2023

DIGITAL INFORMATION STANDARD

CONTENT & FORMATTING REQUIREMENTS

Barrie

FOREWARD

The goal of this document is to provide appropriate guidance to internal and external stakeholders to ensure that the requirements of the Digital Information Standard (DIS) are met.

The DIS was developed to assist the City in moving towards the goal of providing Open Data . Open Data is the idea that certain data should be freely available to everyone to use and republish as they wish, without restriction from copyright, patents, or other mechanisms of control. In order for the City to further its goal of Open Data, processes must be in place to ensure that the data to be shared remains current and maintains a level of accuracy appropriate for sharing openly.

The City can achieve this by working together with internal and external stakeholders to maximize the future value of all digital submissions.

This document does not yet include the steps associated with, or requirements around, the new Automated Submission and Data Validation Tool. The new tool, which is to be launched at the end of 2023, is still in the final stages of development, so another updated version of the document, including all necessary details, will be provided upon the launch of the new Submission Tool.

DISCLAIMER

The City of Barrie reserves the right to amend, alter or accept revisions to this document at any time without further notice.

Over time it will be necessary to update this document as the regulations, design practices and technologies continue to evolve and change. It is the user's responsibility to check the City of Barrie's website for the current revision of this Document. Document holders should immediately discard superseded and cancelled standards.

Document & templates are available on the [City's website](#) under the Digital Information Standard.

REVISION No.	DATE	COMMENT
1	Dec 4, 2017	Revision 1 approval granted
2	Sept 29, 2023	Revision 2 DRAFT

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1. Introduction

The City of Barrie's Digital Information Standard (DIS) is intended to create a common approach for the submission of all digital information related to infrastructure systems found in the City of Barrie.

This document does not provide design guidance. It is incumbent upon the designer to ensure that the appropriate design standards, specifications, and legislation are always adhered to. This document outlines the current minimum content and formatting requirements needed to meet the DIS.

The DIS requirements have been developed to accomplish the following objectives:

- Ensure information submitted to and managed by the City is accurate and current.
- Ensure information is complete.
- Ensure digital data flow is as seamless as possible.
- Improve the efficiency and timeliness of drawing review and approval.

The City has strived to offer a set of predefined digital deliverables based on submission requirements. Object data is to be provided in AutoCAD or Civil 3D using the City of Barrie templates. Each template has been designed to maximize the ease of data extraction. It should be noted that much of the design data we are requesting is already required, this standard simply clarifies the content and defines the required format for submission. Templates are available on the City's website under Digital Information Standard and are discussed further in this document.

Consultations were held involving internal staff and select group of external stakeholders. All comments received from internal and external stakeholders have been assessed and implemented where possible. At this point in time this standard does not require the use of a particular software or template for design; the distinction between design & required digital deliverable should be noted.

The City acknowledges the variety of design software currently in use by external parties, however the City of Barrie has standardized internal design projects within AutoCAD Civil 3D 2023 software. The City has enhanced the design template and make it available freely for external use. The City will continue to improve the Civil 3D template with the goal in mind of mandatory compliance to the City standard template. This template is intended to maximize the use of Civil 3D and assist all parties to achieve the submission requirements of this document.

1.1. Essential Information

The following statements provide essential information related this standard:

- The City of Barrie has incorporated AutoCAD MAP3D object data functionality into the City of Barrie Civil 3D templates to include asset attribution and data in project design and record drawings.

- The Civil 3D drawing templates provided by the City of Barrie contain the required AutoCAD MAP3D Object Data Tables that are used to complete the attribution of new assets and will be used by the submitter to include all required asset information specific to the City of Barrie

- The City of Barrie has incorporated Civil 3D Pipe Networks. Where Civil 3D pipe networks (pipes and structures) are used to model storm and sanitary pipe network infrastructure, the submitter will utilize Civil 3D functionality to provide a File Geodatabase file (FGDB) to the City to facilitate

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the import of the object data to the City's ArcGIS system.

- The City will extract and import data from the submissions in order to add or update pertinent data within the enterprise GIS system. The City of Barrie will not modify or alter the <u>original</u> electronic documents in any way.

- Submittals not meeting the requirements, in part or as a whole, as described in this document will be rejected and returned to the submitter for correction and resubmission. The City will only accept complete packages for submission; resubmission of portions of a package due to initial rejection will not be accepted.
  - Refer to Appendix E for a breakdown of submission sets required at each submission stage.
- The flexibility provided to choose the design software does not negate the need to meet the requirements outlined in the DIS. If it is determined that requirements cannot be met by the contributor's choice of design software, then it is incumbent on the contributor to upgrade to a design software that has the ability to meet the submission requirements.

1.2. Coordination Expectations

The requirements of the DIS outline a shared responsibility for all involved parties. The deliverables are not meant to be created by a single party during final submission or record submission; rather elements should be created by each individual contributor, as part of the design process, and compiled by the party responsible for submission.

It is the responsibility of each individual party contributing to meet the requirements outlined in this document.

1.3. Definitions

As-Constructed: (as per the "*Use of the Professional Engineer's Seal* Guideline"): is documentation created by or based solely on information provided by a third party that reflects the installed, constructed, or commissioned conditions of a device, machine, equipment, apparatus, structure, system, or other outcome of an engineering project. Since the engineer has not verified that the information is complete or accurate, As-Constructed drawings must not be sealed.

As-Recorded: (as per the *Use of the Professional Engineer's Seal* guideline): is a document created to accurately reflect as-constructed, as-built, or as-fabricated conditions and that has been sealed by a professional engineer after verifying that the document is accurate. They are usually retained to meet business or regulatory requirements. (Otherwise known as **Red Line or As Built Drawings**).

AutoCAD: Software developed and marketed by Autodesk. Within this document where the name AutoCAD is used, it refers to specifically to Autodesk's AutoCAD software; accepted releases 2018-2023.

CAD: Computer-aided design (CAD) is the use of computer systems to aid in the creation, modification, analysis, or optimization of a design. This term is not specific to any software.

City: The Corporation of the City of Barrie

Civil 3D: Software developed and marketed by Autodesk. Within this document where the name Civil 3D is used, it refers to specifically to Autodesk's Civil 3D software; accepted releases 2018-2023.

Contributor: Any individual or business contributing to a project under City of Barrie jurisdiction.

Digital Deliverable: Any data submitted to the City or created by the City for the purposes of submission under the Digital Information Standard.

Geo-referencing: To associate something with locations in physical space.

Metadata: Metadata describes other data. Metadata is often tagged (Metatag) to the primary data elements to make functions like database searches more efficient and accurate.

Partial Submission: Partial Submission refers to the practice of sending a single or multiple drawing revision as an update to a previous submission rather than creating a whole complete package.

2. Digital Submission Elements

This section defines the individual elements that make up part of a submission set under the DIS. The elements required vary based on the submission stage of the project. Refer to the appendix E for a breakdown of the submission sets required at each submission stage.

2.1. Project Info Form

A Project Info form will accompany all submissions to assist the City in assigning accurate metadata to all elements submitted. The data on this form is also used to identify the staff who require notification of submission for review and approval processes to begin. Refer to Appendix D for an example of the Project Info Form. Templates are available on the [City's website](#) under Digital Information Standard - [G210 - Project Info-Data Table-Data Checklist](#)

2.2. Data Checklist Form

A Data Checklist will accompany all submissions to assist the City in identifying the object data included in the submission data within the two possible data extraction formats.

An example of the Data Checklist can be found in Appendix D. Templates are available on the [City's website](#) under Digital Information Standard - [G210 - Project Info-Data Table-Data Checklist](#)

2.3. Text/Vector PDF

The **Text/Vector PDF** requirements apply to both the drawing set as well as any accompanying documents (reports, letters, etc.). Drawing sets are to be plotted to PDF using the Autodesk print driver, with layer information included.

The requirements outlined in the Text/Vector PDF section ensures all submissions retain the maximum value for future data usage. These requirements allow near zero loss of data, allowing the submission set to be viewable & searchable via computer, mobile devices, etc. and maintains the ability to easily reproduce hardcopies if needed.

2.3.1. Text/Vector PDF must meet the following minimum requirements:

- All PDF file securities are to be removed. PDFs that have been printed to image-only non-searchable PDFs will not be accepted.
- Drawing set PDFs shall be plotted or published using the Autodesk print driver with the setting 'Layer Information' enabled. A hardcopy plotted drawing set or document which has been scanned to PDF will not be accepted. The command 'Export PDF' is not permitted.
- Accompanying documents or reports can be plotted or saved to PDF.
- The City of Barrie layering standard and associate plot style shall be used for all drawing set PDFs. Drawing set PDFs are to be in black and white, not colour.
- PDFs are to be plotted to scale.
- For any revisions arising from the review process requiring a re-submission; a complete revised version must be submitted, noting the date and revision.

2.4. Sealed PDF

A Sealed PDFs will follow all the requirements of a Text/Vector PDF, however, must include a signed (blue ink) engineer's seal applied where required.

To meet the requirements of a Text/Vector PDF the seal applied to a plan set must be applied digitally. The typical process required to create a Sealed PDF drawing set is as follows:

1. The unstamped plan set would be reviewed by the engineer, with any final changes noted & made by the designer.
2. The designer prepares the Digital Stamp Tracking form (example in Appendix G) with all information.
3. The engineer reviews the sheets named on the form against the sheets he has reviewed; ensuring there are no additional and/or no missing sheets.
4. The engineer stamps and signs the form.
5. The designer scans the form & extracts the digital stamp as an image. It is important to ensure the process to extract the image is done in such a way that the size of the stamp is maintained.
6. The designer places the digital stamp (image) in a protected server location, separate from the project, where it can never be mistakenly sent with the project files.
7. The digital stamp is inserted into the plan using AutoCAD and is set as an external reference.
8. The sealed plan set is plotted to PDF using the Autodesk Print Driver, with layer information enabled. In order to meet DIS requirements the drawing set must be plotted to PDF; hardcopy sets can be easily plotted after the fact.
9. The digital stamp is immediately deleted from the protected location in step 6 (step 6 is required as additional protection to ensure the stamp does not get sent out accidentally).
10. The Sealed PDF plan set and sealed Digital Stamp Tracking form are stored together on the server as record of the set that was produced.

A Sealed PDF document (letter, report, etc.) can include a scanned signature/seal page; this page would then be inserted into a PDF file that meets the requirements of a Text/Vector PDF (not scanned). This allows the majority of the document to meet the requirements for a Text/Vector PDF. The body of the document shall not be on the signature/sealed page.

Adding a digital seal is common industry practice, and acceptable according to the Professional Engineers of Ontario (PEO) guideline 'Use of the Professional Engineer's Seal'. It is incumbent on external parties to define and implement their own audit trail practices for the use of a digital seal.

> *…PEO has revised its previously expressed opinion, as stated in the Guideline to Professional Practice (1988, revised 1998), that "engineers apply their signatures and seals only to the hard copy of the information". Recognizing that electronic documents in Ontario now have the same legal force as paper documents, use of seals on electronic format documents is now allowed…*

2.5. Object Data Extraction

To support the integration of data into City of Barrie corporate systems, the required content must be submitted to the City in the format specified. The exact method of data extraction from a submitter's drawing set or document is outside the limits of this document.

Object Data elements to be extracted are to include all works constructed and existing features remaining after construction, except for a preliminary submission of drawings containing Object Data which are submitted before final approval. Preliminary data simply includes all works <u>expected</u> to be

constructed (i.e., proposed) & existing features <u>expected</u> to remain.

Any future phases shall <u>not</u> require an Object Data submission until they move into the proposed or constructed phase. Within the context of Preliminary Data requirements, phases are to be submitted separately.

Object Data which specifically required by the City, requires the use of the supplied Civil 3D template, available from the [City's website](#).

This City template is to be used to include the project specific Object Data that will be extracted by the City following validation by the automated submission process.

All data elements do not need to be provided in all formats but can be provided as some combination so long as the data provided meets the requirements. The variety of submission methods available has been incorporated into the DIS so that the contributor has flexibility to incorporate requirements into their existing workflows.

A Data Checklist will accompany all submissions to assist the City in locating the required submission data within the data extraction formats. An example of the Data Checklist can be found in Appendix D. Templates are available on the [City's website](#) under Digital Information Standard.

2.5.1. *Data Requirements for Object Data Submission*

The specific data requirements for an Object Data submission are outlined in the following sections, details of the required data can also be found in the Data Checklist.

For the Object Data, a CAD or Civil 3D based .DWG file can be stripped of all non-essential and duplicated information. All required information is within model space, all drawing layouts have been removed, and no external references are present. The basic CAD requirements for Object Data & detail required is limited to the Data Checklist.

The Object Data submission drawings must contain all relevant design elements, and meet all requirements as outlined in this manual.

- Will only include features that would be present after project completion and/or existing features not removed during construction. If the specific object was 'removed' in the field, it will not be provided in the Object Data submission (constructed nor existing) as it has been removed. Alternatively, if it was 'to be abandoned' then it is still existing in the field, therefore it will need to be provided in the Object Data submission.
- Drawings are to be geo-referenced in accordance with Section 4.
- Only data requested in the Data Checklist is to be included. Please refer to the Data Checklist provided with this document for a list of specific data elements allowed.
- All drawing objects (lines, polylines, & block) properties are to be set to 'By Layer' and meet layering requirements.
- No external references are permitted. External references shall be "Inserted" into the drawing.

Refer to the section 5 - AutoCAD Drawing Object Data Requirements for more specific requirements.

AutoCAD, with the MAP 3D Toolset, can be utilized in the attachment of object data to AutoCAD drawing entities as the City of Barrie required Object Data Tables are included in the template.

The DIS includes all required layers and Object Data Tables listed on the Data Checklist, Appendix D.

2.5.2. Object Data Drawing Submission with Civil 3D

Civil 3D design drawings that take advantage of the available Civil 3D features may still require the attachment of Object Data Tables to AutoCAD elements. Refer to the Data Checklist to determine which elements can be provided as Civil 3D or AutoCAD.

The Civil 3D Part Catalog provided with the City of Barrie Civil 3D standard has been modified to include all data requirements as listed on the Data Tables for Sanitary Devices/Pipes and Storm Devices/Pipes. Using this customized Part Catalogs will allow users to add the required data during design, making data extraction much easier.

The use of the City of Barrie Civil 3D template is mandatory. Submissions that do not meet the requirements will be rejected.

Preparation of a Civil 3D Pipe Network for submission can be achieved using the following steps:
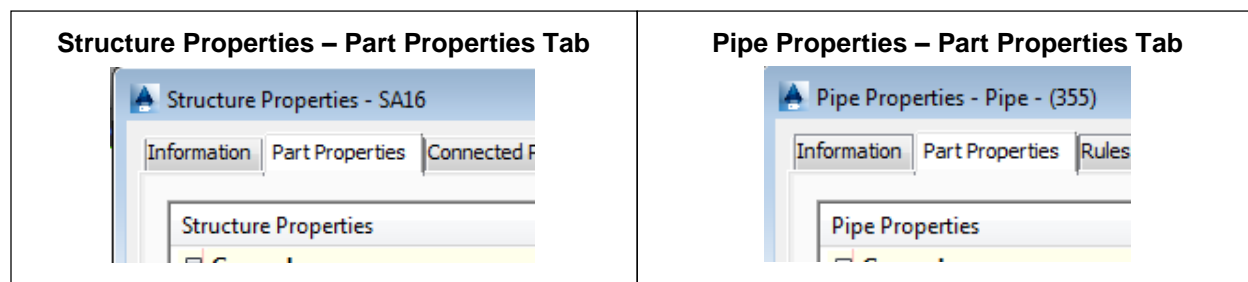
Sample workflow using Civil 3D where Data Shortcuts are utilized:

1. Create a Civil 3D drawing based on the City of Barrie Civil 3D template standard.
    a. Create Data Shortcuts as required.
    b. Develop the design.
    c. Add the required Object Data to the AutoCAD lines/polylines/blocks by completing and attaching the appropriate Object Data Table
    d. Save the original drawing for submission with Data Shortcuts intact for future update during the As-Constructed Data creation stage.
    e. Save the drawing with Submission Name
    f. The Pipe Networks portion of the data is already suitable for submission.
    g. Use the Promote command to create a local copy of each element.
    h. Insert any external references.
    i. Save the file for Object Data Submission

[Important Note – Modelling in Civil 3D]

It is well known that Civil 3D has a phenomenal amount of flexibility built in; this has led to the rise of Drafting in Civil 3D vs. Modelling in Civil 3D. Drafting in Civil 3D relates to a template setup to allow the user to represent design elements through more typical drafting practices; for example a Civil 3D 1200mm circular maintenance hole can be represented through styles as a catchbasin, or a concrete pipe can be labelled as a PVC pipe. This is all based around how the Civil 3D template is created. Modelling in Civil 3D means the template is setup to use the proper structure & pipe definitions from a part catalog.

The process used to extract object data will only see data located in the two areas shown below (Structure & Pipe Properties). Any data not listed here must be provided in a Data Table otherwise your submission will be rejected. **The City of Barrie Civil 3D part catalog has been modified to include all DIS required data elements within Storm & Sanitary pipes and structures.**

Structure Properties – Part Properties Tab	Pipe Properties – Part Properties Tab
Structure Properties - SA16 Information Part Properties Connected F Structure Properties	Pipe Properties - Pipe - (355) Information Part Properties Rules Pipe Properties

2.6. Source Files

Source Files are the primary file(s) where the design of the project has been completed regardless of the software being used.

The Source File represents the design before any conversion that strips out any functionality; for example, exploding intelligent objects, blocks/attributes, etc. The submission of Source Files in their original format will provide flexibility for any potential future use of the data contained within. The source files will be treated as confidential, only data that can be extracted out related to the design will be used.

The City of Barrie will review Source File submissions for the appearance of an acceptable submission; any submissions that appear incomplete will be questioned and could be rejected and/or delay the review process.

Source files for all engineering drawings within the submission set are provided on an "as is" basis, regardless of software platform, symbology, layering, etc. used in their preparation. Source Files can be purged of all unused styles, settings, layers, etc. at the contributor's discretion, so long as it does not affect the source file integrity, i.e., the data must remain in its originally designed state & functionality. Source files that have been converted to an alternative format, i.e., exploded to AutoCAD to remove any of the intelligence of the file, will be rejected and/or delay the review process.

- The Source Files can be provided their default state (uncompressed), preferred, or many be provided as a Split Rar file.
- Best practice with all projects is to provide appropriately named files in an organized folder structure.
- The Source Files should be placed in a folder named 'Source Files' within the DIS submission.
- All primary design files and associated supporting references, databases, etc. are to be included in the submission.

One method to compile the required package is the eTransmit command provided within all AutoCAD & Civil 3D software. This will create a single package, including all associated references (Data references & External References), and will also include most supporting files. If eTransmit is not feasible due to the size of the project, then a method may be chosen by the contributor so long as it includes all project files acceptably organized.

2.7. As-Constructed Drawings (Redlines)

These requirements are to read alongside current City of Barrie Engineering Records Submission requirements.

While it is not mandatory at this time, it is highly recommended that all deviations recorded be transferred to the Text/Vector PDF via a PDF markup tool. This allows the deviations to be easily and clearly applied to the PDF with the ability to edit any typos or errors, organize labels, and generate a report on all deviations within the document for internal QC procedures.

Below are the requirements of an As-Constructed Drawing:

- As-Constructed Drawings are divided into two general submission stages, Partial As-Constructed (Underground and/or Above-ground based on work completed to date) and Final As-Constructed (underground + above grade in their final state).
- As-Recorded Drawings (stamped As-Constructed Drawings) are to be clearly identified as "Partial As-Constructed" (see Section 2.9) or "Final As-Constructed" (see Section 2.10) in the revisions section of the title block with a submission date.
- Multi-year projects will have some combination of Partial or Final As-Constructed Drawings depending on their completed works at the end of each year or construction season.
- As-Constructed for the previous year/construction season is required to be submitted before recommencing construction in the new-year.
- As-Constructed Drawing's shall be based on the unstamped Text/Vector PDF that matches the most current design drawings. Deviations (redlines) can only be applied to unstamped drawings and will only be applied to the latest approved, issued for construction, or addendum drawings.
- As-Constructed Drawings will not include a stamp until reviewed and approved by an engineer prior to submission as an As-Recorded Drawing. If submitting a Partial As-Constructed the stamp should be applied digitally to the scanned As-Constructed Drawing; this ensures future deviations can be added to the unstamped As-Constructed allowing the future submission of the Final As-As-Constructed Drawing.
- All deviations (redlines) must be recorded as the work is performed.
- All deviations must be recorded clearly & legibly in red (ink or digital markup). Anything other than red will cause the As-Constructed Drawing to be rejected. Highlighters, thick markers, scribbled out markups or design data, etc. will cause the As-Constructed Drawings to be rejected.
- All incorrect information must be crossed out or X'd out and replaced with the correct information.
- All deviations related to constructed works shall be included on the Partial As-Constructed or Final As-Constructed for the appropriate year/construction season.
- Deviations shall include all changes, additions, and deletions. All deviations must be recorded, including but not limited to:
    - Road Centerline (horizontal & vertical)
    - Curb and Gutter,
    - Sidewalk,
    - Fences,
    - Retaining Walls,
    - Driveways,
    - Watercourses,
    - Ditches alignments and inverts,
    - Culverts alignment, Size and Inverts,
    - Maintenance Holes,
    - Catch Basins,
    - Sewer Mains alignment, size and Inverts,
    - Sewer Laterals alignment and inverts, Clean-outs
    - Watermains alignment, size and Depth,
    - Water Services alignment, size and Depth,
    - Water Valves,
    - Hydrants,
    - Utility Poles,
    - Utilities,

- o Trees
- o Survey Control Monuments (relates to all monuments within limits of disturbance, not only the project benchmark)
- The Development Manual G200 available on the [City Infrastructure Standards website](#) outlines specific record requirements related to As- Constructed Drawings.
- As-Recorded Drawing sets that are based on re-scanned "Partial As-Constructed" drawings, or if they are dog eared, folded, ripped, muddy, dirty, stained, etc. are not acceptable.
- After all deviations (redlines) for the required stage ("Partial As-Constructed" or "Final As-Constructed") are recorded on a single drawing set they will be reviewed by the engineer to create an As-Recorded Drawing. The engineer's seal, dated for the As-Recorded submission, is required on every sheet in the set.

2.7.1. *As-Constructed Digital Copy*

At this point in time the submission of a digital copy (design DWG) that matches the As-Recorded Drawings (sealed As-constructed Drawings) is required as described on the City of Barrie website, [Engineering Records Submissions](#). This requirement is in addition to the As-Constructed Data described in sections 2.7.2 & 2.7.3.

2.7.2. *As-Constructed Object Data – Partial (Underground and/or Above-ground)*

The As-Constructed Object Data Partial submission represents the requirement to update the Object Data DWG with all works (underground and/or aboveground) constructed & existing features remaining at the end of each year or construction season.

- As-Constructed Data must be submitted every year on multi-year projects.
- As-Constructed Data for the previous year/construction season is required to be submitted before recommencing construction in the new-year.
- The updated As-Constructed Data must be reviewed and approved prior to the submission of plans for building permits.
- The update will include all information required to accurately represent the currently completed works.
- The engineer shall seal the Data Checklist in the location provided which acknowledges the accuracy and continuity of the submitted As-Constructed Data.

The requirements for As-Constructed Data is additional to the requirement to submit an As-Constructed Digital Copy (DWG) set as per the [Engineering Records Submission](#) Requirements.

2.7.3. *As-Constructed Object Data – Final (Underground + Above grade)*

The As-Constructed Data Final submission represents the requirement to update the Object Data with all underground & above grade works constructed & existing features remaining.

- The Final submission will represent all works and will include all data previously submitted within the Partial As-Constructed submissions.
- The update will include all information required to accurately represent the As-Recorded Drawing.
- The engineer shall seal the Data Checklist in the location provided which acknowledges the accuracy and continuity of the submitted As-Constructed Data.
- The updated As-Constructed Data must be reviewed and approved prior to issuance of the Completion Certificate, Holdback Release, Plan of Subdivision Assumption, and issuance of building permits.

The requirements for As-Constructed Data is additional to the requirement to submit an As-Constructed Digital Copy (DWG) set as per the [Engineering Records Submission](#) Requirements.

3. Accepted File Formats

The table below outlines the required file formats related to DIS submissions. File Format represents a small portion of the submission requirements; refer to other sections for specific content & format requirements.

TABLE 3.1 – Submission Formats

Submission Type	Description	Format
Project Info		Excel (XLS) (based on DIS template)
Project Info (sealed)		Scanned PDF accompanied by Excel (XLS) (based on DIS template)
Data Checklist		Excel (XLS) (based on DIS template)
Text/Vector PDF	Plotted drawing set to be submitted	Plotted Autodesk PDF
Text-based documents	Any documentation included in the submission	Plotted PDF
Sealed PDF	Plotted drawing set to be submitted	Plotted Autodesk PDF with digital seal
	Any documentation included in the submission	Plotted PDF (With exception for 1pg sealed & scanned)
Data Table	Data Checklist presented in XLS	Excel (XLS) (based on DIS template)
Object Data Submission (AutoCAD)	Data elements as listed on the Data Checklist presented in CAD	AutoCAD 2018-2023(DWG) (Based on DIS AutoCAD template)

Submission Type	Description	Format
Object Data Submission (Civil 3D)	Data elements as listed on the Data Checklist presented in CAD	Civil 3D 2018-2023 (DWG) (Based on the City of Barrie Civil 3D template)
Source Files	Source files for all engineering drawings within the submission set	[Varies, original format files required] - AutoCAD Civil 3D 2018-2023, AutoCAD 2018-2023, (.DWG), Data Shortcuts (.xml), etc.
As-Constructed Drawing	As-Constructed Drawing pending engineers seal	PDF
Record Drawing	As-Recorded PDF with deviations sealed by engineer	PDF with digital markups, digitally sealed, or Hardcopy markups Sealed & Scanned to PDF (minimum 300dpi)
As-Constructed Data (DWG)	Object Data submission (AutoCAD or Civil 3D)	AutoCAD 2018-2023(DWG) (Based on DIS AutoCAD template)

		Civil 3D 2018-2023 (DWG) (Based on the City of Barrie Civil 3D template)

4. Geo-referencing and Spatial Accuracy

Geo-referencing and Spatial Accuracy requirements described below are mandatory for all digital data under the jurisdiction of the City of Barrie.

The standard coordinate system for the City of Barrie is Universal Transverse Mercator (UTM) Zone 17 North with the North American Datum 1983- "NAD83 (Original)". All digital submissions must be geo-referenced (either with actual coordinates or a .wld file)

Projected Coordinate System:	**UTM NAD 1983 Zone 17N (Original)**
Projection:	**Transverse Mercator**
Geographic Coordinate System:	**GCS North American 1983**
Datum:	**North American 1983**
Linear Unit:	**Meter**

The benchmark number, location, and full description with respect to the project specific control monuments shall be indicated on all drawings. Additionally, the benchmark number and location of ALL control monuments, within the project limits, must be shown on all drawings. Refer to the MNR COSINE Database to retrieve the monument values.

During design & construction care should be taken to protect the control monuments from any damage or removal, however if not possible then arrangements must be made with the City to replace. Refer to the City of Barrie Integrated Control Survey Specifications for detailed description of all requirements.

5. AutoCAD Object Data Layer Requirements

This section outlines the available layers that have been provided to assist in the creation of Object Data Extraction from existing AutoCAD elements are required.

The Civil 3D and AutoCAD template file that maintains the City of Barrie layer structure has been posted on the [City's website](#).

5.1. Overall Layering Convention

Generally, each type of object (buildings, roads, parcel, pipe, etc.) will have a unique layer and be prefixed or suffixed appropriately. The provided AutoCAD template file includes the required Object Data Tables and layers.

Submitters using the City of Barrie Civil 3D Template for design only need to be concerned about layering for AutoCAD based data; layering for data provided as Civil 3D Pipe Networks is controlled automatically.

Any additional layers added must be listed on the Data Checklist and follow the intent of the layering convention described below. Layers listed will be considered for inclusion to the standard. Additional layers duplicating an already defined City of Barrie layer will be rejected.

5.2. General Prefix/Suffix layout:

The examples provided below to describe the general concept required for the layering convention. Labelling for the Object Data submission is not required in the typical sense and therefore no layers are required for these elements. Object Data Tables are not associated with predefined layers.

Not using the Object Data Tables and opting for text labelling will be ignored by the system and will cause your submission to be rejected.

It is required that existing elements in drawings shall be prefixed with "X". This is typically information collected prior to the start of construction from a variety of sources like topographic surveys, tree inventories, and city records. Information collected or converted from subsurface utility engineering (SUE) data are separate from these Existing Elements (see Subsurface Utility Engineering below). For the purposes of this standard, constructed elements surveyed after construction are not considered Existing elements. Any Existing elements that have been, for example, modified or abandoned during construction are now considered Constructed; Existing elements removed during construction should not be present in the Object Data Tables.

Existing Sanitary Maintenance hole (Topographic):	XSANMH
Existing Tree (Topographic / Tree Inventory):	XTREES
Underground Bell (Utilities):.	X-UT-UBELL
Aboveground Bell (Utilities):	X-UT-BELL

Subsurface Utility Engineering (SUE) data collected through project investigations fall into the Existing elements category, if they have not been removed, replaced, or modified during construction. These layers shall include a prefix of "SUE-" and a suffix denoting Quality Level (Quality Level A, B, C, or D). Existing elements are often recreated, based on the SUE, within the design software of choice; in these cases, the SUE elements should either remain alongside the recreated Existing elements or the recreated Existing element layer can be suffixed with the appropriate Quality Level. If the SUE element was replaced or removed during construction, then the corresponding SUE element in the Object Data submission.

Underground Bell (SUE, Quality Level C):	SUE-BE-QLC
Gas line (SUE, Quality Level B):	SUE-GAS-QLB
Storm Pipe (SUE, Quality Level D):	SUE-STM-QLD
Existing Storm Pipe (Converted SUE, Quality Level D):	XSTMM-QLD

Constructed elements (i.e., Proposed or modified in the design) shall conform to the City standards and shall have no prefix. Newly constructed or elements modified in the field for the purposes of this project are considered Constructed elements.

Constructed (proposed) Stormwater Pipe:	STMM
Constructed (proposed) Stormwater Labels, Notes:	STM
Constructed (proposed) Stormwater Maintenance hole:	STMMH
Borehole:	BH

Legal Plan submissions are currently not outlined in this document. With the exception of the required Survey Control, the legal plan will not be included in the Object Data submission as the submission of these files is currently covered under the City of Barrie Integrated Control Survey Specifications.

Refer to Appendix B for data extraction layering requirements.

5.3. Acceptable AutoCAD Drafting Practices for Object Data Extraction

The flexibility provided in regard to choose of design software does not negate the need to follow acceptable drafting practices which facilitate Object Data Extraction. If it is determined that the requirements outlined within this document cannot be met by the submitters design software of choice or the contributor's method of design, then it is incumbent on the contributor to upgrade their software and/or methods so that they are able to meet the requirements.

The requirements outlined in Appendix A are in addition to providing the appropriate block described and outlined in Appendix C.

5.4. Predefined Data Extraction DWG Layers

Refer to Appendix B for data extraction layering requirements.

6. Making a Submission

In 2024 the City of Barrie will launch a new online Portal to automate and validate all NEW development projects and capital project submissions process.
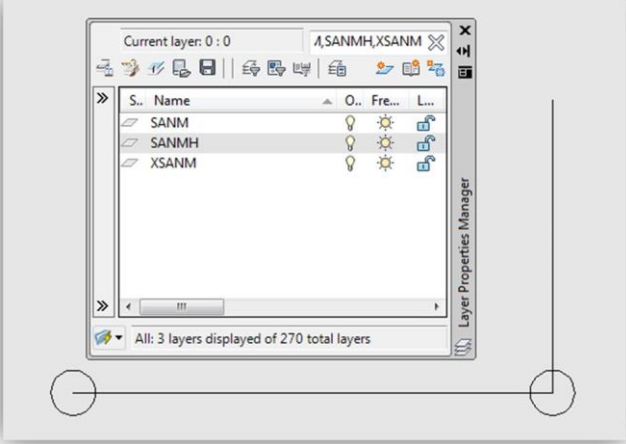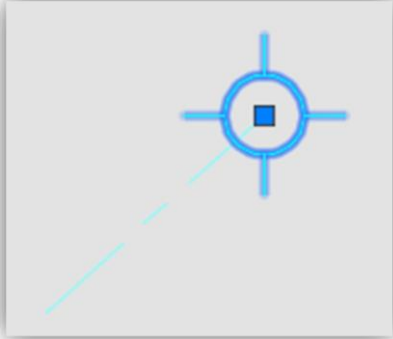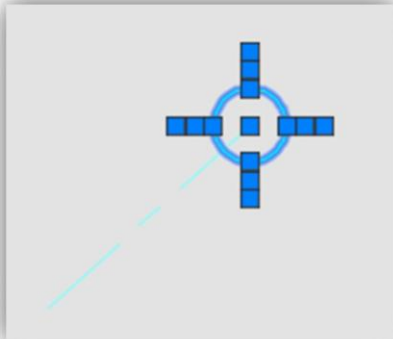
This initiative will require digital submissions of all NEW development projects and capital projects stared in 2024 to be made through the online portal.
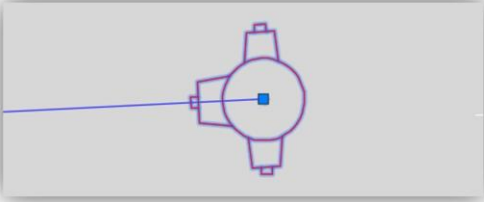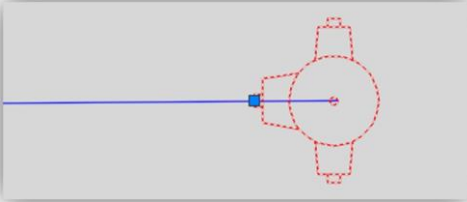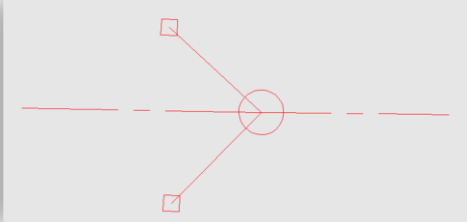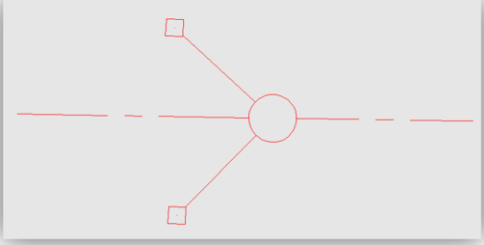
In the interim, submissions of drawings and/or documents can be made to the City by via:
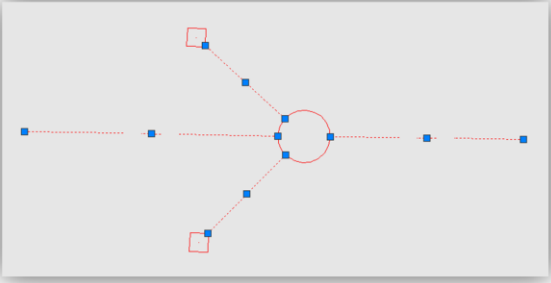
- A USB drives.
- Email (with submissions provided by Hyperlink or FTP Site)

ACCEPTABLE DRAFTING PRACTICES EXAMPLES

Barrie

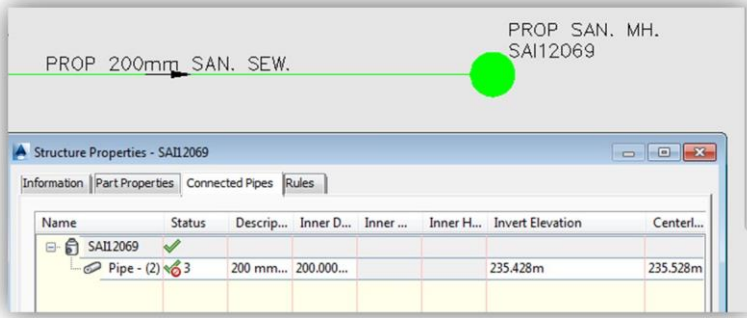| Rule	Examples (not all variations shown)
A Civil 3D pipe network within an unapproved Civil 3D template	**ACCEPTED:** So long as required layering is followed (Object Layer, not style layer), a Civil 3d pipe network does not need labels in the Data Extraction DWG.
Where AutoCAD objects are required such as valves, meters, hydrants, etc. they must be represented by blocks.	**ACCEPTED:** a single block to represent a point object. **REJECTED:** A symbol made up of multiple distinct objects or geometries. For example, exploded block, or object drafted by hand.

Rule	Examples (not all variations shown)
Block insertion points must be at the center of the block.	**ACCEPTED:** The insertion point is located at the central point of the block symbol. Note: the blue grip (blue square) **REJECTED:** The block insertion point is not at the center of the block. Note: the blue grip (blue square)
AutoCAD Linework endpoints must be snapped to the central insertion points of blocks (for example, pipes must be snapped to the insertion point of valves, manholes, etc.)	**ACCEPTED:** AutoCAD line snapped to central insertion point of block. **ACCEPTED:** AutoCAD line snapped to central insertion point of block with the line masked/hidden to block boundary. Example: AutoCAD Wipeout.

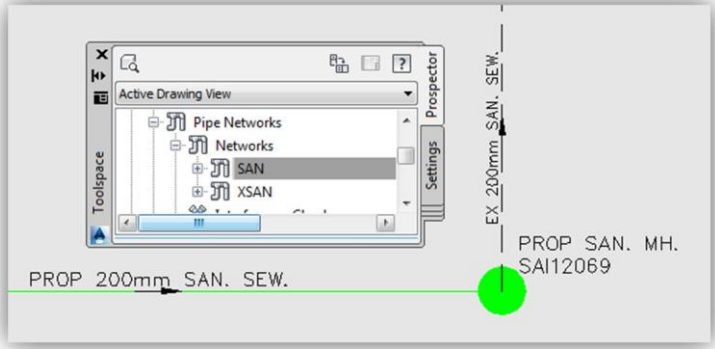| Rule	Examples (not all variations shown)
	REJECTED: Line snapped OR trimmed to block boundary. Note: the blue grip (blue squares). Note that this is often the case if attempting to submit Civil 3D objects converted to AutoCAD; solution is to change the civil 3d style to one that does not mask the pipe prior to conversion.
Contributors providing Pipe Data in AutoCAD	**ACCEPTED:** Pipe data is to be attached to the associated pipe (AutoCAD line or Polyline) using the Object Data Table

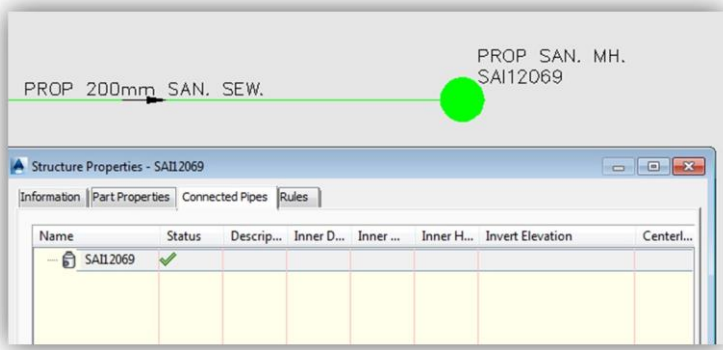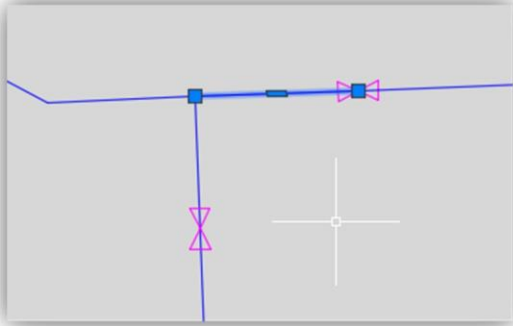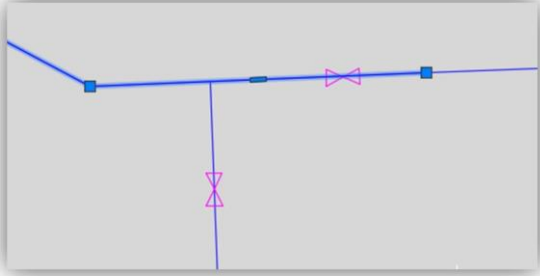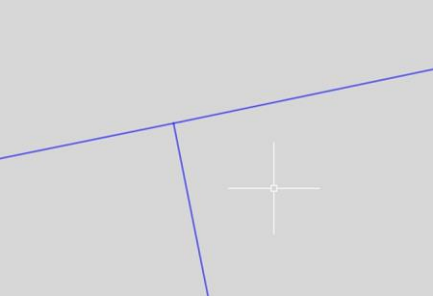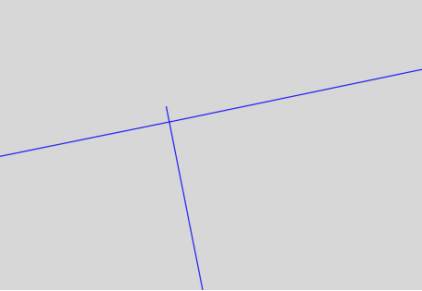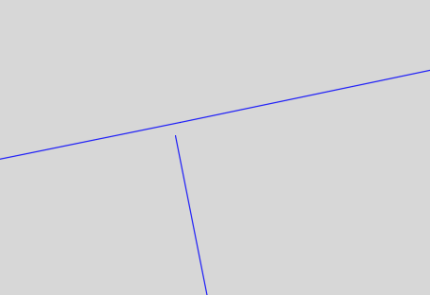| Rule	Examples (not all variations shown)
Civil 3D pipe network objects must be connected.	**ACCEPTED:** Structure Properties must show all current pipe connections. **REJECTED:** Unless truly disconnected in the field, pipe networks should not be seen as two separate networks. The Data Extraction DWG is meant to represent the as-constructed condition; use civil 3d 'merge network' command to combine networks; confirm connections prior to submission. Layering (object layer, not style layer) will still denote status (existing, abandoned, etc.). **REJECTED:** Pipe & structure in plan shows connection but Structure properties shows no connection

Rule	Examples (not all variations shown)
‑ AutoCAD blocks representing drainage structures must not be exploded and have relevant Object Data Tables attached	**Applies only to pipe networks created with AutoCAD entities NOT Civil 3D pipe networks.**
Each element must be represented by an appropriate object(s) and use proper layers (provided) to contain the object. This applies to all AutoCAD elements as well as Civil 3D elements created in an unapproved Civil 3D template. Selection of objects 'by layer' during extraction is automatic.	
All linework must be broken at intersections with other lines or blocks, and must not be arbitrarily broken between intersections	**ACCEPTED:** Lines broken at blocks (i.e., valves). **REJECTED:** Lines not broken at blocks/connections, and/or arbitrarily broken along the line.

Rule	Examples (not all variations shown)
All linework must be correctly snapped (to blocks and other linework)	**ACCEPTED:** Correctly snapped linework: **REJECTED:** Dangles. **REJECTED:** Undershoots:
Where required, direction of flow online/polyline features must be indicated using an arrow line style (provided). This allows the designer to confirm the linework is digitized (drawn) in the correct direction	**Required:** Elements that have design start and end (for example road CL) **Required:** Elements that have a Upstream (end) & downstream (end) (for example sewers)

PREDEFINED DATA EXTRACTION DWG LAYERS

Layer Name	Description
Attributes	
ATT-BLDG-FOOTPRINT	ATTRIBUTE-BUILDING FOOTPRINT
ATT-BOREHOLES	ATTRIBUTE-BOREHOLE
ATT-BRIDGE	ATTRIBUTE-BRIDGE
ATT-CONTROL	ATTRIBUTE-SURVEY CONTROL
ATT-ILLUMINATION	ATTRIBUTE-ILLUMINATION
ATT-INTERSECTION	ATTRIBUTE-INTERSECTION
ATT-MARKER	ATTRIBUTE-MARKER
ATT-PARKING	ATTRIBUTE-PARKING
ATT-PARKS	ATTRIBUTE-PARKS
ATT-POLE	ATTRIBUTE-POLE
ATT-ROAD-CROSSING	ATTRIBUTE-ROAD CROSSING (CROSSWALKS, ETC)
ATT-SAN-DEVICE	ATTRIBUTE-SANITARY DEVICE (MH'S, ETC.)
ATT-SAN-PIPE	ATTRIBUTE-SANITARY PIPE
ATT-SIGN	ATTRIBUTE-SIGNAGE
ATT-STM-DEVICE	ATTRIBUTE-STORM DEVICE (MH'S, CB'S, ETC)
ATT-STM-PIPE	ATTRIBUTE-STORM PIPE
ATT-TREES	ATTRIBUTE-TREES
ATT-UTILITY	ATTRIBUTE-UTILITIES
Constructed Design Elements	
BASE	BASE PLAN
BH	BOREHOLE
BLDGS	BUILDINGS
CL	CENTRELINE AND (OR) BASELINE
CURB	CURB
DITCH	DITCH LINE
ELEV	GROUND ELEVATION
FENCE	FENCE
GEN1	TEXT IN TITLEBLOCK
GEN2	PROPOSED TEXT, TEXT IN TITLEBLOCK
GEN3	MATCH LINES, STREET NAMES
GEN4	STREET NAMES
PARKING	PARKING STALLS
PAVEMARK	LANE AND PAVEMENT MARKING
PAVEMT	PAVEMENT EDGE
PROF	PROPOSED FINISHED GROUND CENTRELINE
PROF-TXT	PROPOSED FINISHED GROUND CENTRELINE TEXT
PGRID	PROFILE GRID LINES
REMOVE	HATCH PATTERN FOR OBJECTS TO BE REMOVED
SAN	TEXT LABELS
SANM	SANITARY MAIN
SANMH	SANITARY MH, ETC

Layer Name	Description
SANS	SANITARY SERVICE (SHOW AS 0.15M PLINE)
SHLDR	SHOULDER EDGE
STA	STATION TIC MARKS & CURVE INFO.
STA-TXT	STATION LABELS
STM	TEXT LABELS
STMCLV	STORM CULVERTS
STMM	STORM MAIN / SUBDRAIN / SERVICE
STMMH	STORM MH, CB'S, ETC
STMS	CB CONNECTION, ETC.
SW	SIDEWALK
TEXT	PROPOSED TEXT, NOTES, DIMENSIONS
TREES	TREES, VEGETATION
UT-BELL	ABOVEGROUND BELL
UT-UCONDUIT	CONDUIT (TRAFFIC LIGHTS ETC.)
UT-CTV	ABOVEGROUND CABLE TV
UT-GAS	ABOVEGROUND GAS
UT-HYDRO	ABOVEGROUND HYDRO
UT-UBELL	UNDERGROUND UNDERGOUND BELL
UT-UCTV	UNDERGROUND CABLE TV
UT-UGAS	UNDERGROUND GAS
UT-UHYDRO	UNDERGROUND HYDRO
WASPRINK	SPRINKLER SYSTEM
WATER	NOTES, WATER VALVE, HYDRANT ETC.
WATERM	WATER MAIN
WATERS	WATER SERVICE
Existing Design Elements	
xBASE	SURVEY-BASE
xBLDGS	SURVEY-BUILDINGS
xCNRAIL	SURVEY-CNR RAILWAY
xCURB	SURVEY-CURB
xDITCH	SURVEY-DITCH
xEASEMT	SURVEY-EASEMENT LINE
xFENCE	SURVEY-FENCE
xLOT	SURVEY-LOT LINE
xMISC	SURVEY-MISCELLANEOUS
xPAVEMT	SURVEY-EDGE OF PAVEMENT
xPROF	SURVEY-GROUND CENTRELINE
xPROF-TXT	SURVEY-GROUND CENTRELINE TEXT
xPT	SURVEY-POINTS
xPT-BLDGS	SURVEY-POINTS @ BUILDINGS
xPT-CURB	SURVEY-POINTS @ BACK OF CURB
xPT-PAVEMT	SURVEY-POINTS @ EDGE OF PAVEMENT

Layer Name	Description
xPT-SURV	SURVEY-POINTS @ SIB,S MONUMENTS,ETC.
xPT-SURVTEMP	SURVEY-TEMPORARY SURVEY POINTS (NAILS, STAKES, ETC.)
xROW	SURVEY-RIGHT OF WAY
xSAN	SURVEY-SANITARY LABELS, NOTES
xSANM	SURVEY-SANITARY MAIN
xSANMH	SURVEY-SANITARY MH, CB'S, ETC
xSANS	SURVEY-SANITARY SERVICE
xSHLDR	SURVEY-EDGE OF SHOULDER
xSLOPE	SURVEY-TOP OR BOTTOM OF SLOPE
xSTM	SURVEY-STORM LABELS, NOTES
xSTMCULV	SURVEY-STORM CULVERT
xSTMM	SURVEY-STORM MAIN
xSTMMH	SURVEY-STORM MH, CB'S, ETC
xSTMS	SURVEY-CB CONNECTION, ETC.
xSURV	SURVEY-SURVEY INFO
xSURVTEMP	SURVEY-SURVEY INFO (TEMPORARY)
xSW	SURVEY-SIDEWALK
xTEXT	SURVEY-TEXT LABELS, EX DIMENSION TEXT, LEADERS,
xTREES	SURVEY-TREES & VEGETATION
xUT-BELL	SURVEY-ABOVEGROUND BELL
xUT-UCONDUIT	SURVEY-CONDUIT (TRAFFIC LIGHTS ETC.)
xUT-CTV	SURVEY-ABOVEGROUND CABLE TV
xUT-GAS	SURVEY-ABOVEGROUND GAS MAIN
xUT-HYDRO	SURVEY-ABOVEGROUND HYDRO
xUT-UBELL	SURVEY-UNDERGROUND BELL
xUT-UCTV	SURVEY-UNDERGROUND CABLE TV
xUT-UGAS	SURVEY-UNDERGROUND GAS MAIN
xUT-UHYDRO	SURVEY-UNDERGROUND HYDRO
xWATER	SURVEY-NOTES, VALVE, HYDRANT, ETC.
xWATERM	SURVEY-WATER MAIN
xWATERP	SURVEY-WATER MAIN IN PROFILE
xWATERS	SURVEY-WATER SERVICE
xWSPRINK	SURVEY-SPRINKLER SYSTEM

Templates are available on the City's website under Digital Information Standard.

PREDEFINED
OBJECT DATA TABLES

AutoCAD MAP 3D Object Data Tables have been included in the City of Barrie Civil 3D 2023 template. These object data tables are used to attribute assets at different stages of design and for the final as-constructed record submission.

Use these object data tables to assign attributes to AutoCAD blocks and polylines that represent existing or design objects such as poles, trees, drainage and sewer structures, storm, sanitary and water pipes, water fittings, hydrants, utilities.

*Where City of Barrie Civil 3D 2023 template and pipe catalogs are used to develop gravity pipe designs for storm and sanitary sewers, the attachment and assignment of attribute information using Object Data Table to storm, and sanitary pipe and structure objects is **not** required.*
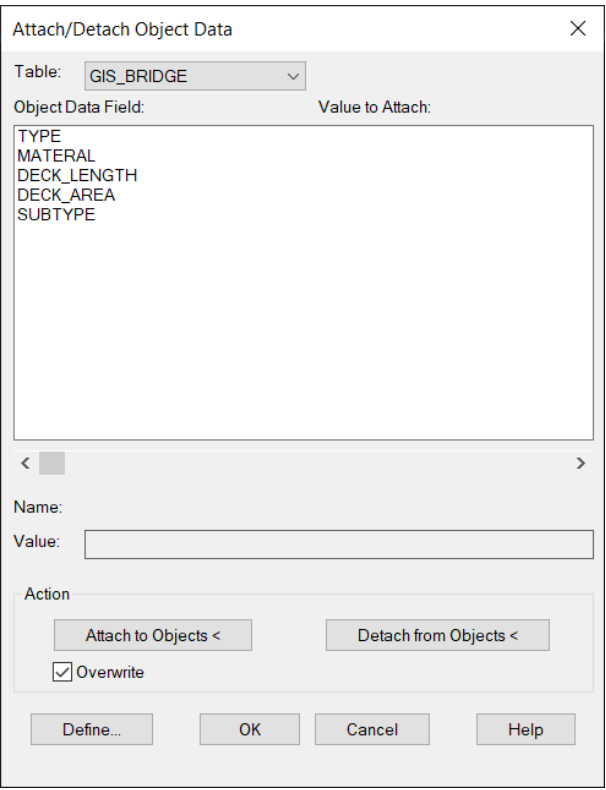
Civil 3D gravity pipe network object data is extracted using the Export to File Geodatabase functionality. The following predefined Object Data Tables are available in the City of Barrie 2023 template.

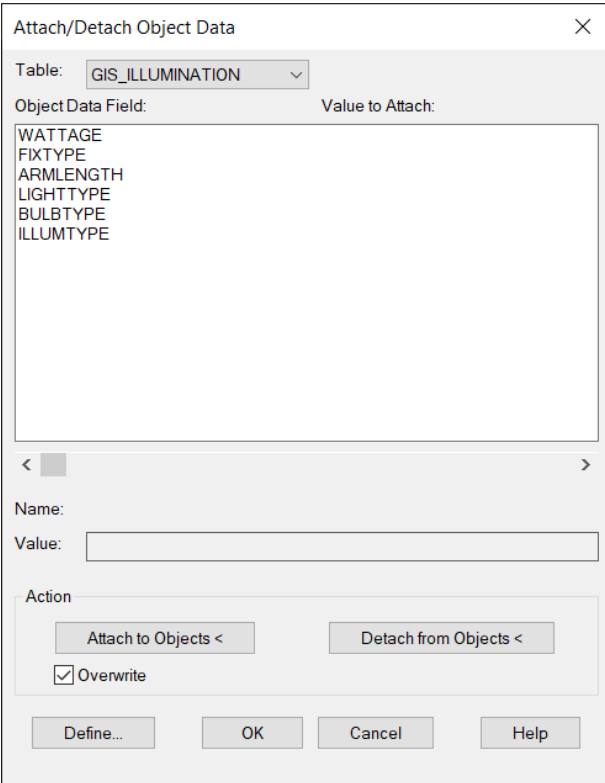| OBJECT DATA TABLE NAME	DESCRIPTION	COMPLETION TIME
GIS_BRIDGE	Bridges information E.g.: Deck length and Area	Pre-Construction
GIS_ILLUMINATION	Illumination information E.g.: Bulb type, wattage, light type	Pre-Construction
GIS_LOW_IMPACT_DEVELOPMENT	Low Impact Development information E.g.: Type, subtype, elevations	Pre-Construction
GIS_PARK_POINTS	Park points information E.g.: Type, Equipment maker, subtype	Pre-Construction
GIS_PARKING DEVICE	Parking Device information E.g.: Manufacturer, payment type, type	Pre-Construction
GIS_POLE	Pole information E.g.: Height, material, type, signs, signals	Pre-Construction
GIS_RETAINING_WALL	Retaining Wall information E.g.: Length, elevation, material	Pre-Construction
GIS_ROAD_CENTRELINE	Geometry information	Pre-Construction
GIS_SANITARY_DEVICE	Sanitary Structure information E.g.: Type, size, depth, elevation, drop	Pre-Construction
GIS_SANITARY_LATERAL	Sanitary Lateral information E.g.: Size, material	Pre-Construction
GIS_SANITARY_PIPE	Sanitary Pipe information E.g.: inverts up & down, size, shape	Pre-Construction
GIS_SIDEWALKS	Sidewalk information E.g.: Type, material, width, surface	Pre-Construction

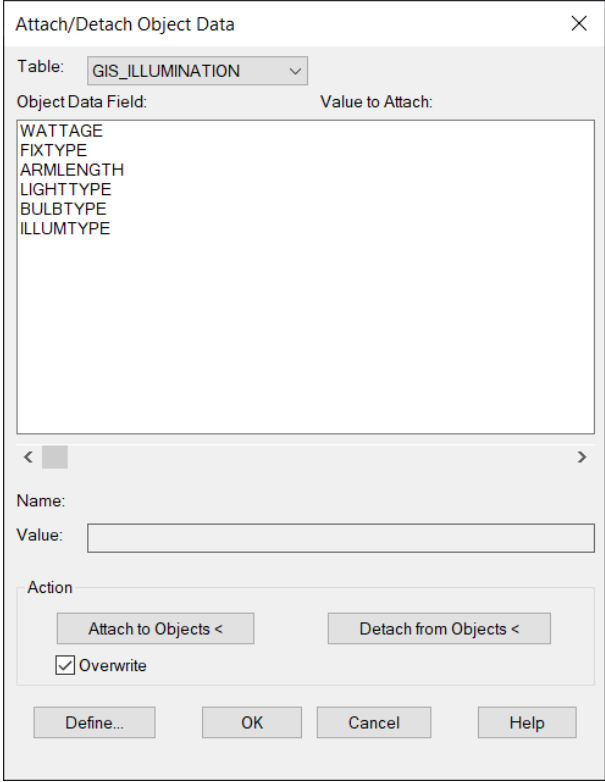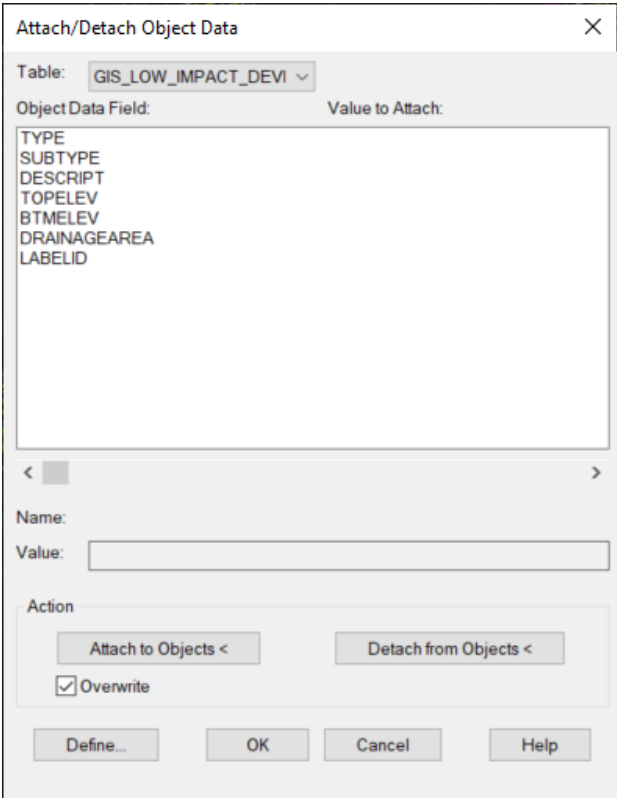| GIS_STORM_DEVICE	Storm Structure information E.g.: Type, size, depth, elevation, drop	Pre-Construction
GIS_STORM_LATERAL	Storm Lateral information E.g.: Size, material, invert up & down	Pre-Construction
GIS_STORM_PIPE	Storm Pipe information E.g.: inverts up & down, size, shape	Pre-Construction
GIS_STORM_POND	Storm Pond/Facility information E.g.: Type, Watershed	Pre-Construction
GIS_TREES	Tree Information E.g.: Species, genus, common name,	Pre-Construction
GIS_UTILITY_LINEAR	Linear Utility information E.g.: location, type, size	Pre-Construction
GIS_UTILITY_POINT	Linear Point information E.g.: type	Pre-Construction
GIS_WATER_FITTING	Water Fitting Information E.g.: Type, material, manufacturer	Pre-Construction
GIS_WATER_HYDRANT	Water Hydrant Information E.g.: Type, manufacturer, main size	Pre-Construction
GIS_WATER_MAIN	Water Main Information E.g.: Type, material, size, encased	Pre-Construction
GIS_WATER_SERVICE	Water Service Information E.g.: Type, material, size	Pre-Construction
GIS_WATER_STRUCTURE	Water Structure Information E.g.: Type, size	Pre-Construction
GIS_WATER_VALVE	Water Valve Information E.g.: Type, manufacturer, size, labelid	Pre-Construction
GIS_WATER_VALVE_CHAMBER	Water Valve Chamber Information E.g.: Type, depth, width, length	Pre-Construction

Object Data Table DEFINITIONS

The following individual object data tables identify each object data field name and the associated data values that are approved for input.

Object Data Table – **GIS BRIDGES**	
TABLE	**DATA FIELDS**
	TYPE MATERIAL DECK_LENGTH DECK_AREA SUBTYPE

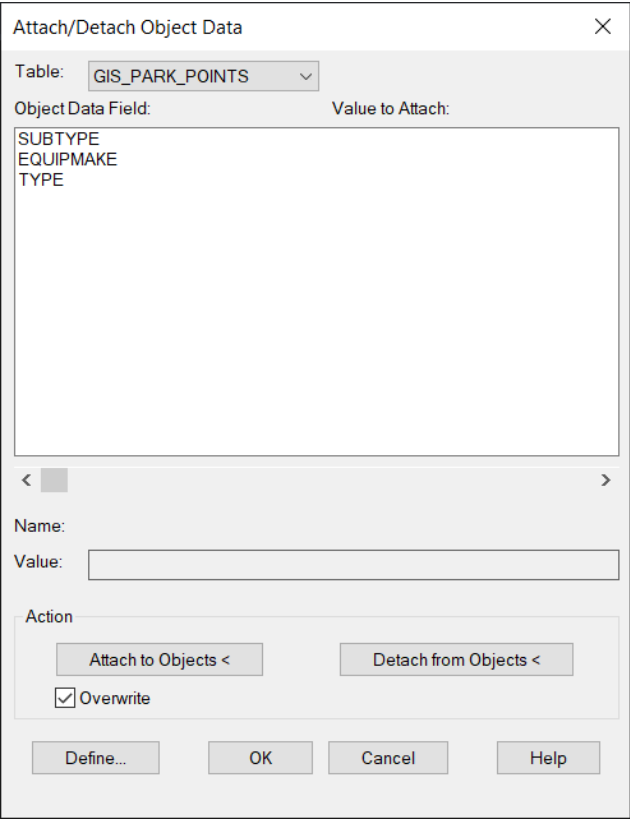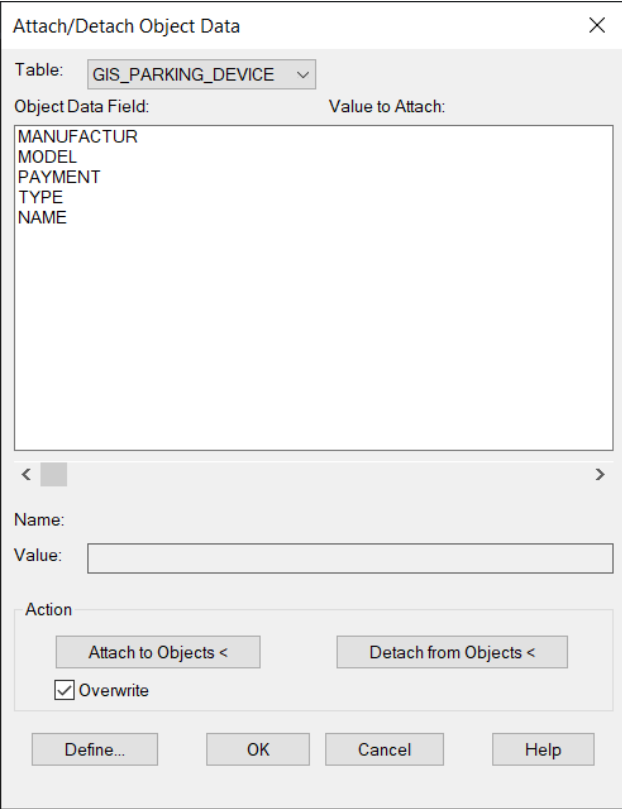|	**DATA VALUES**	
	TYPE	PEDESTRIAN RAIL ROAD
	MATERIAL	MANUAL INPUT
	DECK_LENGTH	MANUAL INPUT, IN METERS
	DECK_AREA	MANUAL INPUT, IN SQUARE METERS
	SUBTYPE	OVER LAND OVER RAIL OVER ROAD OVER WATER

Object Data Table – **GIS ILLUMINATION**

TABLE	DATA FIELDS
	WATTAGE FIXTYPE ARMLENGTH LIGHTTYPE BULBTYPE ILLUMTYPE

Attach/Detach Object Data ✕

Table: GIS_ILLUMINATION ▾

Object Data Field: Value to Attach:

WATTAGE
FIXTYPE
ARMLENGTH
LIGHTTYPE
BULBTYPE
ILLUMTYPE

‹ ▭   ›

Name:

Value: [_____]

Action

[Attach to Objects <]   [Detach from Objects <]
☑ Overwrite

[Define...]   [OK]   [Cancel]   [Help]

DATA VALUES	
WATTAGE	70 100 150 200 250 400 39 47 51 66 67 71 97 98 99 149 OTHER
FIXTYPE	COBRAHEAD CREE RUUD XSP SERIES DECORATIVE GE LIGHTING EVOLVE RES SERIES K330 LED PHILLIPS LUMEC ROADSTAT ROADVIEW SERIES SQUARE LAMP WALLPACK OTHER
ARMLENGTH	MANUAL INPUT, IN METERS
LIGHTTYPE	HPS LED
BULBTYPE	100 WATTS HIGH PRESSURE SODIUM 100 WATTS MERCURY VAPOR 100 WATTS METAL HALIDE 1000 LUMEN (105 WATTS) 1000 WATTS MERCURY VAPOR 1000 WATTS METAL HALIDE 10000 LUMEN (690 WATTS) 149 WATTS/120 VOLTS

Attach/Detach Object Data dialog	BULBTYPE	150 WATTS HIGH PRESSURE SODIUM
		15000 LUMEN (860 WATTS)
		175 WATTS MERCURY VAPOR
		175 WATTS METAL HALIDE
		250 WATTS HIGH PRESSURE SODIUM
		250 WATTS HIGH PRESSURE SODIUM LARGE
		250 WATTS HIGH PRESSURE SODIUM SMALL
		250 WATTS MERCURY VAPOR
		250 WATTS METAL HALIDE
		2500 LUMEN (205 WATTS)
		37 WATTS, 120 VOLTS
		39W LED, 120 V Type III
		400 WATTS HIGH PRESSURE SODIUM
		400 WATTS HIGH PRESSURE SODIUM LARGE
		400 WATTS HIGH PRESSURE SODIUM SMALL
		400 WATTS MERCURY VAPOR
		400 WATTS METAL HALIDE
		4000 LUMEN (327 WATTS)
		50 WATTS HIGH PRESSURE SODIUM
		6000 LUMEN (448 WATTS)
		665 LUMEN (69 WATTS)
		70 WATTS HIGH PRESSURE SODIUM
		70 WATTS METAL HALIDE
		750 WATTS HIGH PRESSURE SODIUM
		97W LED, 120V Type III
		DOUBLE MANTLE
		OTHER HIGH-PRESSURE SODIUM
		OTHER HOLIDAY LIGHTING
		OTHER INCANDESCENT
		OTHER MERCURY VAPOR
		OTHER METAL HALIDE
		SINGLE MANTLE
		TRIPLE MANTLE
		OTHER
	ILLUMTYPE	BEACON
		FIELD
		GROUND MOUNTED
		PARKING
		PATHWAY
		SOLAR
		STREETLIGHT

Attach/Detach Object Data

Table: GIS_ILLUMINATION

Object Data Field: Value to Attach:

WATTAGE
FIXTYPE
ARMLENGTH
LIGHTTYPE
BULBTYPE
ILLUMTYPE

Name:

Value:

Action

Attach to Objects <   Detach from Objects <
☑ Overwrite

Define...   OK   Cancel   Help
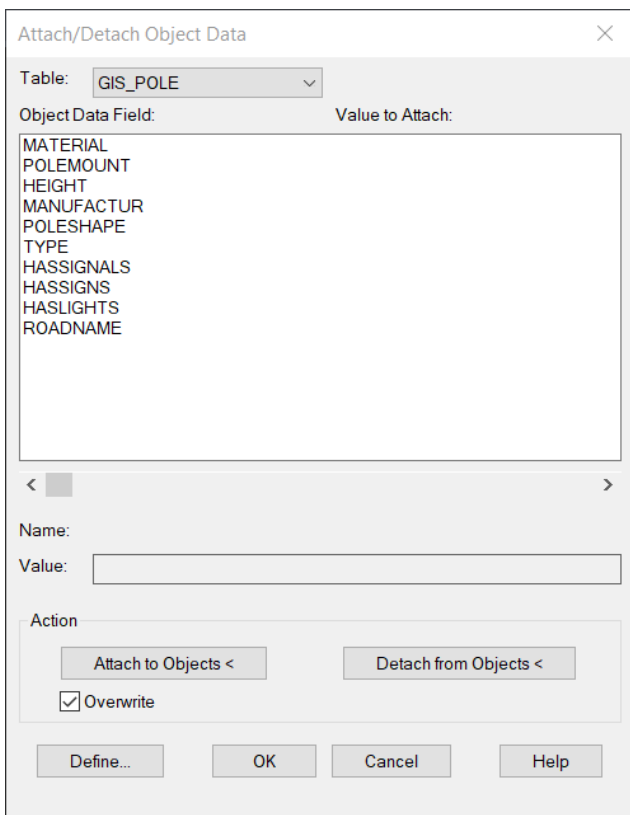
Object Data Table – **GIS_LOW_IMPACT_DEVELOPMENT**

TABLE	DATA FIELDS
	TYPE
	SUBTYPE
	DESCRIPT
	TOPELEV
	BTMELEV
	DRAINAGEAREA
	LABELID

Attach/Detach Object Data ×

Table: GIS_LOW_IMPACT_DEVI ∨

Object Data Field: | Value to Attach:

TYPE
SUBTYPE
DESCRIPT
TOPELEV
BTMELEV
DRAINAGEAREA
LABELID

Name:

Value:

Action

Attach to Objects < Detach from Objects <

☑ Overwrite

Define... OK Cancel Help

DATA VALUES	
TYPE	BIORETENTION DRY SWALE ENHANCED GRASS SWALE GREEN ROOFS PERFORATED PIPE SYSTEM PERMEABLE PAVEMENT RAINWATER HARVESTING SAND FILTRATION BED SOAKAWAYS / INFILTRATION TRENCHES / CHAMBERS SOIL CELLS STORMWATER MANAGEMENT CHAMBER VEGETATED FILTER STRIP
SUBTYPE	MANUAL INPUT
DESCRIPT	MANUAL INPUT
TOPELEV	MANUAL INPUT, IN METERS
BTMELEV	MANUAL INPUT, IN METERS
DRAINAGEAREA	BAYSHORE DRAINAGE AREA BEAR CREEK WATERSHED BUNKERS CREEK WATERSHED DYMENTS CREEK WATERSHED GEORGIAN CREEK WATERSHED GRAY LANE DRAINAGE AREA HEWITTS CREEK WATERSHED HOLGATE CREEK WATERSHED

| | | HOTCHKISS CREEK WATERSHED
HURONIA CREEK WATERSHED
JOHNSON DRAINAGE AREA
KIDDS CREEK WATERSHED
LITTLE LAKE DRAINAGE AREA
LOVERS CREEK WATERSHED
MINETS DRAINAGE AREA
MULCASTER DRAINAGE AREA
NELSON DRAINAGE AREA
RODNEY DRAINAGE AREA
ROYAL OAK DRAINAGE AREA
SANDY COVE WATERSHED
SOPHIA CREEK WATERSHED
ST. VINCENT DRAINAGE AREA
WHISKEY CREEK WATERSHED
WILLIAMS DRAINAGE AREA
OTHER |
| | LABELID | MANUAL INPUT |

Object Data Table – **GIS_PARK POINTS**

TABLE	DATA FIELDS
	TYPE SUBTYPE EQUIPMAKE

Attach/Detach Object Data ✕

Table: GIS_PARK_POINTS ⌄

Object Data Field:　　　　　　Value to Attach:

SUBTYPE
EQUIPMAKE
TYPE

‹ ▢ ›

Name:

Value: [＿＿＿＿＿＿＿＿＿＿＿＿＿＿]

Action

[Attach to Objects <]　　[Detach from Objects <]

☑ Overwrite

[Define...]　[OK]　[Cancel]　[Help]

DATA VALUES	
TYPE	MANUAL INPUT
SUBTYPE	MANUAL INPUT
EQUIPEMAKE	ABC LANDSCAPE BELAIRE BIG TOYS BIG TOYS KOMPAN HENDERSON HILAN KOMPAN LITTLE TYKES PARIS PLAY WORLD PLAYPOWER RECREATION PLAY SYSTEMS OTHER
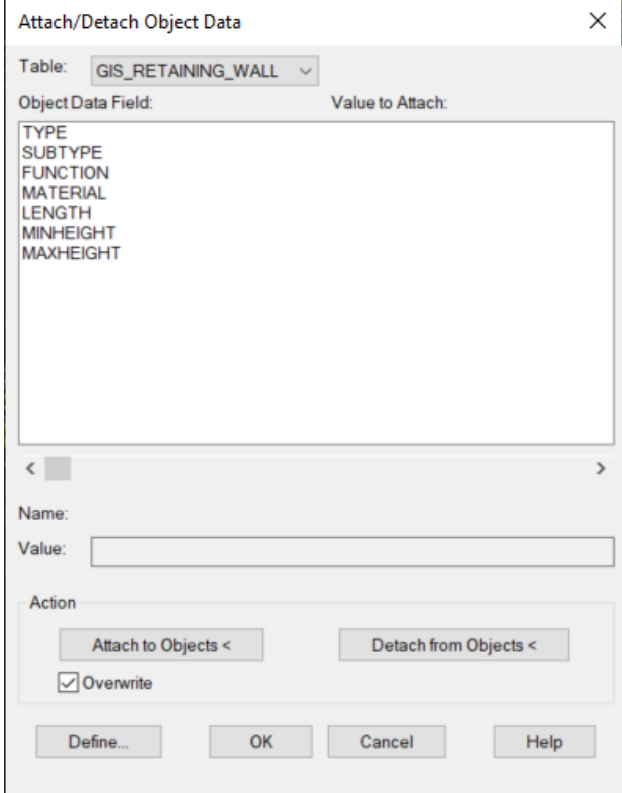
Object Data Table – **GIS_PARKING_DEVICE**

TABLE	DATA FIELDS	
	MANUFACTUR MODEL PAYMENT TYPE NAME	

Attach/Detach Object Data ✕

Table: GIS_PARKING_DEVICE ▾

Object Data Field: Value to Attach:

MANUFACTUR
MODEL
PAYMENT
TYPE
NAME

Name:

Value:

Action
  Attach to Objects <   Detach from Objects <
  ☑ Overwrite

Define...   OK   Cancel   Help

DATA VALUES	
MANUFACTUR	CALE MACKAY OTHER SCHLUMBERGER
MODEL	MANUAL INPUT
PAYMENT	MANUAL INPUT
TYPE	ACCESSIBILITY SPACE CHARGING STATION SPACE MOTORCYCLE SPACE PARKADE PARKING METER PAY DISPLAY TAXI STAND
NAME	MANUAL INPUT
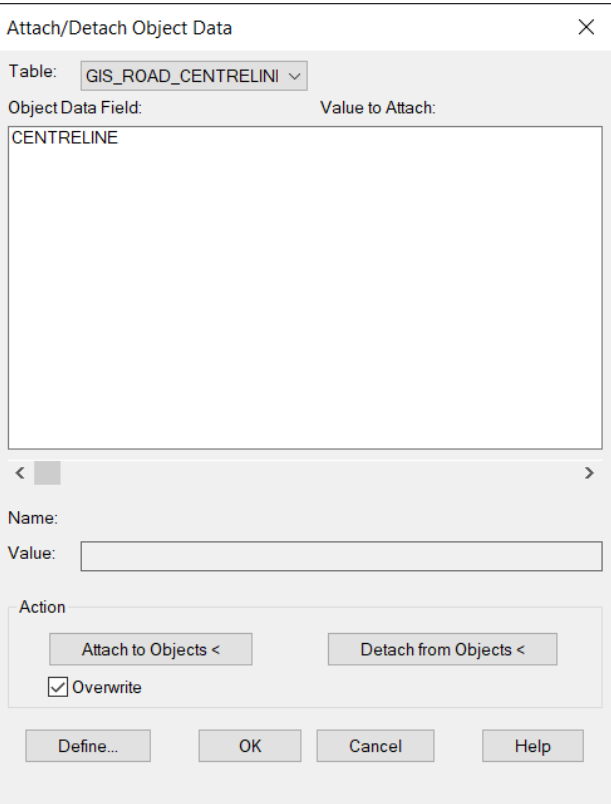
Object Data Table – **GIS_POLE**
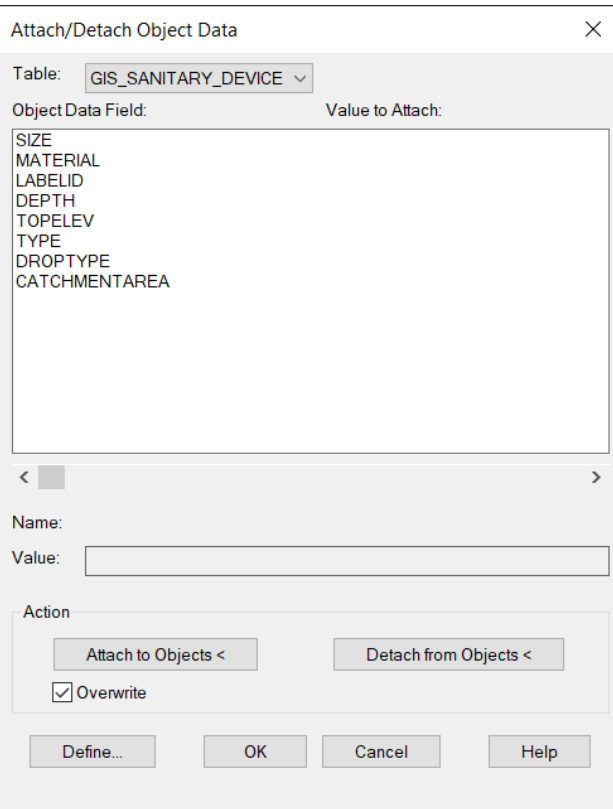
TABLE		DATA FIELDS	
		MATERIAL POLEMOUNT HEIGHT MANUFACTUR POLESHAPE TYPE HASSIGNALS HASSIGNS HASLIGHTS ROADNAME	

Attach/Detach Object Data ✕

Table: GIS_POLE ⌄

Object Data Field: Value to Attach:

MATERIAL
POLEMOUNT
HEIGHT
MANUFACTUR
POLESHAPE
TYPE
HASSIGNALS
HASSIGNS
HASLIGHTS
ROADNAME

‹ ▭   ›

Name:

Value: [   ]

Action
[Attach to Objects <]   [Detach from Objects <]
☑ Overwrite

[Define...]   [OK]   [Cancel]   [Help]

DATA VALUES	
MATERIAL	ALUMINUM CONCRETE OTHER METAL STEEL WOOD OTHER
POLEMOUNT	MANUAL INPUT
HEIGHT	MANUAL INPUT
MANUFACTUR	MANUAL INPUT
POLESHAPE	OCTAGONAL ROUND SQUARE OTHER
TYPE	BUILDING / BRIDGE CANTILEVER DECORATIVE GANTRY MAST FROM SUPPORT OVERHEAD STRUCTURE POLE POLE - GREEN POLE - ROUND POLE - SQUARE SPAN WIRE STREETLIGHT TRAFFIC SIGNAL UTILITY POLE OTHER
HASSIGNALS	YES NO

	HASSIGNS	YES NO
	HASLIGHTS	YES NO
	ROADNAME	MANUAL INPUT

Object Data Table – **GIS_RETAINING_WALL**

TABLE	DATA FIELDS
Attach/Detach Object Data ☒ Table: GIS_RETAINING_WALL ∨ Object Data Field: Value to Attach: TYPE SUBTYPE FUNCTION MATERIAL LENGTH MINHEIGHT MAXHEIGHT ⟨ ▢ ⟩ Name: Value: ▭ Action [Attach to Objects <] [Detach from Objects <] ☑ Overwrite [Define...] [OK] [Cancel] [Help]	TYPE SUBTYPE FUNCTION MATERIAL LENGTH MINHEIGHT MAXHEIGHT

DATA VALUES	
TYPE	ANCHORED RETAINING WALL CANTILEVER RETAINING WALL GRAVITY RETAINING WALL
SUBTYPE	BUTTRESS CANTILEVER COUNTERFORT CANTILEVER EARTH BAG MASONRY MECHANICALLY STABILIZED EARTH MONOLITHIC MASS POST AND LAGGING PRECAST CONCRETE CRIB REINFORCED STEEPENED SLOPE SEGMENTAL SHEET PILING SOIL NAIL WALL STEEL CRIB TIE BACK ANCHOR WALL TIMBER CRIB WIRE FORMED
FUNCTION	BRIDGE ZONE CULVERT HEADWALL EARTH RETAINING, CUT EARTH RETAINING, FILL MINOR RETAINING SLOPE STABALIZATION OTHER
MATERIAL	MANUAL INPUT
LENGTH	MANUAL INPUT, IN METERS
MINHEIGHT	MANUAL INPUT, IN METERS
MAXHEIGHT	MANUAL INPUT, IN METERS

Object Data Table – **GIS_ROAD_CENTRELINE**

TABLE	DATA FIELDS
	CENTRELINE

Attach/Detach Object Data ✕

Table: GIS_ROAD_CENTRELINI ⌄

Object Data Field: Value to Attach:

CENTRELINE

Name:

Value:

Action

Attach to Objects <   Detach from Objects <

☑ Overwrite

Define...   OK   Cancel   Help

DATA VALUES	
CENTRELINE	GEOMETRY ONLY

Object Data Table – **GIS_SANITARY_DEVICE**

TABLE	DATA FIELDS
	SIZE MATERIAL LABELID DEPTH TOPELEV TYPE DROPTYPE CATCHMENTAREA

DATA VALUES

SIZE	19
	25
	30
	32
	37
	38
	40
	50
	60
	65
	75
	90
	100
	125
	135
	150
	200
	250
	300
	350
	375
	400
	425
	450
	500
	525
	550
	600
	625
	650
	675
	700
	750
	800
	825
	840
	850
	875
	900
	965
	975

Attach/Detach Object Data	×

Table: GIS_SANITARY_DEVICE ⌄

Object Data Field: Value to Attach:

SIZE
MATERIAL
LABELID
DEPTH
TOPELEV
TYPE
DROPTYPE
CATCHMENTAREA

Name:

Value:

Action

Attach to Objects <   Detach from Objects <

☑ Overwrite

Define...   OK   Cancel   Help

1000
1025
1050
1075
1090
1095
1150
1200
1220
1226
1260
1300
1350
1400
1450
1500
1525
1535
1600
1625
1650
1700
1725
1730
1800
1829
1840
1850
1880
1900
1920
1950
1975
2000
2125
2200
2250
2300
2325
2350
2400
2440
2690
2750
3000
3050
3340
3500
3600
3670
3750
3800
4000
4270
5500
6000
6096

Attach/Detach Object Data ✕	6600 9754 12200

Table: GIS_SANITARY_DEVICE ▾

Object Data Field: Value to Attach:

SIZE
MATERIAL
LABELID
DEPTH
TOPELEV
TYPE
DROPTYPE
CATCHMENTAREA

◄ ▬ ►

Name:
Value: [   ]
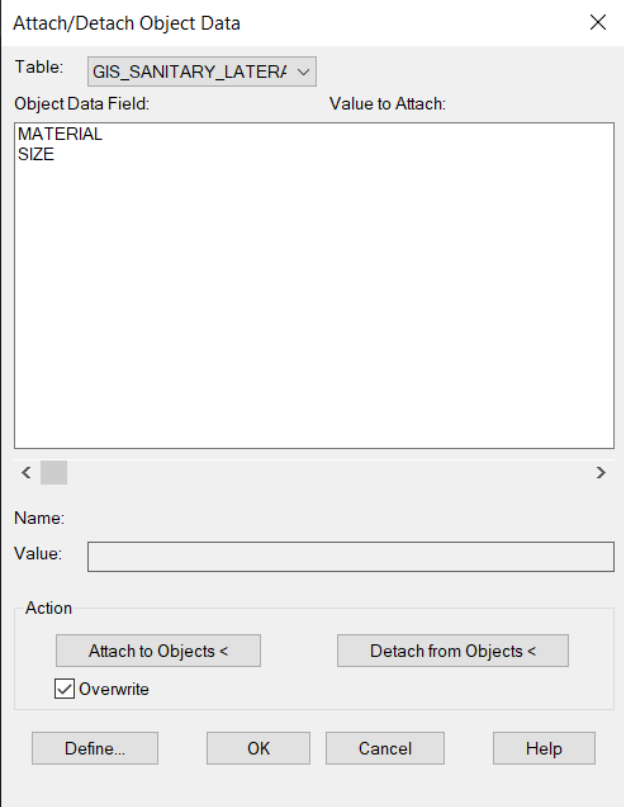
Action
    [Attach to Objects <]   [Detach from Objects <]
    ☑ Overwrite

[Define...]   [OK]   [Cancel]   [Help]
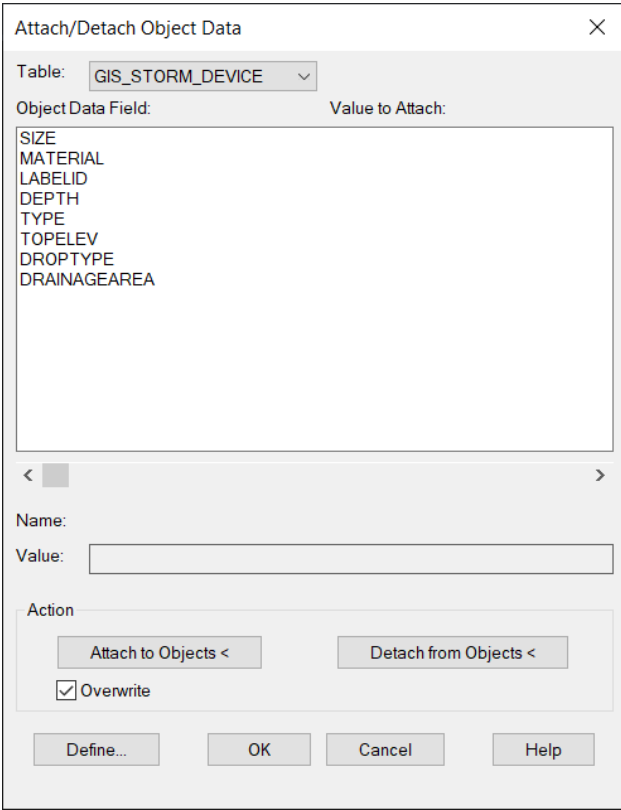
MATERIAL	BRICK CAST IRON CONCRETE POLYVINYL CHLORIDE OTHER
LABELID	MANUAL INPUT
DEPTH	MANUAL INPUT
TOPELEV	MANUAL INPUT
TYPE	BACKFLOW PREVENTION CAP CHAMBER END OF RECORDS JUNCTION MAINTENANCE HOLE PLUG OTHER
DROPTYPE	LATERAL MAIN NONE OTHER
CATCHMENTAREA	BAYVIEW CUNDLES ESSA HEWITTS INDUSTRIAL LAKESHORE NORTH PADDISON FARMS PAINSWICK
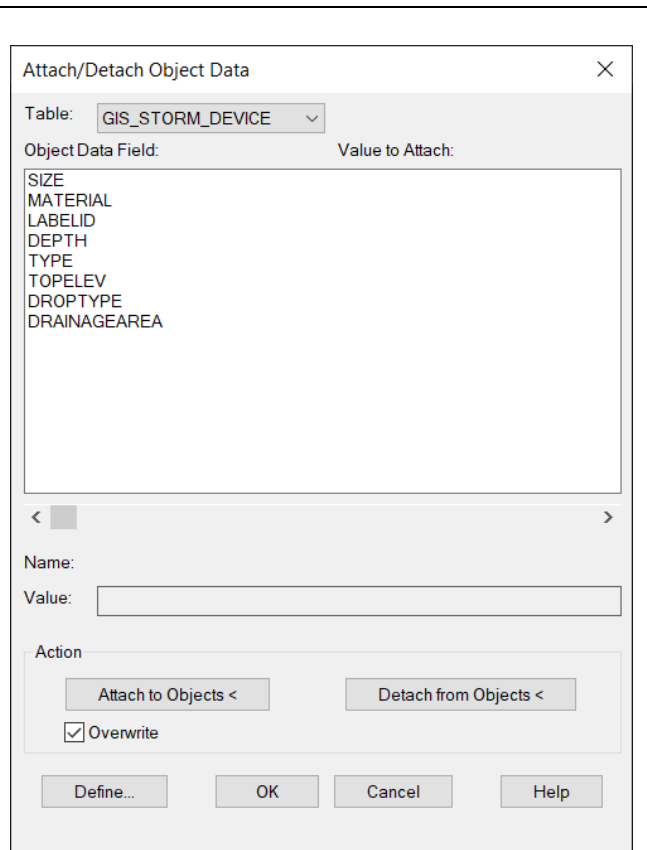
Object Data Table – **GIS_SANITARY_LATERAL**

TABLE	DATA FIELDS	
	MATERIAL **SIZE**	
	DATA VALUES	
	MATERIAL	ASBESTOS CEMENT BITUMINOUS FIBRE CONCRETE CORRUGATED POLYETHYLENE CORRUGATED SLOTTED POLYETHYLENE CORRUGATED STEEL HIGH DENSITY POLYETHYLENE PERFORATED POLYVINYL CHLORIDE POLYPROPOLENE POLYVINYL CHLORIDE STEEL VITRIFIED CLAY OTHER
	SIZE	MANUAL INPUT, IN MILLIMETERS

Attach/Detach Object Data dialog:
Table: GIS_SANITARY_LATERA
Object Data Field: MATERIAL, SIZE
Name: Value:
Action: Attach to Objects < / Detach from Objects < / Overwrite
Define... / OK / Cancel / Help

Object Data Table – **GIS_SANITARY_PIPE**

TABLE		

Attach/Detach Object Data dialog box:
- Table: GIS_SANITARY_PIPE
- Object Data Field:
  - PIPESHP
  - INV_UP_ELV
  - INV_DN_ELV
  - WIDTH
  - HEIGHT
  - TYPE
  - ENCASED
  - MATERIAL
  - LABELID
  - CATCHMENTAREA
- Value to Attach:
- Name:
- Value:
- Action: Attach to Objects < | Detach from Objects <
- ☑ Overwrite
- Define... | OK | Cancel | Help

DATA FIELDS		
PIPESHP		
INV_UP_ELV		
INV_DN_ELV		
WIDTH		
HEIGHT		
TYPE		
ENCASED		
MATERIAL		
LABELID		
CATCHMENTAREA		

DATA VALUES	
PIPESHP	ARCH CIRCULAR CLOSED_RECT HORIZ_ELLIPSE OTHER
INV_UP_ELV	MANUAL INPUT
INV_DN_ELV	MANUAL INPUT
WIDTH	MANUAL INPUT
HEIGHT	MANUAL INPUT
TYPE	FORCE LOCAL SIPHON SUB TRUNK TRUNK OTHER
ENCASED	CONCRETE CURED IN PLACE PIPE(CIPP) POLYSTYRENE STEEL STYROFOAM URECON NONE OTHER
MATERIAL	ASBESTOS CEMENT BITUMINOUS FIBRE CONCRETE
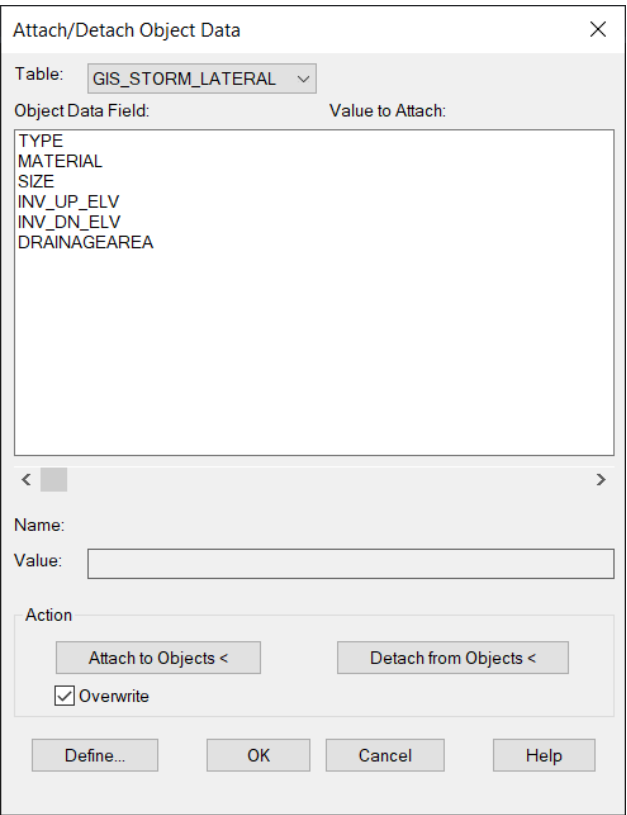
	MATERIAL	CORRUGATED POLYETHYLENE CORRUGATED STEEL HIGH DENSITY POLYETHYLENE POLYPROPYLENE POLYVINYL CHLORIDE PW PVC STEEL VITRIFIED CLAY OTHER
	LABELID	MANUAL INPUT
	CATCHMENTAREA	BAYVIEW CUNDLES ESSA HEWITTS INDUSTRIAL LAKESHORE NORTH PADDISON FARMS PAINSWICK
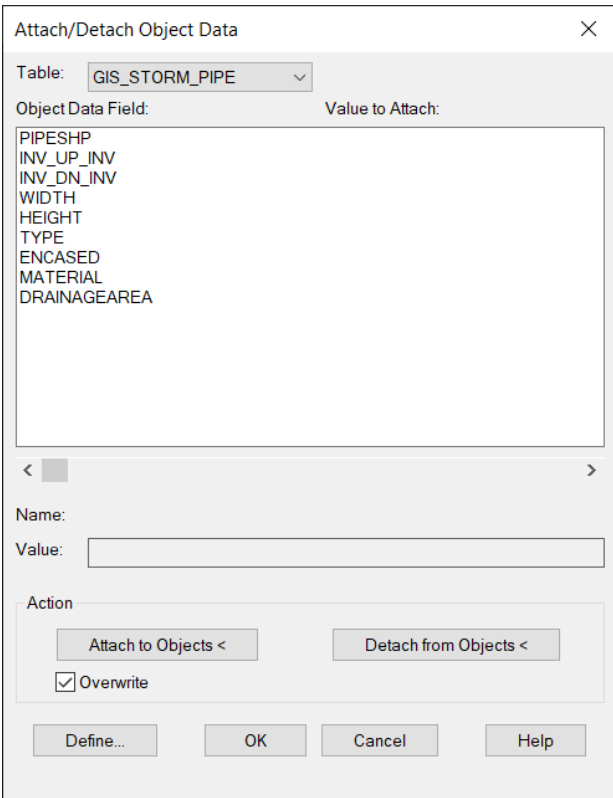
Object Data Table – **GIS_SIDEWALKS**

TABLE

Attach/Detach Object Data ✕

Table: GIS_SIDEWALKS ▾

Object Data Field: Value to Attach:

TYPE
WIDTHDESC
PERMANENCY
WIDTH
SURFACE

‹   ›

Name:

Value: [   ]

Action
[Attach to Objects <]   [Detach from Objects <]
☑ Overwrite

[Define...]   [OK]   [Cancel]   [Help]

DATA FIELDS
TYPE
WIDTHDESC
PERMANENCY
WIDTH
SURFACE

DATA VALUES	
TYPE	BOULEVARD PATHWAY
	SIDEWALK
	STAIRWAY
	TRAIL
	WALKWAY
	OTHER
WIDTHDESC	BETWEEN 1.33 AND 2.33 METERS
	GREATER THAN 2.33 METERS
	LESS THAN 1.33 METERS
	NO SIDEWALK
	OTHER
PERMANENCY	YES
	NO
WIDTH	1
	1.2
	1.5
	1.8
	2
	2.4
	2.5
	2.9
	3
SURFACE	ASPHALT
	BRICK PAVERS
	CONCRETE
	NONE
	STAMPED CONCRETE
	OTHER

Object Data Table – **GIS_STORM_DEVICE**

TABLE	DATA FIELDS	
	SIZE MATERIAL LABELID DEPTH TYPE TOPELEV DROPTYPE DRAINAGEAREA	
	DATA VALUES	
	SIZE	MANUAL INPUT
	MATERIAL	ARMOUR STONE BRICK CONCRETE POLYVINYL CHLORIDE RIP RAP / GABION STONE OTHER
	LABELID	MANUAL INPUT
	DEPTH	MANUAL INPUT
	TYPE	CAP CATCH BASIN CBMH CLEANOUT CONSTRUCTED WATERFALL DCB DCBMH DICB DICBMH DIMH DITCH INLET DROP STRUCTURE END OF RECORDS FLOW MONITOR FLOW SPLITTER FLOW SPREADER GRATE HEADWALL INLET INSPECTION CHAMBERS

Attach/Detach Object Data ✕

Table: GIS_STORM_DEVICE ▾

Object Data Field: Value to Attach:

SIZE
MATERIAL
LABELID
DEPTH
TYPE
TOPELEV
DROPTYPE
DRAINAGEAREA

◄   ►

Name:

Value:

Action

[Attach to Objects <]   [Detach from Objects <]
☑ Overwrite

[Define...]   [OK]   [Cancel]   [Help]

	Attach/Detach Object Data	✕
Table:	GIS_STORM_DEVICE ▾	
Object Data Field:		Value to Attach:

```
SIZE
MATERIAL
LABELID
DEPTH
TYPE
TOPELEV
DROPTYPE
DRAINAGEAREA
```

‹ ▮   ›

Name:

Value: [   ]

Action
    [Attach to Objects <]   [Detach from Objects <]
    ☑ Overwrite

[Define...]   [OK]   [Cancel]   [Help]

Field	Values
TYPE	INSPECTION PORT JUNCTION MAINTENANCE HOLE MONITORING WELL MTD NONE OIL GRIT DEVICE ORIFICE CONTROL PLATE OUTFALL OUTLET STRUCTURE PLUG PLUNGE POOL RDCMH REAR LOT CATCH BASIN RLCBMH ROOF AREA DRAIN SEDIMENT TRAP SFB SUPER CATCH BASIN TEE VALVE WEIR OTHER
TOPELEV	MANUAL INPUT
DROPTYPE	MANUAL INPUT
CATCHMENTAREA	BAYSHORE DRAINAGE AREA BEAR CREEK WATERSHED BUNKERS CREEK WATERSHED DYMENTS CREEK WATERSHED GEORGIAN CREEK WATERSHED GRAY LANE DRAINAGE AREA HEWITTS CREEK WATERSHED HOLGATE CREEK WATERSHED HOTCHKISS CREEK WATERSHED HURONIA CREEK WATERSHED JOHNSON DRAINAGE AREA KIDDS CREEK WATERSHED LITTLE LAKE DRAINAGE AREA

Attach/Detach Object Data ☒
 	
Table: GIS_STORM_DEVICE ▼
Object Data Field: Value to Attach:
SIZE
MATERIAL
LABELID
DEPTH
TYPE
TOPELEV
DROPTYPE
DRAINAGEAREA
 	
‹ ▮ ›
Name:
Value: [   ]
 	
Action
  Attach to Objects <   Detach from Objects <
  ☑ Overwrite
 	
  Define...   OK   Cancel   Help
	CATCHMENTAREA	LOVERS CREEK WATERSHED
		MINETS DRAINAGE AREA
		MULCASTER DRAINAGE AREA
		NELSON DRAINAGE AREA
		RODNEY DRAINAGE AREA
		ROYAL OAK DRAINAGE AREA
		SANDY COVE WATERSHED
		SOPHIA CREEK WATERSHED
		ST. VINCENT DRAINAGE AREA
		WHISKEY CREEK WATERSHED
		WILLIAMS DRAINAGE AREA
		OTHER

Object Data Table – **GIS_STORM_LATERAL**

TABLE	DATA FIELDS	
	TYPE MATERIAL SIZE INV_UP_ELV INV_DN_ELV DRAINAGEAREA	

Attach/Detach Object Data ✕

Table: GIS_STORM_LATERAL ▾

Object Data Field: Value to Attach:

TYPE
MATERIAL
SIZE
INV_UP_ELV
INV_DN_ELV
DRAINAGEAREA

Name:

Value:

Action

Attach to Objects <   Detach from Objects <

☑ Overwrite

Define...   OK   Cancel   Help

DATA VALUES	
TYPE	CATCH BASIN LEAD SUBDRAIN OTHER
MATERIAL	ASBESTOS CEMENT BITUMINOUS FIBRE CONCRETE CORRUGATED POLYETHYLENE CORRUGATED SLOTTED POLYETHYLENE CORRUGATED STEEL HIGH DENSITY POLYETHYLENE PERFORATED POLYVINYL CHLORIDE POLYPROPOLENE POLYVINYL CHLORIDE STEEL VITRIFIED CLAY OTHER
INV_UP_ELEV	MANUAL INPUT
INV_DN_ELV	MANUAL INPUT
DRAINAGEAREA	MANUAL INPUT
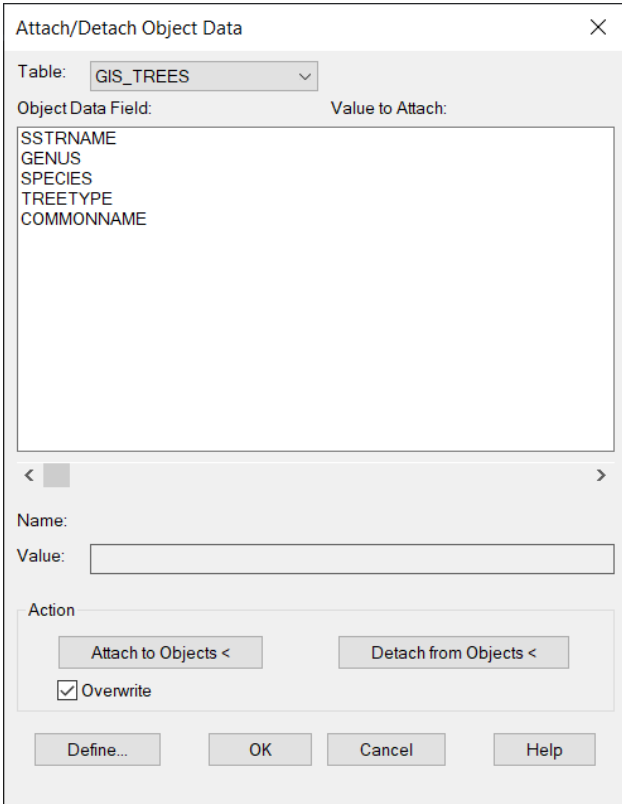
Object Data Table – **GIS_STORM_PIPE**

TABLE

Attach/Detach Object Data   ×

Table: GIS_STORM_PIPE ▾

Object Data Field: Value to Attach:

PIPESHP
INV_UP_INV
INV_DN_INV
WIDTH
HEIGHT
TYPE
ENCASED
MATERIAL
DRAINAGEAREA

‹ ⬜   ›

Name:

Value: [   ]

Action
   [Attach to Objects <]   [Detach from Objects <]
   ☑ Overwrite

[Define...]   [OK]   [Cancel]   [Help]

DATA FIELDS

PIPESHP
INV_UP_ELV
INV_DN_ELV
WIDTH
HEIGHT
TYPE
ENCASED
MATERIAL
DRAINAGEAREA

DATA VALUES

Field	Values
PIPESHP	ARCH CIRCULAR CLOSED_RECT HORIZ_ELLIPSE OTHER
INV_UP_ELV	MANUAL INPUT
INV_DN_ELV	MANUAL INPUT
WIDTH	MANUAL INPUT
HEIGHT	MANUAL INPUT
TYPE	CONVEYANCE SWALE CULVERT DITCH ENGINEERED CHANNEL LOCAL NATURAL SWALE TRUNK WATERCOURSE OTHER
ENCASED	CONCRETE CURED IN PLACE PIPE(CIPP) NONE POLYSTYRENE STEEL STYROFOAM URECON OTHER
MATERIAL	ASBESTOS CEMENT BITUMINOUS FIBRE CONCRETE

	CORRUGATED POLYETHYLENE CORRUGATED STEEL HIGH DENSITY POLYETHYLENE POLYPROPYLENE POLYVINYL CHLORIDE PW PVC STEEL VITRIFIED CLAY OTHER
LABELID	MANUAL INPUT
DRAINAGEAREA	MANUAL INPUT

Object Data Table –
GIS_STORM_WATER_MANAGEMENT_FACILITY_POND

TABLE	DATA FIELDS
	TYPE WATERSHED

DATA VALUES	
TYPE	DRY FOREBAY MECHANICAL DEVICES NATURAL PARKING LOT PARKING LOT & ROOF TOP ROOF TOP WET OTHER
WATERSHED	MANUAL INPUT

Object Data Table – **GIS_TREES**

TABLE

Attach/Detach Object Data ✕

Table: GIS_TREES ⌄

Object Data Field: Value to Attach:

SSTRNAME
GENUS
SPECIES
TREETYPE
COMMONNAME

‹ ▢ ›

Name:

Value: ▭

Action
    [Attach to Objects <]   [Detach from Objects <]
    ☑ Overwrite

[Define...]   [OK]   [Cancel]   [Help]

DATA FIELDS
SSTRNAME
GENUS
SPECIES
TREETYPE
COMMONNAME

DATA VALUES	
SSTRNAME	MANUAL INPUT
GENUS	ACER
	AMELANCHIER
	BETULA
	CARYA
	CASTANEA
	CATALPA
	CELTIS
	CERCIDIPHYLLUM
	CLADASTIS
	CRATAEGUS
	FAGUS
	FRAXINUS
	GINKGO
	GLEDITISIA
	GYMNOCLADUS
	JUGLANS
	LARIX
	MALUS
	OSTRYA
	PHELLODENDRON
	PHELLODENRON
	PICEA
	PINUS
	POPULUS
	PRUNUS
	PYRUS
	QUERCUS
	ROBINIA
	SALIX
	SAPHORA
	SORBUS
	SYRINGA
	THUJA
	TILIA
	ULMUS
	ZELKOVA

	SPECIES	ALBA

Attach/Detach Object Data dialog:

Attach/Detach Object Data   ✕

Table: GIS_TREES

Object Data Field: Value to Attach:

SSTRNAME
GENUS
SPECIES
TREETYPE
COMMONNAME

◄ ▮   ►

Name:

Value: [   ]

Action

[Attach to Objects <]   [Detach from Objects <]

☑ Overwrite

[Define...]   [OK]   [Cancel]   [Help]

SPECIES:

ALBA
AMERICANA
AMERICANA 'AUTUMN PURPLE'
AMURENSE
AMURENSE
AUCUPARIA
BACCATA
BANKSIANA
BILOBA
BILOBA 'AUTUMN GOLD'
CALLERYANA
CALLERYANA 'BRADFORD'
CALLERYANA 'GLENS FORM'
CAMPESTRE
CORDATA
CORDATA 'CORZAM'
CORDATA 'GREENSPIRE'
CORDATA 'REDMOND'
CORDIFORMIS
CORONARIA
DENTATA
DIOICA
FLAVENSCENS
GINNALA
GINNALA 'FLAME'
GLAUCA
GLOBRA
GRANDIFOLIA 'HOMESTEAD'
JAPONICA 'REGENT'
JAPONICUM 'KELSEY'
LAEVIS
LARICINA
LUTEA
MACROCARPA
NEGUNDO
NIGRA
NIGRA 'FALLGOLD'
NIGRUM 'GREENCOLUMN'
OCCIDENTALIS
PALUSTRIS
PAPYRIFERA
PARVIFOLIA
PENNSYLVANICA
PENNSYLVANICA 'PATMORE'
PENNSYLVANICA 'SUMMIT'
PIONEER
PLATANOIDES
PLATANOIDES 'AUTUMN BLAZE'
PLATANOIDES 'COLUMNAR'
PLATANOIDES 'COLUMNARBROAD'

Attach/Detach Object Data dialog: Table: GIS_TREES. Object Data Field: SSTRNAME, GENUS, SPECIES, TREETYPE, COMMONNAME. Name: Value: Action: Attach to Objects <, Detach from Objects <, ☑ Overwrite. Define… OK Cancel Help		PLATANOIDES 'CRIMSON KING' PLATANOIDES 'DEBORAH' PLATANOIDES 'EMERALD QUEEN' PLATANOIDES 'GLOBOSUM' PLATANOIDES 'HARLEQUIN' PLATANOIDES 'ROYAL RED' PLATANOIDES 'SUPERFORM' 'PRARIE FIRE' PSEUDOACACIA PUNGENS PUNGENS 'GLAUCA' RESINOSA RETICULATA RETICULATA 'IVORY SILK' ROBUR ROBUR 'FASTIGIATA' ROYALTY RUBRA RUBRUM RUBRUM 'EMBERS' RUBRUM 'FRANKSRED' RUBRUM 'KARPICK' SACCHARINUM SACCHARUM SACCHARUM 'GREEN MOUNTAIN' SACCHARUM 'LEGACY' SEROTINA SERRATA 'GREEN VASE' 'SNOWDRIFT' SPECIOSA STROBUS TATARICUM TATARICUM TRIACANTHOS TRIACANTHOS 'SHADEMASTER' TRIACANTHOS VAR. 'SKYCOLE' TRUNCATUM X PLAT. 'WARRENRED' VIRGINIANA VIRGINIANA 'SHUBERT' VULGARIS X FLAVESCENS 'GLENLEVEN' X FREEMANII 'CELZAM' X FREEMANII 'JEFFERSRED'
	TREETYPE	MANUAL INPUT

Attach/Detach Object Data ✕ Table: GIS_TREES ▾ Object Data Field: Value to Attach: SSTRNAME GENUS SPECIES TREETYPE COMMONNAME ‹ › Name: Value: [ ] Action [Attach to Objects <] [Detach from Objects <] ☑ Overwrite [Define...] [OK] [Cancel] [Help]	**COMMONNAME**
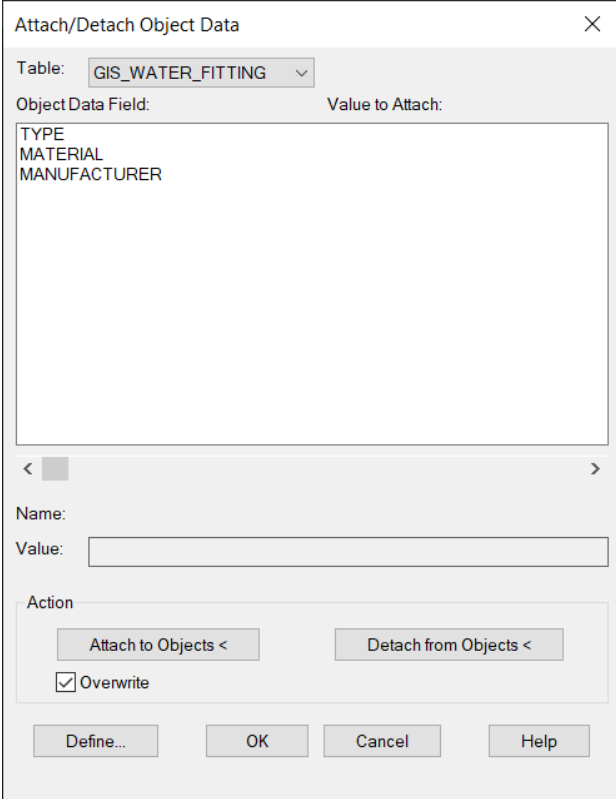
COMMONNAME	
	AMERICAN BEECH
	AMERICAN CHESTNUT
	AMERICAN ELM
	AMUR CORK
	AMUR CORK TREE
	AMUR MAPLE
	AUTUMN BLAZE NORWAY MAPLE
	AUTUMN GOLD GINKO
	AUTUMN PURPLE ASH
	BASSWOOD
	BLACK CHERRY
	BLACK LOCUST
	BLACK WALNUT
	BRADFORD PEAR
	BURR OAK
	CALLERY/ BRADFORD PEAR
	CHAUNTICLEER ORNAMENTAL PEAR
	CHINESE ELM
	COLORADO BLUE SPRUCE
	COLUMNAR NORWAY MAPLE
	COMMON APPLE
	COMMON LILAC
	CORINTHIAN LINDEN
	CRAB APPLE
	CRIMSON KING MAPLE
	DEBORAH MAPLE
	EASTERN WHITE CEDAR
	EMBERS RED MAPLE
	EMERALD QUEEN MAPLE
	ENGLISH OAK
	FALLGOOD ASH
	FLAME MAPLE
	FREEMANII MAPLE
	GINGKO
	GLENLEVEN LINDEN
	GLOBE MAPLE
	GREEN ASH
	GREEN MOUNTAIN MAPLE
	GREEN VASE ZELKOVA
	GREENCOLUMN BLACK MAPLE
	GREENSPIRE LINDEN
	HACKBERRY
	HARLEQUIN MAPLE
	HAWTHORN
	HDEGE MAPLE
	HICKORY
	HOMESTEAD ELM
	HONEYLOCUST
	IRONWOOD
	IVORY SILK LILAC
	JACK PINE
	JAPANESE TREE LILAC
	KARPICK MAPLE
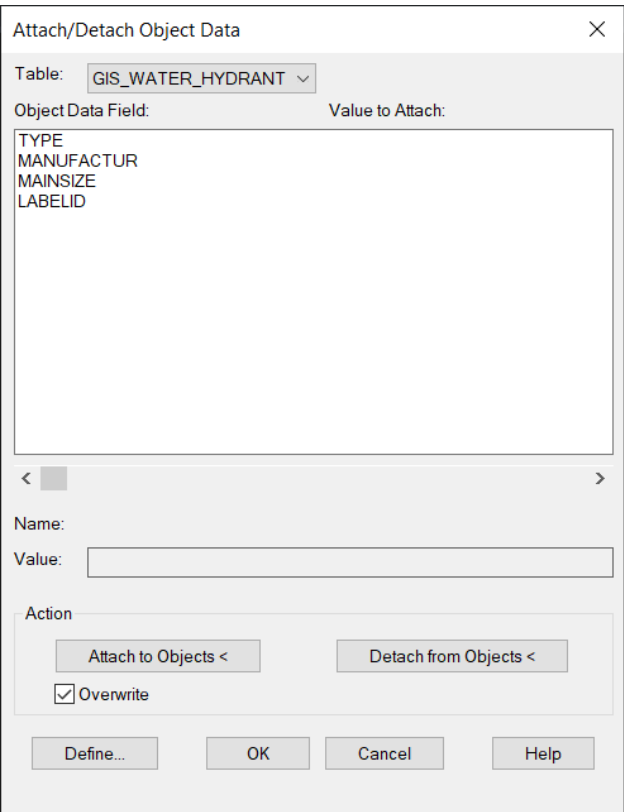
Attach/Detach Object Data   ✕

Table: [GIS_TREES ▾]

Object Data Field: Value to Attach:

SSTRNAME
GENUS
SPECIES
TREETYPE
COMMONNAME

◄ ▢   ►

Name:

Value: [   ]

Action
┌──┐
│   [Attach to Objects <]   [Detach from Objects <]   │
│   ☑ Overwrite   │
└──┘

[Define...]   [OK]   [Cancel]   [Help]

KATSURA TREE
KELSEY CRAPPLE
KENTUCKY COFFEE TREE
LEGACY SUGAR MAPLE
LITTLE LEAF LINDEN
MANITOBA MAPLE
MAPLE TATARIAN
MOUNTAIN ASH
NORTHERN CATALPA
NORWAY MAPLE
PACIFIC SUNSET MAPLE
PAGODA TREE
PARKWAY MAPLE
PATMORE ASH
PIN OAK
PINE
PIONEER ELM
POPLAR
PRARIE FIRE CRABAPPLE
PYRAMIDAL OAK
RED MAPLE
RED OAK
RED SUNSET MAPLE
REDMOND LINDEN
ROYAL RED MAPLE
SCOTCH ELM
(CAMPERDOWN)
SERVICEBERRY
SHADEMASTER HONEY
LOCUST
SHUBERY CHOKECHERRY
SIBERIAN CRABAPPLE
SILVER MAPLE
SKYLINE HONEYLOCUST
SNOWDRIFT CRABAPPLE
SPRUCE
SUGAR MAPLE
SUMMIT ASH
SUPERFORM NORWAY
MAPLE
TAMARACK
TATARIAN MAPLE
WHITE ASH
WHITE BIRCH
WHITE OAK
WHITE PINE
WHITE WILLOW
WILD CRABAPPLE
YELLOWWOOD

Object Data Table – **GIS_UTILITY_LINEAR**

TABLE	DATA FIELDS
	TYPE SIZE LOCATION

Attach/Detach Object Data ✕

Table: GIS_UTILITY_LINEAR ▾

Object Data Field: Value to Attach:

TYPE
SIZE
LOCATION

Name:

Value:

Action

Attach to Objects <   Detach from Objects <
☑ Overwrite

Define...   OK   Cancel   Help

DATA VALUES	
TYPE	GAS SERVICE HYDRO LINE LIGHTING CABLE PARK LIGHTING RWIS CABLE SIGNAL CABLE STREET LIGHT CABLE OTHER
SIZE	50 75 100
LOCATION	AERIAL UNDERGROUND
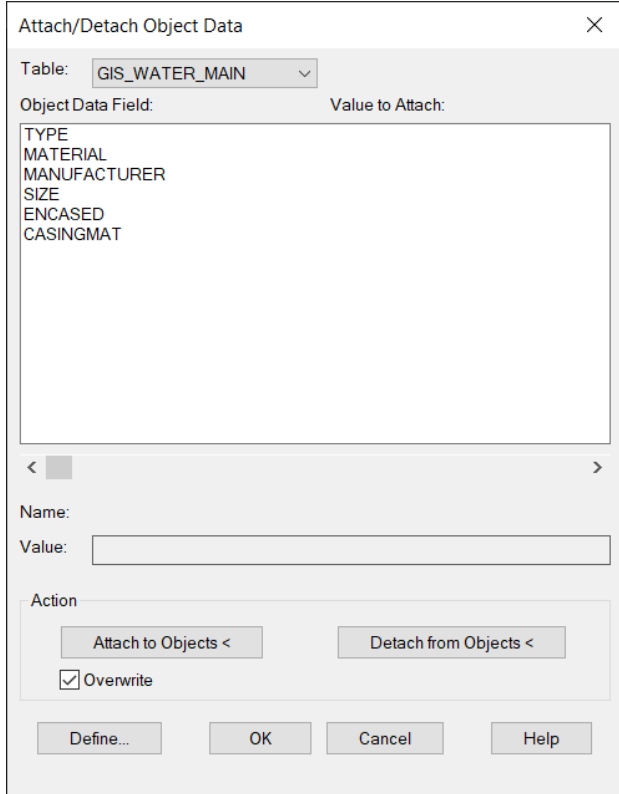
Object Data Table – **GIS_UTILITY_POINT**

TABLE	DATA FIELDS
Attach/Detach Object Data ✕ Table: GIS_UTILITY_POINT ⌄ Object Data Field: Value to Attach: TYPE ◄ ▯ ► Name: Value: [ ] Action Attach to Objects < Detach from Objects < ☑ Overwrite Define... OK Cancel Help	TYPE

DATA VALUES	
TYPE	HANDHOLE HANDWELL MAINTENANCE HOLE POWER PEDESTAL POWER SUPPLY RWIS ACCESS POINT RWIS POWER FEED RWIS SUBPROBE RWIS SURFACE SENSOR RWIS TOWER TEST POINT TRAFFIC CABINET TRAFFIC CONTROLLER TRANSFORMER
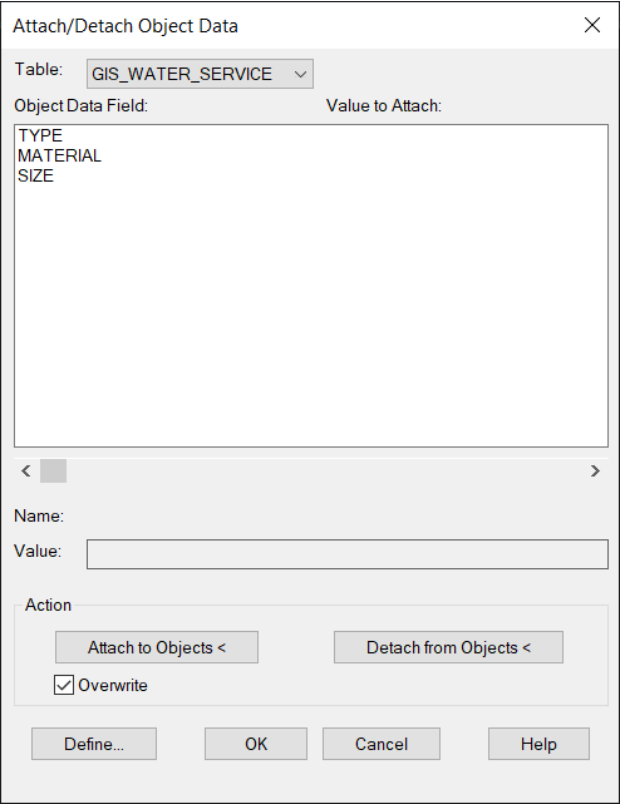
Object Data Table – **GIS_WATER_FITTING**

TABLE	DATA FIELDS	
Attach/Detach Object Data [×] Table: GIS_WATER_FITTING ⌄ Object Data Field: Value to Attach: TYPE MATERIAL MANUFACTURER ‹ ▢ › Name: Value: [ ] Action [Attach to Objects <] [Detach from Objects <] ☑ Overwrite [Define...] [OK] [Cancel] [Help]	TYPE MATERIAL MANUFACTURER	

DATA VALUES		
TYPE	ANCHOR TEE BEND CAP COUPLING CROSS PIPE JOINT PLUG REDUCER TAPPING SLEEVE TEE TRACER WIRE TEST STATION VERTICAL BEND WYE OTHER	
MATERIAL	MANUAL INPUT	
MANUFACTURER	MANUAL INPUT	
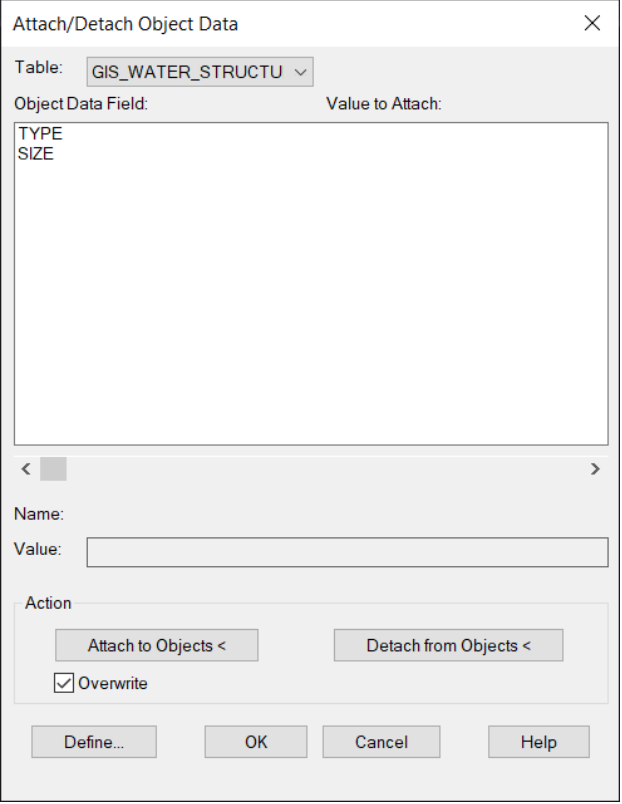
Object Data Table – **GIS_WATER_HYDRANT**

TABLE	DATA FIELDS	
	TYPE MANUFACTURER MAINSIZE LABELID	
	DATA VALUES	
	TYPE	FIRE YARD
	MANUFACTUR	MANUAL INPUT
	MAINSIZE	MANUAL INPUT
	LABELID	MANUAL INPUT

Attach/Detach Object Data ✕

Table: GIS_WATER_HYDRANT ▾

Object Data Field: Value to Attach:

TYPE
MANUFACTUR
MAINSIZE
LABELID

‹   ›

Name:

Value:

Action
Attach to Objects <   Detach from Objects <
☑ Overwrite

Define...   OK   Cancel   Help

Object Data Table – **GIS_WATER_MAIN**

TABLE

Attach/Detach Object Data ✕

Table: GIS_WATER_MAIN ⌄

Object Data Field: Value to Attach:

TYPE
MATERIAL
MANUFACTURER
SIZE
ENCASED
CASINGMAT

< ☐   >

Name:

Value: [   ]

Action
  [Attach to Objects <]   [Detach from Objects <]
  ☑ Overwrite

[Define...]   [OK]   [Cancel]   [Help]

DATA FIELDS
TYPE
MATERIAL
MANUFACTURER
SIZE
ENCASED
CASINGMAT

DATA VALUES	
TYPE	CHLORINE - CONTACT DISTRIBUTION TRANSMISSION OTHER
MATERIAL	ASBESTOS CEMENT BRASS CAST IRON CONCRETE COPPER CROSS LINKED POLYETHYLENE (PEX) DUCTILE IRON GALVANIZED HIGH DENSITY POLYETHYLENE PLASTIC POLYVINYL CHLORIDE STAINLESS STEEL
MANUFACTUR	MANUAL INPUT
SIZE	MANUAL INPUT
ENCASED	CASING CONDUIT BRIDGE INSULATION WRAP NONE OTHER
CASINGMAT	CONCRETE POLYETHYLENE STEEL STEEL CONC POLYETHYLENE STEEL WITH CONCRETE STYROFOAM URECON NONE OTHER

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Object Data Table – **GIS_WATER_SERVICE**

TABLE	DATA FIELDS
	TYPE MATERIAL SIZE

Attach/Detach Object Data   ✕

Table: GIS_WATER_SERVICE ⌄

Object Data Field: Value to Attach:

TYPE
MATERIAL
SIZE

‹ ▢   ›

Name:

Value:

Action

    Attach to Objects <   Detach from Objects <

☑ Overwrite

    Define...   OK   Cancel   Help

DATA VALUES	
TYPE	COMMERCIAL-DOMESTIC FIRE HYDRANT LEAD IRRIGATION RESIDENTIAL-DOMESTIC WATER VALVE CHAMBER CONNECTION
MATERIAL	MANUAL INPUT
SIZE	MANUAL INPUT

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Object Data Table – **GIS_WATER_STRUCTURE**

TABLE	DATA FIELDS	
Attach/Detach Object Data dialog box	**TYPE**	
	SIZE	

TABLE

Attach/Detach Object Data   ×

Table: GIS_WATER_STRUCTU ∨

Object Data Field: Value to Attach:

TYPE
SIZE

<   >

Name:

Value:

Action

[Attach to Objects <] [Detach from Objects <]
☑ Overwrite

[Define...] [OK] [Cancel] [Help]

DATA FIELDS

TYPE
SIZE

DATA VALUES

TYPE	AUTO FLUSHER
	BOOSTER PUMPING STATION
	BULK WATER STATION
	CHLORINE CONTACT
	CHAMBER
	CHLORINE CONTACT
	RESERVOIR
	FLUSH BOXES
	METER SHOP
	MONITORING WELL
	PRODUCTION WELL
	PUMPING STATION
	RESERVOIR
	SAMPLE POINT
	SAMPLE STATION
	SNAKE PIT
	SURFACE WATER TREATMENT PLANT
	WATER TOWER
	WELL PUMP HOUSE
	OTHER
SIZE	MANUAL INPUT

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Object Data Table – **GIS_WATER_VALVE**

TABLE	DATA FIELDS
	TYPE MANUFACTURER SIZE LABELID

Attach/Detach Object Data ✕

Table: GIS_WATER_VALVE ∨

Object Data Field: Value to Attach:

TYPE
MANUFACTURER
SIZE
LABELID

‹ ▭   ›

Name:

Value: [   ]

Action
  [Attach to Objects <]   [Detach from Objects <]
  ☑ Overwrite

  [Define...] [OK] [Cancel] [Help]

DATA VALUES

TYPE	AIR RELEASE VALVE AIR RELIEF VALVE ALTITUDE VALVE ANGLE METER VALVE BALL VALVE BLOWOFF VALVE BUTTERFLY VALVE CHECK VALVE (SINGLE) COMBINATION COMBINATION AIR RELIEF VACUUM RELIEF VALVE CONE VALVE CURB STOP DIAPHRAGM VALVE DRAIN VALVE FLOOD SAFE FLOW CONTROL VALVE GATE VALVE GLOBE VALVE HOSE BIB HYDRANT VALVE HYDRAULIC VALVE MAIN STOP NEEDLE VALVE PLUG VALVE POST INDICATOR VALVE PRESSURE REDUCING VALVE PRESSURE REGULATING VALVE RAISING STEM VALVE SLUICE GATE TAPPING VALVE TEMPERATURE VALVE THROTTLING VALVE VACUUM RELIEF VALVE CHAMBER OTHER
MANUFACTURER	MANUAL INPUT
SIZE	MANUAL INPUT
LABELID	MANUAL INPUT

Object Data Table – **GIS_WATER_VALVE_CHAMBER**

TABLE	DATA FIELDS
	TYPE DEPTH WIDTH LENGTH

Attach/Detach Object Data ✕

Table: GIS_WATER_VALVE_CH ⌄

Object Data Field: Value to Attach:

TYPE
DEPTH
WIDTH
LENGTH

< ▢   >

Name:

Value: [   ]

Action
  [Attach to Objects <]   [Detach from Objects <]
  ☑ Overwrite

[Define...]   [OK]   [Cancel]   [Help]

DATA VALUES	
TYPE	CONTACT CHAMBER DISTRICT METERING DRAIN IRRIGATION MAINTENANCE HOLE METER BOX METER BOX/VAULT METER VAULT MONITOR PRECAST PRIVATE PRV VALVE OTHER
DEPTH	MANUAL INPUT, IN METERS
WIDTH	MANUAL INPUT, IN MILLIMETERS
LENGTH	MANUAL INPUT. IN MILLIMETERS

PROJECT INFO & DATA CHECKLIST

Digital Information Standard
Project Info

"Project Info" Form fields must be completed & submitted in excel; accompaning sealed version may be submitted via PDF

Submission Date: Sunday, January 01, 2017

City of Barrie Primary Contact:

Project Name/Title: Example Subdivision

Project Location: Bayview & Little

Development Name/Phase No.: Phase 1

Submission Set : 3.0 - Subdivision Developments

Submission Level : 3.2 - Prior to Final Approval

Drawing Sheet Name Index : TITLE, GN, GP1, GP2, GP3, SAN, STM,

[comma seperated, no sheet descriptions] PP1, PP2, PP3, PP4, DET1, DET2

Reviewing Engineer accepts that this submission meets the requirements of the Digital Information Standard related to content, accuracy & formatting requirements

Templates are available on the City's website under Digital Information Standard.

Digital Information Standard
Data Checklist

Inclusion of the OBJECT DATA to be submitted must be identified with an '**X**' in the columns for each row. Data categories are marked with Yes (Y) or No (N) denoting if providing data in that category is currently supported. Failure to complete this form will cause an automated rejection of submission.

Description	Autocad		Civil 3D		Responsible Party (if other than designer)	Release	Feature Type	CIVIL 3D OBJECT
Example Row 1	Y		N			Current	BLOCK	
Example Row 2	Y	X	N			Current	AREA	
Example Row 2	Y		Y	X		Current	AREA	
	All required data must be provided in one of these three columns for each row							
	OBJECT DATA							
Borehole Locations	Y		Y		Geotechnical Eng	Current	BLOCK	
Bridges	Y	X	Y	X	Structural Eng	Current	BLOCK	
Building Footprints	Y		Y		Surveyor	Current	AREA	
Easements	Y		Y		Legal Surveyor	Current	AREA	
Illumination	Y	X	Y	X	Lighting Engineer	Current	BLOCK	
Parcel Boundaries	Y		Y		Legal Surveyor	Current	POLYLINE	
Park (Linear Features)	Y	X	Y	X	Landscape Architect	Current	POLYLINE	
Park (BLOCK Features)	Y	X	Y	X	Landscape Architect	Current	BLOCK	
Parking Device	Y	X	Y	X		Current	BLOCK	
Decorative Poles	Y	X	Y	X		Current	BLOCK	
Retaining Walls	Y	X	Y	X	Structural or Designer	Current	POLYLINE	
Road Crossing	Y		Y			Current	BLOCK	
Road Intersection	Y		Y			Current	BLOCK	
Road Segments	Y		Y			Current	POLYLINE	
Sidewalks and Walkways	Y		Y			Current	POLYLINE	
Trail	Y		Y			Current	POLYLINE	
Trees	Y	X	Y	X	Landscape or Arborist	Current	BLOCK	
Utility Line	Y	X	Y	X		Current	POLYLINE	
Survey Control	Y		Y			Current	BLOCK	
Sanitary Devices	Y	X	Y	X		Current	BLOCK	X
Sanitary Pipe	Y	X	Y	X		Current	POLYLINE	X
Stormwater Device	Y	X	Y	X		Current	BLOCK	X

Layer								Type	
Stormwater Pipe		Y	X	Y	X		Current	POLYLINE	X
Water Fitting		Y	X	Y	X		Current	BLOCK	
Water Hydrant		Y	X	Y	X		Current	BLOCK	
Water Main		Y	X	Y	X		Current	POLYLINE	
Water Valve Chamber		Y	X	Y	X		Current	AREA	
Water Valve		Y	X	Y	X		Current	BLOCK	
Park Polygon Features		Y	X	Y	X		Current	AREA	
Parking Locations		Y		Y			Current	AREA	
Railway Line		Y		Y			Current	POLYLINE	
Utility BLOCK		Y	X	Y	X		Current	BLOCK	
Sanitary Laterals		Y	X	Y	X		Current	POLYLINE	X
Stormwater Lateral		Y	X	Y	X		Current	POLYLINE	X
Stormwater Management Facility		Y	X	Y	X		Current	AREA	
Traffic Control		Y	X	Y	X		Current	BLOCK	
Water Facility		Y	X	Y	X		Current	BLOCK	
Water Service		Y	X	Y	X		Current	POLYLINE	
Water Structure		Y	X	Y	X		Current	BLOCK	
Stormwater Catchment areas		Y	X	Y	X		Current	AREA	
Sanitary collection areas		Y		Y			Current	AREA	

Templates are available on the City's website under Digital Information Standard.

Additional Layers:

Additional layers provided in the drawing should be listed below, and note reason for the additional layer. Automation is used to ensure the layers in the Data Extraction DWG match the standard layer list (provided by the city) plus any additional layers listed here. City staff will review the additional layers against the 2 categories to the right.

1 Layer not needed, already provided in standard

2 Layer needed, consideration given for layer to be added to standard

Important Note: Due to the currently limited data extraction not all design elements are found in the data extraction DWG therefore additional layers should be very rare.

Layer Name	Short Description	Reason

** All form fields must be completed & submitted in excel **

Templates are available on the City's website under Digital Information Standard.

SUBMISSION SETS

1. Introduction

This appendix is provided to outline the specific elements that are required for each type of submission as well as the stage of submission, some basic accept/reject criteria has also been provided. The appendix has been laid out in such a way that each set can stand apart from the whole; this was done to allow the relevant submission set to be shared easily.

Please refer to the [Digital Information Standard – Content & Formatting Requirements](#) for a detailed explanation of all elements requested in this document.

Meeting the requirements outlined in this appendix does not remove the need to meet departmental or submission-specific requirements for hardcopy or physical data submissions as requested by other City of Barrie submission practices.

1.1 Important Notice

Any element submitted that does not conform to the requirements outlined in the DIS will cause the entire package to be rejected. If the submission is rejected, then a complete package must be resubmitted; partial submissions will not be accepted.

The requirements in this document apply to all digital information submitted to or created by the City of Barrie related to Infrastructure, Planning and Development.

2. Subdivision Developments

2.1 Requirements for Design below 90% completion

Generally, for review purposes.

- Project Info Form
- Text/Vector PDF – Includes the entire submission set (drawings & documents)

2.2 Required prior to the City of Barrie Issuing Final Approval

- Project Info Form & Data Checklist Form
- Text/Vector PDF – Includes the entire submission set unstamped (drawings); required for As-built PDF (record drawing)
- Sealed PDF – Includes the entire submission set (drawings & documents), with digital stamp.
- Preliminary Object Data – The required Object Data is to include all works expected to be constructed & any existing features expected to remain after construction.
- Source Files – Source files for all engineering drawings within the submission set are to be provided on an "as is" basis, regardless of software platform & method used in their preparation.

2.3 Requirements after Approval; Issued for Construction, Addendums, etc.

- Project Info Form
- Text/Vector PDF – Includes the entire submission set unstamped (drawings); required for As-built PDF (record drawing)
- Sealed PDF – Includes the entire submission set (drawings & documents as required), digital stamp.

2.4 Asbuilt data & Record Drawing submission - Partial Works

Required prior to issuance of building permits and/or every year on multi-year projects:

- Project Info Form & Data Checklist
- As-built PDF – Containing Asbuilt Drawings of the entire submission set with all works constructed to date for belowground and aboveground. Modifications redlined, and in PDF format. Digitally sealed to create a Record Drawing
- As-built Data – The Preliminary Object Data is to be updated with all belowground and aboveground works constructed to date. All works still proposed & existing features remaining remain in the Preliminary state. These submissions are required to match the Asbuilt PDF

2.5 Asbuilt data & Record Drawing submission – Final As-built

Required prior to submission:

- Project Info Form & Data Checklist
- As-built PDF – Containing Asbuilt Drawings of the entire submission set with all belowground and aboveground modifications redlined, and in PDF format. Digitally sealed to create a Record Drawing
- As-built Data – The Object Data is to be updated with all belowground works constructed & existing features remaining. These submissions are required to match the Asbuilt PDF

3. Road Construction, reconstruction, rehabilitation

3.1 Requirements for Design below 90% completion

Generally, for review purposes.

- Project Info Form
- Text/Vector PDF – Includes the entire submission set (drawings & documents)

3.2 Required prior to City of Barrie Issuing Final Approval

- Project Info Form & Data Checklist Form
- Text/Vector PDF – Includes the entire submission set unstamped (drawings); required for As-built PDF (record drawing)
- Sealed PDF – Includes the entire submission set (drawings & documents), with digital stamp.
- Object Data – The required Object Data is to include all works expected to be constructed & any existing features expected to remain after construction.
- Source Files – Source files for all engineering drawings within the submission set are to be provided on an "as is" basis, regardless of software platform & method used in their preparation.

3.3 Requirements after Approval; Issued for Construction, Addendums, etc.

- Project Info Form
- Text/Vector PDF – Includes the entire submission set unstamped (drawings); required for As-built PDF (record drawing)
- Sealed PDF – Includes the entire submission set (drawings & documents as required), digital stamp.

3.4 Asbuilt data & Record Drawing submission - Partial Works

Required prior to issuance of building permits and/or every year on multi-year projects:

- Project Info Form & Data Checklist
- As-built PDF – Containing Asbuilt Drawings of the entire submission set with all works constructed to date for belowground and aboveground. Modifications redlined and in PDF format. Digitally sealed to create a Record Drawing
- As-built Data – The required Object Data is to be updated with all belowground and aboveground works constructed to date. All works are still proposed & existing features remaining remain in the Preliminary state. These submissions are required to match the Asbuilt PDF

3.5 Asbuilt data & Record Drawing submission – Final Asbuilt

Required prior to submission:

- Project Info Form & Data Checklist
- As-built PDF – Containing Asbuilt Drawings of the entire submission set with all belowground and aboveground modifications redlined, and in PDF format. Digitally sealed to create a Record Drawing
- As-built Data – The required Object Data is to be updated with all belowground works constructed & existing features remaining. These submissions are required to match the Asbuilt PDF

DIS SUBMISSION FLOWCHART

Barrie

DIS Overview

DIS Submission Required

Stage 1 Complete — No → Stage 1: Preliminary Design (eg// 30%, 60%, 90%)

Create Text/Vector PDF → Create Sealed PDF

Yes

Stage 2 Complete — No → Stage 2: Issued for Final Approval (eg// Tender Set)

Create Text/Vector PDF → Create Sealed PDF → Create Data Extraction DWG → Create Data Table → Provide Source Files

Yes

Stage 3 Complete — No → Stage 3: Addendum

Create Text/Vector PDF → Create Sealed PDF

Yes

Stage 4 Complete — No → Stage 4: Issued for Construction

Create Text/Vector PDF → Create Sealed PDF

Yes

<u>As-constructed Stages (Asbuilt submission is required every year on multi-year projects)</u>

Multi Year Project — Yes → Stage 5a: As-constructed (Aboveground Works)

— Yes → Stage 5b: As-constructed (Belowground Works)

— No → Stage 5c: As-constructed (Final)

Create As-constructed Drawings (redlines) → Update Data Extraction DWG → Update Data Table

Complete Data Checklist

DIS Submission

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DIS Submission Process

DWG, XLS, SOURCE File Names
Format: [Submission Date YYYYMMDD].[Contract No.].[Project Name]

Examples:
20171020_2017-127T_Morrow Road.DWG
20171020_2017-127T_Morrow Road_C3D.DWG
20171020_2017-127T_Morrow Road.XLS
20171020_2017-127T_Morrow Road_Source.ZIP

PDF File Names
Format: [Submission Date YYYYMMDD].[Contract No.].[Project Name].[Sheet Name]

Examples:
20171020_2017-127T_Morrow Road_PP1.PDF
20171020_2017-127T_Morrow Road_Sealed_PP1.PDF
20171020_2017-127T_Morrow Road_As-Recorded_PP1.PDF

Package Name
Format: [Submission Date YYYYMMDD].[Contract No.].[Project Name]

Example: 20171020.2017-127T.Morrow Road.ZIP

- DIS Submission
- Name Files Appropriately
- Complete 'Project Info' form & seal by reviewing Engineer
- Create one complete ZIP package with all files

Who is the Contributor?
- City Staff → Place Package in DIS Submission Folder
- External Party → Submit Package to City of Barrie P.M. → Place Package in DIS Submission Folder

Email AskIT to notify them of Submission

Has AskIT Received Pre-Asbuilt Stages
- No → Notifications sent to Contract Admin, Project Manager & Contributor of Non-compliance to required Standard → DIS Rejection
- Yes ↓

Is the Project Multi-Year
- Yes → Did AskIT Receive As-built for Previous Year
  - No → Notifications sent to Contract Admin, Project Manager & Contributor of Non-compliance to required Standard
  - Yes ↓
- No ↓

Does the Submission meet DIS Requirements
- Yes → DIS Accepted → Project approved for next stage of DIS process
- No → DIS Rejected → Rejection Notification Sent (Email + Report)

Accepted Notification Sent (Email) → Project approved for next stage of DIS process → Move to Next Stage
Data Integrated into corporate systems

Rejection Notification Sent (Email + Report) → Does Contributor Need to Discuss Issues
- Yes → Set Meeting Date/Time → Contributor to Correct Issues → Restart Stage
- No → Contributor to Correct Issues

DIGITAL STAMP TRACKING FORM (EXAMPLE)

Barrie

Stamp & signature must be entirely inside the box for scanning.

Project Name:

Reviewing Engineer:

Designer:

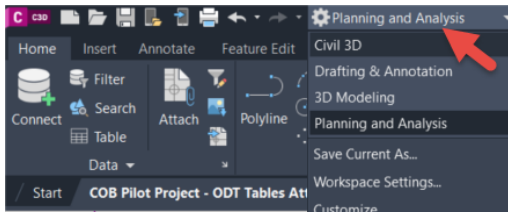Revision:

Date:

Drawing Sheet Name & Title	

Templates are available on the City's website.

ATTACHING OBJECT DATA TABLES

Barrie

Adding Data to Object Data Tables

In the Civil 3D drawing file set the Workspace to Planning and Analysis.

Select the Create tab and from the Drawing Object panel select the Attach/Detach Object Data command.
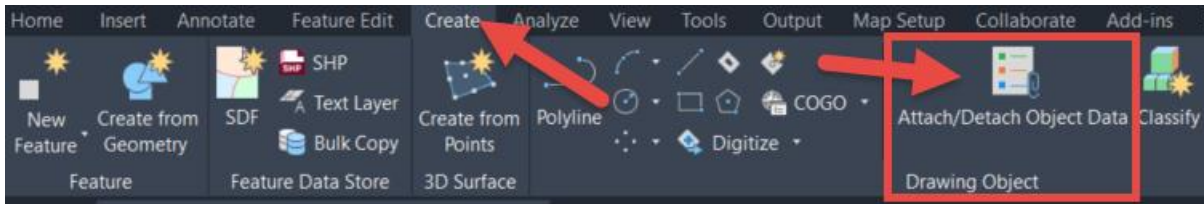
The Attach/Detach Object Data dialogue box is displayed.

Use the pull-down menu to select the desired Object Data Table.

For this example, we will use the GIS_WATER_HYDRANT Object Data Table
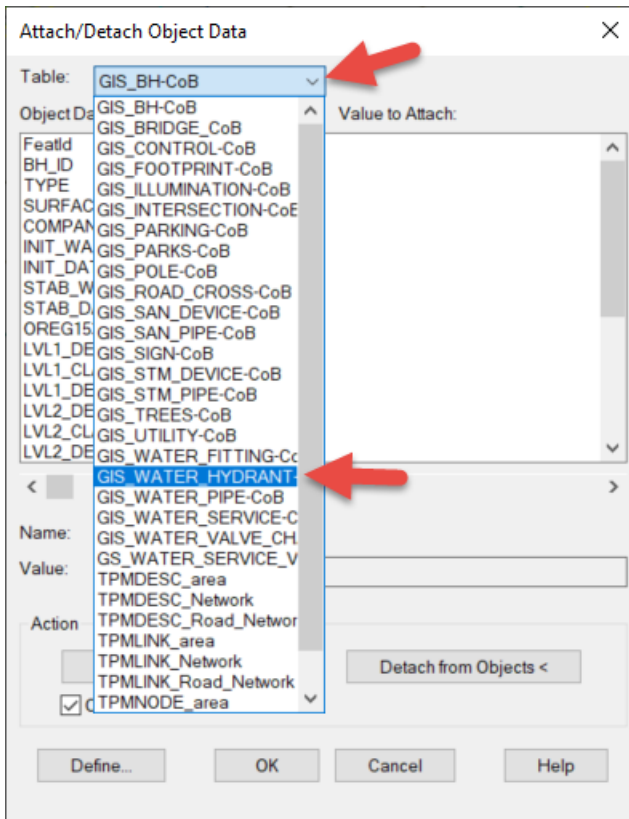
The GIS_WATER_HYDRANT Object Data Table is displayed.
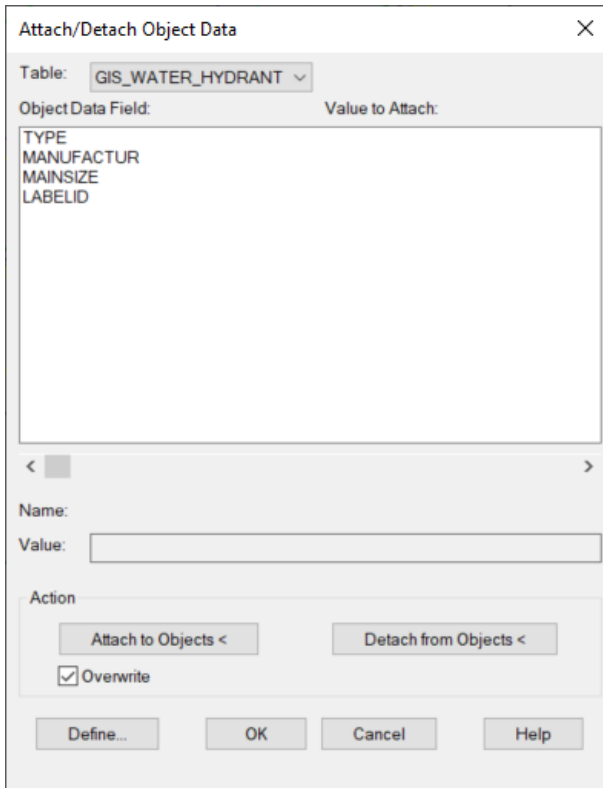
To add attribute data and user defined properties to the table, select the required Object Data Field

And entire the attribute data in the value field as per the following example
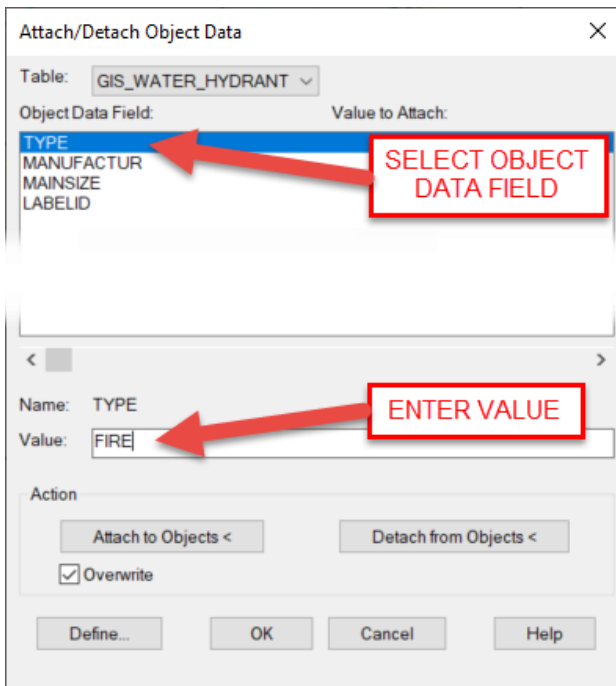
Press ENTER to assign the Value to Attach and update the table.
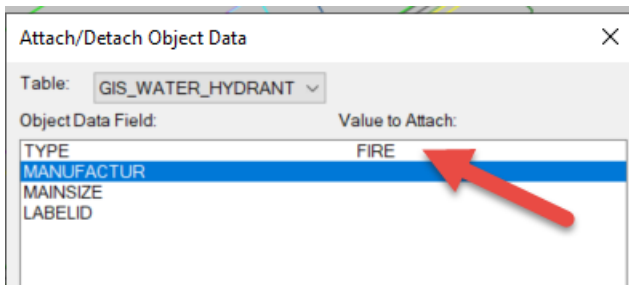
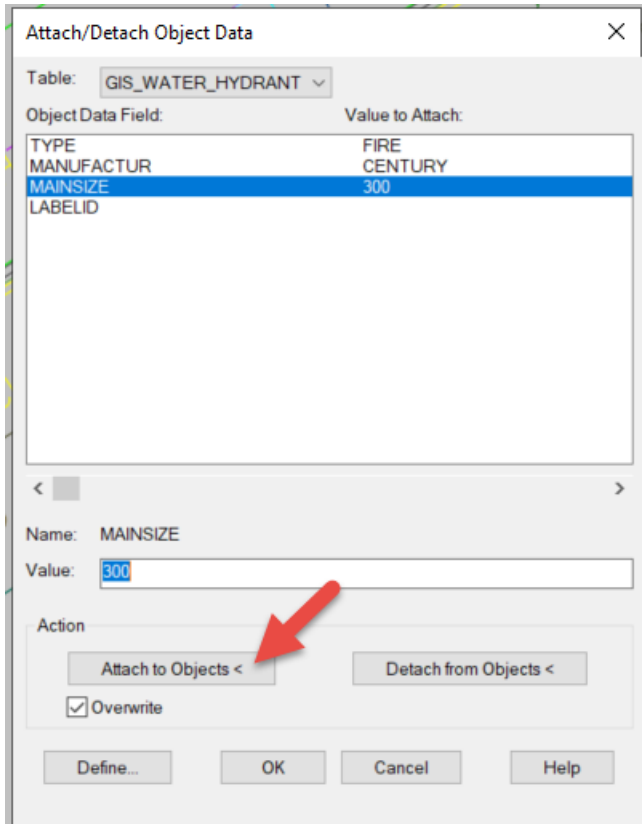Continue to add attribute data to the other Object Data Field.

Select the MANUFACTUR object data field and enter CENTURY for the value and press ENTER.
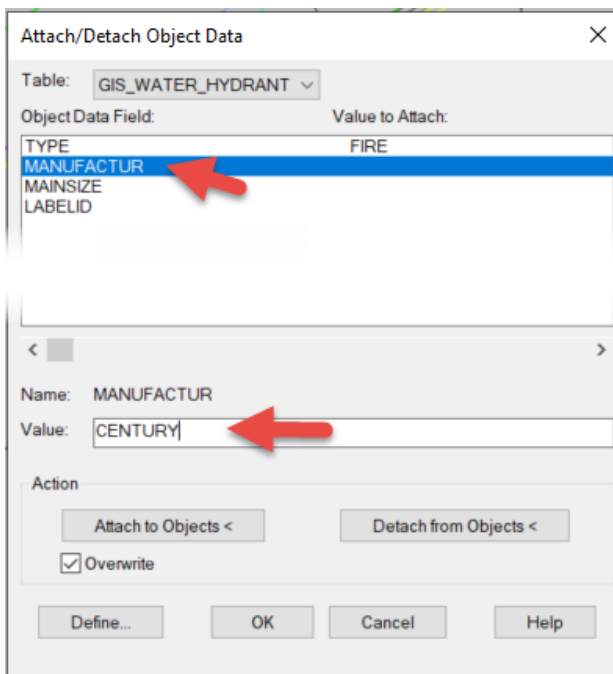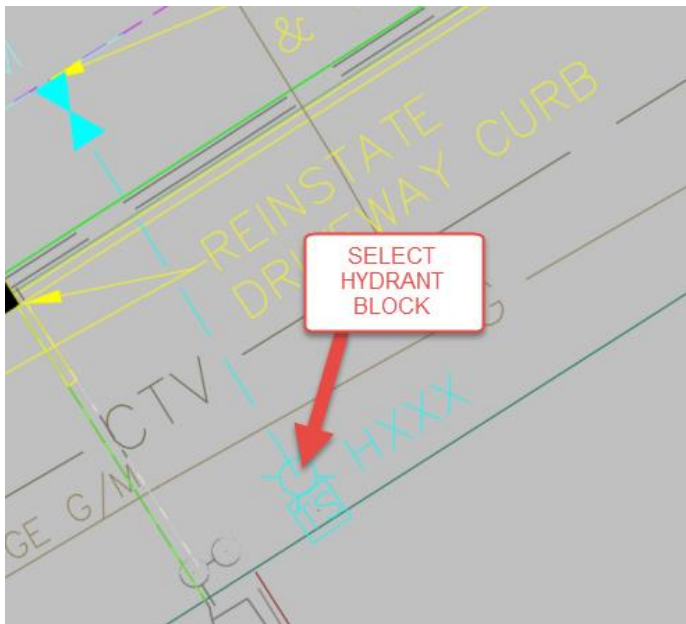

Repeat the process for the MAINSIZE field and enter the value 300.
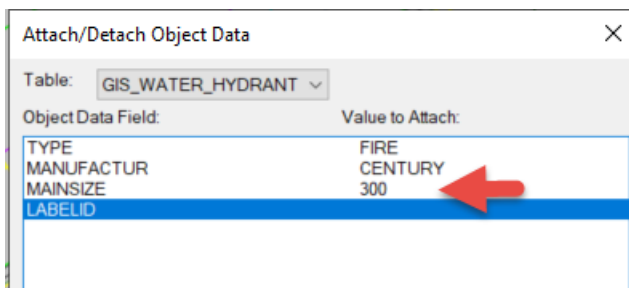
Once the desired data fields have been populated with attribute data pick the Attach to Objects button.

In the drawing select the desired HYDRANT block to attach the Object Data Table and press ENTER to complete the attachment of the Object Data Table to the block.
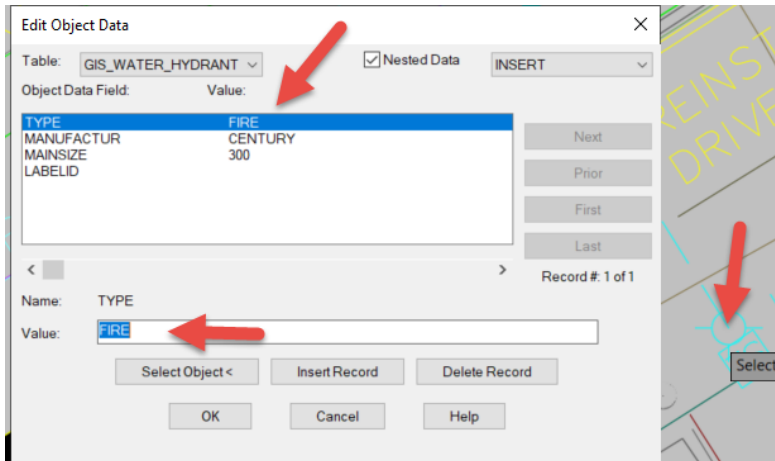

The object data can be access for review and editing in the Properties palette.

Alternatively, the object data can be accessed for review and editing through the Tools tab, on the Map Edit panel, using the Edit Object Data button.
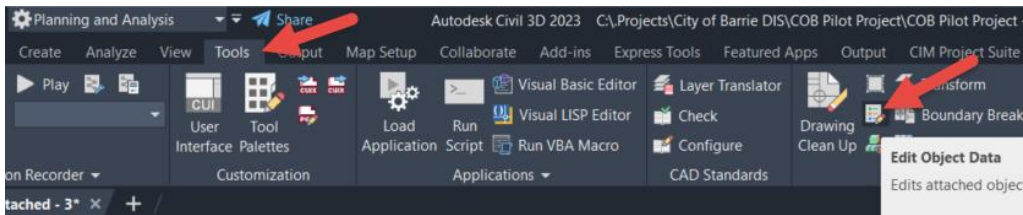
Select the HYDRANT block and the Edit Object Data dialogue will be displayed, permitting the editing of attribute values.

TIPS:
Object Data Tables can be attached to multiple objects by using the Window, Crossing or Select Similar method to create a selection set.
Use the Layer Isolate command to isolate the desired blocks and linework then attach the Object Data Tables and their associated attribute data to multiple objects in a selection set.
Blocks with Object Data Tables that have attributed data already assigned can be copied and the Object Data Table with the attribute data in included in the copied block.