAT if the Highway Works or any part or parts thereof are covered up by the Developer after giving the notice referred to in paragraph 3.5 of this Schedule and the Director shall have failed to inspect in the period therein referred to and the Director shall subsequently require the Highway Works or any part of them to be uncovered for the purposes of inspection:-

(a) if inspection reveals the relevant part or parts of the Highway Works to have been completed in accordance with the approved detailed plans drawings and specification referred to in paragraph 1.2 of this Schedule all costs in respect of such uncovering and inspection and of reinstating the part or parts of the Highway Works uncovered shall be borne by the County Council; or

(b) if inspection reveals the relevant part or parts of the Highway Works not to have been completed in accordance with the approved detailed plans drawings and specifications referred to in paragraph 1.2 of this Schedule all reasonable and proper costs in respect of uncovering and inspection and of reinstating the part or parts of the Highway Works uncovered shall be borne by the Developer

6 UNDERTAKERS

6.1 Insofar as the County Council as Highway Authority is required by any legislation regulation direction or code of practice (including in particular but without prejudice to the generality of the foregoing the New Roads and Street Works Act 1991) to serve a notice or notices in respect of the Highway Works on undertakers or other persons the Developer shall comply with such requirement on behalf of the County Council before the Highway Works commence and shall thereafter assume on behalf of the County Council such responsibilities as follow on therefrom in particular during the construction of the Highway Works and prior to the issue of the Certificate of Substantial Completion the Developer shall also:-

(a) carry out or procure the carrying out of such works and activities in regard to the plant and equipment of undertakers as are required by undertakers in accordance with their statutory powers under the New Roads and Street Works Act 1991 as a result of the construction or intended construction of each and all of the Highway Works

(b) cause all public sewers, highway drains gas and water mains electric cables and telecommunications ducts or other apparatus which are to be laid by the Developer under the Highway Works together with all necessary connections from them to the boundary of the Highway Works to be laid so far as is practicable under the

Highway Works before the foundation of the Highway Works are laid and shall also in so far as is practicable cause the connections from electric cables to any street lamp to be laid before the paving of the footways comprised in the Highway Works is carried out

(c) cause all trench works within the highway to be backfilled and reinstated in accordance with the Specification for the Reinstatement of Openings in the Highway as determined from time to time under the New Roads and Street Works Act 1991

(d) not at any time give consent to the erection by any telecommunications operator of telegraph poles or telephone poles or to the erection by any statutory undertaker or public or private company firm or individual of any over ground or underground equipment without the consent in writing of the Director

7 PROTECTION OF THE PUBLIC

7.1 The Developer shall give due consideration to adjoining owners and occupiers at all times and shall organise activities relating to the Highway Works in such a manner as to cause the least practicable disruption

7.2 Prominent notices shall be displayed and maintained around the perimeter of the site of each and all of the Highway Works to warn the public of the dangers of entering the Site

7.3 The Developer shall nominate a member of the site management team as the contact point for the Director in the event of an emergency and shall advise a daytime and twenty-four (24) hour contact number to the Director for the same purpose

7.4 The Developer shall take or procure the taking of all necessary steps to avoid creating a nuisance from noise and in particular:

7.4.1 the Developer shall afford all reasonable facilities to enable the Director to carry out such site investigations as she may deem necessary in order to determine noise emission levels

7.4.2 all vehicles and plant including compressors shall be fitted with effective silencers and acoustic covers as appropriate and maintained in good working order and all static plant shall be

located to minimise nuisance to persons living or working in the vicinity

7.4.3 all portable traffic signals and pumps shall be operated from mains electricity unless otherwise agreed with the Director

7.4.4 noisy activities shall not be permitted on Sundays and Bank Holidays and except as agreed in writing by the Director shall not be permitted outside the hours of 9.30 a.m. to 4.30 p.m. Monday to Friday and 9.30 a.m. to 1 p.m. on Saturdays

PROVIDED THAT if in the reasonable opinion of the Director the Developer is not dealing adequately with the control of noise the Developer shall carry out or procure the carrying out of such additional measures as the Director considers necessary at the Developer's expense

7.5 Compliance with the provisions of paragraph 7.4 shall not relieve the Developer of any of his obligations and liabilities under this Agreement the Control of Pollution Act 1974 or the Environmental Protection Act 1990

7.6 The Developer shall take or procure the taking of all necessary steps to avoid creating a nuisance from dust and as far as practicable works are to be carried out in such a way that dust is kept to a minimum PROVIDED THAT if in the reasonable opinion of the Director the Developer is not dealing adequately with the control of dust the Developer shall carry out or procure the carrying out of such additional measures as the Director considers necessary at the Developer's expense

7.7 The Developer shall arrange the regular removal of refuse likely to encourage vermin and arrange for suitable secure storage containers to be provided for collection

7.8 The Developer shall keep a log book on site to record all complaints received from the public and the action taken in response and the log book shall be available for inspection by the Director

8 PREVENTION OF MUD BEING CARRIED ON THE PUBLIC HIGHWAY

8.1 Provision shall be made at the Site to limit in so far as is practicable the amount of mud dust and other materials carried on to adjacent public highways by vehicles and plant leaving the Site

8.2 The Developer shall keep or procure the keeping of all roads footpaths rights of way and other means of passage leading to or from or crossing the Site free from mud slurry or other hazardous substances that are deposited through the construction of the Highway Works and any such substance so deposited on any such road footpath right of way or other means of passage shall be promptly removed by or at the direction of the Developer

8.3 The Director may close any associated crossings entrances and exits if such substances deposited are not promptly removed by the Developer and any losses or expenses incurred as a result shall be borne by the Developer and on removal of such substances the Director shall reopen such crossings entrances and exits and the Developer shall bear the costs incurred

9 TRAFFIC CONTROL

9.1 During the periods when the Highway Works are being executed the Developer shall institute at his own expense measures previously approved in writing by the Director to maintain the safe flow of traffic on the highways in the vicinity of the site of the Highway Works

9.2 The Highway Works shall be signed and protected to at least the standards of Chapter 8 of the Traffic Signs Manual published by His Majesty's Stationery Office and the proposed arrangements shall be approved in writing by the Director before the Highway Works commence

10 TIMING

10.1 No Highway Works within or affecting existing public highways or temporary diversions which could interfere with the traffic flow will be permitted within the morning and evening peak periods i.e. 7.30 - 9.30 a.m. and 4.30 - 6.30 p.m. Monday to Friday except as agreed in writing by the Director

11 SAFETY

11.1 During the periods when the Highway Works are being carried out the Developer shall provide all watching and lighting as required and shall maintain all lights, guards, fencing, warning signs when and, where necessary, undertake such further measures as may be reasonably required by the Director

12 ACCOMMODATION WORKS

12.1 The Developer shall carry out or ensure that there shall be carried out all related accommodation works associated with the Highway Works

13 CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015

13.1 The Developer shall be the only client for the purpose of the CDM Regulations and the Developer agrees to undertake the obligations of a client under the CDM Regulations and to use all reasonable endeavours to ensure that the Highway Works are carried out in accordance with the CDM Regulations

13.2 The Highway Works shall not commence until the Developer as the only client has provided to the Director:

13.2.1 an estimate of the number of working days and/or person days of construction work and the number of workers working on site simultaneously at any one point in the project which the Contract will entail

13.2.2 written details of the principal designer and the principal contractor appointed for the project and also provide copies of the Construction Phase Plan and Health & Safety File

13.2.3 a copy of the Notification of Project (form HSE F10) to the HSE pursuant to Regulation 6 of the CDM Regulations

13.3 Throughout the Highway Works the Developer shall provide to the Director copies of the updates and revisions to the construction phase plan and Health and Safety File pursuant to Regulation 12

13.4 Within twenty-eight (28) days of issue of the Certificate of Substantial Completion for any or all of the Highway Works the Developer shall provide to the Director

13.4.1 a plan showing the land over which those Highways Works have been constructed and

13.4.2 a Health and Safety file conforming in all respects with the CDM Regulations and which shall accord with the current format used by the County Council to include a separate Health and Safety File for each Highway Structure

13.5 The Director shall be at liberty to delay issue of the Certificate of Final Completion in respect of any of the Highway Works if the Developer fails to provide the Director with the documents referred to in 13.4.1 and 13.4.2 above within twenty-eight (28) days of issue of any Certificate of Substantial Completion for any of the Highway Works equivalent to the number of days after the twenty-eight (28) day period that the documents were submitted

13.6 In respect of the Highway Works generally the Developer shall provide to the Director the final information in both paper and electronic format and shall at least comprise:

13.6.1 1:500 scale (or alternative scale as may be specified by the Director) "as built" drawings

13.6.2 records of the earthworks showing sources of material used in areas of fill description of fill materials descriptions of sub-grades in cut areas copies of results of tests of material carried out as part of the supervision of the construction of the earthworks

13.6.3 records of the sources of supply of all deliveries of road construction materials with details of the location of the Highway Works at which each load is placed

13.6.4 records of the sources of supply of all other manufactured materials (e.g. drainage goods, fencing materials, traffic signs, electrical components and cables etc).

13.7 No work on Highway Structures shall commence until the general Health and Safety file information including format to be supplied in respect of Highway Structures has been agreed with the County Council's Bridge Engineer and shall accord with the County Council's current Technical Approval Procedure for Highway Structures

13.8 The Developer shall indemnify and keep the County Council indemnified against any breach of the Developer's obligations under this paragraph 13

14 SITE CLEARANCE AND CERTIFICATE(S) OF SUBSTANTIAL COMPLETION

14.1 On Substantial Completion of the Highway Works the Developer shall:-

14.1.1 clear away and remove from the site of the Highway Works all constructional plant and temporary works of every kind and leave the site of the Highway Works in a neat and tidy condition to the satisfaction of the Director and

14.1.2 carry out stage 3 of the Road Safety Audit process and comply to the satisfaction of the Director with recommendations arising thereunder prior to the opening of the Highway Works to the public

14.2. Upon Substantial Completion of the Highway Works including any additional work resulting from stage 3 of the Road Safety Audit process to the satisfaction in all respects of the Director he shall issue a Certificate of Substantial Completion in respect of those Highway Works to the Developer provided that all costs and expenses owing to the County Council have been paid in respect of those Highway Works

14.3. The Developer hereby agrees that on the date of Substantial Completion that part of the Site upon which the Highways Works are constructed which does not currently form part of the public highway shall be dedicated as highway under section 38 of the 1980 Act

14.4. After the issue of the Certificate of Substantial Completion the County Council shall approve a reduction of up to 90% of the Performance Figure in respect of the relevant Highway Works and the County Council shall release the Developer and the Performance Bond Surety and each of them from their obligations under the Performance Bond in respect of the relevant Highway Works to such extent

15 DEFECTS CORRECTION PERIOD AND CERTIFICATE OF FINAL COMPLETION

15.1 The Developer shall maintain each and all of the Highway Works for a period of eighteen (18) months (unless the Director agrees in writing a lesser period having considered paragraph 15.2) from the issue of the related Certificate of Substantial Completion and prior to the expiration of this period the Developer shall reinstate and make good any damage or defect which may have arisen from any cause whatsoever or be discovered during the said period of eighteen months (including any defect in or damage to the surface water drainage system) so as to place the highway and the Highway Works in a condition satisfactory to the Director

15.2 After the expiration of the period of twelve (12) months from Substantial Completion or the date the Development becomes operational (whichever is the latter) the Developer shall (unless the Director writes to the Developer informing him that it is to be carried out sooner or that he does not need to do so) carry out stage 4 of the Safety Audit and comply to the satisfaction of the Director with any recommendations arising thereunder

15.3 After the expiration of the period of eighteen (18) months referred to in paragraph 15.1 (or such lesser period as agreed in writing by the Director under paragraph 15.1) and after any defects have been made good as therein provided including any improvements arising under stage 4 of the Road Safety Audit to the satisfaction of the Director and after the provisions of paragraph 13.4 and paragraph 20.5 of this Schedule have been fulfilled the Director shall issue forthwith to the Developer the Certificate of Final Completion in respect of the Highway Works provided that the Certificate of Final Completion shall in the case of road gullies extend only as far as their points of entry to the surface water sewers

where those are not being adopted by the County Council as highway drains and upon the issue of the Certificate of Final Completion the County Council shall release the Developer and the Performance Bond Surety and each of them from all subsisting obligations under the Performance Bond in respect of those Highway Works

15.4 If called upon to do so by notice in writing served within twenty-one years of the date hereof by the County Council the Developer agrees to transfer to the County Council in consideration of one pound any land over which any part of the Highway Works have been constructed which does not at the date of this Agreement already form part of the highway together with any other land dedicated as public highway by the Developer hereunder free in each case from encumbrances and together with all rights necessary to permit the use inspection maintenance repair and replacement of all utility systems servicing the Highway Works and not vested in the relevant undertaker as are situated outside the limits of the Highway Works and the said other land

16 INDEMNITY

16.1 The Developer shall from the date of this Agreement indemnify the County Council against all claims charges costs expenses liability or loss whatsoever arising out of and incidental to any or all of the Highway Works including but not limited to those arising out of any legally sustainable claims for payments under Section 10 of the Compulsory Purchase Act 1965 and Part I of the Land Compensation Act 1973 (as amended) in connection with those Highway Works provided that the Developer's indemnity will not extend to any claims submitted to the County Council arising out of the negligence of the County Council's employees or arising out of any works of alteration carried out to any of the Highway Works by the County Council after the issue of the related Certificate of Final Completion

16.2 The County Council shall notify the Developer forthwith upon receipt of any such claim or liability

16.3 The County Council shall not accept or settle any claim without first having given the Developer the opportunity to provide the County Council with representations as to the validity of such claim

16.4 The indemnification referred to in paragraph 16.1 includes:

16.4.1 all fees incurred by claimants which the County Council is obliged to pay, and those of the County Council or its agent or contractor, in negotiating any claims (together with VAT payable on the claimants' professional advisors' fees);

16.4.2 statutory interest payments to claimants and their professional advisors; and

16.4.3 the County Council's reasonable and proper legal costs in making the compensation, fees and interest payments

17 PERFORMANCE BOND

17.1 Without expense to the County Council the Developer and the Performance Bond Surety shall on the date of this Agreement enter into the Performance Bond for each and all of the Highway Works and the Developer and Performance Bond Surety shall be bound to the County Council in the amount of the Performance Figure for the Highway Works

17.2 Should the Developer default in the execution of its obligations to carry out any or all of the Highway Works and to maintain the same in accordance with the provisions of this Agreement then the County Council may (subject to the provisions hereinafter contained) itself carry out the Highway Works and maintain the same as aforesaid having first called upon the Performance Bond Surety for the cost to be expended in so doing

17.2.1 Unless there is a danger to users of the highway the County Council shall give twenty (20) working days prior written notice (or lesser period as may in the circumstances be reasonable) of its intention to commence work under Paragraph 17.2

17.2.2 any notice served under this paragraph shall specify the period of the notice ("the Notice Period") the extent of the work which the County Council proposes to carry out and full details of all matters in respect of which the Director considers that the Highway Works have not been carried out in accordance with the terms of this Agreement

17.2.3 if before the expiry of the Notice Period the Developer serves written notice upon the County Council that the Developer intends diligently to execute the works specified in the notice in accordance with the terms of this Agreement and specifies a time to complete that the County Council considers reasonable in the circumstances the County Council shall not be entitled to execute the relevant part or parts of the Highway Works specified in the notice served under this paragraph unless the Developer then fails to execute those works within the agreed time scale

17.3 If the Developer should default in the execution of its obligations to carry out any or all of the Highway Works and to maintain the same in accordance with the provisions of this Agreement then the County Council will call upon the Performance Bond Surety to provide the full Performance Figure (or such sum that remains following reduction of the Performance Bond in accordance with Paragraph 14.4 of this Schedule) in accordance with this Agreement. Save that the County Council after all works are completed and all contracts and any contract claims settled will return any Performance Bond sum unused with interest at the Bank of England Base Rate minus 2 basis points, compounding annually at financial year end on receipt of a written request to the Performance Bond Surety within one month of all the aforementioned completing and settling. If for any period the Bank of England Base Rate is at or below 0.02% then no interest shall be payable for that period by any party to this Agreement

18 COMMUTED SUMS FOR MAINTENANCE

18.1 Prior to the date of this Agreement the Developer shall pay to the County Council the Commuted Sums calculated as follows:

	£
Footways	2,500.00
Drainage	710.00
Traffic Signals	36,324.24

Traffic signs and lines	980.00

19 LEGAL AND ADMINISTRATIVE COSTS

19.1 The Developer shall pay to the County Council:-

19.1.1 the whole of the costs of the County Council's Legal Services Department in connection with the preparation and completion of this Agreement and these costs shall be payable prior to sealing of this Agreement;

19.1.2 interest at four per cent above the Bank of England Base Rate from time to time on any sum due to the County Council under this Agreement which is outstanding for more than twenty-eight (28) days from the date on which it was demanded or in the event that a dispute or difference regarding such payment is referred to arbitration pursuant to clause 4.1 of this Agreement the said twenty-eight (28) day period shall run from the date of the decision of the arbitrator (such interest to be charged on the amount outstanding each day from the date of issue of a written demand for any sum due or in the event that a dispute or difference regarding such payment is referred to arbitration pursuant to clause 4.1 of this Agreement such interest to be charged on the amount outstanding each day from the date of issue of the decision of the arbitrator)

19.1.3 The greater of £5000 (Five thousand pounds) or 7½% of the Performance Figure (excluding the costs associated with statutory undertakers work and traffic management) for the Highway Works towards the costs and expenses of the County Council of checking the design of each and all of the Highway Works and inspecting each and all of the Highway Works such sum shall be payable prior to sealing of this Agreement

19.1.4 the reasonable cost to the County Council of undertaking Road Safety Audits and also the cost of the safety checks of details submitted which sum shall be payable prior to the safety audit commencing

19.1.5 the cost of any temporary and permanent traffic regulation orders which sum shall be payable prior to any work on the making of such order being commenced

19.1.6 the full cost of any other road traffic orders required to facilitate the Highway Works which sum shall be payable prior to any work on the making of such order being commenced

19.1.7 the whole of the costs of the County Council in connection with surveying and assessing the land upon which the Highways Works are to be constructed and land in the vicinity of the Highway Works as deemed necessary by the County Council in order to provide the Compensation Figure for the Compensation Bond, and these costs shall be payable prior to sealing of this Agreement

20 PARTS I AND II OF THE LAND COMPENSATION ACT 1973

Part I and II Claims

20.1 On the date of this Agreement and without expense to the County Council the Developer shall pay the Compensation Cash Deposit to the County Council in the amount of the Compensation Initial Figure

20.2 The Compensation Cash Deposit shall provide that should the Developer default in any way in his obligation to pay to the County Council the sums specified in paragraph 16 of this Schedule the County Council may call upon the Compensation Cash Deposit to pay the sums due under paragraph 16 and paragraph 20.4 of this Schedule to the County Council or any shortfall in the event that some of the monies have already been paid to the County Council

Part I Claims - Depreciation Caused By Public Works

20.3 Upon the date which falls seven (7) years from the point at which the last of the Highway Works is first open to public traffic and if all duly made claims are settled the County Council will release the Developer from all subsisting obligations under Compensation Cash Deposit and the remainder of the Cash Deposit (including any additional sum received by the County Council pursuant to paragraph 20.6 of this Schedule) shall be

returned together with interest as applied at the Bank of England Base Rate minus 2 basis points, compounding annually at financial year end on receipt of a written request. If for any period the Bank of England Base Rate is at or below 0.02% then no interest shall be payable for that period by any party to this Agreement save that if all duly made claims are not settled all but an amount reasonably sufficient to settle such claims will be released

20.4 The Developer hereby undertakes and agrees with the County Council that in the event of any claim for compensation or otherwise or costs or charges arising in connection with or incidental to or in consequence of the carrying out of the Highway Works whether mandatory or discretionary which may be incurred by virtue of any enactment or statutory instrument and otherwise hereby provided for he will hold the County Council fully indemnified from and against all claims charges costs and expenses in connection therewith or arising therefrom

20.5 The County Council hereby agrees to make any report containing a Compensation Assessed Figure available to the Developer without unreasonable delay from receipt of such report.

20.6 The Developer hereby undertakes that should the Compensation Assessed Figure exceed the Compensation Initial Figure the Developer shall pay to the County Council as soon as reasonably practicable a sum equal to the difference.

20.7 The County Council hereby undertakes that should the Compensation Initial Figure exceed the Compensation Assessed Figure the County Council shall pay to the Developer as soon as reasonably practicable a sum equal to the difference.

20.8 The County Council hereby undertakes that any sum paid by the Developer pursuant to paragraph 20.6 of this Schedule shall be added to the Compensation Cash Deposit and held for the same purposes as the Compensation Cash Deposit

Part II Claims

20.9 The Developer covenants with the County Council to comply with the requirements of the Noise Insulation Regulations 1975 (SI 1975/1763) as

amended and to provide to the County Council such evidence as is required by the Director to demonstrate compliance with the Noise Insulation Regulations 1975 prior to the issuing by the County Council of the Certificate of Final Completion in accordance with paragraph 15.3 of this Schedule

SCHEDULE II.A

Performance Bond Agreement

DATED 13 June 2024

CREST NICHOLSON OPERATIONS LIMITED (1)

- and –

NATIONAL HOUSE BUILDING COUNCIL (2)

PERFORMANCE BOND

relating to the development of land at Diaper Farm, Stowmarket, Suffolk

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BY THIS BOND CREST NICHOLSON OPERATIONS LIMITED of 500 Dashwood Lang Road, Bourne Business Park, Addlestone, Surrey, United Kingdom, KT15 2HJ ("the Developer") and **NATIONAL HOUSE BUILDING COUNCIL** ("the Surety") are held and firmly bound to **SUFFOLK COUNTY COUNCIL** of Endeavour House 8 Russell Road Ipswich Suffolk IP1 2BX ("the County Council") in the sum of £303,401.84 (three hundred and three thousand four hundred and one pounds and eighty-four pence) to be paid to the County Council for the payment of which sum the Developer and the Surety bind themselves their successors and assigns jointly and severally

IN WITNESS whereof the Developer and the Surety have hereunto executed and delivered the same on but not before this 13 day of June Two thousand and twenty-four

1. The Developer has entered into an Agreement under seal with the County Council of even date made under Section 278 of the 1980 Act whereby the Developer undertook at its own expense to carry out works as set out in Schedule III of the said Agreement and shown in the Works Drawings annexed to the said Agreement ("the Highway Works")

2. It is intended that this Bond shall be construed as one with the said Agreement

NOW THE CONDITION of the above-written Bond is such that if the Developer shall duly perform and observe all the terms provisions conditions and stipulations of the said Agreement (in so far as they relate to the Highway Works) on the Developer's part to be performed and observed according to the true intent and meaning thereof or if on default by the Developer the Surety shall duly satisfy and discharge the

damages sustained by the County Council up to the amount of the above-written Bond then the above-written Bond shall be null and void but otherwise shall remain in full force and effect **PROVIDED ALWAYS** that the giving by the County Council of any extension of time for performing the said Agreement or any stipulations therein contained and on the part of the Developer to be performed or any other forgiveness or forbearance on the part of the County Council or its successors or assigns shall not in any way release the Surety from any liability under the above-written Bond

EXECUTED AS A DEED by)
CREST NICHOLSON)
(OPERATIONS) LIMITED acting by)
[redacted])
an attorney in the presence of:)

[redacted]

Witness Signature [redacted]

Witness Name [redacted]

Witness Address [redacted]

EXECUTED AS A DEED by)
CREST NICHOLSON)
(OPERATIONS) LIMITED acting by)
[redacted])
an attorney in the presence of:)

[redacted]

Witness Signature [redacted]

Witness Name [redacted]

[redacted]

Witness Address

SIGNED AS A DEED by)
)
as attorney for NATIONAL HOUSE)
BUILDING COUNCIL under a Power)
of Attorney dated 28 September 2023)
in the presence of)

Witness Signature

Witness Name

Witness Address

SCHEDULE III

The Highways Works comprising the following works:

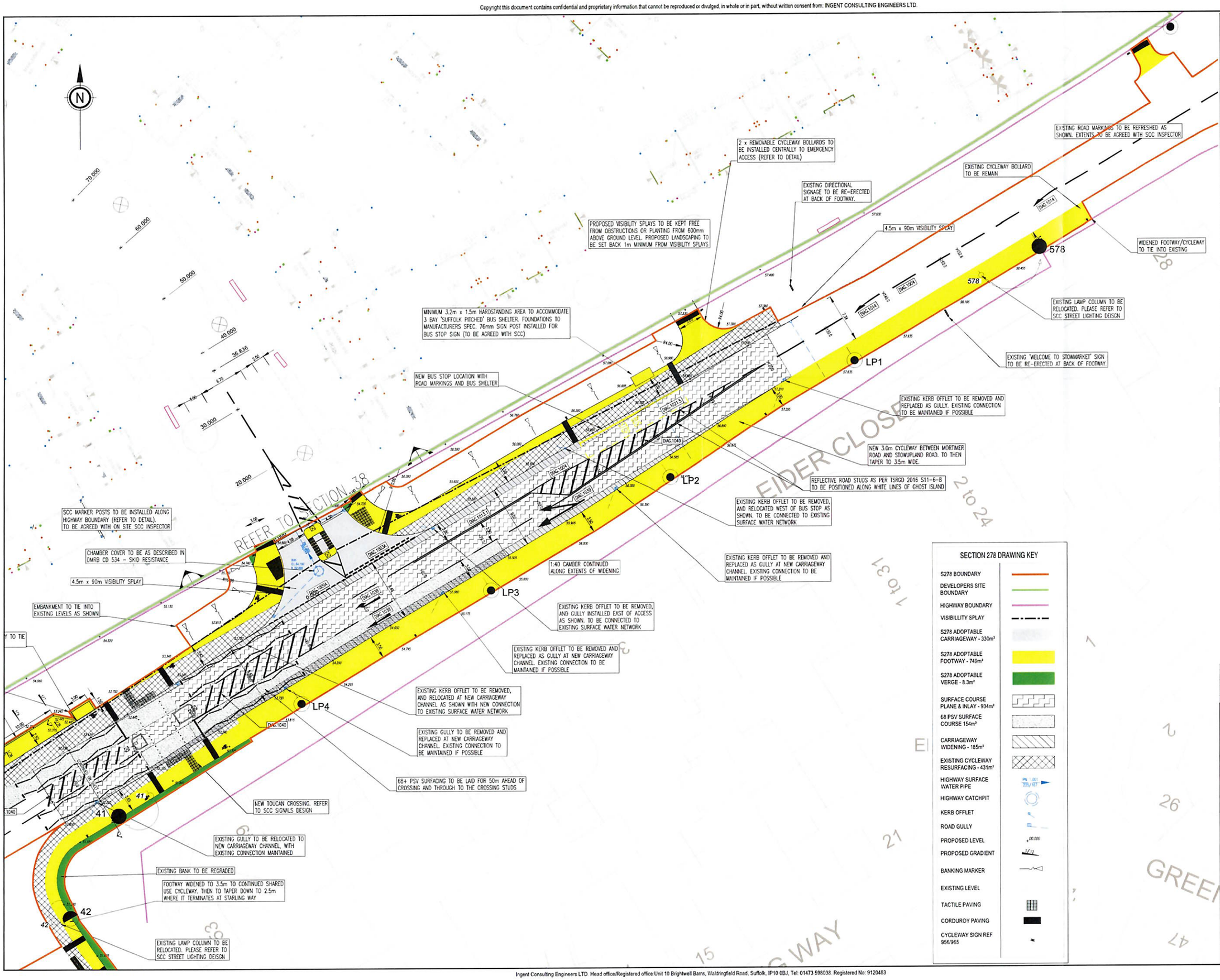
Location	Works	Delivery Programme
B1115 Stowupland Road	Construction of access to serve new residential development including provision of a pedestrian crossing, widening for a right turn pocket and extension of the cycle network.	

Timescales: The Highways Works are to be commenced within 12 (twelve) months of the date of this Agreement and completed within 6 (six) months of commencement of the Highway Works

SCHEDULE IV

Approved List of drawings

	Title	Drawing number
1.	S278 GENERAL ARRANGEMENT SHEET 1	2010-500-278D
2.	S278 GENERAL ARRANGEMENT SHEET 2	2010-500-279D
3.	S278 SITE CLEARANCE SHEET 1	2010-500-280 B
4.	S278 SITE CLEARANCE SHEET 2	2010-500-281 B
5.	S278 KERB LAYOUT SHEET 1	2010-500-285 C
6.	S278 KERB LAYOUT SHEET 2	2010-500-286 C
7.	S278 SITE LOCATION PLAN)	2010-500-287 C
8.	S278 CONSTRUCTION DETAILS 1 OF 5	2010-500-290 A
9.	S278 CONSTRUCTION DETAILS 2 OF 5	2010-500-291 A
10.	S278 CONSTRUCTION DETAILS 3 OF 5	2010-500-292 B
11.	S278 CONSTRUCTION DETAILS 4 OF 5	2010-500-293 A
12.	S278 CONSTRUCTION DETAILS 5 OF 5	2010-500-294
13.	SETTING-OUT-CONTOURS-S278	2010-500-295C
14.	APPROVE STREET LIGHTING DRAWING	SI01/0001/S278STOWMRKDIAPERFARMJCTWORKS
15.	TRAFFIC SIGNALS	ITS/DIAPER/01
16.	APPENDIX 5-2 V3 2023	
17.	APPENDIX 12-5 2023 V3	
18.	GPR SURVEY	ITS/DIAPER/02



SECTION 278 DRAWING KEY

- S278 BOUNDARY
- DEVELOPERS SITE BOUNDARY
- HIGHWAY BOUNDARY
- VISIBILLITY SPLAY
- S278 ADOPTABLE CARRIAGEWAY - 330m²
- S278 ADOPTABLE FOOTWAY - 749m²
- S278 ADOPTABLE VERGE - 8.3m²
- SURFACE COURSE PLANE & INLAY - 934m²
- 68 PSV SURFACE COURSE 154m²
- CARRIAGEWAY WIDENING - 185m²
- EXISTING CYCLEWAY RESURFACING - 431m²
- HIGHWAY SURFACE WATER PIPE
- HIGHWAY CATCHPIT
- KERB OFFLET
- ROAD GULLY
- PROPOSED LEVEL
- PROPOSED GRADIENT
- BANKING MARKER
- EXISTING LEVEL
- TACTILE PAVING
- CORDUROY PAVING
- CYCLEWAY SIGN REF 956/965

GENERAL

1. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED. ANY DISCREPANCIES ARE TO BE RECORDED AND REPORTED TO THE ENGINEERS IMMEDIATELY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER ENGINEERS AND ARCHITECTS DRAWINGS AND THE SPECIFICATION.
3. ANY EXISTING DETAILS WHICH ARE SHOWN ON THIS DRAWING ARE FOR GUIDANCE ONLY AND ARE TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY VARIATIONS ARE TO BE RECORDED AND REPORTED TO THE ENGINEER IMMEDIATELY.
4. ALL WORK ARE TO BE TO THE SATISFACTION OF THE ENGINEER AND LOCAL AUTHORITY BUILDING CONTROL.
5. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE STABILITY OF THE WORKS AT ALL TIMES DURING CONSTRUCTION.
6. ALL WORKMANSHIP AND MATERIALS ARE TO BE TO CURRENT BRITISH STANDARDS.
7. ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.
8. ALL HIGHWAY WORKS ARE TO BE IN ACCORDANCE WITH THE LOCAL AUTHORITIES DESIGN GUIDE AND SPECIFICATION.
9. PRIOR TO THE OCCUPATION OF THE FIRST DWELLING, STREET NAMEPLATES SHALL BE ERECTED IN ACCORDANCE WITH THE HIGHWAY AUTHORITY AND TO THE WORDING AGREED WITH THE PLANNING AUTHORITY.
10. DURING CONSTRUCTION WORKS ON SITE, ALL ROADS AND FOOTPATHS ARE TO BE SWEPT AND KEPT CLEAR OF OBSTRUCTIONS. THIS IS TO INCLUDE EXISTING HIGHWAYS AS APPROPRIATE TO ENSURE SAFE PASSAGE OF ALL ROAD USERS.
11. PROVISION SHALL BE MADE FOR THE INSTALLATION OF ALL MAINS SERVICES INCLUDING DUCTING PRIOR TO THE LAYING OF THE ROAD BASE-COURSE.
12. ALL ROAD MARKINGS AND SIGNS ARE TO BE IN ACCORDANCE WITH 'THE TRAFFIC SIGNS REGULATIONS AND DIRECTIONS' 2016.
13. ALL ADOPTABLE SURFACE WATER SEWERS WITHIN ADOPTABLE HIGHWAYS ARE TO BE A MINIMUM OF 225MM.
14. NO TREES ARE TO BE PLANTED WITHIN 3M OF ANY ADOPTABLE SEWER AND TREE PITS/ROOT BARRIER ARE TO BE USED WHERE TREES ARE WITHIN 3-6M AS SPECIFIED BY THE WATER AUTHORITY.

FOR ALL STREET LIGHTING WORKS PLEASE REFER TO THE SUFFOLK COUNTY COUNCIL APPROVED STREET LIGHTING DESIGN DRAWING

EXISTING UTILITIES AFFECTED BY THE WORKS TO BE PROTECTED/MODIFIED IN ACCORDANCE WITH THE REQUIREMENTS AND APPROVAL OF THE RELEVANT STATUTORY AUTHORITIES. LOCATION OF EXISTING UNDERGROUND UTILITY SERVICES TO BE CONFIRMED.

REMOVAL OF EXISTING ROAD MARKINGS TO BE DONE SO BY METHODS TO THE SATISFACTION AND APPROVAL OF SUFFOLK COUNTY COUNCIL HIGHWAYS DEPT.

ALL VEGETATION AND CLEARANCE WORKS ARE TO BE IN ACCORDANCE WITH ECOLOGICAL AND ARBORICULTURAL REPORTS

CHECK ALL EXISTING ROAD SIGNS ARE SUITABLY SET BACK FROM ROAD EDGE AND/OR RAISED IN HEIGHT FOR PEDESTRIAN/CYCLIST MOVEMENTS.

FOR THE SIGNALS DESIGN, PLEASE REFER TO THE APPROVED SCC SIGNAL DESIGN DRAWINGS

Rev	Revision Notes	Dwn	Apvd	Date
D	CARRIAGEWAY SURFACING EXTENDED NORTH EAST TO INCLUDE NEW GULLY	JK	KK	07.03.24
C	SIGNALISED CROSSING AND MAINTENANCE PARKING BAY ADDED. LIGHTING DESIGN ADDED	JK	KK	22.01.24
B	UPDATED FOR SCC COMMENTS 23.08.23	KJK	KK	06.09.23
A	AZTEC WIDENED, 2m-2AC AND DETECTION ARROW MARKINGS ADDED, HIGH FRICTION TARMAC SHOWN, CORDUROY TACTILES ADDED	TS	JK	15.12.22

INGENT
CONSULTING ENGINEERS
Unit 1a Greenwood Court, Skylner Way, Bury St Edmunds, IP32 7GY.
Tel: 01284 245024 ---- www.ingent.co.uk ---- email: info@ingent.co.uk

TENDER

Project:
DIAPER FARM, STOWMARKET
SUFFOLK

Drawing Title:
SECTION 278 GENERAL ARRANGEMENT
SHEET 1

Client:			Date:
CREST NICHOLSON			OCT 2021
Drawn: JK	Designed: JK	Checked: KK	Approved: KK

Scale: 1:250 (5m 0m 5m 10m 15m)

Project No:	Drawing No & Revision:	Size:
2010-500	278D	A1

SECTION 278 DRAWING KEY

- S278 BOUNDARY
- DEVELOPERS SITE BOUNDARY
- HIGHWAY BOUNDARY
- VISIBILITY SPLAY
- S278 ADOPTABLE CARRIAGEWAY - 330m²
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- PROPOSED GRADIENT
- BANKING MARKER
- EXISTING LEVEL
- TACTILE PAVING
- CORDUROY PAVING
- CYCLEWAY SIGN REF 956/965

MINIMUM 3.2m x 1.5m HARDSTANDING AREA TO ACCOMMODATE 3 BAY 'SUFFOLK PITCHED' BUS SHELTER. FOUNDATIONS TO MANUFACTURERS SPEC. 76mm SIGN POST INSTALLED FOR BUS STOP SIGN (TO BE AGREED WITH SCC)

NEW BUS STOP LOCATION WITH ROAD MARKINGS AND BUS SHELTER

REFER TO SECTION 38

SCC MARKER POSTS TO BE INSTALLED ALONG HIGHWAY BOUNDARY (REFER TO DETAIL). TO BE AGREED WITH ON SITE SCC INSPECTOR

CHAMBER COVER TO BE AS DESCRIBED IN DMRB CD 534 – SKID RESISTANCE

4.5m x 90m VISIBILITY SPLAY

EMBANKMENT TO TIE INTO EXISTING LEVELS AS SHOWN

FOOTWAY/CYCLEWAY TO TIE INTO EXISTING

600mm SLAB REVETMENT DETAIL AT BACK OF MAINTENANCE PARKING BAY AND HARDSTANDING AREA FOR CONTROLLER CABINET – REFER TO DETAIL

PROPOSED VISIBILITY SPLAYS TO BE KEPT FREE FROM OBSTRUCTIONS OR PLANTING FROM 600mm ABOVE GROUND LEVEL. PROPOSED LANDSCAPING TO BE SET BACK 1m MINIMUM FROM VISIBILITY SPLAYS

EXISTING PEDESTRIAN REFUGE ISLAND TO REMAIN

EXISTING [illegible] TO BE REFRESHED AS SHOWN. EXTENT TO BE AGREED WITH SCC INSPECTOR

NEW BUS STOP MARKING, KERBING & 76mm SIGN POST INSTALLED FOR BUS STOP SIGN (TO BE AGREED WITH SCC)

1:40 CAMBER CONTINUED ALONG EXTENTS OF WIDENING

EXISTING KERB OFFLET TO BE AND GULLY INSTALLED EAST OF AS SHOWN. TO BE CONNECTED EXISTING SURFACE WATER NETW

EXISTING KERB OFFLET TO BE REMOVED AND REPLACED AS GULLY AT NEW CARRIAGEWAY CHANNEL. EXISTING CONNECTION TO BE MAINTAINED IF POSSIBLE

EXISTING KERB OFFLET TO BE REMOVED, AND RELOCATED AT NEW CARRIAGEWAY CHANNEL AS SHOWN WITH NEW CONNECTION TO EXISTING SURFACE WATER NETWORK

EXISTING GULLY TO BE REMOVED AND REPLACED AT NEW CARRIAGEWAY CHANNEL. EXISTING CONNECTION TO BE MAINTAINED IF POSSIBLE

68+ PSV SURFACING TO BE LAID FOR 50m AHEAD OF CROSSING AND THROUGH TO THE CROSSING STUDS

NEW TOUCAN CROSSING. REFER TO SCC SIGNALS DESIGN

EXISTING GULLY TO BE RELOCATED TO NEW CARRIAGEWAY CHANNEL, WITH EXISTING CONNECTION MAINTAINED

EXISTING BANK TO BE REGRADED

FOOTWAY WIDENED TO 3.5m TO CONTINUED SHARED USE CYCLEWAY, THEN TO TAPER DOWN TO 2.5m WHERE IT TERMINATES AT STARLING WAY

EXISTING LAMP COLUMN TO BE RELOCATED. PLEASE REFER TO SCC STREET LIGHTING DEISGN

EXISTING LAMP COLUMN TO BE RELOCATED. PLEASE REFER TO SCC STREET LIGHTING DEISGN

WIDENED CYCLEWAY TO CONNECT TO EXISTING DROPPED CROSSING AT STARLING WAY

EXISTING LAMP COLUMN TO BE RELOCATED. PLEASE REFER TO SCC STREET LIGHTING DEISGN

EXISTING STREET NAME PLATE AND GRIT BIN TO BE RELOCATED TO BACK OF NEW FOOTWAY.

LP3 LP4

Norton House

GENERAL

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6. ALL WORKMANSHIP AND MATERIALS ARE TO BE TO CURRENT BRITISH STANDARDS.
7. ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.
8. ALL HIGHWAY WORKS ARE TO BE IN ACCORDANCE WITH THE LOCAL AUTHORITIES DESIGN GUIDE AND SPECIFICATION.
9. PRIOR TO THE OCCUPATION OF THE FIRST DWELLING, STREET NAMEPLATES SHALL BE ERECTED IN ACCORDANCE WITH THE HIGHWAY AUTHORITY AND TO THE WORDING AGREED WITH THE PLANNING AUTHORITY.
10. DURING CONSTRUCTION WORKS ON SITE, ALL ROADS AND FOOTPATHS ARE TO BE SWEPT AND KEPT CLEAR OF OBSTRUCTIONS, THIS IS TO INCLUDE EXISTING HIGHWAYS AS APPROPRIATE TO ENSURE SAFE PASSAGE OF ALL ROAD USERS.
11. PROVISION SHALL BE MADE FOR THE INSTALLATION OF ALL MAINS SERVICES INCLUDING DUCTING PRIOR TO THE LAYING OF THE ROAD BASE–COURSE.
12. ALL ROAD MARKINGS AND SIGNS ARE TO BE IN ACCORDANCE WITH 'THE TRAFFIC SIGNS REGULATIONS AND DIRECTIONS' 2016.
13. ALL ADOPTABLE SURFACE WATER SEWERS WITHIN ADOPTABLE HIGHWAYS ARE TO BE A MINIMUM OF 225MM.
14. NO TREES ARE TO BE PLANTED WITHIN 3M OF ANY ADOPTABLE SEWER AND TREE PITS/ROOT BARRIER ARE TO BE USED WHERE TREES ARE WITHIN 3–6M AS SPECIFIED BY THE WATER AUTHORITY.

FOR ALL STREET LIGHTING WORKS PLEASE REFER TO THE SUFFOLK COUNTY COUNCIL APPROVED STREET LIGHTING DESIGN DRAWING

EXISTING UTILITIES AFFECTED BY THE WORKS TO BE PROTECTED/MODIFIED IN ACCORDANCE WITH THE REQUIREMENTS AND APPROVAL OF THE RELEVANT STATUTORY AUTHORITIES. LOCATION OF EXISTING UNDERGROUND UTILITY SERVICES TO BE CONFIRMED.

REMOVAL OF EXISTING ROAD MARKINGS TO BE DONE SO BY METHODS TO THE SATISFACTION AND APPROVAL OF SUFFOLK COUNTY COUNCIL HIGHWAYS DEPT.

ALL VEGETATION AND CLEARANCE WORKS ARE TO BE IN ACCORDANCE WITH ECOLOGICAL AND ARBORICULTURAL REPORTS

CHECK ALL EXISTING ROAD SIGNS ARE SUITABLY SET BACK FROM ROAD EDGE AND/OR RAISED IN HEIGHT FOR PEDESTRIAN/CYCLIST MOVEMENTS.

FOR THE SIGNALS DESIGN, PLEASE REFER TO THE APPROVED SCC SIGNAL DESIGN DRAWINGS

[redacted]

Rev.	Revision Notes	Dwn	Apvd	Date
D	FOOTWAY SURFACING EXTENDED SOUTH WEST OF LAYBY	JK	KK	07.03.24
C	SIGNALISED CROSSING AND MAINTENANCE PARKING BAY ADDED. LIGHTING DESIGN ADDED	JK	KK	22.01.24
B	UPDATED FOR SCC COMMENTS 23.08.23	K.K	KK	06.09.23
A	ACCESS WIDENED, 2m–2AC AND DETECTION ARROW MARKINGS ADDED, HIGH FRICTION TARMAC SHOWN, CORDUROY TACTILES ADDED	TS	JK	15.14.22

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TENDER

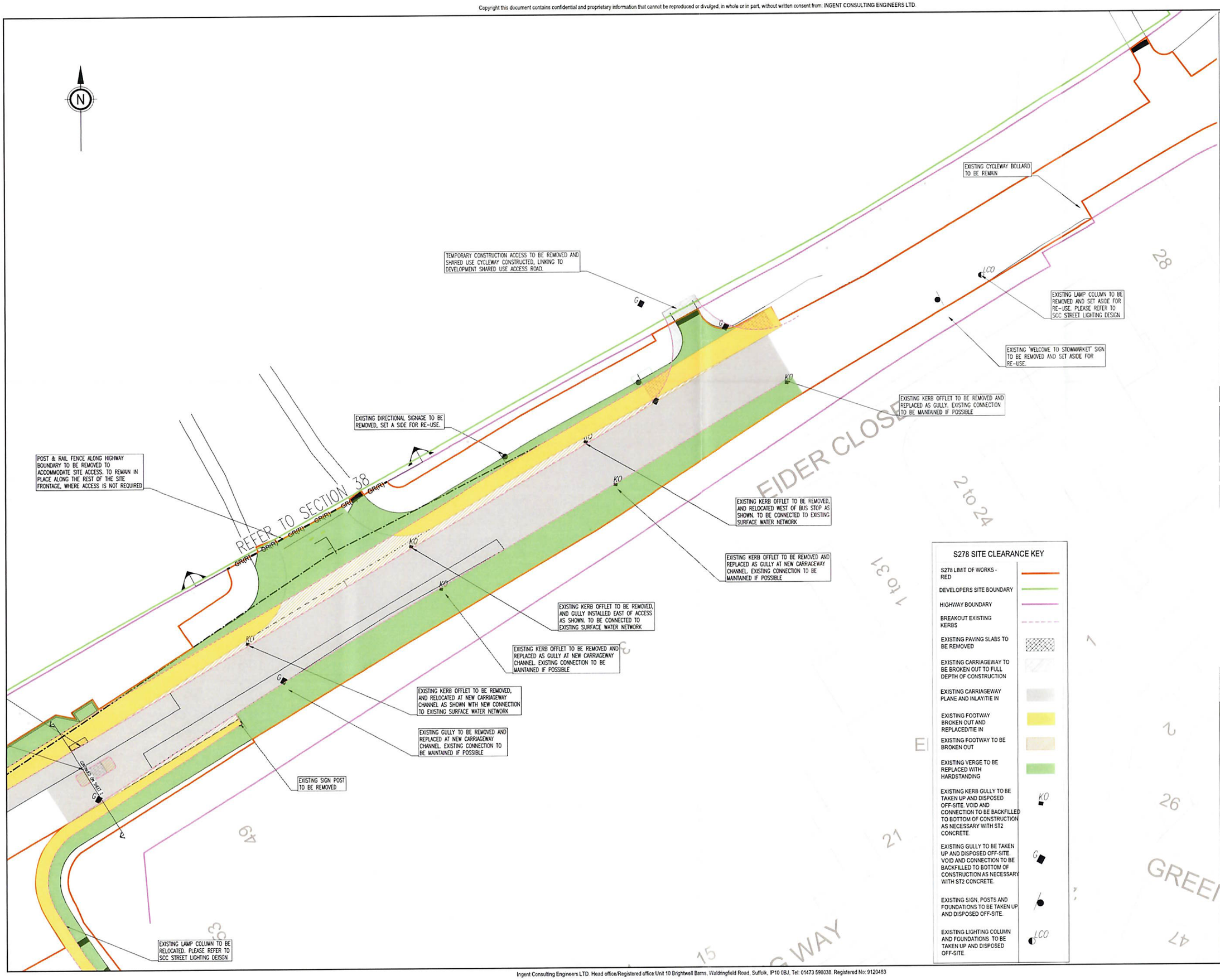
Project:
DIAPER FARM, STOWMARKET
SUFFOLK

Drawing Title:
SECTION 278 GENERAL ARRANGEMENT
SHEET 2

Client:			Date:
CREST NICHOLSON			OCT 2021
Drawn: JK	Designed: JK	Checked: KK	Approved: KK

Scale: 1:250 (5m 0m 5m 10m 15m)

Project No:	Drawing No & Revision:	Size:
2010-500	279D	A1



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6. ALL WORKMANSHIP AND MATERIALS ARE TO BE TO CURRENT BRITISH STANDARDS.

7. ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.

8. ALL HIGHWAY WORKS ARE TO BE IN ACCORDANCE WITH THE LOCAL AUTHORITIES DESIGN GUIDE AND SPECIFICATION.

9. PRIOR TO THE OCCUPATION OF THE FIRST DWELLING, STREET NAMEPLATES SHALL BE ERECTED IN ACCORDANCE WITH THE HIGHWAY AUTHORITY AND TO THE WORDING AGREED WITH THE PLANNING AUTHORITY.

10. DURING CONSTRUCTION WORKS ON SITE, ALL ROADS AND FOOTPATHS ARE TO BE SWEPT AND KEPT CLEAR OF OBSTRUCTIONS, THIS IS TO INCLUDE EXISTING HIGHWAYS AS APPROPRIATE TO ENSURE SAFE PASSAGE OF ALL ROAD USERS.

11. PROVISION SHALL BE MADE FOR THE INSTALLATION OF ALL MAINS SERVICES INCLUDING DUCTING PRIOR TO THE LAYING OF THE ROAD BASE-COURSE.

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13. ALL ADOPTABLE SURFACE WATER SEWERS WITHIN ADOPTABLE HIGHWAYS ARE TO BE A MINIMUM OF 225MM.

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FOR ALL STREET LIGHTING WORKS PLEASE REFER TO THE SUFFOLK COUNTY COUNCIL APPROVED STREET LIGHTING DESIGN DRAWING

EXISTING UTILITIES AFFECTED BY THE WORKS TO BE PROTECTED/MODIFIED IN ACCORDANCE WITH THE REQUIREMENTS AND APPROVAL OF THE RELEVANT STATUTORY AUTHORITIES. LOCATION OF EXISTING UNDERGROUND UTILITY SERVICES TO BE CONFIRMED.

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S278 SITE CLEARANCE KEY

- S278 LIMIT OF WORKS - RED
- DEVELOPERS SITE BOUNDARY
- HIGHWAY BOUNDARY
- BREAKOUT EXISTING KERBS
- EXISTING PAVING SLABS TO BE REMOVED
- EXISTING CARRIAGEWAY TO BE BROKEN OUT TO FULL DEPTH OF CONSTRUCTION
- EXISTING CARRIAGEWAY PLANE AND INLAY/TIE IN
- EXISTING FOOTWAY BROKEN OUT AND REPLACED/TIE IN
- EXISTING FOOTWAY TO BE BROKEN OUT
- EXISTING VERGE TO BE REPLACED WITH HARDSTANDING
- EXISTING KERB GULLY TO BE TAKEN UP AND DISPOSED OFF-SITE. VOID AND CONNECTION TO BE BACKFILLED TO BOTTOM OF CONSTRUCTION AS NECESSARY WITH ST2 CONCRETE. (KO)
- EXISTING GULLY TO BE TAKEN UP AND DISPOSED OFF-SITE. VOID AND CONNECTION TO BE BACKFILLED TO BOTTOM OF CONSTRUCTION AS NECESSARY WITH ST2 CONCRETE. (G)
- EXISTING SIGN, POSTS AND FOUNDATIONS TO BE TAKEN UP AND DISPOSED OFF-SITE.
- EXISTING LIGHTING COLUMN AND FOUNDATIONS TO BE TAKEN UP AND DISPOSED OFF-SITE. (LCO)

[redacted]

Rev	Revision Notes	Dwn	Apvd	Date
B	CARRIAGEWAY AND VERGE HATCHING EXTENDED NORTH EAST TO INCLUDE NEW GULLY	JK	KK	07.03.24
A	SITE CLEARANCE HATCHES AMENDED	JS	JK	09.02.24

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TENDER

Project:
DIAPER FARM, STOWMARKET
SUFFOLK

Drawing Title:
SECTION 278 SITE CLEARANCE
SHEET 1

Client:			Date:
CREST NICHOLSON			SEPT 2023
Drawn: KLK	Designed: KLK	Checked: KK	Approved: KK

Scale: 1:250 (5m 0m 5m 10m 15m)

Project No:	Drawing No & Revision:	Size:
2010-500	280B	A1

S278 SITE CLEARANCE KEY

- S278 LIMIT OF WORKS - RED
- DEVELOPERS SITE BOUNDARY
- HIGHWAY BOUNDARY
- BREAKOUT EXISTING KERBS
- EXISTING PAVING SLABS TO BE REMOVED
- EXISTING CARRIAGEWAY TO BE BROKEN OUT TO FULL DEPTH OF CONSTRUCTION
- EXISTING CARRIAGEWAY PLANE AND INLAY/TIE IN
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- EXISTING FOOTWAY TO BE BROKEN OUT
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- EXISTING GULLY TO BE TAKEN UP AND DISPOSED OFF-SITE. VOID AND CONNECTION TO BE BACKFILLED TO BOTTOM OF CONSTRUCTION AS NECESSARY WITH ST2 CONCRETE. — G
- EXISTING SIGN, POSTS AND FOUNDATIONS TO BE TAKEN UP AND DISPOSED OFF-SITE.
- EXISTING LIGHTING COLUMN AND FOUNDATIONS TO BE TAKEN UP AND DISPOSED OFF-SITE. — LCO

POST & RAIL FENCE ALONG HIGHWAY BOUNDARY TO BE REMOVED TO ACCOMMODATE SITE ACCESS. TO REMAIN IN PLACE ALONG THE REST OF THE SITE FRONTAGE, WHERE ACCESS IS NOT REQUIRED

EXISTING DIRECTIONAL SIGNAGE TO BE REMOVED, SET A SIDE FOR RE-USE.

REFER TO SECTION 38

GR(R)

EXISTING KERB OFFLET TO BE AND GULLY INSTALLED EAST OF AS SHOWN. TO BE CONNECTED EXISTING SURFACE WATER NETV

EXISTING KERB OFFLET TO BE REMOVED AND REPLACED AS GULLY AT NEW CARRIAGEWAY CHANNEL. EXISTING CONNECTION TO BE MAINTAINED IF POSSIBLE

EXISTING DROPPED KERBS TO BE REMOVED AND REPLACED WITH HB2 KERBS WITH 100mm KERB FACE. TACTILE PAVING TO BE REMOVED AND REPLACED WITH CYCLEWAY CONSTRUCTION

EXISTING PEDESTRIAN REFUGE ISLAND TO BE REMOVED AND REPLACED WITH CARRIAGEWAY CONSTRUCTION

EXISTING KERB OFFLET TO BE REMOVED, AND RELOCATED AT NEW CARRIAGEWAY CHANNEL AS SHOWN WITH NEW CONNECTION TO EXISTING SURFACE WATER NETWORK

EXISTING GULLY TO BE REMOVED AND REPLACED AT NEW CARRIAGEWAY CHANNEL. EXISTING CONNECTION TO BE MAINTAINED IF POSSIBLE

EXISTING SIGN POST TO BE REMOVED

4no. HAZARD MARKER BOLLARDS WITHIN EXISTING FOOTWAY TO BE REMOVED BETWEEN EXISTING LAMP COLUMN AND PROPOSED LAYBY (NOT SHOWN ON SURVEY)

CONTINUED ON SHEET 1

EXISTING PEDESTRIAN REFUGE ISLAND TO REMAIN

EXISTING LAMP COLUMN TO BE RELOCATED. PLEASE REFER TO SCC STREET LIGHTING DEISGN

EXISTING LAMP COLUMN TO BE RELOCATED. PLEASE REFER TO SCC STREET LIGHTING DEISGN

EXISTING STREET NAME PLATE AND CRIT BIN TO BE REMOVED AND SET ASIDE FOR REUSE.

Norton House

64 63 1 5 9 14

GENERAL

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Rev	Revision Notes	Dwn	Apvd	Date
B	BOLLARDS REMOVAL NOTE ADDED AND FOOTWAY EXTENDED, SOUTH WEST OF PROPOSED LAYBY.	JK	KK	07.03.24
A	SITE CLEARANCE HATCHES AMENDED	JS	JK	09.02.24

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TENDER

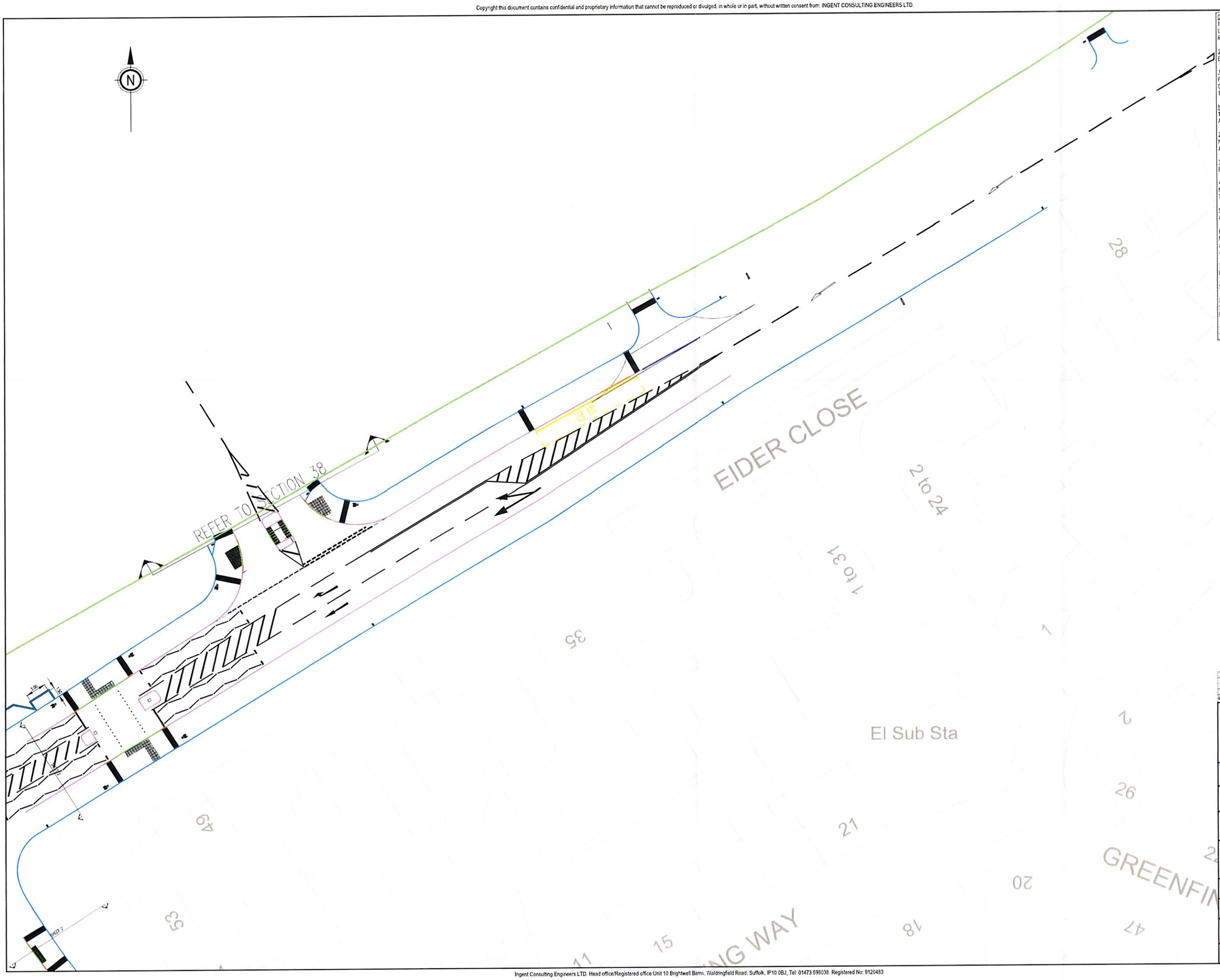
Project:
DIAPER FARM, STOWMARKET
SUFFOLK

Drawing Title:
SECTION 278 SITE CLEARANCE
SHEET 2

Client:			Date:
CREST NICHOLSON			SEPT 2023
Drawn: KLK	Designed: KLK	Checked: KK	Approved: KK

Scale: 1:250 (5m 0m 5m 10m 15m)

Project No:	Drawing No & Revision:	Size:
2010-500	281B	A1



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KERB KEY

HB2 KERB - 204m	
BULLNOSE KERB - 24m	
TRANSITION KERB - 8m	
CONCRETE EDGING - 376m	
BUS STOP (REFER TO CONSTRUCTION DETAILS) - 10m	
DUTCH KERB (REFER TO CONSTRUCTION DETAILS) - 10m	
PAVING SLAB REVETMENT (REFER TO CONSTRUCTION DETAILS) - 23.2m	

TOTAL MEASUREMENTS FOR S278 SHOWN (SHEET 1 & 2 COMBINED)

[redacted]

Rev.	Revision Notes	Dwn	Apvd	Date
C	MAINTENANCE BAY AND SLAB REVETMENT ADDED	JK	KK	12.02.24
B	UPDATED FOR SCC COMMENTS 23.01.23	KJK	KK	06.09.23
A	UPDATED IN LINE WITH GENERAL ARRANGEMENT	TS	JK	15.12.22

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TENDER

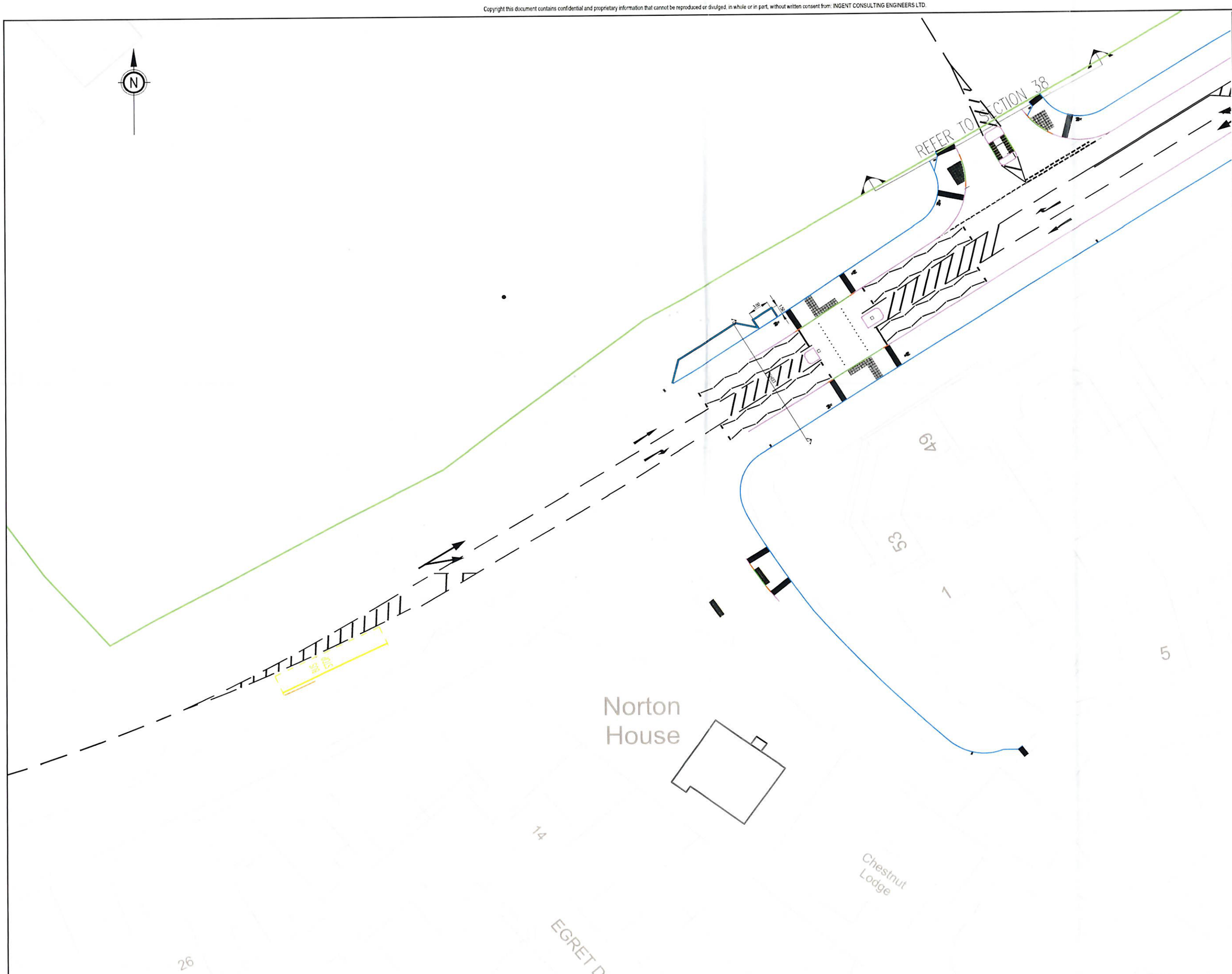
Project:
DIAPER FARM, STOWMARKET
SUFFOLK

Drawing Title:
SECTION 278 ACCESS
KERB LAYOUT
SHEET 1

Client:			Date:
CREST NICHOLSON			OCT 2021
Drawn: JK	Designed: JK	Checked: KK	Approved: KK

Scale: 1:250 (5m 0m 5m 10m 15m)

Project No:	Drawing No & Revision:	Size:
2010-500	285C	A1



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BULLNOSE KERB - 24m	
TRANSITION KERB - 8m	
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TOTAL MEASUREMENTS FOR S278 SHOWN (SHEET 1 & 2 COMBINED)

[redacted]

Rev	Revision Notes	Dwn	Apvd	Date
C	MAINTENANCE BAY AND SLAB REVETMENT ADDED	JK	KK	12.02.24
B	UPDATED FOR SCC COMMENTS 23.08.23	KJK	KK	06.09.23
A	UPDATED IN LINE WITH GENERAL ARRANGEMENT	TS	JK	15.12.22

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TENDER

Project:
DIAPER FARM, STOWMARKET
SUFFOLK

Drawing Title:
SECTION 278 ACCESS
KERB LAYOUT
SHEET 2

Client:			Date:
CREST NICHOLSON			OCT 2021
Drawn: JK	Designed: JK	Checked: KK	Approved: KK

Scale: 1:250 (5m 0m 5m 10m 15m)

Project No:	Drawing No & Revision:	Size:
2010-500	286C	A1

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DRAWING KEY

S278 BOUNDARY	
DEVELOPERS SITE BOUNDARY	

[redacted]

Rev	Revision Notes	Dwn	Apvd	Date
C	UPDATED S278 BOUNDARY TO REVISED DESIGN	JK	KK	07.03.24
B	UPDATED S278 BOUNDARY	JK	KK	12.02.24
A	UPDATED FOR SCC COMMENTS 23.08.23	KJK	KK	06.09.23

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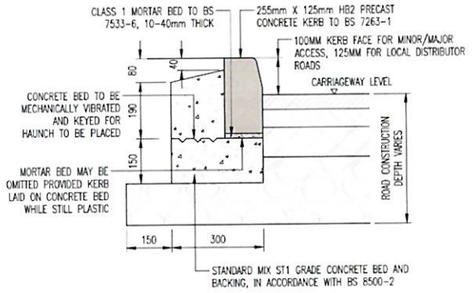
PRELIMINARY

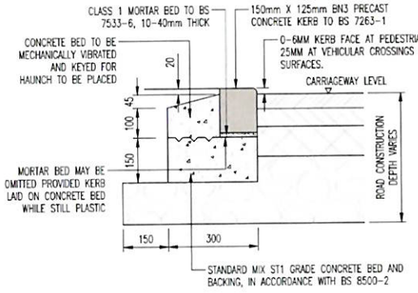
Project:
DIAPER FARM, STOWMARKET
SUFFOLK

Drawing Title:
SECTION 278 SITE LOCATION PLAN

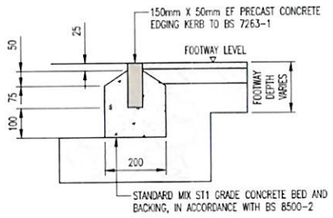
Client:			Date:
CREST NICHOLSON			NOV 2021
Drawn: JK	Designed: JK	Checked: KK	Approved: KK
Scale: 1:1250			
Project No: 2010-500	Drawing No & Revision: 287C		Size: A1



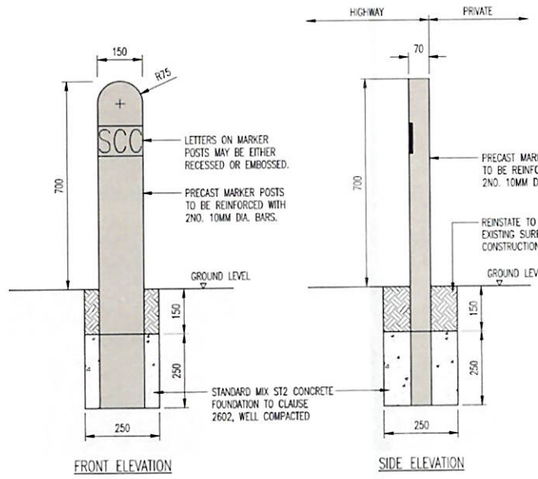
HALF-BATTERED KERB (HB2) DETAIL
SCALE 1:10



BULL-NOSE KERB (BN3) DETAIL
SCALE 1:10



EDGING KERB (EF) DETAIL
SCALE 1:10



PRECAST CONCRETE BOUNDARY MARKER POST
SCALE 1:10

REMOVAL OF EXISTING ROAD MARKINGS TO BE DONE SO BY METHODS TO THE SATISFACTION AND APPROVAL OF SUFFOLK COUNTY COUNCIL HIGHWAYS DEPT.

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EXISTING UTILITIES AFFECTED BY THE WORKS TO BE PROTECTED/MODIFIED IN ACCORDANCE WITH THE REQUIREMENTS AND APPROVAL OF THE RELEVANT STATUTORY AUTHORITIES. LOCATION OF EXISTING UNDERGROUND UTILITY SERVICES TO BE CONFIRMED.

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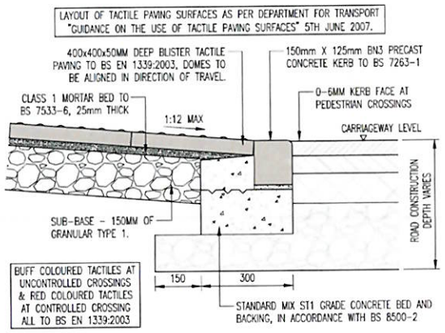
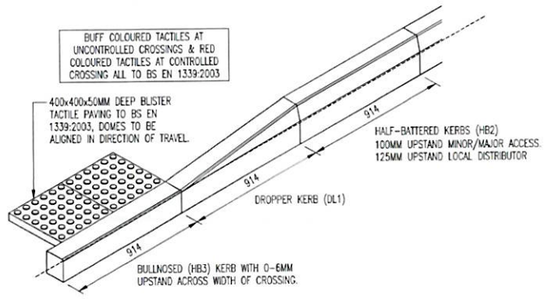
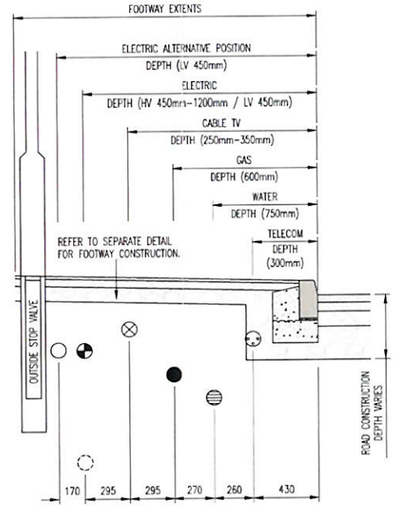


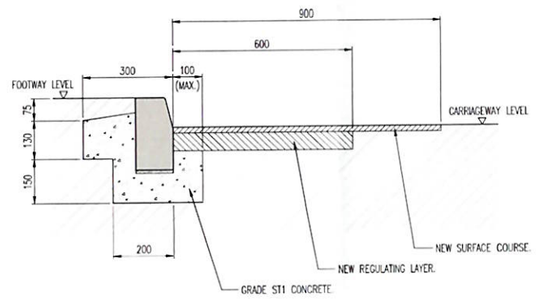
TYPICAL SECTION THROUGH PEDESTRIAN CROSSING
SCALE 1:20



ISOMETRIC VIEW ON PEDESTRIAN CROSSING
SCALE 1:20

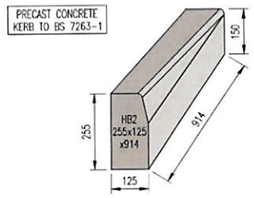


ADOPTABLE SERVICE MARGIN (NJUG)
SCALE 1:20

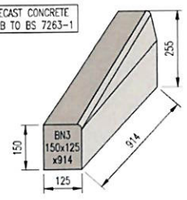


NOTES:
1. JOINT SEALING CUT-BACK TO BE DONE AFTER LAYING OF SUB BASE AND CONCRETE MIX (MECHANICALLY VIBRATED).
2. A CHASE SHALL BE PROVIDED TO GIVE EITHER 100mm DEPTH OF CONCRETE OR 10-25mm CLASS 1 MORTAR BED. THE BED IS TO BE LAID ON EXISTING CARRIAGEWAY WITH CHASE DEPTH OF 40mm MINIMUM.
3. EXISTING SURFACE COURSE TO BE PLANED OUT TO ALLOW MINIMUM 40mm NEW SURFACE COURSE.
4. MAXIMUM THICKNESS OF MORTAR JOINTS TO BE 12mm.
5. HALF-BATTERED KERB SHOWN, DETAIL SIMILAR FOR OTHER KERB TYPES (E.G. BULLNOSED).

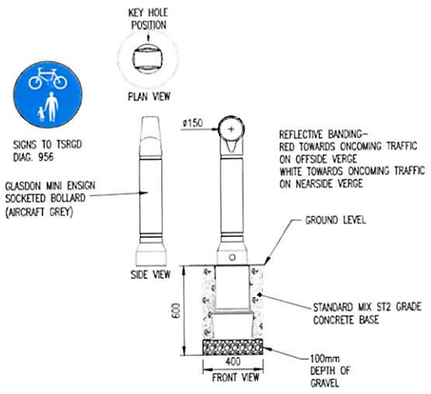
NEW KERB KEYED INTO EXISTING CARRIAGEWAY
SCALE 1:10



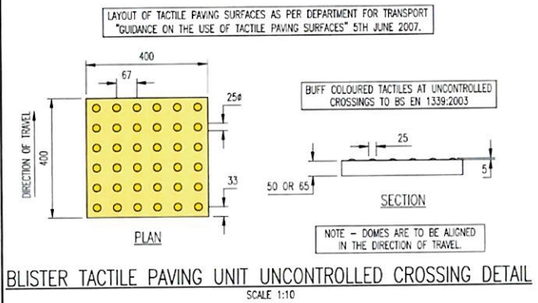
DROPPER KERB (DL1) LEFT
SCALE 1:10



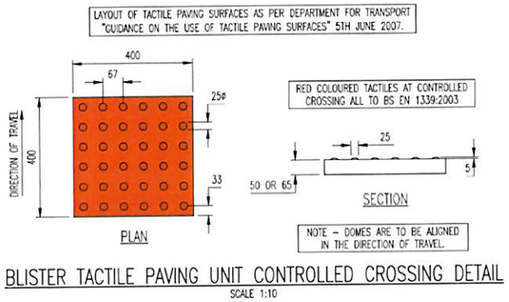
DROPPER KERB (DR1) RIGHT
SCALE 1:10



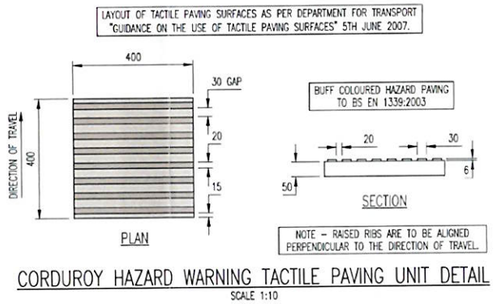
CYCLEPATH BOLLARD
GLASDON MINI-ENSIGN SOCKETED BOLLARD (AIRCRAFT GREY) DETAIL
SCALE 1:20



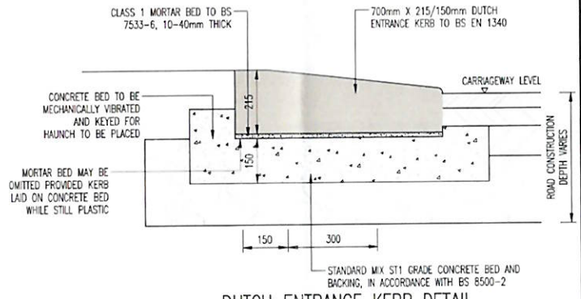
BLISTER TACTILE PAVING UNIT UNCONTROLLED CROSSING DETAIL
SCALE 1:10



BLISTER TACTILE PAVING UNIT CONTROLLED CROSSING DETAIL
SCALE 1:10



CORDUROY HAZARD WARNING TACTILE PAVING UNIT DETAIL
SCALE 1:10



DUTCH ENTRANCE KERB DETAIL
SCALE 1:10

Rev	Revision Notes	Dwn	Apvd	Date
A	UPDATED FOR SCC COMMENTS 23.08.23	KJK	KK	06.09.23

INGENT CONSULTING ENGINEERS
Unit 1a Greenwood Court, Skyliner Way, Bury St Edmunds, IP32 7GY.
Tel: 01284 245024 — www.ingent.co.uk — email: info@ingent.co.uk

smas worksafe consultant SSIP CQMS Safety Scheme
www.smasltd.com

TENDER

Project:
DIAPER FARM, STOWMARKET
SUFFOLK

Drawing Title:
SECTION 278 CONSTRUCTION DETAILS
SHEET 1 OF 5

Client:		Date:
CREST NICHOLSON		OCT 2021
Drawn: KK	Designed: KK	Checked: RGW	Approved: RGW
Scale: As Shown		
Project No: 2010-500	Drawing No & Revision: 290A	Size: A1

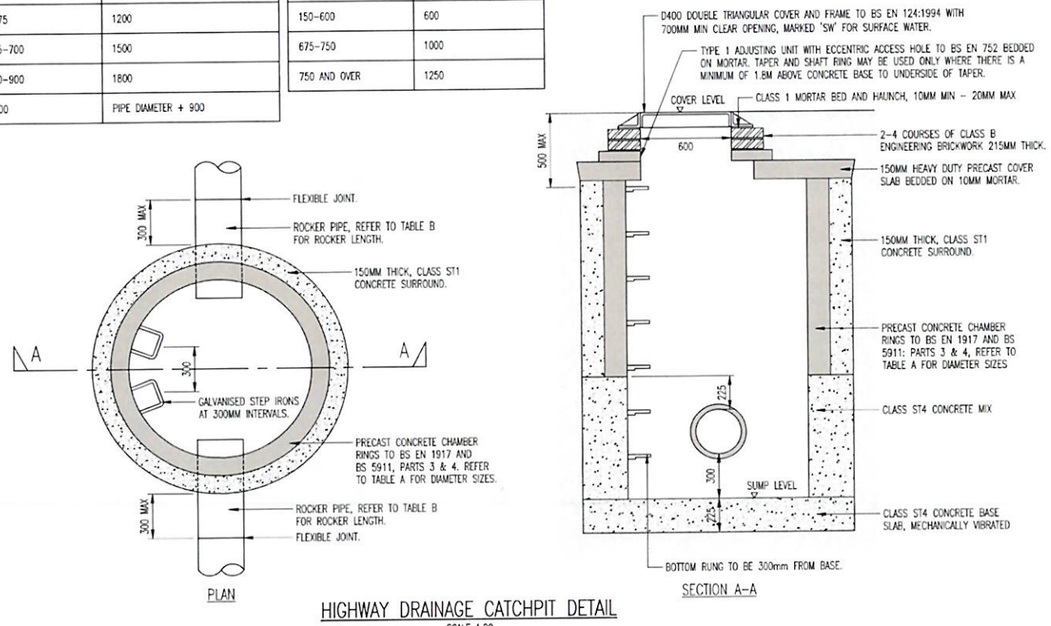
TABLE A

PIPE IN MANHOLE (MM)	CHAMBER SECTION DIAMETER (MM)
<375	1200
375–700	1500
700–900	1800
>900	PIPE DIAMETER + 900

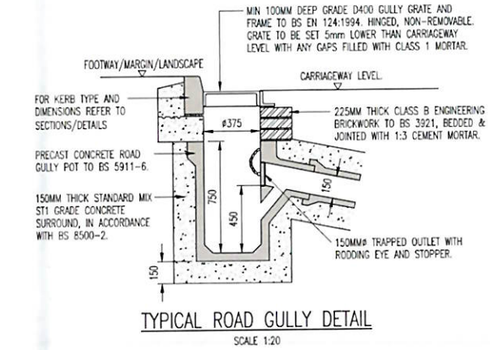
TABLE B

PIPE IDIAMETER (MM)	ROCKER PIPE LENGTH (MM)
150–600	600
675–750	1000
750 AND OVER	1250

MANHOLE COVERS WITHIN CARRIAGEWAY TO BE IN ACCORDANCE WITH DMRB CD 534 WITH RESPECT TO SKIDDING RESISTANCE



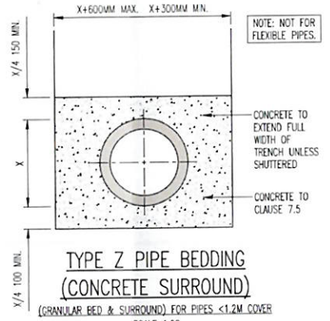
HIGHWAY DRAINAGE CATCHPIT DETAIL
SCALE 1:20



TYPICAL ROAD GULLY DETAIL
SCALE 1:20

GULLY NOTES
1. GULLY GRATING AND FRAME TO BS EN124. REFER TO SCC SPECIFICATION FOR ESTATE ROADS CLAUSE 7.13.4
2. GULLY FRAME TO BE SET ON 10–20MM THICK CLASS 1 CEMENT MORTAR BED TO CLAUSE 2404 (MCHW VOLUME 1).
3. BRICKWORK – MIN. ONE AND NOT MORE THAN THREE COURSES OF CLASS B ENGINEERING BRICKWORK LAID SQUARE. CHANGE IN PROFILE FROM SQUARE TO CIRCULAR TO BE SHAPED IN CLASS 1 MORTAR.
4. WHERE THE GULLY CONNECTION PIPE PASSES UNDER THE CARRIAGEWAY THE INVERT OF THE PIPE AT THE OUTLET SHALL BE SET AT LEAST 175MM BELOW FORMATION LEVEL. THE INVERT SHALL BE AT LEAST 315MM BELOW THE TOP OF THE SUB–BASE.
5. NOTES 3 & 4. WHERE THE TOTAL ROAD CONSTRUCTION DEPTH EXCEEDS 450MM AND THE GULLY CONNECTION PIPE PASSES UNDER THE CARRIAGEWAY UP TO 5 COURSE OF BRICKWORK ARE PERMITTED.

NOTES:
1. 20MM THICK FLEXCELL, OR SIMILAR APPROVED FILLER TO BE USED TO FORM A FLEXIBLE JOINT TO THE CONCRETE SURROUND AT THE LEADING EDGE OF A SLEEVED COUPLING. DIMENSIONS SHOWN ARE IRRESPECTIVE OF TYPE OR DIAMETER OF PIPE. THE SURROUNDS MUST TERMINATE AT A PIPE JOINT.
2. IF PIPES ARE SURROUNDED IN CONCRETE, THE JOINTS ARE TO BE PROTECTED FROM THE THE INGRESS OF CONCRETE BY WRAPPING THEM IN POLYTHENE SHEET OR BUILDING PAPER.



TYPE Z PIPE BEDDING (CONCRETE SURROUND)
(GRANULAR BED & SURROUND) FOR PIPES <1.2M COVER
SCALE 1:20

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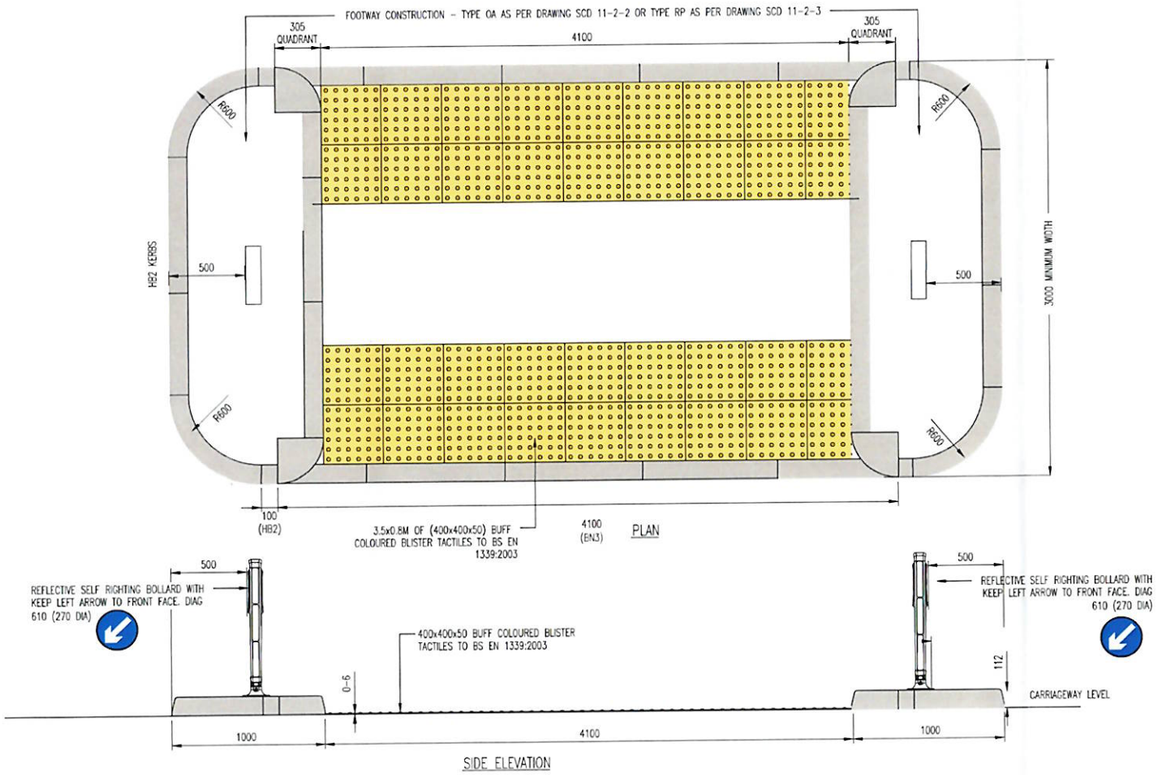
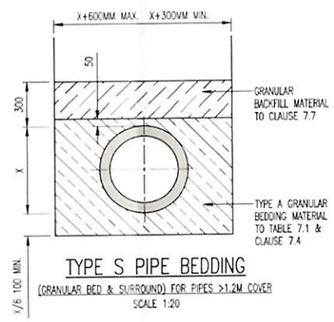


UNCONTROLLED PEDESTRIAN REFUSE ISLAND DETAIL
SCALE 1:20

TABLE 7.1

PIPE DIAMETER (mm)	SINGLE SIZED AGGREGATE (mm) TO BS: 882
LESS THAN 150mm	10
INCLUDING 150mm UP TO 300mm	10 OR 14
INCLUDING 300mm UP TO 525mm	14 OR 20
INCLUDING 525mm AND ABOVE	14, 20 OR 40



TYPE S PIPE BEDDING
(GRANULAR BED & SURROUND) FOR PIPES >1.2M COVER
SCALE 1:20

[redacted]

Rev	Revision Notes	Dwn	Apvd	Date
A	UPDATED FOR SCC COMMENTS 23.08.23	KJK	KK	06.09.23

INGENT
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worksafe consultant www.smas.co.uk | SSIP | CQMS Safety Scheme

TENDER

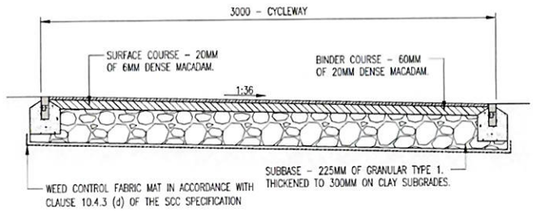
Project:
DIAPER FARM, STOWMARKET
SUFFOLK

Drawing Title:
SECTION 278 CONSTRUCTION DETAILS
SHEET 2 OF 5

Client:			Date:
CREST NICHOLSON			OCT 2021
Drawn: KK	Designed: KK	Checked: RGW	Approved: RGW

Scale:
As Shown

Project No:	Drawing No & Revision:	Size:
2010-500	291A	A1



SECTION THROUGH INDEPENDENT CYCLEWAY
SCALE 1:20

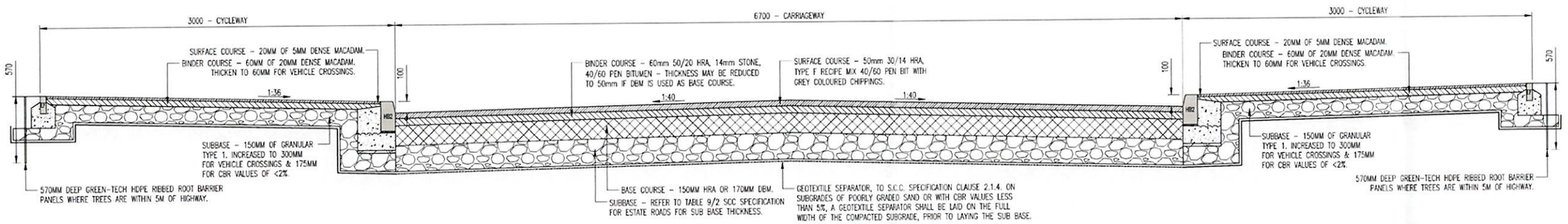
DMRB - CD109 TABLE 2.16 DESIGN SPEED RELATED PARAMETERS (CLASS A & B ROADS)

85TH PERCENTILE SPEED (MPH)	31	37	43	53	62	75
SPEED LIMIT (MPH)		30	40	50	60	70
X DISTANCE	4.5	4.5	4.5	4.5	4.5	4.5
DESIRED MINIMUM SSD (METERS)	70	90	120	160	215	295
ONE STEP BELOW MINIMUM	50	70	90	120	160	215

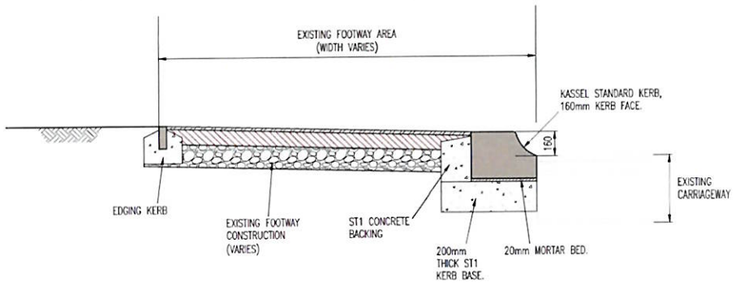
TABLE 9.2 DEPTH OF PAVEMENT COURSES
SUFFOLK COUNTY COUNCIL SPECIFICATION FOR ESTATE ROADS

TYPE OF ROAD	DEPTH OF SUB BASE FOR CBR VALUES (mm)					BASE COURSE DEPTH (mm)		SURFACING DEPTH (mm)	
	<2%	2%	3%	4%	5%>	HRA/DBM	LEAN CONC.	BINDER COURSE	SURFACE COURSE
LOCAL DISTRIBUTOR ROAD	SEE NOTE 3	500	380	300	225	---- 150 HRA 170 DBM	180 ---- ----	70 HRA 50 HRA 50 HRA	50 HRA 50 HRA 50 HRA

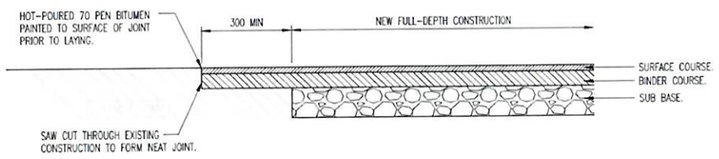
NOTES:
1. WHERE THE SUBGRADE IS FROST SUSCEPTIBLE, THE SUB-BASE DEPTH SHALL BE INCREASED TO PROVIDE A MINIMUM CONSTRUCTION DEPTH OF 450MM.
2. SUBGRADES OF POORLY GRADED SAND OR WITH CBR <5%, A GEOTEXTILE SEPARATOR SHALL BE LAID ON THE FULL WIDTH OF THE COMPACTED SUBGRADE PRIOR TO SPREADING THE SUB-BASE. CLAUSE.2.1.4
3. WHERE CBR VALUES ARE <2%, SPECIAL MEASURES WILL APPLY, ANY AREAS FOUND TO BE LESS THAN 2% THE ENGINEER MUST BE CONSULTED. CLAUSE.2.1.3
4. FOR CONCRETE BASE COURSE TO BE CONSTRUCTED LEAN CONCRETE MUST BE A CONTINUOUS OPERATION AND SHALL BE IN EXCESS OF 200m IN LENGTH OF FULL WIDTH CARRIAGEWAY. CLAUSE.9.5.1.
5. BASE COURSE LAYER IS REQUIRED TO BE INCREASED BY 20mm IN DESIGN THICKNESS TO ALLOW FOR ON-SITE CONSTRUCTION TRAFFIC. CLAUSE.8.3.3
6. ALL WORKS ARE TO BE TO THE SUFFOLK COUNTY COUNCIL "SPECIFICATION FOR ESTATE ROADS" MAY 2007.



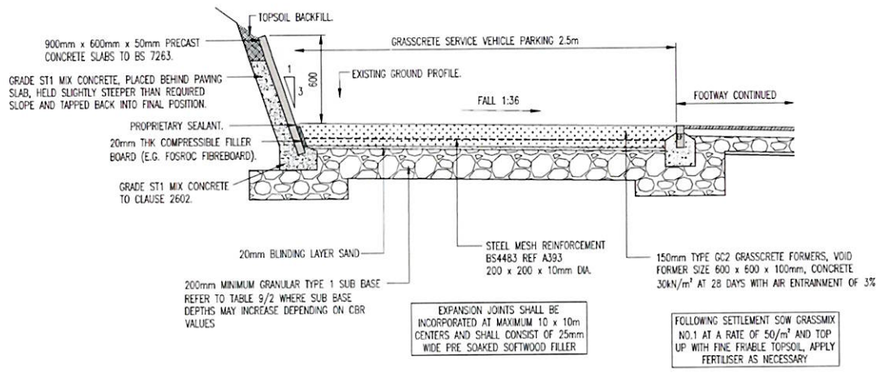
TYPICAL SECTION THROUGH FLEXIBLE LOCAL DISTRIBUTOR ROAD (CAMBER)
SCALE 1:20



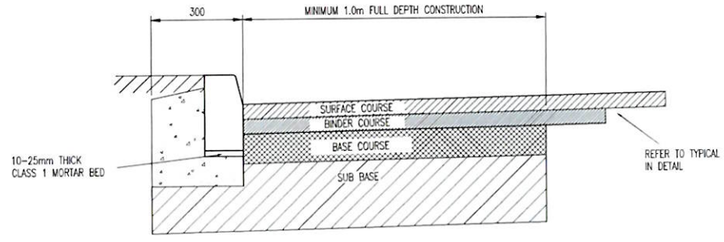
BUS STOP KERB DETAIL
SCALE 1:20



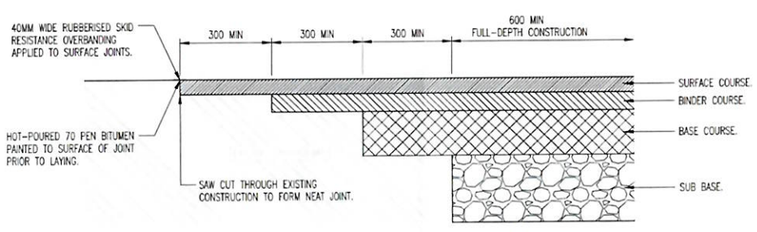
TYPICAL TIE-IN DETAIL TO EXISTING FOOTWAY CONSTRUCTION
SCALE 1:10



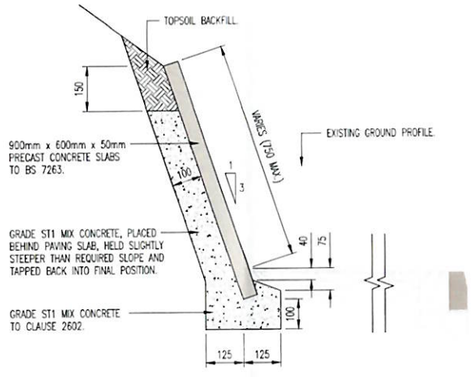
TYPICAL SECTION THROUGH GRASSCRETE MAINTENANCE VEHICLE PARKING AREA
SCALE 1:20



B1115 (STOWUPLAND ROAD) ROAD WIDENING
SCALE 1:10



TYPICAL CARRIAGEWAY TIE-IN TO EXISTING CARRIAGEWAY DETAIL
SCALE 1:10



PAVING SLAB REVETMENT DETAIL
SCALE 1:10

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FOR ALL STREET LIGHTING WORKS PLEASE REFER TO THE SUFFOLK COUNTY COUNCIL APPROVED STREET LIGHTING DESIGN DRAWING

EXISTING UTILITIES AFFECTED BY THE WORKS TO BE PROTECTED/MODIFIED IN ACCORDANCE WITH THE REQUIREMENTS AND APPROVAL OF THE RELEVANT STATUTORY AUTHORITIES. LOCATION OF EXISTING UNDERGROUND UTILITY SERVICES TO BE CONFIRMED.

CHECK ALL EXISTING ROAD SIGNS ARE SUITABLY SET BACK FROM ROAD EDGE AND/OR RAISED IN HEIGHT FOR PEDESTRIAN/CYCLIST MOVEMENTS.

NOTES
1. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. ANY DISCREPANCIES ARE TO BE RECORDED AND REPORTED TO THE ENGINEERS IMMEDIATELY.

2. THE SPECIFICATION FOR ALL HIGHWAY WORKS IS THE "MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOLUME 1, SPECIFICATION FOR HIGHWAY WORKS" - HIGHWAYS AGENCY, MARCH 1998.

3. ALL PRECAST CONCRETE KERBS AND EDGINGS TO BE LAID AND BEDDED IN ACCORDANCE WITH BS 7533, PART 4 ON A MIX ST1 CONCRETE FOUNDATION WHILE IT IS STILL PLASTIC OR AFTER IT HAS SET.

4. ALL PRECAST UNITS TO BE HAUNCHED WITH MIX ST1 CONCRETE.

5. ALL PRECAST KERBS LAID TO SMOOTH HORIZONTAL AND VERTICAL ALIGNMENTS - ALIGNMENT SHALL NOT DEVIATE BY MORE THAN 3MM IN 3M FROM LINE AND LEVEL.

6. FOR CURVES OF RADIUS 12M OR LESS PRECAST KERBS OF APPROPRIATE RADIUS SHALL BE USED.

7. MANUFACTURE OF KERBS, EDGINGS AND PAVING TO BE IN ACCORDANCE WITH BS EN 1339; 2003.

8. COMPACTION OF BITUMINOUS MATERIALS IS TO BE IN ACCORDANCE WITH CLAUSE 901.

9. THICKNESSES OF SUB-BASE AND THE REQUIREMENT FOR A CAPPING LAYER SHALL BE DETERMINED BY ON SITE CBR TESTING.

11. NO PRIVATE SURFACE WATER TO DISCHARGE TO ADOPTABLE HIGHWAY AND NO HIGHWAY SURFACE WATER TO DISCHARGE TO PRIVATE.

12. ALL MANHOLE COVERS AND FRAMES SHOULD COMPLY WITH THE REQUIREMENTS OF BS 7903:1997, BS EN 124 AND HA 104/09. FRAMES SHOULD BE A MINIMUM OF 100MM DEEP.

Rev	Revision Notes	Dwn	Apvd	Date
B	GRASSCRETE MAINTENANCE BAY DETAILS ADDED	JK	KK	22.01.24
A	UPDATED FOR SCC COMMENTS 23.08.23	KJK	KK	04.09.23

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Tel: 01284 245024 — www.ingent.co.uk — email: info@ingent.co.uk

smas worksafe consultant SSIP CQMS Safety Scheme
www.smasltd.com

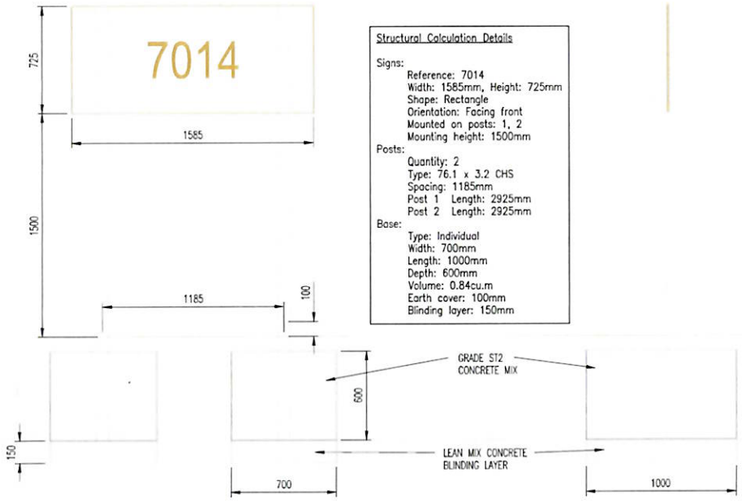
TENDER

Project:
DIAPER FARM, STOWMARKET
SUFFOLK

Drawing Title:
SECTION 278 CONSTRUCTION DETAILS
SHEET 3 OF 5

Client:			Date:
CREST NICHOLSON			OCT 2021
Drawn: KK	Designed: KK	Checked: RGW	Approved: RGW
Scale: As Shown			
Project No: 2010-500	Drawing No & Revision: 292B		Size: A1

Signing Project	DIAPER FARM, STOWMARKET				
Sign Reference	7014	Width (mm)	1585	Background	Red
x Height	100.0	Height (mm)	725	Border	White
Material	Class RA2	Area (sq.m)	1.15	Legend	White



Structural Calculation Details

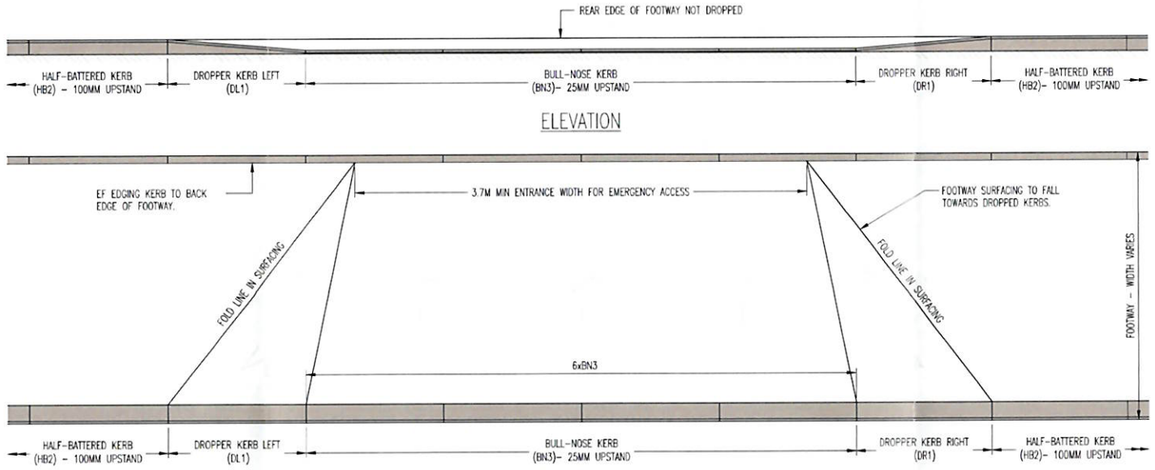
Signs:
- Reference: 7014
- Width: 1585mm, Height: 725mm
- Shape: Rectangle
- Orientation: Facing front
- Mounted on posts: 1, 2
- Mounting height: 1500mm

Posts:
- Quantity: 2
- Type: 76.1 x 3.2 CHS
- Spacing: 1185mm
- Post 1 Length: 2925mm
- Post 2 Length: 2925mm

Base:
- Type: Individual
- Width: 700mm
- Length: 1000mm
- Depth: 600mm
- Volume: 0.84cu.m
- Earth cover: 100mm
- Blinding layer: 150mm

TEMPORARY SIGN POSITIONED IN VERGE FOR 3 MONTHS FROM COMPLETION

SCALE 1:20

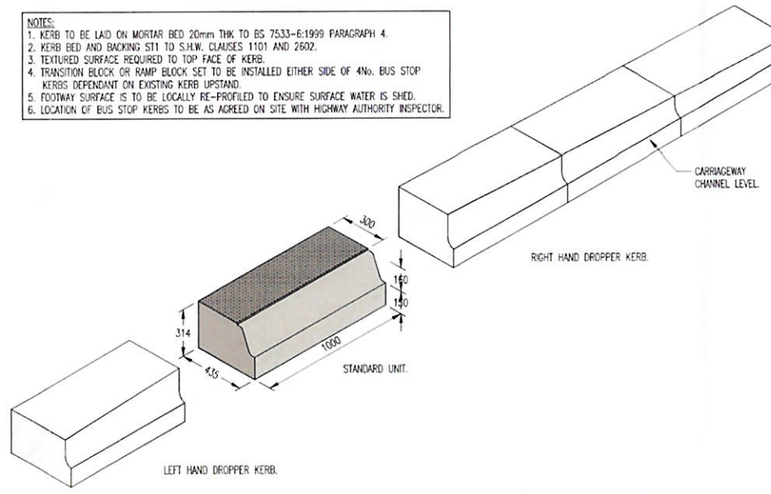


EMERGENCY ACCESS CROSSOVER DETAIL

SCALE 1:20

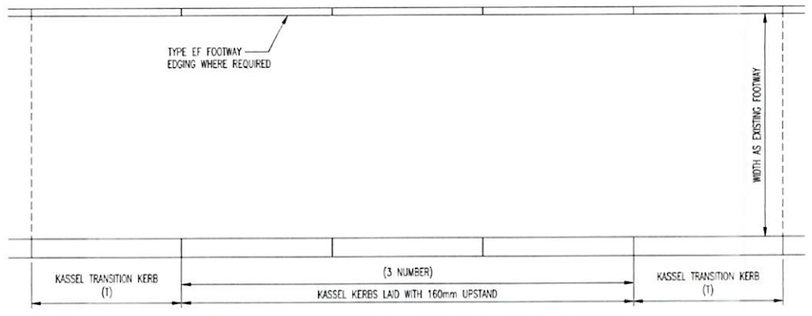
NOTE:
WHERE LONGDITUDIAL ROAD GRADIENT RESULT IN EXCESSIVE CROSSFALLS, BACK EDGE OF KERB MAY BE DROPPED BY 75MM TO MAINTAIN 1IN36 CROSSFALL.

NOTES:
1. KERB TO BE LAID ON MORTAR BED 20mm THK TO BS 7533-6:1999 PARAGRAPH 4.
2. KERB BED AND BACKING ST1 TO S.H.W. CLAUSES 1101 AND 2602.
3. TEXTURED SURFACE REQUIRED TO TOP FACE OF KERB.
4. TRANSITION BLOCK OR RAMP BLOCK SET TO BE INSTALLED EITHER SIDE OF 4No. BUS STOP KERBS DEPENDANT ON EXISTING KERB UPSTAND.
5. FOOTWAY SURFACE IS TO BE LOCALLY RE-PROFILED TO ENSURE SURFACE WATER IS SHED.
6. LOCATION OF BUS STOP KERBS TO BE AS AGREED ON SITE WITH HIGHWAY AUTHORITY INSPECTOR.



ISOMETRIC VIEW ON BUS STOP KERBS & 'KESSEL' 160MM KERB DETAIL

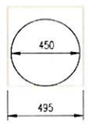
SCALE 1:20



PLAN ON TYPICAL BUS STOP KERB ARRANGEMENT

SCALE 1:20

NOTE:
300mm DIAMETER SIGNS TO REFERENCE 956 TO BE USED BACK TO BACK AT REPEATER SIGN LOCATIONS



Signing Project	DIAPER FARM, STOWMARKET				
Sign Reference	956	Width (mm)	450	Background	White
x Height	78.26	Height (mm)	450	Border	Blue
Material	Class Ref 1	Area (sq.m)	0.16	Legend	Black

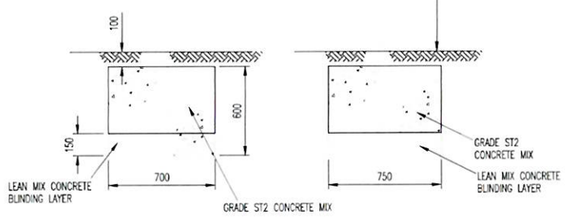
Signing Project	DIAPER FARM, STOWMARKET				
Sign Reference	965	Width (mm)	495	Background	Blue
x Height	50.0	Height (mm)	535	Border	White
Material	Class Ref 1	Area (m²)	0.26	Legend	White

Structural Calculation Details

Signs:
- Reference: 956
- Width: 450mm, Height: 450mm
- Shape: Roundel
- Orientation: Facing back
- Mounted on posts: 1
- Mounting height: 2300mm

Posts:
- Quantity: 1
- Type: 76.1 x 3.2 CHS
- Spacing: N/A
- Post 1 (WBP) Length: 3387mm

Base:
- Type: Combined
- Width: 700mm
- Length: 750mm
- Depth: 600mm
- Volume: 0.32cu.m
- Earth cover: 100mm
- Blinding layer: 150mm



DIAG. 956/965 SIGN AND POST DETAILS

SCALE 1:20

REMOVAL OF EXISTING ROAD MARKINGS TO BE DONE SO BY METHODS TO THE SATISFACTION AND APPROVAL OF SUFFOLK COUNTY COUNCIL HIGHWAYS DEPT.

NOTE:
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EXISTING UTILITIES AFFECTED BY THE WORKS TO BE PROTECTED/MODIFIED IN ACCORDANCE WITH THE REQUIREMENTS AND APPROVAL OF THE RELEVANT STATUTORY AUTHORITIES. LOCATION OF EXISTING UNDERGROUND UTILITY SERVICES TO BE CONFIRMED.

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[redacted]

Rev.	Revision Notes	Dwn	Apvd	Date
A	UPDATED FOR SCC COMMENTS 23.08.23	K.K	KK	06.09.23

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smas worksafe consultant www.smasltd.com SSIP CQMS Safety Scheme

TENDER

Project:
DIAPER FARM, STOWMARKET
SUFFOLK

Drawing Title:
SECTION 278 CONSTRUCTION DETAILS
SHEET 4 OF 5

Client:			Date:
CREST NICHOLSON			OCT 2021
Drawn: KK	Designed: KK	Checked: RGW	Approved: RGW

Scale:
As Shown

Project No:	Drawing No & Revision:	Size:
2010-500	293A	A1

PRODUCT TYPE:

3-Bay Enclosed Bus Shelter (Pitched Roof Style)

DIMENSIONS:

3.00Mtr (L) x 1.30Mtr (W) x 2.50Mtr (H)

PROPOSED MATERIAL SCHEDULE

REAR FRAME: 80mm x 50mm extruded aluminium columns. 80mm x 40mm extruded aluminium transoms.

END FRAMES: 80mm x 50mm extruded aluminium columns. 80mm x 40mm extruded aluminium transoms.

FRONT FRAME: 80mm x 50mm extruded aluminium columns. 80mm x 40mm extruded aluminium transoms.

ROOF SECTION: 100mm x 50mm extruded aluminium eaves beams with 80mm x 40mm extruded aluminium rafters.

ROOF CLADDING – 4mm THK bronze or grey tinted solid polycarbonate.

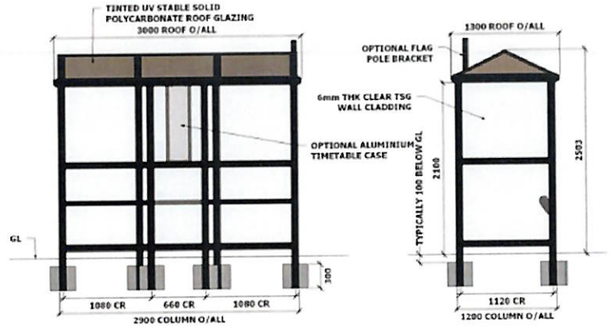
SIDE CLADDING: 6mm THK clear toughened safety glass.

GROUNDWORK'S – All upright columns to be submerged into no less than 0.30Mtr SQ. concrete pad foundations (provided by Shelter Solutions).

FINISH / COLOUR: All extruded aluminium components to be polyester powder to coated to a RAL colour at the client's request.

OPTIONS –
Perch Seating
Timetable Case
Flag Pole Bracket.

ISOMETRIC VIEWS OF PROPOSED 3-BAY ENCLOSED BUS SHELTER



ELEVATIONS OF PROPOSED 3-BAY ENCLOSED BUS SHELTER

PRELIMINARY

REV	DESCRIPTION	DATE

CLIENT
INGENT CONSULTING ENGINEERS

PROJECT
PROPOSED SUFFOLK PITCHED BUS SHELTER

DRAWING TITLE
BUS SHELTER DETAILS

Contract No.	Drawing No.	Rev.
JS-18001	D-18001-A1	
Drawn AT	**Date** SEP 18	**Scale @ A3** / **Checked**

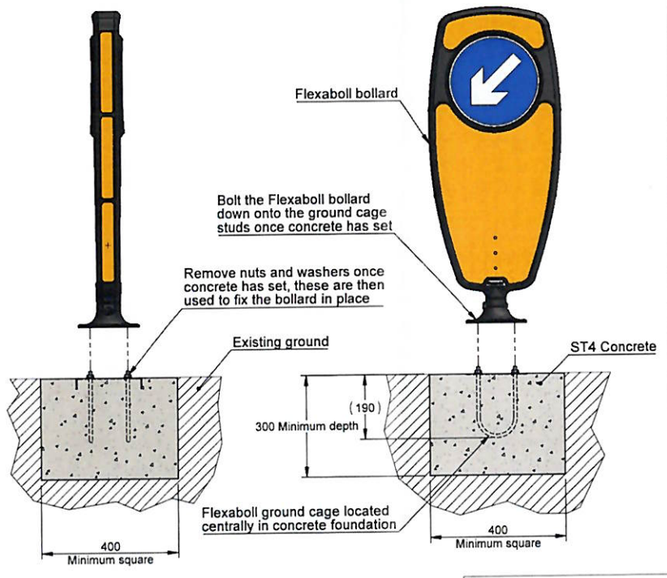
Shelter Solutions (Maypole Manufacturing Ltd T/As Shelter Solutions)
Unit 12, Custom Complex, Yaxley Road, Kroomley Industrial Park, LU3 2SU
Tel: 01942 62 55 77 Fax: 0151 547 0551

ShelterSolutions

SHEET 1 OF 2	PUDSEY DIAMOND FLEXABOLL BOLLARD INSTALLATION DETAILS - GROUND CAGE	PART NUMBER 920008250-4	ISSUE A

Notes:

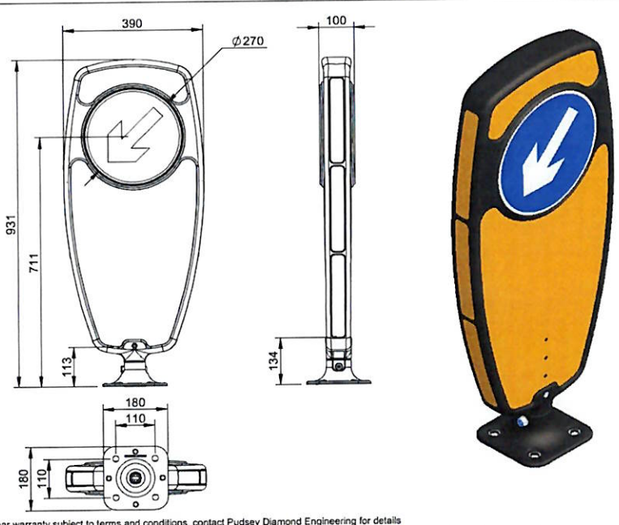
1. Assemble the ground cage as illustrated on sheet 2.
2. Prepare a hole 400mm x 400mm x 300mm deep and fill with ST4 concrete.
3. Insert the ground cage into the concrete.
4. Ensure the plate is flush and level with the surface of the concrete.
5. Allow the concrete to set.
6. Remove the nuts and washers from the top of the ground cage studs.
7. Align the Flexaboll bollard to face oncoming traffic and place over the ground cage studs.
8. Refit nuts and washers to secure the bollard in place.



Pudsey Diamond Engineering ltd

TITLE: FLEXABOLL BOLLARD SPECIFICATION

PART NO:	DRAWING NUMBER:	SIZE:	ISSUE:
920008250	920008250-1	A4	C



Technical Specification

BS 8442:2015	Clause	Notes
RSRB Type:	13.1.1	Type A
Design:	13.1.2	Compliant
Height:	13.1.3	931mm
Body:	13.1.4	Compliant
Projected Area (Front):	13.1.5	212280mm²
Projected Area (Side):	13.1.5	22270mm²
Chromaticity:	13.2.1	Compliant
Photometric Performance	13.2.2	R3B
Adhesion to Substrate	13.3.1	Compliant
Corrosion Resistance (Body)	13.3.2	SP2
Corrosion Resistance (Fixings)	13.3.2	SP1

Additional Information

- *5 year materials and workmanship warranty
- Passively Safe: Passed BS EN 12767:2007 impact testing with a rating of 50/NE/4
- Recessed panels to give added protection on impact
- Made from 100% recyclable materials (excluding retroreflective panels)

Options

- Double aspect signage available (rear reflective panels)
- Available in either black or white
- Range of fixing options available
- Tamperproof fixing option available on request

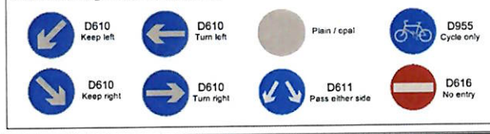
Reduced Replacement cost

Quick and easy replacement of bollard top via a single attachment bolt.

Reduces replacement cost by 30%

* 5 year warranty subject to terms and conditions, contact Pudsey Diamond Engineering for details

Standard sign aspect variants



NOTES: (1) ALL DIMENSIONS IN mm. (2) REMOVE ALL BURRS AND SHARP EDGES.

LINEAR TOLERANCES UNLESS OTHERWISE STATED	ANGULAR TOLERANCES UNLESS OTHERWISE STATED	MATERIAL:
X.00 = ±0.15 X.0 = ±0.50 X = ±5.00	X.00° = ±0.15° X.0° = ±0.50° X° = ±1.00°	SPEC: SEE NOTES
DATE: 06/01/16	SCALE:	FINISH:
DRAWN: WH	CHECKED: **	3RD ANGLE PROJECTION

Pudsey Diamond

TEL: 01264 336077 FAX: 01264 336688 E-MAIL: SALES@PUDSEYDIAMOND.COM WEBSITE: WWW.PUDSEYDIAMOND.COM

[redacted]

Rev	Revision Notes	Drn	Apvd	Date

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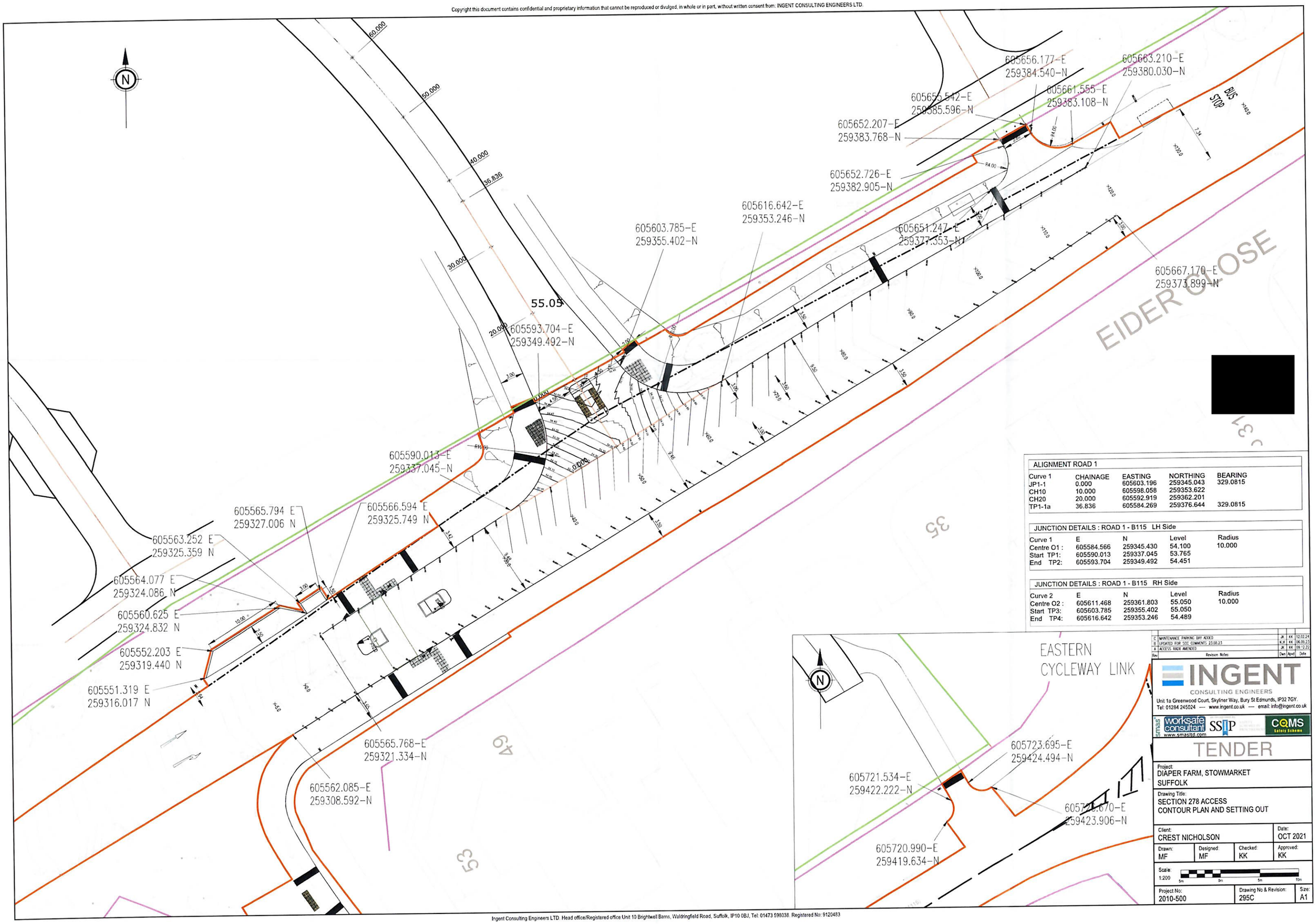
worksafe consultant www.smassltd.com SSIP CQMS Safety Scheme

TENDER

Project: DIAPER FARM, STOWMARKET SUFFOLK			
Drawing Title: SECTION 278 CONSTRUCTION DETAILS SHEET 5 OF 5			
Client: CREST NICHOLSON			Date: SEPT 2023
Drawn: KLK	Designed: KLK	Checked: KK	Approved: KK
Scale: As Shown			
Project No: 2010-500	Drawing No & Revision: 294		Size: A1



ALIGNMENT ROAD 1

Curve 1	CHAINAGE	EASTING	NORTHING	BEARING
JP1-1	0.000	605603.196	259345.043	329.0815
CH10	10.000	605598.058	259353.622	
CH20	20.000	605592.919	259362.201	
TP1-1a	36.836	605584.269	259376.644	329.0815

JUNCTION DETAILS : ROAD 1 - B115 LH Side

Curve 1	E	N	Level	Radius
Centre O1 :	605584.566	259345.430	54.100	10.000
Start TP1:	605590.013	259337.045	53.765	
End TP2:	605593.704	259349.492	54.451	

JUNCTION DETAILS : ROAD 1 - B115 RH Side

Curve 2	E	N	Level	Radius
Centre O2 :	605611.468	259361.803	55.050	10.000
Start TP3:	605603.785	259355.402	55.050	
End TP4:	605616.642	259353.246	54.489	

Rev	Revison Notes	Dwn	Apvd	Date
C	MAINTENANCE PARKING BAY ADDED	JK	KK	12.02.24
B	UPDATED FOR SCC COMMENTS 23.08.23	KJK	KK	06.09.23
A	ACCESS RADII AMENDED	JK	KK	09.12.22

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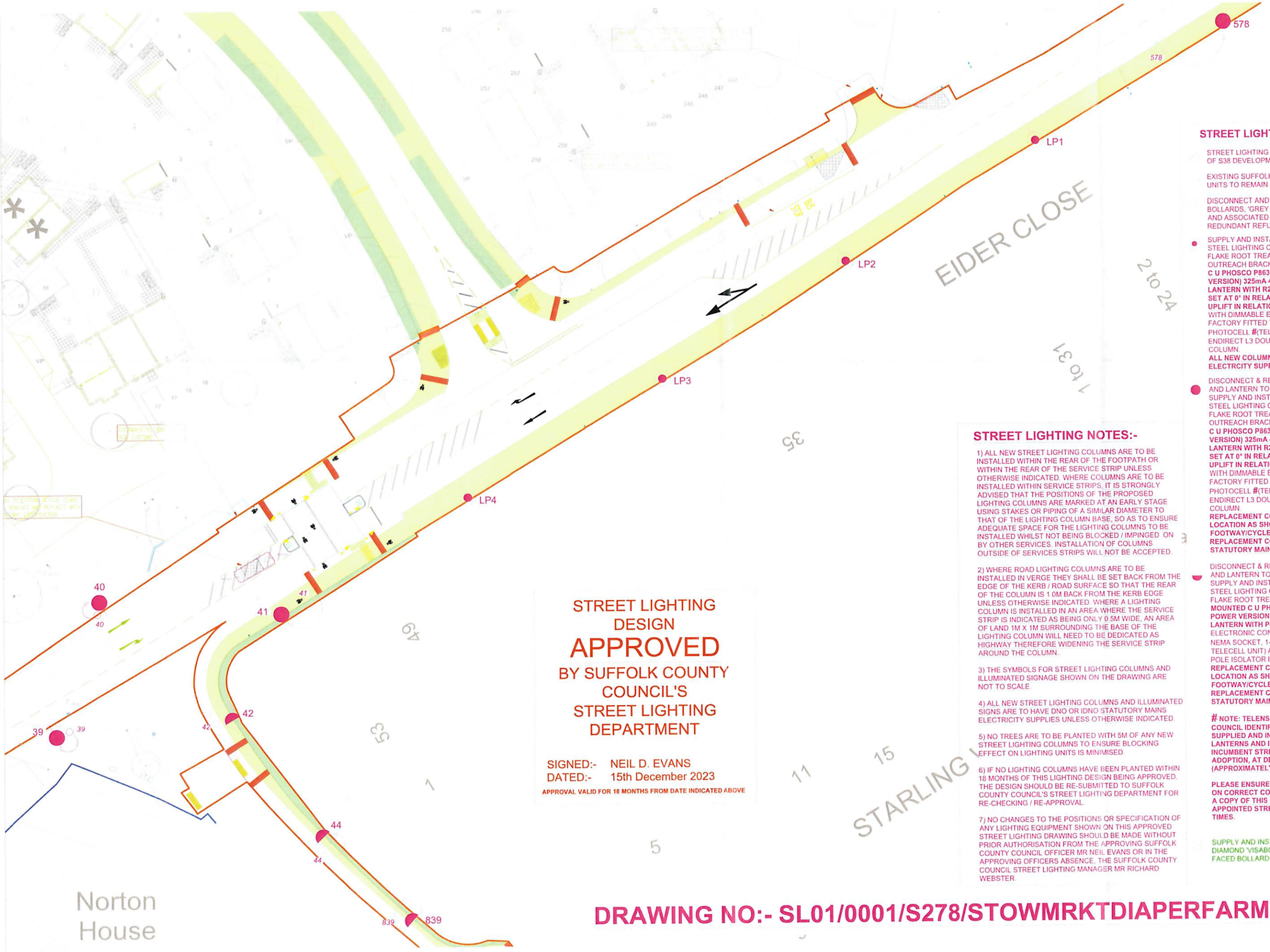
TENDER

Project:
DIAPER FARM, STOWMARKET
SUFFOLK

Drawing Title:
SECTION 278 ACCESS
CONTOUR PLAN AND SETTING OUT

Client:			Date:
CREST NICHOLSON			OCT 2021
Drawn: MF	Designed: MF	Checked: KK	Approved: KK
Scale: 1:200			
Project No: 2010-500	Drawing No & Revision: 295C		Size: A1



STREET LIGHTING LEGEND:-

STREET LIGHTING COLUMNS TO BE INSTALLED AS PART OF S38 DEVELOPMENT WORKS.

EXISTING SUFFOLK COUNTY COUNCIL STREET LIGHTING UNITS TO REMAIN.

DISCONNECT AND REMOVE EXISTING ILLUMINATED BOLLARDS, 'GREY LADY' REFUGE LIGHTING COLUMN AND ASSOCIATED PRIVATE CABLE NETWORK FROM REDUNDANT REFUGE ISLAND TO TIP FOR RECYCLING.

SUPPLY AND INSTALL NEW 8M GALVANISED TUBULAR STEEL LIGHTING COLUMN COMPLETE WITH GLASS FLAKE ROOT TREATMENT AND 1M 'WEBBED' STYLE OUTREACH BRACKET ARM MOUNTING 1NO. **SIDE ENTRY C U PHOSCO P863 128LED 6.03Klm (HIGH POWER VERSION) 325mA 43W WARM WHITE (3000K) LED LANTERN WITH R2E OPTIC SETTING (LANTERN TO BE SET AT 0° IN RELATION TO BRACKET ARM GIVING 5° UPLIFT IN RELATION TO ROAD SURFACE)**, COMPLETE WITH DIMMABLE ELECTRONIC CONTROL GEAR, FACTORY FITTED 7-PIN NEMA SOCKET, 1-PART PHOTOCELL **#**(TELENSA TELECELL UNIT) AND CHARLES ENDIRECT L3 DOUBLE POLE ISOLATOR IN BASE OF COLUMN.
ALL NEW COLUMNS ARE TO HAVE STATUTORY MAINS ELECTRCITY SUPPLIES.

DISCONNECT & REMOVE REDUNDANT LIGHTING COLUMN AND LANTERN TO TIP FOR RECYCLING.
SUPPLY AND INSTALL NEW 8M GALVANISED TUBULAR STEEL LIGHTING COLUMN COMPLETE WITH GLASS FLAKE ROOT TREATMENT AND 1M 'WEBBED' STYLE OUTREACH BRACKET ARM MOUNTING 1NO. **SIDE ENTRY C U PHOSCO P863 128LED 6.03Klm (HIGH POWER VERSION) 325mA 43W WARM WHITE (3000K) LED LANTERN WITH R2E OPTIC SETTING (LANTERN TO BE SET AT 0° IN RELATION TO BRACKET ARM GIVING 5° UPLIFT IN RELATION TO ROAD SURFACE)**, COMPLETE WITH DIMMABLE ELECTRONIC CONTROL GEAR, FACTORY FITTED 7-PIN NEMA SOCKET, 1-PART PHOTOCELL **#**(TELENSA TELECELL UNIT) AND CHARLES ENDIRECT L3 DOUBLE POLE ISOLATOR IN BASE OF COLUMN.
REPLACEMENT COLUMN TO BE INSTALLED IN NEW LOCATION AS SHOWN (WITHIN REAR OF WIDENED FOOTWAY/CYCLEWAY).
REPLACEMENT COLUMNS TO BE RECONNECTED TO STATUTORY MAINS ELECTRCITY SUPPLY.

DISCONNECT & REMOVE REDUNDANT LIGHTING COLUMN AND LANTERN TO TIP FOR RECYCLING.
SUPPLY AND INSTALL NEW 8M GALVANISED TUBULAR STEEL LIGHTING COLUMN COMPLETE WITH GLASS FLAKE ROOT TREATMENT AND 1NO. **POST TOP MOUNTED C U PHOSCO E950 28LED 2.48Klm (HIGH POWER VERSION) 425mA 19W WARM WHITE (3000K) LED LANTERN WITH P4P OPTIC SETTING**, DIMMABLE ELECTRONIC CONTROL GEAR, FACTORY FITTED 7-PIN NEMA SOCKET, 1-PART PHOTOCELL **#**(TELENSA TELECELL UNIT) AND CHARLES ENDIRECT L3 DOUBLE POLE ISOLATOR IN BASE OF COLUMN.
REPLACEMENT COLUMN TO BE INSTALLED IN NEW LOCATION AS SHOWN (WITHIN REAR OF WIDENED FOOTWAY/CYCLEWAY).
REPLACEMENT COLUMNS TO BE RECONNECTED TO STATUTORY MAINS ELECTRCITY SUPPLY.

 # NOTE: TELENSA TELECELLS AND SUFFOLK COUNTY COUNCIL IDENTIFICATION NUMBER PLATES ARE TO BE SUPPLIED AND INSTALLED ON ALL STREET LIGHTING LANTERNS AND ILLUMINATED SIGNS BY SCC'S INCUMBENT STREET LIGHTING CONTRACTOR, UPON ADOPTION, AT DEVELOPERS EXPENSE. (APPROXIMATELY £148 PER LIGHTING UNIT).

PLEASE ENSURE CORRECT LANTERNS ARE INSTALLED ON CORRECT COUMNS AS PER SPECIFICATION ABOVE. A COPY OF THIS DRAWING IS TO BE ISSUED TO THE APPOINTED STREET LIGHTING CONTRACTOR AT ALL TIMES.

SUPPLY AND INSTALL NEW UN-ILLUMINATED PUDSEY DIAMOND 'VISABOLL' RETRO-REFLECTIVE PLAIN FACED BOLLARD UNIT.

STREET LIGHTING NOTES:-

1) ALL NEW STREET LIGHTING COLUMNS ARE TO BE INSTALLED WITHIN THE REAR OF THE FOOTPATH OR WITHIN THE REAR OF THE SERVICE STRIP UNLESS OTHERWISE INDICATED. WHERE COLUMNS ARE TO BE INSTALLED WITHIN SERVICE STRIPS, IT IS STRONGLY ADVISED THAT THE POSITIONS OF THE PROPOSED LIGHTING COLUMNS ARE MARKED AT AN EARLY STAGE USING STAKES OR PIPING OF A SIMILAR DIAMETER TO THAT OF THE LIGHTING COLUMN BASE, SO AS TO ENSURE ADEQUATE SPACE FOR THE LIGHTING COLUMNS TO BE INSTALLED WHILST NOT BEING BLOCKED / IMPINGED ON BY OTHER SERVICES. INSTALLATION OF COLUMNS OUTSIDE OF SERVICES STRIPS WILL NOT BE ACCEPTED.

2) WHERE ROAD LIGHTING COLUMNS ARE TO BE INSTALLED IN VERGE THEY SHALL BE SET BACK FROM THE EDGE OF THE KERB / ROAD SURFACE SO THAT THE REAR OF THE COLUMN IS 1.0M BACK FROM THE KERB EDGE UNLESS OTHERWISE INDICATED. WHERE A LIGHTING COLUMN IS INSTALLED IN AN AREA WHERE THE SERVICE STRIP IS INDICATED AS BEING ONLY 0.5M WIDE, AN AREA OF LAND 1M X 1M SURROUNDING THE BASE OF THE LIGHTING COLUMN WILL NEED TO BE DEDICATED AS HIGHWAY THEREFORE WIDENING THE SERVICE STRIP AROUND THE COLUMN.

3) THE SYMBOLS FOR STREET LIGHTING COLUMNS AND ILLUMINATED SIGNAGE SHOWN ON THE DRAWING ARE NOT TO SCALE.

4) ALL NEW STREET LIGHTING COLUMNS AND ILLUMINATED SIGNS ARE TO HAVE DNO OR IDNO STATUTORY MAINS ELECTRICITY SUPPLIES UNLESS OTHERWISE INDICATED.

5) NO TREES ARE TO BE PLANTED WITH 5M OF ANY NEW STREET LIGHTING COLUMNS TO ENSURE BLOCKING EFFECT ON LIGHTING UNITS IS MINIMISED.

6) IF NO LIGHTING COLUMNS HAVE BEEN PLANTED WITHIN 18 MONTHS OF THIS LIGHTING DESIGN BEING APPROVED, THE DESIGN SHOULD BE RE-SUBMITTED TO SUFFOLK COUNTY COUNCIL'S STREET LIGHTING DEPARTMENT FOR RE-CHECKING / RE-APPROVAL.

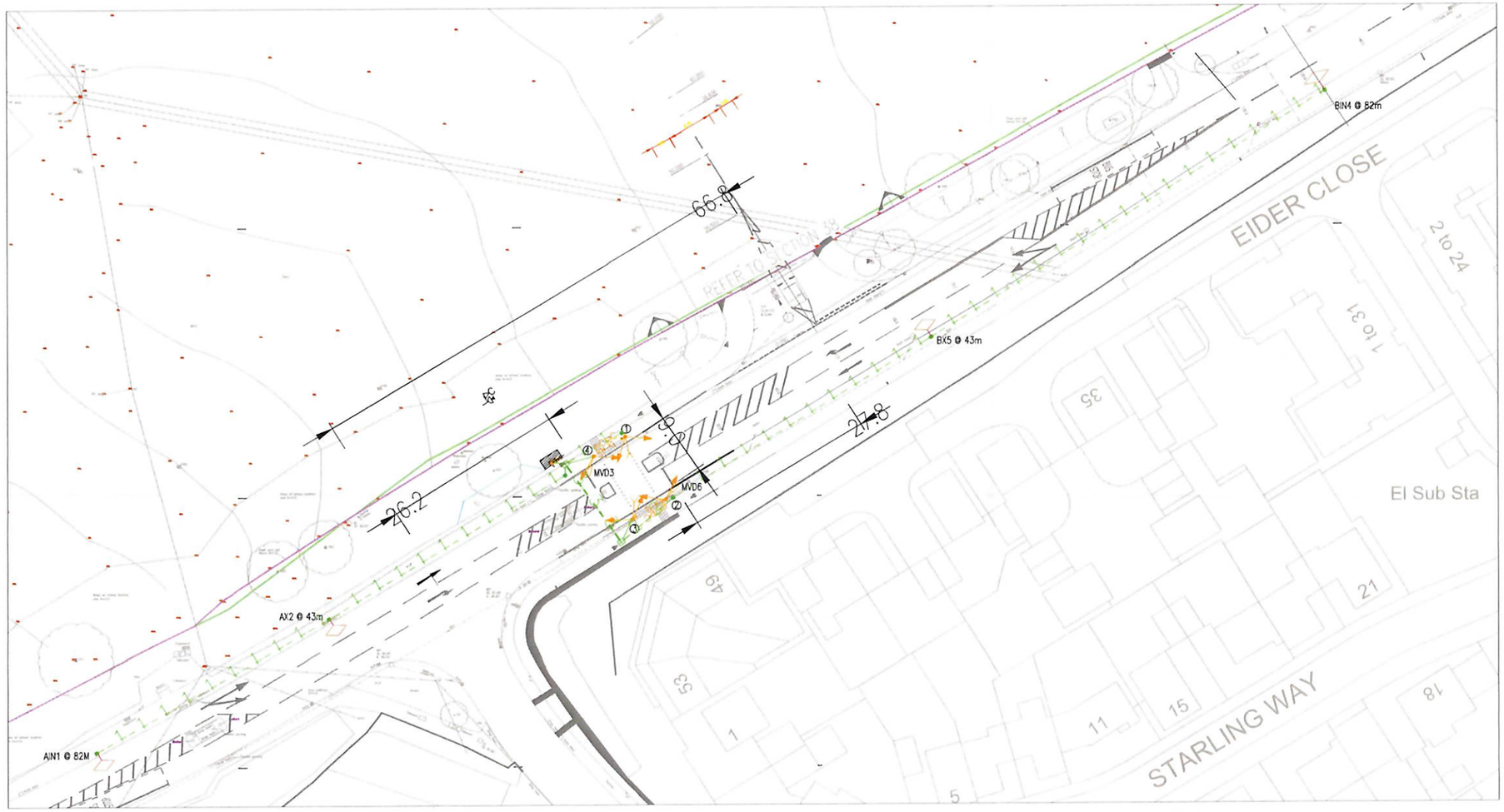
7) NO CHANGES TO THE POSITIONS OR SPECIFICATION OF ANY LIGHTING EQUIPMENT SHOWN ON THIS APPROVED STREET LIGHTING DRAWING SHOULD BE MADE WITHOUT PRIOR AUTHORISATION FROM THE APPROVING SUFFOLK COUNTY COUNCIL OFFICER MR NEIL EVANS OR IN THE APPROVING OFFICERS ABSENCE, THE SUFFOLK COUNTY COUNCIL STREET LIGHTING MANAGER MR RICHARD WEBSTER.

STREET LIGHTING DESIGN
APPROVED
BY SUFFOLK COUNTY COUNCIL'S STREET LIGHTING DEPARTMENT

SIGNED:- NEIL D. EVANS
DATED:- 15th December 2023

APPROVAL VALID FOR 18 MONTHS FROM DATE INDICATED ABOVE

DRAWING NO:- SL01/0001/S278/STOWMRKTDIAPERFARMJCTWORKS



NOTES
1. Replace pedestrian crossing site with ELV controller and signals equipment.
2. GSM OMU compatible with Suffolk County Council remote monitoring system is to be supplied, installed and commissioned by the signal company (including instation configuration).
3. Pole positions should be agreed with local authority engineer before installation .
4. Traffic signal equipment & street furniture should have a minimum clearance of 450mm to kerb face.
5. Push buttons and nearside indicators are to be installed at 30° from kerb line. Tactile devices are to be installed in the indicator units. Audibles to be operational by timetable between 0700–2200 hrs.
6. All street furniture including the controller cabinet are to be black.
7. Controller & feeder pillar are to be set within concrete hard–standing area to provide ease of access for engineers,
8. NAL RS115DF 750mm pole retention sockets are to be used and should be installed to the manufacturer's guidelines.
9. NAL STAKKA twin walled chambers should be used.
10. Standard controller base to be used
11. This drawing should be read in conjunction with Suffolk Highways ITS standard specifications.
12. All equipment, ducting and street furniture should be installed to Suffolk County Council current standards.
13 Stop Line to be 3m back from studs
14 All ducts to be orange
15 50mm duct under kerb to loop feeders
16 50mm duct to feeder piller
17 All duct boxes to have non ferous with traffic signal written legend

KEY

- NEW CONTROLLED CROSSING TACTILE PAVING RED
- METAL STUDS
- PRIMARY HEAD WITH POLE
- ON CROSSING DETECTORS
- CONTROLLER
- ① TRAFFIC SIGNALS POLE NUMBER
- POLE WITH CYCLE AND PED. AND P/B + HIGH LEVEL REPEATER
- PUSH BUTTON
- FEEDER PILLER BESIDE CONTROLLER
- ELECTRICAL CELL
- MVD ABOVE GROUND DETECTORS
- 300 x 450 DUCT BOX FOR MOVA LOOPS
- 600 X 600 DUCT BOXES
- NO OF DUCTS AND LOCATION
- MOVA LOOPS

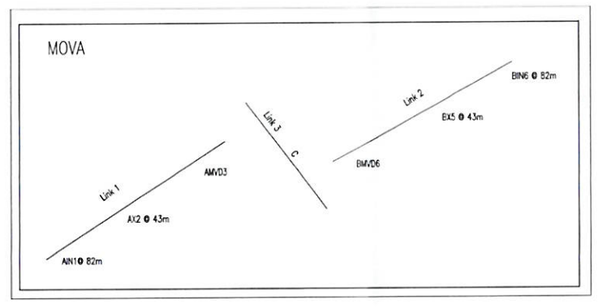
[redacted]

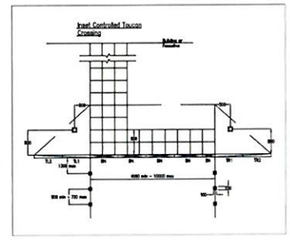
Crossing Times				
Description	Period	Signal to vehicles	Signal to pedestrains /cyclists	
Fixed vehicle period		Green	Red	30
VA minimum	1	Green	Red	7
VA maximum		Green	Red	30
Leaving amber	2	Amber	Red	3
All Red-Gap forced	3	Red	Red	3
Green man timing	4	Red	Green	5
Fixed minimum all red	5	Red	Red	3
additional extendable all red	6	Red	Red	10
additional all red on max	7	Red	Red	3
additional all red on gap	8	Red	Red	0
starting amber (fixed value)	9	Red/amber	Red	2
Other facilities				
Pedestrain Audible Signals (disabled 10pm -7am)	Y			
Pedestrain Tactile Signals	Y			

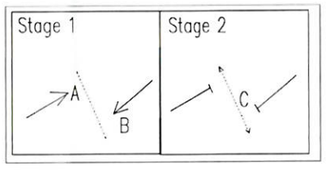
Diaper Farm

Pole No	Pole type	Location	Head type	Push button	Red/Green man/cycle, push button + high level	MVD	On crossing detectors	Photo electric cell
1	STD	0.8BOK & 0.5FTP	2 x PRAG	X			X	X
2	STD	0.8BOK & 0.5FTP	2 x PRAG		X	X		
3	STD	0.8BOK & 0.5FTP	2 x PRAG	X			X	
4	STD	0.8BOK & 0.5FTP	2 x PRAG		X	X		

PRAG Primary -red/amber/ green
BOK Back of kerb
FTP From tactile paving







REVISION(S)				
DESCRIPTION	REV.	DATE	INTL.	

Suffolk Highways
your roads, our business
Phoenix House, 3 Goddard Road, Ipswich, Suffolk IP1 5NP.
Highways enquiries: 0345 606 6171 www.suffolk.gov.uk/highways

CLIENT

PROJECT TITLE
Proposed Toucan Crossing
B1115 Stowupland Rd/Diaper Farm

DRAWING TITLE
Traffic Signals

ORIGINATOR	CHECKER	DESIGNER	REVIEWER
KAS		KAS	

SCALE(S) ORIGINAL SIZE A1	DATE	
N.T.S.	Nov 2023	

DRAWING NUMBER: ITS/Diaper/01 REVISION

File Path R:\Transport & Infrastructure\Traffic Mgmt_ Traffic Signals (Developer Schemes) (Roger Farm Stowmarket)\Traffic Signal Design.dwg
Plot date 22/11/2023

Suffolk County Council

Suffolk Highways

15/11/23

Appendix 5/2 – Traffic Signal Ducts and Chambers

Site:

Document Reference: Diaper Farm – B1115 Stowupland Road

Prepared: Karen smith

Checked:

[redacted]

APPENDIX 5/2 SERVICE DUCT REQUIREMENTS

TRAFFIC SIGNALS

1. Drawing Set

1.1. Reference should be made of the following drawings for the scheme-specific ducting and access chamber design requirements: ITS/Diaper Farm /01 + Civils Drawings provided by INGENT

2. Table 5/2.1 Scheme Specific Drawings

Traffic Signal Design Drawing Title- Proposed Toucan Crossing, B1115 Stowupland Road, Stowmarket

2. Site Specific Requirements

2.1. Prior to ordering or installing any retention sockets the Main Contractor shall confirm the exact specification for each unit with the Traffic Signal Contractor

2.2. The Traffic Signal Contractor shall supply a Controller Cabinet Base, suitable for use with the signal controller cabinet. The Main Contractor shall install the Controller Cabinet Base.

2.3 Please check the statutory undertakers plans to ensure that poles, boxes and ducting can be implemented. If there is an issue, please contact the designer to agree a revised location. Poles may not be located in the tactile paving.

2.4. A comprehensive "as installed" duct drawing will be provided by the Main Contractor on completion of the works.

3. General Requirements

3.1. All underground cables for traffic signals shall be run in ducts.

3.2. Service ducts shall comply with BS EN 61386

3.3. The number and position of all new and existing ducts, chambers, retention sockets, carriageway loop tail boxes and cabinet bases are detailed in the scheme specific design. drawings detailed in Table 5/2.1: 'Scheme Specific Drawings'. New ducts are also detailed

in Tables 5/2.2 – 5/2.3: 'Schedule of Duct Locations and Quantities'.

3.4. The Contractor is to liaise directly with the Traffic Signal Contractor prior to, at the commencement of, and during the associated signals works.

3.5. The Contractor shall be responsible for providing all necessary traffic management arrangements in accordance with the requirements of the current Chapter 8 of the Traffic Signs Manual, for all signal installation works.

3.6. The Contractor shall be responsible for the installation of any traffic signal controller stools, mini pillars and termination haldo pillars. The Contractor is to liaise with the Traffic Signal Contractor regarding installation specification.

3.7. The location of all new ducts, chambers, retention sockets, carriageway loop tail boxes and cabinet bases to be accurately shown on the Contractors As-Built drawings if requested.

3.8. The Contractor shall take particular care when working in the vicinity of existing statutory undertakers (SU) ducting and apparatus. Protection shall be provided and disturbance minimised. SU representatives shall be given adequate prior notice, should any excavation, moving or backfilling or their service ducts or other apparatus be required. The Contractor shall comply with the special requirements of the affected SU companies.

3.9. All new poles shall be installed in pole retention sockets as detailed in the Appendix 12-5 document. Pole retention sockets shall be installed in accordance with the manufacturer's instructions, including the interface to the duct network.

3.10. Poles, when secured in a pole retention socket, shall be capable of withstanding a turning moment of 3.4kNm through a load of 230kg @ 1.5metre from the centre of the pole without any rotation.

3.11. Pole Retention Sockets must be capable of accommodating graded surfaces in paved area such as those at pedestrian crossing.

3.12. All new cabinets shall be installed on Controller Cabinet Bases as detailed in the Appendix 12-5 document. Cabinet Bases shall be installed in accordance with the manufacturer's instructions, including the interface to the duct network.

3.13. The controller and above ground equipment shall not be installed until the UKPN power supply has been installed and site ready for permanent operational use.

If above ground equipment is installed due to miscommunication, it must be made operational within 3 months, any further delay SCC may instruct for all new equipment to be installed.

4. Duct Construction Requirements

4.1. Traffic signal ducts shall be polyethylene twin wall ducts with smooth internal bore and corrugated outer surface. They shall be orange in colour, clearly marked "TRAFFIC SIGNALS" in white lettering at ONE metre intervals, with a 94mm internal diameter and a 110mm external diameter.

4.2. Ducts for wired magnetometers and to carriageway loop boxes shall be polyethylene twin wall ducts with smooth internal bore and corrugated outer surface. They shall be orange in colour, clearly marked "TRAFFIC SIGNALS" in white lettering at ONE metre intervals, with a 50mm internal diameter and a 63mm external diameter. Where laid in road crossing trenches with other ducting, the 50/63mm magnetometer ducting shall be laid above all other ducts.

4.3. Ducts between traffic signal cabinets and electrical feeder pillars shall be polyethylene twin wall ducts with smooth internal bore and corrugated outer surface. They shall be orange in colour, clearly marked "ELECTRIC CABLE DUCT" in white lettering at ONE metre intervals, with a 50mm internal diameter and a 63mm external diameter.

4.4. Ducts between traffic signal cabinets and communications pillars shall be polyethylene twin wall ducts with smooth internal bore and corrugated outer surface. They shall be grey in colour, with a 94mm internal diameter and a 110mm external diameter.

4.5. Flexible (i.e. non–rigid) ducting systems shall not be used on duct runs between chambers, unless agreed in advance with the project manager. Flexible ducting where required. between chambers and traffic signals poles / pillars is acceptable.

4.6. No preformed bends shall be permitted along the duct runs for traffic signals.

4.7. All 94/110mm ducting shall be proven, by the Contractor passing a 90mm mandrel through the whole length of the completed ducting. For details see Highway Construction Detail No. I2.

4.8. All ducts shall be fitted with nylon draw-strings between access chambers and shall be flushed clear, using compressed air, prior to installation of traffic signal and electrical cables.

4.9. Ducts shown on the drawings for the use of traffic signal cables shall not be used to carry any other type of service.

4.10. The minimum cover for ducts laid in the carriageway shall be 600mm. The ducts shall be bedded in accordance with drawing Type B in Highway Construction Detail I2.

4.11. The minimum cover for ducts laid in the footway/verge shall be 450mm. The ducts shall be bedded in accordance with detail Type A in Highway Construction Detail I2.

4.12. If there is any dispute on the bedding required then the full bedding requirements of Highway Construction Detail I2 or MCX 0814 respectively shall apply.

4.13. Where cable ducts enter access chambers (new or existing), the following shall be ensured:

4.13.1. Ducts to enter chamber horizontally;

4.13.2. Ducts to be trimmed at chamber entry such that they are flush with the inner wall of the chamber;

4.13.3. Duct ends to have sharp edges removed.

5 Not required

6. Access Chamber Construction Requirements

6.1. All chambers shall be manufactured of a modular, structural, twin wall construction, with a nominal overall wall thickness of not less than 36mm. The use of thin wall, plastic modular systems will NOT be permitted.

6.2. All chambers shall have an integrated LDPE base, with a pre-drilled minimum 50mm diameter soak away hole in the centre of the chamber.

6.3. Covers and Frames shall be fitted, conforming to EN124 standard and be Class B125 (12.5 tonnes) rating minimum. Composite covers with extra deep galvanised steel raising frames shall be used, unless D400 (40 tonnes) type covers and frames are specified on the scheme drawings. All frames shall be secured to the chamber by means of bolts. All covers shall be clearly embossed with the words "Traffic Signals".

6.4. Where D400 type covers are specified, the associated chamber shall have a 150mm backfill around the chamber using ST4 concrete. Where B125 type covers are specified, the associated chamber may have a backfill around the chamber of suitable material instead of ST4 concrete. In unmade verges all Covers and Frames shall have a ST4 concrete surround formed from wood shuttering to extend 300mm from each side and 150mm deep.

6.5. Chambers must be able to withstand a minimum vertical load of 40 tonnes without the use of concrete surround for support.

6.6. Chamber access sections shall have pre-drilled duct entries which shall be supplied with removable caps.

6.7. Carriageway loop boxes shall be manufactured from ductile iron and shall be installed 200mm from kerb edge. This may be varied to 0-300mm with agreement from the Project Manager.

6.8. In-carriageway, composite detector chambers (for wireless magnetometers) shall meet BS5834 Grade A requirements and shall be installed to the manufacturer's instructions. The covers for the in-carriageway detector chambers shall be red.

6.9. Composite covers must have a minimum skid resistance value (SRV) of 80.

6.10. Where installed in grass or soft verge chambers shall have a minimum 150mm concrete surround to prevent overgrowth of grass or other vegetation.

7. Duct and Access Chamber Locations and Quantities

See attached plan basic outline

600x 600 Duct Boxes x 2

300x 450 duct boxes x 7

1 no duct connecting loops and poles as shown

3 no ducts in Road Crossing into 600 X 600 Duct Boxes

Ducting connecting NAL sockets into Duct Box's

4 no under kerbs required connecting loops to duct boxes

3 Ducts from Duct Box into Controller

Black 50mm duct from Feeder Piler into Controller

APPENDIX 12/5: TRAFFIC SIGNS: TRAFFIC SIGNALS

Toucan Crossing - Diaper Farm /B1115 Stowmarket Road , Stowmarket

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1. Glossary

Term	Meaning / Definition
CDM	Construction Design and Management
CLF	Cable less Linking Facility
ELV	Extra Low Voltage
FT	Fixed Time
FAT	Factory Acceptance Test
GSM	Global System for Mobile Communications
LV	Low Voltage
MOVA	Microprocessor Optimised Vehicle Activation
NRSWA	New Roads and Street Works Act
OMU	Outstation Monitoring Unit
OMCU	Outstation Monitoring Control Unit
OTU	Outstation Transmission Unit
PEC/PECU	Photo Electric Cell / Control Unit
RMS	Remote Monitoring Station
SCOOT	Split Cycle Offset Optimisation Technique
SAT	Site Acceptance Test
UPS	Uninterruptable Power Supply
UTC	Urban Traffic Control
VA	Vehicle Actuation

2. Drawing Sets

Reference should be made of the Highway Authority approved site-specific drawings listed below.

Approved Drawings

Approved Drawings		
Title	Drawing Number	Date Approved
Site Clearance		
construction		
Traffic Signals	ITS/Diaper Farm /01	17/11/2023
Electrical		
White lining		
Resurfacing		

Reference should be made of the standard drawings listed below. (Available on request).

Standard Drawings

Standard Drawings		
Title	Drawing Number	Issue Date
Pedestrian and Toucan Crossing Detail	SCD 1100-8 A	05/2017

3. Type Approval and TOPAS Registration

All signal equipment shall be fully type-approved by the Department for Transport (DfT) or be TOPAS Registered and shall comply with the current versions of the DfT specifications (MCE and TR series) and British Standards Institution (BS) documents. Where later amendments to these documents are issued, equipment shall comply with their revised requirements in force at the time of SAT

.Any reference within this document to the TR2500 suite of documentation shall also be taken as referring to the corresponding TOPAS 2500 suite of documentation.

http://www.topasgroup.org.uk/shop/specifications.htm

4. Contractor Responsibilities

The appointed Principal Contractor shall be responsible for the overall construction of the scheme, including the programming and co-ordination of the installation activities, health and safety of the site works and the arrangement of traffic management.

If requested by the Project Manager, the Principal Contractor shall arrange an individual pre-construction meeting for each traffic signal installation site for the parties listed below to attend. All attendees should be notified a minimum of two weeks in advance.

- Project Manager
- Signal Design Engineer;
- Highway Authority;
- Principal Contractor; and
- Traffic Signal Contractor.

A copy of the proposed civil works and signal installation programmes shall be presented to the Signal Design Engineer at the pre-construction meeting. The installation programme shall include the duration of all areas of works, including Factory Acceptance Test (FAT), Site Acceptance Test (SAT) and Commissioning.

Once the works have commenced, they shall be undertaken over consecutive days. Any deviation from this shall be agreed in writing in advance by the Project Manager.

Principal Contractor

The Principal Contractor shall be responsible for all safe working methods whilst on site. Particular attention shall be paid to Chapter 8 of the current Traffic Signs Manual, The Electricity at Work Regulations 1989, HSG47 "Avoiding Danger from Underground Services" and any site specific rules or instructions.

The Principal Contractor shall co-ordinate with the Traffic Signal Contractor to arrange all necessary traffic management in accordance with the requirements of chapter 8 of "The Traffic Signs Manual" (2006), to carry out all necessary works under this contract.

Traffic Signal Contractor

The Traffic Signal Contractor shall be the appointed organisation responsible for the provision, installation and commissioning of the traffic signal installation and all associated works.

The signal equipment layout shown on the signal design drawings shall be installed in accordance with TA 84/06 "Code of Practice for Traffic Control & Information Systems For All Purpose Roads" and LTN 1/98 "Installation of Traffic Signals & Associated Equipment" and the signal design drawings and this Appendix 12/5 specification.

The Traffic Signal Contractor shall ensure that all staff involved in the installation are fully aware of all relevant specifications and are supplied with all the information and equipment necessary to comply fully with all the requirements. The Traffic Signal Contractor must also ensure that all staff involved in installation attend the site induction as required by the Principal Contractor.

All site work shall comply with the current Health and Safety Standards. Contractors must also comply with the duties placed on them under the Health and Safety Regulations, including CDM and NRSWA.

All Contractors are to ensure that the site remains a safe place to work. The key to this is the proper co-ordination of the work, underpinned by good communication and co-operation between all parties involved. This includes informing all parties about risks to other site workers or members of the public resulting from their work.

All Contractors shall ensure that the site is kept tidy, removing and correctly disposing/storing of all discarded materials at the end of each working day and any excavations made safe.

5. Elexon Charge Codes

For each site the Traffic Signal Contractor shall supply site specific details of the Elexon Charge Codes for all electrical equipment installed.

The data must be presented in the following format

Site SCN			
Item description (make / model)	Location (Controller or Pole Number)	Quantity	Elexon Charge Code

The table shall be site specific, listing only the equipment installed at the site. A generic table listing devices not installed on the site shall not be acceptable.

6. Equipment and Operation

Equipment – Supply

Site to be all new, with ELV signal equipment.

A 20A unmetered electrical supply shall be provided by the Principal Contractor to a new mini pillar.

Where required, modifications required to existing electrical supplies, including fusing requirements, shall be designed, and provided by the Traffic Signal Contractor.

All electrical work shall conform to the latest edition of BS 7671 (IEE wiring regulations), including all amendments. The Traffic Signal Contractor will certify all electrical works.

A 6mm² core armoured cable shall be used to link the power supply secondary isolator fuse to all cabinets. The pillar casing, door and controller link cable earth conductor shall be bonded together and to a main earth terminal with a 10mm² earth cable.

The Traffic Signal Contractor will be responsible for ensuring fuse discrimination is achieved at the site. A demonstration showing compliance with BS 7671 will be required during the SAT to satisfy the Traffic Signal Engineer the electrical installation conforms to the requirements of the electrical regulations.

The Traffic Signal Contractor shall be responsible for all liaison with the Principal Contractor, with regards to the modification of any electricity supply to the controller and termination cabinet of this 230 volt supply.

An Electricity Supply pillar (Haldo or equivalent) shall be supplied for the termination of the electricity supply. Within the pillar a wooden panel shall be fixed which has a space of at least 180 mm high x 100 mm wide x 95 mm deep available for the electricity supplier to mount and connect the cut out. In the pillar a suitable lockable double pole fused isolation switch, to enable the supply to the controller to be isolated, shall be fitted. All earth bonding within the pillar shall be terminated at a main earth terminal. 50mm black ducting shall be installed between the Electricity Supply pillar and the Controller.

The supply pillar should be in close proximity to the controller.

The cable connecting the supply to the controller and termination cabinet shall be provided and installed by the Traffic Signal Contractor, however, the final connection and installation of the electricity supply company's cartridge fuse may only be undertaken by the electricity company's authorised staff.

When multiple isolators exist in any feeder pillar, a clear label shall be installed to identify the supply to each controller and termination cabinet.

A switched dual 13 amp socket shall be provided in each controller and MEC in accordance with clause 3.4.11 of TR 2500A and clause A4.4 of MCE 0125A, in addition to any other power supplies provided to comply with preceding clauses.

A separate fuse or circuit breaker shall be provided for any regulatory signs.

MEC cabinets shall be supplied with a power distribution unit to accept an incoming supply cable and supply auxiliary items.

An additional 5 amp fused supply will be provided in the MEC.

Equipment – General

No Traffic Signal Equipment shall be installed above ground until the electrical supply is in place, activated and all ducting in place.

No Traffic Signals equipment on new builds shall be put in place until the access road is completed and open to traffic

If equipment has been in place and not activated for more than 3 months LED and PCU to be checked and over 6 months they will require replacement

All street furniture shall comply with TR 2206A "Specification for Road Traffic Signals", which supersedes TR 0102A "DTP Standard Traffic Signals" and BS 505: 1971 "Specification for Road Traffic Signals".

There must be a minimum clearance of 450mm between street furniture (including all signal equipment) and the edge of the carriageway.

The location of all street equipment shall be marked on site prior to works commencing during a site meeting attended by the Signal Design Engineer and a suitable representative of the Traffic Signal Contractor.

All cabinets and poles shall be black unless otherwise agreed with Suffolk County Council.

Equipment – Controller

The proposed orientation of the controller and equipment cabinets shall be agreed with the Project Manager prior to installation.

The cabinets and feeder pillars should be located so as to ensure that all approaches are clearly visible from the controller.

The Traffic Signal Contractor shall provide the Principal Contractor with clear instructions for each cabinet to show the recommended method of installation and final level of adjacent footway. Parts of the controller cabinet which are below ground level should be clearly indicated and treated accordingly.

The area around the controller and cabinets shall be paved with a minimum of 1.5 metres in all directions in either flexible carriageway material or concrete flags and shall link to the footway or vehicle maintenance bay where appropriate.

Refer to Traffic Signal Design drawings for exact location and requirements of each traffic signal controller.

When opened the controller door should not obstruct the footway.

The controller shall be provided with a Fault Monitor (FM) indicator on the outside of the cabinet, clearly visible from the main highway.

Where an existing controller installation is being modified and a NAL base is in use the Signal Contractor shall ensure that the base is fully sealed at the completion of works.

Where an existing controller installation is being modified and a NAL base is not in use, the Signal Contractor shall ensure that the base is fully sealed using dry sand covered by two-part epoxy sealant at the completion of works. Full regard must be paid to all COSHH guidance provided by the sealant manufacturer.

All controller cabinets shall be supplied with one key of each type, including T keys, required to gain access to all parts of the controller, broadly in accordance with clause 3.10 of BS 505 as modified by TR 0102A.

Each controller cabinet door shall be provided with a door pocket suitable for a 38mm A4 ring binder.

Equipment – Poles

All feeder pillars, including any pole access doors, shall be sealed to prevent the ingress of water.

All poles shall be planted at depths as specified in the manufacturer's installation guide.

Where installed in grass or soft verge, a level hardstanding in either flexible carriageway material or concrete flags shall be installed adjacent to each pole. It shall be a minimum size of 2m x 1m to provide stable ladder access to the pole.

Prior to ordering or installing any retention sockets the Main Contractor shall confirm the exact specification for each unit with the Traffic Signal Contractor.

The installation of traffic signal poles shall be at the positions shown on the Traffic Signal Design Drawings and are to be agreed with the Traffic Signal Design Engineer on site prior to installation.

Poles that have pedestrian / cycle demand units shall be located 500mm from the side edge of the tactile paving and 500mm from the back of the kerb (800mm from back of kerb for Toucan crossings).

The Traffic Signal Contractor shall be responsible for the supply and affixing of self adhesive pole numbers following the erection of each pole and signal head. Numbers shall be black on a square white background and approximately 50-70mm square.

All poles with low level access doors shall have those doors orientated away from the carriageway edge.

NAL Retention sockets shall be used as appropriate to the pole type.

The Traffic Signal Contractor shall ensure that all poles provided as part of this contract are supplied with head mounting holes suitably pre-drilled in order to comply with the requirements of this specification.

Signal poles shall be supplied without pre-drilled holes for pedestrian demand units.

All signal poles mounted in standard retention sockets shall be slotless. Where agreed with the Project Manager slotted poles may be used with shallow depth retention sockets.

All poles shall be mounted in pole retention sockets with 'duck-foot' bend, such as NAL retention socket or similar approved. The size of the socket shall be as appropriate to the pole size and the foundation shall be as per the manufacturer's recommendations. The depth of the socket shall be 750mm unless specifically agreed with the Project Manager

Steel poles shall have an appropriate black coloured polyester powder coating. Steel poles shall be galvanised in accordance with BS 729: 1971 "Specification for Hot Dip Galvanised Coatings on Iron and Steel Articles" and clearly marked inside to identify them separately from similar, un-galvanised ones. Checks may be undertaken on site by the Signal Design Engineer to ensure that un-galvanised poles have not been used.

All cranked steel poles shall be jointless (swan neck type formed without joints).

Standard 4m poles, short poles and crank poles shall be 114mm diameter.

All short poles (2.0 or 2.5m) shall have a welded top cap

Pedestrian push buttons shall be positioned at a height of between 1.0m and 1.1m above finished ground level, measured to the centre of the push button. They shall be positioned so that a waiting pedestrian will see the WAIT panel and approaching traffic simultaneously.

Where a four-in-line signal head assembly is to be mounted alongside a three-in-line assembly the latter must be raised so that both red signals are at the same level.

Equipment - Traffic Signal Heads

All signal heads must have a minimum clearance from the ground of 2.1 metres or 2.3 metres on cycle ways.

All cranked poles supplied shall have a minimum clearance from the ground of 2.1 metres or 2.3 metres on cycle ways.

The installation of street furniture and the alignment of signal heads shall be at the positions shown on the Traffic Signal Design Drawings and are to be agreed with the Traffic Signal Design Engineer on site prior to installation.

If a signal head is shown as being bracket mounted, a bracket shall allow for the signal head to be offset from the pole as specified in the design.

Brackets shall be protected with an appropriate plastic coating or catalytic paint, or shall be made from a non-corroding material. Vehicle signal head brackets shall enable the head to rotate at least 120 degrees.

Signal heads shall be designed in accordance with BS EN 12368.

Traffic signal heads shall come complete with backing boards (unless otherwise specified) that have been factory treated with BS EN12899-1; 2001 Class 2 retro-reflective white borders.

External wiring between signal heads and poles shall be protected by flexible tubing which shall be fixed securely to the back of the signal head using a nylon or plastic gland. Sufficient tubing shall enter the appropriate hole in the signal pole to ensure that it remains in the pole during flexing of the signal head during all weather conditions.

Signal heads shall be installed so that any copex, above ground vehicle detector plugs and sockets and all associated cabling is not lose or generally susceptible to damage by the actions of adverse weather or vandals.

Transformers and power supplies for tactile devices, pedestrian detectors or audible/tactile equipment shall not be installed in any traffic signal head.

All vehicle signals shall be fitted with primary or secondary visors as shown on the signal design drawing. The internal surface of all visors shall be treated to prevent reflections misleading drivers waiting for opposing traffic phases. If requested by the Signal Design Engineer, secondary hoods shall be rotated by 90 Degrees. Where specified, extra-long visors, visors with cut away sides or visors with louvers shall be fitted.

A Photo Electric Control Unit (PECU) shall be mounted on a signal head that is not subject to the effect of artificial light sources. It is preferable, but not essential, that this pole is close to the controller cabinet. Failure of the PECU shall cause the signals to assume the 'bright' condition. Refer to signal design drawings for details of which pole the PECU is to be installed on.

For signal heads installed at the top of poles with low level access terminations, drop cables fitted shall ensure no intermediate cable terminations are needed between the signal head and the termination at the bottom of the pole.

Pedestrian crossing studs shall be stainless steel.

Equipment – Displays and Push Button Units

Vehicle aspects shall be LED Central Light Source.

Combined pushbutton and Toucan nearside indicators should be used.

All Pedestrian/ Cyclist demand units shall be the extra-low voltage type with a voltage rating of 48V and shall have appropriate wait indicator lamps fitted.

A clear indication of the voltage rating of the wait indicator lamp shall be placed in a conspicuous position on the interior surface of the pedestrian push button unit.

Unless otherwise specified, demand units and nearside displays on standard poles shall be combined units. On folding/hinged poles, separate demand unit and nearside displays shall be used.

Nearside signal and demand units that may be required as part of the traffic signal installation equipment, shall comply with TR2511A "Performance Specification for Nearside Signal and Demand Units".

When separate demand unit and nearside displays are used, the primary nearside indicator shall be so installed that there is a gap of approximately 150mm between the top of the pushbutton unit and the bottom of the display housing.

Nearside pedestrian pushbuttons and displays shall be installed so that they are approximately 30 degrees from the line of the kerb and not visible from the opposite waiting area, unless detailed otherwise on the scheme drawings.

Where specified on the scheme drawings, "Narrow Field of View" optics shall be used

Where specified, additional ('duplicate') nearside displays shall be sited above the "primary" nearside display and shall be narrow field of view. Installation height and orientation must be agreed on site with Signal Design Engineer.

Audible devices shall only be installed as specified on the signal design drawings.

If required, audible signals shall comply with TR2509A "Performance Specification for Audible Equipment for use at Pedestrian Crossings".

Tactile indicator units shall be of a type approved by the Signal Design Engineer. Guidance shall be sought by the prospective Traffic Signals Contractor at the time of quotation as to which types are approved and shall comply with TR2508A; Performance Specification for Tactile Equipment for use at a Pedestrian Crossing.

Until commissioning of the traffic signals has been undertaken, the Traffic Signals Contractor shall ensure that all pedestrian push button units are concealed in such a way as to indicate clearly to pedestrians that they are not in use.

Equipment - Cable Requirements

The Traffic Signal Contractor shall be responsible for the design of the site cable arrangement.

All cables including detector feeder cables but excluding loop detector cables shall have their outer-sheath coloured orange. Additionally, they shall be embossed with the legend "TRAFFIC SIGNALS" in 4mm high characters generally in accordance with BS6346: 1997 "Specification for PVC – insulated cables for electricity supply". For further details on core colours please refer Table 1 at the end of this 'appendix 12/5.

All traffic signal cables (but excluding detector feeder and loop detector cables) shall be Steel Wire Armoured (SWA). Drop cables need not be armoured.

All traffic signal cable shall be installed in below ground ducts.

ELV Cables shall have a yellow "pull tight" label securely fixed to each end. LV Cables shall have a red "pull tight" label securely fixed to each end. Each cable shall have a unique identification number (typically the pole number) which, along with the location of the other

end of the cable, shall be clearly written on each label in indelible ink.

Each cable length between the controller and signal or detector posts or an adjacent controller shall include the greater of 25% or four spare cores throughout its length.

Cables shall not be bent to a radius of less than 12 times their diameter or less than a radius recommended by the manufacturer, whichever is the greater.

Cable lengths/connections shall be arranged so that one signal pole knockdown or one cable fault does not extinguish all the signals on any one approach.

Each pole shall be serviced by a dedicated cable/s for that pole. By exception, if agreed with the Project Manager prior to installation commencing, poles holding solely a pedestrian pushbutton (without any other detection or pedestrian or traffic aspects) may be linked to the adjacent pole with the pedestrian indicator for that pedestrian phase.

ELV and LV shall never be mixed on the same cable – Separate LV and ELV cables shall be used. Separate ELV and LV termination blocks shall be used at the pole terminations.

'Cat 5' cables, where required shall be installed between controller and pole with enough slack to allow connection to peripherals within the controller and attached to the pole.

The termination of each cable core in the controller shall incorporate a drip loop of at least 100mm adjacent to the terminal block to reduce the likelihood of damage from condensation.

A "Cable Schedule - Extra Low Voltage" and "Cable Schedule - Low Voltage" shall be completed for each controller and termination cabinet showing the unique identity of each cable, and the location of its terminations. The "Cable Core Schedule" shall be completed for each cable showing the function of each core within the cable. The completed schedules shall be passed to the Project Manager.

A further cable schematic, detailing the controller to pole cabling shall be provided prior to SAT. This shall include the number of used and spare cores on each cable.

Equipment - Above Ground Detection

Above ground pedestrian detection equipment shall comply with TR2506A "Performance Specification for Above Ground On-Crossing Pedestrian Detection Systems" and TR2507A "Performance Specification for Kerbside Detection Systems for use with Nearside Signals and Demand Units. Above ground vehicle detection shall comply with TR2505A "Performance Specification for Above Ground Vehicle Detector Systems for use at Permanent Traffic Signal Installations"

Any specific software required to setup and maintain the detectors shall be supplied on a CD or USB drive to the Project Manager. Vehicle detection(both VA and MOVA as required and On crossing detection

The supporting brackets for above ground detectors shall normally be mounted on top of a signal aspect bracket. The supporting bracket shall allow for the vertical and horizontal adjustment of the above ground detectors. When adjusted, it shall be possible to lock the above ground detectors in the position selected.

The above ground detector mounting method shall ensure that other furniture, for example backing boards, does not obscure the field of detection and shall be secured by means of an anti-theft fixing.

Cables for above ground detectors shall be secured neatly by tie-wraps to the uppermost signal bracket in such a way as to prevent damage by vandals or inclement weather.

Plug and socket cable connections shall be supplied for termination into the signal heads. The connections shall have a minimum IP55 rating. These connectors shall be fitted to the signal head assembly to enable the detector units to be easily removed for maintenance purposes.

Equipment - Inductive Vehicle Loop Detection

Inductive loop detection equipment shall comply with the latest revision of TR2512 "Performance Specification for Below Ground Vehicle Detection Equipment".

Detector loops are to be installed only after the road markings and any high friction surfacing have been laid.

Where required by the traffic signal design drawing, carriageway loop boxes shall be utilised. These shall be connected to a loop chamber (typically located in the footway/verge) by means of an under-kerb duct, in order to enable loop detectors to be installed without damaging kerb stones.

Inductive loop cable shall comply with the latest revision of TR2029 "NMCS Inductive Loop Detector Cable". The minimum overall cable diameter defined in Clause 5 of TR2029 shall be increased to 6.8 mm.

Inductive loop feeder cable shall be non-armoured and shall comply with the latest revision of TR 2031 "Feeder Cable for Inductive Loop Detectors". The cable shall be sheathed in orange polyethylene, not black as required by Clause 6.1 of TR 2031.

Tests shall be carried out to record the insulation and series resistance of the components of each loop detector installation and shall be completed prior to site acceptance when it will be signed and handed to the Signal Design Engineer.

Feeder cables shall not exceed 200 metres. Exceptionally this maximum length may be increased to 300 metres in accordance with TR2512A provided specific authorisation from the Traffic Signal Engineer is obtained.

Only 1 pair or 2 pair feeder cable shall be used. No feeder cable shall be jointed unless it is to connect a detector loop.

No individual feeder cable shall be connected to more than one physical detector unit. Each loop shall be individually connected to a separate detector unit, or to separate channels of multi-channel detector units or as shown on the signal design drawing.

All individual units/ channels, including spares shall be labelled with their respective loop identification.

Each feeder cable shall have a "pull tight" label securely fixed to each end, the identity of the loop(s) attached to the cable, as shown on the signal design drawing, shall be clearly written on each label in indelible ink.

The minimum dimensions for slot cutting in asphalt road surfaces shall be 8.0 mm wide by 92.5 mm in depth for the actual loop perimeter and for the 'Cut Back' for single and double loop tails. Where three pairs of loop tails share a single 'Cut Back' slot, the depth shall be increased to 110 mm. On concrete road surfaces, the depths specified may be reduced by 30 mm.

Where the loop cable turns in the slot at an angle of less than 110 degrees, the apex of the corner shall be removed in accordance with MCH 1540 Issue F.

All slots shall be made dry and free of debris before the loop cable is laid, and all efforts shall be made to keep the slots clean and dry before the back fill is complete.

Slot cutting shall only take place during the nominated hours identified by the Project Manager. Confirmation of the times will need to be sought from the Project Manager authorising the slot cutting works.

A mains water supply will be used for cooling saw blades during slot cutting. The Traffic Signals Contractor shall be responsible for the gaining of permission from the appropriate water supply company for the extraction of water required for slot cutting purposes.

In order to minimise the possibility of damage to the mains or contamination of the water supply, the Contractor shall supply and use a double non-return valve assembly on standpipe(s) when connected to a hydrant(s). The water companies may stipulate that hoses must not be laid across a carriageway unless it is closed to traffic.

Where a hydrant is not available, or when a carriageway crossing is necessary, the Contractor shall provide a water bowser. A water pump may be connected to the bowser's outlet to supply high pressure water to the slot cutting machine.

The back fill for the loop cable shall be a one-part process, comprising of a layer of hot pour bitumen.

Where more than one pair of loop tails share a common 'Cut Back' slot then a layer of epoxy resin shall be poured over each pair to avoid entrapment of air amongst the loop cables.

The manufacturer's recommendations shall be followed explicitly regarding the handling, mixing, and use of resins and the manufacturer's COSHH datasheets. In all cases the resin pour must be sufficient to provide a 5 mm cover to the upper cable in the slot. The resin must be allowed to set before the application of hot pour bitumen or cold setting asphalt as appropriate.

Jointing shall not take place in wet weather conditions unless suitable protection is erected to ensure moisture cannot enter the joint during the jointing operation.

Equipment - Reuse of Existing Equipment

For sites requiring the reuse of existing traffic signal equipment the Traffic Signal Contractor shall ensure the full compatibility and functionality of all new equipment with the existing equipment. For instance, any new signal heads (including pedestrian phases and wait lamps) shall be fully lamp monitorable by the existing signal controller.

Where compatibility cannot be ensured, the Traffic Signal Contractor shall advise this at time of tender and provide details of any limitations.

The Traffic Signal Contractor shall be responsible for ensuring that all necessary modifications to the existing traffic signal equipment are identified and carried out, to ensure full operation to the scheme design. This shall include, but is not limited to ensuring backplane capacity; detector card capacity; transformer positions and relocation.

Equipment – Installation

The Principal Contractor shall ensure that the installation of traffic signal equipment progresses in such a way as to reasonably minimise disruption to the travelling public, including pedestrians and cyclists. At the pre-construction meetings, the operation of existing signals during construction shall be an agenda item.

Unless otherwise agreed with the Project Manager, existing signals, including pedestrian phases, shall be kept operative during construction. Any periods where the signals are expected to be turned off shall be pre-agreed with the Project Manager.

Where poles are placed into temporary bases, any above ground cables shall be routed or covered to prevent trip hazards.

All erected signal heads that have not been commissioned shall be covered at the end of each day of installation. Durable waterproof orange coloured covers shall be provided by the Traffic Signal Contractor for this purpose. The Traffic Signal Contractor will also be responsible for their fitting and maintenance during the installation period and their removal prior to testing.

All items of street furniture shall be treated with an appropriate protective coating which shall be intact at the time of delivery. Where, during installation, any item of street furniture sustains minor damage or unprotected metal surfaces are exposed, for example while drilling holes in poles for pedestrian push-button boxes, an appropriate repair shall be undertaken to reduce the risk of corrosion.

The transportation to or from site of all necessary street equipment required to carry out the signal installation shall be the responsibility of the Traffic Signal Contractor.

The Traffic Signal Contractor will also be responsible for all necessary on site handling of street equipment in the course of installation works and will be responsible for the safe keeping of all equipment being provided under this contract until site acceptance by the Signal Design Engineer.

Operation – General

Traffic signal controllers shall comply with TR 2500 issue A "Microprocessor Based Traffic Signal Controller" including all released amendments and appendices.

All new controllers shall not utilise EPROMs for the purpose of programming, downloading or storing the controller configuration.

On new controllers, it must be possible to perform minor updates to the controller configuration (those not requiring new hardware or the changing of safety critical configuration items) with the signals switched on.

Communications to the controller and OTU shall be through a handset terminal, a Windows notebook PC, connected through the 'front panel terminal port' or Ethernet or USB socket. It shall be possible to fully communicate with the controller through the use of a windows laptop/notebook running any of Windows XP, Windows 7, Windows 8.1 or Windows 10. Any instructions or additional software required for the configuration of the communications shall be freely provided by the Traffic Signal Contractor.

The controller shall have an internet browser based user interface.

All connection terminals (serial, Ethernet and/or USB) shall be to the front of the controller and shall not need the swing frame to be opened to access them. Extension cables/sockets may be used to enable front of controller access – Any such extension cables shall be securely fixed to the controller frame and clearly labelled to identify them.

Operation – Method of Control

MOVA control is to be used and a new MOVA licence shall be provided as part of this contract.

The MOVA equipment supplied shall be provided with a means of communication via both a Windows notebook PC through the 'front panel terminal port' or Ethernet or USB socket.

Provision of Chameleon and 4G Wifi

Both the above methods of communication shall be by means of the TRL program MOVA comm or other software providing identical functionality.

MOVA validation to be carried out by Suffolk County Council's Traffic Signal Contractor, in conjunction with the local authority.

Operation – Faults

It shall be possible to interrogate the controller in order to identify comprehensive details of any fault.

The failure of any vehicle and/or pedestrian detecting equipment for which fault monitoring has been specified shall cause the FM indicator to be lit. A detector that has been set by means of the operator interface to be permanently active or inactive shall not generate a failure indication.

A Lamp Monitor Facility that is capable of monitoring all vehicle or pedestrian aspects (including the 'WAIT' lamp and nearside pedestrian or cycle aspects) and regulatory box signs shall be provided. This facility shall be provided by a unit integral to the controller. The output of The Lamp Monitoring Facility is to be connected to the relevant input of any remote monitoring or control unit to report to the In-station, where such a unit is fitted.

The signals shall be connected to the Suffolk County Council RMS system, using a GSM SIM card and Chameleon OMU. SIM cards will be provided by Suffolk County Council.

The Traffic Signal Contractor shall provide and configure all necessary in-station and out-station modems to ensure the system is fully operational for the commissioning of the works.

The outstation monitoring unit shall at a minimum report the following fault conditions:

Signal lamp failures indicating lamp colour and phase.

Signals off and be able to distinguish between:

Mains power failure

Controller fault i.e. Power failure to signal aspects.

Signal lamps switched off at Police panel.

Timing violations of the following periods: -

Minimum green period;

Intergreen period;

Maximum green period; and,

All red period.

Signals stuck in Phase/Stage.

Detector Faults.

Door / Flap opening / closing.

Unexpected change of method of control.

Operation – Documentation

The Traffic Signal Contractor shall provide a suitable maintenance log book. This will take the form of an A5 book with cardboard covers It shall be available at the SAT in order that subsequent site visit records can be maintained. Traffic Signal Controller Specification form print outs are to be provided in a water proof folder in the controller cabinet.

A3 sized, laminated copies of the site drawing shall be fixed to the inside of the controller cabinet door.

Laminated schematics of the detector pack allocations shall be fixed to the inside of the controller or equipment cabinet door housing that equipment.

7. Testing

Factory Acceptance Test

One printed copy of the user handbook or guide shall be supplied to the Signal Design Engineer for each type of controller and item of ancillary equipment. The documentation shall include a full list of operator commands and their functions and details of the functions of all switches accessible to the Signal Design Engineer. The Traffic Signal Contractor shall supply the documentation to the Project Manager at the time of the Factory Acceptance Test (FAT).

The Traffic Signal Contractor shall free issue the proposed controller configuration and Windows based emulation/simulation software two weeks prior to the formal FAT date to allow remote 'pre-FAT' testing to be completed by the Project Manager. Emulation/simulation of all controller functions shall be possible.

The Traffic Signal Contractor shall make all necessary arrangements for the Project Manager to attend the FAT (at the local depot of the Traffic Signal Contractor) and shall give the Project Manager at least two weeks' notice of the proposed FAT date. On the agreed FAT date, the Traffic Signal Contractor shall ensure the immediate availability (within 10 minutes, lunch break excepting) of a traffic signal configurator, who can confirm any queries, provide technical support and reconfiguration as needed.

The Traffic Signal Contractor shall ensure that the control equipment on test during the FAT is the hardware, firmware and software that is proposed to be installed for this contract.

Where the configuration of existing controllers is being modified, unless agreed with the Project manager, it shall be possible to carry out the FAT remotely from the Traffic Signal Contractor's depot. The Traffic Signal Contractor shall free issue the proposed controller configuration and Windows based emulation/simulation software to allow full emulation/simulation of all controller functions. On the agreed FAT date, the Traffic Signal Contractor shall ensure the immediate availability (within 10 minutes, lunch break excepting) of a traffic signal configurator, who can confirm any queries, provide technical support and reconfiguration as needed. The Project Manager may alternatively require the FAT test to be completed at the Traffic Signal Contractor's premises.

The Traffic Signal Contractor shall have in place a process to provide a clear issue/version history for the signal controller configuration.

The Signal Design Engineer reserves the right to uniquely mark parts of the control equipment (following a successful FAT).

If requested by the Project Manager, a successfully completed green conflict test certificate shall be provided by the Traffic Signal Contractor as part of the FAT.

Following successful FAT, the Traffic Signal Contractor shall supply the Traffic Signals Engineer with a disc/USB flash drive containing the controller specific configuration data and shall retain sufficient records to provide replacements at reasonable cost, in the event of the configuration becoming damaged or requiring modification. No changes shall be made to the controller configuration post FAT, unless specifically agreed with the Project Manager.

Should it not be possible during the initial FAT for the Signal Design Engineer to accept the control equipment due to the failure of facilities, test gear or control equipment supplied by the Traffic Signal Contractor, all reasonable costs incurred by the Signal Design Engineer to attend subsequent FAT(s) will be recovered from the Traffic Signal Contractor prior to settlement of the final account.

Signal Installation Electrical Test

Electrical safety tests, complying with the latest edition of BS 7671 "Requirements for Electrical Installation" shall be carried out by the Traffic Signal Contractor, using appropriate test equipment, at each of the controller cabinets, termination cabinet and each associated pole.

A "Signal Installation Electrical Test Certificate" shall be completed prior to site acceptance when it will be signed by the Signal Design Engineer. Pole numbers used on the certificate shall be as shown on the signal design drawing.

The Traffic Signal Contractor shall notify the Project Manager in writing of any precautions that are required to safeguard the controller hardware and software during such tests. A list of these precautions shall be left in the controller following commissioning.

The Traffic Signal Contractor shall forward copies of the completed certificates to the Project Manager within five working days of site acceptance test.

During installation, the Traffic Signal Contractor shall ensure that the site remains electrically safe at all times. New equipment shall not be left switched on until SAT has been successfully completed.

Site Acceptance Test

One copy of the Traffic signal controller configuration and cabinet keys shall be provided to the Signal Design Engineer prior to Site Acceptance Testing (SAT).

Site Acceptance Testing will require the Traffic Signal Contractor to provide a SAT Engineer per controller being tested to demonstrate to the Project Manager the compliance of the installation with the specifications in all respects. The Traffic Signal Contractor shall also provide all testing equipment required.

The Traffic Signal Contractor shall make all necessary arrangements for the Project Manager to attend the SAT and shall give the Project Manager at least two weeks' notice of the proposed SAT date.

The Traffic Signal Contractor shall also invite the local authority's Traffic Signal Maintenance Contractor to attend the SAT. Should there be any dispute over site acceptance, the Project Manager's decision shall be final.

The Traffic Signal Contractor is to conduct pre-switch-on tests and complete all relevant documentation required under this specification, prior to SAT.

The Project Manager reserves the right to instruct the Traffic Signal Contractor to carry out any tests he/she may consider necessary to prove the correct operation of the monitoring equipment.

A "Traffic Signal Site Acceptance Certificate" will be signed by the Project Manager and the Traffic Signal Contractor when the installation has been shown to comply with the specifications and all documentation is complete.

The Traffic Signal Contractor shall supply the Project Manager with two copies of appropriate controller interrogation software, and interface leads to enable on site communication with the traffic signal controller via the RS 232, Ethernet or USB engineers port. This shall include all necessary software and/or instructions to allow full communications with the MOVA unit using MOVAComm, using any of Windows XP, Windows 7, Windows 8.1 or Windows 10.

The site shall not formally be accepted until all outstanding snags have been corrected and until all information has been provided.

8. Equipment Handover Maintenance and Warranty

Handover

All outstanding defects are to be rectified within four weeks of switch on. The Project Manager reserves the right to employ the services of another signal company to complete outstanding work not resolved within the four week timeframe. Failure to complete outstanding snags to the Project Manager's satisfaction will result in the 12 month warranty period being awarded to another signal company. Costs incurred when resolving outstanding work after the allocated timeframe, including the 12 month warranty period, shall be invoiced to the Traffic Signal Contractor.

Warranty

The tender price shall include for the provision of 12 months warranty of all equipment supplied under this contract. This 12 month warranty period will not commence until all works (including snag list) have been completed and the site accepted by the Project Manager.

Timing Amendments - Revised Configurations

The Traffic Signal Contractor shall include for the provision and installation of one additional controller configuration per site provided or modified under this contract, to include FAT & SAT. Such reconfiguration shall be possible from any time after initial FAT until the end of the twelve months warranty period for each controller provided under this contract. This shall incorporate any timing or configuration amendments deemed necessary by the Project Manager.

9. Forms

The combination of forms required will vary depending on the type of installation and will be advised when the scheme is approved.

To be completed by the Traffic Signal Contractor

Installation Electrical Test Certificate

Certificate of Detector Performance

Installation Energy Inventory Sheet (Elexon Codes – see section 5)

Installation Inventory Sheet

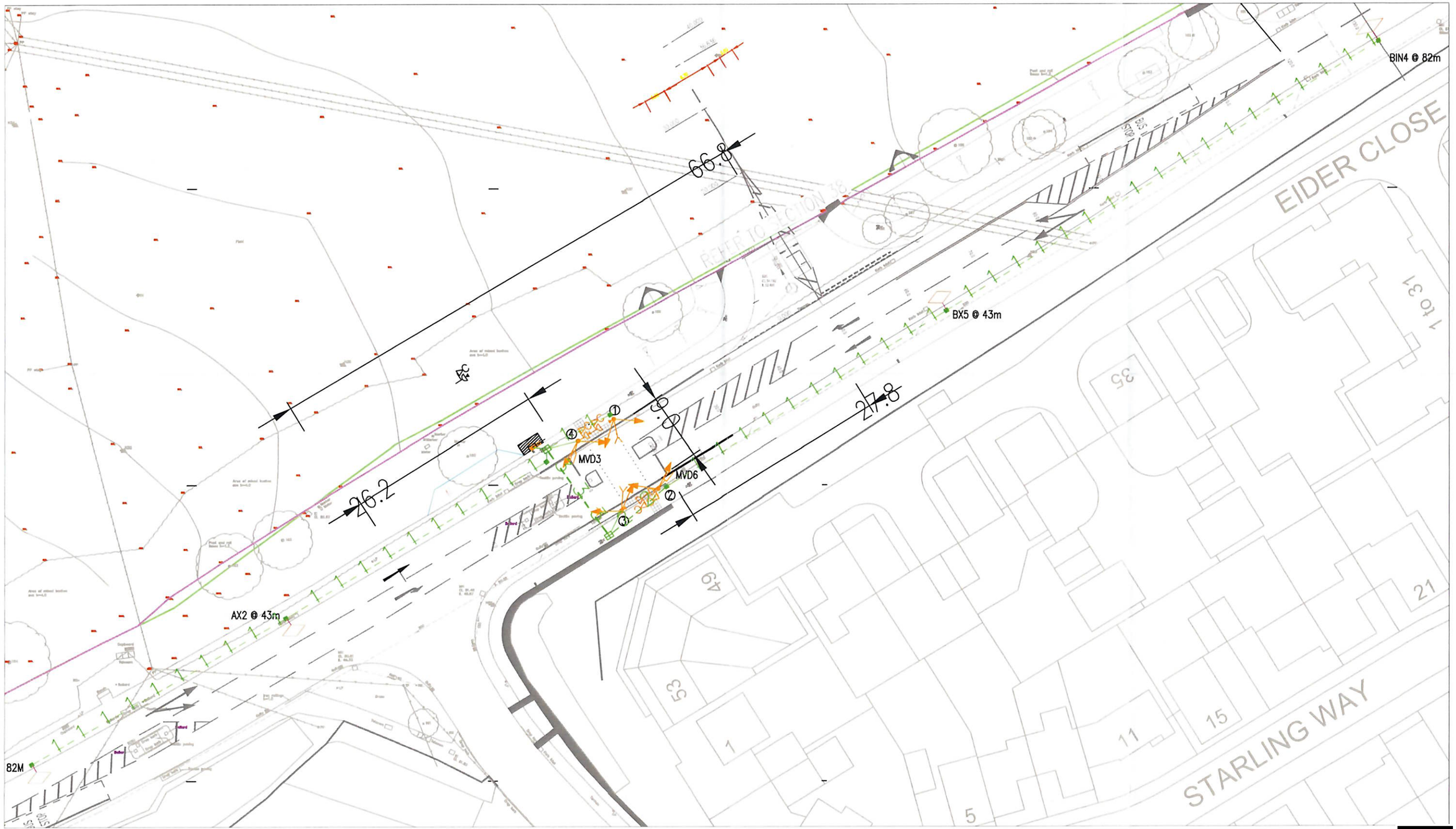
To be completed by an SCC ITS Representative

Factory Acceptance Test

Outstation Acceptance Test

Site Acceptance Test

Example forms are available on request.



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your roads, our business
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CLIENT

REVISION(S)				
DESCRIPTION	REV.	DATE	INTL.	

PROJECT TITLE: Proposed toucan Crossing B1115 Stowupland road/Diaper Farm Stowmarket	ORIGINATOR: KAS	CHECKER:	DESIGNER: KAS
DRAWING TITLE: GPR survey	SCALE(S) ORIGINAL SIZE A3: 1/500 @ A3	DATE: November 2023	
	DRAWING NUMBER: ITS/Diaper/02		REVISION:

[redacted]

File Path R:\Transport & Infrastructure\Traffic Mgmt_ Traffic Signals\Developer Schemes\Diaper Farm Stowmarket\Traffic Signal Design.dwg

Plot date 28/11/2023