


1. Topsoil (including organic material) and weak upper layers must be removed and stored for reuse to re-grass the downstream slope and other disturbed surfaces. Plough, moisten and compact foundation before placing earthfill.
2. The excavation for the cut-off trench must be deep enough to create a seepage barrier. River sand and gravel must be removed. Sides must be smoothly finished before placing earthfill.
3. Rock foundation preparation: All soil and loose stone must be removed. High points and irregularities must be removed or smoothed with a suitable concrete mixture. Rock fissures must be cleaned and filled with a suitable grout mixture.
4. Suitable earthfill for the dam wall must be placed in thin horizontal layers (not thicker than 150 mm after compaction) and must be compacted by suitable compaction rollers to at least 95% Proctor density at optimum moisture content (OMC). For dispersive soils the compaction should be at least 98% Proctor density at a moisture content between OMC and OMC + 3%. The working surface must be level and must be kept moist. Dried out surfaces must be ploughed, moistened and recompacted.
5. The dam wall slopes may be steeper or flatter depending on the nature of fill, as well as foundation material.
6. The specification SABS 1200DE must be specified for the contract.
7. The following equipment must be in operational condition on site: (i) Suitable compaction roller. (ii) Grader or bulldozer. (iii) Water cart.
8. Clean river sand must be used in the filter drains. Perforations in the perforated drain pipes must be small enough to prevent the riversand from passing through.

NOT TO SCALE

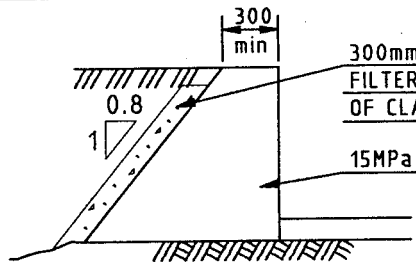

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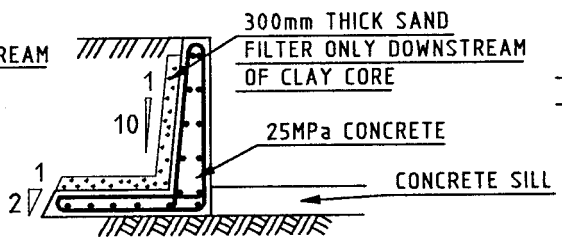
GOEDGEKEUR: *M. Erasmus*
 APPROVED: 95.7.7

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DESIGN GUIDELINES FOR A CATEGORY 1
EARTHFILL DAM WALL

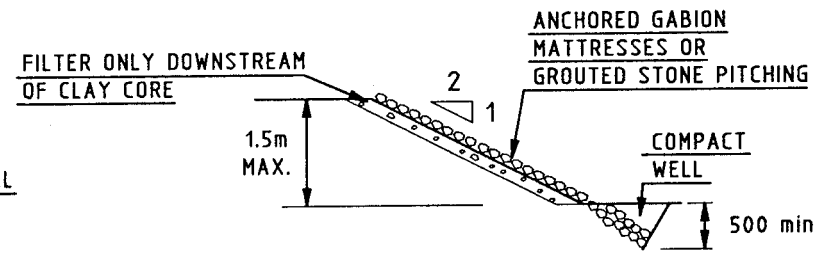
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 VEL/SHEET 1 VAN OF 5



SECTION A-A
MASS CONCRETE
RETAINING WALL

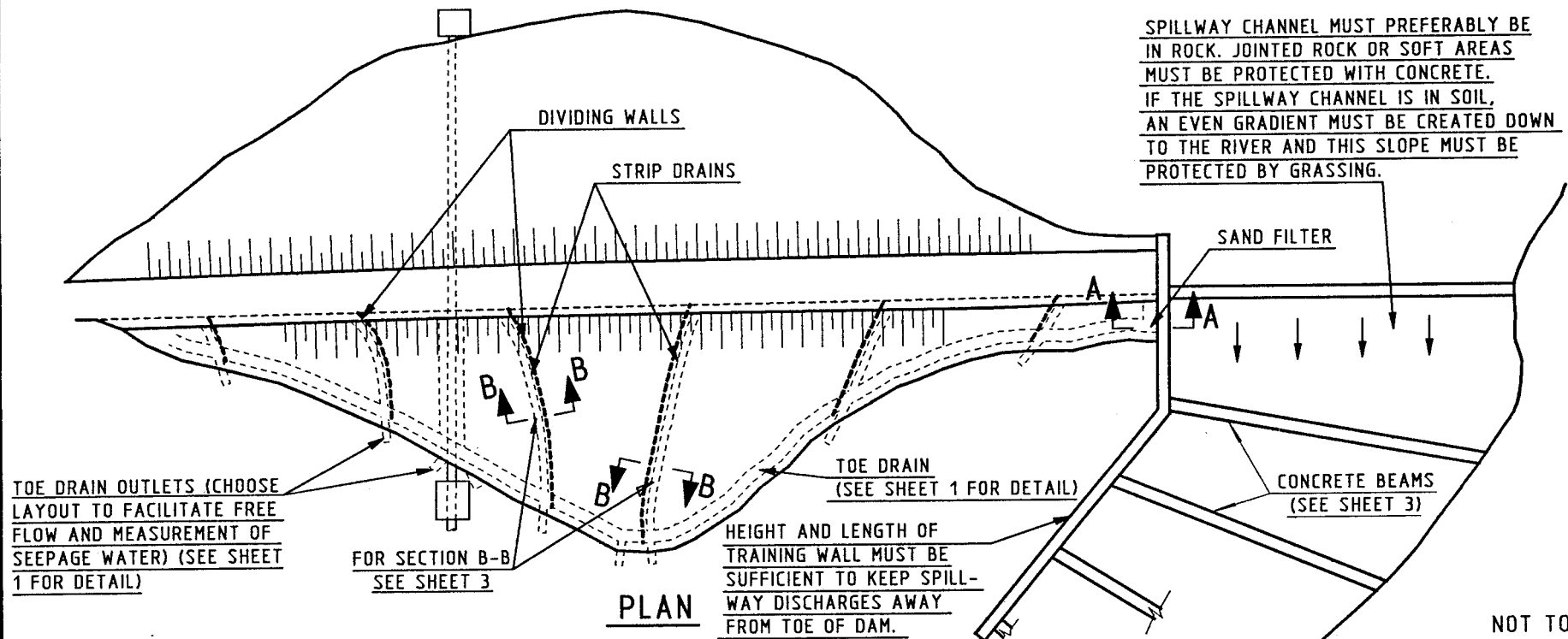


SECTION A-A (ALTERNATIVE)
REINFORCED CONCRETE
RETAINING WALL



SECTION A-A (ALTERNATIVE)
SMALL EARTHFILL SPILLWAYS

SPILLWAY CHANNEL MUST PREFERABLY BE IN ROCK. JOINTED ROCK OR SOFT AREAS MUST BE PROTECTED WITH CONCRETE. IF THE SPILLWAY CHANNEL IS IN SOIL, AN EVEN GRADIENT MUST BE CREATED DOWN TO THE RIVER AND THIS SLOPE MUST BE PROTECTED BY GRASSING.




TOE DRAIN OUTLETS (CHOOSE LAYOUT TO FACILITATE FREE FLOW AND MEASUREMENT OF SEEPAGE WATER) (SEE SHEET 1 FOR DETAIL)

FOR SECTION B-B SEE SHEET 3

HEIGHT AND LENGTH OF TRAINING WALL MUST BE SUFFICIENT TO KEEP SPILLWAY DISCHARGES AWAY FROM TOE OF DAM.

CONCRETE BEAMS (SEE SHEET 3)

NOT TO SCALE

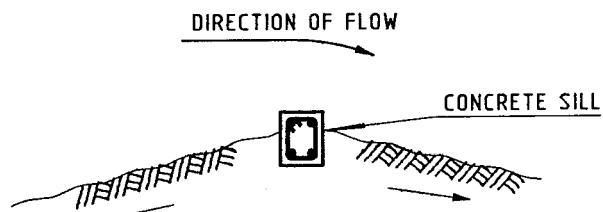

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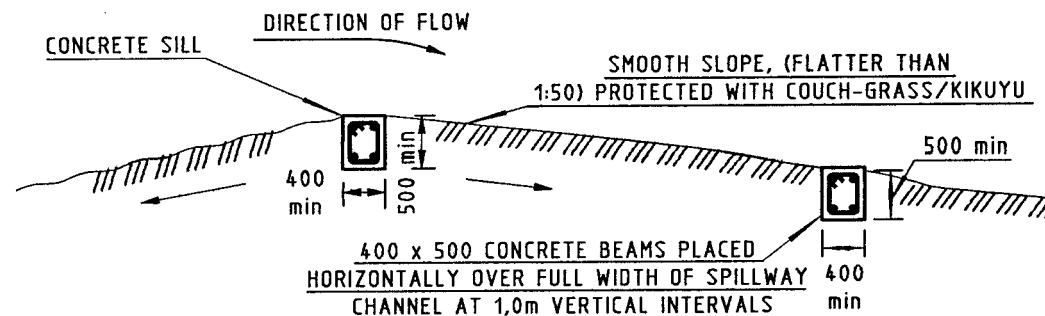
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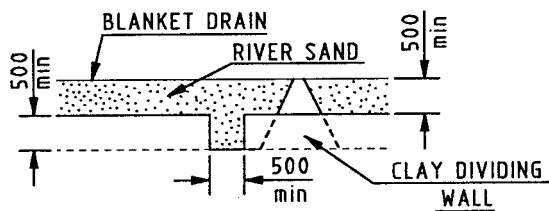
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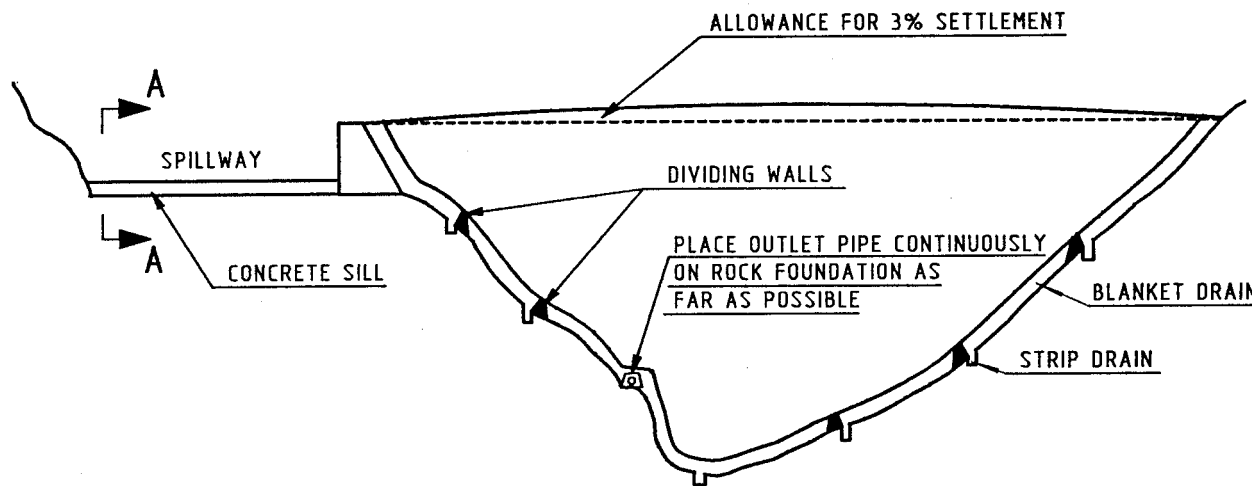
SECTION A-A
SPILLWAY CHANNEL IN ROCK



SECTION A-A
(ALTERNATIVE)
SPILLWAY CHANNEL IN SOIL



SECTION B-B
(SEE SHEET 2)



LONGITUDINAL SECTION DOWNSTREAM OF CHIMNEY DRAIN

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EARTHFILL DAM WALL**

DATUM HERSIEN:
DATE REVIEWED:

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VEL/SHEET

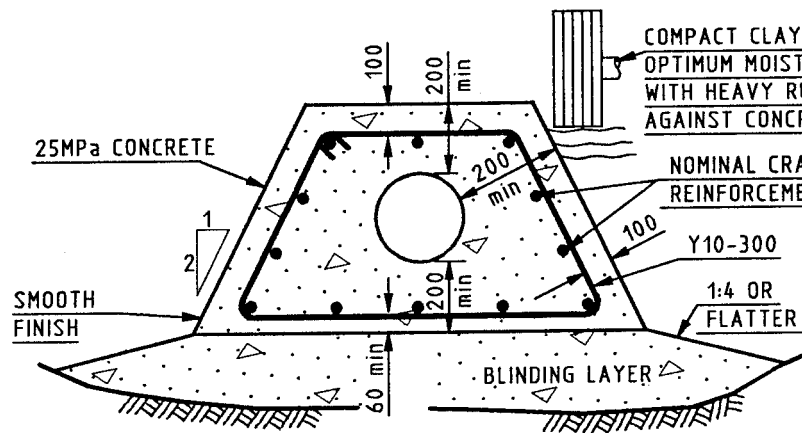
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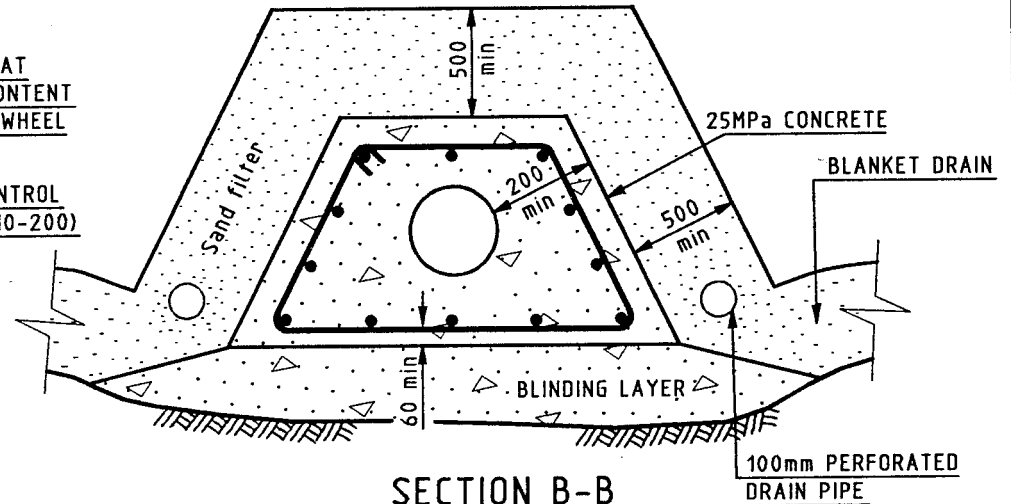
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GOEDGEKEUR:
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7.5.7.7



SECTION A-A

(SEE SHEET 5)

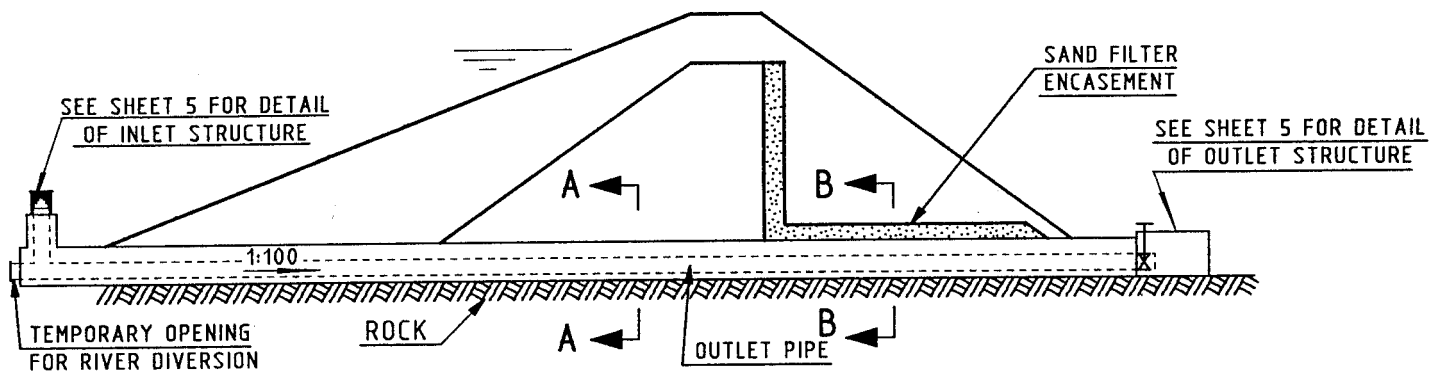


SECTION B-B

(SEE SHEET 5)

OUTLET CONDUIT ON ROCK FOUNDATION

(FOUNDATION PREPARED ACCORDING TO
NOTE 3 ON SHEET 1)



DETAIL OF SAND FILTER PROTECTION AT OUTLET PIPE

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**DESIGN GUIDELINES FOR A CATEGORY 1
EARTHFILL DAM WALL**

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DATE REVIEWED:

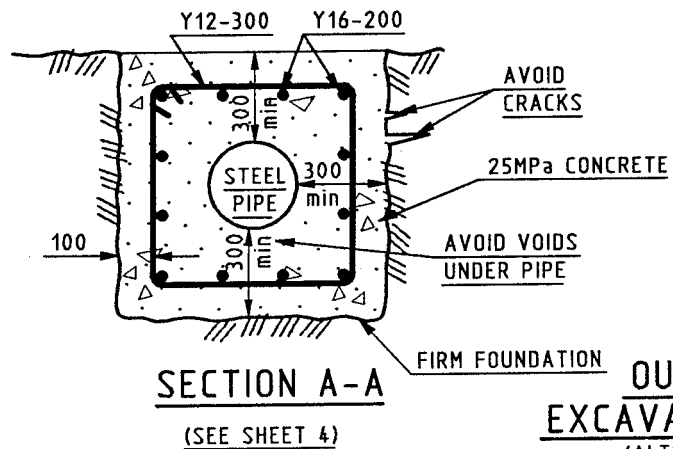
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MAY 1995

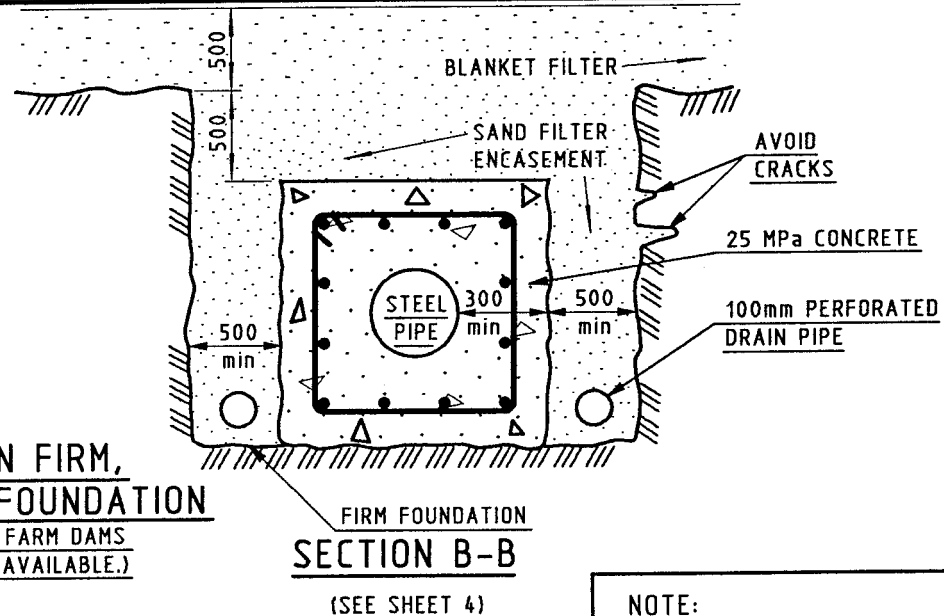
4 VAN
OF 5

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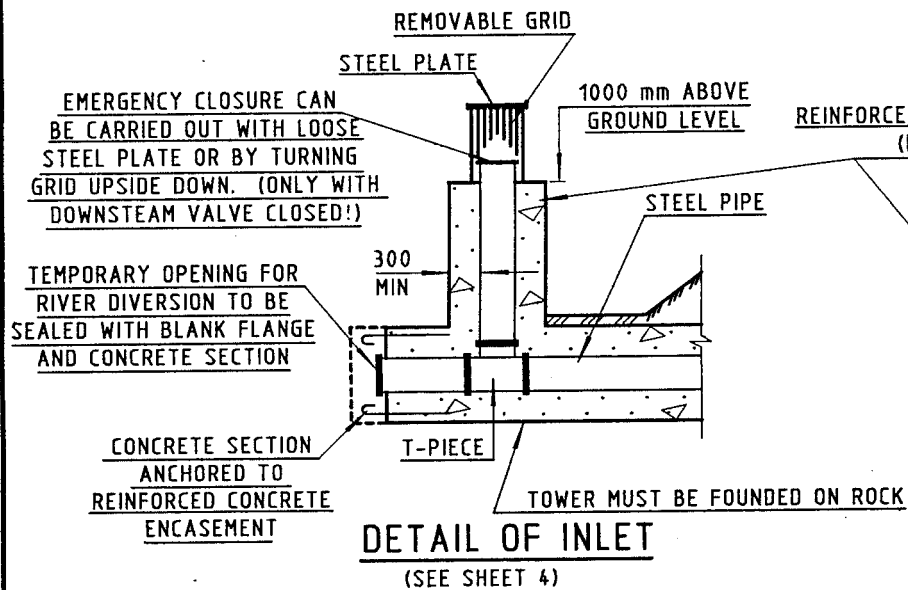
**OUTLET CONDUIT ON FIRM,
EXCAVATABLE IN-SITU FOUNDATION**
(ALTERNATIVE ONLY FOR SMALL FARM DAMS
WHEN ROCK FOUNDATION IS NOT AVAILABLE.)



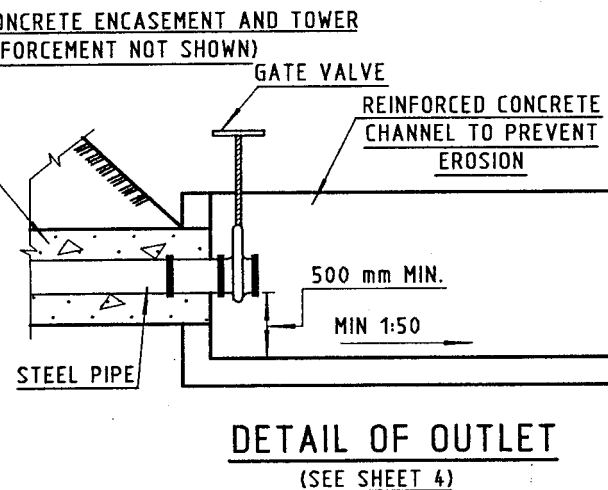
SECTION B-B
(SEE SHEET 4)

NOTE:


1. THE OUTLET PIPE MUST BE PROTECTED AGAINST CORROSION (E.G. WITH EPOXY PAINT INSIDE AND OUTSIDE).
2. REINFORCEMENT MUST BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.



DETAIL OF INLET
(SEE SHEET 4)



DETAIL OF OUTLET
(SEE SHEET 4)


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5 VAN OF **5**