



QLDC ASBUILT PLAN SPECIFICATION REQUIREMENTS

OCTOBER 2008

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In 2008 QLDC introduced Hansen as its Asset Management System and converted all Geographic Information System (GIS) data from New Zealand Map Grid to New Zealand Transverse Mercator. Hansen has strict requirements for the assets' attributes, field names field types. As a result it has become necessary to update the Asbuilt Plan Specification Requirements with the requirements stated in this standard.

The aim of this standard is to create electronic drawings that are consistent irrespective of their source, and from which, underground service information can be easily incorporated into QLDC's GIS and Asset Management System.

SECTION 1

1.1 ACCURACY OF SURVEY

The following accuracy is required: X & Y coordinates $\pm 300\text{mm}$ (Northing & Easting)
: (Z) Lid & Invert levels $\pm 30\text{ mm}$ (e.g. manhole cover)

1.2 COORDINATE SYSTEM

- All files to be provided in terms of **New Zealand Transverse Mercator 2000 coordinate system (NZTM2000), NZGDM 2000 datum.**
- All levels will be provided in **metres above sea level terms** (Dunedin Datum 1958).

1.3 FORMAT & MEDIA

All Asbuilt files shall be supplied in digital format compatible with AutoCAD 2000 and later versions (acceptable formats .dxf, .dwg) or shapefiles (.shp).

A hardcopy plan must also be supplied to: Principal Engineering, Lakes Environmental, 74 Shotover Street, Private Bag 50077, Queenstown.

SECTION 2

FILE STRUCTURE

- Use the relevant Resource Consent number as the file name, e.g. RM010854.dwg
- Include only the following layers in the drawing:
 - Title block
 - Parcel
 - Roading
 - **Drainage (create features in green)**
 - **Water (create features in blue)**
 - **Sewer (create features in red)**
 - Features (Power, Telephone etc)
- Create an identification number / code (ID) for each point and pipe feature.
- Draw pipelines in **flow directions** (i.e. start drawing the line from the source node and end at the destination node) – the flow direction detailing in GIS is based on this.
- Pipelines should be **split** at Nodes and Manholes. Everywhere else use AutoCAD **snapping** tools to connect pipelines. Pipelines should not stop short of connecting to make room for the Node or Manhole symbol.
- All lines shall be **continuous** from node to node (no dashed lines).

- Use **AutoCAD Blocks** to create points and include all the required attributes in the blocks.
- All offset text to be included on the Title block layer.
- Please show **all** pipes and nodes (including house connections, existing pipelines & manholes). Also detail any pipelines made redundant or removed. Mark existing, redundant or removed pipes in the comment field (SPECINST) accordingly.
- Please ensure **all relevant attributes** such as diameters, materials and levels are **clearly** shown for each pipe and point feature.
- Please ensure that all Asbuilt plans have a Title, Reference number (resource consent or contract number), Key (of symbols & abbreviations), Scale, Date, North Arrow, Surveyor's certification and signature of approval.

SECTION 3

REQUIRED FEATURES

Below are lists of possible feature types. Features in the drawing layers must be recorded and identified with the respective **UNITTYPE**. Please note that importing features is a semi automated procedure so it is important that spelling and case of UNITTYPES and attributes are exactly as specified in this standard. The attributes that are required for each feature type are defined in the following section of this document. The field 'Feature Type' is not required as an attribute.

Possible Feature types:

1. Water Reticulation Layer



Point Features

Feature Type	UNITTYPE	Description
Hydrant	HYDRANT	Fire hydrants
Meter	FLOW	Bulk flow meters on mains
Node	JUNCTION	General pipe junction (Tee, Y, etc)
Node	END	End cap
Node	SAMPLE	Water quality sampling point
Node	MISC	Other nodes, fittings, outlet, bore etc
Valve	VALVE	Ball, Gate, Sluice etc
Valve	AIR	Air valve
Valve	NON RETURN	Non return
Valve	PRESSURE	Pressure reducing, sustaining
Valve	TOBY	Toby (on lateral)
Pump Station	BOOSTER	Booster pump station site
Pump Station	INTAKE	Raw water intake pump station site
Pump Station	TRANSFER	Transfer pump station
Treatment Plant	WATERTREAT	Water treatment plant site (including tanks, pumps etc)
Reservoir	WATERTANK	Water reservoir site (including tanks, telemetry, valves etc)


Line Features

Feature Type	UNITTYPE	Description
Main	MAIN	Water main
Main	FALL	Falling main (reservoir to watermain). No laterals
Main	RIDER	Small pipe feeding laterals from main
Main	RISING	Rising main (line out of pump station). No laterals
Main	RACE	Water race
Lateral	LATERAL	House connection (service line)

2. Sewer Reticulation Layer


Point Features

Feature Type	UNITTYPE	Description
Manhole	MANHOLE	Standard manhole
Manhole	CHAMBER	Chamber box
Manhole	LAMPHOLE	Small manhole / inspection point
Manhole	PRESSURE	Pressurised junction
Node	JUNCTION	General pipe junction (Tee, Y, etc)
Node	BEND	Pipe bend
Node	END	End cap
Node	WEIR	Weir
Node	MISC	Other nodes (outlet etc)
Valve	VALVE	Ball, Gate, Sluice etc
Valve	AIR	Air valve
Valve	NON RETURN	Non return valve
Pump Station	SEWERPUMP	Sewer pump station
Treatment Plant	SEWERTREAT	Sewer treatment plant site (including tanks, pumps etc)


Line Features

Feature Type	UNITTYPE	Description
Main	SEWER	Sewer main (gravity line)
Main	TRUNK	Main sewer line (large diameter). No laterals
Main	RISING	Pressurised rising main (line out of pump station)
Main	OUTFALL	Sewer Outfall
Lateral	LATERAL	House connection (service line)

3. Drainage Reticulation Layer



Point Features

Feature Type	UNITTYPE	Description
Manhole	MANHOLE	Standard manhole
Manhole	CHAMBER	Chamber box
Manhole	LAMPHOLE	Small manhole / inspection point
Meter	FLOW	Stormwater flow meter (Gauge)
Node	JUNCTION	General pipe junction (Tee, Y, etc)
Node	END CAP	End cap
Node	MISC	Other nodes
Valve	VALVE	Gate valve etc
Inlet	MUDTANK	Cesspit, sump, mudtank, catchpit
Inlet	SOAKPIT	Soak pit (typically from mudtank)
Structure	INTAKE	Inlet to pipe network (headworks etc)
Structure	INTERCEPT	Pollution interceptor
Structure	OUTLET	Outlet from pipe network (distilling basin, soakage area) etc)
Storage Basin	BASIN	Storage/Retention basin
Pump Station	PUMP STATION	Stormwater Pump Station (future)



Line Features

Feature Type	UNITTYPE	Description
Main	STORM	Stormwater main
Main	DRAINCOIL	Perforated subsoil drain
Main	MUDTANK	Mudtank (sump) connection lateral
Main	CULVERT	Culvert
Channel	CHANNEL	Formed watercourse
Channel	IRRIGATION	Irrigation channel
Lateral	LATERAL	House connection (service line)

SECTION 4

4.1 FEATURE ATTRIBUTES

- For **pipes**, attributes should be attached via the use of an AutoCAD Block, inserted on the midpoint of each line or at the midpoint of any-one section of a line. The number of Blocks containing pipe IDs should be the same as the number of lines representing pipes.
- The requested **point attributes** shown on the following tables should be recorded in AutoCAD blocks, inserted in the centre of the point feature.

The attributes required per feature depend on the Feature Type. All point and pipe features have the same common attributes. Some Feature Types require further more specific attributes. The attributes required per Feature Type are listed in the tables below. The attributes required in addition to the common attributes are shown in purple. The underline attributes need to be populated by predefined values (look up values). Those values are listed in section 5 of this document.

4.1.1 COMMON ATTRIBUTES FOR ALL FEATURES

Common Attributes for all Features

Name	Type	Size	Description
UNITDESC	Text	300	Common Name
ZCOORD	Double		Elevation, Lid-Level (Point assets only)
<u>CONDITION</u>	Double		Condition assessment (1-5)
SPECINST	Text	254	Comments
INSTDATE	Date		Installation Date
ASBUILT	Text	10	Resource Consent or Contract No.
<u>OWN</u>	Text	10	Ownership
<u>SERVSTAT</u>	Text	10	Lifecycle Status
<u>UNITTYPE</u>	Text	10	Asset (feature) subtype
<u>COMPTYPE</u>	Long Integer		Type Code

The following features require only the common attributes:

- **Drainage:** INLET, STRUCTURE, PUMP STATION, STORAGE BASIN
- **Sewer:** PUMP STATION, TREATMENT PLANT
- **Water:** HYDRANT, NODE, RESERVOIR, PUMP STATION

4.1.2 ATTRIBUTES FOR POINTS

Attributes for **Drainage** & **Water** METER

Name	Type	Size	Description
UNITDESC	Text	300	Common Name
ZCOORD	Double		Elevation, Lid-Level
<u>CONDITION</u>	Double		Condition assessment (1-5)
SPECINST	Text	254	Comments
INSTDATE	Date		Installation Date
ASBUILT	Text	10	Resource Consent or Contract No.
<u>OWN</u>	Text	10	Ownership
<u>SERVSTAT</u>	Text	10	Lifecycle Status
<u>UNITTYPE</u>	Text	10	Asset (feature) subtype
<u>COMPTYPE</u>	Long Integer		Type Code
SERNO	Text	20	Meter Serial Number
METERSZ	Double		Nominal Diameter (mm)
MFG	Text	20	Manufacturer
MODELNO	Text	20	Model Number

Attributes for **Drainage** & **Wastewater** NODE

Name	Type	Size	Description
UNITDESC	Text	300	Common Name
ZCOORD	Double		Elevation, Lid-Level
<u>CONDITION</u>	Double		Condition assessment (1-5)
SPECINST	Text	254	Comments
INSTDATE	Date		Installation Date
ASBUILT	Text	10	Resource Consent or Contract No.
<u>OWN</u>	Text	10	Ownership
<u>SERVSTAT</u>	Text	10	Lifecycle Status
<u>UNITTYPE</u>	Text	10	Asset (feature) subtype
<u>COMPTYPE</u>	Long Integer		Type Code
DISTRND	Double		Invert Level (m)

Attributes for **Drainage & Wastewater** MANHOLE

Name	Type	Size	Description
UNITDESC	Text	300	Common Name
ZCOORD	Double		Elevation, Lid-Level
<u>CONDITION</u>	Double		Condition assessment (1-5)
SPECINST	Text	254	Comments
INSTDATE	Date		Installation Date
ASBUILT	Text	10	Resource Consent or Contract No.
<u>OWN</u>	Text	10	Ownership
<u>SERVSTAT</u>	Text	10	Lifecycle Status
<u>UNITTYPE</u>	Text	10	Asset (feature) subtype
<u>COMPTYPE</u>	Long Integer		Type Code
CVRDIAM	Double		Lid Diameter (mm)
BARLDIAM	Double		Manhole Size (mm)
HYDIST	Double		Invert Level (mm)
<u>WALLTYPE</u>	Text	10	Manhole Material
MHDEPTH	Double		Manhole Depth (m)

Attributes for **Drainage & Wastewater** VALVE

Name	Type	Size	Description
UNITDESC	Text	300	Common Name
ZCOORD	Double		Elevation, Lid-Level
<u>CONDITION</u>	Double		Condition assessment (1-5)
SPECINST	Text	254	Comments
INSTDATE	Date		Installation Date
ASBUILT	Text	10	Resource Consent or Contract No.
<u>OWN</u>	Text	10	Ownership
<u>SERVSTAT</u>	Text	10	Lifecycle Status
<u>UNITTYPE</u>	Text	10	Asset (feature) subtype
<u>COMPTYPE</u>	Long Integer		Type Code
RIMELEV	Double		Invert level (m)
SERNO	Text	20	Valve Serial Number
VALVESZ	Double		Nominal Diameter (mm)
MFG	Text	20	Manufacturer
VALVESTAT	Text	10	Valve Default Status (Open/ Closed)
MODELNO	Text	20	Model Number
<u>VLVFUNCTION</u>	Text	15	Valve Function

Attributes for **Water VALVE**

Name	Type	Size	Description
UNITDESC	Text	300	Common Name
ZCOORD	Double		Elevation, Lid-Level
<u>CONDITION</u>	Double		Condition assessment (1-5)
SPECINST	Text	254	Comments
INSTDATE	Date		Installation Date
ASBUILT	Text	10	Resource Consent or Contract No.
<u>OWN</u>	Text	10	Ownership
<u>SERVSTAT</u>	Text	10	Lifecycle Status
<u>UNITTYPE</u>	Text	10	Asset (feature) subtype
<u>COMPTYPE</u>	Long Integer		Type Code
SERNO	Text	20	Valve Serial Number
VALVESZ	Double		Nominal Diameter (mm)
MFG	Text	20	Manufacturer
VALVESTAT	Text	10	Valve Default Status (Open/ Closed)
MODELNO	Text	20	Model Number
<u>VLVFUNCTION</u>	Text	15	Valve Function
HIGHPRES	Float		High Pressure Setting (m)
LOWPRES	Float		Low Pressure Setting (m)

4.1.3 ATTRIBUTES FOR PIPES

Attributes for **Water** MAIN

Name	Field Type	Size	Description
UNITDESC	Text	300	Common Name
<u>CONDITION</u>	Double		Condition assessment (1-5)
SPECINST	Text	254	Comments
INSTDATE	Date		Installation Date
ASBUILT	Text	10	Resource Consent or Contract No.
<u>OWN</u>	Text	10	Ownership
<u>SERVSTAT</u>	Text	10	Lifecycle Status
<u>UNITTYPE</u>	Text	10	Asset (feature) subtype
<u>COMPTYPE</u>	Long Integer		Type Code
PIPEDIAM	Double		Nominal Diameter (mm)
MFG	Text	20	Manufacturer
PIPETYPE	Text	10	Material
JTTYPE	Text	10	Joint Type
DPTH	Double		Typical cover depth to pipe (m)

Attributes for **Drainage & Wastewater** MAIN

Name	Field Type	Size	Description
UNITDESC	Text	300	Common Name
<u>CONDITION</u>	Double		Condition assessment (1-5)
SPECINST	Text	254	Comments
INSTDATE	Date		Installation Date
ASBUILT	Text	10	Resource Consent or Contract No.
<u>OWN</u>	Text	10	Ownership
<u>SERVSTAT</u>	Text	10	Lifecycle Status
<u>UNITTYPE</u>	Text	10	Asset (feature) subtype
<u>COMPTYPE</u>	Long Integer		Type Code
UPSELEV	Double		Upstream Invert RL (m)
DWNELEV	Double		Downstream Invert RL (m)
PIPEDIAM	Double		Nominal Diameter (mm)
MFG	Text	20	Manufacturer
PIPETYPE	Text	10	Material
JTTYPE	Text	10	Joint Type
UPSDEPTH	Double		Upstream Cover Depth (m)
DWNDPTH	Double		Downstream Cover Depth (m)

Attributes for LATERAL (all three services)

Name	Field Type	Size	Description
UNITDESC	Text	300	Common Name
<u>CONDITION</u>	Double		Condition assessment (1-5)
SPECINST	Text	254	Comments
INSTDATE	Date		Installation Date
ASBUILT	Text	10	Resource Consent or Contract No.
<u>OWN</u>	Text	10	Ownership
<u>SERVSTAT</u>	Text	10	Lifecycle Status
<u>UNITTYPE</u>	Text	10	Asset (feature) subtype
<u>COMPTYPE</u>	Long Integer		Type Code
PIPEDIAM	Double		Nominal Diameter (mm)
MFG	Text	20	Manufacturer
PIPETYPE	Text	10	Material
SRVTYPE	Text	10	Connection Type
METERED	Text	10	Boundary Meter on Lateral? (Yes/No)
METERTYPE	Text	10	Boundary Meter Type
TOBY	Text	10	Boundary Toby on Lateral? (Yes/No)

Attributes for Drainage CHANNEL

Name	Field Type	Size	Description
UNITDESC	Text	300	Common Name
<u>CONDITION</u>	Double		Condition assessment (1-5)
SPECINST	Text	254	Comments
INSTDATE	Date		Installation Date
ASBUILT	Text	10	Resource Consent or Contract No.
<u>OWN</u>	Text	10	Ownership
<u>SERVSTAT</u>	Text	10	Lifecycle Status
<u>UNITTYPE</u>	Text	10	Asset (feature) subtype
UPSELEV	Double		Upstream Invert RL (m)
DWNELEV	Double		Downstream Invert RL (m)
CONMATL	Text	10	Construction Material
COMPTYPE	Long Integer		Type Code
<u>CHANSHAPE</u>	Text	10	Channel Shape

SECTION 5

PREDEFINED ATTRIBUTE VALUES (LOOK UP VALUES)

Some of the Fields require predefined value inputs. The following tables list the inputs that are to be used in upper case.

COMPTYPE			Points – Feature Type	
W	S	D	Value	Description
<input checked="" type="checkbox"/>			12	Water Hydrant
<input checked="" type="checkbox"/>			42	Water Meter
<input checked="" type="checkbox"/>			43	Water Node
<input checked="" type="checkbox"/>			46	Water Valve
<input checked="" type="checkbox"/>			78	Water Pump Station
<input checked="" type="checkbox"/>			99	Water Treatment Plant
<input checked="" type="checkbox"/>			86	Water Reservoir
	<input checked="" type="checkbox"/>		22	Sewer Manhole
	<input checked="" type="checkbox"/>		24	Sewer Node
	<input checked="" type="checkbox"/>		35	Sewer Valve
	<input checked="" type="checkbox"/>		15	Sewer Pump (Lift) Station
	<input checked="" type="checkbox"/>		98	Sewer Treatment Plant
		<input checked="" type="checkbox"/>	30	Stormwater Manhole
		<input checked="" type="checkbox"/>	32	Stormwater Node
		<input checked="" type="checkbox"/>	29	Stormwater Inlet
		<input checked="" type="checkbox"/>	49	Stormwater Valve
		<input checked="" type="checkbox"/>	88	Stormwater Meter
		<input checked="" type="checkbox"/>	72	Stormwater Structure (Miscellaneous)
		<input checked="" type="checkbox"/>	77	Stormwater Pump (Lift) Station
		<input checked="" type="checkbox"/>	108	Stormwater Storage Basin

COMPTYPE			Pipes – Feature Type	
W	S	D	Value	Description
<input checked="" type="checkbox"/>			41	Water Main
<input checked="" type="checkbox"/>			45	Water Lateral
	<input checked="" type="checkbox"/>		21	Sewer Main
	<input checked="" type="checkbox"/>		26	Sewer Lateral
		<input checked="" type="checkbox"/>	31	Stormwater Main
		<input checked="" type="checkbox"/>	28	Stormwater Channel
		<input checked="" type="checkbox"/>	33	Stormwater Lateral

CONDITION

W	S	D	Value	Description
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	Very good condition
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	Minor defects only i.e. minor maintenance required 5%)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	Maintenance required to return to accepted level of service i.e. significant maintenance required (10-20%)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	Requires renewal i.e. significant renewal/ upgrade required (20-40%)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5	Asset unserviceable i.e. over 50% of asset requires replacement

CONMATL

W	S	D	Value	Description
		<input checked="" type="checkbox"/>	CONC	Concrete Lined
		<input checked="" type="checkbox"/>	TIMBER	Timber Lined
		<input checked="" type="checkbox"/>	EARTH	Earth
		<input checked="" type="checkbox"/>	GRASS	Grass (Storm flow)

JTTYPE

W	S	D	Value	Description
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CERAMIC	Ceramic Portar
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RRJ	Rubber Ring
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	WELD	Fusion Welded
<input checked="" type="checkbox"/>			SOLVENT	Solvent
<input checked="" type="checkbox"/>			LEAD	Lead
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	BUTT	Butt
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		GIBAULT	Gibaulted
<input checked="" type="checkbox"/>			ZLOCK	Z-Lock (for DI)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		FLANGE	Flange Bolted

OWN

W	S	D	Value	Description
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	QLDC	Queenstown Lakes District Council
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	REGION	Otago Regional Council
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PRIVATE	Private Ownership

PIPETYPE

W	S	D	Value	Description
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	AC	Asbestos Cement
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ALK	Alkathene
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CI	Cast Iron
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CLSTEEL	Concrete Lined Steel
<input checked="" type="checkbox"/>			CLDI	Concrete Lined Ductile Iron
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CONC	Concrete
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		DI	Ductile Iron
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPOXYAC	Epoxy Lined Asbestos Cement
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPOXYCO	Epoxy Lined Concrete
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPOXYEW	Epoxy Lined Earthenware
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPOYPE	Epoxy Lined Polyethylene
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EPOXYST	Epoxy Lined Steel
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	EW	Earthenware
<input checked="" type="checkbox"/>			GI	Galvanised Iron
		<input checked="" type="checkbox"/>	NOVA	Drain Coil
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	HDPE	Polyethylene (High Density)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MDPE	Polyethylene (Medium Density)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MPVC	M-Polyvinyl Chloride
<input checked="" type="checkbox"/>			PP	Polypropylene
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PVC	Polyvinyl Chloride
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	STEEL	Steel

SERVSTAT

W	S	D	Value	Description
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PROPOSED	Proposed
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ACTIVE	Active (In Use)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INACTIVE	Out of Service (Not in Use)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ABANDONED	Abandoned
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	REDRAWN	Old data retired and redrawn

SHAPE

W	S	D	Value	Description
		<input checked="" type="checkbox"/>	NATURAL	Natural Channel / Watercourse
		<input checked="" type="checkbox"/>	BOX	Box Channel
		<input checked="" type="checkbox"/>	TRAP	Trapezoidal
		<input checked="" type="checkbox"/>	DISH	Dished Channel
		<input checked="" type="checkbox"/>	COMB	Combination

SRVTYPE

W	S	D	Value	Description
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RESSTD	Standard Residential
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RESMULTI	Residential (Multi-unit)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RESRURAL	Rural Residential
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	VISITOR	Visitor Accomodation
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	COMIND	Commercial / Industrial
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		FARM	Farm (with stock)
<input checked="" type="checkbox"/>			SEWERPS	Sewer Pump Station
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		TOILET	Public Toilet
<input checked="" type="checkbox"/>			PARKS	Parks
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		HOSPITAL	Hospital
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SCHOOL	School
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OTHCOM	Other Community (Church etc)
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	POOL	Swimming Pool
<input checked="" type="checkbox"/>			FIRE	Fire Fighting
<input checked="" type="checkbox"/>			DIALYSIS	Dialysis Connection

VLVFUNCTION

W	S	D	Value	Description
<input checked="" type="checkbox"/>			BOUNDARY	Boundary (Zone) Valve
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LINE	Line Valve
<input checked="" type="checkbox"/>			INLET	Inlet Valve
<input checked="" type="checkbox"/>			OUTLET	Outlet Valve
<input checked="" type="checkbox"/>			INTERCONNECT	Interconnection Valve
<input checked="" type="checkbox"/>			SURGE	Surge Valve
<input checked="" type="checkbox"/>			WASHOUT	Washout Valve

WALLTYPE

W	S	D	Value	Description
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CONC	Concrete
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	STEEL	Steel
<input checked="" type="checkbox"/>			GRAVEL	Gravel ponds