



Contents

1. [Scope of Works / Description of Systems of Plant & Equipment](#)

2. [Suppliers and Manufacturers Directory](#)

3. [Manufacturers Information](#)

4. [As Built Drawings](#)

5. [Testing & Commissioning Results and Certificates](#)

6. [Operation](#)

7. [Maintenance Procedures and Planned Maintenance](#)

8. [Spares Information](#)

9. [Guarantees and Warranties](#)

10. [Replacement Strategy](#)

11. [Demolition Decommissioning or Disposal](#)





1. Scope of Works / Description of Systems of Plant & Equipment



Scope of Works

FP McCann Ltd have provided and installed precast concrete units including dock pits & lift shaft.

A source of replacements can be obtained from:

FP McCann Limited

3 Drumard Road

Knockloughrim

Magherafelt

Northern Ireland

BT45 8QA

02879642558

info@fpmccann.co.uk

Contact – Karl Judd 07740934589



2. Suppliers and Manufacturers Directory

FP McCann Limited
3 Drumard Road
Knockloughrim
Magherafelt
Northern Ireland
BT45 8QA
02879642558
info@fpmccann.co.uk
Contact – Karl Judd 07740934589





3. Manufacturers Information



Fault Finding/ Maintenance Requirements

No adaptation, modification or cutting of the pre-cast elements should be undertaken without the written approval of FP McCann Limited in the first instance or after assessment by a suitably qualified engineer working from the original calculations and manufacture drawings.

Demolition should only be undertaken by suitably qualified contractors. PC Units should be suitably propped if persons are in close proximity to works during cutting / demolition works otherwise peckers / heavy machinery can be used to remove pre-cast items in a controlled and safe manner.

Pre-stressed concrete units, if applicable, can be demolished quite safely by destroying the concrete around the stressed tendons, immediately once the concrete fails and crushed, the tendons relax and become de-stressed, the stressed tendons should never be cut, generally there is no need.

Cleaning

Not Applicable



4. As Built Drawings

[3.1.14 AB PDF Precast Walls, Stairs & Lift Shaft](#)

[3.1.14 AB DWG Precast Walls, Stairs & Lift Shaft](#)





3.1 AS-BUILT DRAWINGS

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

Drawing Register: FP McCann

PRECAST CONCRETE & RETAINING WALLS

DRAWING NUMBER	DRAWING TITLE	REV
P23025-FPM-ZZ-00-DR-X-0001	Dock Pits Along GL 3/C1-E	C01
P23025-FPM-ZZ-00-DR-X-0002	Prowall Along GL 3/C1-E	C01
P23025-FPM-ZZ-00-DR-X-0003	Yard Retaining Walls	C01
P23025-FPM-ZZ-00-DR-X-0004	Perimeter Retaining Walls Along GL A/1-3	C02
P23025-FPM-ZZ-00-DR-X-0005	Perimeter Retaining Walls Along GL A/1-3	C01
P23025-FPM-ZZ-00-DR-X-0201	Main Entrance Stairs	C02
P23025-FPM-ZZ-00-DR-X-0202	Fire Escape Stairs	C01
P23025-FPM-ZZ-XX-DR-X-0006	Yard Retaining Walls Gridline A/3	C02
P23025-FPM-ZZ-XX-DR-X-0100	Lift Shaft	C01
05-BYL-1462-BS-0001-GA1	GA1 Of Biscuit BS-0001	C01
05-BYL-1462-BS-0002-GA1	GA1 Of Biscuit BS-0002	C01
05-BYL-1462-BS-0003-GA1	GA1 Of Biscuit BS-0003	C01
05-BYL-1462-BW-0001-GA1	GA1 Of Backwall BW-0001	C01
05-BYL-1462-BW-0001-RC1	RC1 Of Backwall BW-0001	C01
05-BYL-1462-BW-0002-GA1	GA1 Of Backwall BW-0002	C01
05-BYL-1462-BW-0002-RC1	RC1 Of Backwall BW-0002	C01
05-BYL-1462-BW-0003-GA1	GA1 Of Backwall BW-0003	C01
05-BYL-1462-BW-0003-RC1	RC1 Of Backwall BW-0003	C01
05-BYL-1462-DP-0001-GA1	GA1 Of Double Door Prowall DP-0001	C01
05-BYL-1462-DP-0001-IM1	IM1 Of Double Door Prowall DP-0001	C02
05-BYL-1462-DP-0001-RC1	RC1 Of Double Door Prowall DP-0001	C01
05-BYL-1462-DP-0002-GA1	GA1 Of Double Door Prowall DP-0002	C01
05-BYL-1462-DP-0002-IM1	IM1 Of Double Door Prowall DP-0002	C02
05-BYL-1462-DP-0002-RC1	RC1 Of Double Door Prowall DP-0002	C01
05-BYL-1462-FT-0001-GA1	GA1 Of Frontwall FT-0001	C01
05-BYL-1462-FT-0001-RC1	RC1 Of Frontwall FT-0001	C01



DRAWING NUMBER	DRAWING TITLE	REV
05-BYL-1462-HT-0001-GA1	GA1 Of Frontwall HT-0001	C02
05-BYL-1462-HT-0001-RC1	RC1 Of Frontwall HT-0001	C01
05-BYL-1462-HT-0002-GA1	GA1 Of Frontwall HT-0002	C02
05-BYL-1462-HT-0002-RC1	RC1 Of Frontwall HT-0002	C01
05-BYL-1462-LL-0001-GA1	GA1 Of Lift Lid LL-0001	C01
05-BYL-1462-LL-0001-RC1	RC1 Of Lift Lid LL-0001	C01
05-BYL-1462-LN-0001-GA1	GA1 Of Lintel LN-0001	C01
05-BYL-1462-LN-0001-RC1	RC1 Of Lintel LN-0001	C01
05-BYL-1462-LN-0002-GA1	GA1 Of Lintel LN-0002	C01
05-BYL-1462-LN-0002-RC1	RC1 Of Lintel LN-0002	C01
05-BYL-1462-LN-0003-GA1	GA1 Of Lintel LN-0003	C01
05-BYL-1462-LN-0003-RC1	RC1 Of Lintel LN-0003	C01
05-BYL-1462-LN-0004-GA1	GA1 Of Lintel LN-0004	C01
05-BYL-1462-LN-0004-RC1	RC1 Of Lintel LN-0004	C01
05-BYL-1462-LP-0001-GA1	GA1 Of Lift Pit LP-0001	C01
05-BYL-1462-LP-0001-IM1	IM1 Of Lift Pit LP-0001	C01
05-BYL-1462-LP-0001-RC1	RC1 Of Lift Pit LP-0001	C01
05-BYL-1462-LW-0001-GA1	GA1 Of Lift Wall LW-0001	C01
05-BYL-1462-LW-0001-IM1	IM1 Of Lift Wall LW-0001	C01
05-BYL-1462-LW-0001-RC1	RC1 Of Lift Wall LW-0001	C01
05-BYL-1462-LW-0002-GA1	GA1 Of Lift Wall LW-0002	C01
05-BYL-1462-LW-0002-IM1	IM1 Of Lift Wall LW-0002	C01
05-BYL-1462-LW-0002-RC1	RC1 Of Lift Wall LW-0002	C01
05-BYL-1462-LW-0003-GA1	GA1 Of Lift Wall LW-0003	C01
05-BYL-1462-LW-0003-IM1	IM1 Of Lift Wall LW-0003	C01
05-BYL-1462-LW-0003-RC1	RC1 Of Lift Wall LW-0003	C01
05-BYL-1462-LW-0004-GA1	GA1 Of Lift Wall LW-0004	C01
05-BYL-1462-LW-0004-IM1	IM1 Of Lift Wall LW-0004	C01
05-BYL-1462-LW-0004-RC1	RC1 Of Lift Wall LW-0004	C01
05-BYL-1462-PR-0001-GA1	GA1 Of Perimeter Wall PR-0001	C02
05-BYL-1462-PR-0001-RC1	RC1 Of Perimeter Wall PR-0001	C01
05-BYL-1462-PR-0002-GA1	GA1 Of Perimeter Wall PR-0002	C01



DRAWING NUMBER	DRAWING TITLE	REV
05-BYL-1462-PR-0002-RC1	RC1 Of Perimeter Wall PR-0002	C01
05-BYL-1462-PR-0003-GA1	GA1 Of Perimeter Wall PR-0003	C02
05-BYL-1462-PR-0003-RC1	RC1 Of Perimeter Wall PR-0003	C01
05-BYL-1462-PR-0004-GA1	GA1 Of Perimeter Wall PR-0004	C01
05-BYL-1462-PR-0004-RC1	RC1 Of Perimeter Wall PR-0004	C01
05-BYL-1462-PR-0005-GA1	GA1 Of Perimeter Wall PR-0005	C01
05-BYL-1462-PR-0005-RC1	RC1 Of Perimeter Wall PR-0005	C01
05-BYL-1462-PR-0006-GA1	GA1 Of Perimeter Wall PR-0006	C01
05-BYL-1462-PR-0006-RC1	RC1 Of Perimeter Wall PR-0006	C01
05-BYL-1462-PR-0007-GA1	GA1 Of Perimeter Wall PR-0007	C01
05-BYL-1462-PR-0007-RC1	RC1 Of Perimeter Wall PR-0007	C01
05-BYL-1462-PR-0008-GA1	GA1 Of Perimeter Wall PR-0008	C01
05-BYL-1462-PR-0008-RC1	RC1 Of Perimeter Wall PR-0008	C01
05-BYL-1462-PR-0009-GA1	GA1 Of Perimeter Wall PR-0009	C02
05-BYL-1462-PR-0009-RC1	RC1 Of Perimeter Wall PR-0009	C01
05-BYL-1462-PR-0010-GA1	GA1 Of Perimeter Wall PR-0010	C02
05-BYL-1462-PR-0010-RC1	RC1 Of Perimeter Wall PR-0010	C01
05-BYL-1462-PR-0011-GA1	GA1 Of Perimeter Wall PR-0011	C02
05-BYL-1462-PR-0011-RC1	RC1 Of Perimeter Wall PR-0011	C01
05-BYL-1462-PR-0013-GA1	GA1 Of Perimeter Wall PR-0013	C01
05-BYL-1462-PR-0013-RC1	RC1 Of Perimeter Wall PR-0013	C01
05-BYL-1462-PR-0014-GA1	GA1 Of Perimeter Wall PR-0014	C01
05-BYL-1462-PR-0014-RC1	RC1 Of Perimeter Wall PR-0014	C01
05-BYL-1462-PR-0015-GA1	GA1 Of Perimeter Wall PR-0015	C01
05-BYL-1462-PR-0015-RC1	RC1 Of Perimeter Wall PR-0015	C01
05-BYL-1462-PR-0016-GA1	GA1 Of Perimeter Wall PR-0016	C01
05-BYL-1462-PR-0016-RC1	RC1 Of Perimeter Wall PR-0016	C01
05-BYL-1462-PR-0017-GA1	GA1 Of Perimeter Wall PR-0017	C01
05-BYL-1462-PR-0017-RC1	RC1 Of Perimeter Wall PR-0017	C01
05-BYL-1462-PR-0018-GA1	GA1 Of Perimeter Wall PR-0018	C01
05-BYL-1462-PR-0018-RC1	RC1 Of Perimeter Wall PR-0018	C01
05-BYL-1462-PR-0019-GA1	GA1 Of Perimeter Wall PR-0019	C01



DRAWING NUMBER	DRAWING TITLE	REV
05-BYL-1462-PR-0019-RC1	RC1 Of Perimeter Wall PR-0019	C01
05-BYL-1462-PR-0020-GA1	GA1 Of Perimeter Wall PR-0020	C01
05-BYL-1462-PR-0020-RC1	RC1 Of Perimeter Wall PR-0020	C01
05-BYL-1462-PR-0021-GA1	GA1 Of Perimeter Wall PR-0021	C01
05-BYL-1462-PR-0021-RC1	RC1 Of Perimeter Wall PR-0021	C01
05-BYL-1462-PR-0023-GA1	GA1 Of Perimeter Wall PR-0023	C01
05-BYL-1462-PR-0023-RC1	RC1 Of Perimeter Wall PR-0023	C01
05-BYL-1462-SB-0001-GA1	GA1 Of Stair Beam SB-0001	C01
05-BYL-1462-SB-0001-RC1	RC1 Of Stair Beam SB-0001	C01
05-BYL-1462-SB-0002-GA1	GA1 Of Stair Beam SB-0002	C01
05-BYL-1462-SB-0002-RC1	RC1 Of Stair Beam SB-0002	C01
05-BYL-1462-SC-0001-GA1	GA1 Of Stonehenge Column SC-0001	C01
05-BYL-1462-SC-0001-RC1	RC1 Of Stonehenge Column SC-0001	C01
05-BYL-1462-SC-0002-GA1	GA1 Of Stonehenge Column SC-0002	C01
05-BYL-1462-SC-0002-RC1	RC1 Of Stonehenge Column SC-0002	C01
05-BYL-1462-SF-0001-GA1	GA1 Of Stairs SF-0001	C01
05-BYL-1462-SF-0001-RC1	RC1 Of Stairs SF-0001	C01
05-BYL-1462-SF-0002-GA1	GA1 Of Stairs SF-0002	C01
05-BYL-1462-SF-0002-RC1	RC1 Of Stairs SF-0002	C02
05-BYL-1462-SF-0003-GA1	GA1 Of Stairs SF-0003	C01
05-BYL-1462-SF-0003-RC1	RC1 Of Stairs SF-0003	C01
05-BYL-1462-SF-0004-GA1	GA1 Of Stairs SF-0004	C01
05-BYL-1462-SF-0004-RC1	RC1 Of Stairs SF-0004	C01
05-BYL-1462-SF-0005-GA1	GA1 Of Stairs SF-0005	C01
05-BYL-1462-SF-0005-RC1	RC1 Of Stairs SF-0005	C01
05-BYL-1462-SF-0006-GA1	GA1 Of Stairs SF-0006	C01
05-BYL-1462-SF-0006-RC1	RC1 Of Stairs SF-0006	C01
05-BYL-1462-SF-0007-GA1	GA1 Of Stairs SF-0007	C01
05-BYL-1462-SF-0007-RC1	RC1 Of Stairs SF-0007	C01
05-BYL-1462-SF-0008-GA1	GA1 Of Stairs SF-0008	C01
05-BYL-1462-SF-0008-RC1	RC1 Of Stairs SF-0008	C01
05-BYL-1462-SF-0009-GA1	GA1 Of Stairs SF-0009	C01



DRAWING NUMBER	DRAWING TITLE	REV
05-BYL-1462-SF-0009-RC1	RC1 Of Stairs SF-0009	C01
05-BYL-1462-SF-0010-GA1	GA1 Of Stairs SF-0010	C01
05-BYL-1462-SF-0010-RC1	RC1 Of Stairs SF-0010	C01
05-BYL-1462-SF-0011-GA1	GA1 Of Stairs SF-0011	C01
05-BYL-1462-SF-0011-RC1	RC1 Of Stairs SF-0011	C01
05-BYL-1462-SF-0012-GA1	GA1 Of Stairs SF-0012	C01
05-BYL-1462-SF-0012-RC1	RC1 Of Stairs SF-0012	C01
05-BYL-1462-SF-0020-GA1	GA1 Of Stairs SF-0020	C01
05-BYL-1462-SF-0020-RC1	RC1 Of Stairs SF-0020	C01
05-BYL-1462-SF-0021-GA1	GA1 Of Stairs SF-0021	C01
05-BYL-1462-SF-0021-RC1	RC1 Of Stairs SF-0021	C01
05-BYL-1462-SF-0022-GA1	GA1 Of Stairs SF-0022	C01
05-BYL-1462-SF-0022-RC1	RC1 Of Stairs SF-0022	C01
05-BYL-1462-SL-0001-GA1	GA1 Of Stair Landing SL-0001	C02
05-BYL-1462-SL-0001-RC1	RC1 Of Stair Landing SL-0001	C02
05-BYL-1462-SL-0002-GA1	GA1 Of Stair Landing SL-0002	C01
05-BYL-1462-SL-0002-RC1	RC1 Of Stair Landing SL-0002	C01
05-BYL-1462-SL-0003-GA1	GA1 Of Stair Landing SL-0003	C01
05-BYL-1462-SL-0003-RC1	RC1 Of Stair Landing SL-0003	C01
05-BYL-1462-SL-0004-GA1	GA1 Of Stair Landing SL-0004	C01
05-BYL-1462-SL-0004-RC1	RC1 Of Stair Landing SL-0004	C01
05-BYL-1462-SL-0005-GA1	GA1 Of Stair Landing SL-0005	C01
05-BYL-1462-SL-0005-RC1	RC1 Of Stair Landing SL-0005	C01
05-BYL-1462-SL-0006-GA1	GA1 Of Stair Landing SL-0006	C01
05-BYL-1462-SL-0006-RC1	RC1 Of Stair Landing SL-0006	C01
05-BYL-1462-SL-0007-GA1	GA1 Of Stair Landing SL-0007	C03
05-BYL-1462-SL-0007-RC1	RC1 Of Stair Landing SL-0007	C02
05-BYL-1462-SP-0001-GA1	GA1 Of Single Door Prowall SP-0001	C01
05-BYL-1462-SP-0001-IM1	IM1 Of Single Door Prowall SP-0001	C01
05-BYL-1462-SP-0001-RC1	RC1 Of Single Door Prowall SP-0001	C01
05-BYL-1462-SW-0001-GA1	GA1 Of Sidewall SW-0001	C01
05-BYL-1462-SW-0001-RC1	RC1 Of Sidewall SW-0001	C01



DRAWING NUMBER	DRAWING TITLE	REV
05-BYL-1462-SW-0002-GA1	GA1 Of Sidewall SW-0002	C01
05-BYL-1462-SW-0002-RC1	RC1 Of Sidewall SW-0002	C01
05-BYL-1462-YD-0001-GA1	GA1 Of Yard Retaining Wall YD-0001	C01
05-BYL-1462-YD-0001-RC1	RC1 Of Yard Retaining Wall YD-0001	C01
05-BYL-1462-YD-0002-GA1	GA1 Of Yard Retaining Wall YD-0002	C01
05-BYL-1462-YD-0002-RC1	RC1 Of Yard Retaining Wall YD-0002	C01
05-BYL-1462-YD-0003-GA1	GA1 Of Yard Retaining Wall YD-0003	C01
05-BYL-1462-YD-0003-RC1	RC1 Of Yard Retaining Wall YD-0003	C01
05-BYL-1462-YD-0004-GA1	GA1 Of Yard Retaining Wall YD-0004	C01
05-BYL-1462-YD-0004-RC1	RC1 Of Yard Retaining Wall YD-0004	C01
05-BYL-1462-YD-0005-GA1	GA1 Of Yard Retaining Wall YD-0005	C01
05-BYL-1462-YD-0005-RC1	RC1 Of Yard Retaining Wall YD-0005	C01
05-BYL-1462-YD-0006-GA1	GA1 Of Yard Retaining Wall YD-0006	C01
05-BYL-1462-YD-0006-RC1	RC1 Of Yard Retaining Wall YD-0006	C01
05-BYL-1462-YD-0007-GA1	GA1 Of Yard Retaining Wall YD-0007	C01
05-BYL-1462-YD-0007-RC1	RC1 Of Yard Retaining Wall YD-0007	C01
05-BYL-1462-YD-0008-GA1	GA1 Of Yard Retaining Wall YD-0008	C01
05-BYL-1462-YD-0008-RC1	RC1 Of Yard Retaining Wall YD-0008	C01
05-BYL-1462-YD-0009-GA1	GA1 Of Yard Retaining Wall YD-0009	C01
05-BYL-1462-YD-0009-RC1	RC1 Of Yard Retaining Wall YD-0009	C01
05-BYL-1462-YD-0010-GA1	GA1 Of Yard Retaining Wall YD-0010	C01
05-BYL-1462-YD-0010-RC1	RC1 Of Yard Retaining Wall YD-0010	C01
05-BYL-1462-YD-0011-GA1	GA1 Of Yard Retaining Wall YD-0011	C01
05-BYL-1462-YD-0011-RC1	RC1 Of Yard Retaining Wall YD-0011	C01
05-BYL-1462-YD-0012-GA1	GA1 Of Yard Retaining Wall YD-0012	C01
05-BYL-1462-YD-0012-RC1	RC1 Of Yard Retaining Wall YD-0012	C01

Unit	Lifter	Weight(T)
BS-0001	3.5T UTA	0.85
BS-0002	3.5T UTA	2.55
BS-0003	3.5T UTA	2.40
BW-0001	RD30-WTA	4.37
BW-0002	RD30-WTA	4.54
BW-0003	RD30-WTA	2.10
DP-0001	7.5T-SPA	6.89
DP-0002	7.5T-SPA	6.89
FT-0001	RD24-WTA	1.19
HT-0001	RD30-WTA	2.83
HT-0002	RD30-WTA	2.83
SC-0001	5.0T-SPA	4.18
SC-0002	RD30-WTA	4.18
SC-0003	5.0T-SPA	4.18
SP-0001	5.0T-SPA	3.44
SW-0001	RD30-WTA	1.47
SW-0002	RD30-WTA	1.54
YD-0001	RD36-WTA	4.04
YD-0006	RD36-WTA	5.02

- Notes:
- Handling, Volumes & Weights
 - In the design of the lifting anchors, we have a adopted a dynamic factor of 1.3 (stationary/mobile crane).
 - See individual unit drawings for volumes and weights
 - Concrete
 - Lifting strength based on 2 cubes = 25 N/mm².
 - Characteristic 28 day cube strength = 50 N/mm².
 - Concrete provides Design Chemical Class 2 (DC2) to Special Digest 1, Table F2.
 - Reinforcement
 - Reinforcement (500B or C) to BS4449.
 - Scheduling, dimensioning, bending and cutting to BS8666.
 - Cage to be tack welded and/or tied with 17 gauge annealed tying wire.
 - Manufacture
 - Manufactured to BS EN 13369:2013
 - Tolerances based on BS EN 13369:2013 & BS EN 13670:2009
 - Finishes: As below unless indicated otherwise on unit drawings.

Top (As Cast Surface)	Front Face & Sides (Struck from Steel/Timber Mould)
Steel Trowelled	Type B

- d) Marking: Units shall be indelibly marked to show:
- Contract number or name
 - Unit reference and date of manufacture
 - Unit weight +5%

5. Design
- This drawing is to be read in conjunction with FP McCann unit Production drawings.
 - Concrete design to EN1992-1-1:2004.
 - Δ Dock pit retaining walls are designed to accommodate retained materials and a floor slab surcharge load of 50 kN/m².
 - Δ Precast biscuit slab designed to support a safe construction load of 5 kN/m². Precast biscuit slab is designed to act compositely with the in-situ concrete topping (supplied and installed by the main contractor - concrete topping to be a minimum strength class of C30/37) to accommodate a UDL surcharge of 50 kN/m².
 - FP McCann have designed the concrete units only, the stability of the support conditions should be checked by overall scheme designer.
 - The front wall 'arm' to which the buffer is fixed is designed for an accidental force of 75kN acting to the buffer. Note that the upstand to the arm is not designed for impact loading and should therefore not be subjected to forces transferred through the buffer.
 - Design life: >50 years.
 - Cover to Reinforcement & Exposure:

Alt Faces	Block	Min. Cover	Max. Cover	Exposure
Biscuit Slab	Block	25mm	20mm	XC3/4, XD1, XF4

6. Installation
- Unrestricted access to be provided by main contractor to a minimum of 11m above FFL. This includes the removal of all beams, cladding rails etc.
 - Main contractor to ensure base slab is installed to the levels shown on this drawing. Allowable tolerance +0/-10mm.
 - Main contractor to allow a minimum of 24 hours before commencement of backfilling. No heavy roller to be used within 1.5m of any precast wall. Filling behind the precast walls to consist of a free draining granular fill laid in a maximum of 225mm layers, compacted using a vibrating plate.
 - Where an in-situ concrete pour is required behind walls this should be cast in layers such that excessive pressure is not imposed on the back of the precast wall during pouring.
 - Excilbur bolt in toe. Grouted with Larsen Multigrout 60.

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross Section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5m to 6m	± 12mm		
Additional for every subsequent 6m	± 6mm	Additional for every subsequent 6m	± 6mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5m to 6m			± 12mm
Additional for every subsequent 6m			± 6mm
Holes, openings, steel plates and inserts			± 5mm
Size of holes or openings:			± 5mm
Location of holes, openings, steel plate inserts:			± 10mm

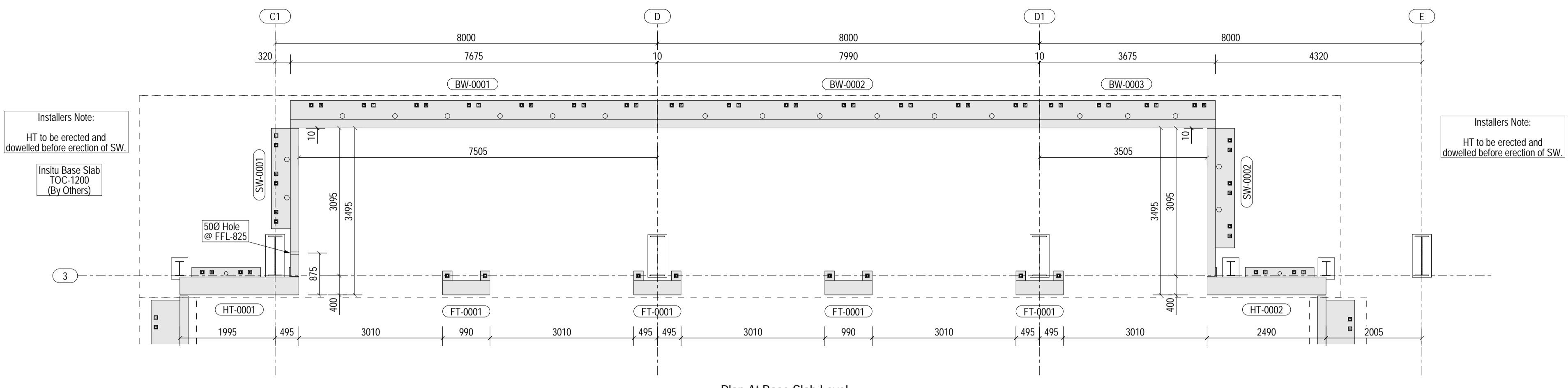
C01	14-03-24	No Comments	DT	NB	SJH
P01	22-02-24	Issued For Construction		NB	SJH
Rev	Date	Revision Detail	By	Chk	App
Status:	As Built				A

FP McCann
 Bullharts Lane
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

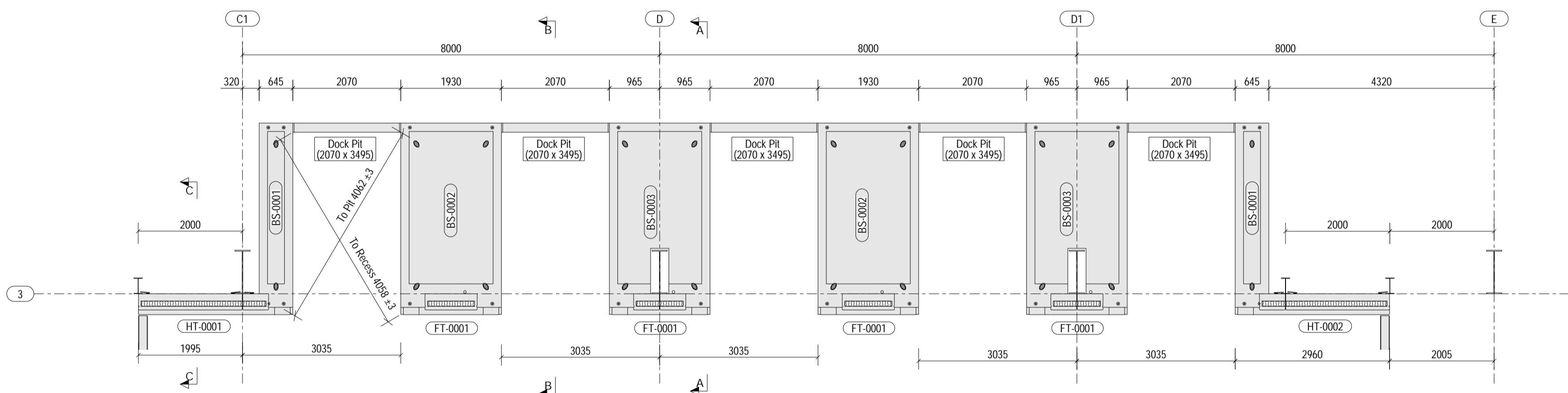
winvic

Project: **Panattoni Park Poyle**
 Title: **General Arrangement of Dock Pits Along GL 3/C1-E**

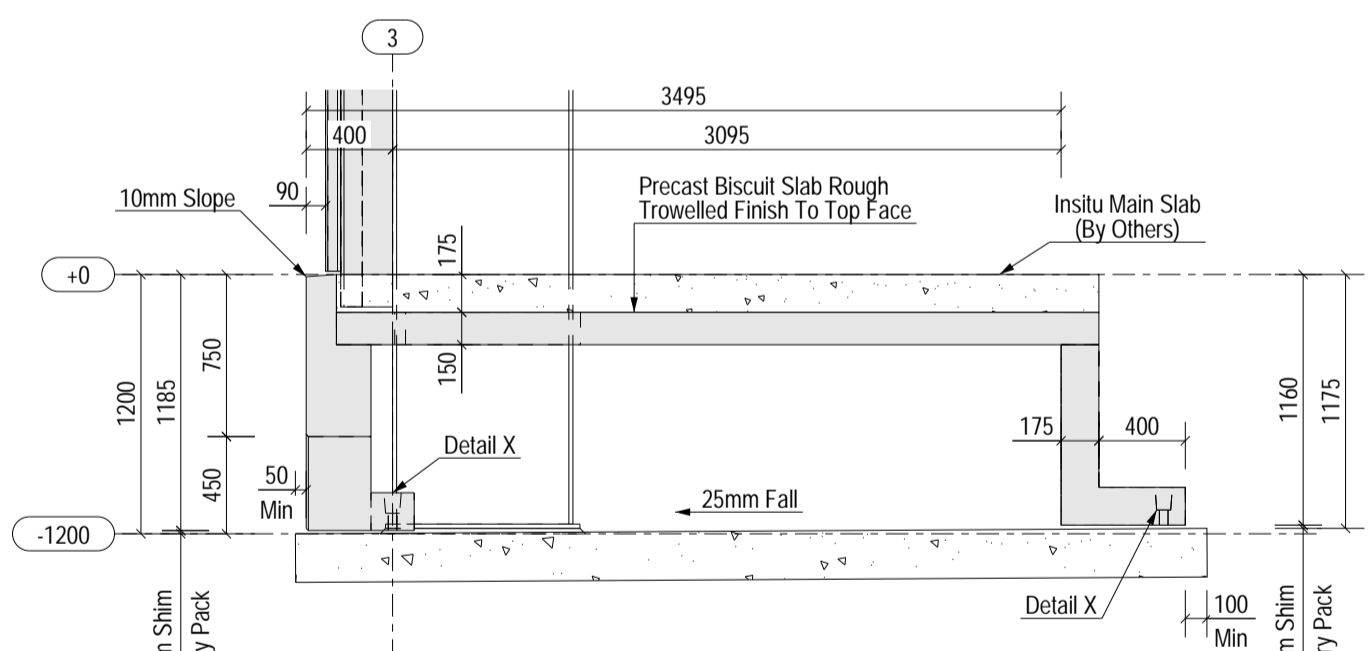
Drawn: DT	Checked: NB	Approved: SJH
Internal Ref: 05-BYL-1462	Date: 16-02-24	Scale: 1:65
Drawing No: P23025-FPM-ZZ-00-DR-X-0001	Rev: C01	



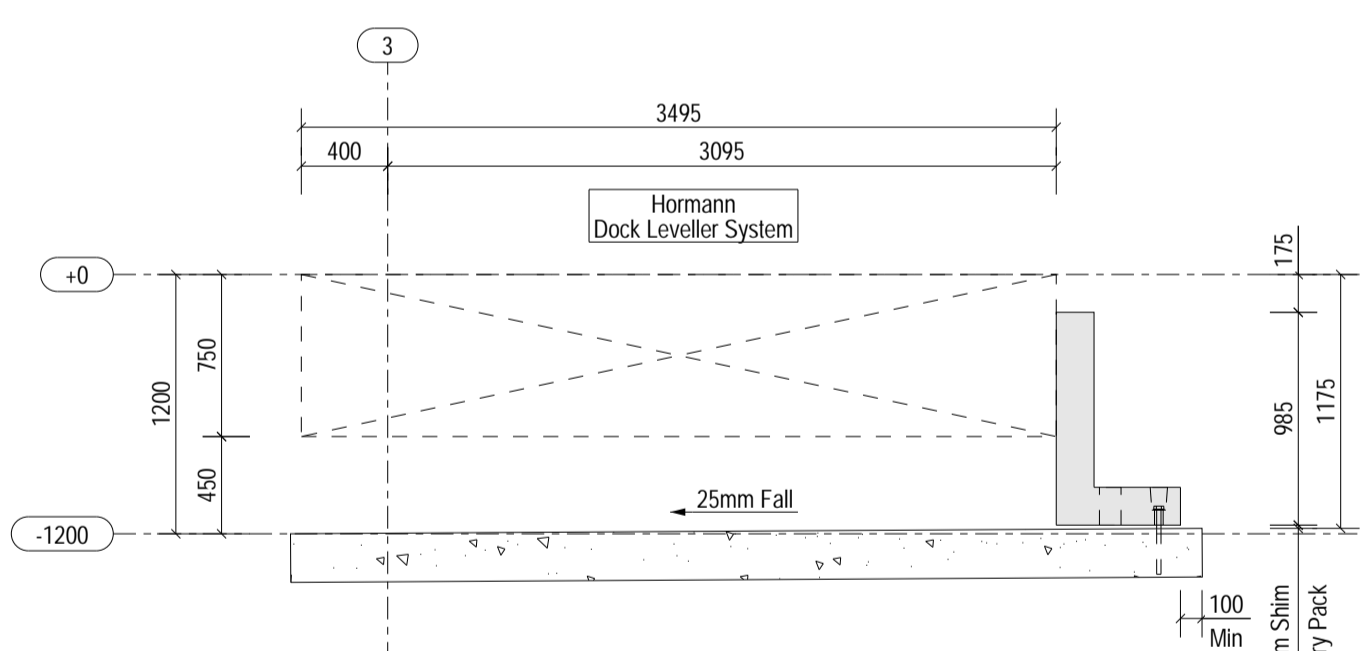
Plan At Base Slab Level



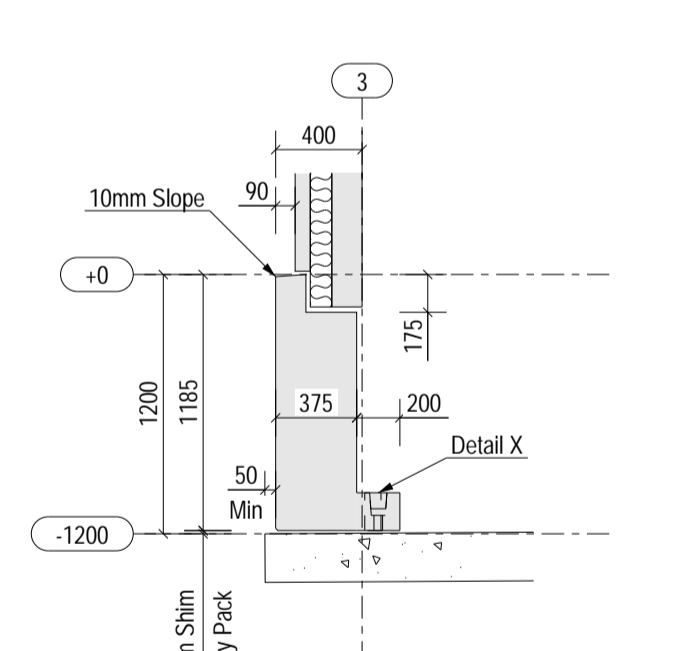
Plan At FFL



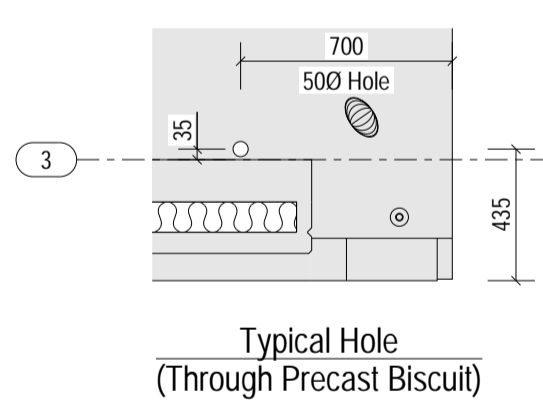
A - A (Through Precast Biscuit)



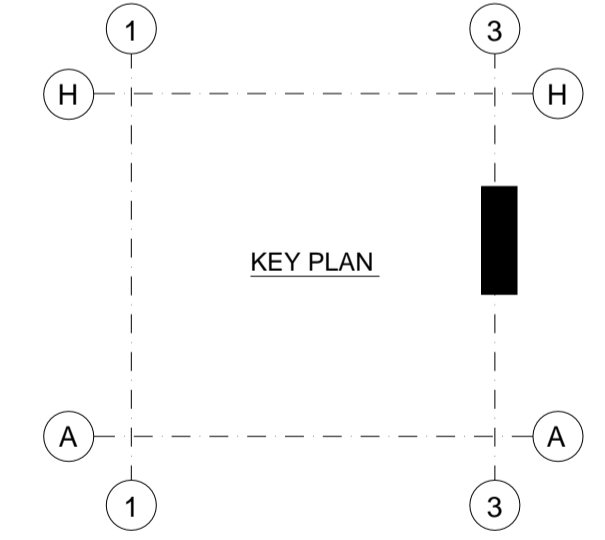
B - B (Through Dock Pit)



C - C



Typical Hole (Through Precast Biscuit)



KEY PLAN

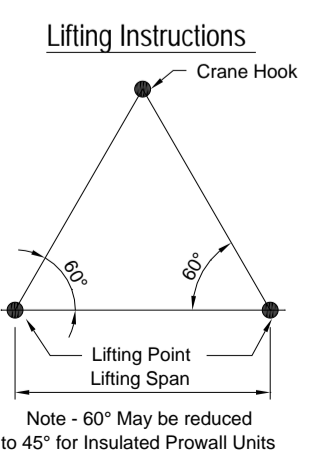
- Biscuit Installation Note**
- Place precast biscuit panels as shown.
 - Place dowel bars into precast biscuit and wall.
 - Top of dowel bars to FFL -175.
 - All dowl pockets to be flooded with Larsen Multigrout 60.

- Important Notes:**
- Concrete base slab to be designed and installed (By Others) to resist the imposed forces and moments from precast elements. The concrete slab is to have a minimum thickness of 225mm and have a minimum strength class of C20/25.

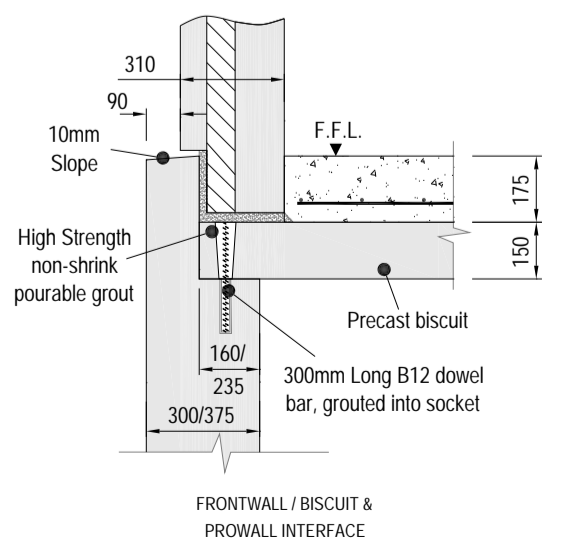
- The Construction (Design & Management) Regulations 2015**
- If you are unsure of your responsibilities please refer to the HSE website.
 - These notes should be read by all CDM duty holders alongside the general arrangement layout and additional notes, whilst we do not go into specifics such as working at heights, working over excavations, slips and trips etc, where Δ is shown in the notes and on the drawing some potential hazard/risks are identified and should be assessed accordingly by the main contractor and the design team prior to any site works commencing.
 - Particular attention should be made to the notes identified by 1 which have the potential for significant risk where not adhered to. This FP McCann general arrangement should be read in conjunction with all other relevant drawings available from the design team e.g Architect, Engineer, Steelwork Sub-Contractor etc.
 - Lifting - The lifting equipment referred to in note 1 is the only lifting equipment which should be used on FP McCann supplied units. All elements must be lifted in accordance with FP McCann's lifting plan/method statement.
 - Installation - Where possible the installation of all units should be done from ground level. If it is necessary to stand on top of any units relevant procedures for working at height must be followed. The manufacturers guidelines and safety recommendations for the application for any grout or resin must be followed.

PRODUCT CODES

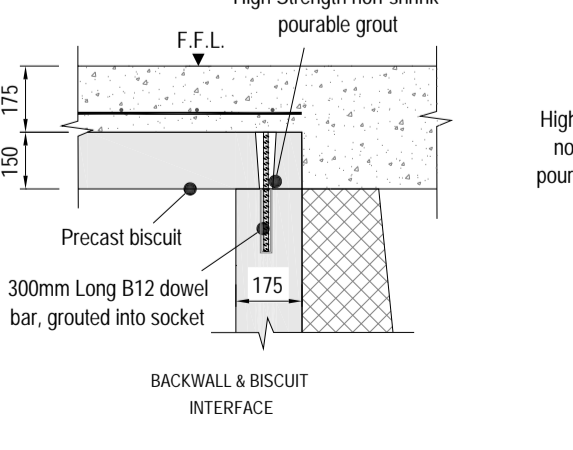
- BP - Blank Prowall Panel
- BS - Biscuit Slab
- BW - Back Wall
- BP - Double Door Prowall Panel
- FN - Non Tailgate Front Wall
- FT - Tailgate Front Wall
- GB - Ground Beam
- HN - Non Tailgate Half
- HT - Half Tailgate Front Wall
- IB - Infill Biscuit Slab
- IF - Infill Front Wall
- IK - Prowall Infill Panel
- IP - Personnel Door Prowall Panel
- PR - Perimeter Retaining Wall
- RR - Reverse Toe Retaining Wall
- SC - Stonehenge Column
- SP - Single Door Prowall Panel
- SW - Side Wall
- YD - Yard Wall Dowelled
- YI - Yard Wall In Situ Toe



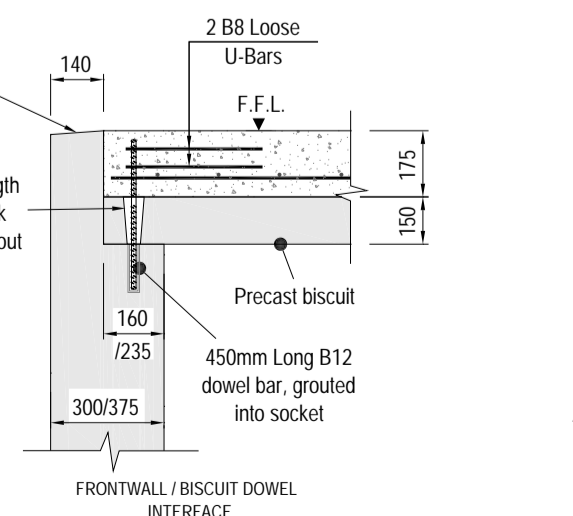
Lifting Instructions



FRONT WALL / BISCUIT & PROWALL INTERFACE

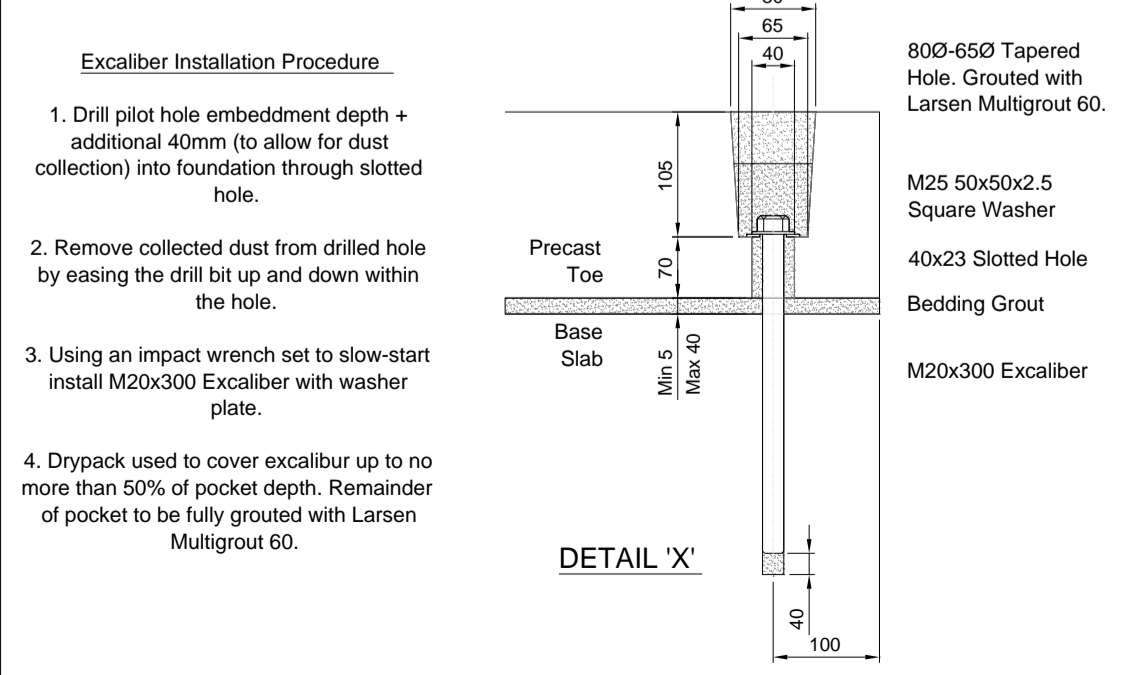


BACK WALL / BISCUIT INTERFACE

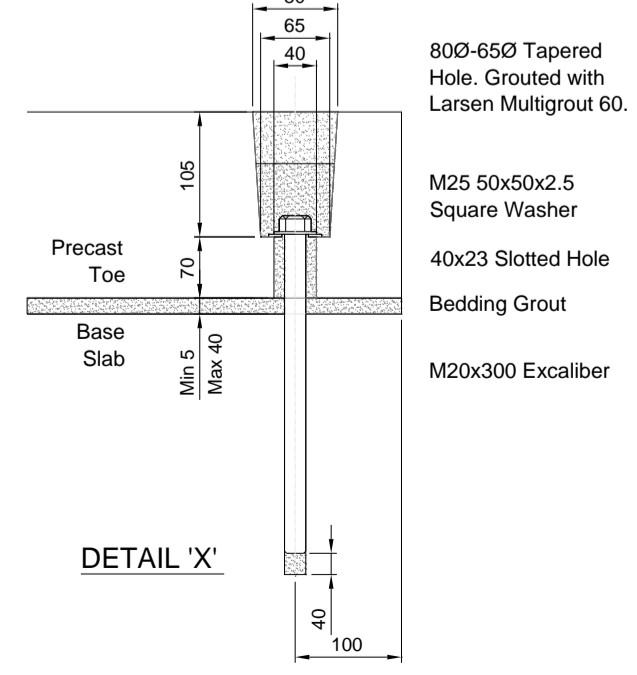


FRONT WALL / BISCUIT DOWEL INTERFACE

- Excilbur pockets generally provided in pairs. One is backup, therefore, only 1No. per pair is needed unless an instruction is given to the contrary. In some instances, for example T-Walls, single pockets are provided, these must all be used.

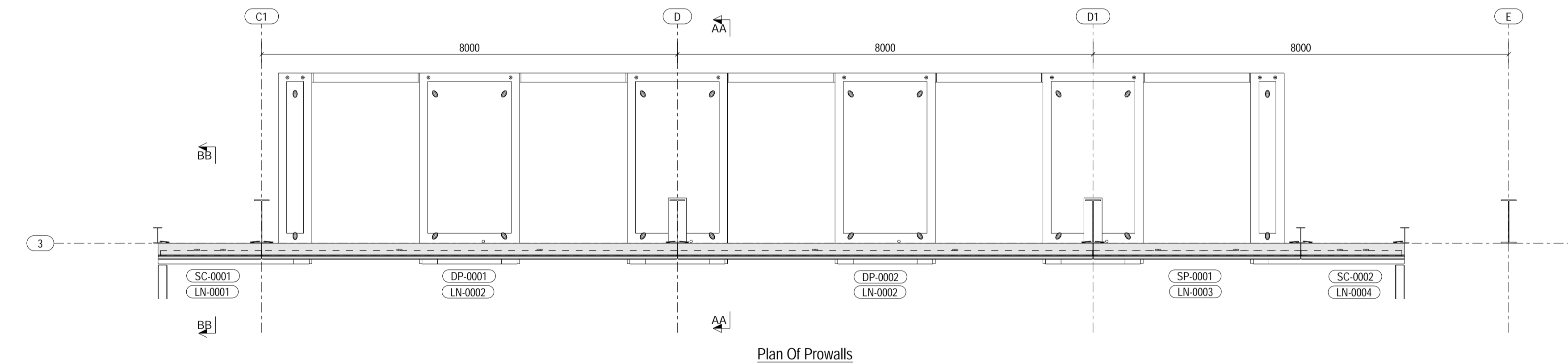
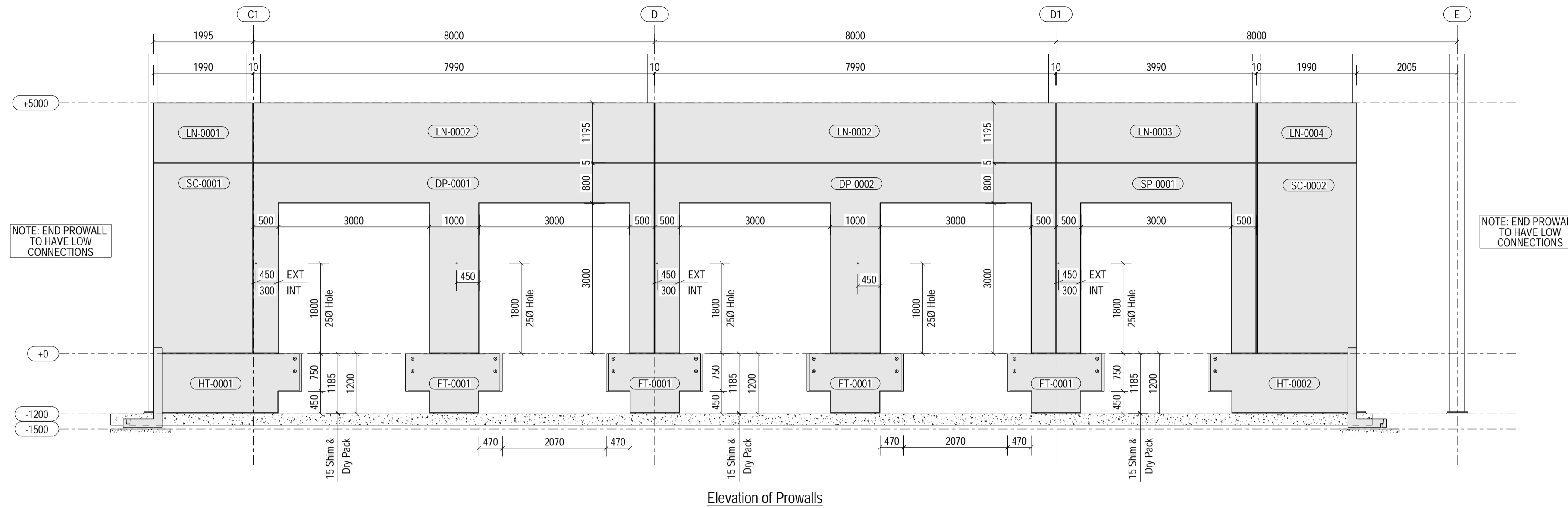


Excilbur Installation Procedure



DETAIL X'

1cm



Unit	Lifter	Weight(T)
BS-0001	3.5T UTA	0.85
BS-0002	3.5T UTA	2.55
BS-0003	3.5T UTA	2.40
BW-0001	RD30-WTA	4.37
BW-0002	RD30-WTA	4.54
BW-0003	RD30-WTA	2.10
DP-0001	7.5T-SPA	6.89
DP-0002	7.5T-SPA	6.89
FT-0001	RD24-WTA	1.19
HT-0001	RD30-WTA	2.83
HT-0002	RD30-WTA	2.83
LN-0001	5.0T-SPA	1.30
LN-0002	7.5T-SPA	5.17
LN-0003	5.0T-SPA	2.59
LN-0004	5.0T-SPA	1.30
SC-0001	5.0T-SPA	4.18
SC-0001	RD30-WTA	4.18
SC-0002	5.0T-SPA	4.18
SC-0002	RD30-WTA	4.18
SP-0001	5.0T-SPA	3.44
SW-0001	RD30-WTA	1.47
SW-0002	RD30-WTA	1.54
YD-0001	RD36-WTA	4.04
YD-0006	RD36-WTA	5.02

- Notes:**
- Handling, Volumes & Weights**
 - In the design of the lifting anchors, we have adopted a dynamic factor of 1.3 (stationary/mobile crane.)
 - See individual unit drawings for volumes and weights
 - Concrete**
 - Lifting strength based on 2 cubes = 25 N/mm².
 - Characteristic 28 day cube strength = 50 N/mm².
 - Concrete provides Design Chemical Class 2 (DC2) to Special Digest 1, Table F.2.
 - Reinforcement**
 - Reinforcement (500B or C) to BS4449.
 - Scheduling, dimensioning, bending and cutting to BS8666.
 - Cage to be tack welded and/or tied with 17 gauge annealed tying wire.
 - Manufacture**
 - Manufactured to BS EN 13369:2013
 - Tolerances based on BS EN 13369:2013 & BS EN 13670:2009
 - Finishes: As below unless indicated otherwise on unit drawings.

Top (As Cast) Surface	Front Face & Sides (Struck from Steel/Timber Mould)
Steel Trowelled	Type B

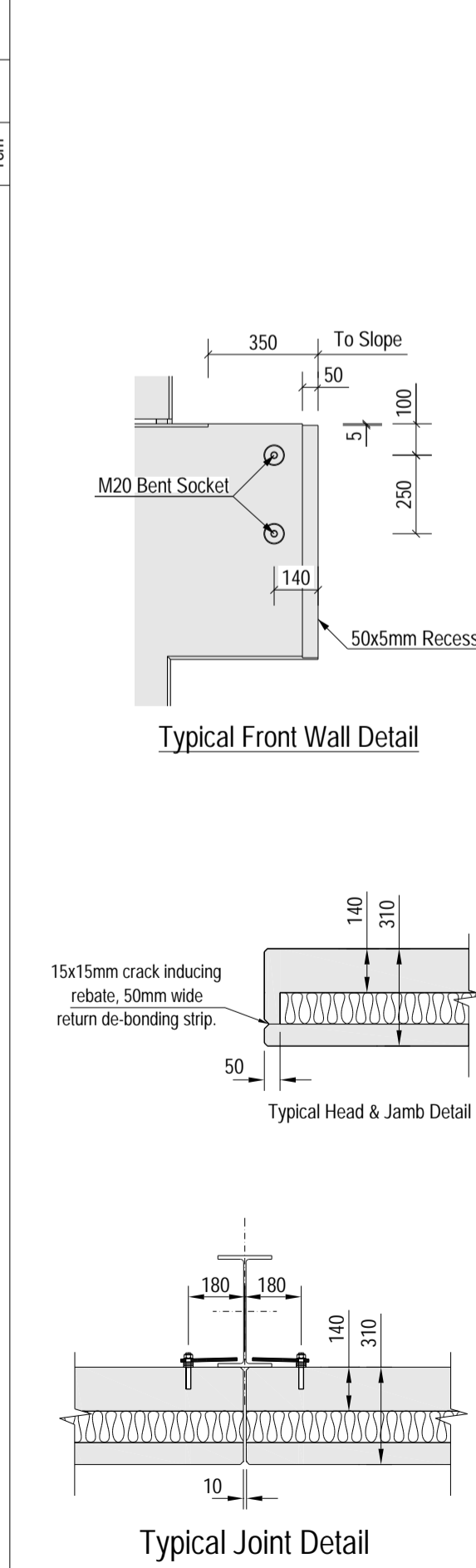
- Marking: Units shall be indelibly marked to show:
 - Contract number or name
 - Unit reference and date of manufacture
 - Unit weight +5%
- Design**
 - This drawing is to be read in conjunction with FP McCann unit Production drawings.
 - Concrete design to EN1992-1-1:2004.
 - Prowall plates should be installed with a minimum bearing of 40mm to steelwork.
 - FP McCann have designed the concrete units only, the stability of the support conditions should be checked by overall scheme designer.
 - Design life: >50 years.
 - Cover to Reinforcement & Exposure:

All Faces	Block	Min. Cover	Max. Cover	Exposure
30mm	25mm	35mm	XC3/4	XD1, XF4

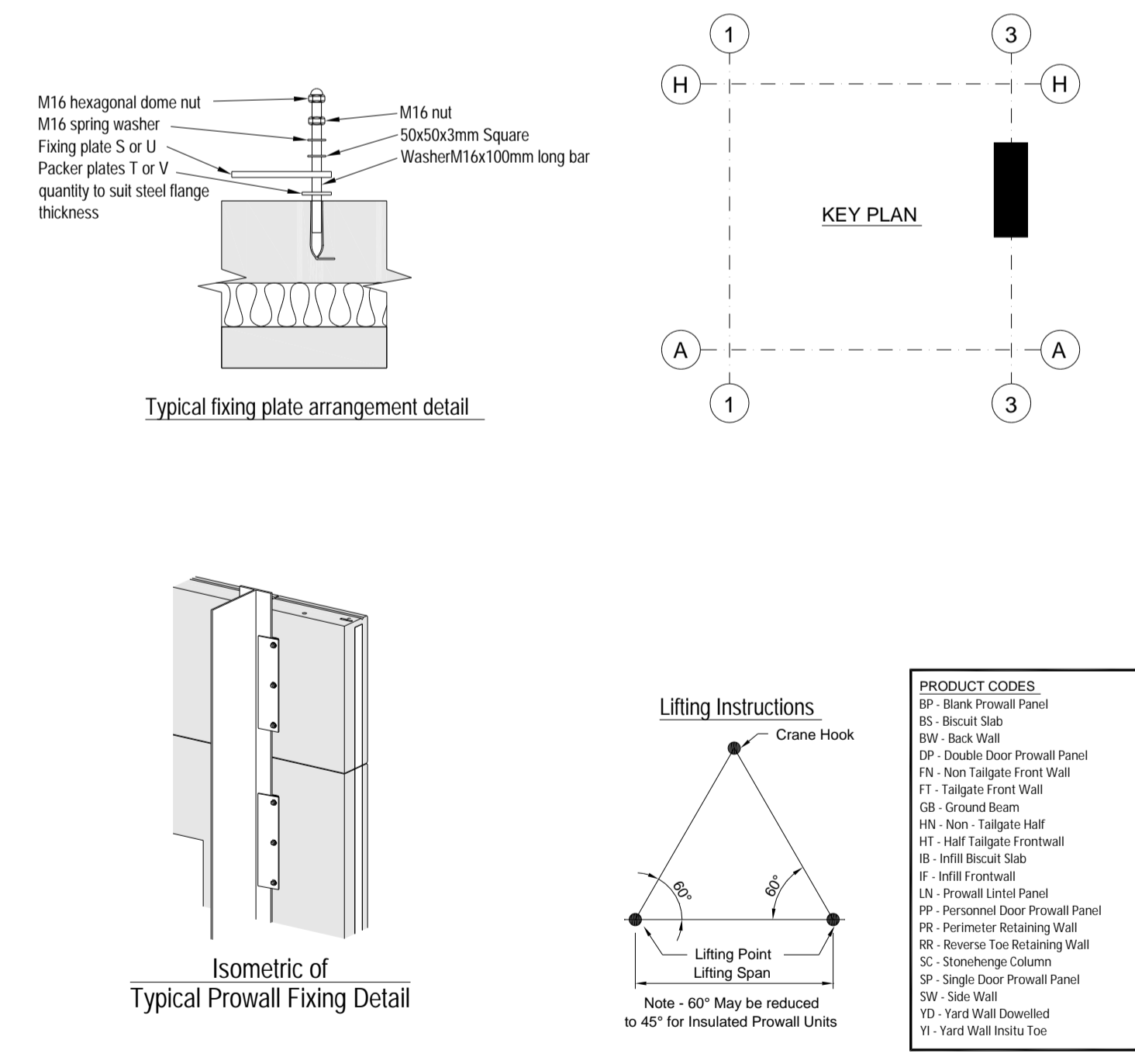
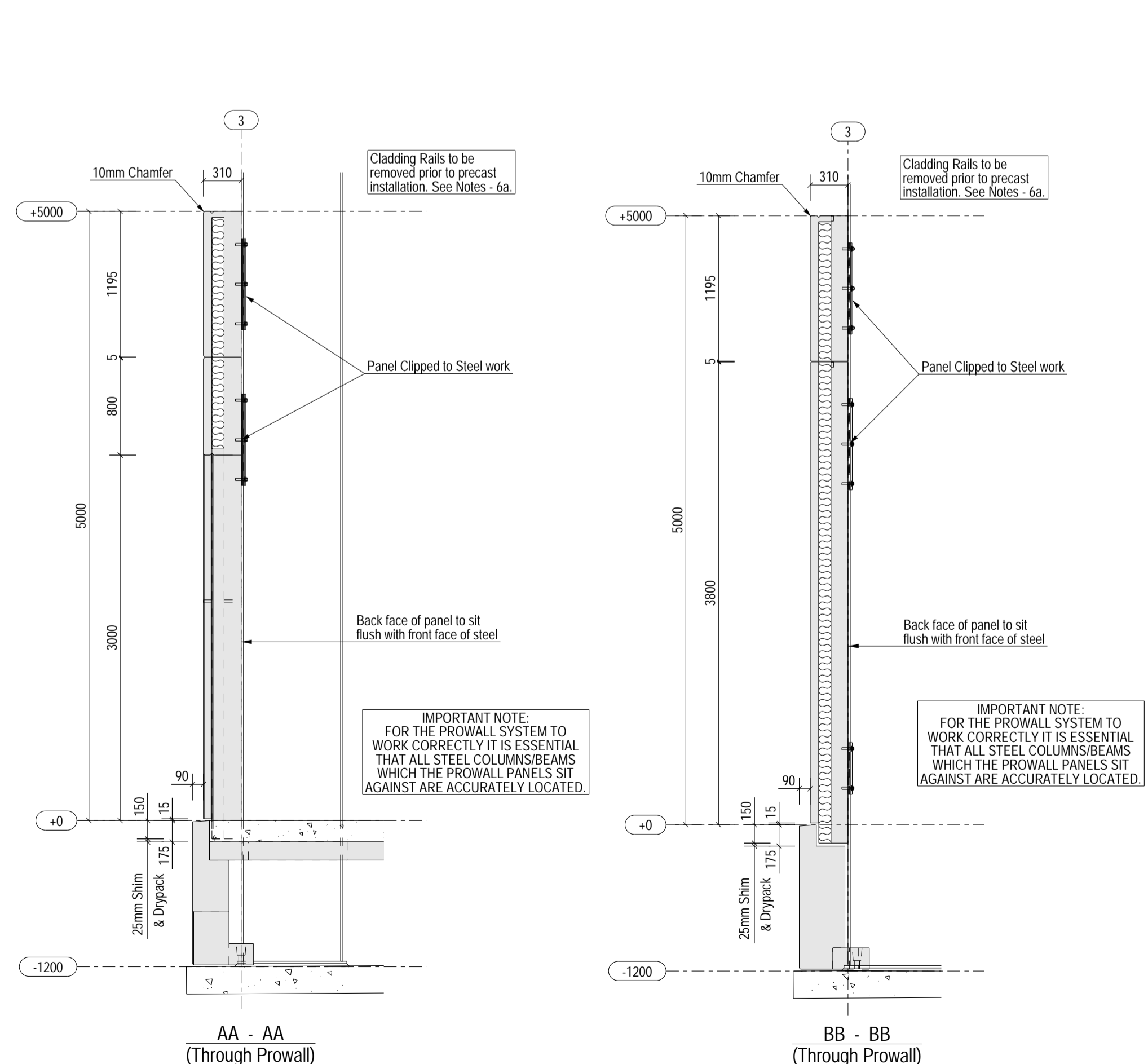
- The Prowall provides an elemental U-Value of 0.22W/m²K.
- Installation**
 - Unrestricted access to be provided by main contractor to a minimum of 1.1m above F.F.L. This includes the removal of all beams, cladding rails etc.
 - First sheeting rail above the top of the Prowall panel is to be a bolted on type clear and to be removed prior to installation of Prowalls.

Manufacture Tolerances			
Length	Variation	Cross Section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5m to 6m	± 12mm		
Additional for every subsequent 6m	± 6mm	Additional for every subsequent 6m	± 6mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5m to 6m			± 12mm
Additional for every subsequent 6m			± 6mm
Holes, openings, steel plates and inserts			± 5mm
Size of holes or openings:			± 5mm
Location of holes, openings, steel plate inserts:			± 10mm

1cm A1



- When installing Dock leveller walls, critical setting out dimension is 260mm from face of steel to back of Front Wall upstand (as shown).
- Prowall levelling shims MUST be positioned beneath inner concrete skin of Prowall Panel centrally about the width of the leg.
- After installation of Prowall panels, ensure that the 25mm tolerance gap beneath the panel is solidly dry packed.



- The Construction (Design & Management) Regulations 2015**
- If you are unsure of your responsibilities please refer to the HSE website.
 - These notes should be read by all CDM duty holders alongside the general arrangement layout and additional notes, whilst we do not go into specifics such as working at heights, working over excavations, slips and trips etc, where Δ is shown in the notes and on the drawing some potential hazard/risks are identified and should be assessed accordingly by the main contractor and the design team prior to any site works commencing.
 - Particular attention should be made to the notes identified by Δ which have the potential for significant risk where not adhered to, this FP McCann general arrangement should be read in conjunction with all other relevant drawings available from the design team e.g Architect, Engineer, Steelwork Sub-Contractor etc.
 - Lifting - The lifting equipment referred to in note 1 is the only lifting equipment which should be used on FP McCann supplied units. All elements must be lifted in accordance with FP McCann's lifting plan/method statement.
 - Installation - Where possible the installation of all units should be done from ground level. If it is necessary to stand on top of any units relevant procedures for working at height must be followed. The manufacturers guidelines and safety recommendations for the application for any grout or resin must be followed.

C01	14-03-24	No Comments	DT	NB	SJH
P01	22-02-24	Issued For Construction		NB	SJH
Rev	Date	Revision Detail	By	Chk	App
Status:			Suitability:		
As Built			A		

As Built

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE8 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

winvic

Panattoni Park Poyle

General Arrangement of Prowalls Along GL 3/C1-E

Drawn: DT	Checked: NB	Approved: SJH
Internal Ref: 05-BYL-1462	Date: 20-02-24	Scale: 1:65
Drawing No: P23025-FPM-ZZ-00-DR-X-0002	Rev: C01	

1cm A1

Unit	Lifter	Weight(T)
HT-0001	RD30-WTA	2.83
HT-0002	RD30-WTA	2.83
SC-0001	5.0T-SPA	4.18
SC-0001	RD30-WTA	4.18
SC-0002	5.0T-SPA	4.18
SC-0002	RD30-WTA	4.18
YD-0001	RD36-WTA	4.04
YD-0002	RD36-WTA	3.94
YD-0003	RD36-WTA	3.80
YD-0004	RD36-WTA	3.77
YD-0005	RD36-WTA	2.43
YD-0006	RD36-WTA	5.02
YD-0007	RD36-WTA	4.18
YD-0008	RD36-WTA	3.78
YD-0009	RD36-WTA	2.90

Notes:

- Handling, Volumes & Weights**
 - In the design of the lifting anchors, we have adopted a dynamic factor of 1.3 (stationary/mobile crane.)
 - See individual unit drawings for volumes and weights
- Concrete**
 - Lifting strength based on 2 cubes = 25 N/mm².
 - Characteristic 28 day cube strength = 50 N/mm².
 - Concrete provides Design Chemical Class 2 (DC2) to Special Digest 1, Table F2.
- Reinforcement**
 - Reinforcement (500B or C) to BS4449.
 - Scheduling, dimensioning, bending and cutting to BS8666.
 - Cage to be tack welded and/or tied with 17 gauge annealed tying wire.
- Manufacture**
 - Manufactured to BS EN 13369:2013
 - Tolerances based on BS EN 13369:2013 & BS EN 13670:2009
 - Finishes: As below unless indicated otherwise on unit drawings.

Top (As Cast) Surface	Front Face & Sides (Struck from Steel/Timber Mould)
Steel Trowelled	Type B

- Marking: Units shall be indelibly marked to show:
 - Contract number or name
 - Unit reference and date of manufacture
 - Unit weight +5%

5. Design

- This drawing is to be read in conjunction with FP McCann unit Production drawings.
- Concrete design to EN1992-1-1:2004.
- Yard retaining walls are designed as pure cantilevers to accommodate retained materials with a surcharge load of 20kN/m².
- FP McCann have designed the concrete units only, the stability of the support conditions should be checked by overall scheme designer.
- Design life: >50 years.

g) Cover to Reinforcement & Exposure:

All Faces	Block	Min. Cover	Max. Cover	Exposure
40mm	35mm	45mm	XC3/4	XD1, XF4

6. Installation

- Main contractor to ensure base slab is installed to the levels shown on this drawing. Allowable tolerance +0/-10mm.
- Main contractor to allow a minimum of 24 hours before commencement of backfilling. No heavy roller to be used within 1.5m of any precast wall. Filling behind the precast walls to consist of a free draining granular fill laid in a maximum of 225mm layers, compacted using a vibrating plate.
- Any post drilled fixings to be specified, designed and installed by others, taking into account the concrete thickness, edge distance, reinforcement and fixing type so as to avoid any damage to precast elements.
- Where an insitu concrete pour is required behind walls this should be cast in layers such that excessive pressure is not imposed on the back of the precast wall during pouring.
- Excavator Bolt in toe. Grouted with Larsen Multigrout 60.

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross Section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5m to 6m	± 12mm		± 12mm
Additional for every subsequent 6m	± 6mm	Additional for every subsequent 6m	± 3mm
Straightness or bow (deviation from intended line)		Variation	
Up to 3m		± 6mm	
3 to 4.5m		± 9mm	
4.5m to 6m		± 12mm	
Additional for every subsequent 6m		± 6mm	
Holes, openings, steel plates and inserts		± 5mm	
Size of holes or openings:		± 5mm	
Location of holes, openings, steel plate inserts:		± 10mm	

C01	14-03-24	Levels Amended	DT	NB	SJH
P01	22-02-24	Issued For Construction	NB	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

Status: As Built Subtability: A

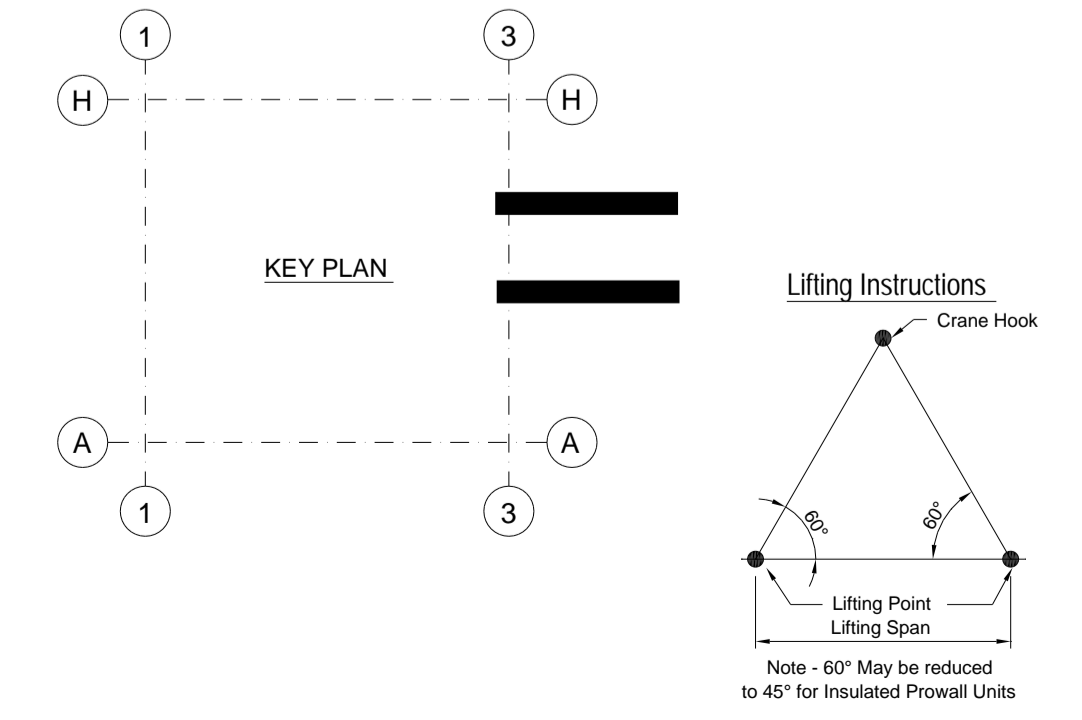
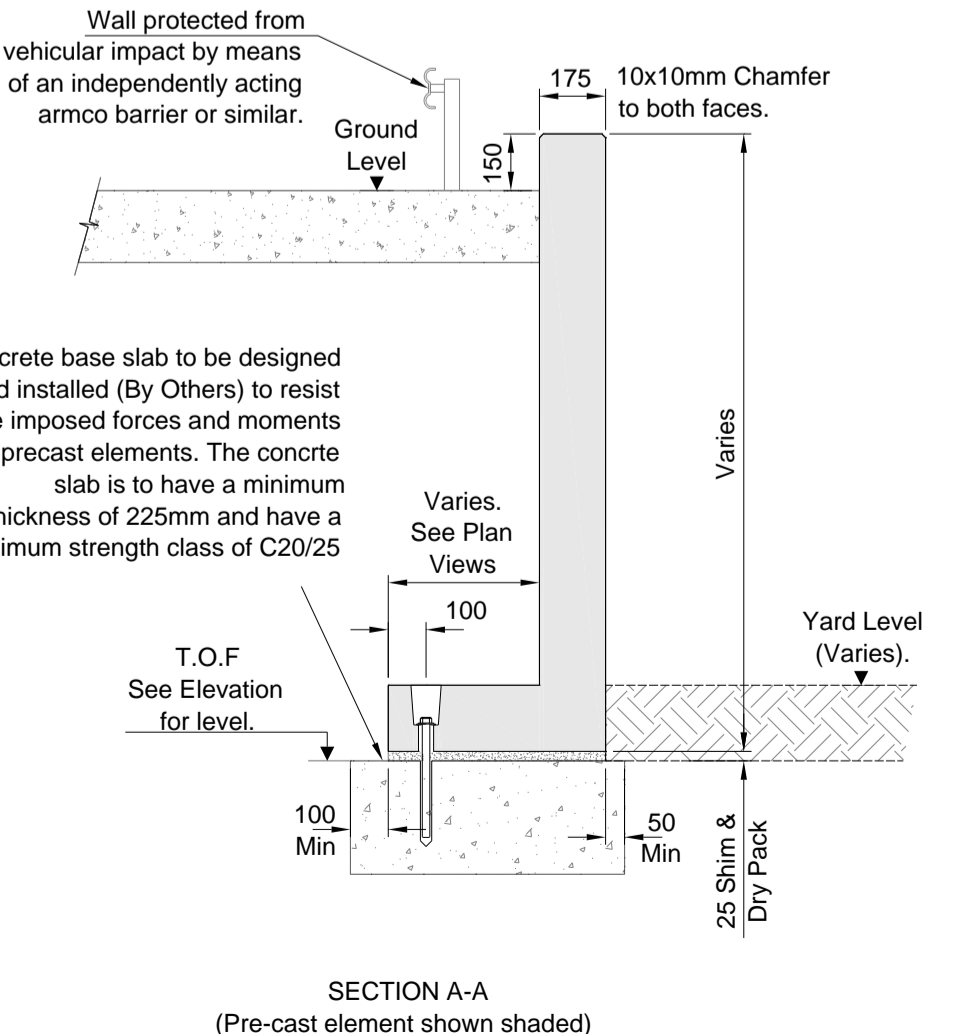
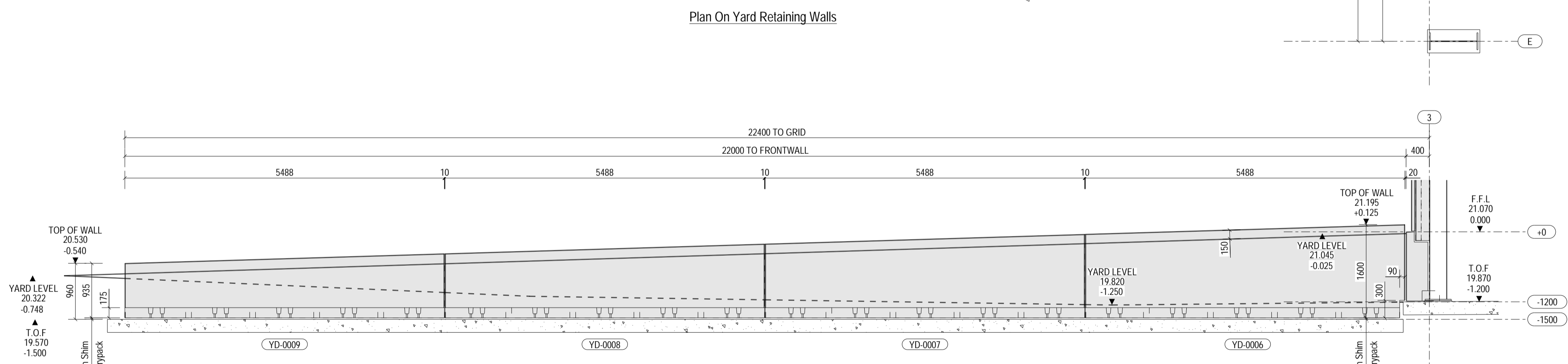
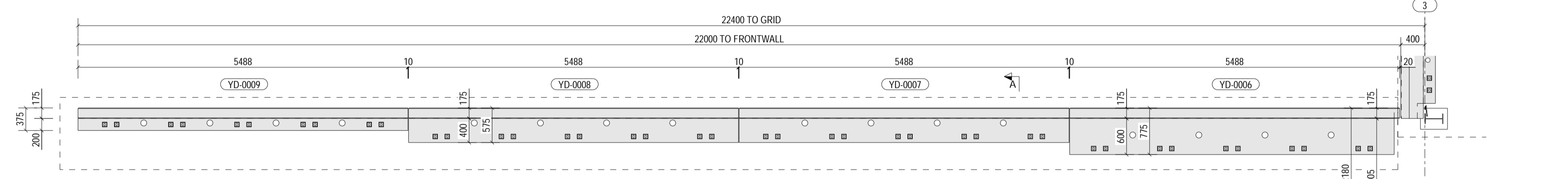
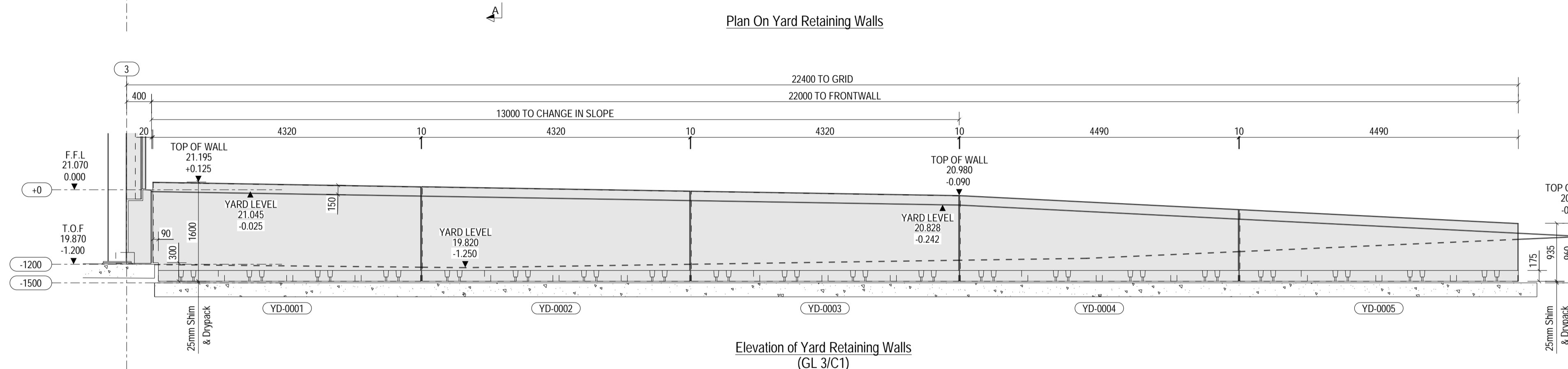
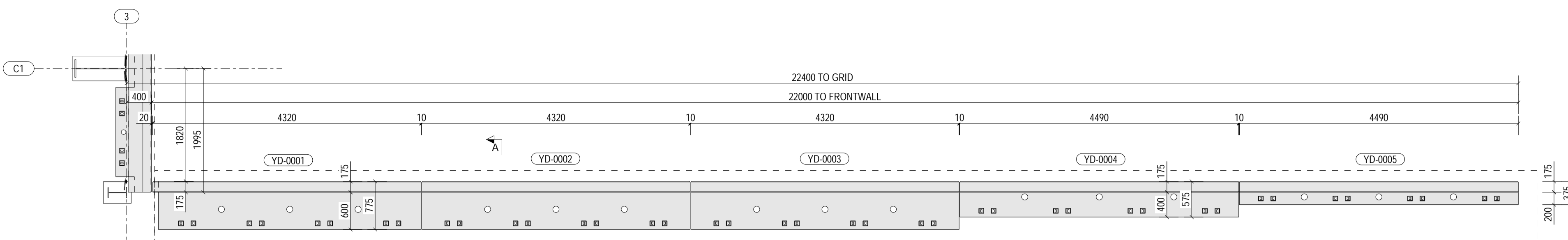
FP McCann
 Bullharts Lane,
 Weston Underwood,
 Derbyshire,
 DE5 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

winvic

Client: Panattoni Park Poyle

Project: General Arrangement of Yard Retaining Walls

Drawn: DT	Checked: NB	Approved: SJH
Internal Ref: 05-BYL-1462	Date: 20-02-24	Scale: 1:50
Drawing No: P23025-FPM-ZZ-00-DR-X-0003	Rev: C01	



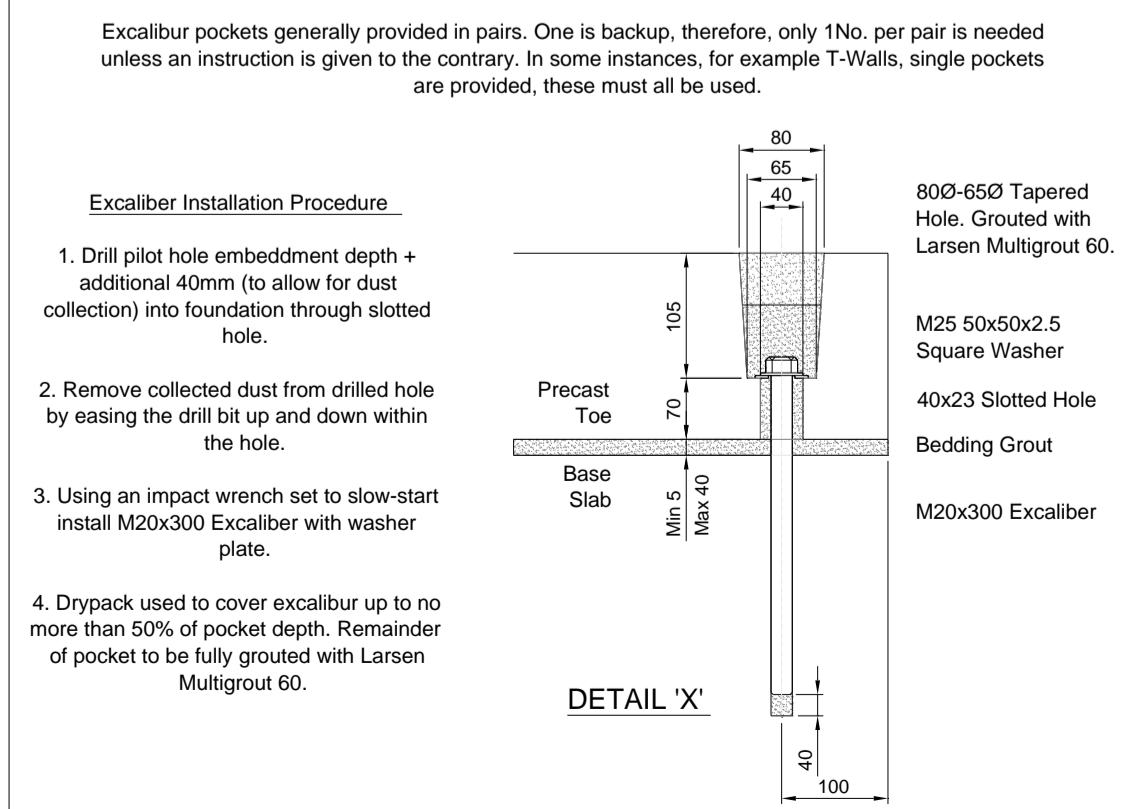
PRODUCT CODES

- BP - Blank Prowall Panel
- BS - Biscuit Slab
- BW - Back Wall
- DP - Double Door Prowall Panel
- FN - Non Tailgate Front Wall
- FT - Tailgate Front Wall
- GB - Ground Beam
- HN - Non Tailgate Half
- HT - Half Tailgate Front Wall
- IB - Infill Biscuit Slab
- IF - Infill Front Wall
- LN - Prowall Lined Panel
- PP - Personnel Door Prowall Panel
- PR - Prowall Retaining Wall
- RS - Reverse Toe Retaining Wall
- SC - Stonehenge Column
- SP - Single Door Prowall Panel
- SW - Side Wall
- YD - Yard Wall Dowelled
- YT - Yard Wall Inlets Toe

Important Notes:
 Concrete base slab to be designed and installed (By Others) to resist the imposed forces and moments from precast elements. The concrete slab is to have a minimum thickness of 225mm and have a minimum strength class of C20/25

The Construction (Design & Management) Regulations 2015

- If you are unsure of your responsibilities please refer to the HSE website.
- These notes should be read by all CDM duty holders alongside the general arrangement layout and additional notes. Whilst we do not go into specifics such as working at heights, working over excavations, slips and trips etc, where this is shown in the notes and on the drawing some potential hazard/risks are identified and should be assessed accordingly by the main contractor and the design team prior to any site works commencing. Particular attention should be made to the notes identified by ! which have the potential for significant risk where not adhered to. This FP McCann general arrangement should be read in conjunction with all other relevant drawings available from the design team e.g Architect, Engineer, Steelwork Sub-Contractor etc.
- Lifting** - The lifting equipment referred to in note 1 is the only lifting equipment which should be used on FP McCann supplied units. All elements must be lifted in accordance with FP McCann's lifting plan/method statement.
- Installation** - Where possible the installation of all units should be done from ground level. If it is necessary to stand on top of any units relevant procedures for working at height must be followed. The manufacturers guidelines and safety recommendations for the application for any grout or resin must be followed.



1cm A1

Unit	Lifter	Weight(T)
PR-0001	RD36-WTA	3.24
PR-0002	RD36-WTA	3.33
PR-0003	RD36-WTA	3.39
PR-0004	RD36-WTA	3.27
PR-0005	RD36-WTA	4.83
PR-0006	RD36-WTA	4.83
PR-0007	RD36-WTA	4.70
PR-0008	RD36-WTA	3.96
PR-0009	RD36-WTA	3.93
PR-0010	RD24-WTA	2.46
PR-0011	RD24-WTA	0.69
PR-0013	RD30-WTA	1.27
PR-0016	RD30-WTA	0.89

- Notes:
- Handling, Volumes & Weights**
 - In the design of the lifting anchors, we have adopted a dynamic factor of 1.3 (stationary/mobile crane.)
 - See individual unit drawings for volumes and weights
 - Concrete**
 - Lifting strength based on 2 cubes = 25 N/mm².
 - Characteristic 28 day cube strength = 50 N/mm².
 - Concrete provides Design Chemical Class 2 (DC2) to Special Digest 1, Table F2.
 - Reinforcement**
 - Reinforcement (500B or C) to BS4449.
 - Scheduling, dimensioning, bending and cutting to BS8666.
 - Cage to be tack welded and/or tied with 17 gauge annealed tying wire.
 - Manufacture**
 - Manufactured to BS EN 13369:2013
 - Tolerances based on BS EN 13369:2013 & BS EN 13670:2009
 - Finishes: As below unless indicated otherwise on unit drawings.

Top (As Cast) Surface	Front Face & Sides (Struck from Steel/Timber Mould)
Steel Trowelled	Type B

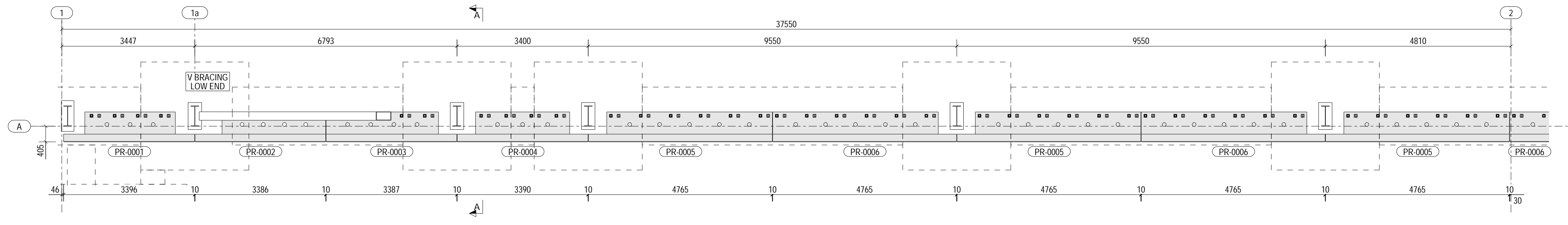
- Marking: Units shall be indelibly marked to show:
 - Contract number or name
 - Unit reference and date of manufacture
 - Unit weight +5%

- Design**
 - This drawing is to be read in conjunction with FP McCann unit Production drawings.
 - Concrete design to EN1992-1-1.
 - Perimeter retaining walls are designed to accommodate retained materials and a floor slab surcharge load of 10 kN/m².
 - FP McCann have designed the concrete units only, the stability of the support conditions should be checked by overall scheme designer.
 - Design life: >50 years.
 - Cover to Reinforcement & Exposures:

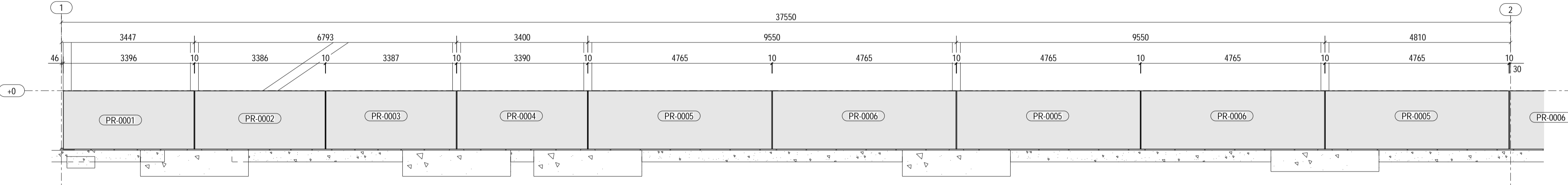
All Faces	Block	Min. Cover	Max. Cover	Exposure
40mm	35mm	45mm	XC3/4	XD1, XF4

Allowable dimensional variations shall not exceed the following	Manufacture Tolerances		
Length	Variation ± 6mm	Cross Section	Variation ± 6mm
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5m to 6m	± 12mm	Additional for every subsequent 6m	± 3mm
Additional for every subsequent 6m	± 6mm		
Straightness or bow (deviation from intended line)	Variation ± 6mm		
Up to 3m	± 6mm		
3 to 4.5m	± 9mm		
4.5m to 6m	± 12mm		
Additional for every subsequent 6m	± 6mm		
Holes, openings, steel plates and inserts	± 5mm		
Size of holes or openings:	± 5mm		
Location of holes, openings, steel plate inserts:	± 10mm		

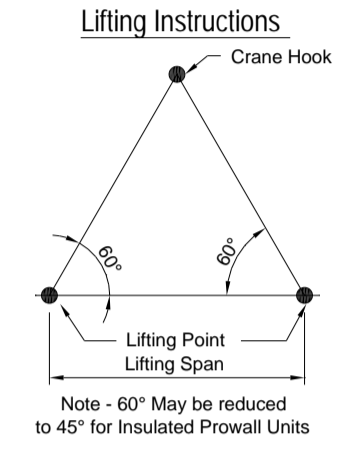
- Installation**
 - Unrestricted access to be provided by main contractor to a minimum of 8m above F.F.L. This includes the removal of all beams, cladding rails etc.
 - Main contractor to ensure base slab is installed to the levels shown on this drawing. Allowable tolerance +0/-10mm.
 - Main contractor to allow a minimum of 24 hours before commencement of backfilling. No heavy roller to be used within 1.5m of any precast wall. Filling behind the precast walls to consist of a free draining granular fill laid in a maximum of 225mm layers, compacted using a vibrating plate.
 - Where an insitu concrete pour is required behind walls this should be cast in layers such that excessive pressure is not imposed on the back of the precast wall during pouring.
 - Excilbur Bolt in toe. Grouted with Larsen Multigrout 60.



Plan At Base Slab Level



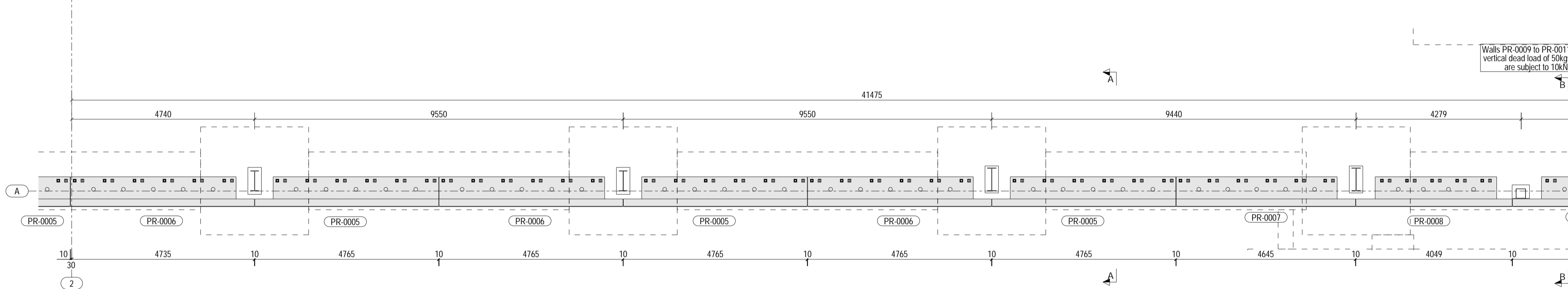
Elevation of Retaining Walls



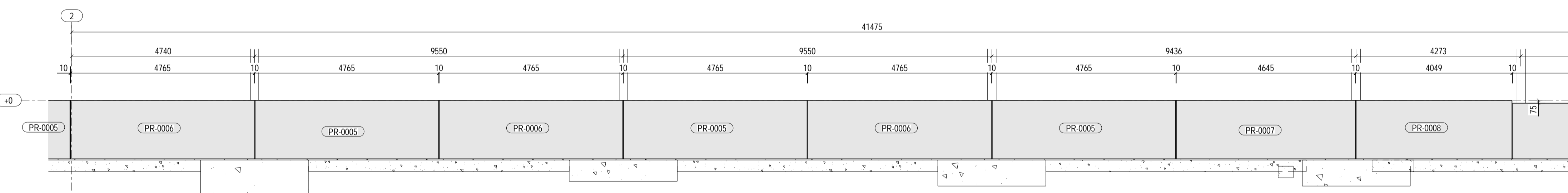
Lifting Instructions

PRODUCT CODES

- SP - Blank Prowall Panel
- BS - Block Wall
- BW - Back Wall
- DP - Double Door Prowall Panel
- FN - Non-Tailgate Front Wall
- FT - Tailgate Front Wall
- GB - Grand Beam
- HN - Non-Tailgate Half
- HT - Half Tailgate Front Wall
- IB - Infill Block Side
- IF - Infill Front Wall
- LN - Prowall Lintel Panel
- PP - Personnel Door Prowall Panel
- PR - Perimeter Retaining Wall
- RS - Reverse Toe Retaining Wall
- SC - Stonehenge Column
- SP - Single Door Prowall Panel
- SW - Side Wall
- YD - Yard Wall Dowelled
- YI - Yard Wall Insitu Toe



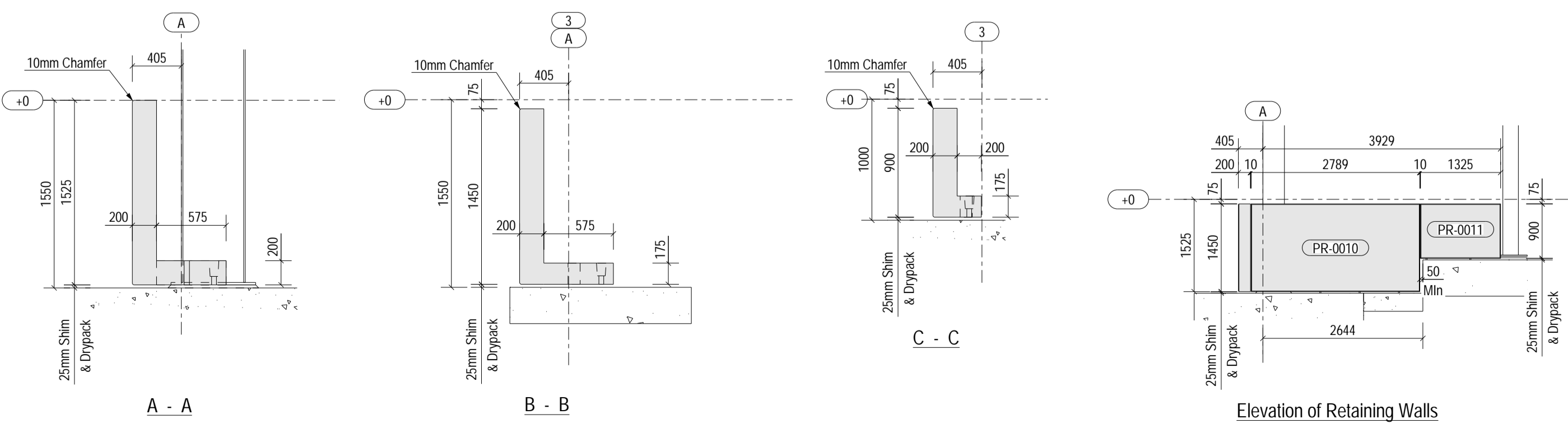
Plan At Base Slab Level



Elevation of Retaining Walls

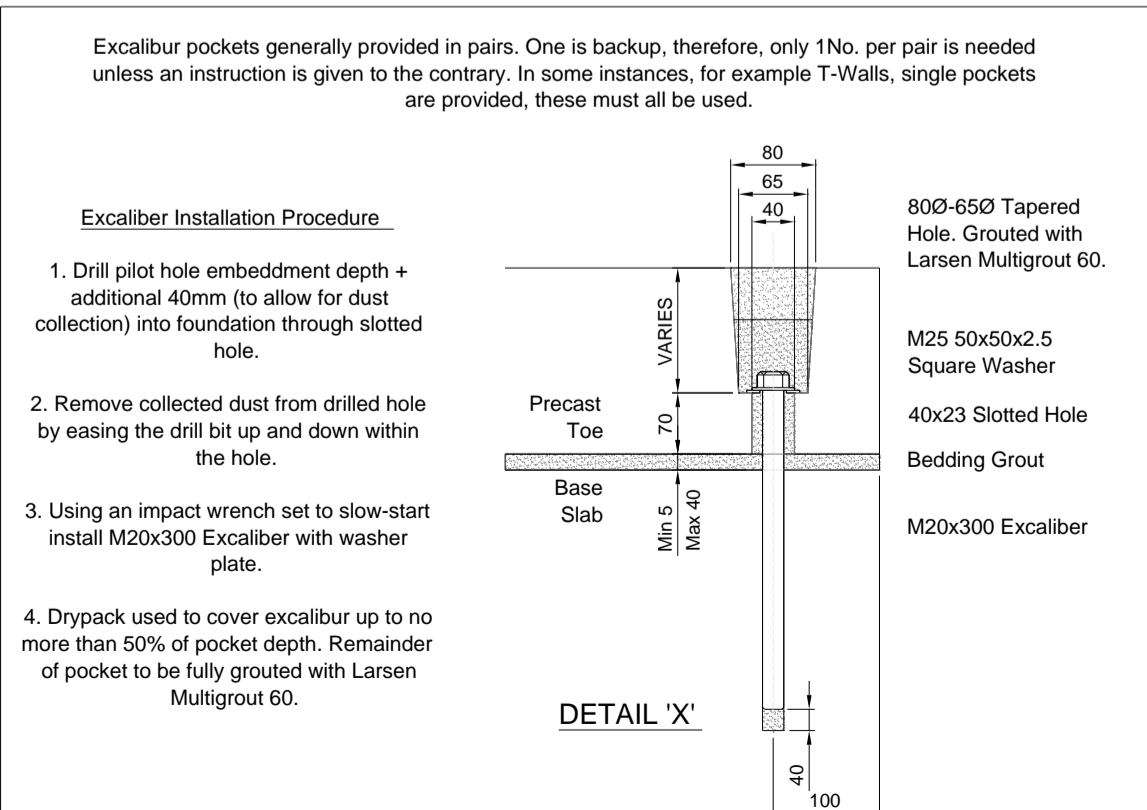
Please note
All precast retaining walls to be installed presteeled

Important Notes:
Concrete base slab to be designed and installed (By Others) to resist the imposed forces and moments from precast elements. The concrete slab is to have a minimum thickness of 225mm and have a minimum strength class of C20/25.



Elevation of Retaining Walls

- The Construction (Design & Management) Regulations 2015
- If you are unsure of your responsibilities please refer to the HSE website.
 - These notes should be read by all CDM duty holders alongside the general arrangement layout and additional notes. Whilst we do not go into specifics such as working at heights, working over excavations, slips and trips etc, where ! is shown in the notes and on the drawing some potential hazard/risks are identified and should be assessed accordingly by the main contractor and the design team prior to any site works commencing. Particular attention should be made to the notes identified by ! which have the potential for significant risk where not adhered to. This FP McCann general arrangement should be read in conjunction with all other relevant drawings available from the design team e.g Architect, Engineer, Steelwork Sub-Contractor etc.
 - Lifting** - The lifting equipment referred to in note 1 is the only lifting equipment which should be used on FP McCann supplied units. All elements must be lifted in accordance with FP McCann's lifting plan/method statement. Installation - Where possible the installation of all units should be done from ground level. If it is necessary to stand on top of any units relevant procedures for working at height must be followed. The manufacturers guidelines and safety recommendations for the application for any grout or resin must be followed.



DETAIL 'X'

Rev	Date	Revision Detail	By	Chk	App
C02	21-03-24	Steel Setting Out Confirmed Issued For Construction	DT	NB	SJH
C01	19-03-24	Extra Wall Added Issued For Construction	DT	NB	SJH
P01	26-02-24	Issued For Approval Comments Req. by 04.03.24	NB	AB	SJH

Status: As Built
Subsidiary: A

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client: **winvic**

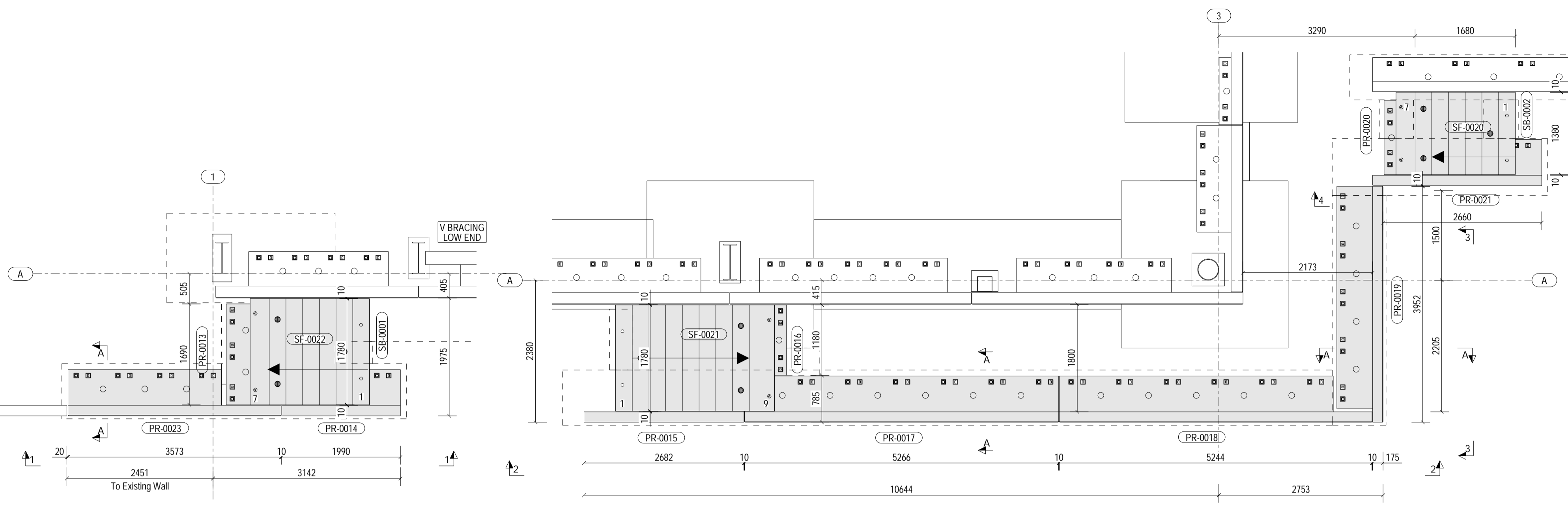
Project: **Panattoni Park Poyle**

Title: **General Arrangement of Perimeter Retaining Walls Along GL A/1-3**

Drawn: DT	Checked: NB	Approved: SJH
Internal Ref: 05-BYL-1462	Date: 23-02-24	Scale: 1:70
Drawing No: P23025-FPM-ZZ-00-DR-X-0004	Rev: C02	

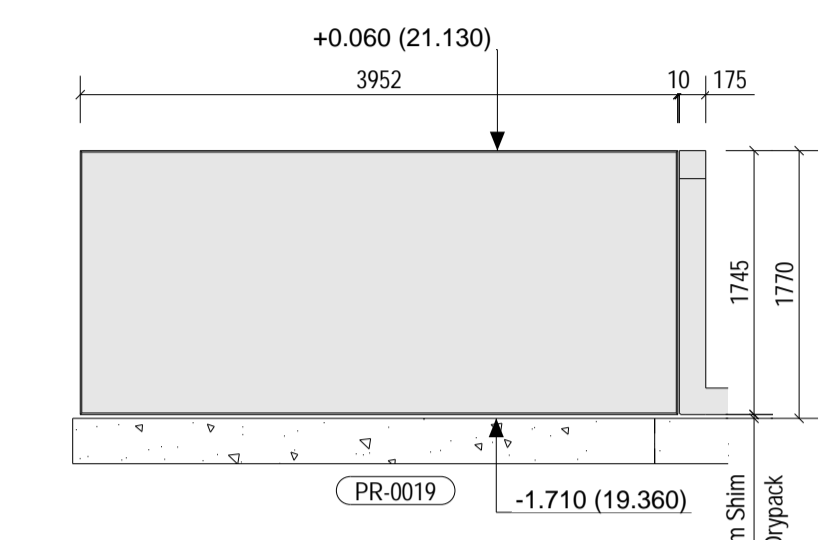
Unit	Lifter	Weight(T)
PR-0001	RD36-WTA	3.24
PR-0002	RD36-WTA	3.33
PR-0007	RD36-WTA	4.70
PR-0008	RD36-WTA	3.96
PR-0009	RD36-WTA	3.93
PR-0010	RD24-WTA	2.46
PR-0011	RD24-WTA	0.69
PR-0013	RD30-WTA	1.27
PR-0014	RD36-WTA	1.56
PR-0015	RD36-WTA	1.52
PR-0016	RD30-WTA	0.89
PR-0017	RD36-WTA	5.37
PR-0018	RD36-WTA	5.18
PR-0019	RD36-WTA	3.97
PR-0020	RD30-WTA	0.81
PR-0021	RD36-WTA	2.19
PR-0022	RD36-WTA	3.39
YD-0010	RD36-WTA	3.70

- Notes:
- Handling, Volumes & Weights**
 - In the design of the lifting anchors, we have adopted a dynamic factor of 1.3 (stationary/mobile crane.)
 - See individual unit drawings for volumes and weights
 - Concrete**
 - Lifting strength based on 2 cubes = 25 N/mm².
 - Characteristic 28 day cube strength = 50 N/mm².
 - Concrete provides Design Chemical Class 2 (DC2) to Special Digest 1, Table F2.
 - Reinforcement**
 - Reinforcement (500B or C) to BS4449.
 - Scheduling, dimensioning, bending and cutting to BS8666.
 - Cage to be tack welded and/or tied with 17 gauge annealed tying wire.
 - Manufacture**
 - Manufactured to BS EN 13369-2013
 - Tolerances based on BS EN 13369-2013 & BS EN 13670:2009
 - Finishes: As below unless indicated otherwise on unit drawings.

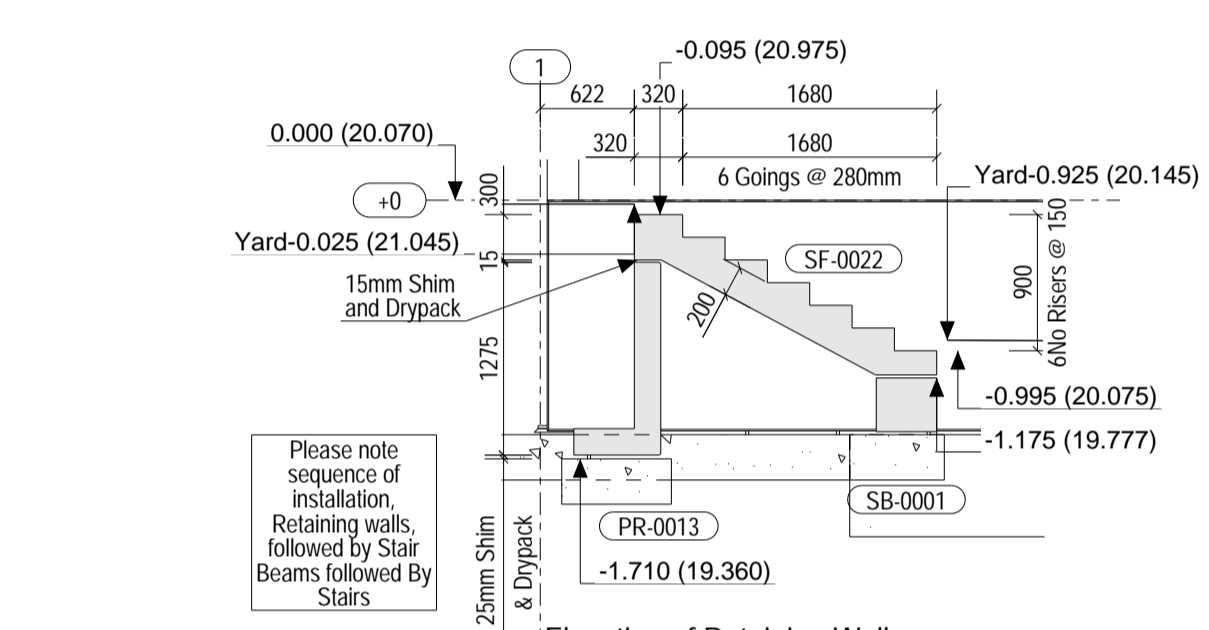


Plan At Base Slab Level

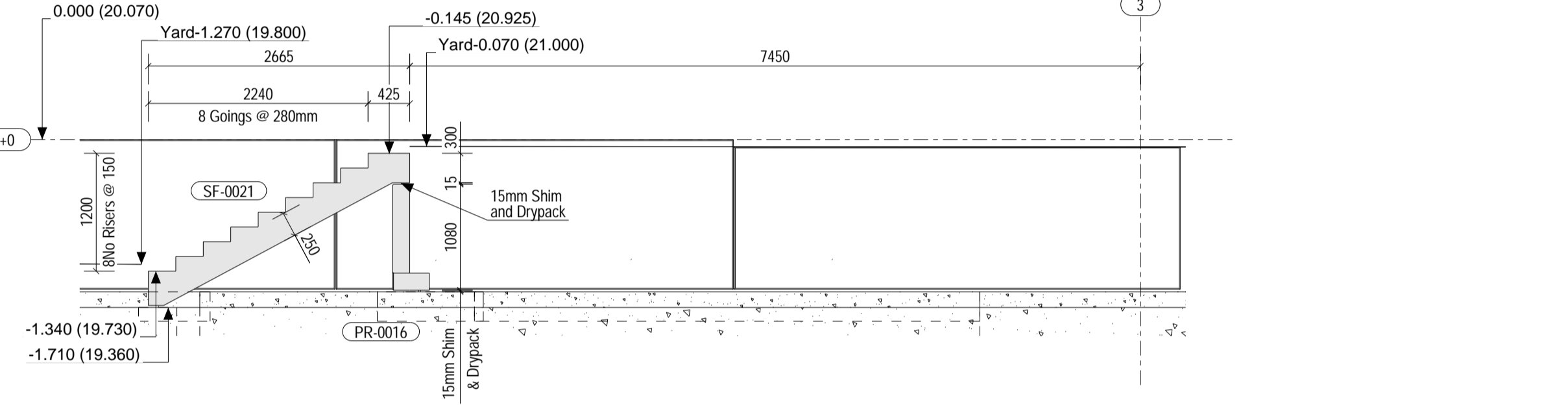
Plan At Base Slab Level



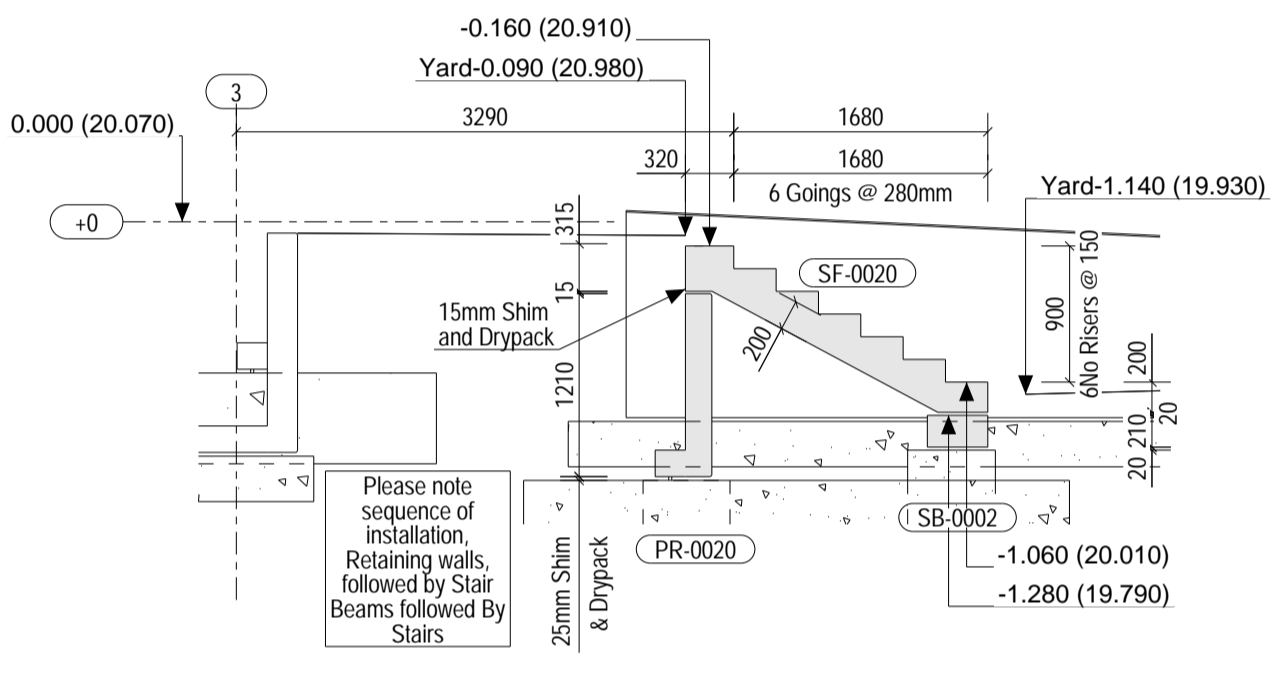
Elevation of Retaining Walls (3-3)



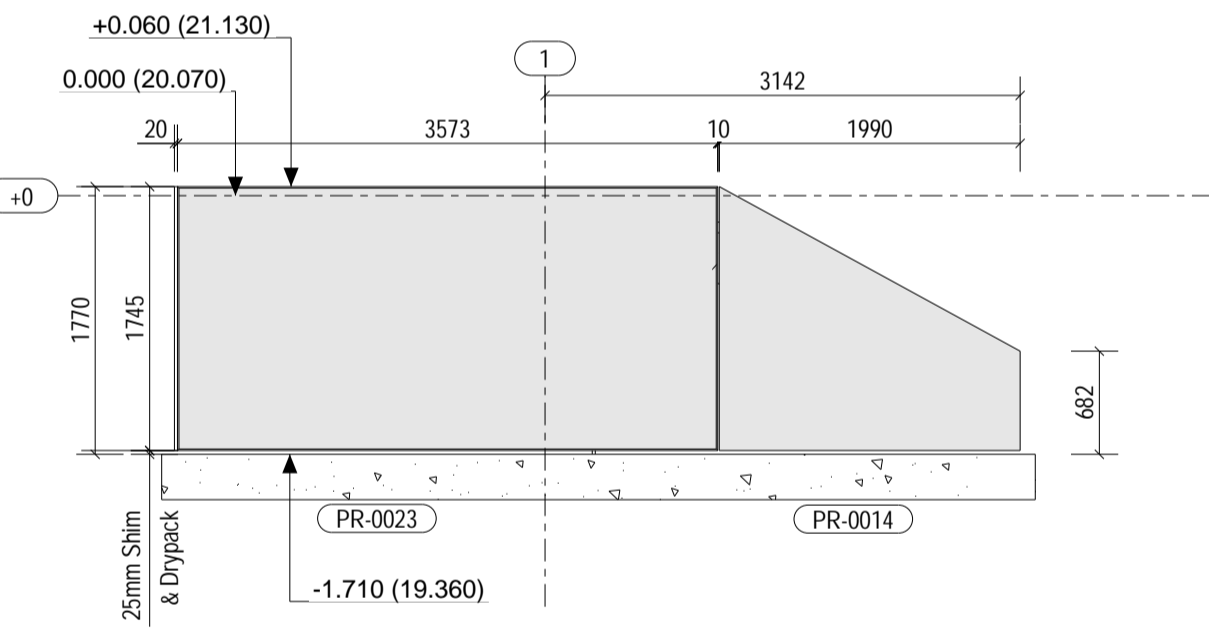
Elevation of Retaining Walls (1-1)



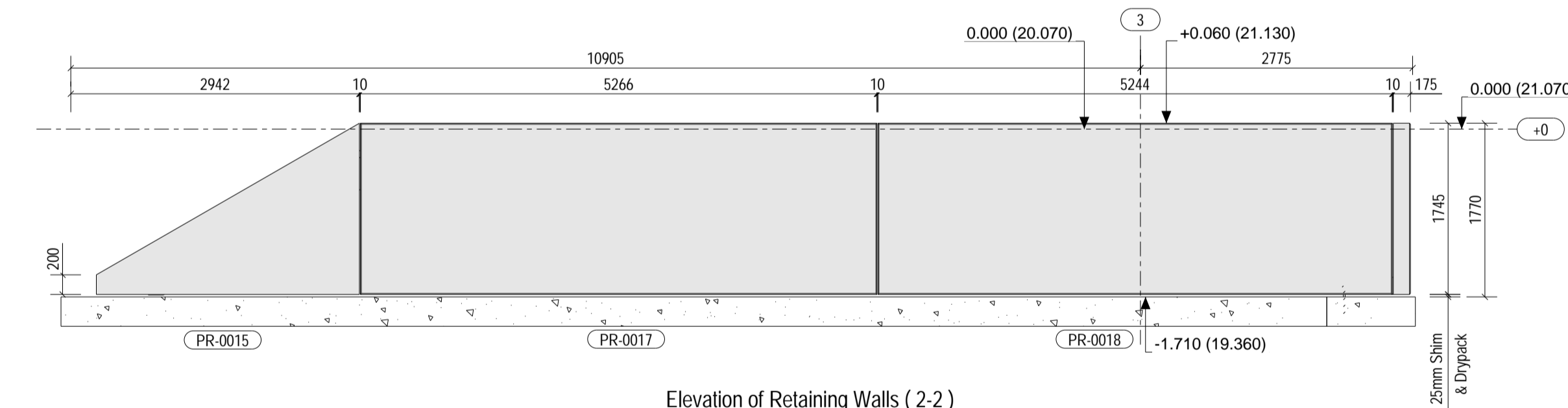
Elevation of Retaining Walls (2-2)



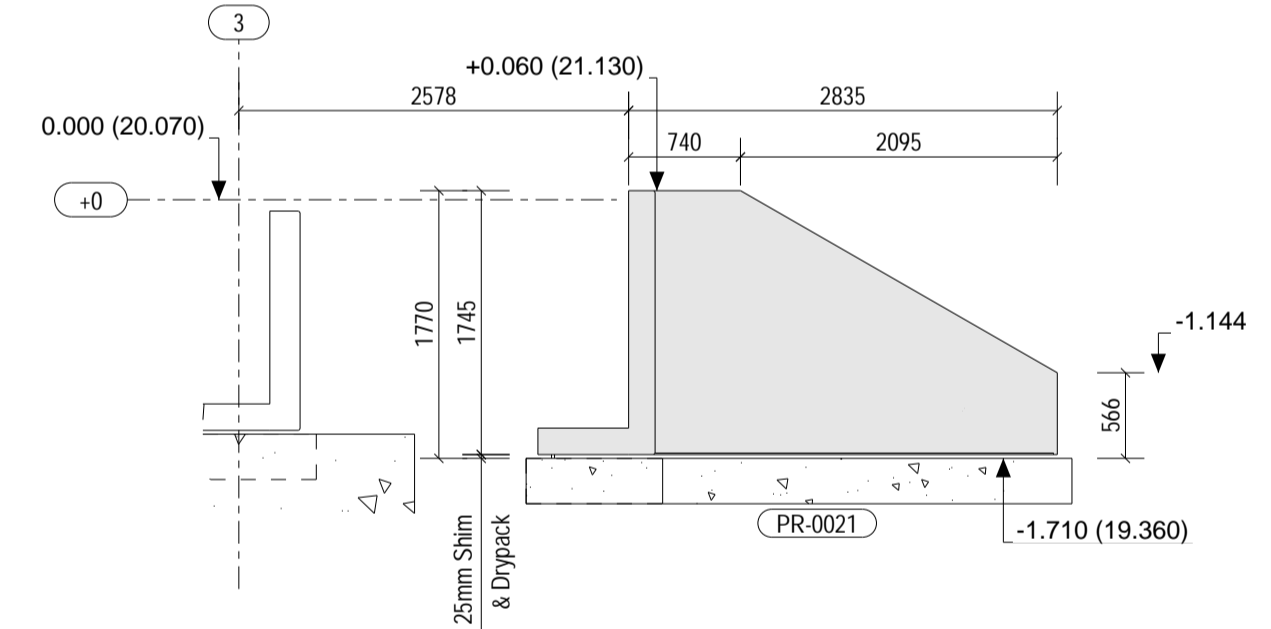
Elevation of Retaining Walls (4-4)



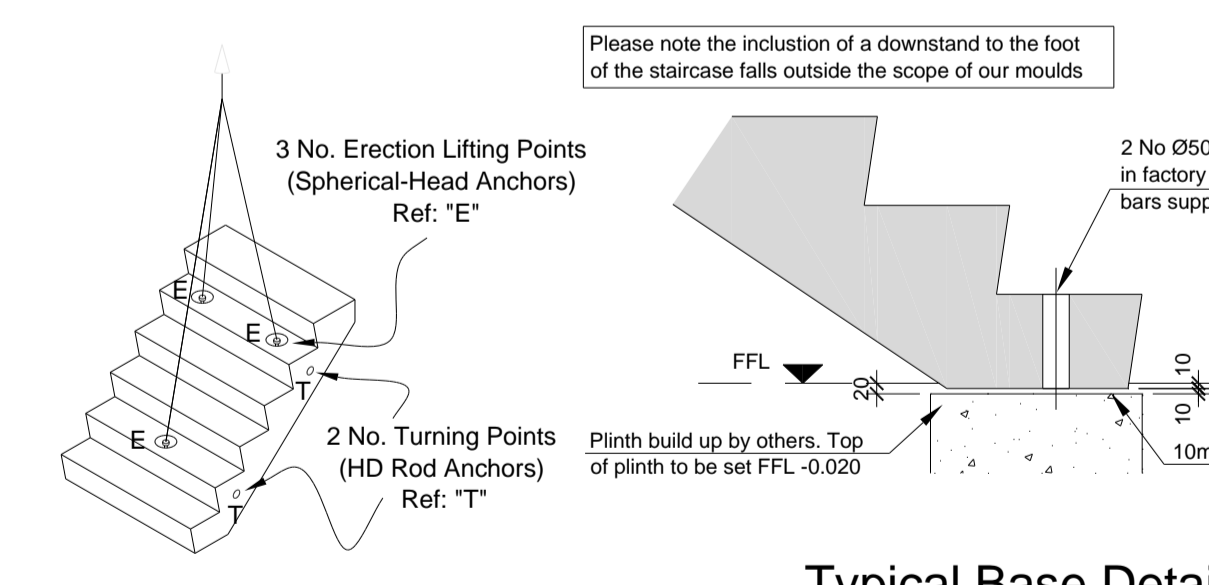
Elevation of Retaining Walls (1-1)



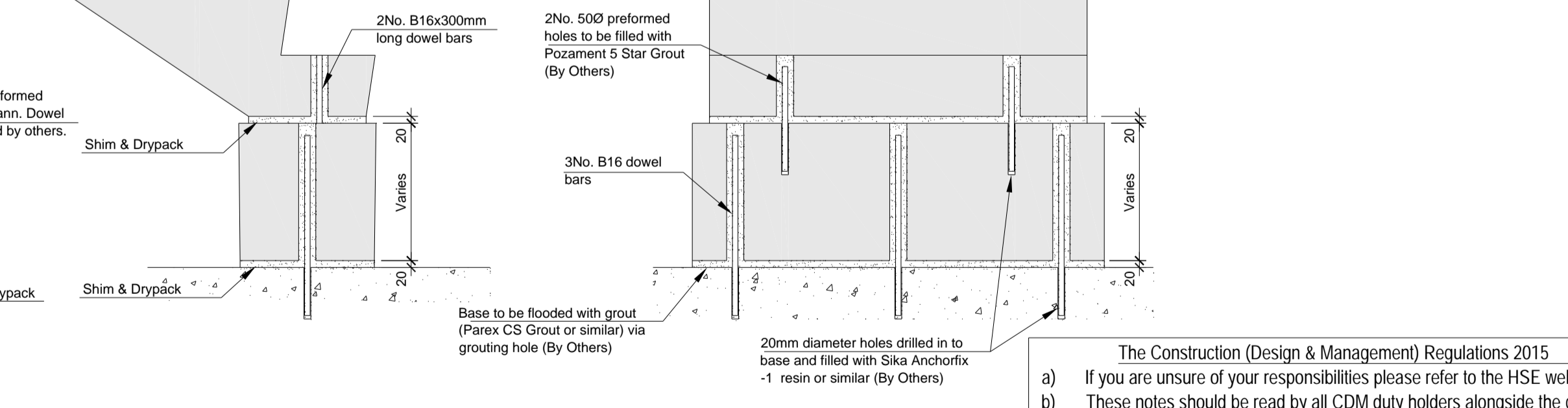
Elevation of Retaining Walls (2-2)



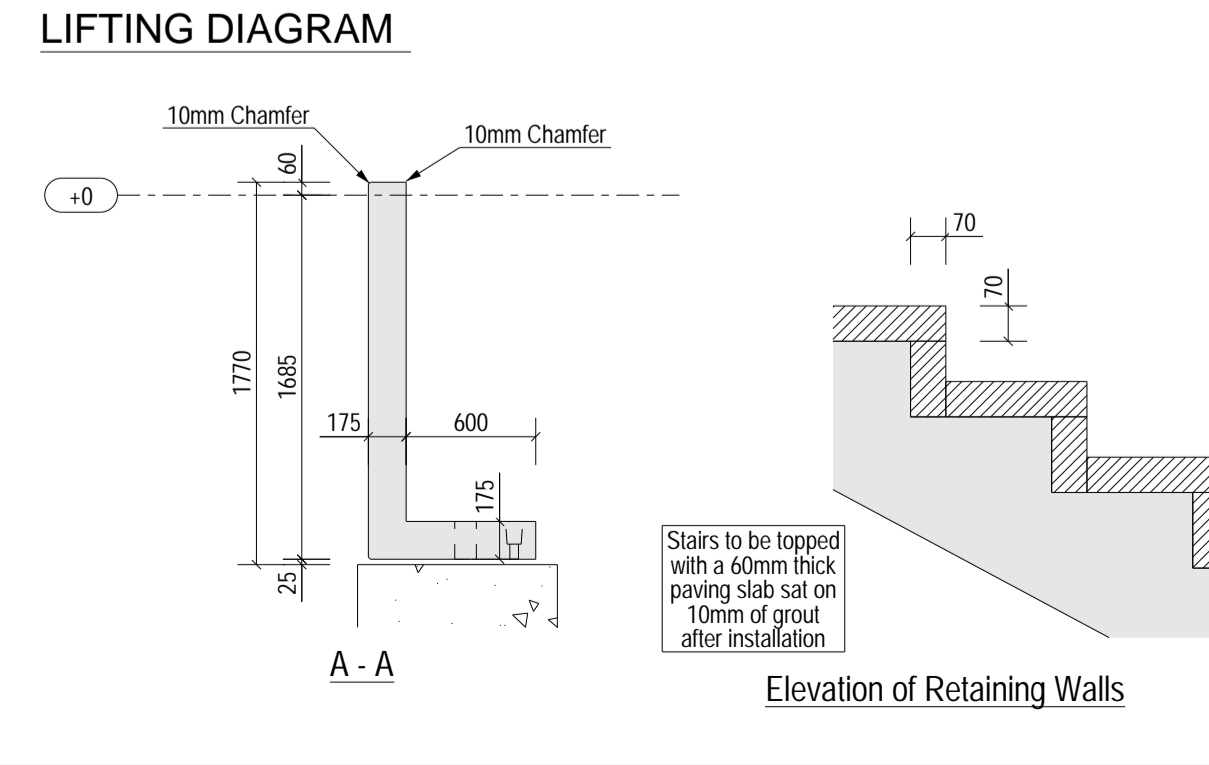
Elevation of Retaining Walls (4-4)



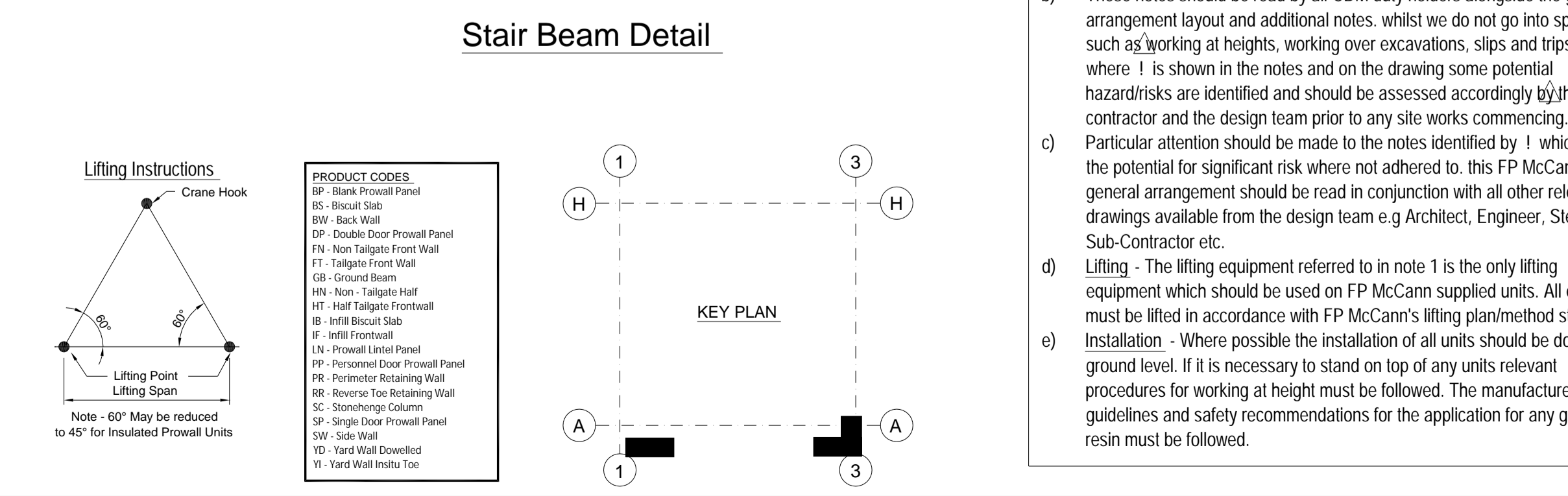
Typical Base Detail



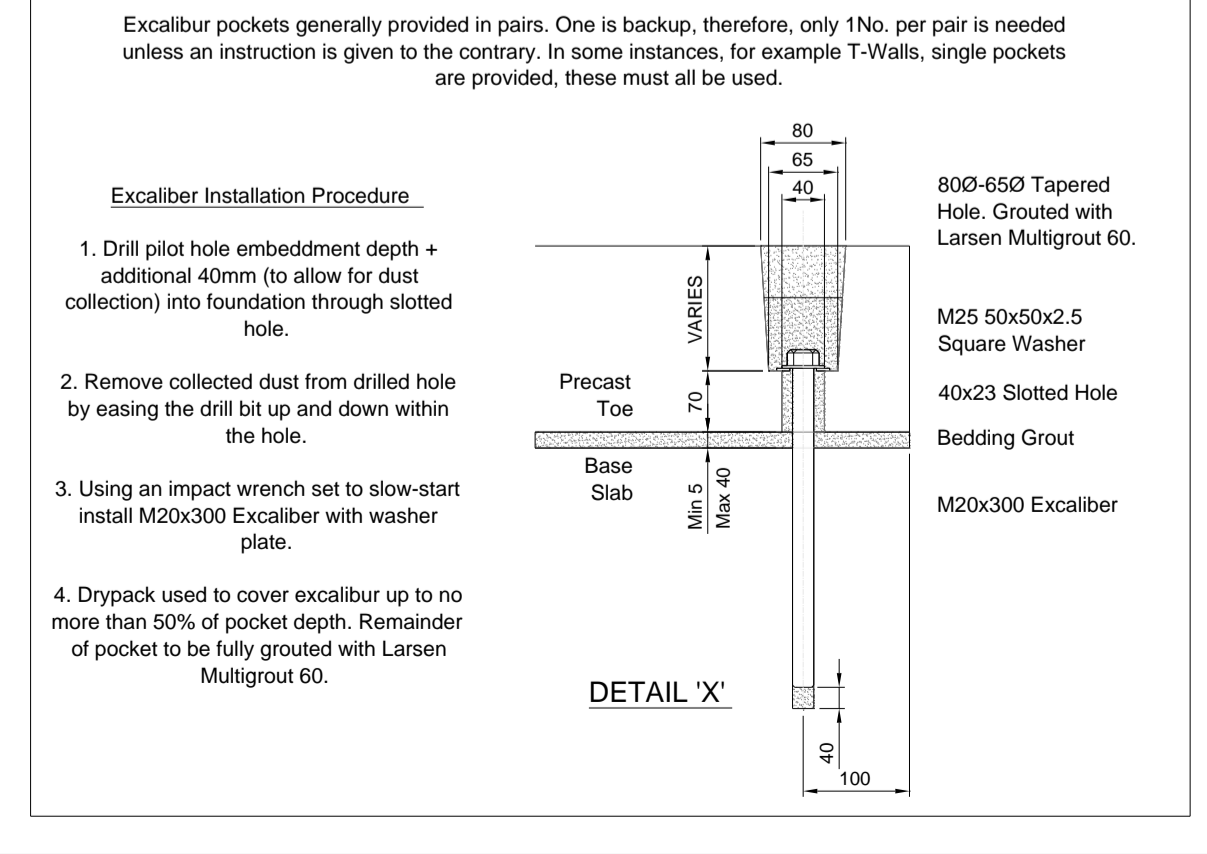
Stair Beam Detail



LIFTING DIAGRAM



KEY PLAN



Excilbur Installation Procedure

Important Notes:
Concrete base slab to be designed and installed (By Others) to resist the imposed forces and moments from precast elements. The concrete slab is to have a minimum thickness of 225mm and have a minimum strength class of C20/25

The Construction (Design & Management) Regulations 2015

- If you are unsure of your responsibilities please refer to the HSE website.
- These notes should be read by all CDM duty holders alongside the general arrangement layout and additional notes. Whilst we do not go into specifics such as working at heights, working over excavations, slips and trips etc, where ! is shown in the notes and on the drawing some potential hazard/risks are identified and should be assessed accordingly by the main contractor and the design team prior to any site works commencing.
- Particular attention should be made to the notes identified by ! which have the potential for significant risk where not adhered to. This FP McCann general arrangement should be read in conjunction with all other relevant drawings available from the design team e.g Architect, Engineer, Steelwork Sub-Contractor etc.
- Lifting** - The lifting equipment referred to in note 1 is the only lifting equipment which should be used on FP McCann supplied units. All elements must be lifted in accordance with FP McCann's lifting plan/method statement.
- Installation** - Where possible the installation of all units should be done from ground level. If it is necessary to stand on top of any units relevant procedures for working at height must be followed. The manufacturers guidelines and safety recommendations for the application for any grout or resin must be followed.

All Faces	Block	Min. Cover	Max. Cover	Exposure
Steel Trowelled	40mm	35mm	45mm	XC3/4 XD1 XF4

6. Installation

- Unrestricted access to be provided by main contractor to a minimum of 8m above F.F.L. This includes the removal of all beams, cladding rails etc.
- Main contractor to ensure base slab is installed to the levels shown on this drawing. Allowable tolerance +/-10mm.
- Main contractor to allow a minimum of 24 hours before commencement of backfilling. No heavy roller to be used within 1.5m of any precast wall. Filling behind the precast walls to consist of a free draining granular fill laid in a maximum of 225mm layers, compacted using a vibrating plate.
- Where an insitu concrete pour is required behind walls this should be cast in layers such that excessive pressure is not imposed on the back of the precast wall during pouring.
- Excilbur Bolt in toe. Grouted with Larsen Multigrout 60.

Manufacture Tolerances			
Length	Variation	Cross Section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5m to 6m	± 12mm		
Additional for every subsequent 6m	± 6mm	Additional for every subsequent 6m	± 3mm
Straightness or bow (deviation from intended line)		Variation	
Up to 3m		± 6mm	
3 to 4.5m		± 9mm	
4.5m to 6m		± 12mm	
Additional for every subsequent 6m		± 6mm	
Holes, openings, steel plates and inserts ± 5mm			
Size of holes or openings: ± 5mm			
Location of holes, openings, steel plate inserts: ± 10mm			

Rev	Date	Revision Detail	By	Chk	App
C01	10-06-24	Levels and Setting out Amended	DT	NB	SJH
P01	14-05-24	Issued For Construction	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

Status: **As Built** Submittal: **A**

MC fpmccann

FP McCann
Bullhust Lane,
Weston Underwood,
Derbyshire,
DE5 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client: **winvic**

Project: **Panattoni Park Poyle**

Title: **General Arrangement of Perimeter Retaining Walls Along GL A/1-3**

Drawn	Checked	Approved
DT	NB	SJH

Internal Ref: **05-BYGL-1462** Date: **13-05-24** Scale: **1:50**

Drawing No: **P23025-FPM-ZZ-00-DR-X-0005** Rev: **C01**

Notes:
 1. **Handling**
 Refer to PFF Code of Practice website for all handling & lifting purposes at: <http://www.precastfloors.info>
 Also refer to Lifting & Handling Instructions Diagram on drawing.
 a) All Site Handling lifting points shall be used as specified below:
 Site Erection System Qty/Unit Drg Ref Reference SWL
 Spherical-Head Anchors E LAP050 5.0T
 Spherical-Head Anchors E LAP050 5.0T
 Anchor recesses to be filled by others on site.
 b) The site lifting/installation equipment may be purchased/hired from Euro Accessories (Tel: 0845 052 4050) or Simply Precast (Tel: 0800 678 5178)
 Site Lifting Euro Accessories: Spherical-Head Clutch Ref: LAPRC050
 Site Lifting Simply Precast: Spherical-Head Clutch Ref: SPARC050
 c) For "Supply Only" contracts it is the responsibility of the General Contractor to ensure appropriate lifting equipment is available for erection purposes.
 d) In the design of the lifting anchors, we have adopted a Dynamic Factor = 1.3 (Stationary Crane/Mobile Crane, hoisting speed >90m/min)

2. **Concrete**
 a) Minimum lifting strength = 15 N/mm²
 b) Characteristic 28 day cube strength = 50 N/mm²
 3. **Insitu**
 Due to safety concerns with the delivery to site, on site lifting, handling and installation of small and/or irregular shaped precast, some areas may be noted as insitu by others. The insitu along with any associated temporary works is to be designed, supplied and laid by others.
 It is also the responsibility of the main contractor/client to make good with insitu conc. around columns, services and where precast runs parallel to steel beams.
 4. **Holes/Cut-outs**
 The precast stair units should not be modified. If this is considered essential, it should be discussed with FP McCann's design team

5. **Building Regulations**
 It is the responsibility of the Building Designer to ensure that the details/sections indicated on this drawing together with the proposed floor finishes satisfy the requirements of both the current edition of Building Regulations Parts A, E, K & M and the Technical Handbook (Scotland) parts 1, 2, 4 & 5.
 6. **Reinforcement**
 a) Reinforcement (500B or C) to BS4449
 b) Scheduling, dimensioning, bending and cutting to BS8666
 c) Cage to be tack welded and/or tied with 19 gauge annealed tying wire
 7. **Manufacture**
 a) Manufactured and Tolerances to BS EN 14843:2007
 b) Finishes: As below unless stated otherwise indicated on drawing

Flights		Landings	
Soffit	Treads, Risers & Strings	Top	Sides & Soffit
Steel Float	Plain Formed Finish	Steel Float	Plain Formed Finish
Landings to receive a min. 50mm sand/cement screed by others for leveling			
c) Marking: Units shall be indelibly marked to show contract number or name, unit reference, date of manufacture and unit weight +5%			

8. **Design**
 Loading data noted below not to be exceeded in the permanent or temp. condition. The stacking of materials should not exceed the loads shown.
 a) Concrete design to EuroCode2, BS EN 1992-1-1
 b) Live Load = 4 kN/m². Finishes = 1.0 kN/m²
 c) Fire Rating: 90mins
 d) Design Life: 50 years
 e) FP McCann have designed the concrete units only
 f) Cover to reinforcement & exposure

Face	Block	Min Cover	Max Cover	Exposure
Top & Sides	20mm	15mm	25mm	XC1
Soffit	30mm	25mm	35mm	XC1

9. **Bearing**
 All bearings for FP McCann precast units are to be provided true to line level by the GC unless stated otherwise. The Project Engineer/Architect are responsible for the design of all supporting structural elements in both temp and permanent condition. Consideration should be given to the stability of the structural elements & temp loads during the erection of FP McCann precast units.
 Prior to installation, the relative bearing levels should be checked by the General Contractor, and any deviation in excess of the outlined in BS 5605 'Guid to Accuracy in Building', should be reported to FP McCann's design team.
 In the event adjacent components do require alignment where bearing precast or structural steelwork, provision of suitable shims/packing, max. thickness 10mm, for final position/leveling of the precast stair unit can be adopted.
 10. **Isolated Load Bearing Steel Beams**
 Isolated steels must be fixed and temporary propping should also be incorporated where the "fixed" steel beams are likely to torsionally deflect during installation of the precast stair units. Fixings should not hinder the installation and the design should be checked for temporary loading to avoid torsional collapse during the installation.
 Consideration should be made to the passive fall protection where temporary works such as props are specified.

11. **Temporary**
 FP McCann will not be responsible for the design, supply, erection, maintenance and dismantling of any temporary works. This is to be carried out by/in accordance with the main contractor's temporary works engineer.
 12. **Installation**
 a) The PC stair components are given individual mark numbers for ease of reference during installation and when discussing any future works. Any deviation from the sequence indicated on the drawing must only be after receipt of approval from the FP McCann design team.
 b) Any post drilled fixing to be specified, designed and installed by others, taking in to account the concrete thickness, edge distance, reinforcement and fixing type so as to avoid any damage to precast elements.

Rev	Date	Revision Detail	By	Chk	App	Submittal
CO2	26-03-24	Handling notes updated	LN	AB	SJH	
CO1	20-03-24	Separate landings introduced to avoid tracing issues for Construction	LN	AB	SJH	
PO1	29-02-24	Issued for Approval Comments required by 07.03.2024	LN	AB	SJH	

Allowable dimensional variations shall not exceed the following	
Length	Variation
Up to 3m	± 6mm
3 to 4.5m	± 9mm
4.5 to 6m	± 12mm
Cross section	Variation
Up to 500mm	± 6mm
500 to 750mm	± 9mm
Straightness or bow (deviation from intended line)	Variation
Up to 3m	± 6mm
3 to 4.5m	± 9mm
4.5 to 6m	± 12mm

Mark	Qty	Weight(T)	Volume(m ³)
SF-0001	1	2.58	1.03
SF-0002	1	3.57	1.43
SF-0003	1	3.62	1.45
SF-0004	1	3.60	1.44
SF-0005	1	4.54	1.82
SF-0006	1	4.54	1.82
SF-0020	1	1.99	0.80
SL-0001	1	2.20	0.88
SL-0002	1	0.16	0.06
SL-0003	1	0.12	0.05
SL-0007	1	2.26	0.90

Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.

Client: **winvic**

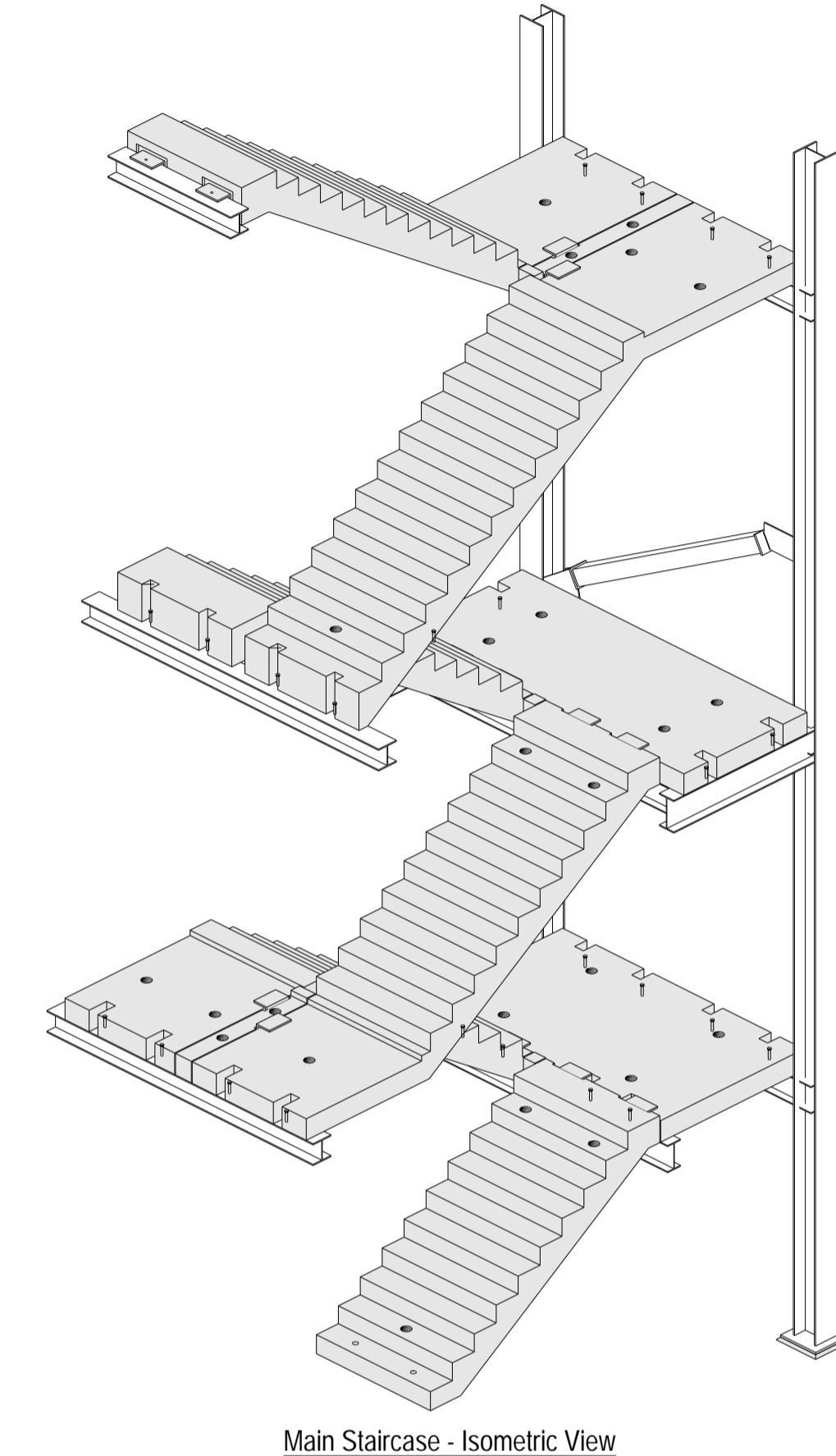
Project: **Panattoni Park Poyle**

Title: **General Arrangement of Main Entrance Stairs**

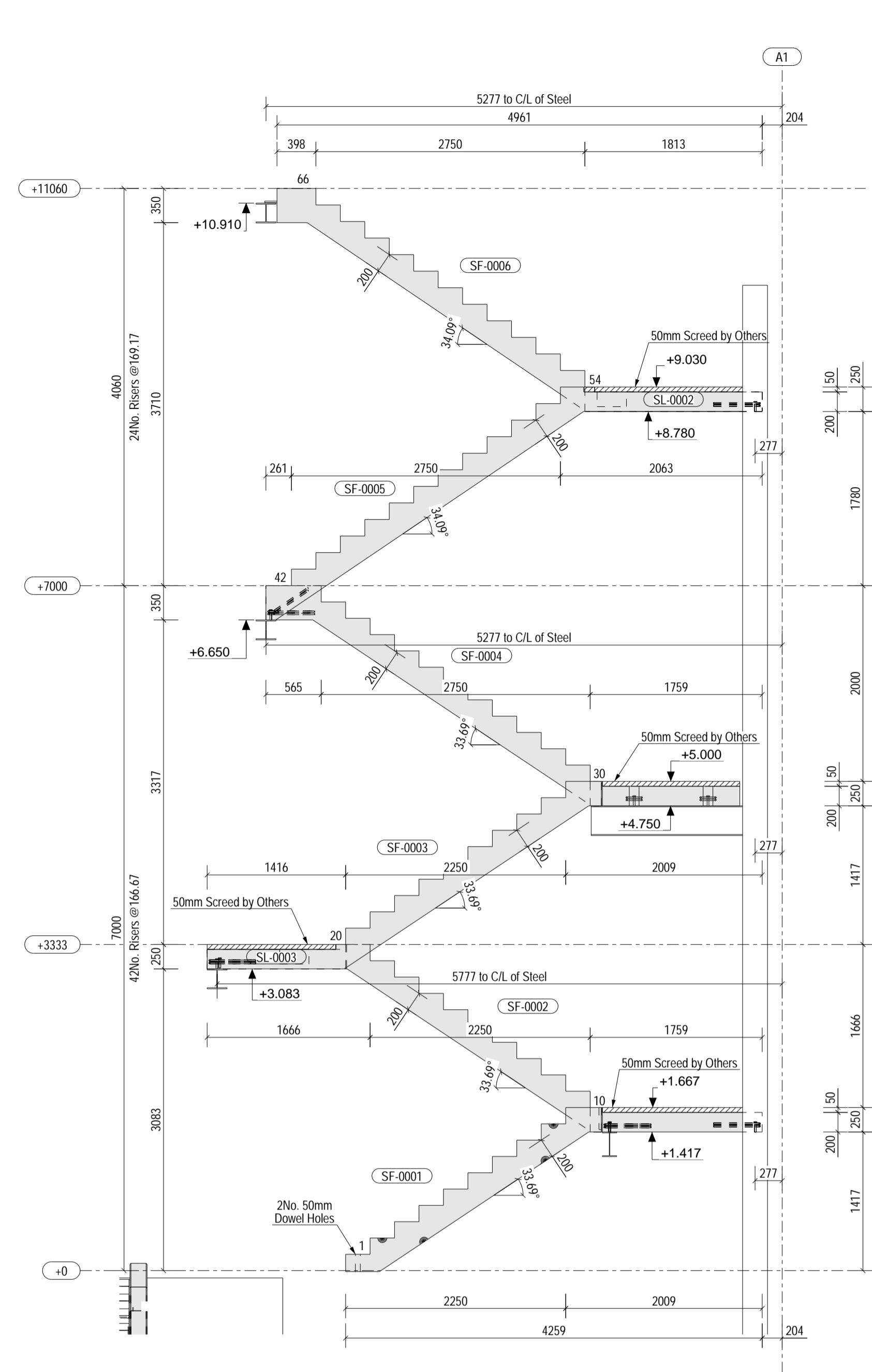
Drawn: LN Checked: AB Approved: SJH

Internal Ref: 05-BYL-1462 Date: 20-02-24 Scale: 1:50

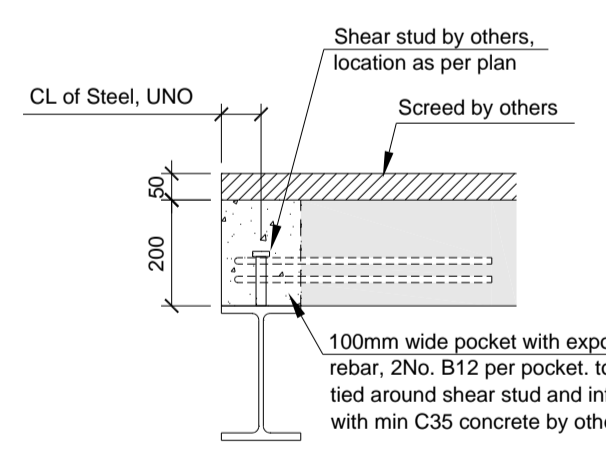
Drawing No: P23025-FPM-ZZ-00-DR-X-0201 Rev: C02



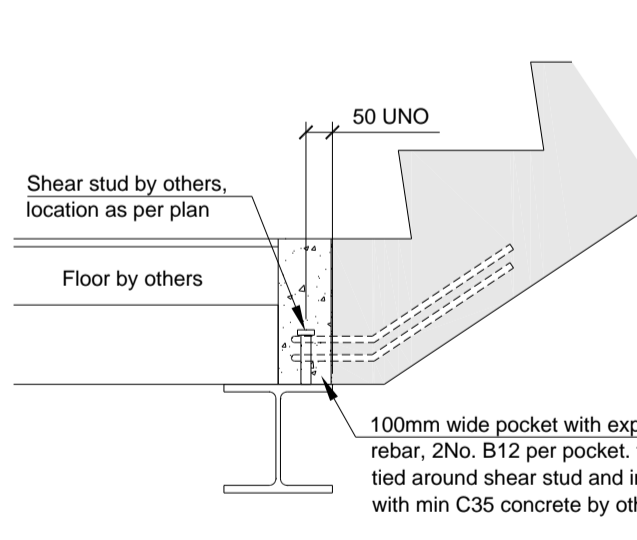
Main Staircase - Isometric View



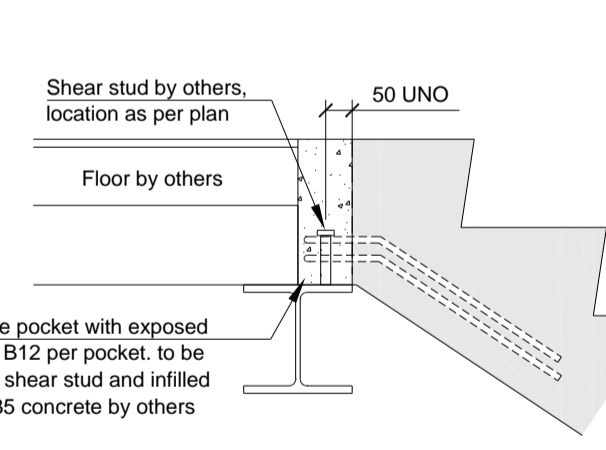
Main Staircase - Elevation



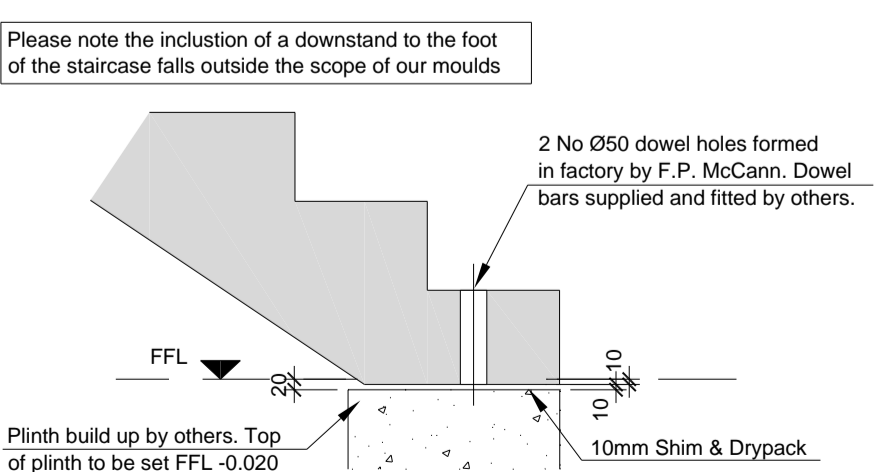
Typical Landing Shear Stud Detail



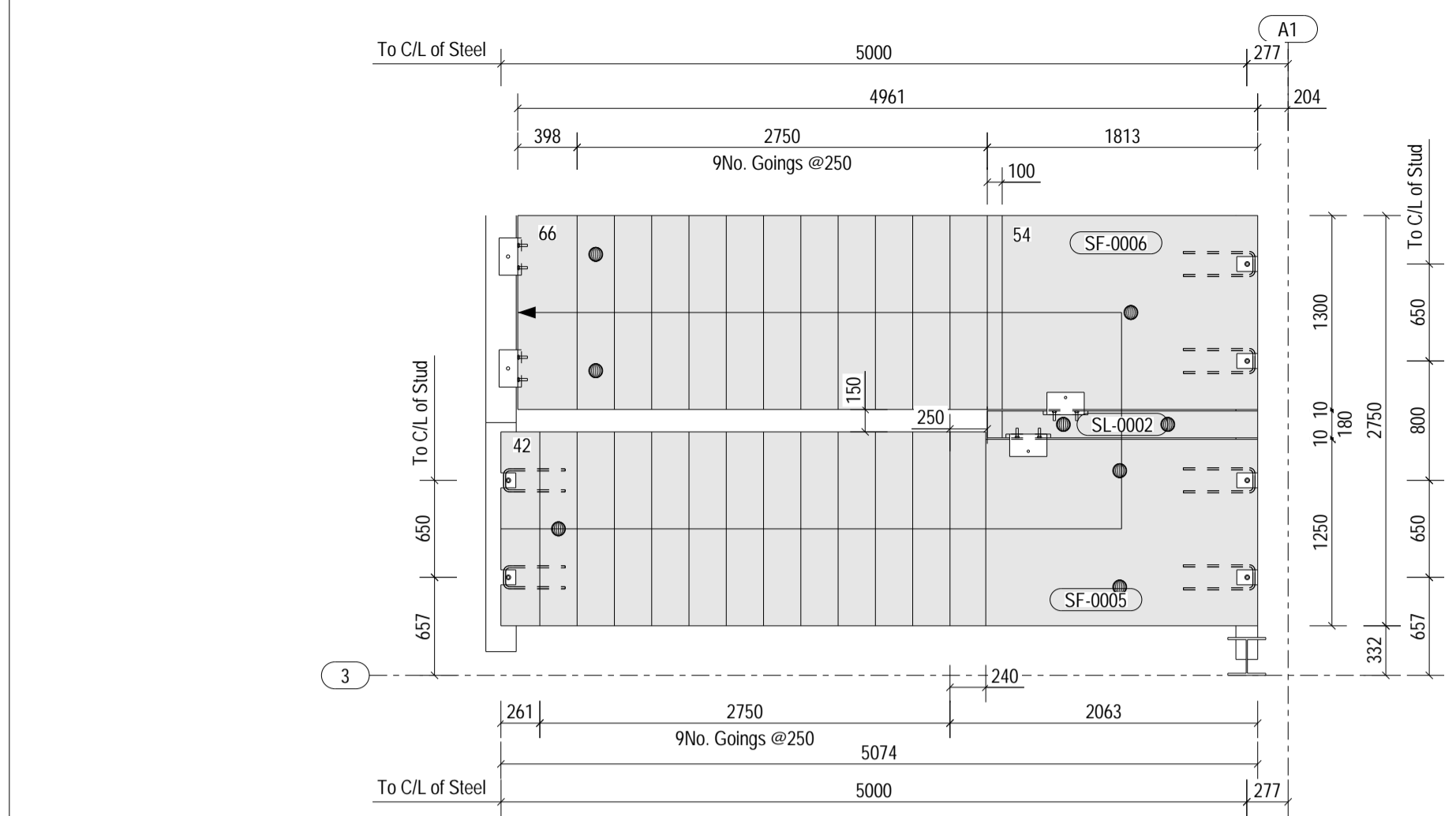
Typical Stair Base Shear Stud Detail



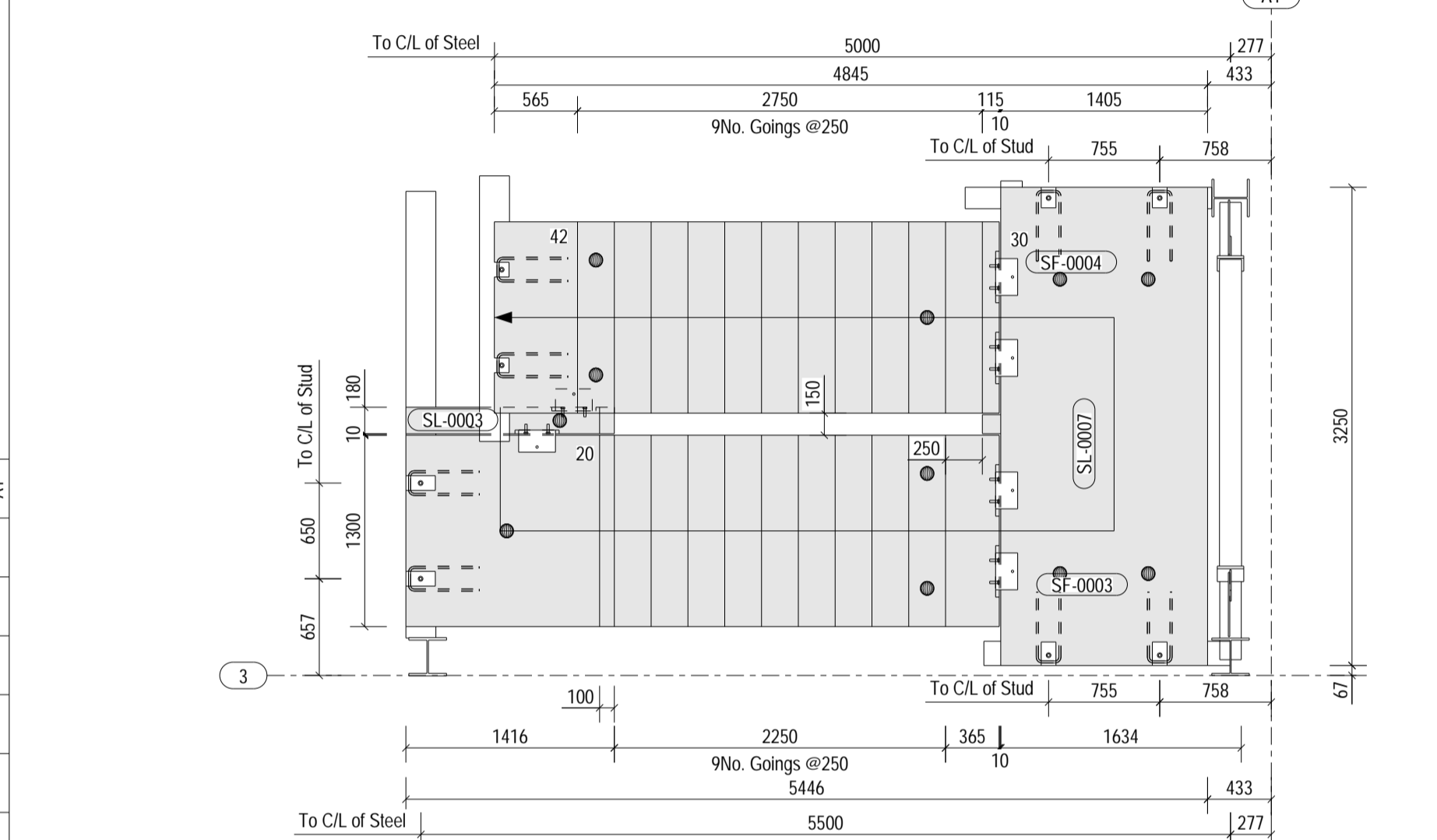
Typical Stair Head Shear Stud Detail



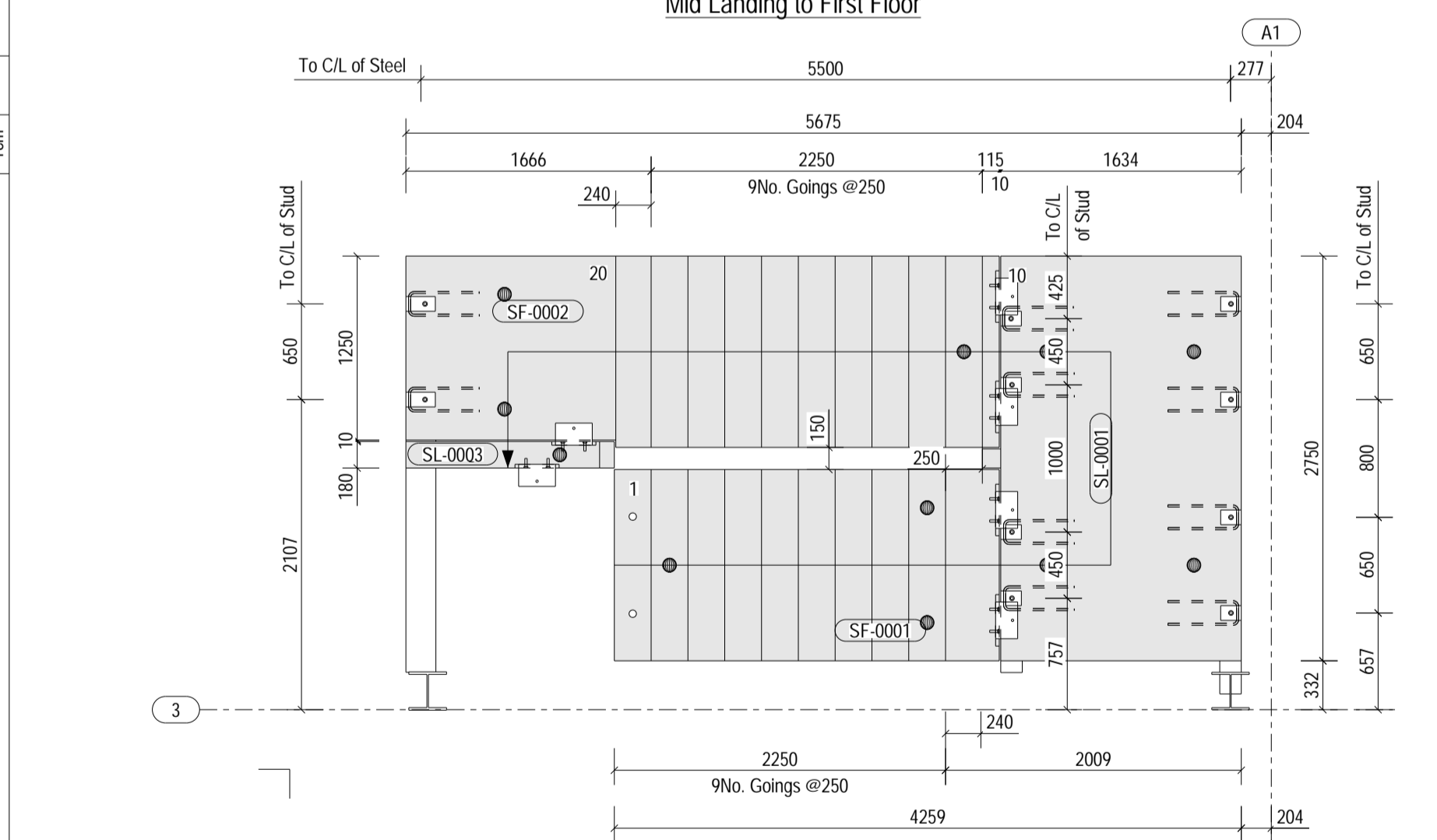
Typical Base Detail



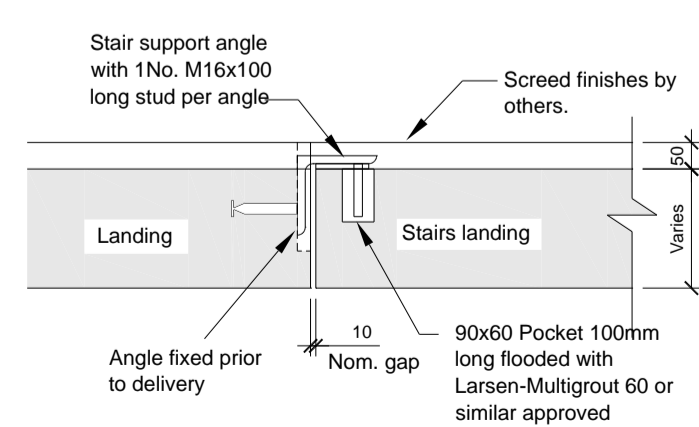
First Floor to Plant Deck



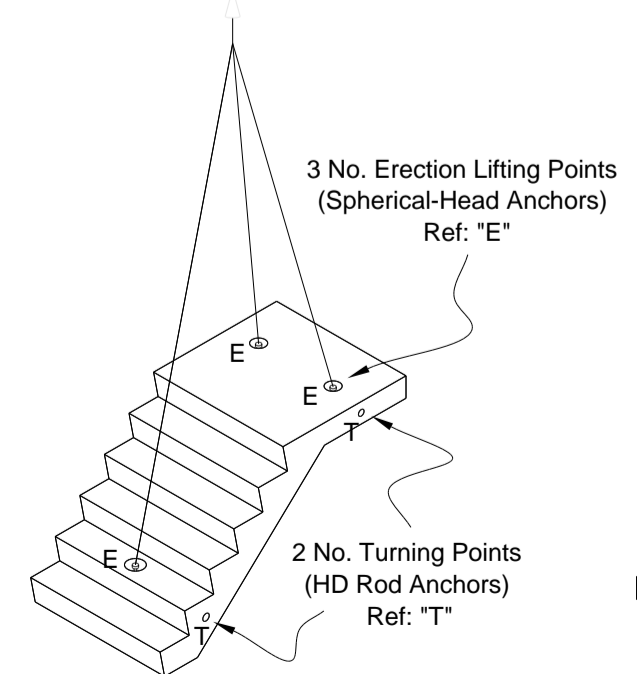
Mid Landing to First Floor



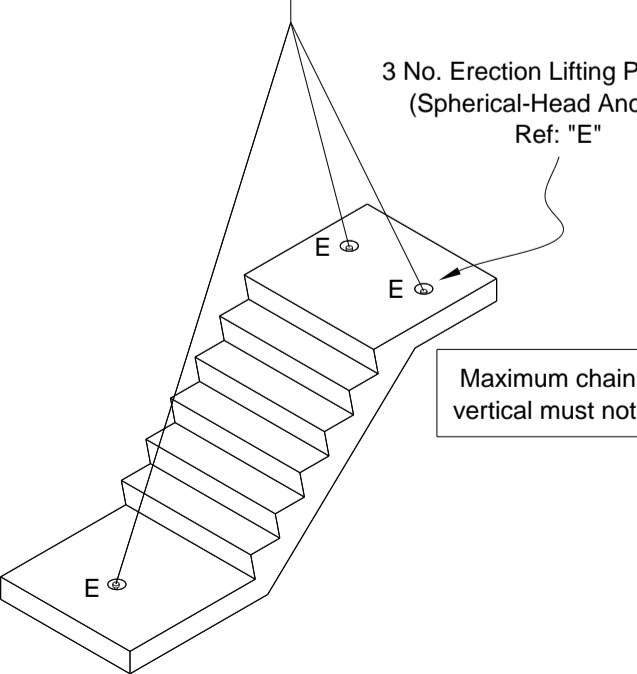
Ground Floor to Mid Landing



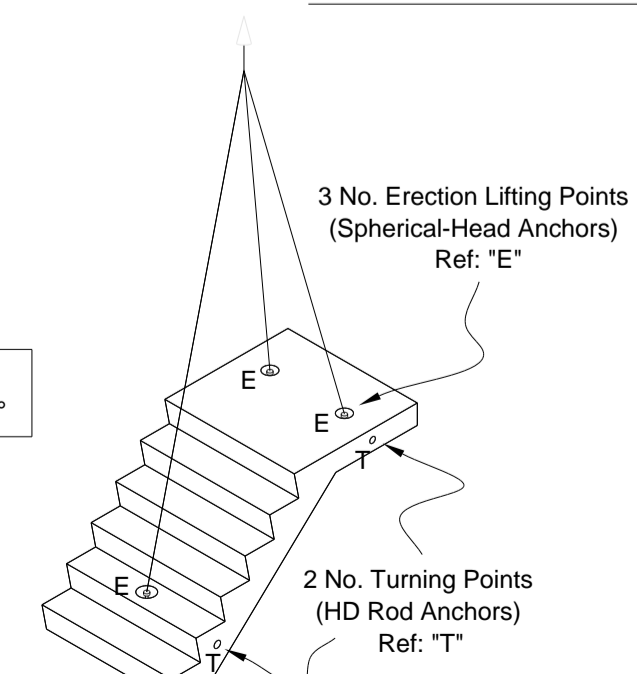
Typical Angle Bearing Detail



LIFTING DIAGRAM

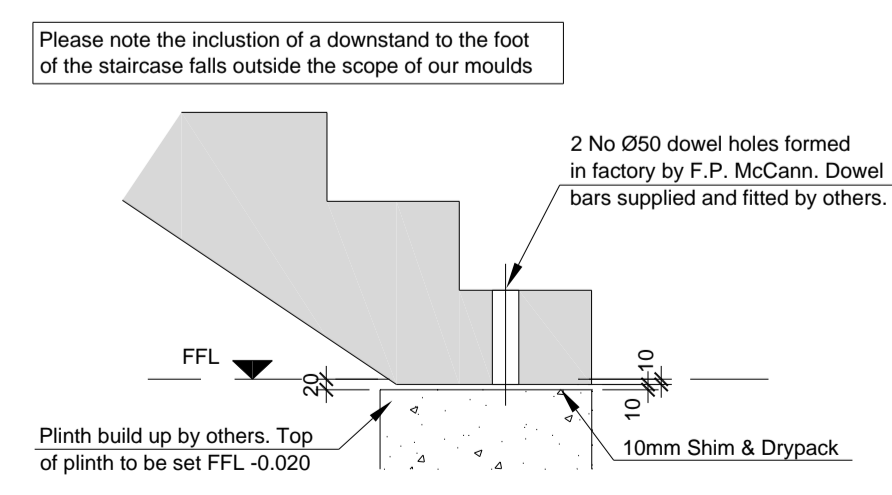
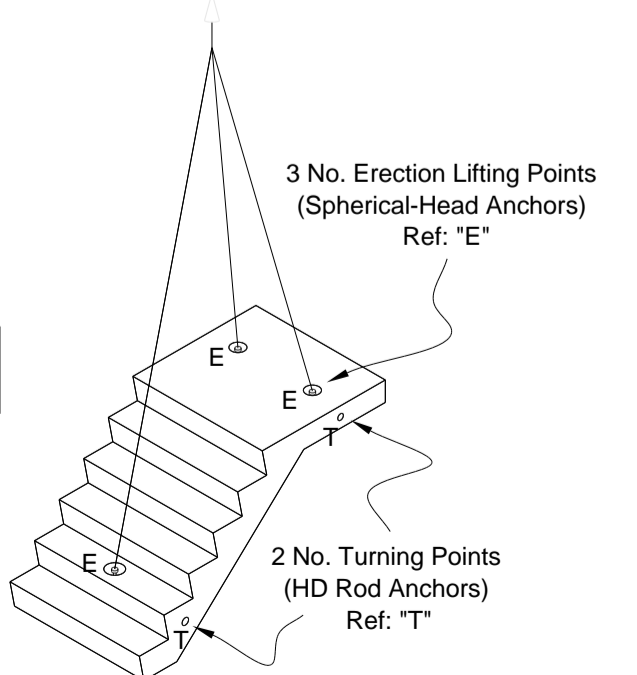
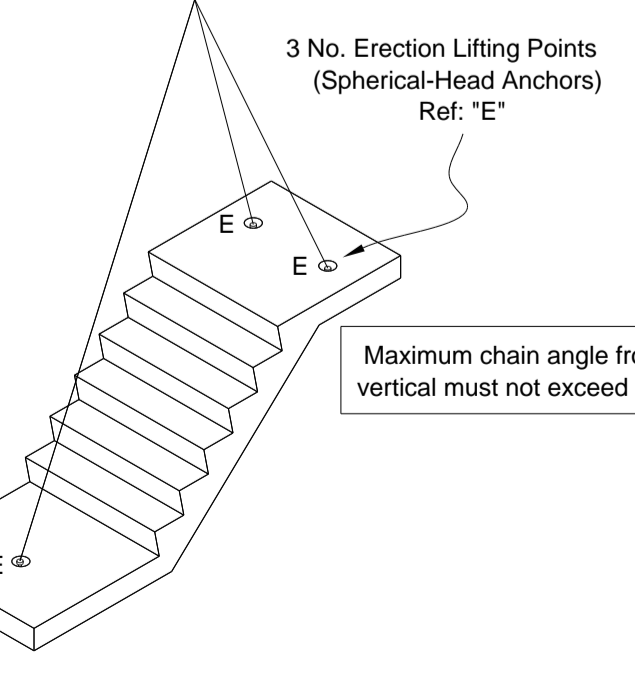
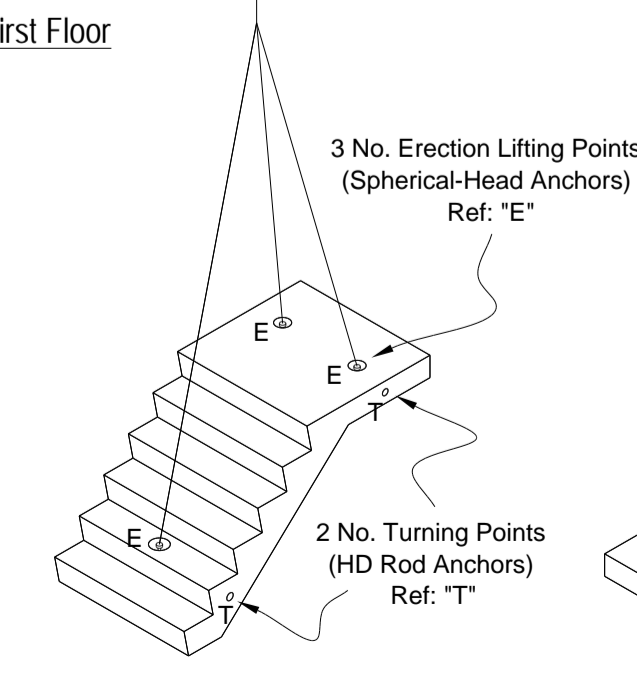
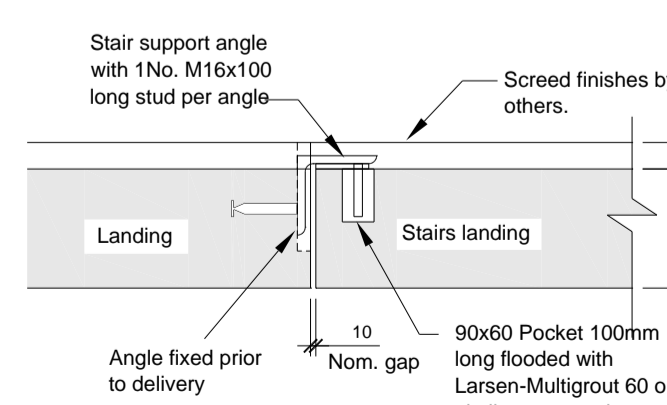
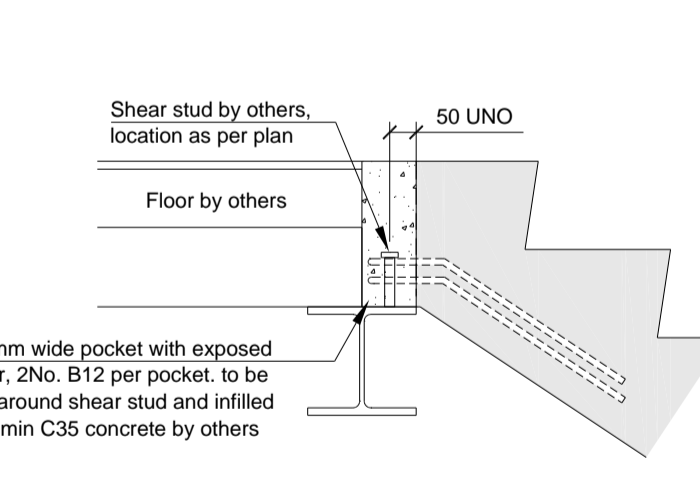
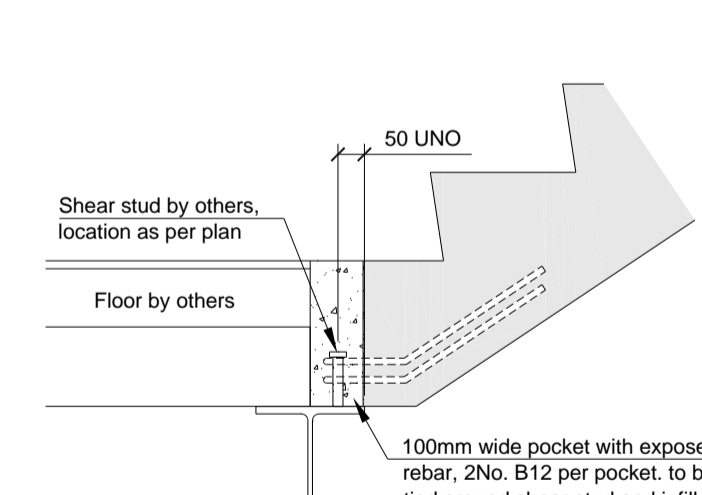
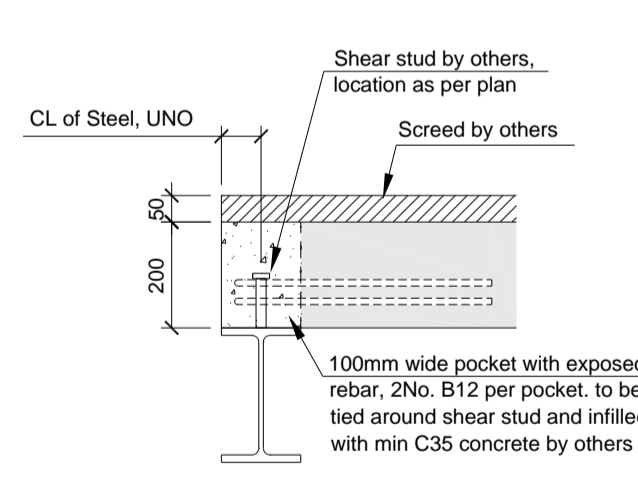
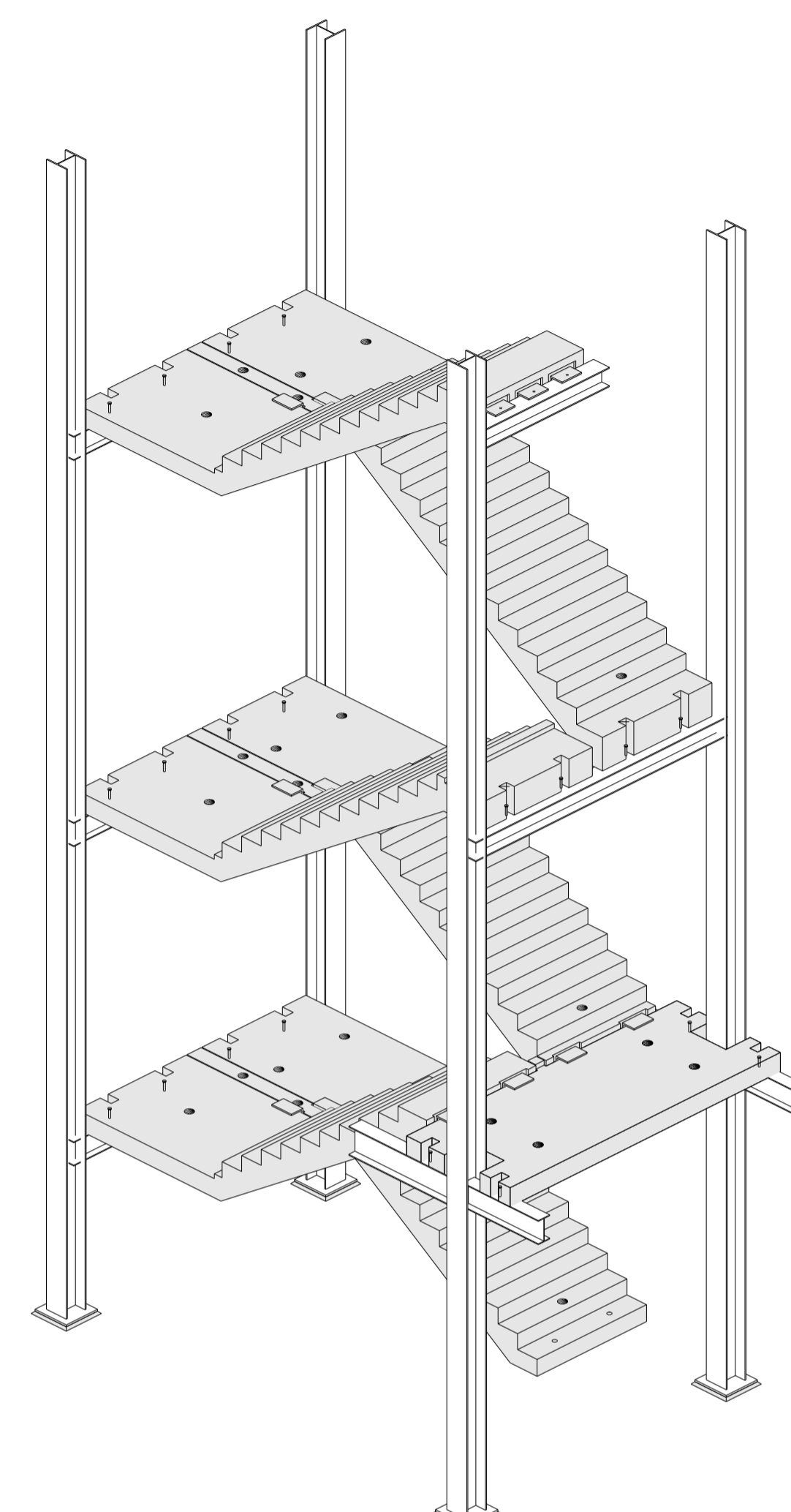
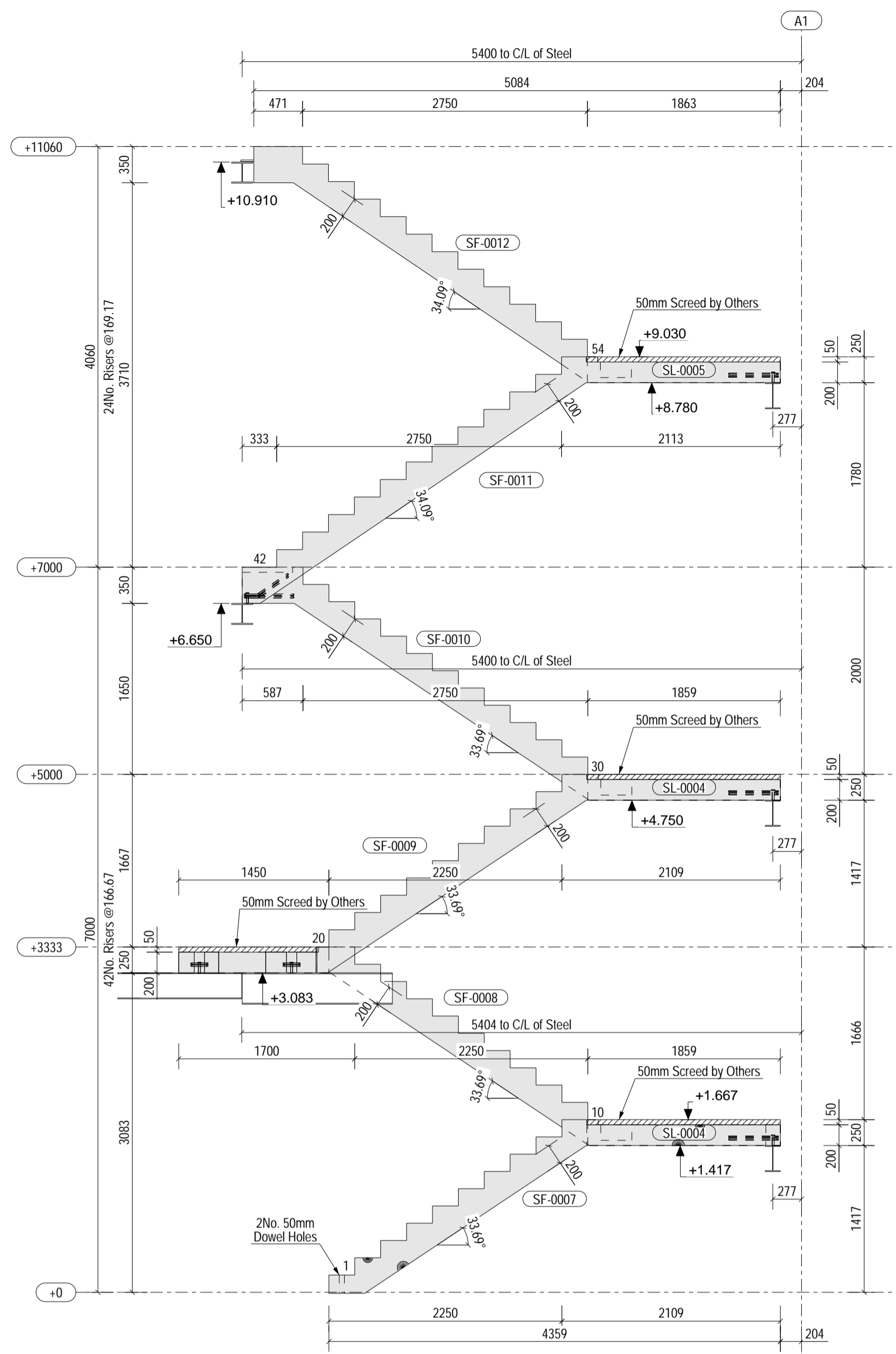
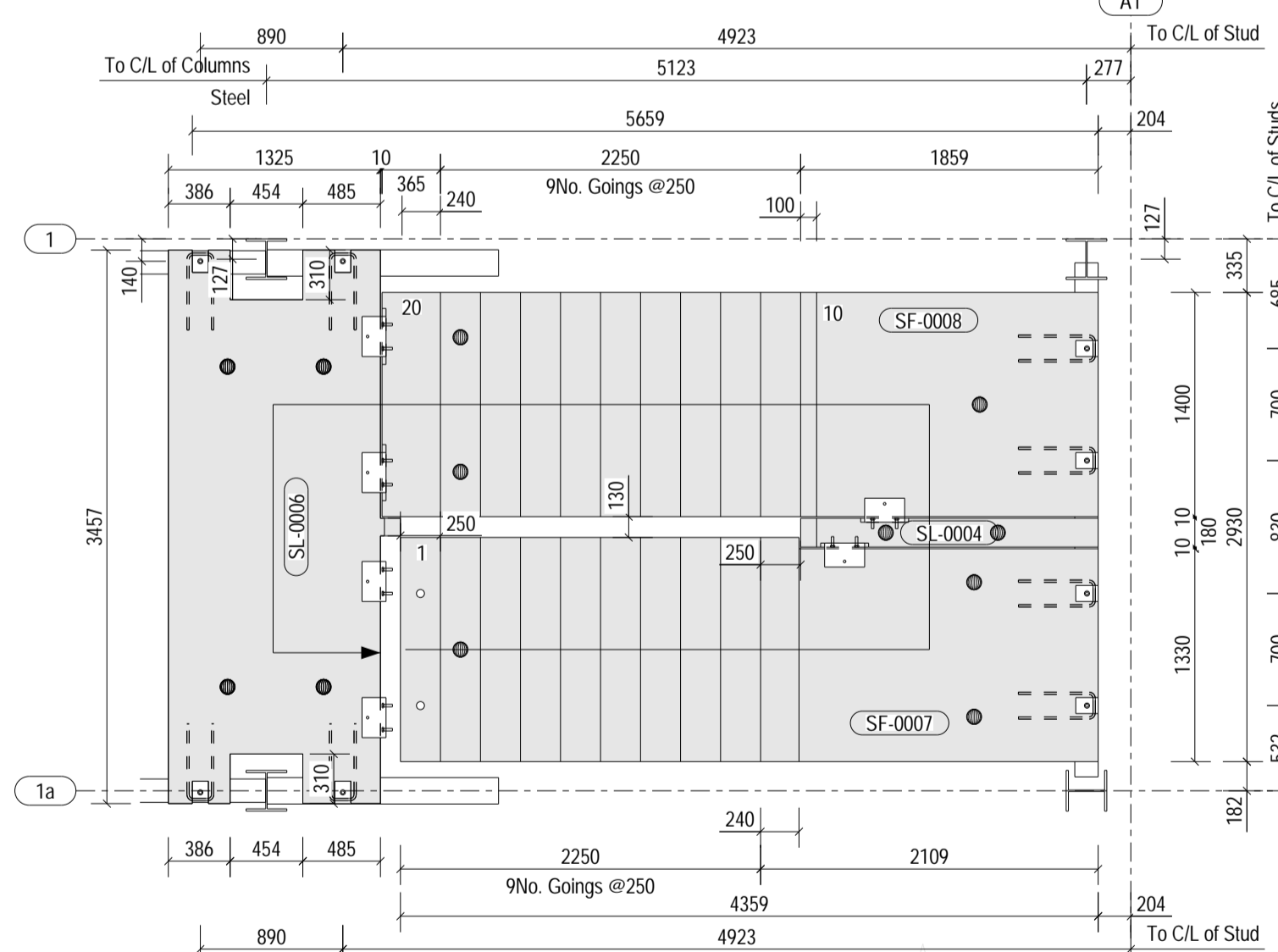
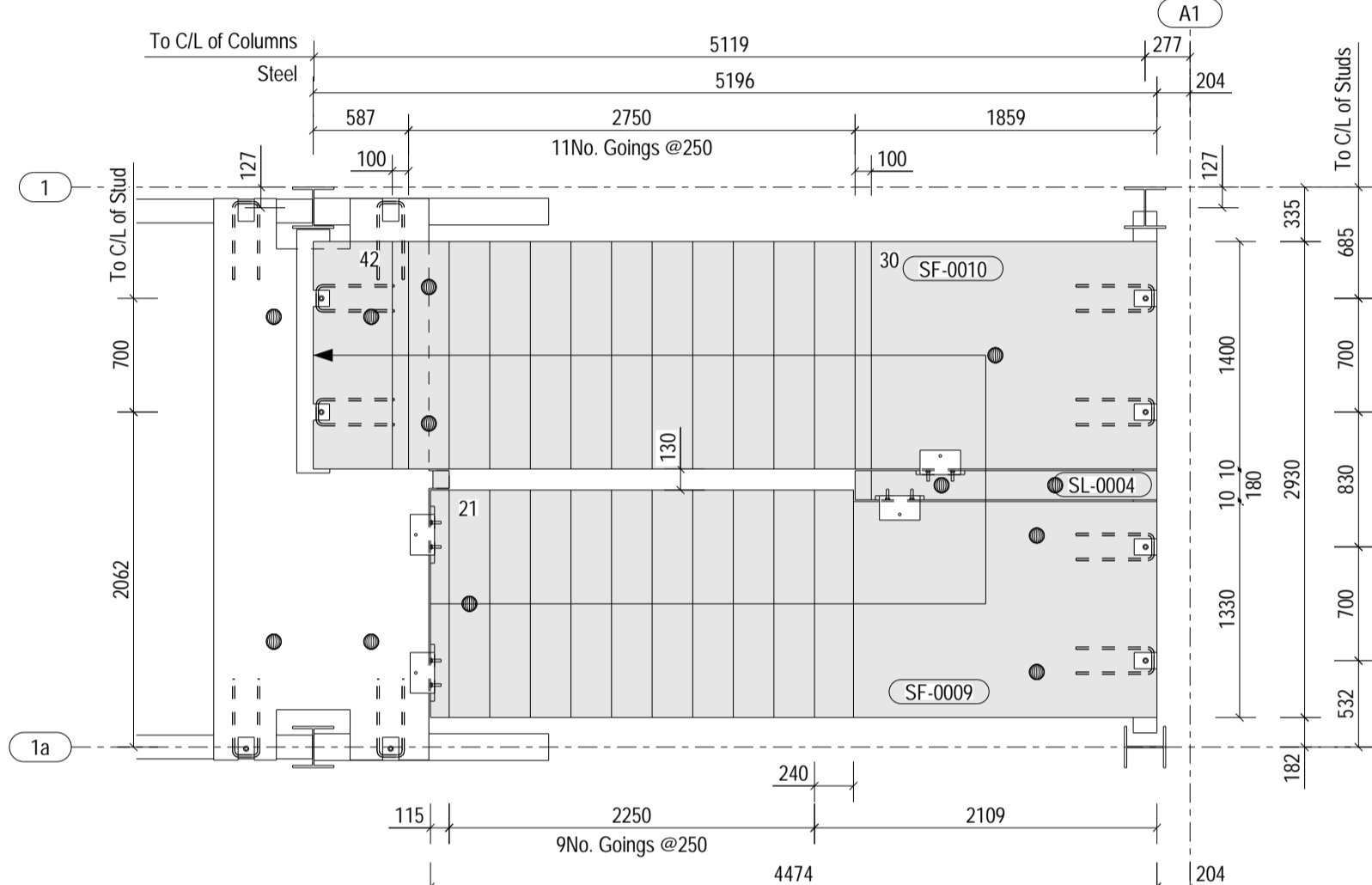
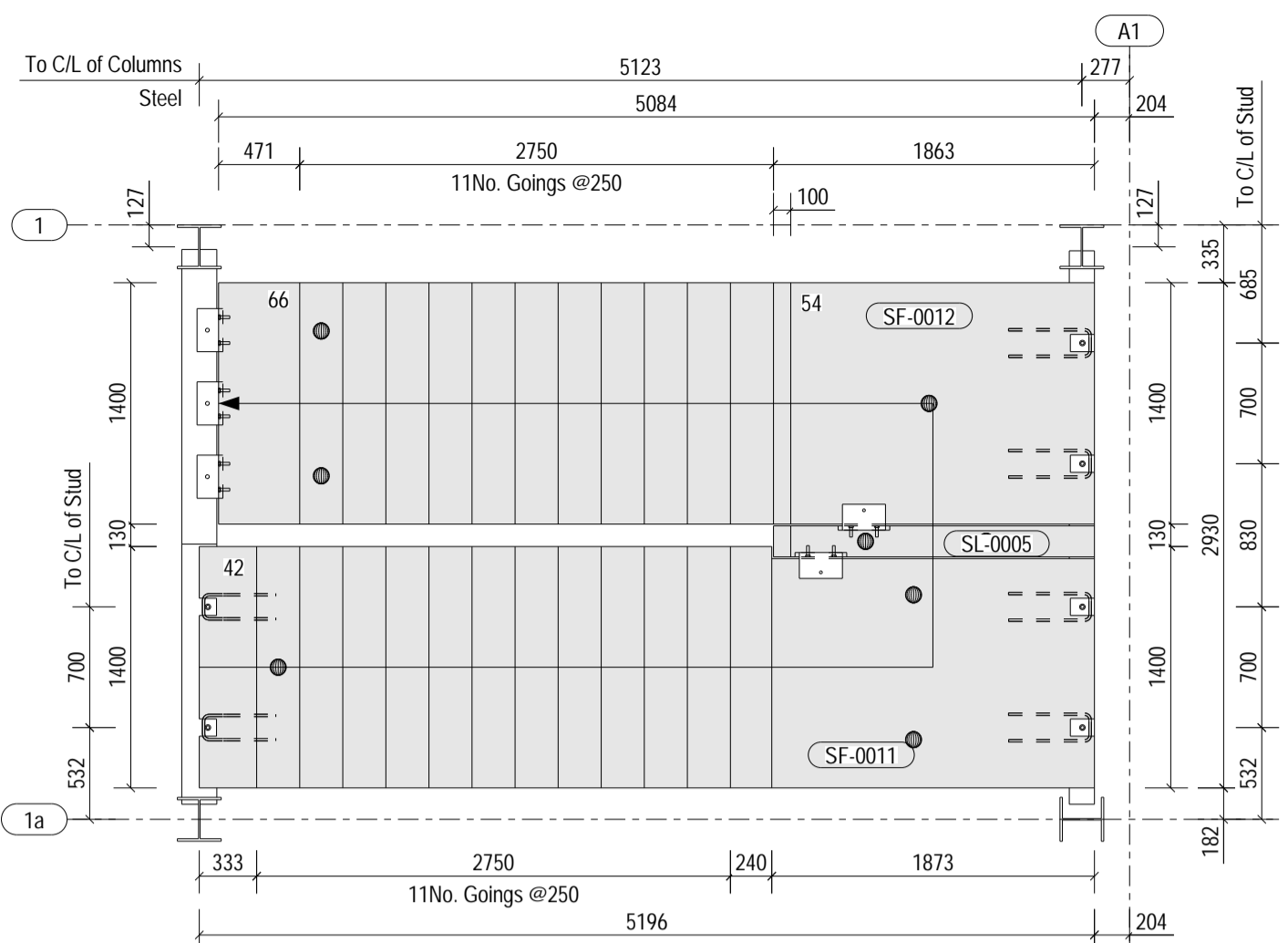


LIFTING DIAGRAM



LIFTING DIAGRAM

The Construction (Design and Management) Regulations 2015
 If you are unsure of your responsibilities please refer to the HSE website.
 The notes below and loading details in (8) should be read by all CDM dutyholders alongside the PC stair layout drawing, section details and additional notes. Whilst we do not go into specifics such as working at heights, slips and trips etc, where applicable shown in the notes and on the drawing some potential hazards / risks are identified and should be assessed accordingly by the main contractor and his design team prior to any site works commencing.
 All installation work to be carried out in accordance with the Precast Flooring Federations Code of Practice available as free download from: www.precastfloors.info
 The F.P. McCann GA's should be read in conjunction with all other relevant drawings from the contract design team e.g. Architects, Engineers, Steel Fabricator etc.



Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		
Straightness or bow (deviation from intended line)		Variation	
Up to 3m		± 6mm	
3 to 4.5m		± 9mm	
4.5 to 6m		± 12mm	
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			

Mark	Qty	Weight(T)	Volume(m³)
SF-0007	1	3.91	1.56
SF-0008	1	4.22	1.69
SF-0009	1	4.14	1.65
SF-0010	1	5.04	2.02
SF-0011	1	5.00	2.00
SF-0012	1	5.01	2.00
SL-0000(?)	1	2.13	0.85
SL-0004	2	0.16	0.07
SL-0005	1	0.16	0.07
SL-0006	1	2.13	0.85

The Construction (Design and Management) Regulations 2015
 If you are unsure of your responsibilities please refer to the HSE website. The notes below and loading details in (8) should be read by all CDM dutyholders alongside the PC stair layout drawing, section details and additional notes. Whilst we do not go into specifics such as working at heights, slips and trips etc, where (L) is shown in the notes and on the drawing some potential hazards / risks are identified and should be assessed accordingly by the main contractor and his design team prior to any site works commencing.
 All installation work to be carried out in accordance with the Precast Flooring Federations Code of Practice available as free download from: www.precastfloors.info
 The F.P. McCann GA's should be read in conjunction with all other relevant drawings from the contract design team e.g. Architects, Engineers, Steel Fabricator etc.

Notes:
 1. Handling
 Refer to PFF Code of Practice website for all handling & lifting purposes at: http://www.precastfloors.info
 Also refer to Lifting & Handling Instructions Diagram on drawing.
 a) All Site Handling lifting points shall be used as specified below:
 Site Erection System Qty/Unit Drg Ref Reference SWL
 Spherical-Head Anchors E LAP050 5.0T
 Spherical-Head Anchors E LAP050 5.0T
 Anchor recesses to be filled by others on site.
 b) The site lifting/installation equipment may be purchased/hired from Euro Accessories (Tel: 0845 052 4050) or Simply Precast (Tel: 0800 678 5178)
 Site Lifting Euro Accessories: Spherical-Head Clutch Ref: LAPRC050
 Site Lifting Simply Precast: Spherical-Head Clutch Ref: SPARC050
 c) For "Supply Only" contracts it is the responsibility of the General Contractor to ensure appropriate lifting equipment is available for erection purposes.
 d) In the design of the lifting anchors, we have adopted a Dynamic Factor = 1.3 (Stationary Crane/Mobile Crane, hoisting speed >90m/min)

2. Concrete
 a) Minimum lifting strength = 15 N/mm²
 b) Characteristic 28 day cube strength = 50 N/mm²
 3. Insitu
 Due to safety concerns with the delivery to site, on site lifting, handling and installation of small and/or irregular shaped precast, some areas may be noted as insitu by others. The insitu along with any associated temporary works is to be designed, supplied and laid by others.
 It is also the responsibility of the main contractor/client to make good with insitu conc. around columns, services and where precast runs parallel to steel beams.
 4. Holes/Cut-outs
 The precast stair units should not be modified. If this is considered essential, it should be discussed with FP McCann's design team

5. Building Regulations
 It is the responsibility of the Building Designer to ensure that the details/sections indicated on this drawing together with the proposed floor finishes satisfy the requirements of both the current edition of Building Regulations Parts A, E, K & M and the Technical Handbook (Scotland) parts 1, 2, 4 & 5.
 6. Reinforcement
 a) Reinforcement (500B or C) to BS4449
 b) Scheduling, dimensioning, bending and cutting to BS8666
 c) Cage to be tack welded and/or tied with 19 gauge annealed tying wire
 7. Manufacture
 a) Manufactured and Tolerances to BS EN 14843:2007
 b) Finishes: As below unless stated otherwise indicated on drawing

Flights		Landings	
Soffit	Treads, Risers & Strings	Top	Sides & Soffit
Steel Float	Plain Formed Finish	Steel Float	Plain Formed Finish

Landings to receive a min. 50mm sand/cement screed by others for leveling
 c) Marking: Units shall be indelibly marked to show contract number or name, unit reference, date of manufacture and unit weight +5%

8. Design
 Loading data noted below not to be exceeded in the permanent or temp. condition. The stacking of materials should not exceed the loads shown.
 a) Concrete design to EuroCode2, BS EN 1992-1-1
 b) Live Load = 4 kN/m², Finishes = 1.0 kN/m²
 c) Fire Rating: 90mins
 d) Design Life: 50 years
 e) FP McCann have designed the concrete units only
 f) Cover to reinforcement & exposure

Face	Block	Min Cover	Max Cover	Exposure
Top & Sides	20mm	15mm	25mm	XC1
Soffit	30mm	25mm	35mm	XC1

9. Bearing
 All bearings for FP McCann precast units are to be provided true to line level by the GC unless stated otherwise. The Project Engineer/Architect are responsible for the design of all supporting structural elements in both temp and permanent condition. Consideration should be given to the stability of the structural elements & temp loads during the erection of FP McCann precast units.
 Prior to installation, the relative bearing levels should be checked by the General Contractor, and any deviation in excess of the outlined in BS 5605 'Guid to Accuracy in Building', should be reported to FP McCann's design team.
 In the event adjacent components do require alignment where bearing precast or structural steelwork, provision of suitable shims/packing, max. thickness 10mm, for final position/leveling of the precast stair unit can be adopted.
 10. Isolated Load Bearing Steel Beams
 Isolated steels must be fixed and temporary propping should also be incorporated where the "fixed" steel beams are likely to torsionally deflect during installation of the precast stair units. Fixings should not hinder the installation and the design should be checked for temporary loading to avoid torsional collapse during the consideration should be made to the passive fall protection where temporary works such as props are specified.

11. Temporary
 FP McCann will not be responsible for the design, supply, erection, maintenance and dismantling of any temporary works. This is to be carried out by/in accordance with the main contractor's temporary works engineer.
 12. Installation
 a) The PC stair components are given individual mark numbers for ease of reference during installation and when discussing any future works. Any deviation from the sequence indicated on the drawing must only be after receipt of approval from the FP McCann design team.
 b) Any post drilled fixing to be specified, designed and installed by others, taking into account the concrete thickness, edge distance, reinforcement and fixing type so as to avoid any damage to precast elements.

Rev	Date	Revision Detail	By	Chk	App	Submittal
C01	26-03-24	2nd Half landing extended to suit column Issued for Construction	LN	AB	SJH	
P01	29-02-24	Issued for Approval Comments required by 07.03.2024	LN	AB	SJH	

As Built

FP McCann
 Bullharts Lane
 Weston Underwood,
 Derbyshire,
 DE8 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client:

Project: Panattoni Park Poyle

Title: General Arrangement of Fire Escape Stairs

Drawn: LN	Checked: AB	Approved: SJH
Internal Ref: 05-BYL-1462	Date: 29-02-24	Scale: 1:50
Drawing No: P23025-FPM-ZZ-00-DR-X-0202	Rev: C01	

Unit	Liter	Weight(T)
PR-0009	RD36-WTA	3.93
PR-0010	RD24-WTA	2.46
PR-0011	RD24-WTA	0.69
PR-0019	RD36-WTA	3.97
PR-0020	RD30-WTA	0.81
PR-0021	RD36-WTA	2.19
YD-0010	RD36-WTA	3.70
YD-0011	RD36-WTA	2.70
YD-0012	RD24-WTA	1.45

Notes:

- Handling, Volumes & Weights**
 - In the design of the lifting anchors, we have adopted a dynamic factor of 1.3 (stationary/mobile crane.)
 - See individual unit drawings for volumes and weights
- Concrete**
 - Lifting strength based on 2 cubes = 25 N/mm².
 - Characteristic 28 day cube strength = 50 N/mm².
 - Concrete provides Design Chemical Class 2 (DC2) to Special Digest 1, Table F.2.
- Reinforcement**
 - Reinforcement (500B or C) to BS4449.
 - Scheduling, dimensioning, bending and cutting to BS8666.
 - Cage to be tack welded and/or tied with 17 gauge annealed tying wire.
- Manufacture**
 - Manufactured to BS EN 13369:2013
 - Tolerances based on BS EN 13369:2013 & BS EN 13670:2009
 - Finishes: As below unless indicated otherwise on unit drawings.

Top (As Cast) Surface	Front Face & Sides (Struck from Steel/Timber Mould)
Steel Trowelled	Type B

- d) Marking: Units shall be indelibly marked to show:
- Contract number or name
 - Unit reference and date of manufacture
 - Unit weight +5%

5. Design

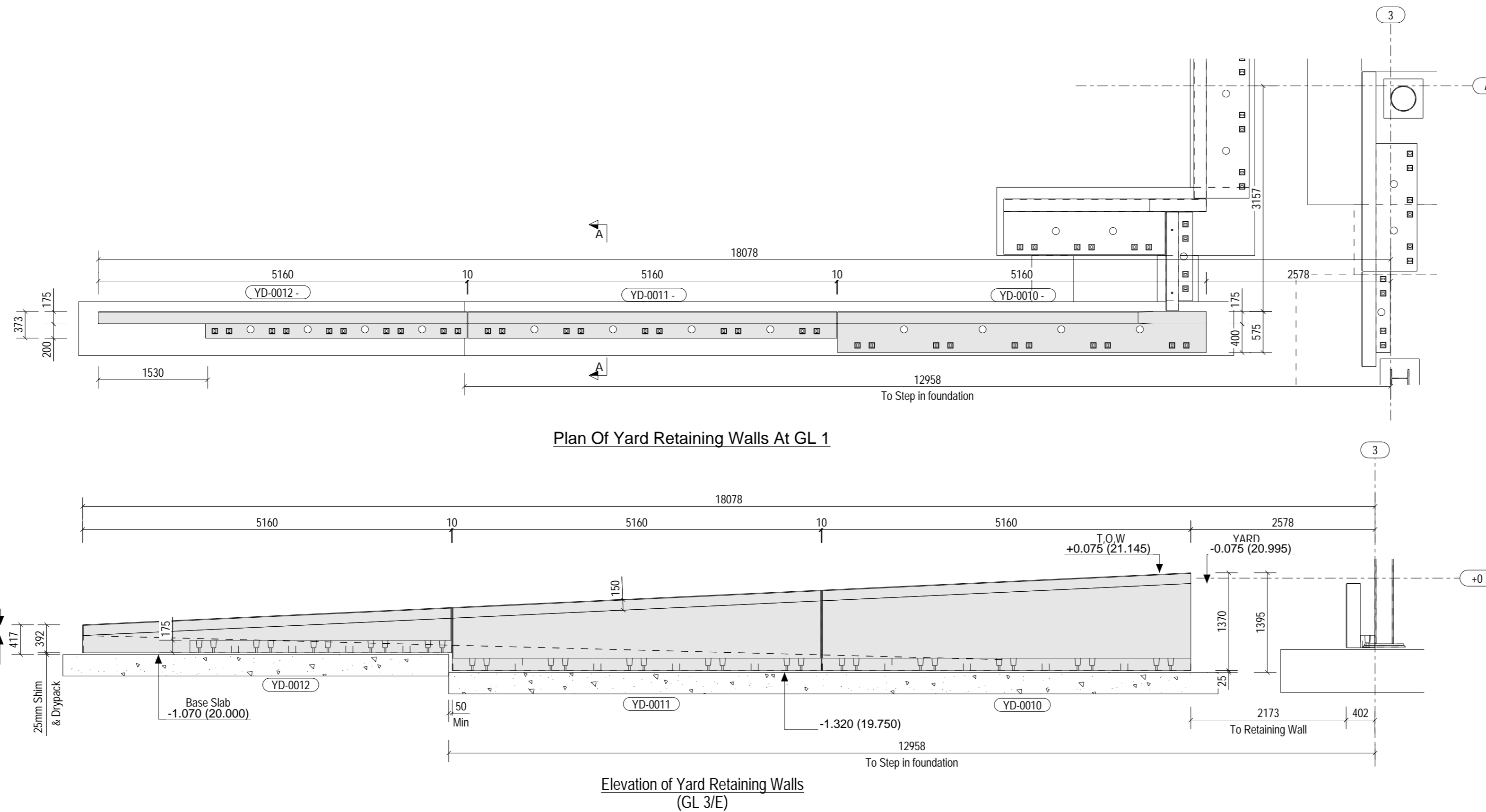
- This drawing is to be read in conjunction with FP McCann unit Production drawings.
- Concrete design to EN1992-1-1:2004.
- Yard retaining walls are designed as pure cantilevers to accommodate retained materials with a surcharge load of 20kN/m².
- FP McCann have designed the concrete units only, the stability of the support conditions should be checked by overall scheme designer.
- Design life: >50 years.
- Cover to Reinforcement & Exposure:

All Faces	Block	Min. Cover	Max. Cover	Exposure
40mm	35mm	45mm	XC3/4	XD1 XF4

6. Installation

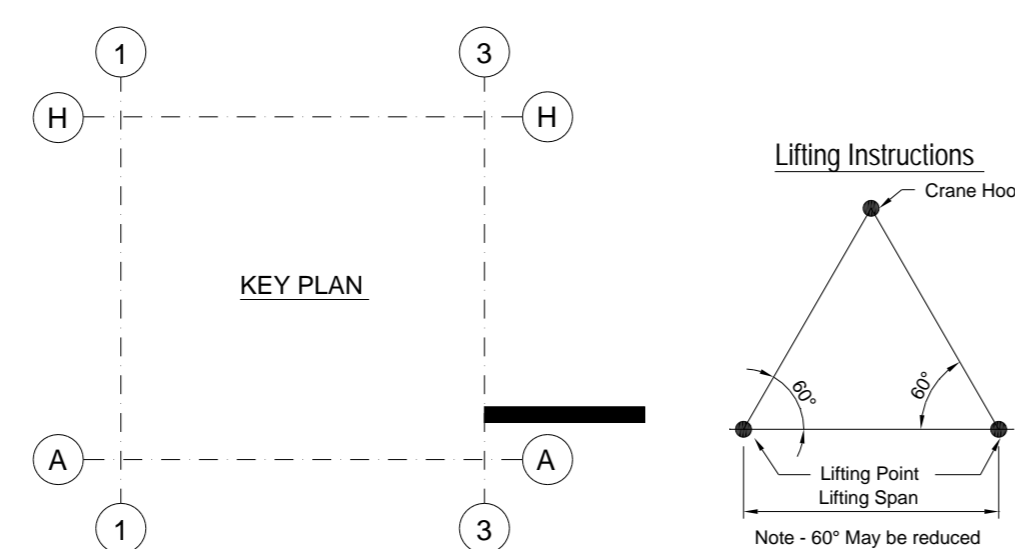
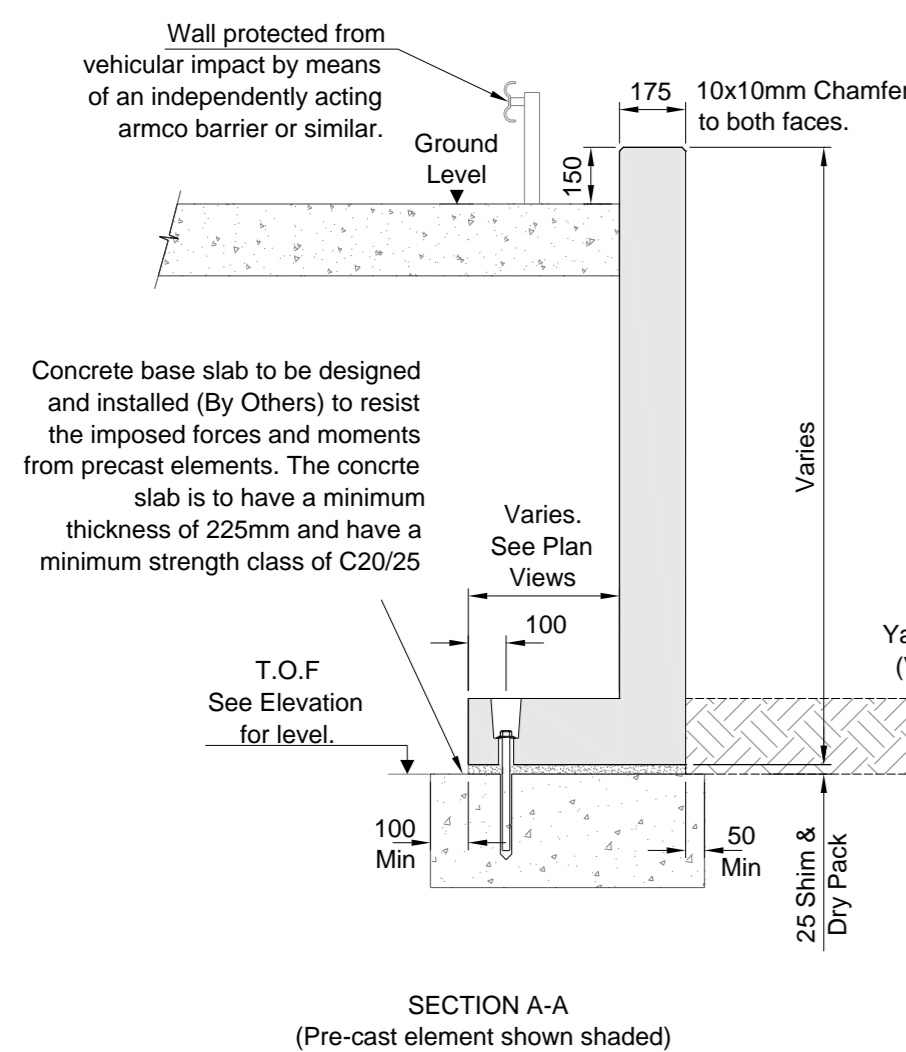
- Main contractor to ensure base slab is installed to the levels shown on this drawing. Allowable tolerance +0/-10mm.
- Main contractor to allow a minimum of 24 hours before commencement of backfilling. No heavy roller to be used within 1.5m of any precast wall. Filling behind the precast walls to consist of a free draining granular fill laid in a maximum of 225mm layers, compacted using a vibrating plate.
- Any post drilled fixings to be specified, designed and installed by others, taking into account the concrete thickness, edge distance, reinforcement and fixing type so as to avoid any damage to precast elements.
- Where an insitu concrete pour is required behind walls this should be cast in layers such that excessive pressure is not imposed on the back of the precast wall during pouring.
- Excaltibur Bolt in toe. Grouted with Larsen Multigrout 60.

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross Section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5m to 6m	± 12mm		
Additional for every subsequent 6m	± 6mm	Additional for every subsequent 6m	± 3mm
Straightness or bow (deviation from intended line)		Variation	
Up to 3m		± 6mm	
3 to 4.5m		± 9mm	
4.5m to 6m		± 12mm	
Additional for every subsequent 6m		± 6mm	
Holes, openings, steel plates and inserts		± 5mm	
Size of holes or openings:		± 5mm	
Location of holes, openings, steel plate inserts:		± 10mm	



Plan Of Yard Retaining Walls At GL 1

Elevation of Yard Retaining Walls (GL 3/E)

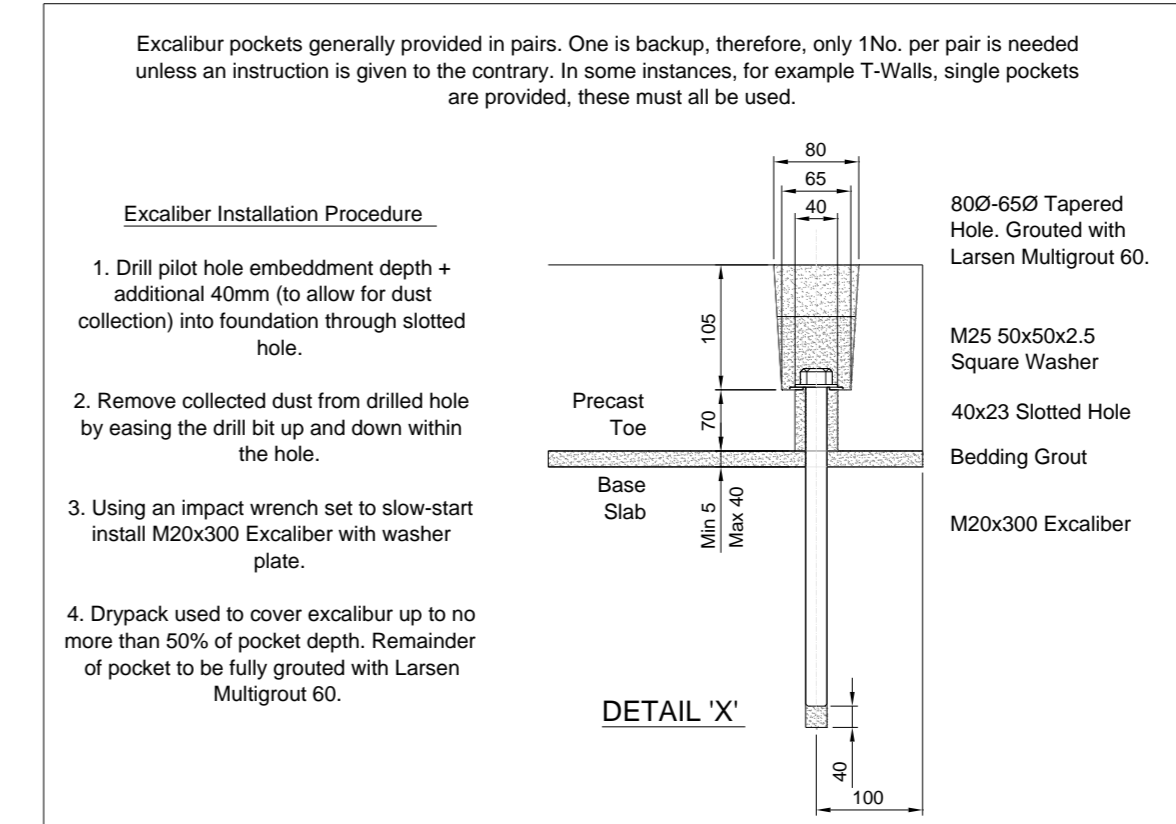


PRODUCT CODES

- BP - Blank Prowall Panel
- BS - Base Slab
- BW - Back Wall
- DP - Double Door Prowall Panel
- FL - Non-Talgate Front Wall
- F1 - Talgate Front Wall
- GB - Ground Beam
- HN - Non-Talgate Half
- HT - Half Talgate Frontwall
- IB - Infill Back Wall
- IF - Infill Frontwall
- LN - Prowall Lined Panel
- PP - Personnel Door Prowall Panel
- PR - Prowall Retaining Wall
- RS - Reverse Toe Retaining Wall
- SC - Stonehenge Column
- SP - Single Door Prowall Panel
- SW - Side Wall
- YD - Yard Wall Dowelled
- TY - Yard Wall Tied Toe

Important Notes:
Concrete base slab to be designed and installed (By Others) to resist the imposed forces and moments from precast elements. The concrete slab is to have a minimum thickness of 225mm and have a minimum strength class of C20/25

- The Construction (Design & Management) Regulations 2015
- If you are unsure of your responsibilities please refer to the HSE website.
 - These notes should be read by all CDM duty holders alongside the general arrangement layout and additional notes, whilst we do not go into specifics such as working at heights, working over excavations, slips and trips etc, where risks are shown in the notes and on the drawing some potential hazard/risks are identified and should be assessed accordingly by the main contractor and the design team prior to any site works commencing.
 - Particular attention should be made to the notes identified by 1 which have the potential for significant risk where not adhered to. This FP McCann general arrangement should be read in conjunction with all other relevant drawings available from the design team e.g Architect, Engineer, Steelwork Sub-Contractor etc.
 - Lifting** - The lifting equipment referred to in note 1 is the only lifting equipment which should be used on FP McCann supplied units. All elements must be lifted in accordance with FP McCann's lifting plan/method statement.
 - Installation** - Where possible the installation of all units should be done from ground level. If it is necessary to stand on top of any units relevant procedures for working at height must be followed. The manufacturers guidelines and safety recommendations for the application for any grout or resin must be followed.



C02	11-06-24	Units Stepped Issued For Construction	DT	NB	SJH
C01	11-06-24	Setting out amended Issued For Construction	DT	NB	SJH
P01	14-05-24	Comments for 21.05.24 Issued For Approval	DT	NB	SJH

Rev	Date	Revision Detail	By	Chk	App
Status:					
As Built					Suitability:
					A

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

winvic

Client:
Panattoni Park Poyle

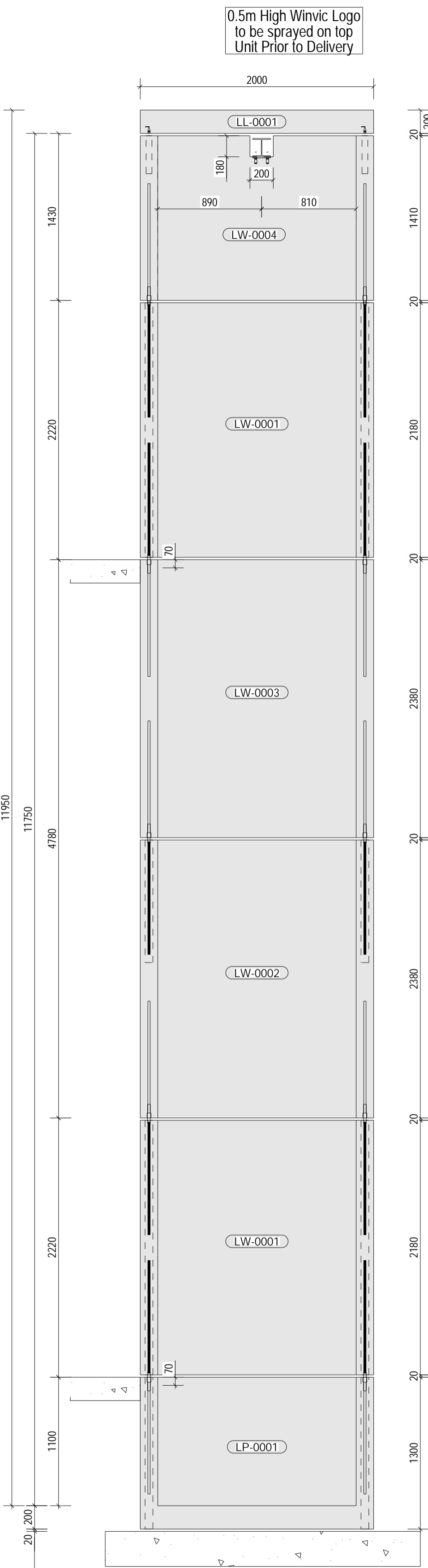
Project:
General Arrangement of Yard Retaining Walls Gridline A / 3

Title:

Drawn: **DT** Checked: **NB** Approved: **SJH**

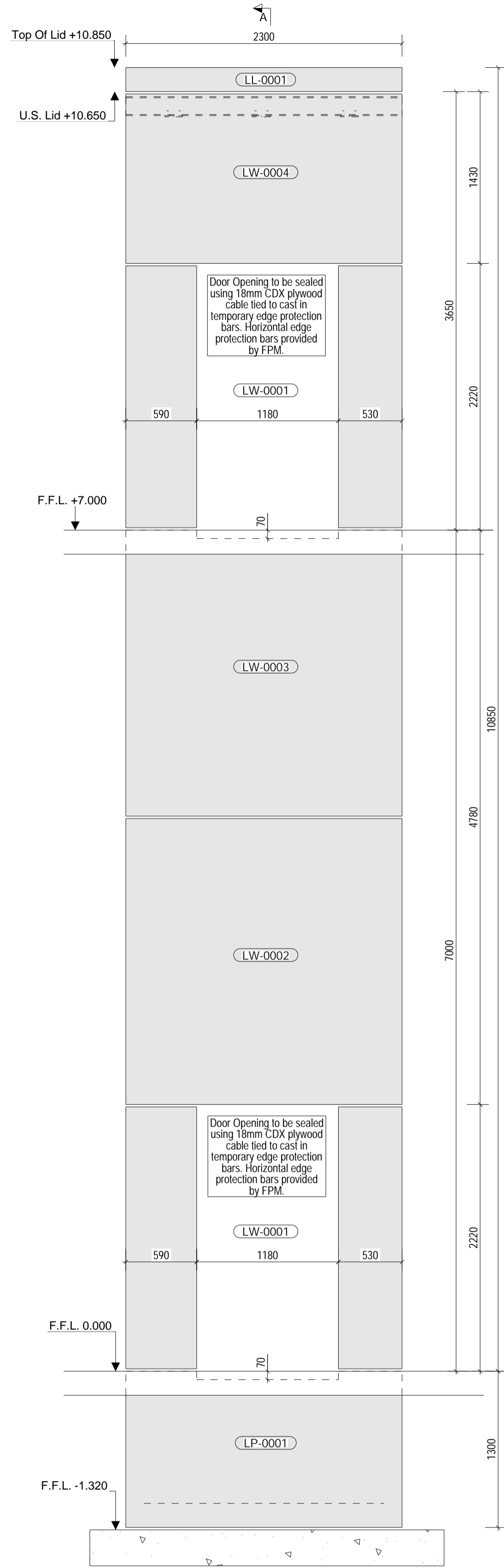
Internal Ref: **05-BYL-1462** Date: **13-05-24** Scale: **1:50**

Drawing No: **P23025-FPM-ZZ-XX-DR-X-0006** Rev: **C02**

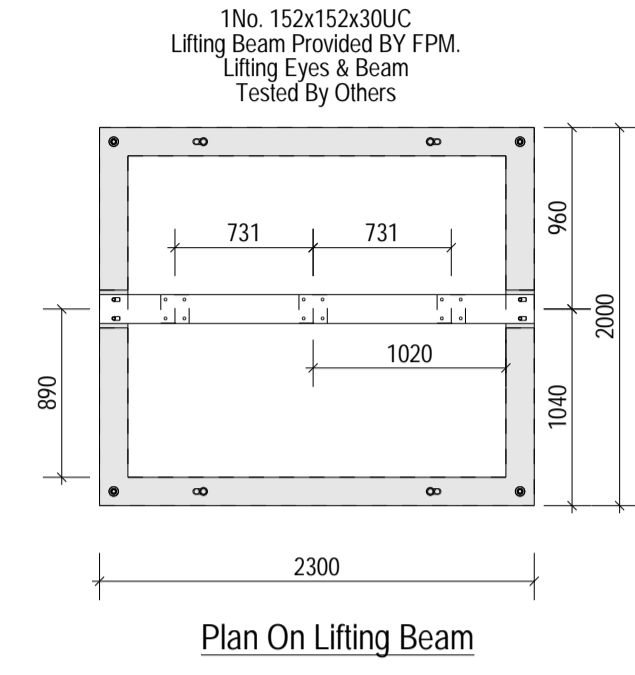


Pil levelled with shims onto a continuous bed of Cembed directly under all shaft walls
 Note: - The Internal pil base slab does not need to be supported by a bedding mortar.

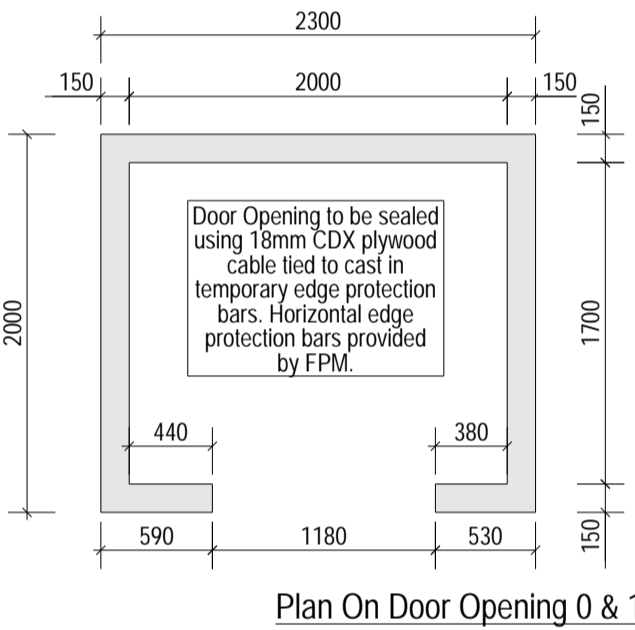
A - A



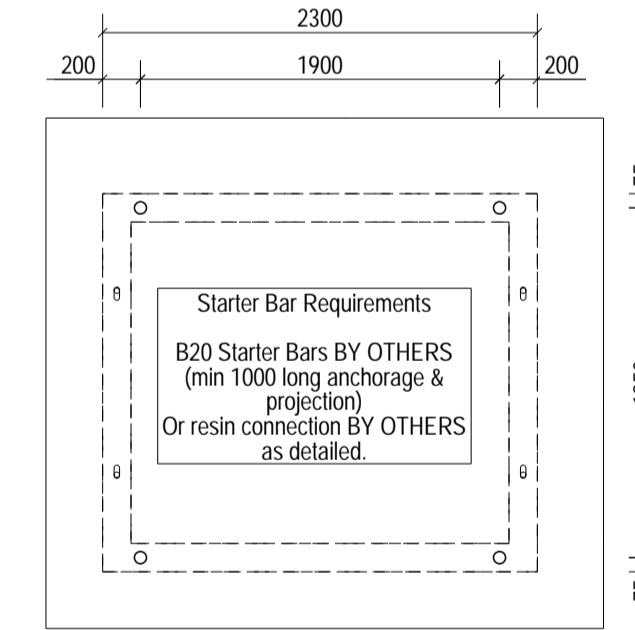
Elevation of Lift Shaft



Plan On Lifting Beam



Plan On Door Opening 0 & 1

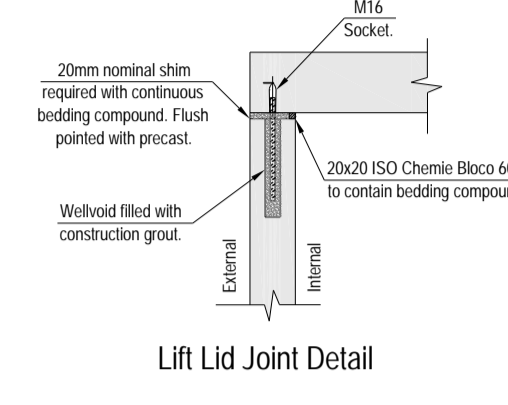


Plan On Foundation Starter Bar Locations

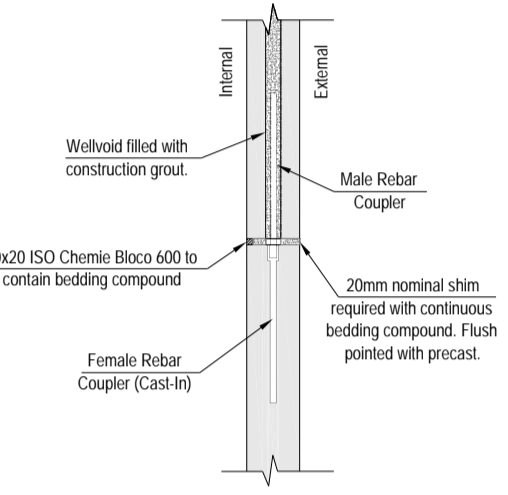
INSTALL NOTE:
 15M MAXIMUM ERECTION HEIGHT IN ONE DAY

Unit	Lifter	Weight(T)
LL-0001	RD30-CFA	2.30
LP-0001	RD36-WTA	5.73
LW-0001	RD36-WTA	5.63
LW-0002	RD36-WTA	7.19
LW-0003	RD36-WTA	7.16
LW-0004	RD36-WTA	4.23

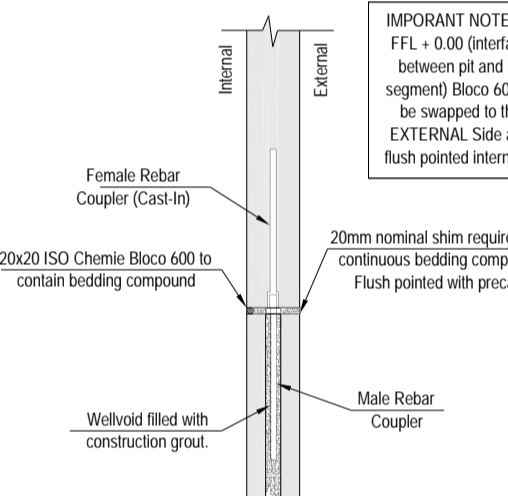
- Notes:
1. Handling
 - a) In the design of the lifting anchors, we have adopted a dynamic factor of 1.3 (stationary/mobile crane.)
 2. Concrete
 - a) Lifting strength based on 2 cubes = 25 N/mm².
 - b) Characteristic 28 day cube strength = 50 N/mm².
 - c) Concrete provides Design Chemical Class 2 (DC2) to Special Digest 1, Table F2
 - d) Lift Pit cast using DC2 Concrete containing Sika Watertight Concrete Powder for watertight concrete.
 3. Reinforcement
 - a) Reinforcement (500B or C) to BS4449.
 - b) Scheduling, dimensioning, bending and cutting to BS8666.
 - c) Cage to be tack welded and/or tied with 17 gauge annealed tying wire.
 4. Manufacture
 - a) Manufactured to BS EN 13369:2013
 - b) Tolerances: - See individual unit drawings.
 - c) Finishes: As below unless indicated otherwise on unit drawings.



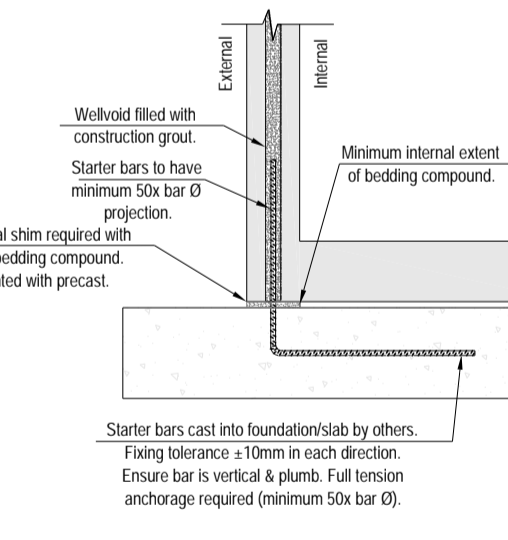
Lift Lid Joint Detail



Standard Rebar Coupler Connection - Top



Standard Rebar Coupler Connection - Bottom



Typical Starter Bar (By Others) Connection to Foundation

Top (As Cast) Surface	Front Face & Sides (Struck From Steel/Timber Mould)
Steel Trowelled	Type B

- a) Contract number or name
 - b) Unit reference and date of manufacture
 - c) Unit weight +5%
5. Design
- a) This drawing is to be read in conjunction with FP McCann unit production drawings.
 - b) Concrete design to EN1992-1-1:2004.
 - c) Design of lift shaft based upon loads provided by lift supplier and assessed temporary loads.
 - d) F. P. McCann have designed the concrete units only, the stability of the support conditions should be checked by overall scheme designer.
 - e) Design Life: >50 years of BS8500.
 - f) Cover to Reinforcement & Exposure:

Shaft & Lid	Block	Min. Cover	Max. Cover	Exposure
	25mm	20mm	30mm	XC1

Lift Pit	Block	Min. Cover	Max. Cover	Exposure
	35mm	30mm	40mm	XC3/4

- a) Fire resistance - Min. 1 hour.
6. Installation
- a) Unrestricted access to be provided by main contractor to a minimum of 25m above FFL. This includes the removal of all beams, cladding rails, etc.
 - b) Main contractor to ensure base slab is installed to the levels shown on this drawing. Allowable tolerance -0/-10mm.
 - c) Erection: Refer to FPM Installation notes.
 - d) Internal shaft dimension to be built to a -0/+25mm tolerance
 - e) Vehicles should not be permitted within the immediate vicinity of the lift shaft during construction by means of fencing or similar method
7. Foundation
- a) Foundations must have a minimum of C20/25 concrete and be at least 250mm thick (By Others).
 - b) Please refer to the below calculation for the foundation design: 05-BYL-1462-FPMC-LIFT1-C01

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Overall Length/Width	Variation	Width Of Walls	Variation
Up to 3.0m	± 5mm	Up to 150mm	± 5mm
3.01 to 6.0m	± 9mm	> 150mm	± 6mm
Additional for every subsequent 6m	± 6mm	Fixings/inserts	± 5mm
		Door opening size	-5/+10mm
Height Of Unit	± 5mm	Internal Shaft Dimensions	± 6mm
Up to 3.0m	± 9mm		
3.01 to 4.5m			

Rev	Date	Revision Detail	By	Chk	App
C01	14-03-24	No Comments Issued For Construction	DT	NB	LK
P01	16-02-24	Comments By 23.02.2024 Issued For Approval	DT	NB	LK

Status: As Built Suitability: A

Client: Panattoni Park Poyle

Project: General Arrangement of Lift Shaft

Title: General Arrangement of Lift Shaft

Drawn: DT	Checked: NB	Approved: LK
Internal Ref: 05-BYL-1462	Date: 13-02-24	Scale: 1:40
Drawing No: P23025-FPM-ZZ-XX-DR-X-0100	Rev: C01	

Mark	Qty	Weight(T)	Volume(m ³)
LL-0001	1	2.30	0.92
LP-0001	1	5.73	2.23
LW-0001	2	5.63	2.23
LW-0002	1	7.19	2.86
LW-0003	1	7.16	2.84
LW-0004	1	4.23	1.68

LOOSE FITTING TAKE OFF		
Description	Quantity	Material
M16 340mm Threaded Bar	4 No.	Zinc Plated
TSE20 Male Coupler 1000mm	20 No.	Galv head & RC Bar

Approved Product List:

Bedding Compound - Tarmac Cembel / Parex Dry Pack C (Summer) / Fosroc Cembel.

Construction Grout - Pozament 5 Star Grout PLATINUM / Speedsure Grout / Larsen Multigrout 60 / FPM High Performance Grout.

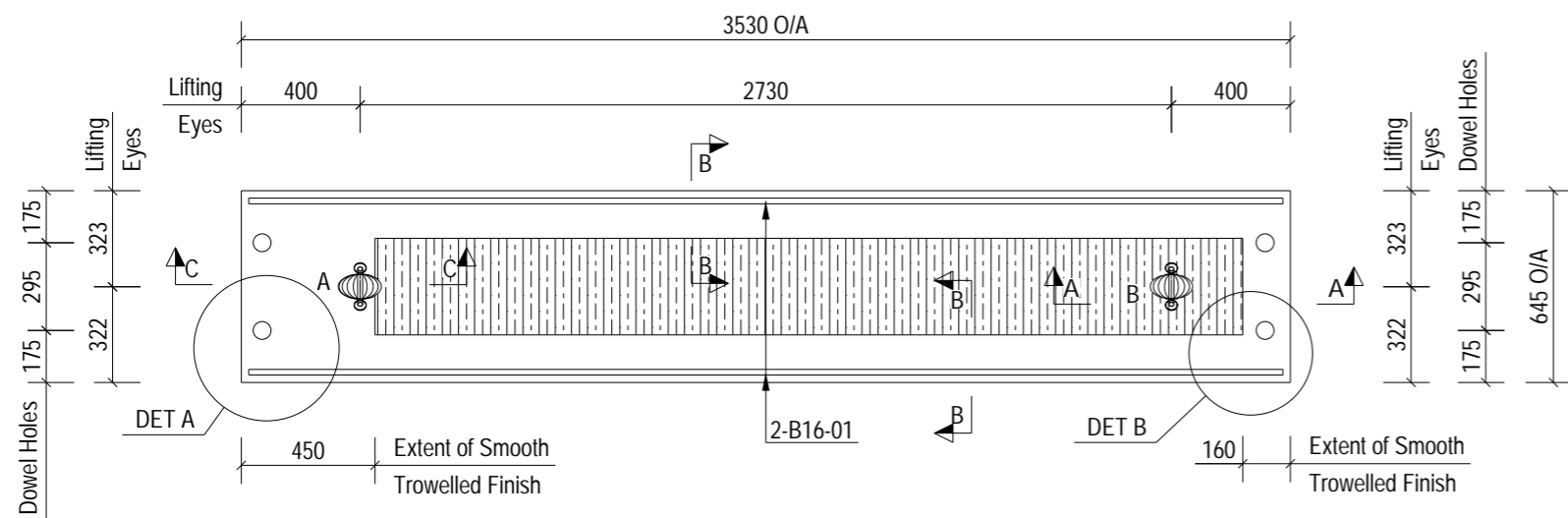
All Approved FPM Products

REQUIRED CONNECTIONS:

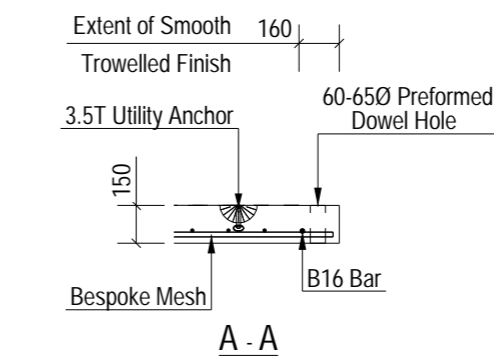
Socket Connections as Detailed

B20 Rebar Couplers (1000 long) & B20 Starter Bars BY OTHERS (min 1000 long anchorage & projection) Or resin connection BY OTHERS as detailed.

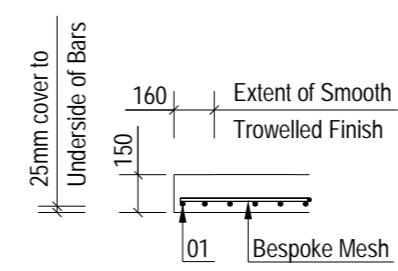
- The Construction (Design & Management) Regulations 2015
- a) If you are unsure of your responsibilities please refer to the HSE website.
 - b) These notes should be read by all CDM duty holders alongside the general arrangement layout and additional notes, whilst we do not go into specifics such as working at heights, working over excavations, slips and trips etc, where risks shown in the notes and on the drawing some potential hazards/risks are identified and should be assessed accordingly by the main contractor and the design team prior to any site works commencing
 - c) Particular attention should be made to the notes identified by 1 which have the potential for significant risk, where not adhered to, this FP McCann general arrangement should be read in conjunction with all other relevant drawings available from the design team e.g Architect, Engineer, Steelwork Sub-Contractor etc.
 - d) Lifting - All elements must be lifted in accordance with FP McCann's lifting plan/method statement, or in the case of supply only contracts see Section 4.0 of the FP McCann "Guide for offloading and the installation of FP McCann Precast Concrete Lift Shaft components for supply only contracts".
 - e) Installation - Refer to FPM installation guidance notes.



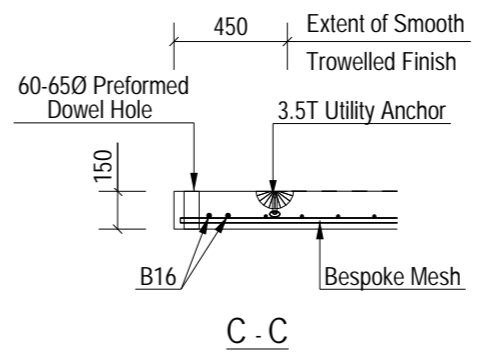
Plan on Mould



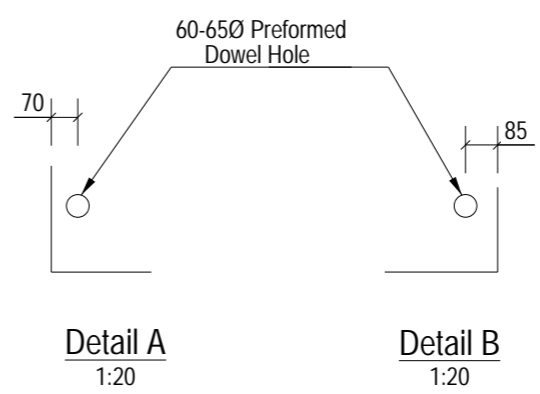
A - A



B - B

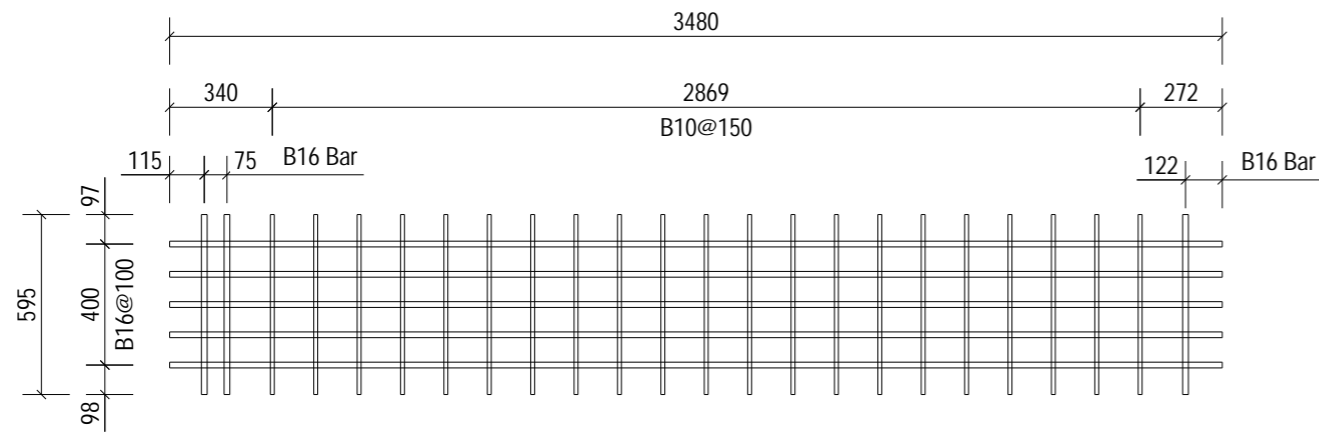


C - C



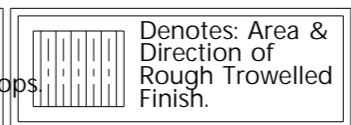
Detail A
1:20

Detail B
1:20



Mesh Details
Bespoke Mesh

Note
All Biscuits over 2.5m long & 1.0m wide to be handled by crane only using designated lifting sockets/loops. Forklift trucks are not to be used.



Denotes: Area & Direction of Rough Trowelled Finish.

Note
Mesh to be trimmed locally to avoid clash with preformed holes.

Note
Demoulding Procedure
1. Ensure that concrete has achieved a characteristic strength of 25 N/mm².
2. Lift biscuit from lifter A until suction is broken.
3. Use lifters A&B to load biscuit.

Unit drawn from floated face

NOTES:

Type.	Biscuit	
Length.	3530	+4 / -4
Height.	150	+4 / -4
Width.	645	+4 / -4
Weight. (T)	0.85	
Volume. (m ³)	0.34	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	As Noted	

RC Drg. Ref.	N/A	
BBS Ref.	05-BYL-1462-BS-0001-BBS	
Calculation Ref.	FPMC-BS-175-3650_RevC01	
Cover.	25mm Nominal, 20mm Minimum	
Casting Bed.	Flat	
Mark.	BS-0001	
Lifting.	As standard procedures.	
Stacking.	Flat	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	3.5T Utility Anchor	LAPU035095G

C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

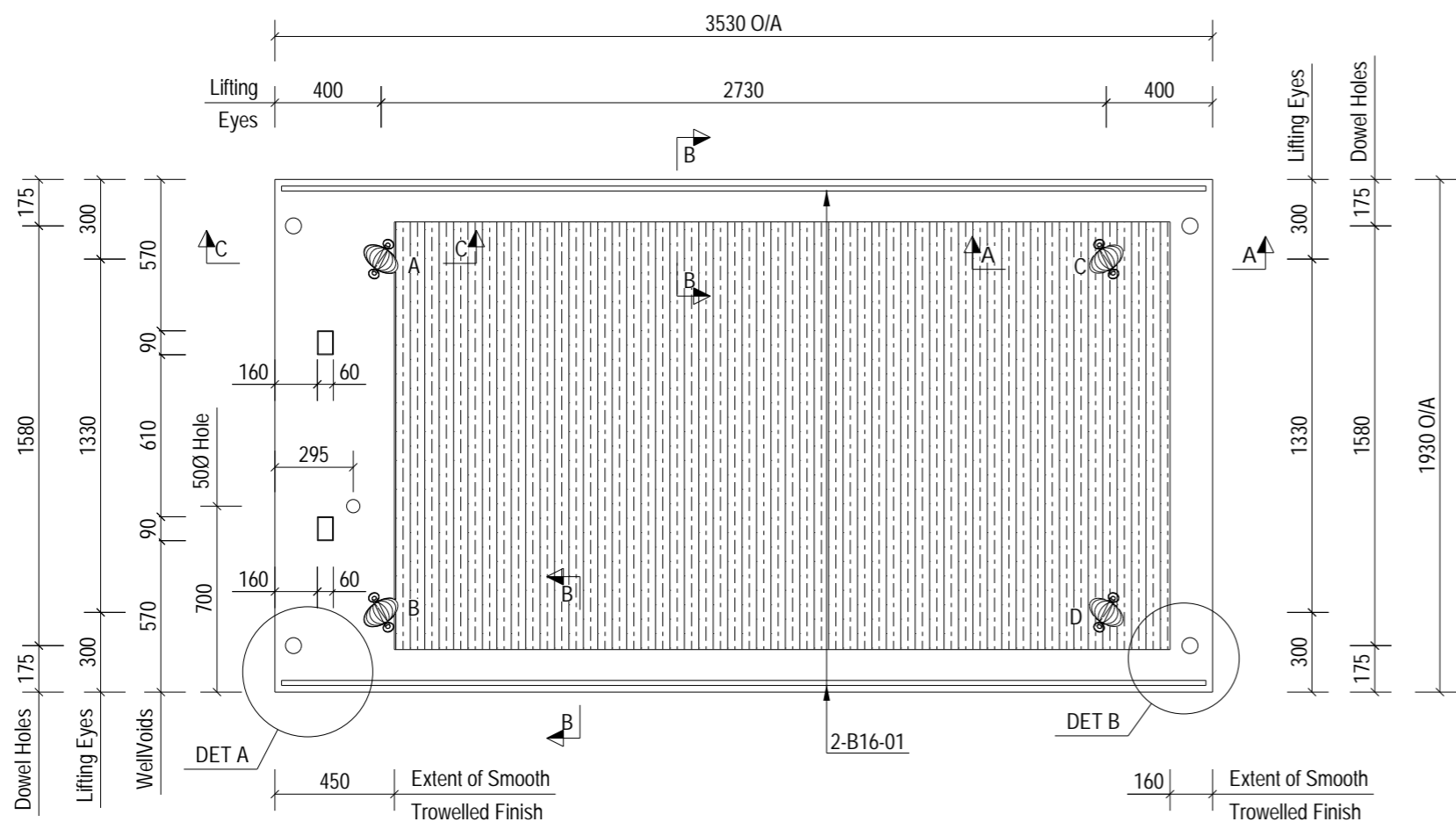
FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

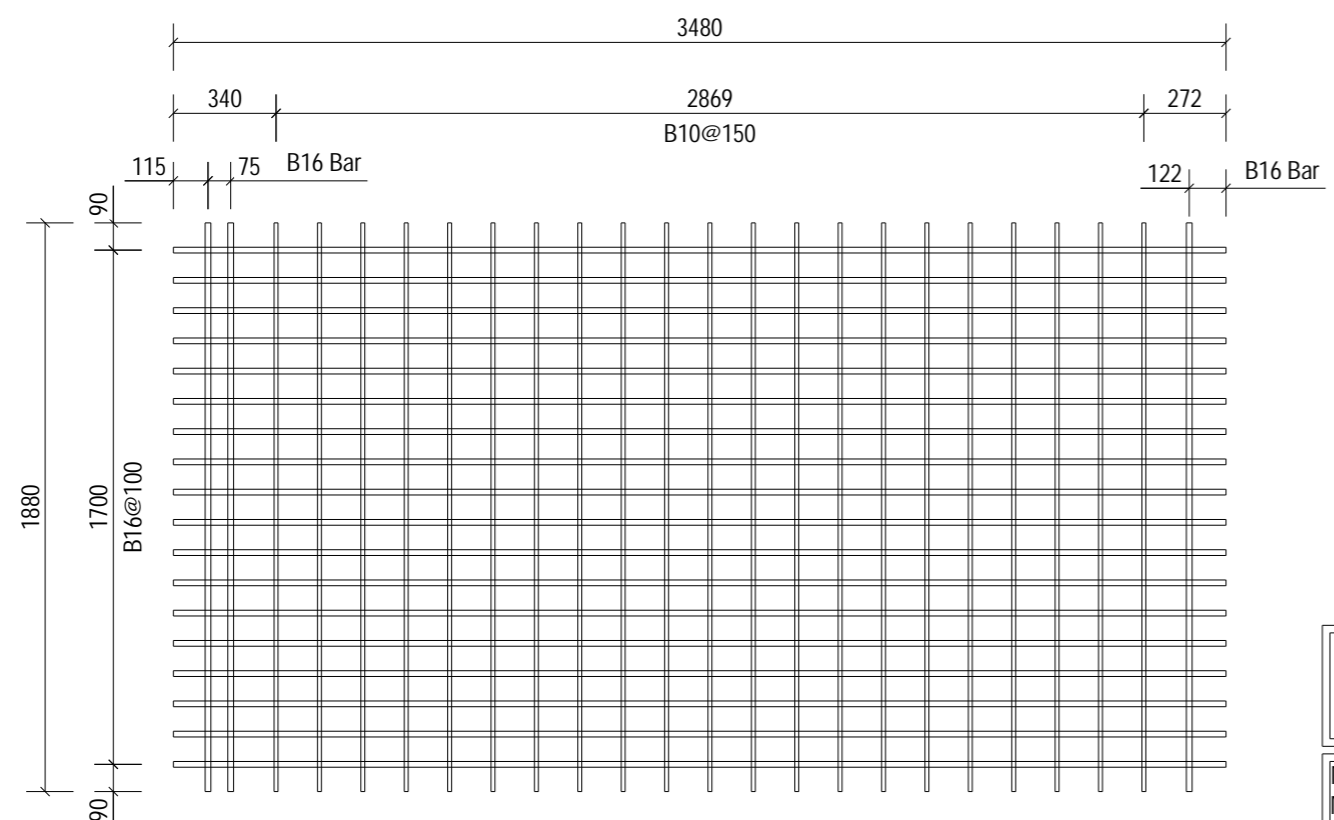
Project. **Panattoni Park Poyle**

Title. **GA1 of Biscuit BS-0001**

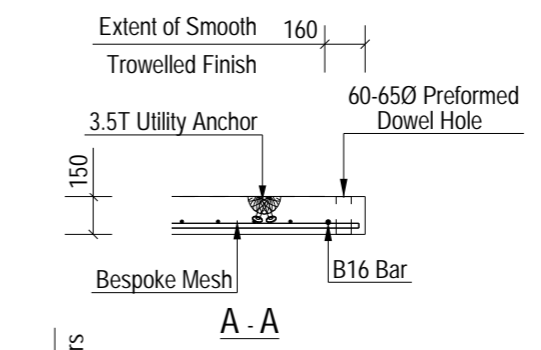
Scale: 1:30	Status: As Built - CR	
Date: 19-03-24		
Drawn: RS	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-BS-0001-GA1	Rev: C01	



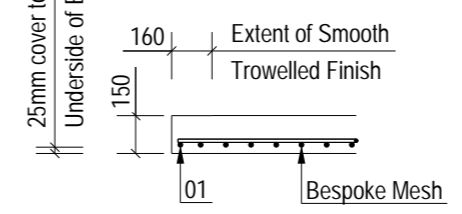
Plan on Mould



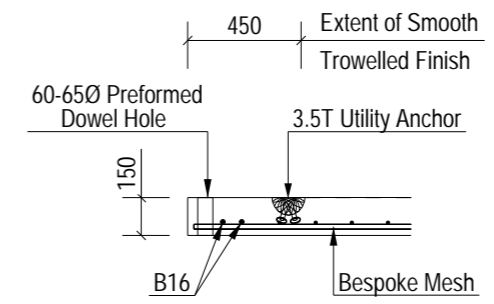
Mesh Details
Bespoke Mesh



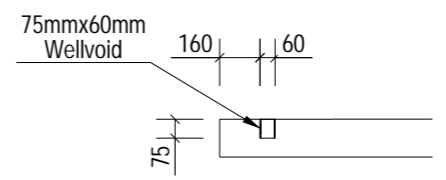
A - A



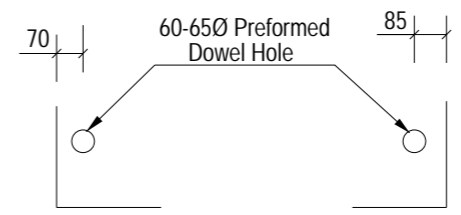
B - B



C - C



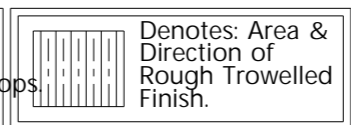
Wellvoid Detail



Detail A
1:20

Detail B
1:20

Note
All Biscuits over 2.5m long & 1.0m wide to be handled by crane only using designated lifting sockets/loops. Forklift trucks are not to be used.



Denotes: Area & Direction of Rough Trowelled Finish.

Note
Mesh to be trimmed locally to avoid clash with preformed holes.

Note
Demoulding Procedure
1. Ensure that concrete has achieved a characteristic strength of 25 N/mm².
2. Lift biscuit from lifters A,B,C until suction is broken.
3. Use lifters A,B,C to load biscuit.

NOTES:

Type.	Biscuit	
Length.	3530	+4 / -4
Height.	150	+4 / -4
Width.	1930	+4 / -4
Weight. (T)	2.55	
Volume. (m ³)	1.02	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	As Noted	

RC Drg. Ref.	N/A	
BBS Ref.	05-BYL-1462-BS-0002-BBS	
Calculation Ref.	FPMC-BS-175-3650_RevC01	
Cover.	25mm Nominal, 20mm Minimum	
Casting Bed.	Flat	

Mark.	BS-0002	
Lifting.	As standard procedures.	
Stacking.	Flat	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	3.5T Utility Anchor	LAPU035095G
2	90*60*75 Well Void	0

C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project.
Panattoni Park Poyle

Title.
GA1 of Biscuit BS-0002

Scale: 1:30	Status: As Built - CR
Date: 19-03-24	

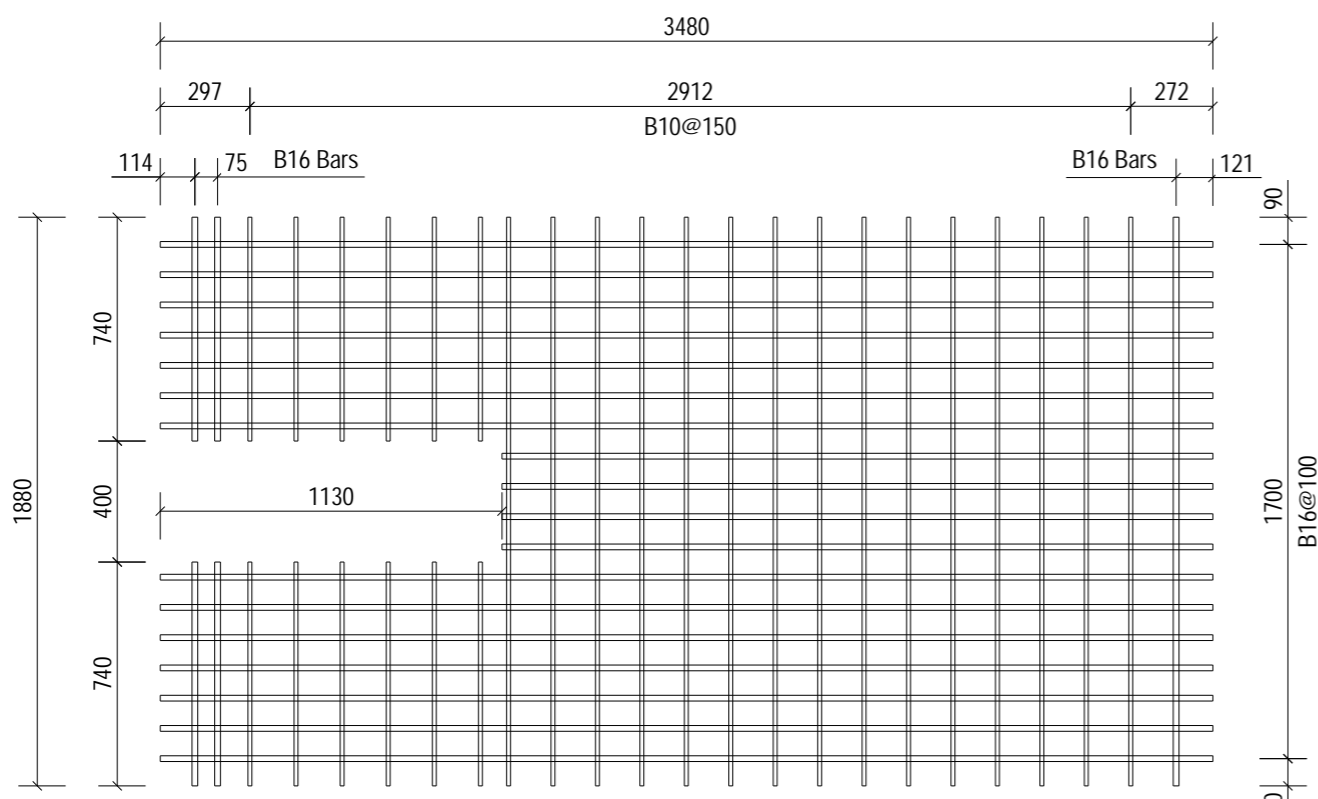
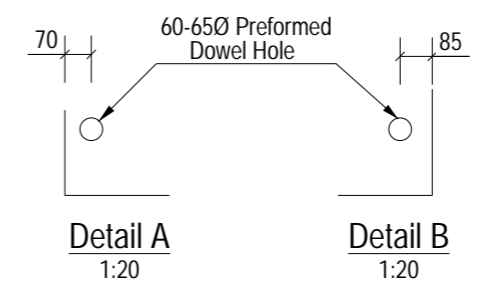
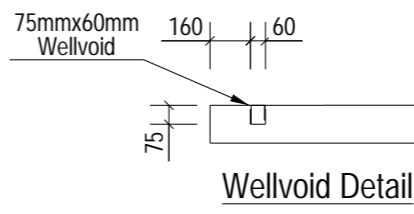
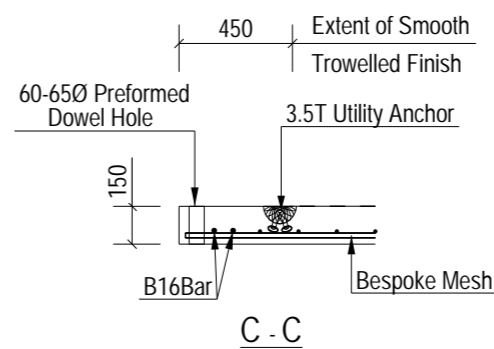
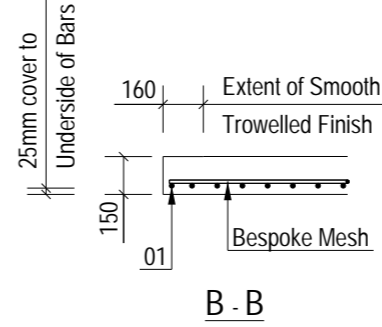
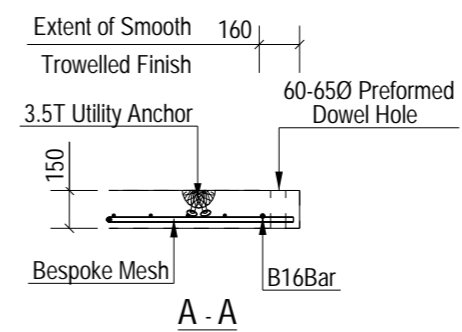
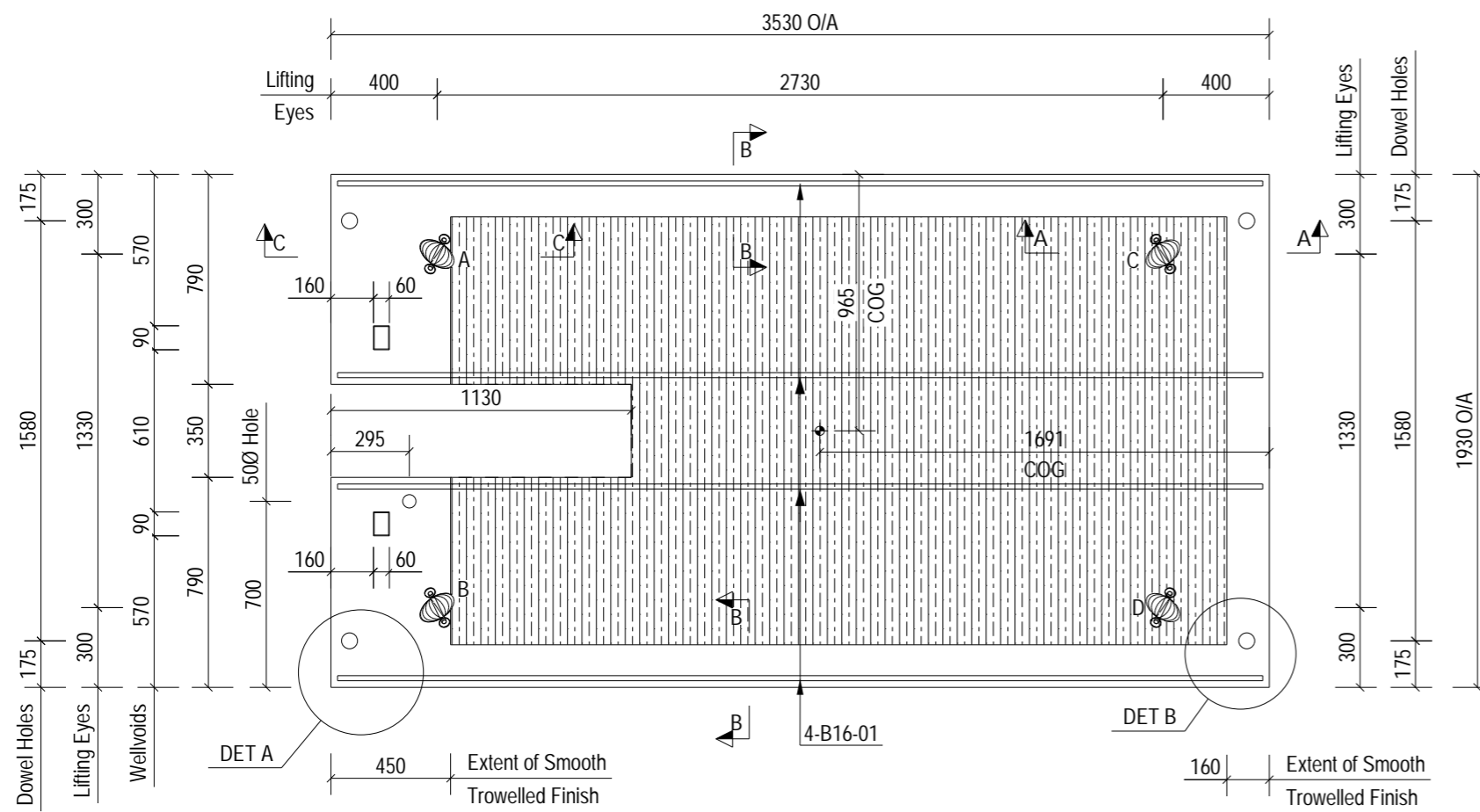
Drawn: RS	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-BS-0002-GA1		Rev: C01

A3

10mm

10mm

A3



Note
All Biscuits over 2.5m long & 1.0m wide to be handled by crane only using designated lifting sockets/loops. Forklift trucks are not to be used.

Denotes: Area & Direction of Rough Trowelled Finish.

Note
Mesh to be trimmed locally to avoid clash with preformed holes.

Note
Demoulding Procedure
1. Ensure that concrete has achieved a characteristic strength of 25 N/mm².
2. Lift biscuit from lifters A,B,C until suction is broken.
3. Use lifters A,B,C & D to load biscuit.

Unit drawn from floated face.

NOTES:

Type.	Biscuit	
Length.	3530	+4 / -4
Height.	150	+4 / -4
Width.	1930	+4 / -4
Weight. (T)	2.40	
Volume. (m ³)	0.96	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	As Noted	

RC Drg. Ref.	N/A	
BBS Ref.	05-BYL-1462-BS-0003-BBS	
Calculation Ref.	FPMC-BS-175-3650_RevC01	
Cover.	25mm Nominal, 20mm Minimum	
Casting Bed.	Flat	
Mark.	BS-0003	
Lifting.	As standard procedures.	
Stacking.	Flat	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666.
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	3.5T Utility Anchor	LAPU035095G
2	90*60*75 Well Void	0

C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

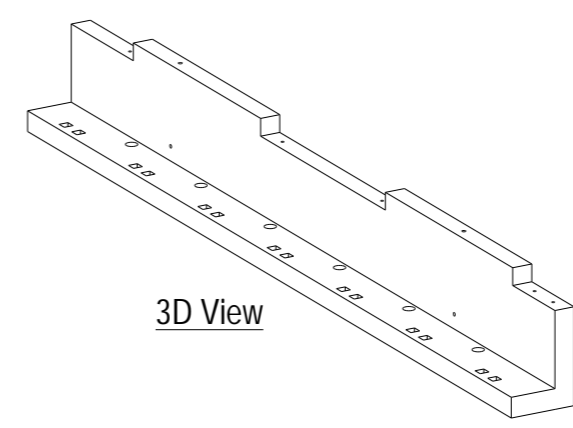
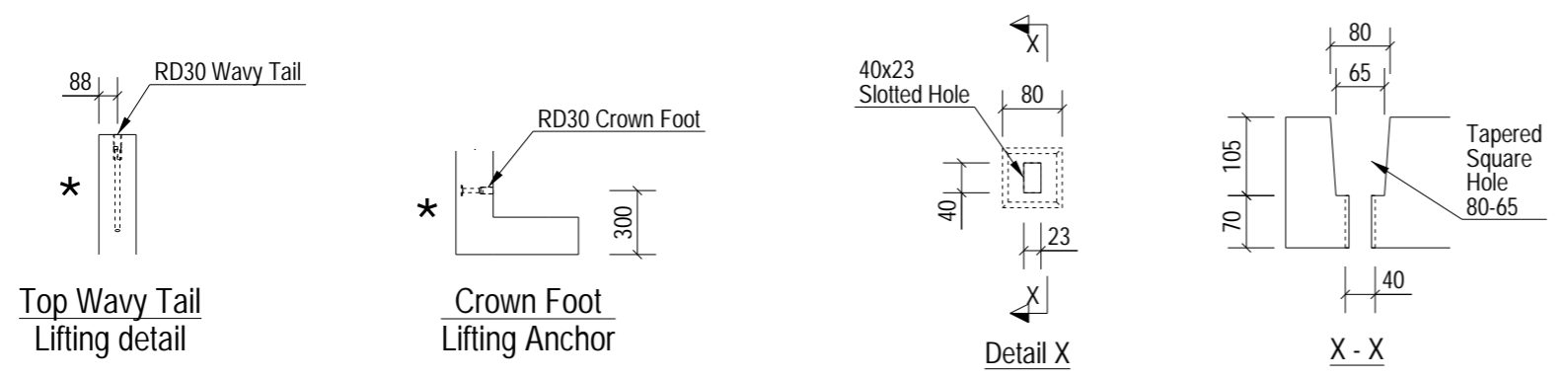
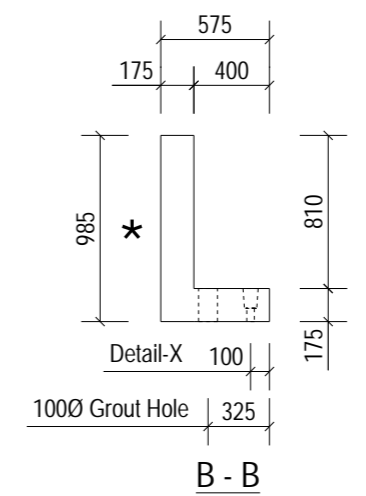
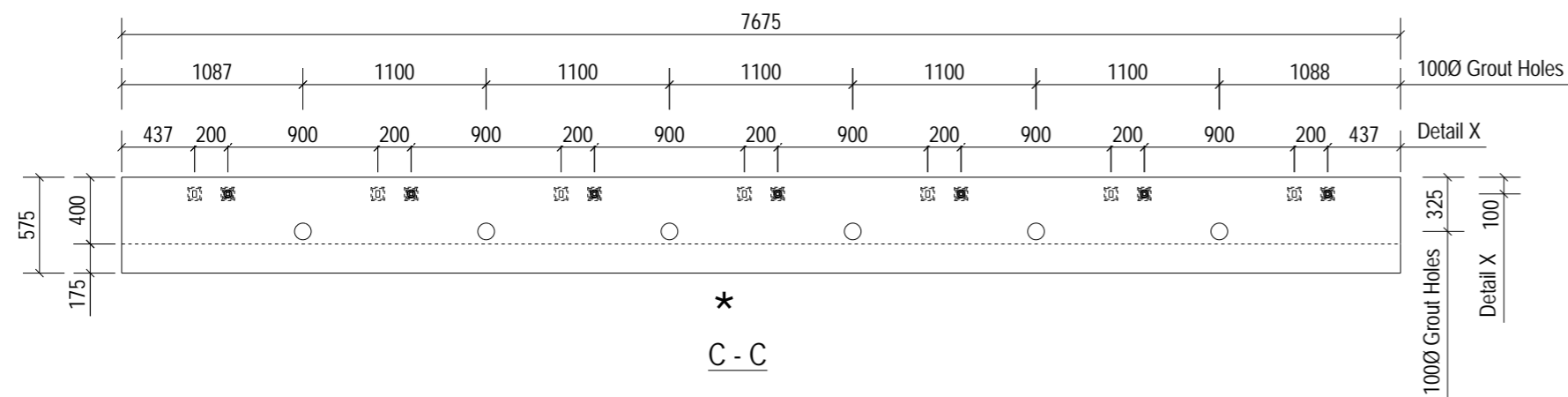
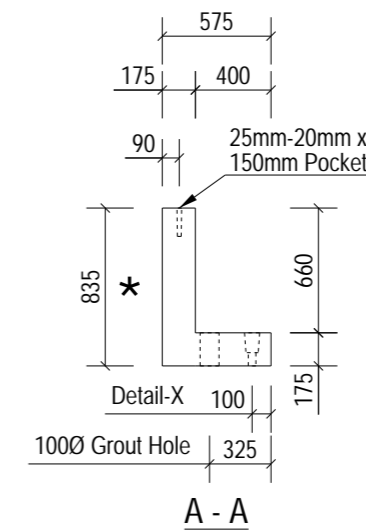
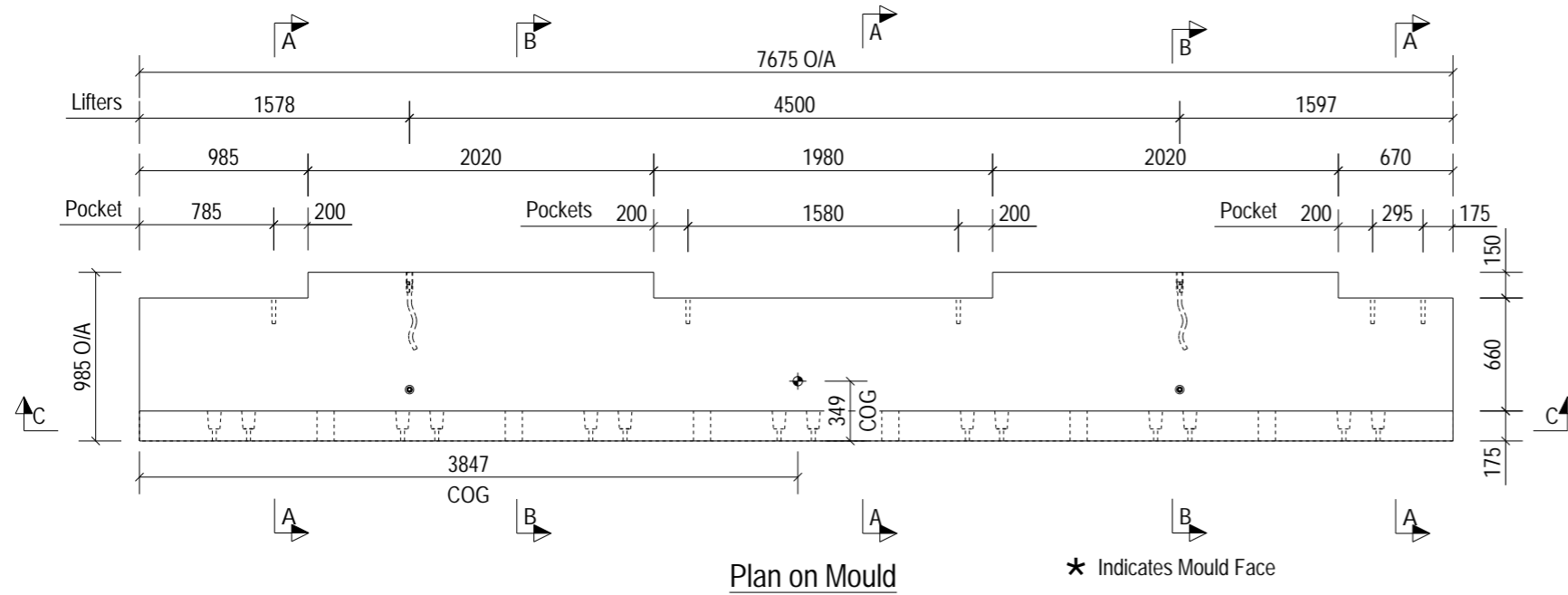
Client: **winvic**

Project: **Panattoni Park Poyle**

Title: **GA1 of Biscuit BS-0003**

Scale: 1:30	Status: As Built - CR
Date: 19-03-24	

Drawn: RS	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-BS-0003-GA1	Rev: C01	



NOTES:

Type.	BACKWALL	
Length.	7675	+4 / -4
Height.	985	+4 / -4
Width.	175	+4 / -4
Weight. (T)	4.37	
Volume. (m³)	1.75	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-BW-0001-RC1	
BBS Ref.	05-BYL-1462-BW-0001-BBS	
Calculation Ref.	FPMC-50-BW_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	BW-0001	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	7 No.
Excalibur Bolt	(M20*300)	7 No.
Biscuit	(B12 x 300mm)	5 No.

C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client: **winvic**

Project: **Panattoni Park Poyle**

Title: **GA1 of BACKWALL BW-0001**

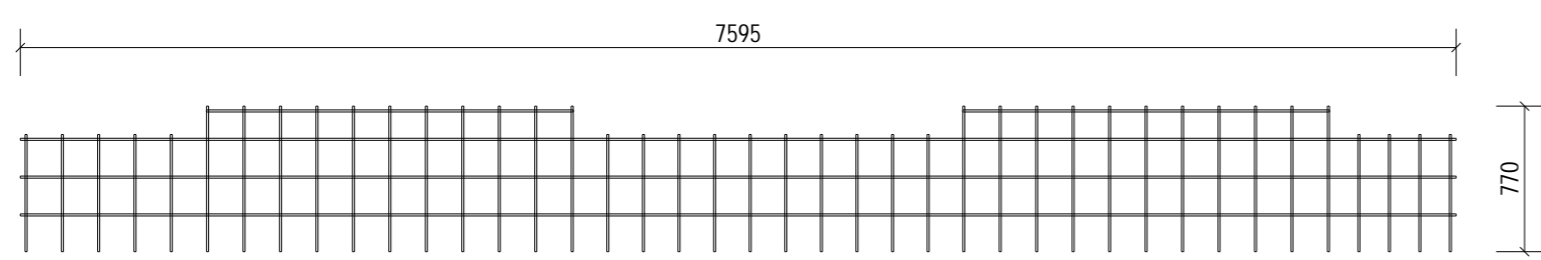
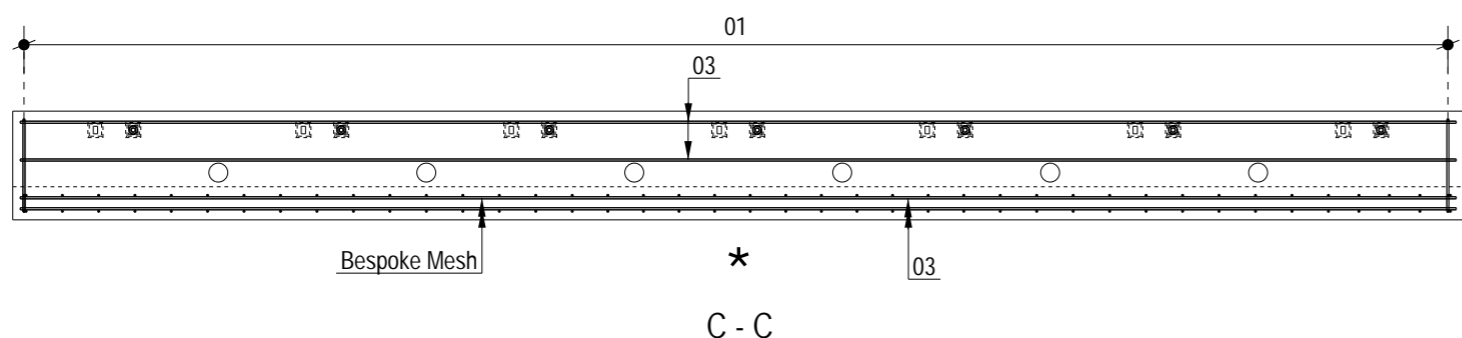
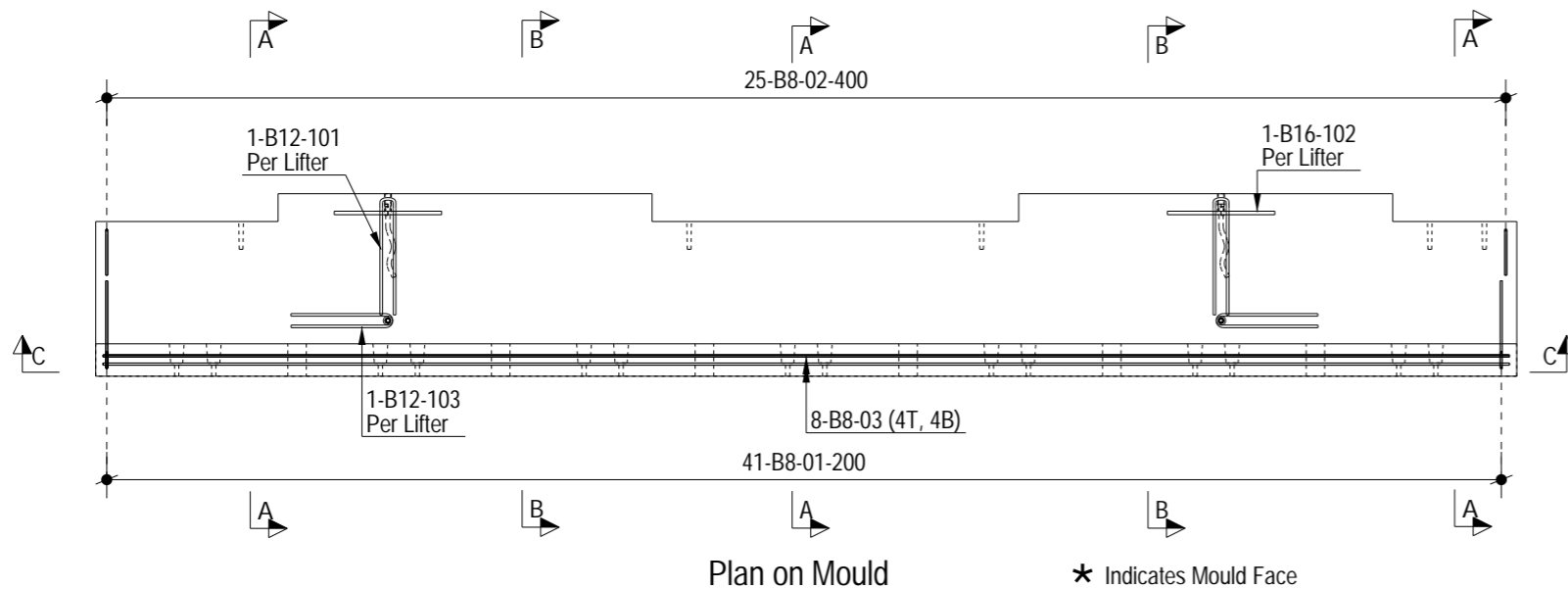
Scale: 1:60 Status: As Built - CR

Drawn: RS Checked: NB Approved: SJH

Drawing No : **05-BYL-1462-BW-0001-GA1** Rev: **C01**

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

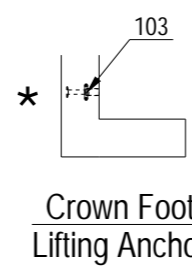
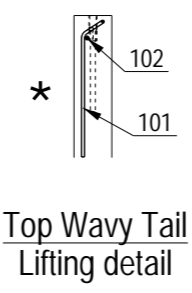
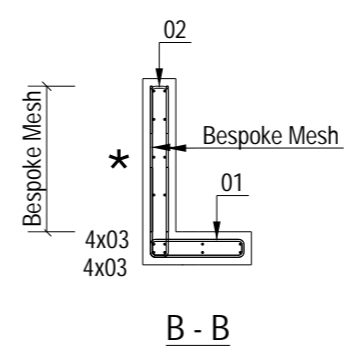
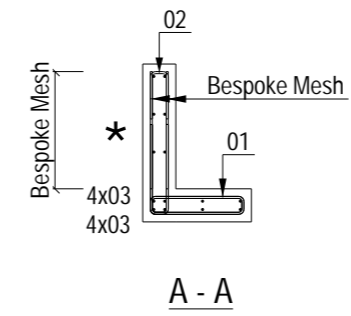
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



Bespoke Mesh
2No. Required
1No. Each face, note mesh orientation on sections.

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

MESH RENINFORCEMENT
ALL MESH - B8@200CRS BOTH DIRECTION



NOTES:

Type.	BACKWALL
Mark.	BW-0001
GA Drg. Ref.	05-BYL-1462-BW-0001-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

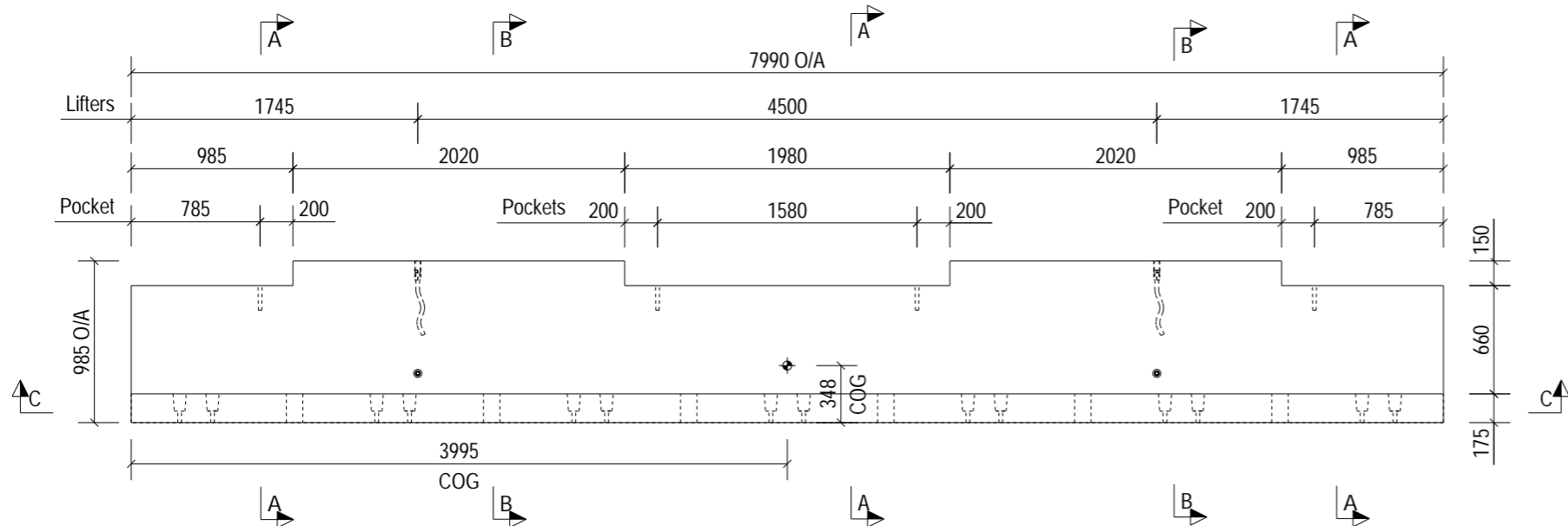
Client.

Project. **Panattoni Park Poyle**

Title. **RC1 of BACKWALL BW-0001**

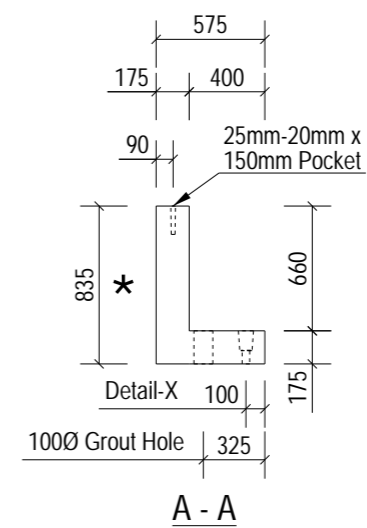
Scale: 1:40	Status: As Built - CR	
Date: 19-03-24		
Drawn: RS	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-BW-0001-RC1		Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

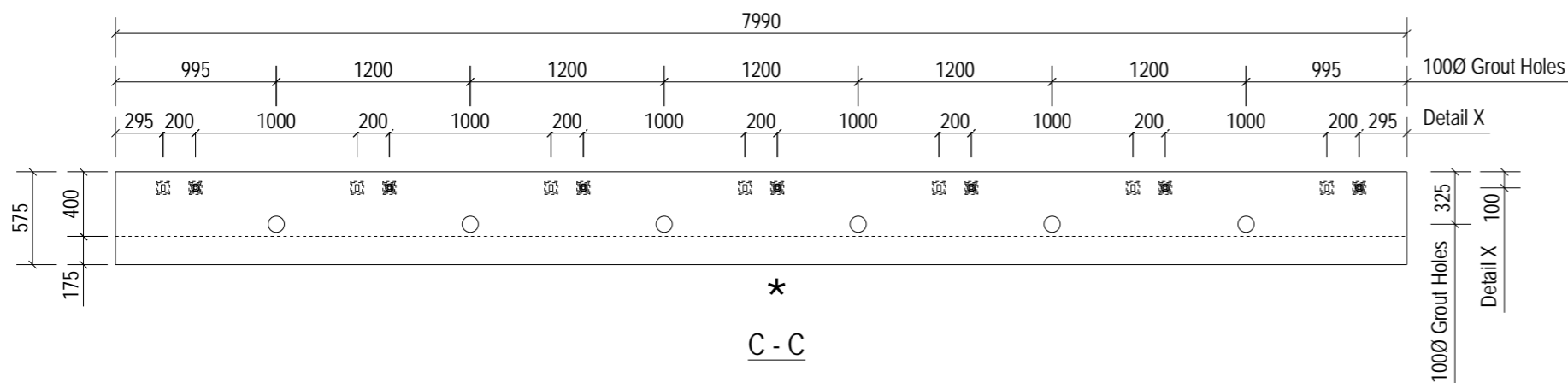


Plan on Mould

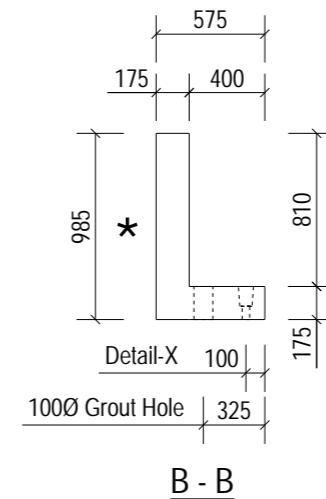
★ Indicates Mould Face



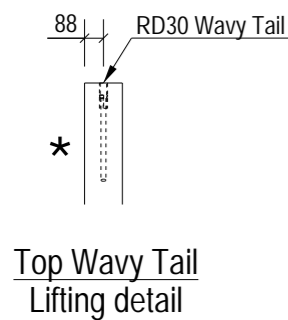
A - A



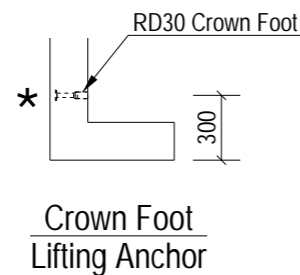
C - C



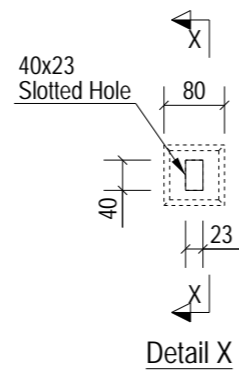
B - B



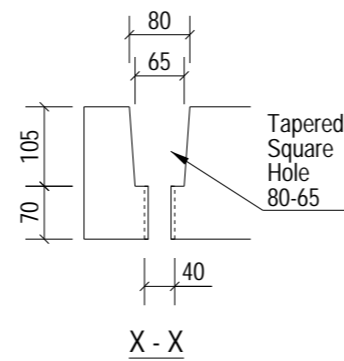
Top Wavy Tail Lifting detail



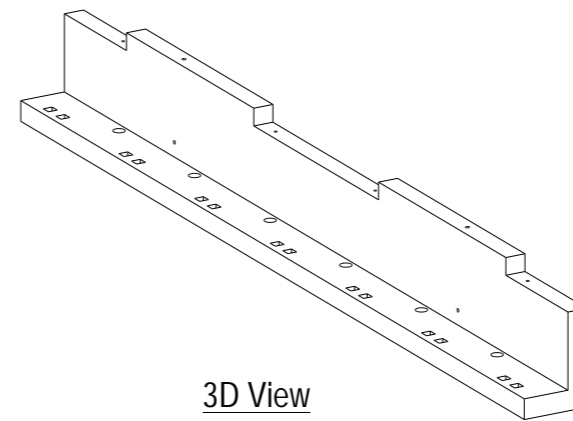
Crown Foot Lifting Anchor



Detail X



X - X



3D View

NOTES:

Type.	BACKWALL	
Length.	7990	+4 / -4
Height.	985	+4 / -4
Width.	175	+4 / -4
Weight. (T)	4.54	
Volume. (m³)	1.82	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-BW-0002-RC1	
BBS Ref.	05-BYL-1462-BW-0002-BBS	
Calculation Ref.	FPMC-50-BW_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	BW-0002	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	7 No.
Excalibur Bolt	(M20*300)	7 No.
Biscuit	(B12 x 300mm)	4 No.

C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

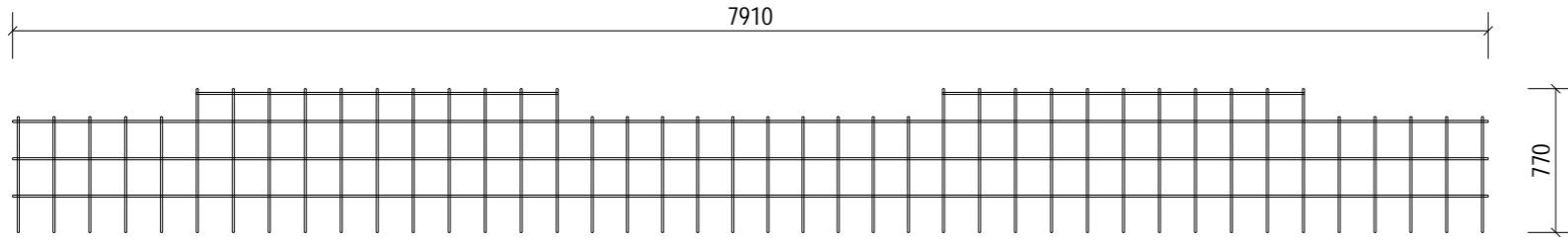
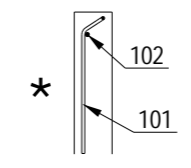
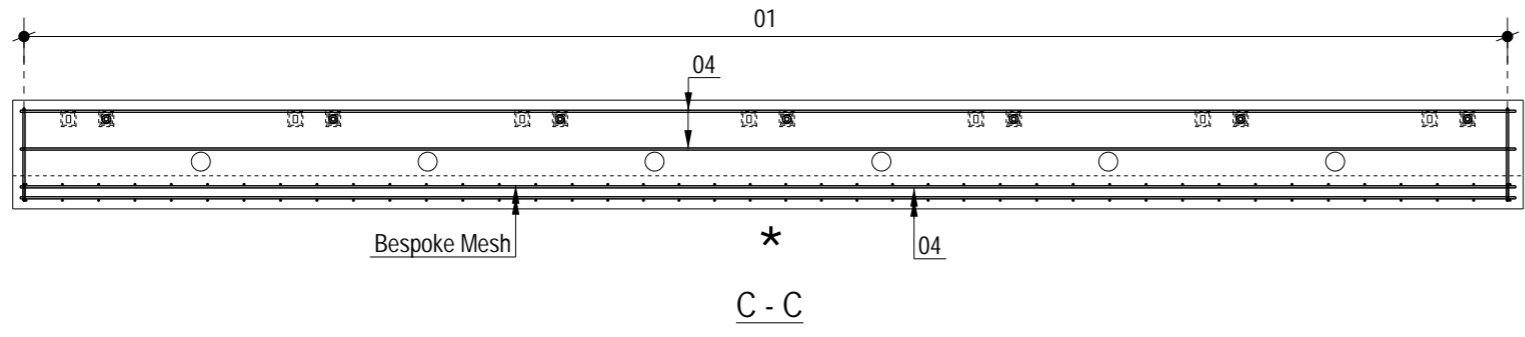
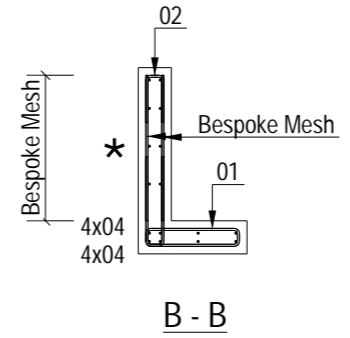
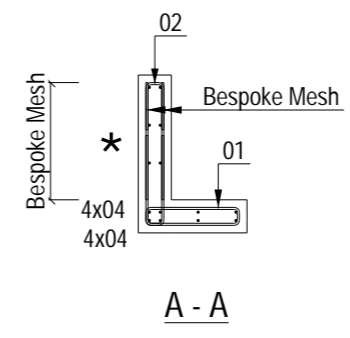
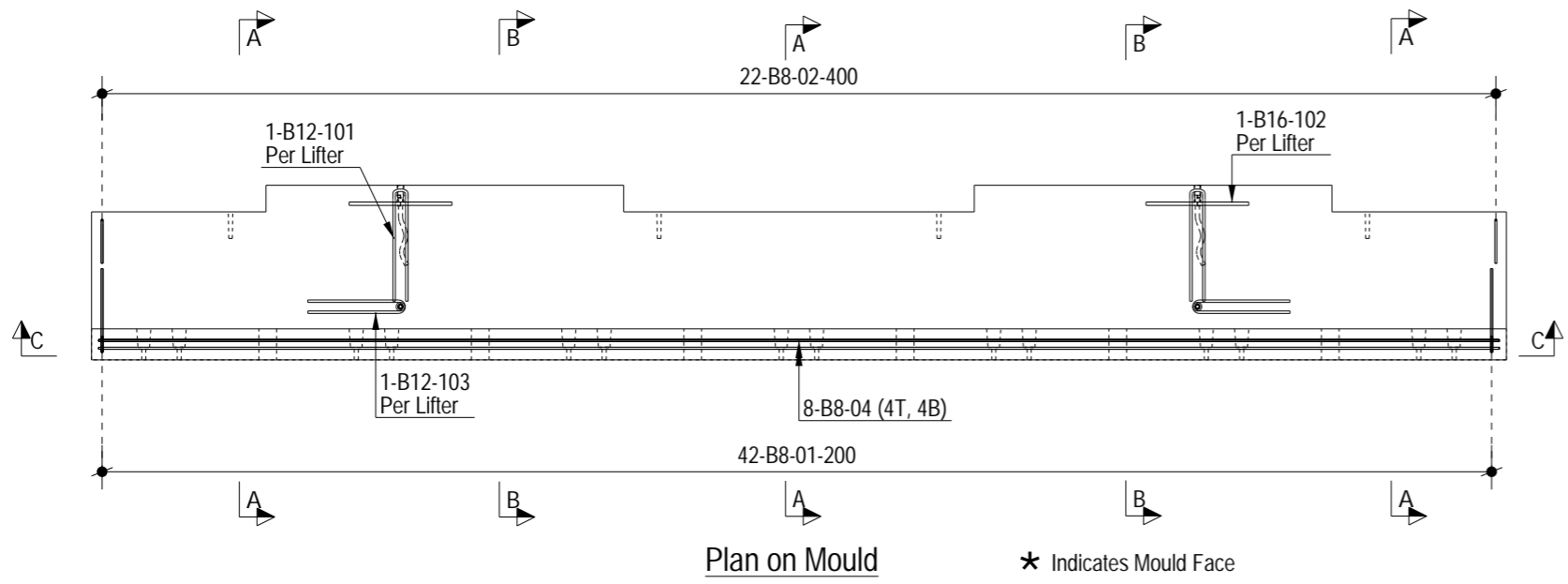
Title. **GA1 of BACKWALL BW-0002**

Scale: 1:60 Status: As Built - CR

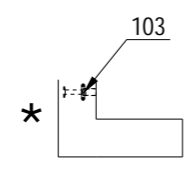
Drawn: RS Checked: NB Approved: SJH

Drawing No : **05-BYL-1462-BW-0002-GA1** Rev: **C01**

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



Bespoke Mesh
2No. Required
1No. Each face, note mesh orientation on sections.



ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

MESH RENINFORCEMENT
ALL MESH - B8@200CRS BOTH DIRECTION

NOTES:

Type.	BACKWALL
Mark.	BW-0002
GA Drg. Ref.	05-BYL-1462-BW-0002-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

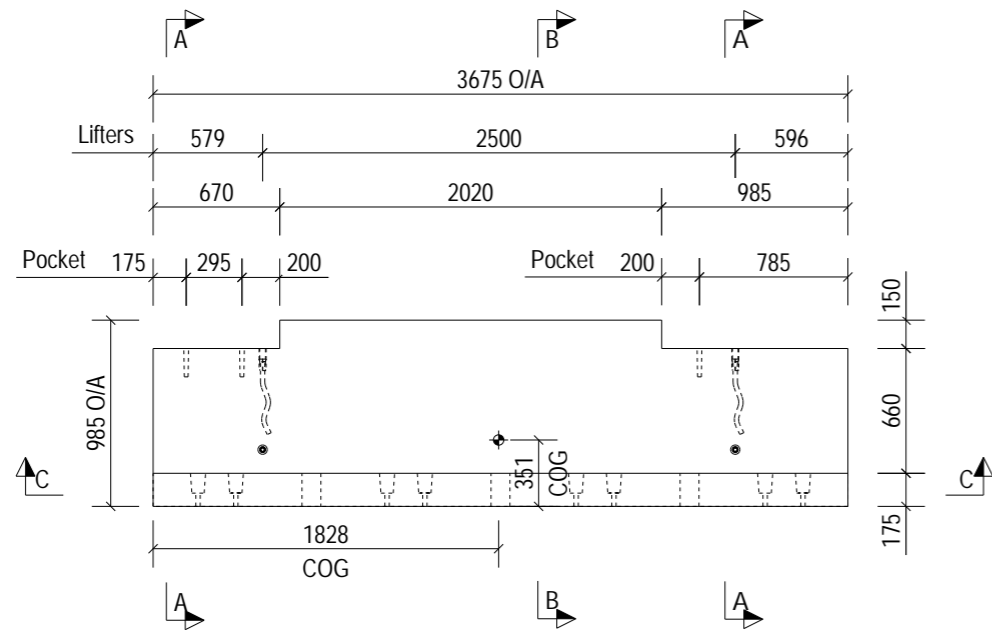
Client.

Project. Panattoni Park Poyle

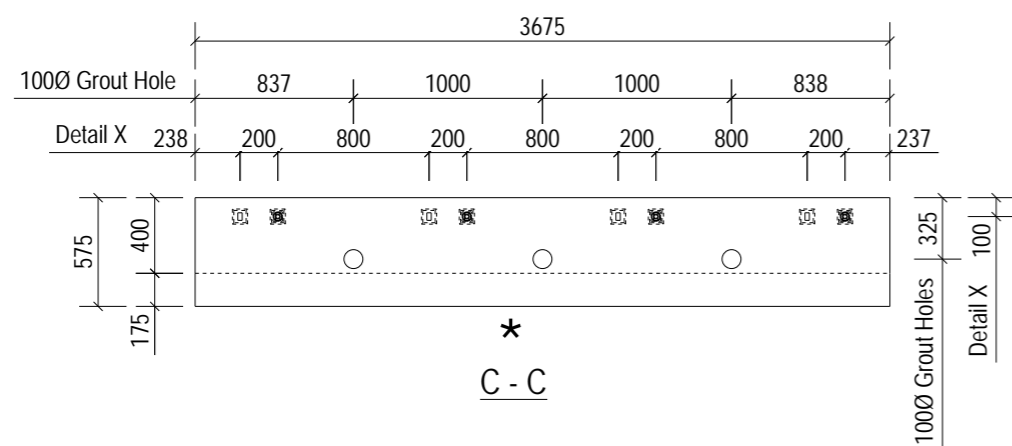
Title. RC1 of BACKWALL BW-0002

Scale: 1:40	Status: As Built - CR	
Date: 20-03-24		
Drawn: RS	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-BW-0002-RC1	Rev: C01	

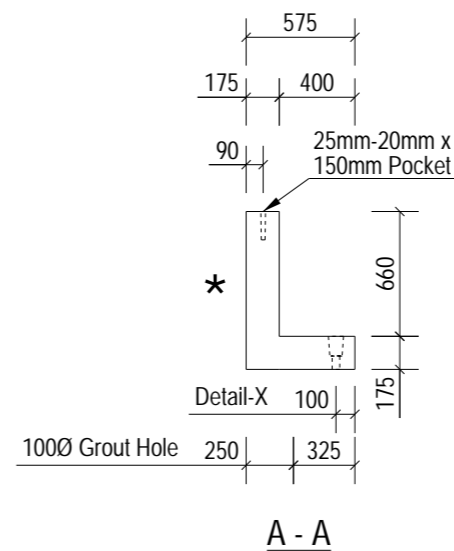
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



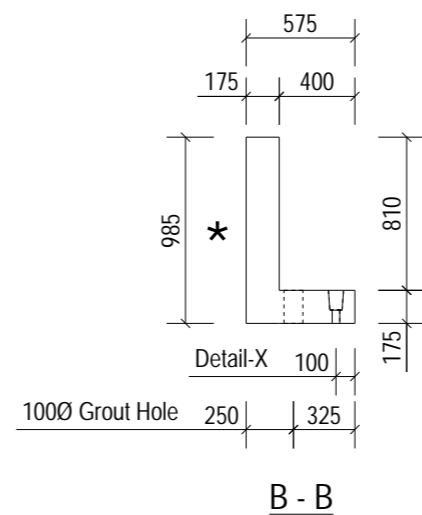
Plan on Mould * Indicates Mould Face



C - C



A - A



B - B

NOTES:

Type.	BACKWALL	
Length.	3675	+4 / -4
Height.	985	+4 / -4
Width.	175	+4 / -4
Weight. (T)	2.10	
Volume. (m ³)	0.84	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-BW-0003-RC1	
BBS Ref.	05-BYL-1462-BW-0003-BBS	
Calculation Ref.	FPMC-50-BW_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	

Mark.	BW-0003	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	4 No.
Excalibur Bolt	(M20*300)	4 No.
Biscuit	(B12 x 300mm)	3 No.

C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann
 FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

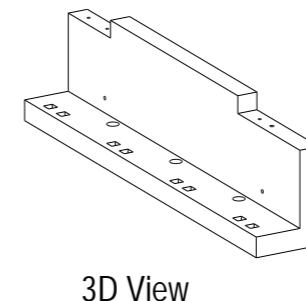
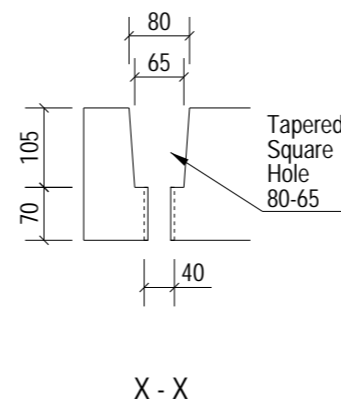
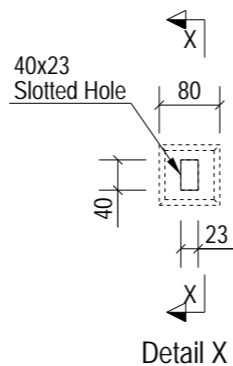
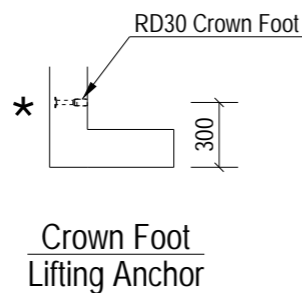
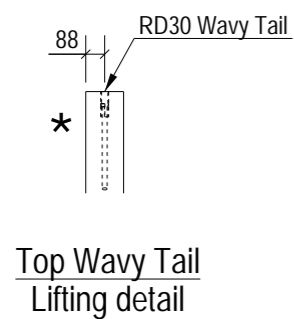
Title. **GA1 of BACKWALL BW-0003**

Scale: 1:60 Status: As Built - CR

Date: 20-03-24

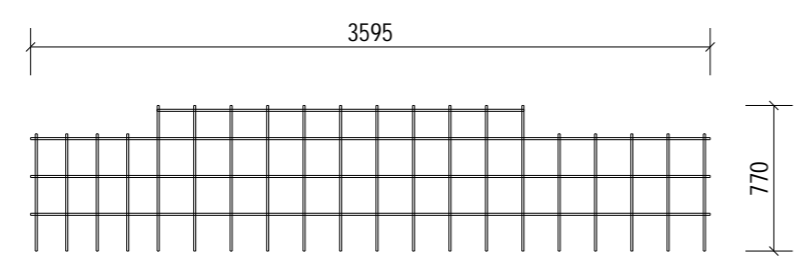
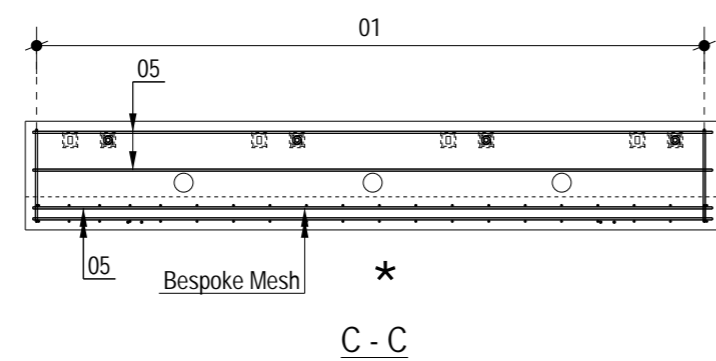
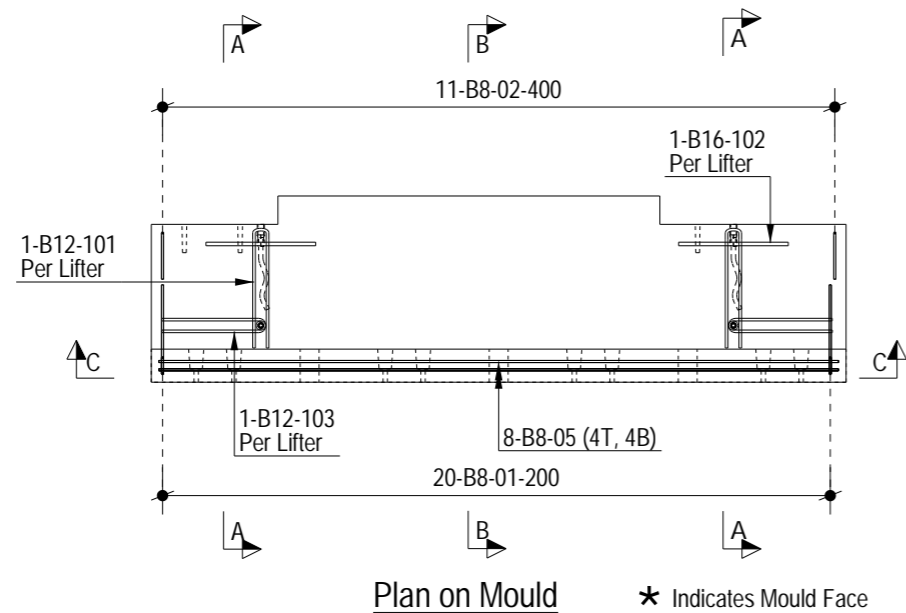
Drawn: RS Checked: NB Approved: SJH

Drawing No : **05-BYL-1462-BW-0003-GA1** Rev: **C01**



3D View

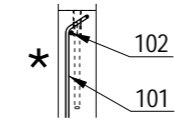
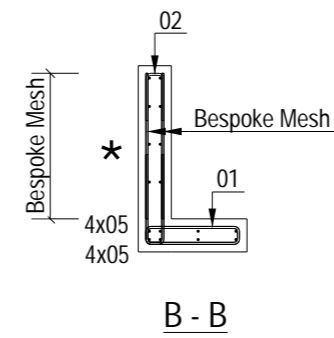
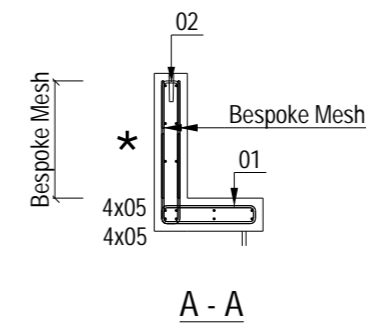
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



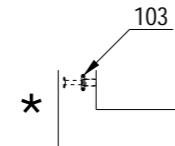
Bespoke Mesh
 2No. Required
 1No. Each face, note mesh orientation on sections.

ALL DIMENSION SHOWN ARE OVERALL SIZES.
 REFER TO THE PXML FOR
 ALL SPECIFIC BAR LOCATIONS.

MESH RENINFORCEMENT
 ALL MESH - B8@200CRS BOTH DIRECTION



Top Wavy Tail
 Lifting detail



Crown Foot
 Lifting Anchor

NOTES:

Type.	BACKWALL
Mark.	BW-0003
GA Drg. Ref.	05-BYL-1462-BW-0003-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 guage annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	21-03-24	Issued For Manufacture.	RS	NB	SJH

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire.
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

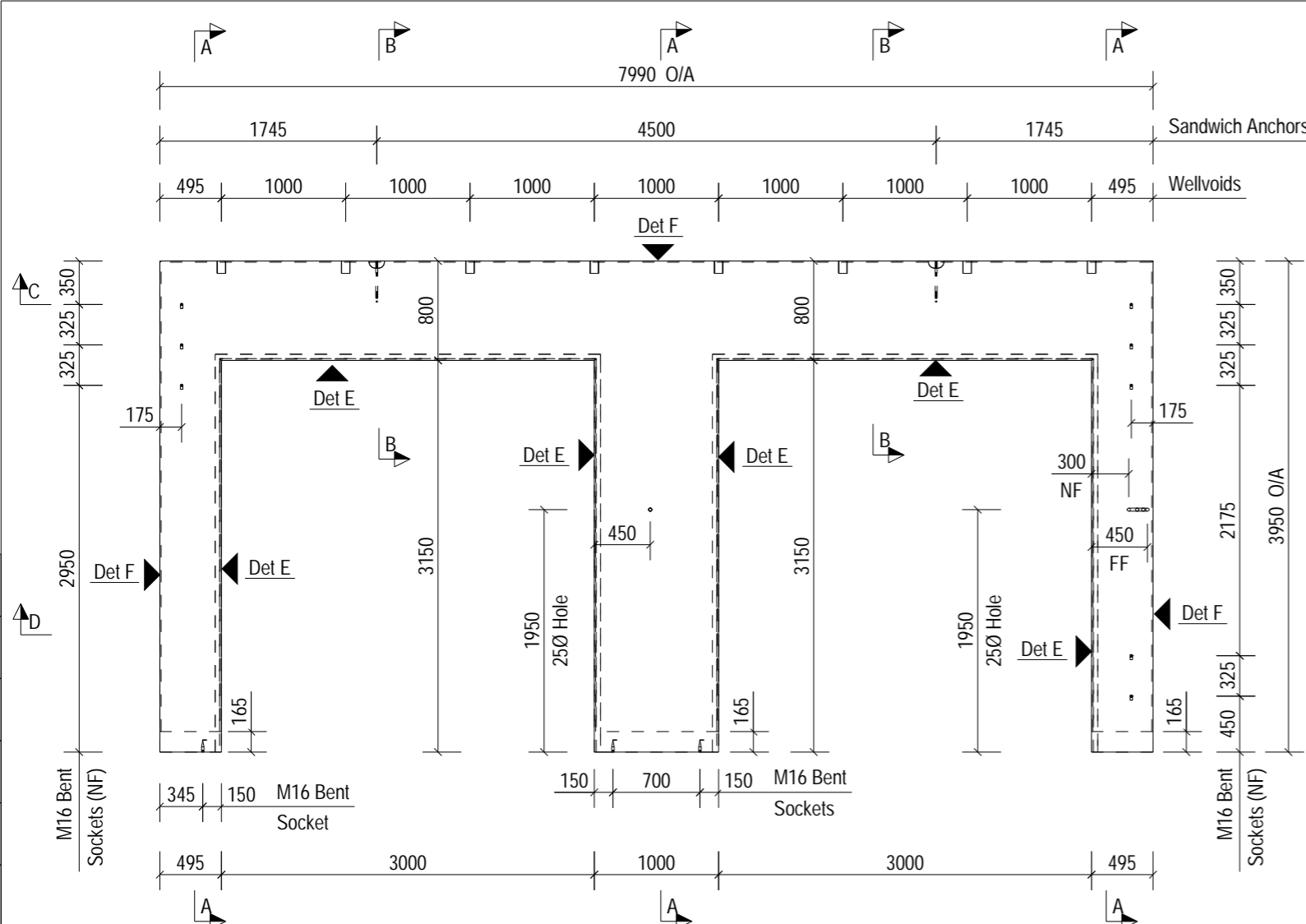
Client.

Project. **Panattoni Park Poyle**

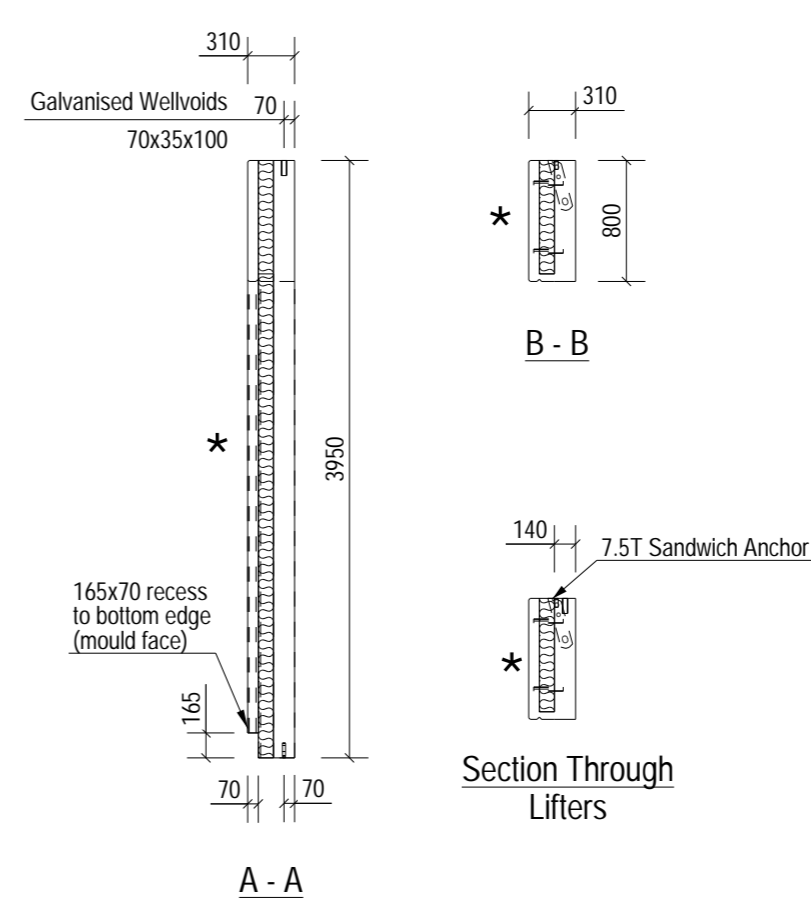
Title. **RC1 of BACKWALL BW-0003**

Scale: 1:40	Status: As Built - CR	
Date: 20-03-24		
Drawn: RS	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-BW-0003-RC1		Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

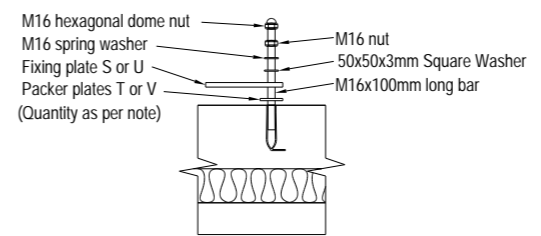


Plan on Mould * Indicates Mould Face

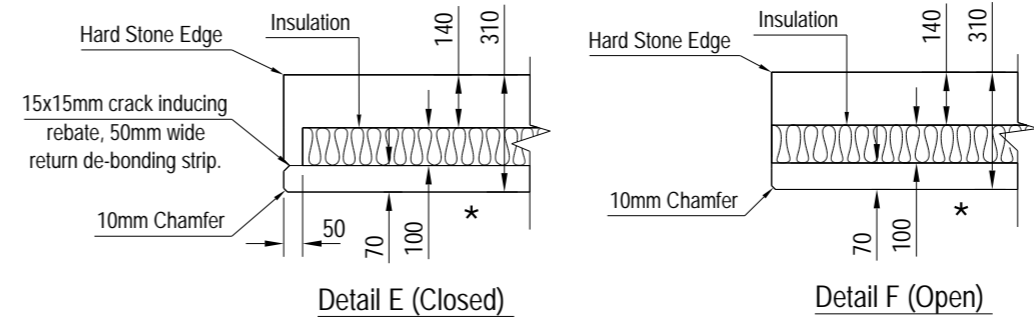


A - A

Section Through Lifters



Typical fixing plate connection detail - To be used at each M16 socket floated face fixing location



Detail E (Closed)

Detail F (Open)

Unit to be delivered with 3No. Packer Plates (T) and 1No. Large plate (S) fitted to each top fixings locations. 3No. Packer Plates (V) and 1No Small plate (U) to one bottom fixing location. See drawing 05-BYL-1462-F01-F05 for details.

Area of Panel = 12.66 m²
 Total No. Ties = 66 Ref: ST12 R2 200-50-50-100 = 5.21 Ties/m²
 550mm x 550mm Max Grid.
 100mm Min - 275mm Max Edge Distance.

NOTES:

Type.	Double Door Prowall	
Length.	7990	+4 / -4
Height.	3950	+4 / -4
Width.	310	+4 / -4
Weight. (T)	6.89	
Volume. (m ³)	2.72	
Concrete.	Grade C40	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-DP-0001-RC	
IM Drg. Ref.	05-BYL-1462-DP-0001-IM	
BBS Ref.	05-BYL-1462-DP-0001-BBS	
Calculation Ref.	FPMC-DP_RevC01	
Cover.	30mm Nominal, (25mm Minimum)	
Casting Bed.	Tilt Table	

Mark.	DP-0001
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
66	Thermomass Round Tie	ST12 R2 200-50-50-100
11	M16 Bent Socket	SFA16100/SSFA16100
8	Galvanised Wellvoid	70x35x100
2	7.5T Sandwich Anchor	LASSP075350/SSPA075350

Loose Fitting Take Off:		
Threaded Bar	(M16 x 140mm)	3 No.

Unit drawn from floated face
 Must be transported and erected in a vertical position
SOCKET LOCATIONS ARE CRITICAL

C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

Client:

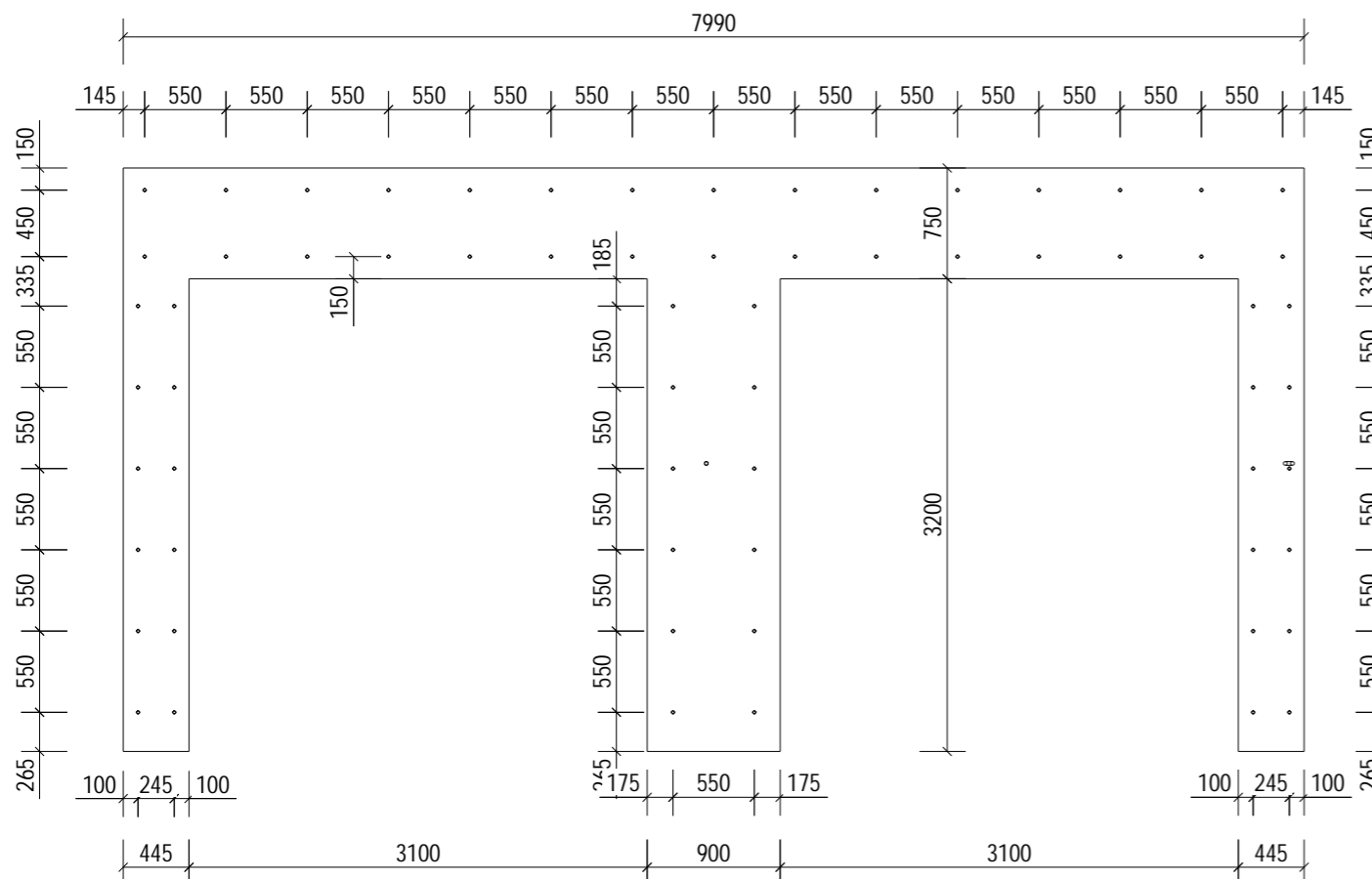
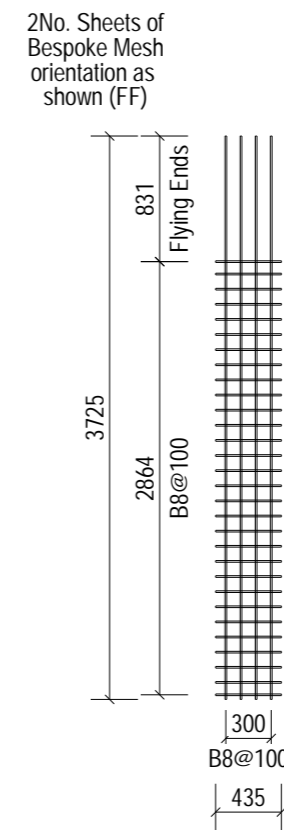
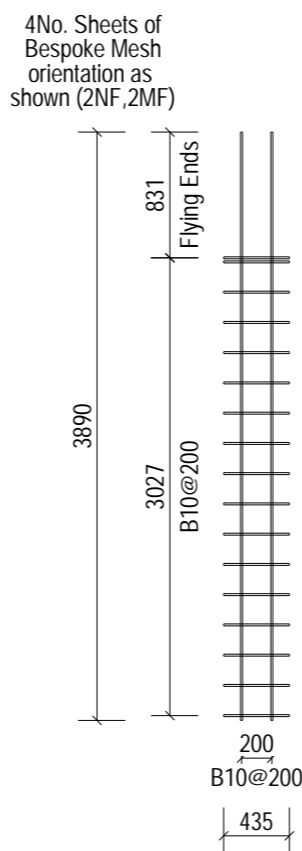
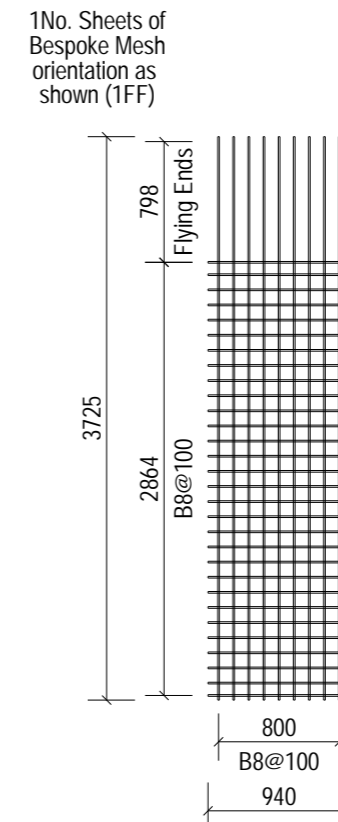
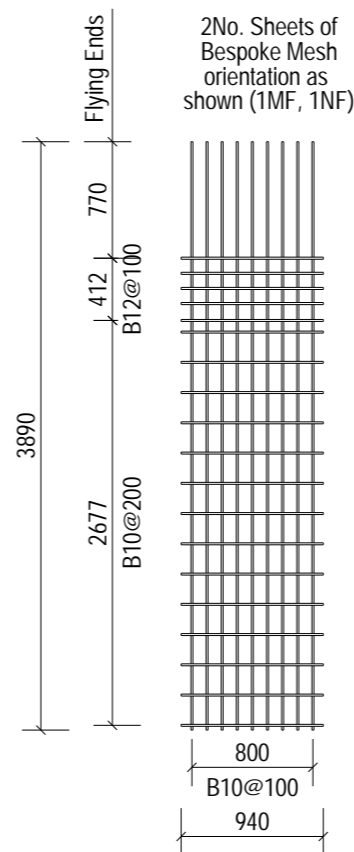
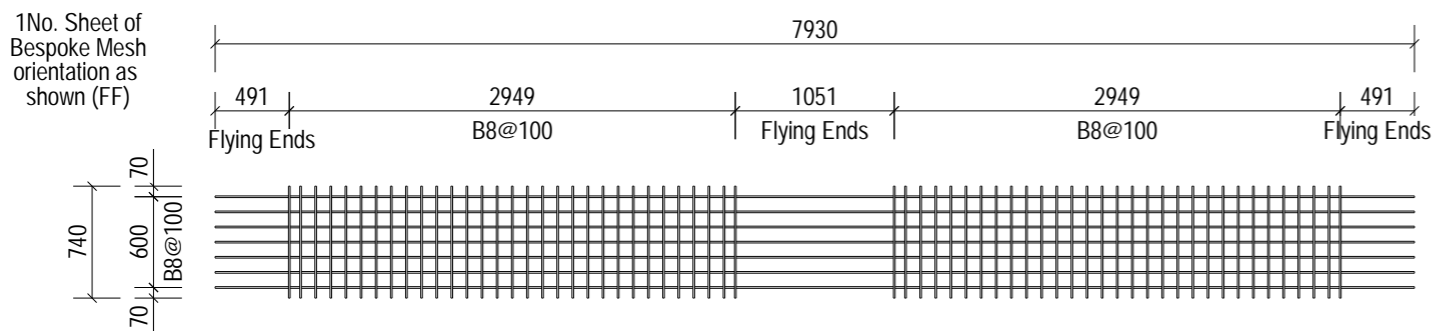
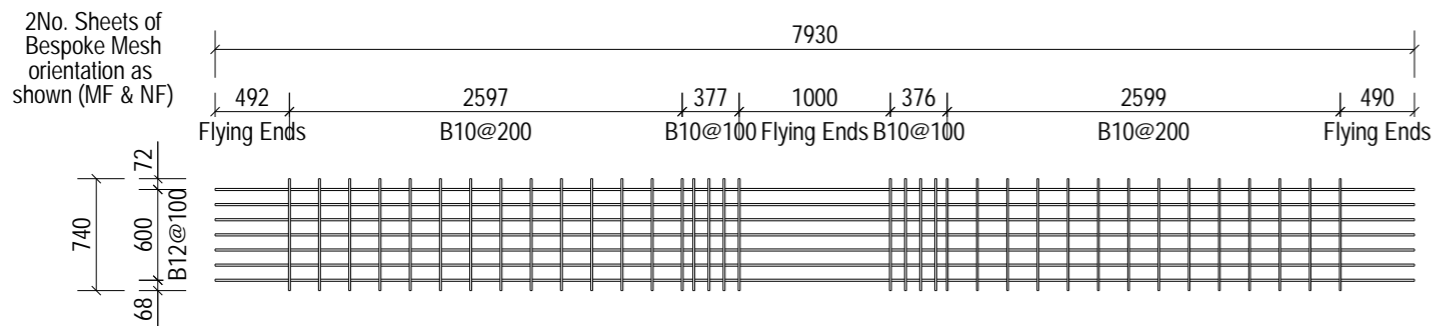
Project: **Panattoni Park Poyle**

Title: **GA1 of Double Door Prowall DP-0001**

Scale: 1:50	Status: As Built - CR		
Date: 19-03-24	Drawn: RS	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-DP-0001-GA1			Rev: C01

A3

10mm



Thermomass Tie Setting Out
ST12 R2 200-50-50-100

Insulation to be supplied in rectangular sheets
 All insulation to be cut by precast manufacturers prior to inclusion in mould and the tie holes drilled once in place. This is to avoid any clash with reinforcing cages.
 The fitting/application of the component shall be conducted in accordance with WP/05/F77

Unit drawn from floated face
SOCKET LOCATIONS ARE CRITICAL
 Notes:
 10 Ø hole drilled into insulation
 Ties must be 100mm minimum from edge

Area of Panel = 12.66 m²
 Total No. Ties = 66 Ref: ST12 R2 200-50-50-100 = 5.21 Ties/m²
 550mm x 550mm Max Grid.
 100mm Min - 275mm Max Edge Distance.

NOTES:

Type.	Double Door Prowall
Mark.	DP-0001
GA Drg. Ref.	05-BYL-1462-DP-0001-GA1
Cover.	30mm Nominal, 25mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C02	03-04-24	Dims Amended. Issued For Manufacture.	DT	NB	SJH
C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire.
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

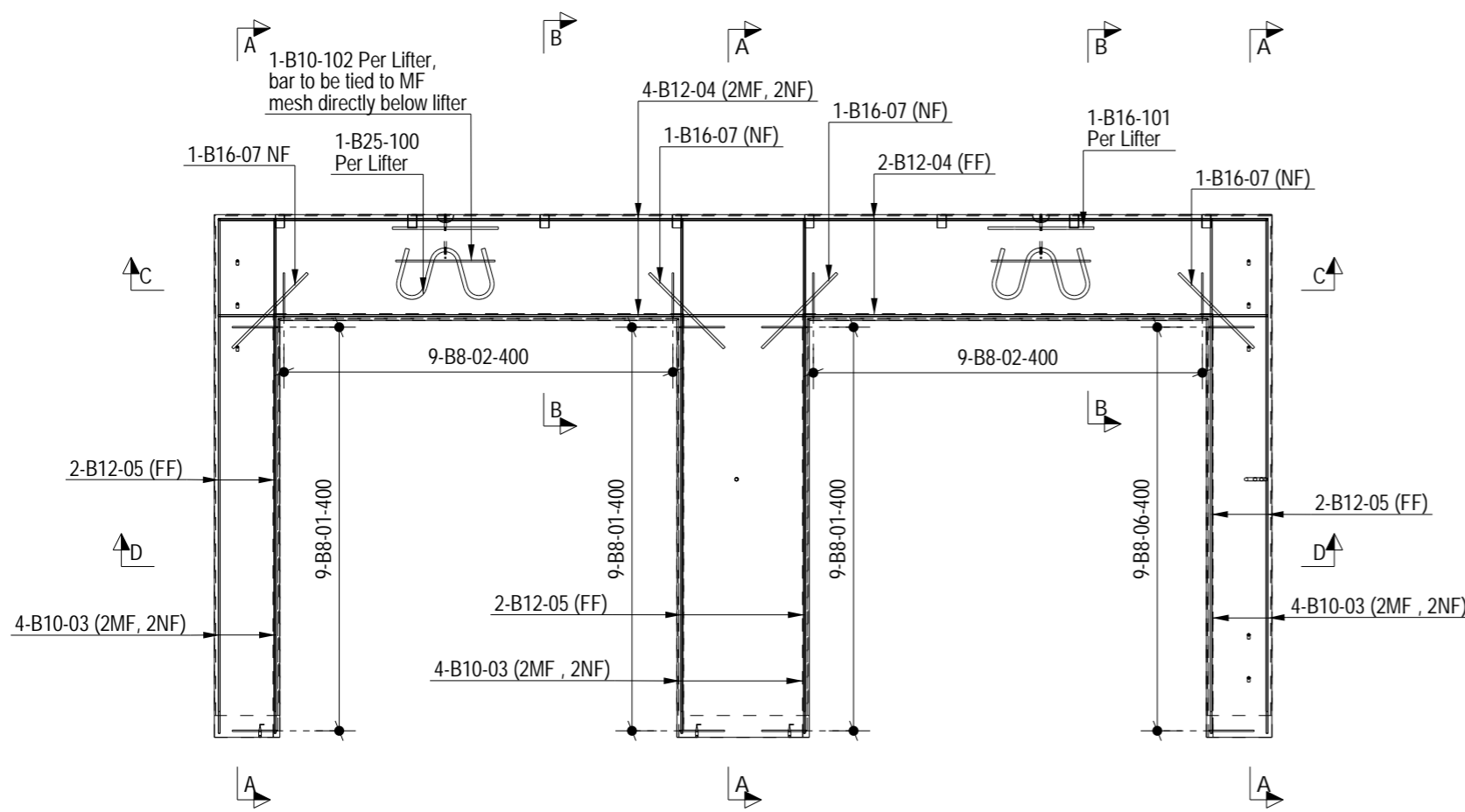
Client:

Project: **Panattoni Park Poyle**

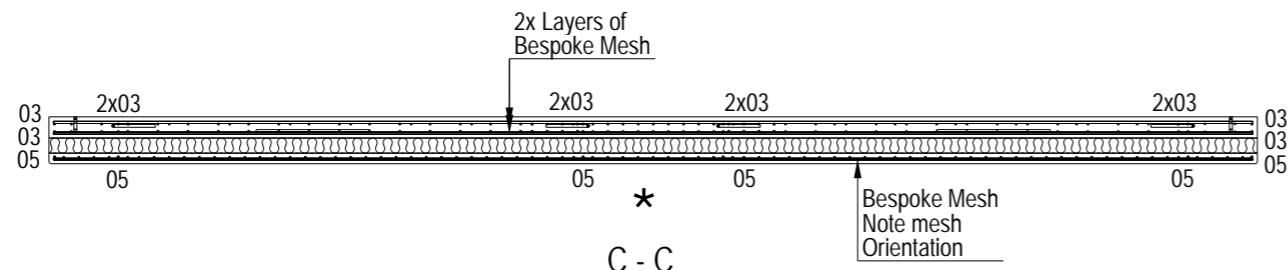
Title: **IM1 of Double Door Prowall DP-0001**

Scale: 1:50	Status: As Built - CR		
Date: 19-03-24	Drawn: DT	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-DP-0001-IM1			Rev: C02

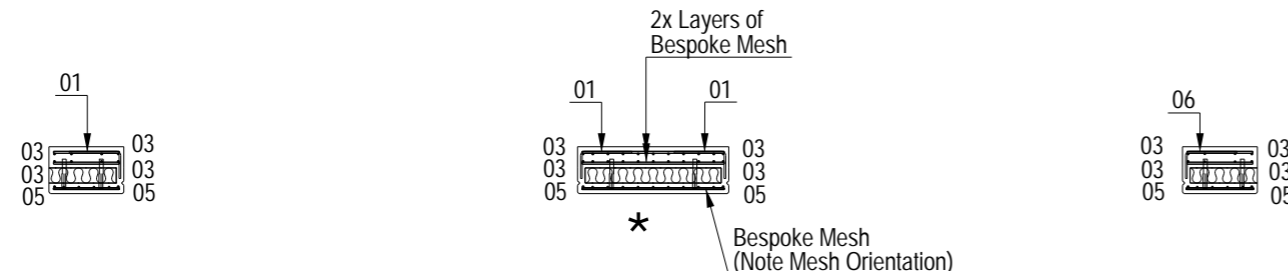
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



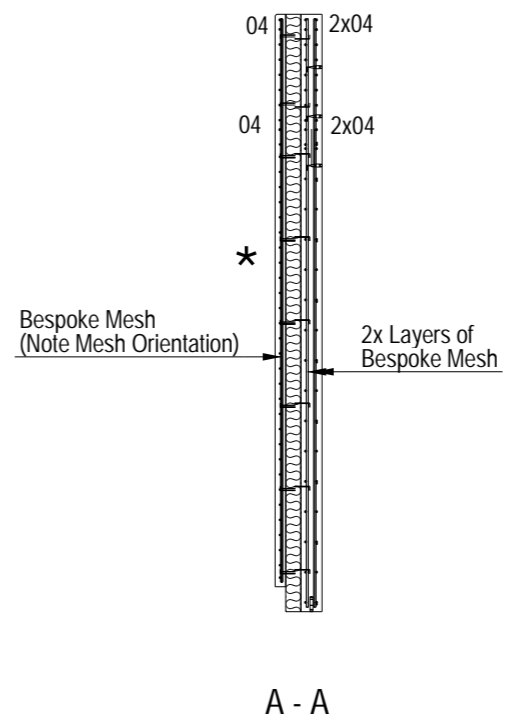
Plan on Mould * Indicates Mould Face



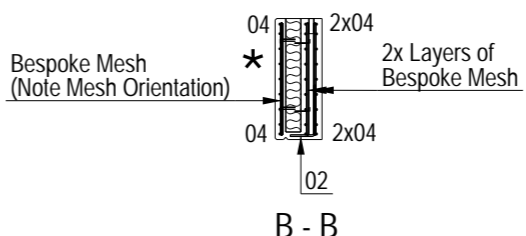
C - C



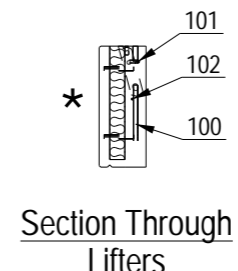
D - D



A - A



B - B

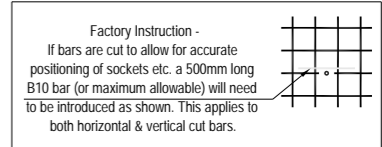
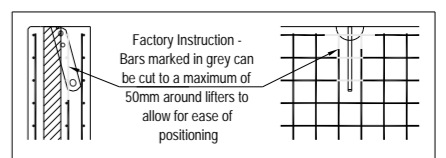


Section Through Lifters

NOTES:

Type.	Double Door Prowall
Mark.	DP-0001
GA Drg. Ref.	05-BYL-1462-DP-0001-GA1
Cover.	30mm Nominal, 25mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.



C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann
 FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client.

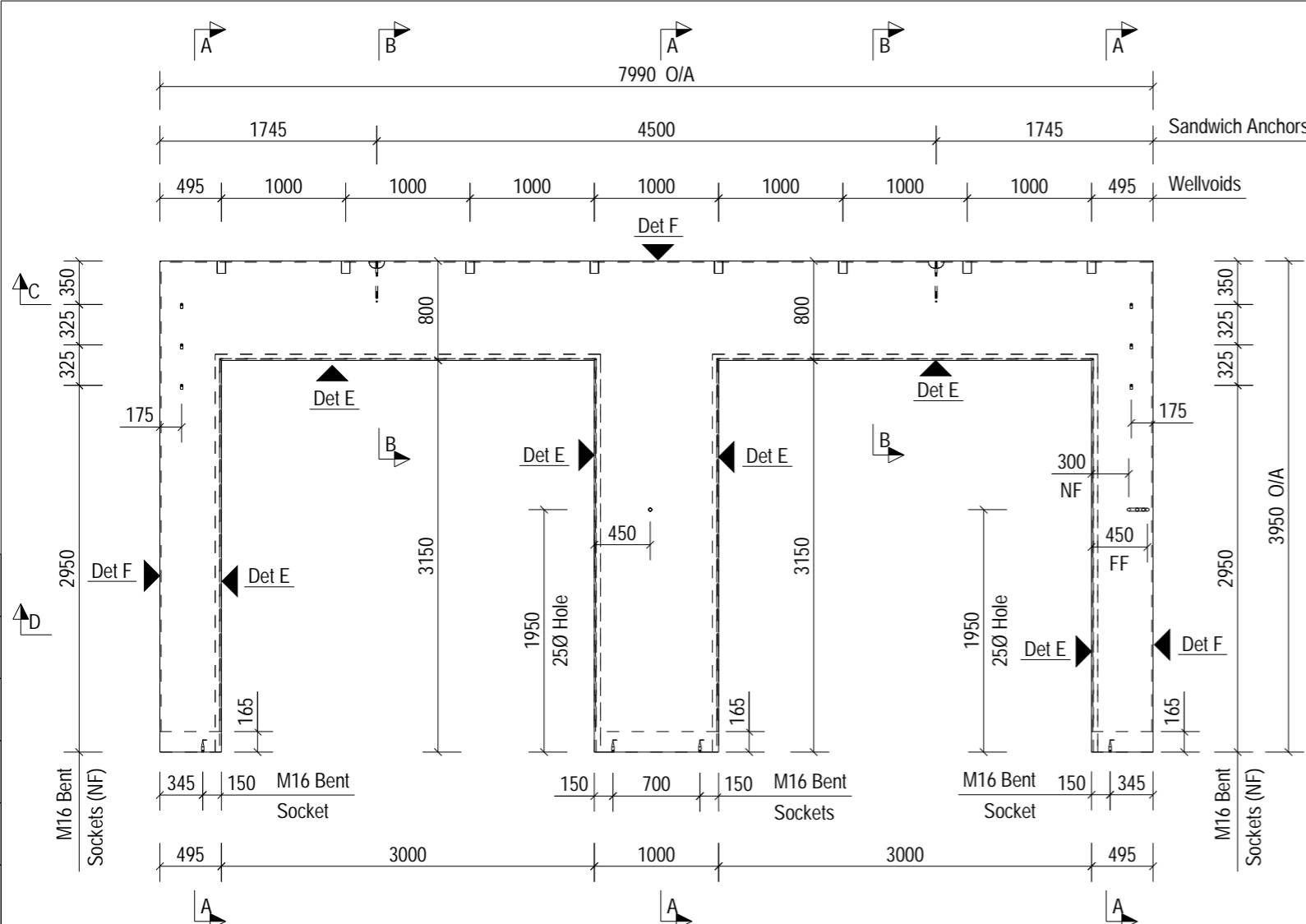
Project. **Panattoni Park Poyle**

Title. **RC1 of Double Door Prowall DP-0001**

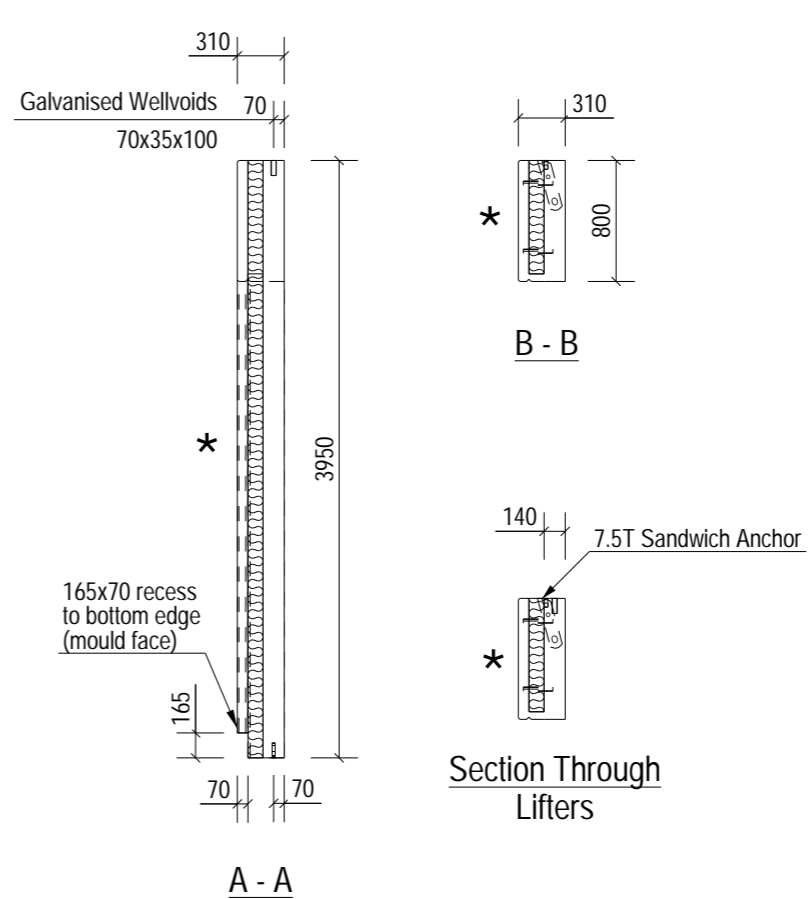
Scale: 1:50	Status: As Built - CR	
Date: 19-03-24		
Drawn: RS	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-DP-0001-RC1		Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

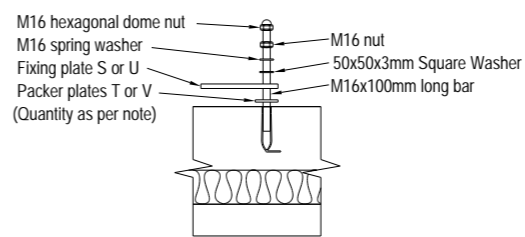
A3
10mm



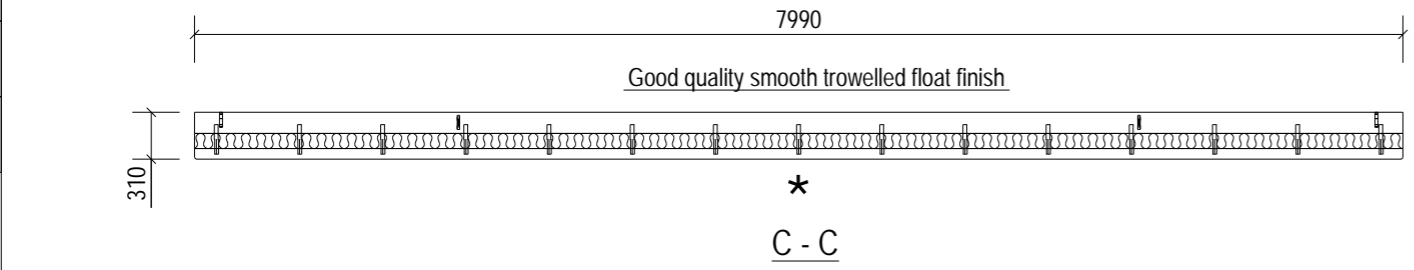
Plan on Mould * Indicates Mould Face



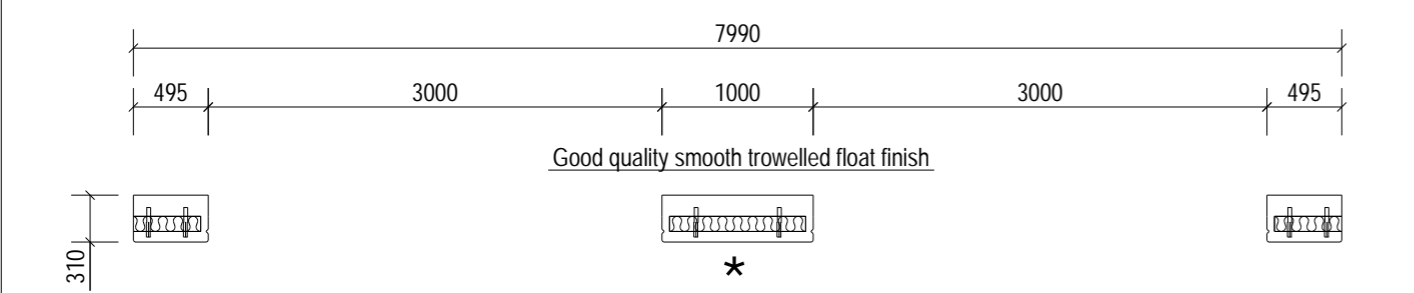
Section Through Lifters



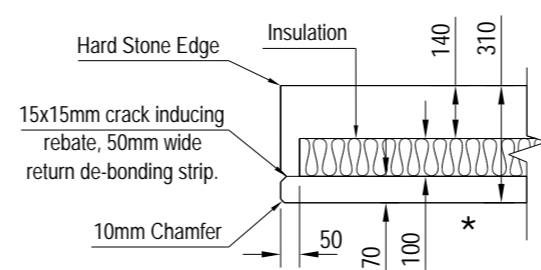
Typical fixing plate connection detail - To be used at each M16 socket floated face fixing location



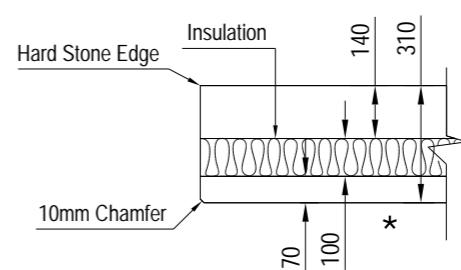
C - C



D - D



Detail E (Closed)



Detail F (Open)

Unit to be delivered with 3No. Packer Plates (T) and 1No. Large plate (S) fitted to each top fixings locations. See drawing 05-BYL-1462-F01-F05 for details.

Area of Panel = 12.66 m²
 Total No. Ties = 66 Ref: ST12 R2 200-50-50-100 = 5.21 Ties/m²
 550mm x 550mm Max Grid.
 100mm Min - 275mm Max Edge Distance.

NOTES:

Type.	Double Door Prowall	
Length.	7990	+4 / -4
Height.	3950	+4 / -4
Width.	310	+4 / -4
Weight. (T)	6.89	
Volume. (m ³)	2.72	
Concrete.	Grade C40	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-DP-0002-RC	
IM Drg. Ref.	05-BYL-1462-DP-0002-IM	
BBS Ref.	05-BYL-1462-DP-0002-BBS	
Calculation Ref.	FPMC-DP_RevC01	
Cover.	30mm Nominal, (25mm Minimum)	
Casting Bed.	Tilt Table	

Mark.	DP-0002	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
66	Thermomass Round Tie	ST12 R2 200-50-50-100
10	M16 Bent Socket	SFA16100/SSFA16100
8	Galvanised Wellvoid	70x35x100
2	7.5T Sandwich Anchor	LASSP075350/SSPA075350

Loose Fitting Take Off:		
Threaded Bar	(M16 x 140mm)	4 No.

Unit drawn from floated face
 Must be transported and erected in a vertical position
SOCKET LOCATIONS ARE CRITICAL

C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client:

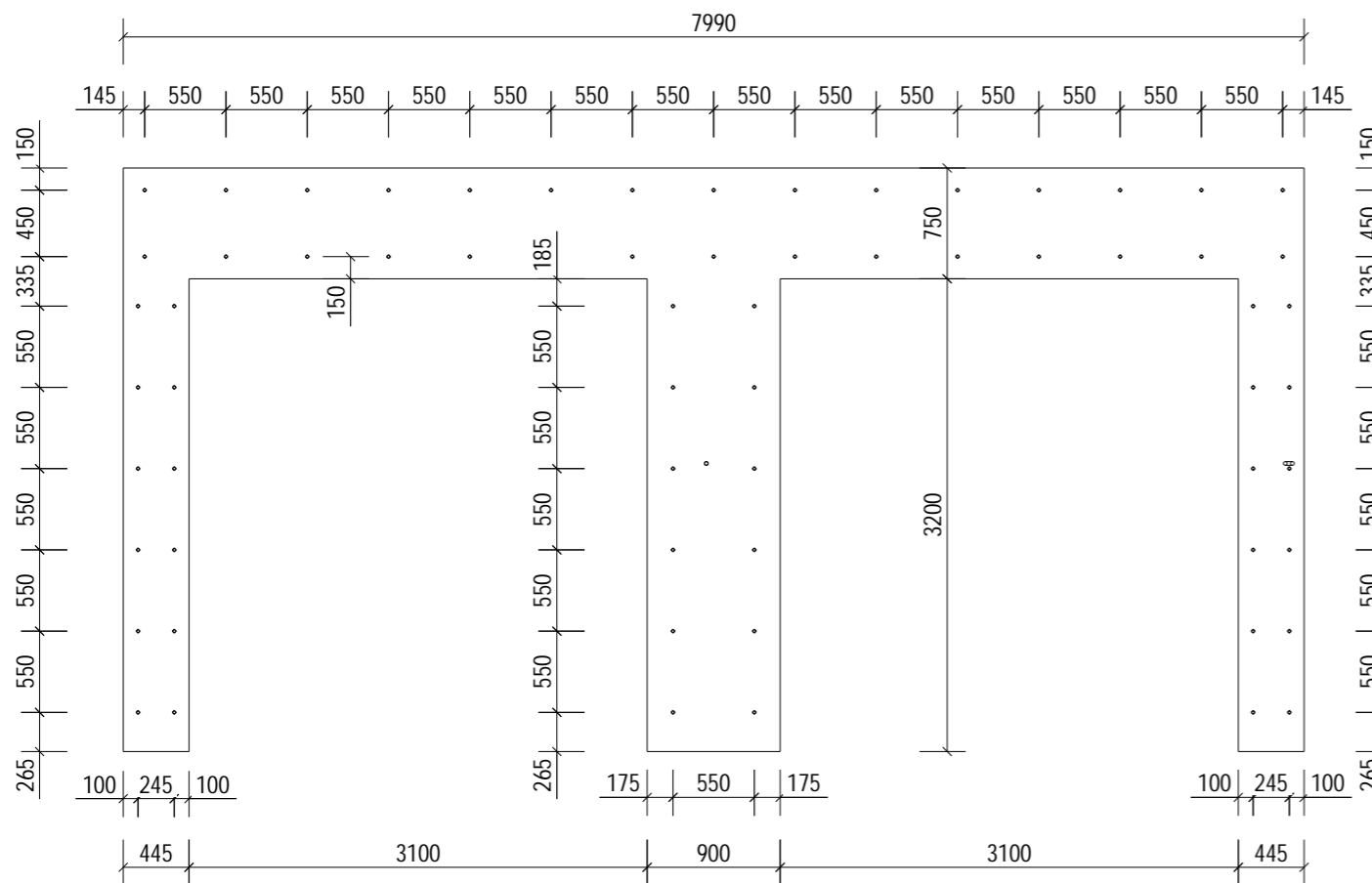
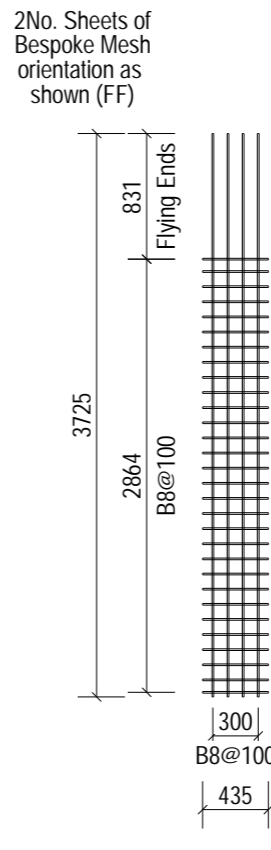
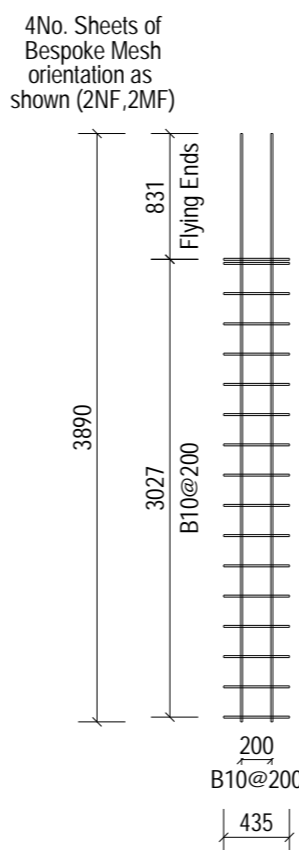
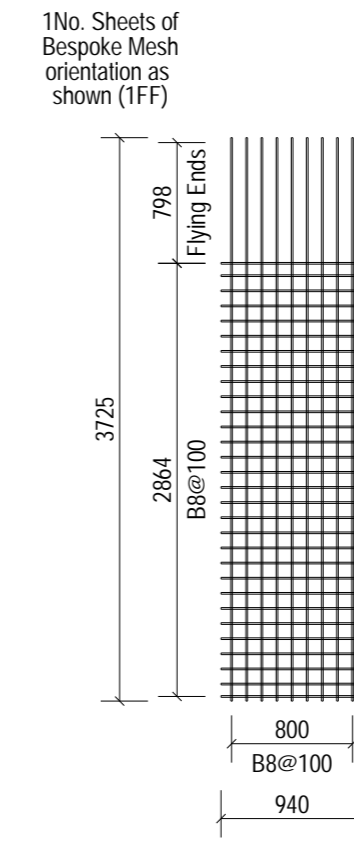
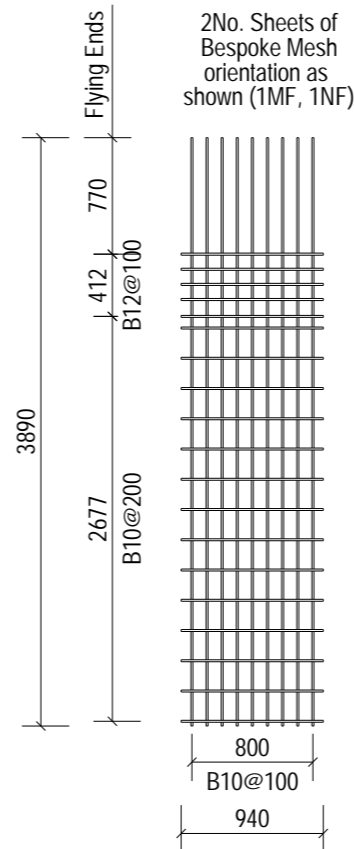
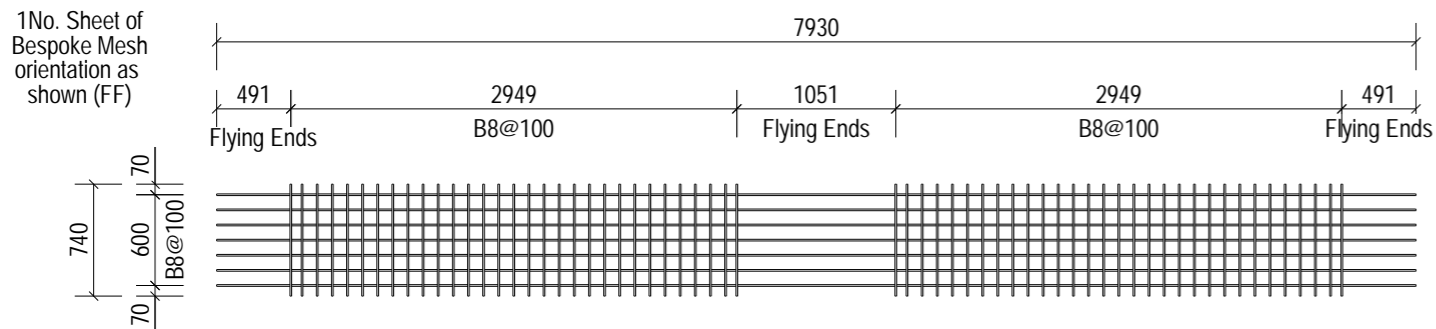
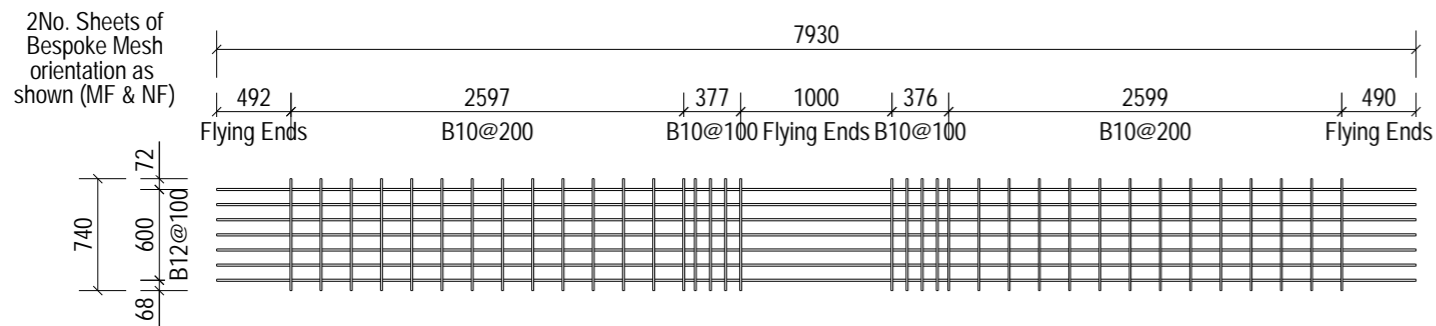
Project: **Panattoni Park Poyle**

Title: **GA1 of Double Door Prowall DP-0002**

Scale: 1:50	Status: As Built - CR
Date: 19-03-24	

Drawn: RS	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-DP-0002-GA1		Rev: C01

DO NOT SCALE, IF IN DOUBT PLEASE ASK.



**Thermomass Tie Setting Out
ST12 R2 200-50-50-100**

Insulation to be supplied in rectangular sheets
 All insulation to be cut by precast manufacturers prior to inclusion in mould and the tie holes drilled once in place.
 This is to avoid any clash with reinforcing cages.
 The fitting/application of the component shall be conducted in accordance with WP/05/F77

Unit drawn from floated face

SOCKET LOCATIONS ARE CRITICAL

Notes:
 10 Ø hole drilled into insulation
 Ties must be 100mm minimum from edge

Area of Panel = 12.66 m²
 Total No. Ties = 66 Ref: ST12 R2 200-50-50-100 = 5.21 Ties/m²
 550mm x 550mm Max Grid.
 100mm Min - 275mm Max Edge Distance.

NOTES:

Type.	Double Door Prowall
Mark.	DP-0002
GA Drg. Ref.	05-BYL-1462-DP-0002-GA1
Cover.	30mm Nominal, 25mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C02	03-04-24	Dims Amended. Issued For Manufacture.	DT	NB	SJH
C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client.

Project. **Panattoni Park
Poyle**

Title. **IM1 of
Double Door Prowall DP-0002**

Scale: 1:50 Status: As Built - CR

Date: 19-03-24

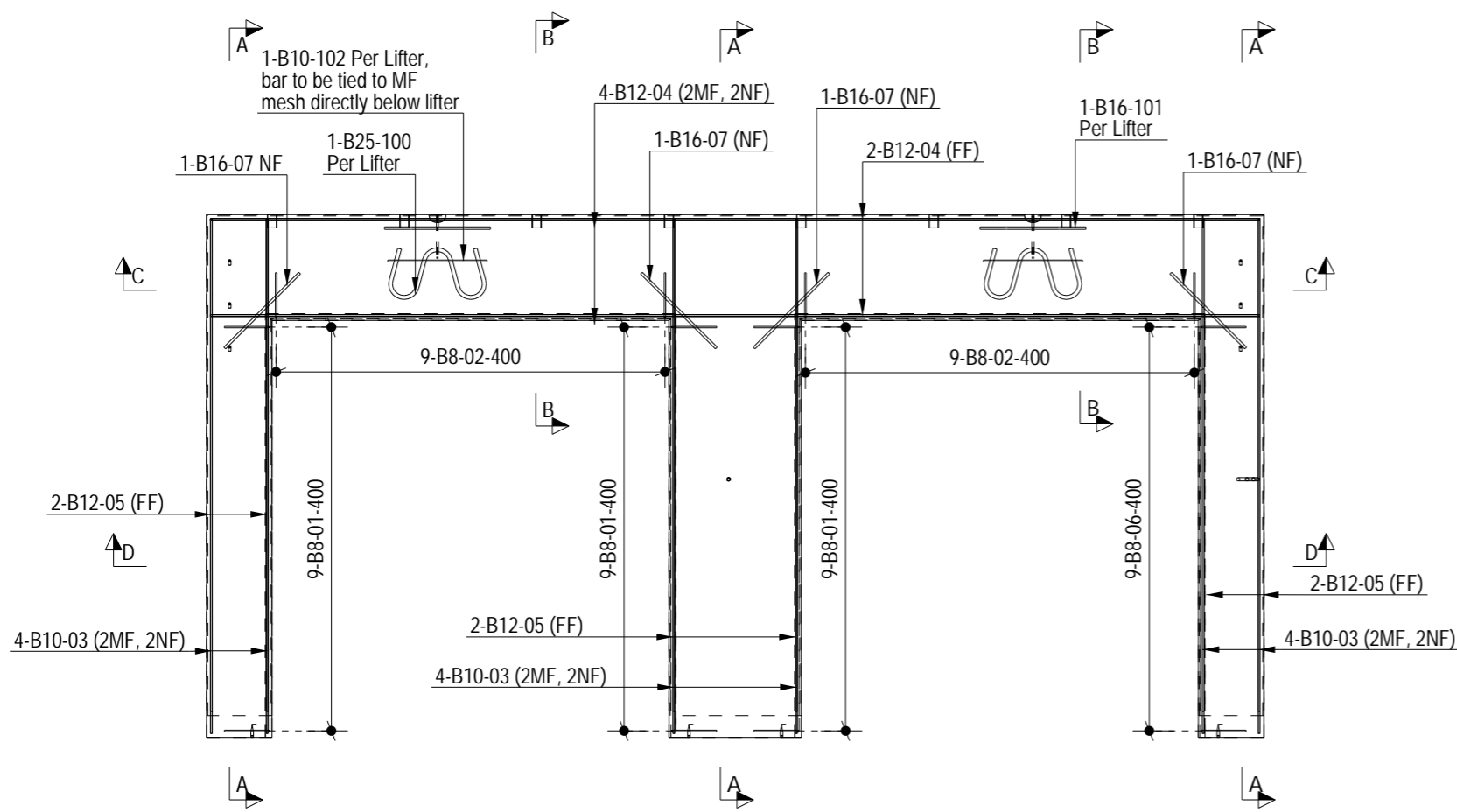
Drawn: DT Checked: NB Approved: SJH

Drawing No : **05-BYL-1462-DP-0002-IM1** Rev: **C02**

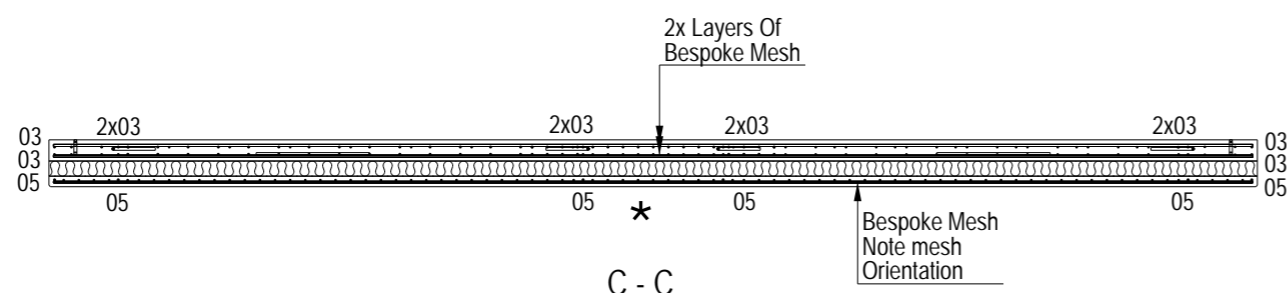
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

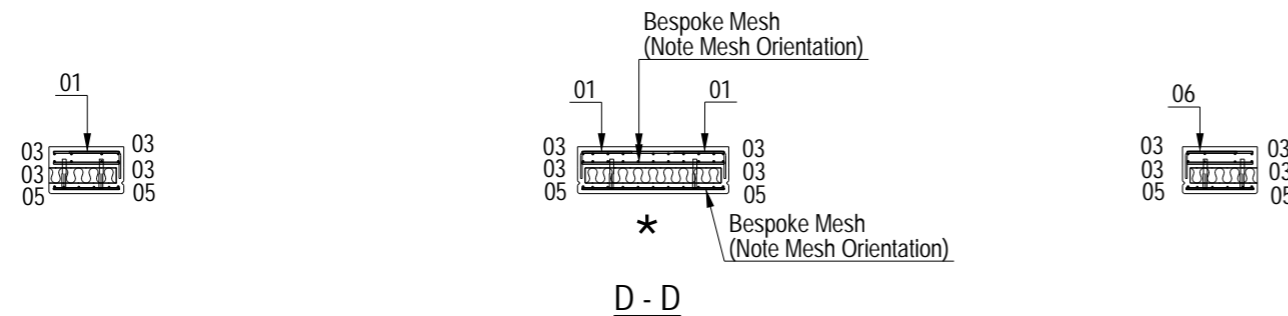
10mm



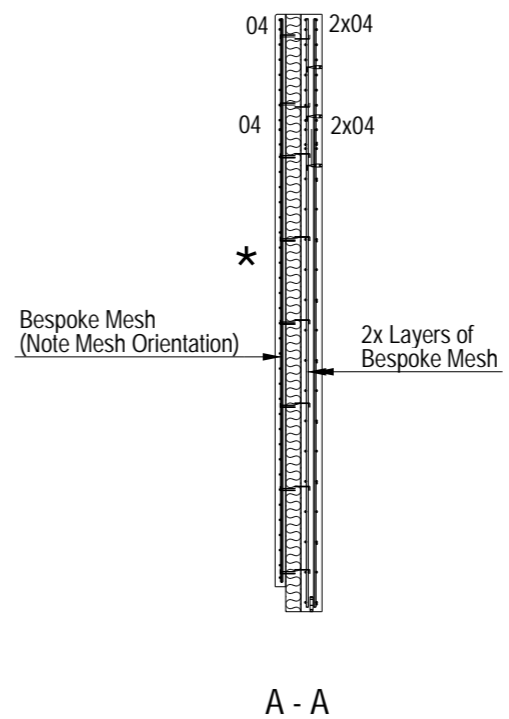
Plan on Mould * Indicates Mould Face



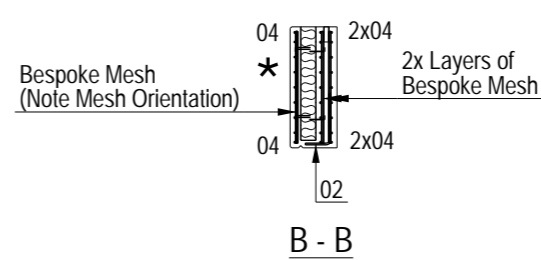
C - C



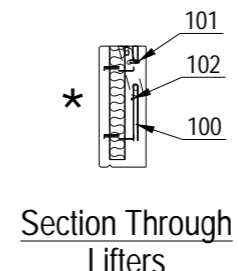
D - D



A - A



B - B

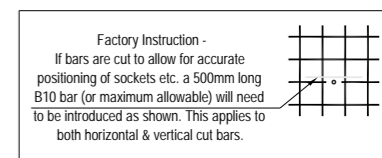
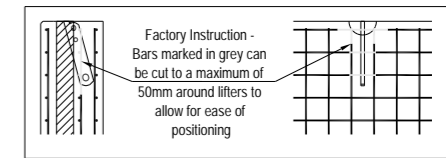


Section Through Lifters

NOTES:

Type.	Double Door Prowall
Mark.	DP-0002
GA Drg. Ref.	05-BYL-1462-DP-0002-GA1
Cover.	30mm Nominal, 25mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.



C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

Title. **RC1 of Double Door Prowall DP-0002**

Scale: 1:50	Status: As Built - CR	
Date: 19-03-24		
Drawn: RS	Checked: NB	Approved: SJH

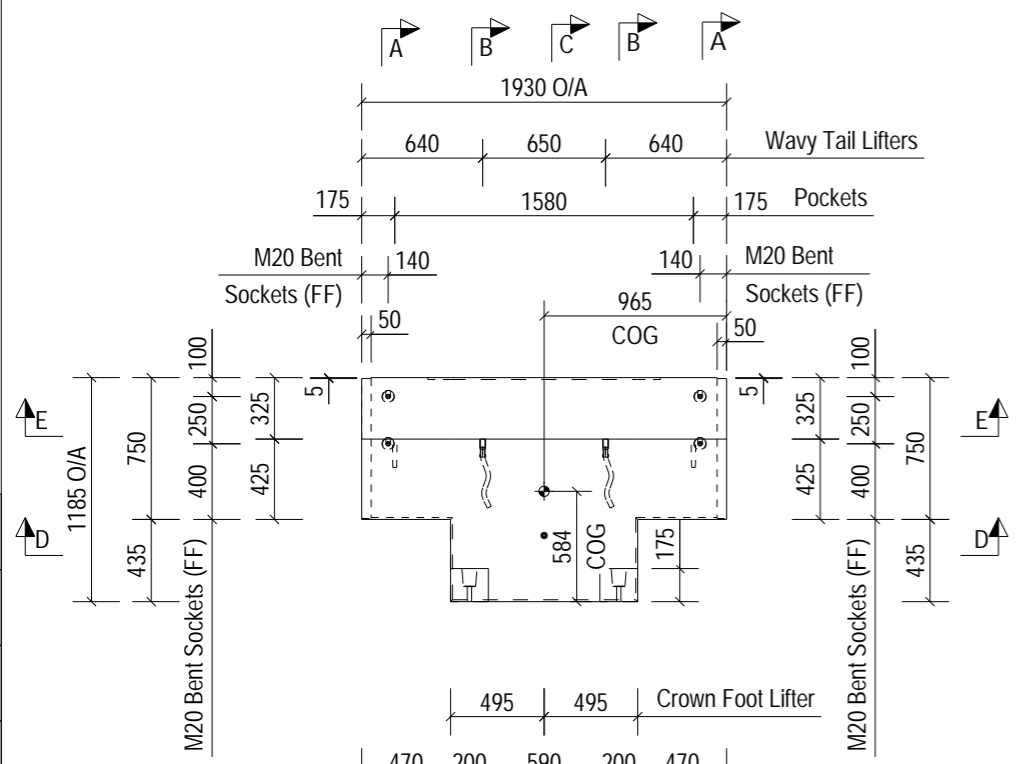
Drawing No : **05-BYL-1462-DP-0002-RC1** Rev: **C01**

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm

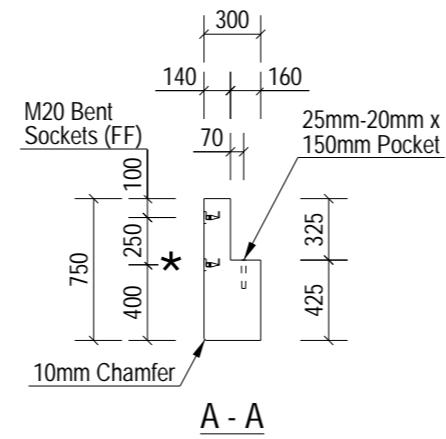
A3

10mm

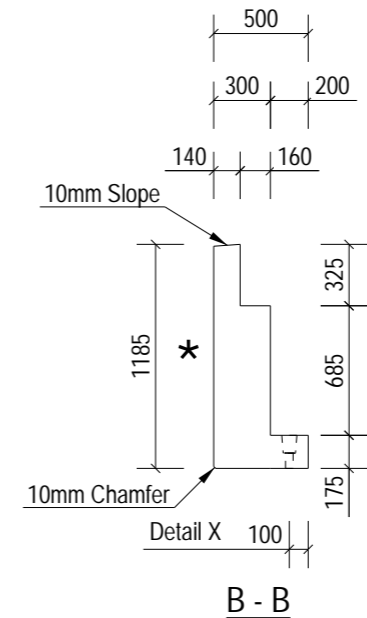


Plan on Mould

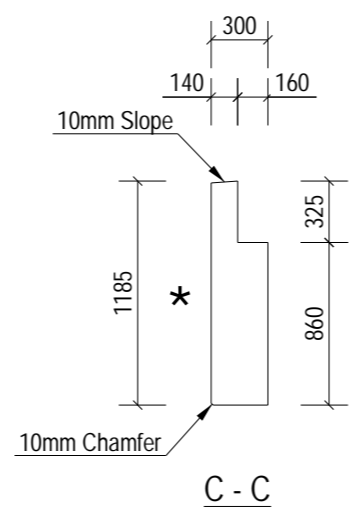
* Indicates Mould Face



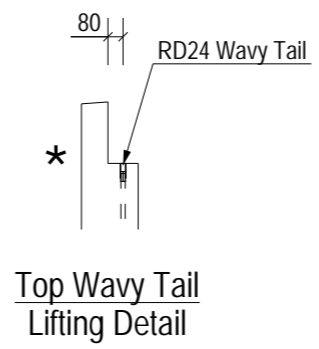
A - A



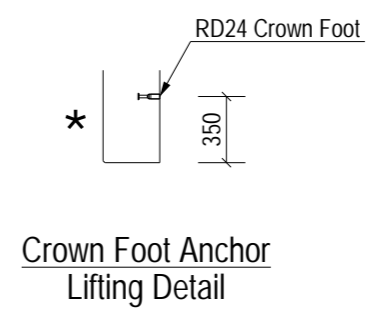
B - B



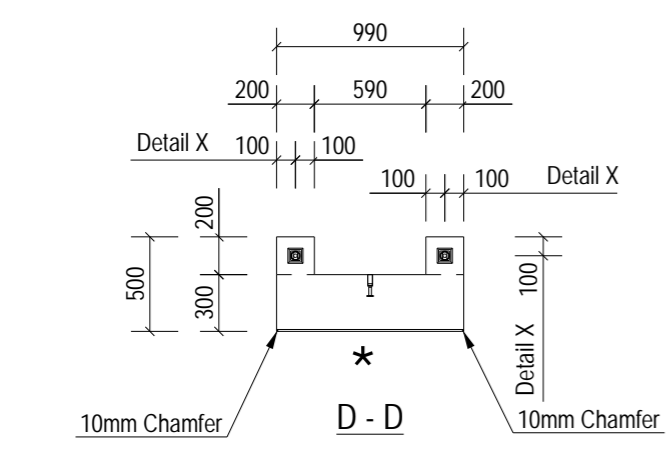
C - C



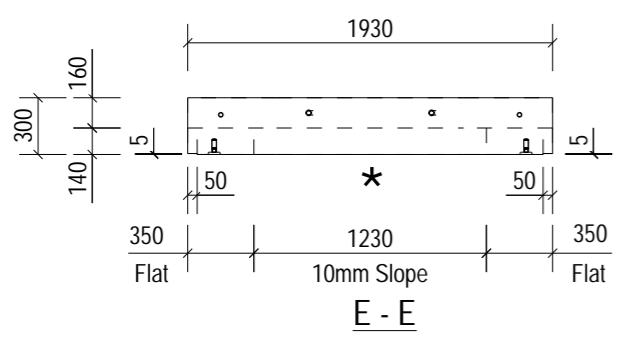
Top Wavy Tail Lifting Detail



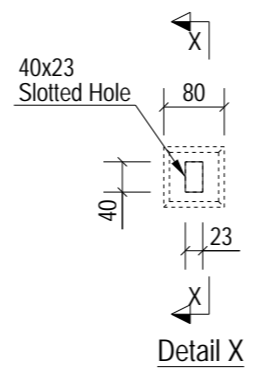
Crown Foot Anchor Lifting Detail



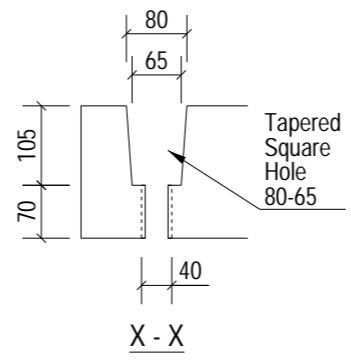
D - D



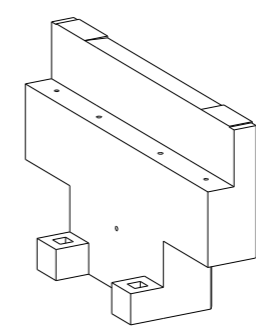
E - E



Detail X



X - X



3D View

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

10mm

A3

NOTES:		
Type.	FRONTWALL	
Length.	1930	+4 / -4
Height.	1185	+4 / -4
Width.	300	+4 / -4
Weight. (T)	1.19	
Volume. (m ³)	0.47	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-FT-0001-RC1	
BBS Ref.	05-BYL-1462-FT-0001-BBS	
Calculation Ref.	FPMC-FT&HT_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	FT-0001	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT		
No.	Item	Ref.
4	M20 Bent Socket	SFA20070/SSFA2070
2	RD24 Wavy Tail	SLWL24360/SSLW24360
1	RD24 Crown Foot	SLS24115/SCFS24115

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	2 No.
Excalibur Bolt	(M20*300)	2 No.
Biscuit	(B12 x 450mm)	2 No.
U-Bar	(B8 x 340mm)	4 No.

C01	21-03-24	Issued For Manufacture.	PK	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

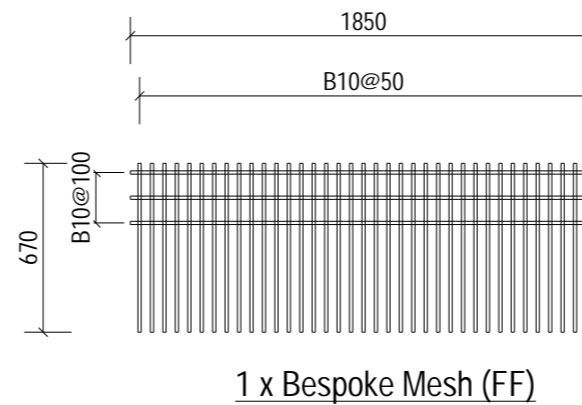
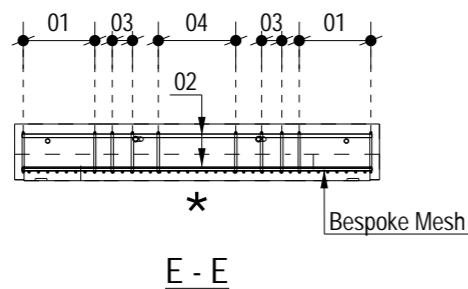
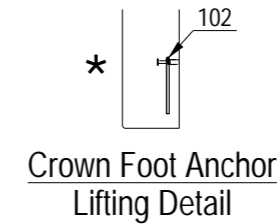
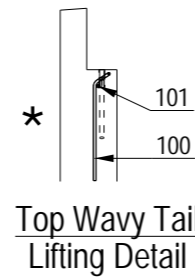
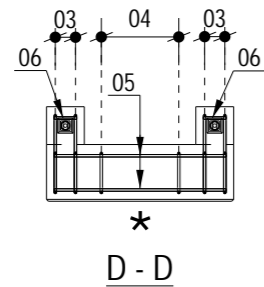
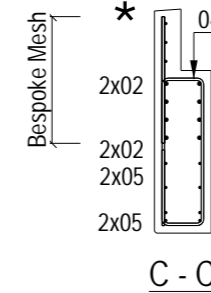
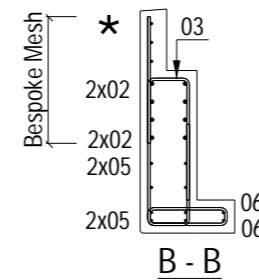
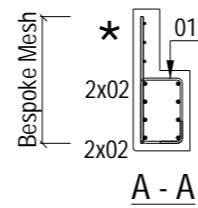
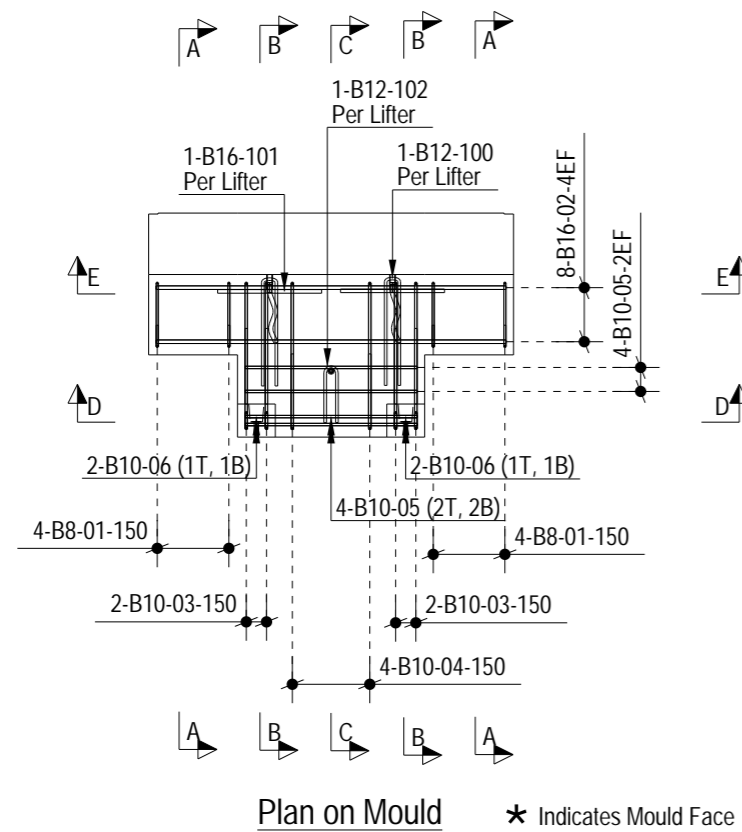
Client. **winvic**

Project. **Panattoni Park Poyle**

Title. **GA1 of FRONTWALL FT-0001**

Scale: 1:40	Status: As Built - CR	
Date: 19-03-24		
Drawn: PK	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-FT-0001-GA1		Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	FRONTWALL
Mark.	FT-0001
GA Drg. Ref.	05-BYL-1462-FT-0001-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	21-03-24	Issued For Manufacture.	PK	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.	
---------	--

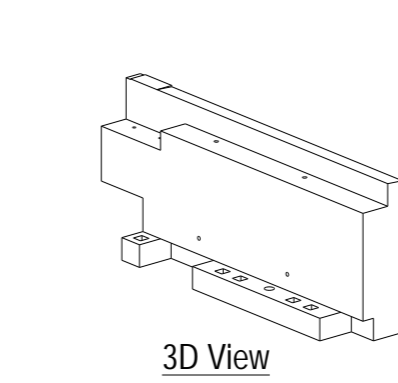
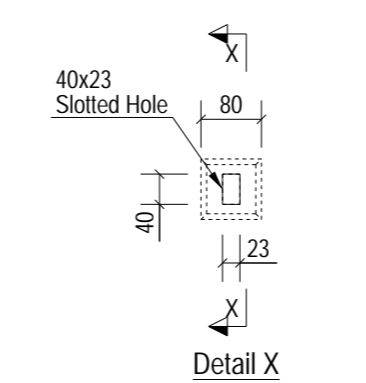
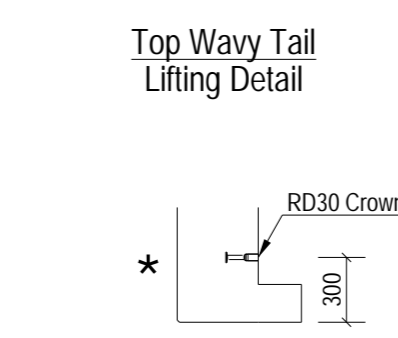
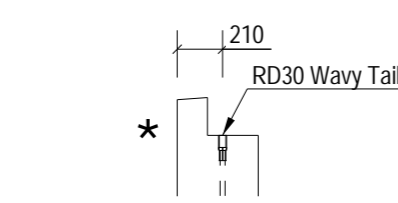
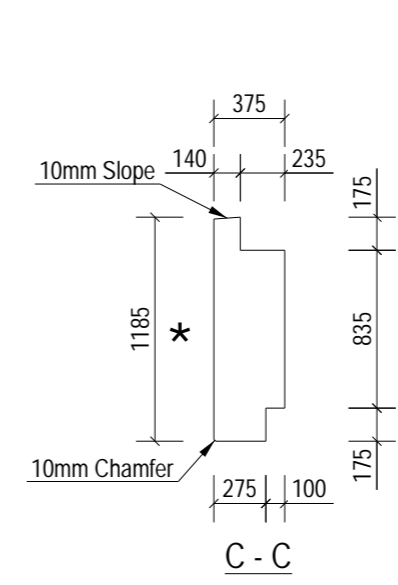
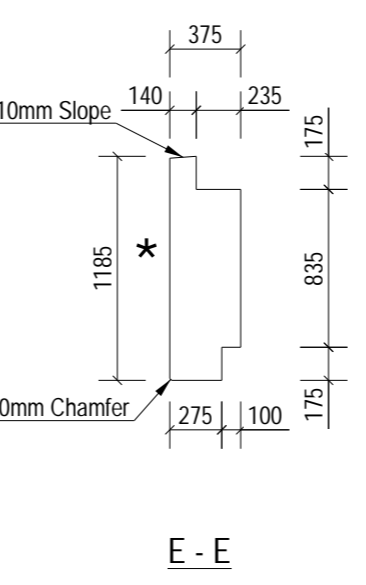
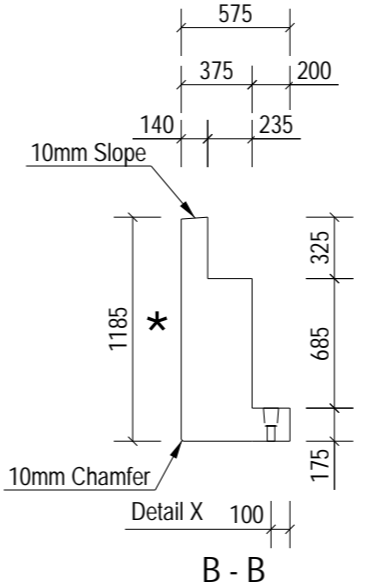
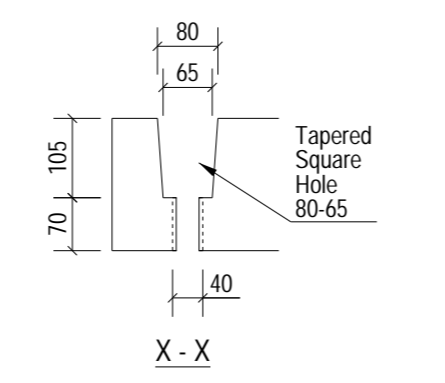
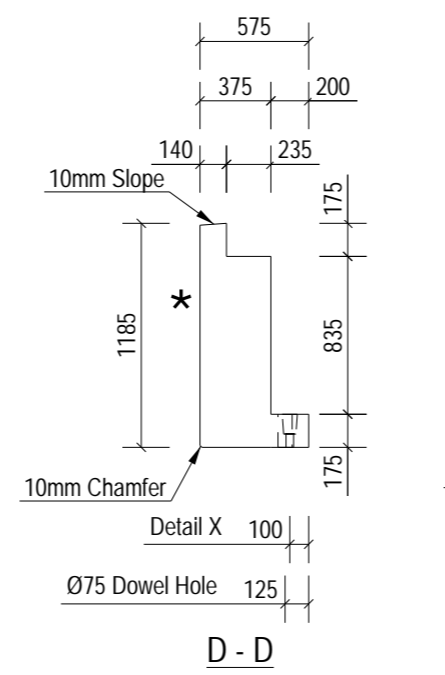
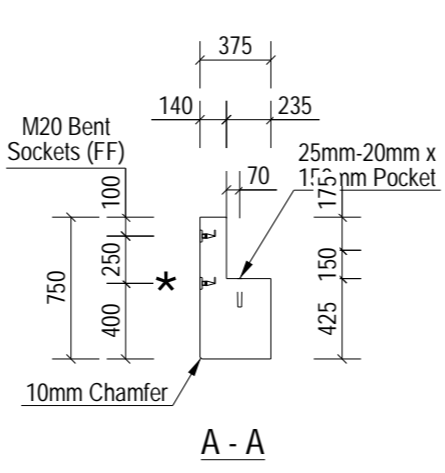
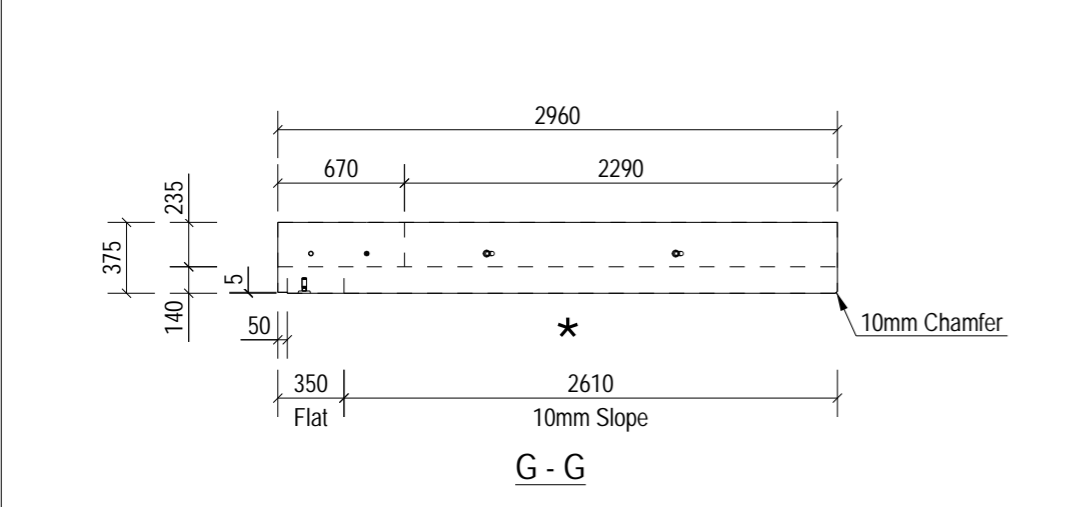
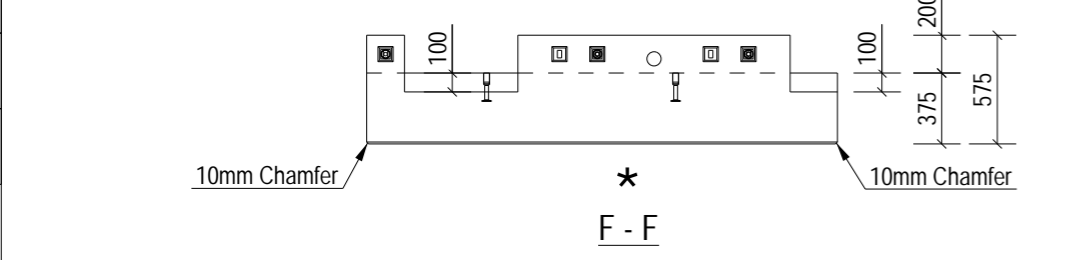
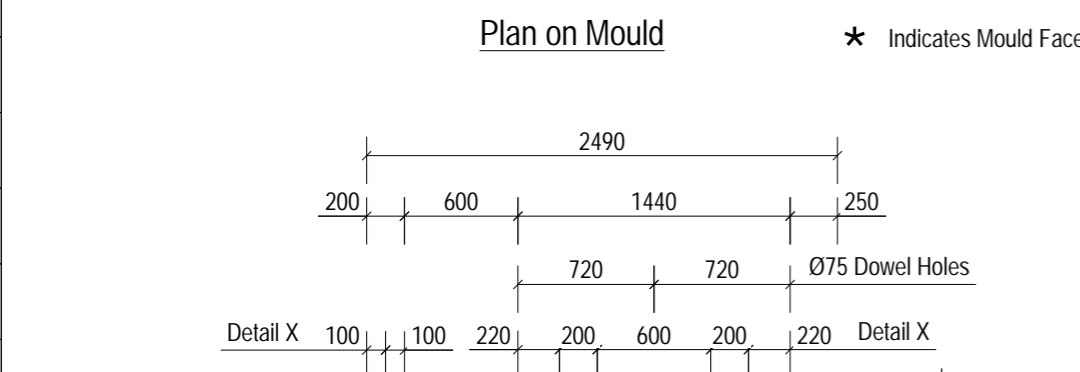
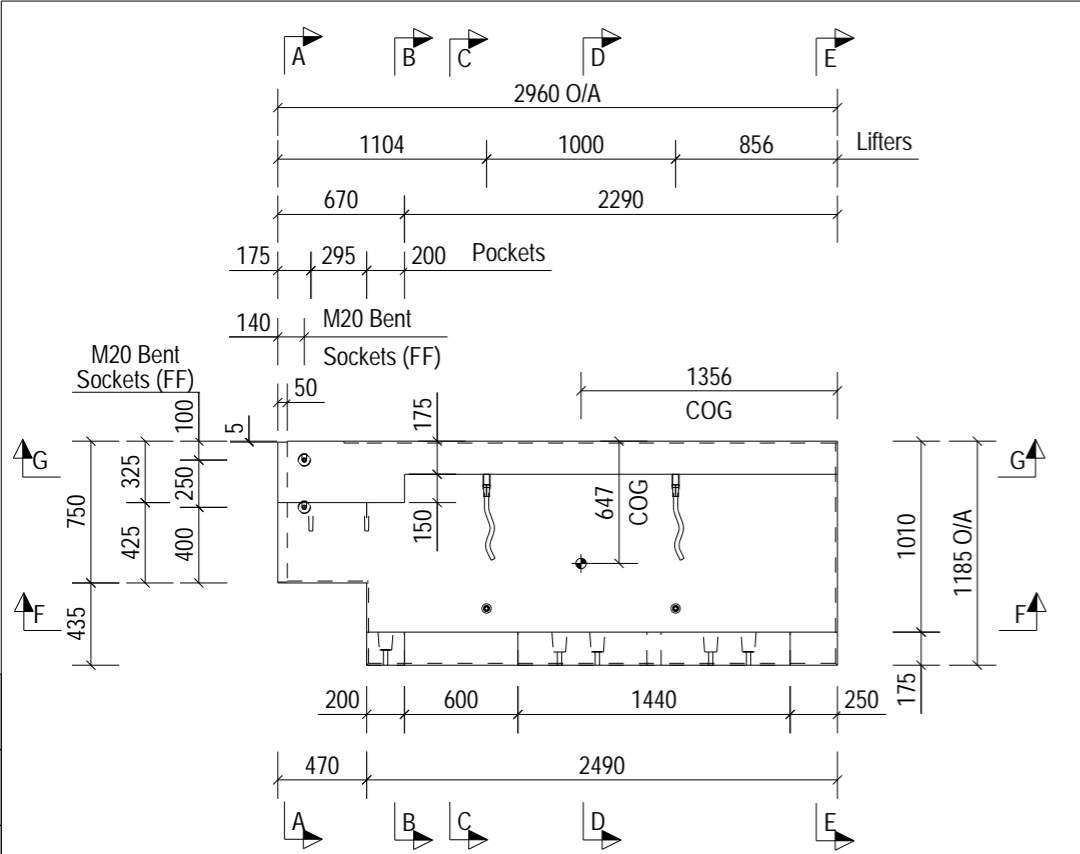
Project.	Panattoni Park Poyle
----------	----------------------

Title.	RC1 of FRONTWALL FT-0001
--------	--------------------------

Scale: 1:40	Status: As Built - CR
Date: 19-03-24	

Drawn: PK	Checked: NB	Approved: SJH
-----------	-------------	---------------

Drawing No : 05-BYL-1462-FT-0001-RC1	Rev: C01
--------------------------------------	----------



NOTES:

Type.	FRONTWALL	
Length.	2960	+4 / -4
Height.	1185	+4 / -4
Width.	375	+4 / -4
Weight. (T)	2.83	
Volume. (m³)	1.13	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-HT-0001-RC1	
BBS Ref.	05-BYL-1462-HT-0001-BBS	
Calculation Ref.	FPMC-FT&HT_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	HT-0001	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	M20 Bent Socket	SFA20070/SSFA2070
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:

Item	Spec	No.
Square Washer	(M25-50*50*2.5)	3 No.
Excalibur Bolt	(M20*300)	3 No.
Biscuit	(B12 x 450mm)	1 No.
Biscuit	(B12 x 300mm)	1 No.
U-Bar	(B8 x 340mm)	2 No.

Rev	Date	Revision Detail	By	Chk	App
C02	02-04-24	Dims Amended.	DT	NB	SJH
C01	21-03-24	Issued For Manufacture.	PK	NB	SJH

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client: **winvic**

Project: **Panattoni Park Poyle**

Title: **GA1 of FRONTWALL HT-0001**

Scale: 1:55 Status: As Built - CR
 Date: 19-03-24

Drawn: DT Checked: NB Approved: SJH
 Drawing No: 05-BYL-1462-HT-0001-GA1 Rev: C02

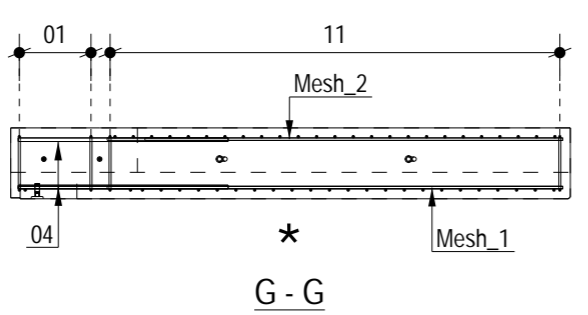
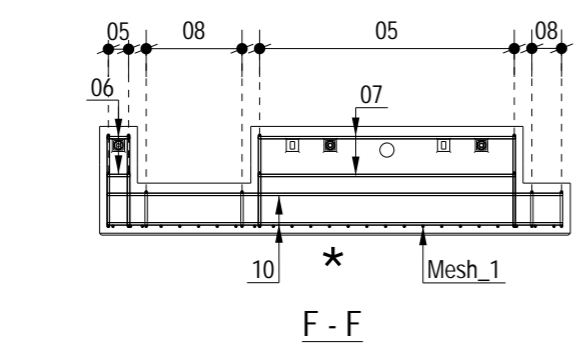
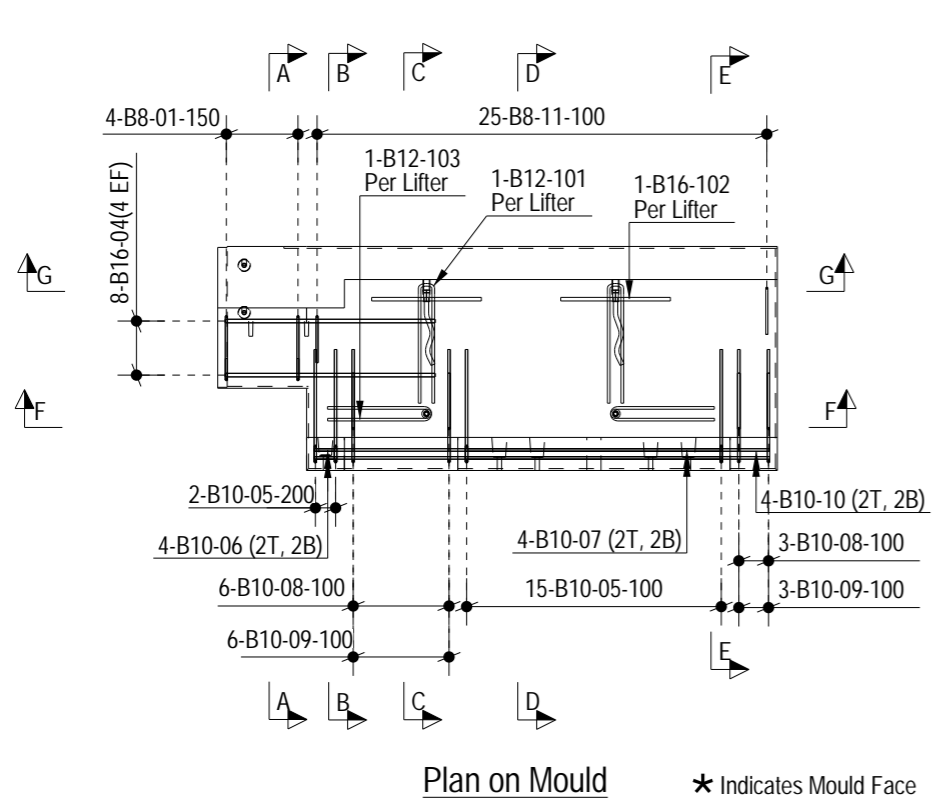
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

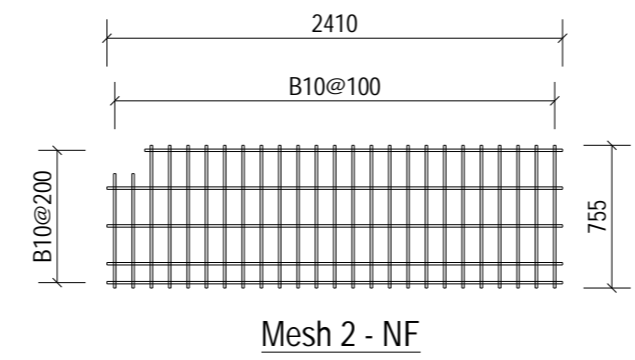
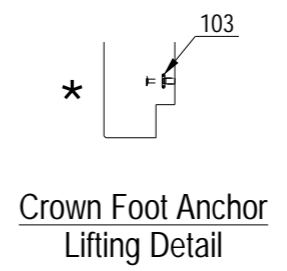
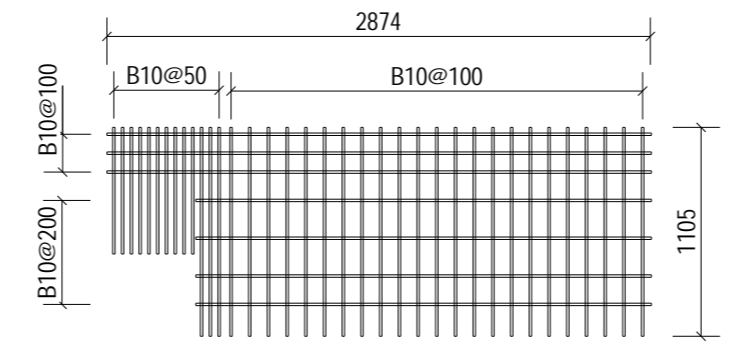
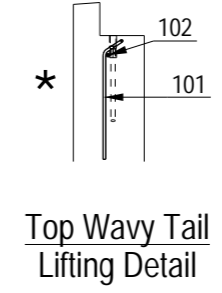
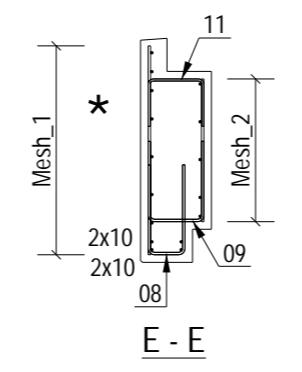
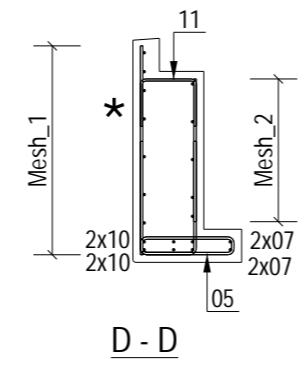
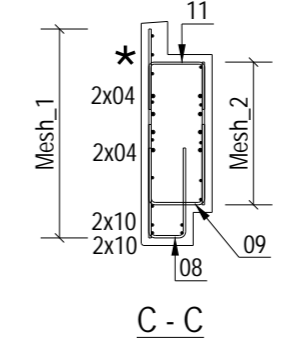
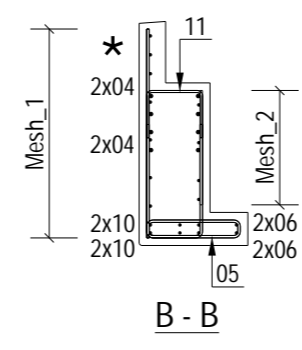
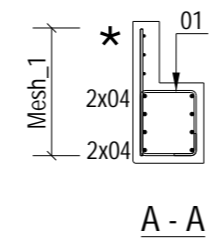
10mm

A3

10mm



Mesh To Be Trimmed to Suit



ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

10mm

A3

NOTES:

Type.	FRONTWALL
Mark.	HT-0001
GA Drg. Ref.	05-BYL-1462-HT-0001-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	21-03-24	Issued For Manufacture.	PK	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

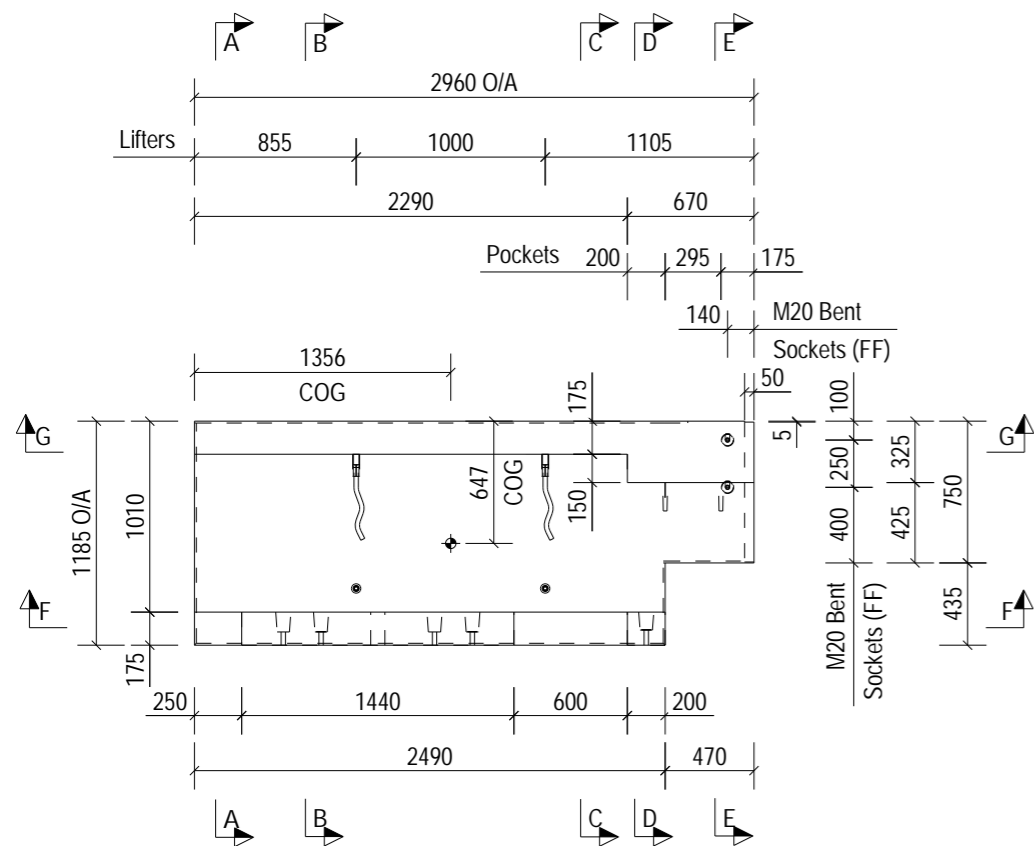
Client.

Project. **Panattoni Park Poyle**

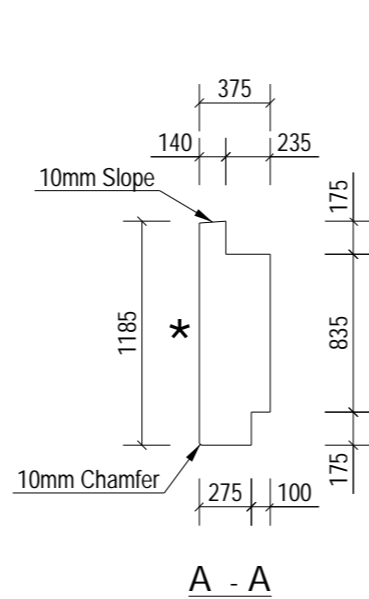
Title. **RC1 of FRONTWALL HT-0001**

Scale: 1:40	Status: As Built - CR	
Date: 19-03-24		
Drawn: PK	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-HT-0001-RC1		Rev: C01

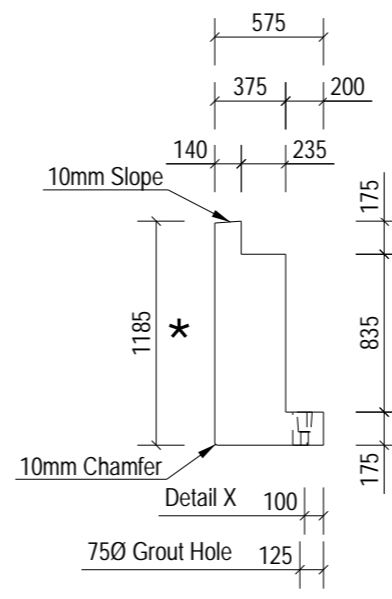
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



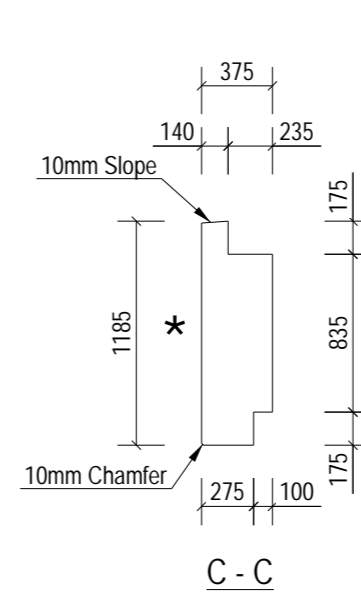
Plan on Mould * Indicates Mould Face



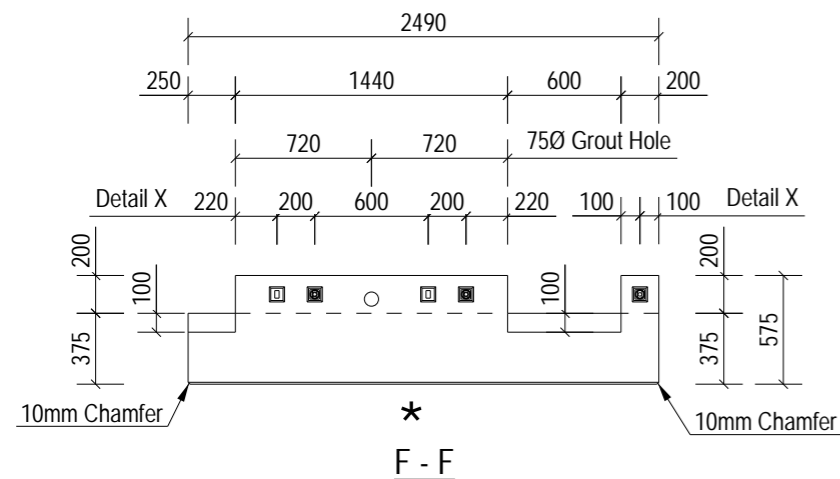
A - A



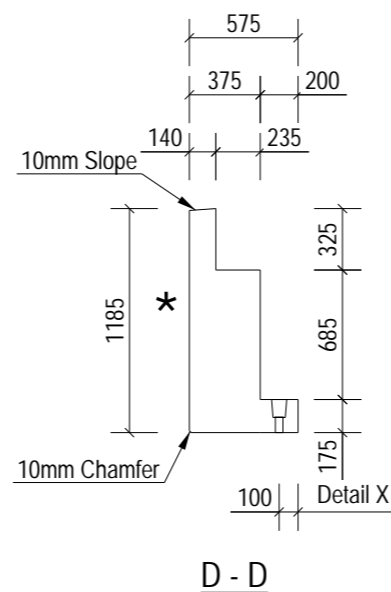
B - B



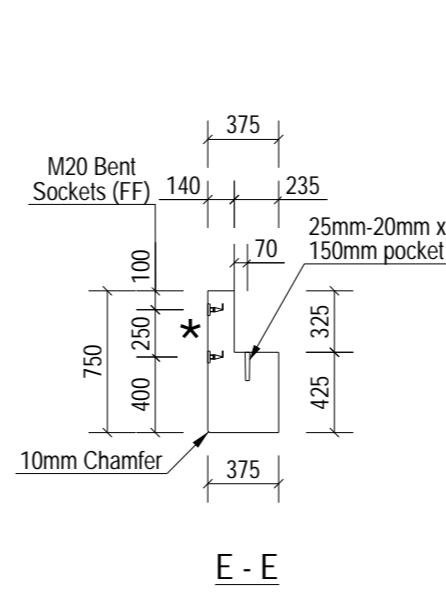
C - C



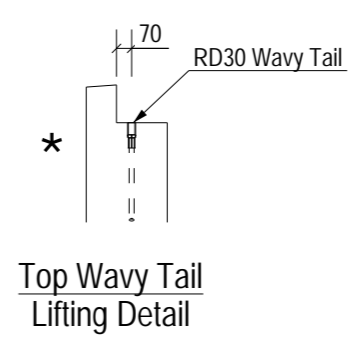
F - F



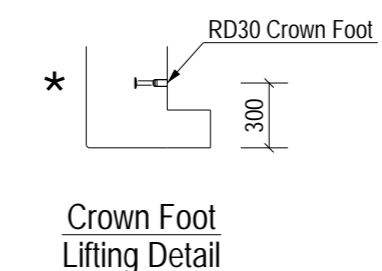
D - D



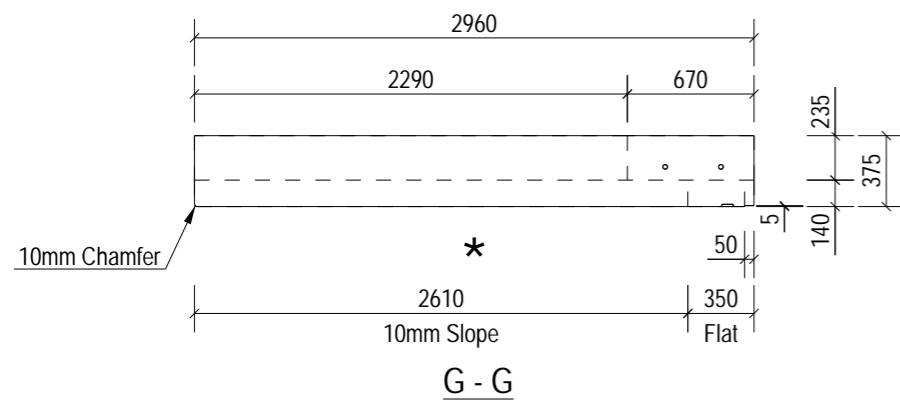
E - E



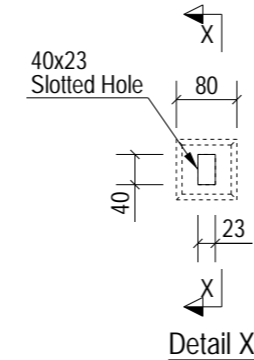
Top Wavy Tail Lifting Detail



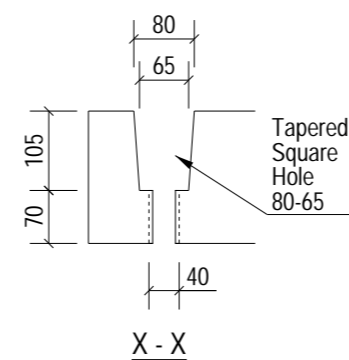
Crown Foot Lifting Detail



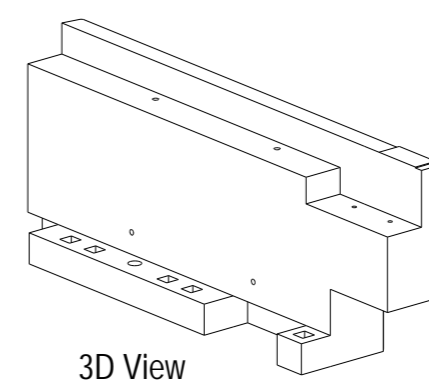
G - G



Detail X



X - X



3D View

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED.

NOTES:

Type.	FRONTWALL	
Length.	2960	+4 / -4
Height.	1185	+4 / -4
Width.	375	+4 / -4
Weight. (T)	2.83	
Volume. (m³)	1.13	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-HT-0002-RC1	
BBS Ref.	05-BYL-1462-HT-0002-BBS	
Calculation Ref.	FPMC-50-HT_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	HT-0002	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	M20 Bent Socket	SFA20070/SSFA2070
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:

Item	Spec	No.
Square Washer	(M25-50*50*2.5)	3 No.
Excalibur Bolt	(M20*300)	3 No.
Biscuit	(B12 x 300mm)	2 No.

Rev	Date	Revision Detail	By	Chk	App
C02	02-04-24	Dims Amended.	DT	NB	SJH
C01	21-03-24	Issued For Manufacture.	PK	NB	SJH

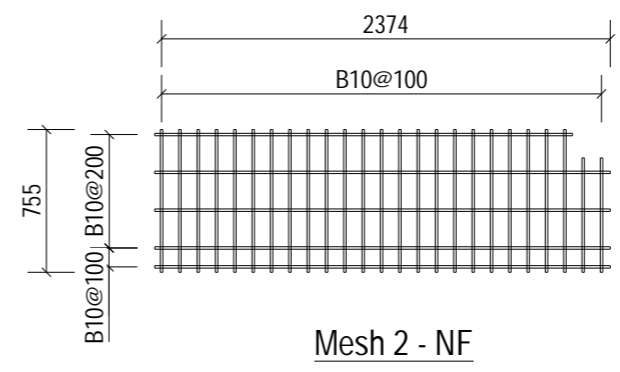
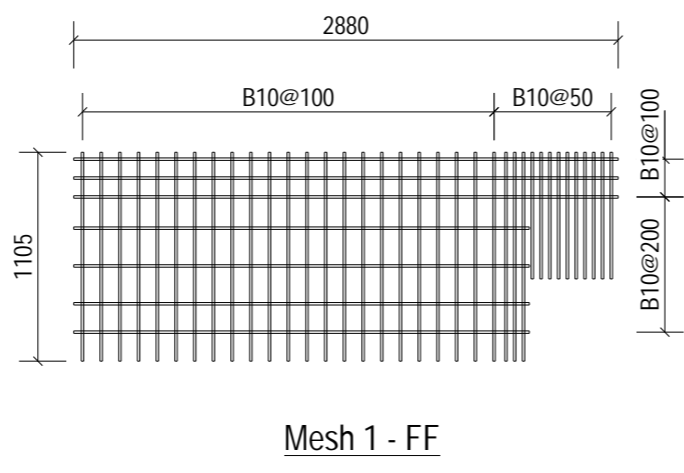
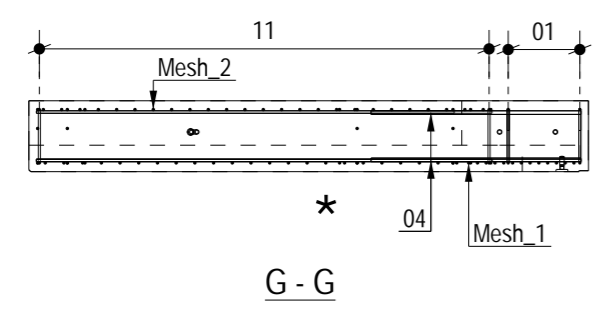
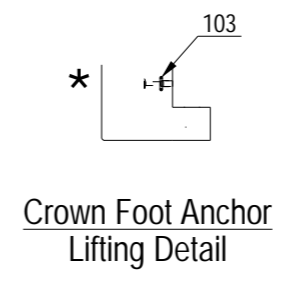
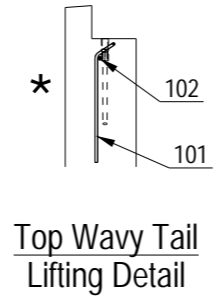
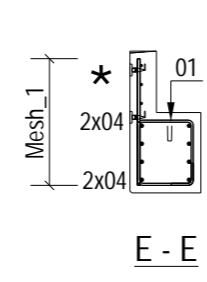
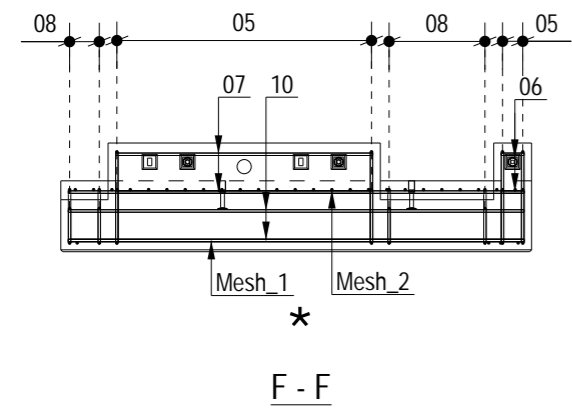
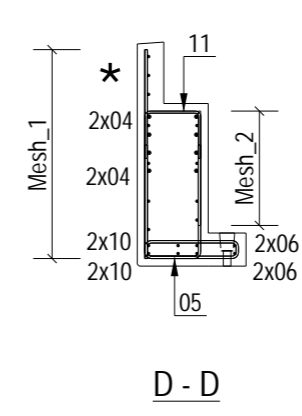
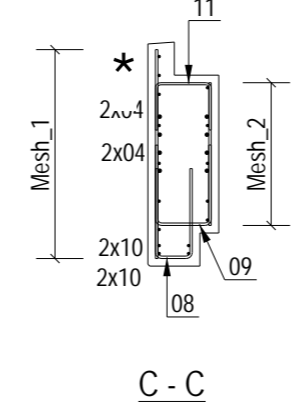
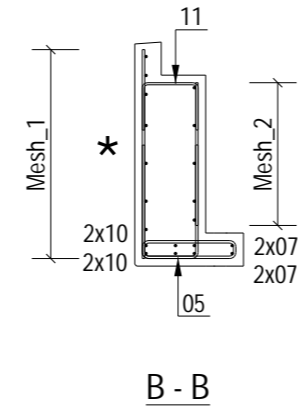
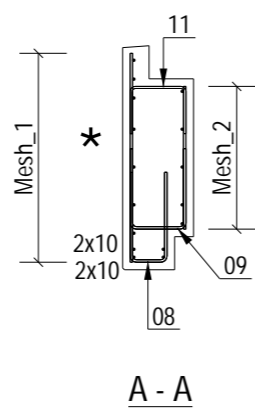
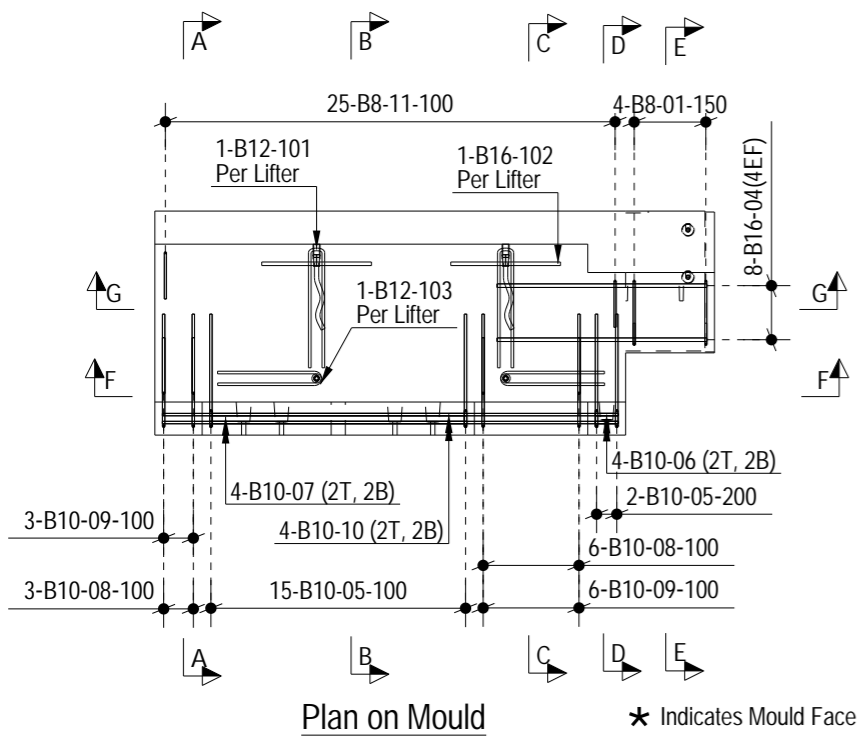
FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client:

Project: Panattoni Park Poyle

Title: GA1 of FRONTWALL HT-0002

Scale: 1:40	Status: As Built - CR
Date: 19-03-24	Drawn: DT
Checked: NB	Approved: SJH
Drawing No: 05-BYL-1462-HT-0002-GA1	Rev: C02



ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	FRONTWALL
Mark.	HT-0002
GA Drg. Ref.	05-BYL-1462-HT-0002-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	21-03-24	Issued For Manufacture.	PK	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

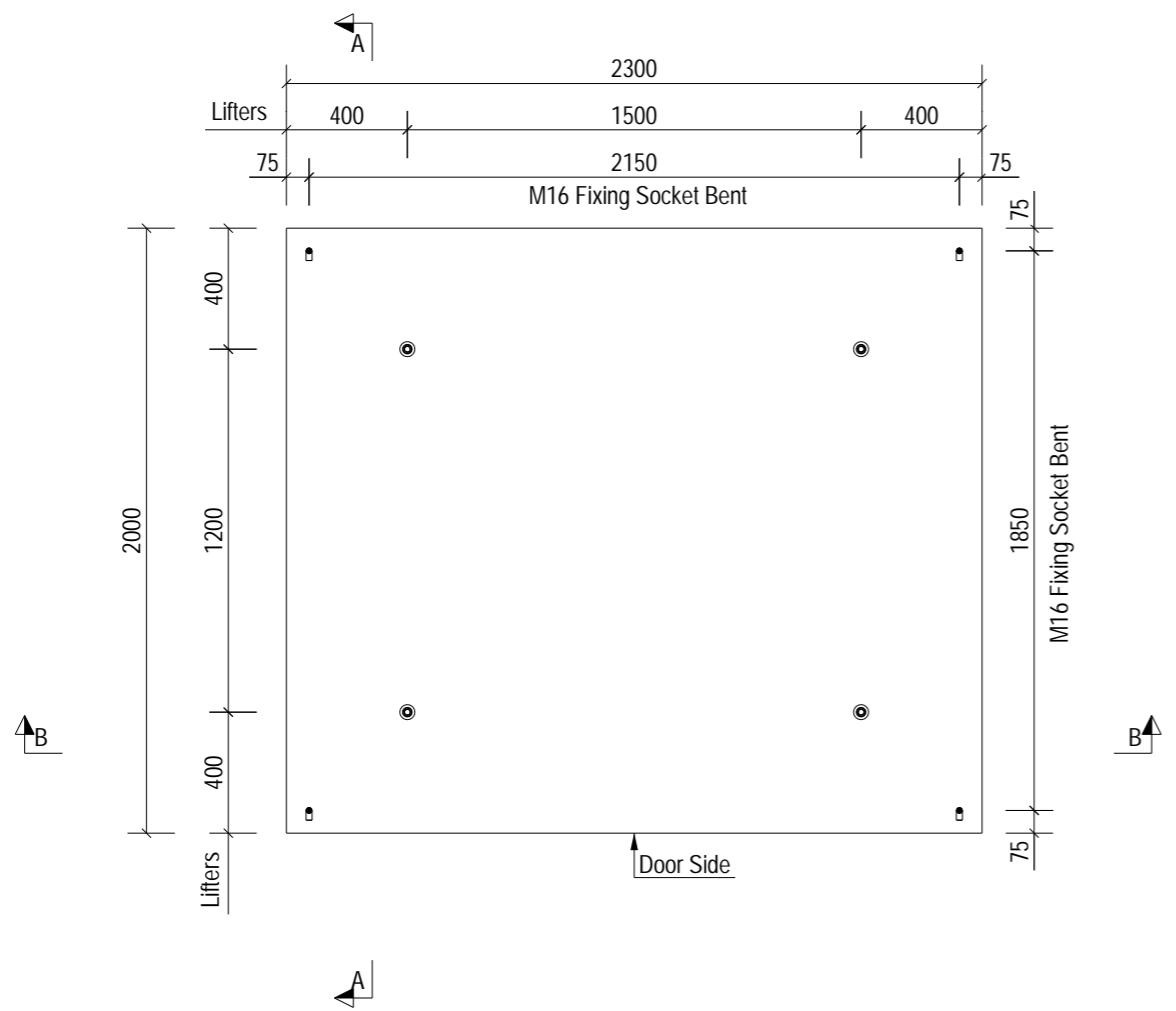
Title. RC1 of FRONTWALL HT-0002

Scale: 1:40	Status: As Built - CR	
Date: 19-03-24		
Drawn: PK	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-HT-0002-RC1	Rev: C01	

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

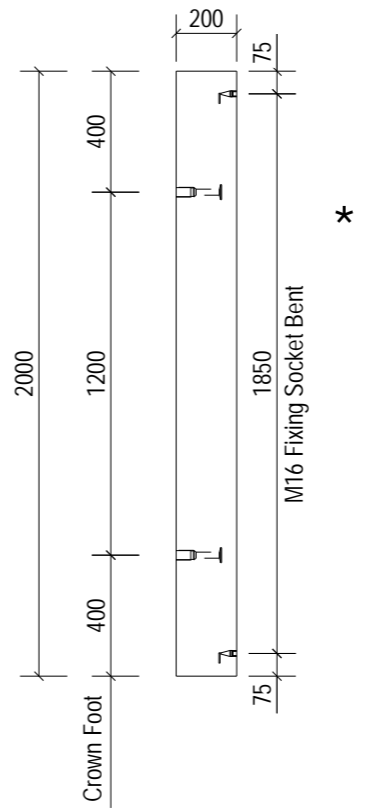
A3

10mm

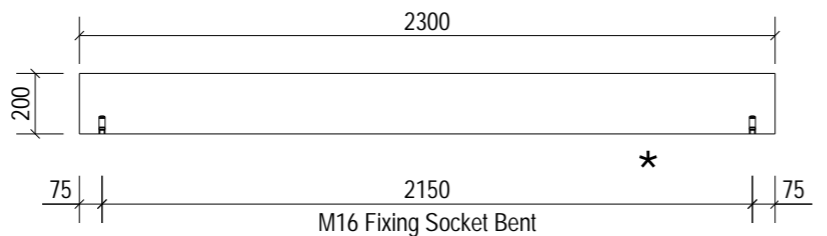


Plan on Mould

* Indicates Mould Face



A - A



B - B

Factory to clearly mark "DOOR SIDE" to top of unit

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Overall Length/Width Variation	Up to 3.0m	± 5mm	Width Of Walls
	3.01 to 6.0m	± 9mm	Up to 150mm
	Additional for every subsequent 6m	± 6mm	> 150mm
Height Of Unit	Up to 3.0m	± 5mm	Fixings/Inserts
	3.01 to 4.5m	± 9mm	Door opening size
			± 5mm
			-5/+10mm
		Internal Shaft	± 6mm
		Dimensions	

NOTES:		
Type.	Lift Lid	
Length.	200	See Table
Height.	2000	See Table
Width.	2300	See Table
Weight. (T)	2.30	
Volume. (m³)	0.92	
Concrete.	Grade C40	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-LL-0001-RC1	
BBS Ref.	05-BYL-1462-LL-0001-BBS	
Calculation Ref.	05-BYL-1462-FPMC-LIFT1-C01	
Cover.	25mm Nominal, (20mm Minimum)	
Casting Bed.	Flat Bed	
Mark.	LL-0001	
Lifting.	As standard procedures.	
Stacking.	Flat	

ENCAST ITEMS: PER UNIT		
No.	Item	Ref.
4	M16 Bent Socket	SFA1660/SSFA1660
4	RD30 Crown Foot	SLS30150/SCFS30150

Loose Fitting Take Off:		
Threaded Bar	(M16 x 340mm)	4 No.

Rev	Date	Revision Detail	By	Chk	App
C01	22-03-24	Issued For Manufacture.	MF	NB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

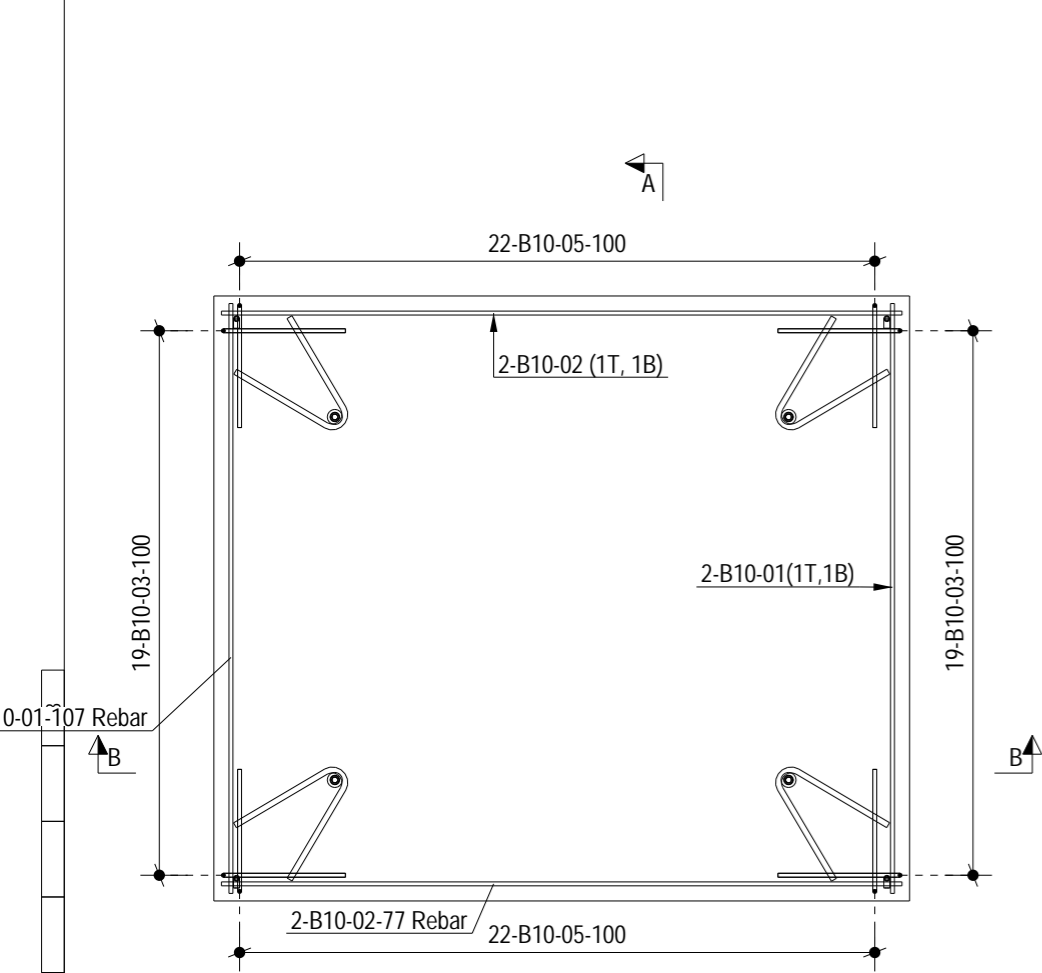
Client. 

Project. **Panattoni Park Poyle**

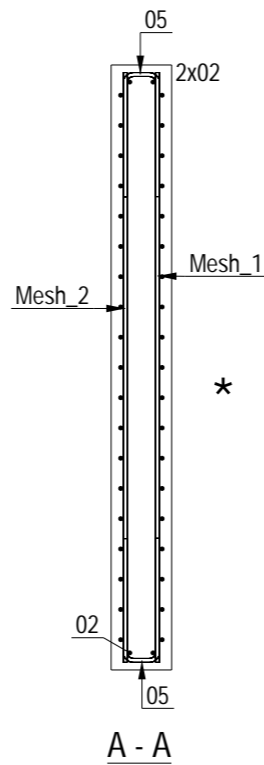
Title. **GA1 of Lift Lid LL-0001**

Scale: 1:25 Status: As Built - CR
Date: 19-03-24

Drawn: MF Checked: NB Approved: SJH
Drawing No : 05-BYL-1462-LL-0001-GA1 Rev: C01

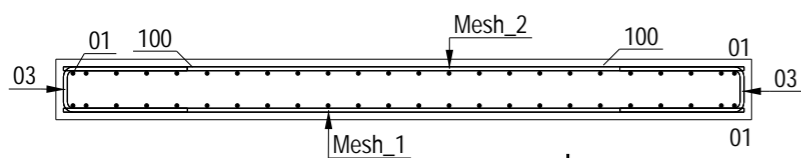


Plan on Mould

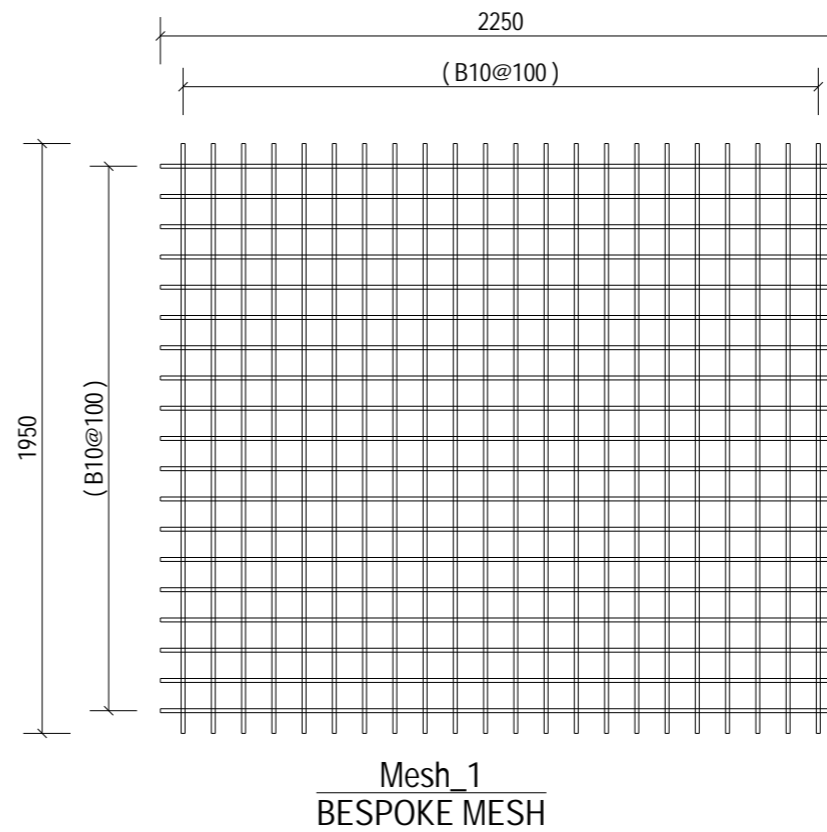


A - A

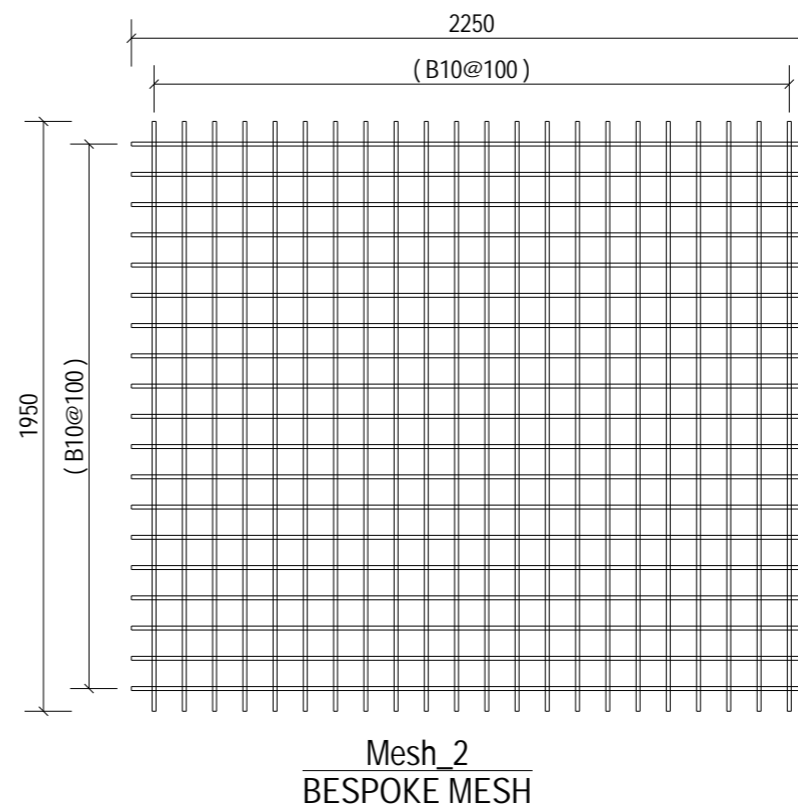
* Indicates Mould Face



B - B



Mesh 1
BESPOKE MESH



Mesh 2
BESPOKE MESH

NOTES:

Type.	Lift Lid
Mark.	LL-0001
GA Drg. Ref.	05-BYL-1462-LL-0001-GA1
Cover.	25mm Nominal, 20mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.



Project.

Panattoni Park
Poyle

Title.

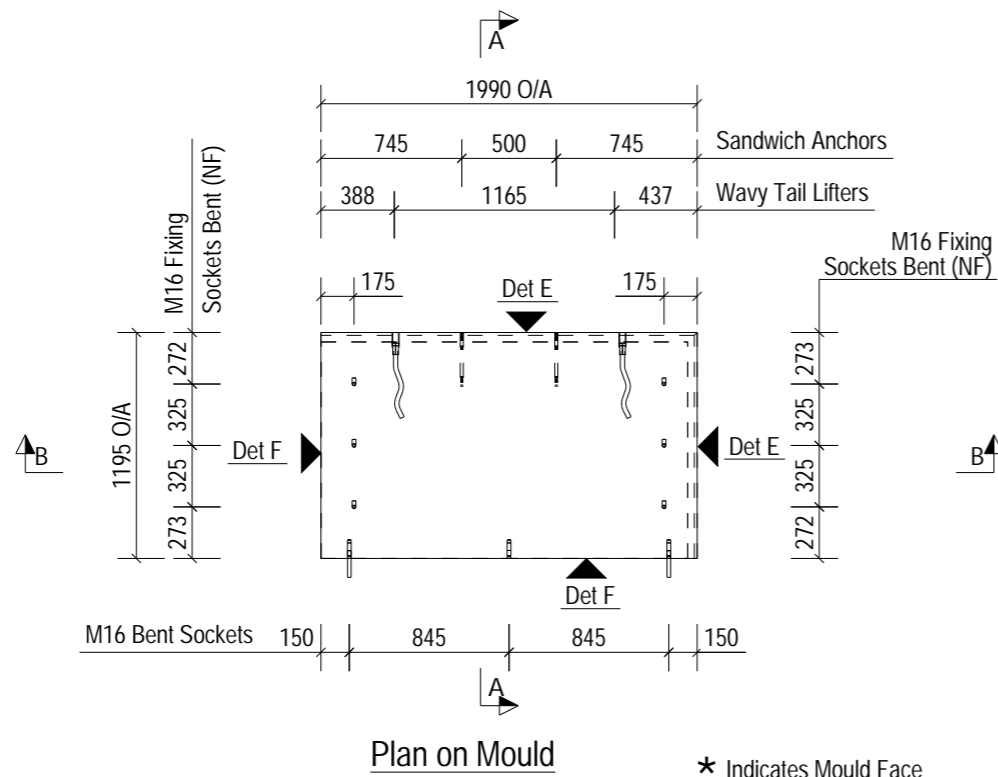
RC1 of
Lift Lid LL-0001

Scale: 1:25
Date: 19-03-24

Status:
As Built - CR

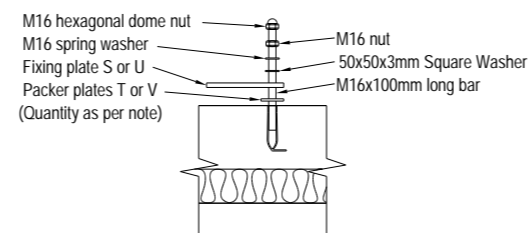
Drawn: MF Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-LL-0001-RC1 Rev: C01

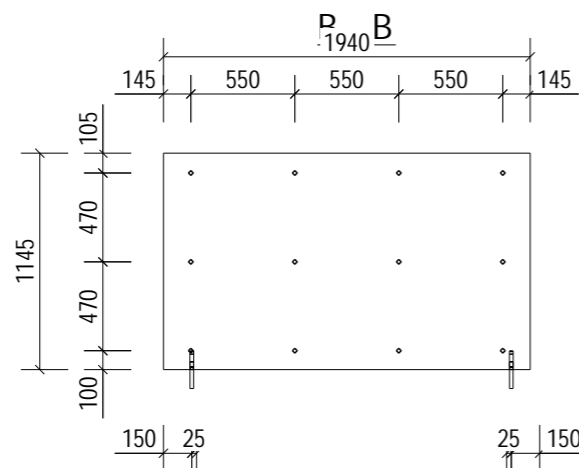


Plan on Mould

* Indicates Mould Face



Typical fixing plate connection detail
- To be used at each M16 socket floated face fixing location



Insulation Tie Setting Out
ST12 R2 200-50-50-100

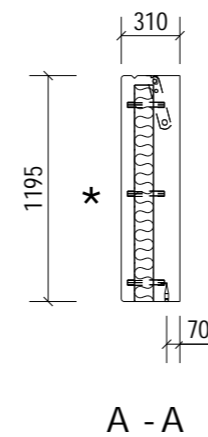
Notes:
10 Ø hole drilled into insulation
Ties must be 100mm minimum from edge

Insulation to be supplied in rectangular sheets
All insulation to be cut by precast manufacturers prior to inclusion in mould and the tie holes drilled once in place. This is to avoid any clash with reinforcing cages.
The fitting/application of the component shall be conducted in accordance with WP/05/F77

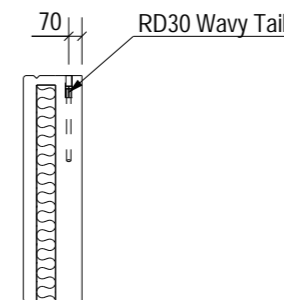
Unit to be delivered with 1No. fixing plate (S) and 3 packer plates (T) fitted at each end of unit. See drawing 05-BYL-1462-F01-F05.

Area of Panel = 2.38 m²
Total No. Ties = 12 Ref: ST12 R2 200-50-50-100 = 5.05 Ties/m²
550mm x 550mm Max Grid.
100mm Min - 275mm Max Edge Distance.

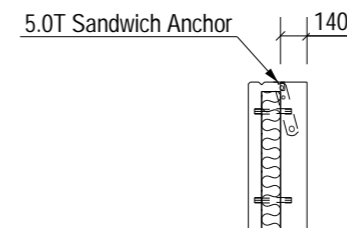
Lifting Note:
Unit to be pitched using wavy tail lifters. Sandwich anchors to be used for all lifting purposes once upright. Once upright wavy tail lifters are to be filled in the factory prior to delivery to site.



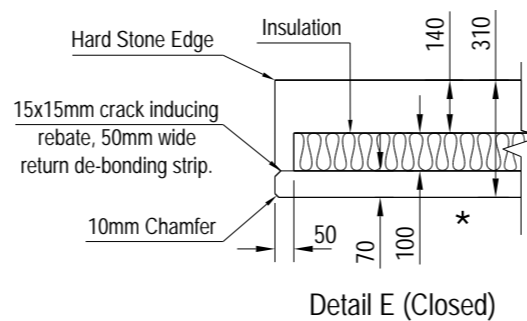
A - A



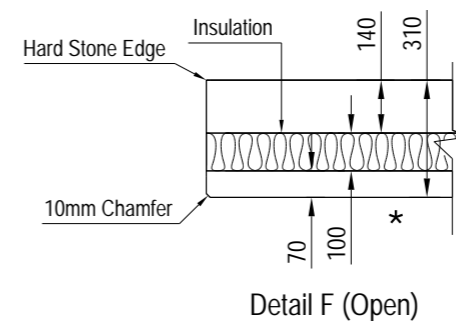
Section Through Wavy Tail



Section Through Sandwich Anchor



Detail E (Closed)



Detail F (Open)

NOTES:

Type.	Lintel	
Length.	1990	+4 / -4
Height.	1195	+4 / -4
Width.	310	+4 / -4
Weight. (T)	1.30	
Volume. (m ³)	0.51	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-LN-0001-RC1	
BBS Ref.	05-BYL-1462-LN-0001-BBS	
Calculation Ref.	FPMC-LNP_RevC01	
Cover.	30mm Nominal, 25mm Minimum	
Casting Bed.	Flat Bed	

Mark.	LN-0001	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
12	Thermomass Round Tie	ST12 R2 200-50-50-100
9	M16 Bent Socket	SFA16100/SSFA16100
2	5.0T Sandwich Anchor	LASSP050300/SSPA050300
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:		
Threaded Bar	(M16 x 140mm)	3 No.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

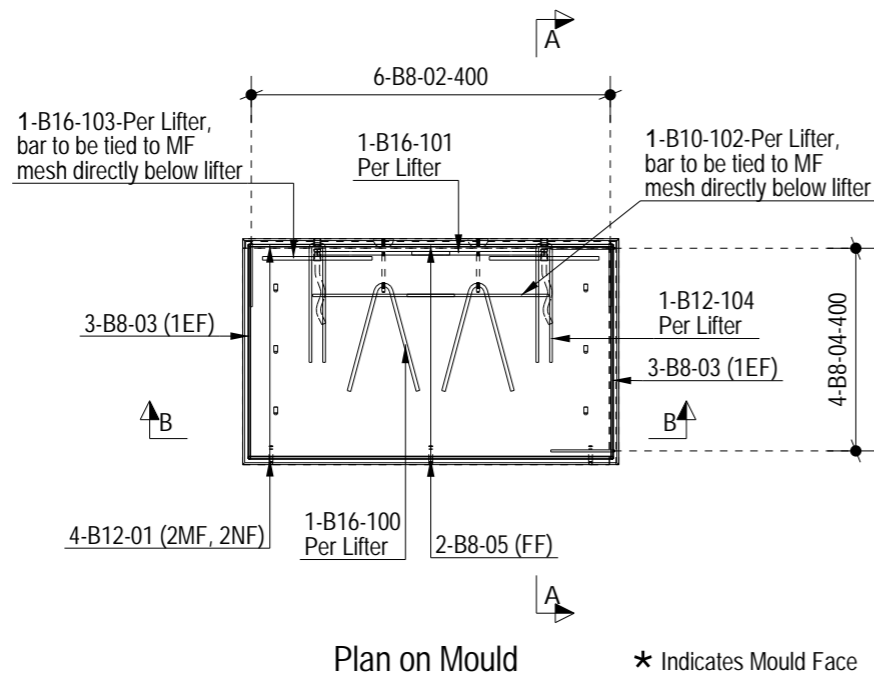
Project. Panattoni Park Poyle

Title. GA1 of Lintel LN-0001

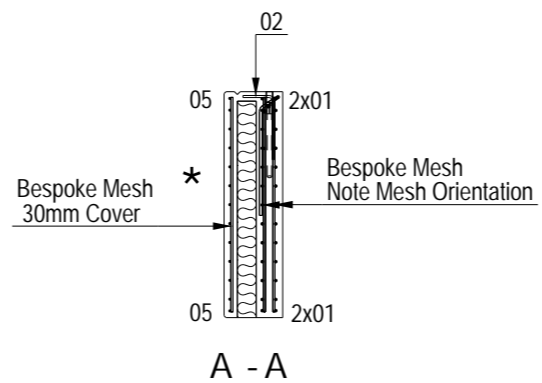
Scale: 1:40 Status: As Built - CR
Date: 18-03-24

Drawn: MA Checked: NB Approved: SJH

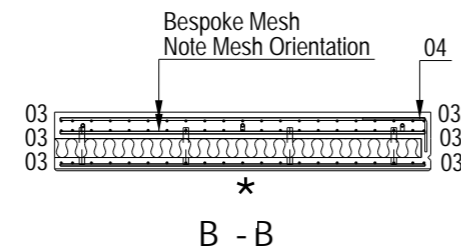
Drawing No : 05-BYL-1462-LN-0001-GA1 Rev: C01



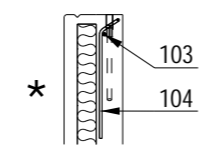
Plan on Mould * Indicates Mould Face



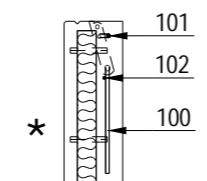
A - A



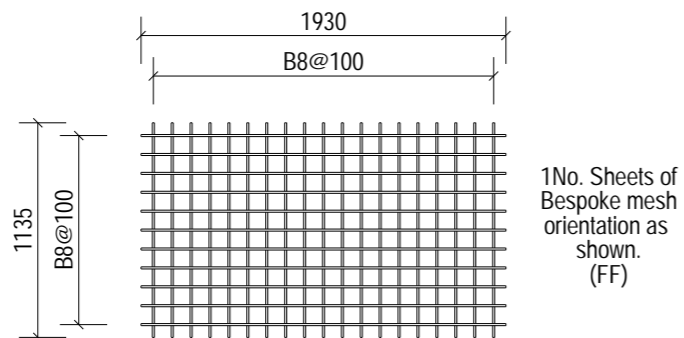
B - B



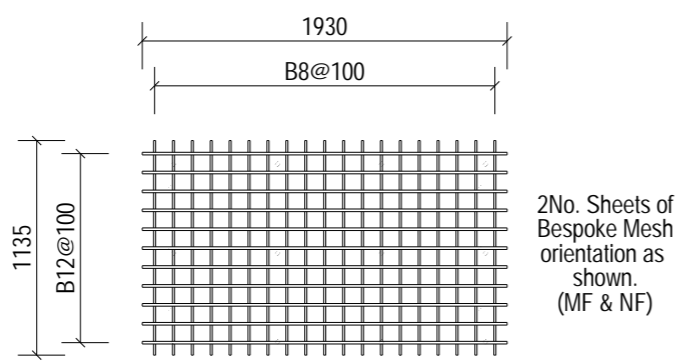
Section Through Wavy Tail



Section Through Sandwich Anchor



1No. Sheets of Bespoke mesh orientation as shown. (FF)



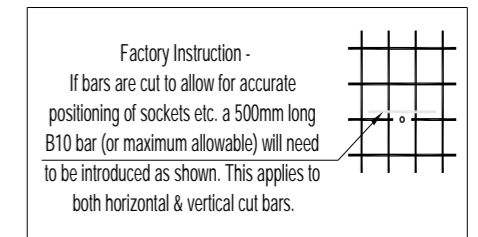
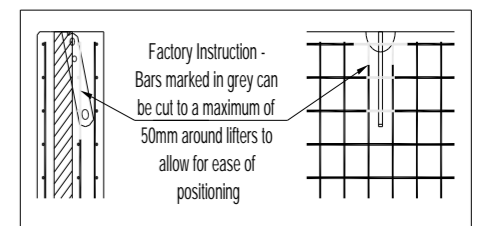
2No. Sheets of Bespoke Mesh orientation as shown. (MF & NF)

ALL DIMENSION SHOWN ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Lintel
Mark.	LN-0001
GA Drg. Ref.	05-BYL-1462-LN-0001-GA1
Cover.	30mm Nominal, 25mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.



Rev	Date	Revision Detail	By	Chk	App
C01	21-03-24	Issued For Manufacture.	MA	NB	SJH

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

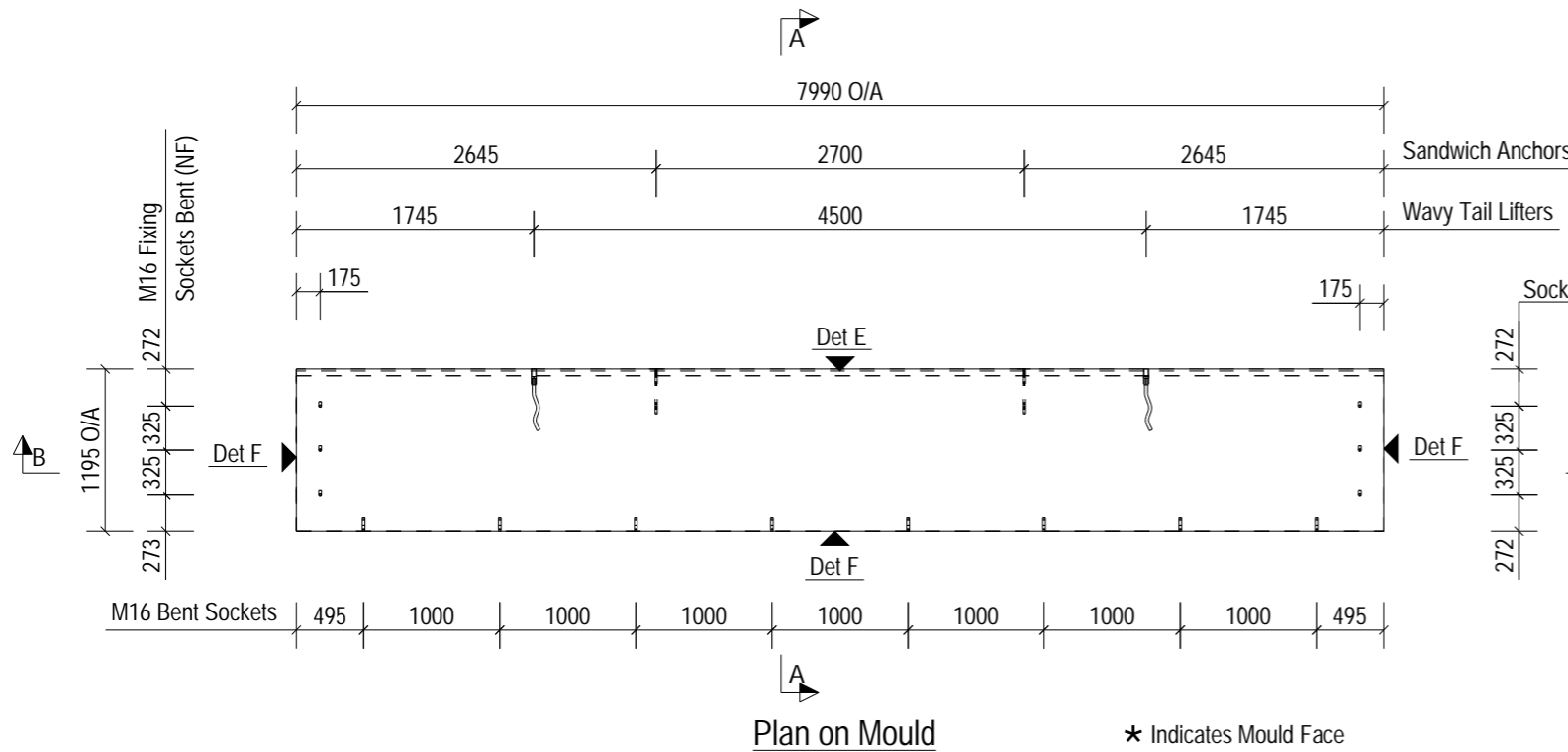
Client.

Project. **Panattoni Park Poyle**

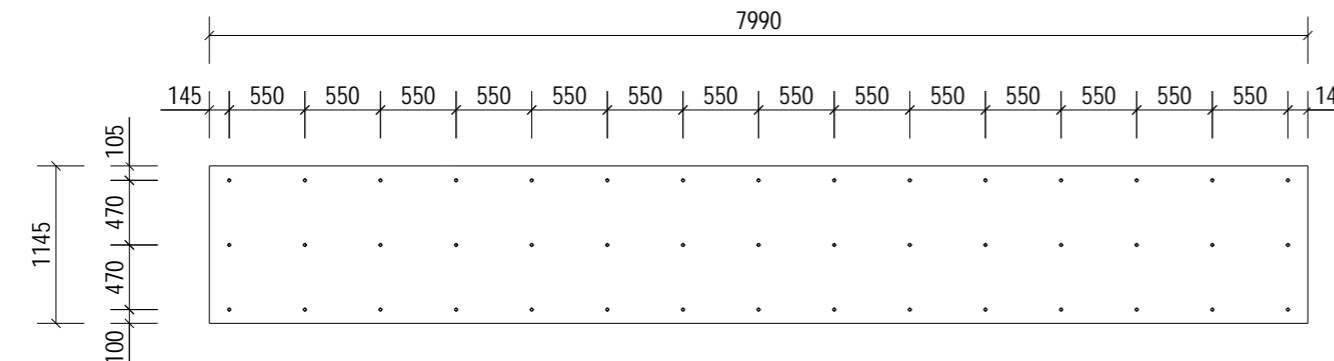
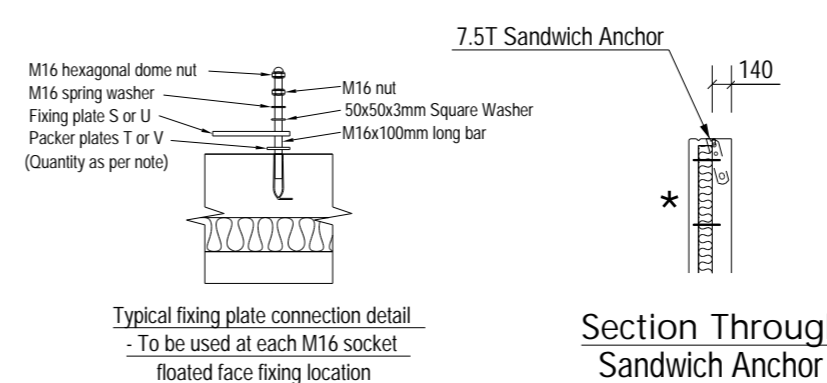
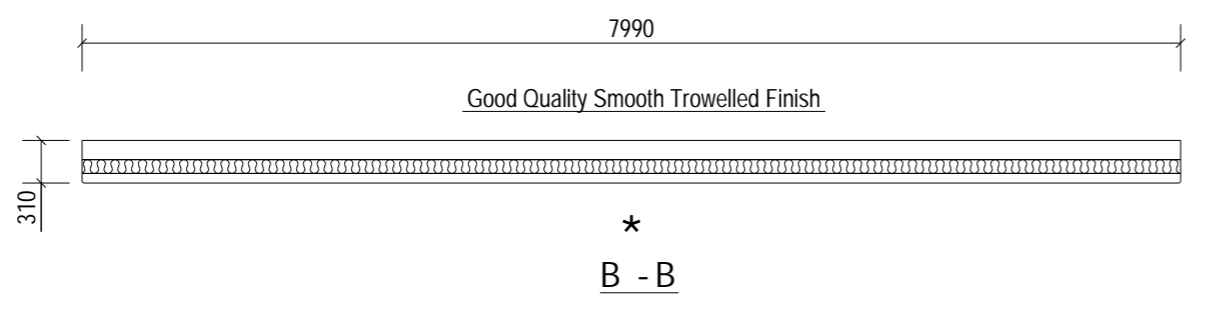
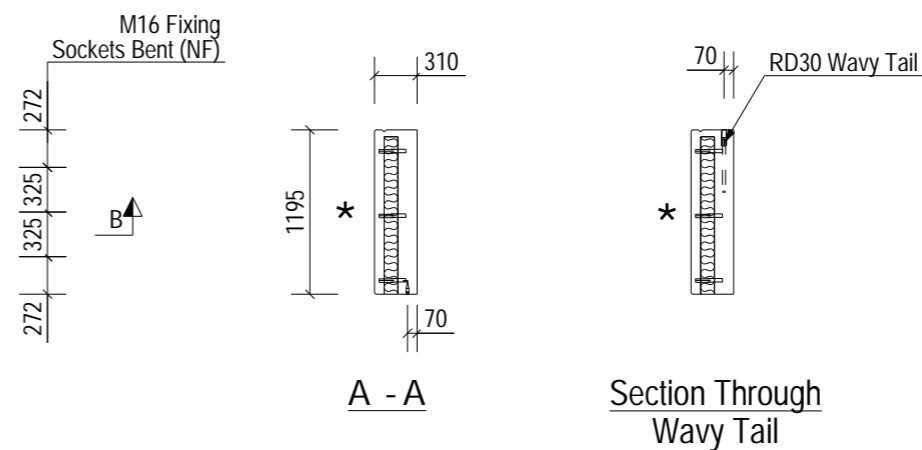
Title. **RC1 of Lintel LN-0001**

Scale: 1:40	Status: As Built - CR	
Date: 18-03-24		
Drawn: MA	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-LN-0001-RC1		Rev: C01

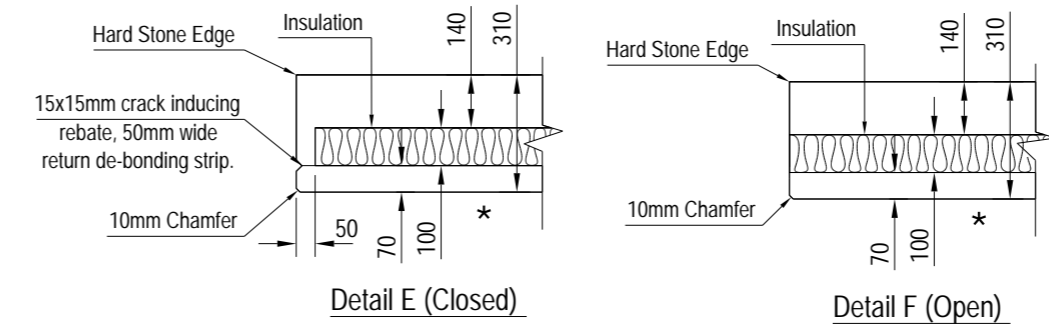
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



Lifting Note:
Unit to be pitched using wavy tail lifters. Sandwich anchors to be used for all lifting purposes once upright. Once upright wavy tail lifters are to be filled in the factory prior to delivery to site.



Insulation Tie Setting Out
ST12 R2 200-50-50-100



Notes:
10 Ø hole drilled into insulation
Ties must be 100mm minimum from edge

Insulation to be supplied in rectangular sheets
All insulation to be cut by precast manufacturers prior to inclusion in mould and the tie holes drilled once in place. This is to avoid any clash with reinforcing cages.
The fitting/application of the component shall be conducted in accordance with WP/05/F77

Unit to be delivered with 1No. fixing plate (S) and 3 packer plates (T) fitted at each end of unit. See drawing 05-BYL-1462-F01-F05.

Area of Panel = 9.55 m²
Total No. Ties = 45 Ref: ST12 R2 200-50-50-100 = 4.71 Ties/m²
550mm x 550mm Max Grid.
100mm Min - 275mm Max Edge Distance.

NOTES:

Type.	Lintel	
Length.	7990	+4 / -4
Height.	1195	+4 / -4
Width.	310	+4 / -4
Weight. (T)	5.17	
Volume. (m ³)	2.04	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-LN-0002-RC1	
BBS Ref.	05-BYL-1462-LN-0002-BBS	
Calculation Ref.	FPMC-LNP_RevC01	
Cover.	30mm Nominal, 25mm Minimum	
Casting Bed.	Flat Bed	
Mark.	LN-0002	
Lifting.	As standard procedures.	
Stacking.	Vertical	

RC Drg. Ref.	05-BYL-1462-LN-0002-RC1	
BBS Ref.	05-BYL-1462-LN-0002-BBS	
Calculation Ref.	FPMC-LNP_RevC01	
Cover.	30mm Nominal, 25mm Minimum	
Casting Bed.	Flat Bed	
Mark.	LN-0002	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
45	Thermomass Round Tie	ST12 R2 200-50-50-100
14	M16 Bent Socket	SFA16100/SSFA16100
2	7.5T Sandwich Anchor	LASSP075350/SSPA075350
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:

Threaded Bar	(M16 x 140mm)	8 No.
--------------	---------------	-------

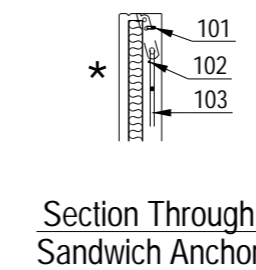
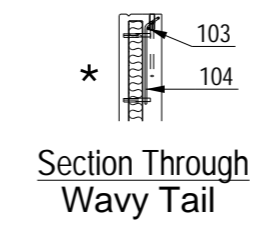
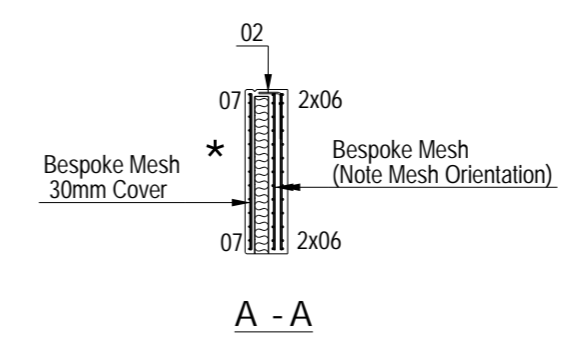
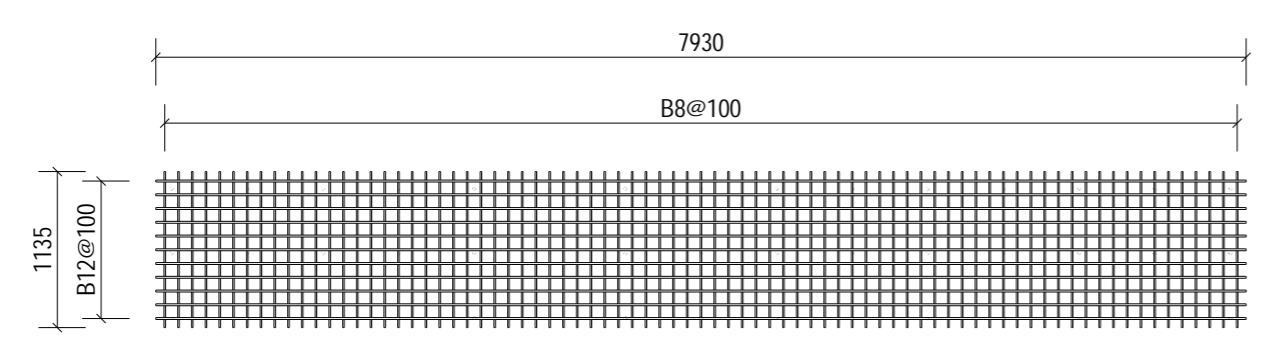
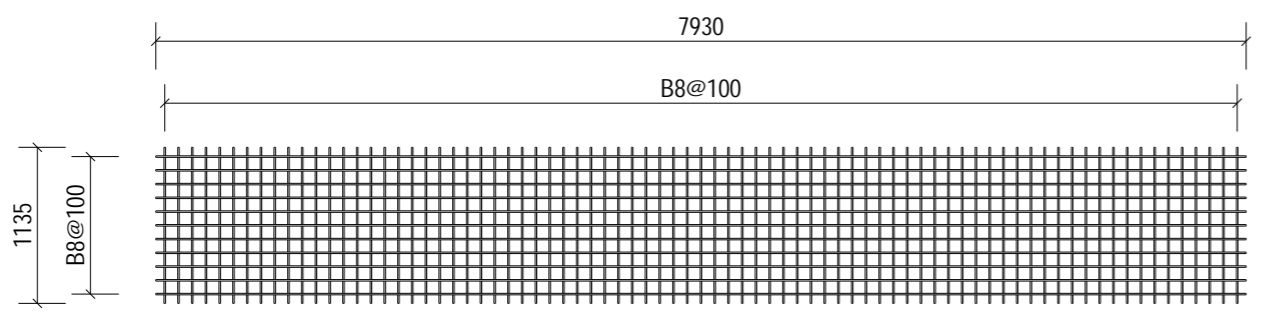
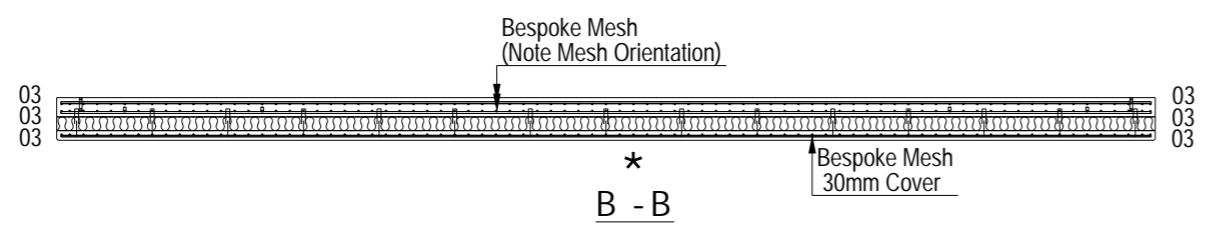
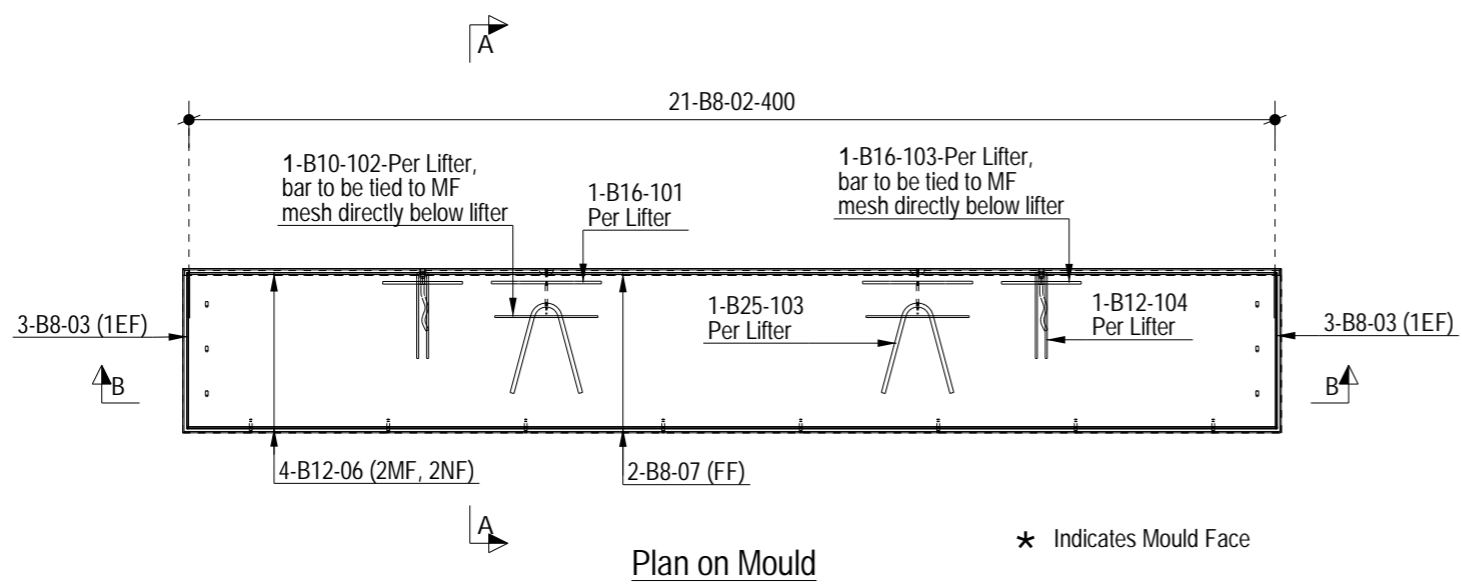
C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

Client:

Project: **Panattoni Park Poyle**

Title: **GA1 of Lintel LN-0002**

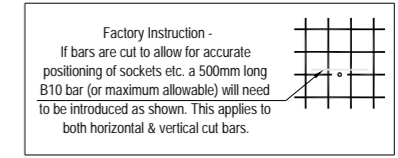
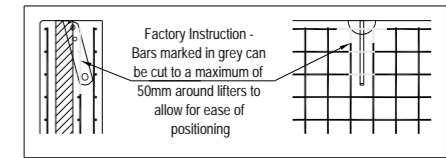
Scale: 1:55	Status: As Built - CR	
Date: 18-03-24	As Built - CR	
Drawn: MA	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-LN-0002-GA1	Rev: C01	



NOTES:

Type.	Lintel
Mark.	LN-0002
GA Drg. Ref.	05-BYL-1462-LN-0002-GA1
Cover.	30mm Nominal, 25mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.



C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

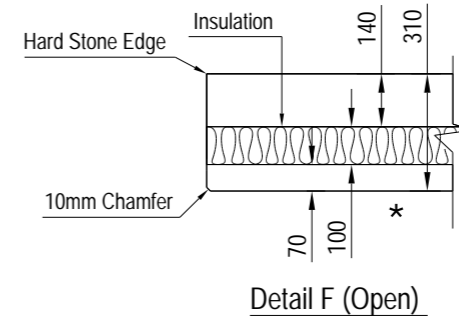
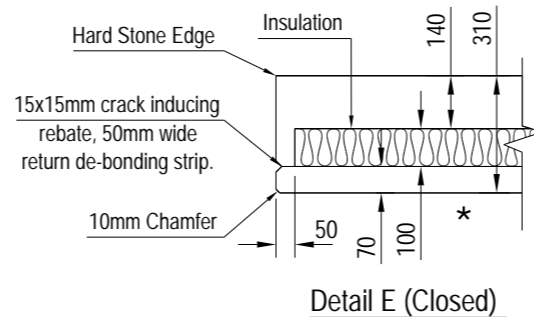
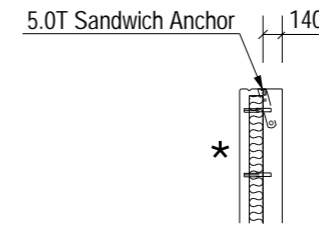
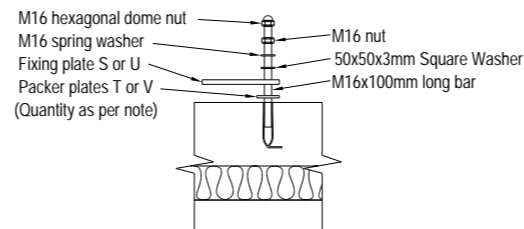
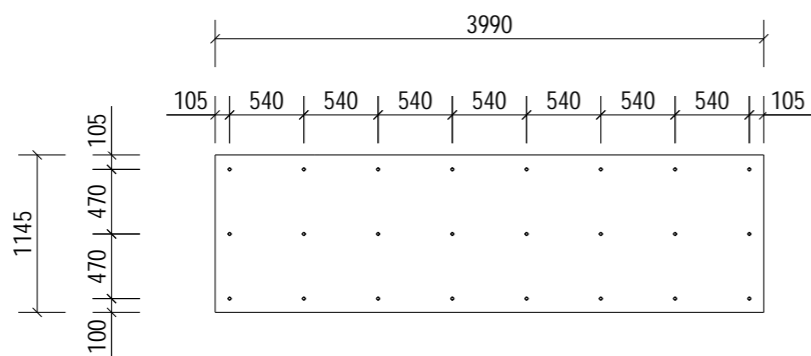
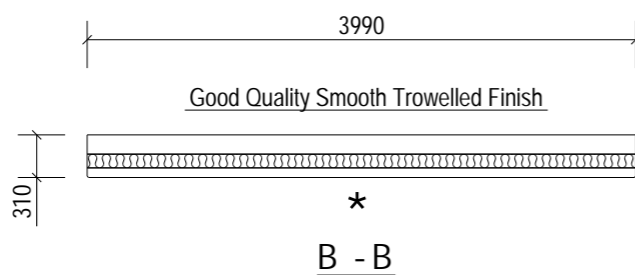
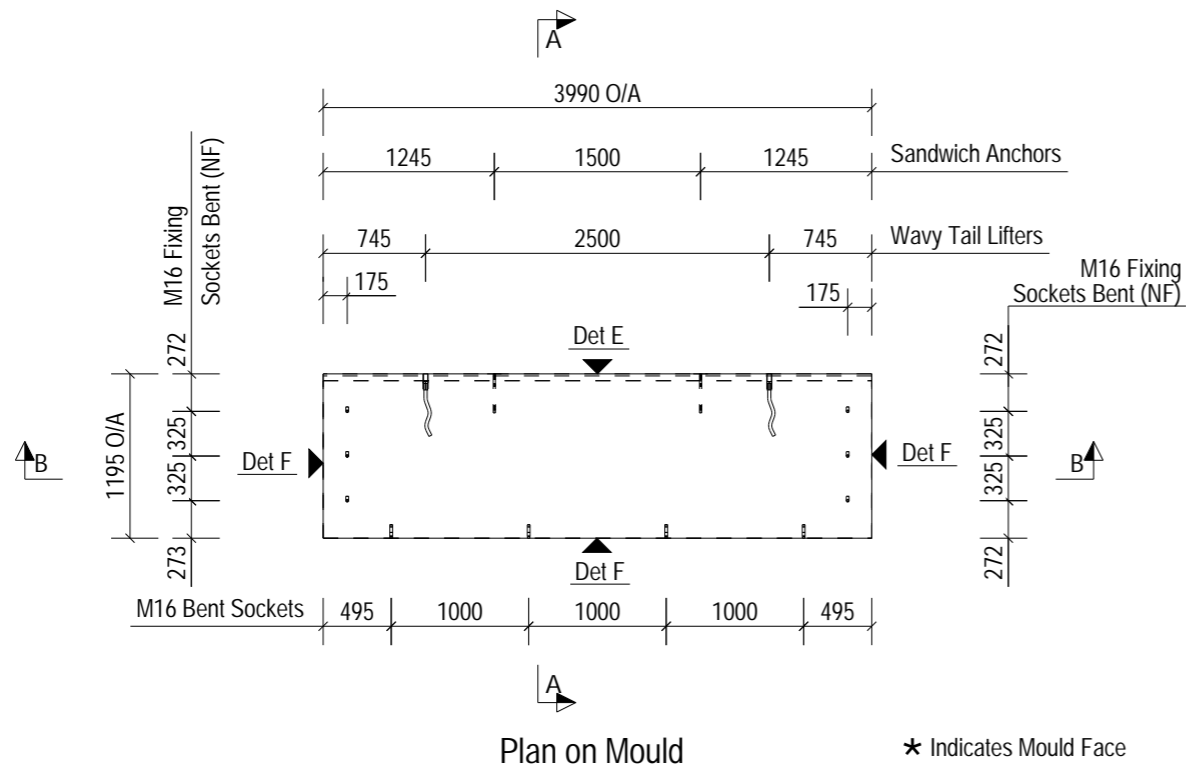
Client. **winvic**

Project. **Panattoni Park Poyle**

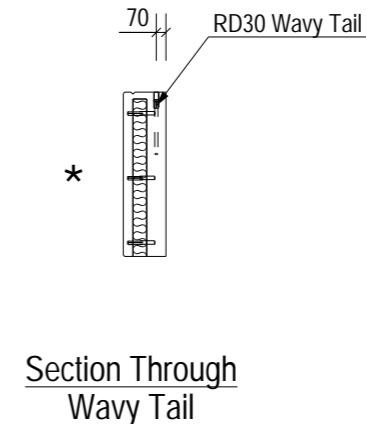
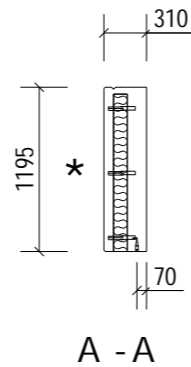
Title. **RC1 of Lintel LN-0002**

Scale: 1:55	Status: As Built - CR	
Date: 18-03-24		
Drawn: MA	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-LN-0002-RC1		Rev: C01

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.



Lifting Note:
Unit to be pitched using wavy tail lifters. Sandwich anchors to be used for all lifting purposes once upright. Once upright wavy tail lifters are to be filled in the factory prior to delivery to site.



NOTES:

Type.	Lintel	
Length.	3990	+4 / -4
Height.	1195	+4 / -4
Width.	310	+4 / -4
Weight. (T)	2.59	
Volume. (m³)	1.02	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-LN-0003-RC1	
BBS Ref.	05-BYL-1462-LN-0003-BBS	
Calculation Ref.	FPMC-LNP_RevC01	
Cover.	30mm Nominal, 25mm Minimum	
Casting Bed.	Flat Bed	

Mark.	LN-0003	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
24	Thermomass Round Tie	ST12 R2 200-50-50-100
10	M16 Bent Socket	SFA16100/SSFA16100
2	5.0T Sandwich Anchor	LASSP050300/SSPA050300
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:		
Threaded Bar	(M16 x 140mm)	4 No.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of Lintel LN-0003**

Scale: 1:55 Status: As Built - CR

Date: 18-03-24

Drawn: MA Checked: NB Approved: SJH

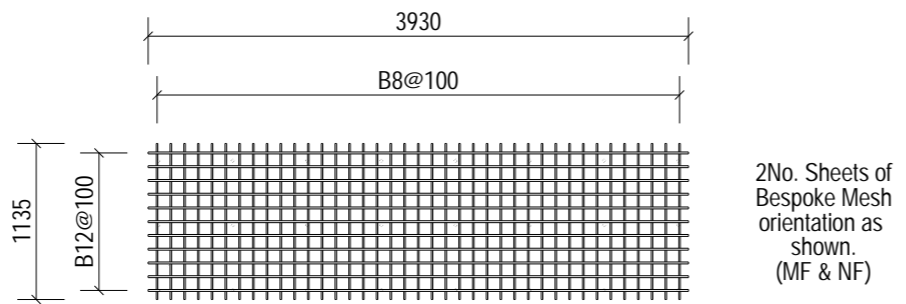
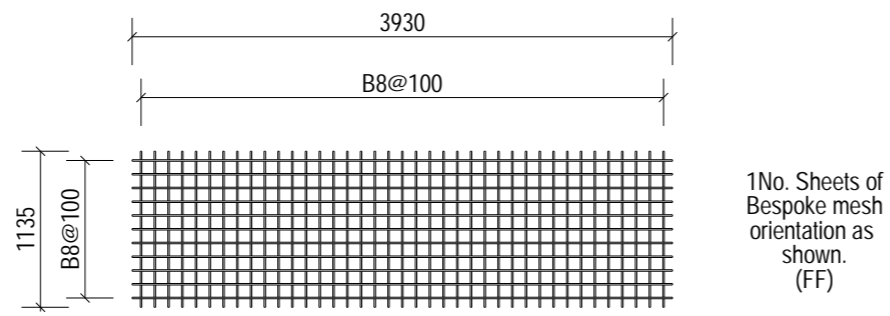
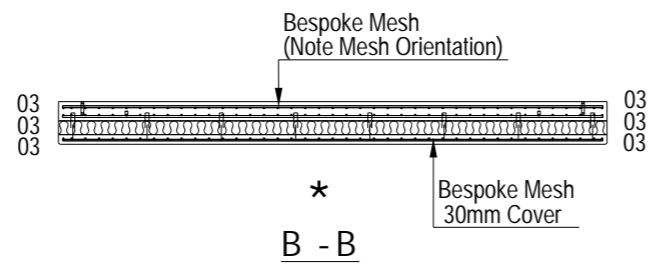
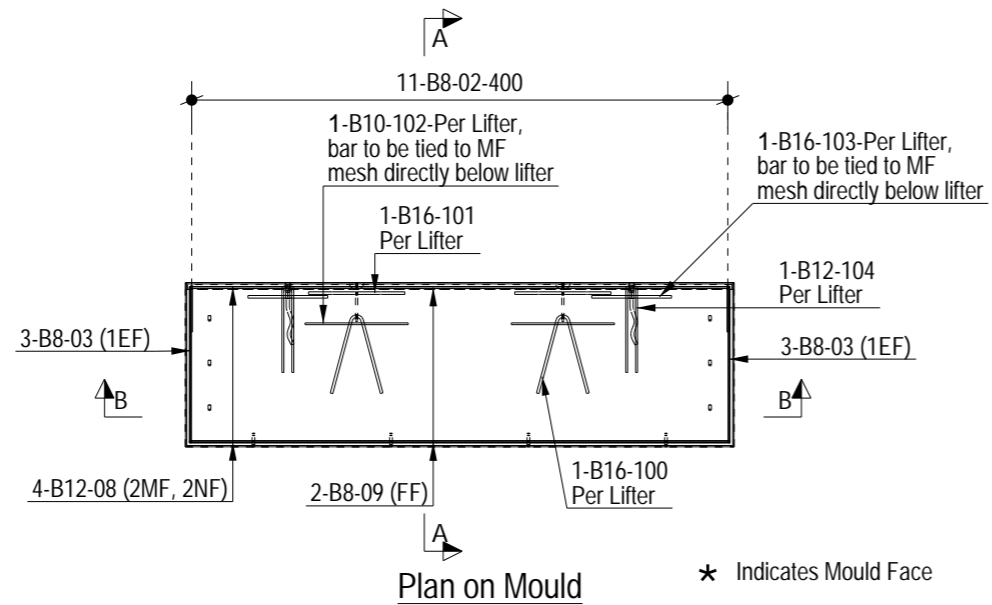
Drawing No : **05-BYL-1462-LN-0003-GA1** Rev: **C01**

Notes:
10 Ø hole drilled into insulation
Ties must be 100mm minimum from edge

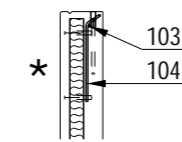
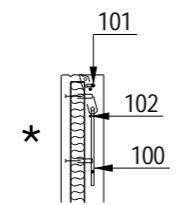
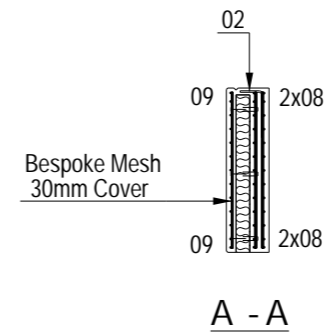
Insulation to be supplied in rectangular sheets
All insulation to be cut by precast manufacturers prior to inclusion in mould and the tie holes drilled once in place. This is to avoid any clash with reinforcing cages.
The fitting/application of the component shall be conducted in accordance with WP/05/F77

Unit to be delivered with 1No. fixing plate (S) and 3 packer plates (T) fitted at each end of unit. See drawing 05-BYL-1462-F01-F05.

Area of Panel = 4.77 m²
Total No. Ties = 24 Ref: ST12 R2 200-50-50-100 = 5.03 Ties/m²
550mm x 550mm Max Grid.
100mm Min - 275mm Max Edge Distance.



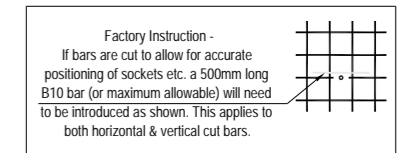
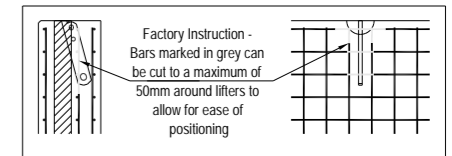
ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.



NOTES:

Type.	Lintel
Mark.	LN-0003
GA Drg. Ref.	05-BYL-1462-LN-0003-GA1
Cover.	30mm Nominal, 25mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.



C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

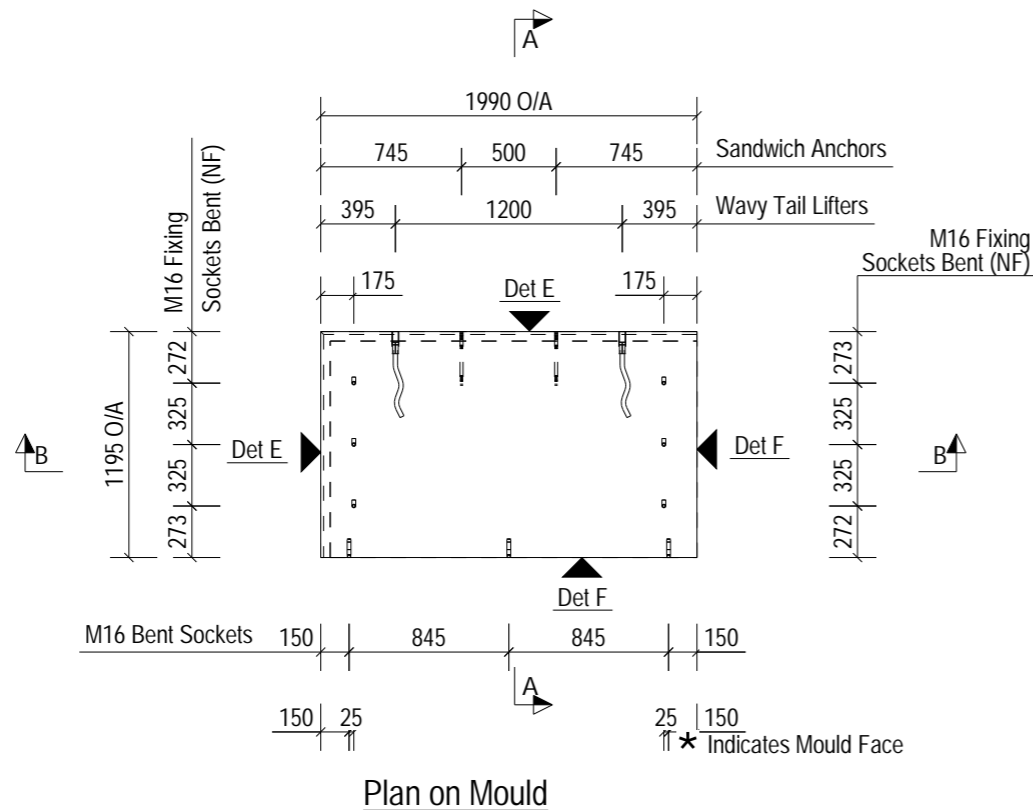
Project. **Panattoni Park Poyle**

Title. **RC1 of Lintel LN-0003**

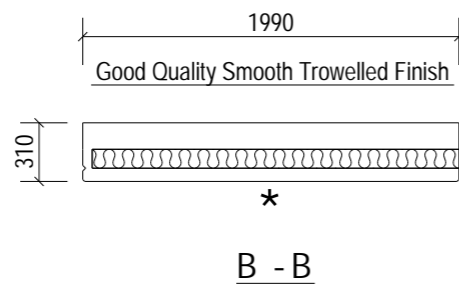
Scale: 1:55 Status: As Built - CR
Date: 18-03-24

Drawn: MA Checked: NB Approved: SJH

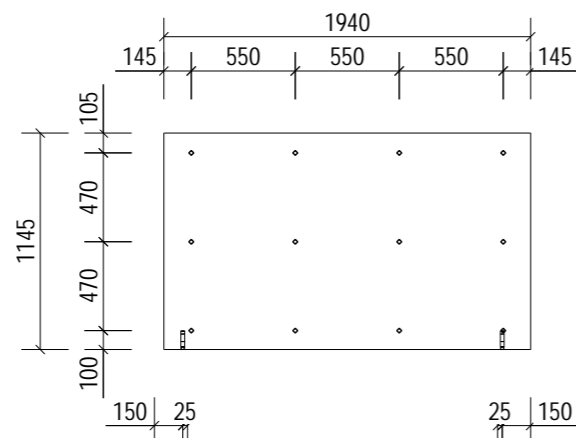
Drawing No : 05-BYL-1462-LN-0003-RC1 Rev: C01



Plan on Mould



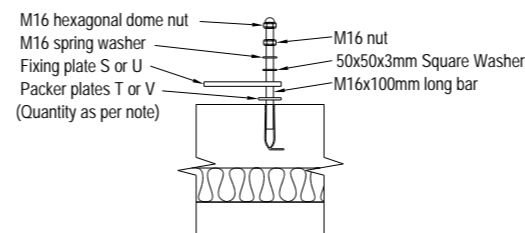
B - B



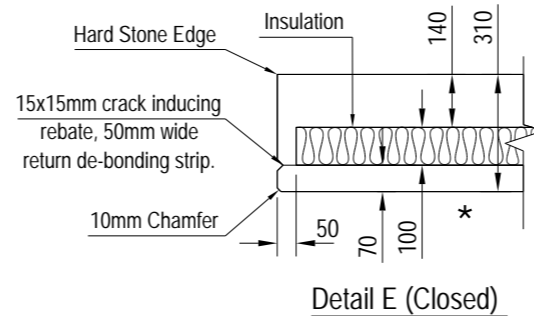
Insulation Tie Setting Out
ST12 R2 200-50-50-100

Notes:
10 Ø hole drilled into insulation
Ties must be 100mm minimum from edge.

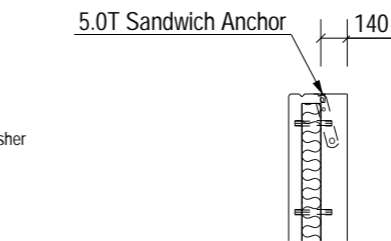
Insulation to be supplied in rectangular sheets
All insulation to be cut by precast manufacturers prior to inclusion in mould and the tie holes drilled once in place. This is to avoid any clash with reinforcing cages.
The fitting/application of the component shall be conducted in accordance with WP/05/F77



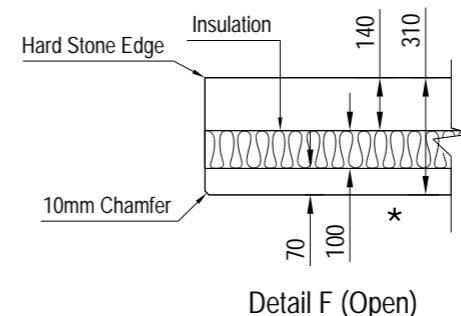
Typical fixing plate connection detail
- To be used at each M16 socket floated face fixing location



Detail E (Closed)

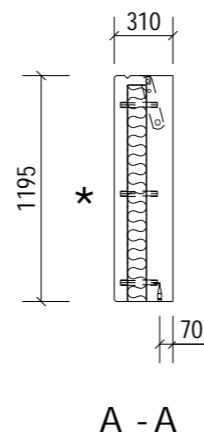


Section Through Sandwich Anchor

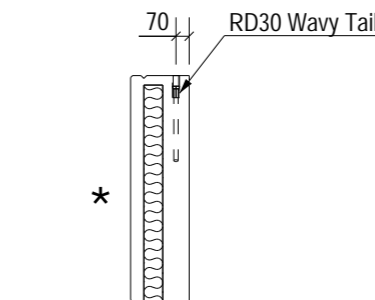


Detail F (Open)

Lifting Note:
Unit to be pitched using wavy tail lifters. Sandwich anchors to be used for all lifting purposes once upright. Once upright wavy tail lifters are to be filled in the factory prior to delivery to site.



A - A



Section Through Wavy Tail

NOTES:

Type.	Lintel	
Length.	1990	+4 / -4
Height.	1195	+4 / -4
Width.	310	+4 / -4
Weight. (T)	1.30	
Volume. (m³)	0.51	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-LN-0004-RC1	
BBS Ref.	05-BYL-1462-LN-0004-BBS	
Calculation Ref.	FPMC-LNP_RevC01	
Cover.	30mm Nominal, 25mm Minimum	
Casting Bed.	Flat Bed	
Mark.	LN-0004	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
12	Thermomass Round Tie	ST12 R2 200-50-50-100
9	M16 Bent Socket	SFA16100/SSFA16100
2	5.0T Sandwich Anchor	LASSP050300/SSPA050300
2	RD30 Wavy Tail	SLWL30450/SSLW30450

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann
FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client: **winvic**

Project: **Panattoni Park Poyle**

Title: **GA1 of Lintel LN-0004**

Scale: 1:40 Status: As Built - CR

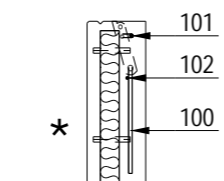
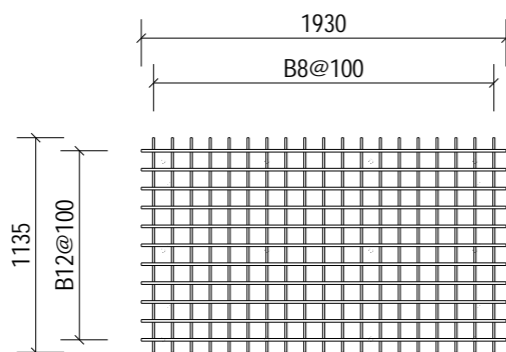
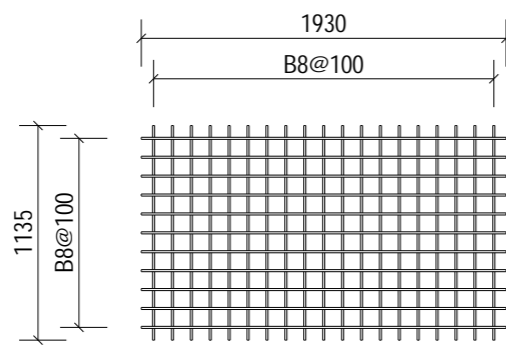
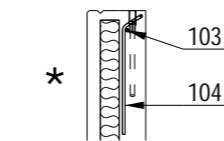
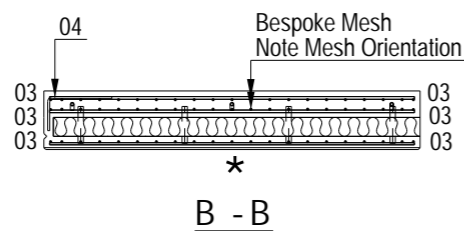
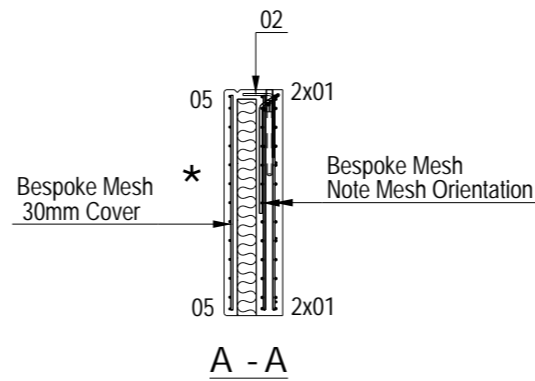
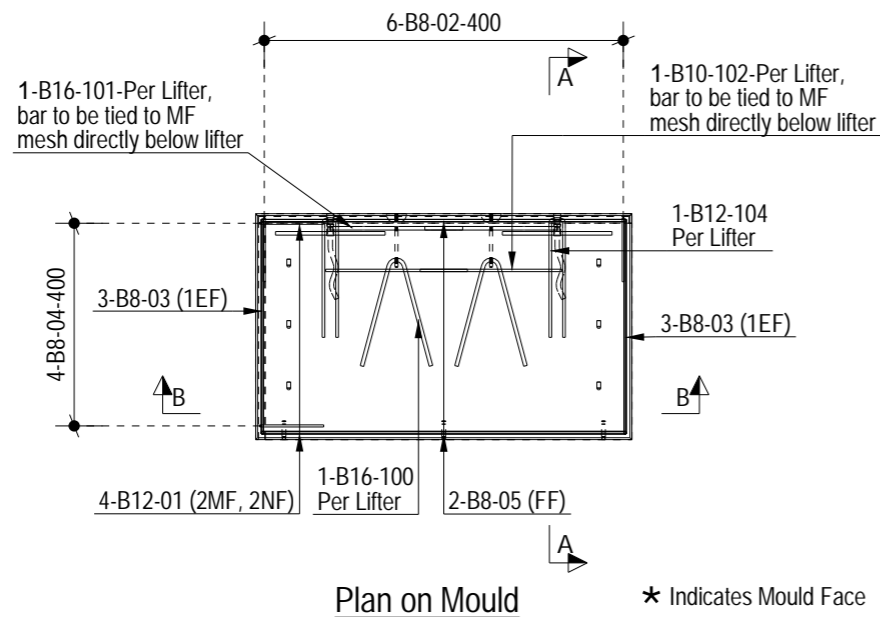
Date: 18-03-24

Drawn: MA Checked: NB Approved: SJH

Drawing No: **05-BYL-1462-LN-0004-GA1** Rev: **C01**

Area of Panel = 2.38 m²
Total No. Ties = 12 Ref: ST12 R2 200-50-50-100 = 5.05 Ties/m²
550mm x 550mm Max Grid.
100mm Min - 275mm Max Edge Distance.

Unit to be delivered with 1No. fixing plate (S) and 3 packer plates (T) fitted at each end of unit. See drawing 05-BYL-1462-F01-F05.

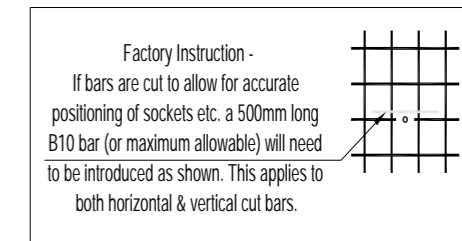
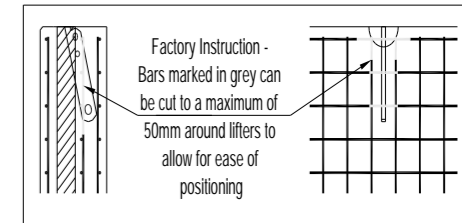


ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Lintel
Mark.	LN-0004
GA Drg. Ref.	05-BYL-1462-LN-0004-GA1
Cover.	30mm Nominal, 25mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.



C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

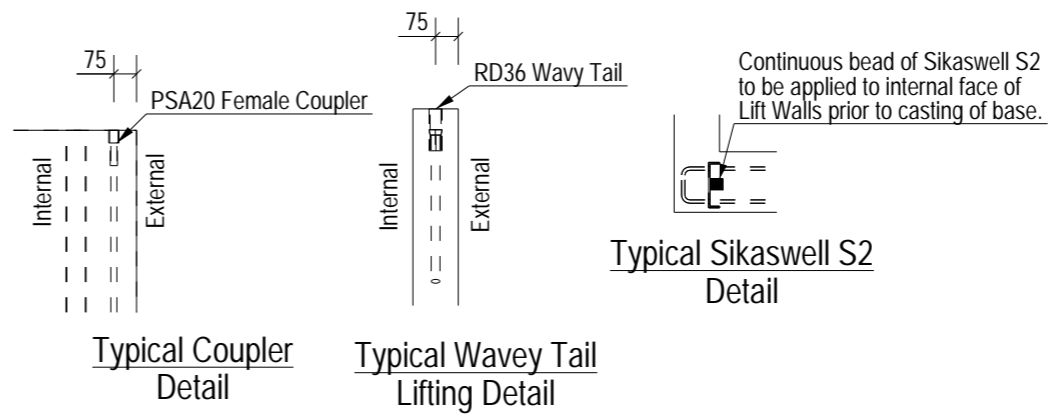
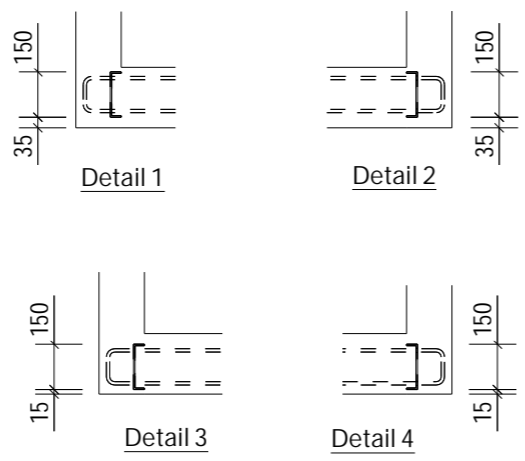
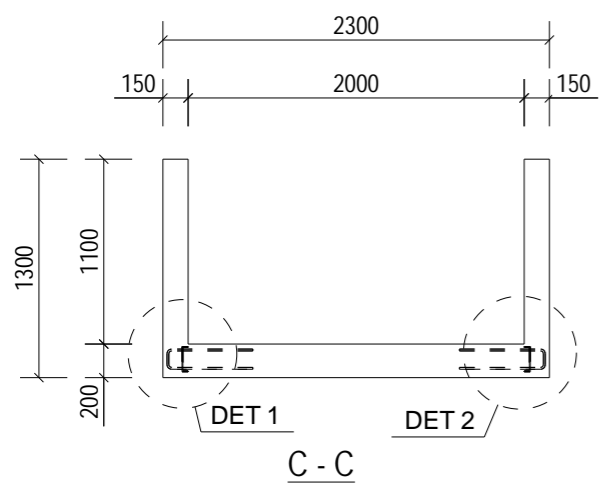
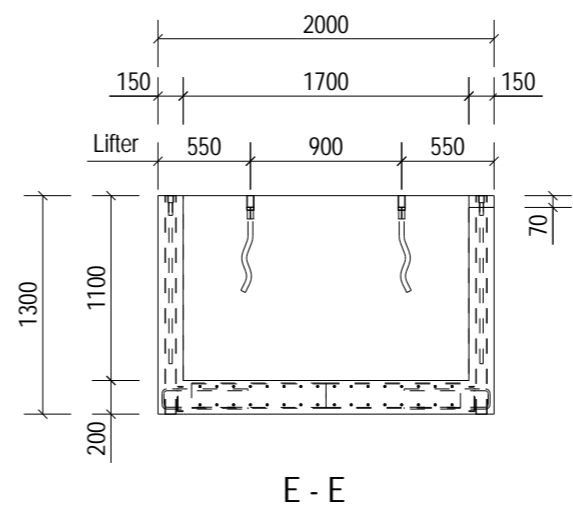
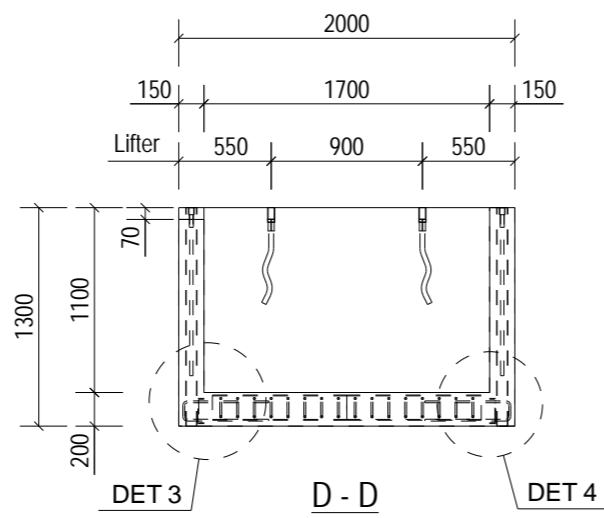
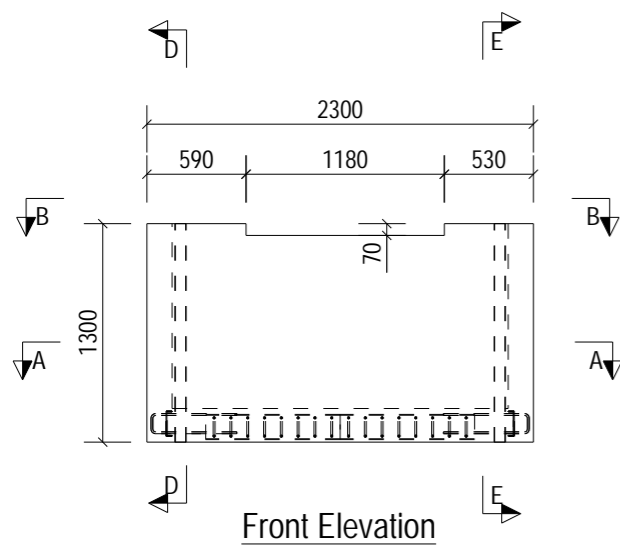
Project. Panattoni Park Poyle

Title. RC1 of Lintel LN-0004

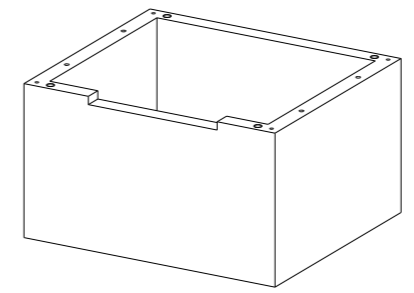
Scale: 1:40 Status: As Built - CR
Date: 18-03-24

Drawn: MA Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-LN-0004-RC1 Rev: C01

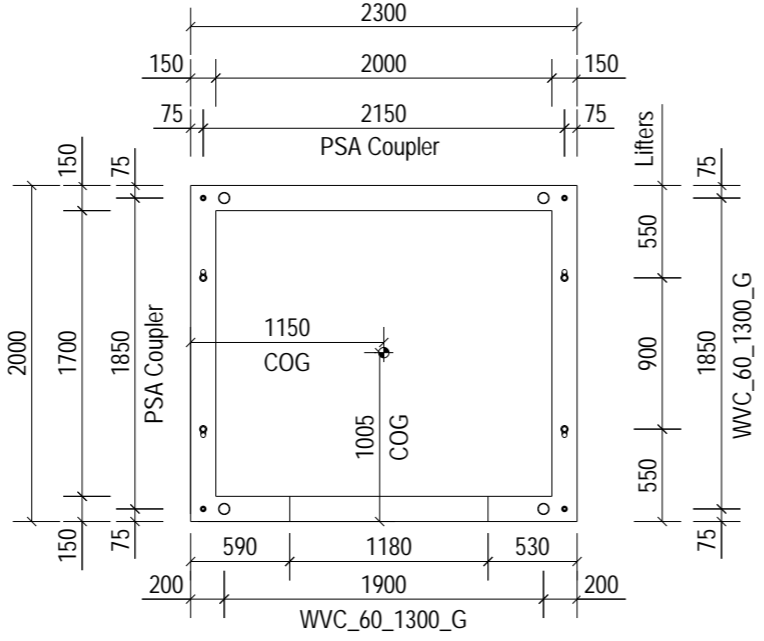
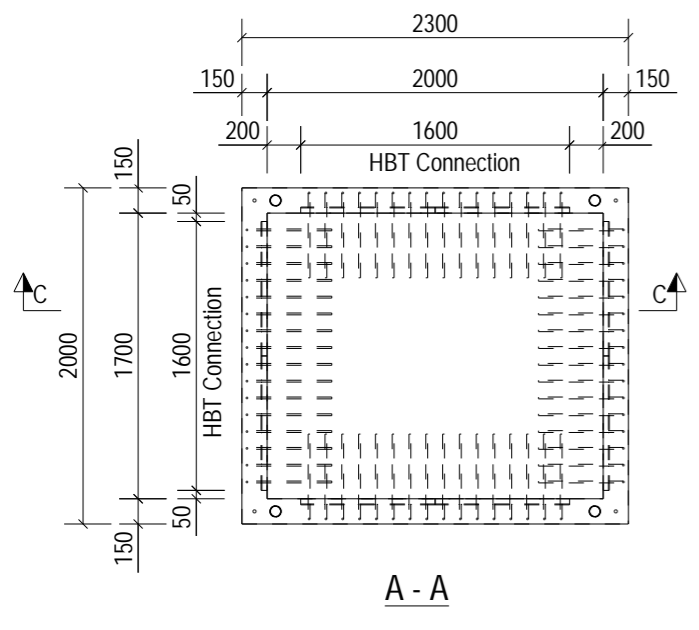


Typical Sikaswell S2 Detail



Isometric Details Only Viewing Only

UNIT TO BE CAST FROM DC2 CONCRETE CONTAINING SIKAWATERTIGHT CONCRETE POWDER MIXED STRICTLY IN ACCORDANCE WITH SIKA DOSAGE GUIDELINES



INSIDE OF UNIT TO BE PAINTED WHITE

Note: ALL 60Ø WELLVOIDS ARE FULL PANEL HEIGHT

CAST IN COUPLER REQUIRED:
PSA20 Female Coupler

Manufacture Tolerances		
Allowable dimensional variations shall not exceed the following		
Overall Length/Width Variation	Width Of Walls	Variation
Up to 3.0m	Up to 150mm	± 5mm
3.01 to 6.0m	> 150mm	± 6mm
Additional for every subsequent 6m	Fixings/Inserts	± 5mm
	Door opening size	-5/+10mm
Height Of Unit	Internal Shaft	± 6mm
Up to 3.0m	Dimensions	
3.01 to 4.5m		

NOTES:

Type.	Lift Pit	
Length.	2300	See Table
Height.	1300	See Table
Width.	2000	See Table
Weight. (T)	5.73	
Volume. (m³)	2.23	
Concrete.	Grade C40	
Mix.	DC2 + Sika Watertight Conc Powder	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-LP-0001-RC1
IM Drg. Ref.	05-BYL-1462-LP-0001-IM1
BBS Ref.	05-BYL-1462-LP-0001-BBS
Calculation Ref.	05-BYL-1462-FPMC-LIFT1-C01
Cover.	35mm Nominal, (30mm Minimum)
Casting Bed.	Tank Mould
Mark.	LP-0001
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
8	HBT_150_800	HBT_150_800
4	PSA20 Female Coupler	1000
4	RD36 Wavy Tail	SLWL36570/SSLW36570
4	WVC_60_1300_G	Wellvoid

Loose Fitting Take Off:

TSE20 Male Coupler	(1000)	4 No.
--------------------	--------	-------

- Casting Sequence:**
1. Shaft Walls.
 2. Open HBT & add Sikaswell.
 3. Cast Base

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client: winvic

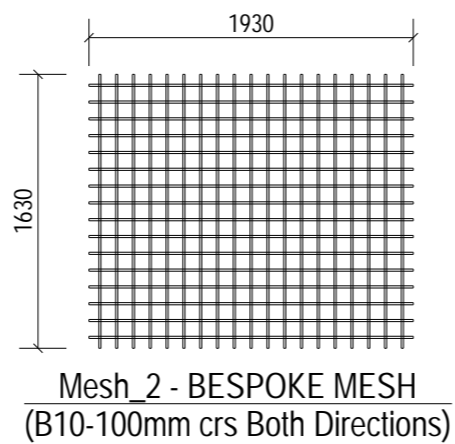
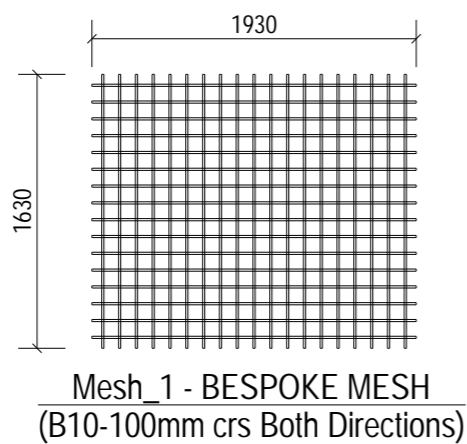
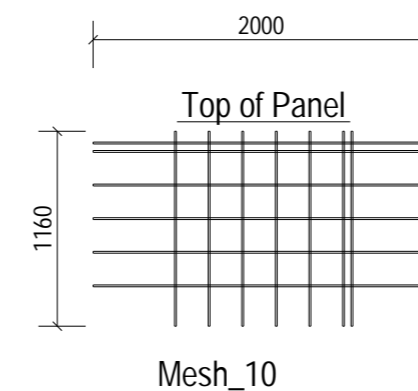
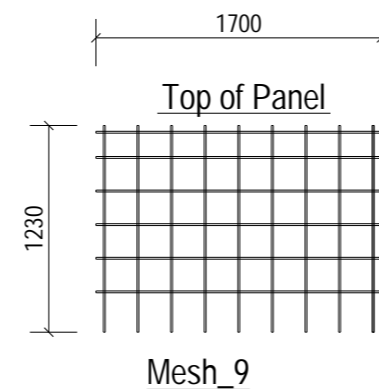
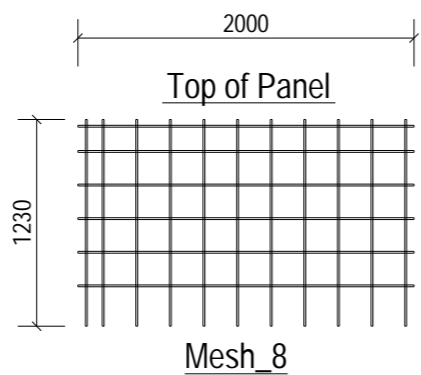
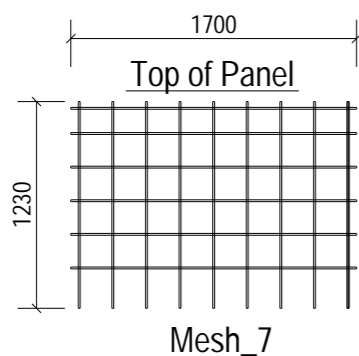
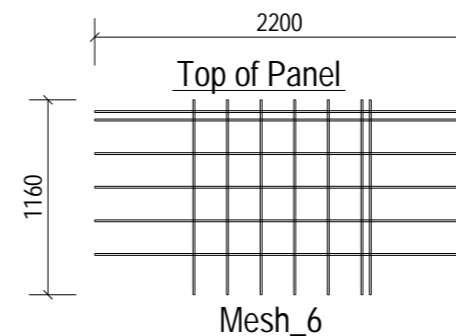
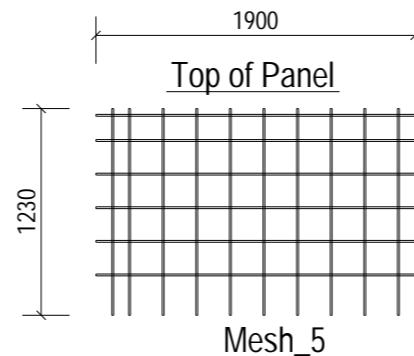
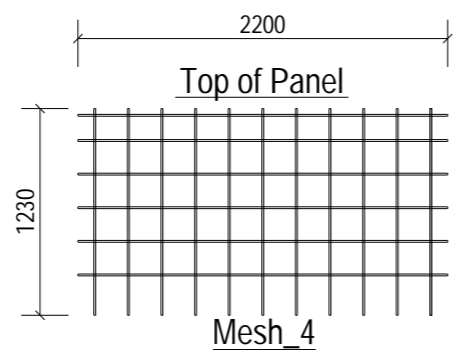
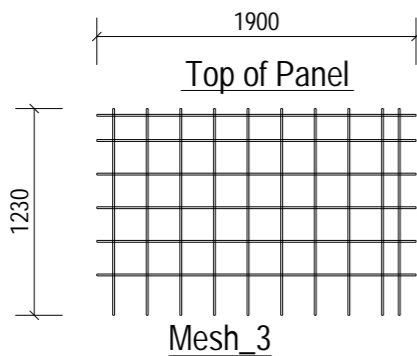
Project: **Panattoni Park Poyle**

Title: **GA1 of Lift Pit LP-0001**

Scale: 1:60	Status: As Built - CR	
Date: 19-03-24		
Drawn: MF	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-LP-0001-GA1		Rev: C01

ALL DIMENSIONS SHOWN ARE
OVERALL SIZES.
REFER TO THE PXML FOR ALL
SPECIFIC BAR LOCATIONS

MESH REINFORCEMENT:
ALL MESH-B8@ 200CRS BOTH
DIRECTIONS



NOTES:

Type.	Lift Pit
Mark.	LP-0001
GA Drg. Ref.	05-BYL-1462-LP-0001-GA1
Cover.	35mm Nominal, 30mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

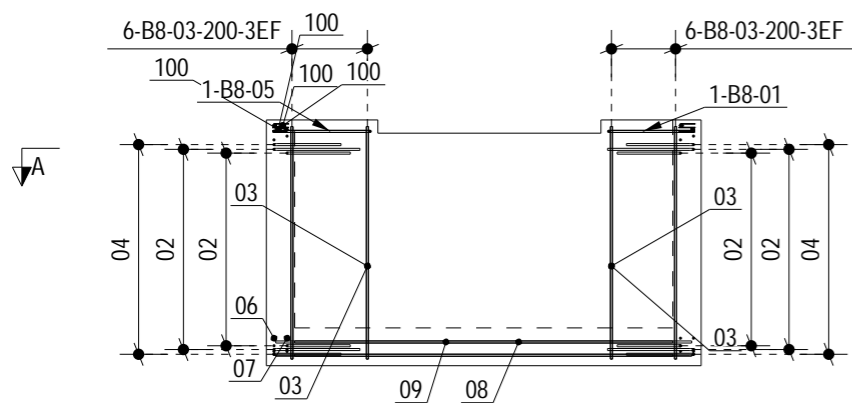
Project. **Panattoni Park Poyle**

Title. **IM1 of Lift Pit LP-0001**

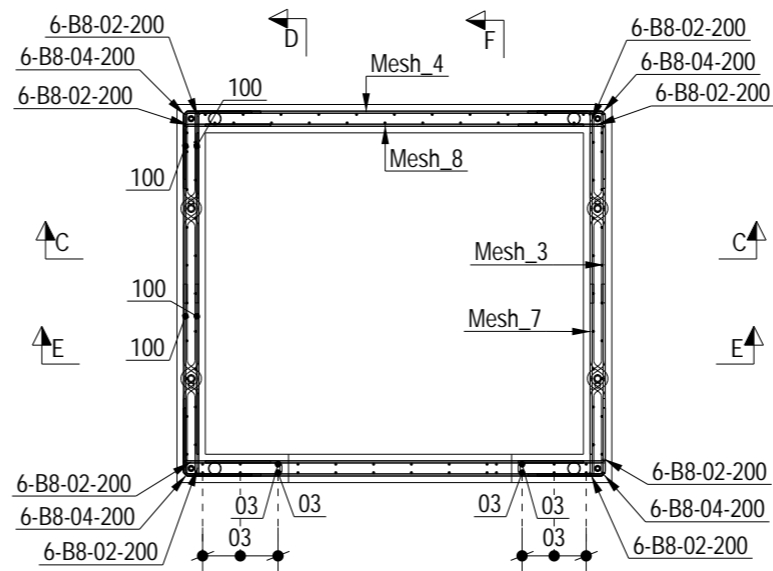
Scale: 1:45 Status: As Built - CR

Drawn: MF Checked: NB Approved: SJH

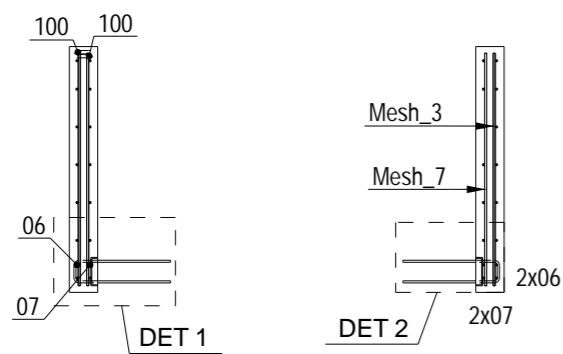
Drawing No : 05-BYL-1462-LP-0001-IM1 Rev: C01



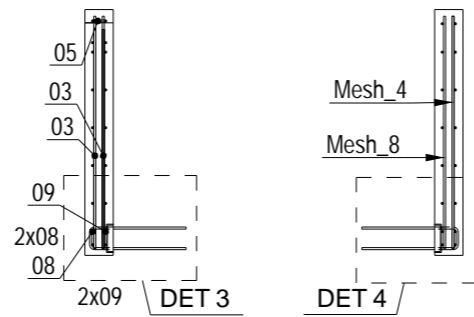
Front Elevation



A - A



C - C
(Wall Only)



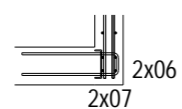
D - D
(Wall Only)



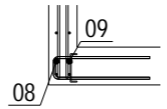
Typical Wavy Tail
Lifting Detail



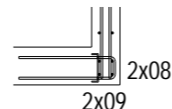
DETAIL 1



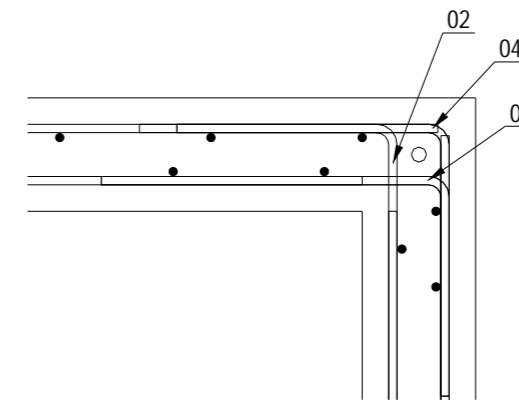
DETAIL 2



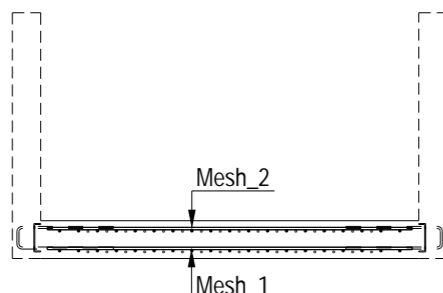
DETAIL 3



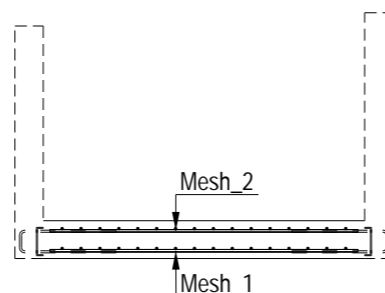
DETAIL 4



Typical Corner Detail



E - E
(Base Only)



F - F
(Base Only)

NOTES:

Type.	Lift Pit
Mark.	LP-0001
GA Drg. Ref.	05-BYL-1462-LP-0001-GA1
Cover.	35mm Nominal, 30mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

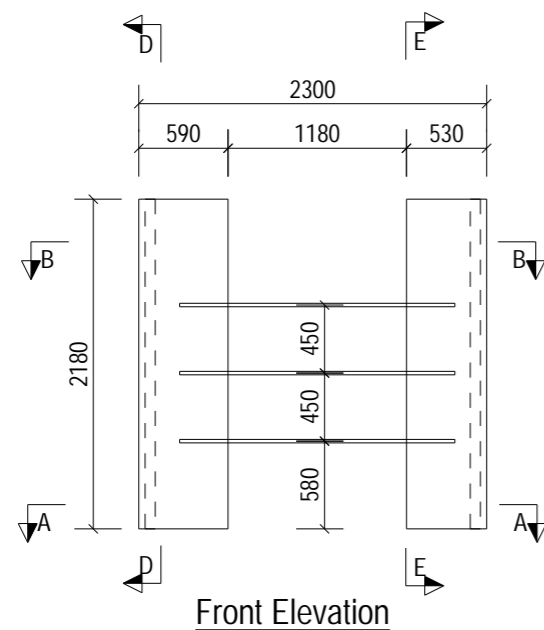
Project. **Panattoni Park Poyle**

Title. **RC1 of Lift Pit LP-0001**

Scale: 1:40 Status: As Built - CR
Date: 19-03-24

Drawn: MF Checked: NB Approved: SJH

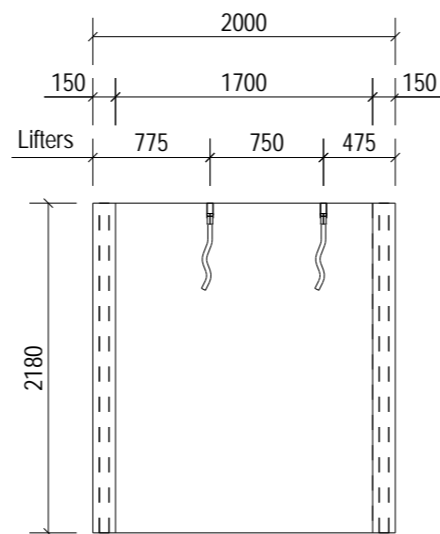
Drawing No : **05-BYL-1462-LP-0001-RC1** Rev: **C01**



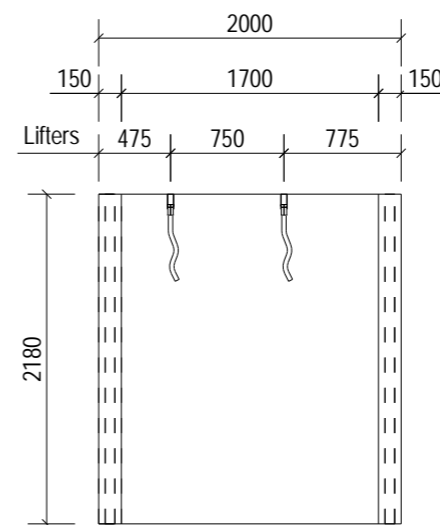
Front Elevation

Door Opening to be sealed using 18mm CDX plywood cable tied to cast in temporary edge protection bars. Horizontal edge protection bars provided by FPM.

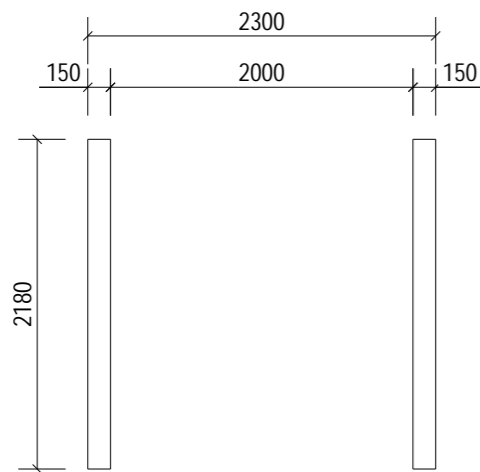
Temporary edge protection bars to be removed and treated by main contractor



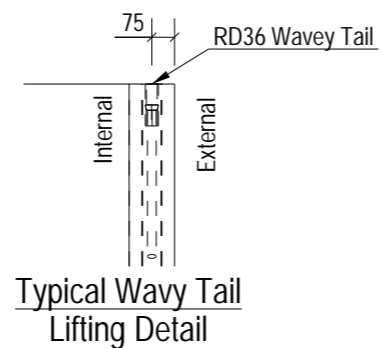
D - D



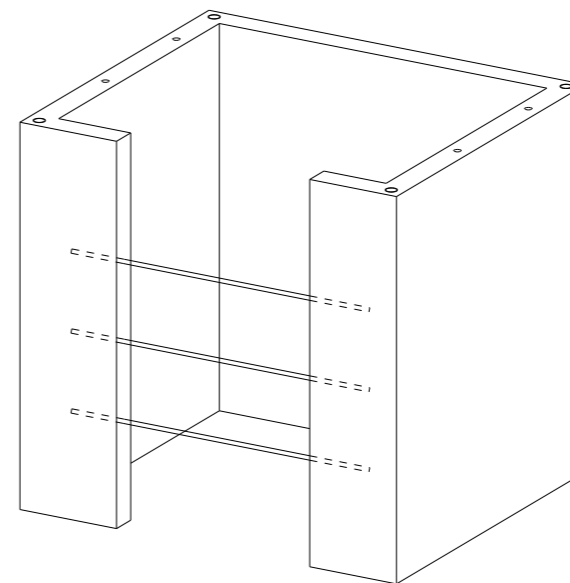
E - E



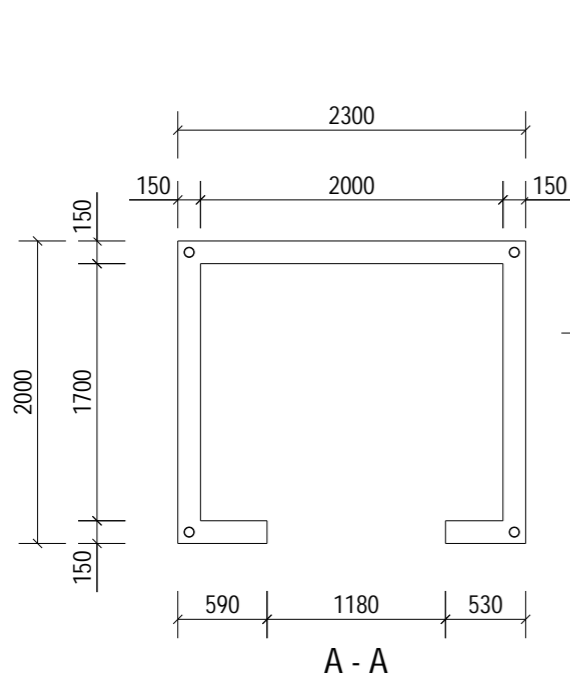
C - C



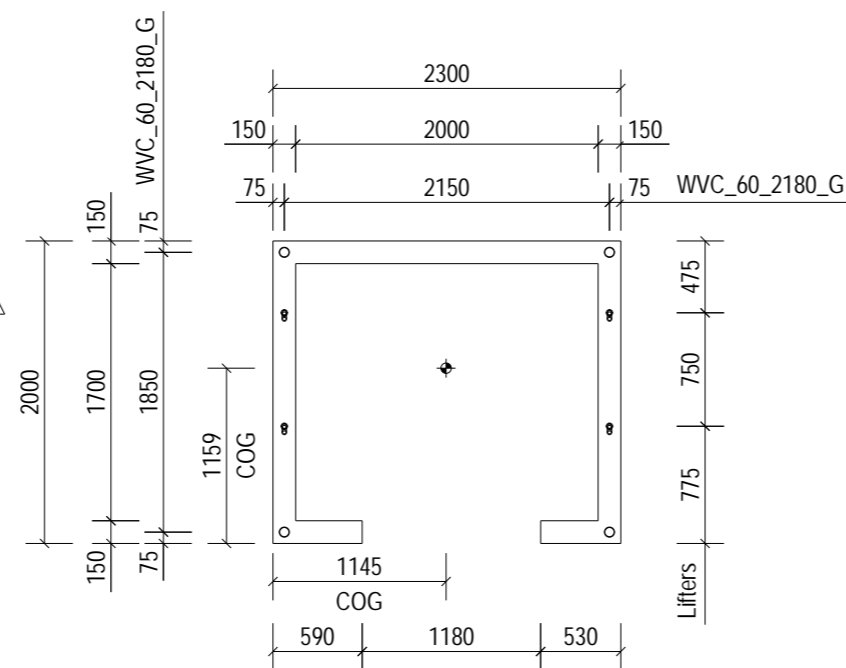
Typical Wavy Tail Lifting Detail



Isometric Details Only Viewing Only



A - A



B - B

INSIDE OF UNIT TO BE PAINTED WHITE

Note: All Wellvoids are full Panel Height

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Overall Length/Width Variation		Width Of Walls	Variation
Up to 3.0m	± 5mm	Up to 150mm	± 5mm
3.01 to 6.0m	± 9mm	> 150mm	± 6mm
Additional for every subsequent 6m	± 6mm	Fixings/Inserts	± 5mm
		Door opening size	-5/+10mm
Height Of Unit		Internal Shaft	± 6mm
Up to 3.0m	± 5mm	Dimensions	
3.01 to 4.5m	± 9mm		

NOTES:		
Type.	Lift Wall	
Length.	2300	See Table
Height.	2180	See Table
Width.	2000	See Table
Weight. (T)	5.63	
Volume. (m³)	2.23	
Concrete.	Grade C40	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-LW-0001-RC1	
IM Drg. Ref.	05-BYL-1462-LW-0001-IM1	
BBS Ref.	05-BYL-1462-LW-0001-BBS	
Calculation Ref.	05-BYL-1462-FPMC-LIFT1-C01	
Cover.	25mm Nominal, (20mm Minimum)	
Casting Bed.	Tank Mould	
Mark.	LW-0001	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT		
No.	Item	Ref.
4	RD36 Wavy Tail	SLWL36570/SSLW36570
4	WVC_60_2180_G	Wellvoid

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann
 FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client: **winvic**

Project: **Panattoni Park Poyle**

Title: **GA1 of Lift Wall LW-0001**

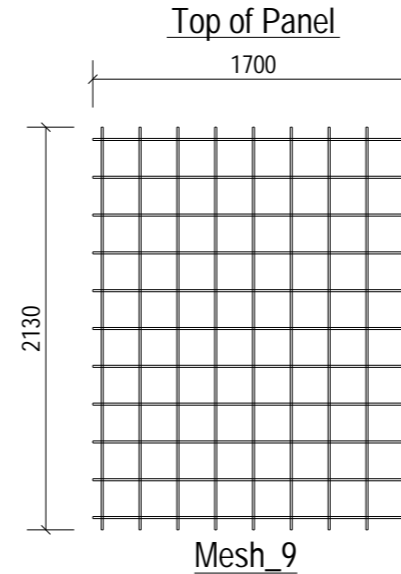
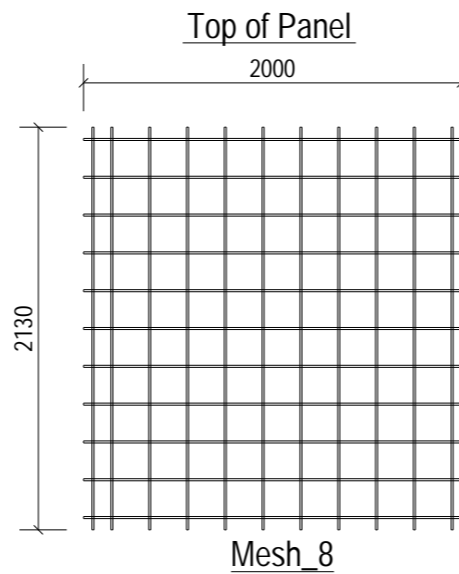
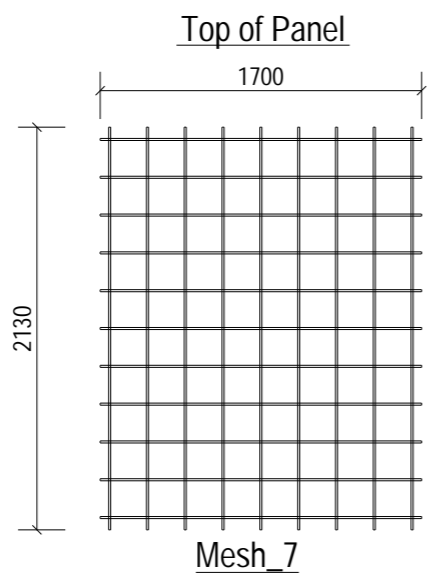
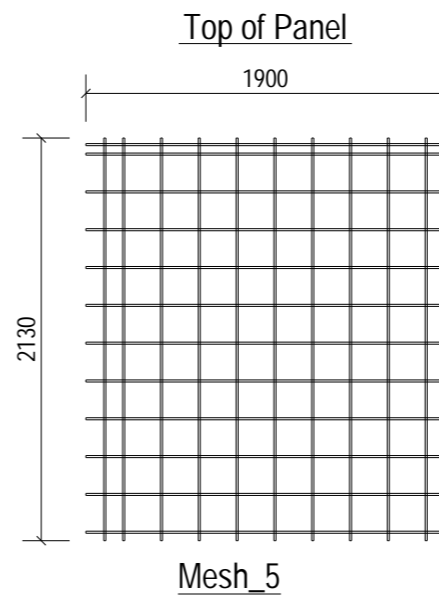
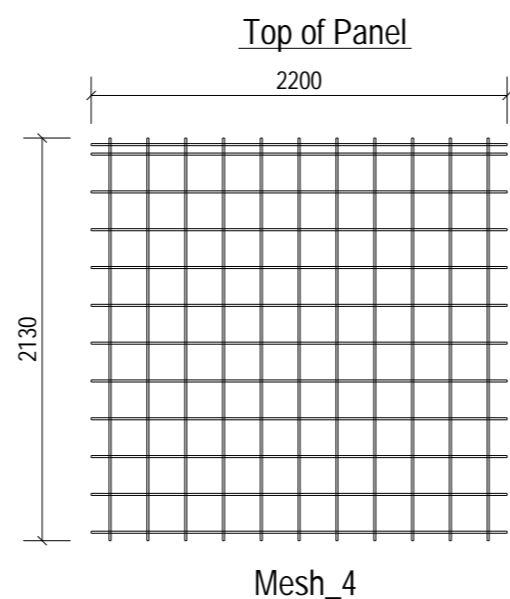
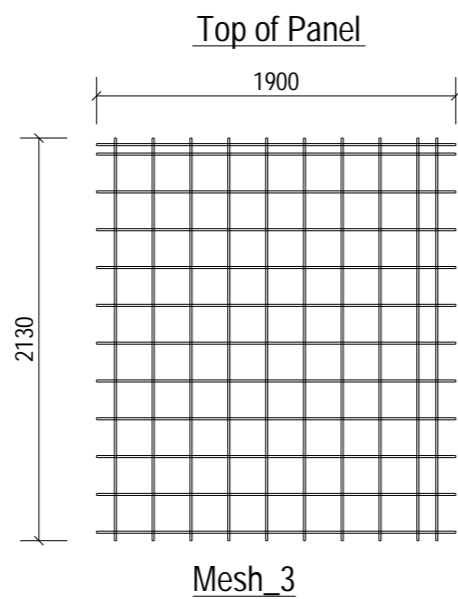
Scale: 1:50 Status: As Built - CR
 Date: 19-03-24

Drawn: MF Checked: NB Approved: SJH

Drawing No : **05-BYL-1462-LW-0001-GA1** Rev: **C01**

ALL DIMENSIONS SHOWN ARE
OVERALL SIZES.
REFER TO THE PXML FOR ALL
SPECIFIC BAR LOCATIONS

MESH REINFORCEMENT:
ALL MESH-B8@ 200CRS BOTH
DIRECTIONS



NOTES:

Type.	Lift Wall
Mark.	LW-0001
GA Drg. Ref.	05-BYL-1462-LW-0001-GA1
Cover.	25mm Nominal, 20mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

Project. Panattoni Park
Poyle

Title. IM1 of
Lift Wall LW-0001

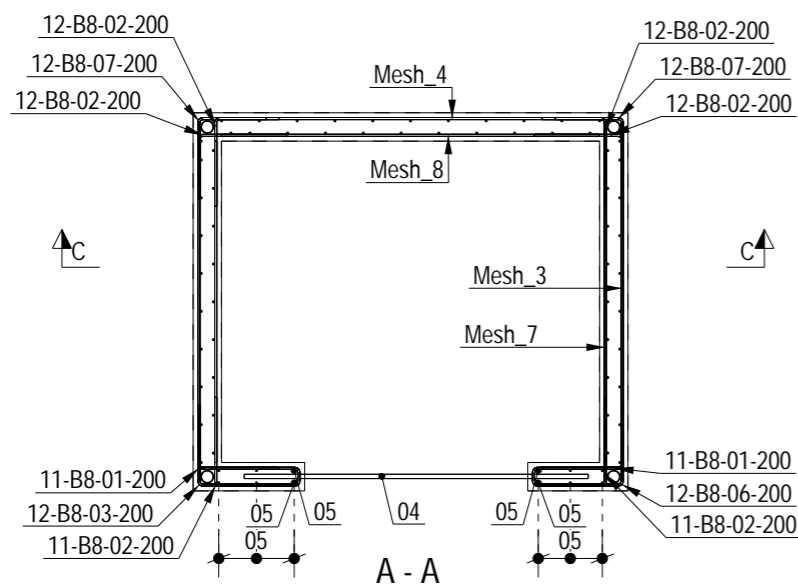
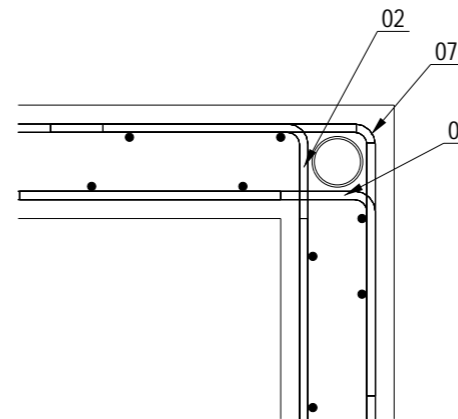
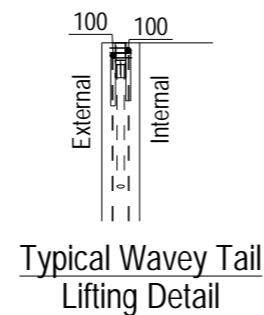
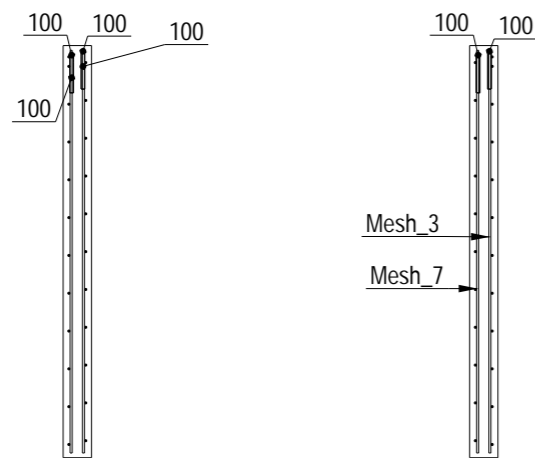
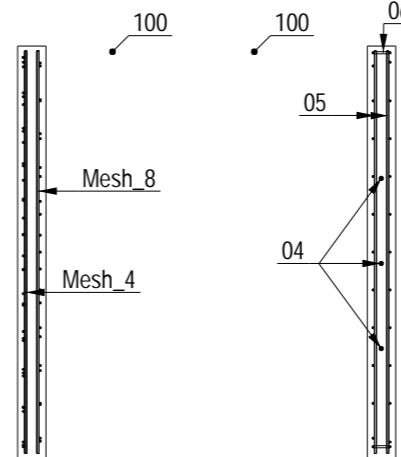
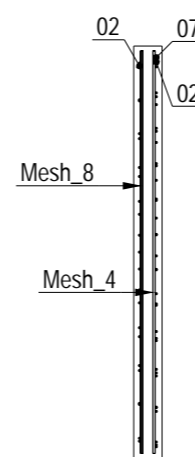
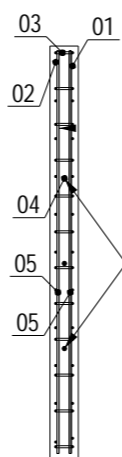
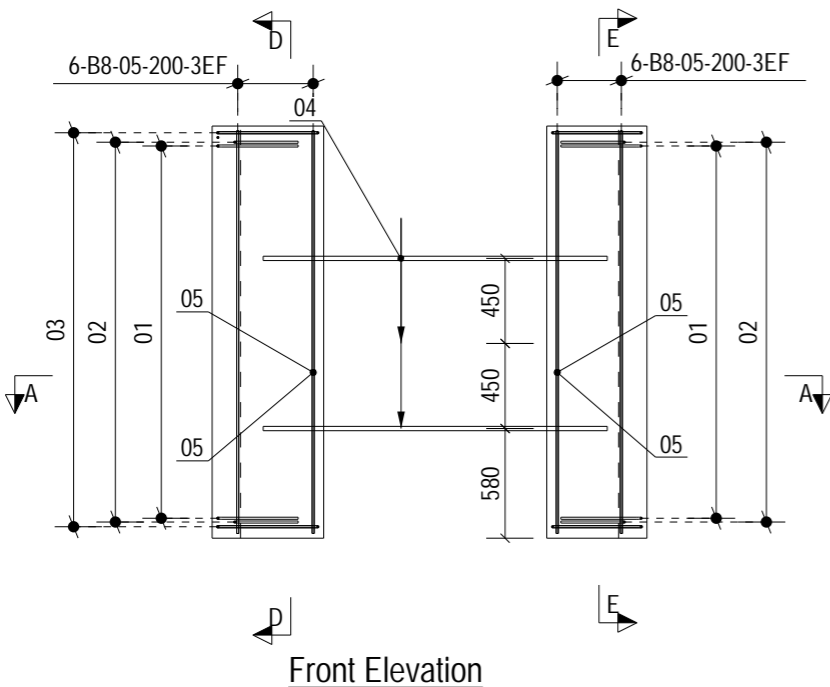
Scale: 1:40 Status: As Built - CR

Date: 19-03-24

Drawn: MF Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-LW-0001-IM1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



NOTES:

Type.	Lift Wall
Mark.	LW-0001
GA Drg. Ref.	05-BYL-1462-LW-0001-GA1
Cover.	25mm Nominal, 20mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	22-03-24	Issued For Manufacture.	MF	NB	SJH


FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client. 

Project. **Panattoni Park Poyle**

Title. **RC1 of Lift Wall LW-0001**

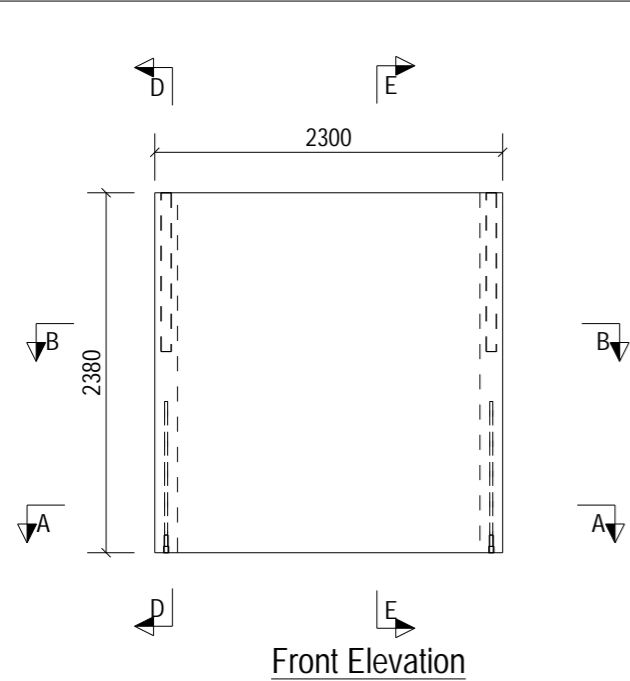
Scale: 1:40 Status: As Built - CR

Date: 19-03-24

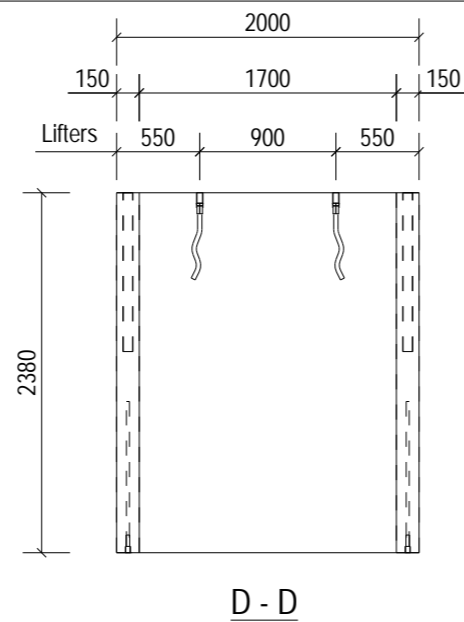
Drawn: MF Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-LW-0001-RC1 Rev: C01

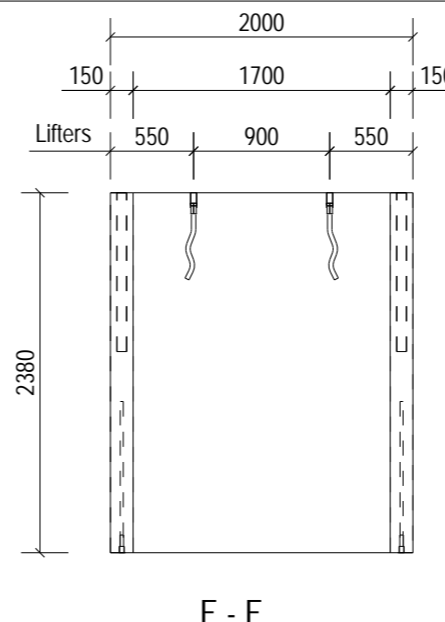
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



Front Elevation



D - D



E - E

NOTES:

Type.	Lift Wall	
Length.	2300	See Table
Height.	2380	See Table
Width.	2000	See Table
Weight. (T)	7.19	
Volume. (m ³)	2.86	
Concrete.	Grade C40	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-LW-0002-RC1	
IM Drg Ref.	05-BYL-1462-LW-0002-IM1	
BBS Ref.	05-BYL-1462-LW-0002-BBS	
Calculation Ref.	05-BYL-1462-FPMC-LIFT1-C01	
Cover.	25mm Nominal, (20mm Minimum)	
Casting Bed.	Tank Mould	
Mark.	LW-0002	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	PSA20 Female Coupler	1000
4	RD36 Wavy Tail	SLWL36570/SSLW36570
4	WVC_60_1050_G	Wellvoid

Loose Fitting Take Off:		
TSE20 Male Coupler	(1000)	4 No.

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. **winvic**

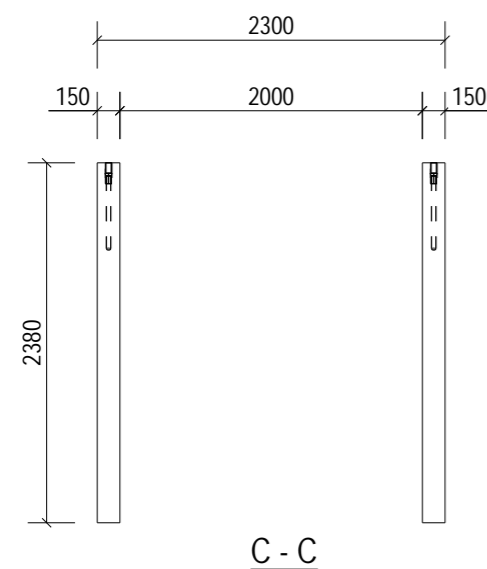
Project. **Panattoni Park Poyle**

Title. **GA1 of Lift Wall LW-0002**

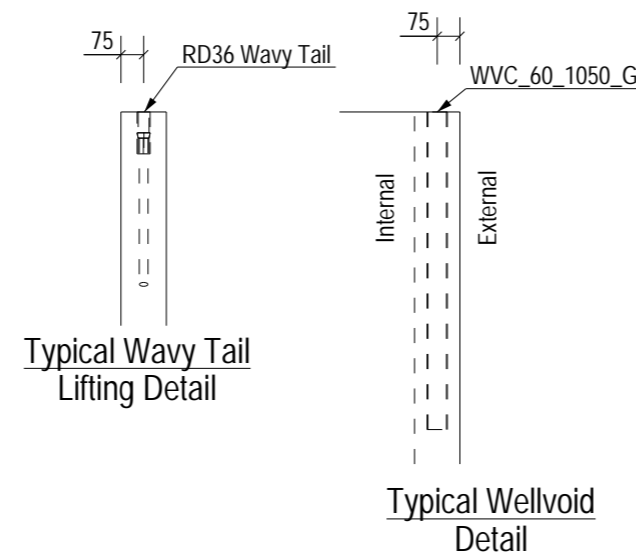
Scale: 1:50 Status: As Built - CR

Date: 19-03-24 Drawn: MF Checked: NB Approved: SJH

Drawing No : **05-BYL-1462-LW-0002-GA1** Rev: C01

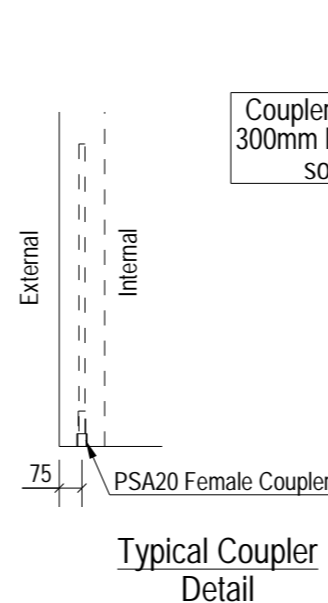


C - C



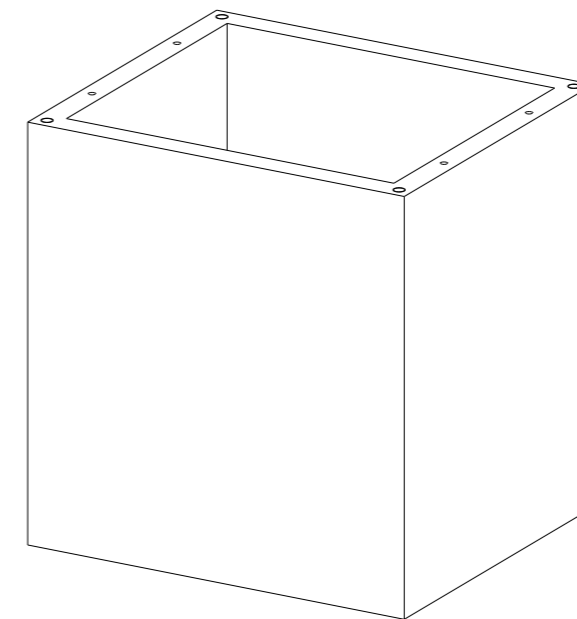
Typical Wavy Tail Lifting Detail

Typical Wellvoid Detail

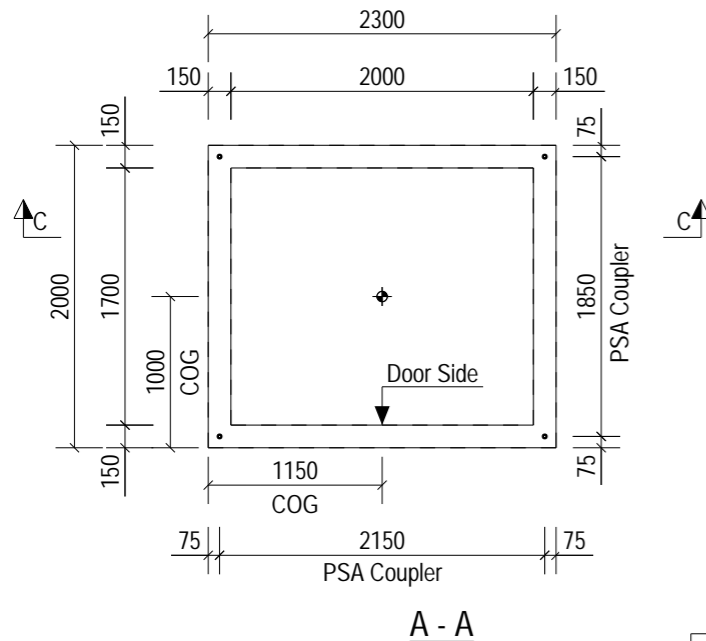


Typical Coupler Detail

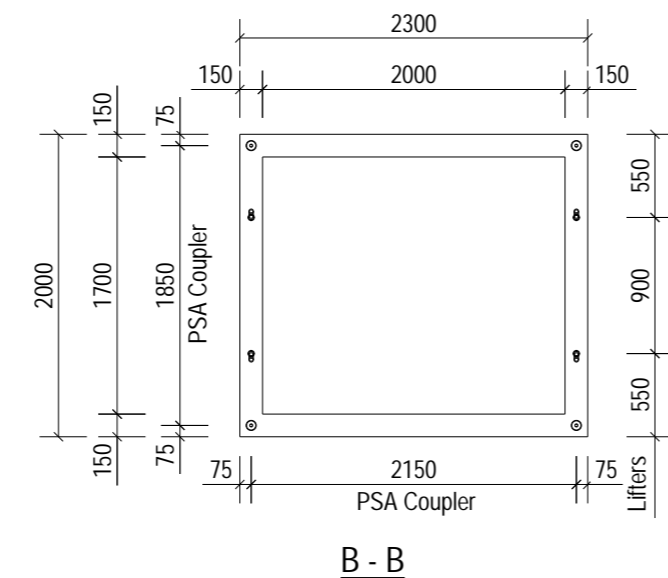
Couplers to be bent where necessary. 300mm Minimum length of coupler from socket end before bending.



Isometric Details Only Viewing Only



A - A



B - B

INSIDE OF UNIT TO BE PAINTED WHITE

FACTORY TO MARK 'DOOR SIDE' ON TOP OF UNIT

CAST IN COUPLER REQUIRED:
PSA20 Female Coupler

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Overall Length/Width	Variation	Width Of Walls	Variation
Up to 3.0m	± 5mm	Up to 150mm	± 5mm
3.01 to 6.0m	± 9mm	> 150mm	± 6mm
Additional for every subsequent 6m	± 6mm	Fixings/Inserts	± 5mm
		Door opening size	-5/+10mm
Height Of Unit		Internal Shaft	± 6mm
Up to 3.0m	± 5mm	Dimensions	
3.01 to 4.5m	± 9mm		

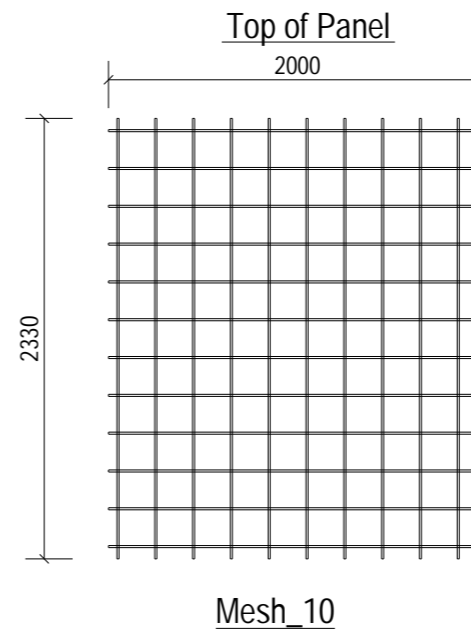
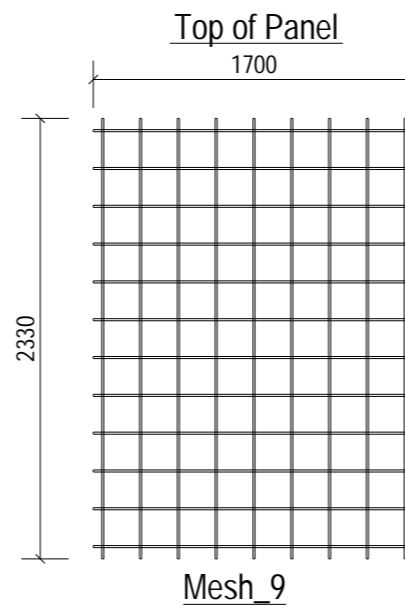
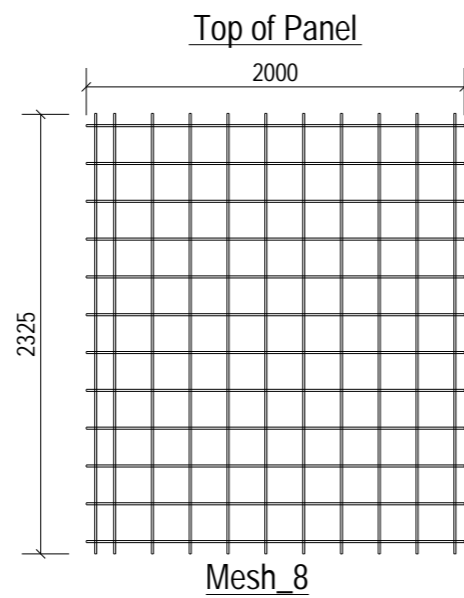
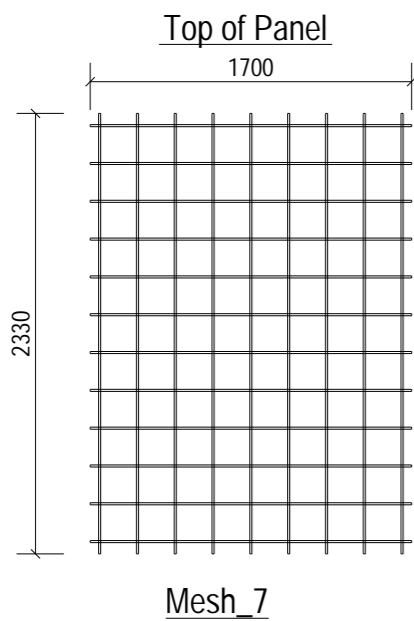
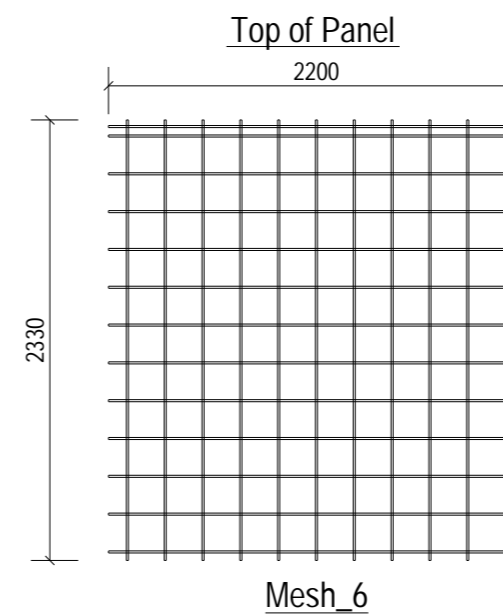
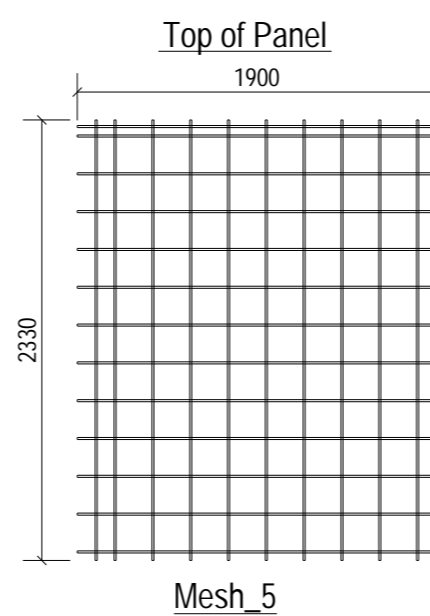
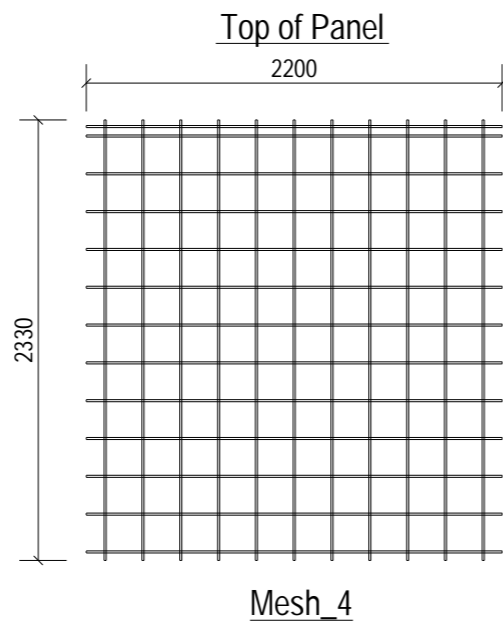
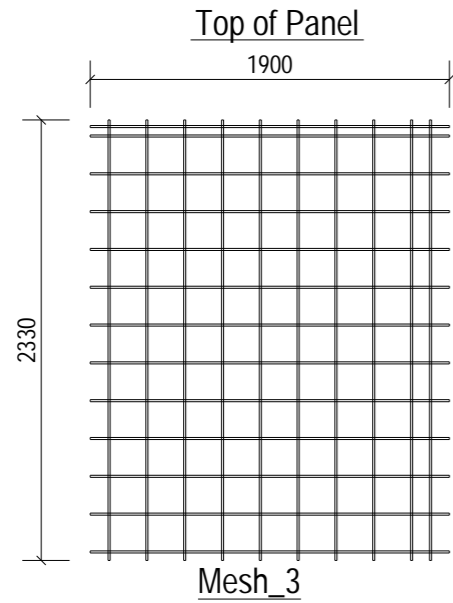
ALL DIMENSIONS SHOWN ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

MESH REINFORCEMENT:
ALL MESH-B8@ 200CRS BOTH DIRECTIONS

NOTES:

Type.	Lift Wall
Mark.	LW-0002
GA Drg. Ref.	05-BYL-1462-LW-0002-GA1
Cover.	25mm Nominal, 20mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.



C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

Title. IM1 of Lift Wall LW-0002

Scale: 1:40 Status: As Built - CR

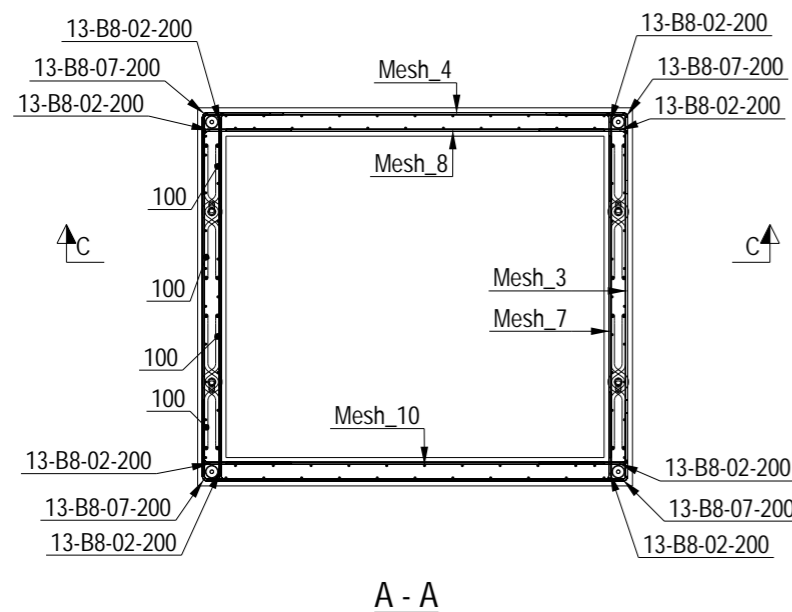
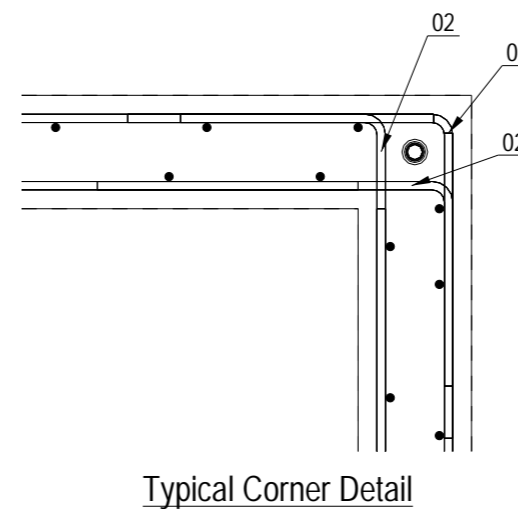
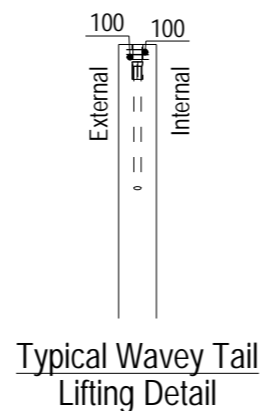
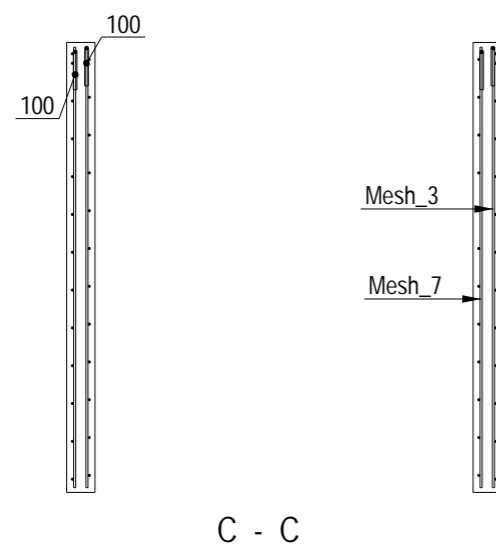
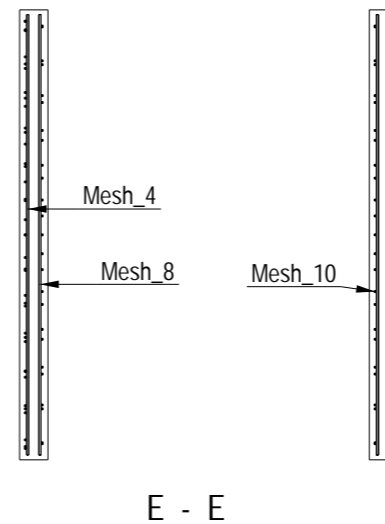
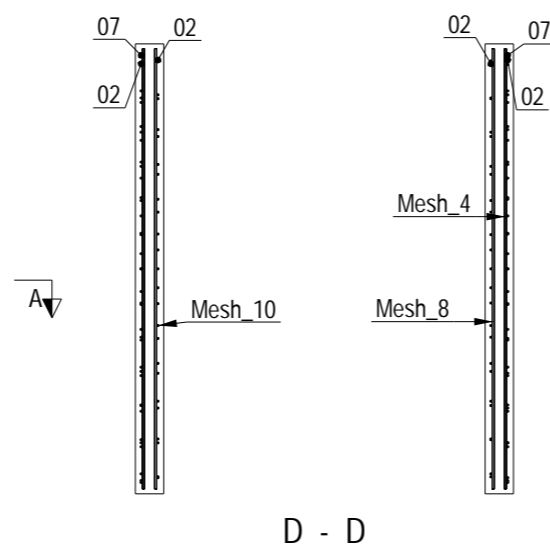
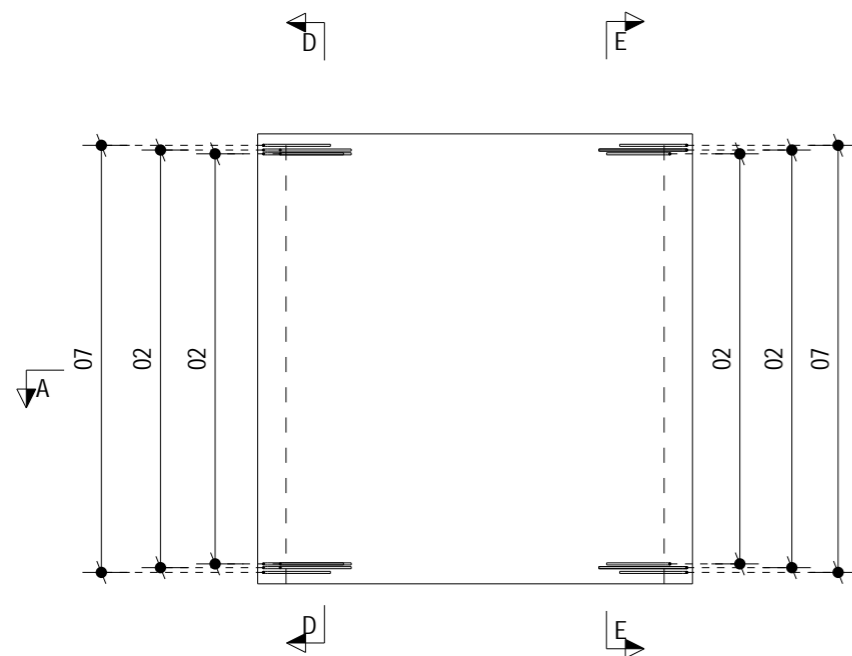
Date: 19-03-24

Drawn: MF Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-LW-0002-IM1 Rev: C01

A3
10mm

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



NOTES:

Type.	Lift Wall
Mark.	LW-0002
GA Drg. Ref.	05-BYL-1462-LW-0002-GA1
Cover.	25mm Nominal, 20mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire.
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **RC1 of Lift Wall LW-0002**

Scale: 1:40 Status: As Built - CR

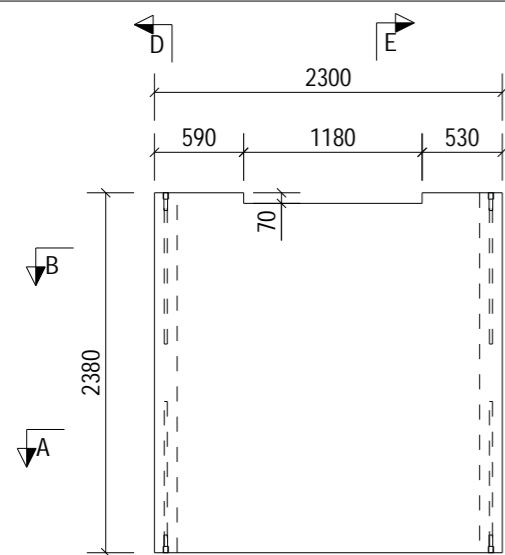
Date: 19-03-24

Drawn: MF Checked: NB Approved: SJH

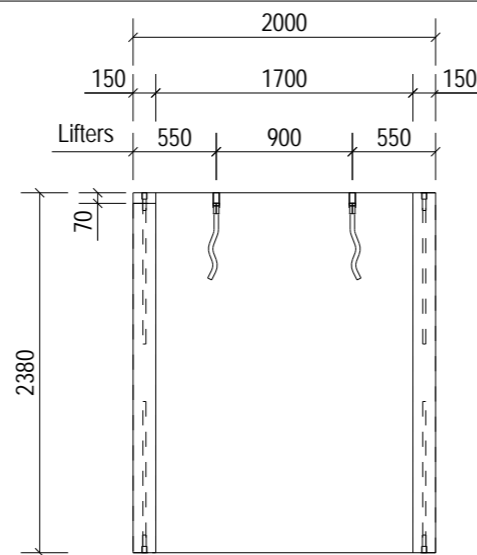
Drawing No : 05-BYL-1462-LW-0002-RC1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

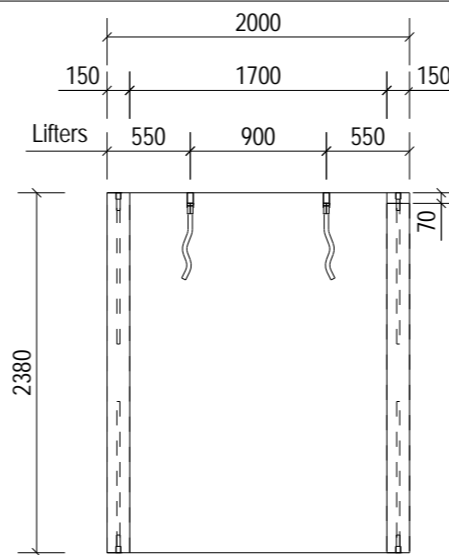
A3
10mm



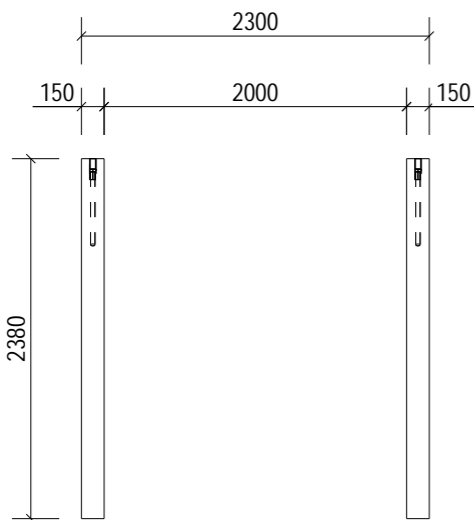
Front Elevation



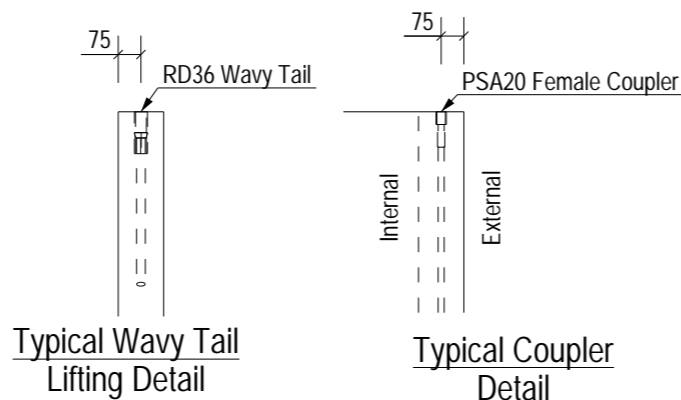
D - D



E - E

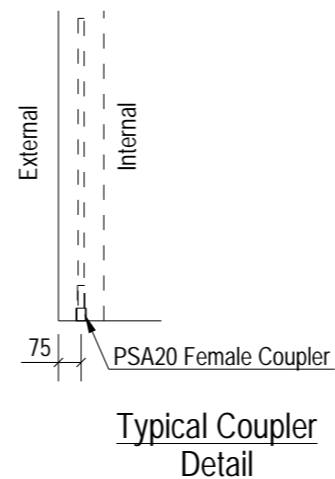


C - C



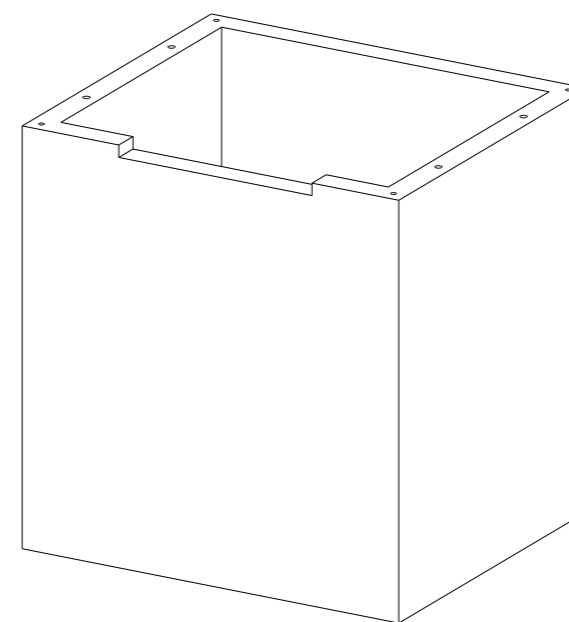
Typical Wavy Tail Lifting Detail

Typical Coupler Detail

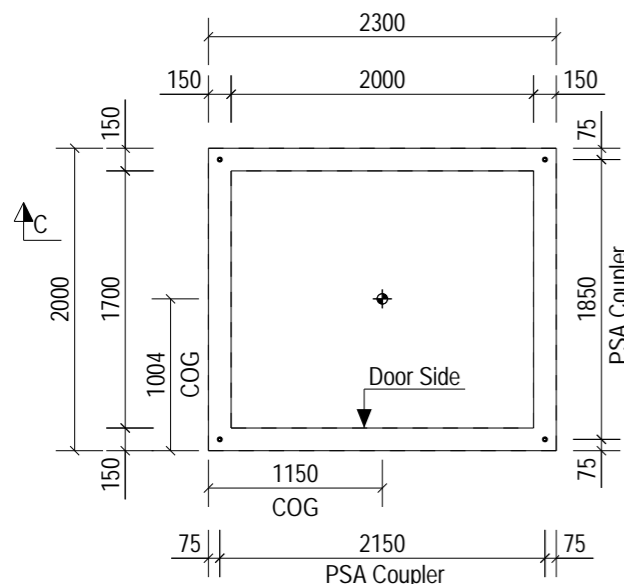


Typical Coupler Detail

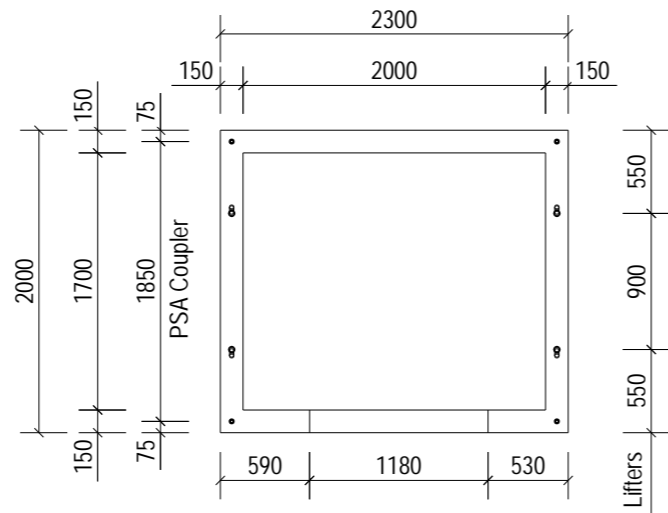
Couplers to be bent where necessary. 300mm Minimum length of coupler from socket end before bending.



Isometric Details Only Viewing Only



A - A



B - B

INSIDE OF UNIT TO BE PAINTED WHITE

FACTORY TO MARK 'DOOR SIDE' ON TOP OF UNIT

CAST IN COUPLER REQUIRED:
PSA20 Female Coupler

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Overall Length/Width Variation		Width Of Walls	Variation
Up to 3.0m	± 5mm	Up to 150mm	± 5mm
3.01 to 6.0m	± 9mm	> 150mm	± 6mm
Additional for every subsequent 6m	± 6mm	Fixings/Inserts	± 5mm
		Door opening size	-5/+10mm
Height Of Unit		Internal Shaft Dimensions	± 6mm
Up to 3.0m	± 5mm		
3.01 to 4.5m	± 9mm		

NOTES:		
Type.	Lift Wall	
Length.	2300	See Table
Height.	2380	See Table
Width.	2000	See Table
Weight. (T)	7.16	
Volume. (m³)	2.84	
Concrete.	Grade C40	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-LW-0003-RC1	
IM Drg Ref.	05-BYL-1462-LW-0003-IM1	
BBS Ref.	05-BYL-1462-LW-0003-BBS	
Calculation Ref.	05-BYL-1462-FPMC-LIFT1-C01	
Cover.	25mm Nominal, (20mm Minimum)	
Casting Bed.	Tank Mould	

Mark.	LW-0003	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT		
No.	Item	Ref.
8	PSA20 Female Coupler	1000
4	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:		
TSE20 Male Coupler	(1000)	8 No.

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann
 FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

Title. **GA1 of Lift Wall LW-0003**

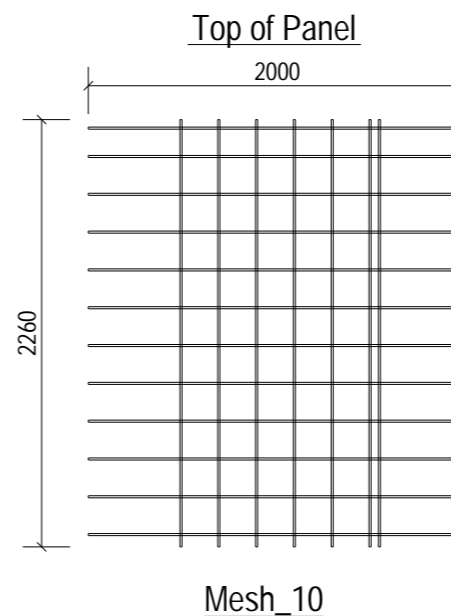
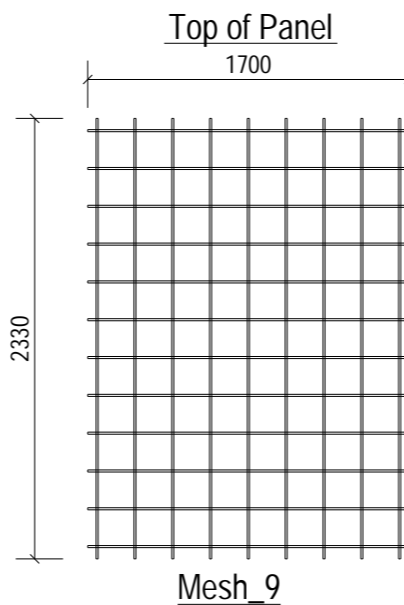
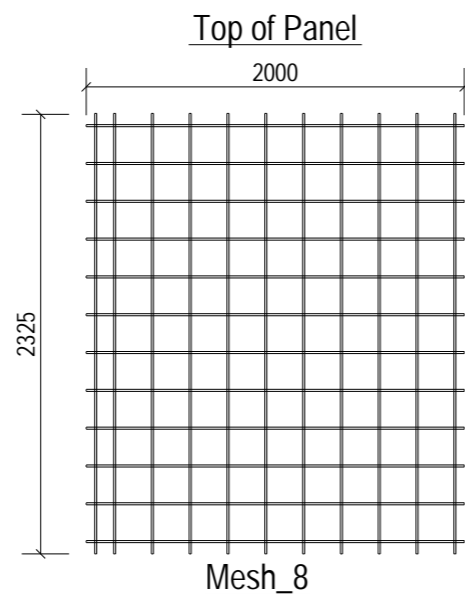
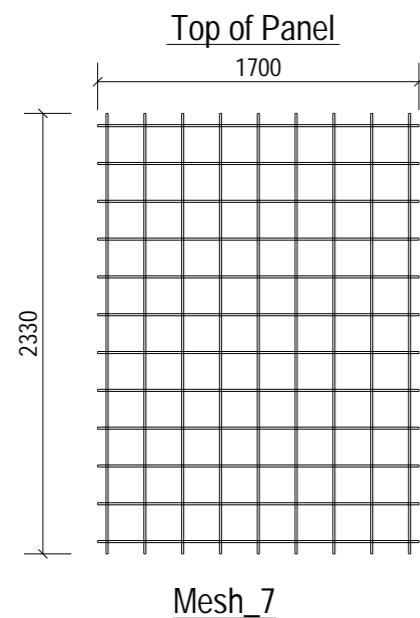
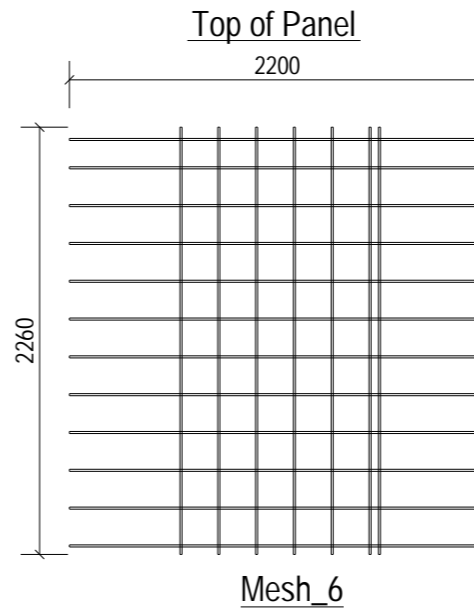
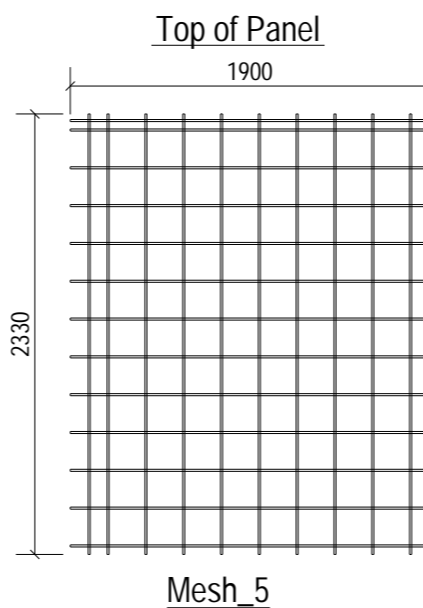
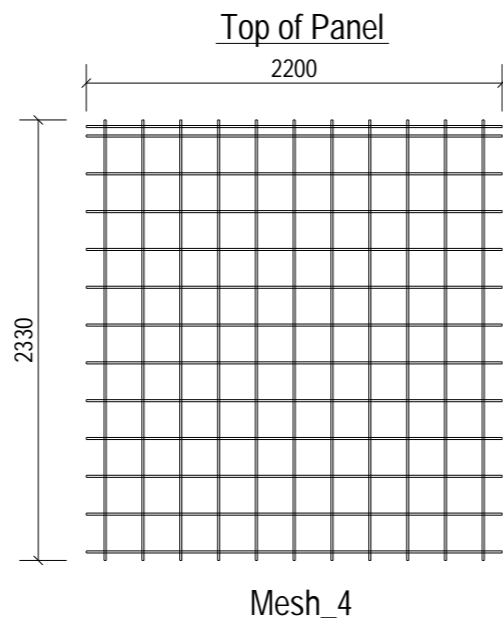
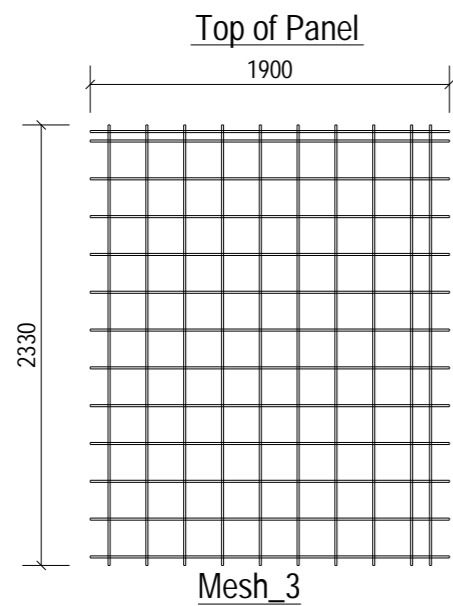
Scale: 1:50 Status: As Built - CR
 Date: 19-03-24

Drawn: MF Checked: NB Approved: SJH

Drawing No : **05-BYL-1462-LW-0003-GA1** Rev: **C01**

ALL DIMENSIONS SHOWN ARE
OVERALL SIZES.
REFER TO THE PXML FOR ALL
SPECIFIC BAR LOCATIONS

MESH REINFORCEMENT:
ALL MESH-B8@ 200CRS BOTH
DIRECTIONS



NOTES:

Type.	Lift Wall
Mark.	LW-0003
GA Drg. Ref.	05-BYL-1462-LW-0003-GA1
Cover.	25mm Nominal, 20mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

Title. IM1 of Lift Wall LW-0003

Scale: 1:40 Status: As Built - CR

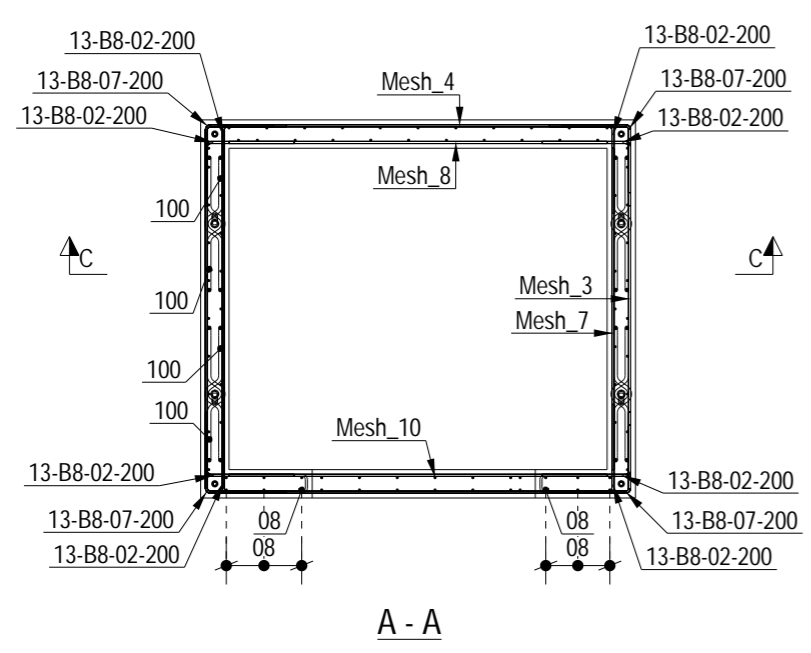
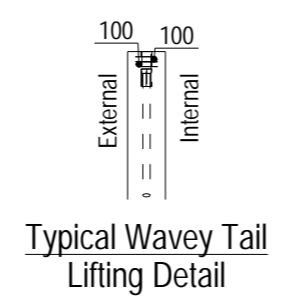
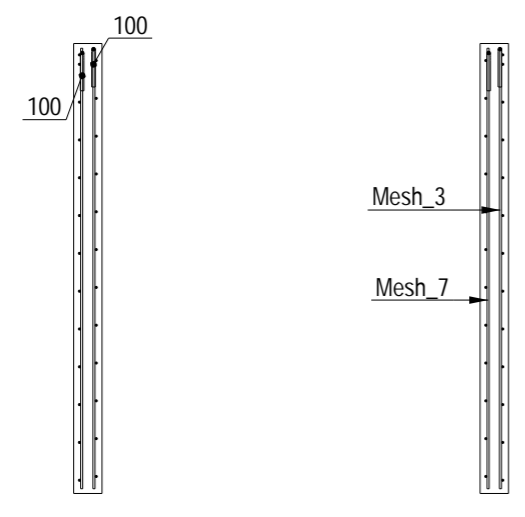
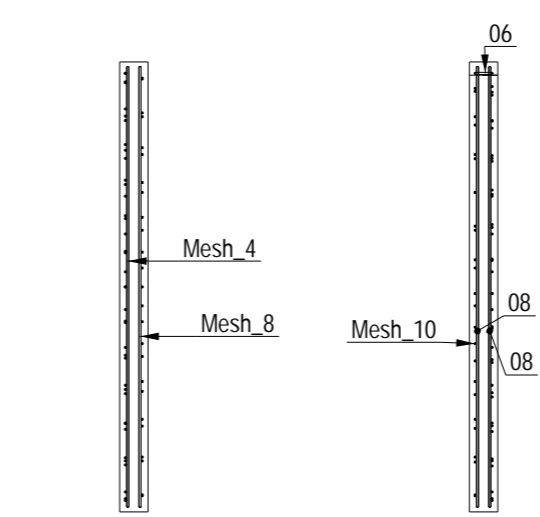
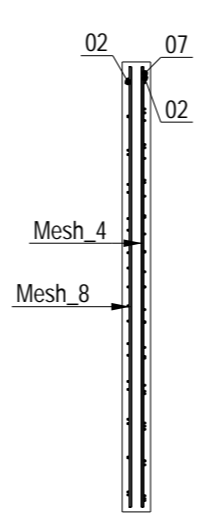
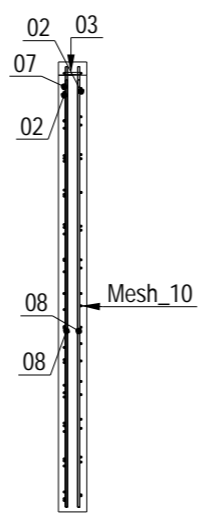
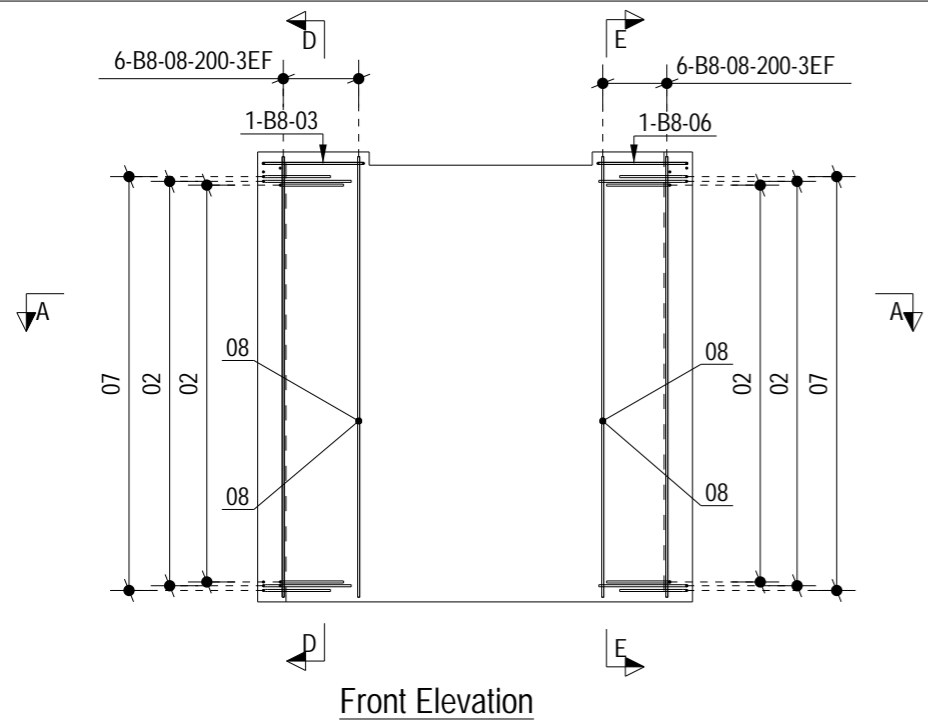
Date: 19-03-24

Drawn: MF Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-LW-0003-IM1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm



NOTES:

Type.	Lift Wall
Mark.	LW-0003
GA Drg. Ref.	05-BYL-1462-LW-0003-GA1
Cover.	25mm Nominal, 20mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **RC1 of Lift Wall LW-0003**

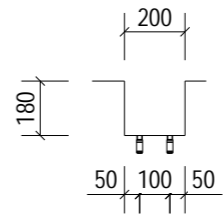
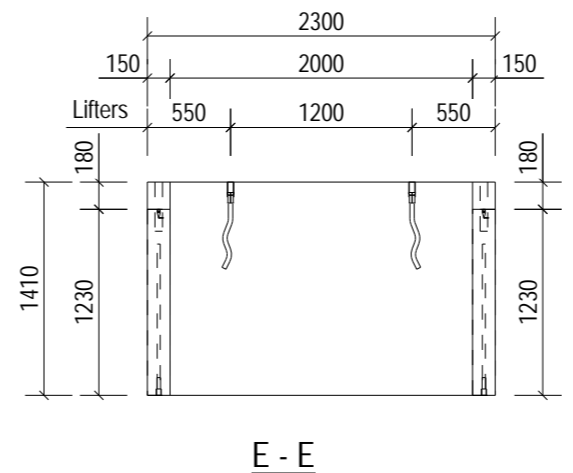
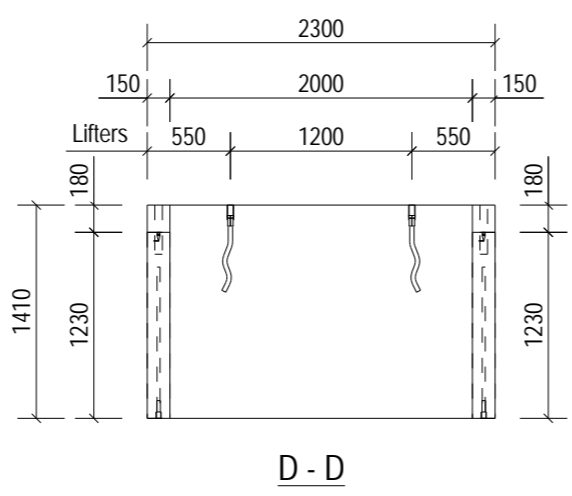
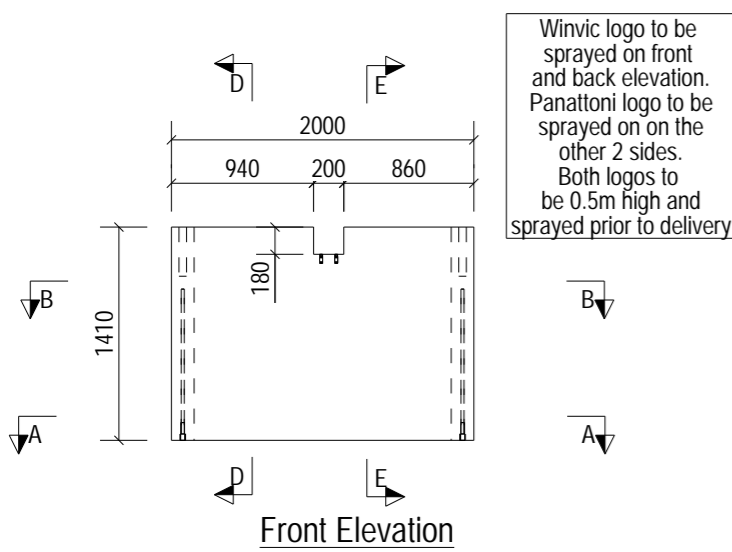
Scale: 1:40 Status: As Built - CR
Date: 19-03-24

Drawn: MF Checked: NB Approved: SJH

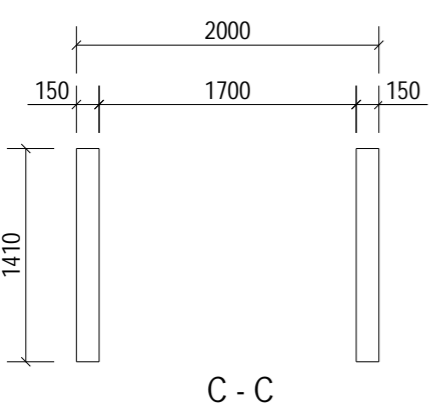
Drawing No : **05-BYL-1462-LW-0003-RC1** Rev: **C01**

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

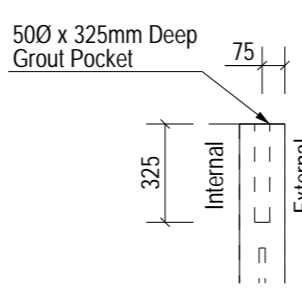
A3
10mm



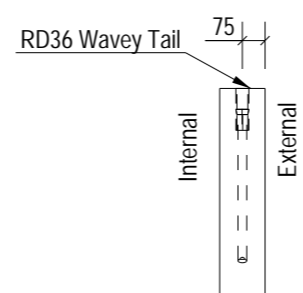
Beam Detail



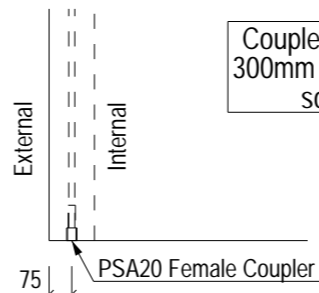
C - C



Typical Grout Pocket Detail



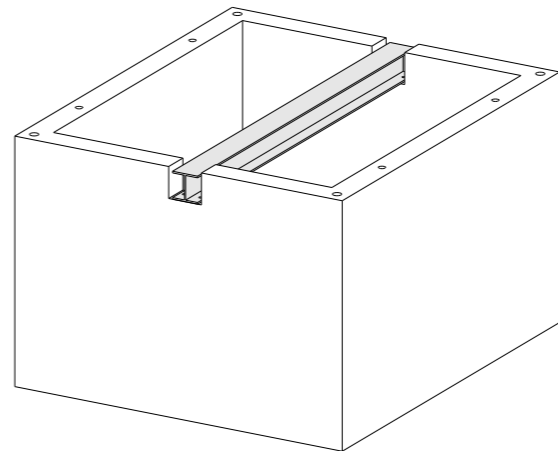
Typical Wavy Tail Lifting Detail



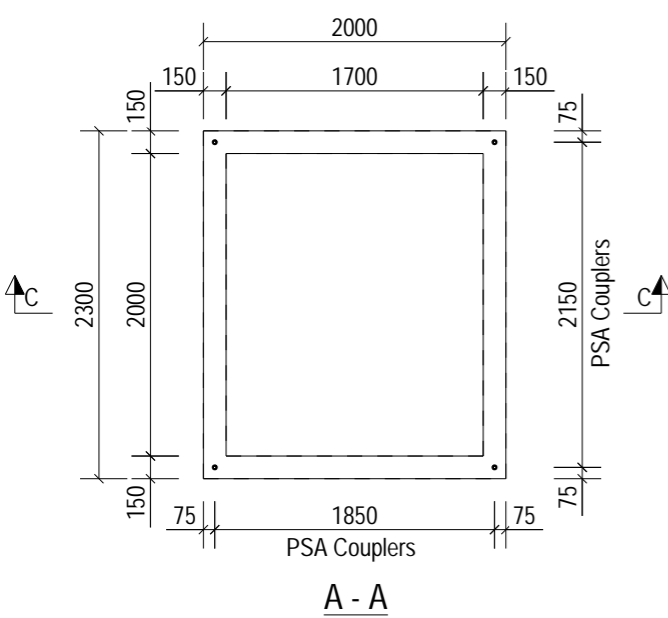
Typical Coupler Detail

Couplers to be bent where necessary. 300mm Minimum length of coupler from socket end before bending.

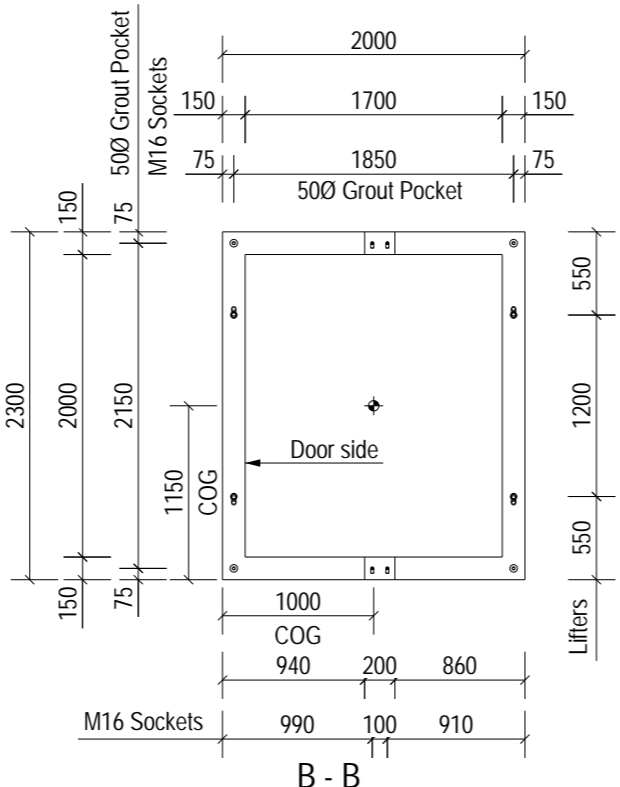
Lifting beam to be fixed to this unit prior to delivery. See FPM Drawing 05-BYL-1462-LB-0001 for details.



Isometric Details Only Viewing Only



A - A



B - B

INSIDE OF UNIT TO BE PAINTED WHITE

CAST IN COUPLER REQUIRED:
PSA20 Female Coupler

Factory to mark Door Side on Top of Unit

NOTES:

Type.	Lift Wall	
Length.	2000	See Table
Height.	1410	See Table
Width.	2300	See Table
Weight. (T)	4.23	
Volume. (m ³)	1.68	
Concrete.	Grade C40	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-LW-0004-RC1	
IM Drg Ref.	05-BYL-1462-LW-0004-IM1	
BBS Ref.	05-BYL-1462-LW-0004-BBS	
Calculation Ref.	05-BYL-1462-FPMC-LIFT1-C01	
Cover.	25mm Nominal, (20mm Minimum)	
Casting Bed.	Tank Mould	
Mark.	LW-0004	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	PSA20 Female Coupler	1000
4	M16 Bent Socket	SFA1660/SSFA1660
4	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

TSE20 Male Coupler	(1000)	4 No.
--------------------	--------	-------

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of Lift Wall LW-0004**

Scale: 1:50 Status: As Built - CR
Date: 19-03-24

Drawn: MF Checked: NB Approved: SJH

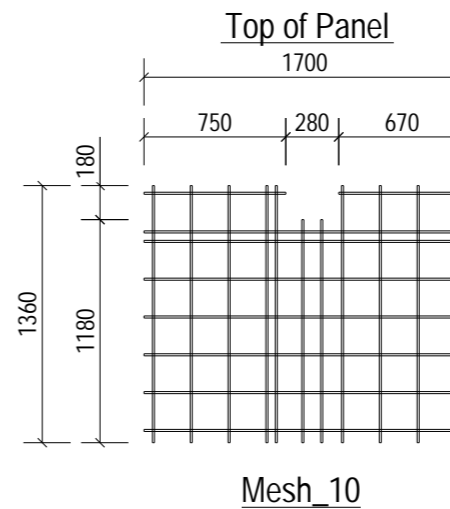
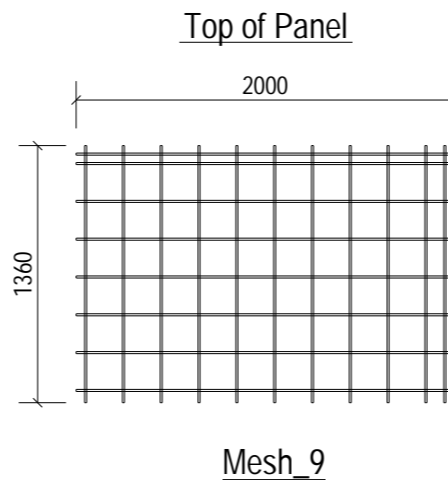
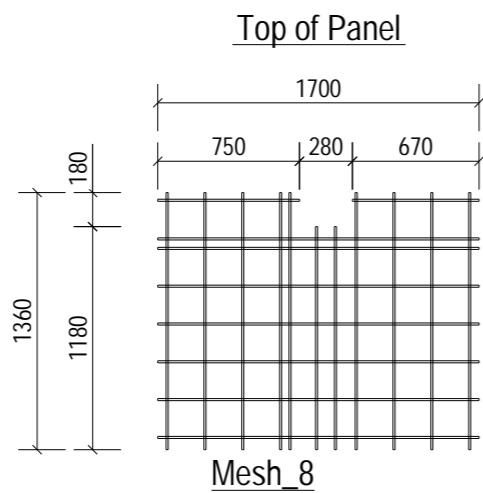
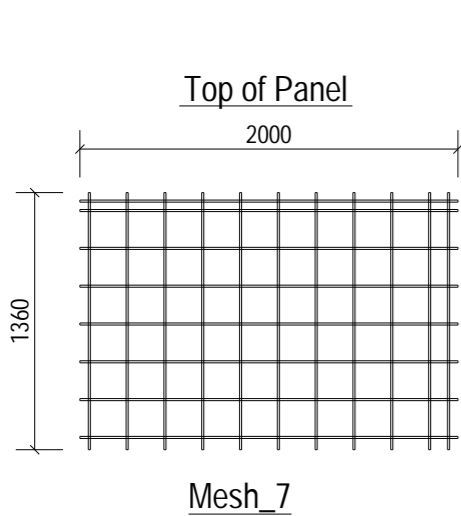
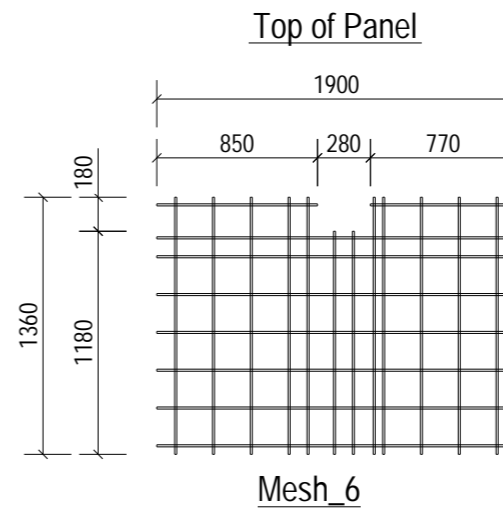
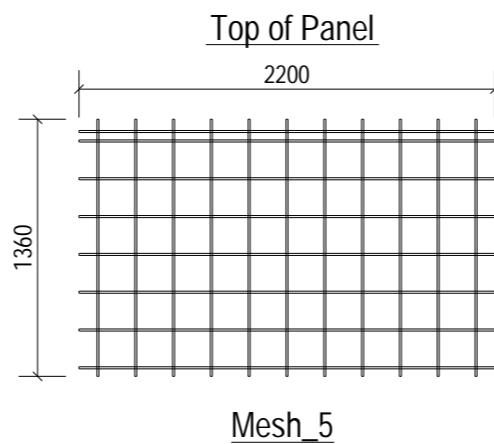
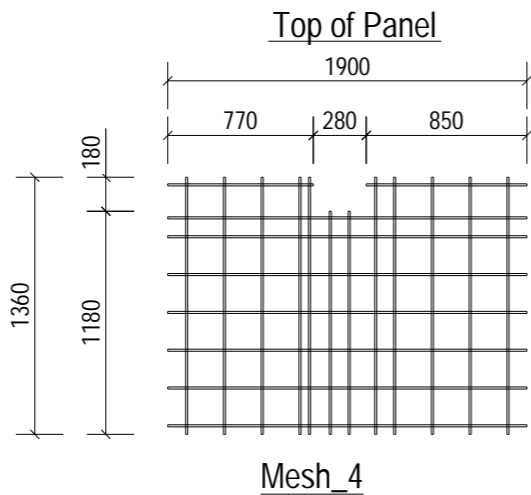
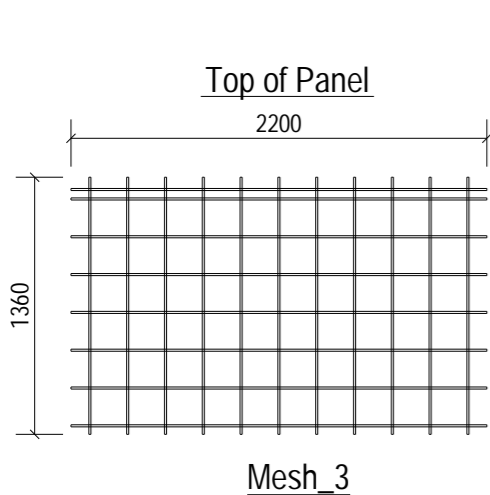
Drawing No : **05-BYL-1462-LW-0004-GA1** Rev: C01

Manufacture Tolerances
Allowable dimensional variations shall not exceed the following

Overall Length/Width	Variation	Width Of Walls	Variation
Up to 3.0m	± 5mm	Up to 150mm	± 5mm
3.01 to 6.0m	± 9mm	> 150mm	± 6mm
Additional for every subsequent 6m	± 6mm	Fixings/Inserts	± 5mm
		Door opening size	-5/+10mm
Height Of Unit		Internal Shaft	± 6mm
Up to 3.0m	± 5mm	Dimensions	
3.01 to 4.5m	± 9mm		

ALL DIMENSIONS SHOWN ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

MESH REINFORCEMENT:
ALL MESH-B8@ 200CRS BOTH DIRECTIONS



NOTES:


Type.	Lift Wall
Mark.	LW-0004
GA Drg. Ref.	05-BYL-1462-LW-0004-GA1
Cover.	25mm Nominal, 20mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

Project. Panattoni Park
Poyle

Title. IM1 of
Lift Wall LW-0004

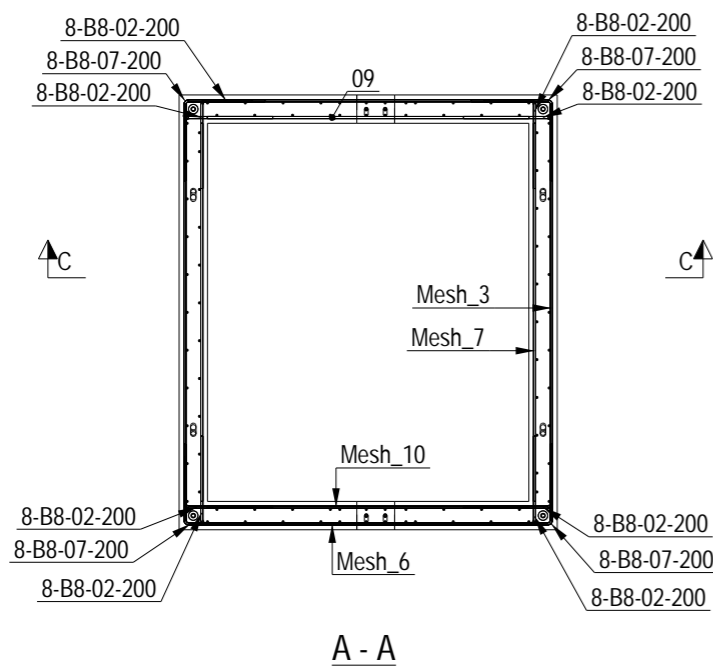
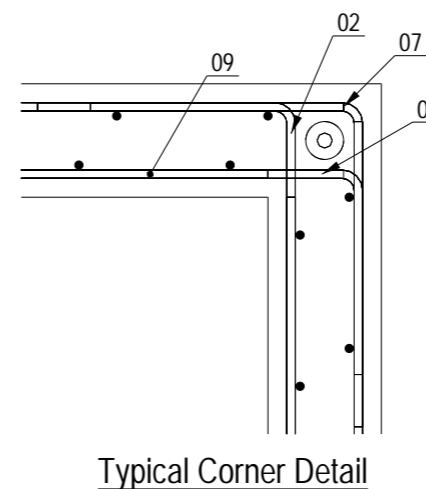
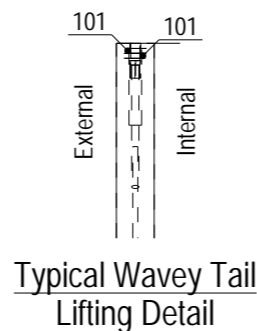
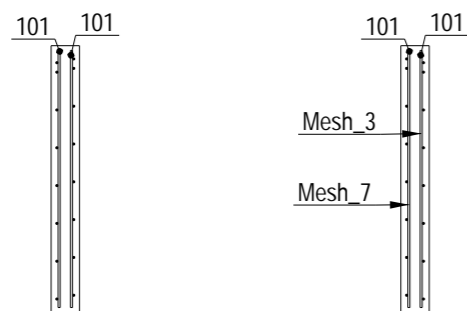
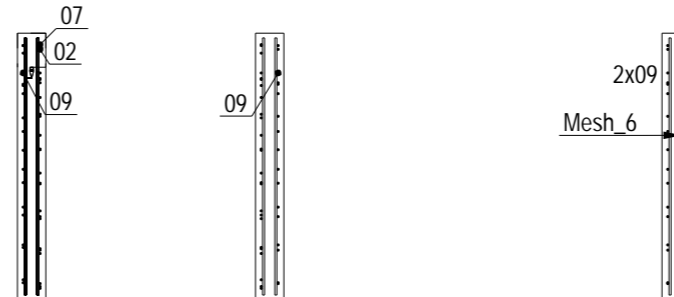
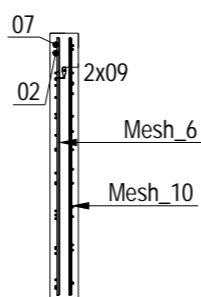
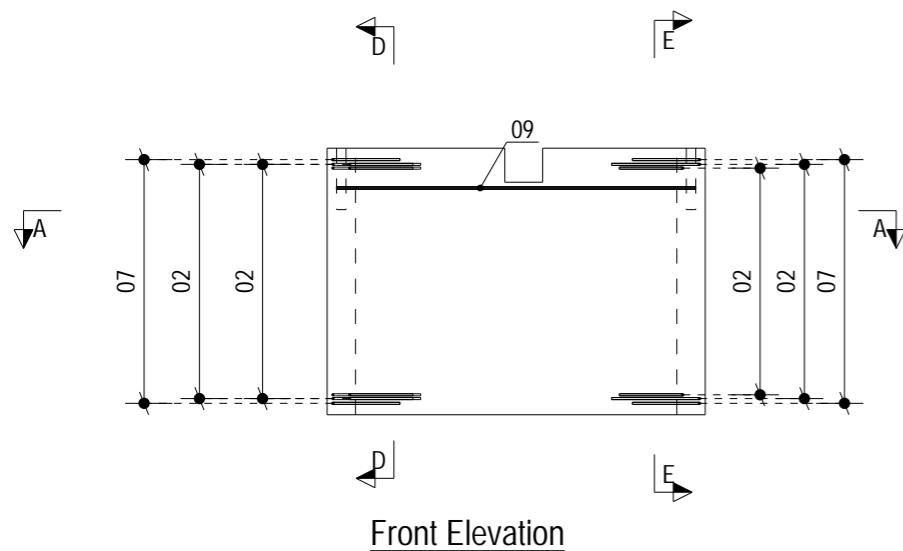
Scale: 1:40 Status:
Date: 19-03-24 As Built - CR

Drawn: MF Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-LW-0004-IM1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm



NOTES:

Type.	Lift Wall
Mark.	LW-0004
GA Drg. Ref.	05-BYL-1462-LW-0004-GA1
Cover.	25mm Nominal, 20mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	22-03-24	Issued For Manufacture.	MF	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

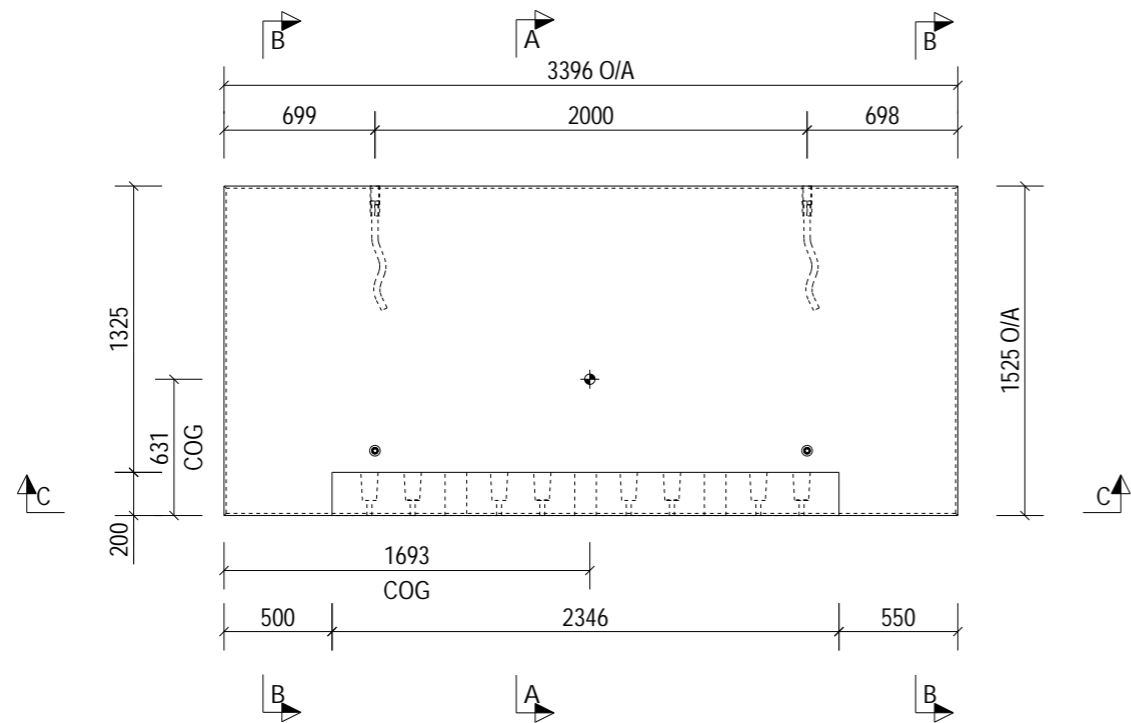
Title. **RC1 of Lift Wall LW-0004**

Scale: 1:40 Status: As Built - CR

Drawn: MF Checked: NB Approved: SJH

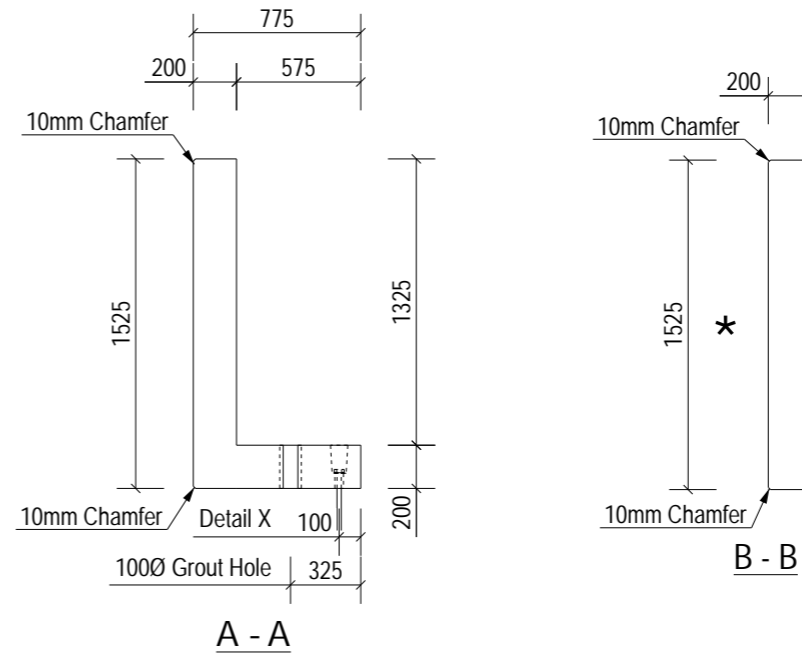
Drawing No : **05-BYL-1462-LW-0004-RC1** Rev: **C01**

A3
10mm



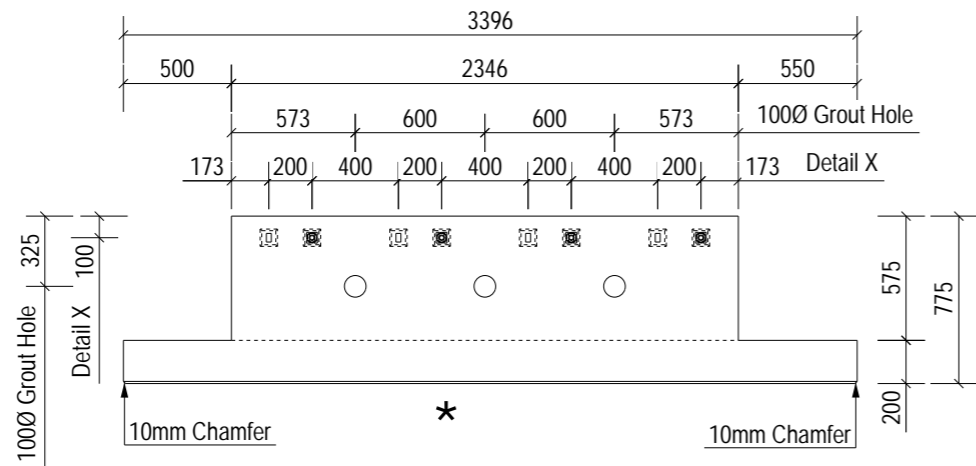
Plan on Mould

* Indicates Mould Face

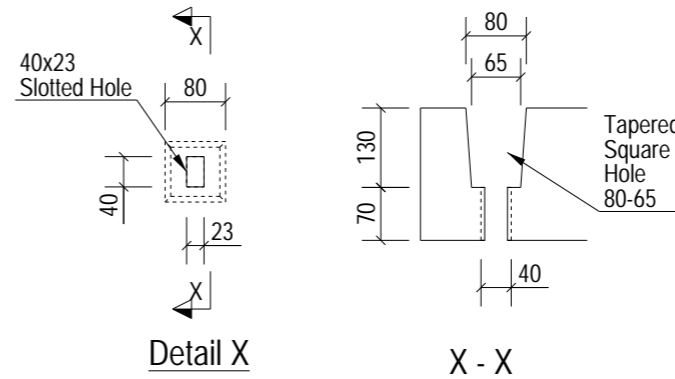


A - A

B - B

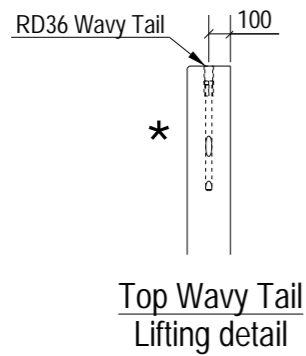


C - C

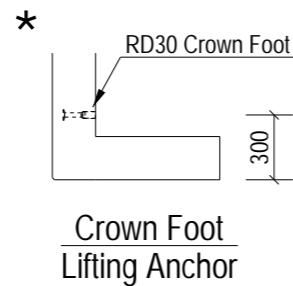


Detail X

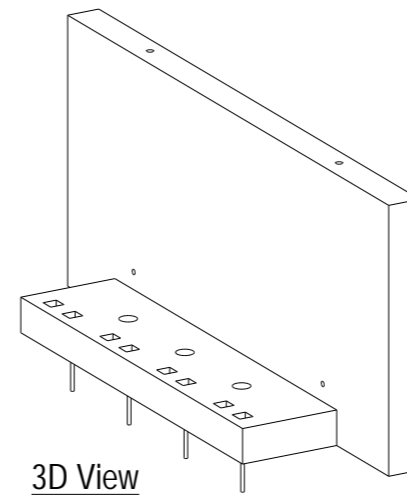
X - X



Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



3D View

NOTES:

Type.	Perimeter Wall	
Length.	3396	+4 / -4
Height.	1525	+4 / -4
Width.	200	+4 / -4
Weight. (T)	3.24	
Volume. (m³)	1.29	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0001-RC1	
BBS Ref.	05-BYL-1462-PR-0001-BBS	
Calculation Ref.	FPMC-50-PR-1650_C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0001	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Item	Spec	Qty
Square Washer	(M25-50*50*2.5)	4 No.
Excalibur Bolt	(M20*300)	4 No.

Rev	Date	Revision Detail	By	Chk	App
C02	27-03-24	Dims Amended Issued For Manufacture	DT	NB	SJH
C01	25-03-24	Issued For Manufacture	DT	NB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client:

Project: Panattoni Park Poyle

Title: GA1 of Perimeter Wall PR-0001

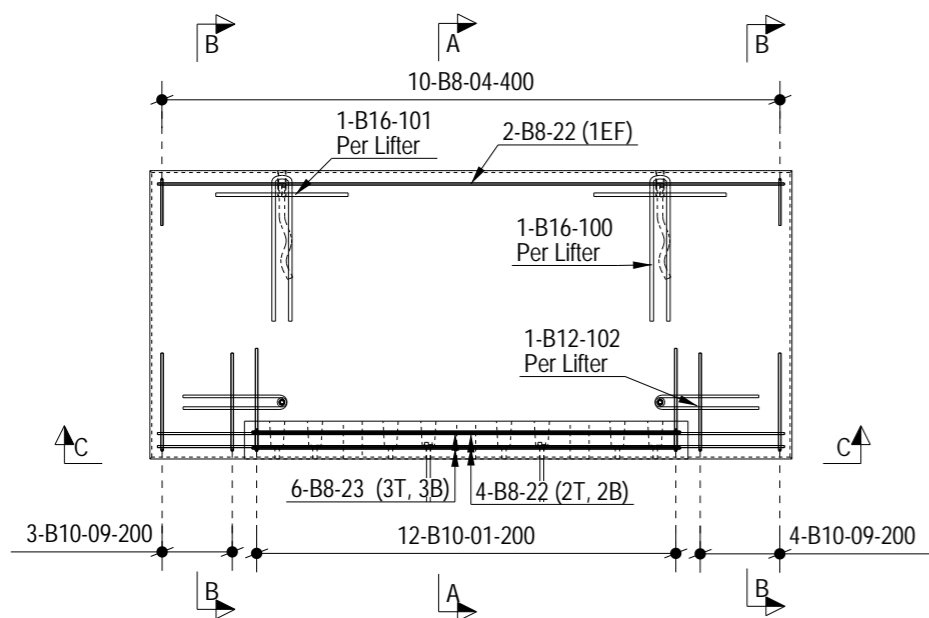
Scale: 1:40 Status: As Built - CR

Date: 22-03-24

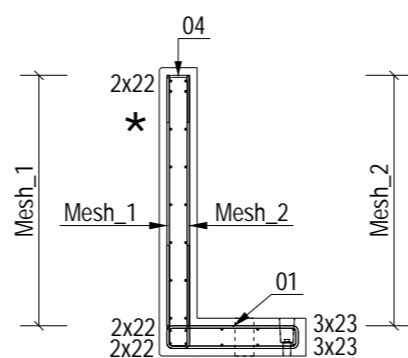
Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0001-GA1 Rev: C02

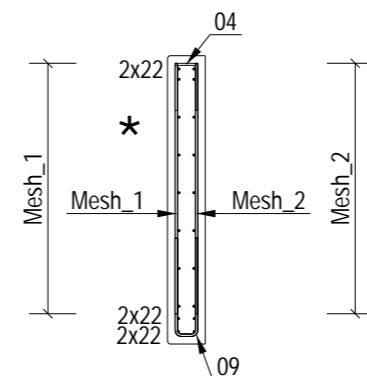
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



Plan on Mould

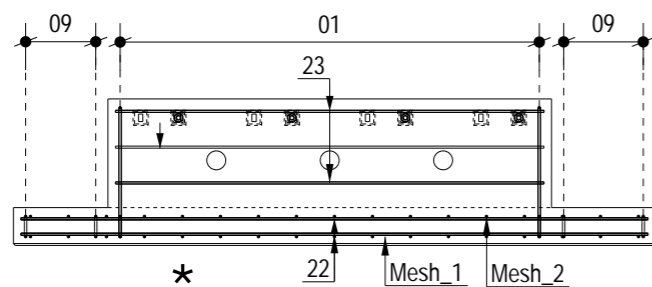


A - A

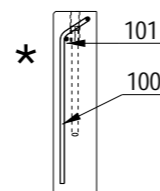


B - B

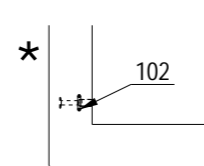
* Indicates Mould Face



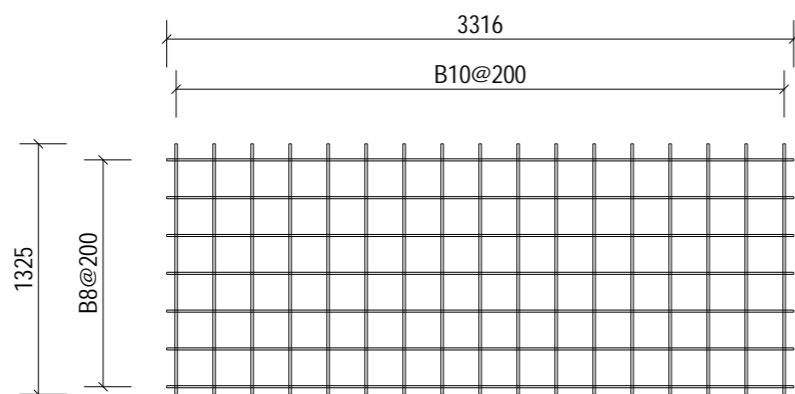
C - C



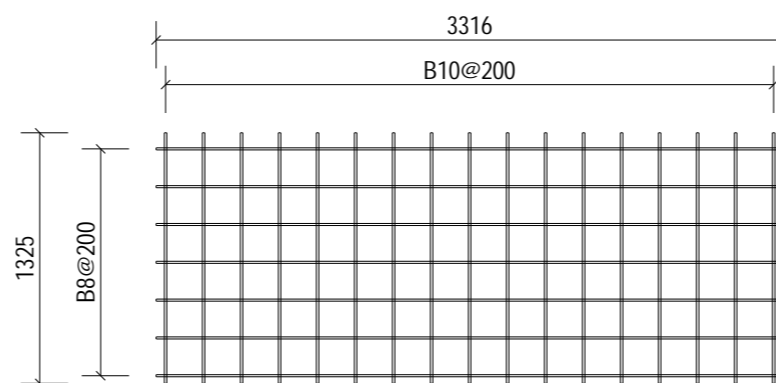
Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0001
GA Drg. Ref.	05-BYL-1462-PR-0001-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	25-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

Project. **Panattoni Park Poyle**

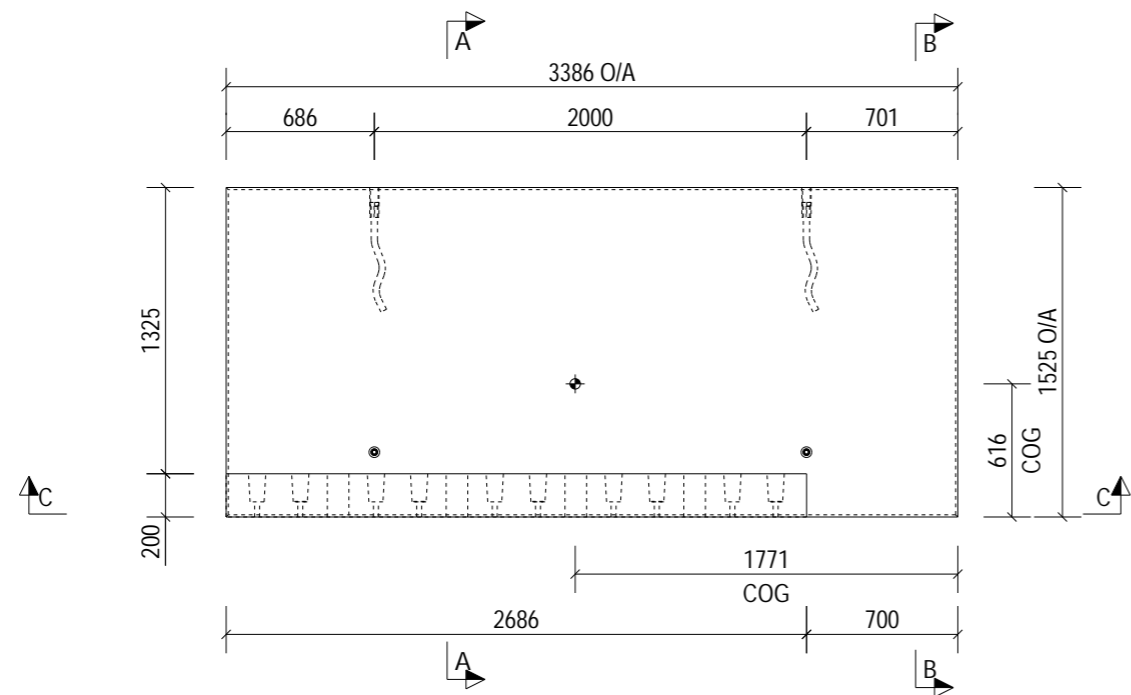
Title. **RC1 of Perimeter Wall PR-0001**

Scale: 1:40 Status: As Built - CR

Date: 22-03-24

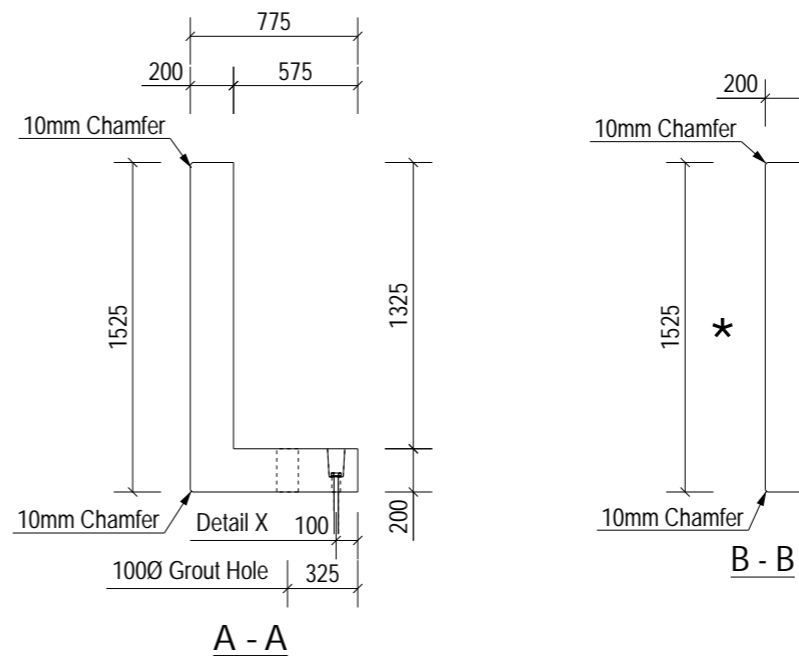
Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0001-RC1 Rev: C01



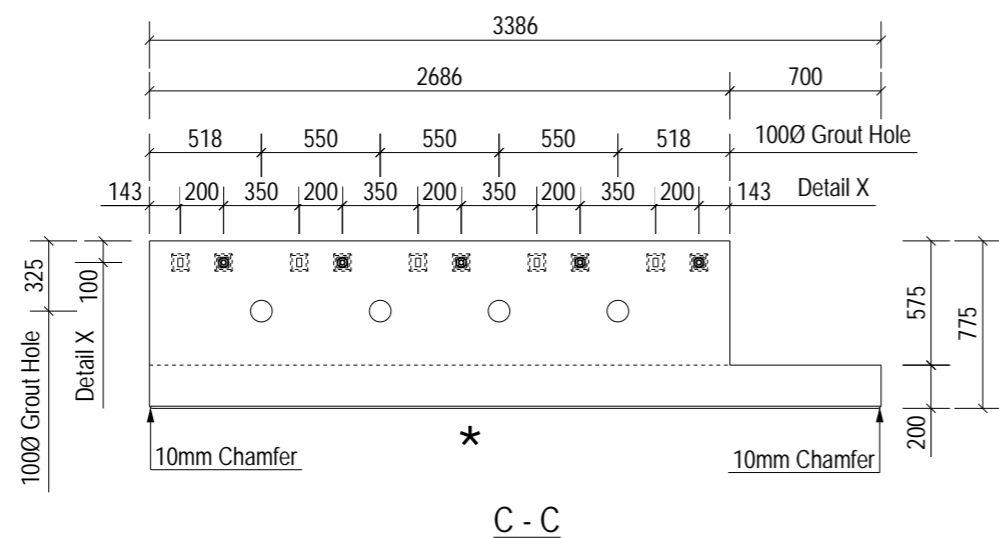
Plan on Mould

* Indicates Mould Face

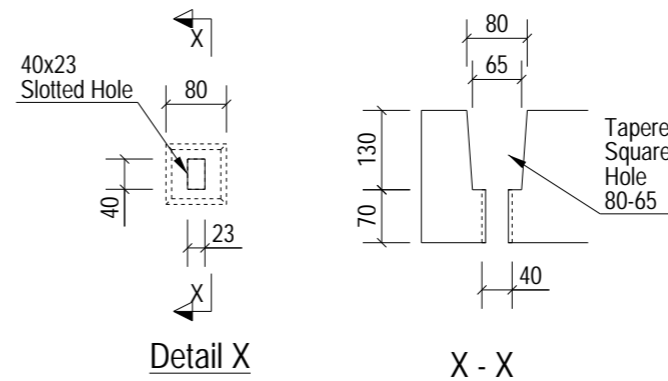


A - A

B - B

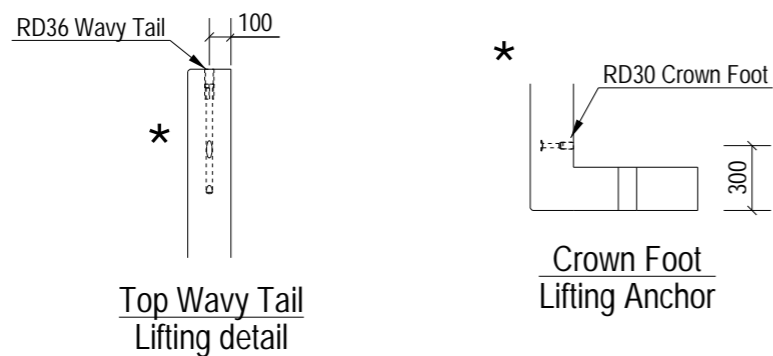


C - C



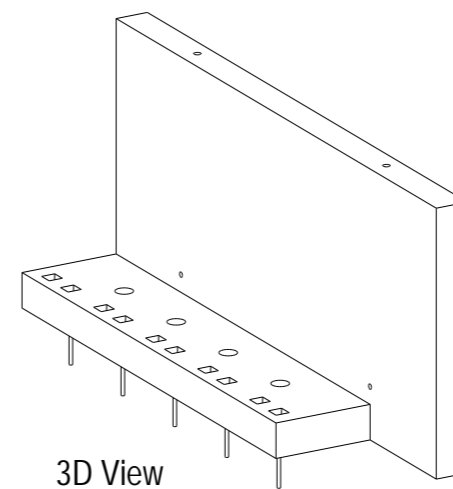
Detail X

X - X



Top Wavy Tail Lifting detail

Crown Foot Lifting Anchor



3D View

NOTES:

Type.	Perimeter Wall	
Length.	3386	+4 / -4
Height.	1525	+4 / -4
Width.	200	+4 / -4
Weight. (T)	3.33	
Volume. (m ³)	1.33	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0002-RC1	
BBS Ref.	05-BYL-1462-PR-0002-BBS	
Calculation Ref.	FPMC-50-PR-1650_C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0002	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	5 No.
Excalibur Bolt	(M20*300)	5 No.

Rev	Date	Revision Detail	By	Chk	App
C01	25-03-24	Issued For Manufacture	DT	NB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

Project. **Panattoni Park Poyle**

Title. **GA1 of Perimeter Wall PR-0002**

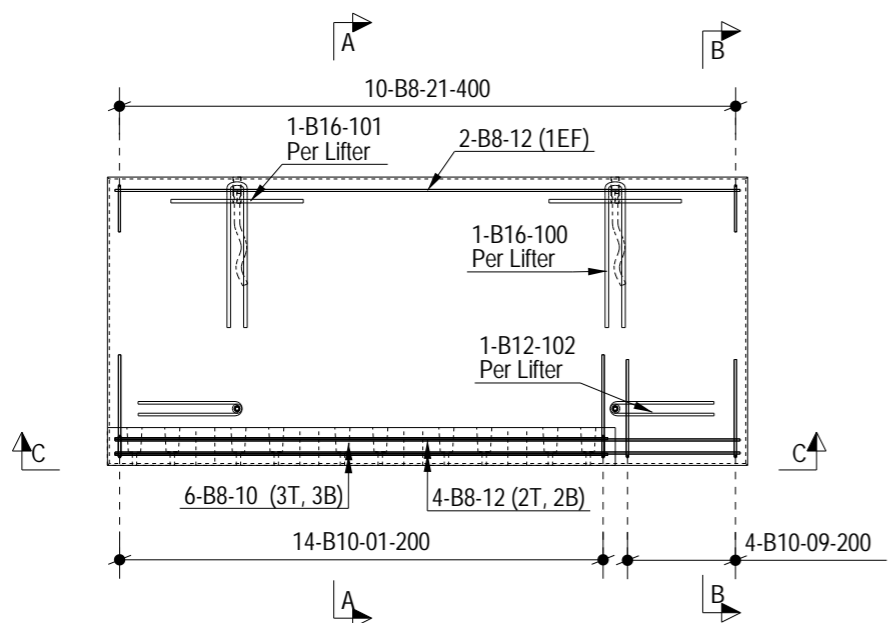
Scale: 1:40 Status: As Built - CR

Date: 22-03-24

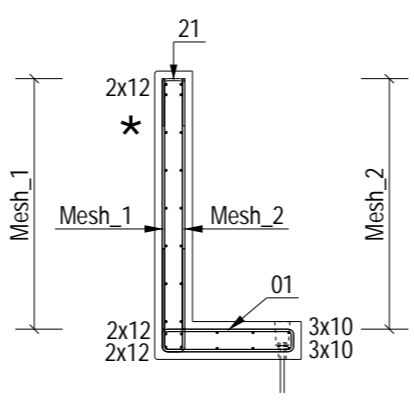
Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0002-GA1 Rev: C01

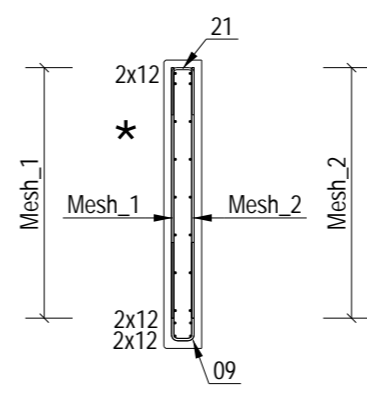
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



Plan on Mould

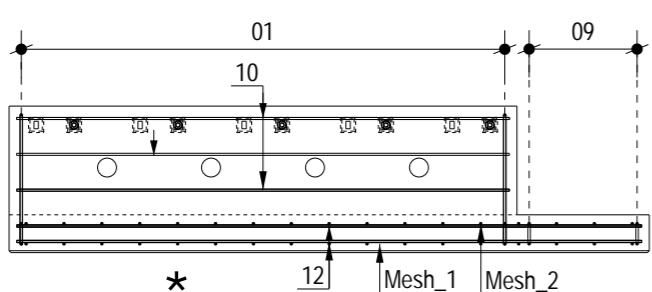


A - A

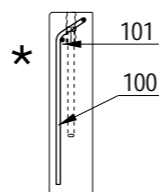


B - B

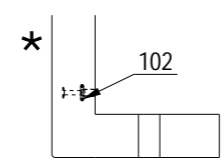
* Indicates Mould Face



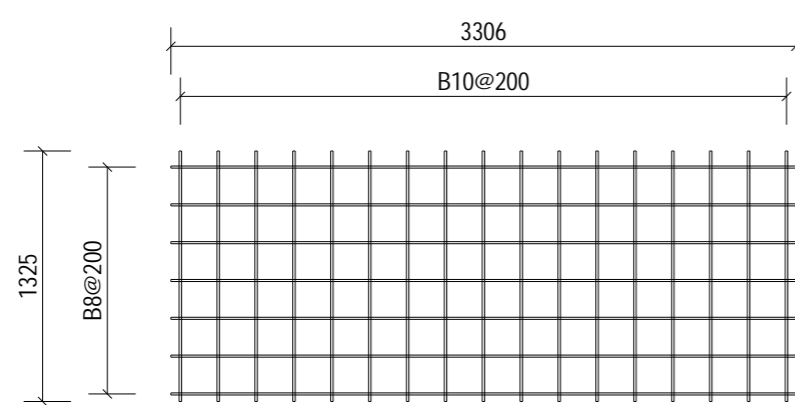
C - C



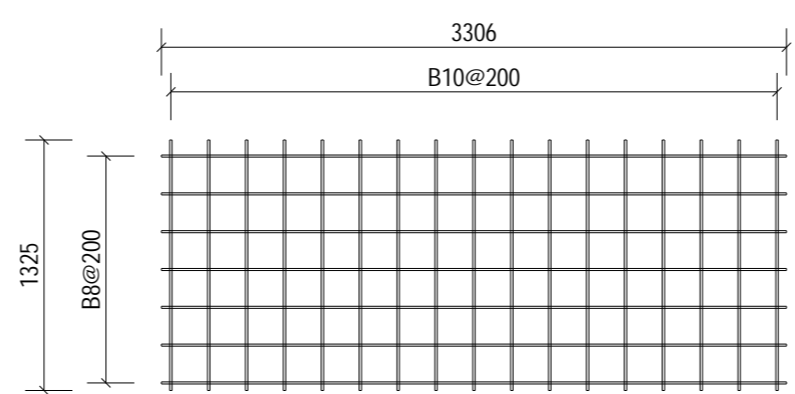
Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

NOTES:	
Type.	Perimeter Wall
Mark.	PR-0002
GA Drg. Ref.	05-BYL-1462-PR-0002-GA1
Cover.	40mm Nominal, 35mm Minimum
<ul style="list-style-type: none"> Reinforcement (500B or C) to BS4449. Scheduling, dimensioning, bending and cutting to BS8666 Cage to be tack welded and/or tied with 17 gauge annealed tying wire. 	

C01	25-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

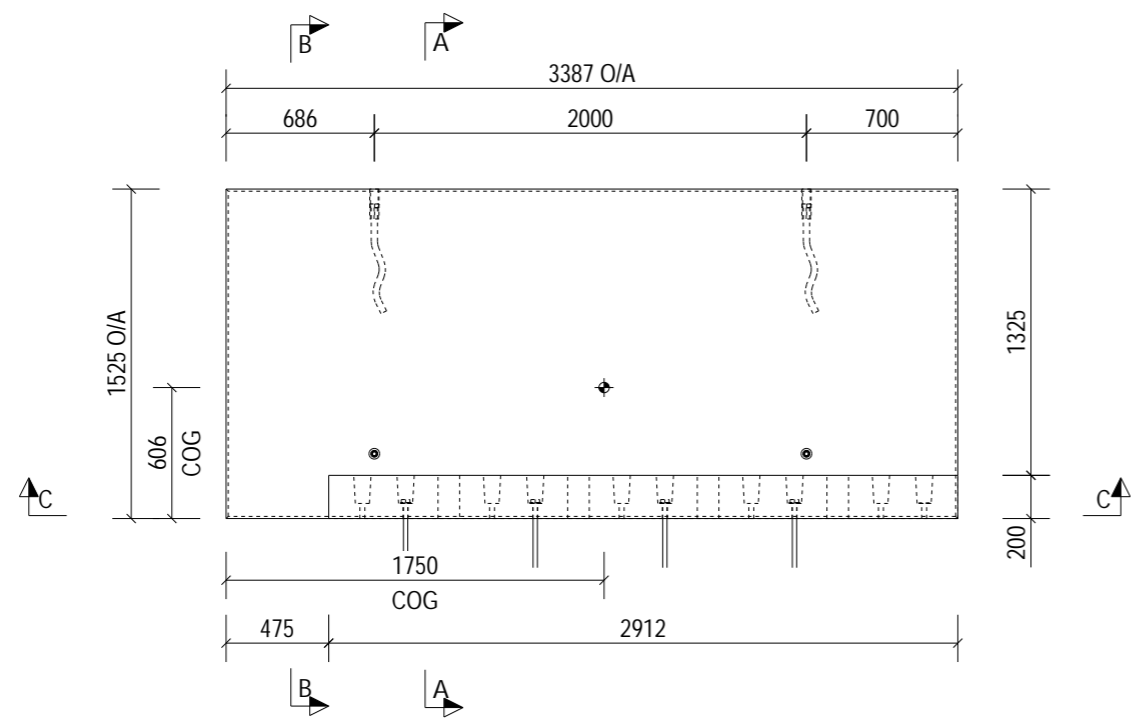
Client.

Project. **Panattoni Park Poyle**

Title. **RC1 of Perimeter Wall PR-0002**

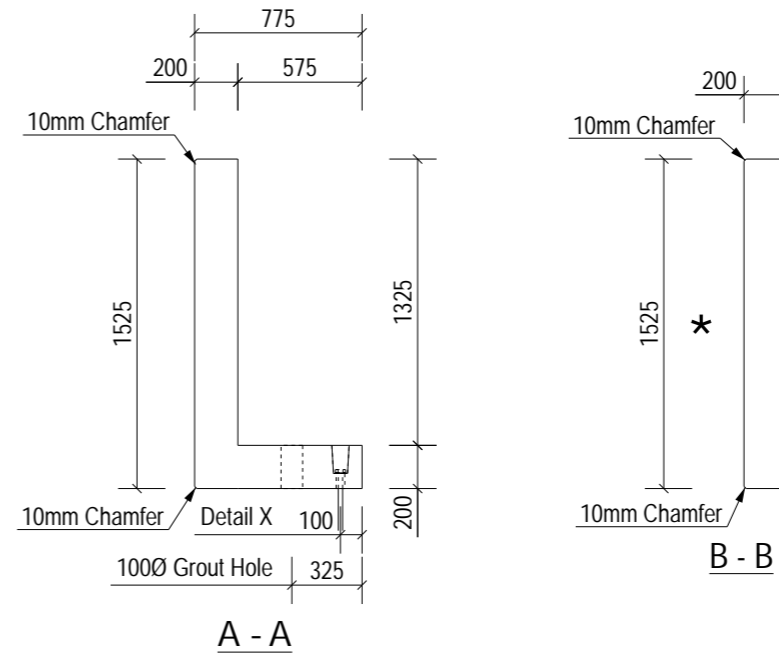
Scale: 1:40	Status: As Built - CR	
Date: 22-03-24		
Drawn: DT	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-PR-0002-RC1	Rev: C01	

A3
10mm



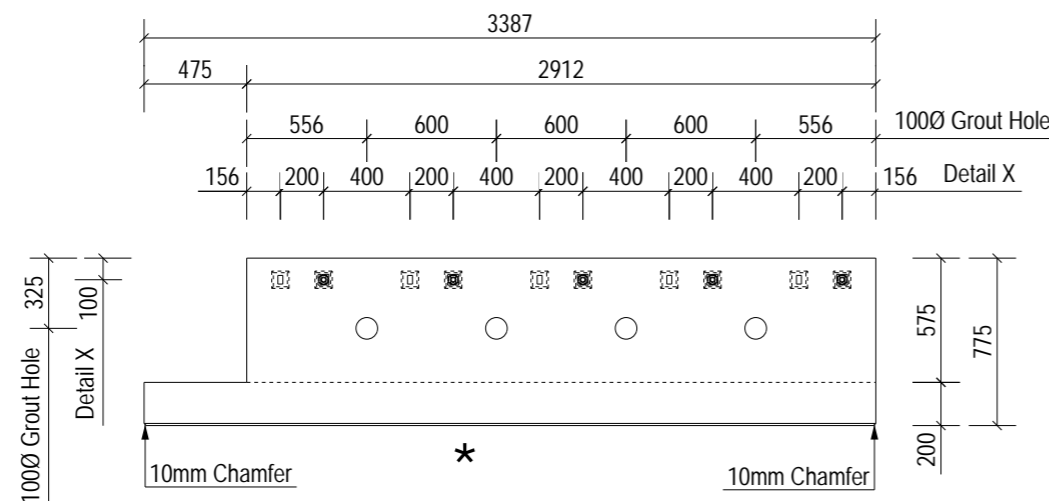
Plan on Mould

★ Indicates Mould Face

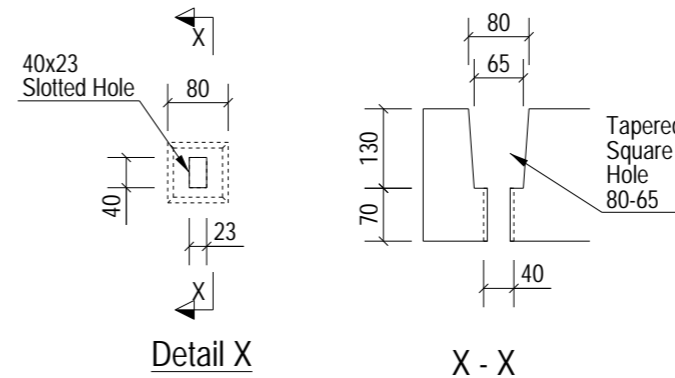


A - A

B - B

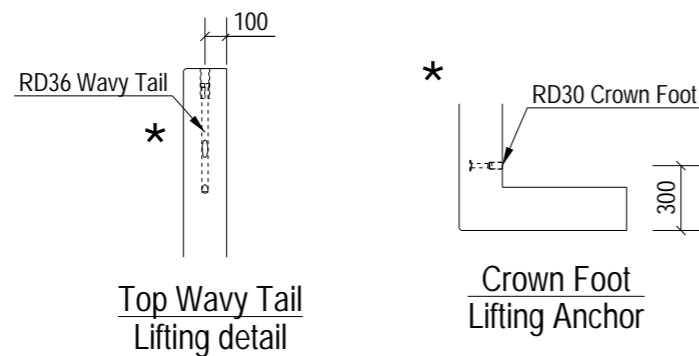


C - C



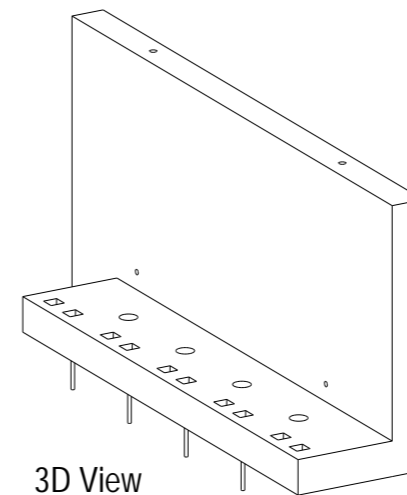
Detail X

X - X



Top Wavy Tail Lifting detail

Crown Foot Lifting Anchor



3D View

NOTES:

Type.	Perimeter Wall	
Length.	3387	+4 / -4
Height.	1525	+4 / -4
Width.	200	+4 / -4
Weight. (T)	3.39	
Volume. (m³)	1.35	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0003-RC1	
BBS Ref.	05-BYL-1462-PR-0003-BBS	
Calculation Ref.	FPMC-50-PR-1650_C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0003	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	5 No.
Excalibur Bolt	(M20*300)	5 No.

Rev	Date	Revision Detail	By	Chk	App
C02	02-04-24	Dims Amended	DT	NB	SJH
C01	25-03-24	Issued For Manufacture	DT	NB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of Perimeter Wall PR-0003**

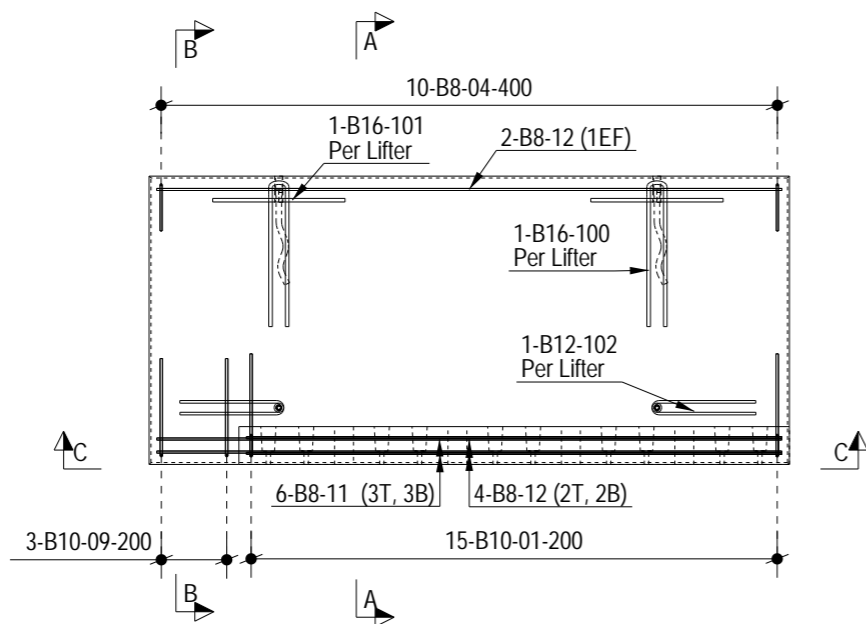
Scale: 1:40 Status: As Built - CR

Date: 22-03-24

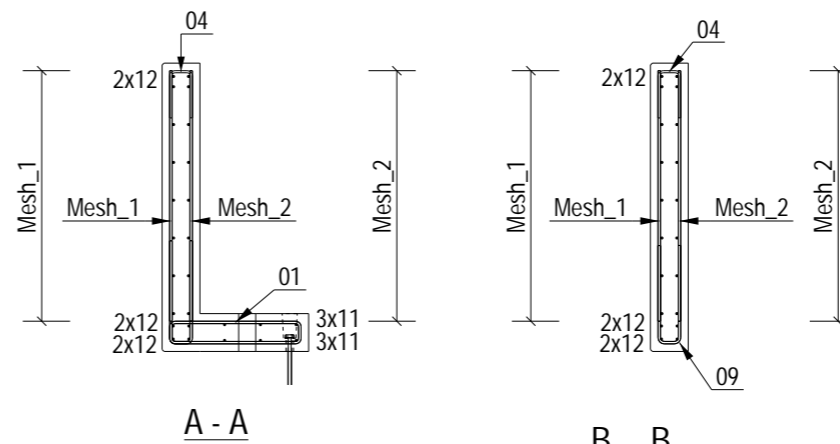
Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0003-GA1 Rev: C02

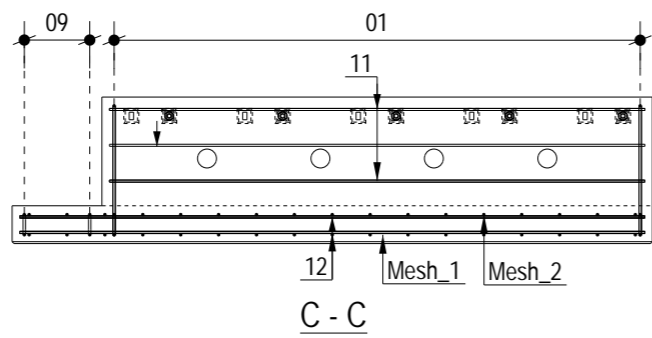
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



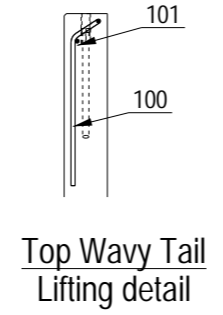
Plan on Mould



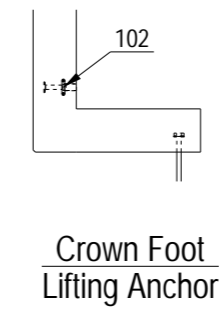
* Indicates Mould Face



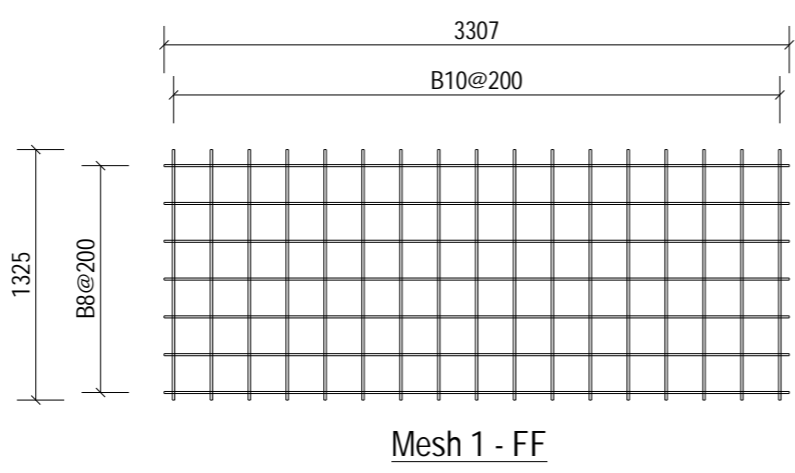
C - C



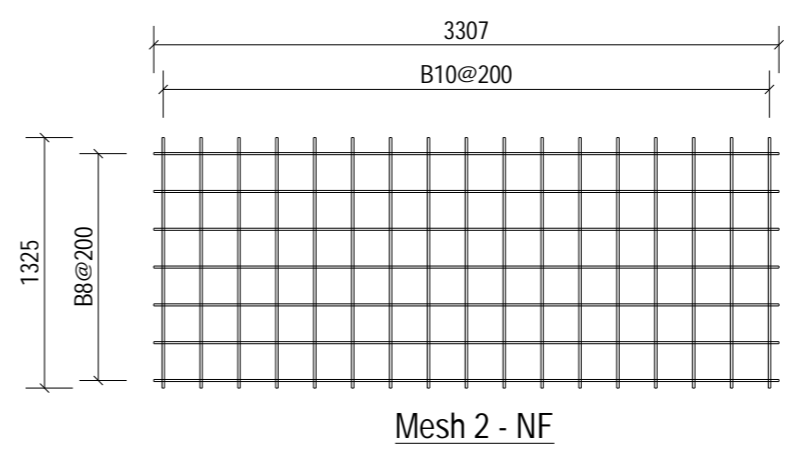
Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0003
GA Drg. Ref.	05-BYL-1462-PR-0003-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	25-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

Client.

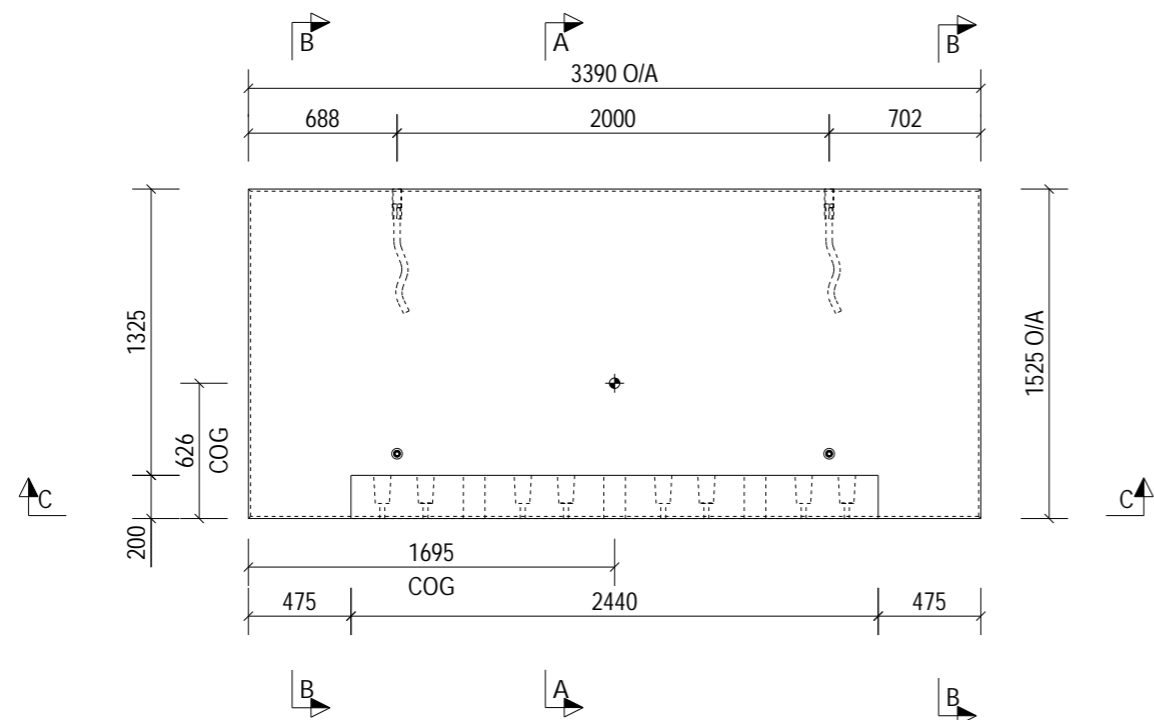
Project. Panattoni Park Poyle

Title. RC1 of Perimeter Wall PR-0003

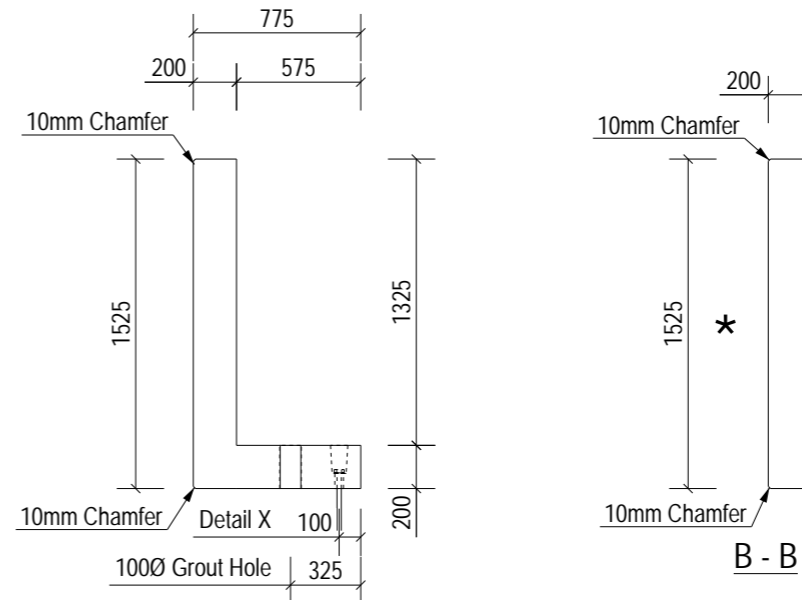
Scale: 1:40	Status: As Built - CR	
Date: 22-03-24		
Drawn: DT	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-PR-0003-RC1		Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm



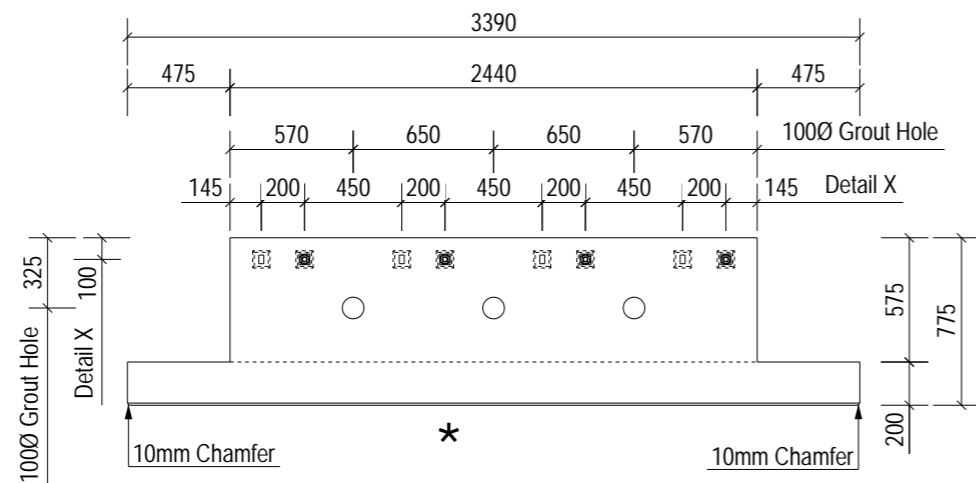
Plan on Mould



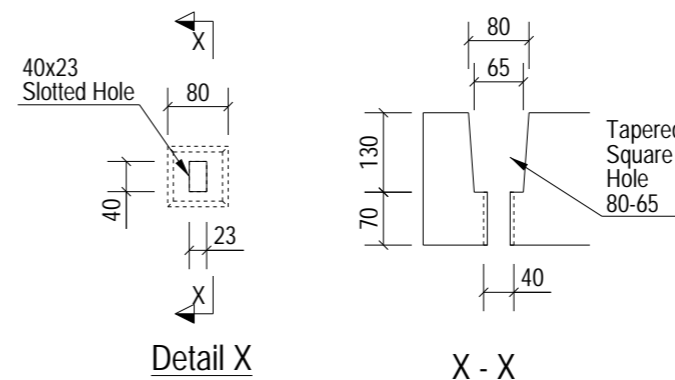
A - A

B - B

* Indicates Mould Face

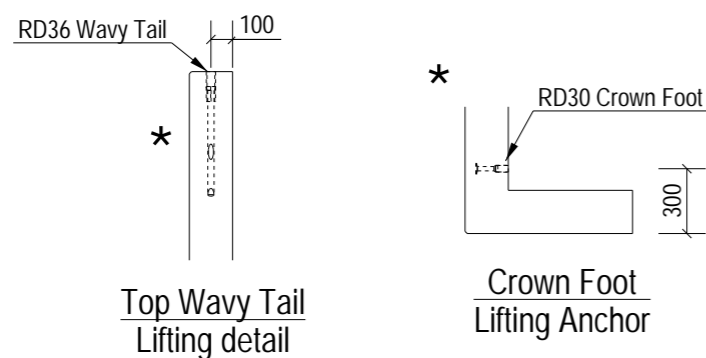


C - C



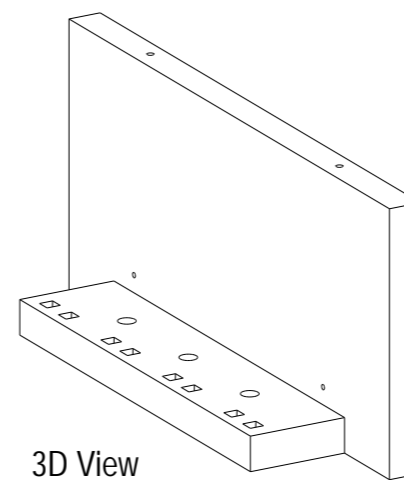
Detail X

X - X



Top Wavy Tail Lifting detail

Crown Foot Lifting Anchor



3D View

NOTES:

Type.	Perimeter Wall	
Length.	3390	+4 / -4
Height.	1525	+4 / -4
Width.	200	+4 / -4
Weight. (T)	3.27	
Volume. (m³)	1.30	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0004-RC1	
BBS Ref.	05-BYL-1462-PR-0004-BBS	
Calculation Ref.	FPMC-50-PR-1650_C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0004	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	4 No.
Excalibur Bolt	(M20*300)	4 No.

C01	25-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of Perimeter Wall PR-0004**

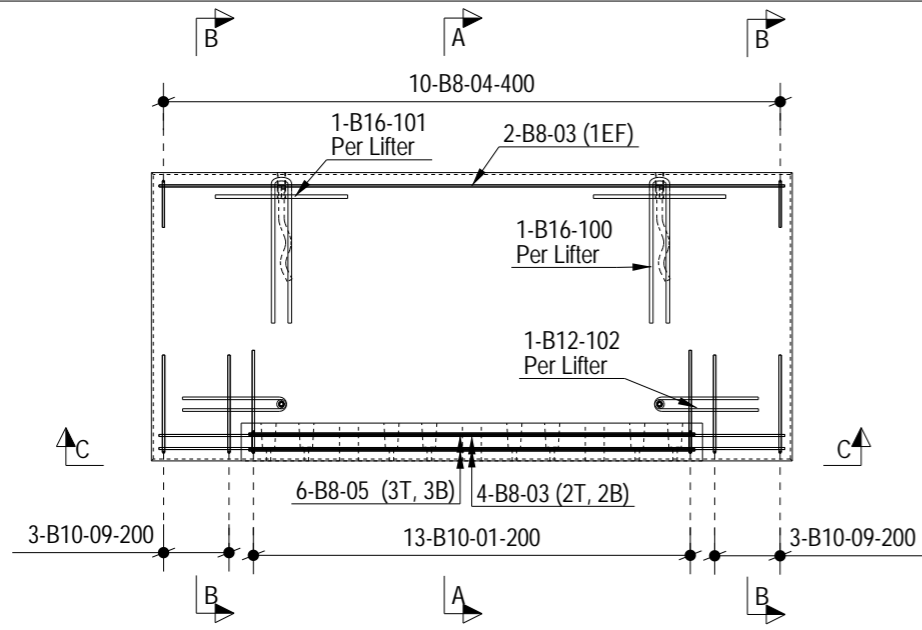
Scale: 1:40 Status: As Built - CR

Date: 22-03-24

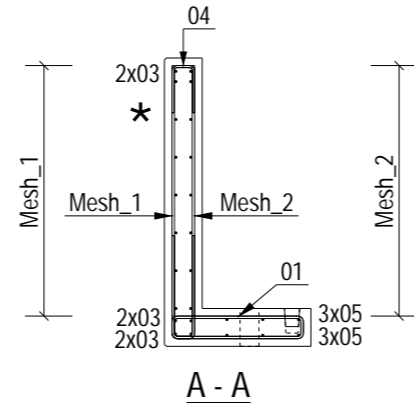
Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0004-GA1 Rev: C01

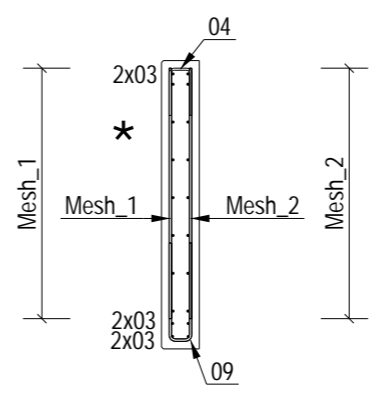
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



Plan on Mould

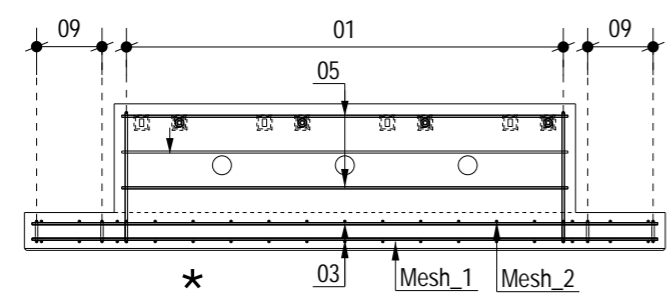


A - A

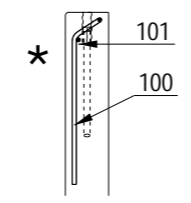


B - B

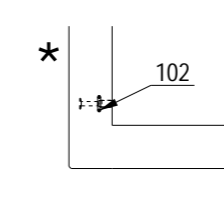
* Indicates Mould Face



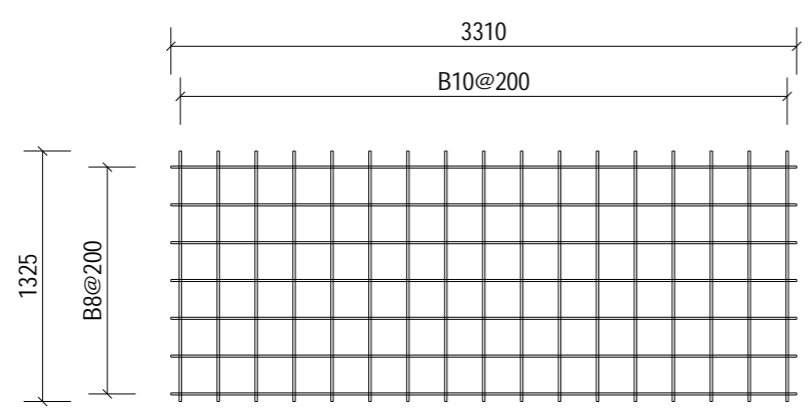
C - C



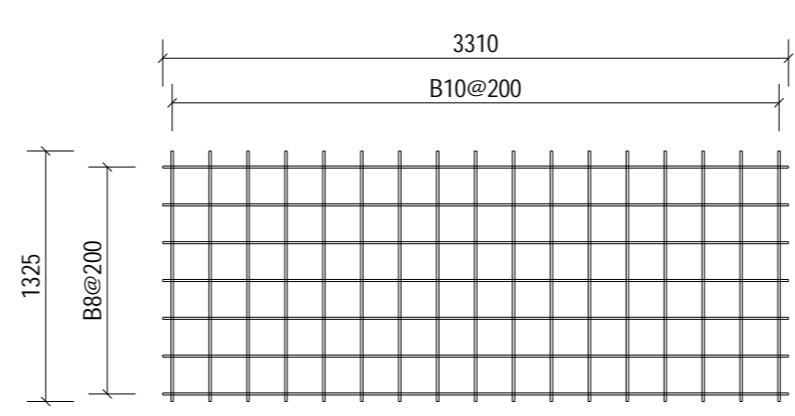
Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0004
GA Drg. Ref.	05-BYL-1462-PR-0004-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	25-03-24	Issued For Manufacture	DT	NB	SJH

Client.

Project. **Panattoni Park Poyle**

Title. **RC1 of Perimeter Wall PR-0004**

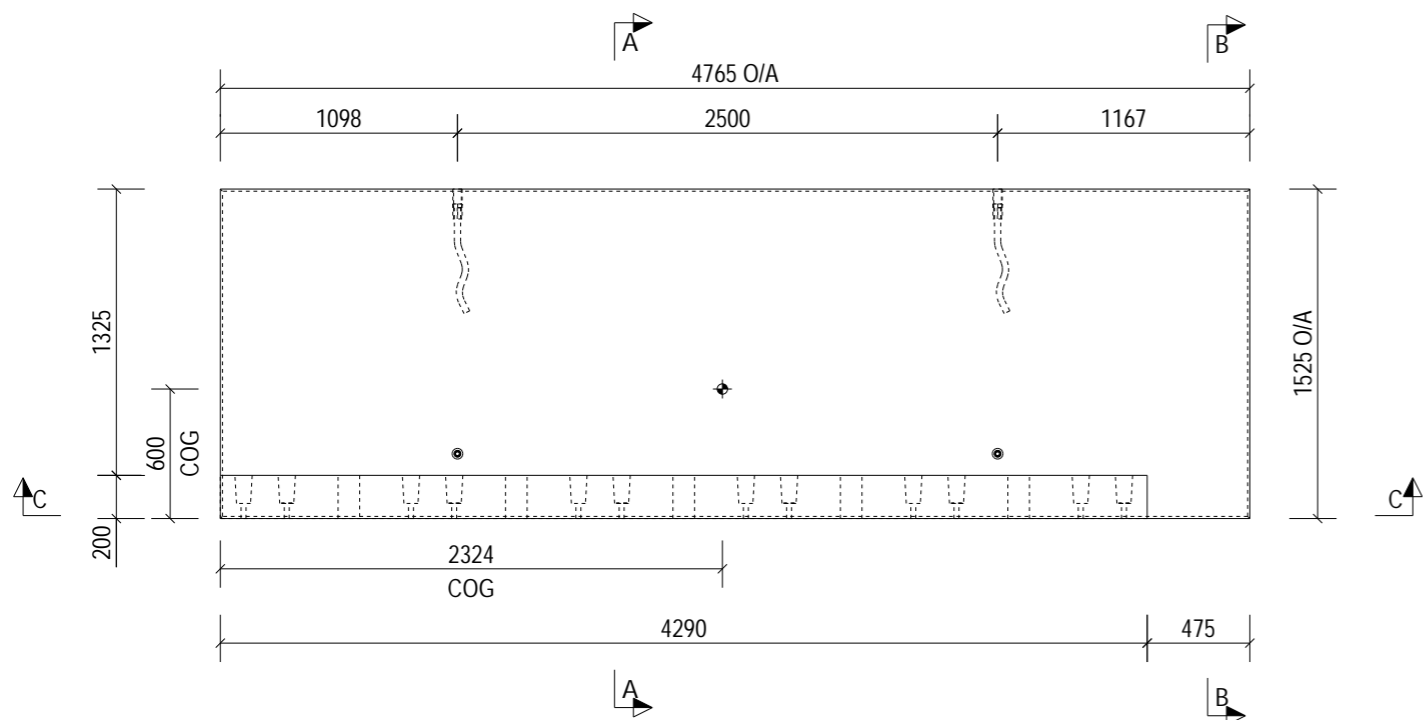
Scale: 1:40 Status: As Built - CR
Date: 22-03-24

Drawn: DT Checked: NB Approved: SJH
Drawing No : 05-BYL-1462-PR-0004-RC1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

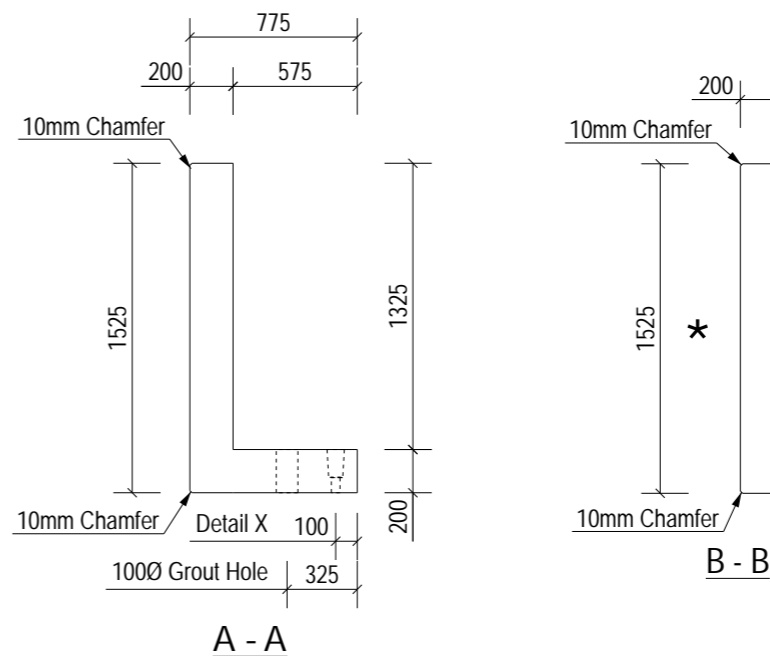
A3

10mm



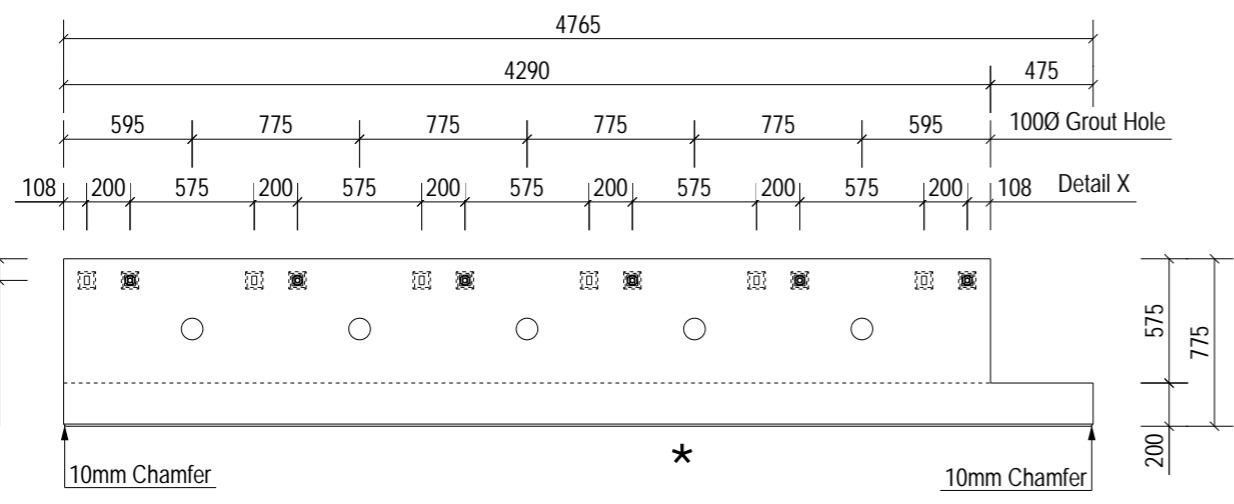
Plan on Mould

* Indicates Mould Face

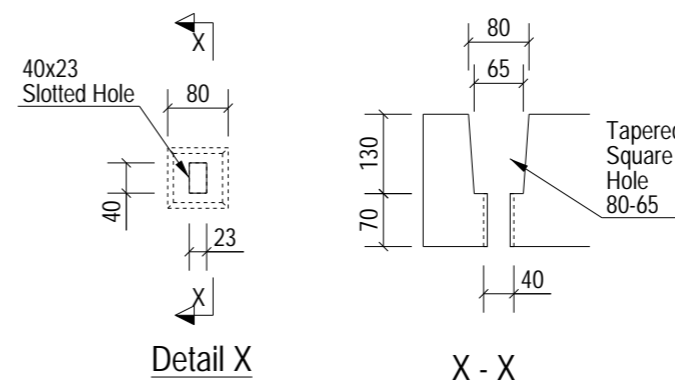


A - A

B - B

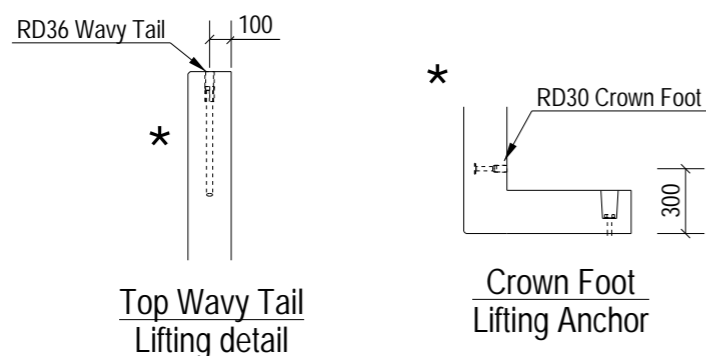


C - C



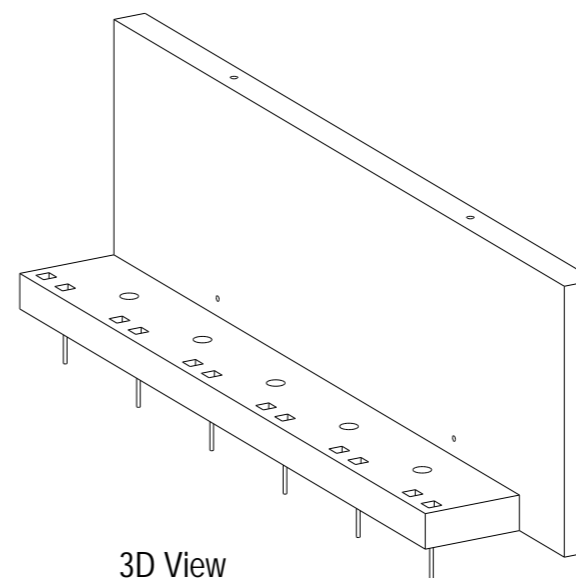
Detail X

X - X



Top Wavy Tail Lifting detail

Crown Foot Lifting Anchor



3D View

NOTES:

Type.	Perimeter Wall	
Length.	4765	+4 / -4
Height.	1525	+4 / -4
Width.	200	+4 / -4
Weight. (T)	4.83	
Volume. (m³)	1.93	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0005-RC1	
BBS Ref.	05-BYL-1462-PR-0005-BBS	
Calculation Ref.	FPMC-50-PR-1650_C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0005	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	6 No.
Excalibur Bolt	(M20*300)	6 No.

C01	22-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann
 FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

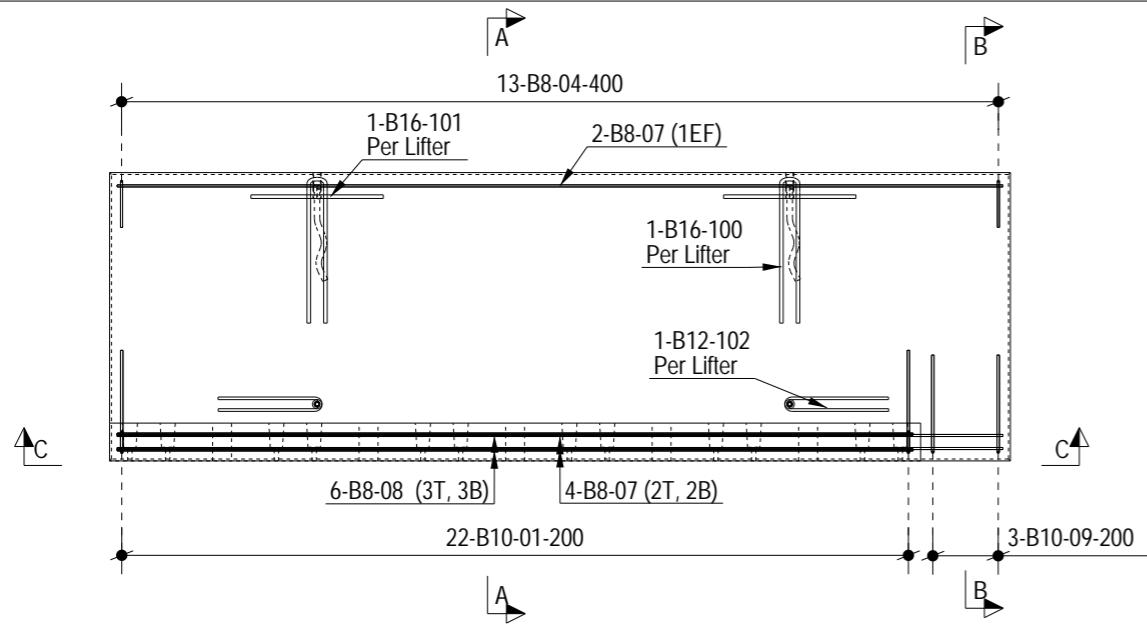
Title. **GA1 of Perimeter Wall PR-0005**

Scale: 1:40 Status: As Built - CR
 Date: 19-03-24

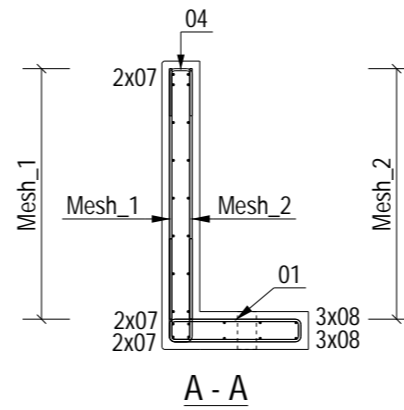
Drawn: DT Checked: NB Approved: SJH

Drawing No : **05-BYL-1462-PR-0005-GA1** Rev: **C01**

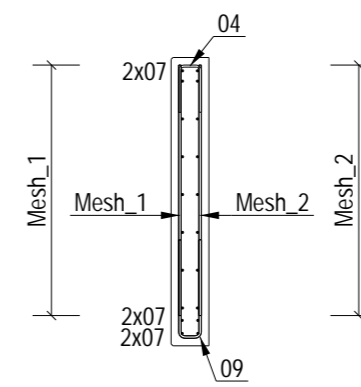
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



Plan on Mould

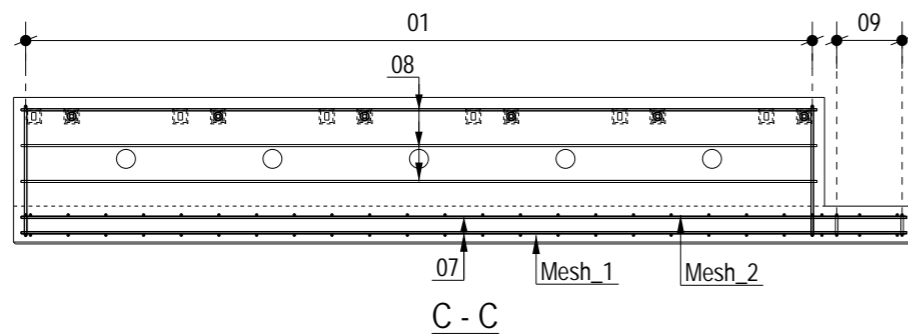


A - A

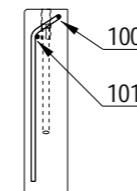


B - B

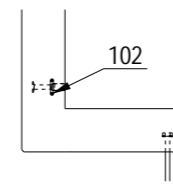
* Indicates Mould Face



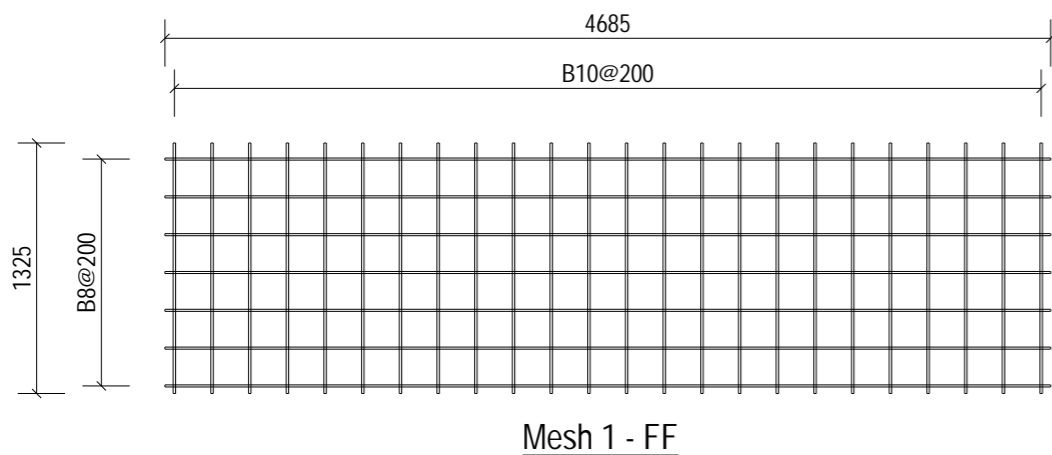
C - C



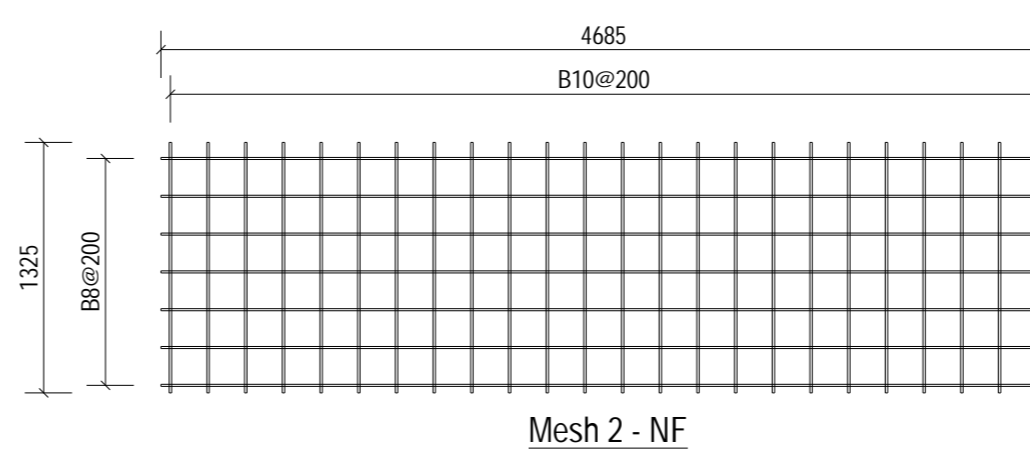
Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0005
GA Drg. Ref.	05-BYL-1462-PR-0005-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	22-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

Client.

Project. **Panattoni Park Poyle**

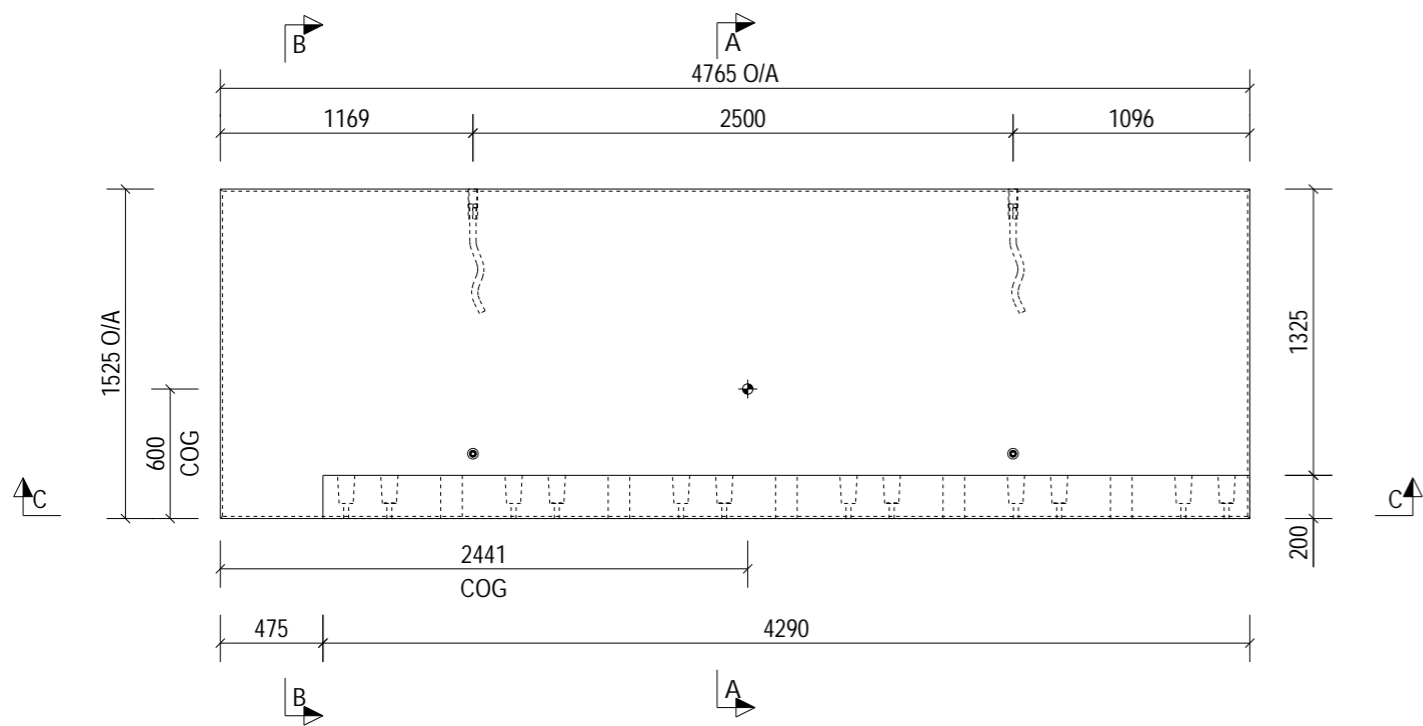
Title. **RC1 of Perimeter Wall PR-0005**

Scale: 1:40 Status: As Built - CR

Date: 19-03-24

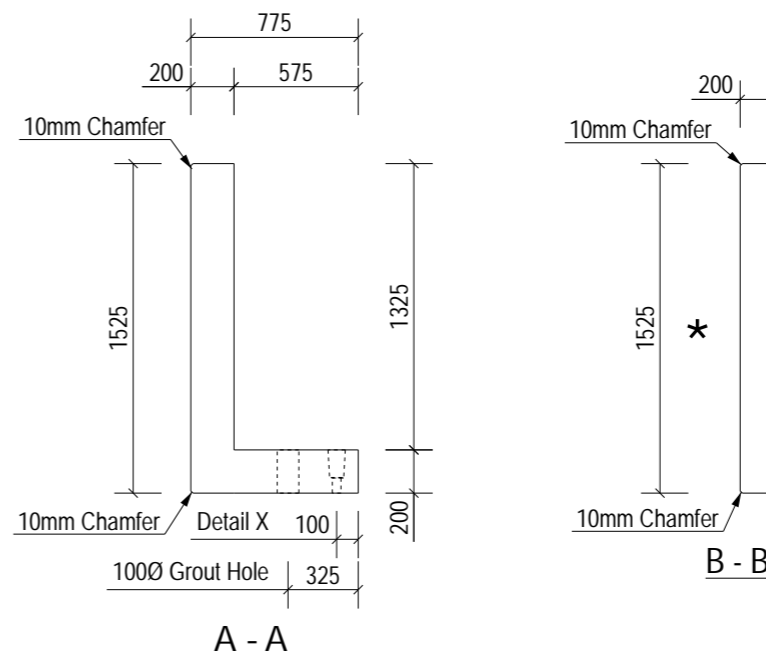
Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0005-RC1 Rev: C01



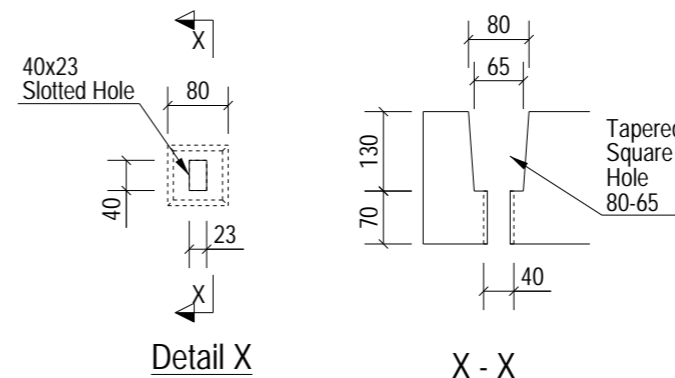
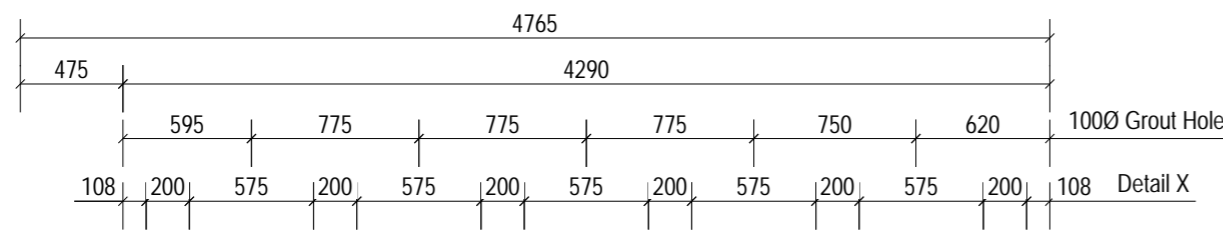
Plan on Mould

* Indicates Mould Face



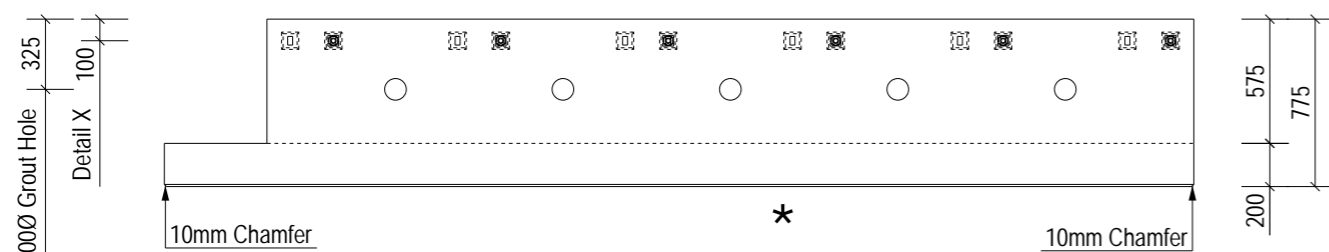
A - A

B - B

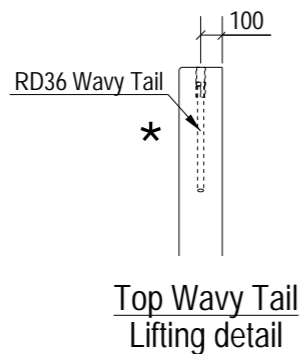


Detail X

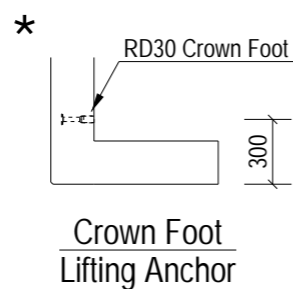
X - X



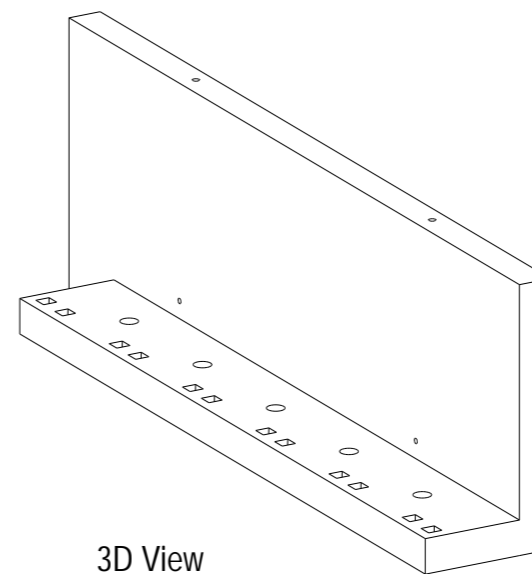
C - C



Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



3D View

NOTES:

Type.	Perimeter Wall	
Length.	4765	+4 / -4
Height.	1525	+4 / -4
Width.	200	+4 / -4
Weight. (T)	4.83	
Volume. (m³)	1.93	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-PR-0006-RC1	
BBS Ref.	05-BYL-1462-PR-0006-BBS	
Calculation Ref.	FPMC-50-PR-1650_C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	

Mark.	PR-0006	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	6 No.
Excalibur Bolt	(M20*300)	6 No.

C01	22-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

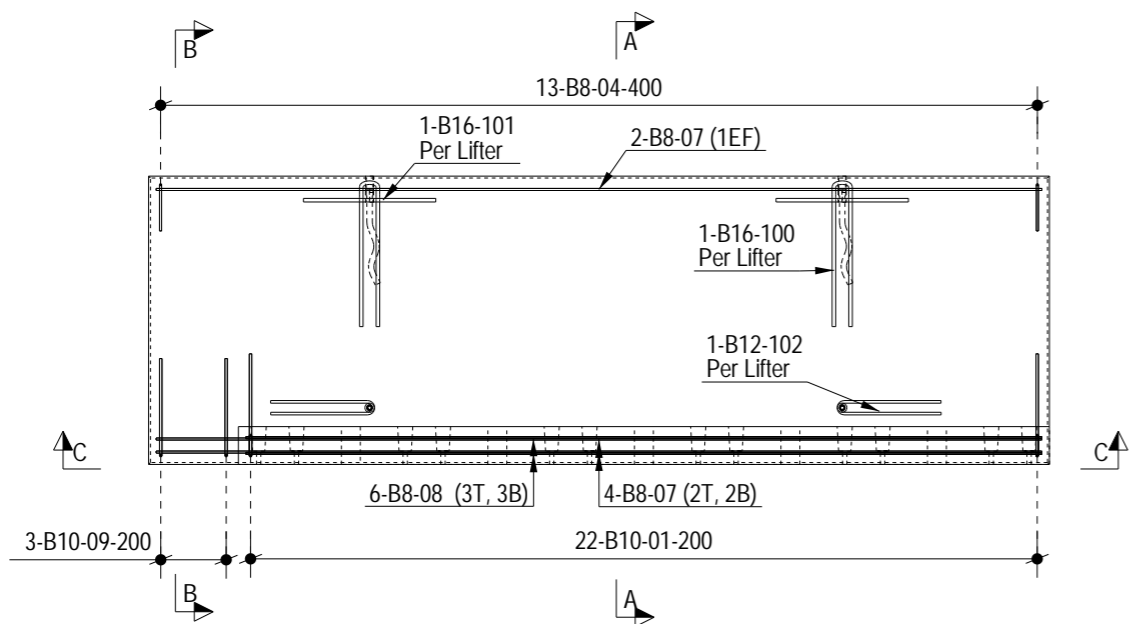
Title. GA1 of Perimeter Wall PR-0006

Scale: 1:40 Status: As Built - CR
Date: 21-03-24

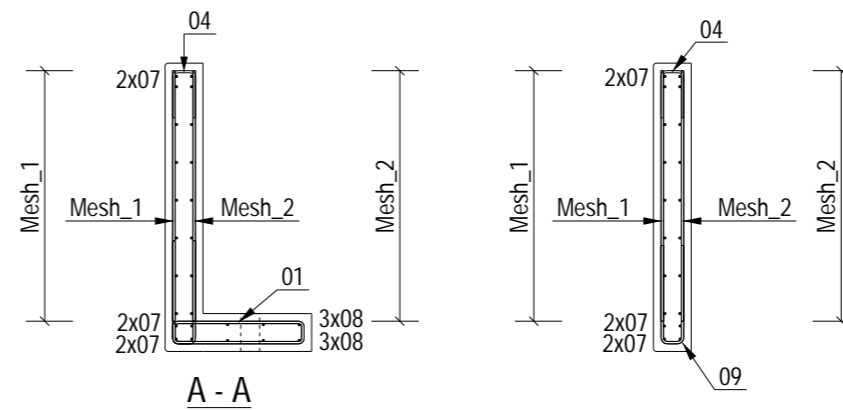
Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0006-GA1 Rev: C01

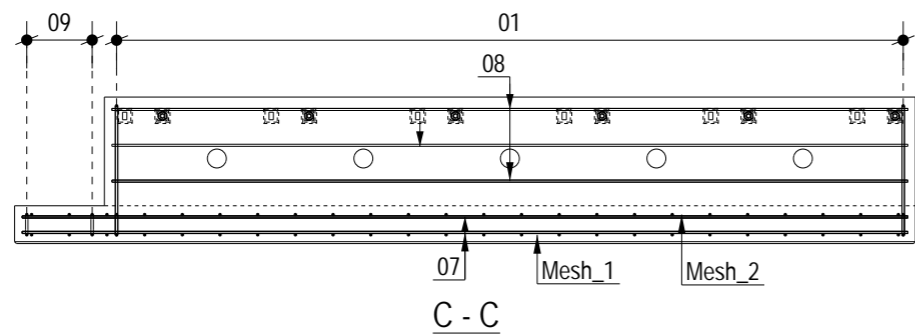
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



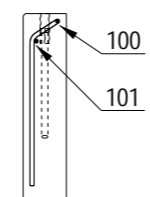
Plan on Mould



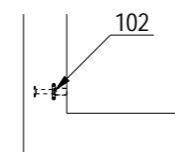
* Indicates Mould Face



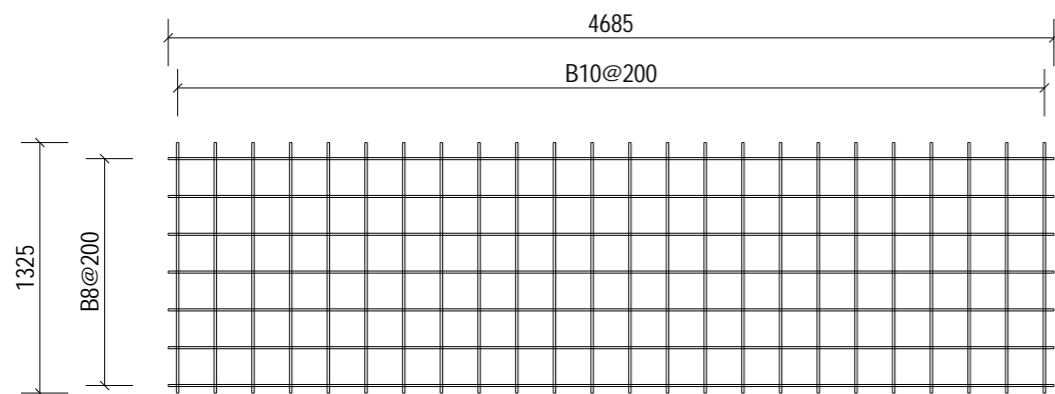
C - C



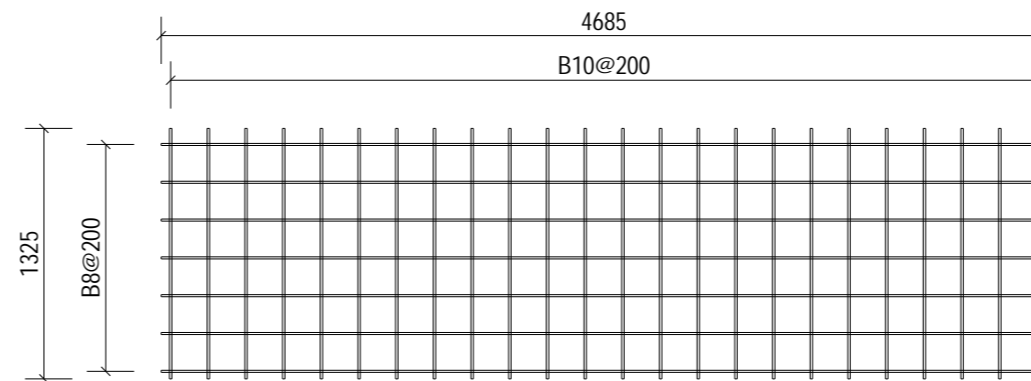
Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0006
GA Drg. Ref.	05-BYL-1462-PR-0006-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	22-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

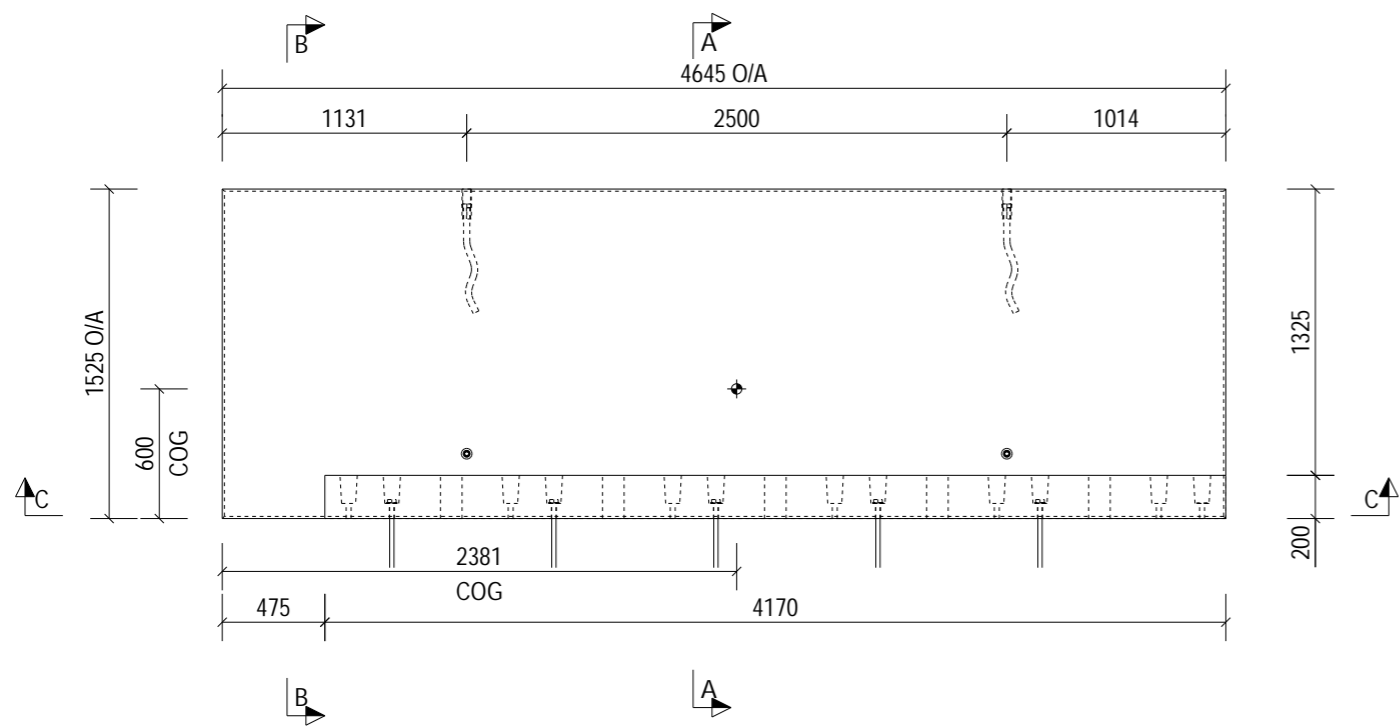
Project. **Panattoni Park Poyle**

Title. **RC1 of Perimeter Wall PR-0006**

Scale: 1:40 Status: As Built - CR
Date: 21-03-24

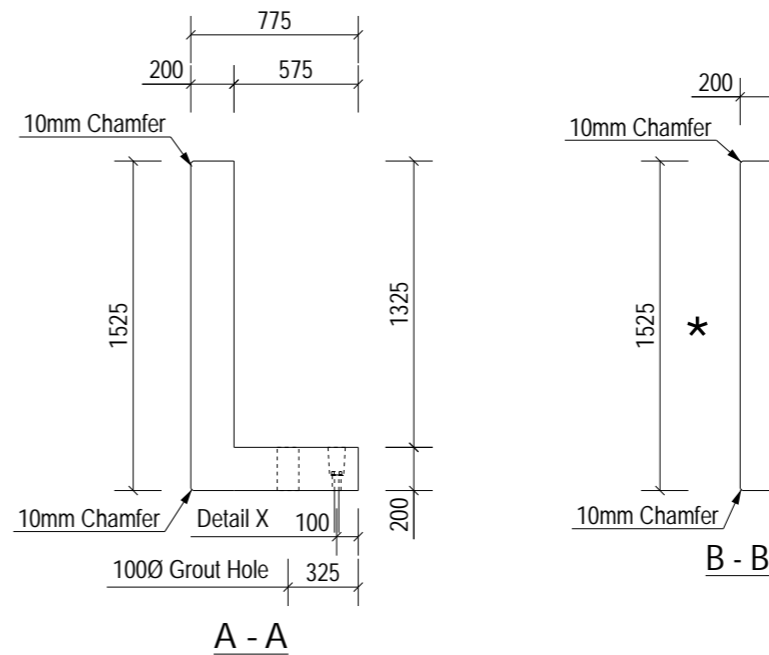
Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0006-RC1 Rev: C01



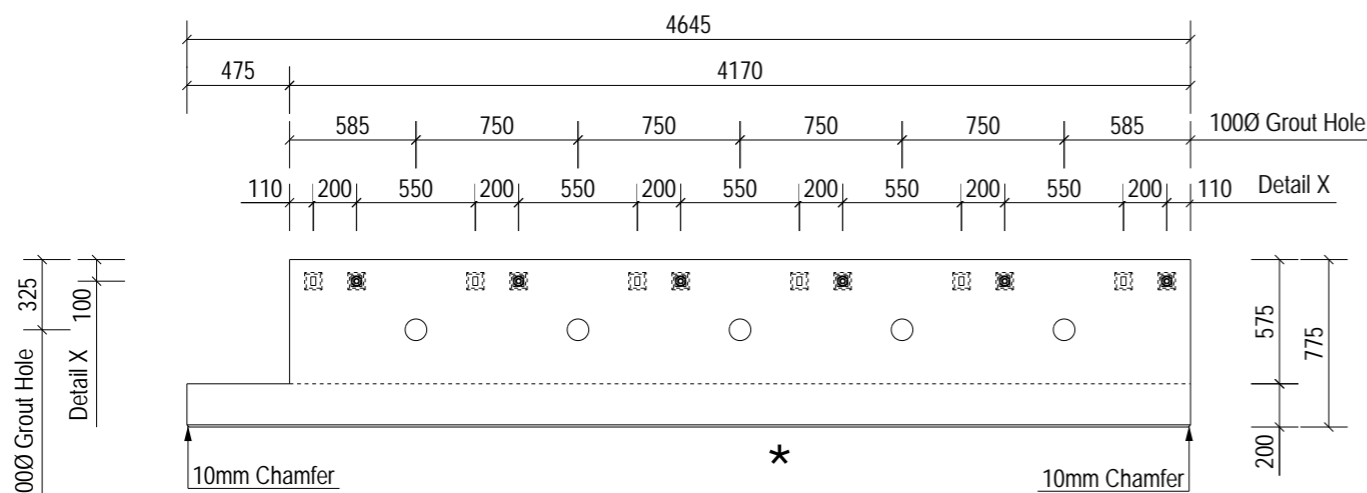
Plan on Mould

* Indicates Mould Face

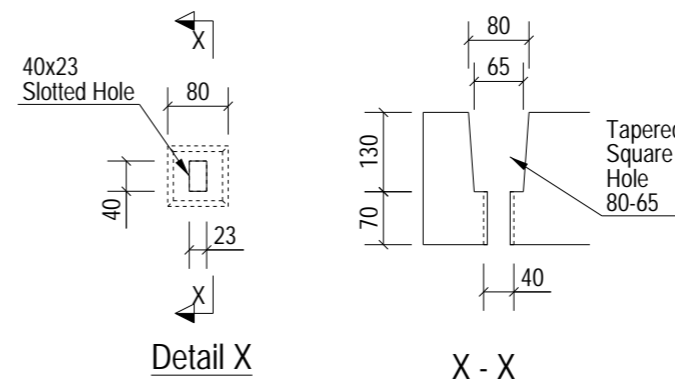


A - A

B - B

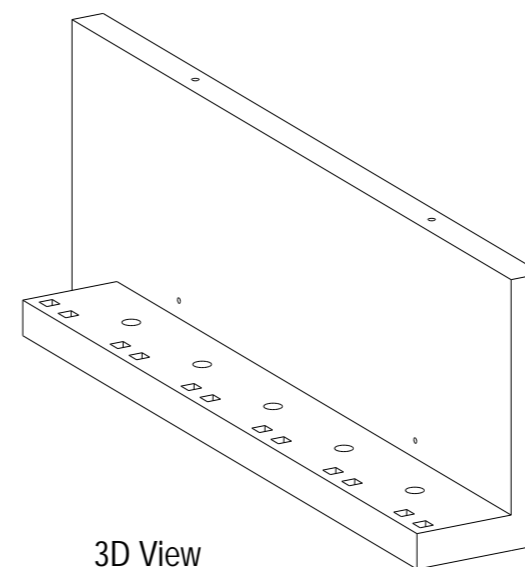


C - C

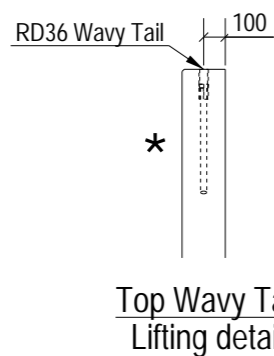


Detail X

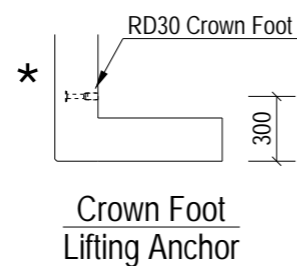
X - X



3D View



Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

NOTES:

Type.	Perimeter Wall	
Length.	4645	+4 / -4
Height.	1525	+4 / -4
Width.	200	+4 / -4
Weight. (T)	4.70	
Volume. (m ³)	1.88	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-PR-0007-RC1	
BBS Ref.	05-BYL-1462-PR-0007-BBS	
Calculation Ref.	FPMC-50-PR-1650_C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	

Mark.	PR-0007	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	6 No.
Excalibur Bolt	(M20*300)	6 No.

C01	25-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of Perimeter Wall PR-0007**

Scale: 1:40 Status: As Built - CR

Date: 22-03-24

Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0007-GA1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

10mm

NOTES:

Type.	Perimeter Wall
Mark.	PR-0007
GA Drg. Ref.	05-BYL-1462-PR-0007-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	25-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

Project. **Panattoni Park Poyle**

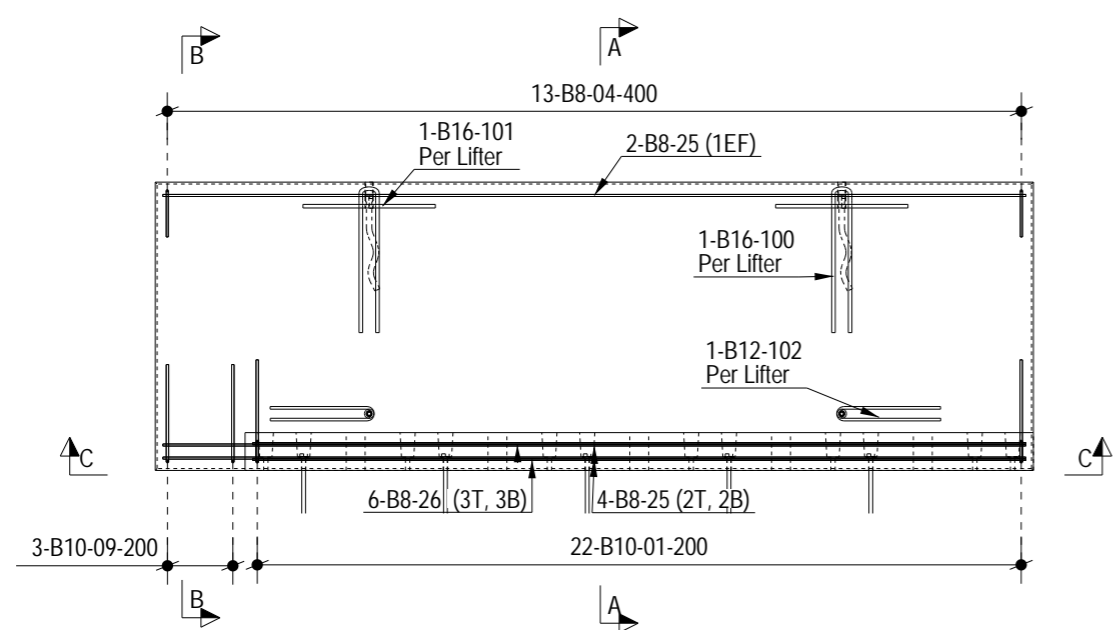
Title. **RC1 of Perimeter Wall PR-0007**

Scale: 1:40 Status: As Built - CR

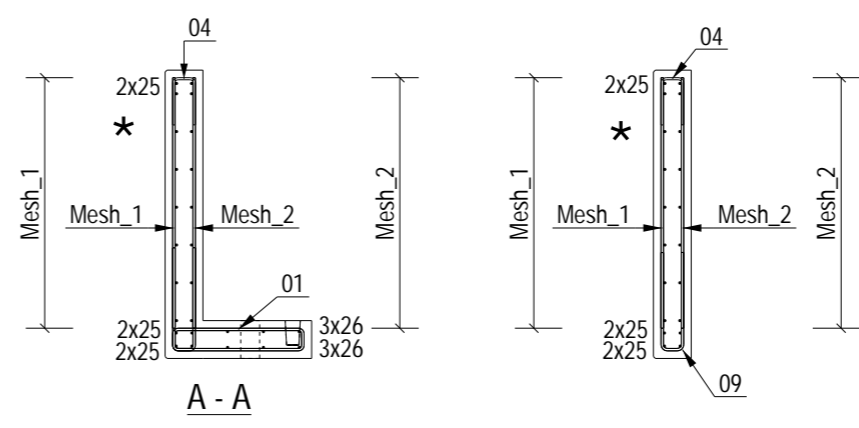
Date: 22-03-24

Drawn: DT Checked: NB Approved: SJH

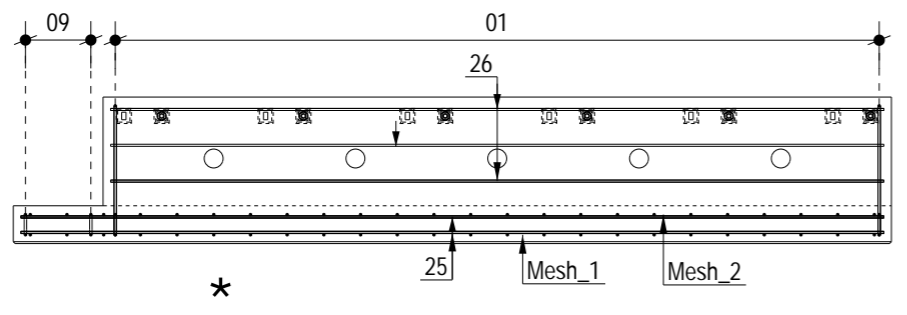
Drawing No : 05-BYL-1462-PR-0007-RC1 Rev: C01



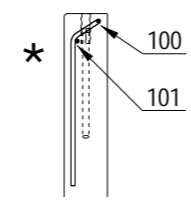
Plan on Mould



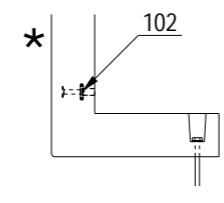
* Indicates Mould Face



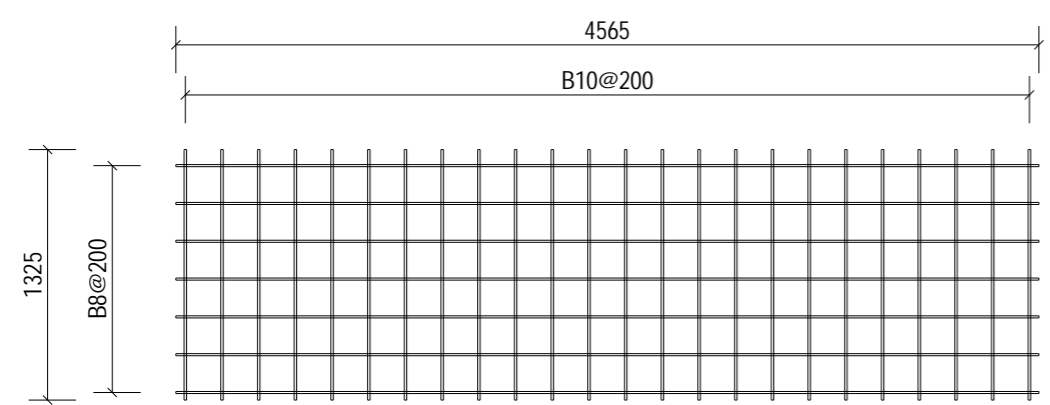
C - C



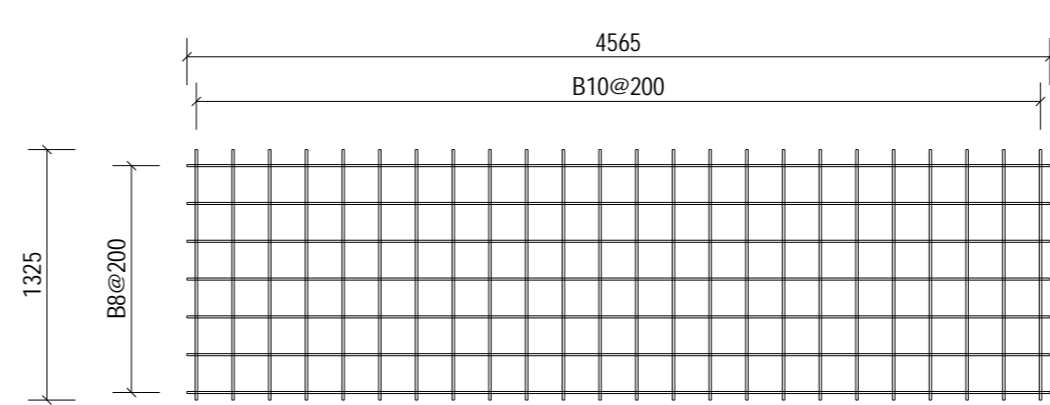
Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 1 - FF

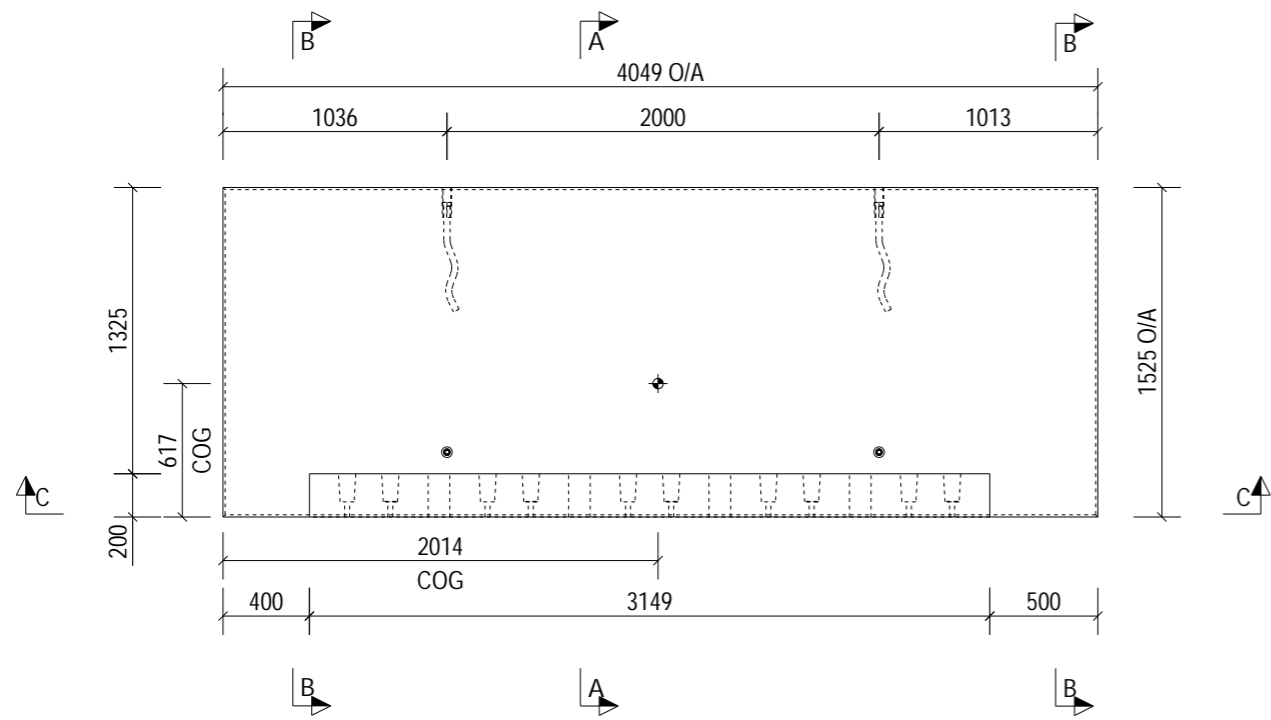


Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

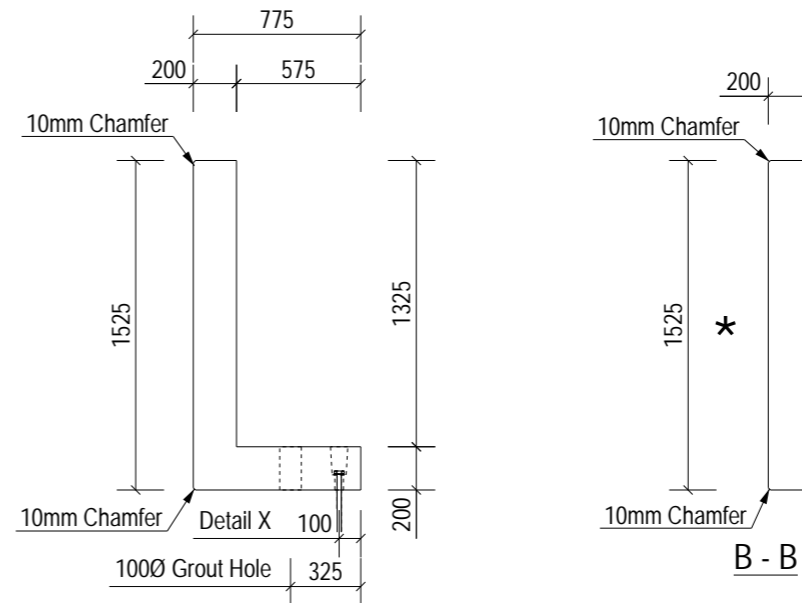
A3
10mm

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



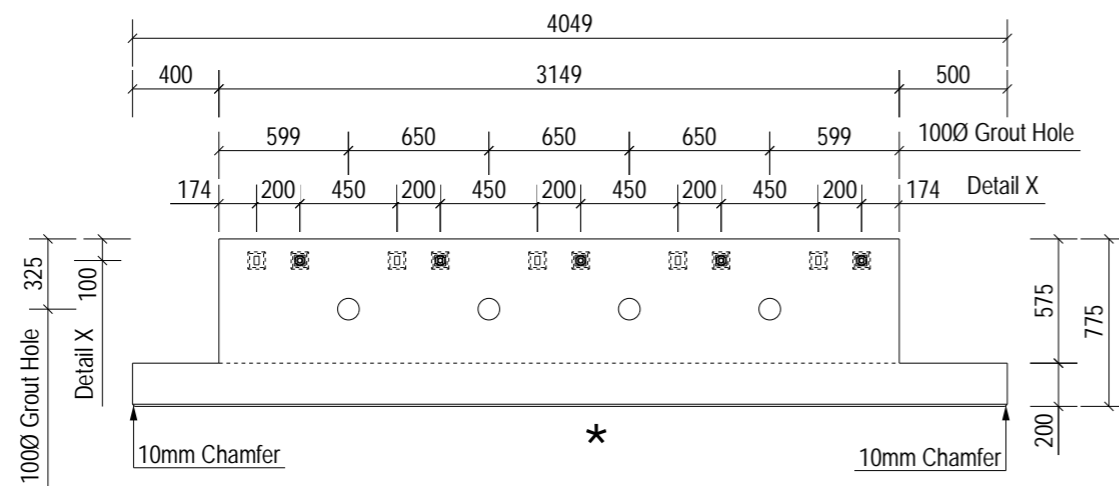
Plan on Mould

* Indicates Mould Face

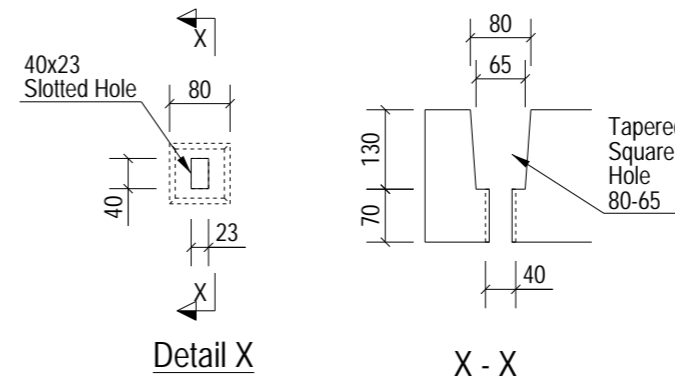


A - A

B - B

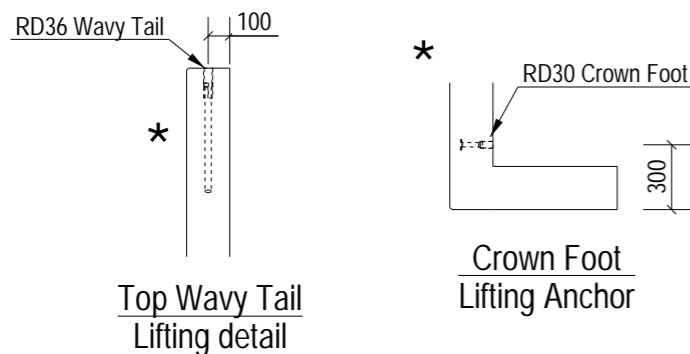


C - C



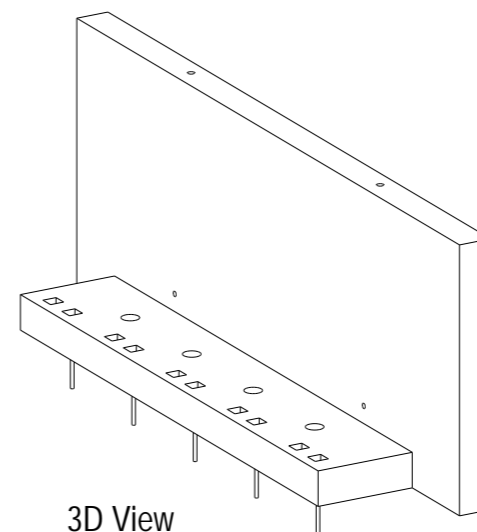
Detail X

X - X



Top Wavy Tail Lifting detail

Crown Foot Lifting Anchor



3D View

NOTES:

Type.	Perimeter Wall	
Length.	4049	+4 / -4
Height.	1525	+4 / -4
Width.	200	+4 / -4
Weight. (T)	3.96	
Volume. (m ³)	1.58	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0008-RC1	
BBS Ref.	05-BYL-1462-PR-0008-BBS	
Calculation Ref.	FPMC-50-PR-1650_C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0008	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	5 No.
Excalibur Bolt	(M20*300)	5 No.

C01	25-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of Perimeter Wall PR-0008**

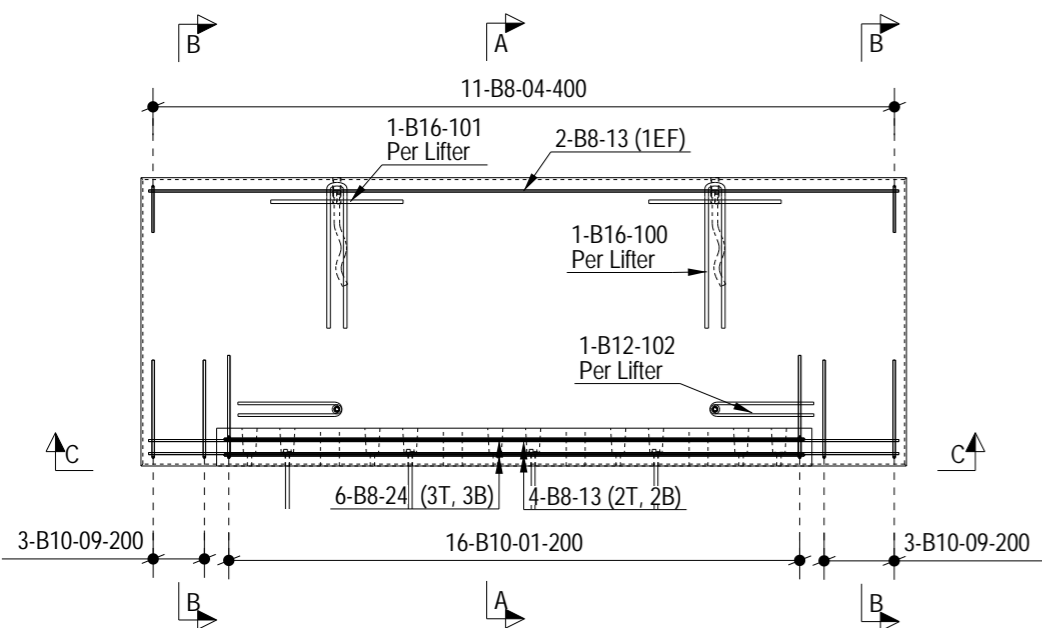
Scale: 1:40 Status: As Built - CR

Date: 22-03-24

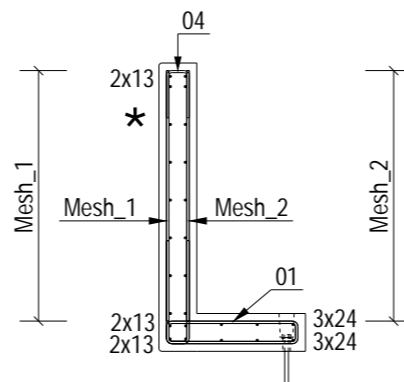
Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0008-GA1 Rev: C01

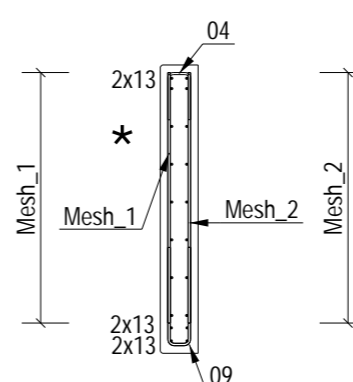
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



Plan on Mould

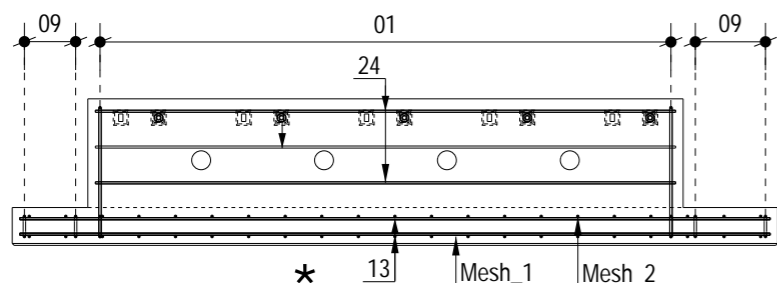


A - A

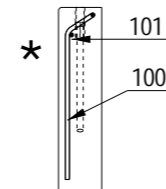


B - B

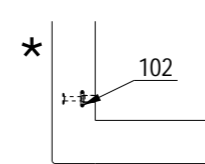
* Indicates Mould Face



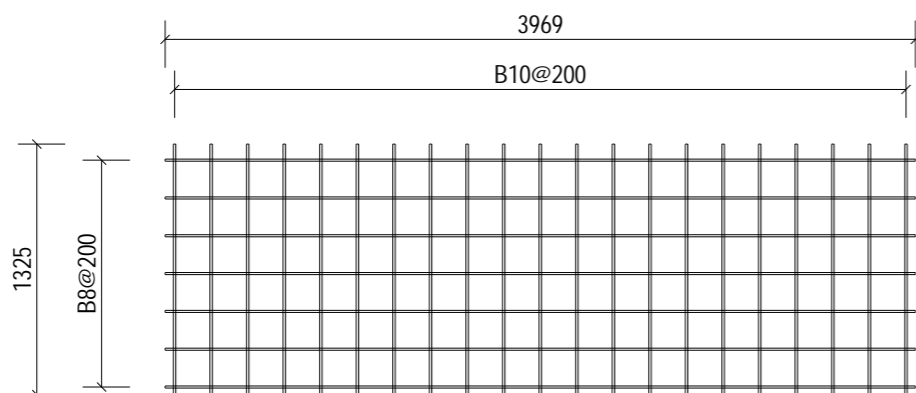
C - C



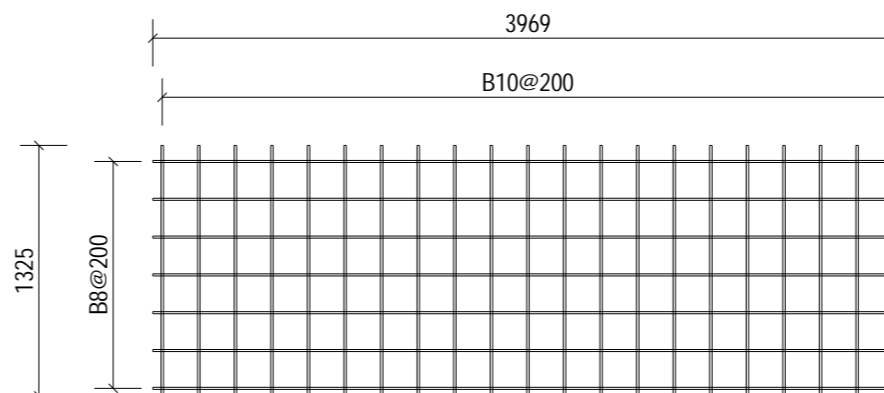
Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0008
GA Drg. Ref.	05-BYL-1462-PR-0008-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	25-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

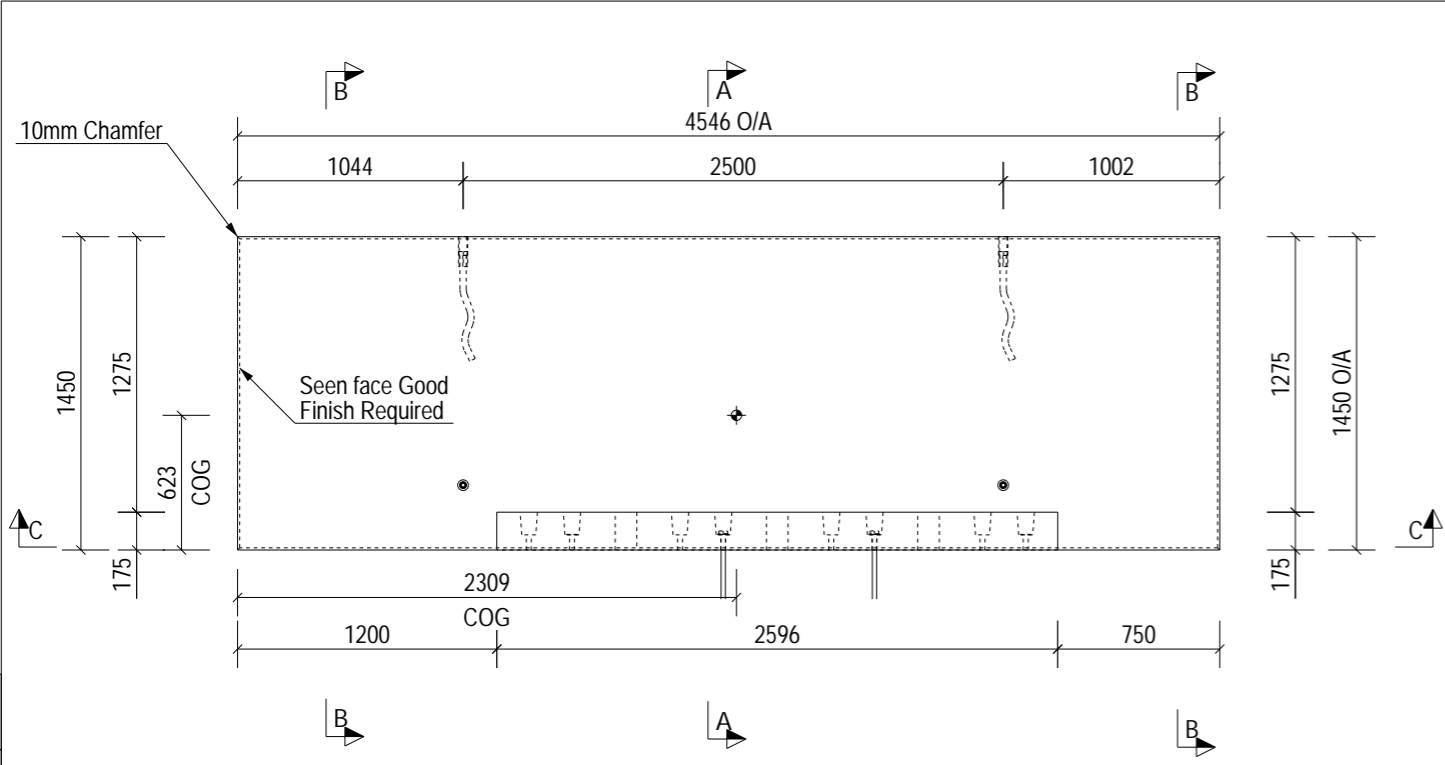
Title. RC1 of Perimeter Wall PR-0008

Scale: 1:40 Status: As Built - CR
Date: 22-03-24

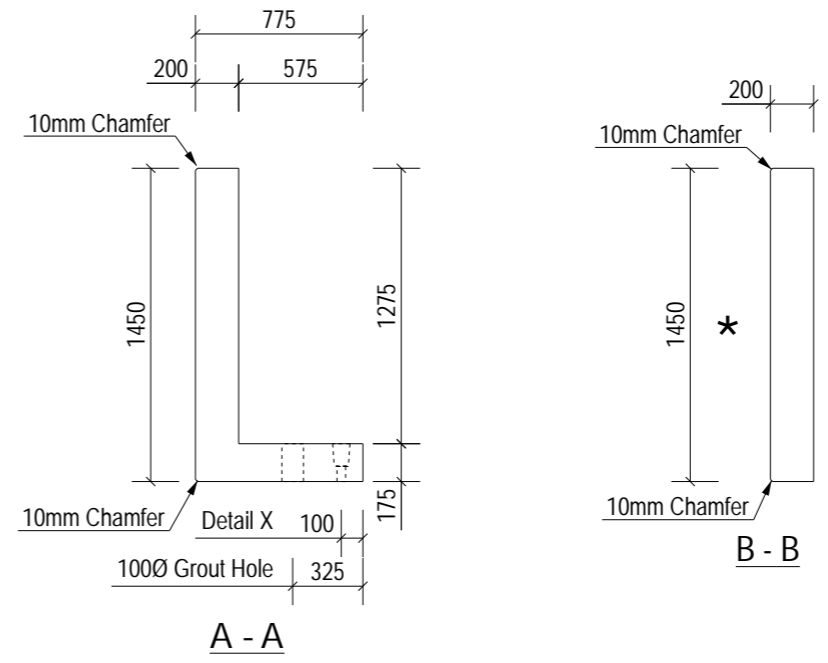
Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0008-RC1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



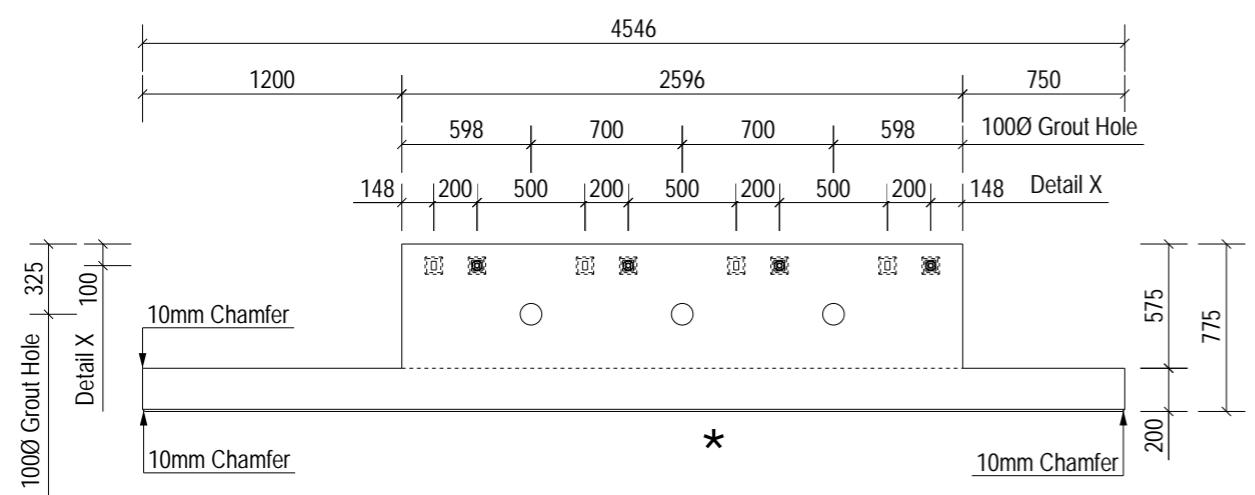
Plan on Mould



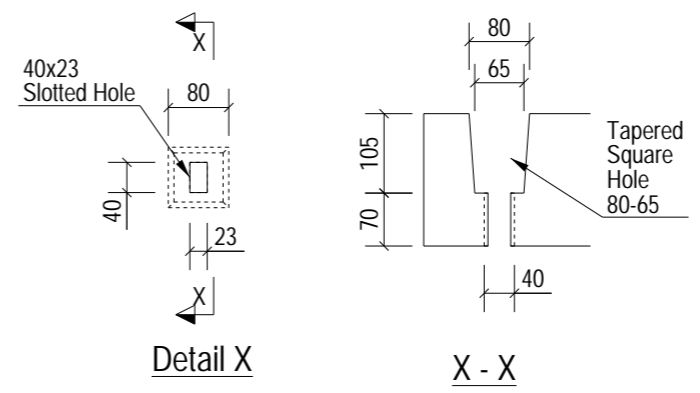
A - A

B - B

* Indicates Mould Face

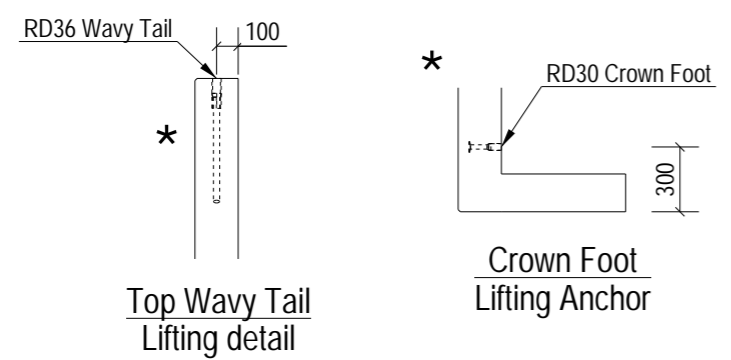


C - C



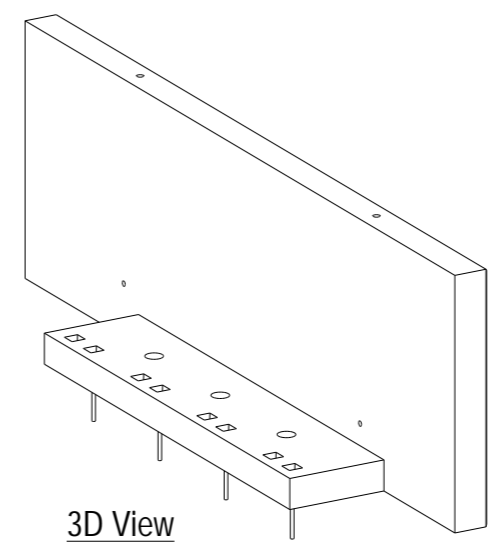
Detail X

X - X



Top Wavy Tail Lifting detail

Crown Foot Lifting Anchor



3D View

NOTES:

Type.	Perimeter Wall	
Length.	4546	+4 / -4
Height.	1450	+4 / -4
Width.	200	+4 / -4
Weight. (T)	3.93	
Volume. (m³)	1.57	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0009-RC1	
BBS Ref.	05-BYL-1462-PR-0009-BBS	
Calculation Ref.	FPMC-50-PR-1500_C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0009	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	4 No.
Excalibur Bolt	(M20*300)	4 No.

Rev	Date	Revision Detail	By	Chk	App
C02	02-04-24	Detail Amended	DT	NB	SJH
C01	25-03-24	Issued For Manufacture	DT	NB	SJH

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

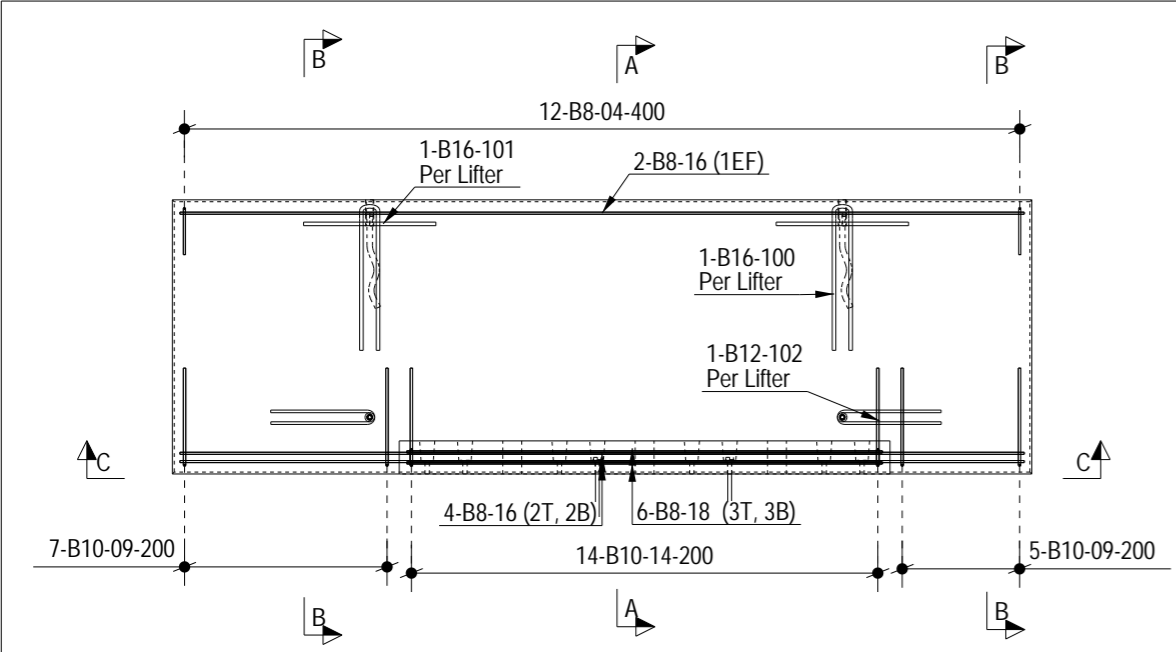
Title. **GA1 of Perimeter Wall PR-0009**

Scale: 1:40 Status: As Built - CR
Date: 22-03-24

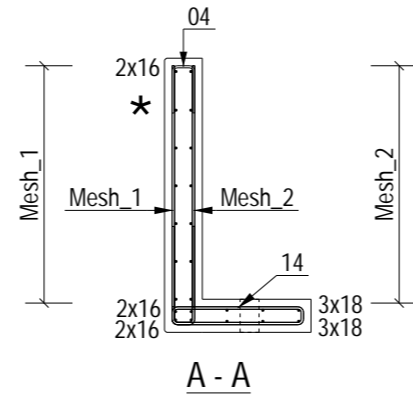
Drawn: DT Checked: NB Approved: SJH
Drawing No : 05-BYL-1462-PR-0009-GA1 Rev: C02

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

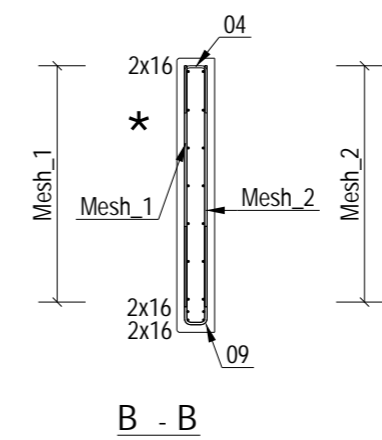
A3
10mm



Plan on Mould

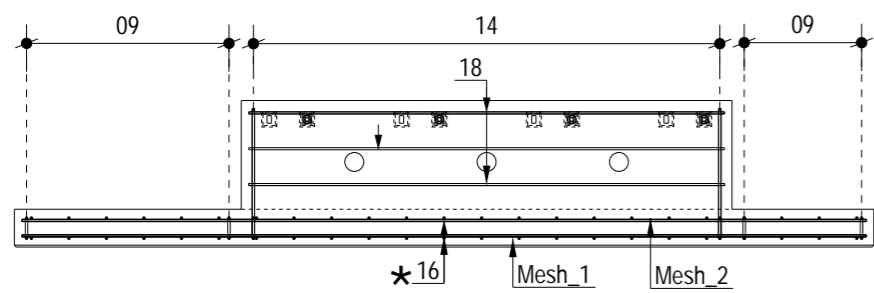


A - A

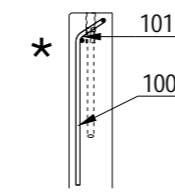


B - B

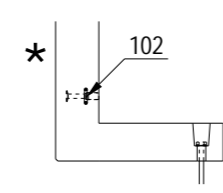
* Indicates Mould Face



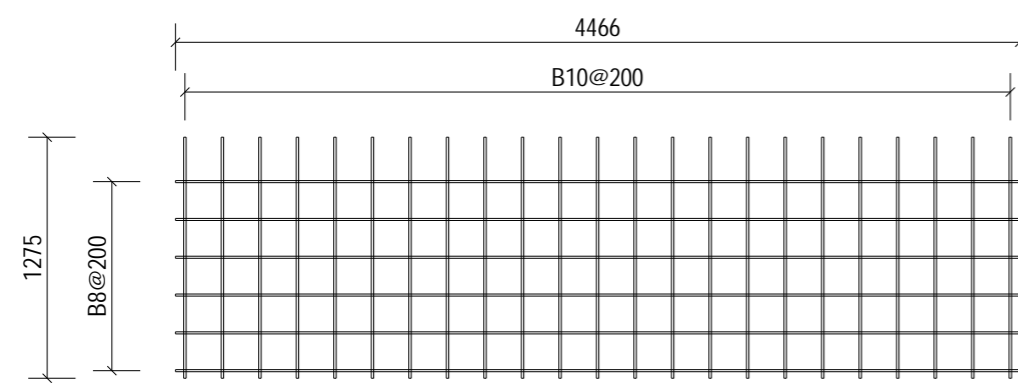
C - C



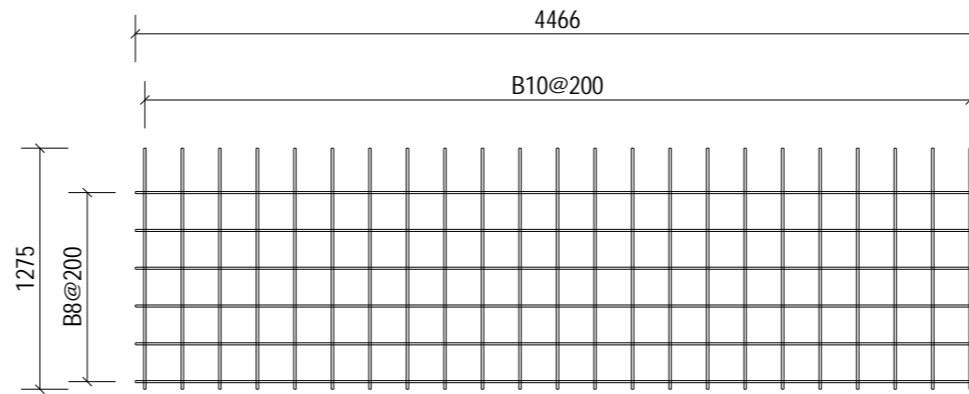
Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0009
GA Drg. Ref.	05-BYL-1462-PR-0009-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	25-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **RC1 of Perimeter Wall PR-0009**

Scale: 1:40 Status: As Built - CR
Date: 22-03-24

Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0009-RC1 Rev: C01

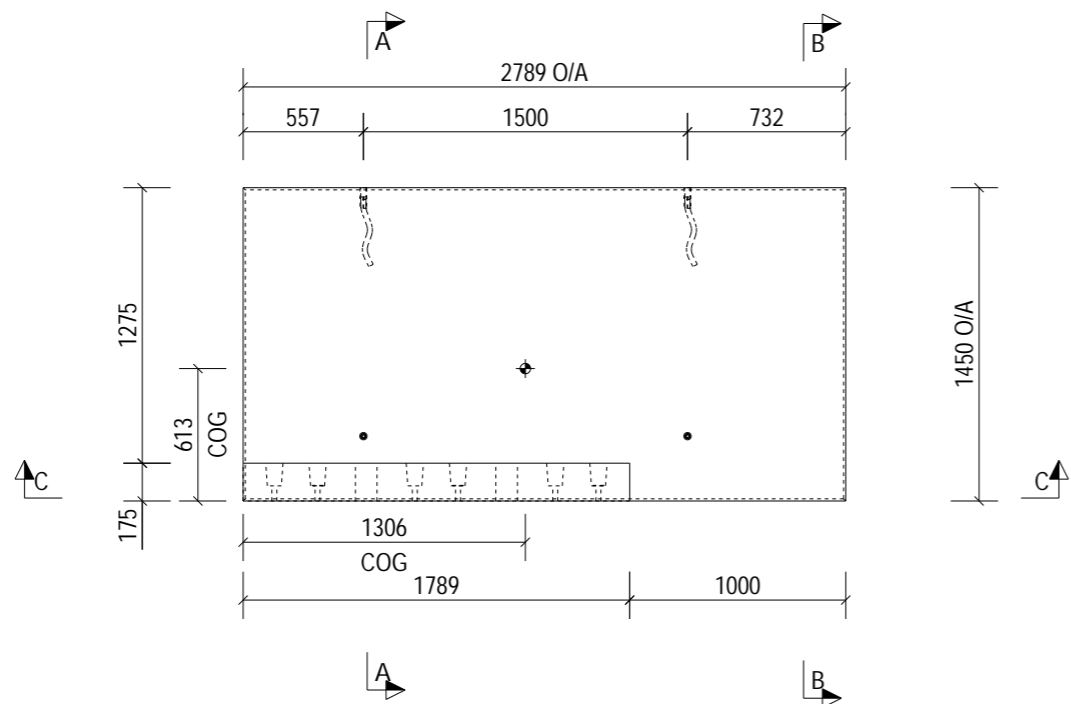
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

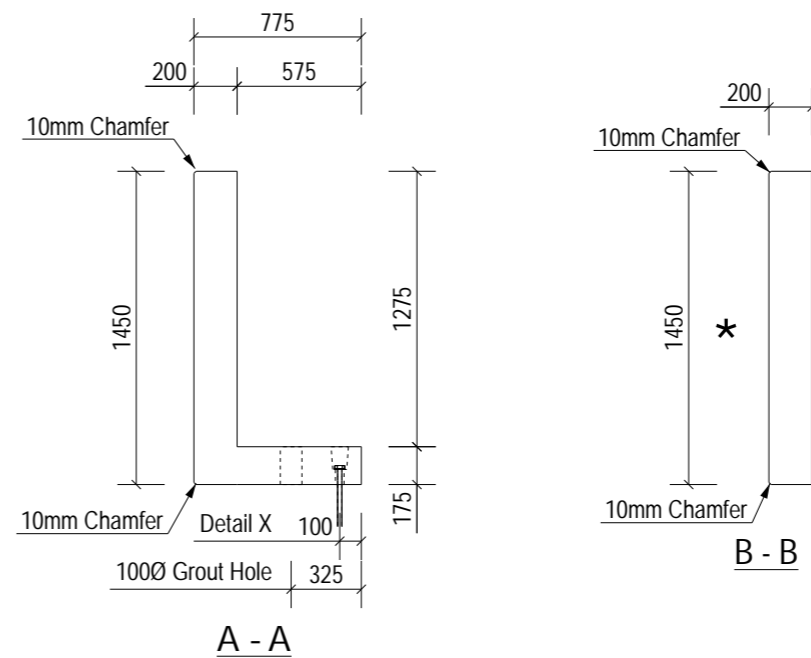
10mm

10mm

A3



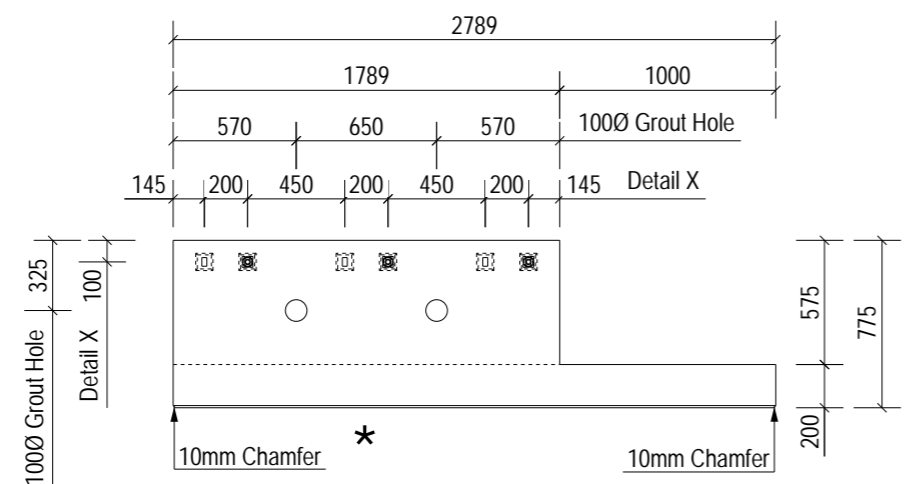
Plan on Mould



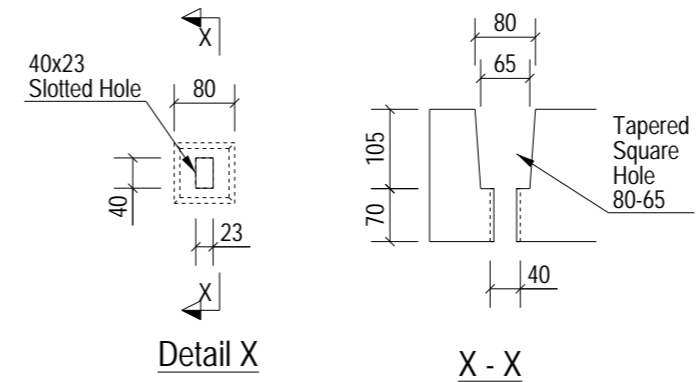
A - A

B - B

* Indicates Mould Face

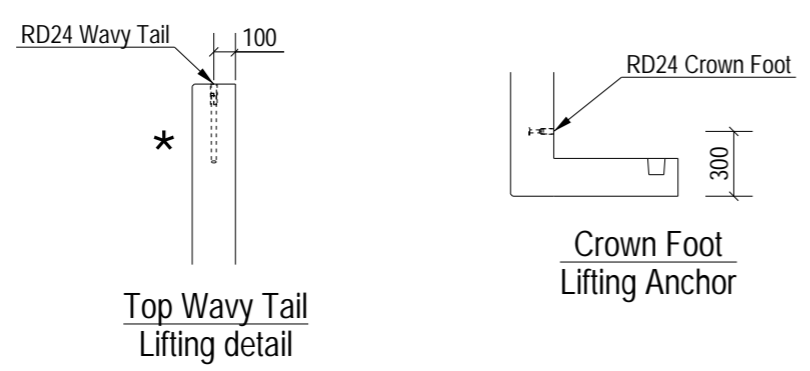


C - C



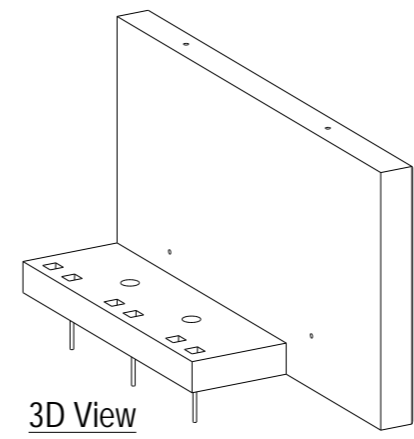
Detail X

X - X



Top Wavy Tail Lifting detail

Crown Foot Lifting Anchor



3D View

NOTES:

Type.	Perimeter Wall	
Length.	2789	+4 / -4
Height.	1450	+4 / -4
Width.	200	+4 / -4
Weight. (T)	2.46	
Volume. (m ³)	0.98	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0010-RC1	
BBS Ref.	05-BYL-1462-PR-0010-BBS	
Calculation Ref.	FPMC-50-PR-1500_C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0010	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD24 Crown Foot	SLS24115/SCFS24115
2	RD24 Wavy Tail	SLWL24360/SSLW24360

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	3 No.
Excalibur Bolt	(M20*300)	3 No.

Rev	Date	Revision Detail	By	Chk	App
C02	02-04-24	Detail Amended	DT	NB	SJH
C01	25-03-24	Issued For Manufacture	DT	NB	SJH

MC fpmccann
 FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

Title. **GA1 of Perimeter Wall PR-0010**

Scale: 1:40 Status: As Built - CR
 Date: 22-03-24

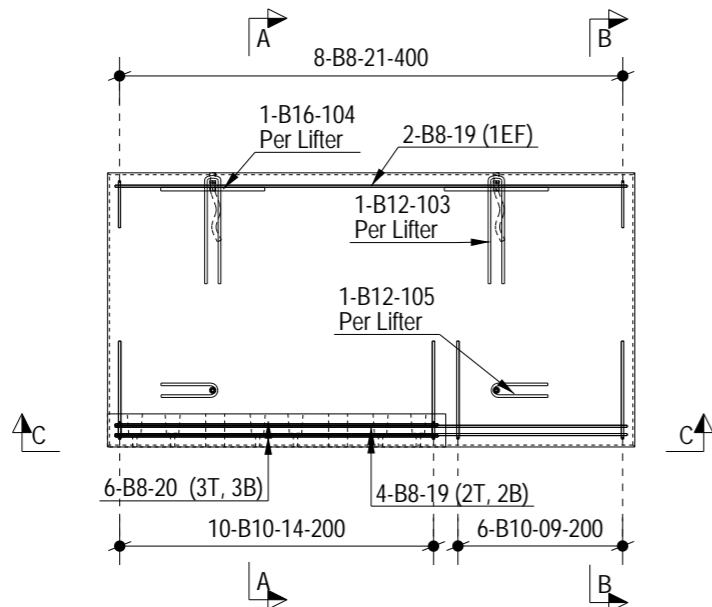
Drawn: DT Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-PR-0010-GA1 Rev: C02

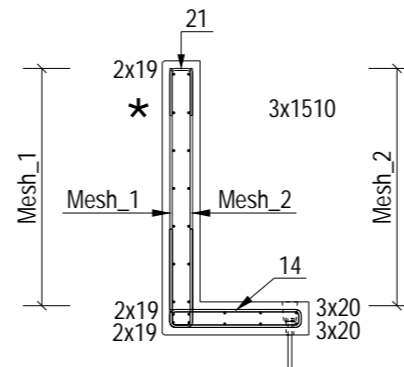
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

A3
10mm

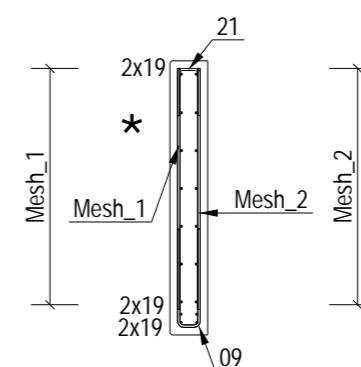
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



Plan on Mould

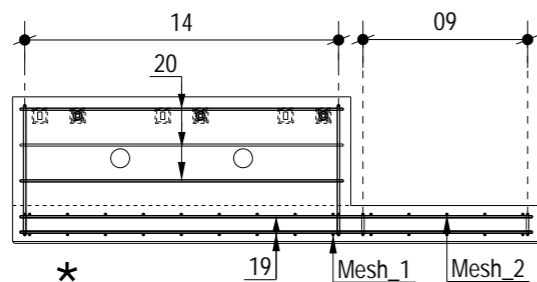


A - A

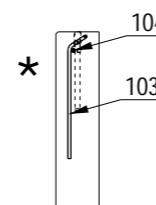


B - B

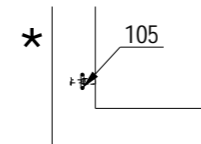
* Indicates Mould Face



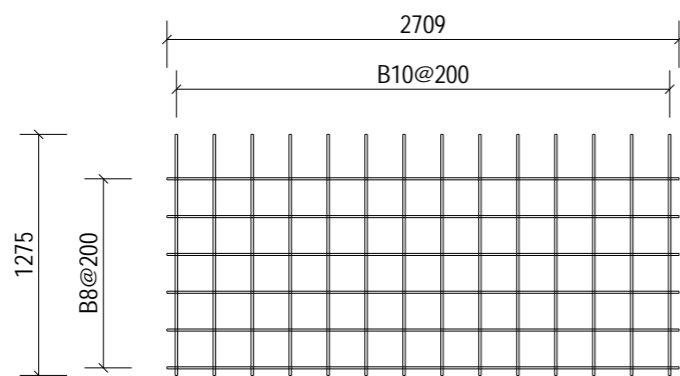
C - C



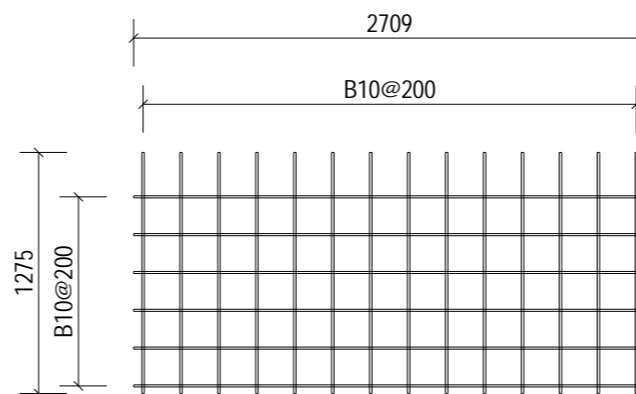
Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0010
GA Drg. Ref.	05-BYL-1462-PR-0010-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	25-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.



Project.

Panattoni Park
Poyle

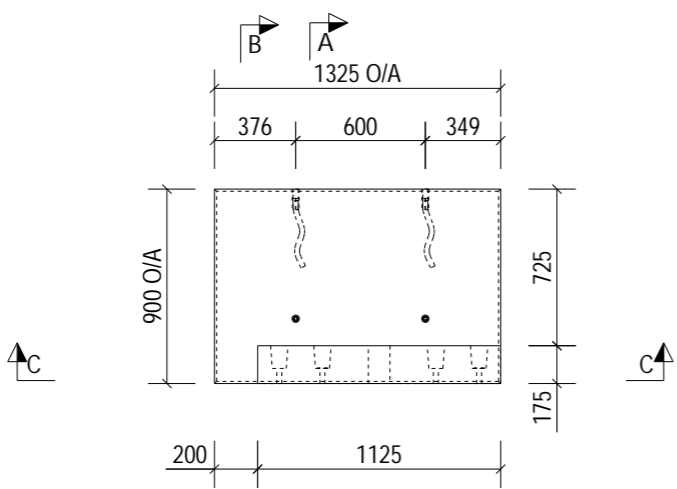
Title.

RC1 of
Perimeter Wall PR-0010

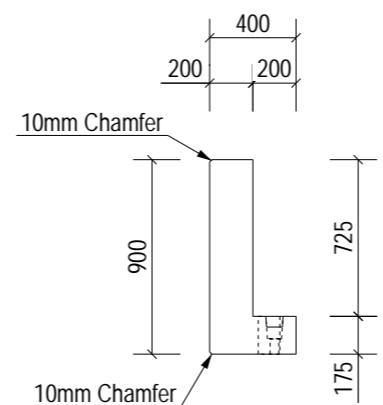
Scale: 1:40	Status: As Built - CR
Date: 22-03-24	

Drawn: DT	Checked: NB	Approved: SJH
-----------	-------------	---------------

Drawing No : 05-BYL-1462-PR-0010-RC1	Rev: C01
--------------------------------------	----------

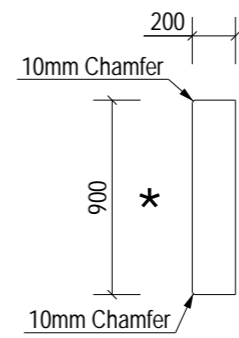


Plan on Mould

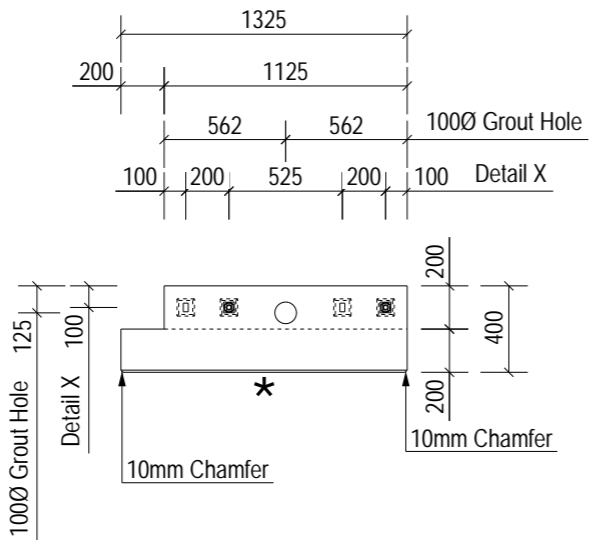


A - A

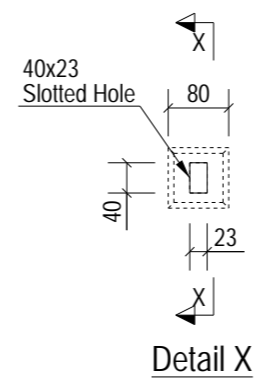
* Indicates Mould Face



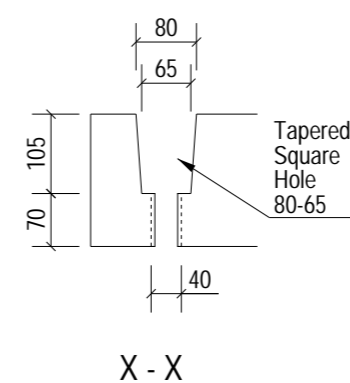
B - B



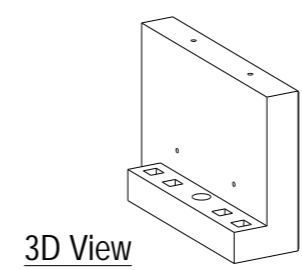
C - C



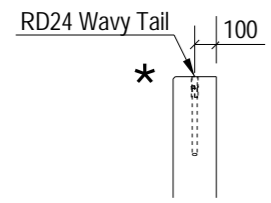
Detail X



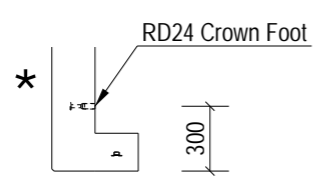
X - X



3D View



Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor

NOTES:

Type.	Perimeter Wall	
Length.	1325	+4 / -4
Height.	900	+4 / -4
Width.	200	+4 / -4
Weight. (T)	0.69	
Volume. (m³)	0.27	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0011-RC1	
BBS Ref.	05-BYL-1462-PR-0011-BBS	
Calculation Ref.	FPMC-50-PR-1000_C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0011	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD24 Crown Foot	SLS24115/SCFS24115
2	RD24 Wavy Tail	SLWL24360/SSLW24360

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	2 No.
Excalibur Bolt	(M20*300)	2 No.

Rev	Date	Revision Detail	By	Chk	App
C02	02-04-24	Detail Amended	DT	NB	SJH
C01	25-03-24	Issued For Manufacture	DT	NB	SJH

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

Title. GA1 of Perimeter Wall PR-0011

Scale: 1:40 Status: As Built - CR
Date: 22-03-24

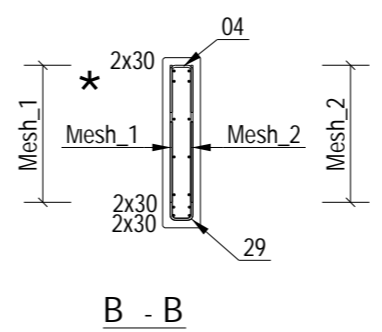
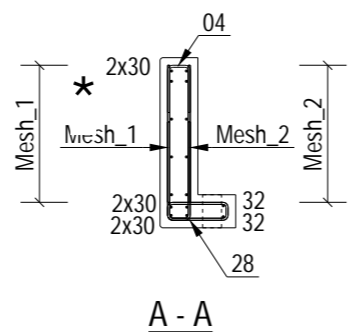
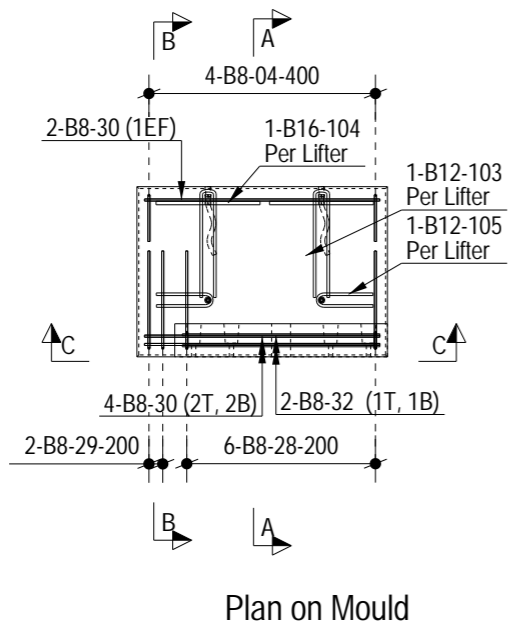
Drawn: DT Checked: NB Approved: SJH
Drawing No : 05-BYL-1462-PR-0011-GA1 Rev: C02

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

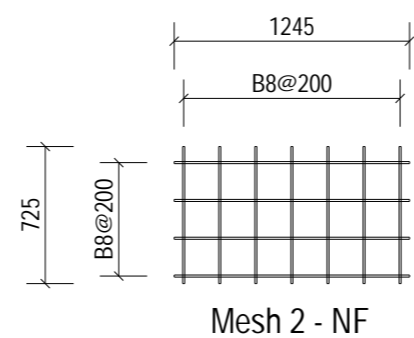
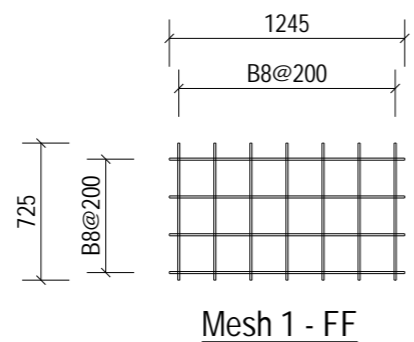
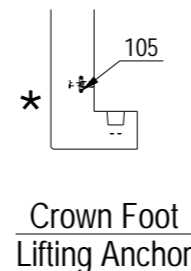
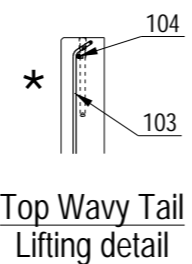
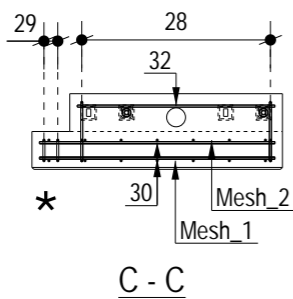
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

10mm



* Indicates Mould Face



ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0011
GA Drg. Ref.	05-BYL-1462-PR-0011-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	25-03-24	Issued For Manufacture	DT	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

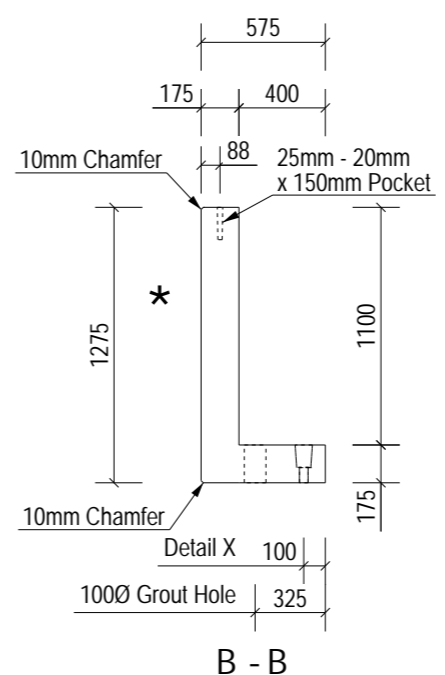
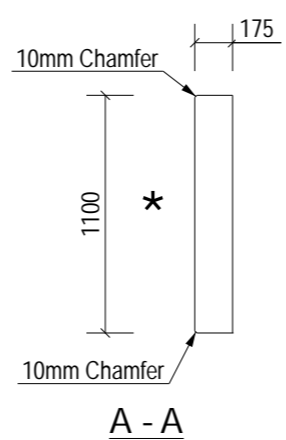
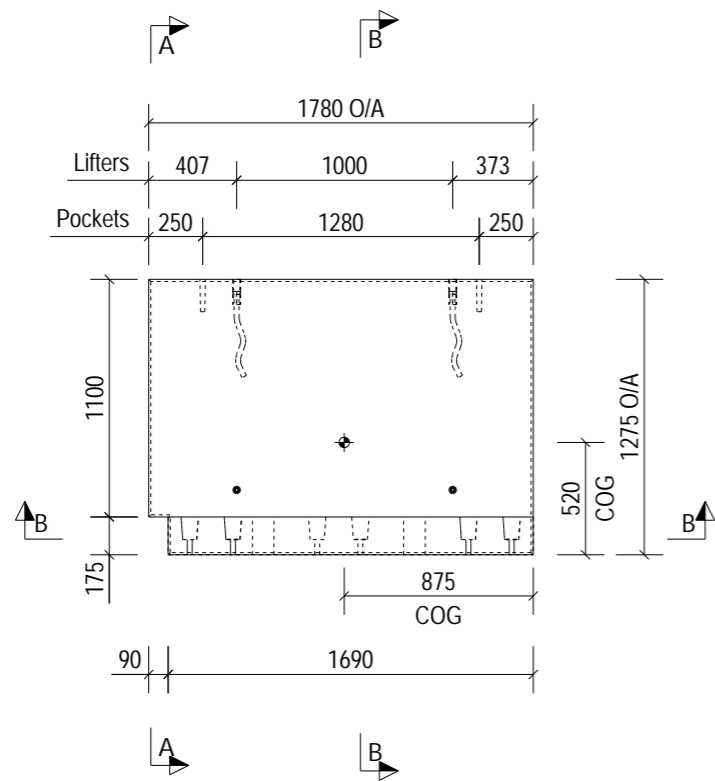
Title. RC1 of Perimeter Wall PR-0011

Scale: 1:40	Status: As Built - CR	
Date: 22-03-24		
Drawn: DT	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-PR-0011-RC1		Rev: C01

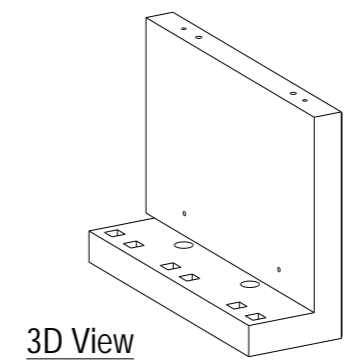
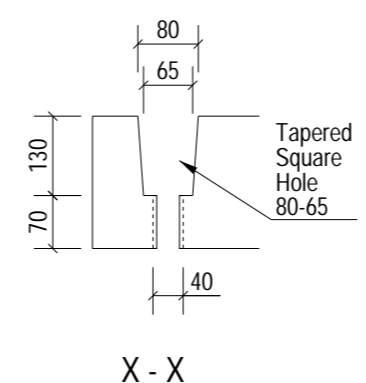
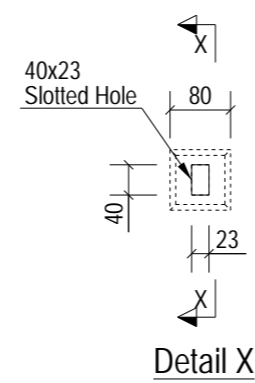
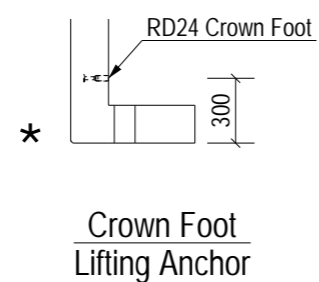
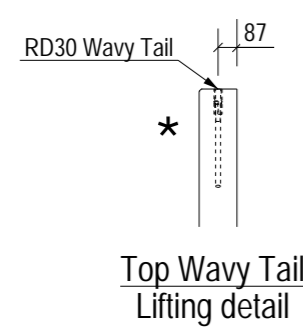
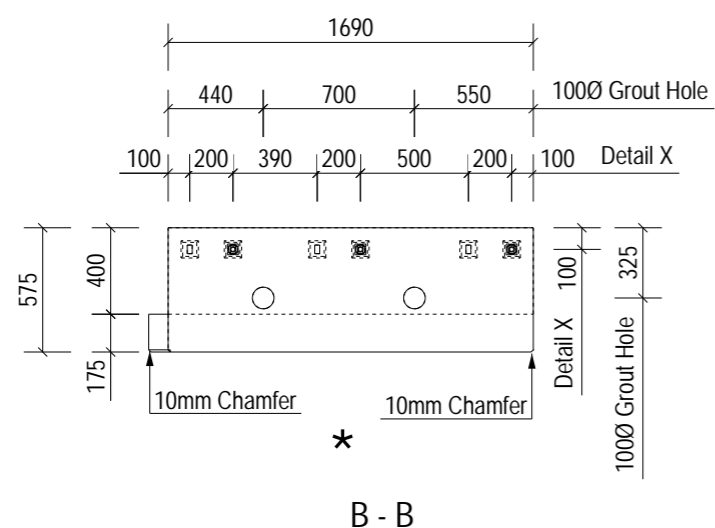
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

10mm



* Indicates Mould Face



NOTES:

Type.	Perimeter Wall	
Length.	1780	+4 / -4
Height.	1275	+4 / -4
Width.	175	+4 / -4
Weight. (T)	1.27	
Volume. (m³)	0.51	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-PR-0013-RC1
BBS Ref.	05-BYL-1462-PR-0013-BBS
Calculation Ref.	FPMC-10-PR-1650_C02
Cover.	40mm Nominal, 35mm Minimum
Casting Bed.	Flat Bed
Mark.	PR-0013
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD24 Crown Foot	SLS24115/SCFS24115
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	3 No.
Excalibur Bolt	(M20*300)	3 No.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

Title. GA1 of Perimeter Wall PR-0013

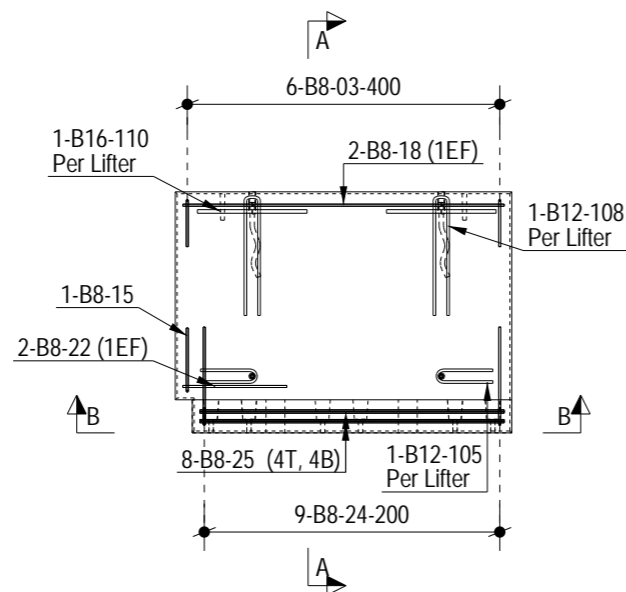
Scale: 1:40 Status: As Built - CR
Date: 13-06-24

Drawn: MF Checked: AB Approved: SJH
Drawing No : 05-BYL-1462-PR-0013-GA1 Rev: C01

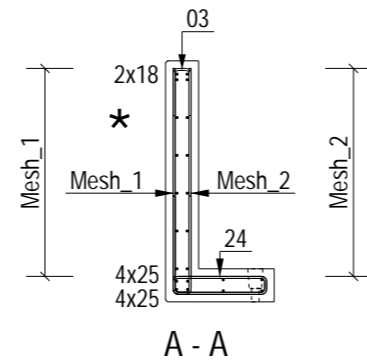
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3 10mm

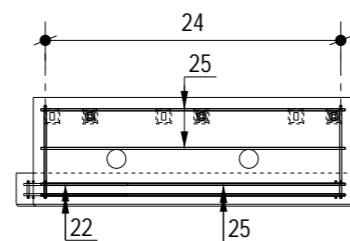


Plan on Mould

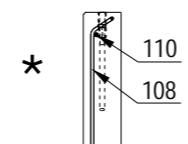


A - A

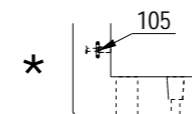
★ Indicates Mould Face



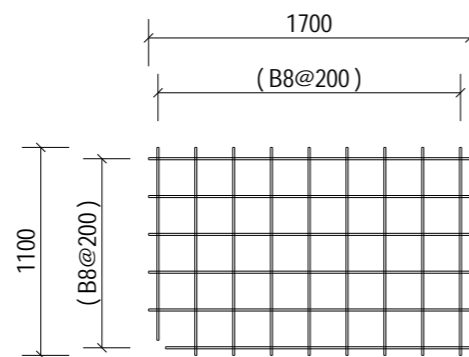
B - B



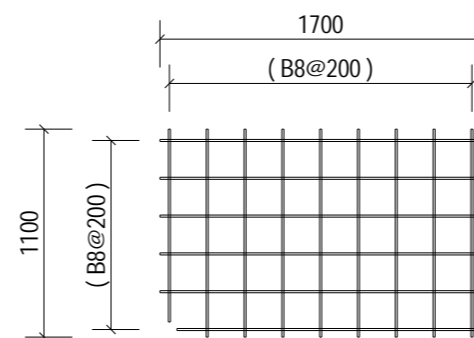
Crown Foot Lifting Anchor



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0013
GA Drg. Ref.	05-BYL-1462-PR-0013-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **RC1 of Perimeter Wall PR-0013**

Scale: 1:40 Status: As Built - CR
Date: 13-06-24

Drawn: MF Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-PR-0013-RC1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

NOTES:

Type.	Perimeter Wall	
Length.	1990	+4 / -4
Height.	1745	+4 / -4
Width.	175	+4 / -4
Weight. (T)	1.56	
Volume. (m ³)	0.62	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-PR-0014-RC1
BBS Ref.	05-BYL-1462-PR-0014-BBS
Calculation Ref.	FPMC-10-PR-1850_C02
Cover.	40mm Nominal, 35mm Minimum
Casting Bed.	Flat Bed
Mark.	PR-0014
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD24 Crown Foot	SLS24115/SCFS24115
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Item	Spec	Qty
Square Washer	(M25-50*50*2.5)	3 No.
Excalibur Bolt	(M20*300)	3 No.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

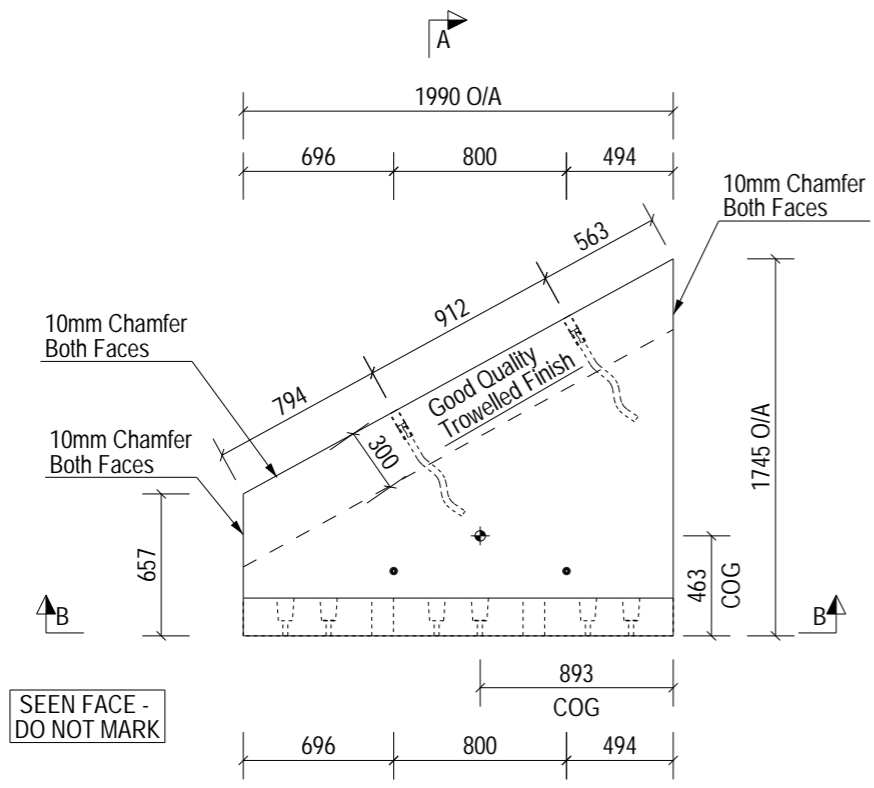
Client: **winvic**

Project: **Panattoni Park Poyle**

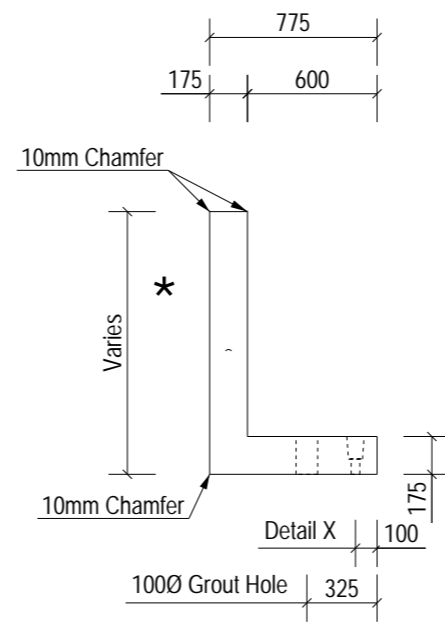
Title: **GA1 of Perimeter Wall PR-0014**

Scale: 1:40 Status: As Built - CR
 Date: 13-06-24

Drawn: MF Checked: AB Approved: SJH
 Drawing No: 05-BYL-1462-PR-0014-GA1 Rev: C01

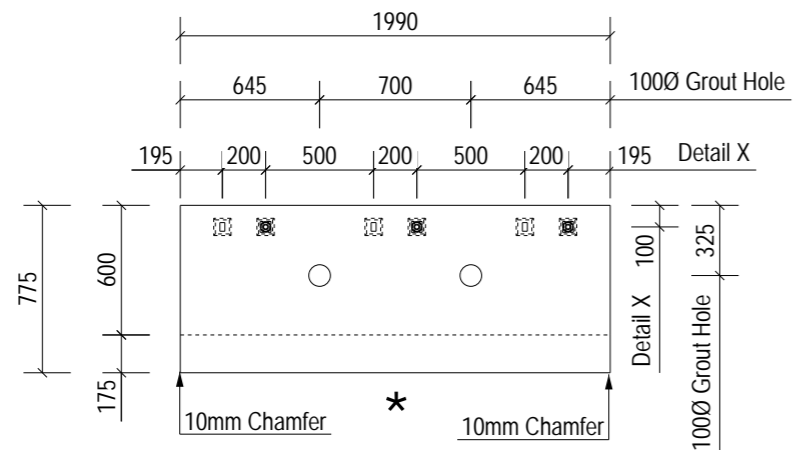


Plan on Mould

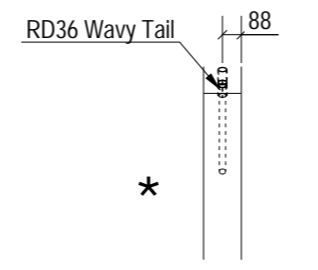


A - A

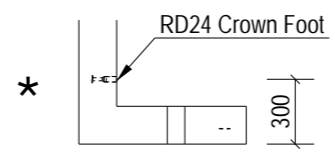
* Indicates Mould Face



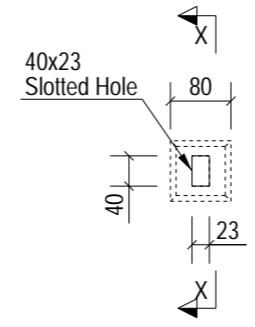
B - B



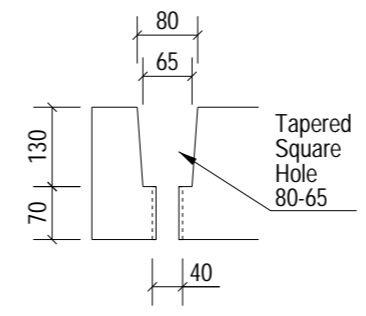
Top Wavy Tail Lifting detail



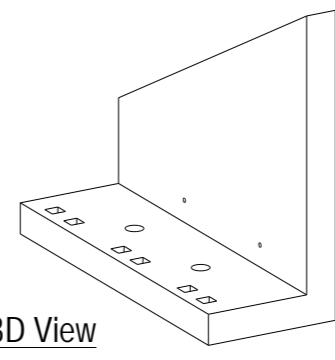
Crown Foot Lifting Anchor



Detail X

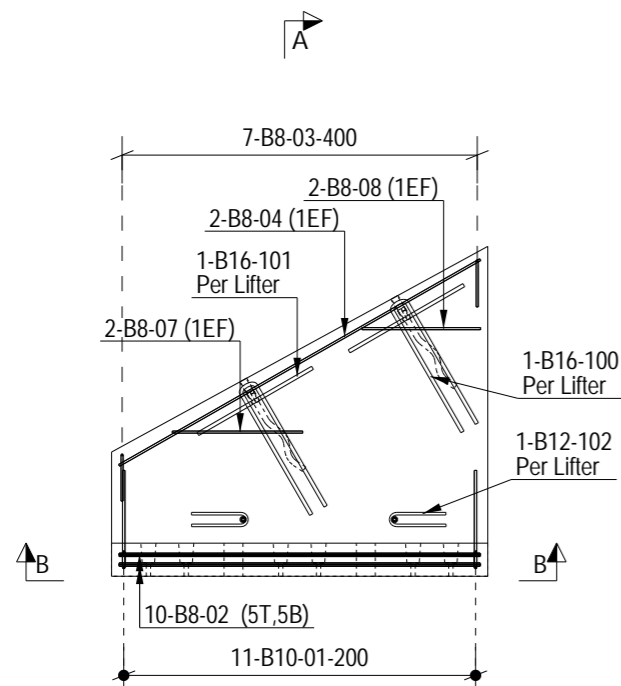


X - X

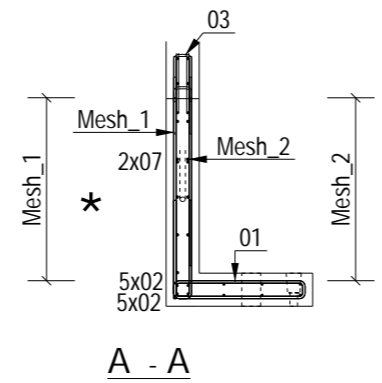


3D View

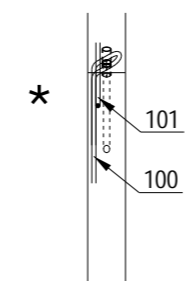
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



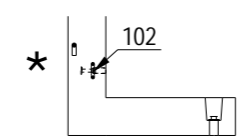
Plan on Mould



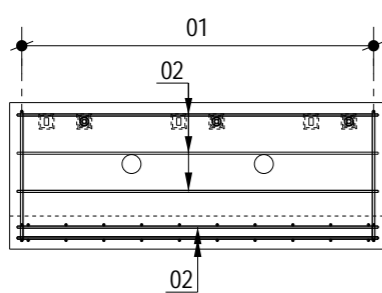
A - A



Top Wavy Tail Lifting detail

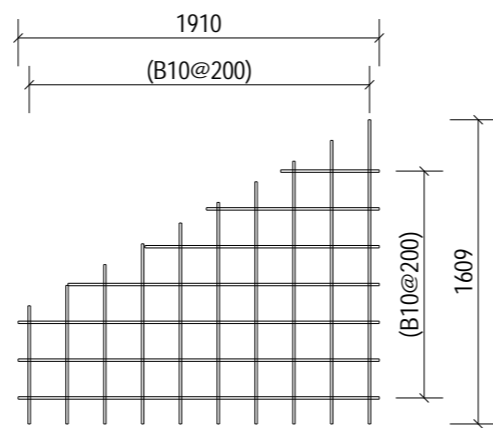


Crown Foot Lifting Anchor

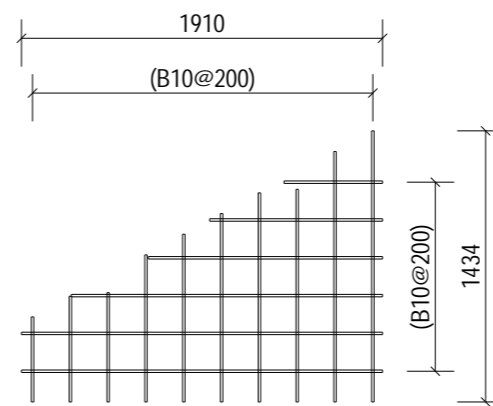


B - B

* Indicates Mould Face



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:	
Type.	Perimeter Wall
Mark.	PR-0014
GA Drg. Ref.	05-BYL-1462-PR-0014-GA1
Cover.	40mm Nominal, 35mm Minimum
<ul style="list-style-type: none"> Reinforcement (500B or C) to BS4449. Scheduling, dimensioning, bending and cutting to BS8666 Cage to be tack welded and/or tied with 17 gauge annealed tying wire. 	

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

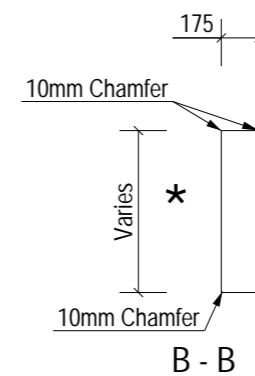
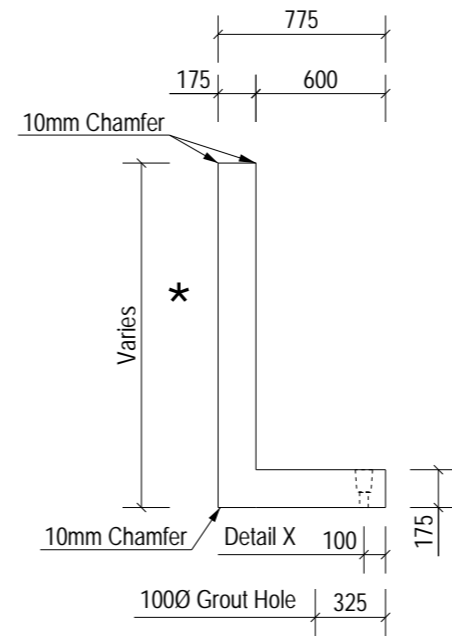
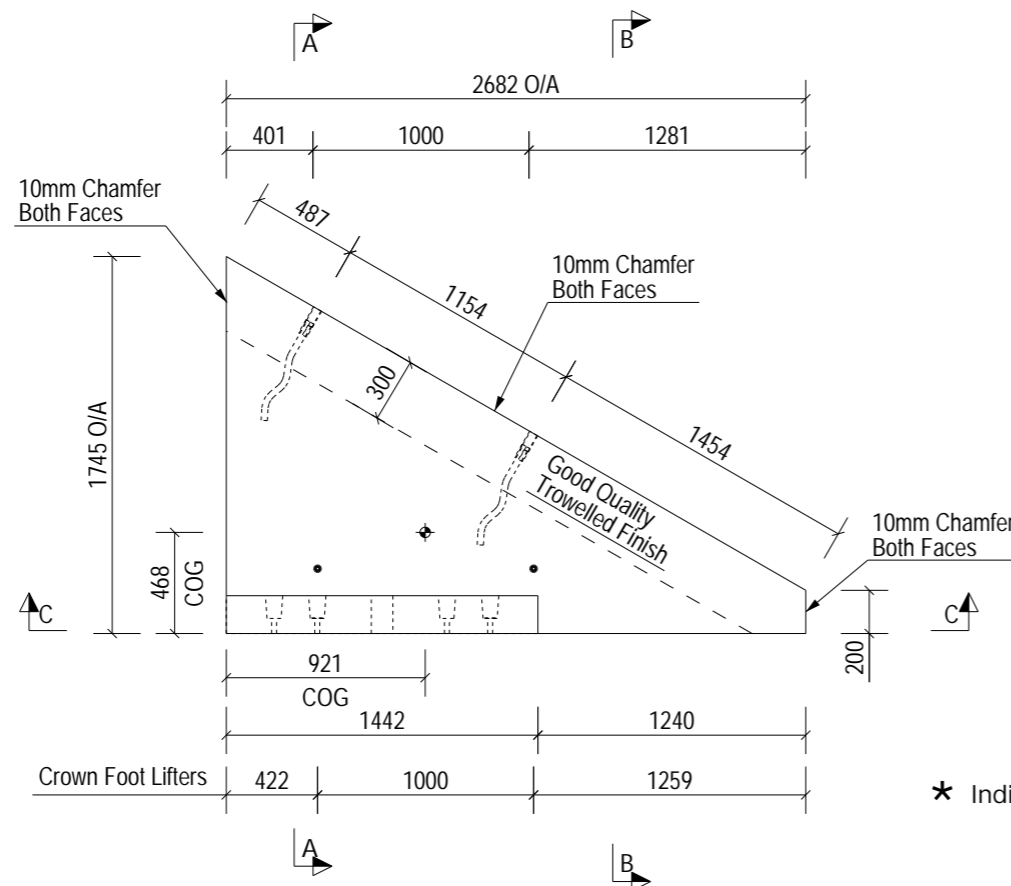
Project. **Panattoni Park Poyle**

Title. **RC1 of Perimeter Wall PR-0014**

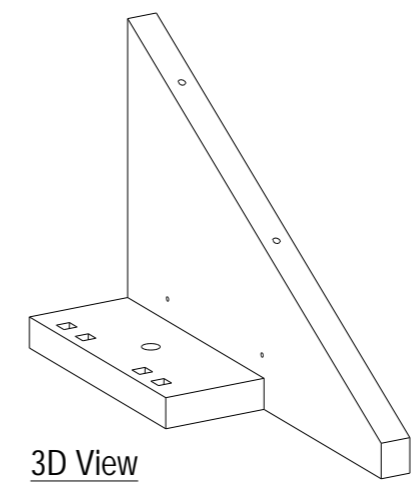
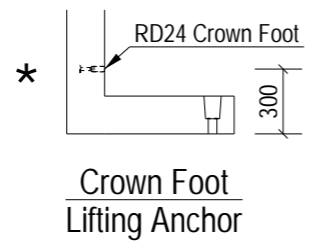
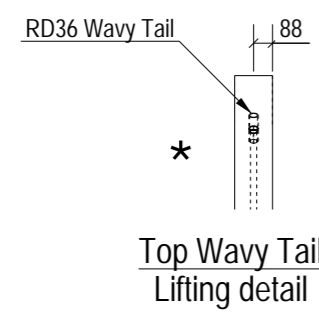
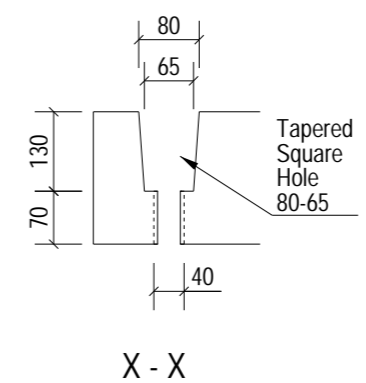
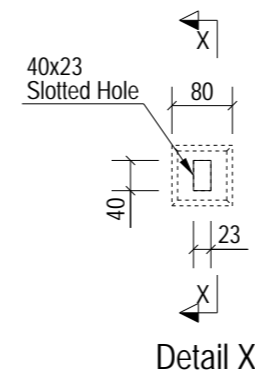
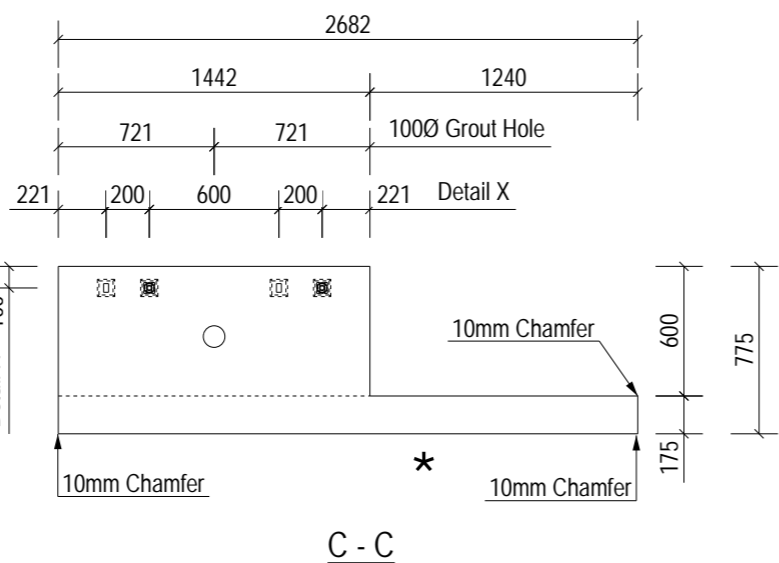
Scale: 1:40 Status: As Built - CR
Date: 13-06-24

Drawn: MF Checked: AB Approved: SJH
Drawing No : 05-BYL-1462-PR-0014-RC1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



* Indicates Mould Face A - A



NOTES:

Type.	Perimeter Wall	
Length.	2682	+4 / -4
Height.	1745	+4 / -4
Width.	175	+4 / -4
Weight. (T)	1.52	
Volume. (m³)	0.60	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0015-RC1	
BBS Ref.	05-BYL-1462-PR-0015-BBS	
Calculation Ref.	FPMC-10-PR-1850_C02	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0015	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD24 Crown Foot	SLS24115/SCFS24115
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	2 No.
Excalibur Bolt	(M20*300)	2 No.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

Title. **GA1 of Perimeter Wall PR-0015**

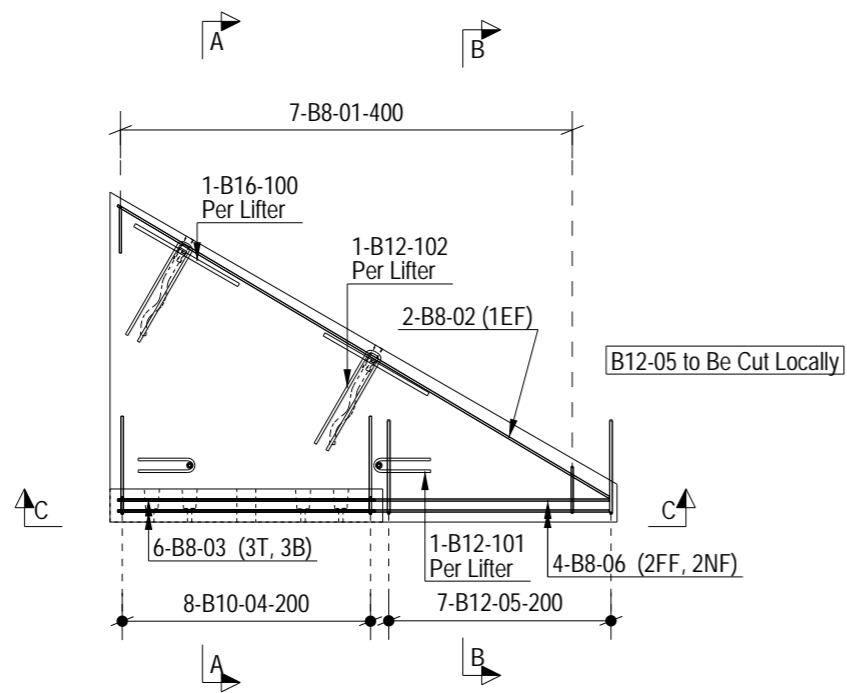
Scale: 1:40 Status: As Built - CR

Drawn: MF Checked: AB Approved: SJH

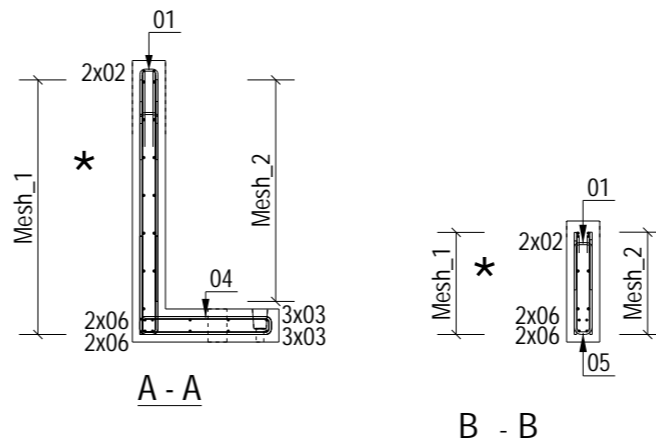
Drawing No : 05-BYL-1462-PR-0015-GA1 Rev: C01

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

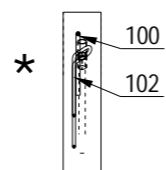
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



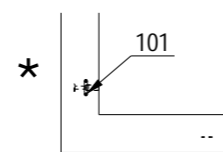
Plan on Mould



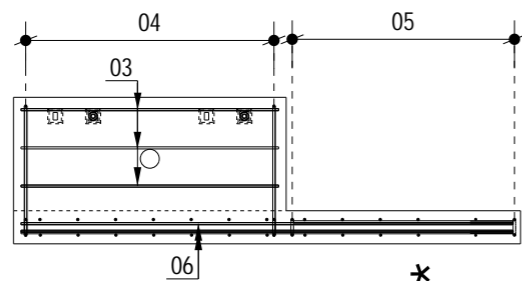
★ Indicates Mould Face



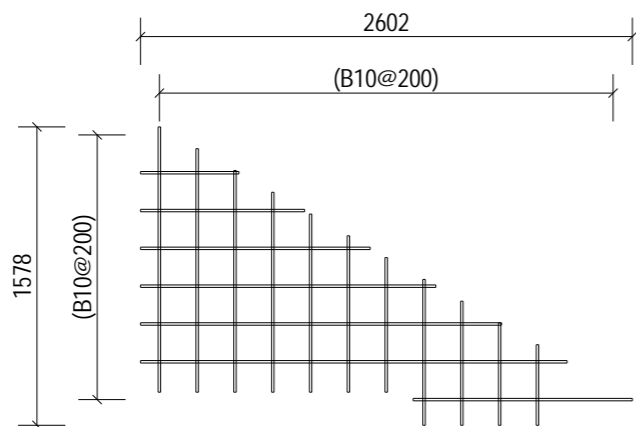
Top Wavy Tail Lifting detail



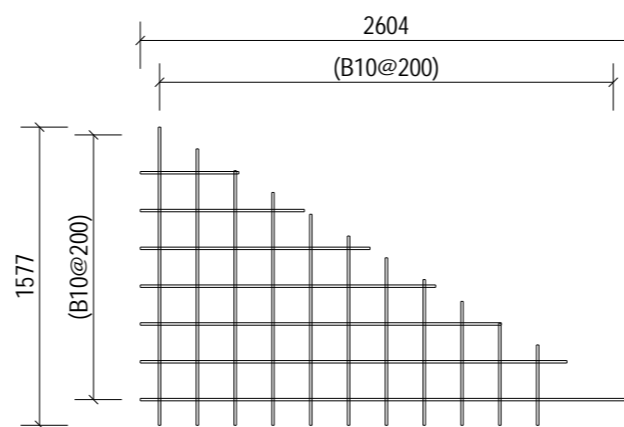
Crown Foot Lifting Anchor



C - C



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0015
GA Drg. Ref.	05-BYL-1462-PR-0015-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.



Project.

Panattoni Park
Poyle

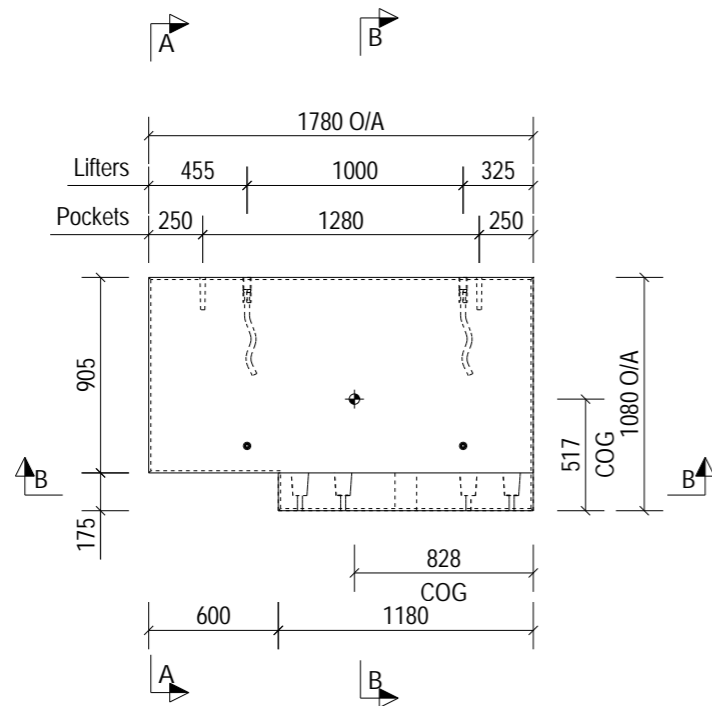
Title.

RC1 of
Perimeter Wall PR-0015

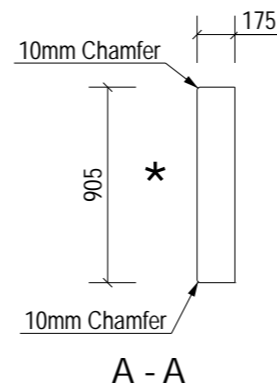
Scale: 1:40
Date: 13-06-24
Status:
As Built - CR

Drawn: MF
Checked: AB
Approved: SJH

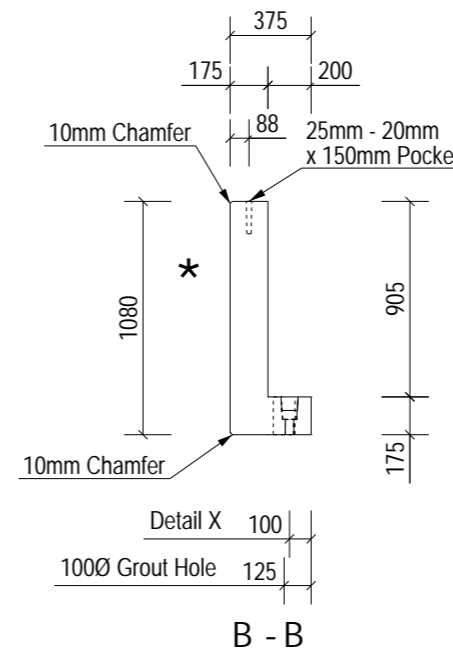
Drawing No :
05-BYL-1462-PR-0015-RC1
Rev:
C01



Plan on Mould

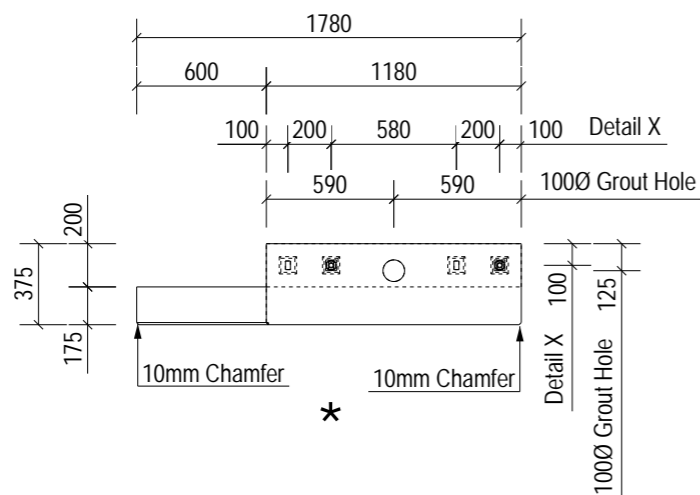


A - A

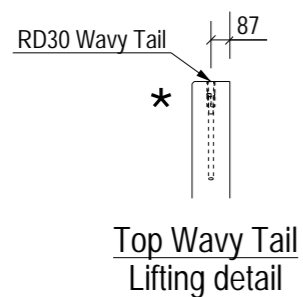


B - B

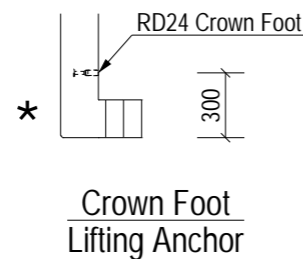
★ Indicates Mould Face



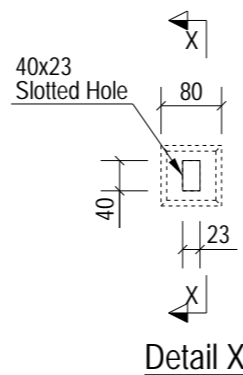
B - B



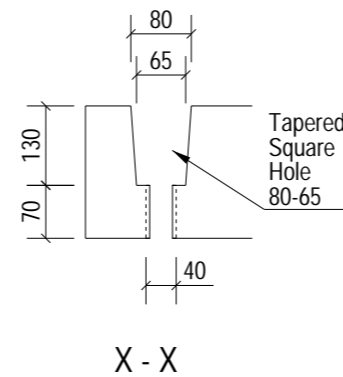
Top Wavy Tail Lifting detail



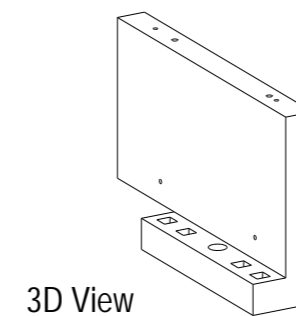
Crown Foot Lifting Anchor



Detail X



X - X



3D View

NOTES:

Type.	Perimeter Wall	
Length.	1780	+4 / -4
Height.	1080	+4 / -4
Width.	175	+4 / -4
Weight. (T)	0.89	
Volume. (m³)	0.36	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0016-RC1	
BBS Ref.	05-BYL-1462-PR-0016-BBS	
Calculation Ref.	FPMC-10-PR-1250_C02	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0016	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD24 Crown Foot	SLS24115/SCFS24115
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	2 No.
Excalibur Bolt	(M20*300)	2 No.

Rev	Date	Revision Detail	By	Chk	App
C01	24-06-24	Issued For Manufacture	DT	AB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

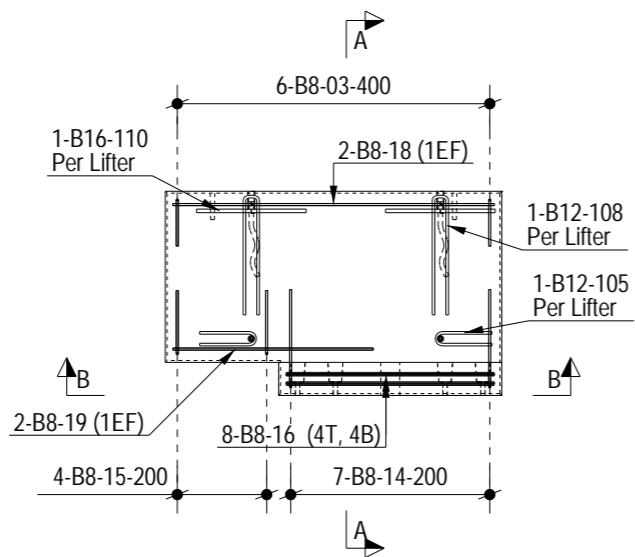
Title. **GA1 of Perimeter Wall PR-0016**

Scale: 1:40 Status: As Built - CR

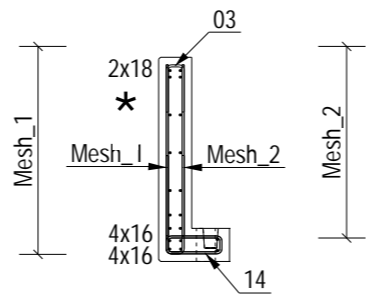
Drawn: DT Checked: AB Approved: SJH

Drawing No : **05-BYL-1462-PR-0016-GA1** Rev: **C01**

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

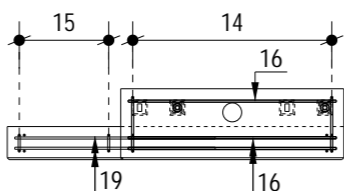


Plan on Mould

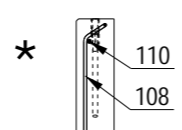


A - A

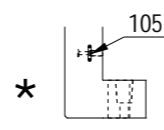
* Indicates Mould Face



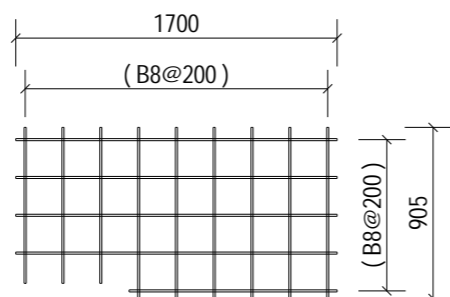
B - B



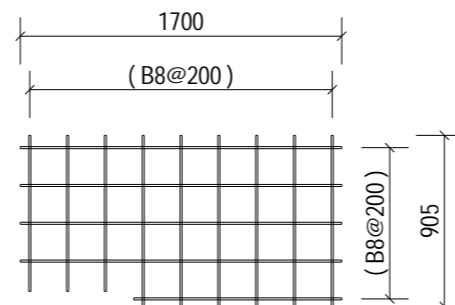
Crown Foot Lifting Anchor



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0016
GA Drg. Ref.	05-BYL-1462-PR-0016-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	24-06-24	Issued For Manufacture	DT	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

winvic

Project.

Panattoni Park
Poyle

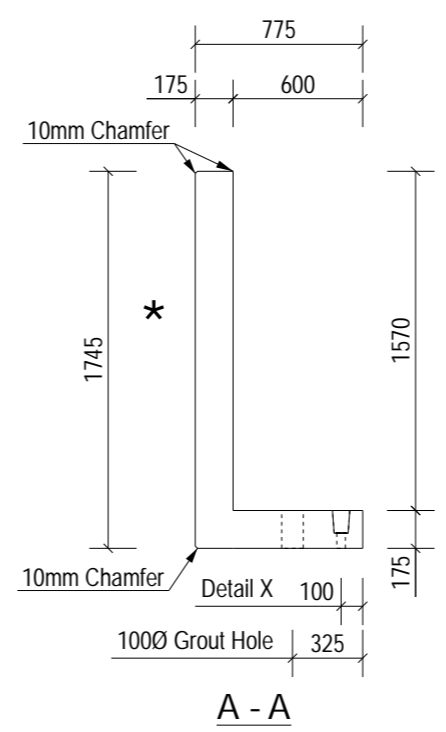
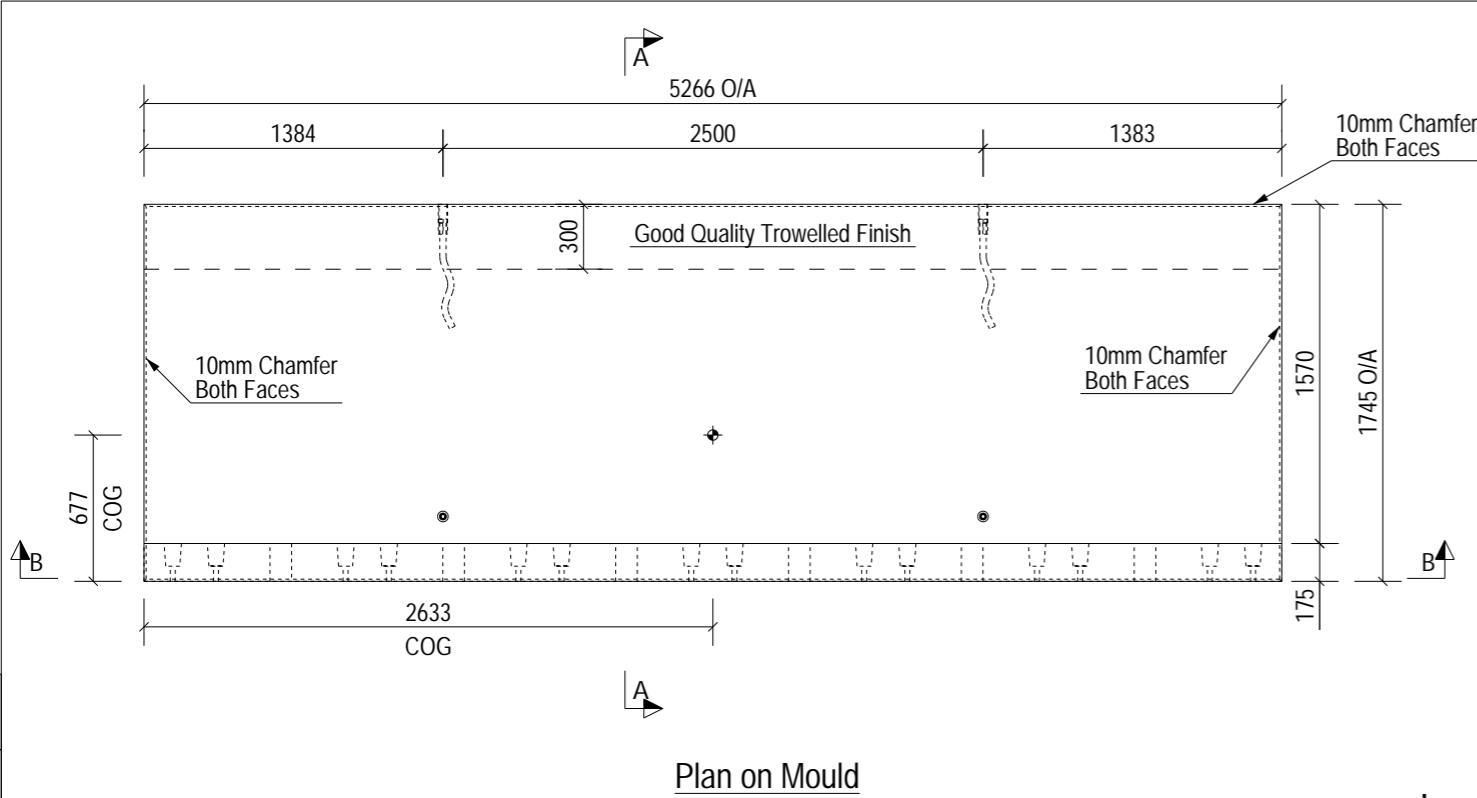
Title.

RC1 of
Perimeter Wall PR-0016

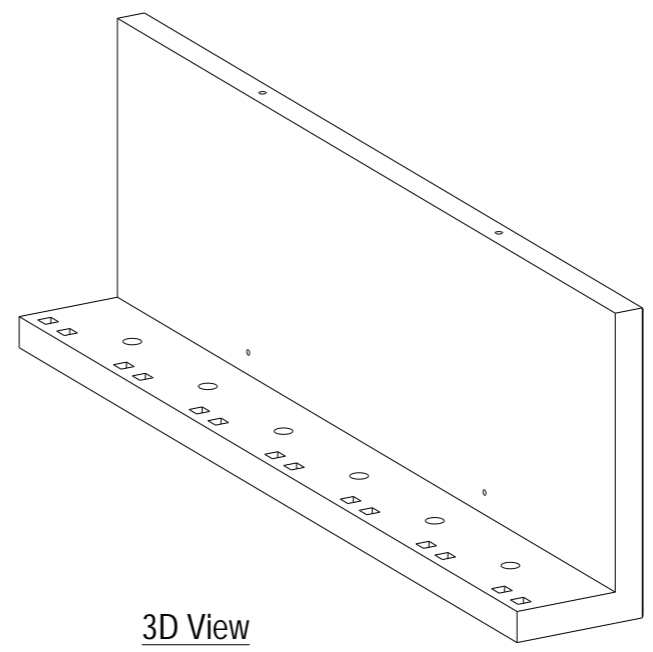
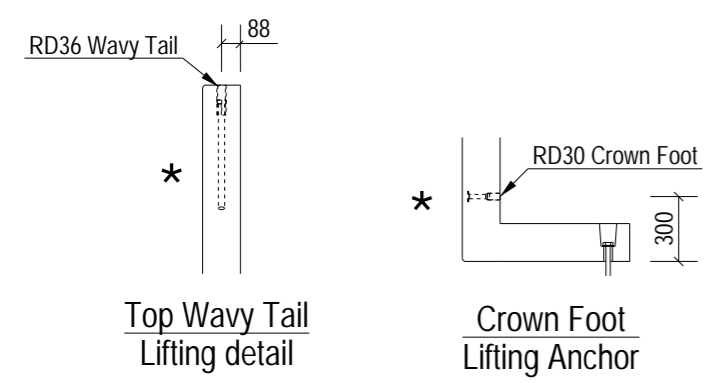
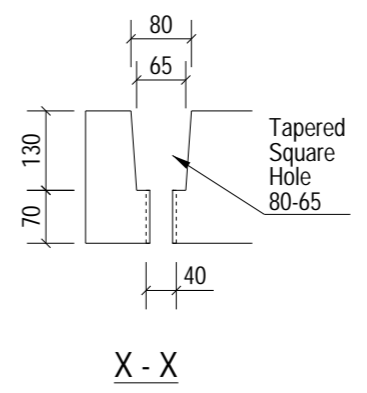
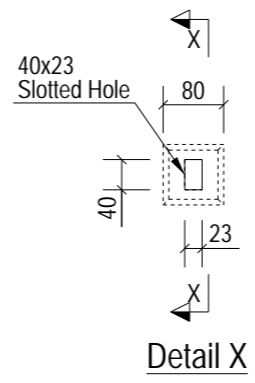
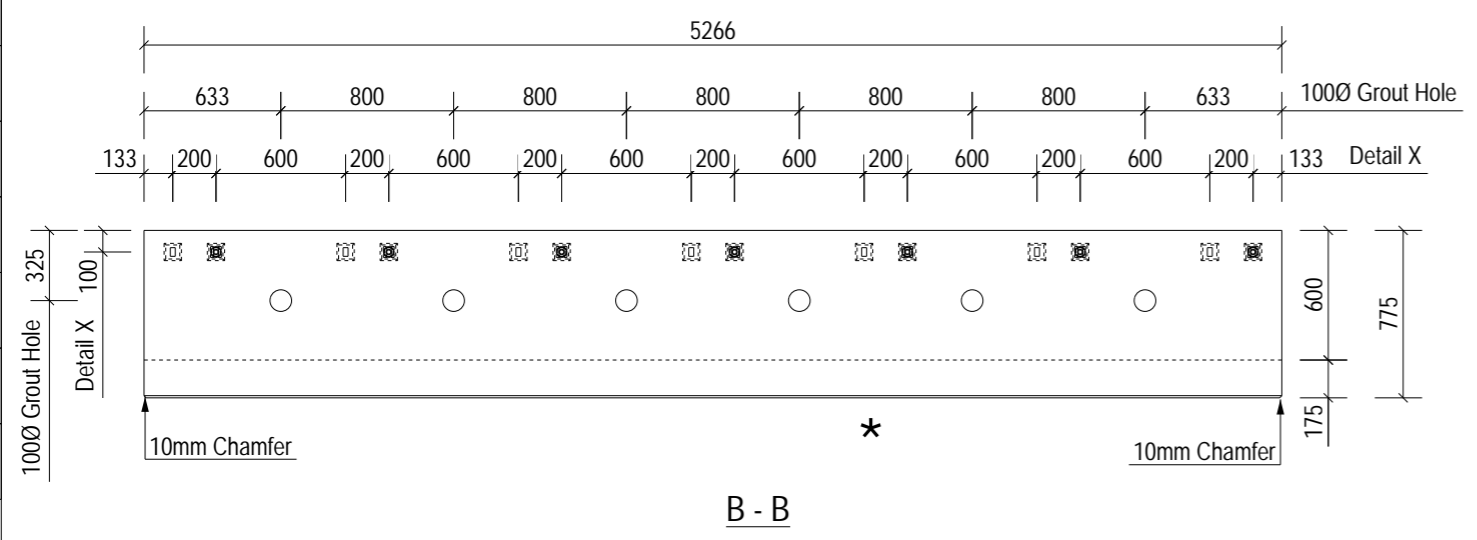
Scale: 1:40 Status: As Built - CR

Drawn: DT Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-PR-0016-RC1 Rev: C01



* Indicates Mould Face



LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

NOTES:

Type.	Perimeter Wall	
Length.	5266	+4 / -4
Height.	1745	+4 / -4
Width.	175	+4 / -4
Weight. (T)	5.37	
Volume. (m³)	2.14	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-PR-0017-RC1	
BBS Ref.	05-BYL-1462-PR-0017-BBS	
Calculation Ref.	FPMC-10-PR-1850_C02	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0017	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	7 No.
Excalibur Bolt	(M20*300)	7 No.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

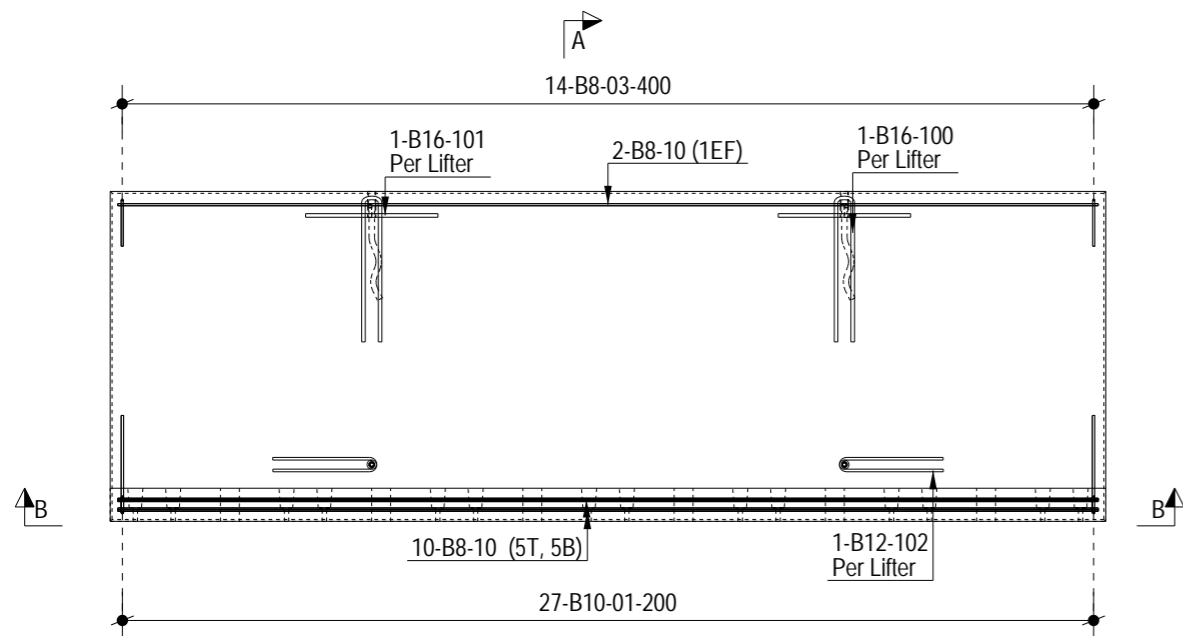
Title. **GA1 of Perimeter Wall PR-0017**

Scale: 1:40 Status: As Built - CR

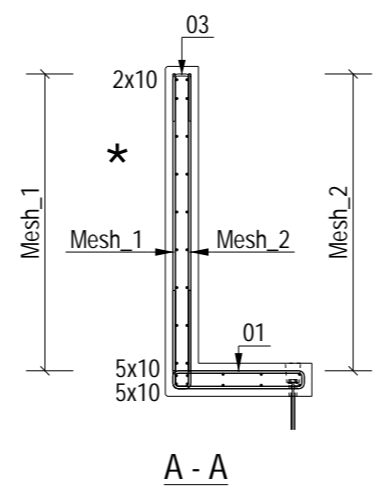
Drawn: MF Checked: AB Approved: SJH

Drawing No : **05-BYL-1462-PR-0017-GA1** Rev: **C01**

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

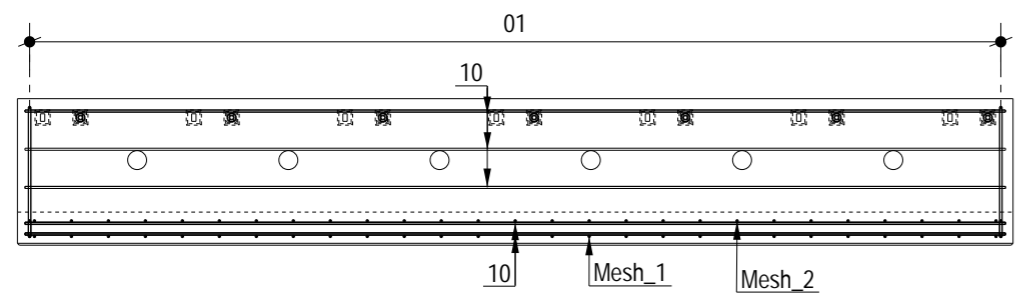


Plan on Mould

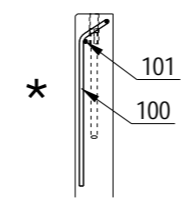


A - A

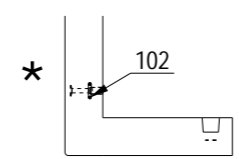
* Indicates Mould Face



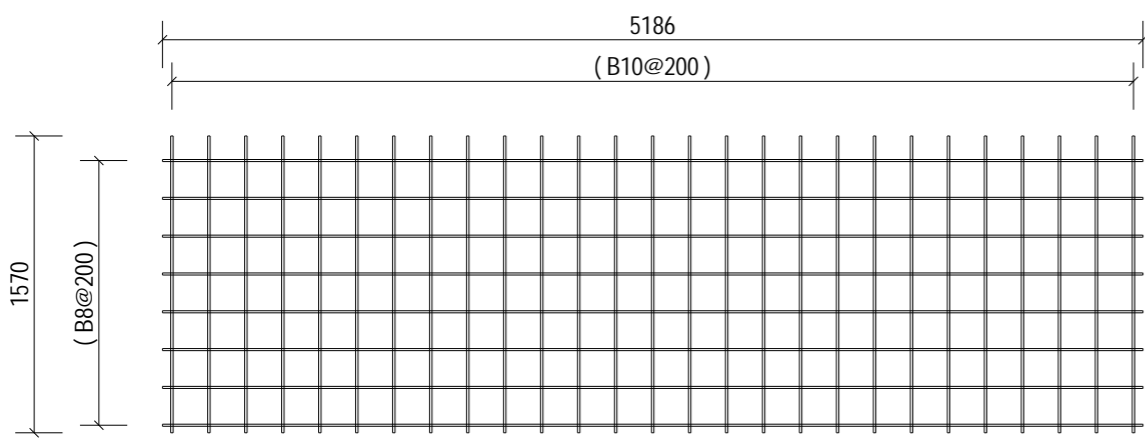
B - B



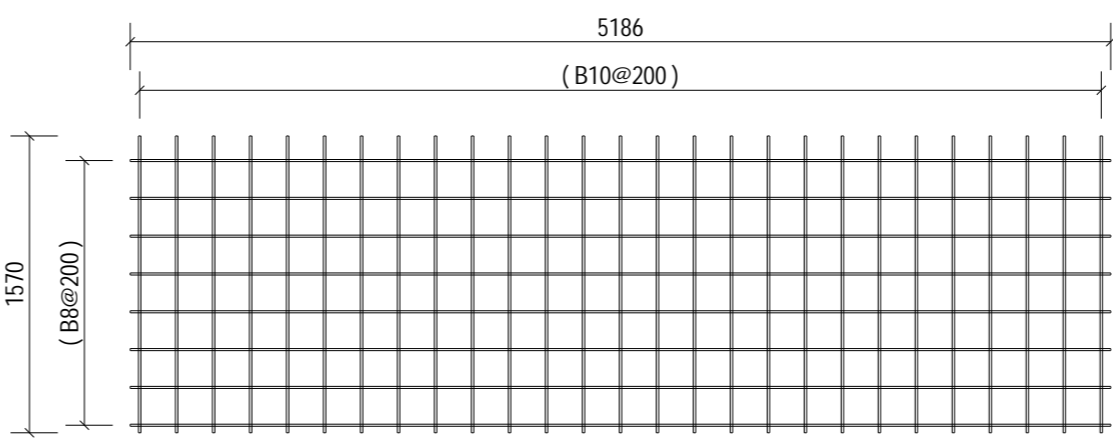
Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0017
GA Drg. Ref.	05-BYL-1462-PR-0017-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

Client:

Project: Panattoni Park Poyle

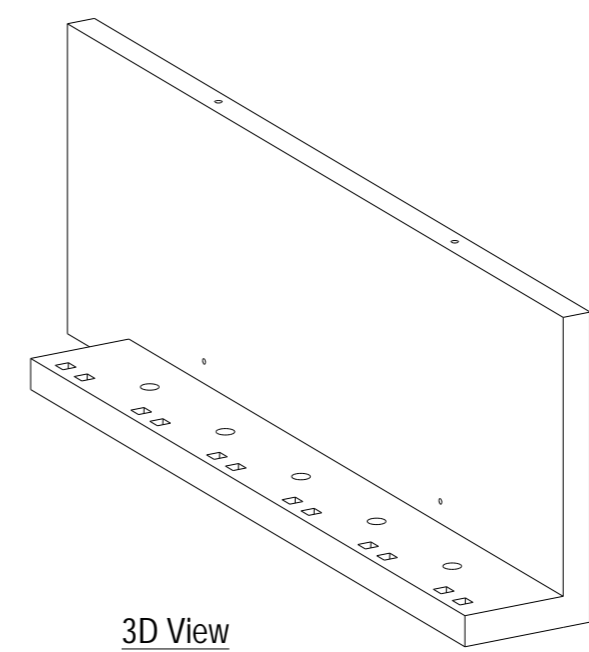
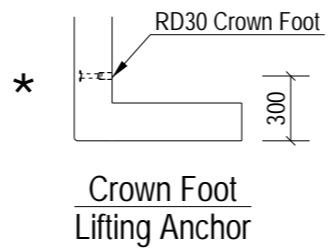
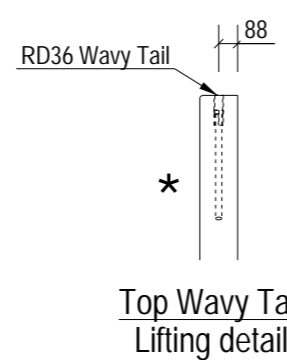
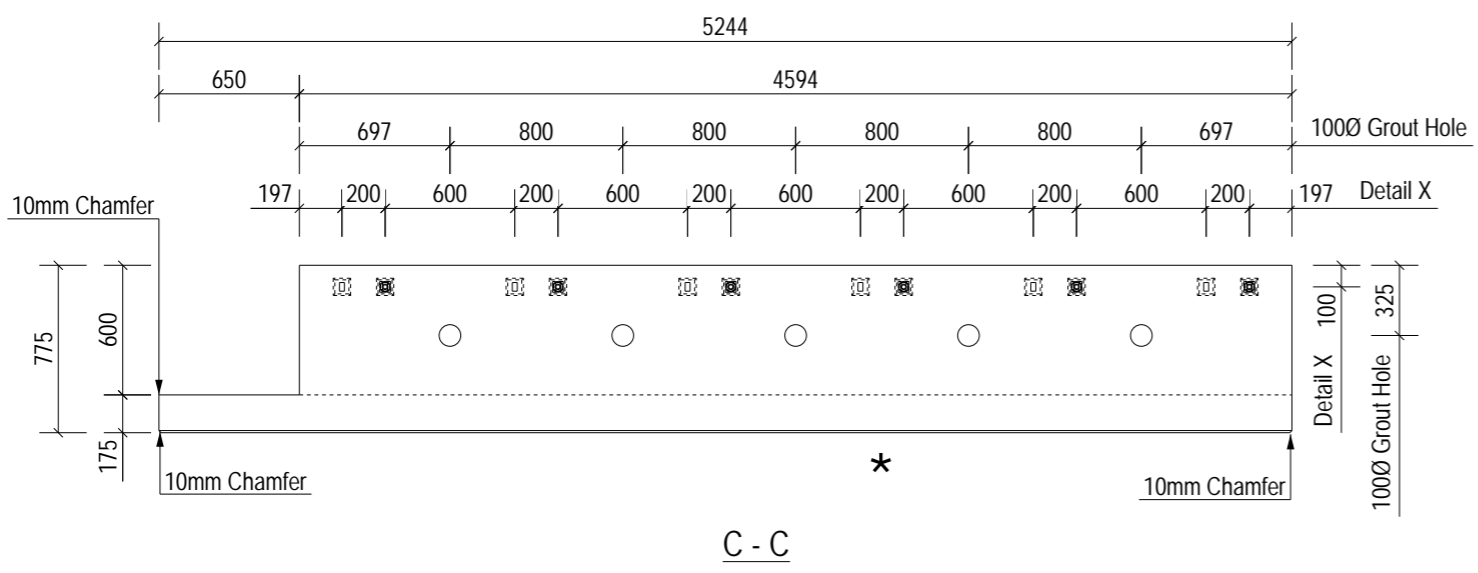
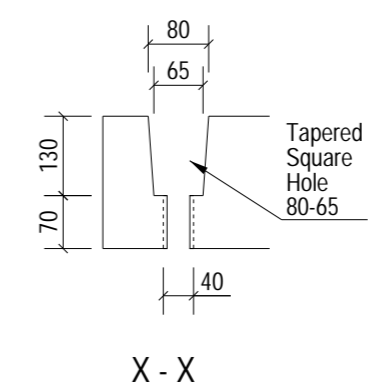
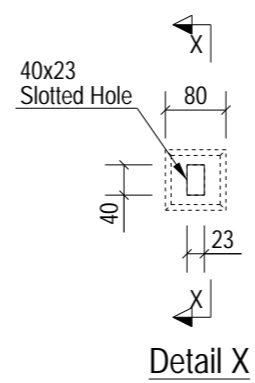
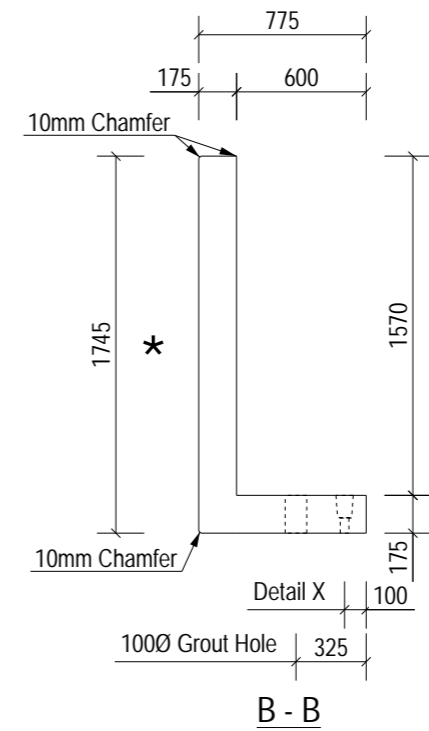
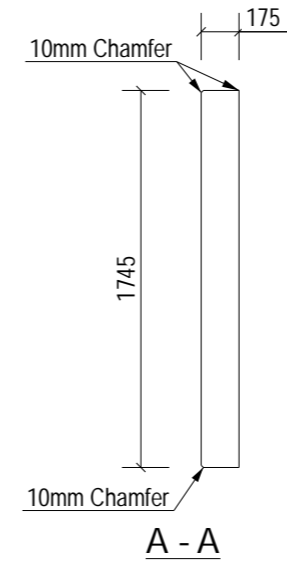
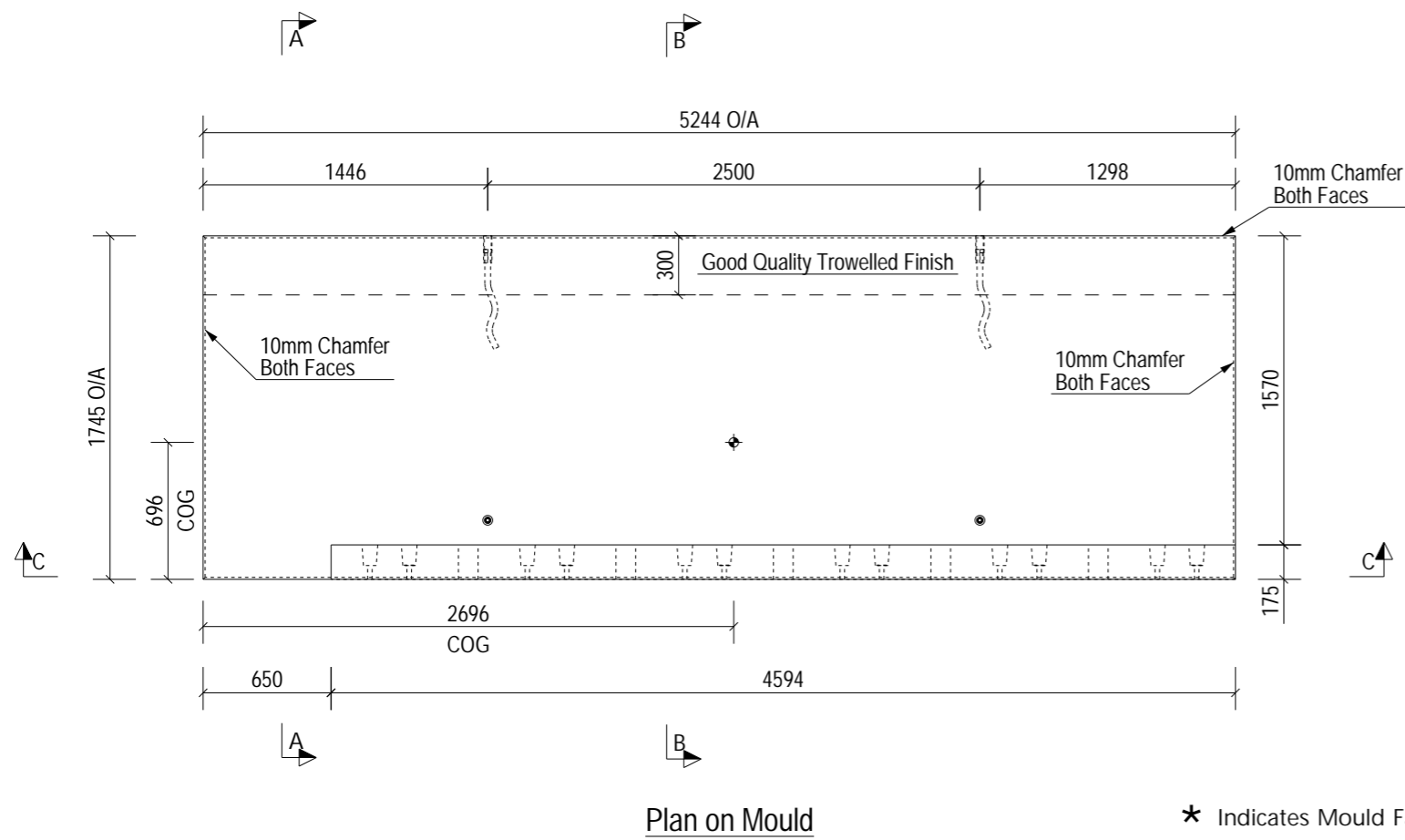
Title: RC1 of Perimeter Wall PR-0017

Scale: 1:40	Status: As Built - CR	
Date: 13-06-24		
Drawn: MF	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-PR-0017-RC1		Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

10mm



LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

NOTES:

Type.	Perimeter Wall	
Length.	5244	+4 / -4
Height.	1745	+4 / -4
Width.	175	+4 / -4
Weight. (T)	5.18	
Volume. (m³)	2.07	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0018-RC1	
BBS Ref.	05-BYL-1462-PR-0018-BBS	
Calculation Ref.	FPMC-10-PR-1850_C02	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0018	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Item	Spec	QTY
Square Washer	(M25-50*50*2.5)	6 No.
Excalibur Bolt	(M20*300)	6 No.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

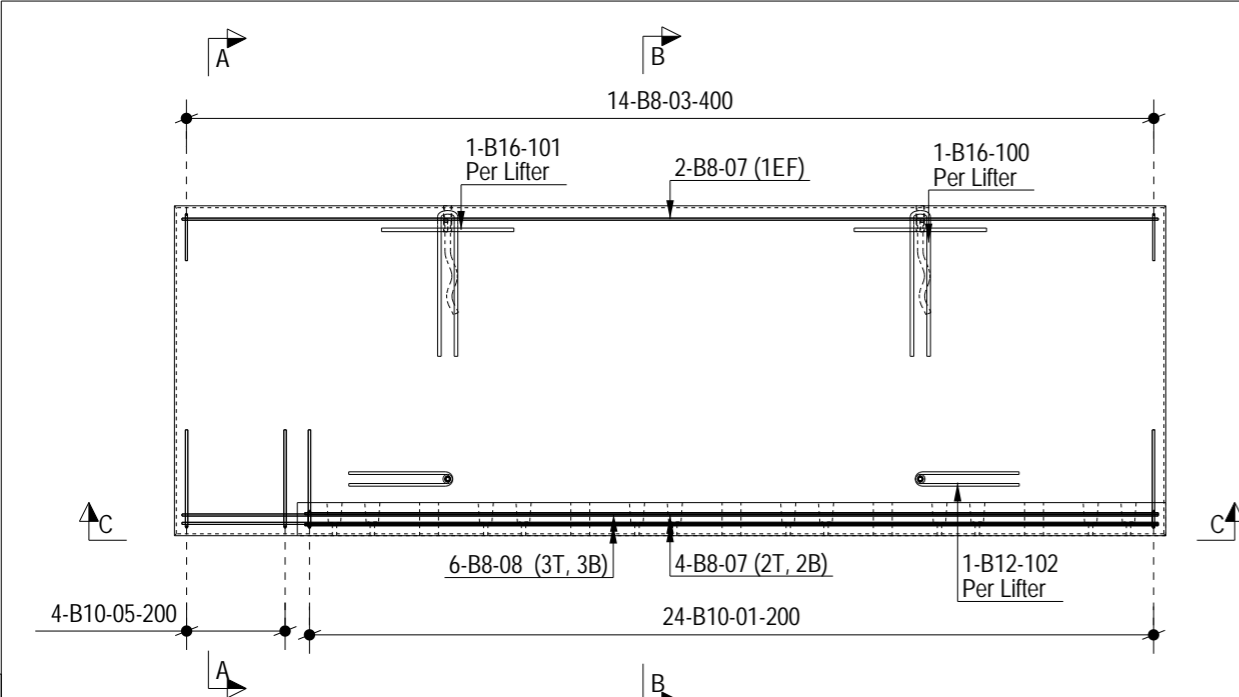
Client: **winvic**

Project: **Panattoni Park Poyle**

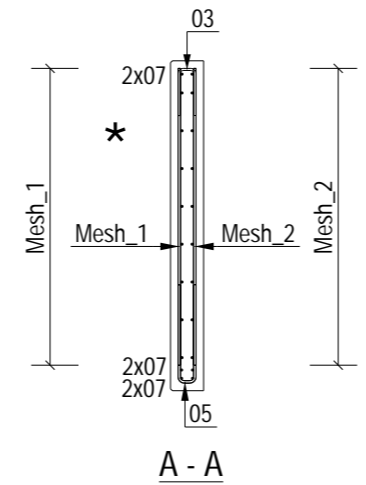
Title: **GA1 of Perimeter Wall PR-0018**

Scale: 1:40 Status: As Built - CR
Date: 13-06-24

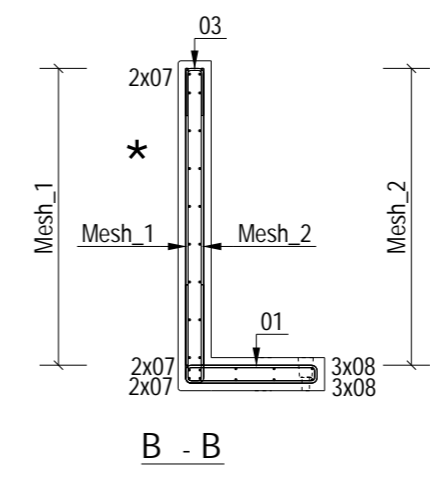
Drawn: MF Checked: AB Approved: SJH
Drawing No: 05-BYL-1462-PR-0018-GA1 Rev: C01



Plan on Mould

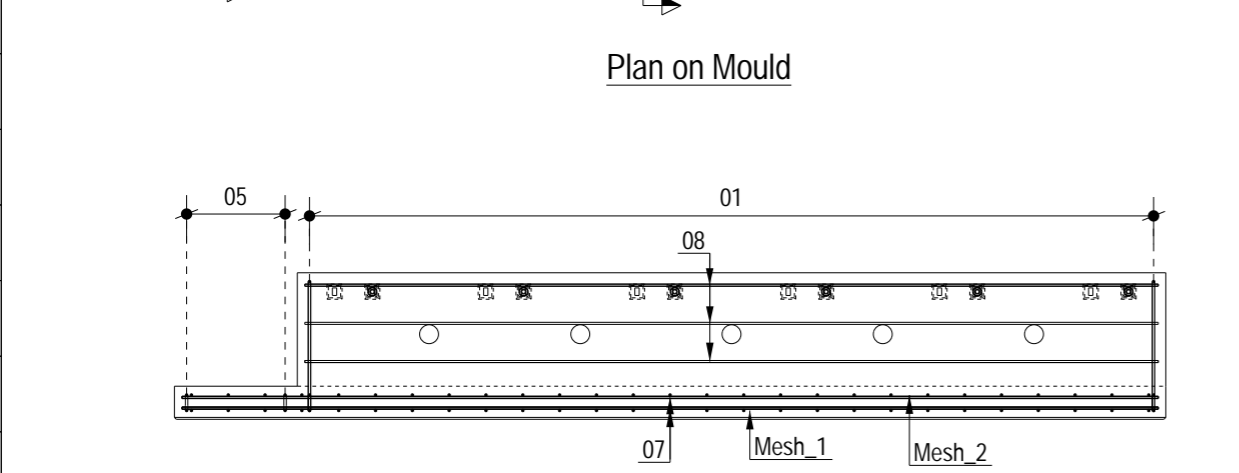


A - A

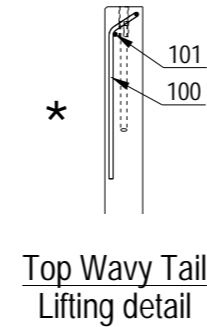


B - B

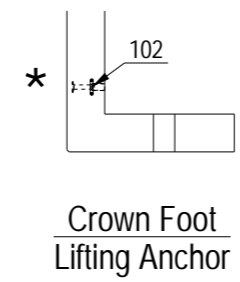
* Indicates Mould Face



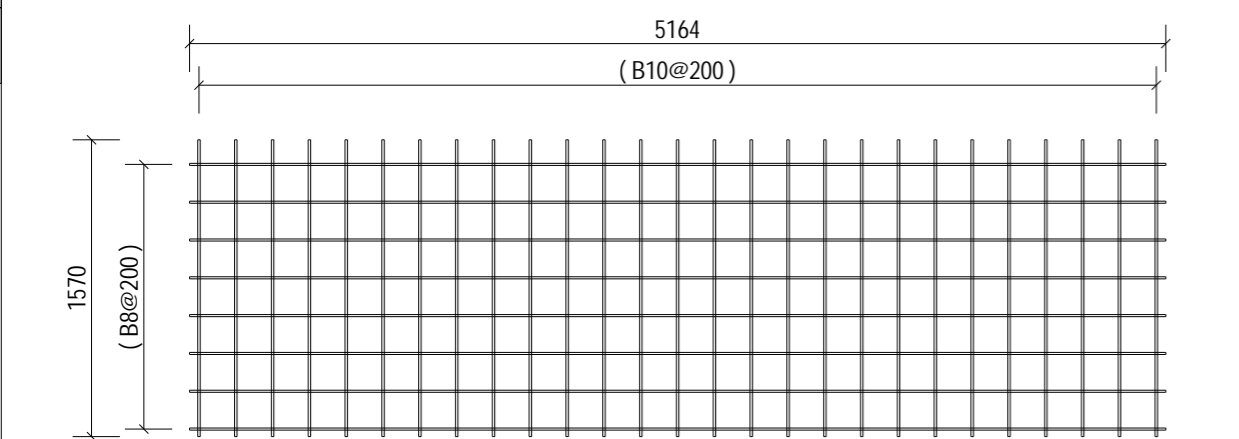
C - C



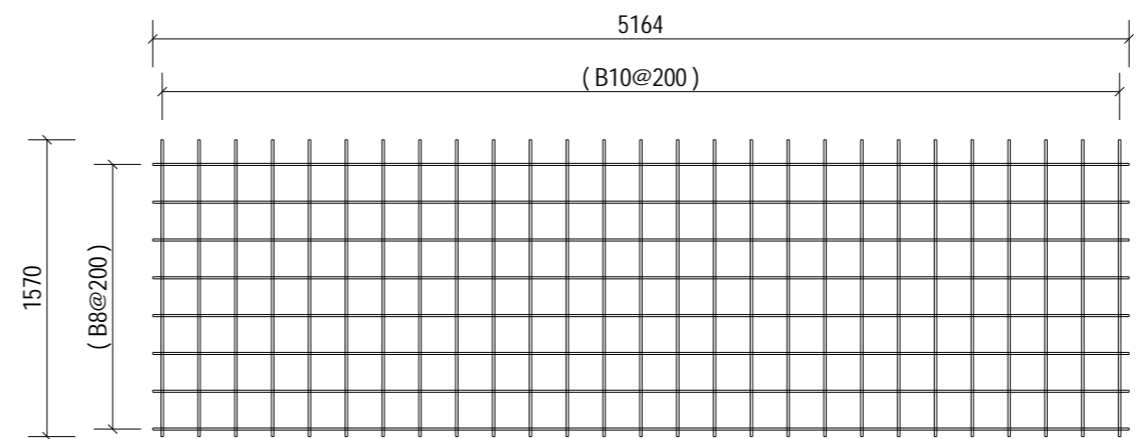
Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0018
GA Drg. Ref.	05-BYL-1462-PR-0018-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project.

Panattoni Park
Poyle

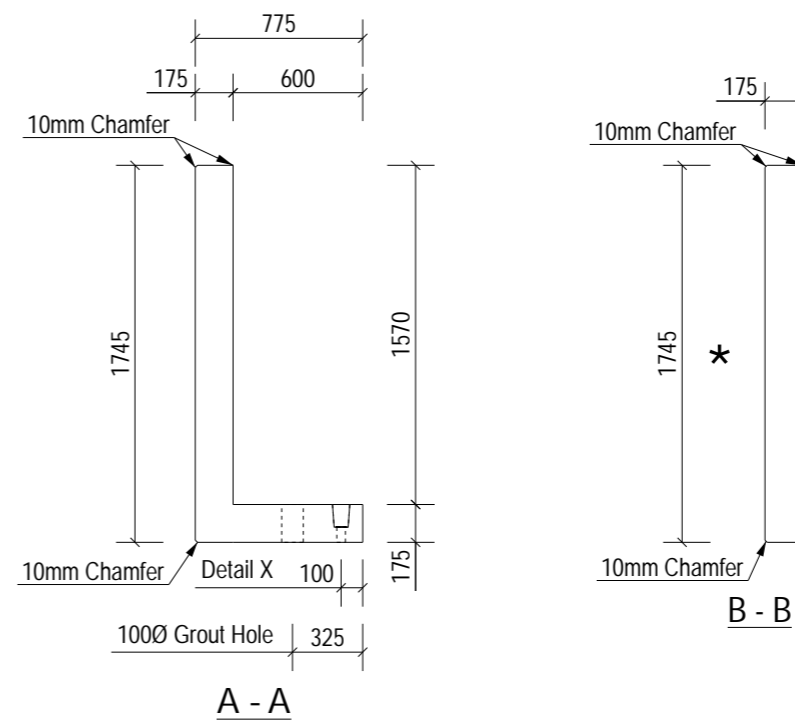
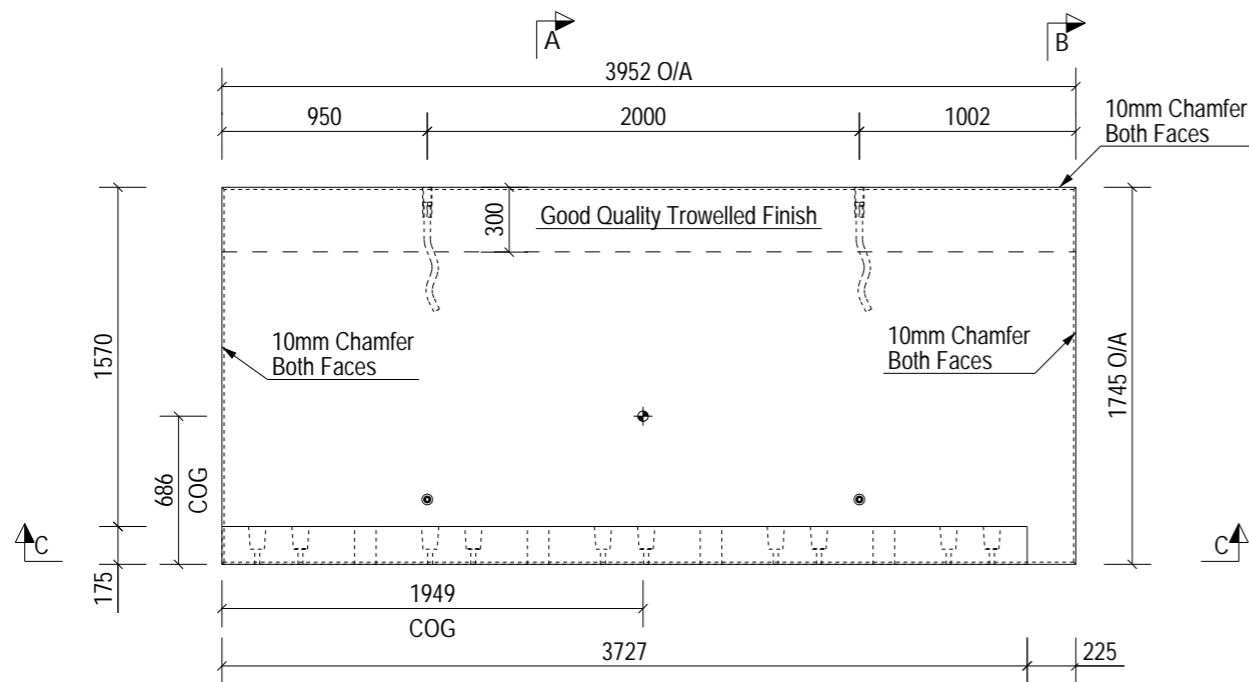
Title.

RC1 of
Perimeter Wall PR-0018

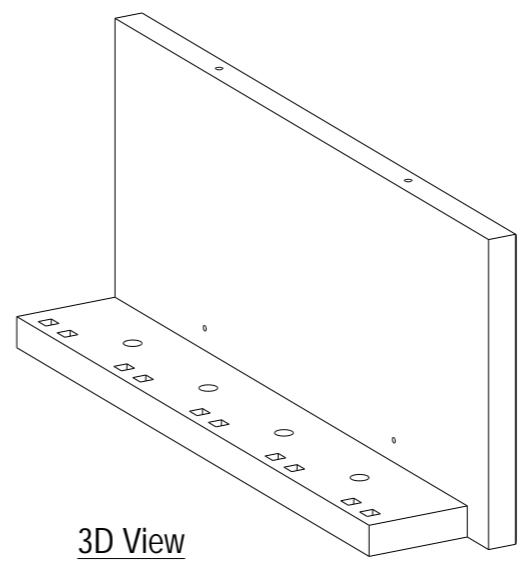
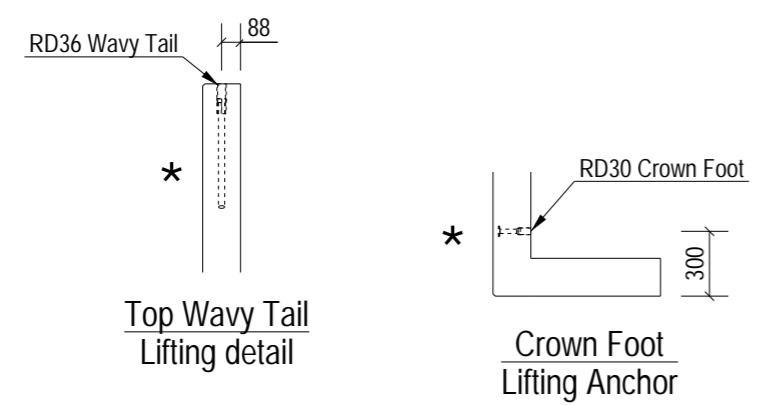
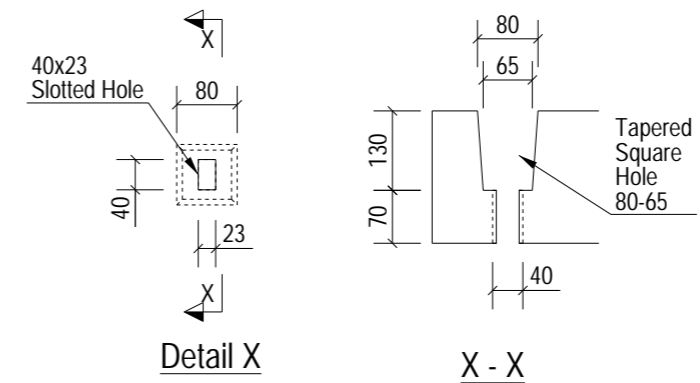
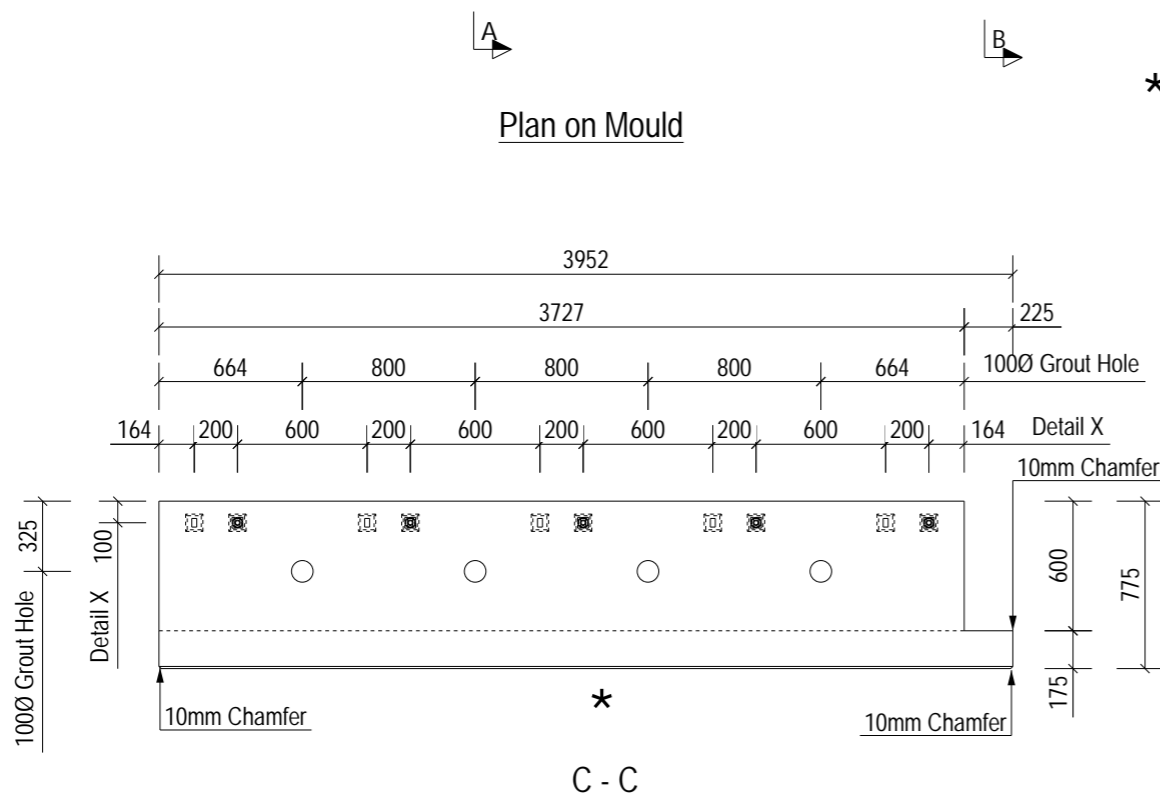
Scale: 1:40	Status: As Built - CR	
Date: 13-06-24		
Drawn: MF	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-PR-0018-RC1	Rev: C01	

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm



* Indicates Mould Face



LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

NOTES:

Type.	Perimeter Wall	
Length.	3952	+4 / -4
Height.	1745	+4 / -4
Width.	175	+4 / -4
Weight. (T)	3.97	
Volume. (m ³)	1.59	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-PR-0019-RC1	
BBS Ref.	05-BYL-1462-PR-0019-BBS	
Calculation Ref.	FPMC-10-PR-1850_C02	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0019	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	5 No.
Excalibur Bolt	(M20*300)	5 No.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of Perimeter Wall PR-0019**

Scale: 1:40	Status: As Built - CR
Date: 13-06-24	

Drawn: MF	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-PR-0019-GA1		Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

NOTES:	
Type.	Perimeter Wall
Mark.	PR-0019
GA Drg. Ref.	05-BYL-1462-PR-0019-GA1
Cover.	40mm Nominal, 35mm Minimum
<ul style="list-style-type: none"> Reinforcement (500B or C) to BS4449. Scheduling, dimensioning, bending and cutting to BS8666 Cage to be tack welded and/or tied with 17 gauge annealed tying wire. 	

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

Project. **Panattoni Park Poyle**

Title. **RC1 of Perimeter Wall PR-0019**

Scale: 1:40 Status: As Built - CR

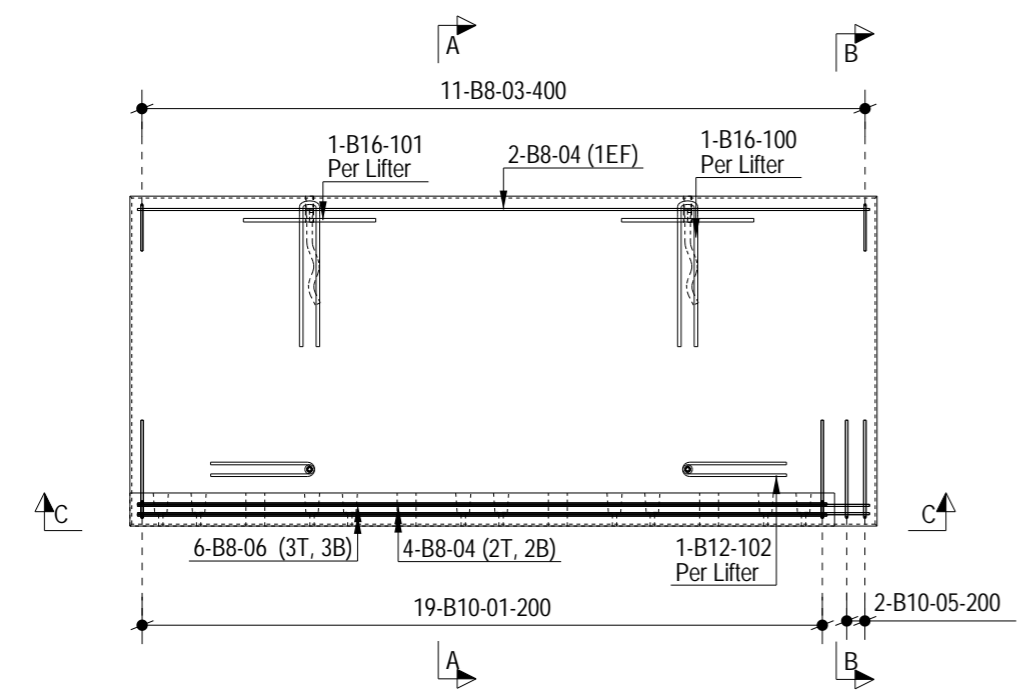
Date: 13-06-24

Drawn: MF Checked: AB Approved: SJH

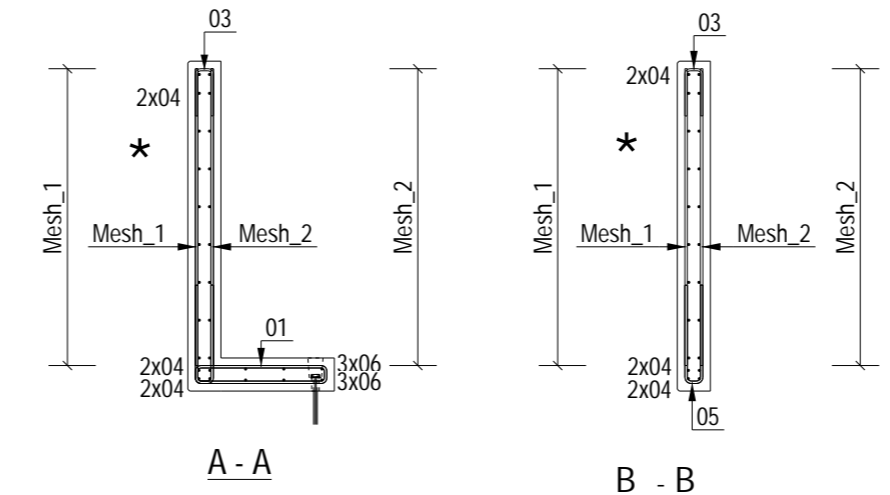
Drawing No : 05-BYL-1462-PR-0019-RC1 Rev: C01

10mm A3

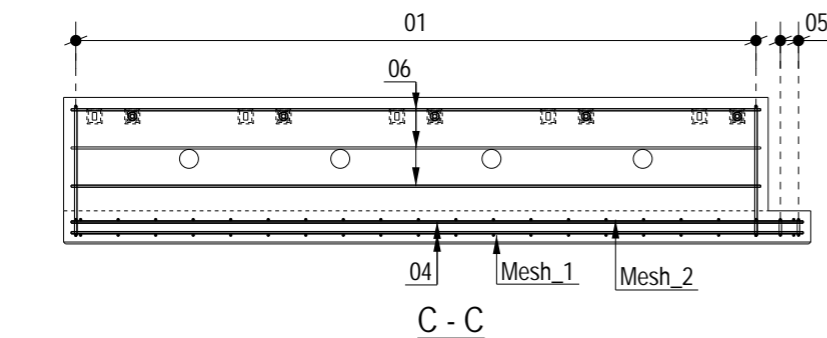
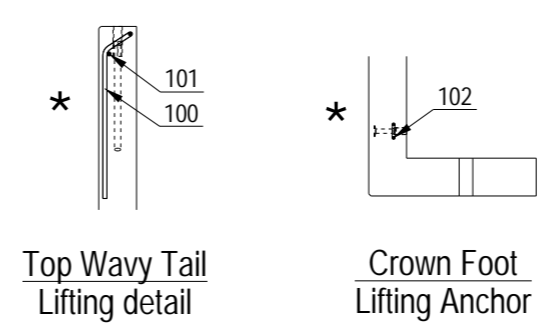
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



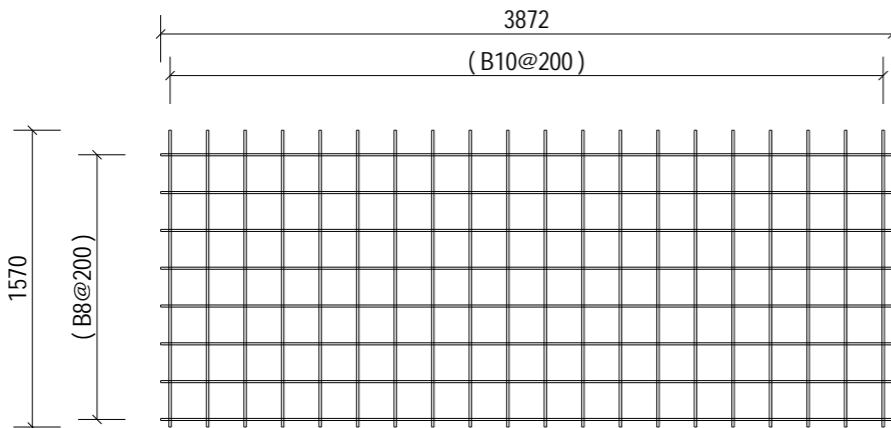
Plan on Mould



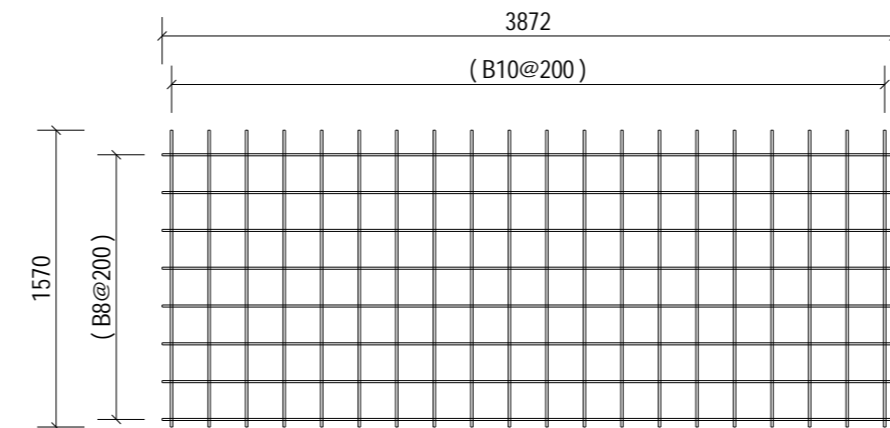
★ Indicates Mould Face



C - C

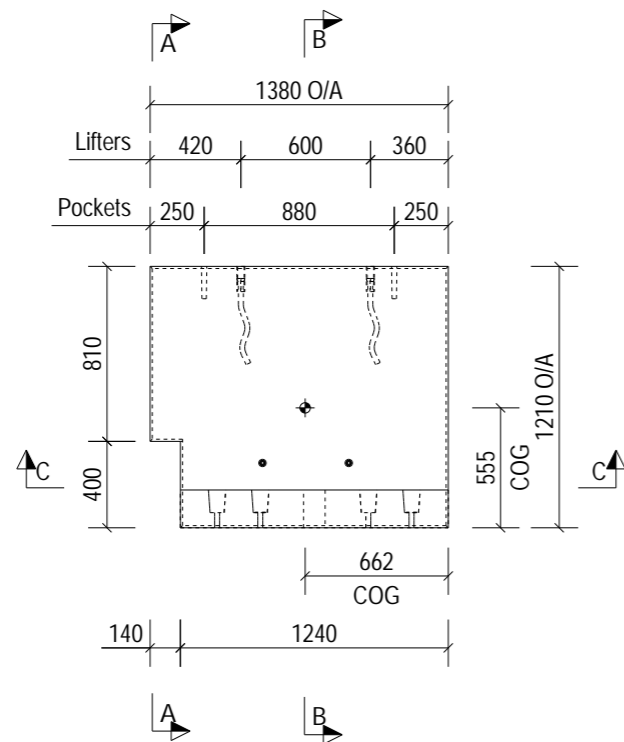


Mesh 1 - FF

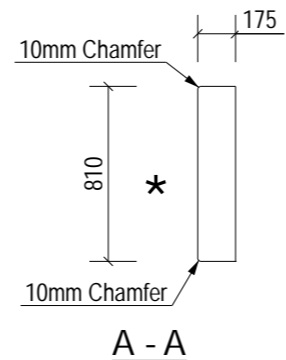


Mesh 2 - NF

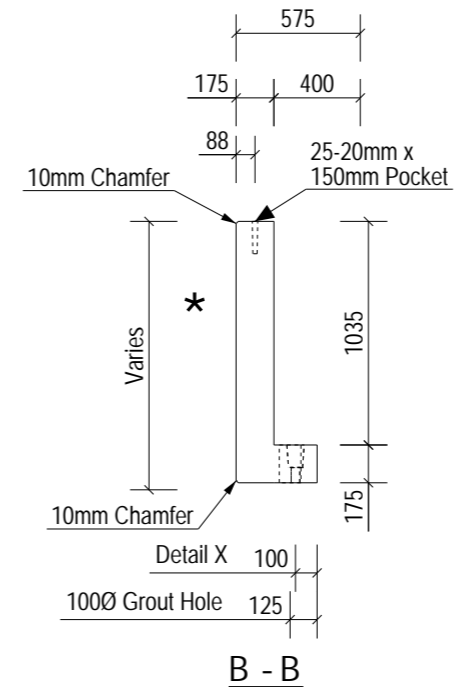
ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.



Plan on Mould

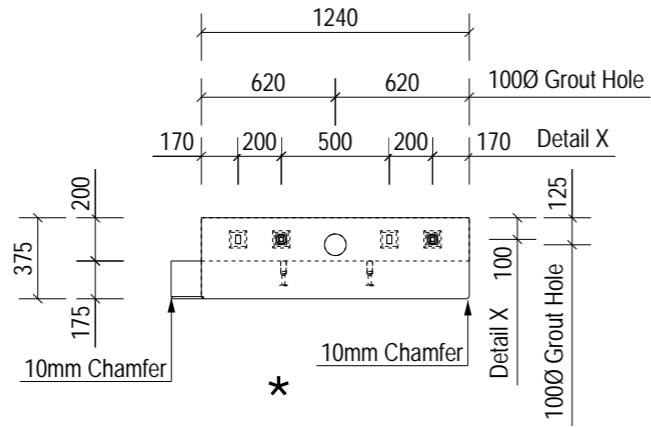


A - A

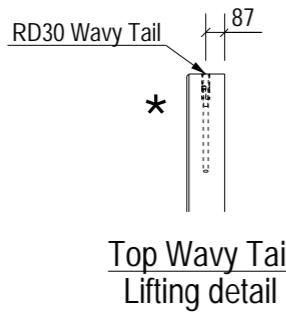


B - B

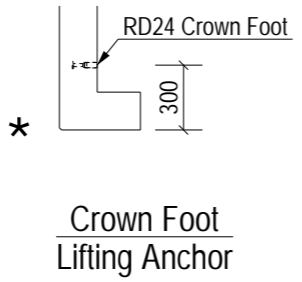
★ Indicates Mould Face



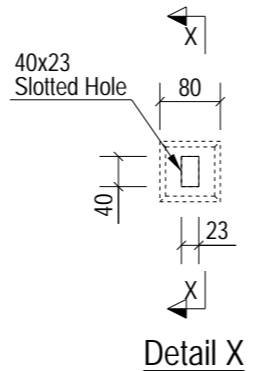
C - C



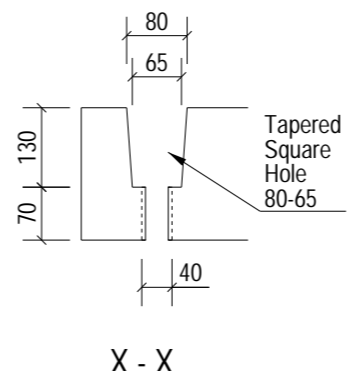
Top Wavy Tail Lifting detail



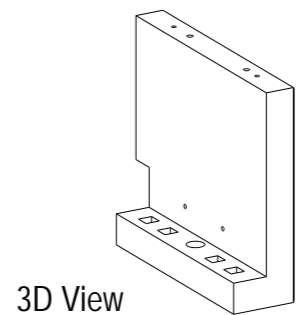
Crown Foot Lifting Anchor



Detail X



X - X



3D View

NOTES:

Type.	Perimeter Wall	
Length.	1380	+4 / -4
Height.	1210	+4 / -4
Width.	175	+4 / -4
Weight. (T)	0.81	
Volume. (m³)	0.32	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-PR-0020-RC1	
BBS Ref.	05-BYL-1462-PR-0020-BBS	
Calculation Ref.	FPMC-10-PR-1250_C02	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0020	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD24 Crown Foot	SLS24115/SCFS24115
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	2 No.
Excalibur Bolt	(M20*300)	2 No.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

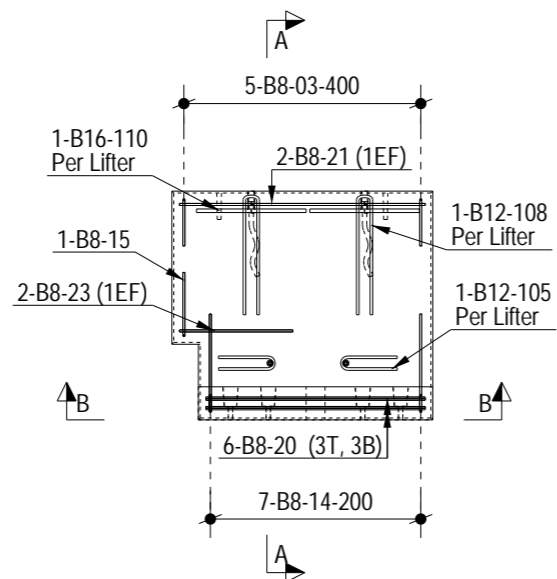
Title. **GA1 of Perimeter Wall PR-0020**

Scale: 1:40	Status: As Built - CR	
Date: 13-06-24		
Drawn: MF	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-PR-0020-GA1	Rev: C01	

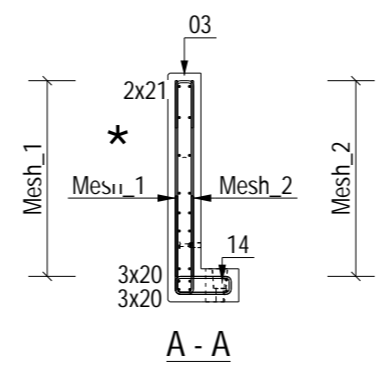
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm

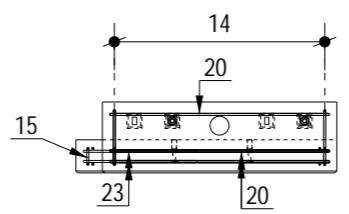


Plan on Mould

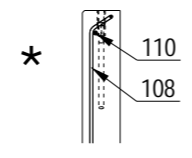


A - A

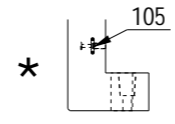
★ Indicates Mould Face



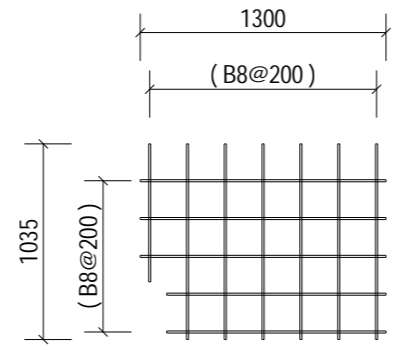
B - B



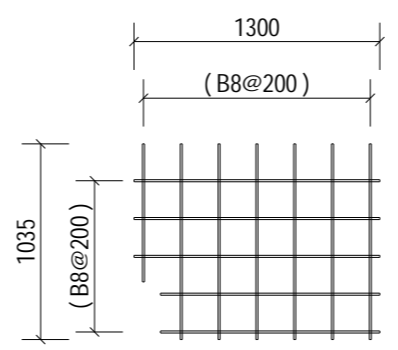
Crown Foot Lifting Anchor



Crown Foot Lifting Anchor



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0020
GA Drg. Ref.	05-BYL-1462-PR-0020-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

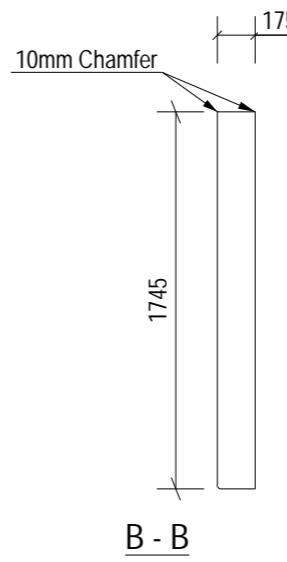
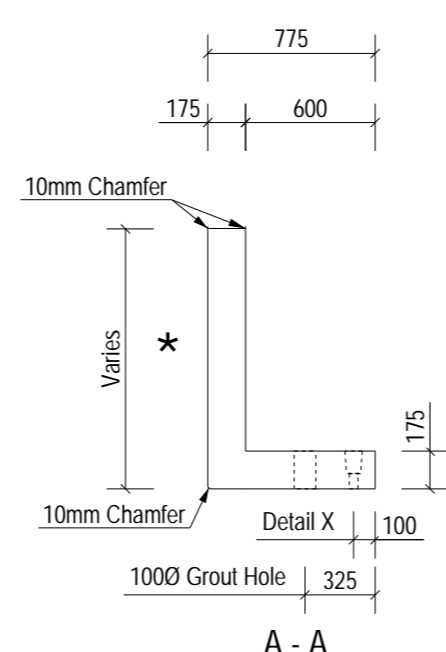
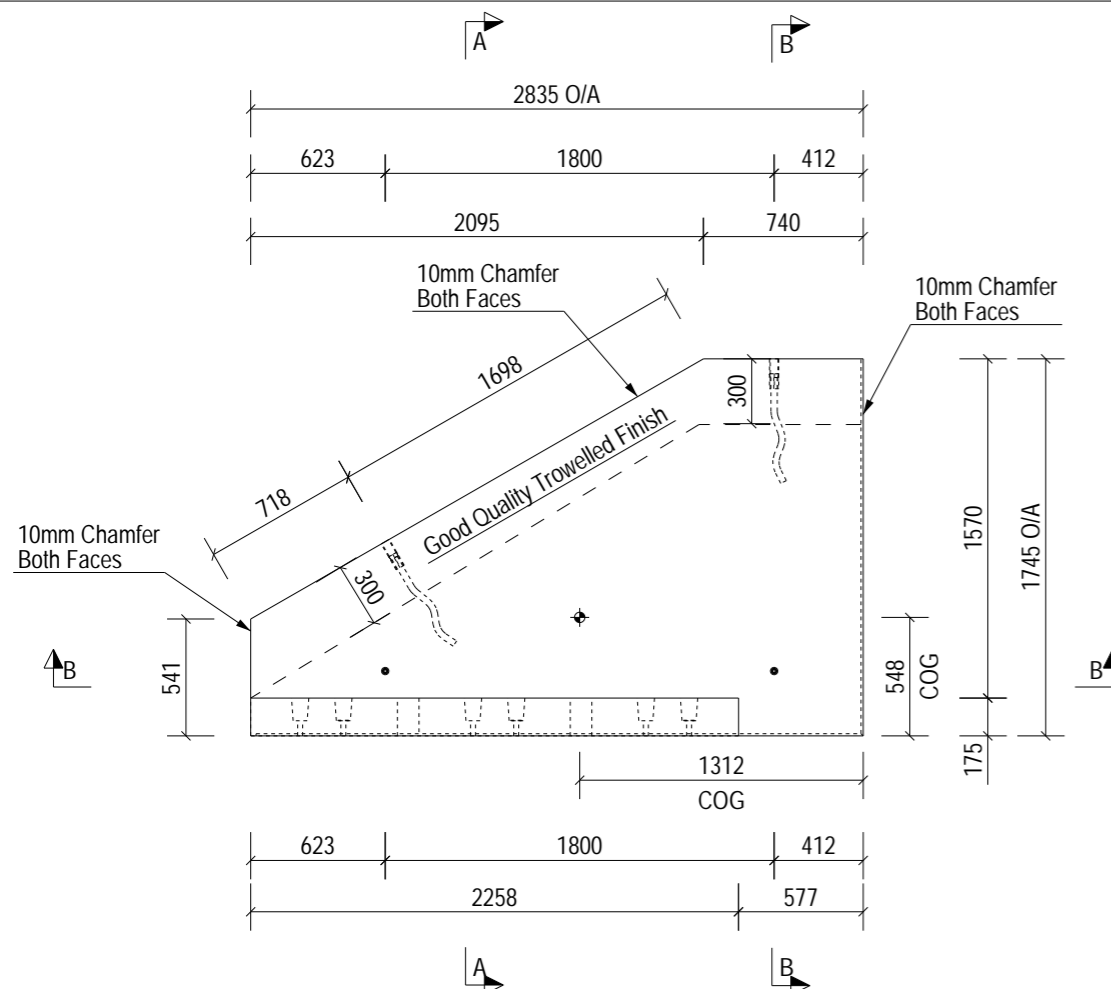
Title. RC1 of Perimeter Wall PR-0020

Scale: 1:40 Status: As Built - CR
Date: 13-06-24

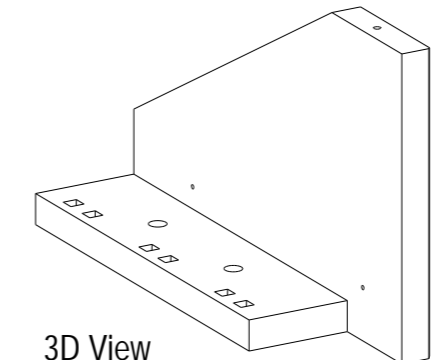
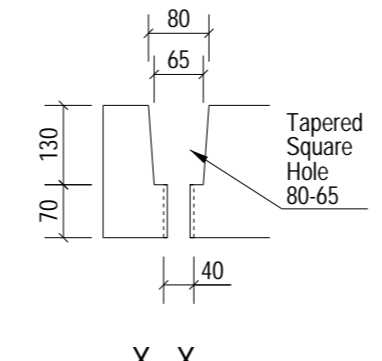
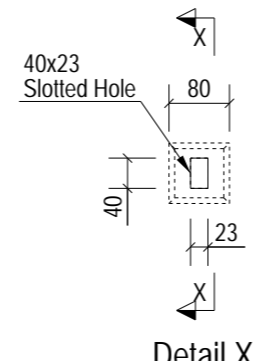
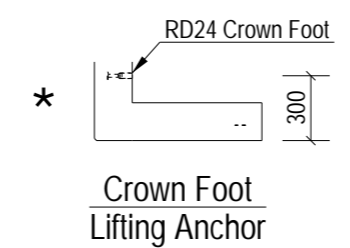
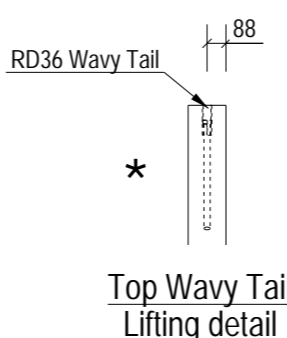
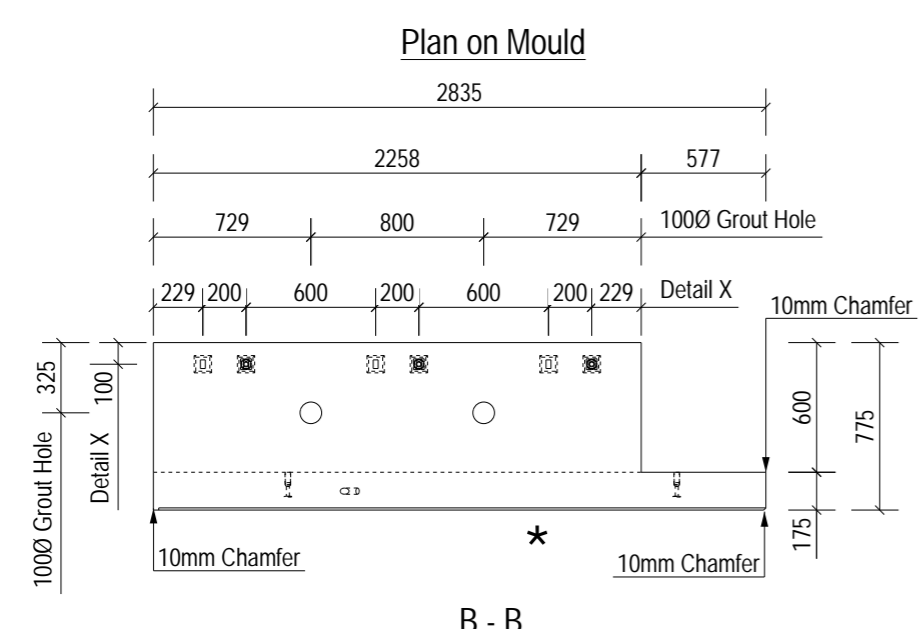
Drawn: MF Checked: AB Approved: SJH
Drawing No : 05-BYL-1462-PR-0020-RC1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm



* Indicates Mould Face



LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

NOTES:

Type.	Perimeter Wall	
Length.	2835	+4 / -4
Height.	1745	+4 / -4
Width.	175	+4 / -4
Weight. (T)	2.20	
Volume. (m³)	0.88	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-PR-0021-RC1
BBS Ref.	05-BYL-1462-PR-0021-BBS
Calculation Ref.	FPMC-10-PR-1850_C02
Cover.	40mm Nominal, 35mm Minimum
Casting Bed.	Flat Bed
Mark.	PR-0021
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD24 Crown Foot	SLS24115/SCFS24115
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	3 No.
Excalibur Bolt	(M20*300)	3 No.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of Perimeter Wall PR-0021**

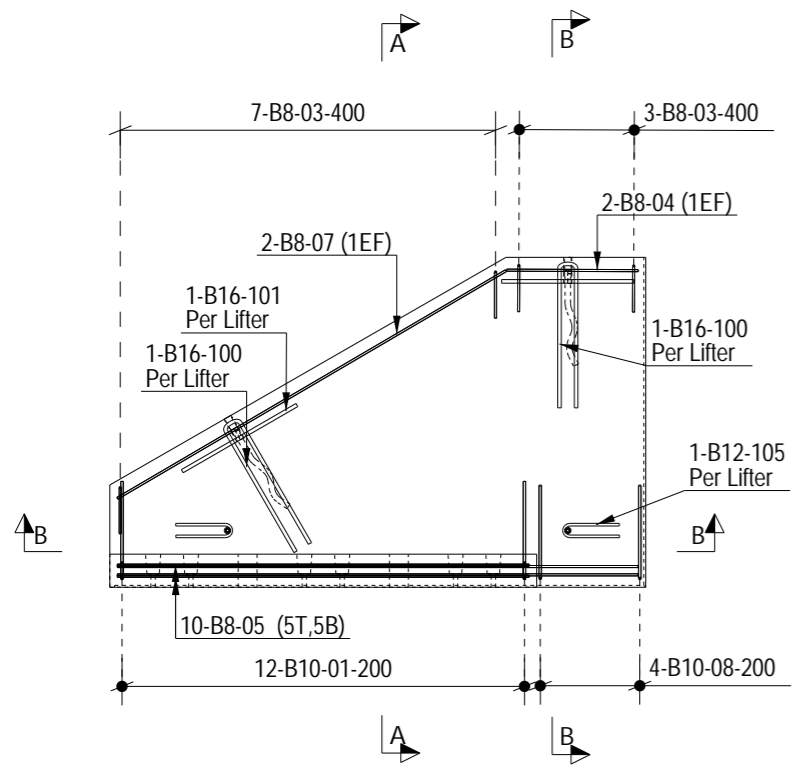
Scale: 1:40	Status: As Built - CR
Date: 14-06-24	

Drawn: MF	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-PR-0021-GA1	Rev: C01	

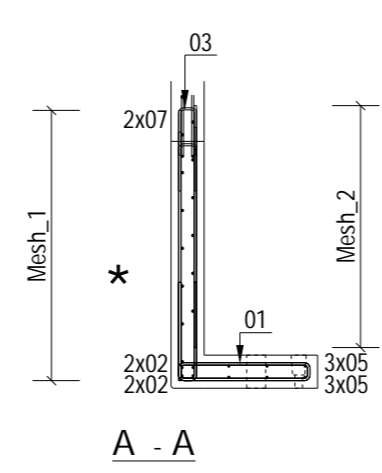
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

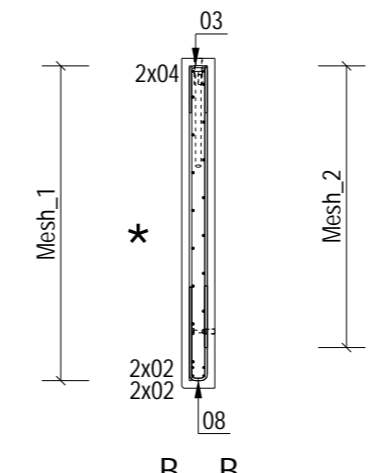
10mm



Plan on Mould

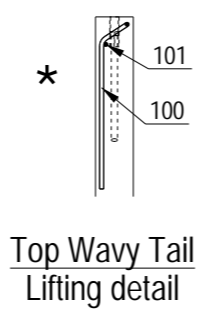


A - A

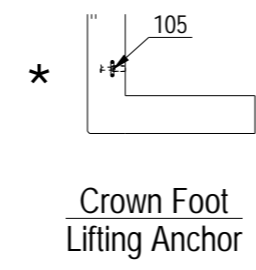


B - B

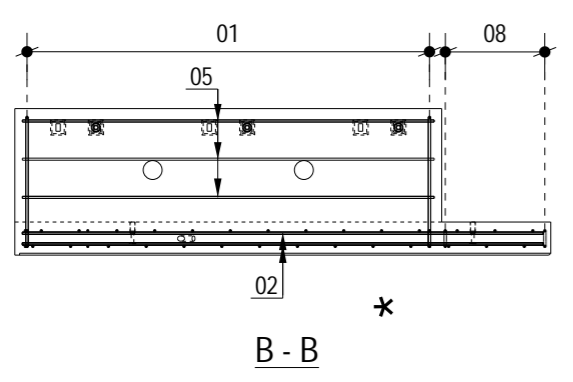
* Indicates Mould Face



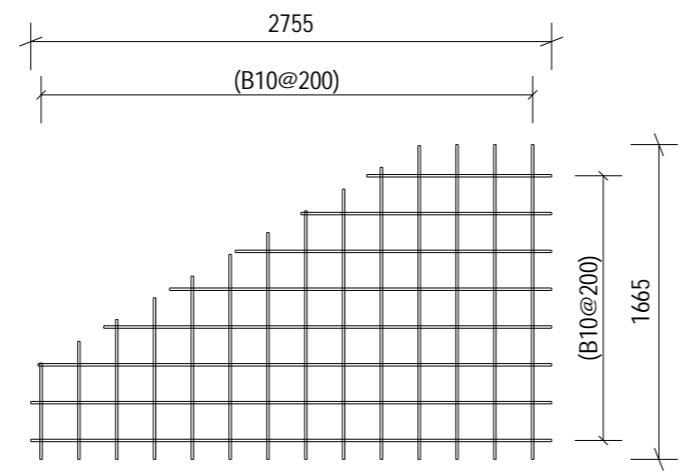
Top Wavy Tail Lifting detail



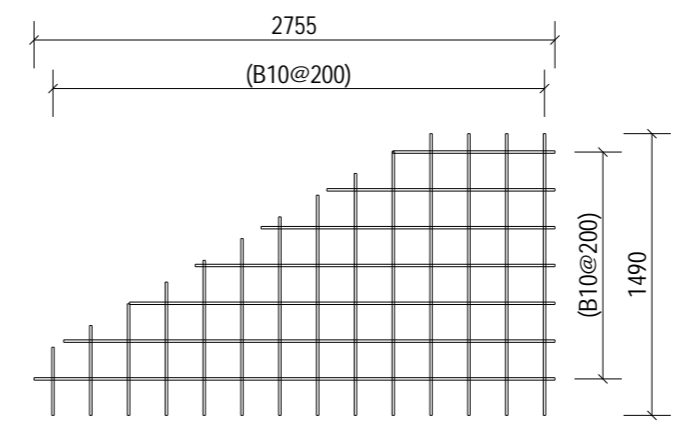
Crown Foot Lifting Anchor



B - B



Mesh 1 - FF



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0021
GA Drg. Ref.	05-BYL-1462-PR-0021-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **RC1 of Perimeter Wall PR-0021**

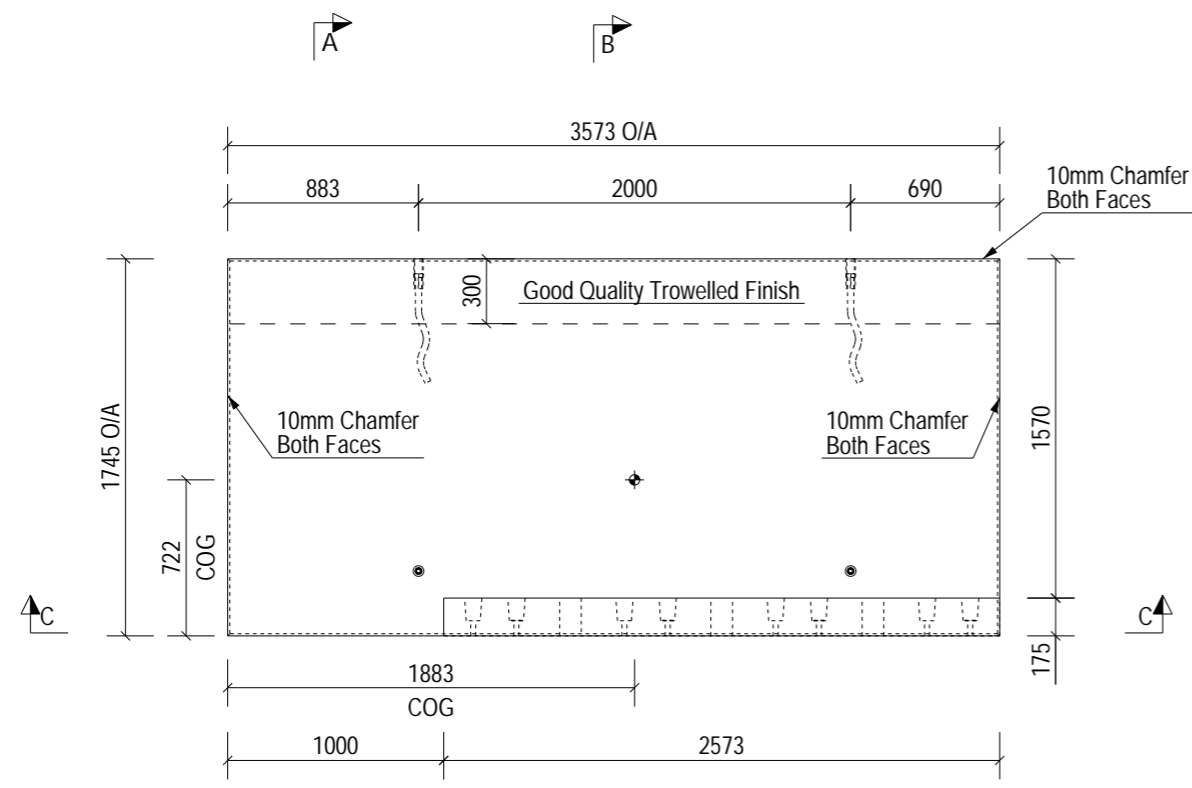
Scale: 1:40 Status: As Built - CR
Date: 14-06-24

Drawn: MF Checked: AB Approved: SJH
Drawing No : 05-BYL-1462-PR-0021-RC1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

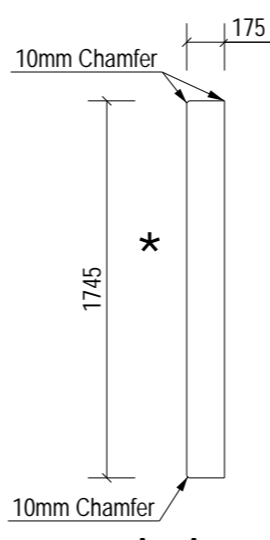
A3

10mm

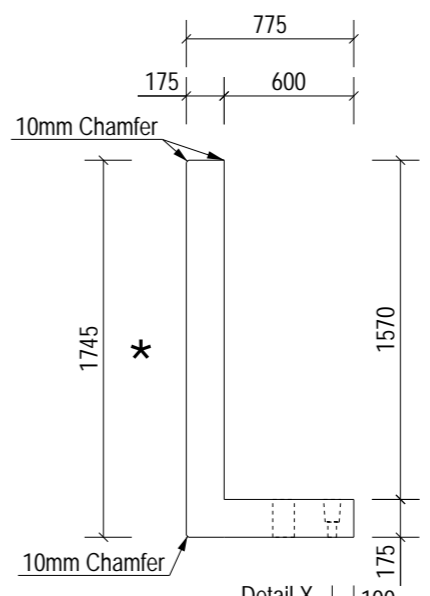


Plan on Mould

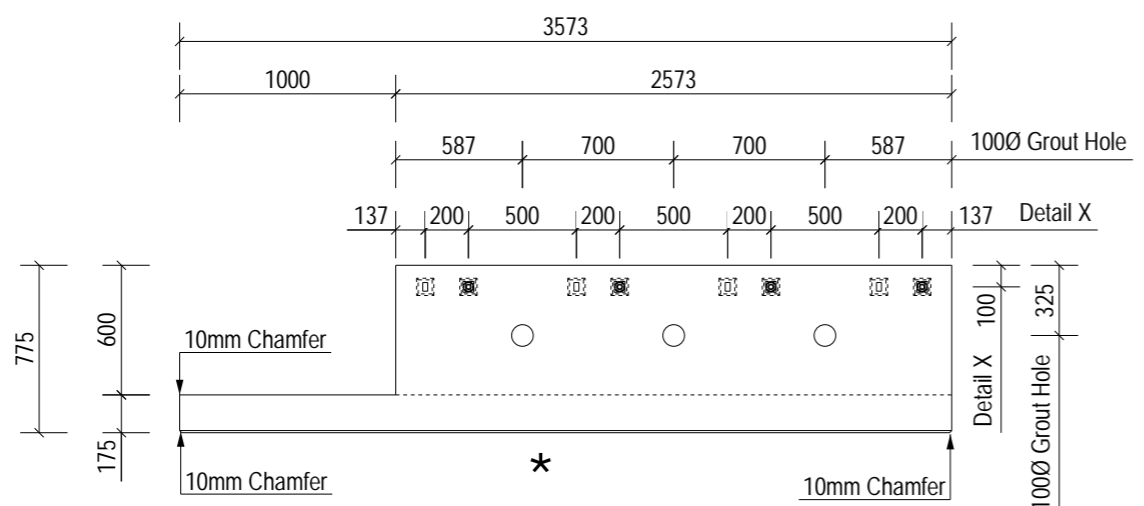
* Indicates Mould Face



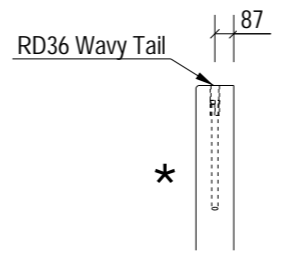
A - A



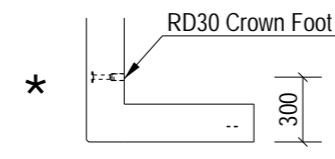
B - B



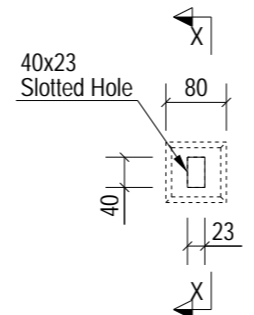
C - C



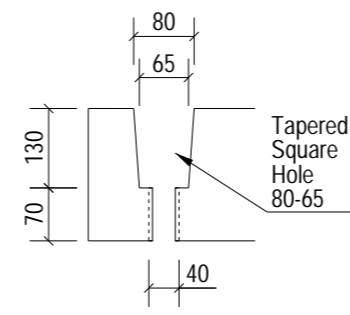
Top Wavy Tail Lifting detail



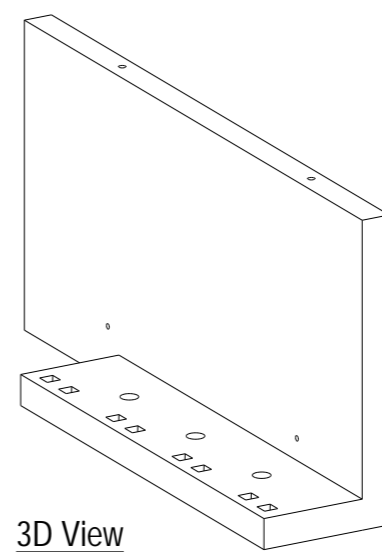
Crown Foot Lifting Anchor



Detail X



X - X



3D View

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

NOTES:

Type.	Perimeter Wall	
Length.	3573	+4 / -4
Height.	1745	+4 / -4
Width.	175	+4 / -4
Weight. (T)	3.39	
Volume. (m³)	1.35	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-PR-0023-RC1	
BBS Ref.	05-BYL-1462-PR-0023-BBS	
Calculation Ref.	FPMC-10-PR-1850_C02	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat Bed	
Mark.	PR-0023	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	4 No.
Excalibur Bolt	(M20*300)	4 No.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

Client.

Project. Panattoni Park Poyle

Title. GA1 of Perimeter Wall PR-0023

Scale: 1:40 Status: As Built - CR
Date: 13-06-24

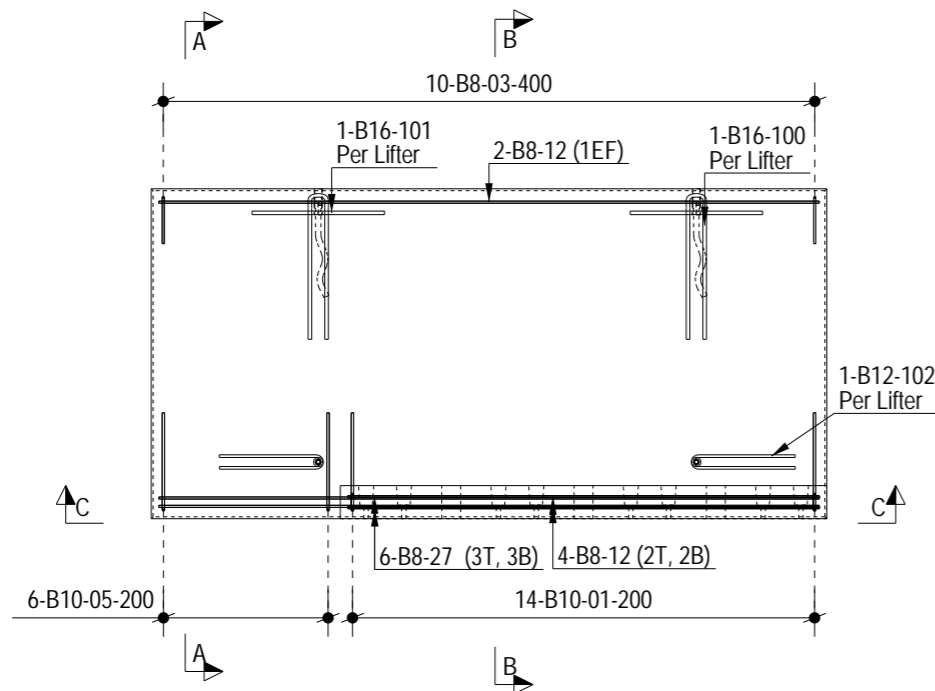
Drawn: MF Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-PR-0023-GA1 Rev: C01

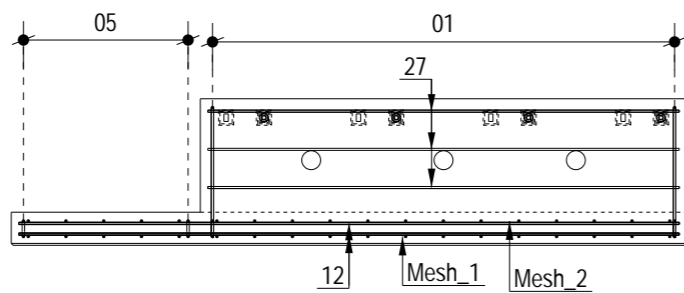
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

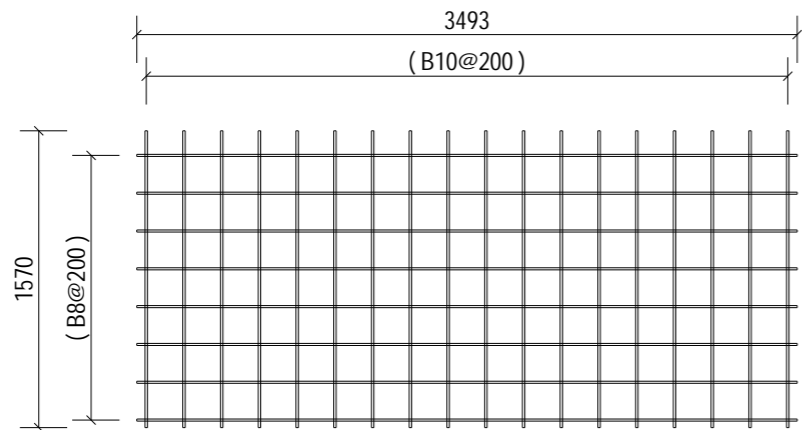
10mm



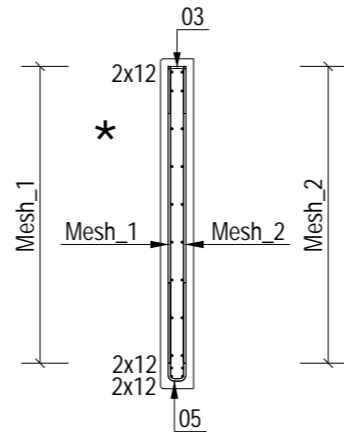
Plan on Mould



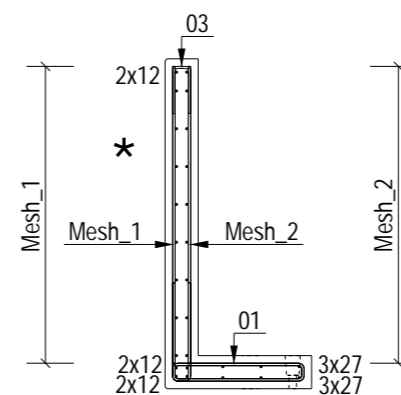
C - C



Mesh 1 - FF

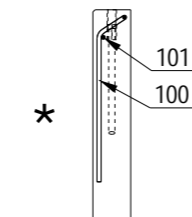


A - A

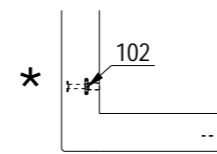


B - B

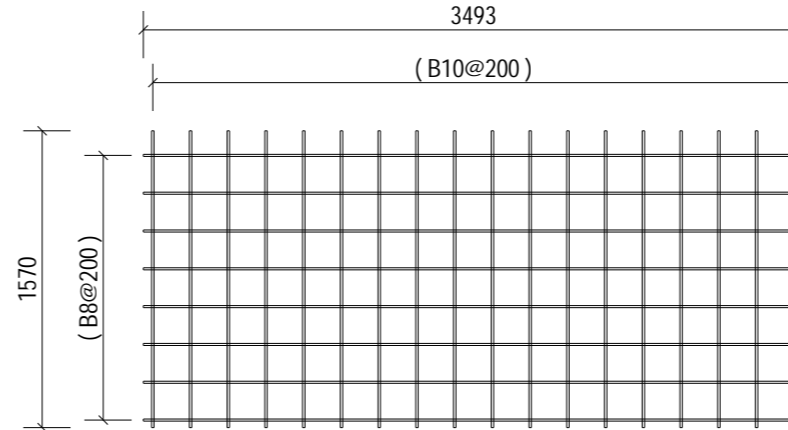
* Indicates Mould Face



Top Wavy Tail Lifting detail



Crown Foot Lifting Anchor



Mesh 2 - NF

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Perimeter Wall
Mark.	PR-0023
GA Drg. Ref.	05-BYL-1462-PR-0023-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

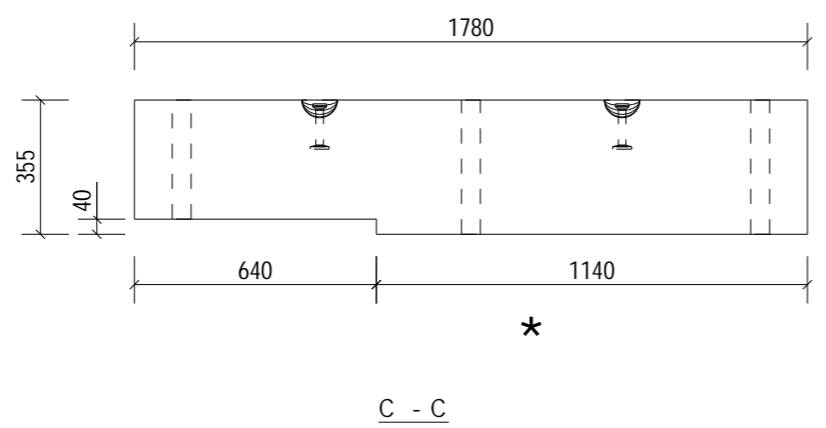
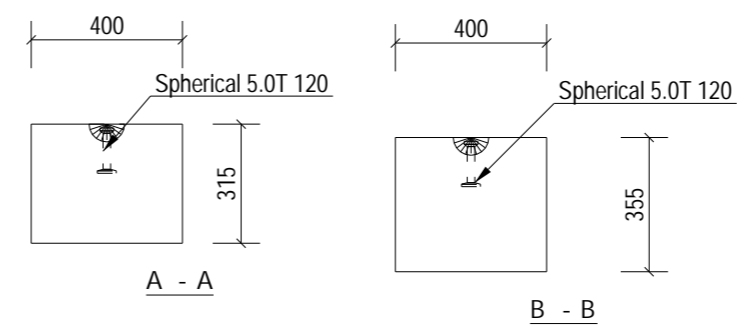
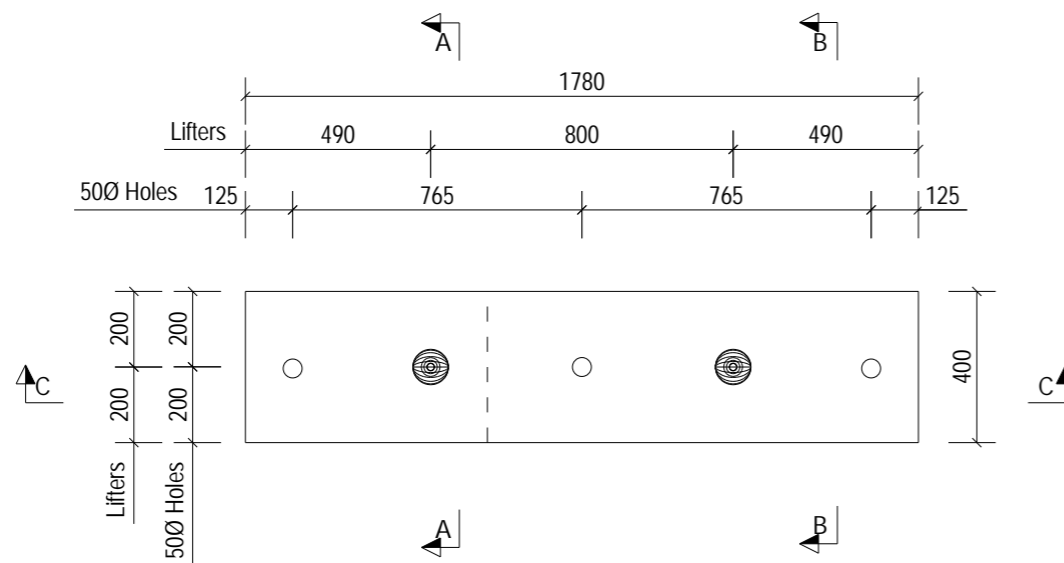
Title. **RC1 of Perimeter Wall PR-0023**

Scale: 1:40 Status: As Built - CR

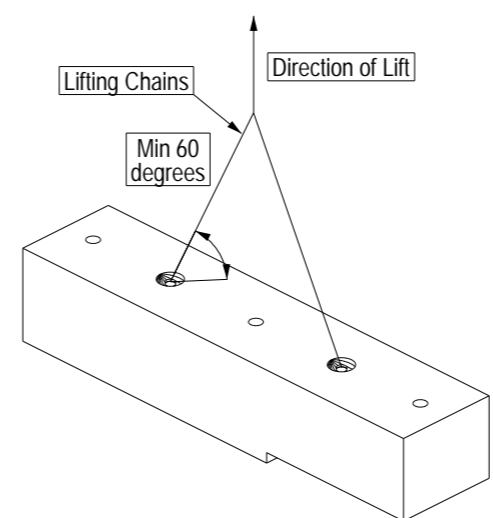
Date: 13-06-24

Drawn: MF Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-PR-0023-RC1 Rev: C01



* Indicates Mould Face



Isometric and Lifting Diagram

NOTES:

Type.	Stair Beam	
Length.	1780	+4 / -4
Height.	355	+4 / -4
Width.	400	+4 / -4
Weight. (T)	0.60	
Volume. (m ³)	0.24	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SB-0001-RC1	
BBS Ref.	05-BYL-1462-SB-0001-BBS	
Calculation Ref.	FPMCB-1462-SB-0001-C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	SB-0001	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	Spherical 5.0T 120	LAP050120/SAP0050120

Ancillary Items
 3No. B16 525mm
 2No. B16 300mm

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

Client.

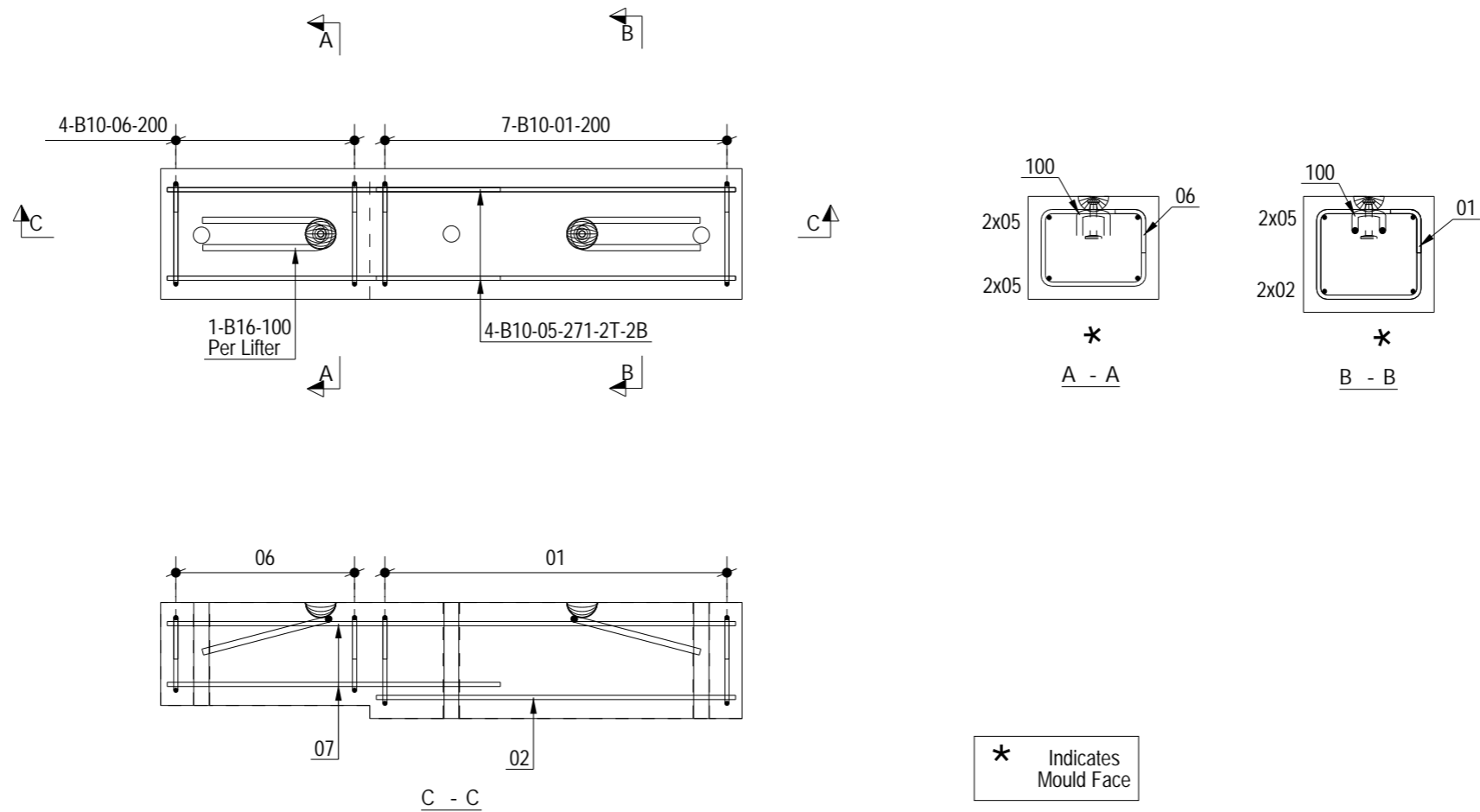
Project. **Panattoni Park Poyle**

Title. **GA1 of Stair Beam SB-0001**

Scale: 1:25 Status: As Built - CR
 Date: 18-06-24

Drawn: MF Checked: AB Approved: SJH

Drawing No : **05-BYL-1462-SB-0001-GA1** Rev: **C01**



NOTES:

Type.	Stair Beam
Mark.	SB-0001
GA Drg. Ref.	05-BYL-1462-SB-0001-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

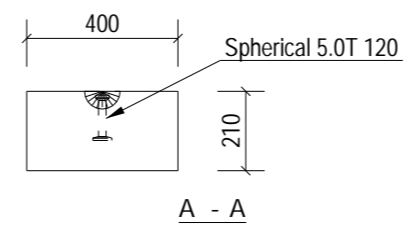
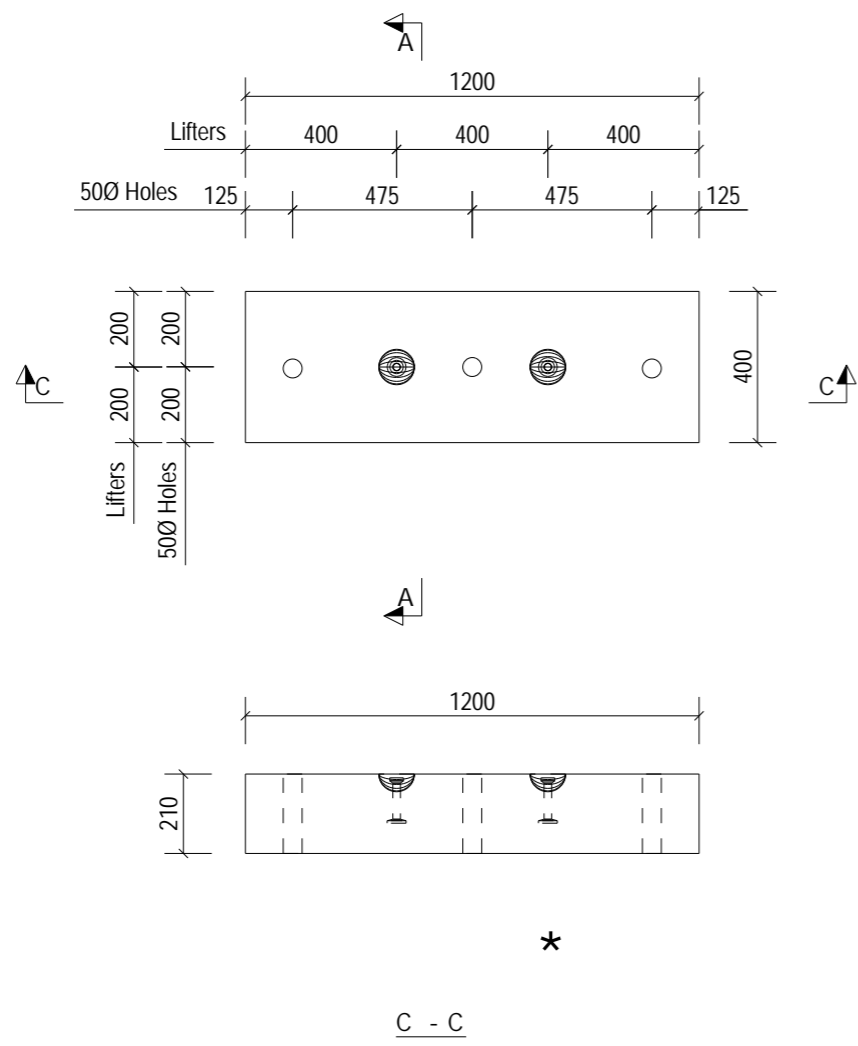
Project. **Panattoni Park Poyle**

Title. **RC1 of Stair Beam SB-0001**

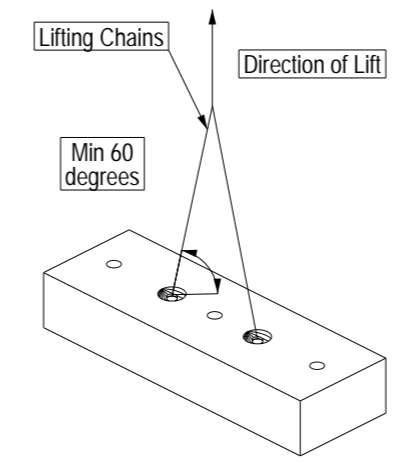
Scale: 1:20 Status: As Built - CR
Date: 18-06-24

Drawn: MF Checked: AB Approved: SJH

Drawing No : **05-BYL-1462-SB-0001-RC1** Rev: **C01**



* Indicates Mould Face



Isometric and Lifting Diagram

NOTES:

Type.	Stair Beam	
Length.	1200	+4 / -4
Height.	210	+4 / -4
Width.	400	+4 / -4
Weight. (T)	0.25	
Volume. (m³)	0.10	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SB-0002-RC1	
BBS Ref.	05-BYL-1462-SB-0002-BBS	
Calculation Ref.	FPMCB-1462-SB-0002-C01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	SB-0002	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	Spherical 5.0T 120	LAP050120/SAP0050120

Ancillary Items
 3No. B16 525mm
 2No. B16 300mm

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

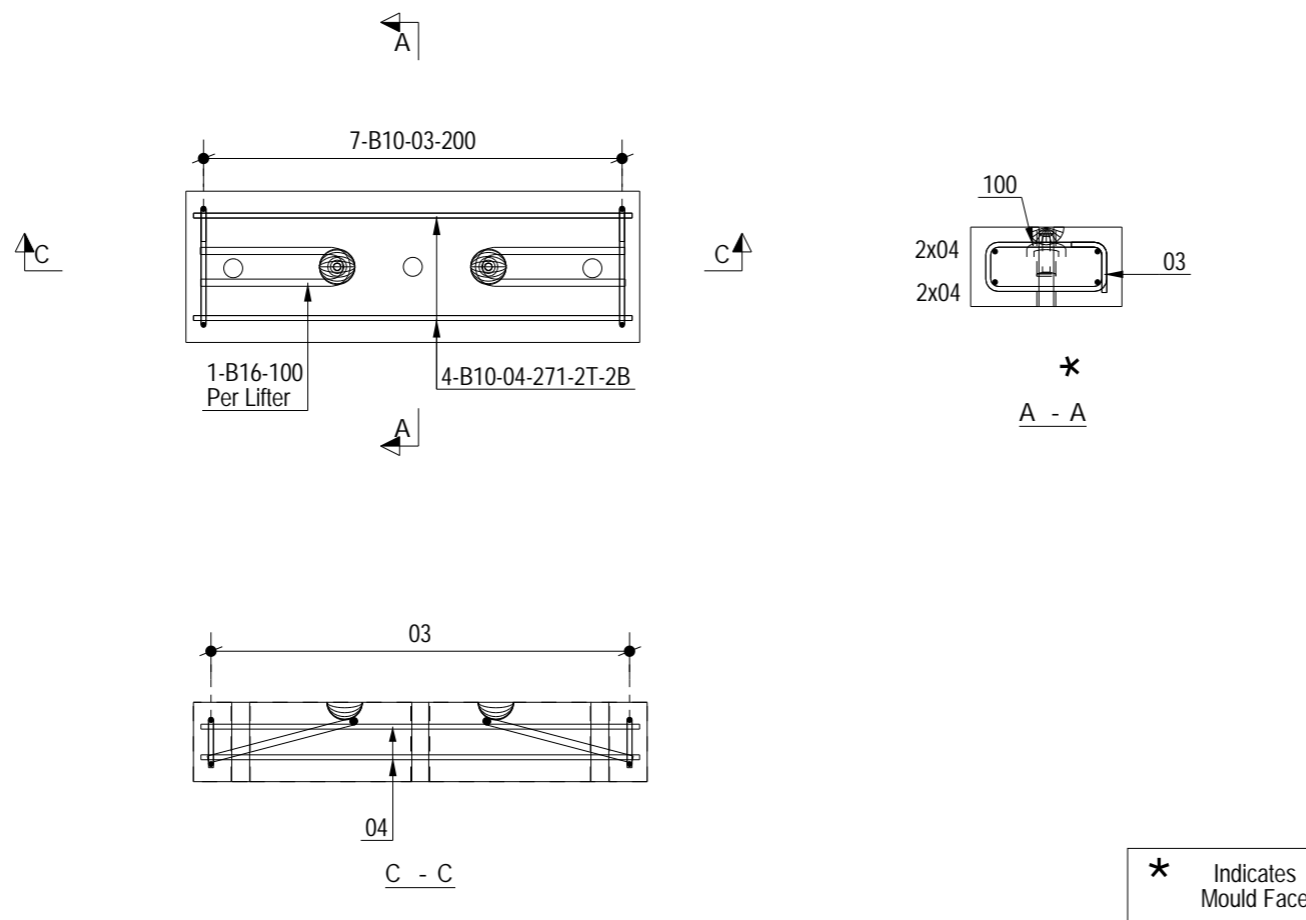
Title. **GA1 of Stair Beam SB-0002**

Scale: 1:25 Status: As Built - CR
 Date: 18-06-24

Drawn: MF Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SB-0002-GA1 Rev: C01

A3
10mm



* Indicates Mould Face

NOTES:

Type.	Stair Beam
Mark.	SB-0002
GA Drg. Ref.	05-BYL-1462-SB-0002-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	19-06-24	Issued For Manufacture.	MF	AB	SJH

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

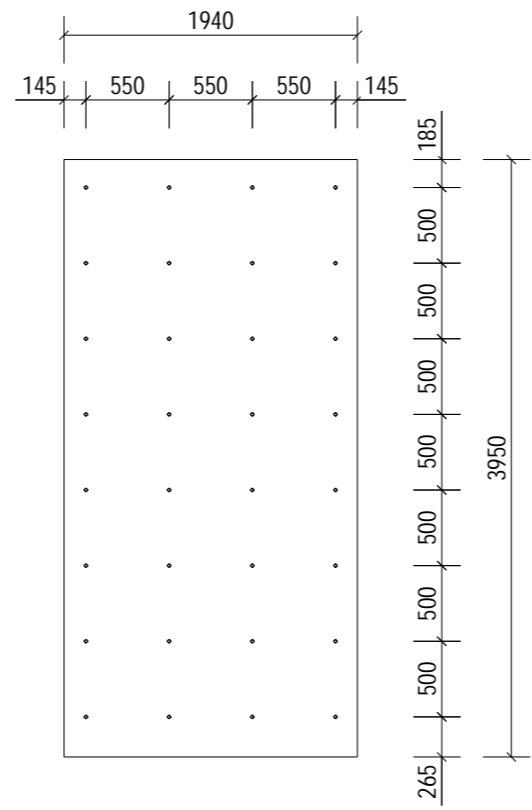
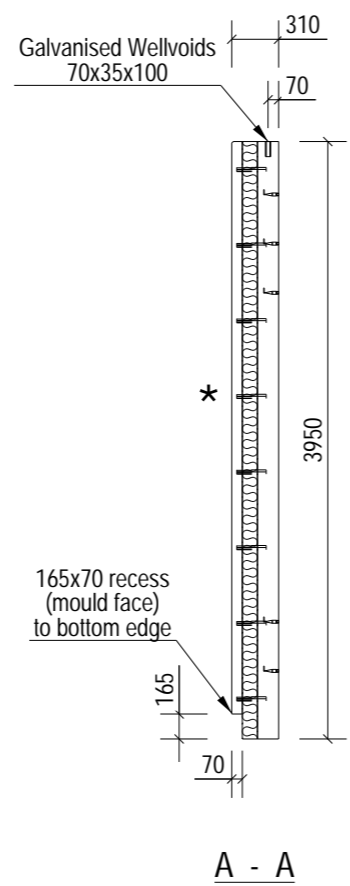
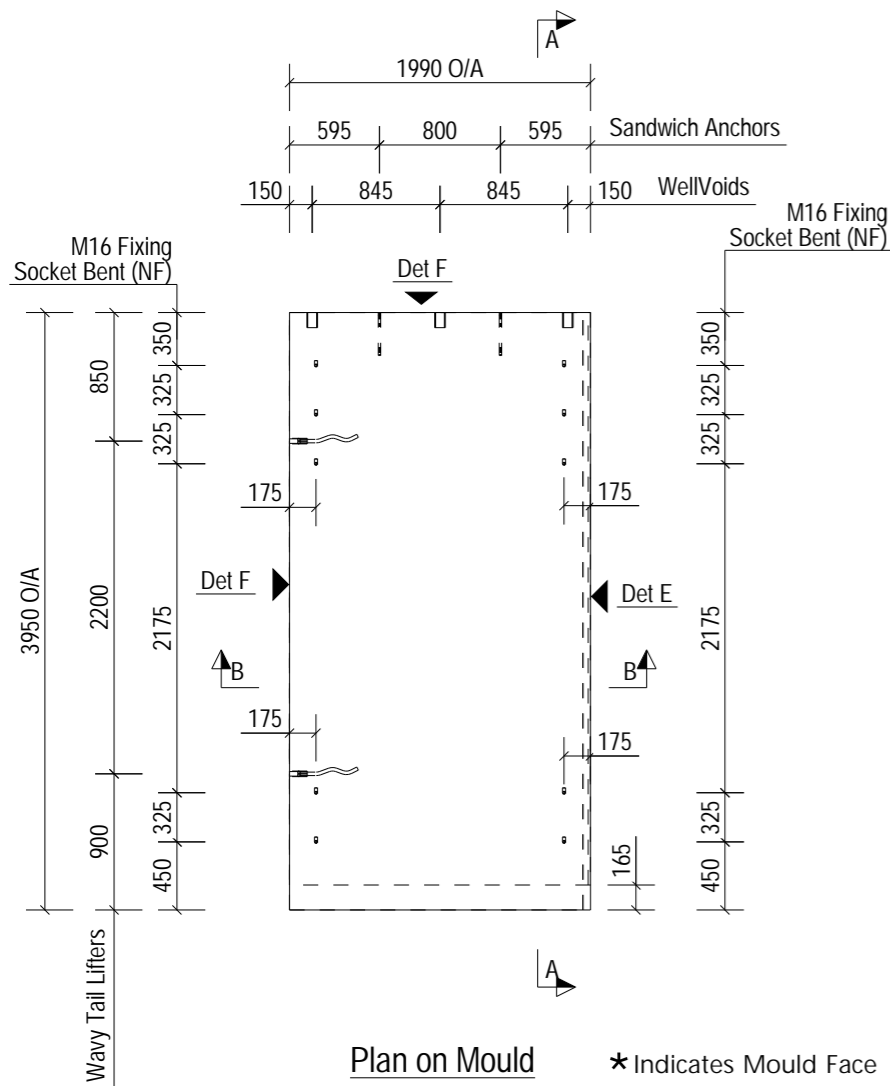
Title. RC1 of Stair Beam SB-0002

Scale: 1:20 Status: As Built - CR
Date: 18-06-24

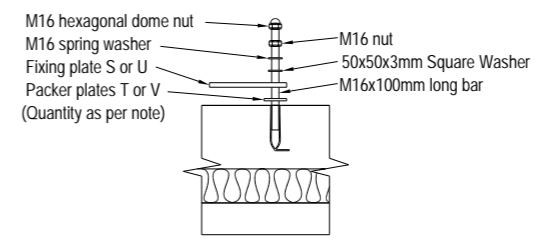
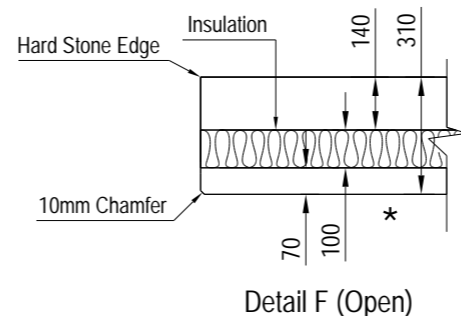
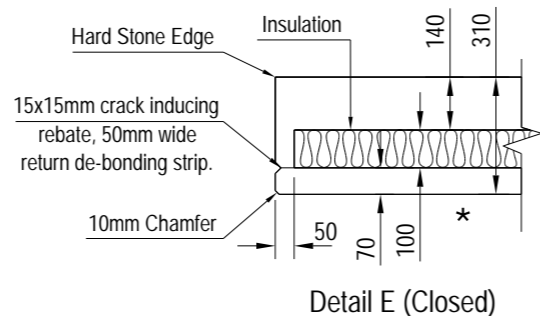
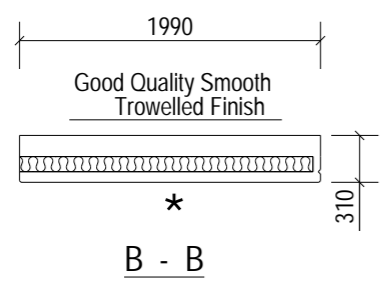
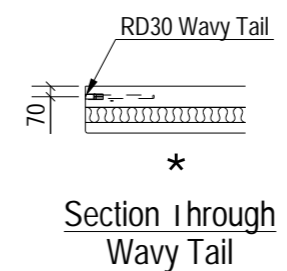
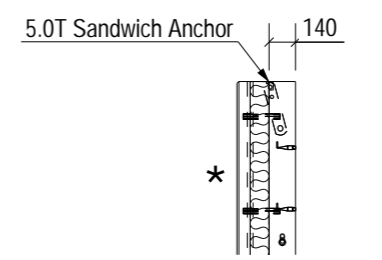
Drawn: MF Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SB-0002-RC1 Rev: C01

A3
10mm



Lifting Note:
Unit to be pitched using wavy tail lifters. Sandwich anchors to be used for all lifting purposes once upright. Once upright wavy tail lifters are to be filled in the factory prior to delivery to site.



Notes:
10 Ø hole drilled into insulation
Ties must be 100mm minimum from edge

Insulation to be supplied in rectangular sheets
All insulation to be cut by precast manufacturers prior to inclusion in mould and the tie holes drilled once in place. This is to avoid any clash with reinforcing cages.
The fitting/application of the component shall be conducted in accordance with WP/05/F77

Unit to be delivered with 3No. Packer Plates (T) and 1No. Large plate (S) fitted to each top fixings locations. 3No. Packer Plates (V) and 1No. Small plate (U) to each bottom fixing location. See drawing 05-BYL-1462-F01-F05 for details.

Area of Panel = 7.86 m²
Total No. Ties = 32 Ref: ST12 R2 200-50-50-100 = 4.07 Ties/m²
550mm x 550mm Max Grid.
100mm Min - 275mm Max Edge Distance.

NOTES:

Type.	Stonehenge Column	
Length.	1990	+4 / -4
Height.	3950	+4 / -4
Width.	310	+4 / -4
Weight. (T)	4.18	
Volume. (m ³)	1.65	
Concrete.	Grade C40	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SC-0001-RC1	
BBS Ref.	05-BYL-1462-SC-0001-BBS	
Calculation Ref.	FPMC-SHP_RevC01	
Cover.	30mm Nominal, 25mm Minimum	
Casting Bed.	Flat Bed	
Mark.	SC-0001	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
32	Thermomass Round Tie	ST12 R2 200-50-50-100
10	M16 Bent Socket	SFA16100/SSFA16100
3	Galv Wellvoid 100mm	WVV-70-35
2	5.0T Sandwich Anchor	LASSP050300/SSPA050300
2	RD30 Wavy Tail	SLWL30450/SSLW30450

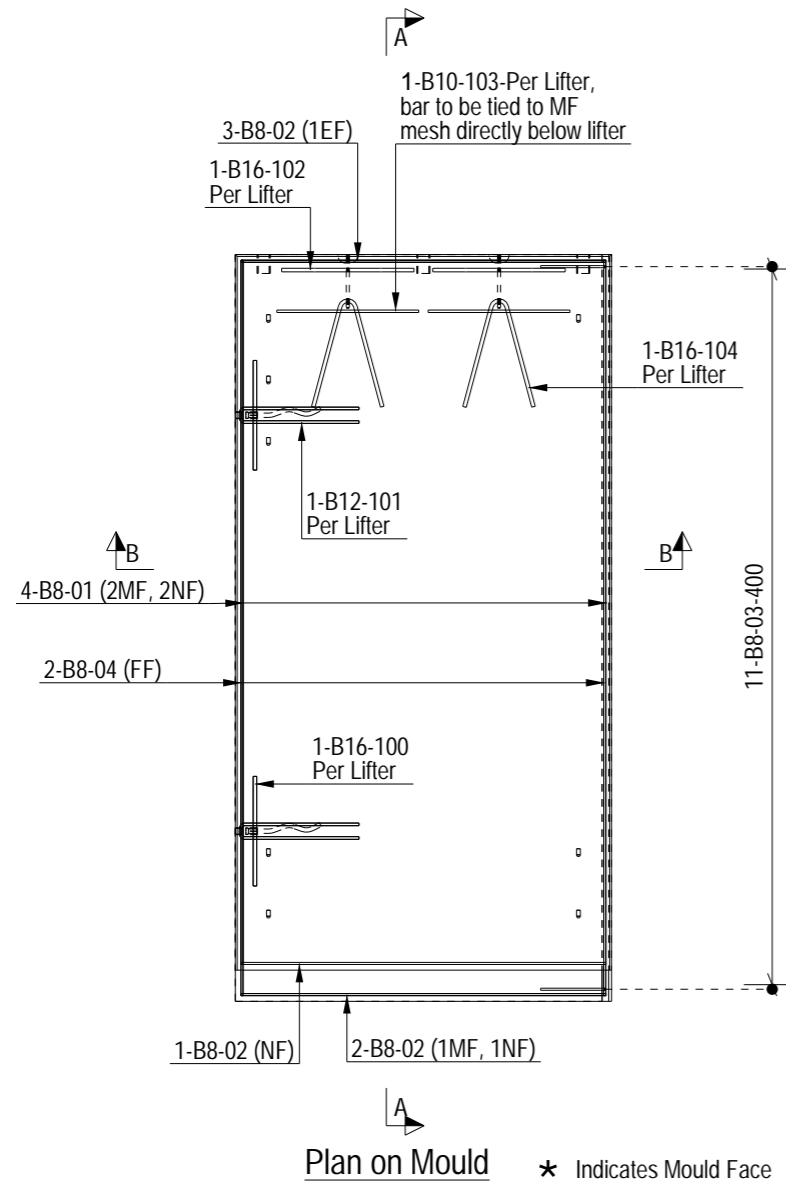
C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

Client:

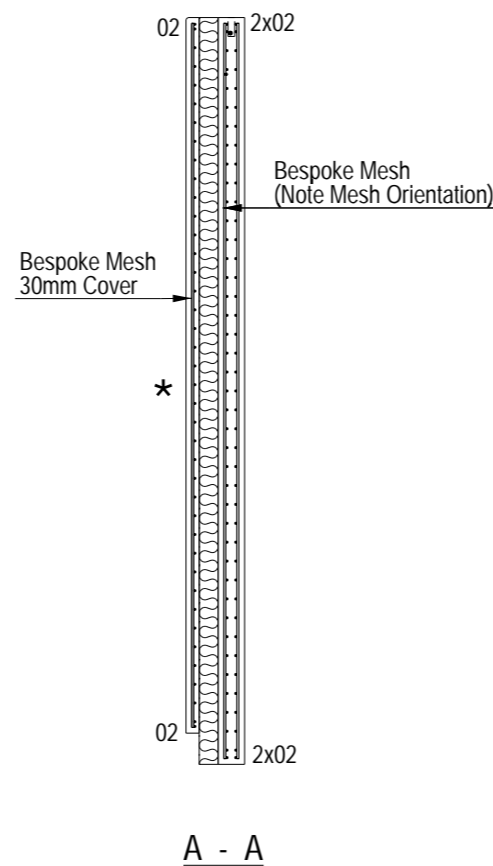
Project: **Panattoni Park Poyle**

Title: **GA1 of Stonehenge Column SC-0001**

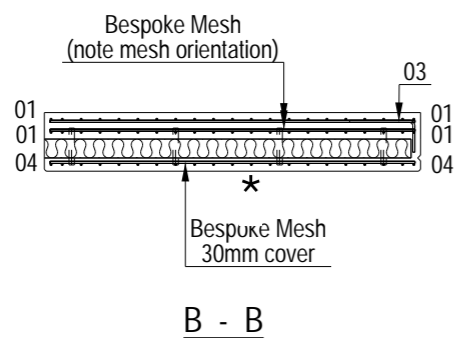
Scale: 1:50	Status: As Built - CR	
Date: 20-03-24		
Drawn: RS	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-SC-0001-GA1		Rev: C01



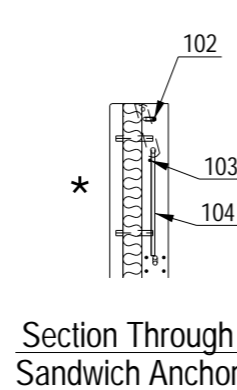
Plan on Mould * Indicates Mould Face



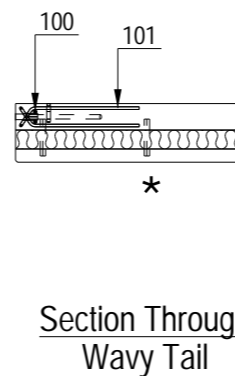
A - A



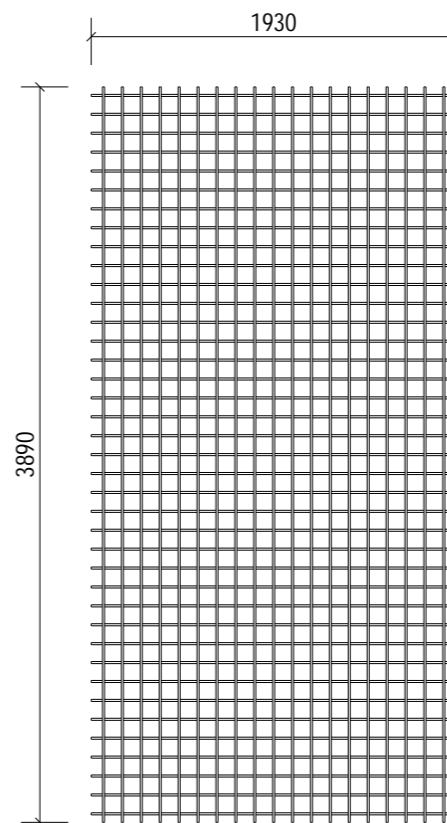
B - B



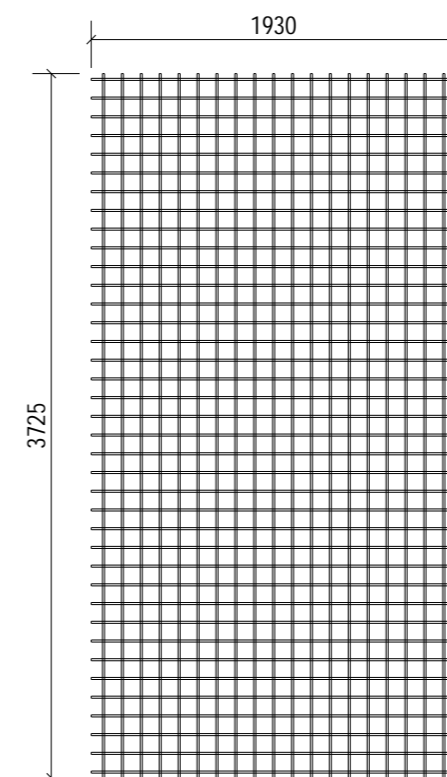
Section Through Sandwich Anchor



Section Through Wavy Tail



2No. Sheets of Bespoke Mesh orientation as shown. (MF & NF)

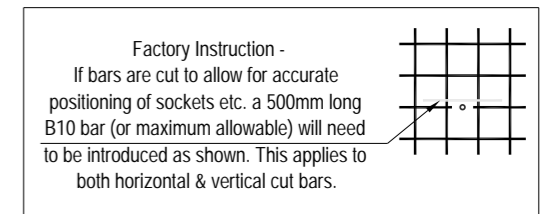
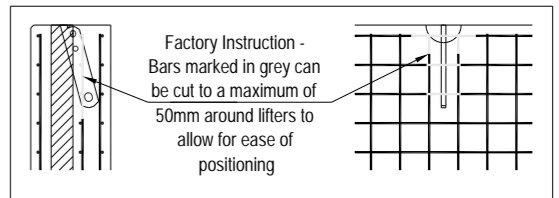


1No. Sheets of Bespoke mesh orientation as shown. (FF)

NOTES:

Type.	Stonehenge Column
Mark.	SC-0001
GA Drg. Ref.	05-BYL-1462-SC-0001-GA1
Cover.	30mm Nominal, 25mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.



C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

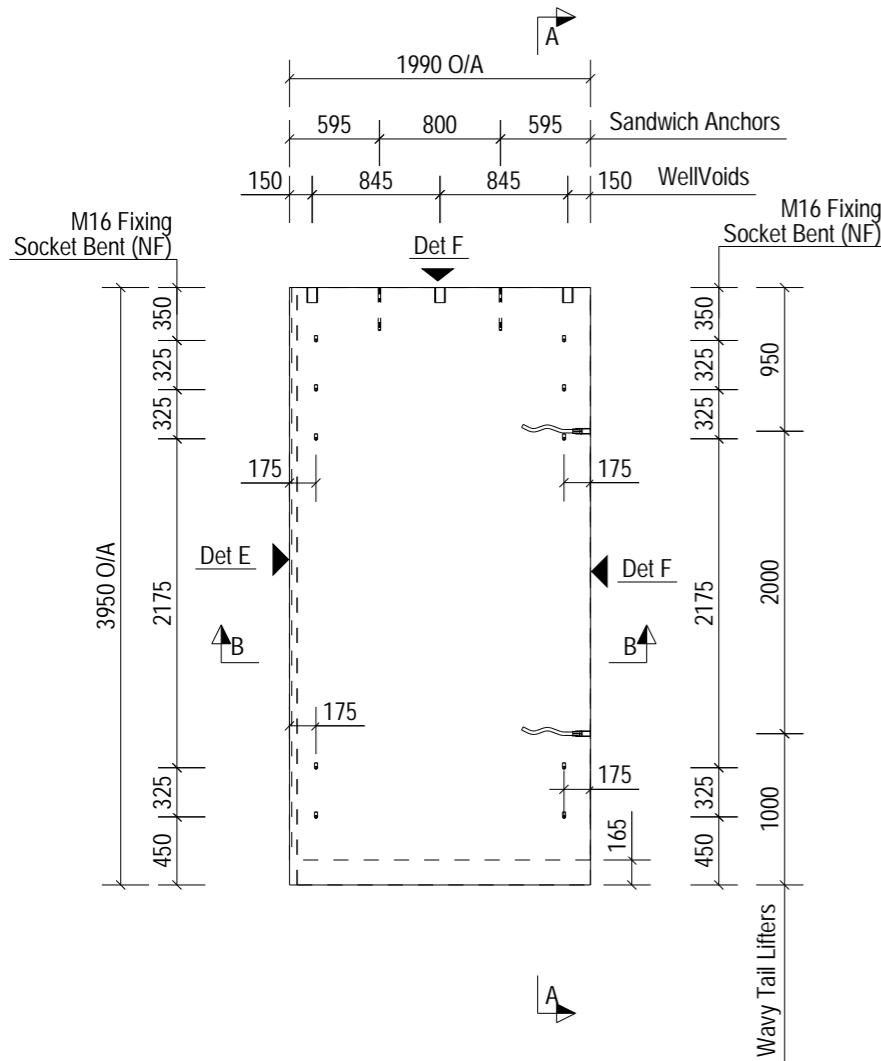
Project. Panattoni Park Poyle

Title. RC1 of Stonehenge Column SC-0001

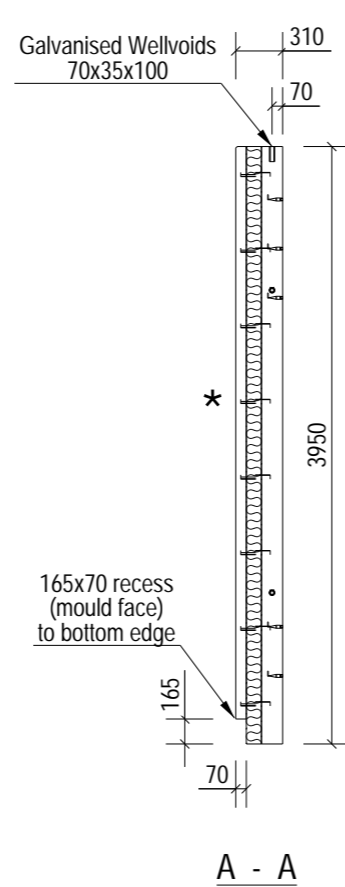
Scale: 1:40	Status: As Built - CR	
Date: 20-03-24		
Drawn: RS	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-SC-0001-RC1		Rev: C01

ALL DIMENSION SHOWN ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

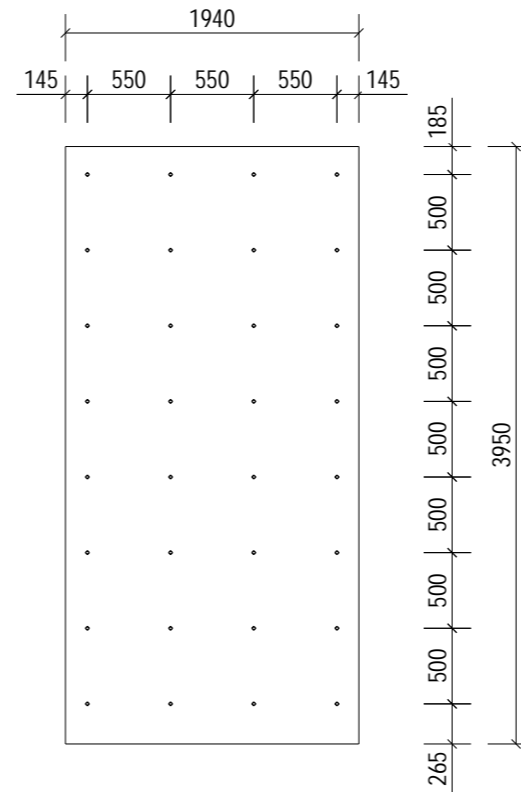
MESH REINFORCEMENT
ALL MESH - B8@100CRS BOTH DIRECTIONS



Plan on Mould * Indicates Mould Face

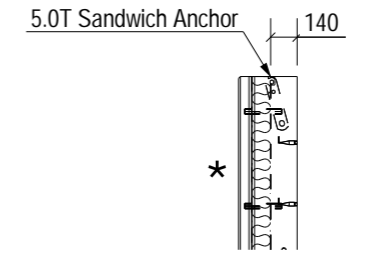


A - A

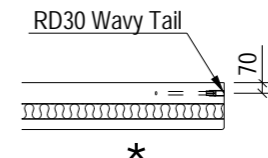


Insulation Tie Setting Out
ST12 R2 200-50-100

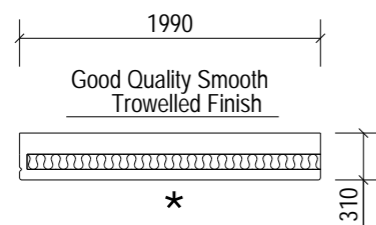
Lifting Note:
Unit to be pitched using wavy tail lifters. Sandwich anchors to be used for all lifting purposes once upright. Once upright wavy tail lifters are to be filled in the factory prior to delivery to site.



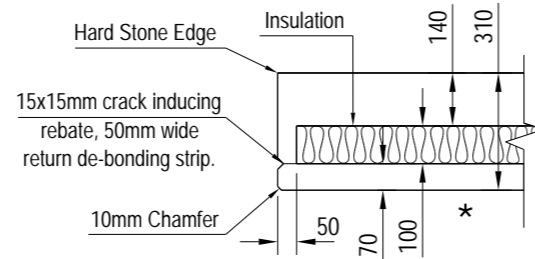
Section Through Sandwich Anchor



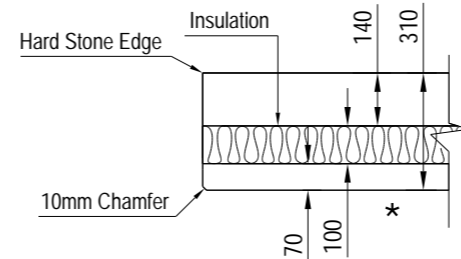
Section Through Wavy Tail



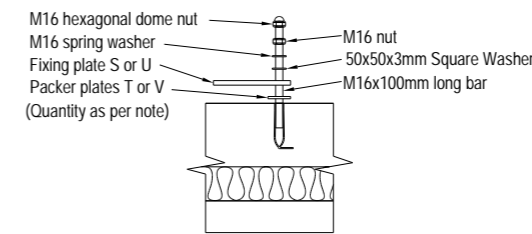
B - B



Detail E (Closed)



Detail F (Open)



Typical fixing plate connection detail
- To be used at each M16 socket floated face fixing location

Notes:
10 Ø hole drilled into insulation
Ties must be 100mm minimum from edge

Insulation to be supplied in rectangular sheets
All insulation to be cut by precast manufacturers prior to inclusion in mould and the tie holes drilled once in place. This is to avoid any clash with reinforcing cages.
The fitting/application of the component shall be conducted in accordance with WP/05/F77

Unit to be delivered with 3No. Packer Plates (T) and 1No. Large plate (S) fitted to each top fixings locations.
3No. Packer Plates (V) and 1No Small plate (U) to each bottom fixing location.
See drawing 05-BYL-1462-F01-F05 for details.

Area of Panel = 7.86 m²
Total No. Ties = 32 Ref: ST12 R2 200-50-50-100 = 4.07 Ties/m²
550mm x 550mm Max Grid.
100mm Min - 275mm Max Edge Distance.

NOTES:

Type.	Stonehenge Column	
Length.	1990	+4 / -4
Height.	3950	+4 / -4
Width.	310	+4 / -4
Weight. (T)	4.18	
Volume. (m ³)	1.65	
Concrete.	Grade C40	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SC-0002-RC1	
BBS Ref.	05-BYL-1462-SC-0002-BBS	
Calculation Ref.	FPMC-SHP_RevC01	
Cover.	30mm Nominal, 25mm Minimum	
Casting Bed.	Flat Bed	
Mark.	SC-0002	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
32	Thermomass Round Tie	ST12 R2 200-50-50-100
10	M16 Bent Socket	SFA16100/SSFA16100
3	Galv Wellvoid 100mm	WVV-70-35
2	5.0T Sandwich Anchor	LASSP050300/SSPA050300
2	RD30 Wavy Tail	SLWL30450/SSLW30450

C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client: **winvic**

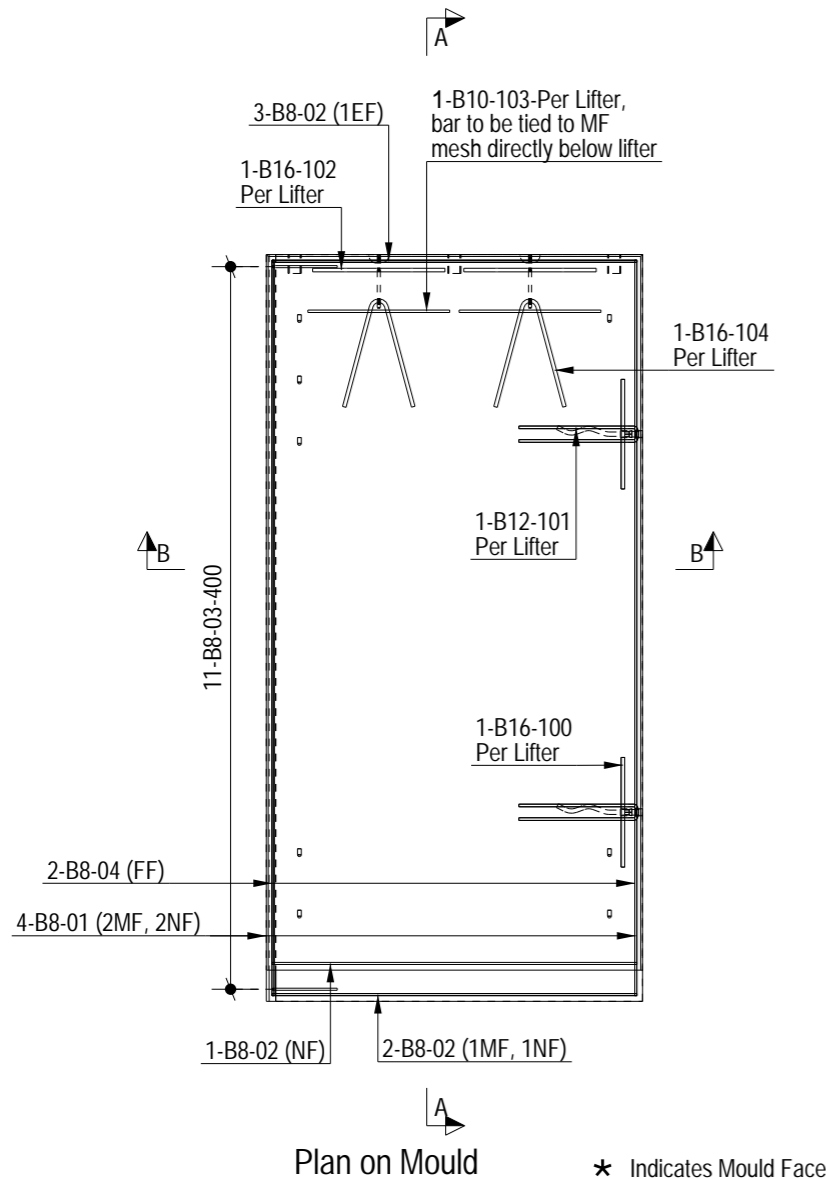
Project: **Panattoni Park Poyle**

Title: **GA1 of Stonehenge Column SC-0002**

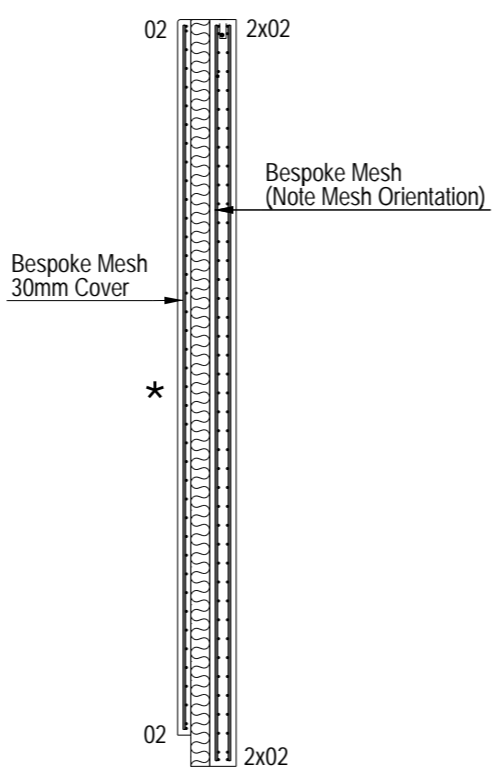
Scale: 1:50 Status: As Built - CR
Date: 20-03-24

Drawn: RS Checked: NB Approved: SJH

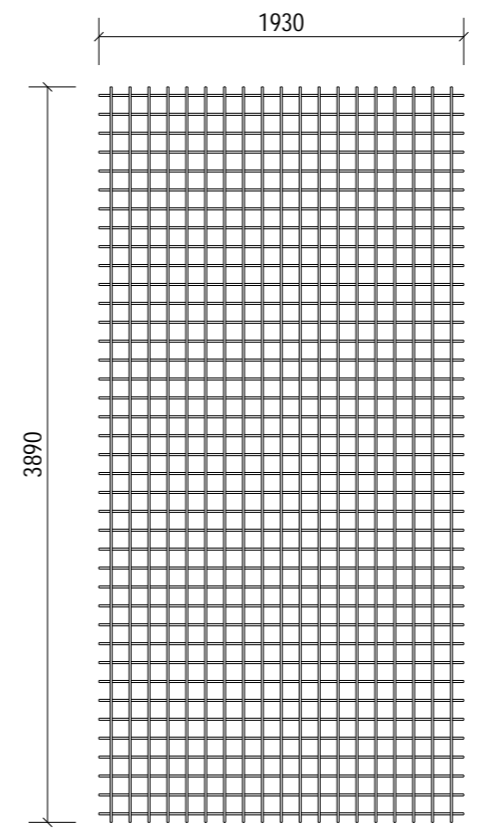
Drawing No: **05-BYL-1462-SC-0002-GA1** Rev: **C01**



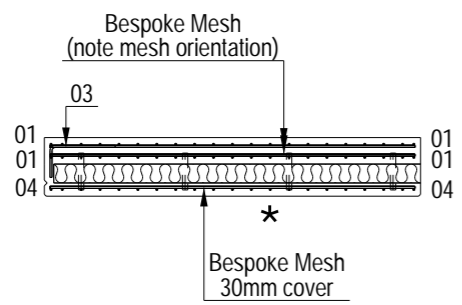
Plan on Mould * Indicates Mould Face



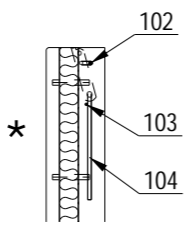
A - A



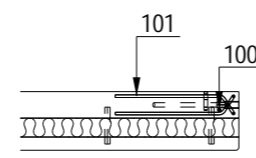
2No. Sheets of Bespoke Mesh orientation as shown. (MF & NF)



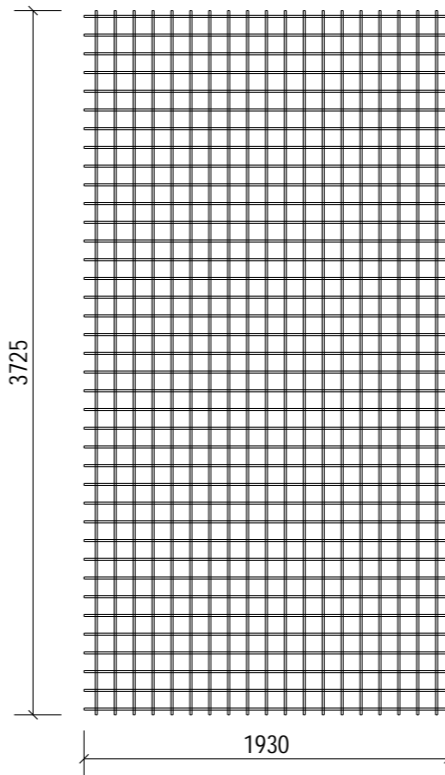
B - B



Section Through Sandwich Anchor



Section Through Wavy Tail



1No. Sheets of Bespoke mesh orientation as shown. (FF)

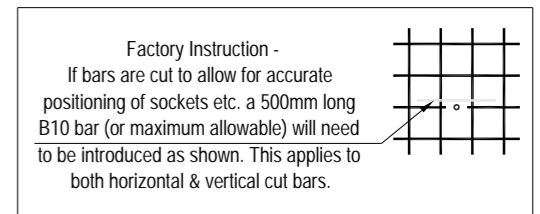
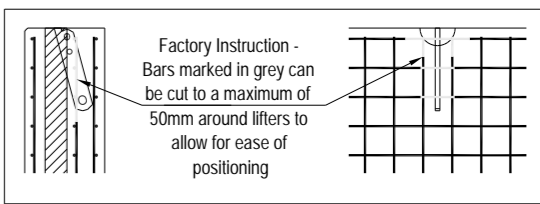
ALL DIMENSION SHOWN ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

MESH REINFORCEMENT
ALL MESH - B8@100CRS BOTH DIRECTIONS

NOTES:

Type.	Stonehenge Column
Mark.	SC-0002
GA Drg. Ref.	05-BYL-1462-SC-0002-GA1
Cover.	30mm Nominal, 25mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.



C01	21-03-24	Issued For Manufacture.	RS	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

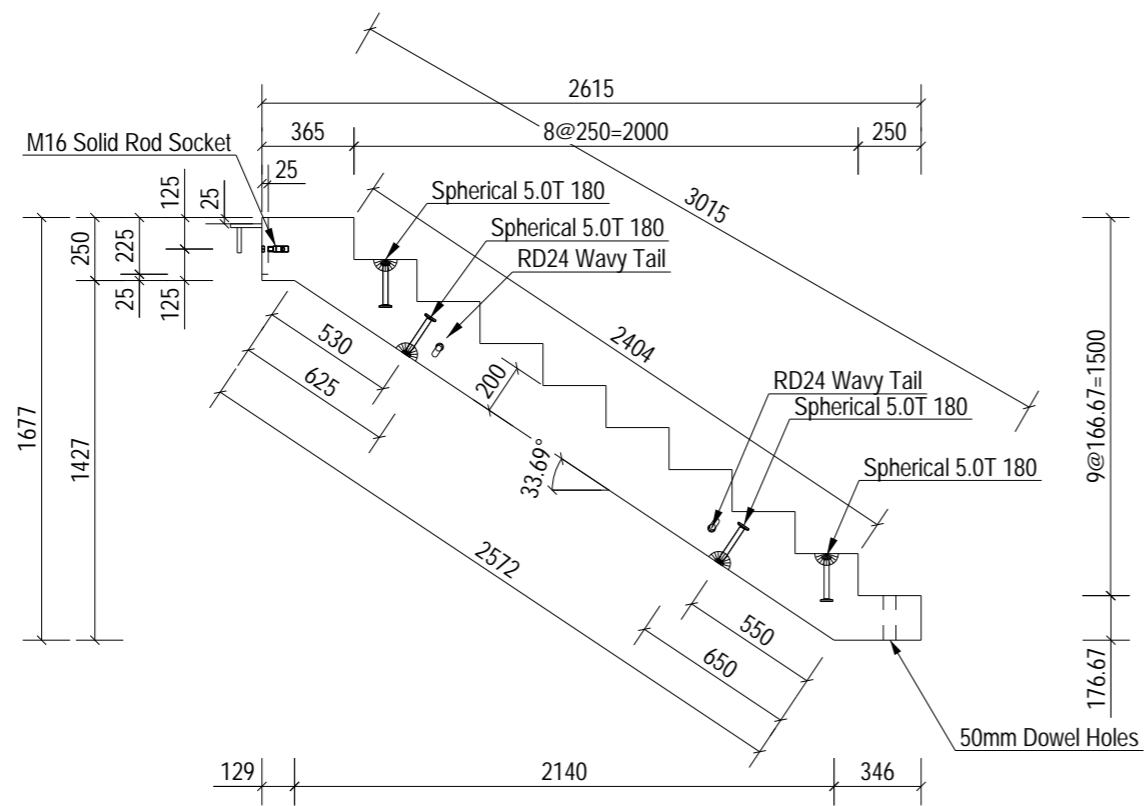
Client.

Project. **Panattoni Park Poyle**

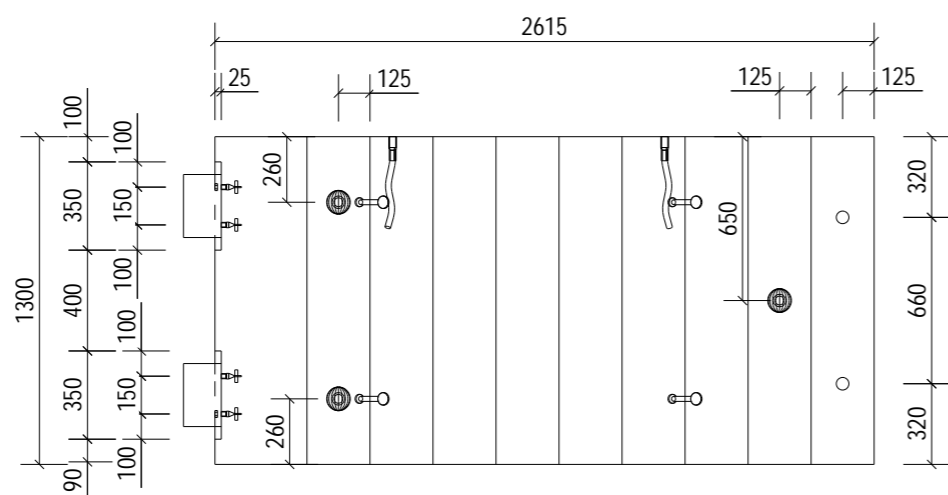
Title. **RC1 of Stonehenge Column SC-0002**

Scale: 1:40	Status: As Built - CR	
Date: 20-03-24		
Drawn: RS	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-SC-0002-RC1		Rev: C01

A3
10mm

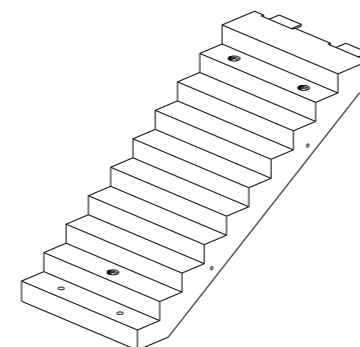


Elevation on Stair



Plan on Stair

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:

Type.	STAIRS	
Length.	1677	+4 / -4
Height.	2615	+4 / -4
Width.	1300	+4 / -4
Weight. (T)	2.60	
Volume. (m³)	1.03	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SF-0001-RC1	
BBS Ref.	05-BYL-1462-SF-0001-BBS	
Calculation Ref.	FPMCB-1462-SF-0001-C01	
Cover.	[REDACTED]	
Casting Bed.	Stair Mould	
Mark.	SF-0001	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
7	Spherical 5.0T 180	LAP050180/SAP0050180
4	M16 Solid Rod Socket	SSRCP1675/SSSCP1675
2	RD24 Wavy Tail	SLWL24360/SSLW24360

Loose Fitting Take Off:		
Angle Cleat Type-1-St	(0)	2 No.

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	27-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

Client:

Project: **Panattoni Park Poyle**

Title: **GA1 of STAIRS SF-0001**

Scale: 1:60 Status: As Built - CR

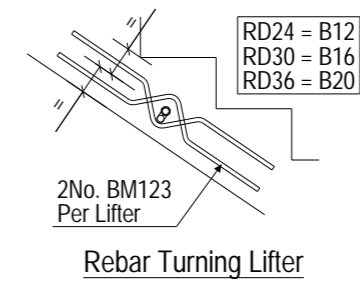
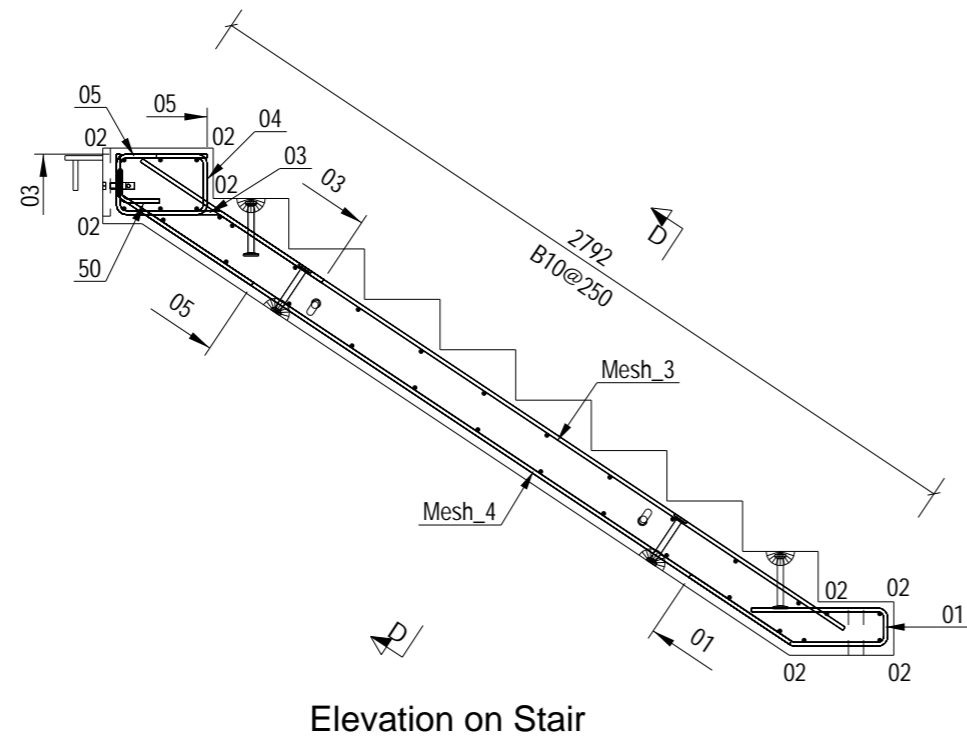
Date: 20-03-24

Drawn: LN Checked: AB Approved: SJH

Drawing No : **05-BYL-1462-SF-0001-GA1** Rev: **C01**

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm



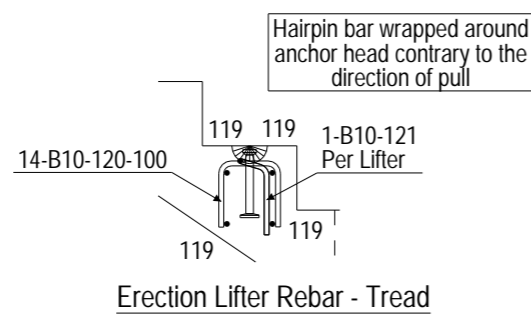
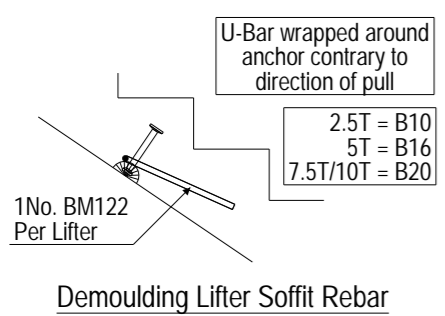
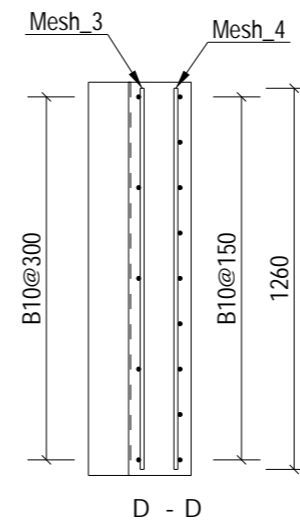
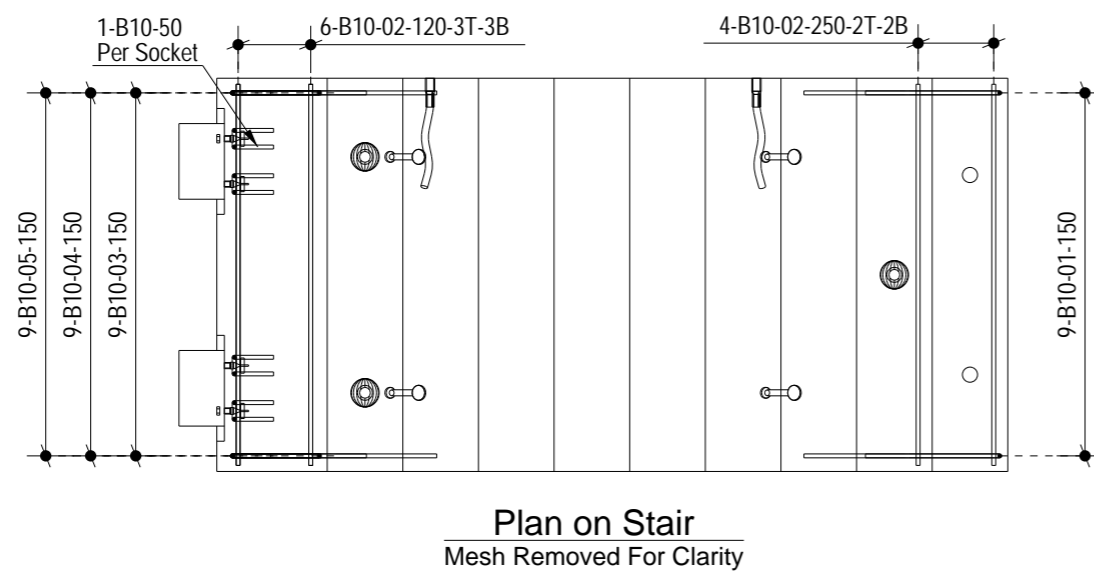
NOTES:

Type.	STAIRS
Mark.	SF-0001
GA Drg. Ref.	05-BYL-1462-SF-0001-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**



C01	27-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

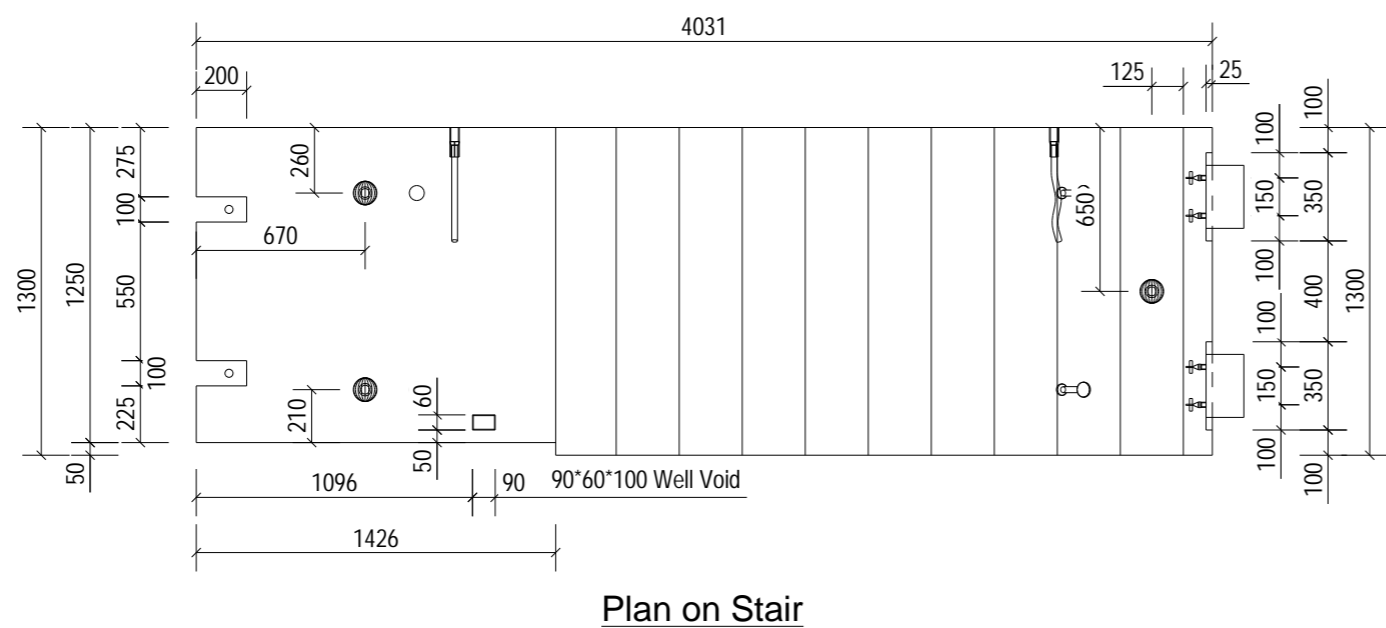
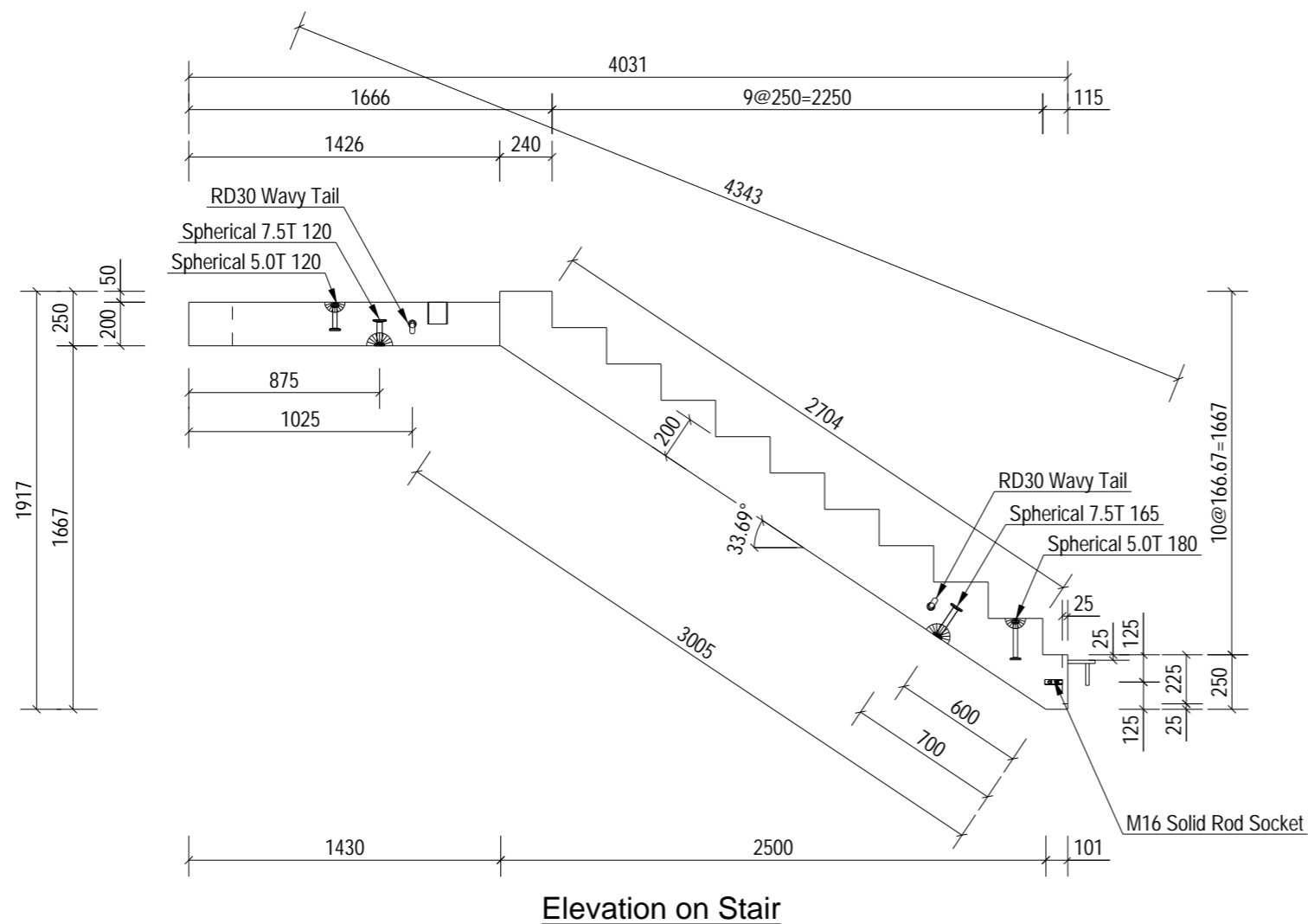
Client.

Project. **Panattoni Park Poyle**

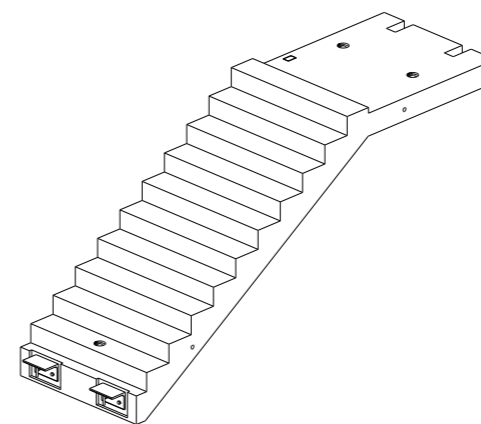
Title. **RC1 of STAIRS SF-0001**

Scale: 1:25	Status: As Built - CR	
Date: 20-03-24		
Drawn: LN	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-SF-0001-RC1	Rev: C01	

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:

Type.	STAIRS	
Length.	1917	+4 / -4
Height.	4031	+4 / -4
Width.	1300	+4 / -4
Weight. (T)	3.60	
Volume. (m³)	1.43	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SF-0002-RC1	
BBS Ref.	05-BYL-1462-SF-0002-BBS	
Calculation Ref.	FPMCB-1462-SF-0002-C01	
Cover.	[REDACTED]	
Casting Bed.	Stair Mould	
Mark.	SF-0002	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	M16 Solid Rod Socket	SSRCP1675/SSSCP1675
2	Spherical 5.0T 120	LAP050120/SAP0050120
2	Spherical 7.5T 120	LAP075120/SAP0075120
2	Spherical 7.5T 165	LAP075165/SAP0075165
2	RD30 Wavy Tail	SLWL30450/SSLW30450
1	90*60*100 Well Void	0
1	Spherical 5.0T 180	LAP050180/SAP0050180

Loose Fitting Take Off:		
Angle Cleat Type-1-St	(0)	2 No.

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

Rev	Date	Revision Detail	By	Chk	App
C01	27-03-24	Issued for Manufacture	LN	AB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client: **winvic**

Project: **Panattoni Park Poyle**

Title: **GA1 of STAIRS SF-0002**

Scale: 1:60 Status: As Built - CR

Date: 22-03-24

Drawn: LN Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SF-0002-GA1 Rev: C01

NOTES:

Type.	STAIRS
Mark.	SF-0002
GA Drg. Ref.	05-BYL-1462-SF-0002-GA1
Cover.	XXXXXXXXXX

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

Rev	Date	Revision Detail	By	Chk	App
C02	27-03-24	Section C-C & D-D Updated	LN	AB	SJH
C01	27-03-24	Issued for Manufacture	LN	AB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

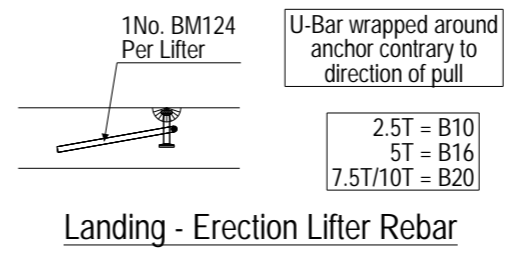
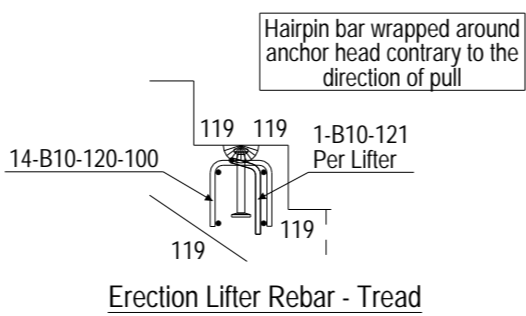
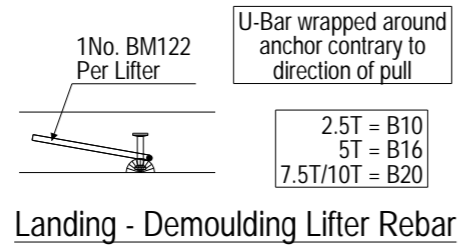
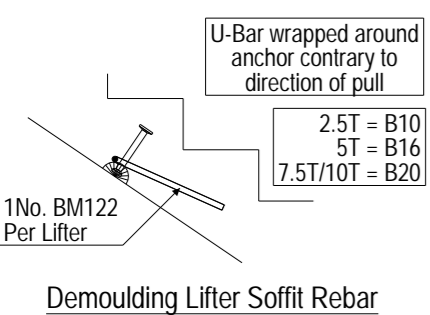
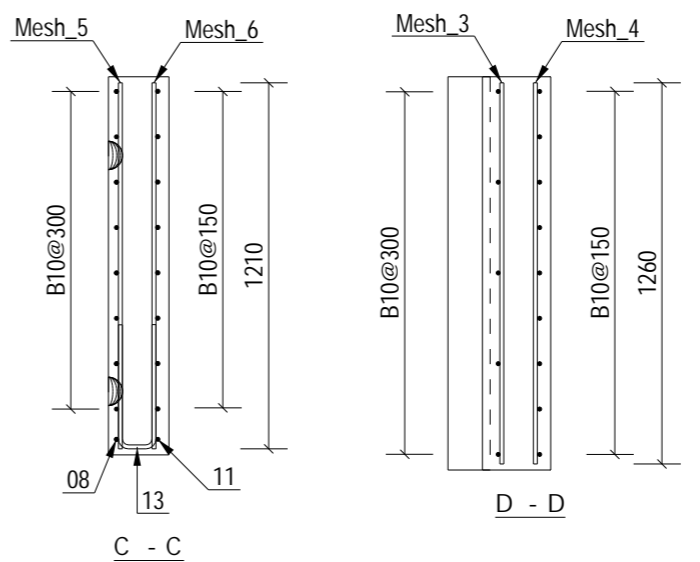
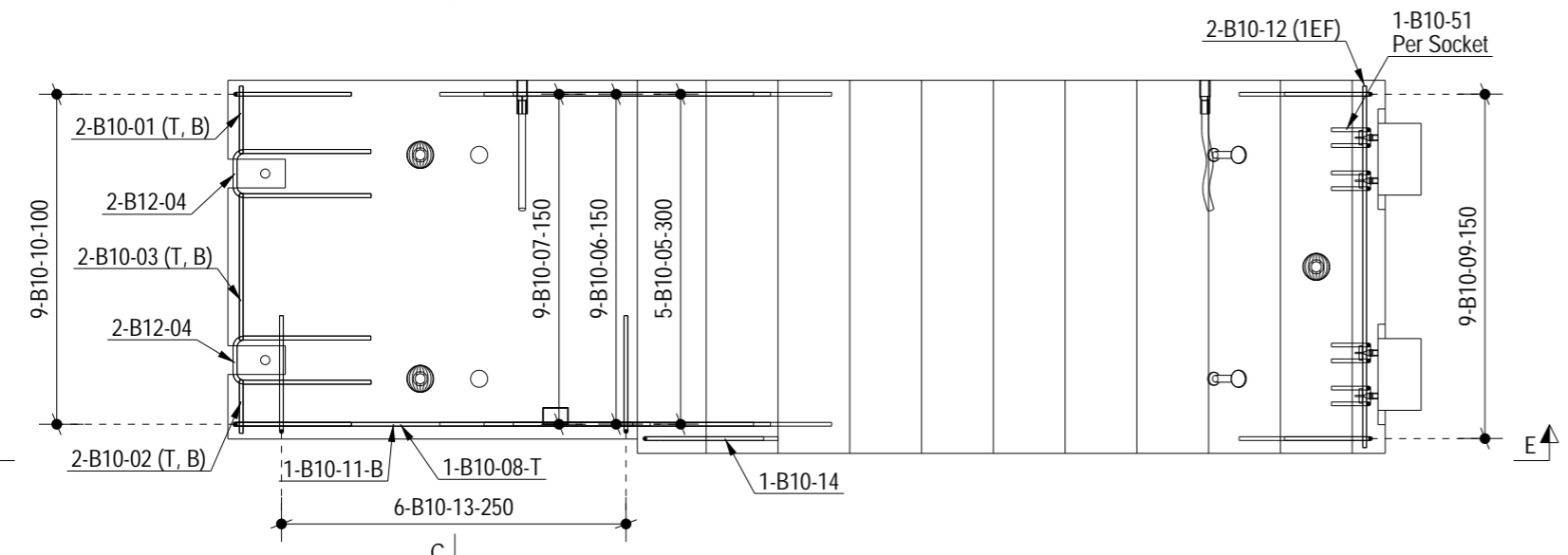
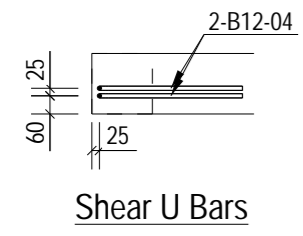
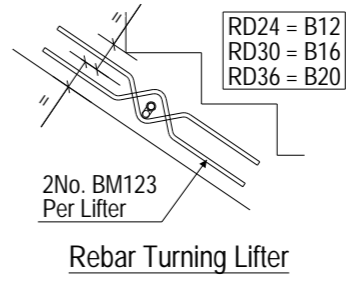
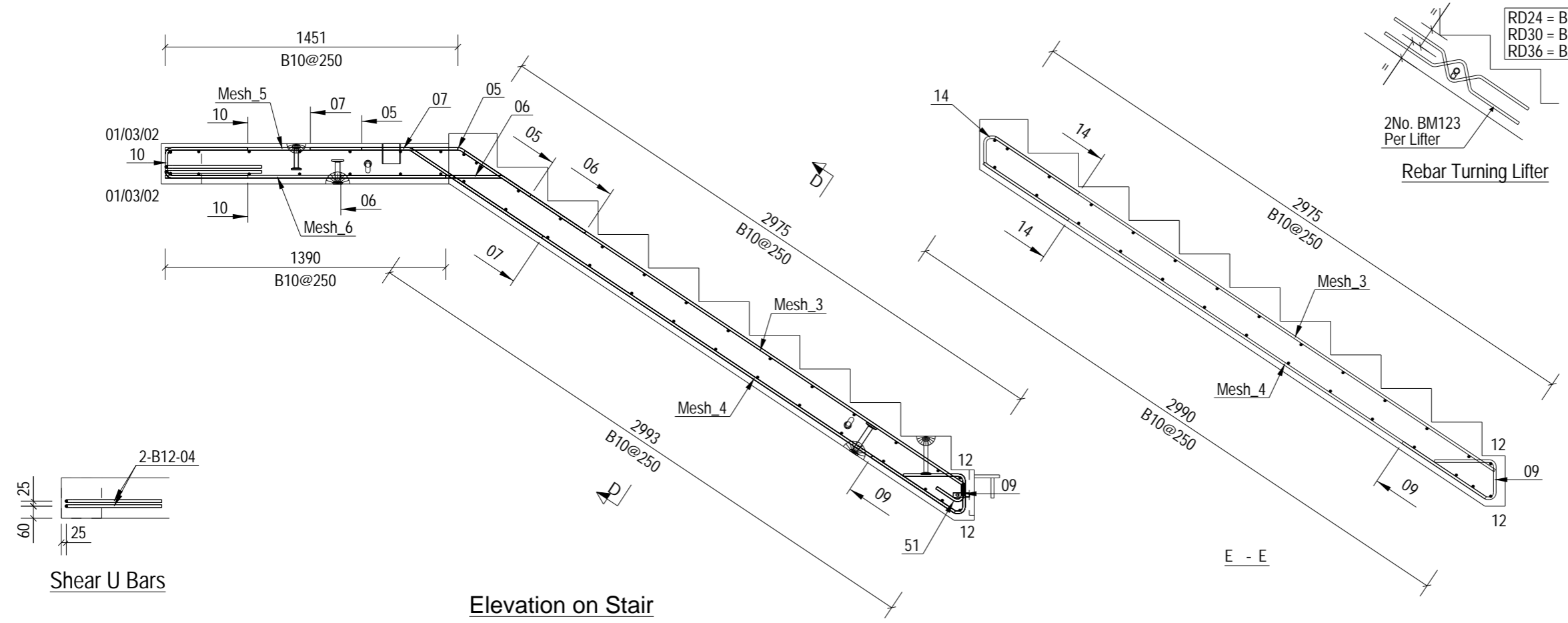
Client: 

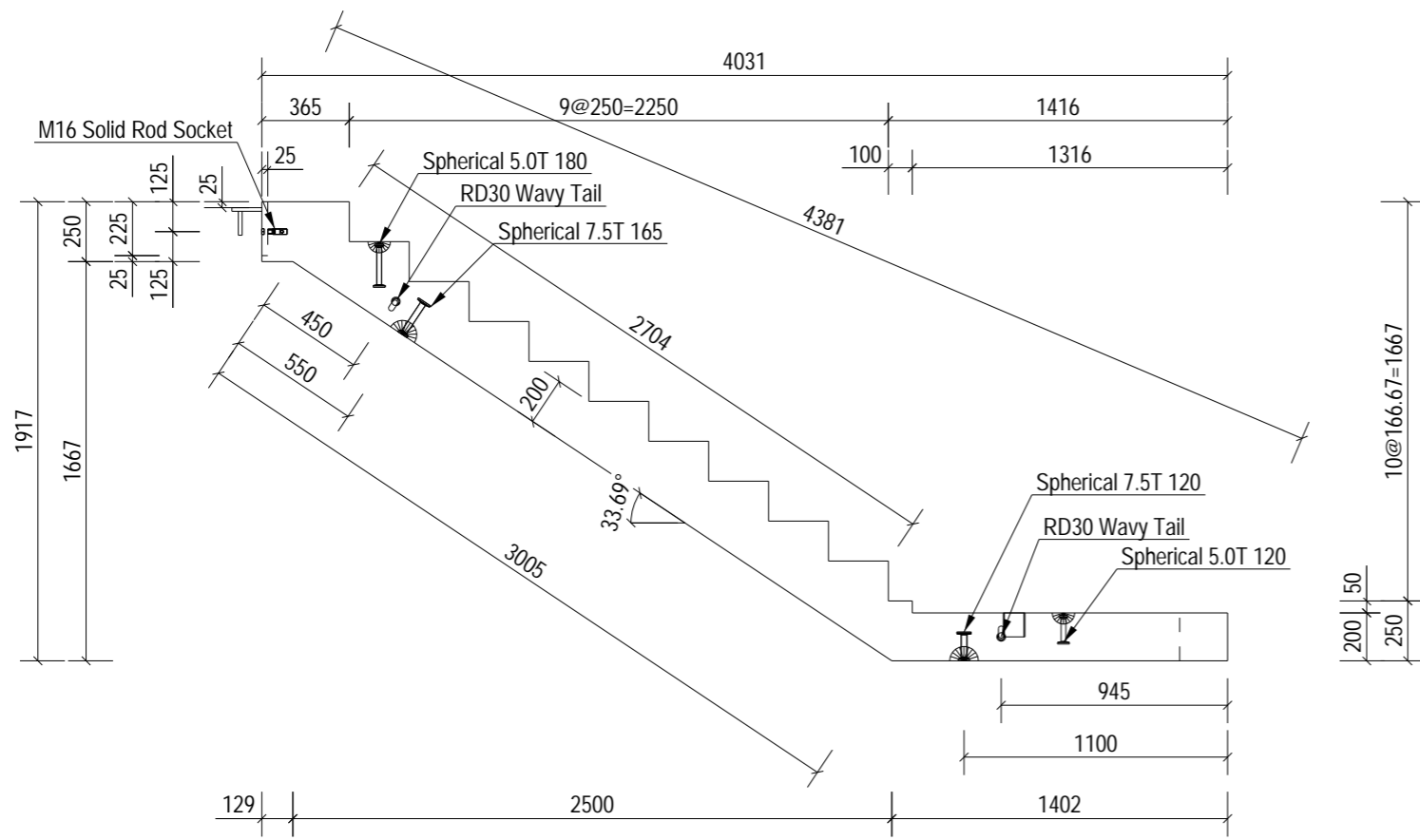
Project: **Panattoni Park Poyle**

Title: **RC1 of STAIRS SF-0002**

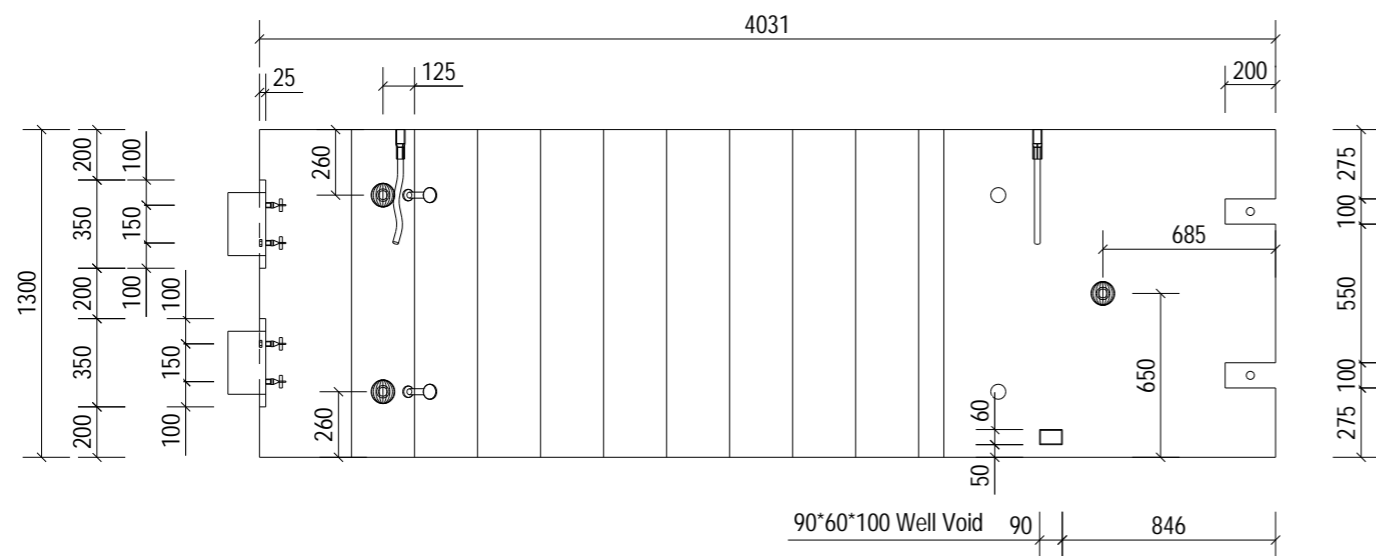
Scale: 1:25 Status: As Built - CR
Date: 22-03-24

Drawn: LN Checked: AB Approved: SJH
Drawing No: 05-BYL-1462-SF-0002-RC1 Rev: C02



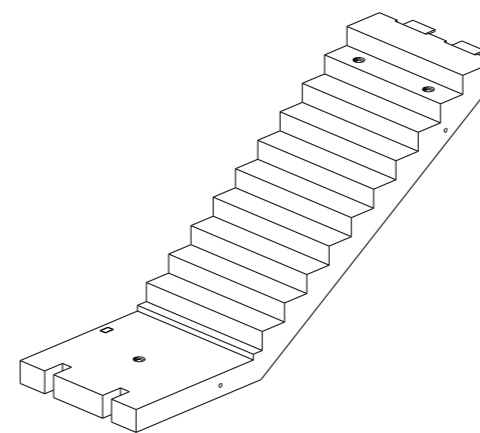


Elevation on Stair



Plan on Stair

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:

Type.	STAIRS	
Length.	1917	+4 / -4
Height.	4031	+4 / -4
Width.	1300	+4 / -4
Weight. (T)	3.65	
Volume. (m³)	1.45	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SF-0003-RC1	
BBS Ref.	05-BYL-1462-SF-0003-BBS	
Calculation Ref.	FPMCB-1462-SF-0003-C01	
Cover.	[REDACTED]	
Casting Bed.	Stair Mould	
Mark.	SF-0003	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	M16 Solid Rod Socket	SSRCP1675/SSSCP1675
2	Spherical 5.0T 180	LAP050180/SAP0050180
2	Spherical 7.5T 120	LAP075120/SAP0075120
2	Spherical 7.5T 165	LAP075165/SAP0075165
2	RD30 Wavy Tail	SLWL30450/SSLW30450
1	90*60*100 Well Void	0
1	Spherical 5.0T 120	LAP050120/SAP0050120

Loose Fitting Take Off:		
Angle Cleat Type-1-St	(0)	2 No.

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

Rev	Date	Revision Detail	By	Chk	App
C01	27-03-24	Issued for Manufacture	LN	AB	SJH

Client: **winvic**

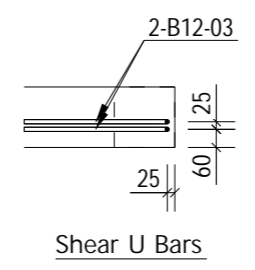
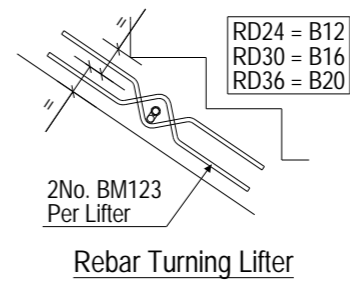
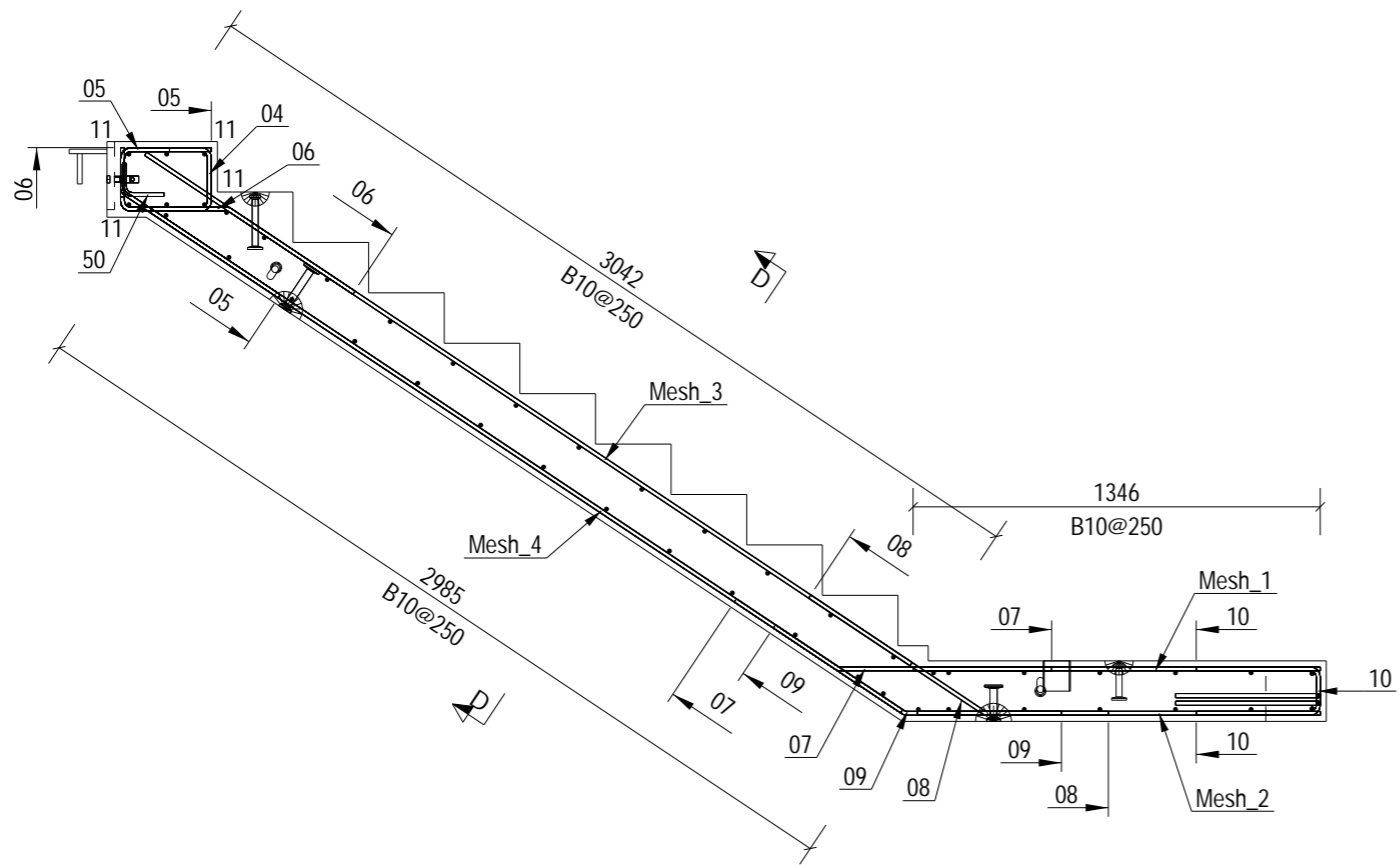
Project: **Panattoni Park Poyle**

Title: **GA1 of STAIRS SF-0003**

Scale: 1:60 Status: As Built - CR

Drawn: LN Checked: AB Approved: SJH

Drawing No : **05-BYL-1462-SF-0003-GA1** Rev: **C01**



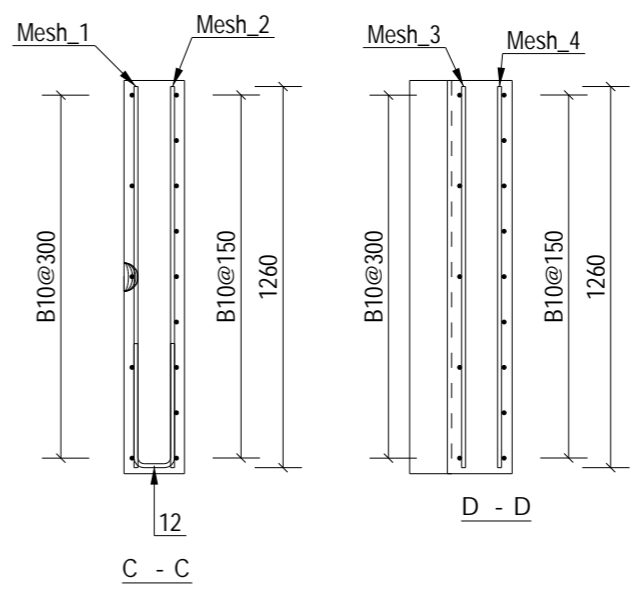
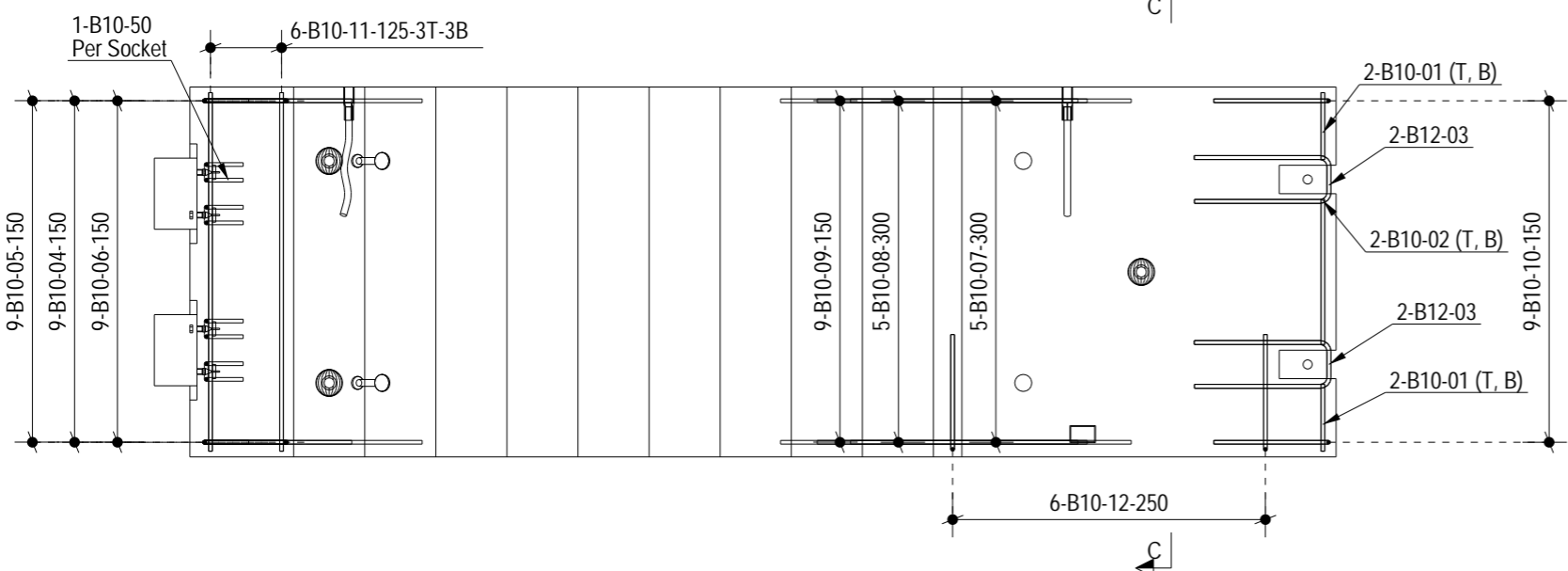
NOTES:

Type.	STAIRS
Mark.	SF-0003
GA Drg. Ref.	05-BYL-1462-SF-0003-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**



C01	27-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client: **winvic**

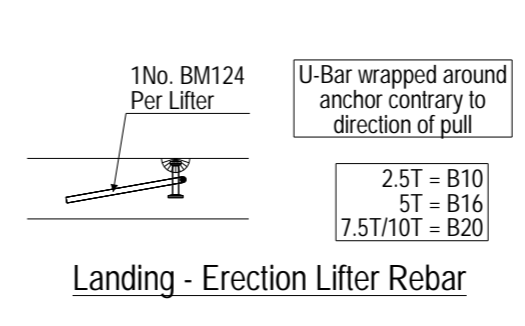
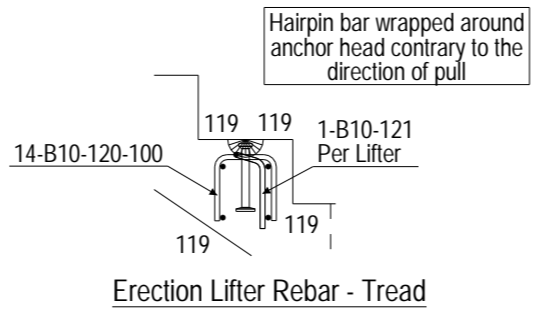
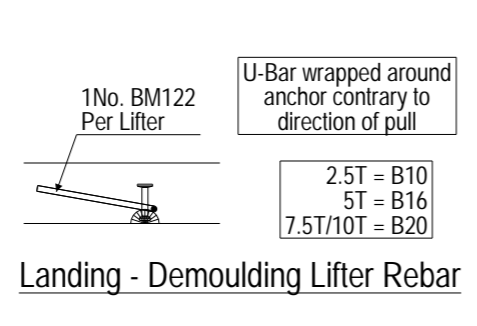
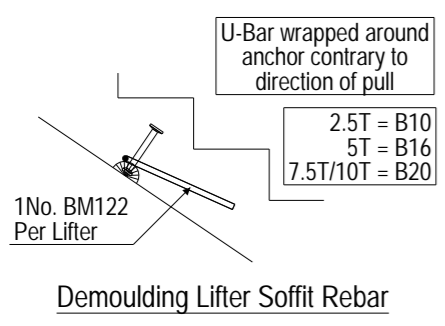
Project: **Panattoni Park Poyle**

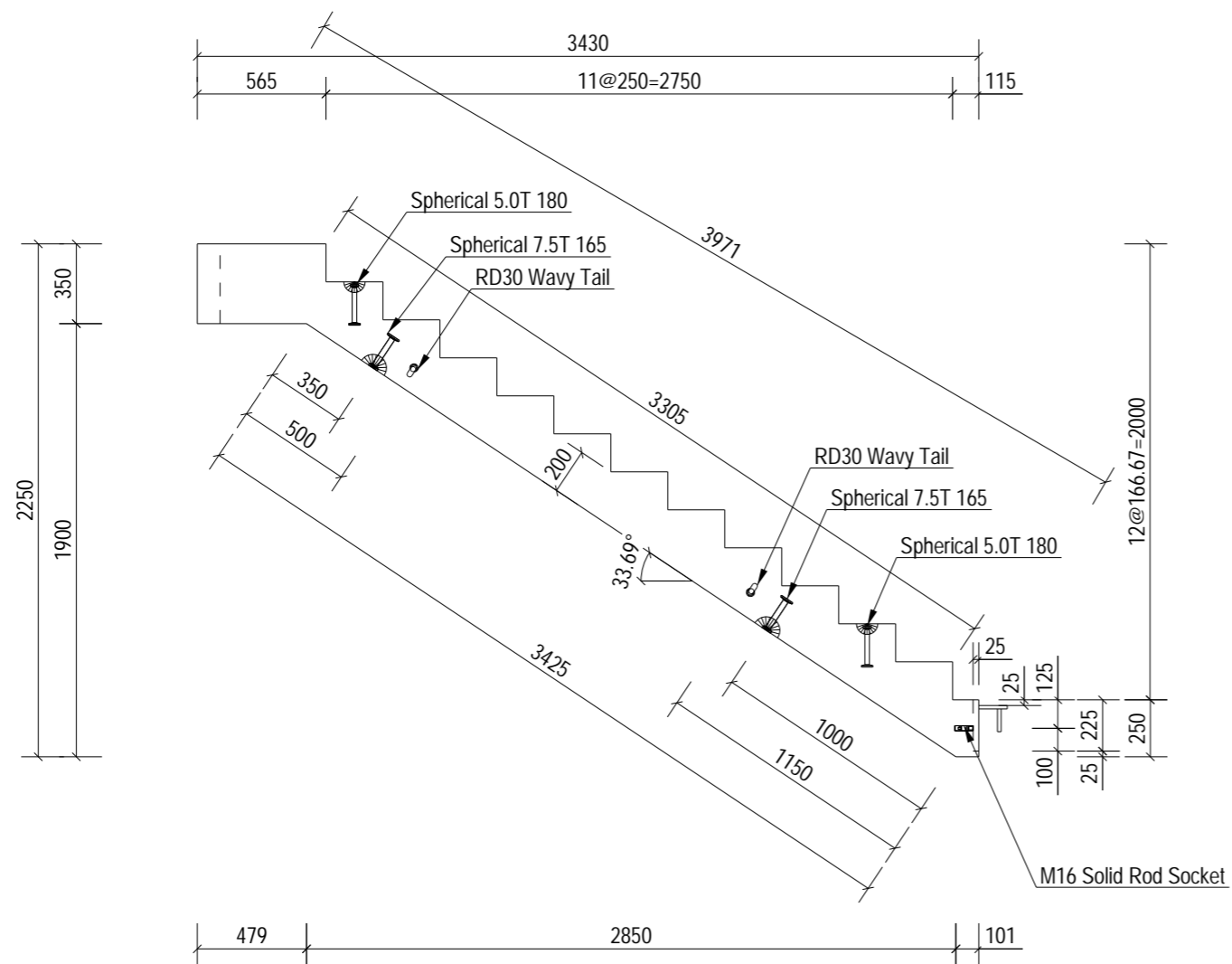
Title: **RC1 of STAIRS SF-0003**

Scale: 1:25 Status: As Built - CR
 Date: 22-03-24

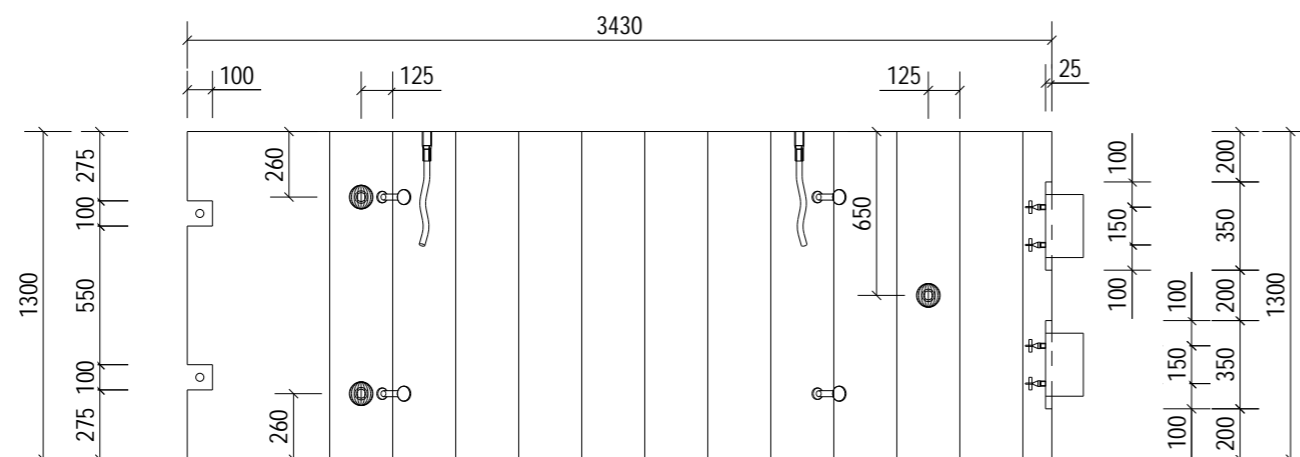
Drawn: LN Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SF-0003-RC1 Rev: C01



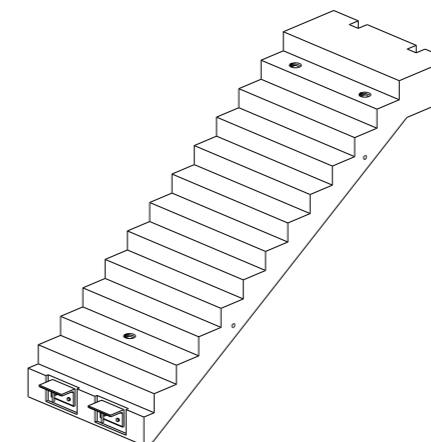


Elevation on Stair



Plan on Stair

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:

Type.	STAIRS	
Length.	2250	+4 / -4
Height.	3430	+4 / -4
Width.	1300	+4 / -4
Weight. (T)	3.63	
Volume. (m³)	1.44	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SF-0004-RC1	
BBS Ref.	05-BYL-1462-SF-0004-BBS	
Calculation Ref.	FPMCB-1462-SF-0004-C01	
Cover.	[REDACTED]	
Casting Bed.	Stair Mould	
Mark.	SF-0004	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	Spherical 7.5T 165	LAP075165/SAP0075165
4	M16 Solid Rod Socket	SSRCP1675/SSSCP1675
3	Spherical 5.0T 180	LAP050180/SAP0050180
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:		
Angle Cleat Type-1-St	(0)	2 No.

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

Rev	Date	Revision Detail	By	Chk	App
C01	27-03-24	Issued for Manufacture	LN	AB	SJH

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client: **winvic**

Project: **Panattoni Park Poyle**

Title: **GA1 of STAIRS SF-0004**

Scale: 1:60 Status: As Built - CR

Date: 22-03-24

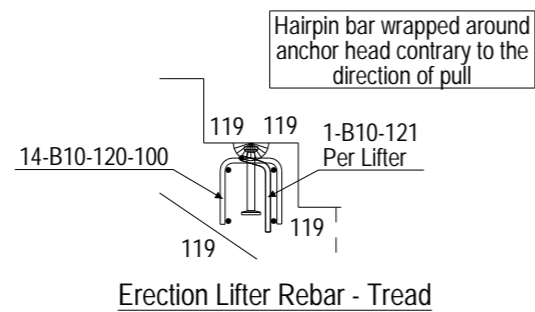
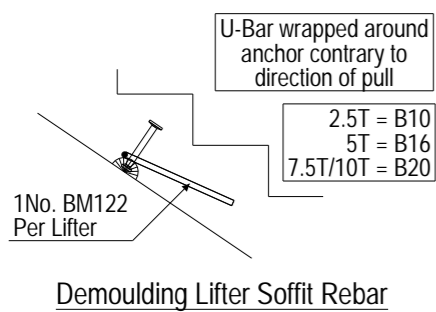
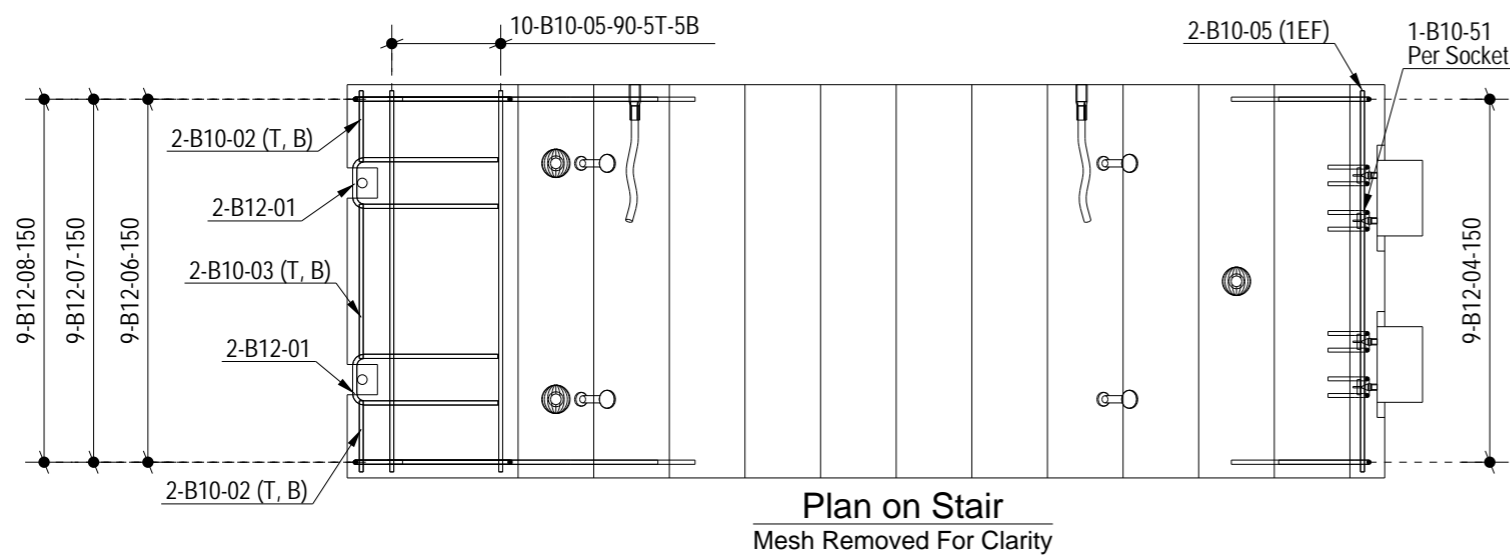
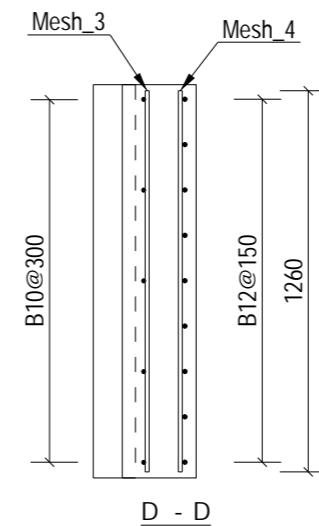
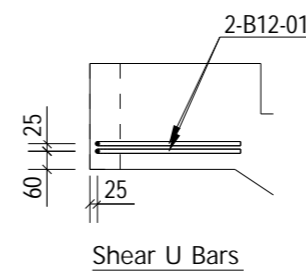
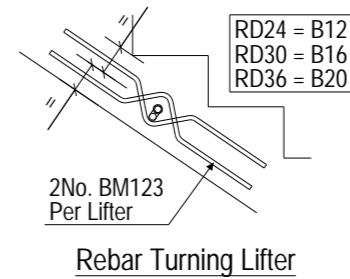
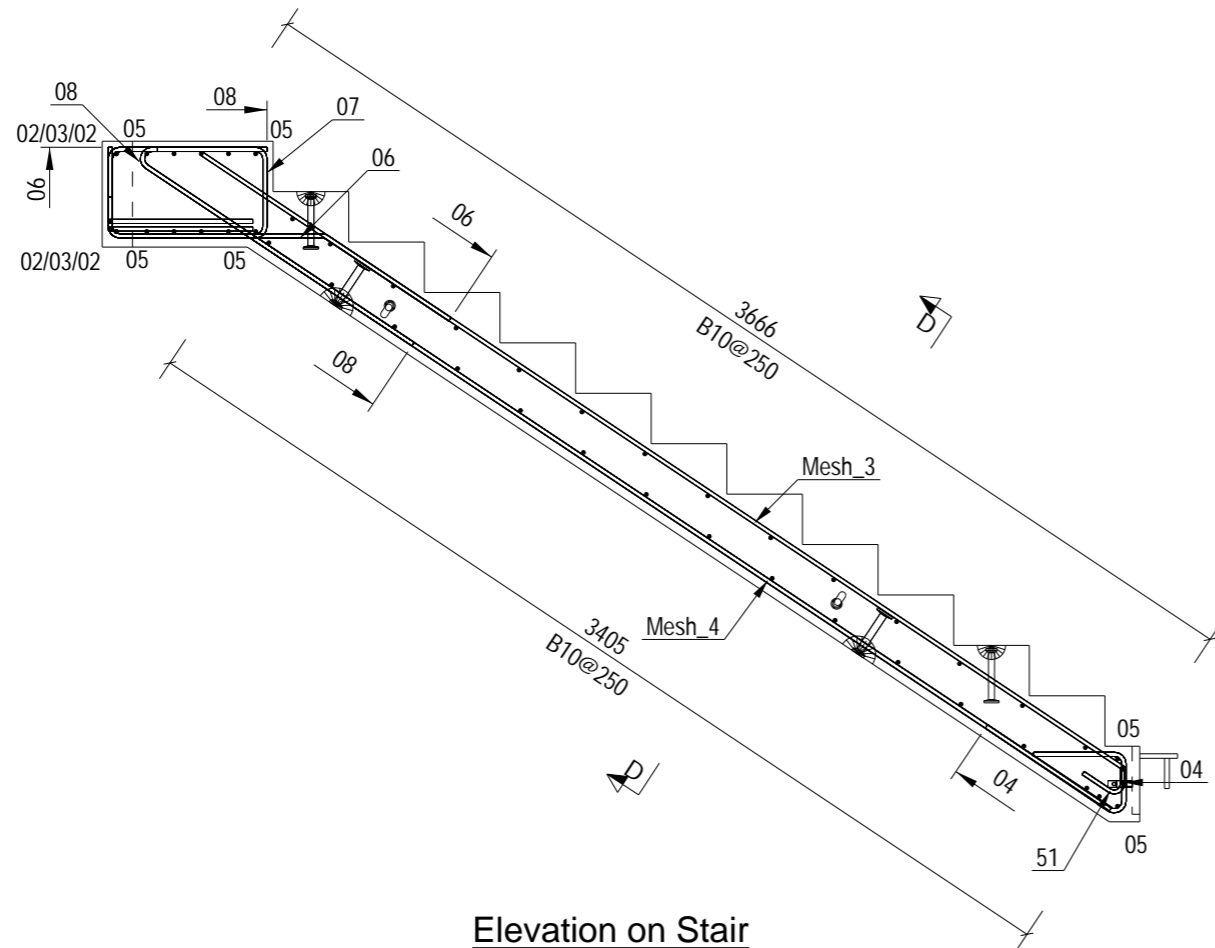
Drawn: LN Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SF-0004-GA1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

10mm



NOTES:

Type.	STAIRS
Mark.	SF-0004
GA Drg. Ref.	05-BYL-1462-SF-0004-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

**90MINS FIRE RATING
 TOP & SIDE COVER 20MM
 SOFFIT COVER 30MM**

C01	27-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire.
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client:

Project: **Panattoni Park Poyle**

Title: **RC1 of STAIRS SF-0004**

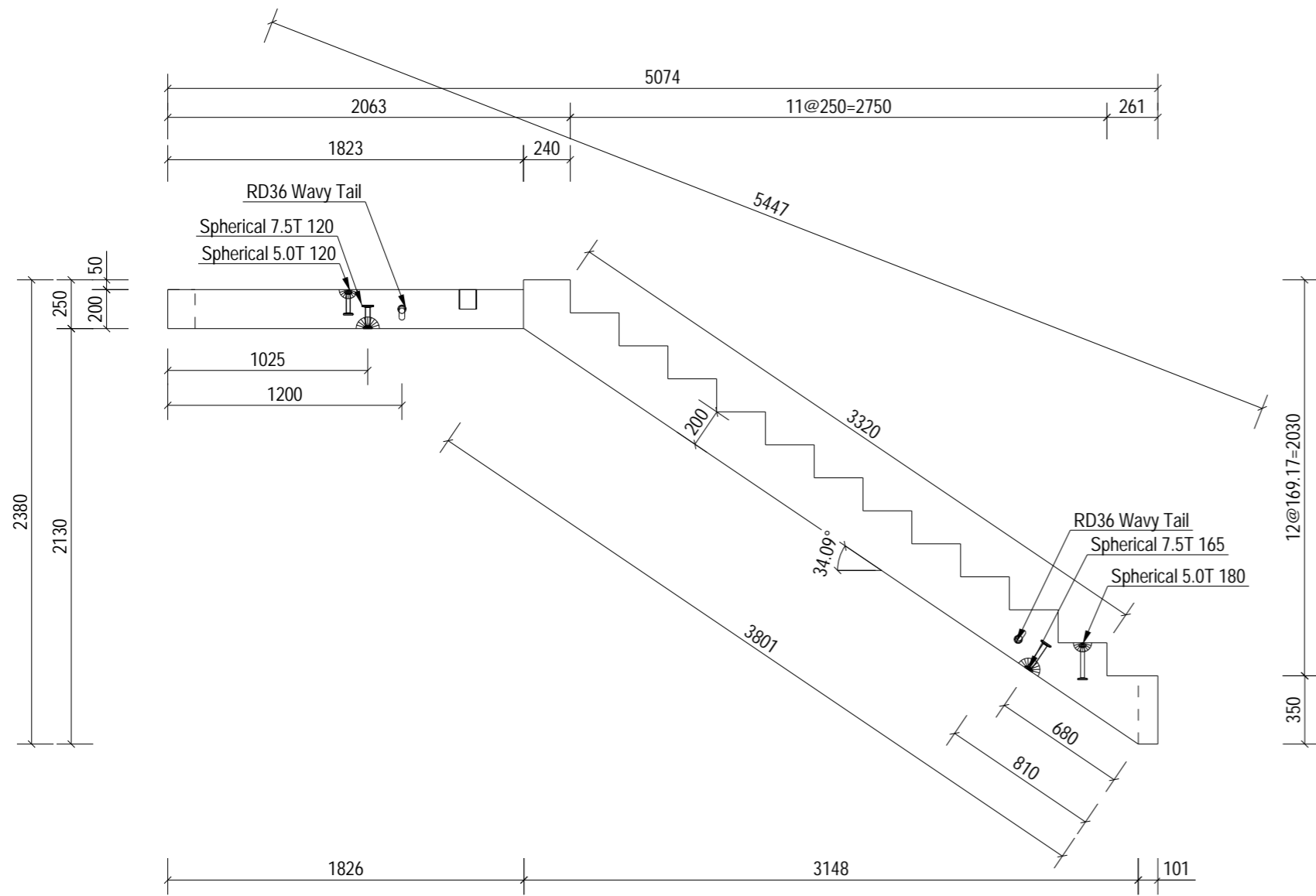
Scale: 1:25 Status: As Built - CR
 Date: 22-03-24

Drawn: LN Checked: AB Approved: SJH

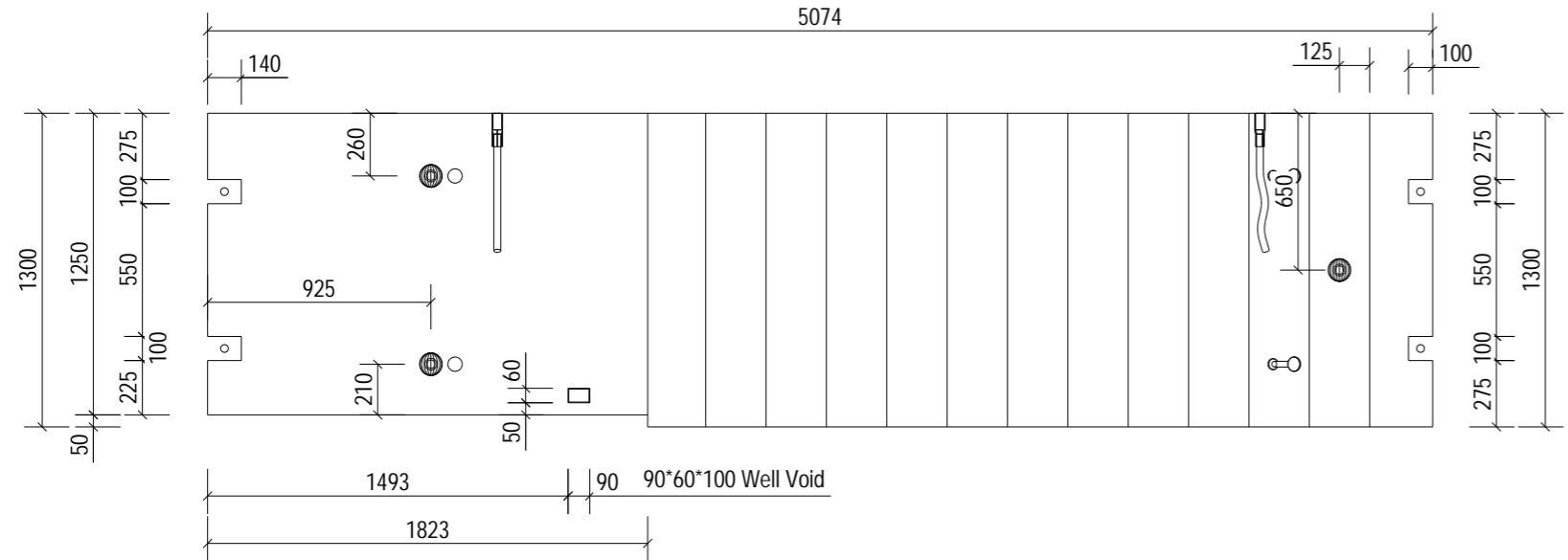
Drawing No : 05-BYL-1462-SF-0004-RC1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

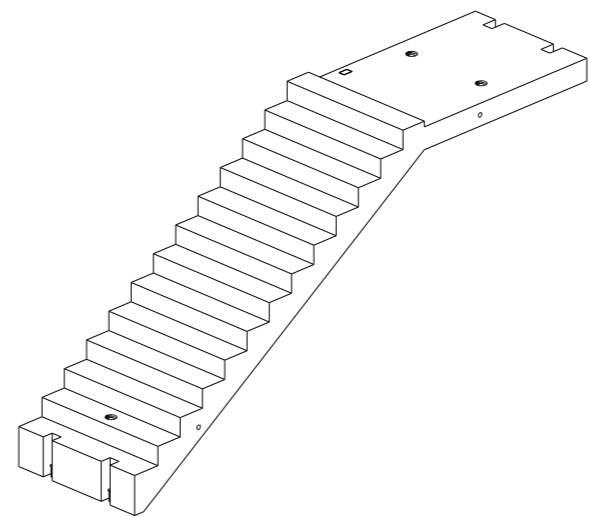


Elevation on Stair



Plan on Stair

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:		
Type.	STAIRS	
Length.	2380	+4 / -4
Height.	5074	+4 / -4
Width.	1300	+4 / -4
Weight. (T)	4.55	
Volume. (m³)	1.82	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SF-0005-RC1
BBS Ref.	05-BYL-1462-SF-0005-BBS
Calculation Ref.	FPMCB-1462-SF-0005-C01
Cover.	
Casting Bed.	Stair Mould
Mark.	SF-0005
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT		
No.	Item	Ref.
2	Spherical 5.0T 120	LAP050120/SAP0050120
2	Spherical 7.5T 120	LAP075120/SAP0075120
2	Spherical 7.5T 165	LAP075165/SAP0075165
2	RD36 Wavy Tail	SLWL36570/SSLW36570
1	90*60*100 Well Void	0
1	Spherical 5.0T 180	LAP050180/SAP0050180

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	27-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park
Poyle**

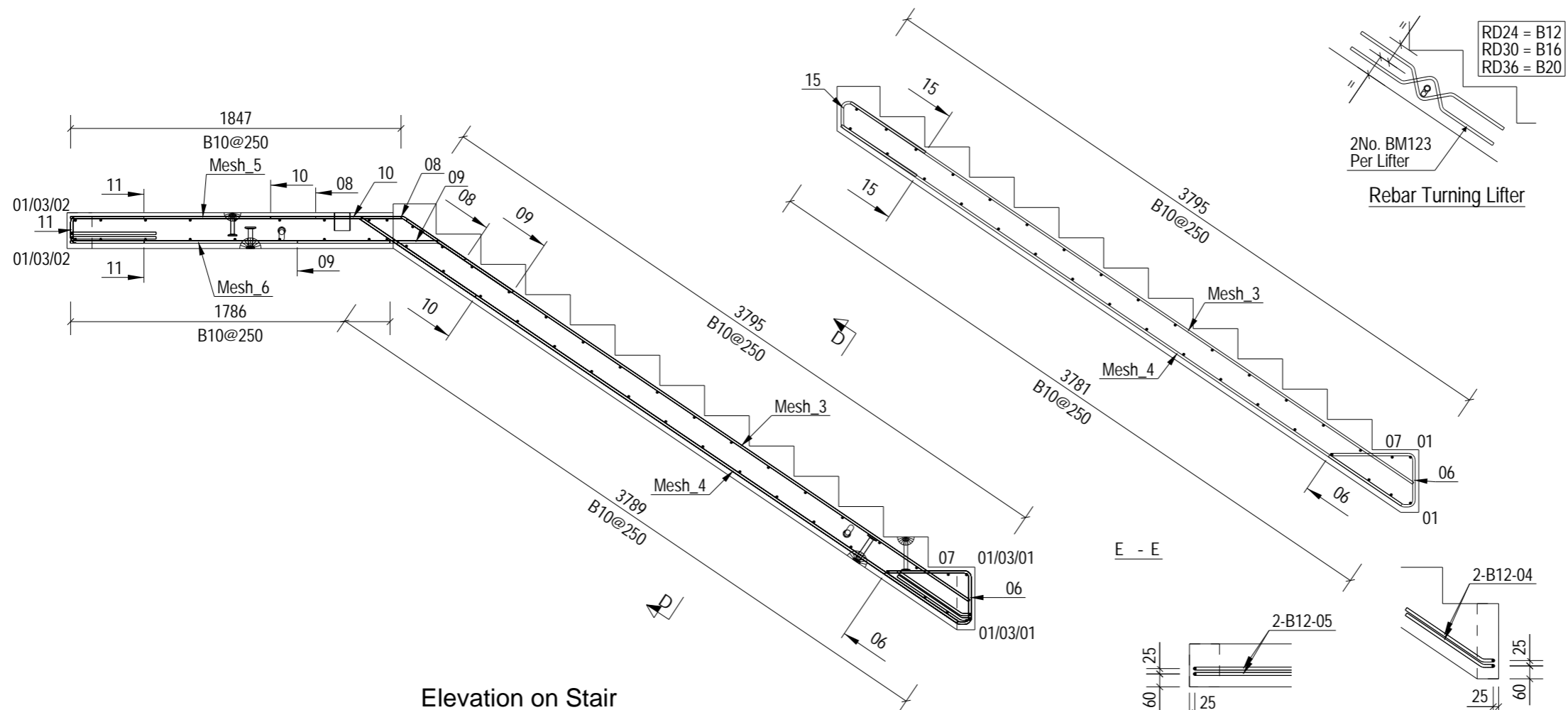
Title. **GA1 of
STAIRS SF-0005**

Scale: 1:60 Status: As Built - CR

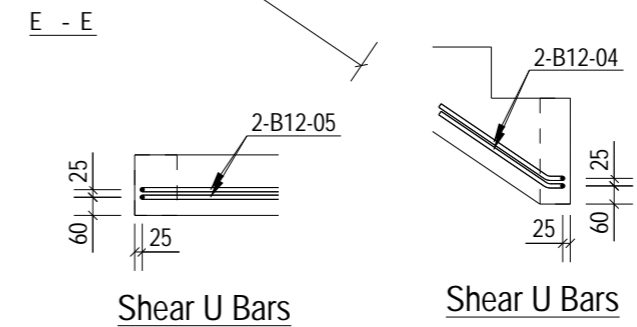
Date: 25-03-24

Drawn: LN Checked: AB Approved: SJH

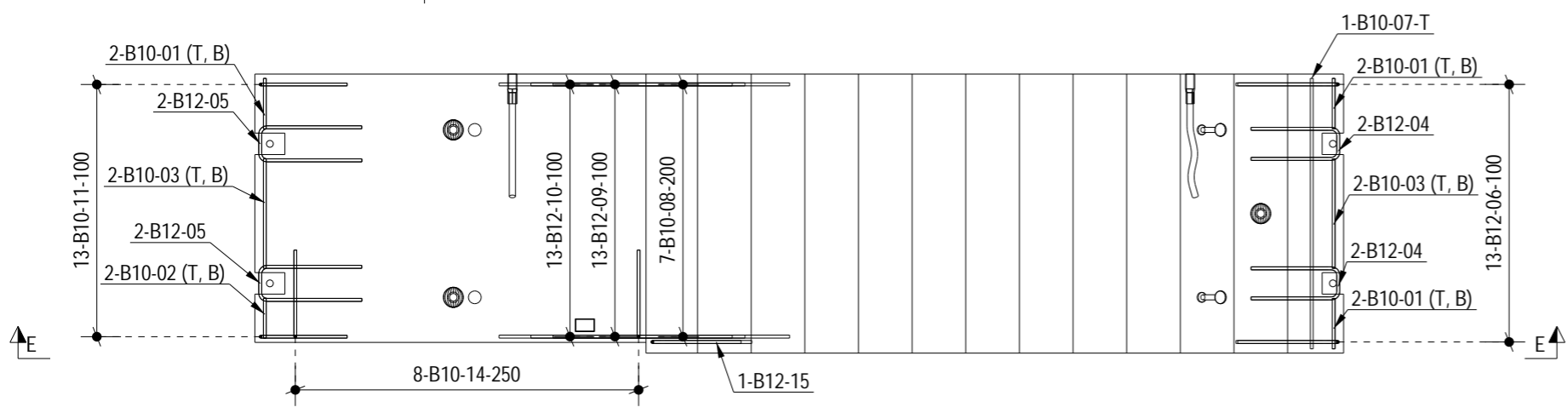
Drawing No : 05-BYL-1462-SF-0005-GA1 Rev: C01



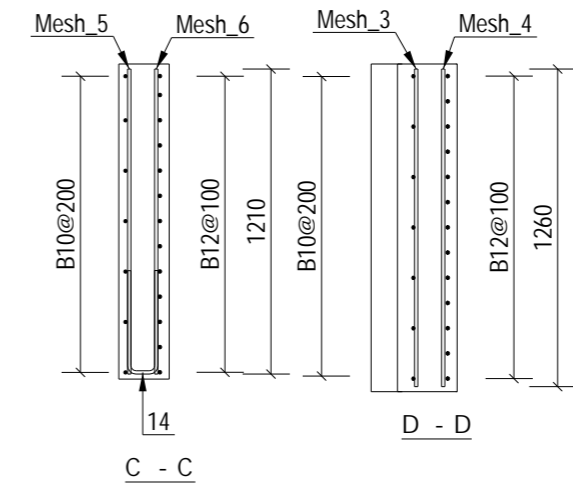
Elevation on Stair



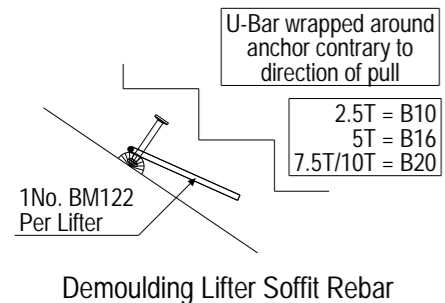
Shear U Bars



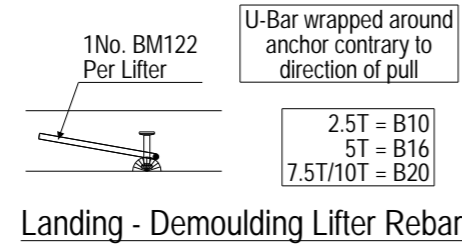
Plan on Stair
Mesh Removed For Clarity



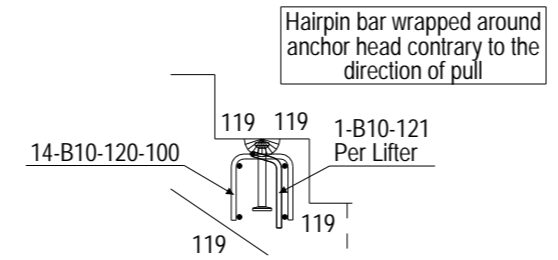
C - C



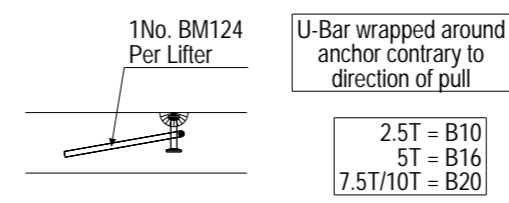
Demoulding Lifter Soffit Rebar



Landing - Demoulding Lifter Rebar



Erection Lifter Rebar - Tread



Landing - Erection Lifter Rebar

NOTES:

Type.	STAIRS
Mark.	SF-0005
GA Drg. Ref.	05-BYL-1462-SF-0005-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	27-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

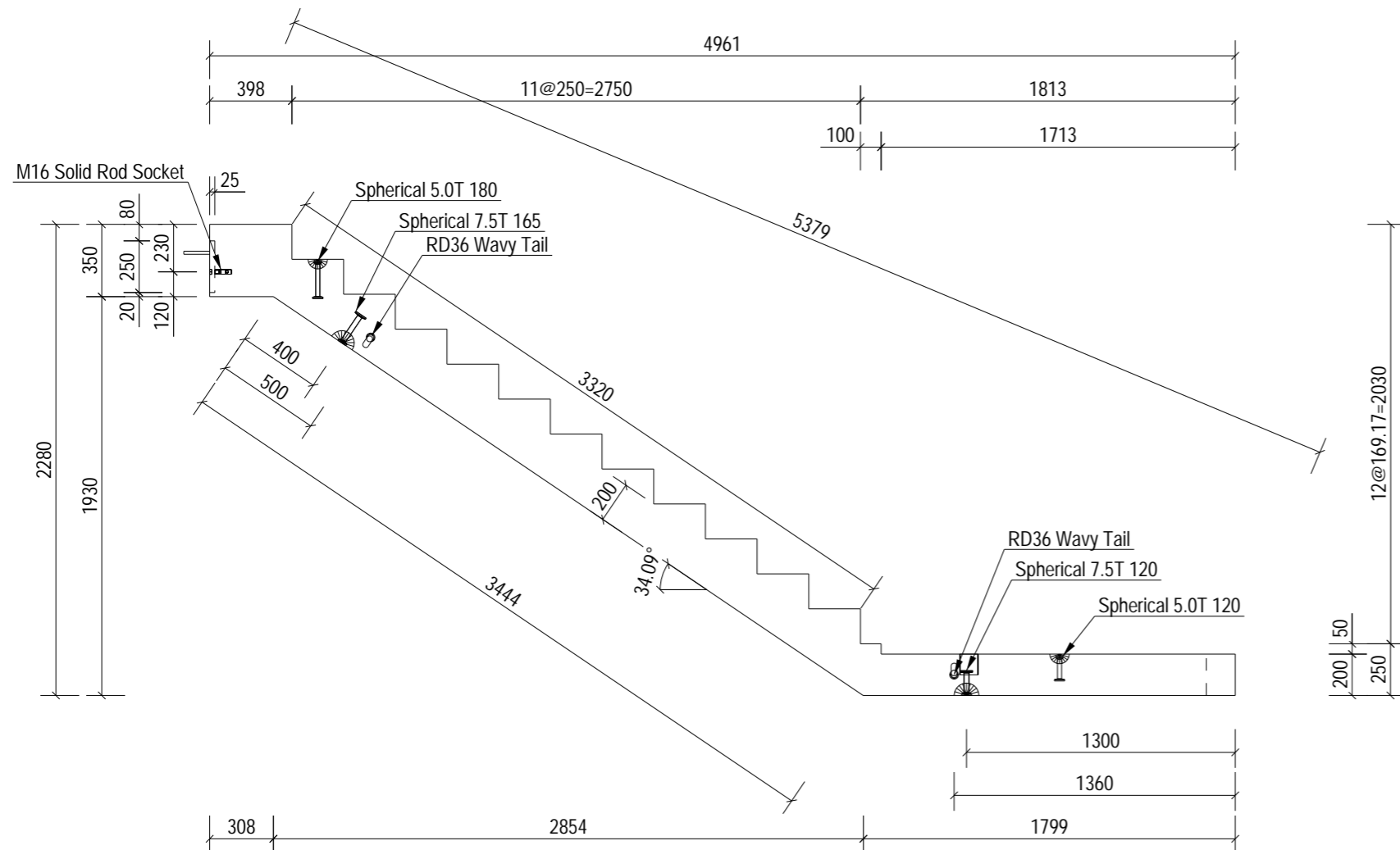
Client: winvic

Project: Panattoni Park Poyle

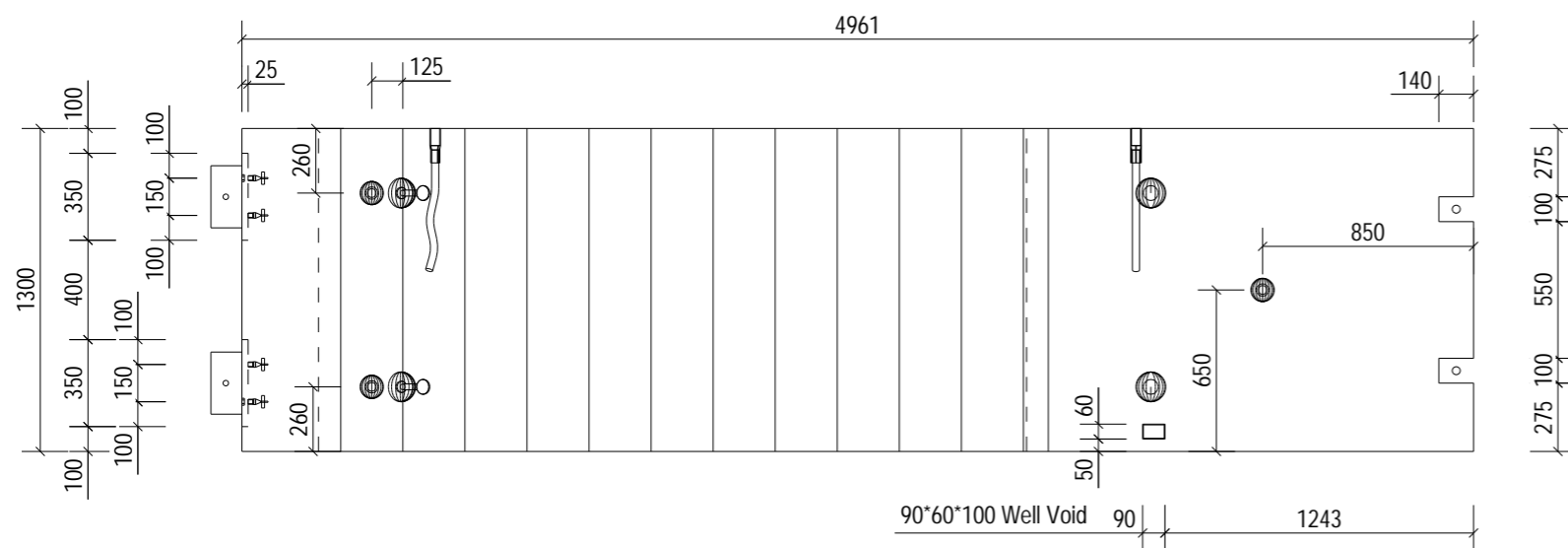
Title: RC1 of STAIRS SF-0005

Scale: 1:30 Status: As Built - CR
Date: 25-03-24

Drawn: LN Checked: AB Approved: SJH
Drawing No: 05-BYL-1462-SF-0005-RC1 Rev: C01

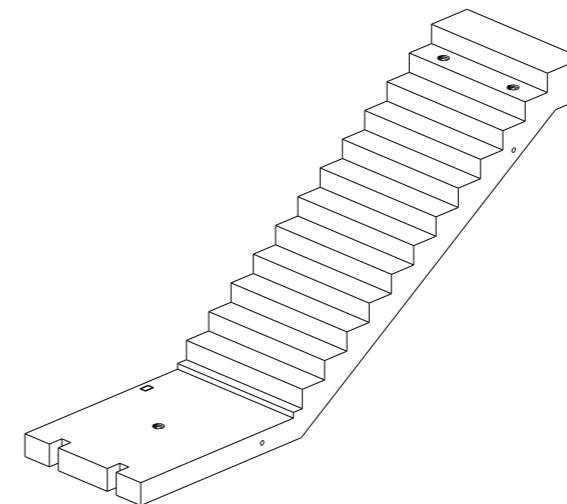


Elevation on Stair



Plan on Stair

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:

Type.	STAIRS	
Length.	2280	+4 / -4
Height.	4961	+4 / -4
Width.	1300	+4 / -4
Weight. (T)	4.57	
Volume. (m³)	1.82	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SF-0006-RC1	
BBS Ref.	05-BYL-1462-SF-0006-BBS	
Calculation Ref.	FPMCB-1462-SF-0006-C01	
Cover.	[REDACTED]	
Casting Bed.	Stair Mould	
Mark.	SF-0006	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	M16 Solid Rod Socket	SSRCP1675/SSSCP1675
2	Spherical 5.0T 180	LAP050180/SAP0050180
2	Spherical 7.5T 120	LAP075120/SAP0075120
2	Spherical 7.5T 165	LAP075165/SAP0075165
2	RD36 Wavy Tail	SLWL36570/SSLW36570
1	90*60*100 Well Void	0
1	Spherical 5.0T 120	LAP050120/SAP0050120

Loose Fitting Take Off:		
Angle Cleat Type-1	(0)	2 No.

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	27-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park
Poyle**

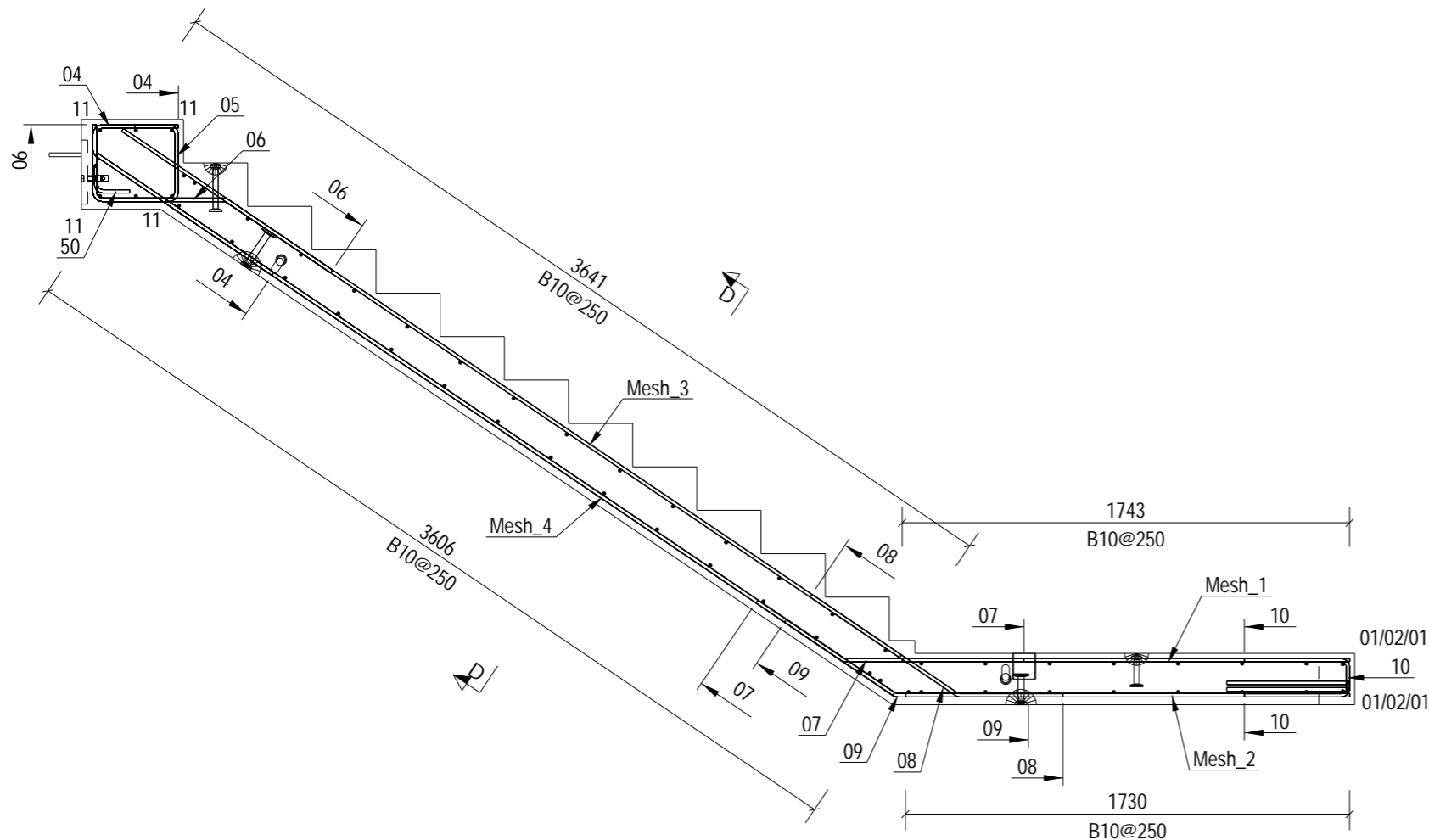
Title. **GA1 of
STAIRS SF-0006**

Scale: 1:60 Status: As Built - CR

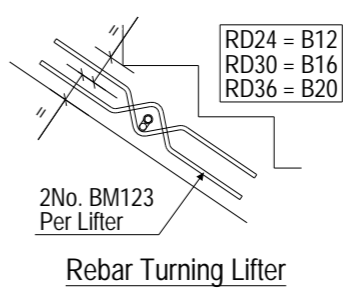
Date: 22-03-24

Drawn: LN Checked: AB Approved: SJH

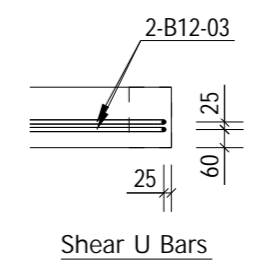
Drawing No : 05-BYL-1462-SF-0006-GA1 Rev: C01



Elevation on Stair



Rebar Turning Lifter



Shear U Bars

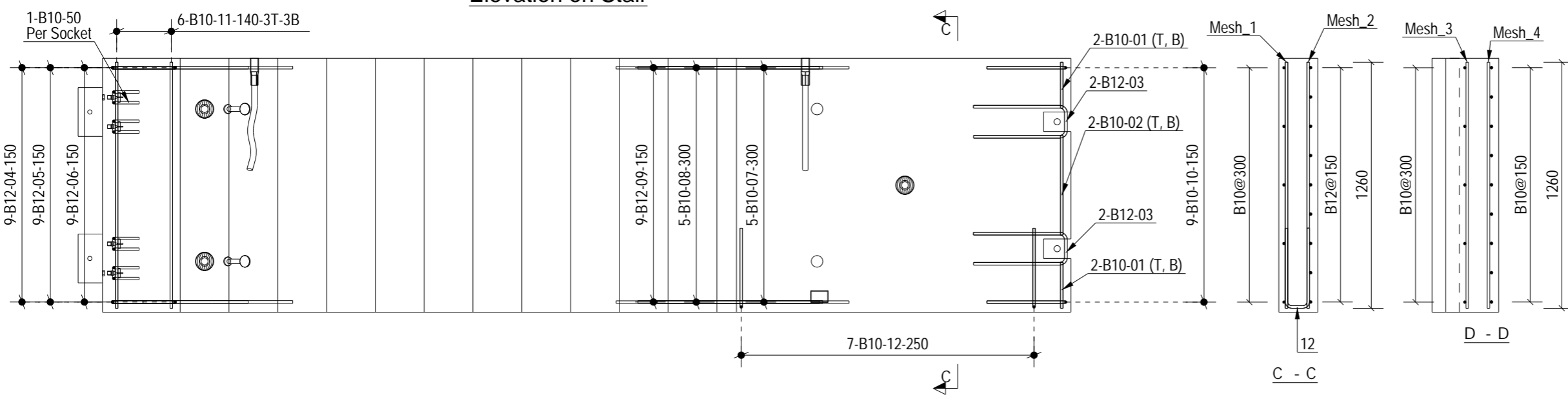
NOTES:

Type.	STAIRS
Mark.	SF-0006
GA Drg. Ref.	05-BYL-1462-SF-0006-GA1
Cover.	

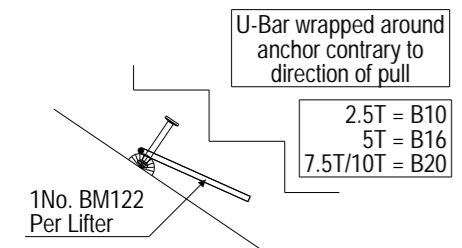
- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

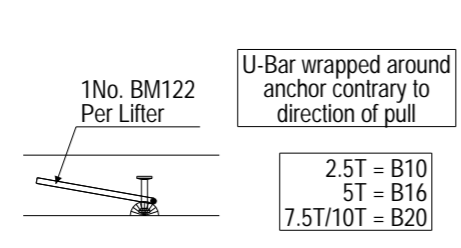
**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**



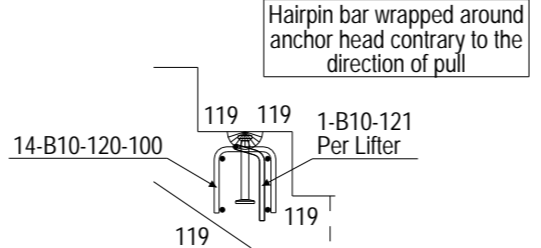
Plan on Stair
Mesh Removed For Clarity



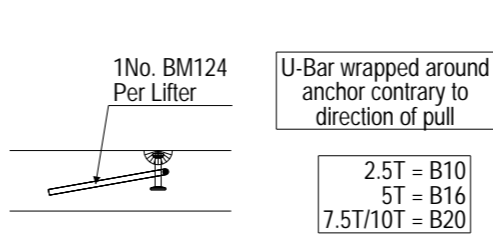
Demoulding Lifter Soffit Rebar



Landing - Demoulding Lifter Rebar



Erection Lifter Rebar - Tread



Landing - Erection Lifter Rebar

C01	27-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

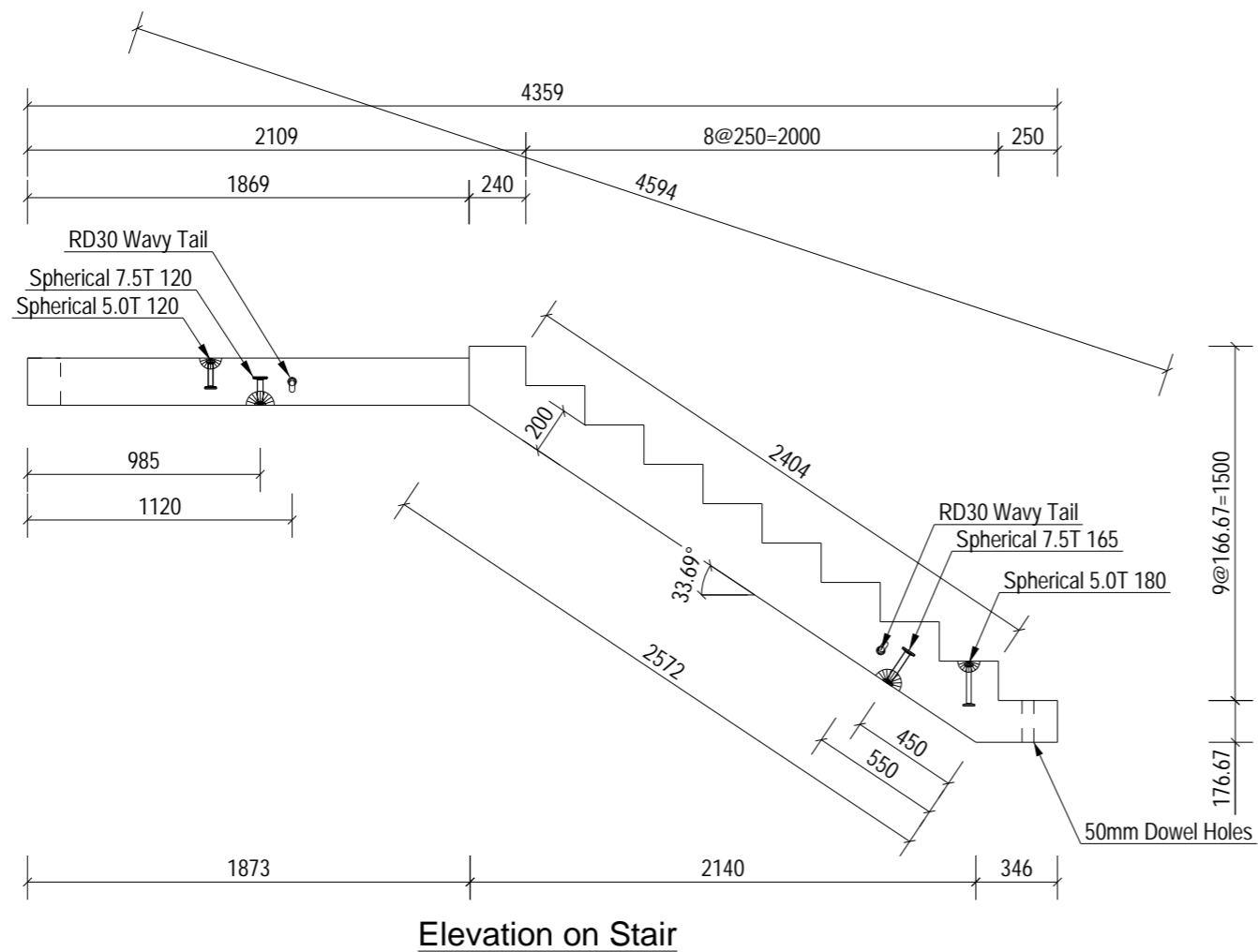
Client:

Project: **Panattoni Park Poyle**

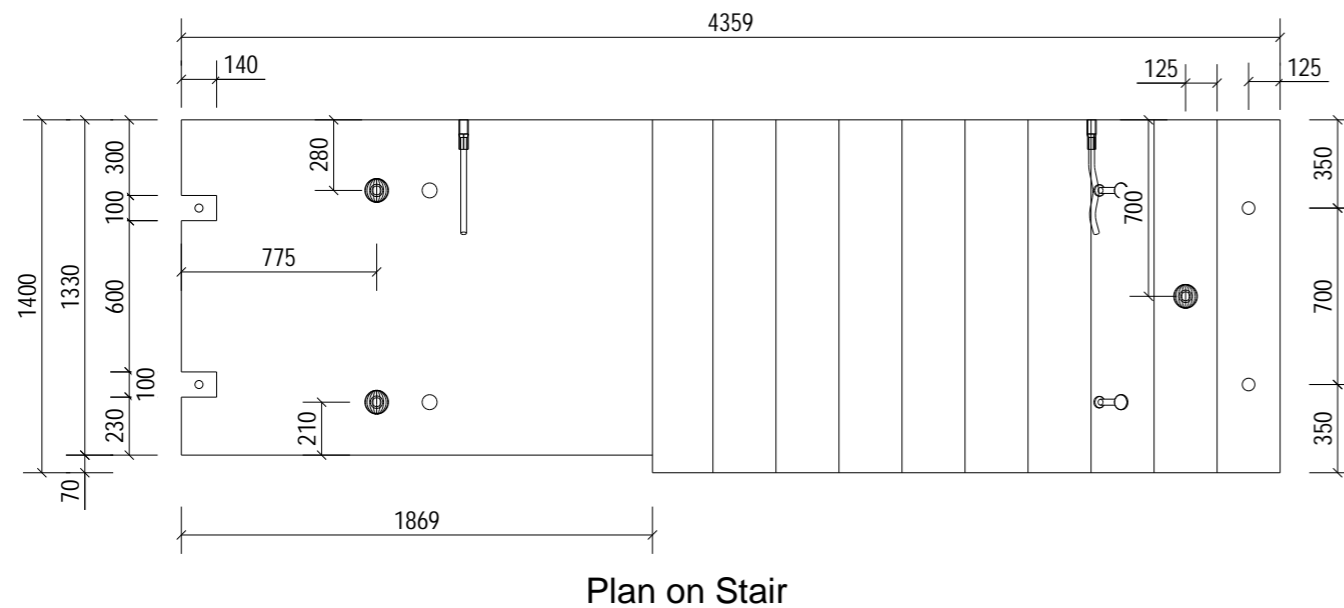
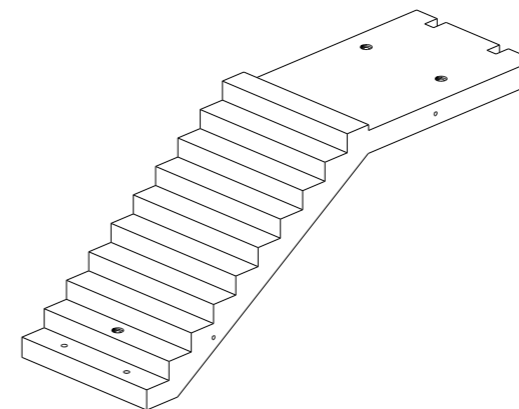
Title: **RC1 of STAIRS SF-0006**

Scale: 1:25 Status: As Built - CR
Date: 22-03-24

Drawn: LN Checked: AB Approved: SJH
Drawing No: 05-BYL-1462-SF-0006-RC1 Rev: C01



Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:

Type.	STAIRS	
Length.	1677	+4 / -4
Height.	4359	+4 / -4
Width.	1400	+4 / -4
Weight. (T)	3.91	
Volume. (m³)	1.56	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SF-0007-RC1	
BBS Ref.	05-BYL-1462-SF-0007-BBS	
Calculation Ref.	FPMCB-1462-SF-0007-C01	
Cover.	[REDACTED]	
Casting Bed.	Stair Mould	
Mark.	SF-0007	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	Spherical 5.0T 120	LAP050120/SAP0050120
2	Spherical 7.5T 120	LAP075120/SAP0075120
2	Spherical 7.5T 165	LAP075165/SAP0075165
2	RD30 Wavy Tail	SLWL30450/SSLW30450
1	Spherical 5.0T 180	LAP050180/SAP0050180

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

Rev	Date	Revision Detail	By	Chk	App
C01	28-03-24	Issued for Manufacture	LN	AB	SJH



FPMcCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park
Poyle**

Title. **GA1 of
STAIRS SF-0007**

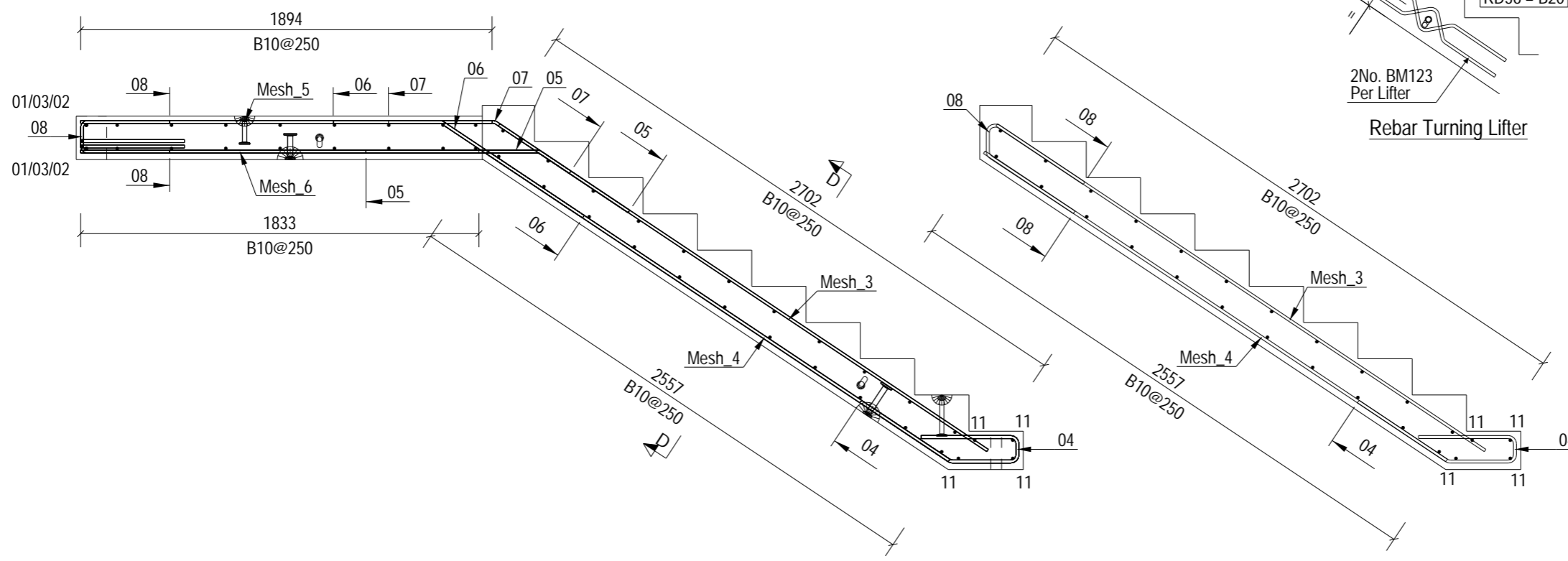
Scale: 1:60 Status: As Built - CR

Date: 26-03-24

Drawn: LN Checked: AB Approved: SJH

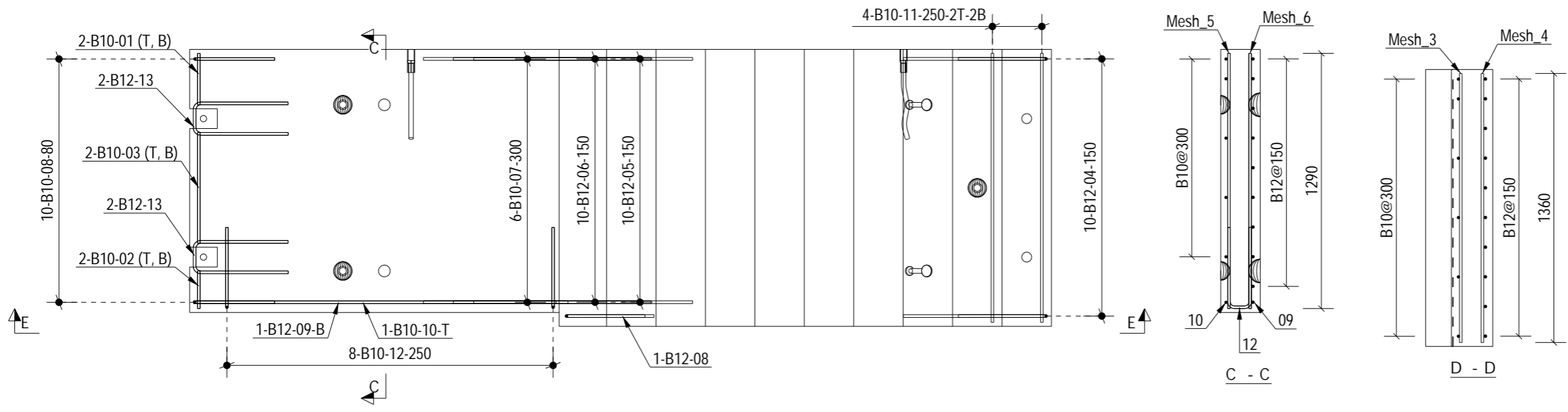
Drawing No : 05-BYL-1462-SF-0007-GA1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

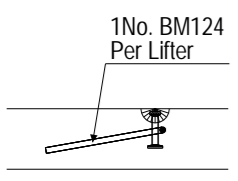


Elevation on Stair

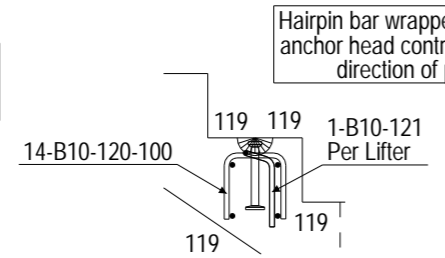
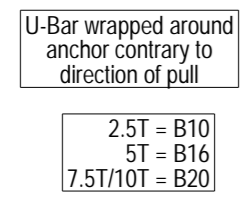
E - E



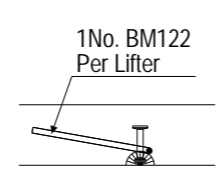
Plan on Stair
Mesh Removed For Clarity



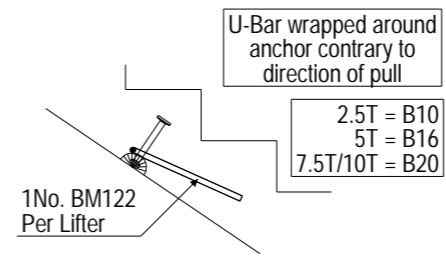
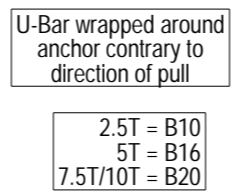
Landing - Erection Lifter Rebar



Erection Lifter Rebar - Tread



Landing - Demoulding Lifter Rebar



Demoulding Lifter Soffit Rebar

NOTES:

Type.	STAIRS
Mark.	SF-0007
GA Drg. Ref.	05-BYL-1462-SF-0007-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

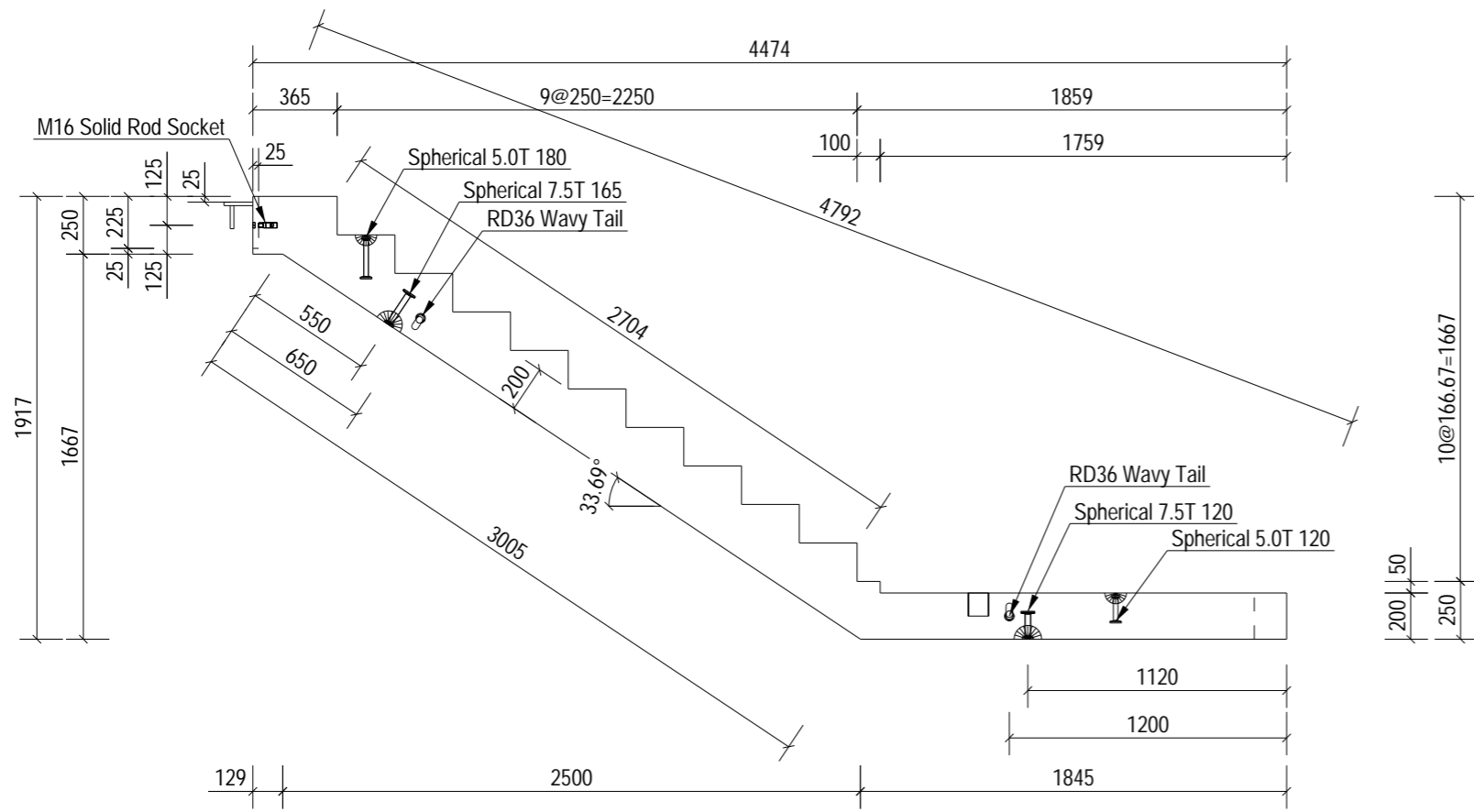
Client.

Project. **Panattoni Park Poyle**

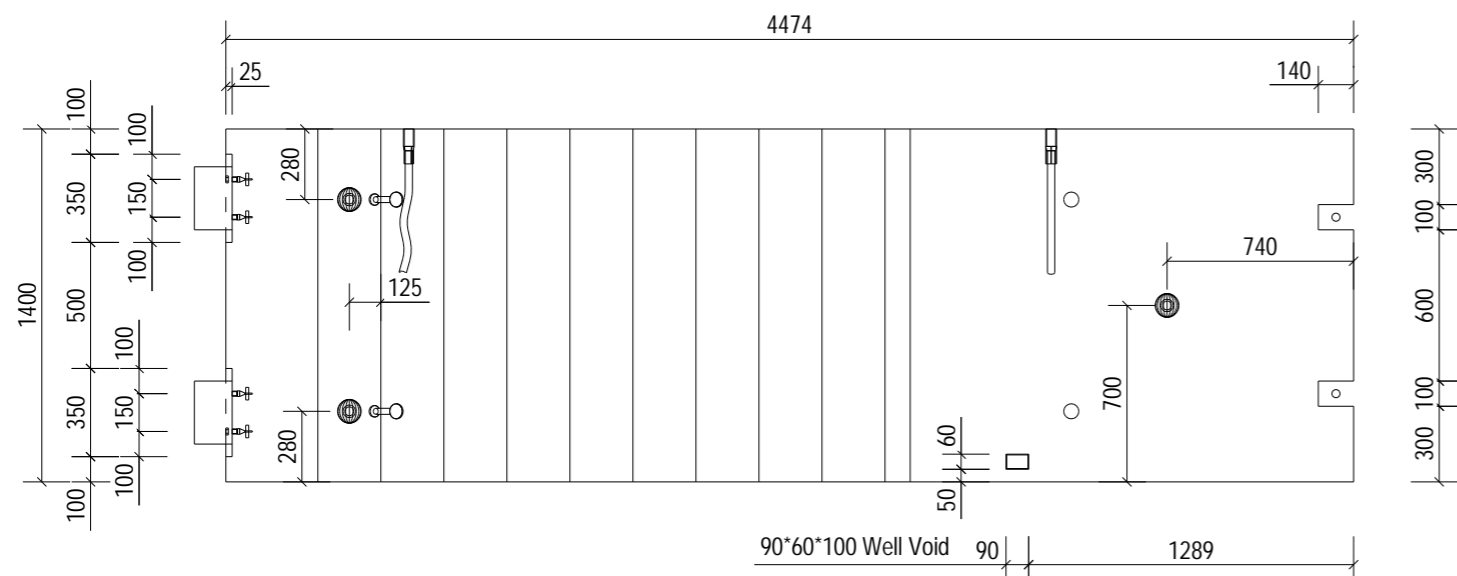
Title. **RC1 of STAIRS SF-0007**

Scale: 1:25	Status: As Built - CR		
Date: 26-03-24	Drawn: LN	Checked: AB	Approved: SJH

Drawing No : **05-BYL-1462-SF-0007-RC1** Rev: **C01**

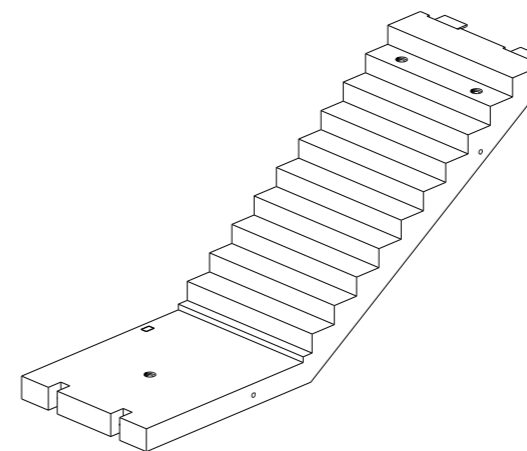


Elevation on Stair



Plan on Stair

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:

Type.	STAIRS	
Length.	1917	+4 / -4
Height.	4474	+4 / -4
Width.	1400	+4 / -4
Weight. (T)	4.25	
Volume. (m³)	1.69	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SF-0008-RC1	
BBS Ref.	05-BYL-1462-SF-0008-BBS	
Calculation Ref.	FPMCB-1462-SF-0008-C01	
Cover.		
Casting Bed.	Stair Mould	
Mark.	SF-0008	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	M16 Solid Rod Socket	SSRCP1675/SSSCP1675
2	Spherical 5.0T 180	LAP050180/SAP0050180
2	Spherical 7.5T 120	LAP075120/SAP0075120
2	Spherical 7.5T 165	LAP075165/SAP0075165
2	RD36 Wavy Tail	SLW/L36570/SSLW36570
1	90*60*100 Well Void	0
1	Spherical 5.0T 120	LAP050120/SAP0050120

Loose Fitting Take Off:		
Angle Cleat Type-1-St	(0)	2 No.

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

Rev	Date	Revision Detail	By	Chk	App
C01	28-03-24	Issued for Manufacture	LN	AB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

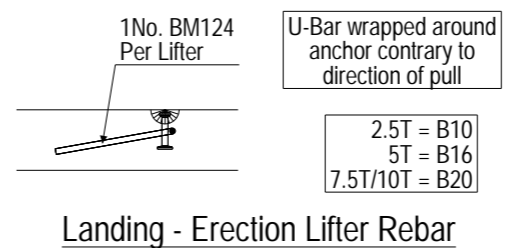
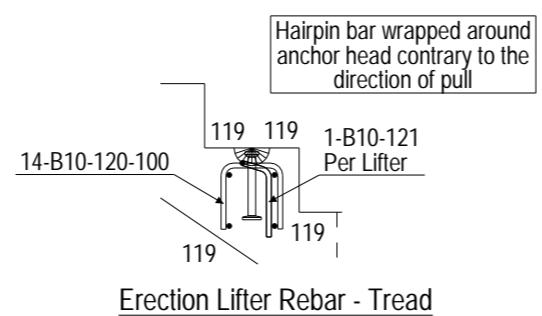
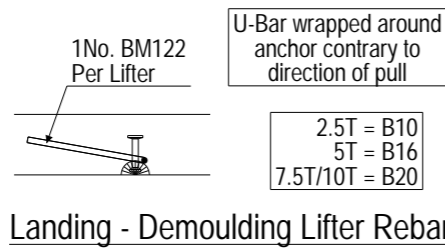
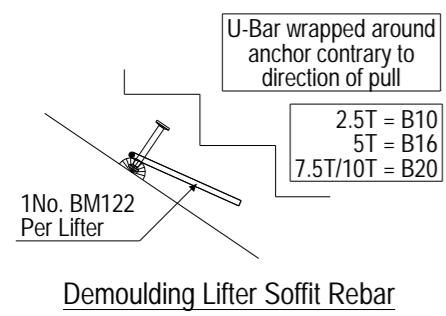
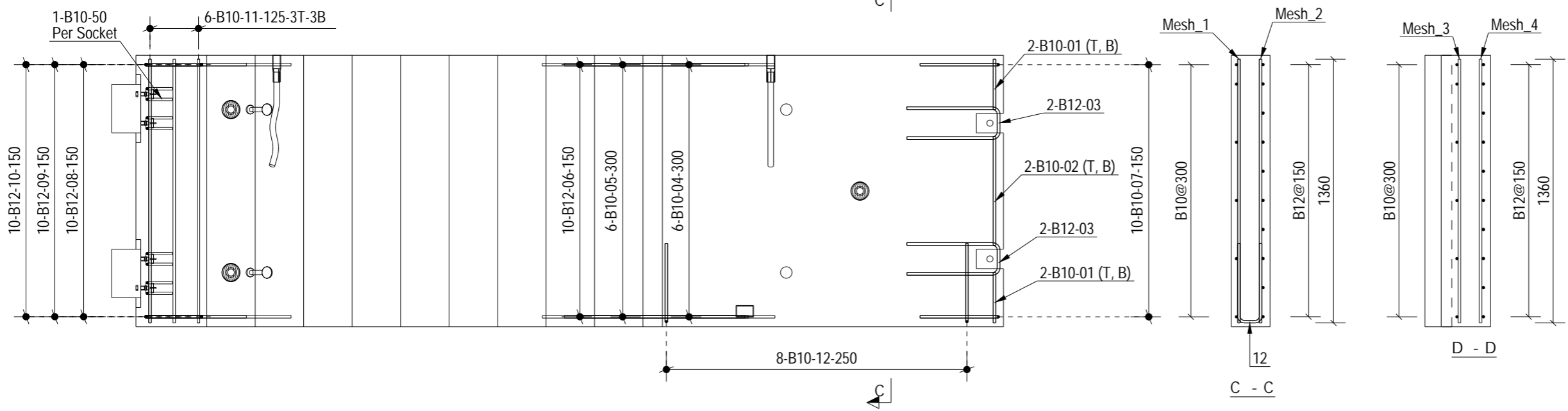
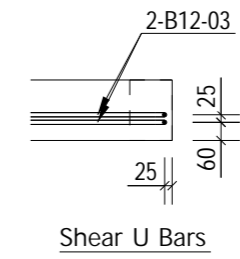
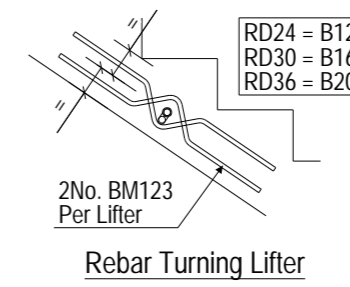
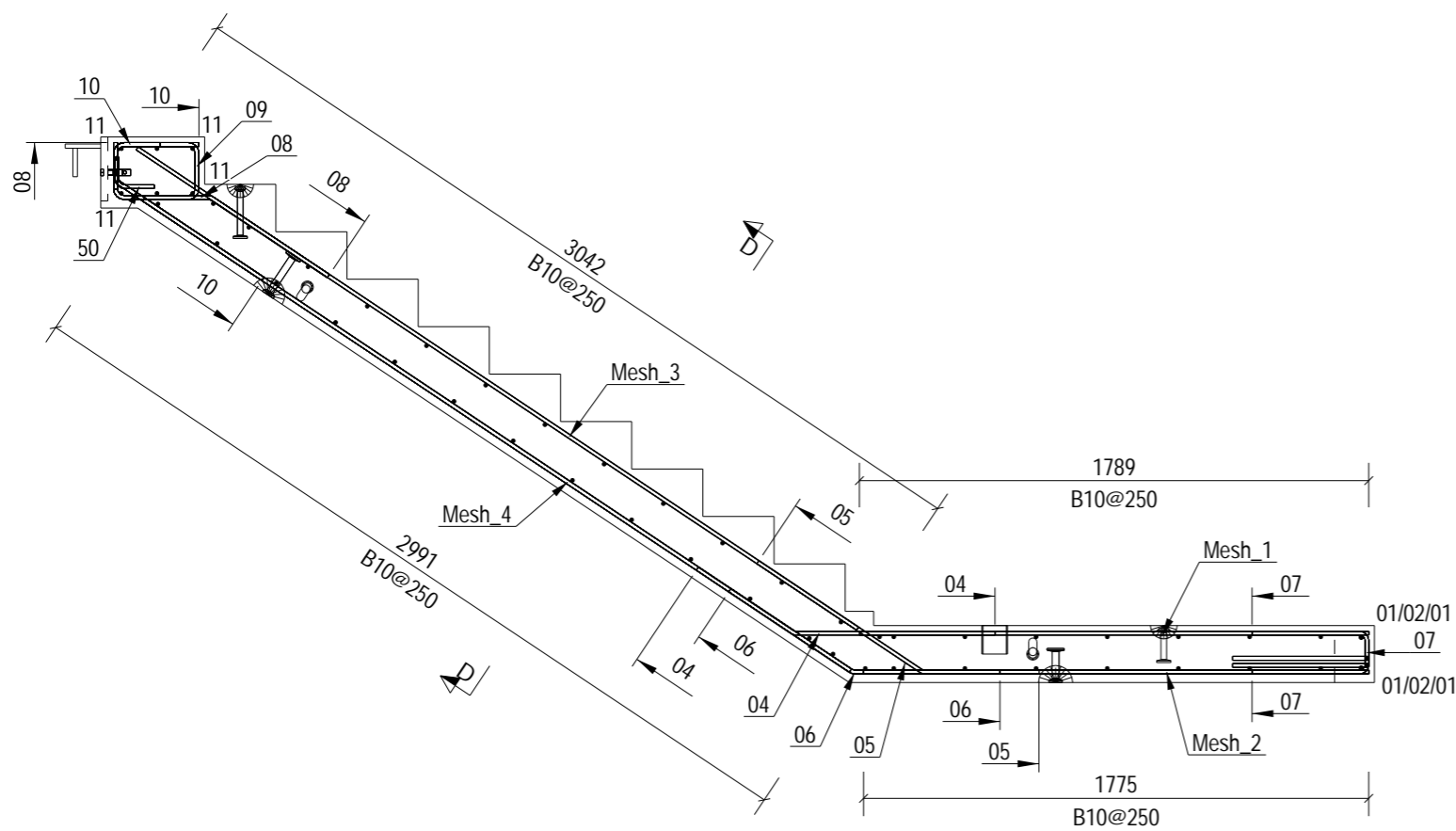
Client: 

Project: **Panattoni Park
Poyle**

Title: **GA1 of
STAIRS SF-0008**

Scale: 1:60	Status: As Built - CR	
Date: 26-03-24		
Drawn: LN	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-SF-0008-GA1		Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



NOTES:

Type.	STAIRS
Mark.	SF-0008
GA Drg. Ref.	05-BYL-1462-SF-0008-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client:

Project: **Panattoni Park Poyle**

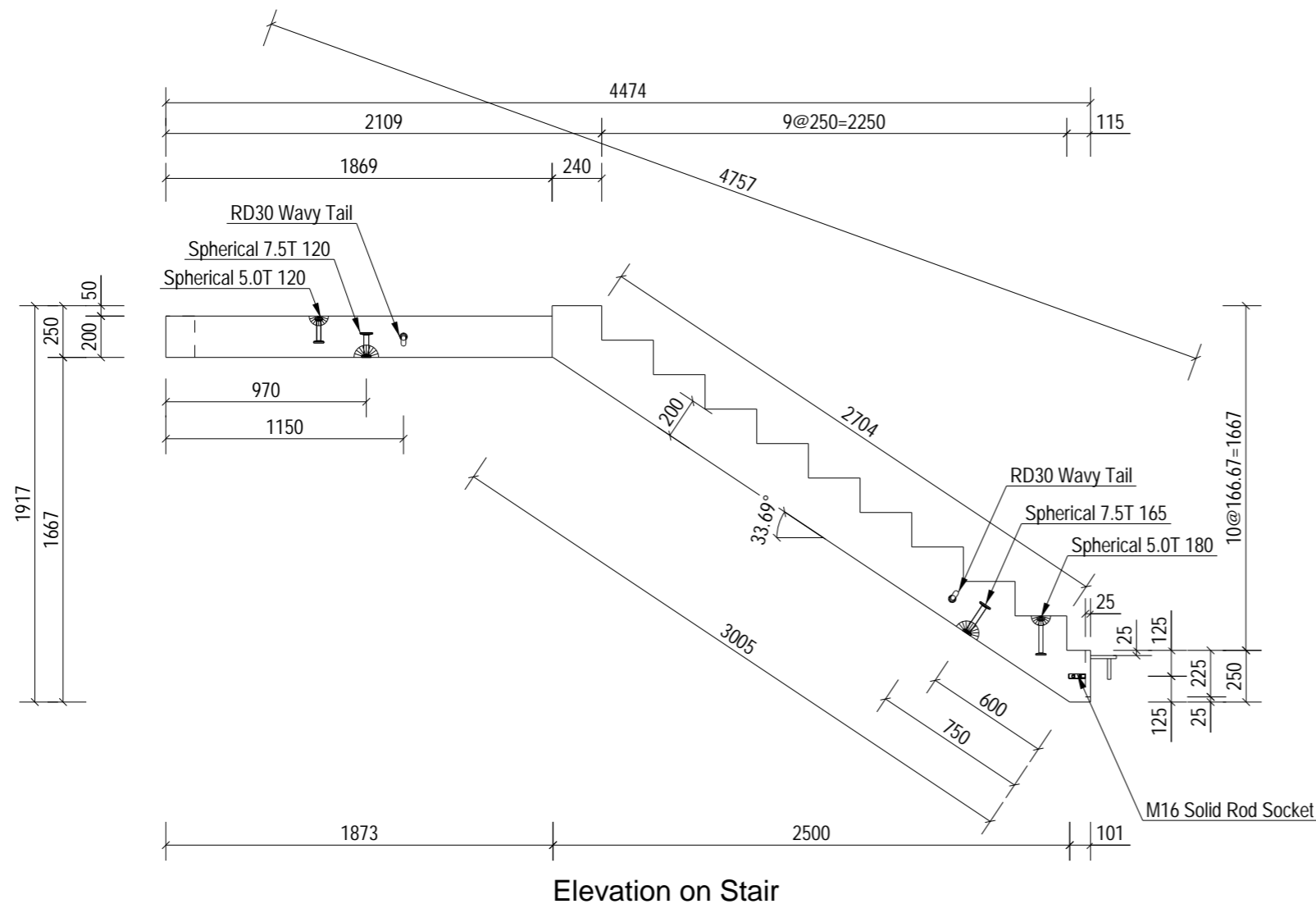
Title: **RC1 of STAIRS SF-0008**

Scale: 1:25	Status: As Built - CR	
Date: 26-03-24		
Drawn: LN	Checked: AB	Approved: SJH

Drawing No : **05-BYL-1462-SF-0008-RC1** Rev: **C01**

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm



Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			

NOTES:		
Type.	STAIRS	
Length.	1917	+4 / -4
Height.	4474	+4 / -4
Width.	1400	+4 / -4
Weight. (T)	4.16	
Volume. (m³)	1.65	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SF-0009-RC1	
BBS Ref.	05-BYL-1462-SF-0009-BBS	
Calculation Ref.	FPMCB-1462-SF-0009-C01	
Cover.		
Casting Bed.	Stair Mould	
Mark.	SF-0009	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT		
No.	Item	Ref.
4	M16 Solid Rod Socket	SSRCP1675/SSSCP1675
2	Spherical 5.0T 120	LAP050120/SAP0050120
2	Spherical 7.5T 120	LAP075120/SAP0075120
2	Spherical 7.5T 165	LAP075165/SAP0075165
2	RD30 Wavy Tail	SLWL30450/SSLW30450
1	Spherical 5.0T 180	LAP050180/SAP0050180

Loose Fitting Take Off:		
Angle Cleat Type-1-St	(0)	2 No.

90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM

C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client: **winvic**

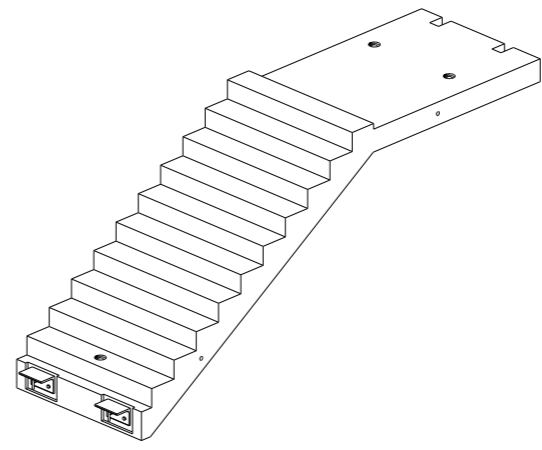
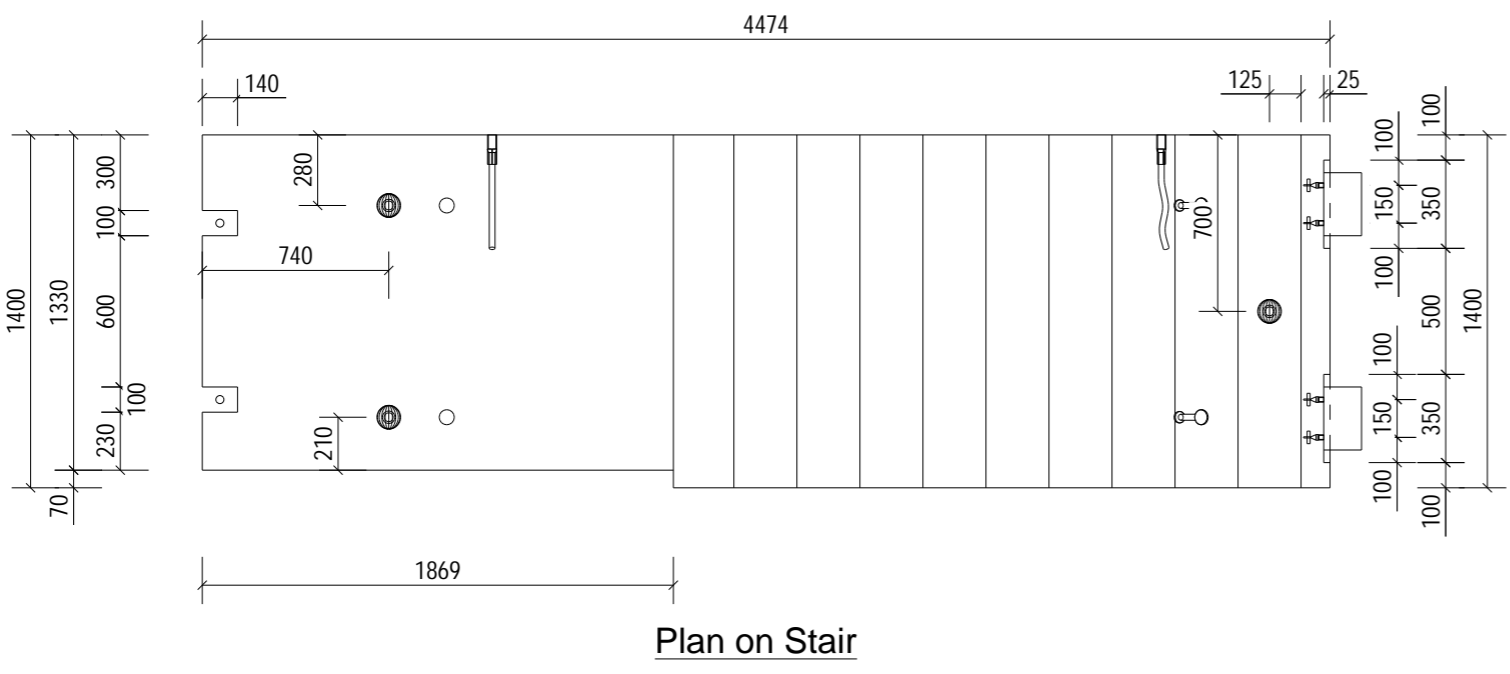
Project: **Panattoni Park Poyle**

Title: **GA1 of STAIRS SF-0009**

Scale: 1:60 Status: As Built - CR
 Date: 26-03-24

Drawn: LN Checked: AB Approved: SJH

Drawing No : **05-BYL-1462-SF-0009-GA1** Rev: **C01**



This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

NOTES:

Type.	STAIRS
Mark.	SF-0009
GA Drg. Ref.	05-BYL-1462-SF-0009-GA1
Cover.	XXXXXXXXXX

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

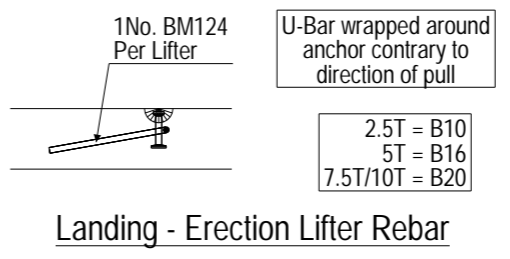
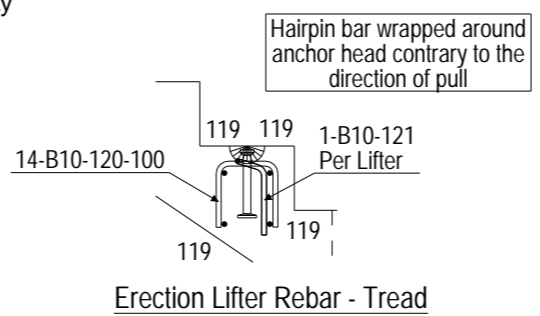
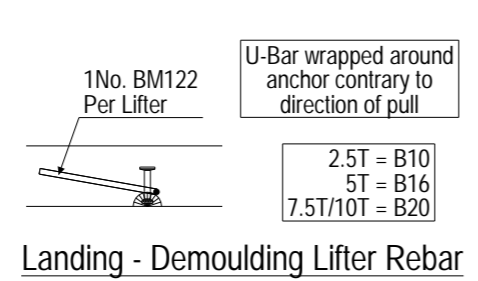
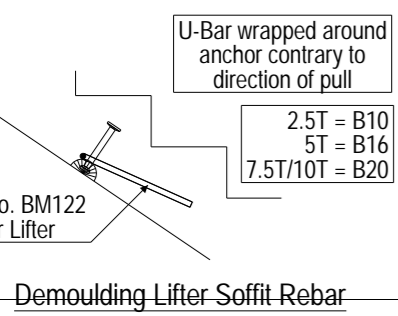
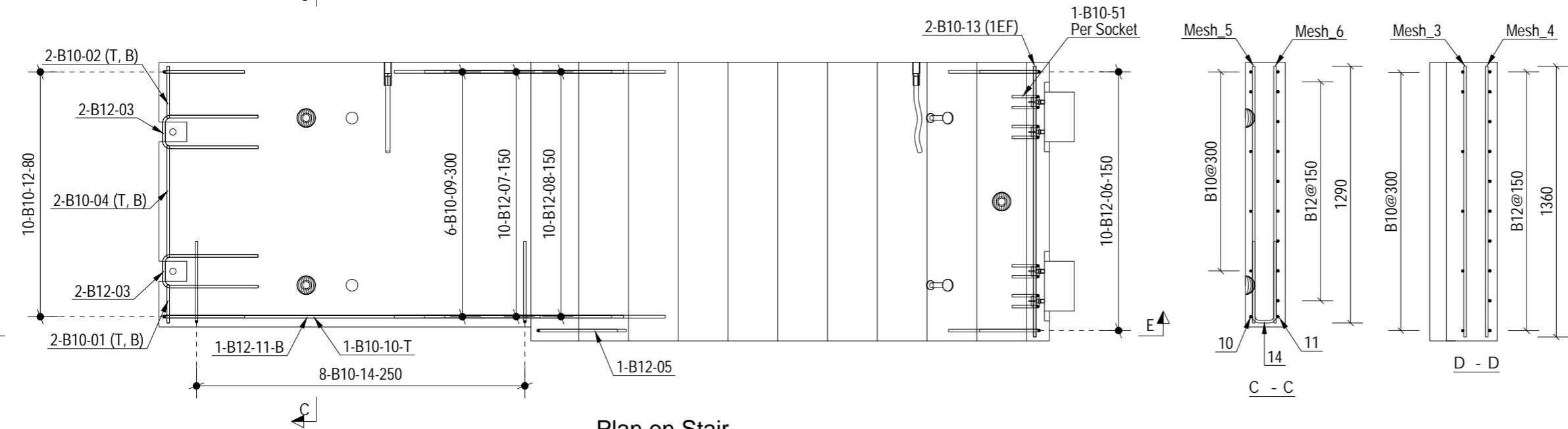
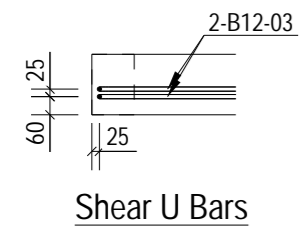
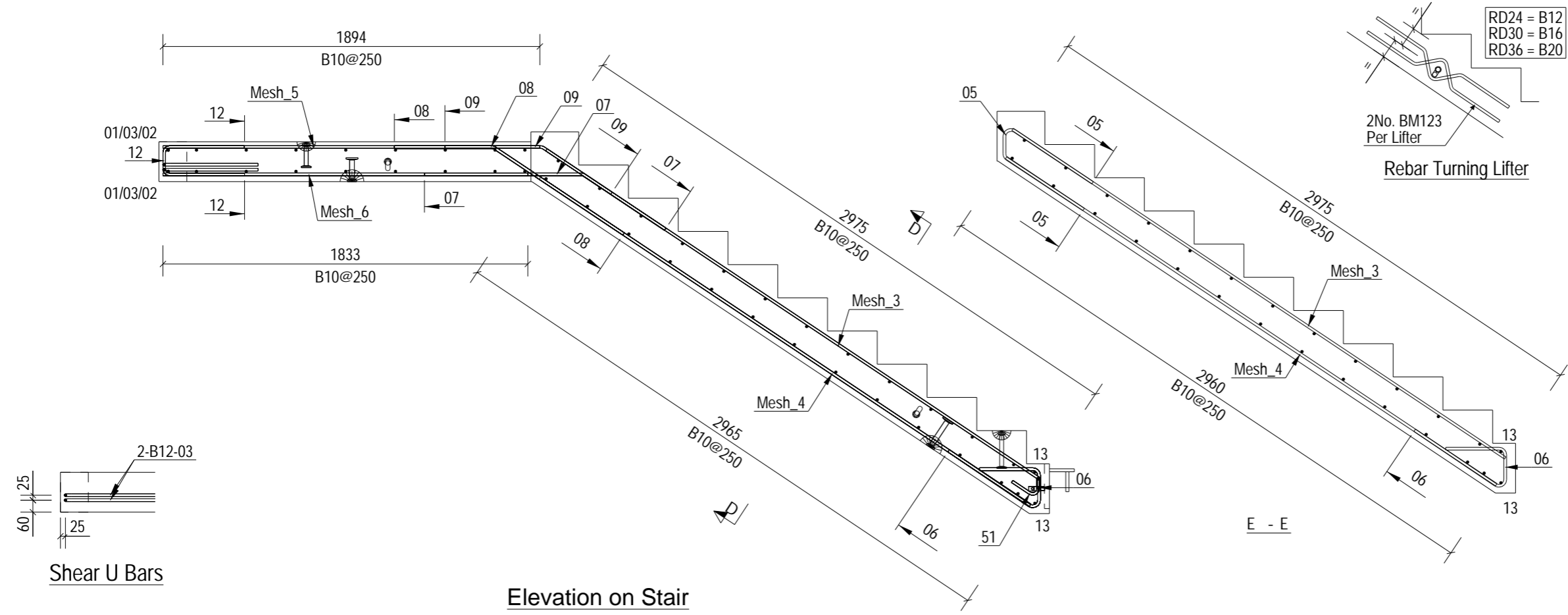
Client: 

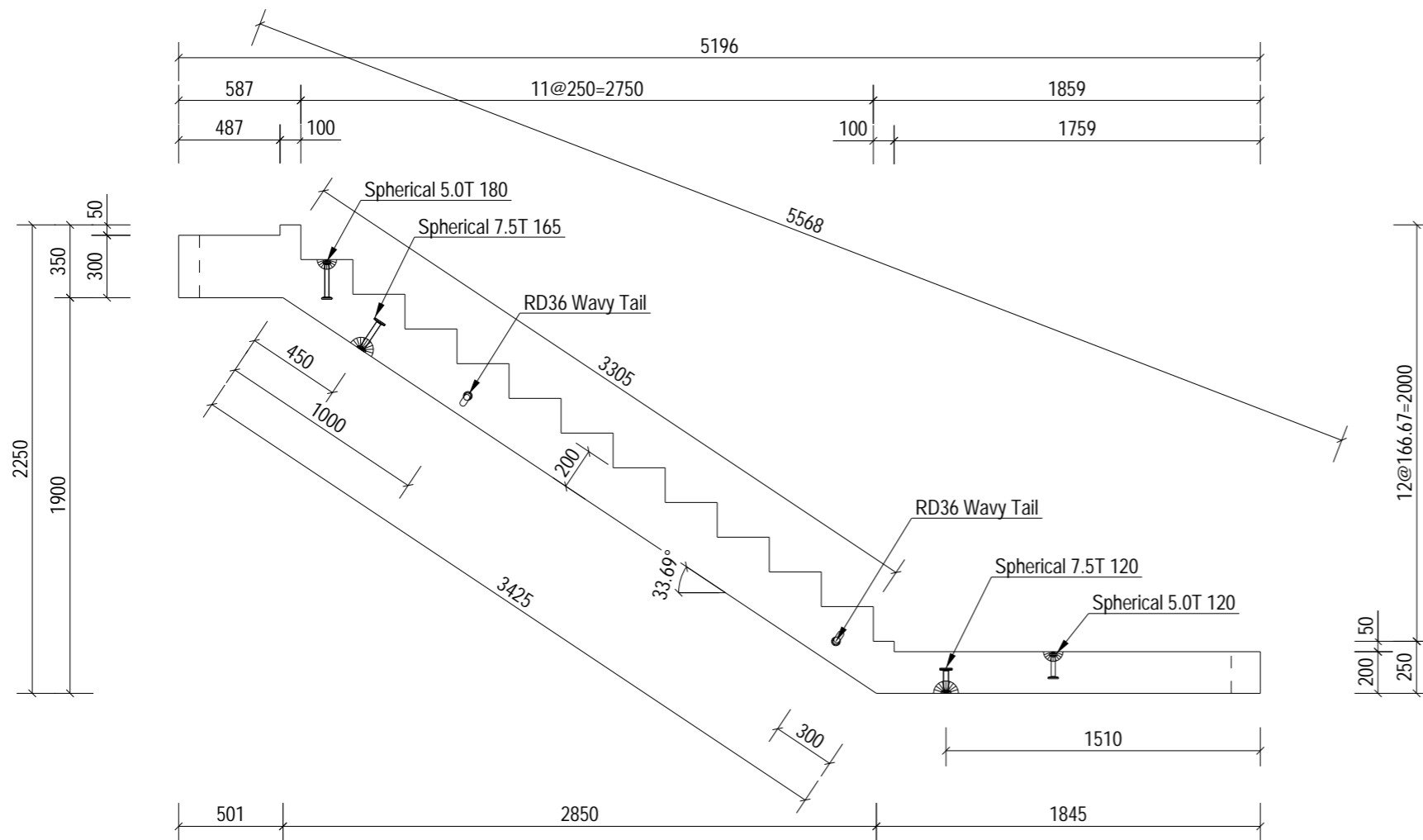
Project: **Panattoni Park Poyle**

Title: **RC1 of STAIRS SF-0009**

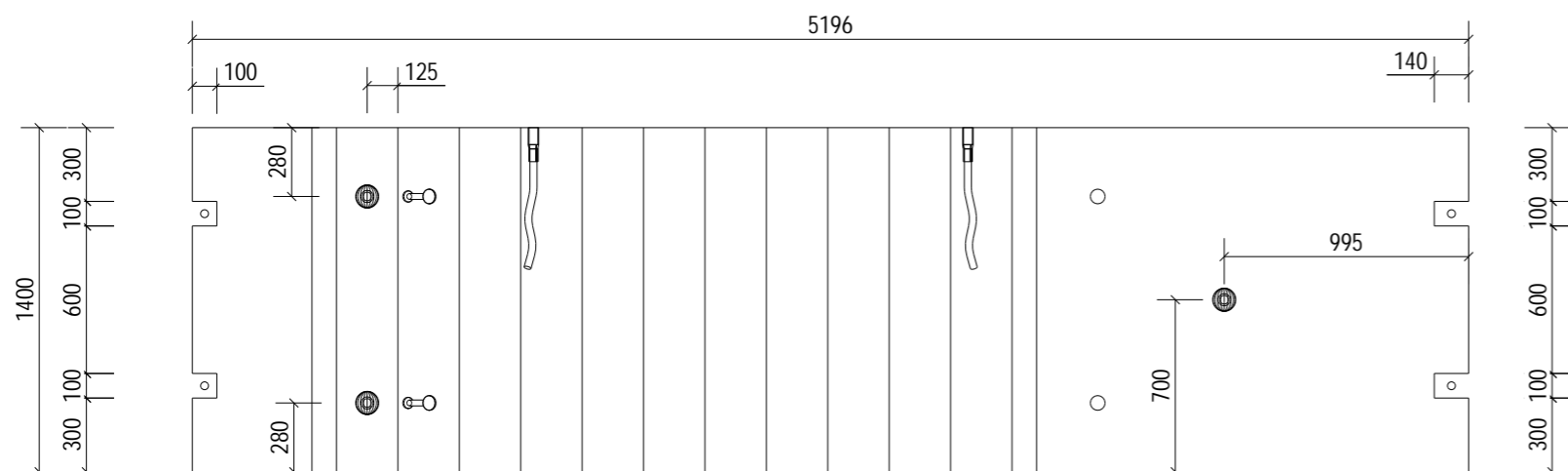
Scale: 1:25 Status: As Built - CR
Date: 26-03-24

Drawn: LN Checked: AB Approved: SJH
Drawing No: 05-BYL-1462-SF-0009-RC1 Rev: C01



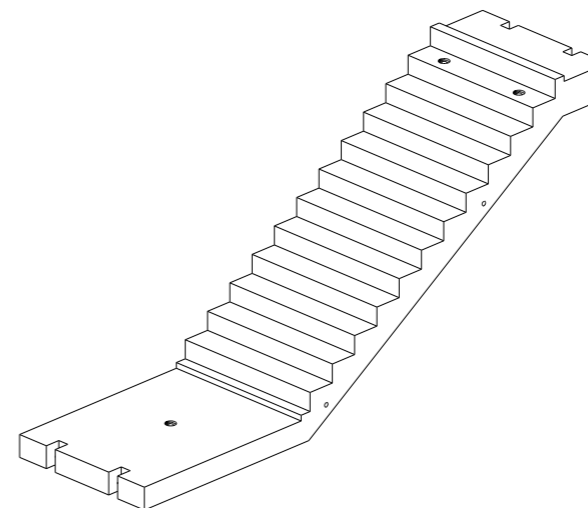


Elevation on Stair



Plan on Stair

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:

Type.	STAIRS	
Length.	2250	+4 / -4
Height.	5196	+4 / -4
Width.	1400	+4 / -4
Weight. (T)	5.05	
Volume. (m³)	2.02	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SF-0010-RC1	
BBS Ref.	05-BYL-1462-SF-0010-BBS	
Calculation Ref.	FPMCB-1462-SF-0010-C01	
Cover.	[REDACTED]	
Casting Bed.	Stair Mould	
Mark.	SF-0010	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	Spherical 5.0T 180	LAP050180/SAP0050180
2	Spherical 7.5T 120	LAP075120/SAP0075120
2	Spherical 7.5T 165	LAP075165/SAP0075165
2	RD36 Wavy Tail	SLWL36570/SSLW36570
1	Spherical 5.0T 120	LAP050120/SAP0050120

90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM

Rev	Date	Revision Detail	By	Chk	App
C01	28-03-24	Issued for Manufacture	LN	AB	SJH



FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire.
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

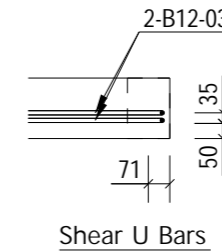
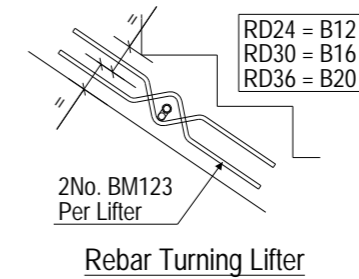
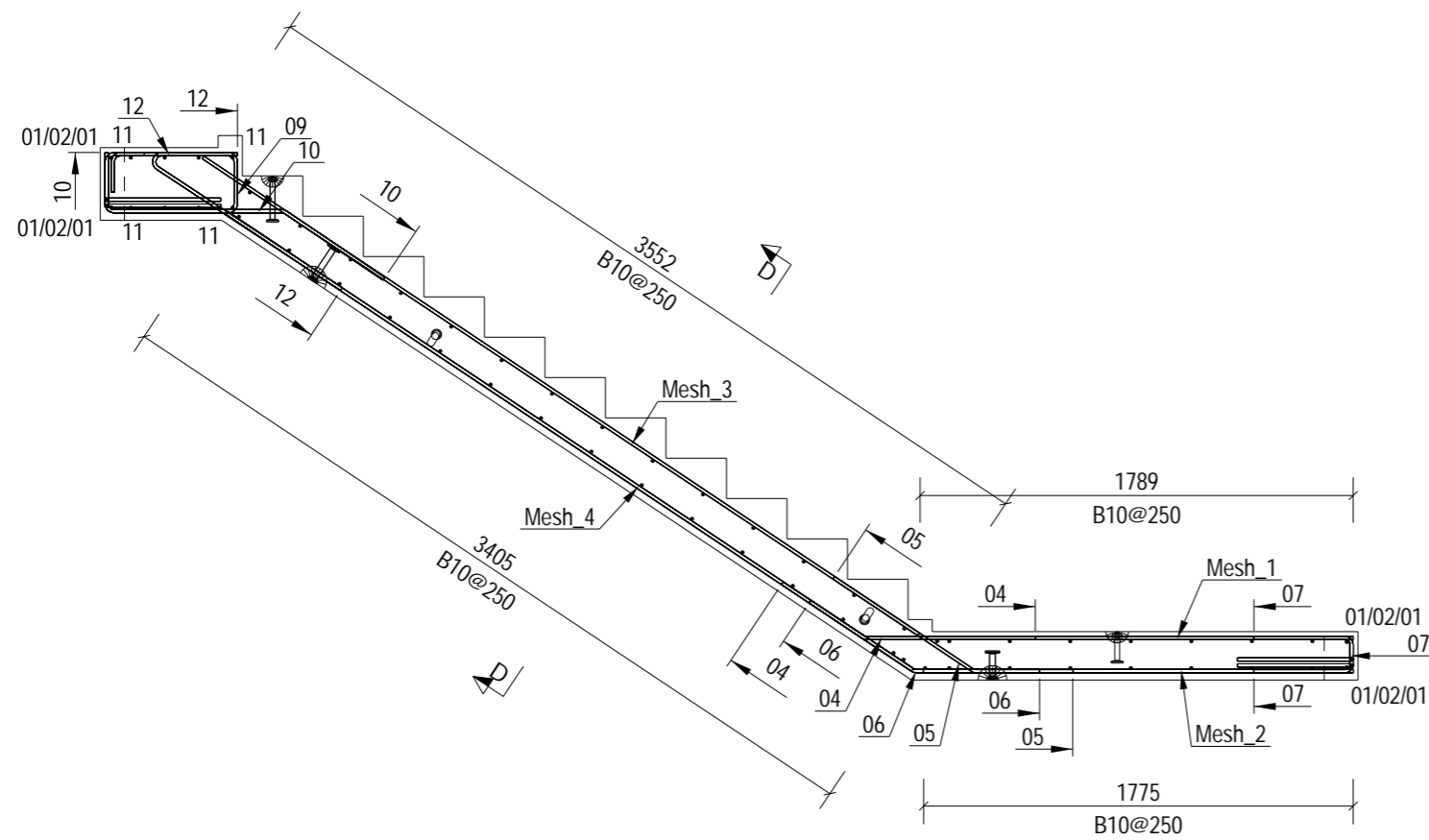
Title. **GA1 of STAIRS SF-0010**

Scale: 1:60 Status: As Built - CR

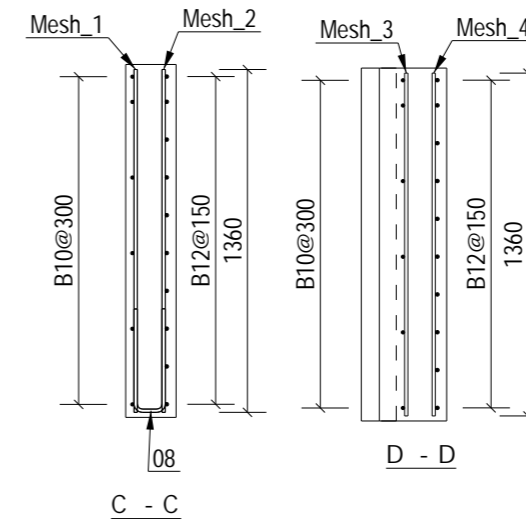
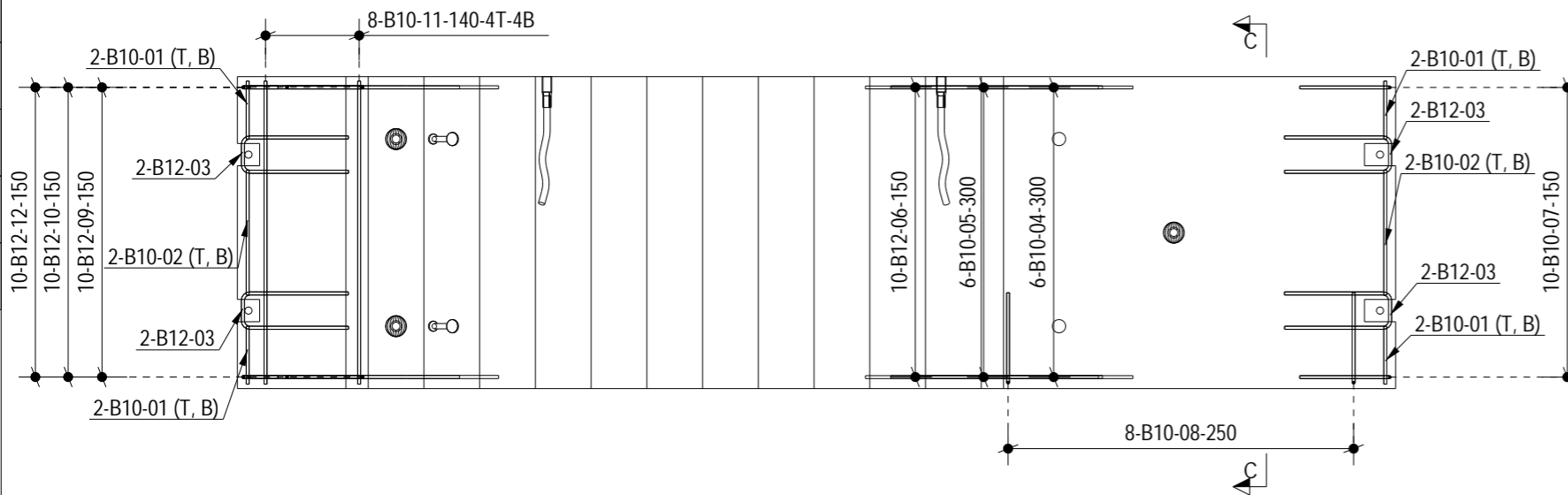
Date: 26-03-24

Drawn: LN Checked: AB Approved: SJH

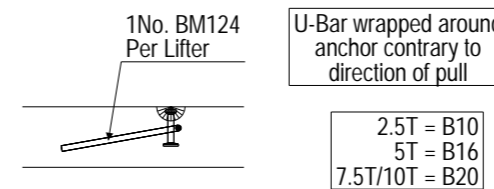
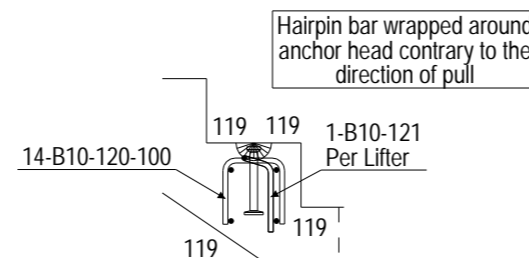
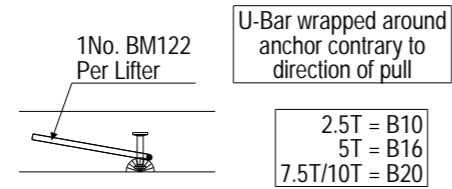
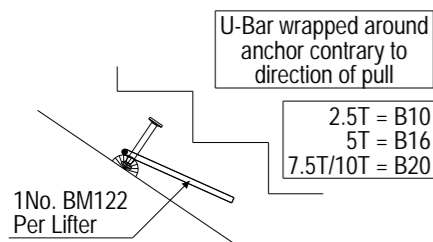
Drawing No : **05-BYL-1462-SF-0010-GA1** Rev: **C01**



Elevation on Stair



Plan on Stair
 Mesh Removed For Clarity



Demoulding Lifter Soffit Rebar

Landing - Demoulding Lifter Rebar

Erection Lifter Rebar - Tread

Landing - Erection Lifter Rebar

NOTES:

Type.	STAIRS
Mark.	SF-0010
GA Drg. Ref.	05-BYL-1462-SF-0010-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

**90MINS FIRE RATING
 TOP & SIDE COVER 20MM
 SOFFIT COVER 30MM**

C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client:

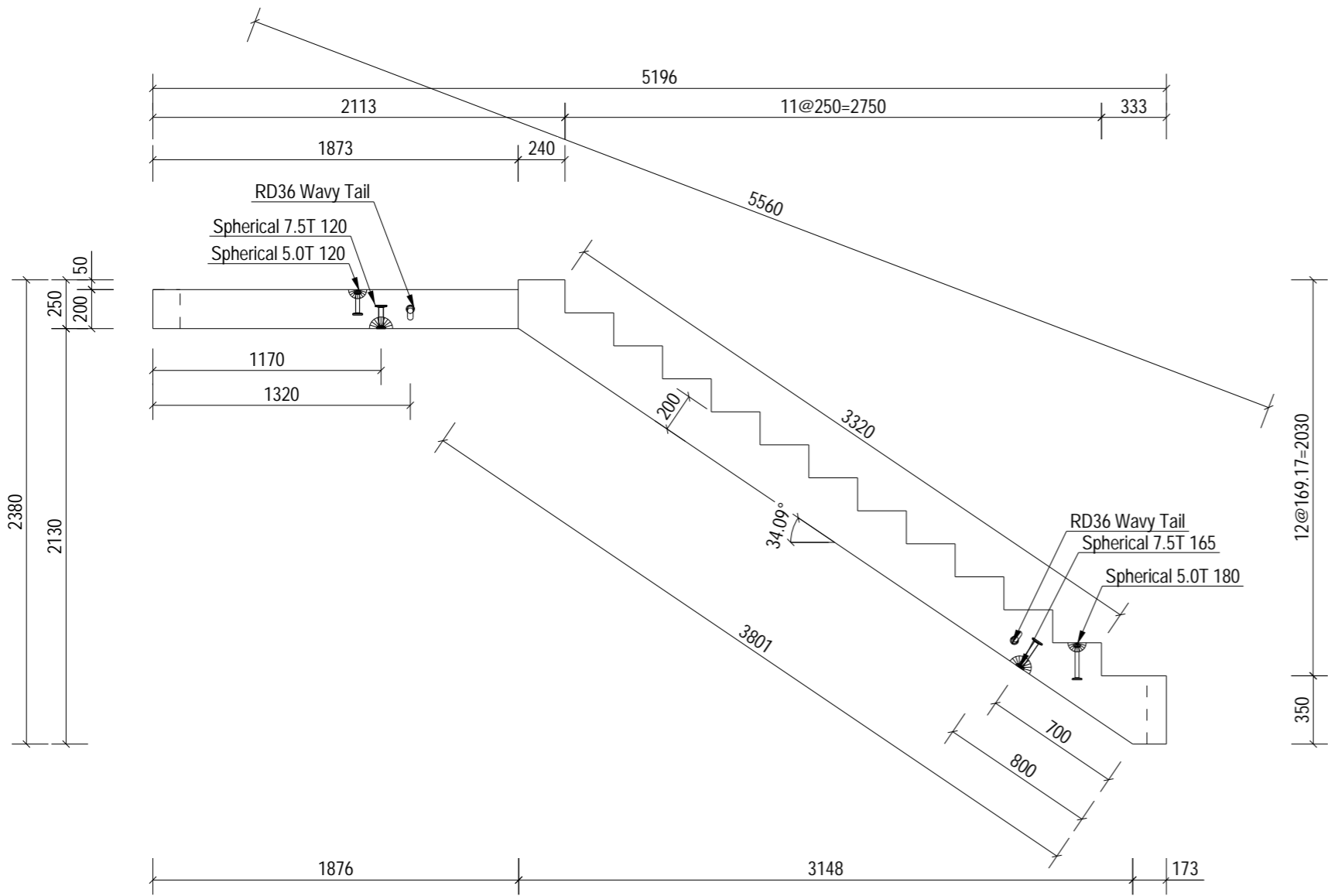
Project: **Panattoni Park Poyle**

Title: **RC1 of STAIRS SF-0010**

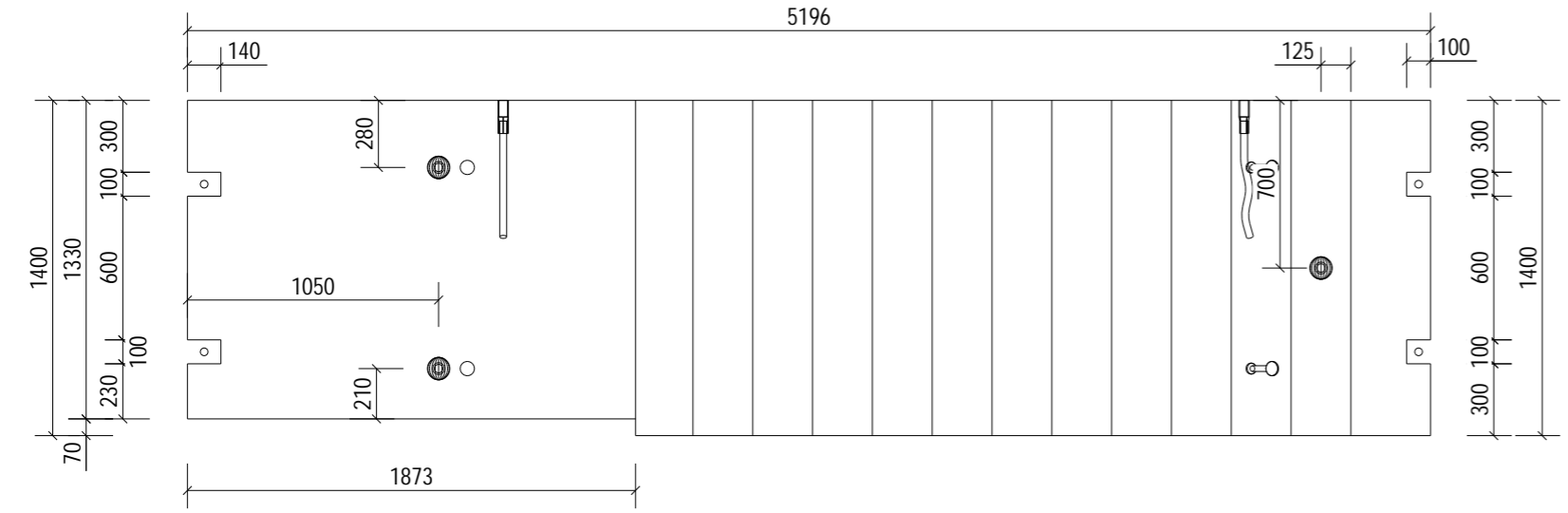
Scale: 1:30 Status: As Built - CR
 Date: 26-03-24

Drawn: LN Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SF-0010-RC1 Rev: C01

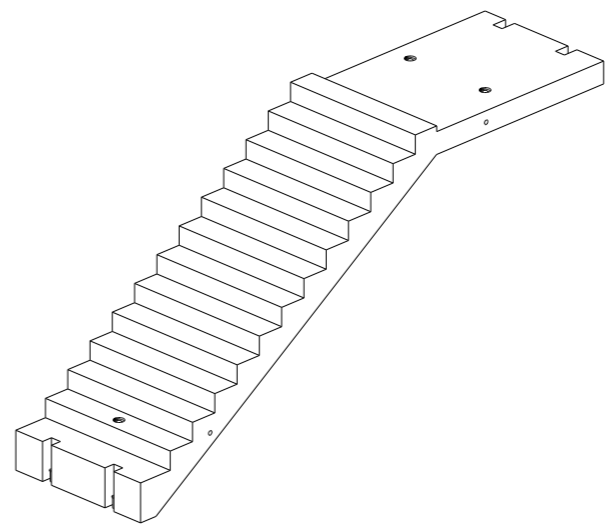


Elevation on Stair



Plan on Stair

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:		
Type.	STAIRS	
Length.	2380	+4 / -4
Height.	5196	+4 / -4
Width.	1400	+4 / -4
Weight. (T)	5.01	
Volume. (m³)	2.00	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SF-0011-RC1
BBS Ref.	05-BYL-1462-SF-0011-BBS
Calculation Ref.	FPMCB-1462-SF-0011-C01
Cover.	
Casting Bed.	Stair Mould
Mark.	SF-0011
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT		
No.	Item	Ref.
2	Spherical 5.0T 120	LAP050120/SAP0050120
2	Spherical 7.5T 120	LAP075120/SAP0075120
2	Spherical 7.5T 165	LAP075165/SAP0075165
2	RD36 Wavy Tail	SLWL36570/SSLW36570
1	Spherical 5.0T 180	LAP050180/SAP0050180

90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM

C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire.
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

Title. **GA1 of STAIRS SF-0011**

Scale: 1:60 Status: As Built - CR
 Date: 27-03-24

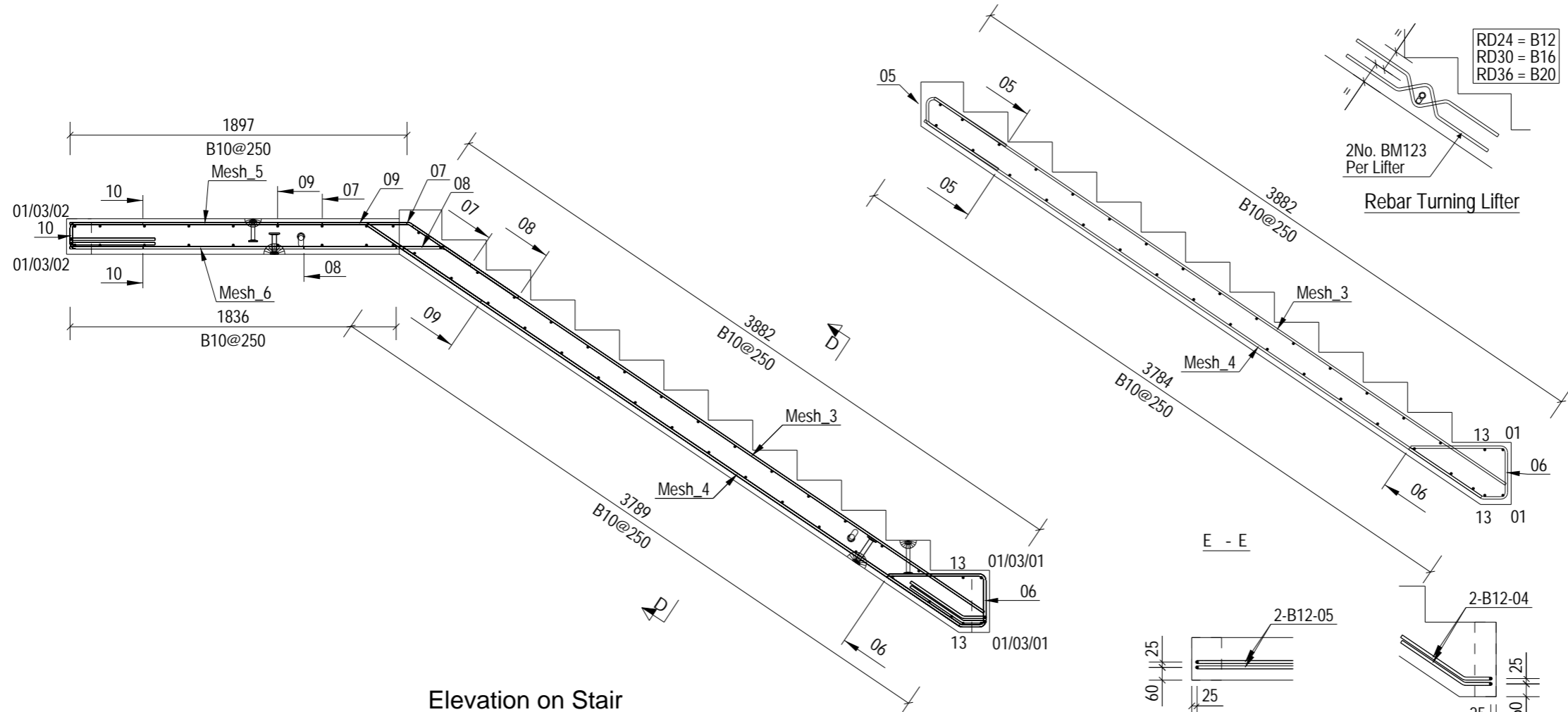
Drawn: LN Checked: AB Approved: SJH

Drawing No : **05-BYL-1462-SF-0011-GA1** Rev: **C01**

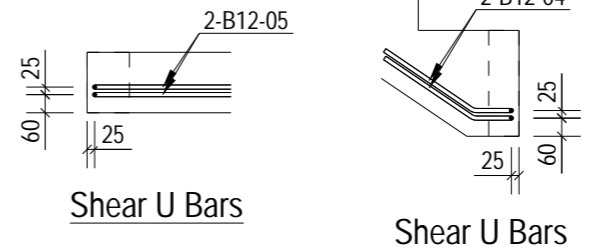
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

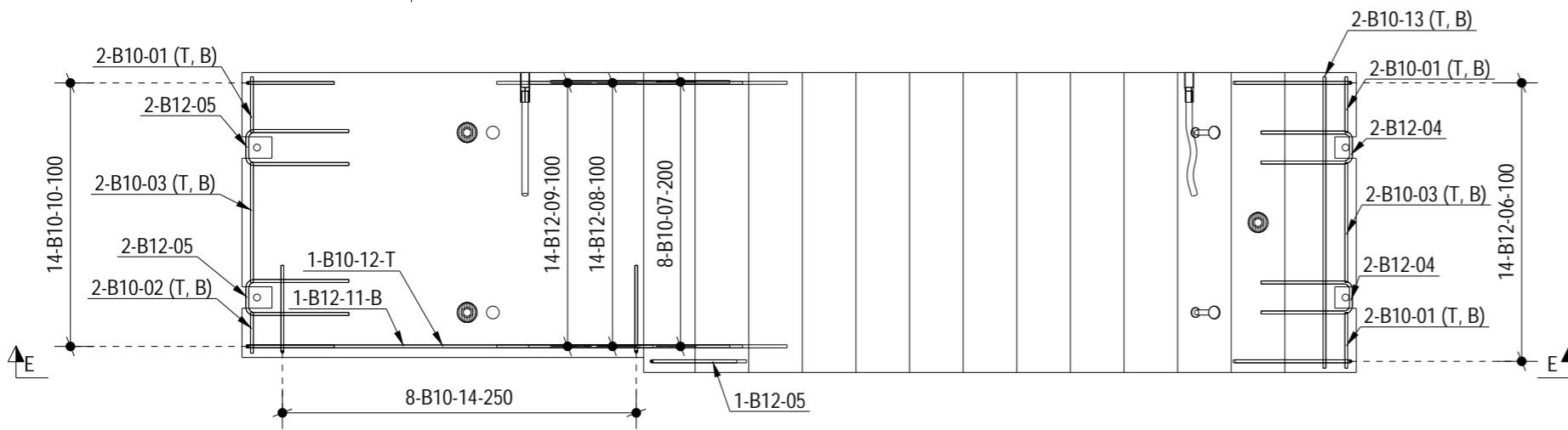
10mm



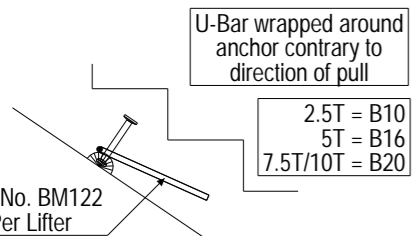
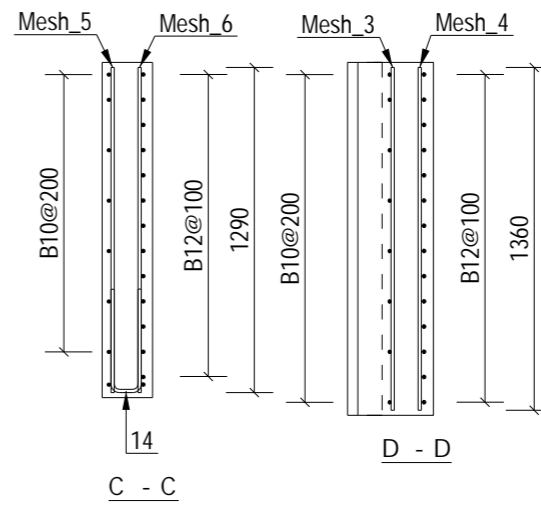
Elevation on Stair



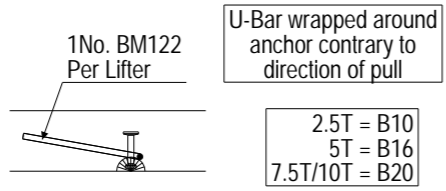
Shear U Bars



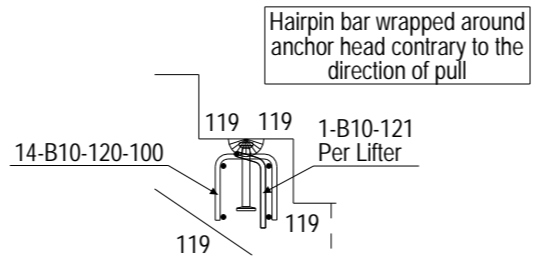
Plan on Stair
Mesh Removed For Clarity



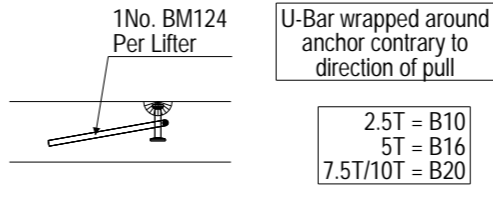
Demoulding Lifter Soffit Rebar



Landing - Demoulding Lifter Rebar



Erection Lifter Rebar - Tread



Landing - Erection Lifter Rebar

NOTES:

Type.	STAIRS
Mark.	SF-0011
GA Drg. Ref.	05-BYL-1462-SF-0011-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client:

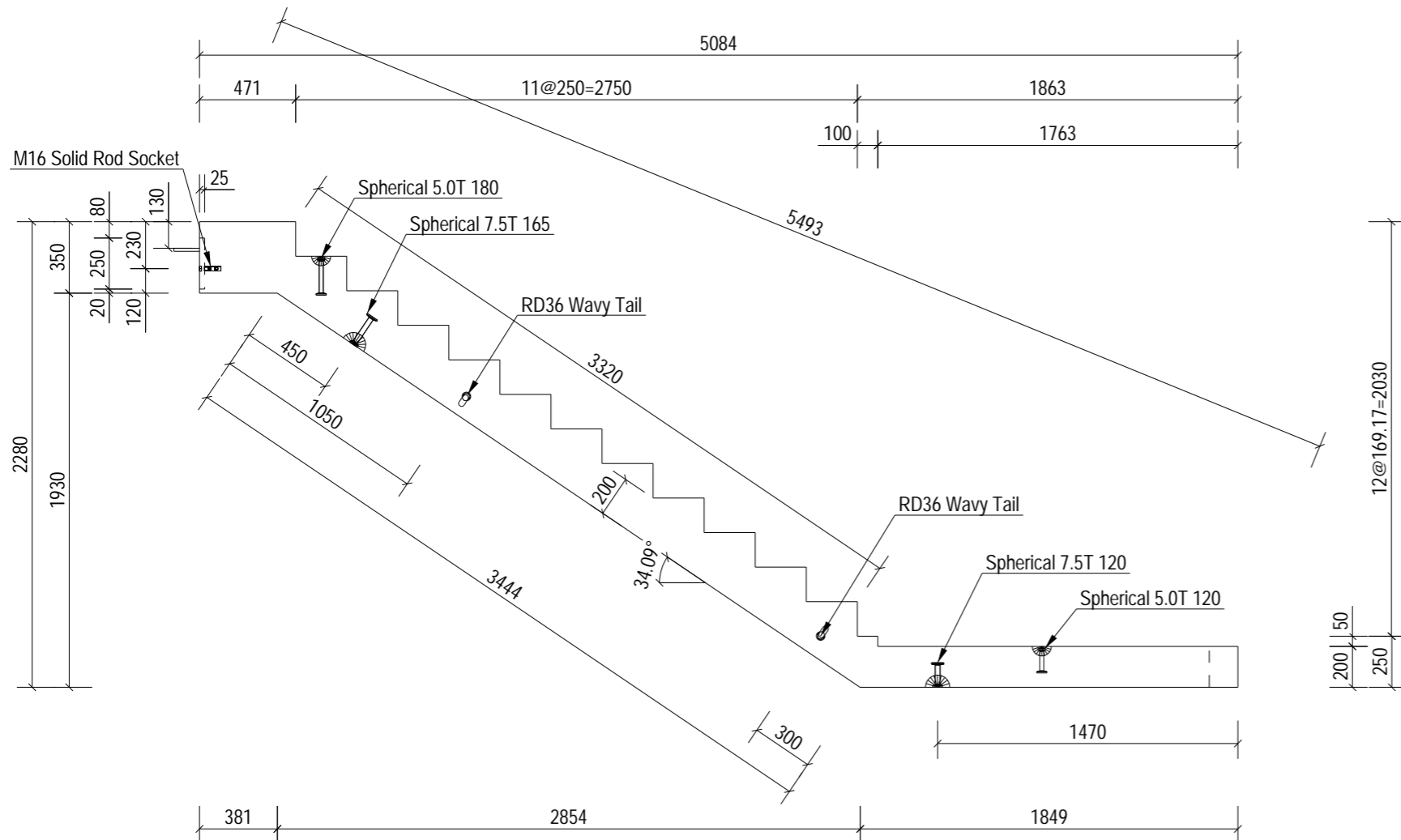
Project: **Panattoni Park Poyle**

Title: **RC1 of STAIRS SF-0011**

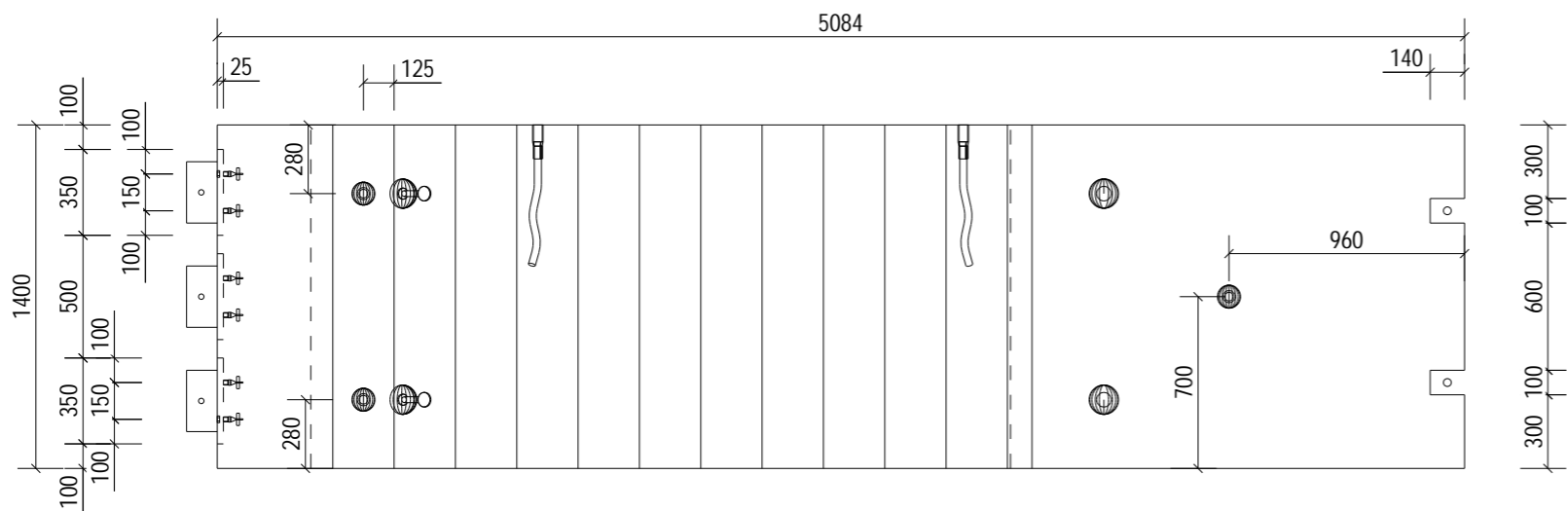
Scale: 1:30	Status: As Built - CR	
Date: 27-03-24		
Drawn: LN	Checked: AB	Approved: SJH

Drawing No : **05-BYL-1462-SF-0011-RC1** Rev: **C01**

A3
10mm

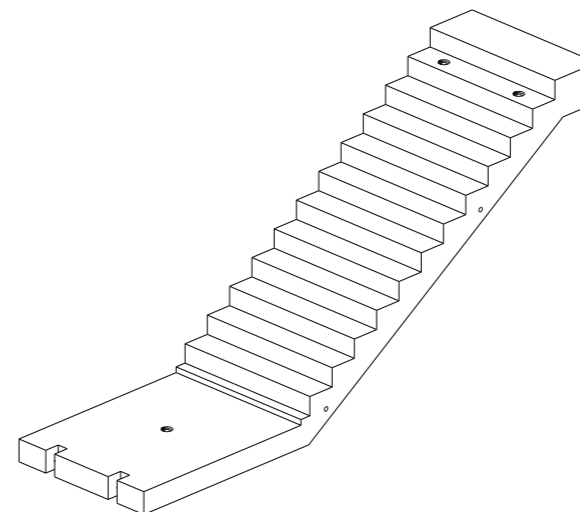


Elevation on Stair



Plan on Stair

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:

Type.	STAIRS	
Length.	2280	+4 / -4
Height.	5084	+4 / -4
Width.	1400	+4 / -4
Weight. (T)	5.05	
Volume. (m ³)	2.00	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SF-0012-RC1	
BBS Ref.	05-BYL-1462-SF-0012-BBS	
Calculation Ref.	FPMCB-1462-SF-0012-C01	
Cover.	[REDACTED]	
Casting Bed.	Stair Mould	
Mark.	SF-0012	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
6	M16 Solid Rod Socket	SSRCP1675/SSSCP1675
2	Spherical 5.0T 180	LAP050180/SAP0050180
2	Spherical 7.5T 120	LAP075120/SAP0075120
2	Spherical 7.5T 165	LAP075165/SAP0075165
2	RD36 Wavy Tail	SLWL36570/SSLW36570
1	Spherical 5.0T 120	LAP050120/SAP0050120

Loose Fitting Take Off:		
Angle Cleat Type-1	(0)	3 No.

90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM

C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



F.P. McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client: 

Project: **Panattoni Park Poyle**

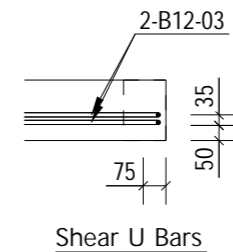
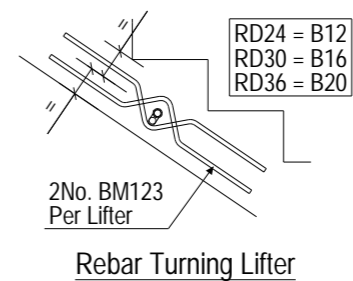
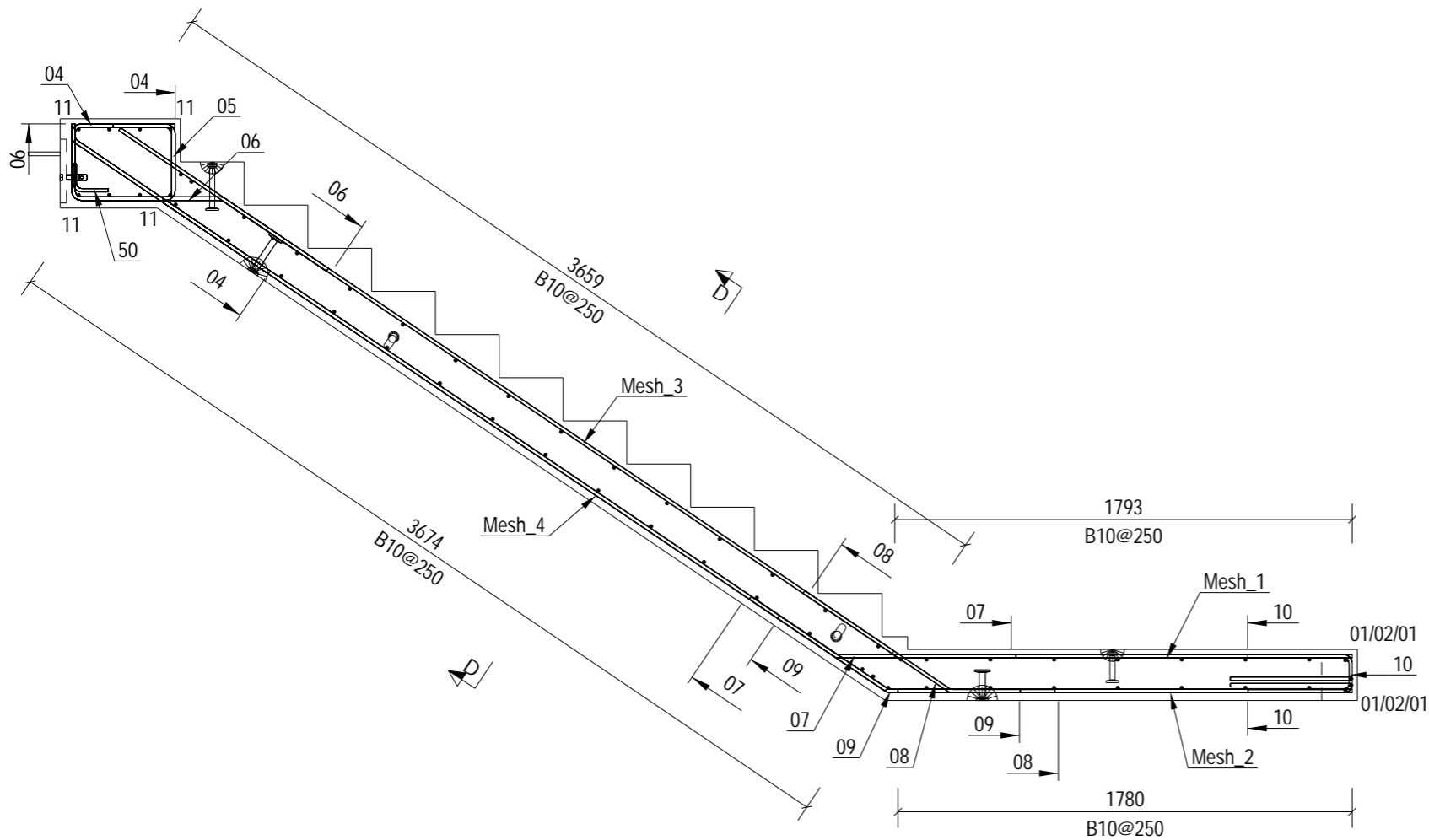
Title: **GA1 of STAIRS SF-0012**

Scale: 1:60 Status: As Built - CR

Date: 26-03-24

Drawn: LN Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SF-0012-GA1 Rev: C01



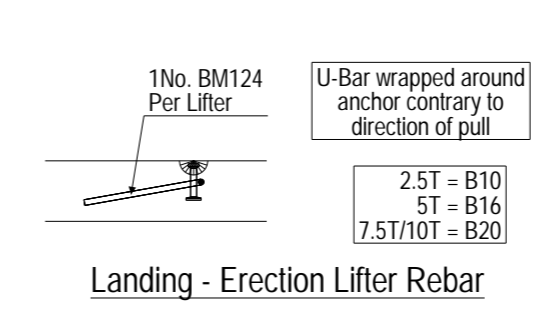
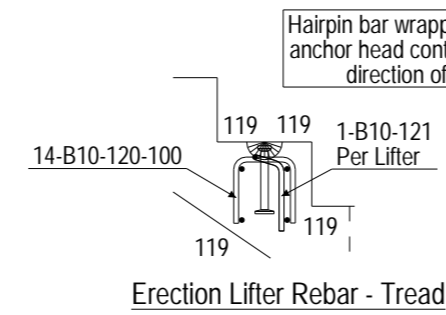
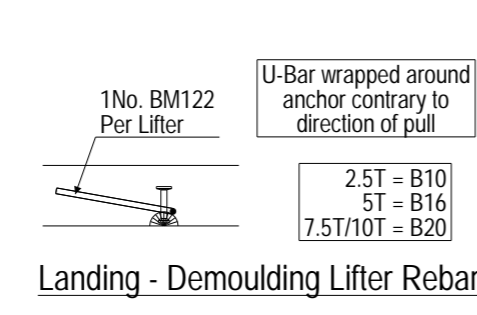
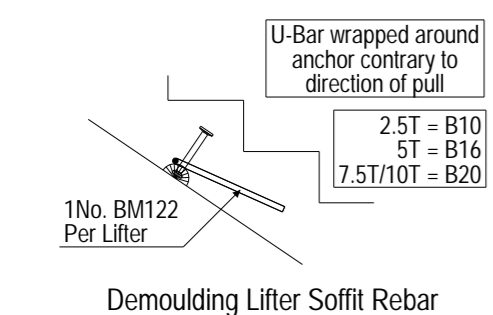
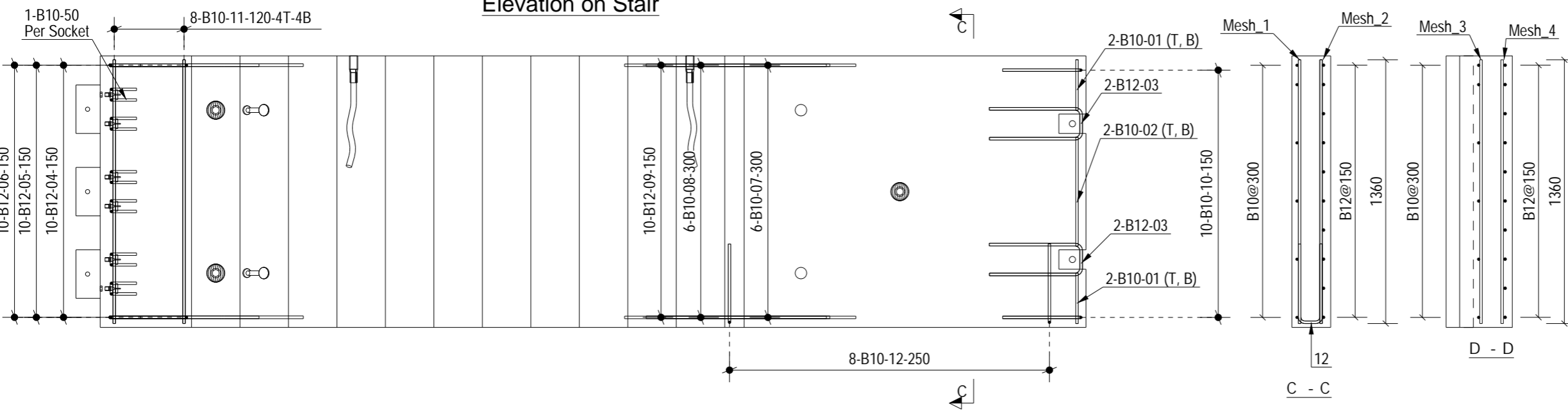
NOTES:

Type.	STAIRS
Mark.	SF-0012
GA Drg. Ref.	05-BYL-1462-SF-0012-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**



C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

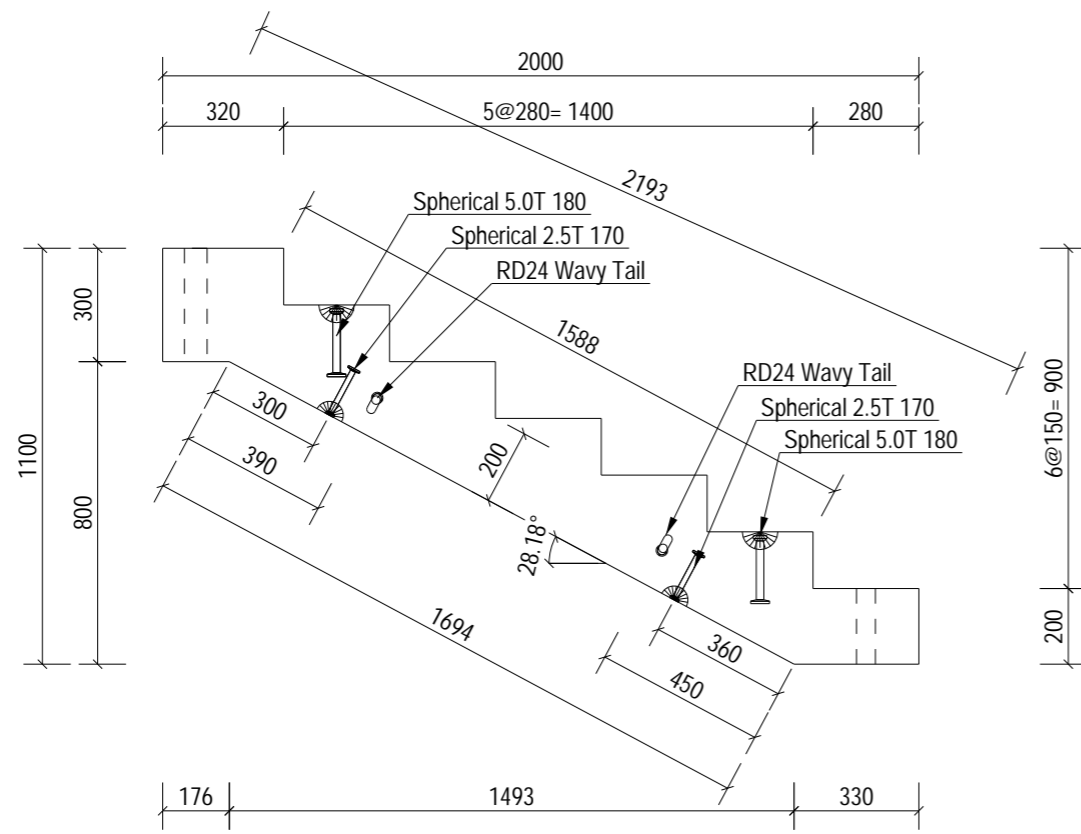
Client: **winvic**

Project: **Panattoni Park Poyle**

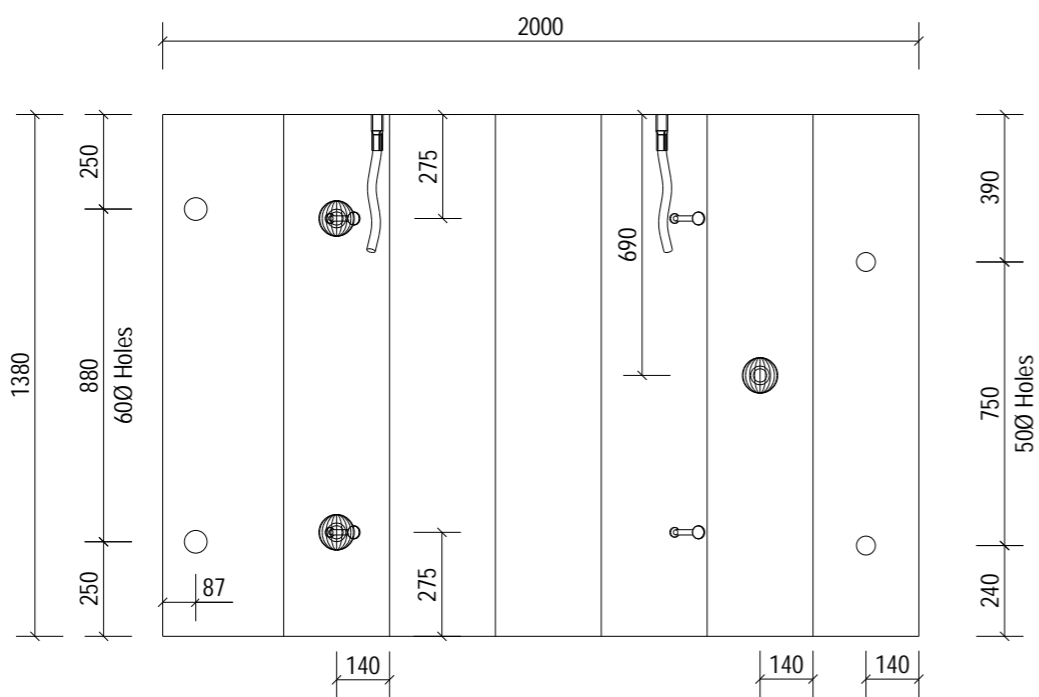
Title: **RC1 of STAIRS SF-0012**

Scale: 1:25	Status: As Built - CR		
Date: 26-03-24	Drawn: LN	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-SF-0012-RC1	Rev: C01		

A3

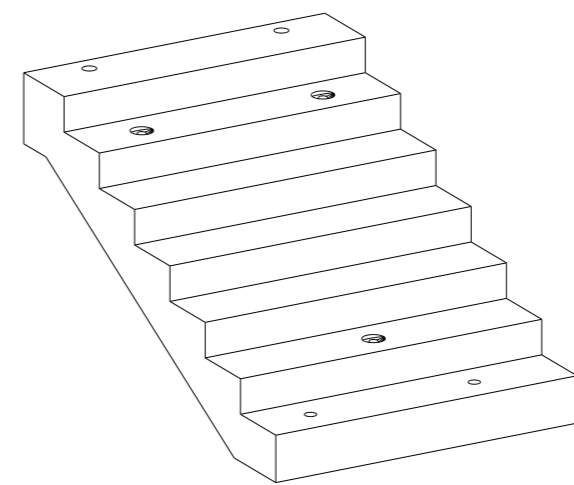


Elevation on Stair



Plan on Stair

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)		Variation	
Up to 3m		± 6mm	
3 to 4.5m		± 9mm	
4.5 to 6m		± 12mm	
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:		
Type.	STAIRS	
Length.	1100	+4 / -4
Height.	2000	+4 / -4
Width.	1380	+4 / -4
Weight. (T)	2.00	
Volume. (m³)	0.80	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SF-0020-RC1
BBS Ref.	05-BYL-1462-SF-0020-BBS
Calculation Ref.	FPMCB-1462-SF-0020-C01
Cover.	
Casting Bed.	Stair Mould
Mark.	SF-0020
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT		
No.	Item	Ref.
4	Spherical 2.5T 170	LAP025170/SAP0025170
3	Spherical 5.0T 180	LAP050180/SAP0050180
2	RD24 Wavy Tail	SLWL24360/SSLW24360

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC
fpmccann

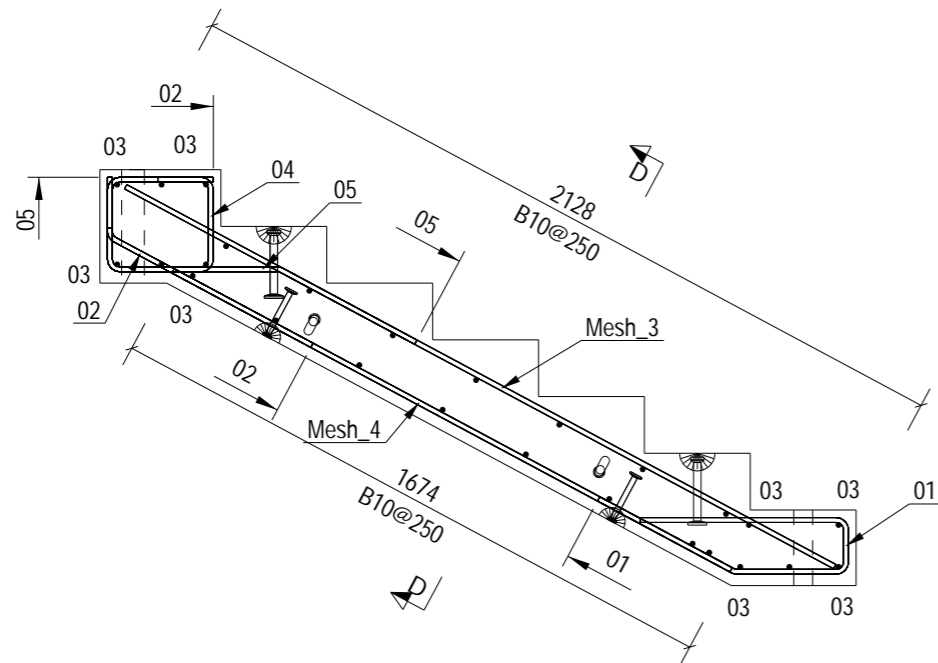
FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. **winvic**

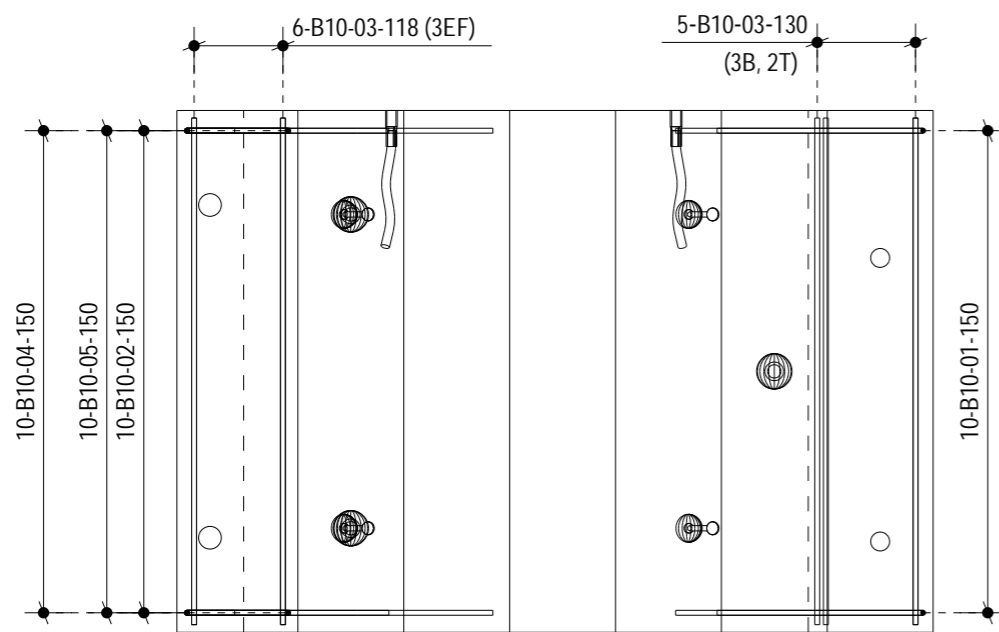
Project. **Panattoni Park
Poyle**

Title. **GA1 of
STAIRS SF-0020**

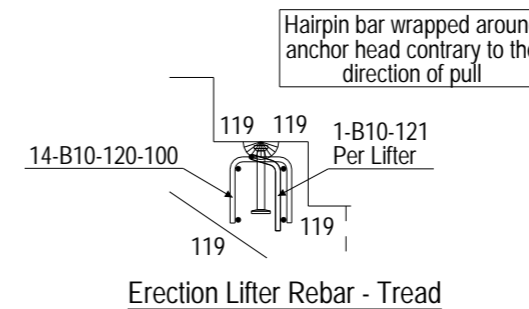
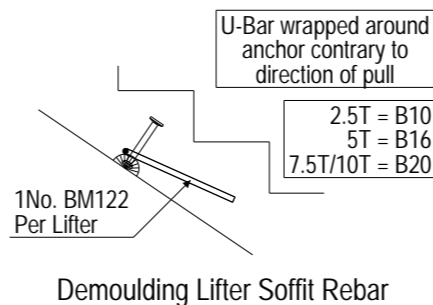
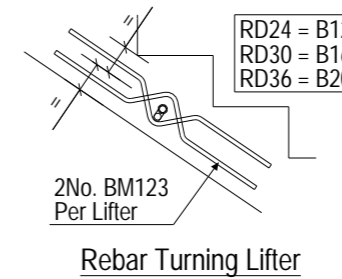
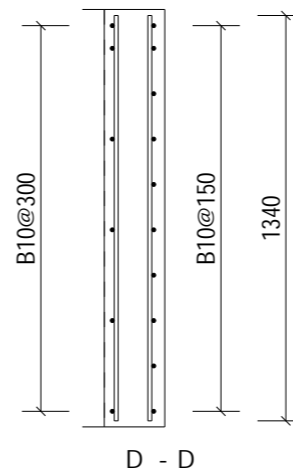
Scale: 1:30	Status: As Built - CR	
Date: 14-06-24		
Drawn: MF	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-SF-0020-GA1		Rev: C01



Elevation on Stair



Plan on Stair
Mesh Removed For Clarity



NOTES:

Type.	STAIRS
Mark.	SF-0020
GA Drg. Ref.	05-BYL-1462-SF-0020-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS
SHOW ARE
OVERALL SIZES.
REFER TO THE PXML
FOR ALL
SPECIFIC BAR
LOCATIONS

90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.



Project.

Panattoni Park
Poyle

Title.

RC1 of
STAIRS SF-0020

Scale: 1:25
Date: 14-06-24

Status:
As Built - CR

Drawn: MF Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SF-0020-RC1 Rev: C01

NOTES:		
Type.	STAIRS	
Length.	1550	+4 / -4
Height.	2665	+4 / -4
Width.	1780	+4 / -4
Weight. (T)	4.17	
Volume. (m ³)	1.66	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			

RC Drg. Ref.	05-BYL-1462-SF-0021-RC1
BBS Ref.	05-BYL-1462-SF-0021-BBS
Calculation Ref.	FPMCB-1462-SF-0021-C01
Cover.	
Casting Bed.	Stair Mould
Mark.	SF-0021
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT		
No.	Item	Ref.
7	Spherical 5.0T 180	LAP050180/SAP0050180
2	RD30 Wavy Tail	SLWL30450/SSLW30450

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

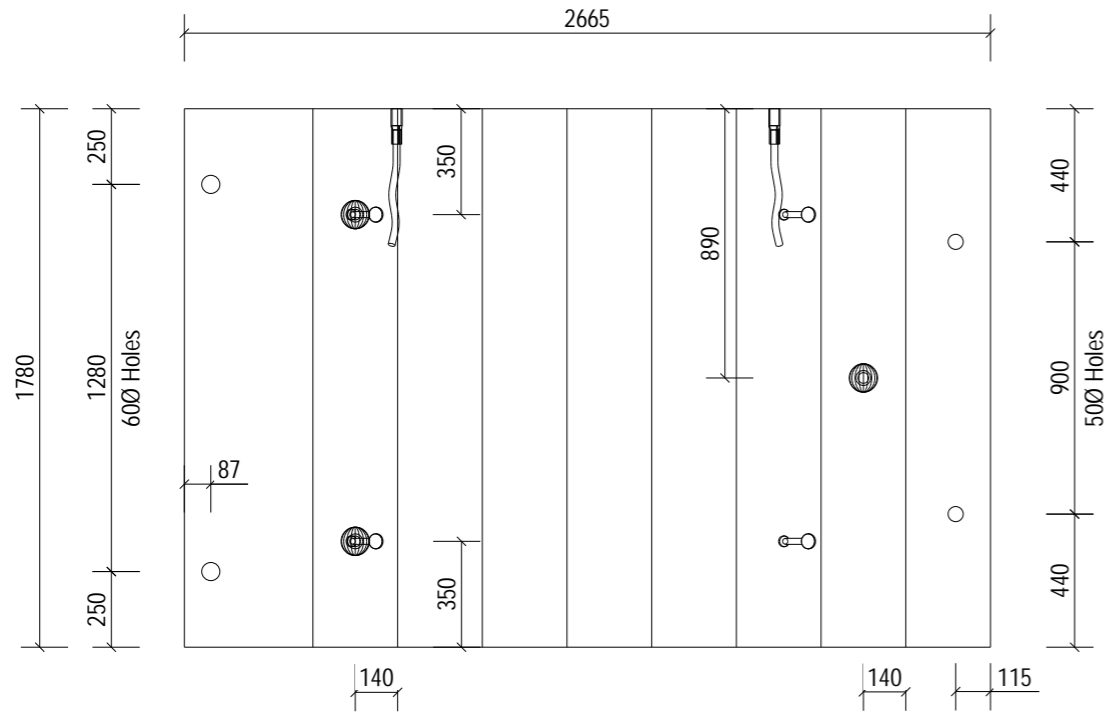
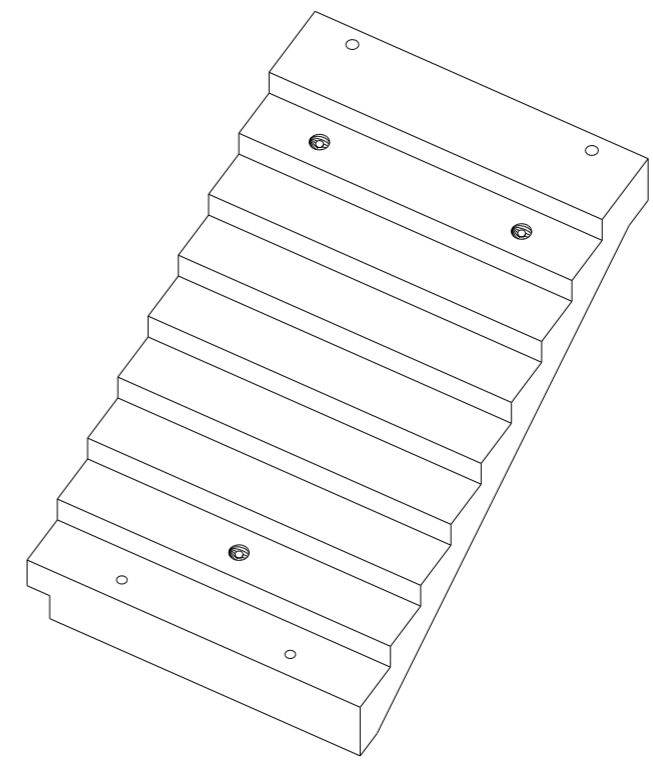
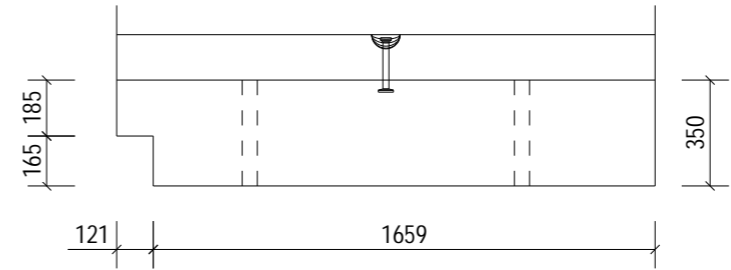
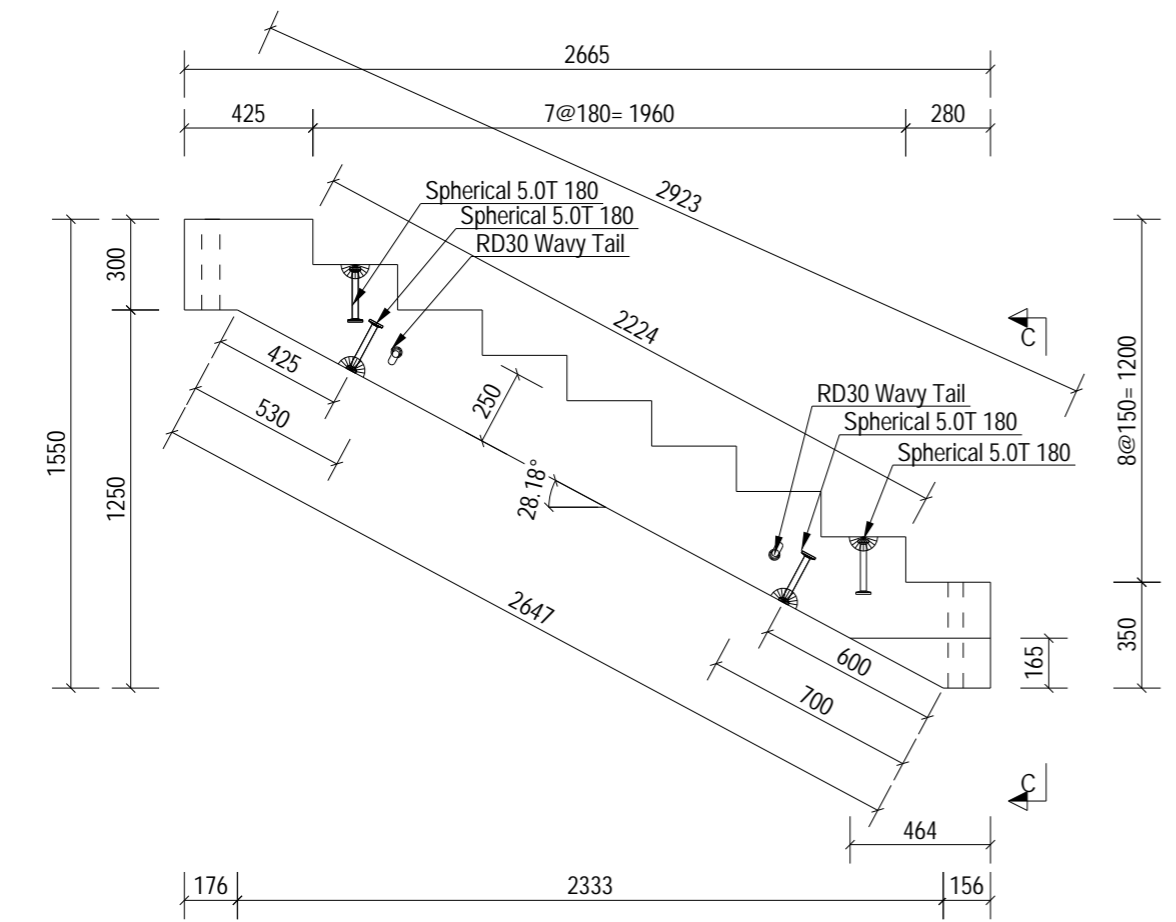
Project. **Panattoni Park Poyle**

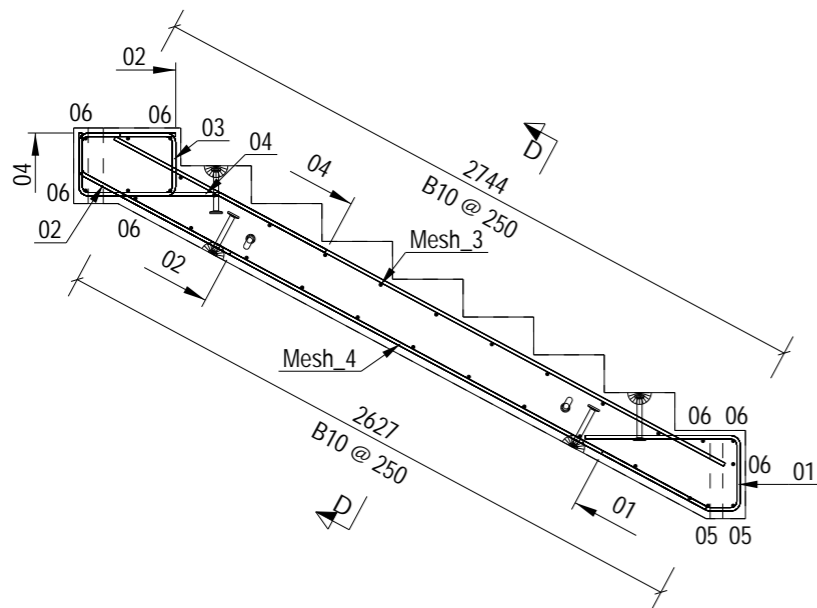
Title. **GA1 of STAIRS SF-0021**

Scale: 1:35 Status: As Built - CR
Date: 14-06-24

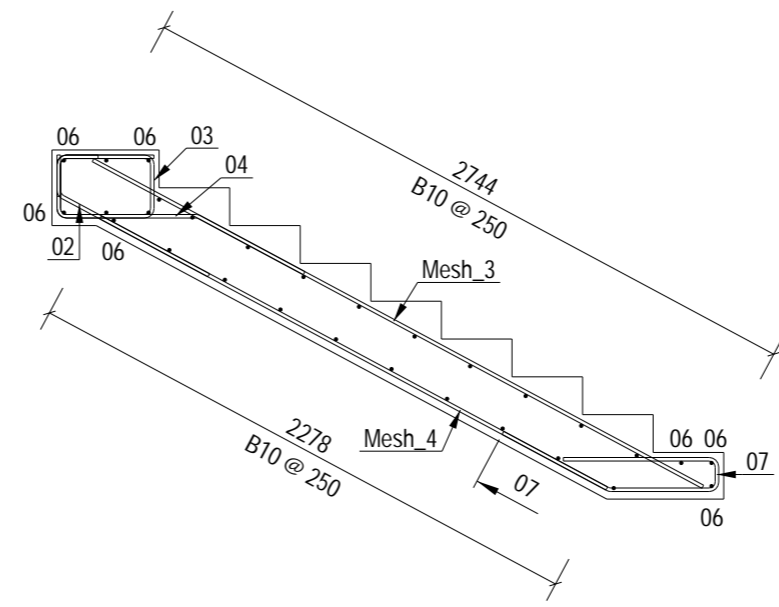
Drawn: MF Checked: AB Approved: SJH

Drawing No : **05-BYL-1462-SF-0021-GA1** Rev: **C01**

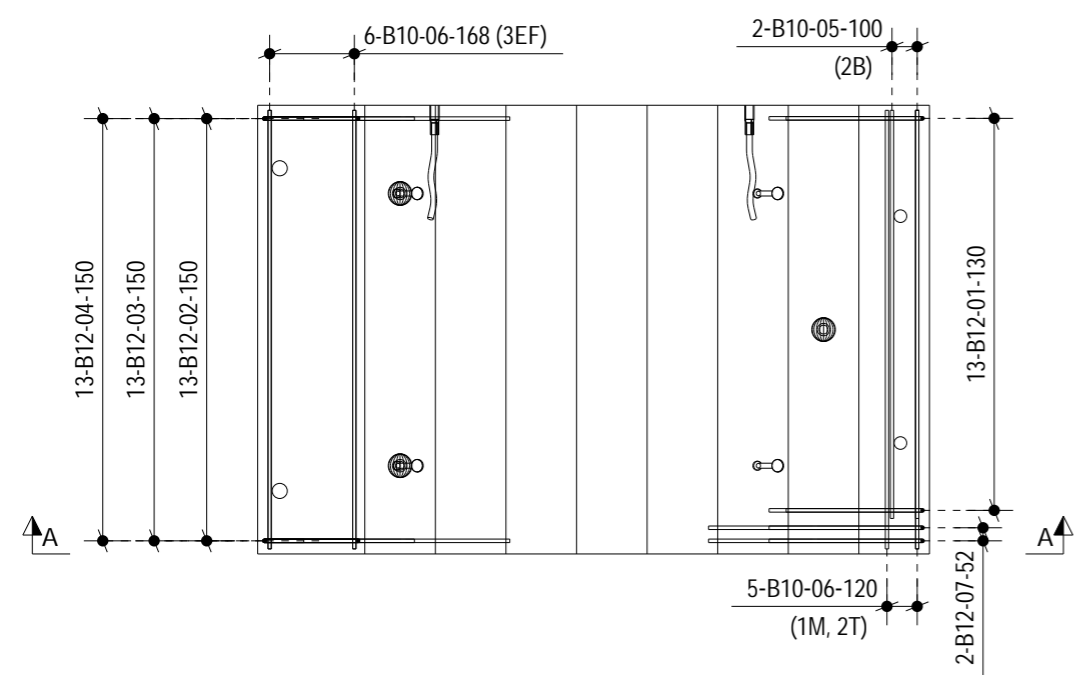




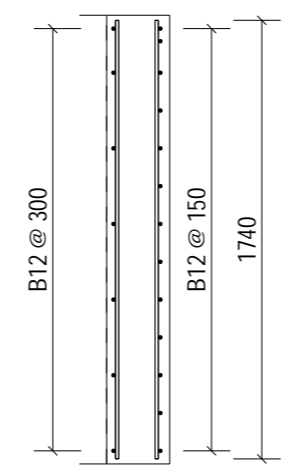
Elevation on Stair



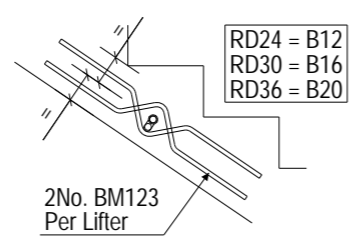
A - A



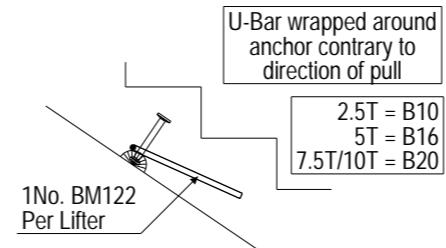
Plan on Stair
Mesh Removed For Clarity



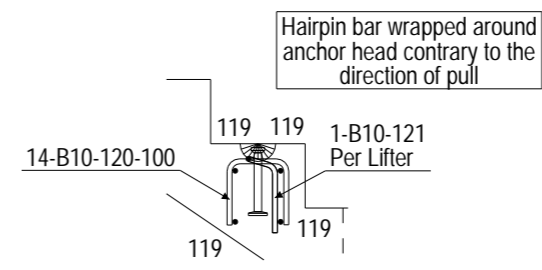
Section D - D



Rebar Turning Lifter



Demoulding Lifter Soffit Rebar



Erection Lifter Rebar - Tread

NOTES:

Type.	STAIRS
Mark.	SF-0021
GA Drg. Ref.	05-BYL-1462-SF-0021-GA1
Cover.	XXXXXXXXXX

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

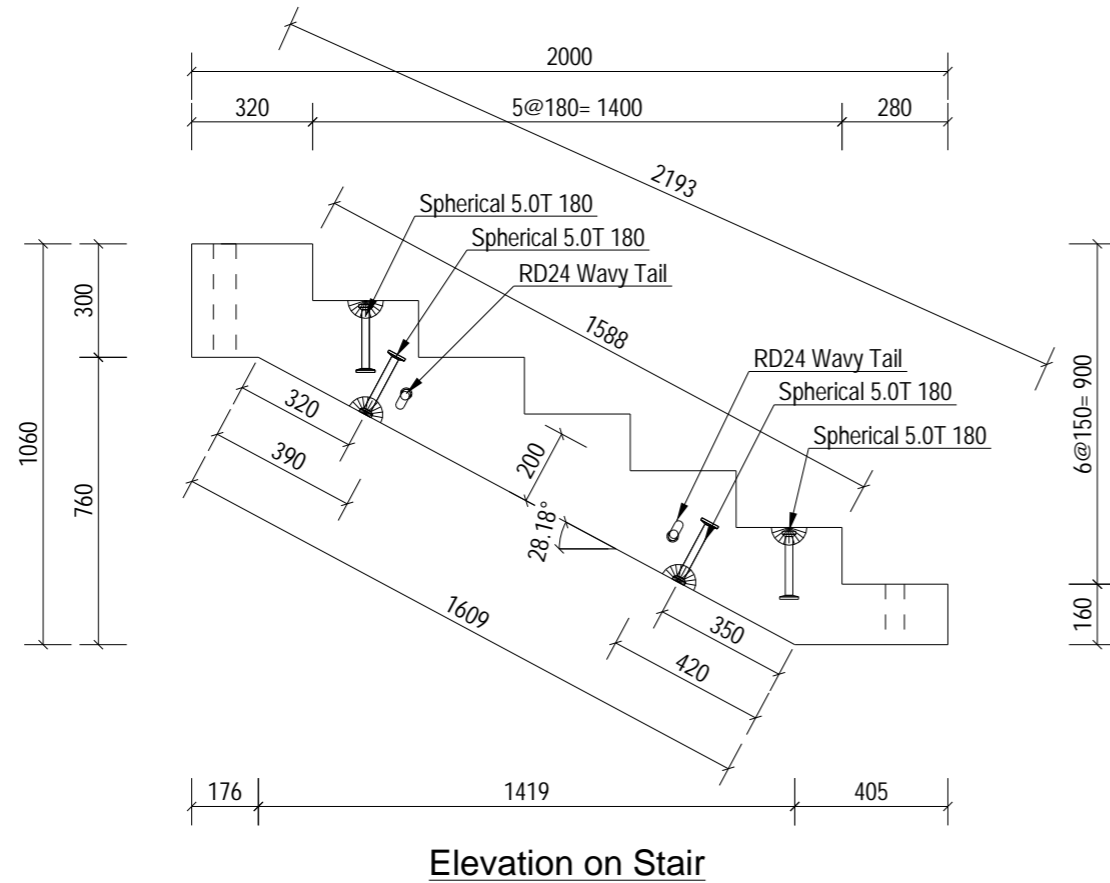
Project. **Panattoni Park Poyle**

Title. **RC1 of STAIRS SF-0021**

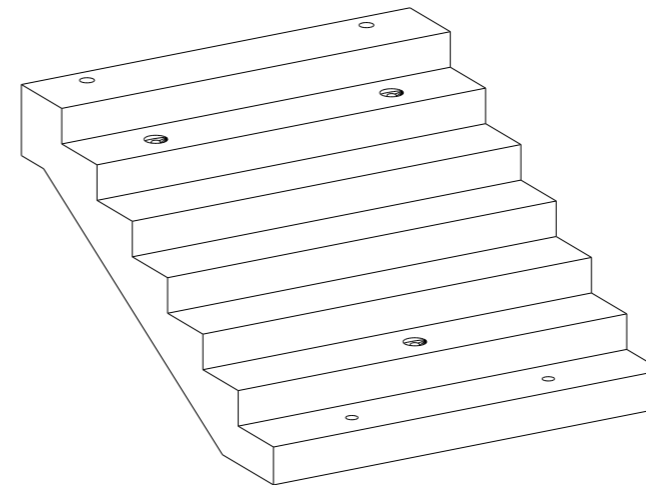
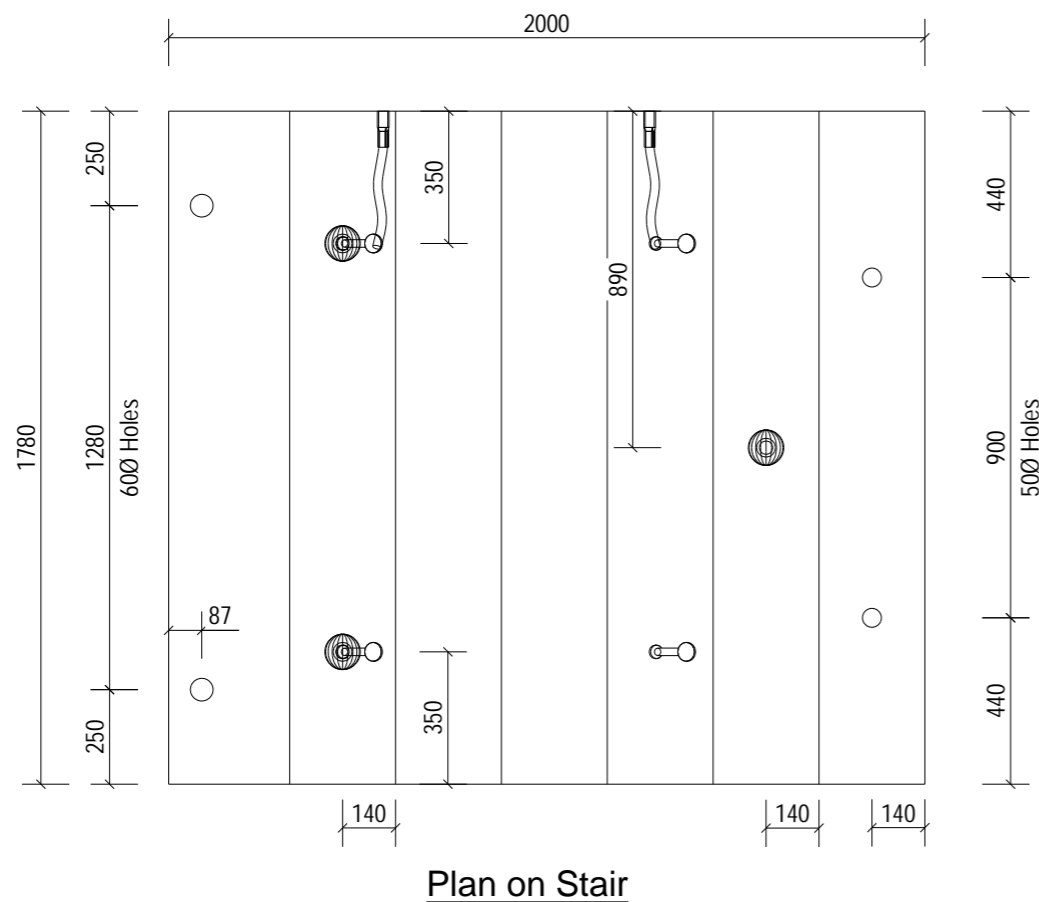
Scale: 1:30 Status: As Built - CR
Date: 14-06-24

Drawn: MF Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SF-0021-RC1 Rev: C01



Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		± 12mm
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			



NOTES:

Type.	STAIRS	
Length.	1060	+4 / -4
Height.	2000	+4 / -4
Width.	1780	+4 / -4
Weight. (T)	2.51	
Volume. (m³)	1.00	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SF-0022-RC1	
BBS Ref.	05-BYL-1462-SF-0022-BBS	
Calculation Ref.	FPMCB-1462-SF-0022-C01	
Cover.	[REDACTED]	
Casting Bed.	Stair Mould	
Mark.	SF-0022	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
7	Spherical 5.0T 180	LAP050180/SAP0050180
2	RD24 Wavy Tail	SLWL24360/SSLW24360

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

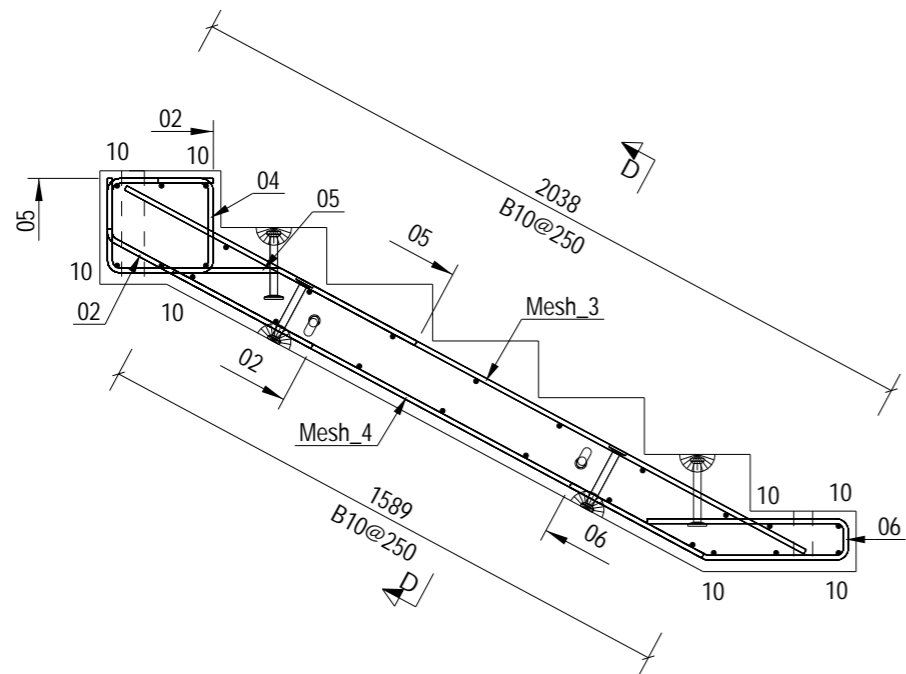
Project. **Panattoni Park
Poyle**

Title. **GA1 of
STAIRS SF-0022**

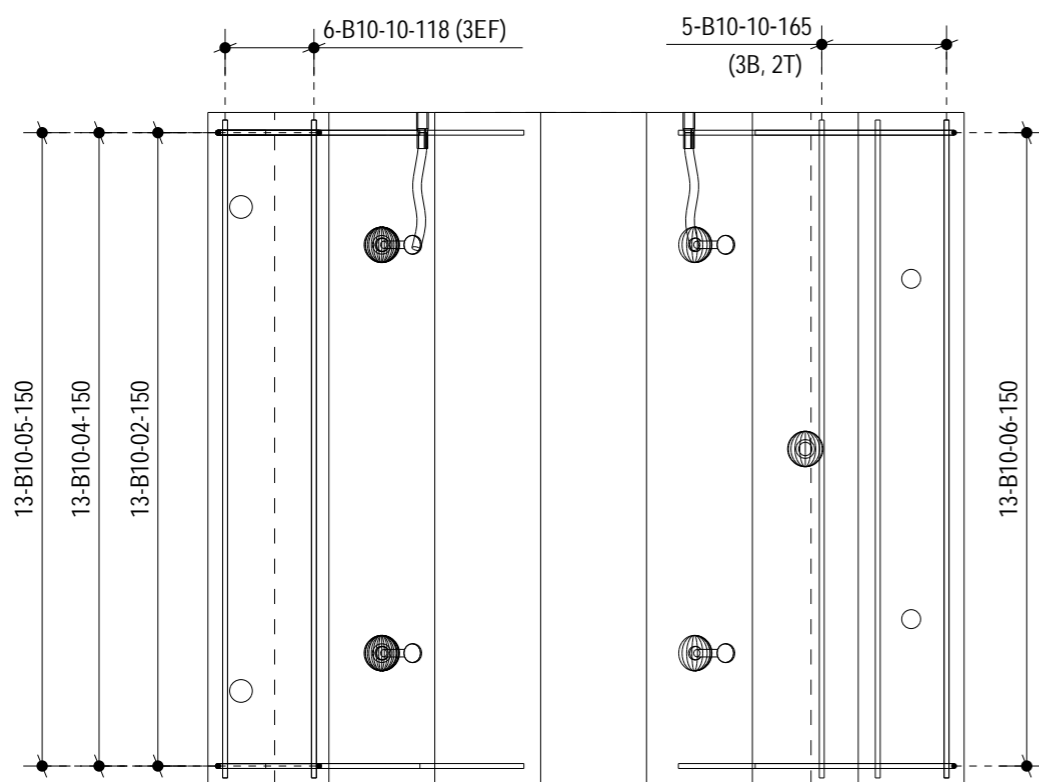
Scale: 1:30 Status: As Built - CR
Date: 14-06-24

Drawn: MF Checked: AB Approved: SJH

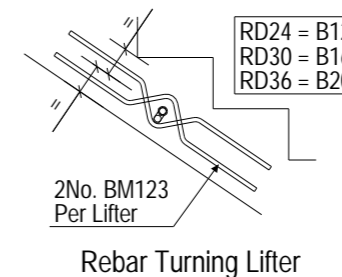
Drawing No : **05-BYL-1462-SF-0022-GA1** Rev: **C01**



Elevation on Stair



Plan on Stair
Mesh Removed For Clarity



Rebar Turning Lifter

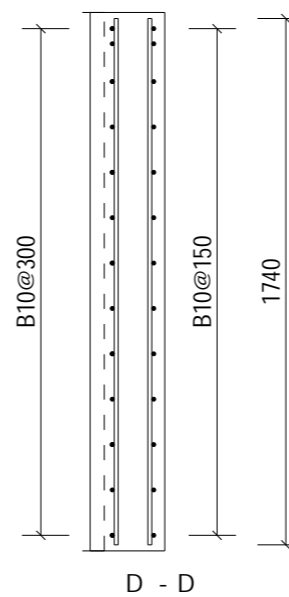
NOTES:

Type.	STAIRS
Mark.	SF-0022
GA Drg. Ref.	05-BYL-1462-SF-0022-GA1
Cover.	

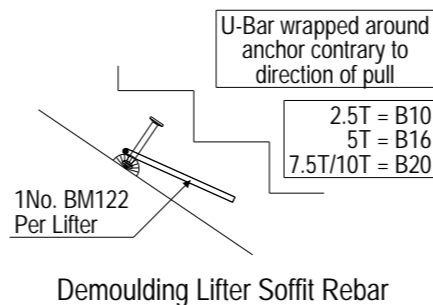
- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

ALL DIMENSIONS SHOW ARE OVERALL SIZES. REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS

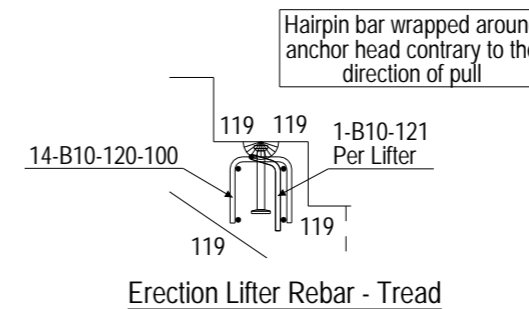
90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM



D - D



Demoulding Lifter Soffit Rebar



Erection Lifter Rebar - Tread

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

Title. RC1 of STAIRS SF-0022

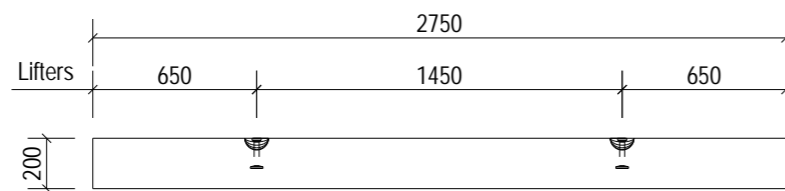
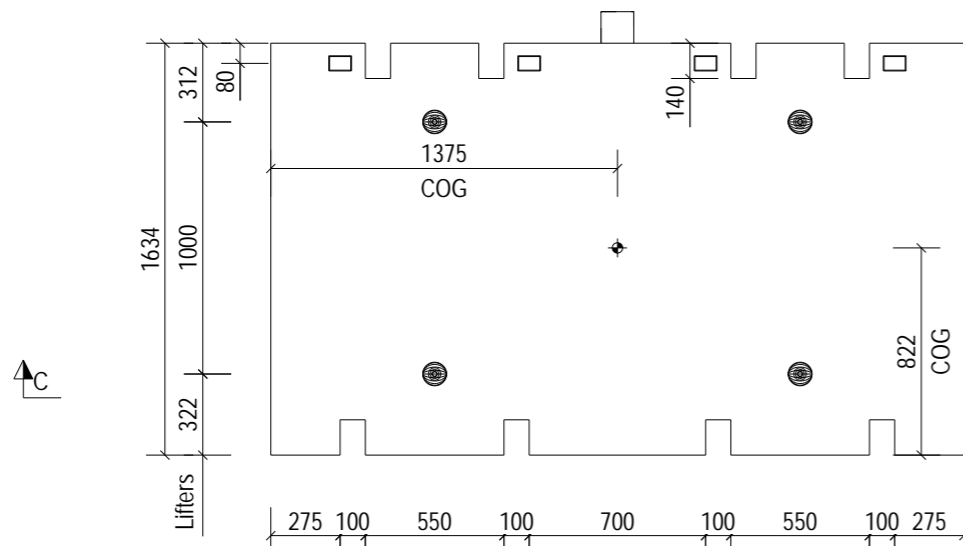
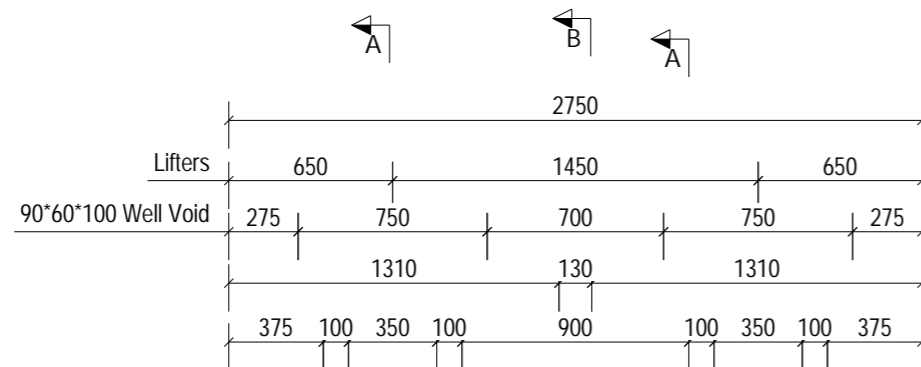
Scale: 1:25 Status: As Built - CR
Date: 14-06-24

Drawn: MF Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SF-0022-RC1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

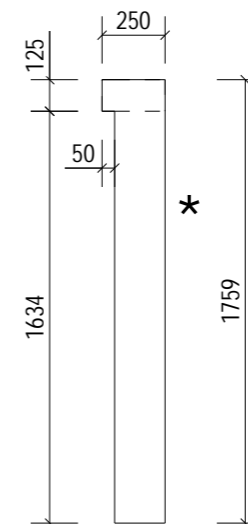
A3
10mm



* Indicates
Mould Face

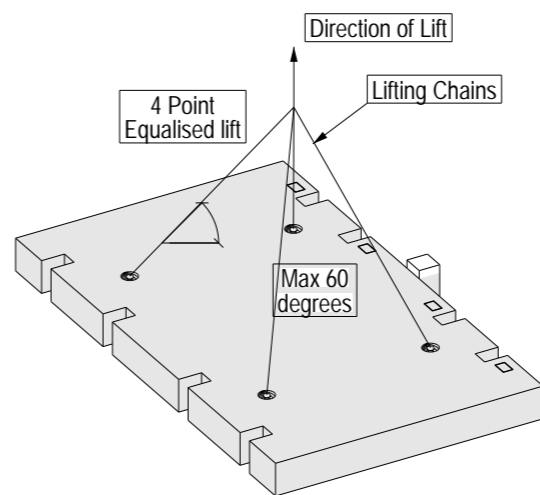


A - A



B - B

* Indicates
Mould Face



NOTES:

Type.	Stair Landing	
Length.	2750	+4 / -4
Height.	250	+4 / -4
Width.	1759	+4 / -4
Weight. (T)	2.20	
Volume. (m³)	0.88	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SL-0001-RC1
BBS Ref.	05-BYL-1462-SL-0001-BBS
Calculation Ref.	FPMCB-1462-SL-0001-C01
Cover.	
Casting Bed.	Flat

Mark.	SL-0001
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	90*60*100 Well Void	0
4	Spherical 5.0T 120	LAP050120/SAP0050120

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

Rev	Date	Revision Detail	By	Chk	App
C02	27-03-24	Isometric View Updated	LN	AB	SJH
C01	27-03-24	Issued for Manufacture	LN	AB	SJH

MC fpmccann
FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

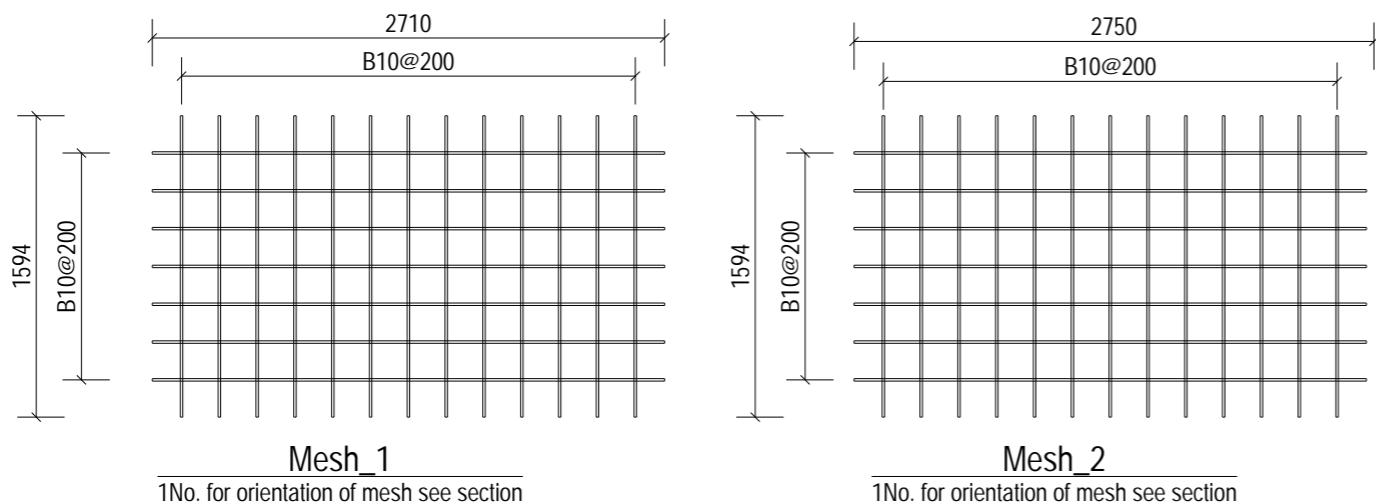
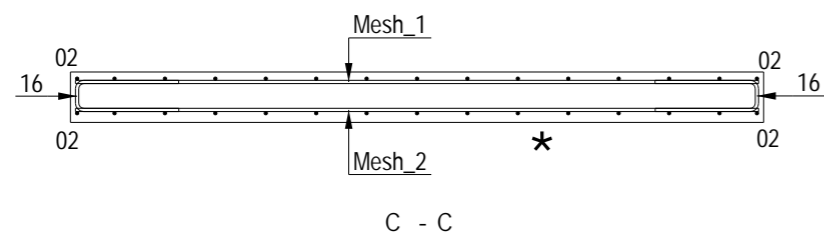
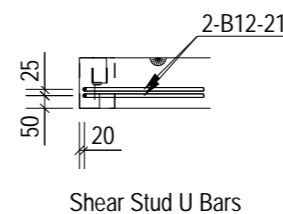
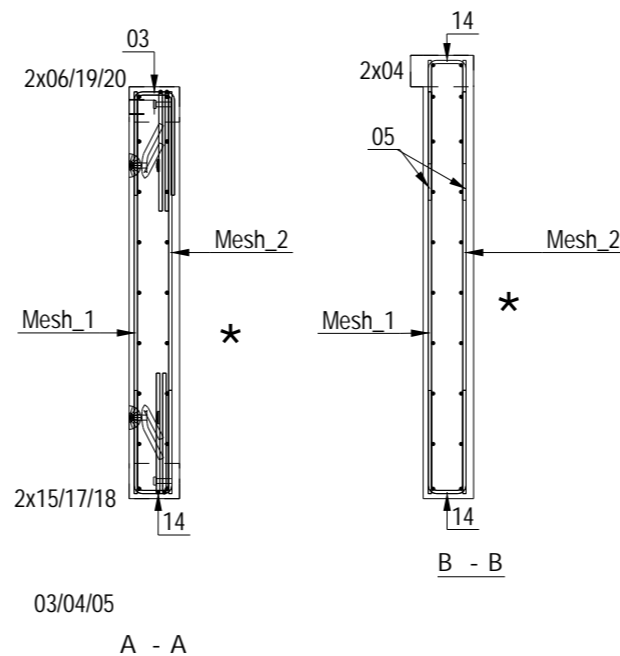
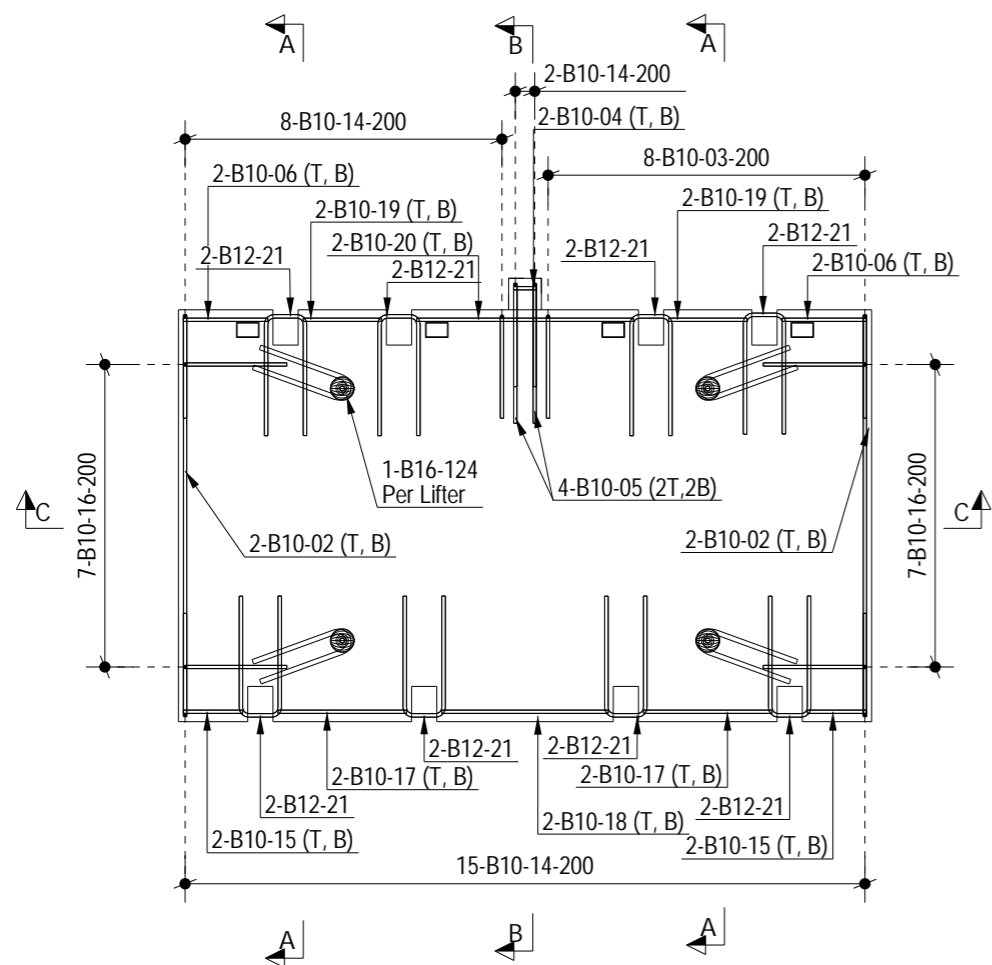
Title. **GA1 of Stair Landing SL-0001**

Scale: 1:40 Status: As Built - CR

Date: 25-03-24

Drawn: LN Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SL-0001-GA1 Rev: C02



NOTES:

Type.	Stair Landing
Mark.	SL-0001
GA Drg. Ref.	05-BYL-1462-SL-0001-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

All dimensions shown are overall sizes
Refer to the PXML for all specific bar locations

90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM

Rev	Date	Revision Detail	By	Chk	App
C02	27-03-24	Lifter notes updated	LN	AB	SJH
C01	27-03-24	Issued for Manufacture	LN	AB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

Title. RC1 of Stair Landing SL-0001

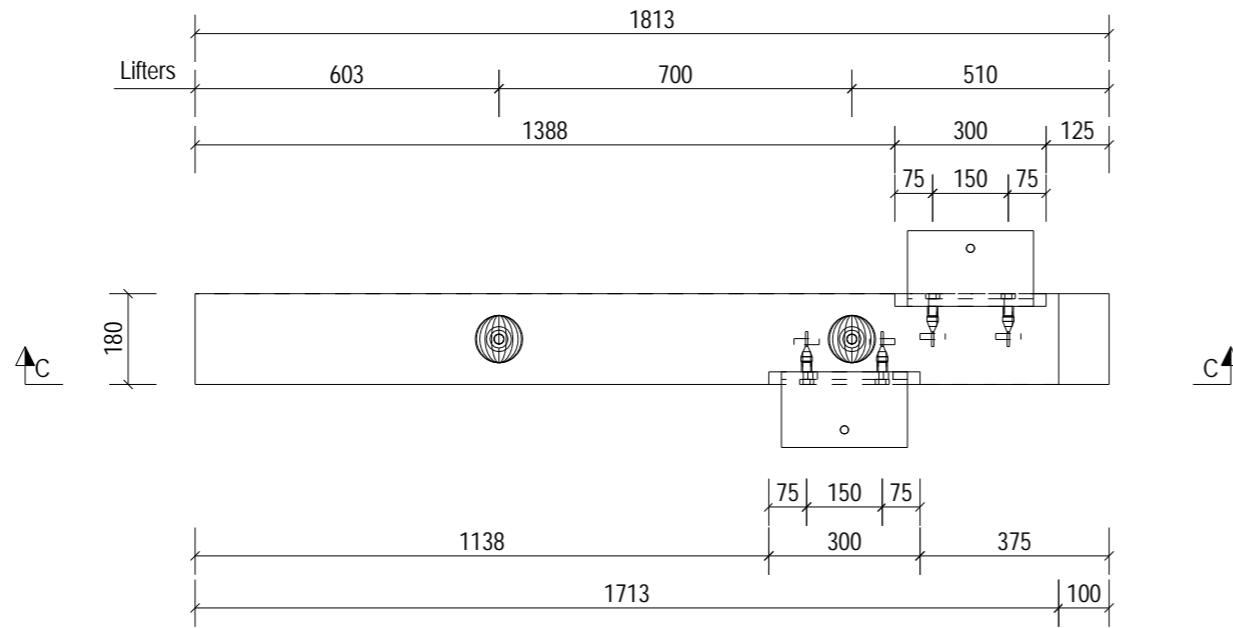
Scale: 1:40 Status: As Built - CR
Date: 25-03-24

Drawn: LN Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SL-0001-RC1 Rev: C02

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

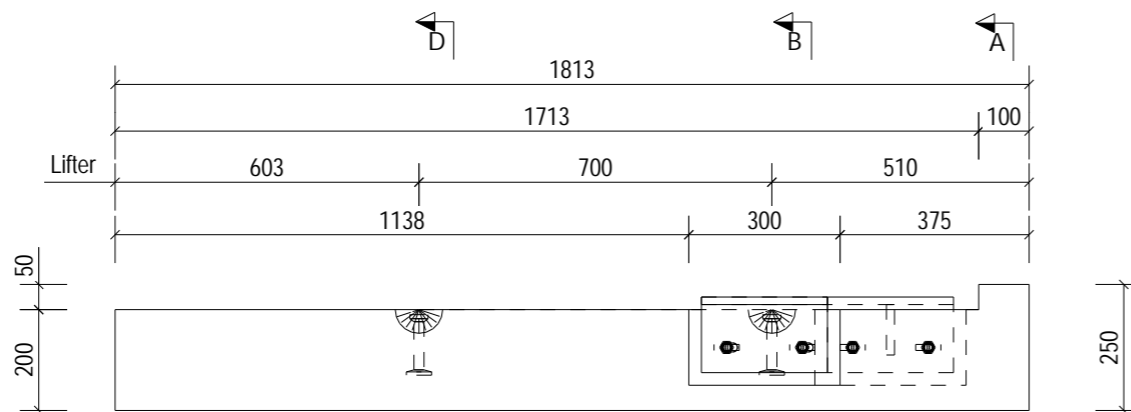
A3
10mm



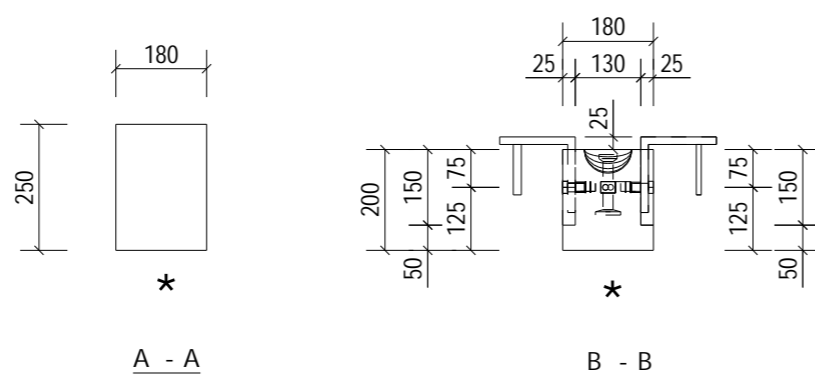
Plan on Mould

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			

★ Indicates Mould Face



C - C



A - A

B - B

D - D

NOTES:

Type.	Stair Landing	
Length.	1813	+4 / -4
Height.	250	+4 / -4
Width.	180	+4 / -4
Weight. (T)	0.18	
Volume. (m³)	0.06	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SL-0002-RC1
BBS Ref.	05-BYL-1462-SL-0002-BBS
Calculation Ref.	FPMCB-1462-SL-0002-C01
Cover.	
Casting Bed.	Flat

Mark.	SL-0002
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	M16 Solid rod socket	SSRCP1675/SSSCP1675
2	Spherical 5.0T 120	LAP0500120/SAP00500120

Loose Fitting Take Off:		
Angle Cleat Type -1st	(0)	2 No.

90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM

C01	27-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

Client:

Project: **Panattoni Park Poyle**

Title: **GA1 of Stair Landing SL-0002**

Scale: 1:15 Status: As Built - CR

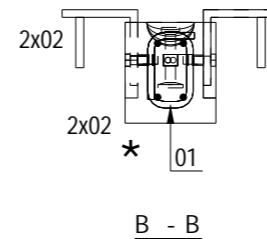
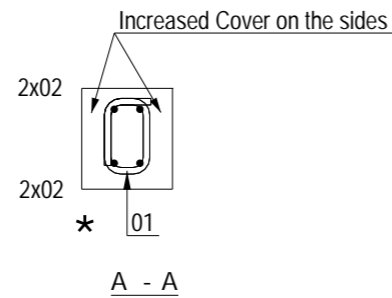
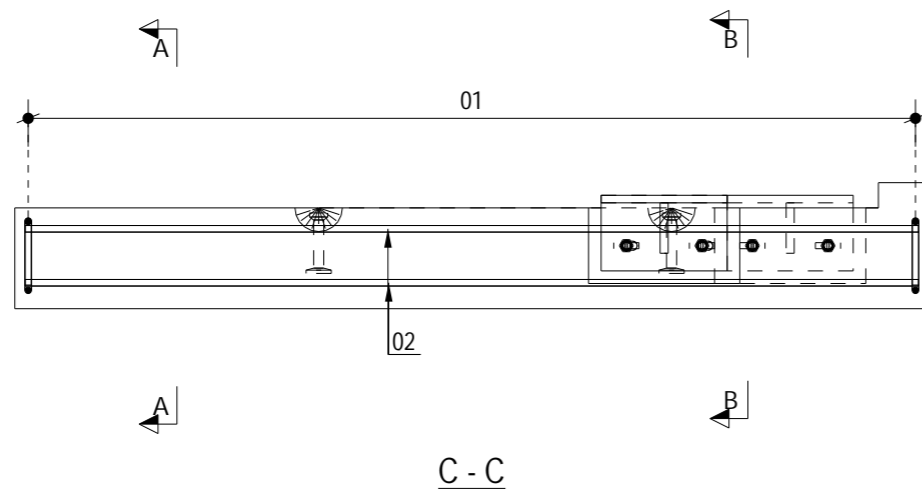
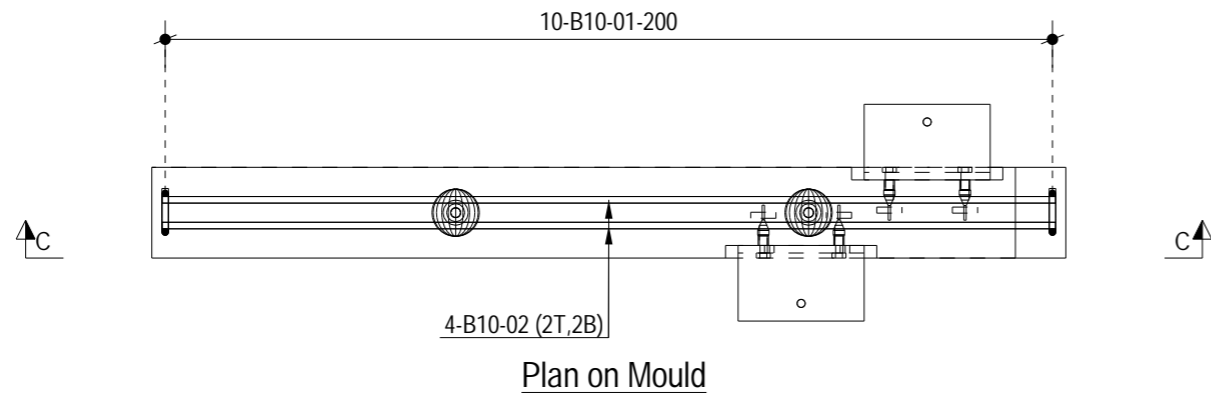
Drawn: LN Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SL-0002-GA1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3

10mm



NOTES:

Type.	Stair Landing
Mark.	SL-0002
GA Drg. Ref.	05-BYL-1462-SL-0002-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

Rev	Date	Revision Detail	By	Chk	App
C01	27-03-24	Issued for Manufacture	LN	AB	SJH

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

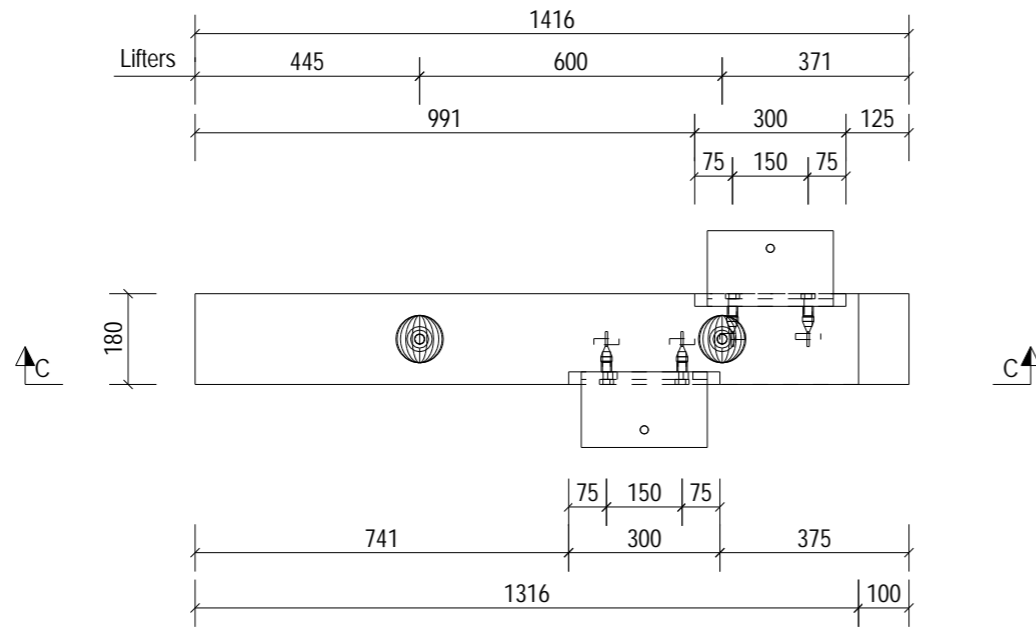
Project. **Panattoni Park
Poyle**

Title. **RC1 of
Stair Landing SL-0002**

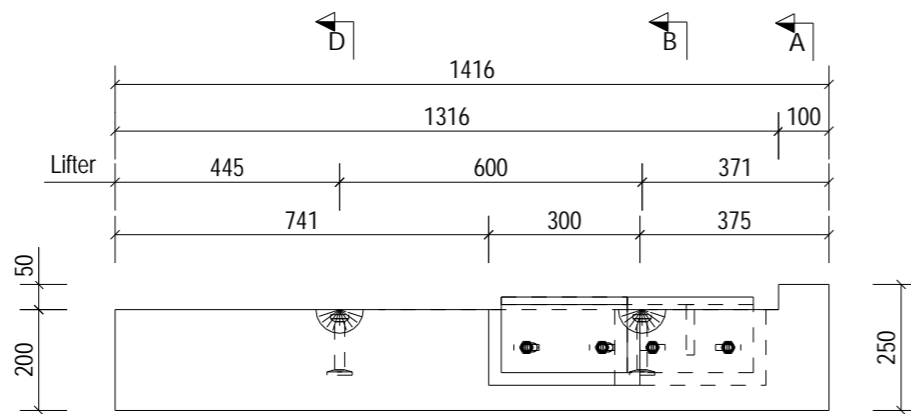
Scale: 1:15 Status: As Built - CR
Date: 22-03-24

Drawn: LN Checked: AB Approved: SJH

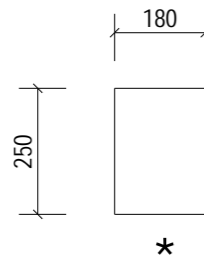
Drawing No : 05-BYL-1462-SL-0002-RC1 Rev: C01



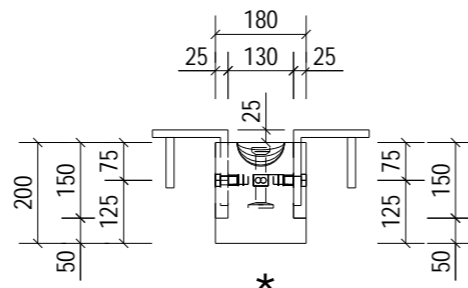
Plan on Mould



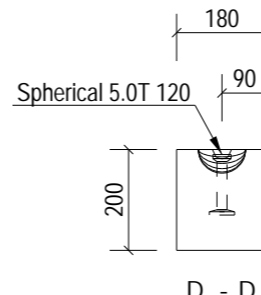
C - C



A - A



B - B



D - D

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			

★ Indicates Mould Face

NOTES:

Type.	Stair Landing	
Length.	1416	+4 / -4
Height.	250	+4 / -4
Width.	180	+4 / -4
Weight. (T)	0.14	
Volume. (m³)	0.05	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SL-0003-RC1
BBS Ref.	05-BYL-1462-SL-0003-BBS
Calculation Ref.	FPMCB-1462-SL-0003-C01
Cover.	
Casting Bed.	Flat

Mark.	SL-0003
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	M16 Solid rod socket	SSRCP1675/SSSCP1675
2	Spherical 5.0T 120	LAP0500120/SAP00500120

Loose Fitting Take Off:		
Angle Cleat Type -1st	(0)	2 No.

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	27-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

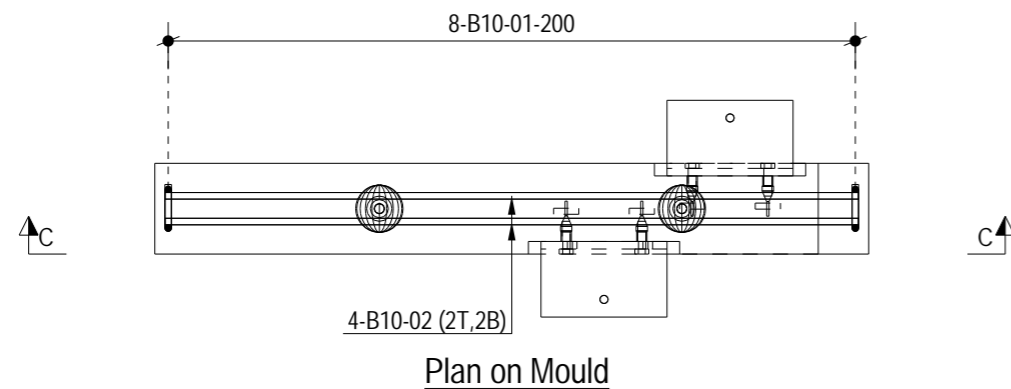
Project. **Panattoni Park
Poyle**

Title. **GA1 of
Stair Landing SL-0003**

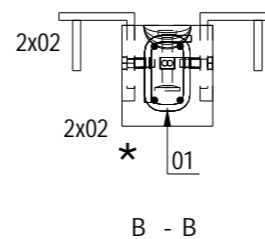
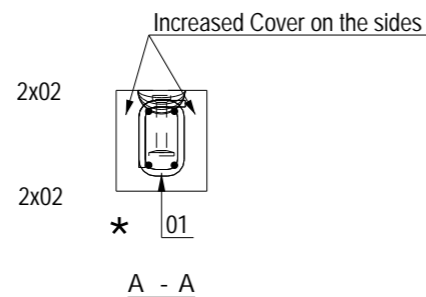
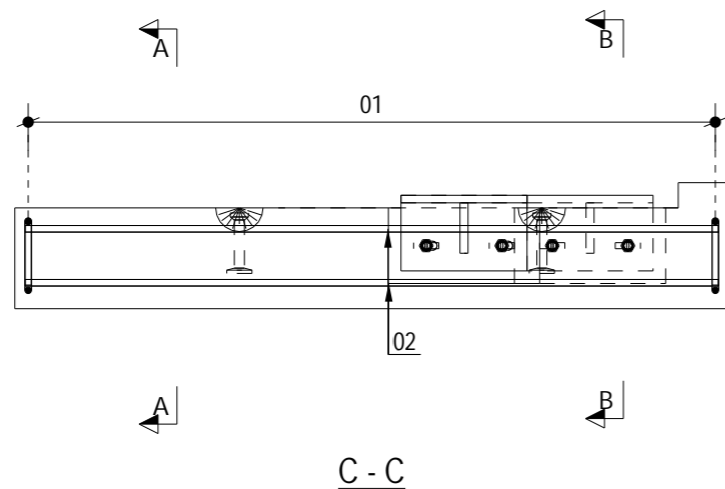
Scale: 1:15 Status: As Built - CR
Date: 22-03-24

Drawn: LN Checked: AB Approved: SJH

Drawing No : **05-BYL-1462-SL-0003-GA1** Rev: **C01**



★ Indicates Mould Face



NOTES:

Type.	Stair Landing
Mark.	SL-0003
GA Drg. Ref.	05-BYL-1462-SL-0003-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	27-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.



Project.

Panattoni Park
Poyle

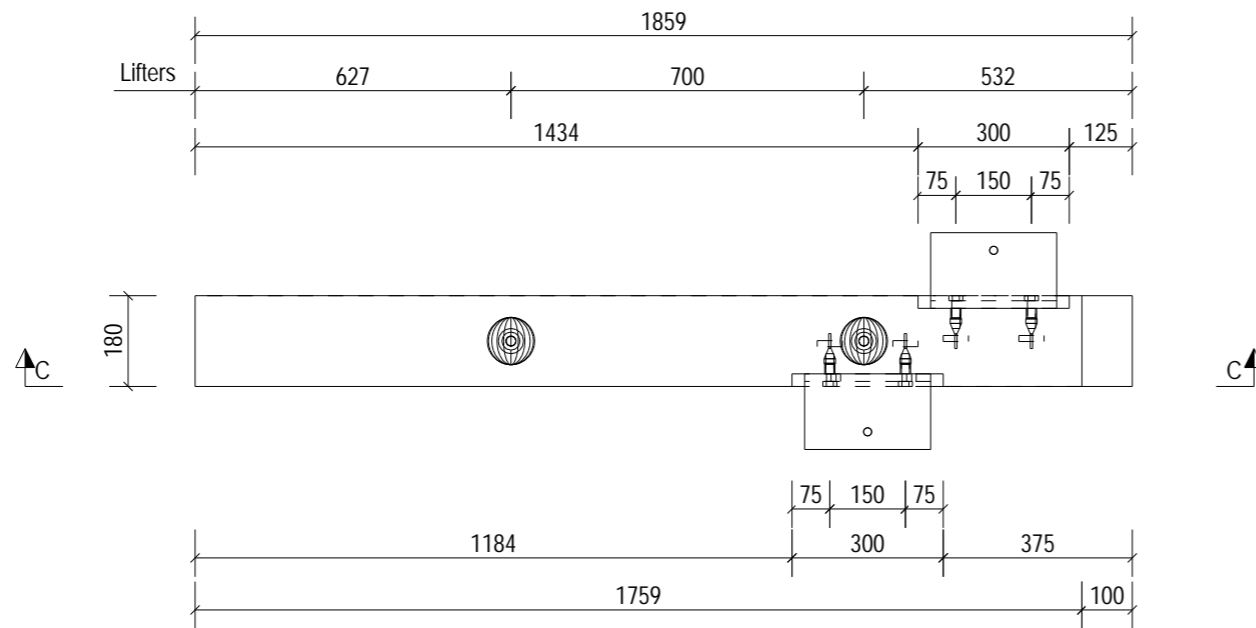
Title.

RC1 of
Stair Landing SL-0003

Scale: 1:15	Status: As Built - CR
Date: 22-03-24	

Drawn: LN	Checked: AB	Approved: SJH
-----------	-------------	---------------

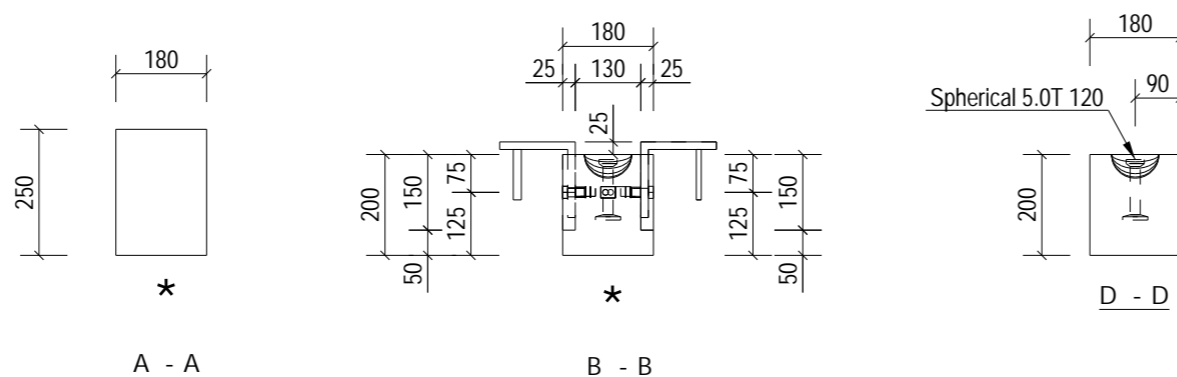
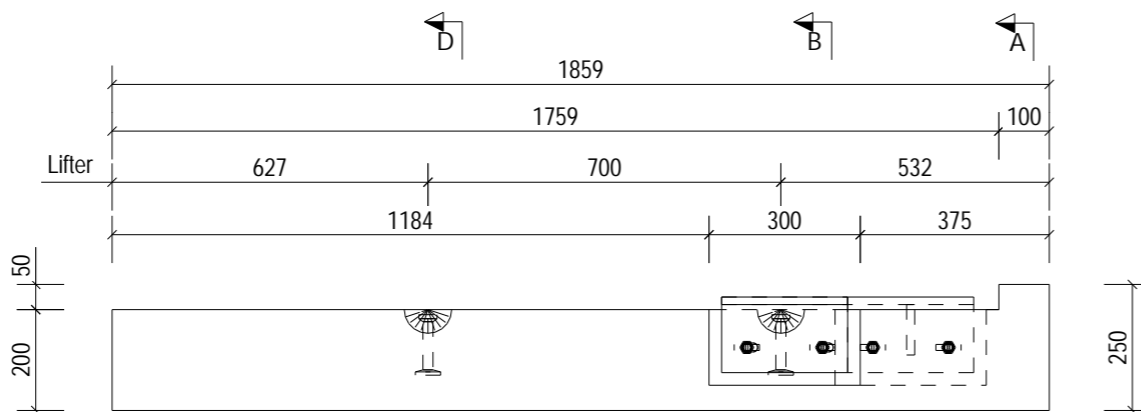
Drawing No : 05-BYL-1462-SL-0003-RC1	Rev: C01
--------------------------------------	----------



Plan on Mould

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			

★ Indicates Mould Face



A - A

B - B

D - D

NOTES:

Type.	Stair Landing	
Length.	1859	+4 / -4
Height.	250	+4 / -4
Width.	180	+4 / -4
Weight. (T)	0.18	
Volume. (m³)	0.07	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SL-0004-RC1
BBS Ref.	05-BYL-1462-SL-0004-BBS
Calculation Ref.	FPMCB-1462-SL-0004-C01
Cover.	
Casting Bed.	Flat

Mark.	SL-0004
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	M16 Solid rod socket	SSRCP1675/SSSCP1675
2	Spherical 5.0T 120	LAP0500120/SAP00500120

Loose Fitting Take Off:		
Angle Cleat Type -1st	(0)	2 No.

90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM

C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire.
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client.

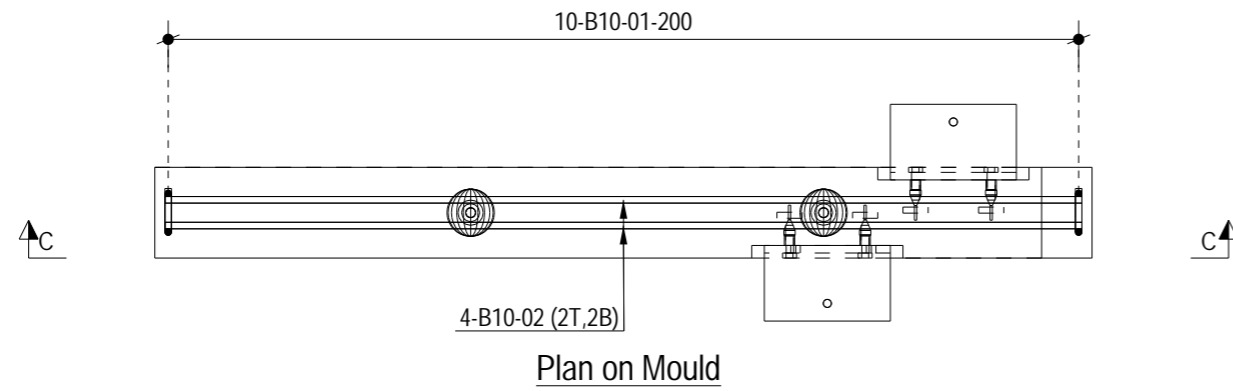
Project. **Panattoni Park Poyle**

Title. **GA1 of Stair Landing SL-0004**

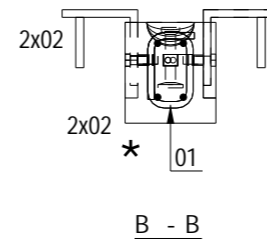
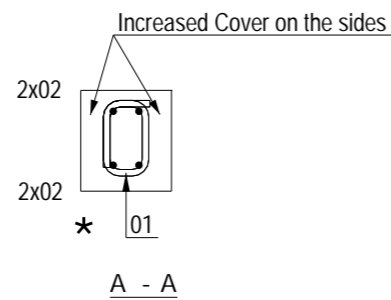
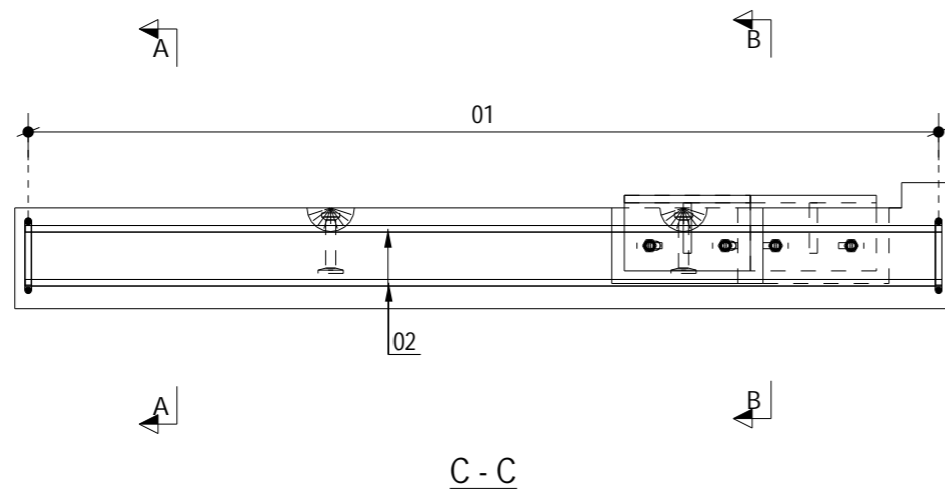
Scale: 1:15 Status: As Built - CR

Drawn: LN Checked: AB Approved: SJH

Drawing No : **05-BYL-1462-SL-0004-GA1** Rev: **C01**



★ Indicates Mould Face



NOTES:

Type.	Stair Landing
Mark.	SL-0004
GA Drg. Ref.	05-BYL-1462-SL-0004-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM

Rev	Date	Revision Detail	By	Chk	App
C01	28-03-24	Issued for Manufacture	LN	AB	SJH



FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client.



Project.

Panattoni Park
 Poyle

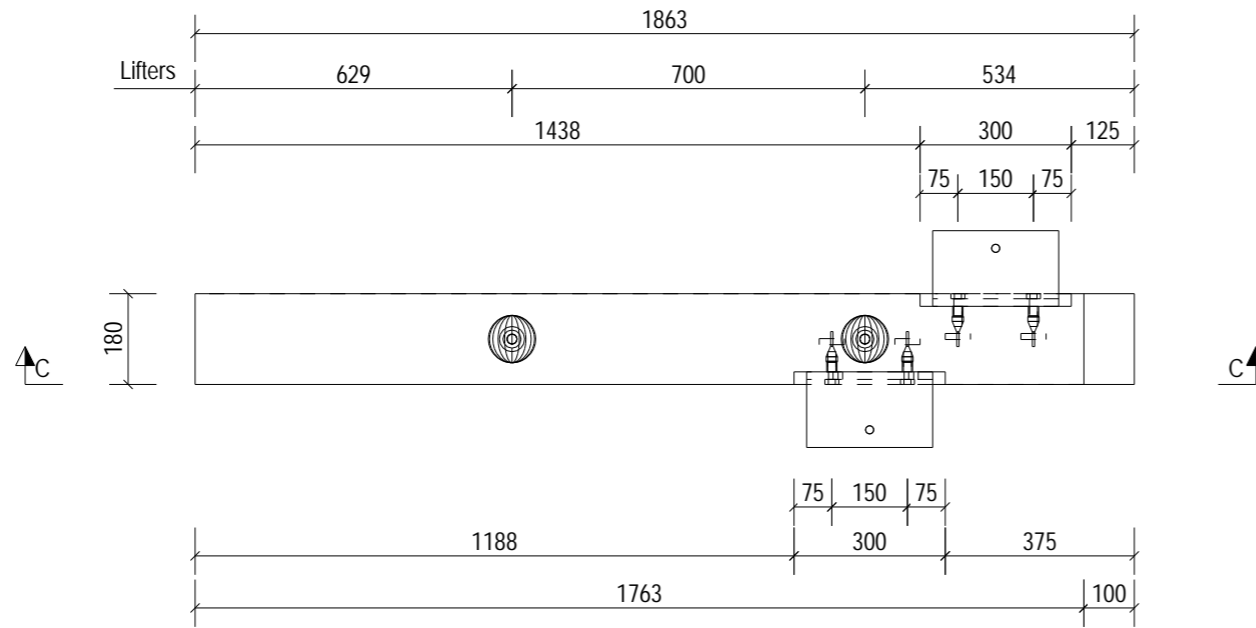
Title.

RC1 of
 Stair Landing SL-0004

Scale: 1:15	Status: As Built - CR
Date: 26-03-24	

Drawn: LN	Checked: AB	Approved: SJH
-----------	-------------	---------------

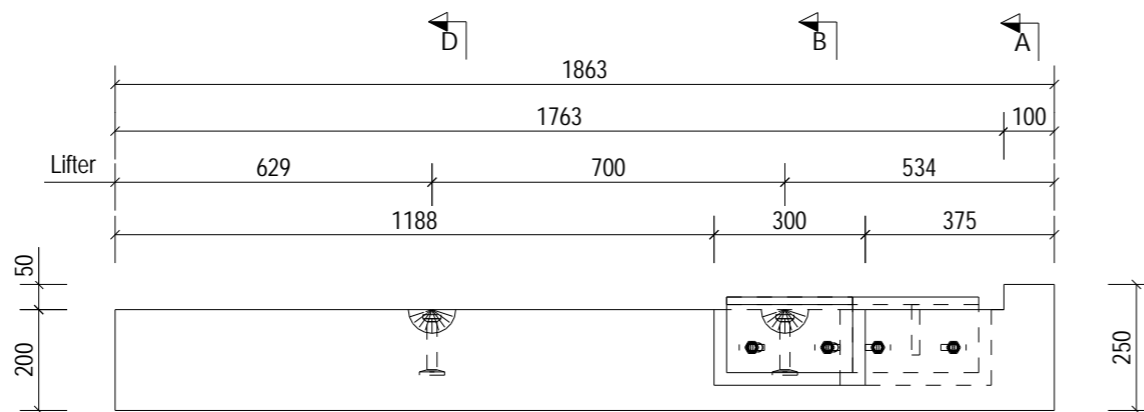
Drawing No : 05-BYL-1462-SL-0004-RC1	Rev: C01
--------------------------------------	----------



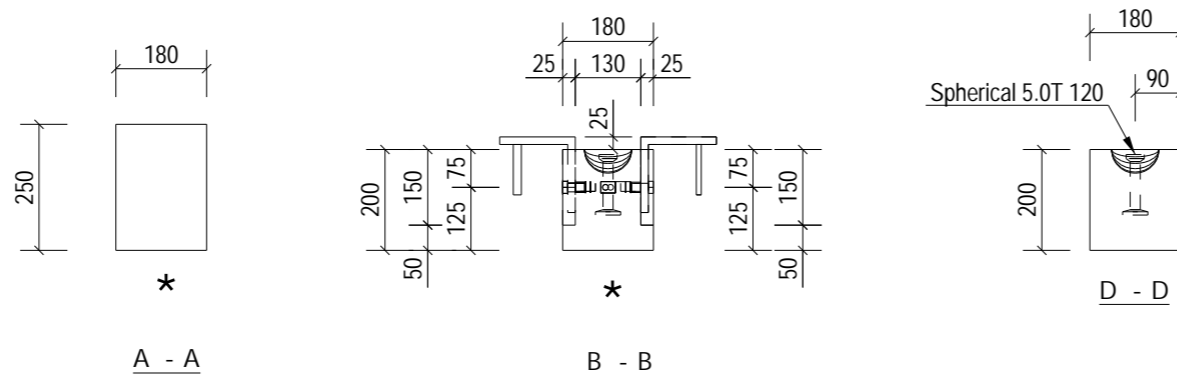
Plan on Mould

Manufacture Tolerances			
Allowable dimensional variations shall not exceed the following			
Length	Variation	Cross section	Variation
Up to 3m	± 6mm	Up to 500mm	± 6mm
3 to 4.5m	± 9mm	500 to 750mm	± 9mm
4.5 to 6m	± 12mm		
Straightness or bow (deviation from intended line)			Variation
Up to 3m			± 6mm
3 to 4.5m			± 9mm
4.5 to 6m			± 12mm
Flatness: The maximum deviation from a 2.0m straight edge placed in any position on a nominally plane surface should not exceed 8mm.			

★ Indicates Mould Face



C - C



A - A

B - B

D - D

NOTES:

Type.	Stair Landing	
Length.	1863	+4 / -4
Height.	250	+4 / -4
Width.	180	+4 / -4
Weight. (T)	0.18	
Volume. (m³)	0.07	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SL-0005-RC1
BBS Ref.	05-BYL-1462-SL-0005-BBS
Calculation Ref.	FPMCB-1462-SL-0005-C01
Cover.	
Casting Bed.	Flat

Mark.	SL-0005
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	M16 Solid rod socket	SSRCP1675/SSSCP1675
2	Spherical 5.0T 120	LAP0500120/SAP00500120

Loose Fitting Take Off:		
Angle Cleat Type -1st	(0)	2 No.

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

Client:

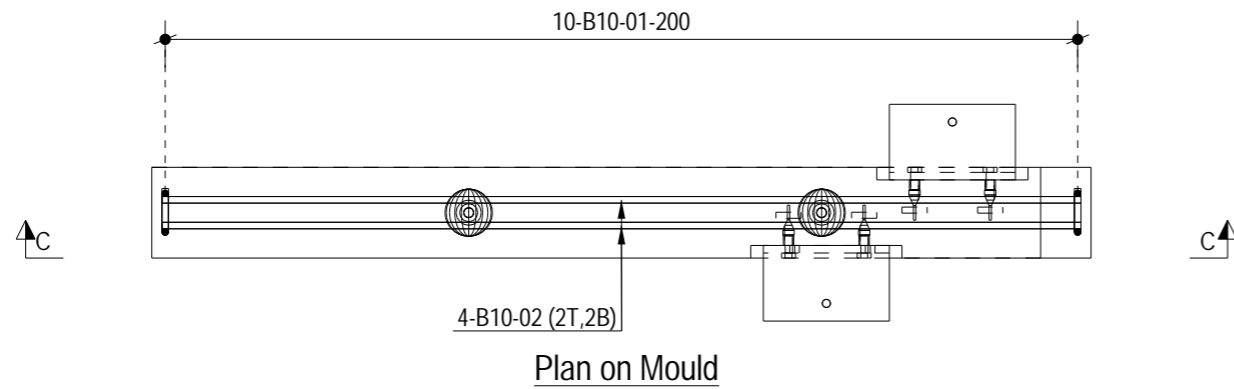
Project: **Panattoni Park Poyle**

Title: **GA1 of Stair Landing SL-0005**

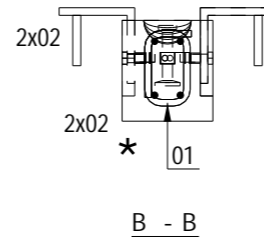
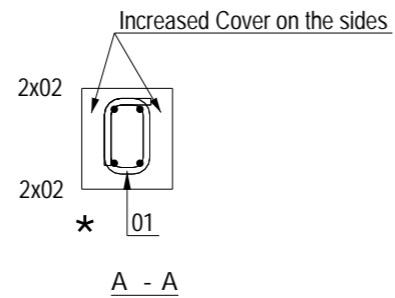
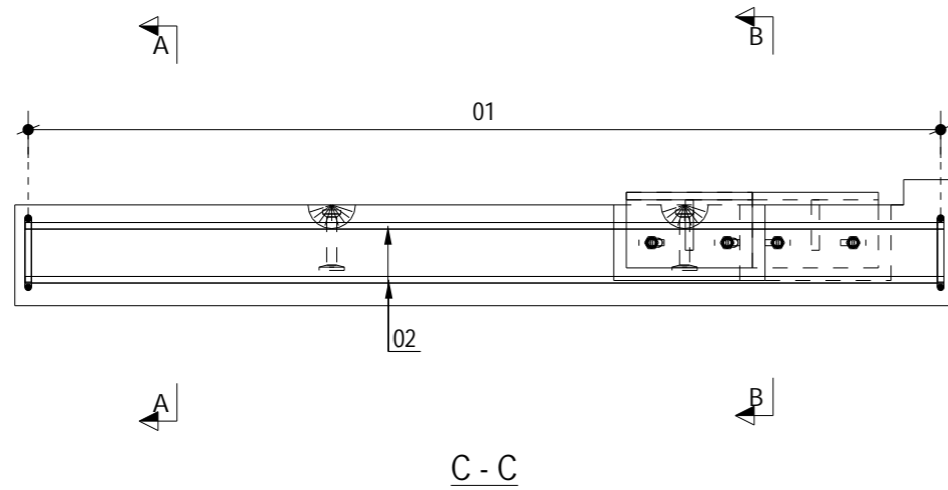
Scale: 1:15 Status: As Built - CR

Drawn: LN Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SL-0005-GA1 Rev: C01



★ Indicates Mould Face



NOTES:

Type.	Stair Landing
Mark.	SL-0005
GA Drg. Ref.	05-BYL-1462-SL-0005-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM

C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client. 

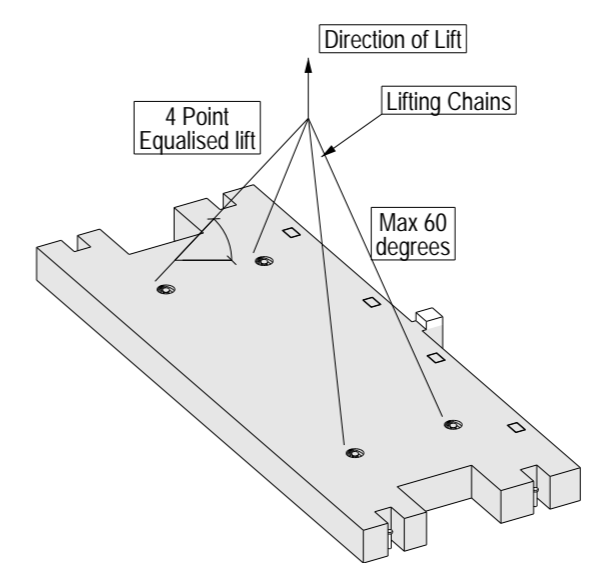
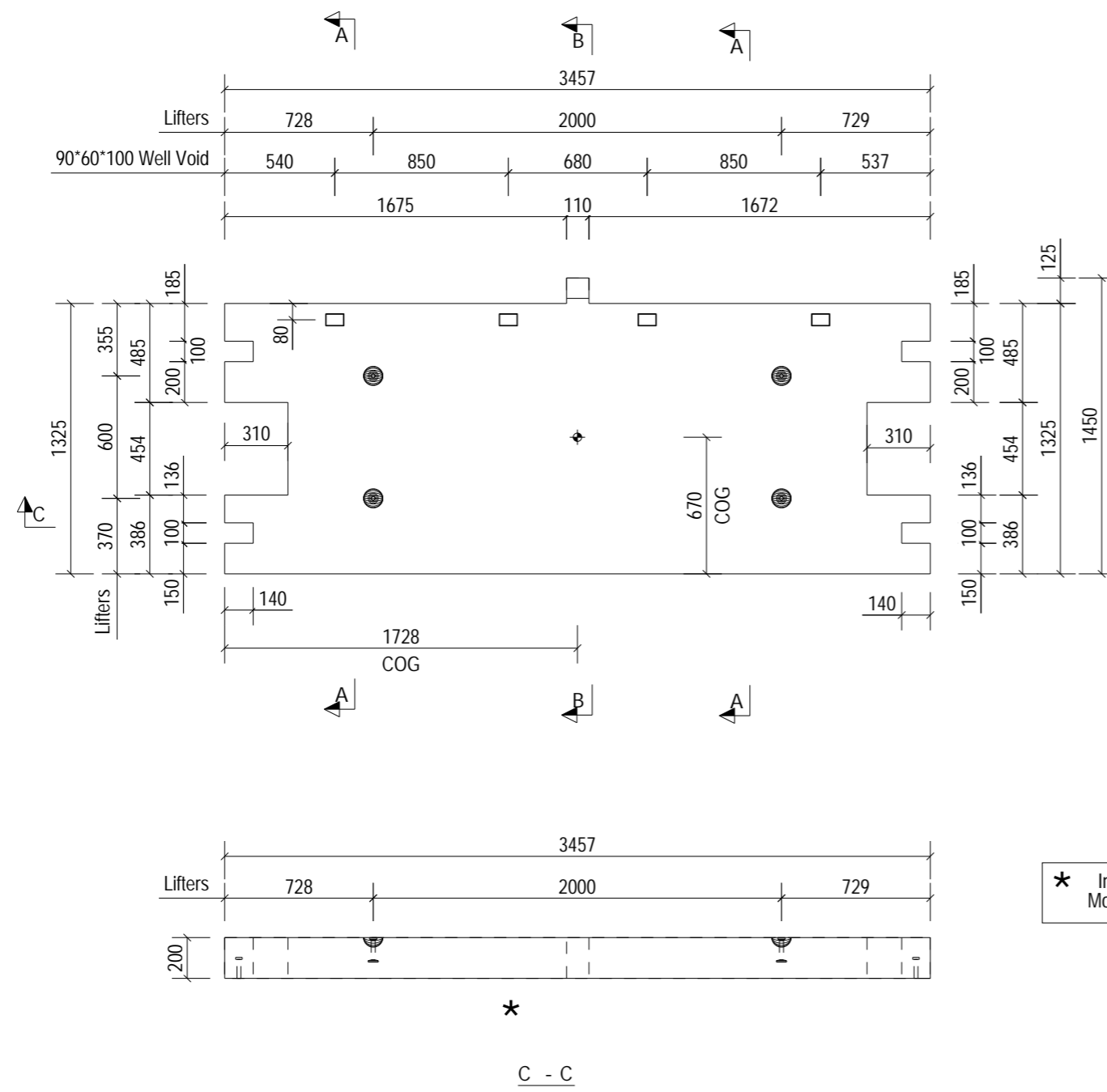
Project. **Panattoni Park Poyle**

Title. **RC1 of Stair Landing SL-0005**

Scale: 1:15 Status: As Built - CR

Drawn: LN Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SL-0005-RC1 Rev: C01



NOTES:

Type.	Stair Landing	
Length.	3457	+4 / -4
Height.	250	+4 / -4
Width.	1450	+4 / -4
Weight. (T)	2.13	
Volume. (m ³)	0.85	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SL-0006-RC1
BBS Ref.	05-BYL-1462-SL-0006-BBS
Calculation Ref.	FPMCB-1462-SL-0006-C01
Cover.	
Casting Bed.	Flat

Mark.	SL-0006
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	90*60*100 Well Void	0
4	Spherical 5.0T 120	LAP050120/SAP0050120

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

C01	28-03-24	Issued for Manufacture	LN	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

Title. **GA1 of Stair Landing SL-0006**

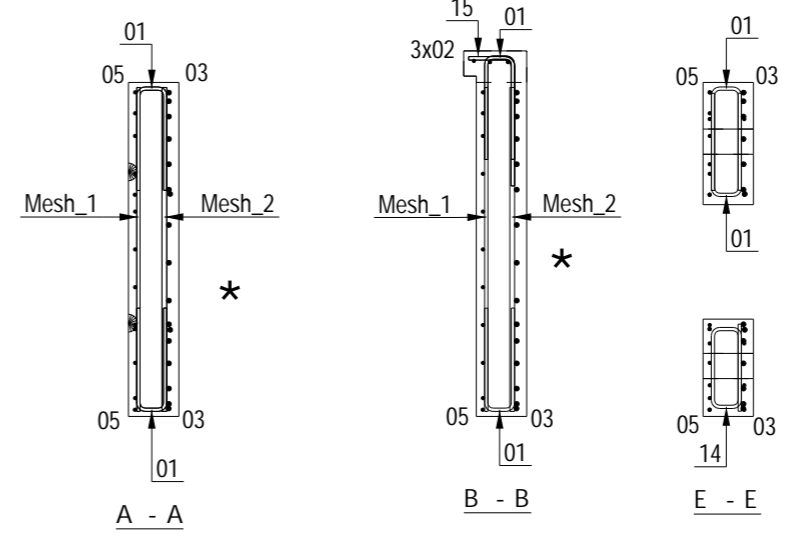
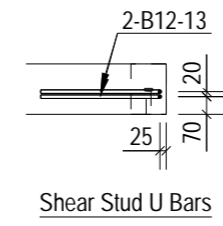
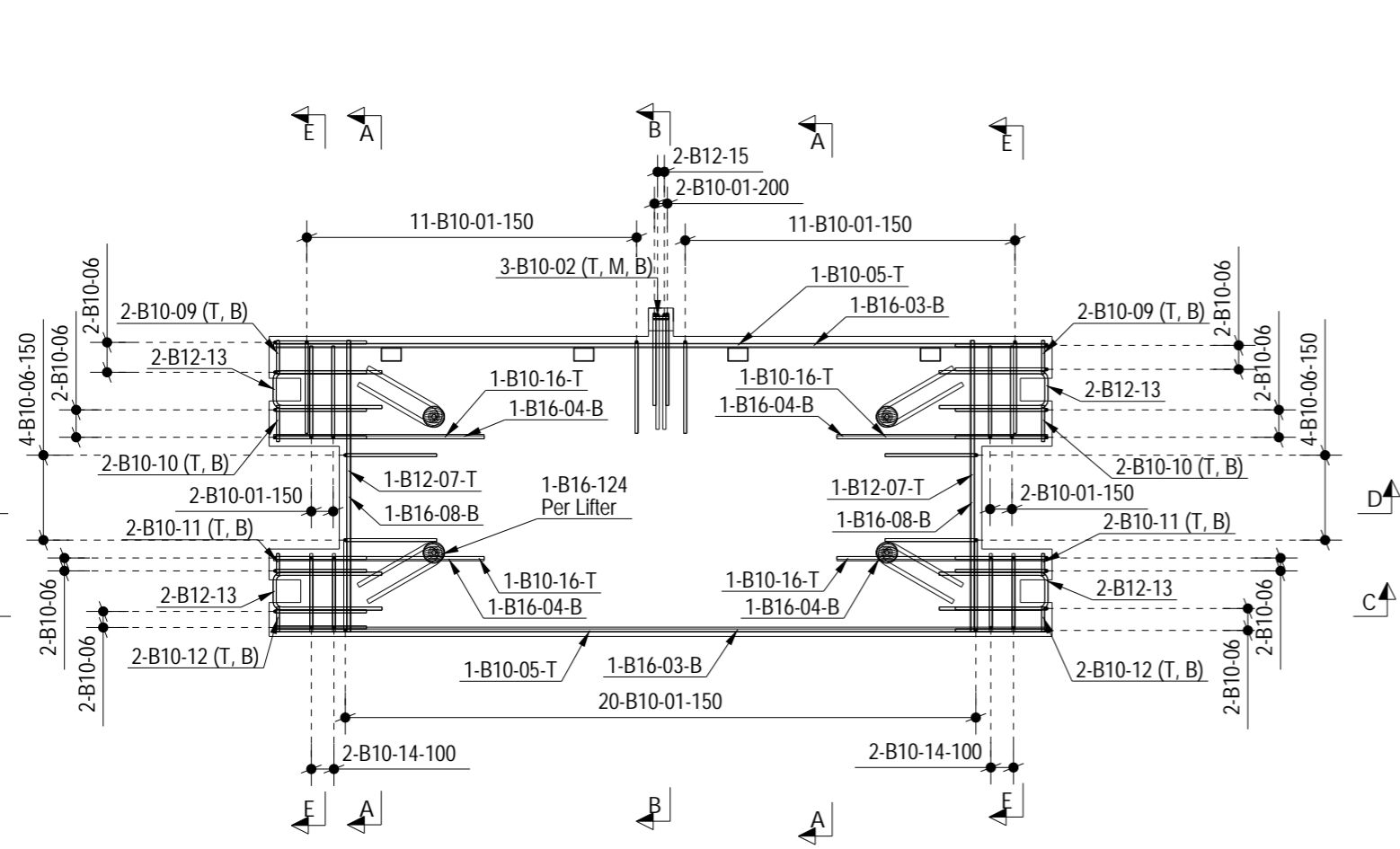
Scale: 1:40	Status: As Built - CR
Date: 27-03-24	

Drawn: LN	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-SL-0006-GA1	Rev: C01	

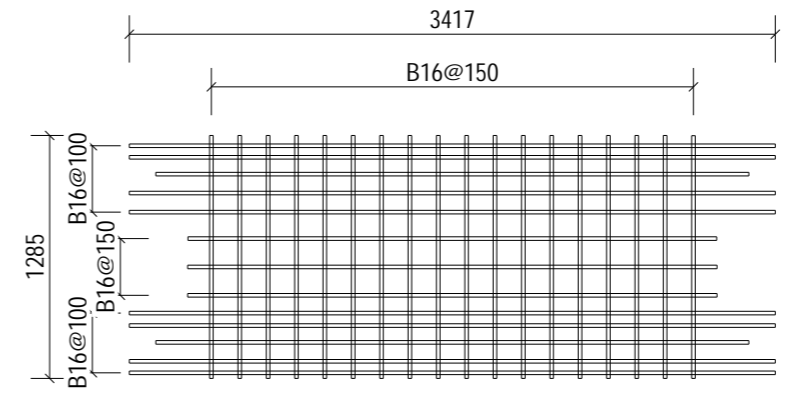
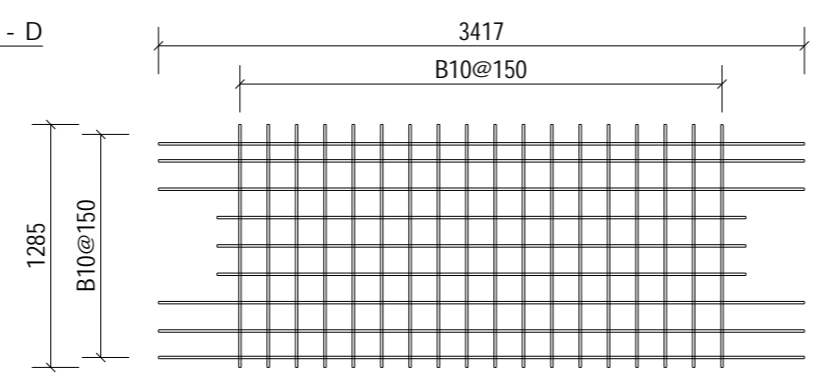
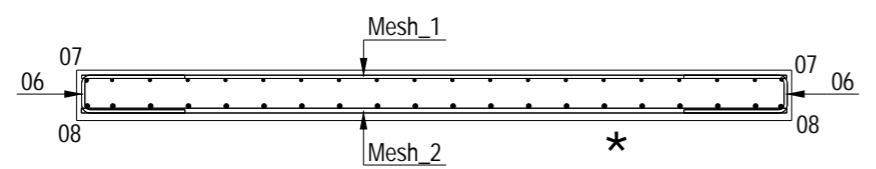
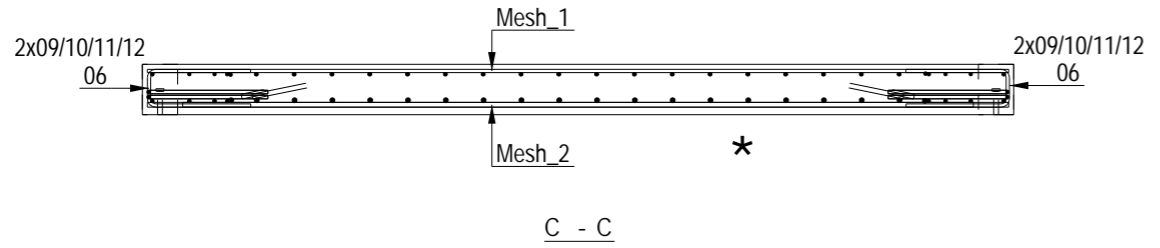
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm

10mm A3



* Indicates Mould Face



Mesh_1
1No. for orientation of mesh see section

Mesh_2
1No. for orientation of mesh see section

10mm A3

NOTES:

Type.	Stair Landing
Mark.	SL-0006
GA Drg. Ref.	05-BYL-1462-SL-0006-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

All dimensions shown are overall sizes
Refer to the PXML for all specific bar locations

90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM

Rev	Date	Revision Detail	By	Chk	App
C01	28-03-24	Issued for Manufacture	LN	AB	SJH

MC
fpmccann

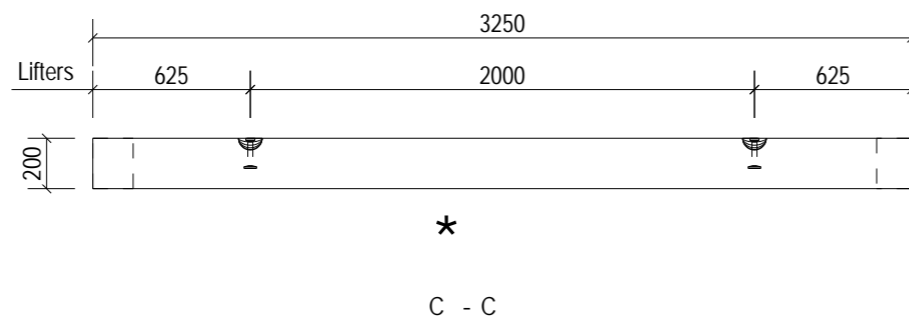
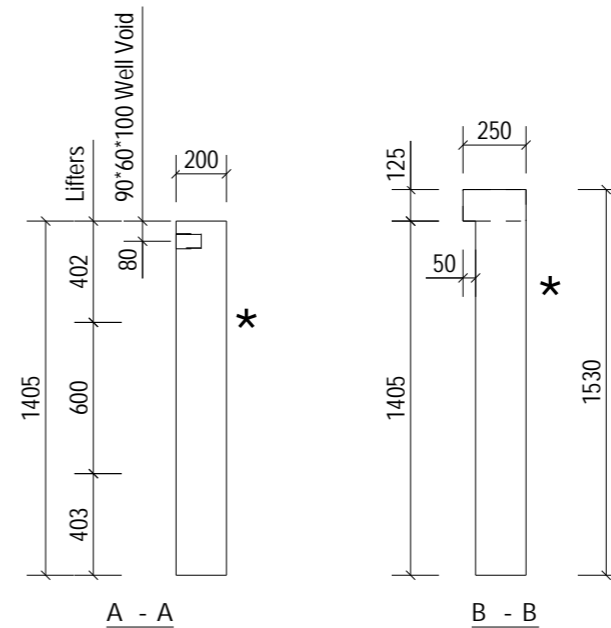
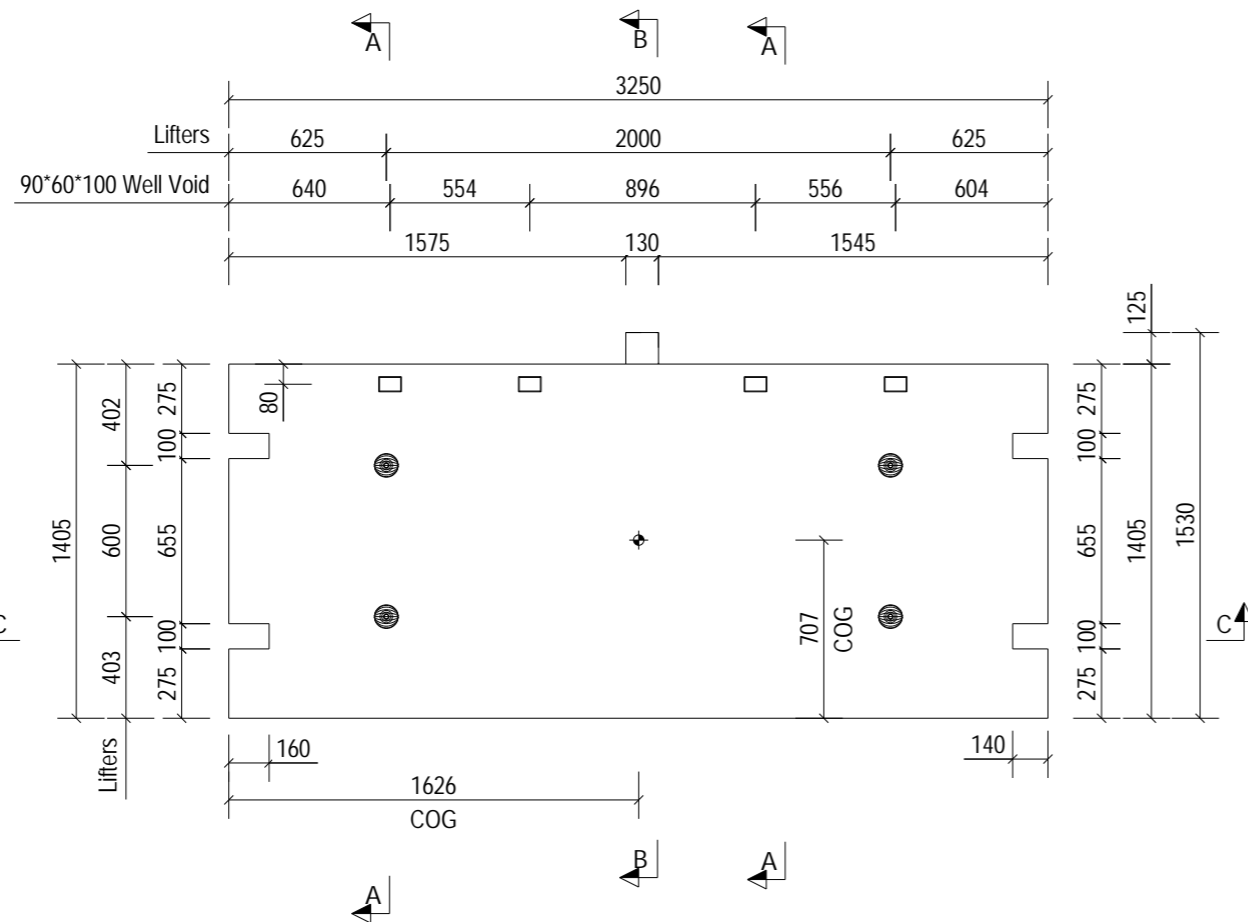
FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

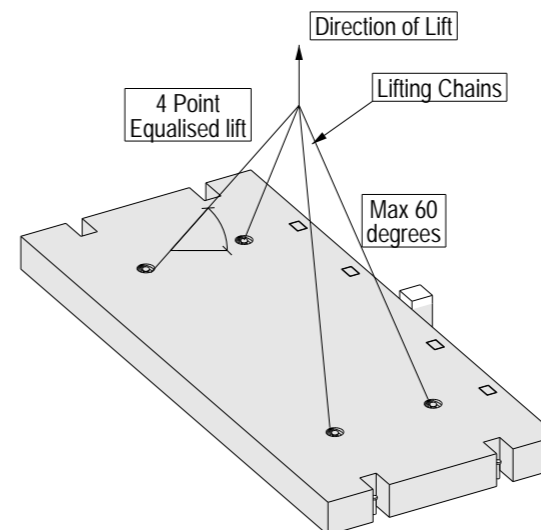
Project. Panattoni Park Poyle

Title. RC1 of Stair Landing SL-0006

Scale: 1:40	Status: As Built - CR	
Date: 27-03-24		
Drawn: LN	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-SL-0006-RC1		Rev: C01



* Indicates Mould Face



NOTES:

Type.	Stair Landing	
Length.	3250	+4 / -4
Height.	250	+4 / -4
Width.	1530	+4 / -4
Weight. (T)	2.27	
Volume. (m ³)	0.90	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SL-0007-RC1
BBS Ref.	05-BYL-1462-SL-0007-BBS
Calculation Ref.	FPMCB-1462-SL-0007-C01
Cover.	
Casting Bed.	Flat

Mark.	SL-0007
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
4	90*60*100 Well Void	0
4	Spherical 5.0T 120	LAP050120/SAP0050120

**90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM**

Rev	Date	Revision Detail	By	Chk	App
C03	05-04-24	Notch dims added	LN	AB	SJH
C02	27-03-24	Isometric View Updated	LN	AB	SJH
C01	27-03-24	Issued for Manufacture	LN	AB	SJH

Client.

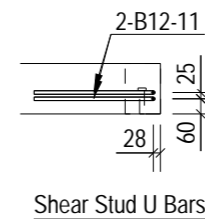
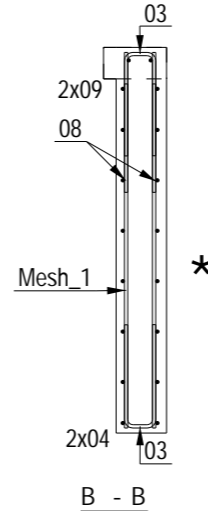
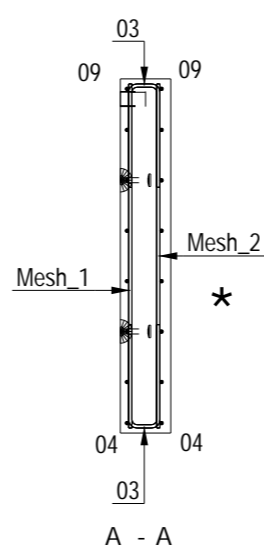
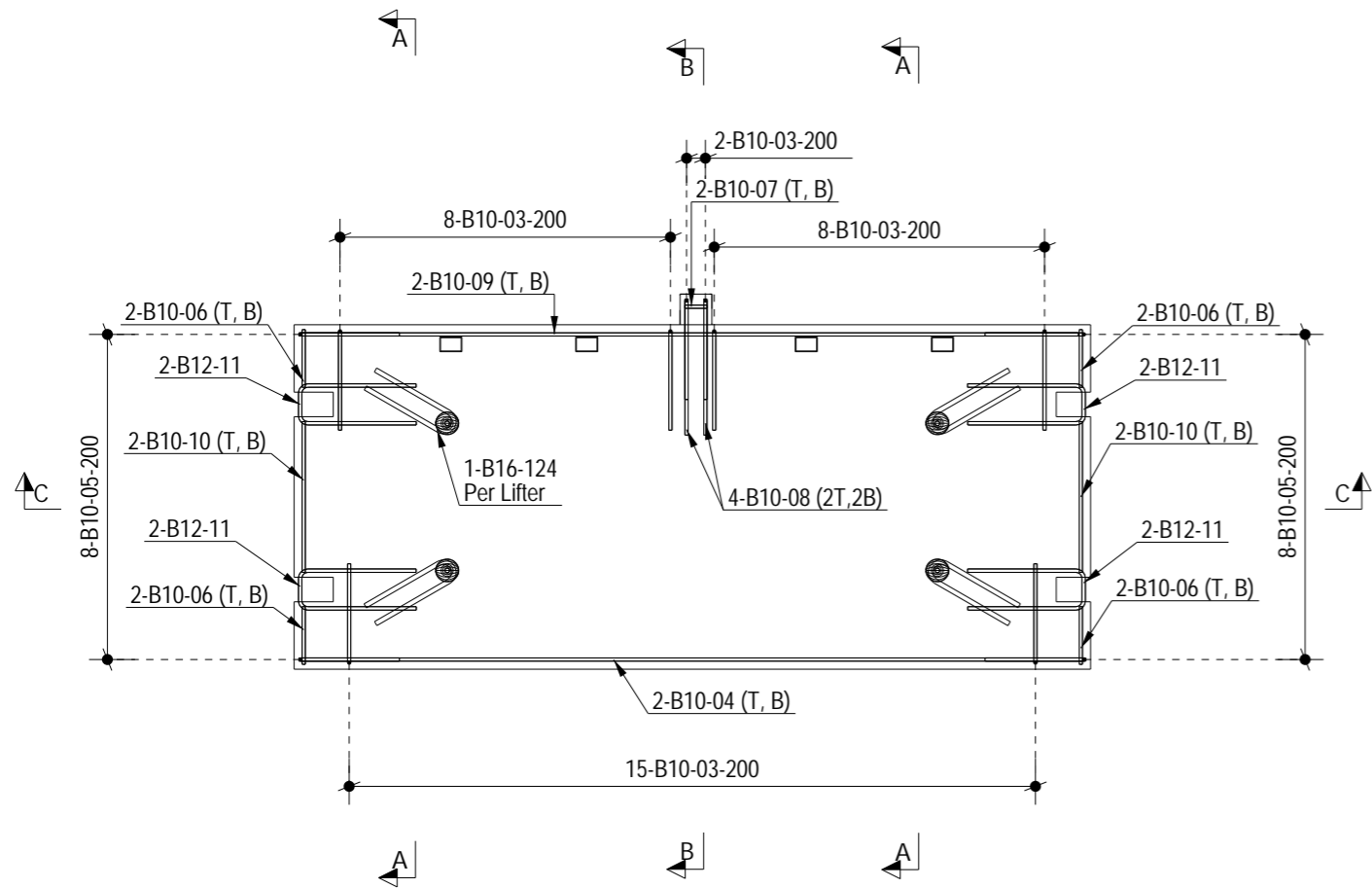
Project. **Panattoni Park Poyle**

Title. **GA1 of Stair Landing SL-0007**

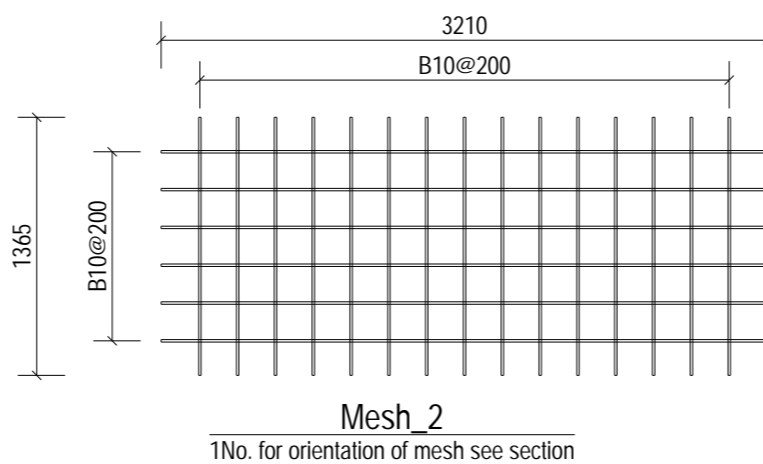
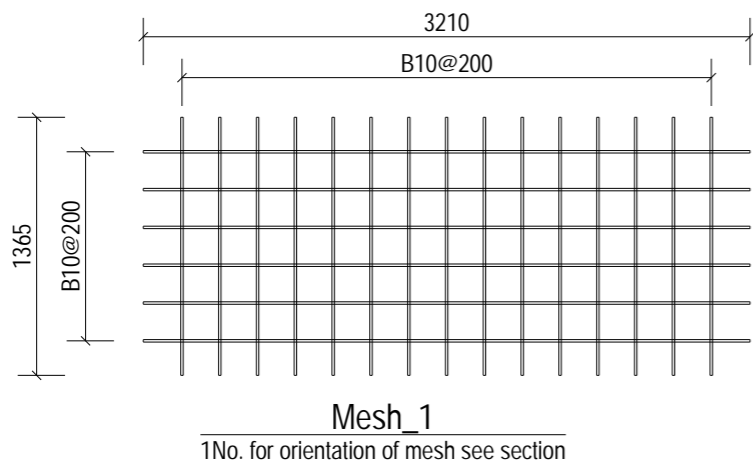
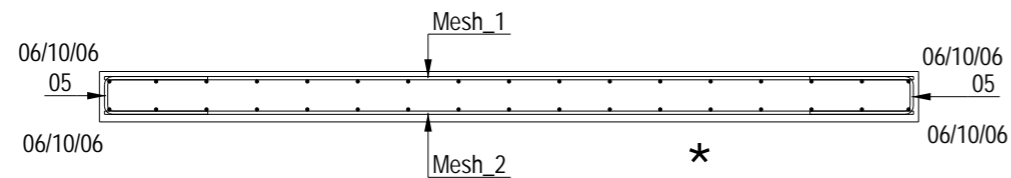
Scale: 1:40	Status: As Built - CR	
Date: 25-03-24		
Drawn: LN	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-SL-0007-GA1		Rev: C03

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm



* Indicates Mould Face



NOTES:

Type.	Stair Landing
Mark.	SL-0007
GA Drg. Ref.	05-BYL-1462-SL-0007-GA1
Cover.	

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

All dimensions shown are overall sizes
Refer to the PXML for all specific bar locations

90MINS FIRE RATING
TOP & SIDE COVER 20MM
SOFFIT COVER 30MM

Rev	Date	Revision Detail	By	Chk	App
C02	27-03-24	Lifter notes updated	LN	AB	SJH
C01	27-03-24	Issued for Manufacture	LN	AB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. Panattoni Park Poyle

Title. RC1 of Stair Landing SL-0007

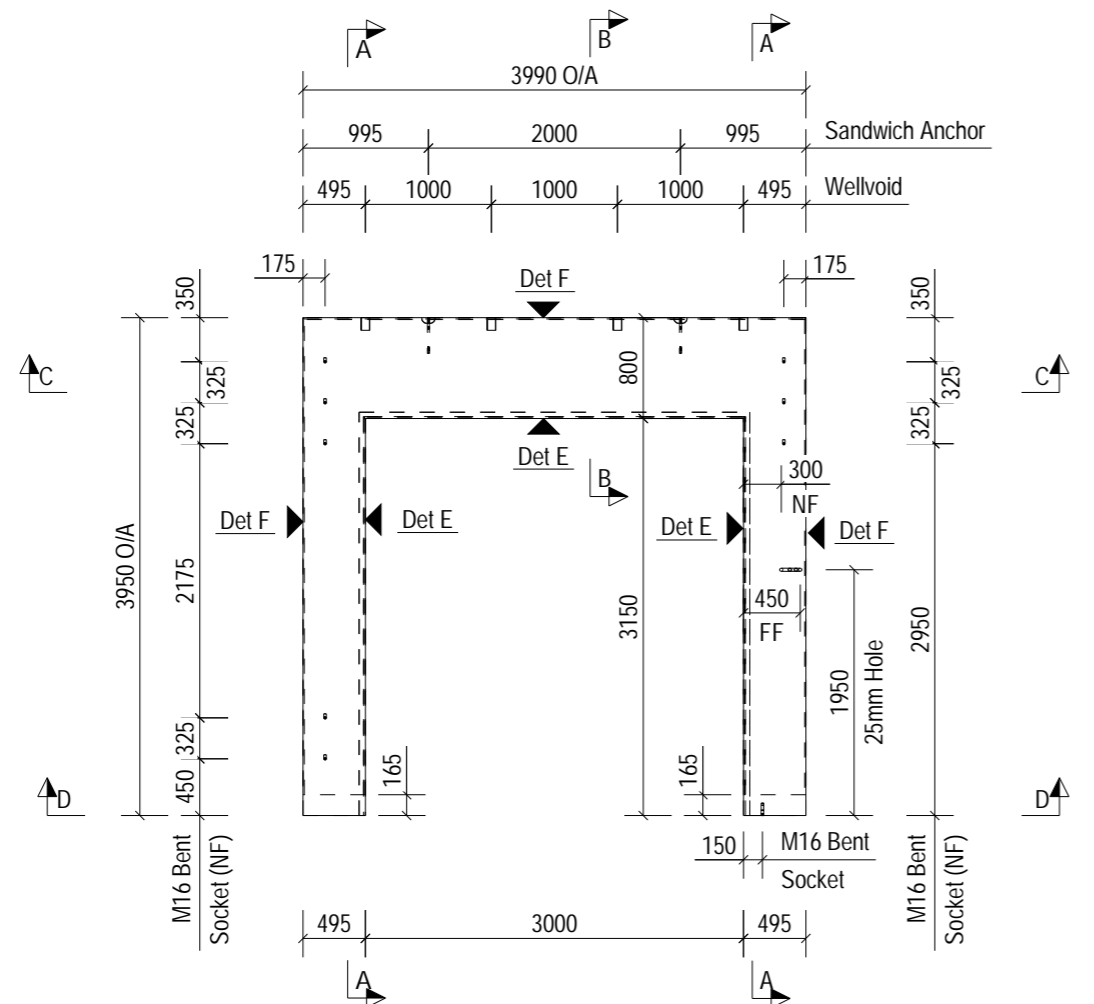
Scale: 1:40 Status: As Built - CR
Date: 25-03-24

Drawn: LN Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-SL-0007-RC1 Rev: C02

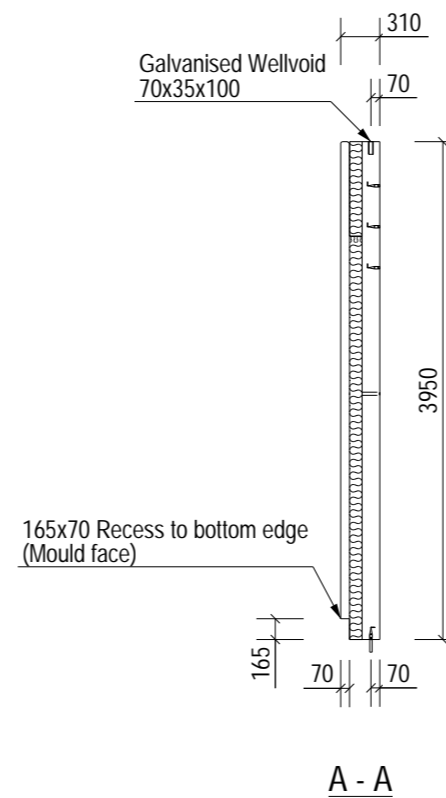
This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm

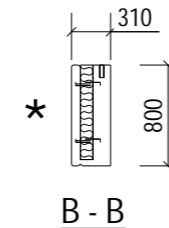


Plan on Mould

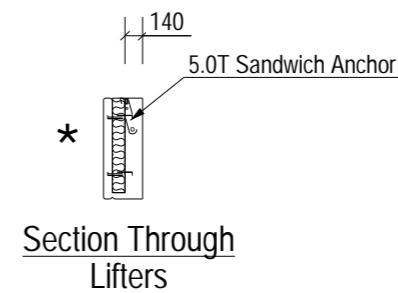
* Indicates Mould Face



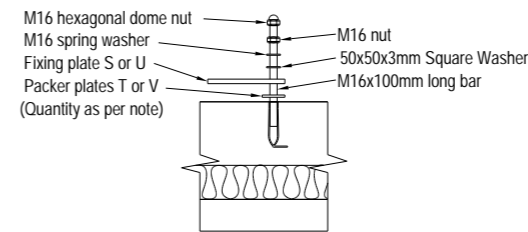
A - A



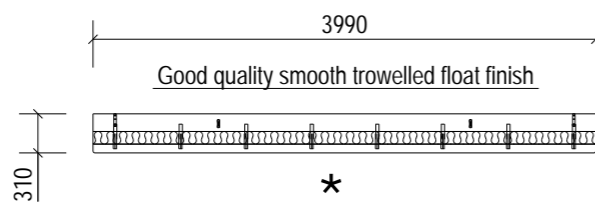
B - B



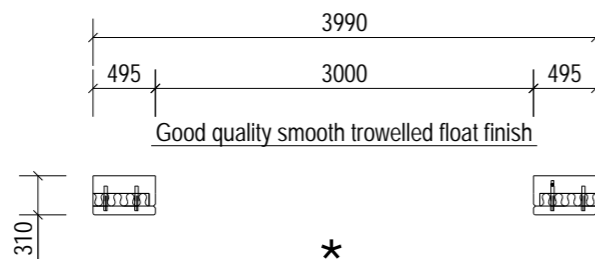
Section Through Lifters



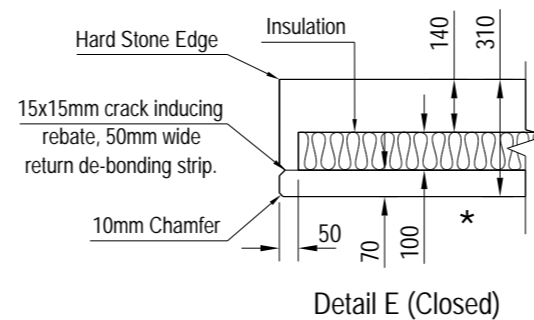
Typical fixing plate connection detail
- To be used at each M16 socket floated face fixing location



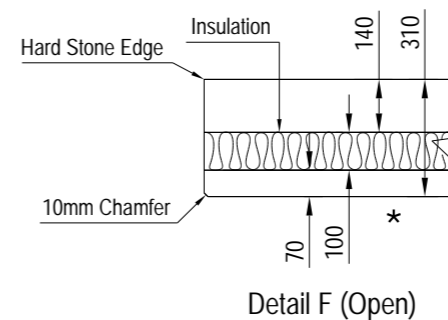
C - C



D - D



Detail E (Closed)



Detail F (Open)

Unit to be delivered with
3No. Packer Plates (T) and 1No. Large plate (S) fitted to each top fixings locations.
3No. Packer Plates (V) and 1No Small plate (U) to one bottom fixing location.
See drawing 05-BYL-1462-F01-F05 for details.

Area of Panel = 6.31 m²
Total No. Ties = 40 Ref: ST12 R2 200-50-50-100 = 6.34 Ties/m²
550mm x 550mm Max Grid.
100mm Min - 275mm Max Edge Distance.

NOTES:

Type.	Single Door Prowall	
Length.	3990	+4 / -4
Height.	3950	+4 / -4
Width.	310	+4 / -4
Weight. (T)	3.44	
Volume. (m ³)	1.36	
Concrete.	Grade C40	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SP-0001-RC1	
IM Drg. Ref.	05-BYL-1462-SP-0001-IM1	
BBS Ref.	05-BYL-1462-SP-0001-BBS	
Calculation Ref.	FPMC-SP_RevC01	
Cover.	30mm Nominal, (25mm Minimum)	
Casting Bed.	Tilt Table	

Mark.	SP-0001
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
40	Thermomass Round Tie	ST12 R2 200-50-50-100
9	M16 Bent Socket	SFA16100/SSFA16100
4	Galvanised Wellvoid	70x35x100
2	5.0T Sandwich Anchor	LASSP050300/SSPA050300

Loose Fitting Take Off:		
Threaded Bar	(M16 x 140mm)	1 No.

Unit drawn from floated face
Must be transported and erected in a vertical position
SOCKET LOCATIONS ARE CRITICAL

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann
FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client: **winvic**

Project: **Panattoni Park Poyle**

Title: **GA1 of Single Door Prowall SP-0001**

Scale: 1:60	Status: As Built - CR
Date: 21-03-24	

Drawn: MA	Checked: NB	Approved: SJH
-----------	-------------	---------------

Drawing No : 05-BYL-1462-SP-0001-GA1	Rev: C01
--------------------------------------	----------

NOTES:

Type.	Single Door Prowall
Mark.	SP-0001
GA Drg. Ref.	05-BYL-1462-SP-0001-GA1
Cover.	30mm Nominal, 25mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

Project. **Panattoni Park Poyle**

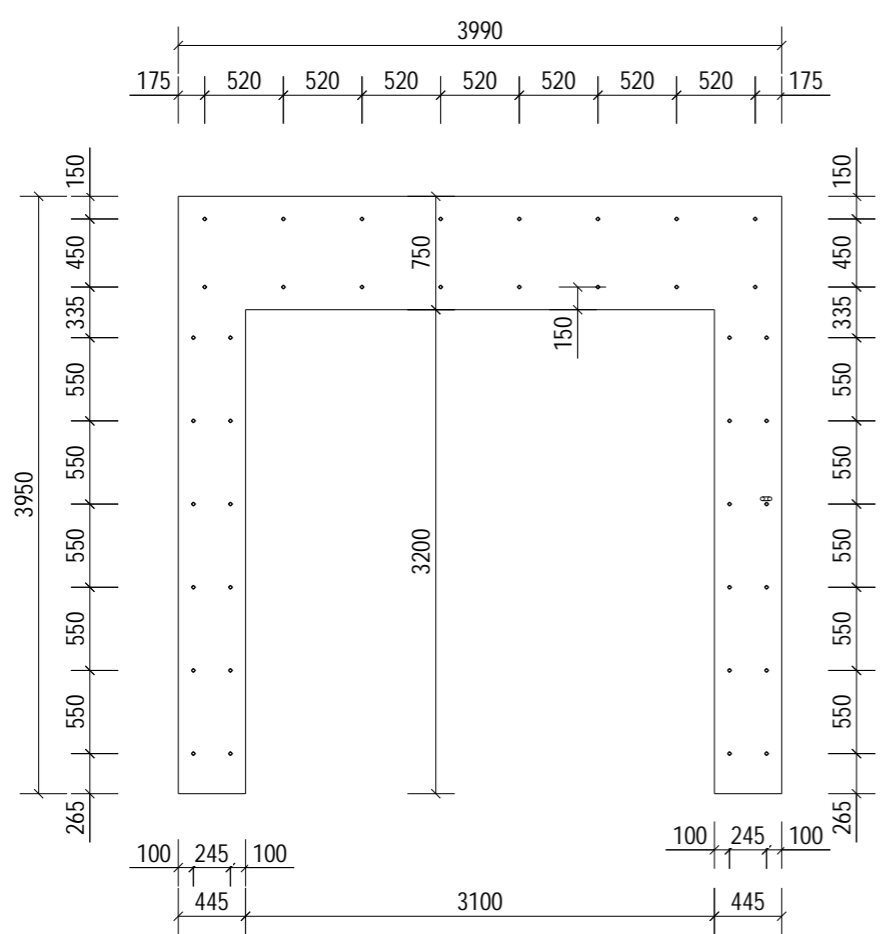
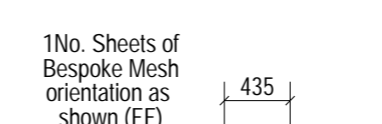
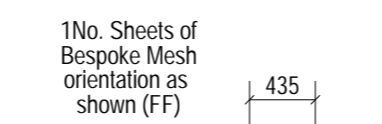
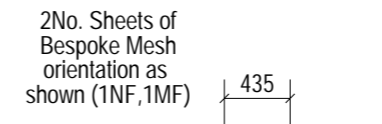
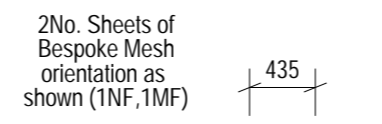
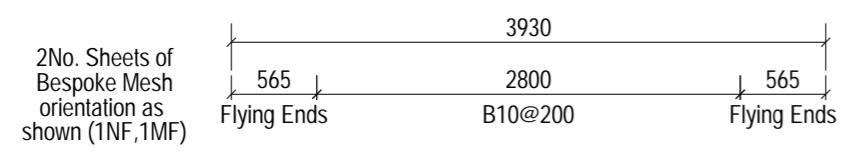
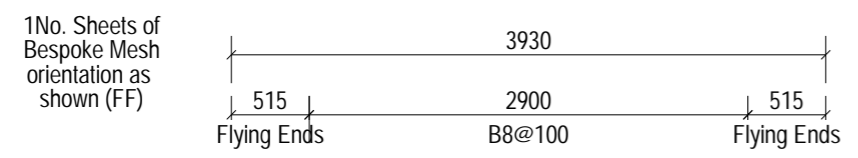
Title. **IM1 of Single Door Prowall SP-0001**

Scale: 1:50 Status: As Built - CR

Date: 21-03-24

Drawn: MA Checked: NB Approved: SJH

Drawing No : **05-BYL-1462-SP-0001-IM1** Rev: **C01**



Unit drawn from floated face

SOCKET LOCATIONS ARE CRITICAL

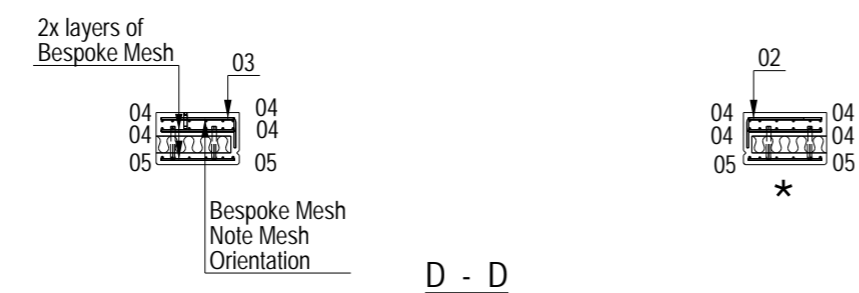
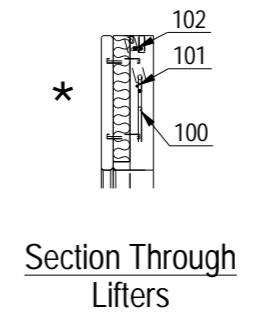
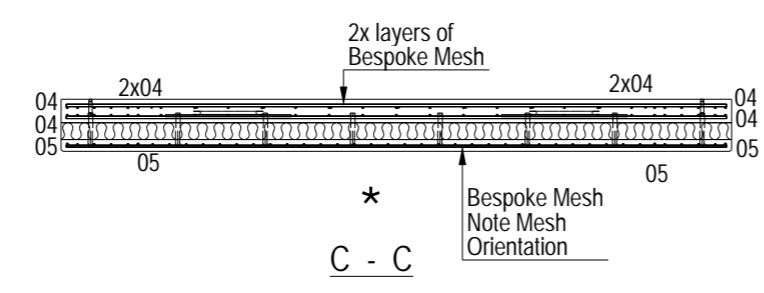
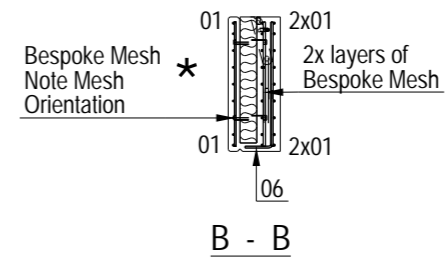
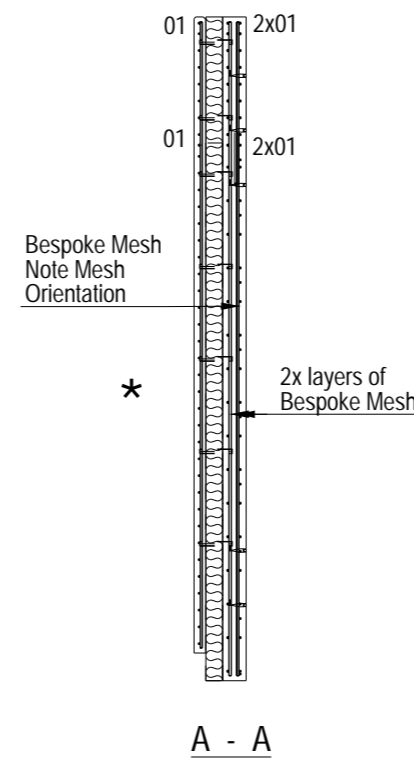
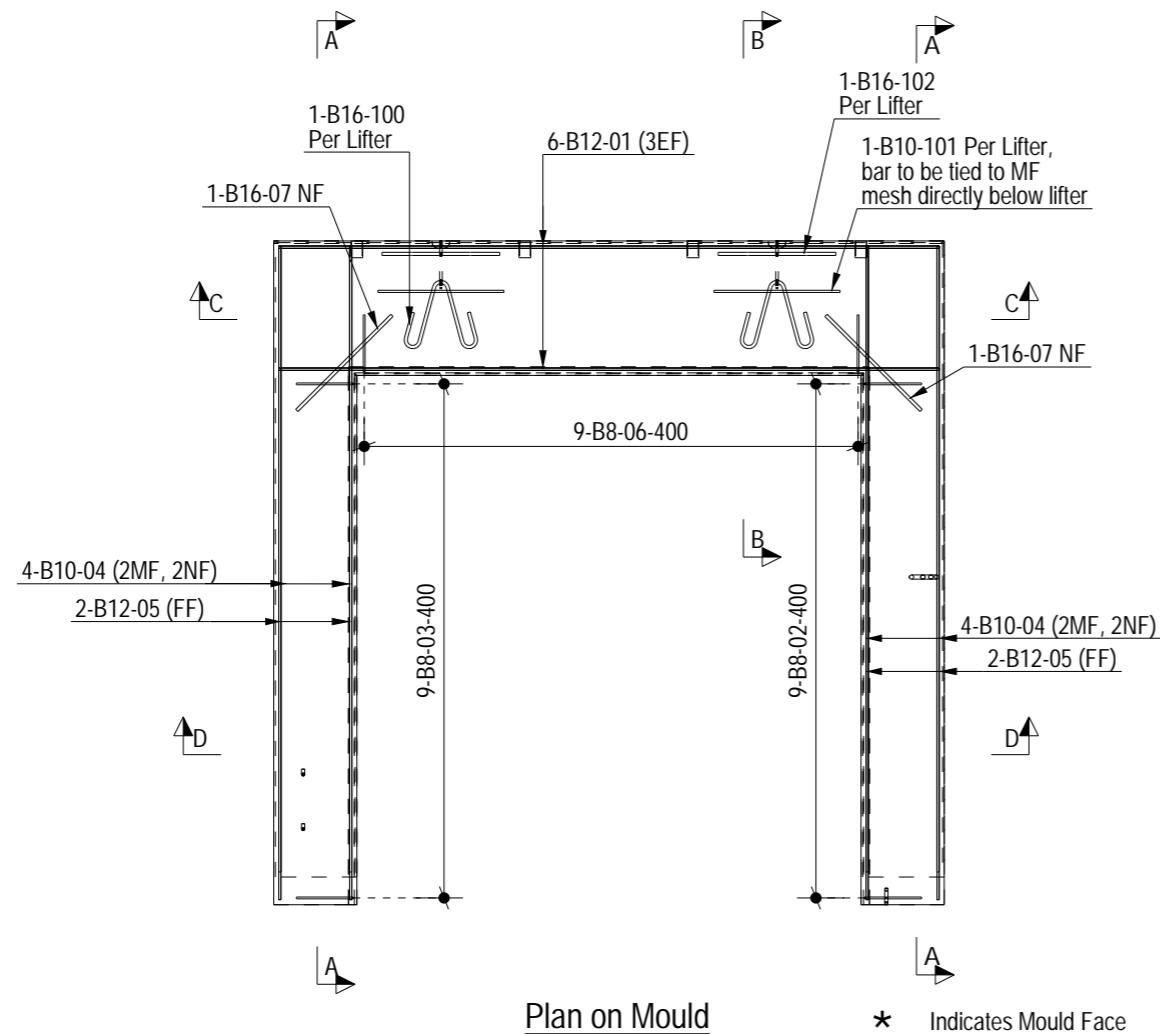
Notes:
10 Ø hole drilled into insulation
Ties must be 100mm minimum from edge

Area of Panel = 6.31 m²
Total No. Ties = 40 Ref: ST12 R2 200-50-50-100
= 6.34 Ties/m²
550mm x 550mm Max Grid.
100mm Min - 275mm Max Edge Distance.

Insulation to be supplied in rectangular sheets
All insulation to be cut by precast manufacturers prior to inclusion in mould and the tie holes drilled once in place. This is to avoid any clash with reinforcing cages.
The fitting/application of the component shall be conducted in accordance with WP/05/F77

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

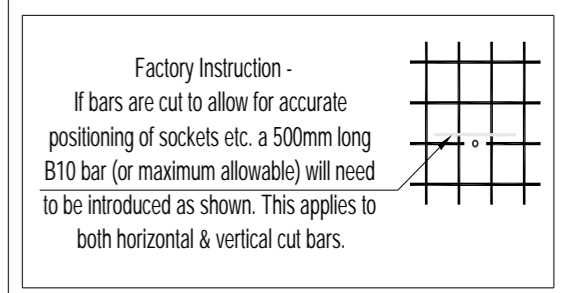
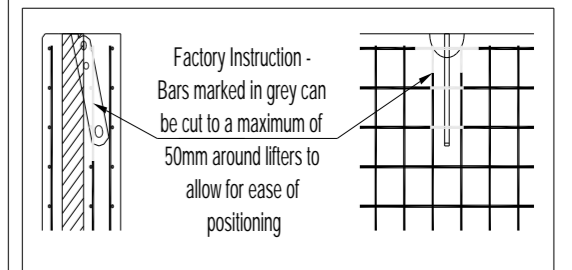
A3
10mm



NOTES:

Type.	Single Door Prowall
Mark.	SP-0001
GA Drg. Ref.	05-BYL-1462-SP-0001-GA1
Cover.	30mm Nominal, 25mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.



C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

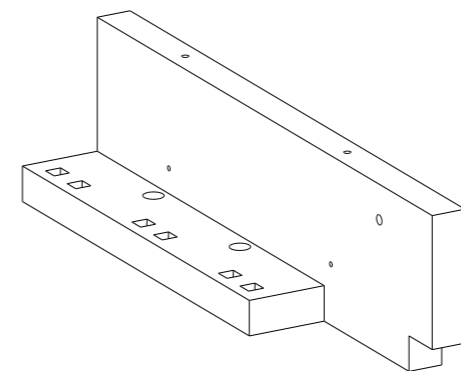
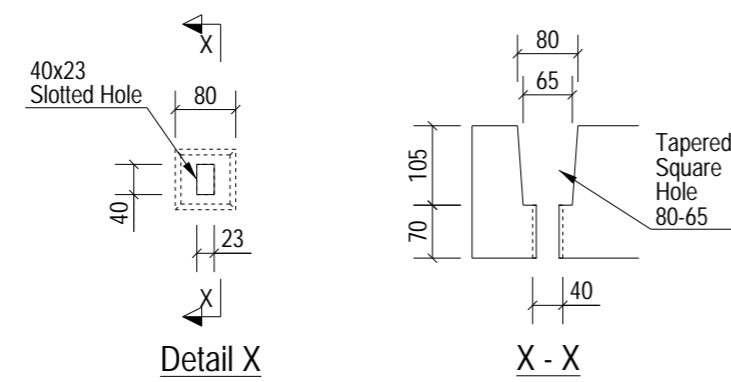
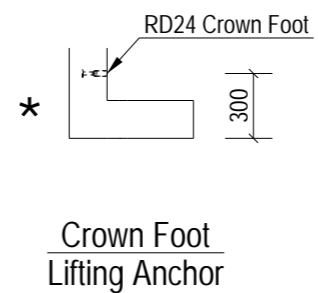
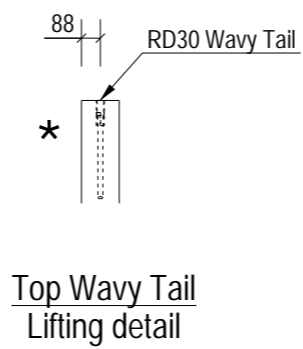
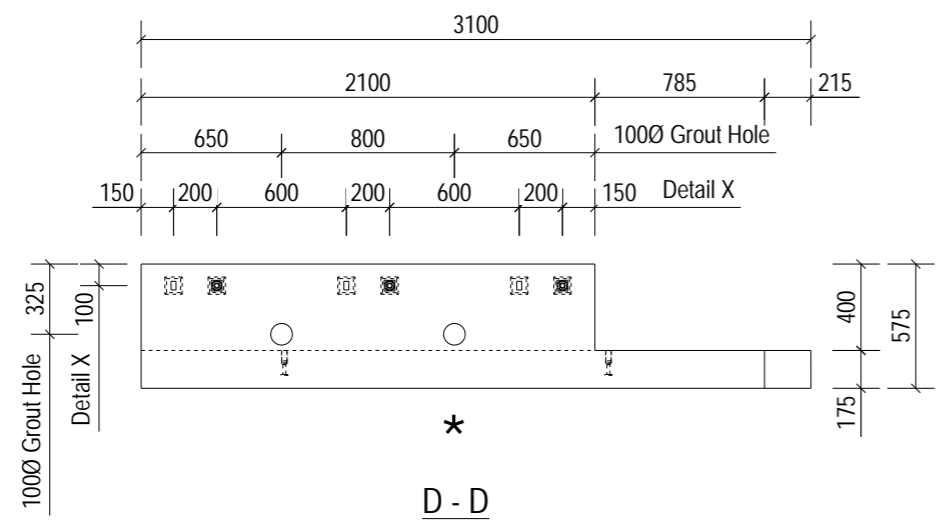
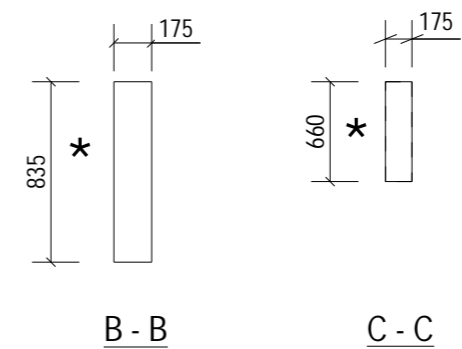
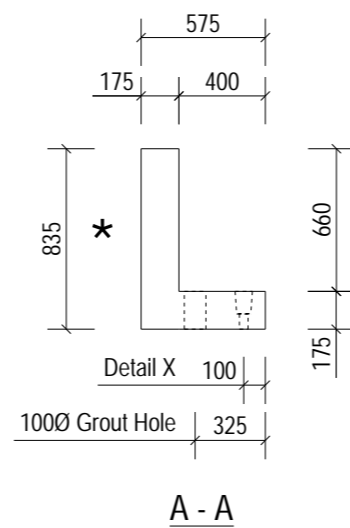
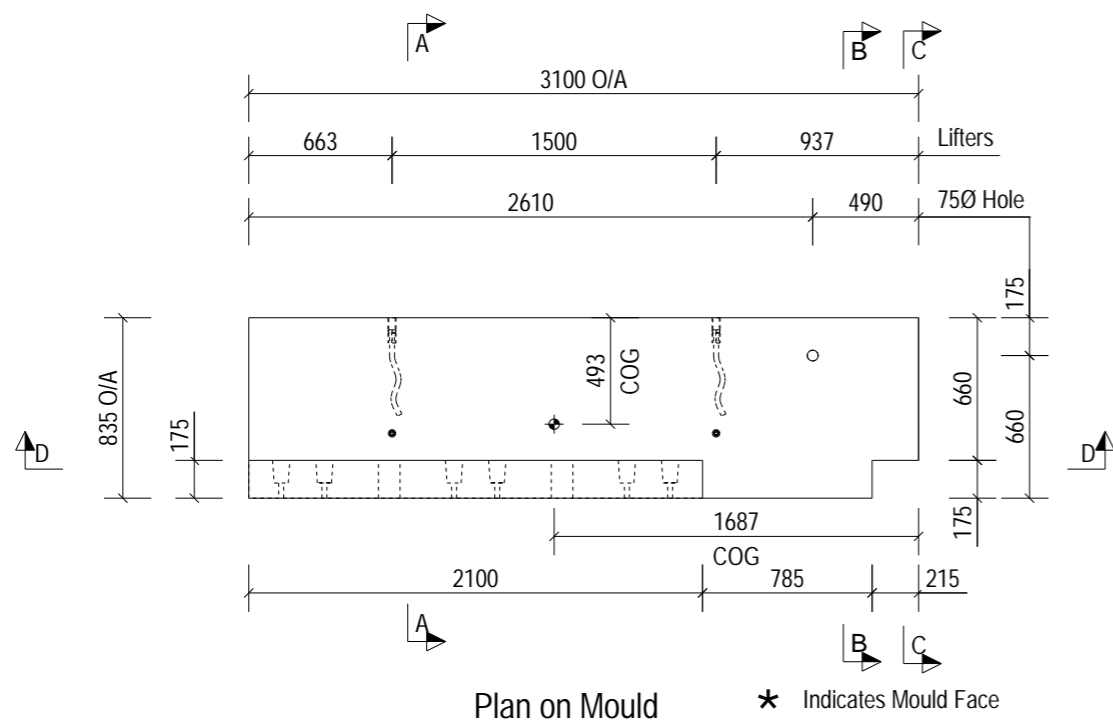
Client.

Project. **Panattoni Park Poyle**

Title. **RC1 of Single Door Prowall SP-0001**

Scale: 1:45	Status: As Built - CR	
Date: 21-03-24		
Drawn: MA	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-SP-0001-RC1	Rev: C01	

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.



NOTES:

Type.	SIDEWALL	
Length.	3100	+4 / -4
Height.	835	+4 / -4
Width.	175	+4 / -4
Weight. (T)	1.47	
Volume. (m³)	0.59	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-SW-0001-RC1
BBS Ref.	05-BYL-1462-SW-0001-BBS
Calculation Ref.	FPMC-50-SW1_RevC01
Cover.	40mm Nominal, 35mm Minimum
Casting Bed.	Flat
Mark.	SW-0001
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD24 Crown Foot	SLS24115/SCFS24115
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:

Item	Spec	No.
Square Washer	(M25-50*50*2.5)	3 No.
Excalibur Bolt	(M20*300)	3 No.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

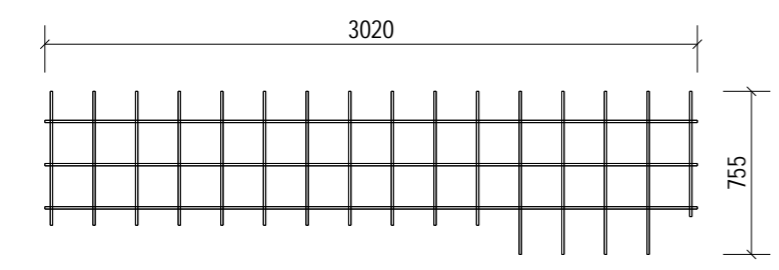
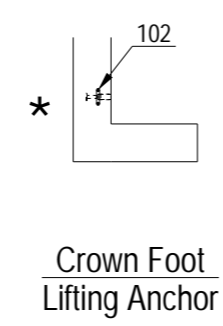
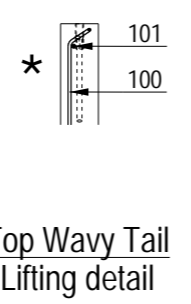
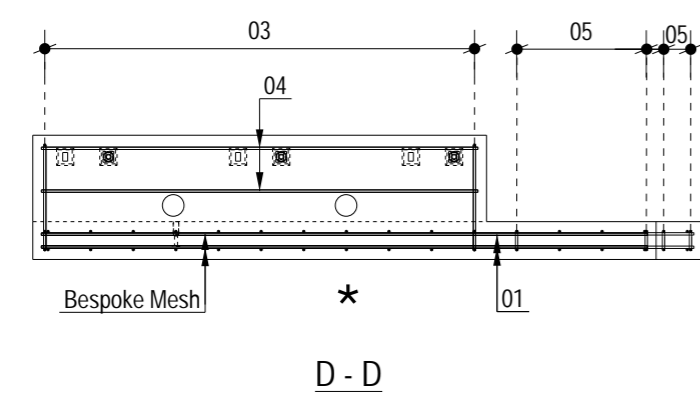
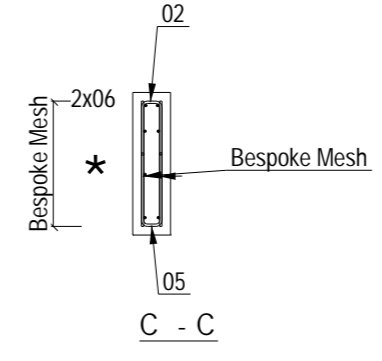
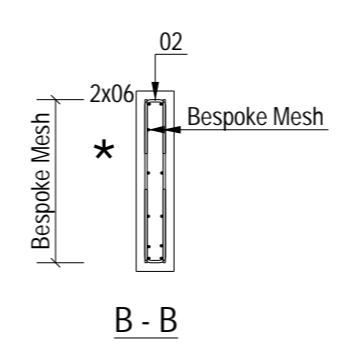
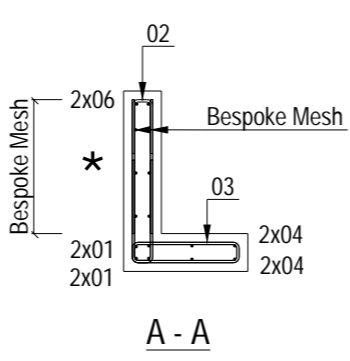
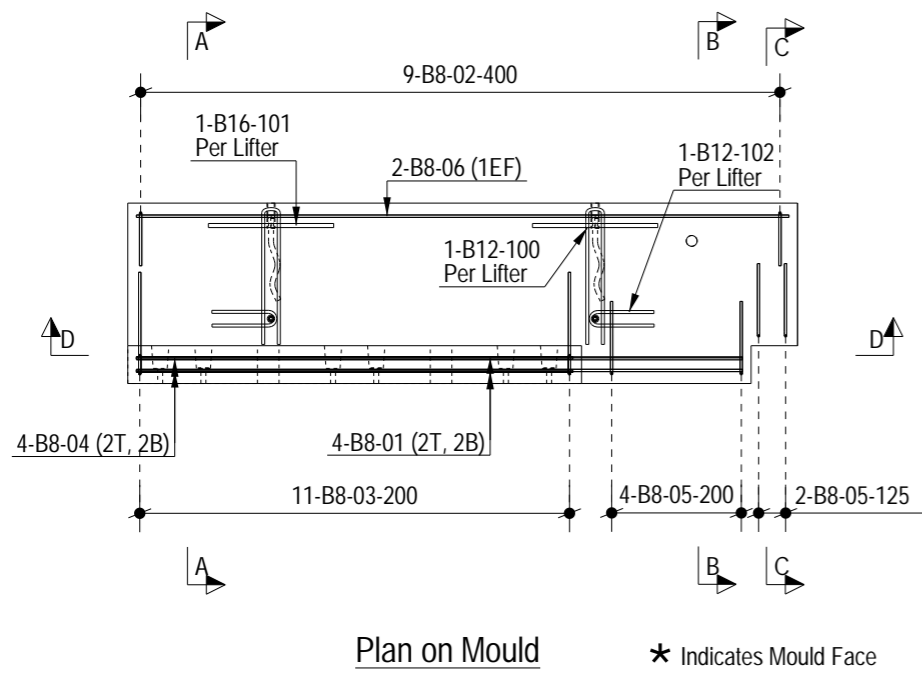
Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of SIDEWALL SW-0001**

Scale: 1:50	Status: As Built - CR	
Date: 20-03-24		
Drawn: MA	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-SW-0001-GA1		Rev: C01

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

MESH REINFORCEMENT:
ALL MESH - B8@ 200CRS BOTH DIRECTIONS

NOTES:

Type.	SIDEWALL
Mark.	SW-0001
GA Drg. Ref.	05-BYL-1462-SW-0001-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

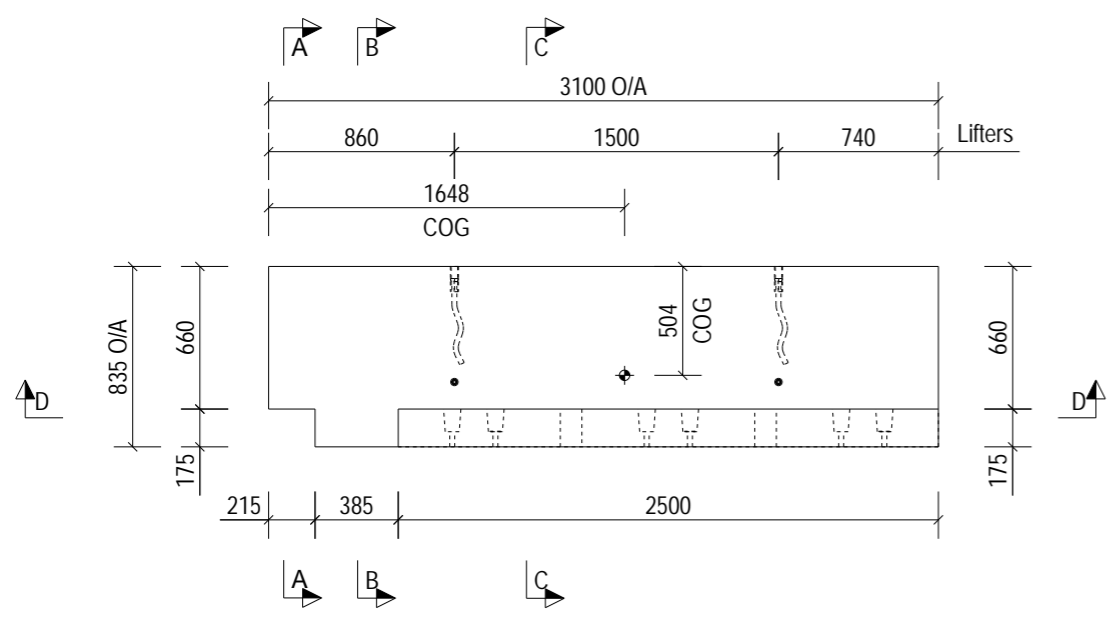
Project. **Panattoni Park Poyle**

Title. **RC1 of SIDEWALL SW-0001**

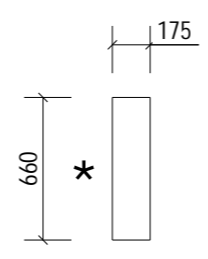
Scale: 1:35	Status: As Built - CR	
Date: 20-03-24		
Drawn: MA	Checked: NB	Approved: SJH

Drawing No : **05-BYL-1462-SW-0001-RC1** Rev: **C01**

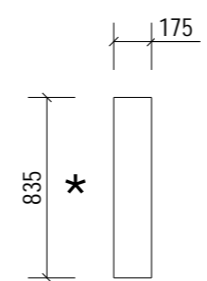
A3
10mm



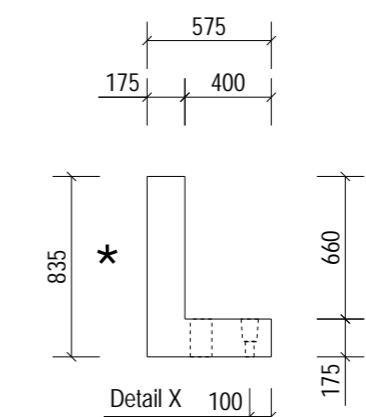
Plan on Mould * Indicates Mould Face



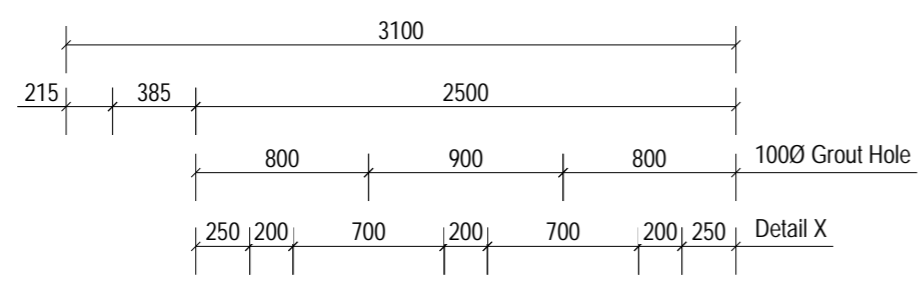
A - A



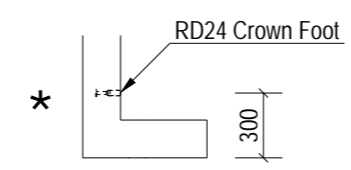
B - B



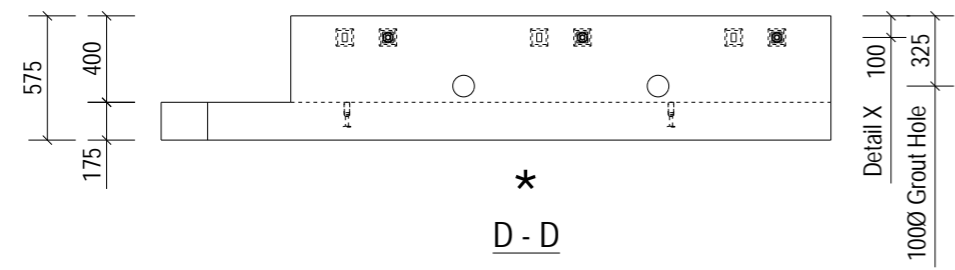
C - C



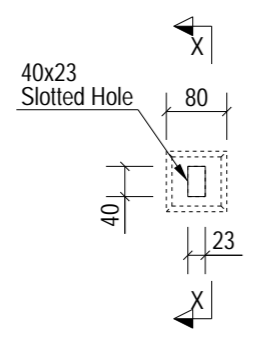
Top Wavy Tail Lifting detail



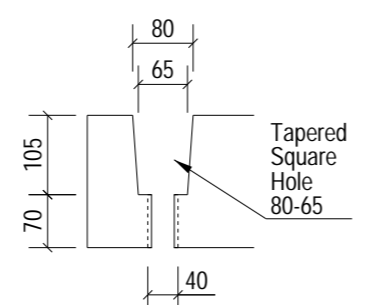
Crown Foot Lifting Anchor



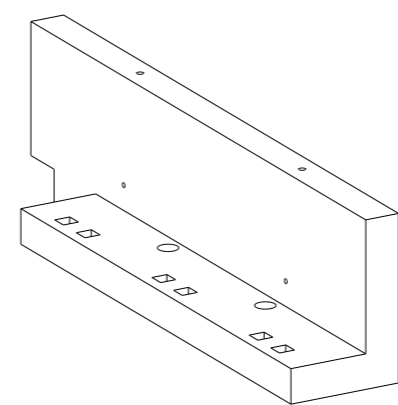
D - D



Detail X



X - X



3D View

NOTES:

Type.	SIDEWALL	
Length.	3100	+4 / -4
Height.	835	+4 / -4
Width.	175	+4 / -4
Weight. (T)	1.54	
Volume. (m³)	0.61	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-SW-0002-RC1	
BBS Ref.	05-BYL-1462-SW-0002-BBS	
Calculation Ref.	FPMC-50-SW1_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	SW-0002	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD24 Crown Foot	SLS24115/SCFS24115
2	RD30 Wavy Tail	SLWL30450/SSLW30450

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	3 No.
Excalibur Bolt	(M20*300)	3 No.

Rev	Date	Revision Detail	By	Chk	App
C01	21-03-24	Issued For Manufacture.	MA	NB	SJH

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of SIDEWALL SW-0002**

Scale: 1:35 Status: As Built - CR
Date: 20-03-24

Drawn: MA Checked: NB Approved: SJH
Drawing No : 05-BYL-1462-SW-0002-GA1 Rev: C01

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

NOTES:

Type.	SIDEWALL
Mark.	SW-0002
GA Drg. Ref.	05-BYL-1462-SW-0002-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	21-03-24	Issued For Manufacture.	MA	NB	SJH

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

Project. **Panattoni Park Poyle**

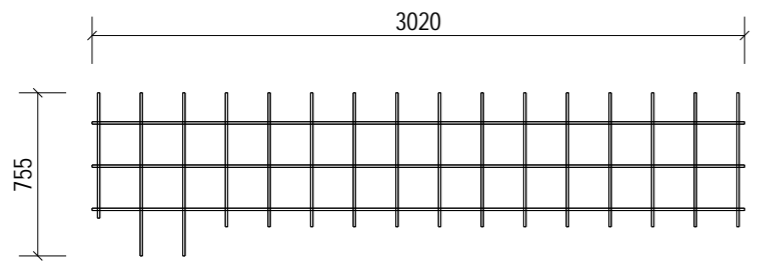
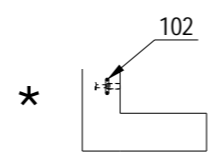
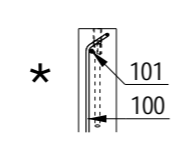
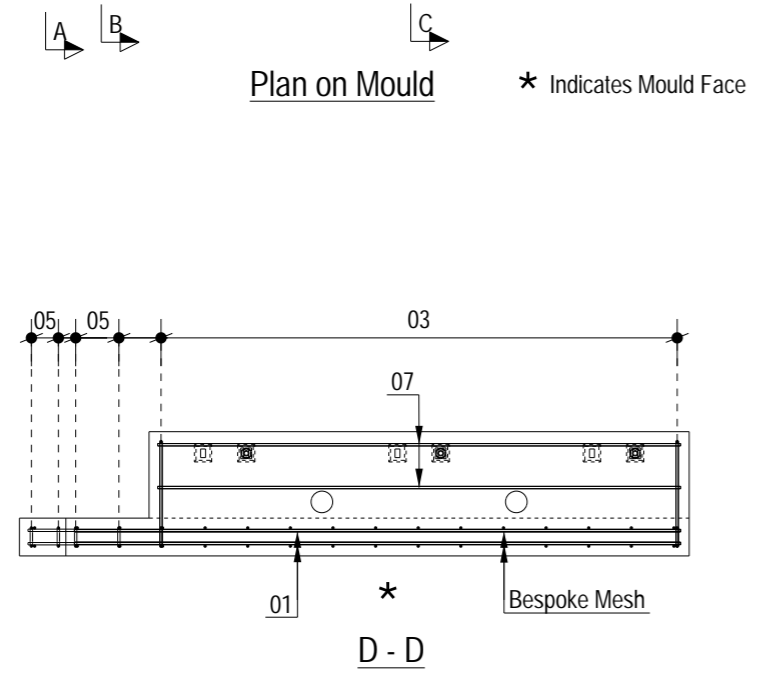
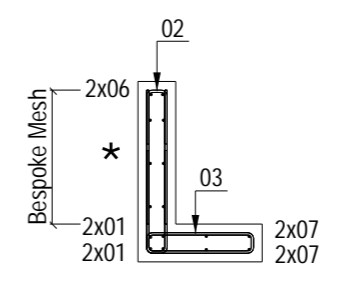
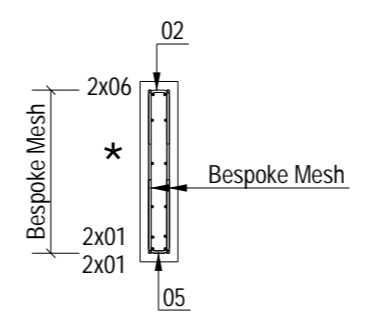
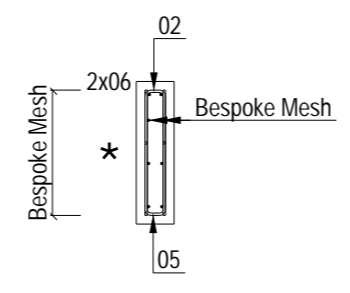
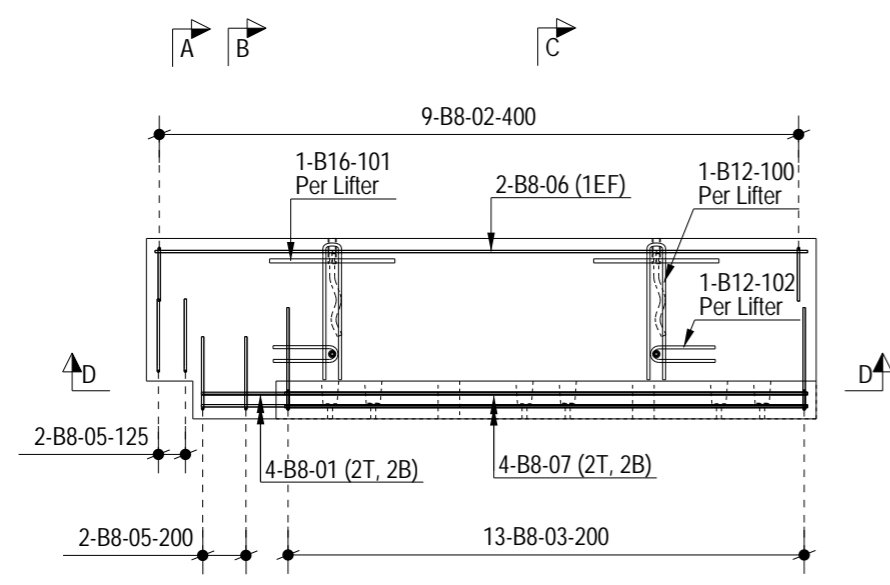
Title. **RC1 of SIDEWALL SW-0002**

Scale: 1:35 Status: As Built - CR

Date: 20-03-24

Drawn: MA Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-SW-0002-RC1 Rev: C01

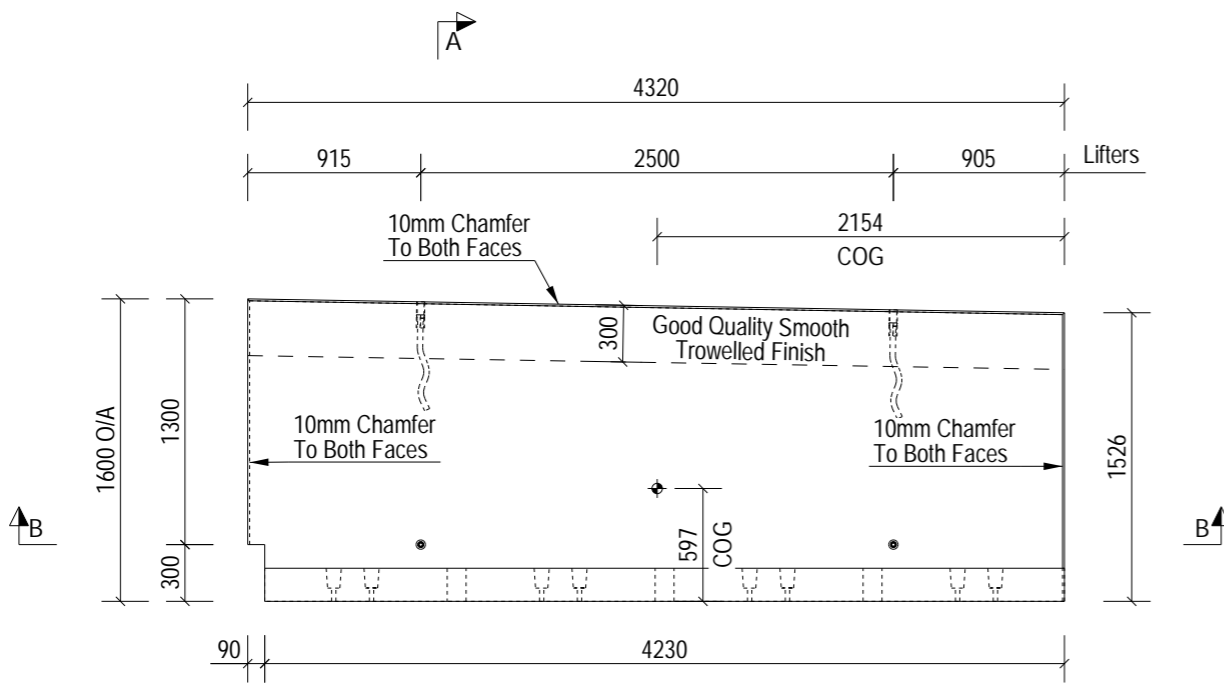


2No. Required
1No. each face, note mesh orientation on sections.

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

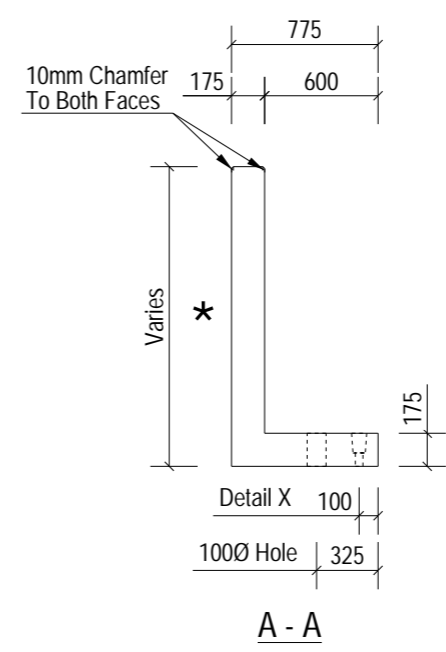
MESH REINFORCEMENT:
ALL MESH - B8@ 200CRS BOTH DIRECTIONS

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

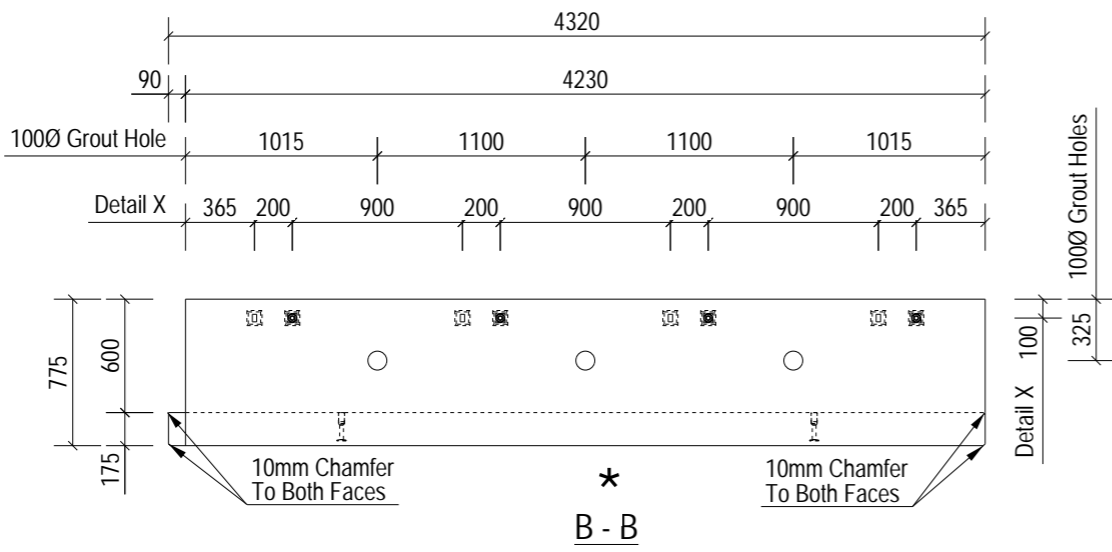


Plan on Mould

* Indicates Mould Face

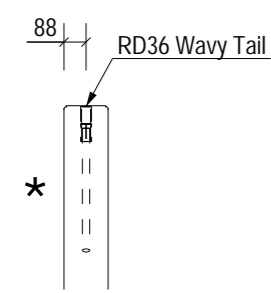


A - A

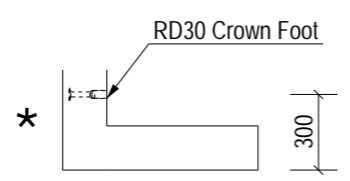


B - B

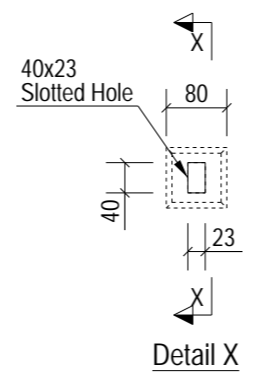
3D View



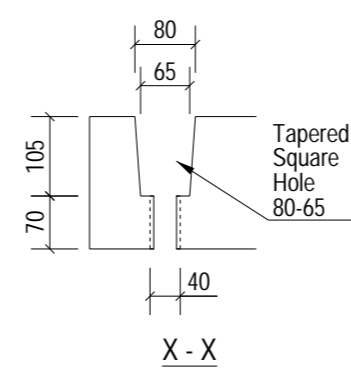
Top Wavy Tail Lifting Detail



Crown Foot Lifting Anchor



Detail X



X - X

NOTES:

Type.	Yard Retaining Wall	
Length.	4320	+4 / -4
Height.	1600	+4 / -4
Width.	175	+4 / -4
Weight. (T)	4.04	
Volume. (m ³)	1.61	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-YD-0001-RC1	
BBS Ref.	05-BYL-1462-YD-0001-BBS	
Calculation Ref.	FPMC-20-YD-1750_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	YD-0001	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	4 No.
Excalibur Bolt	(M20*300)	4 No.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client: **winvic**

Project: **Panattoni Park Poyle**

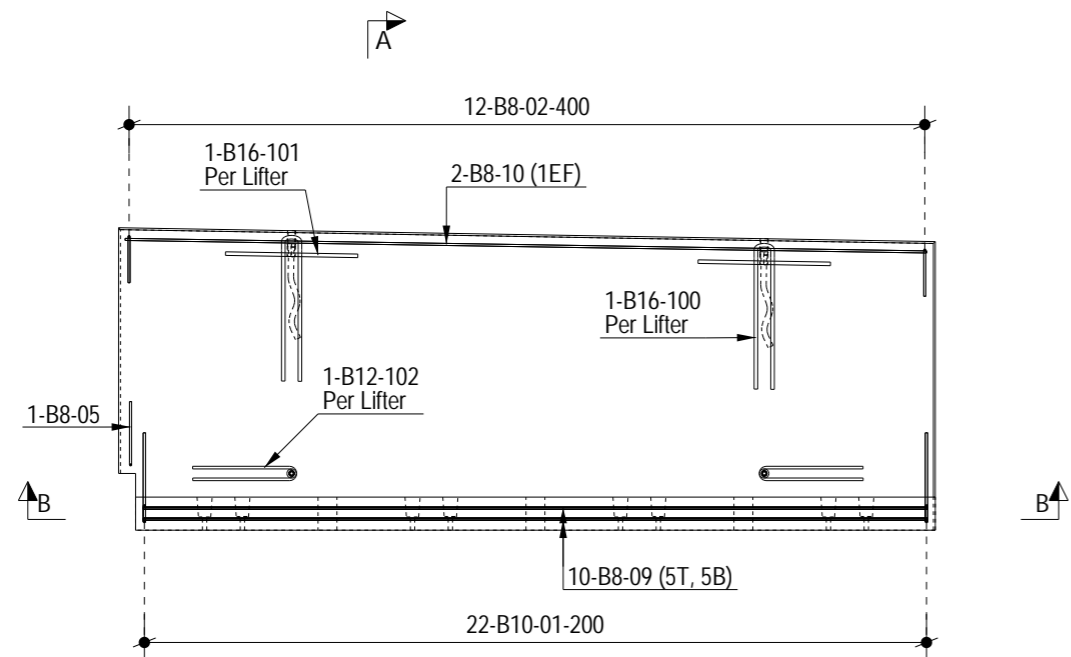
Title: **GA1 of Yard Retaining Wall YD-0001**

Scale: 1:50 Status: As Built - CR
 Date: 19-03-24

Drawn: MA Checked: NB Approved: SJH

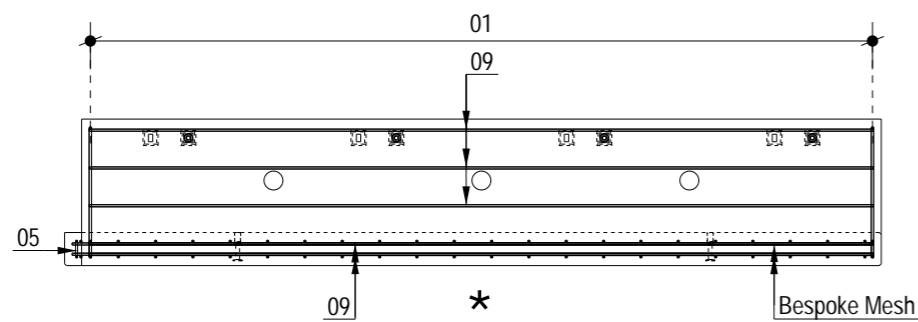
Drawing No: **05-BYL-1462-YD-0001-GA1** Rev: **C01**

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

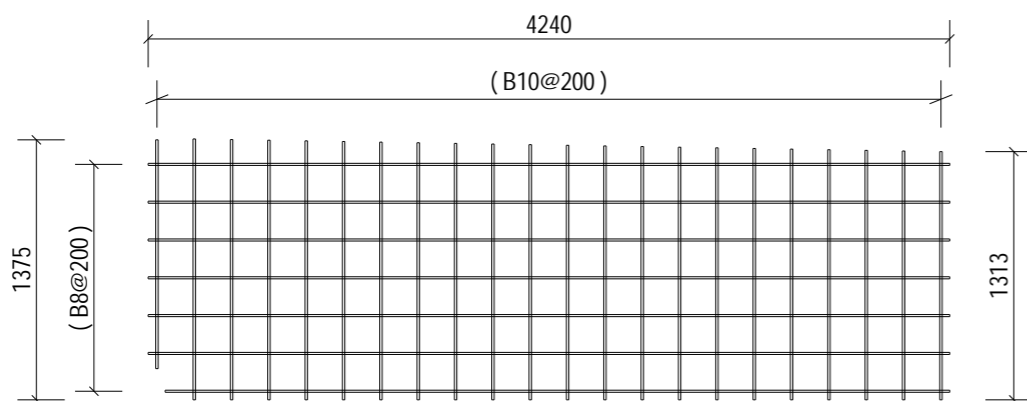


Plan on Mould

* Indicates Mould Face

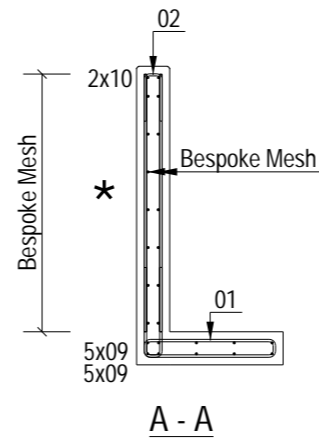


B - B

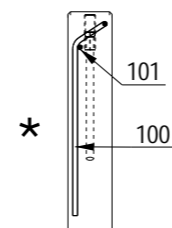


Bespoke Mesh

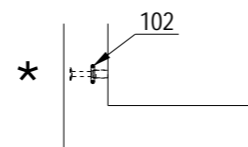
2No. Required
1No. each face, note mesh orientation on sections.



A - A



Top Wavy Tail Lifting Anchor



Crown Foot Lifting Anchor

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Yard Retaining Wall
Mark.	YD-0001
GA Drg. Ref.	05-BYL-1462-YD-0001-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	21-03-24	Issued For Manufacture.	MA	NB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.



Project.

Panattoni Park
Poyle

Title.

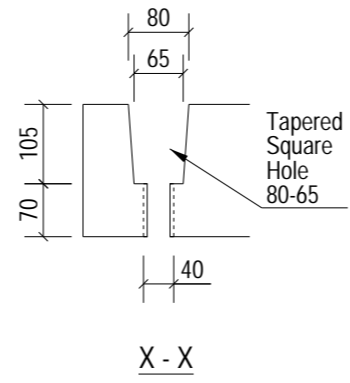
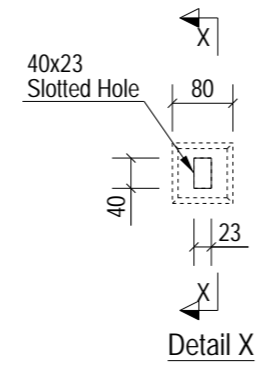
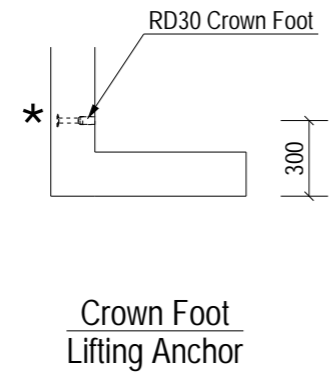
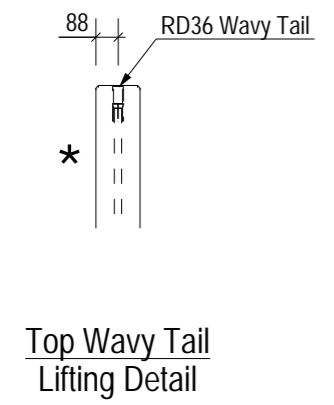
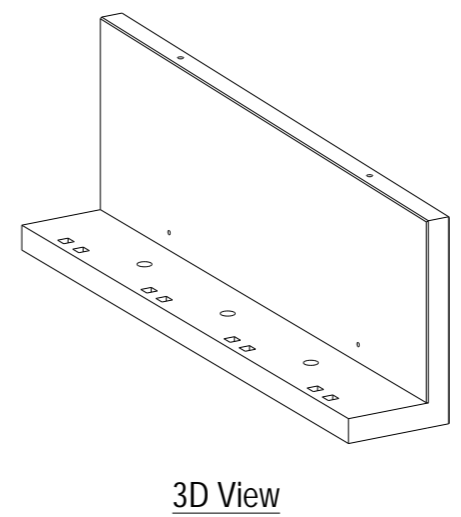
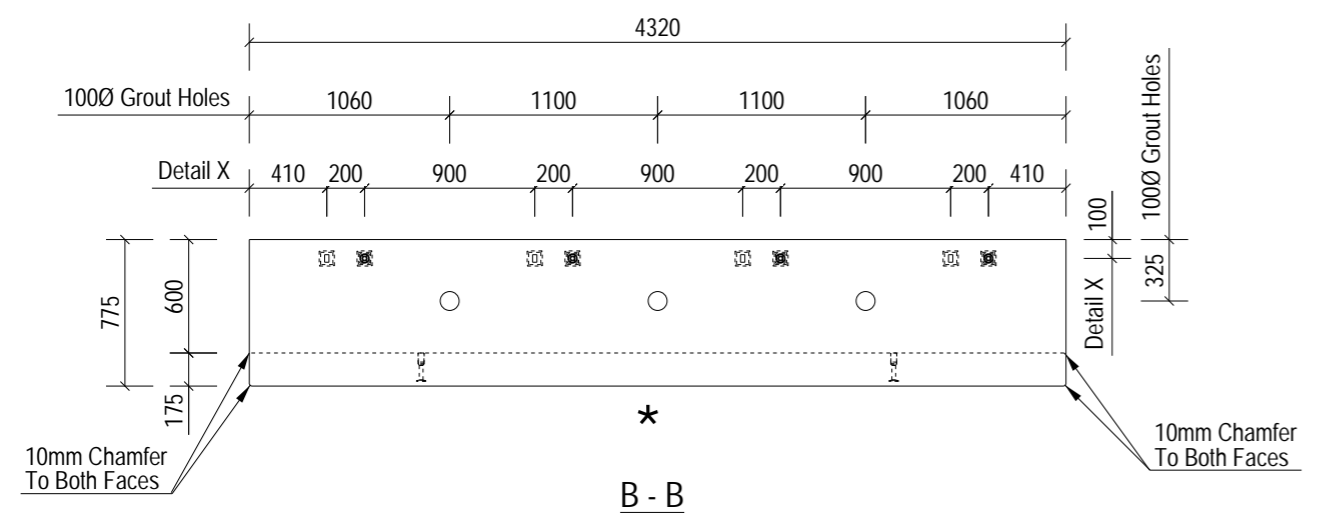
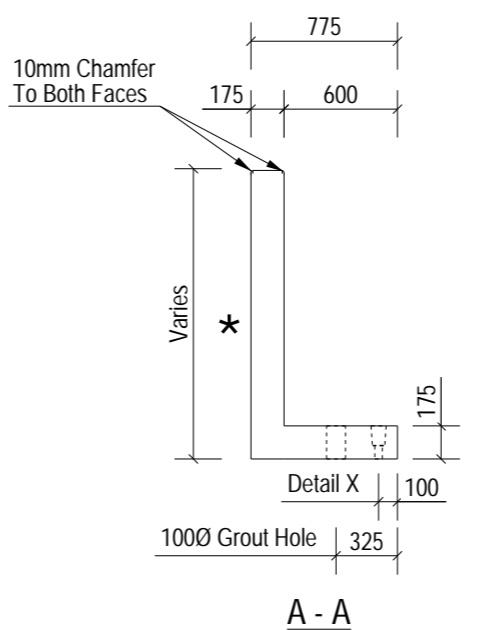
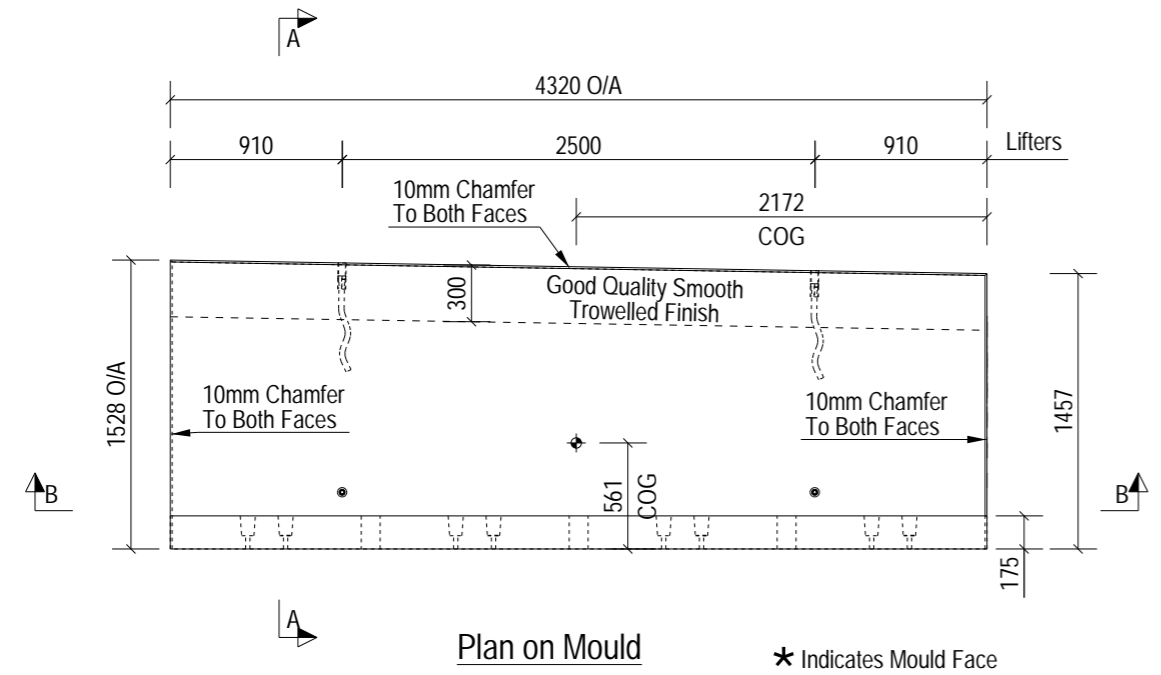
RC1 of
Yard Retaining Wall YD-0001

Scale: 1:40
Date: 19-03-24

Status:
As Built - CR

Drawn: MA Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-YD-0001-RC1 Rev: C01



NOTES:

Type.	Yard Retaining Wall	
Length.	4320	+4 / -4
Height.	1528	+4 / -4
Width.	175	+4 / -4
Weight. (T)	3.94	
Volume. (m³)	1.57	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-YD-0002-RC1
BBS Ref.	05-BYL-1462-YD-0002-BBS
Calculation Ref.	FPMC-20-YD-1750_RevC01
Cover.	40mm Nominal, 35mm Minimum
Casting Bed.	Flat
Mark.	YD-0002
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	4 No.
Excalibur Bolt	(M20*300)	4 No.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of Yard Retaining Wall YD-0002**

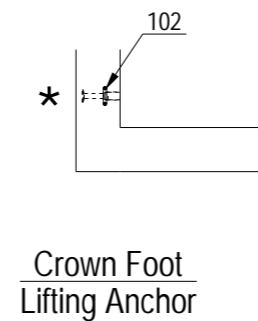
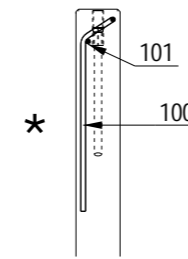
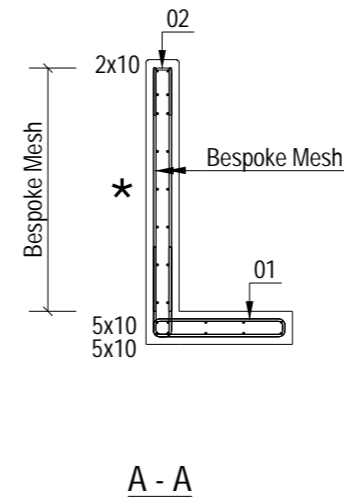
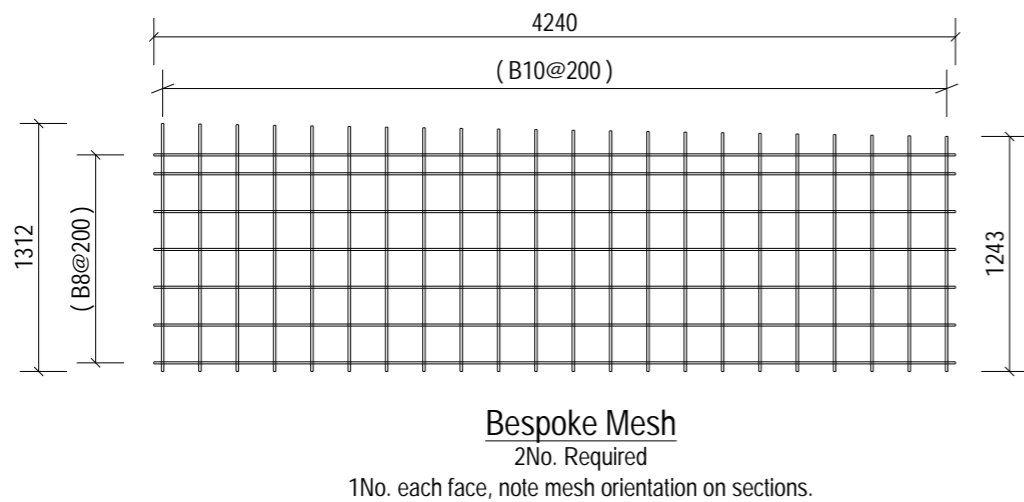
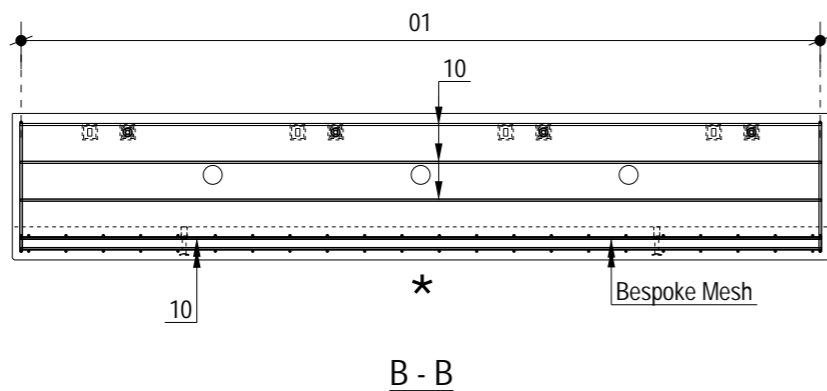
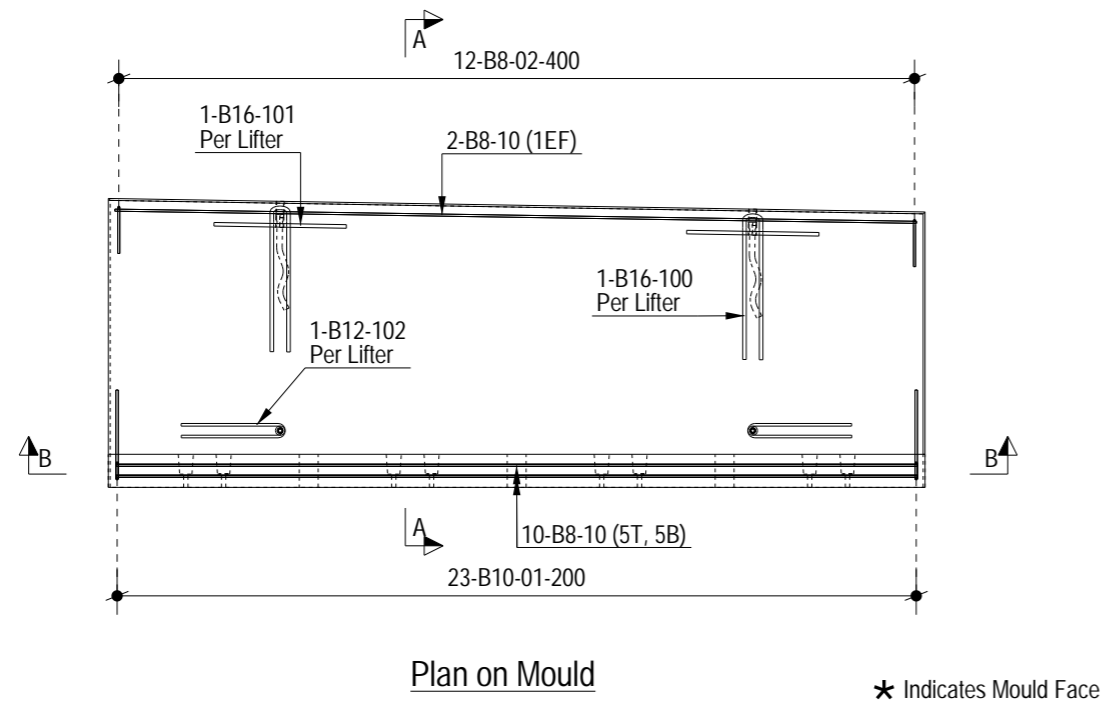
Scale: 1:50 Status: As Built - CR
 Date: 19-03-24

Drawn: MA Checked: NB Approved: SJH

Drawing No : **05-BYL-1462-YD-0002-GA1** Rev: **C01**

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

A3
10mm



NOTES:

Type.	Yard Retaining Wall
Mark.	YD-0002
GA Drg. Ref.	05-BYL-1462-YD-0002-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

Project. **Panattoni Park Poyle**

Title. **RC1 of Yard Retaining Wall YD-0002**

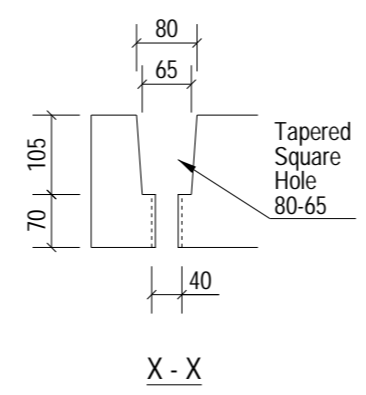
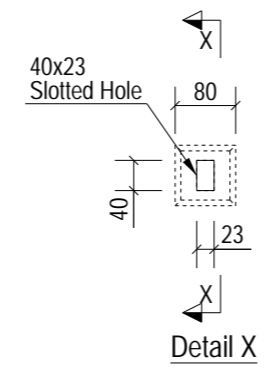
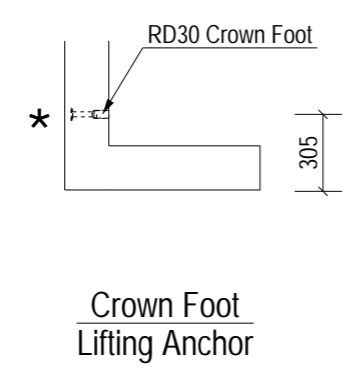
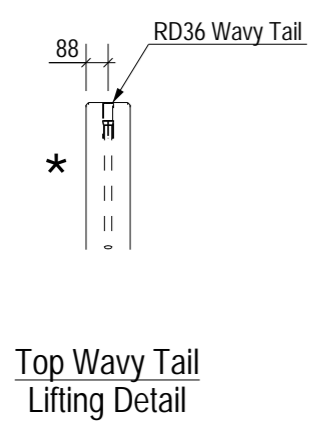
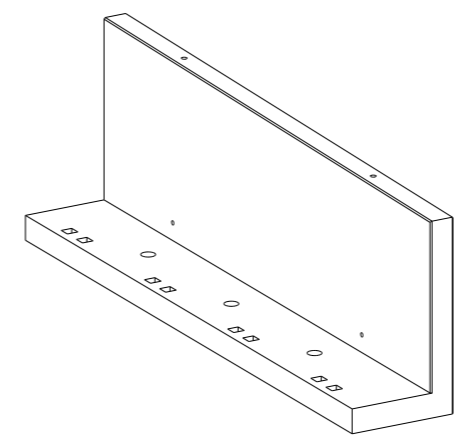
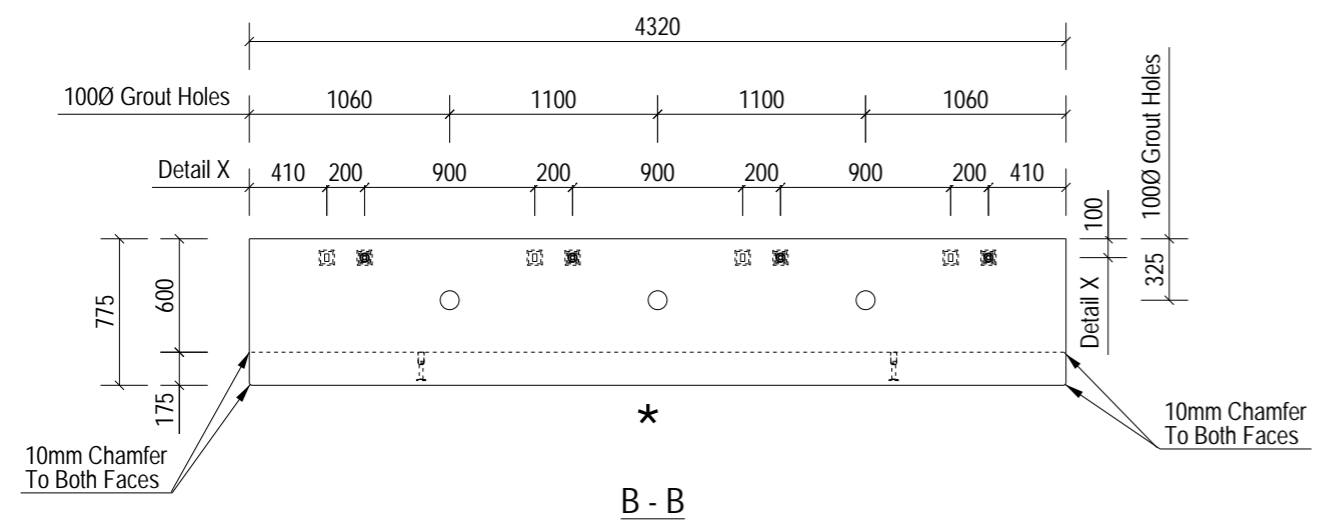
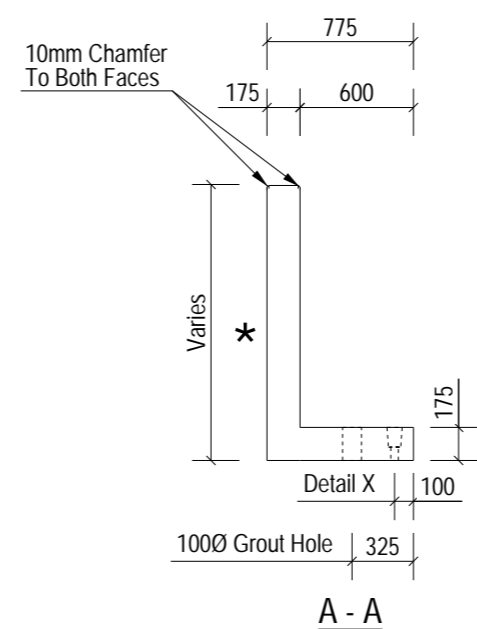
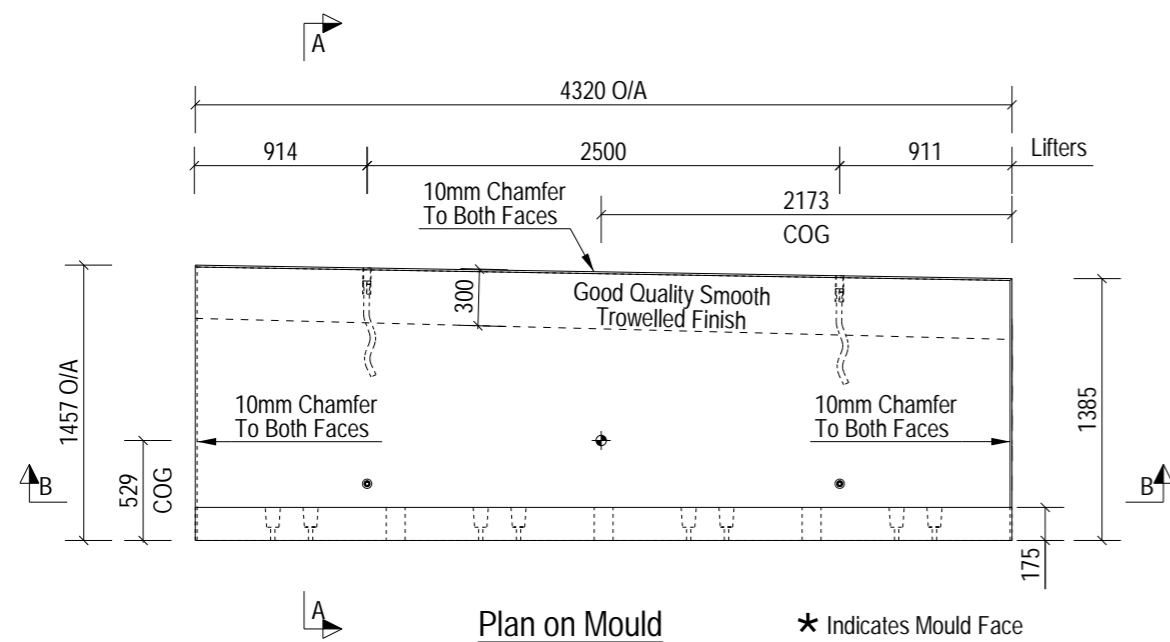
Scale: 1:40 Status: As Built - CR

Date: 19-03-24

Drawn: MA Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-YD-0002-RC1 Rev: C01

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.



NOTES:

Type.	Yard Retaining Wall	
Length.	4320	+4 / -4
Height.	1457	+4 / -4
Width.	175	+4 / -4
Weight. (T)	3.80	
Volume. (m³)	1.52	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-YD-0003-RC1	
BBS Ref.	05-BYL-1462-YD-0003-BBS	
Calculation Ref.	FPMC-20-YD-1750_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	YD-0003	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	4 No.
Excalibur Bolt	(M20*300)	4 No.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of Yard Retaining Wall YD-0003**

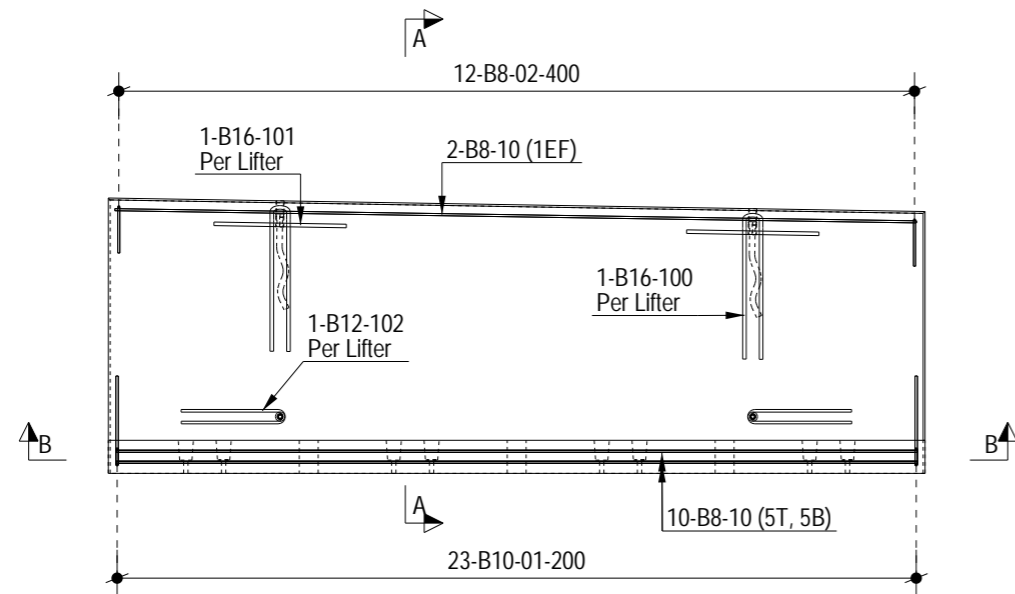
Scale: 1:50 Status: As Built - CR
Date: 19-03-24

Drawn: MA Checked: NB Approved: SJH

Drawing No : **05-BYL-1462-YD-0003-GA1** Rev: **C01**

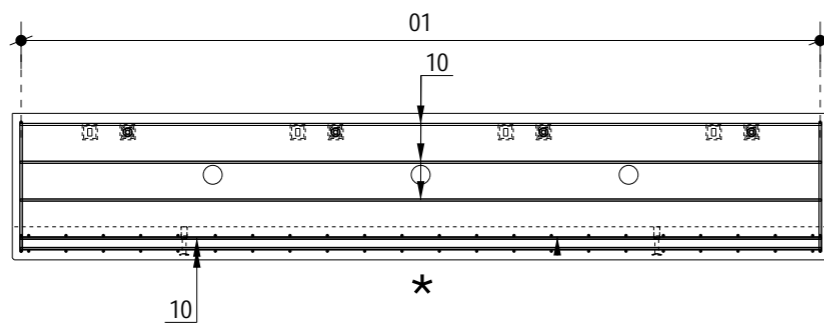
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

A3
10mm

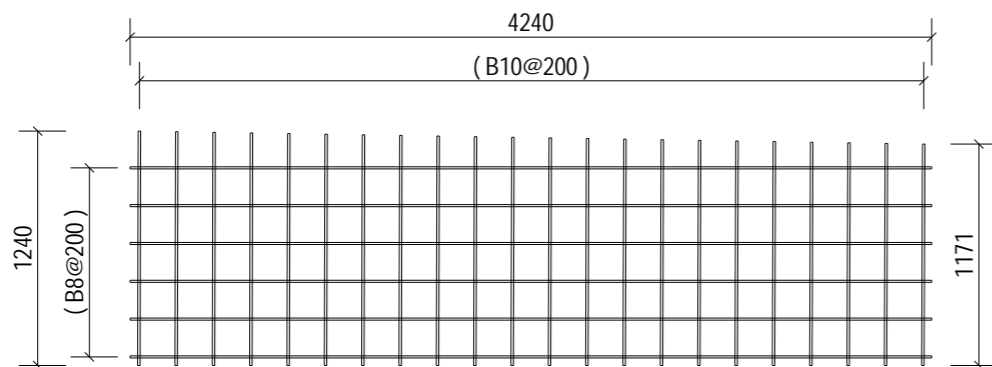


Plan on Mould

* Indicates Mould Face

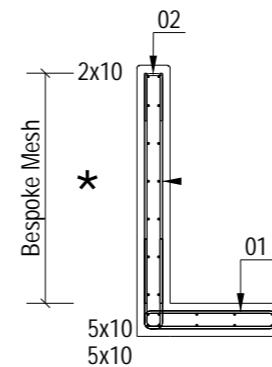


B - B

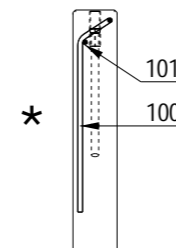


Bespoke Mesh

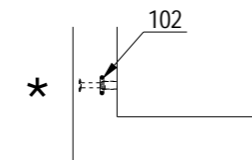
2No. Required
1No. each face, note mesh orientation on sections.



A - A



Top Wavy Tail Lifting Anchor



Crown Foot Lifting Anchor

NOTES:

Type.	Yard Retaining Wall
Mark.	YD-0003
GA Drg. Ref.	05-BYL-1462-YD-0003-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **RC1 of Yard Retaining Wall YD-0003**

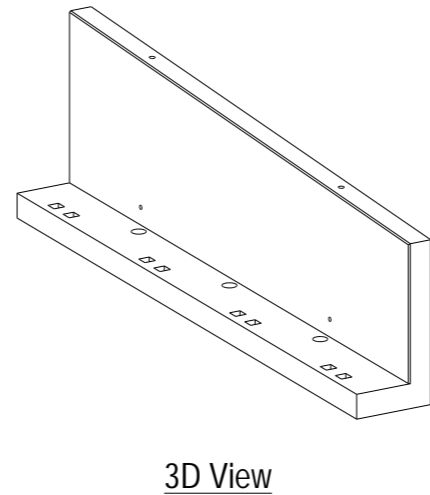
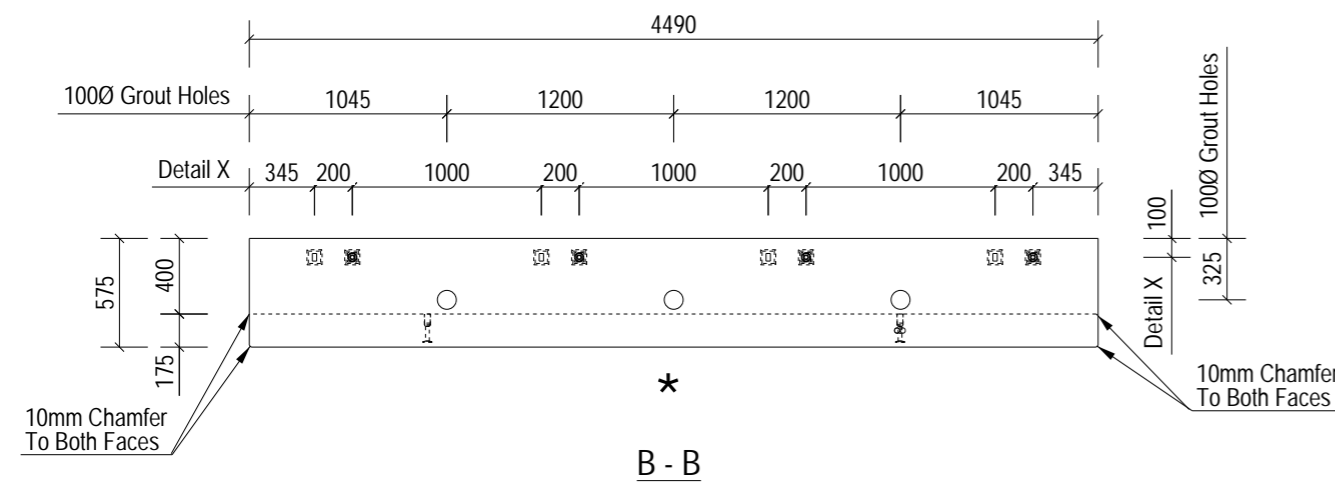
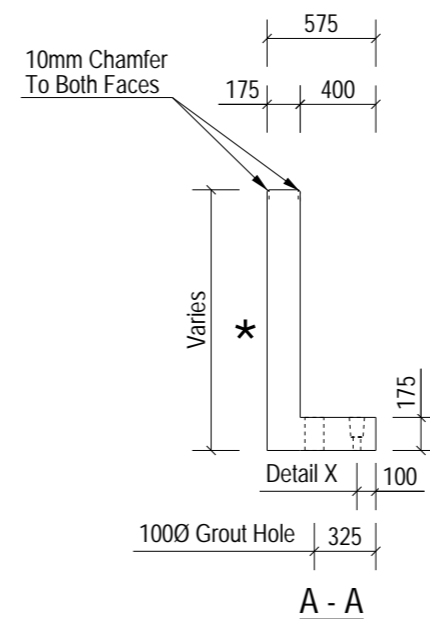
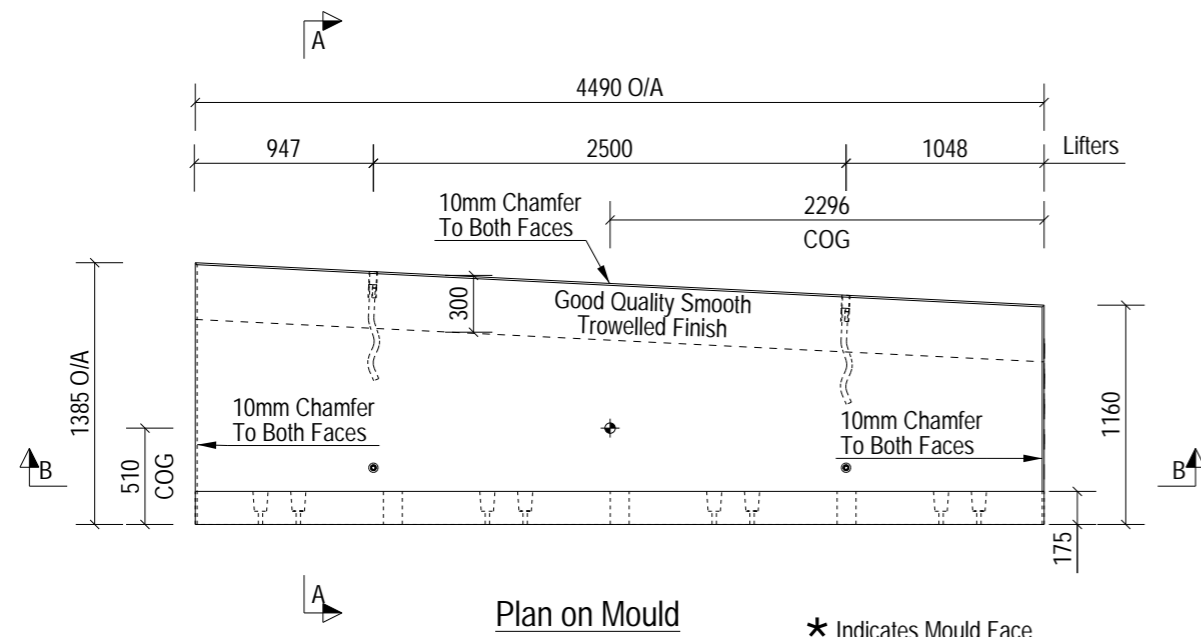
Scale: 1:40 Status: As Built - CR

Date: 19-03-24

Drawn: MA Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-YD-0003-RC1 Rev: C01

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.



NOTES:

Type.	Yard Retaining Wall	
Length.	4490	+4 / -4
Height.	1385	+4 / -4
Width.	175	+4 / -4
Weight. (T)	3.27	
Volume. (m ³)	1.30	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-YD-0004-RC1
BBS Ref.	05-BYL-1462-YD-0004-BBS
Calculation Ref.	FPMC-20-YD-1400_RevC01
Cover.	40mm Nominal, 35mm Minimum
Casting Bed.	Flat
Mark.	YD-0004
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	4 No.
Excalibur Bolt	(M20*300)	4 No.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

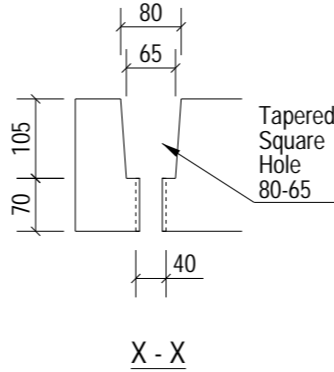
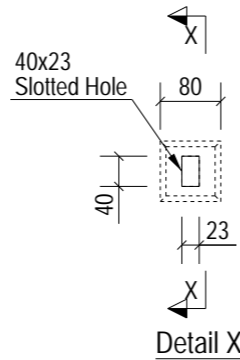
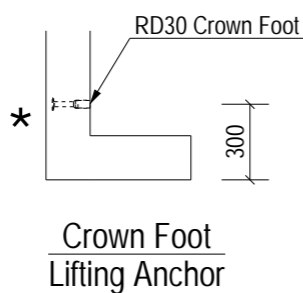
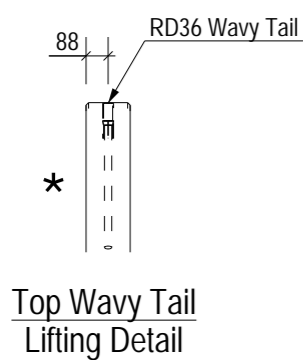
Client: **winvic**

Project: **Panattoni Park Poyle**

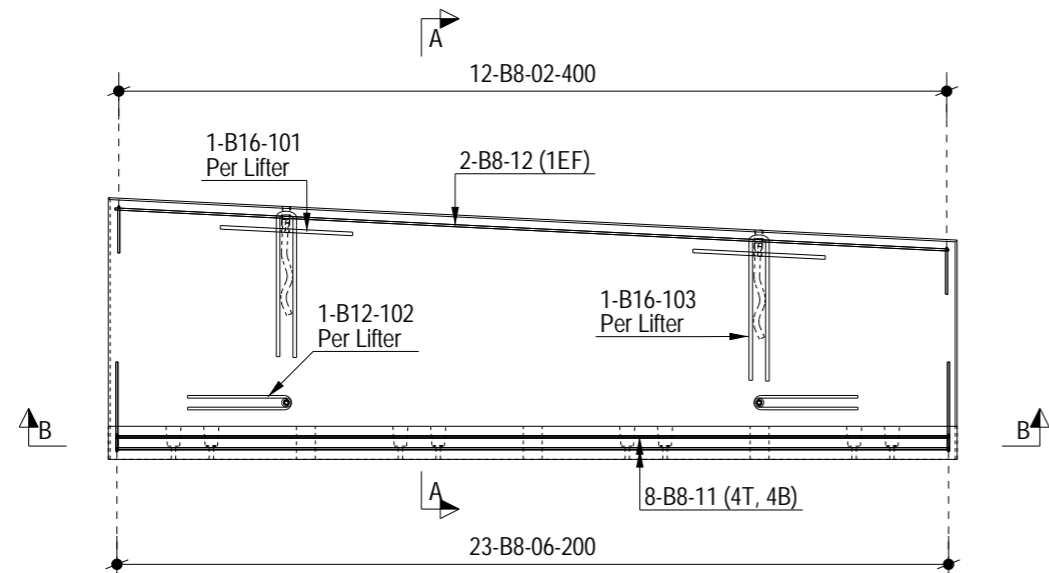
Title: **GA1 of Yard Retaining Wall YD-0004**

Scale: 1:50	Status: As Built - CR
Date: 19-03-24	

Drawn: MA	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-YD-0004-GA1		Rev: C01

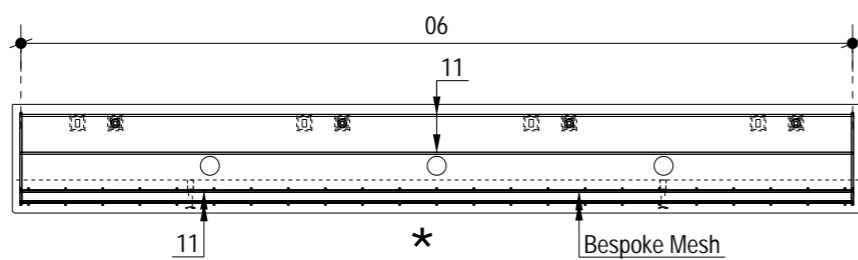


LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

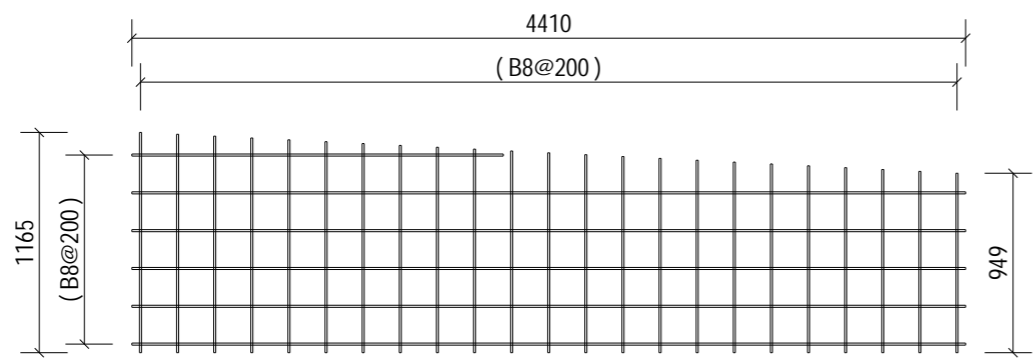


Plan on Mould

* Indicates Mould Face

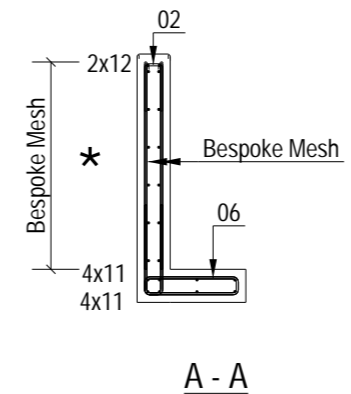


B - B

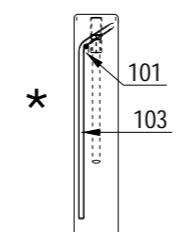


Bespoke Mesh

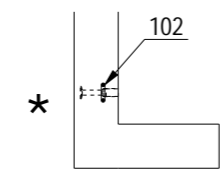
2No. Required
1No. each face, note mesh orientation on sections.



A - A



Top Wavy Tail Lifting Anchor



Crown Foot Lifting Anchor

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

Mesh Reinforcement
B8@ 200CRS Both Directions

NOTES:

Type.	Yard Retaining Wall
Mark.	YD-0004
GA Drg. Ref.	05-BYL-1462-YD-0004-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	21-03-24	Issued For Manufacture.	MA	NB	SJH

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

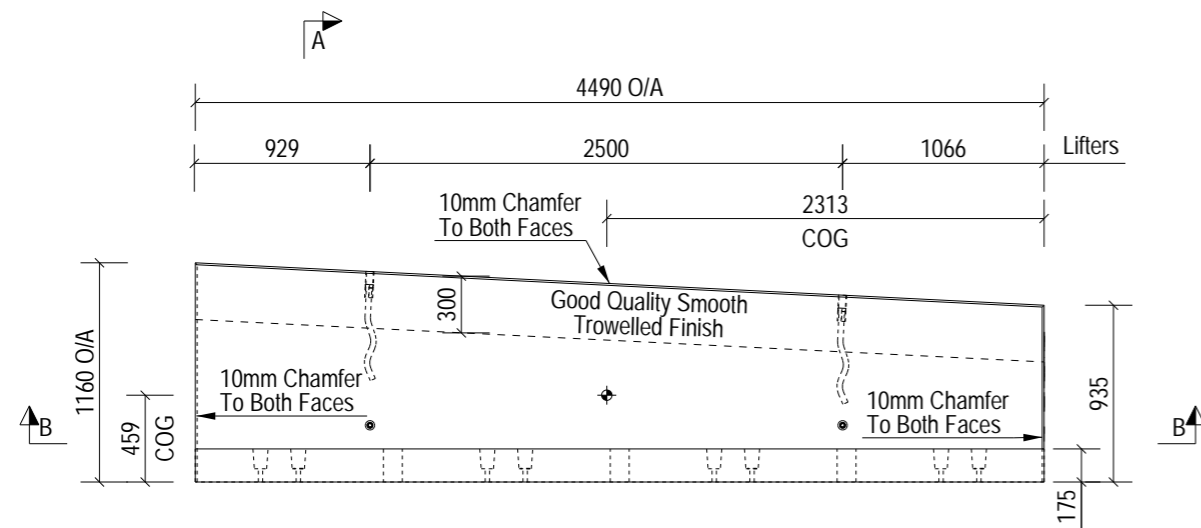
Client.

Project. Panattoni Park Poyle

Title. RC1 of Yard Retaining Wall YD-0004

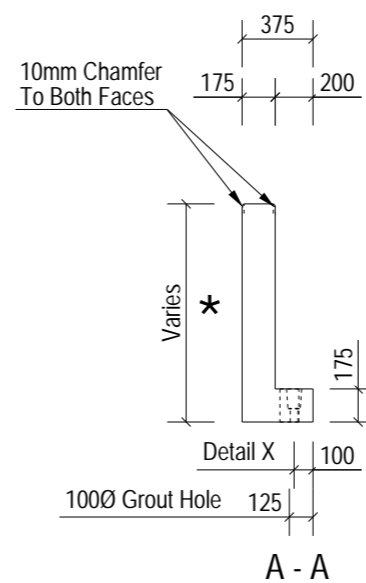
Scale: 1:40	Status: As Built - CR	
Date: 19-03-24		
Drawn: MA	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-YD-0004-RC1	Rev: C01	

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

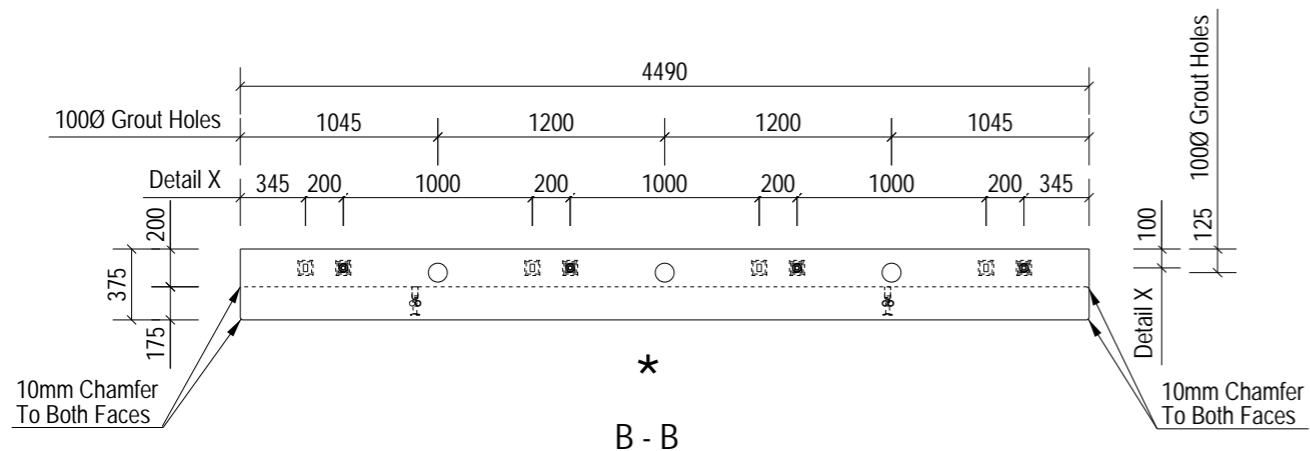


Plan on Mould

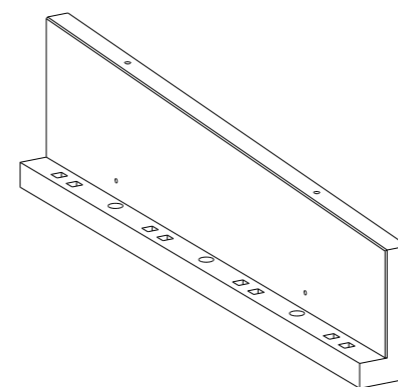
* Indicates Mould Face



A - A



B - B



3D View

NOTES:

Type.	Yard Retaining Wall	
Length.	4490	+4 / -4
Height.	1160	+4 / -4
Width.	175	+4 / -4
Weight. (T)	2.43	
Volume. (m ³)	0.97	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-YD-0005-RC1	
BBS Ref.	05-BYL-1462-YD-0005-BBS	
Calculation Ref.	FPMC-20-YD-1100_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	YD-0005	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	4 No.
Excalibur Bolt	(M20*300)	4 No.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

MC fpmccann
 FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

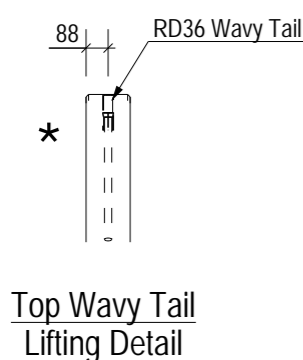
Title. **GA1 of Yard Retaining Wall YD-0005**

Scale: 1:50 Status: As Built - CR

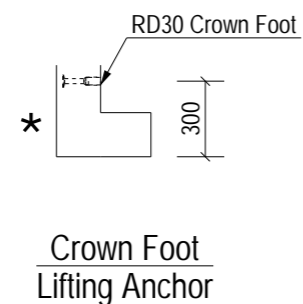
Date: 19-03-24

Drawn: MA Checked: NB Approved: SJH

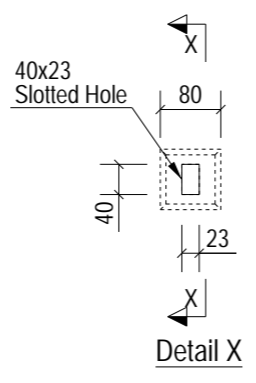
Drawing No : 05-BYL-1462-YD-0005-GA1 Rev: C01



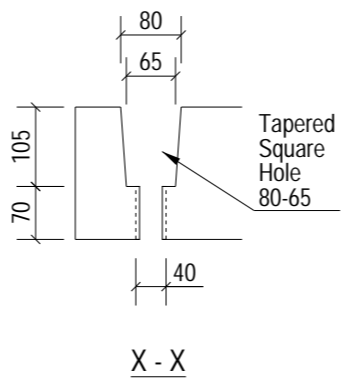
Top Wavy Tail Lifting Detail



Crown Foot Lifting Anchor



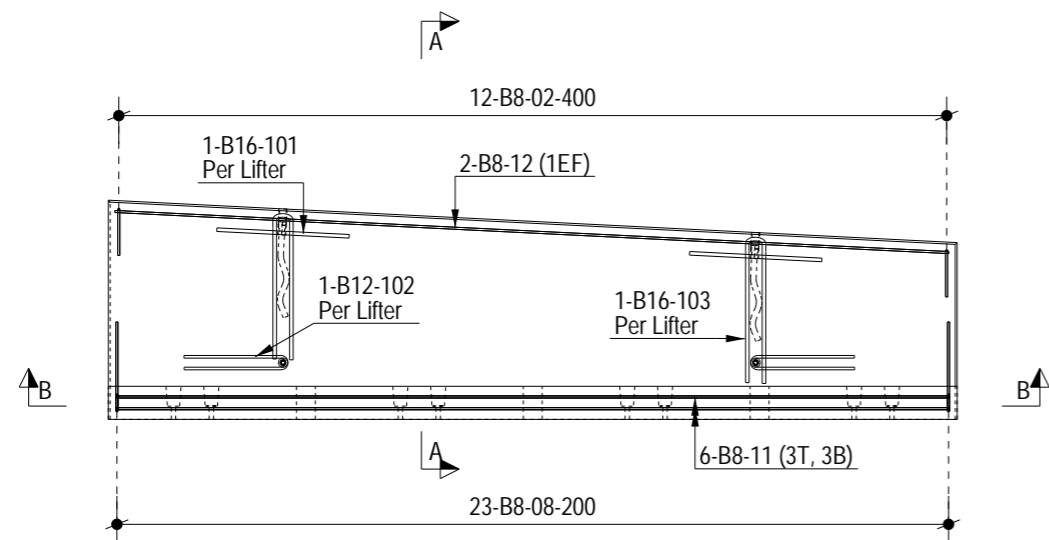
Detail X



X - X

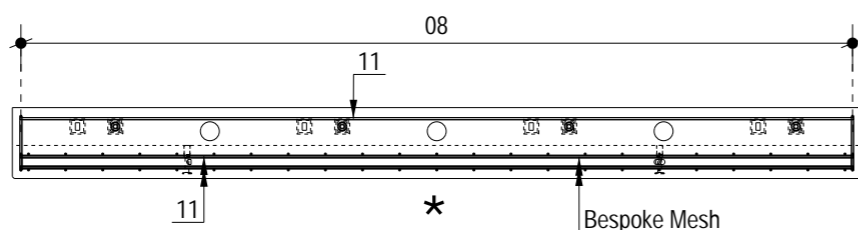
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

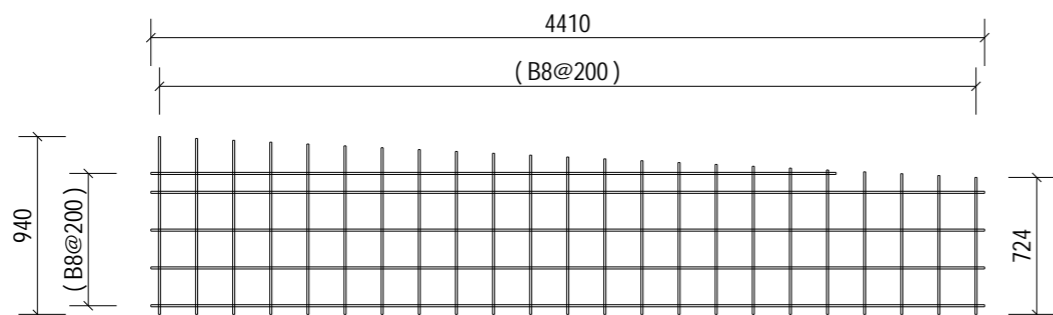


Plan on Mould

* Indicates Mould Face

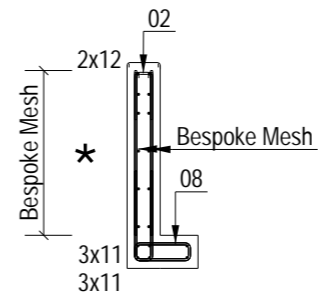


B - B

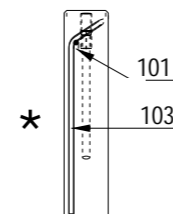


Bespoke Mesh

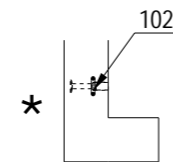
2No. Required
1No. each face, note mesh orientation on sections.



A - A



Top Wavy Tail Lifting Anchor



Crown Foot Lifting Anchor

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

Mesh Reinforcement
B8@ 200CRS Both Directions

NOTES:

Type.	Yard Retaining Wall
Mark.	YD-0005
GA Drg. Ref.	05-BYL-1462-YD-0005-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	21-03-24	Issued For Manufacture.	MA	NB	SJH

MC
fpmccann

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

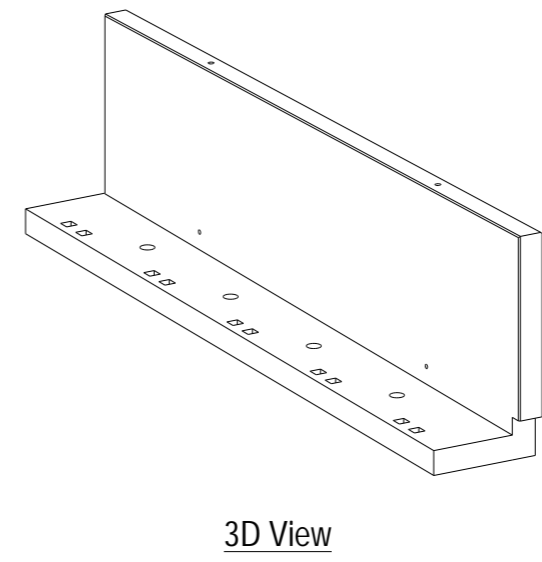
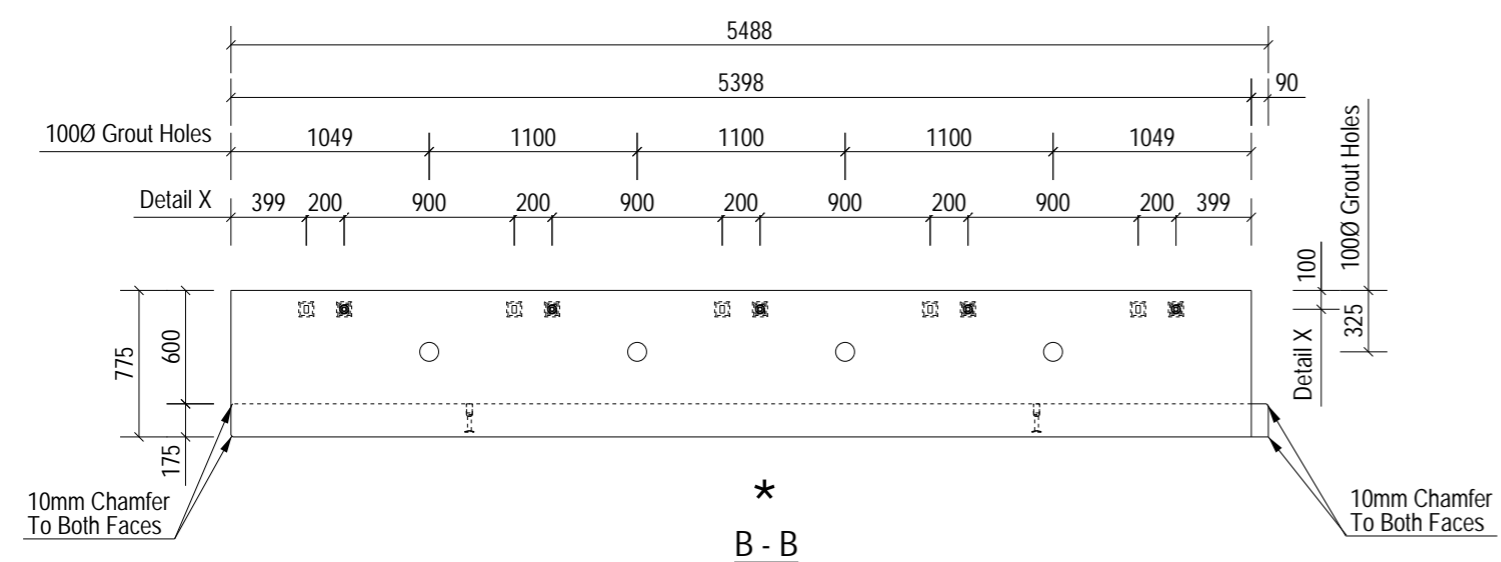
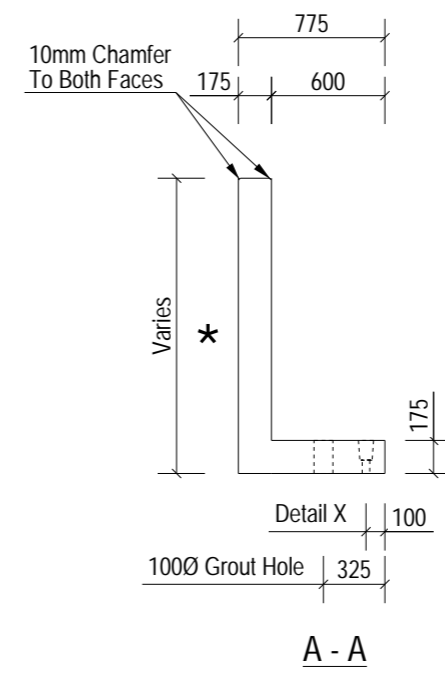
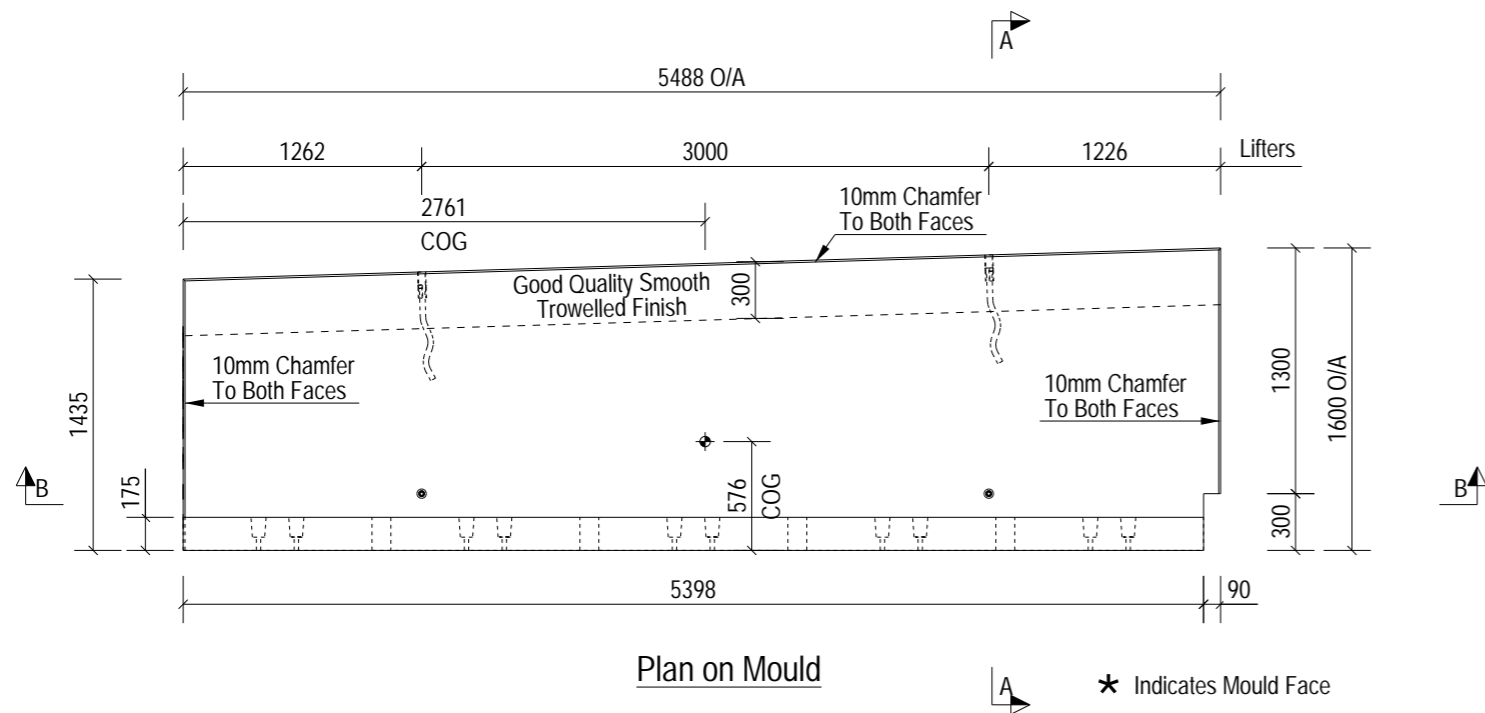
Project. **Panattoni Park Poyle**

Title. **RC1 of Yard Retaining Wall YD-0005**

Scale: 1:40 Status: As Built - CR

Date: 19-03-24

Drawn: MA Checked: NB Approved: SJH
Drawing No : 05-BYL-1462-YD-0005-RC1 Rev: C01



NOTES:

Type.	Yard Retaining Wall	
Length.	5488	+4 / -4
Height.	1600	+4 / -4
Width.	175	+4 / -4
Weight. (T)	5.02	
Volume. (m³)	2.01	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-YD-0006-RC1
BBS Ref.	05-BYL-1462-YD-0006-BBS
Calculation Ref.	FPMC-20-YD-1750_RevC01
Cover.	40mm Nominal, 35mm Minimum
Casting Bed.	Flat
Mark.	YD-0006
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	5 No.
Excalibur Bolt	(M20*300)	5 No.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

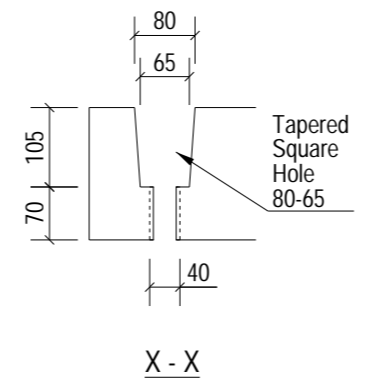
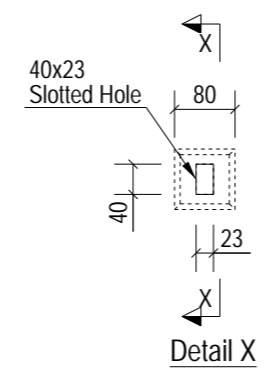
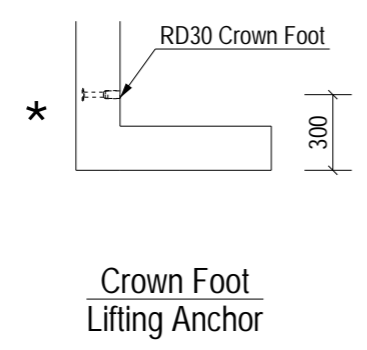
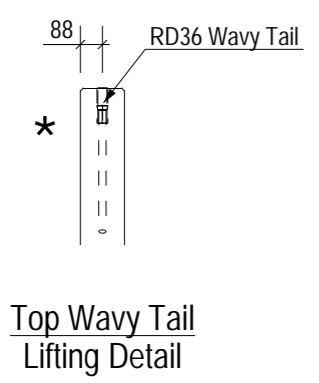
Project. **Panattoni Park Poyle**

Title. **GA1 of Yard Retaining Wall YD-0006**

Scale: 1:50 Status: As Built - CR
Date: 19-03-24

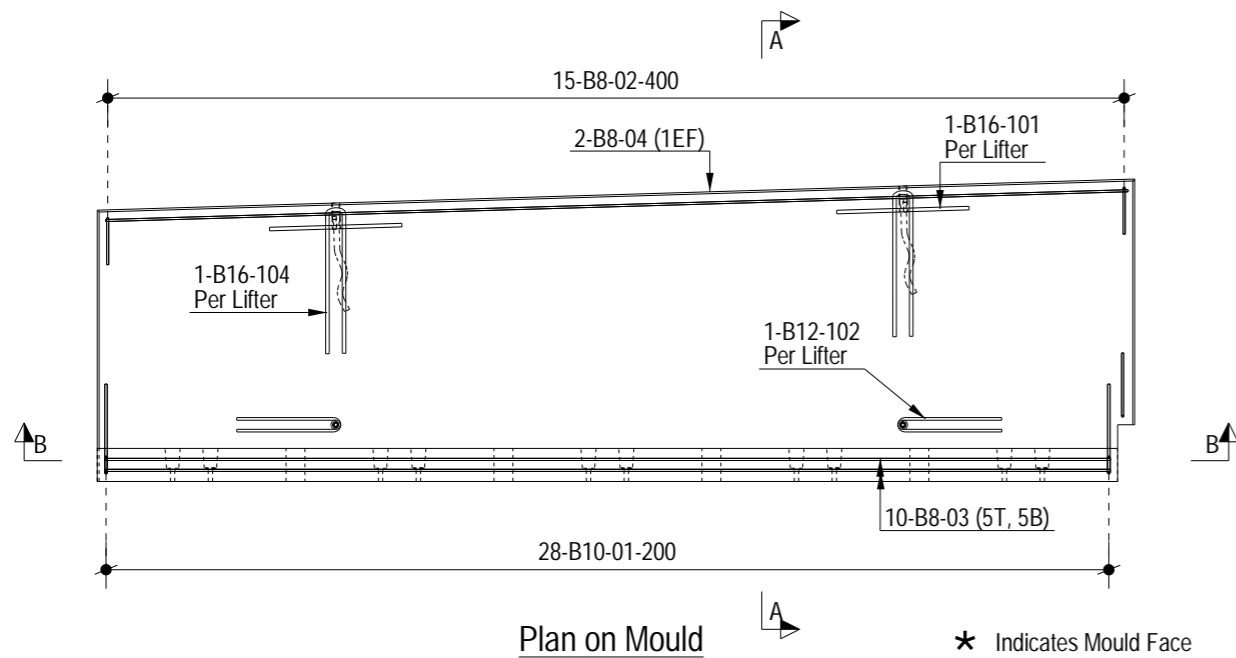
Drawn: MA Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-YD-0006-GA1 Rev: C01



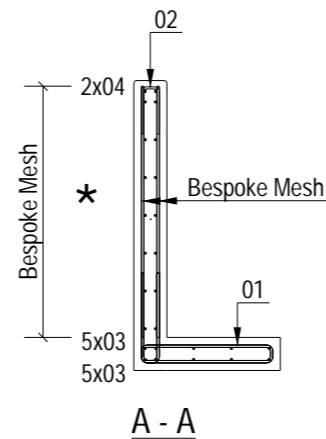
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

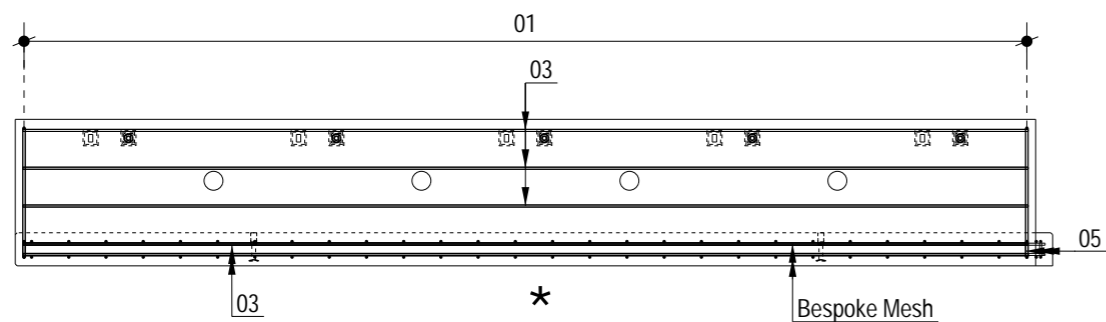


Plan on Mould

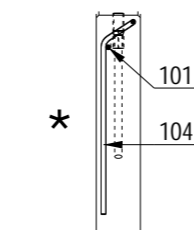
* Indicates Mould Face



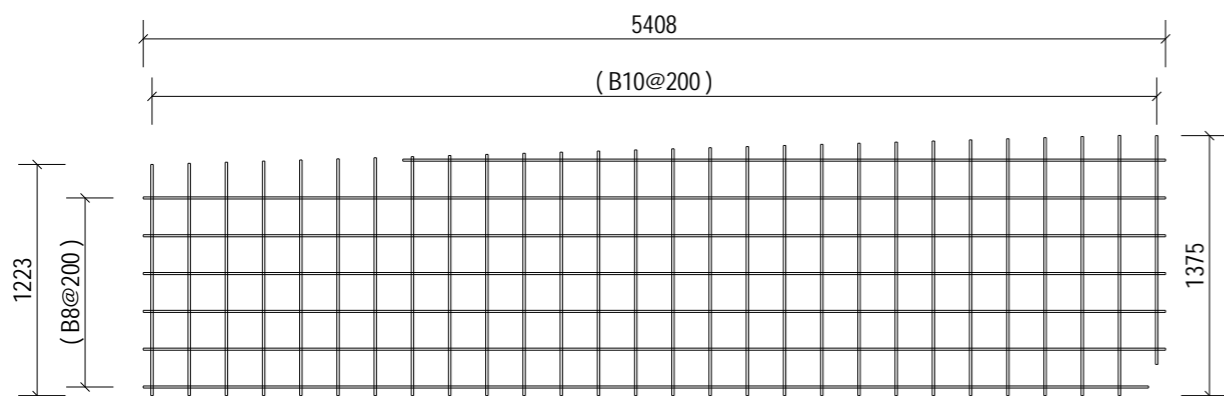
A - A



B - B

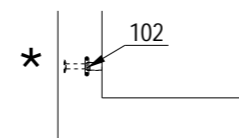


Top Wavy Tail Lifting Anchor



Bespoke Mesh

2No. Required
1No. each face, note mesh orientation on sections.



Crown Foot Lifting Anchor

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Yard Retaining Wall
Mark.	YD-0006
GA Drg. Ref.	05-BYL-1462-YD-0006-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	21-03-24	Issued For Manufacture.	MA	NB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.



Project.

Panattoni Park
Poyle

Title.

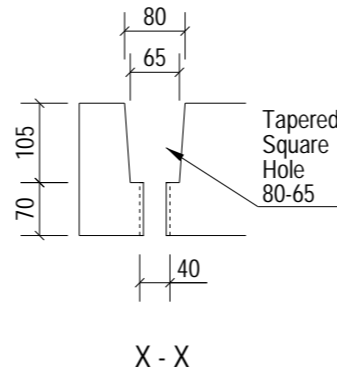
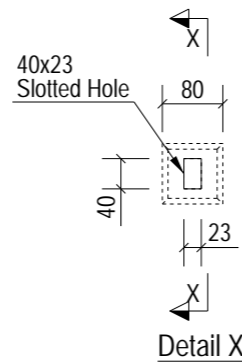
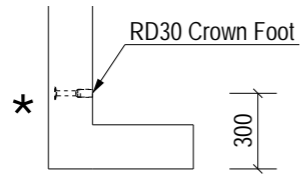
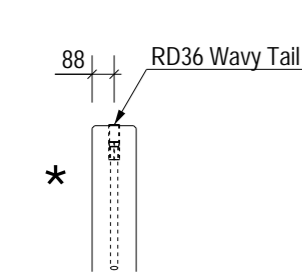
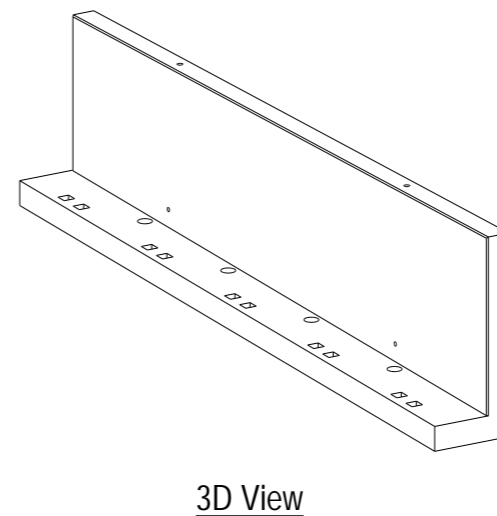
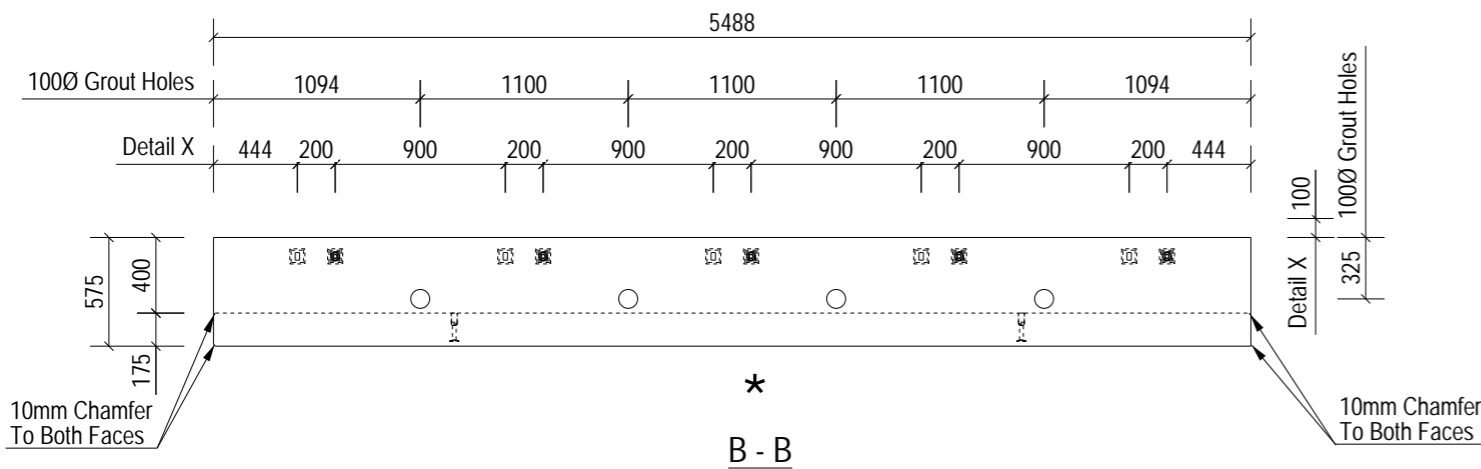
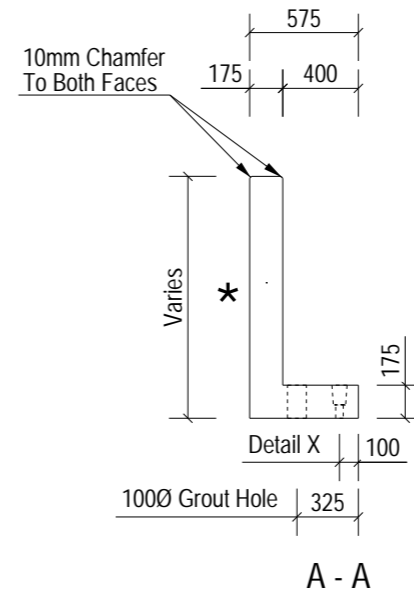
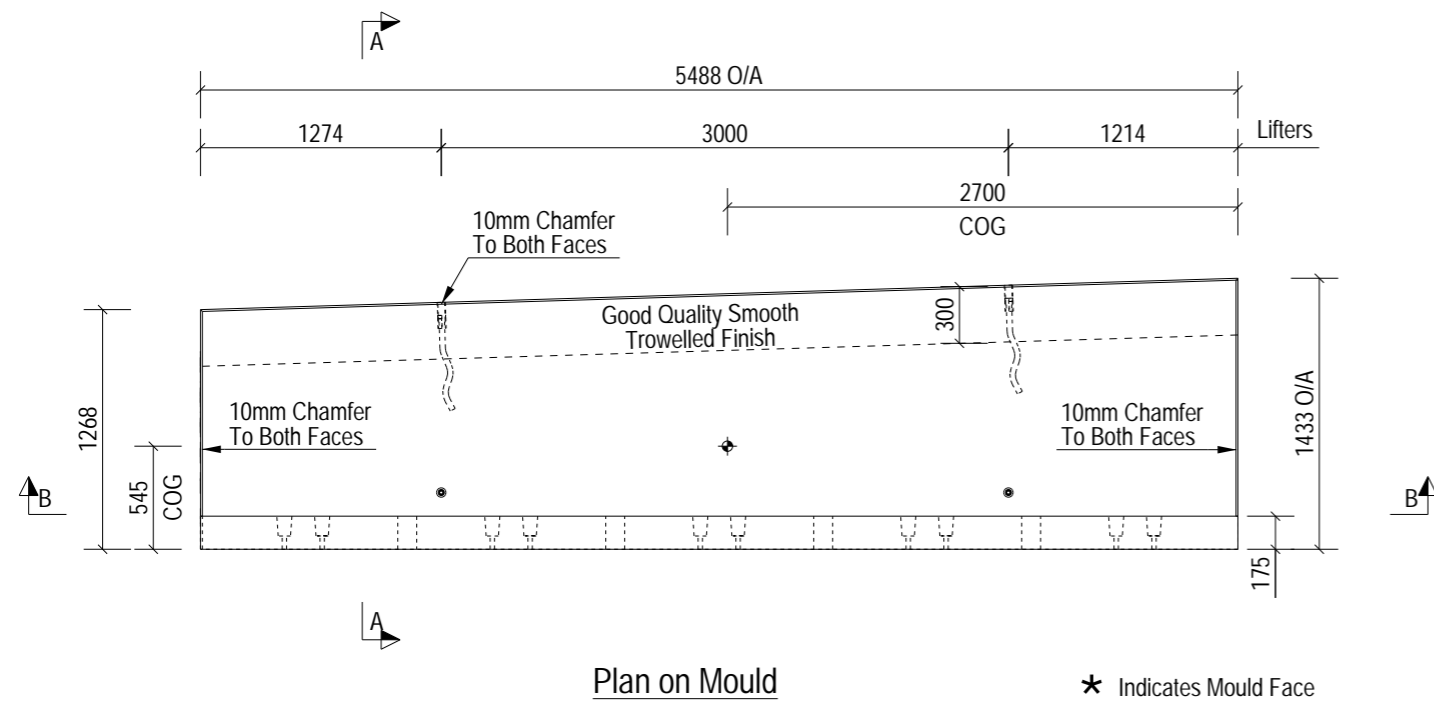
RC1 of
Yard Retaining Wall YD-0006

Scale: 1:40
Date: 19-03-24

Status:
As Built - CR

Drawn: MA Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-YD-0006-RC1 Rev: C01



NOTES:

Type.	Yard Retaining Wall	
Length.	5488	+4 / -4
Height.	1433	+4 / -4
Width.	175	+4 / -4
Weight. (T)	4.18	
Volume. (m³)	1.67	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-YD-0007-RC1	
BBS Ref.	05-BYL-1462-YD-0007-BBS	
Calculation Ref.	FPMC-20-YD-1400_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	YD-0007	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	5 No.
Excalibur Bolt	(M20*300)	5 No.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

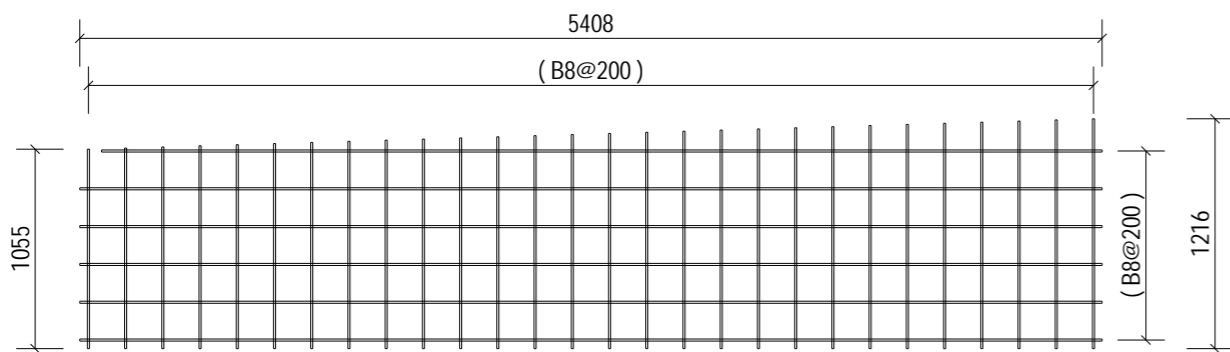
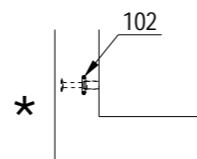
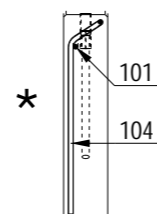
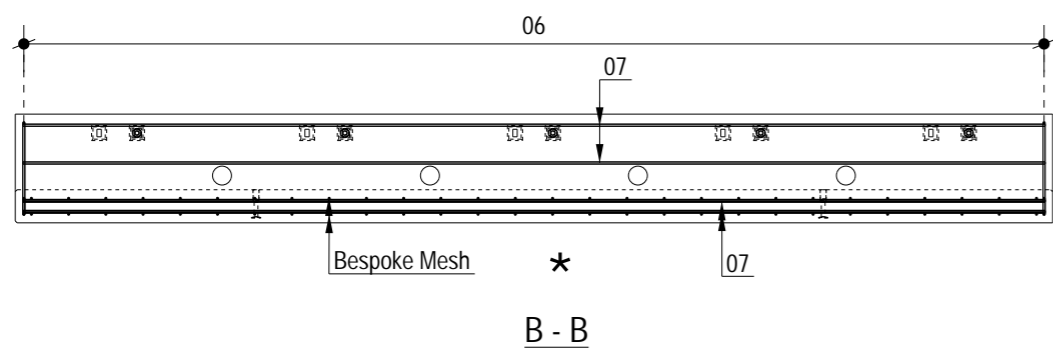
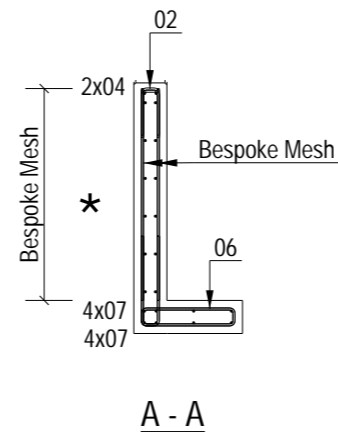
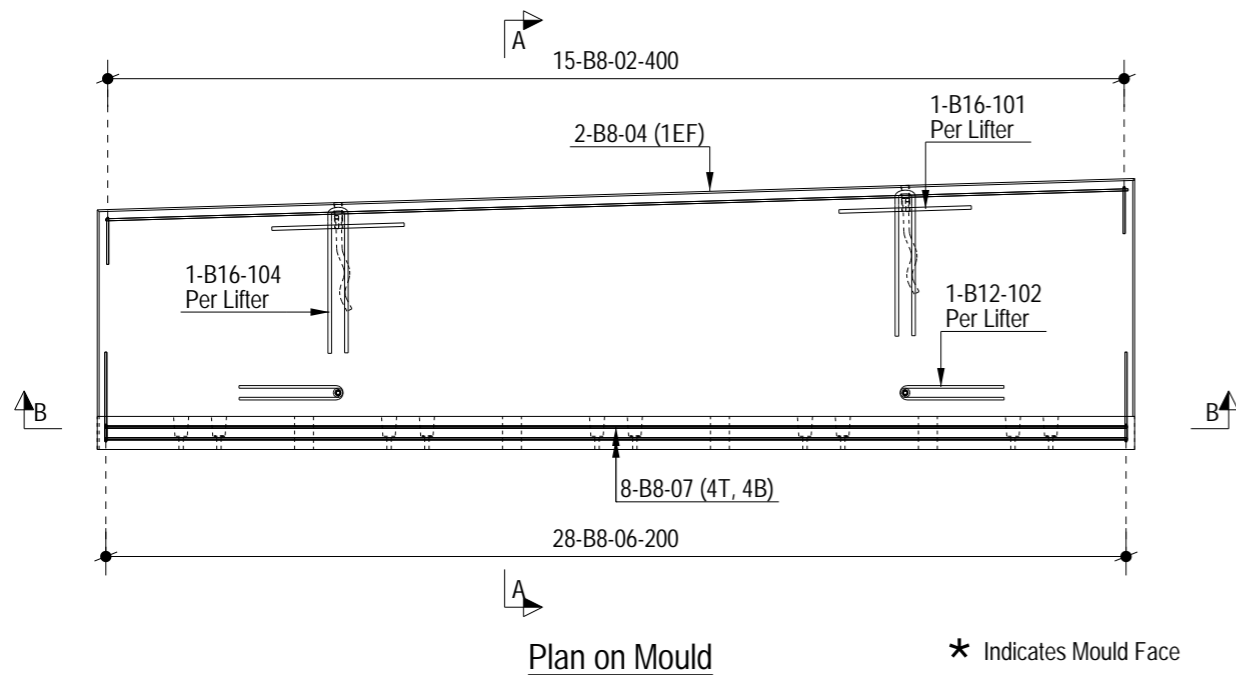
Title. **GA1 of Yard Retaining Wall YD-0007**

Scale: 1:50 Status: As Built - CR

Drawn: MA Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-YD-0007-GA1 Rev: C01

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



2No. Required
1No. each face, note mesh orientation on sections.

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

Mesh Reinforcement
B8@200CRS Both Directions

NOTES:

Type.	Yard Retaining Wall
Mark.	YD-0007
GA Drg. Ref.	05-BYL-1462-YD-0007-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	21-03-24	Issued For Manufacture.	MA	NB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

Project. Panattoni Park Poyle

Title. RC1 of Yard Retaining Wall YD-0007

Scale: 1:40 Status: As Built - CR
Date: 20-03-24

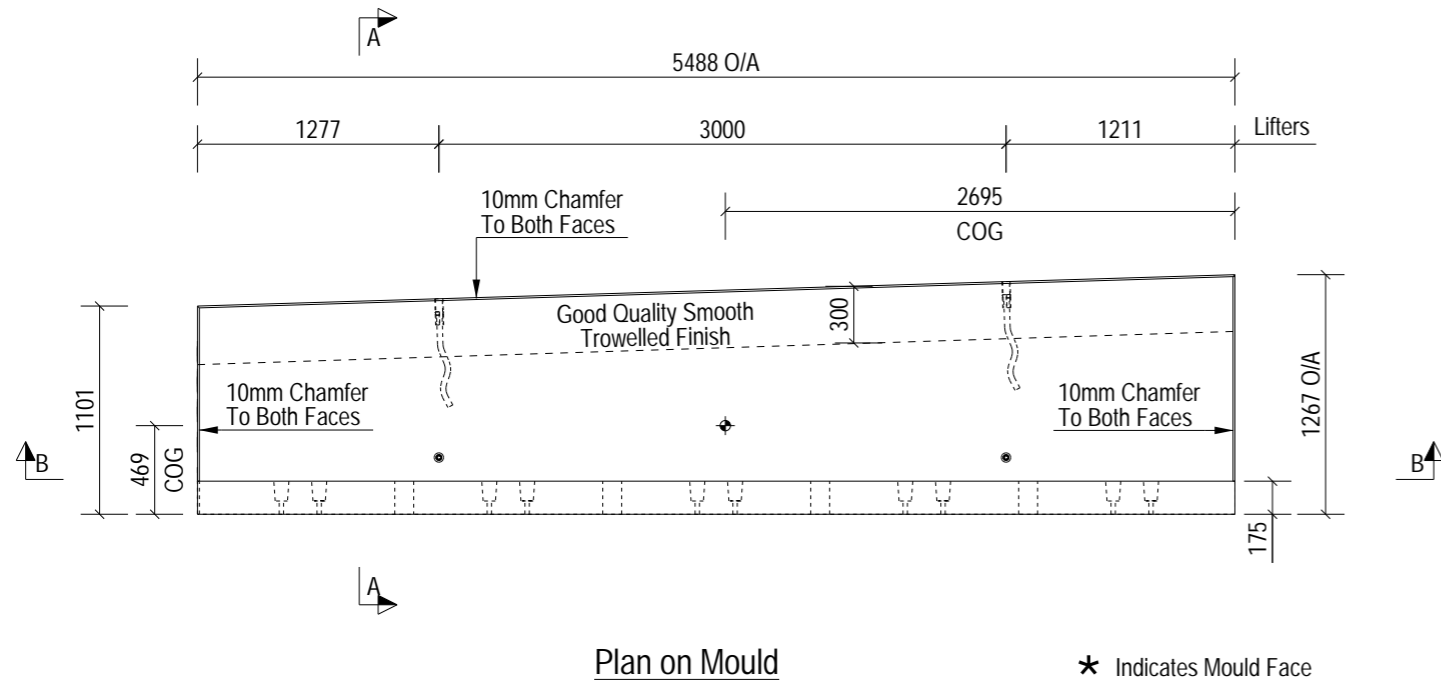
Drawn: MA Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-YD-0007-RC1 Rev: C01

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

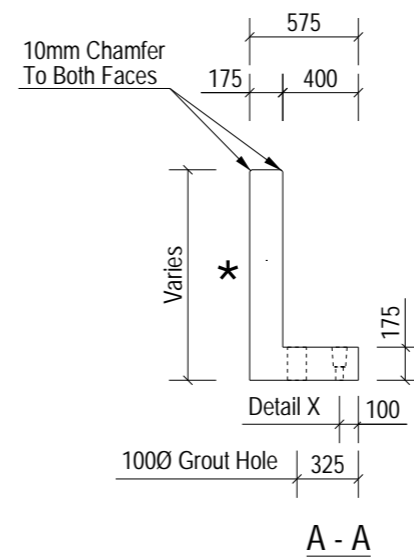
A3

10mm

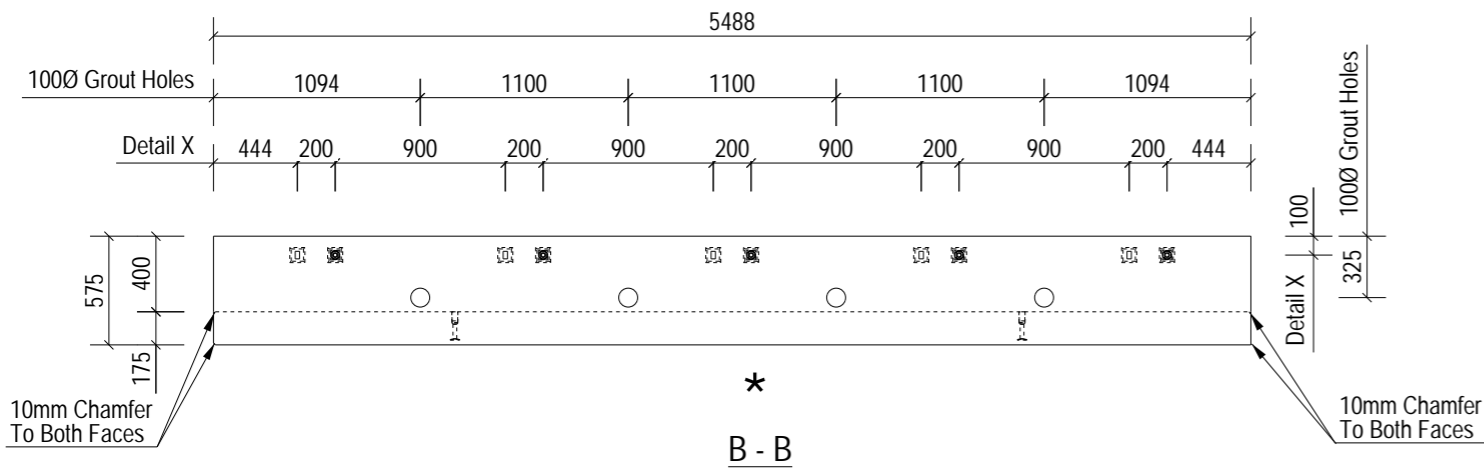


Plan on Mould

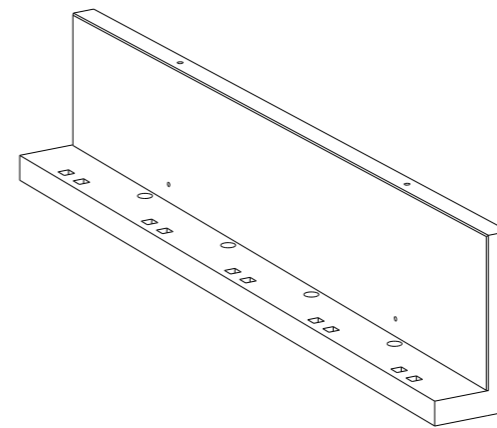
★ Indicates Mould Face



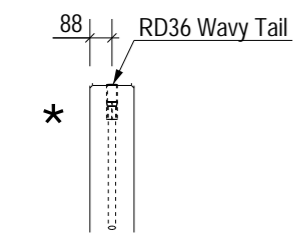
A - A



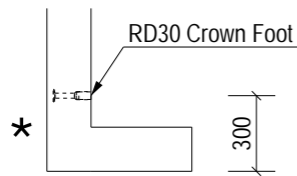
B - B



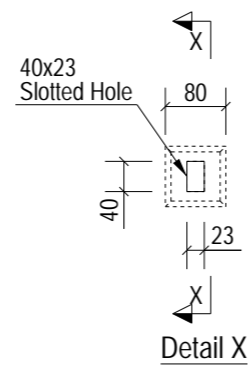
3D View



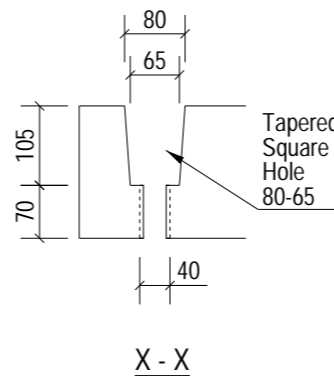
Top Wavy Tail Lifting Detail



Crown Foot Lifting Anchor



Detail X



X - X

NOTES:

Type.	Yard Retaining Wall	
Length.	5488	+4 / -4
Height.	1267	+4 / -4
Width.	175	+4 / -4
Weight. (T)	3.78	
Volume. (m ³)	1.51	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-YD-0008-RC1	
BBS Ref.	05-BYL-1462-YD-0008-BBS	
Calculation Ref.	FPMC-20-YD-1400_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	YD-0008	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	5 No.
Excalibur Bolt	(M20*300)	5 No.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.	
---------	--

Project.	Panattoni Park Poyle
----------	----------------------

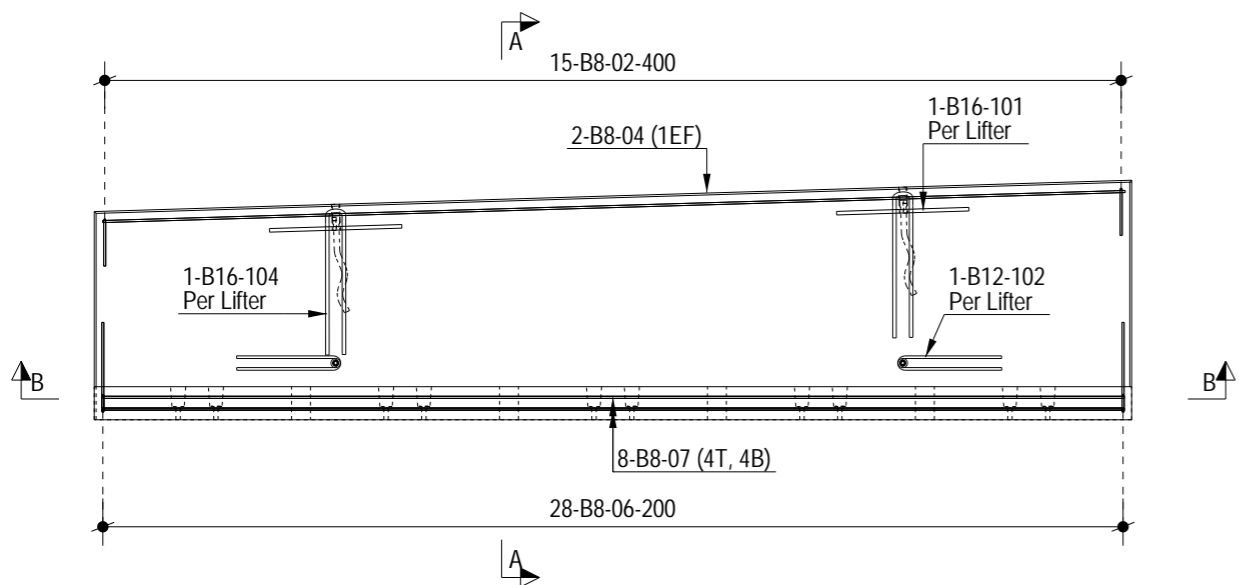
Title.	GA1 of Yard Retaining Wall YD-0008
--------	------------------------------------

Scale: 1:50	Status: As Built - CR
Date: 20-03-24	

Drawn: MA	Checked: NB	Approved: SJH
-----------	-------------	---------------

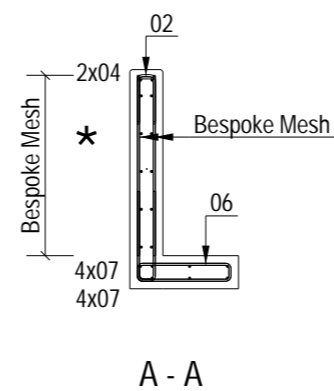
Drawing No : 05-BYL-1462-YD-0008-GA1	Rev: C01
--------------------------------------	----------

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

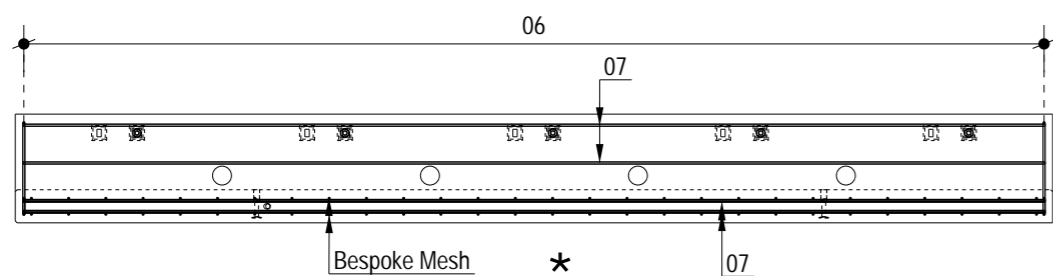


Plan on Mould

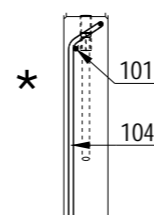
★ Indicates Mould Face



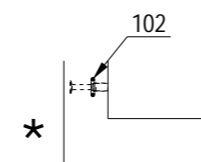
A - A



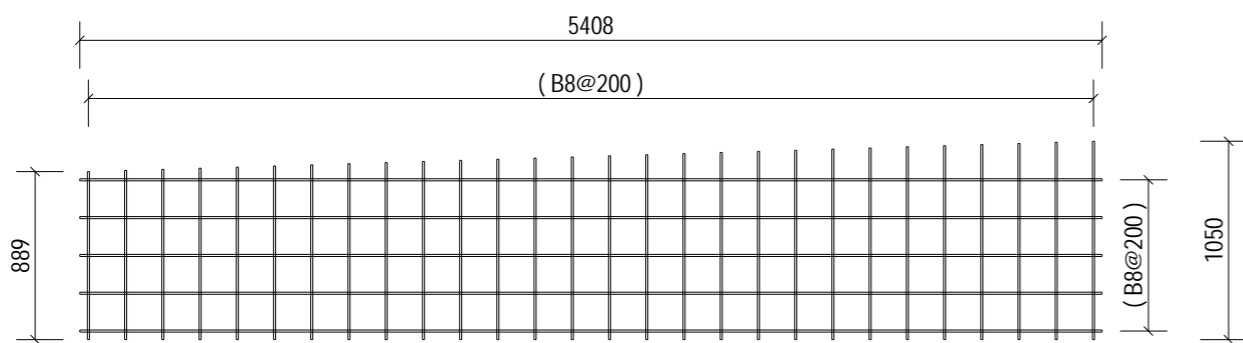
B - B



Top Wavy Tail Lifting Anchor



Crown Foot Lifting Anchor



Bespoke Mesh

2No. Required
1No. each face, note mesh orientation on sections.

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

Mesh Reinforcement
B8@200CRS Both Directions

NOTES:

Type.	Yard Retaining Wall
Mark.	YD-0008
GA Drg. Ref.	05-BYL-1462-YD-0008-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	21-03-24	Issued For Manufacture.	MA	NB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

Project. **Panattoni Park Poyle**

Title. **RC1 of Yard Retaining Wall YD-0008**

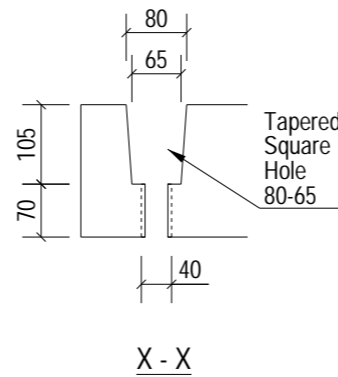
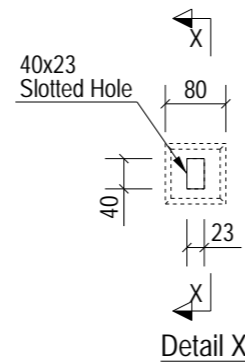
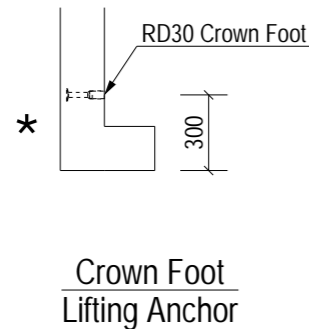
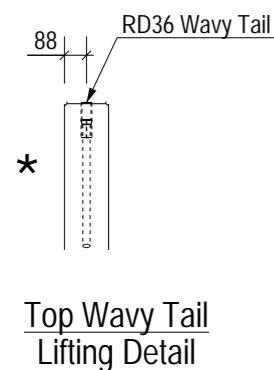
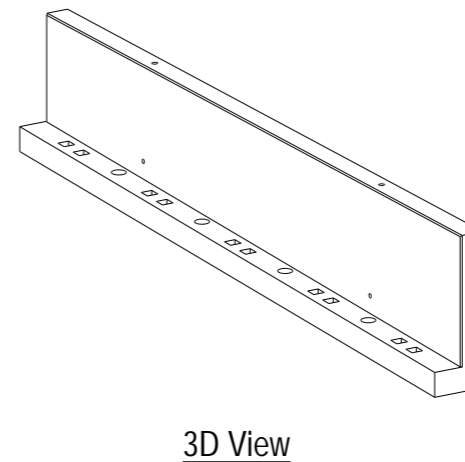
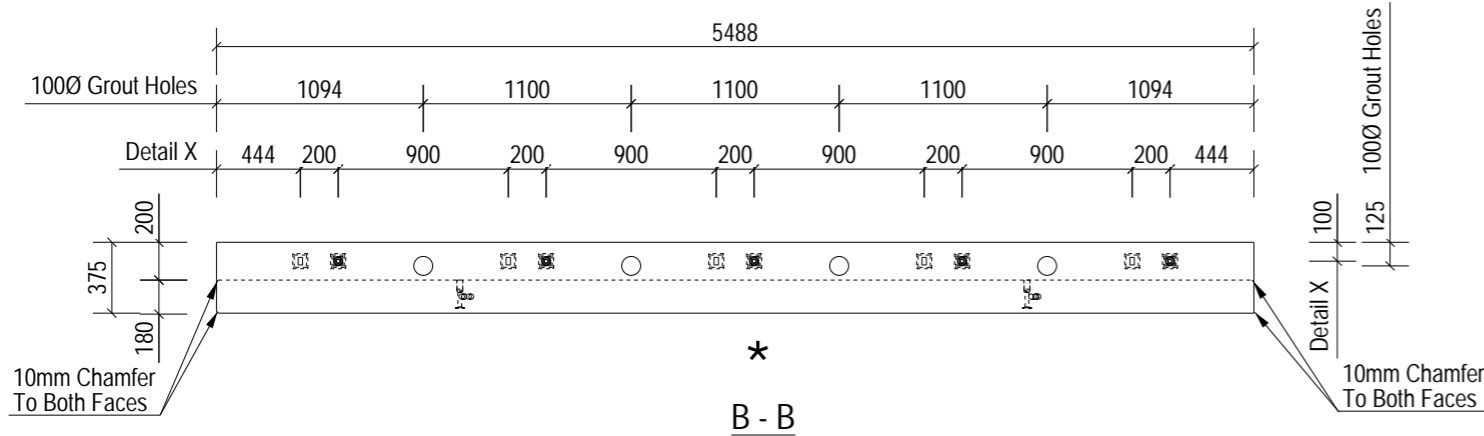
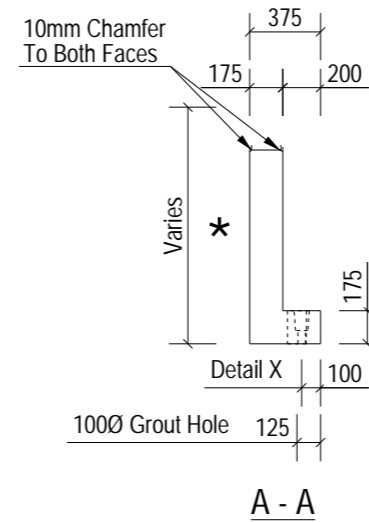
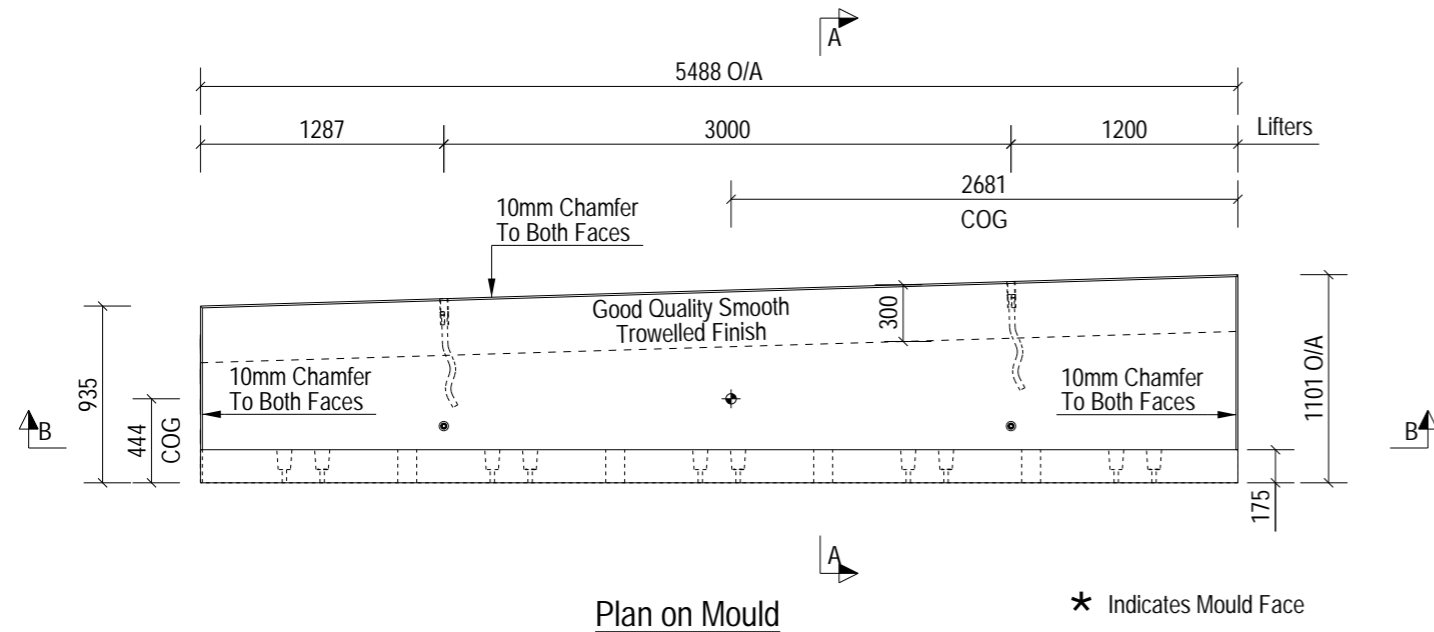
Scale: 1:40 Status: As Built - CR
Date: 20-03-24

Drawn: MA Checked: NB Approved: SJH

Drawing No : **05-BYL-1462-YD-0008-RC1** Rev: **C01**

This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the written authority of F. P. McCann Ltd.

A3
10mm



NOTES:

Type.	Yard Retaining Wall	
Length.	5488	+4 / -4
Height.	1101	+4 / -4
Width.	175	+4 / -4
Weight. (T)	2.90	
Volume. (m ³)	1.16	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-YD-0009-RC1	
BBS Ref.	05-BYL-1462-YD-0009-BBS	
Calculation Ref.	FPMC-20-YD-1100_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	YD-0009	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	5 No.
Excalibur Bolt	(M20*300)	5 No.

C01	21-03-24	Issued For Manufacture.	MA	NB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

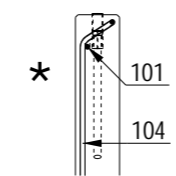
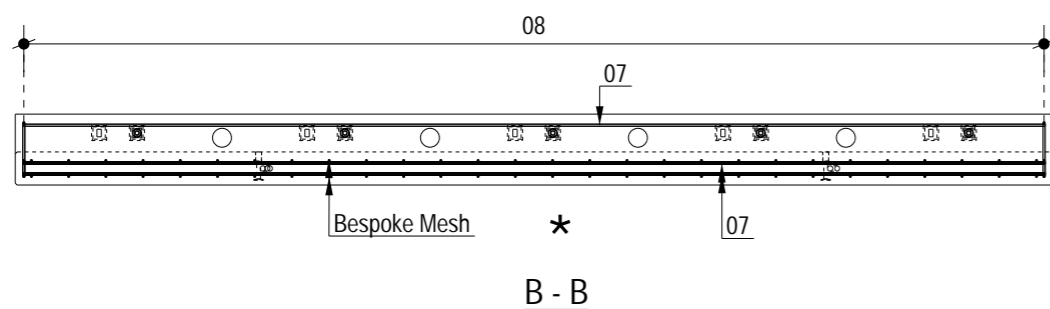
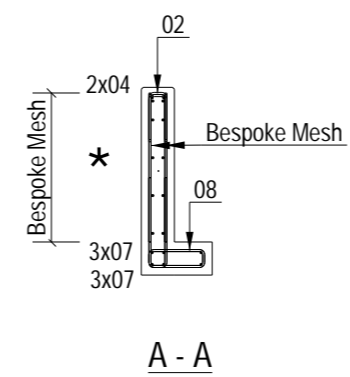
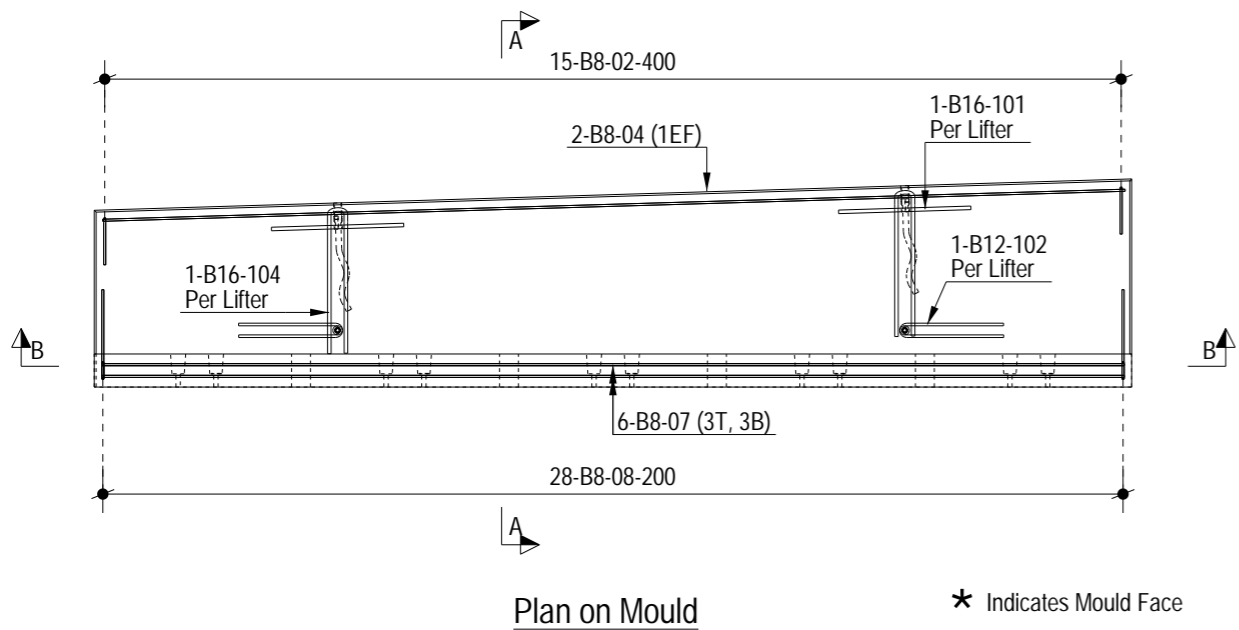
Title. **GA1 of Yard Retaining Wall YD-0009**

Scale: 1:50 Status: As Built - CR

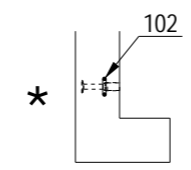
Drawn: MA Checked: NB Approved: SJH

Drawing No : 05-BYL-1462-YD-0009-GA1 Rev: C01

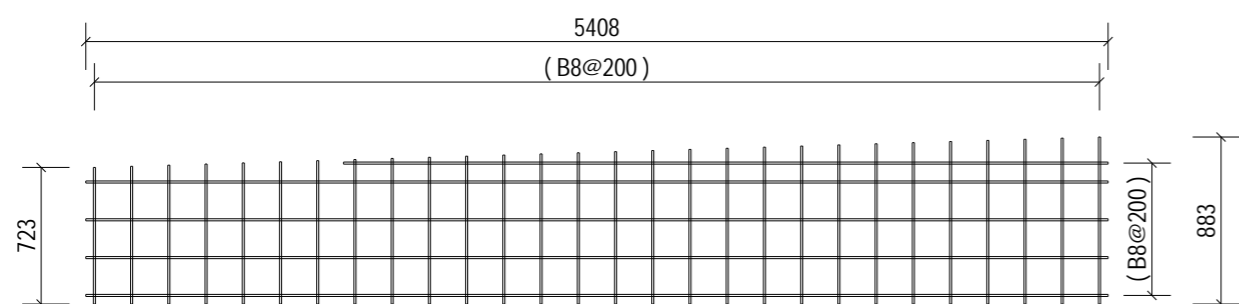
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED



Top Wavy Tail Lifting Anchor



Crown Foot Lifting Anchor



Bespoke Mesh

2No. Required
1No. each face, note mesh orientation on sections.

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

Mesh Reinforcement
B8@200CRS Both Directions

NOTES:

Type.	Yard Retaining Wall
Mark.	YD-0009
GA Drg. Ref.	05-BYL-1462-YD-0009-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	21-03-24	Issued For Manufacture.	MA	NB	SJH

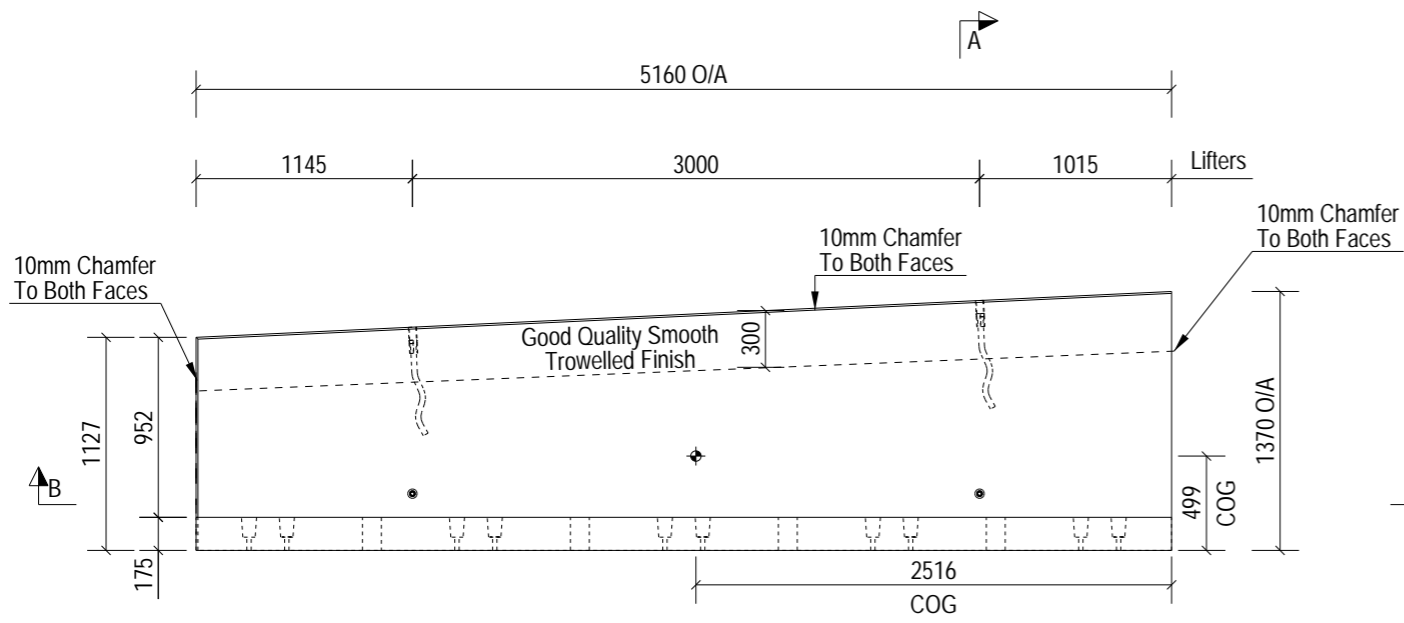
FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

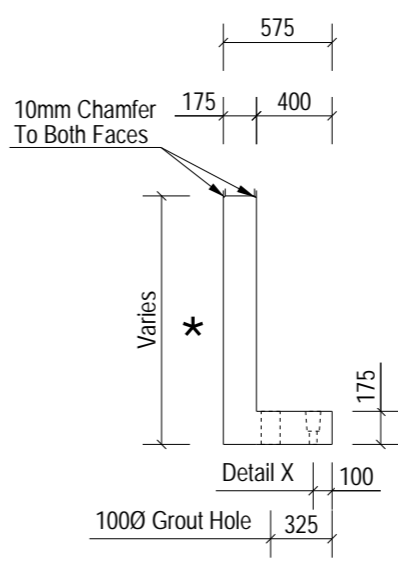
Title. **RC1 of Yard Retaining Wall YD-0009**

Scale: 1:40	Status: As Built - CR	
Date: 20-03-24		
Drawn: MA	Checked: NB	Approved: SJH
Drawing No : 05-BYL-1462-YD-0009-RC1	Rev: C01	

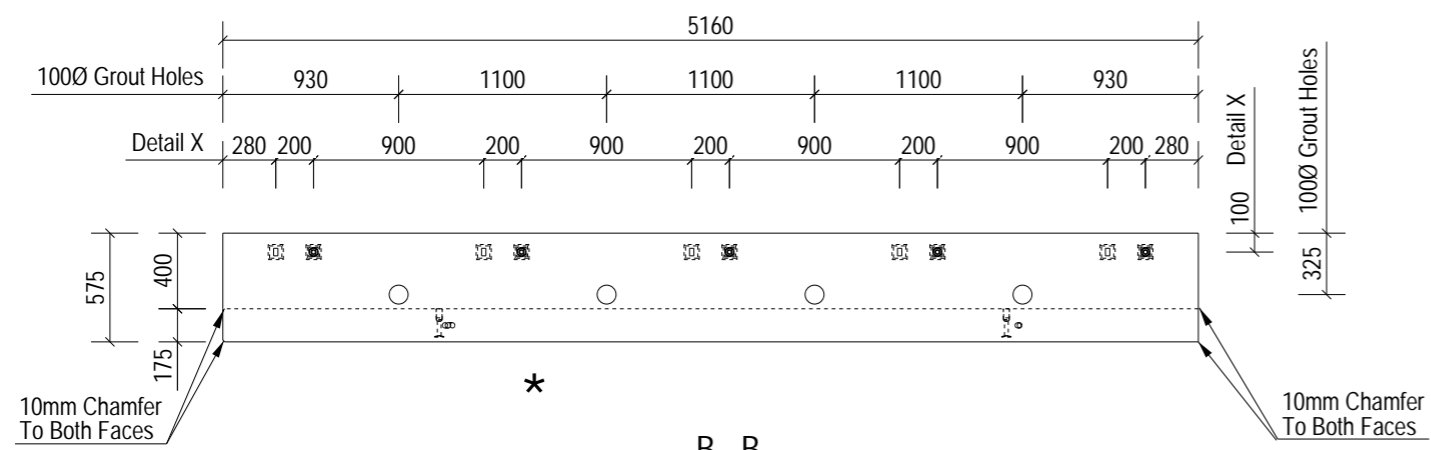


Plan on Mould

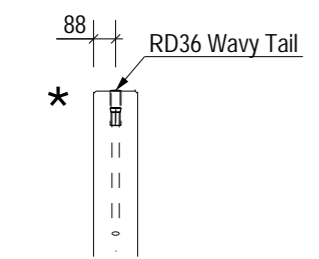
* Indicates Mould Face



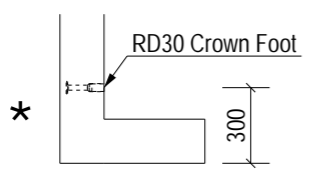
A - A



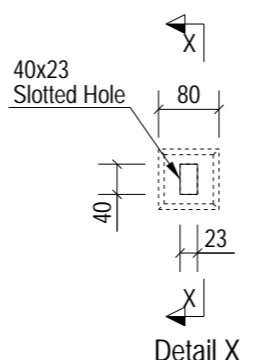
B - B



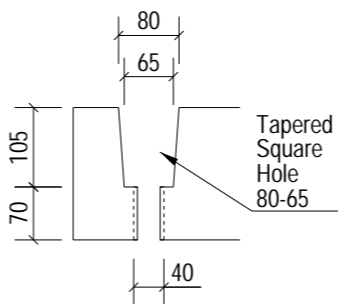
Top Wavy Tail Lifting Detail



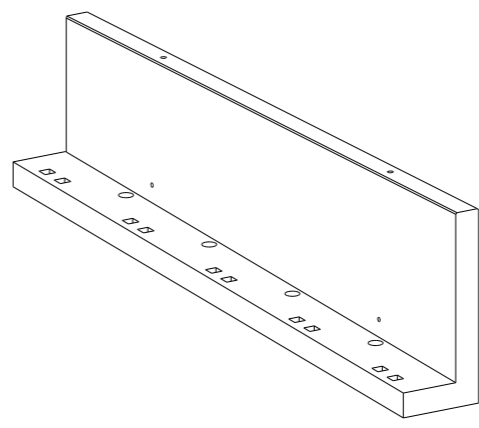
Crown Foot Lifting Anchor



Detail X



X - X



3D View

NOTES:

Type.	Yard Retaining Wall	
Length.	5160	+4 / -4
Height.	1370	+4 / -4
Width.	175	+4 / -4
Weight. (T)	3.70	
Volume. (m³)	1.48	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-YD-0010-RC1
BBS Ref.	05-BYL-1462-YD-0010-BBS
Calculation Ref.	FPMC-20-YD-1400_RevC01
Cover.	40mm Nominal, 35mm Minimum
Casting Bed.	Flat
Mark.	YD-0010
Lifting.	As standard procedures.
Stacking.	Vertical

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	5 No.
Excalibur Bolt	(M20*300)	5 No.

C01	19-06-24	Issued For Manufacture.	MF	AB	SJH
Rev	Date	Revision Detail	By	Chk	App

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

Title. **GA1 of Yard Retaining Wall YD-0010**

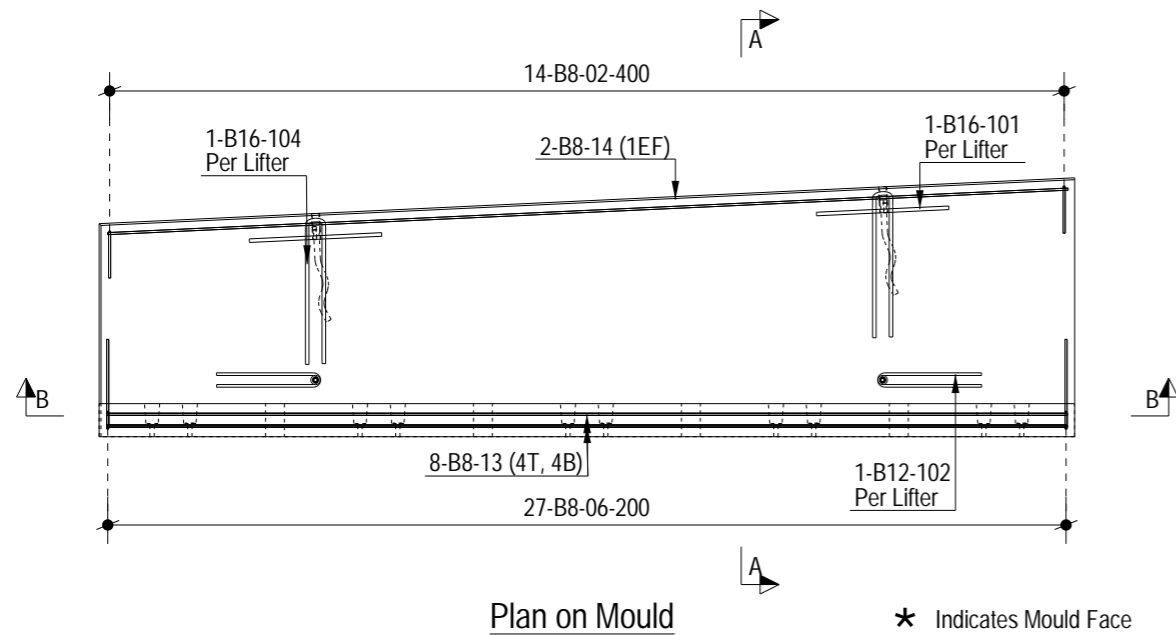
Scale: 1:50 Status: As Built - CR
Date: 13-06-24

Drawn: MF Checked: AB Approved: SJH

Drawing No : **05-BYL-1462-YD-0010-GA1** Rev: **C01**

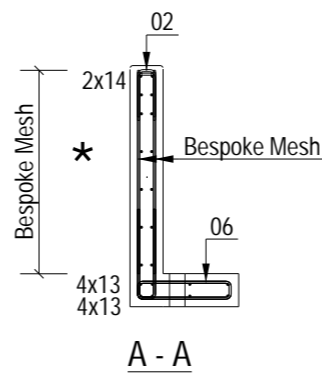
LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

A3
10mm

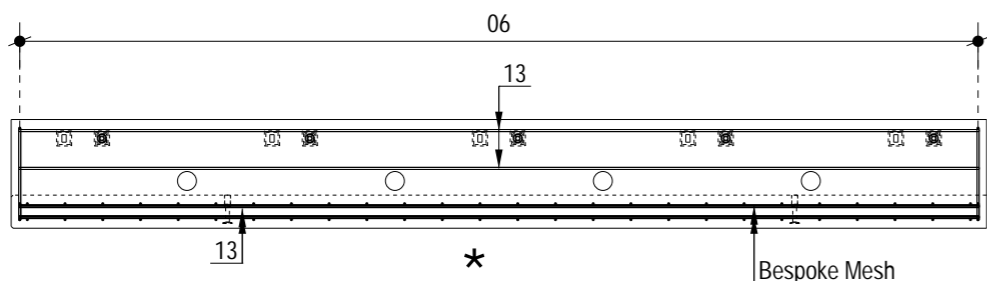


Plan on Mould

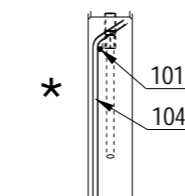
* Indicates Mould Face



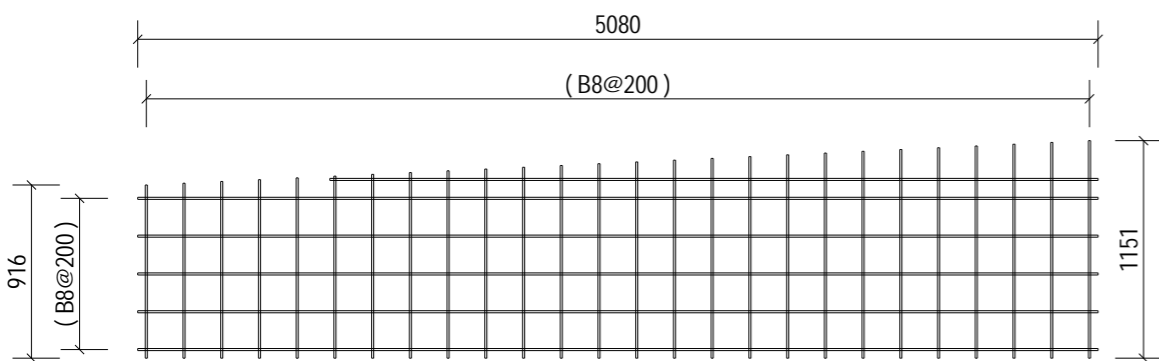
A - A



B - B



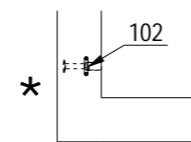
Top Wavy Tail Lifting Anchor



Bespoke Mesh

2No. Required

1No. each face, note mesh orientation on sections.



Crown Foot Lifting Anchor

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Yard Retaining Wall
Mark.	YD-0010
GA Drg. Ref.	05-BYL-1462-YD-0010-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	19-06-24	Issued For Manufacture.	MF	AB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client. 

Project. **Panattoni Park Poyle**

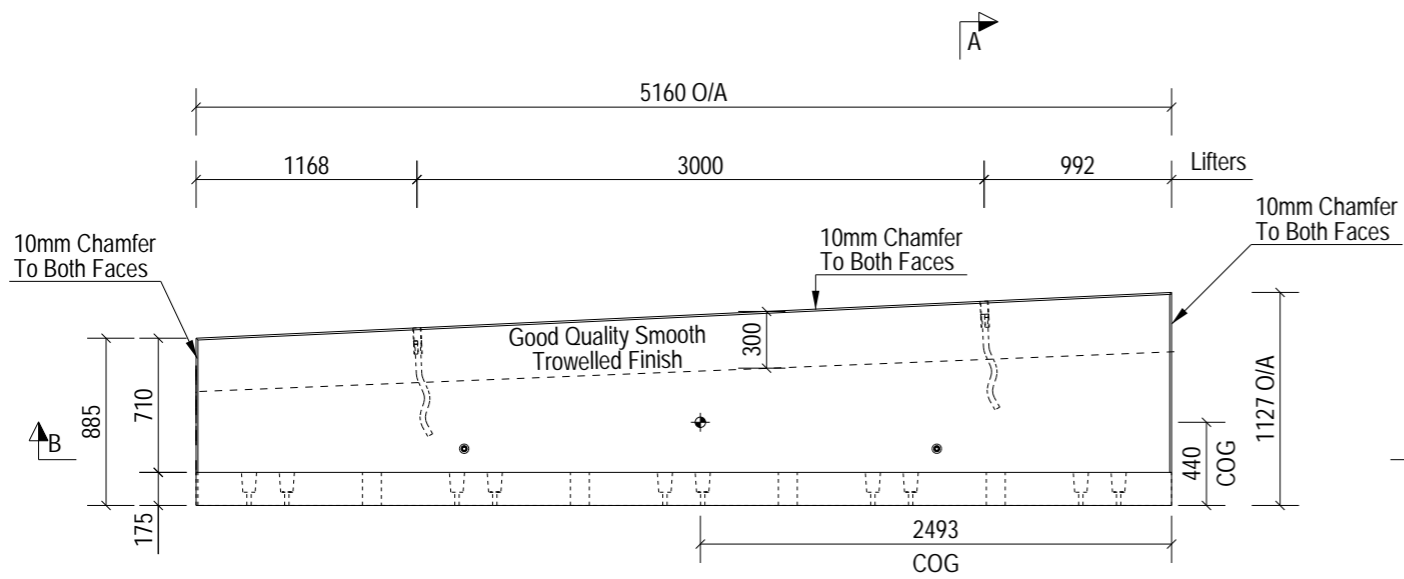
Title. **RC1 of Yard Retaining Wall YD-0010**

Scale: 1:40 Status: As Built - CR

Date: 13-06-24

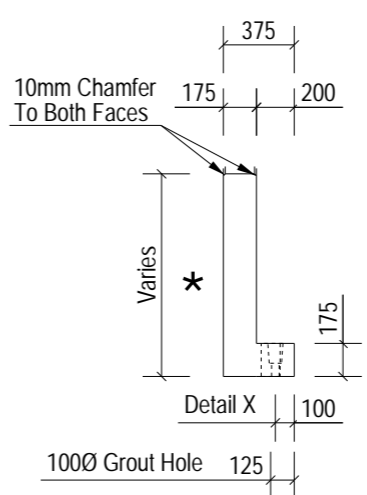
Drawn: MF Checked: AB Approved: SJH

Drawing No : 05-BYL-1462-YD-0010-RC1 Rev: C01

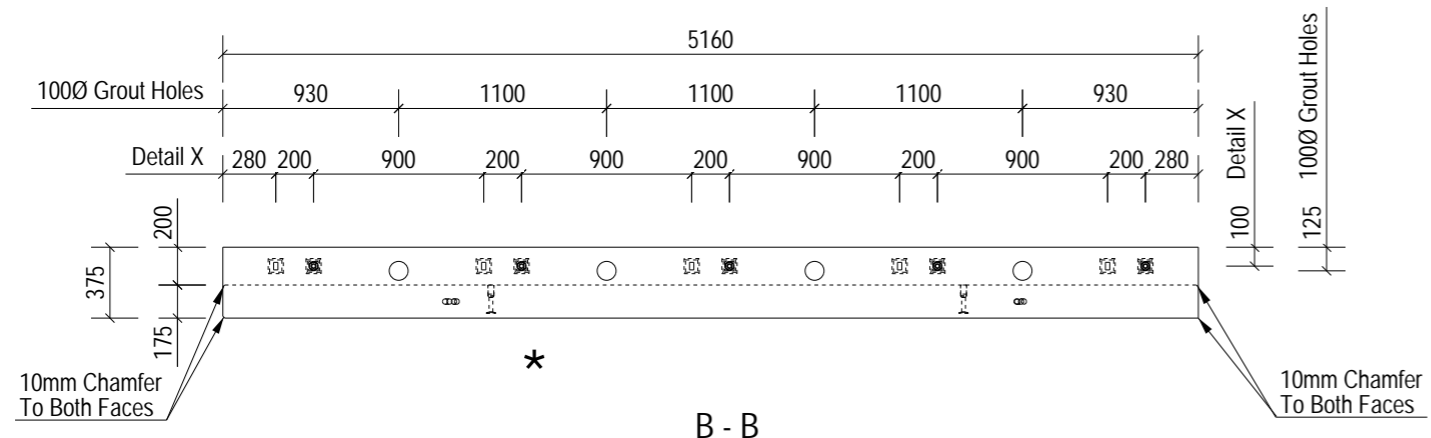


Plan on Mould

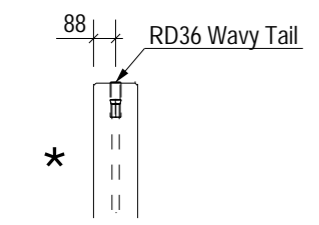
* Indicates Mould Face



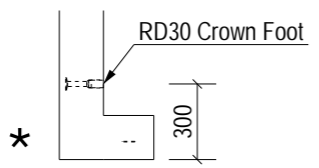
A - A



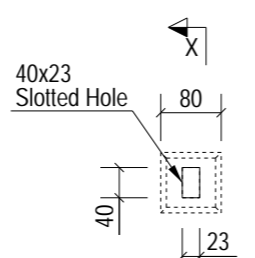
B - B



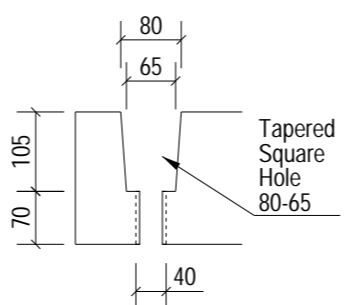
Top Wavy Tail Lifting Detail



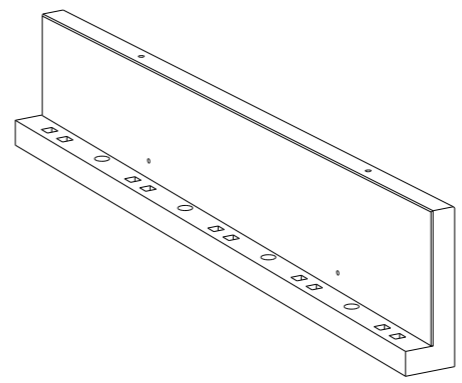
Crown Foot Lifting Anchor



Detail X



X - X



3D View

NOTES:		
Type.	Yard Retaining Wall	
Length.	5160	+4 / -4
Height.	1127	+4 / -4
Width.	175	+4 / -4
Weight. (T)	2.70	
Volume. (m³)	1.08	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm² minimum.	
Finishes.	Steel Trowelled	

RC Drg. Ref.	05-BYL-1462-YD-0011-RC1	
BBS Ref.	05-BYL-1462-YD-0011-BBS	
Calculation Ref.	FPMC-20-YD-1100_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	YD-0011	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT		
No.	Item	Ref.
2	RD30 Crown Foot	SLS30150/SCFS30150
2	RD36 Wavy Tail	SLWL36570/SSLW36570

Loose Fitting Take Off:		
Square Washer	(M25-50*50*2.5)	5 No.
Excalibur Bolt	(M20*300)	5 No.

Rev	Date	Revision Detail	By	Chk	App
C01	19-06-24	Issued For Manufacture.	MF	AB	SJH

FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire,
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

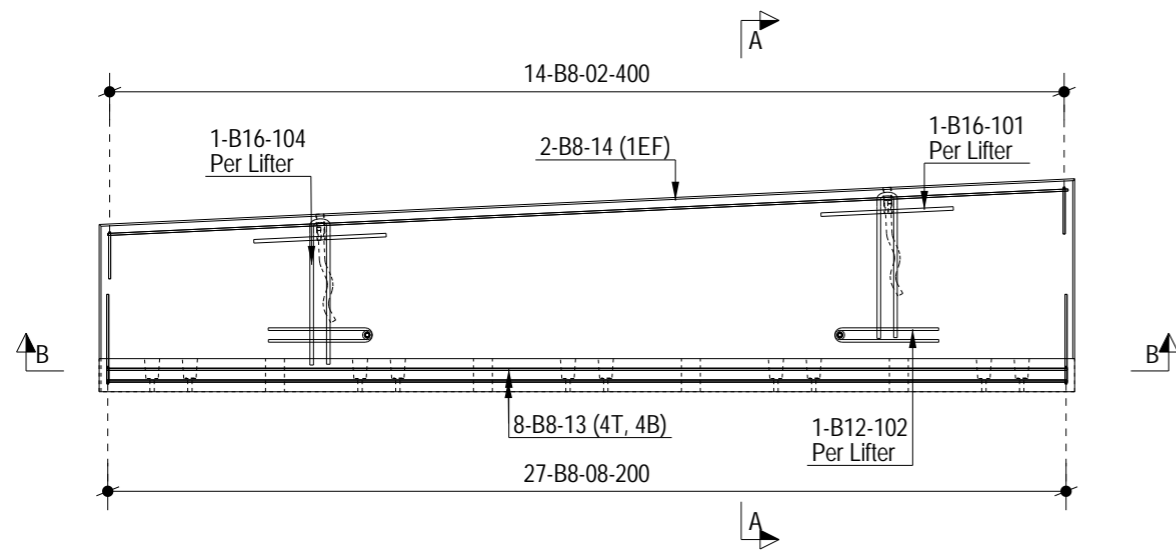
Title. **GA1 of Yard Retaining Wall YD-0011**

Scale: 1:50 Status: As Built - CR
Date: 13-06-24

Drawn: MF Checked: AB Approved: SJH

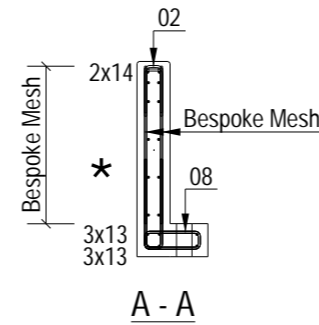
Drawing No : 05-BYL-1462-YD-0011-GA1 Rev: C01

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

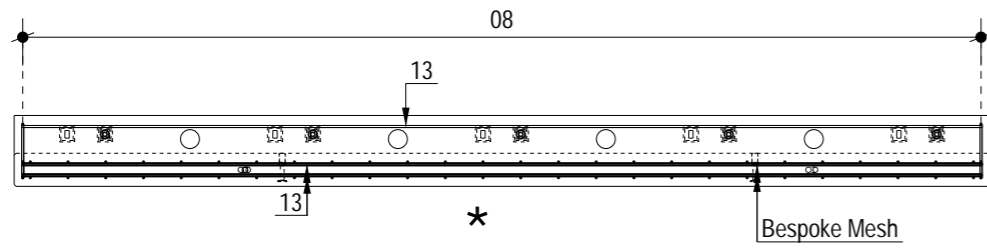


Plan on Mould

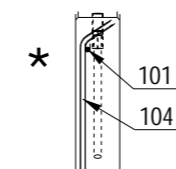
★ Indicates Mould Face



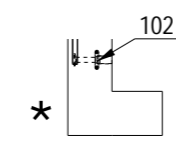
A - A



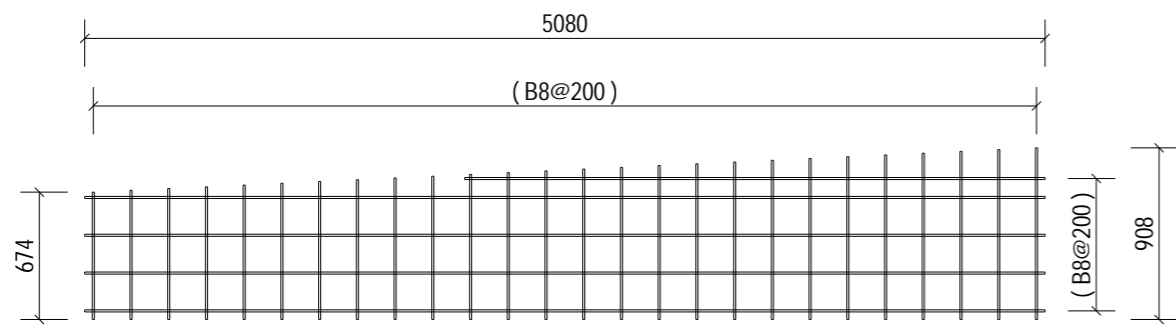
B - B



Top Wavy Tail Lifting Anchor



Crown Foot Lifting Anchor



Bespoke Mesh

2No. Required
1No. each face, note mesh orientation on sections.

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR ALL SPECIFIC BAR LOCATIONS.

NOTES:	
Type.	Yard Retaining Wall
Mark.	YD-0011
GA Drg. Ref.	05-BYL-1462-YD-0011-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	19-06-24	Issued For Manufacture.	MF	AB	SJH

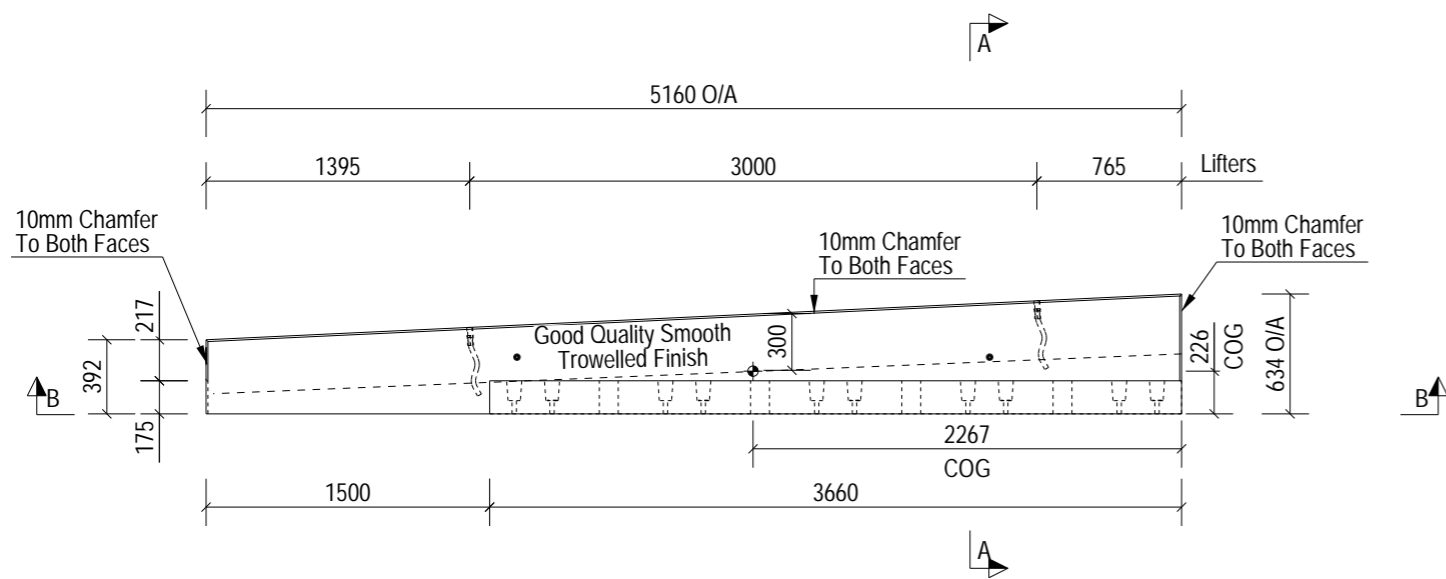
FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.

Project. **Panattoni Park Poyle**

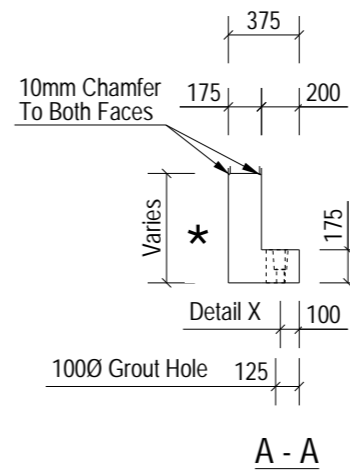
Title. **RC1 of Yard Retaining Wall YD-0011**

Scale: 1:40	Status: As Built - CR	
Date: 13-06-24		
Drawn: MF	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-YD-0011-RC1		Rev: C01

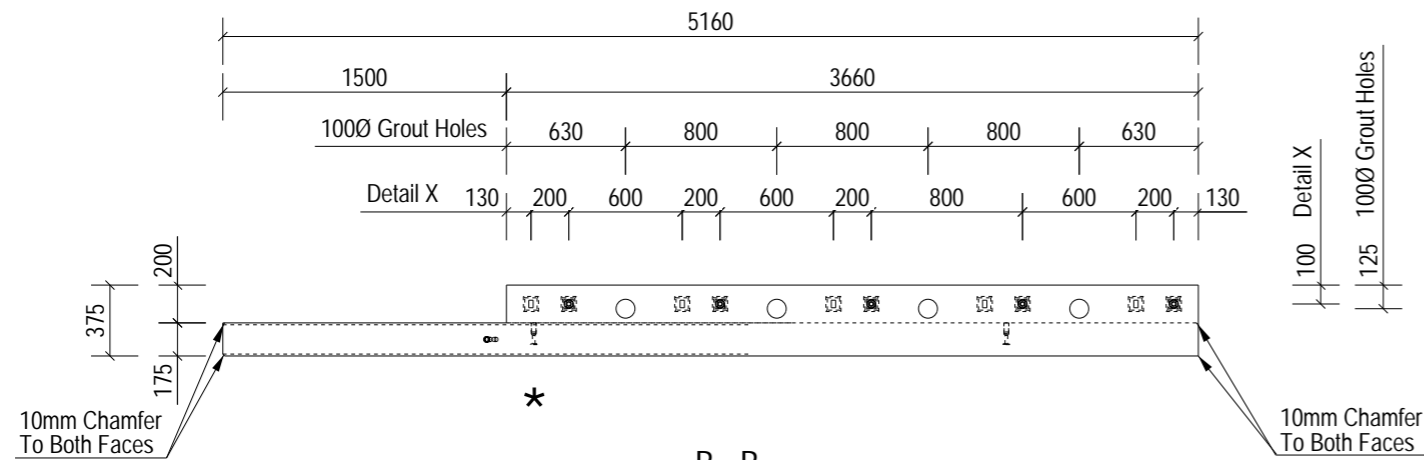


Plan on Mould

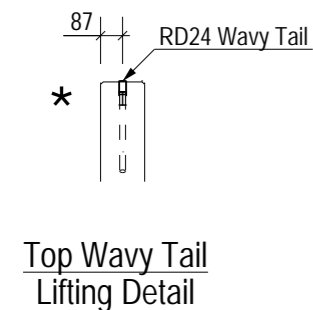
* Indicates Mould Face



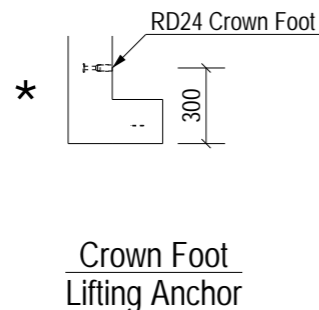
A - A



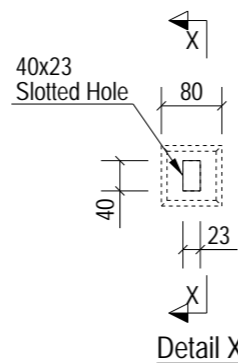
B - B



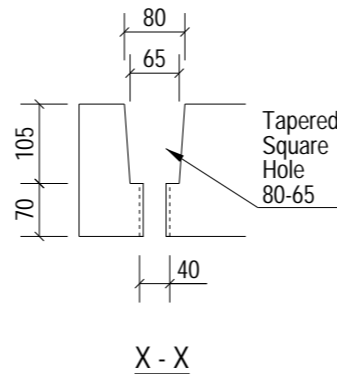
Top Wavy Tail Lifting Detail



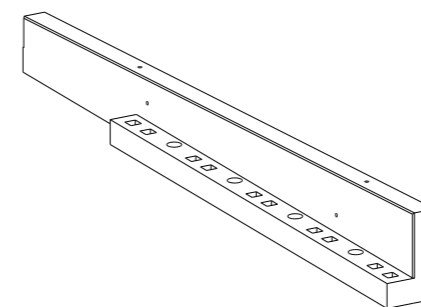
Crown Foot Lifting Anchor



Detail X



X - X



3D View

NOTES:

Type.	Yard Retaining Wall	
Length.	5160	+4 / -4
Height.	634	+4 / -4
Width.	175	+4 / -4
Weight. (T)	1.45	
Volume. (m ³)	0.58	
Concrete.	Grade C40/50	
Mix.	DC2	
Lifting Strength.	25 N/mm ² minimum.	
Finishes.	Steel Trowelled	
RC Drg. Ref.	05-BYL-1462-YD-0012-RC1	
BBS Ref.	05-BYL-1462-YD-0012-BBS	
Calculation Ref.	FPMC-20-YD-1100_RevC01	
Cover.	40mm Nominal, 35mm Minimum	
Casting Bed.	Flat	
Mark.	YD-0012	
Lifting.	As standard procedures.	
Stacking.	Vertical	

ENCAST ITEMS: PER UNIT

No.	Item	Ref.
2	RD24 Crown Foot	SLS24115/SCFS24115
2	RD24 Wavy Tail	SLWL24360/SSLW24360

Loose Fitting Take Off:

Square Washer	(M25-50*50*2.5)	5 No.
Excalibur Bolt	(M20*300)	5 No.

Rev	Date	Revision Detail	By	Chk	App
C01	19-06-24	Issued For Manufacture.	MF	AB	SJH

MC fpmccann
 FP McCann
 Bullhurst Lane,
 Weston Underwood,
 Derbyshire,
 DE6 4PH
 Tel: +44 (0)1335 361 269
 www.fpmccann.co.uk

Client. **winvic**

Project. **Panattoni Park Poyle**

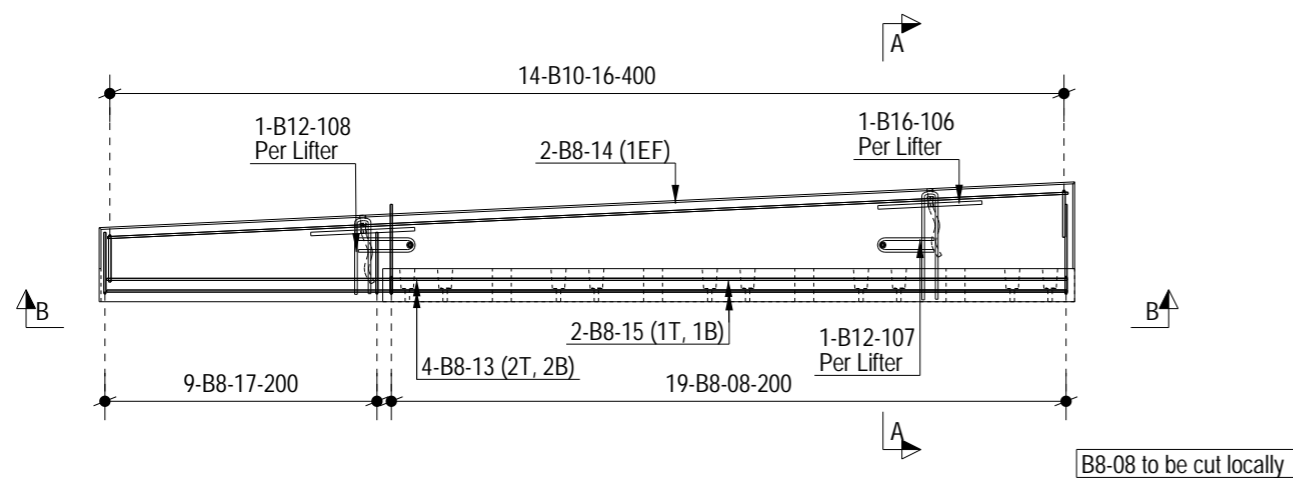
Title. **GA1 of Yard Retaining Wall YD-0012**

Scale: 1:50 Status: As Built - CR

Drawn: MF Checked: AB Approved: SJH

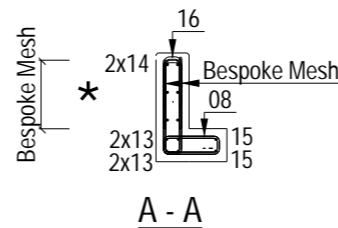
Drawing No : 05-BYL-1462-YD-0012-GA1 Rev: C01

LIFTING BEAM TO BE USED FOR DEMOULDING UNTIL PITCHED

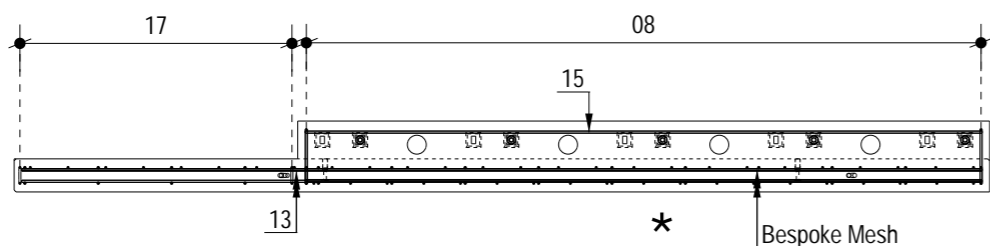


Plan on Mould

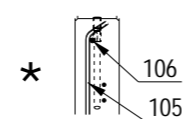
* Indicates Mould Face



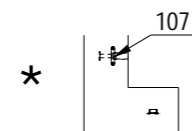
A - A



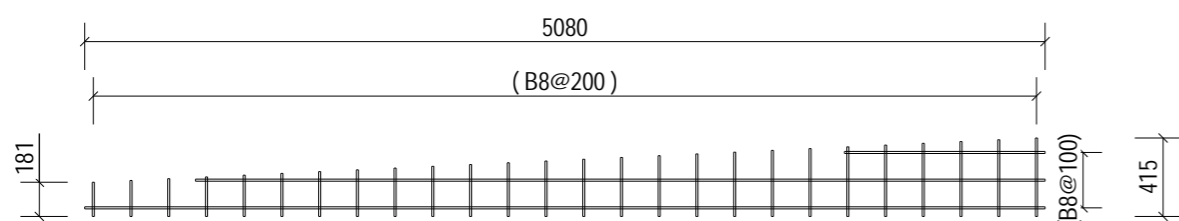
B - B



Top Wavy Tail Lifting Anchor



Crown Foot Lifting Anchor



Bespoke Mesh

2No. Required
1No. each face, note mesh orientation on sections.

ALL DIMENSION SHOWN ARE OVERALL SIZES.
REFER TO THE PXML FOR
ALL SPECIFIC BAR LOCATIONS.

NOTES:

Type.	Yard Retaining Wall
Mark.	YD-0012
GA Drg. Ref.	05-BYL-1462-YD-0012-GA1
Cover.	40mm Nominal, 35mm Minimum

- Reinforcement (500B or C) to BS4449.
- Scheduling, dimensioning, bending and cutting to BS8666
- Cage to be tack welded and/or tied with 17 gauge annealed tying wire.

Rev	Date	Revision Detail	By	Chk	App
C01	19-06-24	Issued For Manufacture.	MF	AB	SJH



FP McCann
Bullhurst Lane,
Weston Underwood,
Derbyshire.
DE6 4PH
Tel: +44 (0)1335 361 269
www.fpmccann.co.uk

Client.	
---------	--

Project.	Panattoni Park Poyle
----------	----------------------

Title.	RC1 of Yard Retaining Wall YD-0012
--------	---------------------------------------

Scale: 1:40	Status: As Built - CR	
Date: 13-06-24		
Drawn: MF	Checked: AB	Approved: SJH
Drawing No : 05-BYL-1462-YD-0012-RC1	Rev: C01	



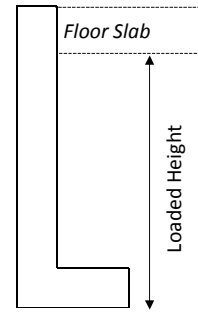
5. Testing & Commissioning Results and Certificates



Wall Height (H_{max}) = 1850 mm
 Min Floor Slab Depth; = 200 mm
 Loaded Height (H); = 1650 mm
 Stem Thickness (S_T); = 175 mm
 Boot Length (T_B); = 600 mm
 Boot Thickness (T_T); = 175 mm
 Screwbolt Spacing(S_S); = 1800 mm
 Edge Distance (S_E); = 100 mm
 Notched base (N); = 20%

Surcharge (Sur); = 10 kN/m²
 Active pressure coeff (K_a); = 0.271
 Base Length (B_L); = 775 mm

Temporary Wind Speed = 60 mph = 27 m/s
 Temporary Wind Force = $0.5 \cdot \rho \cdot v^2$ = 0.4 kN/m²



Global design forces subject to temporary wind loading

	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Wind Load = $W_k \cdot \gamma_Q \cdot H$;	$0.44 \cdot 1.5 \cdot 1.85 =$	1.2 kN	0.925 m	1.1 kNm
	$F_H:$	1.2 kN	$M_H:$	1.1 kNm
	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	$(1.85 - 0.175) \cdot 175 \cdot 25 \cdot 0.9 =$	6.6 kN	0.088 m	0.6 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.8 \cdot 0.775 \cdot 0.175 \cdot 25 \cdot 0.9 =$	2.4 kN	0.388 m	0.9 kNm
	$F_V:$	9.0 kN	$M_V:$	1.5 kNm
Temporary Stability Ratio = M_V / M_H ;	1.5 / 1.1 = 1.36			

Global design forces under standard loading conditions

	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_Q \cdot H$;	$0.271 \cdot 10 \cdot 1.5 \cdot 1.65 =$	6.7 kN	0.825 m	5.5 kNm
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_G \cdot H^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 1.65^2 =$	9.5 kN	0.550 m	5.2 kNm
	$F_H:$	16.2 kN	$M_H:$	10.7 kNm
	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	$(1.65 - 0.175) \cdot 175 \cdot 25 \cdot 0.9 =$	5.8 kN	0.088 m	0.5 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.8 \cdot 0.775 \cdot 0.175 \cdot 25 \cdot 0.9 =$	2.4 kN	0.388 m	0.9 kNm
Weight of soil over boot = $N \cdot T_L \cdot (H - T_T) \cdot \gamma_c \cdot \gamma_f$;	$0.8 \cdot 0.6 \cdot (1.65 - 0.175) \cdot 19 \cdot 0.9 =$	12.1 kN	0.475 m	5.8 kNm
	$F_V:$	20.4 kN	$M_V:$	7.2 kNm
Overtuning moment (ΣM) = $\text{Max}(0, M_H - M_V)$;	$\text{Max}(0, 10.7 - 7.2) = 3.5 \text{ kNm/m}$			
Lever arm to screwbolt (LB1) = $B_L - S_E$;	775 - 100 = 0.675 m			
Tension force in screwbolts (FS1) = $\Sigma M / LB1$;	3.5 / 0.675 = 5.2 kN/m			

Moment and shear in base

Maximum moment in base (M) = $FS1 \cdot (LB1 - S_T)$; $5.2 \cdot (0.675 - 0.175) = 2.6 \text{ kNm/m}$
 Maximum shear in Base (V) = $FS1 \cdot (LB1 - S_T) / LB1$; $5.2 \cdot (0.675 - 175) / 0.675 = 3.9 \text{ kN/m}$

Moment and shear in wall

	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_G \cdot (H - T_T)$;	$0.271 \cdot 10 \cdot 1.5 \cdot 1.475 =$	6.0 kN	0.738 m
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_Q \cdot (H - T_T)^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 1.475^2 =$	7.6 kN	0.492 m
	$F_H:$	13.6 kN	$M_H:$
Maximum moment in wall stem (M);	8.1 kNm/m		
Maximum shear in wall stem (V);	13.6 kN/m		

Reinforcement Design (per/mrun)

Vertical wall stem reinforcement; 10@200 x 8@200

Wall back steel;	B10 @ 200 c/c	$A_{s,prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} =$	237 mm ²	Pass
Wall front steel;	B10 @ 200 c/c	$A_{s,prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} =$	237 mm ²	Pass
Distribution steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	47 mm ²	Pass

Boot link provided; B10 @ 200 c/c

Base top steel;	B10 @ 200 c/c	$A_{s,prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} =$	237 mm ²	Pass
Base bottom steel;	B10 @ 200 c/c	$A_{s,prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} =$	237 mm ²	Pass
Boot distribution T&B;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	47 mm ²	Pass

Moment

	Wall	Base
Effective depth to tension rein' (d_{n1});	130 mm	130 mm
K Factor = $M/(b \cdot d_{n1}^2 \cdot f_{ck})$;	0.012	0.004
Limiting k Factor = $0.598\delta - 0.18\delta^2 - 0.21$;	0.208	0.208
Lever arm (z) = $\text{Min}(0.95 \cdot d_{n1}, d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k}))$;	124 mm	124 mm
Area of rein' reqd for bending ($A_{s,req,b}$) = $M/(f_{yd} \cdot z)$;	150 mm ²	48 mm ²
Min area reqd ($A_{s,min}$) = $\text{max}(0.26 \cdot (f_{ctm}/f_{yk}), 0.0013) \cdot b \cdot d_{n1}$;	237 mm ²	237 mm ²

where $k > k'$ Lever arm (z) = $d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k'})$;
 Depth to compression reinforcement (d_{n2});
 Compression Moment (M') = $b \cdot d_{n1}^2 \cdot f_{ck} \cdot (k - k')$;
 Compression reinforcement reqd (A_s') = $M'/(f_{yd} \cdot (d_{n1} - d_{n2}))$;
 Tension reinforcement required (A_s) = $(M - M')/f_{yd} \cdot z + A_s'$;

Tension reinforcement required at section ($A_{s,req}$)	237 mm ²	237 mm ²
Compression reinforcement required at section ($A_{s',req}$)	0 mm ²	0 mm ²

Shear

Shear resistance constant ($C_{Rd,c}$) = $0.18/\gamma_c$;	0.1N/mm ²	0.1N/mm ²
Effective Depth Factor (k) = $\text{min}(2.0, 1 + \sqrt{200/d_{n1}})$;	2.0000	2.0000
Reinforcement Ratio (ρ_1) = $\text{min}(0.02, A_s/b \cdot d_{n1})$;	0.0030	0.0030
Minimum shear resistance ($V_{Rd,c,min}$) = $0.035 \cdot k^{1.5} \cdot f_{ck}^{0.5} \cdot b \cdot d_{n1}$;	81.4 kN	81.4 kN
Shear resistance ($V_{Rd,c,1}$) = $\text{max}(V_{Rd,c,min}, C_{Rd,c} \cdot k \cdot (100 \cdot \rho_1 \cdot (f_{ck}/1))^{0.333} \cdot b \cdot d_{n1})$;	71.4 kN	71.4 kN
Shear resistance required (V)	13.6 kN	3.9 kN

No shear steel required

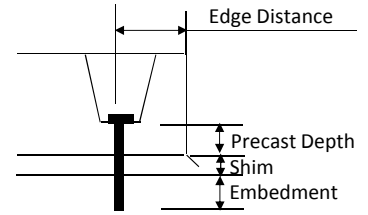
Deflection

Tension Reinforcement ratio (ρ) = $A_{s,req}/bd$;	0.00115
Reference ratio (ρ_0) = $f_{ck}^{0.5}/1000$	0.00632
Compression Reinforcement ratio (ρ') = $A_{s',req}/bd$;	0.00000
Structural system factor (k)	0.40
Where $\rho \leq \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/\rho + 3.2 \cdot f_{ck}^{0.5} \cdot (\rho_0/\rho - 1)^{1.5}))$	16.00
Where $\rho > \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/(\rho - \rho') + f_{ck}^{0.5} \cdot (\rho'/\rho_0)^{0.5}/12))$	N/A
Actual L/d	12.88

Pass

Anchorage Design

- Screwbolt length = 300 mm
- Screwbolt diameter = 20 mm
- Square washer plate size = 50 mm
- Washer thickness = 3 mm
- Slotted hole width = 23 mm
- Precast Depth; = 70 mm
- Max shim height = 40 mm
- Embedment = 188 mm



Screwbolt Detail

Number of Screwbolts (No.) = $1000/D_s$; round(1000/1800) = 0.55
 Tension Force/ No. Screwbolts (N_{ED}) = $FS1/No.$; 5.2/0.55 = 9.5 kN
 Shear Force / No. Screwbolt (V_{Ed}) = $F_H/No.$; 16.2/0.55 = 29.5 kN

Design tension capacity in foundation; $82.90 \cdot (187.5/170)^{1.5}/3.5 = 27.4$ kN **Pass**
 Design tension capacity in precast; $7 \cdot 70^{1.5} \cdot 50^{0.5} = 29.0$ kN **Pass**

Based on screwbolt technical data
 Based on concrete cone failure
 fib bulletin 43 (7-39b)

Check screwbolt for combined tension and shear failure

Design tension capacity of screwbolt ($N_{Rd,Screwbolt}$); $N_{Rd,screwbolt} = 218.4$ kN *Based on the screwbolt tension capacity*
 Design shear capacity of screwbolt ($V_{Rd,Screwbolt}$); $V_{Rd,screwbolt} = 109.2$ kN *Based on the screwbolt shear capacity*

$(N_{ED}/N_{RD,Screwbolt})^{1.5} + (V_{Ed}/V_{Rd,screwbolt})^{1.5} < 1.0$; $(9.5/218.4)^{1.5} + (29.5/109.2)^{1.5} = 0.15$ **Pass**

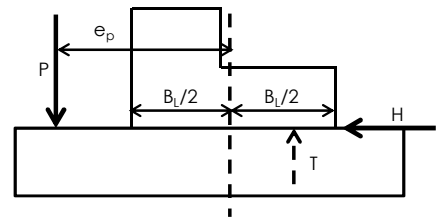
Check local stress on concrete

Design compressive strength (f_{cd}) = $a_{cc} \cdot f_{ck} / \gamma_c$; $1 \cdot 40 / 1.5 = 26.7$ N/mm²
 Applied stress under washer N_{ED}/A ; $9500 / (50^2 - 50 \cdot 23) = 7.0$ N/mm² **Pass**

Base Slab Design

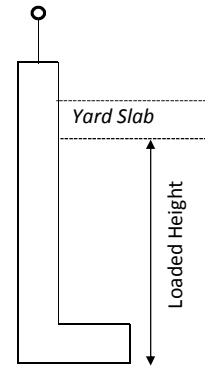
In order to maintain stability the foundation should be designed to resist the vertical load (P) taken at an eccentricity (ep) and the horizontal force (H). In addition the foundation should have sufficient moment capacity to resist the tension force (T) in each screwbolt. The screwbolt connection requires the base slab to have a minimum strength of C20/25 and a minimum depth of 225mm. All foundation design values are factored ULS values.

Vertical Load (P) From standard loading condition = 20.4 kN/m
 Eccentricity (e_p) = M_H/P ; $10.7/20.4 = 0.52$ m
 Horizontal load (H) From standard loading condition = 16.2 kN/m
 Tension Force per Screwbolt (T) From anchor design = 9.5 kN



Average Wall Height (H_{max}) = 1100 mm
 Min Upstand Depth = 150 mm
 Min Yard Slab Depth; = 150 mm
 Loaded Height (H); = 800 mm
 Stem Thickness (S_T); = 175 mm
 Boot Length (T_B); = 200 mm
 Boot Thickness (T_T); = 175 mm
 Screwbolt Spacing(S_S); = 1200 mm
 Edge Distance (S_E); = 100 mm
 Notched base (N); = 20%

Force on Handrail (H_F) = 1.5 kN/m
 Handrail Height (H_H) = 1100 mm



Surcharge (Sur); = 20 kN/m²
 Active pressure coeff (K_a); = 0.271
 Base Length (B_L); = 375 mm

Temporary Wind Speed = 60 mph = 27 m/s
 Temporary Wind Force = $0.5 \cdot \rho \cdot v^2$ = 0.4 kN/m²

Global design forces subject to temporary wind loading

Wind Load = $W_k \cdot \gamma_Q \cdot H$;	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$0.44 \cdot 1.5 \cdot 1.1 =$	0.7 kN	0.550 m	0.4 kNm
	$F_H:$	0.7 kN	$M_H:$	0.4 kNm
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$(1.1 - 0.175) \cdot 175 \cdot 25 \cdot 0.9 =$	3.6 kN	0.088 m	0.3 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.8 \cdot 0.375 \cdot 0.175 \cdot 25 \cdot 0.9 =$	1.2 kN	0.188 m	0.2 kNm
	$F_V:$	4.8 kN	$M_V:$	0.5 kNm
Temporary Stability Ratio = M_V / M_H ;	0.5/0.4 = 1.25			

Global design forces under standard loading conditions

Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_Q \cdot H$;	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$0.271 \cdot 20 \cdot 1.5 \cdot 0.8 =$	6.5 kN	0.400 m	2.6 kNm
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_G \cdot H^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 0.8^2 =$	2.2 kN	0.267 m	0.6 kNm
	$F_H:$	8.7 kN	$M_H:$	3.2 kNm
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$(0.8 - 0.175) \cdot 175 \cdot 25 \cdot 0.9 =$	2.5 kN	0.088 m	0.2 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.8 \cdot 0.375 \cdot 0.175 \cdot 25 \cdot 0.9 =$	1.2 kN	0.188 m	0.2 kNm
Weight of soil over boot = $N \cdot T_L \cdot (H - T_T) \cdot \gamma_c \cdot \gamma_f$;	$0.8 \cdot 0.2 \cdot (0.8 - 0.175) \cdot 19 \cdot 0.9 =$	1.7 kN	0.275 m	0.5 kNm
	$F_V:$	5.4 kN	$M_V:$	0.9 kNm
Overtuning moment (ΣM) = $\text{Max}(0, M_H - M_V)$;	$\text{Max}(0, 3.2 - 0.9) = 2.3 \text{ kNm/m}$			
Lever arm to screwbolt (LB1) = $B_L - S_E$;	$375 - 100 = 0.275 \text{ m}$			
Tension force in screwbolts (FS1) = $\Sigma M / LB1$;	$2.3 / 0.275 = 8.4 \text{ kN/m}$			

Moment and shear in base

Maximum moment in base (M) = $FS1 \cdot (LB1 - S_T)$; $8.4 \cdot (0.275 - 0.175) = 0.8 \text{ kNm/m}$
 Maximum shear in Base (V) = $FS1 \cdot (LB1 - S_T) / LB1$; $8.4 \cdot (0.275 - 175) / 0.275 = 3.1 \text{ kN/m}$

Moment and shear in wall

Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_G \cdot (H - T_T)$;	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$0.271 \cdot 20 \cdot 1.5 \cdot 0.625 =$	5.1 kN	0.313 m
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_Q \cdot (H - T_T)^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 0.625^2 =$	1.4 kN	0.208 m
Handrail Loading = $H_F \cdot \gamma_Q$;	$1.5 \cdot 1.5 =$	2.3 kN	2.025 m
	$F_H:$	8.7 kN	$M_H:$
			6.4 kNm
Maximum moment in wall stem (M);	6.4 kNm/m		
Maximum shear in wall stem (V);	8.7 kN/m		

Reinforcement Design (per/mrun)

Vertical wall stem reinforcement; A252

Wall back steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	239 mm ²	Pass
Wall front steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	239 mm ²	Pass
Distribution steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	48 mm ²	Pass

Boot link provided; B8 @ 200 c/c

Base top steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	239 mm ²	Pass
Base bottom steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	239 mm ²	Pass
Boot distribution T&B;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	48 mm ²	Pass

Moment

	Wall	Base
Effective depth to tension rein' (d_{n1});	131 mm	131 mm
K Factor = $M/(b \cdot d_{n1}^2 \cdot f_{ck})$;	0.009	0.001
Limiting k Factor = $0.598\delta - 0.18\delta^2 - 0.21$;	0.208	0.208
Lever arm (z) = $\text{Min}(0.95 \cdot d_{n1}, d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k}))$;	124 mm	124 mm
Area of rein' reqd for bending ($A_{s,req,b}$) = $M/(f_{yd} \cdot z)$;	119 mm ²	16 mm ²
Min area reqd ($A_{s,min}$) = $\text{max}(0.26 \cdot (f_{ctm}/f_{yk}), 0.0013) \cdot b \cdot d_{n1}$;	239 mm ²	239 mm ²

where $k > k'$ Lever arm (z) = $d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k'})$;
 Depth to compression reinforcement (d_{n2});
 Compression Moment (M') = $b \cdot d_{n1}^2 \cdot f_{ck} \cdot (k - k')$;
 Compression reinforcement reqd (A_s') = $M'/(f_{yd} \cdot (d_{n1} - d_{n2}))$;
 Tension reinforcement required (A_s) = $(M - M')/f_{yd} \cdot z + A_s'$;

Tension reinforcement required at section ($A_{s,req}$)	239 mm ²	239 mm ²
Compression reinforcement required at section ($A_{s',req}$)	0 mm ²	0 mm ²

Shear

Shear resistance constant ($C_{Rd,c}$) = $0.18/\gamma_c$;	0.1N/mm ²	0.1N/mm ²
Effective Depth Factor (k) = $\text{min}(2.0, 1 + \sqrt{200/d_{n1}})$;	2.0000	2.0000
Reinforcement Ratio (ρ_1) = $\text{min}(0.02, A_s/b \cdot d_{n1})$;	0.0020	0.0020
Minimum shear resistance ($V_{Rd,c,min}$) = $0.035 \cdot k^{1.5} \cdot f_{ck}^{0.5} \cdot b \cdot d_{n1}$;	82.0 kN	82.0 kN
Shear resistance ($V_{Rd,c,1}$) = $\text{max}(V_{Rd,c,min}, C_{Rd,c} \cdot k \cdot (100 \cdot \rho_1 \cdot (f_{ck}/1))^{0.333} \cdot b \cdot d_{n1})$;	62.8 kN	62.8 kN
Shear resistance required (V)	8.7 kN	3.1 kN

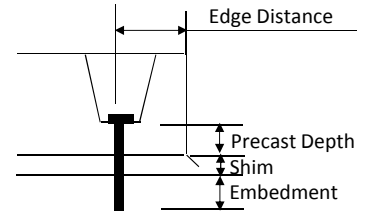
No shear steel required

Deflection

Tension Reinforcement ratio (ρ) = $A_{s,req}/bd$;	0.00091
Reference ratio (ρ_0) = $f_{ck}^{0.5}/1000$	0.00632
Compression Reinforcement ratio (ρ') = $A_{s',req}/bd$;	0.00000
Structural system factor (k)	0.40
Where $\rho \leq \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/\rho + 3.2 \cdot f_{ck}^{0.5} \cdot (\rho_0/\rho - 1)^{1.5}))$	16.00
Where $\rho > \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/(\rho - \rho') + f_{ck}^{0.5} \cdot (\rho'/\rho_0)^{0.5}/12))$	N/A
Actual L/d	7.06
	Pass

Anchorage Design

Screwbolt length	= 300 mm
Screwbolt diameter	= 20 mm
Square washer plate size	= 50 mm
Washer thickness	= 3 mm
Slotted hole width	= 23 mm
Precast Depth;	= 70 mm
Max shim height	= 40 mm
Embedment	= 188 mm



Screwbolt Detail

Number of Screwbolts (No.)= $1000/D_s$;	$\text{round}(1000/1200)= 0.83$
Tension Force/ No. Screwbolts (N_{ED}) = $FS1/No.$;	$8.4/0.83= 10.1 \text{ kN}$
Shear Force / No. Screwbolt (V_{Ed}) = $F_H/No.$;	$8.7/0.83= 10.5 \text{ kN}$

Design tension capacity in foundation;	$82.90 \cdot (187.5/170)^{1.5}/3.5= 27.4 \text{ kN}$	Pass
Design tension capacity in precast;	$7 \cdot 70^{1.5} \cdot 50^{0.5}= 29.0 \text{ kN}$	Pass

Based on screwbolt technical data
Based on concrete cone failure
fib bulletin 43 (7-39b)

Check screwbolt for combined tension and shear failure

Design tension capacity of screwbolt ($N_{Rd,Screwbolt}$);	$NR_{d,screwbolt}= 218.4 \text{ kN}$	<i>Based on the screwbolt tension capacity</i>
Design shear capacity of screwbolt ($V_{Rd,Screwbolt}$);	$VR_{d,screwbolt}= 109.2 \text{ kN}$	<i>Based on the screwbolt shear capacity</i>

$(N_{ED}/N_{RD,Screwbolt})^{1.5} + (V_{Ed}/V_{Rd,screwbolt})^{1.5} < 1.0;$ $(10.1/218.4)^{1.5} + (10.5/109.2)^{1.5} = 0.04$ **Pass**

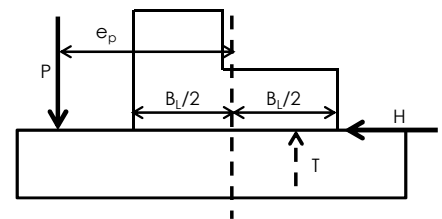
Check local stress on concrete

Design compressive strength (f_{cd})= $a_{cc}f_{ck}/\gamma_c$	$1 \cdot 40/1.5= 26.7 \text{ N/mm}^2$
Applied stress under washer N_{ED}/A	$10100/(50^2-50 \cdot 23)= 7.5 \text{ N/mm}^2$ Pass

Base Slab Design

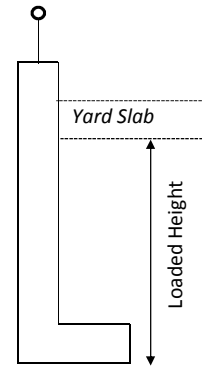
In order to maintain stability the foundation should be designed to resist the vertical load (P) taken at an eccentricity (ep) and the horizontal force (H). In addition the foundation should have sufficient moment capacity to resist the tension force (T) in each screwbolt. The screwbolt connection requires the base slab to have a minimum strength of C20/25 and a minimum depth of 225mm. All foundation design values are factored ULS values.

Vertical Load (P)	From standard loading condition=	5.4 kN/m
Eccentricity (e_p)= M_H/P	3.2/5.4=	0.59 m
Horizontal load (H)	From standard loading condition=	8.7 kN/m
Tension Force per Screwbolt (T)	From anchor design=	10.1 kN



Average Wall Height (H_{max}) = 1400 mm
 Min Upstand Depth = 150 mm
 Min Yard Slab Depth; = 150 mm
 Loaded Height (H); = 1100 mm
 Stem Thickness (S_T); = 175 mm
 Boot Length (T_B); = 400 mm
 Boot Thickness (T_T); = 175 mm
 Screwbolt Spacing(S_S); = 1200 mm
 Edge Distance (S_E); = 100 mm
 Notched base (N); = 20%

Force on Handrail (H_F) = 1.5 kN/m
 Handrail Height (H_H) = 1100 mm



Surcharge (Sur); = 20 kN/m²
 Active pressure coeff (K_a); = 0.271
 Base Length (B_L); = 575 mm

Temporary Wind Speed = 60 mph = 27 m/s
 Temporary Wind Force = $0.5 \cdot \rho \cdot v^2$ = 0.4 kN/m²

Global design forces subject to temporary wind loading

	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Wind Load = $W_k \cdot \gamma_Q \cdot H$;	$0.44 \cdot 1.5 \cdot 1.4 =$	0.9 kN	0.700 m	0.6 kNm
	$F_H:$	0.9 kN	$M_H:$	0.6 kNm
	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	$(1.4 - 0.175) \cdot 175 \cdot 25 \cdot 0.9 =$	4.8 kN	0.088 m	0.4 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.8 \cdot 0.575 \cdot 0.175 \cdot 25 \cdot 0.9 =$	1.8 kN	0.288 m	0.5 kNm
	$F_V:$	6.6 kN	$M_V:$	0.9 kNm
Temporary Stability Ratio = M_V / M_H ;	0.9/0.6 = 1.50			

Global design forces under standard loading conditions

	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_Q \cdot H$;	$0.271 \cdot 20 \cdot 1.5 \cdot 1.1 =$	8.9 kN	0.550 m	4.9 kNm
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_G \cdot H^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 1.1^2 =$	4.2 kN	0.367 m	1.5 kNm
	$F_H:$	13.1 kN	$M_H:$	6.5 kNm
	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	$(1.1 - 0.175) \cdot 175 \cdot 25 \cdot 0.9 =$	3.6 kN	0.088 m	0.3 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.8 \cdot 0.575 \cdot 0.175 \cdot 25 \cdot 0.9 =$	1.8 kN	0.288 m	0.5 kNm
Weight of soil over boot = $N \cdot T_L \cdot (H - T_T) \cdot \gamma_c \cdot \gamma_f$;	$0.8 \cdot 0.4 \cdot (1.1 - 0.175) \cdot 19 \cdot 0.9 =$	5.1 kN	0.375 m	1.9 kNm
	$F_V:$	10.5 kN	$M_V:$	2.7 kNm
Overturning moment (ΣM) = $\text{Max}(0, M_H - M_V)$;	$\text{Max}(0, 6.5 - 2.7) = 3.8 \text{ kNm/m}$			
Lever arm to screwbolt (LB1) = $B_L - S_E$;	575 - 100 = 0.475 m			
Tension force in screwbolts (FS1) = $\Sigma M / LB1$;	3.8 / 0.475 = 8.0 kN/m			

Moment and shear in base

Maximum moment in base (M) = $FS1 \cdot (LB1 - S_T)$; $8 \cdot (0.475 - 0.175) = 2.4 \text{ kNm/m}$
 Maximum shear in Base (V) = $FS1 \cdot (LB1 - S_T) / LB1$; $8 \cdot (0.475 - 0.175) / 0.475 = 5.1 \text{ kN/m}$

Moment and shear in wall

	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>	
Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_G \cdot (H - T_T)$;	$0.271 \cdot 20 \cdot 1.5 \cdot 0.925 =$	7.5 kN	0.463 m	
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_Q \cdot (H - T_T)^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 0.925^2 =$	3.0 kN	0.308 m	
Handrail Loading = $H_F \cdot \gamma_Q$;	$1.5 \cdot 1.5 =$	2.3 kN	2.325 m	
	$F_H:$	12.7 kN	$M_H:$	9.6 kNm

Maximum moment in wall stem (M); 9.6 kNm/m
 Maximum shear in wall stem (V); 12.7 kN/m

Reinforcement Design (per/mrun)

Vertical wall stem reinforcement; A252

Wall back steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	239 mm ²	Pass
Wall front steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	239 mm ²	Pass
Distribution steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	48 mm ²	Pass

Boot link provided; B8 @ 200 c/c

Base top steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	239 mm ²	Pass
Base bottom steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	239 mm ²	Pass
Boot distribution T&B;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	48 mm ²	Pass

Moment

	Wall	Base
Effective depth to tension rein' (d_{n1});	131 mm	131 mm
K Factor = $M/(b \cdot d_{n1}^2 \cdot f_{ck})$;	0.014	0.003
Limiting k Factor = $0.598\delta - 0.18\delta^2 - 0.21$;	0.208	0.208
Lever arm (z) = $\text{Min}(0.95 \cdot d_{n1}, d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k}))$;	124 mm	124 mm
Area of rein' reqd for bending ($A_{s,req,b}$) = $M/(f_{yd} \cdot z)$;	178 mm ²	44 mm ²
Min area reqd ($A_{s,min}$) = $\text{max}(0.26 \cdot (f_{ctm}/f_{yk}), 0.0013) \cdot b \cdot d_{n1}$;	239 mm ²	239 mm ²

where $k > k'$ Lever arm (z) = $d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k'})$;
 Depth to compression reinforcement (d_{n2});
 Compression Moment (M') = $b \cdot d_{n1}^2 \cdot f_{ck} \cdot (k - k')$;
 Compression reinforcement reqd (A_s') = $M'/(f_{yd} \cdot (d_{n1} - d_{n2}))$;
 Tension reinforcement required (A_s) = $(M - M')/f_{yd} \cdot z + A_s'$;

Tension reinforcement required at section ($A_{s,req}$)	239 mm ²	239 mm ²
Compression reinforcement required at section ($A_{s',req}$)	0 mm ²	0 mm ²

Shear

Shear resistance constant ($C_{Rd,c}$) = $0.18/\gamma_c$;	0.1N/mm ²	0.1N/mm ²
Effective Depth Factor (k) = $\text{min}(2.0, 1 + \sqrt{200/d_{n1}})$;	2.0000	2.0000
Reinforcement Ratio (ρ_1) = $\text{min}(0.02, A_s/b \cdot d_{n1})$;	0.0020	0.0020
Minimum shear resistance ($V_{Rd,c,min}$) = $0.035 \cdot k^{1.5} \cdot f_{ck}^{0.5} \cdot b \cdot d_{n1}$;	82.0 kN	82.0 kN
Shear resistance ($V_{Rd,c,1}$) = $\text{max}(V_{Rd,c,min}, C_{Rd,c} \cdot k \cdot (100 \cdot \rho_1 \cdot (f_{ck}/1))^{0.333} \cdot b \cdot d_{n1})$;	62.8 kN	62.8 kN
Shear resistance required (V)	12.7 kN	5.1 kN

No shear steel required

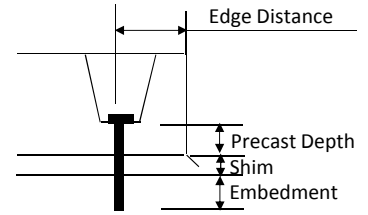
Deflection

Tension Reinforcement ratio (ρ) = $A_{s,req}/bd$;	0.00136
Reference ratio (ρ_0) = $f_{ck}^{0.5}/1000$	0.00632
Compression Reinforcement ratio (ρ') = $A_{s',req}/bd$;	0.00000
Structural system factor (k)	0.40
Where $\rho \leq \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/\rho + 3.2 \cdot f_{ck}^{0.5} \cdot (\rho_0/\rho - 1)^{1.5}))$	16.00
Where $\rho > \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/(\rho - \rho') + f_{ck}^{0.5} \cdot (\rho'/\rho_0)^{0.5}/12))$	N/A
Actual L/d	9.35

Pass

Anchorage Design

Screwbolt length	= 300 mm
Screwbolt diameter	= 20 mm
Square washer plate size	= 50 mm
Washer thickness	= 3 mm
Slotted hole width	= 23 mm
Precast Depth;	= 70 mm
Max shim height	= 40 mm
Embedment	= 188 mm



Screwbolt Detail

Number of Screwbolts (No.)= $1000/D_s$;	$\text{round}(1000/1200) = 0.83$
Tension Force/ No. Screwbolts (N_{ED}) = $FS1/No.$;	$8/0.83 = 9.6 \text{ kN}$
Shear Force / No. Screwbolt (V_{Ed}) = $F_H/No.$;	$13.1/0.83 = 15.8 \text{ kN}$

Design tension capacity in foundation;	$82.90 \cdot (187.5/170)^{1.5}/3.5 = 27.4 \text{ kN}$	Pass
Design tension capacity in precast;	$7 \cdot 70^{1.5} \cdot 50^{0.5} = 29.0 \text{ kN}$	Pass

Based on screwbolt technical data
Based on concrete cone failure
fib bulletin 43 (7-39b)

Check screwbolt for combined tension and shear failure

Design tension capacity of screwbolt ($N_{Rd,Screwbolt}$);	$NR_{d,screwbolt} = 218.4 \text{ kN}$	<i>Based on the screwbolt tension capacity</i>
Design shear capacity of screwbolt ($V_{Rd,Screwbolt}$);	$VR_{d,screwbolt} = 109.2 \text{ kN}$	<i>Based on the screwbolt shear capacity</i>

$(N_{ED}/N_{RD,Screwbolt})^{1.5} + (V_{Ed}/V_{Rd,screwbolt})^{1.5} < 1.0$; $(9.6/218.4)^{1.5} + (15.8/109.2)^{1.5} = 0.06$ **Pass**

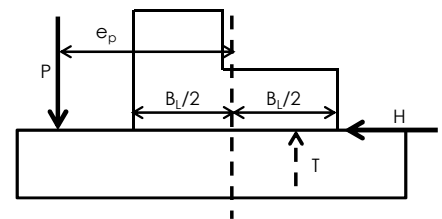
Check local stress on concrete

Design compressive strength (f_{cd}) = $a_{cc} \cdot f_{ck} / \gamma_c$	$1 \cdot 40 / 1.5 = 26.7 \text{ N/mm}^2$
Applied stress under washer N_{ED}/A	$9600 / (50^2 - 2 \cdot 50 \cdot 23) = 7.1 \text{ N/mm}^2$ Pass

Base Slab Design

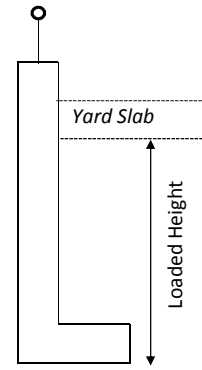
In order to maintain stability the foundation should be designed to resist the vertical load (P) taken at an eccentricity (ep) and the horizontal force (H). In addition the foundation should have sufficient moment capacity to resist the tension force (T) in each screwbolt. The screwbolt connection requires the base slab to have a minimum strength of C20/25 and a minimum depth of 225mm. All foundation design values are factored ULS values.

Vertical Load (P)	From standard loading condition=	10.5 kN/m
Eccentricity (e_p) = M_H/P	$6.5/10.5 =$	0.62 m
Horizontal load (H)	From standard loading condition=	13.1 kN/m
Tension Force per Screwbolt (T)	From anchor design=	9.6 kN



Average Wall Height (H_{max}) = 1750 mm
 Min Upstand Depth = 150 mm
 Min Yard Slab Depth; = 150 mm
 Loaded Height (H); = 1450 mm
 Stem Thickness (S_T); = 175 mm
 Boot Length (T_B); = 600 mm
 Boot Thickness (T_T); = 175 mm
 Screwbolt Spacing(S_S); = 1200 mm
 Edge Distance (S_E); = 100 mm
 Notched base (N); = 20%

Force on Handrail (H_F) = 1.5 kN/m
 Handrail Height (H_H) = 1100 mm



Surcharge (Sur); = 20 kN/m²
 Active pressure coeff (K_a); = 0.271
 Base Length (B_L); = 775 mm

Temporary Wind Speed = 60 mph = 27 m/s
 Temporary Wind Force = $0.5 \cdot \rho \cdot v^2$ = 0.4 kN/m²

Global design forces subject to temporary wind loading

	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Wind Load = $W_k \cdot \gamma_Q \cdot H$;	$0.44 \cdot 1.5 \cdot 1.75 =$	1.2 kN	0.875 m	1.0 kNm
	$F_H:$	1.2 kN	$M_H:$	1.0 kNm
	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	$(1.75 - 0.175) \cdot 175 \cdot 25 \cdot 0.9 =$	6.2 kN	0.088 m	0.5 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.8 \cdot 0.775 \cdot 0.175 \cdot 25 \cdot 0.9 =$	2.4 kN	0.388 m	0.9 kNm
	$F_V:$	8.6 kN	$M_V:$	1.5 kNm
Temporary Stability Ratio = M_V / M_H ;	1.5/1 = 1.50			

Global design forces under standard loading conditions

	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_Q \cdot H$;	$0.271 \cdot 20 \cdot 1.5 \cdot 1.45 =$	11.8 kN	0.725 m	8.5 kNm
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_G \cdot H^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 1.45^2 =$	7.3 kN	0.483 m	3.5 kNm
	$F_H:$	19.1 kN	$M_H:$	12.1 kNm
	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	$(1.45 - 0.175) \cdot 175 \cdot 25 \cdot 0.9 =$	5.0 kN	0.088 m	0.4 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.8 \cdot 0.775 \cdot 0.175 \cdot 25 \cdot 0.9 =$	2.4 kN	0.388 m	0.9 kNm
Weight of soil over boot = $N \cdot T_L \cdot (H - T_T) \cdot \gamma_c \cdot \gamma_f$;	$0.8 \cdot 0.6 \cdot (1.45 - 0.175) \cdot 19 \cdot 0.9 =$	10.5 kN	0.475 m	5.0 kNm
	$F_V:$	17.9 kN	$M_V:$	6.4 kNm
Overtuning moment (ΣM) = $\text{Max}(0, M_H - M_V)$;	$\text{Max}(0, 12.1 - 6.4) = 5.7 \text{ kNm/m}$			
Lever arm to screwbolt (LB1) = $B_L - S_E$;	775 - 100 = 0.675 m			
Tension force in screwbolts (FS1) = $\Sigma M / LB1$;	5.7 / 0.675 = 8.4 kN/m			

Moment and shear in base

Maximum moment in base (M) = $FS1 \cdot (LB1 - S_T)$; $8.4 \cdot (0.675 - 0.175) = 4.2 \text{ kNm/m}$
 Maximum shear in Base (V) = $FS1 \cdot (LB1 - S_T) / LB1$; $8.4 \cdot (0.675 - 175) / 0.675 = 6.2 \text{ kN/m}$

Moment and shear in wall

	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>	
Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_G \cdot (H - T_T)$;	$0.271 \cdot 20 \cdot 1.5 \cdot 1.275 =$	10.4 kN	0.638 m	
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_Q \cdot (H - T_T)^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 1.275^2 =$	5.6 kN	0.425 m	
Handrail Loading = $H_F \cdot \gamma_Q$;	$1.5 \cdot 1.5 =$	2.3 kN	2.675 m	
	$F_H:$	18.3 kN	$M_H:$	15.0 kNm

Maximum moment in wall stem (M); 15.0 kNm/m
 Maximum shear in wall stem (V); 18.3 kN/m

Reinforcement Design (per/mrun)

Vertical wall stem reinforcement; 10@200 x 8@200

Wall back steel;	B10 @ 200 c/c	$A_{s,Prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} = 278\text{mm}^2$	Pass
Wall front steel;	B10 @ 200 c/c	$A_{s,Prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} = 237\text{mm}^2$	Pass
Distribution steel;	B8 @ 200 c/c	$A_{s,Prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} = 56\text{mm}^2$	Pass

Boot link provided; B10 @ 200 c/c

Base top steel;	B10 @ 200 c/c	$A_{s,Prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} = 237\text{mm}^2$	Pass
Base bottom steel;	B10 @ 200 c/c	$A_{s,Prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} = 237\text{mm}^2$	Pass
Boot distribution T&B;	B8 @ 200 c/c	$A_{s,Prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} = 47\text{mm}^2$	Pass

Moment

	Wall	Base
Effective depth to tension rein' (d_{n1});	130 mm	130 mm
K Factor = $M/(b \cdot d_{n1}^2 \cdot f_{ck})$;	0.022	0.006
Limiting k Factor = $0.5986 - 0.186^2 \cdot 0.21$;	0.208	0.208
Lever arm (z) = $\text{Min}(0.95 \cdot d_{n1}, d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k}))$;	124 mm	124 mm
Area of rein' reqd for bending ($A_{s,req,b} = M/(f_{yd} \cdot z)$;	278 mm ²	78 mm ²
Min area reqd ($A_{s,min} = \text{max}(0.26 \cdot (f_{ctm}/f_{yk}), 0.0013) \cdot b \cdot d_{n1}$;	237 mm ²	237 mm ²

where $k > k'$ Lever arm (z) = $d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k'})$;
 Depth to compression reinforcement (d_{n2});
 Compression Moment (M') = $b \cdot d_{n1}^2 \cdot f_{ck} \cdot (k - k')$;
 Compression reinforcement reqd (A_s') = $M'/(f_{yd} \cdot (d_{n1} - d_{n2}))$;
 Tension reinforcement required (A_s) = $(M - M')/f_{yd} \cdot z + A_s'$;

Tension reinforcement required at section ($A_{s,req}$)	278 mm ²	237 mm ²
Compression reinforcement required at section ($A_{s',req}$)	0 mm ²	0 mm ²

Shear

Shear resistance constant ($C_{Rd,c} = 0.18/\gamma_c$;	0.1N/mm ²	0.1N/mm ²
Effective Depth Factor (k) = $\text{min}(2.0, 1 + \sqrt{200/d_{n1}})$;	2.0000	2.0000
Reinforcement Ratio (ρ_1) = $\text{min}(0.02, A_s/b \cdot d_{n1})$;	0.0030	0.0030
Minimum shear resistance ($V_{Rd,c,min} = 0.035 \cdot k^{1.5} \cdot f_{ck}^{0.5} \cdot b \cdot d_{n1}$;	81.4 kN	81.4 kN
Shear resistance ($V_{Rd,c,1} = \text{max}(V_{Rd,c,min}, C_{Rd,c} \cdot k \cdot (100 \cdot \rho_1 \cdot (f_{ck}/1))^{0.333} \cdot b \cdot d_{n1})$;	71.4 kN	71.4 kN
Shear resistance required (V)	18.3 kN	6.2 kN

No shear steel required

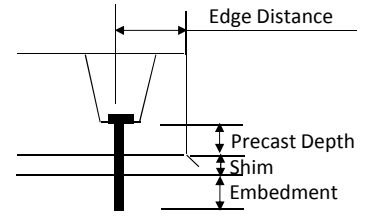
Deflection

Tension Reinforcement ratio (ρ) = $A_{s,req}/bd$;	0.00214
Reference ratio (ρ_0) = $f_{ck}^{0.5}/1000$	0.00632
Compression Reinforcement ratio (ρ') = $A_{s',req}/bd$;	0.00000
Structural system factor (k)	0.40
Where $\rho \leq \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/\rho + 3.2 \cdot f_{ck}^{0.5} \cdot (\rho_0/\rho - 1)^{1.5}))$	16.00
Where $\rho > \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/(\rho - \rho') + f_{ck}^{0.5} \cdot (\rho'/\rho_0)^{0.5}/12))$	N/A
Actual L/d	12.12

Pass

Anchorage Design

Screwbolt length	= 300 mm
Screwbolt diameter	= 20 mm
Square washer plate size	= 50 mm
Washer thickness	= 3 mm
Slotted hole width	= 23 mm
Precast Depth;	= 70 mm
Max shim height	= 40 mm
Embedment	= 188 mm



Screwbolt Detail

Number of Screwbolts (No.)= $1000/D_s$;	$\text{round}(1000/1200) = 0.83$
Tension Force/ No. Screwbolts (N_{ED}) = $F_S/No.$;	$8.4/0.83 = 10.1 \text{ kN}$
Shear Force / No. Screwbolt (V_{Ed}) = $F_H/No.$;	$19.1/0.83 = 23.0 \text{ kN}$

Design tension capacity in foundation;	$82.90 \cdot (187.5/170)^{1.5}/3.5 = 27.4 \text{ kN}$	Pass
Design tension capacity in precast;	$7 \cdot 70^{1.5} \cdot 50^{0.5} = 29.0 \text{ kN}$	Pass

Based on screwbolt technical data
Based on concrete cone failure
fib bulletin 43 (7-39b)

Check screwbolt for combined tension and shear failure

Design tension capacity of screwbolt ($N_{Rd,Screwbolt}$);	$N_{Rd,screwbolt} = 218.4 \text{ kN}$	<i>Based on the screwbolt tension capacity</i>
Design shear capacity of screwbolt ($V_{Rd,Screwbolt}$);	$V_{Rd,screwbolt} = 109.2 \text{ kN}$	<i>Based on the screwbolt shear capacity</i>

$(N_{ED}/N_{RD,Screwbolt})^{1.5} + (V_{Ed}/V_{Rd,screwbolt})^{1.5} < 1.0;$ $(10.1/218.4)^{1.5} + (23/109.2)^{1.5} = 0.11$ **Pass**

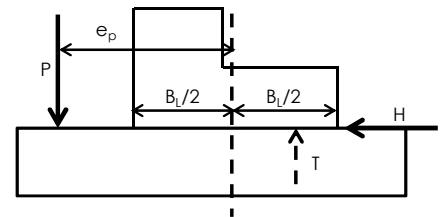
Check local stress on concrete

Design compressive strength (f_{cd}) = $a_{cc} \cdot f_{ck} / \gamma_c$	$1 \cdot 40 / 1.5 = 26.7 \text{ N/mm}^2$
Applied stress under washer N_{ED}/A	$10100 / (50^2 - 50 \cdot 23) = 7.5 \text{ N/mm}^2$ Pass

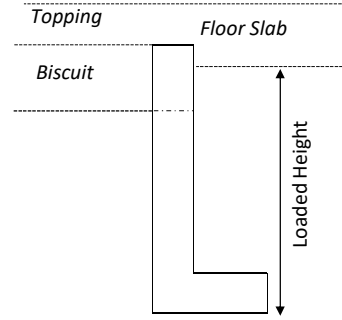
Base Slab Design

In order to maintain stability the foundation should be designed to resist the vertical load (P) taken at an eccentricity (ep) and the horizontal force (H). In addition the foundation should have sufficient moment capacity to resist the tension force (T) in each screwbolt. The screwbolt connection requires the base slab to have a minimum strength of C20/25 and a minimum depth of 225mm. All foundation design values are factored ULS values.

Vertical Load (P)	From standard loading condition=	17.9 kN/m
Eccentricity (e_p) = M_H/P	$12.1/17.9 =$	0.68 m
Horizontal load (H)	From standard loading condition=	19.1 kN/m
Tension Force per Screwbolt (T)	From anchor design=	10.1 kN



Wall Height (H_{max}) = 1100 mm
 Loaded Height (H); = 1100 mm
 Stem Thickness (S_T); = 175 mm
 Boot Length (T_L); = 400 mm
 Boot Thickness (T_T); = 175 mm
 Screwbolt Spacing (S_S); = 1200 mm
 Edge Distance (S_E); = 100 mm
 Notched base (N); = 5%



Surcharge (Sur); = 50 kN/m²
 Active pressure coeff (K_a); = 0.271
 Base Length (B_L); = 575 mm

Temporary Wind Speed = 60 mph = 27 m/s
 Temporary Wind Force = $0.5 \cdot \rho \cdot v^2$ = 0.4 kN/m²

Global design forces subject to temporary wind loading

Wind Load = $W_k \cdot \gamma_Q \cdot H$;	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$0.44 \cdot 1.5 \cdot 1.1 =$	0.7 kN	0.550 m	0.4 kNm
	$F_H:$	0.7 kN	$M_H:$	0.4 kNm
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$(1.1 - 0.175) \cdot 175 \cdot 25 \cdot 0.9 =$	3.6 kN	0.088 m	0.3 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.95 \cdot 0.575 \cdot 0.175 \cdot 25 \cdot 0.9 =$	2.2 kN	0.288 m	0.6 kNm
	$F_V:$	5.8 kN	$M_V:$	0.9 kNm
Temporary Stability Ratio = M_V / M_H ;	0.9/0.4 = 2.25			

Global design forces under standard loading conditions

Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_Q \cdot H$;	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$0.271 \cdot 50 \cdot 1.5 \cdot 1.1 =$	22.4 kN	0.550 m	12.3 kNm
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_G \cdot H^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 1.1^2 =$	4.2 kN	0.367 m	1.5 kNm
	$F_H:$	26.6 kN	$M_H:$	13.8 kNm
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$(1.1 - 0.175) \cdot 175 \cdot 25 \cdot 0.9 =$	3.6 kN	0.088 m	0.3 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.95 \cdot 0.575 \cdot 0.175 \cdot 25 \cdot 0.9 =$	2.2 kN	0.288 m	0.6 kNm
Weight of soil over boot = $N \cdot T_L \cdot (H - T_T) \cdot \gamma_c \cdot \gamma_f$;	$0.95 \cdot 0.4 \cdot (1.1 - 0.175) \cdot 19 \cdot 0.9 =$	6.0 kN	0.375 m	2.3 kNm
	$F_V:$	11.8 kN	$M_V:$	3.2 kNm
Overtuning moment (ΣM) = $\text{Max}(0, M_H - M_V)$;	$\text{Max}(0, 13.8 - 3.2) = 10.6 \text{ kNm/m}$			
Lever arm to screwbolt (LB1) = $B_L - S_E$;	$575 - 100 = 0.475 \text{ m}$			
Tension force in screwbolts (FS1) = $\Sigma M / LB1$;	$10.6 / 0.475 = 22.3 \text{ kN/m}$			

Moment and shear in base

Maximum moment in base (M) = $FS1 \cdot (LB1 - S_T)$; $22.3 \cdot (0.475 - 0.175) = 6.7 \text{ kNm/m}$
 Maximum shear in Base (V) = $FS1 \cdot (LB1 - S_T) / LB1$; $22.3 \cdot (0.475 - 175) / 0.475 = 14.1 \text{ kN/m}$

Moment and shear in wall

Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_G \cdot (H - T_T)$;	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>	
	$0.271 \cdot 50 \cdot 1.5 \cdot 0.925 =$	18.8 kN	0.463 m	
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_Q \cdot (H - T_T)^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 0.925^2 =$	3.0 kN	0.308 m	
	$F_H:$	21.8 kN	$M_H:$	9.6 kNm
Maximum moment in wall stem (M);	9.6 kNm/m			
Maximum shear in wall stem (V);	21.8 kN/m			

Reinforcement Design (per/mrun)

Vertical wall stem reinforcement; A252

Wall back steel;	B8 @ 200 c/c	$A_{s,Prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	239 mm ²	Pass
Wall front steel;	B8 @ 200 c/c	$A_{s,Prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	239 mm ²	Pass
Distribution steel;	B8 @ 200 c/c	$A_{s,Prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	48 mm ²	Pass

Boot link provided; B8 @ 200 c/c

Base top steel;	B8 @ 200 c/c	$A_{s,Prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	239 mm ²	Pass
Base bottom steel;	B8 @ 200 c/c	$A_{s,Prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	239 mm ²	Pass
Boot distribution T&B;	B8 @ 200 c/c	$A_{s,Prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	48 mm ²	Pass

Moment

	Wall	Base
Effective depth to tension rein' (d_{n1});	131 mm	131 mm
K Factor = $M/(b \cdot d_{n1}^2 \cdot f_{ck})$;	0.014	0.010
Limiting k Factor = $0.598\delta - 0.18\delta^2 - 0.21$;	0.208	0.208
Lever arm (z) = $\text{Min}(0.95 \cdot d_{n1}, d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k}))$;	124 mm	124 mm
Area of rein' reqd for bending ($A_{s,req,b}$) = $M/(f_{yd} \cdot z)$;	178 mm ²	124 mm ²
Min area reqd ($A_{s,min}$) = $\text{max}(0.26 \cdot (f_{ctm}/f_{yk}), 0.0013) \cdot b \cdot d_{n1}$;	239 mm ²	239 mm ²

where $k > k'$ Lever arm (z) = $d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k'})$;
 Depth to compression reinforcement (d_{n2});
 Compression Moment (M') = $b \cdot d_{n1}^2 \cdot f_{ck} \cdot (k - k')$;
 Compression reinforcement reqd (A_s') = $M'/(f_{yd} \cdot (d_{n1} - d_{n2}))$;
 Tension reinforcement required (A_s) = $(M - M')/f_{yd} \cdot z + A_s'$;

Tension reinforcement required at section ($A_{s,req}$)	239 mm ²	239 mm ²
Compression reinforcement required at section ($A_{s',req}$)	0 mm ²	0 mm ²

Shear

Shear resistance constant ($C_{Rd,c}$) = $0.18/\gamma_c$;	0.1N/mm ²	0.1N/mm ²
Effective Depth Factor (k) = $\text{min}(2.0, 1 + \sqrt{200/d_{n1}})$;	2.0000	2.0000
Reinforcement Ratio (ρ_1) = $\text{min}(0.02, A_s/b \cdot d_{n1})$;	0.0020	0.0020
Minimum shear resistance ($V_{Rd,c,min}$) = $0.035 \cdot k^{1.5} \cdot f_{ck}^{0.5} \cdot b \cdot d_{n1}$;	82.0 kN	82.0 kN
Shear resistance ($V_{Rd,c,1}$) = $\text{max}(V_{Rd,c,min}, C_{Rd,c} \cdot k \cdot (100 \cdot \rho_1 \cdot (f_{ck}/1))^{0.333} \cdot b \cdot d_{n1})$;	62.8 kN	62.8 kN
Shear resistance required (V)	21.8 kN	14.1 kN

No shear steel required

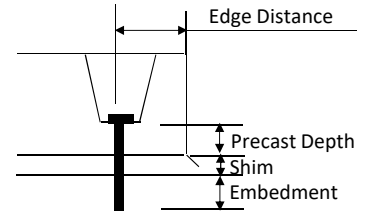
Deflection

Tension Reinforcement ratio (ρ) = $A_{s,req}/bd$;	0.00136
Reference ratio (ρ_0) = $f_{ck}^{0.5}/1000$	0.00632
Compression Reinforcement ratio (ρ') = $A_{s',req}/bd$;	0.00000
Structural system factor (k)	0.40
Where $\rho \leq \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/\rho + 3.2 \cdot f_{ck}^{0.5} \cdot (\rho_0/\rho - 1)^{1.5}))$	16.00
Where $\rho > \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/(\rho - \rho') + f_{ck}^{0.5} \cdot (\rho'/\rho_0)^{0.5}/12))$	N/A
Actual L/d	7.06

Pass

Anchorage Design

Screwbolt length	= 300 mm
Screwbolt diameter	= 20 mm
Square washer plate size	= 50 mm
Washer thickness	= 3 mm
Slotted hole width	= 23 mm
Precast Depth;	= 70 mm
Max shim height	= 40 mm
Embedment	= 188 mm



Screwbolt Detail

Number of Screwbolts (No.)= $1000/D_s$;	$\text{round}(1000/1200) = 0.83$
Tension Force/ No. Screwbolts (N_{ED}) = $FS1/No.$;	$22.3/0.83 = 26.9 \text{ kN}$
Shear Force / No. Screwbolt (V_{Ed}) = $F_H/No.$;	$26.6/0.83 = 32.0 \text{ kN}$

Design tension capacity in foundation;	$82.90 \cdot (187.5/170)^{1.5} / 3.5 = 27.4 \text{ kN}$	Pass
Design tension capacity in precast;	$7 \cdot 70^{1.5} \cdot 50^{0.5} = 29.0 \text{ kN}$	Pass

Based on screwbolt technical data
Based on concrete cone failure
fib bulletin 43 (7-39b)

Check screwbolt for combined tension and shear failure

Design tension capacity of screwbolt ($N_{Rd,Screwbolt}$);	$NR_{d,screwbolt} = 218.4 \text{ kN}$	<i>Based on the screwbolt tension capacity</i>
Design shear capacity of screwbolt ($V_{Rd,Screwbolt}$);	$VR_{d,screwbolt} = 109.2 \text{ kN}$	<i>Based on the screwbolt shear capacity</i>

$(N_{ED}/N_{RD,Screwbolt})^{1.5} + (V_{Ed}/V_{Rd,screwbolt})^{1.5} < 1.0$; $(26.9/218.4)^{1.5} + (32/109.2)^{1.5} = 0.20$ **Pass**

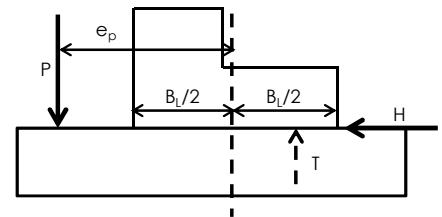
Check local stress on concrete

Design compressive strength (f_{cd}) = $a_{cc} f_{ck} / \gamma_c$	$1 \cdot 40 / 1.5 = 26.7 \text{ N/mm}^2$
Applied stress under washer N_{ED}/A	$26900 / (50^2 - 50 \cdot 23) = 19.9 \text{ N/mm}^2$ Pass

Base Slab Design

In order to maintain stability the foundation should be designed to resist the vertical load (P) taken at an eccentricity (ep) and the horizontal force (H). In addition the foundation should have sufficient moment capacity to resist the tension force (T) in each screwbolt. The screwbolt connection requires the base slab to have a minimum strength of C20/25 and a minimum depth of 225mm. All foundation design values are factored ULS values.

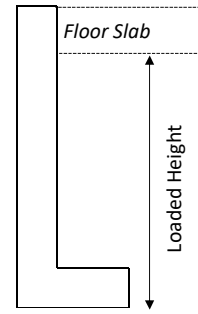
Vertical Load (P)	From standard loading condition=	11.8 kN/m
Eccentricity (e_p) = M_H/P	$13.8/11.8 =$	1.17 m
Horizontal load (H)	From standard loading condition=	26.6 kN/m
Tension Force per Screwbolt (T)	From anchor design=	26.9 kN



Wall Height (H_{max}) = 1300 mm
 Min Floor Slab Depth; = 200 mm
 Loaded Height (H); = 1100 mm
 Stem Thickness (S_T); = 350 mm
 Boot Length (T_B); = 200 mm
 Boot Thickness (T_T); = 175 mm
 Screwbolt Spacing(S_S); = 1000 mm
 Edge Distance (S_E); = 100 mm
 Notched base (N); = 30%

Surcharge (Sur); = 50 kN/m²
 Active pressure coeff (K_a); = 0.271
 Base Length (B_L); = 550 mm

Temporary Wind Speed = 60 mph = 27 m/s
 Temporary Wind Force = $0.5 \cdot \rho \cdot v^2$ = 0.4 kN/m²



Global design forces subject to temporary wind loading

	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Wind Load = $W_k \cdot \gamma_Q \cdot H$;	$0.44 \cdot 1.5 \cdot 1.3 =$	0.9 kN	0.650 m	0.6 kNm
	$F_H:$	0.9 kN	$M_H:$	0.6 kNm
	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	$(1.3 - 0.175) \cdot 350 \cdot 25 \cdot 0.9 =$	8.9 kN	0.175 m	1.6 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.7 \cdot 0.55 \cdot 0.175 \cdot 25 \cdot 0.9 =$	1.5 kN	0.275 m	0.4 kNm
	$F_V:$	10.4 kN	$M_V:$	2.0 kNm
Temporary Stability Ratio = M_V / M_H ;	$2 / 0.6 = 3.33$			

Global design forces under standard loading conditions

	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Horizontal force from surcharge = $k_a \cdot \text{Sur} \cdot \gamma_Q \cdot H$;	$0.271 \cdot 50 \cdot 1.5 \cdot 1.1 =$	22.4 kN	0.550 m	12.3 kNm
Active Pressure = $0.5 \cdot k_a \cdot \gamma_s \cdot \gamma_G \cdot H^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 1.1^2 =$	4.2 kN	0.367 m	1.5 kNm
	$F_H:$	26.6 kN	$M_H:$	13.8 kNm
	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	$(1.1 - 0.175) \cdot 350 \cdot 25 \cdot 0.9 =$	7.3 kN	0.175 m	1.3 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.7 \cdot 0.55 \cdot 0.175 \cdot 25 \cdot 0.9 =$	1.5 kN	0.275 m	0.4 kNm
Weight of soil over boot = $N \cdot T_L \cdot (H - T_T) \cdot \gamma_c \cdot \gamma_f$;	$0.7 \cdot 0.2 \cdot (1.1 - 0.175) \cdot 19 \cdot 0.9 =$	2.2 kN	0.450 m	1.0 kNm
	$F_V:$	11.0 kN	$M_V:$	2.7 kNm
Overtuning moment (ΣM) = $\text{Max}(0, M_H - M_V)$;	$\text{Max}(0, 13.8 - 2.7) = 11.1 \text{ kNm/m}$			
Lever arm to screwbolt (LB1) = $B_L - S_E$;	$550 - 100 = 0.450 \text{ m}$			
Tension force in screwbolts (FS1) = $\Sigma M / \text{LB1}$;	$11.1 / 0.45 = 24.7 \text{ kN/m}$			

Moment and shear in base

Maximum moment in base (M) = $\text{FS1} \cdot (\text{LB1} - S_T)$; $24.7 \cdot (0.45 - 0.35) = 2.5 \text{ kNm/m}$
 Maximum shear in Base (V) = $\text{FS1} \cdot (\text{LB1} - S_T) / \text{LB1}$; $24.7 \cdot (0.45 - 350) / 0.45 = 5.5 \text{ kN/m}$

Moment and shear in wall

	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Horizontal force from surcharge = $k_a \cdot \text{Sur} \cdot \gamma_G \cdot (H - T_T)$;	$0.271 \cdot 50 \cdot 1.5 \cdot 0.925 =$	18.8 kN	0.463 m
Active Pressure = $0.5 \cdot k_a \cdot \gamma_s \cdot \gamma_Q \cdot (H - T_T)^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 0.925^2 =$	3.0 kN	0.308 m
	$F_H:$	21.8 kN	$M_H:$
Maximum moment in wall stem (M);	9.6 kNm/m		
Maximum shear in wall stem (V);	21.8 kN/m		

Reinforcement Design (per/mrun)

Vertical wall stem reinforcement; 10@100 x 10@200

Wall back steel;	B10 @ 100 c/c	$A_{s,prov} = 785\text{mm}^2$	=> Design =>	$A_{s,req} =$	556 mm ²	Pass
Wall front steel;	B10 @ 100 c/c	$A_{s,prov} = 785\text{mm}^2$	=> Design =>	$A_{s,req} =$	556 mm ²	Pass
Distribution steel;	B10 @ 200 c/c	$A_{s,prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} =$	111 mm ²	Pass

Boot link provided; B10 @ 100 c/c

Base top steel;	B10 @ 100 c/c	$A_{s,prov} = 785\text{mm}^2$	=> Design =>	$A_{s,req} =$	237 mm ²	Pass
Base bottom steel;	B10 @ 100 c/c	$A_{s,prov} = 785\text{mm}^2$	=> Design =>	$A_{s,req} =$	237 mm ²	Pass
Boot distribution T&B;	B10 @ 200 c/c	$A_{s,prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} =$	47 mm ²	Pass

Moment

	Wall	Base
Effective depth to tension rein' (d_{n1});	305 mm	130 mm
K Factor = $M/(b \cdot d_{n1}^2 \cdot f_{ck})$;	0.003	0.004
Limiting k Factor = $0.598\delta - 0.18\delta^2 - 0.21$;	0.208	0.208
Lever arm (z) = $\text{Min}(0.95 \cdot d_{n1}, d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k}))$;	290 mm	124 mm
Area of rein' reqd for bending ($A_{s,req,b}$) = $M/(f_{yd} \cdot z)$;	76 mm ²	46 mm ²
Min area reqd ($A_{s,min}$) = $\text{max}(0.26 \cdot (f_{ctm}/f_{yk}), 0.0013) \cdot b \cdot d_{n1}$;	556 mm ²	237 mm ²

where $k > k'$ Lever arm (z) = $d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k'})$;
 Depth to compression reinforcement (d_{n2});
 Compression Moment (M') = $b \cdot d_{n1}^2 \cdot f_{ck} \cdot (k - k')$;
 Compression reinforcement reqd (A_s') = $M'/(f_{yd} \cdot (d_{n1} - d_{n2}))$;
 Tension reinforcement required (A_s) = $(M - M')/f_{yd} \cdot z + A_s'$;

Tension reinforcement required at section ($A_{s,req}$)	556 mm ²	237 mm ²
Compression reinforcement required at section ($A_{s',req}$)	0 mm ²	0 mm ²

Shear

Shear resistance constant ($C_{Rd,c}$) = $0.18/\gamma_c$;	0.1N/mm ²	0.1N/mm ²
Effective Depth Factor (k) = $\text{min}(2.0, 1 + \sqrt{200/d_{n1}})$;	1.8100	2.0000
Reinforcement Ratio (ρ_1) = $\text{min}(0.02, A_s/b \cdot d_{n1})$;	0.0030	0.0060
Minimum shear resistance ($V_{Rd,c,min}$) = $0.035 \cdot k^{1.5} \cdot f_{ck}^{0.5} \cdot b \cdot d_{n1}$;	164.4 kN	81.4 kN
Shear resistance ($V_{Rd,c,1}$) = $\text{max}(V_{Rd,c,min}, C_{Rd,c} \cdot k \cdot (100 \cdot \rho_1 \cdot (f_{ck}/1))^{0.333} \cdot b \cdot d_{n1})$;	151.5 kN	89.9 kN
Shear resistance required (V)	21.8 kN	5.5 kN

No shear steel required

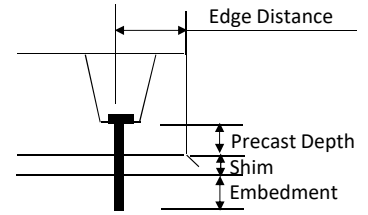
Deflection

Tension Reinforcement ratio (ρ) = $A_{s,req}/bd$;	0.00025
Reference ratio (ρ_0) = $f_{ck}^{0.5}/1000$	0.00632
Compression Reinforcement ratio (ρ') = $A_{s',req}/bd$;	0.00000
Structural system factor (k)	0.40
Where $\rho \leq \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/\rho + 3.2 \cdot f_{ck}^{0.5} \cdot (\rho_0/\rho - 1)^{1.5}))$	16.00
Where $\rho > \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/(\rho - \rho') + f_{ck}^{0.5} \cdot (\rho'/\rho_0)^{0.5}/12))$	N/A
Actual L/d	3.69

Pass

Anchorage Design

Screwbolt length	= 300 mm
Screwbolt diameter	= 20 mm
Square washer plate size	= 50 mm
Washer thickness	= 3 mm
Slotted hole width	= 23 mm
Precast Depth;	= 70 mm
Max shim height	= 40 mm
Embedment	= 188 mm



Screwbolt Detail

Number of Screwbolts (No.)= 1000/D _s ;	round(1000/1000)= 1
Tension Force/ No. Screwbolts (N _{ED}) = FS1/No.;	24.7/1= 24.7 kN
Shear Force / No. Screwbolt (V _{Ed}) = F _H /No.;	26.6/1= 26.6 kN

Design tension capacity in foundation;	82.90•(187.5/170) ^{1.5} /3.5= 27.4 kN	Pass
Design tension capacity in precast;	7•70 ^{1.5} •50 ^{0.5} = 29.0 kN	Pass

Based on screwbolt technical data
Based on concrete cone failure
fib bulletin 43 (7-39b)

Check screwbolt for combined tension and shear failure

Design tension capacity of screwbolt (N _{Rd,Screwbolt});	NRd,screwbolt= 218.4 kN	Based on the screwbolt tension capacity
Design shear capacity of screwbolt (V _{Rd,Screwbolt});	VRd,screwbolt= 109.2 kN	Based on the screwbolt shear capacity

$(N_{ED}/N_{RD,Screwbolt})^{1.5} + (V_{Ed}/V_{Rd,screwbolt})^{1.5} < 1.0;$ $(24.7/218.4)^{1.5} + (26.6/109.2)^{1.5} = 0.16$ **Pass**

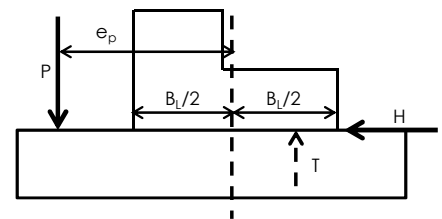
Check local stress on concrete

Design compressive strength (fcd)=a _{cc} f _{ck} /γ _c	1•40/1.5= 26.7 N/mm ²
Applied stress under washer N _{ED} /A	24700/(50 ² -50•23)= 18.3 N/mm ² Pass

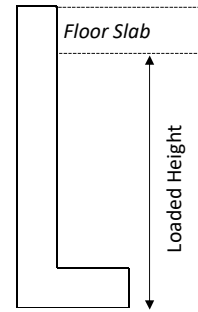
Base Slab Design

In order to maintain stability the foundation should be designed to resist the vertical load (P) taken at an eccentricity (ep) and the horizontal force (H). In addition the foundation should have sufficient moment capacity to resist the tension force (T) in each screwbolt. The screwbolt connection requires the base slab to have a minimum strength of C20/25 and a minimum depth of 225mm. All foundation design values are factored ULS values.

Vertical Load (P)	From standard loading condition=	11.0 kN/m
Eccentricity (e _p)=M _H /P	13.8/11=	1.25 m
Horizontal load (H)	From standard loading condition=	26.6 kN/m
Tension Force per Screwbolt (T)	From anchor design=	24.7 kN



Wall Height (H_{max});	= 1650 mm
Min Floor Slab Depth;	= 200 mm
Loaded Height (H);	= 1450 mm
Stem Thickness (S_T);	= 200 mm
Boot Length (T_B);	= 575 mm
Boot Thickness (T_T);	= 200 mm
Screwbolt Spacing(S_S);	= 800 mm
Edge Distance (S_E);	= 100 mm
Notched base (N);	= 25%
Surcharge (Sur);	= 50 kN/m ²
Active pressure coeff (K_a);	= 0.271
Base Length (B_L);	= 775 mm



Temporary Wind Speed	60 mph	= 27 m/s
Temporary Wind Force	= $0.5 \cdot \rho \cdot v^2$	= 0.4 kN/m ²

Global design forces subject to temporary wind loading

Wind Load = $W_k \cdot \gamma_Q \cdot H$;	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$0.44 \cdot 1.5 \cdot 1.65 =$	1.1 kN	0.825 m	0.9 kNm
	$F_H:$	1.1 kN	$M_H:$	0.9 kNm
Weight of wall stem = $(H-T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$(1.65-0.2) \cdot 200 \cdot 25 \cdot 0.9 =$	6.5 kN	0.100 m	0.7 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.75 \cdot 0.775 \cdot 0.2 \cdot 25 \cdot 0.9 =$	2.6 kN	0.388 m	1.0 kNm
	$F_V:$	9.1 kN	$M_V:$	1.7 kNm
Temporary Stability Ratio = M_V/M_H ;				1.7/0.9= 1.89

Global design forces under standard loading conditions

Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_Q \cdot H$;	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$0.271 \cdot 50 \cdot 1.5 \cdot 1.45 =$	29.5 kN	0.725 m	21.4 kNm
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_G \cdot H^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 1.45^2 =$	7.3 kN	0.483 m	3.5 kNm
	$F_H:$	36.8 kN	$M_H:$	24.9 kNm
Weight of wall stem = $(H-T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
	$(1.45-0.2) \cdot 200 \cdot 25 \cdot 0.9 =$	5.6 kN	0.100 m	0.6 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.75 \cdot 0.775 \cdot 0.2 \cdot 25 \cdot 0.9 =$	2.6 kN	0.388 m	1.0 kNm
Weight of soil over boot = $N \cdot T_L \cdot (H-T_T) \cdot \gamma_c \cdot \gamma_f$;	$0.75 \cdot 0.575 \cdot (1.45-0.2) \cdot 19 \cdot 0.9 =$	9.2 kN	0.488 m	4.5 kNm
	$F_V:$	17.5 kN	$M_V:$	6.1 kNm
Overtuning moment (ΣM) = $\text{Max}(0, M_H - M_V)$;				$\text{Max}(0, 24.9 - 6.1) = 18.8 \text{ kNm/m}$
Lever arm to screwbolt (LB1) = $B_L - S_E$;				$775 - 100 = 0.675 \text{ m}$
Tension force in screwbolts (FS1) = $\Sigma M / LB1$;				$18.8 / 0.675 = 27.9 \text{ kN/m}$

Moment and shear in base

Maximum moment in base (M) = $FS1 \cdot (LB1 - S_T)$;	$27.9 \cdot (0.675 - 0.2) = 13.3 \text{ kNm/m}$
Maximum shear in Base (V) = $FS1 \cdot (LB1 - S_T) / LB1$;	$27.9 \cdot (0.675 - 200) / 0.675 = 19.6 \text{ kN/m}$

Moment and shear in wall

Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_G \cdot (H - T_T)$;	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>	
	$0.271 \cdot 50 \cdot 1.5 \cdot 1.25 =$	25.4 kN	0.625 m	15.9 kNm
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_Q \cdot (H - T_T)^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 1.25^2 =$	5.4 kN	0.417 m	2.3 kNm
	$F_H:$	30.8 kN	$M_H:$	18.1 kNm
Maximum moment in wall stem (M);				18.1 kNm/m
Maximum shear in wall stem (V);				30.8 kN/m

Reinforcement Design (per/mrun)

Vertical wall stem reinforcement; 10@200 x 8@200

Wall back steel;	B10 @ 200 c/c	$A_{s,prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} =$	283 mm ²	Pass
Wall front steel;	B10 @ 200 c/c	$A_{s,prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} =$	283 mm ²	Pass
Distribution steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	57 mm ²	Pass

Boot link provided; B10 @ 200 c/c

Base top steel;	B10 @ 200 c/c	$A_{s,prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} =$	283 mm ²	Pass
Base bottom steel;	B10 @ 200 c/c	$A_{s,prov} = 393\text{mm}^2$	=> Design =>	$A_{s,req} =$	283 mm ²	Pass
Boot distribution T&B;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} =$	57 mm ²	Pass

Moment

	Wall	Base
Effective depth to tension rein' (d_{n1});	155 mm	155 mm
K Factor = $M/(b \cdot d_{n1}^2 \cdot f_{ck})$;	0.019	0.014
Limiting k Factor = $0.5986 - 0.186^2 \cdot 0.21$;	0.208	0.208
Lever arm (z) = $\text{Min}(0.95 \cdot d_{n1}, d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k}))$;	147 mm	147 mm
Area of rein' reqd for bending ($A_{s,req,b}$) = $M/(f_{yd} \cdot z)$;	283 mm ²	207 mm ²
Min area reqd ($A_{s,min}$) = $\text{max}(0.26 \cdot (f_{ctm}/f_{yk}), 0.0013) \cdot b \cdot d_{n1}$;	283 mm ²	283 mm ²

where $k > k'$ Lever arm (z) = $d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k'})$;
 Depth to compression reinforcement (d_{n2});
 Compression Moment (M') = $b \cdot d_{n1}^2 \cdot f_{ck} \cdot (k - k')$;
 Compression reinforcement reqd (A_s') = $M'/(f_{yd} \cdot (d_{n1} - d_{n2}))$;
 Tension reinforcement required (A_s) = $(M - M')/f_{yd} \cdot z + A_s'$;

Tension reinforcement required at section ($A_{s,req}$)	283 mm ²	283 mm ²
Compression reinforcement required at section ($A_{s',req}$)	0 mm ²	0 mm ²

Shear

Shear resistance constant ($C_{Rd,c}$) = $0.18/\gamma_c$;	0.1N/mm ²	0.1N/mm ²
Effective Depth Factor (k) = $\text{min}(2.0, 1 + \sqrt{200/d_{n1}})$;	2.0000	2.0000
Reinforcement Ratio (ρ_1) = $\text{min}(0.02, A_s/b \cdot d_{n1})$;	0.0030	0.0030
Minimum shear resistance ($V_{Rd,c,min}$) = $0.035 \cdot k^{1.5} \cdot f_{ck}^{0.5} \cdot b \cdot d_{n1}$;	97.0 kN	97.0 kN
Shear resistance ($V_{Rd,c,1}$) = $\text{max}(V_{Rd,c,min}, C_{Rd,c} \cdot k \cdot (100 \cdot \rho_1 \cdot (f_{ck}/1))^{0.333} \cdot b \cdot d_{n1})$;	85.1 kN	85.1 kN
Shear resistance required (V)	30.8 kN	19.6 kN

No shear steel required

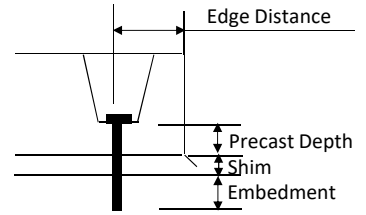
Deflection

Tension Reinforcement ratio (ρ) = $A_{s,req}/bd$;	0.00183
Reference ratio (ρ_0) = $f_{ck}^{0.5}/1000$	0.00632
Compression Reinforcement ratio (ρ') = $A_{s',req}/bd$;	0.00000
Structural system factor (k)	0.40
Where $\rho \leq \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/\rho + 3.2 \cdot f_{ck}^{0.5} \cdot (\rho_0/\rho - 1)^{1.5}))$	16.00
Where $\rho > \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/(\rho - \rho') + f_{ck}^{0.5} \cdot (\rho'/\rho_0)^{0.5}/12))$	N/A
Actual L/d	9.35

Pass

Anchorage Design

Screwbolt length	= 300 mm
Screwbolt diameter	= 20 mm
Square washer plate size	= 50 mm
Washer thickness	= 3 mm
Slotted hole width	= 23 mm
Precast Depth;	= 70 mm
Max shim height	= 40 mm
Embedment	= 188 mm



Screwbolt Detail

Number of Screwbolts (No.)= $1000/D_s$;	$\text{round}(1000/800)= 1.25$
Tension Force/ No. Screwbolts (N_{ED}) = $F_S/No.$;	$27.9/1.25= 22.3 \text{ kN}$
Shear Force / No. Screwbolt (V_{Ed}) = $F_H/No.$;	$36.8/1.25= 29.4 \text{ kN}$

Design tension capacity in foundation;	$82.90 \cdot (187.5/170)^{1.5}/3.5= 27.4 \text{ kN}$	Pass
Design tension capacity in precast;	$7 \cdot 70^{1.5} \cdot 50^{0.5}= 29.0 \text{ kN}$	Pass

Based on screwbolt technical data
Based on concrete cone failure
fib bulletin 43 (7-39b)

Check screwbolt for combined tension and shear failure

Design tension capacity of screwbolt ($N_{Rd,Screwbolt}$);	$N_{Rd,screwbolt}= 218.4 \text{ kN}$	Based on the screwbolt tension capacity
Design shear capacity of screwbolt ($V_{Rd,Screwbolt}$);	$V_{Rd,screwbolt}= 109.2 \text{ kN}$	Based on the screwbolt shear capacity

$(N_{ED}/N_{RD,Screwbolt})^{1.5} + (V_{Ed}/V_{Rd,screwbolt})^{1.5} < 1.0$; $(22.3/218.4)^{1.5} + (29.4/109.2)^{1.5} = 0.17$ **Pass**

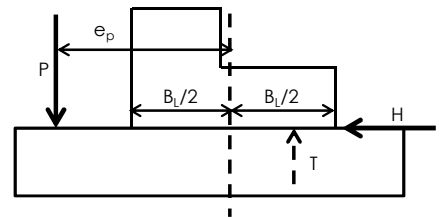
Check local stress on concrete

Design compressive strength (f_{cd})= $a_{cc} \cdot f_{ck} / \gamma_c$	$1 \cdot 40 / 1.5= 26.7 \text{ N/mm}^2$
Applied stress under washer N_{ED}/A	$22300 / (50^2 - 50 \cdot 23) = 16.5 \text{ N/mm}^2$ Pass

Base Slab Design

In order to maintain stability the foundation should be designed to resist the vertical load (P) taken at an eccentricity (ep) and the horizontal force (H). In addition the foundation should have sufficient moment capacity to resist the tension force (T) in each screwbolt. The screwbolt connection requires the base slab to have a minimum strength of C20/25 and a minimum depth of 225mm. All foundation design values are factored ULS values.

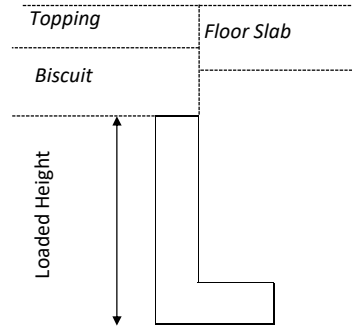
Vertical Load (P)	From standard loading condition=	17.5 kN/m
Eccentricity (e_p)= M_H/P	24.9/17.5=	1.42 m
Horizontal load (H)	From standard loading condition=	36.8 kN/m
Tension Force per Screwbolt (T)	From anchor design=	22.3 kN



Wall Height (H_{max}) = 1050 mm
 Loaded Height (H); = 1050 mm
 Stem Thickness (S_T); = 175 mm
 Boot Length (T_L); = 400 mm
 Boot Thickness (T_T); = 175 mm
 Screwbolt Spacing (S_S); = 1200 mm
 Edge Distance (S_E); = 100 mm
 Notched base (N); = 45%

Surcharge (Sur); = 50 kN/m²
 Active pressure coeff (K_a); = 0.271
 Base Length (B_L); = 575 mm

Temporary Wind Speed = 60 mph = 27 m/s
 Temporary Wind Force = $0.5 \cdot \rho \cdot v^2$ = 0.4 kN/m²



Global design forces subject to temporary wind loading

	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Wind Load = $W_k \cdot \gamma_Q \cdot H$;	$0.44 \cdot 1.5 \cdot 1.05 =$	0.7 kN	0.525 m	0.4 kNm
	$F_H:$	0.7 kN	$M_H:$	0.4 kNm
	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	$(1.05 - 0.175) \cdot 175 \cdot 25 \cdot 0.9 =$	3.4 kN	0.088 m	0.3 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.55 \cdot 0.575 \cdot 0.175 \cdot 25 \cdot 0.9 =$	1.2 kN	0.288 m	0.4 kNm
	$F_V:$	4.7 kN	$M_V:$	0.7 kNm
Temporary Stability Ratio = M_V / M_H ;	0.7/0.4 = 1.75			

Global design forces under standard loading conditions

	<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_Q \cdot H$;	$0.271 \cdot 50 \cdot 1.5 \cdot 1.05 =$	21.3 kN	0.525 m	11.2 kNm
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_G \cdot H^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 1.05^2 =$	3.8 kN	0.350 m	1.3 kNm
	$F_H:$	25.2 kN	$M_H:$	12.5 kNm
	<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Weight of wall stem = $(H - T_T) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;	$(1.05 - 0.175) \cdot 175 \cdot 25 \cdot 0.9 =$	3.4 kN	0.088 m	0.3 kNm
Weight of base = $N \cdot B_L \cdot T_T \cdot \gamma_c \cdot \gamma_f$;	$0.55 \cdot 0.575 \cdot 0.175 \cdot 25 \cdot 0.9 =$	1.2 kN	0.288 m	0.4 kNm
Weight of soil over boot = $N \cdot T_L \cdot (H - T_T) \cdot \gamma_c \cdot \gamma_f$;	$0.55 \cdot 0.4 \cdot (1.05 - 0.175) \cdot 19 \cdot 0.9 =$	3.3 kN	0.375 m	1.2 kNm
	$F_V:$	8.0 kN	$M_V:$	1.9 kNm
Overtuning moment (ΣM) = $\text{Max}(0, M_H - M_V)$;	$\text{Max}(0, 12.5 - 1.9) = 10.6 \text{ kNm/m}$			
Lever arm to screwbolt ($LB1$) = $B_L - S_E$;	575 - 100 = 0.475 m			
Tension force in screwbolts ($FS1$) = $\Sigma M / LB1$;	10.6 / 0.475 = 22.3 kN/m			

Moment and shear in base

Maximum moment in base (M) = $FS1 \cdot (LB1 - S_T)$; $22.3 \cdot (0.475 - 0.175) = 6.7 \text{ kNm/m}$
 Maximum shear in Base (V) = $FS1 \cdot (LB1 - S_T) / LB1$; $22.3 \cdot (0.475 - 175) / 0.475 = 14.1 \text{ kN/m}$

Moment and shear in wall

	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
Horizontal force from surcharge = $ka \cdot Sur \cdot \gamma_G \cdot (H - T_T)$;	$0.271 \cdot 50 \cdot 1.5 \cdot 0.875 =$	17.8 kN	0.438 m
Active Pressure = $0.5 \cdot ka \cdot \gamma_s \cdot \gamma_Q \cdot (H - T_T)^2$;	$0.5 \cdot 0.271 \cdot 19 \cdot 1.35 \cdot 0.875^2 =$	2.7 kN	0.292 m
	$F_H:$	20.4 kN	$M_H:$
Maximum moment in wall stem (M);	8.6 kNm/m		
Maximum shear in wall stem (V);	20.4 kN/m		

Reinforcement Design (per/mrun)

Vertical wall stem reinforcement; A252

Wall back steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} = 239\text{mm}^2$	Pass
Wall front steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} = 239\text{mm}^2$	Pass
Distribution steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} = 48\text{mm}^2$	Pass

Boot link provided; B8 @ 200 c/c

Base top steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} = 239\text{mm}^2$	Pass
Base bottom steel;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} = 239\text{mm}^2$	Pass
Boot distribution T&B;	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2$	=> Design =>	$A_{s,req} = 48\text{mm}^2$	Pass

Moment

	Wall	Base
Effective depth to tension rein' (d_{n1});	131 mm	131 mm
K Factor = $M/(b \cdot d_{n1}^2 \cdot f_{ck})$;	0.013	0.010
Limiting k Factor = $0.5986 - 0.186^2 \cdot 0.21$;	0.208	0.208
Lever arm (z) = $\text{Min}(0.95 \cdot d_{n1}, d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k}))$;	124 mm	124 mm
Area of rein' reqd for bending ($A_{s,req,b}$) = $M/(f_{yd} \cdot z)$;	159 mm ²	124 mm ²
Min area reqd ($A_{s,min}$) = $\text{max}(0.26 \cdot (f_{ctm}/f_{yk}), 0.0013) \cdot b \cdot d_{n1}$;	239 mm ²	239 mm ²

where $k > k'$ Lever arm (z) = $d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k'})$;
 Depth to compression reinforcement (d_{n2});
 Compression Moment (M') = $b \cdot d_{n1}^2 \cdot f_{ck} \cdot (k - k')$;
 Compression reinforcement reqd (A_s') = $M'/(f_{yd} \cdot (d_{n1} - d_{n2}))$;
 Tension reinforcement required (A_s) = $(M - M')/f_{yd} \cdot z + A_s'$;

Tension reinforcement required at section ($A_{s,req}$)	239 mm ²	239 mm ²
Compression reinforcement required at section ($A_{s',req}$)	0 mm ²	0 mm ²

Shear

Shear resistance constant ($C_{Rd,c}$) = $0.18/\gamma_c$;	0.1N/mm ²	0.1N/mm ²
Effective Depth Factor (k) = $\text{min}(2.0, 1 + \sqrt{200/d_{n1}})$;	2.0000	2.0000
Reinforcement Ratio (ρ_1) = $\text{min}(0.02, A_s/b \cdot d_{n1})$;	0.0020	0.0020
Minimum shear resistance ($V_{Rd,c,min}$) = $0.035 \cdot k^{1.5} \cdot f_{ck}^{0.5} \cdot b \cdot d_{n1}$;	82.0 kN	82.0 kN
Shear resistance ($V_{Rd,c,1}$) = $\text{max}(V_{Rd,c,min}, C_{Rd,c} \cdot k \cdot (100 \cdot \rho_1 \cdot (f_{ck}/1))^{0.333} \cdot b \cdot d_{n1})$;	62.8 kN	62.8 kN
Shear resistance required (V)	20.4 kN	14.1 kN

No shear steel required

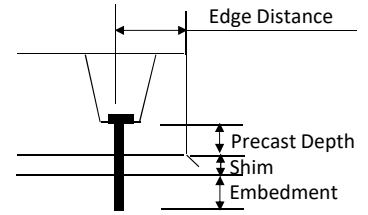
Deflection

Tension Reinforcement ratio (ρ) = $A_{s,req}/bd$;	0.00121
Reference ratio (ρ_0) = $f_{ck}^{0.5}/1000$	0.00632
Compression Reinforcement ratio (ρ') = $A_{s',req}/bd$;	0.00000
Structural system factor (k)	0.40
Where $\rho \leq \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/\rho + 3.2 \cdot f_{ck}^{0.5} \cdot (\rho_0/\rho - 1)^{1.5}))$	16.00
Where $\rho > \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/(\rho - \rho') + f_{ck}^{0.5} \cdot (\rho'/\rho_0)^{0.5}/12))$	N/A
Actual L/d	6.68

Pass

Anchorage Design

Screwbolt length	= 300 mm
Screwbolt diameter	= 20 mm
Square washer plate size	= 50 mm
Washer thickness	= 3 mm
Slotted hole width	= 23 mm
Precast Depth;	= 70 mm
Max shim height	= 40 mm
Embedment	= 188 mm



Screwbolt Detail

Number of Screwbolts (No.)= $1000/D_s$;	$\text{round}(1000/1200) = 0.83$
Tension Force/ No. Screwbolts (N_{ED}) = $FS1/No.$;	$22.3/0.83 = 26.9 \text{ kN}$
Shear Force / No. Screwbolt (V_{Ed}) = $F_H/No.$;	$25.2/0.83 = 30.4 \text{ kN}$

Design tension capacity in foundation;	$82.90 \cdot (187.5/170)^{1.5} / 3.5 = 27.4 \text{ kN}$	Pass
Design tension capacity in precast;	$7 \cdot 70^{1.5} \cdot 50^{0.5} = 29.0 \text{ kN}$	Pass

Based on screwbolt technical data
Based on concrete cone failure
fib bulletin 43 (7-39b)

Check screwbolt for combined tension and shear failure

Design tension capacity of screwbolt ($N_{Rd,Screwbolt}$);	$NR_{d,screwbolt} = 218.4 \text{ kN}$	<i>Based on the screwbolt tension capacity</i>
Design shear capacity of screwbolt ($V_{Rd,Screwbolt}$);	$VR_{d,screwbolt} = 109.2 \text{ kN}$	<i>Based on the screwbolt shear capacity</i>

$(N_{ED}/N_{RD,Screwbolt})^{1.5} + (V_{Ed}/V_{Rd,screwbolt})^{1.5} < 1.0$; $(26.9/218.4)^{1.5} + (30.4/109.2)^{1.5} = 0.19$ **Pass**

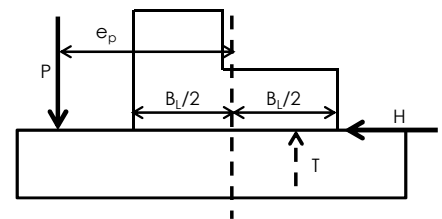
Check local stress on concrete

Design compressive strength (f_{cd}) = $a_{cc} f_{ck} / \gamma_c$	$1 \cdot 40 / 1.5 = 26.7 \text{ N/mm}^2$
Applied stress under washer N_{ED}/A	$26900 / (50^2 - 50 \cdot 23) = 19.9 \text{ N/mm}^2$ Pass

Base Slab Design

In order to maintain stability the foundation should be designed to resist the vertical load (P) taken at an eccentricity (ep) and the horizontal force (H). In addition the foundation should have sufficient moment capacity to resist the tension force (T) in each screwbolt. The screwbolt connection requires the base slab to have a minimum strength of C20/25 and a minimum depth of 225mm. All foundation design values are factored ULS values.


Vertical Load (P)	From standard loading condition=	8.0 kN/m
Eccentricity (e_p) = M_H/P	$12.5/8 =$	1.56 m
Horizontal load (H)	From standard loading condition=	25.2 kN/m
Tension Force per Screwbolt (T)	From anchor design=	26.9 kN





FPM-CA-Prowall
Rev C03
Status Suitable for Construction

STRUCTURAL DESIGN CALCULATIONS
for
INSULATED SANDWICH PANELS - PROWALLS

	Standard Product Design			Job Ref.
	Prowalls Designs			REV: C03
	BY: S.J.H.	22/09/2020	Chk'd by L.K.	04/03/2022

Design

Prowall panels are precast concrete insulated sandwich panels. The panels are designed to resist wind loading imparted directly on to the panel's surface or via a roller shutter door. The panels are comprised of a 140mm structural skin of R.C concrete, a 75mm layer of insulation and a 70mm outer skin of R.C. concrete. The outer skin is connected to the structural skin using sandwich panel connectors spaced evenly throughout the panel. The Prowalls are designed to span between columns to which they are clamped. Generally the units will be clamped at the top using a fixing plate and fixed at the bottom using M16 shear dowels (58kN shear capacity per dowel) into a grouted pocket into the supporting structure. Prowalls are desinged for 1kN/m2 wind loading .

General rules / requirements

- Header above openings should be a minimum of 800mm
- Legs to the side of openings should be a minimum of 400mm
- Large fixing plate required towards the top LHS & RHS
- Small fixing plate or shear dowel at the bottom LHS & RHS and where indicated on following diagrams

Reinforcement Design - External Skin

Reinforcement design based on minimising cracking due to thermal expansion/contraction

All Prowall have 8@100EW to the external skin with an additional B8 mesh bar to periphery of openings.

Reinforcement to be positioned centrally which provides 25mm (nominal) 20 minimum (XC3/4, XD1)

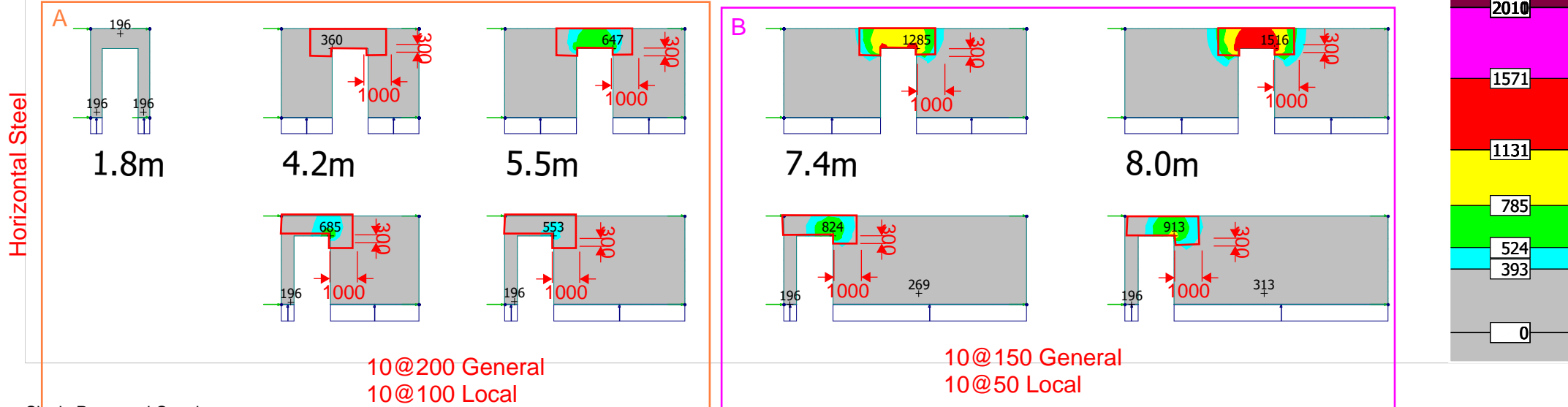
Reinforcement Design – Structural Skin

The reinforcement used in the Prowall panel is dependent upon the positions of openings and span of the panel. As panels may be subjected to positive and negative pressure all reinforcement specified is applied to each face of the structural skin. See following diagrams of Prowall reinforcement requirements (local areas denoted by red boxed areas).

Cover to reinforcement = 25mm (nominal) 20 minimum (XC3/4, XD1). Horizontal Steel to be placed to the outer faces (except stonehenge legs).

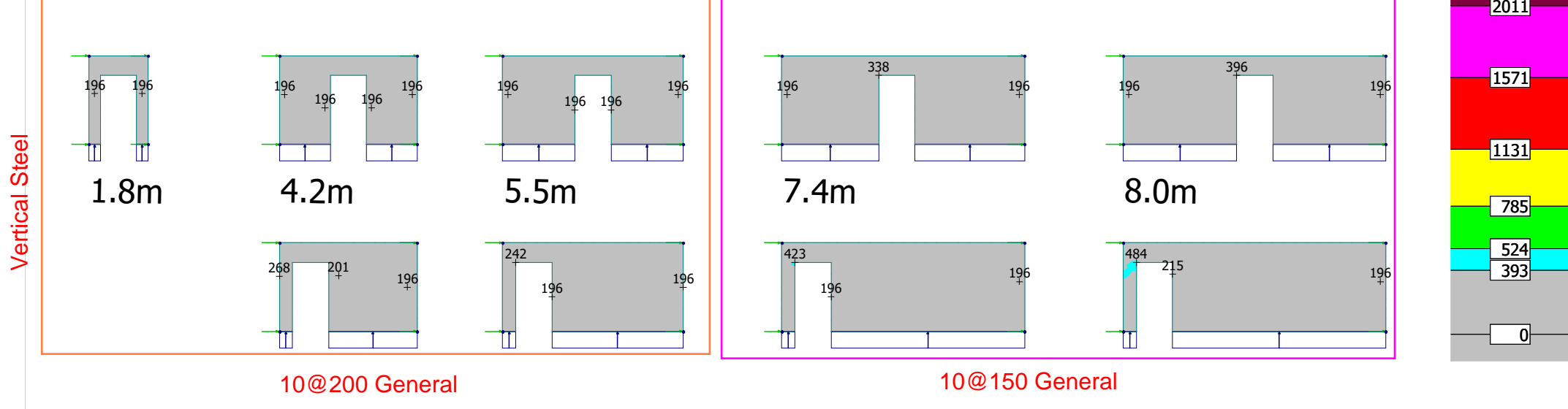
Single Personnel Opening

Eurocode code: 1st order theory - RC shell - Required reinforcement - x' or r, bottom - Load combinations - ULS - Colour palette - [mm²/m]



Single Personnel Opening

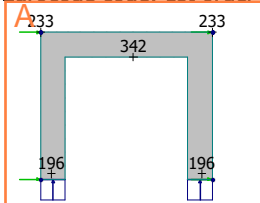
Eurocode code: 1st order theory - RC shell - Required reinforcement - y' or t, bottom - Load combinations - ULS - Colour palette - [mm²/m]



Single Dock Door Opening

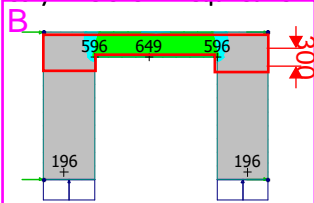
Eurocode code: 1st order theory - RC shell - Required reinforcement - x' or r, bottom - Load combinations - ULS - Colour palette - [mm²/m]

Horizontal Steel



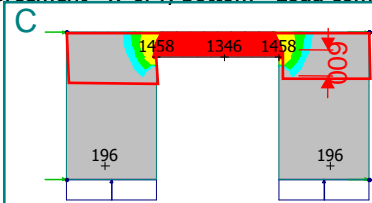
4.2m

10@200 General



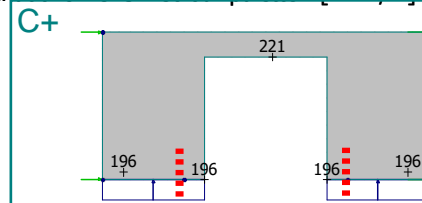
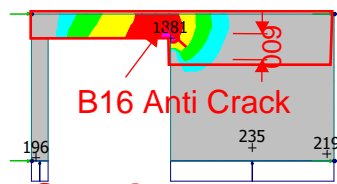
5.5m

10@200 General
12@100 Local



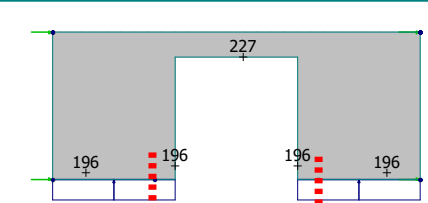
7.4m

10@150 General
10@50 Local



8.0m

As per C, however, shear dowels required as shown

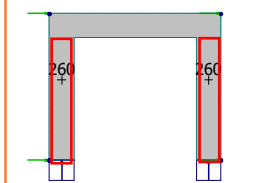


9.0m

Single Dock Door Opening

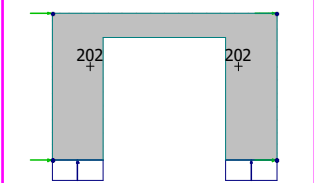
Eurocode code: 1st order theory - RC shell - Required reinforcement - y' or t, bottom - Load combinations - ULS - Colour palette - [mm²/m]

Vertical Steel



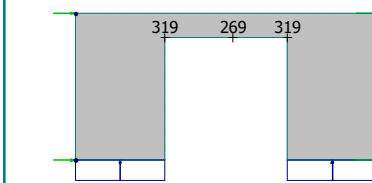
4.2m

10@200
General
10@100 Local
(< 600mm leg)



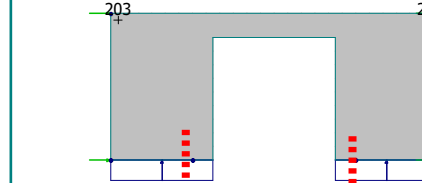
5.5m

10@200 General
10@100 Local
(< 600mm leg)



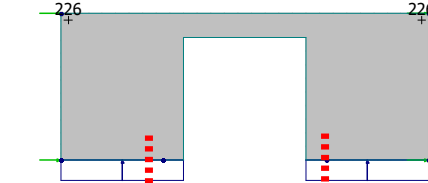
7.4m

10@200 General
10@100 Local
(< 600mm leg)

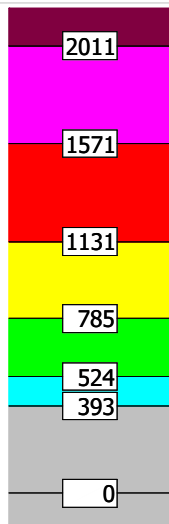
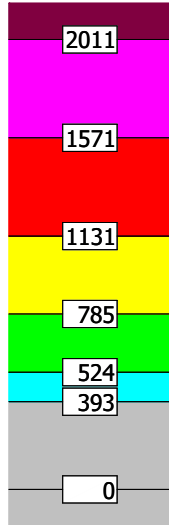


8.0m

As per C, however, shear dowels required as shown

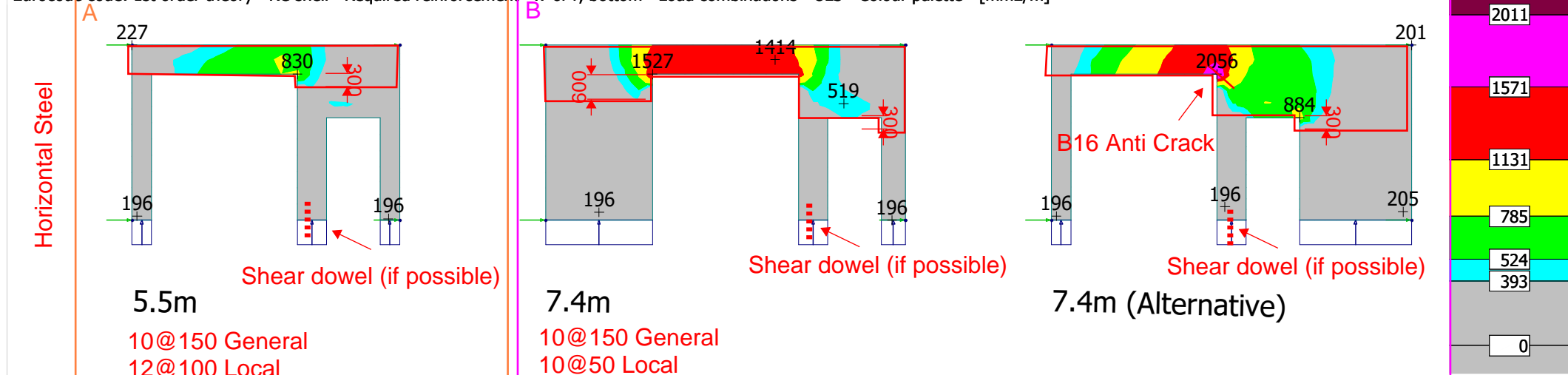


9.0m



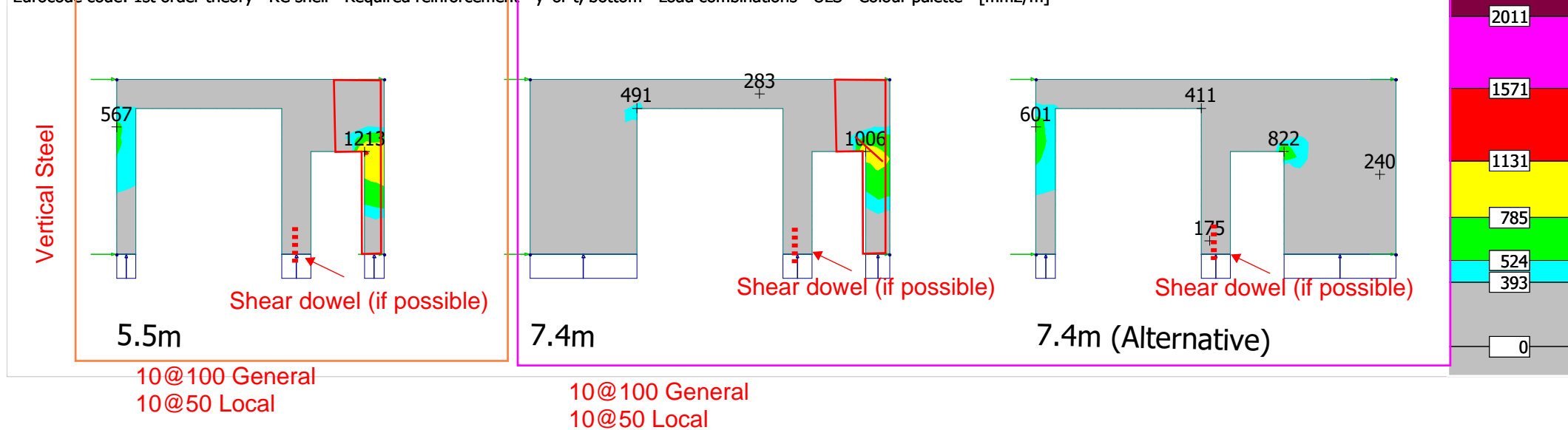
Personnel Dock Door Opening

Eurocode code: 1st order theory - RC shell - Required reinforcement - x' or r, bottom - Load combinations - ULS - Colour palette - [mm²/m]



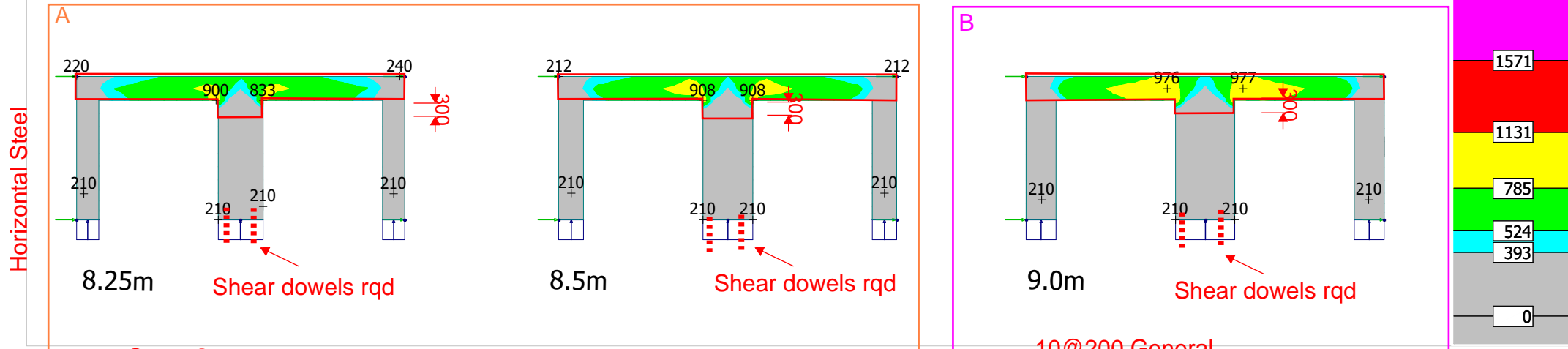
Personnel Dock Door Opening

Eurocode code: 1st order theory - RC shell - Required reinforcement - y' or t, bottom - Load combinations - ULS - Colour palette - [mm²/m]



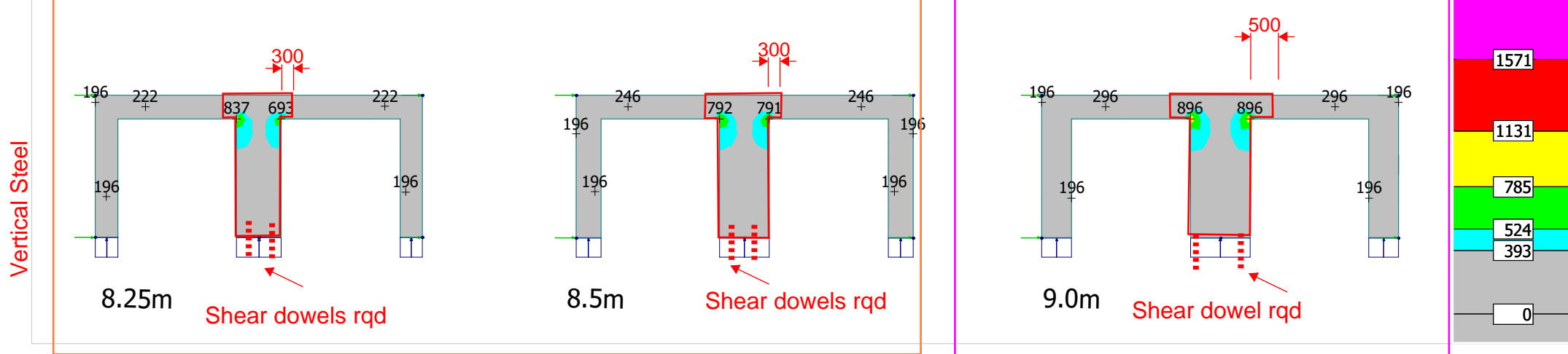
Double Dock Door Opening

Eurocode code: 1st order theory - RC shell - Required reinforcement - x' or r , bottom - Load combinations - ULS - Colour palette - [mm²/m]



Double Dock Door Opening

Eurocode code: 1st order theory - RC shell - Required reinforcement - y' or t , bottom - Load combinations - ULS - Colour palette - [mm²/m]



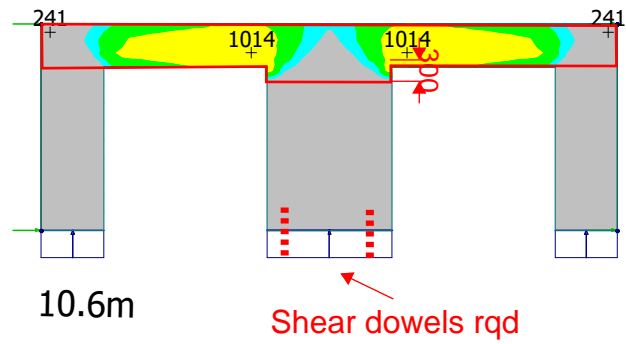
10@200 General
10@100 Local

10@200 General
12@100 Local

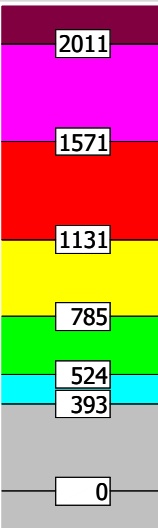
Double Dock Door Opening 10.6

Eurocode code: 1st order theory - RC shell - Required reinforcement - x' or r, bottom - Load combinations - ULS - Colour palette - [mm²/m]

B

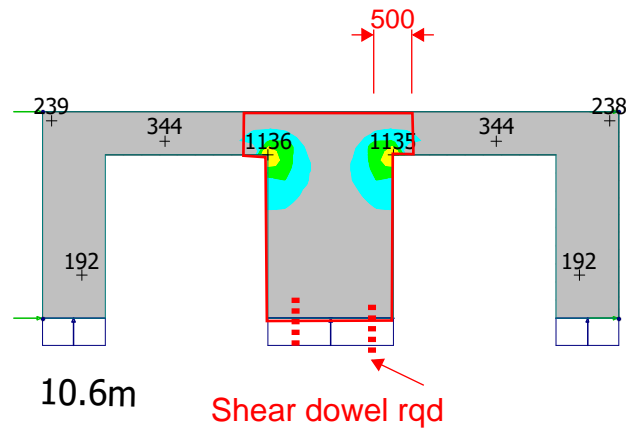


10@200 General
12@100 Local

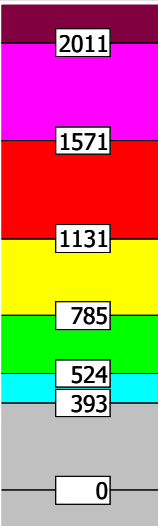


Double Dock Door Opening 10.6

Eurocode code: 1st order theory - RC shell - Required reinforcement - y' or t, bottom - Load combinations - ULS - Colour palette - [mm²/m]



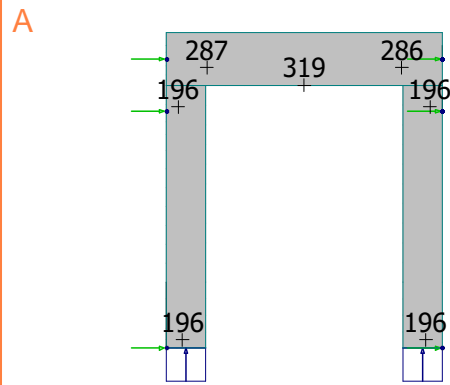
10@200 General
12@100 Local



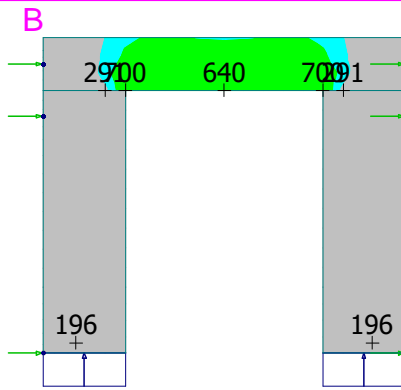
Stone Henge Single Dock Door

Eurocode code: 1st order theory - RC shell - Required reinforcement - x' or r, bottom - Load combinations - ULS - Colour palette - [mm²/m]

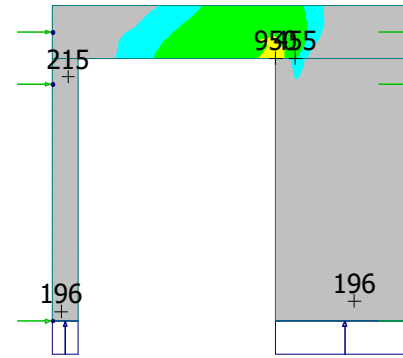
Horizontal Steel



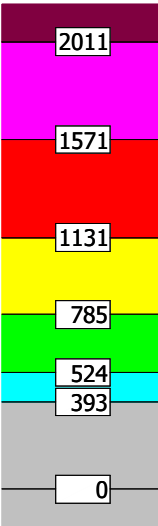
4.2m



5.5m



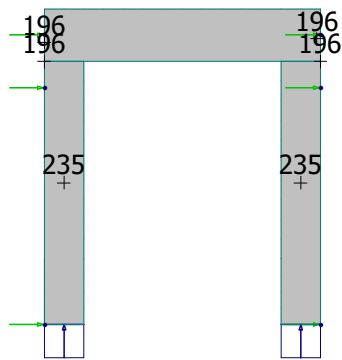
5.5m (Alternative)



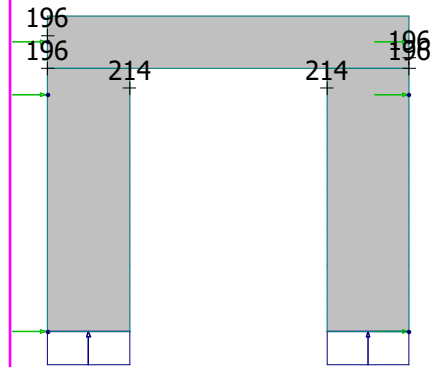
Stone Henge Single Dock Door

Eurocode code: 1st order theory - RC shell - Required reinforcement - y' or t, bottom - Load combinations - ULS - Colour palette - [mm²/m]

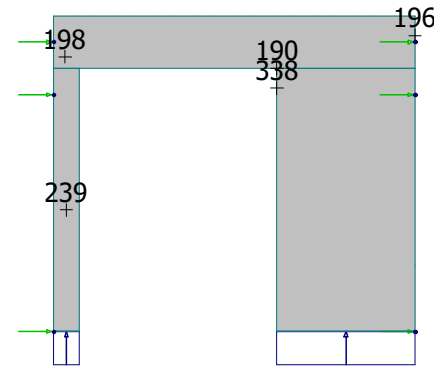
Vertical Steel



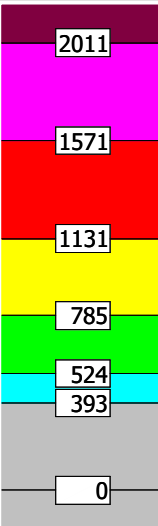
4.2m



5.5m



5.5m (Alternative)



Lintel: 10@200EW

Lintel: 12@100 (long span) X 10@200 (short span)

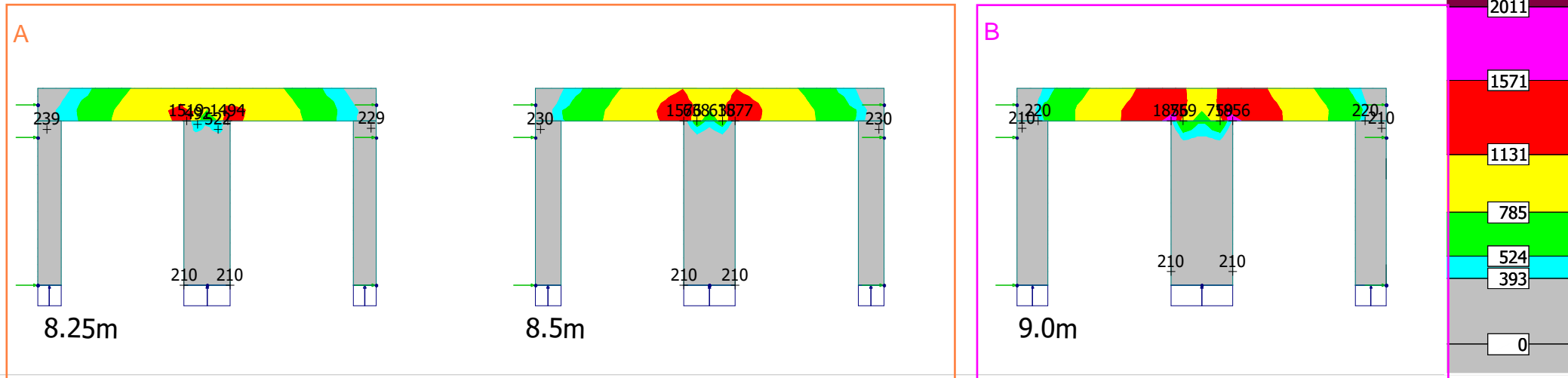
Legs: 10@150 EW

Legs: 10@150EW

Stone Henge Double Dock Door

Eurocode code: 1st order theory - RC shell - Required reinforcement - x' or r , bottom - Load combinations - ULS - Colour palette - [mm²/m]0m

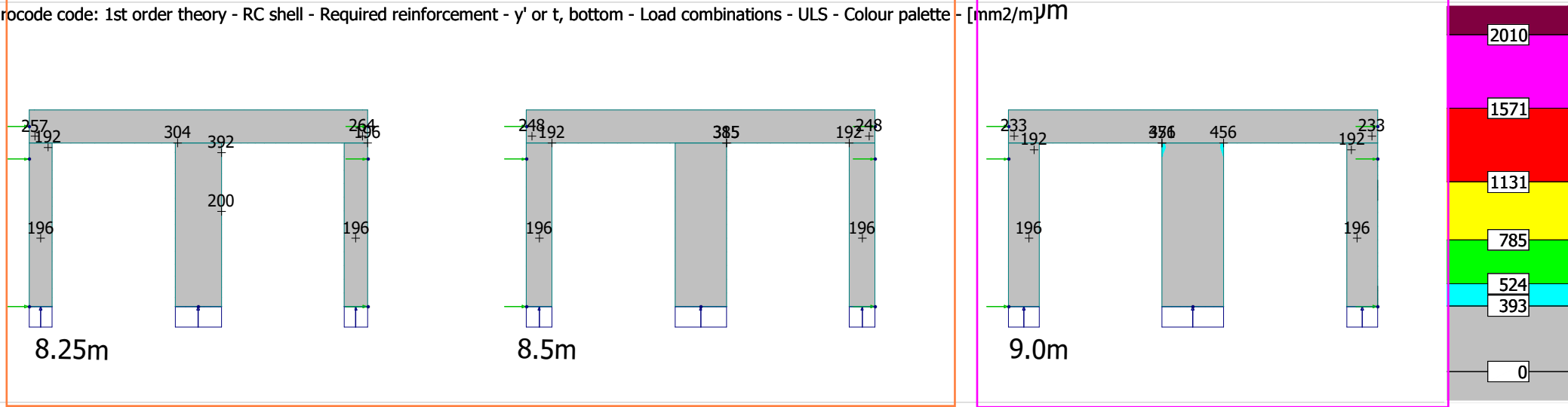
Horizontal Steel



Stone Henge Double Dock Door

Eurocode code: 1st order theory - RC shell - Required reinforcement - y' or t , bottom - Load combinations - ULS - Colour palette - [mm²/m]0m

Vertical Steel



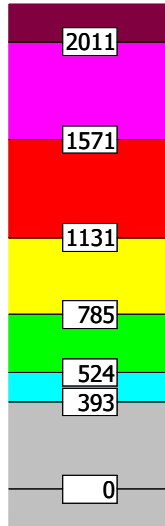
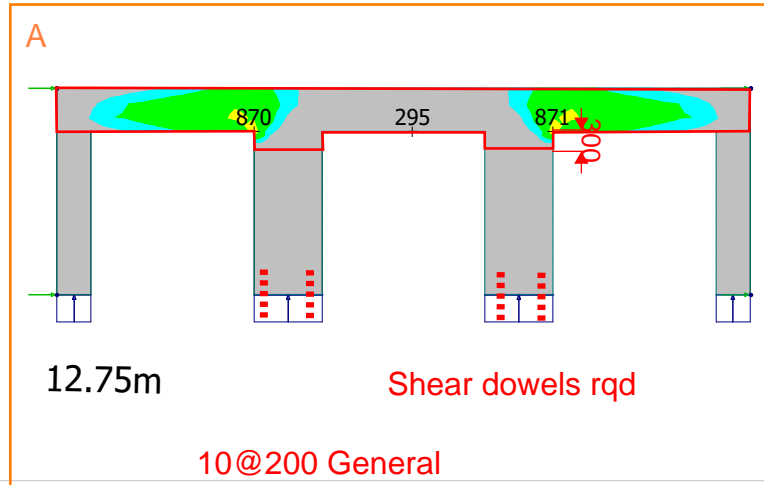
Lintel: 10@50 (long span) x 10@200 (short span)
 Legs: 10@150EW

Lintel: 16@100 (long span) X 10@200 (short span)
 Legs: 10@150EW

Note: Lifting Beam is Required with a 4 Point Lift

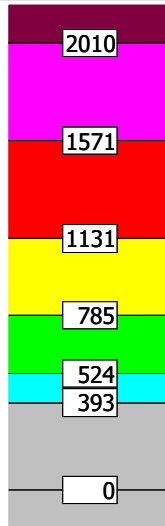
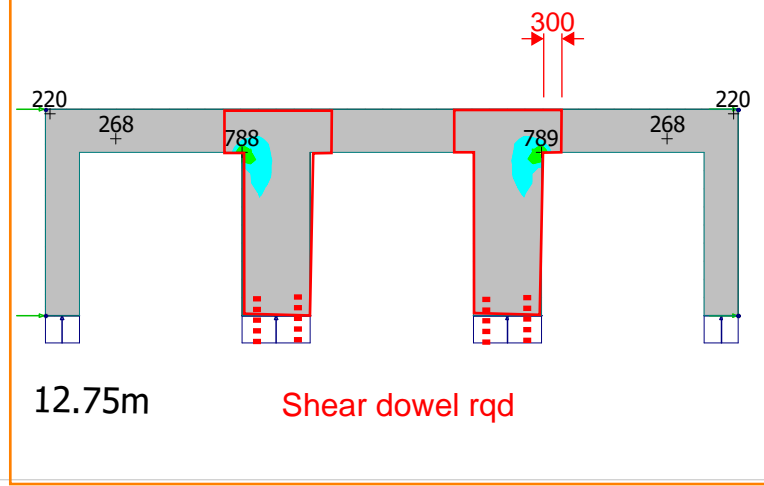
Tripple Dock Door

Eurocode code: 1st order theory - RC shell - Required reinforcement - x' or r, bottom - Load combinations - ULS - Colour palette - [mm²/m]



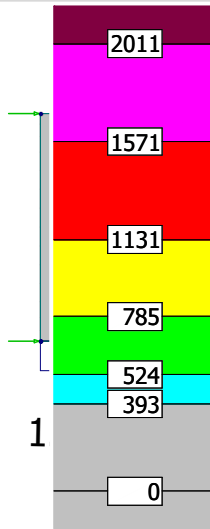
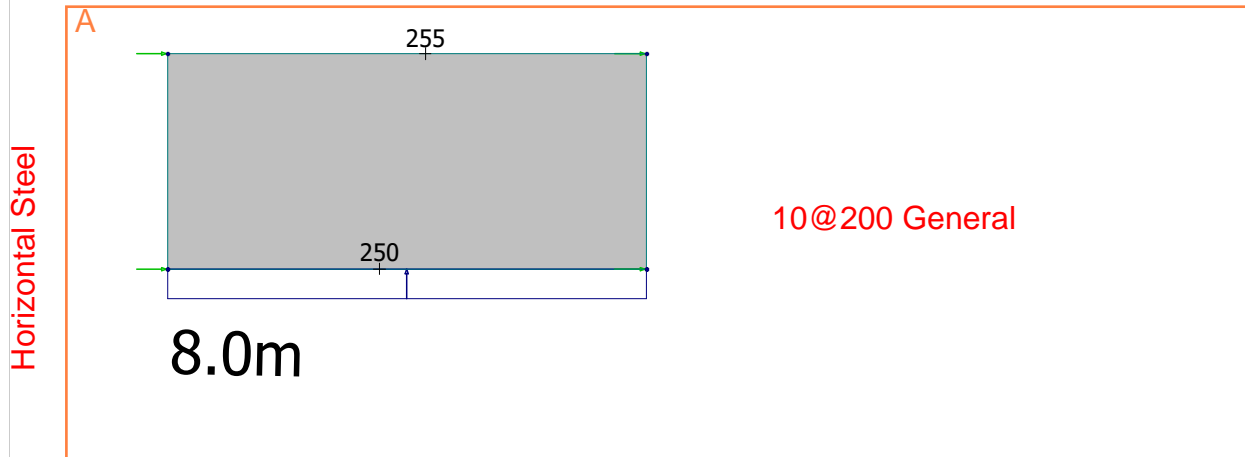
Tripple Dock Door

Eurocode code: 1st order theory - RC shell - Required reinforcement - y' or t, bottom - Load combinations - ULS - Colour palette - [mm²/m]



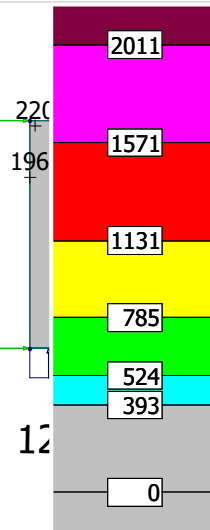
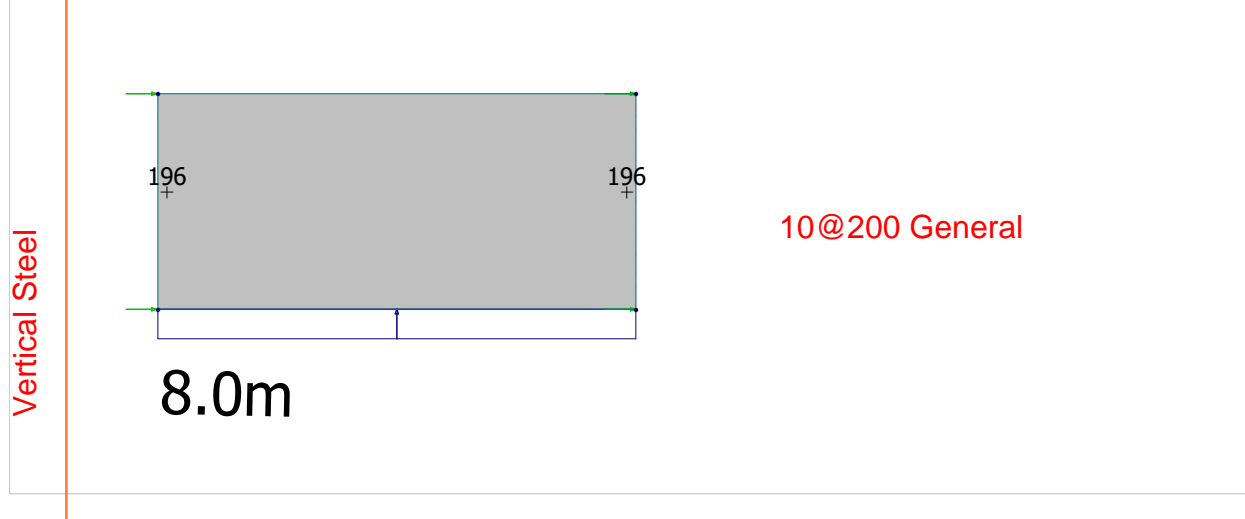
Blank Prowall

Eurocode code: 1st order theory - RC shell - Required reinforcement - x' or r, bottom - Load combinations - ULS - Colour palette - [mm²/m]



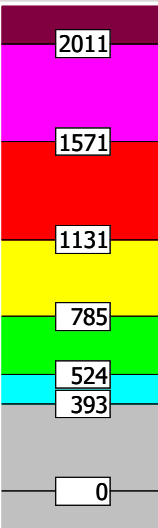
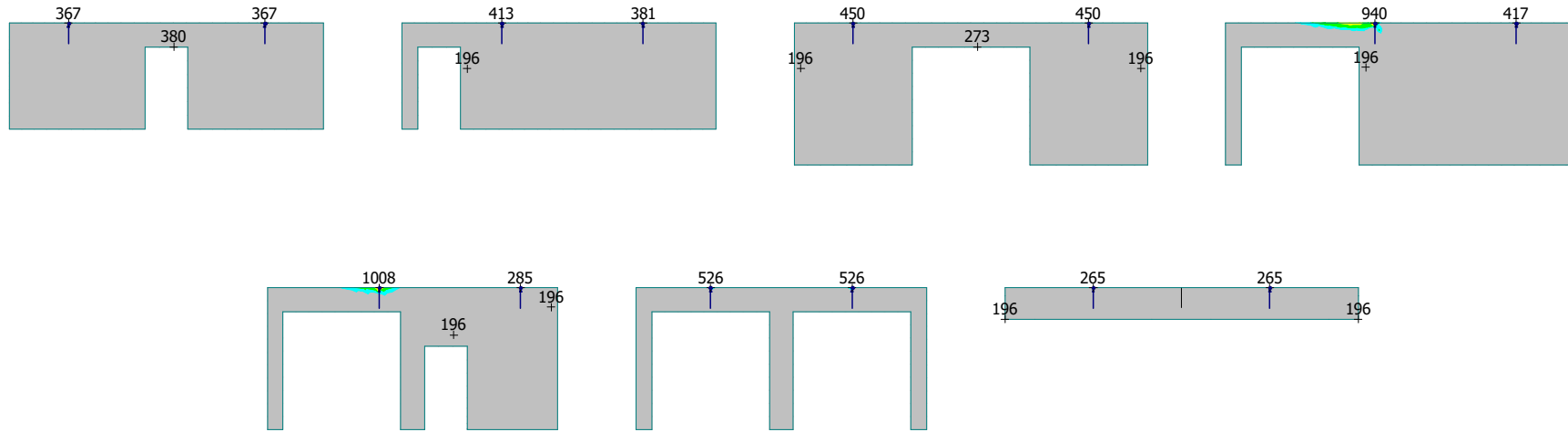
Blank Prowall

Eurocode code: 1st order theory - RC shell - Required reinforcement - y' or t, bottom - Load combinations - ULS - Colour palette - [mm²/m]



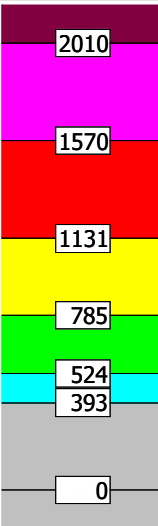
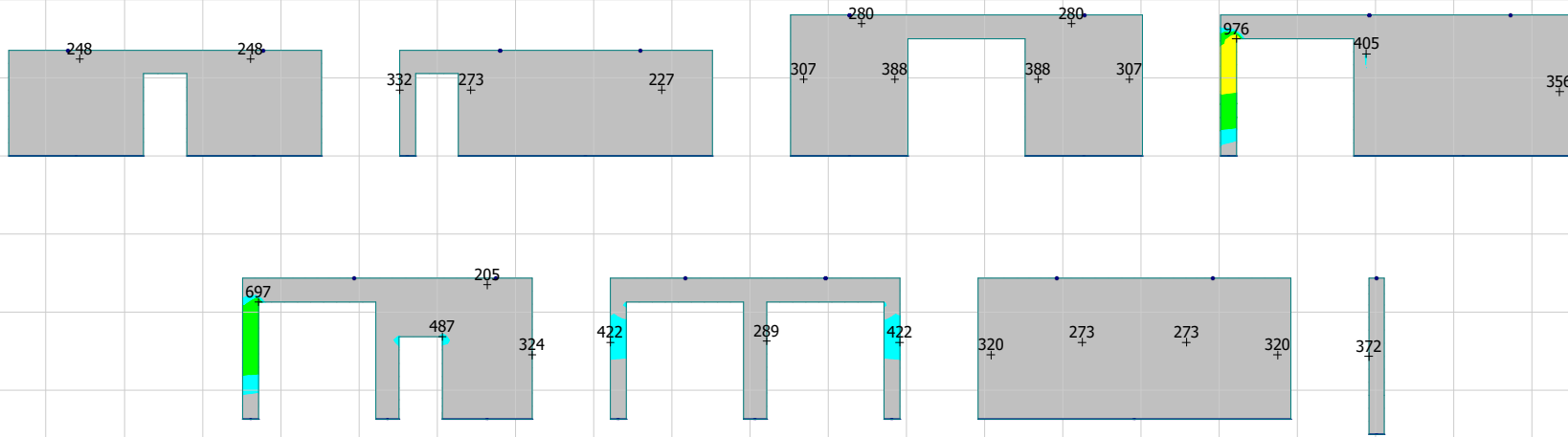
Lifting

Eurocode code: 1st order theory - RC shell - Required reinforcement - x' or r , bottom - Load combinations - Lifting - Colour palette - [mm²/m]



Pitching

Eurocode code: 1st order theory - RC shell - Required reinforcement - y' or t , bottom - Load combinations - Lifting - Colour palette - [mm²/m]



Line Load Reactions

Eurocode code: 1st order theory - Load combinations - ULS - Reactions - [kN, kNm, kN/m, kNm/m, kN/m2]

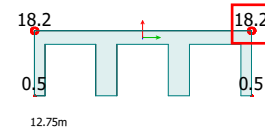
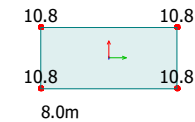
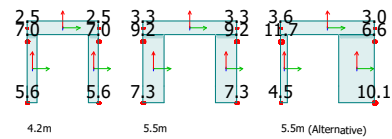
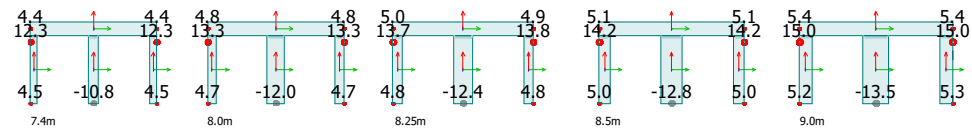
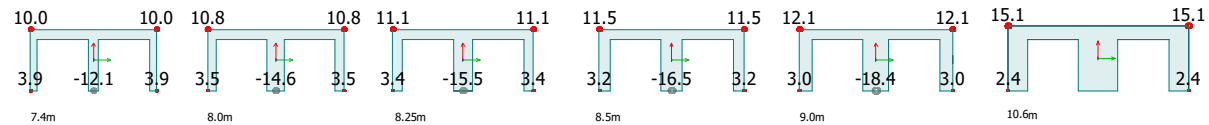
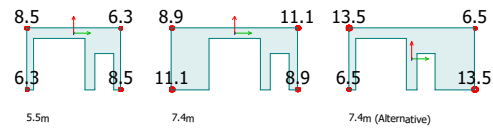
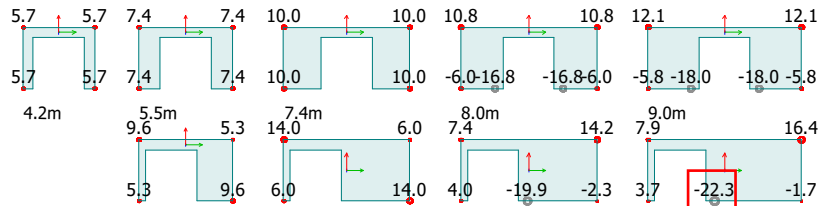
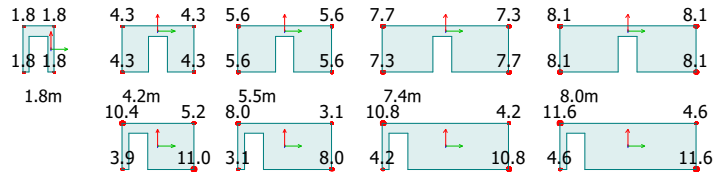


Loads in KN/m



Horizontal Reactions

Eurocode code: 1st order theory - Load combinations - ULS - Reactions - [kN, kNm, kN/m, kNm/m, kN/m2]



Max Shear
 Dowel
 Reaction
 (kN)

Max Clipping
 Plate
 Reaction
 (kN)

1.0 Design Overview

Prowall fixing plates are designed to transfer wind loading applied to the prowall into the steel super structure. The plates are available in two sizes 750x180x10 (Ref S) and 425x180x10 (Ref U). The fixing plates are clamped to a steel column at one end and fixed to the prowall using either a threaded bar with a nut and washers or an Excalibur fixing. Plate S has 3 fixings and plate U has 2 fixings. The plate should be packed out from the back of the prowall so that there is a slight angle to the back of the steel flange.

2.0 Design Loads

Large fixing plates are used to clamp the prowall to the steel columns close to the top of prowall. They are designed for a maximum factored load of 20kN which is greater than the maximum calculated load of 18kN

Factored force / plate 20.0 kN

3. Fixing Check

Force / Fixing 6.7 kN
 Allowable force / fixing (based on socket capacity) 9.5 kN Pass

4. Plate Design

Maximum Eccentricity (e) 120 mm
 Plate Height (b) 750 mm
 Plate thickness (h) 10 mm

Moment (M) = e•F 120•20•1000= 2400000 Nmm
 Second Moment of Area (I) = b•h³/12 750•10³/12= 62500 mm⁴

Maximum stress in steel (σ) = My/I 2400000*(10/2)/62500= 192.0 N/mm

Factor of safety against bending = f_{yd}/σ 275/192= 1.43 Pass

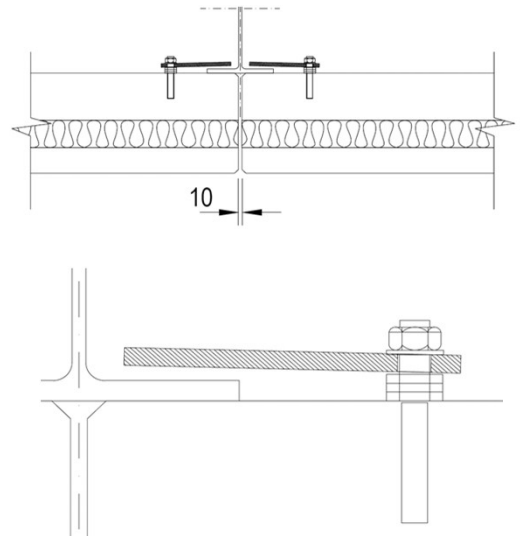


Figure 1. Typical fixing arrangement

1.0 Design Overview

Prowall fixing plates are designed to transfer wind loading applied to the prowall into the steel super structure. The plates are available in two sizes 750x180x10 (Ref S) and 425x180x10 (Ref U). The fixing plates are clamped to a steel column at one end and fixed to the prowall using either a threaded bar with a nut and washers or an Excalibur fixing. Plate S has 3 fixings and plate U has 2 fixings. The plate should be packed out from the back of the prowall so that there is a slight angle to the back of the steel flange.

2.0 Design Loads

Small fixing plates are used to clamp the prowall close to the base of the prowall where the option for a shear dowel is not available. They are designed for a maximum factored load of 15kN which is greater than the maximum calculated force load of 14kN

Factored force / plate 15.0 kN

3. Fixing Check

Force / Fixing 7.5 kN
 Allowable force / fixing (based on socket capacity) 9.5 kN Pass

4. Plate Design

Maximum Eccentricity (e) 120 mm
 Plate Height (b) 425 mm
 Plate thickness (h) 10 mm

Moment (M) = e•F 120•15•1000= 1800000 Nmm
 Second Moment of Area (I) = b•h³/12 425•10³/12= 35417 mm⁴

Maximum stress in steel (σ) = My/I 1800000*(10/2)/35417= 254.1 N/mm

Factor of safety against bending = f_{yd}/σ 275/254.12= 1.08 Pass

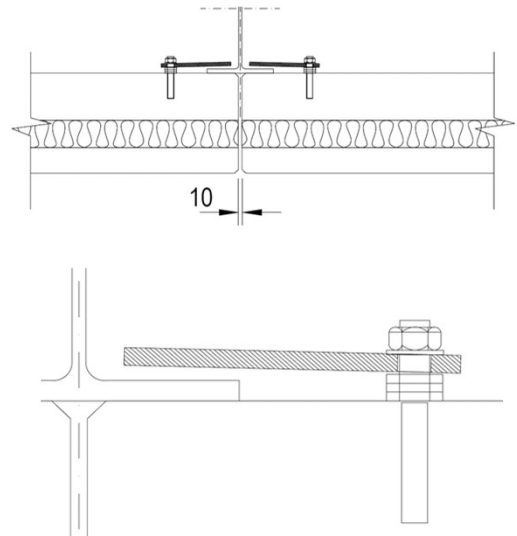
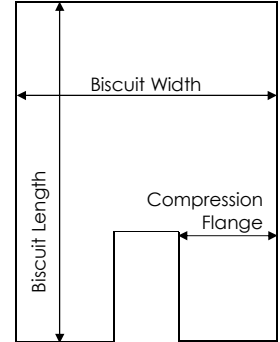


Figure 1. Typical fixing arrangement

The biscuit slab spans between the front and back walls. The slab is designed (where applicable) to accommodate, a column passing through the slab and propping from the biscuit slab to an insulated dock wall panel. The slab is designed in the temporary condition for loading before the composite topping is laid, this includes a uniform construction load and point loads from propping. The slab is also designed in the final state with a composite topping for a more onerous final state uniform loading. The composite design uses a lower strength concrete to reflect the likely in-situ concrete strength.

Biscuit Length (L); = 3650 mm
 Compression Flange (CF); = 645 mm
 Biscuit Depth (H₂); = 150 mm
 Composite Topping (H₂); = 175 mm

Dock Leveller Properties	
Dock Leveller Pit Width;	<= 2070 mm
Dock Leveller Pit Length;	<= 3615 mm



Final state load on biscuit slab (W_F); = 50 kN/m²
 Construction load on biscuit slab (W_T); = 5 kN/m²
 Point load from propping (F_p); = 5 kN

Self Weight

Self weight of biscuit slab (γ_{bisc}) = γc•H₁; 25•0.15 = 3.8 kN/m²
 Self weight of composite topping (γ_{topp}) = γc•H₂; 25•0.175 = 4.4 kN/m²
 Self weight of composite slab (γ_{slab}) = γ_{bisc}+γ_{topp}; 3.75+4.375 = 8.1 kN/m²

Moment and shear in the non-composite temporary condition

	SLS		ULS
Construction load applied to the compression flange = W _T •CF;	5•0.645 = 3.2 kN/m	x1.50	4.8 kN/m
Self weight of biscuit slab = γ _{bisc} •CF;	3.75•0.645 = 2.4 kN/m	x1.35	3.3 kN/m
Uniform load applied to compression flange (W);	<u>5.6 kN/m</u>		<u>8.1 kN/m</u>
Point Load (assumed to act at centre) (P);	5 kN	x1.50	7.5 kN

Slab is considered to be simply supported giving the following moment and shear force.

Maximum Moment at SLS (M_{SLS}) = WL²/8+PL/4; (5.6•3.65²)/8+(5•3.65)/4= 13.9 kNm
 Maximum Moment at ULS (M_{ULS}) = WL²/8+PL/4; (8.1•3.65²)/8+(7.5•3.65)/4= 20.3 kNm
 Shear d from support (V_{ULS}) = WL/2•(1-dn1/(L/2))+P/2; 8.1•3.65/2•(1-117/(3650/2))+7.5/2= 17.6 kN

Moment and shear in the composite final condition

	SLS		ULS
Final state load applied to compression flange = W _F •CF;	50•0.645 = 32.3 kN/m	x1.50	48.4 kN/m
Self weight of composite slab = γ _{slab} •CF;	8.125•0.645 = 5.2 kN/m	x1.35	7.1 kN/m
Uniform load applied to compression flange (W);	<u>37.5 kN/m</u>		<u>55.4 kN/m</u>

Slab is considered to be simply supported giving the following moment and shear force

Maximum Moment at SLS (M_{SLS}) = WL²/8; (37.5•3.65²)/8= 62.4 kNm
 Maximum Moment at ULS (M_{ULS}) = WL²/8; (55.4•3.65²)/8= 92.3 kNm
 Shear d from support (V_{ULS}) = WL/2•(1-dn1/(L/2)); 55.4•3.65/2•(1-292/(3650/2))= 84.9 kN

Reinforcement design

Tension Steel Provided;	B16 @ 100 c/c	$A_{s,prov} = 1297\text{mm}^2$	=> Design =>	$A_{s,req} = 766\text{mm}^2$	Pass
Distribution Steel Provided;	B10 @ 150 c/c	$A_{s,prov} = 524\text{mm}^2$	=> Design =>	$A_{s,req} = 259\text{mm}^2$	Pass

Moment

	SLS	ULS	
	Composite	Composite	Non-Composite
Effective depth to tension rein' (d_{n1});	292 mm	292 mm	117 mm
K Factor = $M/(b \cdot d_{n1}^2 \cdot f_{ck})$;	0.038	0.056	0.057
Limiting k Factor = $0.5986 - 0.186z - 0.21$;	0.208	0.208	0.208
Lever arm (z) = $\text{Min}(0.95 \cdot d_{n1}, d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k}))$;	277 mm	277 mm	111 mm
Area of rein' reqd for bending ($A_{s,req,b}$) = $M/(f_{yd} \cdot z)$;	518 mm ²	766 mm ²	420 mm ²
Min area reqd ($A_{s,min}$) = $\text{max}(0.26 \cdot (f_{ctm}/f_{yk}), 0.0013) \cdot b \cdot d_{n1}$;	284 mm ²	284 mm ²	138 mm ²
<hr/>			
where $k > k'$ Lever arm (z) = $d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k'})$;			
Depth to compression reinforcement (d_{n2});			
Compression Moment (M') = $b \cdot d_{n1}^2 \cdot f_{ck} \cdot (k - k')$;			
Compression reinforcement reqd (A_s') = $M'/(f_{yd} \cdot (d_{n1} - d_{n2}))$;			
Tension reinforcement required (A_s) = $(M - M')/f_{yd} \cdot z + A_s'$;			
<hr/>			
Tension reinforcement required at section ($A_{s,req}$)	518 mm ²	766 mm ²	420 mm ²
Compression reinforcement required at section ($A_{s',req}$)	0 mm ²	0 mm ²	0 mm ²

Shear

	ULS	
	Composite	Non-Composite
Shear resistance constant ($C_{Rd,c}$) = $0.18/\gamma_c$;	0.1N/mm ²	0.1N/mm ²
Effective Depth Factor (k) = $\text{min}(2.0, 1 + \sqrt{200/d_{n1}})$;	1.8280	2.0000
Reinforcement Ratio (ρ_1) = $\text{min}(0.02, A_s/b \cdot d_{n1})$;	0.0070	0.0170
Minimum shear resistance ($V_{Rd,c,min}$) = $0.035 \cdot k^{1.5} \cdot f_{ck}^{0.5} \cdot b \cdot d_{n1}$;	89.2 kN	47.2 kN
Shear resistance ($V_{Rd,c,1}$) = $\text{max}(V_{Rd,c,min}, C_{Rd,c} \cdot k \cdot (100 \cdot \rho_1 \cdot (f_{ck}/1))^{0.333} \cdot b \cdot d_{n1})$;	113.9 kN	73.8 kN
Shear resistance required (V)	84.9 kN	17.6 kN
	Pass	Pass

Deflection Check - SLS Composite Design

Tension Reinforcement ratio (ρ) = $A_{s,req}/bd$;	0.00275
Reference ratio (ρ_0) = $f_{ck}^{0.5}/1000$	0.00548
Structural system factor (k)	1.00
Where $\rho \leq \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/\rho + 3.2 \cdot f_{ck}^{0.5} \cdot (\rho_0/\rho - 1)^{1.5}))$	40.00
Where $\rho > \rho_0$: $L/d = \text{min}(40k, k \cdot (11 + 1.5 \cdot f_{ck}^{0.5} \cdot \rho_0/(\rho - \rho_0) + f_{ck}^{0.5} \cdot (\rho/\rho_0)^{0.5}/12))$	N/A
Actual L/d	12.50
	Pass

Interface Shear Check - ULS Composite

Design value of the shear stress in the interface (v_{Edi}) = $\beta V_{Ed} / (z_{bi})$	0.48N/mm ²
Depth to neutral axis (x) = $2 \cdot (d_{n1} - z) / \lambda$	38 mm
Force in concrete (Fc)	328950 N
Force in concrete above interface	328950 N
Ratio of longitudinal force in new and total concrete area (β)	1
Design shear resistance at the interface (V_{rdi}) = $cfctd + \mu \sigma_n + \rho f_{yd} (\mu \sin \alpha + \cos \alpha)$	0.54N/mm ²
Design tensile concrete strength (f_{ctd}) = $\text{act} \cdot f_{ck} / 0.05/\gamma_c$;	1.35N/mm ²
Roughness coefficient [c] based on a raked finish	0.4
Roughness coefficient [μ] based on a raked finish	0.7
Minimum external normal force (σ_n)	0 N
$\rho = A_s / A_i$	0
Area of reinforcement crossing interface (A_s)	0 Rows of 0 No. B0 legs
Area at interface (A_i)	1177125 mm ²
Angle of links provided (α)	1.571 Rad

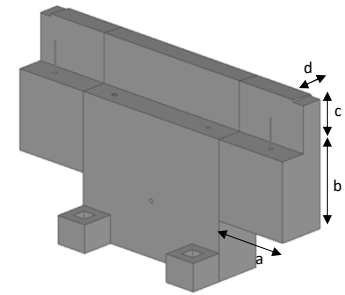
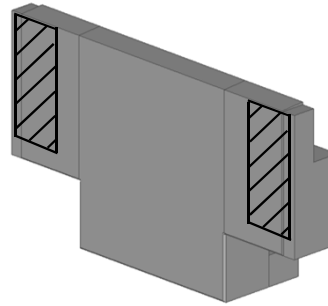
Note: area of interface is taken as half the slab area

Pass $V_{rdi} > v_{Edi}$

Wall Height (H_{max}) = 1300 mm
 Stem Thickness (S_T); = 300 mm
 Boot Length (T_b); = 200 mm
 Boot Thickness (T_T); = 175 mm
 Minimum Base Width = 300 mm

Maximum Arm Length (a) = 470 mm
 Minimum Arm Depth (b) = 275 mm
 Maximum Upstand (c) = 350 mm
 Typical Thickness (d) = 140 mm

Base Length (B_b); = 500 mm
 Impact Force (F_x); = 75.0 kN



Temporary Wind Speed = 60 mph = 27 m/s
 Temporary Wind Force = $0.5 \cdot \rho \cdot v^2$ = 0.4 kN/m²

Ref. Table 4.1 BS EN 1991-1-7 - 150kN Shared equally over 2 buffers

Global design forces subject to temporary wind loading

Wind Load = $W_k \cdot \gamma_Q \cdot H$;

<u>Anti-Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
$0.44 \cdot 1.5 \cdot 1.3 =$	0.9 kN	0.650 m	0.6 kNm
$F_H:$	0.9 kN	$M_H:$	0.6 kNm

Weight of wall stem = $(H-c) \cdot S_T \cdot \gamma_c \cdot \gamma_f$;

<u>Clockwise</u>	<u>Force</u>	<u>Lever arm</u>	<u>Moment</u>
$(1.3-0.35) \cdot 300 \cdot 25 \cdot 0.9 =$	6.4 kN	0.150 m	1.0 kNm
$F_V:$	6.4 kN	$M_V:$	1.0 kNm

Temporary Stability Ratio = M_V/M_H ;

1/0.6 = 1.67

Moment and shear in arm

Maximum moment in arm (M) = $F_x \cdot a \cdot \gamma_Q$

$75 \cdot 0.47 \cdot 1.05 = 37.0$ kNm/m

Maximum shear in arm (V) = $F_x \cdot \gamma_Q$

$75 \cdot 1.05 = 78.8$ kN/m

Reinforcement Design

Steel (Front Face);	3No. B16	(max 200 c/c)	$A_{s,Prov} = 603\text{mm}^2$	=> Design =>	$A_{s,req} = 359\text{mm}^2$	Pass
Steel (Back Face);	3No. B16	(max 200 c/c)	$A_{s,Prov} = 603\text{mm}^2$	=> Design =>	$A_{s,req} = 359\text{mm}^2$	Pass
Shear Steel;	2No. B8 legs @	150c/c	$A_{sw,Prov} = 101\text{mm}^2$	=> Design =>	$S_{,req} = 314\text{c/c}$	Pass

Moment

Effective depth to tension rein' (d_{n1});	249 mm
K Factor = $M/(b \cdot d_{n1}^2 \cdot f_{ck})$;	0.054
Limiting k Factor = $0.5985 - 0.185 \cdot d_{n1} - 0.21$;	0.208
Lever arm (z) = $\text{Min}(0.95 \cdot d_{n1}, d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k}))$;	237 mm
Area of rein' reqd for bending ($A_{s,req,b}$) = $M/(f_{yd} \cdot z)$;	359 mm ²
Min area reqd ($A_{s,min}$) = $\text{max}(0.26 \cdot (f_{ctm}/f_{yk}), 0.0013) \cdot b \cdot d_{n1}$;	125 mm ²
<hr/>	
where k > k' Lever arm (z) = $d_{n1}/2 \cdot (1 + \sqrt{1 - 3.53k'})$;	
Depth to compression reinforcement (d_{n2});	
Compression Moment (M') = $b \cdot d_{n1}^2 \cdot f_{ck} \cdot (k - k')$;	
Compression reinforcement reqd (A_s') = $M'/(f_{yd} \cdot (d_{n1} - d_{n2}))$;	
Tension reinforcement required (A_s) = $(M - M')/f_{yd} \cdot z + A_s'$;	
<hr/>	
Tension reinforcement required at section ($A_{s,req}$)	359 mm ²
Compression reinforcement required at section ($A_{s',req}$)	0 mm ²

Shear

Shear resistance constant ($C_{Rd,c}$) = $0.18/\gamma_c$;	0.1N/mm ²
Effective Depth Factor (k) = $\min(2.0, 1 + \sqrt{200/d_{n1}})$;	1.8960
Reinforcement Ratio (ρ_1) = $\min(0.02, A_s/b \cdot d_{n1})$;	0.0000
Minimum shear resistance ($V_{Rd,c, min}$) = $0.035 \cdot k^{1.5} \cdot f_{ck}^{0.5} \cdot b \cdot d_{n1}$;	39.6 kN
Shear resistance ($V_{Rd,c, 1}$) = $\max(V_{Rd,c, min}, C_{Rd,c} \cdot k \cdot (100 \cdot \rho_1 \cdot (f_{ck}/1))^{0.333} \cdot b \cdot d_{n1})$;	0.0 kN
Shear resistance required (V)	78.8 kN

Shear steel required

Shear Stress (V_{ed}) = $V_{ed}/(b_w \cdot 0.9 \cdot d)$	1.278 kN/m ²
Concrete strut capacity ($V_{Rd, max}$) = $0.138 \cdot f_{ck} (1 - f_{ck}/250)$ where $\cot(\theta) = 2.5$	4.637
where $V_{Rd}(\cot(\theta) = 2.5) < V_{ed}$	0.09567
$\theta = 0.5 \cdot \sin^{-1}(V_{ed}/(0.2 f_{ck} (1 - f_{ck}/250)))$	
Check Maximum Spacing (S_{Max}) = $0.75d$	187 mm
$A_{sw}/S = V_{ed} b_w / (f_{ywd} \cdot \cot(\theta))$	0.32

Wall Reinforcement

Min area reqd ($A_{s, min}$) = $\max(0.26 \cdot (f_{ctm}/f_{yk}), 0.0013) \cdot b \cdot d_{n1}$;	453 mm ²
---	---------------------

Wall back steel;	B10 @ 150 c/c	$A_{s, Prov} = 524 \text{mm}^2$	=> Design =>	$A_{s, req} = 453 \text{mm}^2$	<u>Pass</u>
Distribution steel;	B10 @ 200 c/c	$A_{s, Prov} = 393 \text{mm}^2$	=> Design =>	$A_{s, req} = 91 \text{mm}^2$	<u>Pass</u>

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0001

Contract No

05-BYL-1462

Date.

20.03.2024

Designer

LN

Checked by.

LN

Sheet No.

1

Stair Type:

1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MIStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0001

Design Span : 2.615 metres

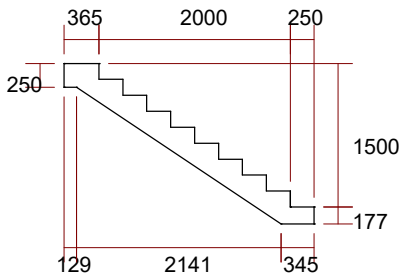
Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	250.0	Cut_back of Riser	=	0.00
Tread	=	250	Riser	=	166.7
Top Landing length	=	365	Bottom Landing length	=	250
Total Going	=	2000	Total Rise	=	1500
No. of Riser	=	9	No of Treads	=	8
Top Landing Thickness	=	250	Top Landing Finish Thickness	=	0
Btm Landing Thickness	=	177	Btm Landing Finish Thickness	=	0
Stair Width	=	1300	Waist Thickness	=	200
Stair Angle	=	33.69 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description	Left Hand End		Dim 3	Dim 4	Right Hand End		Dim 1	Dim 2	Dim 3	Dim 4
	Dim 1	Dim 2			Description	Dim 1				
Splay					Splay					
Rebate	None provided				Rebate					
Extensions	None provided				Extensions					
Extensions	None provided				Extensions					
Cut Outs	None provided				Cut Outs					
Side Notch	None provided				Side Notch					



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0001

Contract No 05-BYL-1462

Date. 20.03.2024

Designer LN

Checked by. LN

Sheet No. 2

Stair Type: 1

Materials (Properties) :

Concrete Strength Class	= C40 / 50	Concrete Strength - cylinder (f _{ck})	= 40.0 N/sq.mm
Aggregate size (max)	= 10 mm	Cement Strength Class	= CEM 42.5R CEM 52.5N CEM52.5R
Compressive strength factor (cl 3.1.6) α _{cc}	= 0.85	Design Compressive strength (cl 3.1.6)	= 22.7 n/sq.mm
Reinforcement Type	= High Yield Type B or C Steel	Characteristic Strength (f _y)	= 500.0 N/sq.mm
Soffit Exposure Condition:	XC1	Cover min = 15 mm	Cover tolerance = 5 mm
Top Surface Exposure Condition:	XC1	Cover min = 15 mm	Cover required = 20 mm
Fire Resistance - Time Required	= 90 mins	Fire Axis Distance Required = 30.0 mm	Minimum Thickness (Solid Slab) = 100.0 mm
Crack Width Allow	= 0.30 mm		

Partial Safety Factors (Materials) :

Design	Concrete ψ _c	Reinforcement ψ _s
Persistent and Transient	1.50	1.15
Accidental	1.20	1.00

Partial Safety Factors (Actions) :

Load Factor (G_k) = 1.35
 G_k modification factor ξ = 1.00
 Load Factor (G_k) = 1.35 = 1.000 x 1.350
 Load Factor (Q_k) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 ψ₀ = 0.70 ψ₁ = 0.50 ψ₂ = 0.30

Loading :

UDL Loads

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Selfweight	6.250	0.000	0.129
Flight	Selfweight	8.093	0.129	2.270
Bottom Landing	Selfweight	4.425	2.270	2.615
Full Stair	Imposed	4.000	0.000	2.615

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m ²)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	0.000	4.000			0.000	2.615	0.000	1.300	0.000	1.300	130.0
2	GDL	6.250	0.000	6.250	0.000	0.000	0.129	0.000	1.300	0.000	1.300	130.0
3	GDL	8.093	0.000	8.093	0.000	0.129	2.270	0.000	1.300	0.000	1.300	130.0
4	GDL	4.425	0.000	4.425	0.000	2.270	2.615	0.000	1.300	0.000	1.300	130.0

Reactions (Service) :

Load Ref No	Type	Reaction - R _i (kN/m)						Reaction - R _r (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	0.000	5.230	0.000	0.000	5.230	1.300	0.000	-5.230	0.000	0.000	-5.230	1.300
2	GDL	0.789	0.000	0.000	0.789	0.000	1.300	-0.020	0.000	0.000	-0.020	0.000	1.300
3	GDL	9.375	0.000	0.000	9.375	0.000	1.300	-7.947	0.000	0.000	-7.947	0.000	1.300
4	GDL	0.101	0.000	0.000	0.101	0.000	1.300	-1.426	0.000	0.000	-1.426	0.000	1.300
Total Comb'd		10.265	5.230	0.000	10.265	5.230	1.300	-9.393	-5.230	0.000	-9.393	-5.230	1.300

Analysis of Forces and Moments:

Limit State	Ultimate					Max	Limit State	Frequent					Max
	A	B	C	D	Position from LHE			A	B	C	D	Position from LHE	
Position from LHE	0.000	0.129	2.270	2.615	1.301	1.301	Position from LHE	0.000	0.129	2.270	2.615	1.300	
Shear (kN)	28.2	25.8	-21.3	-26.7	28.2	28.2	Shear (kN)	16.7	15.4	-12.7	-15.6	16.7	
Moment (kN.m)	0.0	3.5	8.3	0.0	18.6	18.6	Moment (kN.m)	0.0	2.1	4.9	0.0	11.1	
Limit State	Characteristic					Max	Limit State	Quasi Permanent					Max
	A	B	C	D	Position from LHE			A	B	C	D	Position from LHE	
Position from LHE	0.000	0.129	2.270	2.615	1.301	1.301	Position from LHE	0.000	0.129	2.270	2.615	1.299	
Shear (kN)	20.14	18.42	-15.23	-19.01	20.14	20.14	Shear (kN)	15.38	14.13	-11.73	-14.25	15.38	
Moment (kN.m)	0.00	2.50	5.9	0.00	13.29	13.29	Moment (kN.m)	0.00	1.91	4.48	0.00	10.17	

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0001

Contract No

05-BYL-1462

Date.

20.03.2024

Designer

LN

Checked by.

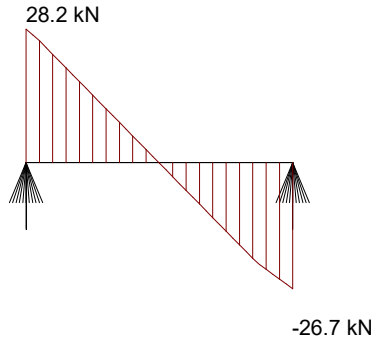
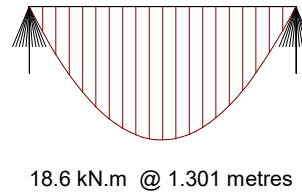
LN

Sheet No.

3

Stair Type:

1

Shear Force Diagram**Bending Moment Diagram****Reinforcement Provided:**

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	10	9	10	5	10	250	see Flight
Flight	Normal	10	9	10	5	10	250	Bar at Centreline
Btm Landing	Normal	10	9	10	5	10	250	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1300.0	1300.0	1300.0	1300.0	N.A.
Effective Depth d1 (mm)	215.0	165.0	142.0	165.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	707.0	707.0	707.0	707.0	Pass
Ast Req'd (mm ²)	510.0	391.4	336.8	391.4)
Ast min (mm ²)	510.0	391.4	336.8	391.4	Pass
Ast Actual Spacing (mm)	156.3	156.3	156.3	156.3	Pass
Ast Allow Spacing (mm)	285.7	300.0	300.0	300.0)
Asc prov'd (mm ²)	392.8	392.8	392.8	392.8	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	279.5	214.5	184.6	214.5)
Shear (Left) Actual (kN)	28.213	25.784	-21.312	25.784	Pass
Shear (Left) Allow (kN)	170.354	134.298	115.578	134.298)
Shear (Right) Actual (kN)	25.784	-21.312	-26.683	-21.312	Pass
Shear (Right) Allow (n/mm ²)	170.354	134.298	115.578	134.298)
Span/Depth Actual	12.163	15.848	18.415	15.848	Pass
Span/Depth Allow	40.000	40.000	40.000	40.000)

Design Satisfactory**Lifters** (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	24.42	Wavy Long Tail 2.5 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	24.42	2.5 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	37.58	5.0 tonne	Reinforcement satisfactory

Parameters

Volume	1.038	Unit weight	26.570 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	9	707	255	350
Right	10	9	707	168	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Angle Design (See works standard)

Angle Location.	Angle Type	Load (kN)	Angle No	Capacity (kN)	Status
Top Angle	1A - 150 x 150 x 15 RSA 250mm Reinforced	28.2	2	60.0	Pass

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni

Unit Reference : SF-0002

Contract No

05-BYL-1462

Date.

27.03.2024

Designer

LN

Checked by.

LN

Sheet No.

1

Stair Type:

1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0002

Design Span : 4.031 metres

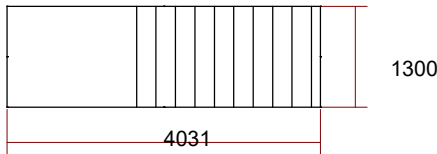
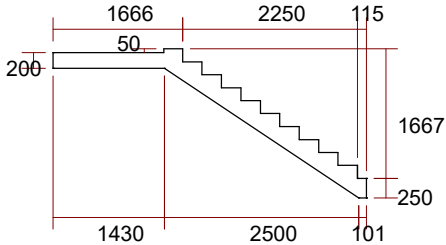
Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	250.0	Cut_back of Riser	=	0.00
Tread	=	250	Riser	=	166.7
Top Landing length	=	1666	Bottom Landing length	=	115
Total Going	=	2250	Total Rise	=	1667
No. of Riser	=	10	No of Treads	=	9
Top Landing Thickness	=	200	Top Landing Finish Thickness	=	50
Btm Landing Thickness	=	250	Btm Landing Finish Thickness	=	0
Stair Width	=	1300	Waist Thickness	=	200
Stair Angle	=	33.70 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description	Left Hand End		Dim 3	Dim 4	Right Hand End		Dim 1	Dim 2	Dim 3	Dim 4
	Dim 1	Dim 2			Description	Dim 1				
Splay	None provided				Splay	None provided				
Rebate	None provided				Rebate	None provided				
Extensions	None provided				Extensions	None provided				
Extensions	None provided				Extensions	None provided				
Cut Outs	None provided				Cut Outs	None provided				
Side Notch	None provided				Side Notch	None provided				



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
 CONTRACT : Panattoni
 Unit Reference : SF-0002

Contract No 05-BYL-1462

Date 27.03.2024

Designer LN

Checked by LN

Sheet No. 2

Stair Type: 1

Materials (Properties) :

Concrete Strength Class	= C40 / 50	Concrete Strength - cylinder (f _{ck})	= 40.0 N/sq.mm	
Aggregate size (max)	= 10 mm	Cement Strength Class	= CEM 42.5R CEM 52.5N CEM52.5R	
Compressive strength factor (cl 3.1.6) α _{cc}	= 0.85	Design Compressive strength (cl 3.1.6)	= 22.7 n/sq.mm	
Reinforcement Type	= High Yield Type B or C Steel	Characteristic Strength (f _y)	= 500.0 N/sq.mm	
Soffit Exposure Condition:	XC1	Cover min = 15 mm	Cover tolerance = 5 mm	Cover required = 20 mm
Top Surface Exposure Condition:	XC1	Cover min = 15 mm	Cover tolerance = 5 mm	Cover required = 20 mm
Fire Resistance - Time Required	= 90 mins	Fire Axis Distance Required = 30.0 mm	Minimum Thickness (Solid Slab) = 100.0 mm	
Crack Width Allow	= 0.30 mm			

Partial Safety Factors (Materials) :

Design	Concrete ψ _c	Reinforcement ψ _s
Persistent and Transient	1.50	1.15
Accidental	1.20	1.00

Partial Safety Factors (Actions) :

Load Factor (G_k) = 1.35
 G_k modification factor ξ = 1.00
 Load Factor (G_k) = 1.35 = 1.000 x 1.350
 Load Factor (Q_k) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 ψ₀ = 0.70 ψ₁ = 0.50 ψ₂ = 0.30

Loading :

UDL Loads

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Finishes	1.200	0.000	1.430
	Selfweight	5.000	0.000	1.430
Flight	Selfweight	8.093	1.430	3.930
	Bottom Landing	Selfweight	6.250	3.930
Full Stair	Imposed	4.000	0.000	4.031

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m ²)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	0.000	4.000			0.000	4.031	0.000	1.300	0.000	1.300	130.0
2	GDL	6.200	0.000	6.200	0.000	0.000	1.430	0.000	1.300	0.000	1.300	130.0
3	GDL	8.093	0.000	8.093	0.000	1.430	3.930	0.000	1.300	0.000	1.300	130.0
4	GDL	6.250	0.000	6.250	0.000	3.930	4.031	0.000	1.300	0.000	1.300	130.0
5	GDL	0.558	0.360	0.558	0.360	1.016	1.226	0.000	0.100	0.000	1.072	121.3

Reactions (Service) :

Load Ref	Load Type	Reaction - R _i (kN/m)						Reaction - R _r (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	0.000	8.062	0.000	0.000	8.062	1.300	0.000	-8.062	0.000	0.000	-8.062	1.300
2	GDL	7.295	0.000	0.000	7.295	0.000	1.300	-1.574	0.000	0.000	-1.574	0.000	1.300
3	GDL	6.779	0.000	0.000	6.779	0.000	1.300	-13.454	0.000	0.000	-13.454	0.000	1.300
4	GDL	0.008	0.000	0.000	0.008	0.000	1.300	-0.621	0.000	0.000	-0.621	0.000	1.300
Total Comb'd		14.082	8.062	0.000	14.082	8.062	1.300	-15.649	-8.062	0.000	-15.649	-8.062	1.300

Additional Loads

Load Ref	Load Type	Reaction - R _i (kN)						Reaction - R _r (kN)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
5	GDL	0.085	0.055	0.000	0.085	0.055	0.100	-0.033	-0.021	0.000	-0.033	-0.021	0.100

Analysis of Forces and Moments:

Limit State	Limit State Frequent					Limit State Quasi Permanent				
	A	B	C	D	Max	A	B	C	D	Max
Ultimate										
Position from LHE	0.000	1.430	3.930	4.031	2.050	0.000	1.430	3.930	4.031	2.059
Shear (kN)	40.7	13.6	-41.4	-43.3	-43.3	23.7	8.2	-24.6	-25.6	-25.6
Moment (kN.m)	0.0	39.0	4.3	0.0	43.2	0.0	22.9	2.5	0.0	25.5
Limit State										
Characteristic										
Position from LHE	0.000	1.430	3.930	4.031	2.050	0.000	1.430	3.930	4.031	2.063
Shear (kN)	28.96	9.75	-29.55	-30.89	-30.89	21.57	7.64	-22.56	-23.53	-23.53
Moment (kN.m)	0.00	27.78	3.0	0.00	30.81	0.00	20.96	2.32	0.00	23.38

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
 CONTRACT : Panattoni
 Unit Reference : SF-0002

Contract No 05-BYL-1462

Date 27.03.2024

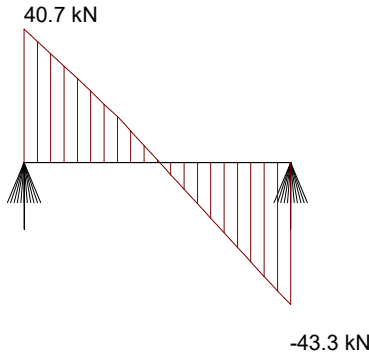
Designer LN

Checked by. LN

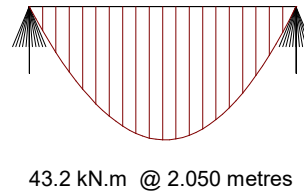
Sheet No. 3

Stair Type: 1

Shear Force Diagram



Bending Moment Diagram



Reinforcement Provided:

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	10	9	10	5	10	250	see Flight
Flight	Normal	10	9	10	5	10	250	Bar at Centreline
Btm Landing	Normal	10	9	10	5	10	250	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1300.0	1300.0	1300.0	1300.0	N.A.
Effective Depth d1 (mm)	165.0	165.0	215.0	165.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	707.0	707.0	707.0	707.0	Pass
Ast Req'd (mm ²)	571.7	571.7	510.0	633.6)
Ast min (mm ²)	391.4	391.4	510.0	391.4	Pass
Ast Actual Spacing (mm)	156.3	156.3	156.3	156.3	Pass
Ast Allow Spacing (mm)	263.5	263.5	286.6	236.2)
Asc prov'd (mm ²)	392.8	392.8	392.8	392.8	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	214.5	214.5	279.5	214.5)
Shear (Left) Actual (kN)	40.673	13.622	-41.388	13.622	Pass
Shear (Left) Allow (kN)	134.298	134.298	170.354	134.298)
Shear (Right) Actual (kN)	13.622	-41.388	-43.276	-41.388	Pass
Shear (Right) Allow (n/mm ²)	134.298	134.298	170.354	134.298)
Span/Depth Actual	24.430	24.430	18.749	24.430	Pass
Span/Depth Allow	40.000	40.000	40.000	40.000)

Design Satisfactory

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	34.29	Wavy Long Tail 4.0 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	34.29	5.0 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	52.75	7.5 tonne	Reinforcement satisfactory

Parameters

Volume	1.457	Unit weight	37.300 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	9	707	286	350
Right	10	9	707	255	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Angle Design (See works standard)

Angle Location.	Angle Type	Load (kN)	Angle No	Capacity (kN)	Status
Btm Angle	1A - 150 x 150 x 15 RSA 250mm Reinforced	-43.3	2	60.0	Pass

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SF-0003

Contract No

05-BYL-1462

Date.

22.03.2024

Designer

LN

Checked by.

LN

Sheet No.

10

Stair Type:

1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0003

Design Span : 4.031 metres

Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	250.0	Cut_back of Riser	=	0.00
Tread	=	250	Riser	=	166.7
Top Landing length	=	365	Bottom Landing length	=	1416
Total Going	=	2250	Total Rise	=	1667
No. of Riser	=	10	No of Treads	=	9
Top Landing Thickness	=	250	Top Landing Finish Thickness	=	0
Btm Landing Thickness	=	200	Btm Landing Finish Thickness	=	50
Stair Width	=	1300	Waist Thickness	=	200
Stair Angle	=	33.70 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description

Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

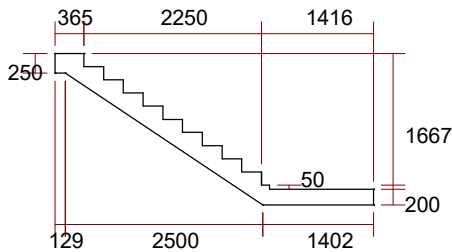
Left Hand End

Dim 1
Dim 2
Dim 3
Dim 4
None provided
None provided
None provided
None provided
None provided
None provided

Right Hand End

Description
Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

Dim 1 Dim 2 Dim 3 Dim 4
None provided
None provided
None provided
None provided
None provided
None provided
None provided



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SF-0003

Contract No 05-BYL-1462

Date. 22.03.2024

Designer LN

Checked by. LN

Sheet No. 11

Stair Type: 1

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (f_{ck}) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (f_y) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (G_k) = 1.35
 G_k modification factor ξ = 1.00
 Load Factor (G_k) = 1.35 = 1.000 x 1.350
 Load Factor (Q_k) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 ψ₀ = 0.70 ψ₁ = 0.50 ψ₂ = 0.30

Loading :

UDL Loads

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Selfweight	6.250	0.000	0.129
Flight	Selfweight	8.093	0.129	2.629
Bottom Landing	Finishes	1.200	2.629	4.031
	Selfweight	5.000	2.629	4.031
Full Stair	Imposed	4.000	0.000	4.031

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m ²)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	0.000	4.000			0.000	4.031	0.000	1.300	0.000	1.300	130.0
2	GDL	6.250	0.000	6.250	0.000	0.000	0.129	0.000	1.300	0.000	1.300	130.0
3	GDL	8.093	0.000	8.093	0.000	0.129	2.629	0.000	1.300	0.000	1.300	130.0
4	GDL	6.200	0.000	6.200	0.000	2.629	4.031	0.000	1.300	0.000	1.300	130.0
5	GDL	0.558	0.360	0.558	0.360	3.015	3.265	0.000	0.100	0.000	0.934	139.2

Reactions (Service) :

Load Ref	Load Type	Reaction - R _i (kN/m)						Reaction - R _r (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	0.000	8.062	0.000	0.000	8.062	1.300	0.000	-8.062	0.000	0.000	-8.062	1.300
2	GDL	0.796	0.000	0.000	0.796	0.000	1.300	-0.013	0.000	0.000	-0.013	0.000	1.300
3	GDL	13.309	0.000	0.000	13.309	0.000	1.300	-6.924	0.000	0.000	-6.924	0.000	1.300
4	GDL	1.511	0.000	0.000	1.511	0.000	1.300	-7.179	0.000	0.000	-7.179	0.000	1.300
Total Comb'd		15.616	8.062	0.000	15.616	8.062	1.300	-14.116	-8.062	0.000	-14.116	-8.062	1.300

Additional Loads

Load Ref	Load Type	Reaction - R _i (kN)						Reaction - R _r (kN)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
5	GDL	0.031	0.020	0.000	0.031	0.020	0.100	-0.109	-0.070	0.000	-0.109	-0.070	0.100

Analysis of Forces and Moments:

Limit State	Limit State Frequent					Limit State Quasi Permanent				
	A	B	C	D	Max	A	B	C	D	Max
Ultimate										
Position from LHE	0.000	0.129	2.629	4.031	1.984	0.000	0.129	2.629	4.031	1.975
Shear (kN)	43.2	40.8	-14.2	-40.8	43.2	25.6	24.2	-8.6	-23.8	25.6
Moment (kN.m)	0.0	5.4	38.7	0.0	43.3	0.0	3.2	22.7	0.0	25.6
Limit State										
Characteristic										
Position from LHE	0.000	0.129	2.629	4.031	1.984	0.000	0.129	2.629	4.031	1.971
Shear (kN)	30.85	29.13	-10.18	-29.08	30.85	23.50	22.24	-7.96	-21.68	23.50
Moment (kN.m)	0.00	3.88	27.6	0.00	30.86	0.00	2.96	20.81	0.00	23.44

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SF-0003

Contract No

05-BYL-1462

Date.

22.03.2024

Designer

LN

Checked by.

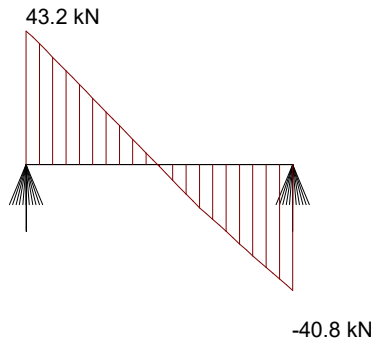
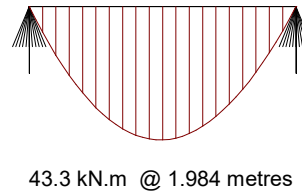
LN

Sheet No.

12

Stair Type:

1

Shear Force Diagram**Bending Moment Diagram****Reinforcement Provided:**

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	10	9	10	5	10	250	see Flight
Flight	Normal	10	9	10	5	10	250	Bar at Centreline
Btm Landing	Normal	10	9	10	5	10	250	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1300.0	1300.0	1300.0	1300.0	N.A.
Effective Depth d1 (mm)	215.0	165.0	165.0	165.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	707.0	707.0	707.0	707.0	Pass
Ast Req'd (mm ²)	510.0	567.4	567.4	634.7)
Ast min (mm ²)	510.0	391.4	391.4	391.4	Pass
Ast Actual Spacing (mm)	156.3	156.3	156.3	156.3	Pass
Ast Allow Spacing (mm)	286.6	265.2	265.2	235.6)
Asc prov'd (mm ²)	392.8	392.8	392.8	392.8	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	279.5	214.5	214.5	214.5)
Shear (Left) Actual (kN)	43.227	40.798	-14.212	40.798	Pass
Shear (Left) Allow (kN)	170.354	134.298	134.298	134.298)
Shear (Right) Actual (kN)	40.798	-14.212	-40.845	-14.212	Pass
Shear (Right) Allow (n/mm ²)	170.354	134.298	134.298	134.298)
Span/Depth Actual	18.749	24.430	24.430	24.430	Pass
Span/Depth Allow	40.000	40.000	40.000	40.000)

Design Satisfactory**Lifters** (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	34.46	Wavy Long Tail 4.0 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	34.46	5.0 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	53.01	7.5 tonne	Reinforcement satisfactory

Parameters

Volume	1.464	Unit weight	37.483 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	9	707	255	350
Right	10	9	707	284	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Angle Design (See works standard)

Angle Location.	Angle Type	Load (kN)	Angle No	Capacity (kN)	Status
Top Angle	1A - 150 x 150 x 15 RSA 250mm Reinforced	43.2	2	60.0	Pass

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SF-0004

Contract No

05-BYL-1462

Date.

22.03.2024

Designer

LN

Checked by.

LN

Sheet No.

4

Stair Type:

1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MIStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0004

Design Span : 3.430 metres

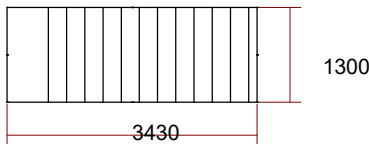
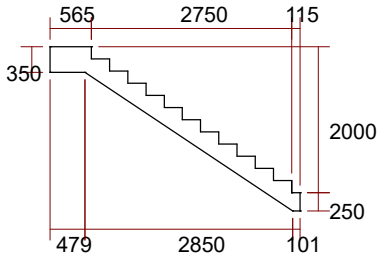
Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	250.0	Cut_back of Riser	=	0.00
Tread	=	250	Riser	=	166.7
Top Landing length	=	565	Bottom Landing length	=	115
Total Going	=	2750	Total Rise	=	2000
No. of Riser	=	12	No of Treads	=	11
Top Landing Thickness	=	350	Top Landing Finish Thickness	=	0
Btm Landing Thickness	=	250	Btm Landing Finish Thickness	=	0
Stair Width	=	1300	Waist Thickness	=	200
Stair Angle	=	33.69 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description	Left Hand End		Dim 3	Dim 4	Right Hand End		Dim 1	Dim 2	Dim 3	Dim 4
	Dim 1	Dim 2			Description	Dim 1				
Splay		None provided			Splay		None provided			
Rebate		None provided			Rebate		None provided			
Extensions		None provided			Extensions		None provided			
Extensions		None provided			Extensions		None provided			
Cut Outs		None provided			Cut Outs		None provided			
Side Notch		None provided			Side Notch		None provided			



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SF-0004

Contract No 05-BYL-1462

Date. 22.03.2024

Designer LN

Checked by. LN

Sheet No. 5

Stair Type: 1

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (fck) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (fy) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (Gk) = 1.35
 Gk modification factor ξ = 1.00
 Load Factor (Gk) = 1.35 = 1.000 x 1.350
 Load Factor (Qk) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 $\psi_0 = 0.70$ $\psi_1 = 0.50$ $\psi_2 = 0.30$

Loading :**UDL Loads**

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Selfweight	8.750	0.000	0.479
Flight	Selfweight	8.093	0.479	3.329
Bottom Landing	Selfweight	6.250	3.329	3.430
Full Stair	Imposed	4.000	0.000	3.430

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m2)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	0.000	4.000			0.000	3.430	0.000	1.300	0.000	1.300	130.0
2	GDL	8.750	0.000	8.750	0.000	0.000	0.479	0.000	1.300	0.000	1.300	130.0
3	GDL	8.093	0.000	8.093	0.000	0.479	3.329	0.000	1.300	0.000	1.300	130.0
4	GDL	6.250	0.000	6.250	0.000	3.329	3.430	0.000	1.300	0.000	1.300	130.0

Reactions (Service) :

Load Ref	Load Type	Reaction - Rl (kN/m)						Reaction - Rr (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	0.000	6.860	0.000	0.000	6.860	1.300	0.000	-6.860	0.000	0.000	-6.860	1.300
2	GDL	3.902	0.000	0.000	3.902	0.000	1.300	-0.293	0.000	0.000	-0.293	0.000	1.300
3	GDL	10.258	0.000	0.000	10.258	0.000	1.300	-12.806	0.000	0.000	-12.806	0.000	1.300
4	GDL	0.009	0.000	0.000	0.009	0.000	1.300	-0.619	0.000	0.000	-0.619	0.000	1.300
Total Comb'd		14.169	6.860	0.000	14.169	6.860	1.300	-13.718	-6.860	0.000	-13.718	-6.860	1.300

Analysis of Forces and Moments:**Limit State**

Ultimate	A	B	C	D	Max	Limit State Frequent	A	B	C	D	Max
Position from LHE	0.000	0.479	3.329	3.430	1.713	Position from LHE	0.000	0.479	3.329	3.430	1.713
Shear (kN)	38.2	27.1	-35.6	-37.5	38.2	Shear (kN)	22.9	16.2	-21.2	-22.3	22.9
Moment (kN.m)	0.0	15.7	3.7	0.0	32.4	Moment (kN.m)	0.0	9.4	2.2	0.0	19.3

Limit State

Characteristic	A	B	C	D	Max	Limit State Quasi Permanent	A	B	C	D	Max
Position from LHE	0.000	0.479	3.329	3.430	1.713	Position from LHE	0.000	0.479	3.329	3.430	1.712
Shear (kN)	27.34	19.39	-25.41	-26.75	27.34	Shear (kN)	21.10	14.89	-19.54	-20.51	21.10
Moment (kN.m)	0.00	11.20	2.6	0.00	23.16	Moment (kN.m)	0.00	8.63	2.01	0.00	17.81

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SF-0004

Contract No 05-BYL-1462

Date. 22.03.2024

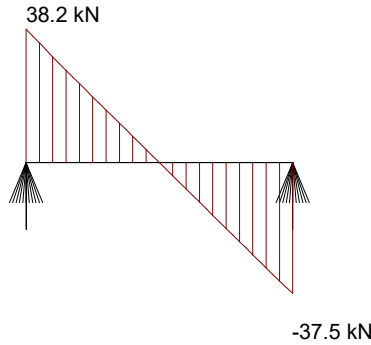
Designer LN

Checked by. LN

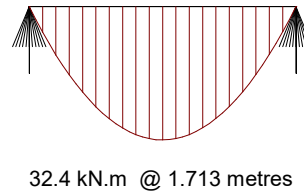
Sheet No. 6

Stair Type: 1

Shear Force Diagram



Bending Moment Diagram



Reinforcement Provided:

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	12	9	10	5	10	150	see Flight
Flight	Normal	12	9	10	5	10	250	Bar at Centreline
Btm Landing	Normal	12	9	10	5	10	250	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1300.0	1300.0	1300.0	1300.0	N.A.
Effective Depth d1 (mm)	314.0	164.0	214.0	164.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1018.0	1018.0	1018.0	1018.0	Pass
Ast Req'd (mm ²)	744.8	389.0	507.6	478.5)
Ast min (mm ²)	744.8	389.0	507.6	389.0	Pass
Ast Actual Spacing (mm)	156.0	156.0	156.0	156.0	Pass
Ast Allow Spacing (mm)	281.1	300.0	300.0	300.0)
Asc prov'd (mm ²)	392.8	392.8	392.8	392.8	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	523.7	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	408.2	213.2	278.2	213.2)
Shear (Left) Actual (kN)	38.244	27.142	-35.565	27.142	Pass
Shear (Left) Allow (kN)	217.865	136.775	169.853	136.775)
Shear (Right) Actual (kN)	27.142	-35.565	-37.453	-35.565	Pass
Shear (Right) Allow (n/mm ²)	217.865	136.775	169.853	136.775)
Span/Depth Actual	10.924	20.915	16.028	20.915	Pass
Span/Depth Allow	40.000	40.000	40.000	40.000)

Design Satisfactory

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	34.23	Wavy Long Tail 4.0 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	34.23	5.0 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	52.67	7.5 tonne	Reinforcement satisfactory

Parameters

Volume	1.455	Unit weight	37.242 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	9	707	372	350
Right	10	9	707	254	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Angle Design (See works standard)

Angle Location.	Angle Type	Load (kN)	Angle No	Capacity (kN)	Status
Btm Angle	1A - 150 x 150 x 15 RSA 250mm Reinforced	-37.5	2	60.0	Pass

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH
 Tel +44(0)1335 361269, www.fpmccann.co.uk
 CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SF-0005

Contract No 05-BYL-1462
 Date. 25.03.2024
 Designer LN
 Checked by. LN
 Sheet No. 1
 Stair Type: 1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MIStructE
 Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0005

Design Span : 5.074 metres

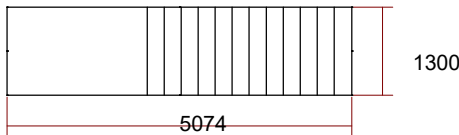
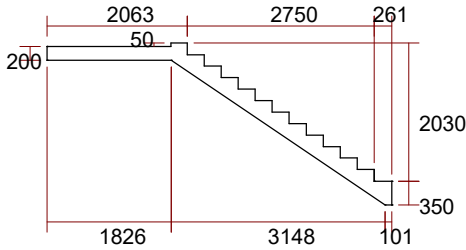
Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	250.0	Cut_back of Riser	=	0.00
Tread	=	250	Riser	=	169.2
Top Landing length	=	2063	Bottom Landing length	=	261
Total Going	=	2750	Total Rise	=	2030
No. of Riser	=	12	No of Treads	=	11
Top Landing Thickness	=	200	Top Landing Finish Thickness	=	50
Btm Landing Thickness	=	350	Btm Landing Finish Thickness	=	0
Stair Width	=	1300	Waist Thickness	=	200
Stair Angle	=	34.08 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description	Left Hand End		Dim 3	Dim 4	Right Hand End		Dim 1	Dim 2	Dim 3	Dim 4
	Dim 1	Dim 2			Description	Dim 1				
Splay		None provided			Splay	None provided				
Rebate		None provided			Rebate	None provided				
Extensions		None provided			Extensions	None provided				
Extensions		None provided			Extensions	None provided				
Cut Outs		None provided			Cut Outs	None provided				
Side Notch		None provided			Side Notch	None provided				



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SF-0005

Contract No 05-BYL-1462

Date. 25.03.2024

Designer LN

Checked by. LN

Sheet No. 2

Stair Type: 1

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (f_{ck}) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (f_y) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (G_k) = 1.35
 G_k modification factor ξ = 1.00
 Load Factor (G_k) = 1.35 = 1.000 x 1.350
 Load Factor (Q_k) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 ψ₀ = 0.70 ψ₁ = 0.50 ψ₂ = 0.30

Loading :

UDL Loads

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Finishes	1.200	0.000	1.826
	Selfweight	5.000	0.000	1.826
Flight	Selfweight	8.152	1.826	4.973
	Bottom Landing	Selfweight	8.750	4.973
Full Stair	Imposed	4.000	0.000	5.074

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m ²)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	0.000	4.000			0.000	5.074	0.000	1.300	0.000	1.300	130.0
2	GDL	6.200	0.000	6.200	0.000	0.000	1.826	0.000	1.300	0.000	1.300	130.0
3	GDL	8.152	0.000	8.152	0.000	1.826	4.973	0.000	1.300	0.000	1.300	130.0
4	GDL	8.750	0.000	8.750	0.000	4.973	5.074	0.000	1.300	0.000	1.300	130.0
5	GDL	0.558	0.360	0.558	0.360	1.413	1.663	0.000	0.100	0.000	1.301	99.9

Reactions (Service) :

Load Ref	Load Type	Reaction - R _i (kN/m)						Reaction - R _r (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	0.000	10.148	0.000	0.000	10.148	1.300	0.000	-10.148	0.000	0.000	-10.148	1.300
2	GDL	9.282	0.000	0.000	9.282	0.000	1.300	-2.036	0.000	0.000	-2.036	0.000	1.300
3	GDL	8.468	0.000	0.000	8.468	0.000	1.300	-17.192	0.000	0.000	-17.192	0.000	1.300
4	GDL	0.009	0.000	0.000	0.009	0.000	1.300	-0.872	0.000	0.000	-0.872	0.000	1.300
Total Comb'd		17.759	10.148	0.000	17.759	10.148	1.300	-20.100	-10.148	0.000	-20.100	-10.148	1.300

Additional Loads

Load Ref	Load Type	Reaction - R _i (kN)						Reaction - R _r (kN)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
5	GDL	0.097	0.063	0.000	0.097	0.063	0.100	-0.042	-0.027	0.000	-0.042	-0.027	0.100

Analysis of Forces and Moments:

Limit State	Limit State					Limit State	Limit State				
	A	B	C	D	Max		A	B	C	D	Max
Ultimate						Frequent					
Position from LHE	0.000	1.826	4.973	5.074	2.584	Position from LHE	0.000	1.826	4.973	5.074	2.596
Shear (kN)	51.2	16.8	-52.8	-55.2	-55.2	Shear (kN)	29.8	10.2	-31.4	-32.8	-32.8
Moment (kN.m)	0.0	62.2	5.4	0.0	68.6	Moment (kN.m)	0.0	36.6	3.2	0.0	40.5
Limit State						Limit State					
Characteristic						Quasi Permanent					
Position from LHE	0.000	1.826	4.973	5.074	2.584	Position from LHE	0.000	1.826	4.973	5.074	2.602
Shear (kN)	36.44	12.00	-37.72	-39.39	-39.39	Shear (kN)	27.16	9.43	-28.84	-30.14	-30.14
Moment (kN.m)	0.00	44.36	3.9	0.00	48.92	Moment (kN.m)	0.00	33.51	2.97	0.00	37.17

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SF-0005

Contract No

05-BYL-1462

Date.

25.03.2024

Designer

LN

Checked by.

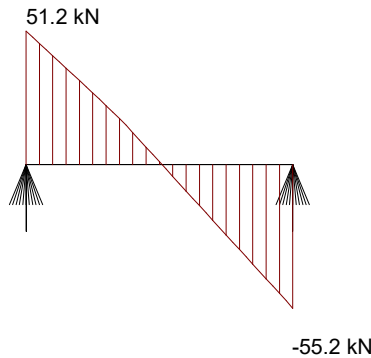
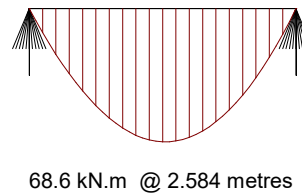
LN

Sheet No.

3

Stair Type:

1

Shear Force Diagram**Bending Moment Diagram****Reinforcement Provided:**

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	12	13	10	7	10	250	see Flight
Flight	Normal	12	13	10	7	10	250	Bar at Centreline
Btm Landing	Normal	12	13	10	7	10	150	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1300.0	1300.0	1300.0	1300.0	N.A.
Effective Depth d1 (mm)	164.0	164.0	314.0	164.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1470.5	1470.5	1470.5	1470.5	Pass
Ast Req'd (mm ²)	918.4	918.4	744.8	1012.2)
Ast min (mm ²)	389.0	389.0	744.8	389.0	Pass
Ast Actual Spacing (mm)	104.0	104.0	104.0	104.0	Pass
Ast Allow Spacing (mm)	300.0	300.0	300.0	297.2)
Asc prov'd (mm ²)	549.9	549.9	549.9	549.9	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	523.7	314.2	Pass
Asd req'd (mm ² /m)	213.2	213.2	408.2	213.2)
Shear (Left) Actual (kN)	51.182	16.755	-52.831	16.755	Pass
Shear (Left) Allow (kN)	154.611	154.611	217.865	154.611)
Shear (Right) Actual (kN)	16.755	-52.831	-55.161	-52.831	Pass
Shear (Right) Allow (n/mm ²)	154.611	154.611	217.865	154.611)
Span/Depth Actual	30.939	30.939	16.159	30.939	Pass
Span/Depth Allow	40.000	40.000	40.000	39.971)

Design Satisfactory**Lifters** (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	43.53	Wavy Long Tail 6.3 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	43.53	5.0 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	66.97	7.5 tonne	Reinforcement satisfactory

Parameters

Volume	1.850	Unit weight	47.358 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	13	1021	459	350
Right	10	13	1021	372	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SF-0006

Contract No

05-BYL-1462

Date.

22.03.2024

Designer

LN

Checked by.

LN

Sheet No.

13

Stair Type:

1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MIStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0006

Design Span : 4.961 metres

Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	250.0	Cut_back of Riser	=	0.00
Tread	=	250	Riser	=	169.2
Top Landing length	=	398	Bottom Landing length	=	1813
Total Going	=	2750	Total Rise	=	2030
No. of Riser	=	12	No of Treads	=	11
Top Landing Thickness	=	350	Top Landing Finish Thickness	=	0
Btm Landing Thickness	=	200	Btm Landing Finish Thickness	=	50
Stair Width	=	1300	Waist Thickness	=	200
Stair Angle	=	34.08 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description

Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

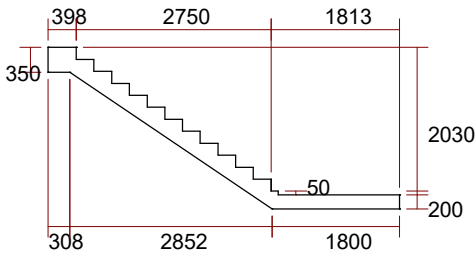
Left Hand End

Dim 1
Dim 2
Dim 3
Dim 4
None provided
None provided
None provided
None provided
None provided
None provided

Right Hand End

Description
Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

Dim 1
Dim 2
Dim 3
Dim 4
None provided
None provided
None provided
None provided
None provided
None provided



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SF-0006

Contract No 05-BYL-1462

Date. 22.03.2024

Designer LN

Checked by. LN

Sheet No. 14

Stair Type: 1

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (f_{ck}) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (f_y) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (G_k) = 1.35
 G_k modification factor ξ = 1.00
 Load Factor (G_k) = 1.35 = 1.000 x 1.350
 Load Factor (Q_k) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 ψ₀ = 0.70 ψ₁ = 0.50 ψ₂ = 0.30

Loading :

UDL Loads

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Selfweight	8.750	0.000	0.308
Flight	Selfweight	8.152	0.308	3.161
Bottom Landing	Finishes	1.200	3.161	4.961
	Selfweight	5.000	3.161	4.961
Full Stair	Imposed	4.000	0.000	4.961

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m ²)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	0.000	4.000			0.000	4.961	0.000	1.300	0.000	1.300	130.0
2	GDL	8.750	0.000	8.750	0.000	0.000	0.308	0.000	1.300	0.000	1.300	130.0
3	GDL	8.152	0.000	8.152	0.000	0.308	3.161	0.000	1.300	0.000	1.300	130.0
4	GDL	6.200	0.000	6.200	0.000	3.161	4.961	0.000	1.300	0.000	1.300	130.0
5	GDL	0.558	0.360	0.558	0.360	3.548	3.798	0.000	0.100	0.000	1.245	104.4

Reactions (Service) :

Load Ref	Load Type	Reaction - R _i (kN/m)						Reaction - R _r (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	0.000	9.922	0.000	0.000	9.922	1.300	0.000	-9.922	0.000	0.000	-9.922	1.300
2	GDL	2.614	0.000	0.000	2.614	0.000	1.300	-0.084	0.000	0.000	-0.084	0.000	1.300
3	GDL	15.122	0.000	0.000	15.122	0.000	1.300	-8.129	0.000	0.000	-8.129	0.000	1.300
4	GDL	2.026	0.000	0.000	2.026	0.000	1.300	-9.137	0.000	0.000	-9.137	0.000	1.300
	Total Comb'd	19.761	9.922	0.000	19.761	9.922	1.300	-17.350	-9.922	0.000	-17.350	-9.922	1.300

Additional Loads

Load Ref	Load Type	Reaction - R _i (kN)						Reaction - R _r (kN)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
5	GDL	0.036	0.023	0.000	0.036	0.023	0.100	-0.103	-0.067	0.000	-0.103	-0.067	0.100

Analysis of Forces and Moments:

Limit State	Limit State Frequent					Limit State Quasi Permanent				
	A	B	C	D	Max	A	B	C	D	Max
Ultimate										
Position from LHE	0.000	0.308	3.161	4.961	2.433	0.000	0.308	3.161	4.961	2.421
Shear (kN)	54.1	47.0	-16.1	-50.0	54.1	32.2	27.9	-9.8	-29.1	32.2
Moment (kN.m)	0.0	15.6	59.7	0.0	65.5	0.0	9.3	35.1	0.0	38.7
Limit State										
Characteristic										
Position from LHE	0.000	0.308	3.161	4.961	2.433	0.000	0.308	3.161	4.961	2.415
Shear (kN)	38.65	33.54	-11.52	-35.63	38.65	29.60	25.62	-9.06	-26.55	29.60
Moment (kN.m)	0.00	11.13	42.5	0.00	46.73	0.00	8.51	32.13	0.00	35.50

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SF-0006

Contract No

05-BYL-1462

Date.

22.03.2024

Designer

LN

Checked by.

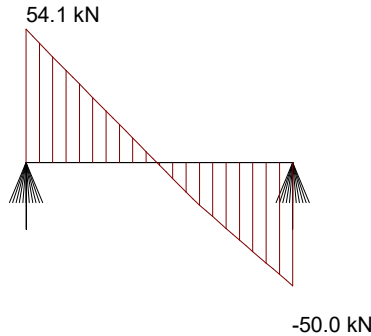
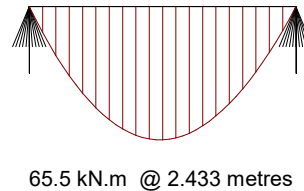
LN

Sheet No.

15

Stair Type:

1

Shear Force Diagram**Bending Moment Diagram****Reinforcement Provided:**

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	12	9	10	5	10	150	see Flight
Flight	Normal	12	9	10	5	10	250	Bar at Centreline
Btm Landing	Normal	12	9	10	5	10	250	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1300.0	1300.0	1300.0	1300.0	N.A.
Effective Depth d1 (mm)	314.0	164.0	164.0	164.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1018.0	1018.0	1018.0	1018.0	Pass
Ast Req'd (mm ²)	744.8	880.7	880.7	966.9)
Ast min (mm ²)	744.8	389.0	389.0	389.0	Pass
Ast Actual Spacing (mm)	156.0	156.0	156.0	156.0	Pass
Ast Allow Spacing (mm)	282.8	246.8	246.8	220.2)
Asc prov'd (mm ²)	392.8	392.8	392.8	392.8	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	523.7	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	408.2	213.2	213.2	213.2)
Shear (Left) Actual (kN)	54.117	46.976	-16.076	46.976	Pass
Shear (Left) Allow (kN)	217.865	136.775	136.775	136.775)
Shear (Right) Actual (kN)	46.976	-16.076	-50.047	-16.076	Pass
Shear (Right) Allow (n/mm ²)	217.865	136.775	136.775	136.775)
Span/Depth Actual	15.799	30.250	30.250	30.250	Pass
Span/Depth Allow	40.000	38.563	38.563	30.788)

Design Satisfactory**Lifters** (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	43.02	Wavy Long Tail 6.3 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	43.02	5.0 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	66.19	7.5 tonne	Reinforcement satisfactory

Parameters

Volume	1.828	Unit weight	46.800 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	9	707	372	350
Right	10	9	707	440	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Angle Design (See works standard)

Angle Location.	Angle Type	Load (kN)	Angle No	Capacity (kN)	Status
Top Angle	1A - 150 x 150 x 15 RSA 250mm Reinforced	54.1	2	60.0	Pass

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0007

Contract No

05-BYL-1462

Date.

19.03.2024

Designer

LN

Checked by.

LN

Sheet No.

1

Stair Type:

1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0007

Design Span : 4.359 metres

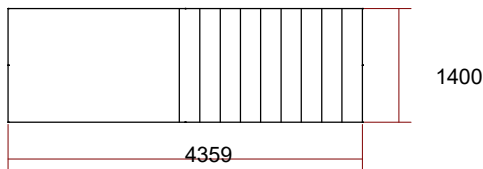
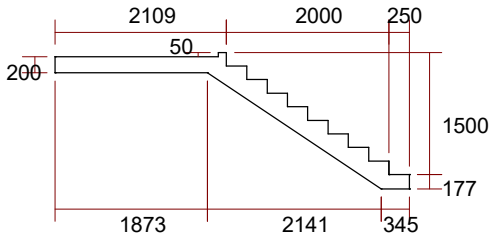
Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	250.0	Cut_back of Riser	=	0.00
Tread	=	250	Riser	=	166.7
Top Landing length	=	2109	Bottom Landing length	=	250
Total Going	=	2000	Total Rise	=	1500
No. of Riser	=	9	No of Treads	=	8
Top Landing Thickness	=	200	Top Landing Finish Thickness	=	50
Btm Landing Thickness	=	177	Btm Landing Finish Thickness	=	0
Stair Width	=	1400	Waist Thickness	=	200
Stair Angle	=	33.69 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description	Left Hand End		Dim 3	Dim 4	Right Hand End		Dim 1	Dim 2	Dim 3	Dim 4
	Dim 1	Dim 2			Description	Dim 1				
Splay	None provided				Splay	None provided				
Rebate	None provided				Rebate	None provided				
Extensions	None provided				Extensions	None provided				
Extensions	None provided				Extensions	None provided				
Cut Outs	None provided				Cut Outs	None provided				
Side Notch	None provided				Side Notch	None provided				



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0007

Contract No 05-BYL-1462

Date 19.03.2024

Designer LN

Checked by LN

Sheet No. 2

Stair Type: 1

Materials (Properties) :

Concrete Strength Class	= C40 / 50	Concrete Strength - cylinder (f _{ck})	= 40.0 N/sq.mm	
Aggregate size (max)	= 10 mm	Cement Strength Class	= CEM 42.5R CEM 52.5N CEM52.5R	
Compressive strength factor (cl 3.1.6) α _{cc}	= 0.85	Design Compressive strength (cl 3.1.6)	= 22.7 n/sq.mm	
Reinforcement Type	= High Yield Type B or C Steel	Characteristic Strength (f _y)	= 500.0 N/sq.mm	
Soffit Exposure Condition:	XC1	Cover min = 15 mm	Cover tolerance = 5 mm	Cover required = 20 mm
Top Surface Exposure Condition:	XC1	Cover min = 15 mm	Cover tolerance = 5 mm	Cover required = 20 mm
Fire Resistance - Time Required	= 90 mins	Fire Axis Distance Required = 30.0 mm	Minimum Thickness (Solid Slab) = 100.0 mm	
Crack Width Allow	= 0.30 mm			

Partial Safety Factors (Materials) :

Design	Concrete ψ _c	Reinforcement ψ _s
Persistent and Transient	1.50	1.15
Accidental	1.20	1.00

Partial Safety Factors (Actions) :

Load Factor (G _k)	= 1.35	
G _k modification factor ξ	= 1.00	
Load Factor (G _k)	= 1.35 = 1.000 x 1.350	
Load Factor (Q _k)	= 1.50	
Imposed loads in buildings (Table NA.1.1)	= Category A: domestic residential areas	
ψ ₀ = 0.70	ψ ₁ = 0.50	ψ ₂ = 0.30

Loading :

UDL Loads

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Finishes	1.200	0.000	1.873
	Selfweight	5.000	0.000	1.873
Flight	Selfweight	8.093	1.873	4.014
	Bottom Landing	Selfweight	4.425	4.014
Full Stair	Imposed	4.000	0.000	4.359

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m ²)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	0.000	4.000			0.000	4.359	0.000	1.400	0.000	1.400	140.0
2	GDL	6.200	0.000	6.200	0.000	0.000	1.873	0.000	1.400	0.000	1.400	140.0
3	GDL	8.093	0.000	8.093	0.000	1.873	4.014	0.000	1.400	0.000	1.400	140.0
4	GDL	4.425	0.000	4.425	0.000	4.014	4.359	0.000	1.400	0.000	1.400	140.0
5	GDL	0.558	0.360	0.558	0.360	1.459	1.709	0.000	0.100	0.000	1.311	106.8

Reactions (Service) :

Load Ref	Load Type	Reaction - R _i (kN/m)						Reaction - R _r (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	0.000	8.718	0.000	0.000	8.718	1.400	0.000	-8.718	0.000	0.000	-8.718	1.400
2	GDL	9.119	0.000	0.000	9.119	0.000	1.400	-2.496	0.000	0.000	-2.496	0.000	1.400
3	GDL	5.624	0.000	0.000	5.624	0.000	1.400	-11.698	0.000	0.000	-11.698	0.000	1.400
4	GDL	0.060	0.000	0.000	0.060	0.000	1.400	-1.466	0.000	0.000	-1.466	0.000	1.400
Total Comb'd		14.804	8.718	0.000	14.804	8.718	1.400	-15.660	-8.718	0.000	-15.660	-8.718	1.400

Additional Loads

Load Ref	Load Type	Reaction - R _i (kN)						Reaction - R _r (kN)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
5	GDL	0.089	0.057	0.000	0.089	0.057	0.100	-0.051	-0.033	0.000	-0.051	-0.033	0.100

Analysis of Forces and Moments:

Limit State	Limit State					Limit State	Limit State				
	A	B	C	D	Max		A	B	C	D	Max
Ultimate						Frequent					
Position from LHE	0.000	1.873	4.014	4.359	2.231	Position from LHE	0.000	1.873	4.014	4.359	2.245
Shear (kN)	46.5	8.5	-42.2	-48.0	-48.0	Shear (kN)	27.0	5.2	-25.0	-28.1	-28.1
Moment (kN.m)	0.0	51.7	15.6	0.0	53.2	Moment (kN.m)	0.0	30.3	9.2	0.0	31.3
Limit State						Limit State					
Characteristic						Quasi Permanent					
Position from LHE	0.000	1.873	4.014	4.359	2.231	Position from LHE	0.000	1.873	4.014	4.359	2.251
Shear (kN)	33.09	6.09	-30.15	-34.22	-34.22	Shear (kN)	24.50	4.91	-22.93	-25.65	-25.65
Moment (kN.m)	0.00	36.86	11.1	0.00	37.95	Moment (kN.m)	0.00	27.67	8.38	0.00	28.60

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0007

Contract No

05-BYL-1462

Date.

19.03.2024

Designer

LN

Checked by.

LN

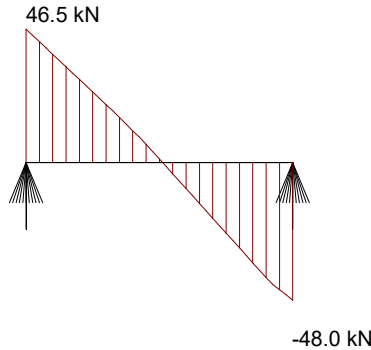
Sheet No.

3

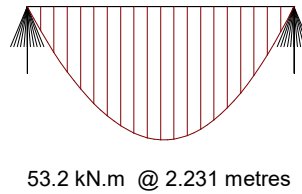
Stair Type:

1

Shear Force Diagram



Bending Moment Diagram



Reinforcement Provided:

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	12	10	10	6	10	250	see Flight
Flight	Normal	12	10	10	6	10	250	Bar at Centreline
Btm Landing	Normal	12	10	10	6	10	250	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1400.0	1400.0	1400.0	1400.0	N.A.
Effective Depth d1 (mm)	164.0	164.0	141.0	164.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1131.1	1131.1	1131.1	1131.1	Pass
Ast Req'd (mm ²)	763.6	763.6	360.2	785.9)
Ast min (mm ²)	418.9	418.9	360.2	418.9	Pass
Ast Actual Spacing (mm)	149.8	149.8	149.8	149.8	Pass
Ast Allow Spacing (mm)	300.0	300.0	300.0	297.2)
Asc prov'd (mm ²)	471.3	471.3	471.3	471.3	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	213.2	213.2	183.3	213.2)
Shear (Left) Actual (kN)	46.507	8.472	-42.247	8.472	Pass
Shear (Left) Allow (kN)	148.839	148.839	134.575	148.839)
Shear (Right) Actual (kN)	8.472	-42.247	-48.031	-42.247	Pass
Shear (Right) Allow (n/mm ²)	148.839	148.839	134.575	148.839)
Span/Depth Actual	26.579	26.579	30.915	26.579	Pass
Span/Depth Allow	40.000	40.000	40.000	40.000)

Design Satisfactory

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	37.36	Wavy Long Tail 4.0 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	37.36	5.0 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	57.47	7.5 tonne	Reinforcement satisfactory

Parameters

Volume	1.588	Unit weight	40.640 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	10	785	382	350
Right	10	10	785	180	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni, Poyle

Unit Reference : SF-0008

Contract No

05-BYL-1462

Date.

26.03.2024

Designer

LN

Checked by.

LN

Sheet No.

1

Stair Type:

1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0008

Design Span : 4.474 metres

Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	250.0	Cut_back of Riser	=	0.00
Tread	=	250	Riser	=	166.7
Top Landing length	=	365	Bottom Landing length	=	1859
Total Going	=	2250	Total Rise	=	1667
No. of Riser	=	10	No of Treads	=	9
Top Landing Thickness	=	250	Top Landing Finish Thickness	=	0
Btm Landing Thickness	=	200	Btm Landing Finish Thickness	=	50
Stair Width	=	1400	Waist Thickness	=	200
Stair Angle	=	33.70 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description

Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

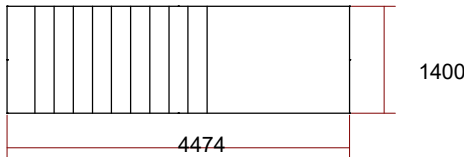
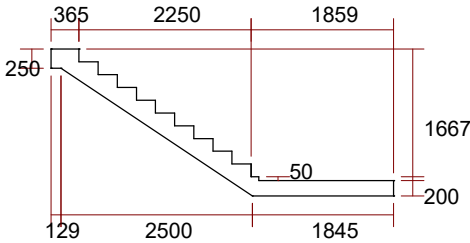
Left Hand End

Dim 1
Dim 2
Dim 3
Dim 4
None provided
None provided
None provided
None provided
None provided
None provided

Right Hand End

Description
Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

Dim 1
Dim 2
Dim 3
Dim 4
None provided
None provided
None provided
None provided
None provided
None provided



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
 CONTRACT : Panattoni, Poyle
 Unit Reference : SF-0008

Contract No 05-BYL-1462

Date. 26.03.2024

Designer LN

Checked by. LN

Sheet No. 2

Stair Type: 1

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (f_{ck}) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (f_y) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (G_k) = 1.35
 G_k modification factor ξ = 1.00
 Load Factor (G_k) = 1.35 = 1.000 x 1.350
 Load Factor (Q_k) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 ψ₀ = 0.70 ψ₁ = 0.50 ψ₂ = 0.30

Loading :

UDL Loads

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Selfweight	6.250	0.000	0.129
Flight	Selfweight	8.093	0.129	2.629
Bottom Landing	Finishes	1.200	2.629	4.474
	Selfweight	5.000	2.629	4.474
Full Stair	Imposed	4.000	0.000	4.474

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m ²)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	0.000	4.000			0.000	4.474	0.000	1.400	0.000	1.400	140.0
2	GDL	6.250	0.000	6.250	0.000	0.000	0.129	0.000	1.400	0.000	1.400	140.0
3	GDL	8.093	0.000	8.093	0.000	0.129	2.629	0.000	1.400	0.000	1.400	140.0
4	GDL	6.200	0.000	6.200	0.000	2.629	4.474	0.000	1.400	0.000	1.400	140.0
5	GDL	0.558	0.360	0.558	0.360	3.015	3.265	0.000	0.100	0.000	1.224	114.4

Reactions (Service) :

Load Ref	Load Type	Reaction - R _i (kN/m)						Reaction - R _r (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	0.000	8.948	0.000	0.000	8.948	1.400	0.000	-8.948	0.000	0.000	-8.948	1.400
2	GDL	0.797	0.000	0.000	0.797	0.000	1.400	-0.012	0.000	0.000	-0.012	0.000	1.400
3	GDL	13.995	0.000	0.000	13.995	0.000	1.400	-6.238	0.000	0.000	-6.238	0.000	1.400
4	GDL	2.358	0.000	0.000	2.358	0.000	1.400	-9.079	0.000	0.000	-9.079	0.000	1.400
Total Comb'd		17.150	8.948	0.000	17.150	8.948	1.400	-15.329	-8.948	0.000	-15.329	-8.948	1.400

Additional Loads

Load Ref	Load Type	Reaction - R _i (kN)						Reaction - R _r (kN)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
5	GDL	0.042	0.027	0.000	0.042	0.027	0.100	-0.098	-0.063	0.000	-0.098	-0.063	0.100

Analysis of Forces and Moments:

Limit State	Limit State Frequent					Limit State Quasi Permanent				
	A	B	C	D	Max	A	B	C	D	Max
Ultimate										
Position from LHE	0.000	0.129	2.629	4.474	2.185	0.000	0.129	2.629	4.474	2.170
Shear (kN)	51.3	48.7	-10.5	-48.0	51.3	30.3	28.8	-6.5	-27.9	30.3
Moment (kN.m)	0.0	6.5	54.2	0.0	56.5	0.0	3.8	31.8	0.0	33.3
Limit State										
Characteristic										
Position from LHE	0.000	0.129	2.629	4.474	2.185	0.000	0.129	2.629	4.474	2.164
Shear (kN)	36.62	34.76	-7.57	-34.17	36.62	27.82	26.47	-6.05	-25.35	27.82
Moment (kN.m)	0.00	4.62	38.6	0.00	40.30	0.00	3.51	29.04	0.00	30.45

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni, Poyle

Unit Reference : SF-0008

Contract No

05-BYL-1462

Date.

26.03.2024

Designer

LN

Checked by.

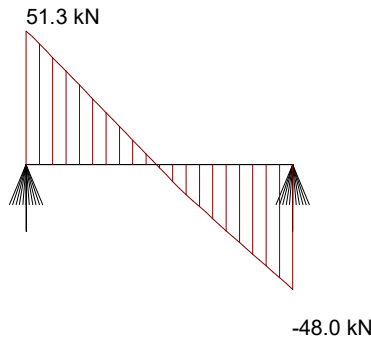
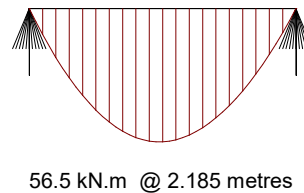
LN

Sheet No.

3

Stair Type:

1

Shear Force Diagram**Bending Moment Diagram****Reinforcement Provided:**

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	12	10	10	6	10	200	see Flight
Flight	Normal	12	10	10	6	10	250	Bar at Centreline
Btm Landing	Normal	12	10	10	6	10	250	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1400.0	1400.0	1400.0	1400.0	N.A.
Effective Depth d1 (mm)	214.0	164.0	164.0	164.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1131.1	1131.1	1131.1	1131.1	Pass
Ast Req'd (mm ²)	546.6	799.6	799.6	834.3)
Ast min (mm ²)	546.6	418.9	418.9	418.9	Pass
Ast Actual Spacing (mm)	149.8	149.8	149.8	149.8	Pass
Ast Allow Spacing (mm)	300.0	294.0	294.0	284.0)
Asc prov'd (mm ²)	471.3	471.3	471.3	471.3	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	392.8	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	278.2	213.2	213.2	213.2)
Shear (Left) Actual (kN)	51.314	48.698	-10.543	48.698	Pass
Shear (Left) Allow (kN)	182.919	148.839	148.839	148.839)
Shear (Right) Actual (kN)	48.698	-10.543	-48.022	-10.543	Pass
Shear (Right) Allow (n/mm ²)	182.919	148.839	148.839	148.839)
Span/Depth Actual	20.907	27.280	27.280	27.280	Pass
Span/Depth Allow	40.000	40.000	40.000	40.000)

Design Satisfactory**Lifters** (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	40.03	Wavy Long Tail 6.3 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	40.03	5.0 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	61.58	7.5 tonne	Reinforcement satisfactory

Parameters

Volume	1.701	Unit weight	43.542 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	10	785	273	350
Right	10	10	785	400	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Angle Design (See works standard)

Angle Location.	Angle Type	Load (kN)	Angle No	Capacity (kN)	Status
Top Angle	1A - 150 x 150 x 15 RSA 250mm Reinforced	51.3	2	60.0	Pass

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni, Poyle

Unit Reference : SF-0009

Contract No

05-BYL-1462

Date.

26.03.2024

Designer

LN

Checked by.

LN

Sheet No.

4

Stair Type:

1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MIStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0009

Design Span : 4.474 metres

Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	250.0	Cut_back of Riser	=	0.00
Tread	=	250	Riser	=	166.7
Top Landing length	=	2109	Bottom Landing length	=	115
Total Going	=	2250	Total Rise	=	1667
No. of Riser	=	10	No of Treads	=	9
Top Landing Thickness	=	200	Top Landing Finish Thickness	=	50
Btm Landing Thickness	=	250	Btm Landing Finish Thickness	=	0
Stair Width	=	1400	Waist Thickness	=	200
Stair Angle	=	33.70 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description

Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

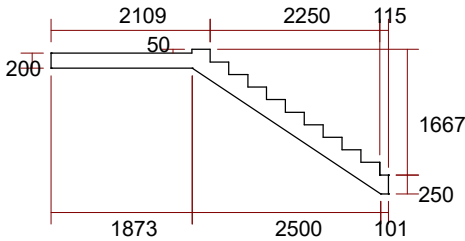
Left Hand End

Dim 1
Dim 2
Dim 3
Dim 4
Description
Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

Right Hand End

Dim 1
Dim 2
Dim 3
Dim 4
Description
Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

None provided
None provided
None provided
None provided
None provided
None provided
None provided
None provided
None provided
None provided



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni, Poyle

Unit Reference : SF-0009

Contract No 05-BYL-1462

Date. 26.03.2024

Designer LN

Checked by. LN

Sheet No. 5

Stair Type: 1

Materials (Properties) :

Concrete Strength Class	= C40 / 50	Concrete Strength - cylinder (f _{ck})	= 40.0 N/sq.mm
Aggregate size (max)	= 10 mm	Cement Strength Class	= CEM 42.5R CEM 52.5N CEM52.5R
Compressive strength factor (cl 3.1.6) α _{cc}	= 0.85	Design Compressive strength (cl 3.1.6)	= 22.7 n/sq.mm
Reinforcement Type	= High Yield Type B or C Steel	Characteristic Strength (f _y)	= 500.0 N/sq.mm
Soffit Exposure Condition:	XC1	Cover min = 15 mm	Cover tolerance = 5 mm
Top Surface Exposure Condition:	XC1	Cover min = 15 mm	Cover required = 20 mm
Fire Resistance - Time Required	= 90 mins	Fire Axis Distance Required = 30.0 mm	Minimum Thickness (Solid Slab) = 100.0 mm
Crack Width Allow	= 0.30 mm		

Partial Safety Factors (Materials) :

Design	Concrete ψ _c	Reinforcement ψ _s
Persistent and Transient	1.50	1.15
Accidental	1.20	1.00

Partial Safety Factors (Actions) :

Load Factor (G_k) = 1.35
 G_k modification factor ξ = 1.00
 Load Factor (G_k) = 1.35 = 1.000 x 1.350
 Load Factor (Q_k) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 ψ₀ = 0.70 ψ₁ = 0.50 ψ₂ = 0.30

Loading :

UDL Loads

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Finishes	1.200	0.000	1.873
	Selfweight	5.000	0.000	1.873
Flight	Selfweight	8.093	1.873	4.373
	Bottom Landing	Selfweight	6.250	4.373
Full Stair	Imposed	4.000	0.000	4.474

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m ²)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	0.000	4.000			0.000	4.474	0.000	1.400	0.000	1.400	140.0
2	GDL	6.200	0.000	6.200	0.000	0.000	1.873	0.000	1.400	0.000	1.400	140.0
3	GDL	8.093	0.000	8.093	0.000	1.873	4.373	0.000	1.400	0.000	1.400	140.0
4	GDL	6.250	0.000	6.250	0.000	4.373	4.474	0.000	1.400	0.000	1.400	140.0
5	GDL	0.558	0.360	0.558	0.360	1.459	1.709	0.000	0.100	0.000	1.329	105.3

Reactions (Service) :

Ref Load	No	Type	Reaction - R _i (kN/m)						Reaction - R _r (kN/m)					
			Position 1			Position 2			Position 1			Position 2		
			Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
	1	UDL	0.000	8.948	0.000	0.000	8.948	1.400	0.000	-8.948	0.000	0.000	-8.948	1.400
	2	GDL	9.183	0.000	0.000	9.183	0.000	1.400	-2.432	0.000	0.000	-2.432	0.000	1.400
	3	GDL	6.108	0.000	0.000	6.108	0.000	1.400	-14.126	0.000	0.000	-14.126	0.000	1.400
	4	GDL	0.007	0.000	0.000	0.007	0.000	1.400	-0.622	0.000	0.000	-0.622	0.000	1.400
	Total Comb'd		15.298	8.948	0.000	15.298	8.948	1.400	-17.179	-8.948	0.000	-17.179	-8.948	1.400

Additional Loads

Ref Load	No	Type	Reaction - R _i (kN)						Reaction - R _r (kN)					
			Position 1			Position 2			Position 1			Position 2		
			Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
	5	GDL	0.090	0.058	0.000	0.090	0.058	0.100	-0.049	-0.032	0.000	-0.049	-0.032	0.100

Analysis of Forces and Moments:

Limit State	Limit State					Limit State	Limit State				
	A	B	C	D	Max		A	B	C	D	Max
Ultimate						Frequent					
Position from LHE	0.000	1.873	4.373	4.474	2.291	Position from LHE	0.000	1.873	4.373	4.474	2.306
Shear (kN)	47.9	9.9	-49.3	-51.4	-51.4	Shear (kN)	27.8	6.1	-29.2	-30.4	-30.4
Moment (kN.m)	0.0	54.4	5.1	0.0	56.4	Moment (kN.m)	0.0	31.9	3.0	0.0	33.2
Limit State						Limit State					
Characteristic						Quasi Permanent					
Position from LHE	0.000	1.873	4.373	4.474	2.291	Position from LHE	0.000	1.873	4.373	4.474	2.312
Shear (kN)	34.10	7.11	-35.22	-36.66	-36.66	Shear (kN)	25.29	5.71	-26.82	-27.87	-27.87
Moment (kN.m)	0.00	38.76	3.6	0.00	40.25	Moment (kN.m)	0.00	29.15	2.75	0.00	30.40

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni, Poyle

Unit Reference : SF-0009

Contract No

05-BYL-1462

Date.

26.03.2024

Designer

LN

Checked by.

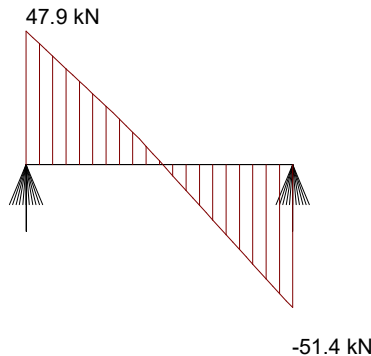
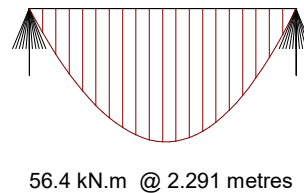
LN

Sheet No.

6

Stair Type:

1

Shear Force Diagram**Bending Moment Diagram****Reinforcement Provided:**

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	12	10	10	6	10	250	see Flight
Flight	Normal	12	10	10	6	10	250	Bar at Centreline
Btm Landing	Normal	12	10	10	6	10	200	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1400.0	1400.0	1400.0	1400.0	N.A.
Effective Depth d1 (mm)	164.0	164.0	214.0	164.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1131.1	1131.1	1131.1	1131.1	Pass
Ast Req'd (mm ²)	802.8	802.8	546.6	833.3)
Ast min (mm ²)	418.9	418.9	546.6	418.9	Pass
Ast Actual Spacing (mm)	149.8	149.8	149.8	149.8	Pass
Ast Allow Spacing (mm)	293.3	293.3	300.0	284.4)
Asc prov'd (mm ²)	471.3	471.3	471.3	471.3	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	392.8	314.2	Pass
Asd req'd (mm ² /m)	213.2	213.2	278.2	213.2)
Shear (Left) Actual (kN)	47.925	9.895	-49.347	9.895	Pass
Shear (Left) Allow (kN)	148.839	148.839	182.919	148.839)
Shear (Right) Actual (kN)	9.895	-49.347	-51.380	-49.347	Pass
Shear (Right) Allow (n/mm ²)	148.839	148.839	182.919	148.839)
Span/Depth Actual	27.280	27.280	20.907	27.280	Pass
Span/Depth Allow	40.000	40.000	40.000	40.000)

Design Satisfactory**Lifters** (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	39.84	Wavy Long Tail 4.0 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	39.84	5.0 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	61.30	7.5 tonne	Reinforcement satisfactory

Parameters

Volume	1.693	Unit weight	43.344 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	10	785	401	350
Right	10	10	785	273	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Angle Design (See works standard)

Angle Location.	Angle Type	Load (kN)	Angle No	Capacity (kN)	Status
Btm Angle	1A - 150 x 150 x 15 RSA 250mm Reinforced	-51.4	2	60.0	Pass

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0010

Contract No

05-BYL-1462

Date.

19.03.2024

Designer

LN

Checked by.

LN

Sheet No.

10

Stair Type:

1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0010

Design Span : 5.196 metres

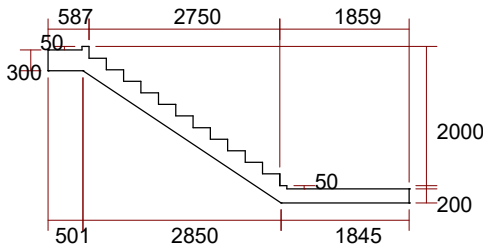
Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	250.0	Cut_back of Riser	=	0.00
Tread	=	250	Riser	=	166.7
Top Landing length	=	587	Bottom Landing length	=	1859
Total Going	=	2750	Total Rise	=	2000
No. of Riser	=	12	No of Treads	=	11
Top Landing Thickness	=	300	Top Landing Finish Thickness	=	50
Btm Landing Thickness	=	200	Btm Landing Finish Thickness	=	50
Stair Width	=	1400	Waist Thickness	=	200
Stair Angle	=	33.69 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description	Left Hand End		Dim 3	Dim 4	Right Hand End		Dim 1	Dim 2	Dim 3	Dim 4
	Dim 1	Dim 2			Description	Dim 1				
Splay	None provided				Splay	None provided				
Rebate	None provided				Rebate	None provided				
Extensions	None provided				Extensions	None provided				
Extensions	None provided				Extensions	None provided				
Cut Outs	None provided				Cut Outs	None provided				
Side Notch	None provided				Side Notch	None provided				



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0010

Contract No 05-BYL-1462

Date 19.03.2024

Designer LN

Checked by LN

Sheet No. 11

Stair Type: 1

Materials (Properties) :

Concrete Strength Class	= C40 / 50	Concrete Strength - cylinder (f _{ck})	= 40.0 N/sq.mm
Aggregate size (max)	= 10 mm	Cement Strength Class	= CEM 42.5R CEM 52.5N CEM52.5R
Compressive strength factor (cl 3.1.6) α _{cc}	= 0.85	Design Compressive strength (cl 3.1.6)	= 22.7 n/sq.mm
Reinforcement Type	= High Yield Type B or C Steel	Characteristic Strength (f _y)	= 500.0 N/sq.mm
Soffit Exposure Condition:	XC1	Cover min = 15 mm	Cover tolerance = 5 mm
Top Surface Exposure Condition:	XC1	Cover min = 15 mm	Cover required = 20 mm
Fire Resistance - Time Required	= 90 mins	Fire Axis Distance Required = 30.0 mm	Minimum Thickness (Solid Slab) = 100.0 mm
Crack Width Allow	= 0.30 mm		

Partial Safety Factors (Materials) :

Design	Concrete ψ _c	Reinforcement ψ _s
Persistent and Transient	1.50	1.15
Accidental	1.20	1.00

Partial Safety Factors (Actions) :

Load Factor (G_k) = 1.35
 G_k modification factor ξ = 1.00
 Load Factor (G_k) = 1.35 = 1.000 x 1.350
 Load Factor (Q_k) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 ψ₀ = 0.70 ψ₁ = 0.50 ψ₂ = 0.30

Loading :

UDL Loads

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Finishes	1.200	0.000	0.501
	Selfweight	7.500	0.000	0.501
Flight	Selfweight	8.093	0.501	3.351
	Finishes	1.200	3.351	5.196
Bottom Landing	Selfweight	5.000	3.351	5.196
	Imposed	4.000	0.000	5.196

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m ²)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	0.000	4.000			0.000	5.196	0.000	1.400	0.000	1.400	140.0
2	GDL	8.700	0.000	8.700	0.000	0.000	0.501	0.000	1.400	0.000	1.400	140.0
3	GDL	8.093	0.000	8.093	0.000	0.501	3.351	0.000	1.400	0.000	1.400	140.0
4	GDL	6.200	0.000	6.200	0.000	3.351	5.196	0.000	1.400	0.000	1.400	140.0
5	GDL	0.558	0.360	0.558	0.360	3.737	3.987	0.000	0.100	0.000	1.291	108.4

Reactions (Service) :

Ref Load	No	Type	Reaction - R _i (kN/m)				Reaction - R _r (kN/m)							
			Position 1		Position 2		Position 1		Position 2					
			Dead	Imposed	A	B	Dead	Imposed	A	B				
	1	UDL	0.000	10.392	0.000	0.000	10.392	1.400	0.000	-10.392	0.000	0.000	-10.392	1.400
	2	GDL	4.152	0.000	0.000	4.152	0.000	1.400	-0.211	0.000	0.000	-0.211	0.000	1.400
	3	GDL	14.513	0.000	0.000	14.513	0.000	1.400	-8.551	0.000	0.000	-8.551	0.000	1.400
	4	GDL	2.030	0.000	0.000	2.030	0.000	1.400	-9.406	0.000	0.000	-9.406	0.000	1.400
	Total Comb'd		20.695	10.392	0.000	20.695	10.392	1.400	-18.168	-10.392	0.000	-18.168	-10.392	1.400

Additional Loads

Ref Load	No	Type	Reaction - R _i (kN)				Reaction - R _r (kN)							
			Position 1		Position 2		Position 1		Position 2					
			Dead	Imposed	A	B	Dead	Imposed	A	B				
	5	GDL	0.036	0.023	0.000	0.036	0.023	0.100	-0.104	-0.067	0.000	-0.104	-0.067	0.100

Analysis of Forces and Moments:

Limit State	Limit State					Limit State	Limit State						
	A	B	C	D	Max		Frequent	A	B	C	D	Max	
Ultimate													
Position from LHE	0.000	0.501	3.351	5.196	2.551	Position from LHE	0.000	0.501	3.351	5.196	2.539		
Shear (kN)	61.0	48.6	-19.0	-56.4	61.0	Shear (kN)	36.3	28.8	-11.5	-32.9	36.3		
Moment (kN.m)	0.0	27.5	69.7	0.0	77.3	Moment (kN.m)	0.0	16.3	41.0	0.0	45.6		
Limit State						Limit State							
Characteristic						Quasi Permanent							
Position from LHE	0.000	0.501	3.351	5.196	2.551	Position from LHE	0.000	0.501	3.351	5.196	2.533		
Shear (kN)	43.59	34.67	-13.58	-40.17	43.59	Shear (kN)	33.38	26.43	-10.64	-29.93	33.38		
Moment (kN.m)	0.00	19.62	49.7	0.00	55.12	Moment (kN.m)	0.00	15.00	37.50	0.00	41.85		

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0010

Contract No

05-BYL-1462

Date.

19.03.2024

Designer

LN

Checked by.

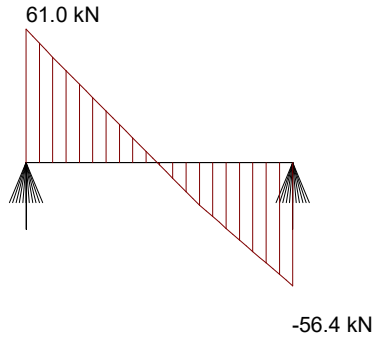
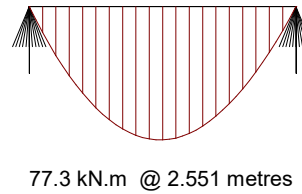
LN

Sheet No.

12

Stair Type:

1

Shear Force Diagram**Bending Moment Diagram****Reinforcement Provided:**

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	12	14	10	8	10	150	see Flight
Flight	Normal	12	14	10	8	10	250	Bar at Centreline
Btm Landing	Normal	12	14	10	8	10	250	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1400.0	1400.0	1400.0	1400.0	N.A.
Effective Depth d1 (mm)	264.0	164.0	164.0	164.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1583.6	1583.6	1583.6	1583.6	Pass
Ast Req'd (mm ²)	674.4	1028.5	1028.5	1140.5)
Ast min (mm ²)	674.4	418.9	418.9	418.9	Pass
Ast Actual Spacing (mm)	103.7	103.7	103.7	103.7	Pass
Ast Allow Spacing (mm)	300.0	300.0	300.0	288.0)
Asc prov'd (mm ²)	628.4	628.4	628.4	628.4	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	523.7	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	343.2	213.2	213.2	213.2)
Shear (Left) Actual (kN)	61.026	48.569	-18.962	48.569	Pass
Shear (Left) Allow (kN)	213.878	166.504	166.504	166.504)
Shear (Right) Actual (kN)	48.569	-18.962	-56.421	-18.962	Pass
Shear (Right) Allow (n/mm ²)	213.878	166.504	166.504	166.504)
Span/Depth Actual	19.682	31.683	31.683	31.683	Pass
Span/Depth Allow	40.000	40.000	40.000	36.059)

Design Satisfactory**Lifters** (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	47.79	Wavy Long Tail 6.3 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	47.79	5.0 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	73.52	7.5 tonne	Reinforcement satisfactory

Parameters

Volume	2.031	Unit weight	51.984 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	14	1099	337	350
Right	10	14	1099	514	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0011

Contract No

05-BYL-1462

Date.

19.03.2024

Designer

LN

Checked by.

LN

Sheet No.

13

Stair Type:

1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MIStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0011

Design Span : 5.196 metres

Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	250.0	Cut_back of Riser	=	0.00
Tread	=	250	Riser	=	169.2
Top Landing length	=	2113	Bottom Landing length	=	333
Total Going	=	2750	Total Rise	=	2030
No. of Riser	=	12	No of Treads	=	11
Top Landing Thickness	=	200	Top Landing Finish Thickness	=	50
Btm Landing Thickness	=	350	Btm Landing Finish Thickness	=	0
Stair Width	=	1400	Waist Thickness	=	200
Stair Angle	=	34.08 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description

Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

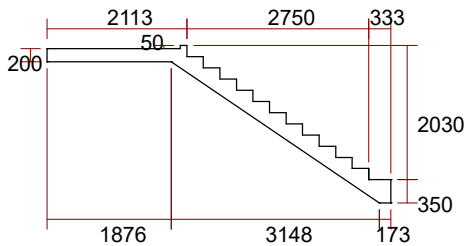
Left Hand End

Dim 1
Dim 2
Dim 3
Dim 4
Description
Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

Right Hand End

Dim 1
Dim 2
Dim 3
Dim 4
Description
Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

Dim 1
Dim 2
Dim 3
Dim 4
None provided
None provided
None provided
None provided
None provided
None provided
None provided



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0011

Contract No 05-BYL-1462

Date. 19.03.2024

Designer LN

Checked by. LN

Sheet No. 14

Stair Type: 1

Materials (Properties) :

Concrete Strength Class	= C40 / 50	Concrete Strength - cylinder (f _{ck})	= 40.0 N/sq.mm
Aggregate size (max)	= 10 mm	Cement Strength Class	= CEM 42.5R CEM 52.5N CEM52.5R
Compressive strength factor (cl 3.1.6) α _{cc}	= 0.85	Design Compressive strength (cl 3.1.6)	= 22.7 n/sq.mm
Reinforcement Type	= High Yield Type B or C Steel	Characteristic Strength (f _y)	= 500.0 N/sq.mm
Soffit Exposure Condition:	XC1	Cover min = 15 mm	Cover tolerance = 5 mm
Top Surface Exposure Condition:	XC1	Cover min = 15 mm	Cover required = 20 mm
Fire Resistance - Time Required	= 90 mins	Fire Axis Distance Required = 30.0 mm	Minimum Thickness (Solid Slab) = 100.0 mm
Crack Width Allow	= 0.30 mm		

Partial Safety Factors (Materials) :

Design	Concrete ψ _c	Reinforcement ψ _s
Persistent and Transient	1.50	1.15
Accidental	1.20	1.00

Partial Safety Factors (Actions) :

Load Factor (G_k) = 1.35
 G_k modification factor ξ = 1.00
 Load Factor (G_k) = 1.35 = 1.000 x 1.350
 Load Factor (Q_k) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 ψ₀ = 0.70 ψ₁ = 0.50 ψ₂ = 0.30

Loading :

UDL Loads

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Finishes	1.200	0.000	1.876
	Selfweight	5.000	0.000	1.876
Flight	Selfweight	8.152	1.876	5.023
	Bottom Landing	Selfweight	8.750	5.023
Full Stair	Imposed	4.000	0.000	5.196

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m ²)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	0.000	4.000			0.000	5.196	0.000	1.400	0.000	1.400	140.0
2	GDL	6.200	0.000	6.200	0.000	0.000	1.876	0.000	1.400	0.000	1.400	140.0
3	GDL	8.152	0.000	8.152	0.000	1.876	5.023	0.000	1.400	0.000	1.400	140.0
4	GDL	8.750	0.000	8.750	0.000	5.023	5.196	0.000	1.400	0.000	1.400	140.0
5	GDL	0.558	0.360	0.558	0.360	1.463	1.713	0.000	0.100	0.000	1.401	99.9

Reactions (Service) :

Ref Load	No	Type	Reaction - R _i (kN/m)						Reaction - R _r (kN/m)					
			Position 1			Position 2			Position 1			Position 2		
			Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
	1	UDL	0.000	10.392	0.000	0.000	10.392	1.400	0.000	-10.392	0.000	0.000	-10.392	1.400
	2	GDL	9.530	0.000	0.000	9.530	0.000	1.400	-2.099	0.000	0.000	-2.099	0.000	1.400
	3	GDL	8.625	0.000	0.000	8.625	0.000	1.400	-17.035	0.000	0.000	-17.035	0.000	1.400
	4	GDL	0.025	0.000	0.000	0.025	0.000	1.400	-1.485	0.000	0.000	-1.485	0.000	1.400
	Total Comb'd		18.180	10.392	0.000	18.180	10.392	1.400	-20.619	-10.392	0.000	-20.619	-10.392	1.400

Additional Loads

Ref Load	No	Type	Reaction - R _i (kN)						Reaction - R _r (kN)					
			Position 1			Position 2			Position 1			Position 2		
			Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
	5	GDL	0.097	0.062	0.000	0.097	0.062	0.100	-0.043	-0.028	0.000	-0.043	-0.028	0.100

Analysis of Forces and Moments:

Limit State	Limit State Frequent					Limit State Quasi Permanent				
	A	B	C	D	Max	A	B	C	D	Max
Ultimate										
Position from LHE	0.000	1.876	5.023	5.196	2.646	0.000	1.876	5.023	5.196	2.659
Shear (kN)	56.4	18.4	-56.6	-60.9	-60.9	32.9	11.1	-33.6	-36.2	-36.2
Moment (kN.m)	0.0	70.3	10.1	0.0	77.4	0.0	41.4	6.0	0.0	45.7
Limit State										
Characteristic										
Position from LHE	0.000	1.876	5.023	5.196	2.646	0.000	1.876	5.023	5.196	2.665
Shear (kN)	40.16	13.15	-40.40	-43.49	-43.49	29.93	10.33	-30.88	-33.28	-33.28
Moment (kN.m)	0.00	50.14	7.2	0.00	55.22	0.00	37.87	5.54	0.00	41.95

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0011

Contract No

05-BYL-1462

Date.

19.03.2024

Designer

LN

Checked by.

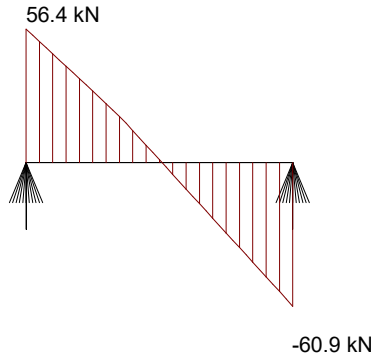
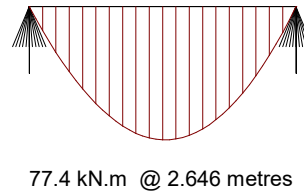
LN

Sheet No.

15

Stair Type:

1

Shear Force Diagram**Bending Moment Diagram****Reinforcement Provided:**

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	12	14	10	8	10	250	see Flight
Flight	Normal	12	14	10	8	10	250	Bar at Centreline
Btm Landing	Normal	12	14	10	8	10	150	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1400.0	1400.0	1400.0	1400.0	N.A.
Effective Depth d1 (mm)	164.0	164.0	314.0	164.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1583.6	1583.6	1583.6	1583.6	Pass
Ast Req'd (mm ²)	1038.1	1038.1	802.1	1142.5)
Ast min (mm ²)	418.9	418.9	802.1	418.9	Pass
Ast Actual Spacing (mm)	103.7	103.7	103.7	103.7	Pass
Ast Allow Spacing (mm)	300.0	300.0	300.0	287.5)
Asc prov'd (mm ²)	628.4	628.4	628.4	628.4	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	523.7	314.2	Pass
Asd req'd (mm ² /m)	213.2	213.2	408.2	213.2)
Shear (Left) Actual (kN)	56.408	18.352	-56.587	18.352	Pass
Shear (Left) Allow (kN)	166.504	166.504	234.624	166.504)
Shear (Right) Actual (kN)	18.352	-56.587	-60.892	-56.587	Pass
Shear (Right) Allow (n/mm ²)	166.504	166.504	234.624	166.504)
Span/Depth Actual	31.683	31.683	16.548	31.683	Pass
Span/Depth Allow	40.000	40.000	40.000	35.917)

Design Satisfactory**Lifters** (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	47.81	Wavy Long Tail 6.3 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	47.81	5.0 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	73.56	7.5 tonne	Reinforcement satisfactory

Parameters

Volume	2.032	Unit weight	52.011 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	14	1099	519	350
Right	10	14	1099	401	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0012

Contract No

05-BYL-1462

Date.

19.03.2024

Designer

LN

Checked by.

LN

Sheet No.

19

Stair Type:

1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0012

Design Span : 5.084 metres

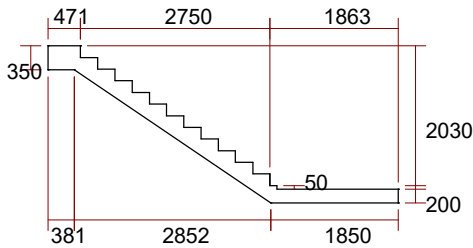
Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	250.0	Cut_back of Riser	=	0.00
Tread	=	250	Riser	=	169.2
Top Landing length	=	471	Bottom Landing length	=	1863
Total Going	=	2750	Total Rise	=	2030
No. of Riser	=	12	No of Treads	=	11
Top Landing Thickness	=	350	Top Landing Finish Thickness	=	0
Btm Landing Thickness	=	200	Btm Landing Finish Thickness	=	50
Stair Width	=	1400	Waist Thickness	=	200
Stair Angle	=	34.08 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description	Left Hand End		Dim 3	Dim 4	Right Hand End		Dim 1	Dim 2	Dim 3	Dim 4
	Dim 1	Dim 2			Description	Dim 1				
Splay	None provided				Splay	None provided				
Rebate	None provided				Rebate	None provided				
Extensions	None provided				Extensions	None provided				
Extensions	None provided				Extensions	None provided				
Cut Outs	None provided				Cut Outs	None provided				
Side Notch	None provided				Side Notch	None provided				



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0012

Contract No 05-BYL-1462

Date. 19.03.2024

Designer LN

Checked by. LN

Sheet No. 20

Stair Type: 1

Materials (Properties) :

Concrete Strength Class	= C40 / 50	Concrete Strength - cylinder (f _{ck})	= 40.0 N/sq.mm
Aggregate size (max)	= 10 mm	Cement Strength Class	= CEM 42.5R CEM 52.5N CEM52.5R
Compressive strength factor (cl 3.1.6) α _{cc}	= 0.85	Design Compressive strength (cl 3.1.6)	= 22.7 n/sq.mm
Reinforcement Type	= High Yield Type B or C Steel	Characteristic Strength (f _y)	= 500.0 N/sq.mm
Soffit Exposure Condition:	XC1	Cover min = 15 mm	Cover tolerance = 5 mm
Top Surface Exposure Condition:	XC1	Cover min = 15 mm	Cover required = 20 mm
Fire Resistance - Time Required	= 90 mins	Fire Axis Distance Required = 30.0 mm	Minimum Thickness (Solid Slab) = 100.0 mm
Crack Width Allow	= 0.30 mm		

Partial Safety Factors (Materials) :

Design	Concrete ψ _c	Reinforcement ψ _s
Persistent and Transient	1.50	1.15
Accidental	1.20	1.00

Partial Safety Factors (Actions) :

Load Factor (G _k)	= 1.35
G _k modification factor ξ	= 1.00
Load Factor (G _k)	= 1.35 = 1.000 x 1.350
Load Factor (Q _k)	= 1.50
Imposed loads in buildings (Table NA.1.1)	= Category A: domestic residential areas
ψ ₀ = 0.70	ψ ₁ = 0.50
	ψ ₂ = 0.30

Loading :

UDL Loads				
Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Selfweight	8.750	0.000	0.381
Flight	Selfweight	8.152	0.381	3.234
Bottom Landing	Finishes	1.200	3.234	5.084
	Selfweight	5.000	3.234	5.084
Full Stair	Imposed	4.000	0.000	5.084

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m ²)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(G _k)	W1(Q _k)	W2(G _k)	W2(Q _k)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	0.000	4.000			0.000	5.084	0.000	1.400	0.000	1.400	140.0
2	GDL	8.750	0.000	8.750	0.000	0.000	0.381	0.000	1.400	0.000	1.400	140.0
3	GDL	8.152	0.000	8.152	0.000	0.381	3.234	0.000	1.400	0.000	1.400	140.0
4	GDL	6.200	0.000	6.200	0.000	3.234	5.084	0.000	1.400	0.000	1.400	140.0
5	GDL	0.558	0.360	0.558	0.360	3.621	3.871	0.000	0.100	0.000	1.284	109.0

Reactions (Service) :

Load Ref	Load Type	Reaction - R _i (kN/m)						Reaction - R _r (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	0.000	10.168	0.000	0.000	10.168	1.400	0.000	-10.168	0.000	0.000	-10.168	1.400
2	GDL	3.212	0.000	0.000	3.212	0.000	1.400	-0.125	0.000	0.000	-0.125	0.000	1.400
3	GDL	14.984	0.000	0.000	14.984	0.000	1.400	-8.266	0.000	0.000	-8.266	0.000	1.400
4	GDL	2.088	0.000	0.000	2.088	0.000	1.400	-9.385	0.000	0.000	-9.385	0.000	1.400
Total Comb'd		20.284	10.168	0.000	20.284	10.168	1.400	-17.776	-10.168	0.000	-17.776	-10.168	1.400

Additional Loads

Load Ref	Load Type	Reaction - R _i (kN)						Reaction - R _r (kN)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
5	GDL	0.037	0.024	0.000	0.037	0.024	0.100	-0.103	-0.066	0.000	-0.103	-0.066	0.100

Analysis of Forces and Moments:

Limit State	Limit State					Limit State	Limit State				
	A	B	C	D	Max		A	B	C	D	Max
Ultimate						Frequent					
Position from LHE	0.000	0.381	3.234	5.084	2.493	Position from LHE	0.000	0.381	3.234	5.084	2.480
Shear (kN)	59.8	50.3	-17.6	-55.2	59.8	Shear (kN)	35.6	29.8	-10.7	-32.2	35.6
Moment (kN.m)	0.0	21.0	67.5	0.0	74.1	Moment (kN.m)	0.0	12.5	39.7	0.0	43.8
Limit State						Limit State					
Characteristic						Quasi Permanent					
Position from LHE	0.000	0.381	3.234	5.084	2.493	Position from LHE	0.000	0.381	3.234	5.084	2.475
Shear (kN)	42.70	35.89	-12.63	-39.31	42.70	Shear (kN)	32.72	27.40	-9.94	-29.29	32.72
Moment (kN.m)	0.00	14.99	48.2	0.00	52.85	Moment (kN.m)	0.00	11.46	36.37	0.00	40.14

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park, Poyle

Unit Reference : SF-0012

Contract No

05-BYL-1462

Date.

19.03.2024

Designer

LN

Checked by.

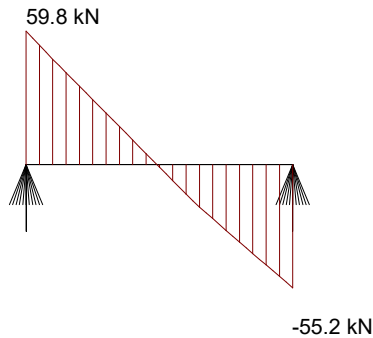
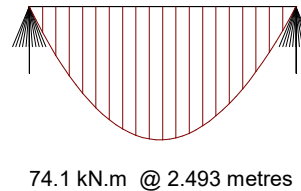
LN

Sheet No.

21

Stair Type:

1

Shear Force Diagram**Bending Moment Diagram****Reinforcement Provided:**

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	12	14	10	8	10	150	see Flight
Flight	Normal	12	14	10	8	10	250	Bar at Centreline
Btm Landing	Normal	12	14	10	8	10	250	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1400.0	1400.0	1400.0	1400.0	N.A.
Effective Depth d1 (mm)	314.0	164.0	164.0	164.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1583.6	1583.6	1583.6	1583.6	Pass
Ast Req'd (mm ²)	802.1	997.0	997.0	1093.4)
Ast min (mm ²)	802.1	418.9	418.9	418.9	Pass
Ast Actual Spacing (mm)	103.7	103.7	103.7	103.7	Pass
Ast Allow Spacing (mm)	300.0	300.0	300.0	296.6)
Asc prov'd (mm ²)	628.4	628.4	628.4	628.4	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	523.7	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	408.2	213.2	213.2	213.2)
Shear (Left) Actual (kN)	59.782	50.272	-17.630	50.272	Pass
Shear (Left) Allow (kN)	234.624	166.504	166.504	166.504)
Shear (Right) Actual (kN)	50.272	-17.630	-55.209	-17.630	Pass
Shear (Right) Allow (n/mm ²)	234.624	166.504	166.504	166.504)
Span/Depth Actual	16.191	31.000	31.000	31.000	Pass
Span/Depth Allow	40.000	40.000	40.000	39.688)

Design Satisfactory**Lifters** (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	47.50	Wavy Long Tail 6.3 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	47.50	5.0 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	73.08	7.5 tonne	Reinforcement satisfactory

Parameters

Volume	2.019	Unit weight	51.674 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	14	1099	401	350
Right	10	14	1099	499	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Angle Design (See works standard)

Angle Location.	Angle Type	Load (kN)	Angle No	Capacity (kN)	Status
Top Angle	1A - 150 x 150 x 15 RSA 250mm Reinforced	59.8	3	90.0	Pass

F P McCann Ltd

New Edinburgh Road,, Uddingston. G71 6NE

, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SF-0020

Contract No

05-BYL-1462

Date.

14.06.2024

Designer

LA

Checked by.

LA

Sheet No.

1

Stair Type:

1

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MIStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0020

Design Span : 2.000 metres

Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	280.0	Cut_back of Riser	=	0.00
Tread	=	280	Riser	=	150.0
Top Landing length	=	320	Bottom Landing length	=	280
Total Going	=	1400	Total Rise	=	900
No. of Riser	=	6	No of Treads	=	5
Top Landing Thickness	=	300	Top Landing Finish Thickness	=	0
Btm Landing Thickness	=	200	Btm Landing Finish Thickness	=	0
Stair Width	=	1380	Waist Thickness	=	200
Stair Angle	=	28.18 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description

Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

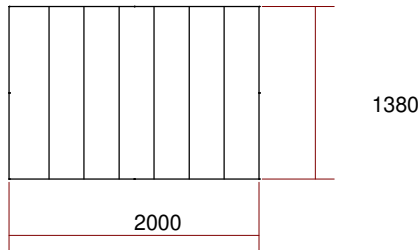
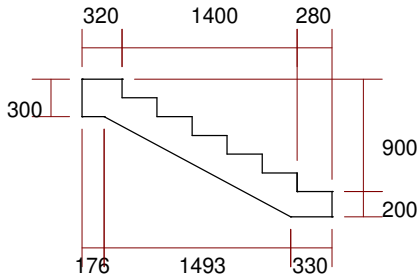
Left Hand End

Dim 1
Dim 2
Dim 3
Dim 4
None provided
None provided
None provided
None provided
None provided
None provided

Right Hand End

Description
Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch
None provided
None provided
None provided
None provided
None provided
None provided

Dim 1
Dim 2
Dim 3
Dim 4
None provided
None provided
None provided
None provided
None provided
None provided
None provided



F P McCann Ltd
 New Edinburgh Road,, Uddingston. G71 6NE
 , www.fpmccann.co.uk
 CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SF-0020

Contract No 05-BYL-1462
 Date. 14.06.2024
 Designer LA
 Checked by. LA
 Sheet No. 2
 Stair Type: 1

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (fck) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (fy) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (Gk) = 1.35
 Gk modification factor ξ = 1.00
 Load Factor (Gk) = 1.35 = 1.000 x 1.350
 Load Factor (Qk) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 $\psi_0 = 0.70$ $\psi_1 = 0.50$ $\psi_2 = 0.30$

Loading :

UDL Loads				
Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Selfweight	7.500	0.000	0.176
Flight	Selfweight	7.547	0.176	1.670
Bottom Landing	Selfweight	5.000	1.670	2.000
Full Stair	Services	1.500	0.000	2.000
	Imposed	4.000	0.000	2.000

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m2)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	1.500	4.000			0.000	2.000	0.000	1.380	0.000	1.380	138.0
2	GDL	7.500	0.000	7.500	0.000	0.000	0.176	0.000	1.380	0.000	1.380	138.0
3	GDL	7.547	0.000	7.547	0.000	0.176	1.670	0.000	1.380	0.000	1.380	138.0
4	GDL	5.000	0.000	5.000	0.000	1.670	2.000	0.000	1.380	0.000	1.380	138.0

Reactions (Service) :

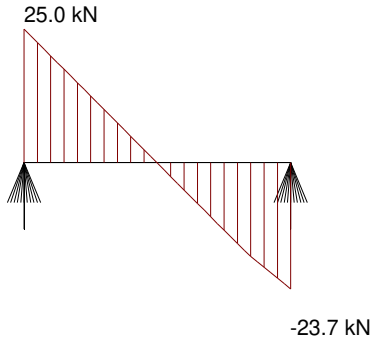
Load Ref No	Type	Reaction - Rl (kN/m)						Reaction - Rr (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	1.500	4.000	0.000	1.500	4.000	1.380	-1.500	-4.000	0.000	-1.500	-4.000	1.380
2	GDL	1.265	0.000	0.000	1.265	0.000	1.380	-0.058	0.000	0.000	-0.058	0.000	1.380
3	GDL	6.068	0.000	0.000	6.068	0.000	1.380	-5.202	0.000	0.000	-5.202	0.000	1.380
4	GDL	0.136	0.000	0.000	0.136	0.000	1.380	-1.515	0.000	0.000	-1.515	0.000	1.380
Total Comb'd		8.970	4.000	0.000	8.970	4.000	1.380	-8.275	-4.000	0.000	-8.275	-4.000	1.380

Additional Loads

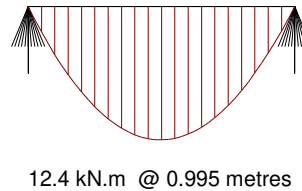
Analysis of Forces and Moments:

Limit State	Ultimate					Max	Limit State	Frequent					Max
	A	B	C	D	Position from LHE			A	B	C	D	Position from LHE	
Position from LHE	0.000	0.176	1.670	2.000	0.995		0.000	0.176	1.670	2.000	0.994		
Shear (kN)	25.0	20.6	-17.0	-23.7	25.0		15.1	12.5	-10.3	-14.2	15.1		
Moment (kN.m)	0.0	4.0	6.7	0.0	12.4		0.0	2.4	4.0	0.0	7.5		
Limit State	Characteristic					Max	Limit State	Quasi Permanent					Max
	A	B	C	D	Position from LHE			A	B	C	D	Position from LHE	
Position from LHE	0.000	0.176	1.670	2.000	0.995		0.000	0.176	1.670	2.000	0.993		
Shear (kN)	17.90	14.73	-12.16	-16.94	17.90		14.03	11.55	-9.57	-13.08	14.03		
Moment (kN.m)	0.00	2.88	4.8	0.00	8.91		0.00	2.26	3.74	0.00	6.97		

Shear Force Diagram



Bending Moment Diagram



Reinforcement Provided:

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	10	10	10	6	10	150	see Flight
Flight	Normal	10	10	10	6	10	250	Bar at Centreline
Btm Landing	Normal	10	10	10	6	10	250	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1380.0	1380.0	1380.0	1380.0	N.A.
Effective Depth d1 (mm)	265.0	165.0	165.0	165.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	785.5	785.5	785.5	785.5	Pass
Ast Req'd (mm ²)	667.3	415.5	415.5	415.5)
Ast min (mm ²)	667.3	415.5	415.5	415.5	Pass
Ast Actual Spacing (mm)	147.8	147.8	147.8	147.8	Pass
Ast Allow Spacing (mm)	240.8	300.0	300.0	300.0)
Asc prov'd (mm ²)	471.3	471.3	471.3	471.3	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	523.7	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	344.5	214.5	214.5	214.5)
Shear (Left) Actual (kN)	24.991	20.571	-16.964	20.571	Pass
Shear (Left) Allow (kN)	206.799	142.563	142.563	142.563)
Shear (Right) Actual (kN)	20.571	-16.964	-23.697	-16.964	Pass
Shear (Right) Allow (n/mm ²)	206.799	142.563	142.563	142.563)
Span/Depth Actual	7.547	12.121	12.121	12.121	Pass
Span/Depth Allow	40.000	40.000	40.000	40.000)

Design Satisfactory

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	15.37	Wavy Long Tail 2.5 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	15.37	2.5 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	23.64	2.5 tonne	Reinforcement satisfactory

Parameters

Volume	0.800	Unit weight	20.472 kN
Angle Spread	60.00 degrees	Spread Factor	1.155
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	10	785	334	350
Right	10	10	785	208	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MIStructE
 Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0021

Design Span : 2.665 metres

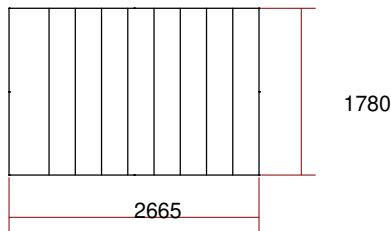
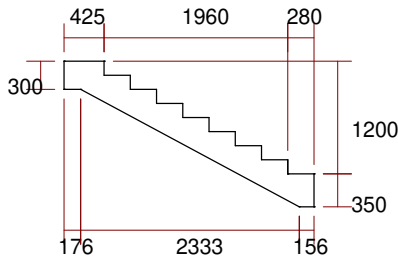
Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	280.0	Cut_back of Riser	=	0.00
Tread	=	280	Riser	=	150.0
Top Landing length	=	425	Bottom Landing length	=	280
Total Going	=	1960	Total Rise	=	1200
No. of Riser	=	8	No of Treads	=	7
Top Landing Thickness	=	300	Top Landing Finish Thickness	=	0
Btm Landing Thickness	=	350	Btm Landing Finish Thickness	=	0
Stair Width	=	1780	Waist Thickness	=	250
Stair Angle	=	28.18 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description	Left Hand End		Dim 3	Dim 4	Right Hand End		Dim 1	Dim 2	Dim 3	Dim 4
	Dim 1	Dim 2			Description	Dim 1				
Splay					Splay					
Rebate	None provided				Rebate					
Extensions	None provided				Extensions					
Extensions	None provided				Extensions					
Cut Outs	None provided				Cut Outs					
Side Notch	None provided				Side Notch					



F P McCann Ltd
 New Edinburgh Road,, Uddingston. G71 6NE
 , www.fpmccann.co.uk
 CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SF-0021

Contract No 05-BYL-1462
 Date. 14.06.2024
 Designer LA
 Checked by. LA
 Sheet No. 5
 Stair Type: 1

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (fck) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (fy) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (Gk) = 1.35
 Gk modification factor ξ = 1.00
 Load Factor (Gk) = 1.35 = 1.000 x 1.350
 Load Factor (Qk) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 $\psi_0 = 0.70$ $\psi_1 = 0.50$ $\psi_2 = 0.30$

Loading :

UDL Loads

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Selfweight	7.500	0.000	0.176
Flight	Selfweight	8.965	0.176	2.509
Bottom Landing	Selfweight	8.750	2.509	2.665
Full Stair	Services	1.500	0.000	2.665
	Imposed	4.000	0.000	2.665

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m ²)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	1.500	4.000			0.000	2.665	0.000	1.780	0.000	1.780	178.0
2	GDL	7.500	0.000	7.500	0.000	0.000	0.176	0.000	1.780	0.000	1.780	178.0
3	GDL	8.965	0.000	8.965	0.000	0.176	2.509	0.000	1.780	0.000	1.780	178.0
4	GDL	8.750	0.000	8.750	0.000	2.509	2.665	0.000	1.780	0.000	1.780	178.0

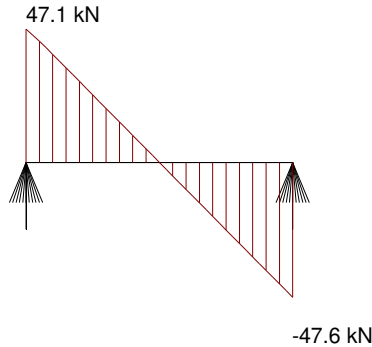
Reactions (Service) :

Load Ref No	Type	Reaction - Rl (kN/m)						Reaction - Rr (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	1.999	5.330	0.000	1.999	5.330	1.780	-1.999	-5.330	0.000	-1.999	-5.330	1.780
2	GDL	1.274	0.000	0.000	1.274	0.000	1.780	-0.043	0.000	0.000	-0.043	0.000	1.780
3	GDL	10.383	0.000	0.000	10.383	0.000	1.780	-10.536	0.000	0.000	-10.536	0.000	1.780
4	GDL	0.040	0.000	0.000	0.040	0.000	1.780	-1.326	0.000	0.000	-1.326	0.000	1.780
Total Comb'd		13.695	5.330	0.000	13.695	5.330	1.780	-13.904	-5.330	0.000	-13.904	-5.330	1.780

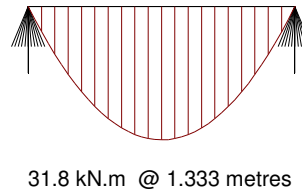
Analysis of Forces and Moments:

Limit State	Ultimate	A	B	C	D	Max	Limit State	Frequent	A	B	C	D	Max
	Shear (kN)	47.1	41.5	-42.1	-47.6	-47.6		Shear (kN)	29.1	25.7	-26.1	-29.5	-29.5
	Moment (kN.m)	0.0	7.8	7.0	0.0	31.8		Moment (kN.m)	0.0	4.8	4.3	0.0	19.7
Limit State	Characteristic	A	B	C	D	Max	Limit State	Quasi Permanent	A	B	C	D	Max
	Shear (kN)	33.86	29.80	-30.28	-34.24	-34.24		Shear (kN)	27.22	24.04	-24.41	-27.60	-27.60
	Moment (kN.m)	0.00	5.59	5.0	0.00	22.84		Moment (kN.m)	0.00	4.50	4.06	0.00	18.41

Shear Force Diagram



Bending Moment Diagram



Reinforcement Provided:

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	12	13	10	10	10	200	see Flight
Flight	Normal	12	13	10	10	10	250	Bar at Centreline
Btm Landing	Normal	12	13	10	10	10	150	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1780.0	1780.0	1780.0	1780.0	N.A.
Effective Depth d1 (mm)	264.0	214.0	314.0	214.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1470.5	1470.5	1470.5	1470.5	Pass
Ast Req'd (mm ²)	857.4	695.0	1019.8	695.0)
Ast min (mm ²)	857.4	695.0	1019.8	695.0	Pass
Ast Actual Spacing (mm)	144.0	144.0	144.0	144.0	Pass
Ast Allow Spacing (mm)	300.0	300.0	281.6	300.0)
Asc prov'd (mm ²)	785.5	785.5	785.5	785.5	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	392.8	314.2	523.7	314.2	Pass
Asd req'd (mm ² /m)	343.2	278.2	408.2	278.2)
Shear (Left) Actual (kN)	47.141	41.468	-42.131	41.468	Pass
Shear (Left) Allow (kN)	266.085	232.569	298.307	232.569)
Shear (Right) Actual (kN)	41.468	-42.131	-47.642	-42.131	Pass
Shear (Right) Allow (n/mm ²)	266.085	232.569	298.307	232.569)
Span/Depth Actual	10.095	12.453	8.487	12.453	Pass
Span/Depth Allow	40.000	40.000	40.000	40.000)

Design Satisfactory

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	32.18	Wavy Long Tail 4.0 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	32.18	5.0 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	49.51	5.0 tonne	Reinforcement satisfactory

Parameters

Volume	1.675	Unit weight	42.876 kN
Angle Spread	60.00 degrees	Spread Factor	1.155
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	13	1021	429	350
Right	10	13	1021	510	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MIStructE
 Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SF-0022

Design Span : 2.000 metres

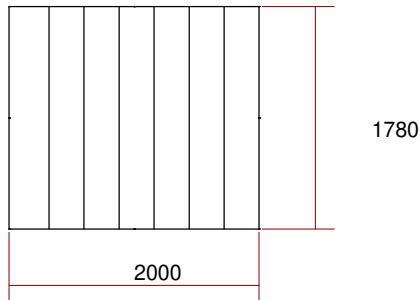
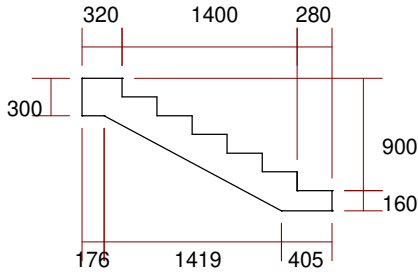
Stair Type : Type 1 - Top Landing + Flight + Bottom Landing

Geometry : Mould Type: Standard

Going	=	280.0	Cut_back of Riser	=	0.00
Tread	=	280	Riser	=	150.0
Top Landing length	=	320	Bottom Landing length	=	280
Total Going	=	1400	Total Rise	=	900
No. of Riser	=	6	No of Treads	=	5
Top Landing Thickness	=	300	Top Landing Finish Thickness	=	0
Btm Landing Thickness	=	160	Btm Landing Finish Thickness	=	0
Stair Width	=	1780	Waist Thickness	=	200
Stair Angle	=	28.18 deg			
Bearing Left	=	0	Bearing Right	=	0

Plan Geometry Features

Description	Left Hand End		Dim 3	Dim 4	Right Hand End		Dim 1	Dim 2	Dim 3	Dim 4
	Dim 1	Dim 2			Description	Dim 1				
Splay					Splay					
Rebate	None provided				Rebate	None provided				
Extensions	None provided				Extensions	None provided				
Extensions	None provided				Extensions	None provided				
Cut Outs	None provided				Cut Outs	None provided				
Side Notch	None provided				Side Notch	None provided				



F P McCann Ltd
 New Edinburgh Road,, Uddingston. G71 6NE
 , www.fpmccann.co.uk
 CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SF-0022

Contract No 05-BYL-1462
 Date. 14.06.2024
 Designer LA
 Checked by. LA
 Sheet No. 8
 Stair Type: 1

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (fck) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (fy) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (Gk) = 1.35
 Gk modification factor ξ = 1.00
 Load Factor (Gk) = 1.35 = 1.000 x 1.350
 Load Factor (Qk) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 $\psi_0 = 0.70$ $\psi_1 = 0.50$ $\psi_2 = 0.30$

Loading :

UDL Loads

Location	Description	Loading (kN/sq.m)	Start	End
Top Landing	Selfweight	7.500	0.000	0.176
Flight	Selfweight	7.547	0.176	1.595
Bottom Landing	Selfweight	4.000	1.595	2.000
Full Stair	Services	1.500	0.000	2.000
	Imposed	4.000	0.000	2.000

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m2)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	1.500	4.000			0.000	2.000	0.000	1.780	0.000	1.780	178.0
2	GDL	7.500	0.000	7.500	0.000	0.000	0.176	0.000	1.780	0.000	1.780	178.0
3	GDL	7.547	0.000	7.547	0.000	0.176	1.595	0.000	1.780	0.000	1.780	178.0
4	GDL	4.000	0.000	4.000	0.000	1.595	2.000	0.000	1.780	0.000	1.780	178.0

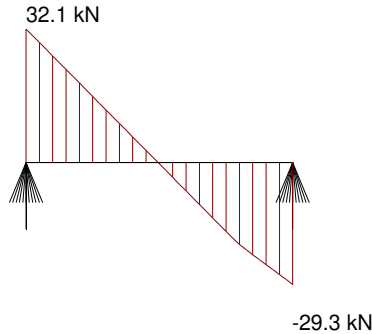
Reactions (Service) :

Load Ref No	Type	Reaction - Rl (kN/m)						Reaction - Rr (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	1.500	4.000	0.000	1.500	4.000	1.780	-1.500	-4.000	0.000	-1.500	-4.000	1.780
2	GDL	1.265	0.000	0.000	1.265	0.000	1.780	-0.058	0.000	0.000	-0.058	0.000	1.780
3	GDL	5.965	0.000	0.000	5.965	0.000	1.780	-4.742	0.000	0.000	-4.742	0.000	1.780
4	GDL	0.164	0.000	0.000	0.164	0.000	1.780	-1.456	0.000	0.000	-1.456	0.000	1.780
Total Comb'd		8.894	4.000	0.000	8.894	4.000	1.780	-7.756	-4.000	0.000	-7.756	-4.000	1.780

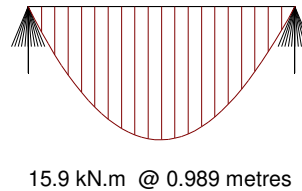
Analysis of Forces and Moments:

Limit State	Ultimate	A	B	C	D	Max	Limit State	Frequent	A	B	C	D	Max
	Shear (kN)	32.1	26.4	-19.6	-29.3	32.1		Shear (kN)	19.4	15.9	-12.0	-17.4	19.4
	Moment (kN.m)	0.0	5.2	9.9	0.0	15.9		Moment (kN.m)	0.0	3.1	5.9	0.0	9.6
Limit State	Characteristic	A	B	C	D	Max	Limit State	Quasi Permanent	A	B	C	D	Max
	Shear (kN)	22.95	18.87	-14.08	-20.93	22.95		Shear (kN)	17.97	14.76	-11.11	-15.94	17.97
	Moment (kN.m)	0.00	3.69	7.1	0.00	11.35		Moment (kN.m)	0.00	2.89	5.48	0.00	8.86

Shear Force Diagram



Bending Moment Diagram



Reinforcement Provided:

Location Ref.	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Top Landing	Normal	10	13	10	7	10	125	see Flight
Flight	Normal	10	13	10	7	10	250	Bar at Centreline
Btm Landing	Normal	10	13	10	7	10	175	see Flight

Design:

Position	Top Landing	Flight	Btm Landing	Max BM.	Status
Cover Prov'd Btm (mm)	30.0	30.0	30.0	30.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	20.0	N.A.
Effective Width(mm)	1780.0	1780.0	1780.0	1780.0	N.A.
Effective Depth d1 (mm)	265.0	165.0	125.0	165.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1021.2	1021.2	1021.2	1021.2	Pass
Ast Req'd (mm ²)	860.7	535.9	406.0	535.9)
Ast min (mm ²)	860.7	535.9	406.0	535.9	Pass
Ast Actual Spacing (mm)	144.2	144.2	144.2	144.2	Pass
Ast Allow Spacing (mm)	243.3	300.0	300.0	300.0)
Asc prov'd (mm ²)	549.9	549.9	549.9	549.9	Pass
Asc req'd (mm ²)	0.0	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	628.4	314.2	448.9	314.2	Pass
Asd req'd (mm ² /m)	344.5	214.5	162.5	214.5)
Shear (Left) Actual (kN)	32.052	26.351	-19.643	26.351	Pass
Shear (Left) Allow (kN)	266.740	183.885	140.869	183.885)
Shear (Right) Actual (kN)	26.351	-19.643	-29.318	-19.643	Pass
Shear (Right) Allow (n/mm ²)	266.740	183.885	140.869	183.885)
Span/Depth Actual	7.547	12.121	16.000	12.121	Pass
Span/Depth Allow	40.000	40.000	40.000	40.000)

Design Satisfactory

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type	Reinforcement Status
Top String (Side Lifting)	2	19.32	Wavy Long Tail 2.5 tonne	Reinforcement satisfactory
Top Surface (Site Lifting)	4	19.32	2.5 tonne	Reinforcement satisfactory
Bottom Surface (Demoulding)	4	29.72	5.0 tonne	Reinforcement satisfactory

Parameters

Volume	1.005	Unit weight	25.736 kN
Angle Spread	60.00 degrees	Spread Factor	1.155
Acceleration factor	1.30	Adhesion Factor	2.00

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	13	1021	430	350
Right	10	13	1021	203	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SL-0001

Contract No

05-BYL-1462

Date.

25.03.2024

Designer

LN

Checked by.

LN

Sheet No.

8

Stair Type:

5

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SL-0001

Design Span : 1.634 metres

Stair Type : Type 5 - Landing

Geometry :

Landing length O/A

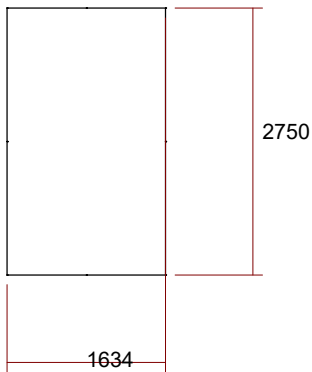
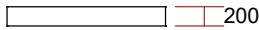
= 1634

Landing Thickness = 200

Bearing Left

= 0

Bearing Right = 0

Plan Geometry Features**Description**Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch**Left Hand End****Dim 1****Dim 2****Dim 3****Dim 4**None provided
None provided
None provided
None provided
None provided
None provided**Right Hand End****Description**Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch**Dim 1****Dim 2****Dim 3****Dim 4**None provided
None provided
None provided
None provided
None provided
None provided

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SL-0001

Contract No 05-BYL-1462

Date. 25.03.2024

Designer LN

Checked by. LN

Sheet No. 9

Stair Type: 5

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (fck) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (fy) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (Gk) = 1.35
 Gk modification factor ξ = 1.00
 Load Factor (Gk) = 1.35 = 1.000 x 1.350
 Load Factor (Qk) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 $\psi_0 = 0.70$ $\psi_1 = 0.50$ $\psi_2 = 0.30$

Loading :**UDL Loads**

Location	Description	Loading (kN/sq.m)	Start	End
Landing	Finishes	1.200	0.000	1.634
	Selfweight	5.000	0.000	1.634
	Imposed	4.000	0.000	1.634

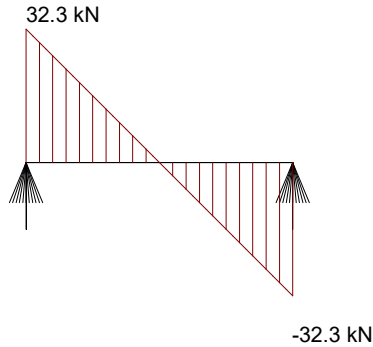
Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m2)			Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %	
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start		End
1	UDL	6.200	4.000			0.000	1.634	0.000	2.750	0.000	2.750	275.0

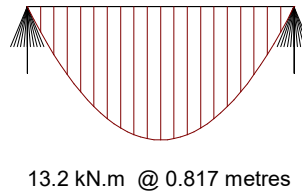
Reactions (Service) :

Load Ref No	Load Type	Reaction - R1 (kN/m)				Reaction - Rr (kN/m)							
		Position 1		Position 2		Position 1		Position 2					
		Dead	Imposed	A	B	Dead	Imposed	A	B				
1	UDL	5.065	3.268	0.000	5.065	3.268	2.750	-5.065	-3.268	0.000	-5.065	-3.268	2.750
	Total Comb'd	5.065	3.268	0.000	5.065	3.268	2.750	-5.065	-3.268	0.000	-5.065	-3.268	2.750

Analysis of Forces and Moments:
Shear Force Diagram



Bending Moment Diagram



Ultimate Limit State	A	B	C	Max
Position from LHE	0.000	0.817	1.634	0.817
Shear (kN)	32.286	0.000	-32.286	0.000
Moment (kN.m)	0.000	13.189	0.000	13.189

Characteristic Limit State	A	B	C	D	Max
Position from LHE	0.000	0.817	1.634	0.000	0.817
Shear (kN)	22.917	9.362	0.000	-22.917	0.000
Moment (kN.m)	0.000	9.362	0.000	0.000	9.362

Quasi Permanent Limit State	A	B	C	D	Max
Position from LHE	0.000	0.817	1.634	0.000	0.817
Shear (kN)	16.626	0.000	-16.626	-16.626	0.000
Moment (kN.m)	0.000	6.792	0.000	0.000	6.792

Reinforcement Provided:

Location	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Left	Normal	10	15	10	15	10	250	see Flight
Right	Normal	10	15	10	15	10	250	see Flight

Design:

Position	Left	Right	Max BM.	Status
Cover Prov'd Btm (mm)	20.0	20.0	20.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	N.A.
Effective Width(mm)	2750.0	2750.0	2750.0	N.A.
Effective Depth d1 (mm)	170.0	170.0	170.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1178.3	1178.3	1178.3	Pass
Ast Req'd (mm ²)	853.0	853.0	853.0)
Ast min (mm ²)	853.0	853.0	853.0	Pass
Ast Actual Spacing (mm)	192.9	192.9	192.9)
Ast Allow Spacing (mm)	297.4	297.4	297.4)
Asc prov'd (mm ²)	1178.3	1178.3	1178.3	Pass
Asc req'd (mm ²)	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	221.0	221.0	221.0)
Shear (Left) Actual (kN)	32.286	0.000	32.286	Pass
Shear (Left) Allow (n/mm ²)	292.701	292.701	292.701)
Shear (Right) Actual (kN)	0.000	-32.286	0.000	Pass
Shear (Right) Allow (n/mm ²)	292.701	292.701	292.701)
Span/Depth Actual	9.612	9.612	9.612	Pass
Span/Depth Allow	40.000	40.000	40.000)

Design Satisfactory

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SL-0001

Contract No

05-BYL-1462

Date.

25.03.2024

Designer

LN

Checked by.

LN

Sheet No.

11

Stair Type:

5

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	15	1178	426	350
Right	10	15	1178	426	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type
Top Surface (Site/Demoulding)	4	21.15	2.5 tonne

Parameters			
Volume	0.899	Unit weight	23.007 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Reinforcement Status

Reinforcement satisfactory

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni

Unit Reference : SL-0002

Contract No

05-BYL-1462

Date.

27.03.2024

Designer

LN

Checked by.

LN

Sheet No.

1

Stair Type:

5

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SL-0002

Design Span : 0.180 metres

Stair Type : Type 5 - Landing

Geometry :

Landing length O/A

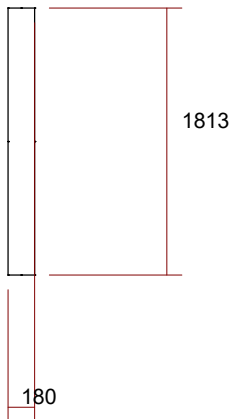
= 180

Landing Thickness = 150

Bearing Left

= 0

Bearing Right = 0

Plan Geometry Features**Description**Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch**Left Hand End****Dim 1****Dim 2****Dim 3****Dim 4**None provided
None provided
None provided
None provided
None provided
None provided**Right Hand End****Description**Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch**Dim 1****Dim 2****Dim 3****Dim 4**None provided
None provided
None provided
None provided
None provided
None provided

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
 CONTRACT : Panattoni
 Unit Reference : SL-0002

Contract No 05-BYL-1462

Date. 27.03.2024

Designer LN

Checked by. LN

Sheet No. 2

Stair Type: 5

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (fck) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (fy) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (Gk) = 1.35
 Gk modification factor ξ = 1.00
 Load Factor (Gk) = 1.35 = 1.000 x 1.350
 Load Factor (Qk) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 $\psi_0 = 0.70$ $\psi_1 = 0.50$ $\psi_2 = 0.30$

Loading :**UDL Loads**

Location	Description	Loading (kN/sq.m)	Start	End
Landing	Finishes	1.200	0.000	0.180
	Selfweight	3.750	0.000	0.180
	Imposed	4.000	0.000	0.180

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m2)			Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %	
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start		End
1	UDL	4.950	4.000			0.000	0.180	0.000	1.813	0.000	1.813	181.3

Reactions (Service) :

Load Ref No	Load Type	Reaction - Rl (kN/m)				Reaction - Rr (kN/m)											
		Position 1				Position 2				Position 1				Position 2			
		Dead	Imposed	A	B	Dead	Imposed	B		Dead	Imposed	A	Dead	Imposed	B		
1	UDL	0.446	0.360	0.000		0.446	0.360	1.813		-0.446	-0.360	0.000	-0.446	-0.360	1.813		
	Total Comb'd	0.446	0.360	0.000		0.446	0.360	1.813		-0.446	-0.360	0.000	-0.446	-0.360	1.813		

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
 CONTRACT : Panattoni
 Unit Reference : SL-0002

Contract No 05-BYL-1462

Date. 27.03.2024

Designer LN

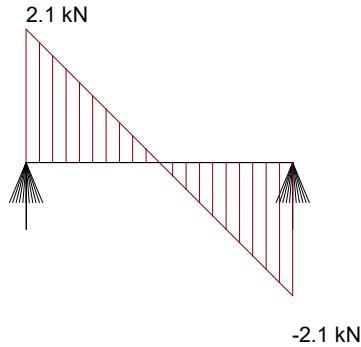
Checked by. LN

Sheet No. 3

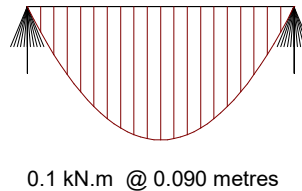
Stair Type: 5

Analysis of Forces and Moments:

Shear Force Diagram



Bending Moment Diagram



Ultimate Limit State	A	B	C	Max
Position from LHE	0.000	0.090	0.180	0.090
Shear (kN)	2.069	0.000	-2.069	0.000
Moment (kN.m)	0.000	0.093	0.000	0.093

Characteristic Limit State	A	B	C	D	Max
Position from LHE	0.000	0.090	0.180		0.090
Shear (kN)	1.460	0.066	0.000	-1.460	0.000
Moment (kN.m)	0.000	0.066	0.000	0.000	0.066

Quasi Permanent Limit State	A	B	C	D	Max
Position from LHE	0.000	0.090	0.180		0.090
Shear (kN)	1.003	0.000	-1.003	-1.003	0.000
Moment (kN.m)	0.000	0.045	0.000	0.000	0.045

Reinforcement Provided:

Location	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Left	Normal	10	10	10	2	10	250	see Flight
Right	Normal	10	10	10	2	10	250	see Flight

Design:

Position	Left	Right	Max BM.	Status
Cover Prov'd Btm (mm)	20.0	20.0	20.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	N.A.
Effective Width(mm)	1813.0	1813.0	1813.0	N.A.
Effective Depth d1 (mm)	120.0	120.0	120.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	785.5	785.5	785.5	Pass
Ast Req'd (mm ²)	397.0	397.0	397.0)
Ast min (mm ²)	397.0	397.0	397.0	Pass
Ast Actual Spacing (mm)	195.9	195.9	195.9)
Ast Allow Spacing (mm)	300.0	300.0	300.0)
Asc prov'd (mm ²)	157.1	157.1	157.1	Pass
Asc req'd (mm ²)	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	156.0	156.0	156.0)
Shear (Left) Actual (kN)	2.069	0.000	2.069	Pass
Shear (Left) Allow (n/mm ²)	136.214	136.214	136.214)
Shear (Right) Actual (kN)	0.000	-2.069	0.000	Pass
Shear (Right) Allow (n/mm ²)	136.214	136.214	136.214)
Span/Depth Actual	1.500	1.500	1.500	Pass
Span/Depth Allow	40.000	40.000	40.000)

Design Satisfactory

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
 CONTRACT : Panattoni
 Unit Reference : SL-0002

Contract No 05-BYL-1462
 Date. 27.03.2024
 Designer LN
 Checked by. LN
 Sheet No. 4
 Stair Type: 5

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	10	785	198	350
Right	10	10	785	198	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Angle Design (See works standard)

Angle Location.	Angle Type	Load (kN)	Angle No	Capacity (kN)	Status
Top Angle	1A - 150 x 150 x 15 RSA 250mm Reinforced	2.1	2	60.0	Pass

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type
Top Surface (Site/Demoulding)	4	1.15	2.5 tonne

Parameters

Volume	0.049	Unit weight	1.253 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Reinforcement Status
 Reinforcement satisfactory

F P McCann Ltd
 New Edinburgh Road,, Uddingston. G71 6NE
 , www.fpmccann.co.uk
 CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SL-0003

Contract No 05-BYL-1462
 Date. 07.03.2024
 Designer LN
 Checked by. LN
 Sheet No. 5
 Stair Type: 5

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2
 Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE
 Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SL-0003

Design Span : 0.180 metres

Stair Type : Type 5 - Landing

Geometry :

Landing length O/A = 180 Landing Thickness = 200
 Bearing Left = 0 Bearing Right = 0

Plan Geometry Features

Description	Left Hand End				Right Hand End				
	Dim 1	Dim 2	Dim 3	Dim 4	Description	Dim 1	Dim 2	Dim 3	Dim 4
Splay					Splay				
Rebate					Rebate				
Extensions					Extensions				
Extensions					Extensions				
Cut Outs					Cut Outs				
Side Notch					Side Notch				



F P McCann Ltd
 New Edinburgh Road,, Uddingston. G71 6NE
 , www.fpmccann.co.uk
 CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SL-0003

Contract No 05-BYL-1462
 Date. 07.03.2024
 Designer LN
 Checked by. LN
 Sheet No. 6
 Stair Type: 5

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (fck) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (fy) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (Gk) = 1.35
 Gk modification factor ξ = 1.00
 Load Factor (Gk) = 1.35 = 1.000 x 1.350
 Load Factor (Qk) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 $\psi_0 = 0.70$ $\psi_1 = 0.50$ $\psi_2 = 0.30$

Loading :

UDL Loads				
Location	Description	Loading (kN/sq.m)	Start	End
Landing	Finishes	1.200	0.000	0.180
	Selfweight	5.000	0.000	0.180
	Imposed	4.000	0.000	0.180

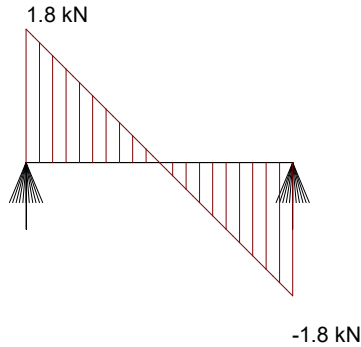
Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m2)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	6.200	4.000			0.000	0.180	0.000	1.416	0.000	1.813	181.3

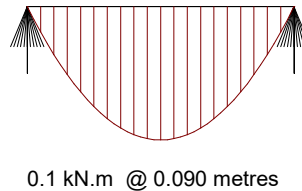
Reactions (Service) :

Load Ref	Load Type	Reaction - Rl (kN/m)						Reaction - Rr (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	0.558	0.360	0.000	0.558	0.360	1.416	-0.558	-0.360	0.000	-0.558	-0.360	1.416
Total Comb'd		0.558	0.360	0.000	0.558	0.360	1.416	-0.558	-0.360	0.000	-0.558	-0.360	1.416

Analysis of Forces and Moments:
Shear Force Diagram



Bending Moment Diagram



Ultimate Limit State	A	B	C	Max
Position from LHE	0.000	0.090	0.180	0.090
Shear (kN)	1.831	0.000	-1.831	0.000
Moment (kN.m)	0.000	0.082	0.000	0.082

Characteristic Limit State	A	B	C	D	Max
Position from LHE	0.000	0.090	0.180		0.090
Shear (kN)	1.300	0.058	0.000	-1.300	0.000
Moment (kN.m)	0.000	0.058	0.000	0.000	0.058

Quasi Permanent Limit State	A	B	C	D	Max
Position from LHE	0.000	0.090	0.180		0.090
Shear (kN)	0.943	0.000	-0.943	-0.943	0.000
Moment (kN.m)	0.000	0.042	0.000	0.000	0.042

Reinforcement Provided:

Location	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Left	Normal	10	8	10	2	10	250	see Flight
Right	Normal	10	8	10	2	10	250	see Flight

Design:

Position	Left	Right	Max BM.	Status
Cover Prov'd Btm (mm)	20.0	20.0	20.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	N.A.
Effective Width(mm)	1416.0	1416.0	1416.0	N.A.
Effective Depth d1 (mm)	170.0	170.0	170.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	628.4	628.4	628.4	Pass
Ast Req'd (mm ²)	439.2	439.2	439.2)
Ast min (mm ²)	439.2	439.2	439.2	Pass
Ast Actual Spacing (mm)	195.1	195.1	195.1)
Ast Allow Spacing (mm)	300.0	300.0	300.0)
Asc prov'd (mm ²)	157.1	157.1	157.1	Pass
Asc req'd (mm ²)	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	221.0	221.0	221.0)
Shear (Left) Actual (kN)	1.831	0.000	1.831	Pass
Shear (Left) Allow (n/mm ²)	150.715	150.715	150.715)
Shear (Right) Actual (kN)	0.000	-1.831	0.000	Pass
Shear (Right) Allow (n/mm ²)	150.715	150.715	150.715)
Span/Depth Actual	1.059	1.059	1.059	Pass
Span/Depth Allow	40.000	40.000	40.000)

Design Satisfactory

F P McCann Ltd

New Edinburgh Road,, Uddingston. G71 6NE

, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SL-0003

Contract No 05-BYL-1462

Date. 07.03.2024

Designer LN

Checked by. LN

Sheet No. 8

Stair Type: 5

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	8	628	220	350
Right	10	8	628	220	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Angle Design (See works standard)

Angle Location.	Angle Type	Load (kN)	Angle No	Capacity (kN)	Status
Top Angle	1A - 150 x 150 x 15 RSA 250mm Reinforced	1.8	2	60.0	Pass

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type
Top Surface (Site/Demoulding)	4	1.20	2.5 tonne

Reinforcement Status
Reinforcement satisfactory

Parameters			
Volume	0.051	Unit weight	1.305 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

F P McCann Ltd
 New Edinburgh Road,, Uddingston. G71 6NE
 , www.fpmccann.co.uk
 CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SL-0004

Contract No 05-BYL-1462
 Date. 07.03.2024
 Designer LN
 Checked by. LN
 Sheet No. 33
 Stair Type: 5

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2
 Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE
 Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SL-0004

Design Span : 0.180 metres

Stair Type : Type 5 - Landing

Geometry :

Landing length O/A = 180 Landing Thickness = 200
 Bearing Left = 0 Bearing Right = 0

Plan Geometry Features

Description	Left Hand End				Right Hand End Description	Dim 1	Dim 2	Dim 3	Dim 4
	Dim 1	Dim 2	Dim 3	Dim 4					
Splay	None provided				Splay	None provided			
Rebate	None provided				Rebate	None provided			
Extensions	None provided				Extensions	None provided			
Extensions	None provided				Extensions	None provided			
Cut Outs	None provided				Cut Outs	None provided			
Side Notch	None provided				Side Notch	None provided			



F P McCann Ltd
 New Edinburgh Road,, Uddingston. G71 6NE
 , www.fpmccann.co.uk
 CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SL-0004

Contract No 05-BYL-1462
 Date. 07.03.2024
 Designer LN
 Checked by. LN
 Sheet No. 34
 Stair Type: 5

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (fck) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (fy) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (Gk) = 1.35
 Gk modification factor ξ = 1.00
 Load Factor (Gk) = 1.35 = 1.000 x 1.350
 Load Factor (Qk) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 $\psi_0 = 0.70$ $\psi_1 = 0.50$ $\psi_2 = 0.30$

Loading :

UDL Loads				
Location	Description	Loading (kN/sq.m)	Start	End
Landing	Finishes	1.200	0.000	0.180
	Selfweight	5.000	0.000	0.180
	Imposed	4.000	0.000	0.180

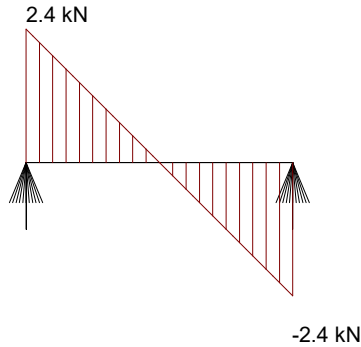
Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m2)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	6.200	4.000			0.000	0.180	0.000	1.859	0.000	1.859	185.9

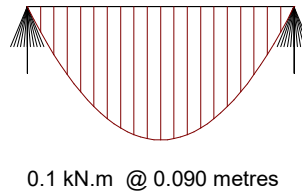
Reactions (Service) :

Load Ref	Load Type	Reaction - Rl (kN/m)						Reaction - Rr (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	0.558	0.360	0.000	0.558	0.360	1.859	-0.558	-0.360	0.000	-0.558	-0.360	1.859
Total Comb'd		0.558	0.360	0.000	0.558	0.360	1.859	-0.558	-0.360	0.000	-0.558	-0.360	1.859

Analysis of Forces and Moments:
Shear Force Diagram



Bending Moment Diagram



Ultimate Limit State	A	B	C	Max
Position from LHE	0.000	0.090	0.180	0.090
Shear (kN)	2.404	0.000	-2.404	0.000
Moment (kN.m)	0.000	0.108	0.000	0.108

Characteristic Limit State	A	B	C	D	Max
Position from LHE	0.000	0.090	0.180	0.000	0.090
Shear (kN)	1.707	0.077	0.000	-1.707	0.000
Moment (kN.m)	0.000	0.077	0.000	0.000	0.077

Quasi Permanent Limit State	A	B	C	D	Max
Position from LHE	0.000	0.090	0.180	0.000	0.090
Shear (kN)	1.238	0.000	-1.238	-1.238	0.000
Moment (kN.m)	0.000	0.056	0.000	0.000	0.056

Reinforcement Provided:

Location	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Left	Normal	10	10	10	2	10	250	see Flight
Right	Normal	10	10	10	2	10	250	see Flight

Design:

Position	Left	Right	Max BM.	Status
Cover Prov'd Btm (mm)	20.0	20.0	20.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	N.A.
Effective Width(mm)	1859.0	1859.0	1859.0	N.A.
Effective Depth d1 (mm)	170.0	170.0	170.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	785.5	785.5	785.5	Pass
Ast Req'd (mm ²)	576.6	576.6	576.6)
Ast min (mm ²)	576.6	576.6	576.6	Pass
Ast Actual Spacing (mm)	201.0	201.0	201.0)
Ast Allow Spacing (mm)	294.6	294.6	294.6)
Asc prov'd (mm ²)	157.1	157.1	157.1	Pass
Asc req'd (mm ²)	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	221.0	221.0	221.0)
Shear (Left) Actual (kN)	2.404	0.000	2.404	Pass
Shear (Left) Allow (n/mm ²)	197.866	197.866	197.866)
Shear (Right) Actual (kN)	0.000	-2.404	0.000	Pass
Shear (Right) Allow (n/mm ²)	197.866	197.866	197.866)
Span/Depth Actual	1.059	1.059	1.059	Pass
Span/Depth Allow	40.000	40.000	40.000)

Design Satisfactory

F P McCann Ltd

New Edinburgh Road,, Uddingston. G71 6NE

, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SL-0004

Contract No 05-BYL-1462

Date. 07.03.2024

Designer LN

Checked by. LN

Sheet No. 36

Stair Type: 5

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	10	785	288	350
Right	10	10	785	288	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Angle Design (See works standard)

Angle Location.	Angle Type	Load (kN)	Angle No	Capacity (kN)	Status
Top Angle	1A - 150 x 150 x 15 RSA 250mm Reinforced	2.4	2	60.0	Pass

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type
Top Surface (Site/Demoulding)	4	1.57	2.5 tonne

Reinforcement Status
Reinforcement satisfactory

Parameters			
Volume	0.067	Unit weight	1.713 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

F P McCann Ltd
 New Edinburgh Road,, Uddingston. G71 6NE
 , www.fpmccann.co.uk
 CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SL-0005

Contract No 05-BYL-1462
 Date. 07.03.2024
 Designer LN
 Checked by. LN
 Sheet No. 41
 Stair Type: 5

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2
 Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE
 Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SL-0005

Design Span : 0.180 metres

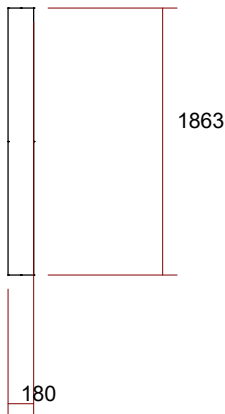
Stair Type : Type 5 - Landing

Geometry :

Landing length O/A = 180 Landing Thickness = 200
 Bearing Left = 0 Bearing Right = 0

Plan Geometry Features

Description	Left Hand End				Right Hand End Description	Dim 1	Dim 2	Dim 3	Dim 4
	Dim 1	Dim 2	Dim 3	Dim 4					
Splay	None provided				Splay	None provided			
Rebate	None provided				Rebate	None provided			
Extensions	None provided				Extensions	None provided			
Extensions	None provided				Extensions	None provided			
Cut Outs	None provided				Cut Outs	None provided			
Side Notch	None provided				Side Notch	None provided			



F P McCann Ltd
 New Edinburgh Road,, Uddingston. G71 6NE
 , www.fpmccann.co.uk
 CLIENT : Winvic
 CONTRACT : Panattoni Park
 Unit Reference : SL-0005

Contract No 05-BYL-1462
 Date. 07.03.2024
 Designer LN
 Checked by. LN
 Sheet No. 42
 Stair Type: 5

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (fck) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (fy) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (Gk) = 1.35
 Gk modification factor ξ = 1.00
 Load Factor (Gk) = 1.35 = 1.000 x 1.350
 Load Factor (Qk) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 $\psi_0 = 0.70$ $\psi_1 = 0.50$ $\psi_2 = 0.30$

Loading :

UDL Loads				
Location	Description	Loading (kN/sq.m)	Start	End
Landing	Finishes	1.200	0.000	0.180
	Selfweight	5.000	0.000	0.180
	Imposed	4.000	0.000	0.180

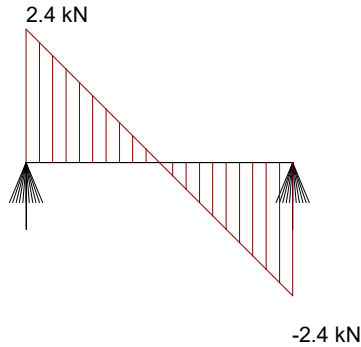
Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m2)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	6.200	4.000			0.000	0.180	0.000	1.863	0.000	1.859	185.9

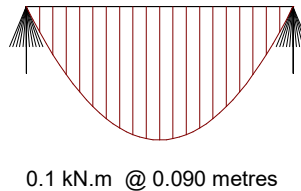
Reactions (Service) :

Load Ref	Load Type	Reaction - Rl (kN/m)						Reaction - Rr (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	0.558	0.360	0.000	0.558	0.360	1.863	-0.558	-0.360	0.000	-0.558	-0.360	1.863
Total Comb'd		0.558	0.360	0.000	0.558	0.360	1.863	-0.558	-0.360	0.000	-0.558	-0.360	1.863

Analysis of Forces and Moments:
Shear Force Diagram



Bending Moment Diagram



Ultimate Limit State	A	B	C	Max
Position from LHE	0.000	0.090	0.180	0.090
Shear (kN)	2.409	0.000	-2.409	0.000
Moment (kN.m)	0.000	0.108	0.000	0.108

Characteristic Limit State	A	B	C	D	Max
Position from LHE	0.000	0.090	0.180	0.000	0.090
Shear (kN)	1.710	0.077	0.000	-1.710	0.000
Moment (kN.m)	0.000	0.077	0.000	0.000	0.077

Quasi Permanent Limit State	A	B	C	D	Max
Position from LHE	0.000	0.090	0.180	0.000	0.090
Shear (kN)	1.241	0.000	-1.241	-1.241	0.000
Moment (kN.m)	0.000	0.056	0.000	0.000	0.056

Reinforcement Provided:

Location	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Left	Normal	10	10	10	2	10	250	see Flight
Right	Normal	10	10	10	2	10	250	see Flight

Design:

Position	Left	Right	Max BM.	Status
Cover Prov'd Btm (mm)	20.0	20.0	20.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	N.A.
Effective Width(mm)	1863.0	1863.0	1863.0	N.A.
Effective Depth d1 (mm)	170.0	170.0	170.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	785.5	785.5	785.5	Pass
Ast Req'd (mm ²)	577.9	577.9	577.9)
Ast min (mm ²)	577.9	577.9	577.9	Pass
Ast Actual Spacing (mm)	201.4	201.4	201.4)
Ast Allow Spacing (mm)	294.1	294.1	294.1)
Asc prov'd (mm ²)	157.1	157.1	157.1	Pass
Asc req'd (mm ²)	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	221.0	221.0	221.0)
Shear (Left) Actual (kN)	2.409	0.000	2.409	Pass
Shear (Left) Allow (n/mm ²)	198.292	198.292	198.292)
Shear (Right) Actual (kN)	0.000	-2.409	0.000	Pass
Shear (Right) Allow (n/mm ²)	198.292	198.292	198.292)
Span/Depth Actual	1.059	1.059	1.059	Pass
Span/Depth Allow	40.000	40.000	40.000)

Design Satisfactory

F P McCann Ltd

New Edinburgh Road,, Uddingston. G71 6NE

, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SL-0005

Contract No 05-BYL-1462

Date. 07.03.2024

Designer LN

Checked by. LN

Sheet No. 44

Stair Type: 5

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	10	785	289	350
Right	10	10	785	289	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Angle Design (See works standard)

Angle Location.	Angle Type	Load (kN)	Angle No	Capacity (kN)	Status
Top Angle	1A - 150 x 150 x 15 RSA 250mm Reinforced	2.4	2	60.0	Pass

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type
Top Surface (Site/Demoulding)	4	1.58	2.5 tonne

Reinforcement Status
Reinforcement satisfactory

Parameters			
Volume	0.067	Unit weight	1.717 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni

Unit Reference : SL-0006

Contract No

05-BYL-1462

Date.

27.03.2024

Designer

LN

Checked by.

LN

Sheet No.

4

Stair Type:

5

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SL-0006

Design Span : 3.457 metres

Stair Type : Type 5 - Landing

Geometry :

Landing length O/A

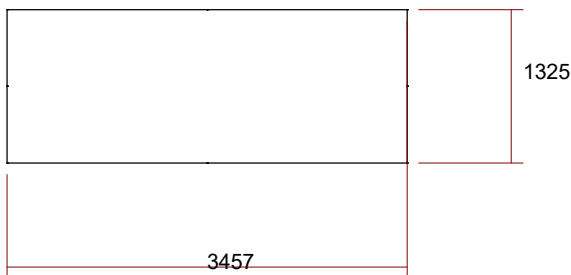
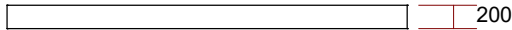
= 3457

Landing Thickness = 200

Bearing Left

= 0

Bearing Right = 0

Plan Geometry Features**Description**Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch**Left Hand End****Dim 1****Dim 2****Dim 3****Dim 4**None provided
None provided
None provided
None provided
None provided
None provided**Right Hand End****Description**Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch**Dim 1****Dim 2****Dim 3****Dim 4**None provided
None provided
None provided
None provided
None provided
None provided

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
 CONTRACT : Panattoni
 Unit Reference : SL-0006

Contract No 05-BYL-1462

Date. 27.03.2024

Designer LN

Checked by. LN

Sheet No. 5

Stair Type: 5

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (fck) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (fy) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (Gk) = 1.35
 Gk modification factor ξ = 1.00
 Load Factor (Gk) = 1.35 = 1.000 x 1.350
 Load Factor (Qk) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 $\psi_0 = 0.70$ $\psi_1 = 0.50$ $\psi_2 = 0.30$

Loading :**UDL Loads**

Location	Description	Loading (kN/sq.m)	Start	End
Landing	Finishes	1.200	0.000	3.457
	Selfweight	5.000	0.000	3.457
	Imposed	4.000	0.000	3.457

Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m2)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	6.200	4.000			0.000	3.457	0.000	1.325	0.000	1.325	132.5
2	GDL	17.150	8.948	17.150	8.948	0.415	1.515	0.000	0.100	0.000	0.936	141.6
3	GDL	15.298	8.948	15.298	8.948	1.945	3.045	0.000	0.100	0.000	0.934	141.9

Reactions (Service) :

Ref Load	No	Type	Reaction - Rl (kN/m)						Reaction - Rr (kN/m)					
			Position 1			Position 2			Position 1			Position 2		
			Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
	1	UDL	10.717	6.914	0.000	10.717	6.914	1.325	-10.717	-6.914	0.000	-10.717	-6.914	1.325
	Total Comb'd		10.717	6.914	0.000	10.717	6.914	1.325	-10.717	-6.914	0.000	-10.717	-6.914	1.325

Additional Loads

Ref Load	No	Type	Reaction - Rl (kN)						Reaction - Rr (kN)					
			Position 1			Position 2			Position 1			Position 2		
			Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
	2	GDL	13.599	7.095	0.000	13.599	7.095	0.100	-5.266	-2.748	0.000	-5.266	-2.748	0.100
	3	GDL	4.683	2.739	0.000	4.683	2.739	0.100	-12.145	-7.104	0.000	-12.145	-7.104	0.100

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

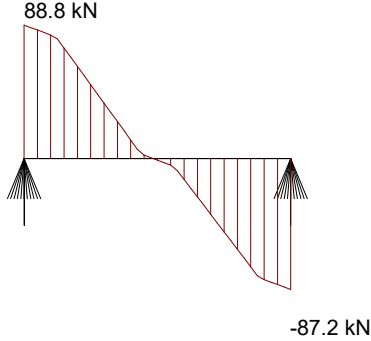
Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
 CONTRACT : Panattoni
 Unit Reference : SL-0006

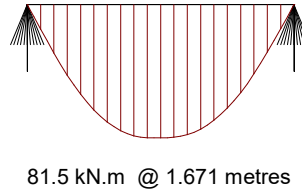
Contract No 05-BYL-1462
 Date. 27.03.2024
 Designer LN
 Checked by. LN
 Sheet No. 6
 Stair Type: 5

Analysis of Forces and Moments:

Shear Force Diagram



Bending Moment Diagram



Ultimate Limit State	A	B	C	Max
Position from LHE	0.000	1.729	3.457	1.671
Shear (kN)	88.762	-1.101	-87.185	0.000
Moment (kN.m)	0.000	81.499	0.000	81.531

Characteristic Limit State	A	B	C	D	Max
Position from LHE	0.000	1.729	3.457	0.000	1.671
Shear (kN)	63.184	57.997	0.000	-62.012	0.000
Moment (kN.m)	0.000	57.997	0.000	0.000	58.021

Quasi Permanent Limit State	A	B	C	D	Max
Position from LHE	0.000	1.729	3.457	0.000	1.646
Shear (kN)	47.021	-0.813	-45.822	-45.822	0.000
Moment (kN.m)	0.000	43.047	0.000	0.000	43.081

Reinforcement Provided:

Location	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Left	Normal	12	14	10	14	10	250	see Flight
Right	Normal	12	14	10	15	10	250	see Flight

Design:

Position	Left	Right	Max BM.	Status
Cover Prov'd Btm (mm)	20.0	20.0	20.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	N.A.
Effective Width(mm)	1325.0	1325.0	1325.0	N.A.
Effective Depth d1 (mm)	170.0	170.0	170.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	1583.6	1583.6	1583.6	Pass
Ast Req'd (mm ²)	1160.7	1160.7	1161.1)
Ast min (mm ²)	411.0	411.0	411.0	Pass
Ast Actual Spacing (mm)	97.9	97.9	97.9)
Ast Allow Spacing (mm)	289.6	289.6	289.4)
Asc prov'd (mm ²)	1099.7	1178.3	1099.7	Pass
Asc req'd (mm ²)	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	221.0	221.0	221.0)
Shear (Left) Actual (kN)	88.762	-1.101	88.762	Pass
Shear (Left) Allow (n/mm ²)	164.394	164.394	164.394)
Shear (Right) Actual (kN)	-1.101	-87.185	-1.101	Pass
Shear (Right) Allow (n/mm ²)	164.394	164.394	164.394)
Span/Depth Actual	20.335	20.335	20.335	Pass
Span/Depth Allow	33.889	33.889	33.860)

Design Satisfactory

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic
CONTRACT : Panattoni
Unit Reference : SL-0006Contract No 05-BYL-1462
Date. 27.03.2024
Designer LN
Checked by. LN
Sheet No. 7
Stair Type: 5**Anchorage Reinforcement:**

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	14	1099	580	350
Right	10	14	1099	580	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type
Top Surface (Site/Demoulding)	4	21.56	2.5 tonne

Parameters

Volume	0.916	Unit weight	23.452 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Reinforcement Status
Reinforcement satisfactory

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SL-0002

Contract No

05-BYL-1462

Date.

25.03.2024

Designer

LN

Checked by.

LN

Sheet No.

16

Stair Type:

5

Stair Design to BS EN 1992-1-1 and BS EN 1992-1-2

Copyright: Precastpro Ltd, Peter Kelly BSc CEng MStructE

Program Version 5.05.254-M Date: 02-01-2024

UNIT REFERENCE : SL-0002

Design Span : 3.255 metres

Stair Type : Type 5 - Landing

Geometry :

Landing length O/A

= 3255

Landing Thickness = 200

Bearing Left

= 0

Bearing Right = 0

Plan Geometry Features

Description

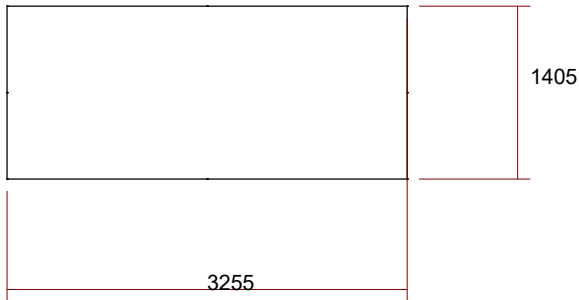
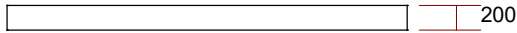
Splay
Rebate
Extensions
Extensions
Cut Outs
Side Notch

Left Hand End

Dim 1	Dim 2	Dim 3	Dim 4
None provided			
None provided			
None provided			
None provided			
None provided			
None provided			

Right Hand End

Description	Dim 1	Dim 2	Dim 3	Dim 4
Splay	None provided			
Rebate	None provided			
Extensions	None provided			
Extensions	None provided			
Cut Outs	None provided			
Side Notch	None provided			



F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SL-0002

Contract No 05-BYL-1462

Date. 25.03.2024

Designer LN

Checked by. LN

Sheet No. 17

Stair Type: 5

Materials (Properties) :

Concrete Strength Class = C40 / 50 Concrete Strength - cylinder (fck) = 40.0 N/sq.mm
 Aggregate size (max) = 10 mm Cement Strength Class = CEM 42.5R CEM 52.5N CEM52.5R
 Compressive strength factor (cl 3.1.6) α_{cc} = 0.85 Design Compressive strength (cl 3.1.6) = 22.7 n/sq.mm
 Reinforcement Type = High Yield Type B or C Steel Characteristic Strength (fy) = 500.0 N/sq.mm
 Soffit Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Top Surface Exposure Condition: XC1 Cover min = 15 mm Cover tolerance = 5 mm Cover required = 20 mm
 Fire Resistance - Time Required = 90 mins Fire Axis Distance Required = 30.0 mm Minimum Thickness (Solid Slab) = 100.0 mm
 Crack Width Allow = 0.30 mm

Partial Safety Factors (Materials) :

Design Concrete ψ_c Reinforcement ψ_s
 Persistent and Transient 1.50 1.15
 Accidental 1.20 1.00

Partial Safety Factors (Actions) :

Load Factor (Gk) = 1.35
 Gk modification factor ξ = 1.00
 Load Factor (Gk) = 1.35 = 1.000 x 1.350
 Load Factor (Qk) = 1.50
 Imposed loads in buildings (Table NA.1.1) = Category A: domestic residential areas
 $\psi_0 = 0.70$ $\psi_1 = 0.50$ $\psi_2 = 0.30$

Loading :**UDL Loads**

Location	Description	Loading (kN/sq.m)	Start	End
Landing	Finishes	1.200	0.000	3.255
	Selfweight	5.000	0.000	3.255
	Imposed	4.000	0.000	3.255

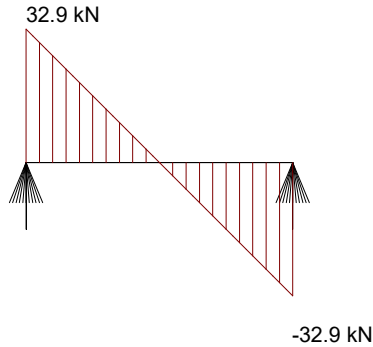
Note: UDL loads shown below as combined load to stair

Load No	Load Type	Loading (kN, kN/m, kN/m2)				Long'l Pos'n (m)		Lateral Pos'n (m)		Load Dist'n		Load %
		W1(Gk)	W1(Qk)	W2(Gk)	W2(Qk)	Start	End	Edge Dist	Load Width	Start	End	
1	UDL	6.200	4.000			0.000	1.634	0.000	1.405	0.000	2.750	275.0

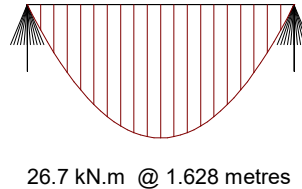
Reactions (Service) :

Load Ref No	Load Type	Reaction - Rl (kN/m)						Reaction - Rr (kN/m)					
		Position 1			Position 2			Position 1			Position 2		
		Dead	Imposed	A	Dead	Imposed	B	Dead	Imposed	A	Dead	Imposed	B
1	UDL	10.091	6.510	0.000	10.091	6.510	1.405	-10.091	-6.510	0.000	-10.091	-6.510	1.405
	Total Comb'd	10.091	6.510	0.000	10.091	6.510	1.405	-10.091	-6.510	0.000	-10.091	-6.510	1.405

Analysis of Forces and Moments:
Shear Force Diagram



Bending Moment Diagram



Ultimate Limit State	A	B	C	Max
Position from LHE	0.000	1.628	3.255	1.628
Shear (kN)	32.859	0.000	-32.859	0.000
Moment (kN.m)	0.000	26.739	0.000	26.739

Characteristic Limit State	A	B	C	D	Max
Position from LHE	0.000	1.628	3.255	0.000	1.628
Shear (kN)	23.324	18.980	0.000	-23.324	0.000
Moment (kN.m)	0.000	18.980	0.000	0.000	18.980

Quasi Permanent Limit State	A	B	C	D	Max
Position from LHE	0.000	1.628	3.255	0.000	1.627
Shear (kN)	16.921	0.000	-16.921	-16.921	0.000
Moment (kN.m)	0.000	13.770	0.000	0.000	13.770

Reinforcement Provided:

Location	Reinf't Type	Tensile Size	No Bars	Comp Size	No. Bars	Distribution Size	Centres	Reinforcement Position
Left	Normal	10	8	10	8	10	250	see Flight
Right	Normal	10	8	10	8	10	250	see Flight

Design:

Position	Left	Right	Max BM.	Status
Cover Prov'd Btm (mm)	20.0	20.0	20.0	N.A.
Cover Prov'd Top (mm)	20.0	20.0	20.0	N.A.
Effective Width(mm)	1405.0	1405.0	1405.0	N.A.
Effective Depth d1 (mm)	170.0	170.0	170.0	N.A.
Effective Depth d2 (mm)	25.0	25.0	25.0	N.A.
Ast Prov'd (mm ²)	628.4	628.4	628.4	Pass
Ast Req'd (mm ²)	435.8	435.8	435.8)
Ast min (mm ²)	435.8	435.8	435.8	Pass
Ast Actual Spacing (mm)	193.6	193.6	193.6)
Ast Allow Spacing (mm)	300.0	300.0	300.0)
Asc prov'd (mm ²)	628.4	628.4	628.4	Pass
Asc req'd (mm ²)	0.0	0.0	0.0)
Asd prov'd (mm ² /m)	314.2	314.2	314.2	Pass
Asd req'd (mm ² /m)	221.0	221.0	221.0)
Shear (Left) Actual (kN)	32.859	0.000	32.859	Pass
Shear (Left) Allow (n/mm ²)	149.544	149.544	149.544)
Shear (Right) Actual (kN)	0.000	-32.859	0.000	Pass
Shear (Right) Allow (n/mm ²)	149.544	149.544	149.544)
Span/Depth Actual	19.147	19.147	19.147	Pass
Span/Depth Allow	40.000	40.000	40.000)

Design Satisfactory

F P McCann Ltd

Bullhurst Lane, Weston Underwood, Derbyshire DE6 4PH

Tel +44(0)1335 361269, www.fpmccann.co.uk

CLIENT : Winvic

CONTRACT : Panattoni Park

Unit Reference : SL-0002

Contract No

05-BYL-1462

Date.

25.03.2024

Designer

LN

Checked by.

LN

Sheet No.

19

Stair Type:

5

Anchorage Reinforcement:

Ref	Bar	Bar	Ast	Ast	Lap
Pos'n	Size	No	Prov'd	50%	Length
Left	10	8	628	218	350
Right	10	8	628	218	350

BS EN 1992-1-1 Cl 9.3.1.2 50% Ast Anchored

Lifters (See works standard)

Location	Lifter No.	Load (kN)	Lifter Type
Top Surface (Site/Demoulding)	4	21.52	2.5 tonne

Parameters			
Volume	0.915	Unit weight	23.415 kN
Angle Spread	90.00 degrees	Spread Factor	1.414
Acceleration factor	1.30	Adhesion Factor	2.00

Reinforcement Status

Reinforcement satisfactory



F.P. McCann
Bullhurst Lane
Weston Underwood
Derbyshire , DE6 4PH

Precast Lift Shaft Design

Calculations have been compiled based on information provided and should only be adopted should a competent engineer agree that all assumptions made accurately reflect the intended function and loading conditions which the units will be subjected to.

Contract Name: Panattoni Park, Poyle
Contract Number: 05-BYL-1462
Client: Winvic
Reference: 05-BYL-1462-FPMC-LIFT1

By: L.K.
Date: 15/02/2024
Check:
Date:

Design in accordance with: BS EN 1992-1:2004

Rev	Description	By	Date
C01	Original Issue.	L.K.	15/02/2024

Design Properties

Unit weight of reinforced concrete $\gamma_c = 25 \text{ kN/m}^3$
 Unit weight of reinforcing steel $\gamma_r = 77 \text{ kN/m}^3$

Concrete Design

Characteristic compressive cylinder strength $f_{ck} = 40 \text{ N/mm}^2$
 Mean value of axial tensile strength $f_{ctm} = 3.51 \text{ N/mm}^2$
 5% fractile of axial tensile strength $f_{ctk,0.05} = 2.46 \text{ N/mm}^2$
 Partial modulus of elasticity of concrete $\gamma_c = 1.50$
 Compressive strength coefficient - cl.3.1.6(1) $\alpha_{cc} = 0.85$
 Concrete to concrete friction factor $f_r = 0.4$

Cover & Exposure (Typical)

Required exposure class Class= XC1
 Nominal cover to reinforcement $c = 25 \text{ mm}$
 Maximum cover deviation $\Delta c_{dev} = 5 \text{ mm}$

Reinforcement details

Characteristic yield strength of reinforcement $f_{yk} = 500 \text{ N/mm}^2$
 Partial factor for reinforcing steel - Table 2.1N $\gamma_s = 1.15$
 Design yield strength of reinforcement $f_{yd} = f_{yk} / \gamma_s = 435 \text{ N/mm}^2$

Design Factors

Permanent action safety factor $\gamma_G = 1.35$
 Variable action safety factor $\gamma_Q = 1.5$
 Permanent favourable action safety factor $\gamma_f = 0.9$

Backfill Material (Where applicable)

The backfill material around the pit should be free draining granular material such as a Class 6N or 6P fill as defined in the Manual of Contract Documents for Highway Works Volume 1 Specification Series 600 Clause 610 and Table 6/1.

Unit weight of material $\gamma_s = 19 \text{ kN/m}^3$
 Typical effective angle of friction $\phi' = 35.0^\circ$
 Active pressure coefficient $k_a = (1 - \sin \phi') / (1 + \sin \phi') = 0.271$

Full Wind Load Assessment

Reference

Two load cases are considered

LC1 - After construction but before main building is erected. Full capacity connection and a higher probability factor.

LC2 - Immediately after construction with limited connection capacity (due to early strength of grout) & reduced wind probability factor.

Evaluation of Peak Velocity

EN 1991-4 & NA

Orography assumed to be not significant

Fundamental value of basic wind velocity ($V_{b,0}$)

$V_{b,map} \cdot C_{alt}$	$22 \cdot 1.024 =$	22.5 m/s	NA.2.4
Map wind speed ($v_{b,map}$)		22.0 m/s	Figure NA.1
Altitude factor (C_{alt})	$1 + 0.001 \cdot A \cdot \text{Min}(1, (10/z)^{0.2})$	1.024	From equations NA.2a & NA.2.b

Directional factor (C_{dir}) 1 NA Table NA.1

Displacement height (h_{dis}) 0

Exposure Factor ($C_e(z)$) B zone Figure NA.7
2.48 value

Exposure Correction Factor ($C_{e,T}$) A or B zone Figure NA.8
1 value

Seasonal factor (C_{season}) 1 NA Table NA.2

Probability factor (C_{prob})	LC1	LC2	
$(1 - k \cdot \ln(-\ln(1-p))) / (1 - k \cdot \ln(-\ln(1-0.02)))^n$	0.85	0.78	
k	0.2	0.2	NA.2.8
n	0.5	0.5	NA.2.8
R	5	2	Table 3.1 1991-1-6
$p = 1/R$	0.20	0.50	

Basic wind velocity (v_b) LC1 LC2
 $C_{dir} \cdot C_{season} \cdot C_{prob} \cdot v_{b,0}$ 19.2 m/s 17.6 m/s EN Expression 4.1

Reference mean (basic) velocity pressure (q_b) LC1 LC2
 $0.5 \cdot \rho \cdot v_b^2$ 0.225 kN/m² 0.189 kN/m² EN Expression 4.10

Peak Velocity Pressure - LC2 (q_p) LC1 LC2
 $q_p(z) = C_e(z) \cdot C_{e,T} \cdot q_b$ 0.558 kN/m² 0.469 kN/m² From equations NA.3a & NA.3.b

Calculation of wind force - See wind loading key (overleaf)

	<u>Wind dir X</u>	<u>Wind dir Y</u>	
Size Factor (c_s)	0.94	0.94	From NA Table NA.3
Dynamic factor (c_d)	1.1	1.1	From NA figure NA.9

Force Coefficient Factors	<u>Wind dir X</u>	<u>Wind dir Y</u>	
Coeff ⁿ of structures without free-end flow ($C_{f,0}$)	2.1	2.3	From EN figure 7.23
Reduction factor for square sections with rounded corners (Ψ_r)	1	1	From EN figure 7.24 for $r/b=0$
Reduction for structural elements with end-effects (Ψ_λ)	1	1	From EN figure 7.36
			Conservatively assume 1 for Ψ_r & Ψ_λ

Force Coefficient (C_f)	<u>Wind dir X</u>	<u>Wind dir Y</u>
$C_{f,0} \cdot \Psi_r \cdot \Psi_\lambda$	2.05	2.25

Wind Force	<u>Wind dir X</u>	<u>Wind dir Y</u>	EN Expression 5.3
$F_W = C_s \cdot C_d \cdot C_f \cdot q_p(z)$	1.18 kN/m ²	1.30 kN/m ²	LC1
	0.99 kN/m ²	1.09 kN/m ²	LC2

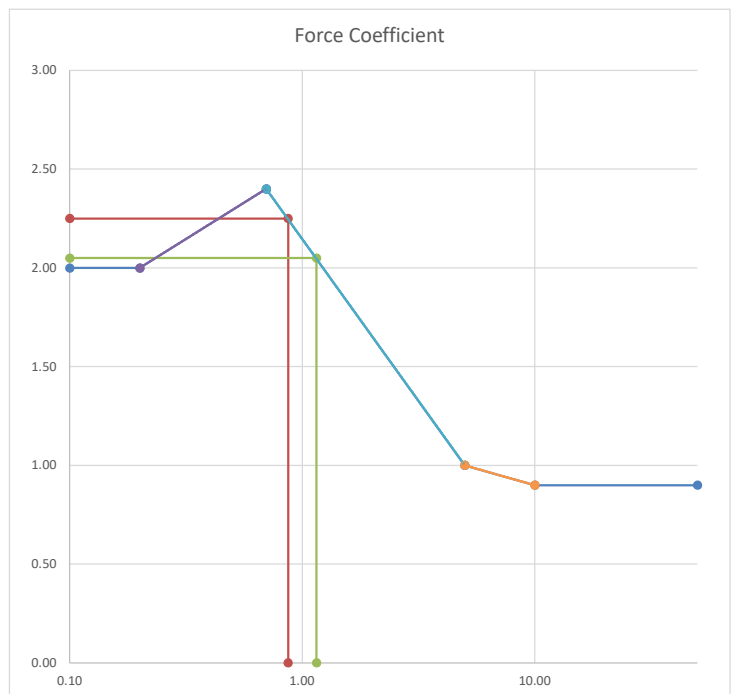
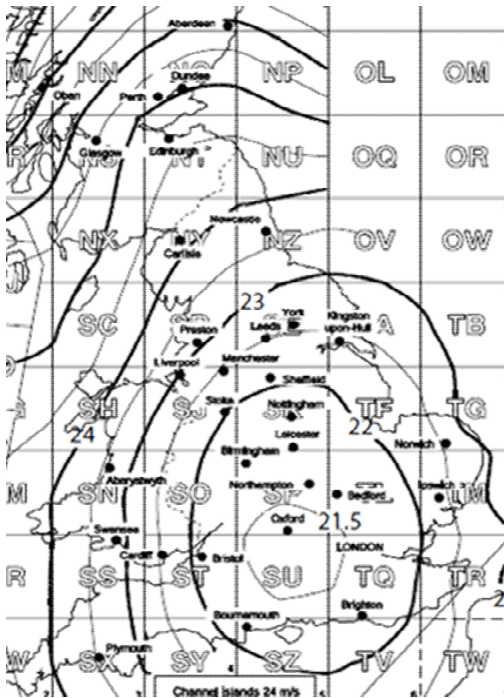
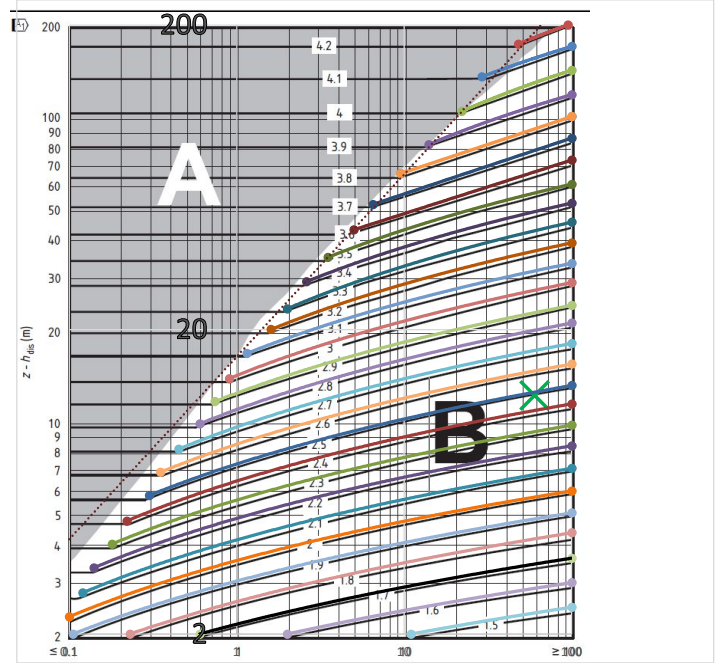
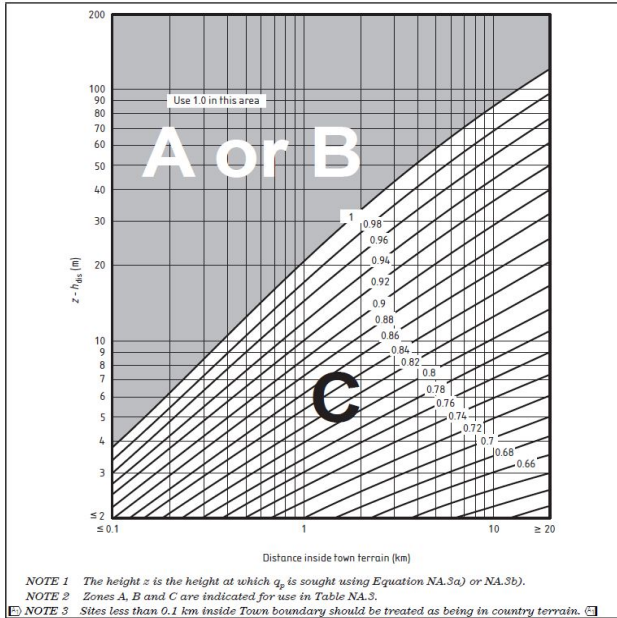
Reference

Geometric Imperfection

Inclination of imperfection (θ_i)			EN 1992-1 & NA
$\theta_0 \cdot \alpha_h \cdot \alpha_m$		3.33E-03	EN Expression 5.1
Basic Value (θ_0)		0.005	
Reduction factor for height (α_h)			
$\alpha_h = 2 / h^{0.5}; 2/3 \leq \alpha_h \leq 1$		0.67	
Reduction factor for number of members			
$\alpha_m = (0.5 \cdot (1 + 1/m))^{0.5}$		1.00	Conservatively assume 1
Eccentricity (e_i)			
$e_i = \theta_i \cdot h$		0.041m	EN Expression 5.2

Wind Design Charts

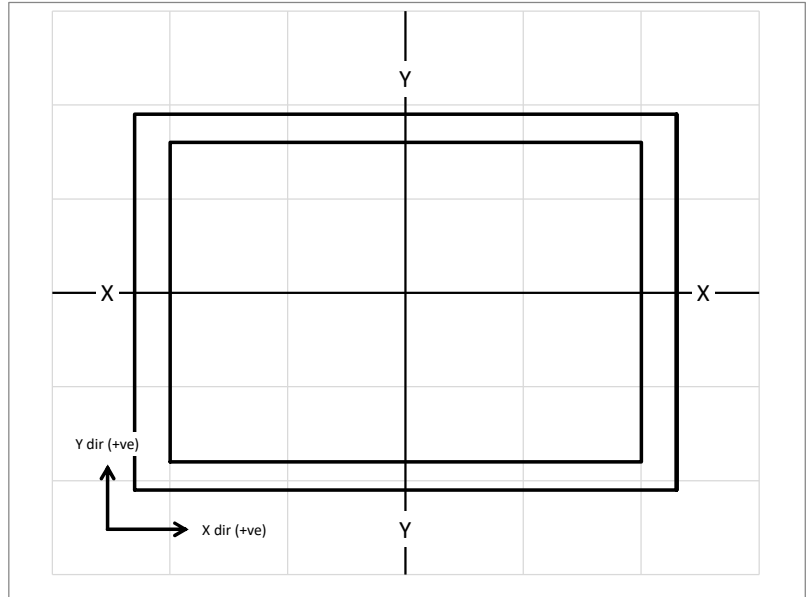
Figure NA.8 Values of exposure correction factor $c_{e,T}$ for sites in Town terrain



Defined Parameters

Total height of lift shaft **12.150m**
Max 1 day construction height **12.150m**

	Cell 1	Cell 2	Cell 3
Thickness			
Front Wall	150mm	0mm	0mm
Back Wall	150mm	0mm	0mm
LH Wall	150mm	150mm	0mm
RH Wall	150mm	0mm	0mm
Dimensions			
Open Width	2000mm	0mm	0mm
Open Depth	1700mm	2000mm	2000mm
Outside Depth	2000mm	2000mm	2000mm
Porosity			
Front Wall	0.20	0	0
Back Wall	0	0	0
LH Wall	0	0	0
RH Wall	0	0	0



Note that the front and back wall correspond to the bottom and top of the cross-section respectively.

Sectional Properties

Sectional Area	1.14E+06 mm ²	Σ Front Wall Area	3.45E+05 mm ²	
Second Moment of Area I _{xx}	6.61E+11 mm ⁴	Σ Back Wall Area	3.45E+05 mm ²	
Second Moment of Area I _{yy}	9.15E+11 mm ⁴	Σ Outside LH Wall Area	3.00E+05 mm ²	
Centroid to extreme fibre (X) +ve / -ve	1150	1150 mm	Σ Outside RH Wall Area	3.00E+05 mm ²
Centroid to extreme fibre (Y) +ve / -ve	1049	951 mm	Outside total width (B)	2300mm
Elastic modulus (Z _{xx})	6.30E+08	6.94E+08 mm ³	Outside total depth (D)	2000mm
Elastic modulus (Z _{yy})	7.95E+08	7.95E+08 mm ³		

Imposed Moments and Forces

Imposed Wind Force	V _x	V _y
V=Fw*A*h	29	36 kN
Imposed Wind Moment	M _{yy}	M _{xx}
M=V*h/2	175	220 kNm
Imposed Moment	M=P*ei	14 kNm

Summary of Moments

	SLS Moments		ULS Moments	
	M _{xx}	M _{yy}	M _{xx}	M _{yy}
Positive X & Y directions	2.34E+08	1.89E+08	3.45E+08	2.76E+08 Nmm
Negative X & Y directions	2.34E+08	1.89E+08	3.45E+08	2.76E+08 Nmm

Direct Stress

	SLS	ULS
Vertical load (P)	3.46E+05	3.12E+05 N
Direct Stress (P/A)	0.304	2.73E-01 N/mm ²

Summary of Shears

	SLS Shear		ULS Shear	
	V _y	V _x	V _y	V _x
Positive X & Y directions	3.63E+04	2.87E+04	5.44E+04	4.31E+04 N
Negative X & Y directions	3.63E+04	2.87E+04	5.44E+04	4.31E+04 N

SLS Forces & Moments

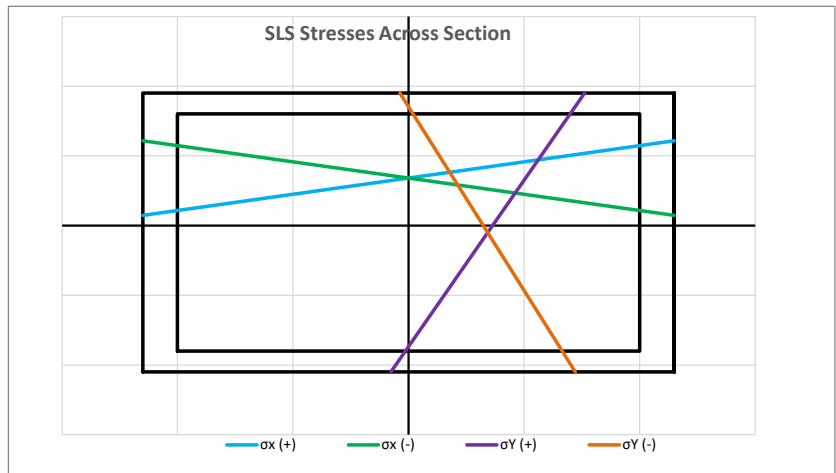
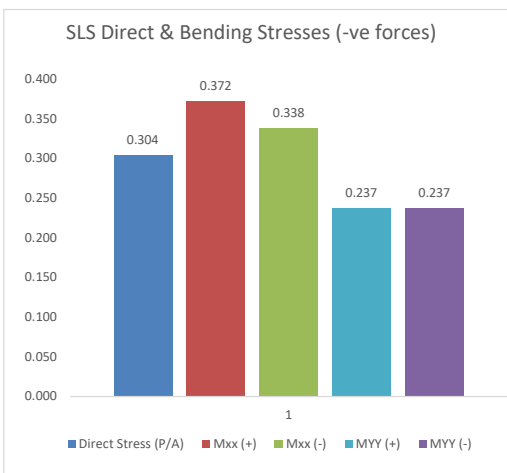
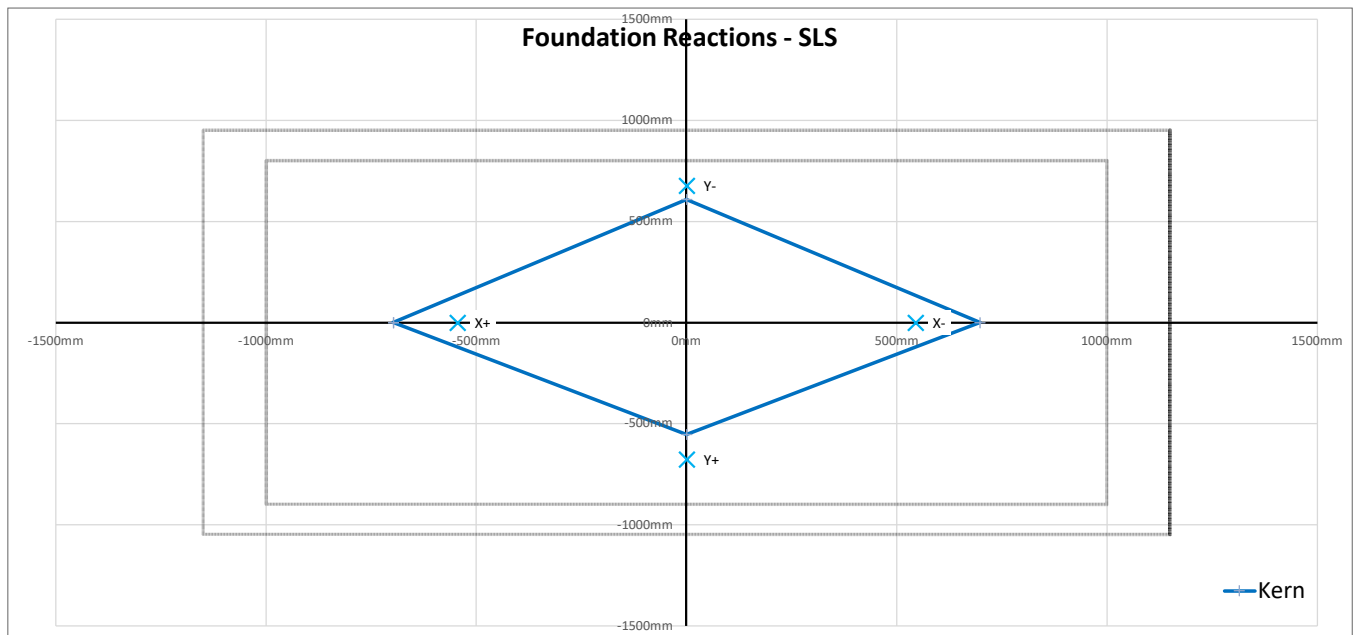
The foundation should be designed for the following forces and moments

Wall stresses induced from +ve forces

		Dir Y	Dir X
Bending Stress	M/Z	0.372	0.237 N/mm ²
Maximum Stress	P/A+M/Z	0.676	0.541 N/mm ²
Minimum Stress	P/A-M/Z	-0.068	0.067 N/mm ²
Eccentricity of base reaction	M/P	-677	-545 mm
Max Comp (Back & RH Wall)	(P/A+M/Z)xh	101.4	81.1 kN/m
Min Comp (Front & LH Wall)	(P/A-M/Z)xh	-10.3	10.0 kN/m

Wall stresses induced from -ve forces

		Dir Y	Dir X
Bending Stress	M/Z	0.338	0.237 N/mm ²
Minimum Stress	P/A-M/Z	-0.034	0.067 N/mm ²
Maximum Stress	P/A+M/Z	0.641	0.541 N/mm ²
Eccentricity of base reaction	M/P	677	545 mm
Max Comp (Front & LH Wall)	(P/A+M/Z)xh	96.2	81.1 kN/m
Min Comp (Back & RH Wall)	(P/A-M/Z)xh	-5.1	10.0 kN/m



ULS Forces & Moments

Wall stresses induced (ULS)

		+Ve applied load		-Ve applied load	
		Dir Y	Dir X	Dir Y	Dir X
Bending Stress	M/Z	0.547	0.347	0.496	0.347 N/mm2
Maximum Stress	P/A+M/Z	0.820	0.620	0.770	0.620 N/mm2
Minimum Stress	P/A-M/Z	-0.274	-0.074	-0.223	-0.074 N/mm2
Eccentricity of base reaction	M/P	-1106	885	1106	-885 mm
Max Comp (B/RH/F/LH)	(P/A+M/Z)xh	123.1	93.1	115.4	93.1 kN/m
Min Comp (F/LH/B/RH)	(P/A-M/Z)xh	-41.1	-11.0	-33.4	-11.0 kN/m
Tesion Length		500	244	449	244 mm

R.C Wall / Vertical Tie & Starter Bar Design

Front Wall Design

Deign wall thickness	150 mm		
Maximum compressive force	115.4 kN/m	allowable	2748 kN/m
Minimum compressive / tension force (-ve)	-41.1 kN/m		
Area of vertical steel required	94 mm2/m	in each layer	47 mm2/m
Min area rqd ($A_{s,min}$)	274 mm2/m	in each layer	137 mm2/m
Mesh Provided vertical	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2/\text{m}$	
Mesh Provided horizontal	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2/\text{m}$	
Vertical Ties / Starter Bars required	2No. B 20	$A_{s,prov} = 273\text{mm}^2/\text{m}$	Placed in first 250mm of tension zone (47kN/bar) Resin Suitable

Back Wall Design

Deign wall thickness	150 mm		
Maximum compressive force	123.1 kN/m	allowable	2748 kN/m
Minimum compressive / tension force (-ve)	-33.4 kN/m		
Area of vertical steel required	77 mm2/m	in each layer	38 mm2/m
Min area rqd ($A_{s,min}$)	274 mm2/m	in each layer	137 mm2/m
Mesh Provided vertical	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2/\text{m}$	
Mesh Provided horizontal	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2/\text{m}$	
Vertical Ties / Starter Bars required	2No. B 20	$A_{s,prov} = 273\text{mm}^2/\text{m}$	Placed in first 225mm of tension zone (38kN/bar) Resin Suitable

Outside LH Wall

Deign wall thickness	150 mm		
Maximum compressive force	93.1 kN/m	allowable	2748 kN/m
Minimum compressive / tension force (-ve)	-11.0 kN/m		
Area of vertical steel required	25 mm2/m	in each layer	13 mm2/m
Min area rqd ($A_{s,min}$)	238 mm2/m	in each layer	119 mm2/m
Mesh Provided vertical	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2/\text{m}$	
Mesh Provided horizontal	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2/\text{m}$	
Vertical Ties / Starter Bars required	2No. B 20	$A_{s,prov} = 314\text{mm}^2/\text{m}$	Placed in first 122mm of tension zone (13kN/bar) Resin Suitable

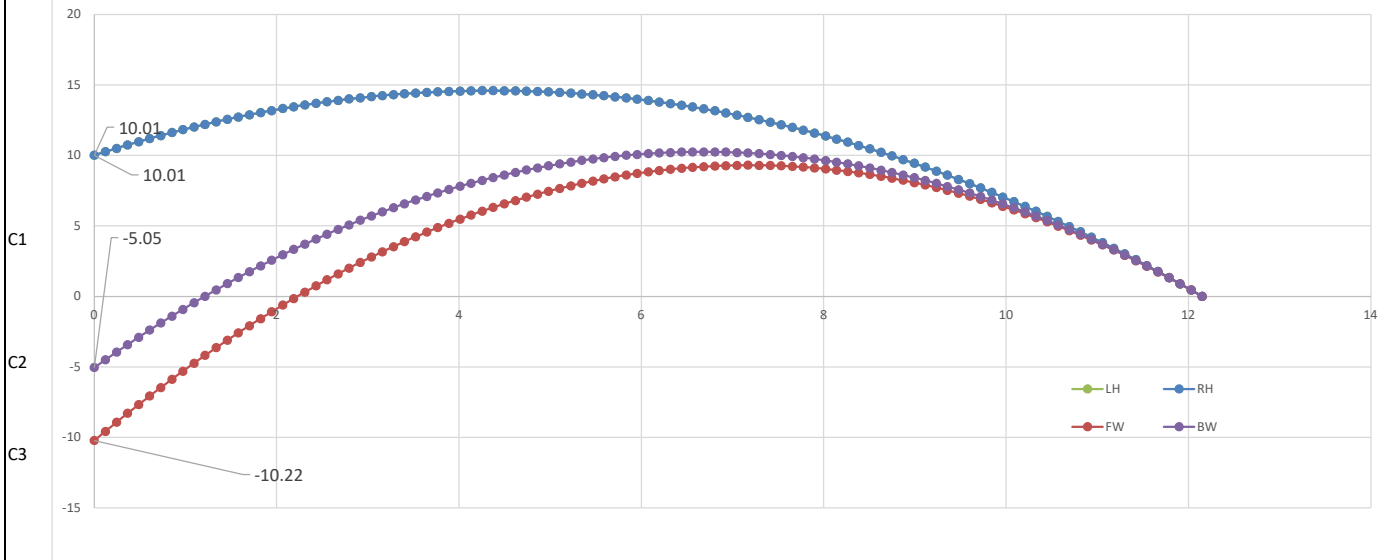
Outside RH Wall

Deign wall thickness	150 mm		
Maximum compressive force	93.1 kN/m	allowable	2748 kN/m
Minimum compressive / tension force (-ve)	-11.0 kN/m		
Area of vertical steel required	25 mm2/m	in each layer	13 mm2/m
Min area rqd ($A_{s,min}$)	238 mm2/m	in each layer	119 mm2/m
Mesh Provided vertical	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2/\text{m}$	
Mesh Provided horizontal	B8 @ 200 c/c	$A_{s,prov} = 251\text{mm}^2/\text{m}$	
Vertical Ties / Starter Bars required	2No. B 20	$A_{s,prov} = 314\text{mm}^2/\text{m}$	Placed in first 122mm of tension zone (13kN/bar) Resin Suitable

Resin Fixing Design

HIT-HY 200-R V3 Injection Mortar can be used to anchor a B20 starter bar with 200mm embedment and 1000mm projection. Fixing must be installed in accordance with manufacturer's recommendations and foundation suitably designed (by others).

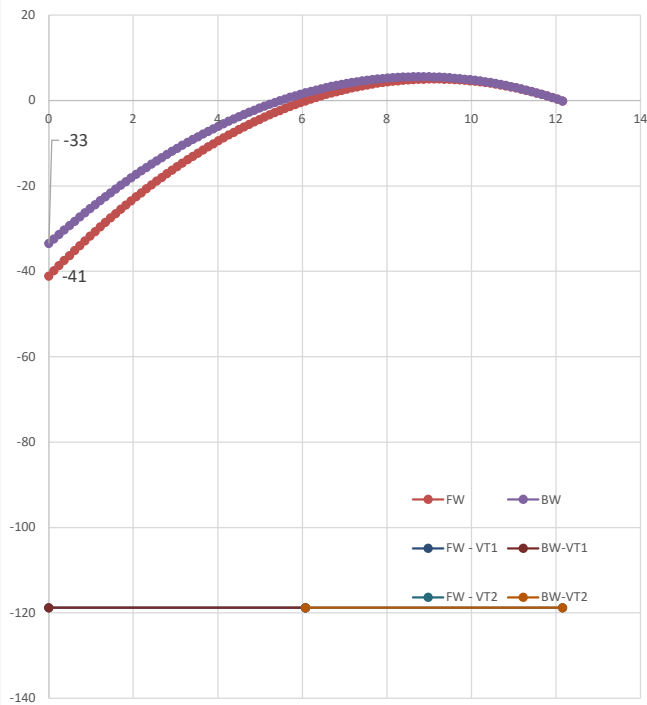
Tension Force (kN/m) vs Height (m) (SLS)



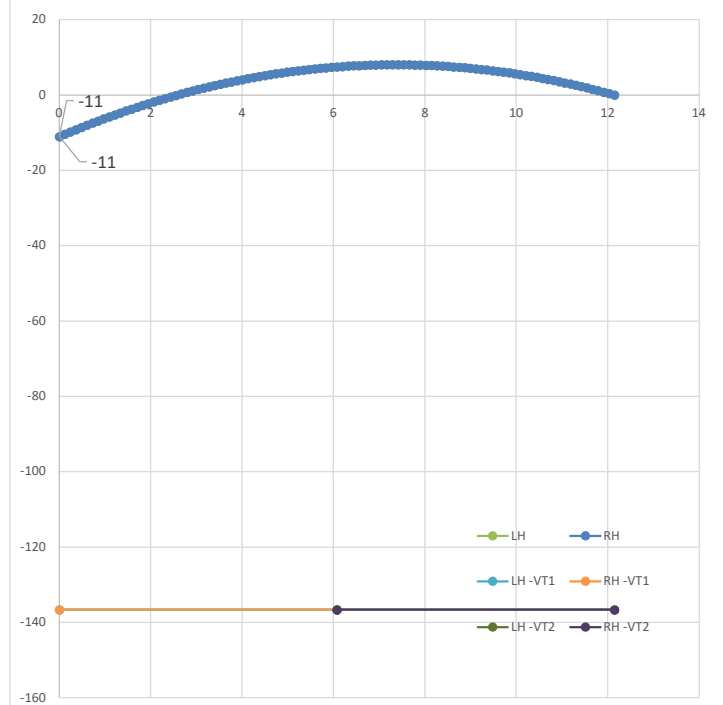
Vertical ties may be reduced at 6.08m or above

FW - VT2	2No. B 20	273mm ² /m
BW-VT2	2No. B 20	273mm ² /m
LH -VT2	2No. B 20	314mm ² /m
RH -VT2	2No. B 20	314mm ² /m

Tension Force - Y Dir (kN/m) vs Height (m) (ULS)



Tension Force - X Dir (kN/m) vs Height (m) (ULS)



Imposed Moments and Forces

Imposed Wind Force	V_x	V_y
$V=F_w*A*h$	24	30 kN
Imposed Wind Moment	M_{yy}	M_{xx}
$M=V*h/2$	147	185 kNm
Imposed Moment		
$M=P*ei$	14 kNm	

Summary of Moments

	SLS Moments		ULS Moments	
	M_{xx}	M_{yy}	M_{xx}	M_{yy}
Positive X & Y directions	1.99E+08	1.61E+08	2.92E+08	2.34E+08 Nmm
Negative X & Y directions	1.99E+08	1.61E+08	2.92E+08	2.34E+08 Nmm

Direct Stress

	SLS	ULS
Vertical load (P)	3.46E+05	3.12E+05 N
Direct Stress (P/A)	0.304	2.73E-01 N/mm ²

Summary of Shears

	SLS Shear		ULS Shear	
	V_y	V_x	V_y	V_x
Positive X & Y directions	3.05E+04	2.42E+04	4.57E+04	3.62E+04 N
Negative X & Y directions	3.05E+04	2.42E+04	4.57E+04	3.62E+04 N

SLS Forces & Moments

Wall stresses induced from +ve forces

		Dir Y	Dir X
Bending Stress	M/Z	0.316	0.202 N/mm ²
Maximum Stress	P/A+M/Z	0.620	0.506 N/mm ²
Minimum Stress	P/A-M/Z	-0.013	0.102 N/mm ²
Eccentricity of base reaction	M/P	575	464 mm
Max Comp (Back & RH Wall)	(P/A+M/Z)xh	93.0	75.9 kN/m
Min Comp (Front & LH Wall)	(P/A+M/Z)xh	-1.9	15.2 kN/m

Wall stresses induced from -ve forces

		Dir Y	Dir X
Bending Stress	M/Z	0.287	0.202 N/mm ²
Minimum Stress	P/A-M/Z	0.017	0.102 N/mm ²
Maximum Stress	P/A+M/Z	0.591	0.506 N/mm ²
Eccentricity of base reaction	M/P	-575	-464 mm
Max Comp (Front & LH Wall)	(P/A+M/Z)xh	88.6	75.9 kN/m
Min Comp (Back & RH Wall)	(P/A+M/Z)xh	2.5	15.2 kN/m

ULS Forces & Moments

Wall stresses induced from +ve forces (ULS)

		Dir Y	Dir X
Bending Stress	M/Z	0.463	0.294 N/mm ²
Maximum Stress	P/A+M/Z	0.737	0.568 N/mm ²
Minimum Stress	P/A-M/Z	-0.190	-0.021 N/mm ²
Eccentricity of base reaction	M/P	937	751 mm
Max Comp (Back & RH Wall)	(P/A+M/Z)xh	110.5	85.2 kN/m
Min Comp (Front & LH Wall)	(P/A+M/Z)xh	-28.5	-3.2 kN/m

Wall stresses induced from -ve forces (ULS)

		Dir Y	Dir X
Bending Stress	M/Z	0.420	0.294 N/mm ²
Minimum Stress	P/A-M/Z	-0.147	-0.021 N/mm ²
Maximum Stress	P/A+M/Z	0.694	0.568 N/mm ²
Eccentricity of base reaction	M/P	-937	-751 mm
Max Comp (Front & LH Wall)	(P/A+M/Z)xh	104.1	85.2 kN/m
Min Comp (Back & RH Wall)	(P/A+M/Z)xh	-22.0	-3.2 kN/m

R.C Wall & Vertical Tie Design

Capacity of vertical ties due to early strength of grout 60%

Front Wall Design

Deign wall thickness	150 mm	
Maximum compressive force	104.1 kN/m	
Minimum compressive / tension force (-ve)	-28.5 kN/m	
Area of vertical steel required	66 mm ² /m	
Vertical Ties Provided	2No. B 20	$A_{s,Prov} = 164\text{mm}^2/\text{m}$

Back Wall Design

Deign wall thickness	150 mm	
Maximum compressive force	110.5 kN/m	
Minimum compressive / tension force (-ve)	-22.0 kN/m	
Area of vertical steel required	51 mm ² /m	
Vertical Ties Provided	2No. B 20	$A_{s,Prov} = 164\text{mm}^2/\text{m}$

Extreme LH Wall

Deign wall thickness	150 mm	
Maximum compressive force	85.2 kN/m	
Minimum compressive / tension force (-ve)	-3.2 kN/m	
Area of vertical steel required	7 mm ² /m	
Vertical Ties Provided	2No. B 20	$A_{s,Prov} = 188\text{mm}^2/\text{m}$

Extreme RH Wall

Deign wall thickness	150 mm	
Maximum compressive force	85.2 kN/m	
Minimum compressive / tension force (-ve)	-3.2 kN/m	
Area of vertical steel required	7 mm ² /m	
Vertical Ties Provided	2No. B 20	$A_{s,Prov} = 188\text{mm}^2/\text{m}$

Compliance checked against requirements of BS EN 206-1 clause 8.2.1.3

Mix Design BG-01

f_{cu} 60 σ 8.61

	Date Cast	Reference	Flow (mm)	Fresh Concrete Temp	Density poy weight (kg)	Fresh concrete density(k g/m ³)	Demould		7 Day			28 day						Saturated Density	Compressive Strength	Criteria 1 f _{ck} - 4	Criteria 2 <15% diff of avg	Criteria 3 15>f _{ck} +1.48σ	mean	Socotec	
							Age (hours)	Cube Result 1	Date tested	Age (days)	Density	Cube result	Date tested	Age (days)	Density 1	Density 2	Test Result 1								Test Result 2
1	22/01/2024	150693	730	16.0	2.219	440	23.0	15.9	29/01/2024	7	2322	53.2	19/02/2024	28	2243	2210	71.9	63.7	2230	67.8	Pass	Pass			
2	29/01/2024	151077	730	17.0	2.396	480	23.0	38.0	05/02/2024	7	2396	70.0	26/02/2024	28	2326	2367	87.4	88.19	2350	87.8	Pass	Pass			
3	02/02/2024	151381	730	17.0	2.319	460	24.0	23.7	09/02/2024	7	2375	48.8	01/03/2024	28	2337	2370	73.6	71.2	2350	72.4	Pass	Pass			
4	06/02/2024	151564	740	16.0	2.258	450	24.0	25.2	13/02/2024	7	2329	58.3	05/03/2024	28	2415	2385	70.8	71.85	2400	71.3	Pass	Pass			
5	08/03/2024	153269	740	19.0	2.351	470	24.0	24.1	15/03/2024	7	2399	66.5	05/04/2024	28	2354	2345	73.1	72.69	2350	72.9	Pass	Pass			
6	13/03/2024	153445	730	16.0	2.293	460	24.0	23.3	20/03/2024	7	2309	63.5	10/04/2024	28	2318	2322	76.2	74	2320	75.3	Pass	Pass			
7	14/03/2024	153505	730	15.0	2.307	460	24.0	21.9	21/03/2024	7	2365	79.0	11/04/2024	28	2371	2383	81.3	84	2380	82.9	Pass	Pass			
8	18/03/2024	153638	730	19.0	2.301	460	24.0	26.2	25/03/2024	7	2370	48.0	15/04/2024	28	2398	2334	70.0	68.31	2370	69.1	Pass	Pass			
9	19/03/2024	153705	730	15.0	2.357	470	23.0	40.0	26/03/2024	7	2398	60.9	16/04/2024	28	2342	2320	71.9	72.63	2330	72.3	Pass	Pass			
10	20/03/2024	153786	720	19.0	2.322	460	24.0	23.1	27/03/2024	7	2339	54.5	17/04/2024	28	2347	2348	64.9	63.12	2350	64.0	Pass	Pass			
11	21/03/2024	153861	730	15.0	2.301	460	23.0	26.9	28/03/2024	7	2352	70.3	18/04/2024	28	2349	2391	91.7	90	2370	90.9	Pass	Pass			
12	22/03/2024	153915	730	15.0	2.311	460	24.0	35.8	02/04/2024	11	2396	68.3	19/04/2024	28	2319.0	2306	64.72	62.16	2310	63.4	Pass	Pass			
13	25/03/2024	154008	730	14.0	2.337	470	23.0	26.0	02/04/2024	8	2308	59.0	22/04/2024	28	2368	2363	70.89	72.63	2370	71.8	Pass	Pass			
14	26/03/2024	154043	730	15.0	2.303	460	23.0	29.2	02/04/2024	7	2330	45.4	23/04/2024	28	2365	2356	64.65	63.28	2360	64.0	Pass	Pass			
15	27/03/2024	154118	730	15.0	2.382	480	24.0	19.1	03/04/2024	7	2277	47.6	24/04/2024	28	2306.0	2353	56.92	62.14	2330	59.5	Pass	Pass	72.4		
16	28/03/2024	154181	730	15.0	2.269	450	23.0	43.8	04/04/2024	7	2290	49.5	25/04/2024	28	2284	2303	68.36	69.91	2290	69.1	Pass	Pass			
17	02/04/2024	154266	730	15.0	2.987	600	24.0	21.7	09/04/2024	7	2315	54.8	30/04/2024	28	2298	2319	69.31	67.96	2310	68.6	Pass	Pass			
18	03/04/2024	154322	730	16.0	2.320	460	23.0	26.4	10/04/2024	7	2345	59.5	01/05/2024	28	2326.0	2363	68.36	67.11	2340	67.7	Pass	Pass			
19	04/04/2024	154413	730	16.0	2.291	460	23.0	26.3	11/04/2024	7	2330	57.2	02/05/2024	28	2362	2349	68.19	70.9	2360	69.5	Pass	Pass			
20	05/04/2024	154469	730	15.0	2.996	600	23.0	29.8	12/04/2024	7	2391	60.7	03/05/2024	28	2316	2318	73.67	75.19	2320	74.4	Pass	Pass			
21	08/04/2024	154529	730	16.0	2.355	470	24.0	36.6	15/04/2024	7	2331	58.5	07/05/2024	29	2390.0	2345	60.19	59.29	2370	59.7	Pass	Pass			
22	09/04/2024	154580	710	15.0	2.389	480	23.0	32.9	16/04/2024	7	2358	69.8	07/05/2024	28	2365	2359	72.89	73.31	2360	73.1	Pass	Pass			
23	10/04/2024	154625	720	19.0	2.298	460	23.0	23.3	17/04/2024	7	2321	60.6	08/05/2024	28	2309	2305	71.97	73.16	2310	72.6	Pass	Pass			
24	11/04/2024	154685	730	15.0	2.276	450	24.0	36.7	18/04/2024	7	2319	63.1	09/05/2024	28	2366.0	2357	60.65	63.29	2360	62.0	Pass	Pass			
25	12/04/2024	154745	730	15.0	2.399	480	23.0	47.9	19/04/2024	7	2373	70.0	10/05/2024	28	2369	2350	75.62	74.51	2360	75.1	Pass	Pass			
26	15/04/2024	154797	730	15.0	2.306	460	24.0	22.1	22/04/2024	7	2326	55.1	13/05/2024	28	2399	2307	63.91	62.11	2350	63.0	Pass	Pass			
27	16/04/2024	154831	730	16.0	2.306	460	23.0	30.1	23/04/2024	7	2312	57.6	14/05/2024	28	2327.0	2321	70.95	71.36	2320	71.2	Pass	Pass			
28	17/04/2024	154877	730	16.0	2.302	460	24.0	21.8	24/04/2024	7	2390	97.0	15/05/2024	28	2392	2336	70.36	71.28	2360	70.8	Pass	Pass			
29	22/04/2024	155049	730	16.0	2.291	460	23.0	23.1	29/04/2024	7	2366	56.4	20/05/2024	28	2399	2332	70.49	72.11	2370	71.3	Pass	Pass			
30	23/04/2024	155115	720	16.0	2.319	460	24.0	22.1	30/04/2024	7	2330	59.2	21/05/2024	28	2313.0	2319	69.11	68.76	2320	68.9	Pass	Pass	69.1		
31	24/04/2024	155168	730	16.0	2.296	460	24.0	19.9	01/05/2024	7	2304	60.0	22/05/2024	28	2339	2328	62.1	63.65	2330	62.9	Pass	Pass			
32	25/04/2024	155291	720	17.0	2.307	460	24.0	20.4	02/05/2024	7	2396	52.9	23/05/2024	28	2323	2335	63.12	65.87	2330	64.5	Pass	Pass			
33	26/04/2024	155306	730	16.0	2.312	460	23.0	35.8	03/05/2024	7	2330	53.3	24/05/2024	28	2321.0	2288	56.61	58.13	2300	57.4	Pass	Pass			
34	29/04/2024	155369	730	16.0	2.307	460	24.0	24.2	07/05/2024	8	2328	49.2	27/05/2024	28	2311	2327	57.86	56.9	2320	57.4	Pass	Pass			
35	13/05/2024	155858	720	17.0	2.291	460	23.0	28.2	20/05/2024	7	2360	56.4	10/06/2024	28	2339	2371	73.11	74.68	2360	73.9	Pass	Pass			



[]

[]

Compliance checked against requirements of BS EN 206-1clause 8.2.1.3

Mix Design BG-01

f_{cu}	55	σ	8.61
----------	----	----------	------

	Demould								7 Day				28 day												
	Date Cast	Reference	Flow (mm)	Fresh Concrete Temp	Density poy weight (kg)	Fresh concrete density(k g/m3)	Age (hours)	Cube Result 1	Date tested	Age (days)	Density	Cube result	Date tested	Age (days)	Density 1	Density 2	Test Result 1	Test Result 2	Saturated Density	Compressive Strength	Criteria 1 $f_{ck} - 4$	Criteria 2 <15% diff of avg	Criteria 3 $15 \geq f_{ck} + 1.48\sigma$	mean	Socotec
1	14/05/2024	155907	730	16.0	2.301	460	24.0	27.2	21/05/2024	7	2381	57.2	11/06/2024	28	2365	2367	70.8	71.4	2370	71.1	Pass	Pass			
2	20/05/2024	156089	720	17.0	2.276	450	23.0	31.7	27/05/2024	7	2397	61.4	17/06/2024	28	2331	2358	78.4	77.13	2340	77.7	Pass	Pass			
3	21/05/2024	156127	730	17.0	2.149	430	24.0	28.4	28/05/2024	7	2397	64.9	18/06/2024	28	2397	2362	79.0	81.13	2380	80.1	Pass	Pass			
4	22/05/2024	156166	730	17.0	2.392	480	24.0	26.2	29/05/2024	7	2342	52.0	19/06/2024	28	2361	2369	69.6	70.2	2370	69.9	Pass	Pass			
5	28/05/2024	156299	720	17.0	2.351	470	24.0	31.9	04/06/2024	7	2343	64.1	25/06/2024	28	2393	2335	69.4	61.92	2360	65.6	Pass	Pass			
6	29/05/2024	156352	730	17.0	2.312	460	24.0	27.0	05/06/2024	7	2345	52.5	26/06/2024	28	2343	2346	61.0	63	2340	62.2	Pass	Pass			
7	03/06/2024	155547	730	18.0	2.258	450	24.0	29.6	10/06/2024	7	2320	48.4	01/07/2024	28	2330	2324	60.3	61	2330	60.8	Pass	Pass			
8	04/06/2024	156630	730	18.0	2.291	460	24.0	28.0	11/06/2024	7	2366	53.6	02/07/2024	28	2359	2365	73.0	79.16	2360	76.1	Pass	Pass			
9	05/06/2024	156680	730	17.0	2.318	460	24.0	29.6	12/06/2024	7	2318	46.0	03/07/2024	28	2321	2328	57.7	58.26	2320	58.0	Pass	Pass			
10	11/06/2024	156914	730	17.0	2.276	450	23.0	26.2	18/06/2024	7	2362	59.3	09/07/2024	28	2335	2311	70.8	71.46	2320	71.1	Pass	Pass			
11	12/06/2024	156957	720	17.0	2.272	450	23.0	28.9	19/06/2024	7	2349	63.9	10/07/2024	28	2392	2333	78.79	77.11	2360	78.0	Pass	Pass			
12	13/06/2024	157024	730	17.0	2.280	460	23.0	27.4	20/06/2024	7	2348	56.8	11/07/2024	28	2326.0	2335	72.08	73.46	2330	72.8	Pass	Pass			
13	14/06/2024	157083	740	16.0	2.231	450	24.0	26.2	21/06/2024	7	2352	63.3	12/07/2024	28	2348	2337	72.13	76.48	2340	74.3	Pass	Pass			
14	17/06/2024	157129	730	17.0	2.381	480	24.0	27.4	24/06/2024	7	2315	61.5	15/07/2024	28	2355	2328	71.1	72.16	2340	71.6	Pass	Pass			
15	18/06/2024	157176	720	17.0	2.249	450	23.0	29.8	25/06/2024	7	2295	45.6	16/07/2024	28	2303.0	2276	66	68.91	2290	67.5	Pass	Pass	70.4	Pass	
16	19/06/2024	157224	730	16.0	2.291	460	23.0	28.8	26/06/2024	7	2315	49.5	17/07/2024	28	2327	2308	66.93	69.82	2320	68.4	Pass	Pass			
17	20/06/2024	157289	730	17.0	2.268	450	23.0	28.0	27/06/2024	7	2356	60.4	18/07/2024	28	2360	2348	76.48	79.11	2350	77.8	Pass	Pass			
18	21/06/2024	157325	730	17.0	2.290	460	23.0	38.0	28/06/2024	7	2319	62.4	19/07/2024	28	2309.0	2316	69.98	70.32	2310	70.2	Pass	Pass			
19	24/06/2024	157370	730	18.0	2.291	460	24.0	28.8	01/07/2024	7	2307	60.9	22/07/2024	28	2359	2369	68.1	64.19	2360	66.1	Pass	Pass			
20	25/06/2024	157423	730	19.0	2.236	450	23.0	29.2	02/07/2024	7	2323	51.6	23/07/2024	28	2332	2323	69.7	72.36	2330	71.0	Pass	Pass			
21	26/06/2024	157463	720	19.0	2.290	460	24.0	28.7	03/07/2024	7	2351	49.6	24/07/2024	28	2358.0	2352	69.31	68.91	2360	69.1	Pass	Pass			
22	27/06/2024	157503	730	19.0	2.287	460	24.0	27.7	04/07/2024	7	2362	59.8	25/07/2024	28	2359	2353	68.19	67.96	2360	68.1	Pass	Pass			
	28/06/2024	157549	730	18.0	2.312	460	24.0	39.8	05/07/2024	7	2387	68.3	26/07/2024	28	2344	2349	66.7	67.6	2350	67.2	Pass	Pass			
23	03/07/2024	157683	730	17.0	2.268	450	24.0	27.8	10/07/2024	7	2320	53.3	31/07/2024	28	2363	2377	69.85	61.36	2370	65.6	Pass	Pass			
24	04/07/2024	157719	730	17.0	2.248	450	24.0	26.9	11/07/2024	7	2349	54.4	01/08/2024	28	2358.0	2333	62.61	61.39	2350	62.0	Pass	Pass			
25	05/07/2024	157769	760	18.0	2.261	450	23.0	29.1	12/07/2024	7	2317	48.6	02/08/2024	28	2312	2284	62.45	63.68	2300	63.1	Pass	Pass			
26	09/07/2024	157848	730	17.0	2.290	460	23.0	29.7	16/07/2024	7	2346	47.4	06/08/2024	28	2331	2320	62.21	60.5	2330	61.4	Pass	Pass			
27	10/07/2024	157889	720	18.0	2.276	450	23.0	32.0	17/07/2024	7	2278	52.0	07/08/2024	28	2269.0	2221	62.75	63.13	2250	62.9	Pass	Pass			
28	11/07/2024	157937	720	17.0	2.769	550	23.0	27.2	18/07/2024	7	2356	58.6	08/08/2024	28	2326	2312	73.41	73.32	2320	73.4	Pass	Pass			
29	12/07/2024	157963	720	17.0	2.268	450	23.0	39.3	19/07/2024	7	2361	50.8	09/08/2024	28	2313	2273	69.79	65.55	2290	67.7	Pass	Pass			
30	15/07/2024	158035	720	17.0	2.317	460	23.0	27.7	22/07/2024	7	2369	54.7	12/08/2024	28	2363.0	2350	61.3	64.68	2360	63.0	Pass	Pass	67.3		
31	16/07/2024	158080	720	16.0	2.271	450	24.0	29.2	23/07/2024	7	2399	63.0	13/08/2024	28	2376	2338	72.46	76.59	2360	74.5	Pass	Pass			
32	17/07/2024	158116	730	17.0	2.316	460	23.0	34.2	24/07/2024	7	2365	53.6	14/08/2024	28	2393	2336	60.61	63.96	2360	62.3	Pass	Pass			
33	18/07/2024	158179	720	17.0	2.286	460	24.0	32.0	25/07/2024	7	2351	58.1	15/08/2024	28	2359.0	2392	81.69	80.81	2380	81.3	Pass	Pass			
34	19/07/2024	158235	740	18.0	2.297	460	23.0	39.1	26/07/2024	7	2305	53.6	16/08/2024	28	2334	2319	75.61	74.77	2330	75.2	Pass	Pass			
35	23/07/2024	158332	720	17.0	2.261	450	23.0	31.7	30/07/2024	7	2379	57.8	20/08/2024	28	2363	2365	69.91	68.1	2360	69.0	Pass	Pass			



Compliance checked against requirements of BS EN 206-1 clause 8.2.1.3

Mix Design GRA 03

f_{cu} 55 σ 8.61

	Date Cast	Reference	Flow (mm)	Fresh Concrete Temp	Density poy weight (kg)	Fresh concrete density(k g/m3)	Demould		7 Day				28 day						Saturated Density	Compres sive Strength	Criteria 1 f _{ck} - 4	Criteria 2 <15% diff of avg	Criteria 3 15≥f _{ck} +1.48σ	mean	Socotec
							Age (hours)	Cube Result 1	Date tested	Age (days)	Density	Cube result	Date tested	Age (days)	Density 1	Density 2	Test Result 1	Test Result 2							
1	26/02/2024	152611	730	13.0	2.293	460	23.0	18.1	04/03/2024	7	2320	67.0	25/03/2024	28	2317	2325	66.0	67.8	2320	66.9	Pass	Pass			
2	27/02/2024	152694	740	14.0	2.315	460	23.0	20.3	05/03/2024	7	2299	63.2	26/03/2024	28	2297	2285	77.8	76.68	2290	77.2	Pass	Pass			
3	28/02/2024	152766	730	14.0	2.312	460	24.0	20.0	06/03/2024	7	2332	73.2	27/03/2024	28	2308	2392	73.9	75.94	2350	74.9	Pass	Pass			
4	29/02/2024	152853	730	14.0	2.308	460	24.0	21.2	07/03/2024	7	2351	70.9	28/03/2024	28	2397	2352	74.0	79.32	2370	76.6	Pass	Pass			
	01/03/2024	152932	730	14.0	2.316	460	24.0	27.9	08/03/2024	7	2357	77.7	02/04/2024	32	2337	2331	89.2	83.63	2330	86.4	Pass	Pass			
5	04/03/2024	153012	730	14.0	2.306	460	24.0	20.5	11/03/2024	7	2348	67.0	02/04/2024	29	2287	2311	69.7	70.13	2300	69.9	Pass	Pass			
6	05/03/2024	153075	730	14.0	2.292	460	23.0	21.2	12/03/2024	7	2334	72.3	02/04/2024	28	2295	2332	78.8	79	2310	79.1	Pass	Pass			
7	06/03/2024	153159	730	14.0	2.306	460	23.0	20.8	13/03/2024	7	2323	63.6	03/04/2024	28	2352	2328	79.9	80	2340	80.0	Pass	Pass			
8	08/03/2024	153230	730	19.0	2.321	460	23.0	32.6	15/03/2024	7	2352	75.5	05/04/2024	28	2345	2355	83.4	82.15	2350	82.8	Pass	Pass			
9	11/03/2024	153307	730	19.0	2.341	470	24.0	29.7	18/03/2024	7	2301	73.1	08/04/2024	28	2315	2309	86.1	80.49	2310	83.3	Pass	Pass			
10	12/03/2024	153370	730	15.0	2.311	460	24.0	22.5	19/03/2024	7	2343	51.3	09/04/2024	28	2328	2309	60.5	61.31	2320	60.9	Pass	Pass			
11	13/03/2024	153478	740	16.0	2.325	460	23.0	41.0	20/03/2024	7	2295	45.5	10/04/2024	28	2284	2289	54.44	55.62	2290	55.0	Pass	Pass			
12	14/03/2024	153509	740	15.0	2.365	470	23.0	26.2	21/03/2024	7	2363	69.9	11/04/2024	28	2339.0	2333	80.18	80.64	2340	80.4	Pass	Pass			
13	15/03/2024	153593	730	15.0	2.215	440	23.0	40.0	22/03/2024	7	2333	55.6	12/04/2024	28	2310	2332	66.11	65.54	2320	65.8	Pass	Pass			
14	18/03/2024	153633	740	19.0	2.349	470	23.0	33.4	25/03/2024	7	2329	63.0	15/04/2024	28	2290	2280	63.4	64.11	2290	63.8	Pass	Pass			
15	19/03/2024	153732	740	15.0	2.331	470	24.0	49.8	26/03/2024	7	2382	75.1	16/04/2024	28	2349.0	2324	59.36	58.11	2340	58.7	Pass	Pass	72.6	Pass	
16	20/03/2024	153769	730	19.0	2.245	450	23.0	33.2	27/03/2024	7	2365	63.1	17/04/2024	28	2352	2328	67.43	70.58	2340	69.0	Pass	Pass			
17	21/03/2024	153843	730	15.0	2.315	460	23.0	31.8	28/03/2024	7	2336	57.7	18/04/2024	28	2332	2337	71.56	70.58	2330	71.1	Pass	Pass			
18	25/03/2024	153992	740	19.0	2.303	460	24.0	33.8	02/04/2024	8	2326	66.7	22/04/2024	28	2305.0	2308	76.25	78.3	2310	77.3	Pass	Pass			
19	26/03/2024	159038	730	15.0	2.305	460	23.0	23.8	02/04/2024	7	2317	56.2	23/04/2024	28	2299	2305	68.43	69.73	2300	69.1	Pass	Pass			
20	27/03/2024	154125	740	15.0	2.993	600	24.0	24.0	03/04/2024	7	2339	62.5	24/04/2024	28	2335	2324	74.11	76.37	2330	75.2	Pass	Pass			
21	28/03/2024	154180	740	15.0	2.450	490	23.0	18.0	04/04/2024	7	2281	50.0	25/04/2024	28	2281.0	2284	67.24	68.11	2280	67.7	Pass	Pass			
22	03/04/2024	154339	730	16.0	2.306	460	23.0	21.2	10/04/2024	7	2351	63.5	01/05/2024	28	2359	2349	79.36	80.11	2350	79.7	Pass	Pass			
23	04/04/2024	154420	720	16.0	2.366	470	23.0	30.6	11/04/2024	7	2331	61.7	02/05/2024	28	2313	2350	71.36	75.8	2330	73.6	Pass	Pass			
24	10/04/2024	154651	710	14.0	2.350	470	23.0	18.0	17/04/2024	7	2335	54.2	08/05/2024	28	2335.0	2340	78.95	77.13	2340	78.0	Pass	Pass			
25	11/04/2024	154681	710	15.0	2.319	460	23.0	25.3	18/04/2024	7	2346	62.9	09/05/2024	28	2367.0	2357	62.26	71.19	2360	66.7	Pass	Pass			
26	12/04/2024	154784	700	15.0	2.399	480	23.0	18.0	19/04/2024	7	2367	69.2	10/05/2024	28	2338	2322	78.99	77.36	2330	78.2	Pass	Pass			
27	15/04/2024	154812	720	15.0	2.318	460	23.0	37.9	22/04/2024	7	2335	67.0	13/05/2024	28	2360.0	2356	76.31	77.53	2360	76.9	Pass	Pass			
28	18/04/2024	154933	720	16.0	2.292	460	24.0	24.3	25/04/2024	7	2319	65.9	16/05/2024	28	2315	2328	77.23	79.86	2320	78.5	Pass	Pass			
29	19/04/2024	154993	720	16.0	2.312	460	24.0	37.9	26/04/2024	7	2292	62.2	17/05/2024	28	2318	2306	81.03	78.36	2310	79.7	Pass	Pass			
30	23/04/2024	155151	730	16.0	2.326	460	23.0	25.4	30/04/2024	7	2290	56.0	21/05/2024	28	2290.0	2236	68.36	65.55	2260	67.0	Pass	Pass	73.8	Pass	
31	25/04/2024	155281	730	17.0	2.312	460	23.0	26.3	02/05/2024	7	2317	59.9	23/05/2024	28	2396	2390	67.31	64.18	2390	65.7	Pass	Pass			
32	03/05/2024	155592	730	16.0	2.345	470	23.0	22.3	10/05/2024	7	2316	69.3	31/05/2024	28	2350	2351	72.82	73.11	2350	73.0	Pass	Pass			
33	13/05/2024	155862	730	17.0	2.236	450	24.0	32.2	20/05/2024	7	2358	47.7	10/06/2024	28	2379.0	2360	77.16	79.36	2370	78.3	Pass	Pass			
34	22/05/2024	156172	720	17.0	2.216	440	24.0	28.3	29/05/2024	7	2307	59.5	19/06/2024	28	2327	2341	62.53	60.89	2330	61.7	Pass	Pass			
35	05/06/2024	156677	720	17.0	2.289	460	24.0	32.8	12/06/2024	7	2353	64.1													





6. Operation

N/A





7. Maintenance Procedures and Planned Maintenance



Fault Finding/ Maintenance Requirements

No adaptation, modification or cutting of the pre-cast elements should be undertaken without the written approval of FP McCann Limited in the first instance or after assessment by a suitably qualified engineer working from the original calculations and manufacture drawings.

Demolition should only be undertaken by suitably qualified contractors. PC Units should be suitably propped if persons are in close proximity to works during cutting / demolition works otherwise peckers / heavy machinery can be used to remove pre-cast items in a controlled and safe manner.

Pre-stressed concrete units, if applicable, can be demolished quite safely by destroying the concrete around the stressed tendons, immediately once the concrete fails and crushed, the tendons relax and become de-stressed, the stressed tendons should never be cut, generally there is no need.

Cleaning

Not Applicable



8. Spares Information

N/A





9. Guarantees and Warranties

N/A





10. Replacement Strategy

N/A





11. Demolition Decommissioning or Disposal



Section 3 – Fault Finding/ Maintenance Requirements

No adaptation, modification or cutting of the pre-cast elements should be undertaken without the written approval of FP McCann Limited in the first instance or after assessment by a suitably qualified engineer working from the original calculations and manufacture drawings.

Demolition should only be undertaken by suitably qualified contractors. PC Units should be suitably propped if persons are in close proximity to works during cutting / demolition works otherwise peckers / heavy machinery can be used to remove pre-cast items in a controlled and safe manner.

Pre-stressed concrete units, if applicable, can be demolished quite safely by destroying the concrete around the stressed tendons, immediately once the concrete fails and crushed, the tendons relax and become de-stressed, the stressed tendons should never be cut, generally there is no need.