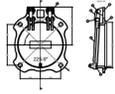


Do Not Scale

YW REF: H-?-??-???

**ALTHON 225MM DUCTILE IRON FLAP VALVE**

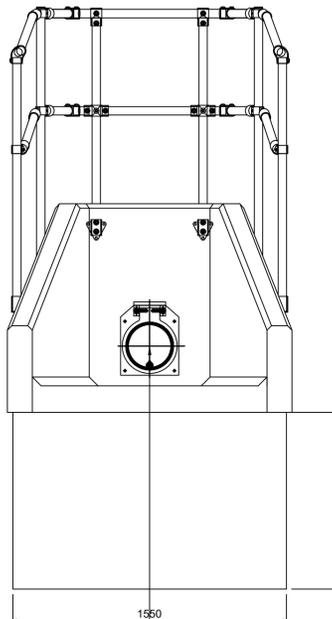
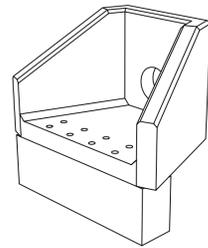
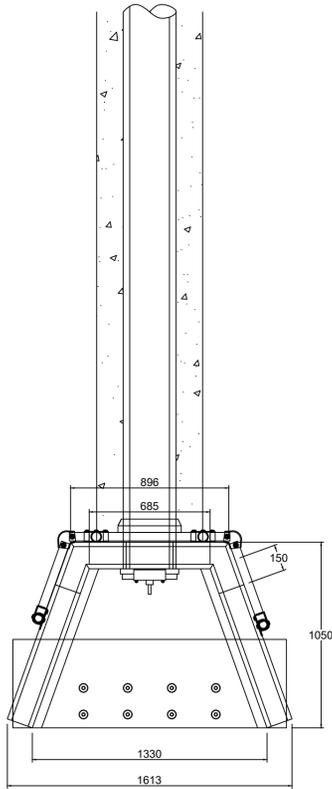


225MM RESILIENT FLAP VALVE				
ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL
1	1	225FRAMERESASME	225MM FRAME CASTING	DUCTILE IRON CASTING
2	1	225RESDOOR	225MM DOOR CASTING	DUCTILE IRON CASTING
3	2	150300BLINK	225MM LINK	DUCTILE IRON CASTING
4	4	225PIN	225MM HINGE PIN	STAINLESS STEEL - GRADE 316
5	8	10STAR	10MM STAR WASHER	STAINLESS STEEL - GRADE 316
6	1	225RESFACING	225MM RESILIENT FACE	RESILIENT EPOXY MATERIAL
7	1	270X12ORING	270X12 O RING	NEOPRENE FOAM

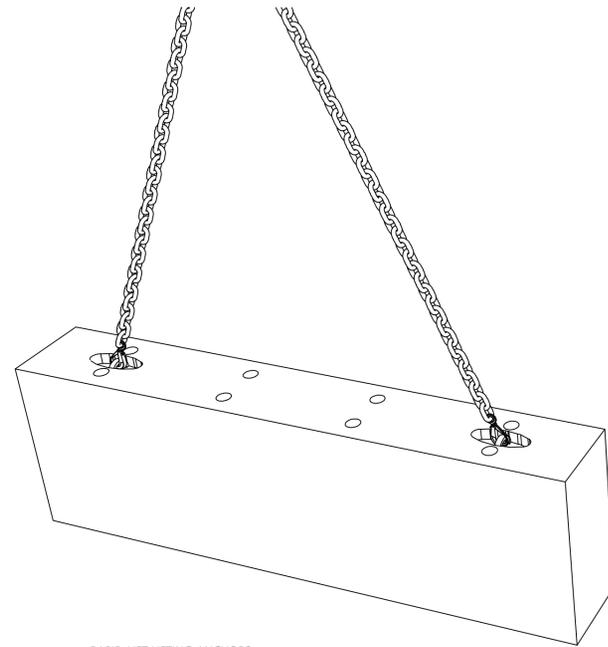
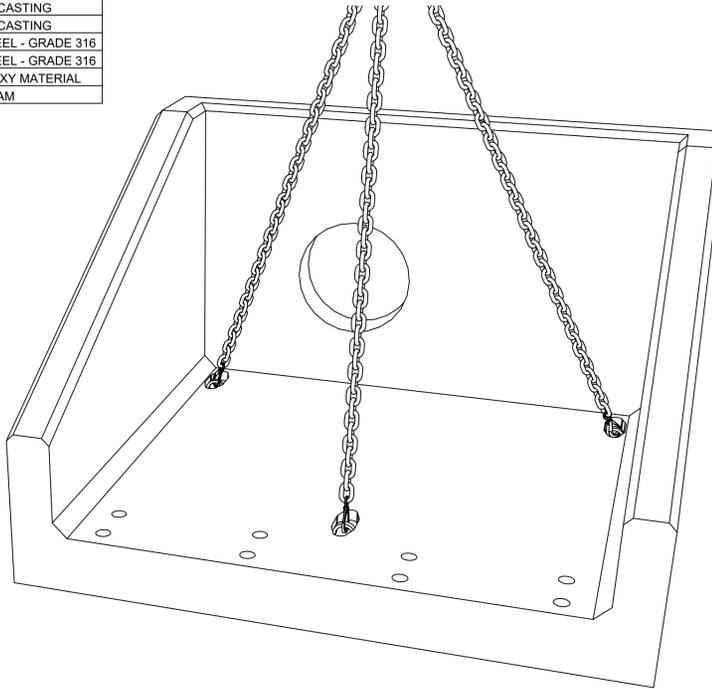
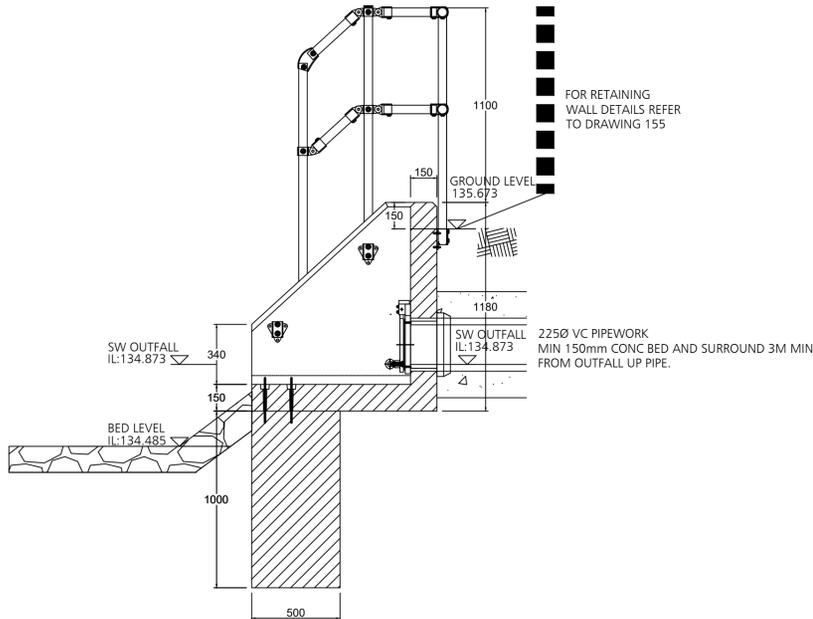
**ALTHON 225MM RESILIENT FLAP VALVE MOUNTING SPECIFICATION INFORMATION**

THE O RING ITEM 7 IS FOR MOUNTING THE FLAP VALVE ONTO A PIPE FLANGE OR HIGH QUALITY FLAT SURFACE AND IS SUPPLIED AS PART OF THE FIXING KIT WHICH NEEDS TO BE ORDERED SEPARATELY. FOR STANDARD WALL MOUNTING THE FLAP VALVE SHOULD BE GROUTED IN THE NORMAL WAY.

NOTE: ISOMETRIC DRAWING IS FOR REFERENCE ONLY, DETAILS MAY NOT ACCURATELY REPRESENT ACTUAL DESIGN - PLEASE SEE DETAILED VIEWS FOR TECHNICAL INFORMATION



**ALTHON 250 DUCTILE IRON FLAP VALVE INFORMATION**  
 OPENING: Ø250MM  
 MAX LOAD FROM BOTTOM INVERT LEVEL (B.I.L.): 1.3MWC LONG PERIOD (=50 YEARS)  
 5MWC SHORT PERIOD (=72HOURS)  
 NUMBER OF CHEMICAL ANCHORS M8: 4 PIECES



**RAPID-LIFT LIFTING ANCHORS**

ALL ALTHON SFA, RSFA, R, SP AND AH12C HEADWALLS AND TOES ARE FITTED WITH RAPID-LIFT LIFTING ANCHORS. THE ALTHON RAPID-LIFT SYSTEM ALLOWS THE HEADWALLS AND TOES TO BE OFFLOADED, TRANSPORTED AND LOCATED IN THEIR FINAL POSITION WITHOUT THE NEED FOR ANY SPECIALISED LIFTING EQUIPMENT. STANDARD LIFTING HOOKS AND CHAINS CAN BE USED WITH THE THREE LIFTING POINTS (TWO LIFTING POINTS ON TOES). THE MINIMUM CHAIN LEG LENGTH FOR ALL UNITS IS 1500MM. DRAWING IS OF A GENERIC HEADWALL FOR THE RAPID-LIFT SYSTEM AND LIFTING POINTS MAY VARY BETWEEN HEADWALLS.

- 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 200mm thick well compacted Class 6A\* selected well graded granular material.
- \*Manual of contract documents for Highway Works: Volume (MCHM1) specification for Highway Works, Series 600 (Nov/09).
- Set the headwall level or with a slight fall 1:50 from pipe to spill mouth.

- Lifting**
- Weight of concrete is based on 2.4 t/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 C40/50A Mix
  - Lifting strength based on 2 cubes = 20N/mm²
  - Characteristic 28 day cube strength = 50N/mm²
  - Concrete provided Design Chemical Class 4 (C4-4) to special Digest 1, Table F2.

- Reinforcement**
- Reinforcement to BS EN 13369
  - Scheduling, dimensioning, bending & cutting to BS8666
  - Code to be machine tied with steel wire

- Manufacture**
- Manufacture to BS EN 15208:2008 precast concrete products - Retaining wall elements. Factory Production Control certificate number: 0086-CPR-650448 & BS EN 13369
  - Tolerances to BS EN 13369 clause 4.3.1.1
  - Finishing

- Marking** Units shall be identifiably marked to show:
- Mould reference code
  - De-mould date
  - Job reference number & unique product number
  - Unit weight (kg)

- Design**
- Concrete design to EC2
  - Althon have designed the 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/m³
  - Angle of internal friction = 30 Deg.
  - Design life >100 years

Min. Cover	Max. Cover	Min. Cover	Max. Cover
to steel	to steel	to steel	to steel
25	25	25	25

- Fabrication Specification**
- Manufacture to BS EN 1090-2 C10 CLASS 1
  - Material grade is to be BS EN 10255 S275
  - Welding carried out to BS EN 1090-2 PARA 7.5.4 - 7.5.18
  - All fillet and butt welds to have a minimum throat thickness of 6mm & joints to be fully welded where possible.
  - Ensure vertical flats are fully welded both sides where possible.
  - All sharp edges and burrs are to be removed.
  - Remove all weld spatter.
  - Holes by punching are permitted with minimum
  - Galvanising is carried out after fabrication to BS EN ISO 1461

- Handrail Specification**
- Kee Klamp Galvanized Size 8 Fittings
  - Size 8 46.5mm OD 3.2mm Wall Thickness Galvanized Medium Duty Tube to BS EN 10255
  - 300N/m Design Load at stated in BS 6118; BS 5140; BS 5395 & 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 Standards, Ladders and Handrails
  - Other design loads available on request
  - GRP/FRP Handrails also available

**DESIGNERS HAZARD IDENTIFICATION**

IT IS ASSUMED THAT ALL WORKS WILL BE UNDERTAKEN BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT. IN ADDITION TO THE HAZARDS TYPICALLY ASSOCIATED WITH THE TYPES OF CONSTRUCTION DETAILED ON THIS DRAWING, ANY KNOWN ABNORMAL HAZARDS SPECIFIC TO THIS DRAWING HAVE BEEN IDENTIFIED.



**Notes**

- YORKSHIRE WATER GENERAL NOTES**
- ALL ADAPTABLE SEWER WORKS AND MATERIAL TO BE IN ACCORDANCE WITH SEWERAGE SECTOR GUIDANCE DESIGN AND CONSTRUCTION GUIDANCE (CODE FOR ADOPTION). THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATERS STANDARDS/REQUIREMENTS/LOCAL PRACTICE FOR THE ADOPTION OF SMALL SUBMERSIBLE FOUL AND SURFACE WATER PUMPING STATIONS AND KITEMARKED.
  - MANHOLE COVERS SHALL HAVE A CLEAR OPENING OF 600MM AND SHALL BE CLASS D400 TO BS EN 124 WITH 150MM DEEP FRAMES IN HIGHWAYS.
  - FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF YORKSHIRE WATER BEFORE ANY SEWER WORKS ARE CARRIED OUT.
  - YORKSHIRE WATER IS NOT OBLIGED TO ACCEPT FILTER DRAIN/LAND DRAINAGE RUN-OFF INTO THE PUBLIC SEWER NETWORK OR ADAPTABLE DRAINAGE SYSTEM (DIRECTLY OR INDIRECTLY). AN ALTERNATIVE METHOD OF DISPOSAL OF THE LAND DRAINAGE RUN-OFF WILL THEREFORE BE REQUIRED AND YOU WILL HAVE TO LIAISE WITH THE LOCAL AUTHORITY, LAND DRAINAGE SECTION WITH REGARD TO THE DISPOSAL OF THE FILTER DRAIN/LAND DRAINAGE RUN-OFF.
  - THE ADAPTABLE SEWERS SHOULD BE A MINIMUM OF 1M AND MANHOLES 0.5M FROM KERB FACES AND SERVICE MARGINS.
  - SEWERS MUST HAVE 5 METRES CLEARANCE FROM TREES AND HEDGES OR THE WIDTH OF THE CANOPY AT MATURE HEIGHT.
  - SEWERS TO BE LAID IN CLASS "S" BEDDING (150MM GRANULAR BED AND SURROUND), WHERE DEPTH OF COVER TO TOP OF THE SEWER IS LESS THAN 1.2M IN HIGHWAYS AND VERGES OR LESS THAN 900MM IN NONE VEHICULAR ACCESS AREAS THEN A CONCRETE SLAB SHOULD BE PROVIDED ABOVE GRANULAR BED AND SURROUND.
  - BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4-08-02 (TABLE A2).
  - YORKSHIRE WATER POLICY IS THAT TYPE "C" BRICK MANHOLES AND 1050MM DIA. MANHOLE RINGS ARE NOT PREFERRED. INSTEAD IT IS PREFERRED THAT YOU USE A TYPE "B" MANHOLE WITH 1200MM DIA OR 1500MM DIA RINGS, WITH THE OPENING SITED OVER THE CHANNEL WHERE DEPTH OF COVER TO PIPE SOFFIT IS 1 - 1.5M.
  - ADAPTABLE PLASTIC SEWER PIPES TO BE BS1 KITEMARKED (CERTIFIED TO WS 4-35-01 AND BS EN 13476). ADAPTABLE PLASTIC SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTABLE AND YORKSHIRE WATER WOULD PREFER CLAYWARE CHANNEL IN MANHOLES.
  - THE MINIMUM CRUSHING STRENGTH FOR CLAY PIPES SHOULD BE AS FOLLOWS : 100MM DIA. 40KN/M, 150MM DIA. 40KN/M, 225MM DIA. 45KN/M AND 300MM DIA. 72KN/M. THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE - (CLASS 120 TO EN 1916/BS5911+1 2002). PLASTIC PIPES SHOULD CONFORM TO WS 4-35-01 AND BS EN 13476.
  - WHERE A B125 COVER AND FRAME HAS BEEN APPROVED, THIS MUST NOT BE COATED IN PLASTIC AND MUST HAVE LIFTING EYES SUITABLY SIZED TO ACCOMMODATE STANDARD LIFTING KEYS. SCREW DOWN COVERS ARE NOT ACCEPTABLE.
  - THERE MUST BE ENOUGH CLEARANCE AT CROSSOVERS TO ACCOMMODATE BEDDING TO BOTH PIPES, APPROX. 300MM - IF CROSSOVER NEAR THE ROCKER THEN THE CLEARANCE NEEDED MAY NEED TO BE INCREASED.

27.01.23	PRELIMINARY ISSUE			
Date	Revision	By	Chkd	Ref

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Project  
**LOVELL HOMES**  
 SAVILLE ROAD  
 SKELMANTHORPE  
 Title  
**S104 - SEWER OUTFALL**  
 HEADWALL DETAIL

Scale	1:20	Drawn	MDJ	Checked	PD
Date	JAN 23	Status	PRELIMINARY		
Drg. No.	21374		133	Rev.	P1