

Proposed Plan Basement
Scale 1:50

Safety, Health and Environmental Information
1. Notes below are additional to hazards/risks normally associated with this type of work:
Construction
CL Condition of existing structure
CH Demolition works
CII Egress from basement

CDM Risk register items
SR-LOC-001, 003
SR-LOC-007

2. For SHE information relevant to all C122 8-10 Southampton Row Reinstatement Works refer to Designer's CDM Risk Register: C122-OVE-N3-LRG-CR006-50001

3. These notes are based on the use of experienced and competent contractors carrying out the work using an approved safe method of working.

- Notes**
1. All dimensions to be checked on site.
 2. Existing structure drawn to assumed dimensions.
 3. Safe system of work and detailed demolition programme to be developed by the contractor, to accommodate installation of new structure. See drawing C122-OVE-C4-DDA-CR001_Z-75050 and 75052 for details.
 4. This drawing is not a comprehensive summary of existing structure. Contractor to review on site.

- Key:**
- Roof or Slab to be removed
 - Wall to be broken down locally (walls where steelwork to be inserted) and brickwork to be made good

Scale 1:50
1m 0 1m 2m 3m 4m 5m



Crossrail Limited
25 Canada Square
Canary Wharf
London
E14 5LQ

© Crossrail

Contract:
Bored Tunnels (Alignment and Track)
Contractor:
Ove Arup & Partners Limited
Location:
Crossrail General

Title:
8 - 10 Southampton Row
Proposed Reinstatement Works
Basement Walls (B1)

Scale:
1:50 @ A1

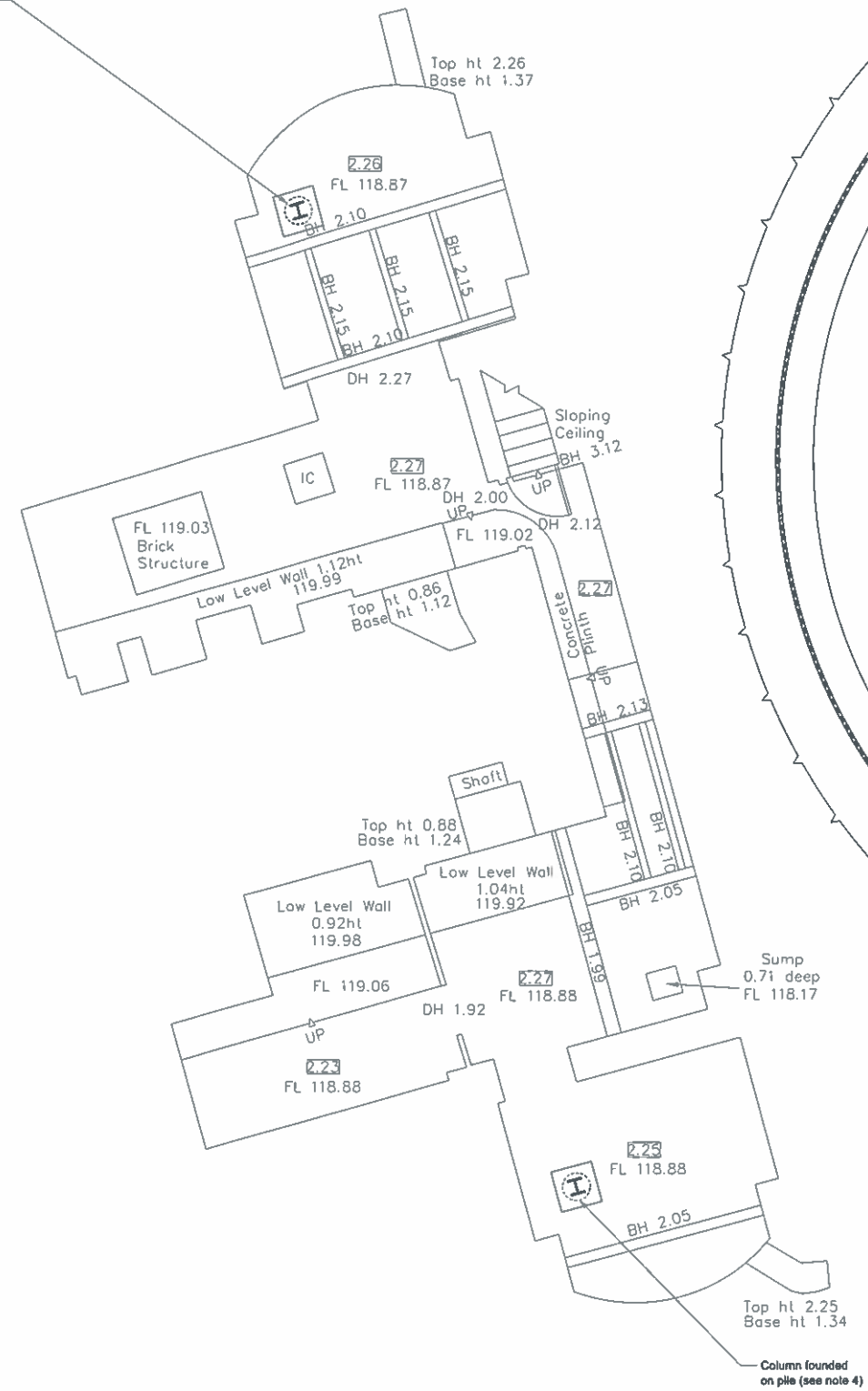
Drawing and CAD file No:
C122-OVE-C4-DDA-CR001_Z-75053

By: N. THOMPSON
Chk: H. RUTLEDGE
App: S. ROBERTS
Auth:

Rev: P04
Suitability: S4



Column founded
on pile (see note 4)



A
DOB-CR086 Z-50005

B
DOB-CR086 Z-50005

Fisher Street
Shaft Site

Proposed Plan Sub Basement
Scale 1:50

Safety, Health and Environmental Information
1. Notes below are additional to hazards/risks normally associated with this type of work:
Construction
CI. Condition of existing structure
CII. Egress from basement
CIII. Ventilation to basement

CDM Risk register items
SR-LOC-001, 009
SR-LOC-007, 008

2. For SHE information relevant to all C122 8-10 Southampton Row Reinforcement Works refer to Designer's CDM Risk Register: C122-OVE-N3-LRG-CR086-50001

3. These notes are based on the use of experienced and competent contractors carrying out the work using an approved safe method of working.

- Notes**
1. All dimensions to be checked on site.
 2. Existing structure drawn to assumed dimensions.
 3. Safe system of work and detailed demolition programme to be developed by the contractor, to accommodate installation of new structure. See drawing C122-OVE-C4-DDA-CR001_Z-75050 and 75052 for details.
 4. For piling details refer to drawing No. C122-OVE-C4-DDD-CR001_Z-23814.
 5. This drawing is not a comprehensive summary of existing structure. Contractor to review on site.



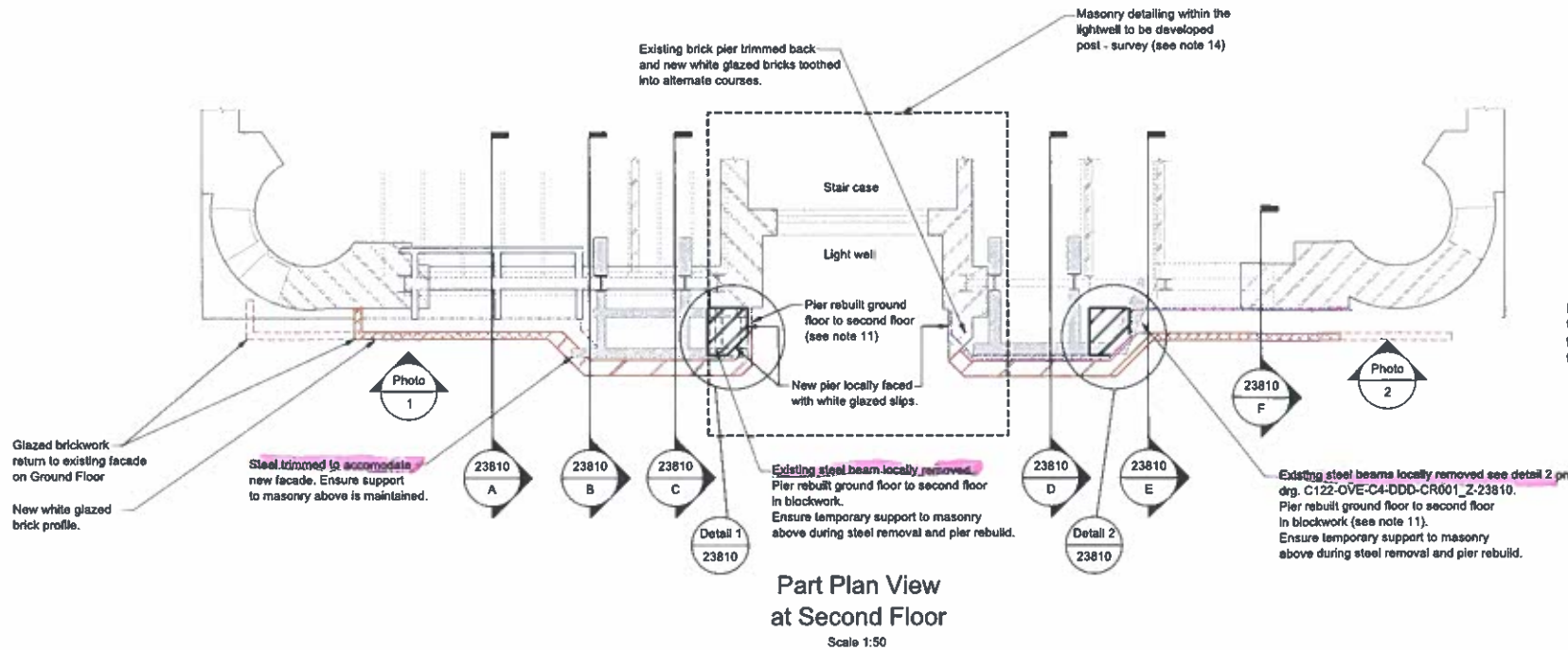
Crossrail Limited
25 Canada Square
Canary Wharf
London
E14 5LQ

Contract : Bored Tunnels (Alignment and Track)			
Originator : Ove Arup & Partners Limited			
Location : Crossrail General			
Title : 8 - 10 Southampton Row Reinstatement Works Sub Basement Piles (B2)		By : J.JANUSZCZAK DN : H.RUTLEDGE App : S.ROBERTS Auth : _____	
Scale : 1:50 @ A1		Drawing and CAD file No : C122-OVE-C4-DDA-CR001_Z-75058	
		Rev : P01	Suitability : S4

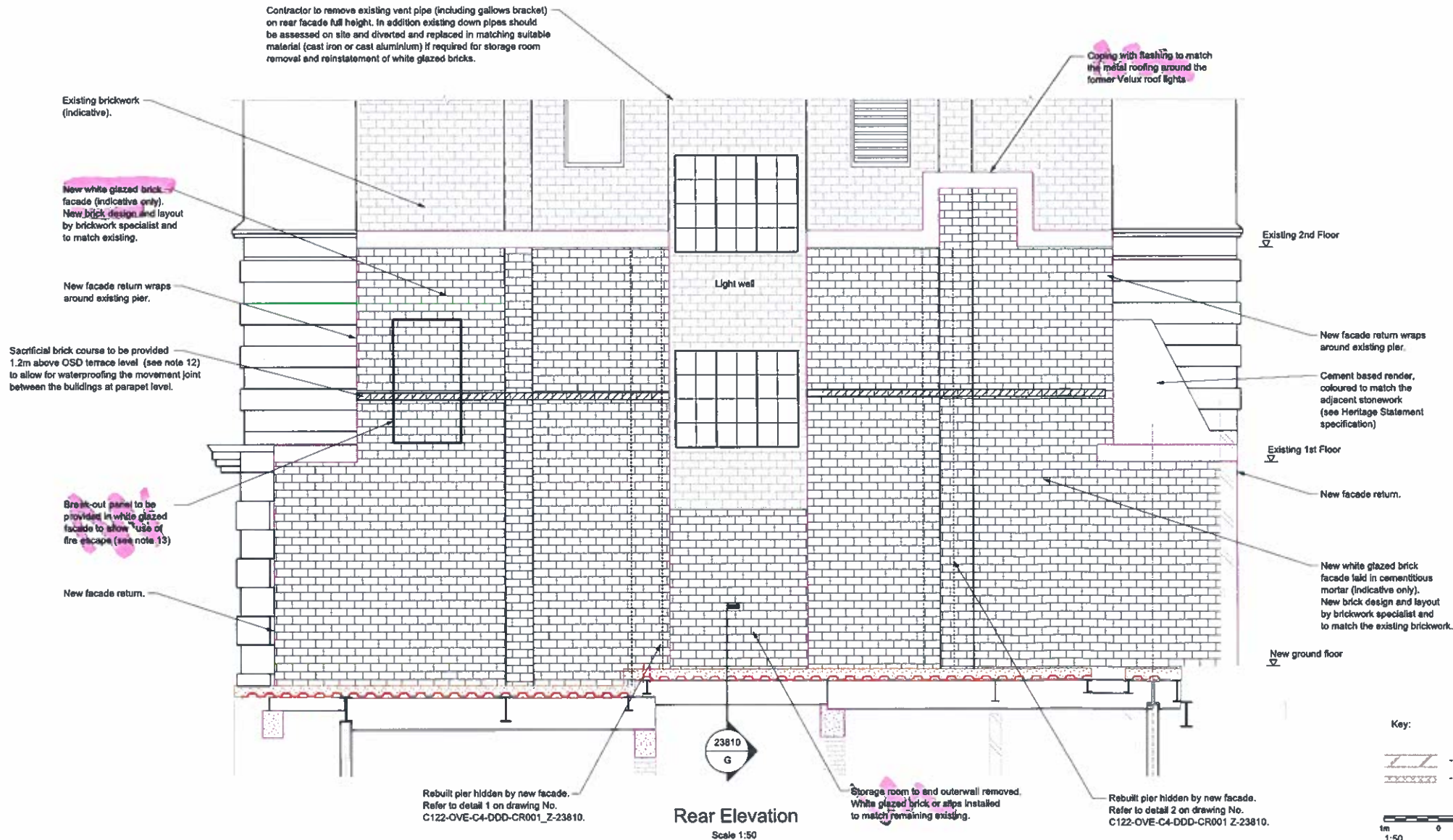
Copy Approved for Design - Created: 28-OCT-2015

Rev.	Date	Description	By	Chkd	App	Auth
P01	27/10/2015	RIBA Stage F Design	JJ	HR	SR	-

Fit for authorisation
RESTRICTED



Photograph 1
Indicating existing steelwork and walls to rear of 8 - 10 Southampton Row - South east corner (taken prior to installation of felt and batten waterproofing)



Photograph 2
Indicating existing steelwork and walls to rear of 8 - 10 Southampton Row - North east corner, including props to flank facade (taken prior to installation of felt and batten waterproofing)

Safety, Health and Environmental Information
1. Notes below are additional to hazards/risks normally associated with this type of work:

Construction
C1. Potential instability of working platform due to unsatisfactory support to building. Contractor to design access scaffolding and working platform taking fully into consideration this potential risk.

CDM Risk register items
SR-LOC-002, 005 & 006

2. For SHE information relevant to all C122 8-10 Southampton Row Reinstatement Works refer to Designer's CDM Risk Register: C122-OVE-N3-LRG-CR086-50001

3. These notes are based on the use of experienced and competent contractors carrying out the work using an approved safe method of working.

P06

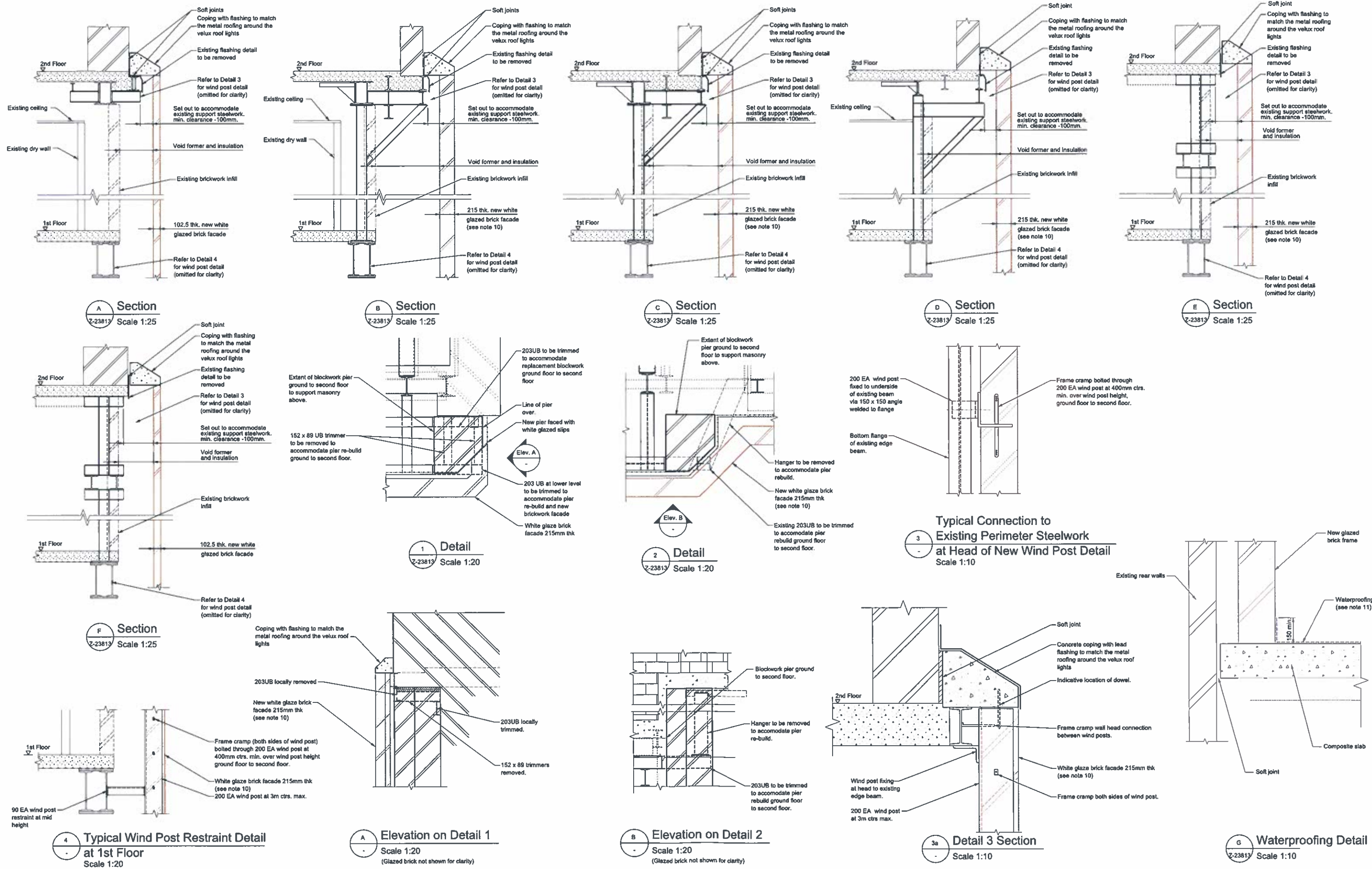
Rev.	Date	Description	By	Chkd	App	Auth
P01	25/06/2013	First Issue For RIBA Stage E IDR	SD	JW	BS	-
P02	03/07/2013	Updated for Gate 2	SD	JW	RM	-
P03	25/07/2013	Issued for ITT	GP	JW	BS	-
P04	27/10/2015	RIBA Stage F Design	JU	HR	SR	-
P05	09/02/2016	Updated for RIBA Stage F Design	JU	HR	SA	-
P06	28/02/2016	HSE notes added.	JU	HR	SF	-

- Notes**
- For Steelwork specification refer to General Notes drawing C122-OVE-S-DDJ-CR001_Z-23304. All new enabling steelwork is to be installed to ensure support of brick piers, slab edge beams etc. prior to cutting of the existing steelwork support beams and subsequent demolition of the outbuilding.
 - Corrosion protection system to provide 15 years of protection for the all new steel work and existing steelwork exposed during the works.
 - All exposed structural steel should be fire protected using intumescent paint to achieve 90minute fire protection and the contractor is to ensure full compatibility between the corrosion and fire protection systems.

- Details of new brickwork including mortar to be submitted to the Project Manager for approval.
- All new steel work to be grade S355.
- All dimensions of new steel work to be confirmed on site prior to ordering.
- Compression strength of all high strength non shrinkage grout to be at least 60N/mm2
- The contractor is to submit a method statement and risk assessment to the Project Manager before commencement of the work.

- For brick and block specification refer to General Notes drawing C122-OVE-S-DDJ-CR001_Z-23304.
- Void former, insulation and detailed brick and blockwork design to be by Brickwork Specialist / MFR.
- Pier geometry to follow line of pier above.
- OSD Terrace level to be confirmed by the Project Manager.
- Break-out panel to be designed to match the permanent brickwork and maintain visual continuity of the layers. Windposts to be designed to frame around the panel to maintain the structural stability of the facade once the panel is removed.
- The masonry layout has been based on incomplete survey data. The masonry in the lightwell area may need to be revised to suit the existing condition.

<p>Crossrail Limited 25 Canada Square Canary Wharf London E14 5LQ</p> <p>© Crossrail</p> <p>www.crossrail.co.uk</p>	<p>Contract: Bored Tunnels (Alignment and Track)</p> <p>Originator: Ove Arup & Partners Limited</p> <p>Location: Crossrail General</p>		<p>By: J.JANUSZKIEWICZ</p> <p>Chk: H.RUTLEDGE</p> <p>App: S.FROST</p> <p>Auth: _____</p>
	<p>Title: 8 - 10 Southampton Row Reinstatement Works Rear Wall Elevation and Plan</p>		<p>Rev: P06</p> <p>Subsity: S4</p>
	<p>Scale: 1:25 @ A1</p>		<p>Drawing and CAD file No: C122-OVE-C4-DDD-CR001_Z-23813</p>
	<p>Fit for authorisation</p>		

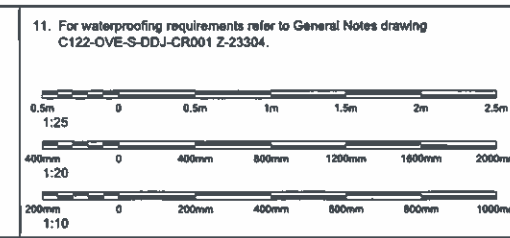


Copy Approved for Design - Created: 28-OCT-2015

Rev.	Date	Description	By	Chd	App	Auth
P01	25/06/2013	First Issue For RIBA Stage E IOR	SD	JW	BS	-
P02	03/07/2013	Updated for Ose 2	SD	JW	RM	-
P03	25/07/2013	Issued for TTT	GP	JW	BS	-
P04	21/10/2015	RIBA Stage F Design	NT	HR	SR	-

- Notes
1. All new enabling steelwork is to be installed to ensure support of brick piers, slab edge beams etc. prior to cutting of the existing steelwork support beams and subsequent demolition of the outbuilding.
 2. Corrosion protection system to provide 15 years of protection for the all new steel work and existing steelwork exposed during the works.
 3. All exposed structural steel should be fire protected using Intumescent paint to achieve 90minute fire protection and the contractor is to ensure full compatibility between the corrosion and fire protection systems.
 4. Details of new brickwork including mortar to be submitted to the Project Manager for approval.

5. All new steel work to be grade S355.
6. All dimensions of new steel work to be confirmed on site prior to ordering.
7. Compression strength of all high strength non shrinkage grout to be at least 60N/mm².
8. The contractor is to submit a method statement and risk assessment to the Project Manager before commencement of the work.
9. For brick and block specification refer to General Notes drawing C122-OVE-S-DDJ-CR001_Z-23304.
10. New double skin brick facade to comprise 2 half brick skins plus 10mm joint. Outer skin to be white glazed. Inner skin may be clay brick.



Crossrail Limited
25 Canada Square
Canary Wharf
London
E14 5LQ

© Crossrail

Contract:
Bored Tunnels (Alignment and Track)

Engineer:
Ove Arup & Partners Limited

Location:
Crossrail General

By: N. THOMPSON
Chd: H. RUTLEDGE
App: S. ROBERTS
Auth: [Signature]

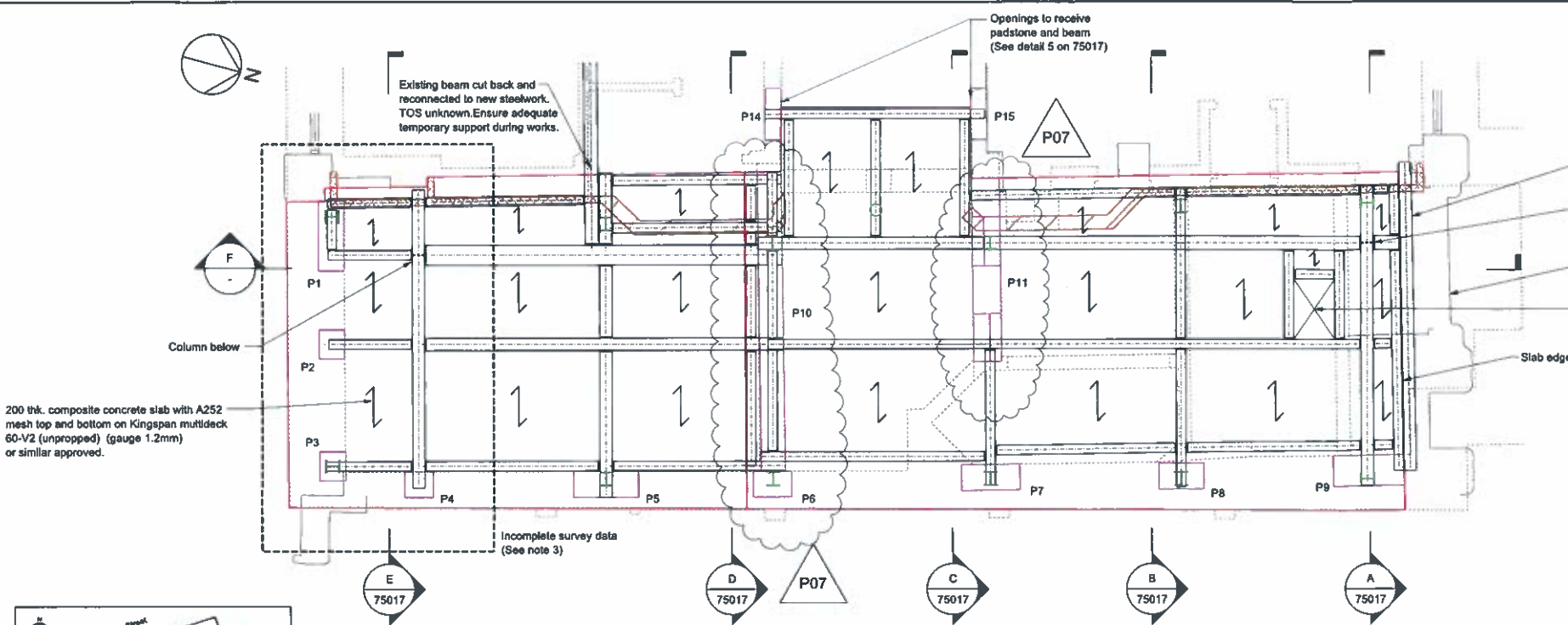
Scale:
Various @ A1

Drawing and CAD file No:
C122-OVE-C4-DDD-CR001_Z-23810

Rev:
P04

Suitability:
S4

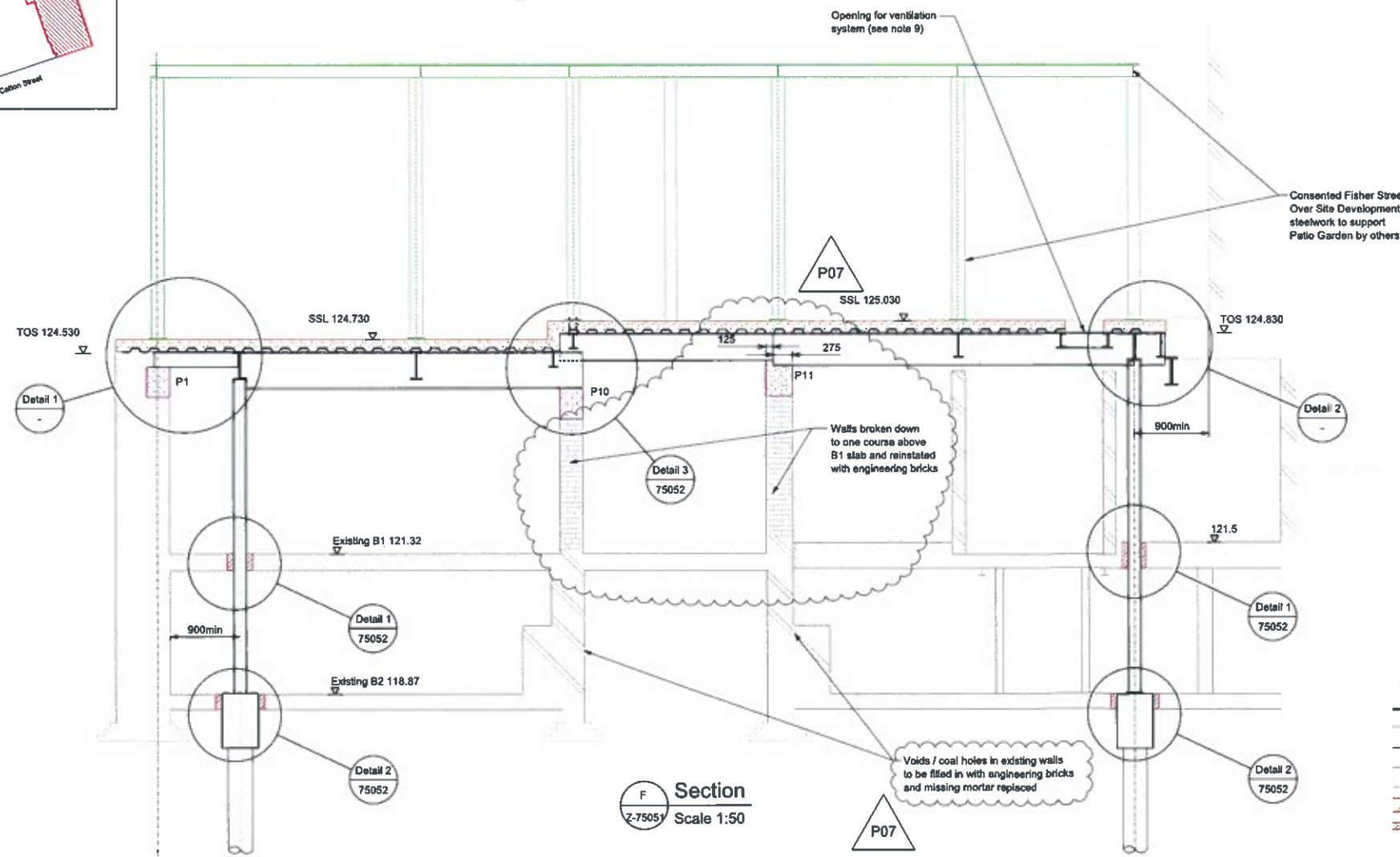
Fit for authorisation



Plan at Ground Floor Level
Scale 1:50



Key Plan



Section
Scale 1:50

Table 1 Padstone dimensions

Padstone Ref.	Width (perpendicular to beam)	Length (parallel to beam)	Height (measured below lowest beam or slab) (see note 9)	Min Beam Bearing Length (see note 9)
P1	1100	400	450	250
P2	450	400	250	250
P3	450	400	250	250
P4	450	400	250	250
P5	1000	400	500	400
P6	600	400	300	N/A
P7	900	400	475	250
P8	700	400	375	400
P9	675	400	300	400
P10	4500 (See Section G)	400	500	125/ 275 (See Section F)
P11	3000 (See Section G)	400	500	250
P14	800	250	425	250
P15	800	250	425	250

P07

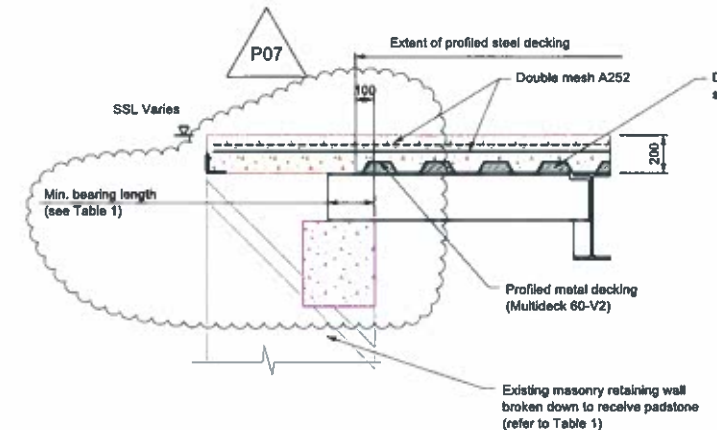
Existing beam to remain TOS unknown.

Column below

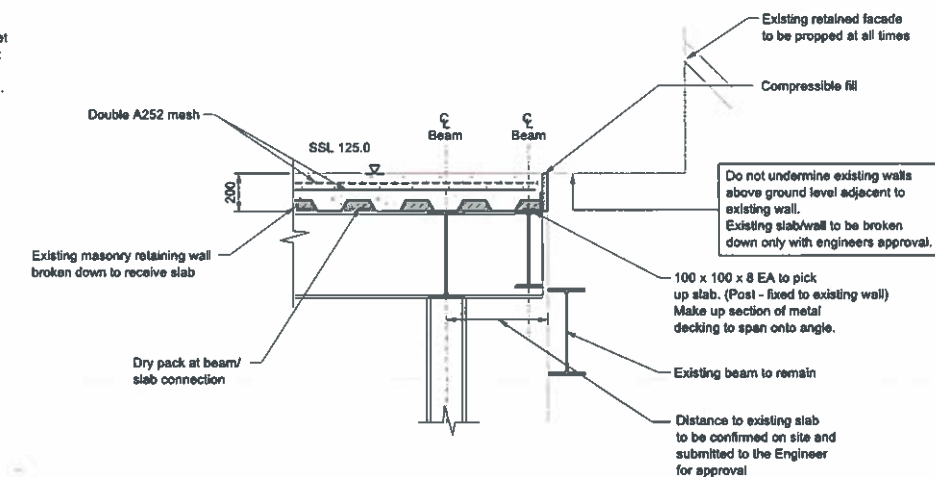
Existing retained facade

Opening for ventilation system (see note 9)

Slab edge



1 Edge Detail at Existing Retaining Wall
(Wall stops at Ground Floor Level)
Scale 1:20



2 Edge Detail at Existing Retaining Walls
(Wall continues above Ground Floor Level)
Scale 1:20

Key:

- New Steelwork
- New Composite slab on steel decking (see note 4)
- New columns and foundations
- Existing Structure Retained
- New OSD steelwork by others
- New white glazed brick facade (double skin/single brick)
- New white glazed brick facade (single skin/half brick)
- TOS - Top of steel

P07

400mm 0 400mm 800mm 1200mm 1600mm 2000mm
Scale 1:20
1m 0 1m 2m 3m 4m 5m
Scale 1:50

Notes

- See General Notes drawing no. C122-OVE-S-DDJ-CR001_Z-23304.
- All dimensions to be checked on site prior to ordering steelwork. Setting out is based on record information. The Contractor shall be responsible for site measuring dimensions relating to existing structure in advance of fabrication to ensure every element is entirely compatible with other elements as to location, line and level.
- The structural design has been based on survey data that was incomplete for the southern end of the B1 level basement. The steelwork layout within this area may need to be revised to suit the actual position of the retaining wall on this side.
- Slab edge to suit existing building profile. Permanent decking formwork to be cut to suit.
- Existing retained facade (north) to be propped at all times.

- Refer to Table 1 for minimum design padstone dimensions. In addition:
 - Where beams are located below OSD columns, beam bearing length on padstone to be extended 150 beyond column centreline.
 - Padstones founded on retaining walls are designed to be flush with internal face of wall. Padstone length to be extended as required to provide full beam bearing length.
 - Padstones length on internal walls to span full width of wall.
- For design loading and steelwork setting out constraints & requirements, refer to drawing C122-OVE-C4-DDA-CR001_Z-75055.
- All levels are given to London Height Datum which is 100m below Ordnance Datum Newlyn.
- For Vent details refer to C122-OVE-E1-STP-CR086-50001.
- For details of steelwork and size refer to C122-OVE-C4-DDA-CR001_Z-75054.

- For piling works refer to C122-OVE-C4-DDA-CR001_Z-23814.
- Any penetrations required in the slab for services relocations shall be designed in accordance with the recommendations in the Kingspan Multideck Technical Handbook. Siltwork and fire stopped to give 120 minutes fire protection.



Crossrail Limited
25 Canada Square
Canary Wharf
London
E14 5LQ
© Crossrail

Contract:
Bored Tunnels (Alignment and Track)
Owner:
Ove Arup & Partners Limited
Location:
Crossrail General
Title:
8 - 10 Southampton Row
Proposed Reinstatement Works
Ground Floor Structural
GA Plan and Section
By:
J. JANUSZKOWICZ
Chk:
H. RUTLEDGE
App:
S. FROST
Auth:
Scale:
1:50 @ A1
Drawing and CAD file no:
C122-OVE-C4-DDA-CR001_Z-75051
Rev:
P07
Suitability:
S4

Safety, Health and Environmental Information

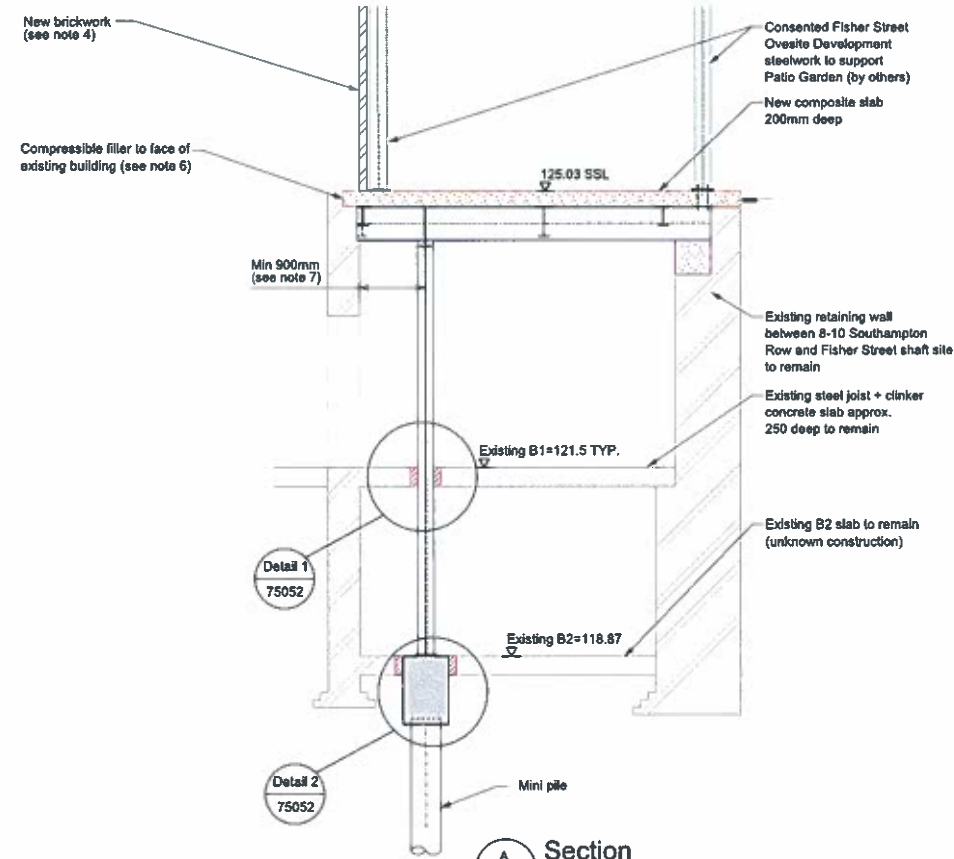
1. Notes below are additional to hazards/risks normally associated with this type of work:

Construction
C1. Manual handling
C1. Structural collapse

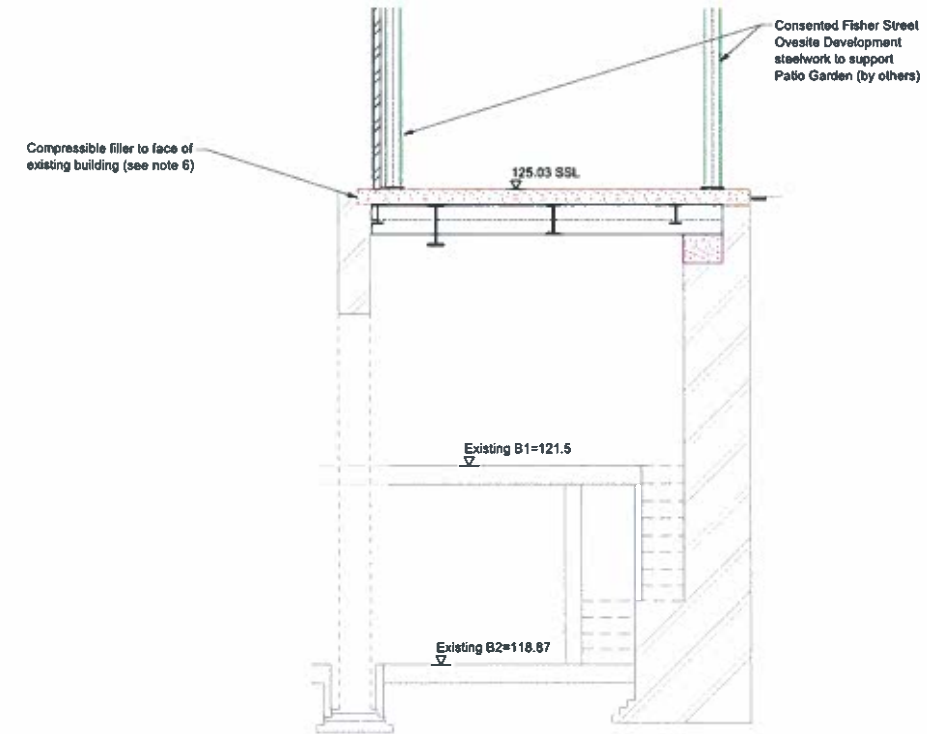
CDM Risk register items
SR-LOC-001, 003, 004, 009

2. For SHE information relevant to all C122 8-10 Southampton Row Reinstatement Works refer to Designer's CDM Risk Register: C122-OVE-N3-LRG-CR086-50001

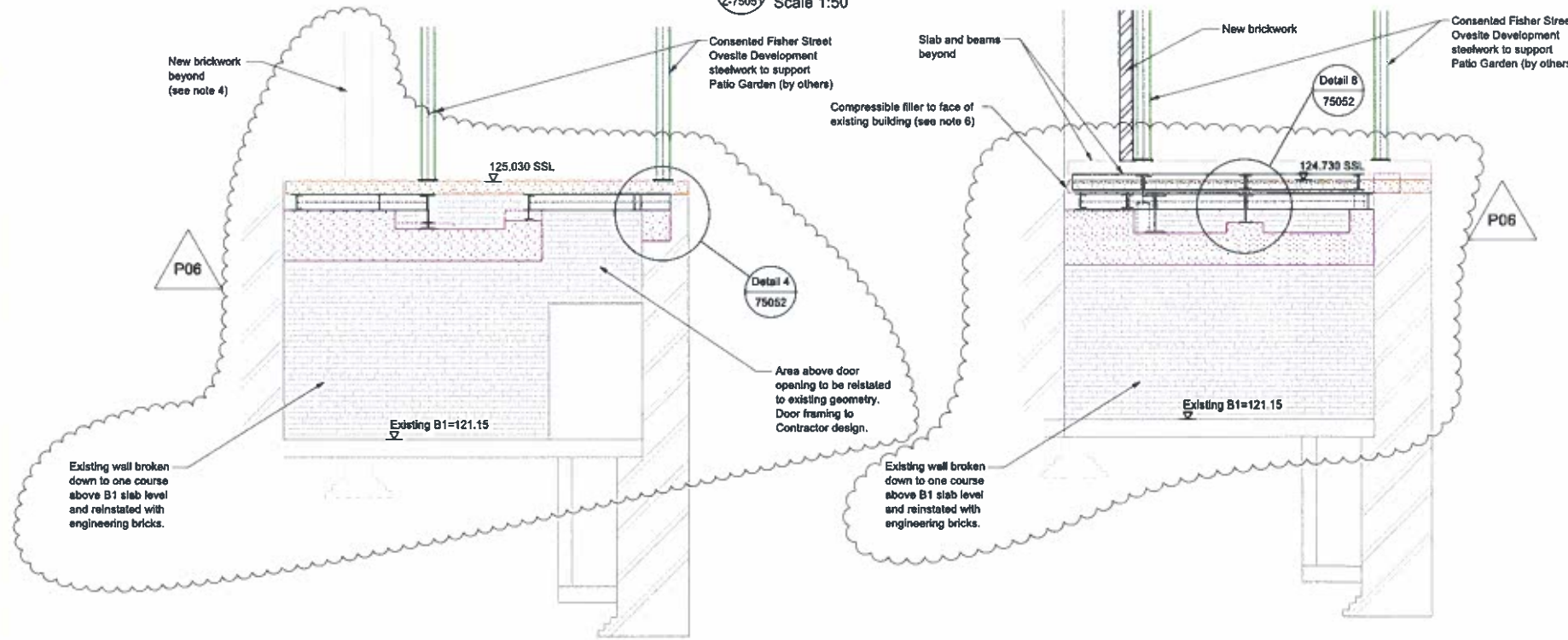
3. These notes are based on the use of experienced and competent contractors carrying out the work using an approved safe method of working.



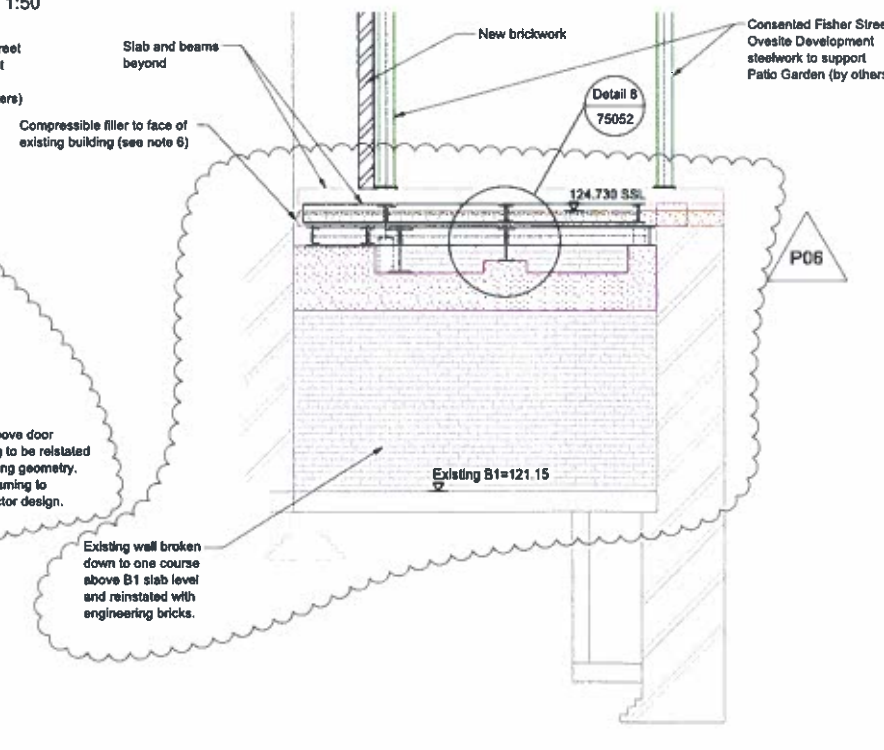
A Section
Z-75051 Scale 1:50



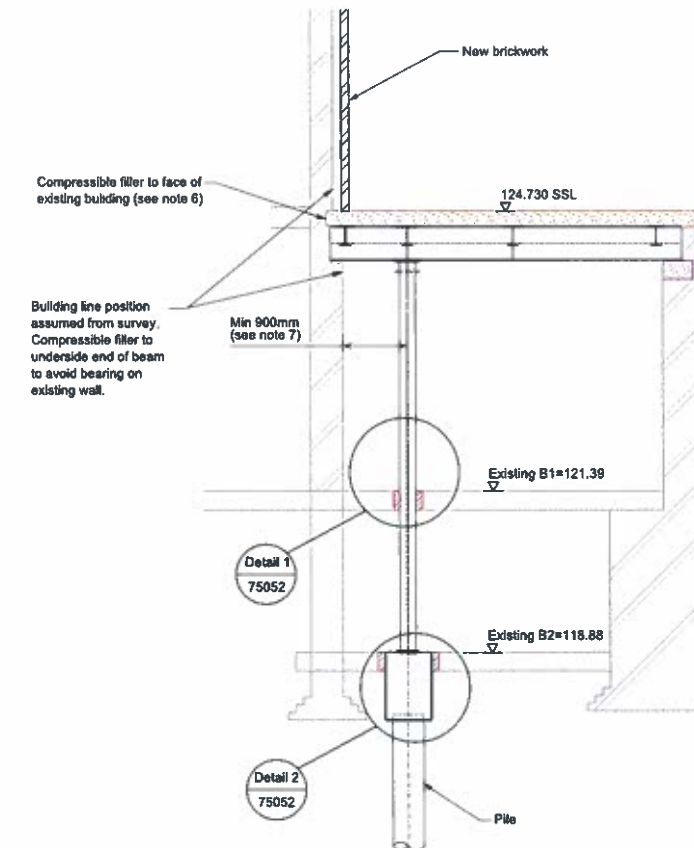
B Section
Z-75051 Scale 1:50



C Section
Z-75051 Scale 1:50



D Section
Z-75051 Scale 1:50



E Section
Z-75051 Scale 1:50

Notes

- All dimensions to be checked on site.
- Existing structure drawn based on survey.
- Slab edge to suit existing building profile. Permanent decking formwork to be cut to suit.
- For details of the new white glazed masonry refer to drawing C122-OVE-S-DDA-CR086_Z-20002.
- Connection design by steelwork contractor.
- Contractor to propose compressible fill material for project manager approval.
- Pile setting out to give 900mm min. clearance for column CL to face of existing wall.

Key:

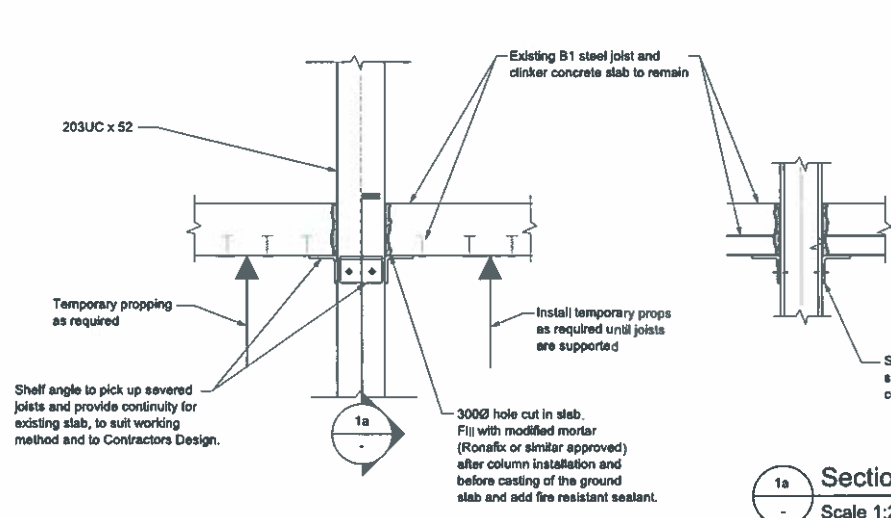
- New Composite slab on steel decking
- New columns and foundations
- Existing Structure Retained
- Consented Oversite Development Steelwork
- New brickwork
- New white glazed masonry
- TOS Top of Steel
- FFL Finished floor level
- SSL Structural slab level



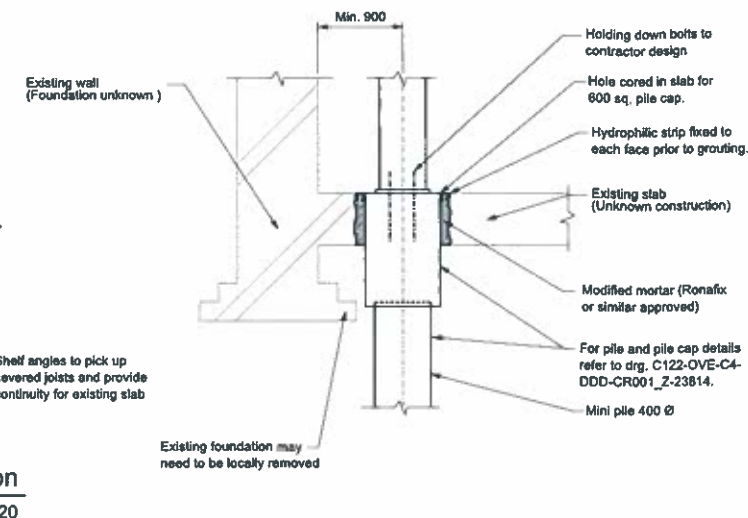
Crossrail Limited
25 Canada Square
Canary Wharf
London
E14 5LQ
© Crossrail

Bored Tunnels (Alignment and Track)
Contractor: Ove Arup & Partners Limited
Location: Crossrail General
Title: 8 - 10 Southampton Row Reinstatement Works Structural Sections
By: J.JANUSZKIEWICZ
Chk: H.RUTLEDGE
App: S.FROST
Auth: —
Scale: 1:50 @ A1
Drawing and CAD file No: C122-OVE-C4-DOB-CR001_Z-75017
Rev: P06
Suitability: S4

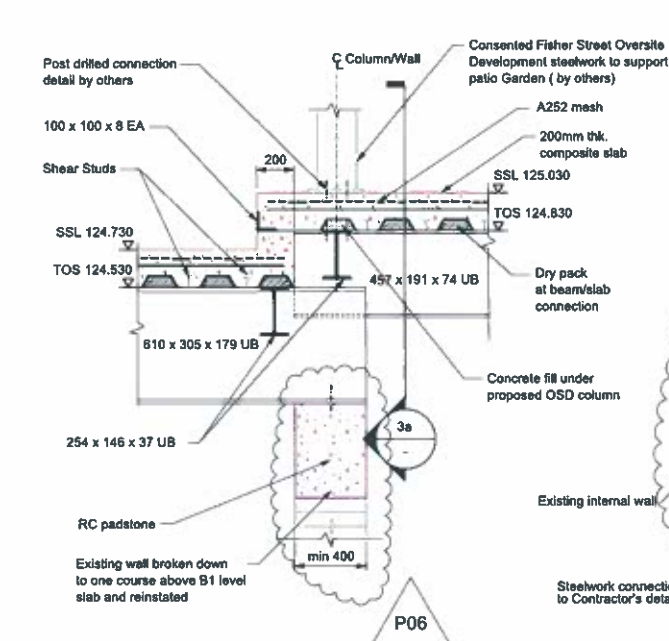
Rev.	Date	Description	By	Chkd	App	Auth
P01	25/06/2013	First Issue For RIBA Stage E IOR	SD	JW	BS	-
P02	03/07/2013	Updated for Gate 2	SD	JW	RM	-
P03	25/07/2013	Issued for ITT	GP	JW	BS	-
P04	27/10/2015	RIBA Stage F Design	PD	HR	SR	-
P05	08/02/2016	Updated for RIBA Stage F Design	JU	HR	SA	-
P06	26/02/2016	Padstone detailing amended.	JU	HR	SF	-



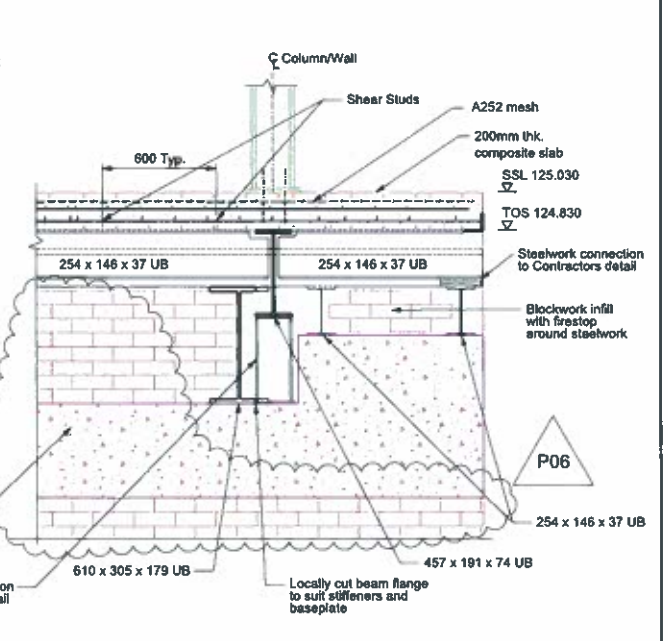
1 Column Through Existing Clinker Concrete B1 Slab Detail
Scale 1:20



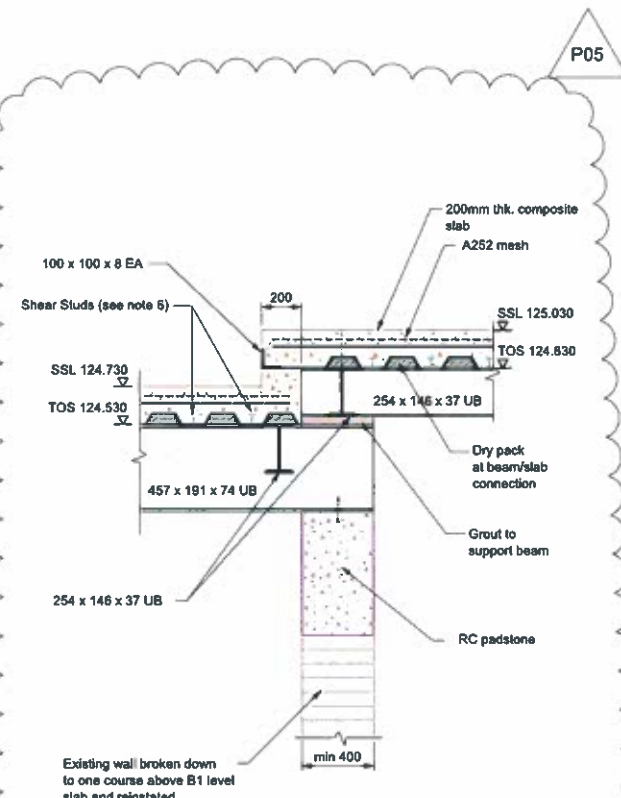
2 Typical Pile Cap Through Existing B2 Slab Detail
Scale 1:20



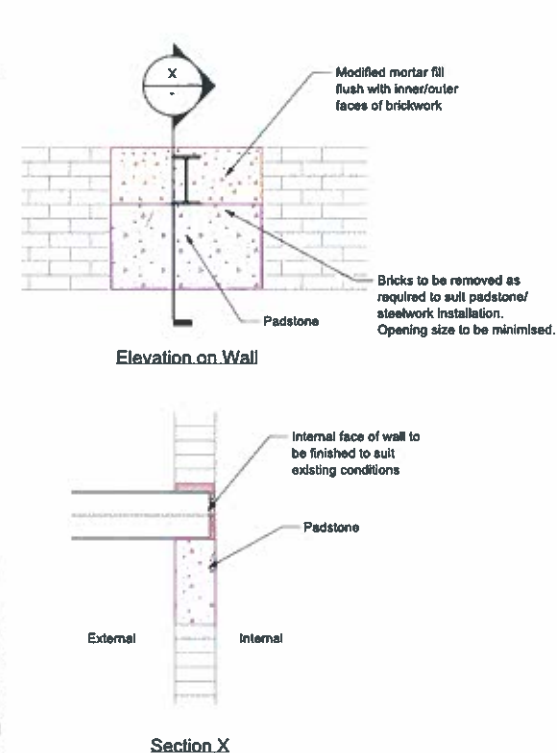
3 Slab Support Detail
Scale 1:20



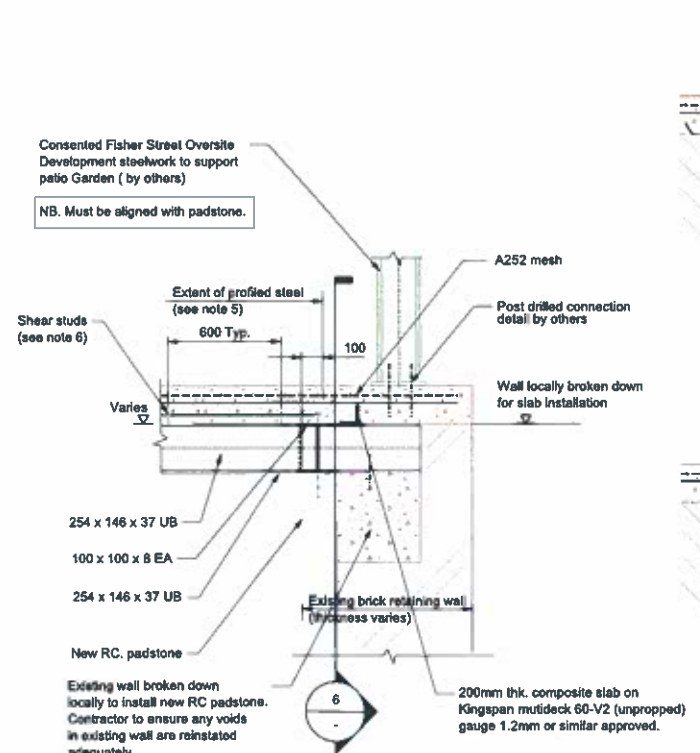
3a Section
Scale 1:20



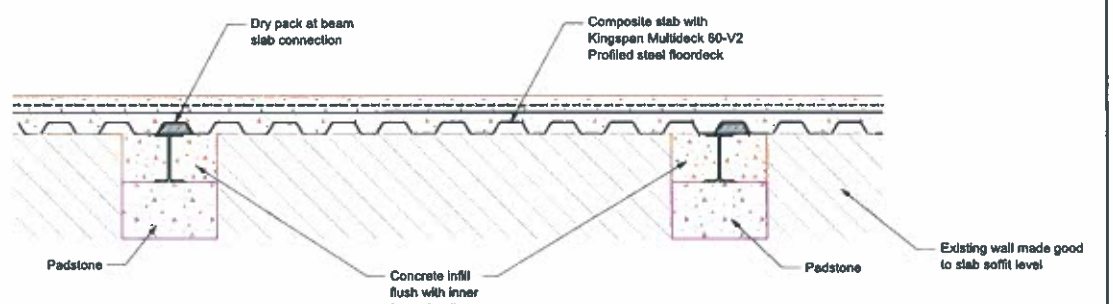
4 Slab Support Detail
Scale 1:20



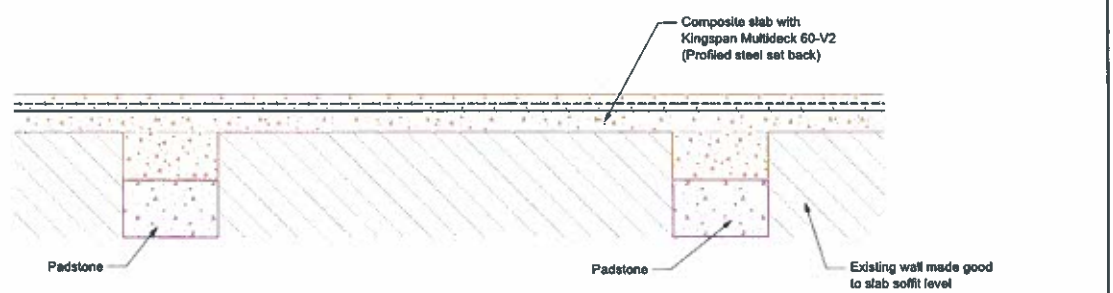
5 Detail of Beam Connections to Lightwell Walls
Scale 1:20



6 Detail at Existing Retaining Wall (Adjacent to Fisher Street Shaft)
Scale 1:20



Section 5a - through Profiled Steel



Section 5b - beyond Edge of Profiled Steel

6 Slab Connections to Existing Retaining Walls
Scale 1:20

(drawn as typical section for east wall. south wall is similar, however steel profile varies)

Safety, Health and Environmental Information
1. Notes below are additional to hazards/risks normally associated with this type of work:
Construction
CI. Construction and condition of existing structure
CII. Manual handling
CIII. Damage to existing structure
CDM Risk register items
SR-LOC-009, 9a
SR-LOC-001
SR-LOC-003
2. For SHE Information relevant to all C122 8-10 Southampton Row Reinstatement Works refer to Designer's CDM Risk Register: C122-OVE-N3-LRG-CR086-50001
3. These notes are based on the use of experienced and competent contractors carrying out the work using an approved safe method of working.

Copy Approved for Design - Created: 26-FEB-2016

Rev.	Date	Description	By	Chkd	App	Auth
P01	25/08/2013	First Issue For RIBA Stage E IDR	SD	JW	BS	-
P02	03/07/2013	Updated for Gate 2	SD	JW	RM	-
P03	25/07/2013	Issued for ITT	GP	JW	BS	-
P04	27/10/2015	RIBA Stage F Design	JU	HR	SR	-
P05	06/02/2018	Updated for RIBA Stage F Design	JU	HR	SA	-
P06	26/02/2018	Padstone detailing amended.	JU	HR	SF	-

Notes
1. All dimensions to be checked on site.
2. Existing structure drawn to assumed dimensions based on survey.
3. Padstones to be 30/37 reinforced concrete with minimum reinforcement. Post fix all steelwork using HD bolts to contractor design. For padstone schedule (Table 1) refer to drawing C122-OVE-C4-DDA-CR001_Z-75051.
4. Contractor to ensure that the B1 slab is adequately propped and that disturbance to the slab is minimised during hole cutting and piling works.
5. Profiled steel to extend 100mm only beyond face of existing wall. Slab concrete to be cast directly on existing wall / padstone to ensure sufficient lateral restraint is provided to the slab.
6. For steelwork notes refer to General Notes Drawing C122-OVE-S-DDJ-CR001_Z-23304

7. Connection between column and B1 slab to be completed prior to casting of ground floor slab
P06

Key:
TOS Top of Steel
FFL Finished floor level
SSL Structural slab level
OSD Over Site Development
1:20
400mm 0 400mm 800mm 1200mm 1600mm 2000mm
1:10
200mm 0 200mm 400mm 600mm 800mm 1000mm

Crossrail
Crossrail Limited
25 Canada Square
Canary Wharf
London
E14 5LQ
© Crossrail

Contract: Bored Tunnels (Alignment and Track)
Originator: Ove Arup & Partners Limited
Location: Crossrail General
Title: 8 - 10 Southampton Row Reinstatement Works
Reinstatement Works Structural Details
By: J.JANUSZCZAK
Cdr: H.RUTLEDGE
App: S.FROST
Auth: -
Scale: 1:10 @ A1
Drawing and CAD File No: C122-OVE-C4-DDA-CR001_Z-75052
Rev: P06
Suitability: S4

Fit for authorisation
RESTRICTED



Reference	Size
B1	406 x 140 x 53 UB
B2	457 x 191 x 74 UB
B3	254 x 146 x 37 UB
B4	100 x 100 x 8 EA
B5	610 x 305 x 179 UB
B6	533 x 210 x 122 UB
C1	203 UC 101
C2	203 UC 60

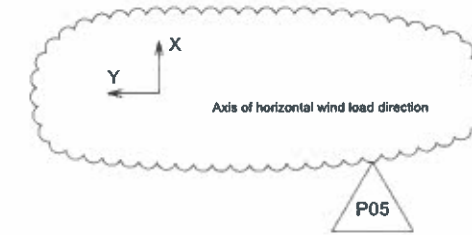
Contract: Bored Tunnels (Alignment and Track)			
Originator: Ove Arup & Partners Limited			
Location: Crossrail General			
Title: 8 - 10 Southampton Row Reinstatement Works Layout of Structural Steelwork and End Reactions Ground Floor Level		By: J.MASZKIEWICZ Cm: H.RUTLEDGE App: S.FROST Auth: —	
Scale: 1:25 @ A1	Drawing and CAD file No. C122-QVF-C4-DDA-CR001 Z-75054		Rev: P06 Suitability: S4



TABLE 1: OVERSITE DEVELOPMENT LOADING ASSUMED IN DESIGN

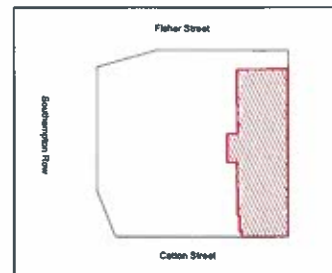
Column Reference	Vertical Dead Load SLS (kN)	Vertical Imposed Load SLS (kN)	Vertical Wind Load SLS (kN)	Horizontal Wind Load (direction) SLS (kN)	Easting (m)	Northing (m)
C1 (A)	45	25	-	-	80862.918	36353.321
C1 (B)	45	25	±15	±10 (y)	80867.063	36354.429
C1 (C)	85	40	±40	±20 (x)	80863.712	36350.541
C1 (D)	65	35	±40	±20 (x) ±10 (y)	80867.802	36351.641
C1 (E)	85	40	-	-	80868.571	36348.771
C2 (F)	70	35	-	-	80865.032	36347.824
C3 (G)	25	5	-	-	80864.993	36345.983
C2 (H)	70	35	±15	±10 (y)	80865.914	36344.545
C1 (J)	70	35	-	-	80869.448	36345.493
C1 (K)	100	50	±40	±20 (x) ±10 (y)	80866.288	36341.980
C1 (L)	100	50	±40	±20 (x)	80870.115	36343.003
C1 (M)	60	30	-	-	80867.281	36337.824
C1 (N)	60	30	-	-	80871.028	36338.832

- Loads from C123 OSD Ref. C123-JUL-S-NOX-CR086-SH003_Z-50001 (revision 2.0).
- Coordinates are to column centreline.



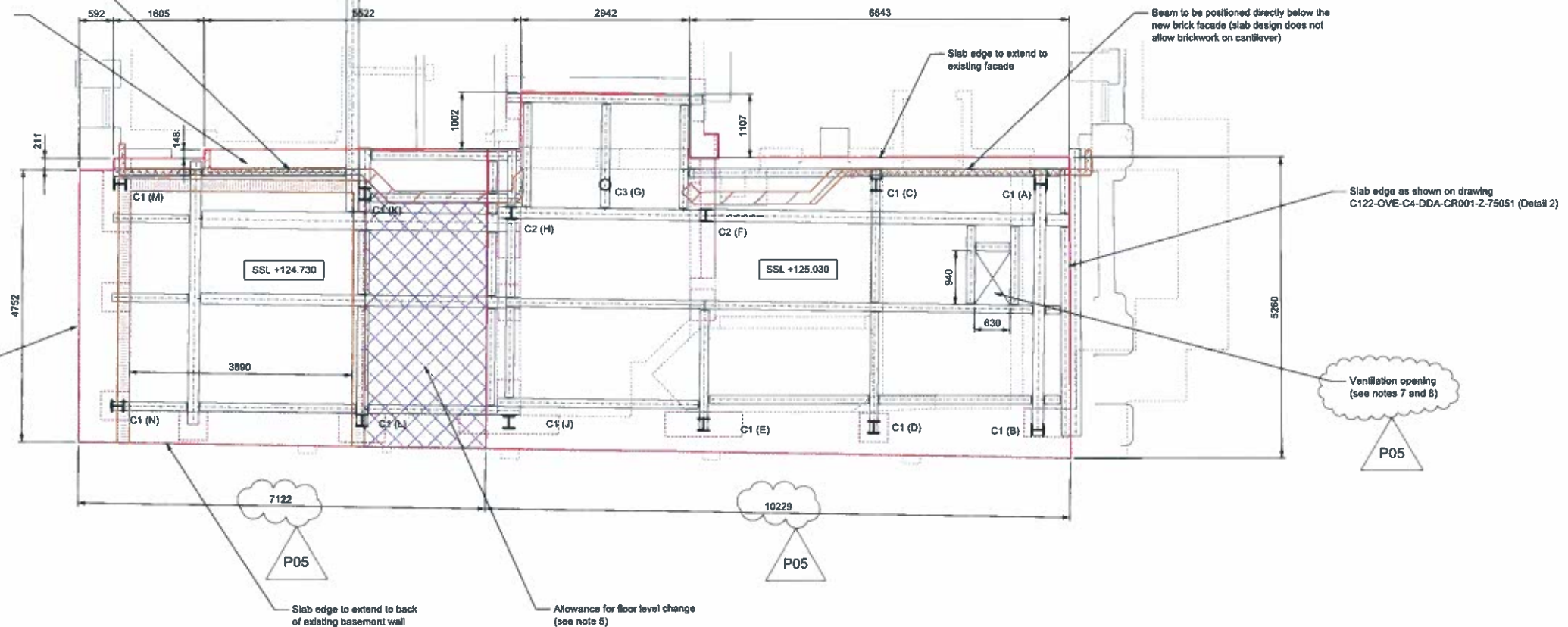
Beam to be positioned directly below the new brick facade (slab design does not allow brickwork on cantilever)

Final brick wall to obtain 100mm min. clearance from existing retained steelwork (see sections A - F on drg. C122-OVE-C4-DDA-CR001_Z-23810) and to match existing profile above.



Key Plan

Slab edge to extend to back of existing basement wall



Plan at Ground Floor Level
Scale 1:50

- Key:
- New white glazed brick facade (double skin)
 - New white glazed brick facade (single skin)
 - UKPN substation walls
 - Allowance for future floor level (see note 5)

Rev.	Date	Description	By	Chkd	App	Auth
P01	25/06/2013	First Issue For RIBA Stage E IDR	SD	JW	BS	-
P02	03/07/2013	Updated for Gate 2	SD	JW	RM	-
P03	25/07/2013	Issued for ITT	GP	JW	BS	-
P04	27/10/2015	RIBA Stage F Design	JJ	HR	JJ	-
P05	08/02/2016	Updated for RIBA Stage F Design	JJ	HR	SA	-

Notes

- For general notes refer to drg. C122-OVE-S-DDJ-CR001_Z-23304.
- This drawing shows the design positions of the OSD columns (constructed by others) assumed in the steelwork design. Following survey, the reinstatement contractor is to submit his proposed steelwork layout to the project manager for designer and OSD approval before commencement of the works.
- Slab dimensions are indicative only. Slab setting out to be based on position of existing structure as shown.
- Slab design is based on 10kN/m UDL and column loading as detailed in Table 1. All loading is quoted as SLS.

- The design allows:
- 18kN/m for UKPN brickwork
 - 40kN/m for white glazed facade (double skin)
 - 20kN/m for white glazed facade (single skin)
 - 2.05kN/m² ground floor slab finishes and basement ceiling services.
- Slab design in hatched area allows for a 5kPa OSD dead load to bring the SSL from +124.730 to SSL +125.030, if required.
 - Any changes to the design must consider the overall stability of the slab / white glazed brick facade for long term load cases both with and without the OSD structure.
 - Ventilation fan loading to be maximum 10kPa.
 - OSD Structural design/internal layout shall make provision for the ventilation ducting equipment.

- OSD columns assumed to be embedded in mortar and fully braced. OSD designer to satisfy himself regarding adequacy of the stiffeners provided in the basement steelwork for assumed OSD layout and loading.
- OSD columns connections to the composite ground level slab are to be detailed by the OSD designer. Fixing embedment to be designed to avoid penetration of the profiled steel.



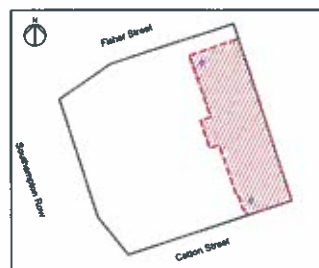
Contract:	Bored Tunnels (Alignment and Track)
Engineer:	Ove Arup & Partners Limited
Location:	Crossrail General
File:	8 - 10 Southampton Row
Reinstatement Works	
Ground Floor Slab Layout and Basis of Design	
Scale:	1:50 @ A1
Drawing and CAD file No:	C122-OVE-C4-DDA-CR001_Z-75055
Rev:	P05
Suitability:	S4



Columns shown are from basement to underside of ground floor only

Outline of composite slab

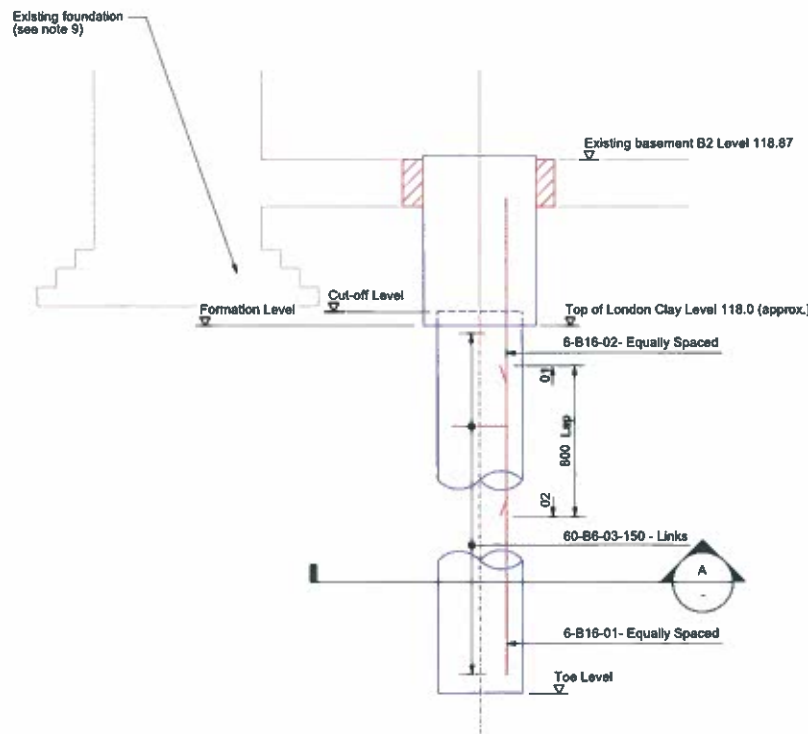
Columns shown are from basement to underside of ground floor only



Key Plan

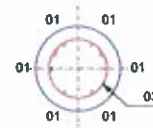
Plan at Ground Level (Pile caps shown for position only as located in the basement)

1:50



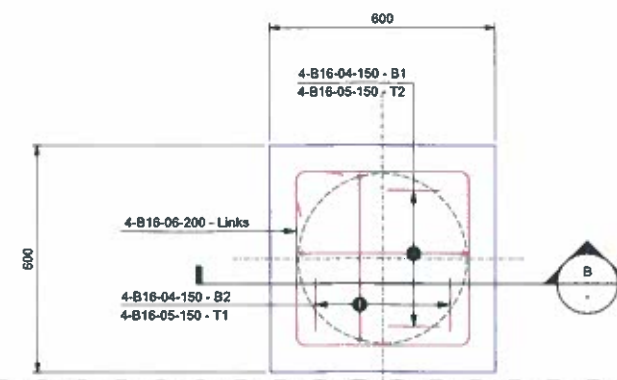
Typical Pile Detail - P1 & P2

1:20



Section A

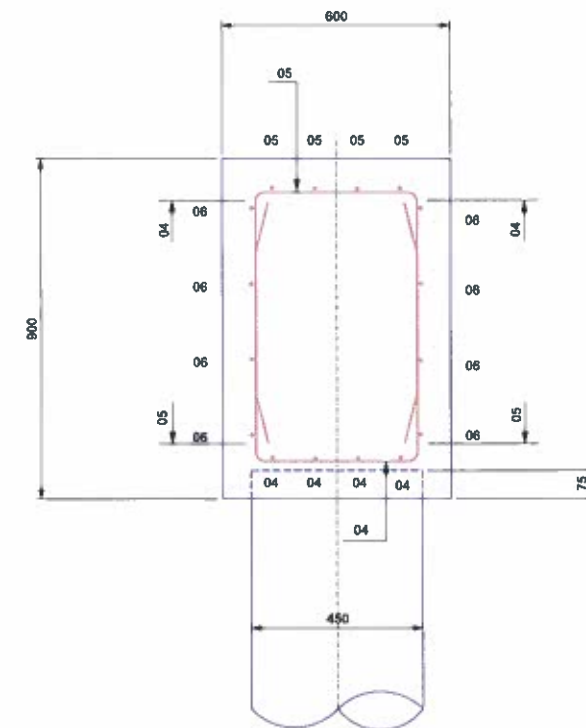
1:20



Plan Pile Cap - P1 & P2

1:10

Pile Schedule					
Pile No.	Working Load (kN)	Pile Dia. (mm)	Cut-off Level (MATD)	Toe Level (MATD)	Pile Length (m)
P1	610	450	118	105	13
P2	610	450	118	105	13



Section B

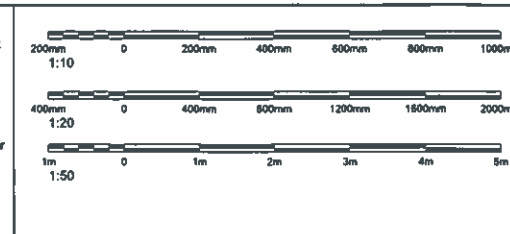
1:10

Copy Approved for Design - Created: 09-FEB-2016

Rev.	Date	Description	By	Chkd	App	Auth
P01	25/08/2013	First Issue For RIBA Stage E IDR	SD	JW	BS	-
P02	03/07/2013	Updated for Gate 2	SD	JW	RM	-
P03	25/07/2013	Issued for ITT	GP	JW	BS	-
P04	28/10/2015	RIBA Stage F Design	JU	HR	SR	-
P05	06/02/2016	Updated for RIBA Stage F Design	JU	HR	SA	-

Notes	
1.	This drawing is to be read in conjunction with drawings C122-OVE-C4-DDD-CR001 Z-75052 and C122-OVE-C4-DDA-CR001 Z-75052.
2.	For piling notes and specification refer to General Notes drawing C122-OVE-S-DDJ-CR001 Z-23304.
3.	For concrete notes and specification refer to General Notes drawing C122-OVE-S-DDJ-CR001 Z-23304.
4.	Reinforcement bar spacings are nominal. Reinforcement bars shall be set out to achieve a cover of 70mm to Pile, 50mm to Pile Cap. Unless Noted Otherwise, the Bar Bending Schedule for approval.
5.	The piling sub-contractor is required to detail the reinforcement and submit the Bar Bending Schedule for approval.
6.	For further information on ground conditions and trial pits see Arup 1993 report included as Annex C to doc. no. C122-OVE-N3-XPA-CR086-50001.
7.	Piles to be set out to achieve 900mm between column centreline and existing walls as shown on drawing C122-OVE-C4-DDA-CR001 Z-75051. Pile setting out to be confirmed with the project manager before commencement of the works.

- Piles to be installed from ground floor level. The contractor shall ensure adequate propping of the existing temporary ground floor slab for the plant loading during construction works. Any back propping to transfer loads to the lower basement shall consider the existing condition of the B1 slab.
- The existing foundations may be broken out locally if encountered during excavation for the pile caps. The project manager shall be informed and a method statement submitted for approval.
- The Contractor shall ensure adequate support to the ground during pile cap excavation, including provision for removal of excess ground water as required.
- The Contractor is to identify to the Project Manager any existing basement props or structures that may obstruct the piling works and submit a method statement for their removal or relocation.



Crossrail Limited
25 Canada Square
Canary Wharf
London
E14 5LQ

Contract:
Bored Tunnels (Alignment and Track)

Originator:
Ove Arup & Partners Limited

Location:
Crossrail General

Title:
**8 - 10 Southampton Row
Pile and Pile Cap Details**

By: J.JANUSZKIEWICZ
Chk: H.RUTLEDGE
App: S.ANDERSON
Auth: _____

Scale:
Various @ A1

Drawing and CAD File No:
C122-OVE-C4-DDD-CR001_Z-23304

Rev: P05
Suitability: S4

- Safety, Health and Environmental Information**
1. Notes below are additional to hazards/risks normally associated with this type of work:
- Construction**
- Cl. Piling from ground level
 - Cil. Ground support and water ingress
- CDM Risk register items**
- SR-LOC-009, 9a
SR-LOC-015,
SR-LOC-017
2. For SHE information relevant to all C122 8-10 Southampton Row Reinstatement Works refer to Designer's CDM Risk Register: C122-OVE-N3-LRG-CR086-50001
3. These notes are based on the use of experienced and competent contractors carrying out the work using an approved safe method of working.

Fit for authorisation

RESTRICTED

1. All dimensions are in millimetres unless otherwise noted.
2. Do not scale from the drawings or the computer digital data.
Only figured dimensions are to be used.
3. All levels are given to London Height Datum which is 100m below Ordnance Datum Newlyn.
4. The contractor shall be responsible for the design, fabrication, erection and removal of all temporary works and shall provide all temporary bracing and back propping necessary to maintain structural stability during construction and installation of the stability system.
5. Any changes in the spacing of columns in either orthogonal direction must be reported to Crossrail before any demolition, steelwork fabrication, or excavation of floors commences.
6. The contractor is to provide and install support to existing floors during piling. All back propping/support is to be taken down to basement floor level. Back propping on all floors is to line through vertically to prevent load being shed into existing floors.
7. Any excess excavation beneath the basement floor slabs is to be made good with Type 1 fill compacted in 150mm layers, or filled with mass fill concrete (FND2).
8. The Contractor is to provide a safe means of vertical access to all floors following the removal of the stairs.
9. Loading:
Design wind loads in accordance with BS 6399.
Basic wind speed 21m/sec
Ground floor slab 10kN/m₂ imposed load.
Dead load (Excl. self weight) :
Ceilings and services 0.15kNm⁻²
Floor finishes (50mm screed) 1.2kNm⁻²
10. The Contractor is to ensure that ground and structure borne vibration at any location on the site including all party walls does not exceed a peak particle velocity of 1mm/sec at any time as a result of his works.
11. Existing retained facade (ground - 1st floor) to be propped at all times

1. In the temporary case up until the OSD structure is built, the ground floor slab will be external. A bituminous waterproofing membrane is to be installed, to lap 150mm minimum up the adjoining walls (contractor to specify, details to be submitted to the project manager for approval).
2. At the retaining walls where there is no adjacent structure the waterproofing is to lap around the ground floor slab and chase into the existing retaining walls. If this waterproofing is to be trafficable by site vehicles the contractor is to supply details for an alternative waterproofing system subject to the project manager's approval.

1. All piling to comply with the Institution of Civil Engineers (ICE) Specification Piling and Embedded Retaining Walls 2007 (SPERW) 2nd edition.
2. Contractor to ensure adequate removal of excess ground water as required.
3. Piling method statement to be submitted to the Project Manager for approval.

1. Read in conjunction with the National Structural Concrete Specification (NSCS) for building construction 3rd Edition.
2. All holes in reinforced concrete are to be formed.
3. Services passing through the concrete to be isolated and protected.
4. Concrete mix designs are in accordance with BS 8500. Designated mixes are proposed for the following elements:
 - Padstones RC30/37
 - Structural slab RC30/37
 - Blinding Concrete FND2
 - Piles and pile caps RC32/40

Concrete for in-situ piling shall have Consistency Class S4
5. For all concrete in contact with the ground, the mix shall comply with the requirements of BRE Special Digest 1 "Concrete in Aggressive Ground" for concrete grade DC-2 (Design Sulphate Class DS-2, ACEC class AC-2).
6. All reinforcement shall be grade B500B and scheduled in accordance with BS8666:2005 unless noted otherwise.
7. Nominal cover of 40mm to be provided to all reinforcement (U.N.O)

1. All steelwork is to comply with the National Structural Steelwork Specification for building construction.
2. Top of Steel (TOS) is top level of steel beam at intersection with columns.
3. Unless noted otherwise, steel grades shall be 355, designed to BS EN 1993 and delivered in accordance with BS EN 10025 2004.
4. Ordinary bolts and nuts shall be grade 8.8 to BS EN 20898, unless noted otherwise.
5. HSFG bolt assemblies shall be in accordance with BS 4395.
6. Detail design of the frame and connections by the steelwork contractor on the basis of the outline framing drawings, details and loadings given by the engineer. Loads are given as ultimate, UNO. The steelwork contractor is to confirm in writing his acceptance of the design for fabrication purposes.
7. Foundation bolts shall be in accordance with BS 7419.
8. Shear studs to have a ultimate tensile strength (f_y) of 460N/mm^2
9. Holding down bolts and setting out templates are to be provided by the steelwork contractor. Setting out and adjustment to be accepted by the structural engineer prior to commencing erection.
10. Steelwork contractor to supply and install grout around and under base plates and at connections to padstones. Grout to be SBD 5 star or similar approved.
11. All welds 6mm c/w uno.
12. All plates 10mm thk uno.
13. Connection Design to be by the Steelwork Contractor and to be submitted for review by CRL/C122.
14. Composite steel decking and shear studs to be provided to manufacturers details. Shear studs to be 19mm dia. 95mm long welded studs. Transverse stud spacing @332mm centres (i.e. 1 per trough). Longitudinal stud spacing not to exceed 600mm.
15. No cutting or removal of placed steelwork or concrete is permitted without prior acceptance.
16. The columns have been designed assuming a maximum X - X eccentricity of 130mm, taken to be a maximum half cap-plate width. Therefore, cap plates for new columns not to project more than 15mm beyond column section.
17. Corrosion protection to provide 15 years of protection for all new steelwork and existing steelwork exposed during the works and all exposed steelwork in B1 slab. New steelwork at B2 to be provided with E1 paint protection system.
18. All exposed structural steel (including B1 slab) should fire protected using intumescent paint to achieve 120 minutes fire protection and the contractor is to ensure full compatibility between the corrosion and fire protection systems.
19. For less accessible structural elements, contractor to consider access for fire protection in his sequencing of the works.

General:

1. All brick and blockwork to comply with the requirements of BS EN-1996 Parts 1-1,1-2,2,and 3 and National Annexes, PD 6697 and the National Building Specification (NBS) Section F10 and Sections referenced therein..
2. Soft joints, void formers and insulation materials to be proposed by the Contractor for Project Manager approval.
3. All brickwork to be laid in accordance with the following:
 - a. BS 8000 Part 3: 1989 Workmanship on Building Sites
 - b. BS 5628 Part 3: 1985 Use of Masonry, Materials and Components
 Generally (in addition refer to the guidance notes for general bricklaying guidance).

Brickwork:

1. All brickwork shall comply with the requirements of BS EN 771-1 and have the following characteristics:
 - a. Bricks shall have a nominal size of 215mm x 102.5mm x 65mm.
 - b. Compressive strength > 70N/mm²
 - c. Frost resistance F2
 - d. Active soluble salts S2
 - e. Water Absorption <4.5% by weight
 - f. Size tolerance mean and range: T_m smaller than 1% of the size / R_m smaller than 2% of the size
2. Glazed bricks are designed for high quality aesthetic applications.
3. Features of the glazed brick finish:
 - a. Impenetrable to water
 - b. Permanent colour
 - c. Chemical resistant
 - d. Lead-free glaze
4. Brickwork specialist manufacturer shall carry out the masonry detailed design and layout to match existing.
5. Mortar colour and brick glazing colour to match existing. Colour of bricks, and mortar to be submitted to Project Manager for approval prior to installation. Provide samples of glazed bricks.
6. All mortar joints shall be bucket handle finish
7. Mortar shall comply with the requirements of BS EN 998-2
8. Mortar shall be Class M6 with Mix 1 : ½: 4 ½

Common Blockwork:

1. All blockwork shall comply with the requirements of BS EN 771-3
2. Blocks to be solid with nominal face size 440mm x 215mm .
3. Minimum compressive strength of blockwork to be 7.3N/mm²
4. Blockwork to be painted to match existing. Use appropriate masonry paint: samples and proposed products to be submitted to the Project manager for approval.
5. Mortar shall comply with the requirements of BS EN 998-2
6. Mortar to be sulphate resisting cement: lime: sand mortar.
7. All mortar joints shall be bucket handle finish.
8. Bed joint reinforcement, if required, shall be stainless steel and shall comply with the requirements of BS EN 845-3

Ancillary Items:

1. All ancillary items (windposts, wall ties, fixings etc) built into the masonry shall be of stainless steel

1. All slabs are normal weight concrete on metal deck unless noted otherwise on the drawings.
2. The Contractor shall form the slab with the specified thickness above all steelwork members. The top surface of the slab shall then be defined and finished by straight lines between these positions. Permissible deviations in the concrete top profile shall be measured from the surface defined above.
3. The metal deck is to be Multideck 60-V2 by Kingspan or similar. Locations as shown on the drawings. Deck thickness to be 1.2mm unless noted otherwise.
4. All metal decking shall be installed in accordance with the manufacturers recommendations.

3. The contractor is to supply and install all edge trims, flashing, closure plates, support angles etc. required, and all sealing necessary to prevent gross loss.
6. No conduits are to be embedded in the concrete on metal decks, and no chases shall be formed unless previously accepted by CRL.
7. The structural arrangement has generally been configured assuming no temporary propping will be required to the metal decking. Contractor to review and provide propping to suit his construction methodology.
8. The contractor is to ensure the thickness of the edge trim is adequate to support the slab edge where it cantilevers beyond the top flange of the beam. The contractor shall allow for all steelwork required to support his particular decking edge details. All edge trims to be installed in accordance with the manufacturers' recommendations.
9. The decking acting with the slab shall be designed to support, in the permanent condition, the loads given on drawings : the contractor is responsible for the design of the metal decking to support the temporary construction loads which shall include the weight of the wet concrete and an imposed load of 4.0kN/m.
10. In areas of complex geometry, where there is obstruction to the support of the metal decking (eg. where decking continues past faces of perimeter columns etc.) The contractor is to provide additional steel support to suit. The contractor shall coordinate with the steelwork contractor to establish and agree the extent of the metal decking to avoid clashes with the steelwork and to ensure all necessary support is provided for the metal decking.

1. Notes below are additional to hazards and risks normally associated with this type of work:

Construction:

- Ci; Potential risk of significant variation to the C122 structural/HAZMAT assumptions used as the basis of design due to limited survey information. Client/Project Manager to be informed prior to commencement of works. CDM Risk Register: C122-OVE-N3-LRG-CR086-50001-SR-LOC-001.
- Cii; Potential risk of injury due to working within a restricted space. CDM Risk Register: C122-OVE-N3-LRG-CR086-50001-SR-LOC-009 & 009a & 003.
- Ciii; Potential risk of collapse of ground floor slab due to unknown load paths when existing steel beams are cut off, propped and reattached to new steelwork. CDM Risk Register: C122-OVE-N3-LRG-CR086-50001-SR-LOC-001


Operation & Maintenance:

- Mi; Potential risks associated with restricted vertical access through the building and emergency escape during inspections and maintenance, including routine maintenance of dewatering pumps.
CDM Risk Register: C122-OVE-N3-LRG-CR086-50001-SR-LOC-007.

Dismantling/Deconstruction:

- Di; Potential risk of restricted access for deconstruction and reinstatement works.
CDM Risk Register: C122-OVE-N3-LRG-CR086-50001-SR-LOC-011.
2. See Designers CDM Risk Register Ref: Doc. No: C122-OVE- N3-LRG-CR086-50001 for full hazard risk and mitigation details.
 3. These notes are based on the use of experienced and competent contractors carrying out the work using an approved safe method of working.
 4. The content of these notes and CDM Risk Register: C122-OVE- N3-LRG-CR086-50001 is based on the assumption that all construction sequencing notes detailed elsewhere on this drawing are implemented as stated.

[illegible]

 <p>Crossrail Limited 25 Canada Square Canary Wharf London E14 3LQ</p> <p>© Crossrail</p> <p>www.crossrail.co.uk</p>	Contract : Bored Tunnels (Alignment and Track)	
	Originator : Ove Arup & Partners Limited	
	Location : Crossrail General	
	Title : 8 - 10 Southampton Row Reinstatement Works General Notes	
	By : J.JANUSZKIEWICZ	Rev. : _____
	Chk : H.RUTLEDGE	Substability : _____
	App : S. ANDERSON	
	Auth : _____	
Scale :	Ordering and CAD file No. :	Rev. :
NTS@A1	C122-OVE-S-DDJ-CR001_Z-23304	P04
		S4