

The diagram illustrates a circular tunnel structure with a central air duct. The following components are labeled:

- theoretical excavation line** excavation by raise boring
- 5 cm shotcrete** fibre reinforced
- water proofing system**
- concrete lining C 25/30**
- intermediate concrete wall C 25/30** according to structural requirement
- empty conduits** (top and bottom)
- drilling for dewatering (if required)** (right side)
- groundwater collecting pipe** Steel pipe Ø200
- no fines concrete** (right side)
- drilling for dewatering (if required)** (bottom right)
- exhaust air duct** 10 m²
- fresh air duct** 10 m²
- Ø6.00** (overall diameter)
- 2.40** (height of each air duct)

drilling for dewatering
(if required)

contact area
for inner lining
($a = 40 \text{ m}$)

exhaust air duct
 10 m^2

fresh air duct
 10 m^2

intermediate concrete wall C 25/30
according to structural requirement

circular collecting pipe
PVC pipe Ø50, perforated

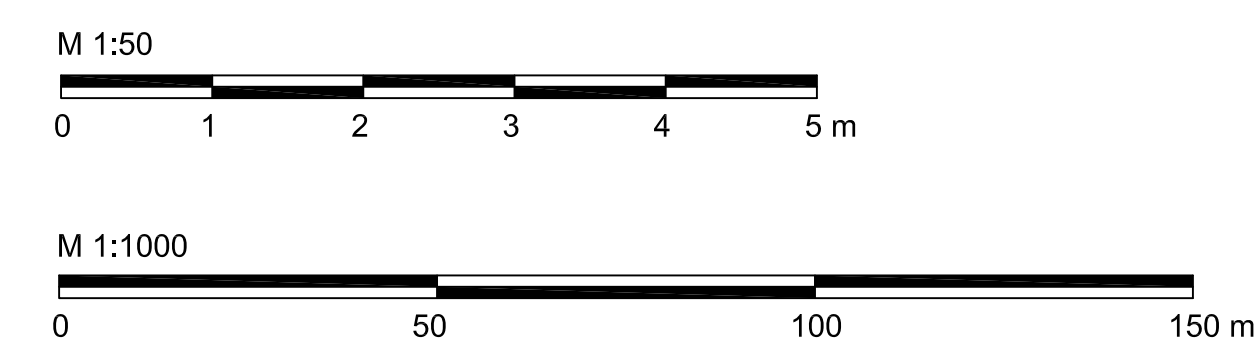
groundwater collecting pipe
Steel pipe Ø200
with niches for revision


2.53

0.25

2.53

5.30

[illegible]



CLIENT	 <p>National Highways & Infrastructure Development Corporation Ltd. (Ministry of Road Transport & Highways, Govt. of India)</p>	<p>Executive Director - III 3rd Floor, PTI Building, 4 - Parliament Street, New Delhi - 110001, India</p>
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PROJECT	<p>CONSTRUCTION, OPERATION AND MAINTENANCE OF 2-LANE BI-DIRECTIONAL ZOJILA TUNNEL WITH PARALLEL ESCAPE (EGRESS) TUNNEL INCLUDING APPROACHES ON SRINAGAR-LEH SECTION CONNECTING NH-1 AT KM 95.00 AND AT KM 118.00 IN THE STATE OF JAMMU & KASHMIR</p> <p style="font-size: 1.2em; margin-top: 20px;">ZOJILA TUNNEL</p>
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CONTENT	TENDER DRAWINGS
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TYPICAL CROSS SECTION SHAFT 3

00	2013-03-31	MBu	GFa	AGo	PRELIMINARY TUNNEL DESIGN PHASE II
REV	DATE	DESIG.	DRAWN	APPROVED	MODIFICATION

<p>3G GRUPPE GEOTECHNIK GRAZ Engineering Consultants</p> <p style="font-size: 0.8em; margin-top: 20px;">Triesster Straße 476a, 8005 Graz-Seiersberg Tel.: ++43 / 316 / 337799, Fax: ++43 / 316 / 337799-11 e-mail: office@3g.at, Internet: http://www.3g.at</p>	 <p style="font-size: 0.7em; margin-top: 10px;">GRUPPE GEOTECHNIK GRAZ <small>in cooperation with</small></p>	 <p style="font-size: 0.8em; margin-top: 10px;">Vayam Technologies Ltd (Formerly IBIL Technologies Limited) Thapar House, 124-Jangpeth, New Delhi-110 001</p>
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	DATE	NAME
DESIGNED	2013-03-31	BURGSTALLER
DRAWN	2013-03-31	FASCHING
CHECKED	2013-03-31	GORICKI
PROJECT NO.:	8482B	REV.: 00
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