S3 TUNNEL TS-26
DESIGN CHALLENGES

M. PROPRENTER
WROCLAW 21.01.2020
S3 TUNNEL TS-26

GENERAL INFORMATION

TWIN TUBE TUNNEL SYSTEM

LENGTH 2.3 km

2+1 LANES

8 CROSS PASSAGES

PEDESTRIAN

1 CROSS PASSAGES

VEHICLES

LONGITUDINAL VENTILATION

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S3 TUNNEL TS-26

REGULAR CROSS SECTION

CLEARANCE PROFILE
- DRAINED DOUBLE SHELL LINING
- SLOTTED KERB STONE
- CABLE DUCTS
- INSTALLATIONS

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NEW ALIGNMENT

INTERMEDIATE C&C SECTION

RESTRICTION OF ACCESS

SHALLOW OVERBURDEN

FEASIBILITY

NEW ALIGNMENT SOLUTION

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Technical conditions to be met by road engineering facilities and their location.

Dz.U. 2000.63.735 of 2000.08.03
Status: Act in force

**ORDINANCE**
**MINISTER FOR TRANSPORT AND MARITIME MANAGEMENT**

of 30 May 2000.

on technical conditions, which should be met by road engineering facilities and their location.

Based on Article 7 par. 2 point 2 of the Act of July 7, 1994 - Construction Law (Journal of Laws No. 89, item 414, of 1996 No. 106, item 465, No. 106, item 496 and No. 146, item 680, of 1997 No. 88, item 554 and No. 111, item 726, of 1998 No. 22, item 118 and No. 106, item 668, of 1999 No. 45, item 412, No. 49, items 483 and No. 62, item 682, and 2000 No. 12, item 136, No. 29, item 354 and No. 43, item 489), the following is ordered:
<table>
<thead>
<tr>
<th>S3 TUNNEL TS-26</th>
<th>SAFETY/MAINTENANCE FACILITIES</th>
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S3 TUNNEL TS-26

SAFETY/MAINTENANCE FACILITIES

- Cross passage for vehicles
- Cross passage for pedestrians
- Fire fighting niches
- Emergency call niches
- Maintenance niches
S3 TUNNEL TS-26

GEOLOGY/HYDROGEOLOGY

SCHIST UNIT

CONGLOMERATE UNIT

TWO MAIN UNITS

CONGLOMERATE AND SCHIST UNIT

SIX GROUND TYPES

WATER BEARING COMPARTMENTS

FLOWING GROUND

FAULT ZONES

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GEOLOGY/HYDROGEOLOGY

GEOLOGICAL 3D MODEL
IMPLEMENTATION OF ALL INFORMATION
VISUALIZATION OF POTENTIAL SITUATIONS
PROGNOSIS
UPDATE DURING CONSTRUCTION

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ANALYSES

EVALUATION OF POT. COMBINATIONS
GEOLOGICAL MODEL
FE-ANALYSES
CONSTRUCTION STAGES
COUPLED ANALYSES

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SUPPORT MEASURES

RANGE OF SUPPORT MEASURES

SHOTCRETE

ROCK BOLTS

LATTICE GIRDER

FOREPOLING/PIPE ROOF

FACE SUPPORT

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SUPPORT MEASURES

DRAINAGE AHEAD OF FACE

DRAINAGE DRILLINGS

FACE STABILITY
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INNER LINING

BEAM SPRING MODEL
LOADS DERIVED FROM FE-ANALYSES
RESIDUAL WATER PRESSURE
CRACK WIDTH
FIRE LOAD CASE
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SAFETY MANAGEMENT

SAFETY MANAGEMENT PLAN

FIXED PROCESSES AND PROCEDURES

DEFINED RESPONSIBILITIES

DEFINED ACTION

GEOTECHNICAL MONITORING

CLIENT

PUBLIC

ENGINEER

CONTRACTOR

DESIGNER
S3 TUNNEL TS-26

SAFETY MANAGEMENT

IDENTIFICATION OF POTENTIAL OCCURRENCES

MONITORING CONCEPT

TECHNICAL SPECIFICATIONS
INSTALLATION AND READING

SAFETY MANAGEMENT PLAN

MONITORING

EVALUATION AND INTERPRETATION

ACTION YES/NO

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IDENTIFICATION OF POTENTIAL GEOT. PROBLEM

MONITORING CONCEPT

MONITORING PROGRAM

TECHNICAL SPECIFICATIONS
INSTALLATION AND READING

SAFETY MANAGEMENT PLAN

MONITORING

EVALUATION AND INTERPRETATION

ACTION YES/NO
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