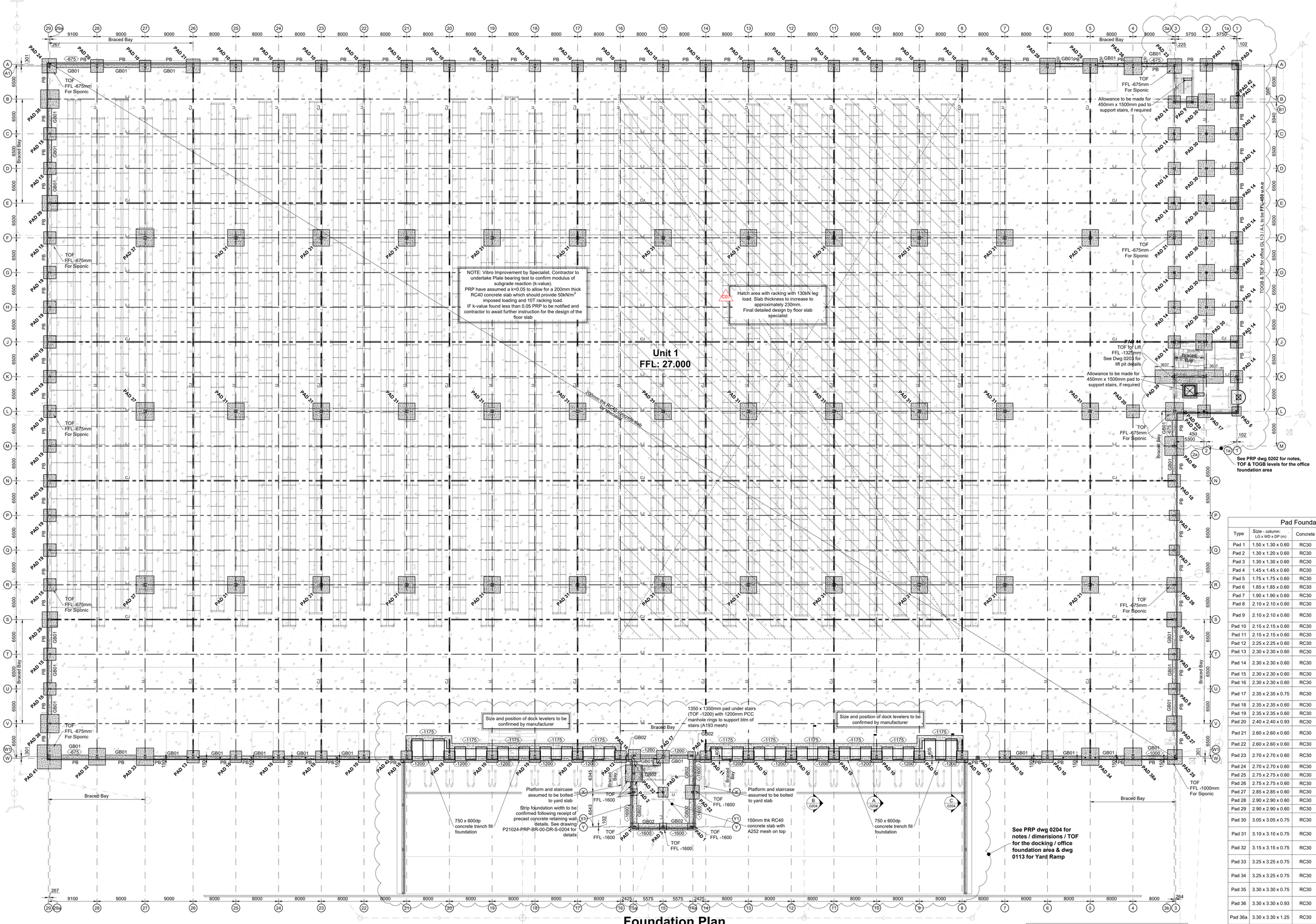
P21-024 Calder Park

Drawing Register: PRP

Works Completed: Engineers

Final Drawings

Drawing No.	Drawing Title	Rev
P21024-PRP-BR-00-DR-S-0201	Foundations Layout	C8
P21024-PRP-BR-00-DR-S-0202	Foundations - Slab and Foundations for Office	C5
P21024-PRP-BR-00-DR-S-0203	Foundations - Slab and Foundations Details	C4
P21024-PRP-BR-00-DR-S-0204	Foundations - Docking and Yard Office Details	C4
P21024-PRP-BR-00-DR-S-0205	Foundations Revolving Door Recess Detail Curtain Edging Detail	C3
P21024-PRP-BR-00-DR-S-0207	Foundations Sprinkler Tank Slab	C1
P21024-PRP-BR-00-DR-S-0209	Unit 1 Meter Termination Cubicle Pit	C2
P21024-PRP-BR-00-DR-S-0210	Foundations Layout	C2
P21024-PRP-BR-00-DR-S-0220	Gatehouse Slab	C2
P21024-PRP-BR-00-DR-S-0221	Gatehouse Reinforcement	C2
P21024-PRP-BR-00-SH-S-0212	Bar bending schedule	C2
P21024-PRP-EX-00-DR-C-0101	Drainage Layout	C8
P21024-PRP-EX-00-DR-C-0102	Drainage Construction Details	C2
P21024-PRP-EX-00-DR-C-0103	Proposed Site Accesses Drainage Layout & Details	C3
P21024-PRP-EX-00-DR-C-0110	External Works	C3
P21024-PRP-EX-00-DR-C-0111	External Works Construction Details	C4
P21024-PRP-EX-00-DR-C-0113	External Works Ramp Retaining Wall	C2
P21024-PRP-EX-00-DR-C-0115	External Works Yard & Footpath Slab Joint Layout Sheet 1 of 2	C3
P21024-PRP-EX-00-DR-C-0116	External Works Yard & Footpath Slab Joint Layout & Details - Sheet 2 of 2	C2
P21024-PRP-EX-00-DR-C-0117	Proposed Site Accesses Layout & Details	C3



Top of Foundation (TOF) Generally FFL - 350mm unless noted otherwise.
Office GL 1-3 / A-L Office TOF=FFL-450mm u.n.o.

ALL DRAWINGS AND SETTING OUT TO ARCHITECTS / STEEL FABRICATORS DRAWINGS

CS2 tapped and sealed gas membrane under slab

GBP = 150kN/m² subject to Vibro Ground Improvement

LEGEND:

PB	Perimeter Beam UKPFC by Steel Fabricator
LJ	Longitudinal Joint
IJ	Induced Joint
CJ	Contraction Joint

Slab joints shown indicatively. Final positions to be coordinated with racking layout, if available

Ground Beams Schedule

Ground Beam	Size [mm]	Reinforcement		
Ref	wd x dp	TOP	BTM	Links
GB01	600 x 600	4 H12	4 H16	4legsH8@200
GB02	1200 x 600	A393	A393	

Pad Foundations

Type	Size - column: LG x WD x DP (m)	Concrete	Reinforcement
Pad 1	1.50 x 1.30 x 0.60	RC30	A193 Mesh top and bottom
Pad 2	1.30 x 1.20 x 0.60	RC30	A252 Mesh top and bottom
Pad 3	1.30 x 1.30 x 0.60	RC30	A252 Mesh top and bottom
Pad 4	1.45 x 1.45 x 0.60	RC30	A193 Mesh top and bottom
Pad 5	1.75 x 1.75 x 0.60	RC30	A393 Mesh top and bottom
Pad 6	1.85 x 1.85 x 0.60	RC30	A393 Mesh top and bottom
Pad 7	1.90 x 1.90 x 0.60	RC30	A193 Mesh top and bottom
Pad 8	2.10 x 2.10 x 0.60	RC30	A193 Mesh top and bottom
Pad 9	2.10 x 2.10 x 0.60	RC30	2 Layers A393 Mesh bottom and 1 layer top
Pad 10	2.15 x 2.15 x 0.60	RC30	A193 Mesh top and bottom
Pad 11	2.15 x 2.15 x 0.60	RC30	A252 Mesh top and bottom
Pad 12	2.25 x 2.25 x 0.60	RC30	A252 Mesh top and bottom
Pad 13	2.30 x 2.30 x 0.60	RC30	A252 Mesh top and bottom
Pad 14	2.30 x 2.30 x 0.60	RC30	2 Layers A393 Mesh bottom and 1 layer top
Pad 15	2.30 x 2.30 x 0.60	RC30	A193 Mesh top and bottom
Pad 16	2.30 x 2.30 x 0.60	RC30	A393 Mesh top and bottom
Pad 17	2.35 x 2.35 x 0.75	RC30	2 Layers A393 Mesh bottom and 1 layer top
Pad 18	2.35 x 2.35 x 0.60	RC30	A393 Mesh top and bottom
Pad 19	2.35 x 2.35 x 0.60	RC30	A193 Mesh top and bottom
Pad 20	2.40 x 2.40 x 0.93	RC30	A393 Mesh top and bottom
Pad 21	2.60 x 2.60 x 0.60	RC30	2 Layers A393 Mesh bottom and 1 layer top
Pad 22	2.60 x 2.60 x 0.60	RC30	A252 Mesh top and bottom
Pad 23	2.70 x 2.70 x 0.60	RC30	2 Layers A393 Mesh bottom and 1 layer top
Pad 24	2.70 x 2.70 x 0.60	RC30	A252 Mesh top and bottom
Pad 25	2.75 x 2.75 x 0.60	RC30	A252 Mesh top and bottom
Pad 26	2.75 x 2.75 x 0.60	RC30	A193 Mesh top and bottom
Pad 27	2.85 x 2.85 x 0.60	RC30	A252 Mesh top and bottom
Pad 28	2.90 x 2.90 x 0.60	RC30	A393 Mesh top and bottom
Pad 29	2.90 x 2.90 x 0.60	RC30	A193 Mesh top and bottom
Pad 30	3.05 x 3.05 x 0.75	RC30	3 Layers A393 Mesh bottom and 1 layer top
Pad 31	3.10 x 3.10 x 0.75	RC30	2 Layers A393 Mesh bottom and 1 layer top
Pad 32	3.15 x 3.15 x 0.75	RC30	2 Layers A393 Mesh bottom and 1 layer top
Pad 33	3.25 x 3.25 x 0.75	RC30	3 Layers A393 Mesh bottom and 1 layer top
Pad 34	3.25 x 3.25 x 0.75	RC30	2 Layers A393 Mesh bottom and 1 layer top
Pad 35	3.30 x 3.30 x 0.75	RC30	3 Layers A393 Mesh bottom and 1 layer top
Pad 36	3.30 x 3.30 x 0.93	RC30	2 Layers A393 Mesh bottom and 1 layer top
Pad 36a	3.30 x 3.30 x 1.25	RC30	2 Layers A393 Mesh bottom and 1 layer top
Pad 37	3.35 x 3.35 x 0.75	RC30	2 Layers A393 Mesh bottom and 1 layer top
Pad 38	3.45 x 3.45 x 0.75	RC30	2 Layers A252 Mesh bottom and 1 layer top
Pad 39	12.80 x 2.50 x 1.15	RC30	H20 bars @ 150mm crs btm and H16 bars top
Pad 40	3.55 x 3.55 x 0.93	RC30	2 Layers A252 Mesh bottom and 1 layer top
Pad 41	4.50 x 4.50 x 0.75	RC30	3 Layers A393 Mesh bottom and 1 layer top
Pad 42	0.60sq or 0.60dia x 0.60dp	RC30	Pad to support Level Access Doors / Glazing posts
Pad 42a	0.60sq or 0.60dia x 0.95dp	RC30	Pad to support Level Access Doors / Glazing posts
Pad 43	0.45sq or 0.45dia x 0.40dp	RC30	If required - Pad to support Perimeter Beam
Pad 44 Lift Slab	2.75 x 2.75 x 0.30	RC30	A393 Mesh top and bottom

Notes:

1. DO NOT SCALE FROM THIS DRAWING.
2. All dimensions are in millimetres Unless Noted Otherwise (u.n.o.)
3. Drawing is to be read in conjunction with all relevant architect's drawings. Any inconsistencies should be reported to PRP immediately.
4. All levels and dimensions are to be checked on site before any work commences.
5. For more information see PRP drawings:
   63150 - 100series - Drainage and External Works
   63150 - 200series - Foundations
   63150 - 300series - Superstructure
6. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, safety boots, reflective clothing, and the use of any other required safety equipment.

Foundations:

1. Concrete for foundations shall be Designated Concrete produced in accordance with BS 8500.
   Trench fill foundations - GEN3
   Pad foundations - RC30
   Ground Beams - RC35
2. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP.
3. All pad and strip foundations shall be placed central beneath columns and walls respectively u.n.o.
4. All foundations are to be founded on undisturbed natural material unless agreed with PRP.
5. Any changes in ground conditions are to be reported to PRP immediately.
6. Foundation excavations to be inspected by PRP at the request of the client or by Building Control officer to ensure that the ground bearing pressure is in excess of 150kN/m².
7. All excavations are be free from debris prior to placement of concrete.
8. Standing water and softened material shall be removed from bottom of excavations prior to placement of concrete.
9. Concrete shall be protected from both frost and moisture loss during the curing stage.
10. Top surface of foundations shall be uniformly level
11. Where required formwork shall be constructed to produce foundations to the dimensions and shapes indicated on drawing
12. Formwork shall be constructed so there is no loss of concrete material
13. Concrete foundations shall be laid within the permissible deviations given in Tables 2 & 3 of BS 5606 for in - situ concrete unless agreed with PRP
14. Contractor to lay out positions of drainage and services prior to pouring of foundations, and notify engineer of any conflicts
15. Reinforcement to be high yield steel to BS 4449
16. Minimum lap lengths to be:
    H10 - 450mm H12 - 500mm
    H16 - 650mm H20 - 800mm
17. Mesh reinforcement shall be to BS 4483
18. Cover to all steel reinforcement, including links shall be 50mm top & sides and 75mm bottom
19. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above

Slab:

1. Concrete for slab shall be Designated Concrete produced in accordance with BS 8500-2006.
   Slab - RC40
2. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP.
3. Any changes in ground conditions are to be reported to PRP immediately.
4. Concrete shall be protected from both frost and moisture loss during the curing stage.
5. Contractor to check Architect's and other specialist drawings to lay out positions of drainage and services prior to pouring of slab, and notify engineer of any conflicts
6. Type 1 sub-base to be in accordance with the Specification for Highway Works placed and compacted with plant approved by the structural engineer
7. Reinforcement to be high yield steel to BS 4449
8. Minimum lap lengths to be:
   H10 - 450mm H12 - 500mm
9. Mesh reinforcement shall be to BS 4483
10. Mesh reinforcement to be supported on proprietary chairs prior to placing of concrete to ensure correct positioning in slab
11. Cover to all steel reinforcement, including links shall be 75mm btm & 50mm sides and top
12. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above
13. Floor flatness to be class SR2 in accordance with BS8204:Part 2 Maximum gap beneath a 3 metre straight edge laid in contact with the floor to be 5mm
14. Compressible filler material to be "Flexcell' or similar approved by the Structural Engineer
19. Cold poured sealant to be 'Colpor 200' or similar approved by the Structural Engineer
20. Top surface of slab to be power floated with dust sealant to Architects specification

C08	21/06/2022	Issued for Final Construction	DC / JM
C07	11/01/2022	Racking thickened slab added	KMV/ JM
C06	05/01/2022	Pad 44 updated to Concast lift dimensions, Pad 31 on GL L/4 changed to Pad 20, pad 39 width corrected	KMV/ JM
C05	23/11/2021	Pad 4 on GL 15/W changed to Pad 17, Pad 27 on GL 3/W changed to Pad 25	KMV/ JM
C04	15/11/2021	Foundations TOF amended along GL3 to match steel fabricator's dwgs	KMV/ JM
C03	12/11/2021	Foundations around docks amended to suit concast drawing.	GF / JM
C02	05/11/2021	Pad 1 & 2 sizes amended, GB on GL A changed to GB01, GB03 renamed as GB02, GB in docking changed to trench foundation, Lift TOF updated	KMV/ JM
C01	01/11/2021	Issued for Construction	KMV/ JM
P07	13/10/2021	Pile caps replaced with pad foundations, levels revised	KMV/ JM
P06	27/08/2021	Pile caps revised	GAJ/ JM
P05	08/07/2021	Docking piles put back on, siponic -675mm TOF added, recessed floor added	KMV/ JM
P04	18/06/2021	GB3 on schedule, CS2 gas membrane & slab tolerance added	KMV/ JM
P03	17/06/2021	Dock / office pile levels amended, BIM nos added	KMV/ JM
Rev	Date	Description	By / Chk

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Leicester Northampton London
engineering excellence | creating advantage

Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

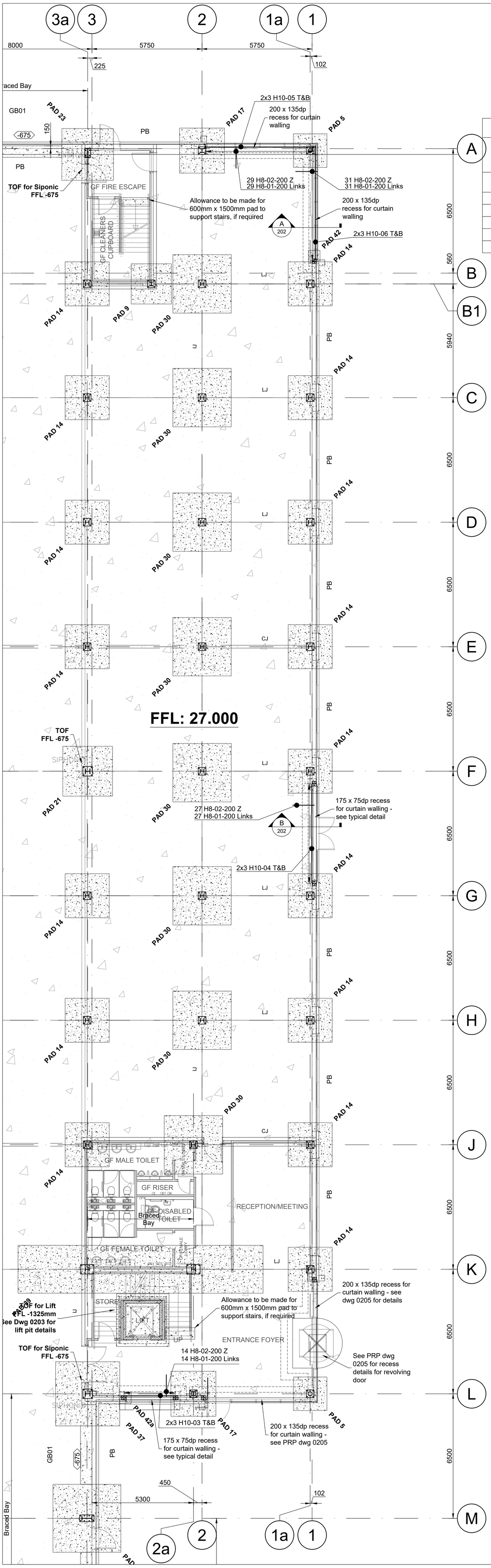
Project: Calder Park, Wakefield, WK4 3FL

Title: Foundations Layout

Status: **FINAL CONSTRUCTION**

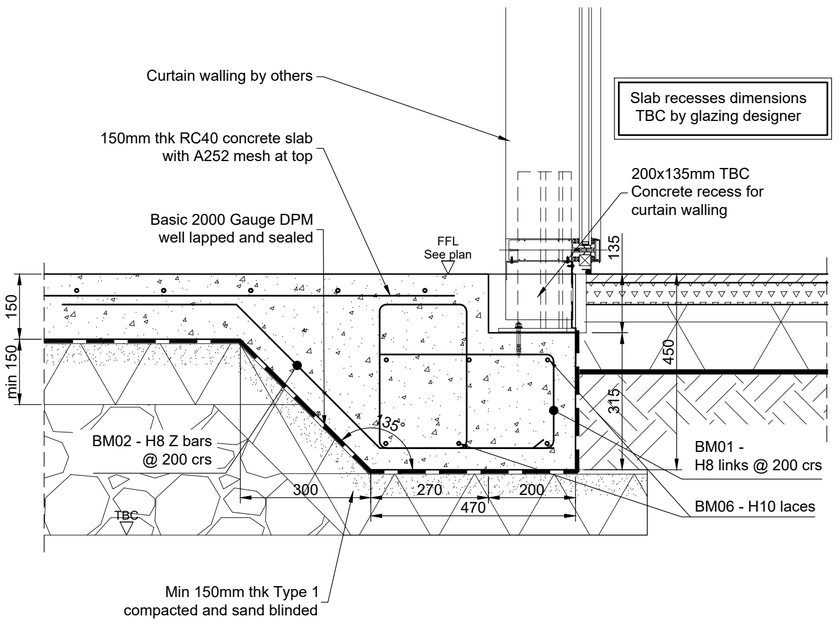
Engineer:	JKT	Date:	Jan 2021
Drawn:	KMV	Scales @ A0:	1:250
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

Drg No: P21024-PRP-BR-00-DR-S-0201 Rev: C08

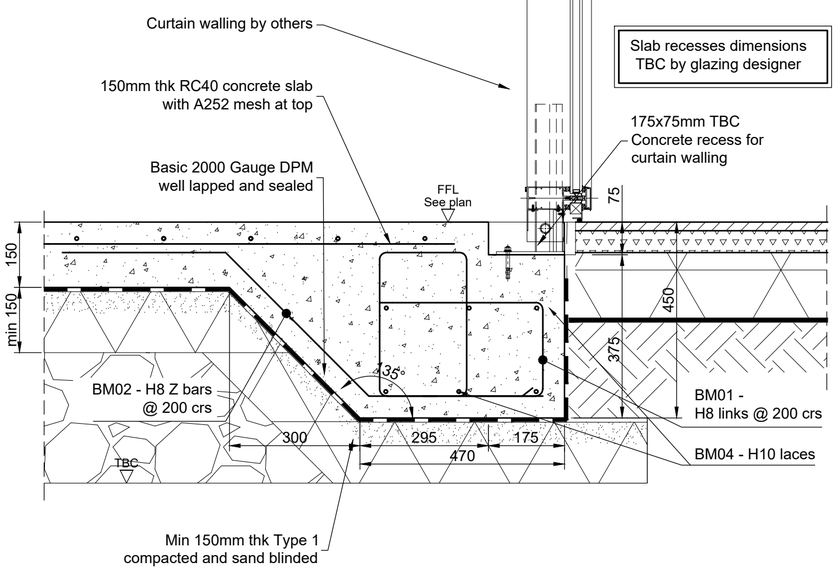


Bar Bending Schedule

Member	Bar Mark	Type	Size	No of mbrs	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	Rev letter
Curtain Walling	01	H	8	1	101	101	1925	64	400	215	400	330	200	
	02	H	8	1	101	101	1275	26	400	470	400	330		
	03	H	10	1	6	6	2650	00	2650					
	04	H	10	1	6	6	5150	00	5150					
	05	H	10	1	6	6	5800	00	5800					
	06	H	10	1	6	6	6000	00	6000					



Typical 200 x 135dp Curtain Wall Recess Detail - Section A-A
1:10



Typical 175 x 75dp Curtain Wall Recess Detail - Section B-B
1:10

Top of Foundation (TOF) Generally FFL - 350mm unless noted otherwise.
Office GL 1-3 / A-L Office TOF=FFL-450mm u.n.o.

ALL DRAWINGS AND SETTING OUT TO ARCHITECTS / STEEL FABRICATORS DRAWINGS

CS2 tapped and sealed gas membrane under slab

GBP = 150kN/m² subject to Vibro Ground Improvement

LEGEND:

PB	Perimeter Beam UKPFC by Steel Fabricator
LJ	Longitudinal Joint
IJ	Induced Joint
CJ	Contraction Joint

Slab joints shown indicatively. Final positions to be coordinated with racking layout, if available

Ground Beams Schedule

Ground Beam Ref	Size [mm] wd x dp	Reinforcement TOP	BTM	Links
GB01	600 x 600	4 H12	4 H16	4legsH8@200

Notes:

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Foundations:

1. Concrete for foundations shall be Designated Concrete produced in accordance with BS 8500.
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   Pad foundations - RC30
   Ground Beams - RC35
2. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP.
3. All pad and strip foundations shall be placed central beneath columns and walls respectively u.n.o.
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13. Concrete foundations shall be laid within the permissible deviations given in Tables 2 & 3 of BS 5606 for in - situ concrete unless agreed with PRP
14. Contractor to lay out positions of drainage and services prior to pouring of foundations, and notify engineer of any conflicts
15. Reinforcement to be high yield steel to BS 4449
16. Minimum lap lengths to be:
    H10 - 450mm H12 - 500mm
    H16 - 650mm H20 - 800mm
17. Mesh reinforcement shall be to BS 4483
18. Cover to all steel reinforcement, including links shall be 50mm top & sides and 75mm bottom
19. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above

Slab:

1. Concrete for slab shall be Designated Concrete produced in accordance with BS 8500-2006.
   Slab - RC40
2. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP.
3. Any changes in ground conditions are to be reported to PRP immediately.
4. Concrete shall be protected from both frost and moisture loss during the curing stage.
5. Contractor to check Architect's and other specialist drawings to lay out positions of drainage and services prior to pouring of slab, and notify engineer of any conflicts
6. Type 1 sub-base to be in accordance with the Specification for Highway Works placed and compacted with plant approved by the structural engineer
7. Reinforcement to be high yield steel to BS 4449
8. Minimum lap lengths to be:
   H10 - 450mm H12 - 500mm
9. Mesh reinforcement shall be to BS 4483
10. Mesh reinforcement to be supported on proprietary chairs prior to placing of concrete to ensure correct positioning in slab
11. Cover to all steel reinforcement, including links shall be 75mm top & 75mm sides and bottom
12. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above
17. Floor flatness to be class SR2 in accordance with BS820:Part 2 Maximum gap beneath a 3 metre straight edge laid in contact with the floor to be 5mm
18. Compressible filler material to be 'Flexcell' or similar approved by the Structural Engineer
19. Cold poured sealant to be 'Colpor 200' or similar approved by the Structural Engineer
20. Top surface of slab to be power floated with dust sealant to Architects specification

Rev	Date	Description	By / Chk
C05	21/06/2022	Issued for Final Construction	DC / JM
C04	21/03/2022	Pad schedule removed (see dwg 201) curtain walling details added	KMV/ JM
C03	15/11/2021	TOF -675 @ GL F/3 to match steel fabricator's dwgs	KMV/ JM
C02	05/11/2021	TOF -525 removed from core area, Lift TOF updated	KMV/ JM
C01	01/11/2021	Issued for Construction	KMV/ JM
P04	08/07/2021	Dock dwg moved to 0204, siponic levels added, TOPC levels amended	KMV/ JM
P03	18/06/2021	GB3 on schedule added & CS2 gas membrane added	KMV/ JM
P02	17/06/2021	Dock / office pile levels amended, BIM nos added	KMV/ JM
P1	25/05/2021	DRAFT Issued for comments	JD / JM

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Leicester
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engineering excellence | creating advantage

Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

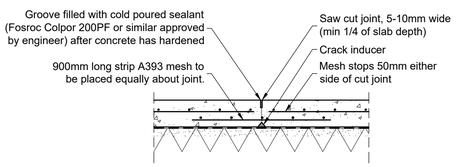
Project:
Calder Park
Wakefield
WK4 3FL

Title:
Foundations
Slab & Foundations for Office

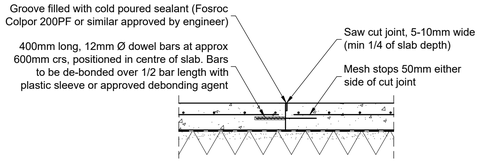
Status: **FINAL CONSTRUCTION**

Engineer:	JKT	Date:	April 2021
Drawn:	KMV	Scales @ A1:	1:100 1:20
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

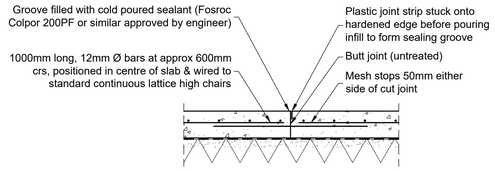
Drg No: P21024-PRP-BR-00-DR-S-0202 Rev: C05



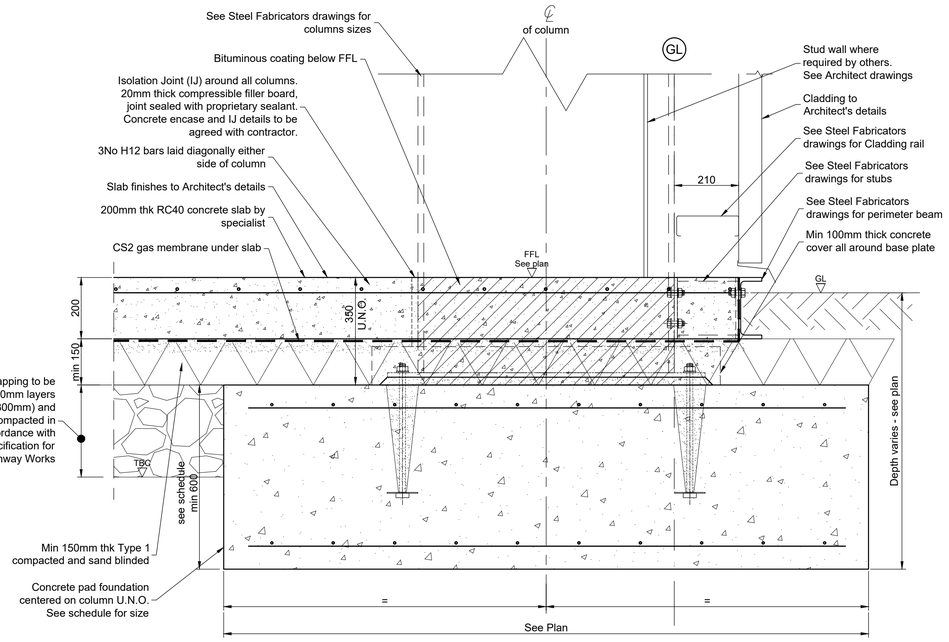
Typical Induced Joint - IJ
1:20



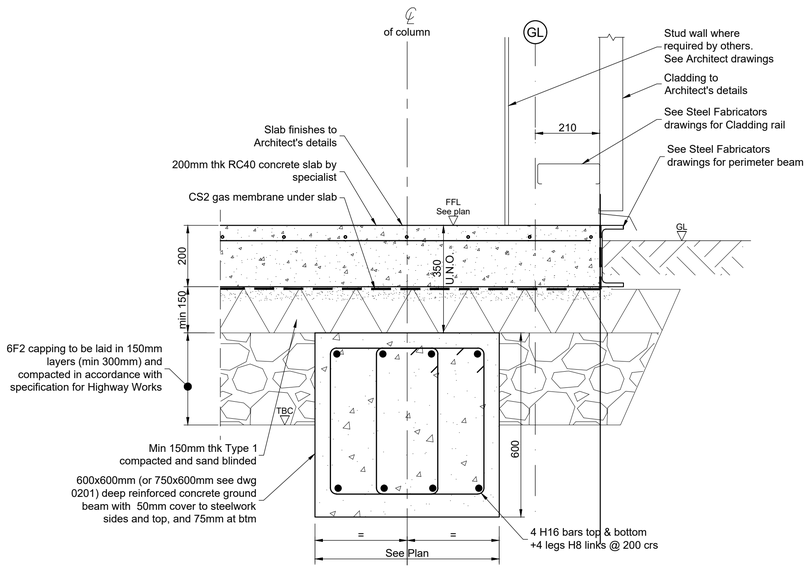
Contraction Joint - CJ
1:20



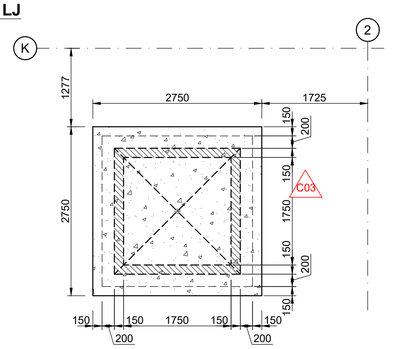
Typical Longitudinal Tied Joint - LJ
1:20



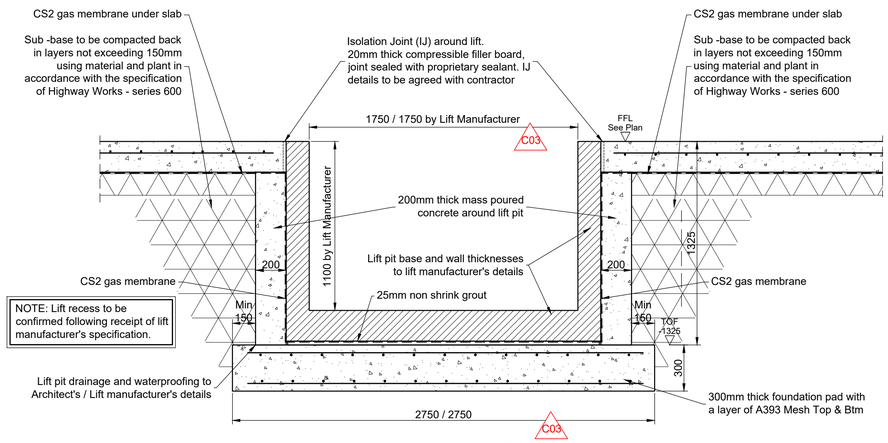
Typical Foundation and Slab Detail
1:10



Typical Ground Beam 01 Detail
1:10



Proposed Lift Slab Plan
1:50



Proposed Lift Pit
1:20

Slab:
1. Concrete for slab shall be Designated Concrete produced in accordance with BS 8500-2006. Slab - RC40
2. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP.
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4. Concrete shall be protected from both frost and moisture loss during the curing stage.
5. Contractor to check Architect's and other specialist drawings to lay out positions of drainage and services prior to pouring of slab, and notify engineer of any conflicts
6. Type 1 sub-base to be in accordance with the Specification for Highway Works placed and compacted with plant approved by the structural engineer
7. Reinforcement to be high yield steel to BS 4449
8. Minimum lap lengths to be:
   H10 - 450mm H12 - 500mm
9. Mesh reinforcement shall be to BS 4483
10. Mesh reinforcement to be supported on proprietary chairs prior to placing of concrete to ensure correct positioning in slab
11. Cover to all steel reinforcement, including links shall be 75mm top & 75mm sides and bottom
12. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above
17. Floor flatness to be class SR2 in accordance with BS820:Part 2 Maximum gap beneath a 3 metre straight edge laid in contact with the floor to be 5mm
18. Compressible filler material to be 'Flexcell' or similar approved by the Structural Engineer
19. Cold poured sealant to be 'Colpor 200' or similar approved by the Structural Engineer
20. Top surface of slab to be power floated with dust sealant to Architects specification

Notes:
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Foundations:
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   Trench fill foundations - GEN3
   Pad foundations - RC30
   Ground Beams - RC35
2. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP.
3. All pad and strip foundations shall be placed central beneath columns and walls respectively u.n.o.
4. All foundations are to be founded on undisturbed natural material unless agreed with PRP.
5. Any changes in ground conditions are to be reported to PRP immediately.
6. Foundation excavations to be inspected by PRP at the request of the client or by Building Control officer to ensure that the ground bearing pressure is in excess of 150kN/m².
7. All excavations are be free from debris prior to placement of concrete.
8. Standing water and softened material shall be removed from bottom of excavations prior to placement of concrete.
9. Concrete shall be protected from both frost and moisture loss during the curing stage.
10. Top surface of foundations shall be uniformly level
11. Where required formwork shall be constructed to produce foundations to the dimensions and shapes indicated on drawing
12. Formwork shall be constructed so there is no loss of concrete material
13. Concrete foundations shall be laid within the permissible deviations given in Tables 2 & 3 of BS 5606 for in - situ concrete unless agreed with PRP
14. Contractor to lay out positions of drainage and services prior to pouring of foundations, and notify engineer of any conflicts
15. Reinforcement to be high yield steel to BS 4449
16. Minimum lap lengths to be:
    H10 - 450mm H12 - 500mm
    H16 - 650mm H20 - 800mm
17. Mesh reinforcement shall be to BS 4483
18. Cover to all steel reinforcement, including links shall be 50mm top & sides and 75mm bottom
19. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above

Rev	Date	Description	By / Chk
C04	21/06/2022	Issued for Final Construction	DC / JM
C03	06/11/2021	Lift slab amended to Concast lift pit size	KMV/ JM
C02	05/11/2021	GBP note added, TOF for lift amended	KMV/ JM
C01	01/11/2021	Issued for Construction	KMV/ JM
P04	08/07/2021	TOPC changed to 350mm & GB 03 detail amended, lift detail added	KMV/ JM
P03	18/06/2021	GB 03 detail added, CS2 gas membrane added	KMV/ JM
P02	17/06/2021	BIM nos added	KMV/ JM

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Northampton
London

engineering excellence | creating advantage

Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

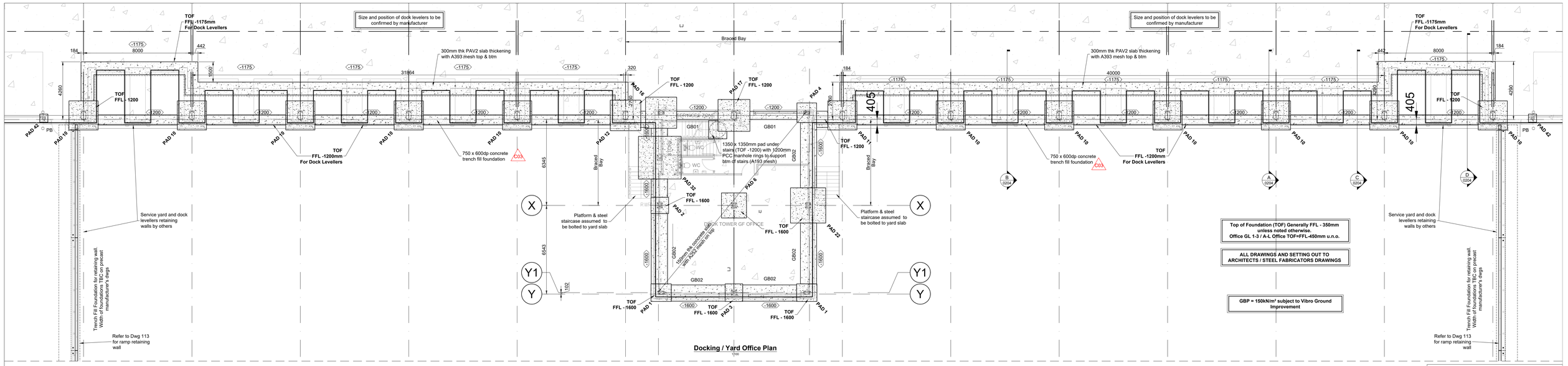
Project:
Calder Park
Wakefield
WK4 3FL

Title:
Foundations
Slab & Foundations Details

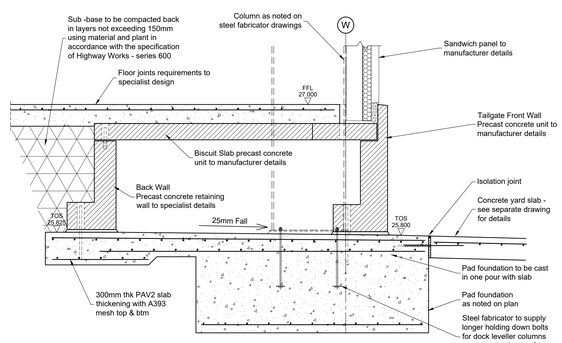
Status: **FINAL CONSTRUCTION**

Engineer:	JKT	Date:	Jan 2021
Drawn:	KMV	Scales @ A1:	1:50 1:20 1:10
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

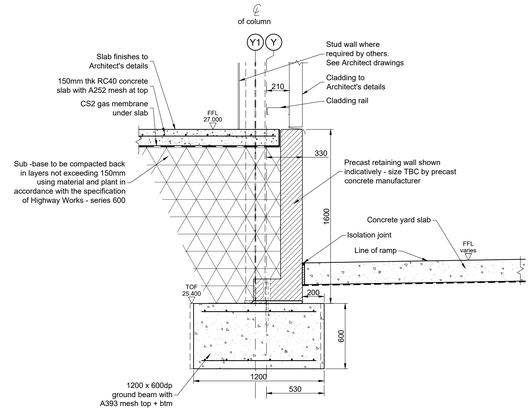
Drg No: P21024-PRP-BR-00-DR-S-0203 Rev: C04



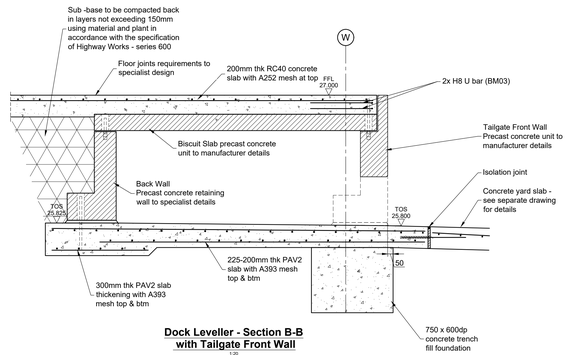
Docking / Yard Office Plan
1:100



Dock Leveller - Section A-A at column locations
1:20

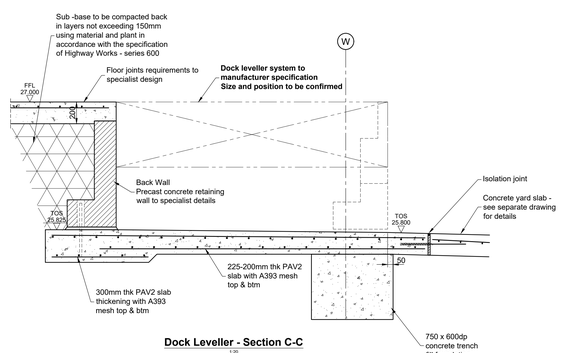


Yard Office Foundation and Slab Detail
1:20

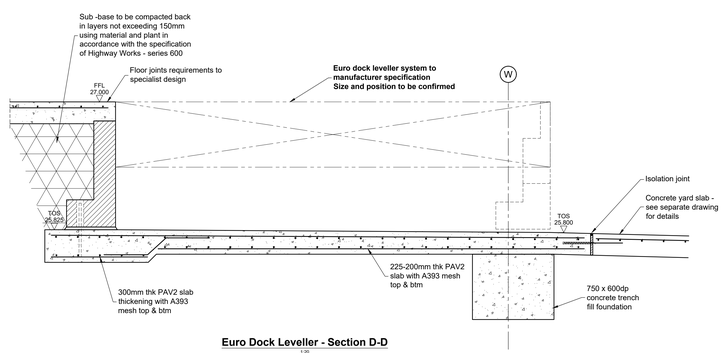


Dock Leveller - Section B-B with Tailgate Front Wall
1:20

Bar Bending Schedule											
Member	Bar Mark	Type	Size	No of mbrs	No of bars in each	Total No	Length of each bar mm	Shape code	A mm	B mm	C mm
Upstand	03	H	8	1	88	88	950	13	600	50	600



Dock Leveller - Section C-C
1:20



Euro Dock Leveller - Section D-D
1:20

Slab:
1. Concrete for slab shall be Designated Concrete produced in accordance with BS 8500-2006. Slab - RC40
2. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP.
3. Any changes in ground conditions are to be reported to PRP immediately.
4. Concrete shall be protected from both frost and moisture loss during the curing stage.
5. Contractor to check Architect's and other specialist drawings to lay out positions of drainage and services prior to pouring of slab, and notify engineer of any conflicts
6. Type 1 sub-base to be in accordance with the Specification for Highway Works placed and compacted with plant approved by the structural engineer
7. Reinforcement to be high yield steel to BS 4449
8. Minimum lap lengths to be:
   H10 - 450mm H12 - 500mm
9. Mesh reinforcement shall be to BS 4483
10. Mesh reinforcement to be supported on proprietary chairs prior to placing of concrete to ensure correct positioning in slab
11. Cover to all steel reinforcement, including links shall be 75mm top & 75mm sides and bottom
12. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above
17. Floor flatness to be class SR2 in accordance with BS820:Part 2 Maximum gap beneath a 3 metre straight edge laid in contact with the floor to be 5mm
18. Compressible filler material to be 'Flexcell' or similar approved by the Structural Engineer
19. Cold poured sealant to be 'Colpor 200' or similar approved by the Structural Engineer
20. Top surface of slab to be power floated with dust sealant to Architects specification

Notes:
1. DO NOT SCALE FROM THIS DRAWING.
2. All dimensions are in millimetres Unless Noted Otherwise (u.n.o.)
3. Drawing is to be read in conjunction with all relevant architect's drawings. Any inconsistencies should be reported to PRP immediately.
4. All levels and dimensions are to be checked on site before any work commences.
5. For more information see PRP drawings:
   63150 - 100series - Drainage and External Works
   63150 - 200series - Foundations
   63150 - 300series - Superstructure
6. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, safety boots, reflective clothing, and the use of any other required safety equipment.

Foundations:
1. Concrete for foundations shall be Designated Concrete produced in accordance with BS 8500.
   Trench fill foundations - GEN3
   Pad foundations - RC30
   Ground Beams - RC35
2. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP
3. All pad and strip foundations shall be placed central beneath columns and walls respectively u.n.o.
4. All foundations are to be founded on undisturbed natural material unless agreed with PRP.
5. Any changes in ground conditions are to be reported to PRP immediately.
6. Foundation excavations to be inspected by PRP at the request of the client or by Building Control officer to ensure that the ground bearing pressure is in excess of 150kN/m².
7. All excavations are be free from debris prior to placement of concrete.
8. Standing water and softened material shall be removed from bottom of excavations prior to placement of concrete.
9. Concrete shall be protected from both frost and moisture loss during the curing stage.
10. Top surface of foundations shall be uniformly level
11. Where required formwork shall be constructed to produce foundations to the dimensions and shapes indicated on drawing
12. Formwork shall be constructed so there is no loss of concrete material
13. Concrete foundations shall be laid within the permissible deviations given in Tables 2 & 3 of BS 5606 for in - situ concrete unless agreed with PRP
14. Contractor to lay out positions of drainage and services prior to pouring of foundations, and notify engineer of any conflicts
15. Reinforcement to be high yield steel to BS 4449
16. Minimum lap lengths to be:
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17. Mesh reinforcement shall be to BS 4483
18. Cover to all steel reinforcement, including links shall be 50mm top & sides and 75mm bottom
19. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above

Rev	Date	Description	By / Chk
C04	21/06/2022	Issued for Final Construction	DC / JM
C03	12/11/2021	Foundations for docks amended to suit concast drawings	GF / JM
C02	05/11/2021	Yard Office foundation position updated as per Concast dwg	KMV/ JM
C01	01/11/2021	Issued for Construction	KMV/ JM
P04	31/08/2021	Pile caps revised, Dock leveler slab options added	GAJ/ JM
P03	08/07/2021	Dock piles added back on, siponic levels added, dock office levels amended	KMV/ JM

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Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

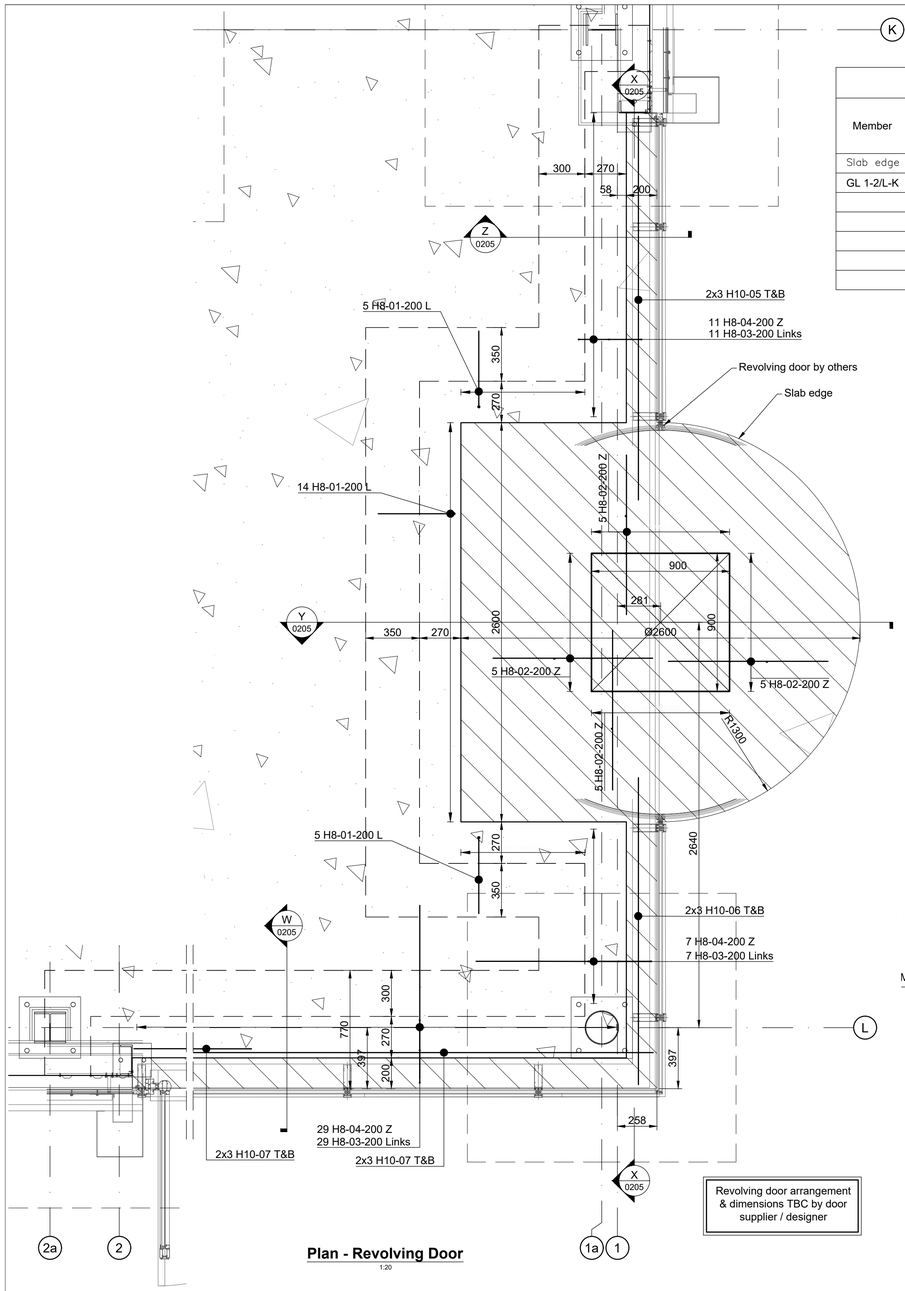
Project:
Calder Park
Wakefield
WK4 3FL

Title:
Foundations
Docking & Yard Office Details

Status: **FINAL CONSTRUCTION**

Engineer:	JKT	Date:	April 2021
Drawn:	KMV	Scales @ A0:	1:100 1:20
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

Drg No: P21024-PRP-BR-00-DR-S-0204 Rev: C04



Revolving door arrangement & dimensions TBC by door supplier / designer

Plan - Revolving Door

1:20

Bar Bending Schedule

Member	Bar Mark	Type	Size	No of mbrs	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	Rev letter
Slab edge	01	H	8	1	24	24	850	11	350	500				
GL 1-2/L-K	02	H	8	1	20	20	1125	26	400	320	400	225		
	03	H	8	1	47	47	1925	64	400	215	400	330	200	
	04	H	8	1	47	47	1275	26	400	470	400	330		
	05	H	10	1	6	6	2500	00	2500					
	06	H	10	1	6	6	2000	00	2000					
	07	H	10	1	12	12	4000	00	3300					

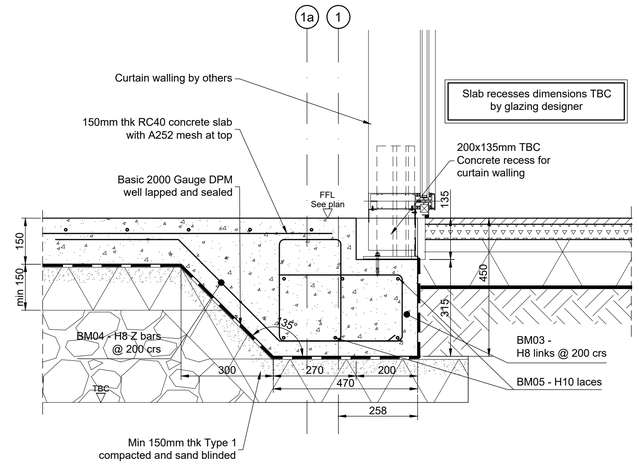
LEGEND:

150mm thk slab
TOS: FFL

Slab Recess
TOC: FFL-135

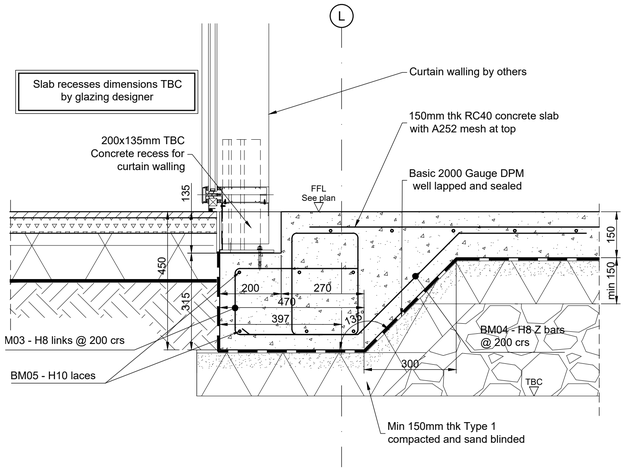
Slab thickening

Architect to confirm slab edge dimensions



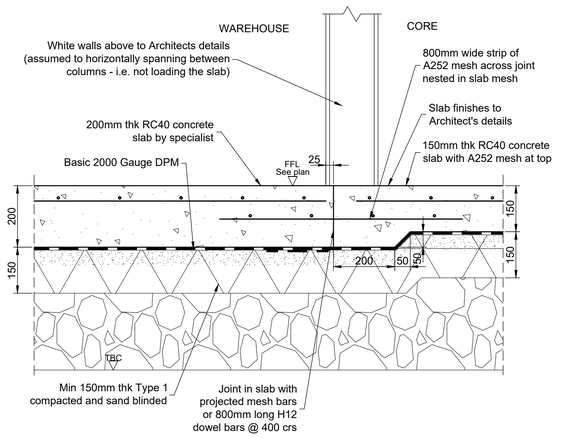
Typical Curtain Wall Recess Detail - Section Z-Z

1:10



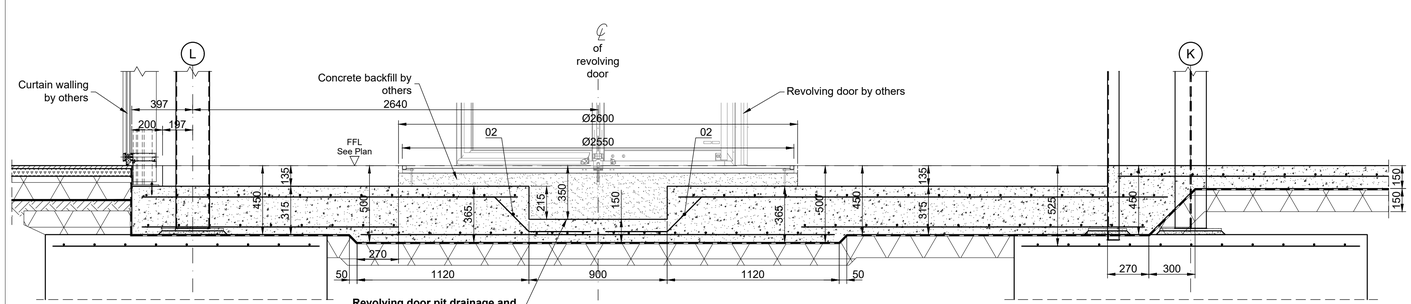
Typical Curtain Wall Recess Detail - Section W-W

1:10



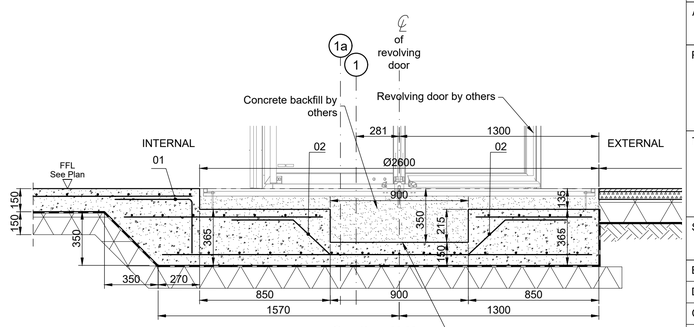
Typical Slab in Core Area / Warehouse

1:10



Section X-X

1:20



Section Y-Y

1:20

Notes:

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3. Drawing is to be read in conjunction with all relevant architect's drawings. Any inconsistencies should be reported to PRP immediately.
4. All levels and dimensions are to be checked on site before any work commences.
5. For more information see PRP drawings:
   63150 - 100series - Drainage and External Works
   63150 - 200series - Foundations
   63150 - 300series - Superstructure
6. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, safety boots, reflective clothing, and the use of any other required safety equipment.

Slab:

1. Concrete for slab shall be Designated Concrete produced in accordance with BS 8500-2006. Slab - RC40
2. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP.
3. Any changes in ground conditions are to be reported to PRP immediately.
4. Concrete shall be protected from both frost and moisture loss during the curing stage.
5. Contractor to check Architect's and other specialist drawings to lay out positions of drainage and services prior to pouring of slab, and notify engineer of any conflicts
6. Type 1 sub-base to be in accordance with the Specification for Highway Works placed and compacted with plant approved by the structural engineer
7. Reinforcement to be high yield steel to BS 4449
8. Minimum lap lengths to be:
   H10 - 450mm H12 - 500mm
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11. Cover to all steel reinforcement, including links shall be 75mm top & 75mm sides and bottom
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17. Floor flatness to be class SR2 in accordance with BS820:Part 2 Maximum gap beneath a 3 metre straight edge laid in contact with the floor to be 5mm
18. Compressible filler material to be 'Flexcell' or similar approved by the Structural Engineer
19. Cold poured sealant to be 'Colpor 200' or similar approved by the Structural Engineer
20. Top surface of slab to be power floated with dust sealant to Architects specification

Rev	Date	Description	By / Chk
C03	21/06/2022	Issued for Final Construction	DC / JM
C02	17/01/2022	Recess shape revised	GAJ/ JM
C01	01/11/2021	Issued for Construction	KMV/ JM

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Brixworth NN6 9BX

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Leicester
Northampton
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engineering excellence | creating advantage

Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

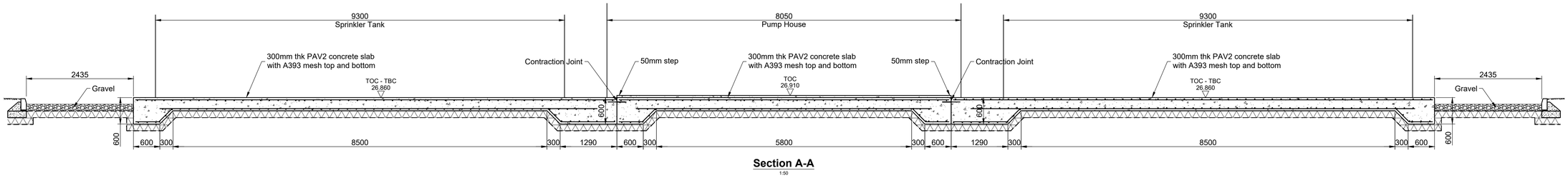
Project:
Calder Park
Wakefield
WK4 3FL

Title:
Foundations
Revolving Door Recess Detail
Curtain Edging Detail

Status:
FINAL CONSTRUCTION

Engineer:	JKT	Date:	Oct 2021
Drawn:	KMV	Scales @ A1:	1:50 1:20 1:10
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

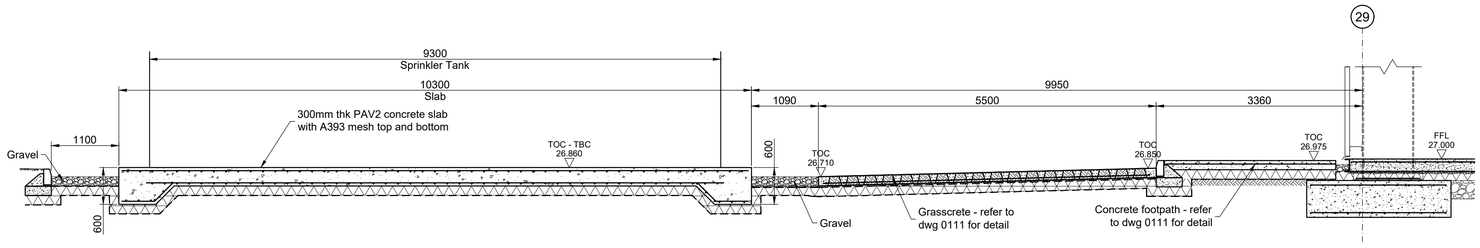
Drg No: P21024-PRP-BR-00-DR-S-0205 Rev: C03



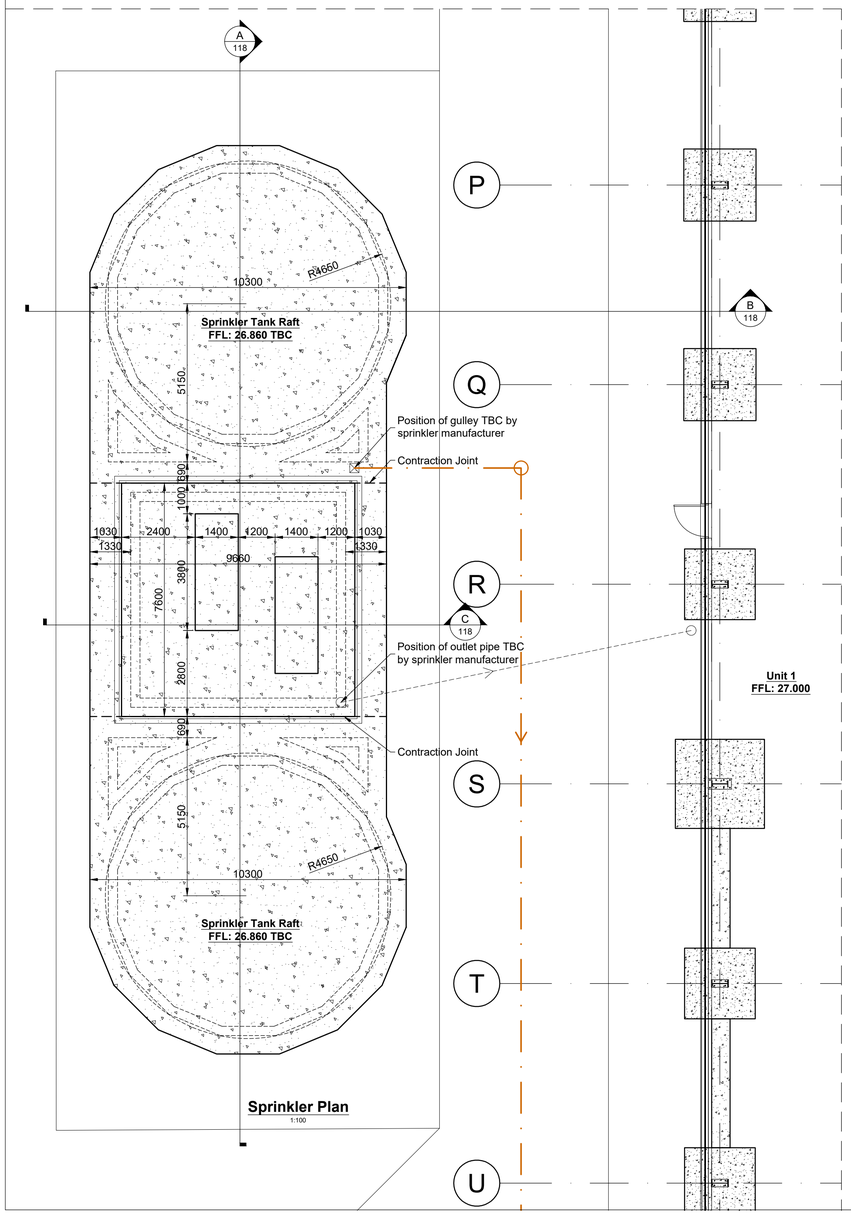
Section A-A
1:50

All dimesions & levels of tanks & pump house TBC by Fire Sprinkler installer

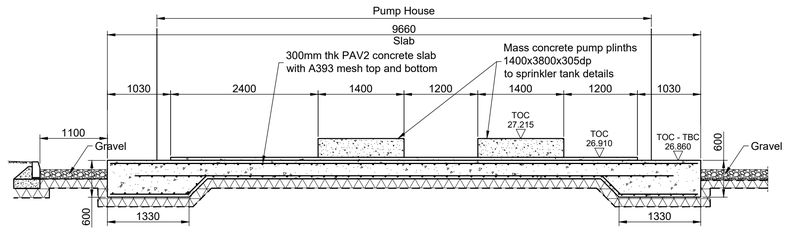
Design based on Vibro Ground Improvement to 119kN/m²



Section B-B
1:50



Sprinkler Plan
1:100



Section C-C
1:50

Slab:
1. Concrete for slab shall be Designated Concrete produced in accordance with BS 8500-2006. Slab - PAV2
2. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP.
3. Any changes in ground conditions are to be reported to PRP immediately.
4. Concrete shall be protected from both frost and moisture loss during the curing stage.
5. Contractor to check Architect's and other specialist drawings to lay out positions of drainage and services prior to pouring of slab, and notify engineer of any conflicts
6. Type 1 sub-base to be in accordance with the Specification for Highway Works placed and compacted with plant approved by the structural engineer
7. Reinforcement to be high yield steel to BS 4449
8. Minimum lap lengths to be:
   H10 - 450mm H12 - 500mm
9. Mesh reinforcement shall be to BS 4483
10. Mesh reinforcement to be supported on proprietary chairs prior to placing of concrete to ensure correct positioning in slab
11. Cover to all steel reinforcement, including links shall be 50mm top & 50mm sides and bottom
12. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above
17. Floor flatness to be class SR2 in accordance with BS820:Part 2 Maximum gap beneath a 3 metre straight edge laid in contact with the floor to be 5mm
18. Compressible filler material to be 'Flexcell' or similar approved by the Structural Engineer
19. Cold poured sealant to be 'Colpor 200' or similar approved by the Structural Engineer
20. Top surface of slab to be power floated with dust sealant to Architects specification

Notes:
1. DO NOT SCALE FROM THIS DRAWING.
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4. All levels and dimensions are to be checked on site before any work commences.
5. For more information see PRP drawings:
   63150 - 100series - Drainage and External Works
   63150 - 200series - Foundations
   63150 - 300series - Superstructure
6. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, safety boots, reflective clothing, and the use of any other required safety equipment.

Rev	Date	Description	By / Chk
C01	21/06/2022	Issued for Final Construction	DC / JM
P01	21/01/2022	Issued for Comments	KMV/ JM

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Leicester
Northampton
London
engineering excellence | creating advantage

Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

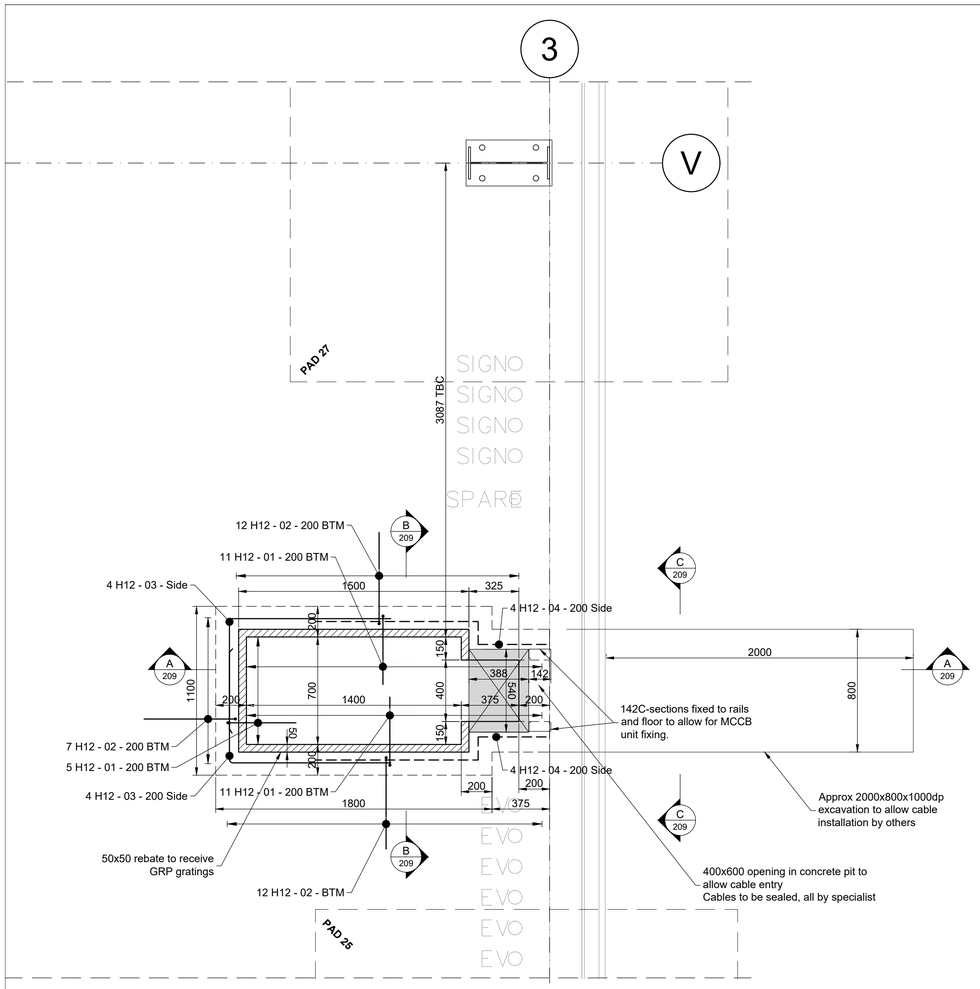
Project:
Calder Park
Wakefield
WK4 3FL

Title:
Foundations
Sprinkler Tank Slab

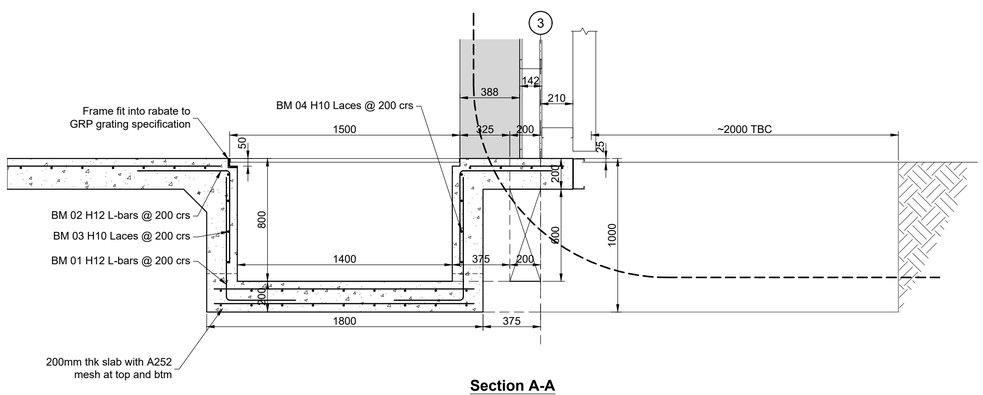
Status: **FINAL CONSTRUCTION**

Engineer:	JKT	Date:	Dec 2021
Drawn:	KMV	Scales @ A1:	1:100 1:50
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

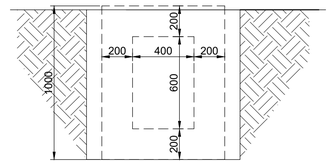
Drg No: P21024-PRP-BR-00-DR-S-0207 Rev: C01



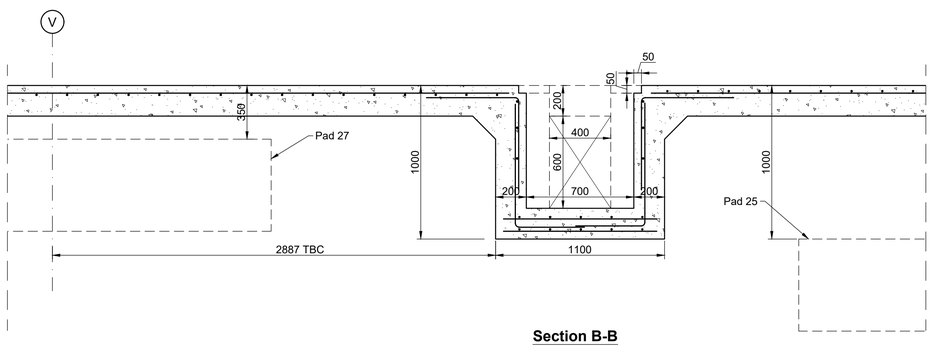
Meter Termination Cubicle Plan
1:20



Section A-A
1:20



Section C-C
1:20



Section B-B
1:20

Bar Bending Schedule For Cubicle Pit

Bar Mark	Type / Size		Total No of bars	Length of each bar mm	Shape code	A mm	B mm	C mm	D mm	E/R mm	Rev letter
01	H	12	27	1250	11	450	800				
02	H	12	31	1200	11	600	600				
03	H	10	8	1800	11	1050	750				
04	H	10	8	1640	23	440	150	1050			

Slab:
1. Concrete for slab shall be Designated Concrete produced in accordance with BS 8500-2006. Slab - RC40
2. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP.
3. Any changes in ground conditions are to be reported to PRP immediately.
4. Concrete shall be protected from both frost and moisture loss during the curing stage.
5. Contractor to check Architect's and other specialist drawings to lay out positions of drainage and services prior to pouring of slab, and notify engineer of any conflicts
6. Type 1 sub-base to be in accordance with the Specification for Highway Works placed and compacted with plant approved by the structural engineer
7. Reinforcement to be high yield steel to BS 4449
8. Minimum lap lengths to be:
   H10 - 450mm H12 - 500mm
9. Mesh reinforcement shall be to BS 4483
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11. Cover to all steel reinforcement, including links shall be 75mm top & 75mm sides and bottom
12. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above
17. Floor flatness to be class SR2 in accordance with BS820:Part 2 Maximum gap beneath a 3 metre straight edge laid in contact with the floor to be 5mm
18. Compressible filler material to be 'Flexcell' or similar approved by the Structural Engineer
19. Cold poured sealant to be 'Colpor 200' or similar approved by the Structural Engineer
20. Top surface of slab to be power floated with dust sealant to Architects specification

Notes:
1. DO NOT SCALE FROM THIS DRAWING.
2. All dimensions are in millimetres Unless Noted Otherwise (u.n.o.)
3. Drawing is to be read in conjunction with all relevant architect's drawings. Any inconsistencies should be reported to PRP immediately.
4. All levels and dimensions are to be checked on site before any work commences.
5. For more information see PRP drawings:
   63150 - 100series - Drainage and External Works
   63150 - 200series - Foundations
   63150 - 300series - Superstructure
6. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, safety boots, reflective clothing, and the use of any other required safety equipment.

Reinforced Concrete (RC) Details:
1. Do not scale this drawing on print or electronically work from figured dimensions only.
2. Dimensions are given in millimeters and levels in meters.
3. Concrete grade for all elements: RC40 u.n.o.
4. Concrete clear cover:
   top & sides : 50mm
   bottom : 50mm
5. All work to comply with the relevant british standards, codes of practice and the building regulations.
6. Unless noted otherwise on this drawing, the reinforcement shall be grade 500, type 2 deformed bars to BS4449 cut and bent in accordance with BS8666-2005 and the bar schedules.
7. Minimum lap lengths to be:
   H8 - 350mm H10 - 450mm
   H12 - 500mm H16 - 650mm

ABBREVIATIONS:

T :	Top
BM:	Bottom
IF :	Inner Face
OF:	Outer Face
"X"1:	First Layer (outer)
"X"2:	Second Layer (inner)
SB:	Side Bar
ES:	Each Side
EC:	Each Corner
V :	Vertical
dp :	Depth
w :	Width
TOB:	Top Of Beam
TOF:	Top Of Foundation
TYP.:	Typical
Req'd:	Required

TYPICAL REBAR CALL UP:
3x10 H20 01 - 200 - T
- 3 -- Notes
- 10 -------- Spacing of bar
- H -------------- Bar Mark reference
- 20 ------------------ Dia of bar
- 01 -------------------- Grade of steel
- 200 ------------------------ Quantity of bars
- T ---------------------------- Multiples

Rev	Date	Description	By / Chk
C02	21/06/2022	Issued for Final Construction	DC / JM
C01	15/03/2022	Issued for Construction	KMV/ JM

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Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

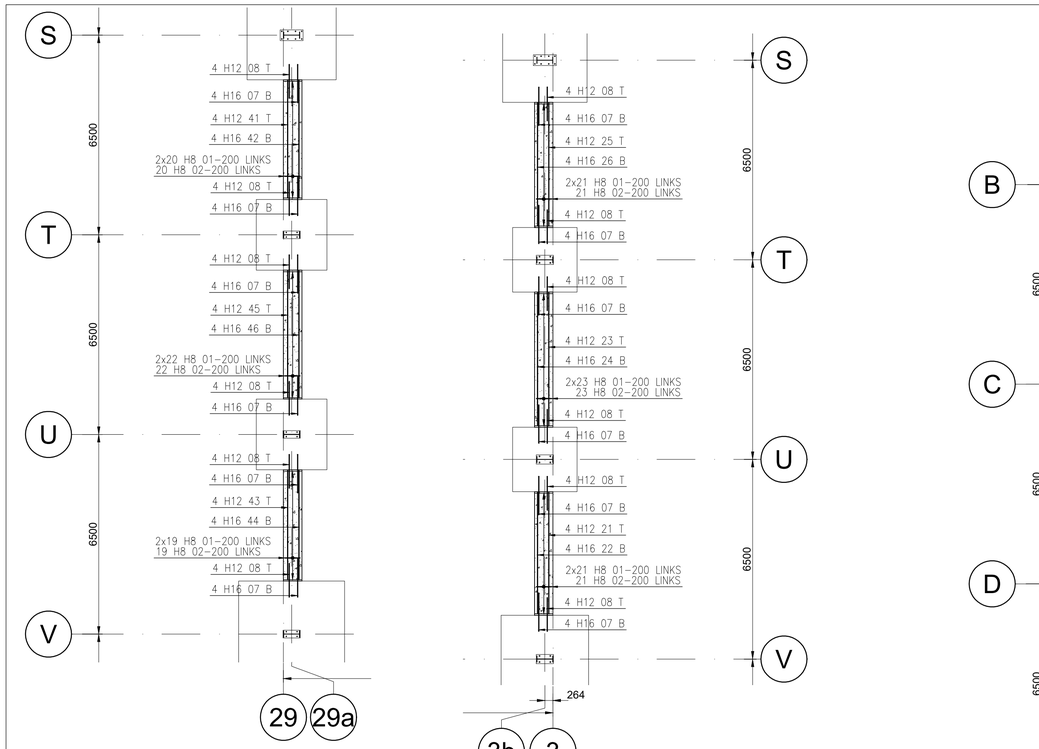
Project:
Calder Park
Wakefield
WK4 3FL

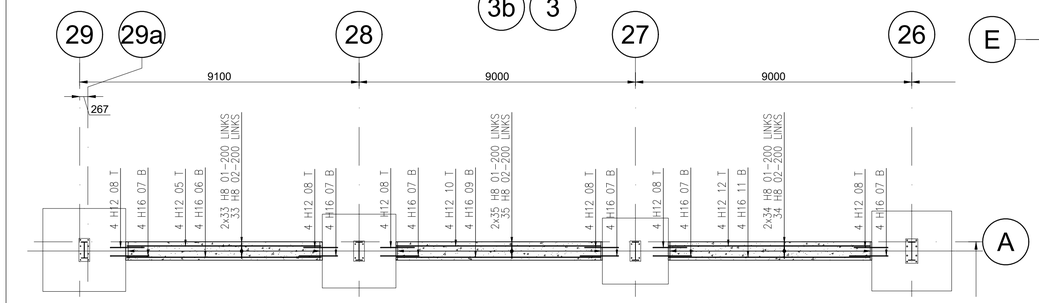
Title:
Unit 1
Meter Termination Cubicle Pit

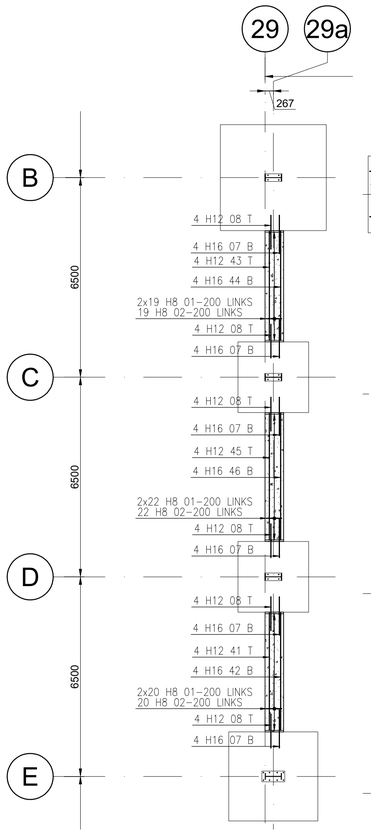
Status: **FINAL CONSTRUCTION**

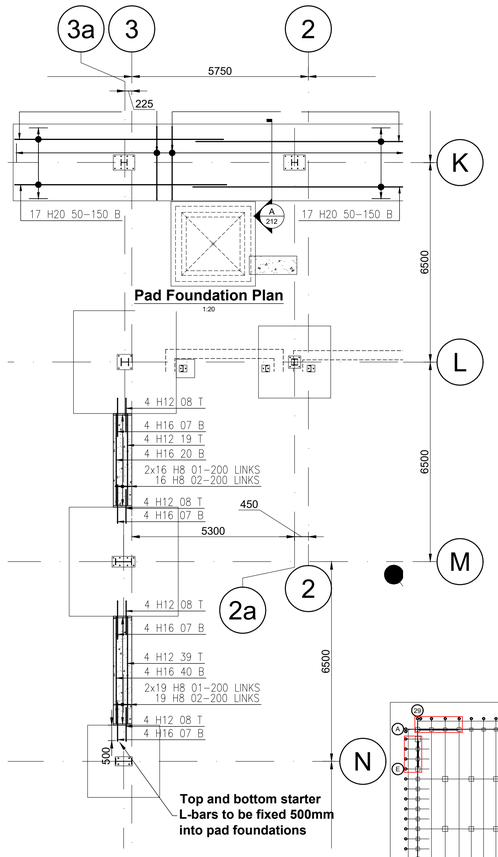
Engineer:	JKT	Date:	March 2022
Drawn:	KMV	Scales @ A1:	1:20
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

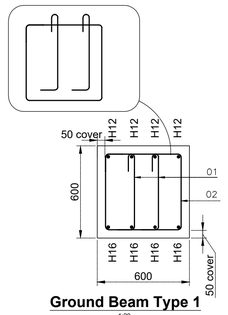
Drg No: P21024-PRP-BR-00-DR-S-0209
Rev: C02

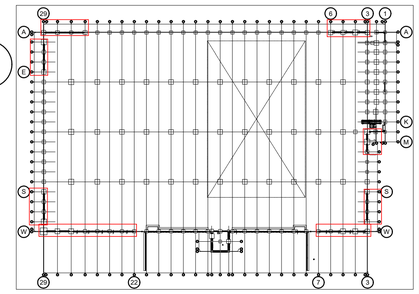


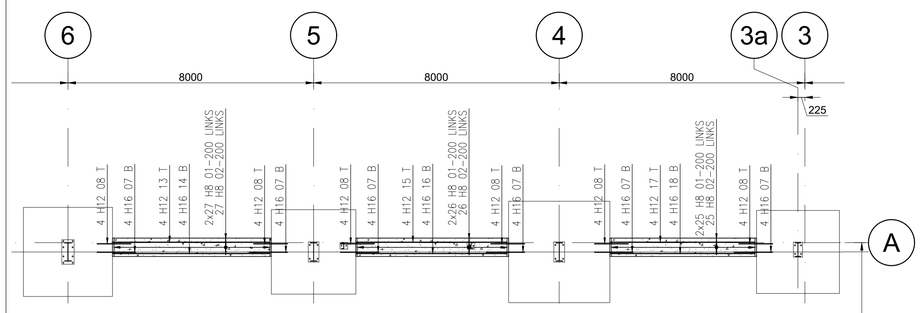


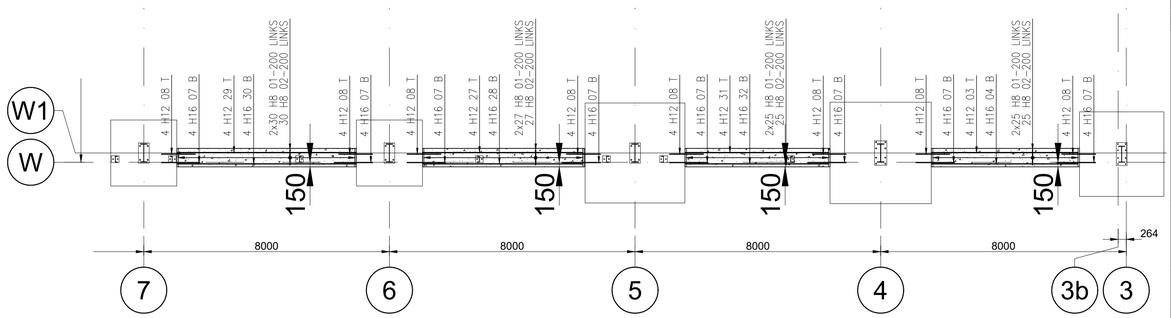












Notes:

1. DO NOT SCALE FROM THIS DRAWING.
2. All dimensions are in millimetres Unless Noted Otherwise (u.n.o.)
3. Drawing is to be read in conjunction with all relevant architect's drawings. Any inconsistencies should be reported to PRP immediately.
4. All levels and dimensions are to be checked on site before any work commences.
5. For more information see PRP drawings:
   63150 - 100series - Drainage and External Works
   63150 - 200series - Foundations
   63150 - 300series - Superstructure
6. Drawing is to be read in conjunction with separate Bar Bending Schedules and revision checked
7. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, safety boots, reflective clothing, and the use of any other required safety equipment.

Reinforced Concrete (RC) Details:

1. Do not scale this drawing on print or electronically work from figured dimensions only.
2. Dimensions are given in millimeters and levels in meters.
3. Concrete grade for all elements: RC35
4. Concrete clear cover:
   Ground Beams (u.n.o)
   top & sides : 50mm
   bottom : 50mm
5. All work to comply with the relevant british standards, codes of practice and the building regulations.
6. Reinforcement on this drawing is listed on schedules numbered 63150 - 210 / 01-02
7. Unless noted otherwise on this drawing, the reinforcement shall be grade 500, type 2 deformed bars to BS4449 cut and bent in accordance with BS8666-2005 and the bar schedules.
8. Minimum lap lengths to be:
   H8 - 350mm H10 - 450mm
   H12 - 500mm H16 - 650mm

ABBREVIATIONS:
T : Top
B : Bottom

TYPICAL REBAR CALL UP:
3x10 H20 01 - 200 - T
| | | | | | └-- Notes
| | | | | └-------- Spacing of bar
| | | | └---------- Bar Mark reference
| | | └------------ Dia of bar
| | └-------------- Grade of steel
| └---------------- Quantity of bars
└------------------ Multiples

Rev	Date	Description	By / Chk
C02	21/06/2022	Issued for Final Construction	DC / JM
C01	15/11/2021	Issued for comments	GAJ / JM

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Client: Tungsten Properties Ltd

Architect: HTC Architects

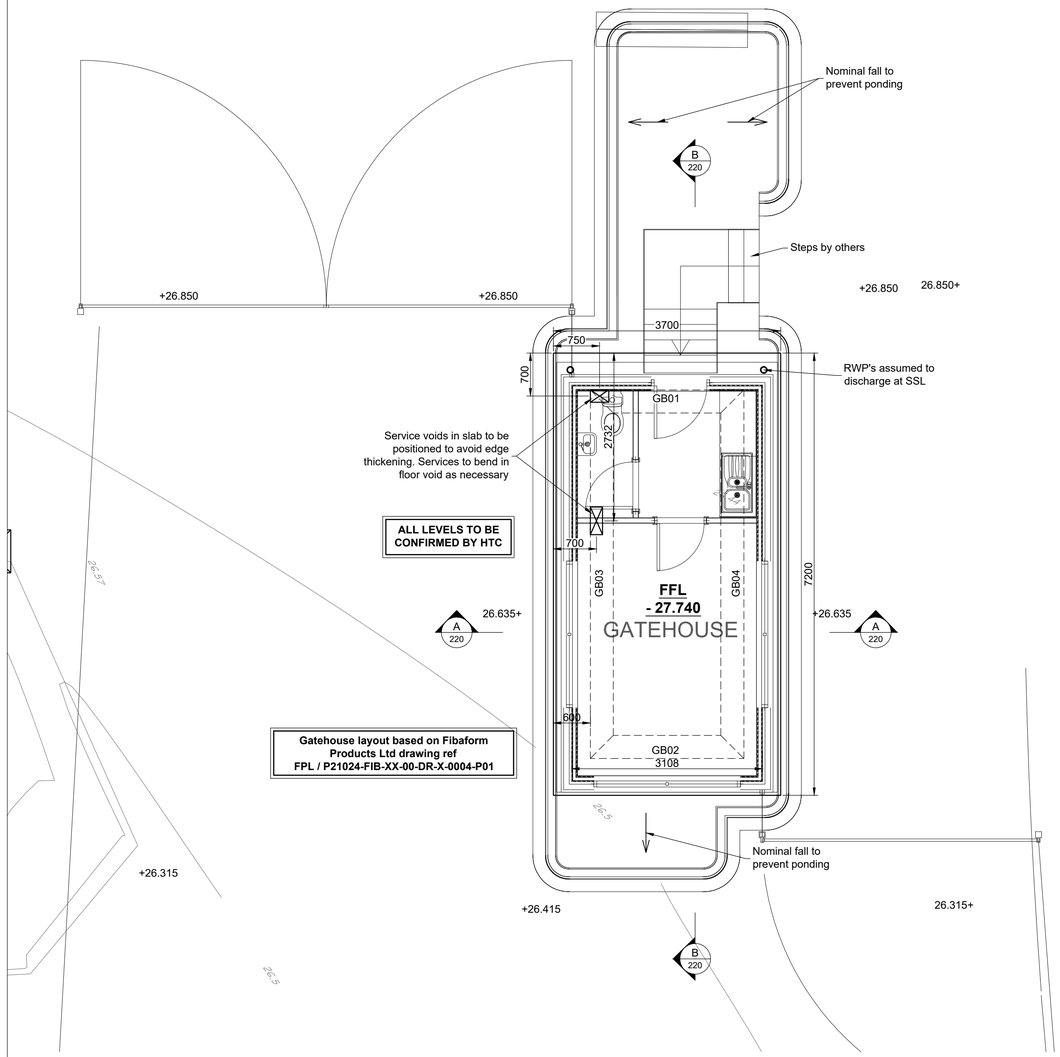
Project:
Calder Park
Wakefield
WK4 3FL

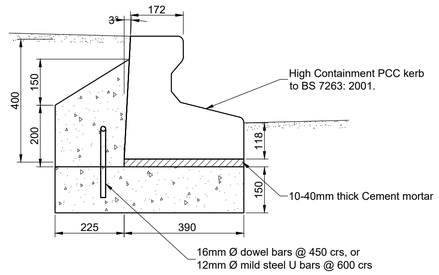
Title:
Foundations
Layout

Status: **FINAL CONSTRUCTION**

Engineer:	JKT	Date:	Nov 2021
Drawn:	GAJ	Scales @ A1:	1:100 1:20
Checked:	JM		
PRP Ref No:	63150	Software:	CADS RC 2019

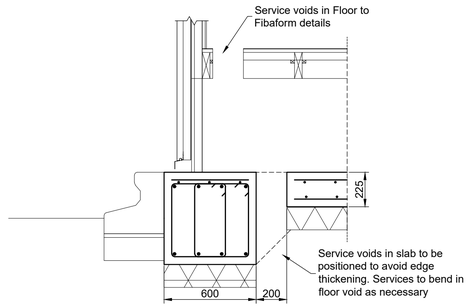
Drg No: P21024-PRP-BR-00-DR-S-0210 Rev: C02



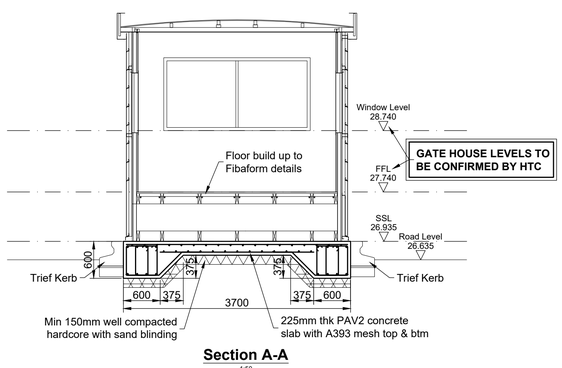


High Containment Kerb: HK
1:10

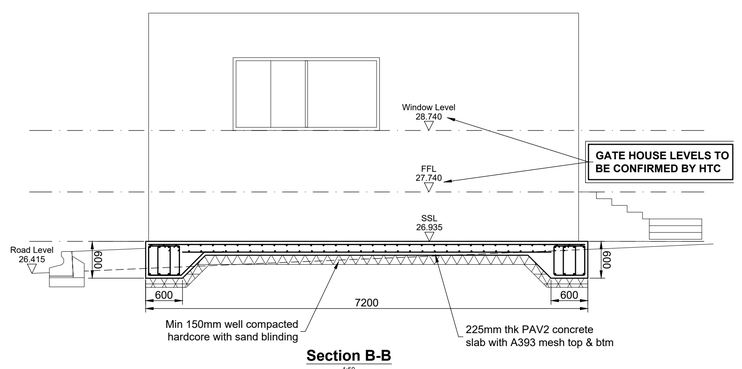
Dowel bars and mortar to be used only when kerb base set prior to laying kerb and kerb backing



Service void detail
1:20



Section A-A
1:50



Section B-B
1:50

SAFETY,HEALTH & ENVIRONMENTAL HAZARD INFORMATION BOX.

The hazards noted below are in addition to the normal hazards and risks faced by a competent contractor when dealing with the types of works detailed on this drawing.

CONSTRUCTION RISKS:

DEMOLITION RISKS:

MAINTENANCE / CLEANING RISKS:

Notes:

1. DO NOT SCALE FROM THIS DRAWING.
2. All dimensions are in millimetres Unless Noted Otherwise (u.n.o.)
3. Drawing is to be read in conjunction with all relevant architect's drawings. Any inconsistencies should be reported to PRP immediately.
4. All levels and dimensions are to be checked on site before any work commences.
5. For more information see PRP drawings:
   63150 - 100series - Drainage and External Works
   63150 - 200series - Foundations
   63150 - 300series - Superstructure
6. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, safety boots, reflective clothing, and the use of any other required safety equipment.

Foundations:

1. Concrete for foundations shall be Designated Concrete produced in accordance with BS 8500.
   Slab - PAV2
2. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP.
3. All pad and strip foundations shall be placed central beneath columns and walls respectively u.n.o.
4. All foundations are to be founded on undisturbed natural material unless agreed with PRP.
5. Any changes in ground conditions are to be reported to PRP immediately.
6. Foundation excavations to be inspected by PRP at the request of the client or by Building Control officer to ensure that the ground bearing pressure is in excess of 100kN/m².
7. All excavations are be free from debris prior to placement of concrete.
8. Standing water and softened material shall be removed from bottom of excavations prior to placement of concrete.
9. Concrete shall be protected from both frost and moisture loss during the curing stage.
10. Day joints in concrete shall be scabbled to provide a 'keying' - in surface for new concrete.
11. Day joints where no reinforcement extends out shall require a layer of A393 mesh top and bottom extending 450mm both sides of the joint.
12. Top surface of foundations shall be uniformly level
13. Where required formwork shall be constructed to produce foundations to the dimensions and shapes indicated on drawing
14. Formwork shall be constructed so there is no loss of concrete material
15. Concrete foundations shall be laid within the permissible deviations given in Tables 2 & 3 of BS 5606 for in - situ concrete unless agreed with PRP
16. Contractor to lay out positions of drainage and services prior to pouring of foundations, and notify engineer of any conflicts
17. Reinforcement to be high yield steel to BS 4449
18. Minimum lap lengths to be:
    H10 - 450mm H12 - 500mm
    H16 - 650mm H20 - 800mm
19. Mesh reinforcement shall be to BS 4483
20. Cover to all steel reinforcement, including links shall be 50mm top & sides and 50mm bottom
21. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above

Rev	Date	Description	By / Chk
C02	21/06/2022	Issued for Final Construction	DC / JM
C01	16/12/2021	Issued for Construction	JD / JM

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Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

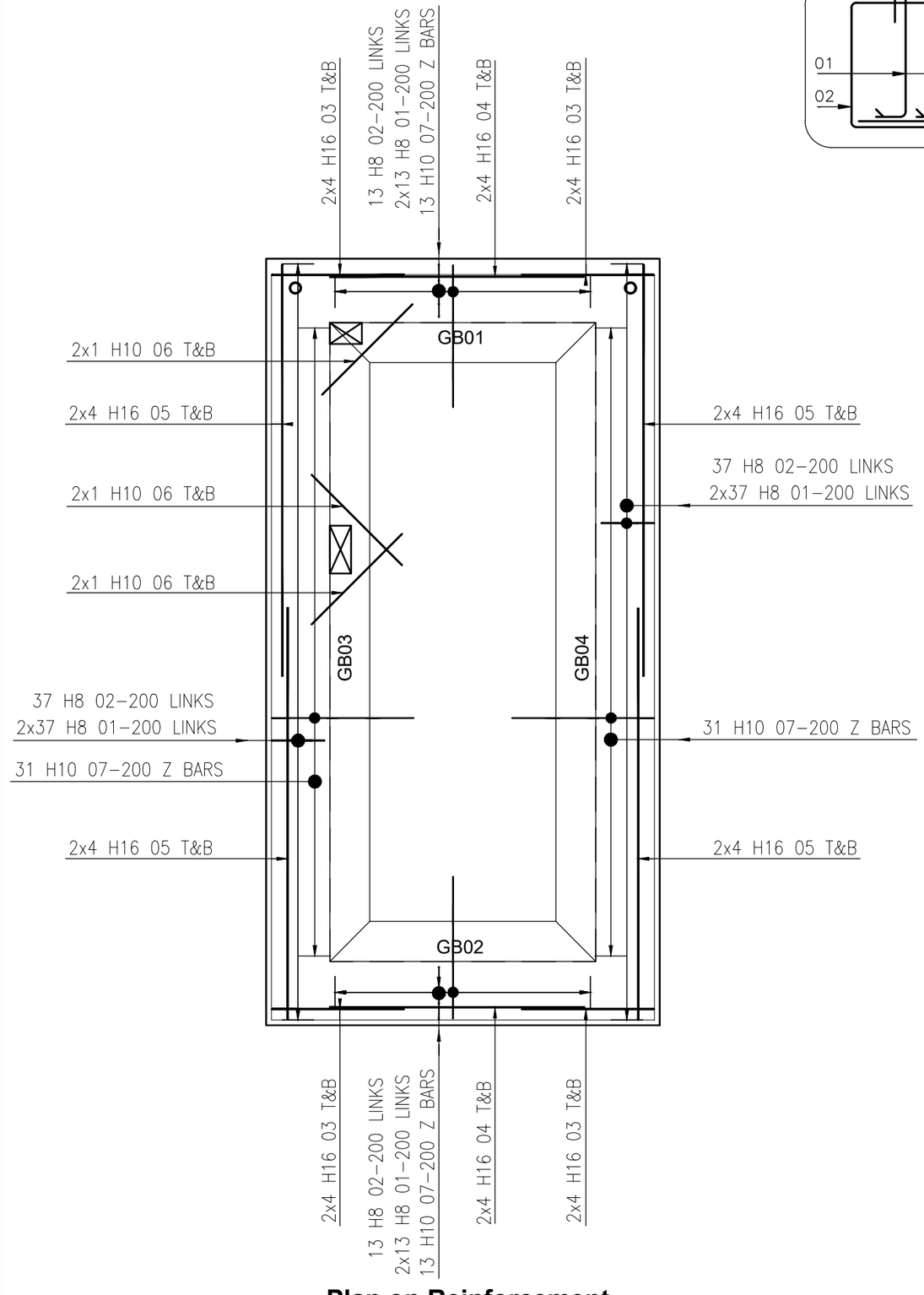
Project:
Calder Park
Wakefield
WK4 3FL

Title:
Gatehouse
Slab

Status: **FINAL CONSTRUCTION**

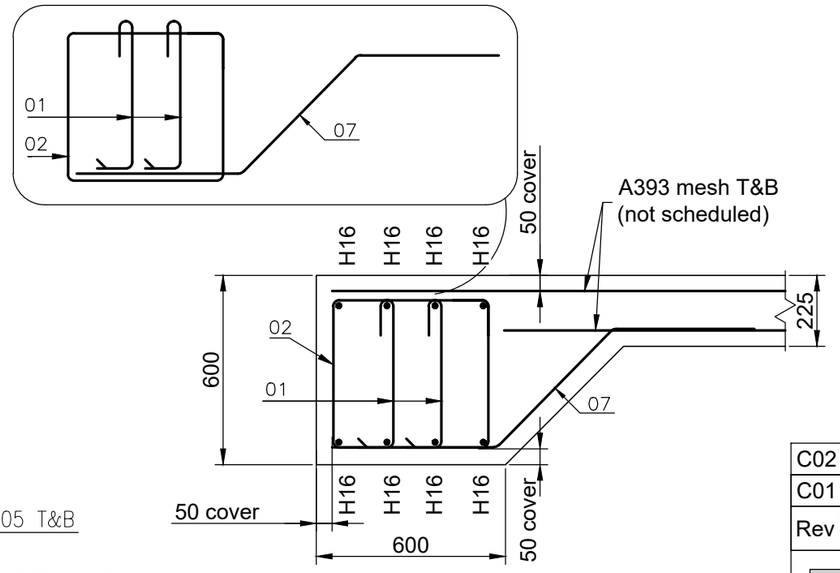
Engineer:	JM	Date:	Dec 2021
Drawn:	JD	Scales @ A1:	1:50 1:20
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

Drg No: P21024-PRP-BR-00-DR-S-0220 Rev: C02



Plan on Reinforcement

1:50



Typical Section

1:20

Reinforced Concrete (RC) Details:

1. Do not scale this drawing on print or electronically work from figured dimensions only.
2. Dimensions are given in millimeters and levels in meters.
3. Concrete grade for all elements: PAV2
4. Concrete clear cover:
   Ground Beams (u.n.o)
   top & sides : 50mm
   bottom : 50mm
5. All work to comply with the relevant British Standards, codes of practice and the building regulations.
6. Reinforcement on this drawing is listed on schedules numbered 63150 - 221 / 01
7. Unless noted otherwise on this drawing, the reinforcement shall be grade 500, type 2 deformed bars to BS4449 cut and bent in accordance with BS8666-2005 and the bar schedules.
8. Minimum lap lengths to be:
   H8 - 350mm H10 - 450mm
   H12 - 500mm H16 - 650mm
   H20 - 800mm H25 - 1000mm
   H32 - 1300mm H40 - 1600mm

ABBREVIATIONS:
T : Top
B : Bottom

TYPICAL REBAR CALL UP:
3x10 H20 01 - 200 - T
| | | | | | | └-- Notes
| | | | | | └-------- Spacing of bar
| | | | | └---------- Bar Mark reference
| | | | └------------ Dia of bar
| | | └-------------- Grade of steel
| | └---------------- Quantity of bars
| └------------------ Multiples
└-------------------- Multiples

Notes:

1. DO NOT SCALE FROM THIS DRAWING.
2. All dimensions are in millimetres Unless Noted Otherwise (u.n.o.)
3. Drawing is to be read in conjunction with all relevant architect's drawings. Any inconsistencies should be reported to PRP immediately.
4. All levels and dimensions are to be checked on site before any work commences.
5. For more information see PRP drawings:
   63150 - 100series - Drainage and External Works
   63150 - 200series - Foundations
   63150 - 300series - Superstructure
6. Drawing is to be read in conjunction with separate Bar Bending Schedules and revision checked
7. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, safety boots, reflective clothing, and the use of any other required safety equipment.

Rev	Date	Description	By / Chk
C02	21/06/2022	Issued for Final Construction	DC / JM
C01	15/12/2021	Issued for Construction	JD / JM

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Client: TUNGSTEN PROPERTIES LTD

Project:
Calder Park
Wakefield
WK4 3FL

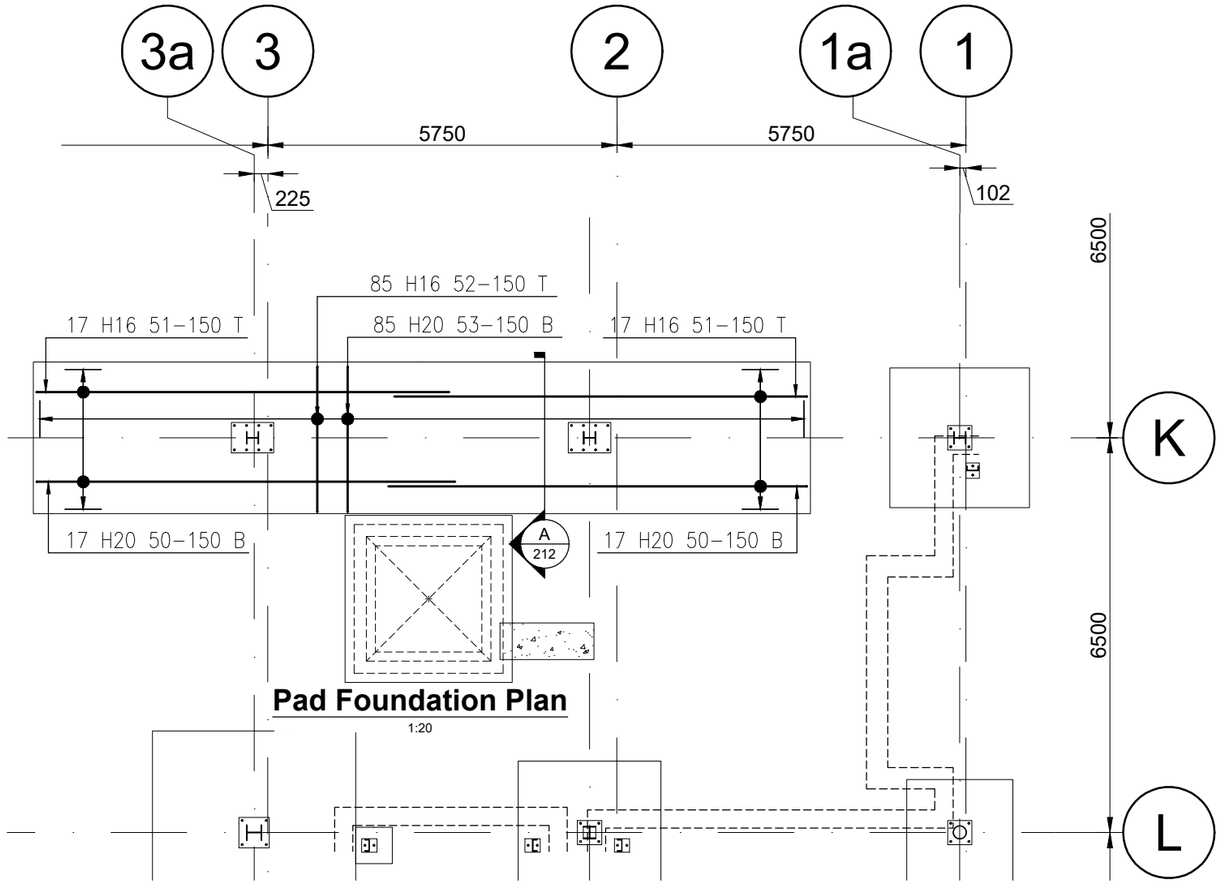
Architect:
HTC Architects

Title:
Gatehouse Reinforcement

Status:
FINAL CONSTRUCTION

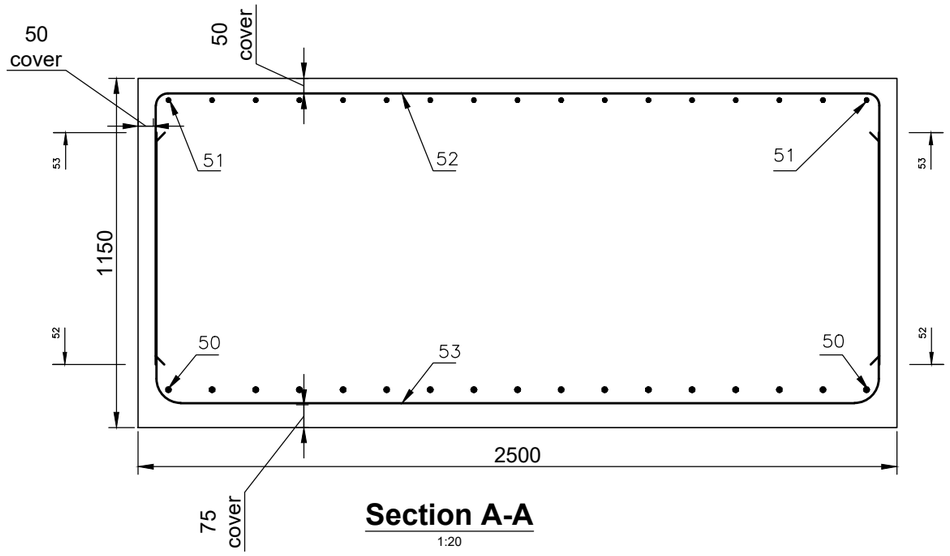
Engineer:	JM	Date:	Dec 2021
Drawn:	JD	Scales @ A3:	1:50 1:20
Checked:	JM		
PRP Ref No:	63150	Software:	CADS RC 2020

Drg No: P21024-PRP-BR-00-DR-S-0221
Rev: C02



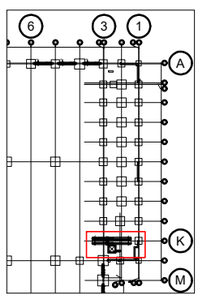
Pad Foundation Plan

1:20



Section A-A

1:20



Reinforced Concrete (RC) Details:

1. Do not scale this drawing on print or electronically work from figured dimensions only.
2. Dimensions are given in millimeters and levels in meters.
3. Concrete grade for all elements: RC30
4. Concrete clear cover:
   Pad Foundation (u.n.o)
   top & sides : 50mm
   bottom : 75mm
5. All work to comply with the relevant british standards, codes of practice and the building regulations.
6. Reinforcement on this drawing is listed on schedules numbered P21024-PRP-BR-00-SH-S-0213 01
7. Unless noted otherwise on this drawing, the reinforcement shall be grade 500, type 2 deformed bars to BS4449 cut and bent in accordance with BS8666-2005 and the bar schedules.
8. Minimum lap lengths to be:
   H8 - 350mm H10 - 450mm
   H12 - 500mm H16 - 650mm H20 - 1000mm

ABBREVIATIONS:
T : Top
B : Bottom

TYPICAL REBAR CALL UP:
3x10 H20 01 - 200 - T
| | | | | | └-- Notes
| | | | | └-------- Spacing of bar
| | | | └---------- Bar Mark reference
| | | └------------ Dia of bar
| | └-------------- Grade of steel
| └---------------- Quantity of bars
└------------------ Multiples

Rev	Date	Description	By / Chk
C02	21/06/2022	Issued for Final Construction	DC / JM
C01	30/11/2021	Issued for comments	GAJ / JT

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Client: TUNGSTEN PROPERTIES LTD

Project:
Calder Park
Wakefield, WK4 3FL

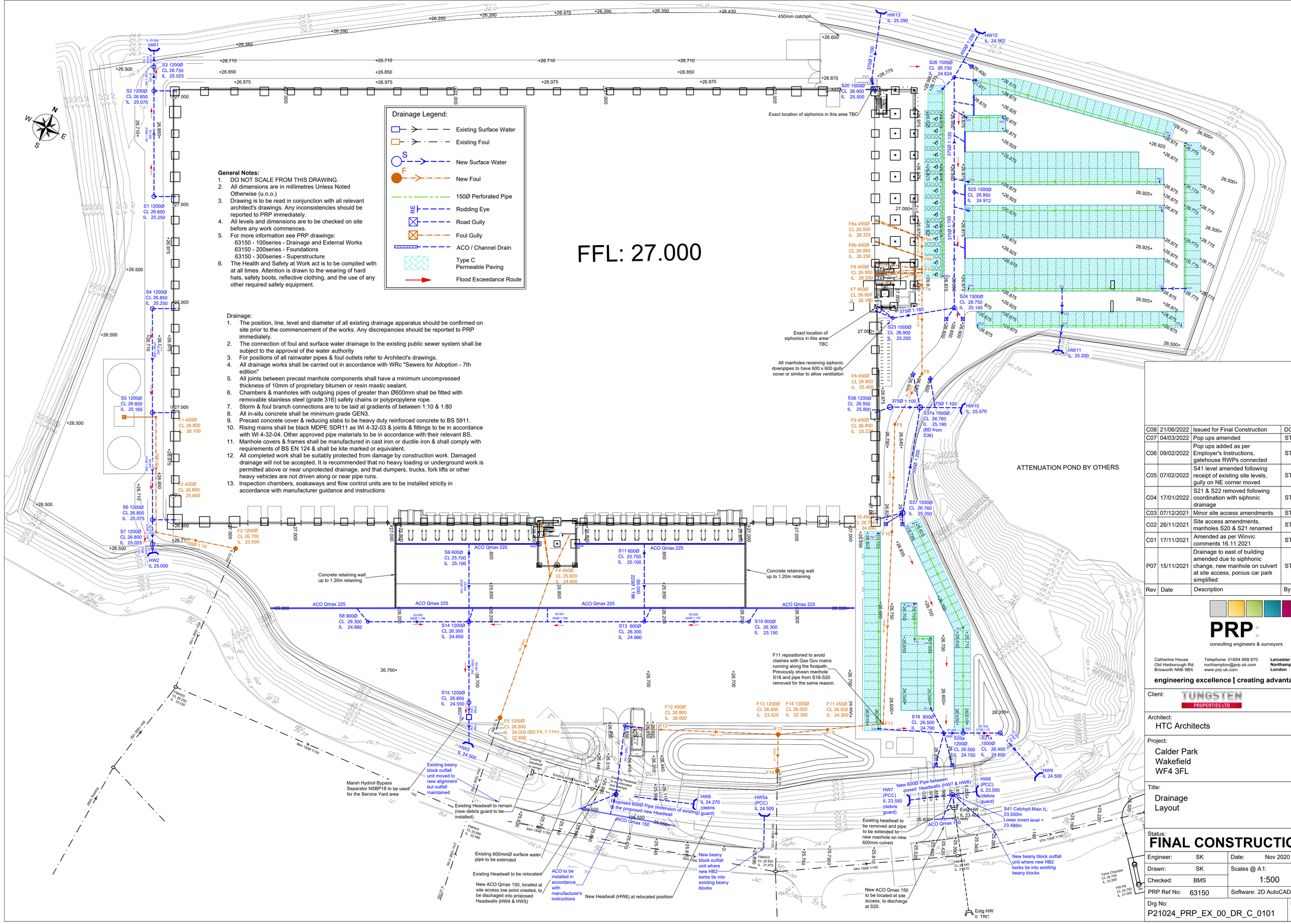
Architect:
HTC Architects

Title:
Foundations - PAD 39 - RC Details

Status:
FINAL CONSTRUCTION

Engineer:	JKT	Date:	Noc 2021
Drawn:	GAJ	Scales @ A3:	1:100 1:20
Checked:	JM		
PRP Ref No:	63150	Software:	CADS RC 2019

Drg No: P21024-PRP-BR-00-DR-S-0212
Rev: C02



C08	21/06/2022	Issued for Final Construction	DC / JM
C07	04/03/2022	Pop ups amended	ST / JM
C06	09/02/2022	Pop ups added as per Employer's Instructions, gatehouse RWPs connected	ST / JM
C05	07/02/2022	S41 level amended following receipt of existing site levels, gully on NE corner moved	ST / JM
C04	17/01/2022	S21 & S22 removed following coordination with siphonic drainage	ST / JM
C03	07/12/2021	Minor site access amendments	ST / JM
C02	26/11/2021	Site access amendments, manholes S20 & S21 renamed	ST / JM
C01	17/11/2021	Amended as per Winvic comments 16.11.2021	ST / JM
P07	15/11/2021	Drainage to east of building amended due to siphonic change, new manhole on culvert at site access, porous car park simplified	ST / JM
Rev	Date	Description	By / Chk

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Leicester
Northampton
London

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Client: TUNGSTEN PROPERTIES LTD

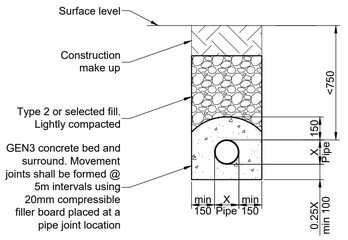
Architect: HTC Architects

Project:
Calder Park
Wakefield
WF4 3FL

Title:
Drainage Layout

Status: **FINAL CONSTRUCTION**

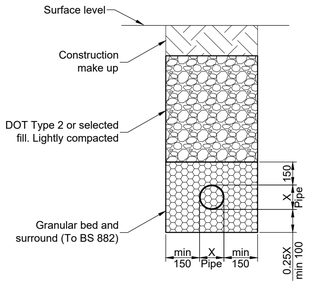
Engineer:	SK	Date:	Nov 2020
Drawn:	SK	Scales @ A1:	1:500
Checked:	BMS		
PRP Ref No:	63150	Software:	2D AutoCAD 2010
Drg No:	P21024_PRP_EX_00_DR_C_0101	Rev:	C08



Typical Pipe Bedding With Concrete Bed and Surround

1:20

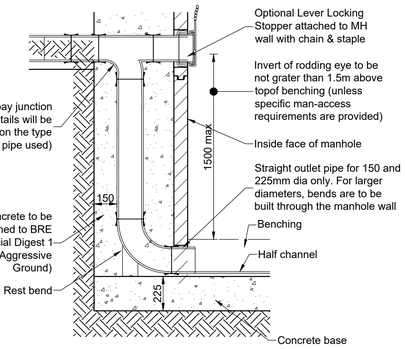
GEN3 concrete bed and surround to be used under paved areas where the depth between the finished construction level and the Barrel of the drain is less than 750mm.



Typical Pipe Bedding With Granular Bed and Surround

1:20

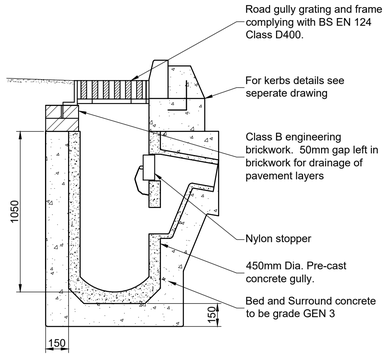
Granular bed and surround to be used where concrete bed and surround are not required.



Note: steeper gradients are preferred to the use of backdrops.
Type of backdrop (vertical or 45deg ramped) to be used to be agreed with Undertaker.

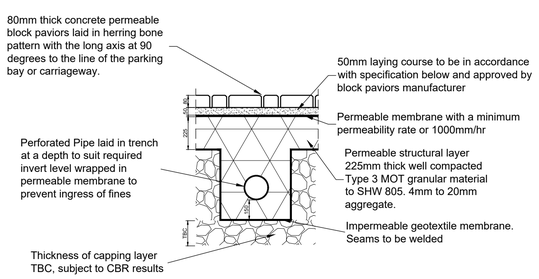
Typical Vertical Backdrop Detail

1:20



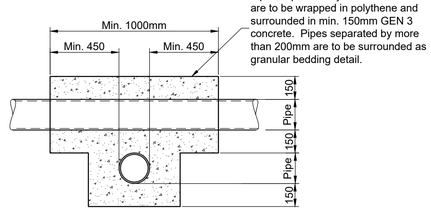
Typical Concrete Gully Detail

1:20



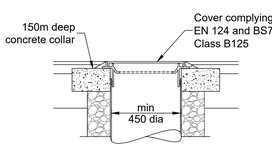
Typical Porous Pipe in Permeable Block Paved Areas Providing Attenuation

1:20



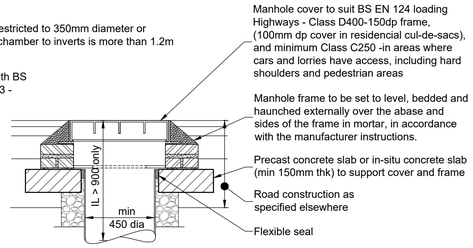
Typical Pipe Crossing Detail

1:20

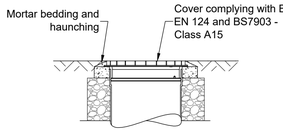


Cover for Driveways, Footpaths and Landscaped Areas

1:20



Min 900mm IL, for shallower chambers use Type 3 (precast concrete rings) or Type 4 (brick manhole)

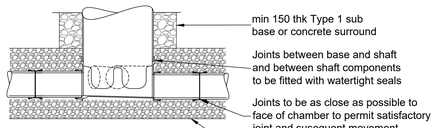


Cover for Domestic Gardens

1:20

Cover for Roads and Carparks

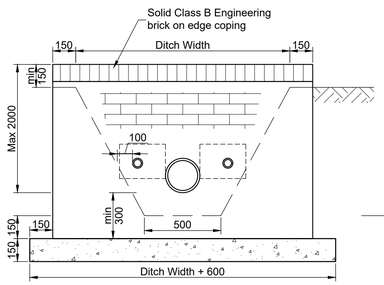
1:20

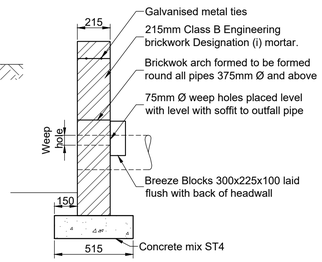


Plastic chambers and rings shall comply with BS EN 13598-1 and BS EN 13598-2 or have equivalent independent approval

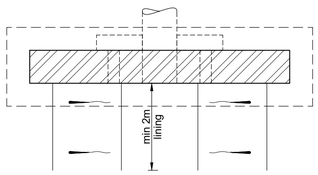
Polypropylene Inspection Chamber (PPIC) Detail

1:20



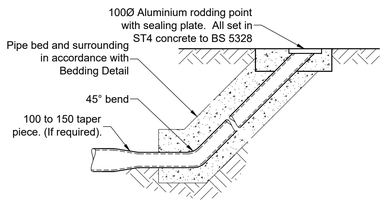


1. All dimensions in millimeters
2. Brickwork to be used in England Bond
3. Generally used for maximum depth of up to 2m and a width of 4.5m
4. Ditch lininig to be invert Type 3 with side slopes Type 7 for a minimum distance of 2m unless otherwise described in the Contract
5. this detail is for use with pipe sized up to 450mm diameter



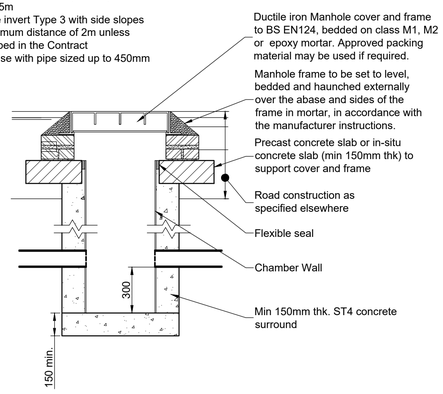
Headwal Details

1:20



Rodding Eye Detail

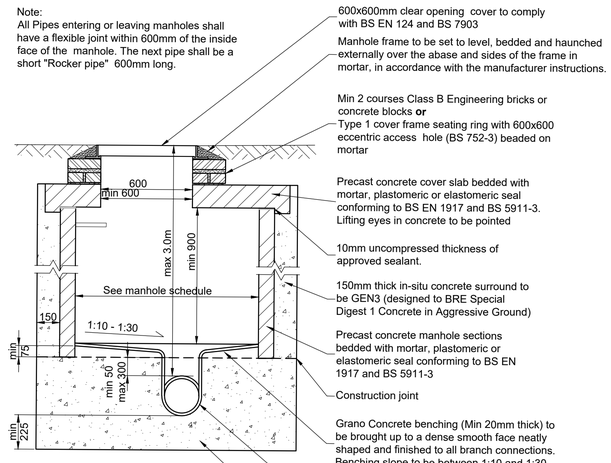
1:20



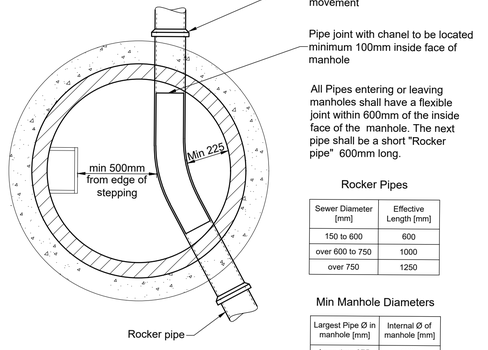
Typical Catchpit Detail

1:20

Note:
All Pipes entering or leaving manholes shall have a flexible joint within 600mm of the inside face of the manhole. The next pipe shall be a short "Rocker pipe" 600mm long.



Typical Manhole Detail

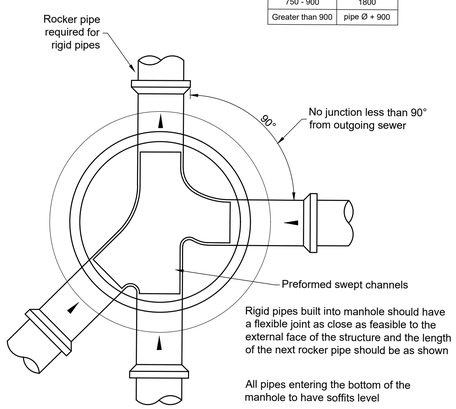


Rocker Pipes

Sewer Diameter [mm]	Effective Length [mm]
150 to 600	600
over 600 to 750	1000
over 750	1250

Min Manhole Diameters

Largest Pipe Ø in manhole [mm]	Internal Ø of manhole [mm]
Less than 375	1200
375 - 450	1350
500 - 700	1500
750 - 900	1800
Greater than 900	pipe Ø + 900



Arrangement of Pipe Junctions Within Manholes

1:20

Notes:

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4. All levels and dimensions are to be checked on site before any work commences.
5. For more information see PRP drawings:
   63150 - 100series - Drainage and External Works
   63150 - 200series - Foundations
   63150 - 300series - Superstructure
6. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, safety boots, reflective clothing, and the use of any other required safety equipment.

Drainage:

1. The position, line, level and diameter of all existing drainage apparatus should be confirmed on site prior to the commencement of the works. Any discrepancies should be reported to PRP immediately.
2. The connection of foul and surface water drainage to the existing public sewer system shall be subject to the approval of the water authority
3. For positions of all rainwater pipes & foul outlets refer to Architect's drawings.
4. All drainage works shall be carried out in accordance with WRc "Sewers for Adoption - 7th edition"
5. All joints between precast manhole components shall have a minimum uncompressed thickness of 10mm of proprietary bitumen or resin mastic sealant.
6. Chambers & manholes with outgoing pipes of greater than Ø600mm shall be fitted with removable stainless steel (grade 316) safety chains or polypropylene rope.
7. Storm & foul branch connections are to be laid at gradients of between 1:10 & 1:80
8. All in-situ concrete shall be minimum grade GEN3.
9. Precast concrete cover & reducing slabs to be heavy duty reinforced concrete to BS 5911.
10. Rising mains shall be black MDPE SDR11 as WI 4-32-03 & joints & fittings to be in accordance with WI 4-32-04. Other approved pipe materials to be in accordance with their relevant BS.
11. Manhole covers & frames shall be manufactured in cast iron or ductile iron & shall comply with requirements of BS EN 124 & shall be kite marked or equivalent.
12. Where there is no intermediate manhole between the start of a surface water pipe run and the soakaway the gradient of the run shall be not less than 1 : 60.
13. All completed work shall be suitably protected from damage by construction work. Damaged drainage will not be accepted. It is recommended that no heavy loading or underground work is permitted above or near unprotected drainage, and that dumpers, trucks, fork lifts or other heavy vehicles are not driven along or near pipe runs.
14. Inspection chambers, soakaways and flow control units are to be installed strictly in accordance with manufacturer guidance and instructions

Rev	Date	Description	By / Chk
C02	21/06/2022	Issued for Final Construction	DC / JM
C01	09/12/2021	Issued for construction	ST / JM
P03	12/07/2021	Drainage Constr. Details updated.	SK /BMS
P02	17/06/2021	BIM numbering	KMV/BMS
P1	02/12/2020	Issued for Planning	SK /BMS

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Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

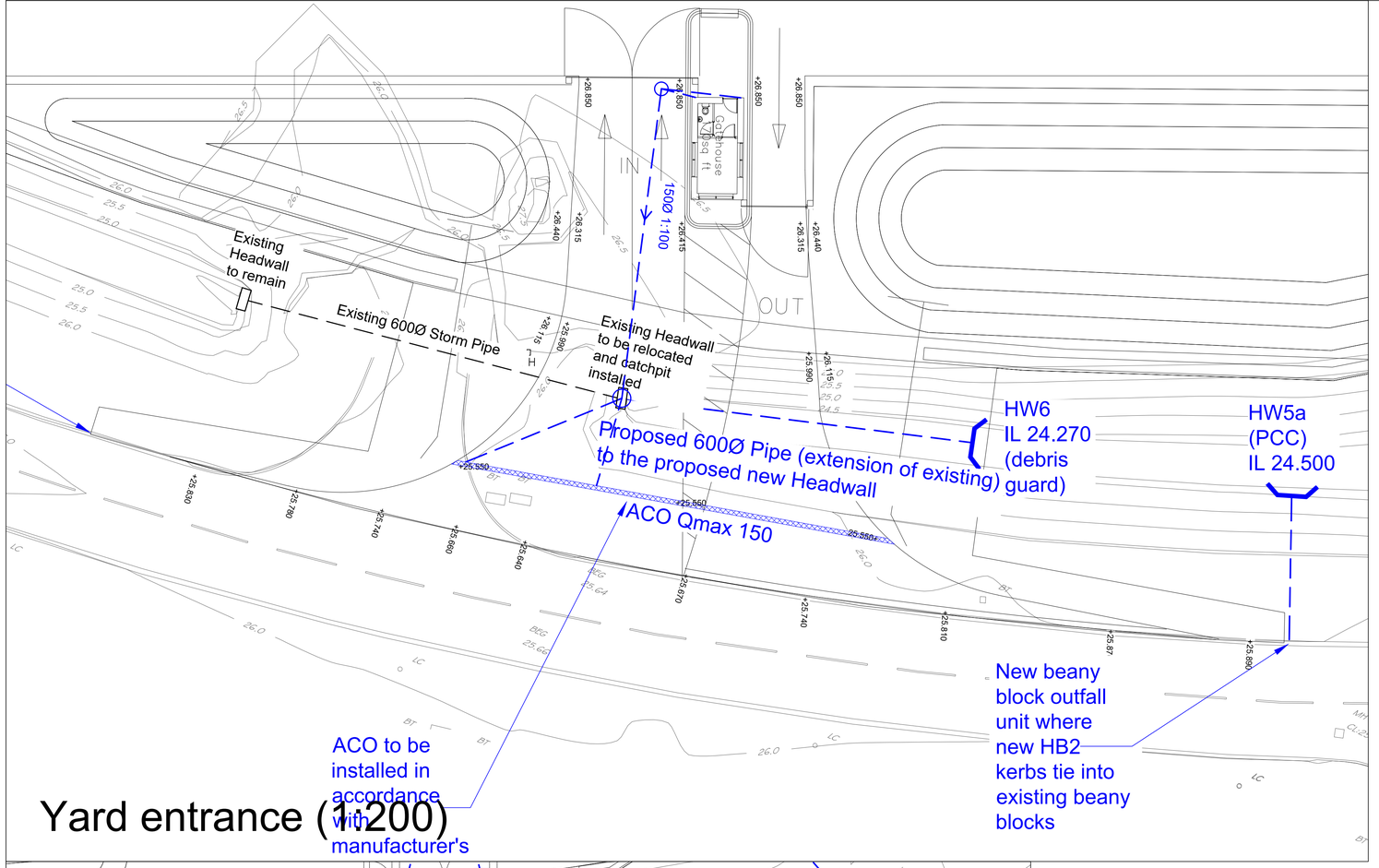
Project: Calder Park, Wakefield, WF4 3FL

Title: Drainage Construction Details

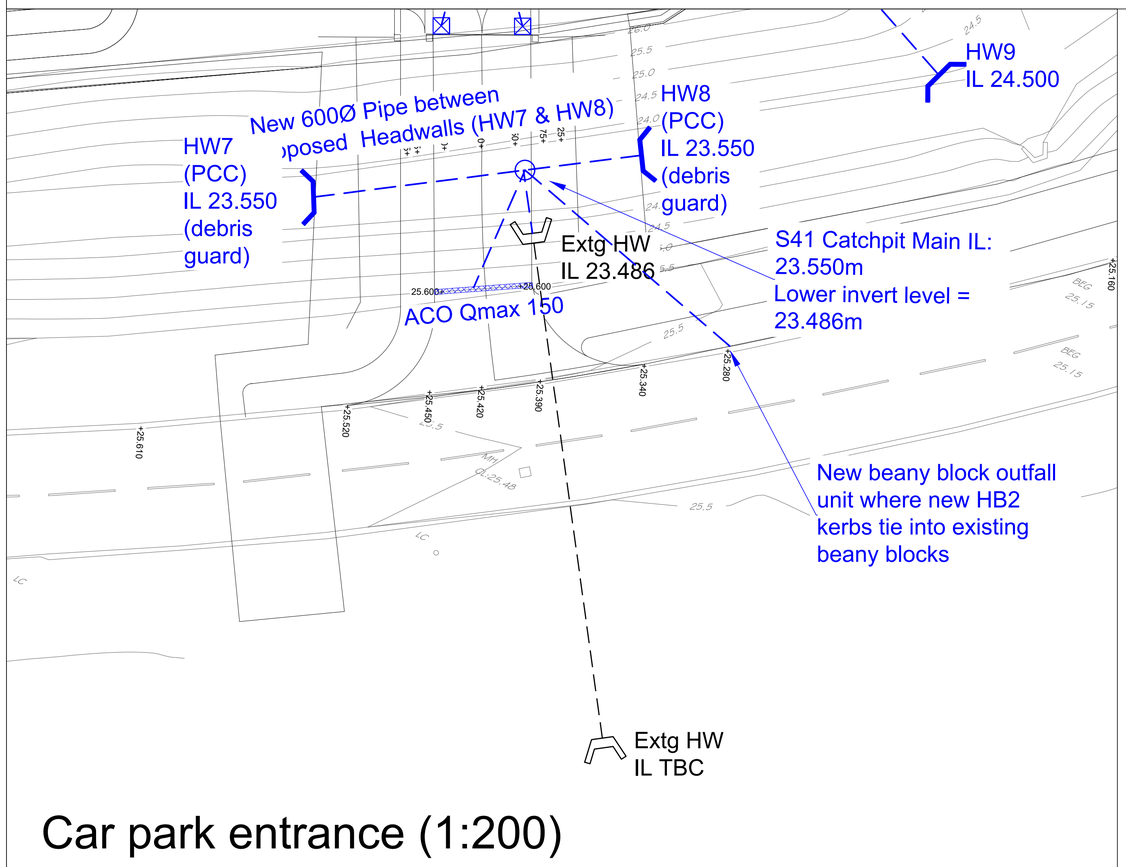
Status: **FINAL CONSTRUCTION**

Engineer:	SK	Date:	Nov 2020
Drawn:	SK	Scales @ A1:	1:20
Checked:	BMS		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

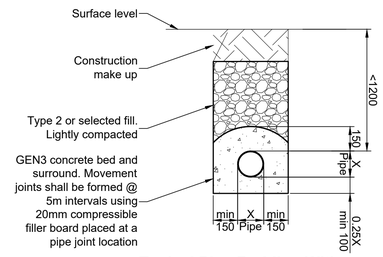
Drg No: P21024_PRP_EX_00_DR_C_0102 Rev: C02



Yard entrance (1:200)

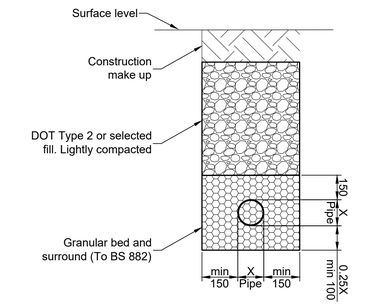


Car park entrance (1:200)



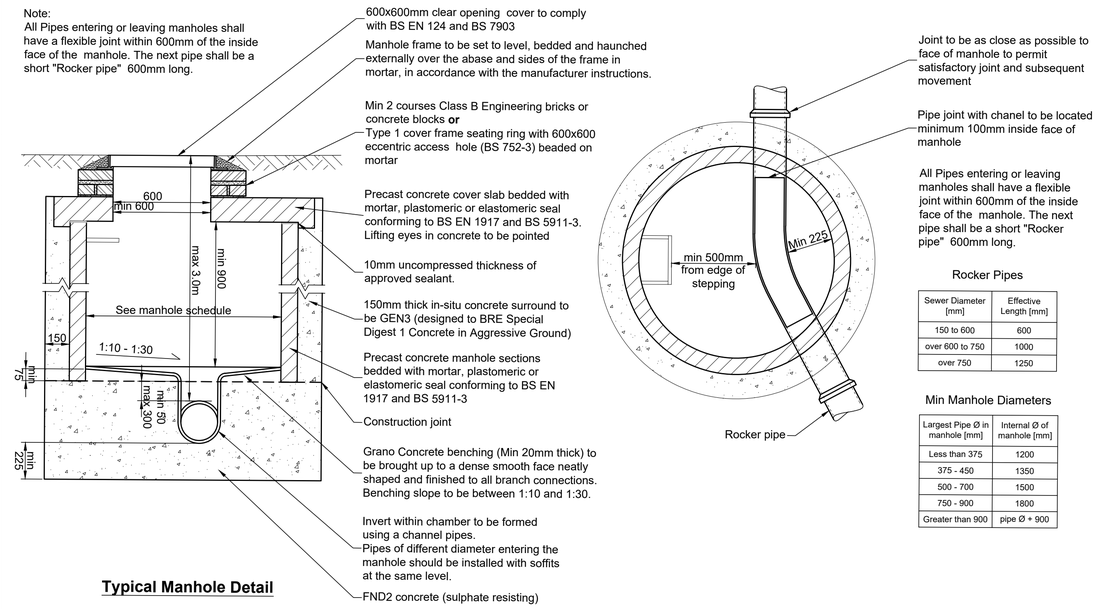
Typical Pipe Bedding With Concrete Bed and Surround
1:20

GEN3 concrete bed and surround to be used under paved areas where the depth between the finished construction level and the Barrel of the drain is less than 1200mm.



Typical Pipe Bedding With Granular Bed and Surround
1:20

Granular bed and surround to be used where concrete bed and surround are not required.



Typical Manhole Detail

Rocker Pipes

Sewer Diameter [mm]	Effective Length [mm]
150 to 600	600
over 600 to 750	1000
over 750	1250

Min Manhole Diameters

Largest Pipe Ø in manhole [mm]	Internal Ø of manhole [mm]
Less than 375	1200
375 - 450	1350
500 - 700	1500
750 - 900	1800
Greater than 900	pipe Ø + 900

General Notes:

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   63150 - 100series - Drainage and External Works
   63150 - 200series - Foundations
   63150 - 300series - Superstructure
6. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, safety boots, reflective clothing, and the use of any other required safety equipment.

Drainage:

1. The position, line, level and diameter of all existing drainage apparatus should be confirmed on site prior to the commencement of the works. Any discrepancies should be reported to PRP immediately.
2. The connection of foul and surface water drainage to the existing public sewer system shall be subject to the approval of the water authority
3. For positions of all rainwater pipes & foul outlets refer to Architect's drawings.
4. All drainage works shall be carried out in accordance with WRc "Sewers for Adoption - 7th edition"
5. All joints between precast manhole components shall have a minimum uncompressed thickness of 10mm of proprietary bitumen or resin mastic sealant.
6. Chambers & manholes with outgoing pipes of greater than Ø600mm shall be fitted with removable stainless steel (grade 316) safety chains or polypropylene rope.
7. Storm & foul branch connections are to be laid at gradients of between 1:10 & 1:80
8. All in-situ concrete shall be minimum grade GEN3.
9. Precast concrete cover & reducing slabs to be heavy duty reinforced concrete to BS 5911.
10. Manhole covers & frames shall be manufactured in cast iron or ductile iron & shall comply with requirements of BS EN 124 & shall be kite marked or equivalent.
11. All completed work shall be suitably protected from damage by construction work. Damaged drainage will not be accepted. It is recommended that no heavy loading or underground work is permitted above or near unprotected drainage, and that dumpers, trucks, fork lifts or other heavy vehicles are not driven along or near pipe runs.
12. Inspection chambers, headwalls, gullies, ACO channels, and beany kerbs are to be installed strictly in accordance with manufacturer guidance and instructions

Drainage Legend:

- Existing Surface Water
- New Surface Water
- Rodding Eye
- Road Gully
- ACO / Channel Drain

Rev	Date	Description	By / Chk
C03	21/06/2022	Issued for Final Construction	DC / JM
C02	07/02/2022	S41 amended	ST / JM
C01	07/12/2021	Debris guards added to 600mm headwalls, manhole in HGV entrance changed to CP	ST / JM

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London

engineering excellence | creating advantage

Client: Tungsten Properties Ltd

Architect: HTC Architects

Project:
Calder Park
Wakefield
WF4 3FL

Title:
Proposed Site Accesses
Drainage Layout & Details

Status: **FINAL CONSTRUCTION**

Engineer:	ST	Date:	Nov 2021
Drawn:	ST	Scales @ A1:	AS SHOWN
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

Drg No: P21024_PRP_EX_00_DR_C_0103 Rev: C03

Notes:

- For Proposed External Surfaces Plan please refer to HTC Architects drawing: 'P21024_HTC_XX_ZZ_DR_A_C401 P1 Surface Treatments Site Plan'.
- For Proposed Kerbing Plan please refer to HTC Architects drawing: 'P21024_HTC_XX_ZZ_DR_A_C400 P06 GA Site Plan'.
- For the extent of Proposed Permeable Paving please refer to PRP Drainage Layout drawing: 'P21024-PRP-EX-00-DR-C-0101 P06'.
- For Proposed External Surfaces Construction Details please refer to PRP External Works Construction Details drawing: 'P21024-PRP-EX-00-DR-C-0111 P03'.

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   63150 - 300series - Superstructure
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Legend:

- +100.00 Existing Levels
- 65.500 New Levels
- 1/X Slope
- Gully & ACO/Channel Drain
- BB Beany Block
- HB HB2 Kerb
- TK Transition Kerb
- BN Bullnose Kerb
- TP Tactile Paving
- ED Edging Kerb
- HCK Trief Kerb
- Proposed Concrete Slab
- Proposed Asphalt Carriageway
- Proposed Asphalt Footway

FFL: 27.000

External Works:

1. Prior to any works being carried out within or immediately adjacent to the public highway, a scheme for the safe control of traffic and pedestrians is to be agreed with the Highway Authority and implemented
2. Any utilities shown on this drawing are indicative only. It is the Contractor's responsibility to trace and indicate the precise location and nature of all services.
3. The Developer/Contractor shall be responsible for liaison with the Statutory Undertakers and other cable service companies for the provision of all required services, diversion.
4. Special care is to be taken when excavating in the vicinity of existing tress, it is not intended that any tree roots should be severed or damaged and specialist advice should be sought when major roots present a problem.
5. The formation of all surfaces shall be trimmed, rolled and treated with a glyphosphate based weedkiller in accordance with the manufacturers instructions prior to laying the sub-base
6. All in situ concrete shall be Designated Concrete GEN3 produced in accordance with BS 8500-2006.
7. In all instances sulphate resisting cement is to be used.
8. Half Battered and Splayed kerbs face shall be 125mm above the channel level. Bullnosed kerb shall be 0-6mm above wearing course for pedestrian crossing and 25mm for vehicular access
9. The minimum depth of concrete below all kerbs shall be 150mm. Kerbs shall be laid on a 10-40mm bed of Class 1 cement mortar unless laid with the foundation in one operation.
10. Adequate bond must be made between foundation and haunch if laid in more than one operation. Preferred method of bonding to be by means of steel U-bars reinforcement, any other method to be approved by PRP.
11. Mortar joints between kerbs not to be provided unless specified. Gaps between kerbs to be 1 to 2mm.
12. The sub-grade shall be prepared to falls to ensure that construction thickness' remain uniform, Following trimming of the sub-grade it shall be protected against the ingress of water, failure to do so will seriously weaken the sub-grade.
13. All soft spots shall be excavated and replaced with compacted sub-base material
14. The minimum total carriageway construction thickness shall not be less than 450mm.
15. All materials used in top 450mm of carriageway construction shall be non-frost susceptible.

Varied kerb face (125-0mm)

Concrete retaining wall up to 1.20m retaining

Concrete retaining wall up to 1.20m retaining

Refer to PRP drawing 117 for detailed site access arrangements

Refer to PRP drawing 117 for detailed site access arrangements

EXISTING BB

EXISTING BB

EXISTING BB

HB EXISTING BB

Rev	Date	Description	By / Chk
C03	21/06/2022	Issued for Final Construction	DC / JM
C02	07/02/2022	Levels on NE corner of building, site entrances updated to suit architect's layout	ST / JM
C01	26/11/2021	Amendments to site accesses	ST / JM
P07	15/11/2021	Porous car park simplified, levels added	ST / JM
P06	25/10/2021	Latest Architect's Site Plan added. Proposed Levels updated. Levels added around accesses.	SK / JM
P05	03/09/2021	Site plan updated to Architects latest layout. Proposed levels updated accordingly.	SK / JM
P04	12/07/2021	External works levels updated.	SK /BMS
P03	17/06/2021	dwg 0103 changed to 0110, BIM nos added	KMV/BMS
P2	12/02/2021	Bund levels added as land architect dets..	BMS/BMS
P1	15/12/2020	Issued for Comment.	SK /BMS

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Northampton
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Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

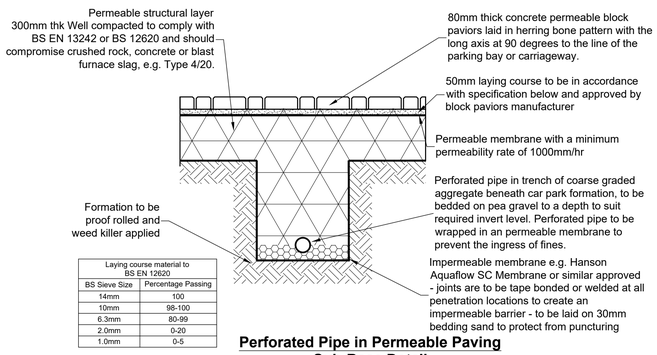
Project:
Calder Park
Wakefield
WK4 3FL

Title: External Works

Status: **FINAL CONSTRUCTION**

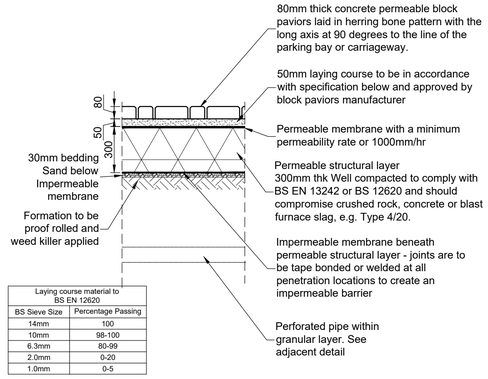
Engineer:	SK	Date:	Nov 2020
Drawn:	SK	Scales @ A1:	1:500
Checked:	BMS		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

Drg No: P21024-PRP-EX-00-DR-C-0110 Rev: C03



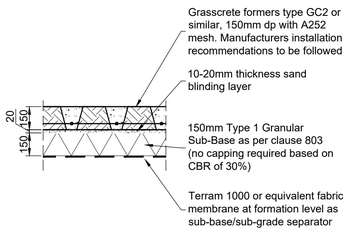
Laying course material to BS EN 12620	
BS Sieve Size	Percentage Passing
14mm	100
10mm	98-100
6.3mm	80-99
2.0mm	0-20
1.0mm	0-5

Perforated Pipe in Permeable Paving Sub-Base Detail
1:20



Laying course material to BS EN 12620	
BS Sieve Size	Percentage Passing
14mm	100
10mm	98-100
6.3mm	80-99
2.0mm	0-20
1.0mm	0-5

Permeable Block Paving to car parking spaces
1:20



Access Route Construction
1:20

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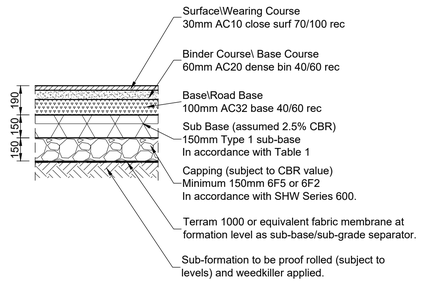
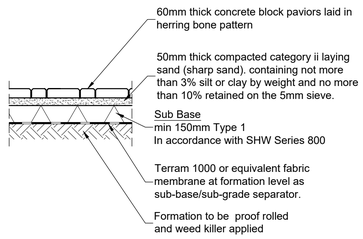
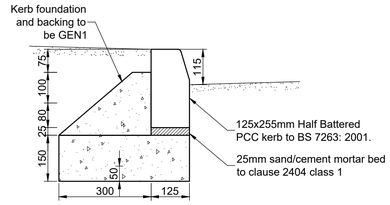


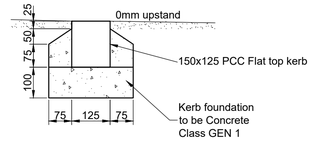
Car Parking Access and Aisles Tarmac Surface Construction
1:20



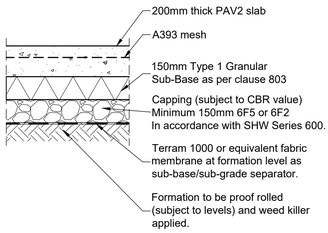
Block Paved Footpath Detail around Pedestrian Footpaths within office car park areas
1:20



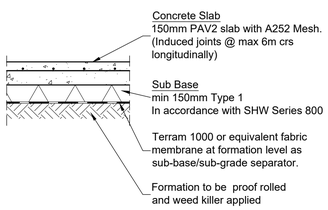
Concrete Kerb Type: HB
1:10



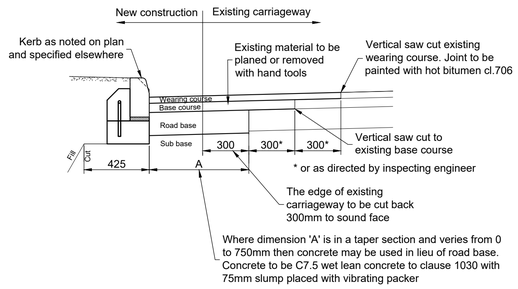
Concrete Square Channel Kerb Type
1:10



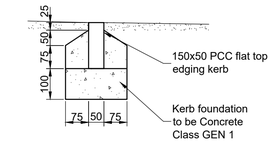
Concrete Yard Slab Construction
1:20



Concrete Footpath Construction
1:20



Construction Detail Adjacent to Existing Carriageway
1:10



Footpath/Footway Edging Type: ED
1:10

Sub-Base / Sub-Grade Thickness (Access Roads & Service Yards)		
CBR Value	Sub Base + Capping (mm)	Sub Base Alone (mm)
< 2%	150 sub-base + 600 capping	N/A
2.5%	150 sub-base + 400 capping	N/A
3%	150 sub-base + 350 capping	300
5%	150 sub-base + 250 capping	225
10%	150 sub-base + 190 capping	180
15%	150 sub-base + 150 capping	150
> 15%	150 sub-base	0

On frost susceptible sub-grades minimum total construction thickness = 450mm
The formation is to be proof rolled prior to laying of any Sub-base material.
Clause references shown on this drawing refer to DTp Specification for Highway Works.
Any make-up necessary beneath Type 1 Sub-base to be Type 1 or Class 6F2 Capping material.

Sub-Base / Sub-Grade Thickness (Car Parking)	
CBR Value	Sub Base + Capping (mm)
< 2%	150 sub-base + 350 capping
2%	150 sub-base + 250 capping
3%	150 sub-base + 150 capping
4%	150 sub-base + 100 capping
> 5%	200 sub-base

Note:

External Works Construction Details drawing to be read in conjuction with HTC Architects Proposed External Surfaces Plan drawing: 'P21024_HTC_XX_ZZ_DR_A_C401 P1 Surface Treatments Site Plan'.

NOTE

1) All works to be carried out in accordance with the DfT specificaiton for Highway Works and latest British Standards and Codes of Practice unless agreed in writing with Borough Council Engineer.
2) General deterioration of the existing highway / footway / verges created through construction of the new S278 development will be reinstated to the satisfaction of the Borough Council Engineer at the developers' own expense.
3) No private surface water shall discharge onto adoptable highway.

External Works:

1. Prior to any works being carried out within or immediately adjacent to the public highway, a scheme for the safe control of traffic and pedestrians is to be agreed with the Highway Authority and implemented
2. Any utilities shown on this drawing are indicative only. It is the Contractor's responsibility to trace and indicate the precise location and nature of all services.
3. The Developer/Contractor shall be responsible for liaison with the Statutory Undertakers and other cable service companies for the provision of all required services, diversion.
4. Special care is to be taken when excavating in the vicinity of existing tress, it is not intended that any tree roots should be severed or damaged and specialist advice should be sought when major roots present a problem.
5. The formation of all surfaces shall be trimmed, rolled and treated with a glyphosphate based weedkiller in accordance with the manufacturers instructions prior to laying the sub-base
6. All in situ concrete shall be Designated Concrete GEN3 produced in accordance with BS 8500-2006.
7. In all instances sulphate resisting cement is to be used.
8. Half Battered and Splayed kerbs face shall be 125mm above the channel level. Bullnosed kerb shall be 0-6mm above wearing course for pedestrian crossing and 25mm for vehicular access
9. The minimum depth of concrete below all kerbs shall be 150mm. Kerbs shall be laid on a 10-40mm bed of Class 1 cement mortar unless laid with the foundation in one operation.
10. Adequate bond must be made between foundation and haunch if laid in more than one operation. Preferred method of bonding to be by means of steel U-bars reinforcement, any other method to be approved by PRP.
11. Mortar joints between kerbs not to be provided unless specified. Gaps between kerbs to be 1 to 2mm.
12. The sub-grade shall be prepared to falls to ensure that construction thickness' remain uniform, Following trimming of the sub-grade it shall be protected against the ingress of water, failure to do so will seriously weaken the sub-grade.
13. All soft spots shall be excavated and replaced with compacted sub-base material
14. The minimum total carriageway construction thickness shall not be less than 450mm.
15. All materials used in top 450mm of carriageway construction shall be non-frost susceptible.

Rev	Date	Description	By / Chk
C04	21/06/2022	Issued for Final Construction	DC / JM
C03	07/02/2022	Access route detail added	KMV/ JM
C02	17/01/2022	Footpath mesh corrected to A252	ST / JM
C01	09/12/2021	Issued for construction	ST / JM
P03	12/07/2021	External works construction details updated.	SK /BMS
P02	17/06/2021	BIM nos added	KMV/BMS
P1	25/05/2020	DRAFT - WORK IN PROGRESS	SK /BMS

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Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

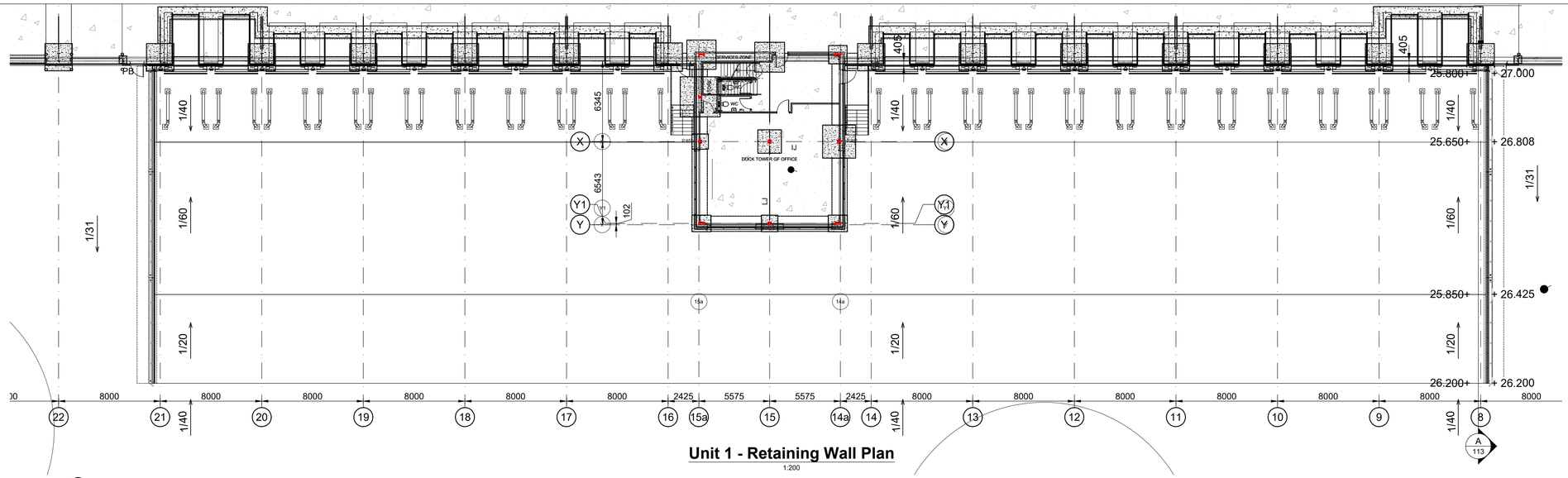
Project:
Calder Park
Wakefield
WK4 3FL

Title:
External Works
Construction Details

Status: **FINAL CONSTRUCTION**

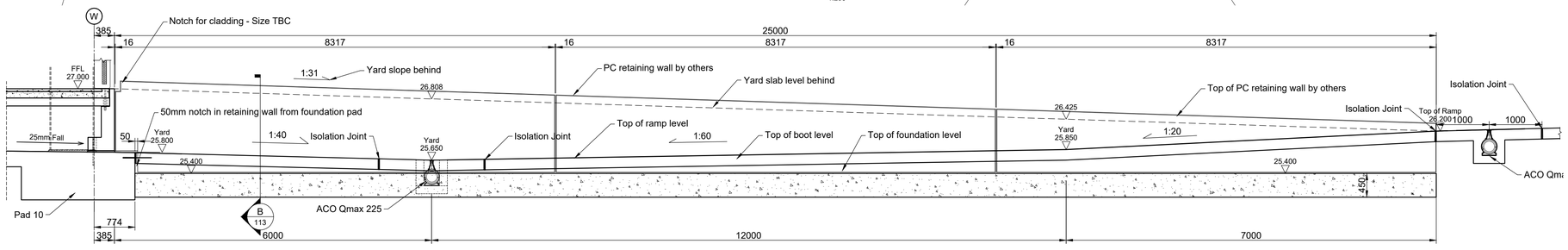
Engineer:	SK	Date:	Nov 2020
Drawn:	SK	Scales @ A1:	1:20 1:10
Checked:	BMS		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

Drg No: P21024-PRP-EX-00-DR-C-0111
Rev: C04



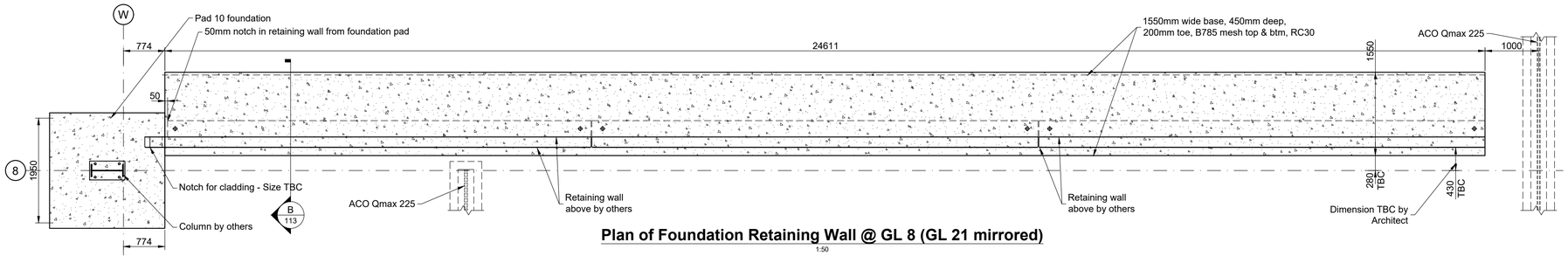
Unit 1 - Retaining Wall Plan

1:200



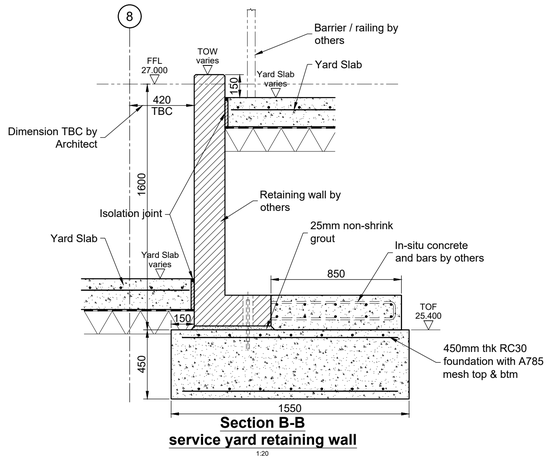
Unit 1 - Yard Ramp Section A-A

1:50



Plan of Foundation Retaining Wall @ GL 8 (GL 21 mirrored)

1:50



Section B-B service yard retaining wall

1:20

Notes:

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3. Drawing is to be read in conjunction with all relevant architect's drawings. Any inconsistencies should be reported to PRP immediately.
4. All levels and dimensions are to be checked on site before any work commences.
5. For more information see PRP drawings:
   63150 - 100series - Drainage and External Works
   63150 - 200series - Foundations
   63150 - 300series - Superstructure
6. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, safety boots, reflective clothing, and the use of any other required safety equipment.

Yard Slab:

1. The Contractor shall check all tie-ins for line and level with existing before commencing any works. The Engineer shall be notified immediately, in writing, should any errors be found.
2. Any discrepancies, of whatever nature, must be reported to the Engineer prior to the commencement or requirements of the Health and Safety At Work Act 1974, and CDM regulations 2015. The contractor will be deemed to have allowed for full compliance, including full liaison with the planning supervisor, within his rates.
3. All private drainage works to be in accordance with the requirements of Building Regulations 2000, Part H, "Drainage and waste disposal".
4. Should any departure from the slab level be considered, agreement shall be sought from the Engineer immediately and prior to commencement or continuance of any works, and should take full account of all restrictions to the slab level.
5. This drawing is to be read in conjunction with all other relevant Engineering and Architects details
6. Under no circumstances shall additional water or additives be supplemented to the design mix without approval from PRP.
7. Any changes in ground conditions are to be reported to PRP immediately.
8. Concrete shall be protected from both frost and moisture loss during the curing stage.
9. Contractor to check Architect's and other specialist drawings to lay out positions of drainage and services prior to pouring of slab, and notify engineer of any conflicts
10. Bottom of excavations shall be trimmed and leveled
11. Type 1 sub-base to be in accordance with the Specification for Highway Works placed and compacted with plant approved by the structural engineer
12. Reinforcement to be high yield steel to BS 4449
13. Minimum lap lengths to be:
    H10 - 450mm H12 - 500mm H16 - 650mm
14. Mesh reinforcement shall be to BS 4483
15. Mesh reinforcement to be supported on proprietary chairs prior to placing of concrete to ensure correct positioning in slab
16. Cover to all steel reinforcement, including links shall be 50mm top & sided and 75mm bottom
17. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above

Rev	Date	Description	By / Chk
C02	21/06/2022	Issued for Final Construction	DC / JM
C01	09/12/2021	General update as per to Concast dwg, issued for construction	KMV/ JM
P02	08/07/2021	Issued for comments pile caps removed, general update	KMV/ JM
P1	25/05/2021	Issued for comments	KMV/ JM

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Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

Project:
Calder Park
Wakefield
WK4 3FL

Title:
External Works
Ramp Retaining Wall

Status: **FINAL CONSTRUCTION**

Engineer:	JKT	Date:	March 2021
Drawn:	KMV	Scales @ A1:	1:200 1:50
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

Drg No: P21024-PRP-EX-00-DR-C-0113 Rev: C02

FIRE / EMERGENCY ACCESS ROUTE

(Tank sizes and pump house size by tenant.)
12.5 m x 34.5m gravel zone allowance.

78 Cycle Parking spaces

EV CHARGING POINTS

FUTURE PROVISION FOR EV CHARGING POINTS AS REQUIRED BY TENANT

SERVICE YARD

ELECTRIC GATES TO YARD.

PEEL AVENUE

Refer to PRP drawing 117 for detailed site access arrangements

Refer to PRP drawing 117 for detailed site access arrangements

Gas Gov

Sub Station

ADDITIONAL MANOEUVRING SPACE

Notes:

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17. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above

C03	21/06/2022	Issued for Final Construction	DC / JM
C02	22/03/2022	Joints amended for Q-Max channel at yard entrance	KMV/ JM
C01	09/12/2021	Issued for construction	ST / JM
P02	05/11/2021	EJ added by access doors & updated joints positions	KMV/ JM
P01	20/10/2021	Issued for comments	KMV/ JM
Rev	Date	Description	By / Chk

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Client: TUNGSTEN PROPERTIES LTD

Architect: HTC Architects

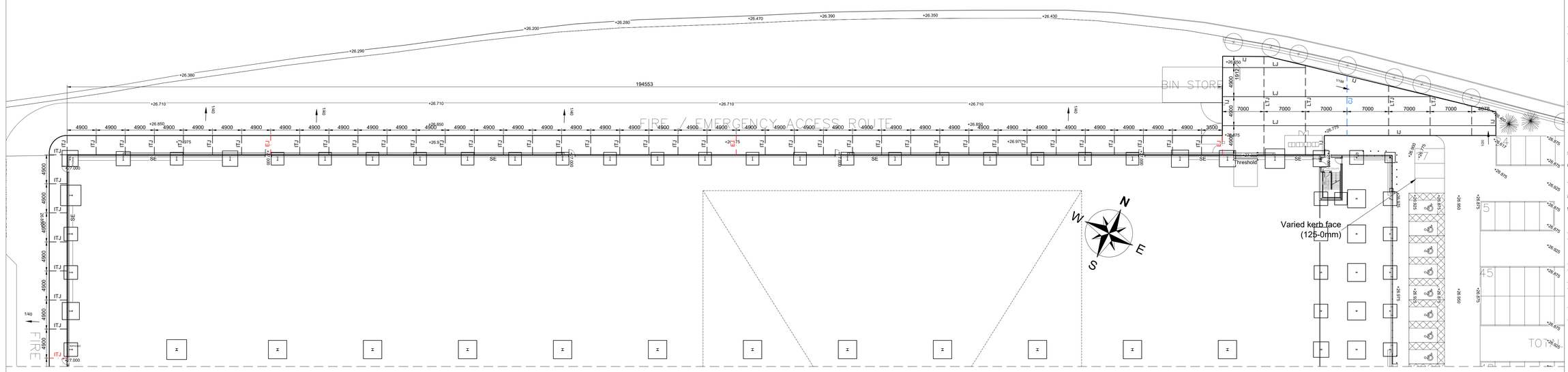
Project:
Calder Park
Wakefield
WK4 3FL

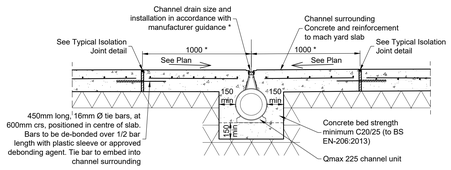
Title:
External Works
Yard & Footpath Slab Joint Layout
Sheet 1 of 2

Status: **FINAL CONSTRUCTION**

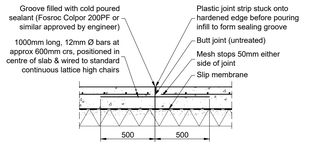
Engineer:	JM	Date:	Oct 2021
Drawn:	KMV	Scales @ A0:	1:250
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

Drg No: P21024-PRP-EX-00-DR-C-0115 Rev: C03

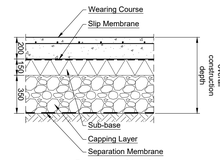




Typical Section Through Channel Drain - IsoJ joint
1:20



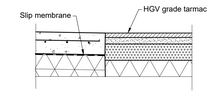
Typical Longitudinal Tied Joint LJ at approx 4.9m crs
1:20



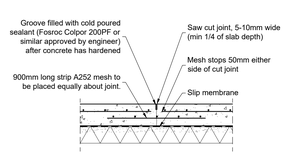
Concrete Yard based on 3% CBR
1:20

Concrete Yard Slab Specification: (assumed 3% CBR)
Underside of Sub-base to be plate bearing tested by specialist

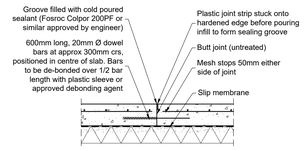
1. **Wearing Course:**
   200mm thick, air entrained concrete in accordance with BS5328, PAV 2 (in accordance with TR66 - External in-situ Concrete Paving) brushed or lightly tamped surface with trowelled margin
   1 layer A393 mesh at top, 50mm cover, 350mm laps
2. **Slip membrane:** 1200 guage polythene
3. **Sub-base: (see schedule below)**
   150mm thick sand blinded granular material Type 1 in accordance with DTp Specification for Highway Works Clause 803
4. **Capping Layer: (see schedule below)**
   350mm thick Granular material Class 6F2 in accordance with DTp Specification for Highway Works table 6/1 (see below table for thickness)
5. **Separation Membrane:**
   Terram 1000 (on cohesive sub-grades)



Slab to Tarmac Edge Detail - TE
1:20



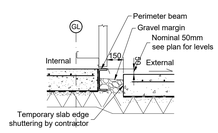
Typical Induced Transverse Joint ITJ at approx 7.0m crs
1:20



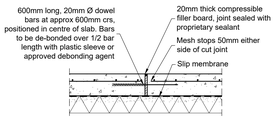
Typical Contraction Joint CJ at max 21.0m crs
1:20

Sub-Base/Sub-Grade Thicknesses. **Access Roads & Service Yards**		
CBR Value	Sub Base + Capping	Sub Base Alone
< 2 %	150 sub-base + 600 capping	N/A
2.5 %	150 sub-base + 400 capping	N/A
3 %	150 sub-base + 350 capping	300
5 %	150 sub-base + 250 capping	225
10 %	150 sub-base + 190 capping	180
15 %	150 sub-base + 150 capping	150*
> 15 %	150 sub-base*	0*

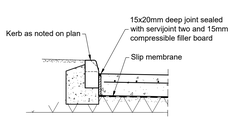
Note:
*On frost susceptible sub-grades minimum total construction thickness = 450mm
The formation is to be proof rolled prior to laying of any Sub-base material.
Any make-up necessary beneath Type 1 Sub-base to be Type 1 or Class 6F2 Capping material .



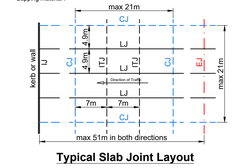
Slab Edge Detail
1:20



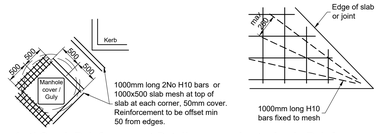
Typical Expansion Joint EJ at max 51.0m crs
1:20



Typical Isolation Joint IJ at kerb, building lane
1:20

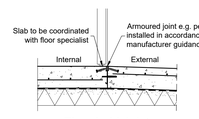


Typical Slab Joint Layout

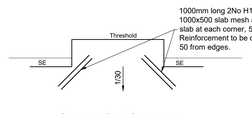


Anti Crack Reinforcement Detail
1:50

Acute Angle Reinforcement
1:20



Threshold Joint
1:20



Corners Reinforcement
1:20

Notes:

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   63150 - 300series - Superstructure
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11. Type 1 sub-base to be in accordance with the Specification for Highway Works placed and compacted with plant approved by the structural engineer
12. Reinforcement to be high yield steel to BS 4449
13. Minimum lap lengths to be:
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14. Mesh reinforcement shall be to BS 4483
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16. Cover to all steel reinforcement, including links shall be 50mm top & sided and 75mm bottom
17. Cover to reinforcement shall not deviate more than +/- 5mm throughout for the limits given in the note above

Rev	Date	Description	By / Chk
C02	21/06/2022	Issued for Final Construction	DC / JM
C01	09/12/2021	Issued for construction	KMV/ JM
P01	20/10/2021	Issued for comments	KMV/ JM

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Leicester Northampton London
engineering excellence | creating advantage

Client: TUNGSTEN PROPERTIES LTD

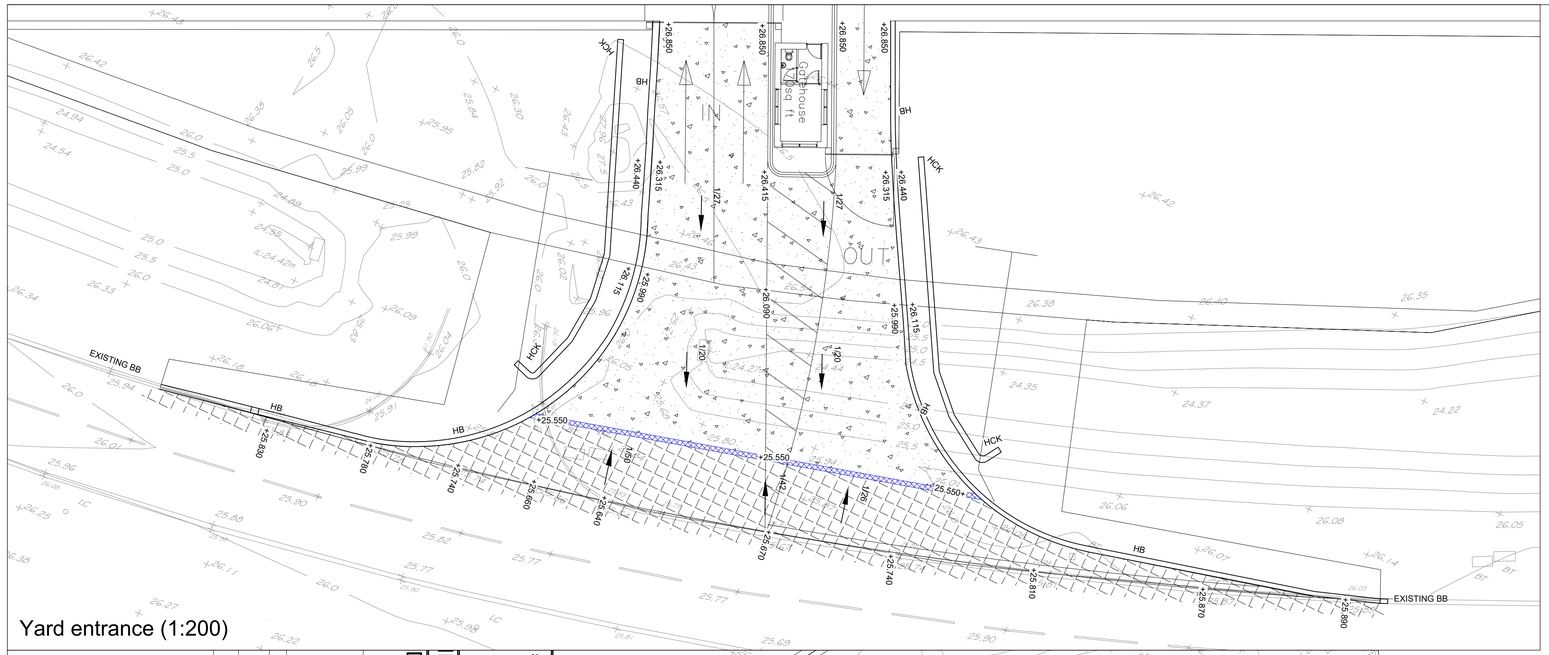
Architect: HTC Architects

Project:
Calder Park
Wakefield
WK4 3FL

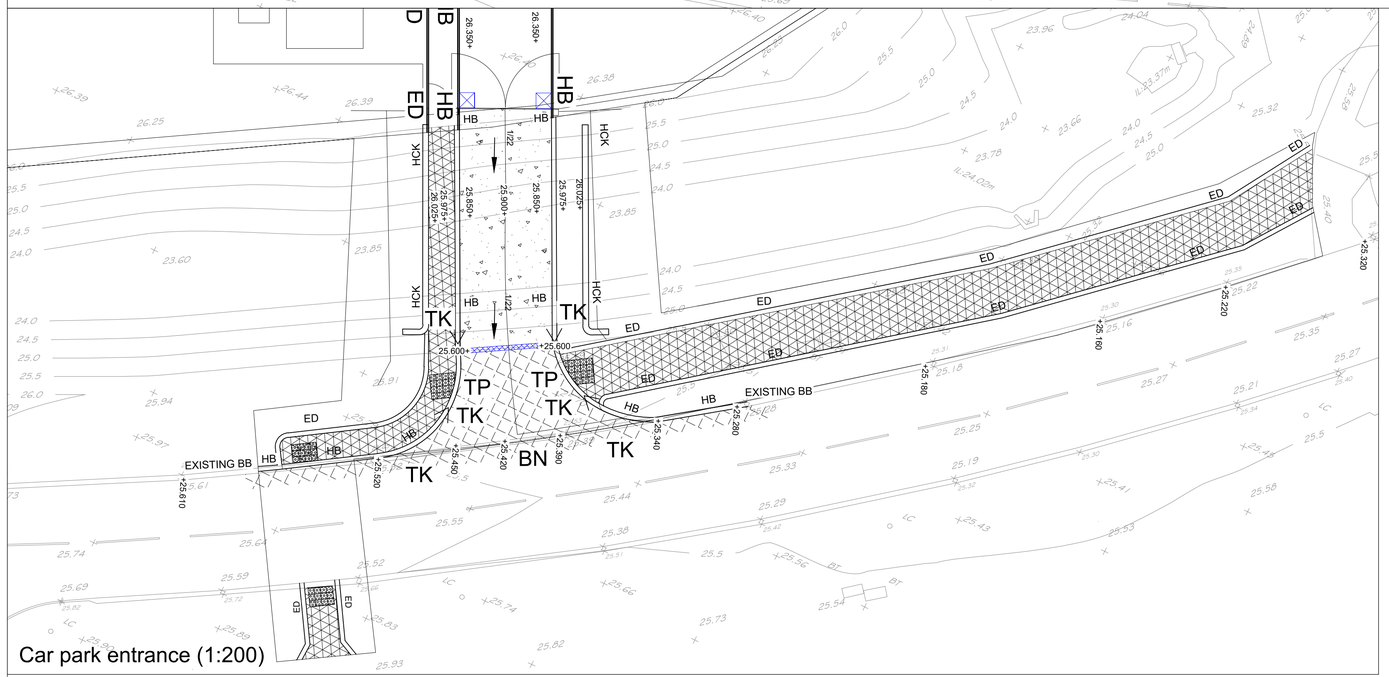
Title:
External Works
Yard & Footpath Slab Joint Layout & Details - Sheet 2 of 2

Status: **FINAL CONSTRUCTION**

Engineer:	JM	Date:	Oct 2021
Drawn:	KMV	Scales @ A0:	1:200 1:50 1:20
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010
Drg No:	P21024-PRP-EX-00-DR-C-0116	Rev:	C02



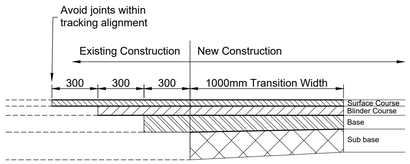
Yard entrance (1:200)



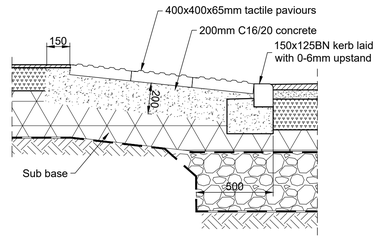
Car park entrance (1:200)

Legend:

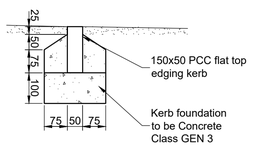
- +100.00 Existing Levels
- 65.500 New Levels
- 1/X Slope
- Gully & ACO/Channel Drain
- BB Beany Block
- HCK Trief Kerb
- HB HB2 Kerb
- TK Transition Kerb
- BN Bullnose Kerb
- TP Tactile Paving
- ED Edging Kerb
- Proposed Concrete Slab
- Proposed Asphalt Carriageway
- Proposed Asphalt Footway



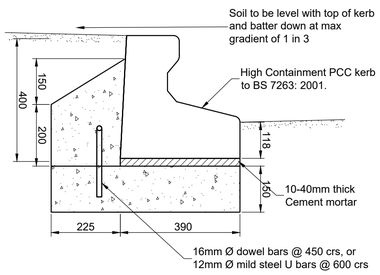
Carriageway Tie in Detail
1:20



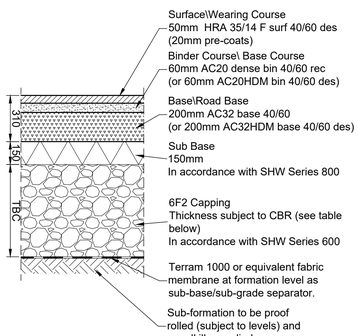
Tactile Paving Section
1:20



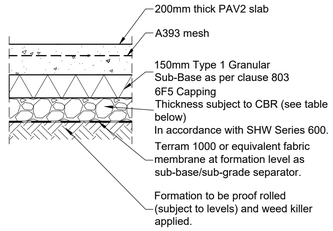
Footpath/Footway Edging Type: ED
1:10



High Containment Kerb: HK
1:10



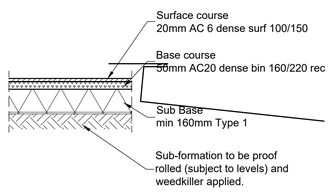
Asphalt Carriageway
1:20



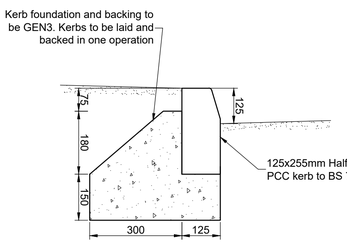
Concrete Slab Construction
1:20

Sub-Base & Capping Thickness for Entrances	
CBR Value	Sub Base + Capping (mm)
< 2%	150 sub-base + 600 capping
2.5%	150 sub-base + 450 capping
3%	150 sub-base + 350 capping
4%	150 sub-base + 300 capping
5-15%	150 sub-base + 250 capping
> 15%	150 sub-base + 0 capping

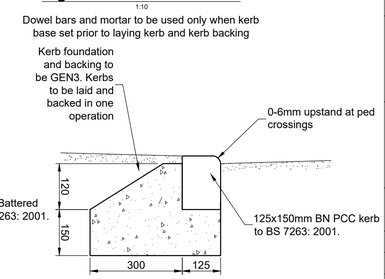
The formation is to be proof rolled prior to laying of any sub-base material. Clause references shown on this drawing refer to DTp Specification for Highway Works.



Footways
1:20



Concrete Kerb Type: HB
1:10



Concrete Kerb Type: BN
1:10

Notes:

1. DO NOT SCALE FROM THIS DRAWING.
2. All dimensions are in millimetres Unless Noted Otherwise (u.n.o.)
3. Drawing is to be read in conjunction with all relevant architect's drawings. Any inconsistencies should be reported to PRP immediately.
4. All levels and dimensions are to be checked on site before any work commences.
5. For more information see PRP drawings:
   63150 - 100series - Drainage and External Works
   63150 - 200series - Foundations
   63150 - 300series - Superstructure
6. The Health and Safety at Work act is to be complied with at all times. Attention is drawn to the wearing of hard hats, safety boots, reflective clothing, and the use of any other required safety equipment.

Site accesses:

1. Prior to any works being carried out within or immediately adjacent to the public highway, a scheme for the safe control of traffic and pedestrians is to be agreed with the Highway Authority and implemented
2. Any utilities shown on this drawing are indicative only. It is the Contractor's responsibility to trace and indicate the precise location and nature of all services.
3. The Developer/Contractor shall be responsible for liaison with the Statutory Undertakers and other cable service companies for the provision of all required services, diversion.
4. Special care is to be taken when excavating in the vicinity of existing tress, it is not intended that any tree roots should be severed or damaged and specialist advice should be sought when major roots present a problem.
5. The formation of all surfaces shall be trimmed, rolled and treated with a glyphosphate based weedkiller in accordance with the manufacturers instructions prior to laying the sub-base
6. All in situ concrete shall be Designated Concrete GEN3 produced in accordance with BS 8500-2006.
7. In all instances sulphate resisting cement is to be used.
8. Half Battered and Splayed kerbs face shall be 125mm above the channel level. Bullnosed kerb shall be 0-6mm above wearing course for pedestrian crossing and 25mm for vehicular access
9. The minimum depth of concrete below all kerbs shall be 150mm. Kerbs shall be laid on a 10-40mm bed of Class 1 cement mortar unless laid with the foundation in one operation.
10. Adequate bond must be made between foundation and haunch if laid in more than one operation. Preferred method of bonding to be by means of steel U-bars reinforcement, any other method to be approved by PRP.
11. Mortar joints between kerbs not to be provided unless specified. Gaps between kerbs to be 1 to 2mm.
12. The sub-grade shall be prepared to falls to ensure that construction thickness' remain uniform, Following trimming of the sub-grade it shall be protected against the ingress of water, failure to do so will seriously weaken the sub-grade.
13. All soft spots shall be excavated and replaced with compacted sub-base material
14. The minimum total carriageway construction thickness shall not be less than 450mm.
15. All materials used in top 450mm of carriageway construction shall be non-frost susceptible.

C03	21/06/2022	Issued for Final Construction	DC / JM
C02	07/02/2022	Entrance layout updated to suit architect's layout	ST / JM
C01	09/12/2021	Issued for construction	ST / JM
Rev	Date	Description	By / Chk

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Client:
Tungsten Properties Ltd

Architect:
HTC Architects

Project:
Calder Park
Wakefield
WK4 3FL

Title:
Proposed Site Accesses Layout & Details

Status:
FINAL CONSTRUCTION

Engineer:	ST	Date:	Nov 2021
Drawn:	ST	Scales @ A1:	AS SHOWN
Checked:	JM		
PRP Ref No:	63150	Software:	2D AutoCAD 2010

Drg No: P21024-PRP-EX-00-DR-C-0117
Rev: C03