

## GENERAL DRAWING NOTES

- A. All dimensions in mm U.O.S.  
B. All measurements  $\pm 1\text{mm}$ .  
C. DO NOT SCALE DRAWING.

## SPECIFICATION INFORMATION

- A. Openings sized to suit outer dimension of pipe.  
B. Invert level of pipe can be set to your specification.

## PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

## HANDLING

- A. Weight of concrete is based on  $2.4 \text{ tonne/m}^3$ , +5% is recommended for sizing appropriate lifting equipment.  
B. Unit to be lifted as per drawing / available lifting guide.

## MATERIAL

- A. Self-compacting Reinforced Cement Concrete DC4/DS4.  
B. Lifting strength based on 2 cubes =  $20\text{N/mm}^2$ .  
C. Characteristic 28 day cube strength =  $50\text{N/mm}^2$ .  
D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

## REINFORCEMENT

- A. Reinforcement Wire structure to BS EN 13369.  
B. Scheduling, dimensions, bends & cutting to BS8666.  
C. Reinforcing Wire structure to be machine tied with steel wire.

## MANUFACTURE

- A. Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.  
B. Tolerances to BS EN 13369 clause 4.3.1.1.  
C. Surface Finishing:

Class	Top	Sides	Rear	Rear of Backwall
	A	A	A	Self-Levelled

- D. Marking, units shall be indelibly marked to show:
- Mould reference code.
  - De-mould date.
  - Job reference number & unique product number.
  - Unit weight (kg).

## DESIGN

- A. Concrete structure designed to Eurocode 2.  
B. JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.  
C. Units are designed to withstand a vertical live load surcharge of  $10\text{kN/M}^2$ .  
D. Weight of soil =  $18\text{kN/M}^3$ .  
E. Angle of internal friction = 30 Deg.  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
Minimum Cover for All Faces	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

## FABRICATION SPECIFICATION

- A. Manufacture IAW EN 1090-2 EXC CLASS 1.  
B. Material grade is to be: BS EN 10025 S275.  
C. Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.  
D. All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.  
E. Ensure vertical flats fully welded both sides where possible.  
F. All sharp edges and burrs are to be removed.  
G. Remove all weld splatter.  
H. Holes by punching are permitted with reaming.  
I. Galvanising process after fabrication to BS EN ISO1461.

## C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications (250kN / 25 ton load rating). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
C. Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



ADDRESS: JKH LIMITED  
CHISWICK AVENUE  
MILDENHALL  
IP28 7AY

WEBSITE: www.jkhlimited.co.uk  
EMAIL: sales@jkhlimited.co.uk  
TEL: 01638 713795

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DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
1000x1000x1000mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

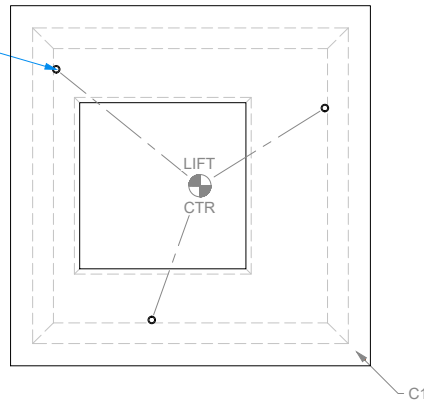
0			0
CHAMBER, MULTIPLE-PIECE:			0
F1: 1105	0	0	0
B1: 1105	0	0	0
C1: 813	0	0	0
0	0	0	0
0	0	0	0
TOE BEAM:	0	0	TOTAL WEIGHT: 3023

DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

DRAWING #:

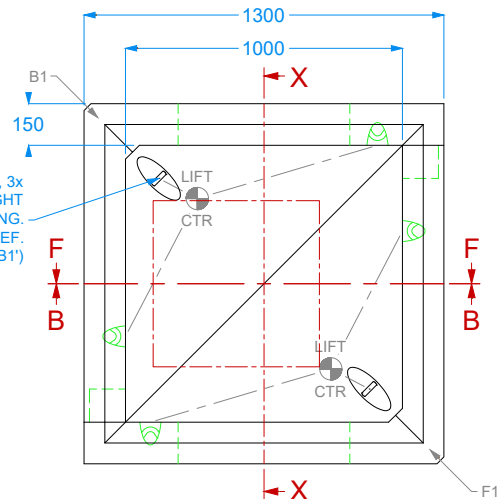
V.CHA-150-1000X1000X1000

LIFTING SOCKETS, x3  
-WIRE LIFTING LOOPS  
(RD20, 3 POINT CHAIN,  
REF. COVER SLAB 'C1')



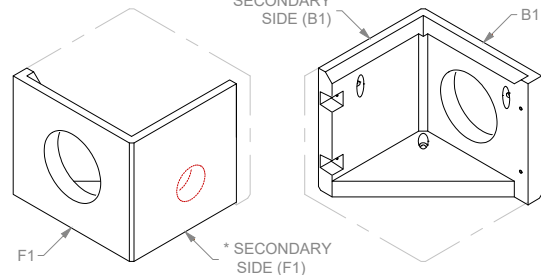
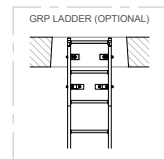
VIEW: TOP (COVER SLAB SHOWN ONLY)

LIFTING ANCHORS, 3x  
FOR ONSITE UPRIGHT  
STATIC ONLY LIFTING.  
(3 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')



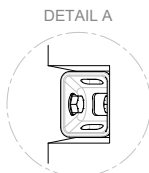
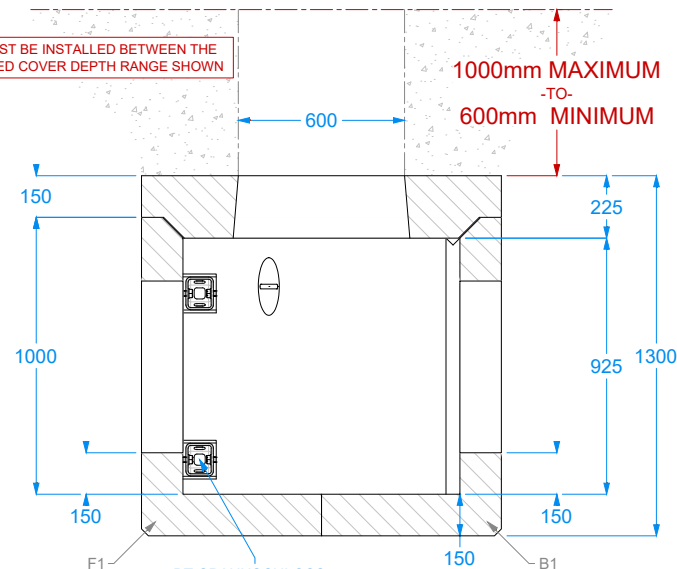
VIEW : TOP (CHAMBER SHOWN ONLY)

SECONDARY SIDE HOLE LIMITED TO MAX  
50% SIZE OF PRIMARY SIDE HOLE SIZING \*



VIEW: ISOMETRIC

UNIT MUST BE INSTALLED BETWEEN THE  
SPECIFIED COVER DEPTH RANGE SHOWN

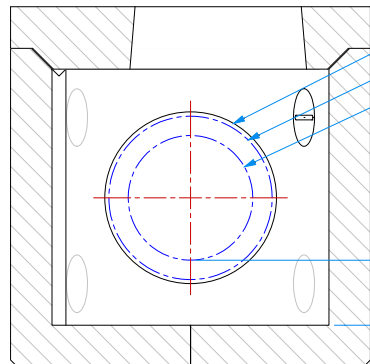


M20 TURNBUCKLE

BT-SPANNSCHLOSS  
M20 TURNBUCKLES  
SET INTO RECESSES  
ALONG JOINT EDGE,  
CAST-IN M20 FIXING  
SOCKETS, SECURED  
WITH S/S BOLTS.

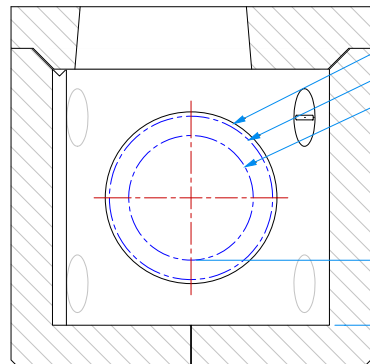
VIEW: SECTION X-X

OPENING (MAX) 620  
PIPE O/D\*  
PIPE I/D\*



VIEW: SECTION F-F

OPENING (MAX) 620  
PIPE O/D\*  
PIPE I/D\*



VIEW : SECTION B-B

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## SPECIFICATION INFORMATION

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B. Invert level of pipe can be set to your specification.

## PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

## HANDLING

- A. Weight of concrete is based on  $2.4 \text{ tonne/m}^3$ ,  $\pm 5\%$  is recommended for sizing appropriate lifting equipment.  
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D. Weight of soil =  $18\text{kN/M}^3$ .  
E. Angle of internal friction =  $30 \text{ Deg}$ .  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness				>100 yrs, 150mm+ Thickness			
	Block Size	Min Size	Max Size	Cover	Block Size	Min Size	Max Size	Cover
Minimum Cover for All Faces	33	28	38	55	50	50	63	

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

## FABRICATION SPECIFICATION

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## C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications ( $250\text{kN} / 25 \text{ ton load rating}$ ). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
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DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
1000x1000x1500mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

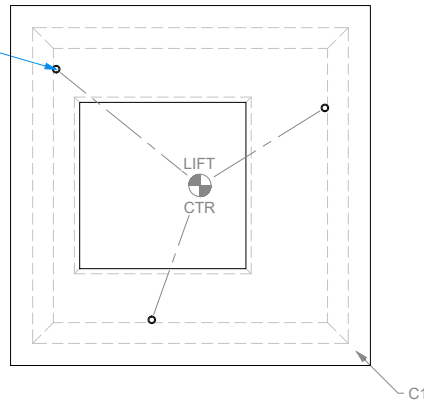
	0	0	0	0
CHAMBER, MULTIPLE-PIECE:	0	0	0	0
F1: 1520	0	0	0	0
B1: 1520	0	0	0	0
C1: 813	0	0	0	0
0	0	0	0	0
0	0	0	0	0
TOE BEAM:	0	0	0	0
TOTAL WEIGHT:	3853			

DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

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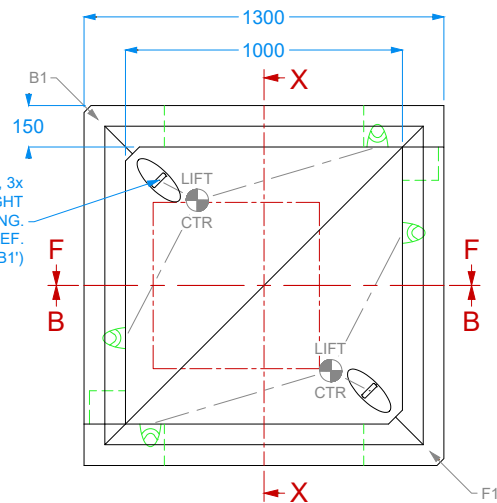
V.CHA-150-1000X1000X1500

LIFTING SOCKETS, x3  
-WIRE LIFTING LOOPS  
(RD20, 3 POINT CHAIN,  
REF. COVER SLAB 'C1')



VIEW: TOP (COVER SLAB SHOWN ONLY)

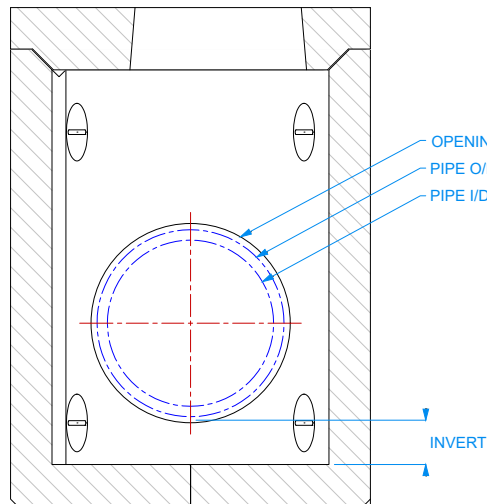
LIFTING ANCHORS, 3x  
FOR ONSITE UPRIGHT  
STATIC ONLY LIFTING.  
(3 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')



VIEW : TOP (CHAMBER SHOWN ONLY)

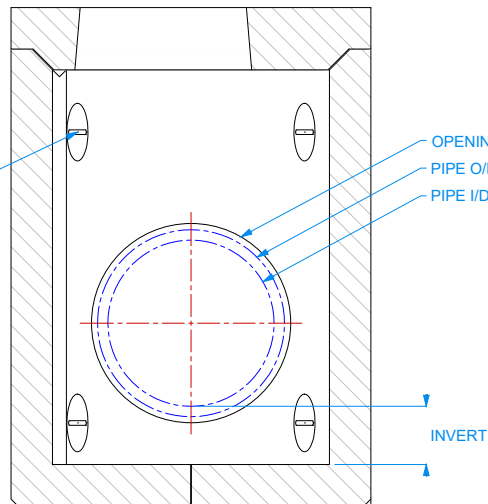
LIFTING ANCHORS, 2x  
AT TOP FOR ONSITE  
ROTATE LIFT UPRIGHT  
(2 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')

ALL ANCHORS, x4 FOR  
TRANSPORT LOADING  
WITH UNIT SIDE LAYED  
(4 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')



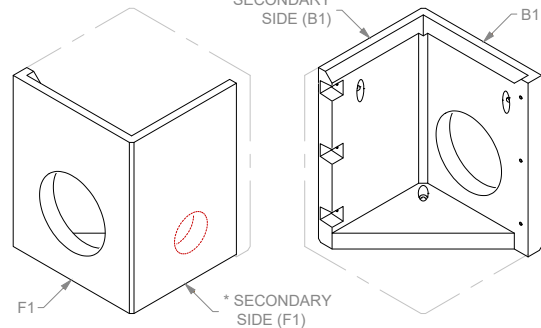
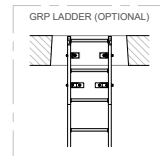
VIEW: SECTION F-F

OPENING (MAX) 720  
PIPE O/D\*  
PIPE I/D\*



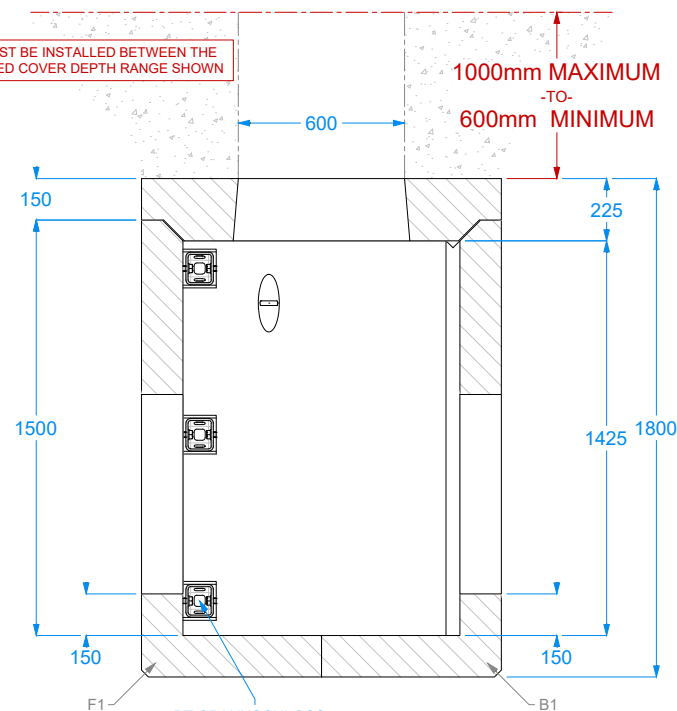
VIEW : SECTION B-B

SECONDARY SIDE HOLE LIMITED TO MAX  
50% SIZE OF PRIMARY SIDE HOLE SIZING \*



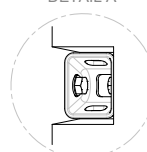
VIEW: ISOMETRIC

UNIT MUST BE INSTALLED BETWEEN THE  
SPECIFIED COVER DEPTH RANGE SHOWN



VIEW: SECTION X-X

DETAIL A



M20 TURNBUCKLE

BT-SPANNSCHLOSS  
M20 TURNBUCKLES  
SET INTO RECESSES  
ALONG JOINT EDGE,  
CAST-IN M20 FIXING  
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V CHAMBER 150mm WALL THICKNESS,  
1000x1000x2000mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

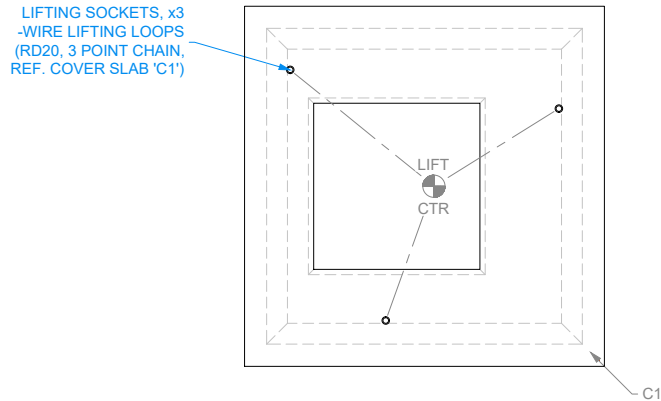
	0	0	0
CHAMBER, MULTIPLE-PIECE:	0	0	0
F1: 1935	0	0	0
B1: 1935	0	0	0
C1: 813	0	0	0
0	0	0	0
0	0	0	0

TOE BEAM: 0 0 TOTAL WEIGHT: 4683

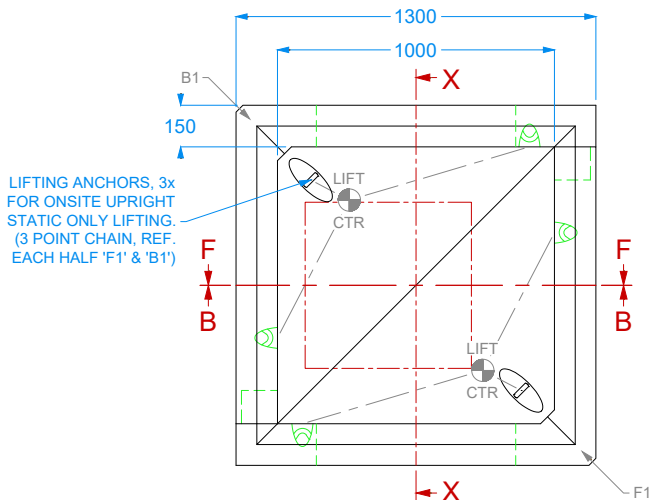
DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

DRAWING #:

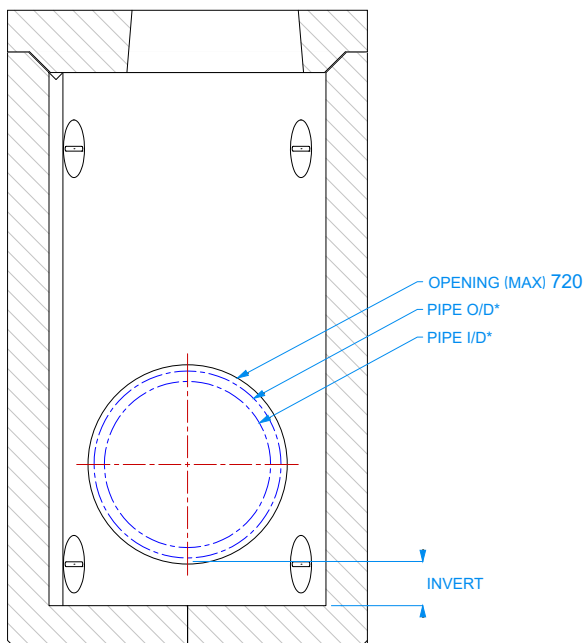
V.CHA-150-1000X1000X2000



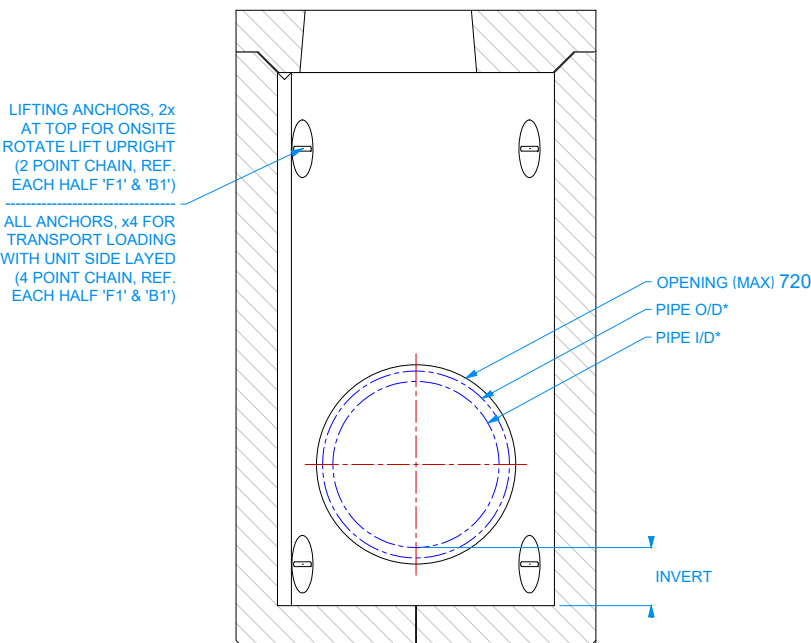
VIEW: TOP (COVER SLAB SHOWN ONLY)



VIEW : TOP (CHAMBER SHOWN ONLY)

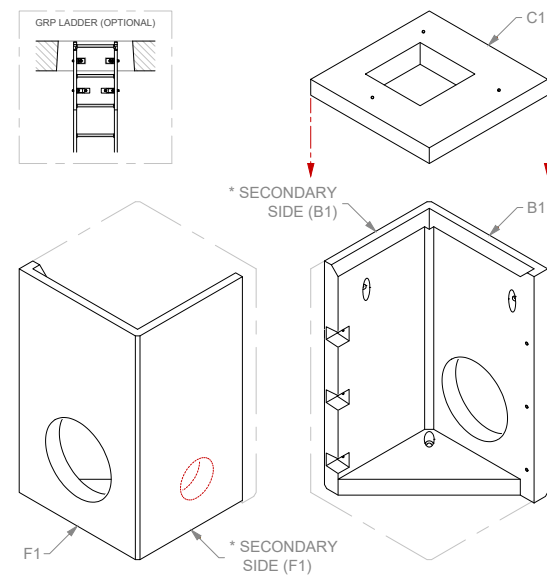


VIEW: SECTION F-F

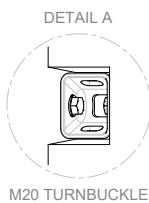
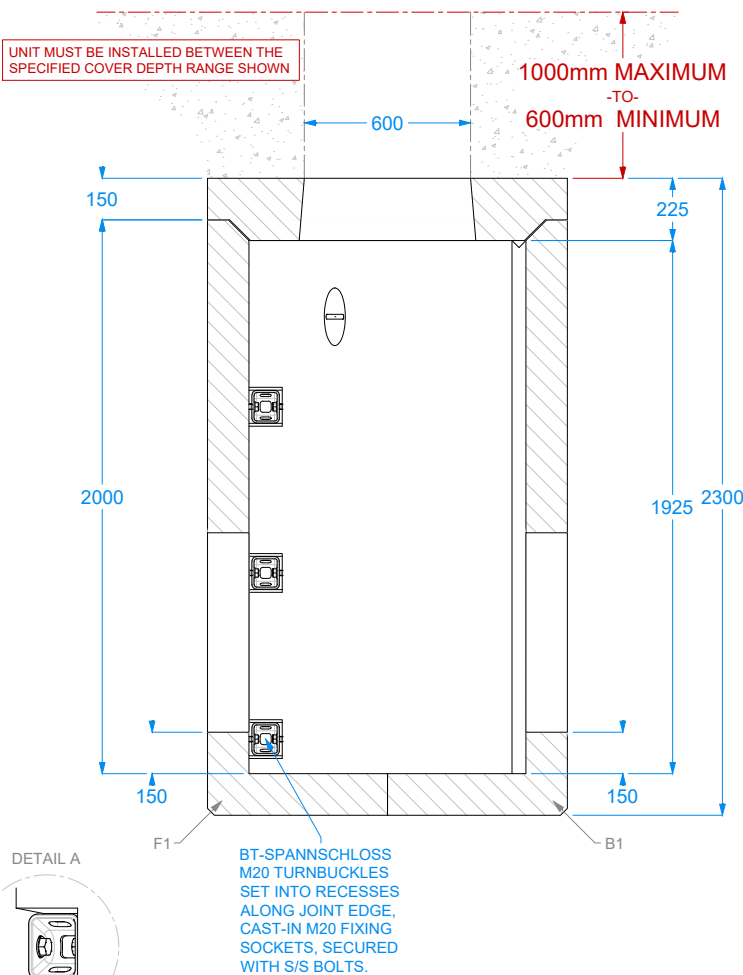


VIEW : SECTION B-B

SECONDARY SIDE HOLE LIMITED TO MAX  
50% SIZE OF PRIMARY SIDE HOLE SIZING \*

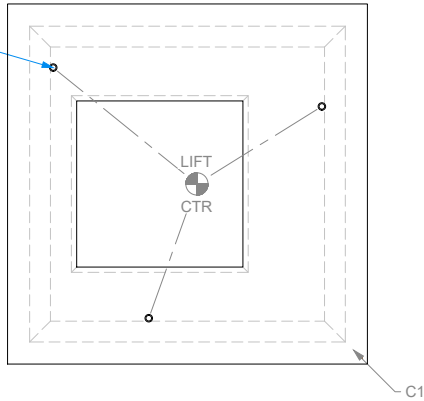


VIEW: ISOMETRIC



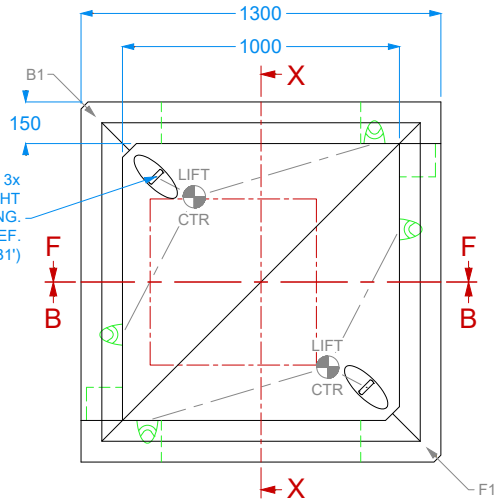
VIEW: SECTION X-X

LIFTING SOCKETS, x3  
-WIRE LIFTING LOOPS  
(RD20, 3 POINT CHAIN,  
REF. COVER SLAB 'C1')



VIEW: TOP (COVER SLAB SHOWN ONLY)

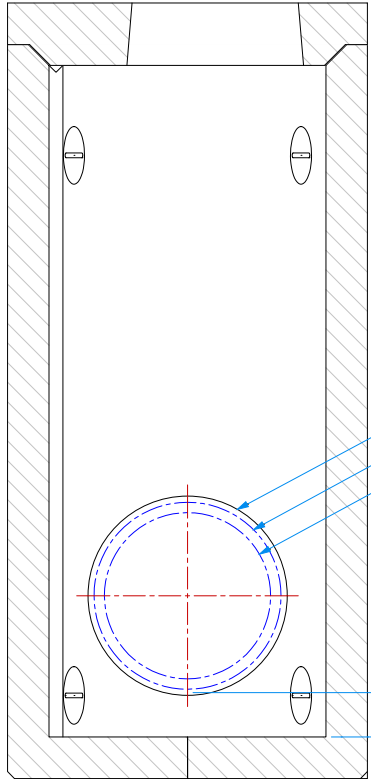
LIFTING ANCHORS, 3x  
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VIEW : TOP (CHAMBER SHOWN ONLY)

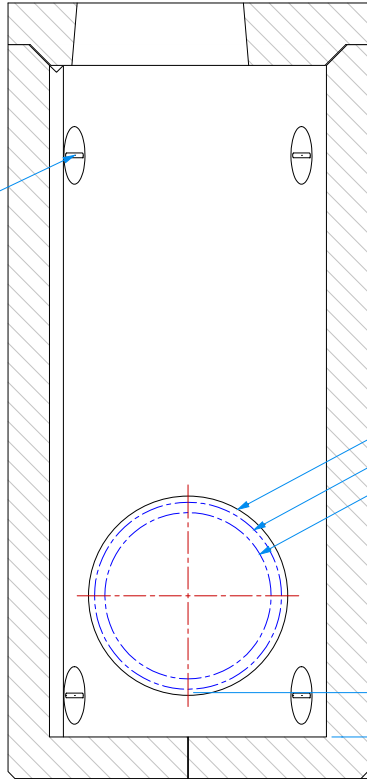
LIFTING ANCHORS, 2x  
AT TOP FOR ONSITE  
ROTATE LIFT UPRIGHT  
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EACH HALF 'F1' & 'B1')

ALL ANCHORS, x4 FOR  
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WITH UNIT SIDE LAYED  
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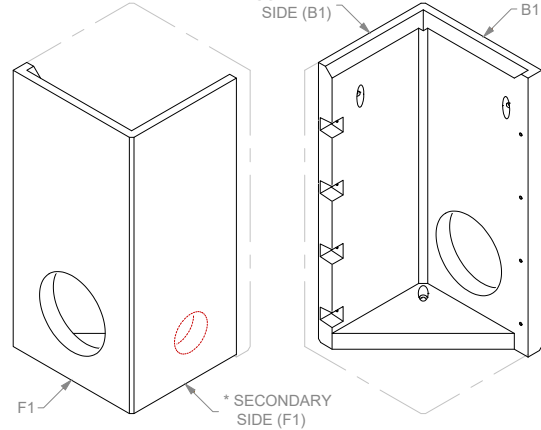
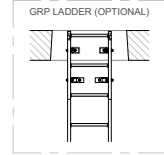
VIEW: SECTION F-F

OPENING (MAX) 720  
PIPE O/D\*  
PIPE I/D\*



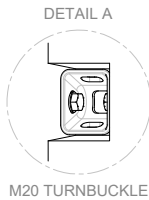
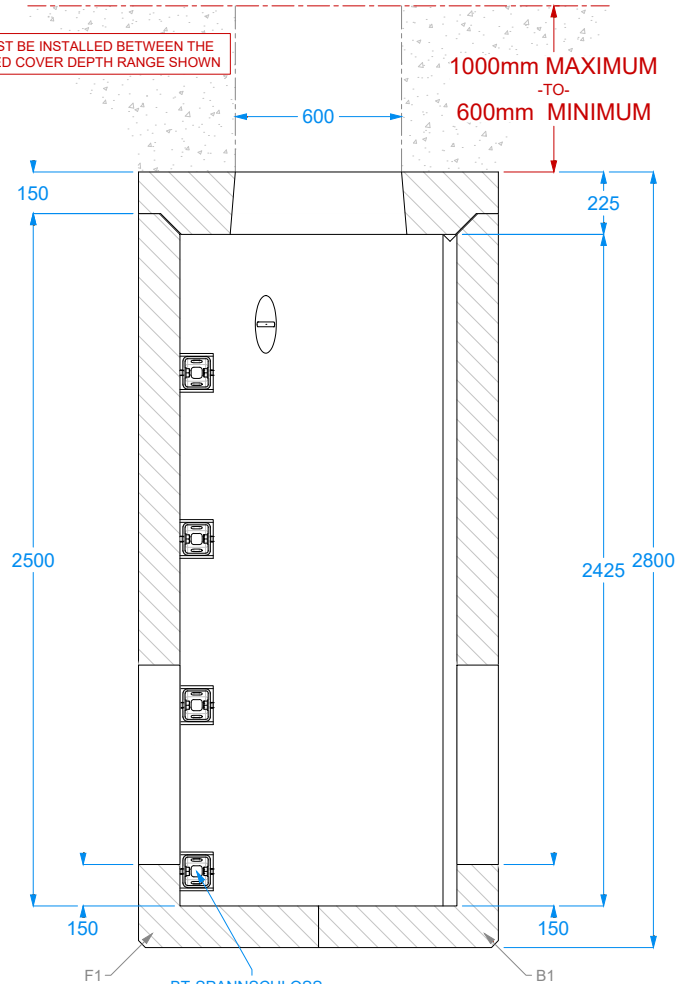
VIEW : SECTION B-B

SECONDARY SIDE HOLE LIMITED TO MAX  
50% SIZE OF PRIMARY SIDE HOLE SIZING \*



VIEW: ISOMETRIC

UNIT MUST BE INSTALLED BETWEEN THE  
SPECIFIED COVER DEPTH RANGE SHOWN



M20 TURNBUCKLE

BT-SPANNSCHLOSS  
M20 TURNBUCKLES  
SET INTO RECESSES  
ALONG JOINT EDGE,  
CAST-IN M20 FIXING  
SOCKETS, SECURED  
WITH S/S BOLTS.

VIEW: SECTION X-X

#### GENERAL DRAWING NOTES

- A. All dimensions in mm U.O.S.  
B. All measurements  $\pm 1\text{mm}$ .  
C. DO NOT SCALE DRAWING.

#### SPECIFICATION INFORMATION

- A. Openings sized to suit outer dimension of pipe.  
B. Invert level of pipe can be set to your specification.

#### PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

#### HANDLING

- A. Weight of concrete is based on  $2.4 \text{ tonne/m}^3$ , +5% is recommended for sizing appropriate lifting equipment.  
B. Unit to be lifted as per drawing / available lifting guide.

#### MATERIAL

- A. Self-compacting Reinforced Cement Concrete DC4/DS4.  
B. Lifting strength based on 2 cubes =  $20\text{N/mm}^2$ .  
C. Characteristic 28 day cube strength =  $50\text{N/mm}^2$ .  
D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

#### REINFORCEMENT

- A. Reinforcement Wire structure to BS EN 13369.  
B. Scheduling, dimensions, bends & cutting to BS8666.  
C. Reinforcing Wire structure to be machine tied with steel wire.

#### MANUFACTURE

- A. Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.  
B. Tolerances to BS EN 13369 clause 4.3.1.1.  
C. Surface Finishing:

	Top	Sides	Rear	Self-Levelled
Class	A	A	A	

- D. Marking, units shall be indelibly marked to show:
- Mould reference code.
  - De-mould date.
  - Job reference number & unique product number.
  - Unit weight (kg).

#### DESIGN

- A. Concrete structure designed to Eurocode 2.  
B. JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.  
C. Units are designed to withstand a vertical live load surcharge of  $10\text{kN/M}^2$ .  
D. Weight of soil =  $18\text{kN/M}^3$ .  
E. Angle of internal friction =  $30 \text{ Deg}$ .  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
Minimum Cover for All Faces	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

#### FABRICATION SPECIFICATION

- A. Manufacture IAW EN 1090-2 EXC CLASS 1.  
B. Material grade is to be: BS EN 10025 S275.  
C. Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.  
D. All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.  
E. Ensure vertical flats fully welded both sides where possible.  
F. All sharp edges and burrs are to be removed.  
G. Remove all weld splatter.  
H. Holes by punching are permitted with reaming.  
I. Galvanising process after fabrication to BS EN ISO1461.

#### C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications (250kN / 25 ton load rating). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
C. Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



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#### DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
1000x1000x2500mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

	0	0	0	0
CHAMBER, MULTIPLE-PIECE:	0	0	0	0
F1: 2345	0	0	0	0
B1: 2345	0	0	0	0
C1: 813	0	0	0	0
0	0	0	0	0
0	0	0	0	0

TOE BEAM: 0 0 TOTAL WEIGHT: 5503

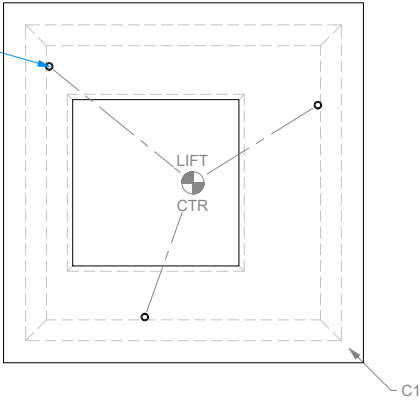
DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

DRAWING #:

V.CHA-150-1000X1000X2500

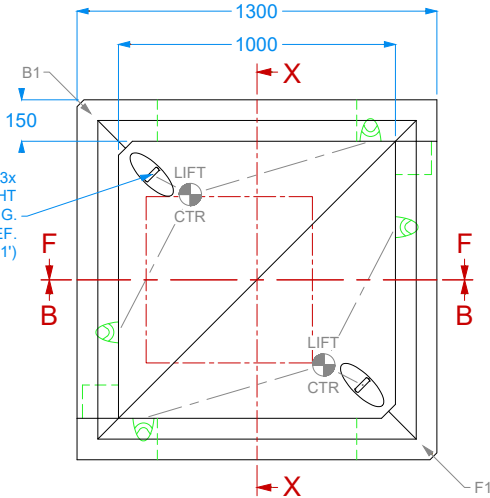


LIFTING SOCKETS, x3  
-WIRE LIFTING LOOPS  
(RD20, 3 POINT CHAIN,  
REF. COVER SLAB 'C1')



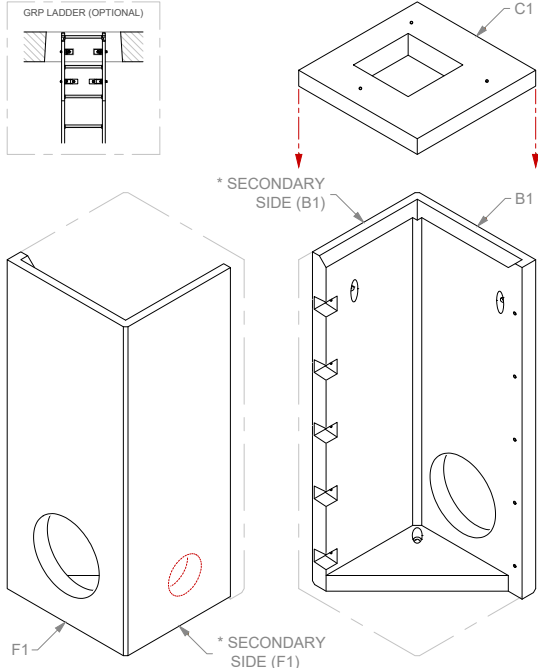
VIEW: TOP (COVER SLAB SHOWN ONLY)

LIFTING ANCHORS, 3x  
FOR ONSITE UPRIGHT  
STATIC ONLY LIFTING.  
(3 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')

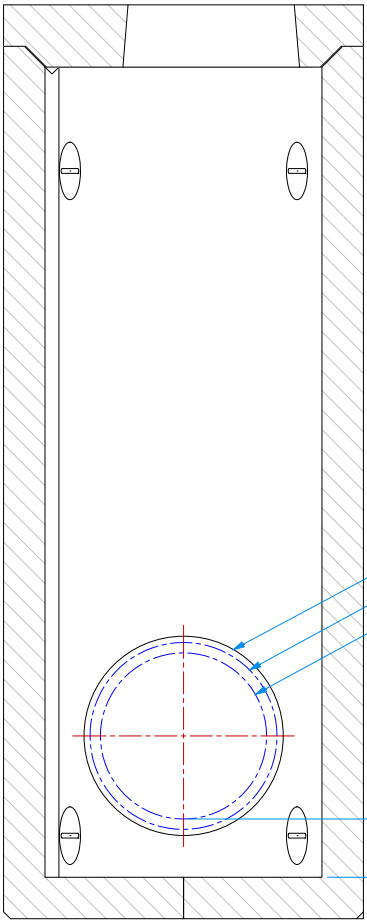


VIEW : TOP (CHAMBER SHOWN ONLY)

SECONDARY SIDE HOLE LIMITED TO MAX  
50% SIZE OF PRIMARY SIDE HOLE SIZING \*



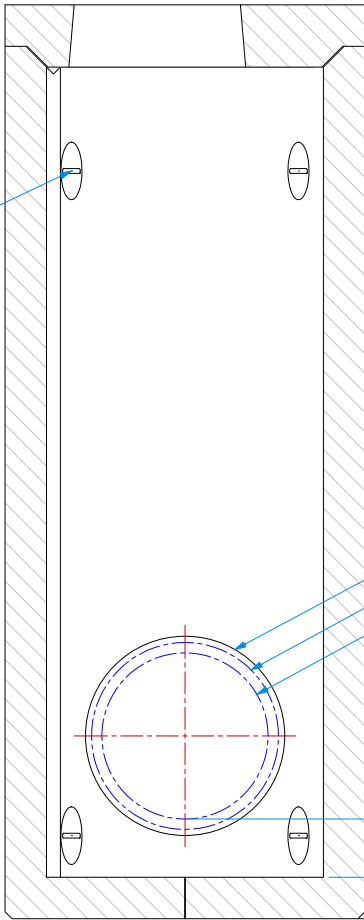
VIEW: ISOMETRIC



VIEW: SECTION F-F

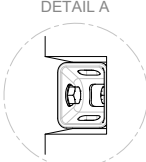
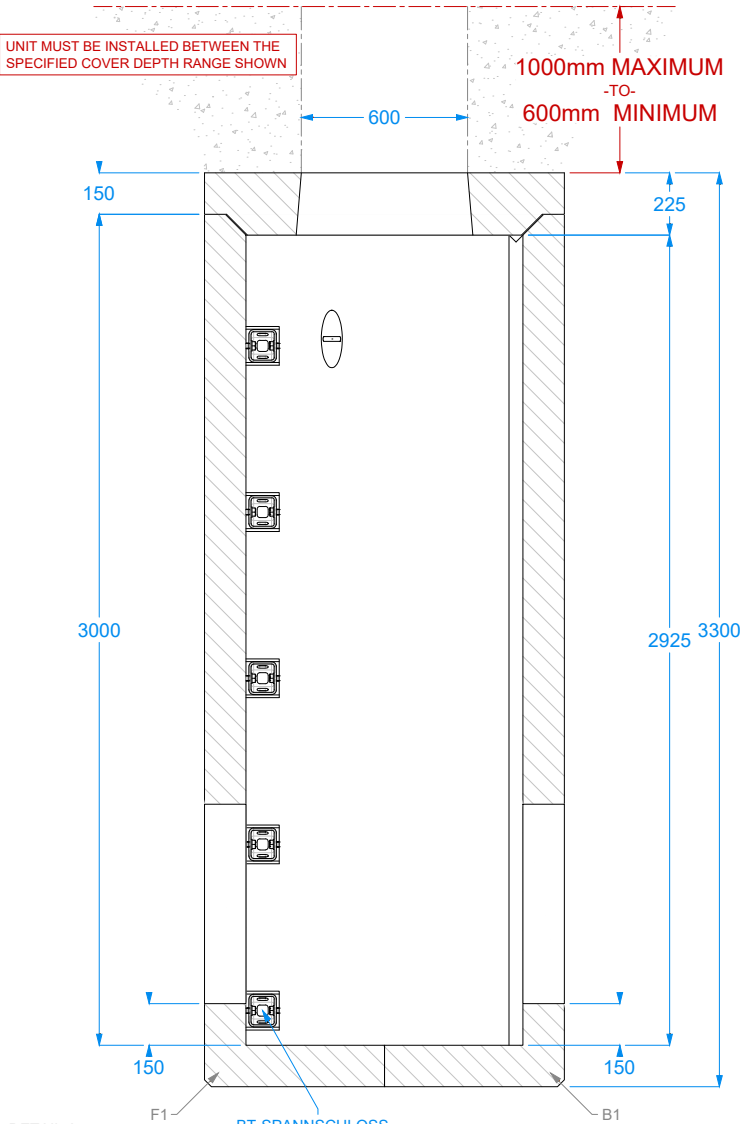
LIFTING ANCHORS, 2x  
AT TOP FOR ONSITE  
ROTATE LIFT UPRIGHT  
(2 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')

ALL ANCHORS, x4 FOR  
TRANSPORT LOADING  
WITH UNIT SIDE LAYED  
(4 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')



VIEW : SECTION B-B

UNIT MUST BE INSTALLED BETWEEN THE  
SPECIFIED COVER DEPTH RANGE SHOWN



M20 TURNBUCKLE

VIEW: SECTION X-X

#### GENERAL DRAWING NOTES

- A. All dimensions in mm U.O.S.  
B. All measurements  $\pm 1$ mm.  
C. DO NOT SCALE DRAWING.

#### SPECIFICATION INFORMATION

- A. Openings sized to suit outer dimension of pipe.  
B. Invert level of pipe can be set to your specification.

#### PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

#### HANDLING

- A. Weight of concrete is based on 2.4 tonne/m<sup>3</sup>, +5% is recommended for sizing appropriate lifting equipment.  
B. Unit to be lifted as per drawing / available lifting guide.

#### MATERIAL

- A. Self-compacting Reinforced Cement Concrete DC4/DS4.  
B. Lifting strength based on 2 cubes = 20N/mm<sup>2</sup>.  
C. Characteristic 28 day cube strength = 50N/mm<sup>2</sup>.  
D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

#### REINFORCEMENT

- A. Reinforcement Wire structure to BS EN 13369.  
B. Scheduling, dimensions, bends & cutting to BS8666.  
C. Reinforcing Wire structure to be machine tied with steel wire.

#### MANUFACTURE

- A. Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.  
B. Tolerances to BS EN 13369 clause 4.3.1.1.  
C. Surface Finishing:

	Top	Sides	Rear	Rear of Backwall
Class	A	A	A	Self-Levelled

- D. Marking, units shall be indelibly marked to show:  
• Mould reference code.  
• De-mould date.

- Job reference number & unique product number.  
• Unit weight (kg).

#### DESIGN

- A. Concrete structure designed to Eurocode 2.  
B. JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.  
C. Units are designed to withstand a vertical live load surcharge of 10kN/M<sup>2</sup>.  
D. Weight of soil = 18kN/M<sup>3</sup>.  
E. Angle of internal friction = 30 Deg.  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
Minimum Cover for All Faces	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

#### FABRICATION SPECIFICATION

- A. Manufacture IAW EN 1090-2 EXC CLASS 1.  
B. Material grade is to be: BS EN 10025 S275.  
C. Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.  
D. All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.  
E. Ensure vertical flats fully welded both sides where possible.  
F. All sharp edges and burrs are to be removed.  
G. Remove all weld splatter.  
H. Holes by punching are permitted with reaming.  
I. Galvanising process after fabrication to BS EN ISO1461.

#### C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications (250kN / 25 ton load rating). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
C. Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



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DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
1000x1000x3000mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

	0	0	0
CHAMBER, MULTIPLE-PIECE:	0	0	0
F1: 2760	0	0	0
B1: 2760	0	0	0
C1: 813	0	0	0
0	0	0	0
0	0	0	0

TOE BEAM: 0 0 TOTAL WEIGHT: 6333

DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

DRAWING #:

V.CHA-150-1000X1000X3000

## GENERAL DRAWING NOTES

- A. All dimensions in mm U.O.S.  
B. All measurements  $\pm 1\text{mm}$ .  
C. DO NOT SCALE DRAWING.

## SPECIFICATION INFORMATION

- A. Openings sized to suit outer dimension of pipe.  
B. Invert level of pipe can be set to your specification.

## PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

## HANDLING

- A. Weight of concrete is based on  $2.4 \text{ tonne/m}^3$ , +5% is recommended for sizing appropriate lifting equipment.  
B. Unit to be lifted as per drawing / available lifting guide.

## MATERIAL

- A. Self-compacting Reinforced Cement Concrete DC4/DS4.  
B. Lifting strength based on 2 cubes =  $20\text{N/mm}^2$ .  
C. Characteristic 28 day cube strength =  $50\text{N/mm}^2$ .  
D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

## REINFORCEMENT

- A. Reinforcement Wire structure to BS EN 13369.  
B. Scheduling, dimensions, bends & cutting to BS8666.  
C. Reinforcing Wire structure to be machine tied with steel wire.

## MANUFACTURE

- A. Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.  
B. Tolerances to BS EN 13369 clause 4.3.1.1.  
C. Surface Finishing:

	Top	Sides	Rear	Rear of Backwall
Class	A	A	A	Self-Levelled

- D. Marking, units shall be indelibly marked to show:
- Mould reference code.
  - De-mould date.
  - Job reference number & unique product number.
  - Unit weight (kg).

## DESIGN

- A. Concrete structure designed to Eurocode 2.  
B. JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.  
C. Units are designed to withstand a vertical live load surcharge of  $10\text{kN/M}^2$ .  
D. Weight of soil =  $18\text{kN/M}^3$ .  
E. Angle of internal friction =  $30 \text{ Deg}$ .  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
Minimum Cover for All Faces	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

## FABRICATION SPECIFICATION

- A. Manufacture IAW EN 1090-2 EXC CLASS 1.  
B. Material grade is to be: BS EN 10025 S275.  
C. Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.  
D. All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.  
E. Ensure vertical flats fully welded both sides where possible.  
F. All sharp edges and burrs are to be removed.  
G. Remove all weld splatter.  
H. Holes by punching are permitted with reaming.  
I. Galvanising process after fabrication to BS EN ISO1461.

## C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications ( $250\text{kN} / 25 \text{ ton load rating}$ ). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
C. Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



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DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
1500x1500x1000mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES in kg UNITS:

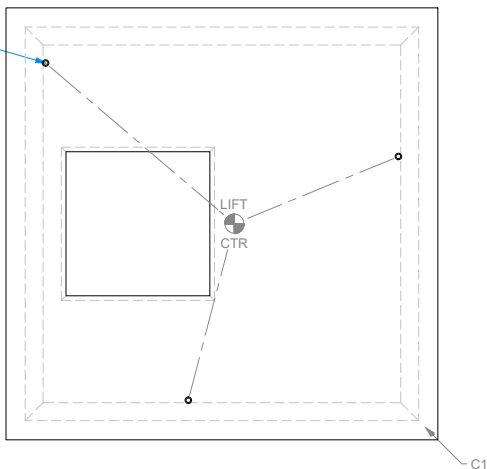
	0	0	0	0
CHAMBER, MULTIPLE-PIECE:				
F1: 1740	0	0		0
B1: 1740	0	0		0
C1: 1608	0	0		0
	0	0	0	0
	0	0	0	0
TOE BEAM:	0	0		TOTAL WEIGHT: 5088

DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

DRAWING #:

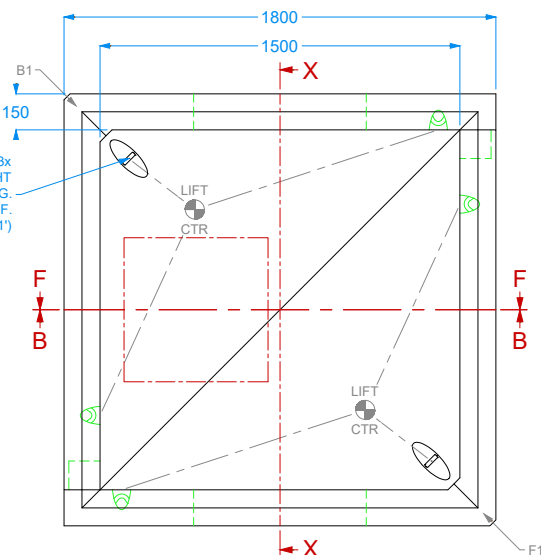
V.CHA-150-1500X1500X1000

LIFTING SOCKETS, x3  
-WIRE LIFTING LOOPS  
(RD20, 3 POINT CHAIN,  
REF. COVER SLAB 'C1')

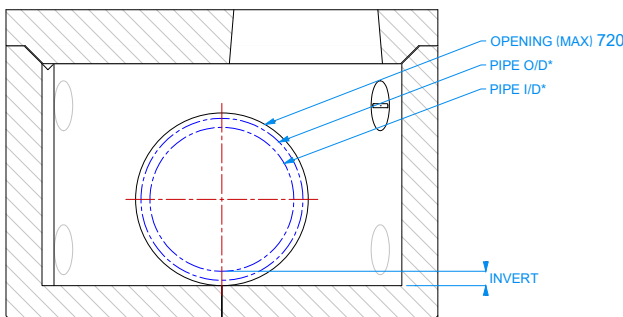


VIEW: TOP (COVER SLAB SHOWN ONLY)

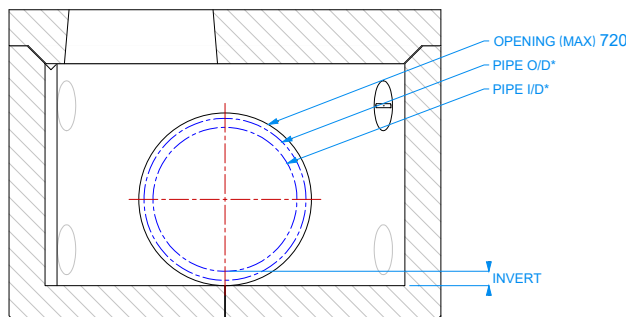
LIFTING ANCHORS, 3x  
FOR ONSITE UPRIGHT  
STATIC ONLY LIFTING.  
(3 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')



VIEW : TOP (CHAMBER SHOWN ONLY)

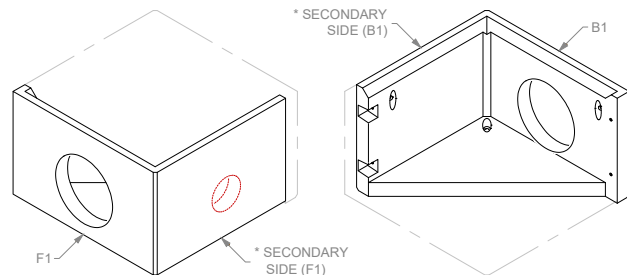
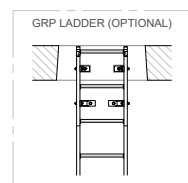


VIEW: SECTION F-F



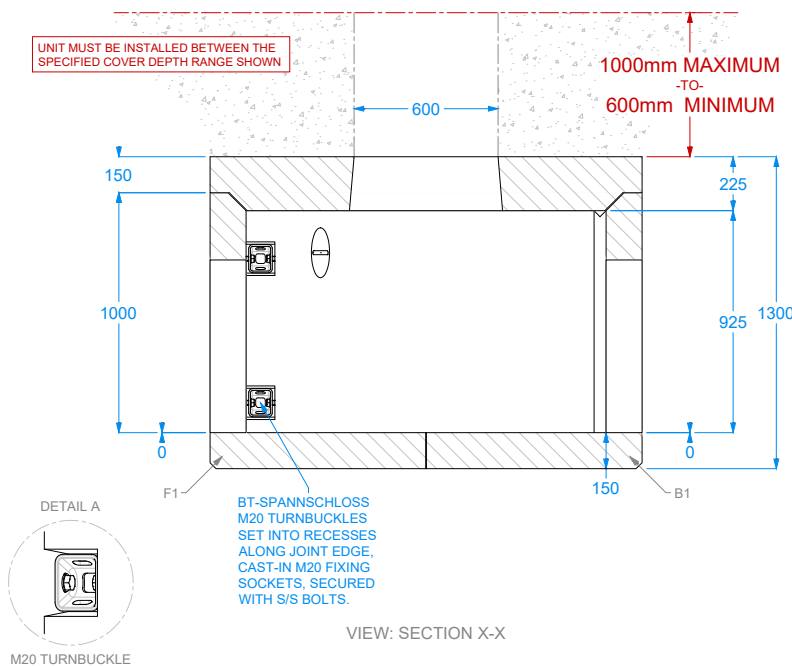
VIEW : SECTION B-B

SECONDARY SIDE HOLE LIMITED TO MAX  
50% SIZE OF PRIMARY SIDE HOLE SIZING \*



VIEW: ISOMETRIC

UNIT MUST BE INSTALLED BETWEEN THE  
SPECIFIED COVER DEPTH RANGE SHOWN



VIEW: SECTION X-X

## GENERAL DRAWING NOTES

- A. All dimensions in mm U.O.S.  
B. All measurements  $\pm 1\text{mm}$ .  
C. DO NOT SCALE DRAWING.

## SPECIFICATION INFORMATION

- A. Openings sized to suit outer dimension of pipe.  
B. Invert level of pipe can be set to your specification.

## PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

## HANDLING

- A. Weight of concrete is based on  $2.4 \text{ tonne/m}^3$ , +5% is recommended for sizing appropriate lifting equipment.  
B. Unit to be lifted as per drawing / available lifting guide.

## MATERIAL

- A. Self-compacting Reinforced Cement Concrete DC4/DS4.  
B. Lifting strength based on 2 cubes =  $20\text{N/mm}^2$ .  
C. Characteristic 28 day cube strength =  $50\text{N/mm}^2$ .  
D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

## REINFORCEMENT

- A. Reinforcement Wire structure to BS EN 13369.  
B. Scheduling, dimensions, bends & cutting to BS8666.  
C. Reinforcing Wire structure to be machine tied with steel wire.

## MANUFACTURE

- A. Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.  
B. Tolerances to BS EN 13369 clause 4.3.1.1.  
C. Surface Finishing:

	Top	Sides	Rear	Rear of Backwall
Class	A	A	A	Self-Levelled

- D. Marking, units shall be indelibly marked to show:
- Mould reference code.
  - De-mould date.
  - Job reference number & unique product number.
  - Unit weight (kg).

## DESIGN

- A. Concrete structure designed to Eurocode 2.  
B. JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.  
C. Units are designed to withstand a vertical live load surcharge of  $10\text{kN/M}^2$ .  
D. Weight of soil =  $18\text{kN/M}^3$ .  
E. Angle of internal friction =  $30^\circ$  Deg.  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
Minimum Cover for All Faces	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

## FABRICATION SPECIFICATION

- A. Manufacture IAW EN 1090-2 EXC CLASS 1.  
B. Material grade is to be: BS EN 10025 S275.  
C. Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.  
D. All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.  
E. Ensure vertical flats fully welded both sides where possible.  
F. All sharp edges and burrs are to be removed.  
G. Remove all weld splatter.  
H. Holes by punching are permitted with reaming.  
I. Galvanising process after fabrication to BS EN ISO1461.

## C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications (250kN / 25 ton load rating). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
C. Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



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DRAWING TITLE:

**V CHAMBER 150mm WALL THICKNESS,  
1500x1500x1500mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES**

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

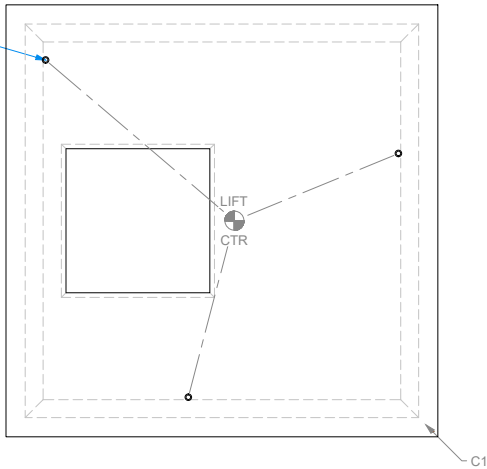
	0	0	0	0
CHAMBER, MULTIPLE-PIECE:				
F1: 2335	0	0		0
B1: 2335	0	0		0
C1: 1608	0	0		0
	0	0		0
	0	0		0
TOE BEAM:	0	0	TOTAL WEIGHT:	6278

DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

DRAWING #:

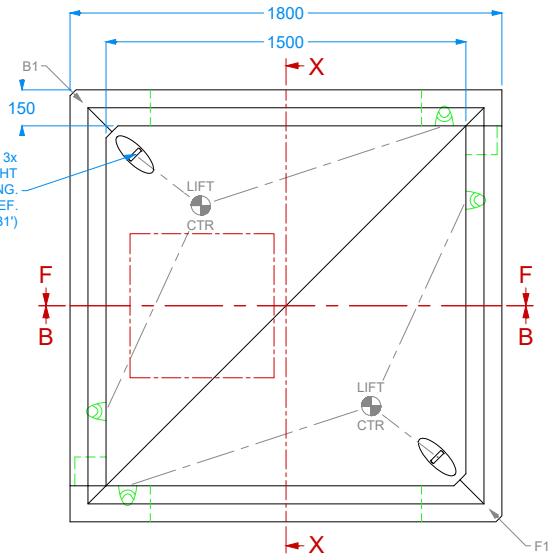
**V.CHA-150-1500X1500X1500**

LIFTING SOCKETS, x3  
-WIRE LIFTING LOOPS  
(RD20, 3 POINT CHAIN,  
REF. COVER SLAB 'C1')



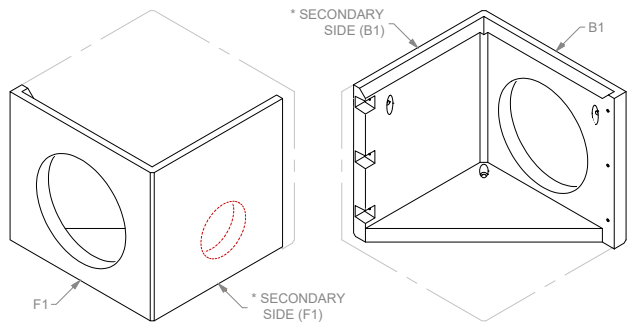
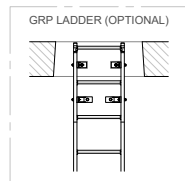
VIEW: TOP (COVER SLAB SHOWN ONLY)

LIFTING ANCHORS, 3x  
FOR ONSITE UPRIGHT  
STATIC ONLY LIFTING.  
(3 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')



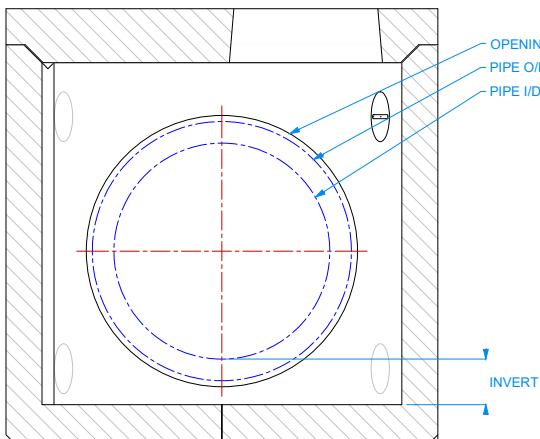
VIEW : TOP (CHAMBER SHOWN ONLY)

SECONDARY SIDE HOLE LIMITED TO MAX  
50% SIZE OF PRIMARY SIDE HOLE SIZING \*



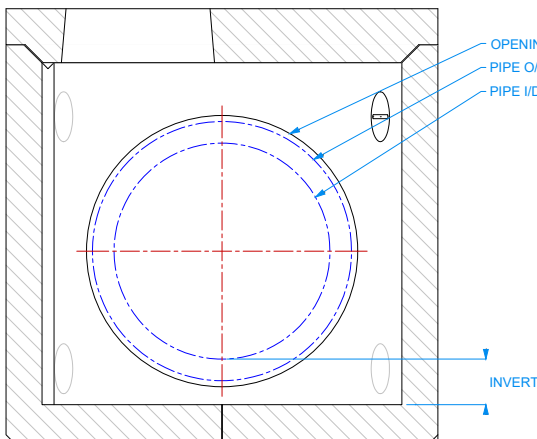
VIEW: ISOMETRIC

OPENING (MAX) 1130  
PIPE O/D\*  
PIPE I/D\*



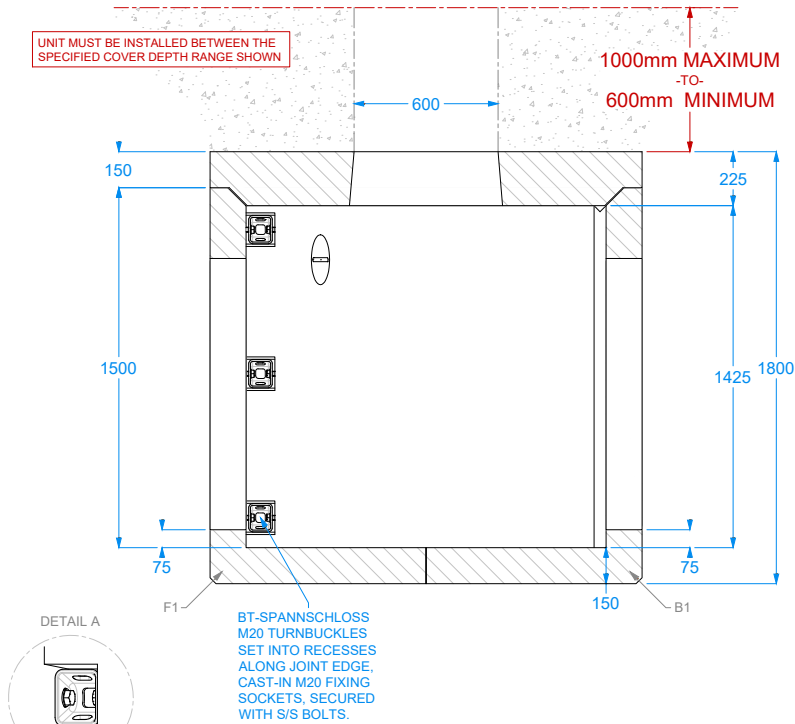
VIEW: SECTION F-F

OPENING (MAX) 1130  
PIPE O/D\*  
PIPE I/D\*



VIEW : SECTION B-B

UNIT MUST BE INSTALLED BETWEEN THE  
SPECIFIED COVER DEPTH RANGE SHOWN



M20 TURNBUCKLE

BT-SPANNSCHLOSS  
M20 TURNBUCKLES  
SET INTO RECESSES  
ALONG JOINT EDGE,  
CAST-IN M20 FIXING  
SOCKETS, SECURED  
WITH S/S BOLTS.

VIEW: SECTION X-X

## GENERAL DRAWING NOTES

- A. All dimensions in mm U.O.S.  
B. All measurements  $\pm 1\text{mm}$ .  
C. DO NOT SCALE DRAWING.

## SPECIFICATION INFORMATION

- A. Openings sized to suit outer dimension of pipe.  
B. Invert level of pipe can be set to your specification.

## PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

## HANDLING

- A. Weight of concrete is based on  $2.4 \text{ tonne/m}^3$ , +5% is recommended for sizing appropriate lifting equipment.  
B. Unit to be lifted as per drawing / available lifting guide.

## MATERIAL

- A. Self-compacting Reinforced Cement Concrete DC4/DS4.  
B. Lifting strength based on 2 cubes =  $20\text{N/mm}^2$ .  
C. Characteristic 28 day cube strength =  $50\text{N/mm}^2$ .  
D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

## REINFORCEMENT

- A. Reinforcement Wire structure to BS EN 13369.  
B. Scheduling, dimensions, bends & cutting to BS8666.  
C. Reinforcing Wire structure to be machine tied with steel wire.

## MANUFACTURE

- A. Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.  
B. Tolerances to BS EN 13369 clause 4.3.1.1.  
C. Surface Finishing:

	Top	Sides	Rear	Rear of Backwall
Class	A	A	A	Self-Levelled

- D. Marking, units shall be indelibly marked to show:
- Mould reference code.
  - De-mould date.
  - Job reference number & unique product number.
  - Unit weight (kg).

## DESIGN

- A. Concrete structure designed to Eurocode 2.  
B. JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.  
C. Units are designed to withstand a vertical live load surcharge of  $10\text{kN/m}^2$ .  
D. Weight of soil =  $18\text{kN/m}^3$ .  
E. Angle of internal friction =  $30 \text{ Deg}$ .  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
Minimum Cover for All Faces	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

## FABRICATION SPECIFICATION

- A. Manufacture IAW EN 1090-2 EXC CLASS 1.  
B. Material grade is to be: BS EN 10025 S275.  
C. Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.  
D. All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.  
E. Ensure vertical flats fully welded both sides where possible.  
F. All sharp edges and burrs are to be removed.  
G. Remove all weld splatter.  
H. Holes by punching are permitted with reaming.  
I. Galvanising process after fabrication to BS EN ISO1461.

## C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications ( $250\text{kN} / 25 \text{ ton load rating}$ ). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
C. Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



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TEL: 01638 713795

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DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
1500x1500x2000mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

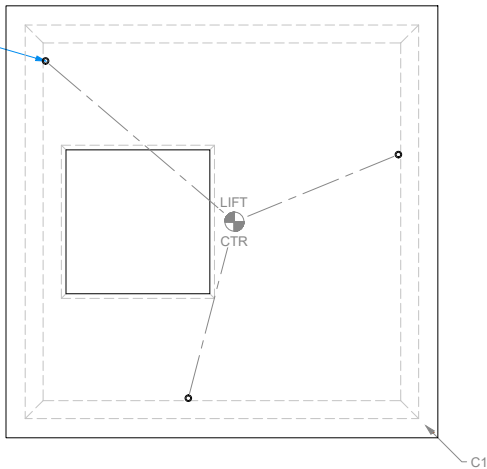
	0	0	0	0
CHAMBER, MULTIPLE-PIECE:	0	0	0	0
F1: 2925	0	0	0	0
B1: 2925	0	0	0	0
C1: 1608	0	0	0	0
0	0	0	0	0
0	0	0	0	0
TOE BEAM:	0	0	TOTAL WEIGHT: 7458	

DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

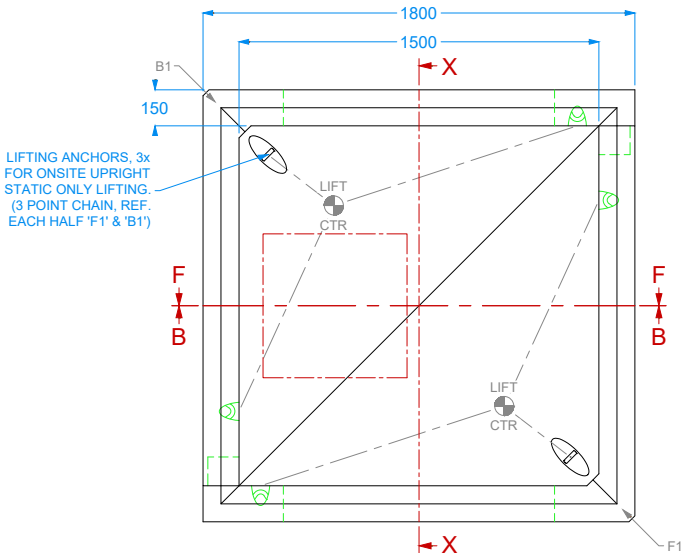
DRAWING #:

V.CHA-150-1500X1500X2000

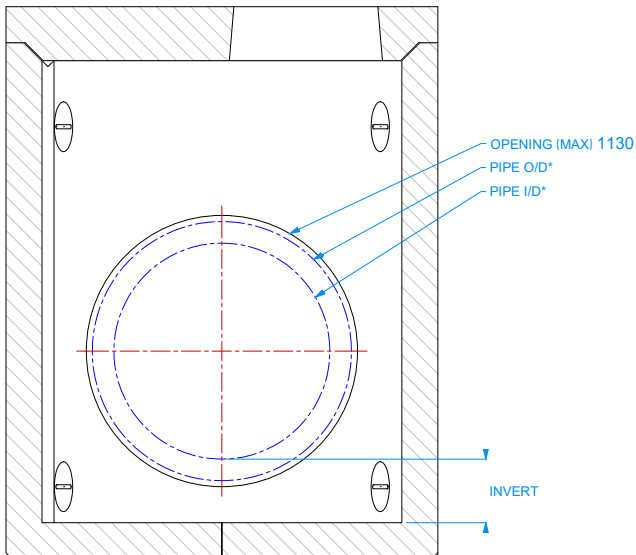
LIFTING SOCKETS, x3  
-WIRE LIFTING LOOPS  
(RD20, 3 POINT CHAIN,  
REF. COVER SLAB 'C1')



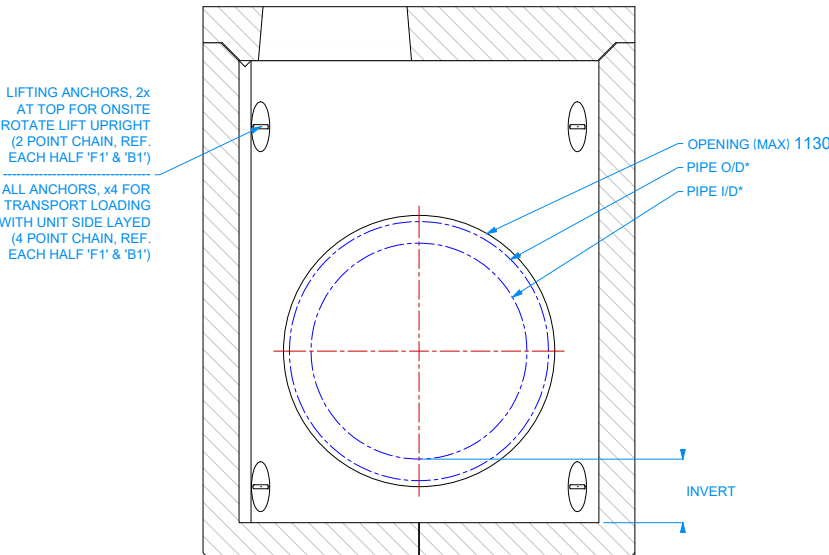
VIEW: TOP (COVER SLAB SHOWN ONLY)



VIEW : TOP (CHAMBER SHOWN ONLY)

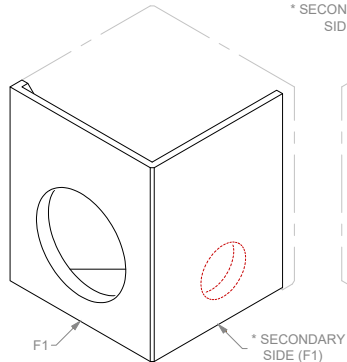
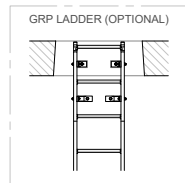


VIEW: SECTION F-F

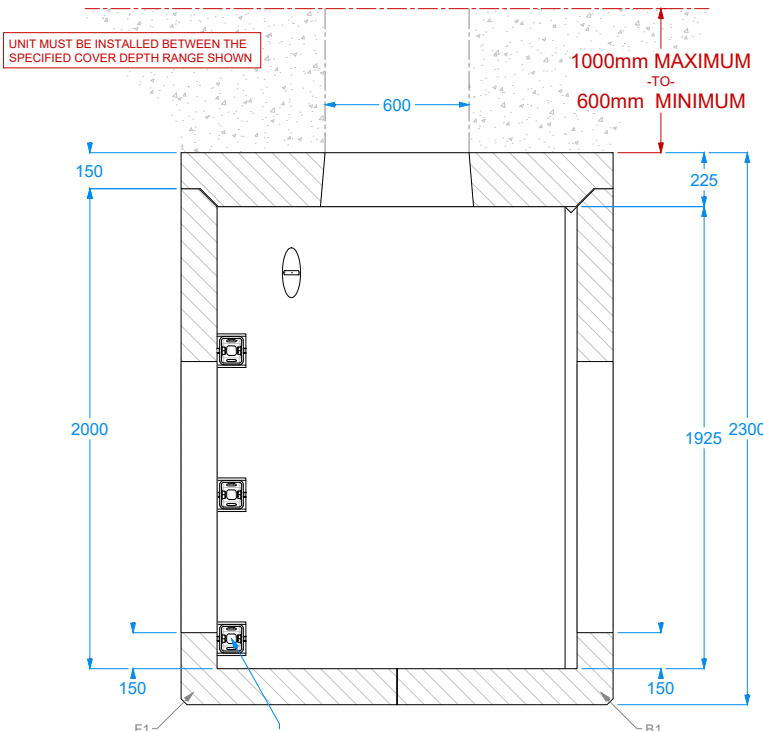


VIEW : SECTION B-B

SECONDARY SIDE HOLE LIMITED TO MAX  
50% SIZE OF PRIMARY SIDE HOLE SIZING \*



VIEW: ISOMETRIC



VIEW: SECTION X-X

BT-SPANNSCHLOSS  
M20 TURNBUCKLES  
SET INTO RECESSES  
ALONG JOINT EDGE,  
CAST-IN M20 FIXING  
SOCKETS, SECURED  
WITH S/S BOLTS.



## GENERAL DRAWING NOTES

- A. All dimensions in mm U.O.S.  
B. All measurements  $\pm 1\text{mm}$ .  
C. DO NOT SCALE DRAWING.

## SPECIFICATION INFORMATION

- A. Openings sized to suit outer dimension of pipe.  
B. Invert level of pipe can be set to your specification.

## PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

## HANDLING

- A. Weight of concrete is based on  $2.4 \text{ tonne/m}^3$ ,  $\pm 5\%$  is recommended for sizing appropriate lifting equipment.  
B. Unit to be lifted as per drawing / available lifting guide.

## MATERIAL

- A. Self-compacting Reinforced Cement Concrete DC4/DS4.  
B. Lifting strength based on 2 cubes =  $20\text{N/mm}^2$ .  
C. Characteristic 28 day cube strength =  $50\text{N/mm}^2$ .  
D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

## REINFORCEMENT

- A. Reinforcement Wire structure to BS EN 13369.  
B. Scheduling, dimensions, bends & cutting to BS8666.  
C. Reinforcing Wire structure to be machine tied with steel wire.

## MANUFACTURE

- A. Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.  
B. Tolerances to BS EN 13369 clause 4.3.1.1.  
C. Surface Finishing:

	Top	Sides	Rear	Rear of Backwall
Class	A	A	A	Self-Levelled

- D. Marking, units shall be indelibly marked to show:
- Mould reference code.
  - De-mould date.
  - Job reference number & unique product number.
  - Unit weight (kg).

## DESIGN

- A. Concrete structure designed to Eurocode 2.  
B. JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.  
C. Units are designed to withstand a vertical live load surcharge of  $10\text{kN/M}^2$ .  
D. Weight of soil =  $18\text{kN/M}^3$ .  
E. Angle of internal friction =  $30 \text{ Deg}$ .  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
Minimum Cover for All Faces	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

## FABRICATION SPECIFICATION

- A. Manufacture IAW EN 1090-2 EXC CLASS 1.  
B. Material grade is to be: BS EN 10025 S275.  
C. Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.  
D. All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.  
E. Ensure vertical flats fully welded both sides where possible.  
F. All sharp edges and burrs are to be removed.  
G. Remove all weld splatter.  
H. Holes by punching are permitted with reaming.  
I. Galvanising process after fabrication to BS EN ISO1461.

## C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications ( $250\text{kN} / 25 \text{ ton load rating}$ ). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



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DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
1500x1500x2500mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

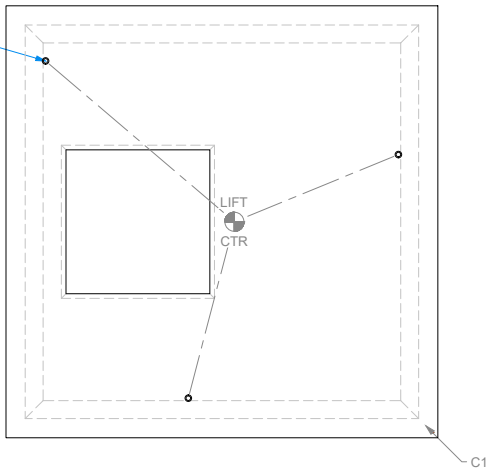
	0	0	0	0
CHAMBER, MULTIPLE-PIECE:	0	0	0	0
F1: 3515	0	0	0	0
B1: 3515	0	0	0	0
C1: 1608	0	0	0	0
0	0	0	0	0
0	0	0	0	0
TOE BEAM:	0	0	0	0
TOTAL WEIGHT:	8638			

DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

DRAWING #:

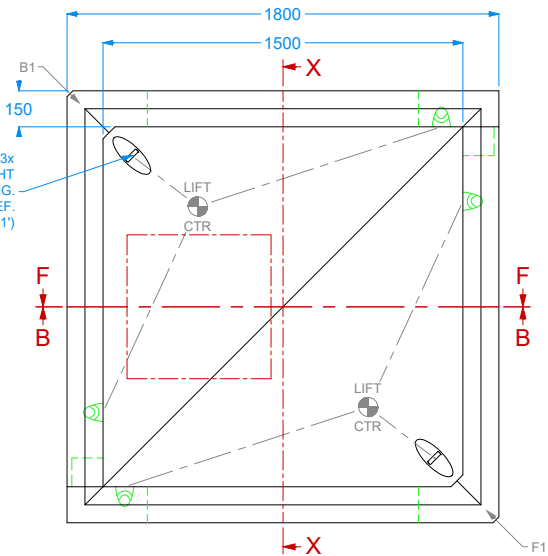
V.CHA-150-1500X1500X2500

LIFTING SOCKETS, x3  
-WIRE LIFTING LOOPS  
(RD20, 3 POINT CHAIN,  
REF. COVER SLAB 'C1')



VIEW: TOP (COVER SLAB SHOWN ONLY)

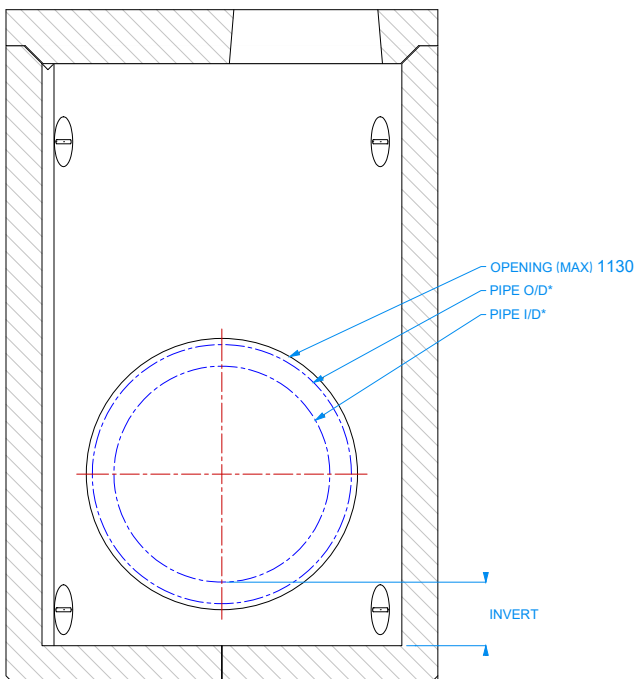
LIFTING ANCHORS, 3x  
FOR ONSITE UPRIGHT  
STATIC ONLY LIFTING.  
(3 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')



VIEW : TOP (CHAMBER SHOWN ONLY)

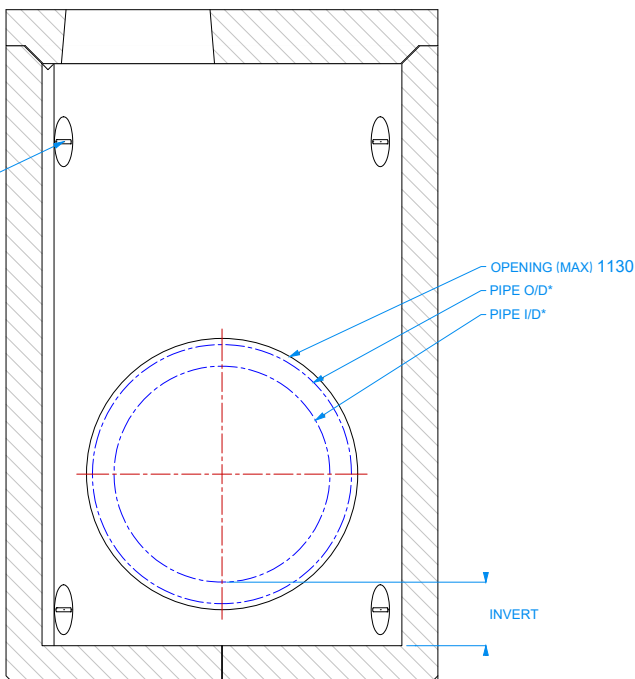
LIFTING ANCHORS, 2x  
AT TOP FOR ONSITE  
ROTATE LIFT UPRIGHT  
(2 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')

ALL ANCHORS, x4 FOR  
TRANSPORT LOADING  
WITH UNIT SIDE LAYED  
(4 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')



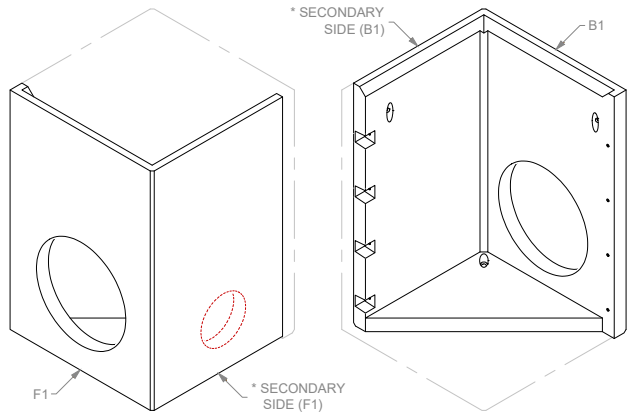
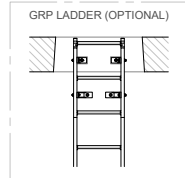
VIEW: SECTION F-F

OPENING (MAX) 1130  
PIPE O/D\*  
PIPE I/D\*



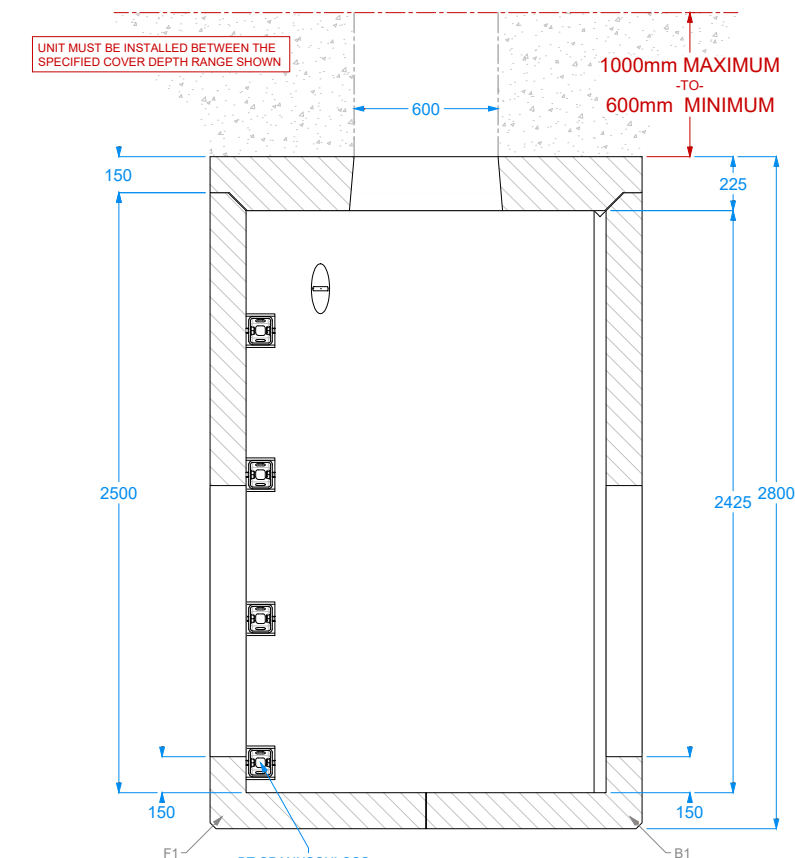
VIEW : SECTION B-B

SECONDARY SIDE HOLE LIMITED TO MAX  
50% SIZE OF PRIMARY SIDE HOLE SIZING \*



VIEW: ISOMETRIC

UNIT MUST BE INSTALLED BETWEEN THE  
SPECIFIED COVER DEPTH RANGE SHOWN



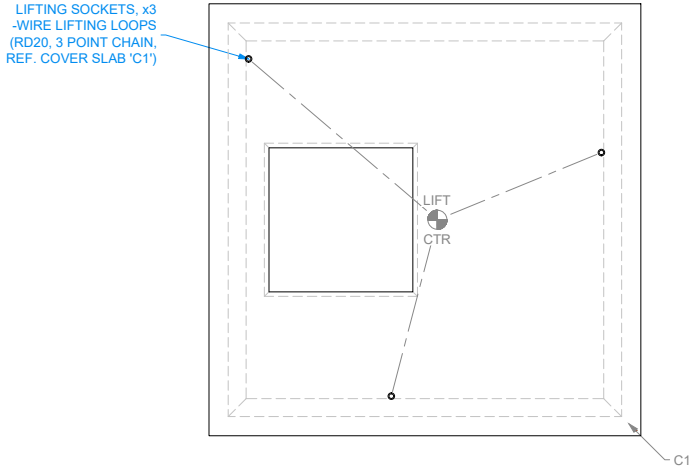
DETAIL A



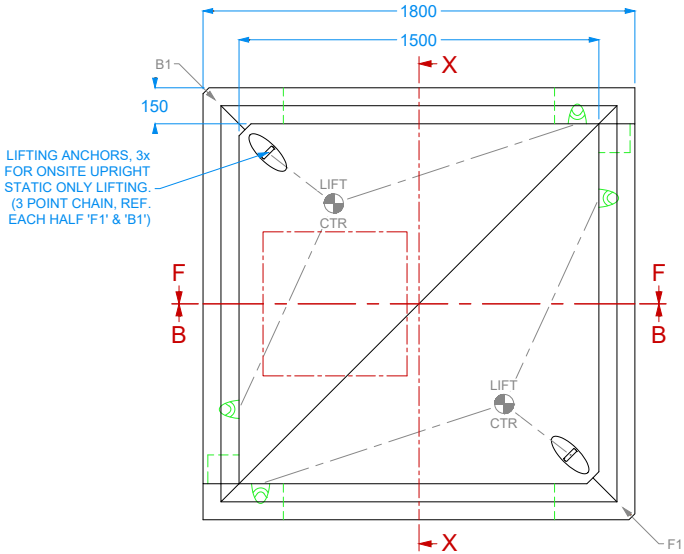
M20 TURNBUCKLE

BT-SPANNSCHLOSS  
M20 TURNBUCKLES  
SET INTO RECESSES  
ALONG JOINT EDGE,  
CAST-IN M20 FIXING  
SOCKETS, SECURED  
WITH S/S BOLTS.

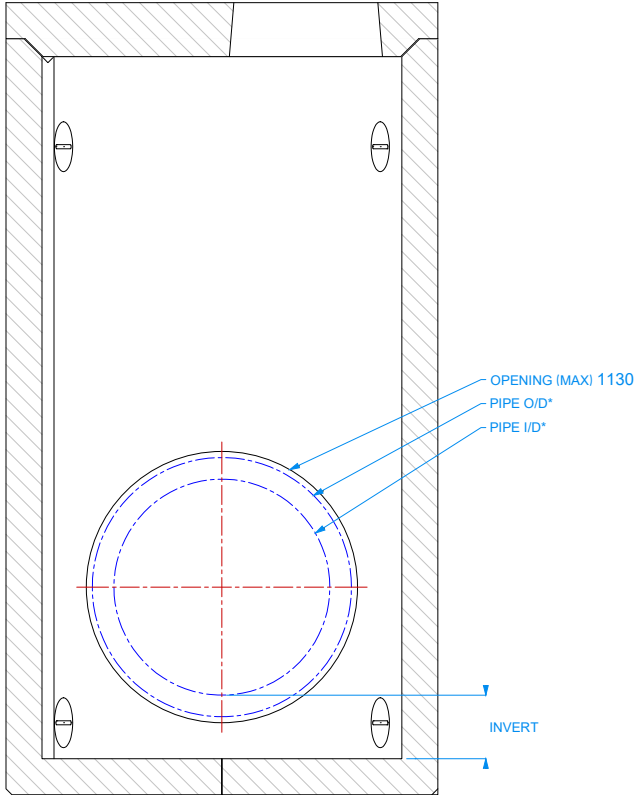
VIEW: SECTION X-X



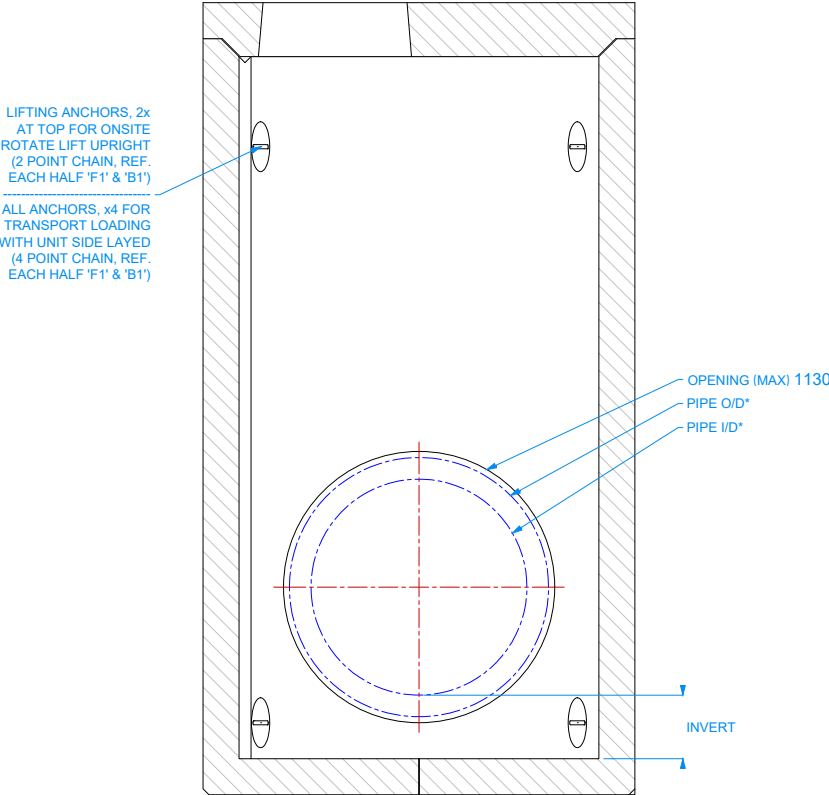
VIEW: TOP (COVER SLAB SHOWN ONLY)



VIEW : TOP (CHAMBER SHOWN ONLY)

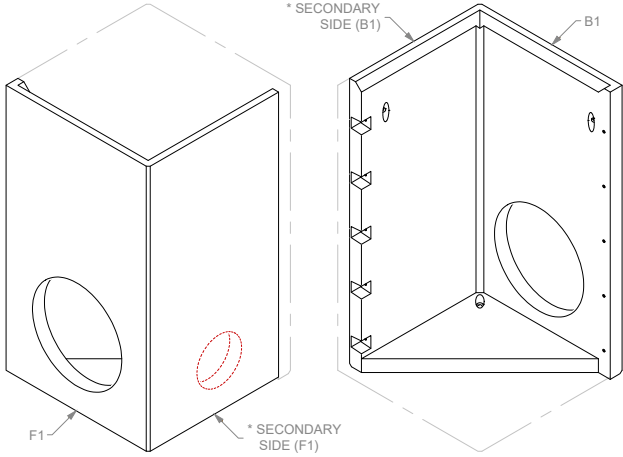
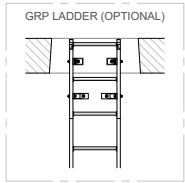


VIEW: SECTION F-F

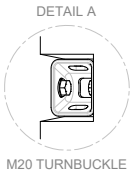
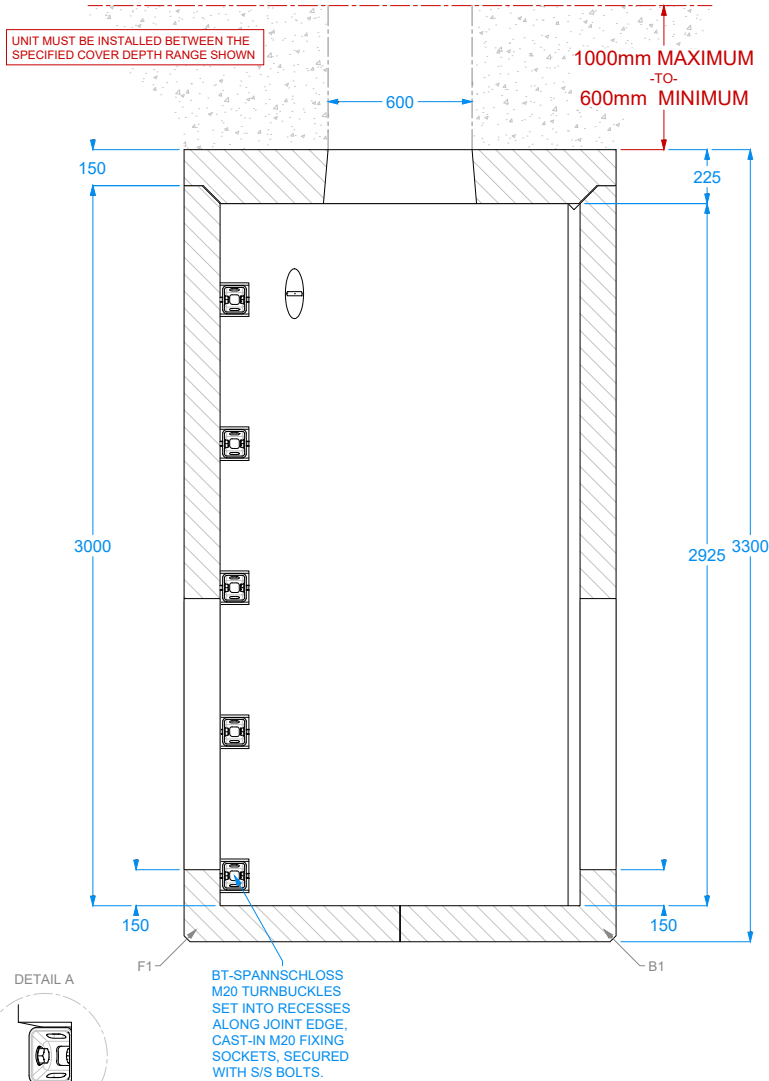


VIEW : SECTION B-B

SECONDARY SIDE HOLE LIMITED TO MAX 50% SIZE OF PRIMARY SIDE HOLE SIZING \*



VIEW: ISOMETRIC



VIEW: SECTION X-X

#### GENERAL DRAWING NOTES

- A. All dimensions in mm U.O.S.  
B. All measurements  $\pm 1\text{mm}$ .  
C. DO NOT SCALE DRAWING.

#### SPECIFICATION INFORMATION

- A. Openings sized to suit outer dimension of pipe.  
B. Invert level of pipe can be set to your specification.

#### PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

#### HANDLING

- A. Weight of concrete is based on  $2.4 \text{ tonne/m}^3$ , +5% is recommended for sizing appropriate lifting equipment.  
B. Unit to be lifted as per drawing / available lifting guide.

#### MATERIAL

- A. Self-compacting Reinforced Cement Concrete DC4/DS4.  
B. Lifting strength based on 2 cubes =  $20\text{N/mm}^2$ .  
C. Characteristic 28 day cube strength =  $50\text{N/mm}^2$ .  
D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

#### REINFORCEMENT

- A. Reinforcement Wire structure to BS EN 13369.  
B. Scheduling, dimensions, bends & cutting to BS8666.  
C. Reinforcing Wire structure to be machine tied with steel wire.

#### MANUFACTURE

- A. Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.  
B. Tolerances to BS EN 13369 clause 4.3.1.1.  
C. Surface Finishing:

	Top	Sides	Rear	Rear of Backwall
Class	A	A	A	Self-Levelled

- D. Marking, units shall be indelibly marked to show:  
• Mould reference code.  
• De-mould date.  
• Job reference number & unique product number.  
• Unit weight (kg).

#### DESIGN

- A. Concrete structure designed to Eurocode 2.  
B. JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.  
C. Units are designed to withstand a vertical live load surcharge of  $10\text{kN/M}^2$ .  
D. Weight of soil =  $18\text{kN/M}^3$ .  
E. Angle of internal friction = 30 Deg.  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
Minimum Cover for All Faces	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

#### FABRICATION SPECIFICATION

- A. Manufacture IAW EN 1090-2 EXC CLASS 1.  
B. Material grade is to be: BS EN 10025 S275.  
C. Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.  
D. All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.  
E. Ensure vertical flats fully welded both sides where possible.  
F. All sharp edges and burrs are to be removed.  
G. Remove all weld splatter.  
H. Holes by punching are permitted with reaming.  
I. Galvanising process after fabrication to BS EN ISO1461.

#### C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications (250kN / 25 ton load rating). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
C. Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



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#### DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
1500x1500x3000mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

	0	0	0	0
CHAMBER, MULTIPLE-PIECE:				
F1:	4110	0	0	0
B1:	4110	0	0	0
C1:	1608	0	0	0
	0	0	0	0
	0	0	0	0
TOE BEAM:	0	0	0	9828

DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

DRAWING #:

V.CHA-150-1500X1500X3000

## GENERAL DRAWING NOTES

- A. All dimensions in mm U.O.S.  
B. All measurements  $\pm 1\text{mm}$ .  
C. DO NOT SCALE DRAWING.

## SPECIFICATION INFORMATION

- A. Openings sized to suit outer dimension of pipe.  
B. Invert level of pipe can be set to your specification.

## PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

## HANDLING

- A. Weight of concrete is based on  $2.4 \text{ tonne/m}^3$ , +5% is recommended for sizing appropriate lifting equipment.  
B. Unit to be lifted as per drawing / available lifting guide.

## MATERIAL

- A. Self-compacting Reinforced Cement Concrete DC4/DS4.  
B. Lifting strength based on 2 cubes =  $20\text{N/mm}^2$ .  
C. Characteristic 28 day cube strength =  $50\text{N/mm}^2$ .  
D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

## REINFORCEMENT

- A. Reinforcement Wire structure to BS EN 13369.  
B. Scheduling, dimensions, bends & cutting to BS8666.  
C. Reinforcing Wire structure to be machine tied with steel wire.

## MANUFACTURE

- A. Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.  
B. Tolerances to BS EN 13369 clause 4.3.1.1.  
C. Surface Finishing:

	Top	Sides	Rear	Rear of Backwall
Class	A	A	A	Self-Levelled

- D. Marking, units shall be indelibly marked to show:
- Mould reference code.
  - De-mould date.
  - Job reference number & unique product number.
  - Unit weight (kg).

## DESIGN

- A. Concrete structure designed to Eurocode 2.  
B. JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.  
C. Units are designed to withstand a vertical live load surcharge of  $10\text{kN/M}^2$ .  
D. Weight of soil =  $18\text{kN/M}^3$ .  
E. Angle of internal friction =  $30 \text{ Deg}$ .  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
Minimum Cover for All Faces	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

## FABRICATION SPECIFICATION

- A. Manufacture IAW EN 1090-2 EXC CLASS 1.  
B. Material grade is to be: BS EN 10025 S275.  
C. Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.  
D. All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.  
E. Ensure vertical flats fully welded both sides where possible.  
F. All sharp edges and burrs are to be removed.  
G. Remove all weld splatter.  
H. Holes by punching are permitted with reaming.  
I. Galvanising process after fabrication to BS EN ISO1461.

## C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications ( $250\text{kN} / 25 \text{ ton load rating}$ ). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
C. Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



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EMAIL: [sales@jkh Ltd.co.uk](mailto:sales@jkh Ltd.co.uk)  
TEL: 01638 713795

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DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
2000x2000x1000mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

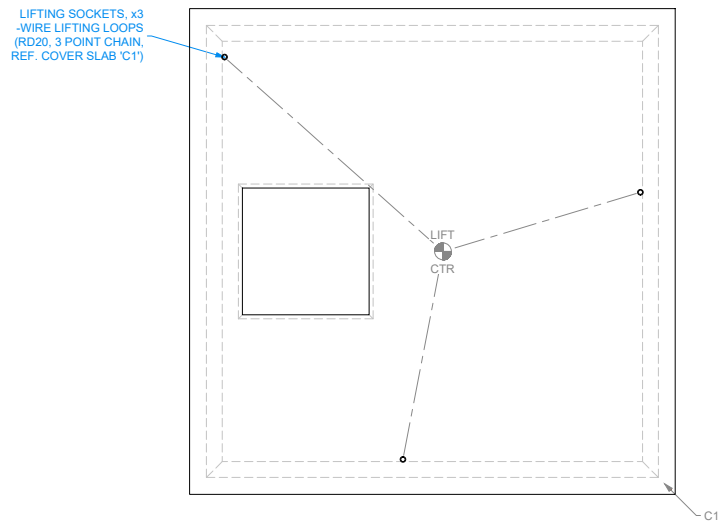
	0	1
CHAMBER, MULTIPLE-PIECE:	0	1
F1: 2460	0	1
B1: 2460	0	1
C1: 2675	0	1
	0	1
	0	1

TOE BEAM: 1 1 TOTAL WEIGHT: 7611

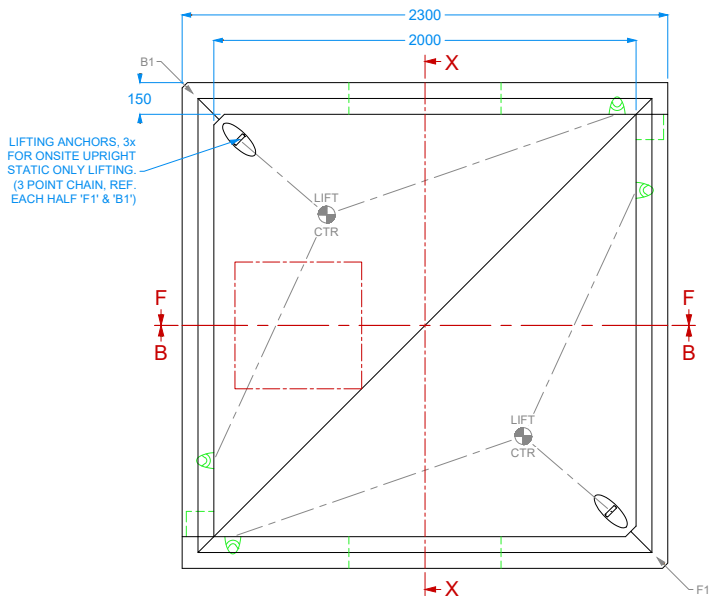
DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

DRAWING #:

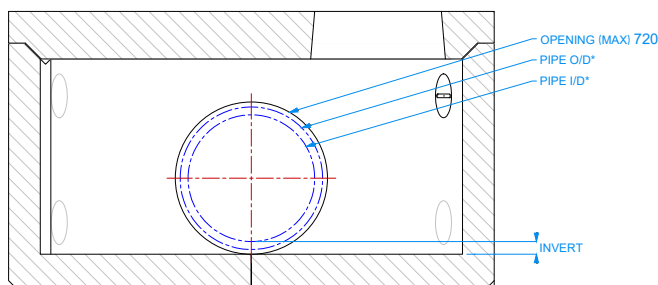
V.CHA-150-2000X2000X1000



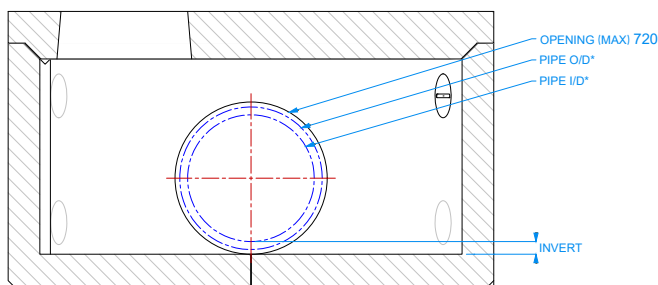
VIEW: TOP (COVER SLAB SHOWN ONLY)



VIEW : TOP (CHAMBER SHOWN ONLY)



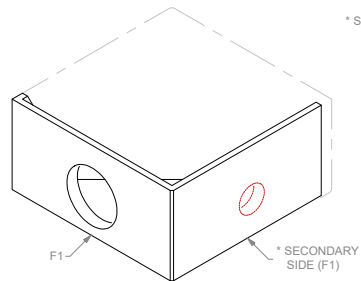
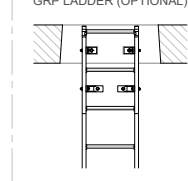
VIEW: SECTION F-F



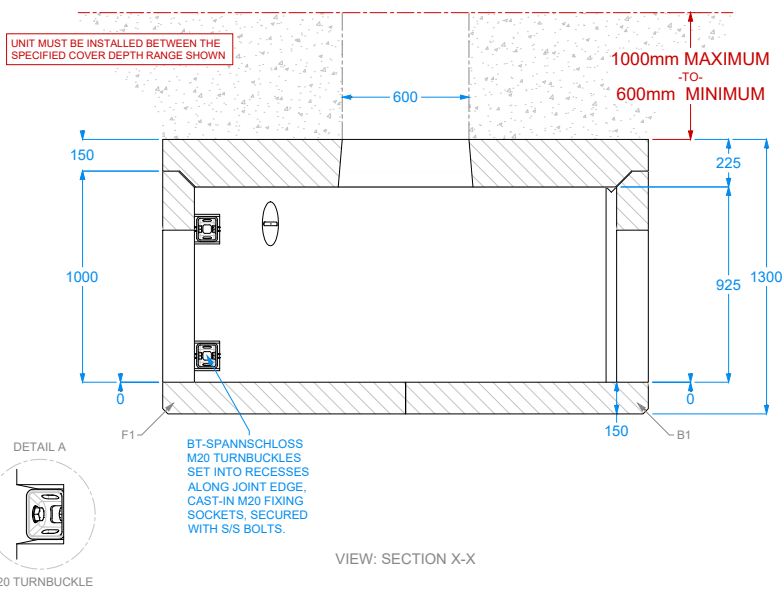
VIEW : SECTION B-B

SECONDARY SIDE HOLE LIMITED TO MAX 50% SIZE OF PRIMARY SIDE HOLE SIZING \*

GRP LADDER (OPTIONAL)



VIEW: ISOMETRIC



## GENERAL DRAWING NOTES

- A. All dimensions in mm U.O.S.  
B. All measurements  $\pm 1\text{mm}$ .  
C. DO NOT SCALE DRAWING.

## SPECIFICATION INFORMATION

- A. Openings sized to suit outer dimension of pipe.  
B. Invert level of pipe can be set to your specification.

## PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

## HANDLING

- A. Weight of concrete is based on  $2.4 \text{ tonne/m}^3$ , +5% is recommended for sizing appropriate lifting equipment.  
B. Unit to be lifted as per drawing / available lifting guide.

## MATERIAL

- A. Self-compacting Reinforced Cement Concrete DC4/DS4.  
B. Lifting strength based on 2 cubes =  $20\text{N/mm}^2$ .  
C. Characteristic 28 day cube strength =  $50\text{N/mm}^2$ .  
D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

## REINFORCEMENT

- A. Reinforcement Wire structure to BS EN 13369.  
B. Scheduling, dimensions, bends & cutting to BS8666.  
C. Reinforcing Wire structure to be machine tied with steel wire.

## MANUFACTURE

- A. Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.  
B. Tolerances to BS EN 13369 clause 4.3.1.1.  
C. Surface Finishing:

	Top	Sides	Rear	Rear of Backwall
Class	A	A	A	Self-Levelled

- D. Marking, units shall be indelibly marked to show:
- Mould reference code.
  - De-mould date.
  - Job reference number & unique product number.
  - Unit weight (kg).

## DESIGN

- A. Concrete structure designed to Eurocode 2.  
B. JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.  
C. Units are designed to withstand a vertical live load surcharge of  $10\text{kN/M}^2$ .  
D. Weight of soil =  $18\text{kN/M}^3$ .  
E. Angle of internal friction =  $30 \text{ Deg}$ .  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
Minimum Cover for All Faces	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

## FABRICATION SPECIFICATION

- A. Manufacture IAW EN 1090-2 EXC CLASS 1.  
B. Material grade is to be: BS EN 10025 S275.  
C. Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.  
D. All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.  
E. Ensure vertical flats fully welded both sides where possible.  
F. All sharp edges and burrs are to be removed.  
G. Remove all weld splatter.  
H. Holes by punching are permitted with reaming.  
I. Galvanising process after fabrication to BS EN ISO1461.

## C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications ( $250\text{kN} / 25 \text{ ton load rating}$ ). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
C. Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



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DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
2000x2000x1500mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

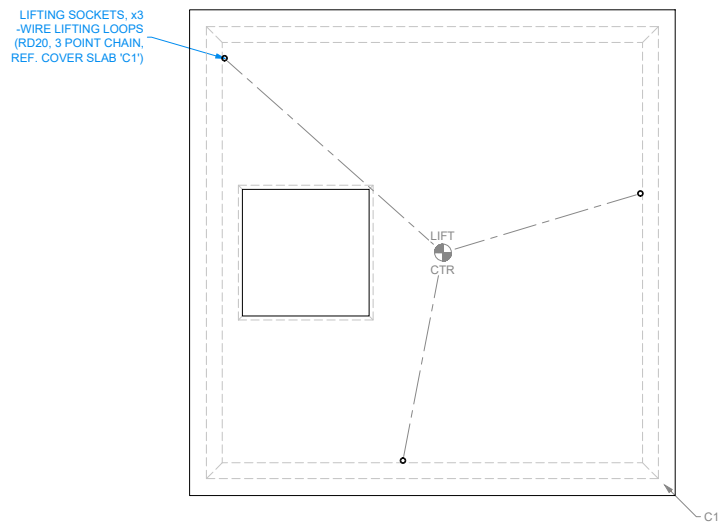
0			1
CHAMBER, MULTIPLE-PIECE:			1
F1: 3235	0	1	1
B1: 3235	0	1	1
C1: 2675	0	1	1
0	1	1	1
0	1	1	1

TOE BEAM: 1 1 TOTAL WEIGHT: 9161

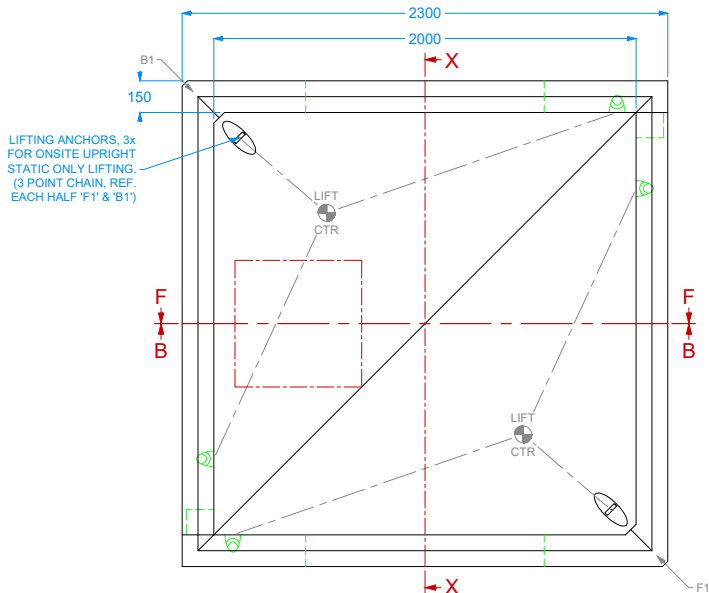
DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

DRAWING #:

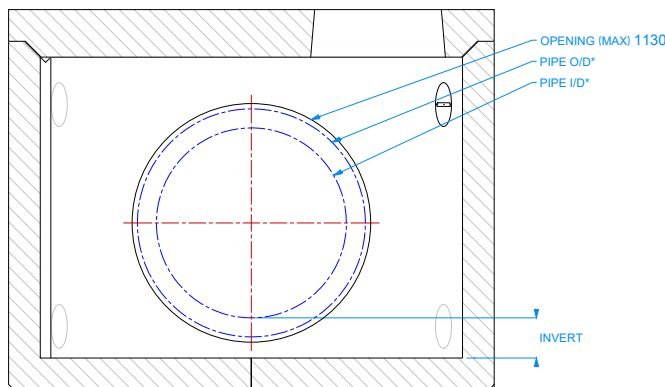
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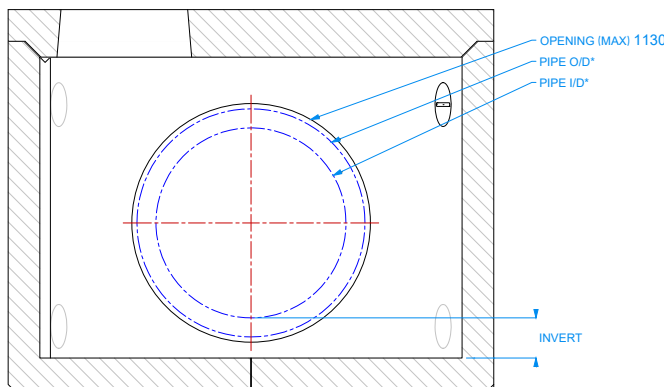
VIEW: TOP (COVER SLAB SHOWN ONLY)



VIEW : TOP (CHAMBER SHOWN ONLY)

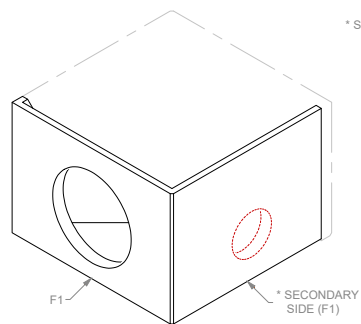
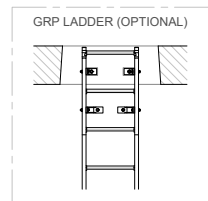


VIEW: SECTION F-F

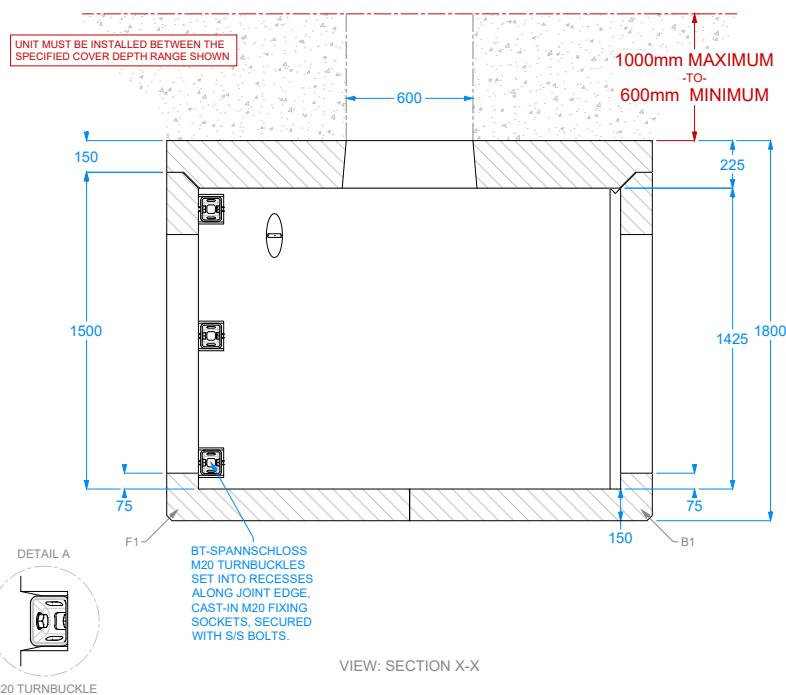


VIEW : SECTION B-B

SECONDARY SIDE HOLE LIMITED TO MAX.  
50% SIZE OF PRIMARY SIDE HOLE SIZING\*



VIEW: ISOMETRIC





## GENERAL DRAWING NOTES

- A. All dimensions in mm U.O.S.  
B. All measurements  $\pm 1\text{mm}$ .  
C. DO NOT SCALE DRAWING.

## SPECIFICATION INFORMATION

- A. Openings sized to suit outer dimension of pipe.  
B. Invert level of pipe can be set to your specification.

## PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

## HANDLING

- A. Weight of concrete is based on  $2.4 \text{ tonne/m}^3$ , +5% is recommended for sizing appropriate lifting equipment.  
B. Unit to be lifted as per drawing / available lifting guide.

## MATERIAL

- A. Self-compacting Reinforced Cement Concrete DC4/DS4.  
B. Lifting strength based on 2 cubes =  $20\text{N/mm}^2$ .  
C. Characteristic 28 day cube strength =  $50\text{N/mm}^2$ .  
D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

## REINFORCEMENT

- A. Reinforcement Wire structure to BS EN 13369.  
B. Scheduling, dimensions, bends & cutting to BS8666.  
C. Reinforcing Wire structure to be machine tied with steel wire.

## MANUFACTURE

- A. Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.  
B. Tolerances to BS EN 13369 clause 4.3.1.1.  
C. Surface Finishing:

	Top	Sides	Rear	Rear of Backwall
Class	A	A	A	Self-Levelled

- D. Marking, units shall be indelibly marked to show:
- Mould reference code.
  - De-mould date.
  - Job reference number & unique product number.
  - Unit weight (kg).

## DESIGN

- A. Concrete structure designed to Eurocode 2.  
B. JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.  
C. Units are designed to withstand a vertical live load surcharge of  $10\text{kN/M}^2$ .  
D. Weight of soil =  $18\text{kN/M}^3$ .  
E. Angle of internal friction =  $30^\circ$  Deg.  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
Minimum Cover for All Faces	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

## FABRICATION SPECIFICATION

- A. Manufacture IAW EN 1090-2 EXC CLASS 1.  
B. Material grade is to be: BS EN 10025 S275.  
C. Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.  
D. All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.  
E. Ensure vertical flats fully welded both sides where possible.  
F. All sharp edges and burrs are to be removed.  
G. Remove all weld splatter.  
H. Holes by punching are permitted with reaming.  
I. Galvanising process after fabrication to BS EN ISO1461.

## C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications (250kN / 25 ton load rating). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
C. Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



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DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
2000x2000x2000mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES in kg UNITS:

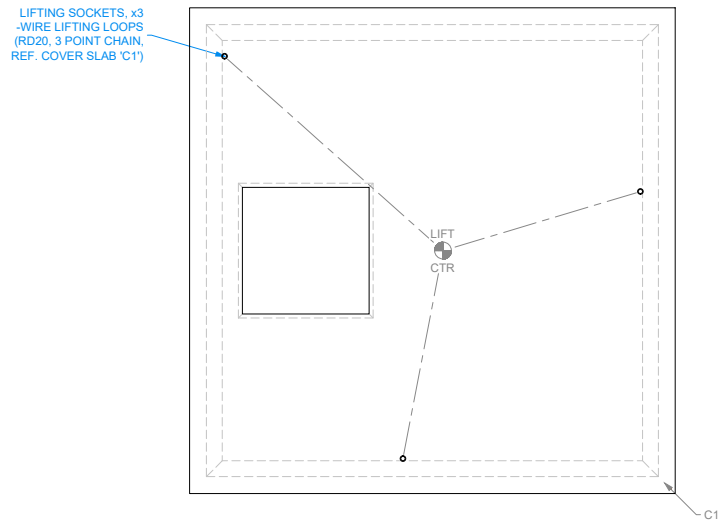
	0	0	0	0
CHAMBER, MULTIPLE-PIECE:				
F1: 4005	0	0		0
B1: 4005	0	0		0
C1: 2675	0	0		0
	0	0	0	0
	0	0	0	0

TOE BEAM: 0 0 0 TOTAL WEIGHT: 10685

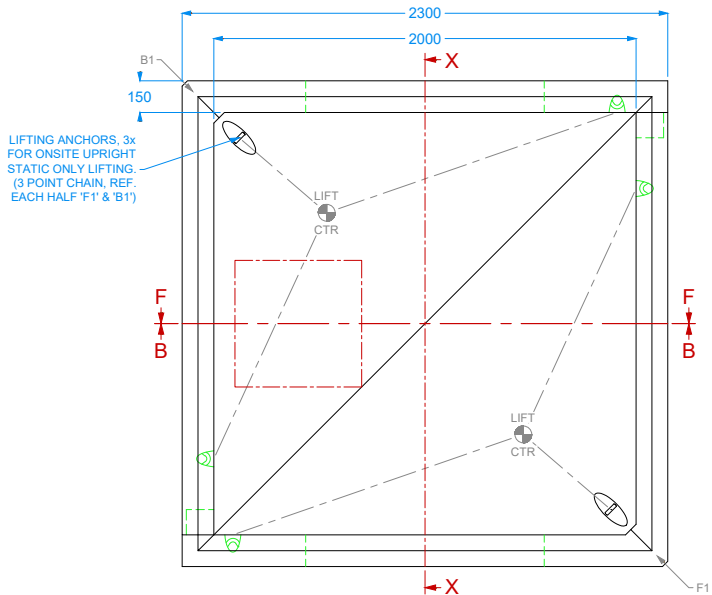
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DRAWING #:

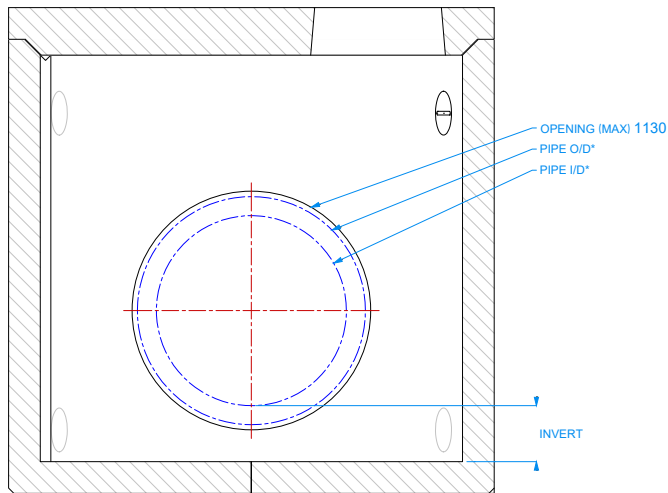
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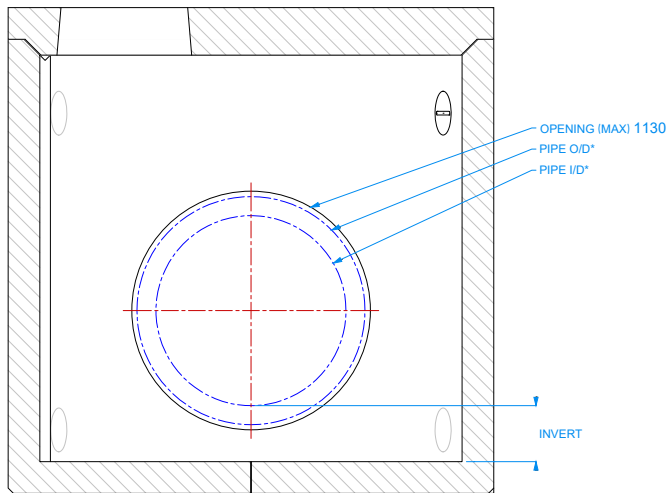
VIEW: TOP (COVER SLAB SHOWN ONLY)



VIEW : TOP (CHAMBER SHOWN ONLY)



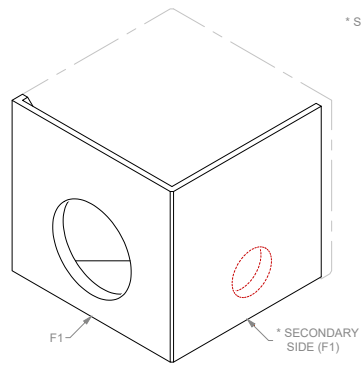
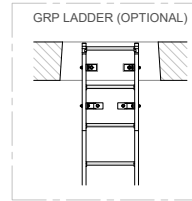
VIEW: SECTION F-F



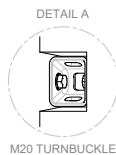
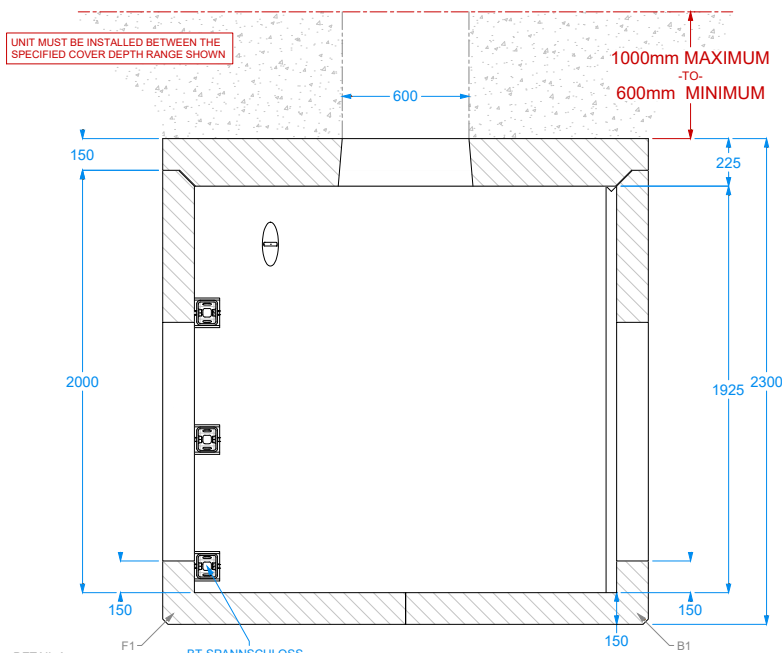
VIEW : SECTION B-B

SECONDARY SIDE HOLE LIMITED TO MAX.  
50% SIZE OF PRIMARY SIDE HOLE SIZING \*

GRP LADDER (OPTIONAL)



VIEW: ISOMETRIC



BT-SPANNSCHLOSS  
M20 TURNBUCKLES  
SET INTO RECESSES  
ALONG JOINT EDGE,  
CAST-IN M20 FIXING  
SOCKETS, SECURED  
WITH S/S BOLTS.

VIEW: SECTION X-X

## GENERAL DRAWING NOTES

- A. All dimensions in mm U.O.S.  
B. All measurements  $\pm 1\text{mm}$ .  
C. DO NOT SCALE DRAWING.

## SPECIFICATION INFORMATION

- A. Openings sized to suit outer dimension of pipe.  
B. Invert level of pipe can be set to your specification.

## PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

## HANDLING

- A. Weight of concrete is based on  $2.4 \text{ tonne/m}^3$ , +5% is recommended for sizing appropriate lifting equipment.  
B. Unit to be lifted as per drawing / available lifting guide.

## MATERIAL

- A. Self-compacting Reinforced Cement Concrete DC4/DS4.  
B. Lifting strength based on 2 cubes =  $20\text{N/mm}^2$ .  
C. Characteristic 28 day cube strength =  $50\text{N/mm}^2$ .  
D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

## REINFORCEMENT

- A. Reinforcement Wire structure to BS EN 13369.  
B. Scheduling, dimensions, bends & cutting to BS8666.  
C. Reinforcing Wire structure to be machine tied with steel wire.

## MANUFACTURE

- A. Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.  
B. Tolerances to BS EN 13369 clause 4.3.1.1.  
C. Surface Finishing:

	Top	Sides	Rear	Rear of Backwall
Class	A	A	A	Self-Levelled

- D. Marking, units shall be indelibly marked to show:
- Mould reference code.
  - De-mould date.
  - Job reference number & unique product number.
  - Unit weight (kg).

## DESIGN

- A. Concrete structure designed to Eurocode 2.  
B. JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.  
C. Units are designed to withstand a vertical live load surcharge of  $10\text{kN/M}^2$ .  
D. Weight of soil =  $18\text{kN/M}^3$ .  
E. Angle of internal friction =  $30 \text{ Deg}$ .  
F. Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
Minimum Cover for All Faces	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

## FABRICATION SPECIFICATION

- A. Manufacture IAW EN 1090-2 EXC CLASS 1.  
B. Material grade is to be: BS EN 10025 S275.  
C. Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.  
D. All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.  
E. Ensure vertical flats fully welded both sides where possible.  
F. All sharp edges and burrs are to be removed.  
G. Remove all weld splatter.  
H. Holes by punching are permitted with reaming.  
I. Galvanising process after fabrication to BS EN ISO1461.

## C250 CLASS LOADING SPECIFICATION

- A. Unit designed to C250 class loading specification for heavy duty site applications (250kN / 25 ton load rating). Design limitations in place to meet C250 specification as following;  
B. Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.  
C. Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



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DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
2000x2000x2500mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

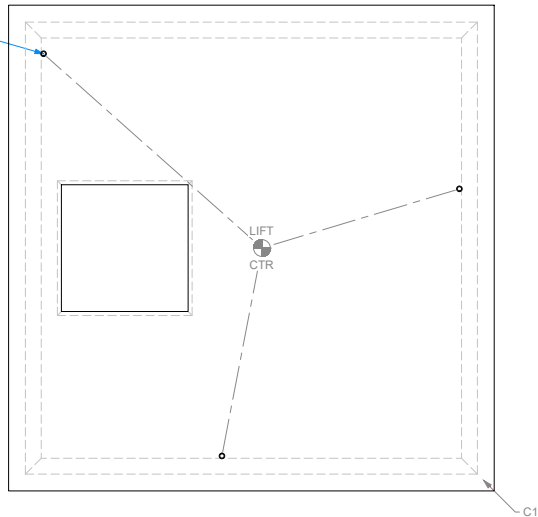
	0	0	0
CHAMBER, MULTIPLE-PIECE:	0	0	0
F1: 4775	0	0	0
B1: 4775	0	0	0
C1: 2675	0	0	0
0	0	0	0
0	0	0	0
TOE BEAM:	0	0	TOTAL WEIGHT: 12225

DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

DRAWING #:

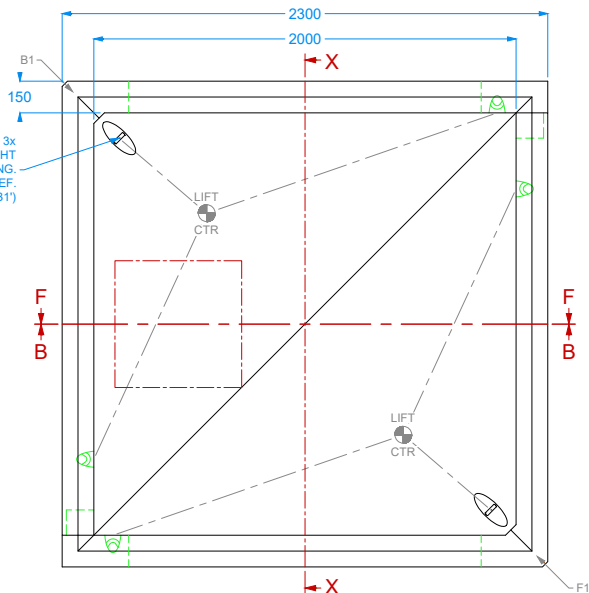
V.CHA-150-2000X2000X2500

LIFTING SOCKETS, x3  
-WIRE LIFTING LOOPS  
(RD20, 3 POINT CHAIN,  
REF. COVER SLAB 'C1')



VIEW: TOP (COVER SLAB SHOWN ONLY)

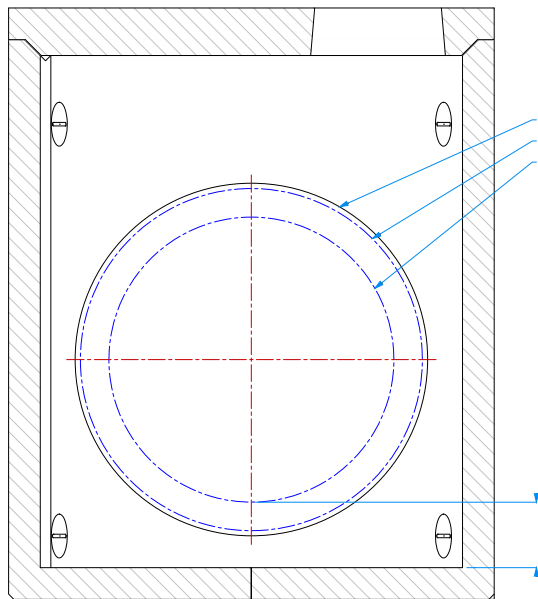
LIFTING ANCHORS, 3x  
FOR ONSITE UPRIGHT  
STATIC ONLY LIFTING.  
(3 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')



VIEW : TOP (CHAMBER SHOWN ONLY)

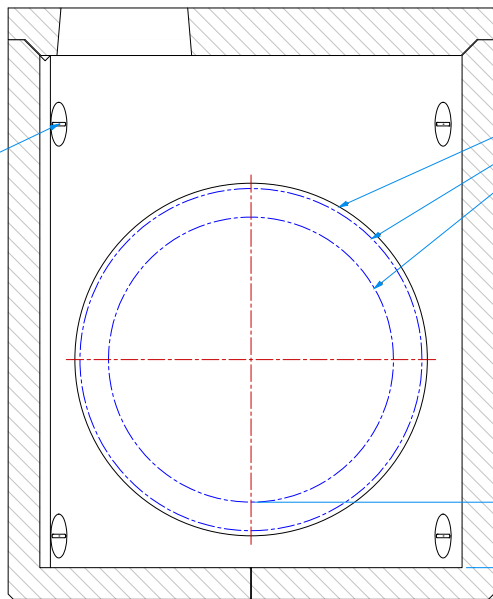
LIFTING ANCHORS, 2x  
AT TOP FOR ONSITE  
ROTATE LIFT UPRIGHT  
(2 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')

ALL ANCHORS, x4 FOR  
TRANSPORT LOADING  
WITH UNIT SIDE LAYED  
(4 POINT CHAIN, REF.  
EACH HALF 'F1' & 'B1')



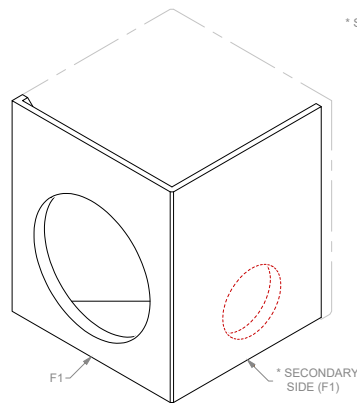
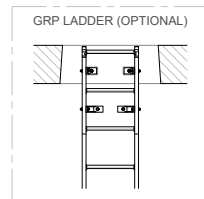
VIEW: SECTION F-F

OPENING (MAX) 1670  
PIPE O/D\*  
PIPE I/D\*



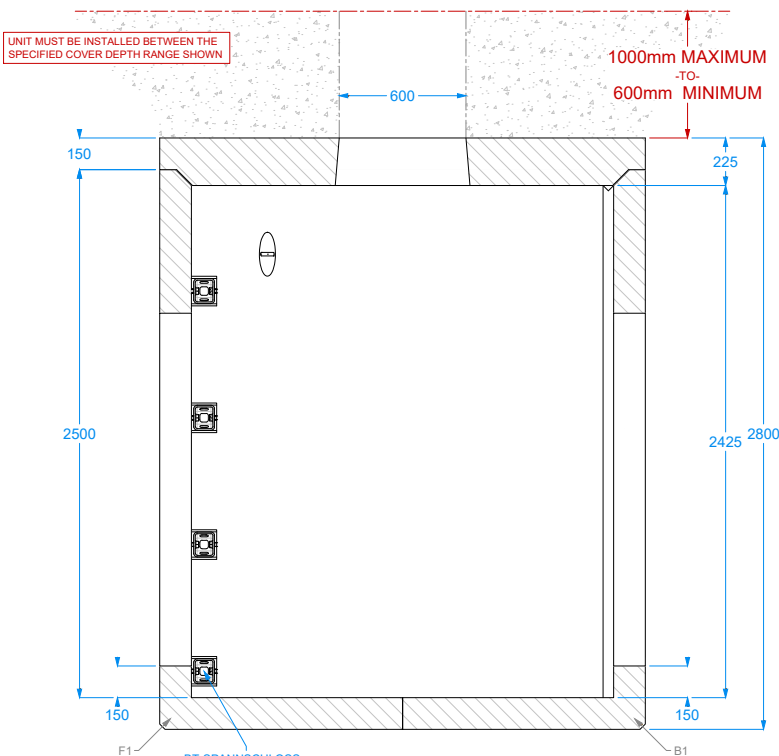
VIEW : SECTION B-B

SECONDARY SIDE HOLE LIMITED TO MAX  
50% SIZE OF PRIMARY SIDE HOLE SIZING \*



VIEW: ISOMETRIC

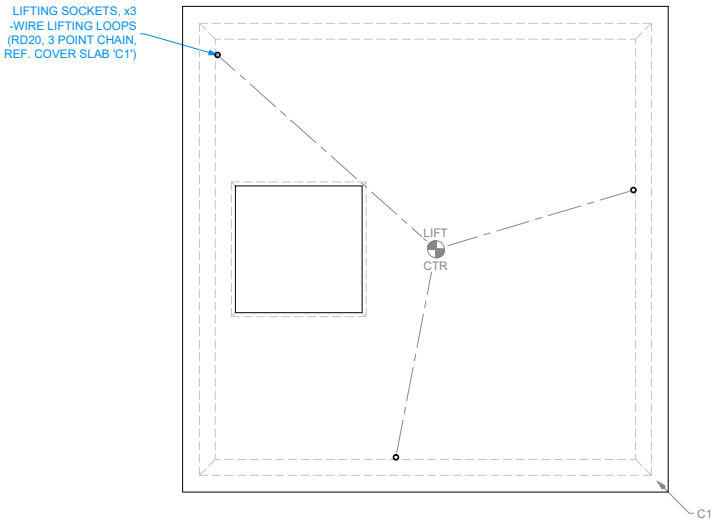
UNIT MUST BE INSTALLED BETWEEN THE  
SPECIFIED COVER DEPTH RANGE SHOWN



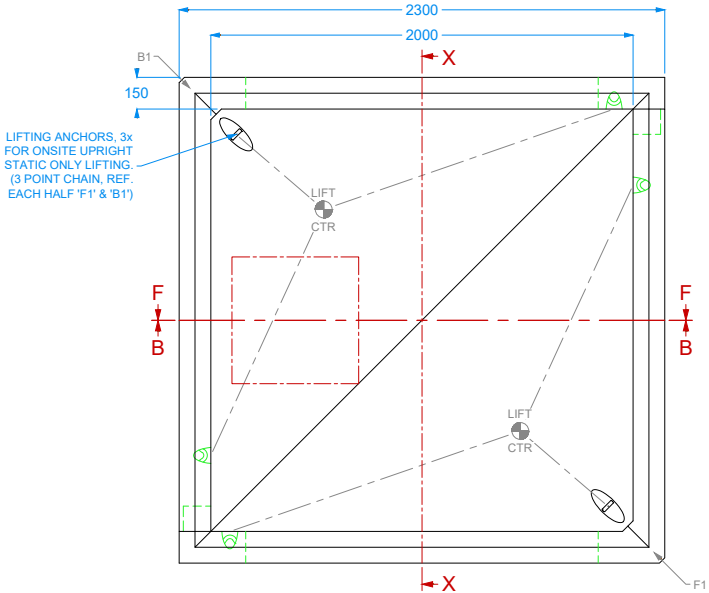
M20 TURNBUCKLE

BT-SPANNSCHLOSS  
M20 TURNBUCKLES  
SET INTO RECESSES  
ALONG JOINT EDGE,  
CAST-IN M20 FIXING  
SOCKETS, SECURED  
WITH S/S BOLTS.

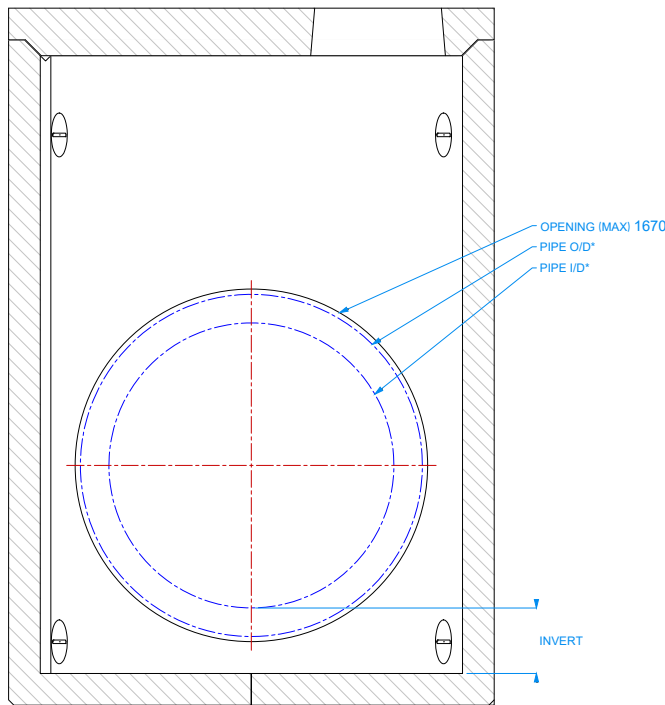
VIEW: SECTION X-X



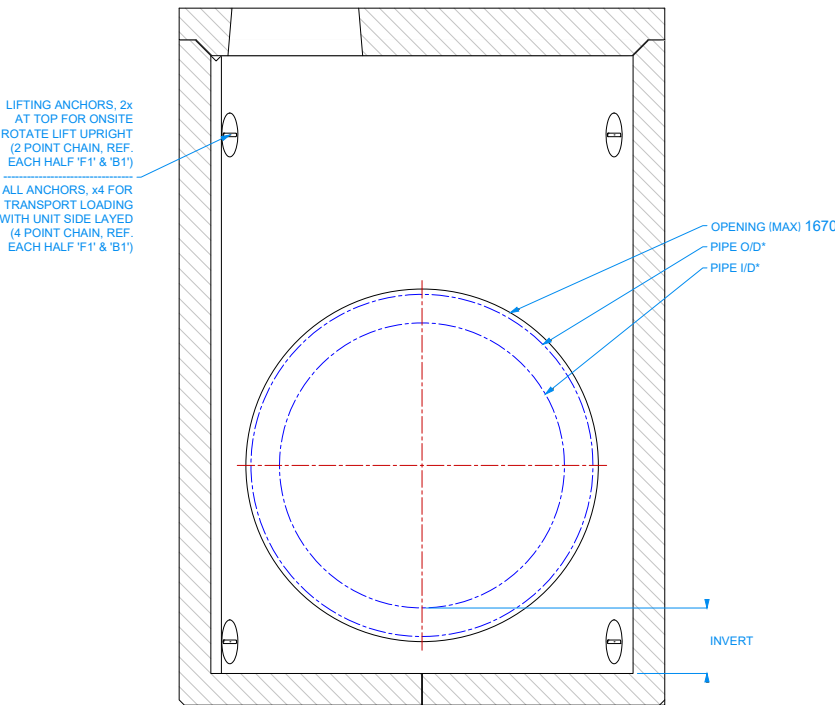
VIEW: TOP (COVER SLAB SHOWN ONLY)



VIEW : TOP (CHAMBER SHOWN ONLY)

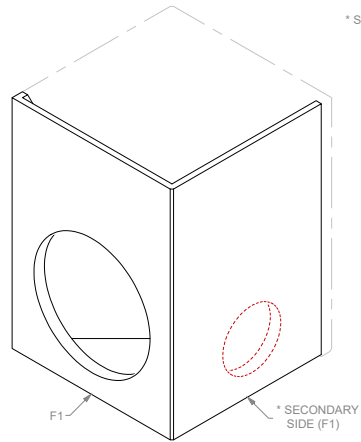
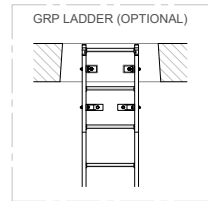


VIEW: SECTION F-F

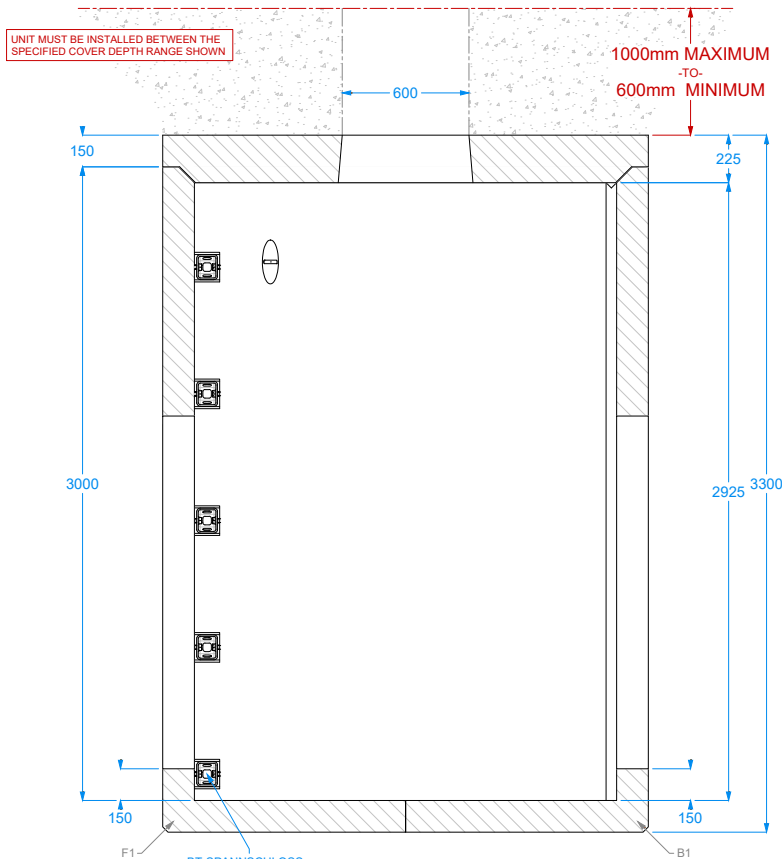


VIEW : SECTION B-B

SECONDARY SIDE HOLE LIMITED TO MAX. 50% SIZE OF PRIMARY SIDE HOLE SIZING \*



VIEW: ISOMETRIC



VIEW: SECTION X-X

#### GENERAL DRAWING NOTES

- All dimensions in mm U.O.S.
- All measurements  $\pm 1$ mm.
- DO NOT SCALE DRAWING.

#### SPECIFICATION INFORMATION

- Openings sized to suit outer dimension of pipe.
- Invert level of pipe can be set to your specification.

#### PRECAST UNIT INSTALLATION

Units should be bedded on minimum 100mm thick layer GEN1 concrete base to ensure units are level and stable.

#### HANDLING

- Weight of concrete is based on 2.4 tonne/m<sup>3</sup>, +5% is recommended for sizing appropriate lifting equipment.
- Unit to be lifted as per drawing / available lifting guide.

#### MATERIAL

- Self-compacting Reinforced Cement Concrete DC4/DS4.
- Lifting strength based on 2 cubes = 20N/mm<sup>2</sup>.
- Characteristic 28 day cube strength = 50N/mm<sup>2</sup>.
- Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

#### REINFORCEMENT

- Reinforcement Wire structure to BS EN 13369.
- Scheduling, dimensions, bends & cutting to BS8666.
- Reinforcing Wire structure to be machine tied with steel wire.

#### MANUFACTURE

- Manufacture to BS EN 15258:2008 precast concrete products retaining wall elements, factory production control certificate 0086-CPR-650448 & BS EN 13369.
- Tolerances to BS EN 13369 clause 4.3.1.1.
- Surface Finishing:

	Top	Sides	Rear	Rear of Backwall
Class	A	A	A	Self-Levelled

- Marking, units shall be indelibly marked to show:
  - Mould reference code.
  - De-mould date.
  - Job reference number & unique product number.
  - Unit weight (kg).

#### DESIGN

- Concrete structure designed to Eurocode 2.
- JKH have designed concrete units only, the site conditions should be assessed for suitability by the scheme designer.
- Units are designed to withstand a vertical live load surcharge of 10kN/M<sup>2</sup>.
- Weight of soil = 18kN/M<sup>2</sup>.
- Angle of internal friction = 30 Deg.
- Design Life as table below \* (all cover sizes in mm).

Design Life	>50 yrs, 100mm Thickness			>100 yrs, 150mm+ Thickness		
Minimum Cover for All Faces	Block Size Cover	Min Size Cover	Max Size Cover	Block Size Cover	Min Size Cover	Max Size Cover
	33	28	38	55	50	63

\* Design life of >100 yrs can be extended to >120 yrs with Bitumen coating application.

Exposure Class	Exposure induced by Carbonation	Corrosion induced by Chloride	Freeze/thaw attack	Chemical attack
All Faces	XC3/4	XD3	XF4	XA3

#### FABRICATION SPECIFICATION

- Manufacture IAW EN 1090-2 EXC CLASS 1.
- Material grade is to be: BS EN 10025 S275.
- Welding to IAW EN 1090-2 PARA 7.5.4 - 7.5.18.
- All fillet & butt welds to have minimum throat thickness of 6mm and joints fully welded where possible.
- Ensure vertical flats fully welded both sides where possible.
- All sharp edges and burrs are to be removed.
- Remove all weld splatter.
- Holes by punching are permitted with reaming.
- Galvanising process after fabrication to BS EN ISO1461.

#### C250 CLASS LOADING SPECIFICATION

- Unit designed to C250 class loading specification for heavy duty site applications (250kN / 25 ton load rating). Design limitations in place to meet C250 specification as following;
  - Secondary side hole diameter is limited to maximum of 50% size of primary side hole diameter, as indicated on drawing.
- Unit must be installed between the specified cover depth range detailed as follows, with the top of the cover slab set down between 1000mm maximum -to- 600mm minimum below the site surface level as indicated on drawing view.



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DRAWING TITLE:

V CHAMBER 150mm WALL THICKNESS,  
2000x2000x3000mm +PCC COVER SLAB  
C250 CLASS LOADING SPECIFICATION  
STANDARD & OPTIONAL FEATURES

CONCRETE MIX DESIGN, NAME / CODE #: ECO1 / DS4

CONCRETE CO<sub>2</sub> EMISSION (ESTIMATE) kg: -

WEIGHT BREAKDOWN BY TYPE - All FIGURES IN kg UNITS:

	0	0	0
CHAMBER, MULTIPLE-PIECE:	0	0	0
F1: 5555	0	0	0
B1: 5555	0	0	0
C1: 2675	0	0	0
0	0	0	0
0	0	0	0

TOE BEAM: 0 0 TOTAL WEIGHT: 13785

DRAWN: PN ISSUE #: 01 SHEET #: 1 DATE: 12/2/24

DRAWING #:

V.CHA-150-2000X2000X3000