

**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/m<sup>3</sup> +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/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 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
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>3</sup>.
- 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	33

\*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**

- 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 Fittings.
- 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**

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

### 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: K30)

### FLOW CONTROL DEVICES

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

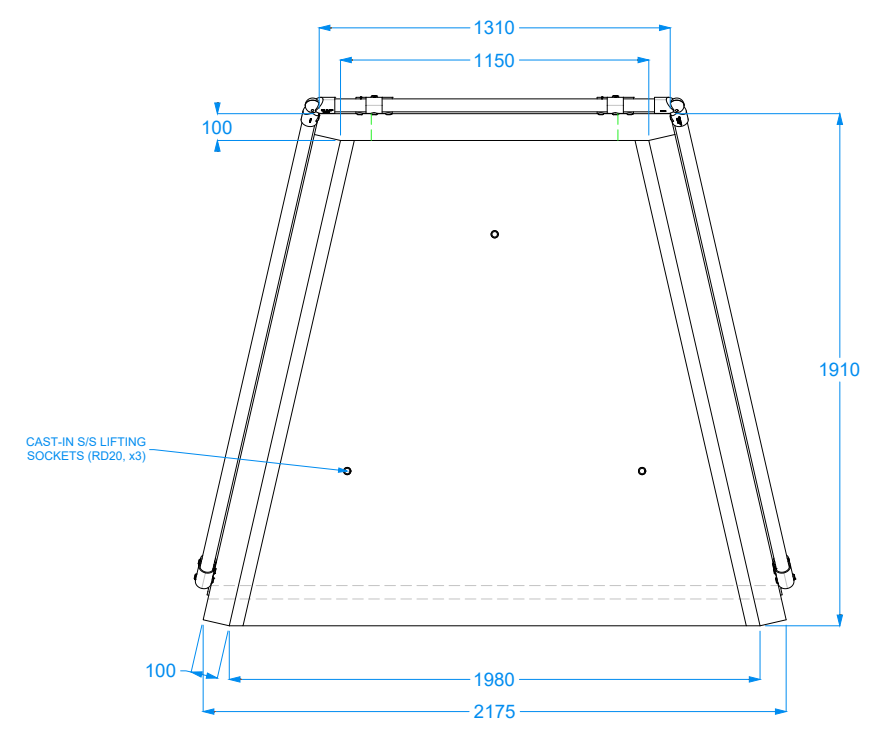
- S/S FIXINGS & RUBBER SEALS / SEALANTS AS STANDARD

- FLAP VALVES
- PENSTOCKS
- ORIFICE PLATES
- BAFFLE BLOCKS

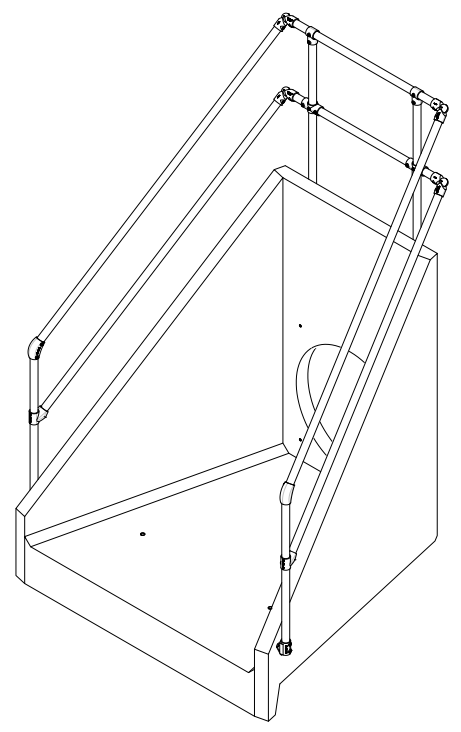
### ALUMINIUM STOPLOG SYSTEM

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

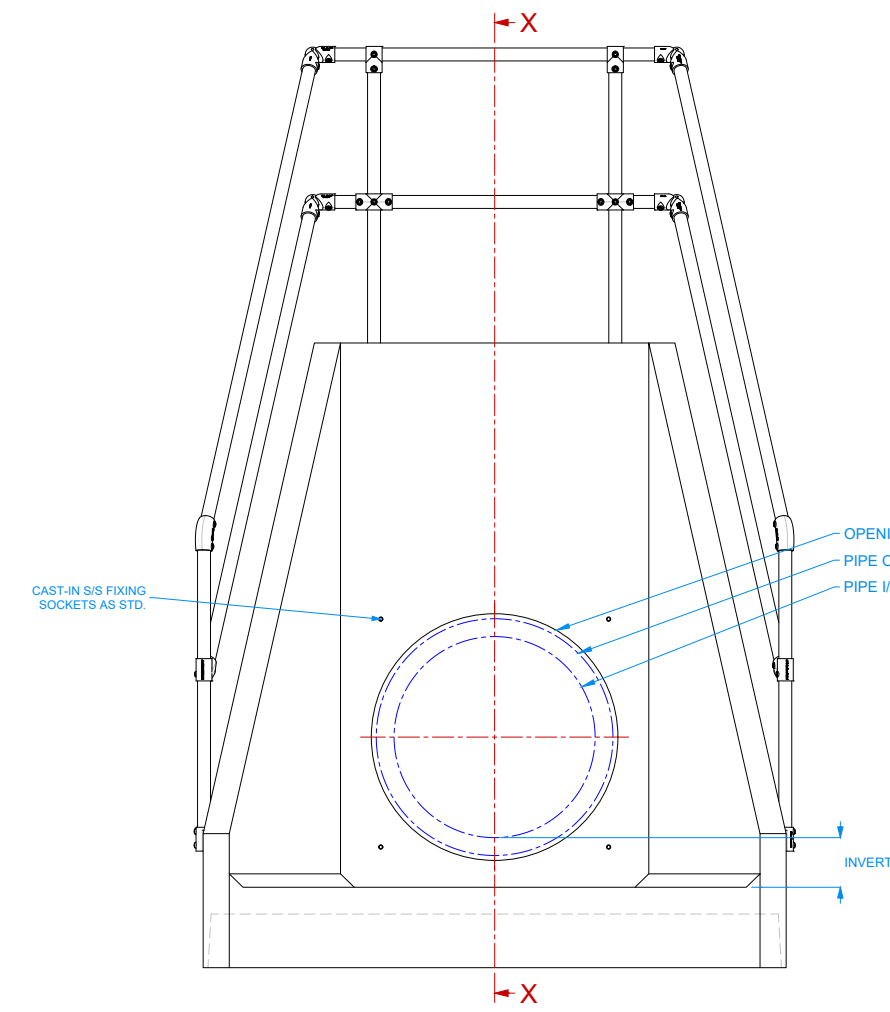
- VARIOUS BOARD HEIGHT / TYPES AVAILABLE
- LOCKING BRACKETS & T-KEY KITS SUPPLIED.
- S/S FIXINGS & RUBBER SEALS AS STANDARD



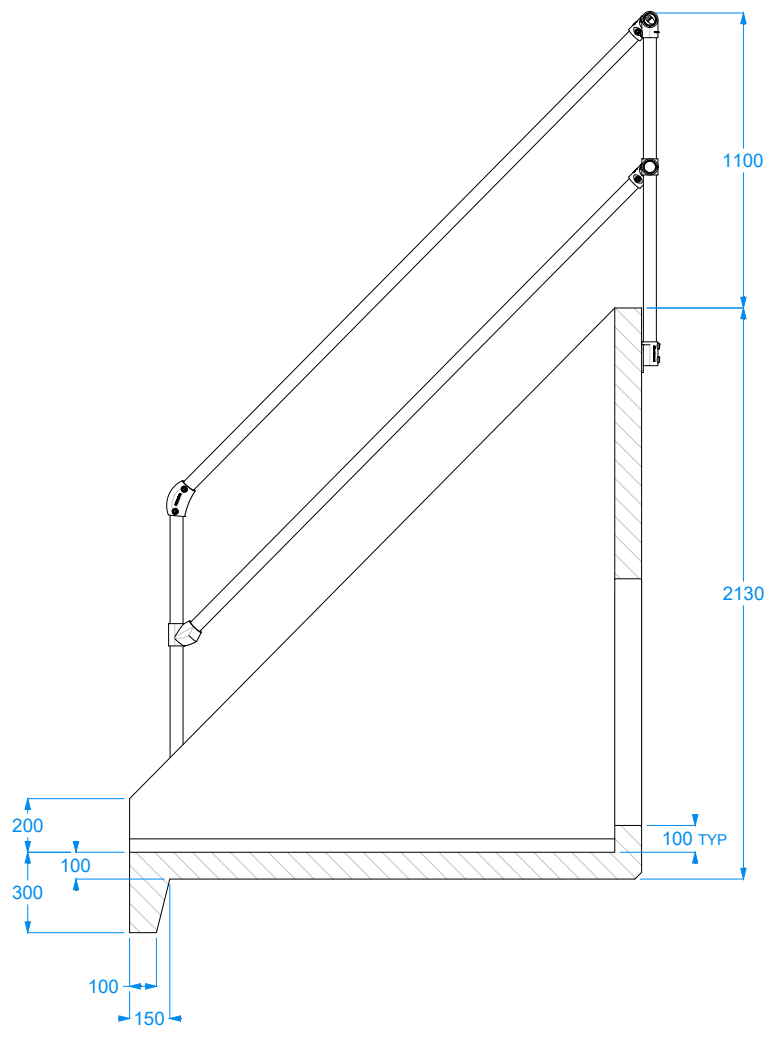
VIEW: TOP



VIEW: ISOMETRIC



VIEW: FRONT



VIEW: SECTION X-X

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

TOTAL WEIGHT (CASTINGS ONLY): **2575 kg**

CONCRETE MIX DESIGN:

**ECO 1**

CO<sup>2</sup> EMISSION REDUCTION **-50%**