

| MANHOLE HEIGHT VARIATION AND No. OF DUCTS | | | | | |
|---|--------------------|--------------------------|------------------------------|----|----|
| TYPE | INTERNAL HEIGHT | EXTERNAL HEIGHT (REF) | No. OF DUCTS IN POSITIONS | | |
| | | | R | S | Т |
| A | 2100 | 2650 | 24 | 36 | 18 |
| В | 2400 | 2950 | 32 | 48 | 24 |
| С | 2700 | 3250 | 42 | 60 | 36 |

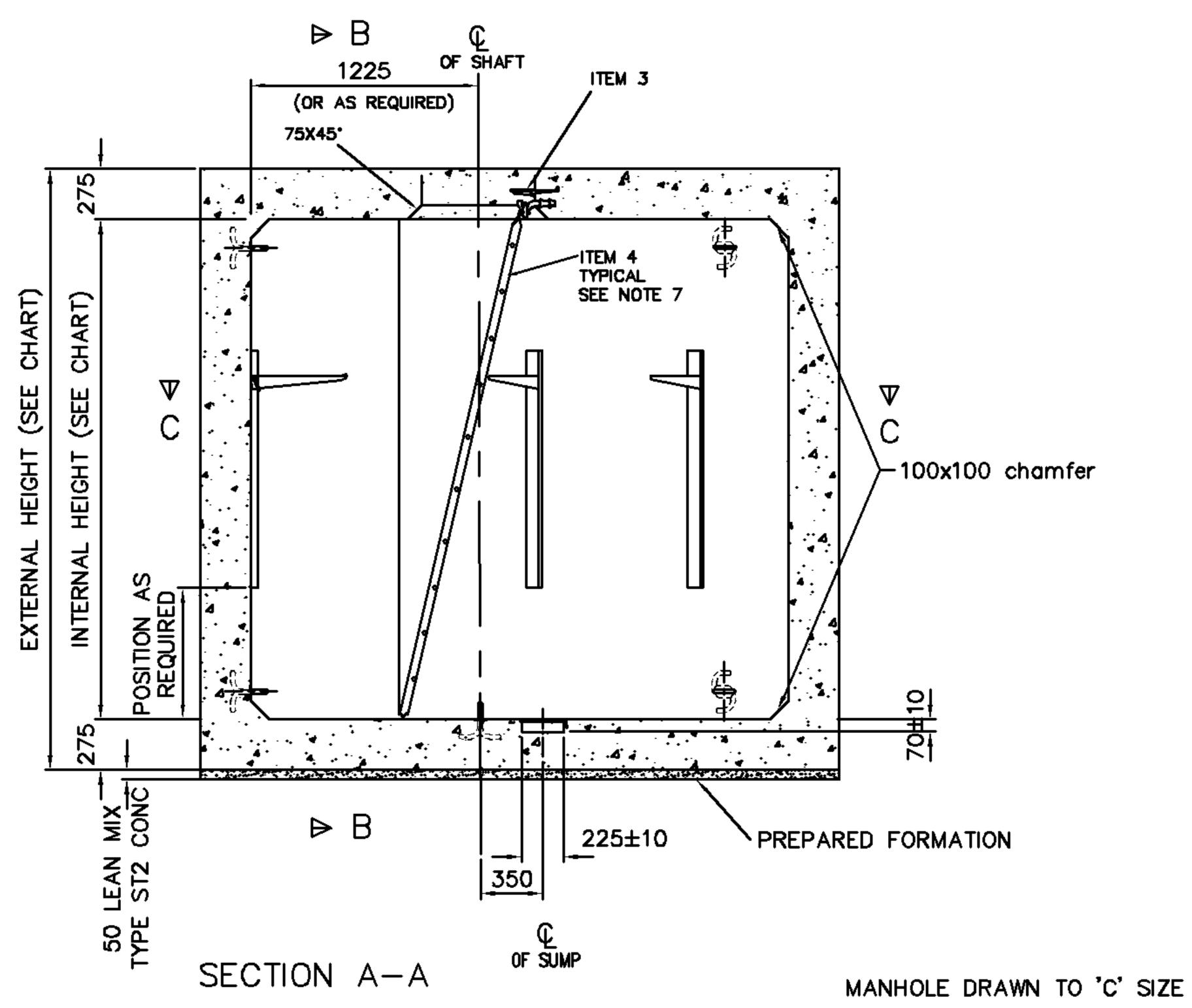
-100x100

chamfer

<u> 225±10</u>

PREPARED FORMATION

WALL B ITEM (WALL A ITEM 7 ITEM 9 의 기본 -€\$\$ ITEM 2 O WALL C 4. 300 1000 1000 2900 WALL D SECTION C-C



- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS, DOCUMENTATION AND SPECIFICATIONS RELATING TO THIS MANHOLE STRUCTURE TYPE CONSTRUCTION.
- WORKMANSHIP, MATERIALS AND METHOD OF CONSTRUCTION ARE TO COMPLY WITH ALL CURRENT RELEVANT CONTRACT DOCUMENTS, BRITISH STANDARDS, EUROCODES AND CODES OF PRACTICE (RELEVANT TO THE CONSTRUCTION INDUSTRY) AND ACCEPTED CONSTRUCTION PRACTICE.
- 3. ALL EXISTING SERVICES POSITIONS ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR PRIOR TO STARTING THE WORKS.
- 4. ALL ACCEPTED SAFE DIGGING PRACTICES AND SAFE METHODS OF WORKING ARE TO BE EMPLOYED DURING THE INSTALLATION OF THE MANHOLE STRUCTURE.
- 5. CONCRETE TO BE GRADE C35/45 WITH A WATER CEMENT RATIO 0.4. MIN. CEMENT CONTENT 380kg/m3. AGGREGATE MAX. SIZE 20mm. ALL IN ACCORDANCE WITH BS8500 (BS EN206).
- 6. DUCT ENTRIES CAN BE PLACED IN THE WALLS IN THE POSITIONS REQUIRED WITH MINIMUM CLEARANCE OF 150mm FROM ADJACENT WALL, 450mm FROM ROOF AND 350mm FROM FLOOR.
- 7. SHAFT TO BE CONSTRUCTED IN ACCORDANCE WITH CN1153 AND POSITIONED AS REQUIRED. STEPS AND LADDER TO BE ORIENTATED TO FACE THE ONCOMING TRAFFIC, DETAILS SHOWN ARE TYPICAL POSITIONS.
- 8. ANY BRICKS USED TO FORM SHAFT OR ADJUST FRAME AND COVER LEVEL TO BE (MINIMUM) CLASS B ENGINEERING BRICKS, MORTAR TO BE 1:5 CEMENT: SAND RATIO (MAXIMUM) OR 1:1:5 CEMENT: LIME: SAND CLASS (iii).
- 9. BRICKS AND MORTAR TO BE IN ACCORDANCE WITH BS5628.
- 10. REINFORCEMENT TO BE GRADE B500B OR B500C CONFORMING TO BS4449: 2005 (CLAUSE 1712 SHW).
- 11. BAR SCHEDULE AND BENDING TO CONFORM TO BS8666.
- 12. MINIMUM COVER 55mm TO ANY CONCRETE FACE PROPRIETARY APPROVED SPACERS TO BE UTILISED.
- 13. BARS INTERSECTING HOLES TO BE CUT ON SITE AND TRIMMED TO CN13916.
- 14. ADDITIONAL BARS MAY BE UTILISED TO TIE / SUPPORT MAIN BARS AS REQUIRED.
- 15. MAXIMUM SPACING OF REINFORCING BARS TO BE 150mm C/C.
- 16. SUMP TO BE POSITIONED BELOW SHAFT. TYPICAL POSITION SHOWN.
- 17. ANCHOR IRONS MUST BE POSITIONED AT LEAST 230mm FROM ANY DUCT OR WALL OPENING. ANCHOR IRONS MUST BE POSITIONED 150mm FROM ANY WALL, ROOF OR FLOOR, FLOOR ANCHOR IRONS SHOULD BE PLACED BELOW SHAFT.
- 18. STANDARD DEPTHS OF COVER TO THE TOP OF THE ROOF ARE: -150mm FOOTWAY
- 450mm CARRIAGEWAY
- 19. ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS (SHW) AND ALL SUBSEQUENT AMENDMENTS.
- 20. ALL BACKFILL MATERIAL IS TO BE CLASS 6N TYPE.
- 21. ALL CONSTRUCTION JOINTS TO BE AS PER CLAUSE 1710 SHW.
- 22. INTERNAL CORNER CHAMFER DETAILS TO BE AS PER APPENDIX D OF BD 31/01 THE DESIGN OF BURIED CONCRETE BOX AND PORTAL FRAME STRUCTURES.
- 23. CONTRACTOR TO PROVIDE A GENERAL ARRANGEMENT DRAWING SHOWING THE POSITION OF THE STRUCTURE IN RELATION TO THE HIGHWAY AND ITS FEATURES, INCLUDING RELATIVE LEVELS TO HIGHWAY SURFACE.
- 24. CONTRACTOR TO PROVIDE DETAILS; NUMBER AND POSITION OF DUCT ENTRY OPENINGS WITHIN THE CHAMBER.
- 25. CONTRACTOR TO PROVIDE PROGRAMME OF CONSTRUCTION SEQUENCE DETAILING TIMING OF POURS AND COMMENCEMENT OF BACKFILL.
- 26. CONCRETE TESTING TO BE UNDERTAKEN IN ACCORDANCE WITH BT SPECIFICATION.

BOLT FOUNDATION ±5mm DRN RFG C S CKD M.S. A² CERTIFICATION DESIGNER M DA RIOS

M DA RIOS

DATE 04/07/94

TOLERANCES: - CN15456

ANCHOR IRON POSITION ±50mm

BRICKWORK MORTAR JOINTS ±5mm

TOP OF DEPTH PLATE ±4mm

DUCT ENTRY POSITION ±25mm DUCT FLUSH WITH WALL -10mm

F&C LEVEL WITH HIGHWAY NIL F&C ROCKING NIL

F & C SURROUND IN UNMADE ±5mm

MANHOLE INTERNAL LENGTH & WIDTH

MANHOLE INTERNAL HEIGHT ±15mm

SHAFT DIMENSIONS 610mm -10mm +

SHAFT POSITION IN ROOF ±100mm

NEAR FACE TO FAR FACE ±15mm

STEEL CAGE GRID PATTERN ±10mm

STEEL DEPTH OF COVER ±5mm

STEEL DEPTH TO LUG ±5mm

STEP POSITION ±15mm STEP HORIZONTAL ±5mm

SUMP POSITION ±25mm

ROUND SUMP 230# ±5mm

VERTICALITY OF WALLS ±15mm

SLAB THICKNESS -10 TO +150mm

SUMP DEPTH ±10mm

& C UNSUPPORTED OVER BOX +5mm

WALL FLATNESS ±11mm

STEEL BARS ALIGNMENT

VERT & HORIZ ±15mm

BEDDING MATERIAL ±5

VOIDAGE 0.5%

CEMENT MORTAR -20mm

ANY MODIFICATION TO THE DRAWING OR THE USE OF ALTERNATIVE ITEMS TO THOSE SPECIFIED MUST BE AGREED WITH THE DESIGNER.

SECTION B-B

MATERIAL **FINISH**

DIMENSIONS IN mm UNLESS OTHERWISE STATED OMS Drawing Review Hatching added Prepared formation note added 23.08.15

AMENDMENT

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VARIOUS LOCATIONS

STANDARD MANHOLE MRX510A,510B,510C GENERAL ARRANGEMENT

DO NOT SCALE

ORIGINAL SCALE 1:20 REFERENCES SPEC: BS4449, BS8666,

BS5606,BS EN1992,LN550. DRGS: CN1059, CN1153, CN1161 CN1162, CN1166, CN1961, CN9165, CN13616, CN14122, CN15456. SPECS; BS8500 & BS EN206

CN **ALA944**

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