

# CODING, SYMBOLS AND LINETYPES FOR PRESENTATION OF DETAILED SURVEY DATA

## 1. SCOPE

The way in which the topographical features are coded and associated with symbols and line types is often determined by the software application. Guidelines for the standard of presentation, coding, symbology and line types and the various features expected in a detailed survey, as required by the Transport Agency's *Minimum Standard Z/16 Survey Specification*, are presented below.

The Client recognises that there are a variety of different survey software and design applications available. For that reason, there is no determination on the use of any particular application.


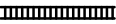
Three-dimensional DXF files appear to be the most versatile for interchangeability. The three-dimensional DXF shall have all common objects separated into appropriate layers. Layer names shall be in accordance with the feature name used for the survey, eg BB00 for bottom of bank (refer to coding, symbols and line type style presented below).

### 1.1 Symbol and linetype library

The following symbol and line type library has been selected as the Client's default library based Road and Traffic Authority, New South Wales symbols and line types. DXF files for these symbols can be downloaded for use, in addition to *PSG/10*, via the Transport Agency's website: <http://www.nzta.govt.nz/resources/state-highway-professional-services-contract-proforma-manual/guidelines/psg.html>

## Structures, boundaries, areas and rail

## BRIDGE STRUCTURES (BDGE)

CODE	DESCRIPTION	LINESTYLE/SYMBOL	CODE	DESCRIPTION	LINESTYLE/SYMBOL
AB00	Abutment Bottom	————	BW00	Bottom of Wall	————
AT00	Abutment Top	————	CS00	Concrete Slab at Ground Level	————
BC00	Bridge Column / Pier	————	DO00	Doorway	
BD00	Bridge Deck	————	LB00	Loading Bay/Dock	-----
HS00	Headstock	————	OB00	General Built-up Area	————
UC00	Underneath Clearance	- - - -	OC00	Cemetery	————
WW00	Wing Wall	————	OM00	Miscellaneous Structure	————
XJ00	Bridge Expansion Joint	————	OO00	Sporting Arena	————
XP00	Bridge Expansion Plate	————	OR00	Ruin	————
PABB	Bridge Abutment Bottom	°AB	OS00	Silo or Tank	————
PABT	Bridge Abutment Top	°AB	OT00	Swimming Pool	————
PBCP	Bridge Cap / Pile	°BC	RW00	Retaining Wall	————
PBPI	Bridge Pier / Column	°BP	SO00	Stairs - Outside	

## BUILDING AND STRUCTURES (BUIL)

CODE	DESCRIPTION	LINESTYLE/SYMBOL	CODE	DESCRIPTION	LINESTYLE/SYMBOL
AW00	Awning	-----	PAWN	Awning Point	°AW
BU00	Building Walls	————	PCBU	Corner of Building at NS	°CB
BV00	Building Eaves	-----	PFLR	Floor Level	°FL

**BOUNDARIES (BDYS)**

CODE	DESCRIPTION	LINestyle/SYMBOL
BE00	Easement Boundary	
BL00	Local Government Boundary	
BM00	Digital Cadastre	
BO00	DP Overlay	
BP00	Parish Boundary	
BT00	Title Boundary	
DE00	Digitising Extent	
FS00	Field Survey Extent	
NF00	Field Completion Boundary	

**RAILWAY (RAIL)**

CODE	DESCRIPTION	LINestyle/SYMBOL
RA00	Top of Rail	
RF00	Railway Platform Edge	
RP00	Top of Railway Platform	
RR00	Railway Ramp	
RS00	Railway Signal Carrier	
RT00	Railway Track Centre	
PRAL	Top of Rail Point	
PRBX	Railway Control Box	
PRCC	Railway Signal Cable Carrier	
PRSG	Railway Signal	
PRTM	Railway Track Monument	
PSTR	Railway Stanchion	

**HERITAGE (HERI)**






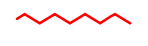



CODE	DESCRIPTION	SYMBOL
PHAZ	Hazardous Site	
PHEE	Endangered Ecological Community	
PHNI	Non Indigenous Heritage Area	
PHEC	Endangered Community	
PHIA	Indigenous Heritage Area	

## Roadway features


## ROAD/PAVEMENT (ROAD)

CODE	DESCRIPTION	LINESTYLE/SYMBOL
BK00	Back of Kerb	————
CR00	Crown of Road	———— -
DW00	Driveway	————
EF00	Edge of Formation	— — —
EM00	Edge of Median	————
EP00	Edge of Pavement	-----
ER00	Edge of Road	-----
ET00	Edge of Track	-----
FP00	Footpath	————
GF00	Gutter Flow Line	————
KB00	Top of Kerb	————
KJ00	Kerb - Type F (Jersey - Bottom)	————
KR00	Pram Ramp	————
LP00	Lip Line	————
TM00	Top of Median	————
VT00	Vehicular Track Edge	-----







## PAVEMENT MARKINGS (LNMK)

CODE	DESCRIPTION	LINESTYLE/SYMBOL
AE00	Pavement Arrow - Straight and Left	
AI00	Pavement Arrow - Straight and Right	
AL00	Pavement Arrow - Left Turn	
AR00	Pavement Arrow - Right Turn	
AS00	Pavement Arrow - Straight Ahead	
BS00	Barrier and Separation Line	————
CA00	Pedestrian Crossing Approach	
CB00	Broken Paint Line (Separation Line)	- - - -
CC00	Continuity Paint Line	- - - - -
CF00	Full Paint Line (Edge or Barrier)	————
CL00	Centre Line of Paint Line /Pavement	- - - -
CV00	Chevron Marking Left	
CW00	Clearway Edge Line	- - - - -
CX00	Pedestrian Crossing	————
CY00	Chevron Marking Right	
CZ00	Pedestrian Crossing - Zebra	
DB00	Double Barrier Line	————
LL00	Lane Line	- - - -





















## PAVEMENT MARKINGS (LNMK)

CODE	DESCRIPTION	LINESTYLE/SYMBOL
S4	Speed Zone - 40km/h	40
S5	Speed Zone - 50km/h	50
S6	Speed Zone - 60km/h	60
S7	Speed Zone - 70km/h	70
S8	Speed Zone - 80km/h	80
S9	Speed Zone - 90km/h	90
S10	Speed Zone - 100km/h	100
S11	Speed Zone - 110km/h	110
SB00	Separation and Barrier Line	
PTMX	Traffic Marker (Silent Cop)	• TM

## TRAFFIC SIGNAL FEATURES (TCS)

CODE	DESCRIPTION	LINESTYLE/SYMBOL
SD00	Signal Detector	
TO00	Traffic Light with Outreach	
PSCL	Traffic Signal Controller	
PSDR	Traffic Signal Detector	
PSGL	Traffic Control Signal	
PSJX	Traffic Signal Junction Box	

## CULTURAL (CULT)

CODE	DESCRIPTION	LINESTYLE/SYMBOL
BH00	Bus Shelter	
BI00	Bin - Large	
FC00	Fence - Cattle Yard	
FE00	Fence	
FL00	Fence Line	
FM00	Fence - Manproof	
GA00	Gate	
GR00	Guard Fence	
OW00	Windmill	
SE00	Seat	
SF00	Safety Fence (Wire Rope)	
SI00	Large Sign	
SX00	Sign with Outreach	
TA00	Picnic Table	
PBIN	Rubbish Bin	
PBUS	Bus Stop	
PFLG	Flag Pole	
PFPL	Fireplace	
PHIS	Historical Point of Interest	
PHST	Headstone	
















## Topographical and Miscellaneous






## TOPOGRAPHICAL FEATURES (TOPO)

CODE	DESCRIPTION	LINESTYLE/SYMBOL	CODE	DESCRIPTION	LINESTYLE/SYMBOL
BB00	Bottom of Bank / Embankment		VL00	Landslide / Eroded Bank	
CU00	Top of Cutting		WE00	Water Edge / Level	
EG00	Edge of Garden		WL00	Lake	
FO00	Ford		WR00	River or Creek Edge	
JC00	Cultivation Pasture		PF01	Tree Foliage - 1m Spread	
JD00	Timber or Scrub (Dense)		PF02	Tree Foliage - 2m Spread	
JG00	Grassland		PF03	Tree Foliage - 3m Spread	
JM00	Timber or Scrub (Medium)		PF04	Tree Foliage - 4m Spread	
JO00	Orchard		PF05	Tree Foliage - 5m Spread	
JR00	Rock Area		PF06	Tree Foliage - 6m Spread	
JS00	Timber or Scrub (Scattered)		PF07	Tree Foliage - 7m Spread	
JW00	Swamp Outline		PF08	Tree Foliage - 8m Spread	
NB00	Breakline or Ridge		PF09	Tree Foliage - 9m Spread	
NS00	Natural Surface		PF10	Tree Foliage - 10m Spread	
RE00	Reservoir		PF12	Tree Foliage - 12m Spread	
TB00	Top of Bank		PF15	Tree Foliage - 15m Spread	
TR00	Tree Foliage		PNSS	Natural Surface Point	<b>123 450</b>
VC00	Cliff / Escarpment		PSHT	PSHT Spot Height	<b>123 450</b>














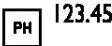







## TOPOGRAPHICAL FEATURES (TOPO)

CODE	DESCRIPTION	LINestyle/SYMBOL
PT01	Tree Trunk - 100mm	
PT02	Tree Trunk - 200mm	
PT03	Tree Trunk - 300mm	
PT04	Tree Trunk - 400mm	
PT05	Tree Trunk - 500mm	
PT06	Tree Trunk - 600mm	
PT07	Tree Trunk - 700mm	
PT08	Tree Trunk - 800mm	
PT09	Tree Trunk - 900mm	
PT10	Tree Trunk - 1000mm	
PT12	Tree Trunk - 1200mm	
PT15	Tree Trunk - 1500mm	
PSWA	Swamp - Marsh	

## MISCELLANEOUS (MISC)

CODE	DESCRIPTION	LINestyle/SYMBOL
HO00	High Pressure Oil Pipeline	
HP00	Hotspot	
JL00	Join Line (Boundary)	
OG00	Golf Course	
OH00	Stockpile	

## MISCELLANEOUS (MISC)

CODE	DESCRIPTION	LINestyle/SYMBOL
OP00	Park or Open Space	
QQ00	Check String	
SG00	Stock Grid	
SL00	Seismic Line	
US00	Service / Junction Box	
UT00	Underground Tank	
PBHX	Bore Hole	
PBRK	MX Break String	
PCAM	Red Light Camera	
PCFU	Camera - Flash Unit	
PGAT	Gatic Cover Lid	
PGEO	Geotech Test Point	 TP I
PHNL	Pot Hole - Null Level	
PHRL	Pot Hole - With RL	
POHM	High Pressure Oil Pipeline Marker	
PPET	Petrol Pump	
PPOL	Pole (Unidentified)	
PSPC	Speed Camera	
PSTS	Seismic Test Shot	
PUSR	Unidentified Service	
PUTP	Underground Tank	



## Services and Utilities

## DRAINAGE FEATURES (DRAI)

CODE	DESCRIPTION	LINESTYLE/SYMBOL	CODE	DESCRIPTION	LINESTYLE/SYMBOL
B000	Box Culvert - 150 High		DD00	Dish Drain	
B100	Box Culvert - 225 High		DF00	Batter Drain GI Flume	
B200	Box Culvert - 300 High		DP00	Drainage Pit	
B300	Box Culvert - 375 High		DR00	Drain	
B400	Box Culvert - 450 High		DT00	Table Drain	
B600	Box Culvert - 600 High		DX00	Drainage Box	
B700	Box Culvert - 750 High		GP00	Gully Pit	
B900	Box Culvert - 900 High		HB00	Headwall Bottom	
D000	Box Culvert - 1050 High		HW00	Headwall	
D100	Box Culvert - 1200 High		K100	Kerb Inlet	
D200	Box Culvert - 1500 High		U100	Pipe 225 Dia	
D300	Box Culvert - 1800 High		U200	Pipe 300 Dia	
D400	Box Culvert - 2100 High		U300	Pipe 375 Dia	
D500	Box Culvert - 2400 High		U400	Pipe 450 Dia	
D600	Box Culvert - 2700 High		U500	Pipe 525 Dia	
D700	Box Culvert - 3000 High		U600	Pipe 600 Dia	
D800	Box Culvert - 3300 High		U700	Pipe 750 Dia	
D900	Box Culvert - 3600 High		U900	Pipe 900 Dia	

## DRAINAGE FEATURES (DRAI)

CODE	DESCRIPTION	LINestyle/SYMBOL	CODE	DESCRIPTION	LINestyle/SYMBOL
UB00	Box Culvert - Unspecified Height	— — —	PI06	Invert - 600 Dia	⊙ <sup>IN</sup> 123.450 600 Dia
UU00	Underground Stormwater Pipe	====	PI07	Invert - 750 Dia	⊙ <sup>IN</sup> 123.450 750 Dia
V100	Pipe 1050 Dia	— ∅1050 —	PI09	Invert - 900 Dia	⊙ <sup>IN</sup> 123.450 900 Dia
V200	Pipe 1200 Dia	— ∅1200 —	PI10	Invert - 1050 Dia	⊙ <sup>IN</sup> 123.450 1050 Dia
V300	Pipe 1350 Dia	— ∅1350 —	PI12	Invert - 1200 Dia	⊙ <sup>IN</sup> 123.450 1200 Dia
V500	Pipe 1500 Dia	— ∅1500 —	PI13	Invert - 1350 Dia	⊙ <sup>IN</sup> 123.450 1350 Dia
V600	Pipe 1650 Dia	— ∅1650 —	PI15	Invert - 1500 Dia	⊙ <sup>IN</sup> 123.450 1500 Dia
V800	Pipe 1800 Dia	— ∅1800 —	PI16	Invert - 1650 Dia	⊙ <sup>IN</sup> 123.450 1650 Dia
WC00	Water Course / Drain	— — —	PI18	Invert - 1800 Dia	⊙ <sup>IN</sup> 123.450 1800 Dia
PDJM	Drainage Junction Manhole	⊙	PILT	Inlet to Sump	⊙ <sup>IL</sup> 123.45
PEWW	End of Wingwall	⊙ <sup>EW</sup> 123.45	PINV	Invert of Pipe	⊙ <sup>IN</sup> 123.45
PFHT	Flood Height	⊙ <sup>FH</sup> 123.45	PJBX	Top of Concrete Junction Box	⊙
PGUL	Gully Pit at Gutter Line	⊙	POBV	Obvert of Pipe	⊙ <sup>OB</sup> 123.45
PHWB	Bottom of Headwall	⊙ <sup>HW</sup> 123.45	PSDO	Invert of Subsoil Drain Outlet	⊙ <sup>SD</sup>
PHWT	Top of Headwall	⊙ <sup>HW</sup> 123.45	PSFP	Subsoil Drain Flush Point	⊙ <sup>SF</sup>
PI01	Invert - 225 Dia	⊙ <sup>IN</sup> 123.450 225 Dia	PWLP	Water Level Point	⊙ <sup>WL</sup> 123.45
PI02	Invert - 300 Dia	⊙ <sup>IN</sup> 123.450 300 Dia			
PI03	Invert - 375 Dia	⊙ <sup>IN</sup> 123.450 375 Dia			
PI04	Invert - 450 Dia	⊙ <sup>IN</sup> 123.450 450 Dia			
PI05	Invert - 525 Dia	⊙ <sup>IN</sup> 123.450 525 Dia			

## Services and Utilities

## COMMUNICATIONS (COMM)














CODE	DESCRIPTION	LINestyle/SYMBOL
OA00	Optical Fibre - Above Ground	
OD00	Optical Fibre - Ducting	
OU00	Optical Fibre - Underground	
OZ00	Optical Fibre - Digitised	
TD00	Telephone Ducting	
TL00	Telephone Line	
TS00	Telephone Sump	
TX00	Telephone Box	
TY00	Telephone - House Connection	
TZ00	Telephone Line - Digitised	
PMPT	Mobile Phone Transmitter	
POFJ	Optical Fibre Junction Box	
POFM	Optical Fibre Cable Marker	
POFP	Optical Fibre Pit	
PT3P	Telephone Triple Concrete Pit	
PTBX	Telephone Box Point	
PTCM	Telephone Cable Marker	
PTDP	Telephone Distribution Pillar	

CODE	DESCRIPTION	LINestyle/SYMBOL
PTJP	Above Ground Joining Post	
PTMP	Std 1.1m by 1.1m Main Pit	
PTPL	Telephone Pole	
PTSP	Telephone Single Concrete Pit	
PTTP	Telephone Twin Concrete Pit	




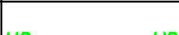

## ELECTRICITY SERVICES(ELEC)

CODE	DESCRIPTION	LINestyle/SYMBOL
EC00	Electrical Transformer Cabinet	
ED00	Electricity Ducting	
EL00	Electricity Pylon Leg	
ES00	Electricity Main Sump	
EU00	Electric Underground Line	
EY00	Electricity - House Connection	
EZ00	Electric Underground Line - Digitised	
LI00	Light with Outreach	
UE00	Major Transmission Line	
UL00	Minor Transmission Line	
PECM	Electricity Cable Marker	








**ELECTRICITY SERVICES(ELEC)**

CODE	DESCRIPTION	LINestyle/SYMBOL
PEFP	Distribution Fuse Point	
PEJB	Electricity Cable Junction Box	
PEMH	Electricity Cable Manhole	
PETC	Transformer Cabinet Centre	
PEUP	Underground Power Service Pillar	
PHTT	High Tension Pylon	
PLGN	Garden Light	
PLPL	Pole - Light	
PPLP	Pole - Power and Light	
PPPL	Pole - Power	
PPTR	Pole - Power and Transformer	
PSAP	Stay Anchor Pole	
PSPL	Stay Pole	









**GAS SERVICES (GAS)**

CODE	DESCRIPTION	LINestyle/SYMBOL
GM	Gas Main	
GY	Gas - House Connection	
GZ	Gas Main - Digitised	
HG	High Pressure Gas Pipeline	
PGAS	Gas Valve Box	














**GAS SERVICES (GAS)**

CODE	DESCRIPTION	LINestyle/SYMBOL
PGHL	Gas Manhole Cover	
PGHM	High Pressure Gas Pipeline Marker	
PGMR	Gas Meter	
PGPM	Gas Pipeline Marker	
PGRB	Gas Regulator Box	
PGTP	Gas Test Point	
PGVP	Gas Vent Pipe	






**SEWER SERVICES (SEWR)**

CODE	DESCRIPTION	LINestyle/SYMBOL
SM	Sewer Main	
SP	Sewerage Pond	
ST	Septic Tank	
SY	Sewer - House Connection	
SZ	Sewer Main - Digitised	
PSLH	Sewer Lamphole	
PSMH	Sewer Manhole	
PSVP	Sewer Vent Pipe	








**ELECTRICITY SERVICES(ELEC)**

CODE	DESCRIPTION	LINESTYLE/SYMBOL
PEFP	Distribution Fuse Point	
PEJB	Electricity Cable Junction Box	
PEMH	Electricity Cable Manhole	
PETC	Transformer Cabinet Centre	
PEUP	Underground Power Service Pillar	
PHTT	High Tension Pylon	
PLGN	Garden Light	
PLPL	Pole - Light	
PPLP	Pole - Power and Light	
PPPL	Pole - Power	
PPTR	Pole - Power and Transformer	
PSAP	Stay Anchor Pole	
PSPL	Stay Pole	





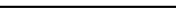



**GAS SERVICES (GAS)**

CODE	DESCRIPTION	LINESTYLE/SYMBOL
GM	Gas Main	
GY	Gas - House Connection	
GZ	Gas Main - Digitised	
HG	High Pressure Gas Pipeline	
PGAS	Gas Valve Box	

**GAS SERVICES (GAS)**

CODE	DESCRIPTION	LINESTYLE/SYMBOL
PGHL	Gas Manhole Cover	
PGHM	High Pressure Gas Pipeline Marker	
PGMR	Gas Meter	
PGPM	Gas Pipeline Marker	
PGRB	Gas Regulator Box	
PGTP	Gas Test Point	
PGVP	Gas Vent Pipe	

**SEWER SERVICES (SEWR)**

CODE	DESCRIPTION	LINESTYLE/SYMBOL
SM	Sewer Main	
SP	Sewerage Pond	
ST	Septic Tank	
SY	House Connection	
SZ	Sewer Main - Digitised	
PSLH	Sewer Lamphole	
PSMH	Sewer Manhole	
PSVP	Sewer Vent Pipe	

## Services, Utilities, Photogrammetry and Survey Marks

### WATER SERVICES (WATR)

CODE	DESCRIPTION	LINestyle/SYMBOL
RM00	Water Main - Recycled	
UO	Overhead Pipeline	
UP	Unidentified Pipeline	
WM	Water Main	
WY	Water - House Connection	
WZ	Water Main - Digitised	
PRAV	Air Valve - Recycled	
PRET	Water Earth Terminal - Recycled	
PRHY	Water Hydrant - Recycled	
PRMM	Water Main Marker - Recycled	
PRMR	Water Meter - Recycled	
PRSV	Water Stop Valve - Recycled	
PRTP	Water Tap - Recycled	
PWAV	Air Valve	
PWET	Earth Terminal	
PWFB	Fire Hydrant	
PWHY	Water Hydrant	
PWMM	Water Main Marker	

CODE	DESCRIPTION	LINestyle/SYMBOL
PWMR	Water Meter	
PWSV	Stop Valve	
PWTP	Water Tap	

### PHOTOGRAMMETRY (FOTO)

CODE	DESCRIPTION	LINestyle/SYMBOL
PHCP	Horizontal Control Point	
PMCP	Minor Control Point	
PPCN	Photo Centre	
PVCP	Vertical Control Point	

### PHOTOGRAMMETRY CONTOURS (CONT)

CODE	DESCRIPTION	LINestyle/SYMBOL
X	Contour - Standard / Inter	
XQ	Contour - Inter Depression	
Y	Contour - Aux (Whole Metre)	
YQ	Contour - Aux (Decimeter)	
Z	Contour - Index	
ZQ	Contour - Index Depression	

