EV Charging Point Delivery Stage

Euston FIRE STATION

Document Reference No: GB/QGB2480/Euston/10/09/18

Issue No: 1

Issue Date: 20/12/2018

chargemaster@gbhereford.co.uk

Contents

Other separate documents required:

- Shut Down Request – To be sent after LFB sign off

1. EV Charging Point Survey

Input Power	☐ 16 Amp	☒ 32 Amp	☐ 64 Amp	☐ _____ Amp
Phases	☐ Single Phase	☒ 3 Phase	No Sockets:	☐ 1 ☐ 2
Unit Type	☐ Homecharge	☒ Dual Wall Mount	☐ Dual Post Mount	☐ Rapid Charger
Power at Socket(s)	☐ 3.6kW	☐ 7.3kW	☒ 11kW	☐ 22kW
Communications	☒ YES ☐ NO	Connectivity:	☒ SIM Card	☐ Ethernet
Ancillaries	☐ Guard Rail	☐ Signage	☐ Feeder Pillar	☐ Earth Pit
Additional Works	☐ Civil Works	☒ Bay marking	☐ _____	

Description of Installation:
To Install: - 1 No. Three Phase 22Kw (2 x 11KW) three phase dual outlet floor mounted Electric Vehicle Charge point. The charge-point shall be located at the front of the fire station (refer to photo survey). The cable will be run through the Electric switch room through existing hole to the external position. 63mm cored hole will be required from the centre base position of the charger to the inside lower wall position as shown in the below photos. LSF SWA cable is to be installed clipped direct/Cable Tray/Steel Conduit/Steel Trunking. The cable tray and cable is to be installed as per sections 5.7 and 5.8 of the LFB Standard station design brief (Appendix P: Standard Electrical Specification).

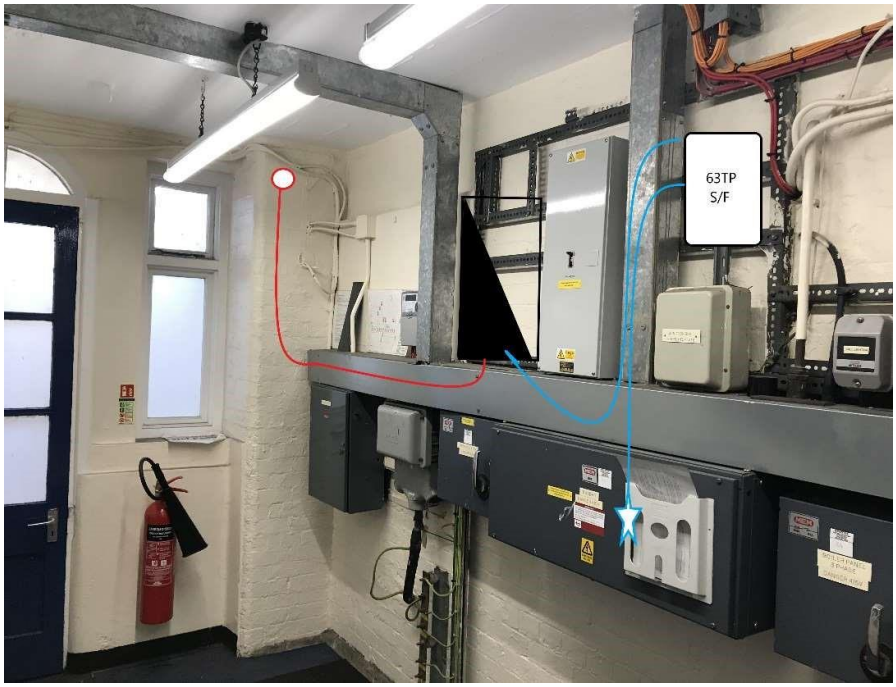
Description of Power Distribution:
The station has a three Phase 100 Amp supply and has a TN-S Earthing system. With prior DNO approval there is currently sufficient spare capacity for the addition of a 3 Phase 22KW wall mounted EVC. 0 volts. Brief description of work required: - Installation of 1 x new 63Amp TP Switch Fuse, 63 Amp Sub Main, 1 x 100 Amp TP Distribution Board, 2 x 16 Amp TP MCB's, Cable Tray and containment, 2 x 32 Amp final circuits & 1 x 3 Phase 22KW wall mounted EVC. All installation work to comply with BS: 7671 and the IET Code of Practice for Electric Vehicle Charging Equipment Installation (2nd Edition).

Signal Test Results:				
O2:	GSM 900	SIG 78%	BER Good	Absolute level: -65 dBm
EE:	GSM 1800	SIG 87%	BER Good	Absolute level: -54 dBm
Vodafone:	GSM 900	SIG 78%	BER Good	Absolute level: -67dBm

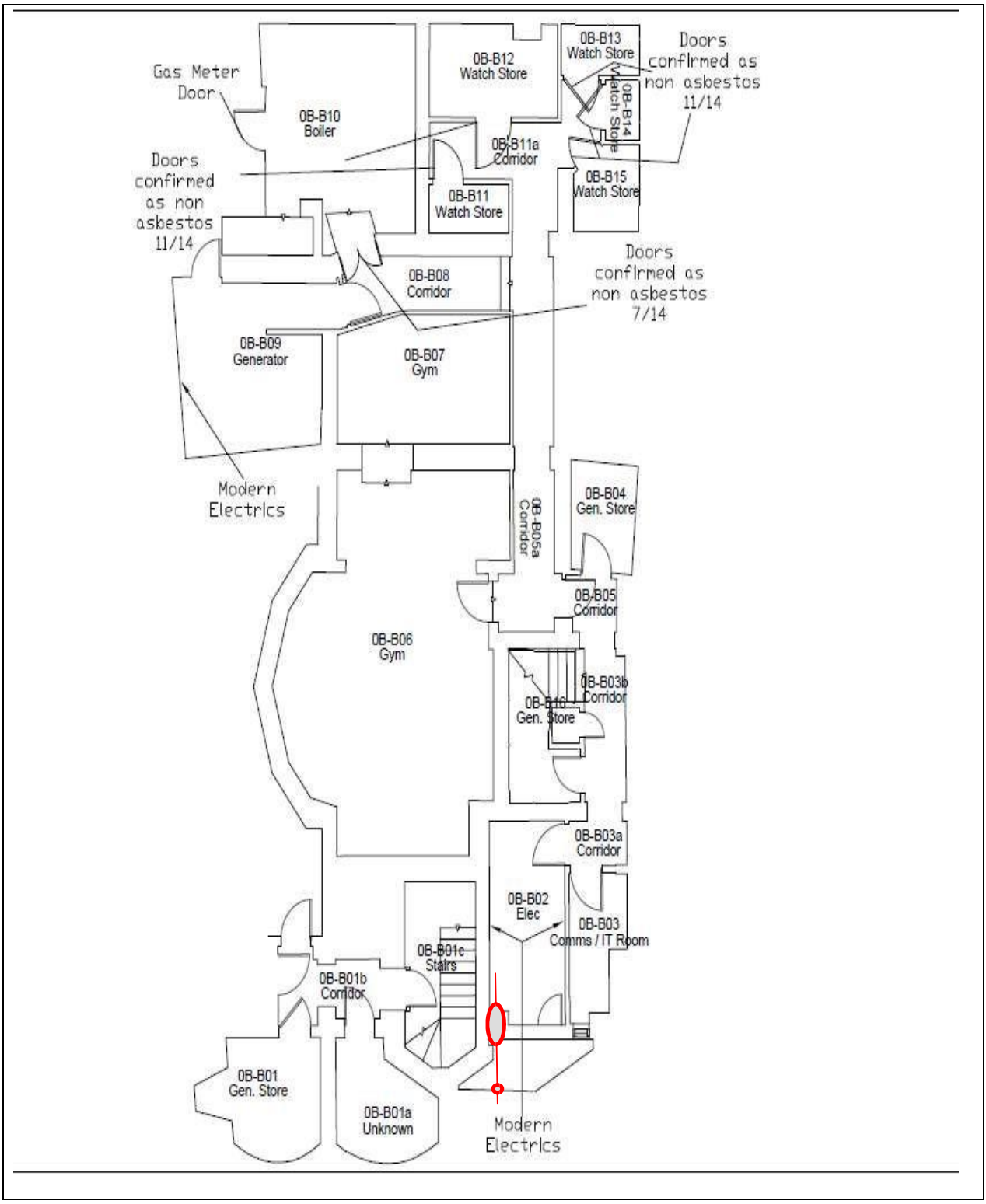
Description of Civil Works (if applicable):
Heat applied pre-formed Bay Marking. NOTE: DURING THE UNDERTAKING OF ANY CIVIL ENGINEERING WORK, IF ANY ASBESTOS MATERIAL IS IDENTIFIED OR SUSPECTED, THE AREA SHALL BE ISOLATED AND THE LFB AUTHORIZED REPRESENTATIVE SHALL BE DULY INFORMED AS PER LFB ASBESTOS MANAGEMENT PLAN (POLICY 694).

Description of Additional Works (if applicable):
As detailed in survey photos.

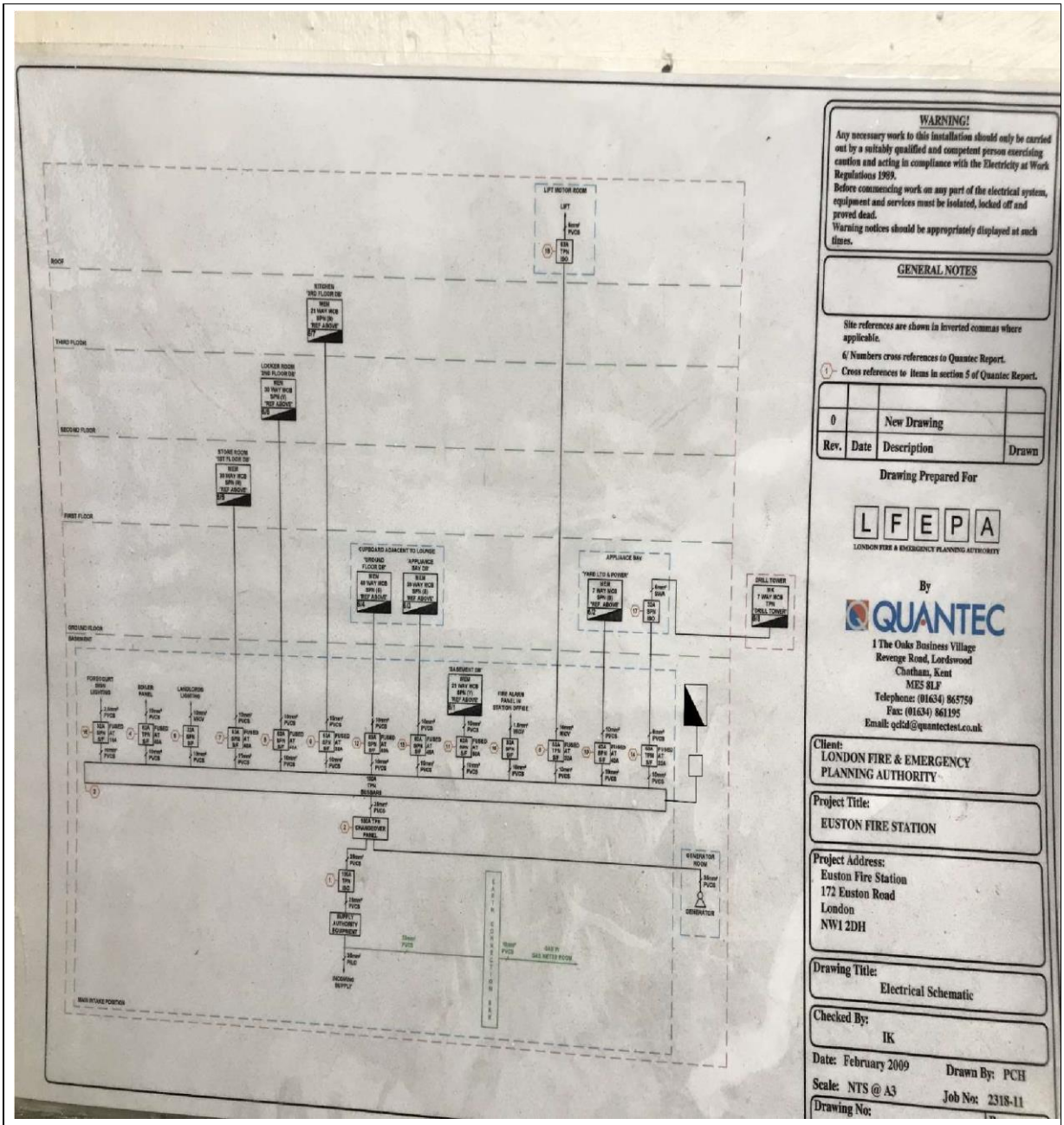
1. Photographs of site, cable route and location


63TP
S/F

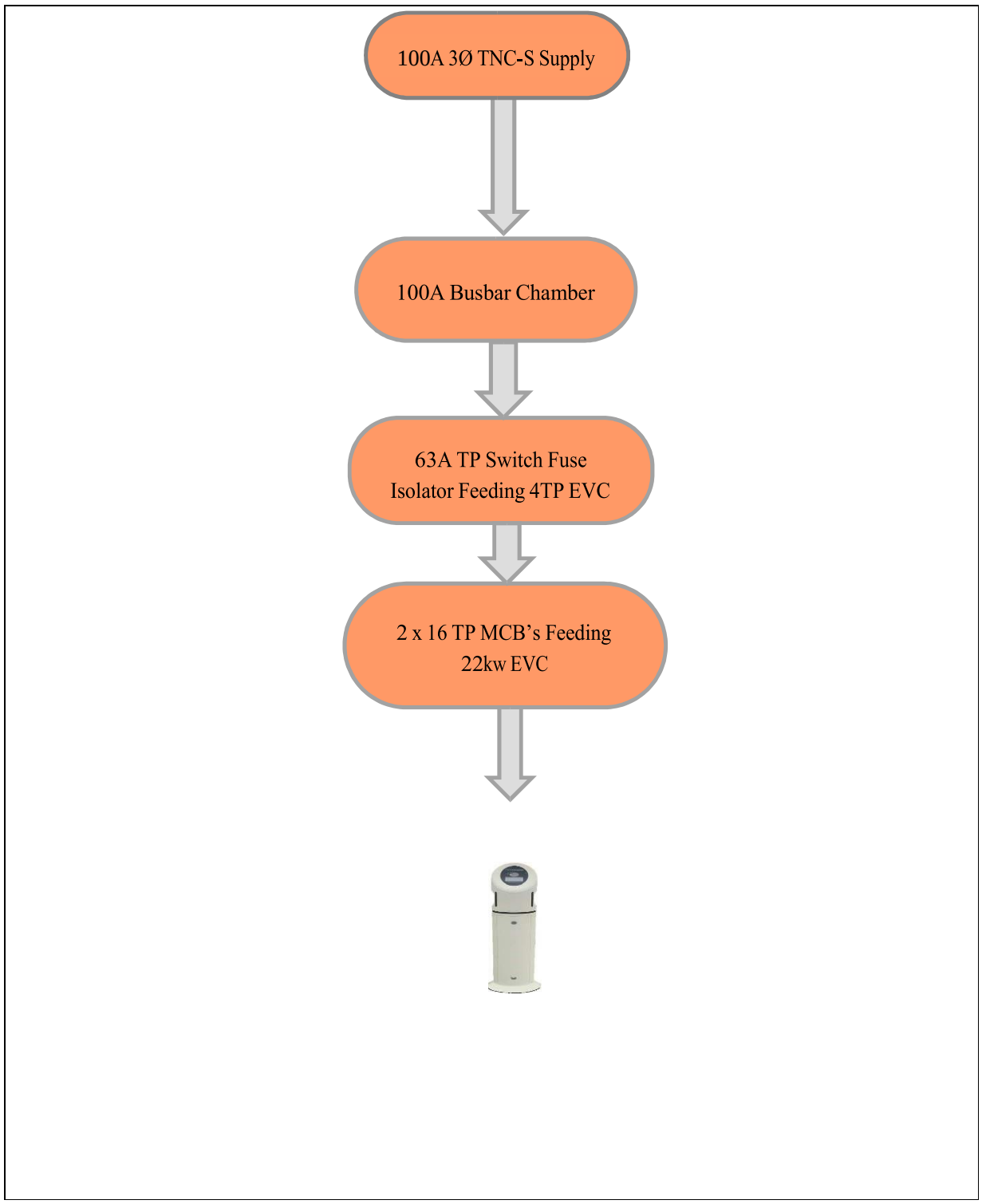
2. Signed Site Plans:


Gas Meter Door
0B-B10 Boiler
0B-B12 Watch Store
0B-B13 Watch Store
Doors confirmed as non asbestos 11/14
0B-B14 Watch Store
0B-B11a Corridor
0B-B15 Watch Store
Doors confirmed as non asbestos 11/14
0B-B11 Watch Store
0B-B08 Corridor
Doors confirmed as non asbestos 7/14
0B-B09 Generator
0B-B07 Gym
Modern Electrics
0B-B05a Corridor
0B-B04 Gen. Store
0B-B05 Corridor
0B-B06 Gym
0B-B03b Corridor
0B-B16 Gen. Store
0B-B03a Corridor
0B-B02 Elec
0B-B03 Comms / IT Room
0B-B01c Stairs
0B-B01b Corridor
0B-B01 Gen. Store
0B-B01a Unknown
Modern Electrics

3. Schematic of electrical additions to electrical infrastructure


WARNING!
Any necessary work to this installation should only be carried out by a suitably qualified and competent person exercising caution and acting in compliance with the Electricity at Work Regulations 1989.
Before commencing work on any part of the electrical system, equipment and services must be isolated, locked off and proved dead.
Warning notices should be appropriately displayed at such times.
GENERAL NOTES
Site references are shown in inverted commas where applicable.
6/ Numbers cross references to Quantec Report.
Cross references to items in section 5 of Quantec Report.
0 New Drawing
Rev. Date Description Drawn
Drawing Prepared For
LFEPA
LONDON FIRE & EMERGENCY PLANNING AUTHORITY
By
QUANTEC
1 The Oaks Business Village
Revenge Road, Lordswood
Chatham, Kent
ME5 8LF
Telephone: (01634) 865750
Fax: (01634) 861195
Email: qcltd@quantectest.co.uk
Client:
LONDON FIRE & EMERGENCY PLANNING AUTHORITY
Project Title:
EUSTON FIRE STATION
Project Address:
Euston Fire Station
172 Euston Road
London
NW1 2DH
Drawing Title:
Electrical Schematic
Checked By:
IK
Date: February 2009
Drawn By: PCH
Scale: NTS @ A3
Job No: 2318-11
Drawing No:

4. Electrical Schematic of Site


100A 3Ø TNC-S Supply
100A Busbar Chamber
63A TP Switch Fuse
Isolator Feeding 4TP EVC
2 x 16 TP MCB's Feeding
22kw EVC

5. LOAD CALCULATOR

Ref. No. GB/QGB2480/Euston/10/09/18

Premises	Site Name			COMMENTS
PHASE	L1	L2	L3	
Insert - Electrical Supply Head Rating (Amps)	100 Amps	100 Amps	100 Amps	
Insert - Existing loading per phase from full load test (AMPS)	20 Amps	15 Amps	21 Amps	
Proposed New Load per phase (AMPS)	32 Amps	32 Amps	32 Amps	1 x 22KW EVC (2 x 11KW Outlets)
30% spare capacity allowance	30 Amps	30 Amps	30 Amps	Actual spare capacity is approximately 47%
Total load	52 Amps	77 Amps	83 Amps	
PASS/FAIL	Pass	Pass	Pass	

6. Cable calculation as per 17th Edition BS 7671 Regulations

Site Ref. No.: GB/QGB2480/Euston/10/09/18

Cable Requirements.

Cable size (sq.mm):	4.00
Max. current rating over 10 mtrs.	42.00
Actual voltage drop over 10 mtrs.	3.20
Estimated conductor temperature (c)	64.83

Your selection.

Cable Type	Armoured Cables (90°C XLPE)
Supply voltage (V)	400
Phase:	Three phase
Cable load (Amps)	32
Cable length (mtrs.)	10
Ambient temperature (c)	30
Average efficiency	1.00
Power factor	1.00
Cable grouping factor	1.00
Temperature correction factor	1.00
No.of circuits:	1
Maximum allowed volt drop (%)	5.00
Selected installation	MULTICORE SWA CLIPPED DIRECT (IEE Table 4E4A Method C)

Related Information.

7. Site Specific Electric Vehicle Charge Point Risk Assessment Form

GB Job Ref	QGB2480
Site details:	Euston Fire Station, 172 Euston Rd, Kings Cross, London NW1 2DH

Annex E - Checklist for commercial and industrial installations

(Form to be included with forms for certification given to the person ordering the work)

Arrangements prior to installation - Commercial and industrial installations

Ref	Check	Yes No N/A
4.1 Annex E	Are there are any hazardous zones where flammable/combustible gases may be present	No
4.1	Have the boundaries of any hazardous zones been identified	N/A
4.1	Can the installation be carried out so that the charged vehicle, cable and connections are outside the hazardous area when charging?	N/A
3.1	Is the supply a metered supply?	Yes
3.2	Is the existing supply adequate for the additional demand?	Yes
8	Has the earthing arrangement for the incomer power supply been established?	Yes
	Are the existing earth and bonding arrangements compliant with BS7671?	Yes
8.2.3	Is the supply PME (TN-C-S)	No
8	If PME, have precautions necessary to prevent danger in the event o an open circuit neural been identified and addressed?	N/A
8.2.1	If a TT earthing arrangement is being provided for the charging equipment has a simultaneous contact assessment been carried ou	N/A
3.5	Has GPRS coverage of the proposed installation location been checked?	Yes
3.6	Has the installer reviewed the installation instructions provided by th equipment manufacturer?	Yes
3.7	Has planning permission been granted for the charging equipment installation?	N/A
3.9	Have the details of the proposed installation been discussed and agreed with the client?	Yes
	Have any necessary repairs to the existing installation been agreed with the client?	N/A

8. ELECTRIC VEHICLE CHARGE POINT (INCLUDING EXCAVATION & PLINTH FOUNDATIONS) METHOD STATEMENT FOR LFB

~~Site Ref. No.: GB/QGB2480/Euston/10/09/18~~

Appendix 4 Initial Survey

Premises Name: Euston FIRE STATION REF.NO. GB/QGB2480/Euston/25/09/18			
Requirement	Completed Yes/No	Comments	Gateway Sign Off
1. Check the Location of the electrical intake and detail on drawing	YES		
2. Check the electrical schematic for the premises and ID the existing bus bar or primary electrical distribution network	YES		
3. Examine the intake metering fuse sizes and note the size	YES		
4. Examine the earthing arrangements and determine type, take an earth impedance reading and record.	YES		
5. Record the premises phase loads with the station loaded and all lighting on.	YES		
6. Examine the neutral system and record any back EMF.	NO		
7. Check for a voltage optimisation unit – these limit the total capacity available to 70 amps at these sites.	YES		
8. Identify a tap in location on the attached schematic – (this should be on the non-essential side of premises electrical system).	YES		
9. On the premises plan identify the external locations for each EV point – (front and back of house).	YES		
10. On the premises plan identify the cabling routes through the premises.	YES		

Appendix 5 Design Information

Premises Name: Euston FIRE STATION Site Ref. No.: GB/QGB2480/Euston/10/09/18			
Requirement	Completed Yes/No	Comments	Gateway Sign Off
1. Identify the length of cable run and the cabling size in accordance with the electrical regulations and LFB appendix P (installation standards).	YES		
2. Calculate the cabling size and clearly show this on an electrical drawing denoting the schematic of the whole installation. Detail on the electrical drawing all protection devices and demonstrated protection discrimination in accordance with the electrical regulations.	YES		
3. Fully describe on the electrical drawing the wiring standard, size and type.	YES		
4. Complete an asbestos check in accordance with policy 694 – no works are to be undertaken without asbestos clearance from TSS Property. Contact: Ross Nicolson x 31275	YES		