



# **PSPC National CADD Standard**

## **Computer-Aided Design and Drafting**

Version: 2024

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# PSPC National CADD Standard

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## 1. Introduction

Computer Aided Design and Drafting (CADD) is an integral component of information management for Public Services and Procurement Canada (PSPC). The production of CADD drawings is an important corporate asset. The greatest payback for CADD and related technology is in the reuse of the digital data for facilities management and as a foundation for future projects. If CADD drawings are to be an effective source of information, they must adhere to a standardized set of criteria that all CADD users will understand.

As an ongoing effort to keep up with changing technology, we are pleased to introduce the 2024 version of the PSPC National CADD Standard. A concerted effort has been made not only to simplify the standard, but also to reinforce the requirements in areas we feel are critical to our goals.

This version features interoperability enhancements with Building Information Modeling (BIM) authoring technologies with the goal of simplifying the transition between BIM and CADD. Furthermore, new national toolkits for AutoCAD, Civil 3D and Revit are featured in the annexes to support and facilitate the adoption of the PSPC National CADD Standard on projects.

### 1.1 Scope

This standard applies to all services that generate CADD drawings for PSPC, including both internal PSPC employees and external consultant(s).

### 1.2 Definitions

(a) **Drawings**: The graphical and pictorial portions of the contract documents, wherever located and whenever issued showing the design, location and dimension of the Work, generally including illustrations, plans, elevations, sections, details and diagrams. In the context of this document, the term drawing refers to both CADD and PDF drawing file format as defined below.

- **Computer-Aided Design and Drafting (CADD) Drawings** are drawings digitally represented as vector graphics stored in an Autodesk AutoCAD TrustedDWG (.dwg) file format.
- **Portable Document Format (PDF) Drawings** are drawings digitally represented as raster images / vector graphics stored in a PDF/E-1 (.pdf) file format in accordance with ISO 24517-1.

(b) **Sheet, subset and set**: A sheet refers to a sheet in a project. A subset refers to sheets grouped by discipline. A set refers to the full set of sheets for the project.

### 1.3 Terminology

This document utilizes “shall” and “must” interchangeably and are used to express a requirement, a provision that internal PSPC employees and external consultants are obligated to meet.

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## 1.4 Annex document listing

The annex documents listed in Table 1-1 are separate and subordinate documents to the PSPC National CADD Standard that provides in-depth documentation for a specific topic.

Table 1-1 : Listing of available annex documents

Document Name	Description
Annex A: Layers	Listing of standard CADD layers and abbreviations for the layer fields.
Annex B: Symbols and Graphics	Listing of standard symbols and graphics including blocks, line types and hatch patterns.
Annex C: Toolkit for AutoCAD	Document covering templates and tools related to the PSPC National CADD Standard and working with the Autodesk AutoCAD application.
Annex D: Toolkit for Civil 3D	Document covering templates and tools related to the PSPC National CADD Standard and working with the Autodesk AutoCAD Civil 3D application.
Annex E: Toolkit for Revit	Document covering templates and tools related to the PSPC National CADD Standard and working with the Autodesk Revit application.

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## 1.5 Inquiries

For questions or further information pertaining to this document, please contact the Geomatic Services National Centre of Expertise by email at [CADD-CDAO@pwgsc-tpsgc.gc.ca](mailto:CADD-CDAO@pwgsc-tpsgc.gc.ca).

For any questions pertaining to the use of the National CADD Standard on a project, please email the your regional contact listed in Table 1-2 - Regional contact list.

Table 1-2 - Regional contact list

Regions	Contact
Atlantic	<a href="mailto:PWGSC.AtlanticCADD-CDAOAtlantique.TPSGC@pwgsc-tpsgc.gc.ca">PWGSC.AtlanticCADD-CDAOAtlantique.TPSGC@pwgsc-tpsgc.gc.ca</a>
Québec	<a href="mailto:TPSGC.rqcdao-qrcadd.PWGSC@tpsgc-pwgsc.gc.ca">TPSGC.rqcdao-qrcadd.PWGSC@tpsgc-pwgsc.gc.ca</a>
National Capital Area	<a href="mailto:TPSGC.CDAO-CADD.PWGSC@tpsgc-pwgsc.gc.ca">TPSGC.CDAO-CADD.PWGSC@tpsgc-pwgsc.gc.ca</a>
Ontario	<a href="mailto:PWGSC.OntCADD-CDAO.TPSGC@pwgsc-tpsgc.gc.ca">PWGSC.OntCADD-CDAO.TPSGC@pwgsc-tpsgc.gc.ca</a>
Western	<a href="mailto:PWGSC.WRSIM-ROGIS.TPSGC@pwgsc-tpsgc.gc.ca">PWGSC.WRSIM-ROGIS.TPSGC@pwgsc-tpsgc.gc.ca</a>
Pacific	<a href="mailto:Walter.Casol@tpsgc-pwgsc.gc.ca">Walter.Casol@tpsgc-pwgsc.gc.ca</a>

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## 2. Project Delivery

This section describes the requirements around the quality assurances of drawing deliverables.

### 2.1 Drawing deliverables

(a) Drawings must be prepared and submitted in accordance with the PWGSC Documentation and Deliverables Manual for Architectural and Engineering Consultants available at <https://publications.gc.ca/site/eng/9.926552/publication.html>.

(b) Additional requirements can be added in the Project Brief, Terms of References or Statement of Work.

### 2.2 Quality assurance of drawings

(a) All submitted drawings must conform with The PSPC National CADD Standard regardless of the condition of any existing drawings provided at the outset of work.

(b) All drawings must be completed to the satisfaction of PSPC. As such, PSPC will carry out quality assurance of submitted drawings in accordance with section 4 *Quality assurance of drawings*.

### 2.3 Disclaimers and limitation of liabilities

(a) Drawings and data produced for PSPC purposes should be considered for illustrative or reference purposes only by users outside of PSPC.

(b) PSPC and its agents, consultants, contractors, or employees provide these materials and information “as is” without warranty of any kind, implied or express, as to the information being accurate or complete and without any warranty of merchantability and fitness for a particular purpose.

(c) PSPC does not assume any legal liability or responsibility for the accuracy, completeness or usefulness of the drawings, data, or information incidental thereto. PSPC recommends that users exercise their own skill and care with respect to their use or seek professional advice.

(d) Under no circumstances will PSPC be liable to any person or business entity for any direct, indirect, special, incidental, consequential, or other damages as a result of any use of drawings, data, or any information incidental thereto, including, without limitation, any lost profits or business interruption.

### 2.4 Copyright

(a) The Copyright Act protects all works (including drawings, charts, photos, etc.) from being copied without permission. Copying a work is called “copyright infringement.” Copying including “cutting-and-pasting,” reproducing, publishing, or transmitting any work without permission by any means is considered copyright infringement. All work is copyright protected even if it does not explicitly say so.

(b) Without prejudice to any rights or privileges of the Crown, where any work is or has been, prepared or published by or under the direction or control of His Majesty or any government department, the



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copyright in the work shall, subject to any agreement with the author, belong to Her Majesty. The copyright ownership can also be transferred to the client by written contract. Use of any PSPC content without permission, in whole or in part, is strictly forbidden.

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### 3. The PSPC National CADD Standard

This section describes the requirements of the PSPC National CADD Standard. The intent is to supply sufficient directions so that drawings are presented in a consistent manner, while maximising the interoperability between CADD, BIM, and other systems.

#### 3.1 File presentation standard

All CADD drawings must conform with the following presentation standard:

- (a) Must not be compressed in an EXE file format.
- (b) Must not be password protected.
- (c) Must not contain any hyperlinks.
- (d) Must be purged of all definitions that are not used, such as layers, text styles, dimension styles, layer filters and blocks.
- (e) Must be purged of any object definitions without geometry, such as zero-length geometry and empty text or blocks objects.
- (f) Must not contain errors that are detectable using the Audit command.
- (g) All design information must be modelled at full scale (real-world units) in model space with text, dimensions, blocks, hatch patterns and line types matching the view scale.
- (h) The paper space must only contain items that are not linked to objects in the model space (e.g., title block, viewports, titles, general notes, legends).
- (i) Must be easy to interpret, good positioning of annotations and dimensions, use of legends and schedules, layout of structural grid and cross-referencing symbols.
- (j) The use of text, dimension, leader, block, line weight, line type and hatch pattern must be uniform throughout the drawing set.
- (k) When appropriate to the type of drawing, lines must be drawn in an orthogonal mode.
- (l) All vector endpoint intersections must be drawn with closed corners.
- (m) All drawn shapes shall be closed shapes.
- (n) Must be saved with the main layout active and all the viewports locked to the correct scale.

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## **3.2 External reference standard**

### **3.2.1 CADD drawings**

(a) All externally referenced CADD drawing(s) must be bound within each submitted CADD drawing in such a way to avoid the creation of extra prefixed layers.

(b) CADD drawings must not contain referenced symbols. Symbols must be inserted as blocks.

### **3.2.2 Raster images**

(a) Raster images must be used as references only and cannot replace the vector data normally required in drawings.

(b) When raster images are attached to CADD drawings, the raster images and their metadata files are to be submitted with the CADD drawings.

## **3.3 Digital signature standard**

(a) CADD drawings must not contain the seal of a member of a professional association.

(b) The digital signature of a member of a professional association must be applied to PDF drawings using a visual appearance for the seal/stamp, signature, date and in compliance with the member's professional association standards or guidelines. See 3.12.2 Information in title blocks for the location of the professional seal /stamp on the title block.

(c) The digital signature on PDF drawings must be configured to accept multiple digital signatures.

(d) When required, the PSPC Project Manager will append a digital signature to the professionally signed PDF using a visual appearance for the signature. See 3.12.2 Information in title blocks for the signature location of the PSPC Project Manager on the title block.

## **3.4 Layering standard**

(a) CADD drawings must adhere to PSPC layering structure and naming convention.

(b) Standard layers must be used before creating new layers. Standard layers are found in *Annex A*.

(c) CADD Drawings must not contain unnecessary frozen or off layers.

(d) No objects should reside on layer "0" or "DEFPOINTS" except for the sub-components of block definitions and dimensions. Use the "Plot/Non plot" layer property instead of the Defpoints layer.

(e) No layer names with an external reference "Bind" prefix (blockname\$n\$layername).

### **3.4.1 Sorting graphic data into related data groups**

(a) Layers must be broken into two major groupings: principal data and supporting data.

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### Principal data

(b) Principal data consist mainly of plan or site views of the asset, e.g., the base plan, floor plan, site plan, mechanical site plan, etc.

(c) Drawing depicting principal data must use the proper standard layer according to the data type being represented. Table 3-1 shows examples of principal data layers used on an existing floor plan view.

Table 3-1 : Existing floor plan view examples

Layer Name	Layer Name (French)	Data type / Description
A-WL-INT-N	A-MU-INT-N	Architecture - Wall - Interior - New
A-DR-INT	A-PO-INT	Architecture - Door - Interior (“Existing” implied)
A-WD-EXT	A-FN-EXT	Architecture - Window - Exterior (“Existing” implied)

### Supporting data

(d) Supporting data consist mainly of detail views, e.g., section view, elevation view, schedules, legends and title blocks.

(e) Drawing depicting supporting data must use the proper detail layer according to the data type being represented. Table 3-2 shows examples of supporting data layers used to represent a detail view.

Table 3-2 : Detail view examples

Layer Name	Layer Name (French)	Description
G-DT-LIN	G-DT-TRI	General - Detail - Line work (wall, floor and roof line work)
G-DT-LIN_Medium	G-DT-TRI_Moyenne	General Detail Linework with a medium line weight of 0.35 mm (see <i>Free Text</i> ).
G-DT-TXT	G-DT-TEX	General - Detail - Text (annotations, title, graphic scale, etc.)
G-DT-DIM	G-DT-DIM	General - Detail - Dimensions
G-DT-HAT	G-DT-HAC	General - Detail - Hatching (insulation, wood grain, etc.)

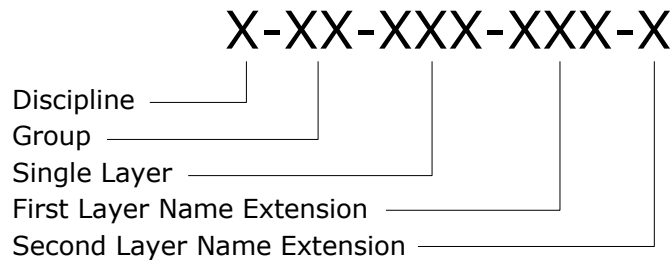
### 3.4.2 Layering naming convention

(a) The PSPC layer naming convention is based on a modular, alphanumeric layer nomenclature format designed to sort graphic data in a specific manner and consists of five fields separated by hyphens.

- The first three fields (Discipline, Group and Single Layer) are mandatory.
- The last two fields (First Layer Name Extension and Second Layer Name Extension) are optional fields that allow more precise data identification where necessary.

(b) Two-field layer names (X-XX) may only be used under special conditions and with PSPC’s approval.

Figure 3-1 : Layer field description



#### Discipline field **X-XX-XXX**

(c) The discipline field identifies the discipline responsible for the layer content. Table 3-3 lists examples of the discipline field.

(d) Discipline fields are listed in *Annex A – Layers: 2.1 Discipline field*.

(e) Where an object cannot be associated with a specific discipline or is applicable to all disciplines, the special abbreviation of “G” may be used to indicate “General information.”

Table 3-3 : Examples of common discipline field

Discipline field	Usage	Usage (French)	Description
A	A-WL-EXT	A-MU-EXT	Architectural Wall Exterior
S	S-WL-RWL	S-MU-STM	Structural Wall Retaining

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**Group field** X-**XX**-XXX

(f) The group field identifies groupings of common data types relevant to each discipline. The Table 3-4 lists examples of common group fields.

(g) Group fields abbreviations are listed in the *Annex A – Layers: 2.2 Group fields*.

Table 3-4 : Examples of common group field abbreviations

Group field	Group field (French)	Data type / Description
WL	MU	Wall
DR	PO	Door
WD	FN	Window

**Single layer field** X-XX-**XXX**

(h) The single layer field subdivides the group field to identify each layer more precisely. Single layer abbreviations allow information pertaining to physical properties, materials, graphics, text and discipline related data types to be included.

(i) Standard single layer fields abbreviations are listed in *Annex A – CADD Layers. Table 3-5* lists examples of single layer abbreviations.

**First Layer Name Extension (optional)** X-XX-XXX-**XXX**-X

(j) The First Layer Name Extension, like the Single Layer field, allows information pertaining to physical properties, materials, graphics, text and discipline related data to be included.

(k) The extensions use the same abbreviations as the single layer field and may be used with any valid layer from the standard layer list.

(l) Standard first layer name extensions abbreviations are listed in the *Annex A – CADD Layers. Table 3-5* lists examples of first layer name extension fields.

Table 3-5: Examples of single layer and first layer name extension usage

Single layer field or First Layer Name Extension	Single layer field or First Layer Name Extension (French)	Usage	Usage (French)	Data type
EXT	EXT	A-WL-EXT	A-MU-EXT	Architectural Wall Exterior
BRK	BRQ	A-WL-EXT-BRK	A-MU-EXT-BRQ	Architectural Wall Exterior Brick

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**Second Layer Name Extension (optional) X-XX-XXX-XXX-X**

(m) The Second Layer Name Extension allows information pertaining to geometry, construction, status, second language and numerical options to be included.

(n) The extensions may be used with any valid layer from the Standard Layer list.

(o) Standard second layer name extension abbreviations are listed in *Annex A – CADD Layers*.

(p) Where plans are specifically titled “New” (or “Existing”), the “N” (or “E”) Second Layer Name Extension modifier indicating the construction status may be omitted but all other construction status extensions must be included.

Table 3-6: Examples of second layer name extension usage

Second Layer Name Extension	Usage	Usage (French)	Description
E	A-WL-EXT-E	A-MU-EXT-E	Architectural Wall Exterior Existing
X	A-WL-EXT-BRK-X	A-MU-EXT-BRQ-X	Architectural Wall Exterior Brick Removed

**Free Text**

(q) Free text must be appended to a layer name by adding an underscore character at the end of a valid layer name.

Table 3-7 : Examples of Free Text

Layer Name	Layer Name (French)	Description
G-DT-LIN_Medium	G-DT-TRI_Moyenne	Detail line with a medium line weight
M-SN-SPT_-1.0	M-RH-POL_-1.0	Soundings at -1.0 m depth
M-SN-HWL_14 January 1990	M-RH-LHM_14 January 1990	High Water Line on a specific date

**3.4.3 Provision for creation of new layers**

(a) If a layer is not provided in the standard layer list, new layer names must adhere to the following rules:

(b) Must follow the standard layer name convention.

(c) Must use an existing one-character discipline abbreviation.

(d) Must use an existing two-character group abbreviation.

(e) Must use an existing three-character single layer field abbreviation or first layer name extension.

### 3.5 Colour standard

(a) Index Colours (1-255) must be used as the colour scheme on all drawings. True Colours (RGB) must only be used when colour printing is required for specific objects or layers.

(b) All objects must be placed using the colour property set to "ByLayer." Object-level overrides must be kept to a minimum.

(c) The default monochrome.ctb plot style table (pen assignment) must be used for printing of sheets.

(d) Colour must not be used to determine printing line weight. Line weight is determined by the line weight attribute or property.

### 3.6 Line weight standard

(a) The line weights displayed in Table 3-8 must be used for all drawings unless substantial improvement in readability can be gained using additional weights.

(b) All objects must be placed using line weight property set to "ByLayer." Object-level overrides must be kept to a minimum.

Table 3-8 : Suggested line weight settings

Line Weights	Line weight (mm)	Examples of use
Extra Thin	0.09 to 0.13	Hatching
Thin	0.15 to 0.18	Dimension lines, Centre line, Intermediate contour lines, Leader and extension, Phantom lines, Grid lines
Fine	0.20 to 0.25	Light and background features, Hidden lines
Medium	0.30 to 0.35	Visible object outlines, Index contour line
Wide	0.50	Section lines, Grade line, Rebar
Thick	0.70	Cutting lines, Match lines, Reference lines, Viewing planes
Extra Thick	1.00	Title sheet border



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### **3.7 Line type and hatching standard**

- (a) All objects must be placed using the line type property set to “ByLayer.” Object-level overrides must be kept to a minimum.
- (b) Line type scales must be globally controlled by the LTSCALE system variable and must be set between 0.4 and 1.
- (c) Object-level line type scale must be set to 1 and object-level overrides must be kept to a minimum.
- (d) The following line type system variables must be set:
- The MEASUREMENT variable set to 1.
  - The CELTSCALE variable set to 1
  - The PSLTSCALE variable set to 1.
  - The MSLTSCALE variable set 1.
- (e) The line types and hatch patterns defined in the *Annex B: Symbols and graphics* must be used on all drawings.
- (f) If a line type or hatch pattern is not provided in the *Annex B: Symbols and graphics*, the metric line types and metric hatch patterns supplied with the Autodesk products must be used.
- (g) For all other line types or hatch patterns, the Consultant or the CADD Service provider must have their symbol library pre-approved by PSPC.

### **3.8 Block standard**

- (a) Blocks must not be exploded.
- (b) Blocks must not contain nested blocks (blocks made of blocks). The use of groups is preferable when grouping blocks together, for example, a table with chairs around it.
- (c) The blocks defined in the *Annex B: Symbols and graphics* must be used on all drawings.
- (d) If a block is not provided in the *Annex B: Symbols and graphics*, the Consultant or CADD Service provider must have their symbols and graphics library pre-approved by PSPC and must adhere to section 3.8.1 *Provision for creation of new blocks*.

#### **3.8.1 Provision for creation of new blocks**

- (a) The subcomponents of the block must be created with colour, line type and lineweight set to “ByLayer” or “ByBlock” where possible to allow complete control over the appearance of the block.
- (b) The subcomponents of the block must be created on layer “0” and inserted on the proper layer, i.e., office chair inserted on layer I-FU-SET.

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(c) Graphic blocks must be drawn to scale geometrically and inserted with a scale of 1.

(d) Symbol blocks must be drawn at the actual plotted size and not smaller than 2.5 mm. Symbol blocks must then be inserted based on the view scale.

### 3.9 Text style standard

(a) Text styles for use in drawings must be created using the True Type Fonts (TTF) listed in Table 3-9 or any other font files provided by PSPC.

Table 3-9 : Standard text fonts

Font name (TTF)	Examples of use
Arial Narrow	General notes, dimensions, leaders, labels, callouts, etc.
Arial or Arial Black	Headings, titles, room names or other text that requires more emphasis.

(b) Text style names must include the following components separated by an underscore (\_). See Table 3-10: Examples of text style names for examples of text style names.

- Font name
- Any other special effects (if required)

Table 3-10: Examples of text style names

Style Name	Description
Arial Narrow	Annotative text style with Arial Narrow used for general notes, dimensions and annotations.
Arial	Text style with Arial used for titles.
Arial_WF1.2	Text style with Arial and width factor 1.2.

(c) The height of the text must be independently assigned to each text objects in accordance with Table 3-11.

Table 3-11 : Standard text height

Text height (mm)	Example Items
< 2.0	Text smaller than 2 mm may only be used under special conditions with PSPC's approval.
2.0 or 2.5	Notes, general text, dimensions, annotations
3.5	Subheadings, room names, street names
4.5 or 5.0	Major headings, view titles

(d) All French characters must be accented.

(e) All text on drawings must be upper-case with the exception of lower-case unit symbols.

(f) Paragraphs must be created and formatted using Multiline Text (MTEXT) objects.

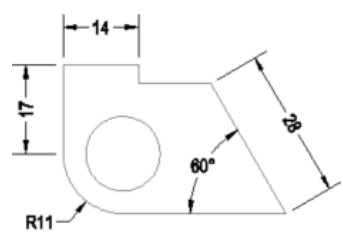
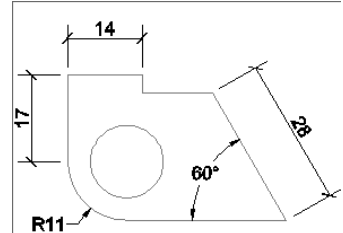
### 3.10 Dimension style standard

(a) All dimensioning must be associative.

#### 3.10.1 Format

(a) Dimensions styles must be configured based on the formats listed in Table 3-12 : Dimension style format.

Table 3-12 : Dimension style format

Dimension format	Description	Example of use
Engineering	Arrowheads for dimension terminators and leader terminators.	 <p>The diagram shows a mechanical part with dimensions: 14, 17, 28, and a 60-degree angle. A fillet radius is labeled R11. Dimension lines use arrowheads to terminate at the object's boundaries.</p>
Architectural	Ticks for linear dimension terminators and arrowheads for leader terminators.	 <p>The diagram shows the same mechanical part with dimensions: 14, 17, 28, and a 60-degree angle. A fillet radius is labeled R11. Dimension lines use ticks to terminate at the object's boundaries.</p>

### 3.10.2 Units

- (a) True dimension values must be shown and not be overridden or altered.
- (b) The unit for linear dimensioning is the millimetre, except where the scope of the drawing requires the use of the metre, such as in site plans.
- (c) Integers shall indicate millimetres, e.g., 435, 4300. Decimal numbers with three decimal places shall indicate metres, e.g., 5.435, 4.300.
- (d) All other dimensions and notations should be followed by the unit symbol.

### 3.10.3 Naming convention

(a) Dimension style names must include the following components separated by an underscore (\_). See Table 3-13 for examples of dimension style names.

- Format (see 3.10.1 Format)
  - Engineering
  - Architectural
- Scale
  - None for annotative scaling
  - 100 = 1:100
  - 50 = 1:50
- Units (see 3.10.2 Units)
  - None for annotative scaling
  - mm = Millimetres
  - m = Metres
- Modifiers
  - None for normal
  - CL = Centreline extension lines

Table 3-13 : Example of dimension style names

Style Name	Description
Architectural_50mm	Architectural dimension for a 1:50 floor plan view.
Architectural	Architectural dimension with annotative property enabled
Engineering_1000m	Engineering dimension for site plan view scaled at 1:1000 with metres as base unit
Engineering_CL	Annotative engineering dimension with centreline extension lines

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### 3.11 Multileader style standard

(a) Multileader style names must include the following components separated by an underscore (\_). See Table 3-14 for examples of multileader style names.

- Format (see 3.10.1 Format)
  - Engineering
  - Architectural
- Drawing Scale
  - None for annotative scaling
  - 100 = 1:100
  - 50 = 1:50
- Units (see 3.10.2 Units)
  - None for annotative scaling
  - mm = Millimetres
  - m= Metres
- Modifiers
  - None for normal mtext multileader
  - D1 = Multileader with detail callout block (D2, D3, etc. for alternate Detail callout blocks)
  - S = Multileader with slot callout block
  - C = Multileader with circle callout block
  - B = Multileader with box callout block
  - H = Multileader with hexagon callout block
  - T = Multileader with triangle callout block

Table 3-14 : Examples of multileader style names

Style Name	Description
Architectural_50mm	Normal multiline text (MTEXT) multileader with the architectural format
Engineering	Annotative multiline text (MTEXT) multileader with the engineering format
Engineering_C	Annotative engineering circle callout multileader

### 3.12 Title blocks standard

(a) Title blocks must always be inserted in a layout (paper space) at 0,0,0 with scale factor of 1 and rotation angle of 0.

(b) Model space graphics must appear in the layout in correctly scaled and locked viewports.

(c) There must be only one (1) title block per layout.

(d) The title block is not to be exploded or altered. Attributes must be used to enter title block information.

(e) No entities outside the title block perimeter are allowed.

### 3.12.1 Title blocks and paper sizes

(a) Standard title blocks, cover title blocks and pre-configured layouts are available at [PWGSC Layouts - Présentations TPSGC.dwg](#).

(b) Unless requested otherwise by PSPC, all drawing sheets must be compiled using the B1 standard titleblocks and cover title block in accordance with Table 3-15.

(c) When drawing sheets larger than A0 are required, a width of 841 mm must be used with an increment in length of 150 mm.

Table 3-15 : Standard Title block and Sheet Sizes

Paper designation	Paper dimension (mm / H x V)	PSPC title block and layout name	PSPC cover title block and layout name
ISO B1	1000 x 707	PWGSCB1	PWGSCB1-Cover
ISO A0	1189 x 841	PWGSCA0	PWGSCA0-Cover
ISO A1	841 x 594	PWGSCA1	PWGSCA1-Cover
ISO A2	594 x 420	PWGSCA2	PWGSCA2-Cover
ANSI B	432 x 279	PWGSCSCL3	PWGSCSCL3-Cover
14" x 8.5" (Legal)	356 x 216	PWGSCSCL2	Not available
8.5" x 14" (Legal)	216 x 356	PWGSCSCL2P	Not available
ANSI A	279 x 216	PWGSCSCL1	Not available
ANSI A	216 x 279	PWGSCSCL1P	Not available

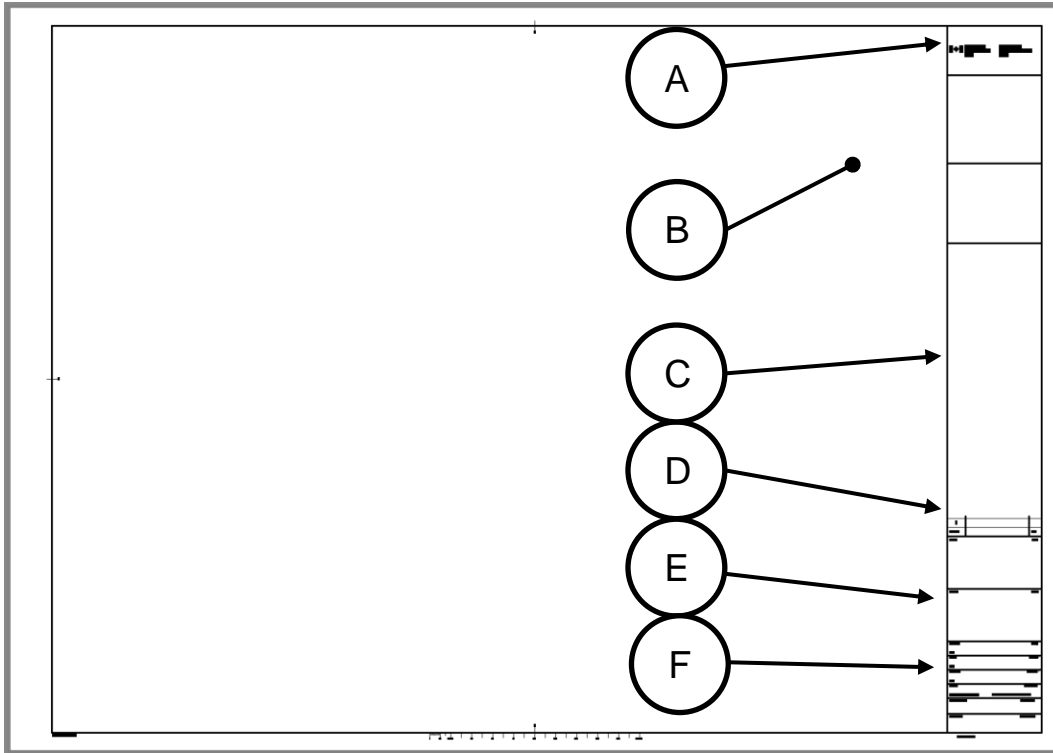
### 3.12.2 Information in title blocks

(a) The title block must contain following components:

Table 3-16 : Title block components

Item	Components	Description
A	PWGSC Logo	PWGSC corporate identification logo.
B	North Arrow	If applicable, include a north arrow with each plan views indicating the direction and type of north.
C	Information Security Category	For information security category other than unclassified, the information security category must be inserted immediately below the PWGSC logo.
C	Key Plan	Key plan when needed. The key plan must include the main axes, a hatched zone of interest, the identification contextual information such as neighboring streets and a north arrow.
C	General Notes	If applicable, includes general notes.
C	Units Notes	If applicable, include notes about the unit of the dimensions shown on the drawing.
C	Georeferencing Notes	If applicable, include notes about the georeferencing of the views such as the horizontal and vertical geodetic reference systems, cartographic projection, combined scale factor, etc.
C	Professional seal(s)	Professional seal(s) must be inserted on PDF and hardcopy drawings only ( <i>see 3.3 Digital signature standard</i> ).
D	Revision Block	Drawing revision #, revision description and date to list history or revisions, addenda, as-built information, etc.
E	Project & Drawing Information Fields	Project name, address and drawing name
F	Production Information Fields	Various initials fields, project number and drawing number

Figure 3-2 : B1 Title block



(b) The title block must contain following production identification field components:

Table 3-17 : Production Identification Fields

Predetermined Fields	Required Content
Designed	Initials and date of the engineer or architect responsible for the design. The field can also be switched to Measured by.
Drawn	Initials and date of the individual responsible for drawing preparation.
Approved	Initials and date of the individual responsible for the approval of the drawing.
PWGSC Project Manager	The PWGSC Project Manager signature must be inserted on PDF and hardcopy drawings only (see 3.3 Digital signature standard).
Project Number	The project number as provided by PSPC.
Drawing Number	Drawing number (see 3.19 Drawing numbering standard).



Figure 3-3 : Production Identification Fields

designed	X.X.	conçu
date	YYYY-MM-DD	
drawn	X.X.	dessiné
date	YYYY-MM-DD	
approved	X.X.	approuvé
date	YYYY-MM-DD	
Tender	Soumission	
PWGSC Project Manager	Administrateur de projets TPSGC	
project number	no. du projet	
R.000000.000		
drawing no.	no. du dessin	
X1		

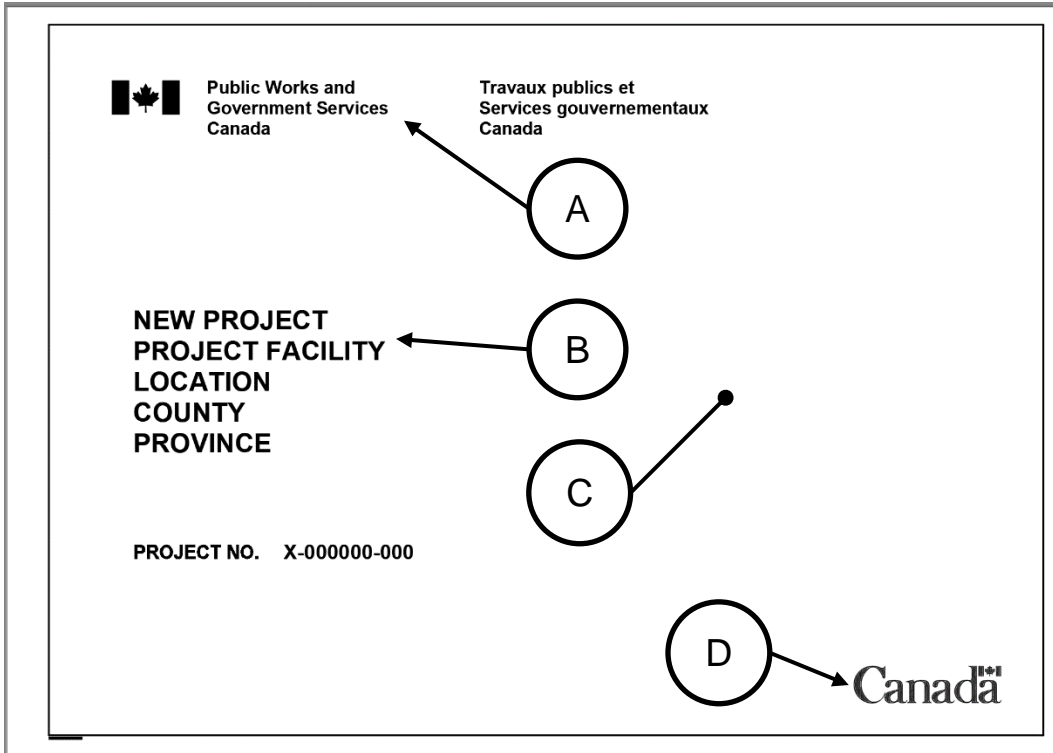
### 3.12.3 Information on cover title block

(a) The cover title block must contain the following components:

Table 3-18 : Cover Sheet Fields

Item	Components	Description
A	PWGSC Logo	The PWGSC corporate identification logo as provided
B	Titleblock info	Project name, asset name, address, project number, current revision
C	Key Plan	Optionally, a key plan locating the assets for large projects.
C	Presentation view	Optionally, a presentation view or photo of the project.
C	Drawing Index	Optionally, a drawing index (see 3.16 <i>Drawing index standard</i> ).
D	GoC Logo	The Government of Canada wordmark as provided

Figure 3-4 : B1 Cover Sheet



### 3.13 Systems of measurement and preferred scales standard

- (a) The International System of Units (S.I.) must be used to prepare all drawings.
- (b) All design information must be modelled at full scale (real-world units) in model space.
- (c) Preferred view scale with millimeter units

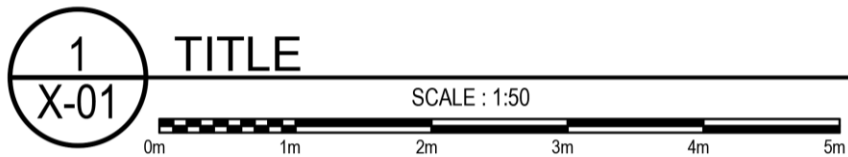
1:1	1:10	1:50	1:250	1:2 000
1:2	1:20	1:100	1:500	1:5 000
1:5	1:25	1:200	1:1 000	1:10 000

### 3.14 Graphical scale standard

- (a) Each view (plan, section, detail, elevation, profile, etc.) on a sheet must be accompanied by a graphical scale (see *Figure 3-5 : Example of a graphical scale*) and be located immediately below the pertinent heading / view title on the sheet.
- (b) Graphical scale blocks defined in the symbols and graphics library must be used on all drawings. See Annexe C: Symbols and graphics.

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Figure 3-5 : Example of a graphical scale



### 3.15 Section and detail identifiers standard

- (a) Each detail, section and elevation view must be identified with cross-referencing symbols and view titles.
- (b) Cross-referencing symbols defined in the symbols and graphics library must be used on all drawings. See Annex C: Symbols and graphics.

### 3.16 Drawing index standard

- (a) A drawing index must be provided at the beginning of the drawing set immediately after the cover sheet or on the cover sheet.
- (b) The drawing index must list the drawing number and drawing name of each sheet in the drawing set, following the discipline sequence order and grouping as per Table 3-19.

### 3.17 Legend standard

- (a) A legend of symbols, abbreviations, references, etc., must be provided immediately after the cover sheet and the drawing index sheet, or at the beginning of each drawing subset, or on directly on the sheet.

### 3.18 Schedules and tables standard

- (a) Where schedules or tables occupy entire sheets, locate them at the end of each drawing subset.

### 3.19 Drawing numbering standard

- (a) Drawings must be numbered and sequenced in subsets according to their discipline as indicated in Table 3-19.
- (b) On drawing sets where the number of sheets in a subset is expected to exceed 99, the drawing number must have 3 digits beginning with 001. For example, the first drawing in the Architectural subset is A001.

Table 3-19 : Drawing numbering convention and sequence by discipline

Sequence order	Discipline / Drawing subset	Drawing number
0	General: cover sheet or small project where two or more disciplines appear on the same sheet.	G01, G02, etc.
1	Land Surveying	LS01, LS02, etc.
2	Demolition / Removals	D01, D02, etc.
3	Bridges and Dams	B01, B02, etc.
4	Civil and Marine	C01, C02, etc.
5	Landscape Architecture	L01, L02, etc.
6	Structural	S01, S02, etc.
7	Architecture	A01, A02, etc.
8	Mechanical	M01, M02, etc.
9	Electrical	E01, E02, etc.
10	Interior Design	ID01, ID02, etc.

### 3.20 Drawing filename standard

(a) The naming convention of each drawing filename must be composed of the following components separated by an hyphen (-). See Table 3-20 for examples or drawing filenames.

- Project number
- Drawing number(s)
- Drawing name or description

Table 3-20 : Examples of drawing filenames

Drawing file name	Description
X123456789-A01–Ground Floor Plan.dwg	The first sheet of the architectural discipline subset showing the ground floor plan.
X123456789-C05 C09–Plans and Profiles.dwg	A drawing containing the sheet 5 through 9 of the civil discipline showing plans and profiles information.

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X123456789-M03-Plumbing Layout.dwg	The third sheet of the mechanical discipline subset showing the plumbing layout.
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## 4. Quality assurance of drawings

This section presents the requirements of the PSPC National CADD Standard as a short form checklist for drawing quality assurance verification. Most of the requirements listed below can be checked automatically using the PSPC Quality Assurance Check tool found in the *Annex C : Toolkit for AutoCAD*.

### 4.1 File presentation standard

Table 4-1 : Quality control requirement for file presentation

Section	Quality control requirements	Compliance (Yes, No, n/a)
3.1abc	The drawings are submitted in the CADD file format. They are not compressed as exe, not password-protected and does not contain hyperlinks.	
3.1def	Drawings have been purged and audited, free of errors and unused and empty object definitions.	
3.1gh	The model space contains all design information modelled at full scale along with design related annotations matching the view scale. The paper space only contains items that are not linked to objects in the model space.	
3.1i	Good drafting practices are used to make the drawings easy to interpret: good positioning of annotations and dimensions, use of legends and schedules, layout of structural grid and cross-referencing bubbles.	
3.1j	The use of text, dimension, leader, block, line weight, line type and hatch pattern must be uniform throughout the drawing set.	
3.1klm	Lines are drawn orthogonally when appropriate, endpoints intersections are drawn with closed corners and shapes are closed.	
3.1n	Drawings are saved with the main layout active and all viewports locked to the appropriate scale.	

### 4.2 External reference standard

Table 4-2 : Quality control requirements for external references and raster images

Section	Quality control requirements	Compliance (Yes, No, n/a)
3.2.1	Drawings does not contain any externally referenced CADD drawings.	
3.2.2	Raster images and their metadata files are included with the submitted drawings.	

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### 4.3 Digital signature standard

Table 4-3 - Quality control requirements for digital signatures

Section	Quality control requirements	Compliance (Yes, No, n/a)
3.3a	CADD drawings do not contain professional stamps or seals.	

### 4.4 Layer standard

Table 4-4 : Quality control requirements for layers

Section	Quality control requirements	Compliance (Yes, No, n/a)
3.4a	CADD drawings are compliant with the PSPC layer structure and naming convention.	
3.4b	No new layer name were created when the proper standard layer already exists	
3.4c	CADD drawing must not contain unnecessary frozen or off layers.	
3.4d	No object resides on layer 0 or DEFPOINTS except for the sub-components of block definitions and dimensions.	
3.4e	No layer names with an external reference "Bind" prefix (blockname \$n\$layername)	

### 4.5 Colour standard

Table 4-5 : Quality control requirements for colours assignments

Section	Quality control requirements	Compliance (Yes, No, n/a)
3.5a	Index Colours (1-255) must be used as the colour scheme.	
3.5b	Colours are assigned to layers, object-level colours are generally set to "ByLayer," and colour overrides are kept to a minimum.	
3.5cd	The monochrome.ctb plot style table (pen assignment) is used for printing. Colours are not used to determine the printing line weight.	

#### 4.6 Line weight standard

Table 4-6 : Quality control requirements for line weight

Section	Quality control requirements	Compliance (Yes, No, n/a)
3.6a	Proper use of line weights	
3.6b	Line weights are assigned to layers, the object-level line weights are generally set to "ByLayer," and line weight overrides are kept to a minimum.	

#### 4.7 Line types and hatch standard

Table 4-7 : Quality control requirements for line types and hatch patterns

Section	Quality control requirements	Compliance (Yes, No, n/a)
3.7ab	The line type scale is globally controlled by the LTSCALE system variable. Object-level line type scale are generally set to 1.	
3.7c	Line types are assigned to layers, object-level line types are generally set to "ByLayer" and line weight overrides are kept to a minimum.	
3.7d	Line type system variables are set up correctly (i.e., MEASUREMENT, CELTSCALE, PSLTSCALE, MSLTSCALE)	
3.7efg	Only PSPC and/or Autodesk line type / hatch patterns are used. All other line types or hatch patterns must have been approved by PSPC.	

#### 4.8 Block standard

Table 4-8 : Quality control requirements for blocks

Section	Quality control requirements	Compliance (Yes, No, n/a)
3.8a	Blocks are not exploded	
3.8b	Blocks do not contain nested blocks (blocks made of blocks).	
3.8c	Only PSPC symbols are used. All other symbols and graphics must have been approved by PSPC.	



#### 4.9 Text style standard

Table 4-9 : Quality control requirements for text styles

Section	Quality control requirements	Compliance (Yes, No, n/a)
3.9a	Text Styles are created using Arial, Arial Narrow or Arial Black True Type fonts.	
3.9b	Text styles names are compliant with the PSPC text style naming convention.	
3.9cd	Proper use of text height.	
3.9efg	Text is uppercase, French characters are accented and MTEXT is used for paragraph.	

#### 4.10 Dimension and multileader standard

Table 4-10 : Quality control requirements for dimension and multileader styles

Section	Quality control requirements	Compliance (Yes, No, n/a)
3.10ab	All dimensions are associative, using their true dimension values.	
3.10.1	Dimension styles follows one of the two accepted formats (engineering or architectural)	
3.10.2	The unit for linear dimensioning is the millimetre or metre. Millimetres units are represented by integers and metres are represented by a number with three decimal places. All other dimensions and notations are followed by their unit symbol.	
3.10.3 3.11	Dimension and multileader style names are compliant with the PSPC naming conventions.	

#### 4.11 Titleblock standard

Table 4-11 : Quality control requirements for titleblock standard.

Section	Quality control requirements	Compliance (Yes, No, n/a)
3.12 a 3.12.1	The appropriate PSPC title blocks are inserted in the layouts at coordinates (0,0,0) with scale factor of 1 and rotation angle of 0.	
3.12b	Viewports are set to the preferred scale and locked.	
3.12cdef	Only one title block is inserted per layout. Title blocks are not exploded. No entities outside the title block perimeter.	

3.12.2 3.12.3	The title block information in the title block is complete and consistent throughout the drawing set.	
3.12.2 3.14	Each view (plan, section, detail, elevation, etc.), is accompanied by a heading / view title, the appropriate graphical scale and, if required, a north arrow.	
3.12.3	A key plan is placed on the cover title block that locates the asset(s) for large projects.	
3.16 3.17	A drawing index and symbol legends are provided.	
3.19 3.20	Drawings are named, numbered and sequenced correctly.	