

Stringer - A-Spec

Infrastructure Asset Data Capture and Management for the Stringer
Survey Environment



Contents

Overview.....	4
How to Access A-Spec.....	5
Spec Families.....	10
Entity Types.....	12
Setting Up Your Project.....	14
Code and Layer Mapping.....	16
Attaching A-Spec Data.....	18
Editing A-Spec Data.....	21
Auto-Populating Field Data.....	23
Validating Your Data.....	24
Finding Unattributed Objects.....	26
Exporting for Submission.....	28
The AI Bulk Editor.....	30
The A-Spec Workspace.....	32
Capture Categories.....	36
Field Definitions.....	37
Mapping File Format.....	39
Zoom-to-Entity.....	40
The Built-in A-Spec Database.....	40
A Typical Workflow.....	41
Best Practices.....	43
Common Scenarios.....	43
Frequently Asked Questions.....	44
Glossary.....	46

Overview

A-Spec is an infrastructure asset data capture and management module built into the Stringer survey environment. It lets you attach structured attribute information to your survey points, survey strings, and CAD objects — then review, validate, and export that data as council-submission-ready shapefiles or MapInfo files.

A-Spec is designed for surveyors, civil designers, and GIS operators who need to deliver attributed asset data to councils and asset owners. All your attribute data is stored alongside your drawing in a project database, so it travels with the job — copy the project to another machine and your A-Spec data goes with it.

What problem does A-Spec solve?

Modern councils and asset owners no longer accept plain CAD drawings as a complete handover — they want structured, validated, georeferenced attribute data that can feed directly into their GIS and asset management systems. Producing that data manually, asset by asset, is tedious and error-prone. A-Spec bridges the gap: it takes what you've already surveyed or drawn, lets you attach the required attributes efficiently, checks everything against council rules, and produces a tidy submission package on demand.

Who is A-Spec for?

- **Surveyors** handling as-constructed and pickup surveys who need to submit attributed data to councils
- **Civil designers** delivering design data with embedded asset attributes
- **GIS operators** preparing data for upload into enterprise asset management systems
- **Project managers and QA staff** who need confidence that submissions are complete and error-free before they leave the office

What's included out of the box?

A-Spec ships with **three asset families** covering drainage, roads, and open space — each with a full set of fields, domain pick-lists, and validation rules. For most jobs, you can go straight from install to production without writing a single custom schema.

If you do need to customise, the Schema Editor lets you add your own asset classes, adjust fields, or change domain pick-lists to match a council's specific requirements.

How your data is stored

A-Spec project data is stored within the Stringer project database. When **Pack Mode** is enabled, all project data is stored directly within the DWG file.

This provides several benefits:

- Attribute data remains associated with the drawing.
- Archiving the project also archives the associated A-Spec data.
- Jobs can be copied, backed up, or versioned as a single package when Pack Mode is used.

Storage locations:

- **Pack Mode ON:** All project data is stored within the DWG file.
- **Pack Mode OFF:** Project data is stored in the project database, located in the **-Data** folder alongside the DWG file.

How to Access A-Spec

There are three different interface options for working with A-Spec — the **Toolbar**, the **Toolspace** menu, and the **Workspace**. They all hook into the same underlying data, so any change you make in one is immediately reflected in the others. Choosing between them is purely about which interface suits the work you're doing right now.

You can switch between all three at any time without losing work, and many users have all three open at once during a busy editing session.

1. The A-Spec Toolbar

The A-Spec Toolbar is a compact, vertical floating toolbar that gives you one-click access to the A-Spec actions you'll reach for most often. Each icon fires a single command, so you don't need to navigate menus during a busy editing session.

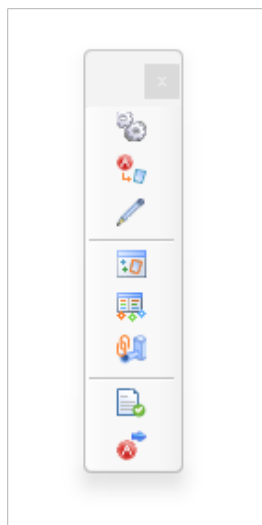


Figure 1: Floating toolbar with eight one-click icons.

The toolbar is opened from the Stringer Toolspace (Attributes Button → A-Spec → Show Toolbar). It floats above the drawing as a slim vertical strip and can be dragged anywhere on screen.

The icons, top to bottom, are:

1. **Project Setup** — opens the project configuration dialog
2. **Attach** — attach A-Spec records to selected CAD entities
3. **Edit** — pick an entity and edit its A-Spec attributes
4. **Workspace** — open the A-Spec Workspace
5. **Apply Mappings** — run the auto-mapper across all survey/CAD data
6. **D-Spec** — D-Spec Auto Populate (pit/pipe levels, lengths, grades, linkage)
7. **Validate** — open the Validation Report
8. **Export** — open the Export dialog

Best for: Active editing sessions where you'll be running these eight high-frequency commands repeatedly. The toolbar keeps every common tool one click away without cluttering the menu structure.

Typical workflow with the toolbar: Open it at the start of an editing session, run Apply Mappings and D-Spec Populate, jump into the 2D Viewer for review, and finish with Validate + Export — all from the toolbar. The **Attach** and **Edit** tools are used directly with CAD entities in model space.

2. The Stringer Toolspace

The Stringer Toolspace is the central hub for all Stringer actions, and A-Spec lives inside it as a dedicated submenu. Select the Attributes button on the Toolspace, hover over **A-Spec**, and you'll see the full menu, grouped into logical sections by separator:

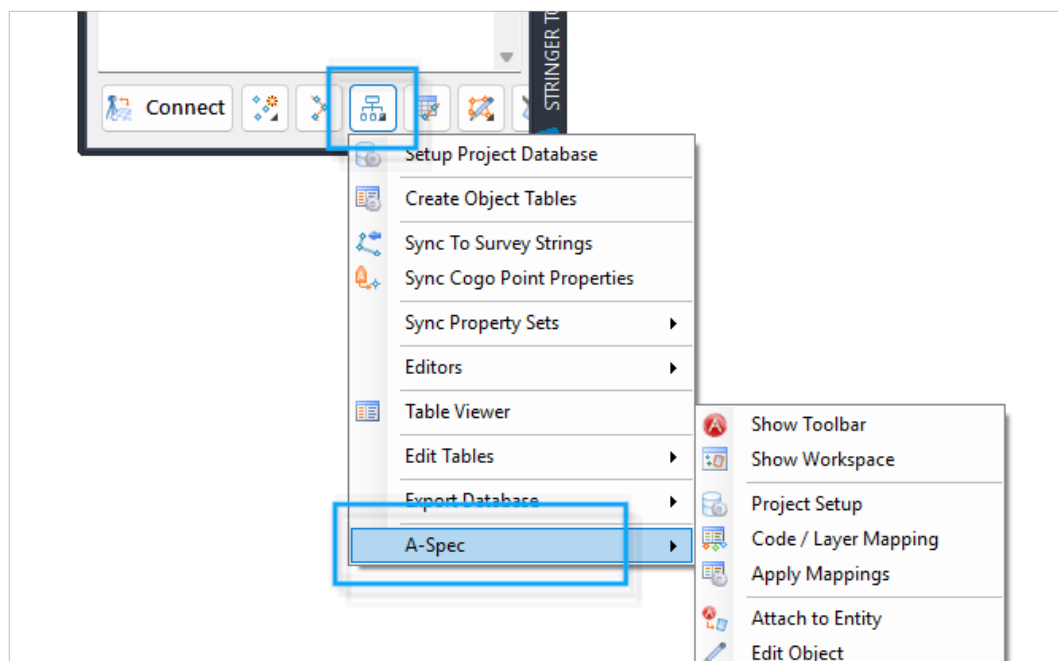


Figure 2: Menu showing all A-Spec actions.

- **Show Toolbar, Show Workspace** — open the other two A-Spec interfaces
- **Project Setup, Code / Layer Mapping, Apply Mappings** — set up and auto-attach
- **Attach to Entity, Edit Object, Match Properties** — single-entity actions
- **Bulk Attach from Layer, Attach by Class** — bulk attach options
- **Data Viewer** — tabular editing
- **List Unattributed** — find what hasn't been attributed yet
- **D-Spec Auto Populate, Sync from Survey** — auto-populate field data
- **Schema Editor** — customise asset classes and fields
- **Validation Report, Export Shapefiles** — QA and submission

The Toolspace menu has the most discoverable layout of the three interfaces — every action is named in plain English, grouped sensibly, and accompanied by an icon. It's the easiest place to find an action you don't run very often.

Best for: Occasional or one-off A-Spec actions, especially when you're already working in Stringer and

don't want to add another window or toolbar to your screen. It's also the natural starting point for new users — if you're not sure where to find something, the Toolspace menu is the place to look.

Typical workflow with the Toolspace menu: Use it to start a job (open Project Setup, set up Code/Layer Mapping), to pop into A-Spec for a one-off action mid-session, and to launch the Toolbar or Workspace when you're settling in for a longer editing run.

3. The A-Spec Workspace

The A-Spec Workspace is a dedicated window that combines a 2D plan view, an asset class tree, and a live properties panel into a single environment. Unlike the Toolbar and Toolspace menu — which run actions inside the host CAD drawing — the Workspace is its own visual interface for browsing, navigating, and editing A-Spec data.

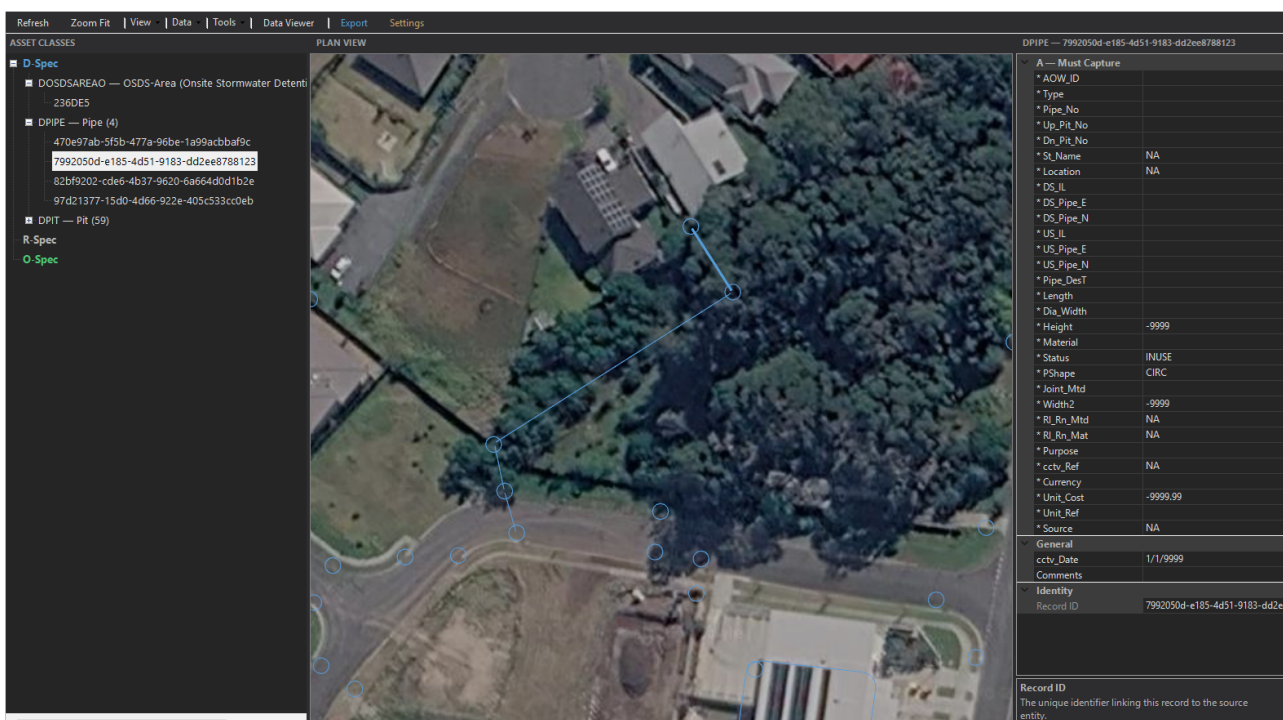


Figure 3: Three-panel layout with tree, plan, and properties.

From inside the Workspace you can:

- See every attributed asset on a colour-coded plan view at once, optionally over a live aerial photo background
- Browse the asset class tree to drill into specific classes and records
- Edit attributes directly in the properties panel
- Run Attach to Entity, Edit Object, Apply Mappings, D-Spec Auto Populate, and Sync from Survey from the Data menu

- Launch Validation Report, List Unattributed, Highlight Invalid, and Match Properties from the Tools menu
- Open the Data Viewer, Export, and Settings from the main toolbar
- Right-click an entity for **Select Similar** and right-click a tree node for **Open in Data Viewer** or **Delete Record**

In other words, the Workspace doesn't just visualise your data — it's a complete editing environment in its own right. For most jobs, once setup is done, you can spend the rest of the project working entirely within the Workspace.

Best for: Reviewing, auditing, and cleaning up A-Spec data, especially on jobs with lots of records. The visual overview makes it dramatically faster to spot misclassified assets, gaps in coverage, and network connectivity issues (such as pipes that don't connect to pits) compared with working through tabular data alone.

Typical workflow with the Workspace: Open it after the initial Apply Mappings pass, use the tree and plan view to navigate around your data, and edit attributes in the properties panel as you go. Hit Validate and Export from the same window when you're ready to submit.

The Workspace gets a full deep-dive section later in this guide.

Choosing the right interface

Situation	Best interface
Starting a new job, or running an occasional action	Toolspace menu
Heads-down editing session, lots of commands	Toolbar
Visual review, cleanup, audit, or large-scale editing	Workspace
Single quick action while working in CAD	Toolspace menu
Drainage network review and connectivity check	Workspace
Setting up a new project (first time)	Toolspace menu

Or, more simply:

- **Toolspace menu** = the menu of every action, always available, low screen footprint
- **Toolbar** = quick-access icons for the actions you use most
- **Workspace** = the full visual editing environment

Combining interfaces

Field tip

Most experienced A-Spec users don't pick just one — they combine them. A common setup is:

- Stringer Toolspace open in the corner of the screen for occasional actions and to launch other interfaces
- A-Spec Toolbar docked to one side for fast access during editing
- A-Spec Workspace open in the centre as the main visual environment

Because all three share the same underlying data, you can attach a record from the Toolbar, edit it in the Workspace properties panel, validate it from the Toolspace menu, and they'll all show consistent results in real time.

Spec Families

A-Spec module organises asset classes into **three spec families**: D-Spec, R-Spec, and O-Spec. Each family targets a specific infrastructure domain and ships with its own set of asset classes, fields, and validation rules. More families will be added to the module at a later date.

Family	Domain	Example Asset Classes
D-Spec	Drainage / Stormwater	Pit, Pipe, Headwall, Channel, Basin, Culvert, GPT, WSUD, OSD, Property Connection, Overland Flow Path, Subsoil Drain

R-Spec	Roads / Transport	Kerb, Pavement, Footpath, Vehicle Crossing, Street Light, Sign, Safety Barrier, Traffic Island, Line Marking, Street Furniture, Retaining Wall, Shared Path, Nature Strip, Speed Hump, Tactile Indicator
O-Spec	Open Space / Parks	Tree, Turf, Garden Bed, Bollard, Playground Equipment, Fencing, Irrigation, Sports Facility, Park Furniture, Shelter, Jetty, Park Lighting, Park Path, Open Space Wall

Choosing your families

For most jobs you'll only need one or two families. A typical subdivision as-constructed survey might use D-Spec and R-Spec; a civil infrastructure upgrade might add S-Spec and W-Spec; a park redevelopment would be primarily O-Spec. Enabling a family adds its asset classes to every picker in A-Spec — so only turn on what the council has actually asked for.

Different councils often require different **spec versions**. Larger councils may publish their own version of D-Spec, R-Spec, and so on, with subtle tweaks to field lists or domain values. A-Spec supports multiple versions per family, so you can keep each council's flavour alongside the others and simply switch between them in Project Setup.

INFO

The A-Spec module currently supports three families, with additional families planned for release later this year.

Entity Types

A-Spec records can be linked to three different source entity types. The type you choose affects where the geometry comes from and how updates flow through the job.

Entity Type	Source	When to use it
Survey Point	Stringer point data	Point features captured during survey (pits, hydrants, trees)
Survey String	Stringer string/polyline data	Linear features captured by string coding (kerbs, pipes, fencing)
CAD Entity	Any AutoCAD/BricsCAD object	Designed features, imported objects, or anything not in the survey

A-Spec figures out which entity type a selection is automatically — you don't need to tell it. Survey data has the advantage that attribute changes made in Stringer (such as elevation corrections) can flow through into A-Spec via Sync from Survey, keeping everything consistent.

Geometry Types

Every asset class in A-Spec declares the geometry it expects. This governs which picker you see when attaching, and how the data is written on export.

Geometry	Typical CAD Entity	Example Assets
Point	Block reference, point	Pit, Hydrant, Tree, Bollard
Line	Polyline, 3D polyline, line	Pipe, Kerb, Fencing
Polygon	Closed polyline	Basin, Pavement, Garden Bed

Geometry compatibility

Line and polygon geometry types are treated as interchangeable when attaching. An open or closed polyline can be attached to either a line or polygon asset class — A-Spec writes the right geometry on export regardless. Point geometry stays distinct: you can't attach a line asset class to a point, or vice versa, because the geometry simply isn't there.

This flexibility matters in practice. You might have a closed polyline representing a detention basin that you want to attribute as D-Spec DBASN (a polygon class), but the same polyline could equally be treated as a linear feature — A-Spec accepts both. If you're unsure, pick the geometry that best reflects what the feature actually is, and A-Spec will handle the rest.

Multiple assets on the same entity

Each entity can hold **one A-Spec record per asset class**, but the same physical object can carry records from more than one class if it genuinely represents more than one asset. In practice this is rare — most objects are one asset — but the flexibility is there if you need it.

Setting Up Your Project

Before you start attaching data, take a few minutes to configure your project. Project Setup is where you tell A-Spec everything it needs to know to produce a valid council submission. A few minutes spent here saves hours of rework at export time.

A-Spec Families

- ☒ D-Spec (Drainage)
- ☒ R-Spec (Roads)
- ☒ O-Spec (Open Space)

Coordinate System

EPSG Code: 28356 - GDA94 / MGA Zone 56

Datum: AHD

Quality Level: QL-A

Dictionary Database

Dictionary: C:\ProgramData\CSS\ARD\Common\Common-10\Connect\ASpec\ASpecDictionary.db (shared default)

Browse...

Use Default

New From Defaults...

Initialise Project

Edit Schema...

Switch Database...

Project is initialised.

Council / Authority

Council Name:

Council Code:

Certification Details

Consultant:

ABN:

Surveyor:

Registration:

Project Ref:

Description:

Common Field Defaults

Field Name	Default Value
Owner	
Condition	
Comments	

OK Cancel

Figure 4: Project setup window with options for specifications and database selection.

Spec families and versions

Tick the families you actually need for the job — for example, D-Spec and R-Spec for a typical subdivision. Only the families you enable appear in the pickers, menus, and exports, which keeps everything focused. For each family, choose the spec version the council has asked for. If the council hasn't specified, the most recent version is a safe default.

Council and project identification

- **Council name and code** — The receiving authority for your submission. This ends up embedded in the certification CSV produced at export.

- **Project reference and description** — Your own job identifier and a short description. These help you and the council tie the submission back to the physical project.

Coordinate system

Choose the EPSG code that matches the coordinate system your drawing is in (for example, 7855 for GDA2020 MGA Zone 55, or 7844 for GDA2020 geographic). A-Spec uses the EPSG code to generate the .prj file that accompanies every exported shapefile, so it's critical that this is set correctly — a wrong EPSG code will place your assets on the wrong side of the country in GIS.

If you're not sure which EPSG code to use, ask the council — most publish the expected coordinate system in their submission guidelines.

Vertical datum and quality level

- **Vertical datum** — Usually AHD (Australian Height Datum) in Australia. This is informational but is included in the certification file.
- **Quality level** — The AS 5488 quality level for the survey (QL-A through QL-D). Most as-constructed surveys submit as QL-A or QL-B; design data or indicative information is typically QL-C or QL-D. The quality level affects interpretation of the submitted data by the council.

Certification details

The certification block captures who produced the data and stands behind it. At minimum you'll want:

- **Consultant name and ABN** — Your company details
- **Surveyor name and registration number** — The registered surveyor responsible for the work

These appear in the certification CSV and are typically required for the council to accept the submission.

Mapping file paths

If you have saved code and layer mapping files (see the next section), point Project Setup at them here. Most organisations keep a standard mapping file on a network share and simply reference it from every new job.

Common defaults

Common defaults let you set project-wide values for fields that are the same across every asset in the job. The classic example is the asset **Owner** — if every asset in the job will be owned by the same council, set the Owner default once and A-Spec fills it in on every new record. You can still override on a per-record basis if needed.

Custom database location

A-Spec normally saves the project database with the drawing file in the -Data folder. When "Pack Mode" is enabled in Stringer, the A-Spec database is stored within the DWG file.

Code and Layer Mapping

The Code/Layer Mapping editor is where you tell A-Spec how to recognise your assets automatically. By mapping survey codes and CAD layer names to A-Spec asset classes, you make it possible to attribute hundreds of assets in a single click later on.

You only need to set up your mapping once per organisation — save the mapping file, reuse it on every new job, and tweak it as new asset types appear.

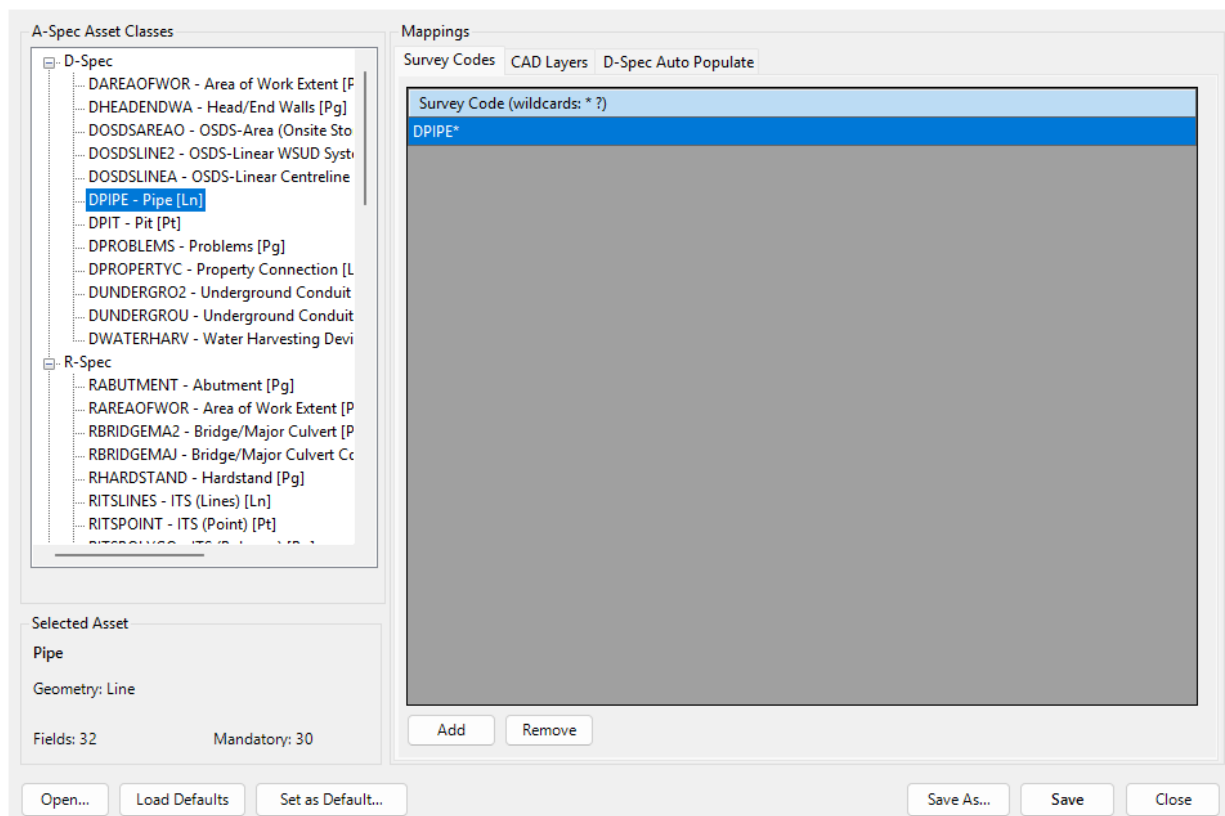


Figure 5: Asset classes and survey codes shown in a code/layer mapping panel.

What the mapping editor does

The mapping editor gives you two complementary mapping tables:

- **Survey codes** map to asset classes for both points and strings. If your surveyors use PIT for drainage

pits, map PIT to DPIT, and every point or string coded PIT becomes a drainage pit record when you run Apply Mappings.

- **CAD layer names** map to asset classes for polylines, blocks, and any other CAD object. If your drafting standard puts all kerbs on V-ROAD-KERB, map that layer to RKERB.

You can map as many codes or layers to a single asset class as you need — A-Spec treats the right-hand side of each rule as a list.

Wildcards

Both tables support two wildcard characters:

- * matches any number of characters (including none)
- ? matches exactly one character

This is especially handy when your codes or layer names follow a pattern with variable suffixes. A rule like SW* catches every code starting with SW (SW, SW150, SWMH, SW-IO) in one line. A rule like KERB? catches KERB1 through KERB9 but not plain KERB or KERB10 — useful when you want precise control.

Wildcards are case-insensitive, so sw* and SW* behave identically.

Mapping strategy

TIP

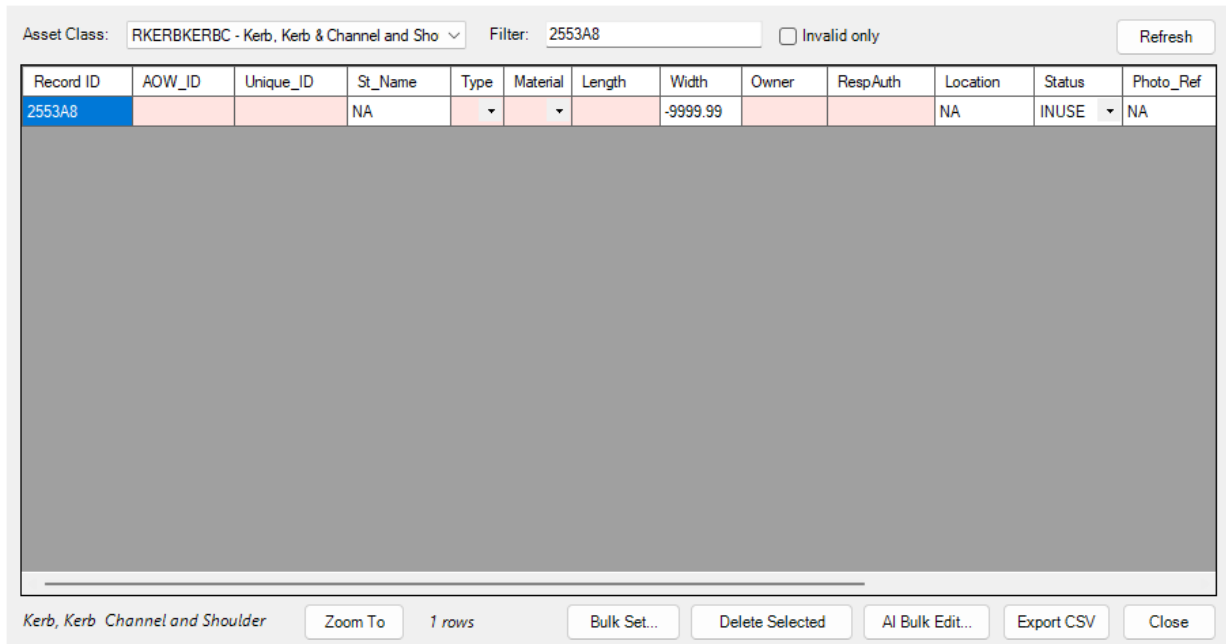
A few tips from experienced users:

- **Start with a master file.** Build one mapping file that covers everything your organisation encounters, and point every new job at it. Only add project-specific overrides when truly needed.
- **Favour broad rules.** It's better to catch a few extras and review them than to miss real assets. Unattributed entities show up clearly in the List Unattributed tool.
- **Review after first Apply.** On a new mapping file, run Apply Mappings once, then use List Unattributed and the Data Viewer to spot what was missed or miscategorised. Refine the mapping file and re-apply.
- **Version your mapping files.** A mapping file is gold — keep it in version control or at least a backed-up network location.

Attaching A-Spec Data

Attaching is the act of linking an A-Spec record to a physical object in the drawing. There are several ways to do this, depending on whether you'd rather start from the entity, the asset class, or just let A-Spec do the work.

A good rule of thumb: let Apply Mappings do as much as possible, then use the manual tools to clean up the rest.



Record ID	AOW_ID	Unique_ID	St_Name	Type	Material	Length	Width	Owner	RespAuth	Location	Status	Photo_Ref
2553A8			NA				-9999.99			NA	INUSE	NA

Figure 6: The Data Viewer enables editing of individual records and supports bulk modifications.

1 Apply Mappings (the fastest way)

If you've set up your code and layer mappings, **Apply Mappings** is the most powerful tool in the kit. It scans every survey point, every survey string, and every CAD entity in the drawing, and automatically attaches A-Spec records wherever a mapping match is found.

You'll see a summary at the end showing how many points, strings, and CAD entities were attributed, and how many were skipped because they already had records or couldn't be matched. For most jobs, this single action does 90% of the work.

Apply Mappings is safe to run repeatedly. Existing records are left alone — only new entities are attributed. This means you can run it once at the start, add more survey or CAD data, and run it again to pick up just the new stuff.

2 Attach to Entity

Use this when you want to start from what's already in the drawing. Pick one or more entities, and A-Spec will offer you a filtered list of asset classes that match the geometry you selected (so you won't be offered "Pipe" if you've picked a point block). Records are created with sensible defaults, and if you've selected just a single entity, the data view opens straight away so you can fill in the details.

Attach to Entity is ideal when:

- You're working through a small batch of one-off features that don't fit the mapping rules
- You're attributing something unusual that you haven't added to the mapping file yet
- You want to select a mix of points, lines, and polygons in one go and assign each to the most appropriate class

If any of the entities you've selected already have a record of the class you pick, A-Spec will ask whether to replace, skip, or stop before making changes.

3 Attach by Class

The reverse workflow — pick the asset class first, then select the entities. This is handy when you know exactly what you're attributing and want to attach a batch quickly without scrolling through dropdowns each time.

It's also the better choice when you've got an unusual case where the entity geometry could be read multiple ways and you want to be sure of the class before picking. For instance, you might want to attribute every closed polyline on a particular layer as a garden bed rather than a sports facility — Attach by Class removes any ambiguity.

4 Bulk Attach from Layer

Got a whole layer full of identical assets — say, every kerb on V-ROAD-KERB? Bulk Attach from Layer lets you nominate a layer and an asset class, and every compatible entity on that layer is attributed in one go.

This is perfect when:

- Your drafter has been disciplined about layering but you don't have a mapping rule set up
- You want to quickly process a one-off layer without adding to the master mapping file
- You're importing CAD data from another source and want to batch-attribute it on arrival

Geometry compatibility is still checked per entity, so a mis-layered block on a kerb layer won't get attributed as a kerb by mistake.

Attaching gotchas

IMPORTANT

A few things that catch people out:

- **Zero-length polylines** (accidentally snapped to themselves) don't have usable geometry and will be skipped during attachment. Clean these up in the drawing first.
- **Proxy objects** from other CAD applications may not expose geometry to A-Spec. If you see skip counts in the summary, check whether your source data contains proxies that need exploding or converting.
- **Nested blocks** are treated as a single unit — you attach the whole block, not its internals.

Editing A-Spec Data

A-Spec gives you several complementary ways to edit attribute data, depending on whether you're tweaking one record, copying values across many, doing a wholesale review, or editing visually from the plan view. Most users find themselves using two or three of these tools during a typical job.

1 Edit Object

The simplest edit workflow: click an entity in the drawing, and the data view opens for that record. If the entity hasn't been attributed yet, you'll be prompted to attach it first.

Edit Object is great when you're already working in the drawing and spot something that needs fixing — no need to switch windows or hunt through a list.

2 Match Properties

Just like the familiar CAD "match properties" command, but for asset data. Pick a source entity that already has the values you want, then click the targets. All the field values are copied across, and any targets that don't yet have a record will get one created automatically.

Match Properties shines when you've got a run of identical assets — for example, a kerb return that's all the same material and type, or a line of matching bollards. Fill in one, then "paint" the rest in seconds.

Bear in mind that Match Properties copies every field value, including identity fields. If you want to copy most fields but keep unique IDs, use the Data Viewer or the AI Bulk Editor instead.

3 Data Viewer

The Data Viewer is your tabular editing environment. It shows every record across every active asset class, organised by table, with full field-level editing, domain pick-lists, and zoom-to-entity buttons so you can flip back to the drawing for context. This is the best place to do a thorough review or to clean up a column of values.

The Data Viewer is particularly good for:

- **Column-by-column QA.** Scroll down the Material column and check for blanks or anomalies at a glance.
- **Bulk filling.** Work your way through every record of a given class in one sitting.
- **Cross-referencing.** See every pipe in one table and every pit in another, side-by-side.
- **CSV-style review.** The tabular view is the most spreadsheet-like experience in A-Spec and is the closest analogue to working in Excel.

Every edit saves immediately, so you can switch asset classes or close the viewer at any time without losing work.

4 Workspace Properties Panel

The Workspace properties panel (covered in detail later) is the most visual way to edit — click an entity on the plan view and its attributes appear grouped by capture category on the right. It's ideal when geographic context matters, such as checking that every pit on the eastern leg of a network has its ID filled in.

Asset Class: DPIT - Pit Filter: ☐ Invalid only Refresh

Record ID	AOW_ID	Pit_No	St_Name	Location	Type	Const_Type	Acces_Mtd	Lid_Type	Lid_Mat	Easting	I
05ba419e-e5c4-437d-a171-e69efe91be56			NA	NA							
07f834e1-43a6-40a6-a4be-b968b7c68c98			NA	NA							
081e2f83-4766-4a12-8868-9769dd492217			NA	NA							
0dca5e51-130a-455c-bdcb-da215f0b04b4			NA	NA							
0fb50215-de89-48b4-a86c-61120d529b5f			NA	NA							
10fb1168-8e8f-46ad-91c9-ccd217c8996c			NA	NA							
1d1003c8-e778-4d87-8d0b-20d7552fda58			NA	NA							
23dd3b9e-2e79-496a-9600-fa8de3335a0			NA	NA							
257b1a9d-1e02-4887-afaa-a3bfeb175845			NA	NA							
29aa94a2-3a03-420d-84fe-9e6aa782756e			NA	NA							
29e1ac44-4d56-4b4b-b527-5479d39d860d			NA	NA							
30567063-37f5-4458-b46a-a3cde7d40fee			NA	NA							
31d65344-ed7c-45e8-8ff8-1531d36b3671			NA	NA							
33c6678c-e9c6-4529-8955-86ca96eef167			NA	NA							
3a4bf4b9-de40-41ef-a4a7-4fff4de6868e			NA	NA							
47061688-c5bd-4c11-ae96-916d41aaca91			NA	NA							

Pit — 59 record(s) (59 with issues) Zoom To 59 rows Bulk Set... Delete Selected All Bulk Edit... Export CSV Close

Figure 7: The Data Viewer displays record IDs and associated data fields. Extensive editing options are provided.

Auto-Populating Field Data

Two tools dramatically reduce the amount of manual data entry needed. Both are safe to run at any time — they only fill blank fields, never overwriting anything you've typed in.

D-Spec Auto Populate

For drainage jobs, D-Spec Auto Populate is a huge time-saver. It reads the live survey data and works out most of the drainage-specific fields for you in four sequential steps:

1. **Pit surface levels.** For every drainage pit that's linked to a survey point, the pit's surface level is set from the point's Z coordinate. No more typing surface levels one at a time.
2. **Pipe inverts, length, and grade.** For every pipe that's linked to a survey string, the upstream and downstream invert levels are taken from the string endpoints, and the length and grade are calculated from the geometry.
3. **Pipe-to-pit linkage.** A-Spec finds the nearest pit at each end of every pipe (within a search radius) and records the upstream and downstream pit IDs. This is what makes your exported network connect properly in GIS.
4. **Corrected pipe geometry.** Raw survey polylines rarely start and end exactly at pit centres — they're

often picked up at the pit rim or just offset. D-Spec Auto Populate stores a corrected geometry for each pipe that runs pit-centre to pit-centre, so the exported shapefile lines connect cleanly.

When should you run it? Ideally right after you've attached your D-Spec records — once the pits and pipes are attributed, auto-populate fills in the engineering fields in one pass.

Requirements: D-Spec must be active, and the drainage pits and pipes need to already have A-Spec records attached. Run Apply Mappings (or the manual attach tools) first, then auto-populate.

Safety: Only empty fields are filled. If you've manually entered an invert level that disagrees with the survey, your value is preserved.

Sync from Survey

Sync from Survey re-reads survey points and survey strings to refresh field values that come from the survey. It's the tool to reach for when:

- You attached records before the survey attribute data was finalised (so the A-Spec records were populated with partial or default values)
- The survey has been re-processed — for instance, after a control update or a datum adjustment — and the A-Spec fields need to pick up the corrected values
- You just want to be sure your A-Spec data matches the current state of the survey before export

Sync works across every active asset class, not just D-Spec. Wherever an A-Spec record is linked to a survey point or string, Sync will re-resolve the link and refresh any field values that come from the survey.

Like auto-populate, Sync only fills blank fields — your manual entries are always preserved.

Validating Your Data

The Validation Report is your safety net before export. It runs every quality check that applies to your active asset classes and presents the results in a clean summary view. You'll see, per asset class, the total number of records, how many are valid, how many have issues, and an overall completion percentage.

Drilling into any row gives you a detailed list of what needs fixing.

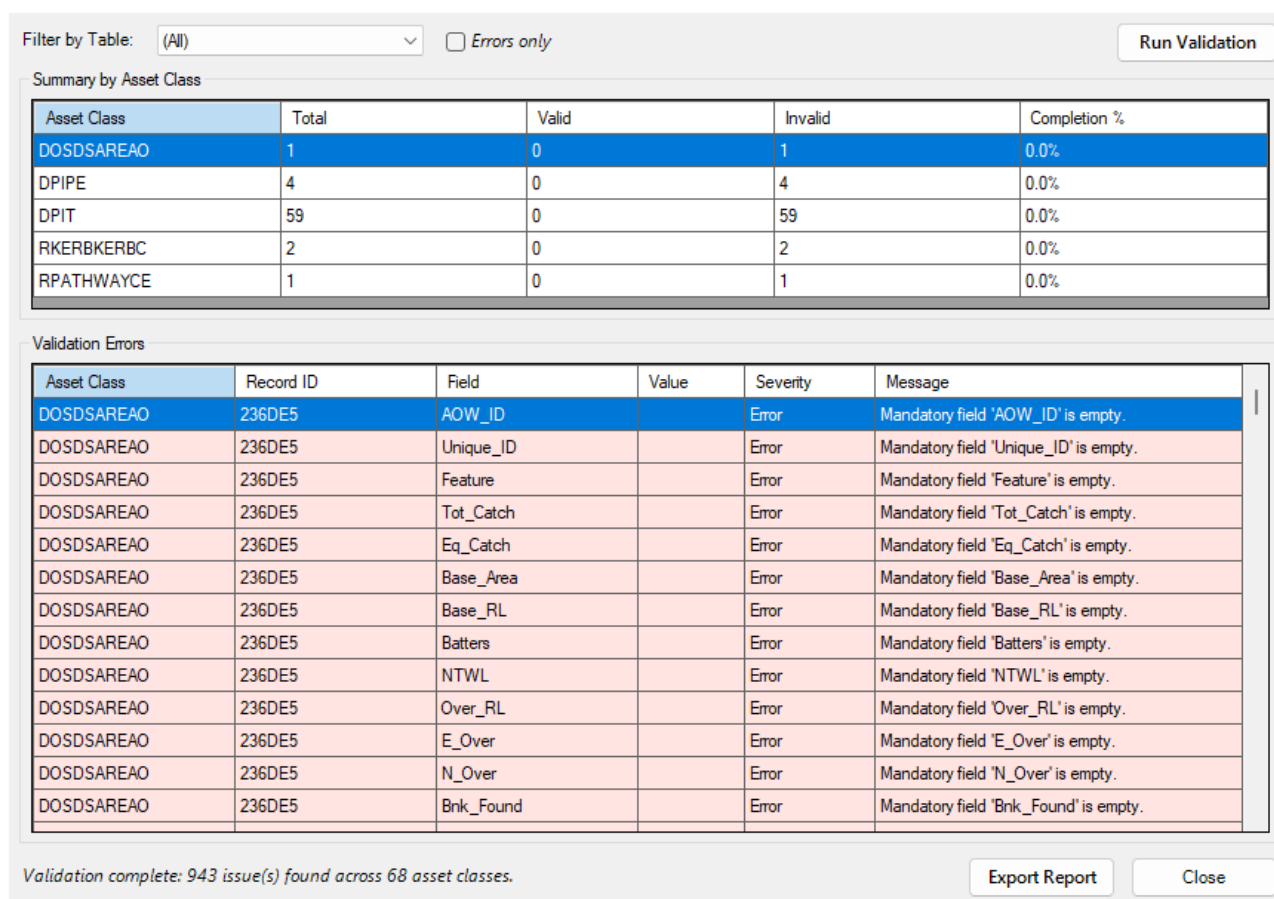


Figure 8: Validation summary with per-class errors and warnings.

What validation checks for

Field-level checks (apply everywhere):

- **Mandatory fields** left empty — reported as errors
- **Capture Category A** fields left empty — reported as errors
- **Capture Category B and C** fields left empty — reported as warnings
- **Values not in the domain pick-list** — reported as errors (a typo in a material name, for example)
- **Wrong data type** — text entered into a numeric field, or vice versa
- **Strings longer than 254 characters** — reported as warnings, because anything longer won't fit in a shapefile

Drainage-specific checks (D-Spec):

- Upstream invert levels lower than downstream inverts (pipe flowing uphill)
- Pit surface level lower than the invert level (nonsensical geometry)
- Basin spillway level at or below the invert level

- Top of bund level lower than the spillway level
- Pipe upstream or downstream pit ID references that don't match any actual pit

Working with the Validation Report

The summary view lets you see at a glance which asset classes are ready and which need work. The completion percentage is a useful metric to share with project managers — it shows how close a job is to submission-ready.

The detailed error list can be filtered and sorted. Each entry shows you the record, the field in question, and what's wrong. Clicking an entry zooms to the offending asset in the drawing so you can fix it in context.

Exporting the report

Both the summary and the detailed error list can be exported to CSV. This is useful for:

- Sharing a clean punch list with a drafts person or surveyor
- Documenting QA for ISO or internal audit purposes
- Tracking progress week by week on a long-running job

Validation is non-destructive

Running the Validation Report never changes your data. It's purely a read-only check — run it as often as you like, at any stage of the project.

Highlight Invalid (Workspace)

For a more visual take on validation, the Workspace has a **Tools → Highlight Invalid** toggle. When active, every entity with a validation error (missing Category-A or mandatory field) is painted red on the plan view. The status bar reports the total count.

As you edit records in the properties panel, A-Spec re-validates each one in the background and turns red entities back to their family colour the moment they become valid. This makes the Workspace a powerful real-time QA dashboard: turn Highlight Invalid on, work through the red dots and lines until they're all gone, and you know your job will validate cleanly without ever opening the full Validation Report.

Toggle Highlight Invalid off (or press Ctrl+R) to clear the highlighting and return to normal colours.

Finding Unattributed Objects

The List Unattributed tool scans the drawing for anything that doesn't yet have an A-Spec record — survey points, survey strings, polylines, blocks, lines, and points in model space. Each unattributed item is

listed with its type, code, layer, and location, with a zoom-to button so you can decide whether it needs attributing or whether it's fine to leave alone.

When to use it

List Unattributed is the perfect final check before export, to make sure you haven't missed anything important. But it's also useful:

- **Early in the job**, to see what percentage of your entities have been attributed (and therefore how much work is left)
- **After a drawing update**, to find new entities that arrived in the latest revision
- **When debugging mapping rules**, to see what slipped through your code/layer mappings

What counts as "unattributed"

An entity is considered unattributed if it has no A-Spec record at all, in any active asset class. Entities that already have at least one record are not listed.

Entities that shouldn't ever be attributed — for example, text, leaders, viewports, and non-asset drafting elements — are still listed, but you can safely ignore them. Many users filter the list by type or layer to focus on the things that could realistically be assets.

Triage from the list

From the List Unattributed window, you can zoom to any entity to check in context. If it is an asset, jump straight to Attach to Entity to attribute it. If it isn't, move on to the next one.

Exporting for Submission

When your data is clean and validated, the Export dialog produces a council-ready submission package. This is where all the work you've put into setup, attachment, population, and validation comes together into deliverable files.

Shapefile Export

Shapefiles are the most widely accepted format for council submissions in Australia. A-Spec produces one ESRI shapefile per asset class, with the following characteristics:

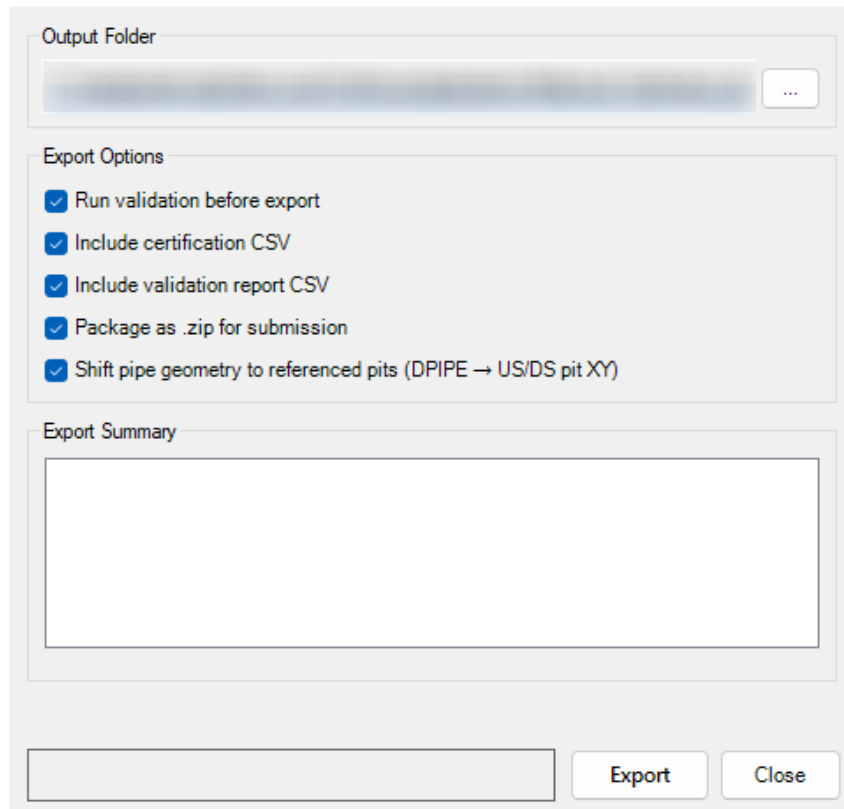


Figure 9: Export dialog showing options for file creation and export summary.

- **One file set per class.** Each asset class becomes its own shapefile (with its accompanying .shp, .shx, .dbf, and .prj files).
- **Correct geometry type.** Point classes produce point shapefiles, line classes produce polyline shapefiles, and polygon classes produce polygon shapefiles.
- **Projection file.** A .prj file is generated from your project's EPSG code, so the shapefile opens in the correct coordinate system in any GIS application.
- **Character fields.** All fields are written as character (string) type, up to 254 characters. This is the A-Spec convention and ensures maximum compatibility across GIS software, even for numeric values.

- **Corrected geometry where available.** Drainage pipes that have been through D-Spec Auto Populate use the corrected pit-to-pit geometry, so connectivity is clean in GIS.

MapInfo Export

If your council prefers MapInfo, A-Spec also writes `.mif` and `.mid` files for every asset class. The `.mif` file contains the geometry (as Point, Pline, or Region objects), and the `.mid` file contains the attribute data as comma-delimited rows.

MapInfo exports are produced alongside shapefiles from the same dialog, so you can produce both formats in one go if you need to.

Certification CSV

A certification file is produced alongside your geometry exports, summarising the project. It captures:

- Project reference and description
- Receiving council
- Consultant and surveyor details
- Coordinate system name and EPSG code
- Vertical datum and quality level
- Active spec families and the version used for each
- Record count for every asset class exported
- Export timestamp

The certification CSV is what stands behind your submission and is usually a mandatory part of the handover to council.

ZIP Package

Finally, every file produced — shapefiles, MapInfo files, certification CSV, and any supporting files — is bundled into a single `.zip` for submission, so you've got one tidy file to email or upload.

Re-exporting

INFO

You can re-run the export as many times as you like. It's common to export early (perhaps with known gaps), review with the client, fix issues, and re-export for the final submission. Each export is timestamped in the filename so older versions aren't overwritten.

The AI Bulk Editor

The AI Bulk Editor is A-Spec's smart assistant for making sweeping attribute changes without writing scripts or editing records one at a time. You simply describe what you want in plain English, review the proposed changes, and accept or reject them.

The AI Bulk Editor is launched from the **Data Viewer** — open the Data Viewer (toolbar, Toolspace menu, or Workspace toolbar), pick an asset class, and click the **AI Bulk Edit...** button at the bottom right.

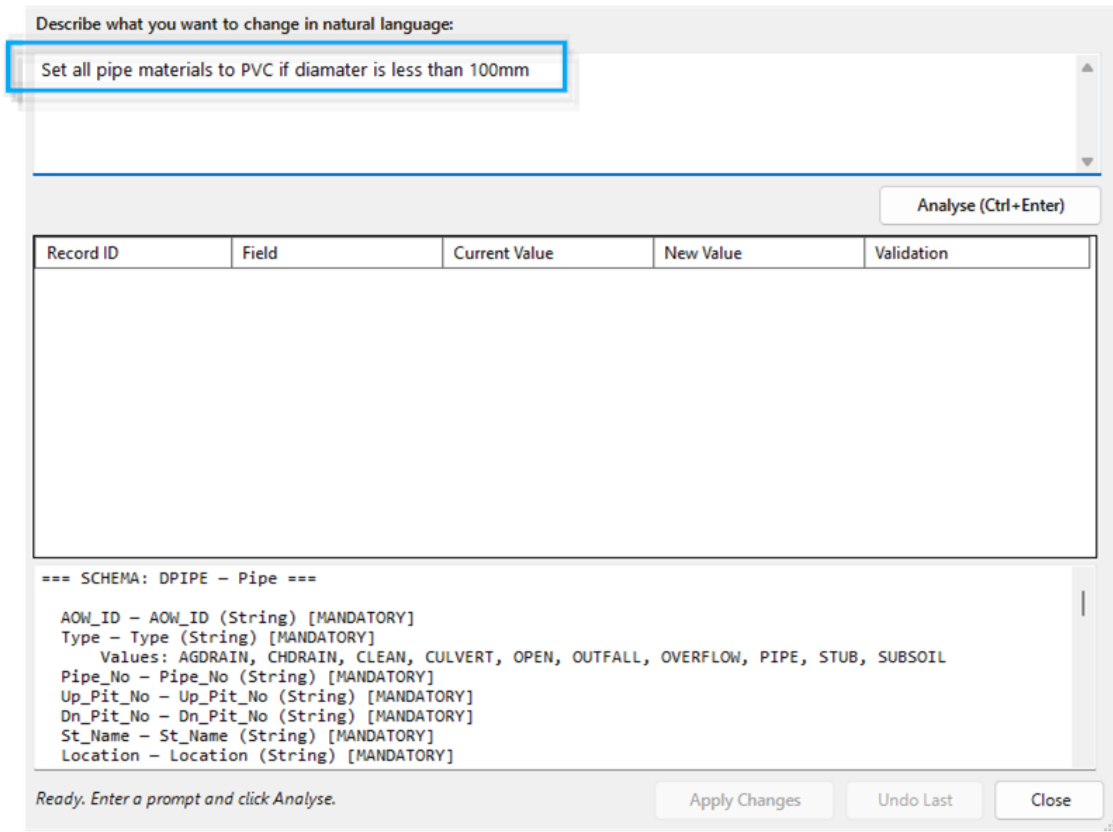


Figure 10: The AI Bulk Editor enables record modification through natural language input.

How it works

1 Scope

The AI Bulk Editor opens scoped to the asset class currently shown in the Data Viewer.

2 Instruct

Type an instruction in plain English, such as:

- *"Set all pit types to Grated Inlet where the depth is greater than 1000mm"*
- *"Change the material on every kerb from Concrete to Precast Concrete"*
- *"Fill the Asset Owner field with 'City of Example' on any record where it's blank"*

3 Propose

A-Spec sends the current records and the schema to the AI model. The AI returns a set of proposed edits.

4 Validate

Every proposed edit is validated against the schema before you see it:

- Domain pick-list values are verified
- Data types are checked (no text into numeric fields)
- String lengths are verified against the field maximum
- Field names are verified to exist in the schema

5 Review and Accept

The proposed changes are presented in a before/after view, field by field. Accept or reject. If you accept, the changes are applied and an undo snapshot is taken first — so you can roll back if you change your mind.

What kinds of tasks it's great for

- **Standardisation.** Fix inconsistent capitalisation or abbreviations across a class.
- **Conditional bulk updates.** "Set X to Y where Z matches a pattern" is the AI Bulk Editor's sweet spot.
- **Gap-filling.** "Fill any blank Owner field with the default value" applied across thousands of records in one go.
- **Cleanup after a council specification change.** Remap old domain values to new ones without retyping.

What to watch out for

INFO

- **Be specific.** The clearer your instruction, the more accurate the proposed edits. Include the field name, the condition, and the target value.
- **Review before accepting.** The AI is good, but it's not infallible — always scan the before/after view before clicking accept.
- **Start small.** On your first few uses, try the AI Bulk Editor on a handful of records to get a feel for the tone of instruction that works best.
- **Use undo freely.** If an edit doesn't turn out the way you expected, the undo snapshot lets you roll back with a single click.

Batching large jobs

For very large record sets, the AI Bulk Editor automatically splits the work into batches behind the scenes, so performance stays snappy even on thousands of records. You'll see progress as batches complete.

Safety

No edit is ever applied without your explicit confirmation. Invalid edits (those that would break schema validation) are flagged and excluded from the final change list, so you can't accidentally corrupt your data.

The A-Spec Workspace

The A-Spec Workspace is the most visual way to work with your data. It's a dedicated 2D plan view that shows every attributed asset in your job, colour-coded by spec family, with a tree of asset classes on the left and a properties panel on the right. It's the closest thing A-Spec has to a "mission control" view.

The three panels

- **Asset Class Tree** (left) — A hierarchical view of every spec family, every asset class, and every individual record. Click a record to highlight it on the plan; double-click to zoom to it. The tree shows record counts at every level, so you can see at a glance how many pits, pipes, kerbs, or trees you've attributed.
- **Plan View** (centre) — Every entity drawn as colour-coded geometry: circles for points, polylines for lines, closed shapes for polygons. Each spec family has its own colour, so you can see at a glance how your data is distributed. Drainage is cyan, roads are a light green, open space is yellow, and so on — a quick scan tells you whether your drainage network is where you expect it to be.

- **Properties Panel** (right) — The full attribute list for the selected record, organised by capture category (Must Capture, Should Capture, Recommended, Optional, and Identity). Domain fields show pick-list dropdowns, free-text fields show input boxes, and edits save instantly.

Visual features

- **Colour coding by family** makes it obvious at a glance which assets belong to which domain. Drainage and sewer networks sit alongside each other in a subdivision; colour lets you quickly tell one from the other.
- **Entity labels** show the asset code at the centroid of each feature. Toggle them on for detail or off to reduce clutter on dense sites (View → Labels).
- **Polygon fills** can be turned off when you want to see underlying geometry or when polygons overlap (View → Fills).
- **Aerial imagery** can be draped under your data as a live satellite background — see the dedicated section below.
- **Hover tooltips** appear when you pause over an entity for a moment. They show every mandatory and capture-category field at a glance, with the value that's currently entered or a REQUIRED / RECOMMENDED placeholder for blanks. Tooltips with missing mandatory fields are highlighted in pink for instant visibility.
- **Live coordinate readout** in the status bar shows the true map coordinates (E / N) of your mouse position as you move around the plan — handy for quickly checking where something is without leaving the Workspace.
- **Record count** in the status bar tells you how many A-Spec entities are currently rendered.

Navigation

- **Left-click** to select an entity. The tree syncs to the selected record and the properties panel populates instantly.
- **Right-click an entity** to open a context menu with **Select Similar** (covered below).
- **Right-click a tree node** to open the record in the Data Viewer or delete it.
- **Double-click a record in the tree** to zoom to it — especially useful when a particular record is flagged in validation and you need to find it quickly.
- **Middle-mouse drag** to pan.
- **Scroll wheel** to zoom in and out.
- **Zoom Fit** button frames every visible entity in the viewport in one click.

- **Refresh** reloads all A-Spec records from the database and re-renders the plan. Use this after external changes, such as a round-trip through the Data Viewer.
- **Ctrl+R** is a shortcut for Refresh that also clears any active Highlight Invalid mode.

Editing from the Workspace

The Workspace isn't just for viewing — it's a complete editing environment in its own right. The toolbar at the top of the window is grouped into four menus and four direct buttons:

View menu:

- **Labels** — toggle asset code labels on the plan
- **Fills** — toggle polygon fills on/off (also switches between Shaded and Wireframe display modes)
- **Aerial Imagery** — opens the Aerial Imagery settings dialog

Data menu:

- **Attach to Entity** — pick an entity in the host drawing and attribute it from within the Workspace
- **Edit Object** — jump back to an entity and edit its record
- **Apply Mappings** — run the full auto-mapper and see the new records appear in the tree and plan view
- **D-Spec Auto Populate** — fill in drainage fields from the survey without leaving the Workspace
- **Sync from Survey** — refresh records from the latest survey data

Tools menu:

- **Validation Report** — opens the full Validation Report window
- **List Unattributed** — opens the Unattributed Objects scanner
- **Highlight Invalid** — paints invalid entities (those with missing Category-A or mandatory fields) red directly on the plan view, and self-clears as you fix the offending fields. Toggle it off to return to normal colours.
- **Match Properties** — start a Workspace-native Match Properties session (see below)

Direct toolbar buttons:

- **Refresh** — reload all records from the database and re-render the plan
- **Zoom Fit** — frame every visible entity in the viewport
- **Data Viewer** — opens the tabular editor, filtered to the currently-selected asset class. The Data Viewer is also where the **AI Bulk Edit** button lives, so this is your jumping-off point into AI-assisted bulk edits.
- **Export** — opens the Export dialog
- **Settings** — opens Project Setup

Editing many records at once from the Workspace

The Workspace gives you two visually-driven ways to edit many records in one go, both feeding directly into the right-hand properties panel:

- **Select Similar** — right-click an entity on the plan and choose **Select Similar**. Every entity of the same asset class is highlighted, and the properties panel switches into bulk-edit mode. Any value you type in the panel applies to every selected record at once. Fields that already differ between records show as (Varies) until you overwrite them.
- **Match Properties (Workspace)** — select a source entity (the one with the values you want to copy), then choose **Tools → Match Properties**. The cursor turns into a cross-hair; left-click each target entity to add it to the set, then press **Enter** to apply or **Esc** to cancel. The properties panel opens pre-filled with the source values, ready to be written to all targets in one save.

Both flows use the same bulk descriptor under the hood, so the experience is identical: you see a single combined property sheet that writes to many records at once. This is often faster than the Data Viewer's tabular bulk-set tool when geographic context matters.

Aerial imagery overlay

The Workspace can drape live satellite tiles underneath your A-Spec data, giving you instant ground-truth context for every record. Open the dialog from **View → Aerial Imagery** and you'll see five fields:

- **Enabled** — turn the overlay on or off without losing your other settings
- **Map Provider** — choose from Bing Satellite, Bing Hybrid, Google Satellite, Google Hybrid, or Open Street Map
- **Opacity** — slider from 10% to 100%, controlling how strongly the imagery shows through your data
- **Zoom Level** — preferred tile zoom (12 to 19); higher zoom gives sharper imagery but pulls more tiles
- **Projection** — pick a DotSpatial category/system (e.g. NationalGridsAustralia → GDA2020 / MGA zone 55) or browse to an ESRI .prj file. The projection tells A-Spec how to convert your drawing coordinates to the WGS84 lat/long the tile servers expect.

A quick hint at the bottom of the dialog reminds Australian users to choose `NationalGridsAustralia` → `GDA2020 / MGA zone XX`.

Once enabled, tiles fetch in the background as you pan and zoom. The Workspace caches tiles in memory so revisiting an area is instant. Your settings — provider, opacity, zoom, projection, enabled state — are remembered and restored automatically the next time you open the Workspace.

Aerial imagery is purely a visual aid: it doesn't affect your data, exports, or validation in any way. Turn it off any time you want a clean plan view.

Why most users live in the Workspace

Key takeaways

Once a project is set up and the initial Apply Mappings pass is done, most users find themselves spending the bulk of their time in the Workspace. The combination of:

- A visual overview of every asset at once, optionally over an aerial backdrop
- Hover tooltips that surface mandatory-field gaps without a click
- Highlight Invalid mode for at-a-glance QA on the plan
- One-click access to every editing tool
- Instant attribute editing in the properties panel — single, Select Similar, or Match Properties bulk modes
- Zoom-to and match-back navigation between plan and tree

... makes it an extremely productive environment for the review, refine, and polish phases of an A-Spec job.

Capture Categories

A-Spec fields use a tiered capture classification — the **capture category** — to indicate how important each field is for council submission. The category system is aligned with AS 5488 and most council asset specifications, and it's the primary way that validation distinguishes between true errors and informational warnings.

Category	Meaning	Validation Severity
A	Must capture — required for submission	Error if empty
B	Should capture — expected for completeness	Warning if empty
C	Recommended — helpful for asset management	Warning if empty
D	Optional — supplementary information	No validation

How to use the categories in practice

In the Workspace properties panel, fields are visually grouped by capture category, with the most important (Category A — Must Capture) at the top. This means you always see the critical fields first, and you can work your way down through the tiers as time allows.

A pragmatic strategy:

- **Always fill Category A.** These will fail validation and block submission.
- **Fill Category B wherever practical.** They're easy QA wins and improve the council's ability to use your data.
- **Fill Category C if you have the information.** Skip if you don't — they're warnings, not errors.
- **Use Category D as time permits.** Often these are nice-to-have fields that few projects bother with.

Mandatory vs. capture category

Some older asset classes use a simple Mandatory flag instead of a capture category. The Mandatory flag works the same way as Category A — if mandatory is true, the field must not be empty for the record to be valid.

Field Definitions

Every field in an A-Spec asset class is defined by a small set of properties. Most users won't need to think about these unless they're customising a schema, but understanding what they mean helps you read the field list and the validation results.

Property	Description
Field Name	Short name (≤ 10 chars for shapefile compatibility)
Display Name	Human-readable label shown in the interface
Data Type	String, Double, Integer, or Date
Mandatory	Whether the field is required
Capture Category	A / B / C / D tier (see above)
Domain Values	Constrained pick-list (empty = free text)
Default Value	Pre-populated on new records

Max Length	Maximum string length (default 254)
Sort Order	Display ordering in the properties panel
Description	Help text shown to users

Why field names are short

Shapefiles inherit a 10-character limit on field names from the underlying DBF format. A-Spec respects this so that exported shapefiles open cleanly in any GIS application. The short name is what GIS software sees; the longer Display Name is shown in A-Spec to make life easier for the human filling things in.

Domain values

When a field has a domain (a pick-list of allowed values), A-Spec presents the values as a dropdown in the properties panel and the Data Viewer. Free-text entry is blocked, and validation will flag any value that's not in the pick-list — a powerful way to enforce consistency across hundreds of records.

If you need a value that isn't in the list, the Schema Editor lets you add it (subject to council acceptance).

Default values

Default values pre-populate new records as they're created. The most useful defaults are typically:

- **Council-defined common values** like a default Owner or Asset Manager
- **Frequently-recurring values** like the most common pipe material in your area

Defaults set in the schema apply to all projects; defaults set in Project Setup's Common Defaults apply only to the current job.

Mapping File Format

Mapping files are plain-text files that pair asset class codes with the survey codes or CAD layer names that should be matched to them. They're easy to edit by hand or in any text editor.

Code Mapping (survey codes → asset classes)

```
DPIT=PIT,GP,SEP,KIP
DPIPE=PIPE,SW*,DR*
RKERB=KERB,K&G
```

- Left side: asset class code (the A-Spec class to attach)
- Right side: comma-separated survey code patterns to match
- Supports * (any characters) and ? (single character) wildcards

In this example, any point or string with a survey code of PIT, GP, SEP, or KIP is treated as a drainage pit, while pipes coded PIPE, anything starting with SW, or anything starting with DR are treated as drainage pipes.

Layer Mapping (CAD layers → asset classes)

```
DPIT=V-DRIN-PIT
DPIPE=V-DRIN-PIPE
RKERB=V-ROAD-KERB
```

- Same format, but matches against CAD layer names rather than survey codes
- Supports wildcards and is case-insensitive

Layer mapping is what catches CAD-only entities (designed features, imported objects, drafted polygons) that don't have a survey code attached.

Maintenance tips

- **Comments and order.** Mapping files are processed top-to-bottom; if two rules could match the same code or layer, the first match wins. Keep your most specific rules at the top.
- **Editing in place.** You can edit the mapping file in any text editor, save, and re-run Apply Mappings to see the effect immediately.
- **Per-job overrides.** Save a job-specific mapping file alongside the project for any rules unique to that submission, and reference your master file for everything else.

Zoom-to-Entity

Wherever you see a zoom button in A-Spec — in the Data Viewer, the Validation Report, the Unattributed Objects list, or the Workspace — A-Spec will smartly frame the asset for you. Survey points zoom to a 20 m window centred on the point, survey strings zoom to a 50 m window around the string midpoint, and CAD entities zoom to their full extents with a sensible margin.

This matters when you're working through a long list of issues: instead of scrolling around the drawing trying to find a problem record, one click puts you right on top of it.

The Built-in A-Spec Database

Stringer A-Spec ships with the latest A-Spec dictionary already installed, so you can start a job out of the box without sourcing schemas yourself. The dictionary covers every standard asset class across the seven spec families (D-Spec, R-Spec, O-Spec) at the current published version.

Updating to the latest dictionary

A-Spec dictionaries are updated periodically. The Schema Editor features an integrated updater, eliminating the need for manual release tracking.

1. Open the **Schema Editor** (Toolspace → A-Spec → Schema Editor).
2. Choose **File → Download Database**.
3. The editor fetches the latest `ASpecDictionary.db` from the Civil Survey Applications server.
4. You're then prompted either to:

Replacing the default updates every project that uses the shared dictionary the next time it opens. Saving under a different name is useful when you want to trial a new release on a single job before rolling it out organisation-wide.

Custom and extended schemas

If the council you're submitting to needs an asset class that isn't in the shipped dictionary, the Schema Editor also lets you add custom classes, add fields to an existing class, or import a complete schema set from an A-Spec JSON archive (**File → Import JSON...**). Custom dictionaries can be saved alongside the default and selected per-project from Project Setup.

A Typical Workflow

Here's how a typical A-Spec job flows from start to submission. The exact order varies from job to job, but most follow something close to this pattern.

1 Project Setup

Choose your spec families, set the council, coordinate system, and certification details. Five minutes here saves hours later.

2 Code/Layer Mapping

Make sure your mapping file covers the codes and layers in this job, or load your organisation's standard mapping file. If anything new has appeared on this job, add a quick rule before continuing.

3 Apply Mappings

Let A-Spec auto-attribute everything it recognises in one click. You'll typically see a summary showing hundreds or thousands of records created from a single command — this is where the up-front effort on mapping pays off.

4 Manual Attachment

Use Attach to Entity, Attach by Class, or Bulk Attach from Layer to pick up anything the mapping didn't cover. Run List Unattributed first to see what's left.

5 D-Spec Auto Populate

On drainage jobs, fill in pit surface levels, pipe inverts, lengths, grades, and pit linkages from the survey data. This single step often eliminates 80% of the manual data entry on a drainage job.

6 Sync from Survey

If the survey has been updated since the records were attached, run Sync from Survey to refresh field values. Safe to skip if your survey hasn't changed.

7 Open the Workspace

Review your records visually, see how the asset network hangs together, and edit anything that needs cleaning up. The Workspace makes spotting gaps and inconsistencies much faster than working through tables.

8 Edit and Refine

Use Edit Object, Match Properties, the Data Viewer, the AI Bulk Editor, or the Workspace properties panel to finalise field values. Different tools suit different sub-tasks — use whichever feels right.

9 Validate

Run the Validation Report, fix any errors, and re-run until you're clean. Aim for 100% on Category A fields and as high as possible on B and C.

10 List Unattributed

Final sweep for anything that slipped through. Common stragglers are last-minute drawing additions, mis-layered entities, and assets the mapping rules didn't quite catch.

11 Export

Produce shapefiles (or MapInfo files), the certification CSV, and a tidy ZIP package ready for submission. Re-run as many times as needed; each export is timestamped.

Best Practices

A few patterns that consistently lead to better, faster A-Spec jobs:

- **Set up early** — Fill out Project Setup before you start attaching anything. The EPSG code, council details, and certification information are easy to put in early but painful to backfill later — especially if you've already exported once and need to redo it.
- **Invest in your mapping file** — A well-tuned organisational mapping file is the single biggest productivity multiplier in A-Spec. Spend the time once, save it forever. Treat the file like code — keep it under version control, review changes, and document any non-obvious patterns with comments where the format allows.
- **Validate early and often** — Don't save the Validation Report for the night before submission. Run it after every major attach pass and after each round of edits. It's much easier to fix issues incrementally than to face a wall of red the day before deadline.
- **Use auto-populate before manual editing** — For D-Spec, always run D-Spec Auto Populate before you start manually entering invert levels, pipe lengths, or grades. The auto-populated values are usually correct, and manually-entered values won't be overwritten anyway — so there's nothing to lose and a lot of typing to save.
- **Trust the schema, watch the warnings** — The schema validation is your safety net. If validation says a value isn't in the domain, don't assume the schema is wrong — check first whether the council's spec really does include your value. Often, an unexpected validation error is the first sign that you've drifted away from the council's accepted vocabulary.
- **Keep one eye on the Workspace** — Even if you prefer working in the Data Viewer, periodically open the Workspace to see your data on the plan. It's the easiest way to spot:
- **Back up your project database** — Because everything A-Spec knows is stored in the project database, that database is your single source of truth. Make sure it's part of your normal project backups.
- **Resync after survey changes** — Whenever the survey data is regenerated or adjusted, run Sync from Survey before re-validating. This keeps A-Spec aligned with the latest survey state without overwriting any manual edits.

Common Scenarios

Subdivision as-constructed survey

A typical residential subdivision pickup might involve:

- D-Spec for stormwater (pits, pipes, headwalls, sometimes basins)

- R-Spec for the road network (kerbs, pavement, footpaths, vehicle crossings)
- Sometimes O-Spec for parks within the development

Workflow: Project Setup → Apply Mappings → D-Spec Auto Populate → manual cleanup in the Workspace → Validate → Export.

Expect the bulk of your time to be spent reviewing pit and pipe attributes, since those are the data-rich assets in a typical D-Spec submission.

Civil infrastructure handover

Larger civil projects often add S-Spec (sewer) and W-Spec (water) on top of D-Spec and R-Spec. The principles are the same as a subdivision job, but you'll have more asset classes active at once and more validation cross-checks (especially around pit/manhole linkage and pipe direction).

Park redevelopment

O-Spec dominates park work. The asset count is often lower than a civil job, but the variety is higher — trees, garden beds, playground equipment, fencing, lighting, paths. The Workspace's colour coding really shines here, since you can see at a glance how the different asset types are arranged through the park.

Council reformat or specification change

If a council updates its spec mid-project, the AI Bulk Editor is often the fastest way to remap old domain values to new ones. Combined with re-running validation against the new spec version, you can usually update a job in an afternoon.

Multi-stage development

For staged developments where new assets arrive over time, A-Spec is happy being run repeatedly. Run Apply Mappings each time new survey or CAD data is added — only new entities get attributed, and your existing records are left alone.

Frequently Asked Questions

Where is the A-Spec data stored? In a project database alongside your drawing. The data travels with the drawing automatically — no separate files to manage — unless you've explicitly chosen a custom database location in Project Setup.

Can two people work on the same A-Spec project at once?	The project database is single-writer at any given moment. Two people can open the drawing and view the data, but concurrent editing isn't supported — coordinate within your team so only one person edits at a time.
What happens if I change spec families partway through?	Disabling a family hides its asset classes from the menus and validation, but doesn't delete the data. Re-enabling restores everything. Adding a new family doesn't affect existing data — it just makes new asset classes available.
How do I add a new asset class the council requires?	Use the Schema Editor to add a new class (or new fields to an existing class). Make sure to set the geometry type, capture categories, and any domain values up front — these affect how the class behaves in attach, validation, and export.
Why are my numeric fields exported as text?	By convention, A-Spec writes all shapefile fields as character (text) type, regardless of the underlying data type. This is a deliberate choice for council compatibility — it means decimal places, leading zeros, and edge-case values are preserved exactly as entered, with no risk of GIS software converting them. If you need numeric types in your GIS, convert in your downstream workflow.
Can I edit a field value through the drawing rather than A-Spec?	No — A-Spec records are stored separately from the drawing's CAD properties. Always edit through A-Spec (Edit Object, Data Viewer, Workspace, or AI Bulk Editor) to ensure changes are captured.
What if my drawing isn't georeferenced?	A-Spec writes geometry to the shapefile in the drawing's coordinate space, then attaches the EPSG code from Project Setup as the projection. If the drawing isn't actually in that coordinate system, your shapefiles will be misplaced. Always make sure the drawing's units and orientation match the EPSG code you've chosen.
Can I delete an A-Spec record without deleting the entity?	Yes — you can detach a record without affecting the underlying drawing entity. The entity stays where it is; the A-Spec record (and its attributes) is removed.

How big can a project get?	A-Spec is designed to handle thousands of records comfortably. Very large projects (tens of thousands of records) work fine, though some operations — like the AI Bulk Editor — may take longer to complete on big datasets and will batch automatically to maintain performance.
What if the validation report flags something that isn't really an error?	Warnings are informational — you can submit with warnings outstanding. Errors block submission for council acceptance, but if you genuinely believe a field shouldn't be required, the Schema Editor lets you adjust the field's capture category or mandatory flag (subject to whether the council will accept the change).

Glossary

Asset class	A type of asset (e.g. drainage pit, kerb, tree). Each asset class has its own set of fields, geometry type, and validation rules.
Attribute	A field value on an A-Spec record (e.g. PitType = "Grated Inlet").
Capture category	The importance tier of a field (A through D), governing whether empty values are errors or warnings.
CAD entity	Any AutoCAD or BricsCAD object (polyline, block, point, line, etc.).
Code mapping	A rule that links a survey code to an asset class.
Domain	The list of allowed values for a field (e.g. "Grated Inlet", "Letterbox", "Sag").
EPSG code	A numeric code identifying a coordinate system (e.g. 7855 for GDA2020 MGA Zone 55).
Layer mapping	A rule that links a CAD layer name to an asset class.
Mandatory	A flag indicating the field must not be empty.
Project database	The data store where all A-Spec records for a job live.

Schema	The structural definition of asset classes, fields, and validation rules.
Spec family	A grouping of related asset classes (e.g. D-Spec for drainage).
Spec version	A specific revision of a spec family, often council-specific.
Survey point	A point feature captured during survey (managed in Stringer).
Survey string	A linear feature captured during survey (managed in Stringer).
Workspace	The dedicated 2D plan view and editing window for A-Spec.
Zoom-to	The action of framing a specific entity in the active view.