

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	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).

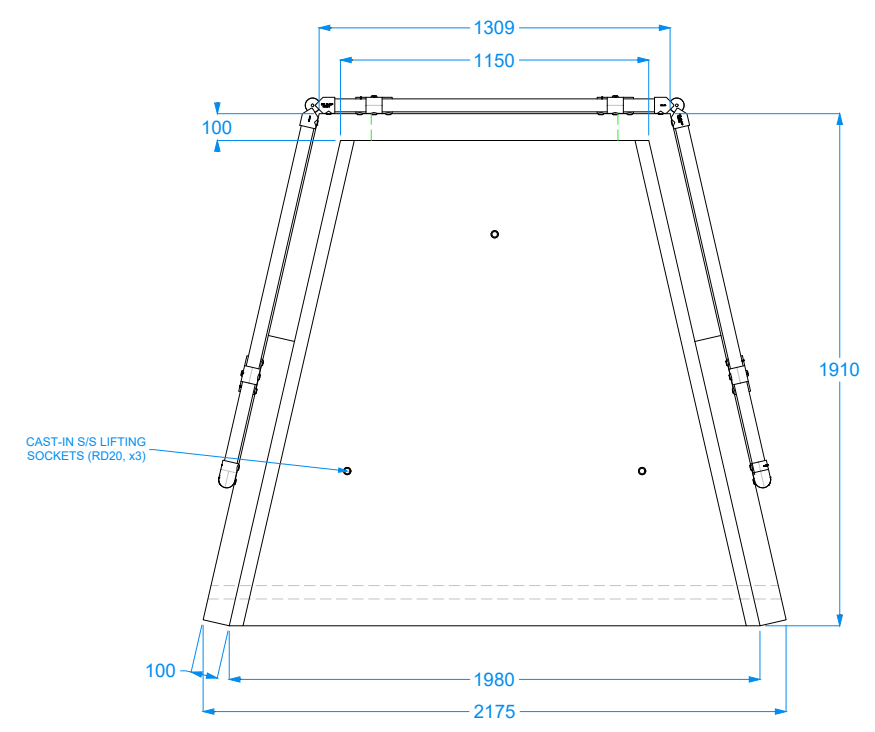
DESIGN

- 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).

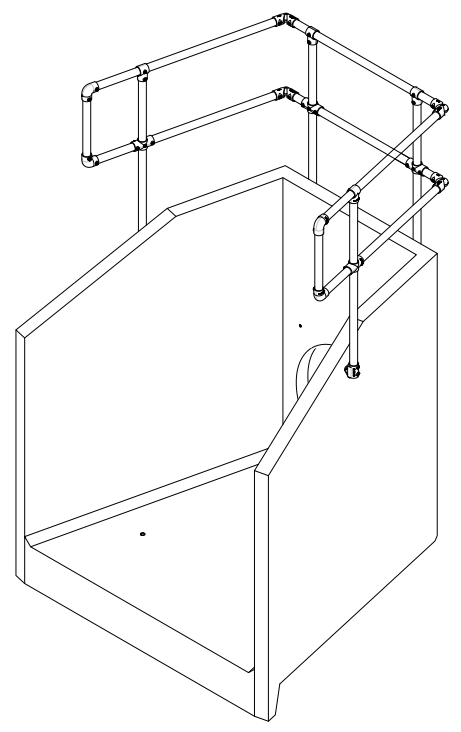
Design Life	>50 years, 100mm Wall Thickness		>100 years, 150mm Wall Thickness	
	Block Size Cover	Min Size Cover	Block Size Cover	Min Size Cover
Minimum Cover for All Faces	33	28	38	55

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

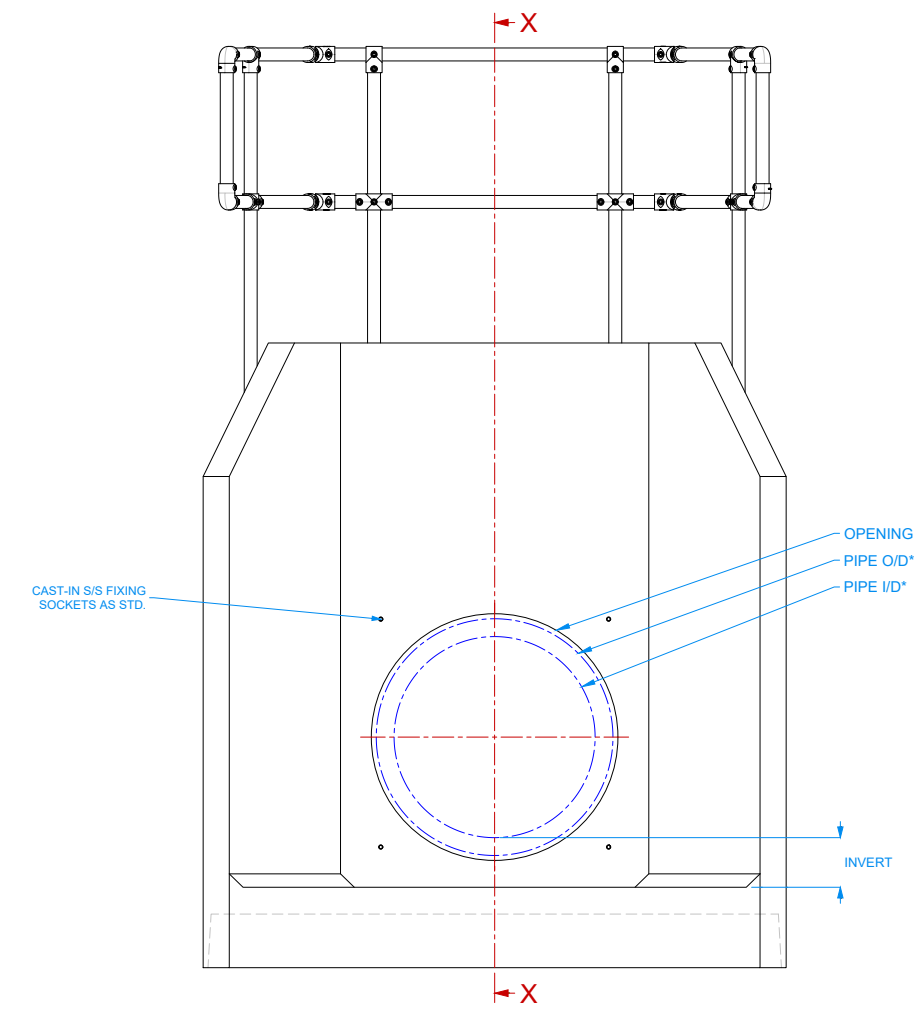
Exposure Classification	Exposure induced by Carbonation		Corrosion induced by Chloride		Freeze/thaw attack		Chemical attack	
	All Faces	XC3/4	XD3	XF4	XA3			



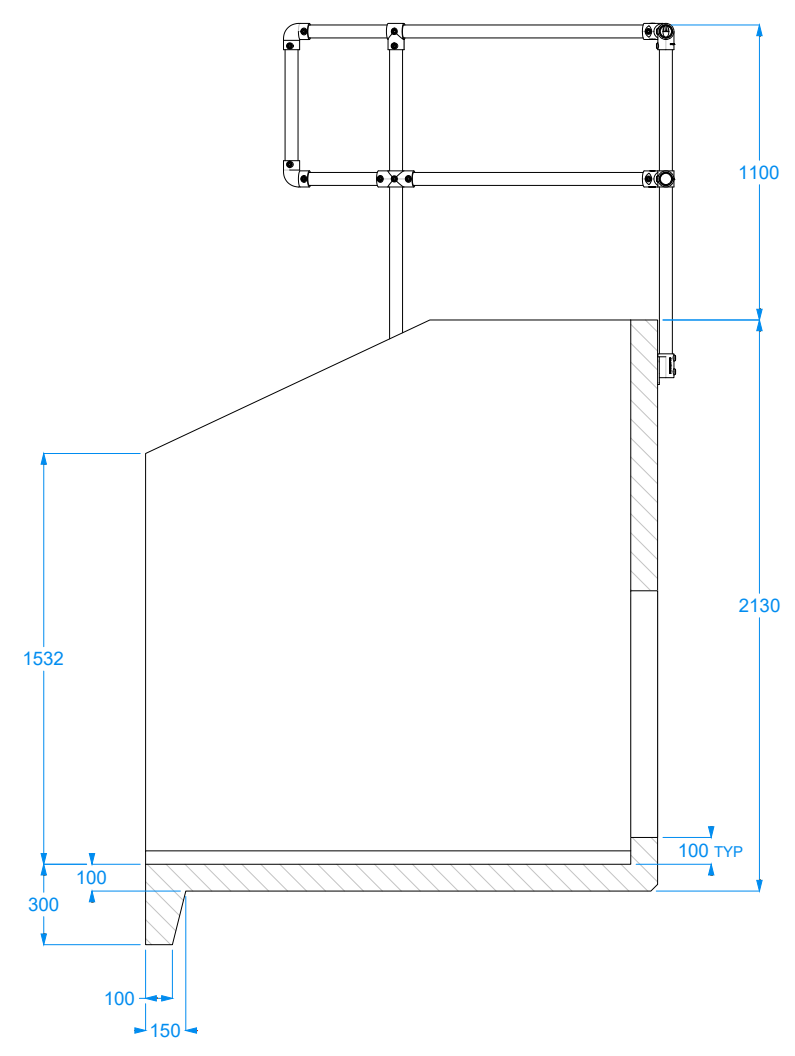
VIEW: TOP



VIEW: ISOMETRIC



VIEW: FRONT



VIEW: SECTION X-X

STANDARD FEATURES

OPENING SIZE GUIDE

Ø 1130 mm
← MAXIMUM OPENING →

TYPICAL MAXIMUM PIPE SIZES:
PLASTIC TWINWALL I/D: Ø 900 mm
CONCRETE I/D: Ø 900 mm

CUSTOM DESIGN
BESPOKE SOLUTIONS ...

- CONCRETE
- STEELWORK
- HANDRAILS
- FLOW CONTROL

INTEGRAL TOE

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

OPTIONAL FEATURES

TOE BEAM RANGE

- VARIOUS SIZE OPTIONS ARE AVAILABLE
- DOWEL PINS SUPPLIED TO SECURE TOE TO HEADWALL

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
- HINGED COUPLED
- SLOPED
- CRANKED

KEEP KLAMP HANDRAILS

FACTORY FITTED AS STANDARD *WHERE PRACTICAL / SAFE FOR TRANSPORT

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

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

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.
- All sharp edges and burrs are to be removed.
- Holes by punching are permitted with reaming.
- Galvanising process after fabrication to BS EN ISO1461.

HANDRAIL SPECIFICATION

- Keep 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.

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DRAWING TITLE:

**SERIES 1000 HEADWALL (2130 HIGH)
REFLEX WINGWALL
STANDARD & OPTIONAL FEATURES**

TOTAL WEIGHT (CASTINGS ONLY): **3330 kg**

CONCRETE MIX DESIGN:

CO² EMISSION REDUCTION ↓ -50%