

Grouting Instruction VL4 FIRST GROUT FAN

Tunnel	VL4 (W=6,9-H=6,9)
Instruction N°	572-584

Chainage	1+405.8
Total Inflow face	
Total Inflow Probe hole	1 4/5
Water pressure measured	7 bar

Mark additional holes with x and number

Erase holes not to be used

1-DRILL HOLES 1 TO 15 WITH ANGLE 15° IN ORDER:
6, 7, 5, 8, 4, 9, 3, 10, 2, 11, 1, 12, 15, 13, 14 AND
GROUT

2- DRILL HOLES IN ORDER: 17, 21, 18, 20, 19, 16
PARALLEL TO THE TUNNEL AND GROUT.

THE PACKER SHOULD BE INSTALLED BETWEEN 1,5
AND 3,0 M (DEPENDING OF ROCK MASS
CONDITION, REF LEAKAGE)

Design Mix (Type A,B,C, D or E)	A
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WCR	0,65
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Closure criteria

Pmax	25*
Vmax (l/m borehole)	85
GIN	1000

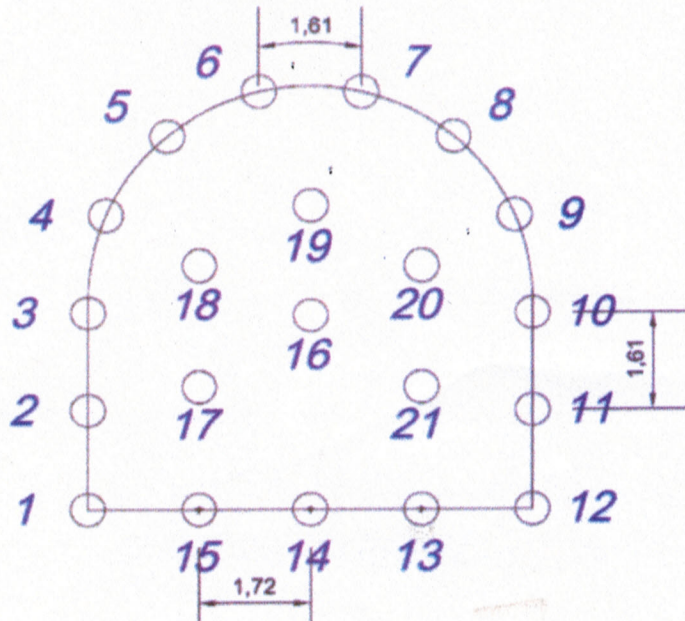
*IF GROUNDWATER PRESSURE IS
HIGHER THAN 10 BAR THEN APPLY
GROUT PRESSURE OF 2,5 TIMES
GROUNDWATER PRESSURE

Instructed by:	ERNESTO HERNANDEZ Jara
Instruction date:	23-03-16

HOLES 1-15 16-21

N° of Grout holes	15	6
Grout holes length (m)	27	27
Grout hole angle ref Tunnel axis	15	0

Position of Grout holes 1st grout round:



NOTES:

- 1-DRILL GROUTING HOLES TO THE FULL DEPTH AS INSTRUCTED, EVEN WITH SIGNIFICANT DISCHARGE (>2.5 l/sec)
- 2- THE MAXIMUM INCREASE OF GROUTING PRESSURE SHALL BE NOT MORE THAN 2,5 BAR PER MINUTE.
- 3- DRY HOLE SHALL NOT BE REDRILLED OR REGROUTED.

STRABAG ANTONIA DEČMAN A. Dečman 23/03/2016
Name Signature 12:40h

SAM ERNESTO HERNANDEZ Jara
Name Signature