C. A. D. STANDARDS

The Authority requires that all CAD drawings be submitted in accordance to the following standards. Using these standards will allow the Authority to efficiently import and attribute digital vector data directly into the Authority's GIS.

The Authority will provide vendors with existing land base and infrastructure as it exists in the Authority's GIS for the vendors use. This information will be "clipped" by area of interest.

Projection

NAD 1983
Rhode Island State Plane
US Feet

Scale

1" = 100'

Layers

Type	Layer Name	Description	
Base Map	BLDG	Building Footprints	P-line - Closed
	BOS	Back of Sidewalk	P-line
	BRDG	Bridges	P-line
	CL	Street Centerlines	P-line
	EASE	Easement	P-line
	HYDL	Linear Hydrology (Streams, Creeks, Rivers)	P-line
	HYDP	Polygonal Hydrology (Ponds, Lakes)	P-line - Closed
	PE	Edge of Pavement	P-line
	PRCL	Parcel Lines	P-line
	UTIL	Other Utilities (Gas, Power, Cable, Etc.)	Point
	CON	Elevation Contours	Pline
Annotation	CL-NAME	Street Name	

Water	CS	Curb Stop	Point
	FIT	Fittings	Point
	HYD	Fire Hydrants	Point
	MAIN	Water Mains	P-line
	MISC-PIPE	Miscellaneous	P-line
	MTR	Meter Pits	Point
	PS	Pump Station	P-line - Closed
	SVC	Services	P-line
	TNK	Tanks	P-line - Closed
	VLV	Valves	Point
	WELL	Wells	Point

Type	Layer Name	Description	
Annotation	CS-DATE	Curb Stop Installation Date	MM/DD/YYYY
	CS-SIZE	Curb Stop Service Size	
	CS-TYP	Curb Stop Type	Residential, Irrigation, Commercial, Agriculture, Large Community, Industrial, Fire, Other.
	FIT-DATE	Fitting Installation Date	MM/DD/YYYY
	FIT-MAT	Fitting Material	Asbestos Cement, Cast Iron, Ductile Iron, PVC, Galvanized Iron, Copper, Steel, HDPE, Unknown
	FIT-SIZE	Fitting Size	
	FIT-TYP	Fitting Type	Tee, Bend, Cross, Cap, Plug, Reducer, Unknown
	HYD-DATE	Hydrant Installation Date	MM/DD/YYYY
	HYD-NUM	Hydrant Number	
	HYD-TYP	Hydrant Type	Mueller, Darling, Mathews, Ludlow, Kennedy, AVK, Unknown
	MIS-PIPE-DATE	Miscellaneous Pipe Installation Date	MM/DD/YYYY
	MIS-PIPE-MAT	Miscellaneous Pipe Material	
	MIS-PIPE-SIZE	Miscellaneous Pipe Size	
	MIS-PIPE-TYP	Miscellaneous Pipe Type	Hydrant, Pump Station, Tank Piping, Bypass Piping, Well Piping, Blowoff Piping, Meter Connection Piping
	MN-DATE	Main Installation Date	MM/DD/YYYY
	MN-DIA	Main Diameter	
	MN-LEN	Main Length	
	MN-MAT	Main Material	Asbestos Cement, Cast Iron, Ductile Iron, PVC, Galvanized Iron, Copper, Steel, HDPE, Unknown
	MTR-DATE	Meter Installation Date	MM/DD/YYYY
	MTR-SIZE	Meter Size	
	MTR-TYP	Meter Type	Residential, Irrigation, Commercial, Agriculture, Large Community, Industrial, Fire, Other.
	PS-DATE	Pump Station Installation Date	MM/DD/YYYY
	PS-ID	Pump Station Identification / Name	
	SVC-DATE	Service Installation Date	MM/DD/YYYY
	SVC-DIA	Service Diameter	
	SVC-MAT	Service Material	Asbestos Cement, Cast Iron, Ductile Iron, PVC, Galvanized Iron, Copper, Steel, HDPE, Unknown
	TNK-DATE	Tank Installation Date	MM/DD/YYYY
	TNK-ID	Tank Identification / Name	
	TNK-MAT	Tank Material	Steel, Concrete
	VLV-DATE	Valve Installation Date	MM/DD/YYYY
	VLV-MAT	Valve Material	Asbestos Cement, Cast Iron, Ductile Iron, PVC, Galvanized Iron, Copper, Steel, HDPE, Unknown
	VLV-MN-SIZE	Valve Main Size	
	VLV-NUM	Valve Number	
	VLV-TYP	Valve Type	Gate, Butterfly, Pressure Reducing, Check Valve
	WELL-DATE	Well Installation Date	MM/DD/YYYY
	WELL-ID	Well Identification / Name	

This layer structure is to be adhered to without exception. It is equally important that other items such as reference lines, dimension lines, etc. do not get placed on layers where they do NOT belong. Any feature NOT described above should NOT go on any layer listed above. As well, it is critical that all text be placed according to these layers. This will allow the Authority to automatically import the text as attributes to the features in its GIS.

Placement Rules

Blocks and W-Blocks

- It is imperative that blocks and w-blocks be created in the layers to which they will be inserted.

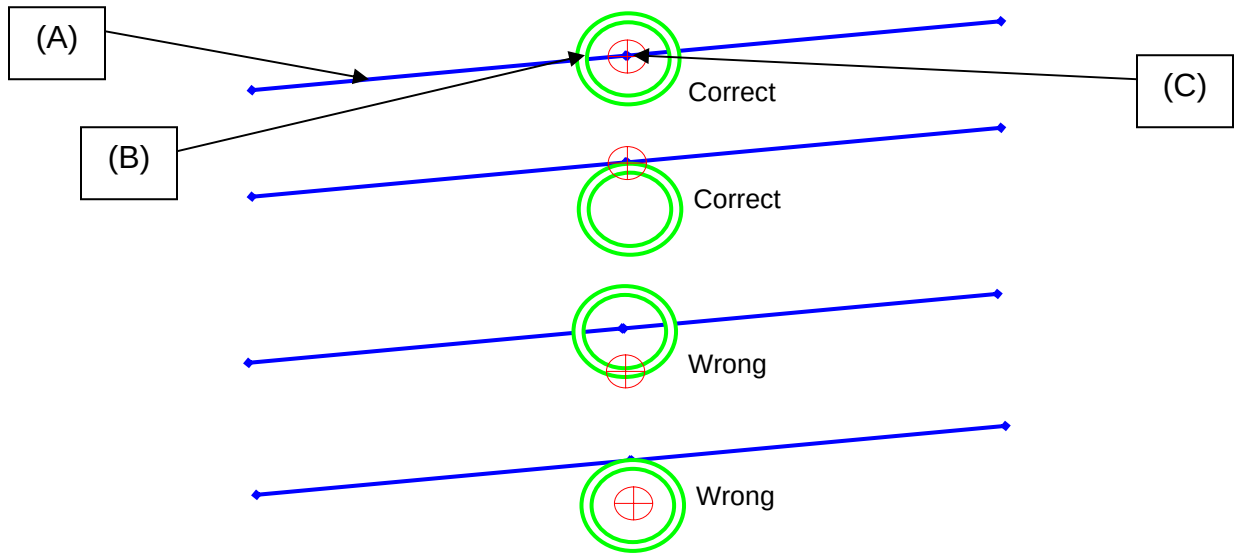
  For example:

  - A block being used to represent a "Gate Valve" should be created using the layer "VLV". It should then also be inserted as layer "VLV". This will ensure that the point gets translated properly to the GIS.

- It is critical that the insertion point of any block or blocks be at the line. When placing the block the insertion point will be snapped to the line.

  Key for examples:

  - (A) – 2 line segments snapped at block location representing Main segments.
  - (B) – Block representing Valve or other feature.
  - (C) – Represents the insertion point of the block.

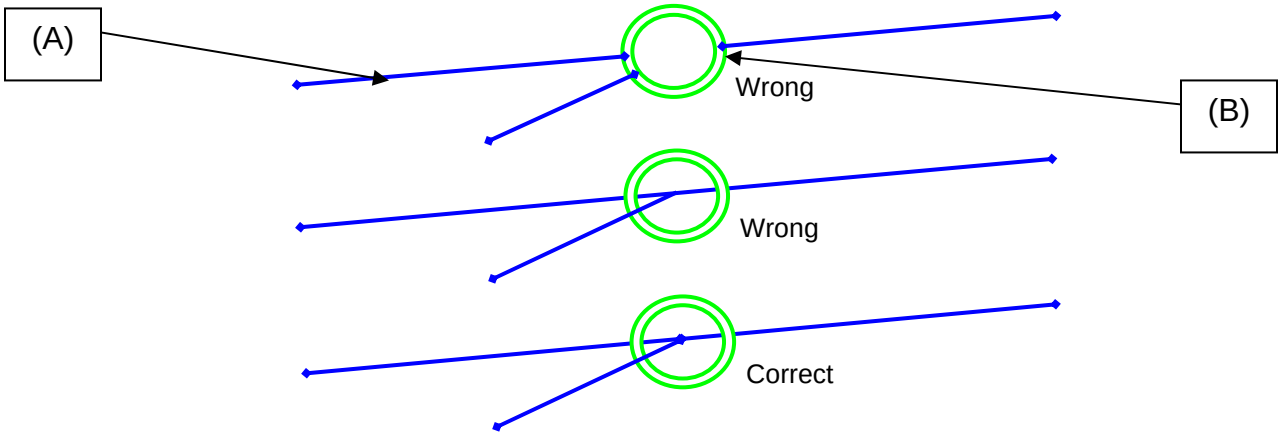


Lines and P-Lines

- It is extremely important that line work be snapped with no gaps. Often drafters will leave a gap in line work at blocks. This works fine for drawings but does not allow for connectivity in the GIS model. Lines must be snapped at the end points. As well, there must be a break in the lines at all valves and fittings.

Key for Example

- (A) - Lines to represent Mains or other linear features.
- (B) – Block representing point features.



Submittal Of Completed Work To AUTHORITY

It is expected that submitted drawing files tie directly back to the area in the GIS from which it was clipped and adhere to all the aforementioned standards. New and / or edited line work should snap back to existing line work in the GIS.

All data shall be free of errors and contain no…

- Undershoots
- Overshoots
- Sliver Polygons
- Dangling Nodes
- Unlabeled Features
- Unresolved Line Segments
- Topological Errors

Prior to submittal of completed drawing to Authority, vendor shall verify…

- Links
- Point Symbology For Positional Accuracy
- Layer Conformance
- Line Quality
- Network Connectivity

Adherence to these standards will ensure the most efficient means of maintaining the Authority's GIS and mapping practices. Allowing the Authority to be more responsive and cost effective in its daily operations.