

PLAN SHEETS AND DRAWINGS

A PERMIT EXPEDITER SERIES BY PERMIT ADVISORS



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Plan Sheets and Drawings

While a Permit Expediter is not an architect, nor a construction project manager, or city planner (though some have previously worked as one) it is important for one to have a strong knowledge of the details that go into planning a building. This information helps them properly prepare a permit for review and submittal. If an expeditor can spot a flaw before the permit is reviewed by a city planner, then the client will save time and money by not having to go through the re-submittal process.

Due to the importance of having a strong foundation, this white paper will go into detail about the basics of plan sheets and drawings.

We'll dive into how to read and understand plans, as well as the different types of callouts, views, and much more.



Drawing Types

Drawings are the language that construction personnel use to communicate with one another. It is created by the designer and then brought into action by the contractor. Often referred to generically as **plans**, these various types of drawings focus on multiple scopes of the construction of any project. This can range from a minor interior change on an existing store (usually referred to as a **Tenant Improvement [TI]**) to a complete building built from the ground-up.

Drawings give guidance and reference to those executing the construction of the project. Below, we will lay out various types of plans we deal with. Architects and engineers will use different methods to organize and bring to life their designs, but usually the type of plan (signifying what type of work the plan will represent) will be called out by the letter used in the sheet nomenclature. For example: S-100 for a structural sheet and P-1 for a plumbing sheet. This is most often in the lower right corner of the “Title Block”, which is usually a column running down the right side of a drawing.

A complex project may require hundreds of sheets of drawings, while a simple building project may need just a few sheets. Project drawings form an important part of the project contract between an expediter and the main contractor and are therefore legal documents. During construction, the building should be built exactly as shown on the drawings, unless there is a written instruction issued by the architect to the builder to make a specific change.

Drawing Types

Architectural Drawings

These are the primary drawings to coordinate the construction of the project. Architectural Drawings lay out both the location of work to be performed and the “design intent” for how the completed construction should look. All other plans will be driven by this set of drawings.

Structural Drawings

Structural drawings are a separate set of plans that accompany the architectural plans as needed to show the design of any load bearing, anchoring, or supporting items in the construction. These are often accompanied by calculations which are supporting documentation to show the reviewer how these designs were arrived at.

Mechanical Drawings

Typically, mechanical drawings cover the scope of HVAC (heating-ventilation-air-conditioning). This set will show the equipment type/locations, specifications, and locations of related duct/pipe, etc. within context of the project. That way a contractor will know the path it needs to follow to reach the designated spaces of the project. Technically, “mechanical” plans would cover various scopes of a project since anything to do with the flow of air or liquids (water/gas/etc.) is designed by a mechanical engineer, but this can get confusing in the context of a construction therefore anything related to liquids is usually on a P-Sheet (or FP as it sometimes relates to sprinklers).

Drawing Types (Cont'd)

Electrical Drawings

Electrical plans are primarily lists and diagrams showing all the equipment involved in the providing of electricity to the project and the equipment/circuits distributing it throughout the project to all the lights/receptacles. One of the most important components of an electrical plan is the **Single Line Diagram**. This is a simplified diagram representing all the power equipments by which electricity is provided from the meter and distributed throughout the project.

Plumbing Drawings

Plumbing plans will show fixtures, equipment, and piping for both the supply and removal of liquids. This can range from water for sinks and toilets, to gas for a furnace, to grease waste for a commercial kitchen. The most important component of a set of plumbing plans are the **Riser Diagrams**. These are simplified diagrammatic representations showing all the fixtures and equipment as a system. Generally, this will show all pipes to and through the project including utility meters, sewers, and other wastewater systems. This allows clear understanding of all the requirements the system must provide to achieve the supply and removal of these liquids and the number and type of fixtures in the system.

Views

Construction drawings belong to one of four types of views: plan, elevation, section, and detail. This refers to the point of a drawing that seems to be viewed and drawn from.

Plan View: A View from Above, Looking Down

A plan view perspective means that a person is looking down from above at a specific level, or part of a level, of a building. The term plan is often used inter-changeably with “plans” referring to the drawing set for a project. Technically, a plan is a specific view looking down. However, there are often multiple versions of plans focusing on different information because a project will often contain too much information to show/reference all in one set plan. An example would be a **Construction Plan** to show the general construction of the walls, partitions, spaces, and then a **Fixtures and Finishes Plan** to show where the floor, wall, and ceiling finishes are to be installed along with the construction of displays and built in fixtures/furnitures.

Site Plan View

Site Plans are drawn on a small scale so that they can show the building/project in context. This context is typically the entire lot or block of land on which the building exists (or at least the part most relevant to the project). The idea is that the plans can start at a larger context view and then zoom into the specific scope of work on/in the building.

Site plans also generally show items like driveways, fences, parking, and retaining walls. They can also contain an **Assessor’s Map**, which is a legal representation of the property, a **Vicinity Map** to show more context of the surrounding area, and a **Plot Plan** which is required in some jurisdictions to relate the permit to a specific area of work.

Views (Cont'd)

Elevation View: A View From The Side

This plan view allows a person to view it as a perspective, which means that someone can look at the building as one naturally would (from top to bottom). These can be of exterior or interior walls, while focusing exclusively on the finished construction from ground/roof, floor/ceiling, and extending edge or corner.

Section View: A Slice Through the Building

Most commonly a view from top to bottom, but at a point within the building. Image cutting a building in half from side to side and removing a portion so you can see it much like a doll house. This shows the space within the context of the building and exposes the ground/floor, walls, and ceiling.

Detail View: A Close-Up View

In most cases, a zoomed-in view of a connection or assembly showing more details and components than can be shown in a more comprehensive view.

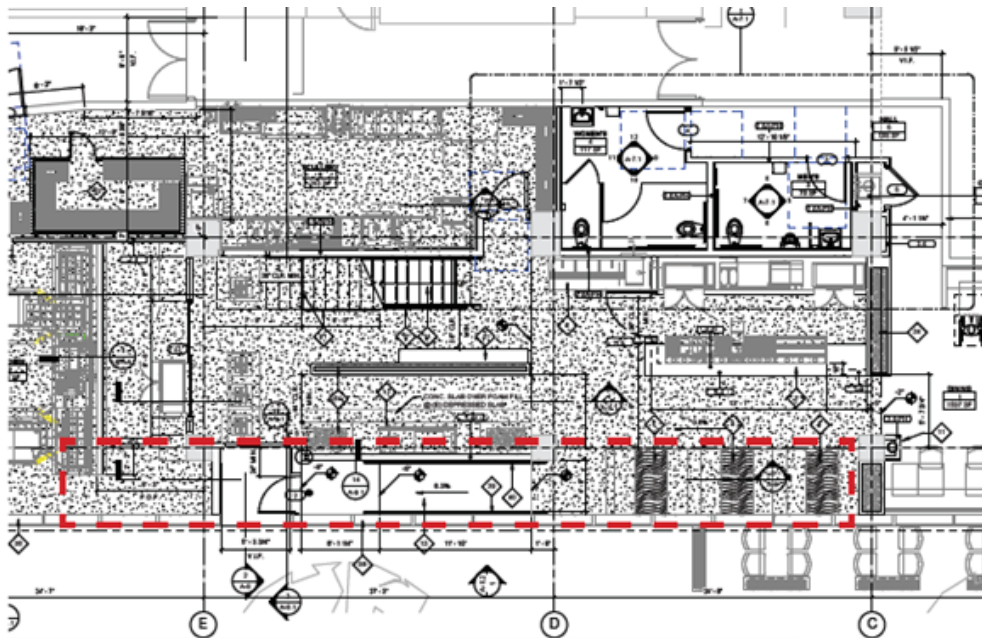
Axonometric/Perspective View: A Zoomed-Out View

A view zoomed out, looking down from an angle. Imagine an ariel view where you can see most of three sides of the “box” exposed to the viewer perspective.

Call-Outs and References

Section Call-Out

A section is an imaginary cut through the whole building or a portion of the building. To understand where this 'cut' is taken, some reference is required. In the image below, you can see a line crossing through a portion of the plan with an arrow one end and a number/sheet number behind that arrow. This line is showing where the 'cut' is taken. The arrow shows the direction the view is looking. The number and sheet number are the cross references to the sheet on which that drawing of this view exists.



Call-Outs and References (Cont'd)

Interior Elevation Call-Out

An elevation is the view most similar to how we view things in real life. To understand which wall in a project that an elevation represents, you will need to locate in a plan view, an elevation call-out which is most often a circle with arrows pointing off of it. This will refer to you a specific drawing on a sheet.

Detail Call-Out

Since plans tend to be drawn at a smaller scale to provide more context on the page, detailed information is most often not shown. Therefore, designers will enlarge areas of the project for more information in subsequent drawings. These are often larger scales of very tiny areas such as: a connection, a wall assembly, or typical structural anchorage.

Note Call-Out

Much of what needs to be done, or abided by in a project, does not need to be shown explicitly in drawings so the designer will just include it in the notes section. That means that while the drawings are important, all the key information is located in the notes call-out on the plan sheet.

General project requirements can be a simple list of notes. If referring to a special condition that does not require a drawing, there will be a reference on a plan to a note elsewhere on the sheet. These are often shown with a line/arrow pointing to an area or item, with a special shape and tag referring you to a specific note on the page.



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ABOUT US:

Permit Advisors was founded over a decade ago by Roy Hasson and has grown to be one of the leading providers in FULL-SERVICE permit expediting and entitlement services in the United States. We understand that building permits can be one of the most tedious and nerve-wracking parts of any construction project. We are here to take that stress off our client's hands and to manage every aspect of the process.

From detailed research and due diligence to quality control on all plans and documents to ensure your submittal package is 100% ready for review, we provide the best solutions to any issue that may arise during the plan-check process. The relationships that we have developed in thousands of municipalities help us succeed where other firms may experience delays.