

	<p style="text-align: center;">TECHNICAL STANDARDS DETAILED TECHNICAL CONDITIONS FOR THE CONSTRUCTION OF THE RAILWAY INFRA- STRUCTURE OF THE SOLIDARITY TRANSPORT HUB – DESIGN GUIDELINES</p>	<p style="text-align: center;">CENTRALNY PORT KOMUNIKACYJNY – SOLIDARITY TRANSPORT HUB POLAND</p>
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TECHNICAL STANDARDS

**DETAILED TECHNICAL CONDITIONS FOR THE CON-
STRUCTION OF THE RAILWAY INFRASTRUCTURE OF
THE SOLIDARITY TRANSPORT HUB – DESIGN GUIDE-
LINES**

VOLUME V.2

PUBLIC ROADS

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The list of volumes constituting the detailed technical conditions for the construction of the railway infrastructure of the Solidarity Transport Hub:

Volume A	Introduction to the STH railway standards
Volume I.1	Railway track – layout geometry
Volume I.2	Railway – design of civil structures
Volume I.3	Railway track – drainage of track layout
Volume I.4	Railway track – gauge
Volume I.5	Railway track – geotechnical investigations and design
Volume II.1	2 x 25 kV 50 Hz AC overhead catenary system and traction power supply
Volume II.2	3 kV DC overhead catenary system and traction power supply
Volume III.1	Engineering structures
Volume III.2	Tunnels
Volume IV	Non-OCL power engineering
Volume V.1	Non-public roads
Volume V.2	Public roads
	It contains requirements for road systems for passenger services, as well as dimensioning rules and technical conditions to be met by walkways and circulation routes.
Volume VI.1	Control command and signalling – basic equipment
Volume VI.2	Control command and signalling – European Train Control System (ETCS)
Volume VII.1	Fixed and wireless communication systems and data transmission
Volume VII.2	Telecommunication systems and telematics
Volume VII.3	Detection of rolling stock failure conditions (DSAT)
Volume VIII.1	Station and railway station buildings
Volume VIII.2	Technical buildings
Volume VIII.3	Structures
Volume VIII.4	Structural landscaping
Volume IX	Measures to minimise environmental impact
Volume X	Conflicts with external networks
Volume XI	Electromagnetic compatibility (EMC)
Volume XII	Railway line guard
Volume XIII	Technical support facilities
Volume XIV	Health and safety support systems for people and property
Volume XV	Survey control
Volume XVI	Railway rolling stock
Volume XVII	Automatic baggage check-in systems
Volume XVIII	Security, protection and cybersecurity integrity requirements

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Table of contents

1	Introduction.....	9
1.1	Preliminary provisions	9
1.2	Technical scope.....	9
1.3	Links to other volumes.....	10
1.4	Definitions of terms used	11
2	Essential, basic and general requirements for the STH railway infrastructure	13
3	Public road design.....	17
3.1	General requirements.....	17
3.2	Detailed requirements	18
4	Crossings of railway lines and sidings with public roads	19
5	Reference documents	21

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1 Introduction

1.1 Preliminary provisions

- 1) The basis for designing and constructing the structures included in the document entitled “Detailed technical conditions for the construction of railway infrastructure of the Solidarity Transport Hub – Volume V.2 – Public roads”, hereinafter referred to as the “Standards”, is the Act of 21 March 1985 on public roads (consolidated text: Journal of Laws of 2020, item 470, as amended). [1].
- 2) While preparing the Standards, reference documents have been taking into account that can be found in chapter 5.
- 3) The requirements of the Standards are compliant with the applicable legal requirements for the railway system interoperability in the European Union.
- 4) The standards were developed taking into account the current state of the art in the scope of designing and constructing public roads.
- 5) In cases not regulated in the Standards, commonly applicable regulations and engineering knowledge should be used.
- 6) Whenever the Standards refer to “STH railway infrastructure”, “STH railway lines”, etc., this should be understood as new railway infrastructure, new railway lines or other civil structures constructed by STH, which may be managed by another railway infrastructure administrator in the future.

1.2 Technical scope

- 1) The standards specify the general technical requirements for design of public roads by Centralny Port Komunikacyjny Sp. z o.o., hereinafter referred to as the Company, referred to in point 2).
- 2) In these Standards, all public roads within the meaning of the Act [1] designed by the Company are treated as public roads.

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1.3 Links to other volumes

The links between this Standards volume and other volumes are presented in Table 1.

Table 1 Links to other volumes of the Standards

Volume No	Volume title	Relation content
I.3	Railway track – drainage of track layout	Requirements for drainage of public roads.
III.1	Engineering structures	Requirements for road overpasses and trestle bridges. Protection of engineering structures against unintentional entry of road vehicles into the railway infrastructure area.
XII	Railway line guard	Protection against unintentional entry of road vehicles into the railway infrastructure area.
XIII	Technical support facilities	Road systems of the technical support facilities.

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1.4 Definitions of terms used

- 1) **Public road** – a road classified as a public road in accordance with the Act [1].
- 2) **Level crossing** – at-grade crossing other than a pedestrian crossing.
- 3) **Passage** – a single-level crossing designed for pedestrian, bicycle or pedestrian and bicycle traffic only; a passage is not a circulation route between platforms within a railway station or a passenger stop.
- 4) **Crossing** – intersection of a railway line or railway siding with a road.
- 5) **Multi-level crossing** – a crossing where a road passes above or under a railway line or railway siding.

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2 Essential, basic and general requirements for the STH railway infrastructure

Table 2 defines the link between the detailed technical conditions and the essential, basic and general requirements for the STH infrastructure.

Table 2 Essential, basic and general requirements for the STH infrastructure

sub-chapter of this volume defining detailed technical conditions	essential requirements (Railway Interoperability Directive)						basic requirements	general requirements for the STH railway infrastructure			
	1.1. security	1.2. reliability and accessibility	1.3. health	1.4. environmental protection	1.5. technical compliance	1.6. accessibility		2.1. mechanical resistance and stability 2.2. fire safety 2.3. hygiene, health and the environment 2.4. safety and accessibility in use 2.5. protection against noise 2.6. energy economy and heat retention 2.7. sustainable use of natural resources	3.1. oriented towards the needs of the economy	3.2. orientation towards the needs of passengers	3.3. orientation towards the needs of carriers
3.1	-	1.2.2	-	-	-	1.6.1 1.6.3	2.4.1	-	-	-	-
3.2	-	1.2.2	-	-	-	1.6.1 1.6.3	2.4.1	-	-	-	-
4	1.1.11	-	1.3.3	-	-	-	2.4.1	-	-	-	-

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Cybersecurity

Technical solutions which collect, store, process, make available or transmit data ensuring compliance with the essential requirements with respect to safety (requirements from 1.1.1. to 1.1.11. specified in Volume A of the STH railway standards) and general requirements for the STH rail infrastructure with respect to protection (requirements from 1.1.12. and 1.1.13 specified in Volume A of the STH railway standards) should be designed taking into account cybersecurity, i.e. “security of network and information systems”, which is defined in the Directive concerning measures for a high common level of security of network and information systems as follows:

“security of network and information systems” means the ability of network and information systems to resist, at a given level of confidence, any action that compromises the availability, authenticity, integrity or confidentiality of stored or transmitted or processed data or the related services offered by, or accessible via, those network and information systems;

[as defined in Article 4 of Directive 2016/1148]

Cybersecurity includes two types of threats resulting from unauthorised access to the systems/equipment/networks that collect, store, process, make available or transmit data:

6) physical security threats

It is necessary to secure systems/equipment/networks against direct access which could enable causing (intentionally or unintentionally) threats to functional safety.

7) IT security threats

It is necessary to secure systems/equipment/networks against logical access via IT systems/equipment/networks, which could enable causing (intentionally or unintentionally) threats to functional safety.

Cybersecurity defined this way applies both to information systems used for rail transport purposes and to operational systems used for rail transport purposes, but the STH railway standards do not include requirements for information systems, e.g. timetabling systems.

Physical security threats and IT security threats for operational systems for which requirements are defined in the STH railway standards should be addressed by railway operators as part of the risk assessment and by design engineers/manufacturers/contractors as part of threat control. Additionally, it is required for the applied protections to be documented and verified in accordance with the requirements included in Volume XVIII of the STH railway standards.

Cybersecurity within the scope of this volume of the STH railway standards

Currently, in the area covered by this volume of standards, there are no networks and information systems whose security could be endangered. However, it is possible that such networks and information systems or technical solutions that collect, store, process, make available or transmit data may arise. For example, a system of sensors may be used that, through wired or wireless networks, public or non-public networks or directly, will connect to, for instance, an infrastructure manager's system. Then, they should be protected against physical security and IT security threats in a manner compliant with the requirements of the Information Safety Management System (ISMS) implemented by the STH company.

At the same time, it should be kept in mind that the ISMS will be subject to changes because maintaining the required level of cybersecurity is not possible by meeting requirements of the standards once since cybersecurity is a process rather than a state. In order to minimise the number and size of cyber threats, the requirements (obligations) included in the Act of 5 July 2018 on the national cybersecurity system in Chapter 3 for operators of key services, in Chapter 5 for public entities should be continuously observed in operational processes and only digital service providers fulfilling the obligations described in Chapter 4 of that Act should be used.

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3 Public road design

3.1 General requirements

- 1) Public roads should be designed for the purposes of:
 - a) transport services for STH facilities open to the public and serving commercial functions in passenger and freight traffic,
 - b) ensuring access to multi-level crossings in the event that existing circulation routes are intersected by the designed railway infrastructure.
- 2) In accordance with point 1) letter a), public roads should ensure access to:
 - a) railway stations (or to the area of platforms of such operating offices which are not equipped with a station building),
 - b) public freight infrastructure (e.g. yards and loading platforms).
- 3) Public roads should be designed in accordance with the rules specified in the Regulation [2].
- 4) If it is designed to connect the drainage system of a public road of an administrator other than the Company with the drainage system of the STH railway line, the drainage system of such a road should meet all requirements specified in the Company's standards, in particular in Volume I.3 of the Standards entitled "Railway track – drainage of the track layout".
- 5) Protection against unintentional entry of road vehicles into the railway infrastructure area should be designed in accordance with the requirements specified in:
 - a) Volume III.1 of the Standards entitled "Engineering structures" – for road overpasses and trestle bridges,
 - b) Volume XII of the Standards entitled "Railway line guard" – for locations of parallel routes in the immediate vicinity of a railway line and a public road.

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3.2 Detailed requirements

- 1) Public roads supporting the STH facilities referred to in chapter 3.1 point 1) letter a) and chapter 3.1 point 2), should be designed at least as class Z roads with hard enhanced bituminous, concrete or concrete paver pavement.
- 2) The class and pavement of public roads referred to in chapter 3.1 point 1) letter b) should be selected and designed in such a way that they correspond at least to the standard of the circulation route intersected by the designed railway infrastructure.
- 3) In relation to specific locations or the entire project, the Company may indicate a different class (including classes lower than Z with reference to point 1)) for designing public roads.
- 4) Public roads supporting the STH facilities referred to in chapter 3.1 point 2) letter a), in principle, should be equipped with sidewalks and cycle paths, providing access for pedestrians and cyclists to structures and a convenient circulation within their area and in their vicinity.
- 5) It is permitted not to build sidewalks or cycle paths referred to in point 4) if it is justified by local conditions, e.g. location of a passenger station directly along high-speed lines, at a significant distance from the towns served.
- 6) The public roads referred to in chapter 3.1 point 1) letter b) should be equipped with sidewalks and cycle paths in the scope compliant with the standard of the circulation route intersected.
- 7) In the vicinity of each railway station (or platforms of such operating offices which are not equipped with a station building), the following should be designed:
 - a) infrastructure for collective transport services, which, depending on the needs, should include:
 - bus (trolleybus) stops, bays and terminals,
 - tram stops and platforms;
 - b) infrastructure for passenger road transport services, and in particular the appropriate number of parking spaces provided for:
 - long-term parking (“park & ride” formula),
 - short-term parking (“kiss& ride” formula);
 - c) roofed and monitored bicycle car park.
- 8) At stations equipped with separate car parks, sufficient and suitable parking spaces must be reserved for disabled persons and persons with reduced mobility entitled to use the disabled parking spaces at a location as close as possible to an accessible entrance.

[as defined in TSI PRM]

4 Crossings of railway lines and sidings with public roads

- 1) Intersections of newly constructed STH railway lines with public roads should be designed as multi-level crossings only.
- 2) Crossings of newly constructed STH railway sidings with public roads are recommended to be designed as multi-level.
- 3) If for technical or economic reasons it is not possible to apply the solution referred to in point 2), it is permitted to design a railway siding crossing with a public road at one level in accordance with the rules specified in the Regulation [4].
- 4) If the construction of a new STH railway line intersects an existing vehicle, cycling or pedestrian circulation route (public road, cycle path, pedestrian and cycle path, sidewalk), its users should be provided with access to:
 - a) a multi-level crossing at a distance not exceeding 3 km from the intersected line, counting along the centre line of the designed railway line – in the case of road vehicles,
 - b) a passage/crossing over or under a railway line or a multi-level crossing with a separated pedestrian or cycle road at a distance not exceeding 500 m from the intersected line counting along the centre line of the designed railway line – in the case of cyclists and pedestrians.
- 5) Any changes to the existing circulation (road, cycle and pedestrian) networks, including in particular the number and location of multi-level crossings, passages and cycle crossings above or under a railway line, should be designed in accordance with the applicable regulations (i.a. in accordance with [1], [2], [4]) and the principles of technical knowledge, while respecting the public interest.

The solutions adopted should be agreed with road administrators and local authorities.

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5 Reference documents

- [1] Ustawa z dnia 21 marca 1985 r. o drogach publicznych (t.j. Dz. U. z 2020 r. Poz. 470, z późn. zm.)
- [2] Rozporządzenie Ministra Transportu i Gospodarki Morskiej z dnia 2 marca 1999 r. w sprawie warunków technicznych, jakim powinny odpowiadać drogi publiczne i ich usytuowanie (t.j. Dz. U. z 2016 r. Poz. 124, z późn. zm.)
- [3] Rozporządzenie Ministra Infrastruktury w sprawie trybu sporządzania informacji oraz gromadzenia i udostępniania danych o sieci dróg publicznych, obiektach mostowych, tunelach oraz promach (Dz. U. z 2005 r. Nr 67, poz. 583)
- [4] Rozporządzenie Ministra Infrastruktury i Rozwoju z dnia 20 października 2015 r. w sprawie warunków technicznych, jakim powinny odpowiadać skrzyżowania linii kolejowych oraz bocznic kolejowych z drogami i ich usytuowanie (Dz. U. z 2015 r. Poz. 1744, z późn. zm.)
- [5] Rozporządzenie Ministra Transportu i Gospodarki Morskiej z dnia 30 maja 2000 r. w sprawie warunków technicznych, jakim powinny odpowiadać drogowe obiekty inżynierskie i ich usytuowanie (Dz. U. z 2000 r. poz. 735, z późn. zm.)

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