British Columbia

Ministry of Technology, Innovation and Citizens' Services

Shared Services BC

Real Property Division

CAD Guidelines and Standards

Approvals:

Todd Evans	Drawings Technologist
Lorraine McMillan	Director of Real Estate Policy and Performance Management (Shared Services)
Stephen Marguet	Executive Director of Real Estate Policy and Performance Management (Shared Services)

BRITISH COLUMBIA | REAL PROPERTY
A DIVISION of SHARED SERVICES BC

1. Document Control

Change Record

Date	Author	Version	Change Reference
07-20-2007	Todd Evans	1.0	Document Created
02-12-2009	Todd Evans	C	Document updated, IWS (Shared Services) file naming convention removed and added to IWS (Shared Services) Drawing policy. Title block restrictions ,Drawing file submission schedule removed
03-12-2013	Cristina Martinez for Todd Evans	D	Document Update, added Disclaimers and Limitation of Liabilities
02-04-2014	Todd Evans	E	Document Update – Reorg Division Name change RPD

Reviewers

Name	Position
Cristina Martinez	Drawings Coordinator
Todd Evans	Drawings Technologist
Lorraine McMillan	Director of Real Estate Policy and Performance Management (Shared Services)
Stephen Marguet	Executive Director of Real Estate Policy and Performance Management (Shared Services)

2. Table of Contents

1. Document Control 2
2. Table of Contents 3
3. Quality Assurance of CAD Data 7
3.1. Digital File Review 7
3.2. Drawing File Format 8
3.2.1. External references (XREF) 8
3.2.2. Raster images 8
3.2.3. Vertical products 9
3.2.4. File submission 9
4. Project Delivery 10
4.1. Project Start-up 10
4.1.1. CAD Master File Use 10
4.1.2. Drawing Format 10
4.2. Work in Progress 10
4.3. Production of Contract Drawings 10
4.4. Contract drawing submission 11
4.5. Disclaimers and Limitation of Liabilities 11
4.6. Copyright 12
5. RPD Computer Aided Drafting Standards 13
5.1. Layering Standards 13
5.1.1. Colour Assignment Standard: Layer Colours and Pen Weights 13
5.1.2. Graphic Data Sort into Related Data Groups 13
5.1.3. Principal Data 14
5.1.4. Supporting Data 14
5.1.5. Provision for Creation of New Layers 15
5.1.6. Layering Naming Convention 15
5.2. Blocks Standards 17
5.3. Text Style Standards 18
5.4. Dimension Styles Standards 18
5.4.1. Dimension Style Naming 18
5.5. Linetype Standards 19
5.6. Title Blocks and Graphic Scales 20
5.6.1. Title Block Set-up 20
5.6.2. Information in Title Blocks 20
5.6.3. Drawing Scales 20
5.7. Systems of Measurement and Preferred Scales 21
5.7.1. Drawing scales examples 21
5.8. Drawing legibility and Conventions 21
5.9. Delivery Standard -Purge 22

Appendix A. Definitions 23
Appendix B. RPD Standard Layer Names 24
Appendix C. Layer Descrptions 44

This Page Left Blank Intentionally

CAD STANDARDS

Real Property Division (RPD), Ministry of Technology, Innovation and Citizens' Services , Shared Service BC of the Province of British Columbia; Computer Aided Drafting (CAD) Standards are an integral component in the overall use and reuse of CAD files. Efficiencies occur to both RPD and future Consultant work when these standards are adhered to and are in the best interest and benefit of all parties to comply with these standards.

Efforts have been invested to make these standards as simplified as possible, giving liberties to the user and yet still provide RPD a critical means of standardisation which meets future archival values. These standards have been developed and modeled after the Public Works and Government Services Canada (PWGSC) Cad Standards. If during project work certain standards for layer naming convention etc. are required additional information and standards can be obtained from the RPD Drawing Technologist.

While striving to maintain the consistency necessary for life cycle maintainability, the RPD (Shared Services) CAD Standards are to be considered a dynamic document from which increased experience, technological advancement, and industry wide standardization will provide future direction.

3. Quality Assurance of CAD Data

RPD (Shared Services) conducts a Quality Control Assessment of all delivered CAD data files and printed drawing plans. This includes but is not limited to; drawing content, Title Block layout and font usage continuity throughout a drawing set and adherence to this CAD Standard Document.

All hardcopy drawings or PDF submissions must match the submitted AutoCAD files and be completed to the satisfaction of the RPD representative.

Note that the content of the digital CAD data file is just as important as the printed content and no drawing will be accepted as final until all issues are resolved. Delivered work that fails to meet any requirement in any of these areas will result in the work being deemed unacceptable. The Consultant/Drafting Service will be required to correct the problem(s) at their cost. Furthermore, RPD will exercise its option to withhold payment of the contracted work as set out in the contract terms until the work is made right. Alternatively, RPD may, if the Consultant/Drafting Service refuses to correct the problem, make the corrections to the CAD data files and printed drawing plans and deduct the cost thereof from the Consultant/Drafting Service's fee. The Consultant/Drafting Service grants to RPD an irrevocable license to make such corrections and use the corrected CAD data files and printed drawing plans as it sees fit. Furthermore, RPD reserves the right to make use of the printed drawing plans resulting from the CAD data files with no obligation for payment until the CAD data files are corrected.

3.1. Digital File Review

The following items will be reviewed to assure adherence to the CAD Standards. In all AutoCAD 2004 versions and later the AutoCAD Standards Checker will be used. On all other drawings done using previous versions of AutoCAD 2004 the following will be checked manually

COLOUR ASSIGNMENT

RPD Colour/Line Weight assignment must be used.

LAYER STANDARD

a) Only Standard Layer Names and/or RPD Layer names must be used.
b) Entities must be on correct layers.

TEXTSTYLE STANDARD

Only Standard AutoCAD SHX fonts or TTF fonts can be used.

LINETYPE STANDARD

a) Only Standard AutoCAD and/or RPD linetypes can be used.
b) Linetype display variables must be used correctly

DIMENSION STYLE STANDARD

a) Associative Dimensions must be used
b) RPD naming convention must be used

EXTERNAL REFERENCING

The use of external references will be authorized only if certain conditions are met.

RPD TITLE BLOCKS AND GRAPHIC SCALES

a) RPD Title blocks must be used properly if provided
b) Title blocks must contain the minimum information (section 3.6) if no RPD Title block is provided
c) Graphic Scales or written scale must accompany all Plans, Sections, Details and Elevations, etc.

1:1 METRIC MODEL

Drawing must be modeled at full-size using metric units.

REAL WORLD COORDINATE SYSTEM

Maintain Coordinate systems integrity for 2D drawings.

3.2. Drawing File Format

RPD requires all files to be generated with Microsoft Windows Operating Systems. The CAD drawing format required for drawings is the AutoCAD native format DWG file, Release 2000 to 2004. Drawing files submitted in Adobe PDF, Autodesk DWF or any other simplified formats is unacceptable. Any drawing files created in a foreign CAD program and converted to DWG must be fully compatible with AutoCAD release 2004. Any problems arising from document incompatibility will be the Consultant/Drafting Service responsibility.

3.2.1. External references (XREF)

The use of the external references (xrefs) will be conditionally authorized when used in conjunction with the "Sheet Set Manager" to support the transmission of drawing files in a compressed format.

In all the other cases, external references must be converted into blocks (Do not BIND XREFs, instead use BIND INSERT). In no circumstance shall a drawing contain referenced symbols; they must be inserted as blocks.

3.2.2. Raster images

When separate raster images are included in a drawing, they must be positioned correctly. The raster images must be provided with the drawing along with any specific instructions needed to position them. (Coordinate, rotation, scaling)

In the case of orthophotos attached to a drawing, a TFW file must be provided.

3.2.3. Vertical products

Where AutoCAD objects are used in vertical products such as Autodesk Architectural Desktop, Autodesk Building Systems, Autodesk Map or Autodesk Land Desktop, appropriate 'object enablers' must be provided to view and manipulate the objects.

3.2.4. File submission

Submission and transfer of drawing files will be through E-mail where possible. If using Windows file compression (ZIP) to assist with file transfer the file extension must be changed as provincial servers will strip out any zip files i.e.: Change Draw.Zip to Draw.Tif. Where file size exceeds the limit of E-mail, or if the above submission process is not available, compact disks (CD's) may be delivered to the designated contact person.

When using email for the drawings please provide the following information:

- Project Location
- Project Name
- RPD Project Number
- File Name(s)
- RPD Building Number

4. Project Delivery

4.1. Project Start-up

All project drawings must be created using the standards contained herein.

Where CAD services are provided externally, RPD CAD standards will also be required of the consultant or CAD service. Pertinent CAD and as-built drawings for the related facility, as well as this document and associated Title Block template file will be provided if required.

4.1.1. CAD Master File Use

Existing digital information, when available, is used to form the foundation for new project drawings. Any areas critical to the project should be verified by field checking. New digital drawing files created must be modified to include the most up-to-date information to the standards contained herein. Older CAD data, used in new drawing files, must be updated to current CAD standards. The extent of verification/updating of the existing digital files should be negotiated at the start-up of project. All new work must meet this standard herein irrespective of the condition of any existing files provided at the outset of work.

.

4.1.2. Drawing Format

All final drawings, including Title Blocks, shall be delivered in "Model space".

4.2. Work in Progress

It is imperative that all work in progress shall be regularly backed up. RPD assumes no responsibility for losses resulting in failed data files. The consultant / CAD service shall maintain the drawings in their own project directory until all drawings for the project are completed, verified and accepted by RPD.

4.3. Production of Contract Drawings

All drawing sheet sizes will conform to the following:

Sheet Designation	Overall Size (mm)
B1	707 x 1000
A0	841 x 1189
A2	420 x 594
A3 (11 x 17 Tabloid)	297 x 420
A4 (Letter / Portrait)	297 x 210

4.4. Contract drawing submission

Submission of final as-built contract drawings (record drawings) is to be in hard copy as per contract and must be accompanied by digital AutoCAD as-built (record drawing) files. The hard copy drawings and digital files must represent exactly, the as-built conditions on site at the time of completion of the project.

ALL changes made to the project during the construction phase, by ALL disciplines and sub-disciplines are to be incorporated into the contract drawings at the record drawing stage prior to submittal.

All changes must be clearly and properly denoted on the record drawing sheets as per standard drafting convention on both the hard copy and electronic files.

Procedures for denoting revisions should include, (but not be limited to) the following:

All revisions are to be recorded in the revision area of the title block, noted as per revision number, date, reason for revision. Triangular symbols with numbers inside are to denote the changes on the drawings. Clouds are to be used to denote areas of revision where there is a significant area involved.

The drawing must be saved such as to be printed without any page setup. The main layout must be active and all the viewports adjusted and locked to the correct scale.

4.5. Disclaimers and Limitation of Liabilities

Maps, drawings, and data produced for RPD purposes should be considered for illustrative or reference purposes only by users outside of RPD.

RPD 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.

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

Under no circumstances will RPD 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 the maps, drawings, data, or any information incidental thereto, including, without limitation, any lost profits or business interruption.

4.6. Copyright

The Copyright Act protects all works (including drawings, charts, photos, etc.) from being copied without permission. All finally submitted CAD Data files remain under ownership of the creating Consultant / CAD Service. RPD maintains the right to use these files for the exclusive use of present and future project applications.

5. RPD Computer Aided Drafting Standards

The standards described in this section are general standards and, in the context of a request for proposal, specific instructions can be added or can modify these.

5.1. Layering Standards

Layering structure is of high importance to RPD. The explanations below outlines the creation and rational for the use of layers and must be adhered to unless approved by RPD representative. Independent contractors can add layers which are not included in the template but the layers must adhere to RPD naming conventions

5.1.1. Colour Assignment Standard: Layer Colours and Pen Weights

Colour is to be used as a method of defining line weight to the plotter. Layers must be assigned appropriate colours and entities should be created with colour "bylayer" where possible, except as provided for in the creation of symbols.

Line	Weight
Suggested Line Weight Settings:	
Centre Lines Axis Grid Lines	Extra Thin 0.100mm
Dimension Lines Phantom Lines Intermediate Contour Lines Hatching Text -Normal Leader and Extension Lines	Thin 0.15 to 0.250mm
Hidden Lines Text -Sub Headings Index Contour Line Visible Object Outlines	Medium 0.300mm to 0.500mm
Cutting Match Lines Section Lines Viewing Planes Reference Lines Text –Titles Major Headings	Thick 0.700mm
Title Sheet Border	1.000mm

If colour dependent plot output, then the Plotter.CTB must be attached with the final submission to ensure proper colour designation.

5.1.2. Graphic Data Sort into Related Data Groups

Layers are used to sort the data types being depicted by the line work (Not to sort line weights, line types, colours or other schemes). This is the only way to identify what entities on a graphic screen are supposed to represent without resorting to annotations. (I.e. does a rectangle represent a building outline, a

concrete pad, a storage tank or is it an annotation box?). The Layering standards are to be used to create the layers to accommodate these groupings of related data.

To simplify the Layering, drawing data can be broken into two major groupings, Principal Data and Supporting Data. The level of complexity and number of layers required for the two groups is significantly different.

5.1.3. Principal Data

Principal Data is contained mainly on the plan views of the facility, i.e., Base Plan, Floor Plan, Site Plan, etc. This type of data requires strict adherence to layer naming and proper grouping of data. The line work that is used to depict facility components must always be drawn using the most up-to-date accurate information available. Line work depicting objects must be placed on the proper standard layer according to the data type being represented by the line work. For example, on a Floor Plan, the walls, doors, windows, and bathroom fixtures must have separate layers. Note that where plans are specifically titled "New" (or "Existing) the N (or E) Construction Status Extension layer modifier may be omitted, but all disparate Construction Status Extensions must be included.

Existing Floor Plan Example:

A-WL-INT-N	Architectural Wall Interior New	Interior Walls New
A-WL-INT-X	Architectural Wall Interior Remove	Interior Walls To Be Removed
A-WL-OLN	Architectural Wall Outline Exterior	Building Outline (Existing Implied)
A-DR-INT	Architectural Door Interior	Interior Doors (Existing Implied)
A-DR-INT-N	Architectural Door Interior New	Interior Doors New
A-WD-EXT	Architectural Window Exterior	Exterior Windows (Existing Implied)
H-PF-FIX	Mechanical Plumbing Fixtures	Toilets, Bathtubs, etc. (Existing Implied)

Note: When a symbol is placed to represent an object, it must be placed on a symbol layer, as in the following examples.

Symbols Example:

G-TL-SYM - General Title block Symbols - Symbols, key plan, north arrow, bar scale

5.1.4. Supporting Data

Supporting Data is made up of Sections, Details, Elevations, Schedules and Legends, Title Blocks, etc. This type of data requires minimal layering breakdown. Line work in a detail representing different components does not need to be placed on separate layers. For example, a building construction detail can be drawn with a foundation wall; frame wall, floors, and roof line work on a single layer, although the dimensions, annotation and hatching should be separated as indicated in the example below. Colour should be set "bylayer" for the majority of entities on a layer and specifically where necessary to obtain varying line weights in that layer.

Detail Example:

A-DT-LIN	Architectural Detail Linework	Wall, Floor and Roof Linework
A-DT-TXT	Architectural Detail Text	Annotations, Title, Graphic Scale, etc.
A-DT-DIM	Architectural Detail Dimensions	Dimensions
A-DT-HAT	Architectural Detail Hatching	Hatching - Insulation, Wood Grain, etc.

Schedule Example:

A-SC-LIN	Architectural Schedule Linework	Schedule Grid or Linework
A-SC-TXT	Architectural Schedule Text	Schedule Data, Annotation

Supporting Data can also appear on plan views:

H-PL-TXT	Mechanical Plan Text	Titles, Graphic Scale, Annotation Bubbles
S-PL-DIM	Structural Plan Dimensions	Dimensions

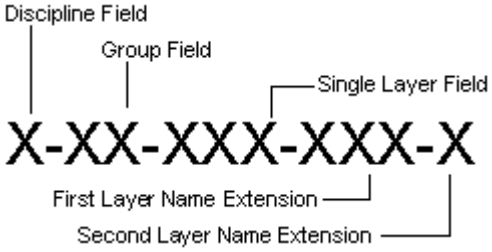
5.1.5. Provision for Creation of New Layers

As all possibilities are not covered in the existing layer list, it is possible (and necessary) to create new layer names for some objects. The rules for creation of new layers are:

a) Proper Standard Layer for object must not already exist
b) Must follow standard format
c) Must use existing Discipline Group (i.e.: G = General)
d) Must use existing Group field (i.e. : G-TL= General Title Block)
e) Must use existing 3 character grouping from Single Layer Field or First Layer Name Extension - G-TL-DET i.e.: General Title Block Details

5.1.6. Layering Naming Convention

Layering of CADD information must adhere to the following Layering Naming Convention. The layer is the basic tool for organizing and managing graphic information. Layers are used to sort graphic objects into groupings of related data. Alphanumeric layer nomenclature format is designed to sort this data in a specific manner.



The layer name structure consists of 5 fields separated by hyphens. The first 3 fields, consisting of the discipline, group and single layer fields, are mandatory while the last 2 are optional fields allowing a more precise identification where necessary.

Note: See Appendix B for Field Descriptions

Discipline Field **X**-XX-XXX

The Discipline Field identifies the discipline responsible for the layer content. Where an object cannot be associated with a specific discipline, or is applicable to all disciplines, the special General Information Field "G" may be used.

The defined discipline fields are:

A	Architecture
B	Bridge Engineering
C	Civil Engineering, Site work and Landscaping
E	Electrical Systems
G	General Information
H	Mechanical
I	Interior Design
L	Legal Surveys
M	Marine
R	Real Property Space Management
S	Structure

Group Field X-**XX**-XXX

The Group Field identifies groupings of common types of drawing information relevant to each discipline. The Group Fields defined for each Discipline Field are listed in the Standard Layer List. In addition to the Group Fields defined in the Standard Layer List there are some common Group Fields to place supporting graphic data such as sections and details, etc.

Single Layer Field X-XX-**XXX**

The Single Layer Field subdivides the classifications created by the Discipline and Group Fields to identify each layer more precisely. The Single Layer Fields defined for Group Fields under each Discipline Field are listed in the Standard Layer List and described in the Layer Field Description

First Layer Name Extension X-XX-XXX-**XXX**-X

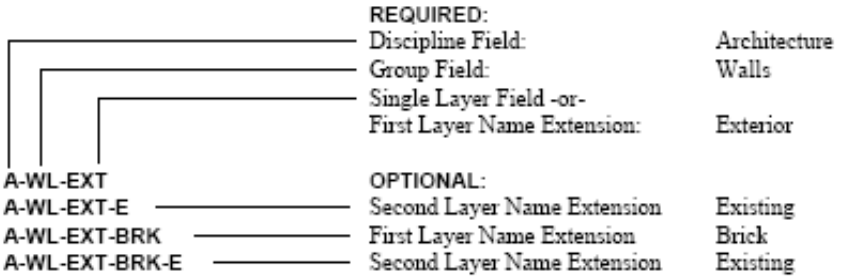
The First Layer Name Extension allows information pertaining to Physical Properties, Materials, Graphics and Text to be included. The extensions may be used with any valid layer from the Standard Layer List. They may also be used as a Single Layer Field value where appropriate.

Second Layer Name Extension X-XX-XXX-XXX-**X**

The Second Layer Name Extension allows information pertaining to Geometry, Construction, Status, Second Language and Numerical Options to be included. The extensions may be used with any valid layer from the Standard Layer List.

Valid Layer Name Formats

Only 4 variants of the layer name format will be accepted, as indicated below:



Note: Add an underscore character at the end of a valid layer name to append free text to the layer name e.g.

M-SN-SPT_-1.0	Soundings at -1.0m depth
M-SN-HWL_January 14, 1990	High Water Line at specific date

5.2. Blocks Standards

AutoCAD blocks are used to group entities. These graphic blocks shall not be exploded. Nested blocks are allowed only to group a preset of simple blocks. Symbols shall be created with linetype and colour Byblock. This allows complete control over the appearance of the symbol. By default the symbol will take on the properties of the layer it is placed on but it can be changed to suit requirements independent of the layer settings.

There is two different ways for creation and insertion of AutoCAD blocks with basic rules for creating each:

a) Simple blocks with one data type, e.g., toilet fixtures, furniture
   - Created on layer 0
   - b) Must be inserted on proper layer

b) Complex graphics requiring use of multiple data types
   - Each data type is created on its proper layer
   - Colour and linetype must be Bylayer or Byblock so that colour and linetype

May be assigned to the symbol regardless of the layer properties the symbol is inserted on, e.g. title blocks created with objects on different layers

Cut and Paste blocks are not acceptable. If this function is used in the creation of the drawing set, all of these block types must be exploded and the file purged of its entities before final delivery is accepted.

5.3. Text Style Standards

Text styles for use in drawings must be created using Standard AutoCAD SHX or TTF font files. Text style usage should be uniform throughout each project drawing set

Height of these text styles must be set to 0 (Not fixed) or the dimension text height variable, DIMTXT, will be overridden and the text height for dimensions, as well as normal text, will not change to suit different scaling requirements.

Standard text height for:

- Notes, dimensions, annotations, etc. - 2.5 mm
- Major headings - 5.0mm
- Sub headings - 3.5mm.

Text smaller than 2.5mm can only be used under special conditions and must have RPD approval.

5.4. Dimension Styles Standards

All dimensioning must be created on entities in model space with associative dimensions.

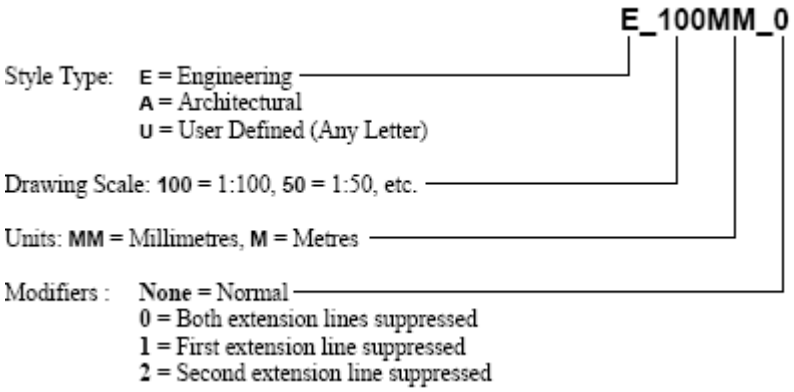
Two dimensioning formats are used to cover most applications for RPD projects:

a) Engineering with arrowheads for dimension terminators.
b) Architectural with ticks for dimension terminators.

5.4.1. Dimension Style Naming

Dimension style usage should be uniform throughout each project drawing set. Using dimensions styles reduces the time necessary to create, edit and maintain dimensions. Dimension styles are created by specifying values for a number of dimension variables and saving the style with a unique name. The dimension style controls the appearance of all the dimensions created while the dimension style is active. Changes to the dimension style will automatically be reflected in the associated dimensions.

Using of override properties is not allowed. A new dimension style should be created to work with different properties.



Examples:

A_50MM	Normal Architectural dimension for floor plans
A_50MM_0	Architectural dimension with no extension lines to dimension to grid lines
E_1000M	Normal Engineering dimension for site plans with metres as base unit

5.5. Linetype Standards

The appearance of linetypes in the drawing is determined by the system variables LTSCALE, PSLTSCALE, and MEASUREMENT. The MEASUREMENT variable determines which linetype description file to use for linetype loading:"0" sets the default file to the imperial unit file acad.lin "1" sets the default file to the metric unit file acadiso.lin.

The LTSCALE variable sets the global linetype scale factor.

The PSLTSCALE controls linetype appearance in paper space.

For consistent linetype appearance and plotting results, the required values for the variables are as follows:

Final Drawings: Title sheet in Paper Space with single, scaled, VIEWPORT.

a) MEASUREMENT= 1
b) LTSCALE= between 0.5 and 2[1]
c) PSLTSCALE=1 (On)
d) Display Locked = Yes
e) CELTSCALE = 1.0

Drawings must not contain linetypes or complex linetypes other than those defined in the ACADISO.LIN file supplied with AutoCAD or other linetypes supplied by RPD. The linetypes contained in the ACAD.LIN file should not be used because they are drawn to be used with imperial drawings.

[1] The LTSCALE value should be equal to 1 while printing in paper space but it could be slightly higher or lower if the linetypes provided are too large or too small.

5.6. Title Blocks and Graphic Scales

5.6.1. Title Block Set-up

Completed Drawings must adhere to the following composition standard:

a) Drawings are to be modeled at full scale (real world units) in Model Space, with text, symbols, hatch patterns and line widths adjusted by scale factor required.
b) Title Block sheets must always be inserted in a Layout (Paper Space) at 0,0,0 origin, with Scale factor of 1 and rotation angle of 0.
c) Model Space graphics must appear in the layout in correctly scaled VIEWPORTS
d) Only one (1) Title Block per Layout. 2) Title block is not to be exploded. The title block information is entered as prompted through the attribute dialog box or prompts.
e) Drawings can be created using the Title block provided and used as a template by using the "Save As" file save function.

5.6.2. Information in Title Blocks

All project drawings must be compiled on the standard RPD sheets provided. Each title block must contain the following information:

a) Project name
b) Address
c) Drawing name e.g. Floor plan, building
d) Floor level
e) Measured by and date
f) Drawn by and date
g) Approved by and date
h) Project manager
i) Project number
j) RPD or WSI project number
k) Drawing number
l) Revision chart
m) Consultant or draft service identification
n) North arrow
o) Site plan (if pertinent)
p) building number or lease number if pertinent

5.6.3. Drawing Scales

Each plan, section, detail, elevation, profile, etc., on a completed drawing sheet shall be accompanied by a Graphic Scale that specifies the scale e.g. 1:100. The graphic scale shall be located immediately below the pertinent heading.

5.7. Systems of Measurement and Preferred Scales

The unit for linear dimensioning is the millimetre, except where the drawing requires the use of the metre, such as in site plans. Integers shall indicate millimetres, and decimal numbers with three decimal places shall indicate metres. Any other dimensions and notations should be followed by the unit symbol.

5.7.1. Drawing scales examples

Plot Scale	Text Sizes Notations	LTSCALE
1:1	2.5	1
1:10	25	10
1:20	50	20
1:50	125	50
1:100	250	100
1:200	500	200
1:500	1250	500
1:1000	2500	1000
1:2000	5000	2000
1:5000	12500	5000

5.8. Drawing legibility and Conventions

All projects will include a drawing schedule listing all drawings pertaining to the project.

All intersections are to be closed.

Lines are to be trimmed to intersections.

Text is to be placed so as not to overwrite other entities. Whenever possible or practical, textual information is to be placed away from the drawing's line work with leaders extending into the drawing area.

Only information pertaining to the drawing shall be displayed on sheet, all other information is to be placed on frozen layers.

All partial plans are to be referenced to a "key" plan or detail reference to indicate where the partial plan is located in relation to the entire floor plan or site.

Hatches are to be applied to new work as applicable to denote the extent and type of work.

Existing structures are not to receive hatching.

The purpose of the drawings shall be clearly indicated by means of designation, eg: "Concept only", "Preliminary", "Not for Construction", "Issued for Construction", "Record Drawing", "[other reason for issue]", and should include any qualifying notation or limitation regarding the scope of the drawings. All releases shall be stamped and signed by the issuer (designer's personal seal).

Where details or sheets are omitted from a series or set such that there is a gap in the sequential numbering there shall be a notation to indicate that these missing elements do not comprise part of the final document set. This shall only be permitted to occur at the very end of the project where it would be difficult &/or time consuming to amend the documents. Gaps in the sequencing of sheets or details are to be corrected at the preliminary phases where possible.

5.9. Delivery Standard -Purge

Upon completion of the final CAD data files, all files must be purged of all unused layers, blocks and entities. This function will reduce the size of data files and will eliminate all erroneous attachments. Once files are purged, save the condensed data files and arrange for delivery to RPD.

Appendix A. Definitions

As-Built	"As-Built" shall mean a set of construction drawings reflecting on-site changes required during the project as well as the original design intent.
AutoCAD	"AutoCAD" shall mean the CADD software developed by Autodesk Inc.
Base Plan	"Base Plan" shall mean a clean, two dimensional floor plans of a building drawn from field surveys containing all pertinent graphic information. The intent is to use Base Plan files for project drawings, then update them once a project is complete and the area affected is re-measured.
CADD	"CADD" shall mean Computer Aided Design and Drafting.
CAFM	"CAFM" shall mean Computer Aided Facilities Management.
EDM	"EDM" shall mean Enterprise Document Management. This is an RPD internal electronic document filing system (Formally known as SPARK).
RPD	"RPD" shall mean Integrated Workplace Solutions.
Layers	"Layers" shall mean the AutoCAD system of dividing drawing elements.
Legacy Drawings	"Legacy Drawings" shall mean older hard copy drawings, microfiche aperture card not in digital format or older CADD files not to present standards.
SDIM	"SDIM" shall mean Spatial Data Information Management, a general term for managing CADD/CAFM/GIS drawings.

Appendix B. RPD Standard Layer Names

(Note This appendix is to be used as a guide. Additional layers can be added which are not listed in this appendix as long as the RPD layer naming convention is used)

Layer Name	Description
A-CI	**Circulation**
A-CI-ELE	Elevators
A-CI-ESC	Escalators
A-CI-LFT	Lift platforms for barrier-free access
A-CI-RMP	Barrier-free ramps
A-CI-STR	Stairs, stair wells, and ladders
A-CL	**Ceilings**
A-CL-BKH	Bulkheads
A-CL-FIN	Finishes
A-CL-GRD	Physical ceiling grid
A-CL-OPN	Openings, penetrations, skylights
A-CL-PLN	Planning grid lines
A-DR	**Doors**
A-DR-EXT	Exterior doors, jambs, casework, swings
A-DR-EXT-IDN	Exterior doors identification numbers
A-DR-HED	Door headers
A-DR-HED-PAR	Door headers in a partition wall
A-DR-INT	Interior doors, jambs, casework, swings
A-DR-INT-IDN	Interior doors identification numbers
A-DR-INT-PAR	Interior doors, in a partition wall
A-FL	**Floors**
A-FL-FIN	Floor finishes
A-FL-FIN-IDN	Floor finishes description
A-FL-LEV	Floor level changes, ramps, truck wells
A-FL-OPN	Openings, floor hatching
A-FL-OVH	Overhead items, skylights, overhangs, soffits
A-FL-RAS	Raised floors
A-FL-SPE	Architectural specialties, casework and millwork
A-GL	**General**
A-GL-ATT	Attributes
A-GL-CLN	Under construction lines, temporary aids
A-GL-DIM	General architectural dimensions
A-GL-IDN	Identification, elevation points
A-GL-RME	Read Me general drawing info.
A-GL-TXT	General text (street names)
A-PL	**Plan Information**

Layer Name	Description
A-PL-OLN	Open-to-Below plan information outline
A-RF	**Roofs**
A-RF-LEV	Roof level changes, ridges, valleys, pads
A-RF-OLN	Roofs edge and features
A-RF-OPN	Roof openings for fans, stacks and ducts
A-RF-OVH	Overhead items, roof above, canopies, soffits
A-RF-WLK	Roof boardwalks, catwalks
A-WD	**Windows**
A-WD-EXT	Exterior window panes and frames
A-WD-HED	Window headers in a wall
A-WD-HED-PAR	Window headers in a partition wall
A-WD-INT	Interior window panes and frames
A-WD-INT-PAR	Interior window in a partition wall
A-WD-OVH	Overhead windows / skylights
A-WD-SIL	Window sills
A-WL	**Non-Structural Walls**
A-WL-EXT	Exterior walls
A-WL-EXT-HAT	Exterior walls hatching
A-WL-FEN	Fences
A-WL-FIN	Wall finishes
A-WL-INT	Interior walls
A-WL-INT-LOW	Interior walls - low walls
A-WL-INT-LOW-PAR	Interior partition - low walls
A-WL-INT-PAR	Interior partition walls
A-WL-OLN	Wall outlines, building footprints, sheds, etc
A-WL-WRM	Washroom partitions
B-AP	**Approach Slabs**
B-AP-PLN	Approach slabs in plan view
B-BR	**Bearing Plan**
B-BR-LIN	Bearing plan line work
B-DK	**Bridge deck and components**
B-DK-BAR	Barriers / railings
B-DK-CRB	Curbs / sidewalks
B-DK-DDR	Deck drains
B-DK-DEK	Deck plan
B-DK-EXJ	Expansion joints
B-DK-REB	Deck reinforcing
B-DK-STG	Steel grating
B-GL	**General**
B-GL-DIM	Dimensions
B-GL-HAT	Hatching

Layer Name	Description
B-GL-LAY	Layout line work
B-GL-SOL-DRK	Solid fills - dark
B-GL-SOL-LIT	Solid fills - light
B-GL-SOL-MED	Solid fills - medium
B-GL-TXT	Text
B-SB	**Substructure**
B-SB-ABU	Abutments
B-SB-APR	Approach slabs
B-SB-BRG	Bearing
B-SB-FTG	Footing
B-SB-PIR	Piers
B-SB-REB	Substructure reinforcing
B-SP	**Scour Protection**
B-SP-GAB	Gabions
B-SP-RRP	Riprap
B-SS	**Superstructure**
B-SS-BEM	Beams
B-SS-BRC	Bracing
B-SS-CAT	Catwalks
B-SS-GTL	Girders / trusses
B-SS-REB	Superstructure reinforcing
B-SS-SNL	Stringers
C-BH	**Borehole Data (geotechnical)**
C-BH-IDN	Borehole identification numbers
C-BH-LOG	Borehole logs and data
C-BH-MON	Geotechnical monitoring wells
C-BH-SMP	Soil sample locations
C-BH-STP	Stratigraphic profiles
C-EN	**Environmental**
C-EN-PLM	Plume outline
C-EN-SIT	Boundary limits of contaminated site
C-EN-TNK	Holding tanks for environmental issues
C-EN-WEL	Environmental monitoring wells
C-GF	**Gases and Fuels**
C-GF-DPI	Diesel fuel pipelines
C-GF-DSE	Diesel fuel valves, manholes, meters, storage
C-GF-NPI	Natural gas pipelines
C-GF-NSE	Natural gas valves, manholes, meters, storage
C-GF-OPI	Oil pipelines
C-GF-OSE	Oil valves, manholes, meters, storage
C-GF-PPI	Propane pipelines

Layer Name	Description
C-GF-PSE	Propane valves, manholes, meters, storage
C-GF-TXT	Gas and oil text / description
C-GL	**General**
C-GL-PIC	Inserted pictures
C-GL-PIC-SYM	Symbol with hyperlink to picture file
C-HW	**Highway Engineering Data**
C-HW-CON	Highway construction staging
C-HW-HWY	Highway plan
C-HW-MSH	Mass hauling diagrams
C-HW-STG	Staging layout plan
C-HY	**Hydrology**
C-HY-CAT	Catchments area
C-HY-DRA	Drainage area
C-HY-FLO	Flow / discharge
C-HY-ICE	Ice thickness
C-LD	**Landscaping**
C-LD-ART	Artwork, special features
C-LD-FLG	Flagpoles
C-LD-FTN	Fountains, pools
C-LD-FUR	Site furnishings, benches, garbage cans...
C-LD-LWN	Lawn area
C-LD-PLT	Plant materials
C-LD-SPO	Sports facilities, goal nets, shooting targets...
C-LD-TER	Terraces, courtyards, patios
C-LD-TXT	Descriptive information text
C-PF	**Profile Data**
C-PF-HOR	Horizontal profiles
C-PF-VER	Vertical profiles
C-RO	**Roads**
C-RO-ACR	Fire department access routes
C-RO-ALI	Alignment
C-RO-BRG	Bridges overpasses, etc...
C-RO-CLI	Road centreline
C-RO-CRB	Curbs
C-RO-CRB-ASP	Asphalt curbs
C-RO-CRB-GRA	Granite curbs
C-RO-GRL	Guides / guard rails, median dividers, bollards
C-RO-GUT	Gutter lines
C-RO-MRK	Markings and road striping
C-RO-RMP	Ramps, on-ramps, loading docks...
C-RO-ROD	Drivable road limits (asphalt) road, lots

Layer Name	Description
C-RO-ROD-APP	Drivable road limits' approximate location
C-RO-ROD-CON	Drivable road limits (concrete) road, lots
C-RO-ROD-GRV	Drivable road limits (gravel), shoulder of road
C-RO-STR	Bridge abutments and piers, and supports
C-RO-TUN	Road tunnels, underpasses, etc.
C-RO-TXT	Road description / information text
C-RW	**Railways**
C-RW-ALI	Alignment
C-RW-BRG	Bridges
C-RW-CLI	Rail centrelines
C-RW-RAI	Railway lines, switches
C-RW-RMP	Ramps
C-RW-STR	Bridge abutments, piers, trestles and supports
C-RW-TUN	Tunnels
C-SA	**Sanitary Sewer**
C-SA-ABN	Abandoned sanitary sewer lines
C-SA-CMB-MLI	Combined main sewer lines
C-SA-CMB-SLI	Combined service sewer lines
C-SA-DRA	Drainage catch areas
C-SA-IOT	Sanitary inlet outlet structure
C-SA-JUN	Junction symbols
C-SA-JUN-IDN	Text description - type of junction
C-SA-MAN	Sewer manholes, catch basins, pumping stations
C-SA-MAN-IDN	Text regarding t/g elevation, inverts elevation etc
C-SA-MLI	Sanitary main sewer lines
C-SA-SLI	Sanitary service sewer lines
C-SA-TMT	Sewage treatment areas
C-SA-TXT	General text: length of sewer, slope, material etc.
C-SF	**Site Features**
C-SF-ARM	Erosion control, armourstone, riprap
C-SF-BRG	Foot bridges
C-SF-CON	Concrete features, slabs
C-SF-DBR	Debris, rubble, loose rock and soil
C-SF-FEN	Fencing
C-SF-MAR	Marshes, wetlands
C-SF-RWL	Retaining walls
C-SF-STR	Stairs not attached to buildings
C-SF-SWK	Sidewalks

Layer Name	Description
C-SF-TRE	Trees, tree lines
C-SF-TRE-TXT	Text describing trees
C-SF-TRL	Trails, footpaths
C-SF-TUN	Utility / pedestrian service tunnels
C-SF-TXT	Site feature description text
C-SF-WTR	Watercourses, shorelines
C-SI	**Signs and Guideposts**
C-SI-GDP	Guideposts
C-SI-SGL	Sign layouts and details
C-SI-SGN	Signs
C-SI-TXT	Signage text
C-SM	**Storm Drainage & Systems**
C-SM-ABN	Abandoned storm sewer lines
C-SM-CUL	Culverts
C-SM-DCL	Ditch centre lines
C-SM-DRA	Drainage catchments areas
C-SM-IOT	Storm inlet outlet structure
C-SM-JUN	Junction symbols
C-SM-JUN-IDN	Junction description text
C-SM-MAN	Catch basins, manholes, pumping stations
C-SM-MAN-IDN	Manhole description text; elevation, direction
C-SM-MLI	Storm main sewer lines
C-SM-MNG	Storm water management pond
C-SM-SLI	Storm service sewer lines
C-SM-SUB	Subdrains
C-SM-TXT	Text describing length of sewer, slopes, material
C-SV	**Survey Control, Non Legal**
C-SV-BEN	Local bench marks
C-SV-BND	Non-legal boundaries
C-SV-CHN	Chainage
C-SV-CTL	Control points
C-SV-GRD	Survey grid
C-SV-HOR	Horizontal alignment
C-SV-HPT	Horizontal control points
C-SV-LIM	Limits of contract, non legal
C-SV-LIN	Survey feature connectivity line work
C-SV-MON	Found legal monuments
C-SV-PAR	Parcel line work
C-SV-PAR-TXT	Parcel text
C-SV-PNT	Survey points
C-SV-SEL	Super elevation

Layer Name	Description
C-SV-SET	Setbacks
C-SV-STA-EQU	Station equation labels
C-SV-STA-LBL	Station labels
C-SV-STA-PTS	Station points
C-SV-TRA	Traverse line work
C-SV-VER	Vertical alignment
C-SV-VPT	Vertical control points
C-TP	**Topographical Information**
C-TP-BNK	Top of bank
C-TP-CON-MJR	Major contours
C-TP-CON-MNR	Minor contours
C-TP-SPT	Spot elevation
C-TP-SRF	Surface model line work
C-TP-SRF-3GR	Surface model - 3d grid
C-TP-SRF-3PO	Surface model - 3d polylines
C-TP-SRF-BDR	Surface model border
C-TP-SRF-BRK	Surface model break lines
C-TP-VOL	Surface volume line work
C-TP-VOL-TXT	Surface volume calculation text
C-WM	Water and Fire
C-WM-FHY	Fire hydrants
C-WM-FRL	Fire lines
C-WM-IRP	Irrigation system piping
C-WM-IRR	Irrigation heads, controls, valves
C-WM-JUN	Junction symbols
C-WM-JUN-IDN	Text describing type of junction
C-WM-MAN	Manholes, pumping stations, storage, valves
C-WM-MAN-IDN	Text describing; t/g elevation, t/pipe elevation
C-WM-MLI	Water main
C-WM-RAW	Raw water lines
C-WM-SLI	Water service line
C-WM-TXT	Water main descriptive text
C-WM-WTR	Water wells
E-CK	**Clock Systems**
E-CK-CLK	Clock locations
E-CK-EQP	Clock equipment
E-CK-WRG	Wiring
E-DA	**Data Systems**
E-DA-EQP	Data equipment
E-DA-OUT	Data outlets / jacks
E-DA-WRG	Wiring

Layer Name	Description
E-EG	**Emergency Generation**
E-EG-EQP	Emergency power generation equipment
E-EG-GEN	Generators, control switchboards
E-EL	**Emergency Lighting**
E-EL-ESG	Exit signs
E-EL-LCM	Emergency luminaries ceiling mounted
E-EL-LWS	Emergency luminaries wall mounted
E-EL-OLB	Emergency outside luminaries attached to buildings, poles
E-EP	**Emergency Power Equipment**
E-EP-CTL	Motors and controls
E-EP-DCB	DC battery systems
E-EP-REC	Receptacles
E-EP-TEN	Special tenant systems
E-EP-UPS	UPS and conditioned power
E-EW	**Emergency Power Wiring and Cabling**
E-EW-CBT	Cable trays, ducts and raceways
E-EW-CLT	Control wiring for emergency lighting
E-EW-EXP	Exposed inside/outside wiring
E-EW-HVC	High voltage in ceiling space
E-EW-LVC	Low voltage in ceiling space
E-EW-LVU	Low voltage under floor
E-EW-UPS	Ups and conditioned power
E-EW-WCL	Ceiling mounted wiring
E-FR	**Electrical Fire Protection**
E-FR-AEP	Alarm and annunciator panels, buzzer, bells
E-FR-AID	Alarm initiation devices: pull stations, heat/smoke detector
E-FR-ELD	Electromagnetic locking devices
E-FR-SIG	Signalling devices
E-FR-VCE	Emergency voice communication
E-FR-VCW	Emergency voice communication wiring
E-FW	**Flat Wiring**
E-FW-CBL	Flat wiring cable location
E-FW-CNB	Flat wiring connection boxes
E-GD	**Grounding**
E-GD-WRG	Wiring, rods, bus plates
E-LP	**Lightning Protection**
E-LP-WRG	Devices, equipment and wiring
E-NG	**Normal Power Generation**
E-NG-EQP	Normal power generation equipment
E-NG-GEN	Generators, control switchboard

Layer Name	Description
E-NL	**Normal Lighting**
E-NL-CTL	Lighting controls
E-NL-LCM	Luminaries ceiling mounted
E-NL-LWS	Luminaries in workspace and wall mounted
E-NL-OLB	Outside luminaries attached to buildings, poles
E-NP	**Normal Power Equipment**
E-NP-CTL	Motors and controls
E-NP-EQP	Normal power equipment - ceiling fans ...
E-NP-HVD	High voltage distribution
E-NP-LVD	Low voltage distribution
E-NP-MEC	Electrical connections to mechanical equipment
E-NP-RAD	Radiant heating panels
E-NP-OUT	Outlets, receptacles
E-NP-TEN	Special tenant systems
E-NW	**Normal Power Wiring and Cabling**
E-NW-CBT	Cable trays, ducts and raceways
E-NW-CTL	Control wiring lighting
E-NW-EXP	Exposed inside/outside wiring
E-NW-HVW	High voltage wiring in ceiling space
E-NW-LVC	Low voltage wiring in ceiling space
E-NW-LVF	Low voltage under floor
E-NW-LVW	Low voltage in workspace
E-NW-PST	Power poles with receptacles
E-NW-TEN	Tenant systems in workspace
E-NW-UPS	Ups and conditioned power
E-PA	**Sound and PA Systems**
E-PA-EQP	Sound equipment
E-PA-OUT	Outlets
E-PA-WRG	Wiring
E-PH	**Telephone Systems**
E-PH-EQP	Equipment
E-PH-OUT	Outlets
E-PH-PAN	Telephone panel
E-PH-WRG	Wiring
E-SD	**Site Distribution and Electrical Equipment**
E-SD-COD	Conduits
E-SD-COM-ABV	Communication lines - above grade - phone, video
E-SD-COM-UND	Communication lines - below grade - phone, video
E-SD-DUC	Concrete ducts

Layer Name	Description
E-SD-EQP	Site distribution equip; transformers, pedestals
E-SD-HVO-ABV	High voltage distribution - above grade
E-SD-HVO-UND	High voltage distribution - below grade
E-SD-LTG-ABV	Lighting and wiring - above grade
E-SD-LTG-UND	Lighting and wiring - below grade
E-SD-LVO-ABV	Low voltage distribution - above grade
E-SD-LVO-UND	Low voltage distribution - below grade
E-SD-MAN	Manhole, hand wells (electrical, communication)
E-SD-MAN-IDN	Text describing; t/g elevation, line elevation
E-SD-MUN	Municipal and utility services
E-SD-POL	Poles and towers (electrical, communication)
E-SD-SUB	Substations
E-SD-TXT	Text describing type of distribution system
E-SE	**Security Systems**
E-SE-ALM	Intrusion alarms
E-SE-CTL	Intrusion controls and controllers
E-SE-ELK	Electrical security locks
E-SE-LAN	Intrusion system LAN
E-SE-SEN	Intrusion sensors
E-SE-VCL	Video controllers (digital)
E-SE-VCM	Video cameras and monitors
E-SE-WRG	Intrusion controller wiring
E-SG	**Signal Systems**
E-SG-EQP	Equipment
E-SG-OUT	Outlets
E-SG-WRG	Wiring
E-SM	**Electrical Schematics**
E-SM-CLK	Clock system schematics
E-SM-DAS	Data systems schematics
E-SM-EFP	Electrical fire protection schematics
E-SM-ELT	Emergency lighting schematics
E-SM-EPR	Emergency power wiring & equip.
E-SM-EPR-MAX	Maximo numbers for emergency equipment
E-SM-EPR-TXT	Text for emergency equipment
E-SM-EQP	Switch board & equipment outlines
E-SM-EWR	Emergency wiring schematics
E-SM-GEN	Emergency generation schematics
E-SM-GND	Grounding schematics
E-SM-HVW	High voltage (>750v) wiring & equip.
E-SM-HVW-MAX	Maximo numbers for high voltage equipment

Layer Name	Description
E-SM-HVW-TXT	Text for high voltage equipment
E-SM-KRK	Kirk key interlocks
E-SM-LAN	Local area network schematics
E-SM-LGT	Lighting control schematics and diagrams
E-SM-LTP	Lightning protection schematics
E-SM-MTR	Metering wiring & equipment
E-SM-MTR-TXT	Metering wiring & equipment text
E-SM-NEO	Neoc wiring and equipment
E-SM-NEO-MAX	Maximo for neoc equipment
E-SM-NLT	Normal lighting schematics
E-SM-NPR	Normal power schematics, risers
E-SM-NPR-MAX	Maximo tag numbers (00-00-00)
E-SM-NPR-TXT	Text for low voltage equipment
E-SM-PAS	Public address system schematics
E-SM-SGN	Signal schematic
E-SM-TEL	Telephone schematics
E-SM-VID	Video system schematics
E-VD	**Video Conferencing Systems**
E-VD-EQP	Equipment
E-VD-OUT	Outlets
E-VD-WRG	Wiring
G-LG	**Legend Information**
G-LG-LIN	Symbol legend line work
G-LG-TXT	Symbol legend
G-TL	**Title Block**
G-TL-ATT	Attributes for title block
G-TL-LAY	Paper space boundaries
G-TL-LIN	Line work for title block
G-TL-LOG	Logos
G-TL-RME	Title block Read Me layer
G-TL-SYM	Symbols, key plan, north arrow, bar scale
G-TL-TXT	Text for title block
H-CS	**Control Systems**
H-CS-AIR	Control air piping
H-CS-DAM	Damper actuators, controllers
H-CS-EQP	Energy management systems
H-CS-THR	Thermostats, humidistat, sensors
H-CS-VAV	Valve actuators, controllers
H-DD	**Ductwork Distribution**
H-DD-COA	Combustion air ductwork
H-DD-EXH	Exhaust air ductwork

Layer Name	Description
H-DD-FLU	Flue, vent, breaching
H-DD-INS	Duct insulation, acoustical lining
H-DD-OUT	Outside air ductwork
H-DD-RET	Return ductwork
H-DD-SUP	Supply ductwork
H-DE	**Ductwork Equipment**
H-DE-EXH	Exhaust grilles
H-DE-FAN	Fans, dampers, coils, filters and equipment
H-DE-OUT	Outside air grilles
H-DE-RET	Return grills
H-DE-SUP	Supply diffusers, grills, vents
H-DE-VAV	Variable air volume boxes
H-EQ	**Equipment**
H-EQ-ACE	Air conditioning equipment
H-EQ-CMA	Compressed air equipment
H-EQ-CNV	Convectors
H-EQ-FEQ	Fuel equipment
H-EQ-HYD	Hydronic equipment
H-EQ-REF	Refrigerant equipment
H-EQ-STM	Steam equipment
H-EQ-WPM	Domestic water tanks, pumps, water softeners
H-FD	**Fire Protection Distribution**
H-FD-CEX	Chemical extinguishing piping
H-FD-FEX	Foamed extinguishing piping
H-FD-SPP	Sprinkler piping
H-FD-STP	Standpipe piping
H-FE	**Fire Protection Equipment**
H-FE-CAB	Fire hose cabinet
H-FE-CEX	Chemical extinguishing equipment
H-FE-EPE	Explosion-proof equipment
H-FE-EXG	Fire extinguishers
H-FE-FDP	Fire dampers
H-FE-FEX	Foamed extinguishing equipment
H-FE-FHY	Building fire hydrants
H-FE-FIT	Sprinklers
H-FE-FSF	Fire stop flaps
H-FE-SMC	Smoke control equipment
H-FE-SPE	Sprinkler equipment
H-FE-SPH	Sprinkler heads
H-FE-SSZ	Sprinkler system zones
H-FE-STE	Standpipe equipment

Layer Name	Description
H-PD	**Piping Distribution**
H-PD-CHR	Chilled water return
H-PD-CHS	Chilled water supply
H-PD-CMA	Compressed air
H-PD-DCW	Domestic cold water
H-PD-DHR	Domestic hot water recirculation
H-PD-DHW	Domestic hot water
H-PD-DRA	Drainage waste and vents
H-PD-FIT	Fittings
H-PD-FOR	Fuel oil return
H-PD-FOS	Fuel oil supply
H-PD-GLR	Glycol return
H-PD-GLS	Glycol supply
H-PD-HWR	Heating water return
H-PD-HWS	Heating water supply
H-PD-MAN	Access holes
H-PD-NGA	Natural gas
H-PD-PGA	Propane gas
H-PD-RAD	Radiant heat tubing
H-PD-RFG	Refrigerant gas
H-PD-RFL	Refrigerant liquid
H-PD-SAN	Sanitary
H-PD-STC	Steam condensate
H-PD-STM	Steam
H-PF	**Plumbing Fixtures**
H-PF-BIB	Hose bib connectors
H-PF-FDR	Floor drains
H-PF-FIX	Fixtures
H-PF-RDR	Roof drains
H-SM	**Mechanical Schematics and Riser Diagrams**
H-SM-CSY	Control system schematics
H-SM-DRS	Duct riser diagrams
H-SM-DUC	Duct schematic diagrams
H-SM-PIP	Piping schematic diagrams
H-SM-PRS	Piping riser diagrams
H-SM-WST	Waste schematics
H-SP	**Fuel and Process Piping**
H-SP-MAN	Manholes, valves, meters and fuelling stations
H-SP-SER	Fuel and process piping
H-SP-TNK	Fuel tanks
I-EM	**Employee Information**

Layer Name	Description
I-EM-IDN	Employee identification
I-EQ	**Equipment**
I-EQ-CMP	Computers
I-EQ-OEQ	Office equipment
I-EQ-SPC	Special equipment
I-FU	**Furniture**
I-FU-ACC	Accessories, coat trees, racks
I-FU-ART	Artwork
I-FU-CAB	Storage cabinets, files
I-FU-CLR	Furniture color
I-FU-DSK	Desks, work surfaces
I-FU-NOF	Non-office furniture, first aid room beds, etc
I-FU-PLT	Plants
I-FU-SET	Seating
I-FU-SHL	Shelving
I-FU-TXT	Annotations / Text furniture
I-FU-TAB	Tables
I-FU-SIZ	Furniture size
I-SI	**Signage**
I-SI-EQP	Barrier-free signs
I-SI-OFF	Office signage
I-SI-SPC	Special signage
I-SY	**Screening Systems**
I-SY-ACC	Accessories, paper manager, privacy screens, etc
I-SY-CON	Screen connecting devices
I-SY-FUR	Screen mounted furniture, storage, accessories
I-SY-LAN	LAN network jack
I-SY-NLT	Normal powered lighting
I-SY-PWS	Powered screens
I-SY-SCR	Screens
I-SY-SCR-CLR	Screen colors
I-SY-SCR-IDN	Screening sizes
I-SY-SCR-OVN	Screen over-head storage, etc
I-SY-SCR-PST	Screen electrical posts / poles
I-SY-SHL	Shelving, overhead storage
I-SY-TEL	Telecom jacks
I-SY-WSK	Work surfaces, D-tops, P-tops, etc
L-AZ	**Airport Zoning**
L-AZ-ZNP	Proposed new zoning
L-AZ-ZNS	Zoning surfaces, runway strips, centrelines
L-GL	**General**

Layer Name	Description
L-GL-TXT	General text
L-PL	**Legal Survey Plan**
L-PL-BDY	Legal limits, fee simple, admin., control
L-PL-BND	Legal boundaries
L-PL-CEN	Provincial, national coordinates of parcel centroid
L-PL-DIM	General measurements, dimensions, etc
L-PL-FEA	Physical site features; fences, buildings, walls, etc
L-PL-FEA-TXT	Text describing physical site features
L-PL-LIM	Limited interest estate: easement, right-of-way
L-PL-LIM-IDN	Indent. text for limited interest estate: easement, right-of-way
L-PL-NAT	Natural boundaries, watercourses, shorelines
L-PL-PAR	Parcel line work
L-PL-PAR-IDN	Parcel identification
L-PL-PAR-TXT	Parcel text
L-PL-PPR	Outer perimeter boundaries of ownership
L-PL-PPR-IDN	Owner identification
L-PL-PPR-PWC	Outer perimeter boundaries of PWGSC property
L-PL-SEL	Super elevation
L-PL-SET	Setbacks
L-PL-UCD	Underlying cadastral fabric; deeds, lots, plans
L-SP	**Legal Site Plan**
L-SP-CAN	Canadian boundaries
L-SP-CLS	CLSR boundaries, reserves, parks
L-SP-PRO	Provincial boundaries
L-SP-REG	Regional and municipality boundaries
L-SP-SPR	Outer perimeter boundaries of entire fee simple
L-SV	**Legal Survey**
L-SV-BEN	Local bench marks
L-SV-BEN-IDN	Identification text for local bench marks
L-SV-CHN	Chainage
L-SV-CLN	Radial ties, traverse lines, control lines
L-SV-CTL	Control points
L-SV-CTL-F	Found control points
L-SV-CTL-GPS	GPS control points
L-SV-CTL-GPS-IDN	Identification text for GPS control points
L-SV-CTL-IDN	Identification text for control points
L-SV-CTL-IDN-F	Identification text for found control points
L-SV-GRD	Survey grid

Layer Name	Description
L-SV-HOR	Horizontal alignment
L-SV-HPT	Horizontal control points
L-SV-HPT-IDN	Identification text for horizontal control points
L-SV-LIN	Survey feature connectivity line work
L-SV-MON	Legal monuments, horizontal / vertical control
L-SV-MON-F	Found legal monuments, horizontal/vertical control
L-SV-MON-IDN	Identification text for legal monuments
L-SV-MON-IDN-F	Identification text for found legal monuments
L-SV-PNT	Survey points
L-SV-PNT-GEO	Geodetic survey points
L-SV-STA-EQU	Station equation labels
L-SV-STA-LBL	Station labels
L-SV-STA-PTS	Station points
L-SV-TRA	Traverse linework
L-SV-VER	Vertical alignment
L-SV-VPT	Vertical control points
L-TP	Topographical Information
L-TP-BNK	Top of bank
L-TP-CON-MJR	Major contours
L-TP-CON-MNR	Minor contours
L-TP-SPT	Spot elevation
L-TP-SRF	Surface model linework
L-TP-SRF-3GR	Surface model 3d grid
L-TP-SRF-3PO	Surface model 3d polylines
L-TP-SRF-BDR	Surface model borders
L-TP-SRF-BRK	Surface model break lines
L-TP-VOL	Surface volume line work
L-TP-VOL-TXT	Surface volume calculation text
R-BC	**Building Common Areas "Accessory B"**
R-BC-COR	Shared public corridors
R-BC-OLN	General shared building outline
R-BC-RMS	Shared rooms
R-BS	**Building Service Areas**
R-BS-OLN	General building service outline
R-BS-RMS	Building service rooms
R-BS-SFT	Vertical shafts, elevators, stairs (Takes walls over RMS)
R-EX	**Exterior Site Areas**
R-EX-OLN	Exterior Site Areas

Layer Name	Description
R-FC	**Floor Common Areas**
R-FC-CNV	Convectors (baseboard, radiators)
R-FC-COL	Building Structure, columns (interior and perimeter)
R-FC-COR	Primary circulation
R-FC-ENC	Encroachments (unusable space)
R-FC-FIR	Fire egress cross over areas / fire refuge areas
R-FC-LOB	Floor elevator lobbies
R-FC-OLN	General outline of floor common areas
R-FC-RMS	Washrooms, electrical, telecom, janitor's closets
R-GA	**Gross Area**
R-GA-EXT	Exterior gross area
R-GA-INT	Interior gross area
R-GL	**General**
R-GL-TXT	Street names for Space Audit
R-PK	**Parking**
R-PK-0000-DEP	Parking number - department name (Special use only)
R-PK-0000-DEP-HAT	Parking number - department name - hatching
R-PK-0000-BRF-DEP	Barrier free parking
R-PK-DIV	Parking divisions
R-PK-EXT	Exterior parking (Special use only)
R-PK-IDN	Parking identification numbers
R-PK-INT	Interior parking (Special use only)
R-PK-OLN	Outlines
R-PK-SPE	Special parking
R-SU	**Surface Maintenance Building**
R-SU-CLG	Ceiling finishes
R-SU-COR	Primary corridors
R-SU-DEP	Space allocation by department
R-SU-DIV	Division of area
R-SU-EXT	Exterior finishes
R-SU-FLR	Floor finishes
R-SU-FLR-HIG	High traffic area
R-SU-FLR-LOW	Low traffic area
R-SU-GRP	Space allocation by group / branch
R-SU-IDN	Surface identification number
R-SU-OLN	Outlines
R-SU-RMS	Rooms
R-SU-SFT	Shafts

Layer Name	Description
R-SU-SPE	Special surfaces
R-SU-WAL	Walls
R-SU-WIN	Windows
R-UC	**User Common**
R-UC-COR	Shared public corridors
R-UC-OLN	General shared user outline
R-UC-RMS	Shared rooms
R-US	**Usable**
R-US-001, 002	Usable area polygons by location
R-US-COR	Primary circulation areas (Special use only)
R-US-DEP	Space allocation by department (Special use only)
R-US-DIV	Division of areas
R-US-GRP	Space allocation by group / branch (Special use only)
R-US-IDN	Location identification numbers
R-US-OLN	General usable outlines (Special use only)
R-US-RMS	Room identification numbers (Special use only)
R-US-UNT	Space allocation by units (Special use only)
R-ZN	**Zoning**
R-ZN-CLN	Cleaning zoning
R-ZN-FIR	Fire egress zoning
R-ZN-SEC	Security zoning
S-CL	**Ceilings**
S-CL-BEM	Ceiling beams
S-FL	**Floors**
S-FL-BEM	Floor beams
S-FL-BRC	Bracing
S-FL-DEK	Decking, waffle
S-FL-FRM	Framing
S-FL-JNT	Joints, expansion, construction
S-FL-JST	Joists
S-FL-OLN	Floor outlines
S-FL-OPN	Floor openings
S-FL-SLB	Floor slabs
S-FL-STR	Structural landings
S-FN	**Foundations**
S-FN-CAP	Pile caps and grade beams
S-FN-FIL	Backfill, soil line
S-FN-FTG	Footings
S-FN-OLN	Foundation outlines
S-FN-PIL	Piles, caissons, piers

Layer Name	Description
S-GD	**Structural grid**
S-GD-EXT	Structural grid lines outside building
S-GD-INT	Structural grid lines inside building
S-RF	**Roofs**
S-RF-BEM	Beams
S-RF-BRC	Bracing
S-RF-DEK	Decking, waffle
S-RF-FRM	Framing
S-RF-JNT	Joints, expansion, construction
S-RF-JST	Joists
S-RF-OLN	Roof outlines
S-RF-OPN	Roof openings
S-RF-SLB	Roof slabs
S-RF-TRU	Roof trusses
S-WL	**Walls, Columns**
S-WL-BRC	Cross bracing
S-WL-BRG	Bearing walls
S-WL-COL	Columns
S-WL-JNT	Joints, expansion, construction
S-WL-OPN	Wall openings
S-WL-RET	Retaining walls
RPD_areas	See Layer Name
RPD_draft	See Layer Name
RPD_Exterior Gross	See Layer Name
RPD_GROSSAREAS	See Layer Name
RPD_HATCH	See Layer Name
RPD_Interior Gross Measured	See Layer Name
RPD_room_NUMBER	See Layer Name
RPD_room_TEXT	See Layer Name
RPD_Title	See Layer Name
BOMA_areas	See Layer Name
Drawing	See Layer Name
G-BORDER	See Layer Name
G-TITLEBLOCK_TXT	See Layer Name
Room description	See Layer Name
Consultant Drawing	See Layer Name

Appendix C. Layer Descriptions

Ext.	Description
1	Option #1
2	Option #2
3DM	3D Model Components
ABN	Abandoned
ABU	Abutments
ABV	Above Ground, Above Grade
ACC	Accessories, Coat Trees, Racks
ACE	Air Conditioning Equipment
ACR	Fire Department Access Routes
AEP	Alarm and Enunciator Panels
AID	Alarm Initiation Devices
AID	Room, Area Identifier
AIR	Control Air Piping
ALI	Alignment
ALM	Intrusion Alarms
AP	Approach Slabs
APR	Approach Slab
ARM	Erosion Control, Armourstone, Riprap
ART	Artwork
ASP	Asphalt
ATT	Attributes
AZ	Airport Zoning
B	Bottom
BAR	Barrier/Railing
BC	Building Common (Accessory B)
BED	Vessel Beds
BEM	Beams
BEN	Local Bench Mark
BF	Building Factors
BH	Borehole Data
BIB	Hose Bib Connectors
BKH	Bulkheads
BLK	Block
BND	Non-Legal Boundaries
BNK	Top of Bank
BR	Bearing Plan
BRC	Bracing
BRD	Bracing, Wales
BRG	Bearing (Bridge, Structure)
BRG	Bridges (Civil)
BRK	Brick
BRM	Crest of Breakwater, Berm
BS	Building Service Areas
BUO	Buoys
BW	Breakwater Features
C	Centre

Ext.	Description
CAB	Cabinets
CAI	Caissons
CAN	Canadian Boundaries
CAP	Pile Caps and Grade Beams
CAR	Carpet
CAR	Cards (Marine)
CAT	Catchments Area (Civil)
CAT	Catwalks
CBL	Flat Wiring Cable Location
CBT	Cable Trays, Ducts and Raceways
CEN	Centroid
CEX	Chemical Extinguishing
CHN	Chainage
CHR	Chilled Water Return
CHS	Chilled Water Supply
CI	Circulation
CIR	Circulation
CK	Clock Systems
CL	Ceilings
CLI	Centreline
CLK	Clock
CLN	Control, Construction Lines
CLR	Color
CLS	CLSR Boundaries, Reserves, Parks
CLT	Control Wiring for Emergency Lighting
CLZ	Cleaning Zoning
CMA	Compressed Air
CMB-MLI	Combined Main Sewer Line
CMB-SLI	Combined Service Sewer Line
CMP	Computers
CNB	Flat Wiring Connection Boxes
CNV	Convectors
COA	Combustion Air Ductwork
COD	Conduit
COL	Columns
CON	Concrete
CON	Highway Construction Staging (Civil)
CON	Screen Connector (Interior Design)
CON-MJR	Major Contours

Ext.	Description
CON-MNR	Minor Contours
COR	Corridor
CRB	Curb
CRB	Cribwork, Ballast Floor (Marine)
CRW	Crown slopes, Crowns
CS	Control Systems
CSY	Control System Schematics
CTL	Controls
CUL	Culverts
CVY	Horizontal Conveyors, Moving Sidewalks
CWL	Cope walls, Cope beams
DA	Data Systems
DAM	Dampers, Valves
DAS	Data Systems Schematics
DAT	Chart Datum Contour, 0.00 m
DBR	Debris, Rubble, Loose Rock and Soil
DBY	Legal Limits, Fee Simple, Admin. , Control
DCB	DC Battery Systems
DCL	Ditch Centre line
DCW	Domestic Cold Water
DD	Ductwork Distribution
DE	Ductwork Equipment
DEK	Decking, Waffle
DEP	Space Allocation: Tenant Department
DHR	Domestic Hot Water Recirculation
DHW	Domestic Hot Water
DIG	Digitized or Vectorized from Scanned
DIM	Dimensions
DK	Bridge Deck and Components
DKP	Guideposts
DPI	Diesel Fuel Pipelines
DR	Doors
DRA	Drainage Waste and Vents
DRG	Dredged Area or Limits
DRK	Derricks, Cranes, Gallows
DRN	Drains, Scuppers
DRS	Duct Riser Diagrams
DSE	Diesel Fuel Valves
DSK	Desks, Work surfaces
DT	Details
DUC	Ducts
E	Existing

Ext.	Description
EFP	Electrical Fire Protection Schematics
EG	Emergency Generation
EL	Elevations
EL	Emergency Lighting (Electrical)
ELD	Electromagnetic Locking Devices
ELE	Elevators
ELK	Electrical Security Locks
ELT	Emergency Lighting Schematics
EM	Emergency
EME	Emergency
EN	Environmental
ENC	Encroachments, Unusable Space
ENV	Environmental
EP	Emergency Power Equipment
EPE	Explosion-Proof Equipment
EPR	Emergency Power wiring & equipment
EQ	Equipment
EQP	Equipment
ESC	Escalators
ESG	Exit Signs
EW	Emerg. Power Wiring & Cabling
EWR	Emergency Wiring Schematics
EX	Exterior Site Areas
EXG	Fire Extinguisher
EXH	Exhaust
EXJ	Expansion Joint
EXP	Exposed Inside/Outside Wiring
EXT	Exterior
FAN	Fans
FC	Floor Common Area
FD	Fire Protection Distribution
FDP	Fire Dampers
FDR	Floor Drains
FE	Fire Protection Equipment
FEA	Physical Site Features
FEN	Fences
FEQ	Fuel Equipment
FEX	Foamed Extinguishing
FHY	Fire Hydrants
FIL	Backfill, Soil-line
FIN	Finish
FIR	Fire Rated
FIT	Fittings
FIX	Fixtures
FL	Floors
FLG	Flagpoles
FLO	Flow/Discharge

Ext.	Description
FLU	Flue, Vent, Breaching
FN	Foundations
FND	Fenders
FOR	Fuel Oil Return
FOS	Fuel Oil Supply
FR	Electrical Fire Protection
FRL	Fire Lines (Civil)
FRM	Framing
FSF	Fire Stop Flaps
FST	Floating Wharfs
FTG	Footing
FTN	Fountains, Pools
FU	Furniture
FUR	Furniture
FW	Flat Wiring
FWL	Fire Walls
GA	Gross Area
GAB	Gabions
GD	Grounding (Electrical)
GD	Grids
GEN	Generators, Control Switchboard
GF	Gases and Fuels
GL	Global
GLR	Glycol Return
GLS	Glycol Supply
GND	Grounding Schematics
GRA	Granite
GRD	Grid
GRL	Guide/Guard Rails
GRP	Space Allocation: Tenant's Major Groups:
GRV	Gravel
GTL	Girders/Truss
GUA	Guards
GUT	Gutter Line
GWY	Gangways
HAT	Hatching
HED	Door or Window Headers
HNT	High Normal Tide
HOR	Horizontal
HPT	Horizontal Control Point
HVC	High Voltage in Ceiling Space
HVD	High Voltage Distribution
HVW	High voltage
HW	Highway Engineering Data
HWL	High Water Line
HWR	Heating Water Return
HWS	Heating Water Supply
HWY	Highway Plan

Ext.	Description
HY	Hydrology
HYD	Hydronic Equipment
ICE	Ice Thickness
IDN	Identification Numbers
INS	Insulation
INT	Interior
IOT	Inlet Outlet Structure
IRP	Irrigation System Piping
IRR	Irrigation Heads, Controls, Valves
JNT	Joints, Expansion, Construction
JST	Joists
JUN	Junction Symbols
L	Left
LA	Local Area Networks
LAD	Ladders
LAN	Local Area Network Schematics
LCM	Luminaries Ceiling Mounted
LD	Landscaping
LEG	Legal data
LEV	Levels
LFT	Lift Platforms for Barrier Free Access
LG	Legends
LGT	Lighting Control Schematics and Diagrams
LIM	Limits
LIN	Linework
LNT	Low Normal Tide
LOB	Lobby
LOG	Borehole Logs and Data (Civil)
LOG	Logo
LP	Lightning Protection
LTP	Lightning Protection Schematics
LVC	Low Voltage in Ceiling Space
LVD	Low Voltage Distribution
LVF	Low Voltage Under floor
LVU	Low Voltage Under floor
LVW	Low Voltage
LWL	Low Water Line
LWN	Lawn area
LWS	Luminaries Wall Mounted
MAJ	Major Sea Bottom Contours
MAN	Manholes
MAP	Photogrammetry data - Mapping
MAR	Marshes, Wetlands
MEC	Elect.Connections to Mechanical Equip.
MIN	Minor Sea Bottom Contours
MLI	Main Line

Ext.	Description
MNG	Storm Water Management Pond
MON	Geotechnical Monitoring Well (Civil)
MON	Legal Monument (Civil, Legal)
MOR	Mooring Cleats, Bollards
MRK	Markings and Road Striping
MSH	Mass Hauling Diagram
MTR	Metering wiring & equipment
MUN	Municipal and Utility Services
N	New
NAT	Natural Boundaries
NEO	Numbers for high voltage equipment
NEO-TXT	Metering wiring & equipment
NG	Normal Power Generation
NGA	Natural Gas
NL	Normal Lighting
NLT	Normal Lighting Schematics
NOD	Node, Horizontal Reference Point
NOF	Non-Office Furniture, First Aid Room Bed
NP	Normal Power Equipment
NPI	Natural Gas Pipelines
NPR	Normal Power Schematics, Risers
NPR-MAX	Maximo tag numbers (00-00-00)
NSE	Natural Gas Valves, Manholes, Meters
NV	Navigation
NW	Normal Power Wiring & Cabling
OEQ	Office Equipment
OFF	Office Signage
OLB	Outside Luminaries Attached to Buildings
OLN	Outlines
OPI	Oil Pipelines
OPN	Openings
OSE	Oil Valves, Manholes, Meters, Storage
OUT	Outlets
OUT	Outside Air (Mechanical)
OVH	Overhead Window/skylight
OVN	Overhead items, roof above, etc.
P	Planned or Proposed
PA	Sound and PA Systems
PAR	Parcel Linework

Ext.	Description
PAS	Public Address System Schematics
PD	Piping Distribution
PF	Profile Data (Civil)
PF	Plumbing Fixtures (Mechanical)
PGA	Propane Gas
PH	Telephone Systems
PIL	Piles, Caissons, Piers
PIP	Piping Schematic Diagrams
PIR	Pier
PK	Parking
PL	Plan
PLM	Plume outline
PLN	Plan
PLT	Plants
PNT	Survey Point
POL	Poles and Towers(Electrical, Comm.)
PPI	Propane Pipelines
PPR	Outer Perimeter Boundary of Ownership
PRO	Profiles
PRO	Provincial Boundaries (Legal)
PRS	Piping Riser Diagrams
PSE	Propane Valves, Manholes, Meters
PST	Power Poles With Receptacles
PWS	Powered Screens
R	Right
RAD	Radiant Heat
RAI	Railway
RAS	Raised Floors
RAW	Raw Water Lines
RDR	Roof Drains
REB	Reinforcing Structure
REC	Receptacles
REF	Refrigerant Equipment
REG	Regional and Municipality Boundaries
RET	Return
RET	Retaining Walls (Structure)
RF	Roofs
RFG	Refrigerant Gas
RFL	Refrigerant Liquid
RME	Read-Me
RMP	Ramps
RMS	Building Service Rooms
RO	Roads

Ext.	Description
ROD	Drivable Road Limits (asphalt) Road, Lots
ROD-APP	Drivable Road Limits Approximate Loc.
RRP	Rip Rap
RTL	Trails, Footpaths
RTU	Roof Truss
RW	Railways
RWL	Retaining Walls
S	Base
SA	Sanitary Sewer
SAN	Sanitary
SB	Substructure
SC	Schedules
SCR	Screens
SD	Site Dist. and Elect. Equipment
SE	Security Equipment
SEC	Security Zoning
SEL	Superelevation
SEN	Intrusion Sensors
SER	Fuel and Process Piping
SET	Setback (Civil)
SET	Seating (Interior Design)
SF	Site Features
SFT	Vertical Shafts, Elevators, Stairs
SG	Signal Systems
SGL	Sign Layouts and Details
SGN	Signs
SHL	Shelving
SI	Signage
SIG	Signaling Devices
SIL	Window Sill
SIT	Boundary Limits of Contaminated Site
SK	Skid-way, Haul-outs, Slipways
SKD	Skid Timbers, Skid Poles
SLB	Concrete Slabs, Precast Panels
SLI	Service Line
SM	Storm Drainage & Systems (Civil)
SM	Schematics
SMC	Smoke Control Equipment
SMP	Soil Sample Location
SN	Hydro. Survey Info , Non Legal
SNL	Stringers
SP	Scour Protection (Bridge)
SP	Fuel and Process Piping (Mechanical)
SP	Legal Site Plan (Legal Survey)
SPA	Spars

Ext.	Description
SPC	Special
SPE	Architectural Specialties (Architectural)
SPE	Sprinkler Equipment (Mechanical)
SPH	Sprinkler Heads
SPO	Sports Facilities
SPP	Sprinkler Piping
SPR	Outer Perim. Bound. of Entire Fee Simple
SPT	Spot Elevations
SRF	Surface Model Linework
SRF-3GR	Surface Model 3d Grid
SRF-3PO	Surface Model 3d Polylines
SRF-BDR	Surface Model Border
SRF-BRK	Surface Model Break Lines
SS	Superstructure
SSP	Steel Sheet Piling
SSZ	Sprinkler System Zones
ST	Sections
STA	Stairs
STA-EQU	Station Equation Labels
STA-LBL	Station Labels
STA-PTS	Station Points
STC	Steam Condensate
STE	Standpipe Equipment
STG	Steel Grating (Bridge)
STG	Staging Layout Plans (Civil)
STL	Steel
STM	Steam
STO	Stone
STP	Stratigraphic Profile (Civil)
STP	Standpipe Piping (Mechanical)
STR	Stairs, Ladders
SU	Surface Maintenance Building
SUB	Subterranean
SUP	Supply
SUR	Survey data
SV	Survey Control, Non Legal
SWK	Sidewalks
SY	Screening Systems
SYM	Symbols

Ext.	Description
T	Top
TAB	Tables
TEL	Telephone Schematics
TEN	Special Tenant Systems
TER	Terraces, Courtyards, Patios
THR	Thermostats, Humidistats, Sensors
TID	Tide Gauges, Tidal Equipment, etc.
TIE	Tie Rods, Anchor Blocks, Tie Back Walls
TIL	Tile
TIM	Timber, Wood
TL	Titleblock
TMP	Temporary
TMT	Sewage Treatment Areas
TNK	Tanks
TOE	Toe of Breakwater
TP	Topographical Information
TRA	Traverse Linework
TRE	Trees, Tree Lines
TUN	Tunnels
TXT	Annotation, Bubbles, Graphic Scales
UC	User Common
UCD	Underlying Cadastral Fabric
UND	Underground, Below Grade
UPS	UPS and Conditioned Power
US	Usable Area
VAV	Variable Air Volume Boxes
VCE	Emergency Voice Communication
VCW	Emergency Voice Communication Wiring
VD	Video Conferencing Systems
VER	Vertical
VID	Video System Schematics
VOL	Surface Volume Linework
VPT	Vertical Control Point
VWC	Video Wiring and Cabling
WCL	Ceiling Mounted Wiring
WCM	Video Cameras and Monitors
WD	Windows
WEL	Environmental Monitoring Wells
WF	Wharf Features
WL	Walls
WLK	Roof Board Walks, Cat Walks
WM	Water and Fire
WPM	Domestic Water Tanks, Pumps, etc.
WRG	Wiring
WRM	Washroom Partitions
WST	Waste Schematics
WTR	Water
X	To Be Removed
ZN	Zoning
ZNP	Proposed New Zoning
ZNS	Zoning Surfaces