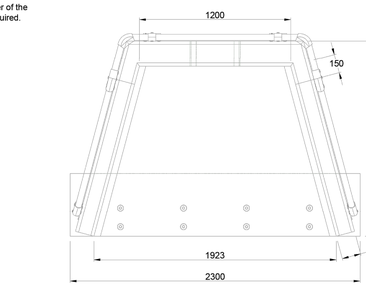
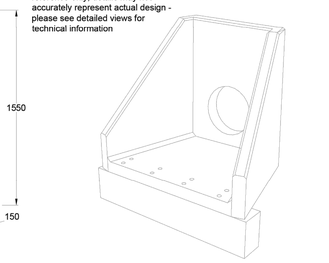
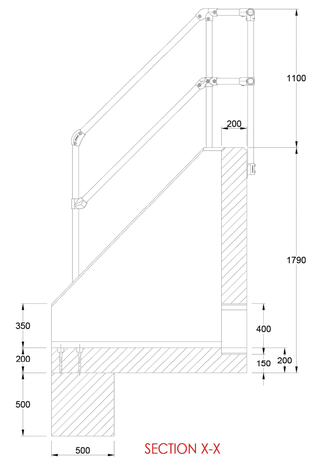
Opening in back wall cast to suit the outside diameter of the pipe at invert height required.



Note: Isometric drawing is for reference only, details may not accurately represent actual design - please see detailed views for technical information





DO NOT SCALE DRAWING

NOTES:

- All dimensions in mm
- All measurements ± 1mm

Specification Information
- Opening in back wall cast to suit outside diameter of the pipework.
- 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 a 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 08).

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 = 25N/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, dimensioning, bending & 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 number: 0086-CPR-650448 & BS EN 13369
B. Tolerances to BS EN 13369 clause 4.3.1.1
C. Finishing:

	Top	Sides	Rear	Rear of back wall
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 design to EC2
B. Althon have designed the 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: >120 years
*For products installed in aggressive environments, bitumen coating can be requested at additional cost

Min Cover	Cover Block Size (mm)	Min Cover Size (mm)	Max Cover Size (mm)
All Faces	55	50	65

Exposure Classification	Exposure Indicator by Carbonation	Corrosion Indicator 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 carried out IAW EN 1090-2 PARA 7.5.4 - 7.5.18
D. All fillet and butt welds to have a minimum throat thickness of 6mm & joints to be fully welded where possible.
E. Ensure vertical flats are 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 is carried out after fabrication to BS EN ISO 1461

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 at 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

REV NO	DATE	DESCRIPTION

Althon

ADDRESS: ALTHON LIMITED
HAMPSTEAD AVENUE SOUTH
NORWICH
NR6 6FW
TEL: 01603 489700
FAX: 01603 489701
EMAIL: sales@althon.co.uk
WEBSITE: www.althon.co.uk

PROPRIETARY & CONFIDENTIAL
The information contained in this drawing is the sole property of Althon Limited. Any reproduction in part or as a whole without the written permission of Althon Limited is strictly prohibited.

DRAWING TITLE / PROJECT:
Pond Out
SFA13C Headwall
500 x 500mm Toe
3 Sided Kee Klamp

CLIENT:

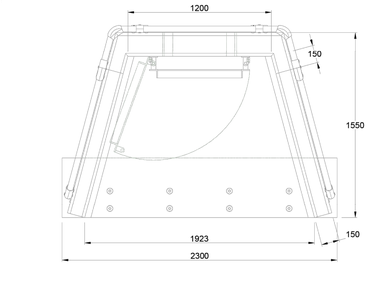
SCALE:	PAPER:	SHEET NO:	DATE:
NTS	A3	02 OF 02	15.10.2025

HEADWALL WEIGHT:	TOE WEIGHT:
3460kg	1360kg

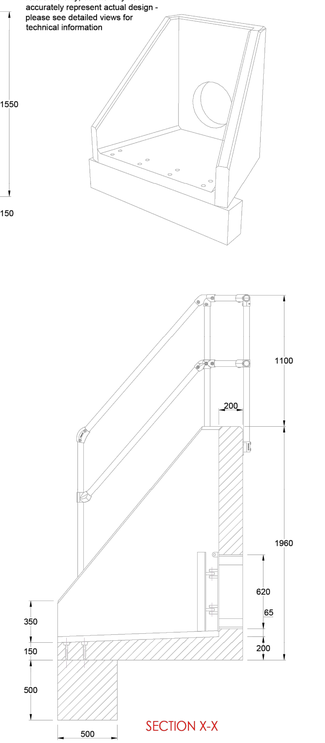
MISC WEIGHT:	GRATING WEIGHT:	DRAWN BY:
N/A	N/A	JW

DRAWING No: ALT-151025-204-02

Opening in back wall cast to suit the outside diameter of the pipe at invert height required.



Note: Isometric drawing is for reference only, details may not accurately represent actual design - please see detailed views for technical information



DO NOT SCALE DRAWING

NOTES:

- All dimensions in mm
- All measurements ± 1mm

Specification Information
- Opening in back wall cast to suit outside diameter of the pipework.
- 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 a 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 08).

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 = 25N/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, dimensioning, bending & 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 number: 0086-CPR-650448 & BS EN 13369
B. Tolerances to BS EN 13369 clause 4.3.1.1
C. Finishing:

	Top	Sides	Rear	Rear of back wall
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 design to EC2
B. Althon have designed the 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: >120 years
*For products installed in aggressive environments, bitumen coating can be requested at additional cost

Min Cover	Cover Block Size (mm)	Min Cover Size (mm)	Max Cover Size (mm)
All Faces	55	50	65

Exposure Classification	Exposure Indicator by Carbonation	Corrosion Indicator 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 carried out IAW EN 1090-2 PARA 7.5.4 - 7.5.18
D. All fillet and butt welds to have a minimum throat thickness of 6mm & joints to be fully welded where possible.
E. Ensure vertical flats are 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 is carried out after fabrication to BS EN ISO 1461

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 at 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

REV NO	DATE	DESCRIPTION

Althon

ADDRESS: ALTHON LIMITED
HAMPSTEAD AVENUE SOUTH
NORWICH
NR6 6FW
TEL: 01603 489700
FAX: 01603 489701
EMAIL: sales@althon.co.uk
WEBSITE: www.althon.co.uk

PROPRIETARY & CONFIDENTIAL
The information contained in this drawing is the sole property of Althon Limited. Any reproduction in part or as a whole without the written permission of Althon Limited is strictly prohibited.

DRAWING TITLE / PROJECT:
Pond In 1 & Pond In 2
SFA12D Headwall
500 x 500mm Toe
3 Sided Kee Klamp
SFA1 450 Outfall Safety Grille

CLIENT:

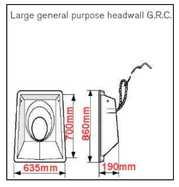
SCALE:	PAPER:	SHEET NO:	DATE:
NTS	A3	01 OF 02	15.10.2025

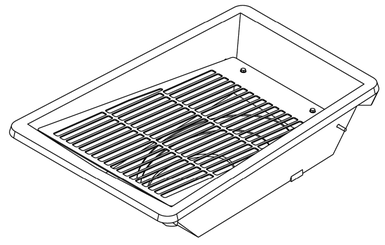
HEADWALL WEIGHT:	TOE WEIGHT:
3550kg	1360kg

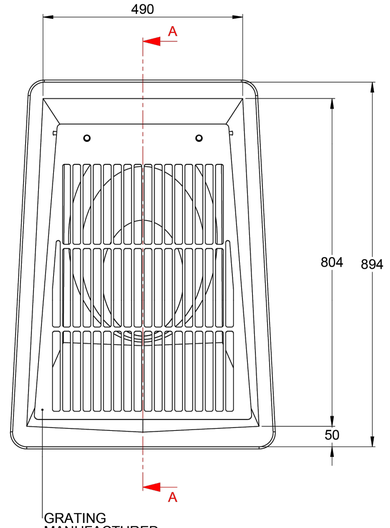
MISC WEIGHT:	GRATING WEIGHT:	DRAWN BY:
N/A	55kg	JW

DRAWING No: ALT-151025-204-01



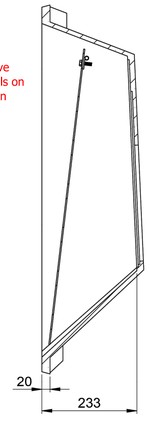






GRATING MANUFACTURED IN 3mm MILD STEEL - HOT DIP GALVANISED FINISH

It may be necessary to remove the grating from the headwalls on the inlets to ponds. Grating on the outlet headwall to be maintained.



SECTION A-A

DO NOT SCALE DRAWING

NOTES:
- All dimensions in mm (+/-) 5
- All measurements ± 1mm

Headwall Installation
Dig out sufficiently to allow headwall flanges to finish flush with the batter. Take outfall pipe (minimum length 1.5m rigid impervious pipe) and slide it through headwall so it protrudes approximately 125mm. Make a good connection with the land drain and seal by retaining approximately 150mm of soil into trench and consolidating. Unravel the string and draw the anchor back along the trench as the rest of the backfilling is completed.

Material
- Characteristic compressive strength of Glass Reinforced Concrete = 60N/mm2
- Characteristic flexural strength of Glass Reinforced Concrete = 9N/mm2
- Free water Cement ratio: <0.35
- Glass fibres: 42kg/m3
- Minimum Cement content: 900kg/m3
- Specification: AA2, DS2, DC2

ADDRESS: JKH LIMITED
HAMPSTEAD AVENUE
MILDENHALL
IP28 7AU
TEL: 01638 712795
FAX: 01638 662597
EMAIL: elk@jkhltd.co.uk
WEBSITE: www.jkhltd.co.uk

PROPRIETARY & CONFIDENTIAL
The information contained in this drawing is the sole property of JKH Concrete Units Limited. Any reproduction in part or as a whole without the written permission of JKH Concrete Units Limited is strictly prohibited.

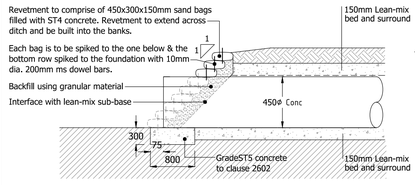
DRAWING TITLE / PROJECT:
GRC LARGE GENERAL PURPOSE HEADWALL + GRATING

CLIENT:	N/A		
SCALE:	1:8	DRAWING DATE:	02/07/2019
HEADWALL WEIGHT:	24kg	GRATING WEIGHT:	4kg
TOTAL WEIGHT:	28kg		
DRAWN BY:	DH	CHECKED BY:	JP
DRAWING No:	Large General Purpose & Grating - JKH		

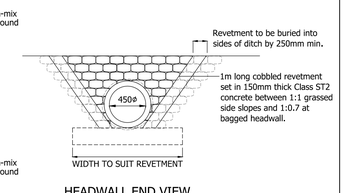
CE

DO NOT SCALE DRAWING

PROPOSED HEADWALL - TYPE A. NTS



SECTION THROUGH HEADWALL



HEADWALL END VIEW

FOR APPROVAL

NOTES:
All dimensions must be checked on site and not scaled from this drawing.

	Date	Revisions

© copyright

Design Team Stafford TF
STAFFORD I E
10 AXON, COMMERCE ROAD
PETERBOROUGH BUSINESS PARK
LYNCH WOOD
PETERBOROUGH, PE2 6LR
TEL: 01733 232388, FAX: 01733 232266, MOBILE: 07710 832745, E-MAIL: mail@Staffordie.co.uk

Client

FLO-GRO SYSTEMS Ltd.
St. James House
8 Overcliffe,
Gravesend,
KENT
DA11 0HJ
Tel: 01666 840 980; E: enquiries@flogrosystems.com
www.flogrosystems.com

Job Title

Proposed Commercial Development
Decoy Farm, Spalding Road
Crowland, Lincolnshire
PE6 0LU

Drawing Title
Construction Details
Sheet 3

Date	Scale	Drawn
OCT. 2025	NTS	IAC/TRS

Drg.No.	Rev.
9033 -303	-