

IMPERIAL COLLEGE LONDON

Faculty of Engineering

Department of Civil and Environmental Engineering

Concrete Building Detailed Design Project
Drawings

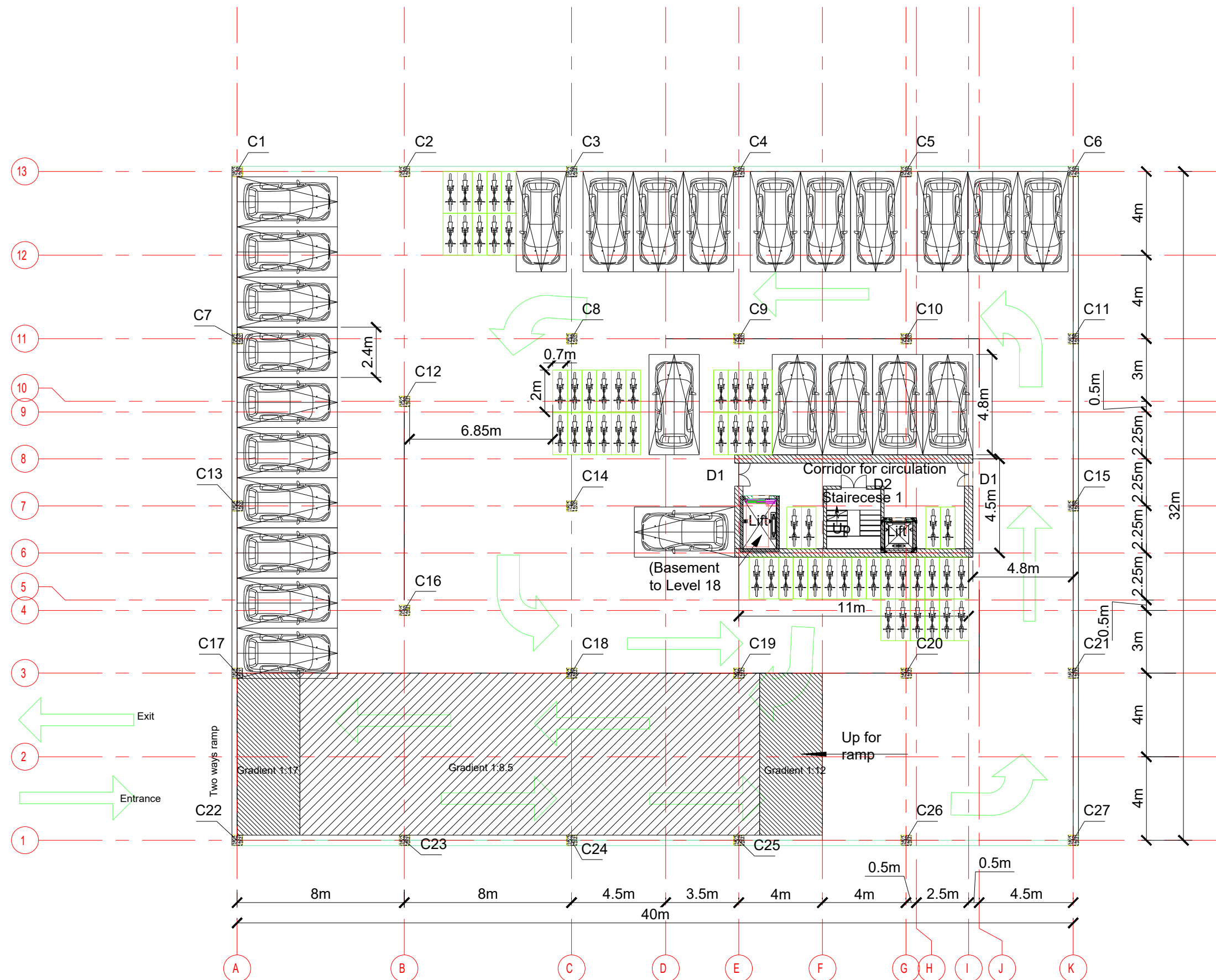
Yibin Feng
2021-2022

DECLARATION OF OWN WORK

Declaration:

This submission is my own work. Any quotation from, or description of, the work of others is acknowledged herein by reference to the sources, whether published or unpublished.

Signature : _____Yibin Feng_____



Basement Level (Car parking) Plan view 1:200

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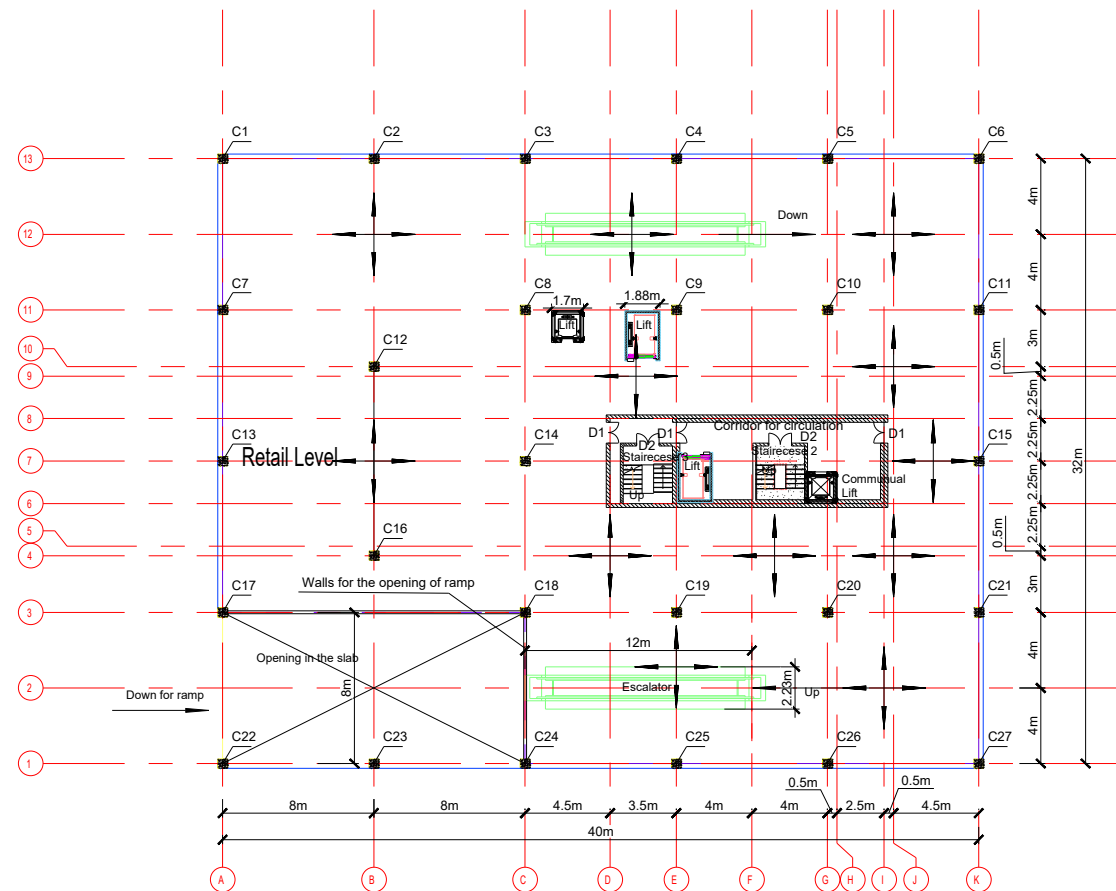
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Designer information:
Name : Yibin Feng
CID : 02146640
General Structural Engineering

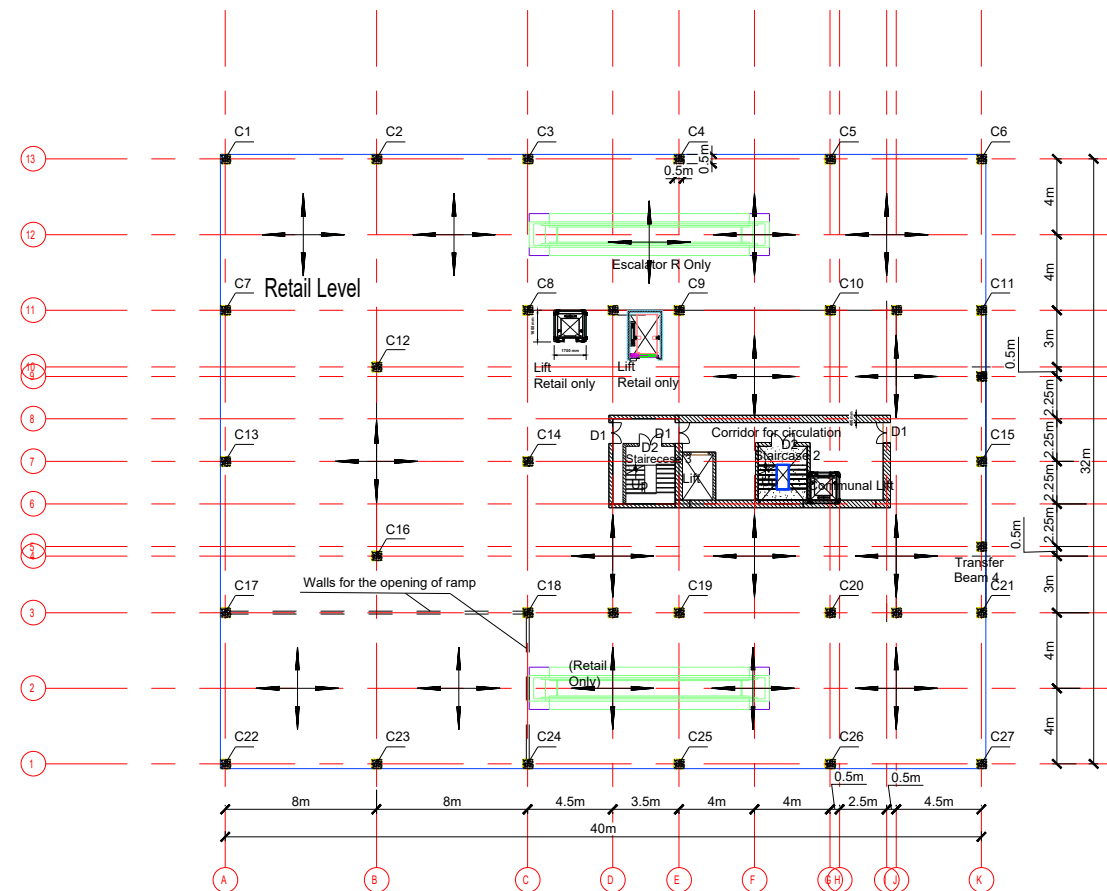
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A waterside redevelopment area

Project name:
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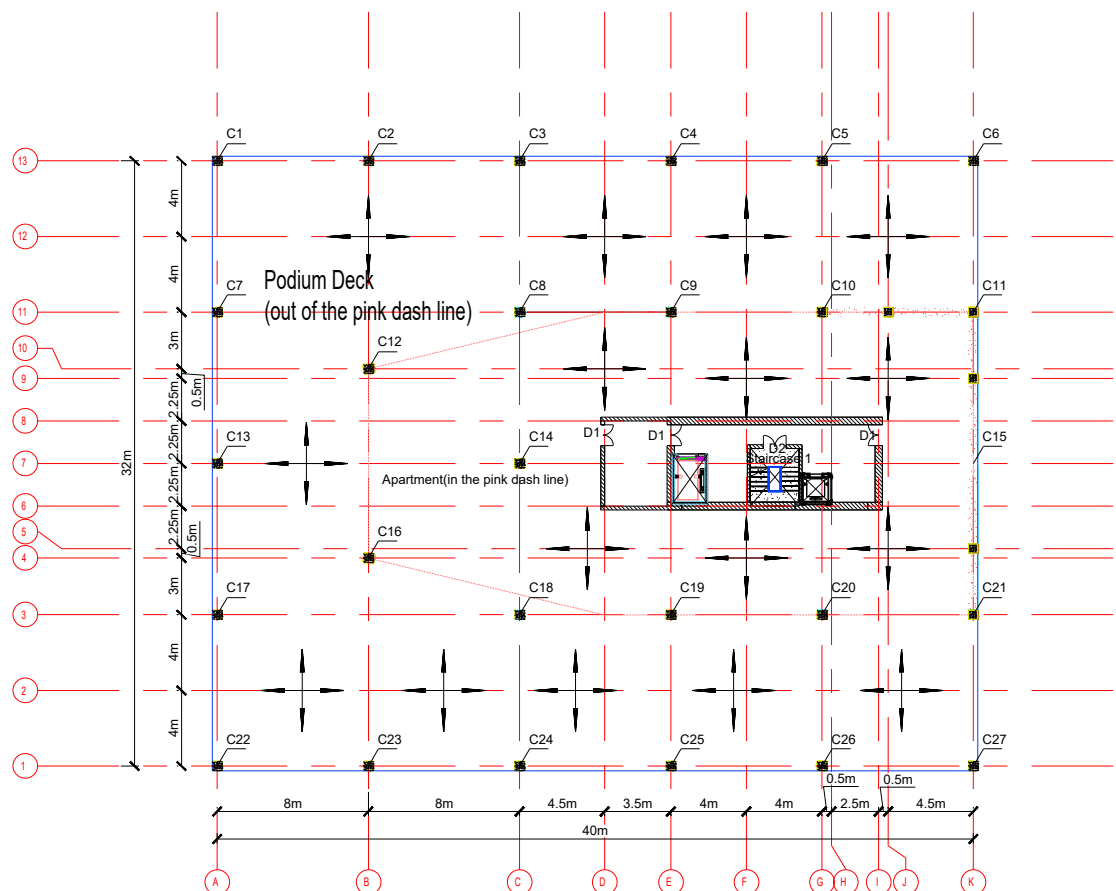
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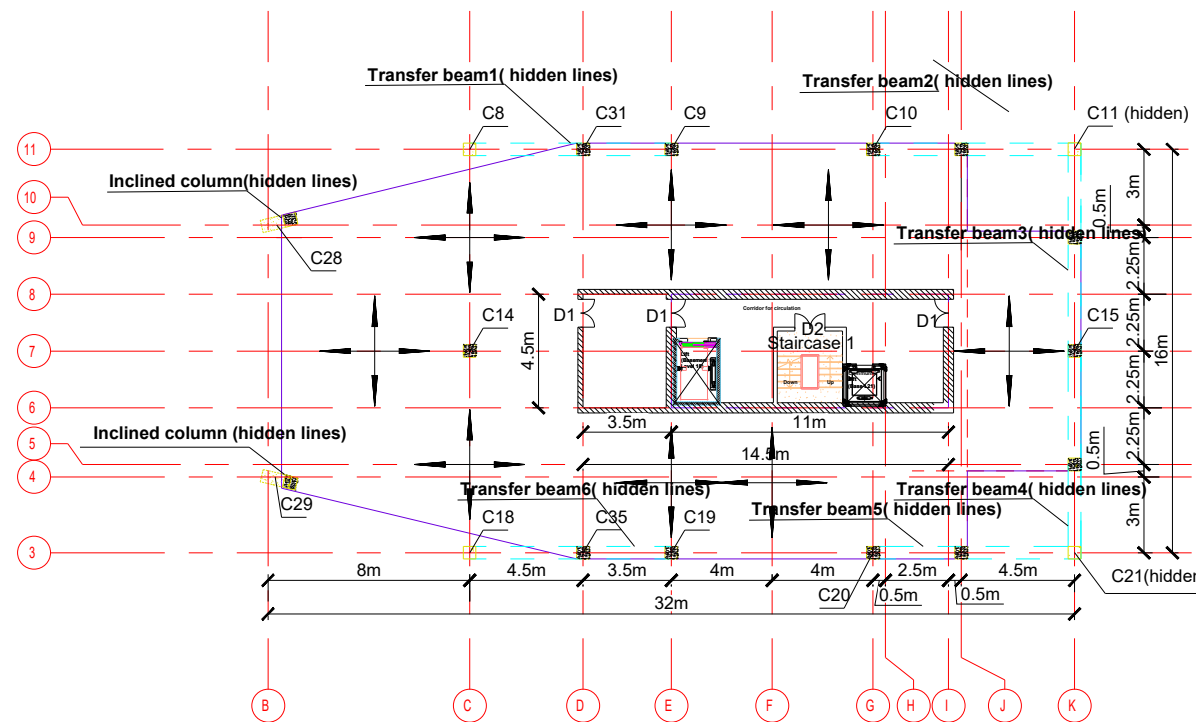
Ground Level (Retail) Plan view 1:400



Level 1 (Retail) Plan view 1:400



Level 2 (Retail) Plan view 1:400

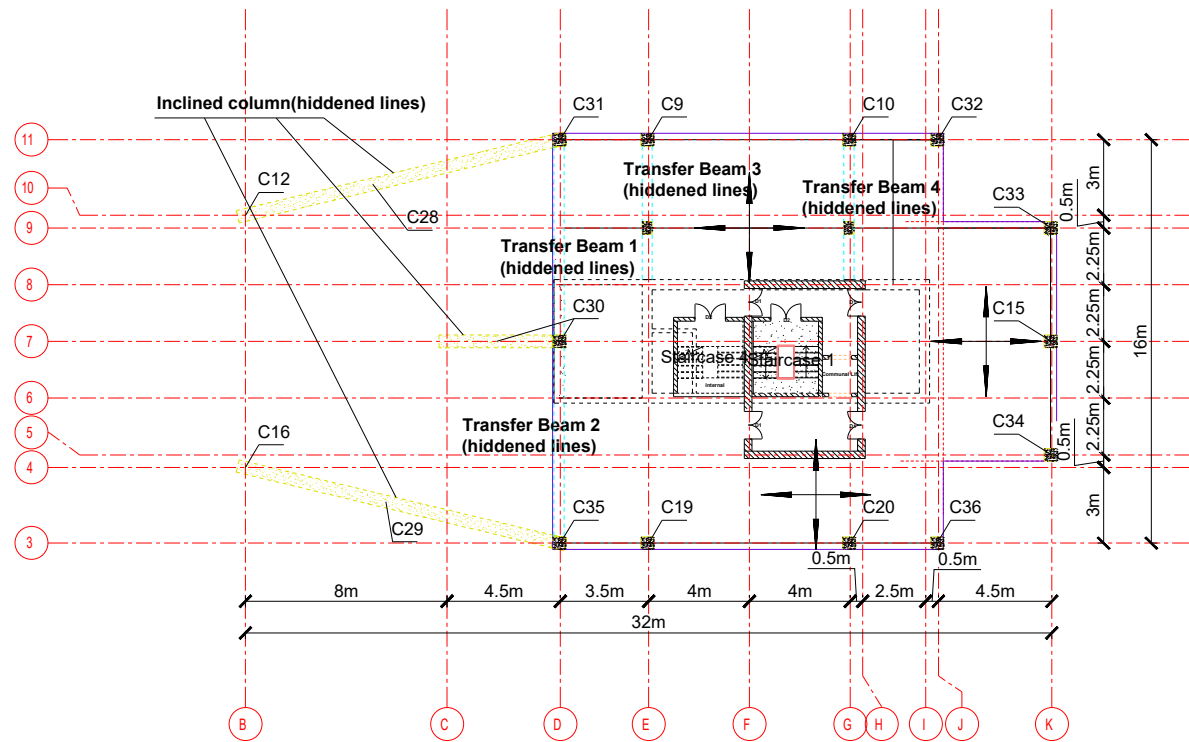


Level 3 (Apartment) Plan view 1:300

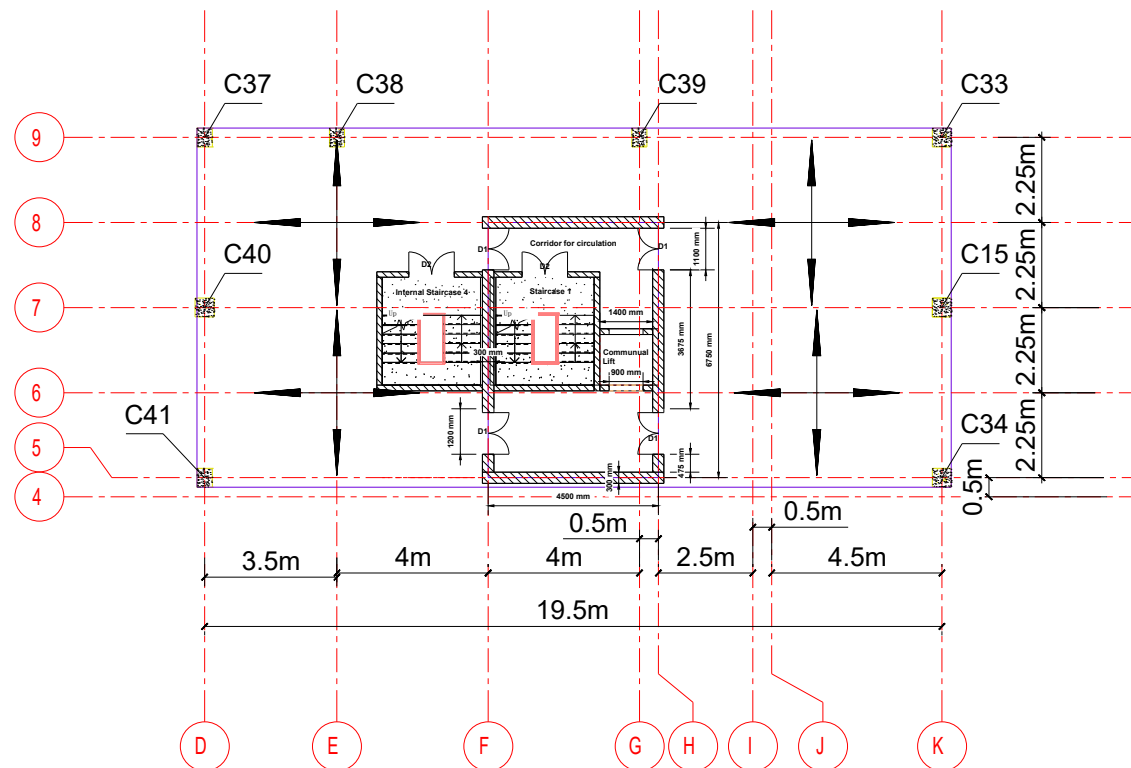
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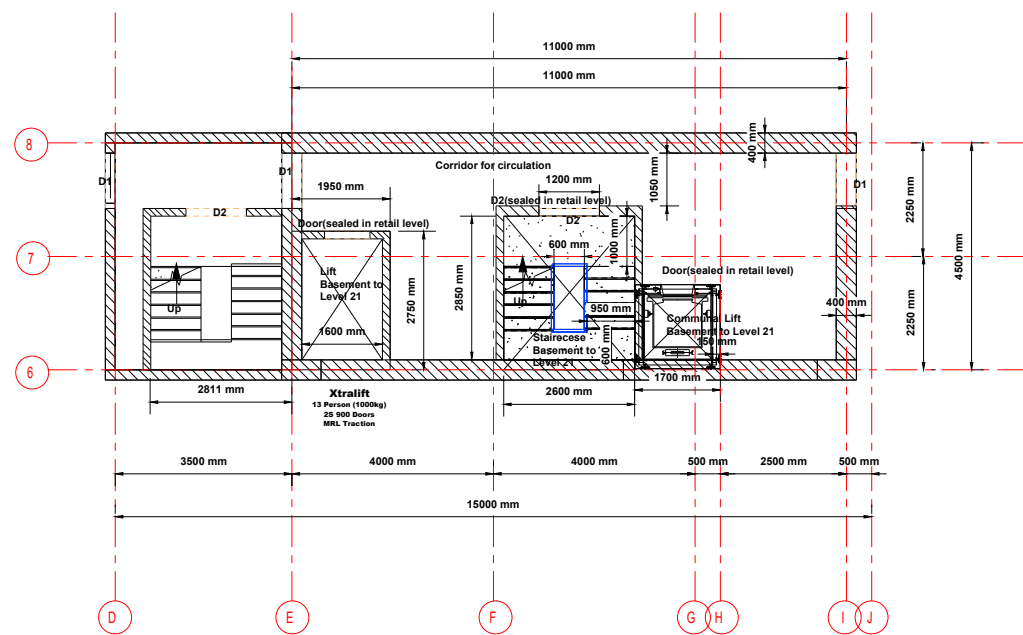
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Level 18 (Garden Level) Plan view 1:300



Level 19 (Penthouse) Plan view 1:200



Level 1 (Retail) access layout 1:150

Table for staircases							
Stair labels	Type	Rise (mm)	going (mm)	Width of flight (mm)	Width of Cavity (mm)	Width of Landing 1 (mm)	Width of Landing 2 (mm)
Staircase 1	Double flight	149.2	250	1100	600	1000	600
Staircase 2	Double flight	200	275	1100	600	1000	600
Staircase 3	Double flight	149.2	250	1100	600	1000	600
Staircase 4	Double flight	149.2	250	1100	600	1000	600

Table for doors			
Door labels	Type	Height (mm)	width (mm)
Door 1	Double-Door	2100	1100
Door 2	Double-Door	2100	1200

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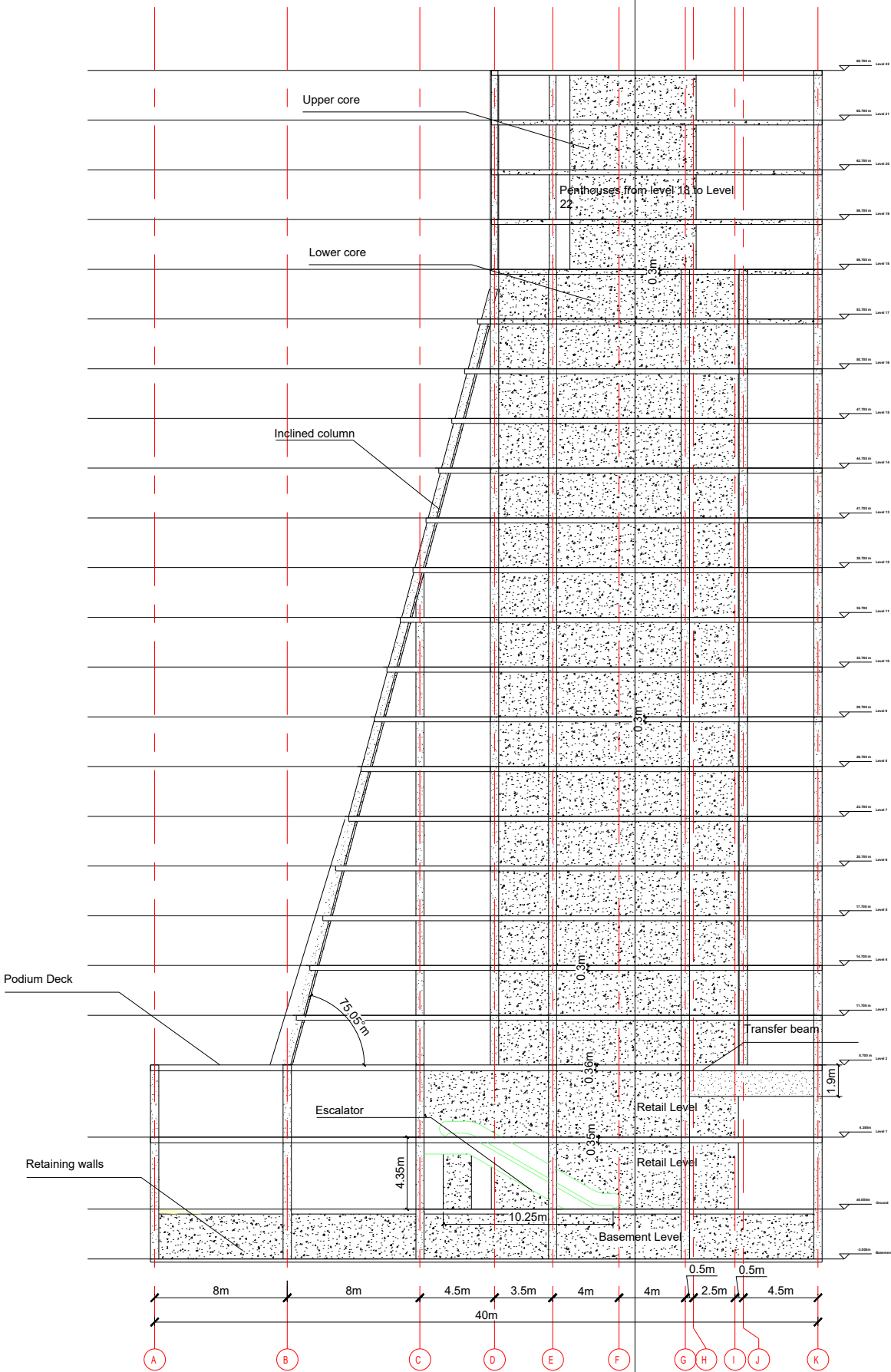
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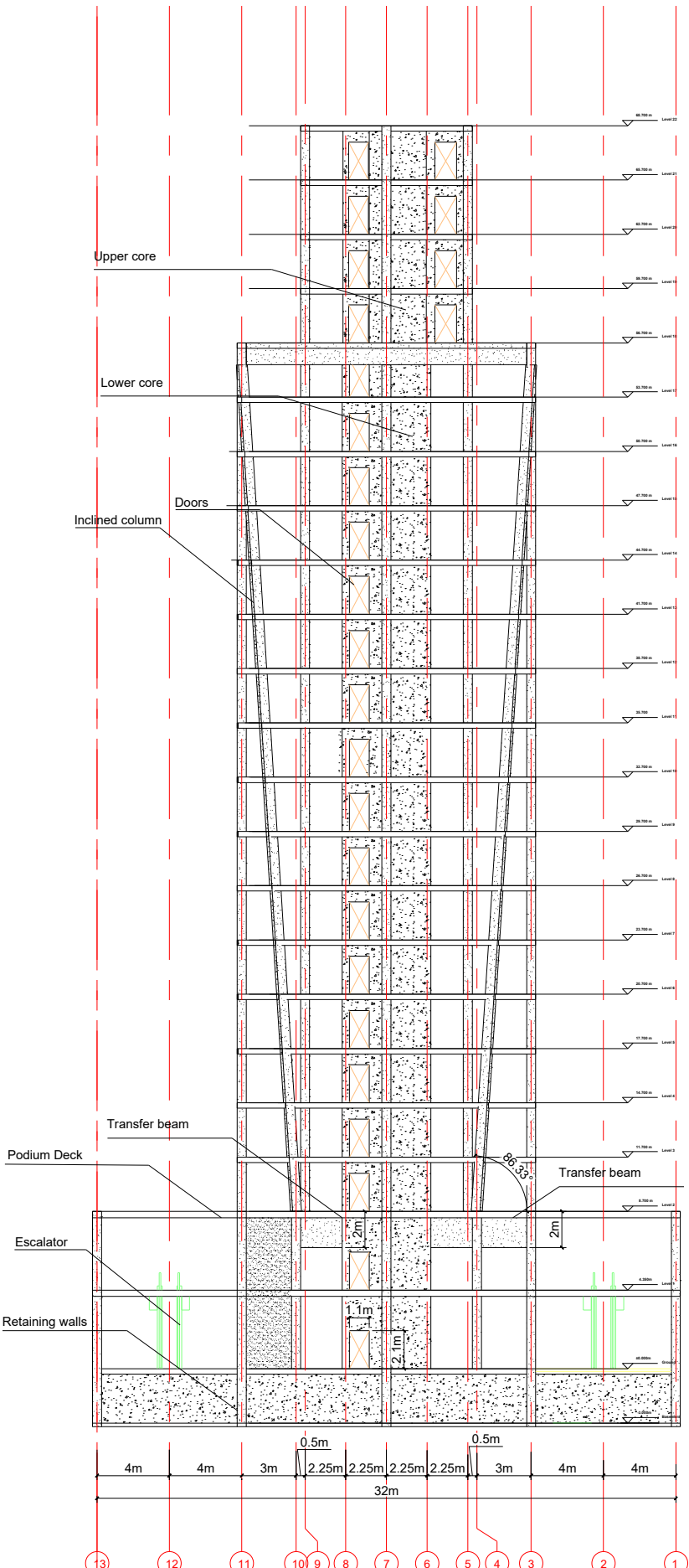
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Profile View 1-1



Elevation view from West to East direction 1:350



Elevation view from North to South direction 1:350

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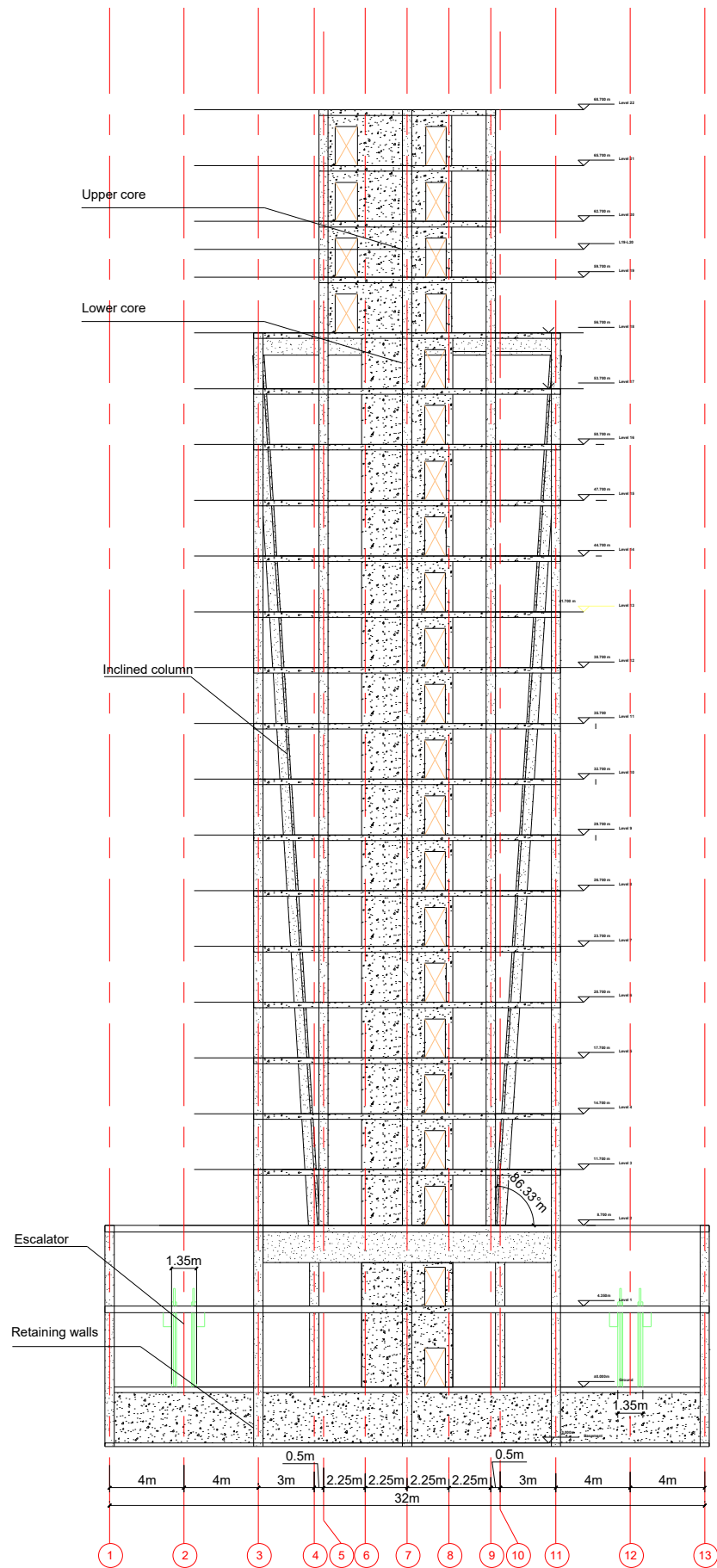
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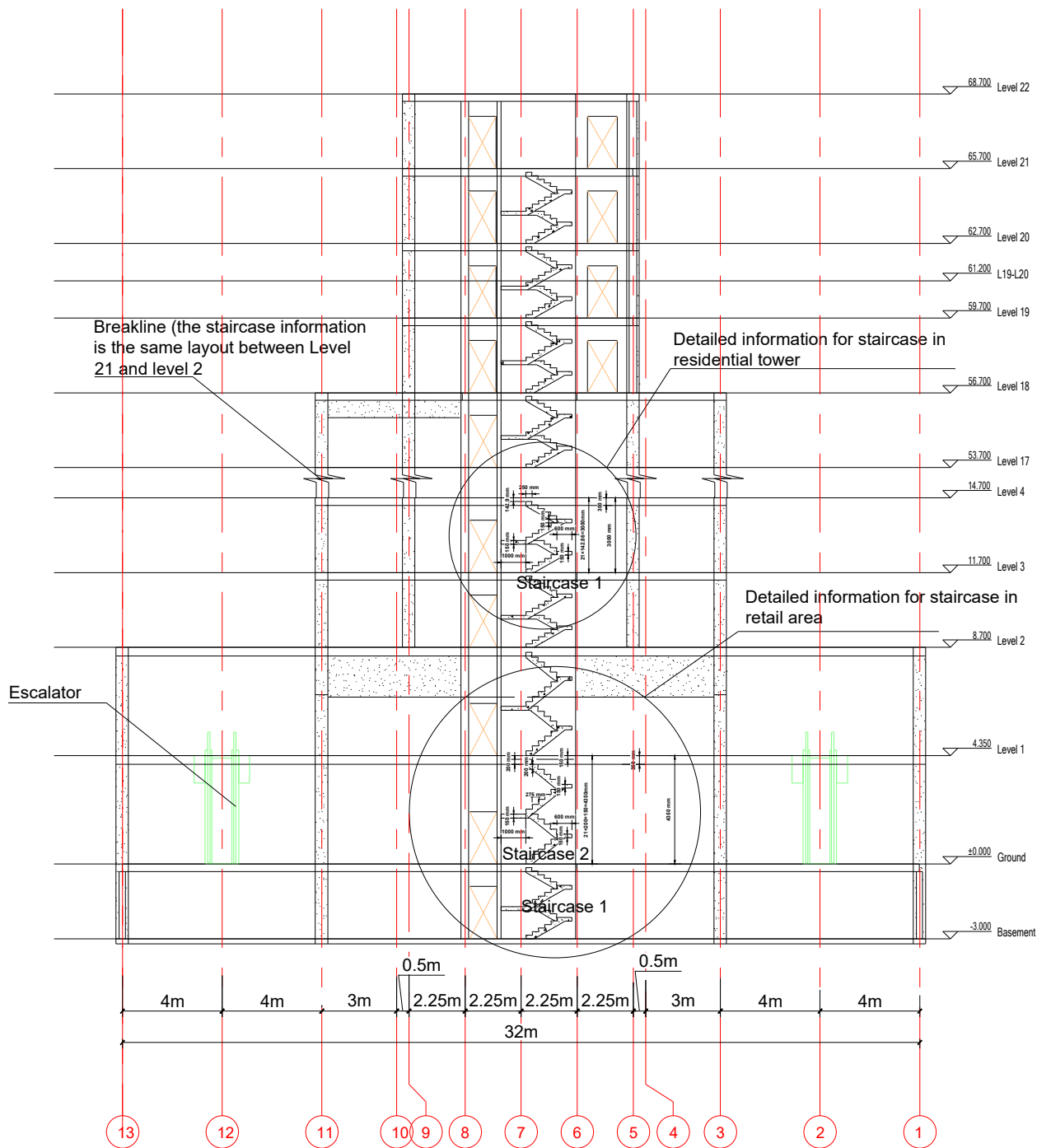
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Elevation view from South to North direction 1:350



1-1 Profile View and the stairs detail dimension 1:250

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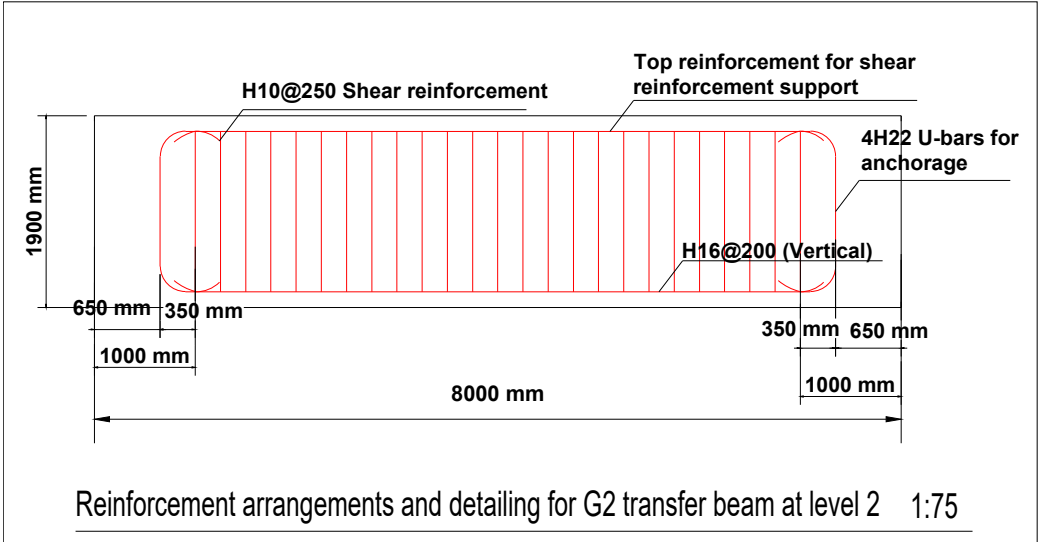
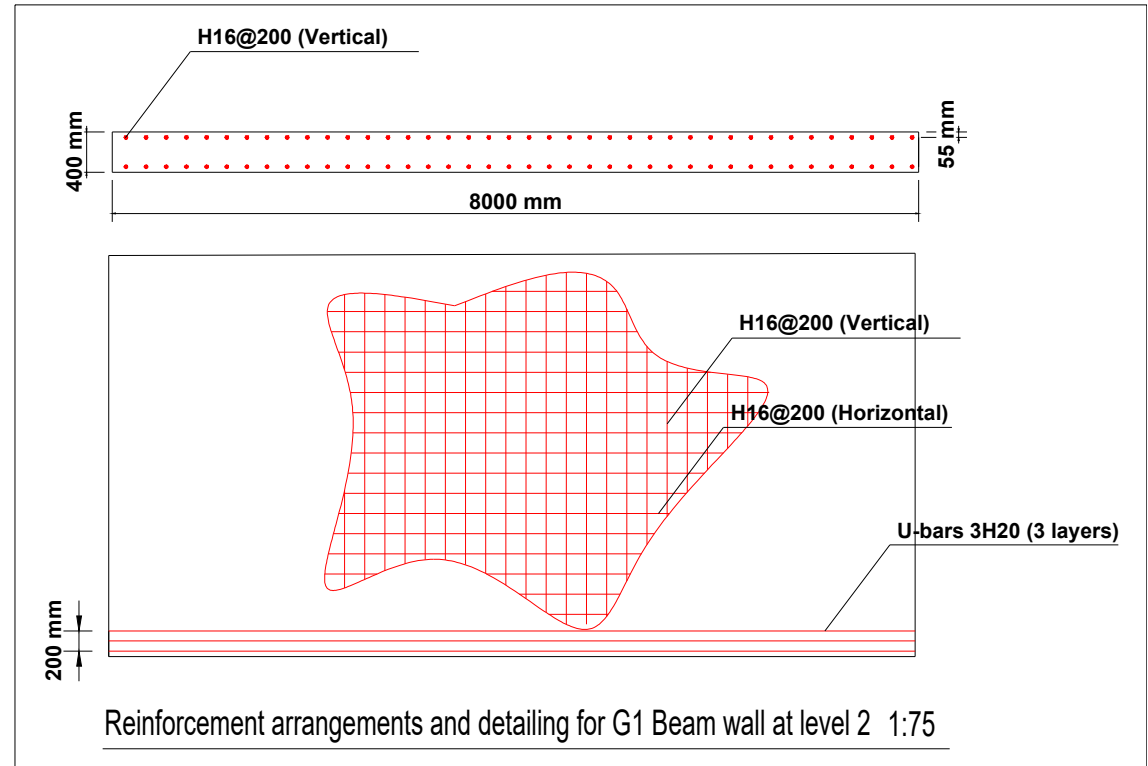
C2-G1	C1-G2	C7-G3	C9-G4	C11-G5	C14-G6	C 28,29,30-Inclined column	C3-G1	C4-G1	C9-G4
Bottom of basement ~ Top of level 2	Bottom of basement ~ Top of level 2	Bottom of basement ~ Top of level 2	Bottom of basement ~ Top of level 18	Bottom of basement ~ Top of level 22	Bottom of basement ~ Top of level 12	Bottom of level 3 ~ Top of level 18	Bottom of basement ~ Top of level 2	Bottom of basement ~ Top of level 2	Bottom of basement ~ Top of level 2
20H32	20H32	16H26	16H26	12H20	16H32	12H20	20H32	20H32	16H26
H8@225	H8@225	H8@225	H8@225	H8@225	H8@225	H5@240	H8@225	H8@225	H8@225
Sq 500×500 mm	Sq 500×500 mm	Sq 500×500 mm	Sq 500×500 mm	Sq 500×500 mm	Sq 1000×1000 mm	Sq 500×500 mm	Sq 500×500 mm	Sq 500×500 mm	Sq 500×500 mm

Reinforcement arrangements and detailings 1:50

Column design information					
Column labels	Group Type	Vertical reinforcement	Links	Cover C _{nom}	Grade f _{ck}
C2,C3,C4,C5	G1	20H32	H8@225	55	50
C1,C6	G2	20H32	H8@225	55	50
C7,C13	G3	16H26	H8@225	55	50
C8,C9,C10,C12	G4	16H20	H8@225	55	50
C11,C15	G5	12H20	H8@225	55	50
C14	G6	16H32	H8@225	55	50
C29	G6	12H20	H5@240	55	50
C28	G6	12H20	H5@240	55	50
C30	G6	12H20	H5@240	55	50
Note*: Design in groups (as introduced and calculated in the 3.1.2 of calculation report) Half of the columns in retain levels will be shown(symmetry), and the design information for inclined columns C29-C30 as examples. (mm in all)					

Transfer components design information											
Range	Group Type	Design Number	Span Length		Width	Height	Flexural reinforcement	Shear reinforcement	Curtail at bottom		Anchored reinforcement
			Span 1	Span 2					1st (mm)	2nd (mm)	
			m	m	m	m	(at bottom)	(at bottom)	1st (mm)	2nd (mm)	
For level 2	G1 (STM)	Transfer 1	4.5	3.5	0.5	4					
		Transfer 6	4.5	3.5							
	G2(Beam)	Transfer 2	3.5	4.5	0.5	1.9	8H32 B	H10@250	650	1000	4H22
		Transfer 5	3.5	4.5							
	G3 (Beam)	Transfer 3	4.5	3.5	0.5	2	10H32 B	H10@250	650	1000	4H22
		Transfer 4	3.5	4.5							
For level 18	G1(Beam)	Transfer 1	3.5	2.25	0.5	1.2	8H25 B	H10@250	500	500	4H18
		Transfer 2	2.25	3.5							
	G2(Beam)	Transfer 3	3.5	2.25	0.4	1.2	8H18 B	H10@250	700	500	3H22
	G3 (Beam)	Transfer 4	3.5	2.25							
	Note*: Design in groups (as introduced and calculated in section 5.1 of the calculation report) Half of the columns in retain levels will be shown(symmetry), and the design information for inclined columns C29-C30 as examples.										

For STM reinforcement design						
Range	Group Type	d' (mm)	Flexural tension bars	Vertical reinforcement	Horizontal reinforcement	Height
For level 2	G1 (STM)	100	U-bars 3H20	H16@200	H16@200	4

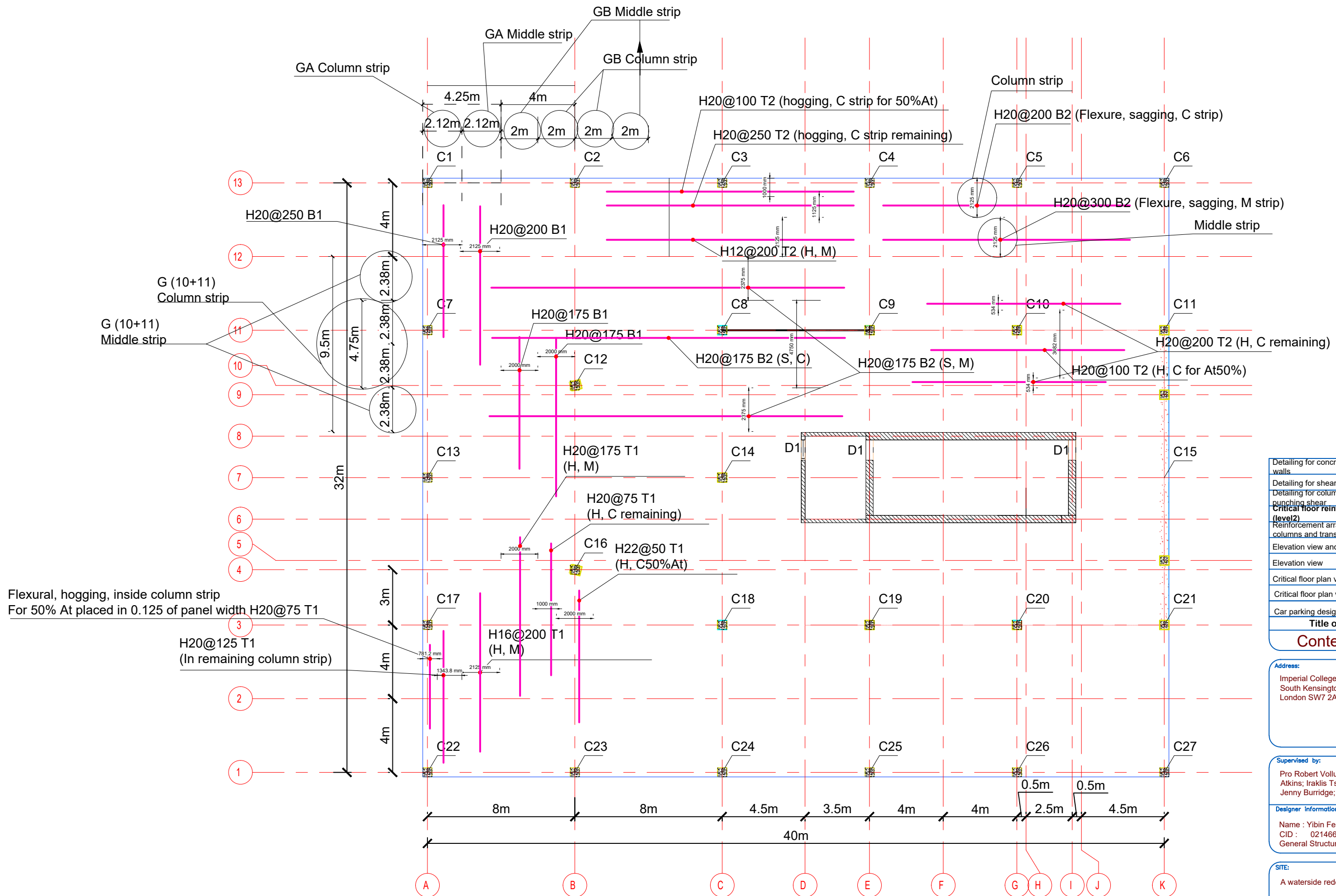


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Critical floor reinforcement design and arrangement (Level 2) 1:200

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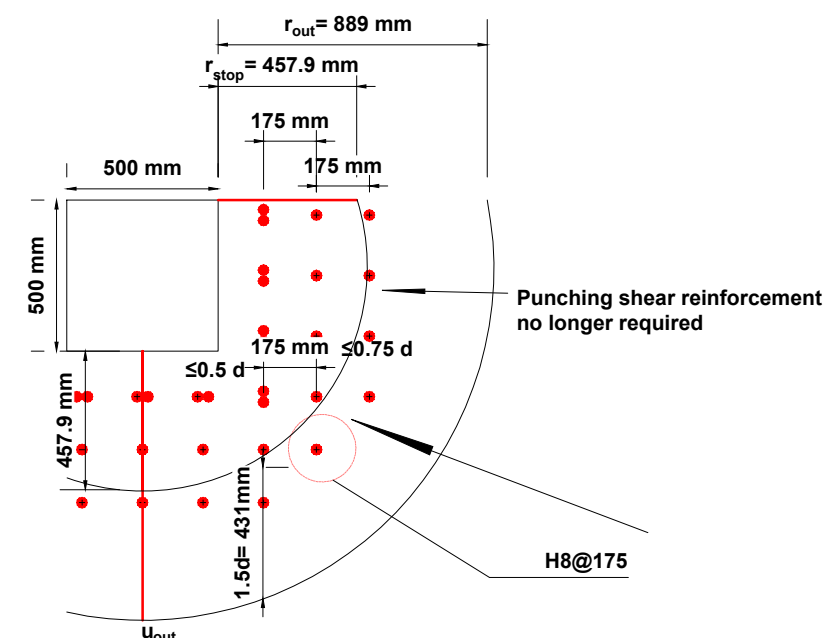
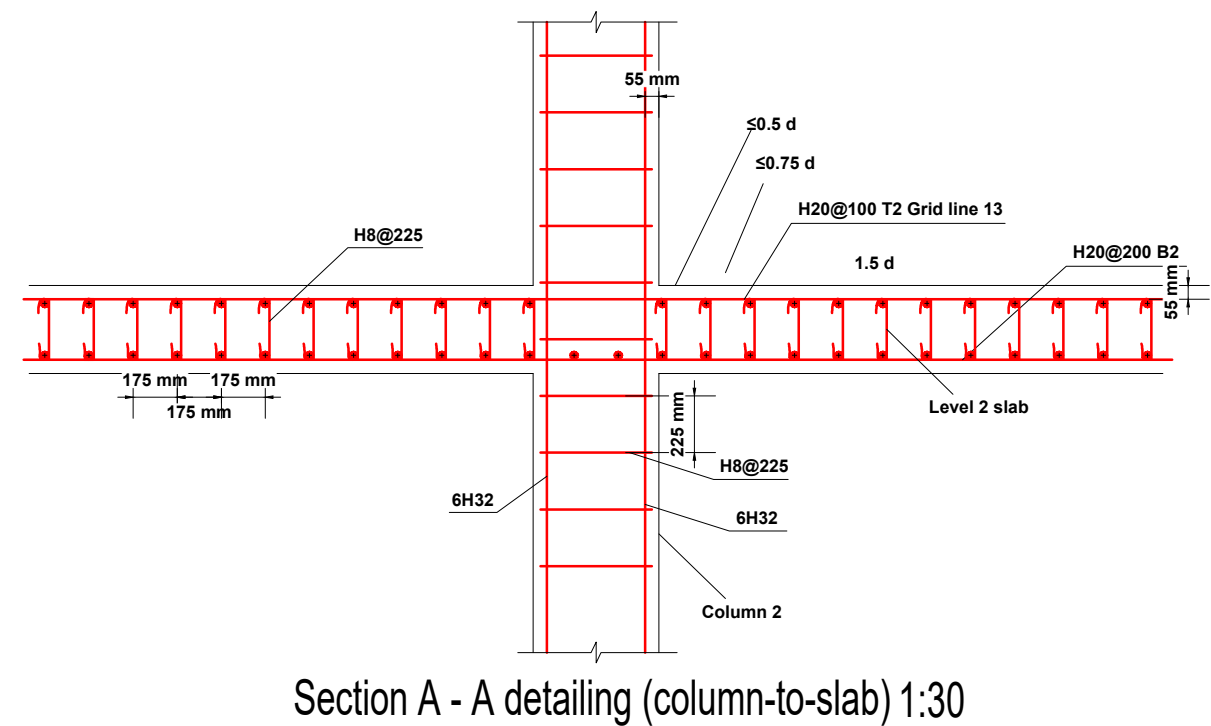
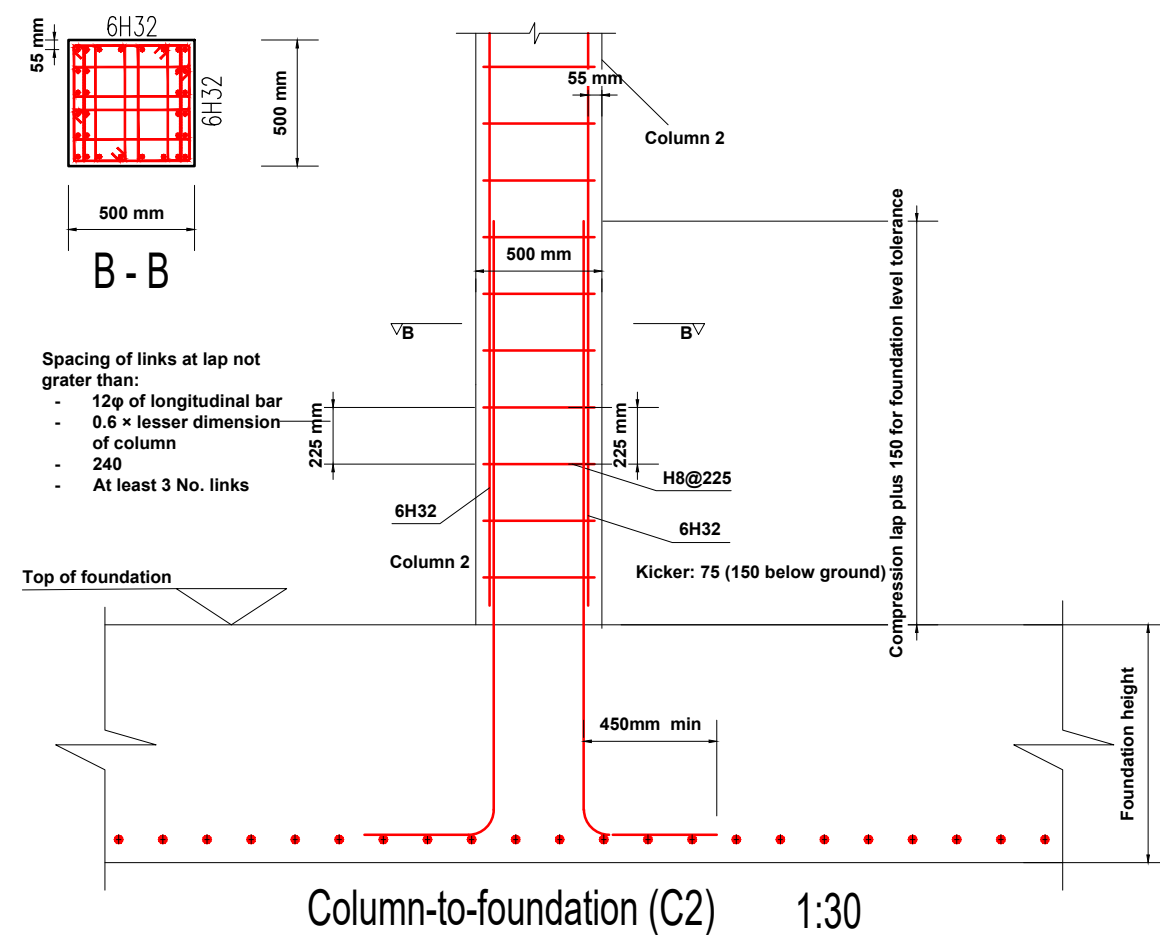
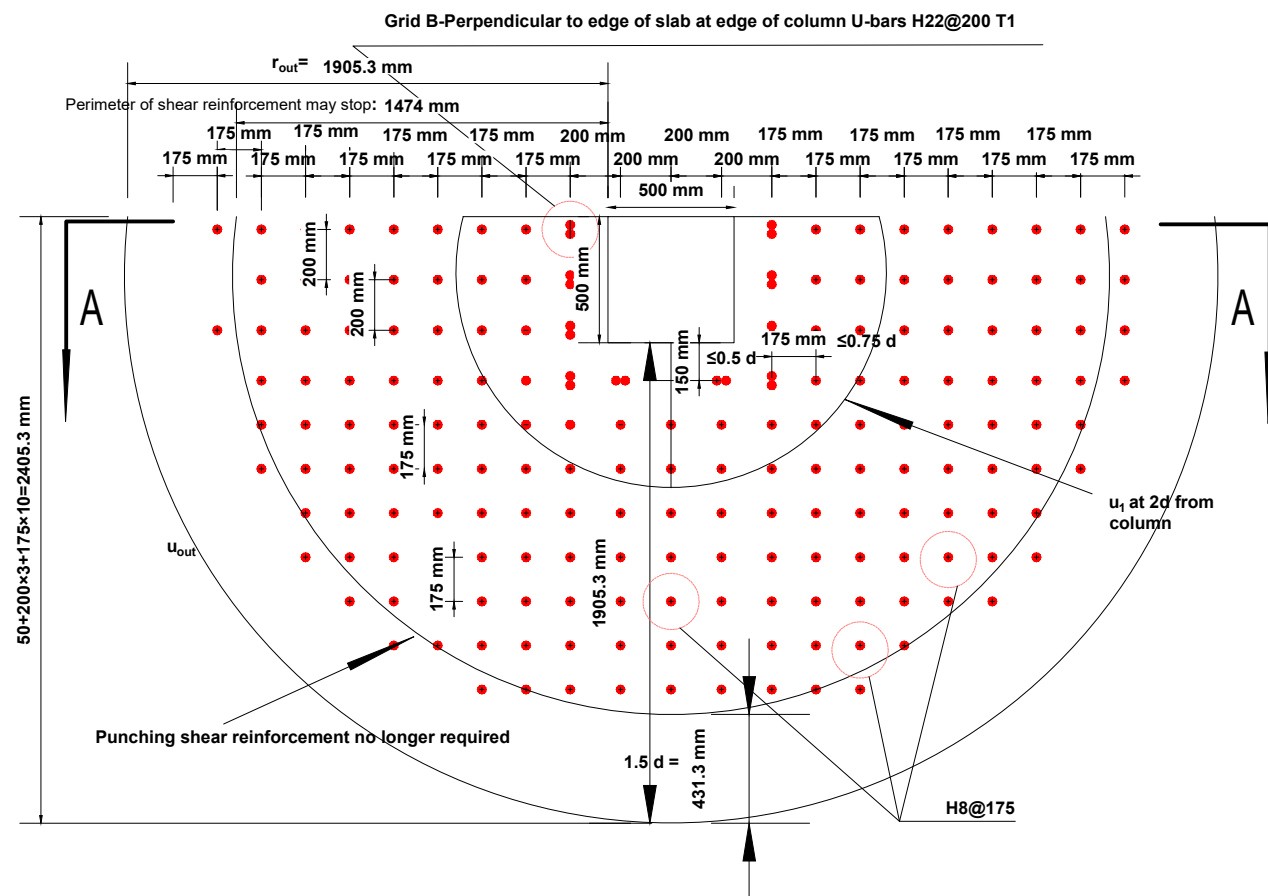
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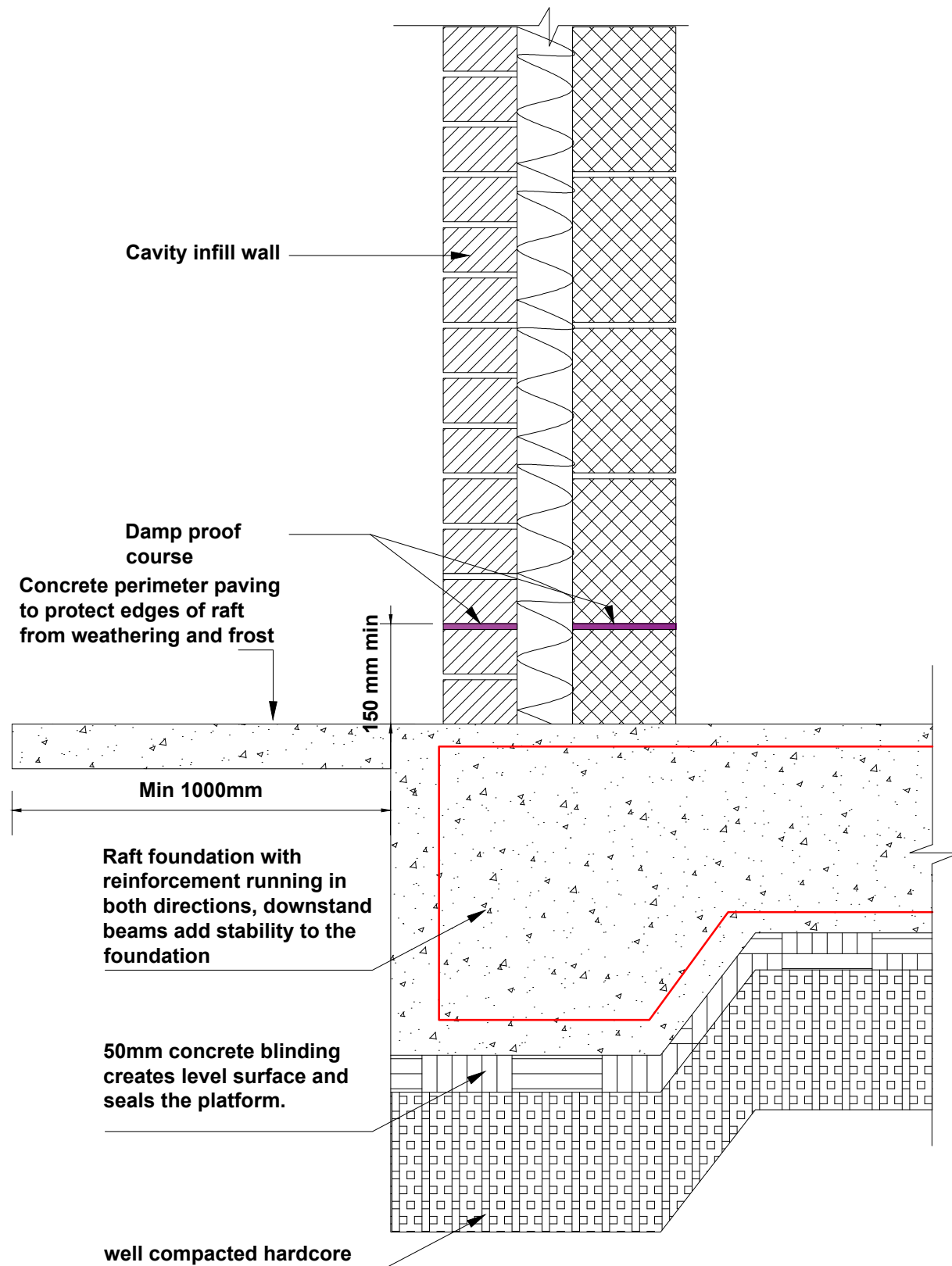
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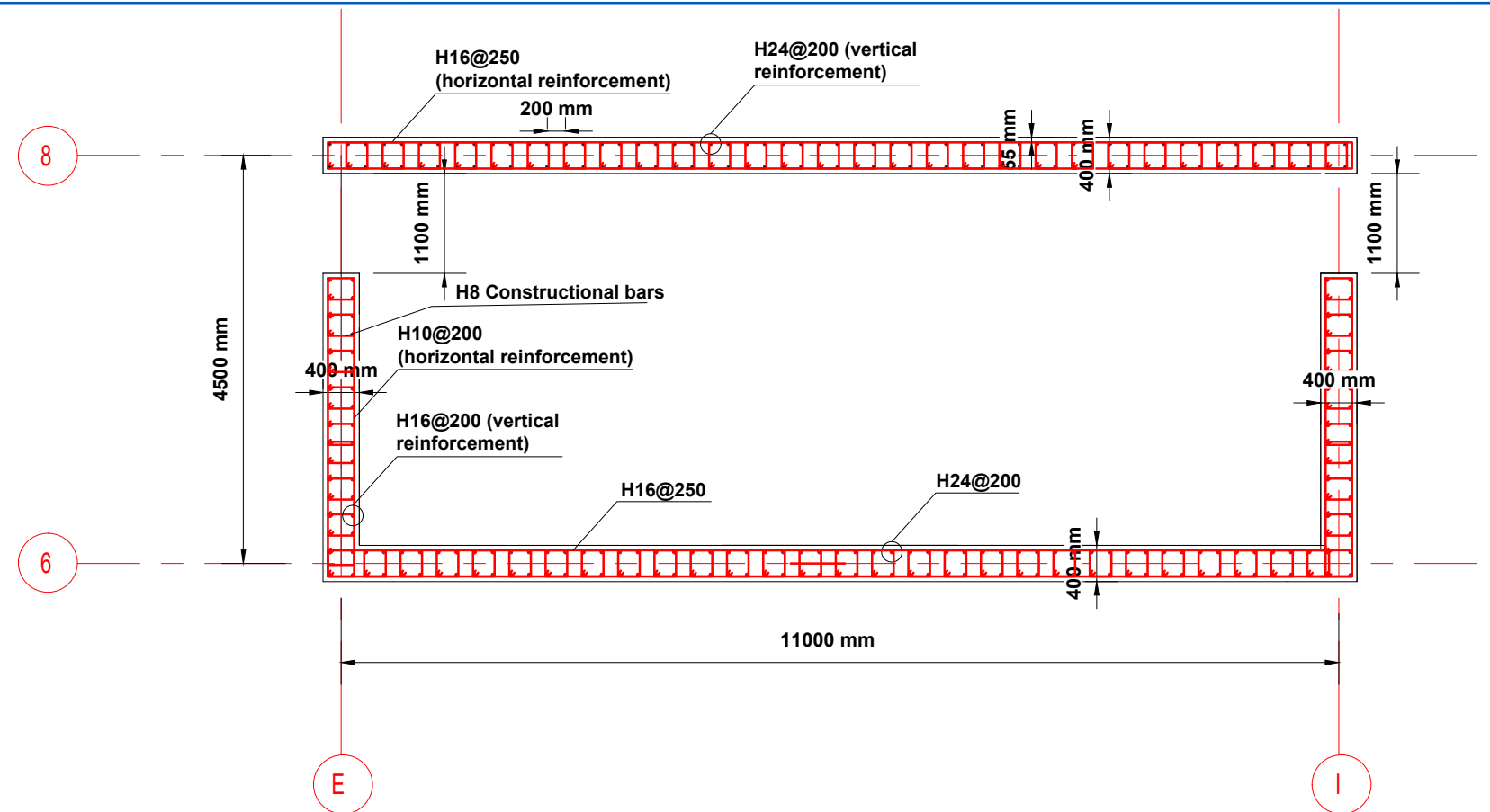
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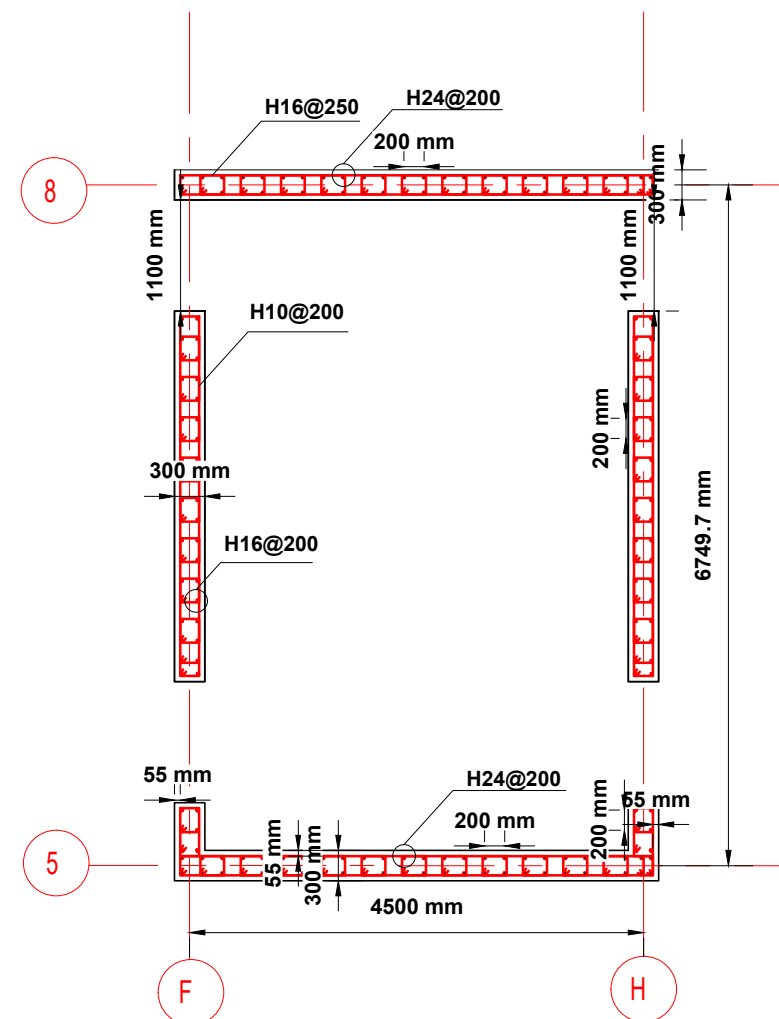
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Raft foundation details with down stand beam 1:20



Lower core reinforcement design 1:75



Upper core reinforcement design 1:75

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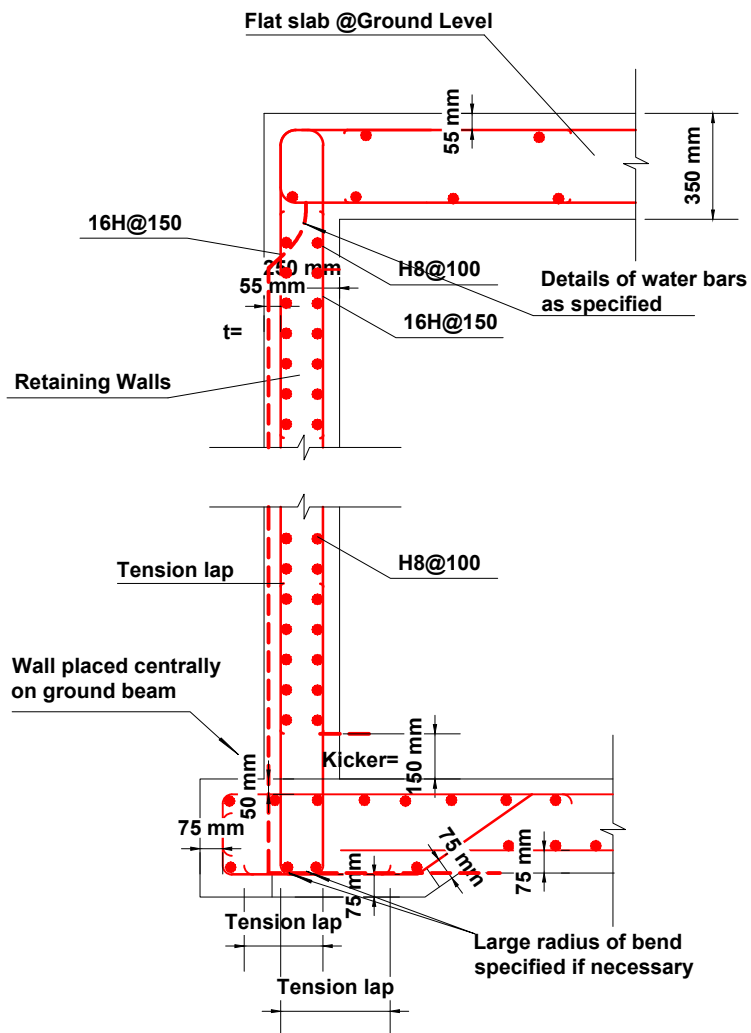
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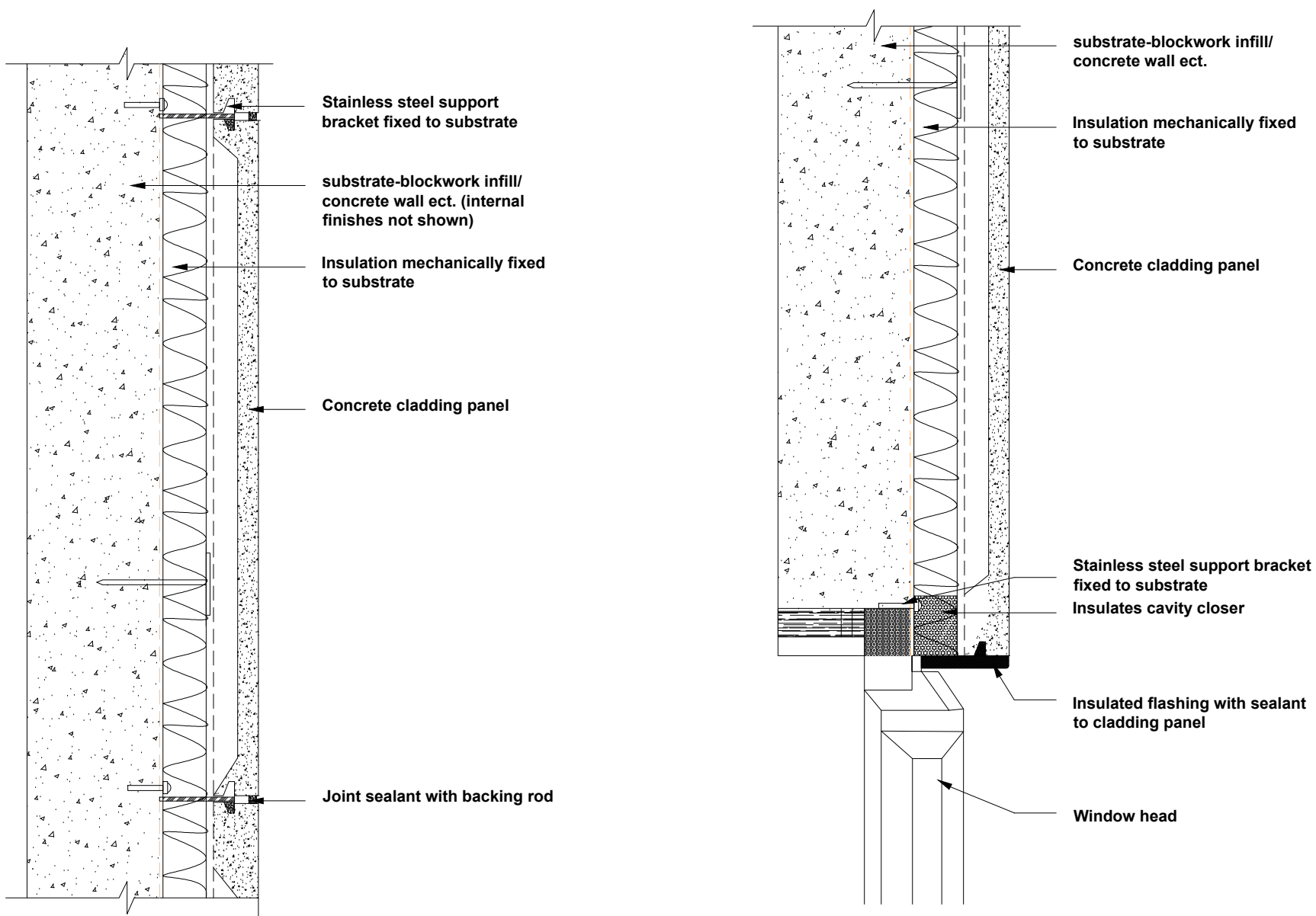
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Basement retaining walls between slab and ground beam 1:25



Concrete cladding details-wall section 1:25

Concrete cladding details-window head detail 1:25

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