CITY OF GREATER SUDBURY
ENGINEERING SERVICES

DRAFTING STANDARDS MANUAL

CAD / METRIC

AS DISPLAYED ONLINE 2022-01-14
https://www.greatersudbury.ca/business/engineering-standards/drafting-procedures/

TABLE OF CONTENTS

DIVISION 1

Drawing Names

This section of the manual has been set aside to discuss how we name drawings at the City of Greater Sudbury. The related documents listed below contain information about the eight (8) different naming conventions we use. These rules should be more than adequate when we name our project files. The CADD Technician will ultimately review and confirm all the drawing names prior to their final storage.

"A / B" Numbered Plans

This category of plans is indexed based on the size of the drawing sheet. The types of plans found in this category include the following:

- Miscellaneous "A3" / "B" Size Plans
- Miscellaneous "A4" / "A" Size Plans

The numbers assigned to this type of drawings is purely arbitrary. The **Plan Index System** contains all particulars about plans indexed this way. The following is an example of how we should name this type of plan:

Example -> B999-1.dwg
Example -> A2000-1.dwg

The suffix indicates the number of drawings that are contained in this set.

"C" Numbered Plans

This category of plans are indexed based on the size of the drawing sheet. The types of plans found in this category include the following:

- Construction Plans (Plan and Profile)
- Traffic Control Plans
- Hydraulic Network Analysis Plans
- Miscellaneous "A1" / "C" Size Plans

The numbers assigned to this type of drawings is purely arbitrary. The **Plan Index System** contains all the particulars about plans indexed this way. The following is an example of how we should name this type of plan:

*Example -> C1000-1 to 3_C3D_CSRS_z81.*dwg

The range (1 to 3) indicates the number of drawings contained in this drawing set. The "C3D' indicates the drawing was created using AutoCAD Civil 3D. The "CSRS_z81" indicates the zone/datum the drawing is in.

"D" Numbered Plans

This category of plans are indexed based on the size of the drawing sheet. The types of plans found in this category include the following:

- Miscellaneous "A0" / "D" Size Plans

The numbers assigned to these types of drawings are purely arbitrary. The **Plan Index System** contains all the particulars about plans indexed this way. The following is an example of how we should name this type of plan:

Example -> D1000-1.dwg

The suffix indicates the number of drawings that are contained in this set.

Compiled Plans

A compiled plan is the base drawing that we work on when we prepare construction plan and profile drawings. This drawing generally contains property and/or detail from electronic surveys. There are two (2) different forms of Compiled Plans filed:

- Completed Compiled Plan
- Partially Completed Compiled Plan

The following is the naming convention we use for these types of plans:

Completed Compiled Plan

- Street Name – Paris Street
- Completion Date – (17-02-03)
- Location of Plan – Cedar to Elm

Example -> Paris (17-02-03) - Cedar to Elm.dwg

Partially Completed Compiled Plan

- Street Name – Paris Street
- Partially Completed Compiled Plan Designation – P
- Location of Plan – Cedar to Elm

Example -> Paris-P - Cedar to Elm.dwg

Future Project Plans

A Future project plan is a construction drawing (plan and profile) that has not received a "C" number because the project was deferred. Future project plans can take one (1) of two (2) forms:

- Completed Future Project Plan
- Partially Completed Future Project Plan

The following is the naming convention we use for these types of plans:

Completed Future Project Plan

- Street Name – Barry Downe Rd.
- Sheet Number – 5
- Future Plan Designation – FP

Example -> BarryDowne5-FP.dwg

Partially Completed Future Project Plan

- Street Name – Barry Downe Rd.
- Sheet Number – 5
- Future Plan Designation – FP
- Partially Completed Future Plan Designation – P

Example -> BarryDowne5-FP-P.dwg

Key Plans of Services

This category of plans are indexed based on the township and section that they represent. The types of plans that are found in this category include the following:

- Sanitary Sewer Key Plan
- Storm Sewer Key Plan
- Watermain Key Plan

Each of the drawings can contain any one of the above noted key plans. The only determining factor of whether a plan exists or not, is the presence of services in that particular area. The following is an example of how we should name this type of plan:

Example -> Bal-10.dwg

The drawing name is comprised of the township name (abbreviation) with the section number.

The following are the accepted abbreviations for the township names.

Township Name	Abbreviation	Township Name	Abbreviation
McKim	MCK	Graham	GRA
Balfour	BAL	Capreol	CAP
Broder	BRO	Garson	GAR
Levack	LEV	Hanmer	HAN
Neelon	NEE	Dryden	DRY
Dowling	DOW	Blezard	BLE
Snider	SNI	Falconbridge	FAL
Waters	WAT	Rayside	RAY
Norman	NOR	Denison	DEN

As Built Street Plans

There are three (3) different types of As Built street plans that we file:

- Completed As Built Plan
- Base As Built Plan
- Partially Completed As Built Plan

The following is the naming convention we use for these types of plans:

Completed As Built Plan

- Street Name – Caswell Drive
- Sheet Number – 1

Example -> Caswell1.dwg0

Base As Built Plan

- Street Name – Caswell Drive
- Sheet Number – 1
- Base Plan Designation – B

Example -> Caswell1B.dwg

Partially Completed As Built Plan

- Street Name – Caswell Drive
- Sheet Number – 1
- Partially Completed Plan Designation – P

Example -> Caswell1P.dwg

Note: Some drawings will have "Nref" in the drawing name.

Example -> Caswell1_Nref.dwg

This indicates the drawing is not in any coordinate zone. Our drawings are usually in Zone 53 (old) or CSRS Zone 81 (new).

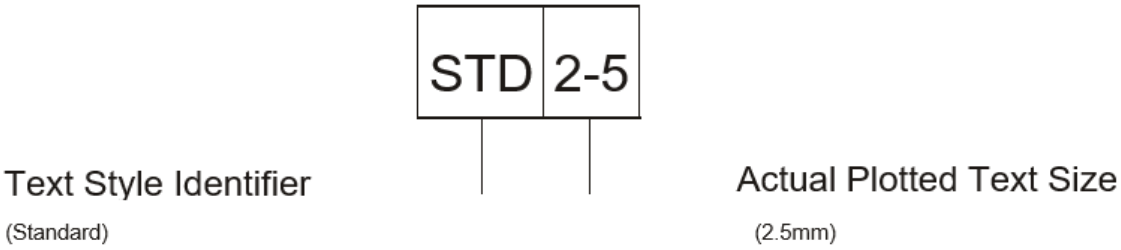
DIVISION 2

Text Style and Font

All the prototypes we use have predefined text styles. The purpose of predefining the fonts is to make sure there is consistency in the drawings created. The text heights are based on old "Leroy" standards converted into metric. The majority of the text styles use a "simplex" type font which provides us a legible letter style with a very small footprint.

Traffic Control and Signal Installation Drawings

Layer Description



The example above highlights a typical text style name. All style names are split into two (2) sections, the first section is the type (STD – Standard) while the second part provides the plotted text size in millimeters. There are two (2) different types of text styles which may be defined within the prototype:

- STD – Standard text style that uses a “Simplex” font.
- CSTD – Construction standard style that uses a “Simplex” font with a 23 degree obliquing angle.

All the “STD” and “CSTD” styles are setup in sizes that correspond with equivalent “Leroy” template sizes. An example of this is the “STD2-0" which is equal to an “80 Leroy” template. The chart below highlights the text styles that have been setup in each prototype with their plotted size and lettering template equivalent.

Text Style Name	Plotted Text Size (mm)	Lettering Template
STD1-5	1.5	60
STD2-0	2.0	80
STD2-5	2.5	100
STD3-0	3.0	120
STD3-5	3.5	140
STD4-5	4.5	175
STD5-0	5.0	200
STD6-0	6.0	240

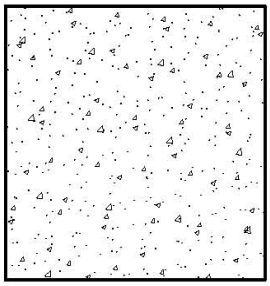
DIVISION 3

Hatching

In the past we have limited the use of hatching within our drawings due to memory limitations on our computers systems, but that issue is no longer applicable. Now, all standard AutoCAD hatch patterns are available for use in our projects. The hatch patterns defined within the linked document should be considered the minimum list for use. The other standard AutoCAD hatch patterns can be used on a project-by-project basis with the approval of the CADD Technician.

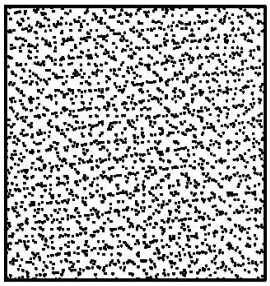
Hatch Patterns

Concrete Sidewalk/Curb & Gutter (AR-CONC)



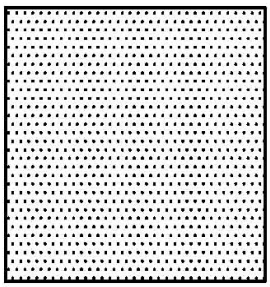
Drawing Type	Drawing Scale	Purpose	Hatch Scale	Rotation Angle
Plan & Profile	1:250	Concrete Sidewalks	0.25	0
Typical Sections	1:50	Concrete Sidewalks	0.025	0
Typical Sections	1:50	Concrete Curb & Gutter	0.025	0

Asphalt Boulevards (AR-SAND)



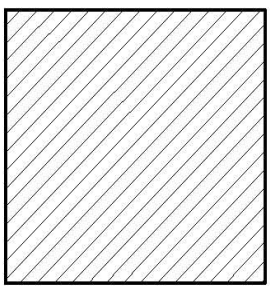
Drawing Type	Drawing Scale	Purpose	Hatch Scale	Rotation Angle
Plan & Profile	1:250	Asphalt Boulevards	0.35	0

Granular A/B (DOTS)



Drawing Type	Drawing Scale	Purpose	Hatch Scale	Rotation Angle
Typical Sections	1:50	Granular 'A'	0.75	45
Typical Sections	1:50	Granular 'B'	1.5	45

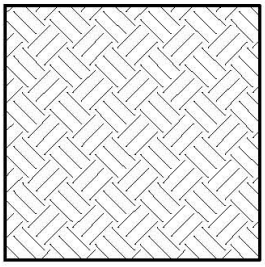
Earth Fill (ANSI 31)



Drawing Type	Drawing Scale	Purpose	Hatch Scale	Rotation Angle
Typical Sections	1:50	Earth Fill (Right)	1.0	10
Typical Sections	1:50	Earth Fill (Left)	1.0	100

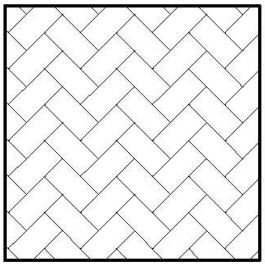
Hatch Patterns

Original Ground (Earth)



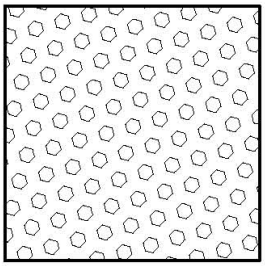
Drawing Type	Drawing Scale	Purpose	Hatch Scale	Rotation Angle
Typical Sections	1:50	Original Ground	0.75	45

Lockstone Driveways and Sidewalks (AR-HBONE)



Drawing Type	Drawing Scale	Purpose	Hatch Scale	Rotation Angle
Plan & Profile	1:250	Lockstone Driveways & Sidewalks	0.05	0

Erosion Control (HEX)



Drawing Type	Drawing Scale	Purpose	Hatch Scale	Rotation Angle
Plan & Profile	1:250	Erosion Control	1.0	45

Drawing Type	Drawing Scale	Purpose	Hatch Scale	Rotation Angle
Plan and Profile	1:250	Concrete Sidewalks	0.25	0
Typical Sections	1:50	Concrete Sidewalks	0.025	0
Typical Sections	1:50	Concrete Sidewalks	0.025	0

Drawing Type	Drawing Scale	Purpose	Hatch Scale	Rotation Angle
Plan and Profile	1:250	Asphalt Boulevards	0.35	0

Drawing Type	Drawing Scale	Purpose	Hatch Scale	Rotation Angle
Typical Sections	1:50	Granular ‘A’	0.75	45
Typical Sections	1:50	Granular ‘B’	1.5	45

Drawing Type	Drawing Scale	Purpose	Hatch Scale	Rotation Angle
Typical Sections	1:50	Earth Fill (Right)	1.0	10
Typical Sections	1:50	Earth Fill (Left)	1.0	100

DIVISION 4

Scales

Most of the items requiring scales in a drawing have been preset in the various prototypes. The only exception to this rule is the hatch scale. A recommended hatch scale is indicated in the attached document but can be manipulated based on the final look required.

- Select the document below to review a list of the dimension, line type, and hatch scale values that have been preset in each prototype.

Scales

Prototype	Description	Dim Scale (2 mm text size)	LT Scale	Hatch Scale
A1-250-CGS	1:250 Plan and Profile	2.778	4.76	6.35
A1-500-CGS	1:250 Plan and Profile	5.556	9.53	12.7
A1-PL-CGS	A1 Plan	11.111	19.0	25.0
A1-COV-CGS	Contract Cover	11.111	19.0	25.0
A1-KEY-CGS	Key Plan of Services	11.111	1.0	25.0
A1-HNA-CGS	Hydraulic Network Analysis	11.111	7.0	25.0
A1-TRA-CGS	Traffic Control	2.778	4.76	6.35
A0-PL-CGS_PORT	A0 Plan (portrait)	11.111	19.0	25.0
A0-PL-CGS_LAND	A0 Plan (landscape)	11.111	19.0	25.0
A3-PL-CGS	A3 Plan	11.111	19.0	25.0
A4-PL-CGS_PORT	A4 Plan (portrait)	11.111	19.0	25.0
A4-PL-CGS_LAND	A4 Plan (landscape)	11.111	19.0	25.0

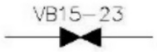
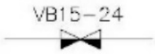
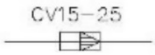
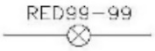
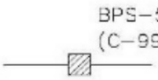
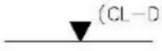
DIVISION 5

Blocks

All the symbols (blocks) for our drawings are located in the prototypes. They can be inserted into the drawing by using toolbars and/or pulldown menus. The scales, layers, etc., will be preset during the insertion process and should not require manipulation for the most part.

- Select one of the categories below to see a complete listing of all symbols (blocks) defined within the appropriate drawing.

Hydraulic Network Analysis Symbols

SYMBOL	BLOCK NAME	DESCRIPTION
	NODE	HYDRAULIC NETWORK NODE, c/w NODE ELEVATION AND NUMBER
	FGNODE	FIXED GRADE NODE, c/w NODE ELEVATION AND NUMBER
	WELL	WATER WELL, c/w WELL NUMBER AND CONSTRUCTION PLAN NUMBER
	TANK	WATER STORAGE TANK, c/w CONSTRUCTION PLAN NUMBER, HIGH AND LOW WATER LEVELS, AND DIMENSIONS IF AVAILABLE (INCLUDE TANK NUMBER ASSIGNED BY TECH. SERVICES)
	V-C	WATER VALVE (Fully Closed), c/w VALVE NUMBER
	V-P	WATER VALVE (Partially Opened), c/w VALVE NUMBER
	CV	CHECK VALVE, c/w VALVE NUMBER
	PV	RED# - PRESSURE REDUCING VALVE, c/w VALVE NUMBER SUS# - PRESSURE SUSTAINING VALVE, c/w VALVE NUMBER REL# - PRESSURE RELIEF VALVE, c/w VALVE NUMBER
	BPS	BOOSTER PUMPING STATION, c/w CONSTRUCTION PLAN NUMBER (INCLUDE STATION NUMBER ASSIGNED BY TECH. SERVICES)
	CL	CLOSED LINE (DEVELOPMENT) (FUTURE) (ULTIMATE)
	ARROW	NORTH ARROW (Shown not to Scale)

Key Plan of Services Symbols

SYMBOL NUMBER	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
1	●	SANITARY MANHOLE	SAN–SYM	SMH
2	■	SAN. LIFTSTATION	SAN–SYM	LS
		FLUOR. STATION	WAT–SYM	STAT
		BOOSTER STATION		
		METER CHAMBER		
3	●	STORM MANHOLES & MHCB's	STM–SYM	SSMH
4	▭	CATCHBASIN	STM–SYM	CB
5	⟩—	HEADWALLS	STM–SYM	H–WALL
6	•	VALVE CHAMBERS & VALVE BOXES	WAT–SYM	VALVE
7	●	HYDRANTS	WAT–SYM	HYD
8	LS–2345	LIFTSTATION NUMBER	SAN–SYM	LS–NUM
9	13–345	STRUCTURE NUMBER	STM–SYM SAN–SYM WAT–SYM	K–NUM
10	H15–55	HYDRANT NUMBER	WAT–SYM	H–NUM
11	6	TOWNSHIP HATCHING	BTXT–017	TWP–HATCH
12	◄—	FLOW DIRECTION ARROW	SAN–SYM STM–SYM	FDA
13	◄—	WATERMAIN REDUCER	WAT–SYM	RED
14	FS–2345	FLUORIDATION STATION NUMBER	WAT–SYM	FS–NUM

Plan and Profile Symbols

FIELD CODE	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
1	⊙ RMS# ELEV	BENCH MARK	SYM-MON	BM
2	□ CM	CONCRETE MONUMENT	SYM-PRO	CM
3	□ SIB	STANDARD IRON BAR	SYM-PRO	SIB
4	□ SSIB	SHORT STANDARD IRON BAR	SYM-PRO	SSIB
5	■ IB	IRON BAR	SYM-PRO	IB
6	■ RB	ROCK BAR	SYM-PRO	RB
7	● RIB	ROUND IRON BAR	SYM-PRO	RIB
8	※ CC	CUT CROSS	SYM-PRO	CC

Plan and Profile Symbols

FIELD CODE	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
16	 MH STA o/s	SANITARY MANHOLE	SYM-SAN	SAN
17	 C/O	SANITARY CLEAN OUT	SYM-SAN	CO
18	 MH STA o/s	STORM MANHOLE	SYM-STM	STM
19	 MHCB STA o/s	MANHOLE CATCHBASIN	SYM-STM	MHCB
20	 CB STA o/s	CATCHBASIN	SYM-STM	CB
21	 DCB STA o/s	DOUBLE CATCHBASIN	SYM-STM	DCB
22	 DMHCB STA o/s	DOUBLE MANHOLE CATCHBASIN	SYM-STM	DMHCB
25	 H-WALL	HEADWALL	SYM-STM	H-WALL
	PLUG	STM. SEWER PLUG	SYM-STM	STM-PL
	PLUG	SAN. SEWER PLUG	SYM-SAN	SAN-PL
		FLOW DIRECTION ARROW	SYM-STM SYM-SAN	FDA

Plan and Profile Symbols

FIELD CODE	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
41	VC STA o/s	VALVE CHAMBER	SYM-WAT	VC
42	VB STA o/s	VALVE BOX	SYM-WAT	VB
43	SB	SERVICE BOX	SYM-WAT	SB
44	HYD STA	HYDRANT	SYM-WAT	HYD
45	VB	HYDRANT VALVE BOX	SYM-WAT	HVB
	TEE	WATERMAIN TEE	SYM-WAT	TEE
	CROSS	WATERMAIN CROSS	SYM-WAT	X
	90° BEND	WATERMAIN 90° BEND	SYM-WAT	90
	45° BEND	WATERMAIN 45° BEND	SYM-WAT	45
	22-1/2° BEND	WATERMAIN 22-1/2° BEND	SYM-WAT	22
	11-1/4°BEND	WATERMAIN 11-1/4° BEND	SYM-WAT	11
	RED	WATERMAIN REDUCER	SYM-WAT	RED
	CAP	WATERMAIN CAP	SYM-WAT	WAT-PL
46	T-STN	ANODE/CATHODE TEST STATION	SYM-WAT	T-STN
47	WELL	WATER WELL	SYM-PRE	WELL

Plan and Profile Symbols

FIELD CODE	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
51	● T	TELEPHONE POLE	SYM-TEL	T
52	□ T.MH.	TELEPHONE MANHOLE	SYM-TEL	TMH
53	⊠ TP	TELEPHONE PEDESTAL	SYM-TEL	TP
54	□ TEL	TELEPHONE BOOTH	SYM-PRE	TEL
55	● TV	TELEVISION POLE	SYM-CTV	TV
56	✳ TV(ANT)	TELEVISION ANTENNA	SYM-CTV	ANT-T
57	✳ TV(DISH)	TELEVISION DISH	SYM-CTV	DISH
58	● E	HYDRO POLE	SYM-HYD	E
59	□ E.MH.	HYDRO MANHOLE	SYM-HYD	EMH
60	□ EHH	HYDRO HAND HOLE	SYM-HYD	HJB
61	○ LS	LAMP STANDARD	SYM-HYD	LS
62	⊠ TRAN	HYDRO TRANSFORMER	SYM-HYD	TRANS
63	* E	HYDRO MARKER	SYM-HYD	E-MR
64	⋈ GV	GAS VALVE BOX	SYM-GAS	GV
65	□ G.MH.	GAS MANHOLE	SYM-GAS	GMH

Plan and Profile Symbols

FIELD CODE	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
66	△ GR	GAS REGULATOR	SYM-GAS	GR
67	* G	GAS MARKER	SYM-GAS	G-MR
68	■ GD	GAS DRIP	SYM-GAS	GD
71	* T	TELEPHONE POLE	SYM-TEL	TG
72	● T	TELEGRAPH MARKER	SYM-TEL	T-MR

Plan and Profile Symbols

FIELD CODE	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
76	THH	TRAFFIC HAND HOLE	SYM-TRA	TJB
77	BL	TRAFFIC BOLLARD	SYM-TRA	BL
78	PM	PARKING METER	SYM-TRA	PM
79	TC	TRAFFIC CONTROLLER	SYM-TRA	TC
80	MS	MUNICIPAL SIGN	SYM-RDS	MS
81	RRX	RAIL CROSSING SIGN	SYM-RWY	RRX
82	TL	TRAFFIC LIGHT STANDARD	SYM-TRA	TL
83	WL	TRAFFIC WALK LIGHT	SYM-TRA	WL
84	s	OTHER SIGNS	SYM-PRE	S

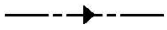
Plan and Profile Symbols

FIELD CODE	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
91		TREE	SYM-PRE	TREE
92	 SWP	SWAMP	SYM-PRE	SWP
93	 SHB	SHRUB	SYM-PRE	SHB

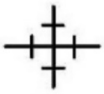
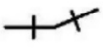
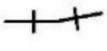
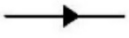
Plan and Profile Symbols

FIELD CODE	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
166	o FP	FLAG POLE	SYM-PRE	FP
167	⊡ MB	MAIL BOX	SYM-PRE	MB
	#234	BASEMENT FLOOR ELEVATION	SYM-BLG	BFE
168	o CL	CLOTHES LINE POLE	SYM-PRE	CL

Plan and Profile Symbols

SYMBOL NUMBER	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
1		SANITARY MANHOLE	CSYM-SAN	SAN
2		STORM MANHOLE	CSYM-STM	STM
3		MANHOLE CATCHBASIN	CSYM-STM	MHCB
4		DBL. MANHOLE CATCHBASIN	CSYM-STM	DMHCB
5		DOUBLE CATCHBASIN	CSYM-STM	DCB
6		CATCHBASIN	CSTM-STM	CB
7		FLOW DIRECTION ARROW	CSYM-STM CSYM-SAN	CFDA
8		SUBDRAIN FLOW DIRECTION ARROW	CSYM-STM	S-ARR
9		STORM HEADWALL	CSYM-STM	CH-WALL

Plan and Profile Symbols

SYMBOL NUMBER	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
10		VALVE CHAMBER	CSYM-WAT	VC
11		VALVE BOX	CSYM-WAT	VB
12		HYDRANT	CSYM-WAT	HYD
13		HYDRANT VALVE BOX	CSYM-WAT	HVB
14		SERVICE BOX	CSYM-WAT	SB
15		WATERMAIN TEE	CSYM-WAT	CTEE
16		WATERMAIN CROSS	CSYM-WAT	CX
17		WATERMAIN 90° BEND	CSYM-WAT	C90
18		WATERMAIN 45° BEND	CSYM-WAT	C45
19		WATERMAIN 22-1/2° BEND	CSYM-WAT	C22
20		WATERMAIN 11-1/4° BEND	CSYM-WAT	C11
21		WATERMAIN REDUCER	CSYM-WAT	CRED
22		ANODE/CATHODE TEST STATION	CSYM-WAT	C-STN
23		ANODE/CATHODE	CSYM-WAT	C-AND
24		WATERMAIN PLUG	CSYM-WAT	CWAT-PL

Plan and Profile Symbols

SYMBOL NUMBER	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
25		LAMP STANDARD	CSYM-HYD	LS
26		HYDRO HANDHOLE	CSYM-HYD	CHJB
27		TRAFFIC LIGHT STANDARD	CSYM-TRA	CTL
28		TRAFFIC HANDHOLE	CSYM-TRA	CTJB
29		TRAFFIC WALK LIGHT POLE	CSYM-TRA	CWL

Plan and Profile Symbols

SYMBOL NUMBER	SYMBOL	DESCRIPTION	LAYER INSERTION	BLOCK NAME
30		STRUCTURE REMOVAL	CSYM-STM CSYM-WAT CSYM-SAN	CR
31		STRUCTURE REMOVE & REPLACE	CSYM-STM CSYM-WAT CSYM-SAN	CRR
32		STRUCTURE BREAKDOWN & CAP	CSYM-STM CSYM-WAT CSYM-SAN	CBC

Traffic Control Symbols

SYMBOL	BLOCK NAME	DESCRIPTION
	SH-1	HIGHWAY SIGNAL HEAD (30 cm. Red) WITH BACKBOARD AND MAST ARM
	SH-2	HIGHWAY SIGNAL HEAD (30 cm. Red) WITH BACKBOARD AND OVERHEAD CABLE
	SH-3	HIGHWAY SIGNAL HEAD WITH BACKBOARD AND MAST ARM (ALL 30 cm. LENSES)
	SH-4	SPECIAL HEAD WITH ARROW INDICATION AND BACKBOARD (Example shows Type ② Head)
	SH-5	SPECIAL HEAD WITH BACKBOARD AND ONE OR MORE PROGRAMMABLE LENSES (Example shows Type ② Head)
	SH-6	STANDARD SIGNAL HEAD WITH BACKBOARD AND MAST ARM (ALL 20 cm. LENSES)
	SH-7	STANDARD SIGNAL HEAD WITH MAST ARM, WITHOUT BACKBOARD
	PSH	PEDESTRIAN SIGNAL HEAD
	PPD	PEDESTRIAN PUSH BUTTON
	DET-1	VEHICLE PASSAGE LOOP DETECTOR
	DET-2	VEHICLE LOOP DETECTOR
	DET-3	DUPLEX LOOP DETECTOR
	DET-4	DIAMOND LOOP DETECTOR
	DET-5	MICRO-LOOP DETECTOR
	DET-6	- EMERGENCY VEHICLE PRE-EMPTION DETECTOR -MICRO-WAVE DETECTOR

Traffic Control Symbols

SYMBOL	BLOCK NAME	DESCRIPTION
	TS10	TRAFFIC SIGNAL POLE (10cm)
	DET-7	MAGNETIC VEHICLE DETECTOR
	TC	TRAFFIC CONTROLLER
	TS	TRAFFIC SIGN
	ITSF	TRAFFIC SIGN WITH FLASHING BEACON
	ITS	ILLUMINATED TRAFFIC SIGN
	TL	TRAFFIC SIGNAL POLE (STD.)
	THH	TRAFFIC HANDHOLE
	TSS	10cm DIA. POLE WITH PEDESTRIAN SIGNALS (STACKED)
	TA	TURN ARROW (SHOWN NOT TO SCALE)
	TA1	TURN ARROW (SHOWN NOT TO SCALE)
	ARROW	NORTH ARROW (SHOWN NOT TO SCALE)

DIVISION 6

Colour and Pen Codes

This area of the manual has been set aside to discuss the way we have setup pen colours and line weights within the various prototypes we use. AutoCAD employs one (1) of two (2) different approaches when establishing plot parameters, namely, **Named Plot Style Tables** or **Colour Dependent Plot Style Tables**. The first approach (named plot style tables) allows you to assign plot parameters such as line weight, grayscale, etc. to individual objects regardless of the colour. The other approach (colour dependent plot style tables) sets the plot parameters based on the colour and nothing else. In our environment we have chosen to use colour dependent plot style tables (CTB Files) to control the way our drawings are plotted. This approach allows us to setup all plot parameters with the CTB File rather than at the plotter.

We currently use one (1) of four (4) different CTB Files to control how our drawing looks when we plot it. The following are the colour dependent plot style tables (CTB Files) that have been setup:

- Full Size
- Half Size
- Generic Colour
- Key Plan

The "Full Size" CTB File is used when we are plotting any "A0" and "A1" sized drawings. The "Half Size" CTB File is used when we plot drawings on "A3/B" or "A4/A" size paper. The "Generic Colour" CTB File is used with colour presentation on all paper sizes. It should be noted that the generic colour CTB File has all the pen weights set to 0.25 mm and should be adjusted to suit your requirements. The last CTB File has been setup to handle Key Plans of Services.

- Select one of CTB Files listed below, to see a complete list of how each table has been setup.

Colour and Pen Codes

Full Size CTB

Property	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16
Color (1)	7	7	7	7	7	7	7	7	253	253	253	253	51	51	51	51
Dither	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on
Grayscale	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Pen #	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto
Virtual Pen #	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto
Screening	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Line Type	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on
Adaptive	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on
Line Weight	0.50	0.25	0.70	0.35	0.35	0.35	0.25	0.10	0.25	0.35	0.50	0.70	0.25	0.35	0.50	0.70
Line End Style (2)	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS
Line Join Style (3)	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS
Fill Style (4)	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS

(1) OC - Use Object Colour
(2) OS - Use Object Style
(3) OJS - Use Object Join Style
(4) OFS - Use Object Fill Style

Colour and Pen Codes

Generic Colour CTB

Property	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16
Color (1)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dither	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on
Grayscale	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Pen #	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto
Virtual Pen #	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto
Screening	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Line type	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on
Adaptive	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on
Line Weight	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Line End Style (2)	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS
Line Join Style (3)	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS
Fill Style (4)	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS

(1) OC - Use Object Colour
(2) OS - Use Object Style
(3) OJS - Use Object Join Style
(4) OFS - Use Object Fill Style

Colour and Pen Codes

Half Size CTB

Property	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16
Color (1)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Dither	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on
Grayscale	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Pen #	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto
Virtual Pen #	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto
Screening	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Line Type	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on
Adaptive	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on
Line Weight	0.30	0.10	0.40	0.15	0.15	0.15	0.10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Line End Style (2)	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS
Line Join Style (3)	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS
Fill Style (4)	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS

(1) OC - Use Object Colour
(2) OS - Use Object Style
(3) OJS - Use Object Join Style
(4) OFS - Use Object Fill Style

Colour and Pen Codes

Key Plan of Services CTP

Property	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16
Color (1)	7	7	7	7	7	7	7	7	253	253	253	253	OC	OC	OC	OC
Dither	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on
Grayscale	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off
Pen #	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto
Virtual Pen #	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto	auto
Screening	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Line Type	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on
Adaptive	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on
Line Weight (5)	0.30	0.10	0.70	0.15	0.15	0.15	0.10	0.10	OLW	OLW	OLW	OLW	OLW	OLW	OLW	OLW
Line End Style (2)	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS	OS
Line Join Style (3)	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS	OJS
Fill Style (4)	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS	OFS

(1) OC - Use Object Colour
(2) OS - Use Object Style
(3) OJS - Use Object Join Style
(4) OFS - Use Object Fill Style
(5) OLW - Use Object Line Weight

DIVISION 7

Line Types

We are presently using the standard AutoCAD Line Types in the majority of drawing prototypes we use. The only exceptions to this rule are the Plan & Profile, Key, HNA and Traffic Control Plans which have customized line pattern files established in them. These prototypes have all the custom Line Types pre-loaded with Line Types scales preset.

Select one of the plan types listed below, to view a chart highlighting the custom Line Types.

Hydraulic Network Plan Line Types

LINETYPE NUMBER	DESCRIPTION	LINETYPE NAME
01		CONTINUOUS
02		DASHDOT
03		DASHED
04		HIDDEN

Key Plan of Services Line Types

LINETYPE NUMBER	DESCRIPTION	LINETYPE NAME
01		CONTINUOUS
02		SAN
03		FM
04		STM
05		LDR
06		CON
07		BDY

Plan and Profile Line Types

LINETYPE NUMBER	DESCRIPTION	LINETYPE NAME
01		CONTINUOUS
02		PHANTOM-3
03		PHANTOM-2
04		LONG-DASH
05		SHORT-DASH
06		PHANTOM-1
07		CENTER
08		MED-DASH
09		COMMON
10		SUBDRAIN
11		FENCE
12		DITCH

LINETYPE NUMBER	DESCRIPTION	LINETYPE NAME
13		BUSH LINE
14		CURBX
15		DWY DERPRESSION
16		GAS
17		GUIDE RAIL
18		HEDGE
19		ROCK
20		TRACKS

Traffic Control and Signal Installation Line Types

LINETYPE NUMBER	DESCRIPTION	LINETYPE NAME
01		CONTINUOUS
02		DL1
03		DL2
04		DL3
05		DL4
06		DL5
07		DL6
08		DL7
09		CL2
10		CL3
11		CL4

DIVISION 8

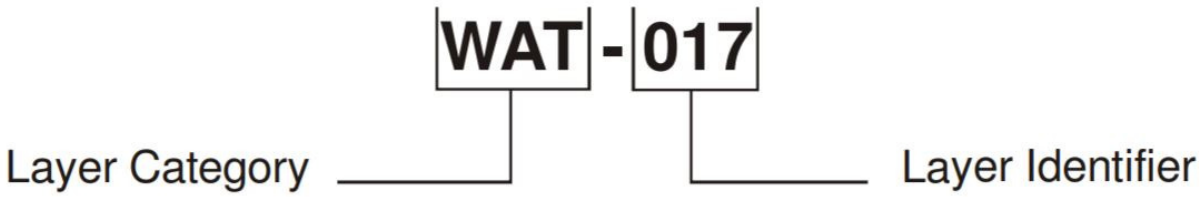
Layering Conventions

We are presently utilizing four (4) layering conventions for the various drawings we complete on our computer systems. Although there are subtle differences in all the layering conventions, they all follow the same basic rules. All the layer names are made up of a three (3) or four (4) character category followed by a three (3) number or letter identifier. All drawings completed on the computer systems should follow these basic rules or derivatives of them.

- Select one (1) of the Layer Conventions listed below to access a complete listing of all predefined layers.

Hydraulic Network Plans

Layer Description



1. The layer category indicates what type of information is to be placed on this layer. In the above-noted example, the category indicates a As Built watermain layer.

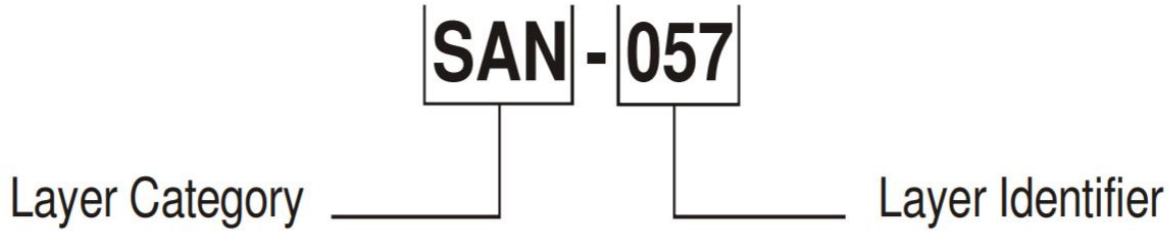
2. The prefix “F” or “U” in front of the layer category is used to indicate layers that contain network information that is considered a Future or Ultimate Plan.

3. The layer identifier is either three (3) numbers or a layer category name. With the three (3) numbered system, the first two (2) indicate the Line Type (01=continuous), while the last number gives you the colour (7 = white). The reason for this type of identifier is to allow for varying Line Types and colours on multiple layers under the same category. (See the chart's list of Line Type numbers and colour numbers with associated pen sizes.)

LAYER CATEGORY	DESCRIPTION	LAYER NAMES	PURPOSE
1. BOR	- Border	BOR-A1	- A1 HNA Plan sheet with attributes
2. REF	- Reference lines	REF-013	- Work Lines
		REF-017	- Work Lines
3. WAT	- Watermain	WAT-017	- As Built Watermains
		FWAT-034	- Future Watermains
		UWAT-026	- Ultimate Watermains
4. SYM	- Symbols	SYM-015	- As Built Watermain Symbols
		FSYM-014	- Future Watermain Symbols
		USYM-016	- Ultimate Watermain Symbols
5. TXT	- Text	TXT-017	- As Built Text
		TXT-013	- As Built Text
		TXT-011	- As Built Text
		FTXT-017	- Future Text
		FTXT-013	- Future Text
		FTXT-011	- Future Text
		UTXT-017	- Ultimate Text
		UTXT-013	- Ultimate Text
		UTXT-011	- Ultimate Text

Key Plans of Services

Layer Description



1. The layer category indicates what type of information is to be placed on this layer. In the above-noted example, the category indicates a sanitary sewer layer.

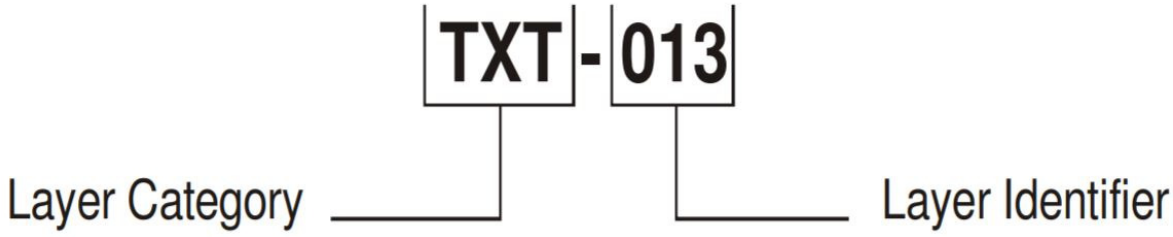
2. The layer identifier is either three (3) numbers or a layer category name. With the 3-number system, the first two indicate the Line Type (01=continuous), while the last number gives you the colour (3=green). The reason for this type of identifier is to allow for varying Line Types and colours on multiple layers under the same category. (See the chart's list of Line Type numbers and colour numbers with associated pen sizes.)

The other type of layer identifier has a name replacing the numbers. This is used to indicate specific objects that reside under certain layer category. (i.e., San-Sym: Sanitary Sewer Symbols). These layers always use a continuous line type with an assigned colour, based on the pen size required to draw the item.

LAYER CATEGORY	DESCRIPTION	LAYER NAMES	PURPOSE
1. BOR	- Border	BOR-A1	- A1 Key Plan sheet with attributes
2. BASE	- Base Plan	BASE-015	- All R.O.W. lines
		BASE-011	- All outlines of rivers lakes and creeks
		BASE-062	- All Lot/Con Lines
		BASE-071	- Mun./Regional Bdy's.
		BASE-012	- Railways
		BASE-024	- Private Roads
3. BTXT	- Base Plan Text	BTXT-017	- All 1.5, 2.0, 2.5 mm text
		BTXT-011	- All 3.5 and 4.5 mm text
		BTXT-013	- All 4.5 mm and larger text
4. SAN	- Sanitary Sewer	SAN-027	- All Sanitary Sewer Lines
		SAN-032	- All Forcemains
		SAN-057	- Leader lines for Key Plan Numbers
		SAN-SYM	- Sanitary Sewer Symbols
		SAN-TXT	- Sanitary Sewer Text
5. STM	- Storm Sewer	STM-047	- Storm Sewer and Ditch Lines
		STM-057	- Leader Lines for Key Plan Numbers
		STM-SYM	- Storm Sewer Symbols
		STM-TXT	- Storm Sewer Text
6. WAT	- Watermain	WAT-012	- Watermain Lines
		WAT-057	- Leader Lines for Key Plan Numbers
		WAT-SYM	- Watermain Symbols
		WAT-TXT	- Watermain Text

Traffic Control and Signal Installation Drawings

Layer Description



1. The layer category indicates what type of information is to be placed on this layer. In the above-noted example, the category indicates a general text layer.

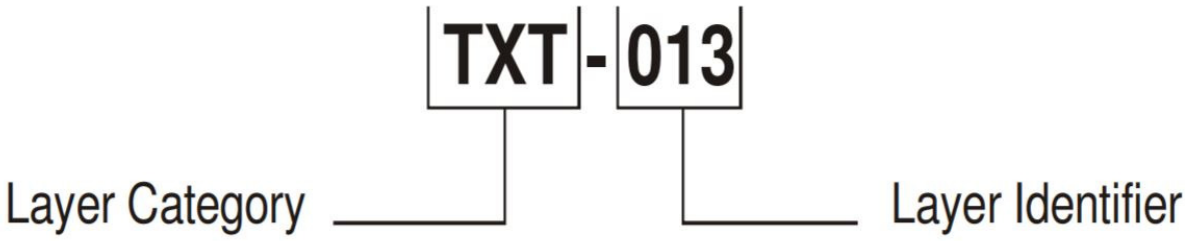
2. The layer identifier is either three (3) numbers or a layer category name. With the 3-number system, the first two indicate the Line Type (01=continuous), while the last number gives you the colour (3=green). The reason for this type of identifier is to allow for varying line types and colours on multiple layers under the same category. (See the chart's list of linotype numbers and colour numbers with associated pen sizes.)

The other type of layer identifier has a category name replacing the numbers. This is used to indicate specific information under certain layer categories. (i.e., Sym-Tra: Traffic Control Symbols). These layers always use a continuous line type with an assigned colour, based on the pen size required to draw the item.

LAYER CATEGORY	DESCRIPTION	LAYER NAMES	PURPOSE
1. BOR	- Border	BOR-A1	- A1 Traffic Control Plan with attributes
2. REF	- Reference	REF-013	- Border line reference layer
		REF-017	- Work lines and Text
3. TXT	- Text	TXT-013	- General Text Layer
		TXT-016	- General Text Layer
		TXT-011	- General Text Layer
		TXT-017	- General Text Layer
		TXT-RDS	- Road Text
		TXT-TEL	- Bell Telephone Text
		TXT-HYD	- Hydro Text
		TXT-TRA	- Traffic Control Text
4. SYM	- Symbols	SYM-RDS	- Roadway Symbols
		SYM-TEL	- Telephone Symbols
		SYM-HYD	- Hydro Symbols
		SYM-TRA	- Traffic Control Symbols
5. RDS	- Roads & Topo.	RDS-016	- Roads, C. & G. S/W, Medians, Islands
6. TRA	- Traffic Control	TRA-015	- All Loop Detectors
		TRA-013	- Line Painting, Turn Arrows, Stop Bars
		TRA-073	- 100 mm PVC Rigid Traffic Signal Duct
		TRA-043	- 100 mm PVC Flex. Traffic Signal Duct
		TRA-101	- 75 mm PVC Rigid Traffic Signal Duct
		TRA-021	- 75 mm PVC Flexible Traffic Signal Duct
		TRA-111	- 50 mm Flexible Interconnect Duct
		TRA-037	- Loop Detector Duct
7. PRO	- Property	PRO-013	- All Right-of-Way Lines
8. BLG	- Building	BLG-011	- All Buildings
9. HAT	- Hatching	HAT-017	- Hatching Layers

1:250/1:500 Plan and Profile Drawings

Layer Description



1. The Layer Category indicates what type of information is to be placed on this layer. In the above-noted example, the category indicates a general text layer. The letter “C” in front of the Line Types would indicate a construction information layer. The “P” prefix for the “TXT” category, indicates property text.

2. The layer identifier is either three 3 numbers or a layer category name. With the 3-number system, the first two indicate the Line Type (01=continuous), while the last number gives you the colour (3=green). The reason for this type of identifier is to allow for varying Line Types and colours on multiple layers under the same category. (See the chart's list of Line Type numbers and colour numbers with associated pen sizes.)

The other type of layer identifier has a category name replacing the numbers. This is used to indicate specific information under certain layer categories. (i.e., Sym-San: Sanitary Sewer Symbols) These layers always use a continuous Line Type with an assigned colour, based on the pen size required to draw the item.

LAYER CATEGORY	DESCRIPTION	LAYER NAMES	PURPOSE
1. BOR	- Border	BOR-A1	- A1 plan and profile sheet with attributes
		BOR-PRO	- Profile Grid Lines
2. REF	- Reference	REF-013	- Border line reference layer
		REF-017	- Work lines and Text
3. TXT	- Text	TXT-017	- General Text (STD1-5, 2-0, 2-5)
		TXT-016	- General Text (STD3-0)
		TXT-011	- General Text (STD3-5, 4-5)
		TXT-013	- General Text (STD5-0, 6-0)
		CTXT-011	- Const. Text (CSTD1-5, 2-0, 2-5)
		CTXT-017	- Const. Text (CSTD3-5, 4-5)
		CTXT-013	- Const. Text (CSTD6-0)
		PTXT-017	- Property Text (STD1-5, 2-0, 2-5)
		PTXT-011	- Property Text (STD3-5, 4-5)
		PTXT-018	- Background Property Text Information
		TXT-SAN	- Sanitary Sewer Text
		TXT-SANS	- Sanitary Sewer Service Text
		TXT-STM	- Storm Sewer Text
		TXT-WAT	- Watermain Text
		TXT-WATS	- Water Service Text
		TXT-RDS	- Road Text
		TXT-GAS	- Gasmain Text
		TXT-TEL	- Bell Telephone Text
		TXT-HYD	- Hydro Text
		TXT-TRA	- Traffic Control Text
		TXT-CTV	- Television Text
		TXT-RWY	- Railway Text
		TXT-BLG	- Building Text

		TXT-PRE	- Preliminary Const. Detail Text
		TXT-CON	- Contour Text
		TXT-MON	- Bench Mark Text
4. PRO	- Property	PRO-013	- Street Lines
		PRO-015	- Lot Lines
		PRO-017	- Match Lines
		PRO-025	- Easement Lines
		PRO-077	- As Built Survey Baselines
		PRO-071	- Mun. Bdy., Township & Lot/Con Lines
		PRO-011	- Rivers, Lakes, etc.
		PRO-092	- Common Ownership Lines
		CPRO-072	- Centreline of Construction
		PRO-012	- Property Reserve Lines
		PRO-REF (turned off)	- Lot dimensions, 53R plans, bars, parts PT)
5. SYM	- Symbols	SYM-PRO	- Property Symbols (SIB, IB, etc.)
		SYM-SAN	- San. Sewer Symbols
		SYM-STM	- Stm. Sewer Symbols
		SYM-WAT	- Wm Symbols
		SYM-WATS	- Water Services
		SYM-RDS	- Roadway Symbols
		SYM-GAS	- Gasmain Symbols
		SYM-TEL	- Telephone Symbols
		SYM-HYD	- Hydro Symbols
		SYM-TRA	- Traffic Control Symbols
		SYM-CTV	- Television Symbols
		SYM-RWY	- Railway Symbols
		SYM-BLG	- Building Symbols
		SYM-PRE	- Preliminary Construction Symbols
		SYM-CON	- Contour Symbols

		SYM-DTM	- Digital Terrain Modeling Symbols
		SYM-MON	- Bench Mark Symbols
		CSYM-SAN	- San. Sewer Const. Symbols
		CSYM-STM	- Stm. Sewer Const. Symbols
		CSYM-WAT	- Wm. Const. Symbols
		CSYM-RDS	- Road Const. Symbols
		CSYM-HYD	- Hydro Const. Symbols
		CSYM-TRA	- Traffic Control Const. Symbols
6.SAN	- Sanitary Sewer	SAN-043	- San. Sewer Structures (Asb. Profile)
		SAN-046	- San. Sewers (Plan)
		SAN-046P	- San. Sewers (Profile)
		SAN-036	- Forcemains (Plan)
		SAN-036P	- Forcemains (Profile)
		SAN-055	- Pipe Casings for Crossings
		SAN-048	- Abandoned San. Sewers (Lines & Text)
		SAN-038	- Abandoned Fm's. (Lines & Text)
		SAN-041	- San. Sewer Rock Tunnel
		SAN-046S	- San. Sewer Services
		CSAN-043	- Const. San. Sewermains
		CSAN-033	- Const. Forcemains
7. STM	- Storm Sewer	STM-063	- Stm. Sewer Structure (Asb. Profile)
		STM-064	- Stm. Sewers, Culverts (Plan)
		STM-064P	- Stm. Sewers (Profile)
		STM-107	- Asb. Subdrains
		STM-068	- Abandoned Stm. Sewers (Lines & Text)
		STM-055	- Pipe Casing for Crossings
		CSTM-101	- Const. Subdrain
		CSTM-063	- Const. Storm Sewers and Structures
8. WAT	- Watermain	WAT-013	- Wm. Structures (As Built Profile Only)

		WAT-015	- Wm. Lines (Plan)
		WAT-015P	- Wm. Lines (Profile)
		WAT-018	- Abandoned Wm's. (Lines & Text)
		WAT-055	- Pipe Casings for Crossings
		WAT-015S	- Water Services
		CWAT-013	- Const. of Wm. Lines & Structures
9. RDS	- Roads & Topo.	RDS-015	- Road Profile
		RDS-016	- Roads, C & G, S/W, Medians, Islands
		RDS-087	- Gravel Roads
		RDS-088	- Exist. Roadside Slopes
		RDS-017	- Rock Outcrops (Plan)
		RDS-017P	- Rock Probes (Profile)
		CRDS-011	- Const. Roads, C & G, etc.
		CRDS-012	- Proposed Shoulder Lines
		CRDS-013	- Const. Road Profile
		CRDS-015	- Proposed Ditch and Roadside Slopes
		CRDS-084	- Road Const. Sub-Base Lines (Profile)
10. GAS	- Gasmain	GAS-052	- Gasmain Lines
11. TEL	- Telephone	TEL-057	- U/G Bell Lines
12. HYD	- Hydro	HYD-057	- U/G Hydro Lines
		CHYD-053	- Construction of U/G Hydro Lines
13. TRA	- Traffic Control	TRA-057	- U/G Traffic Plants
		CTRA-053	- Construction Traffic Plants
14. CTV	- Television	CTV-057	- U/G Television Cables
		CCTV-053	- Construction Television Plants
15. RWY	- Railway	RWY-017	- Railway Tracks
16. BLG	- Building	BLG-011	- All houses and buildings
		BLG-056	- Carports, Sundecks, Porches (Attached)
		BLG-016	- Sheds, Garages, etc. (detached)

17. PRE	-Prel. Const. Detail	PRE-012	- All private property detail
		PRE-082	- Gravel Driveways
		PRE-062	- Driveway Culverts
		PRE-112	- Fence Lines
		PRE-122	- Ditch Lines
18. CON	- Contours	CON-017	- 0.25 m Contour Lines
		CON-014	- 2.0 m Contour Lines
19. DTM	- Digital Terr. Mod.	DTM-017	- Digital Terrain Modeling Points
20. HAT	- Hatching	HAT-017	- Hatching (As Built)
		CHAT-017	- Hatching (Construction)