



ICAO

MACHINE READABLE TRAVEL DOCUMENTS TECHNICAL REPORT

Additional TD1 and TD3 Size Layout Specifications for Machine Readable Travel Documents (MRTDs)

Version – 2.1 | October 2025

ICAO-ISO SC17 Working Group 3 (WG3), Task Force 6 (TF6)
FOR THE INTERNATIONAL CIVIL AVIATION ORGANIZATION

Additional TD1 and TD3 Size Layout Specifications for MRTDs

Release : 2.1
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Release Control

Release	Date	Description
1.3.1	Sept. 2023	Published version of the original Technical Report entitled 'Additional TD1 layout specifications for MROTDs'
2.0	August 2025	Initial draft: Updated version entitled TD1 and TD3 Layout Specifications
2.1	Oct. 2025	Final version: Incorporates feedback from the comment resolution process

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1. Scope

The Technical Report entitled 'Additional TD1 layout specifications for MROTDs (Version 1.3.1)' was authorized for inclusion within the 9th edition of Doc 9303, Part 5: Specifications for TD1 Size Machine Readable Official Travel Documents (MROTDs).

The original Technical Report introduced a range of optional portrait-oriented layouts for TD1 size MROTDs (herein referred to 'TD1') as an alternative to the landscape-oriented layout. WG3/Task Force 2 (TF2) was assigned with the editorial task to merge the TR within the 9th edition.

During the editorial process, it was evident that additional technical specifications and layout recommendations should be incorporated within the 9th edition. Specifically, the placement of the optional Card Access Number (CAN) and/or an optional barcode compliant with the Technical Report 'ICAO Datastructure for Barcode (IDB)' warranted further clarity within TD1 layouts. Similarly, guidance related to the inclusion of the IDB within the TD3 size format (MRP) was limited and required additional clarification.

This document is derived from the original Technical Report and is an updated version with editorial amendments which supplements Doc 9303 8th edition and is planned for inclusion within the 9th edition. While most modifications are editorial, additional technical specifications related to the CAN and IDB are presented herein in Section 4, 5 and 6.

The scope of this document includes:

- 1) Section 1 and 2 are derived and updated from the original Technical Report. The sections are informative.
- 2) Section 3 provides updated graphics and tables related to the permissible variations of the portrait-oriented layout. Updated graphics include the ICAO-approved portrait which will be incorporated within the 9th edition of Doc 9303. The technical specifications related to the zone dimensions remain unchanged from the original Technical Report.
- 3) Section 4 presents additional recommendations pertaining to the inclusion of the Card Access Number (CAN) for portrait orientations. The updated technical specifications allow for more flexibility within the layout regarding the placement of the CAN and reflect the space constraints on the front side of the TD1.
- 4) Section 5 presents additional recommendations and technical specifications related to the placement of an IDB within the front and reverse side of the portrait-oriented and landscape-oriented TD1.
- 5) Section 6 presents additional recommendations and technical specifications related to the placement of an IDB within a TD3.

Once endorsed, the additional technical specifications identified in Section 4, 5 and 6 will be incorporated in the 9th edition of Doc 9303 Part 4 and Part 5.

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1.1 Terminology

1.1.1 Technical report terminology

The key words “MUST”, “MUST NOT”, “SHALL”, “SHALL NOT”, “REQUIRED”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC 2119].

MUST	This word, or the terms “REQUIRED” or “SHALL”, means that the definition is an absolute requirement of the specification.
MUST NOT	This phrase, or the phrase “SHALL NOT”, means that the definition is an absolute prohibition of the specification.
SHOULD	This word, or the adjective “RECOMMENDED”, means that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
SHOULD NOT	This phrase, or the phrase “NOT RECOMMENDED” means that there may exist valid reasons in particular circumstances when the particular behaviour is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behaviour described with this label.
MAY	This word, or the adjective “OPTIONAL”, means that an item is truly optional. One user may choose to include the item because a particular application requires it or because the user feels that it enhances the application while another user may omit the same item. An implementation which does not include a particular option MUST be prepared to interoperate with another implementation which does include the option, though perhaps with reduced functionality. In the same vein an implementation which does include a particular option MUST be prepared to interoperate with another implementation which does not include the option (except, of course, for the feature the option provides).
CONDITIONAL	The usage of an item is dependent on the usage of other items. It is therefore further qualified under which conditions the item is REQUIRED or RECOMMENDED. This is an additional key word used in Doc 9303 (not part of RFC 2119).

In case OPTIONAL features are implemented, they MUST be implemented as described in this Technical Report.

1.1.2 Terms and Definitions

MRZ	Machine Readable Zone
CAN	Card Access Number
IDB	ICAO Datastructure for Barcode
MROTD	Machine Readable Official Travel Document (TD1 format)
MRP	Machine Readable Passport (TD3 format)
MRTD	Machine Readable Travel Document

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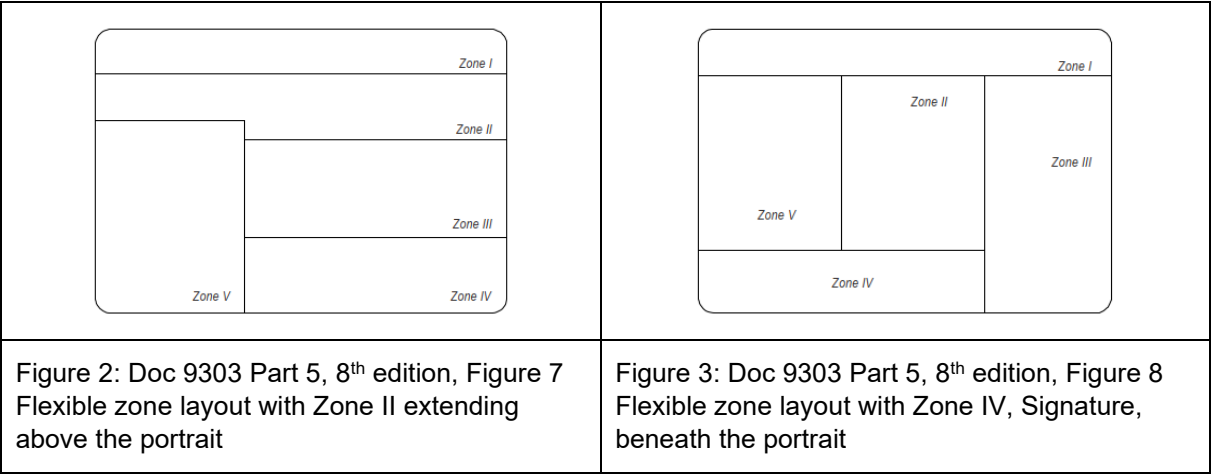
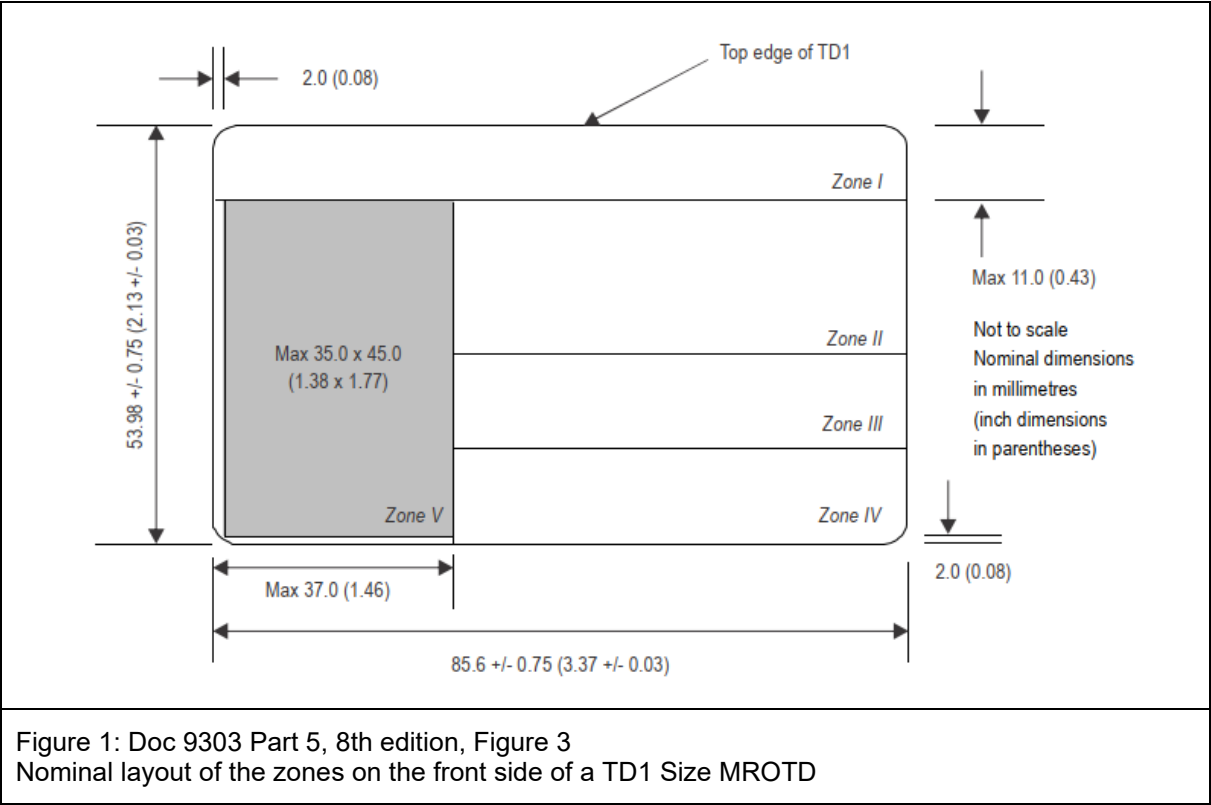
2. Landscape-oriented TD1 layout specifications

2.1 Zone layout for the front side

Doc 9303 Part 5 (8th edition) offers flexibility in the zone layout for landscape-oriented TD1 MROTDs.

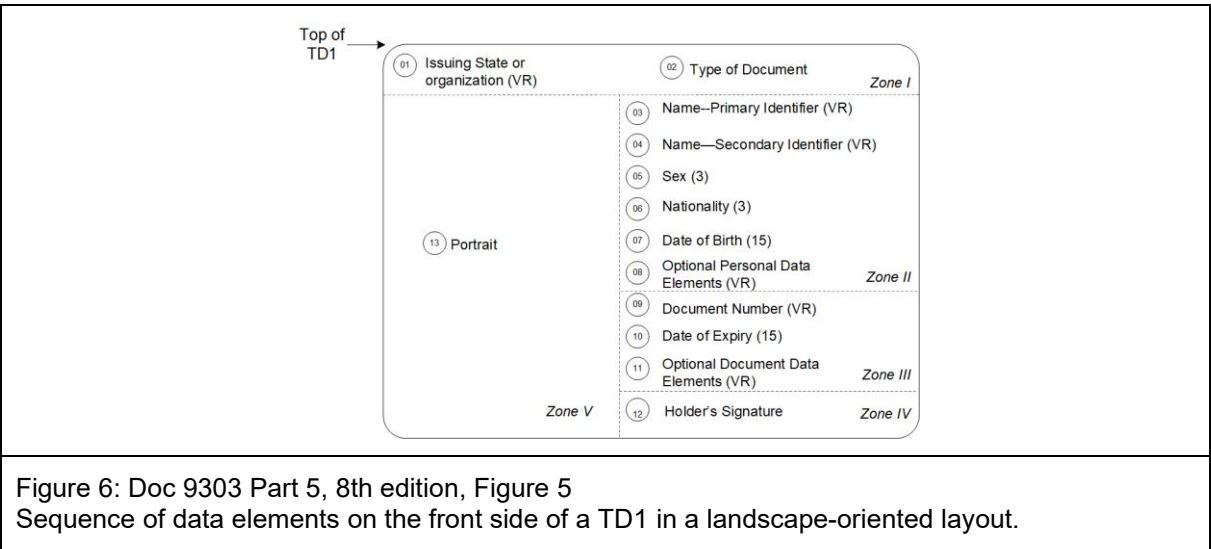
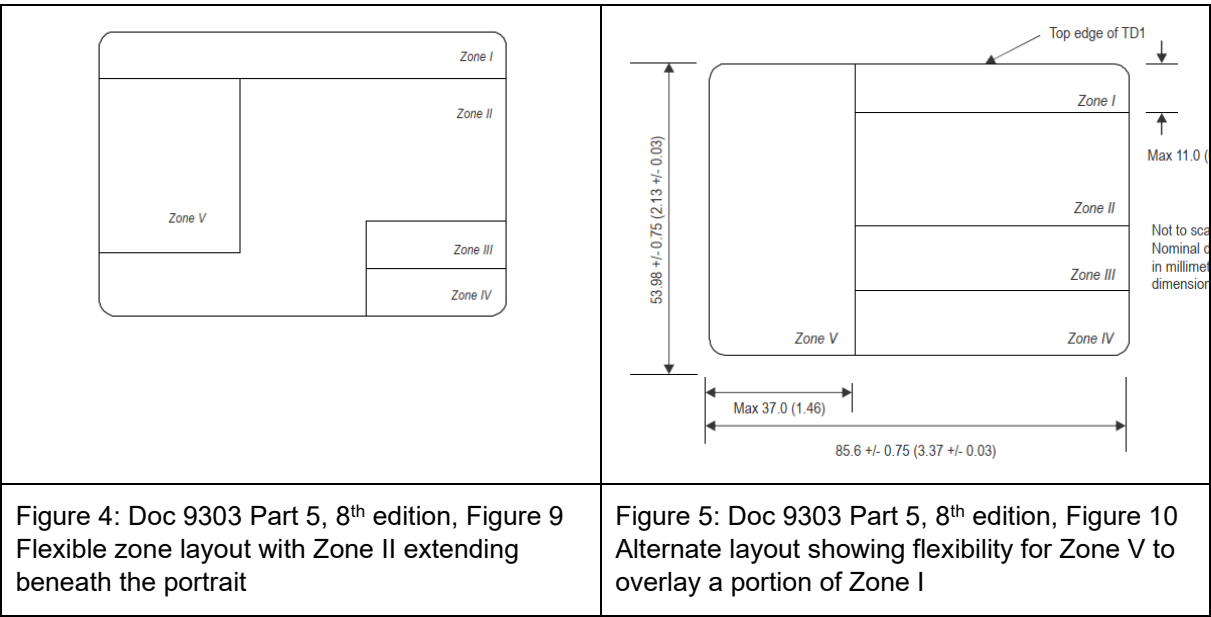
Issuing States or organizations MAY introduce a TD1 in accordance with the current Doc 9303 Part 5 specifications in a landscape-oriented layout or MAY introduce a portrait-oriented layout defined in Section 3, as detailed in this updated Technical Report.

Five (5) different landscape-oriented layout options MAY be applied on the front side of the TD1 as detailed in this Section. These landscape-oriented documents have limitations related to the size of the holder’s portrait.



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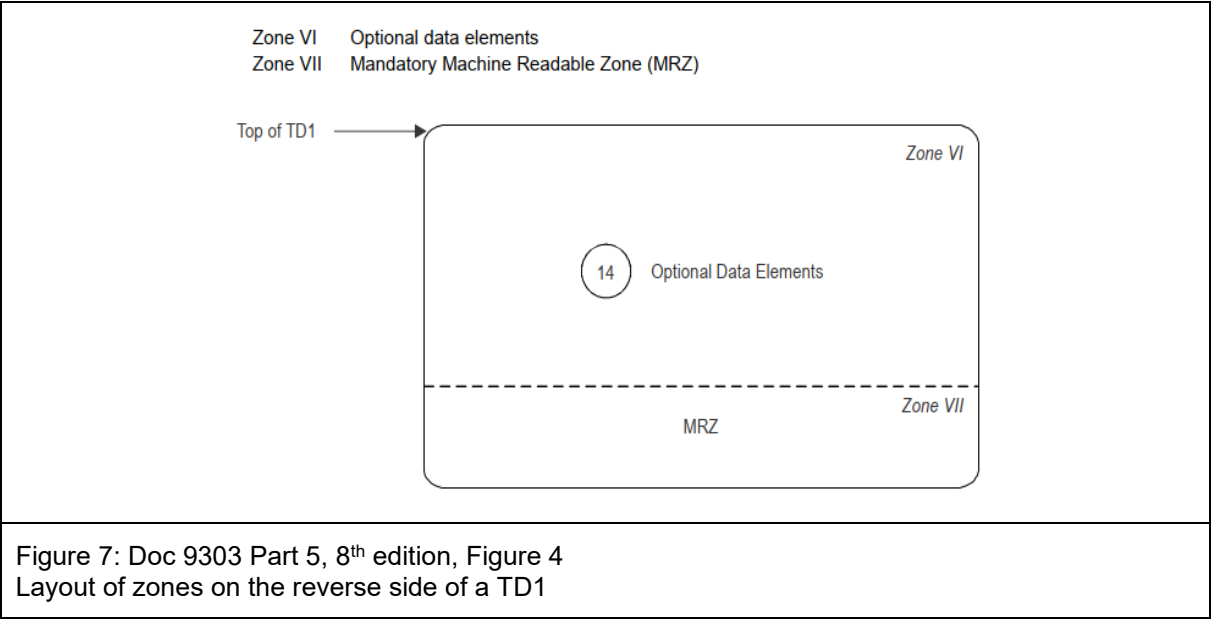


2.2 Zone layout for the reverse side

Doc 9303 Part 5 (8th edition) provides layout specifications for the reverse side of the TD1, as detailed in this Section and presented for informative purposes only. Note that updated specifications for the reserve side are presented in Section 3.3.1 and 3.3.2.

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For additional details of the zones and its contents refer to Doc 9303-5.

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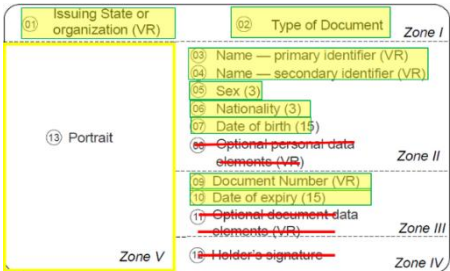

3. Portrait-oriented TD1 layout specifications

Issuing States or organizations MAY introduce a TD1 with a portrait-oriented layout. Six (6) separate layout options MAY be applied on the front side of the portrait-oriented TD1.

3.1 General considerations

The card orientation for the additional layout is changed from landscape to portrait to facilitate a significantly larger portrait of the holder.

While the majority of the relevant data remains on the front side of the TD1, the optional data elements and the signature are moved to the reverse side of the card. Refer to Figures 8 and 9.

	
<p>Figure 8: Current zone layout according to Part 5</p> <p>The data elements highlighted in yellow correspond to the highlighted areas in the additional layout (Figure 9). The optional data elements and signature are moved to the reverse side.</p>	<p>Figure 9: Personalized example within a portrait-oriented layout</p> <p>The data elements highlighted in yellow remain on the front side. Zone II data elements are distributed in the horizontal axis (i.e. name, sex, nationality) and vertical axis (i.e. date of birth). Zone III (i.e. document number, date of expiry) are on the vertical axis.</p>

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3.2 Zone layout for the front side

The following two layout options allow for a larger portrait of the holder on the document.

The current zone IV (signature) is moved to the reverse side of the document. Additionally, zones I, II and III are designed as flexible as denoted by the shaded areas that represent the option to extend either of the adjacent zones into these regions, i.e. allowing for this area to be used for either of the zones denoted in the shaded areas. This flexibility has been introduced after assessment of recent designs and implementations of TD1s in circulation with respect to the space utilized for zones I, II and III on these cards. In particular, countries with many official languages benefit from this flexibility as they may have specific needs for additional space in some zones.

Dimensions for Zone V (mandatory identification feature - portrait of the holder):

For these additional portrait-oriented layouts of TD1, the mandatory identification feature (zone V) MAY be 61.0 mm x 45.1 mm (2.40 inch x 1.78 inch), which is larger than the 45.0 mm x 35.0 mm (1.26 inch x 1.02 inch) as it is currently defined in Doc 9303-5 clause 4.1.1.

Figure 10 and Figure 1 show the two zone layout options for the front side of the card. Specific examples of these layout options with different ways to utilize the flexibility denoted by the shaded areas are shown as different variants in subsections 3.2.1 to 3.2.6.

While variants described in subsections 3.2.1 to 3.2.4 address additional space requirements in zones II and III, the variants in subsections 3.2.5 to 3.2.6 address needs for additional space in zone I.

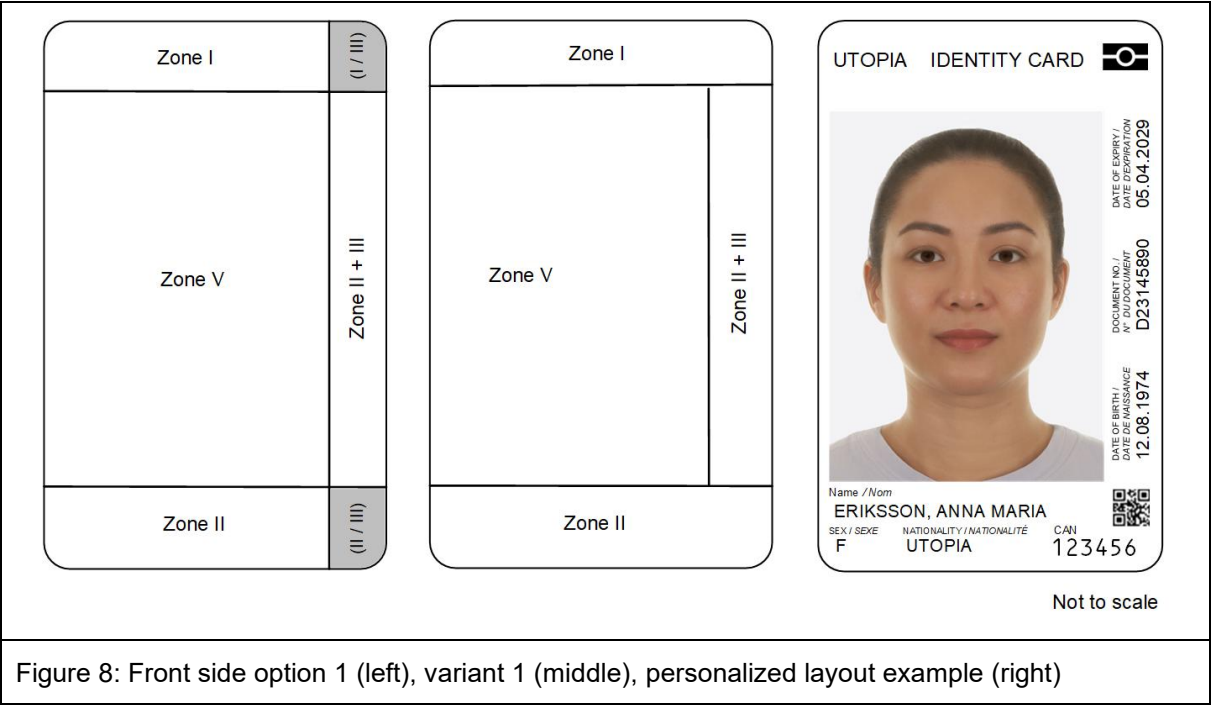
Figure 10: Option 1 for the front side	Figure 11: Option 2 for the front side

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3.2.1 Front side: Option 1 / Variant 1

For Option 1 / Variant 1, the layout of the zones SHOULD be as specified in Figure 12 (middle) and SHOULD use the dimensions specified in Table 1.



Zone	Width (Option 1, variant 1)	Height
Zone I	53.98 mm 2.13 in	10.7 mm 0.42 in
Zone II	53.98 mm 2.13 in	13.9 mm 0.55 in
Zone II+III	8.88 mm 0.35 in	61.0 mm 2.40 in
Zone V	45.1 mm 1.78 in	61.0 mm 2.40 in

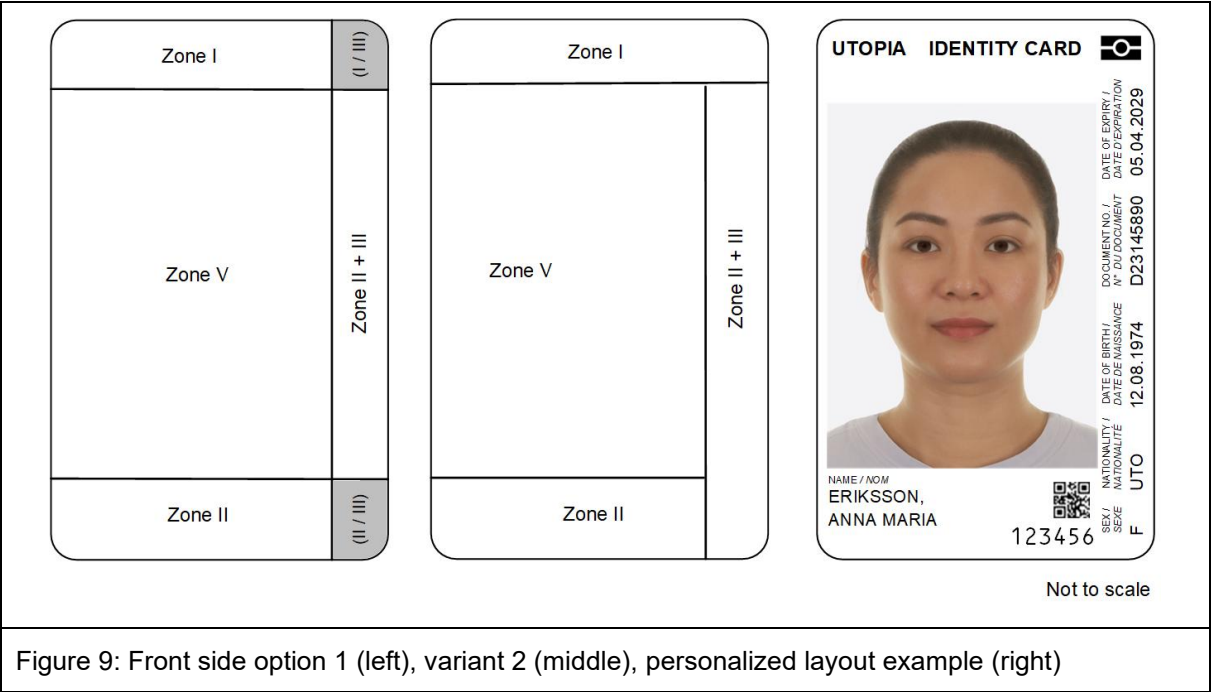
Table 1: Dimensions for different zones: front side option 1, variant 1

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3.2.2 Front side: Option 1 / Variant 2

For Option 1 / Variant 2, the layout of the zones SHOULD be as specified in Figure 13 (middle) and SHOULD use the dimensions specified in Table 2.



Zone	Width (option 1, Variant 2)	Height
Zone I	53.98 mm 2.13 in	10.7 mm 0.42 in
Zone II	45.1 mm 1.78 in	13.9 mm 0.55 in
Zone II+III	8.88 mm 0.35 in	74.9 mm 2.95 in
Zone V	45.1 mm 1.78 in	61.0 mm 2.40 in

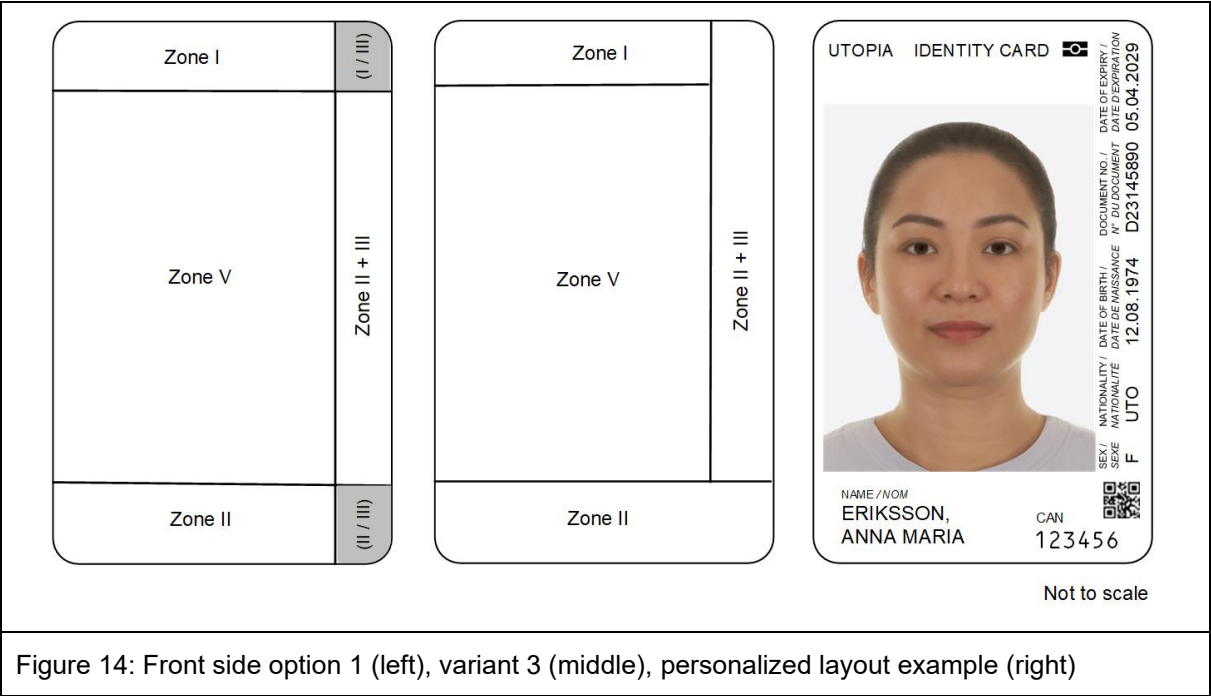
Table 2: Dimensions for different zones: front side Option 1, Variant 2

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3.2.3 Front side: Option 1 / Variant 3

For Option 1 / Variant 3, the layout of the zones SHOULD be as specified in Figure 14 (middle) and SHOULD use the dimensions specified in Table 3.



Zone	Width (Option 1, variant 3)	Height
Zone I	45.1 mm 1.78 in	10.7 mm 0.42 in
Zone II	53.98 mm 2.13 in	13.9 mm 0.55 in
Zone II+III	8.88 mm 0.35 in	71.7 mm 2.82 in
Zone V	45.1 mm 1.78 in	61.0 mm 2.40 in

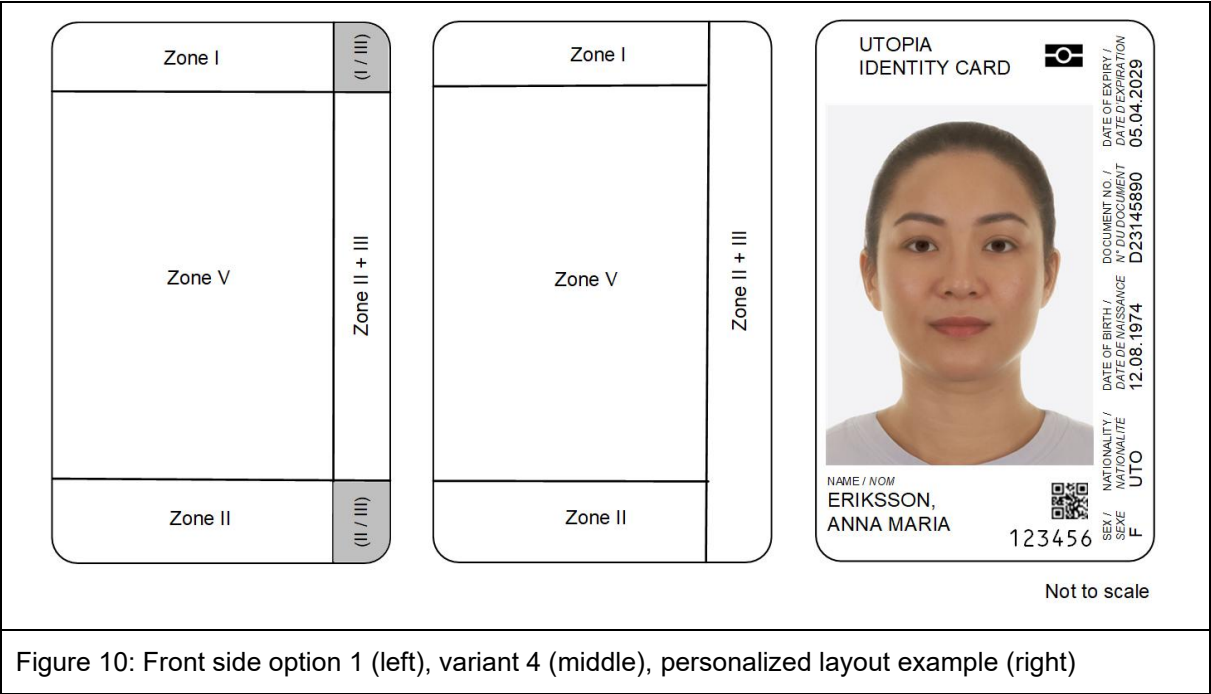
Table 3: Dimensions for different zones: front side option 1, variant 3

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3.2.4 Front side: Option 1 / Variant 4

For Option 1 / Variant 4, the layout of the zones SHOULD be as specified in Figure 15 (middle) and SHOULD use the dimensions specified in Table 4.



Zone	Width (option 1, variant 4)	Height
Zone I	45.1 mm 1.78 in	10.7 mm 0.42 in
Zone II	45.1 mm 1.78 in	13.9 mm 0.55 in
Zone II+III	8.88 mm 0.35 in	85.6 mm 3.37 in
Zone V	45.1 mm 1.78 in	61.0 mm 2.40 in

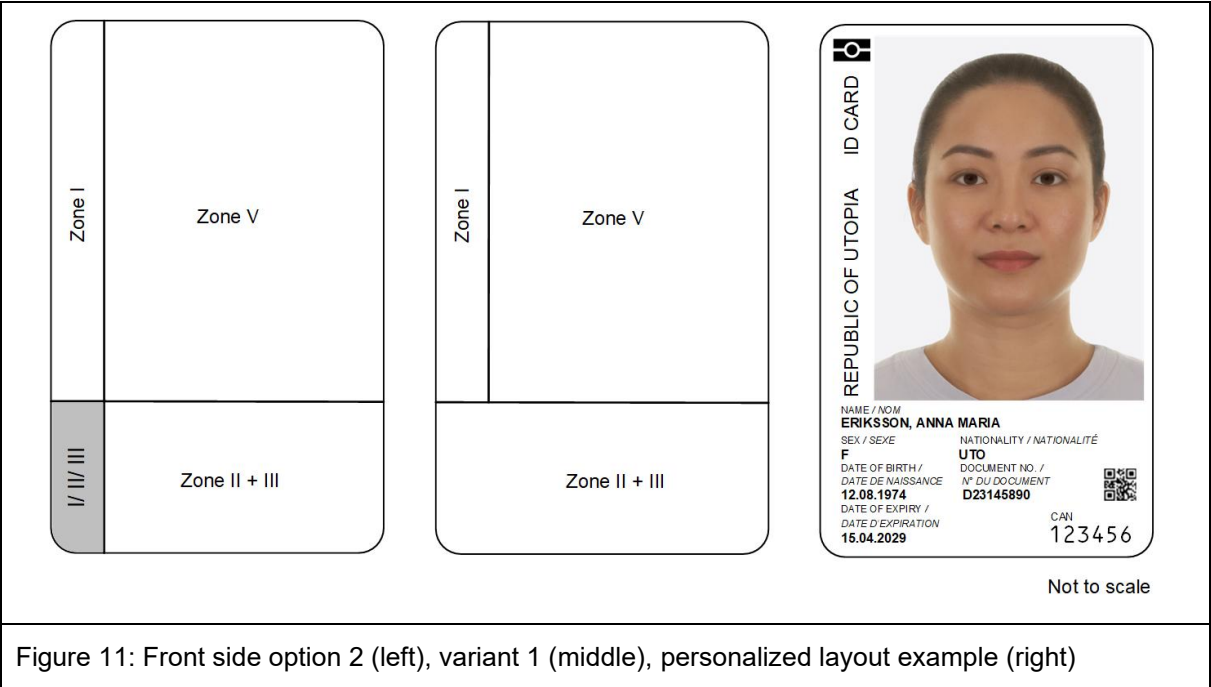
Table 4: Dimensions for different zones: front side option 1, variant 4

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3.2.5 Front side: Option 2 / Variant 1

For Option 2 / Variant 1, the layout of the zones SHOULD be as specified in Figure 16 (middle) and SHOULD use the dimensions specified in Table 5.



Zone	Width (Option 2, variant 1)	Height
Zone I	8.88 mm 0.35 in	61.0 mm 2.40 in
Zone II + III	53.98 mm 2.13 in	24.6 mm 1.78 in
Zone V	45.1 mm 1.78 in	61.0 mm 2.40 in

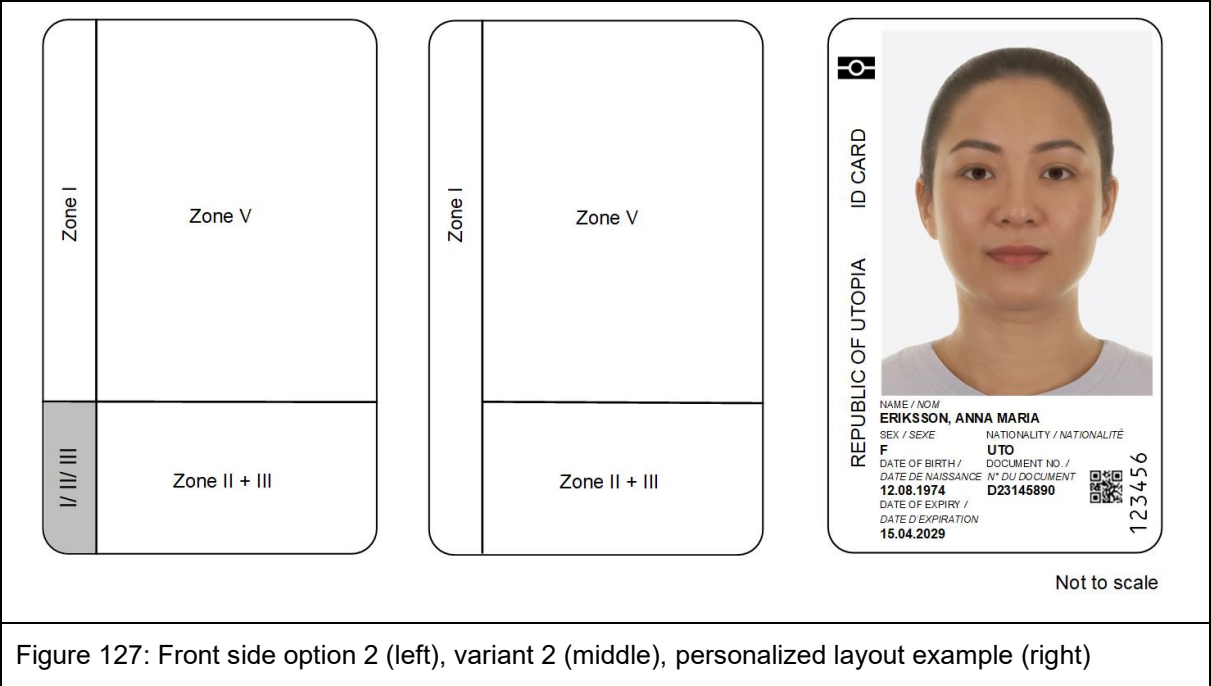
Table 5: Dimensions for different zones: front side Option 2 /Variant 1

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3.2.6 Front side: Option 2 / Variant 2

For Option 2 / Variant 2, the layout of the zones SHOULD be as specified in Figure 17 (middle) and SHOULD use the dimensions specified in Table 6.



Zone	Width (option 2 variant 2)	Height
Zone I	8.88 mm 0.35 in	85.6 mm 3.37 in
Zone II + III	45.1 mm 1.78 in	24.6 mm 1.78 in
Zone V	45.1 mm 1.78 in	61.0 mm 2.40 in

Table 6: Dimensions for different zones: front side Option 2 / Variant 2

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Note that zone IV of the current landscape specification (signature) is moved from the front to the reverse side of the document for portrait-oriented layouts.

When an issuing State or organization chooses, for its own or for bilateral purposes, to expand the machine-readable data capacity of a TD1 through use of an integrated circuit with contacts, the contacts SHALL be placed in Zone IV + VI.

Figure 13: Reverse side option 1 (left), personalized layout example (right)

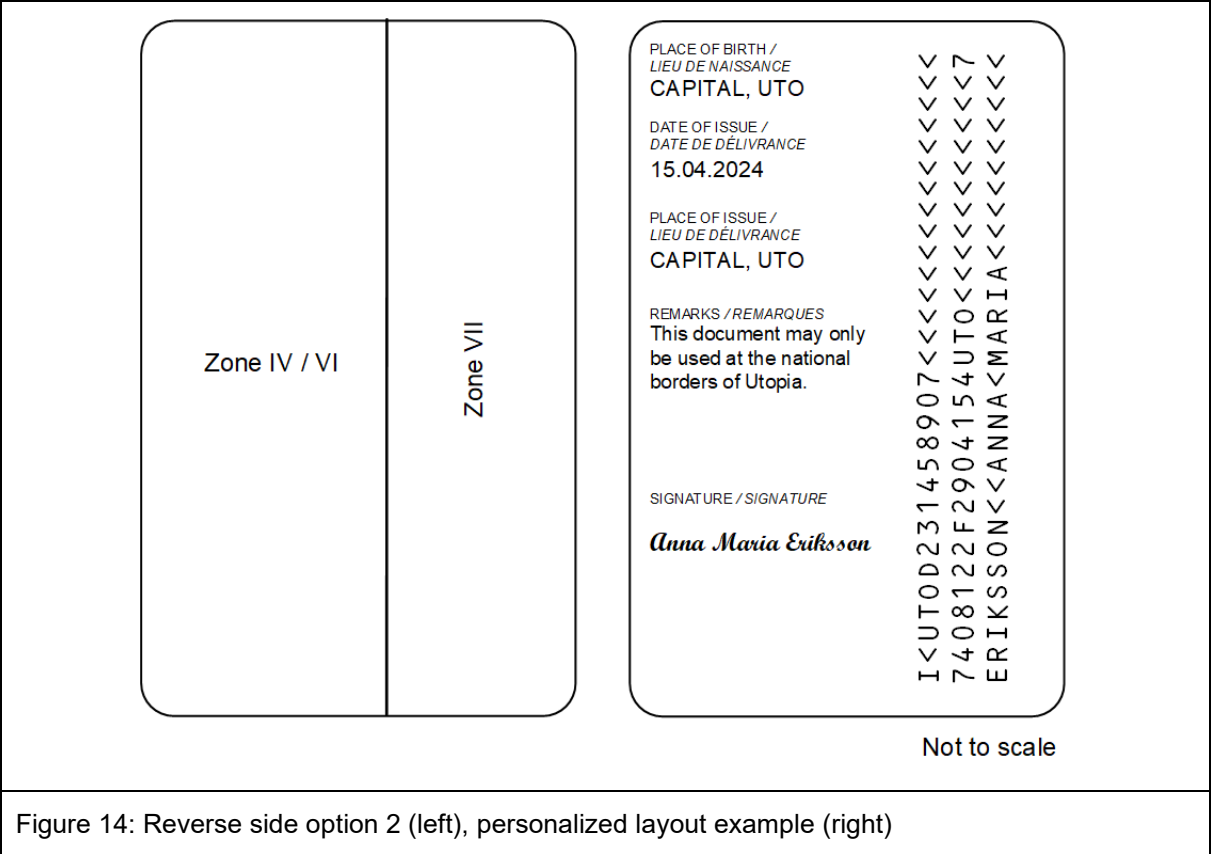
Table 7: Dimensions for different zones: reverse side option 1

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3.3.2 Reverse side: Option 2

This option is intended to provide a possibility for maintaining the same portrait orientation of the TD1 on both the front and reverse side. The layout of the zones SHALL use the dimensions specified in Table 8.



Zone dimensions: reverse side option 2 [dimensions in mm]		
Zone	Width	Height
Zone IV + VI	30.7	85.6
Zone VII	23.3	85.6

Table 8: Dimensions for different zones: reverse side option 2

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4. Card Access Number (CAN)

4.1 Current specification

In the current Doc 9303 Part 5 (8th edition), the position of the CAN is defined as follows (section 3.2.3):

Vertical position is conforming to the vertical position of any one of the three MRZ lines as specified in this document and shown in Figure 6. The horizontal position shall be at the discretion of the issuing State or organization, but shall not overlap the portrait area (Zone V) or interfere with the legibility of other data in the VIZ.

The figure that is referred to in the quote defines the dimensions of the machine-readable zone on a TD1 (landscape-oriented) and is reproduced in Figure 20 in this document.

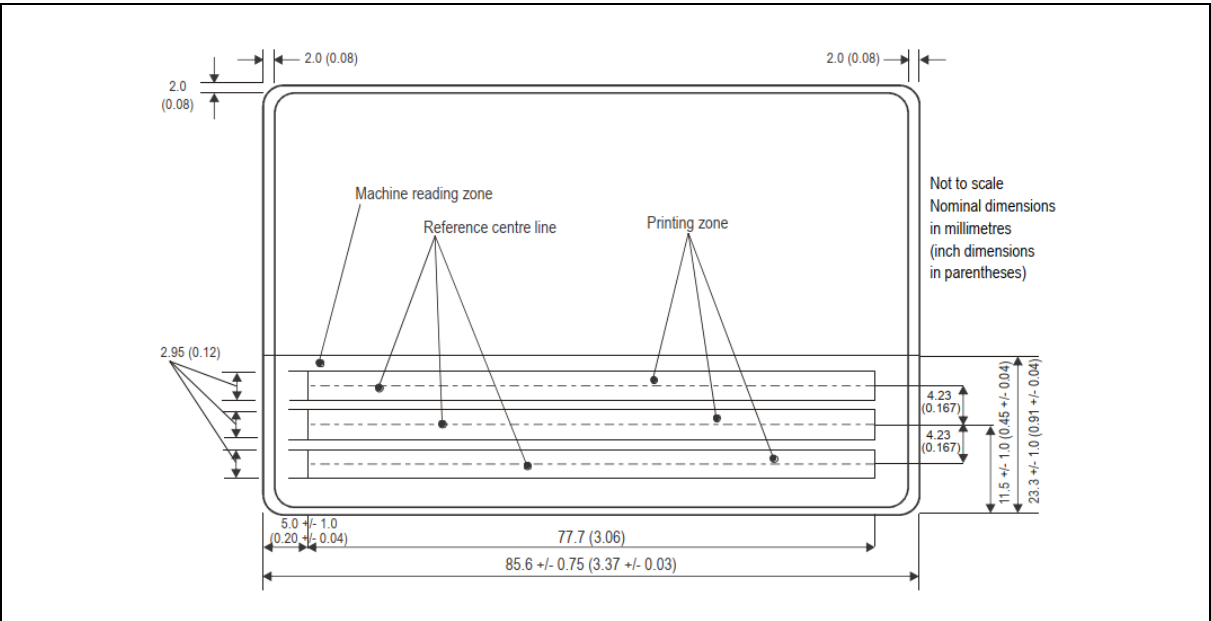


Figure 20: Doc 9303 Part 5, 8th edition, Figure 6
Position and dimensions of Zone VII the Machine-Readable Zone

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4.2 CAN within a TD1 layout

Doc 9303 Part 5 (8th edition), Section 3.2.3 provides specifications for the CAN within a landscape-oriented TD1.

Additional specifications are presented herein to supplement Section 3.2.3 for the landscape-oriented layout as well as the inclusion of the CAN within the portrait layout.

Updated specifications are intended to provide additional flexibility with the layout design owing to the limited space within the zones to include multilingual captions and the potential inclusion should an optional IDB be included.

General Requirements

The following specifications apply to the CAN within both landscape and portrait-oriented layouts:

- The 'CAN' SHALL be a 6-digit number.
- The 'CAN' SHALL be comprised solely of numerals, 0 to 9.
- The font and background SHALL conform to the specifications for the MRZ, set out in Doc 9303-3.
- The 'CAN' MAY include a field caption.

Landscape-oriented layouts

The 'CAN' SHOULD be placed in Zone III. The horizontal position is at the discretion of the issuing State or organization but SHALL not overlap the portrait area (Zone V) or interfere with the legibility of other data elements within the VIZ.

Portrait-oriented layouts

The 'CAN' SHOULD be placed in the recommended area as illustrated in Figure 21. Owing to space constraints, additional flexibility is permitted for the location. The 'CAN' MAY be positioned in a vertical or horizontal orientation as illustrated in Figure 22.

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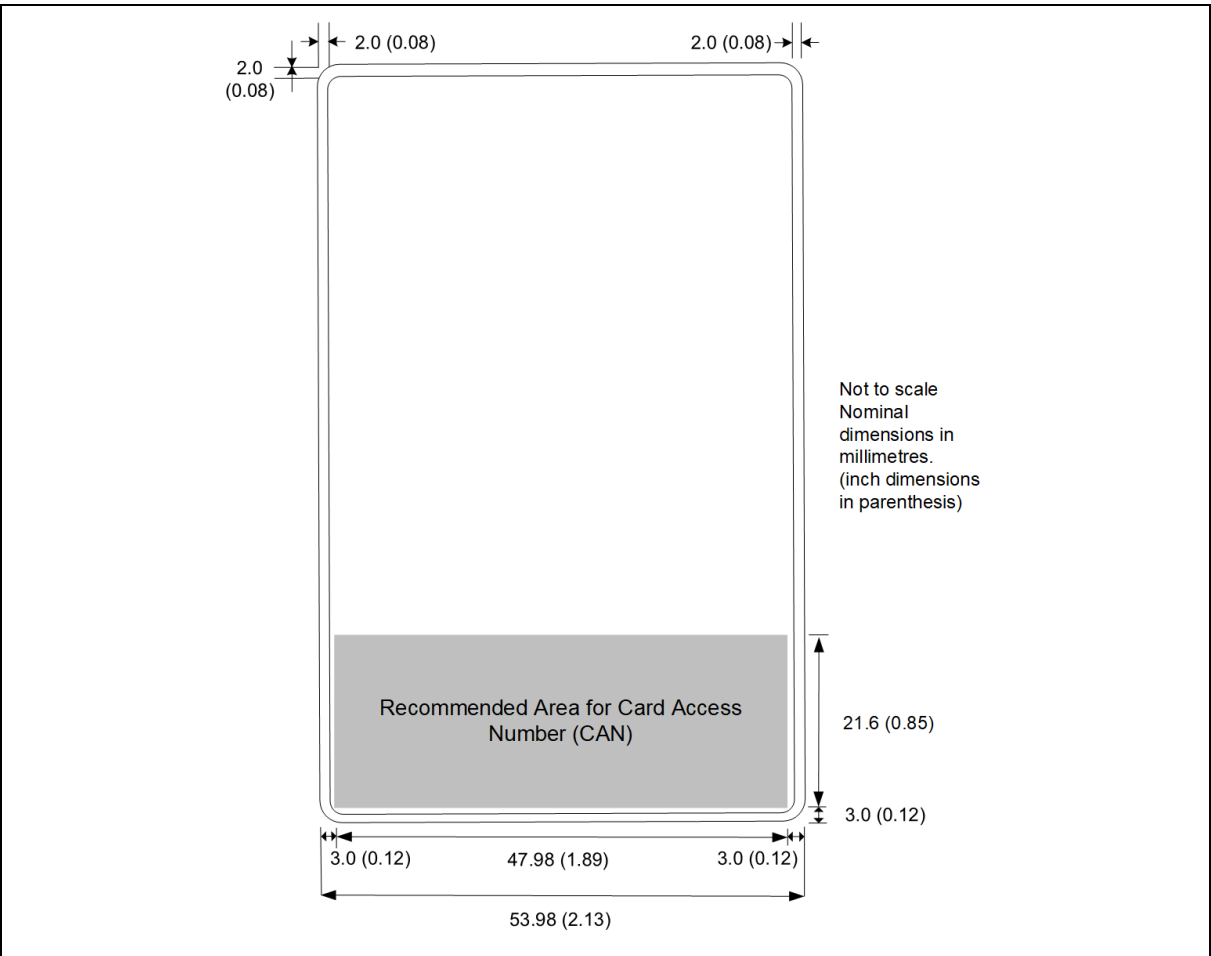


Figure 21: Additional specification for CAN placement within a portrait-oriented layout

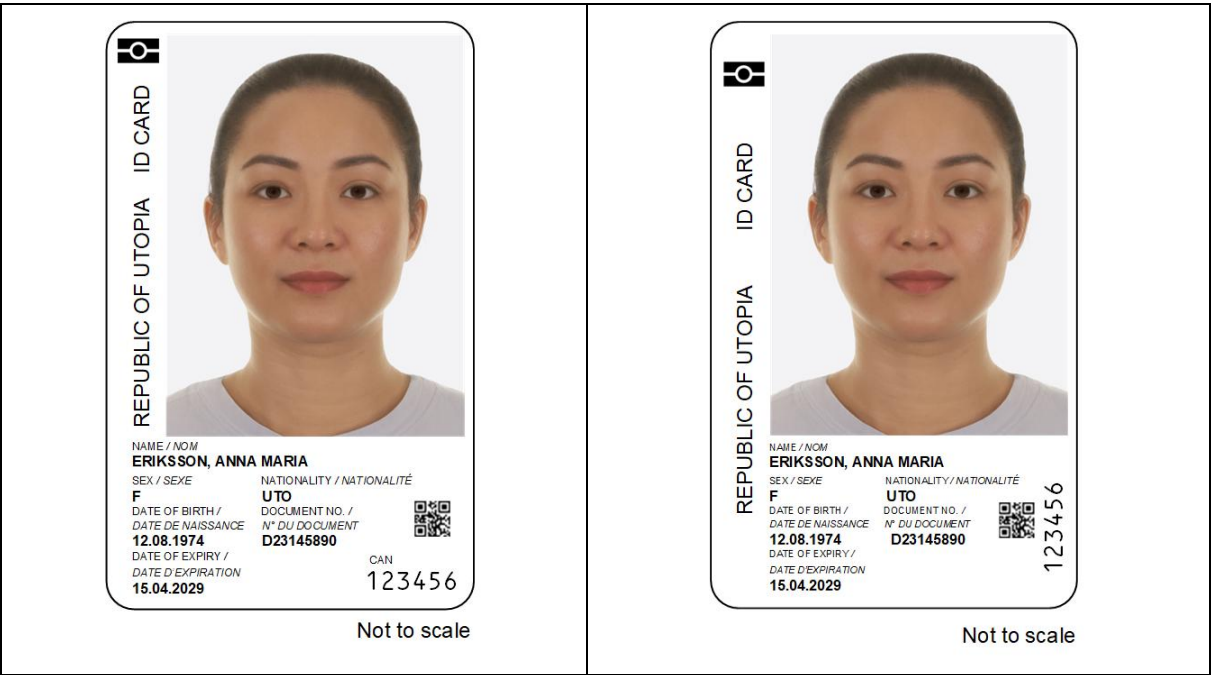


Figure 22: Personalized examples for a front side displaying possible placements for the CAN with the horizontal orientation (left) and vertical orientation (right).

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The inclusion of an IDB is optional and MAY be included within a landscape-oriented or portrait-oriented TD1. An IDB MAY be included within the front and/or reverse side of the TD1.

The RECOMMENDED IDB area described throughout Section 5 is intended to offer flexibility, recognizing that the field length, position and font of other variable data elements within the Zones will vary. Similarly, the size of the IDB may vary according to its contents and the encoding format selected.

[illegible]

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5.1 Portrait-oriented layout (front)

To allow flexibility within the layout, the following graphics illustrate the RECOMMENDED location for the IDB on the front side of the portrait-oriented TD1. Figure 25 illustrates the RECOMMENDED area for the IDB within the portrait-oriented layout Options 1 and 2. For IDBs containing the CAN, the barcode SHALL be printed on the front of the TD1 to facilitate machine assisted inspection.

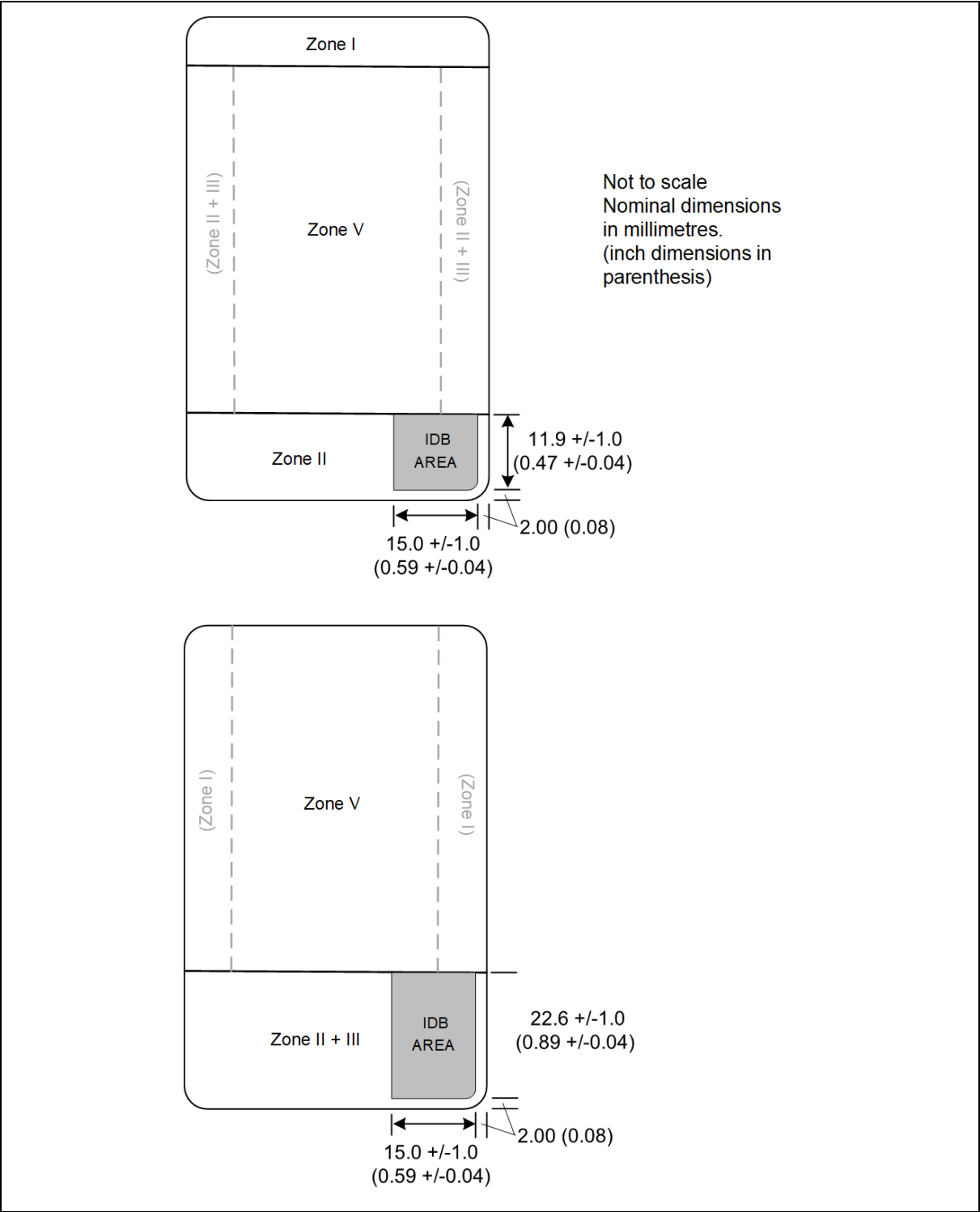


Figure 25: Recommended IDB placement on the portrait-oriented layout, front side of the TD1

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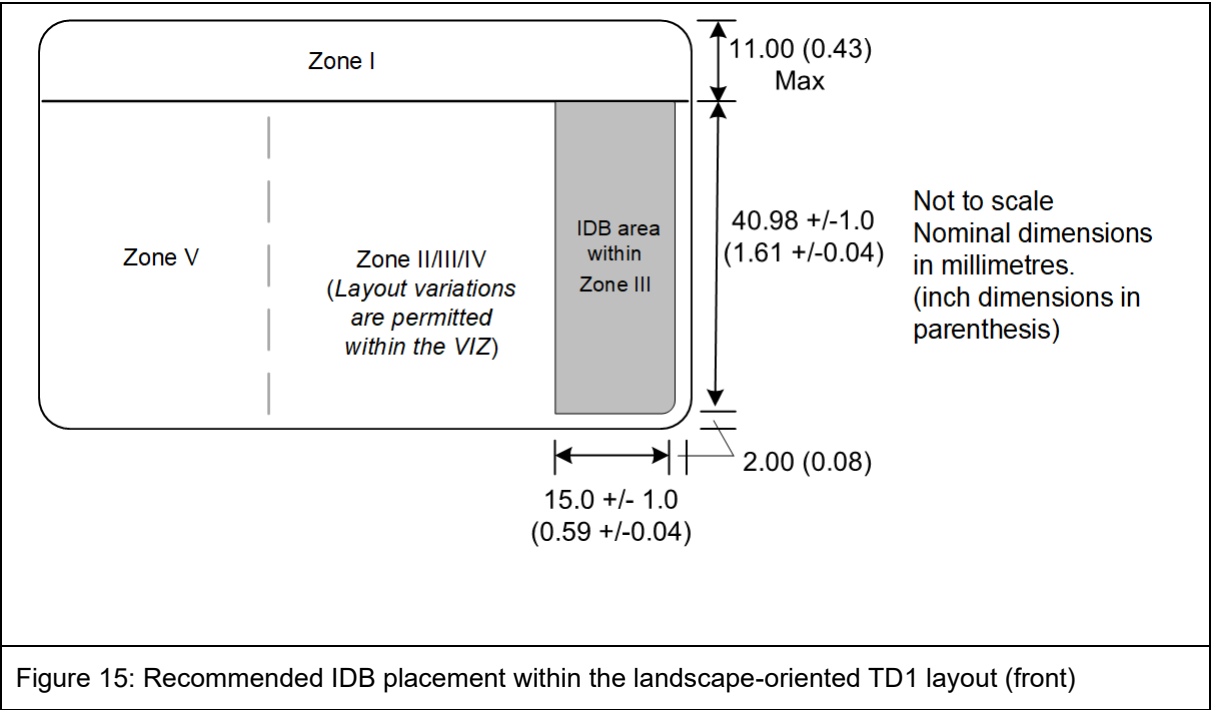
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5.2 Landscape-oriented layout (front)

The IDB is optional and MAY be included within a landscape-oriented layout on the front of the TD1. For IDBs containing the CAN, the barcode SHALL be printed on the front of the TD1 to facilitate machine assisted inspection.

To allow flexibility within the layout, Figure 26 illustrates the RECOMMENDED location for the IDB on the front of the TD1. The IDB SHOULD be located within Zone III of the landscape version. Zone III MAY be adjusted in size and shape as previously illustrated in Figures 1 - 5.

For a TD1 with a landscape oriented layout using an integrated circuit with contacts, the contacts MAY be placed in Zone VI. If this option is chosen, the provisions of Doc 9303-5 section 3.2.1 for the relocation of the holder’s portrait do not apply.

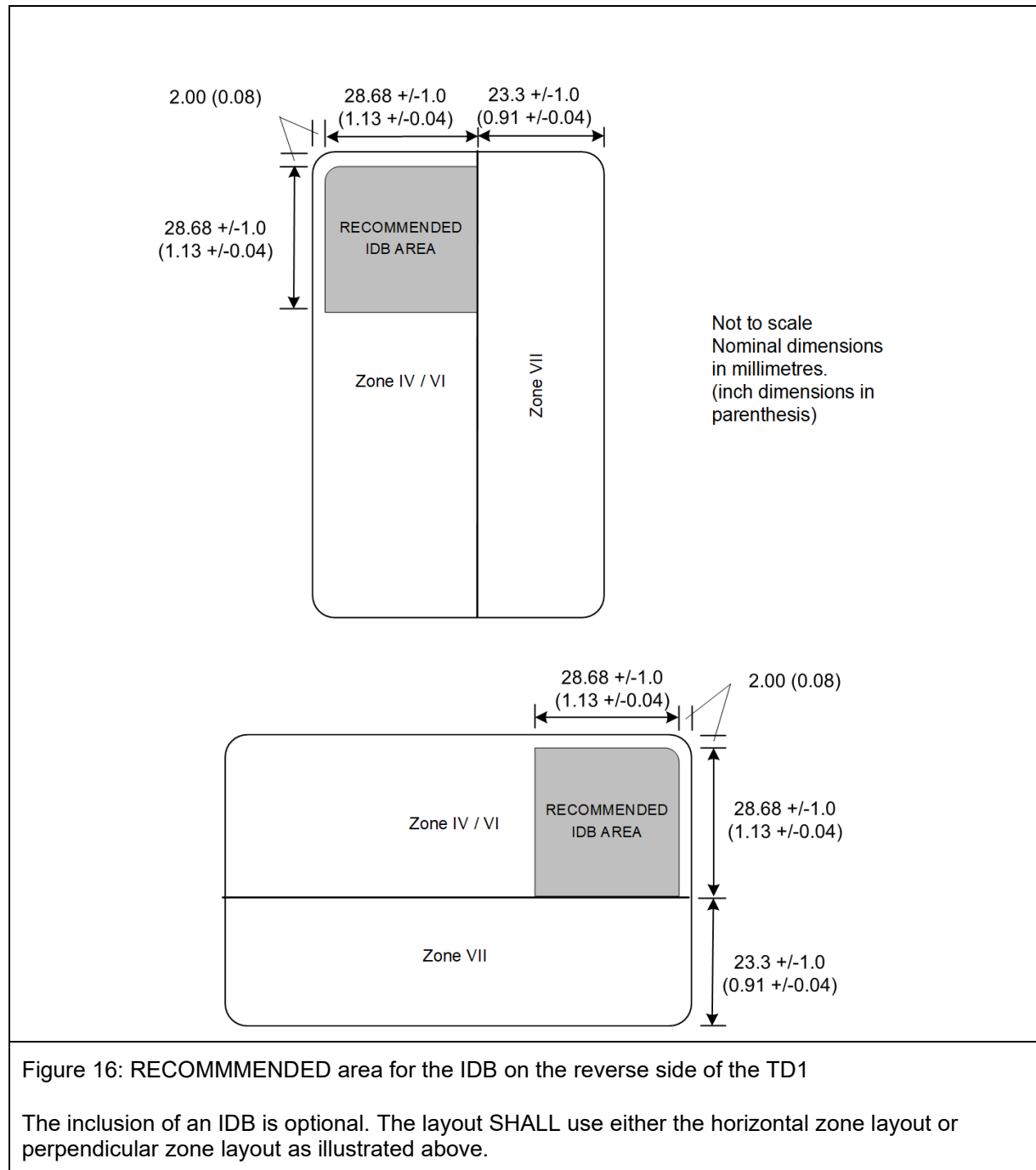


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5.3 IDB placement on the reverse side of the TD1

An IDB MAY be included on the reverse side of the TD1. Figure 27 illustrates the RECOMMENDED maximum size to avoid interference with Zone VII (MRZ) and provide a perimeter from the edge of the TD1.



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6. Placement of an optional IDB within a TD3

Doc 9303 Part 4 (8th edition), Section 3.3 permits flexibility within the zone layout of the Visual Inspection Zone (VIZ). However, Part 4 does not offer guidance related to the inclusion of an IDB. This section provides additional technical guidance.

6.1 Recommended IDB position

The IDB MAY be included within the data page and/or an adjacent page. If contained within the front side of the data page, it MUST be placed within Zone II or III as per the variations permitted in Section 3.3 of Doc 9303 Part 4.

The IDB SHOULD be placed within the recommended area as illustrated in Figure 28. The recommended IDB area provides flexibility, as other data elements, including captions, font, size and inclusion of optional elements, such as transparent windows and other security features will vary and affect the available space. The size of the IDB can also vary based on content and encoding format.

The IDB field SHOULD have a caption indicating its purpose (e.g., CAN). Refer to Figure 29.

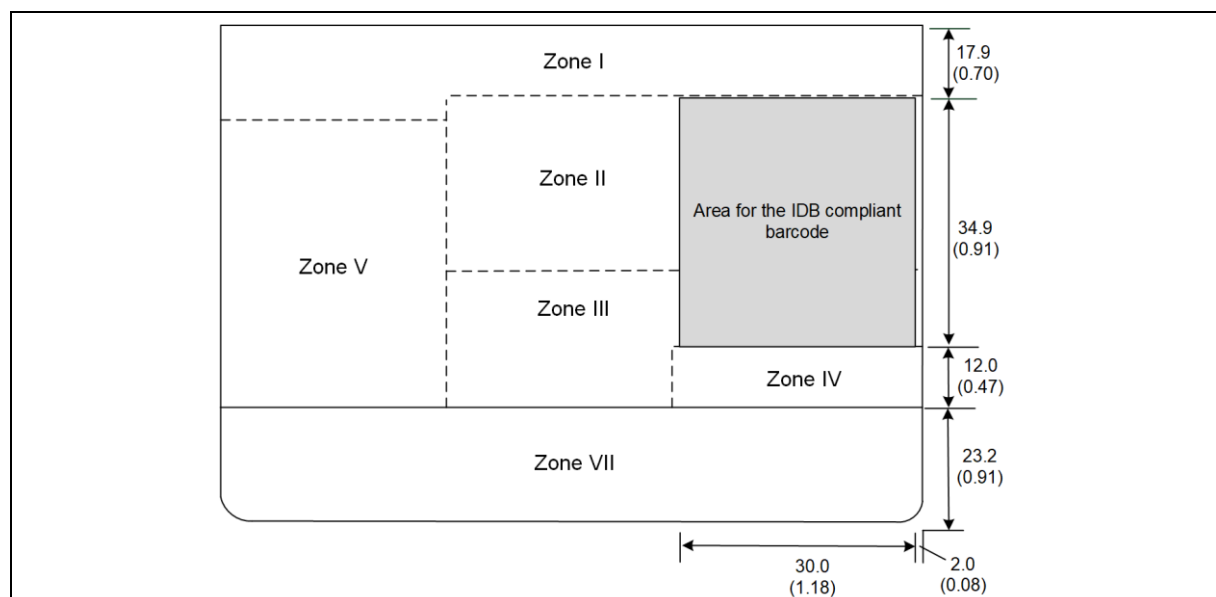


Figure 17: RECOMMEND area for the IDB within the data page of a TD3 document.

The IDB SHALL NOT interfere with the readability of other data elements located within Zone II or III. If Zone IV (signature) is relocated to an adjacent page or the reverse side of the data page, the IDB area MAY be positioned within the extended Zone II/III, in accordance with Doc 9303 Part 4, Section 3.3.

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Figure 18: Example of an IDB included within the passport data page.