



March 19, 2024

File: 0552-001-Bulletins

City of Beaumont – Engineering & GIS Bulletin #010 Record Drawing and GIS Data Requirements Update

As our GIS system and record keeping systems evolve, the type and format of data required on record drawings and data will require some changes as well. The City of Beaumont has incorporated feedback received in 2023 on these changes and has now provided alternative options as well. These changes are in line with what many municipalities are moving towards as GIS systems continue to modernize.

Please review the attachments:

- Revised Section 1.2.4 Geographic Information System (GIS) and Asset Data Update to replace the existing Section 1.2.4 in the General Design Standards, pages 29-31. All revisions or new items are highlighted in red text.
- Revised Table 1.2.4 GIS/CAD Data Specifications to replace existing Table 1.2.4 - Required Features: Specifies layer naming convention to be used, asset attribute information to be provided and types of features to be represented by points, lines and polygons. The preference is for the AutoCAD file layer name to match the City of Beaumont's layer naming standards. If this is not possible, an excel table is attached with this bulletin and the Consultant's layer name which corresponds to the City of Beaumont layer can be provided in the excel sheet. This completed excel sheet can then be sent with the record drawing files.
- The coordinate system has been revised and record files must now be submitted in **grid**, instead of ground coordinates.
- Minor revisions to Sections 1.3.6 and 1.3.7 to correlate with 1.2.4. Also the requirement for submitting 2 hard copy sets of record drawings has been removed.

Please ensure all record drawings submitted from this point onwards comply with these updated requirements. Please send any comments or questions on these revisions directly to <u>gis@beaumont.ab.ca</u> and cc <u>engineering@beaumont.ab.ca</u>, we greatly appreicate your cooperation on this.



Thank you,

City of Beaumont Engineering and GIS teams

Attachment: Reivsed Section 1.2.4 Geographic Information System (GIS) and Asset Data Update, Revised Section 1.3.6 Record Drawings and Reports, Revised Section 1.3.7 Landscape Record Drawing Submission, Revised Table 1.2.4 – GIS/CAD Data Specifications (pdf and excel format)



March 2024 - REVISED SECTIONS 1.2.4, 1.3.6, 1.3.7 OF BEAUMONT GENERAL DESIGN STANDARDS

1.2.4 Geographic Information System (GIS) and Asset Data Update

Once CCC is issued, all relevant GIS shall be updated with the new asset data and submitted to Engineering Services as part of the 'Record' drawings. Confirmation of the 'Record' drawing data shall also form part of the CCC inspection. Corrected electronic 'Record' drawings must be submitted to Engineering Services within four months of CCC approval.

a. Drawing Submission

- i. Digital 'Record' Drawings must be submitted in AutoCAD Map3D compatible and PDF formats. AutoCAD drawings shall be formatted as a single file with a layout for each drawing sheet. There must be a separate layer for each type of applicable feature (for example, a layer for water lines and another layer for storm pipe). See revised table 1.2.4 for layer naming specifications. Ensure the:
 - a. AutoCAD file layer names match City of Beaumont's layer naming standards (as per table 1.2.4) OR populate the column titled "CAD/Shapefile Associated Layer Name" in the attached excel version of table 1.2.4 with the layer name in the AutoCAD file that corresponds with Beaumont's layer naming convention.
 - b. City of Beaumont can provide an AutoCAD template upon request with City of Beaumont's layer naming convention pre-populated to assist with this requirement.
 - c. PDF files shall be formatted as a single file showing all sheets, and should be a 600 dpi or better resolution.
- Submit a zip folder of shapefiles including attribute information for the features. The shapefiles must be projected to grid coordinates, NAD 1983 CSRS 3TM 114 (WKID 3780). There must be a separate shapefile for each type of applicable feature (for example, a shapefile for water lines and

another shapefile for storm pipe). See table 1.2.4 for specifications. Ensure the shapefile names match City of Beaumont's layer naming standards (as per table 1.2.4) **OR** populate the column titled "CAD/Shapefile Associated Layer Name" in table 1.2.4 with the shapefile name that corresponds with Beaumont's layer naming convention.

- a. The shapefiles must be in a zipped folder (.zip) including its associated files:
 - i. .cpg
 - ii. .dbf (required)
 - iii. .prj (required)
 - iv. .sbn
 - v. .sbx
 - vi. .shp (required)
 - vii. .shx (required)
- b. **Drawing Presentation** Drawings submitted must adhere to the following rules:
 - i. All drawing objects and text associated with those objects must be located in model space.
 - All drawing objects to be shown at actual length and in grid coordinates based on NAD 1983 CSRS 3TM 114 (WKID 3780).
 projection with no scaling, rotating, or shifting required. Local Datum is not permissible.
 - iii. All drawings shall be in metric units
 - iv. Drawing must be purged of all definitions that are not used such as:layers, layer filters, text styles, dimension styles, blocks, etc.
 - v. All objects must be on the appropriate corresponding layer. (For example, water mains on a separate layer from water valves, hydrants etc.) Please see table 1.2.4 for the layer naming convention to be used. Ensure the Shapefile/AutoCAD layer names match City of Beaumont's layer naming standards (as per table 1.2.4) OR populate the column titled "CAD/Shapefile Associated Layer Name" in table 1.2.4 with the

layer name in the AutoCAD file that corresponds with Beaumont's layer naming convention.

- vi. Newly constructed items must be in a separate layer from existing infrastructure. "E" should be prefixed before the layer name if the asset is already existing. Please see table 1.2.4 for the layer naming convention to be used.
- vii. Duplicate objects and text are to be removed.
- viii. External References are to be bound within the drawing.
- c. **Digital Data Structure** Point, line, polygon, text, dimensions and asset attribute information in the AutoCAD/Shapefile submission are as follows:
 - i. Surface/Polygon features Surface/Polygon features within the drawing are to be represented by the AutoCAD command: region. Do NOT use block for surface/polygon features. All surface/polygon features within the drawing are to be on the correct layer. Please see table 1.2.4 for the layer naming convention to be used, asset attribute information and types of features to be represented by surface/polygons.
 - ii. Line features All linear features within the drawing are to be on the correct layer. Linear features are created by the AutoCAD commands, line, circle, arc and polyline. Lines representing a segment of any utility are to be one segment from point feature to point feature. For example, a water main is drawn as a polyline or line from each valve, reducer, etc. to the next point feature. The lines representing utilities are not to be broken at curves; they are to be one polyline until the next point feature. The exceptions to this rule are water mains that have a 45° or greater bend; the bend is treated as a point feature without requiring symbolic representation. Please see table 1.2.4 for the layer naming convention to be used, asset attribute information and types of features to be represented by lines.
 - iii. Point Features Point features within the drawing are to be represented by a point or a block. All point features within the drawing are to be on the correct layer. Please see table 1.2.4 for the layer naming convention

to be used, asset attribute information and types of features to be represented by points. Points or Blocks shall be 'snapped' to linear features. All blocks are to be inserted on the layer that corresponds with the feature. Point Features are not to be exploded.

- iv. Text and Dimensions All text and dimensions within the CAD file are to be drawn in model space.
- v. Asset Attribute Information Please see table 1.2.4 for the attribute information, layer naming convention and geometry type to be used for each asset type. Attribute information is to be populated in the object data table of the CAD template and the shapefiles.
- vi. In addition to the information required for digital record drawing submission, the following additional information should also be noted within the submission:
 - i. As-Built drawing completion date
 - ii. Construction start and end dates
 - iii. Street Names within the construction area
- vii. Please submit digital information in AutoCAD/Shapefile format for any additional information that is applicable that is not listed in table 1.2.4.
 For example, location of trails, parks, trees, sports fields, etc.

1.3.6 'Record' Drawings and Reports

Within four (4) months of the issuing of a Construction Completion Certificate for the underground utilities the Developer shall submit 'Record' drawings in the form of:

a. Two (2) sets of signed and sealed <u>'Record'</u> drawings in paper print format size A1;

- b. An electronic copy in PDF format of the signed 'Record' drawing; and,
- c. An electronic file in an Auto Cad version acceptable to Engineering Services. The electronic drawing file shall be in a form that includes one overall Auto Cad plan or model. This model must include all improvements and should reference specific overalls, plan profiles etc.

- i. One AutoCAD file with layout tabs to be submitted; not separate files
- ii. AutoCAD must use coordinate system NAD 1983 CSRS 3TM 114 (WKID 3780), grid coordinates.
- d. Please see revised section 1.2.4 for further details on digital file requirements.

1.3.7 Landscape 'Record' Drawing Submission Process

'Record' Drawings submission of the signed Landscape drawings shall be submitted by the Developer / Landscape Architect within (4) months following Construction Completion Certificate (CCC) Approval. 'Record' drawing submission required prior to issuance of Final Acceptance Certificate (FAC) paperwork. The 'Record' Drawing submission shall include the following:

- a. Electronic File: Spatially correct AutoCAD file as per revised section 1.2.4
- b. PDF File: Full Size set of stamped & signed Landscape drawings
- c. Hardcopy: Three (3) full sets of stamped and signed Landscape drawings
- d. Please see revised section 1.2.4 for further details on digital file requirements.

MARCH 2024 - Revised Table 1.2.4 GIS/CAD Data Specifications

MARCH 2024 - Revised Table 1.2.4 (GIS/CAD Data Specifications				
CAD Lavor/Shanofile Name	Purpose of Lavor	CAD/Shapefile	CAD/SHAPEFILE ASSOCIATED	Possiered Attribute Fields (field name must match)	Pacammandad Attribute Fields (fi
COB Bridge Culvert	Bridge Culvert	Line		Diameter, Installed Date, Invert Down, Invert Up, Length, Material, Slope	N/A
COB_Bridge_Culvert_E	Existing Bridge Culvert	Line		N/A	N/A
COB_Culvert	Culvert	Line		Diameter, Installed_Date, Invert_Down, Invert_Up, Length, Material, Slope	N/A
COB_Culvert_E	Existing Culvert	Line		N/A	N/A
COB_Curb	Curb	Line		Installed_Date	Material, Curb_Length, Curb_Width, Curb_Offset, Curb_Hei
COB_Curb_E	Existing Curb	Line		N/A Installed Date	N/A Material Curb Length Curb Width Gutter Width Curb O
COB Curb Gutter E	Existing Curb Gutter	Line		N/A	N/A
COB_DRN_Ditch	Drainage Ditch	Point		Installed_Date	, Ditch_Length
COB_DRN_Ditch_E	Existing Drainage Ditch	Point		N/A	N/A
COB_Electric_Pole	Electric Pole	Point		Installed_Date	N/A
COB_Electric_Pole_E	Existing Electric Pole	Point		N/A	N/A N/A
COB_Electric_Streetlight F	Existing Street Light	Point		N/A	N/A N/A
COB_Electric_Line	Electrical Line	Line		Installed_Date	Number of Lines
COB_Electric_Line_E	Existing Electrical Line	Line		N/A	N/A
COB_Gravel_Road	Gravel Road	Polygon		Installed_Date, Base_Material, Surface_Material, Surface_Thickness	Speed
COB_Gravel_Road_E	Existing Gravel Road	Polygon		N/A	N/A
COB_Paved_Road_E	Paved Road Existing Paved Road	Polygon Polygon		Installed_Date, Base_Material, Surface_Material, Surface_Thickness, Base_Thickness	N/A
COB Primary Conductor	Primary Conductor	Line		Installed Date	N/A
COB_Primary_Conductor_E	Existing Primary Conductor	Line		N/A	N/A
COB_Rain_Gauge	Rain Gauge	Point		Installed_Date	N/A
COB_Rain_Gauge_E	Existing Rain Gauge	Point		N/A	N/A
COB_ROW_Line_F	Right of Way Lines	Line		Type	N/A N/A
COB_ROW_LINE_L COB_San_Flow_Meter	Sanitary Flow Meter	Point		Installed Date	N/A N/A
COB_San_Flow_Meter_E	Existing Sanitary Flow Meter	Point		N/A	N/A
COB_SAN_MH	Wastewater Sanitary Manhole	Point		Installed_Date, Cover_Type, MH_Diameter, MH_Height, MH_Size, MH_Type, Rim_Elevation	Inflow_Potential, Invert_In, Invert_Out, MH_Use
COB_SAN_MH_E	Existing Wastewater Sanitary Manhole	Point		N/A	N/A
COB_SAN_Pipe	Wastewater Sanitary Pipe	Line		Installed_Date, Invert_Down, Invert_Up, Pipe_Height, Pipe_Slope, Pipe_Material, Pipe_Width	Pipe_Use, Lined_Date, Lining_Material, Lining_Method, Me
COB_SAN_PIPE_E	Existing Wastewater Sanitary Pipe	Line		N/A Installed Date Invert Down Invert Un Pine Material Pine Size	N/A Lined Date Lining Material Lining Method Measured Le
COB SAN Service E	Existing Wastewater Sanitary Service	Line		N/A	N/A
COB_SAN_SWMF	Sanitary Water Management Facility	Polygon		, Installed_Date, Bottom, Drainage_Area, Max_Storage	Туре
COB_SAN_SWMF_E	Existing Sanitary Water Management Facility	Polygon		N/A	N/A
COB_SAN_Valve	Wastewater Sanitary Valve	Point		Installed_Date	Manufacturer, Valve_Size, Valve_Type
COB_SAN_Valve_E	Existing Wastewater Sanitary Valve	Point		N/A	N/A Motorial
COB_SAN_Inspection_Chamber E	Existing Sanitary Inspection Chamber	Point		N/A	N/A
COB_Sidewalk_Edge	Sidewalk Edge	Line		Installed_Date	Material
COB_Sidewalk_Edge_E	Existing Sidewalk Edge	Line		N/A	N/A
COB_Sidewalk_Surface	Sidewalk Surface	Polygon		Installed_Date	Material
COB_Sidewalk_Surface_E	Existing Sidewalk Surface	Polygon			N/A
COB_Sidewalk E	Sidewalk Centreline	Line			Naterial, Base_Material, Surface_Material, Surface_Inickn
COB STM CB	Drainage Storm Catch Basin	Point		Installed Date, Diameter, Rim Elevation	Frame and Cover, Material
COB_STM_CB_E	Existing Drainage Storm Catch Basin	Point		N/A	N/A
COB_STM_CBMH	Drainage Storm Catch Basin Manhole	Point		Installed_Date, Invert_In_1, Invert_Out_1, Rim_Elevation, Material	OrificeSize
COB_STM_CBMH_E	Existing Drainage Storm Catch Basin Manhole	Point			N/A
COB_SIM_Ceptor	Drainage Storm Ceptor	Point		Installed_Date, Invert_In_1, Invert_Out_1, Rim_Elevation	Material N/A
COB_STM_Ceptor_L	Drainage Storm Control	Point		Installed Date	Type
COB_STM_Control_E	Existing Drainage Storm Control	Point		N/A	N/A
COB_STM_Inlet	Drainage Storm Inlet	Point		Installed_Date	Type, Invert
COB_STM_Inlet_E	Existing Drainage Storm Inlet	Point		N/A	N/A
COB_STM_MH	Drainage Storm Manhole	Point		Installed_Date, Rim_Elevation, Diameter, Invert_In_1, Invert_Out_2, Material	OrificeSize
	Drainage Storm Outlet	Point		Installed Date	N/A Type Invert
COB STM Outlet E	Existing Drainage Storm Outlet	Point		N/A	N/A
COB_STM_Pipe	Drainage Storm Pipe	Line		Installed_Date, Size, Invert_Up, Invert_Down, Slope, Type	Length, Year_Lining
COB_STM_Pipe_E	Existing Drainage Storm Pipe	Line		N/A	N/A
COB_STM_Pump	Drainage Storm Pump	Point		Installed_Date	Type
COB_STM_Pump_E	Existing Drainage Storm Pump Drainage Storm Service	Point		N/A Installed Date Type Size	N/A Invert In Invert Out Pine Material
COB STM Service E	Existing Drainage Storm Service	Line		N/A	N/A
COB_STM_Swale	Drainage Storm Swale	Line		Installed_Date	Туре
COB_STM_Swale_E	Existing Drainage Storm Swale	Line		N/A	N/A
COB_STM_SWMF	Storm Water Management Facility	Point		Installed_Date, Bottom, Drainage_Area, Max_Storage	Type
COB_STM_SWMF_E	Existing Storm Water Management Facility	Point		N/A Installed Date	N/A Tupe
COB STM Valve E	Existing Drainage Storm Valve	Point		N/A	N/A
COB_WTR_CC	Water Curb Cock Valve	Point		Installed_Date, CC_Material, CC_Size	CC_Function, CC_Box_Material, CC_Type, Position, Rod_Ma
COB_WTR_CC_E	Existing Water Curb Cock Valve	Point		N/A	N/A
COB_WTR_FlushPoint	Water Flush Point	Point		Installed_Date	Drain_Plugged, Flush_Point_Type, Rod_Material, Surroundi
COB_WTR_FlushPoint_E	Existing Water Flush Point	Point		N/A Installed Date	N/A Manufacturor Material Sizo
COB_WIR_HOL_Iap COB_WIR_Hot_Tap_F	Existing Water Hot Tap	Point		N/A	N/A
COB_WTR_Hydrant	Water Hydrant	Point		Installed_Date, Manufacturer, Pipe_Size	Hydrant_Flow_Capacity, Rod Length, Rod Type, Anode Ins
COB_WTR_Hydrant_E	Existing Water Hydrant	Point		N/A	N/A

eld name must match)

eight, Curb_Type

Offset, Curb_Height, Curb_Type

easured_Length, Pipe_Use, Pipe_Shape

ength, Pipe_Slope, Pipe_Use

ness, Base_Thickness, Subbase_Material, Subbase_Thickness

laterial, Surrounding_Surface

ling_Surface, Valve_Material

nstalled, Dead_End, Hydrant_Capacity, Surrounding_Surface, Upper_Rod_Type

COB_WTR_Isolation_Valve COB_WTR_Isolation_Valve_E COB WTR Main Valve COB_WTR_Main_Valve_E COB WTR Pipe COB_WTR_Pipe_E COB_WTR_Pump COB_WTR_Pump_E COB_WTR_Reducer COB_WTR_Reducer_E COB_WTR_Reservoir COB_WTR_Reservoir_E COB WTR Service COB WTR Service E COB WTR Service Valve COB_WTR_Service_Valve_E COB_Street_Centreline COB_Street_Centreline_E COB_Trail_E COB_Trail COB_Crosswalk_E COB_Crosswalk COB_Pavement_Marking_Line_E COB_Pavement_Marking_Line COB_Parking_Lot_E COB_Parking_Lot COB_Parking_Lot_Marking_E COB_Parking_Lot_Marking COB_Sign_E COB_Sign COB_Bench COB_Bench_E COB_Bleacher COB_Bleacher_E COB_Fence COB_Fence_E COB_Picnic_Table COB_Picnic_Table_E COB_Playground_Apparatus COB_Playground_Apparatus_E COB_Tree COB_Tree_E COB_Bollard COB_Bollard_E COB_Curb COB_Curb_E COB Curb Gutter COB_Curb_Gutter_E COB Curb Ramp COB_Curb_Ramp_E COB_Guardrail COB_Guardrail_E COB_Gutter COB_Gutter_E COB_Median COB_Median_E COB Sidewalk COB_Sidewalk_E

Trail

Sign

Tree

Curb

Water Isolation Valve Point Existing Water Isolation Valve Point Water Main Valve Point Existing Water Main Valve Point Water Main Pipe Line Existing Water Main Pipe Line Water Pump Point Existing Water Pump Point Water Reducer Point Existing Water Reducer Point Water Reservoir Polygon Existing Water Reservoir Polygon Water Service Pipe Line Existing Water Service Pipe Line Water Service Valve Point Point Existing Water Service Valve Line Street Centreline Existing Street Centreline Line Existing Trail Line Line Existing Crosswalk Polygon Crosswalk Polygon Existing Pavement Marking Line Line Pavement Marking Line Line Existing Parking Lot Polygon Parking Lot Polygon Existing Parking Lot Marking Line Parking Lot Marking Line Existing Sign Point Point Bench Point Existing Bench Point Bleacher Polygon Existing Bleacher Polygon Line Fence Existing Fence Line Picnic Table Point Existing Picnic Table Point Playground Apparatus Point Existing Playground Apparatus Point Point Existing Tree Point Bollard Point Existing Bollard Point Line Existing Curb Line Curb and Gutter Line Existing Curb and Gutter Line Curb and Ramp Point Existing Curb and Ramp Point Guardrail Line Existing Guardrail Line Gutter Line Existing Gutter Line Median Polygon Existing Median Polygon Sidewalk Line Existing Sidewalk Line

In	stalled_Date	Casing_Type, Manufacturer, Valve_Type
N,	/Α	N/A
In	stalled_Date	Casing_Type, Manufacturer, Boundary_Valve, Valve_Orient
N	/Α	N/A
In	stalled Date, Pipe Length, Pipe Material, Pipe Size	N/A
N	/A	N/A
In	stalled Date	Pump Type
N		N/A
In	called Date	Manufacturer Material Size 1
N		N/A
in,	ra	Connecity
IN,		N/A
in	stalled_Date, Pipe_Iviaterial, Pipe_Size	Pipe_Length, Connection_Type
N		N/A
In	stalled_Date	Manufacturer, Boundary_Valve, Casing_Type, Valve_Orient
N	A	N/A
In	stalled_Date, Type	Surface_Material, Direction, MaxSpeed, Name, Class, Base
N,	/Α	N/A
N,	/Α	N/A
In	stalled_Date, Surface_Material, Surface_Thickness, Base_Material, Base_Thickness	Subbase_Material, Subbase_Thickness
N	/Α	N/A
In	stalled Date, Width, Surface Material, Type, Length, Width	Marking Material
N	/A	N/A
In	stalled Date, Purpose, Marking Material, Length, Line Type, Line Width, Colour	N/A
N		N/A
In	stalled Date Surface Material Surface Thickness Base Material Base Thickness	Subbase Material Subbase Thickness No. of Stalls
N	/a	N/A
In	ra	N/A
N	A	N/A
IN,	(A	N/A
in	stalled_Date, Width, Height, Direction_Facing, Sign_Class, Description, Post_I ype	MUTCD_Code, Colour
in	stalled_Date, Mount, Type	Pad, Pad_size_cm, Length_cm, Width_cm, Bench_Colour, B
N		N/A
In	stalled_Date, Manufacturer	Length_in_m, Height_in_m, Number_of_Rows, Seating_Ca
N	/A	N/A
In	stalled_Date, Manufacturer, Material	N/A
N	/A	N/A
In	stalled_Date, Mount, Type	Width_cm, Length_cm, Pad, Pad_size_cm, Base_Colour, Be
N	/Α	N/A
In	stalled_Date, Type, Manufacturer	Colour
N	/A	N/A
In	stalled Date, Species, Height	N/A
N	/A	N/A
In	stalled Date Shape of Bollard	Surface Treatment
N		N/A
In	 stalled Date Curb Type Material Curb Width in cm Curb Height In cm	Direction
N	A	N/A
ln.	ra Italiad Data Curb Tuna Matarial Guttar Width in am Curb Haight In am	Direction
N	zanegubare, curb_rype, Marenai, Gurter_Wight_in_chi, curb_neight_in_chi	Direction N/A
IN,	/A	N/A
in	stalied_Date, Type, surface_Material, surface_Thickness_in_cm, Base_Material, Base_Thickness_in_cm	N/A
IN,		N/A
In	stalied_Date, Type, Material	Size
N	Α	N/A
In	stalled_Date, Type, Material, Width_in_cm	N/A
N	Α	N/A
In	stalled_Date, Type, Surface_Material, Surface_Thickness, Base_Material, Base_Thickness_in_cm	N/A
N	/Α	N/A
In	stalled_Date, Type, Width_in_m, Surface_Material, Surface_Thickness_in_cm, Base_Material, Base_Thickness_in_cm	N/A
N	Α	N/A

tation, Valve_Type

tation, Number_of_Turns, Normal_Postion

e_Material, Surface_Thickness, Base_Thickness, Subbase_Material, Subbase_Thickness

Base_Colour

pacity, Style, Colour

ench_Colour