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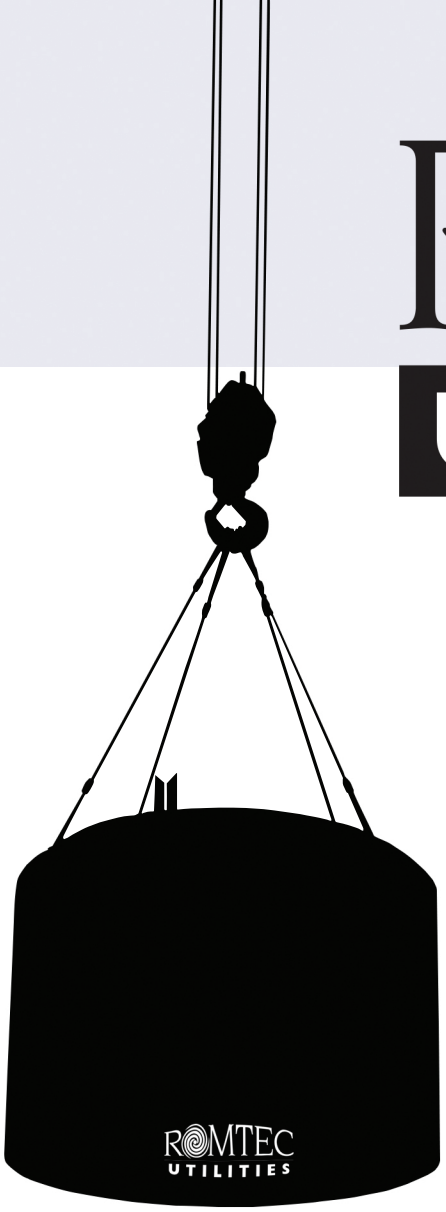

How to

Get the Correct Shelters and Control Buildings

Romtec Utilities
Technical White Paper

www.RomtecUtilities.com

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Figure 1: Sheltered Electrical Components

Introduction:

Control buildings and shelters can serve many purposes for a pump or lift station system, and Romtec Utilities can provide a large selection of sizes, materials, and design elements for these types of structures. Romtec Utilities works frequently with its sister company Romtec, Inc. to supply pre-engineered control buildings, shelters, and shade structures. Utilizing both of the Romtec Companies is a great advantage to a project in terms of integrating two design documents into a comprehensive set of plans accurately and cost effectively.

With control buildings, each customer has different priorities, and typically, each project is unique. There is large variation of equipment that can be supplied for a pump or lift station, and in some cases, the design of a control room will reflect the above-grade components specified for the pump station. These components can include generators, control panels, odor controls, wash down stations, access

hatches, and more. With such diverse possibilities, control buildings should generally be configured in conjunction with the pump station.

Municipal and private design standards are also a major factor for designing control buildings. There are many nationally adopted standards like those from the National Electric Code (NEC) or the National Fire Prevention Association (NFPA) that specify how certain equipment is laid out or installed. Additionally, there can be local codes or preferences that further regulate how equipment in a control building is handled. These design standards can vary from extremely specific to nonexistent.

Usually, these differences in approach result in unique buildings, but for individual customers, designs standards allow a good structure design to be replicated over and over. Consistent design and construction for a structure can improve the operation and maintenance needs of a water system with benefits to cost, ease of training, staff familiarity, and standard inventories. The Romtec Companies are able to help customers implement standards by providing a consistent product with clear plans, documentation, and support.

For packaged pump or lift stations, there are three basic categories of structures: shade structures, weather shelters, and control buildings. The advantage of each structure is tied to the priorities of the project and the customer. Romtec Utilities and Romtec can help make any pump or lift station structure a successful addition.

Shade Structures

Figure 2: A Prefabricated Steel Shade Structure

Shade structures are commonly used in lift station designs to protect lift station components like control panels, automatic transfer switches, and electrical meters from direct sunlight. Electrical components are particularly sensitive to overheating, and direct sunlight can add severely to temperature increases above ambient conditions. States with typically low atmospheric conditions –e.g. Arizona, California, or Nevada– will experience more dramatic heat absorption from direct sunlight.

Shade structures are simple and inexpensive and are designed to handle normal weather and storm conditions. These are usually two or four post structures with a small covering or roof structure over the components to be shaded. For best results, the structure and components should be oriented to minimize exposure to the hot season solar paths.

Weather Shelters

Figure 3: A Six-Post Shelter

These shelters are also designed to prevent damage from weather conditions beyond direct sunlight. Most weather shelters can be stamped and sealed by an engineer to meet local, state, and national codes. This documentation verifies a shelter is capable of safely withstanding the weather conditions of the site. This verification takes into account everything from seismic codes to snow load capabilities.

With a weather shelter, any or all of the lift station components can be located under the protection of the structure. Each job location will possess different challenges that a weather shelter can resolve. In snowy regions, the vault hatches can be covered to provide year-round access to below-grade components. In wet regions, electrical enclosures and generators can be protected from damaging moisture incursion.

Weather shelters are typically constructed of the same materials as shade structures with the additional option of concrete block. These structures range from two post designs to large pavilions with wind screens. Roofing is available with any standard materials that are specified by the customer or the applicable codes and standards. Weather shelters can also be constructed with more aesthetic considerations for locations with nearby tenants or matching buildings.

Control Buildings

Figure 4: A Comprehensive Control Building

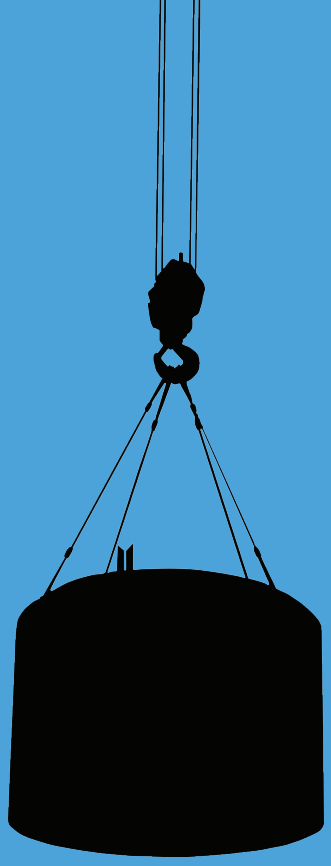
Control buildings offer the complete package for protecting a pump station's components. These structures can handle severe storm conditions and restrict access from trespassers or vandals. Control buildings will also be stamped and sealed by an engineer to verify adherence to all local, state, and national codes. Many municipal and private customers maintain lift station design standards to construct identical control buildings.

Control buildings vary greatly from project to project because of the different priorities and codes relative to each customer and location. Most control buildings are used to contain the total electrical controls for the lift station. The Occupational Safety and Health Administration is enforcing more and more regulations for accessing electrical components. As such, control buildings are becoming an integral piece to providing safe working conditions with respect to these regulations.

Control buildings are typically built with concrete block construction to provide affordable, durable, and secure structures. At some locations, aesthetics are also important for control buildings to improve a high-visibility location or to match surrounding structures. For these buildings, siding packages such as horizontal slat, board and batten, or stone veneer siding might be included. Roofing materials can be chosen with a wide-range of styles, colors, and materials to suit any preference. Control buildings might also include increased door hardware, windows, HVAC (heating, ventilation, and air-conditioning) systems, and more to meet the design standards or preferences.

Conclusion

Shelters and control buildings can be an inexpensive way to improve the longevity of some pump and lift station components. Additionally, these structures help facilitate year-round access, easy maintenance, and improved security. For customers with design standards, a these structures are simple additions to a pump station installation process. For customers without design standards, Romtec Utilities and Romtec can assist in reaching suitable structure designs to satisfy all goals, priorities, and preferences.



About Romtec Utilities

Romtec Utilities, Inc. designs, manufactures, supplies, and installs site specific packaged pump stations. Our pump stations include detailed drawings and specifications in the CSI format with all structural, mechanical, communication, and electrical plans. Our documentation also includes a complete bill of materials, a well-defined scope of work and services, and a complete system warranty. Our complete packaged systems serve commercial, municipal, state, federal, agricultural, and industrial applications for virtually any type of water-pumping system.

Romtec Utilities, Inc. began operation in 2000 in Roseburg, Oregon. The US economic conditions at that time fostered the growth of a booming housing market, and Romtec Utilities did a lot of business working with developers and public agencies who needed packaged lift stations. Romtec Utilities distinguished itself by offering quality designs, fast lead times, and an ability to get projects approved and installed quickly.

In the wake of the 2008 Financial Crisis, the market changed and so did Romtec Utilities. Romtec Utilities made a rigorous evaluation of its product offering to become more cost competitive. We also placed more emphasis on working with industrial clients with a broad range of applications.

In the following years, Romtec Utilities underwent dramatic changes that have ultimately made us a better company. We expanded our interests to include more stormwater, more wastewater, and more industrial water applications. We improved our vendor relationships to provide our customers with more products and capabilities at lower prices. We developed an efficient and precise documentation process to foster fast and clear communications, and we strengthened our field services and repair capabilities.

We have completed hundreds of projects across the United States and have supplied packages for international installations. Contact us for assistance. We love to talk about pumping systems of every type, shape, and size!

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