Electronic Submittal Recommendations

Water

It is recommended that electronic, GIS, submittals be required for any additions or improvement projects for the water distribution system. At a minimum water, collection of mains, water meters, water valves, and hydrants should be required with additional features being collected if desired. These items should be submitted as a file geodatabase (i.e. ".gdb" file extension). This will allow for ease of transferring data while keeping attachments associated with features. These items should be geolocated and should have a horizontal accuracy of within 4 inches.

Upon the completion of construction, the files should be submitted to the Town of Danville to the designated person in charge of maintaining the Town of Danville's GIS database. This person should coordinate with the appropriate Town of Danville Department Head to check that the data is complete and correct. We recommend a retainage be held until the files have been submitted and checked for accuracy and compliance with any future Town of Danville Standards.

The Town of Danville should require photos be attached to each feature. Features that will be buried should be photographed prior to burial. It is recommended that all photos have a specific orientation in regards to cardinal directions. Banning Engineering orients photos so that the photos are taken facing North, unless it is more beneficial to take the photo from a different orientation. The following is our recommendation for general guidelines for photo orientations.

1. Photos should be taken in landscape orientation.
2. Photos of the following features should be taken from the surface looking down at the feature with the field personnel oriented so that the top of the photo is North:
   2.1. Watermain
   2.2. Water Meters
   2.3. Water Valves
3. Photos of Hydrants should be taken so that the photos are focused on the side with the information stamp that contains the manufacturer and year.

Hydrant. Taken so Year and Manufacturer is shown.

As an additional recommendation, individual attachments should be no larger than 10MB. Keeping file sizes limited in size reduces the overall size of files that the Town of Danville will have to maintain. Additional attachments could be considered, such as design or as-built drawings.

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The following information should be included for each feature. The field names should match those shown below for consistency in data to allow for easier data compilation and analysis. Additional fields desired by the Town of Danville should be added to any future Town of Danville Standards. Additionally, it is recommended that valves be broken up into categories such as fire main valve, water main valve, hydrant valve, etc.

Watermain	**Water Meter Pit**	**Water Valves**	**Hydrants**
Pipe_Size	Meter_ID	Valve_ID	Hydrant_ID
Pipe_Material	Lid_Condition	Manufacturer	Manufacturer
Upstream_Point_ID	Pit_Condition	Model	Model
Downstream_Point_ID	Number_of_Meters	Size	Size
Date_of_Install	Meter_Read_Type	Valve_Type	Bury_Depth
Length	Meter_1_Address	Install_Date	Hydrant_Valve_ID
Comment	Meter_2_Address	Date_Last_Exercised	Install_Date
	Meter_3_Address	Comment	Date_of_Last_Service
	Comment		Date_Last_Exercised
			Comment

Descriptions of the recommended fields and additional details are as follows:

Features	Fields	Field Types	Field Descriptions
Watermain (Polyline)	Pipe_Size	Short	Diamter of Watermain (INCHES)
	Pipe_Material	Text - Coded Value	Watermain Material
	Upstream_Point_ID	Text	ID of Upstream feature. (Water Meter, Water Valve, or Hydrant)
	Downstream_Point_ID	Text	ID of Downstream feature. (Water Meter, Water Valve, or Hydrant)
	Date_of_Install	Date	Date Watermain was installed (YYYYMMDD)
	Length	Double	Length of Watermain (Calculated by GIS Program)
	Comment	Text	Comments
Water Meters (Point)	Meter_ID	Text	ID of Water Meter (Town of Danville Selected Style)
	Lid_Condition	Text - Coded Value	Condition of Meter Pit Lid
	Pit_Condition	Text - Coded Value	Condition of Meter Pit
	Number_of_Meters	Short	Number of Meters in Pit
	Meter_Read_Type	Text - Coded Value	Type of Water Meter (Radio Read, Manual Read, Etc.)
	Meter_1_Address	Text	Meter 1 Address
	Meter_2_Address	Text	Meter 2 Address
	Meter_3_Address	Text	Meter 3 Address
	Comment	Text	Comments
Water Valves (Point)	Valve_ID	Text	ID of Water Valve (Town of Danville Selected Style)
	Manufacturer	Text - Coded Value	Manufacturer of Water Valve
	Model	Text	Model of Water Valve
	Size	Short	Size of Water Valve (INCHES)
	Valve_Type	Text - Coded Value	Type of Water Valve (Butterfly, Gate, Ball, Etc.)
	Install_Date	Date	Date Water Valve was Installed (YYYYMMDD)
	Date_Last_Exercised	Date	Last Date Valve was Exercised (YYYYMMDD)
	Comment	Text	Comments
Hydrants (Point)	Hydrant_ID	Text	ID of Hydrant (Town of Danville Selected Style)
	Manufacturer	Text - Coded Value	Manufacturer of Hydrant
	Model	Text	Model of Hydrant
	Size	Short	Size of Hydrant (INCHES)
	Bury_Depth	Text - Coded Value	Bury Depth (FEET & INCHES)
	Hydrant_Valve_ID	Text	ID of Hydrant Valve (Located as a Water Valve)
	Install_Date	Date	Hydrant Install Date (YYYYMMDD)
	Date_of_Last_Service	Date	Date Hydrant was Last Serviced (YYYYMMDD)
	Date_Last_Exercised	Date	Date Hydrant was Last Exercised (YYYYMMDD)
	Comment	Text	Comments