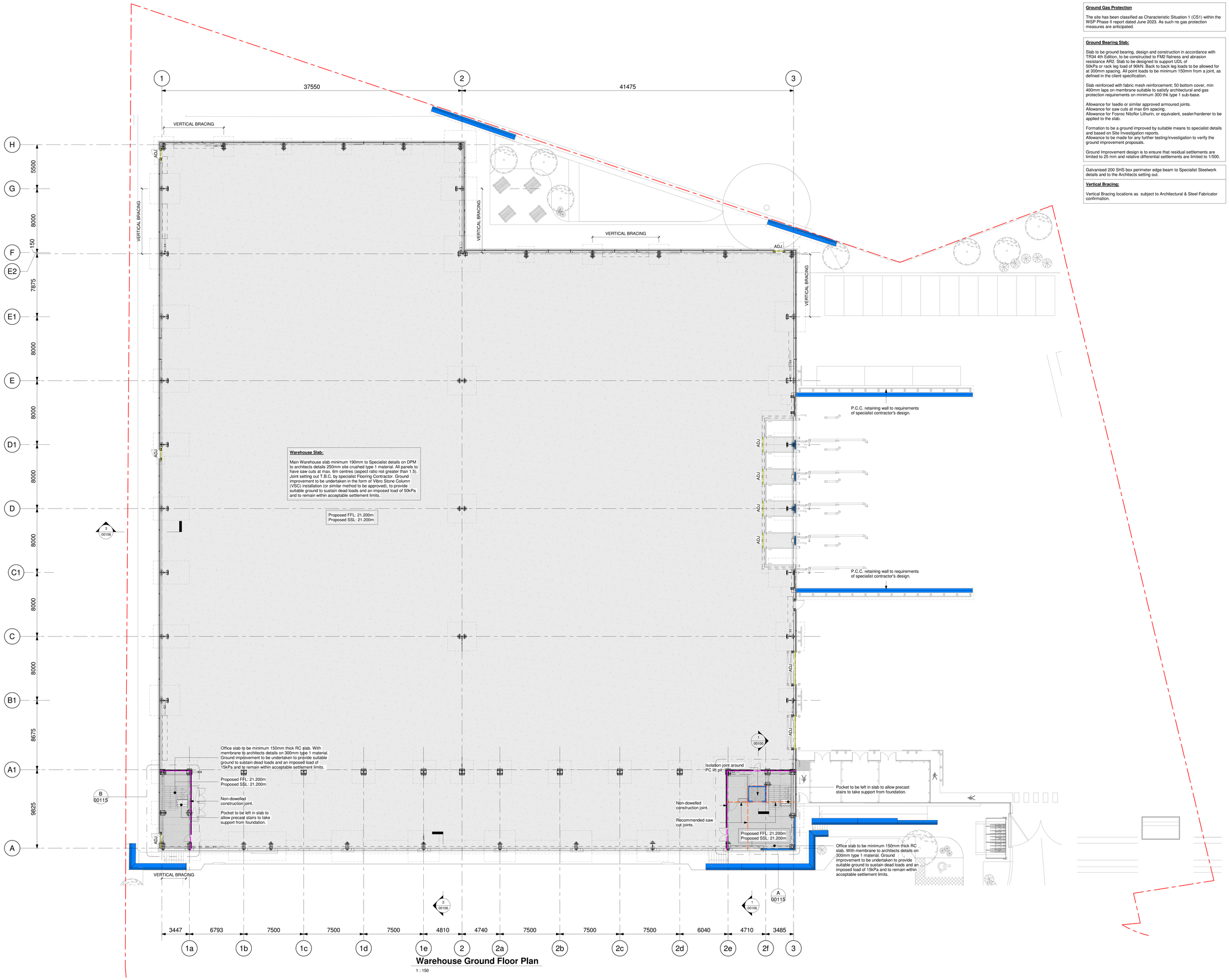
3.1 AS-BUILT DRAWINGS

Please note that all drawings below are hyperlinked to the drawings listed in the below register. Please click on the drawing title to go directly to the drawing you wish to view.

Drawing Register: Burrows Graham

ENGINEERS

DRAWING NUMBER	DRAWING TITLE	REV
P23025-BGL-XX-00-DR-S-00110	Ground Floor G.A.	AB
P23025-BGL-XX-00-DR-S-00115	Ground Floor Core Layouts	AB
P23025-BGL-XX-01-DR-S-00120	First Floor Office & Second Floor Plant Deck Layout	AB
P23025-BGL-XX-XX-DR-C-00200	Proposed Levels	AB
P23025-BGL-XX-XX-DR-C-00201	Proposed Earthworks	AB
P23025-BGL-XX-XX-DR-C-00205	Earthworks Specification Requirements	AB
P23025-BGL-XX-XX-DR-C-00210	Proposed Drainage Plan	AB
P23025-BGL-XX-XX-DR-C-00215	Slab & Pavement Specifications	AB
P23025-BGL-XX-XX-DR-C-00216	Joint Layout	AB
P23025-BGL-XX-XX-DR-C-00219	Kerbing Layout	AB
P23025-BGL-XX-XX-DR-C-00221	Drainage & External Details Sheet 1 Of 4	AB
P23025-BGL-XX-XX-DR-C-00222	Drainage & External Details Sheet 2 Of 4	AB
P23025-BGL-XX-XX-DR-C-00223	Drainage & External Details Sheet 3 Of 4	AB
P23025-BGL-XX-XX-DR-C-00224	Drainage & External Details Sheet 4 Of 4	AB
P23025-BGL-XX-XX-DR-S-00100	Foundation G.A.	AB
P23025-BGL-XX-XX-DR-S-00105	Foundation & Slab Typical Sections & Details	AB
P23025-BGL-XX-XX-DR-S-00106	Foundation & Slab Sections	AB



Warehouse Ground Floor Plan

1 : 150

Ground Gas Protection

The site has been classified as Characteristic Situation 1 (CS1) within the WSP Phase II report dated June 2023. As such no gas protection measures are anticipated.

Ground Bearing Slab:

Slab to be ground bearing, design and construction in accordance with TR34 4th Edition, to be constructed to FM2 flatness and abrasion resistance AR2. Slab to be designed to support UDL of 50kPa or rack leg load of 90kN. Back to back leg loads to be allowed for at 300mm spacing. All point loads to be minimum 150mm from a joint, as defined in the client specification.

Slab reinforced with fabric mesh reinforcement; 50 bottom cover, min 400mm laps on membrane suitable to satisfy architectural and gas protection requirements on minimum 300 thk type 1 sub-base.

Allowance for Isedio or similar approved armoured joints.
Allowance for saw cuts at max 6m spacing.
Allowance for Fosroc Nitoflor Lithurin, or equivalent, sealer/hardener to be applied to the slab.

Formation to be a ground improved by suitable means to specialist details and based on Site Investigation reports.
Allowance to be made for any further testing/investigation to verify the ground improvement proposals.

Ground Improvement design is to ensure that residual settlements are limited to 25 mm and relative differential settlements are limited to 1/500.

Galvanised 200 SHS box perimeter edge beam to Specialist Steelwork details and to the Architects setting out.

Vertical Bracing:

Vertical Bracing locations as subject to Architectural & Steel Fabricator confirmation.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING

CONSTRUCTION

MAINTENANCE

DEMOLITION

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

GENERAL NOTES:

1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and performance and design specifications.

2. This drawing is not to be scaled. all dimensions are in mm unless noted otherwise.

3. All materials and workmanship to be in accordance with the requirements of the latest relevant Standards and Codes of Practice.

4. All dimensions and setting out are to be confirmed by the Architect and checked on site. Any discrepancies to be reported to the Engineer.

5. All reinforcement to be high yield (fy=500 N/mm2/) to BS 4449. Steel fabric reinforcement to be to BS 4483.

Legend

- Armoured Day Joints - Permaban Alphajoint 4010.
- Non-dowelled Construction Joint.
- Site Boundary.

Slab thickness and joint layout shown indicatively, to be designed by specialist slab contractor.

REV	DATE	BY	REVISION	CHK
C01	26/07/24	DRB	Final Construction.	DB
P01	05/12/23	DRB	Preliminary Issue.	DB

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Tel:+44 (0)144 250 8402

CLIENT

PANATTONI

PROJECT

HORTON ROAD POYLE

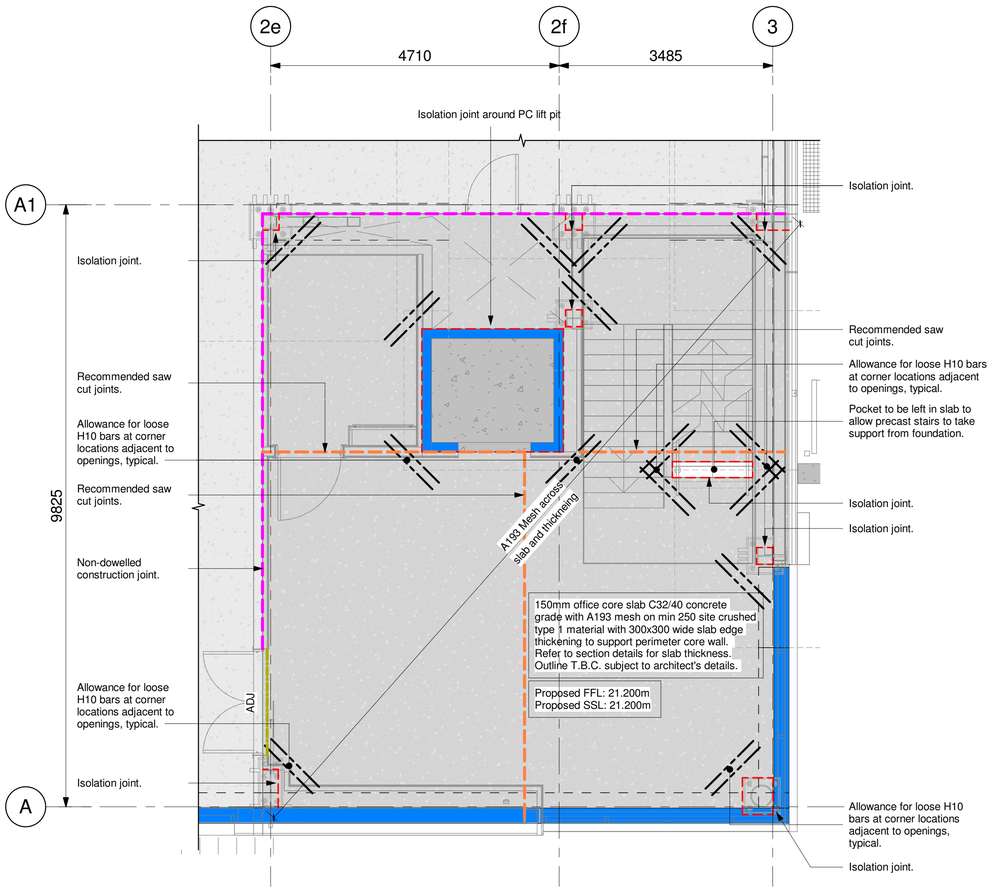
DRAWING TITLE

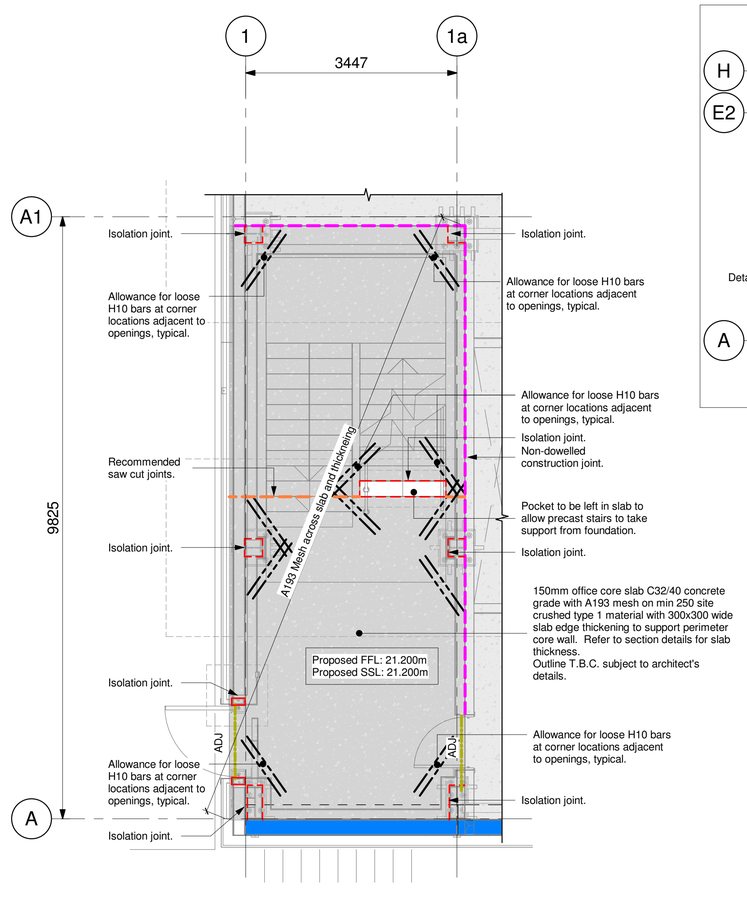
Ground Floor G.A.

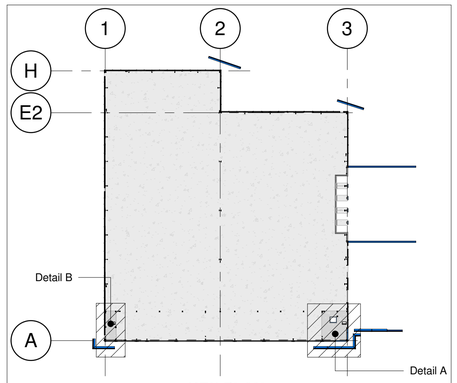
OUR PROJECT NUMBER	DRAWING STATUS	OFFICE	
22232	FINAL CONSTRUCTION	SOUTH	
SCALE @ A0	DATE	DRAWN BY	CHECKED BY
As indicated	05/12/23	DRB	DB

DRAWING No: P23025-BGL-XX-00-DR-S-00110

REV: C01



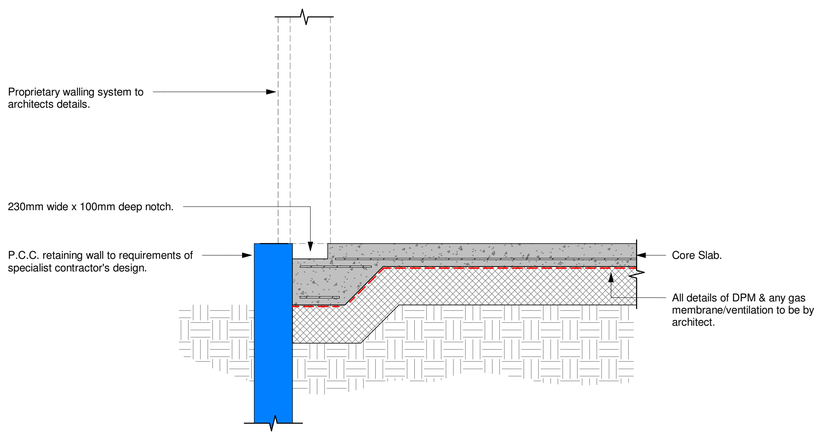




KEY PLAN

Detail A - Ground Floor Core Layout

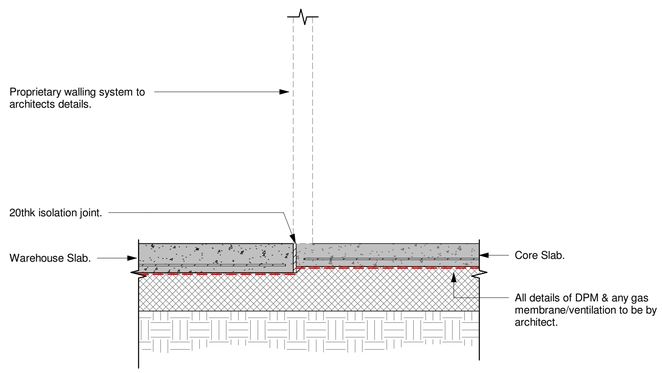
1 : 50



Typical Section Through Core Slab Edge

Detail B - Ground Floor Core Layout

1 : 50



Typical Edge Detail at Junction of Office & Warehouse Slab

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING

CONSTRUCTION

MAINTENANCE

DEMOLITION

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

GENERAL NOTES:

1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and performance and design specifications.

2. This drawing is not to be scaled. all dimensions are in mm unless noted otherwise.

3. All materials and workmanship to be in accordance with the requirements of the latest relevant Standards and Codes of Practice.

4. All dimensions and setting out are to be confirmed by the Architect and checked on site. Any discrepancies to be reported to the Engineer.

5. All reinforcement to be high yield (fy=500 N/mm2/) to BS 4449. Steel fabric reinforcement to be to BS 4483.

REV	DATE	BY	REVISION	CHK
C01	22/05/24	DRB	For Construction.	DB
P01	05/12/23	DRB	Preliminary Issue.	DB

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HORTON ROAD POYLE

DRAWING TITLE

Ground Floor Core Layouts

OUR PROJECT NUMBER	DRAWING STATUS	OFFICE	
22232	FINAL CONSTRUCTION	SOUTH	
SCALE @ A1	DATE	DRAWN BY	CHECKED BY
As indicated	05/12/23	DBR	DB

DRAWING No	REV
P23025-BGL-XX-00-DR-S-00115	C01

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING

CONSTRUCTION

MAINTENANCE

DEMOLITION

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

GENERAL NOTES:

1. All dimensions are to be checked on site before the commencement of works. Work to figured dimensions only are to be taken from this drawing. Do not scale.

2. Any discrepancies are to be reported to the Architect & Engineer for verification.

3. This drawing is copyright of BGL and the Sole property of BGL.

4. Drawing to be read in conjunction with Architects drawings.

5. Steelwork to be in accordance with BGL steelwork specification G10.

6. Steelwork to be designed by specialist contractor in accordance with steelwork specification G10.

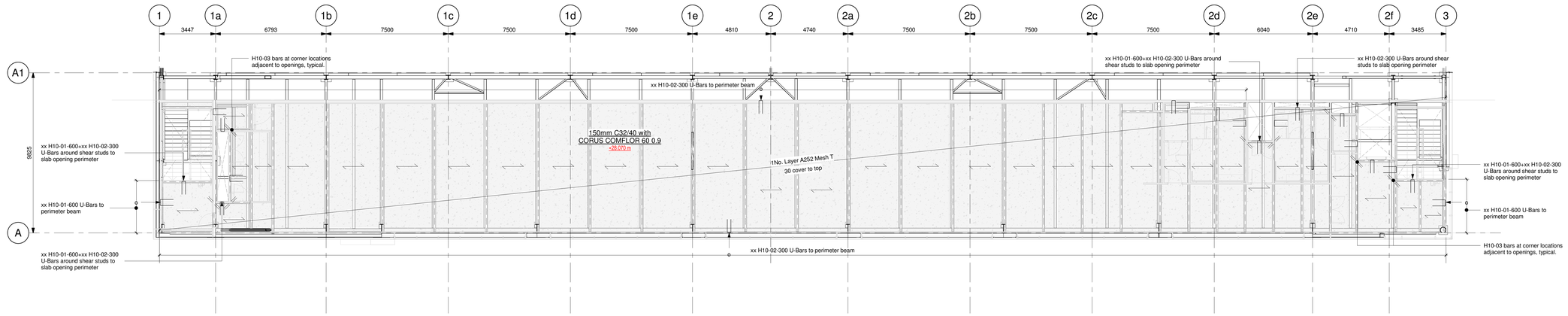
7. Main structure frame loadings and deflection criteria are as stated in steelwork specification G10.

8. Locations of vertical bracing are to be agreed with BGL.

9. Information is in conjunction with architect's project reference: G1104.

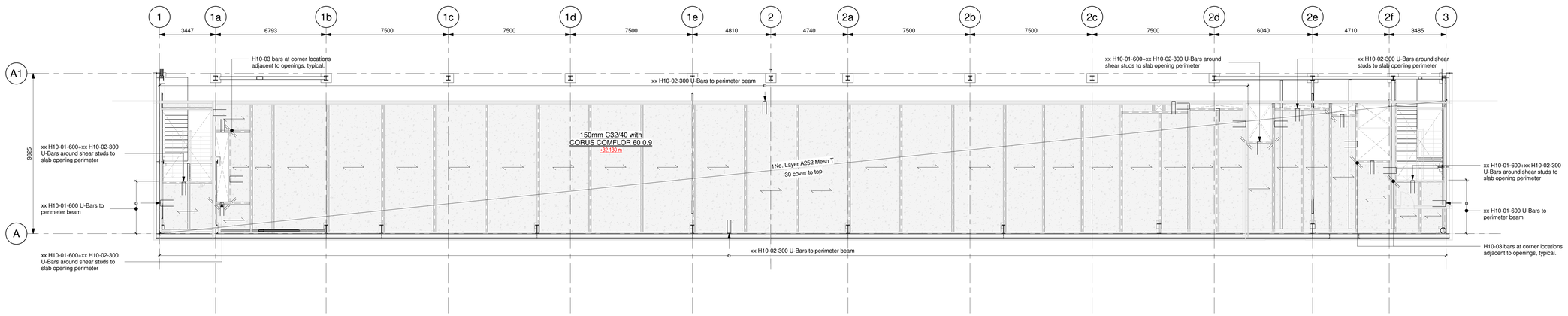
First Floor - Office Layout

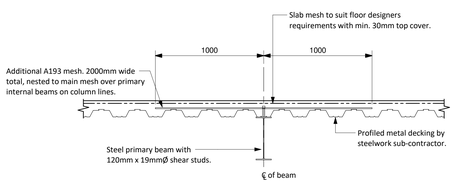
1 : 100



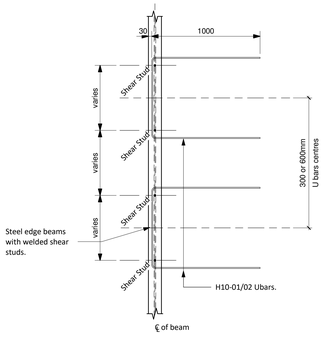
Second Floor - Plant Deck Layout

1 : 100



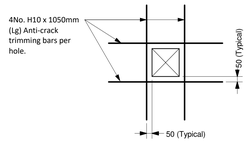


Typical Section Through Transverse Reinforcement



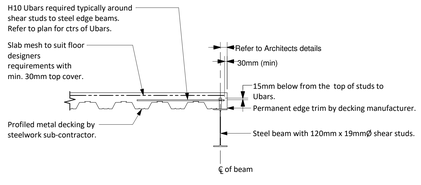
Plan on Steel Edge Beams

Note:
This detail also applies around voids in slab.

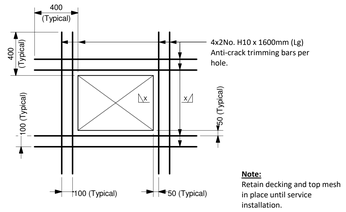


Typical Plan on Service Openings in Slabs Type 01

[Openings less than 250mm]



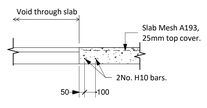
Typical Section Through Edge Beams



Note:
Retain decking and top mesh in place until service installation.

Typical Plan on Service Openings in Slabs Type 02

[Openings 250-700mm Max]



Section X - X

BAR SCHEDULE												
MEMBER	BAR MARK	TYP & SIZE	No. OF MEMBERS	No. IN EACH	TOTAL No.	LENGTH (mm)	SHAPE CODE	A (mm)	B (mm)	C (mm)	D (mm)	E/R (mm)	REV.
FIRST FLOOR OFFICE FLOOR PLAN	01	H10	1	XX	XX	XXX	21	1000	XXX	(1000)			
	02	H10	1	XX	XX	XXX	21	1000	XXX	(1000)			
	03	H10	1	16	16	1000	00	1000					
SECOND FLOOR PLANT DWCK FLOOR PLAN	01	H10	1	XX	XX	XXX	21	1000	XXX	(1000)			
	02	H10	1	XX	XX	XXX	21	1000	XXX	(1000)			
	03	H10	1	16	16	1000	00	1000					
Floor mesh to deck designers specification - 30mm cover													
Mesh to be provided with flying ends to avoid congestion at laps													
Number of perimeter U-bars will depend on shear stud spacing. TBC by steel frame designer.													

1st Floor & Plant Deck Slab Specification

150mm thick grade C28 / 35 concrete slab to BS EN 206-1 and BS 8500 reinforced with 1 layer A252 fabric reinforcement with 30mm top cover (400mm min laps to reinforcement) on profiled metal decking by steelwork sub-contractor. Additional reinforcement to be provided where required by steelwork contractor for composite beam design.

Slabs to be designed and constructed in accordance with guidance in Concrete Society TR75.

Imposed Loading: Office = 4 + 1kPa, Plant = 7.5kPa

Surface flatness SR2 to BS8204-2.

Construction stage deflections to be considered in design of steelwork and slabs.

Denotes span direction of profile steel decking.

Typical Sections & Details

1 : 20

REV	DATE	BY	REVISION	CHK
C01	26/07/24	DRB	Final Construction.	DB
P01	05/12/23	DRB	Preliminary Issue.	DB

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CLIENT

PANATTONI

PROJECT

HORTON ROAD POYLE

DRAWING TITLE

First Floor Office & Second Floor Plant Deck Layout

OUR PROJECT NUMBER	DRAWING STATUS	OFFICE
22232	FINAL CONSTRUCTION	SOUTH

SCALE @ A0	DATE	DRAWN BY	CHECKED BY
As Indicated	05/12/23	DRB	DB

DRAWING No: P23025-BGL-XX-01-DR-S-00120

REV: C01

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING

CONSTRUCTION

1. ADD RESIDUAL RISKS HERE

MAINTENANCE

1. ADD RESIDUAL RISKS HERE

DEMOLITION

1. ADD RESIDUAL RISKS HERE

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

GENERAL NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL THE RELEVANT ARCHITECTS, ENGINEERS' AND SERVICE ENGINEERS DRAWINGS & SPECIFICATIONS.
2. BASED ON GREENHATCH GROUP TOPO SURVEY GH6963 (21/02/2020) AND UMC ARCHITECTS LAYOUT 22400-UMC-EX-00-DR-A-601 REV C01.

Key:

- Site Boundary
- (XX.XX) Existing Level
- 00.00 Proposed Level
- 1:40 Proposed Slope
- Precast Retaining Wall
- Existing Retaining Wall
- Slab on Edge Detail
- Slab thickening
- Proposed Contour Minor 0.1m
- Proposed Contour Major 0.5m

REV	DATE	BY	DESCRIPTION	CHK'D
C05	11/09/24	DJB	FINAL CONSTRUCTION	DB
C04	02/08/24	SN	Ramp levels amended	DB
C03	05/06/24	SN	LEVELS AMENDED	DB
C02	15/05/24	DRD	SITE LAYOUT UPDATED	DB
C01	06/03/24	DRD	SITE LAYOUT UPDATED	DB
P03	22/02/24	DRD	SITE LAYOUT UPDATED	DB
P02	26/01/24	DRD	SITE LAYOUT UPDATED	DB
P01	01/12/23	SN	FIRST ISSUE	RM

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CLIENT

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PROJECT

HORTON ROAD, POYLE

DRAWING TITLE

PROPOSED LEVELS

OUR PROJECT NUMBER	DRAWING STATUS	OFFICE	
22232	CONSTRUCTION	SOUTH	
SCALE @ A1	DATE	DRAWN BY	CHECKED BY
1:250 @A1	12/01/23	DRD	RM

DRAWING No

P23025-BGL-XX-XX-DR-C-00200

REV

C05

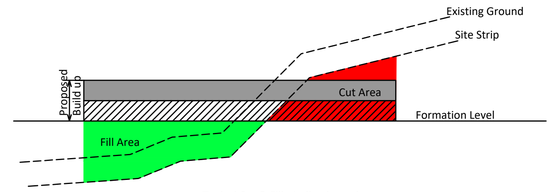
SCALE BAR 1:250 (0, 5, 10, 15, 20, 25)

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2D Area	Cut	Fill	Net
CF - SITE STRIP TO FORMATION	1.000	1.000	12856.098sq.m	1404.261 Cu. M.	4409.640 Cu. M.	3005.378 Cu. M.<Fill>
Totals			12856.098sq.m	1404.261 Cu. M.	4409.640 Cu. M.	3005.378 Cu. M.<Fill>

Key:

- Site Boundary
- Precast Retaining Wall
- ×(00.00) Existing Level



Typical Cut & Fill - Indicative only

(20.261m) (20.330m) (20.368m) (20.257m) (20.536m) (20.617m) (20.812m) (21.342m) (20.241m) (20.422m) (20.194m) (20.386m) (20.183m) (20.126m) (19.757m) (19.724m) (19.453m) (19.457m) (19.564m) (19.630m) (19.566m) (19.573m)

Unit 100
FFL 21.070m
AOD

FE
First Floor Offices
Lobby

5No. Loading Dock Doors

28No. Yard Car spaces

31No. Car spaces
(59No. Car spaces Total)
2No. Disabled
12No. EV

HORTON ROAD

SURFACE LEVEL DATA			
NUMBER	MINIMUM LEVEL	MAXIMUM LEVEL	COLOUR
1	-3.00	-2.50	
2	-2.50	-2.00	
3	-2.00	-1.50	
4	-1.50	-1.00	
5	-1.00	-0.50	
6	-0.50	0.00	
7	0.00	0.50	
8	0.50	1.00	
9	1.00	1.50	

0 5 10 15 20 25
SCALE BAR 1:250

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING

CONSTRUCTION

1. SERVICES RUNNING THROUGH SITE, ASSUMED LIVE UNTIL CONFIRMED DISCONNECTED.

MAINTENANCE

DEMOLITION

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

NOTES:

1. ALL DIMENSIONS ARE TO BE CHECKED ON SITE BEFORE COMMENCEMENT OF WORKS. WORK TO FIGURED DIMENSIONS ONLY. DO NOT SCALE OFF THIS DRAWING. ANY DISCREPANCIES ARE TO BE REPORTED TO THE BURROWS GRAHAM FOR CLARIFICATION.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT BURROWS GRAHAM DRAWINGS AND SPECIFICATIONS
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL AND M&E SERVICES DRAWINGS AND SPECIFICATIONS.
4. THIS DRAWINGS IS BASED ON "UMC ARCHITECTS" DRAWING NO 22400-UMC-ZZZZ-SI-DR-A-601 REV P05
5. THIS DRAWING IS BASED ON "GREENHATCH GROUP" DRAWING NO GH6963 DATED 21/02/2020. NO ALLOWANCE HAS BEEN MADE FOR ANY CHANGES IN GROUND PROFILE AFTER DATE OF SURVEY.
6. PROPOSED SURFACE LEVELS ARE SHOWN ON BURROWS GRAHAM DRAWING NO: 22232-BGL-XX-XX-DR-C-00200.
7. CONTOURS ARE SHOWN AT 100mm INTERVALS
8. IT IS ASSUMED THAT A 200mm DEEP LAYER OF CONCRETE SLAB/ASPHALT MATERIAL WILL BE STRIPPED PRIOR TO COMMENCEMENT OF EARTHWORKS. ACTUAL DEPTH OF STRIP WILL VARY TO SUIT ACTUAL DEPTH OF MATERIAL. THIS WILL AFFECT FINAL EARTHWORKS VOLUMES.

   STRIP VOLUME -
   12395m² X 0.2m = 2479m³ (RE-USE SUBJECT TO SUITABILITY)
9. THE FOLLOWING CONSTRUCTION BUILD-UPS ARE ASSUMED FOR THE PURPOSES OF EARTHWORKS VOLUME CALCULATION ONLY. THESE BUILD-UPS ARE NOT TO BE USED FOR PRICING PAVEMENT/SUB-BASE/CAPPING LAYERS. FOR ACTUAL DEPTHS OF PAVEMENT/SUB-BASE/CAPPING LAYERS REFER TO BURROWS GRAHAM PAVEMENT DRAWING/SPECIFICATION.

BUILDING FOOTPRINT	500mm
CAR-PARK	450mm
SERVICE YARD	500mm
FOOTPATHS	350mm
10. NO ALLOWANCE HAS BEEN MADE FOR BULKING OF MATERIALS OR FOR USE OR ARISINGS FROM GROUND-WORKS (FOUNDATIONS, DRAINAGE ETC).
11. EARTHWORKS SLOPES ARE ASSUMED TO BE 1:3 FOR THE PURPOSES OF VOLUME CALCULATION ONLY AND THIS IS SUBJECT TO DETAILED GEOTECHNICAL ASSESSMENT PRIOR TO CONFIRMING FINAL LEVELS.
12. VOLUMES ARE CALCULATED AS THE DIFFERENCE BETWEEN:
    - GROUND LEVEL AFTER TOPSOIL/SURFACE MATERIAL STRIP
    - UNDERSIDE OF CONSTRUCTION BUILD-UP
13. ALL VOLUMES STATED ON THIS DRAWING ARE BASED ON PRELIMINARY CALCULATION BY BURROWS GRAHAM AND SHOULD BE VERIFIED/FINALISED BY THE EARTHWORK'S CONTRACTORS OWN CALCULATIONS/MODELLING.

REV	DATE	BY	DESCRIPTION	CHK'D
C01	11.09.24	DJB	Final Construction	RM
P01	01.12.23	SN	Preliminary Issue	RM

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CLIENT

PANATTONI

PROJECT

HORTON ROAD, POYLE

DRAWING TITLE

PROPOSED EARTHWORKS

OUR PROJECT NUMBER	DRAWING STATUS	OFFICE	
22232	CONSTRUCTION	SOUTH	
SCALE @ A1	DATE	DRAWN BY	CHECKED BY
1:250 @A1	13/01/23	DRD	RM

DRAWING No: P23025-BGL-XX-XX-DR-C-00201

REV: C01

PLAN OF EARTHWORKS AREAS

SCALE 1:500

1:500 Metric
5m 0 5m 10m 15m 20m

SUMMARY OF COMPACTION REQUIREMENTS

SUMMARY OF COMPACTION REQUIREMENTS (FROM TABLE D20-6/1 AND CLAUSE 612)

Key	Earthworks Class	Typical Use	Compaction Control and Key Performance Requirements
	Class 1A General Granular Fill	Earthworks fill to external areas	SHW Table 6/4 Method 2, modified as required to ensure 95% MDD and a minimum CBR of 5%
	Class 1B General Granular Fill	Earthworks fill to external areas	SHW Table 6/4 Method 3, modified as required to ensure 95% MDD and a minimum CBR of 5%
	Class 2A General Wet Cohesive Fill	Earthworks fill to external areas	SHW Table 6/4 Method 1, modified as required to ensure 95% MDD and a minimum CBR of 5% and Cu of 50 kN/m²
	Class 2B General Dry Cohesive Fill	Earthworks fill to external areas	SHW Table 6/4 Method 2, modified as required to ensure 95% MDD and a minimum CBR of 5% and Cu of 80 kN/m²
	Class 2C General Stony Cohesive Fill	Earthworks fill to external areas	SHW Table 6/4 Method 2, modified as required to ensure 95% MDD and a minimum CBR of 5% and Cu of 50 kN/m²
	Class 4 Landscape Fill	Fill to landscape areas	SHW Table 6/4 Method 2 and Clause 620, modified as required to ensure minimum Cu of 40 kN/m²
	Class 6N/6P Selected Granular Fill	Fill below structures and behind retaining walls	End Product, 95% MDD and a minimum CBR of 8%. For fill behind specialist retaining walls, parameters are TBC by the designer
	*Class 7A Selected Cohesive Fill	Fill below structures	End Product, 95% MDD (100% MDD for 2.5kg rammer), less than 5% Air Voids and minimum Cu of 80 kN/m²

*Class 7A Selected Cohesive Fill: Minimum Cu of 80kN/m² based on assumed Ed'/Cu ratio of 150. Minimum Cu requirement to be confirmed following compaction trials and compared with the data obtained from the incremental plate load tests. Minimum Constrained Modulus (D) for engineered fill supporting floor slabs is 12MPa. For design purposes assume a minimum equivalent CBR of 3%.

TABLE 6/4: Method Compaction for Earthworks Materials: Plant and Methods (Method 1 to Method 6)
(ThisTable is to be read in conjunction with sub-Clause 612.10)

Type of Compaction Plant	Ref No.	Category	Method 1		Method 2		Method 3		Method 4		Method 5		Method 6		
			D	N#	D	N#	D	N#	D	N	D	N	N for D = 1 10 mm	N for D = 150 mm	N for D = 250 mm
Smoothedwheeledroller(or vibratory roller operating without vibration)	1	Mass per metre width of roll: over 2100 kg up to 2700 kg	125	8	125	10	125	10*	175	4	unsuitable	unsuitable	unsuitable	unsuitable	unsuitable
	2	over 2700 kg up to 5400 kg	125	6	125	8	125	8*	200	4	unsuitable	16	unsuitable	unsuitable	unsuitable
	3	over 5400 kg	150	4	150	8	unsuitable		300	4	unsuitable	8	16		unsuitable
Gridroller		Mass per metre width of roll:													
	1	over 2700 kg up to5400 kg	150	10	unsuitable		150	10	250	4	unsuitable	unsuitable	unsuitable	unsuitable	unsuitable
	2	over 5400 kg up to 8000 kg	150	8	125	12	unsuitable		325	4	unsuitable	20	unsuitable	unsuitable	unsuitable
	3	over 8000 kg	150	4	150	12	unsuitable		400	4	unsuitable	12	20		unsuitable
Deadweight tamping roller		Mass per metre width of roll:													
	1	over 4000 kg up to 6000 kg	225	4	150	12	250	4	350	4	unsuitable	12	20		unsuitable
	2	over 6000 kg	300	5	200	12	300	3	400	4	unsuitable	8	12		20
Pneumatic-tyred roller		Mass per wheel:													
	1	over 1000 kg up to 1500 kg	125	6	unsuitable		150	10*	240	4	unsuitable	unsuitable	unsuitable	unsuitable	unsuitable
	2	over 1500 kg up to 2000 kg	150	5	unsuitable		unsuitable		300	4	unsuitable	unsuitable	unsuitable	unsuitable	unsuitable
	3	over 2000 kg up to 2500 kg	175	4	125	12	unsuitable		350	4	unsuitable	unsuitable	unsuitable	unsuitable	unsuitable
	4	over 2500 kg up to 4000 kg	225	4	125	10	unsuitable		400	4	unsuitable	unsuitable	unsuitable	unsuitable	unsuitable
	5	over 4000 kg up to 6000 kg	300	4	125	10	unsuitable		unsuitable		unsuitable	12	unsuitable	unsuitable	unsuitable
	6	over 6000 kg up to 8000 kg	350	4	150	8	unsuitable		unsuitable		unsuitable	12	unsuitable	unsuitable	unsuitable
	7	over 8000kg up to 12000kg	400	4	150	8	unsuitable		unsuitable		unsuitable	10	16		unsuitable
	8	over 12000kg	450	4	175	6	unsuitable		unsuitable		unsuitable	8	12		unsuitable
Vibratory tamping roller		Mass per metre width of a vibrating roll:													
	1	over 700 kg up to 1300 kg	100	12	100	12	150	12	100	10	unsuitable	unsuitable	unsuitable	unsuitable	unsuitable
	2	over 1300 kg up to 1800 kg	125	12	125	12	175	12*	175	8	unsuitable	12	unsuitable	unsuitable	unsuitable
	3	over 1800 kg up to 2300 kg	150	12	150	12	200	12*	unsuitable		unsuitable	8	12		unsuitable
	4	over 2300 kg up to 2900 kg	150	9	150	9	250	12*	unsuitable		400	5 6	10		unsuitable
	5	over 2900 kg up to 3600 kg	200	9	200	9	275	12*	unsuitable		500	6 6	10		unsuitable
	6	over 3600 kg up to 4300 kg	225	9	225	9	300	12*	unsuitable		600	6 4	8		unsuitable
	7	over 4300 kg up to 5000 kg	250	9	250	9	300	9*	unsuitable		700	6 3	7		12
	8	over 5000 kg	275	9	275	9	300	7*	unsuitable		800	6 3	6		10

EXTRACT FROM SHW - METHOD COMPACTION

Volume 1
Specification for Highway Works

Series 600
Earthworks

TABLE 6/4: Method Compaction forEarthworks Materials: Plant and Methods (Method 7)
(ThisTable is to be read in conjunction with sub-Clause 612.10)

Type of Compaction Plant	Ref No.	Category	Method 7	
			N for D = 150 mm	N for D = 250 mm
Smoothwheeledroller (or vibratory roller operating without vibration)	1	Mass per metre width of roll: over 2100 kg up to 2700 kg	unsuitable	unsuitable
	2	over 2700 kg up to 5400 kg	unsuitable	unsuitable
	3	over 5400 kg	12	unsuitable
Grid roller	1	Mass per metre width of roll: over 2700 kg up to 5400 kg	unsuitable	unsuitable
	2	over 5400 kg up to 8000 kg	16	unsuitable
	3	over 8000 kg	8	unsuitable
Deadweight tamping roller	1	Mass per metre width of roll: over 4000 kg up to 6000 kg	4	8
	2	over 6000 kg	3	6
Pneumatic-tyred roller	1	Mass per wheel: over 1000 kg up to 1500 kg	unsuitable	unsuitable
	2	over 1500 kg up to 2000 kg	12	unsuitable
	3	over 2000 kg up to 2500 kg	6	unsuitable
	4	over 2500 kg up to 4000 kg	5	unsuitable
	5	over 4000 kg up to 6000 kg	4	16
	6	over 6000 kg up to 8000 kg	unsuitable	8
	7	over 8000 kg up to 12000 kg	unsuitable	4
	8	over 12000 kg	unsuitable	4
Vibratory tamping roller	1	Mass per metre width of vibrating roll: over 700 kg up to 1300 kg	unsuitable	unsuitable
	2	over 1300 kg up to 1800 kg	unsuitable	unsuitable
	3	over 1800 kg up to 2300 kg	16	unsuitable
	4	over 2300 kg up to 2900 kg	12	unsuitable
	5	over 2900 kg up to 3600 kg	10	unsuitable
	6	over 3600 kg up to 4300 kg	8	16
	7	over 4300 kg up to 5000 kg	7	14
	8	over 5000 kg	6	12
Vibratory roller	1	Mass per metre width of vibrating roll: over 270 kg up to 450 kg	unsuitable	unsuitable
	2	over 450 kg up to 700 kg	unsuitable	unsuitable
	3	over 700 kg up to 1300 kg	unsuitable	unsuitable
	4	over 1300 kg up to 1800 kg	unsuitable	unsuitable
	5	over 1800 kg up to 2300 kg	12	unsuitable
	6	over 2300 kg up to 2900 kg	10	unsuitable
	7	over 2900 kg up to 3600 kg	10	unsuitable
	8	over 3600 kg up to 4300 kg	8	unsuitable
	9	over 4300 kg up to 5000 kg	8	unsuitable
	10	over 5000 kg	6	12
Vibratory plate compactor		Mass per m^2 of base plate:		
	1	over 880 kg up to 1100 kg	unsuitable	unsuitable
	2	over 1100 kg up to 1200 kg	unsuitable	unsuitable
	3	over 1200 kg up to 1400 kg	unsuitable	unsuitable
	4	over 1400 kg up to 1800 kg	10	unsuitable
	5	over 1800 kg up to 2100 kg	8	unsuitable
	6	over 2100 kg	6	12
Vibro-tamper		Mass:		
	1	over 50 kg up to 65 kg	unsuitable	unsuitable
	2	over 65 kg up to 75 kg	unsuitable	unsuitable
	3	over 75 kg up to 100 kg	unsuitable	unsuitable
	4	over 100 kg	8	unsuitable
Power rammer		Mass:		
	1	100 kg up to 500 kg	8	unsuitable
	2	over 500 kg	6	10
Dropping weight compactor		Mass of rammer over 500 kg height drop:		
	1	over 1 m up to 2 m	unsuitable	unsuitable
	2	over 2 m	unsuitable	unsuitable

TABLE D20-1/5 EARTHWORKS TESTING REQUIREMENTS

CLAUSE	WORK, GOODS OR MATERIAL		TEST	FREQUENCY	TEST CERTIFICATE	COMMENTS
Series 600	Earthworks				Required	**Refer to Table D20-6/1 for specific testing for each sub-class of fill.** Test frequency relates to the class of material from each source. For source approval testing the minimum number of tests will be 3 per source. If multiple sources of the same class are used, each source shall be tested at the frequency stated. The source can only be approved for use within the permanent works once at least 3 tests are received by the Engineer and demonstrate compliance with the requirements of Table D20-6/1. If material is used without the appropriate source testing it is deemed to have been placed at the Contractors risk. Where the volume of a single source used in the earthworks operation is in excess of 10,000m³, once 10,000m³ has been used the rate of testing may be reduced following agreement with the Designer/Engineer. Refer to Clause 612 for in situ testing requirements during the placement and compaction of fill. Geo-environmental consultant to advise on any chemical testing requirements.
601, 631 to 637, 640	Acceptable Limits					
	Class	General Description (Typical use)				
	1A 1B	General Granular Fill (External Areas)	MC (U)	1 per 2,000m³		
			Grading (U) & Uniformity Coefficient	1 per 2,000m³		
			OMC/MDD (U) (Vib Hammer)	1 per 2,000m³		
			TRL 447 Sulphate Suite including WS, OS, TPS, OM (where hydraulic binder is used min frequency of 1 per 250m³)	1 per 2,000m³		
			Organic matter	Source Approval		
			Chemical Suite (Imported Materials)	RMS		
	2A 2B 2C 2D	General Cohesive Fill (External Areas)	MC (U)	1 per 2,000m³		
			PL, LL, PI (U)	1 per 2,000m³		
			Grading (U)	1 per 2,000m³		
			OMC/MDD to include HSV at each compaction point & Particle Density (U) (2.5kg for 2A & 2C or 4.5kg for 2B)	1 per 2,000m³		
			Undrained Triaxial Shear Strength/HSV Calibration	Source Approval		
			TRL 447 Sulphate Suite including WS, OS, TPS, OM (where hydraulic binder is used min frequency of 1 per 250m³)	1 per 2,000m³		
			Organic matter	Source Approval		
			Chemical Suite (Imported Materials)	RMS		
	4	Landscape Fill (Landscape Bunds)	MC (U)	1 per 5,000m³		
			Grading (U)	1 per 5,000m³		
	6N/6P 6F1 6F2 6F5	Selected Granular Fill (Below structures, working platform, behind retaining walls, capping)	MC (U)	1 per 1,000m³		
			Grading (U) & Uniformity Coefficient	1 per 1,000m³		
			OMC/MDD (Vib Hammer)	1 per 1,000m³		
			Los Angeles Coefficient	1 per 1,000m³		
			Effective Stress (ϕ' and c')	Source Approval		
			TRL 447 Sulphate Suite including WS, OS, TPS, OM (where hydraulic binder is used min frequency of 1 per 250m³)	1 per 2,000m³		
			Constituent Parts to include bitumen content (Recycled Aggregate)	Source Approval		
			Chemical Suite (Imported Materials)	RMS		

CLAUSE	WORK, GOODS OR MATERIAL		TEST	FREQUENCY	TEST CERTIFICATE	COMMENTS
601, 631 to 637, 640	7A	Selected Cohesive Fill (Below structures)	MC (U)	1 per 1,000m³		
			PL, LL, PI (U)	1 per 1,000m³		
			Grading (U)	1 per 1,000m³		
			OMC/MDD to include HSV at each compaction point & Particle Density (U) (2.5kg or 4.5kg Rammer)	1 per 1,000m³		
			Undrained Triaxial Shear Strength/HSV Calibration	Source Approval		
			Remoulded Undrained Triaxial Shear Strength (U) at NMC	1 per 5,000m³		
			TRL 447 Sulphate Suite including WS, OS, TPS, OM (where hydraulic binder is used min frequency of 1 per 250m³)	1 per 2,000m³		
			Chemical Suite (Imported Materials)	RMS		
602	Earthworks material beneath the surface of a road or external area with hardstanding		Frost Heave (U)	Source Approval	For ALL material within 450mm of the finished level	
612	Compaction of Fills					
	Method Placement	Class 1A, 1B, 2A, 2B, 2C, 2D	Compaction Trial Dual Cycle Plate Load Test for equivalent CBR in accordance with Table 1/5-3 (BS 1377-9 and DMRB IAN 73/06 Rev 1)	1 per method per source 1 per 50m x 50m grid at the subgrade level	Required	Plate load testing for equivalent CBR to be carried out in accordance with BS 1377-9 and DMRB IAN 73/06 Rev 1. Incremental plate load testing to be undertaken in accordance with BS 1377-9: 1990 and Clause 6.17.1 Method 1 of the 'Institution of Civil Engineers Specification for Ground Treatment, 1987' Plate load testing designated at the subgrade level below structures, roads and external areas to also be undertaken in areas of cut at the frequency stated. Refer to Table D20-6/1 for minimum compaction requirements to be met. Compaction Trial to be completed in accordance with agreed method (contractor to submit proposals). Refer to D20 for compaction trial requirements. Where the hand shear vane is used as compaction control it shall be calibrated against the laboratory triaxial test. Where the Nuclear Density Gauge (NDG) is used for the measurement of density and moisture content it shall be calibrated for the particular source material under test.
		Class 4	Undrained Shear Strength (HSV)	1 per 500m³		
	End Product	Class 6N/6P, 7A	Compaction Trial (to include both plate load tests) Field Dry Density & Moisture Content (U) Undrained Shear Strength (HSV) or CBR (Mexe Probe) Dual Cycle Static Incremental Plate Load Test in accordance with Table 1/5-2 to alternate with Dual Cycle Plate Load Test for equivalent CBR in accordance with Table 1/5-3 (BS 1377-9 and DMRB IAN 73/06 Rev 1)	1 per method per source 1 per 25m x 25m grid per layer (min of 3) 1 per 50m x 50m Grid every 1m lift of fill		

CLAUSE	WORK, GOODS OR MATERIAL	TEST	FREQUENCY	TEST CERTIFICATE	COMMENTS
630	Below internal floor slabs following placement of capping and subbase	Dual Cycle Plate Load Test for Modulus of Subgrade Reaction (k762) in accordance with Table 1/5-3 (BS 1377-9 and DMRB IAN 73/06 Rev 1)	1 per 2000m² (increased as required to suit developers specification)	Required	Minimum k762 required at the final formation to be confirmed by the Structural Engineer.

Table 1/5.2: Incremental Plate Load Test - Applied Loading and Settlement Criteria

LOAD INCREMENT	APPLIED LOAD (kN/m²)	MAXIMUM DEFORMATION/SETTLEMENT
Stage 1	75 kN/m²	Declared value
Stage 2	150 kN/m²	Declared Value
Stage 3	300 kN/m²	Declared Value
Stage 4	425 kN/m²	Declared Value
Stage 5	0 kN/m²	Recovered deformation shall be less than 50% of maximum settlement from Stage 4
Stage 6	150 kN/m²	Not more than 5 mm between Stage 5 & Stage 6
Stage 7	300 kN/m²	Not more than 10 mm between Stage 5 & Stage 7
Stage 8	425 kN/m²	Not more than 20 mm between Stage 5 & Stage 8

Table 1/5.3: Plate Load Test Methodology for k762 and Equivalent CBR

DUAL CYCLE PLATE LOAD TEST: CONFIRMATION OF MODULUS OF SUBGRADE REACTION k_r, k762 AND EQUIVALENT CBR

This test should be undertaken with a minimum 0.60m diameter plate, and whilst plates of smaller diameter may be used this should not be less than 0.30m. The method of analysis should follow DMRB IAN 73/06 Rev 1 for an equivalent CBR. The modulus of subgrade reaction is an elastic modulus, and can only be proven if the test is done cyclically to ensure repeatable results. Therefore, the testing protocols to be followed are as follows:

1. The initial seating stress is to be based upon the stress required to induce at least1.5mm.
2. The first load cycle is applied incrementally, to achieve cumulate settlement intervals of 0.25, 0.50, 0.75, 1.00, 1.25 and 1.50 mm respectively. Each incremental stress is maintained until there is less than 0.05mm per minute per increment before the next load is applied.
3. Upon achieving the 1.50mm settlement and less than 0.05mm per minute requirement, the plate is unloaded back to zero and the non-recoverable settlement at a stress of 0 kPa is recorded.
4. The dial gauges are re-set to zero, and the test is repeated to achieve the same number of increments with the corresponding same level of deformation (e.g. stress applied to achieve 0.25mm increments, up to a maximum nominal deformation of 1.50mm).

The results are assessed by:

1. Checking that the non-recoverable settlement after the first cycle is less than 50% of the total (e.g. if the total settlement was 1.50mm, then after unloading back to zero the gauges should return to less than 0.75mm). If this is not achieved, additional stress cycles can be undertaken until repeatable values are recorded as this is indicative of poor compaction and requires re-engineering.
2. Comparison of the stiffness (E, Eplt) of the final cycle divided by the stiffness of the previous cycle. The target ratio for shall be less than 2.0, and never above 2.2. Where the ratio is greater than 2.2, this indicates the fill has not been fully compacted
3. The modulus of subgrade reaction (k_s, k762) for the first cycle, shall be equal to or more than the design value for the subgrade and checked against the foundation design requirements. This can be converted to equivalent CBR if required by the design, using the equation in DMRB IAN 73/06 Rev 1.

TABLE 6/4: Method Compaction for Earthworks Materials: plant and Methods (Method 1 to Method 6)
(This Table is to be read in conjunction with sub-Clause 612.10)

Type of Compaction Plant	Ref No.	Category	Method 1		Method 2		Method 3		Method 4		Method 5		Method 6		
			D	N#	D	N#	D	N#	D	N	D	N	N for D = 1 10 mm	N for D = 150 mm	N for D = 250 mm
Vibratory roller		Mass per metre width of a vibratory roll:													
	1	over 270 kg up to 450 kg	unsuitable		75	16	150	16	unsuitable		unsuitable		unsuitable	unsuitable	unsuitable
	2	over 450 kg up to 700 kg	unsuitable		75	12	150	12	unsuitable		unsuitable		unsuitable	unsuitable	unsuitable
	3	over 700 kg up to 1300 kg	100	12	125	10	150	6	125	10	unsuitable		16	unsuitable	unsuitable
	4	over 1300 kg up to 1800 kg	125	8	150	8	200	10*	175	4	unsuitable		6	16	unsuitable
	5	over 1800 kg up to 2300 kg	150	4	150	4	225	12*	unsuitable		unsuitable		4	6	12
	6	over 2300 kg up to 2900 kg	175	4	175	4	250	10*	unsuitable		400	5	3	5	11
	7	over 2900 kg up to 3600 kg	200	4	200	4	275	8*	unsuitable		500	5	3	5	10
	8	over 3600 kg up to 4300 kg	225	4	225	4	300	8*	unsuitable		600	5	2	4	8
	9	over 4300 kg up to 5000 kg	250	4	250	4	300	6*	unsuitable		700	5	2	4	7
	10	over 5000 kg	275	4	275	4	300	4*	unsuitable		800	5	2	3	6
Vibrating plate compactor		Mass per m^2 of base plate:													
	1	over 880 kg up to 1 100 kg	unsuitable		unsuitable		75	6	unsuitable				unsuitable	unsuitable	unsuitable
	2	over 1100 kg up to 1200 kg	unsuitable		75	10	100	6	75	10			unsuitable	unsuitable	unsuitable
	3	over 1200 kg up to 1400 kg	unsuitable		75	6	150	6	150	8			unsuitable	unsuitable	unsuitable
	4	over 1400 kg up to 1800 kg	100	6	125	6	150	4	unsuitable				unsuitable	8	unsuitable
	5	over 1800 kg up to 2100 kg	150	6	150	5	200	4	unsuitable				unsuitable	5	8	unsuitable
	6	over 2100 kg	200	6	200	5	250	4	unsuitable				unsuitable	3	6	12
Vibro-tamper		Mass:													
	1	over 50 kg up to 65 kg	100	3	100	3	150	3	125	3			unsuitable	4	8	unsuitable
	2	over 65 kg up to 75 kg	125	3	125	3	200	3	150	3			unsuitable	3	6	12
	3	over 75 kg up to 100 kg	150	3	150	3	225	3	175	3			unsuitable	2	4	10
	4	over 100 kg	225	3	200	3	225	3	250	3			unsuitable	2	4	10
Power rammer		Mass:													
	1	100 kg up to 500 kg	150	4	150	6	unsuitable		200	4			unsuitable	5	8	unsuitable
	2	over 500 kg	275	8	275	12	unsuitable		400	4			unsuitable	5	8	14
Dropping-weight compactor		Mass of rammer over 500 kg weight drop:													
	1	over 1 m up to 2 m	600	4	600	8	450	8	unsuitable				unsuitable	unsuitable	unsuitable	unsuitable
	2	over 2 m	600	2	600	8	unsuitable		unsuitable				unsuitable	unsuitable	unsuitable	unsuitable

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING

CONSTRUCTION

MAINTENANCE

DEMOLITION

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

GENERAL NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL THE RELEVANT ARCHITECTS, ENGINEERS' AND SERVICE ENGINEERS DRAWINGS & SPECIFICATIONS.

EARTHWORKS NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE BURROWS GRAHAM LTD. (BGL) SPECIFICATION D20.
2. THE CONTRACTOR SHALL COMPILE ALL RECORD INFORMATION REQUIRED FOR THE EARTHWORKS COMPLETION REPORT, AS DESCRIBED IN CLAUSE D20/101. ALL TEST RESULTS SHALL BE SUBMITTED TO BURROWS GRAHAM FOR REVIEW DURING THE COURSE OF THE WORKS.
3. ALL EARTHWORKS ARE TO BE UNDERTAKE IN ACCORDANCE WITH BS 6031:2009 (CODE OF PRACTICE FOR EARTHWORKS) AND BS EN 13242 (HYDRAULICALLY BOUND AND UNBOUND MATERIALS FOR USE IN CIVIL ENGINEERING, USING THE SPECIFICATION FOR HIGHWAY WORKS AS THE MODEL SPECIFICATION. ADDITIONAL REFERENCE SHALL BE MADE TO THE RECOMMENDATIONS AND MODEL SPECIFICATION FOR EARTHWORKS DEFINED IN BRE FB 57 BUILDING ON FILL, GEOTECHNICAL ASPECTS VERSION 3: 2015. SITE SPECIFIC TESTING REQUIREMENTS FOR FILL MATERIALS ARE AS DETAILED ON THIS DRAWING AND SHOULD BE READ IN CONJUNCTION WITH THE ABOVE PUBLICATIONS.
4. WHERE THERE IS A PERCEIVED TO BE A CONFLICT IN REQUIREMENTS BETWEEN THE VARIOUS DOCUMENTS DETAILED ABOVE AND THE CONTENT OF THIS DRAWING, THE CONTRACTOR SHALL ASSUME THE MOST ONEROUS REQUIREMENT AND CONSULT WITH BGL ON THE EXACT REQUIREMENTS TO BE MET.
5. SHOULD ANY MATERIAL BE PLACED WHICH HAS NOT BEEN GIVEN PRIOR WRITTEN APPROVAL FROM THE ENGINEER, THE CONTRACTOR WILL HAVE DONE THIS AT THEIR OWN RISK AND THEY WILL BE RESPONSIBLE FOR ANY AND ALL REMEDIAL WORKS REQUIRED TO RECTIFY THE SITUATION. ALL COSTS ASSOCIATED WITH THIS REMEDIAL WORK ARE TO BE BORNE BY THE CONTRACTOR.
6. ALL WORKS AND ASSOCIATED COSTS RELATING THE CONTROL AND MANAGEMENT OF WATER ON SITE, FROM EXISTING, PROPOSED OR REDUNDANT WATERCOURSES OR FROM ANY OTHER SOURCE INCLUDING GROUNDWATER, RAINFALL AND SURFACE WATER IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL COSTS FOR THE CONTROL AND MANAGEMENT OF WATER ARE TO BE BORNE BY THE CONTRACTOR AND THE CONTRACTOR IS DEEMED TO HAVE READ, UNDERSTOOD AND FULLY ACCOUNTED FOR THESE COSTS WITHIN THEIR TENDER SUBMISSION. ANY UNCERTAINTY OVER THE ISSUES ASSOCIATED WITH WATER OR GROUNDWATER CONTROL SHOULD BE SUBMITTED TO BGL FOR CLARIFICATION, AS SOON AS ANY SUCH ISSUE IS NOTED OR IDENTIFIED BY ANY PARTY.

REV	DATE	BY	REVISION	CHK'D
C01	11.09.2024	DJB	FINAL CONSTRUCTION	RM
P01	01.12.2023	TJS	PRELIMINARY ISSUE	RM

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CLIENT

PANATTONI

PROJECT

HORTON ROAD
POYLE

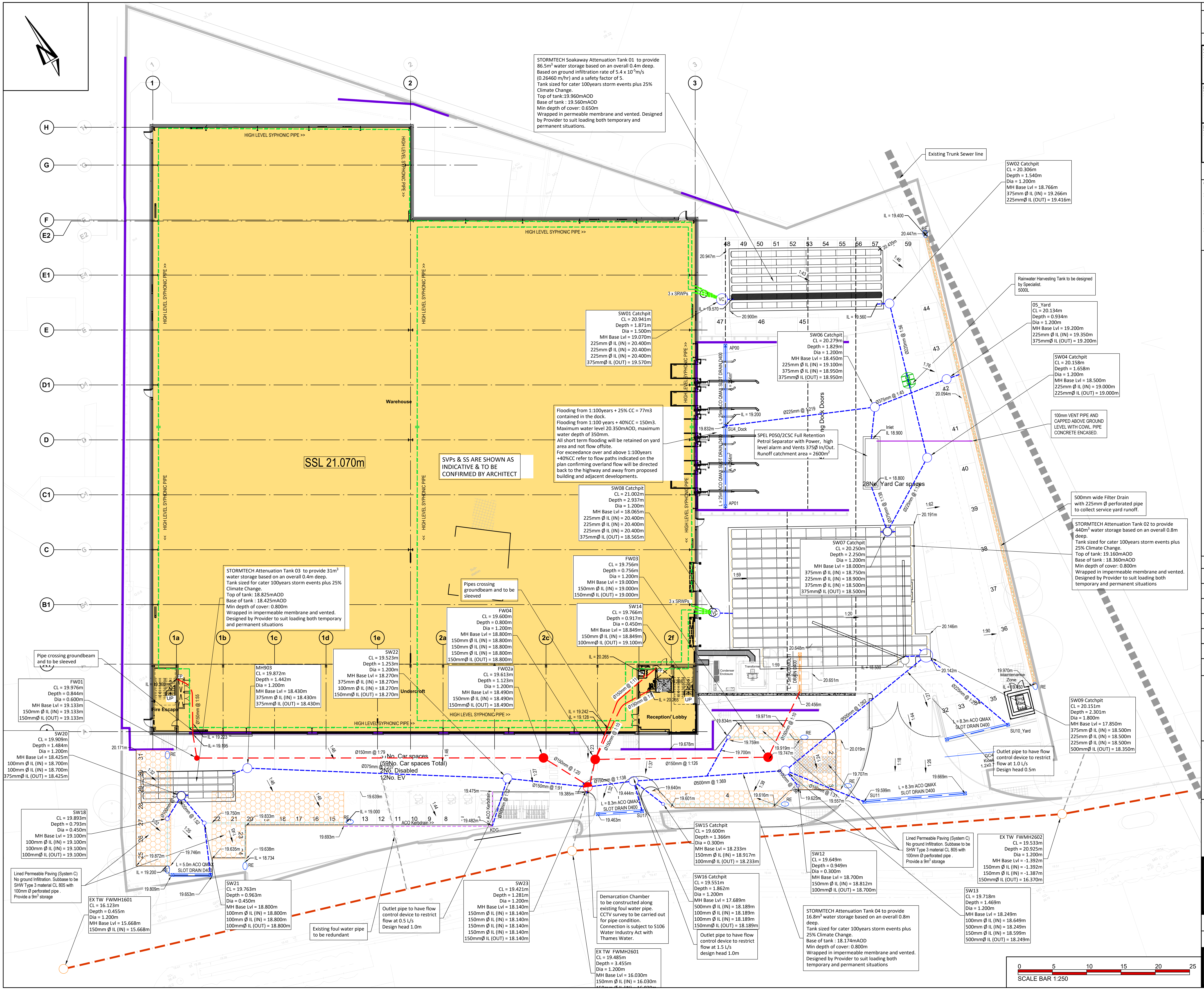
DRAWING TITLE

EARTHWORKS SPECIFICATION REQUIREMENTS

BGL PROJECT NUMBER	DRAWING STATUS	OFFICE
22232	CONSTRUCTION	SOUTHERN

SCALE @ A0	DATE	DRAWN BY	CHECKED BY
AS SHOWN	19.06.23	TJS	DB

DRAWING No	REV
P23025-BGL-XX-XX-DR-C-00205	C01



Existing Trunk Sewer line

STORMTECH Soakaway Attenuation Tank 01 to provide 86.5m³ water storage based on an overall 0.4m deep.
Based on ground infiltration rate of 5.4 x 10⁻⁵m/s (0.26460 m/hr) and a safety factor of 5.
Tank sized for cater 100years storm events plus 25% Climate Change.
Top of tank:19.960mAOD
Base of tank : 19.560mAOD
Min depth of cover: 0.650m
Wrapped in permeable membrane and vented. Designed by Provider to suit loading both temporary and permanent situations.

SW01 Catchpit
CL = 20.941m
Depth = 1.871m
Dia = 1.500m
MH Base Lvl = 19.070m
225mm Ø IL (IN) = 20.400m
225mm Ø IL (IN) = 20.400m
225mm Ø IL (IN) = 20.400m
375mmØ IL (OUT) = 19.570m

SW06 Catchpit
CL = 20.279m
Depth = 1.829m
Dia = 1.200m
MH Base Lvl = 18.450m
225mm Ø IL (IN) = 19.100m
375mm Ø IL (IN) = 18.950m
375mmØ IL (OUT) = 18.950m

SW02 Catchpit
CL = 20.306m
Depth = 1.540m
Dia = 1.200m
MH Base Lvl = 18.766m
375mm Ø IL (IN) = 19.266m
225mmØ IL (OUT) = 19.416m

Rainwater Harvesting Tank to be designed by Specialist.
5000L

05_Yard
CL = 20.134m
Depth = 0.934m
Dia = 1.200m
MH Base Lvl = 19.200m
225mm Ø IL (IN) = 19.350m
375mmØ IL (OUT) = 19.200m

SW04 Catchpit
CL = 20.158m
Depth = 1.658m
Dia = 1.200m
MH Base Lvl = 18.500m
225mm Ø IL (IN) = 19.000m
225mmØ IL (OUT) = 19.000m

100mm VENT PIPE AND CAPPED ABOVE GROUND LEVEL WITH COWL. PIPE CONCRETE ENCASED.

Flooding from 1:100years + 25% CC = 77m3 contained in the dock.
Flooding from 1:100 years + 40%CC = 150m3.
Maximum water level 20.350mAOD, maximum water depth of 350mm.
All short term flooding will be retained on yard area and not flow offsite.
For exceedance over and above 1:100years +40%CC refer to flow paths indicated on the plan confirming overland flow will be directed back to the highway and away from proposed building and adjacent developments.

SPEL P050/2CSC Full Retention Petrol Separator with Power, high level alarm and Vents 375Ø In/Out.
Runoff catchment area = 2600m²

SVPs & SS ARE SHOWN AS INDICATIVE & TO BE CONFIRMED BY ARCHITECT

SW08 Catchpit
CL = 21.002m
Depth = 2.937m
Dia = 1.200m
MH Base Lvl = 18.065m
225mm Ø IL (IN) = 20.400m
225mm Ø IL (IN) = 20.400m
225mm Ø IL (IN) = 20.400m
375mmØ IL (OUT) = 18.565m

500mm wide Filter Drain with 225mm Ø perforated pipe to collect service yard runoff.

STORMTECH Attenuation Tank 02 to provide 440m³ water storage based on an overall 0.8m deep.
Tank sized for cater 100years storm events plus 25% Climate Change.
Top of tank: 19.160mAOD
Base of tank : 18.360mAOD
Min depth of cover: 0.800m
Wrapped in impermeable membrane and vented.
Designed by Provider to suit loading both temporary and permanent situations

SW07 Catchpit
CL = 20.250m
Depth = 2.250m
Dia = 1.200m
MH Base Lvl = 18.000m
375mm Ø IL (IN) = 18.750m
225mm Ø IL (IN) = 18.900m
375mm Ø IL (IN) = 18.500m
375mmØ IL (OUT) = 18.500m

FW03
CL = 19.756m
Depth = 0.756m
Dia = 1.200m
MH Base Lvl = 19.000m
150mm Ø IL (IN) = 19.000m
150mmØ IL (OUT) = 19.000m

STORMTECH Attenuation Tank 03 to provide 31m³ water storage based on an overall 0.4m deep.
Tank sized for cater 100years storm events plus 25% Climate Change.
Top of tank: 18.825mAOD
Base of tank : 18.425mAOD
Min depth of cover: 0.800m
Wrapped in impermeable membrane and vented.
Designed by Provider to suit loading both temporary and permanent situations

Pipes crossing groundbeam and to be sleeved

SW14
CL = 19.766m
Depth = 0.917m
Dia = 0.450m
MH Base Lvl = 18.849m
150mm Ø IL (IN) = 18.849m
100mmØ IL (OUT) = 19.100m

FW04
CL = 19.600m
Depth = 0.800m
Dia = 1.200m
MH Base Lvl = 18.800m
150mm Ø IL (IN) = 18.800m
150mm Ø IL (IN) = 18.800m
150mm Ø IL (IN) = 18.800m
150mmØ IL (OUT) = 18.800m

Pipe crossing groundbeam and to be sleeved

MH903
CL = 19.872m
Depth = 1.442m
Dia = 1.200m
MH Base Lvl = 18.430m
375mm Ø IL (IN) = 18.430m
375mmØ IL (OUT) = 18.430m

SW22
CL = 19.523m
Depth = 1.253m
Dia = 1.200m
MH Base Lvl = 18.270m
375mm Ø IL (IN) = 18.270m
100mm Ø IL (IN) = 18.270m
150mmØ IL (OUT) = 18.270m

FW02a
CL = 19.613m
Depth = 1.123m
Dia = 1.200m
MH Base Lvl = 18.490m
150mm Ø IL (IN) = 18.490m
150mm Ø IL (IN) = 18.490m
150mmØ IL (OUT) = 18.490m

FW01
CL = 19.976m
Depth = 0.844m
Dia = 0.600m
MH Base Lvl = 19.133m
150mm Ø IL (IN) = 19.133m
150mmØ IL (OUT) = 19.133m

SW20
CL = 19.909m
Depth = 1.484m
Dia = 1.200m
MH Base Lvl = 18.425m
100mm Ø IL (IN) = 18.700m
100mm Ø IL (IN) = 18.700m
375mmØ IL (OUT) = 18.425m

SW09 Catchpit
CL = 20.151m
Depth = 2.301m
Dia = 1.800m
MH Base Lvl = 17.850m
375mm Ø IL (IN) = 18.500m
225mm Ø IL (IN) = 18.500m
225mm Ø IL (IN) = 18.500m
500mmØ IL (OUT) = 18.350m

Outlet pipe to have flow control device to restrict flow at 1.0 L/s
Design head 0.5m

SW18
CL = 19.893m
Depth = 0.793m
Dia = 0.450m
MH Base Lvl = 19.100m
100mm Ø IL (IN) = 19.100m
100mm Ø IL (IN) = 19.100m
100mmØ IL (OUT) = 19.100m

Lined Permeable Paving (System C)
No ground Infiltration. Subbase to be SHW Type 3 material CL 805 with 100mm Ø perforated pipe .
Provide a 9m³ storage

EX TW FWMH1601
CL = 16.123m
Depth = 0.455m
Dia = 1.200m
MH Base Lvl = 15.668m
150mm Ø IL (IN) = 15.668m
150mmØ IL (OUT) = 15.668m

SW21
CL = 19.763m
Depth = 0.963m
Dia = 0.450m
MH Base Lvl = 18.800m
100mm Ø IL (IN) = 18.800m
100mm Ø IL (IN) = 18.800m
100mmØ IL (OUT) = 18.800m

Existing foul water pipe to be redundant

Outlet pipe to have flow control device to restrict flow at 0.5 L/s
Design head 1.0m

SW23
CL = 19.421m
Depth = 1.281m
Dia = 1.200m
MH Base Lvl = 18.140m
150mm Ø IL (IN) = 18.140m
150mm Ø IL (IN) = 18.140m
150mm Ø IL (IN) = 18.140m
150mm Ø IL (IN) = 18.140m
150mmØ IL (OUT) = 18.140m

Demarcation Chamber to be constructed along existing foul water pipe.
CCTV survey to be carried out for pipe condition.
Connection is subject to S106 Water Industry Act with Thames Water.

EX TW FWMH2601
CL = 19.485m
Depth = 3.455m
Dia = 1.200m
MH Base Lvl = 16.030m
150mm Ø IL (IN) = 16.030m

SW15 Catchpit
CL = 19.600m
Depth = 1.366m
Dia = 0.300m
MH Base Lvl = 18.233m
150mm Ø IL (IN) = 18.917m
100mmØ IL (OUT) = 18.233m

SW16 Catchpit
CL = 19.551m
Depth = 1.862m
Dia = 1.200m
MH Base Lvl = 17.689m
500mm Ø IL (IN) = 18.189m
100mm Ø IL (IN) = 18.189m
100mm Ø IL (IN) = 18.189m
150mmØ IL (OUT) = 18.189m

Outlet pipe to have flow control device to restrict flow at 1.5 L/s
design head 1.0m

SW12
CL = 19.649m
Depth = 0.949m
Dia = 0.300m
MH Base Lvl = 18.700m
150mm Ø IL (IN) = 18.812m
100mmØ IL (OUT) = 18.700m

STORMTECH Attenuation Tank 04 to provide 16.8m³ water storage based on an overall 0.8m deep.
Tank sized for cater 100years storm events plus 25% Climate Change.
Base of tank : 18.174mAOD
Min depth of cover: 0.800m
Wrapped in impermeable membrane and vented.
Designed by Provider to suit loading both temporary and permanent situations

Lined Permeable Paving (System C)
No ground Infiltration. Subbase to be SHW Type 3 material CL 805 with 100mm Ø perforated pipe .
Provide a 9m³ storage

EX TW FWMH2602
CL = 19.533m
Depth = 20.925m
Dia = 1.200m
MH Base Lvl = -1.392m
150mm Ø IL (IN) = -1.392m
150mm Ø IL (IN) = -1.387m
150mmØ IL (OUT) = 16.370m

SW13
CL = 19.718m
Depth = 1.469m
Dia = 1.200m
MH Base Lvl = 18.249m
100mm Ø IL (IN) = 18.649m
500mm Ø IL (IN) = 18.249m
150mm Ø IL (IN) = 18.599m
500mmØ IL (OUT) = 18.249m

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING

CONSTRUCTION

1. ADD RESIDUAL RISKS HERE

MAINTENANCE

1. ADD RESIDUAL RISKS HERE

DEMOLITION

1. ADD RESIDUAL RISKS HERE

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

GENERAL NOTES:

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2. BASED ON GREENHATCH GROUP TOPO SURVEY GH6963 (21/02/2020) AND UMC ARCHITECTS LAYOUT 22400-UMC-ZZZZ-SI-DR-A-601 .
3. Average ground water level based on the SI is 19.50m AOD

KEY:

	Site Boundary
S.S.L. ??.??m	Proposed Building Level
SWMH	Proposed Surface Water pipe & Chamber
FWMH	Proposed Foul Water pipe & Chamber
	Existing Foul Water Pipe
	Proposed Syphonic Pipe
SU	Proposed Slot Drain & Sump Unit
	Proposed Foul Water Channel
	Proposed Kerb Drain
KDG	Proposed Kerb Drain Gully
	Proposed porous paving block
	Filter Drain with Perforated Pipe
1:40	Proposed yard slope
RE	Rodding Eye
FP	Foul Water Pops Up
BD	Backdrop
TG	Trapped Bin Gully

Public Sewer Lines

EX_MH	Existing Foul Water pipe & Chamber

REV	DATE	BY	DESCRIPTION	CHK'D
C03	11.09.24	DJB	FINAL CONSTRUCTION	RM
C02	02.07.24	SN	As-Built information added	RM
C01	08.03.24	SN	Foul Water lateral pipes Issue for Construction	RM
P03	15.01.24	SN	Drainage strategy amended to suit design levels	RM
P01	05.12.23	SN	Attenuation Tanks Spec amended	RM
P01	01.12.23	SN	Preliminary Issue	RM

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CLIENT

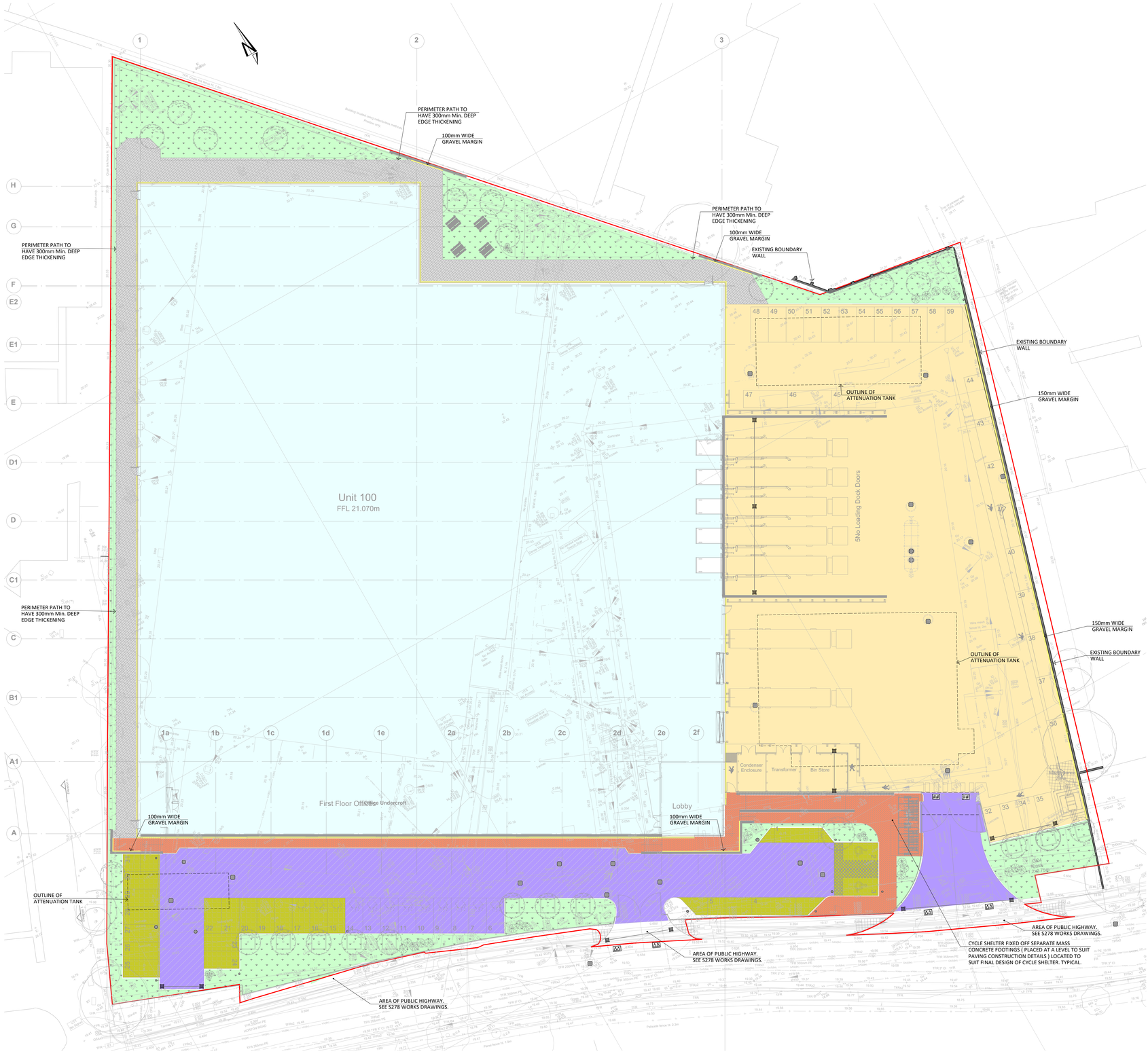
PROJECT
HORTON ROAD, POYLE

DRAWING TITLE
PROPOSED DRAINAGE PLAN

OUR PROJECT NUMBER 22232	DRAWING STATUS CONSTRUCTION	OFFICE SOUTH	
SCALE @ A1 1:250 @A1	DATE 24/03/23	DRAWN BY SN	CHECKED BY RM

DRAWING No
P23025-BGL-XX-XX-DR-C-00210

REV
C03



PLAN OF EXTERNAL SURFACES

SCALE 1:200

1:200 Metric
1m 0 5m 10m

DESIGN BASED ON CBR OF 5% BEING ACHIEVED AT FORMATION FOLLOWING HEAVY ROLLER COMPACTION AND REMOVAL OF SOFT SPOTS AND CONFIRMED VIA ON SITE PLATE TESTING

NOTE:
ΔΔ INDICATES STEPPED 'TIE-IN' DETAIL REQUIRED AS DETAILED ON DRG. No. P23025-BGL-XX-XX-DR-S-00224

NOTE:
INDICATES TRANSITION DETAIL REQUIRED AS DETAILED ON DRG. No. P23025-BGL-XX-XX-DR-S-00224

KEY TO SURFACE CONSTRUCTION

H.G.V. EXTERNAL YARD
190mm THICK (U.N.O.), GRADE C32/40AE CONCRETE SLAB WITH BRUSHED FINISH, REINFORCED WITH A252 FABRIC (75mm TOP COVER, 300mm MINIMUM LAPS) ON 1200g POLYTHENE MEMBRANE ON MINIMUM 300mm DTp TYPE 1 SUB-BASE (SITE CRUSHED) (490mm O/A THICKNESS) ALLOW FOR JOINTS IN EXTERNAL YARD SLAB AT MAXIMUM 4.9m x 6.5m CENTRES TO ENSURE CRACKING IS CONTROLLED & ALSO TO SUIT POUR SEQUENCES.

GROUND FLOOR WAREHOUSE / OFFICE SLABS
SEE DRG. No. P23025-BGL-XX-XX-DR-S-00110

ACCESS ROAD SURFACING
40mm AC10 SURFACE COURSE
60mm AC20 BINDER COURSE
150mm AC32 BASE COURSE
150mm DTp TYPE 1 (SITE CRUSHED)
150mm DTp TYPE 6F2
(550mm O/A THICKNESS)

CAR PARK SURFACING
40mm AC10 SURFACE COURSE
60mm AC20 BINDER COURSE
250mm DTp TYPE 1 (SITE CRUSHED)
(350mm O/A THICKNESS)

** PEDESTRIAN ACCESS AREA : BLOCK PAVING
60mm THICK BLOCK PAVIOURS ON
30mm WELL COMPACTED SAND ON
150mm DTp TYPE 1 SUB-BASE (SITE CRUSHED)

** VEHICLE ACCESS AREA (CAR PARK : PERMEABLE BLOCK PAVING)
80mm BLOCK PAVING
50mm 2-6mm CLEAN STONE BEDDING ON
TERRAM 1000
320mm 4-20mm CLEAN CRUSHED STONE OGCR SUB-BASE
NON PERMEABLE MEMBRANE TO BOTTOM & SIDES

NOTE: ** BLOCK TYPE, COLOUR & LAYING PATTERN ARE TO BE TO ARCHITECTS DETAILS / SPECIFICATION.

LANDSCAPING 1
LANDSCAPE TO ARCHITECTS / SPECIALISTS DETAILS

GRAVEL MARGIN
GRAVEL MARGIN TO PERIMETER OF BUILDING & FRONT OF RETAINING WALL TO CAR PARK. WIDTH T.B.C.

GRAVEL AREA (FILTER DRAIN)
SEE DRAINAGE STANDARD DETAILS

PERIMETER FOOTWAY / SUB-STATION APRON
150mm THICK CONCRETE (C40 5%AE) SLAB REINFORCED THROUGHOUT THE TOP WITH BS MESH REF A252 (50mm COVER) ON 1200g POLYTHENE MEMBRANE ON 200mm DOT TYPE 1 SUB-BASE ON R.C.D. TREATED GROUND FORMATION MIN. 5% C.B.R.

NOTE:

L.J (LONGITUDINAL JOINTS) REQUIRED WHERE INDICATED.

D.L.J. (DE-BONDED LONGITUDINAL JOINTS) REQUIRED WHERE INDICATED.

E.J. (EXPANSION JOINTS) ARE REQUIRED AT 80m MAX. CENTRES.

D.E.J. (DRAINAGE EXPANSION JOINTS) ARE REQUIRED EACH SIDE OF DRAINAGE CHANNEL.

I.D.J (INDUCED CONTRACTION JOINT) REQUIRED WHERE INDICATED.

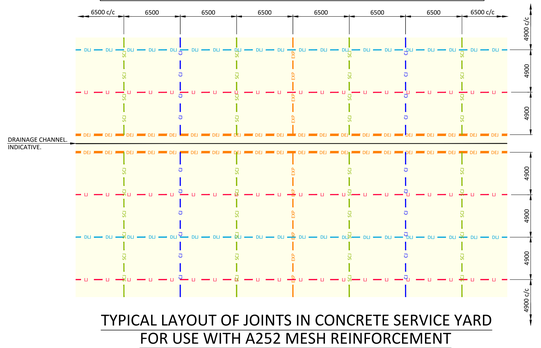
S.C.J. (SAWN CONTRACTION JOINT) REQUIRED WHERE INDICATED.

C.J. (FORMED CONTRACTION JOINTS) REQUIRED WHERE INDICATED.

REFER TO BURROWS GRAHAM DRG. No. P23025-BGL-XX-XX-DR-C-00224 FOR TYPICAL DETAILS OF JOINTS.

JOINT SPACING TO SUIT 400mm LAPS TO MESH WITH 50mm EDGE COVER.

JOINT SPACING IS INDICATIVE AND IS T.B.C. TO SUIT CONTRACTORS WORKING METHODS.



TYPICAL LAYOUT OF JOINTS IN CONCRETE SERVICE YARD FOR USE WITH A252 MESH REINFORCEMENT

SCALE 1:250

1:250 Metric
5m 0 5m 10m

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MAINTENANCE

DEMOLITION

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REV	DATE	BY	REVISION	CHK'D
C03	11.09.24	DJB	FINAL CONSTRUCTION	RM
C02	06.03.2024	TJS	NOTES ADDED RE GRAVEL MARGIN	DB
C01	06.03.2024	TJS	CONSTRUCTION ISSUE	DB
P01	01.12.2023	TJS	PRELIMINARY ISSUE	DB

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CLIENT
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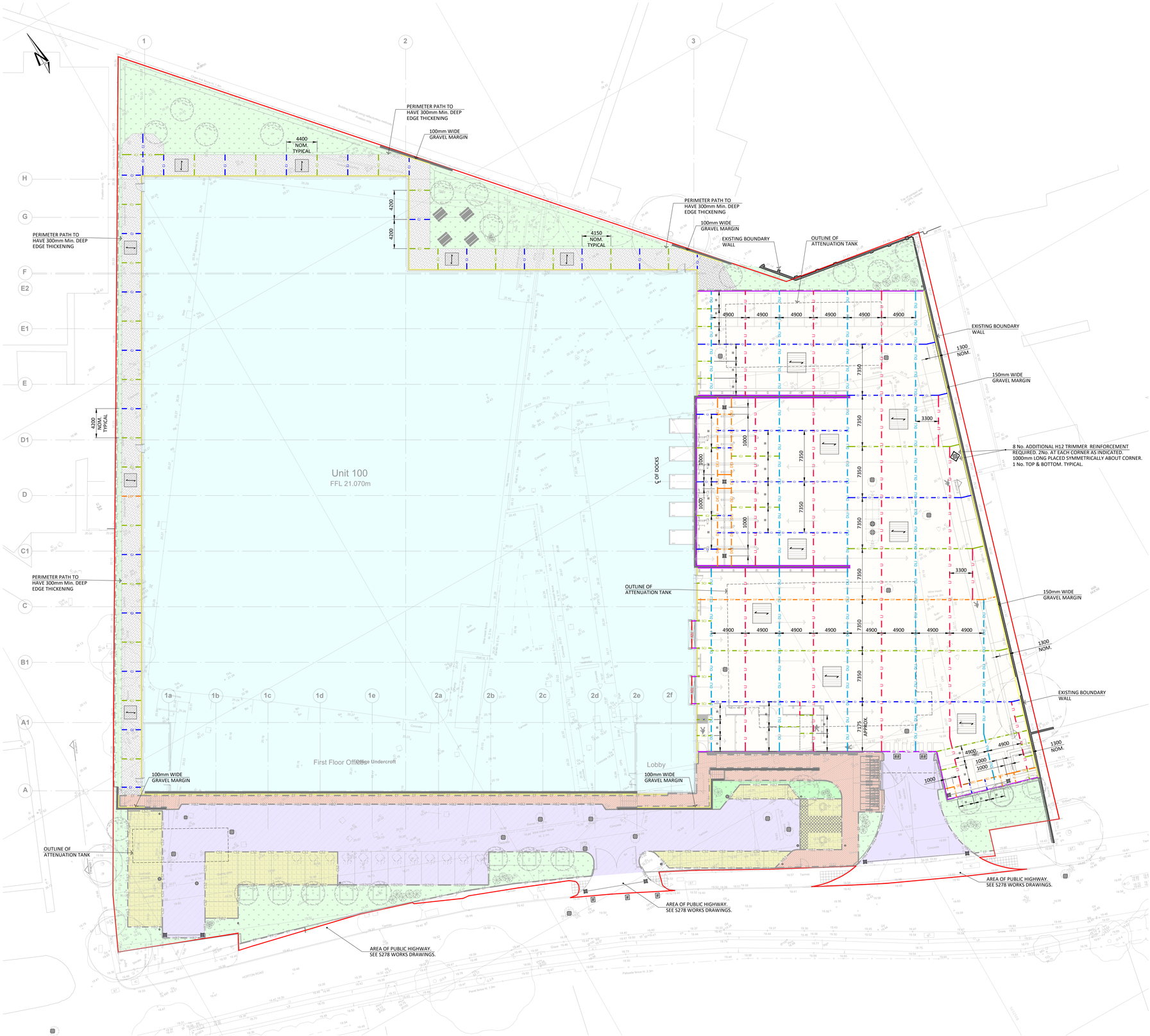
PROJECT
HORTON ROAD
POYLE

DRAWING TITLE
SLAB & PAVEMENT SPECIFICATIONS

BGL PROJECT NUMBER	DRAWING STATUS	OFFICE
22232	CONSTRUCTION	SOUTHERN
SCALE @ A0	DATE	DRAWN BY / CHECKED BY
AS SHOWN	19.06.23	TJS / DB

DRAWING No: P23025-BGL-XX-XX-DR-C-00215
REV: C03



PLAN OF JOINT LAYOUT

SCALE 1:200

1:200 Metric
1m 0 5m 10m

IMPORTANT NOTE:
ALL M&E SERVICES DRAW-PITS AND ACCESS CHAMBERS ARE TO BE COORDINATED WITH THE JOINT LAYOUT & POSITIONED SO THAT THE EDGE OF THE COVER FRAME IS AT LEAST A MINIMUM OF 1m FROM EACH JOINT.

FOR DETAILS OF JOINTS SEE DRG. No. P23025-BGL-XX-XX-DR-C-00224

KEY TO JOINT TYPE WHERE APPLICABLE

- LJ — LONGITUDINAL JOINT (L.J.)
- DLJ — DEBONDED LONGITUDINAL JOINT (D.L.J)
- DEJ — EXPANSION JOINT @ DRAINAGE CHANNEL (D.E.J.)
- EXP — EXPANSION JOINT (E.J.)
- CJ — FORMED CONTRACTION JOINT (C.J.)
- ICJ — INDUCED CONTRACTION JOINT (i.C.J.)
- SCJ — SAWN CONTRACTION JOINT (S.C.J.)
- ISOLATION JOINT (I.J.)
- TJ — TRANSITION JOINT (T.J.)
- ADJ — PERMABAN ALPHA JOINT OR SIMILAR (A.D.J.) INSTALLED BY SPECIALIST INTERNAL GROUND FLOOR CONTRACTOR

DENOTES DIRECTION OF BRUSH MARKS

NOTE:
INDICATES TRANSITION DETAIL REQUIRED AS DETAILED ON DRG. NO. P23025-BGL-XX-XX-DR-C-00224

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

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REV	DATE	BY	REVISION	CHK'D
C02	11.09.2024	DJB	FINAL CONSTRUCTION	RM
C01	13.03.2024	TJS	CONSTRUCTION ISSUE	DB

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CLIENT
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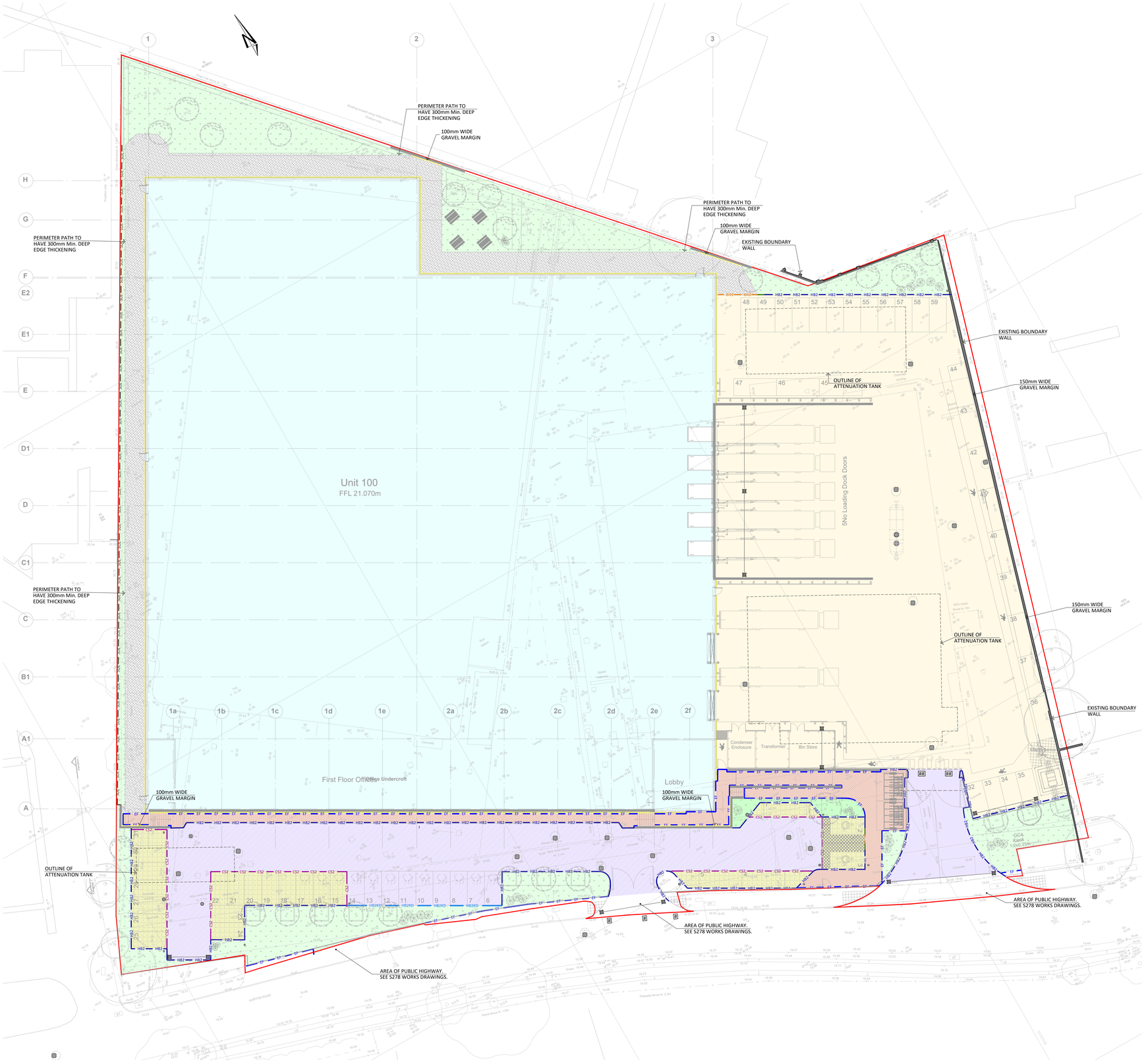
PROJECT
HORTON ROAD
POYLE

DRAWING TITLE
JOINT LAYOUT

BGL PROJECT NUMBER	DRAWING STATUS	OFFICE
22232	CONSTRUCTION	SOUTHERN

SCALE @ A0	DATE	DRAWN BY	CHECKED BY
AS SHOWN	11.03.24	TJS	DB

DRAWING No: P23025--BGL-XX-XX-DR-C-00216
REV: C02



PLAN OF KERBS
SCALE 1:200

1:200 Metric
1m 0 5m 10m

KEY TO KERBS
(WHERE APPLICABLE)

KERBS TO BE TO BS EN 1340:2003

HB1 = 150 x 305 PRECAST CONCRETE HALF BATTER KERB

HB2 = 125 x 255 PRECAST CONCRETE HALF BATTER KERB

BN3 = 305 x 150 PRECAST CONCRETE BULL NOSE KERB

BN2 = 255 x 125 PRECAST CONCRETE BULL NOSE KERB

BN3 = 125 x 150 PRECAST CONCRETE BULL NOSE KERB (6mm MAX. UPSTAND)

CS1 = 255 x 125 PRECAST CONCRETE SQUARE KERB / CHANNEL

CS2 = 150 x 125 PRECAST CONCRETE SQUARE KERB / CHANNEL

CHL = PRECAST CONCRETE SQUARE KERB / CHANNEL

EF = 150 x 50 PRECAST CONCRETE FLAT TOP EDGING

TK = TRANSITION KERB/S (AS REQUIRED)

HB2BK = BEANY BLOCK PC CONCRETE HALF BATTER KERB

HB2KD = HALF BATTER KERB DRAIN

DK = DROP KERB/S (AS REQUIRED)

DKS = DROP KERB SET INCORPORATING
(LEFT DROPPER , BN3's TO SUIT, RIGHT DROPPER)

GS = 100 x 100 GRANITE SETTS

TRSK = TRIEF SAFETY KERB
TK = TRANSITION KERB/S (AS REQUIRED)

SOE = PRECAST CONCRETE PAVING SLABS ON EDGE

TIM = TIMBER EDGING

FOR DETAILS OF KERBS SEE DRG. No. P23025-BGL-XX-XX-DR-C-00224

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

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DEMOLITION

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C03	11.09.2024	DJB	FINAL CONSTRUCTION	RM
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PROJECT
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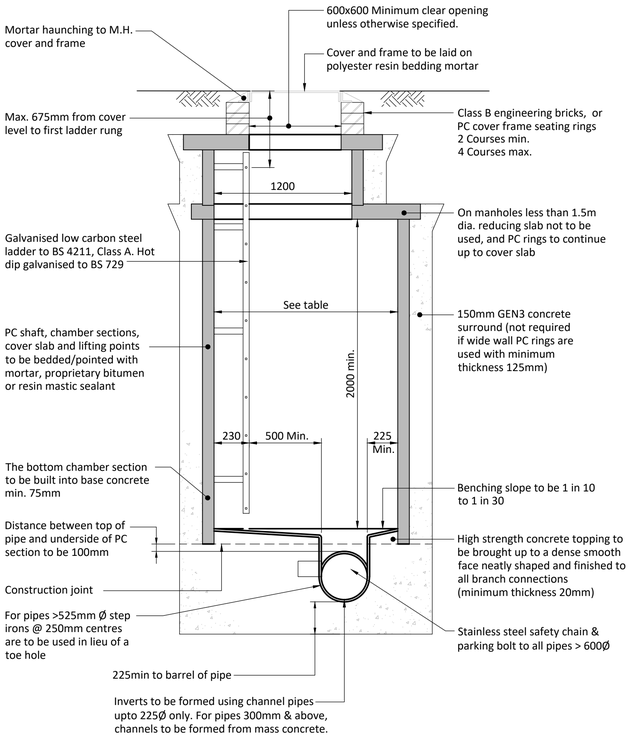
POYLE

DRAWING TITLE
KERBING LAYOUT

BGL PROJECT NUMBER	DRAWING STATUS	OFFICE
22232	CONSTRUCTION	SOUTHERN

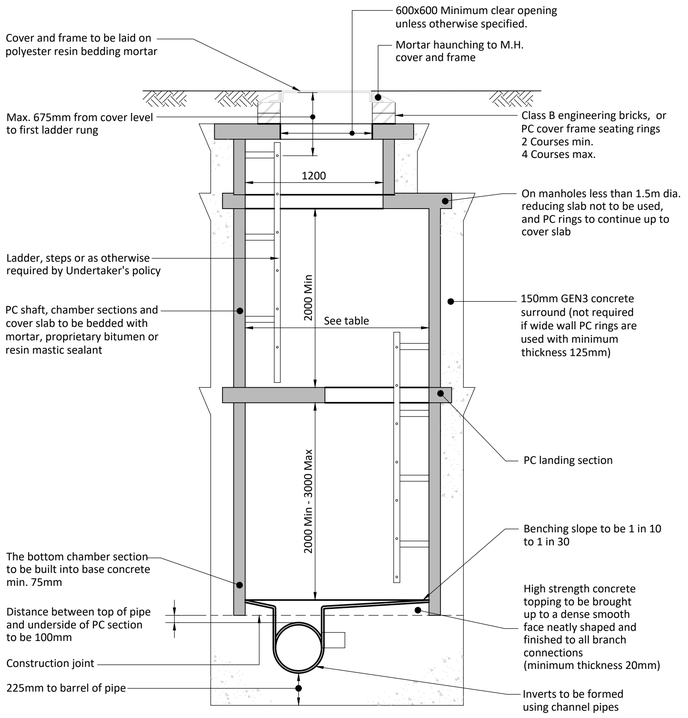
SCALE @ A0	DATE	DRAWN BY	CHECKED BY
AS SHOWN	19.06.23	TJS	DB

DRAWING No	REV
P23025--BGL-XX-XX-DR-C-00219	C03



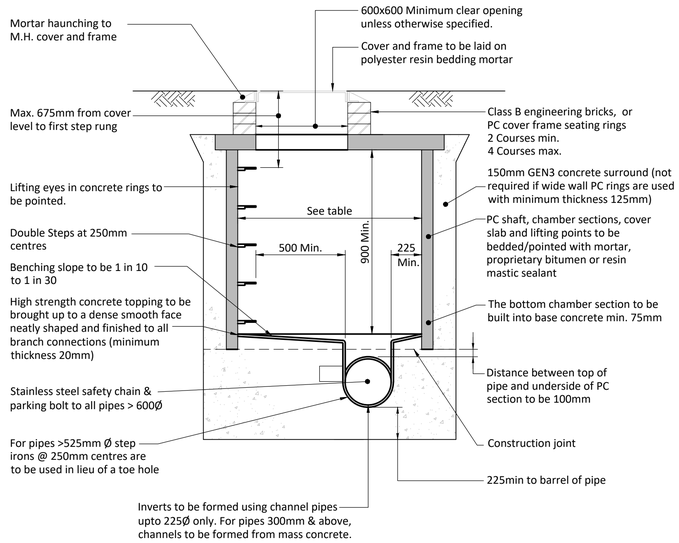
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)
LESS THAN 375mm	1200
375 - 450	1350
500 - 700	1500
750 - 900	1800
GREATER THAN 900mm	PIPE DIAMETER + 900mm

Refer to non-standard detail for manholes with more than 2No. large diameter pipes.



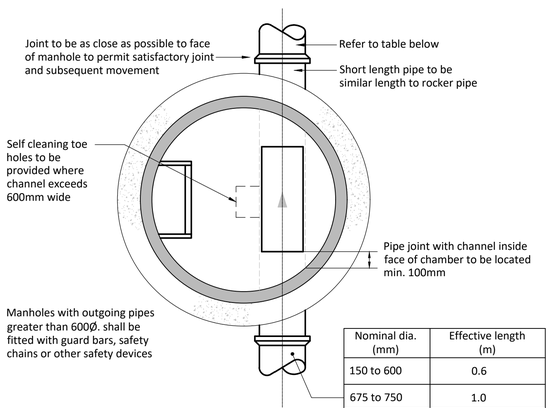
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)
LESS THAN 375mm	1200
375 - 450	1350
500 - 700	1500
750 - 900	1800
GREATER THAN 900mm	PIPE DIAMETER + 900mm

Refer to non-standard detail for manholes with more than 2No. large diameter pipes.



DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)
LESS THAN 375mm	1200
375 - 450	1350
500 - 700	1500
750 - 900	1800
GREATER THAN 900mm	PIPE DIAMETER + 900mm

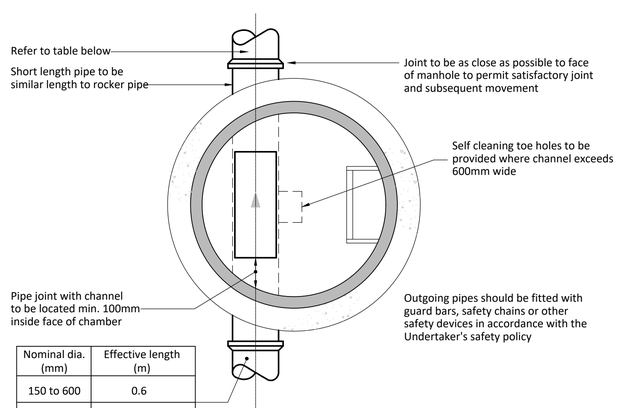
Refer to non-standard detail for manholes with more than 2No. large diameter pipes.



Nominal dia. (mm)	Effective length (m)
150 to 600	0.6
675 to 750	1.0
825 & over	1.25

TYPICAL MANHOLE DETAIL TYPE 1A

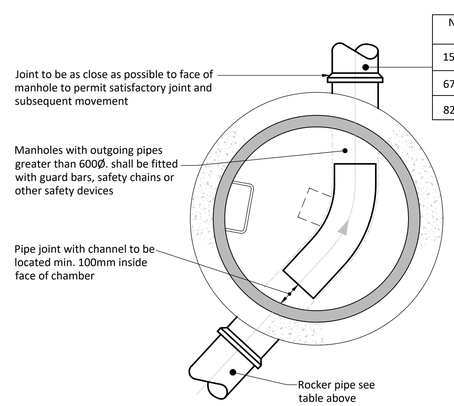
DEPTH FROM GROUND LEVEL TO SOFFIT OF PIPE 3m TO 6m



Nominal dia. (mm)	Effective length (m)
150 to 600	0.6
675 to 750	1.0
825 & over	1.25

TYPICAL MANHOLE DETAIL TYPE 1B

DEPTH FROM GROUND LEVEL TO SOFFIT OF PIPE 6m MINIMUM



Nominal dia. (mm)	Effective length (m)
150 to 600	0.6
675 to 750	1.0
825 & over	1.25

TYPICAL MANHOLE DETAIL TYPE 2

DEPTH FROM GROUND LEVEL TO SOFFIT OF PIPE 1.5m* TO 3.0m

NOTE: P.C.C CHAMBER RINGS USED FOR MANHOLES LESS THAN 1500 TO SOFFIT WITHIN HIGHWAYS FOR LOAD CLASS D400 SHALL BE 600X600 CLEAR OPENING. ALL MAINTENANCE SHALL BE CARRIED OUT FROM THE SURFACE. NO STEP RUNGS SHALL BE PROVIDED. THE COVER OPENING SHALL BE LOCATED OVER THE OUTGOING PIPE.

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DRAWING TITLE

DRAINAGE & EXTERNAL DETAILS
SHEET 1 OF 4

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22232	CONSTRUCTION	SOUTHERN	
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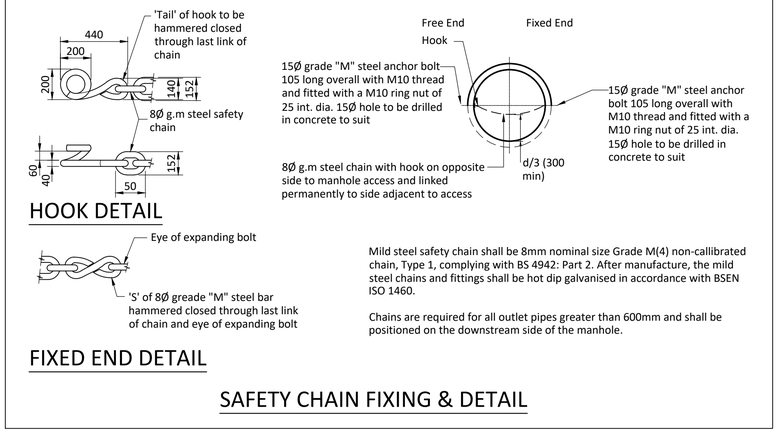
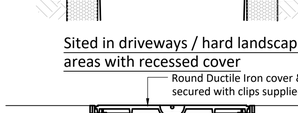
DRAWING No	REV
P23025--BGL-XX-XX-DR-C-00221	C01



HOOK DETAIL

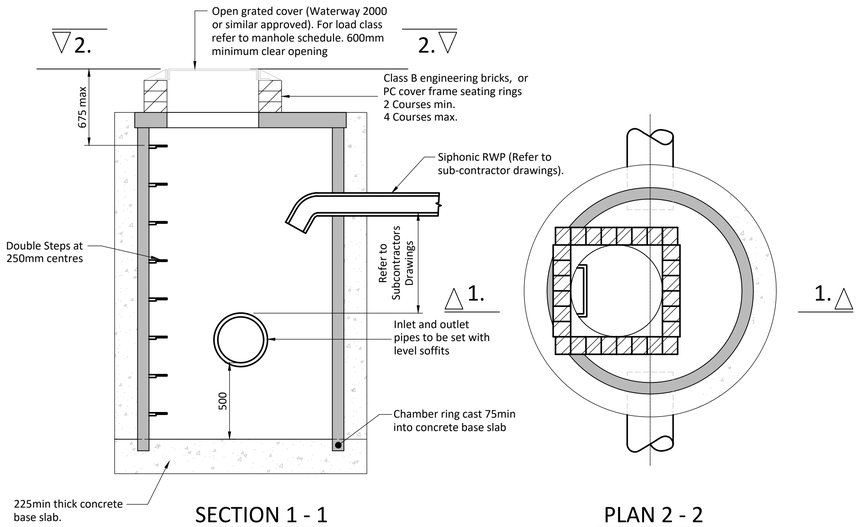


Mild steel safety chain shall be 8mm nominal size Grade M(4) non-callibrated chain, Type 1, complying with BS 4942: Part 2. After manufacture, the mild steel chains and fittings shall be hot dip galvanised in accordance with BSEN ISO 1460.

Chains are required for all outlet pipes greater than 600mm and shall be positioned on the downstream side of the manhole.

FIXED END DETAIL

SAFETY CHAIN FIXING & DETAIL

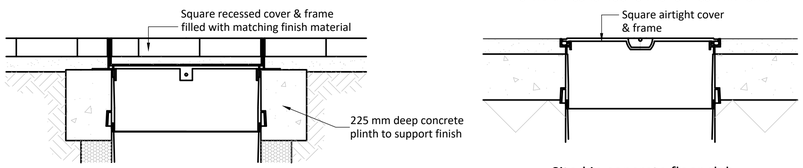


SECTION 1 - 1

PLAN 2 - 2

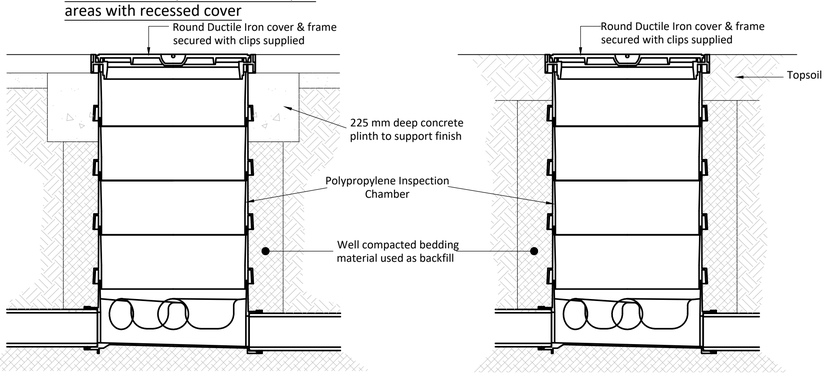
CATCHPIT MANHOLE - TO RECEIVE SIPHONIC CONNECTIONS

CHAMBER CONSTRUCTION AS FOR PCC MANHOLES



Sited in driveways / hard landscaped areas with recessed cover

Sited in concrete floor slab



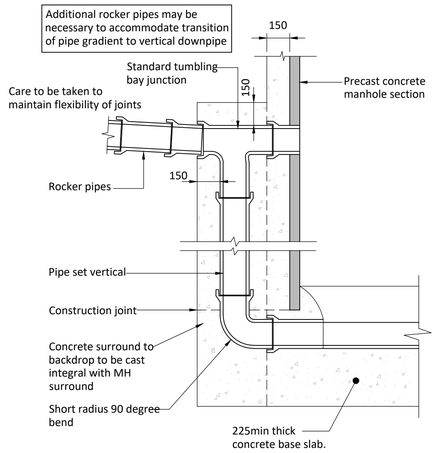
Sited in driveways / hard landscaped areas With standard round cover

Sited in soft landscaped areas With standard round cover

POLYPROPYLENE INSPECTION CHAMBER DETAIL TYPE 4

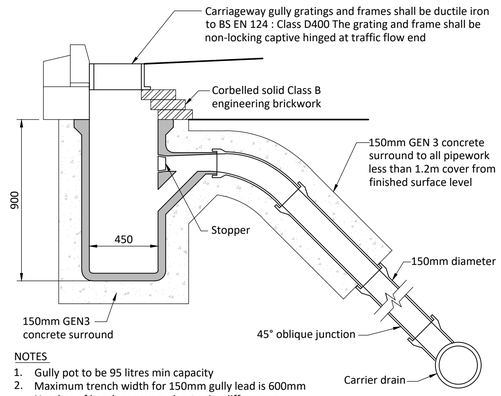
DEPTH FROM COVER LEVEL TO INVERT LEVEL < 1.2m

NB - Universal Product - Adaptor to pvc-u pipe included



TYPICAL VERTICAL BACKDROP DETAIL

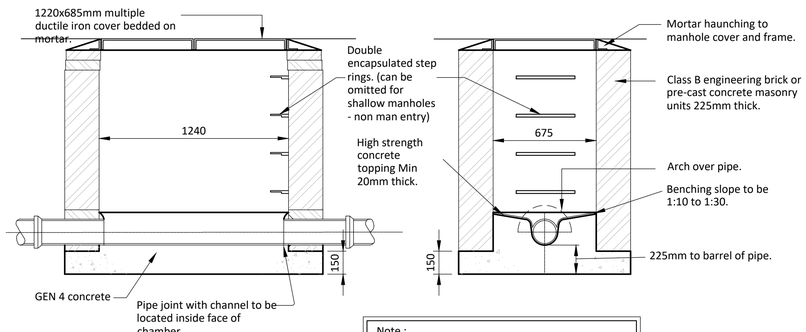
Note : Where the drop is not greater than 1.5m a 45° drop pipe may be used



NOTES

1. Gully pot to be 95 litres min capacity
2. Maximum trench width for 150mm gully lead is 600mm Number of bends may vary due to site differences
3. Concrete surround to pipes shall always finish at a joint

GULLY DETAIL WITH CONNECTION TO CARRIER DRAIN



Rocker pipe lenght

Nominal dia. (mm)	Effective length (m)
150 to 600	0.6
675 to 750	1.0
825 & over	1.25

TYPICAL MANHOLE DETAIL TYPE 4

DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE UP TO 1m

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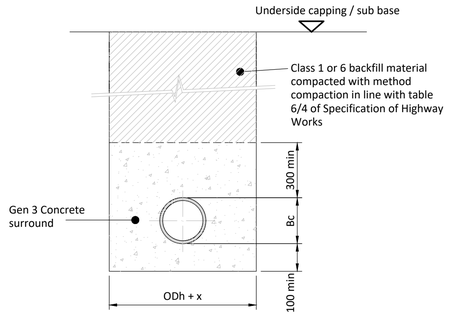
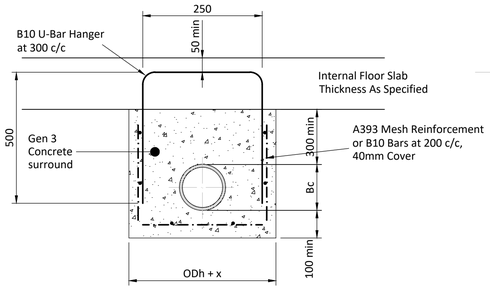
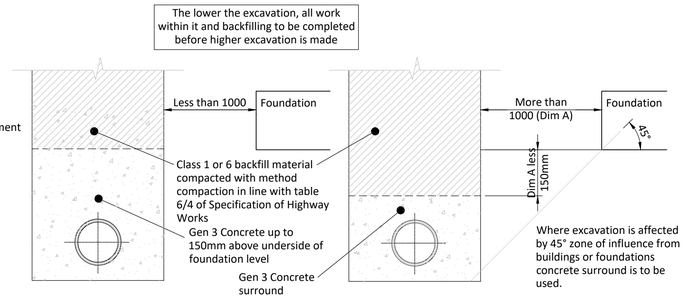


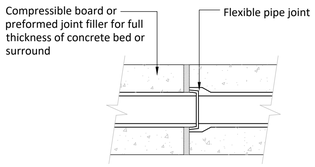
Class Z Bedding Detail



Class Y Bedding Detail



Detail indicating concrete backfilling to trenches in close proximity to building and foundations)



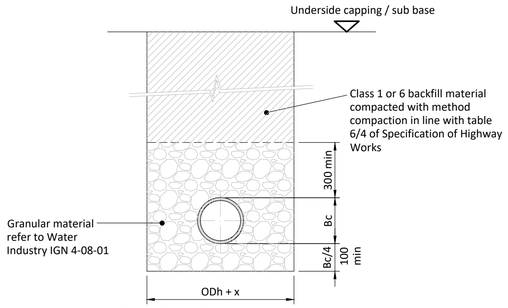
Joints for Concrete Surround to Pipes

(To occur at each pipe joint)

Pipe Ø (mm)	Joint thickness
< 450	18mm
450-1200	36mm
1200 >	54mm

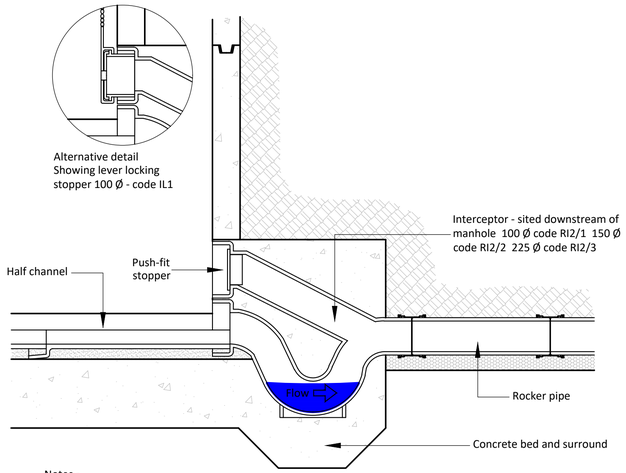
Compressible FIller Table

(Bitumen impregnated insulating board to BS 1142: Part 3)



Y value (below pipe)
Hard spots/irregular trench bottom Bc/4 (200mm min)
Even trench bottom Bc/6 (100mm min)
Bc = Outside diameter

Class S Bedding Detail



Notes -
1. Dimensions shown may vary due to manufacturing tolerances.
2. 225 Ø units are manufactured segmentally from straight pipe.

Typical Interceptor Detail

DN (mm)	Supported trench minimum width (OD_h + x) m	Unsupported trench minimum width (OD_h + x) m	
		β > 60°	β ≤ 60°
≤225	OD_h + 0.40	OD_h + 0.40	
>225 to ≤350	OD_h + 0.50	OD_h + 0.50	OD_h + 0.40
>350 to ≤700	OD_h + 0.70	OD_h + 0.70	OD_h + 0.40
>700 to ≤1200	OD_h + 0.85	OD_h + 0.85	OD_h + 0.40
>1200	OD_h + 1.00	OD_h + 1.00	OD_h + 0.40

NOTE:
In the values OD_h + x, x/2 equals the minimum working space between the pipe and the trench wall or the support if present.
Where OD_h is the horizontal outside diameter, in metres
β is the angle of unsupported trench side measured to the horizontal

Table 1 BS EN 1610 : 2015 - Minimum trench width depending on the nominal diameter (DN) of the pipe.

Trench Depth (m)	Minimum trench Width (m)
<1.00	No minimum width required
≥ 1.00 ≤ 1.75	<1.00
> 1.75 ≤ 4.00	<1.00
> 4.0	<1.00

[a] maximum depth of unsupported trench

Table 2 BS EN 1610 : 2015 Minimum trench width depending on the trench depth

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P23025-BGL-XX-XX-DR-C-00223	C01

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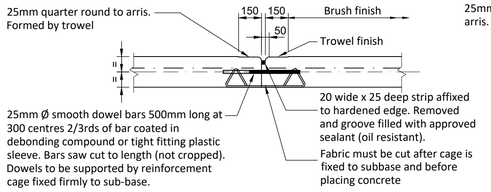
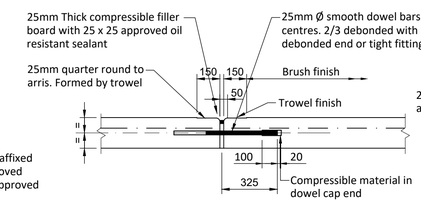
Note :
Where joint is not a 'stop end' surface groove to be sawcut 5mm wide x D / 3 deep and filled with approved sealant (oil resistant)



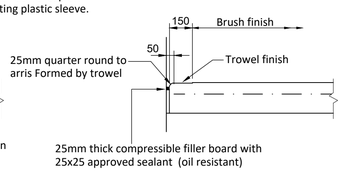
CONTRACTION JOINT - (C.J.)

(Scale 1:20)



EXPANSION JOINT - (E.J.)

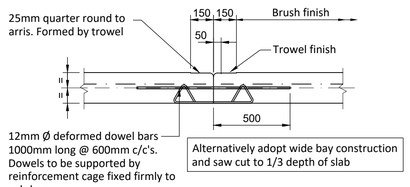
(Scale 1:20)



ISOLATION JOINT - (I.J.)

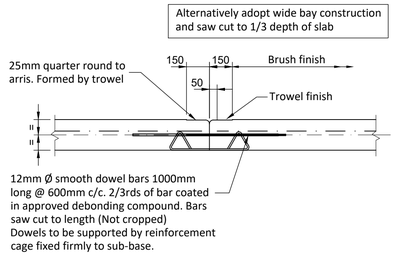
(REQUIRED AGAINST KERBS AND BUILDING STRUCTURE)

(Scale 1:20)



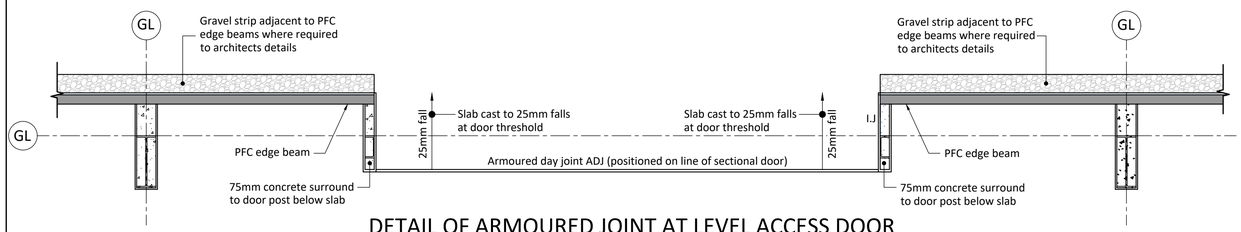
LONGITUDINAL JOINT - (L.J.)

(Scale 1:20)



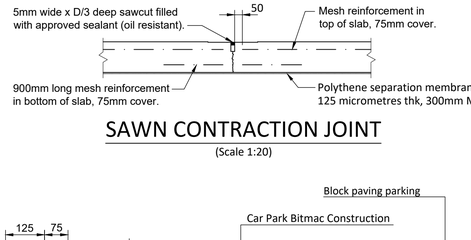
DEBONDED LONGITUDINAL JOINT - (D.L.J.)

(Scale 1:20)



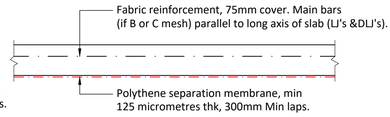
DETAIL OF ARMOURED JOINT AT LEVEL ACCESS DOOR

(Scale 1:25)



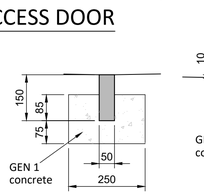
SAWN CONTRACTION JOINT

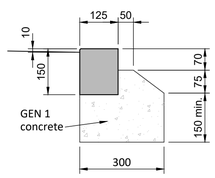
(Scale 1:20)

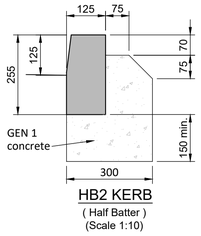


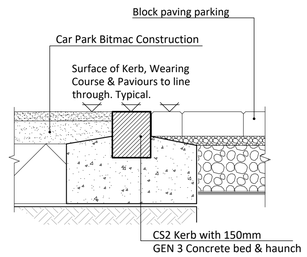
TYPICAL EXTERNAL SLAB SECTION

(Scale 1:20)



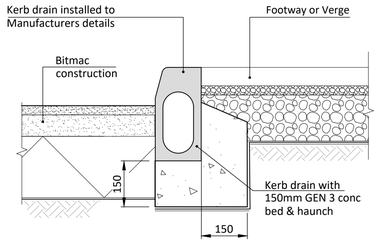






CS2 KERB / CHANNEL

Scale 1:10

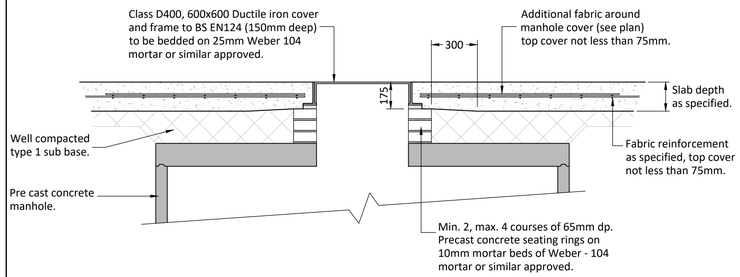


HB2BK KERB DRAINAGE

(Half Batter)
Scale 1:10

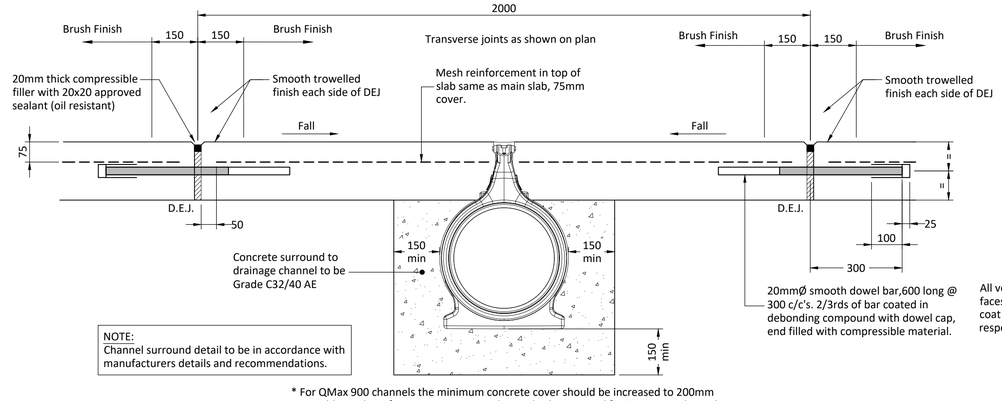
TYPICAL DETAIL OF MANHOLE COVER INSTALLATION

Scale 1:20



TYPICAL SECTION SHOWING FRAME BEDDING DETAILS

(Scale 1 : 20)

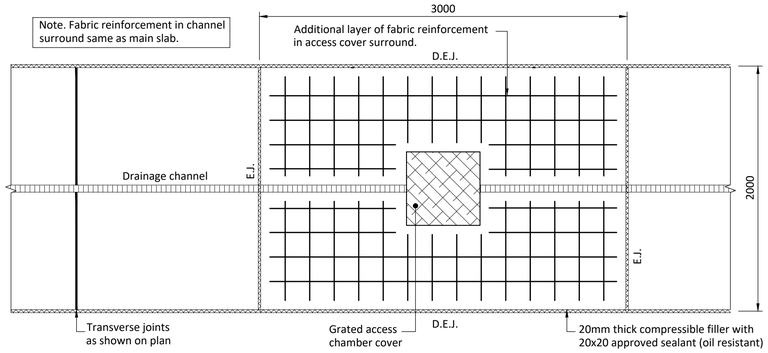


NOTE:
Channel surround detail to be in accordance with manufacturers details and recommendations.

* For QMax 900 channels the minimum concrete cover should be increased to 200mm min. Additional reinforcement to surround may also be required for QMax 900 channels.

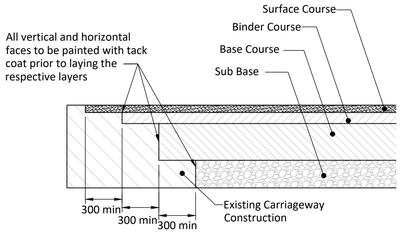
TYPICAL SECTION THROUGH DRAINAGE CHANNEL (D.E.J.)

(SCALE 1 : 10)



TYPICAL PLAN ON CHANNEL ACCESS SURROUND

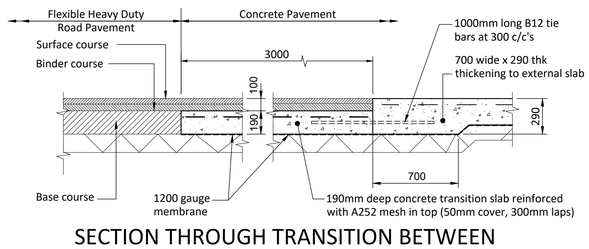
(Scale 1 : 25)



LONGITUDINAL TIE-IN DETAIL TO EXISTING CARRIAGEWAY

FOR TIE-IN TO ADOPTED HIGHWAYS REFER TO THE LOCAL APPROVING AUTHORITY'S STANDARD DETAILS

(Scale 1 : 25)



SECTION THROUGH TRANSITION BETWEEN CONCRETE YARD & ACCESS ROAD

(Scale 1:25)

REV	DATE	BY	REVISION	CHK'D
C01	11.09.2024	DJB	FINAL CONSTRUCTION	DB
P01	01.12.2023	TJS	PRELIMINARY ISSUE	DB

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CLIENT

PANATTONI

PROJECT

HORTON ROAD
POYLE

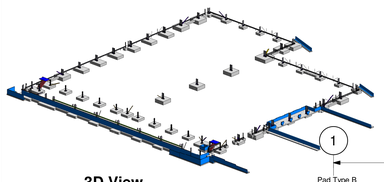
DRAWING TITLE

DRAINAGE & EXTERNAL DETAILS
SHEET 4 OF 4

BGL PROJECT NUMBER	DRAWING STATUS	OFFICE	
22232	CONSTRUCTION	SOUTHERN	
SCALE @ A1	DATE	DRAWN BY	CHECKED BY
AS SHOWN	19.06.23	TJS	DB

DRAWING No: P23025-BGL-XX-XX-DR-C-00224

REV: C01



3D View

All 600 x 600dp RC Tie/Ground Beams to have 4H16 top, bottom and sides with H10 links @ 200 centres.

Foundations Note:
In addition to building foundations, allowance to be made for the following foundation items across the site:
- Gate post foundations: To suit all gate arrangements which will be to specialist subcontractor design and to Architectural intent.
- Substation base: This will be specific to UKPN requirements but allowance for a 750mm (4 layers A393 mesh total) thick raft below the footprint of the unit.
- Totem and other signage bases. Make allowance for 1.5x1.5x0.9m pad with 4 no. layers A393 mesh to each Totem sign.
- Bases to all fences, lighting columns, bollards and time lapse camera columns. All to manufacturers details.

Pad Foundation Schedule

Pad Ref.	Pad Foundation Size	Reinforcement
Pad Type A	2000 x 2000 x 750dp	1 Layer A252 Mesh Btm. & 1 Layer A252 Mesh Top.
Pad Type B	2500 x 2500 x 750dp	1 Layer A252 Mesh Btm, 1 Layer A252 Mesh Top.
Pad Type C	3800 x 5200 x 750dp	2 Layers A252 Mesh Btm. & 1 Layer A252 Mesh Top.
Pad Type D	3600 x 3600 x 750dp	1 Layer A252 Mesh Btm. & 1 Layer A252 Mesh Top.
Pad Type E	3900 x 3900x 750dp	1 Layer A393 Mesh Btm.
Pad Type F	2900 x 2900 x750dp	1 Layer A252 Mesh Btm. & 1 Layer A252 Mesh Top.
Pad Type G	4500 x 4500 x 1200dp	2 Layers A252 Mesh Btm. & 1 Layer A252 Mesh Top.
Pad Type H	3600 x 3600 x 1200dp	2 Layers A252 Mesh Btm. & 1 Layer A252 Mesh Top.
Pad Type H1	3600 x 3600 x 1500dp	2 Layers A252 Mesh Btm. & 1 Layer A252 Mesh Top.
Pad Type J	4000 x 4000 x 1200dp	2 Layers A252 Mesh Btm. & 1 Layer A252 Mesh Top.
Pad Type K	1000 x 1000 x750dp	1 Layer A252 Mesh Btm.
Pad Type L	3800 x 3800 x 1200dp	2 Layers A252 Mesh Btm. & 1 Layer A252 Mesh Top.
Pad Type M	2900 x 4500 x 900dp	2 Layers B1131 Mesh Btm. (Laid with main bars in alternating directions), 2 Layers A252 Mesh Top.
Pad Type N	450 x 450 x 300dp	Mass Concrete
Pad Type X	3600 x 4000 x 1070dp	1 Layer A252 Mesh Btm. & 1 Layer A252 Mesh Top.
Grand total: 73		

Note:
Mesh requirements listed above are a minimum. Pads subjected to uplift forces such as those in braced bays will require 1 layer A252 mesh in the top of the pad in addition to bottom mesh.

In addition to the mesh requirements listed above please consider the below

Member	Bar mark	Type and size		No. of bars in each	Total no.	Length of each bar mm	Shape code	A mm	B mm	C mm	D mm	E/R mm	Weight Kgs	Dev letter
		Top	Side											
Tie Beam	01	H	10	8	39	312	2150	51	500	475	150	150		
	02	H	16	8	8	64	7750	00	7750					
Ground Beam on GL. A	03	H	12	1	28	28	4650	51	1600	625	150	150		
	04	H	12	1	28	28	3050	51	800	625	150	150		
	05	H	16	1	22	22	7000	00	7000					

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING

CONSTRUCTION

MAINTENANCE

DEMOLITION

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

GENERAL NOTES:

1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and performance and design specifications.

2. This drawing is not to be scaled. all dimensions are in mm unless noted otherwise.

3. All materials and workmanship to be in accordance with the requirements of the latest relevant Standards and Codes of Practice.

4. All dimensions and setting out are to be confirmed by the Architect and checked on site. Any discrepancies to be reported to the Engineer.

5. All concrete bases to be located concentrically under stanchion centre lines unless noted otherwise

6. All foundations to be poured in one continuous pour unless agreed otherwise with Burrows Graham.

7. All foundations, where applicable, to have top 50 cover and bottom, 75 cover, unless noted otherwise. Where top mesh has been cut to accommodate bolt boxes, loose H10 bars at 100 centres to be provided (lap length 40 x diameter).

8. All insitu concrete works to be in grade C32/40 concrete designed to DC1 classification, to the latest editions of BS EN 206-1 and BS 8500-1 & 2. Refer to Geo-Environmental Assessment notes for appropriate mix design recommendations.

9. All reinforcement to be high yield (fy=500 N/mm2/) to BS 4449. Steel fabric reinforcement to be to BS 4483.

10. Where foundations are to be loaded prior to 28 day concrete strength being achieved Burrows Graham must be consulted. An alternative concrete specification may be required.

11. Foundations are to be founded within engineered fill or natural ground. Any other excavation necessary in soft areas are to be backfilled to underside of foundation level using concrete fill.

12. Top level of foundations shall be as noted on the plans. Typically to be 350mm below SSL unless noted otherwise.

13. The steelwork design contractor is to design the holding down bolt, based on depths of foundation shown, pull out value using an allowable shear stress vc of the mass concrete base of 0.4N/mm². These bases are to be considered as unreinforced for holding down bolt calculations.

14. Fire boundary conditions have been determined by the Architect.

15. Bracing locations and steelwork loads have been determined by Severfields steelwork fabricators.

16. For orientation & setting out of stanchion baseplate holding down bolts refer to steelwork subcontractors drawings.

17. For latest drainage layout, refer to drg no. P23025-BGL-XX-XX-DR-C-00200.

Legend

Site Boundary

REV	DATE	BY	REVISION	CHK
C03	26/07/24	DRB	Final Construction.	DB
C02	07/03/24	DRB	Detail Sections & Precast Dock Slab Updated.	DB
C01	04/03/24	DRB	For Construction.	DB
P03	23/02/24	DRB	For Information.	DB
P02	22/02/24	DRB	For Information.	DB
P01	05/12/23	DRB	Preliminary Issue.	DB

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PROJECT

HORTON ROAD POYLE

DRAWING TITLE

Foundation G.A.

OUR PROJECT NUMBER	DRAWING STATUS	OFFICE
22232	FINAL CONSTRUCTION	SOUTH

SCALE @ A0	DATE	DRAWN BY	CHECKED BY
As indicated	05/12/23	DRB	DB

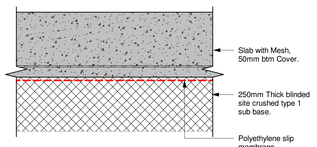
DRAWING No: P23025-BGL-XX-XX-DR-S-00100 REV: C03

Warehouse Foundation G.A.

1 : 150

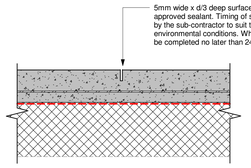
SECTION 1-1

1 : 50

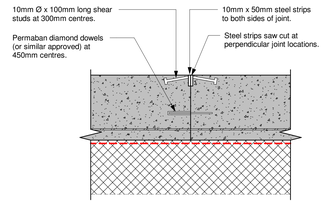


Formation level of capping layer to rigid inclusions to be rolled and compacted to achieve a min 5% CBR Contractor to allow for heavy compaction roller or engineered fill where significate areas of fill are required under the slab. Contractor to consider using Terram 2000 stone saver matting if needed to suit ground conditions.

Office Slab Make up
(for Main Warehouse slab design refer to Specialist Flooring Contractors Details)

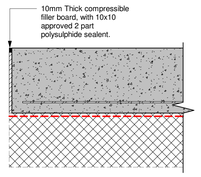


Office Typical Saw Cut Joint
(for Main Warehouse slab design refer to Specialist Flooring Contractors Details)

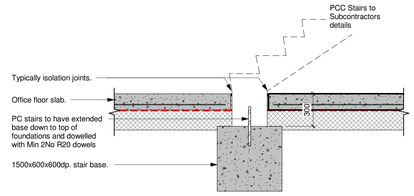


- Detail shown is Permaban strip joint detail - other proprietary joints are available from the various flooring contractors,
- Steel plate to be minimum 10mm thick,
- Use for all formed contraction joints in trafficked areas,
- Level of steel plate to be checked with precision level equipment prior to casting.

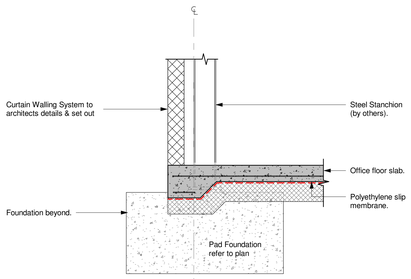
Office Armoured Day Joint (ADJ)
(for Main Warehouse slab design refer to Specialist Flooring Contractors Details)



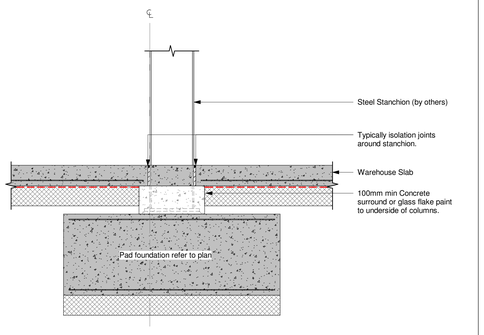
Office Typical Isolation Joint
(for Main Warehouse slab design refer to Specialist Flooring Contractors Details)



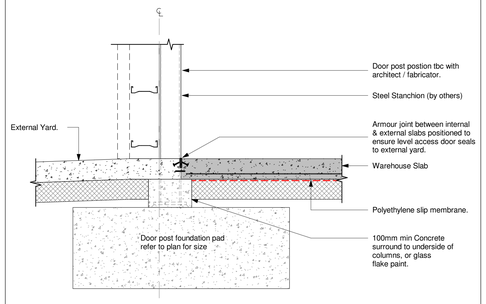
PC Stair Support Detail



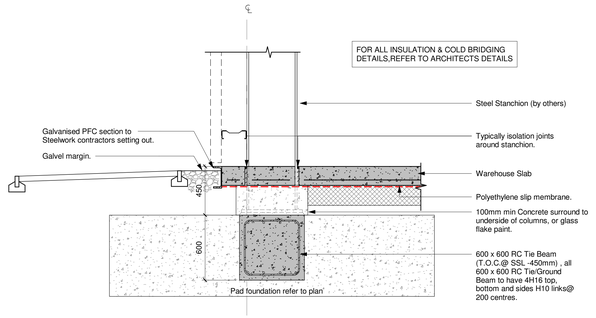
Slab Edge Thickening at Curtain wall locations



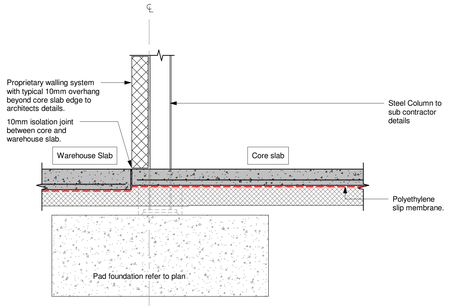
Typical Section Through Valley Column



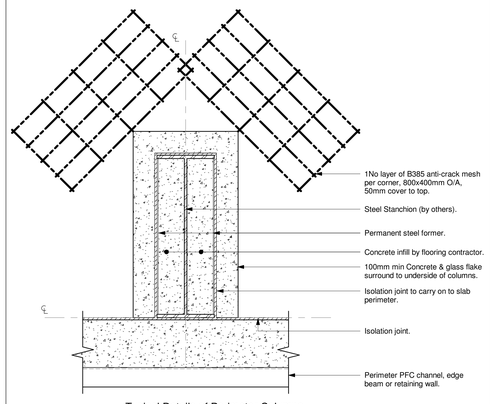
Typical Section Through Level Access Door



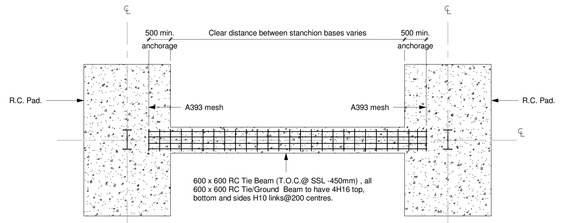
Typical Section Through 600x600 R.C. Tie Beam



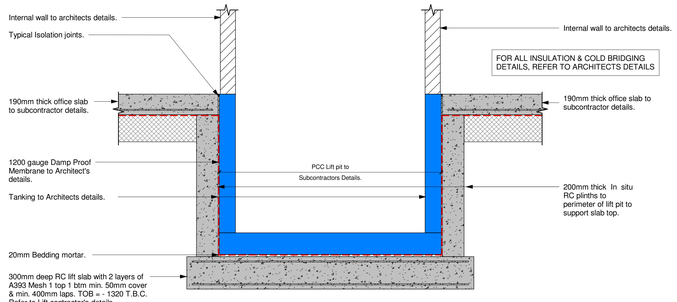
Typical Interface Between Core & Warehouse Slab



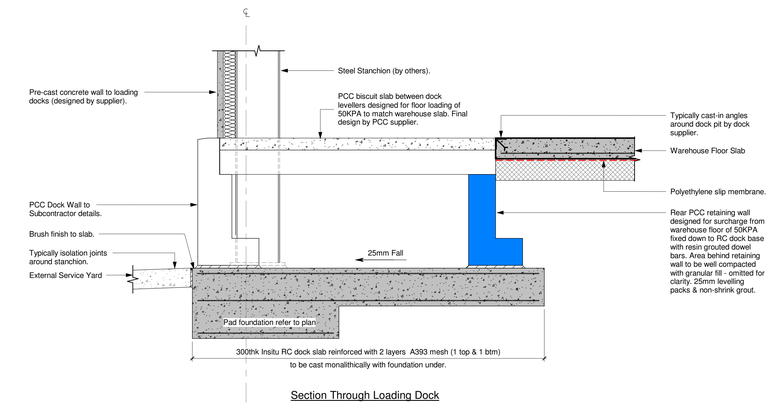
Typical Details of Perimeter Columns



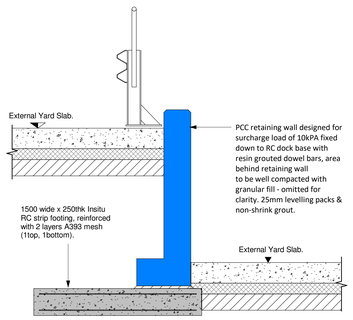
Typical G.A. and R.C. Details on 600 x 600 Tie Beams



Section Through PC Lift Pit



Section Through Loading Dock



Section Through Yard Retaining Wall

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING

CONSTRUCTION

MAINTENANCE

DEMOLITION

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5. All concrete bases to be located concentrically under stanchion centre lines unless noted otherwise

6. All foundations to be poured in one continuous pour unless agreed otherwise with Burrows Graham.

7. All foundations, where applicable, to have top 50 cover and bottom, 75 cover, unless noted otherwise. Where top mesh has been cut to accommodate bolt boxes, loose H10 bars at 100 centres to be provided (lap length 40 x diameter).

8. All reinforcement to be high yield (fy=500 N/mm2/) to BS 4449. Steel fabric reinforcement to be to BS 4483.

9. Where foundations are to be loaded prior to 28 day concrete strength being achieved Burrows Graham must be consulted. An alternative concrete specification may be required.

10. Foundations are to be founded within engineered fill onto CMC piling / ground improvement solutions. Any other excavation necessary in soft areas are to be backfilled to underside of foundation level using concrete fill.

11. Top level of foundations shall be 450mm below finished floor level UNO. Foundations to be lowered locally where necessary to acomodate siphonic drainage.

12. The steelwork design contractor is to design the holding down bolt, based on depths of foundation shown, pull out value using an allowable shear stress vc of the mass concrete base of 0.4N/mm². These bases are to be considered as unreinforced for holding down bolt calculations.

13. Fire boundary conditions TBC by architect and steelwork contractor.

14. Bracing locations and final loads are to be confirmed by steelwork contractor. Bracing locations shown on drawing are assumed. All steelwork detailed by steelwork fabricator.

15. For any internal portal bracing required by steelwork contractor, foundations to be set at 750mm below finished floor level if required to allow baseplate gussets to be concealed below slab level.

16. For orientation & setting out of stanchion baseplate holding down bolts refer to steelwork subcontractors drawings.

17. For latest drainage layout, refer to drg no. 22232-BGL-XX-DR-C-00250.

18. Information is in conjunction with architect's project reference: 22400.

REV	DATE	BY	REVISION	CHK
C01	26/07/24	DRB	Final Construction.	DB
P01	05/12/23	DRB	Preliminary Issue.	DB

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Tel:+44 (0)144 250 8402

CLIENT

PANATTONI

PROJECT

HORTON ROAD POYLE

DRAWING TITLE

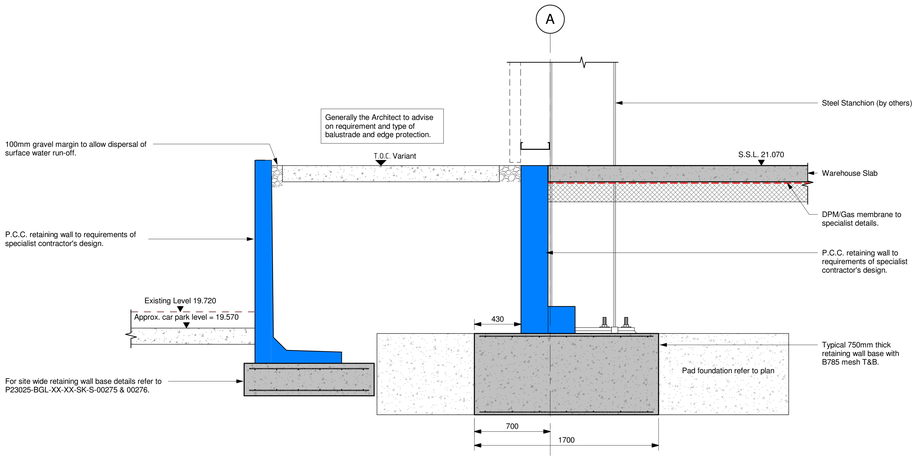
Foundation & Slab Typical Sections & Details

OUR PROJECT NUMBER	DRAWING STATUS	OFFICE
22232	FINAL CONSTRUCTION	SOUTH

SCALE @ A2	DATE	DRAWN BY	CHECKED BY
As indicated	05/12/23	DRB	DB

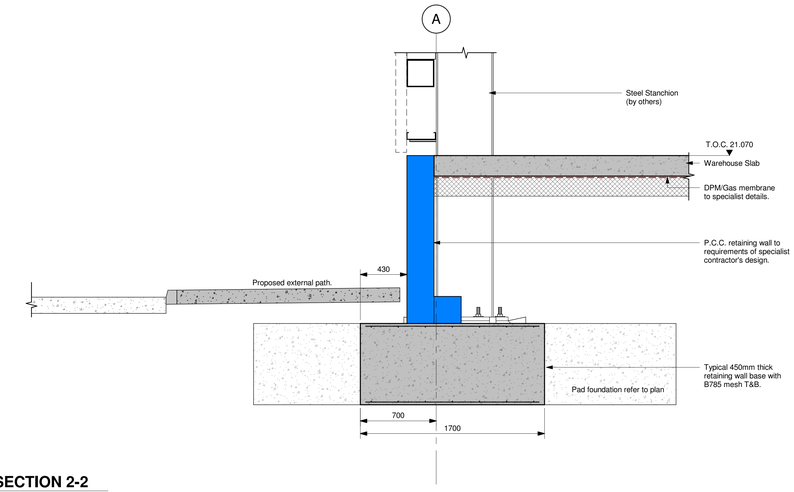
DRAWING No: P23025-BGL-XX-XX-DR-S-00105

REV: C01



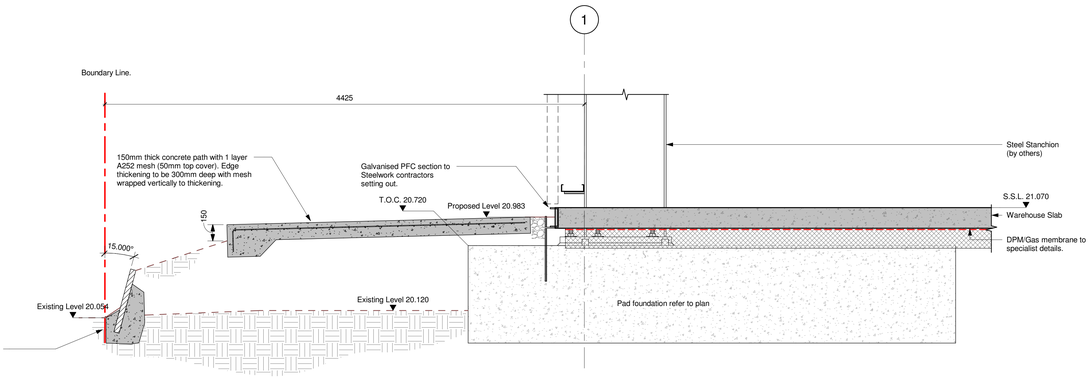
SECTION 1-1

1 : 20



SECTION 2-2

1 : 20



SECTION 3-3

1 : 20

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

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DEMOLITION

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7. All foundations, where applicable, to have top 50 cover and bottom, 75 cover, unless noted otherwise. Where top mesh has been cut to accommodate bolt boxes, loose H10 bars at 100 centres to be provided (lap length 40 x diameter).

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14. Bracing locations and final loads are to be confirmed by steelwork contractor. Bracing locations shown on drawing are assumed. All steelwork detailed by steelwork fabricator.

15. For any internal portal bracing required by steelwork contractor, foundations to be set at 750mm below finished floor level if required to allow baseplate gussets to be concealed below slab level.

16. For orientation & setting out of stanchion baseplate holding down bolts refer to steelwork subcontractors drawings.

17. For latest drainage layout, refer to drg no. 22232-BGL-XX-DR-C-00250.

18. Information is in conjunction with architect's project reference: 22400.

REV	DATE	BY	REVISION	CHK
C02	26/07/24	DRB	Final Construction.	DB
C01	07/03/24	DRB	For Construction.	DB
P01	05/12/23	DRB	Preliminary Issue.	DB

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CLIENT

PANATTONI

PROJECT

HORTON ROAD POYLE

DRAWING TITLE

Foundation & Slab Sections

OUR PROJECT NUMBER	DRAWING STATUS	OFFICE
22232	FINAL CONSTRUCTION	SOUTH

SCALE @ A0	DATE	DRAWN BY	CHECKED BY
1 : 20	05/12/23	DRB	DB

DRAWING No	REV
P23025-BGL-XX-XX-DR-S-00106	C02