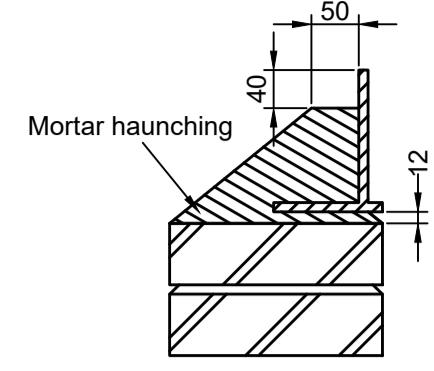


YW REFERENCE:  
**S104-2024-042**

MANHOLE COVERS TO BE HEAVY DUTY TWIN 600mm x 600mm OR TWIN 610mm x 675mm DOUBLE TRIANGULAR COVERS, WITH A CLEAR ACCESS OPENING OF 1220mm x 675mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAY AND FITTED WITH A FALL ARREST GRILLE.

1:3 CEMENT MORTAR BED & HAUNCH TO COVER & FRAME SAT ON CLASS 'B' ENG. BRICKWORK (MIN. 2 COURSES-MAX. 4 COURSES)

GUIDE EYE FOR OPERATING ROD TO BE ATTACHED TO COVER SLAB



**DETAIL A**

NOTE:  
ALL CUSTOM BUILT IRONWORK TO BE HOT-DIPPED GALVANISED PRIOR TO FINAL FIXING

FLOW CONTROL MH  
HYDRO-BRAKE OPTIMUM  
(REF:SHE-0075-3500-2100-3500)  
HEAD=2.1m  
FLOW=3.5l/s

MANHOLE COVERS TO BE HEAVY DUTY TWIN 600mm x 600mm OR TWIN 610mm x 675mm DOUBLE TRIANGULAR COVERS, WITH A CLEAR ACCESS OPENING OF 1220mm x 675mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAY AND FITTED WITH A FALL ARREST GRILLE.

LOCATION OF TEE-KEY ON HOOKS LOCATED ON INSIDE OF COVER

GUIDE EYE FOR OPERATING ROD TO BE ATTACHED TO COVER SLAB

HEAVY DUTY REINFORCED PRECAST SRC CONC. COVER SLAB TO BS 5911 BEDDED ON MORTAR, PROPRIETARY BITUMEN, OR RESIN MASTIC SEALANT. SLAB MUST BE KITEMARKED

OPERATING ROD TO BE POSITIONED SO SURFACE BOX CANNOT BE SHUT WHILE DISC VALVE IN OPEN POSITION.

BOLTED SEGMENTAL OR PRECAST REINFORCED CONCRETE MANHOLE RINGS 2.7m INTERNAL DIAMETER BEDDED ON MORTAR, PROPRIETARY BITUMEN, OR RESIN MASTIC SEALANT. RING TO BE LOCALLY CUT TO ALLOW STORAGE PIPE 50mm CLEARANCE FROM RING.

150mm THICK GEN 3 CONCRETE SURROUND

MASS CONCRETE BASE/WALL CONSTRUCTION TO 100mm ABOVE SOFFIT TO PIPE, WALLS 450mm THICKNESS WITH A393 MESH TO EACH FACE, COVER 50mm MIN

T12 STARTER BARS 600mm AT 200c/c TO BOTH FACES OF THE WALL CAST INTO BASE SLAB TO LIE INTO WALL REINFORCING.

1500" STAINLESS STEEL PENSTOCK BY ALTHON. TO BE FIXED TO CAST INSITU MOUNTING BLOCK OPERATED FROM ABOVE BY WAY OF OPERATING HANDLE. OPERATED AND POSITIONED IN MANHOLE TO ALLOW OPERATION OF DISC VALVE.

INVERT OF DISC VALVE TO BE SET LEVEL WITH INVERT OF FLOW CONTROL UNIT

HEAVY DUTY REINFORCED PRECAST SRC CONC. COVER SLAB TO BS 5911 BEDDED ON MORTAR, PROPRIETARY BITUMEN, OR RESIN MASTIC SEALANT. SLAB MUST BE KITEMARKED

150mm THICK GEN 3 CONCRETE SURROUND

MASS CONCRETE BASE/WALL CONSTRUCTION TO 100mm ABOVE SOFFIT TO PIPE, WALLS 450mm THICKNESS WITH A393 MESH TO EACH FACE, COVER 50mm MIN

THE FIRST JOINT TO THE STORAGE MANHOLES SHOULD BE AS CLOSE AS POSSIBLE TO THE EXTERNAL FACE OF THE MANHOLE

**SECTION A-A THROUGH MH S15**  
(1:20)

BENCHING FORMED WITH GEN 3 SRC CONC. WITH A HIGH STRENGTH TOPPING MIN. 40mm THICK WITH A SMOOTH AND NEAT FINISH

300mm THICK CAST IN-SITU REINFORCED CONCRETE BASE SLAB FORMED IN SULPHATE RESISTANT RC40 CONCRETE WITH TWO LAYERS OF A393 MESH IN BOTH TOP AND BOTTOM FACES. MIN COVER 50mm. ON 50mm CONCRETE BLINDING.

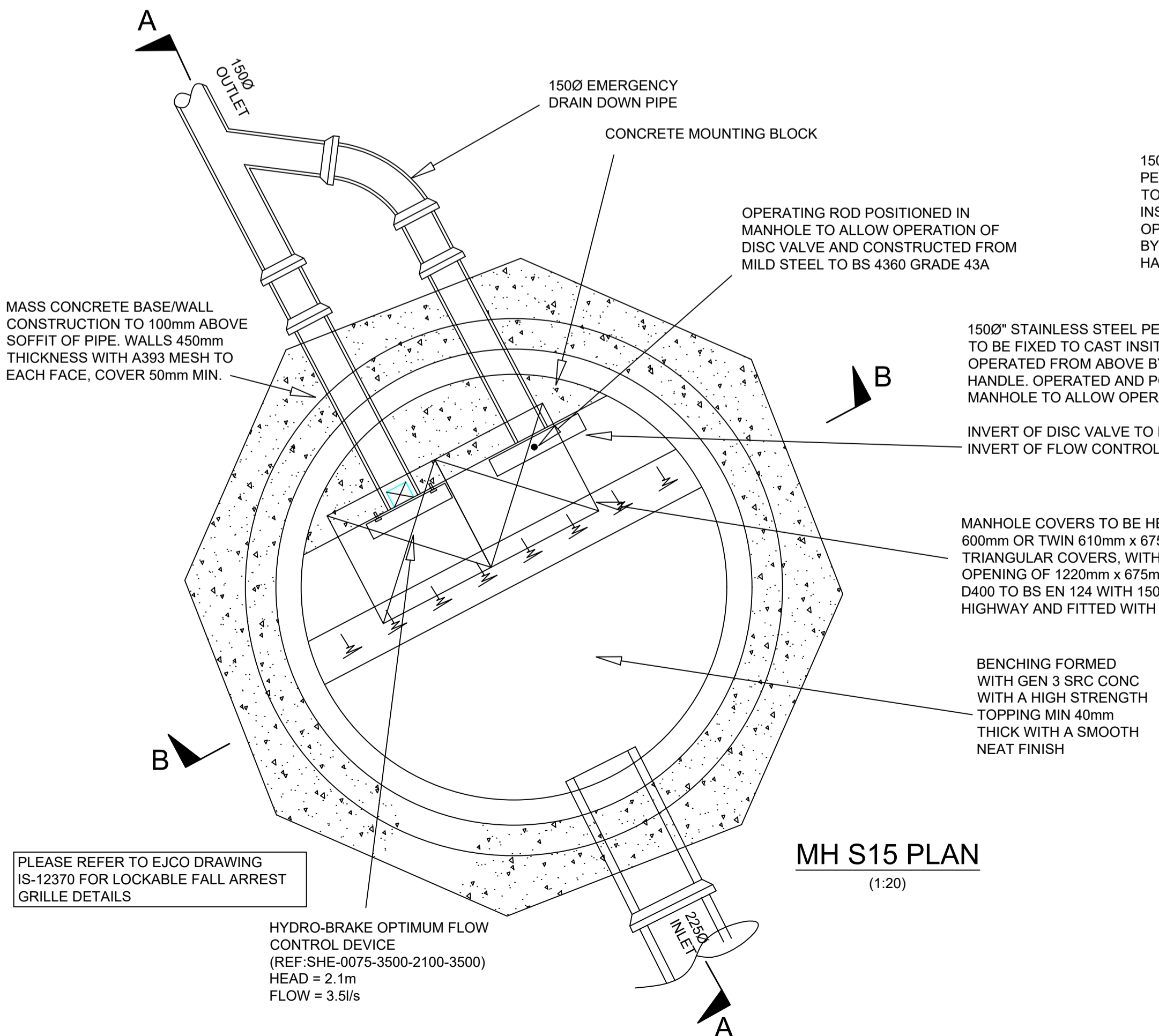
1500" STAINLESS STEEL PENSTOCK BY ALTHON. TO BE FIXED TO CAST INSITU MOUNTING BLOCK OPERATED FROM ABOVE BY WAY OF OPERATING HANDLE. OPERATED AND POSITIONED IN MANHOLE TO ALLOW OPERATION OF DISC VALVE.

MASS CONCRETE BASE/WALL CONSTRUCTION TO 100mm ABOVE SOFFIT OF PIPE, WALLS 450mm THICKNESS WITH A393 MESH TO EACH FACE, COVER 50mm MIN.

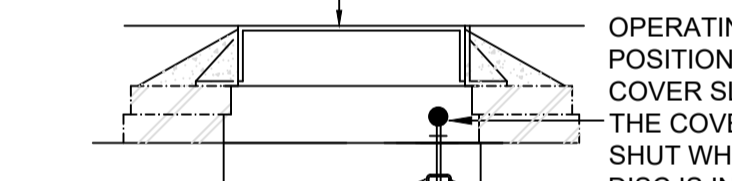
PLEASE REFER TO EJCO DRAWING IS-12370 FOR LOCKABLE FALL ARREST GRILLE DETAILS

HYDRO-BRAKE OPTIMUM FLOW CONTROL DEVICE (REF:SHE-0075-3500-2100-3500)  
HEAD = 2.1m  
FLOW = 3.5l/s

**MH S15 PLAN**  
(1:20)



COVER & FRAME TO BE IN ACCORDANCE WITH BSEN124 WITH MINIMUM 1220x675mm CLEAR OPENING. 1:3 CEMENT MORTAR BED & HAUNCH TO COVER & FRAME SAT ON CLASS 'B' ENG. BRICKWORK (MIN 2 COURSES-MAX 4 COURSES).



OPERATING ROD TO BE POSITIONED INSIDE THE COVER SLAB SO THAT THE COVER CANNOT BE SHUT WHILE PENSTOCK DISC IS IN OPEN POSITION

1500" STAINLESS STEEL PENSTOCK BY ALTHON. TO BE FIXED TO CAST INSITU MOUNTING BLOCK OPERATED FROM ABOVE BY WAY OF OPERATING HANDLE

1500" STAINLESS STEEL PENSTOCK BY ALTHON. TO BE FIXED TO CAST INSITU MOUNTING BLOCK OPERATED FROM ABOVE BY WAY OF OPERATING HANDLE. OPERATED AND POSITIONED IN MANHOLE TO ALLOW OPERATION OF DISC VALVE.

**ELEVATION ON PENSTOCK**

MANHOLE COVERS TO BE HEAVY DUTY TWIN 600mm x 600mm OR TWIN 610mm x 675mm DOUBLE TRIANGULAR COVERS, WITH A CLEAR ACCESS OPENING OF 1220mm x 675mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAY AND FITTED WITH A FALL ARREST GRILLE.

BENCHING FORMED WITH GEN 3 SRC CONC WITH A HIGH STRENGTH TOPPING MIN 40mm THICK WITH A SMOOTH NEAT FINISH

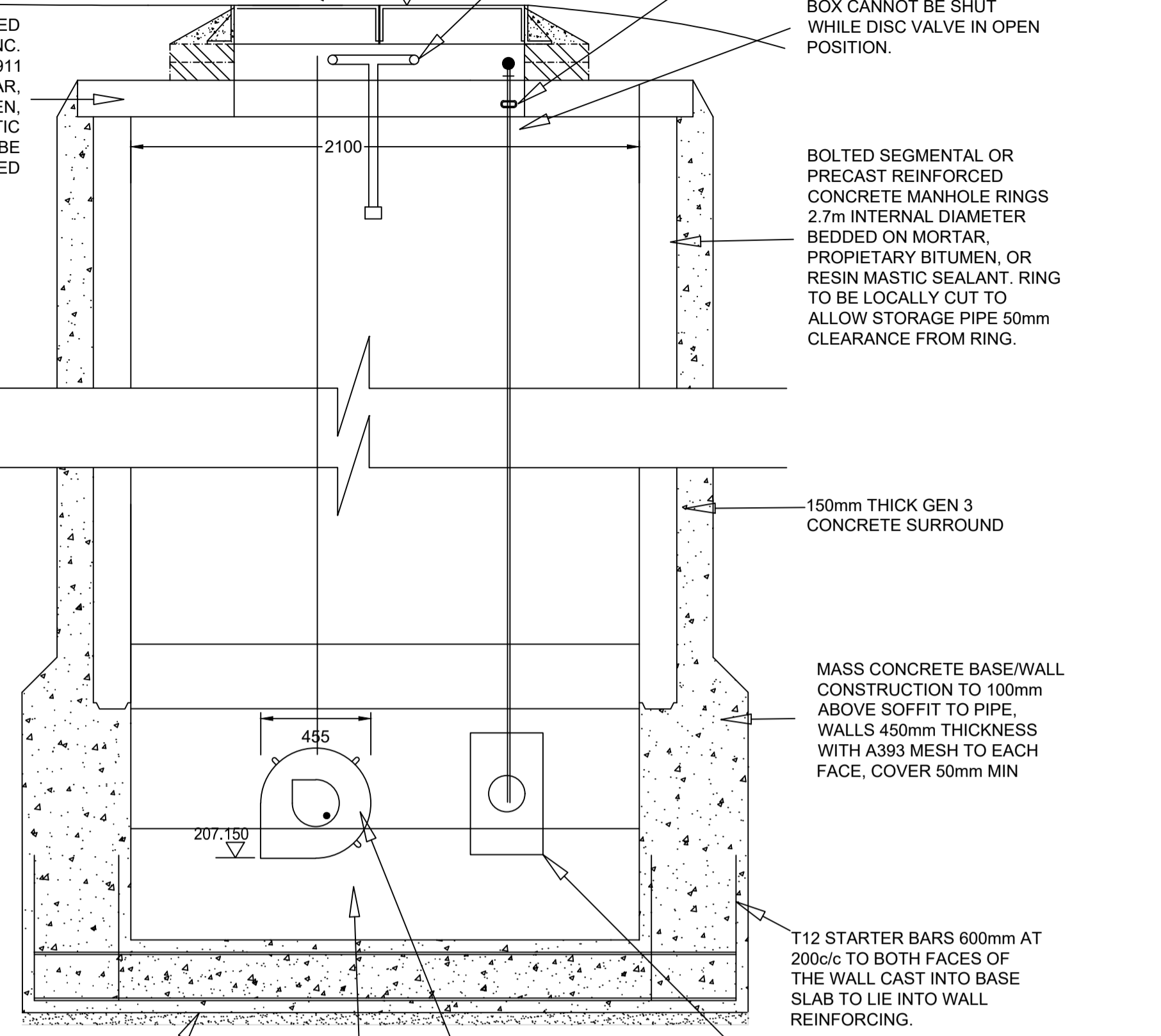
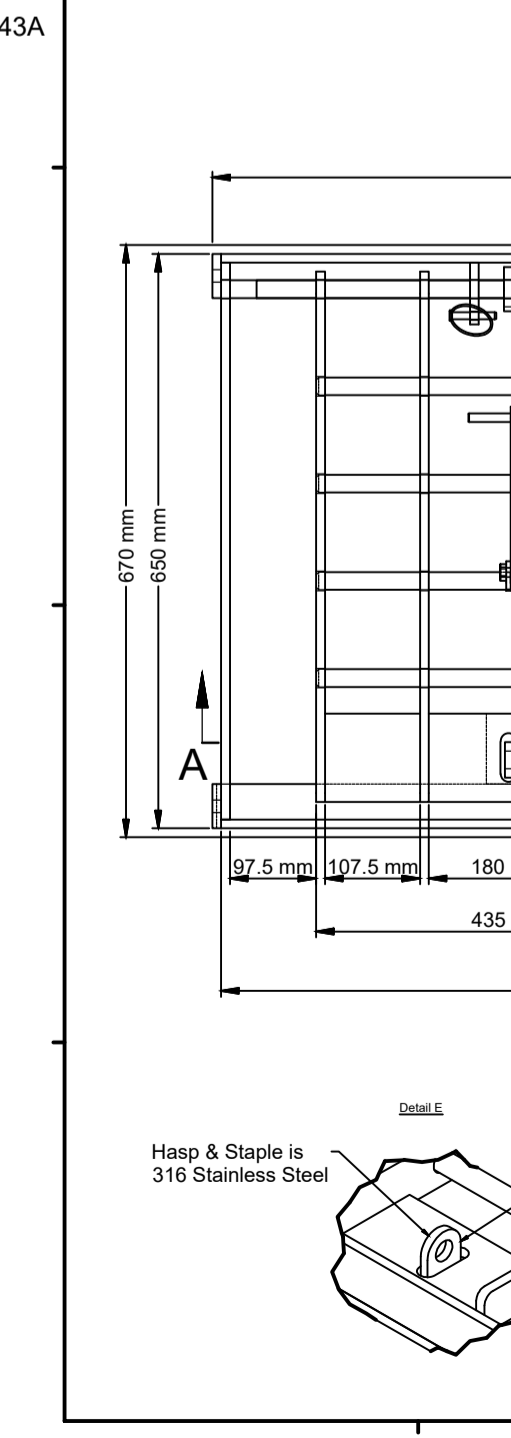
INVERT OF DISC VALVE TO BE SET LEVEL WITH INVERT OF FLOW CONTROL UNIT

**SECTION B-B THROUGH MH S15**  
(1:20)

300mm THICK CAST IN-SITU REINFORCED CONCRETE BASE SLAB FORMED IN SULPHATE RESISTANT RC40 CONCRETE WITH TWO LAYERS OF A393 MESH IN BOTH TOP AND BOTTOM FACES. MIN COVER 50mm. ON 50mm CONCRETE BLINDING.

BENCHING FORMED WITH GEN 3 SRC CONC. WITH A HIGH STRENGTH TOPPING MIN. 40mm THICK WITH A SMOOTH AND NEAT FINISH

**Hinged Fall Arrest Grille**



HYDRO-BRAKE OPTIMUM FLOW CONTROL DEVICE (REF:SHE-0075-3500-2100-3500)  
HEAD = 2.1m  
FLOW = 3.5l/s

1500" STAINLESS STEEL PENSTOCK BY ALTHON. TO BE FIXED TO CAST INSITU MOUNTING BLOCK OPERATED FROM ABOVE BY WAY OF OPERATING HANDLE. OPERATED AND POSITIONED IN MANHOLE TO ALLOW OPERATION OF DISC VALVE.

INVERT OF DISC VALVE TO BE SET LEVEL WITH INVERT OF FLOW CONTROL UNIT

MASS CONCRETE BASE/WALL CONSTRUCTION TO 100mm ABOVE SOFFIT TO PIPE, WALLS 450mm THICKNESS WITH A393 MESH TO EACH FACE, COVER 50mm MIN

150mm THICK GEN 3 CONCRETE SURROUND

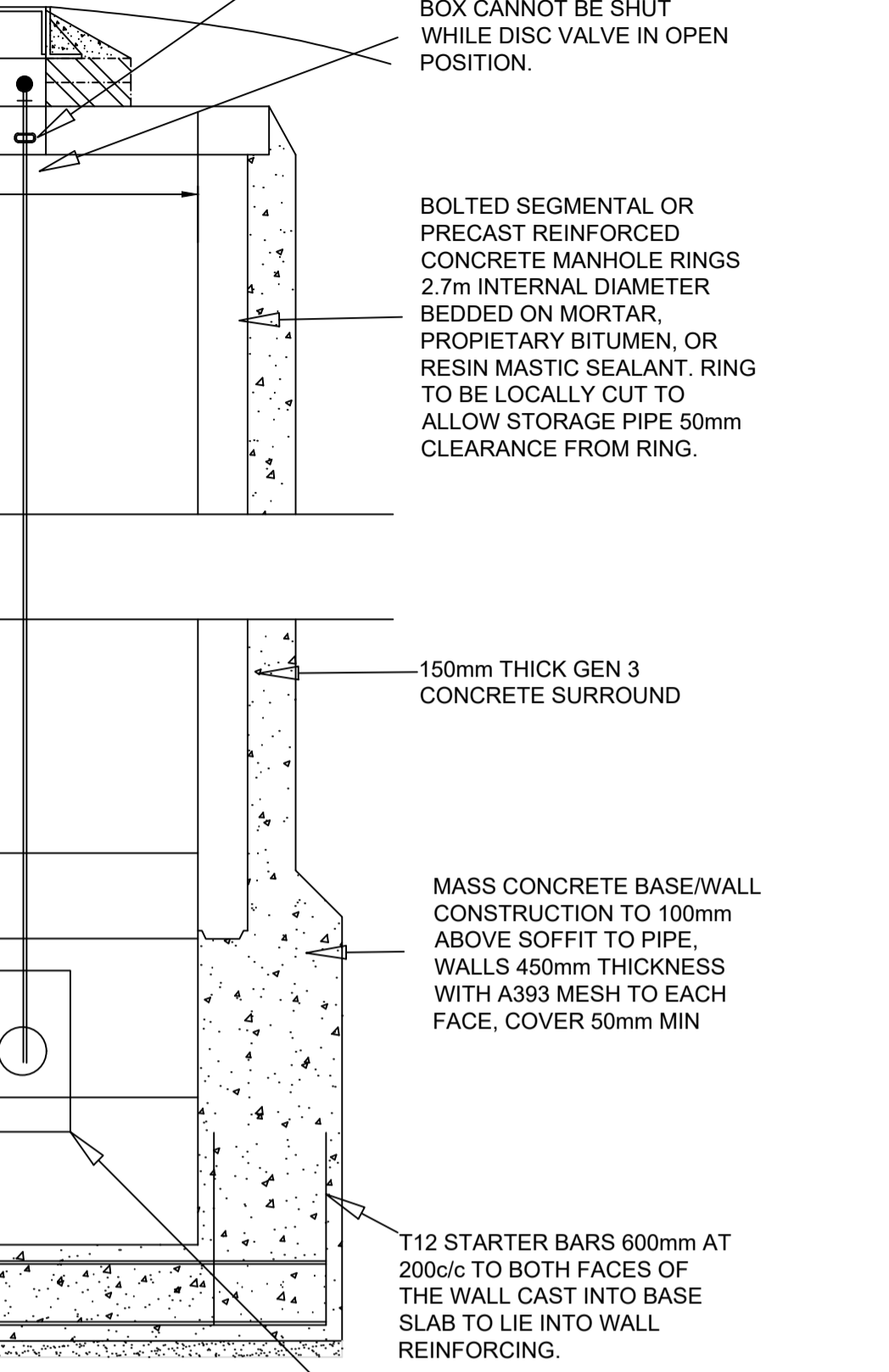
OPERATING ROD TO BE POSITIONED SO SURFACE BOX CANNOT BE SHUT WHILE DISC VALVE IN OPEN POSITION.

HEAVY DUTY REINFORCED PRECAST SRC CONC. COVER SLAB TO BS 5911 BEDDED ON MORTAR, PROPRIETARY BITUMEN, OR RESIN MASTIC SEALANT. SLAB MUST BE KITEMARKED

LOCATION OF TEE-KEY ON HOOKS LOCATED ON INSIDE OF COVER

GUIDE EYE FOR OPERATING ROD TO BE ATTACHED TO COVER SLAB

OPERATING ROD TO BE POSITIONED SO SURFACE BOX CANNOT BE SHUT WHILE DISC VALVE IN OPEN POSITION.



HYDRO-BRAKE OPTIMUM FLOW CONTROL DEVICE (REF:SHE-0075-3500-2100-3500)  
HEAD = 2.1m  
FLOW = 3.5l/s

1500" STAINLESS STEEL PENSTOCK BY ALTHON. TO BE FIXED TO CAST INSITU MOUNTING BLOCK OPERATED FROM ABOVE BY WAY OF OPERATING HANDLE. OPERATED AND POSITIONED IN MANHOLE TO ALLOW OPERATION OF DISC VALVE.

INVERT OF DISC VALVE TO BE SET LEVEL WITH INVERT OF FLOW CONTROL UNIT

MASS CONCRETE BASE/WALL CONSTRUCTION TO 100mm ABOVE SOFFIT TO PIPE, WALLS 450mm THICKNESS WITH A393 MESH TO EACH FACE, COVER 50mm MIN

150mm THICK GEN 3 CONCRETE SURROUND

OPERATING ROD TO BE POSITIONED SO SURFACE BOX CANNOT BE SHUT WHILE DISC VALVE IN OPEN POSITION.

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LOCATION OF TEE-KEY ON HOOKS LOCATED ON INSIDE OF COVER

GUIDE EYE FOR OPERATING ROD TO BE ATTACHED TO COVER SLAB

OPERATING ROD TO BE POSITIONED SO SURFACE BOX CANNOT BE SHUT WHILE DISC VALVE IN OPEN POSITION.

- NOTES**
- THIS DRAWING IS PRODUCED FOR USE IN THIS PROJECT ONLY AND MAY NOT BE USED FOR ANY OTHER PURPOSE. THE CONSULTING ENGINEERS ACCEPT NO LIABILITY FOR THE USE OF THIS DRAWING OTHER THAN THE PURPOSE FOR WHICH IT WAS INTENDED IN CONNECTION WITH THIS PROJECT AS RECORDED ON THE TITLE BLOCK FIELDS 'PURPOSE FOR ISSUE' AND 'FILE STATUS CODE'.
  - THIS DRAWING MAY NOT BE REPRODUCED IN ANY FORM WITHOUT PRIOR WRITTEN AGREEMENT FROM ADVANT ENGINEERS.
  - DO NOT SCALE FROM THE DRAWING, USE WRITTEN DIMENSIONS ONLY.
  - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
  - DISCREPANCIES MUST BE REPORTED BACK TO THE ENGINEER PRIOR TO CONSTRUCTION.
  - THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ADVANT ENGINEERS DRAWINGS AND SPECIFICATIONS.
- YORKSHIRE WATER NOTES**
- ALL ADAPTABLE SEWER WORKS AND MATERIAL TO BE IN ACCORDANCE WITH SEWERAGE SECTOR GUIDANCE DESIGN AND CONSTRUCTION GUIDANCE [CODE FOR ADPTION], THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATERS STANDARDS / REQUIREMENTS / LOCAL PRACTISE 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 FILER 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 1.0m AND MANHOLES 0.5m FROM KERB FACES AND SERVICES MARGINS.
  - SEWERS MUST HAVE A 5.0m 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 THE DEPTH OF COVER TO TOP OF THE SEWER IS LESS THAN 1.2m IN HIGHWAYS AND VERGES (OR LESS THAN 900mm IN NON-VEHICULAR ACCESS AREAS) THEN A CONCRETE SLAB SHOULD BE PROVIDED ABOVE GRANULAR BED AND SURROUND.
  - THERE MUST BE ENOUGH CLEARANCE AT CROSSOVERS TO ACCOMMODATE BEDDING TO BOTH PIPES, APPROX 300mm - IF CROSSOVER IS ER THE ROCKER THEN CLEARANCE MAY NEED TO BE INCREASED.
  - BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF ATER INDUSTRY SPECIFICATION 4-08-02 (TABLE A2).
  - ADAPTABLE PLASTIC SEWER PIPES TO BE BS1 KITEMARKED (CERTIFIED TO WIS 4-35-01 AND BS EN 13476). ADAPTABLE PLASTIC SEWER PIPES TO BE LAID IN MAXIMUM 3.0m 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 CHANNELS 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  
300mm DIA 72kN/m
  - THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE IN ACCORDANCE WITH - (CLASS 120 TO EN 1916/BS5911-12002). PLASTIC PIPES SHOULD CONFORM TO WIS 4-35-01 AND BS EN 13476.
  - YORKSHIRE WATER POLICY IS THAT BRICK MANHOLES AND 1050mm DIA MANHOLE RINGS ARE NOT PREFERRED. INSTEAD IT IS PREFERRED THAT YOU USE A TYPE 'B' MANHOLE WITH 1200mm DIA, 1350mm DIA OR 1500mm DIA RINGS, WITH THE OPENING SITED OVER THE CHANNEL WHERE DEPTH OF THE COVER TO PIPE SOFFIT IS 1.0m - 1.5m.
  - 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.

REV	AMENDMENTS	BY	DATE
C	UPDATED TO YW COMMENTS	MJM	01.10.24
B	UPDATED TO YW COMMENTS	MJM	01.10.24
A	INITIAL ISSUE	MJM	12.07.24

**FOR APPROVAL**

STATUS	CHK'D
PRELIMINARY	MJM
FOR COMMENT	MJM
FOR APPROVAL	MJM
FOR CONSTRUCTION	
AS BUILT	

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CLIENT  
**ORION HOMES**

CONTRACT  
**DENBY LANE GRANGE MOOR**

TITLE  
**S15 FLOW CONTROL MANHOLE DETAIL**

DRAWN	MJM	CHK'D	MJM
SCALE	SEE DETAIL	DATE	12.07.24

JOB No	DRG No	REV
24017	107	C