

LTR/16185/03

18<sup>th</sup> October 2017

FTAO Darren Pickens  
Campbell Driver Partnership  
Capricorn Park  
Blakewater Road  
Blackburn  
BB1 5 QR

Dear Darren,

**PRESSPARTS MACHINE SHOP EXTENSION, PHILIPS ROAD, BLACKBURN**  
**VALIDATION OF GROUND GAS PROTECTION,**

Following on from the submission of our Phase II Geoenvironmental Assessment for the above development at Presspart, Philips Road, Blackburn (Ref: R.14110/G/1 Nov 2014), which recommended the installation of ground gas protection measures to achieve a two point score in accordance with BS8485:2007 (subsequently updated in 2015). As the gas protection measures were not to be installed by a specialist installation contractor building control required the installation of these measures to be independently verified and this letter details the findings of this work.

Campbell Driver Partnership (projects architects) drawings No. 13.190.04/012A, 13.190.04/006C, detailing the ground gas membrane installation are provided as Enclosure 1. In addition to this gas details for the Phase 4 area are shown on Paul Waite Associates drawing 16185-S-02C and 16185-S-04D provided as Enclosure 1.

A low permeability gas membrane (Super Yellow 2000G Gas membrane) was installed across the machine shop extension floor area, with all joints and service penetrations lapped (150mm) and sealed with double sided Alderseal Gastite Mastic. A copy of the specification sheets and delivery notes are attached as Enclosures 2. Given the complex nature of the development, which involved the new extension tying in with existing historic buildings (which are not installed with ground gas protection), a 450mm plinth

was cast and dowelled to the existing floor slab and the gas membrane was taken to near the top of the existing slab and bonded with bitumen primer and gas tape.

An engineer from Paul Waite Geo-Environmental Limited (PWAG) visited the site on the 12<sup>th</sup> October 2017 to validate the installation of the low permeability ground gas membrane. The validation records for each visit along with a selection of photographs are attached as Enclosures 3 and 4.

The validation records indicate that the gas protection measures had been installed appropriately.

If you have any questions concerning the above please do not hesitate to contact us.

Yours sincerely



A handwritten signature in black ink, appearing to read 'L. Palmer'.

Dr. Lindsay Palmer MSc. BSc.

Encs

- Enclosure 1: Ground Gas Protection Details (CPD and PWA drawings)
- Enclosure 2: Delivery Notes  
Specification Sheets Super Yellow 2000g gas membrane,  
Gastite Mastic tape
- Enclosure 3: Validation Records (12<sup>th</sup> October 2017)
- Enclosure 4: Site Photographs

# **Enclosure 1**

## **Ground Gas Protection Details**

revisions:  
 A: 09.08.16: windows retained  
 B: 20.01.17: updated for tender issue  
 C: 03.02.17: amended to suit structure plans; cladding colours amended

**OVERCLAD EXISTING ROOF:**  
 Carefully strip off existing overcladding top sheets allowing for methodical programming to maintain weathertightness / existing production operations beneath. Provide new sheet metal cladding to match profile of Kingspan KS1000 DR/DRC fixed to existing steel upstand sections allowing for Kingspan Trapezoidal KS1000 TR Rooflights at existing rooflight positions. Allow for installation of new Rockwool Roll - 150mm laid over existing roof covering beneath proposed outer sheeting.

- Existing roof build assumed to be as follows:
- 180mm steel purlins spanning existing portal frames
  - mechanically fixed asbestos sheets fixed over purlins
  - steel upstand sections (z sections or similar) fixed through sheets to purlins;
  - sheet metal overcladding (facing sheet) fixed to upstands

**NEW HIGHLINE GUTTERS:**  
 Provide new Spectrum finished Kingspan Highline gutters (Colour: Onyx, RAL 7016) to face of new cladding panels including for all internal and external corners, stop ends, and 100mm square section PPC aluminium downpipes etc.

**NEW WALL CLADDING:**  
 New pre-formed 300mm corner flashings to match new cladding panels in spectrum finish

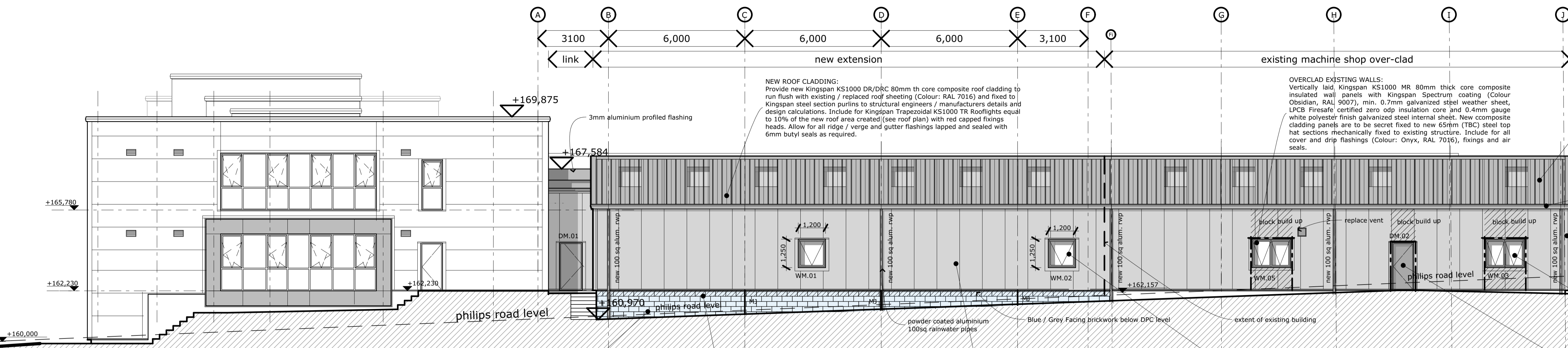
**EXISTING OPENING:**  
 Install new steel frame to structural engineers details and provide new block infill build up and new schuco window

**NEW STRUCTURAL OPENING:**  
 Form new structural opening by removal of approx.2 pre-cast concrete panels to form minimum structural opening of 1200mm wide. Provide new steel support frame to structural engineers details to take new concrete lintel and 140mm concrete block infill at high level strapped to existing head restraint. Provide new Hormann PPC from STD range (see door schedule) - Colour: RAL 7016

**OVERCLAD EXISTING ROOF:**  
 Carefully strip off existing overcladding top sheets allowing for methodical programming to maintain weathertightness / existing production operations beneath. Provide new sheet metal cladding to match profile of Kingspan KS1000 DR/DRC fixed to existing steel upstand sections allowing for Kingspan Trapezoidal KS1000 TR Rooflights at existing rooflight positions. Allow for installation of new Rockwool Roll - 150mm laid over existing roof covering beneath proposed outer sheeting.

**OVERCLAD EXISTING WALLS:**  
 Vertically laid Kingspan KS1000 DR secret fix 80mm thick core composite insulated wall panels with Kingspan Spectrum coating (Colour: Spectrum Silver, RAL 9016), min. 0.7mm galvanized steel weather sheet, LPCB Firesafe certified zero odp insulation core and 0.4mm gauge white polyester finish galvanized steel internal sheet. New composite cladding panels are to be secret fixed to new 65mm (TBC) steel top hat sections mechanically fixed to existing structure. Include for all cover and drip flashings (Colour: Onyx, RAL 7016), fixings and air seals.

**NEW SECTIONAL DOOR:**  
 Provide new sectional door by specialist subcontractor in existing structural opening. Allow for new PFC head support to structural engineers details and allow for forming metal stud, ply lined bulkhead for door roller / recess. Sectional door to have minimum U Value of 0.25w/m<sup>2</sup>K and Colour: RAL 7016



east elevation

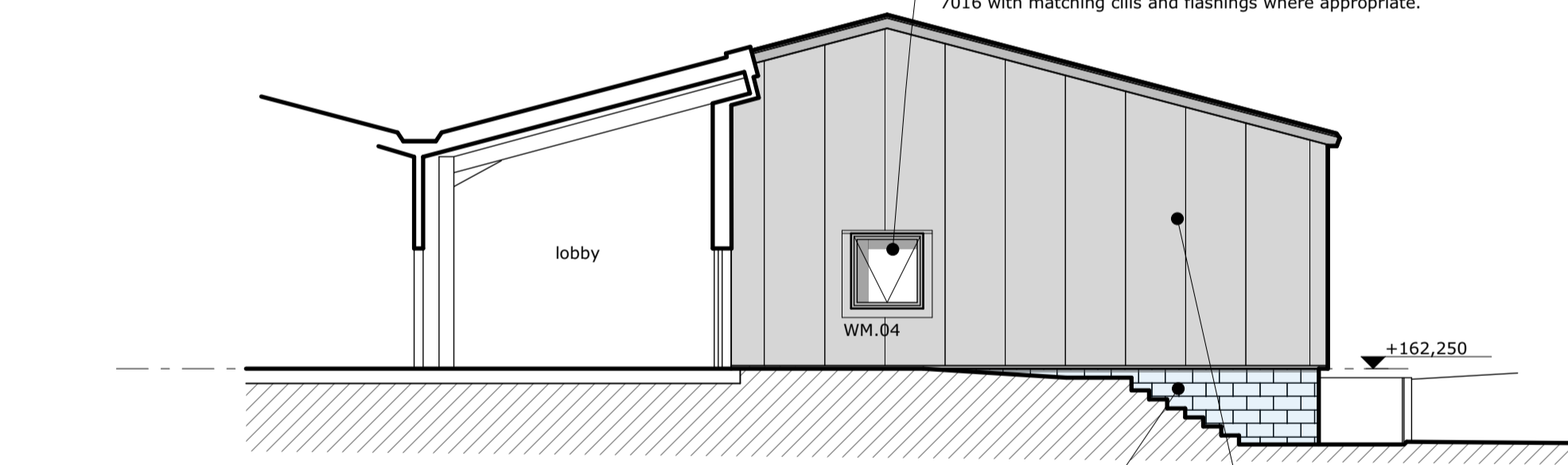
**NEW RETAINING WALL:**  
 to comprise external leaf of 90mm thick STONEMASTER - EBONY SMOOTH Modular Block 219x444mm (obtainable from Lancashire Brick and Tile Tel.01204 400400) with grey coloured Ticon Y14 mortar in 6mm reinforced bed joints and perps; and 115mm wide concrete filled reinforced cavity and 100mm thick internal leaf of min. 7N/mm<sup>2</sup> solid no voids dense concrete 1900Kg/m<sup>3</sup> blockwork. Provide stainless steel Bricktor Crack Control Reinforcement (for 2-3mm thin joints system) within new external leaf masonry.

**NEW EXTERNAL WALL:**  
 Allow for partially insulated cavity 1 course below FFL with KINGSPAN THERMOWALL TWS0 50mm thick rigid insulation boards) above leaving 65mm residual air space. Include for installing Cavity Tray Pyramid weep vents (grey) over IKO Hylod Gastite DPC lapped with below slab DPM

**NEW WALL CLADDING:**  
 Vertically laid Kingspan KS1000 MR 80mm thick core composite insulated wall panels with Kingspan Spectrum coating (Colour: Obsidian, RAL 9007), min. 0.7mm galvanized steel weather sheet, LPCB Firesafe certified zero odp insulation core and 0.4mm gauge white polyester finish galvanized steel internal sheet. New composite cladding panels are to be secret fixed to new Kingspan Cladding rails to structural engineers design and details.

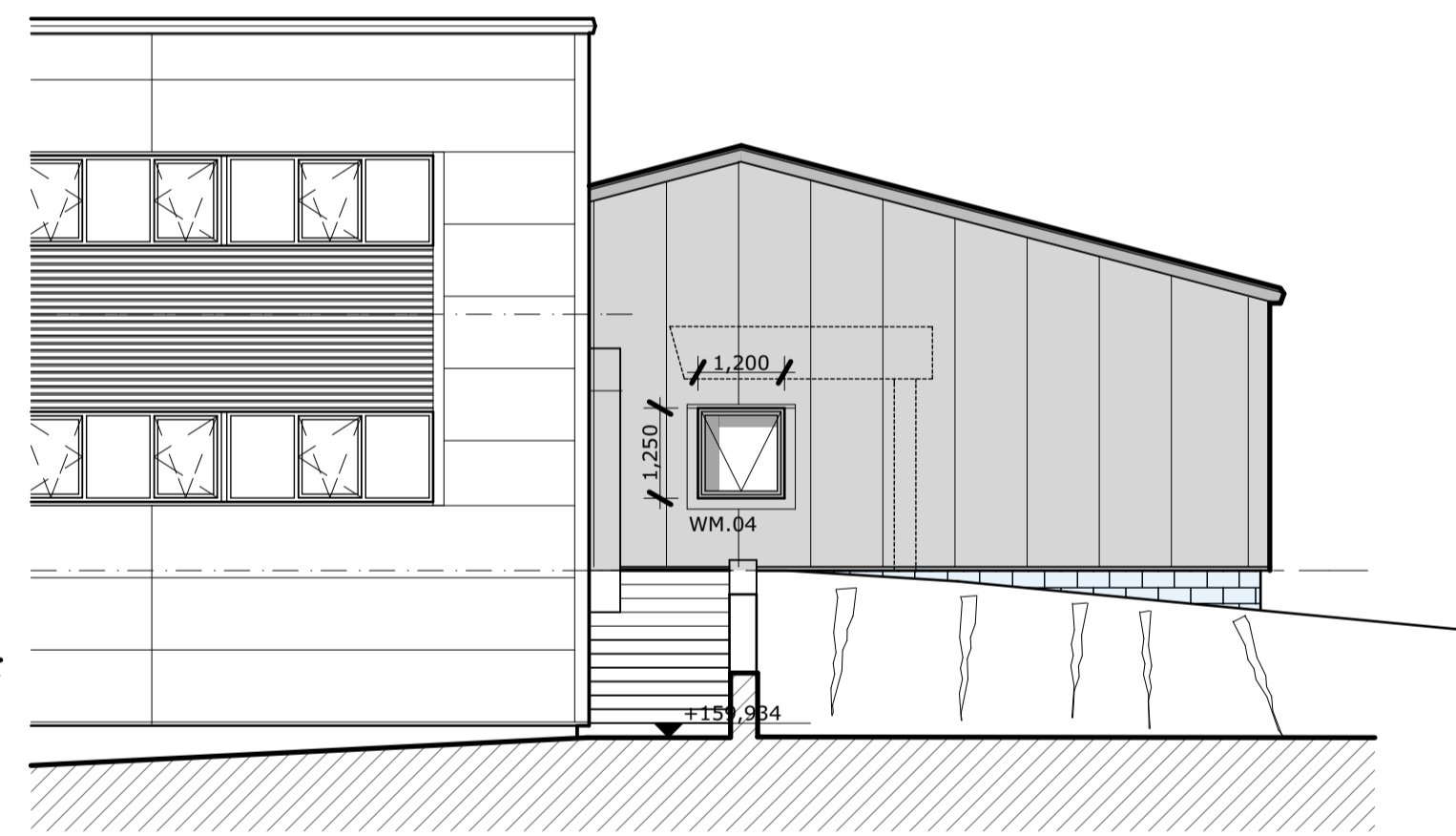
**NEW WINDOWS:**  
 All windows to be by: Schuco UK Limited Whitehall Avenue, Kingston, Milton Keynes, MK10 0AL Tel. 01908 282 111 generally comprising product ref: AWS 70.HI (high insulation) Tilt only thermally broken inward opening window system with an overall U Value to achieve approximately 1.5w/m<sup>2</sup>K. Frame colour to be RAL 7016 with matching cills and flashings where appropriate.

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 All windows to be by: Schuco UK Limited Whitehall Avenue, Kingston, Milton Keynes, MK10 0AL Tel. 01908 282 111 generally comprising product ref: AWS 70.HI (high insulation) Tilt only thermally broken inward opening window system with an overall U Value to achieve approximately 1.5w/m<sup>2</sup>K. Frame colour to be RAL 7016 with matching cills and flashings where appropriate.



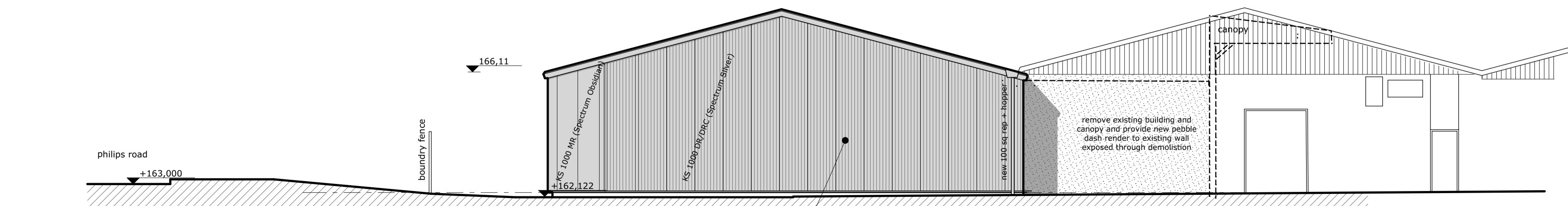
south elevation

**NEW RETAINING WALL:**  
 to comprise external leaf of 90mm thick STONEMASTER - EBONY SMOOTH Modular Block 219x444mm (obtainable from Lancashire Brick and Tile Tel.01204 400400) with grey coloured Ticon Y14 mortar in 6mm reinforced bed joints and perps; and 115mm wide concrete filled reinforced cavity and 100mm thick internal leaf of min. 7N/mm<sup>2</sup> solid no voids dense concrete 1900Kg/m<sup>3</sup> blockwork. Provide stainless steel Bricktor Crack Control Reinforcement (for 2-3mm thin joints system) within new external leaf masonry.



west elevation

**NEW WALL CLADDING:**  
 Vertically laid Kingspan KS1000 MR 80mm thick core composite insulated wall panels with Kingspan Spectrum coating (Colour: Obsidian, RAL 9007), min. 0.7mm galvanized steel weather sheet, LPCB Firesafe certified zero odp insulation core and 0.4mm gauge white polyester finish galvanized steel internal sheet. New composite cladding panels are to be secret fixed to new Kingspan Cladding rails to structural engineers design and details.



north elevation

**OVERCLAD EXISTING WALLS:**  
 Vertically laid Kingspan 80mm thick core composite insulated wall panels with Kingspan Spectrum coating (see elevations for profiles and colours), min. 0.7mm galvanized steel weather sheet, LPCB Firesafe certified zero odp insulation core and 0.4mm gauge white polyester finish galvanized steel internal sheet. New composite cladding panels are to be secret fixed to new 65mm (TBC) steel top hat sections mechanically fixed to existing structure. Include for all cover and drip flashings (Colour: Onyx, RAL 7016), fixings and air seals.

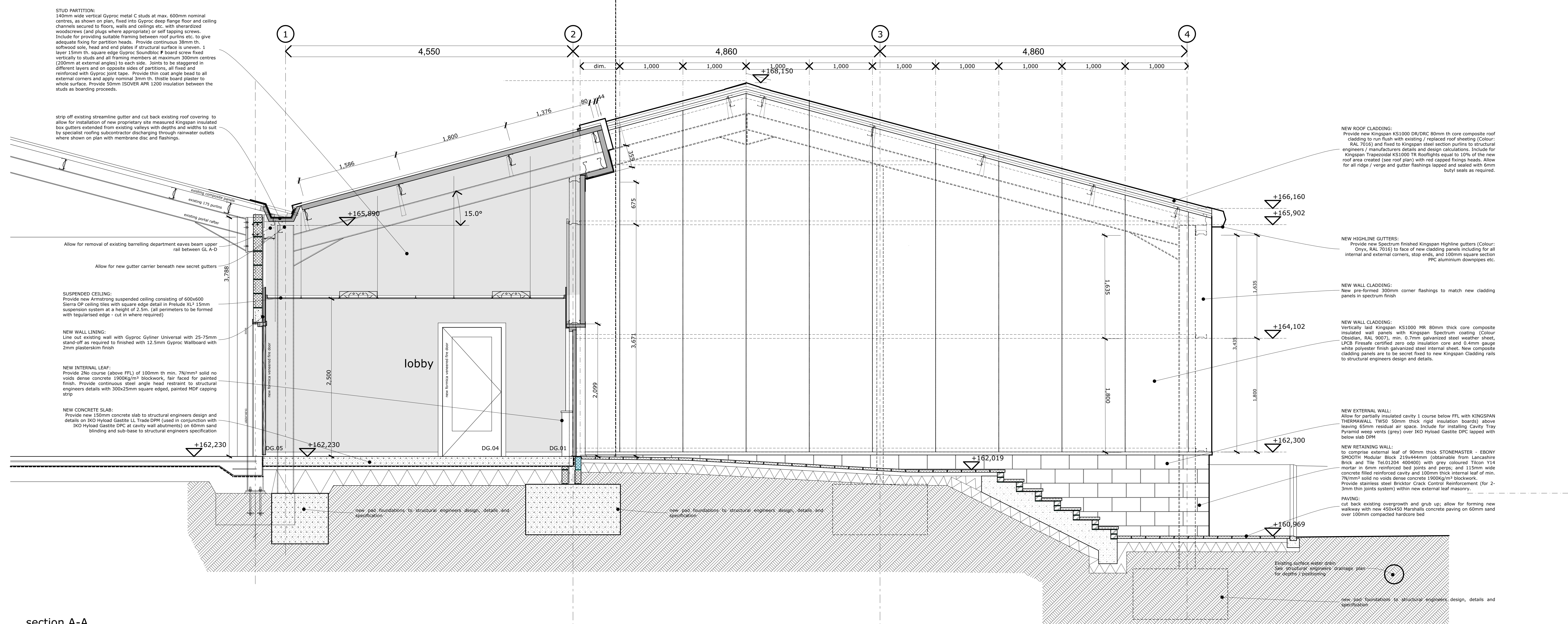
**campbell driver partnership**  
 architects designers surveyors

client: **pressart manufacturing**  
 project: **phase 4 development**  
 phillips road blackburn  
 sheet: **machine shop proposed elevations**

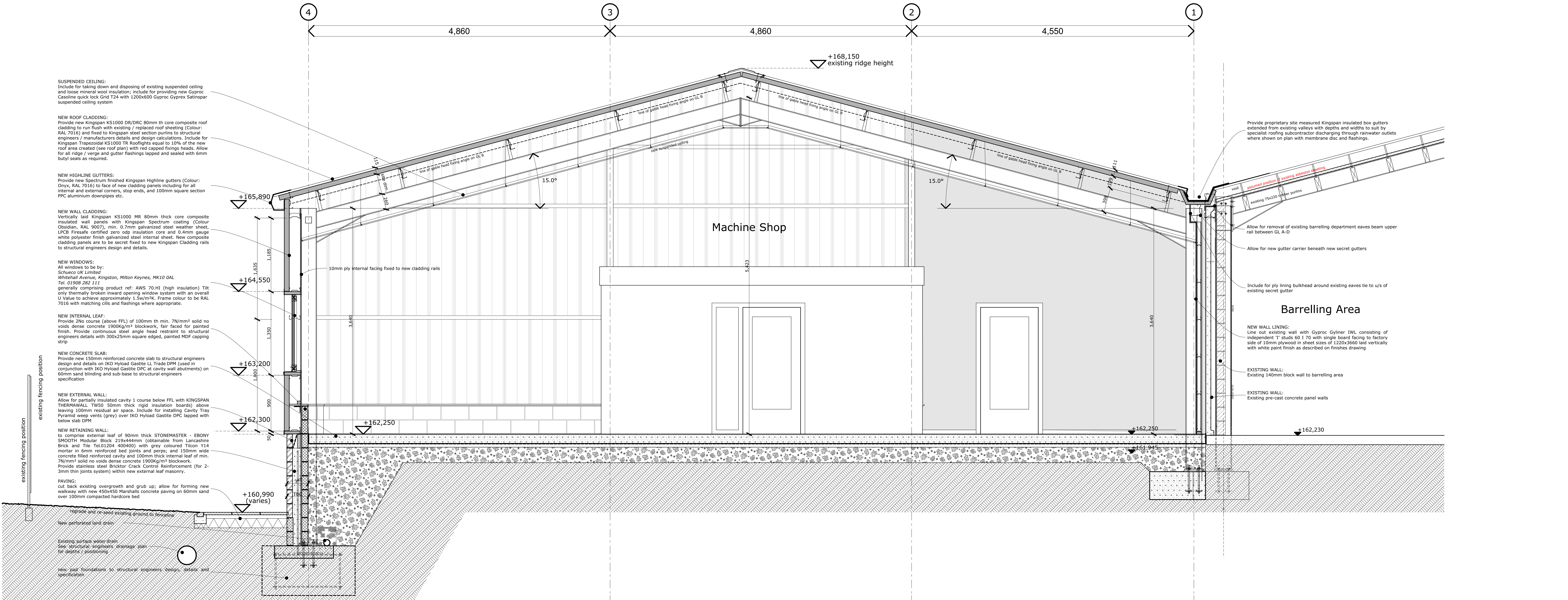
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 drawn: dp  
 capricorn park  
 blakewater road  
 blackburn bb1 5qr  
 t: 01254 297700  
 email: design@cdparchitects.co.uk





section A-A



section B-B

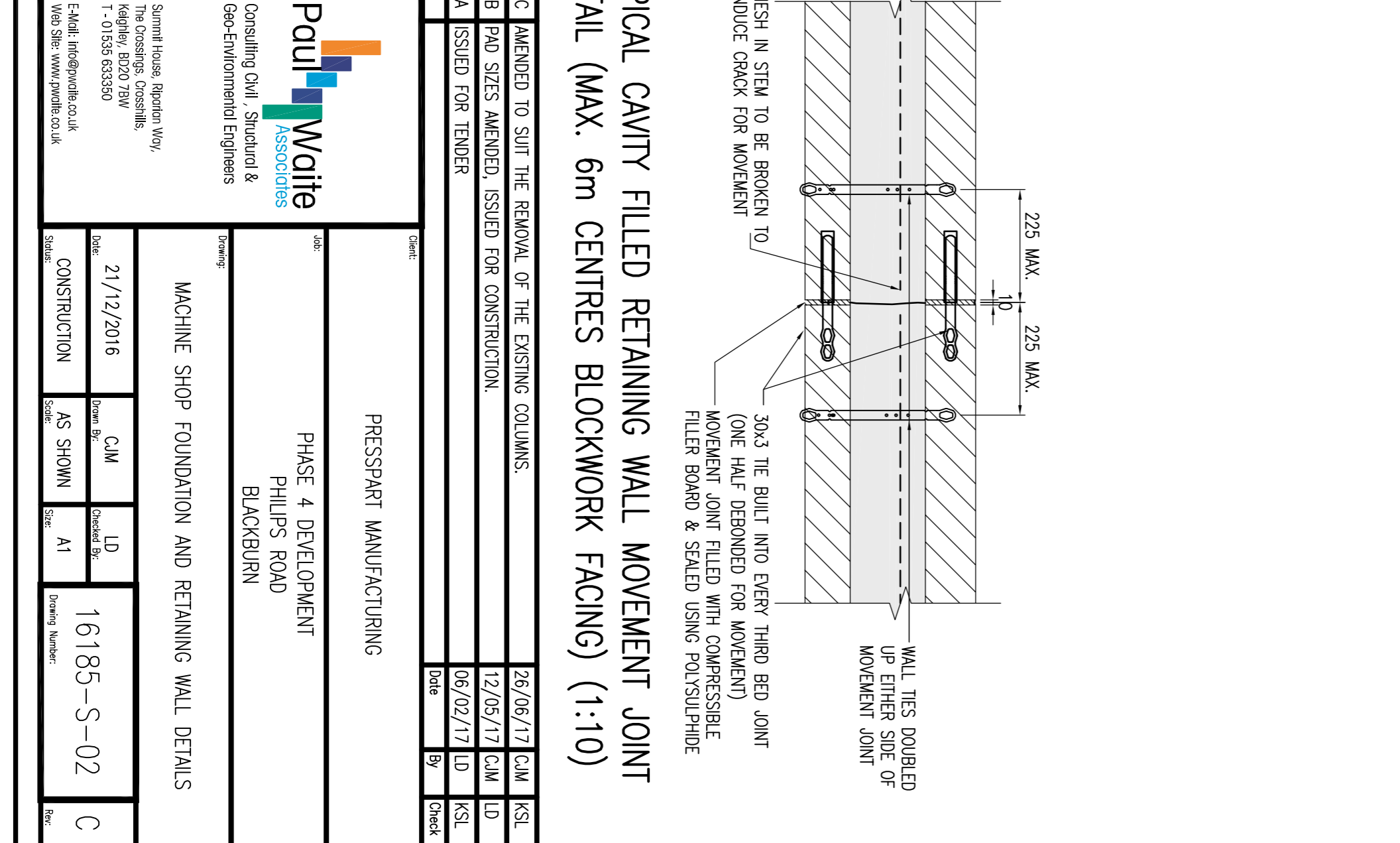
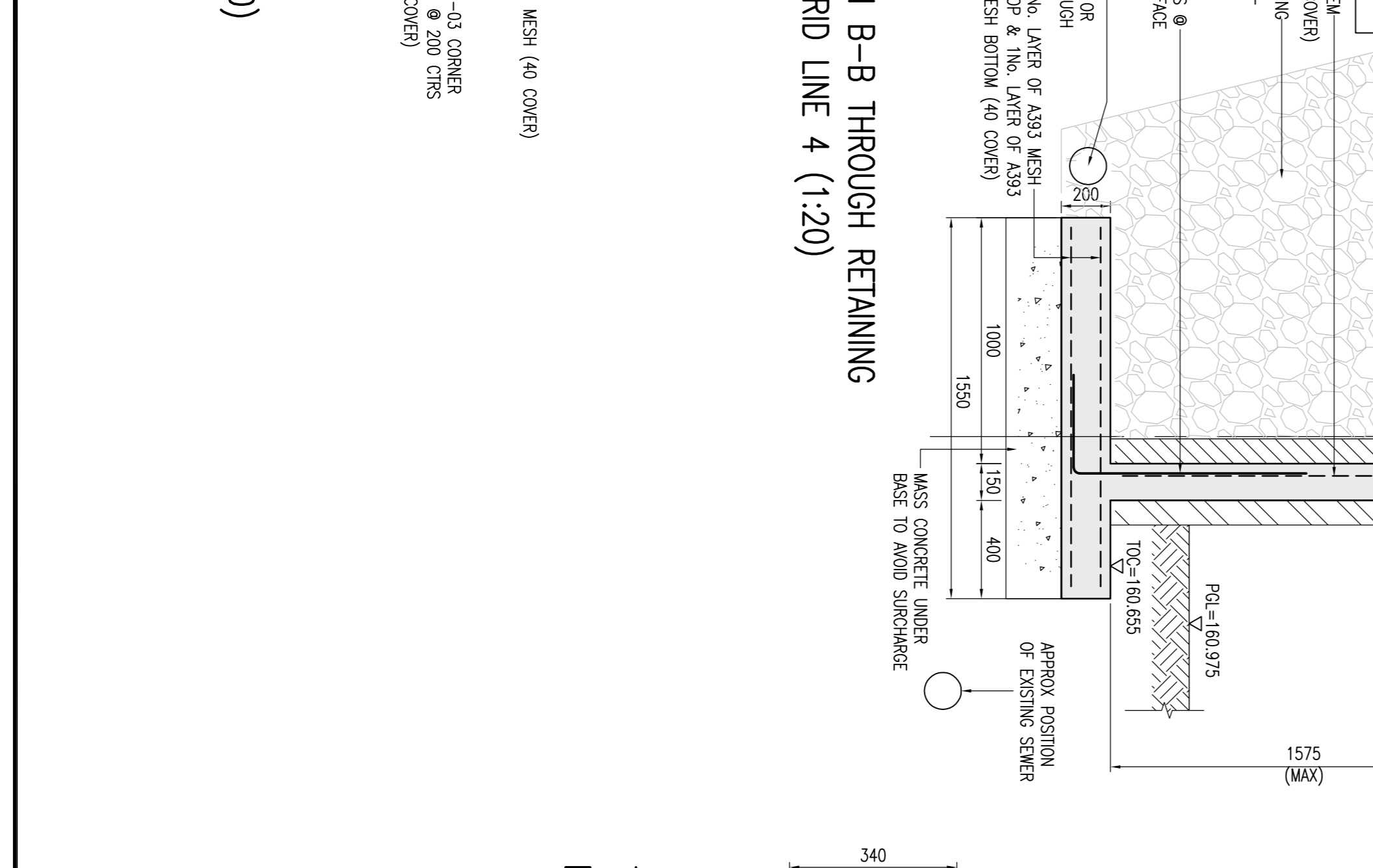
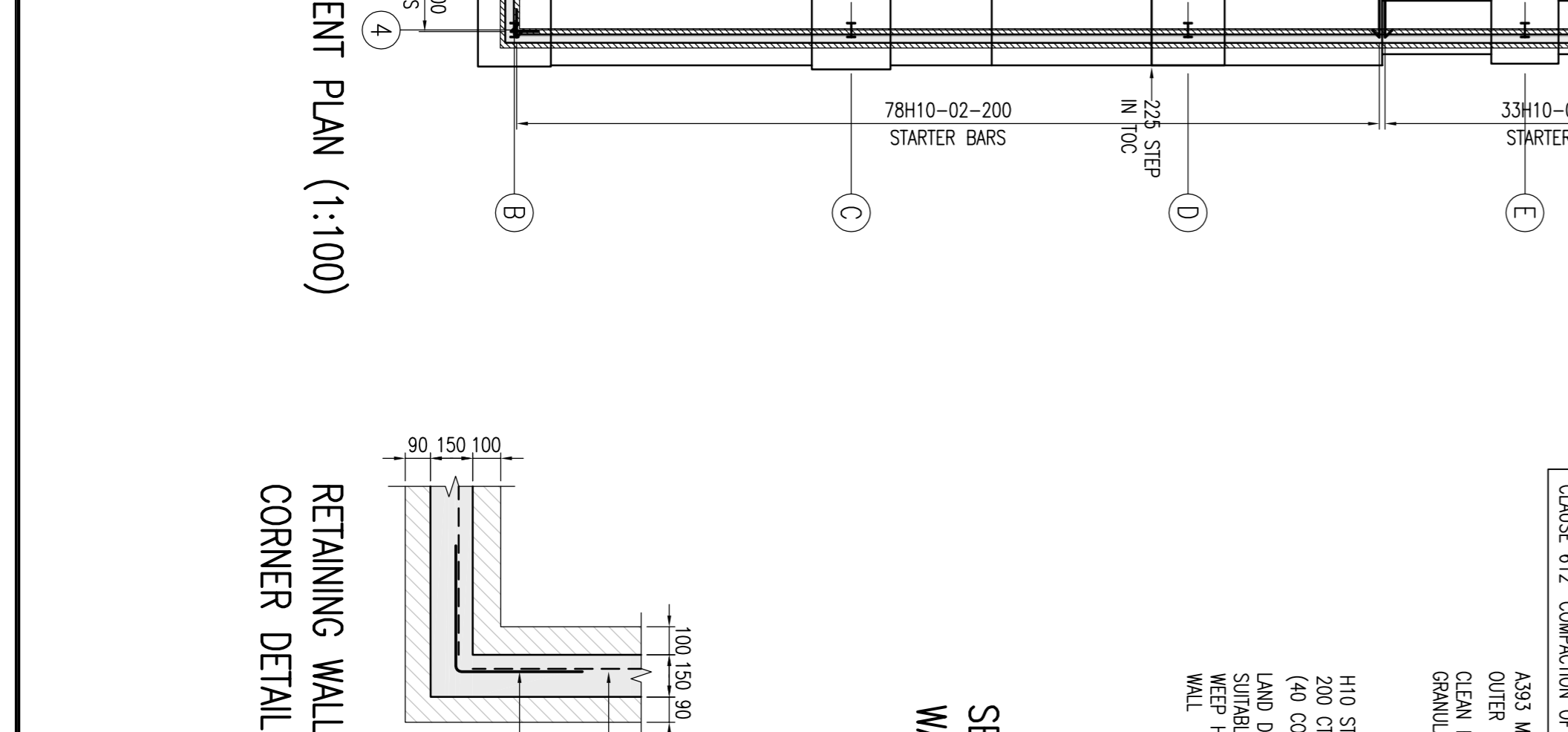
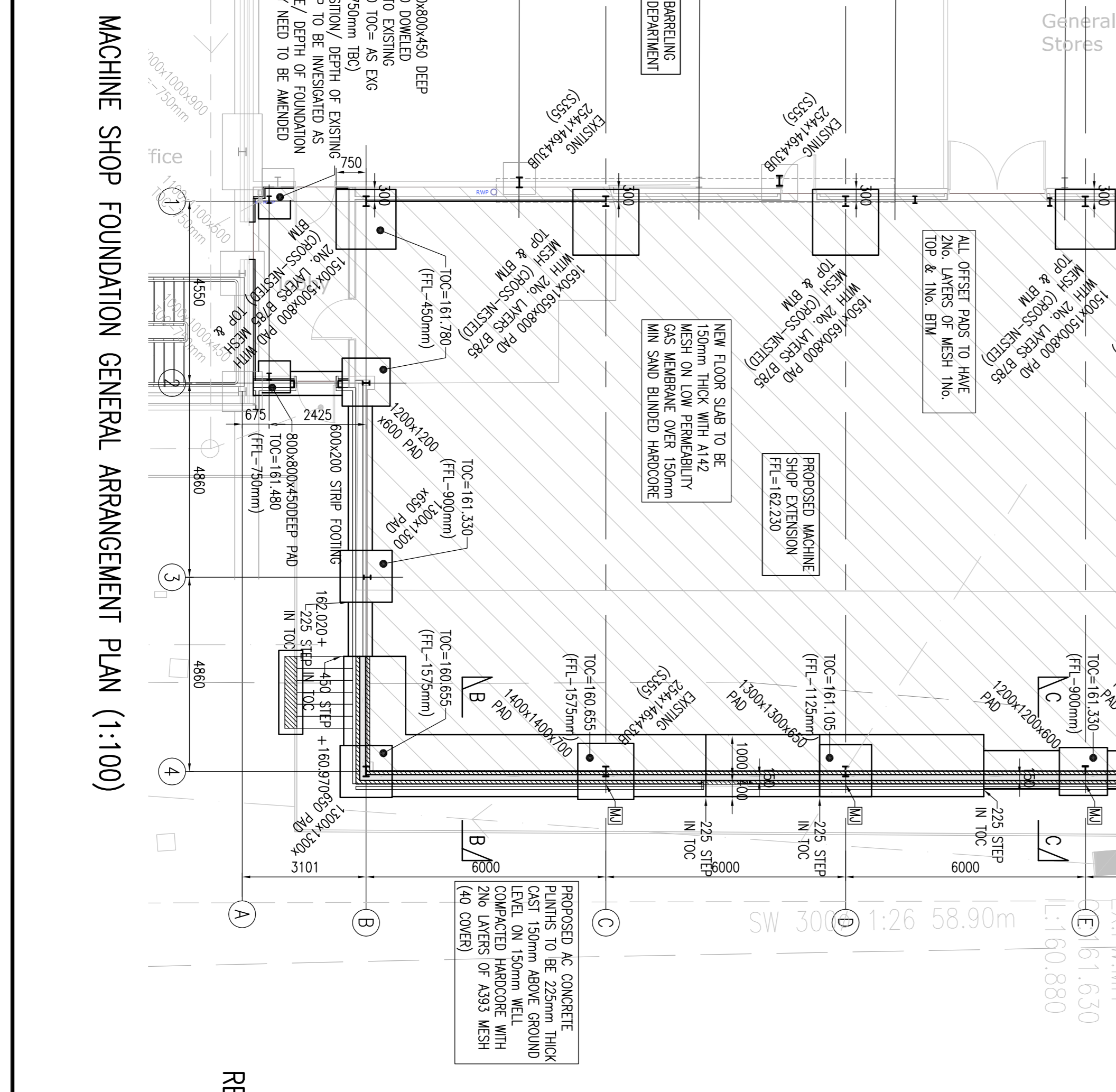
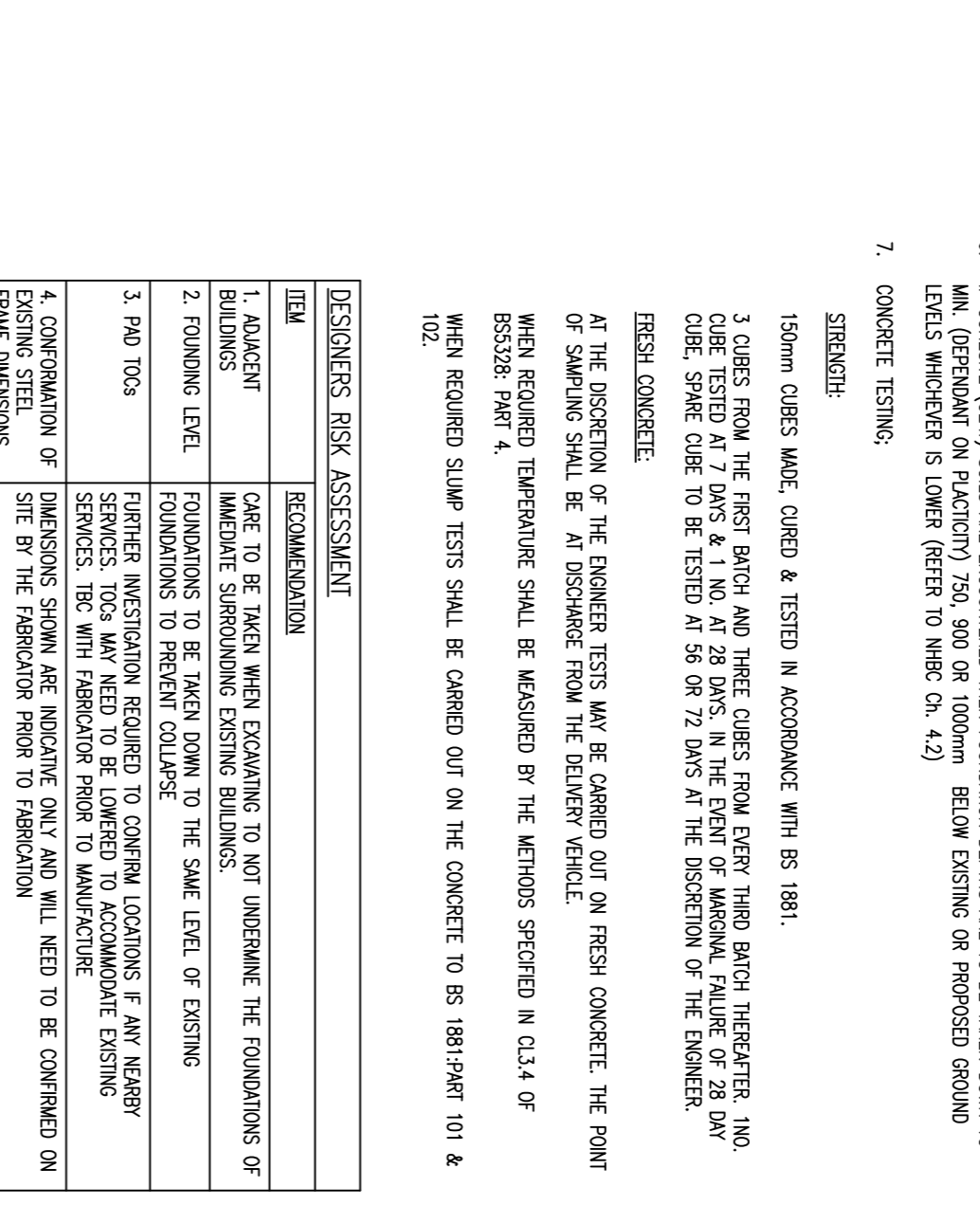
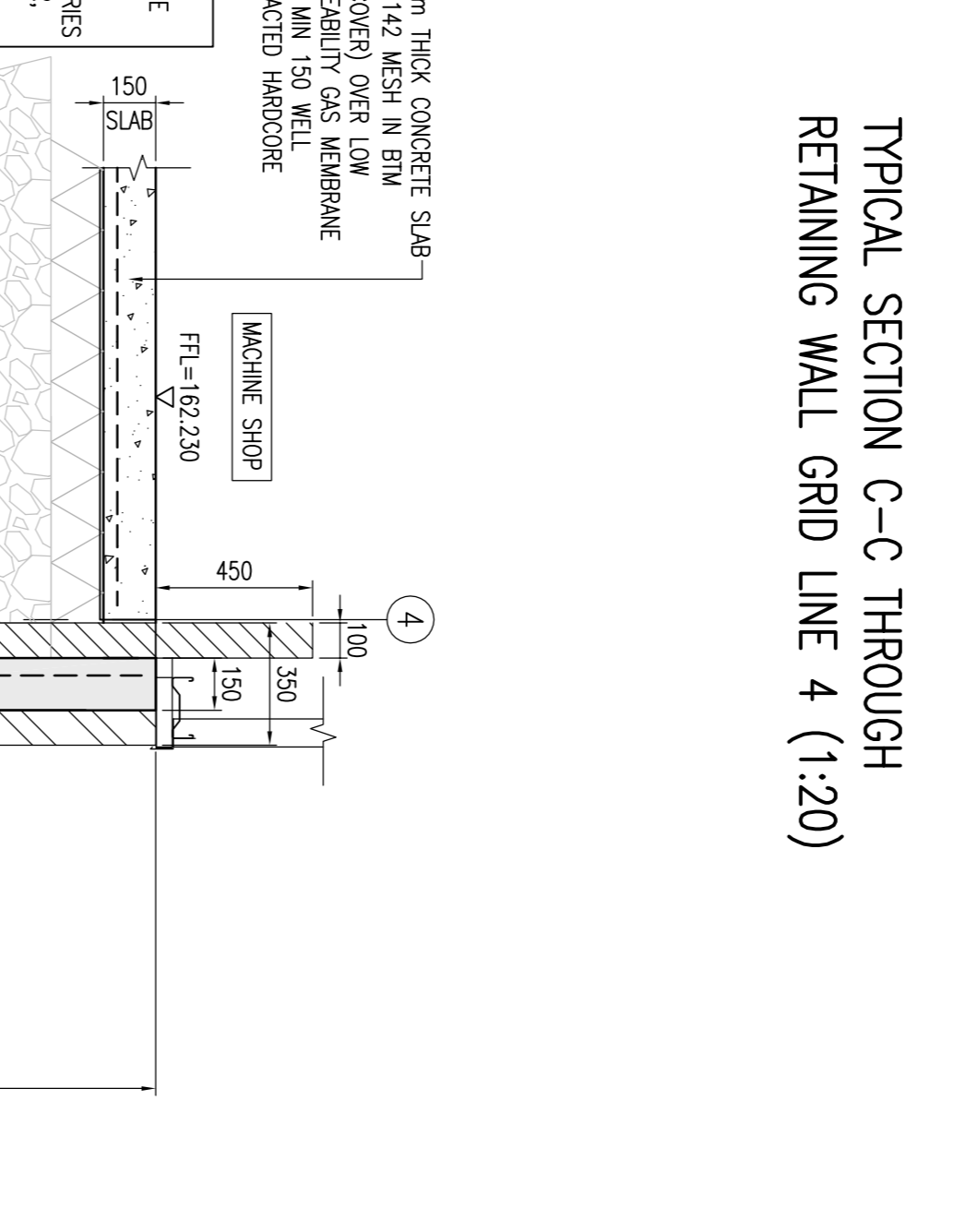
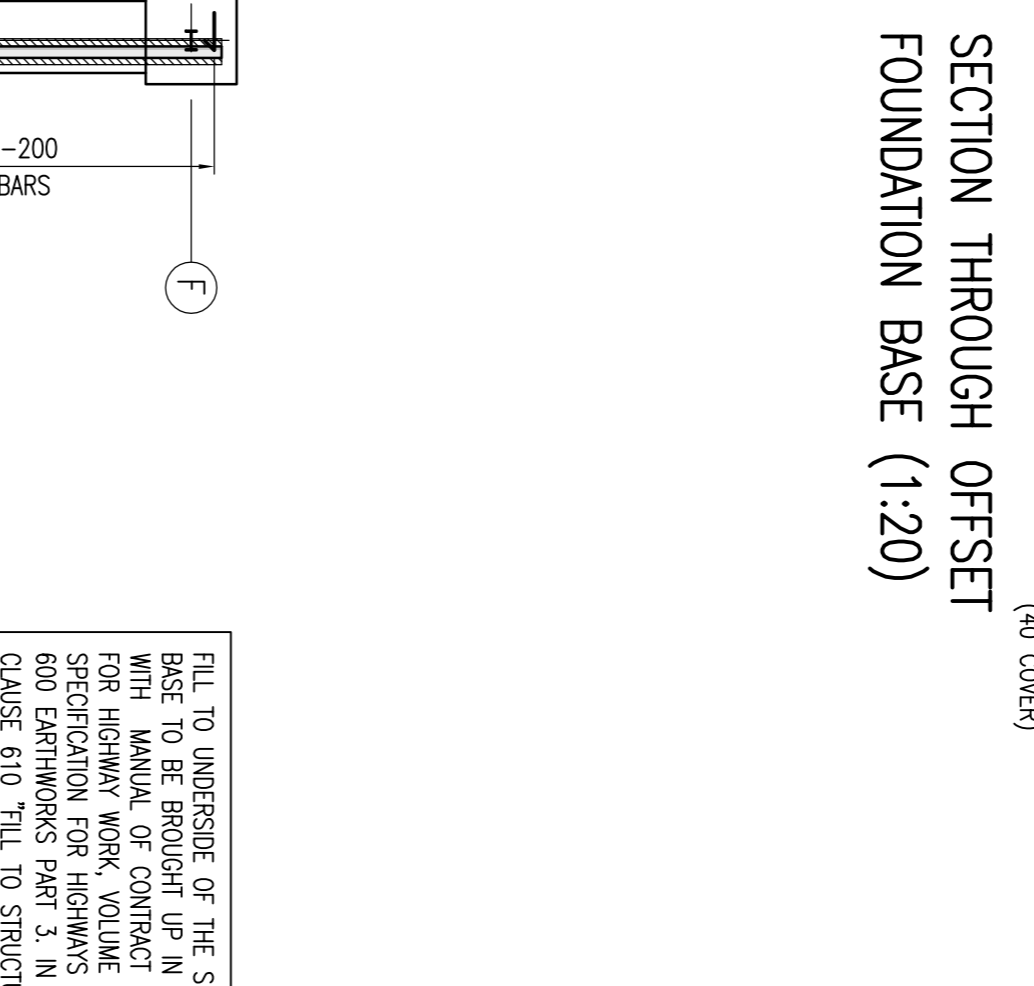
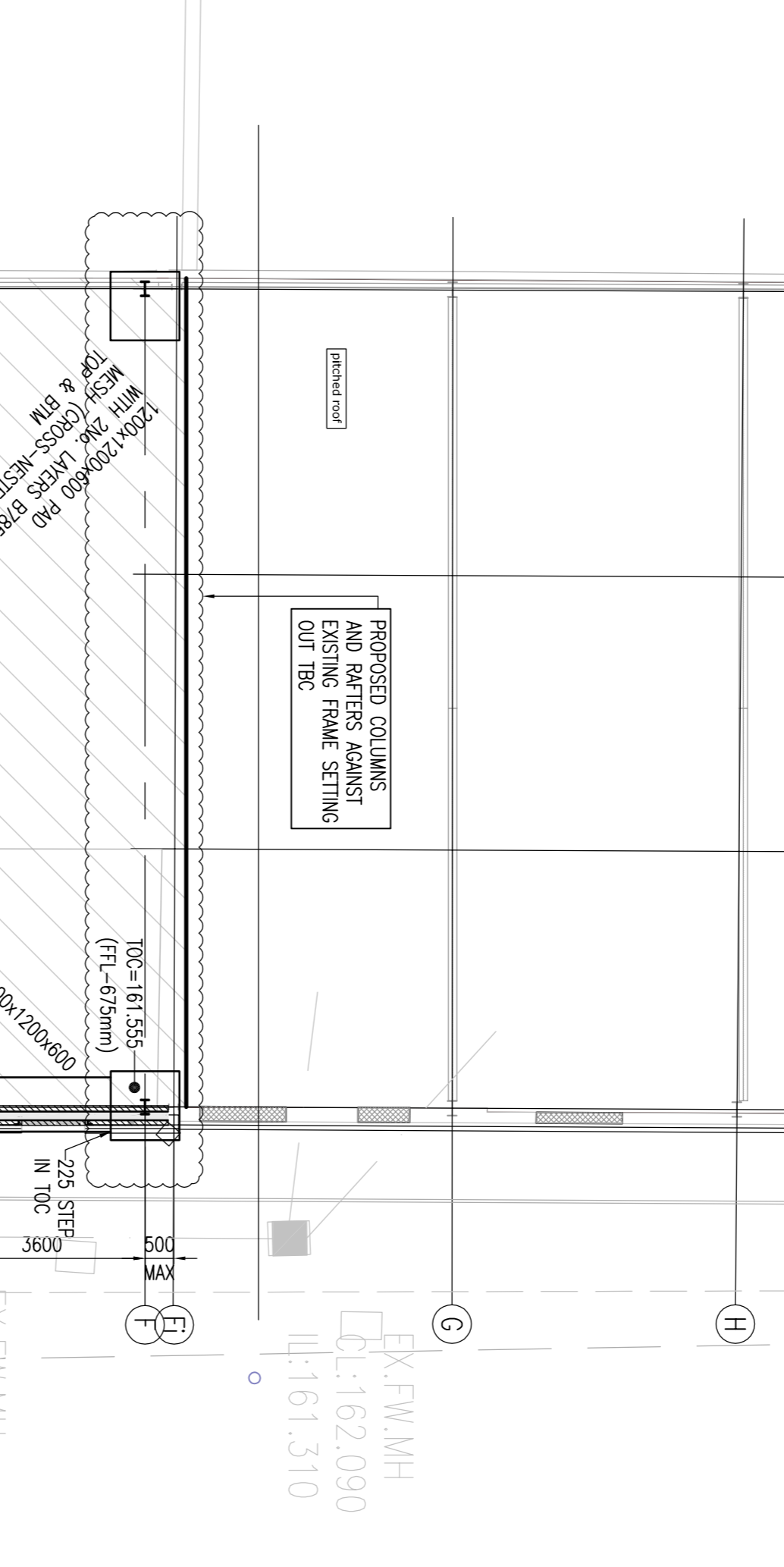
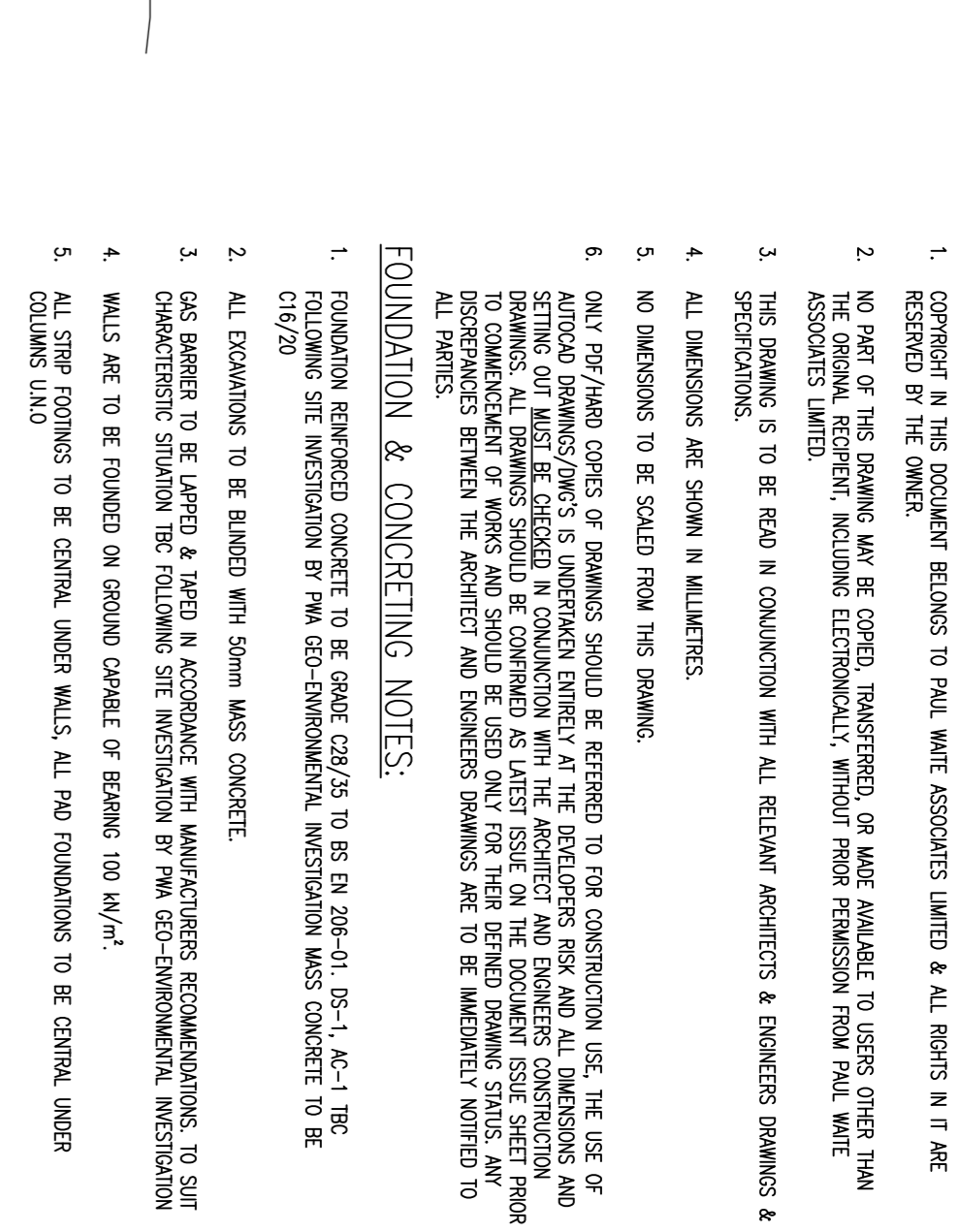
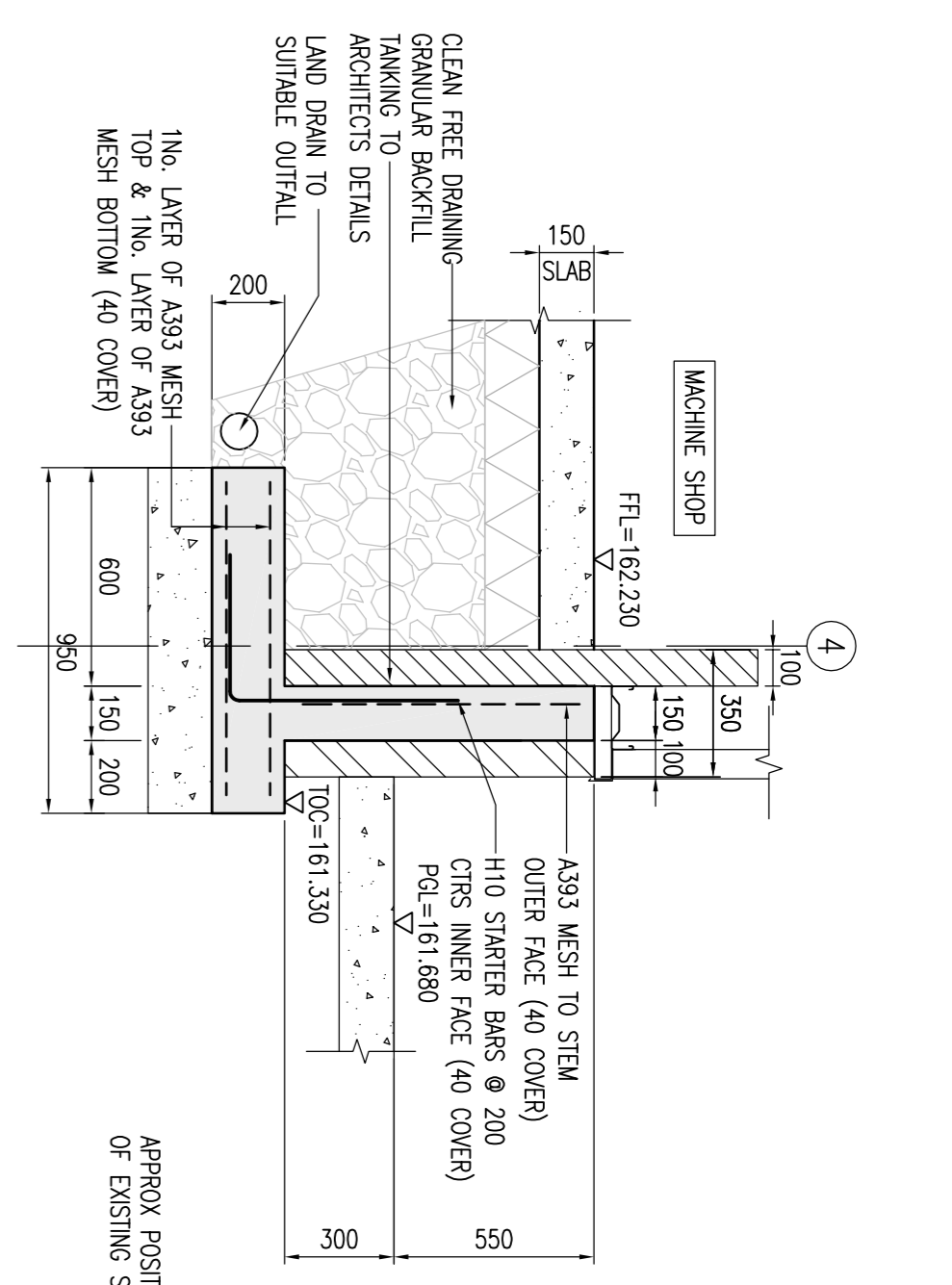
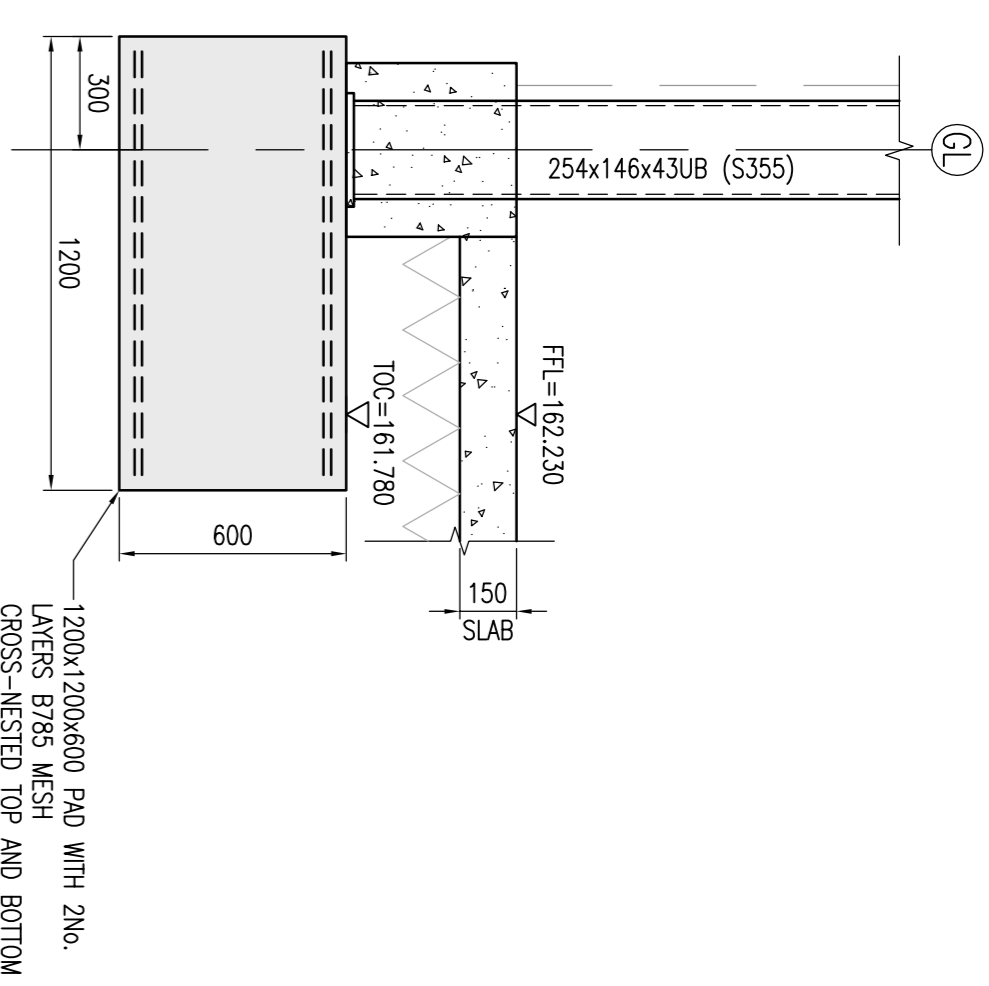
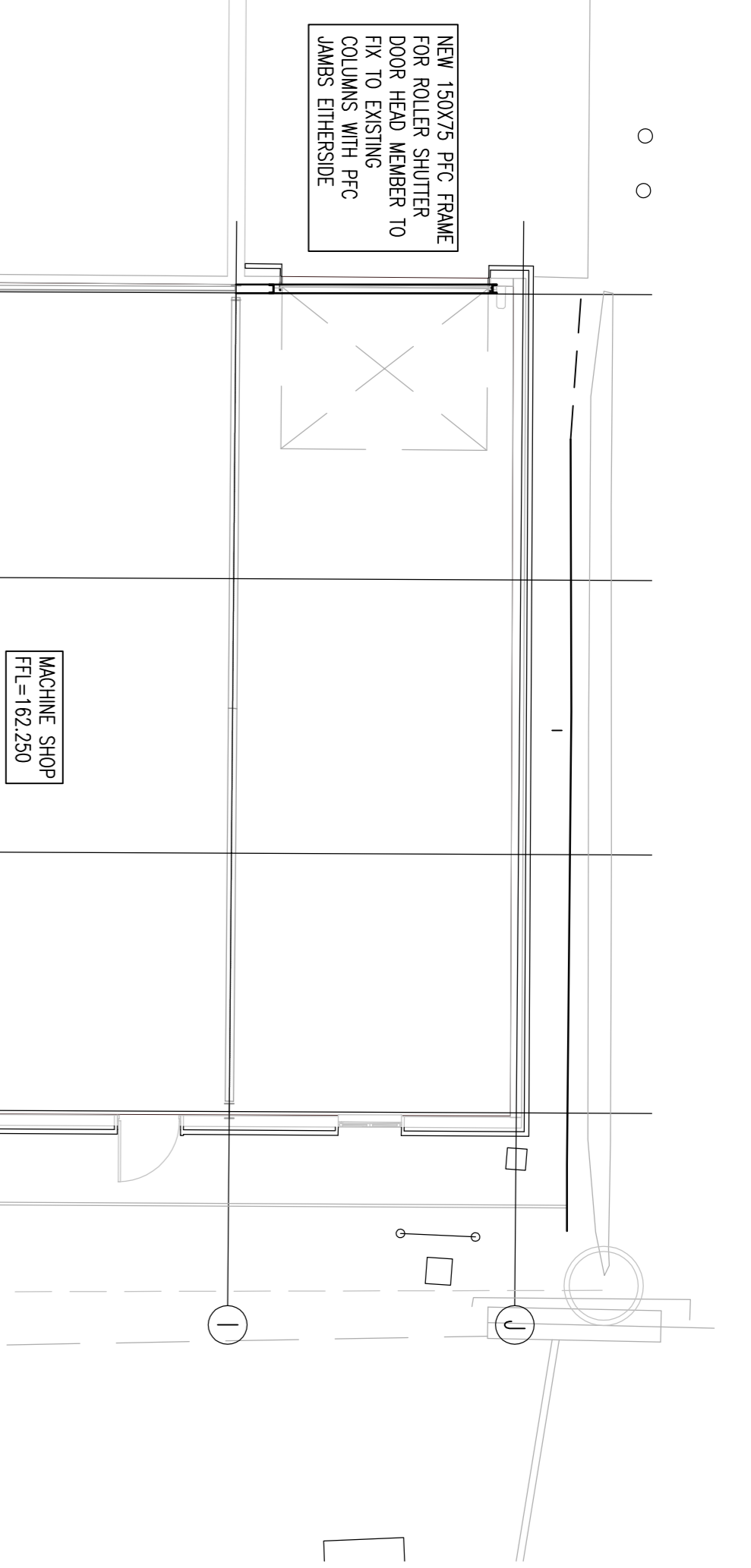
**campbell driver partnership**  
 architects designers surveyors

client: **presspart manufacturing**  
 project: **phase 4 development**  
 phillips road blackburn

sheet: **machine shop - section A-A**

dwg no: <b>13.190.04</b>	<b>012</b>	<b>A</b>
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date: 10.01.17		
drawn: dp		email: design@cdpartnership.co.uk





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  - NO DIMENSIONS TO BE SCALED FROM THIS DRAWING.
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**FOUNDATION & CONCRETING NOTES:**

- FOUNDATION REINFORCED CONCRETE TO BE GRADE C28/F25 TO BS EN 206-01. (S1-1, AC-1) FOLLOWING SITE INVESTIGATION BY PWA GEO-ENVIRONMENTAL INVESTIGATION MASS CONCRETE TO BE C16/F20.
- ALL EXCAVATIONS TO BE BUNDED WITH 50mm MASS CONCRETE.
- ONE BARBER TO BE LAPPED & TIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO SUIT CHARACTERISTIC STRENGTH (F<sub>yk</sub>) FOLLOWING SITE INVESTIGATION BY PWA GEO-ENVIRONMENTAL INVESTIGATION.
- WALLS ARE TO BE FOUND ON GROUND CAPABLE OF BEARING 100 kN/m<sup>2</sup>.
- ALL SHOE BEAMS TO BE CENTRAL UNDER WALLS. ALL PWD FOUNDATIONS TO BE CENTRAL UNDER CHAIRING LINDS.
- F CHEQUER (C40) SOILS ARE ENCOUNTERED THEN FOUNDATION DEPTHS ARE TO BE TAKEN DOWN TO MIN. (DEPENDANT ON FACTORY) 750, 900 OR 1000mm BELOW EXISTING OR PROPOSED GROUND LEVELS WHICHEVER IS LOWER (REFER TO WMS OR 4.2).
- CONCRETE TESTING:

**DESIGNERS RISK ASSESSMENT**

ITEM	RECOMMENDATION
1. ADJACENT BUILDINGS	ONE TO BE TAKEN WHEN EXCAVATING TO NOT UNDERMINE THE FOUNDATIONS OF ADJACENT BUILDINGS TO BE TAKEN INTO CONSIDERATION.
2. FOUNDATION DEPTHS	FOUNDATION DEPTHS TO BE THE SAME LEVEL OF EXISTING FOUNDATIONS TO PREVENT COLLAPSE.
3. PWD TOGS	FINANCIAL INVESTIGATION REQUIRED TO DETERMINE CONDITIONS & ANY HAZARDOUS SERVICES. TOGS MAY NEED TO BE LOWERED TO ACCOMMODATE EXISTING SERVICES. TRS WITH PARABOLIC PRIOR TO MANUFACTURE.
4. CONSTRUCTION OF EXISTING STEEL	DIMENSIONS SHOWN ARE INDICATIVE ONLY AND WILL NEED TO BE CONFIRMED ON SITE BY THE FABRICATOR PRIOR TO FABRICATION.

150mm THICK CONCRETE SLAB WITH 142 MESH IN BIM (40 COVER) OVER LOW PERMEABILITY GAS MEMBRANE OVER MIN 150 WELL COMPACTED HARDCORE

FILL TO UNDERSIDE OF THE SLAB SUB BASE TO BE BRUGHT UP IN ACCORDANCE WITH MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORK. VOLUME 1 SPECIFICATION FOR HIGHWAYS WORKS: SERIES 600 EARTHWORKS PART 3. IN PARTICULAR, CLAUSE 610 'FILL TO STRUCTURES' & CLAUSE 612 'COMPACTION OF FILLS'

150mm THICK CONCRETE SLAB WITH 142 MESH IN BIM (40 COVER) OVER LOW PERMEABILITY GAS MEMBRANE OVER MIN 150 WELL COMPACTED HARDCORE

NEW FLOOR SLAB TO BE 150mm THICK WITH A142 MESH ON LOW PERMEABILITY GAS MEMBRANE OVER 150mm MIN SAND BLINDED HARDCORE

APPROX POSITION OF EXISTING SEWER

APPROX POSITION OF EXISTING SEWER

APPROX POSITION OF EXISTING SEWER

APPROX POSITION OF EXISTING SEWER

**Paul White**  
ASSOCIATES  
Consulting Civil, Structural & Geo-Environmental Engineers

Summit House, Beacon Way,  
The Courtyard, Coulsdon,  
Kent, TN8 7PW  
1-01353 053330  
Email: info@paulwhite.co.uk  
Web Site: www.paulwhite.co.uk

MACHINE SHOP FOUNDATION AND RETAINING WALL DETAILS

PHASE 4 DEVELOPMENT  
PHILIPS ROAD  
BLACKBURN

PROJECT NO: 16185-S-02

DATE: 21/12/2016

CONSTRUCTION

AS SHOWN

LD

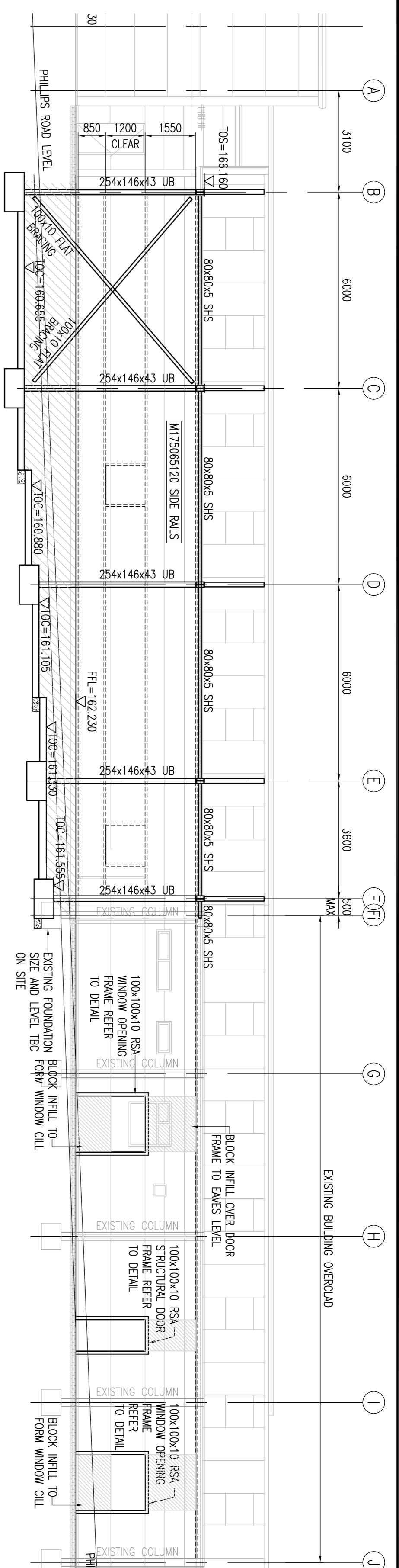
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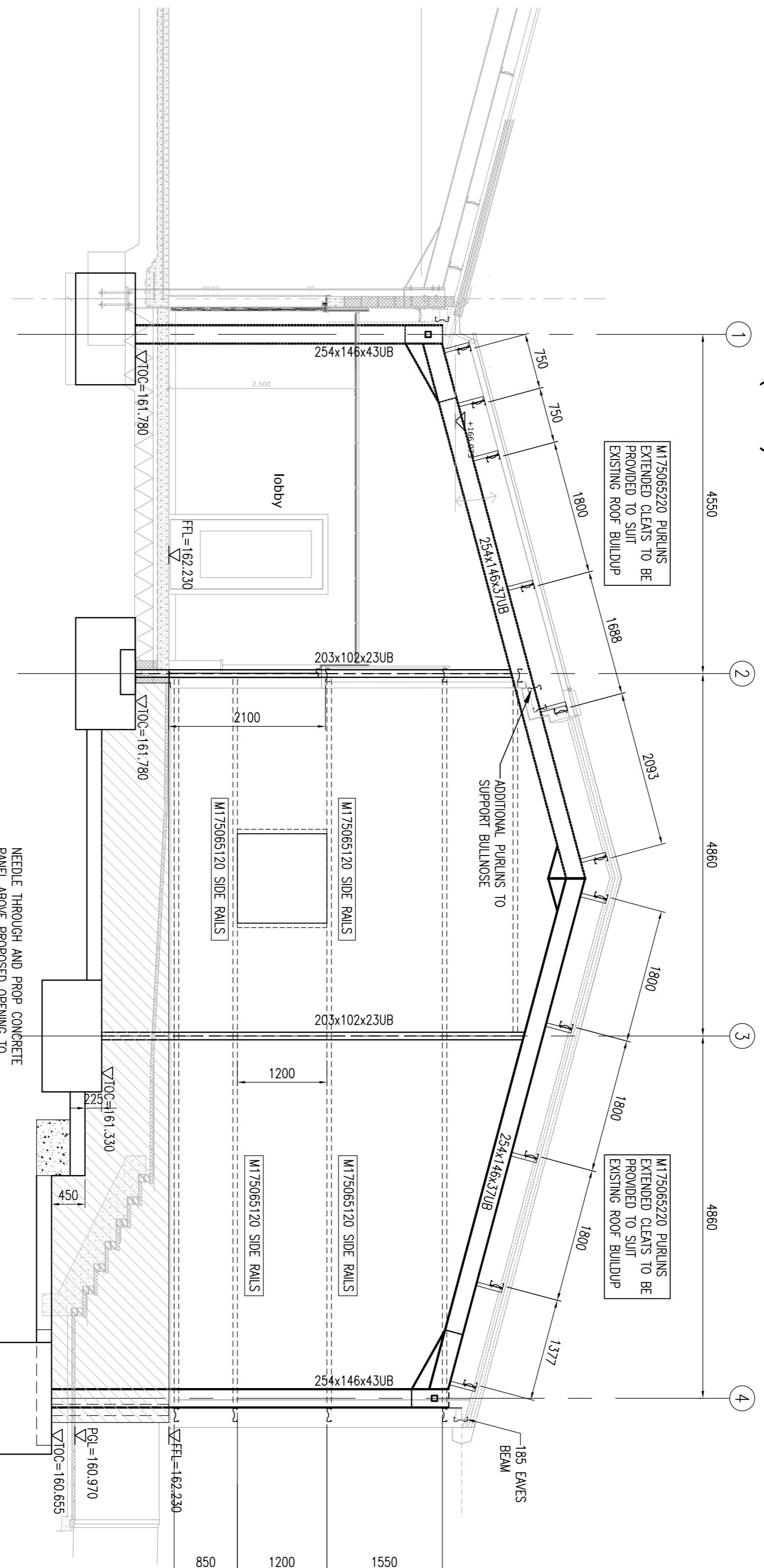
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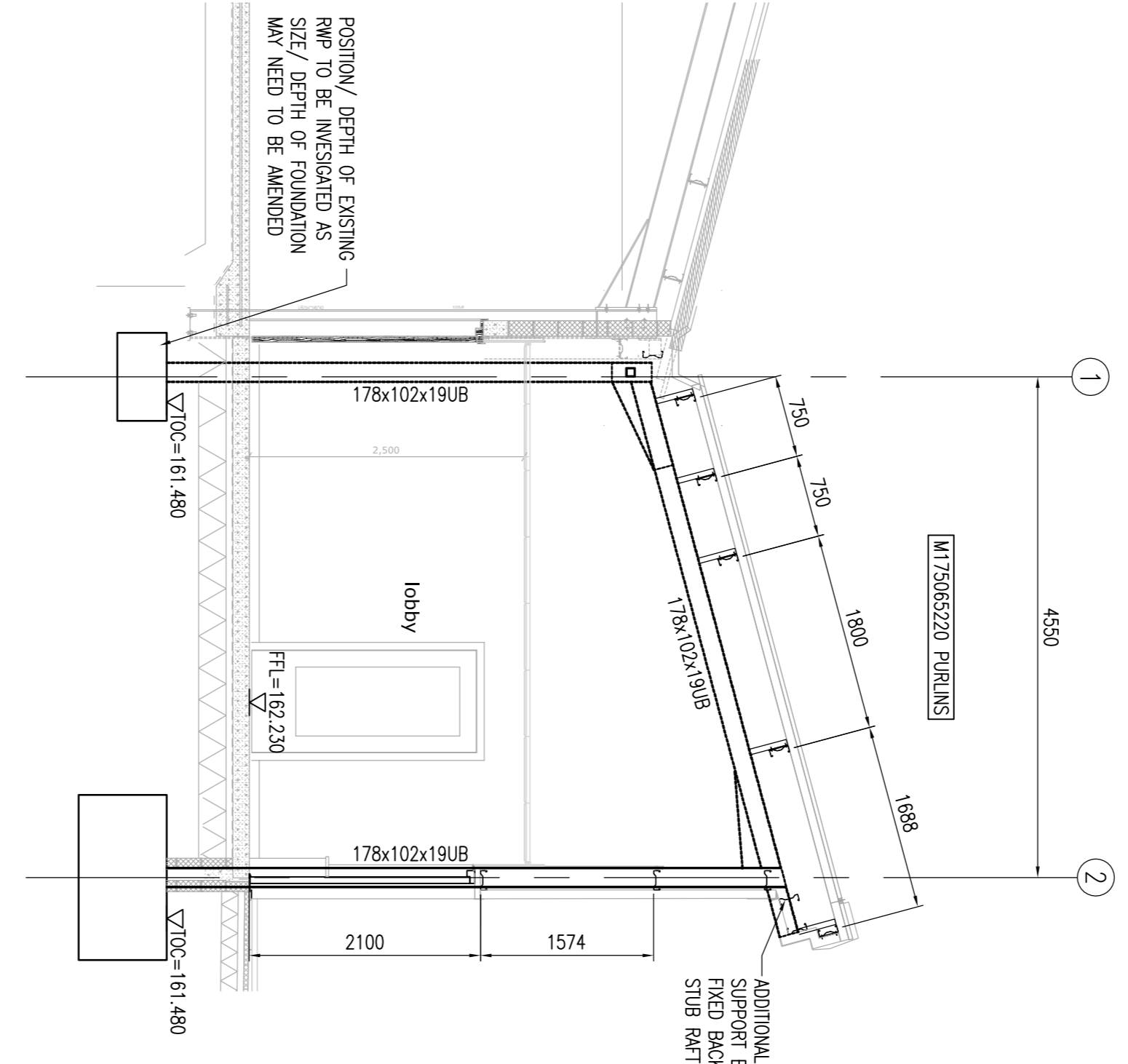




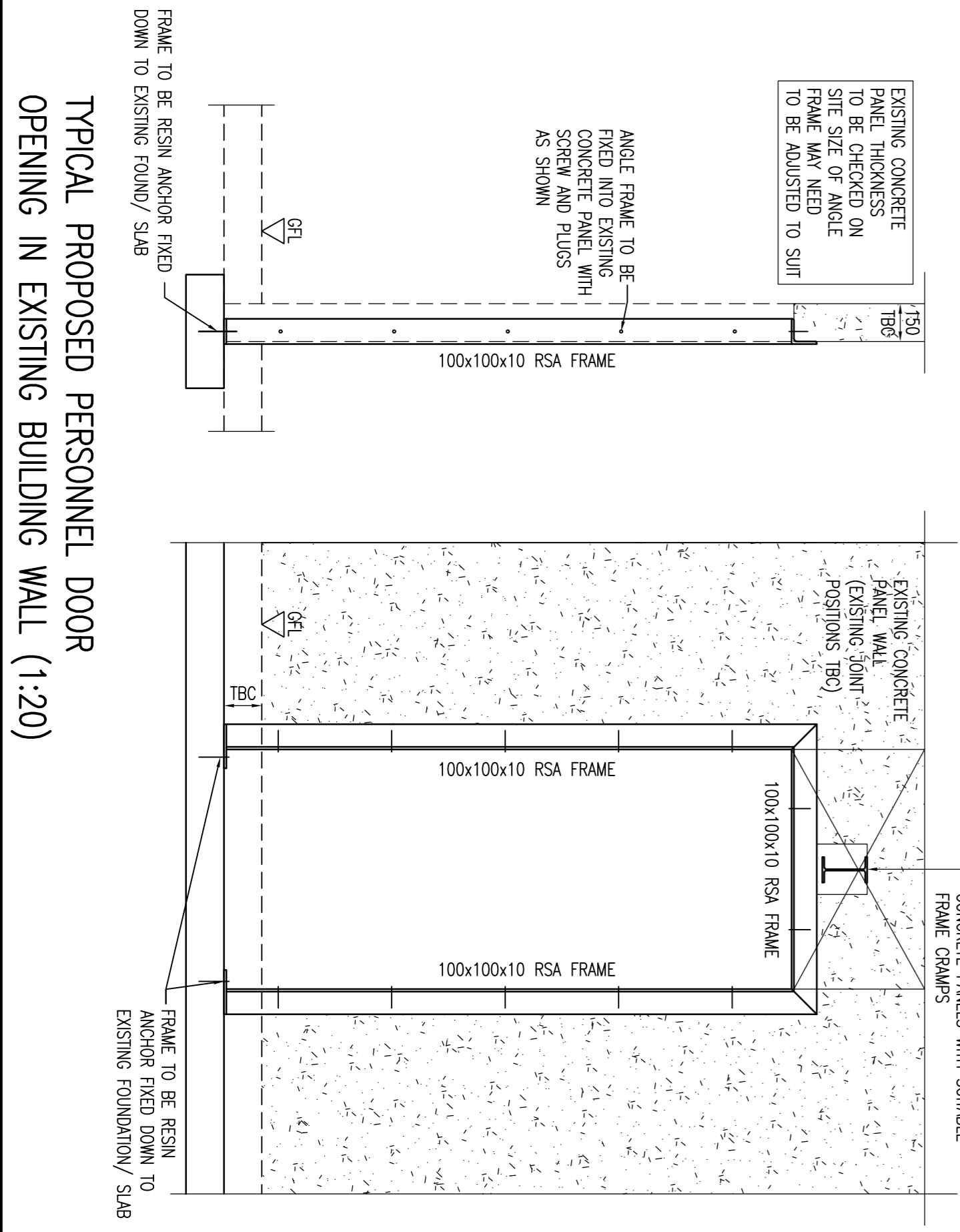
ELEVATION ON GRIDLINE 4 (1:100)



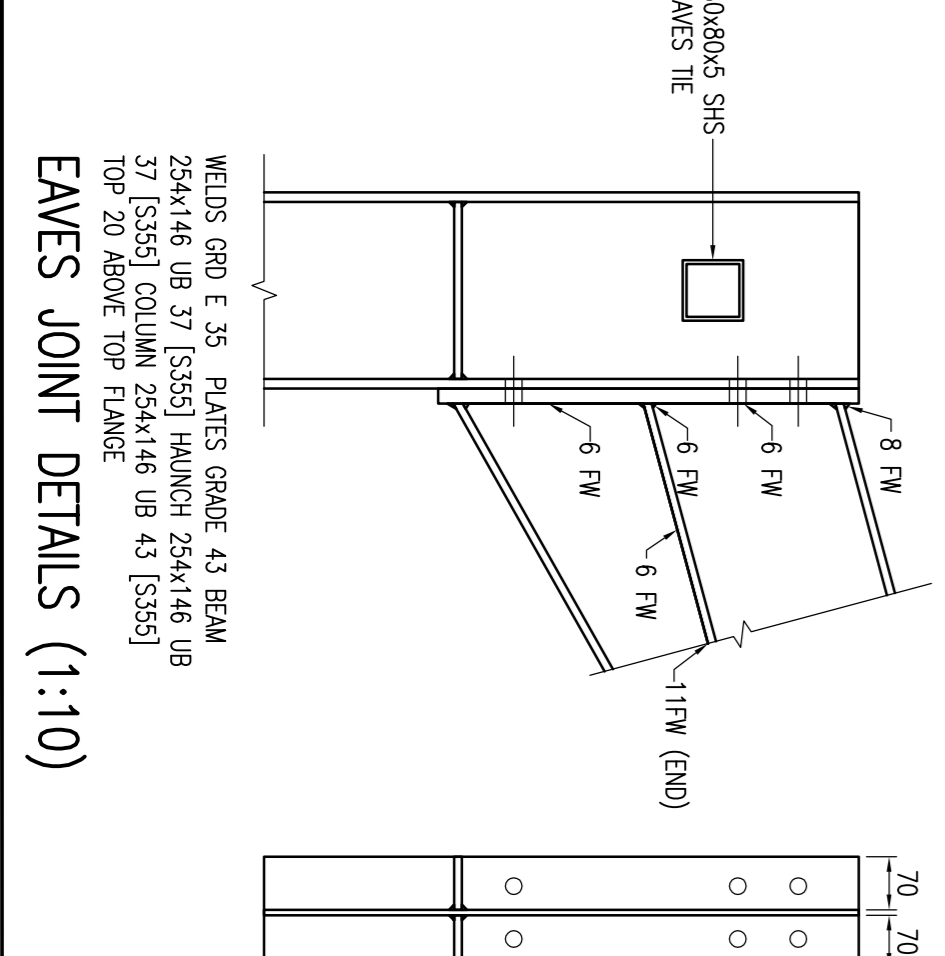
ELEVATION ON GRIDLINE B (1:50)



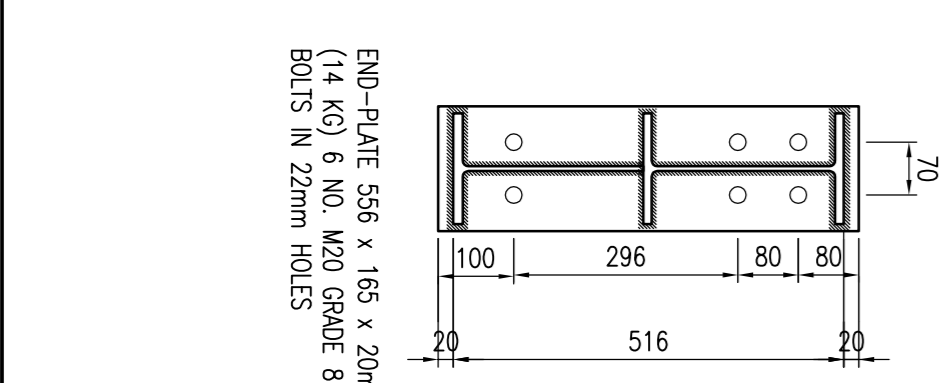
SECTION A-A (1:50)



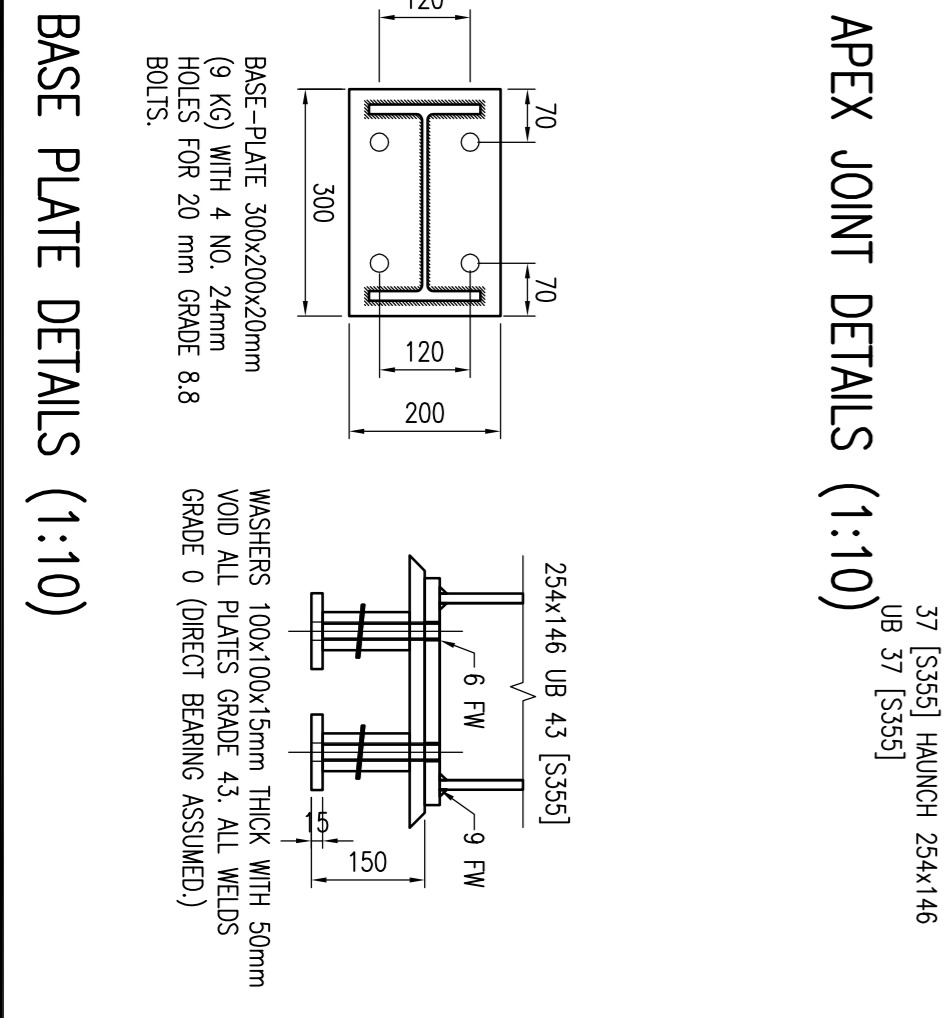
TYPICAL PROPOSED PERSONNEL DOOR OPENING IN EXISTING BUILDING WALL (1:20)



EAVES JOINT DETAILS (1:10)



BASE PLATE DETAILS (1:10)



APEX JOINT DETAILS (1:10)

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  7. ALL STEELWORK TO BE FABRICATED IN ACCORDANCE WITH EXECUTION CLASS FROM TABLE B2.7 OF BS EN 1090-2 EXC2.
  8. ALL FABRICATED STEELWORK DELIVERED TO SITE FROM THE 1<sup>ST</sup> JULY 2014 TO BE CE MARKED BS54M MEMBERS MUST BE OF ACCREDITED AS A CONDITION OF MEMBERSHIP.
  9. ALL STEELWORK TO B.S. EN 10025/S275/50 UNK.
  10. ALL STEELWORK TO BE SHIP PAINTED IN ACCORDANCE WITH THE BSS SPECIFICATION.
  11. ALL STEELWORK BUILT INTO CONCRETE WALLS, OR ENCASED IN MASONRY, IS TO BE IN ACCORDANCE WITH THE BSS SPECIFICATION.
  12. ALL STEELWORK ENCASED IN CONCRETE IS TO BE LEFT UNPAINTED.
  13. ALL BOLTS MUST BE OSGT 7 DAYS PRIOR TO ERECTION OF STEELWORK.
  14. ALL HANGING DOWN BOLTS TO BE POSITIONED TO (+ OR -) 5mm & TIGHTENED TO ALLOW A FREE MOVEMENT OF 40mm IN ANY DIRECTION.
  15. ALL BASE PLATES TO BE GROUDED USING A HIGH STRENGTH NON-SHRINKABLE GROUT. AFTER STEELWORK HAS BEEN LINED & LEVELLED.
  16. ALL STEELWORK BELOW GROUND IS TO BE PROTECTED IN 100mm MINIMUM CONCRETE SURROUNDING TO PREVENT CORROSION. THE CONCRETE SURROUNDING IS TO BE PROTECTED WITH AN APPROPRIATE WATER RESISTANT PAINT/WASTE TO JOINT.
  17. BEARING STRESS BENTONITE BASE PLATES IS NOT TO EXCEED 80kN/m<sup>2</sup>.
  18. ALL BOLTS ARE TO BE GRADE 8.8 (A193) & NOT HARDENED SPAN DOMINATED. (OR EQUIVALENT APPROVED).
  19. ALL HANGING DOWN BOLTS ARE TO BE GRADE 4.6 (A193).
  20. FABRICATING/PAINING OF HOT ROLLED STEELWORK: SURFACE PREPARATION - BLAST CLEAN TO SA 2.5. PAINTING (INCLUDE MEMBERS) AFTER PREPARATION STEELWORK IS TO BE SHIP PAINTED WITH ONE COAT APPROVED. (APPROVED) APPLIED IN ACCORDANCE WITH COATING MANUFACTURERS DETAILS. AFTER REGION OF STEELWORK IS COMPLETED, CARE TO BE TAKEN DURING TRANSPORTATION AND HANDLING TO MINIMIZE DAMAGE. ANY DAMAGED SURFACES TO BE MADE GOOD ON SITE TO PROVIDE A MINIMUM DRY FILM THICKNESS OF 80 MICRONS. (SHOULD ANY STEELWORK BE EXTERNAL THEN THE FRAMER THICKNESS MAY NEED TO BE INCREASED).
  21. ALL STEELWORK WITHIN 40mm OF EXTERNAL LEAF OF CONCRETE WALLS TO BE PAINTED WITH ONE COAT OF ALKALYNE FREE EPOXY 450 MICRON OR 250 MICRON WITH 25mm IMPERMEABLE INSULATION.
  22. STEELWORK SETTING OUT DIMENSIONS TO BE COMPAIRED BY THE ARCHITECT.
  23. ALL STEELWORK TO BE IMMEDIATELY PAINTED IN ACCORDANCE WITH THE BSS AS REQUIRED BY ARCHITECT. (UNPAINTED) TO BE MADE IN AREAS WHERE THE TOP FLANGE OF BEAMS IS TO BE LEFT UNPAINTED.
  24. WHERE STEELWORK BEARS ONTO PARTS, THEY ARE TO BE 40x215x THE WIDTH OF THE WALL & HAVE A MINIMUM BEARING OF 75mm UNK.
  25. ALL COLD ROLLED SET OUT TO ARCHITECTS DETAILS.
  26. SITE STORAGE - STEELWORK TO BE SUPPORTED OFF THE GROUND & SEPARATED BY WOODEN PARTERS TO ALLOW AIR CIRCULATION. RAINWATER MUST BE AVOIDED.

DATE	REVISION/DESCRIPTION
17/01/17	ISSUED FOR CONSTRUCTION
22/02/17	FORNAL REVISIONS AMENDED TO 254x146x37's
06/02/17	ISSUED FOR TENDER

<p>Paul White Associates Consulting Civil, Structural &amp; Geo-Environmental Engineers</p>		<p>Project Name: <b>PHASE 4 DEVELOPMENT</b> Location: <b>PHILIPS ROAD BLACKBURN</b></p>	
<p>Client: <b>PRESSPART MANUFACTURING</b></p>		<p>Project No: <b>MACHINE SHOP ELEVATIONS AND SECTIONS</b></p>	
<p>Author: <b>AS SHOWN</b></p>	<p>Check: <b>AS SHOWN</b></p>	<p>Date: <b>16/185-S-04</b></p>	<p>Scale: <b>D</b></p>

## **Enclosure 2**

### **Specification Sheets /Delivery notes**



# Travis Perkins

**Travis Perkins Trading Company Limited**  
 Registered in England No. 733503  
 VAT REGN. No. GB 408 5567 37

7/ER STREET  
 30JN  
 3 980

\*\*\* DUPLICATE \*\*\*  
 DELIVERY NOTE

F33400

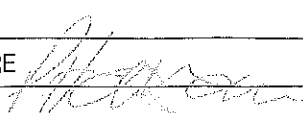
BRANCH	2768 NELSON TP	TEL:	01282 690619	DELIVERY INDICATOR	1	DATE	09/08/17 09:02
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<b>CUSTOMER DETAILS:</b> 416630 DALE CONTRACTORS LTD WIDOW HILL ROAD BURNLEY BB10 2LJ	<b>DELIVER TO:</b> PHILLIPS ROAD BLACKBURN BB1 5RP	<b>SALES PERSON :</b> JULE <b>PAYMENT METHOD :</b> <b>YOUR ORDER No. :</b> 00037677 <b>CONTACT :</b> BRANHAM <b>TEL NO :</b> 01282 453555 <b>DATE REQD :</b> MC 14/08/17 <b>QUOTE NO :</b> 0024000 <b>VEHICLE-REG :</b> FE61MU7
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ITEM DESCRIPTION	QUANTITY	CF WEIGHT
1 LOW PEAK GAS MEMBRANE S/YELLOW 1.2X50 42	7.00 ROLL	#
2 GAS TAPE TO SUIT 100MM X 12M ROLL 42	20.00 EACH	#
3 RUBBERDIP HYDRO BASTITE DPC 8M X 600MM 652174 PRICED FROM QUOTE 0028000	5.00 ROLL	82.50kg
4 XTHERM CONVEY CALL BOARD PARTIAL FILL SQUARE EDGE 1200X450X50 XT/CM 526155	55.00 SHEET	56.85kg
5 DYNAMID VENTS 100MM 85	800.00 EACH	#
6 LAMINATE 48	1.00 EACH	#
7 UNCLN REINFORCEMENT WASH IMP/S/O3. 0/350 P70000 249310 PRICED FROM QUOTE 0024000	40.00 EACH	14.00kg
<b>** TOTAL ORDER WEIGHT</b>	<b>152.150 kgs</b>	<b>(LINES 3, 4, 7)</b>

The indicated weights on this document are approximate and are intended to assist in manual handling considerations. Building aggregate material weights allow for a +/- 5% tolerance.

HIRES ARE SUBJECT TO OUR CONDITIONS OF HIRE

Shortages must be reported within 2 working days and damages must be reported within 7 days of receipt of materials.  Health & Safety: For information on products (e.g. COSHH) please visit <a href="http://www.travisperkins.co.uk">www.travisperkins.co.uk</a> . Contact the H&S Dept. during office hours on (01604) 752424 if data not available.  A workslip confers no rights to remove goods from our branches. An invoice or delivery note must be obtained from counter staff. A delivery note is not a VAT invoice.	ASAP	£ CONTINUED £ £
	PRINTED AT 09:05 ON 17/08/17	
SIGNATURE 	TIME 17/8/17	
PRINTED	DATE 17/08/17	

**PLEASE SEE REVERSE FOR OUR SALE TERMS**



# Ancillaries

## Gastite Mastic / Factory Formed Details

### ALDERSEAL GASTITE MASTIC

Alderseal Gastite Mastic is a self supporting non setting mastic. Developed for sealing around cable ducts, conduits, service pipe entries and reinforcing bars against gas and water ingress. Particularly at the critical point of entry when small diameter penetrations pass through the Membrane system.

It is possible for gas and water to track up and along cable, duct and steel bar penetrations of the Membrane. It is difficult to guarantee a sealed collar system on small diameter penetration.

Alderseal Gastite Mastic has been specifically developed to solve this problem.

It has British Telecom type approval and meets the requirements of British Gas for sealing services.

#### Description:

Firm Fibrous Mastic based on Polybutene, mineral fillers, organic fibres and water displacing materials.

#### Application:

Alderseal Gastite Mastic is packed into the ends of the duct by hand and moulded firmly around cables and against the duct ensuring there are no gaps or fissures. The Mastic should be packed to a depth of least equal diameter of the duct.

When used for sealing around solid penetrations reinforcing bars, mains, water pipes, etc. It is moulded by hand using firm pressure pressed into the angle caused by penetration. The Mastic being moulded onto both sides of the angle by at least 40mm.

Alderseal Gastite Mastic can also be used to pack into the angle at penetrations before the application of Factory Formed Collars and Cloaks.

All surfaces should be free from loose rust, scale, dirt or previous sealant.

#### Properties:

Alderseal Gastite Mastic Adheres to common construction materials such as steel, glazed earthen ware, clay, lead, polythene, pvc. Unaffected by natural gas including Methane and Carbon Dioxide and water. Accommodates movement.

Alderseal Gastite Mastic also adheres to wet surfaces and withstands at least 20kpa (2 metre head) water pressure for a minimum of 30 minutes.

<b>Colour:</b>	Off White
<b>Specific Gravity:</b>	1.66
<b>Specific Volume:</b>	578cc/kg
<b>Application Temperature Range:</b>	0°- 35°C
<b>Service Temperature Range:</b>	-15°- 100°C
<b>Extruded Strips Weight:</b>	1 kg
<b>Dimensions:</b>	330mm x 40mm x 40mm
<b>No per carton:</b>	8

#### Application:

All penetration ducts passing through Gas Membrane to be sealed at point of penetration with Alderseal Gastite Mastic as supplied by Alderburgh Ltd, Sladen Mill, Halifax Road, Littleborough. OL15 0LB.

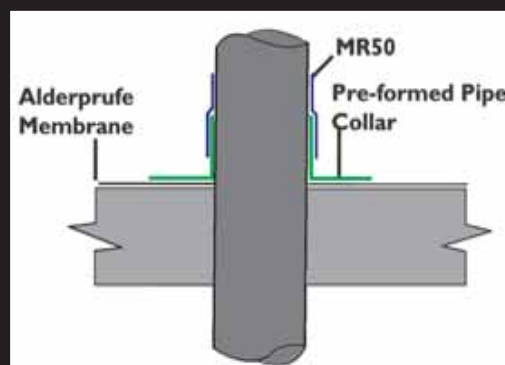
#### Health and Safety:

There are no known safety hazards in the normal use of this product. Full COSHH data available.

## Factory Formed Details

### PRE-FORMED PIPE COLLAR (TOP HAT)

The Pre-formed Pipe Collar is easily installed wherever penetration of the GAS barrier membrane is necessary for ducting or other services. Secure bonding of the pre formed pipe collar to the membrane is simply achieved by ensuring an overlap of 150mm and the application of ALDERSEAL GAS-TITE COMPOUND. Available in 110mm, 120mm, and 130mm' diameter. Special sizes can be made to order.



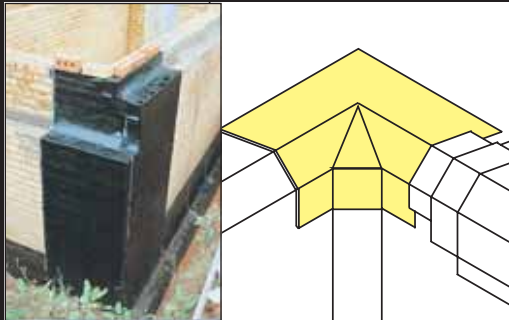


## Ancillaries

### Factory Formed Details / GasTite Compound

#### Description

Factory formed corners and detail profiles designed to eliminate all risk in applications of membranes at the weakest point. Eliminates any risk of error by applicator guaranteeing a complete waterproof and Gastite detail.



#### Material Specification

Manufactured from Aldercourse GRA or Tuflex DPC, the details are totally compatible with all membrane systems.

#### Size

All overlaps minimum 100mm onto membrane face.

#### PRE-FORMED COLUMN CLOAKS

#### Description

Manufactured in the factory with fully tested joints. The profiles are supplied to the exact size of the stanchions or the profile they are sealing. Heat bonded to the steel and either welded or adhered using Gastite Compound to the membrane. The profiles guarantee total security against ingress at the most difficult point to seal. Always installed as part of our guaranteed systems.



#### ALDERSEAL GAS TITE COMPOUND

#### Description

A modified polymer adhesive in sheet form, protected on both sides by siliconed release paper.

#### Uses

For sealing laps on Alderprufe GRA Gas Barrier and all Gas Barrier Systems, to themselves and each other, eg, Pre-Formed Corners and Profiles, Protection Boards, both vertical and horizontally, Fillet Sections.

#### Technical Data

**Rolls Size:** 15mts **Material Thickness:** 2mm  
**Elongation at break:** 400%.

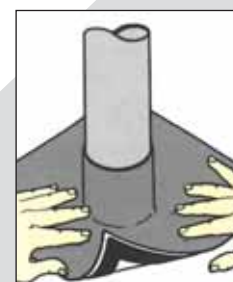
#### Application

Cut tape to desired profile shape and size. Remove release paper on one side and apply using firm pressure direct to profile or board. Prepare surface to be adhered to. Concrete and masonry must first be allowed to dry and for best results primed using Self Adhesive Membrane Primer.

When surface is prepared, remove second release paper on exposed side and fix in position. Firm pressure will ensure good adhesion. Warming tape by storing indoors before use will aid adhesion. Once in place the profile or product is firmly fixed and becomes an integral part of the gasproofing system.

#### Specification

All Laps on Alderprufe GRA Gas Barrier, all 'Profiles', protection boards 'Fillet Sections' of factory formed details are to be applied and fixed with Alderseal Gastite Double Sided Tape and in accordance with manufacturers instructions by Alderburgh Ltd.







## **Super Yellow 2000G Gas Membrane**

- Complies with guidance in BS8485:2007 and Ciria 665
- Provides protection from radon and carbon dioxide gases
- Provides protection from low levels of methane gas
- Acts as a high performance damp proof membrane
- Manufactured in the UK by Alderburgh Ltd

### Description

Super Yellow 2000G Gas Membrane is a UK manufactured co-polymer thermoplastic membrane. It combines gas and damp proofing protection in an easy to install, flexible membrane. The product is coloured yellow for ease of identification on site. The membrane is 500 microns thick (2000 gauge) and supplied in rolls 1.2m x 50m.

### Application

The Building Regulations require that proper precautions be taken to prevent danger to health and safety when building on gas contaminated land. Super Yellow 2000G Gas Membrane offers a safe solution for the protection of buildings and occupiers against radon, carbon dioxide and low levels of methane gas ingress when incorporated into the ground floor construction under guidance in BS8485@2007 and Ciria 665.

### Installation

Super Yellow 2000G Gas Membrane and additional components should be installed in accordance with the recommendations of BRE Report 414 "Protective measures for housing on gas-contaminated land". The membrane should be installed on a blinded or smooth surface allowing adequate overlap for jointing between the sheets and avoiding bridging i.e. areas of unsupported membrane.

To avoid slip or shear planes it is not recommended to take the membrane through the wall. In order to provide a continuous barrier across the cavity the appropriate grade of Alderburgh DPC should be sealed to the membrane, taken through the inner leaf and incorporated below the Higrade cavity tray in the outer leaf.

### Ventilation

An open void beneath the ground floor should be constructed with cross ventilation through the external and internal walls. This will dilute and disperse soil gases. Open voids are normally restricted to beam and block floors or other precast concrete floor systems. An alternative for providing ventilation beneath in-situ concrete floor slabs is to install a suitable Geo-void gas venting system.

### Jointing

Super Yellow 2000G Gas Membrane should be overlapped by at least 100mm and sealed with Alderseal Gastite Tape.

Ensure the membrane is clean and dry at the time of jointing. Perforations or punctures in the sheet should be covered with another part of the sheet and have an overlap of at least 150mm and the laps sealed with Alderseal Gastite Tape.

Preformed collars and cloaks should be used to seal around all penetrations to ensure a gastight seal; preformed Pipe Collars for service entry pipes, preformed corner cloaks and preformed column cloaks for steel stanchions are available. The base of the preformed unit should be bonded using Alderseal Gastite Jointing Tape

#### Covering

Super Yellow 2000G Gas Membrane should be covered by a protective layer as soon as possible after installation. Care should be taken to ensure the membrane is not punctured, stretched or displaced when applying a screed or final floor covering. A minimum thickness of 50mm screed is recommended. When reinforced concrete is to be laid over the membrane the steel reinforcements must be prevented from contacting the membrane. If necessary, protect the membrane using Backerboard HD or Geotex 300pp.

#### Precautions

Super Yellow 2000G Gas Membrane is classified as non-hazardous when used in accordance with CP102: 1973. The membrane is chemically inert and is not affected by acids or alkalis that may be present in the sub-soils.

Care should be taken to avoid accidental damage when handling the membrane on site.

The product is not intended for use where there is the risk of hydrostatic pressure, where it will be exposed for long periods of outdoor weathering, or where hydrocarbons or high levels of methane are recorded.

#### Technical Data

Thickness	500 microns (2000 gauge)
Colour	Yellow
Roll Dimensions	1.2 m x 50 m
Roll Weight	28.2 kg
Water vapour transmission rate	0.00036Kg/m <sup>2</sup> /h atm
Tear Resistance (ASTM-D.1004)	6.77 kg / mm <sup>2</sup>
Tensile Strength	1.14 kg / mm <sup>2</sup>
Elongation at break	> 500%
Carbon Dioxide gas permeability (ISO 2782)	2.80 x 10 <sup>-17</sup> m <sup>2</sup> / sec / Pa
Methane gas permeability (ISO 2782)	1.13 x 10 <sup>-17</sup> m <sup>2</sup> / sec / Pa
Radon permeability	8 x 10 <sup>-12</sup> m <sup>2</sup> /sec/Pa

The information given in this datasheet is based on data knowledge correct at the time of printing. Statements made are of a general nature and are not intended to apply to any use or application outside any referred to in the datasheet. As conditions of usage and installation are beyond our control we do not warrant performance obtained but strongly recommend that our installation guidelines and the relevant British Standard Codes of Practice are adhered to. Please contact us if you are in any doubt as to the suitability of application.

January 2009

Alderburgh Ltd, Sladen Mill, Halifax Road, Littleborough, Lancashire, OL15 0LB Tel: 01706 374416



# **Enclosure 3**

## **Validation Records**

## GAS PROTECTION VALIDATION REPORT



One sheet to be completed for each plot inspected by a suitably qualified engineer

Job Number	16185	Design Source		Specification Source		Other Documents Attached	YES
Site Name	Pressparts	Building Use	<i>Commercial</i>				
Plot Number	Phase 4	Building Description	No. of storeys	1	Building Type: <i>Extension to existing building</i>		
Compiled by	Lindsay Palmer	Gas Protection Type	<i>Passive</i>		Foundation Type:	<i>Ground Floor slab</i>	

Ventilated sub-floor (if present)	Inspection date / time		Inspected by		Photographed?	
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\* Notes / Recommendations (see guidelines below)

Void Former Type	N/A	1.
Height of Void Space	N/A	2.
Gravel Type	N/A	3.
Pipe Size and Spacing	N/A	4.
External Wall Airbricks	N/A	5.
Internal Sleeper Walls	N/A	6.
External Vent Trenches / Ducts	N/A	7.

Gas Barrier	Inspection Date /Time	12/10/2017	Inspected by	Lindsay Palmer	Photographed?	YES
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Notes / Recommendations

Membrane Type	✓	Installed Super Yellow 2000g gas membrane
Extent of Coverage	✓	Complete coverage
Underside of Membrane	✓	Blinded hardcore
Slab / Membrane Condition	✓	Good condition, no debris or punctures noted, slight creasing of membrane within central area of plot.
Laps and Joints	✓	Joints lapped (150mm laps) and sealed with double sided tape (gastite mastic) between sheets and on top surface where required.
Damp-proof Course	✓	Gas membrane also serves as damp proof membrane, sealed to outer edge of building cladding
Service Entries and Seals	✓	Membrane taken up 150mm around service entry (top hat style) and penetrations, lapped and sealed with double sided gastite tape.
Cavity Inspection	N/A	N/A

This plot has PASSED inspection

(Any proposed remedial works will be noted in the 'Remarks' column on this form)

An additional inspection visit IS NOT required for this plot

Qualified Engineer:  
(PRINT NAME)

LINDSAY PALMER

Signed: \_\_\_\_\_

\*Delete as appropriate



## GAS PROTECTION VALIDATION REPORT



One sheet to be completed for each plot inspected by a suitably qualified engineer

### Guide Notes

1. Void Former Type	Proprietary Type - Manufacturer and Specification, in accordance with design? Installed properly without damage?
2. Height of Void Space	Height of proprietary former or constructed ventilation space below suspended flow - note any debris on void / obstructions to air flow, note formation surface soil type (e.g. crushed concrete / brick), any evidence of flooding.
3. Gravel Type	Gravel type, if used (limestone / granite, etc.) and any specification (e.g. 6F2), typical particle dimensions (mm), apparent fines content (low / high), compaction (loose / dense), waterlogging / contamination by clay, organic matter, other debris. Take photographs of stockpile, close up shot of stone with tape measure. Alternatively, check details on delivery tickets for stone. Take photographs of adjacent plots if at this stage of construction. Check depth of stone confirms to at least 300mm if visible.
4. Pipe Size and Spacing	Diameter in mm, material type (e.g. PVC), slotted / perforated, positioning and spacing / separation and jointing as on design drawing - if not sketch arrangement - do pipes connect with external (telescopic / swan-neck) vents? Take photographs of vents on external walls for each plot (May be possible to photograph other plots on-site, which are at a stage of installing vents. Will be useful for these plots later on).
5. External Wall Airbricks	Check numbers, size and positions as design drawing (if not shown, make sketch, check for blockage, e.g. by mortar / soil / pavings, etc.
6. Internal Sleeper Walls	Check for ventilation holes, e.g. honeycomb brickwork or pipe crossings, note size, spacing and location, in accordance with design?
7. External Vent Trenches / Ducts	Check whether located and constructed in accordance with design drawings, if open-topped gravel, note gravel type and presence of fines / contamination. If pipe or other vents, check positions and construction for functionality and absence of blockages - vents may be built over.
8. Membrane Type	Note manufacturer and product specification, including batch / roll numbers if present - in accordance with specification? Check stock storage arrangements - protected from dirt and damage?
9. Extent of Coverage	If membrane is incomplete, further inspection will be required - note areas completed / incomplete - is membrane fully visible or have internal walls been constructed over membrane / screed placed?
10. Underside of Membrane	Where necessary, for example when using a granular blanket as a ventilation layer, check the underside of the membrane has adequate protection, e.g. minimum 50mm no fines concrete blinding layer or appropriate geo-textile (see below).
11. Slab / Membrane Condition	Record presence of debris / rough surfaces, in particular sharp projections, below or above membrane, record location of all punctures or repairs, note arrangements to protect membrane surface from traffic / tools and equipment / materials, and temporary weighting down of membrane, e.g. use of boards - record evidence of footprints / tracks on membrane surface, creases or water / wind damage. Take photographs of each plot inspected.
12. Laps and Joints	Check all the joints are lapped and sealed in accordance with the manufacturers requirements / specification, particularly where creases / folds are present (usually minimum 150mm laps, with double-sided tape between sheets and single sided tape on top surface, note size of sheets and frequency of edge sheets). Take photographs of jointing for each plot.
13. Damp-proof Course	Record DPC manufacturer and product code, usually integrated with the membrane, measure the DPC projection from external wall in mm, check laps and seals between membrane and DPC - note any particular stress points and tension between the two, check for damage to the DPC
14. Service Entries and Seals	Note number, position and diameter of service entries - check top hat seal arrangements in accordance with design / specification (laps and seals between top hat and floor membrane, pipe upstand is usually a minimum of 150mm) check jubilee clips to secure top had seal to pipe - note presence of clips and tightness of connections. Take photographs for all plots inspected.
15. Cavity Inspection	Check gas membrane of gas resistant DPC is taken across cavity. Check for rips across cavity. Check for jointing detail of gas resistant DPC or membrane across cavity to main membrane. Take photographs for all plots inspected.

# **Enclosure 4**

## **Site Photographs**



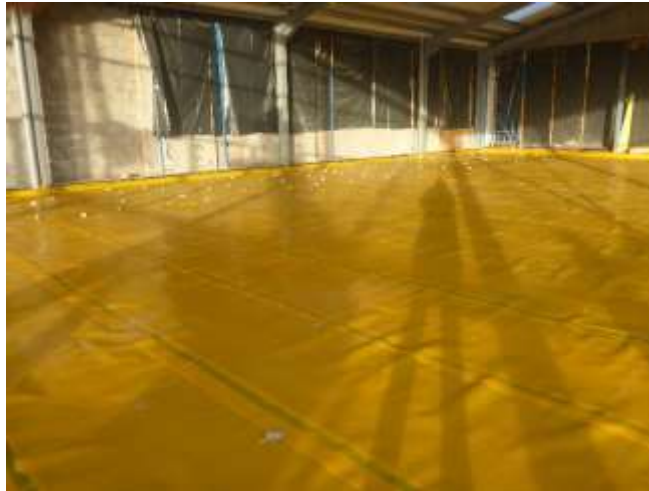


Plate 1: Gas Membrane installation across Machine shop extension floor area



Plate 2: Gas membrane installation up to external wall



Plate 3: Gas membrane installation up to existing internal wall



Plate 4: Gas membrane taken up 150mm and sealed with double sided tape around service penetration



Plate 5: Gas membrane taken up 150mm and sealed with double sided tape around stanchions