

DRAWING NOTES

- All dimensions in mm U.O.S.
- All measurements ±1mm.
- DO NOT SCALE DRAWING.

SPECIFICATION INFORMATION

- Opening in back wall cast to suit outer dimension of pipe.
- Invert level of pipe can be set to your specification.

HEADWALL INSTALLATION

Units should be bedded on minimum 150mm thick well compacted Class 6N or 6K* well graded granular material with 50mm topping of fine material (Class 6L*) to ensure units are level and stable.

*Manual of contract documents for Highway Works: Volume (MCHW1) specification for Highway Works, Series 600 (Nov 09).

HANDLING

A. Weight of concrete is based on 2.4 tonne/m³ +5% is recommended for sizing lifting equipment.

B. All lifting points shall be used as specified below

C. Unit to be lifted as per lifting diagram.

CONCRETE

A. Mix ref: Self-compacting DC4 / DS4 Mix.

B. Lifting strength based on 2 cubes = 20N/mm².

C. Characteristic 28 day cube strength = 50N/mm².

D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

REINFORCEMENT

A. Reinforcement to BS EN 13369.

B. Scheduling, dimensions, bends & cutting to BS8666.

C. Cage 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. Finishing:

Class	Top	Sides	Rear	Rear of Backwall
	A	A	A	Self-Levelled
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/m².

D. Weight of soil = 18kN/m².

E. Angle of internal friction = 30 Deg.

F. Design Life as table below * (all cover sizes in mm).

Design Life	>50 years, 100mm Wall Thickness		>100 years, 150mm Wall Thickness	
	Min Size Cover for All Faces	Max Size Cover	Min Size Cover	Max Size Cover
33	28	38	55	63

*Design life of >100 years can be extended to >120 years with Bitumen coating application

Exposure Classification	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.

HANDRAIL SPECIFICATION

A. Kee Klamp® Galvanised Size 8 Fixings.

B. Size 8 48.3mm OD 3.2mm Wall Thickness Galvanised Medium Duty Tube to BS EN 10255

C. 360N/m Design Load as stated in BS 8118, BS 6180, BS 6399 & BS 7818, Civil Engineering Specification for the Water Industry (CESWI) 7th Edition Clause 2.60 Handrails & Balusters & The Engineering Equipment and Materials Users' Association (EEMUA) Publication 105 7th Edition Factory Stairways, Ladders and Handrails.

D. Other design loads available on request.

E. GRP/FRP Handrails also available.



ADDRESS: JKH LIMITED
CHISWICK AVENUE
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IP28 7AY

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

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DRAWING TITLE:

XR1000 A HEADWALL
STANDARD & OPTIONAL FEATURES

TOTAL WEIGHT (CASTINGS ONLY): **2840 Kg**

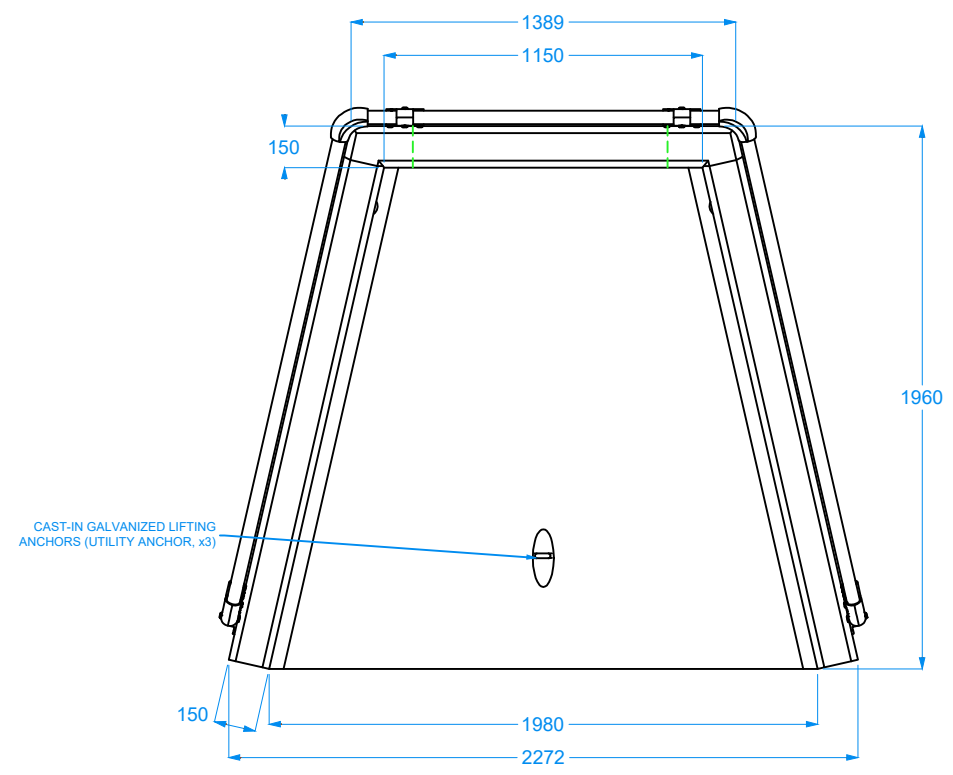
CONCRETE MIX DESIGN:

ECO 1

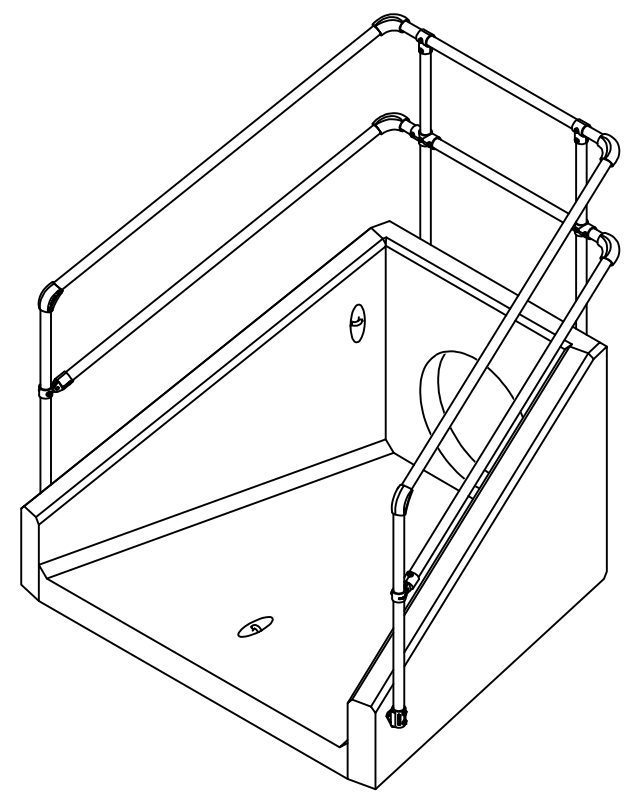
CEMENT REDUCTION **-46%**

DRAWN: OB | ISSUE #: 01 | SHEET #: 1 of 1 | DATE: 10/07/25

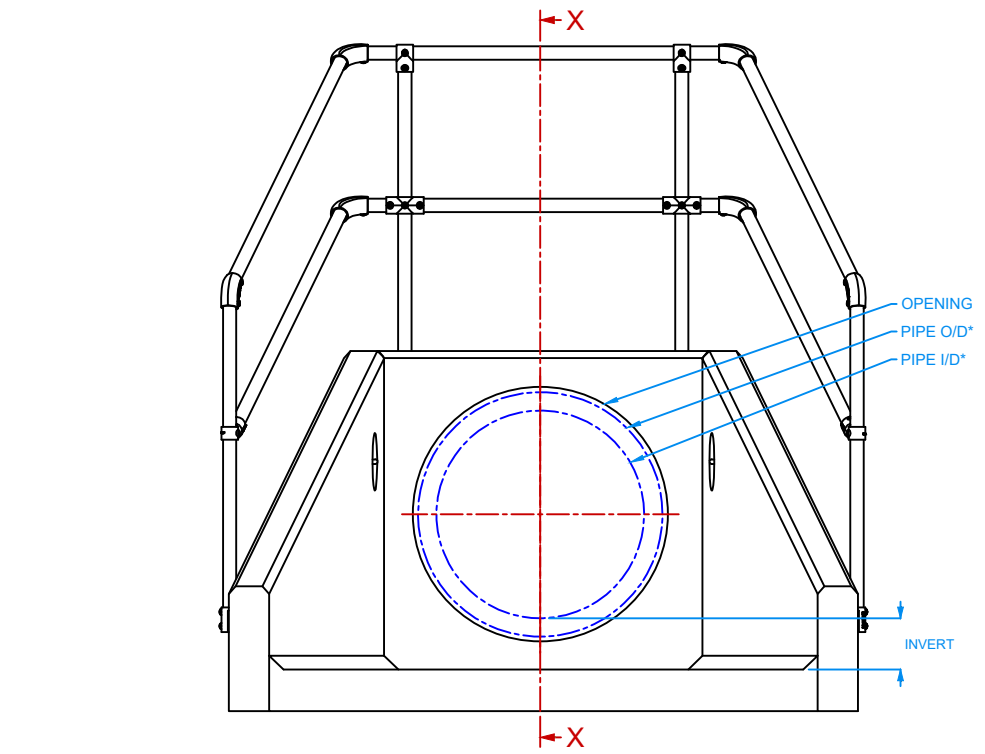
DRAWING #:
XR1000A



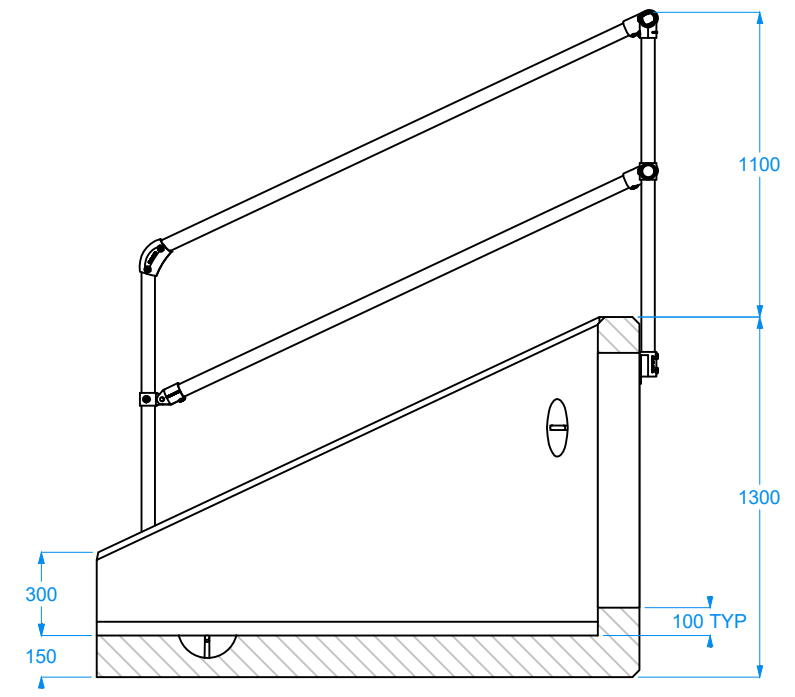
VIEW: TOP



VIEW: ISOMETRIC




VIEW: FRONT



VIEW: SECTION X-X

STANDARD FEATURES

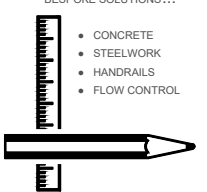
OPENING SIZE GUIDE



Ø 1020mm
MAXIMUM OPENING


TYPICAL MAXIMUM PIPE SIZES*
PLASTIC TWINWALL I/D: Ø 750mm
CONCRETE I/D: Ø 750mm

CUSTOM DESIGN
BESPOKE SOLUTIONS...

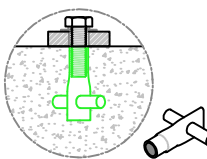


- CONCRETE
- STEELWORK
- HANDRAILS
- FLOW CONTROL

100 YEAR DESIGN LIFE

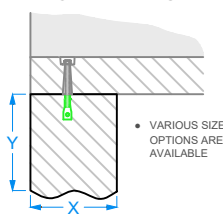


CAST-IN S/S SOCKETS
ACCURATE ALIGNMENT TO JOINT FITTINGS & OPTIONAL FEATURES



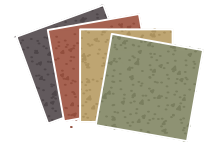
OPTIONAL FEATURES

TOE BEAM RANGE



- VARIOUS SIZE OPTIONS ARE AVAILABLE

CONCRETE COLOURS







- 24 COLOURS AVAILABLE IN RANGE FOR BLENDING ITEM WITH LOCAL ENVIRONMENT

GRATINGS & TRASH SCREENS

FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT


- FULLY WELDED, HOT DIP GALVANISED STEEL & S/S FIXINGS AS STANDARD

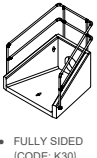
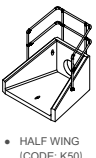
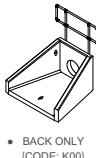






- CLOSE COUPLED
- SFA / SSG OUTFALL GRILLE
- SLOPED
- CRANKED

KEE KLAMP HANDRAILS

FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT












- KEE KLAMP #8 AS STANDARD
- FULLY SIDED (CODE: K30)
- HALF WING (CODE: K50)
- BACK ONLY (CODE: K00)

FLOW CONTROL DEVICES

FACTORY FITTED (WHERE PRACTICAL / SAFE FOR TRANSPORT) AS STANDARD


- S/S FIXINGS & RUBBER SEALS / SEALANTS AS STANDARD

- FLAP VALVES
- PENSTOCKS
- ORIFICE PLATES
- BAFFLE BLOCKS

ALUMINIUM STOPLOG SYSTEM

CHANNELS FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT



- VARIOUS BOARD HEIGHT / TYPES AVAILABLE
- LOCKING BRACKETS & T-KEY KITS SUPPLIED, S/S FIXINGS & RUBBER SEALS AS STANDARD

DRAWING NOTES

- All dimensions in mm U.O.S.
- All measurements ±1mm.
- DO NOT SCALE DRAWING.

SPECIFICATION INFORMATION

- Opening in back wall cast to suit outer dimension of pipe.
- Invert level of pipe can be set to your specification.

HEADWALL INSTALLATION

Units should be bedded on minimum 150mm thick well compacted Class 6N or 6K* well graded granular material with 50mm topping of fine material (Class 6L*) to ensure units are level and stable.

*Manual of contract documents for Highway Works: Volume (MCHW1) specification for Highway Works, Series 600 (Nov 09).

HANDLING

A. Weight of concrete is based on 2.4 tonne/m³ +5% is recommended for sizing lifting equipment.

B. All lifting points shall be used as specified below

C. Unit to be lifted as per lifting diagram.

CONCRETE

A. Mix ref: Self-compacting DC4 / DS4 Mix.

B. Lifting strength based on 2 cubes = 20N/mm².

C. Characteristic 28 day cube strength = 50N/mm².

D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

REINFORCEMENT

A. Reinforcement to BS EN 13369.

B. Scheduling, dimensions, bends & cutting to BS8666.

C. Cage 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. Finishing:

Class	Top	Sides	Rear	Rear of Backwall
	A	A	A	Self-Levelled
Class 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 10kN/m².

D. Weight of soil = 18kN/m².

E. Angle of internal friction = 30 Deg.

F. Design Life as table below * (all cover sizes in mm).

Design Life	>50 years, 100mm Wall Thickness		>100 years, 150mm Wall Thickness	
	Min Size Cover for All Faces	Max Size Cover	Min Size Cover	Max Size Cover
Class A	33	28	38	50
Class B	33	28	38	50
Class C	33	28	38	50

*Design life of >100 years can be extended to >120 years with Bitumen coating application

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

HANDRAIL SPECIFICATION

A. Kee Klamp® Galvanised Size 8 Fixings.

B. Size 8 48.3mm OD 3.2mm Wall Thickness Galvanised Medium Duty Tube to BS EN 10255

C. 360N/m Design Load as stated in BS 8118, BS 6180, BS 6399 & BS 7818, Civil Engineering Specification for the Water Industry (CESWI) 7th Edition Clause 2.60 Handrails & Balusters & The Engineering Equipment and Materials Users' Association (EEMUA) Publication 105 7th Edition Factory Stairways, Ladders and Handrails.

D. Other design loads available on request.

E. GRP/FRP Handrails also available.



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DRAWING TITLE:

**XR1000 A LW HEADWALL
STANDARD & OPTIONAL FEATURES**

TOTAL WEIGHT (CASTINGS ONLY): 3410 Kg

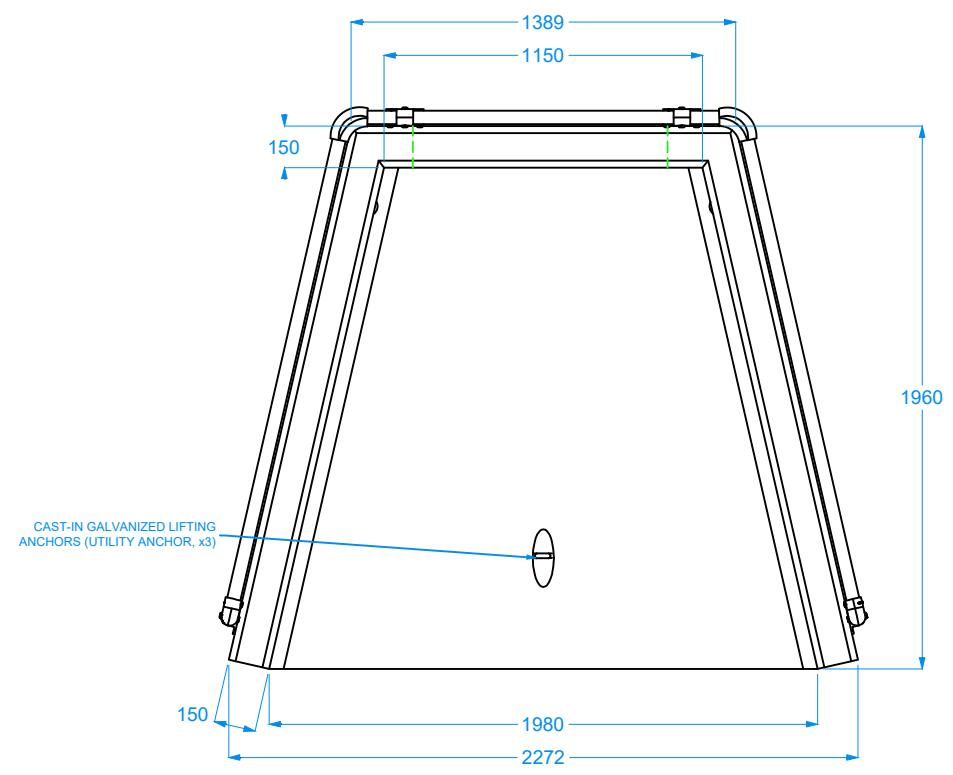
CONCRETE MIX DESIGN:

eco 1

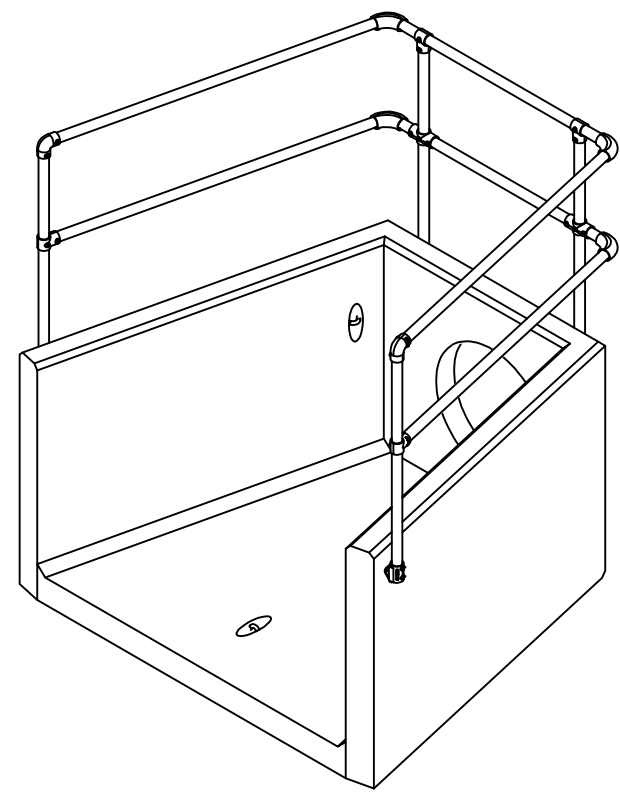
CEMENT REDUCTION -46%

DRAWN: OB | ISSUE #: 01 | SHEET #: 1 of 1 | DATE: 10/07/25

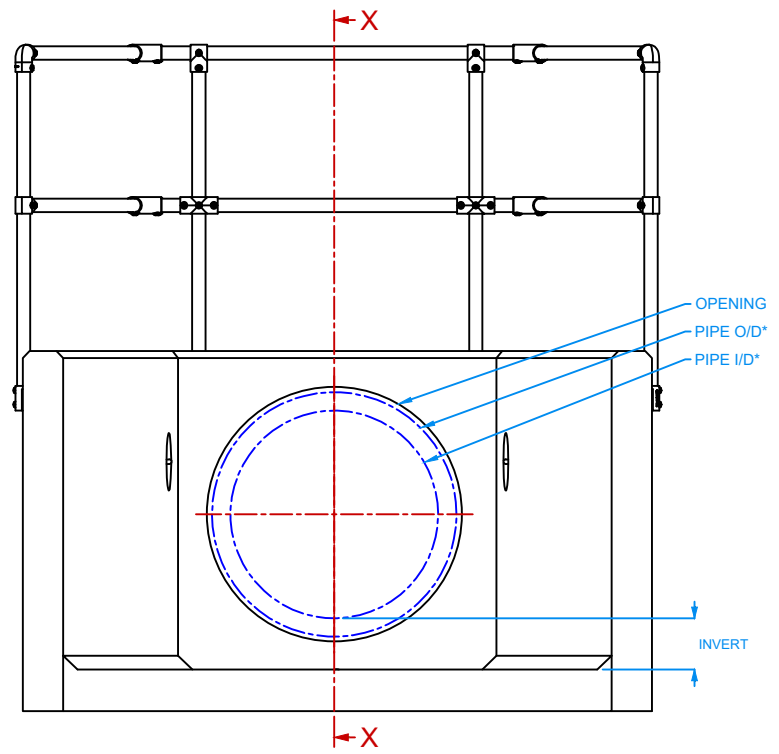
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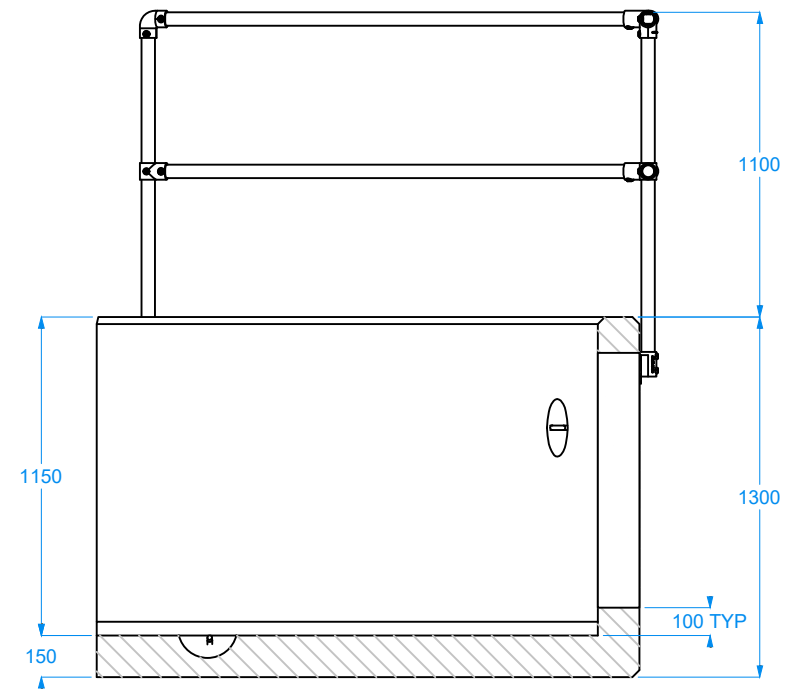
VIEW: TOP



VIEW: ISOMETRIC




VIEW: FRONT



VIEW: SECTION X-X

STANDARD FEATURES

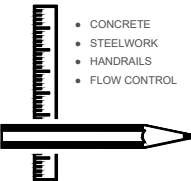
OPENING SIZE GUIDE



Ø 1020mm
← MAXIMUM OPENING →


TYPICAL MAXIMUM PIPE SIZES*
PLASTIC TWINWALL I/D: Ø 750mm
CONCRETE I/D: Ø 750mm

**CUSTOM DESIGN
BESPOKE SOLUTIONS...**

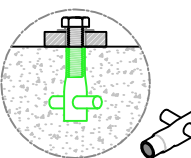


- CONCRETE
- STEELWORK
- HANDRAILS
- FLOW CONTROL

100 YEAR DESIGN LIFE

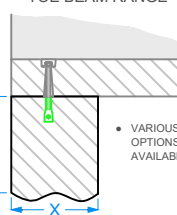


**CAST-IN S/S SOCKETS
ACCURATE ALIGNMENT TO JOINT
FITTINGS & OPTIONAL FEATURES**



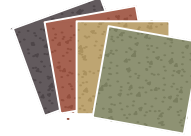
OPTIONAL FEATURES

TOE BEAM RANGE



• VARIOUS SIZE OPTIONS ARE AVAILABLE

CONCRETE COLOURS





• 24 COLOURS AVAILABLE IN RANGE FOR BLENDING ITEM WITH LOCAL ENVIRONMENT

GRATINGS & TRASH SCREENS

FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT






- FULLY WELDED, HOT DIP GALVANISED STEEL & S/S FIXINGS AS STANDARD


• CLOSE COUPLED • SFA / SSG OUTFALL GRILLE • SLOPED • CRANKED

KEE KLAMP HANDRAILS

FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT











• KEE KLAMP #8 AS STANDARD • FULLY SIDED (CODE: K30) • HALF WING (CODE: K50) • BACK ONLY (CODE: K00)

FLOW CONTROL DEVICES

FACTORY FITTED (WHERE PRACTICAL / SAFE FOR TRANSPORT) AS STANDARD

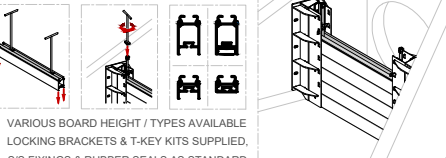
- S/S FIXINGS & RUBBER SEALS / SEALANTS AS STANDARD

• FLAP VALVES • PENSTOCKS • ORIFICE PLATES • BAFFLE BLOCKS

ALUMINIUM STOPLOG SYSTEM

CHANNELS FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT



- VARIOUS BOARD HEIGHT / TYPES AVAILABLE
- LOCKING BRACKETS & T-KEY KITS SUPPLIED, S/S FIXINGS & RUBBER SEALS AS STANDARD

DRAWING NOTES

- All dimensions in mm U.O.S.
- All measurements ±1mm.
- DO NOT SCALE DRAWING.

SPECIFICATION INFORMATION

- Opening in back wall cast to suit outer dimension of pipe.
- Invert level of pipe can be set to your specification.

HEADWALL INSTALLATION

Units should be bedded on minimum 150mm thick well compacted Class 6N or 6K* well graded granular material with 50mm topping of fine material (Class 6L*) to ensure units are level and stable. *Manual of contract documents for Highway Works: Volume (MCHW1) specification for Highway Works, Series 600 (Nov 09).

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A. Weight of concrete is based on 2.4 tonne/m³ +5% is recommended for sizing lifting equipment.

B. All lifting points shall be used as specified below

C. Unit to be lifted as per lifting diagram.

CONCRETE

A. Mix ref: Self-compacting DC4 / DS4 Mix.

B. Lifting strength based on 2 cubes = 20N/mm².

C. Characteristic 28 day cube strength = 50N/mm².

D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

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B. Scheduling, dimensions, bends & cutting to BS8666.

C. Cage to be machine tied with steel wire.

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Class	Top	Sides	Rear	Rear of Backwall
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Design Life	>50 years	100mm Wall Thickness	>100 years	150mm Wall Thickness
Minimum Cover for All Faces	33	28	38	55
	33	28	38	55
	33	28	38	55

D. Marking. Units shall be indelibly marked to show:

- Mould reference code.
- De-mould date.
- Job reference number & unique product number.
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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/m².

D. Weight of soil = 18kN/m³.

E. Angle of internal friction = 30 Deg.

F. Design Life as table below * (all cover sizes in mm).

Design Life	>50 years	100mm Wall Thickness	>100 years	150mm Wall Thickness
Minimum Cover for All Faces	33	28	38	55
Exposure Classification	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

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DRAWING TITLE:

**XR1000 B HEADWALL
STANDARD & OPTIONAL FEATURES**

TOTAL WEIGHT (CASTINGS ONLY): 3575 Kg

CONCRETE MIX DESIGN:

eco 1

CEMENT
REDUCTION **-46%**

STANDARD FEATURES

OPENING SIZE GUIDE

Ø1130mm
← MAXIMUM OPENING

**CUSTOM DESIGN
BESPOKE SOLUTIONS...**

- CONCRETE
- STEELWORK
- HANDRAILS
- FLOW CONTROL

OPTIONAL FEATURES

TOE BEAM RANGE

• VARIOUS SIZE OPTIONS ARE AVAILABLE

CONCRETE COLOURS

• 24 COLOURS AVAILABLE IN RANGE FOR BLENDING ITEM WITH LOCAL ENVIRONMENT

GRATINGS & TRASH SCREENS

FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT

- FULLY WELDED, HOT DIP GALVANISED STEEL & S/S FIXINGS AS STANDARD

KEE KLAMP HANDRAILS

FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT

FLOW CONTROL DEVICES

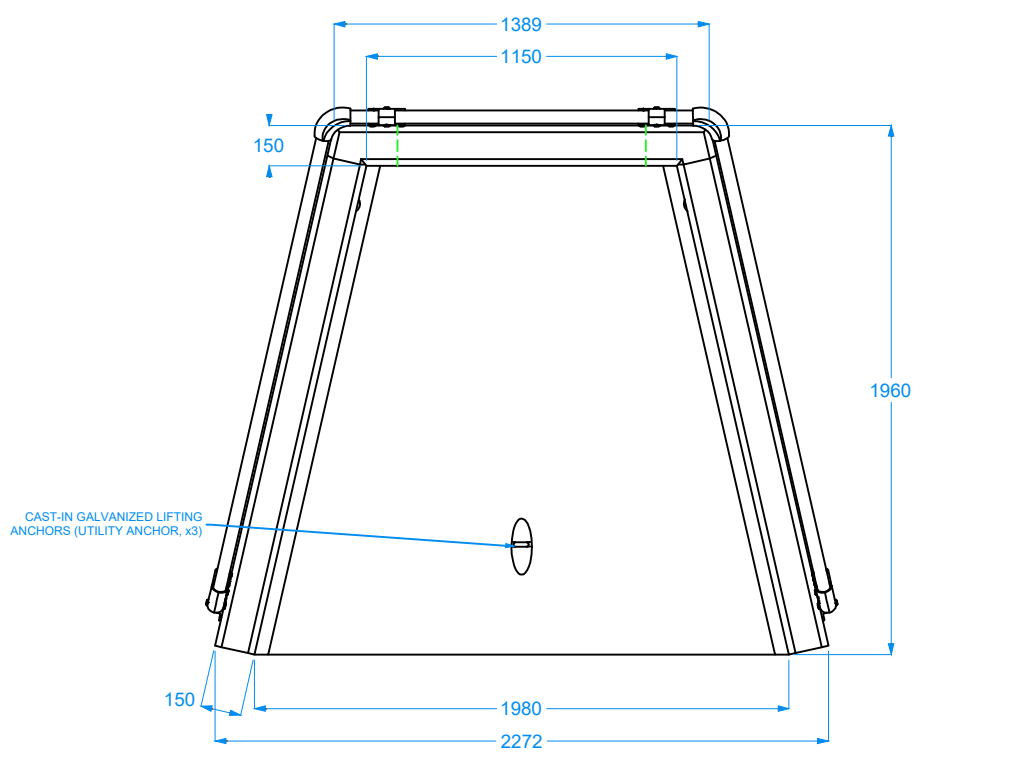
FACTORY FITTED (WHERE PRACTICAL / SAFE FOR TRANSPORT) AS STANDARD

- S/S FIXINGS & RUBBER SEALS / SEALANTS AS STANDARD

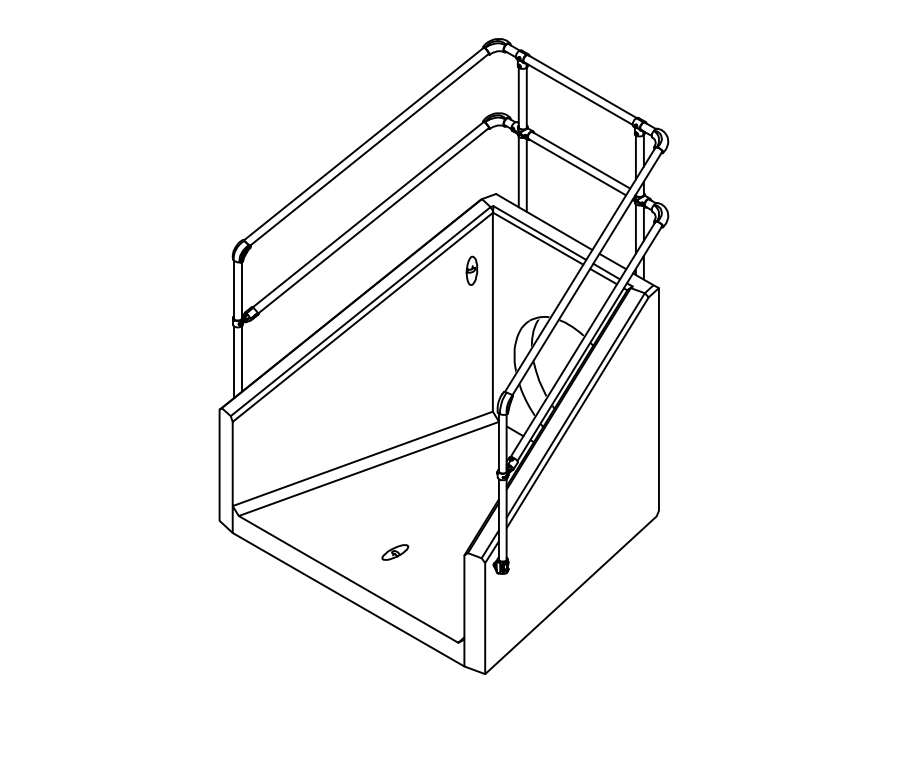
ALUMINIUM STOPLOG SYSTEM

CHANNELS FACTORY FITTED AS STANDARD * WHERE PRACTICAL / SAFE FOR TRANSPORT

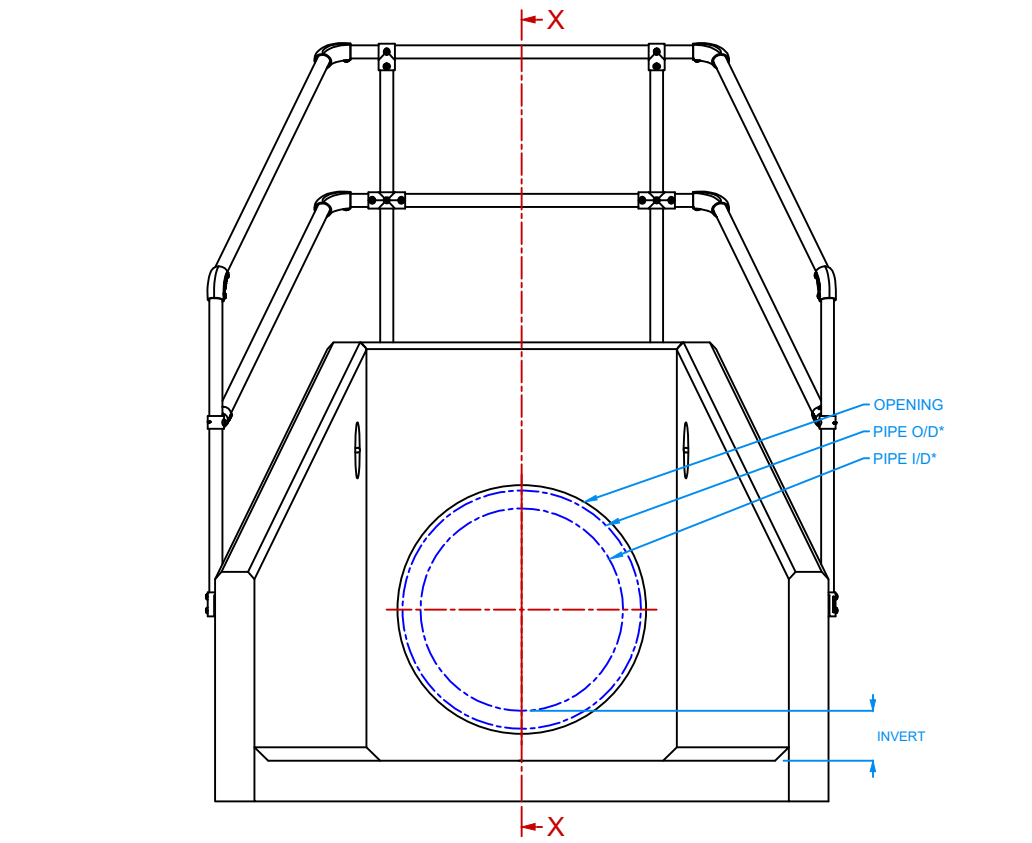
- VARIOUS BOARD HEIGHT / TYPES AVAILABLE
- LOCKING BRACKETS & T-KEY KITS SUPPLIED, S/S FIXINGS & RUBBER SEALS AS STANDARD



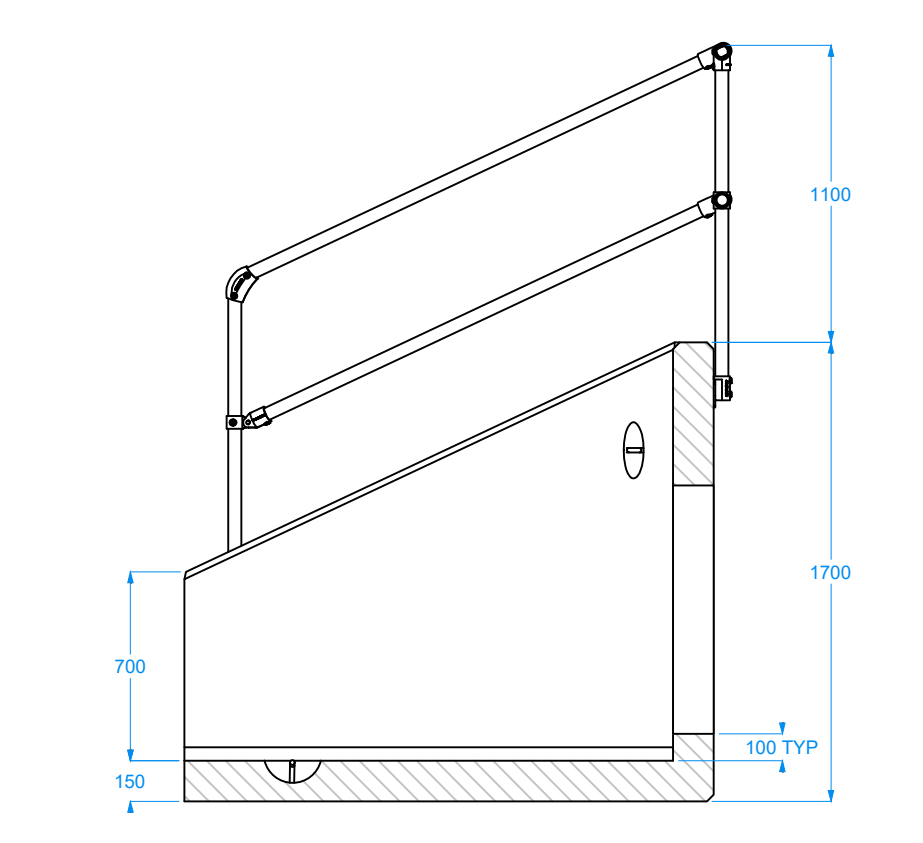
VIEW: TOP



VIEW: ISOMETRIC



VIEW: FRONT



VIEW: SECTION X-X

DRAWING NOTES

- All dimensions in mm U.O.S.
- All measurements ±1mm.
- DO NOT SCALE DRAWING.

SPECIFICATION INFORMATION

- Opening in back wall cast to suit outer dimension of pipe.
- Invert level of pipe can be set to your specification.

HEADWALL INSTALLATION

Units should be bedded on minimum 150mm thick well compacted Class 6N or 6K* well graded granular material with 50mm topping of fine material (Class 6L*) to ensure units are level and stable. *Manual of contract documents for Highway Works: Volume (MCHW1) specification for Highway Works, Series 600 (Nov 09).

HANDLING

A. Weight of concrete is based on 2.4 tonne/m³ +5% is recommended for sizing lifting equipment.

B. All lifting points shall be used as specified below

C. Unit to be lifted as per lifting diagram.

CONCRETE

A. Mix ref: Self-compacting DC4 / DS4 Mix.

B. Lifting strength based on 2 cubes = 20N/mm².

C. Characteristic 28 day cube strength = 50N/mm².

D. Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

REINFORCEMENT

A. Reinforcement to BS EN 13369.

B. Scheduling, dimensions, bends & cutting to BS8666.

C. Cage 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. Finishing:

Class	Top	Sides	Rear	Rear of Backwall
	A	A	A	Self - Levelled
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/m².

D. Weight of soil = 18kN/m³.

E. Angle of internal friction = 30 Deg.

F. Design Life as table below * (all cover sizes in mm).

Design Life	>50 years, 100mm Wall Thickness		>100 years, 150mm Wall Thickness	
	Minimum Cover for All Faces	Max Size Cover	Minimum Cover	Max Size Cover
33	33	28	38	55
50	33	28	38	55
63	33	28	38	55

*Design life of >100 years can be extended to >120 years with Bitumen coating application

Exposure Classification	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.

HANDRAIL SPECIFICATION

A. Kee Klamp® Galvanised Size 8 Fittings.

B. Size 8 48.3mm OD 3.2mm Wall Thickness Galvanised Medium Duty Tube to BS EN 10255

C. 360N/m Design Load as stated in BS 8118, BS 6180, BS 6399 & BS 7818, Civil Engineering Specification for the Water Industry (CESWI) 7th Edition Clause 2.60 Handrails & Balusters & The Engineering Equipment and Materials Users' Association (EEMUA) Publication 105 7th Edition Factory Stairways, Ladders and Handrails.

D. Other design loads available on request.

E. GRP/FRP Handrails also available.

ADDRESS: JKH LIMITED
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TEL: 01638 713795

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DRAWING TITLE:

**XR1000 B LW HEADWALL
STANDARD & OPTIONAL FEATURES**

TOTAL WEIGHT (CASTINGS ONLY): 4140 Kg

CONCRETE MIX DESIGN:

eco 1

CEMENT REDUCTION ↓ -46%

STANDARD FEATURES

OPENING SIZE GUIDE

Ø1130mm
← MAXIMUM OPENING

TYPICAL MAXIMUM PIPE SIZES:
PLASTIC TWINWALL I.D.: Ø900mm
CONCRETE I.D.: Ø900mm

**CUSTOM DESIGN
BESPOKE SOLUTIONS...**

- CONCRETE
- STEELWORK
- HANDRAILS
- FLOW CONTROL

**100
YEAR
DESIGN LIFE**

CAST-IN S/S SOCKETS
ACCURATE ALIGNMENT TO JOINT
FITTINGS & OPTIONAL FEATURES

OPTIONAL FEATURES

TOE BEAM RANGE

• VARIOUS SIZE
OPTIONS ARE
AVAILABLE

CONCRETE COLOURS

• 24 COLOURS AVAILABLE IN
RANGE FOR BLENDING ITEM
WITH LOCAL ENVIRONMENT

GRATINGS & TRASH SCREENS

FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT

- FULLY WELDED, HOT DIP GALVANISED STEEL & S/S FIXINGS AS STANDARD

- CLOSE COUPLED
- SFA / SSG OUTFALL GRILLE
- SLOPED
- CRANKED

KEE KLAMP HANDRAILS

FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT

- KEE KLAMP #8 AS STANDARD
- FULLY SIDED (CODE: K30)
- HALF WING (CODE: K50)
- BACK ONLY (CODE: K00)

FLOW CONTROL DEVICES

FACTORY FITTED (WHERE PRACTICAL / SAFE FOR TRANSPORT) AS STANDARD

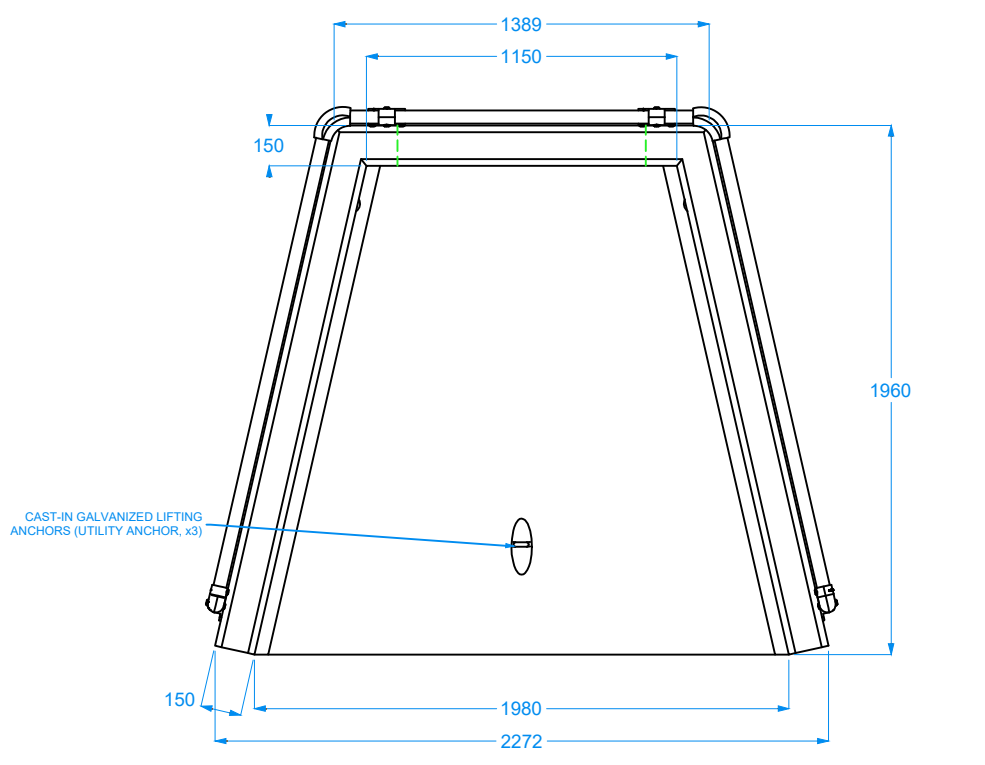
- S/S FIXINGS & RUBBER SEALS / SEALANTS AS STANDARD

- FLAP VALVES
- PENSTOCKS
- ORIFICE PLATES
- BAFFLE BLOCKS

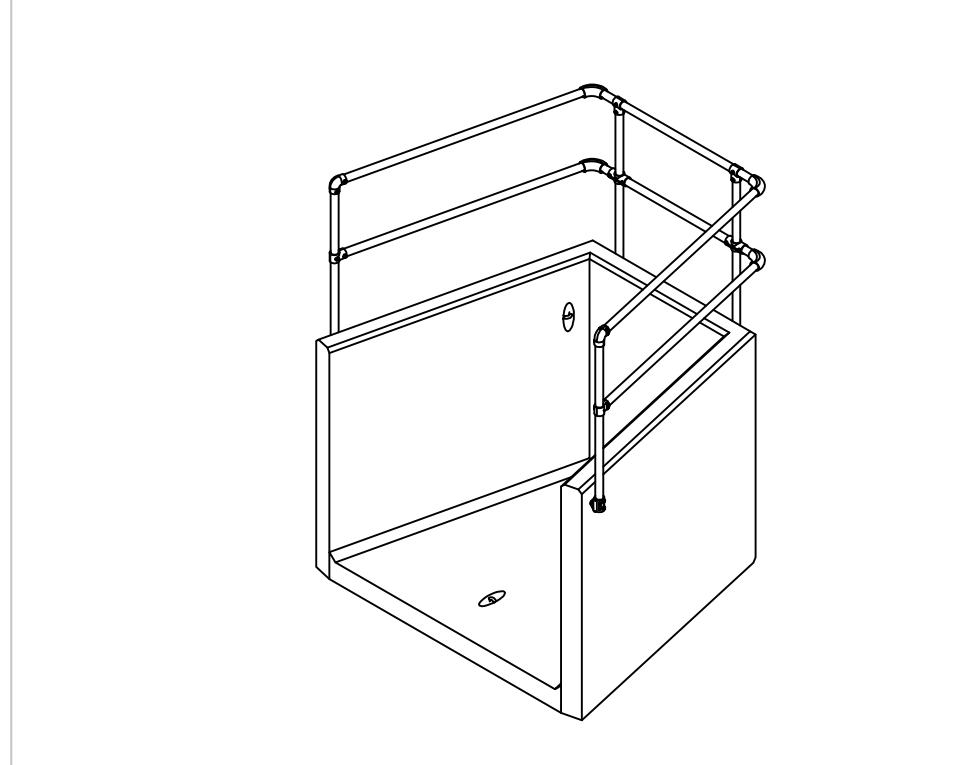
ALUMINIUM STOPLOG SYSTEM

CHANNELS FACTORY FITTED AS STANDARD *
*WHERE PRACTICAL / SAFE FOR TRANSPORT

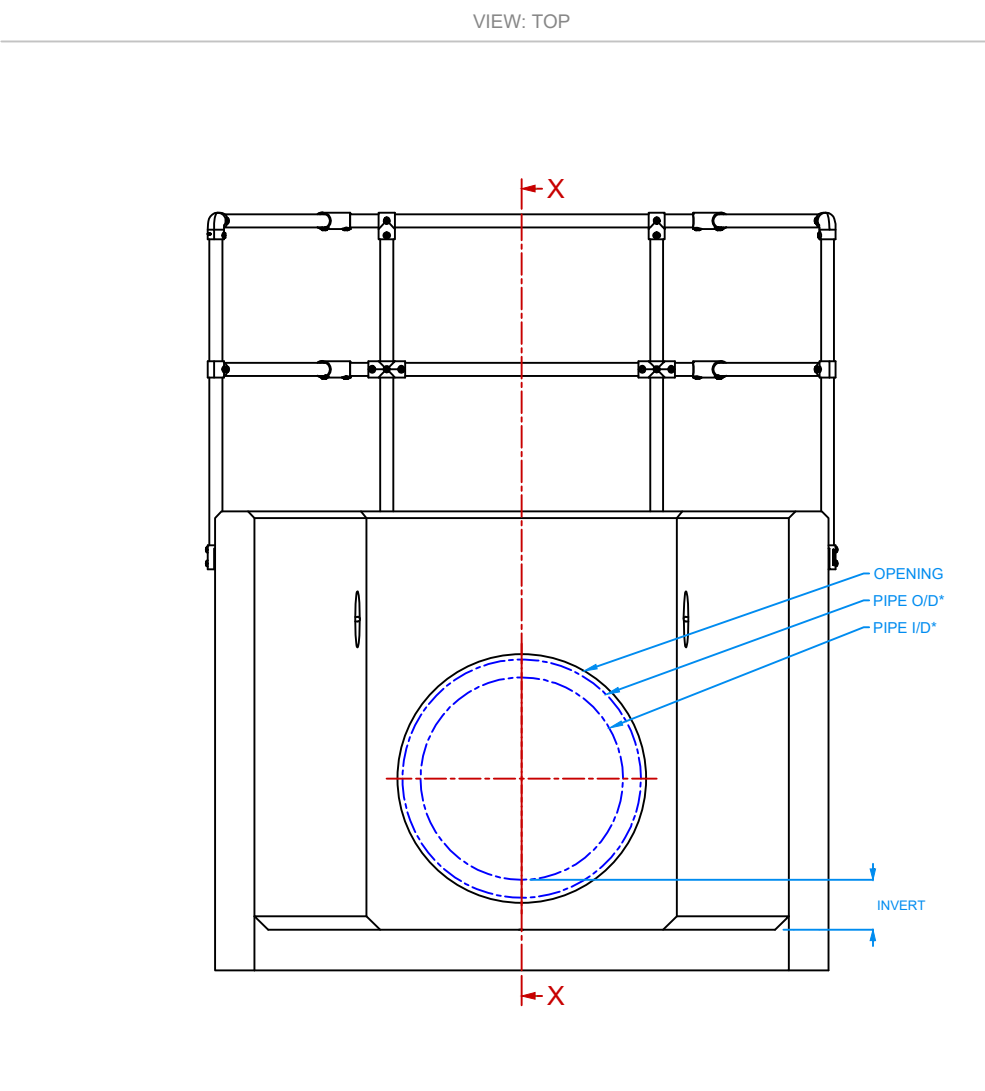
- VARIOUS BOARD HEIGHT / TYPES AVAILABLE
- LOCKING BRACKETS & T-KEY KITS SUPPLIED, S/S FIXINGS & RUBBER SEALS AS STANDARD



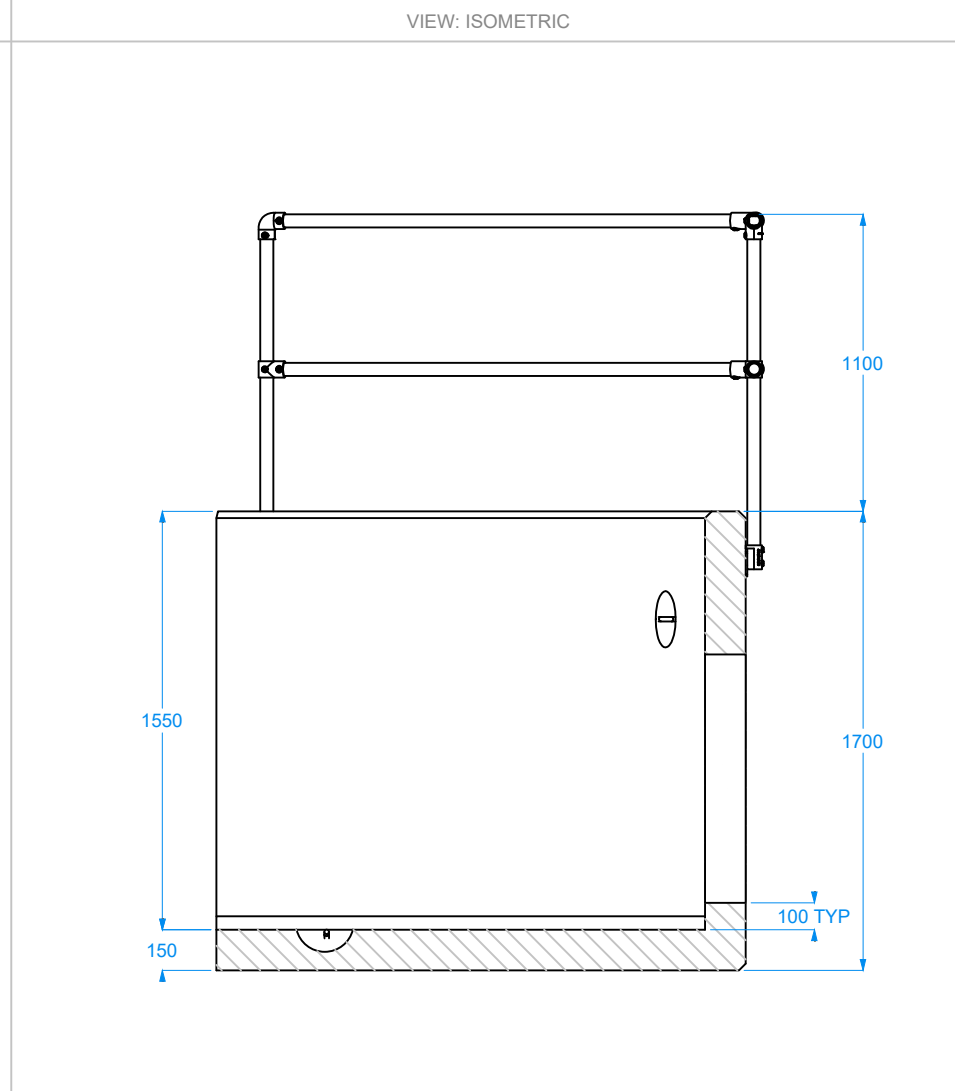
VIEW: TOP



VIEW: ISOMETRIC



VIEW: FRONT



VIEW: SECTION X-X

DRAWING NOTES

- All dimensions in mm U.O.S.
- All measurements ±1mm.
- DO NOT SCALE DRAWING.

SPECIFICATION INFORMATION

- Opening in back wall cast to suit outer dimension of pipe.
- Invert level of pipe can be set to your specification.

HEADWALL INSTALLATION

Units should be bedded on minimum 150mm thick well compacted Class 6N or 6K* well graded granular material with 50mm topping of fine material (Class 6L*) to ensure units are level and stable. *Manual of contract documents for Highway Works: Volume (MCHW1) specification for Highway Works, Series 600 (Nov 09).

HANDLING

- Weight of concrete is based on 2.4 tonne/m³ +5% is recommended for sizing lifting equipment.
- All lifting points shall be used as specified below
- Unit to be lifted as per lifting diagram.

CONCRETE

- Mix ref: Self-compacting DC4 / DS4 Mix.
- Lifting strength based on 2 cubes = 20N/mm².
- Characteristic 28 day cube strength = 50N/mm².
- Concrete provides Design Chemical Class 4 (DC4) to special Digest 1, Table F2.

REINFORCEMENT

- Reinforcement to BS EN 13369.
- Scheduling, dimensions, bends & cutting to BS8666.
- Cage 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.
- Finishing:

Class	Top	Sides	Rear	Rear of Backwall
	A	A	A	A

- 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/m².
- Weight of soil = 18kN/m².
- Angle of internal friction = 30 Deg.
- Design Life as table below * (all cover sizes in mm).

Design Life	>50 years, 100mm Wall Thickness		>100 years, 150mm Wall Thickness	
	Min Size Cover	Max Size Cover	Min Size Cover	Max Size Cover
All Faces	33	28	38	55
			50	63

*Design life of >100 years can be extended to >120 years with Bitumen coating application

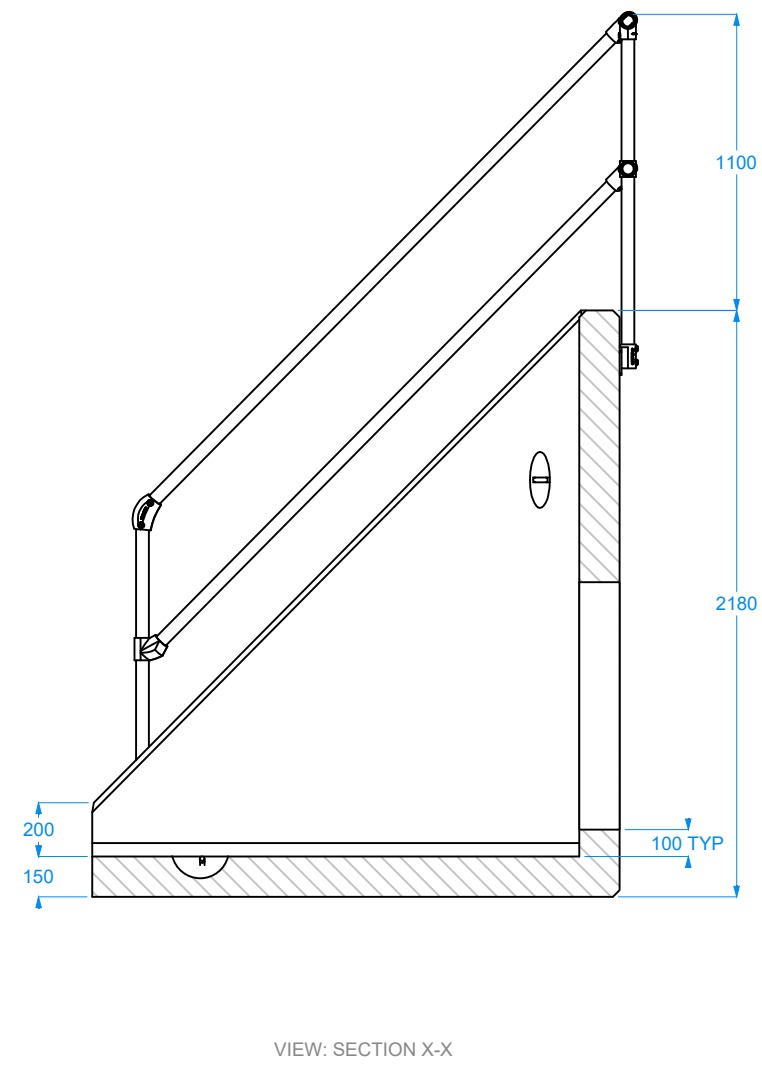
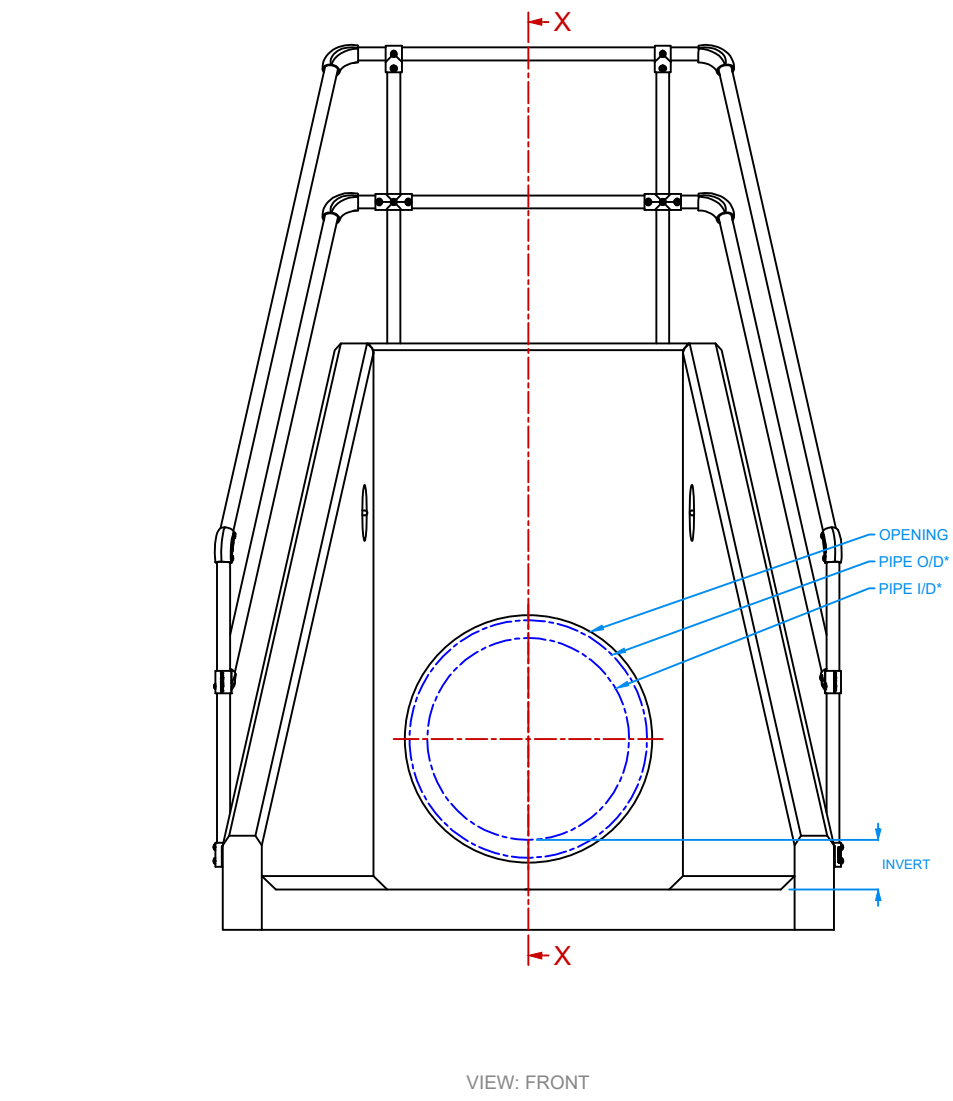
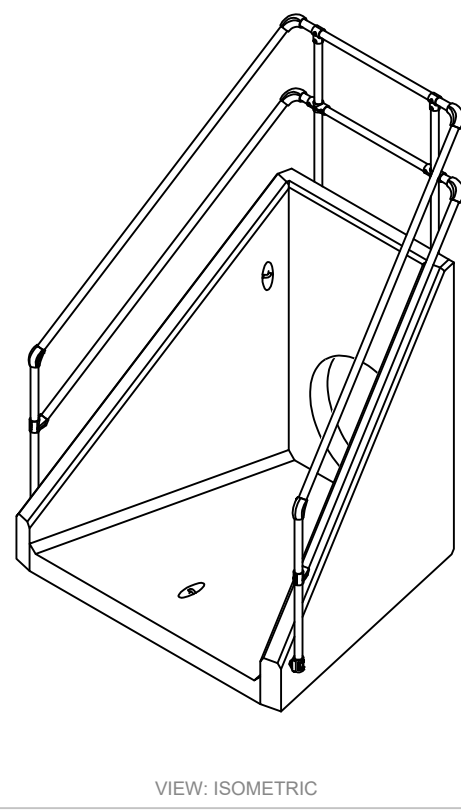
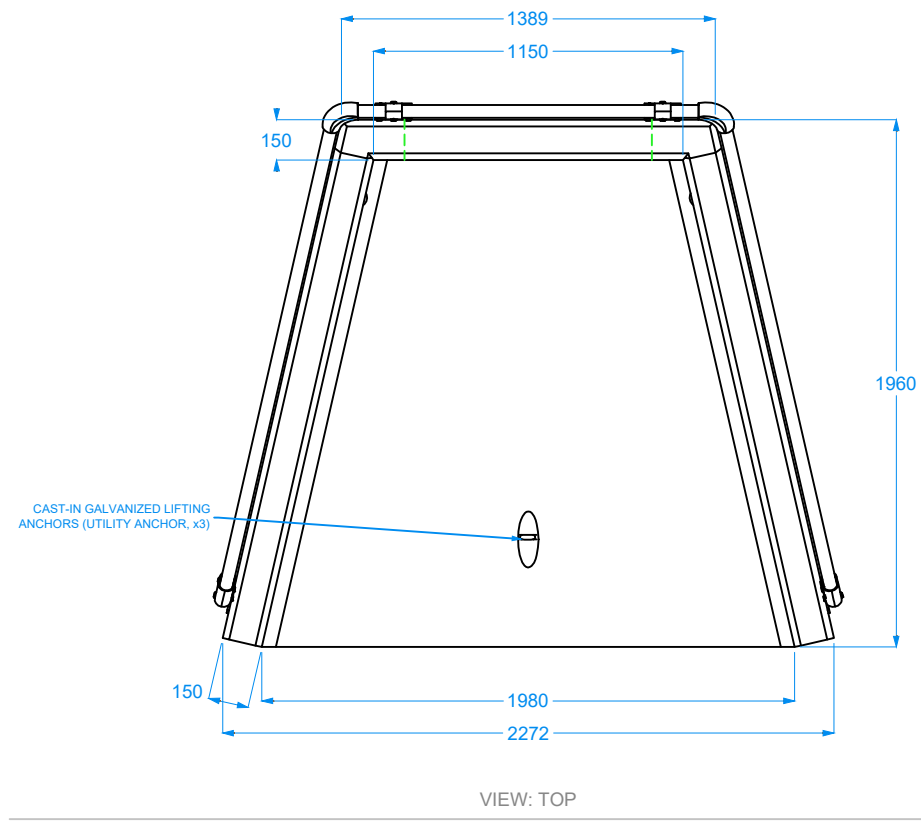
Exposure Classification	Exposure induced by Carbonation		Corrosion induced by Chloride		Freeze/thaw attack		Chemical attack	
	Min Size Cover	Max Size Cover	Min Size Cover	Max Size Cover	Min Size Cover	Max Size Cover	Min Size Cover	Max Size Cover
All Faces		XC3/4		XD3		XF4		XA3

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.

HANDRAIL SPECIFICATION

- Keel Klamp® Galvanised Size 8 Fixings.
- Size 8 48.3mm OD 3.2mm Wall Thickness Galvanised Medium Duty Tube to BS EN 10255
- 360N/m Design Load as stated in BS 8118, BS 6180, BS 6399 & BS 7818, Civil Engineering Specification for the Water Industry (CESWI) 7th Edition Clause 2.60 Handrails & Balusters & The Engineering Equipment and Materials Users' Association (EEMUA) Publication 105 7th Edition Factory Stairways, Ladders and Handrails.
- Other design loads available on request.
- GRP/FRP Handrails also available.



STANDARD FEATURES

OPENING SIZE GUIDE

Ø1130mm
← MAXIMUM OPENING →

TYPICAL MAXIMUM PIPE SIZES*
PLASTIC TWINWALL I/D: Ø900mm
CONCRETE I/D: Ø900mm

CUSTOM DESIGN
BESPOKE SOLUTIONS...

- CONCRETE
- STEELWORK
- HANDRAILS
- FLOW CONTROL

100 YEAR DESIGN LIFE

CAST-IN S/S SOCKETS
ACCURATE ALIGNMENT TO JOINT FITTINGS & OPTIONAL FEATURES

OPTIONAL FEATURES

TOE BEAM RANGE

• VARIOUS SIZE OPTIONS ARE AVAILABLE

CONCRETE COLOURS

• 24 COLOURS AVAILABLE IN RANGE FOR BLENDING ITEM WITH LOCAL ENVIRONMENT

GRATINGS & TRASH SCREENS

FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT

- FULLY WELDED, HOT DIP GALVANISED STEEL & S/S FIXINGS AS STANDARD

- CLOSE COUPLED
- SFA / SSG OUTFALL GRILLE
- SLOPED
- CRANKED

KEE KLAMP HANDRAILS

FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT

- KEE KLAMP #8 AS STANDARD
- FULLY SIDED (CODE: K30)
- HALF WING (CODE: K50)
- BACK ONLY (CODE: K00)

FLOW CONTROL DEVICES

FACTORY FITTED (WHERE PRACTICAL / SAFE FOR TRANSPORT) AS STANDARD

- S/S FIXINGS & RUBBER SEALS / SEALANTS AS STANDARD

- FLAP VALVES
- PENSTOCKS
- ORIFICE PLATES
- BAFFLE BLOCKS

ALUMINIUM STOPLOG SYSTEM

CHANNELS FACTORY FITTED AS STANDARD * WHERE PRACTICAL / SAFE FOR TRANSPORT

- VARIOUS BOARD HEIGHT / TYPES AVAILABLE
- LOCKING BRACKETS & T-KEY KITS SUPPLIED, S/S FIXINGS & RUBBER SEALS AS STANDARD

DRAWING TITLE:

**XR1000 C HEADWALL
STANDARD & OPTIONAL FEATURES**

TOTAL WEIGHT (CASTINGS ONLY): **3800 Kg**

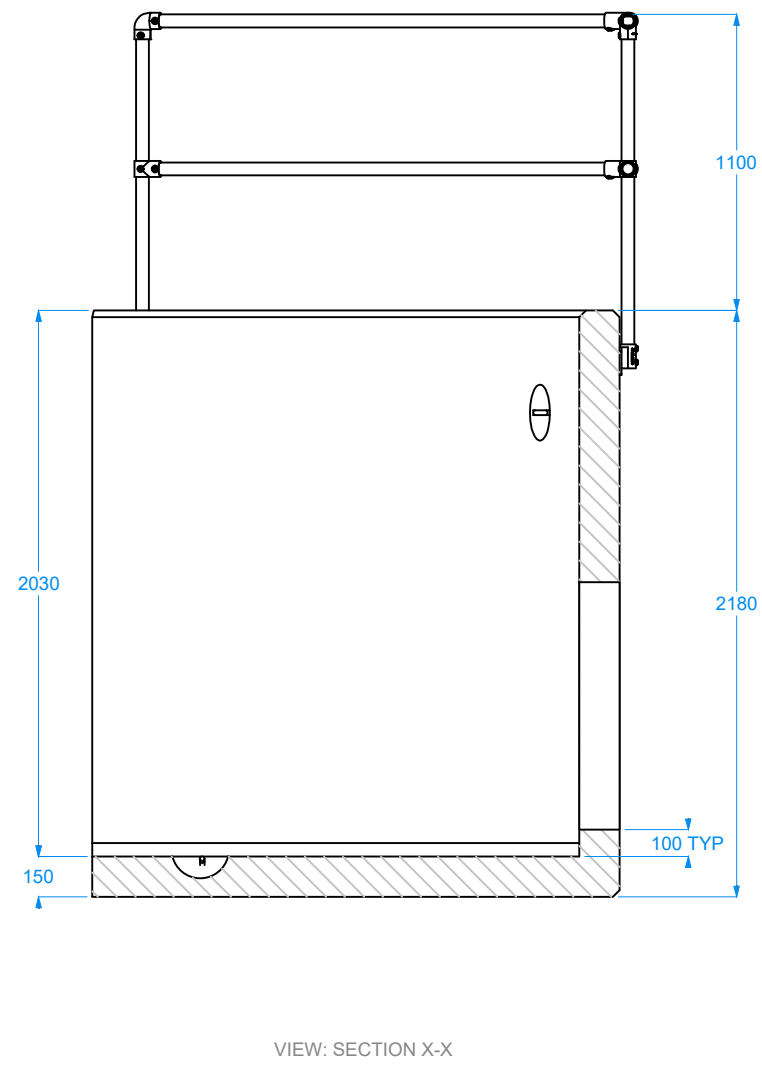
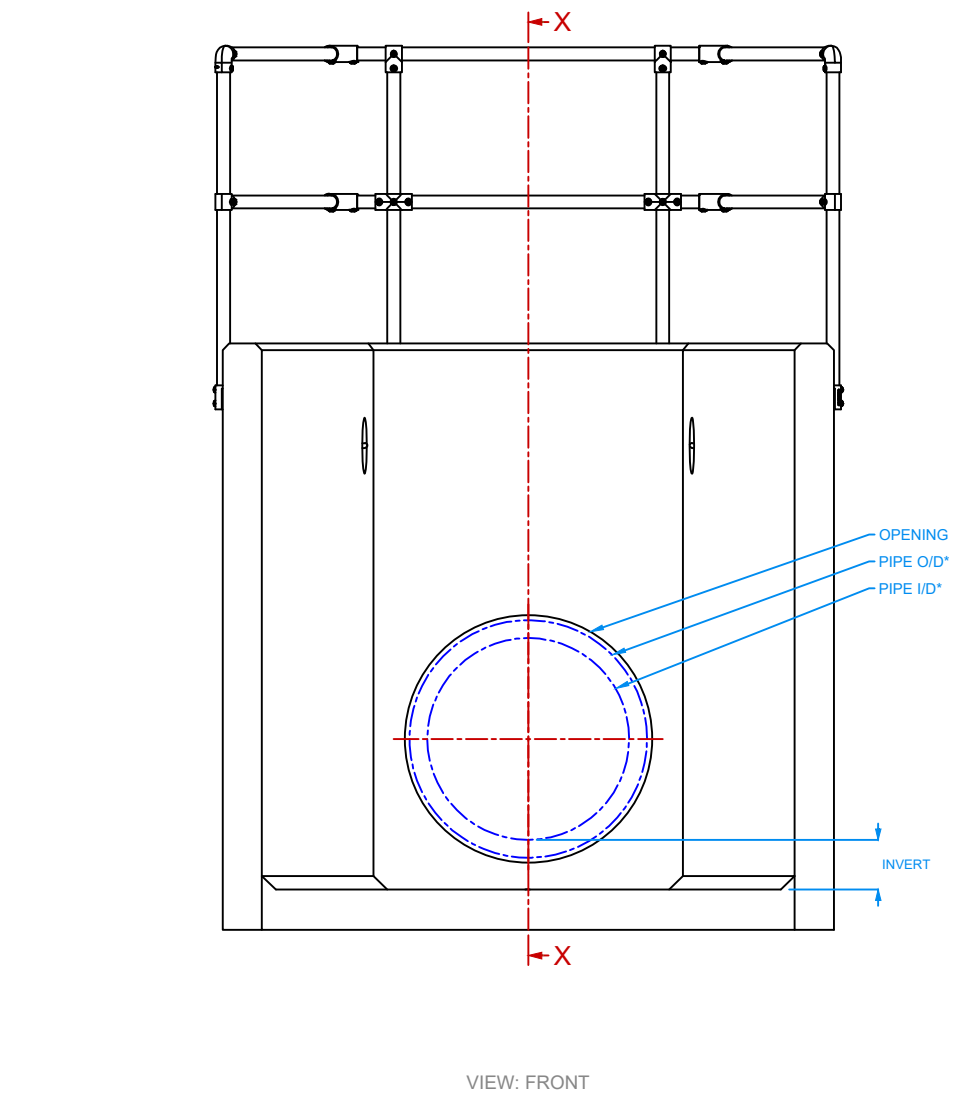
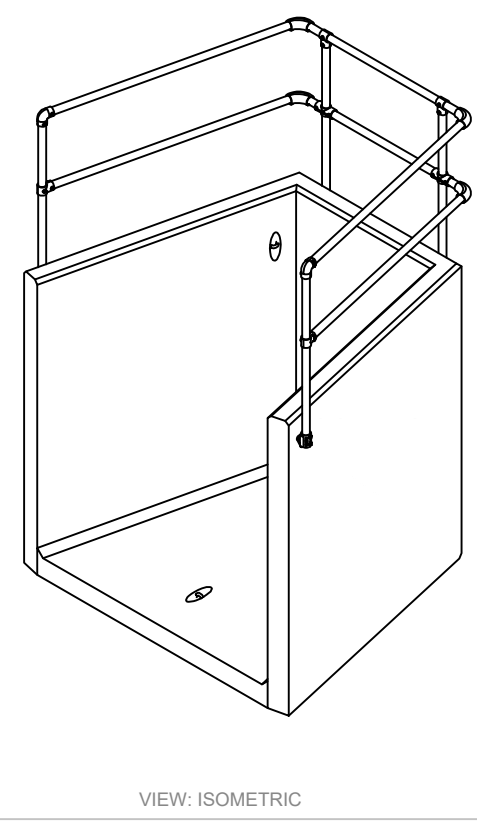
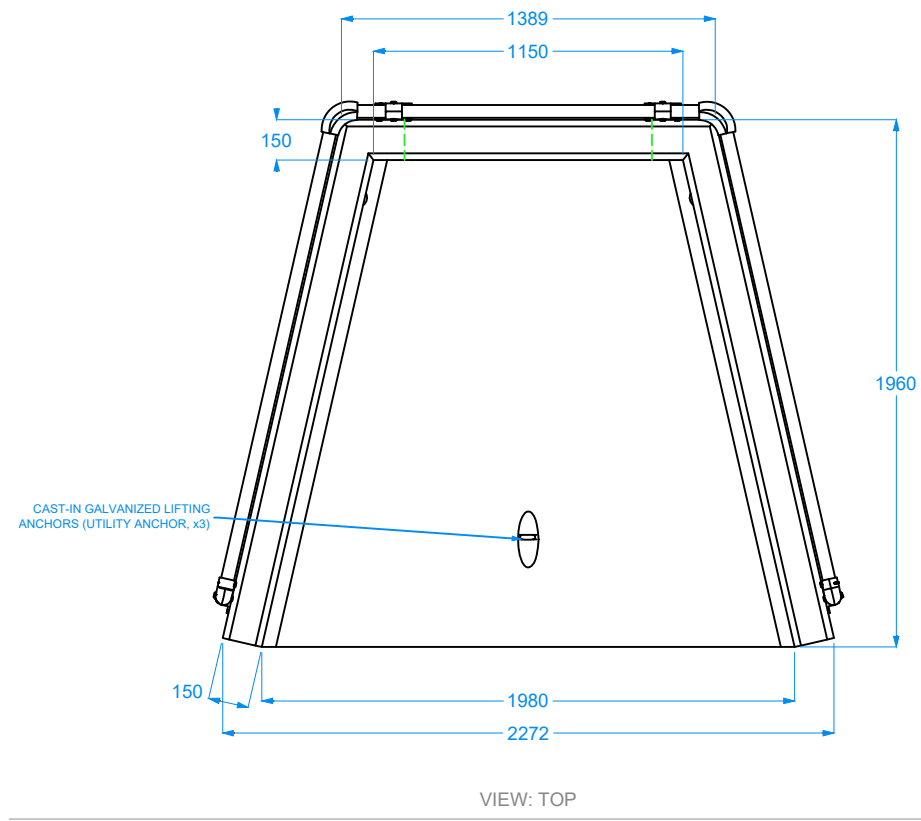
CONCRETE MIX DESIGN:

eco 1

CEMENT REDUCTION **-46%**

DRAWN: OB | ISSUE #: 01 | SHEET #: 1 of 1 | DATE: 10/07/25

DRAWING #:
XR1000C



STANDARD FEATURES

OPENING SIZE GUIDE

Ø1130mm
← MAXIMUM OPENING

TYPICAL MAXIMUM PIPE SIZES*
PLASTIC TWINWALL I/D: Ø900mm
CONCRETE I/D: Ø900mm

CUSTOM DESIGN
BESPOKE SOLUTIONS...

- CONCRETE
- STEELWORK
- HANDRAILS
- FLOW CONTROL

100 YEAR DESIGN LIFE

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FACTORY FITTED (WHERE PRACTICAL / SAFE FOR TRANSPORT) AS STANDARD

- S/S FIXINGS & RUBBER SEALS / SEALANTS AS STANDARD

- FLAP VALVES
- PENSTOCKS
- ORIFICE PLATES
- BAFFLE BLOCKS

ALUMINIUM STOPLOG SYSTEM

CHANNELS FACTORY FITTED AS STANDARD * WHERE PRACTICAL / SAFE FOR TRANSPORT

- VARIOUS BOARD HEIGHT / TYPES AVAILABLE
- LOCKING BRACKETS & T-KEY KITS SUPPLIED, S/S FIXINGS & RUBBER SEALS AS STANDARD

DRAWING NOTES

- All dimensions in mm U.O.S.
- All measurements ±1mm.
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- Opening in back wall cast to suit outer dimension of pipe.
- Invert level of pipe can be set to your specification.

HEADWALL INSTALLATION

Units should be bedded on minimum 150mm thick well compacted Class 6N or 6K* well graded granular material with 50mm topping of fine material (Class 6L*) to ensure units are level and stable. *Manual of contract documents for Highway Works: Volume (MCHW1) specification for Highway Works, Series 600 (Nov 09).

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Class	Top	Sides	Rear	Rear of Backwall
	A	A	A	Self - Levelled
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	• Mould reference code.			
	• De-mould date.			
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- Weight of soil = 18kN/m³.
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Design Life	>50 years, 100mm Wall Thickness		>100 years, 150mm Wall Thickness	
	Min Size Cover	Max Size Cover	Min Size Cover	Max Size Cover
Minimum Cover for All Faces	33	28	38	50

*Design life of >100 years can be extended to >120 years with Bitumen coating application

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	All Faces	XC3/4	XD3	XF4

FABRICATION SPECIFICATION

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HANDRAIL SPECIFICATION

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- Size 8 48.3mm OD 3.2mm Wall Thickness Galvanised Medium Duty Tube to BS EN 10255
- 360N/m Design Load as stated in BS 8118, BS 6180, BS 6399 & BS 7818, Civil Engineering Specification for the Water Industry (CESWI) 7th Edition Clause 2.60 Handrails & Balusters & The Engineering Equipment and Materials Users' Association (EEMUA) Publication 105 7th Edition Factory Stairways, Ladders and Handrails.
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- GRP/FRP Handrails also available.

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DRAWING TITLE:

**XR1000 C LW HEADWALL
STANDARD & OPTIONAL FEATURES**

TOTAL WEIGHT (CASTINGS ONLY): **5025 Kg**

CONCRETE MIX DESIGN:

ECO 1

CEMENT REDUCTION **↓ -46%**