

Lift Station Design Guidelines

Revised 2025-07-25

General

Sanitary Sewer Lift Stations that will be accepted by Green Valley Water (GVW) to own and operate as a part of the public sewer system shall conform to the following design guidelines. The registered engineer of record for the lift station design may use their engineering judgement in the development of the final design. However, the intent of the guidelines shall be adhered to.

Lift Station Site

The lift station site shall be configured in a manner conforming to the following diagrams. Lift station components shall allow GVW personnel to freely maneuver the site with the minimum clearances shown on the diagrams, including maintenance vehicle access. Refer to Exhibit LSI for examples of lift station layouts, along with minimum clearances between components.

The lift station site shall contain the following described components, as illustrated on the following exhibits:

1. Maintenance Vehicle Access
 - a. The lift station site shall provide access for the GVW maintenance vehicle to access the site without obstructing traffic on the adjacent roadway. The vehicle measures 12-feet wide by 24-feet long with its outriggers and doors open. A minimum of 4-foot clearance is required on all sides of the maximum vehicle envelope.
2. Wet Well Vault
 - a. The wet well vault shall be constructed of polymer concrete per M.A.G. Spec 744.
 - b. The wet well vault shall be sized to provide one-hour of emergency storage between the high-water alarm elevation and the rim of the lowest manhole upstream of the vault, without risk of backing up into any structure served by the upstream sanitary sewer collection system.
3. Pumps
 - a. The lift station shall contain a minimum of two submersible pumps. GVW's standard is Flyght pumps. However, other manufacturers will be considered on a case-by-case basis if the lift station operating conditions dictate.
 - b. The pumps will be controlled by a radar level sensor mounted through the top of the vault. A mercoïd float switch backup system will be installed and hung from a float tree mounted on vault top, with each float on its own hook.
4. Mechanical Equipment Building
 - a. The lift station site shall contain a building that houses all control valves, pressure gauges, flow meters, and surge relief valves. The building shall be a commercial building which is permitted by the Town of Payson Building Department. Building materials may be selected by the design engineer to aesthetically match the surrounding development. However, any exotic building materials, e.g. copper,

cedar siding, etc., will be maintained by the development per the project Development Agreement and memorialized in the project CC&R's.

- b. The building shall be equipped with a heat source controlled by a thermostat to prevent freezing in the winter months. Cooling can be achieved by a forced ventilation fan with exhaust louvers located on the opposite side of the building. Both the ventilation fan and exhaust louvers shall be electrically operated to close when the fan is not operating.

5. Mechanical Equipment

- a. All lift station mechanical equipment, including but not limited to control valves, pressure gauges, flow meters, surge relief valves, etc. shall be located above grade inside the building. The basic equipment layout shall conform to Exhibits LS2 and LS3.

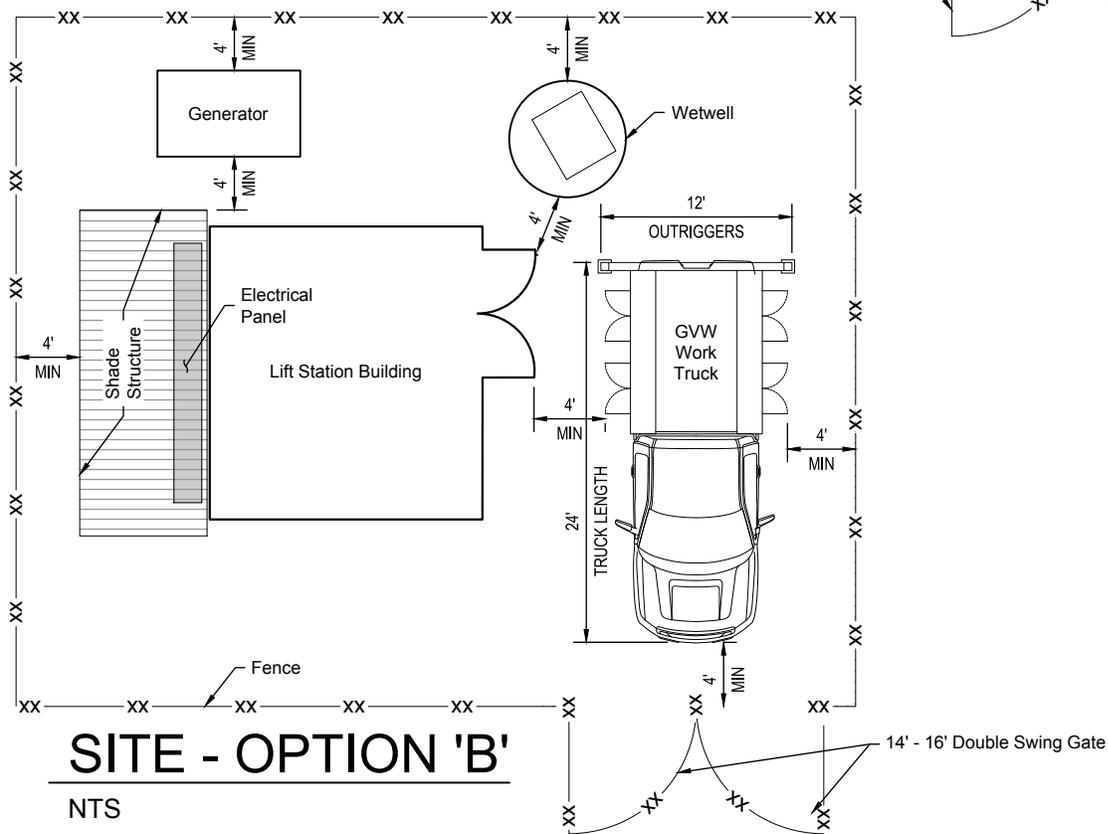
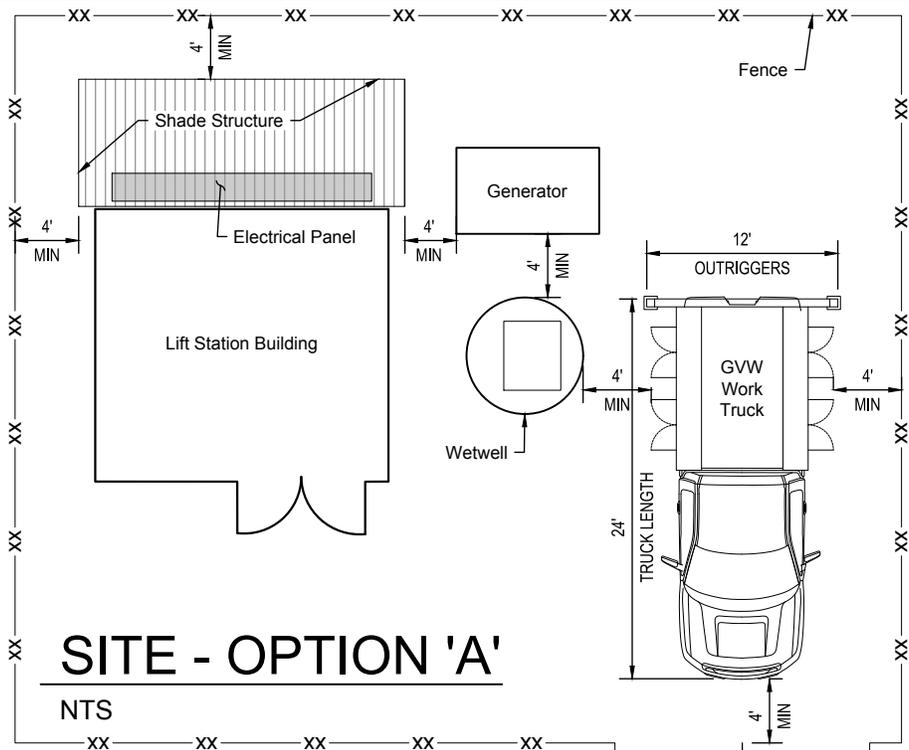
6. Electrical Equipment

- a. All shall be located outside of the building, under a shade awning. A side shade shall be provided if the electrical equipment is exposed to sunlight at any time of the day.

7. Emergency Generator

- a. An emergency generator shall be supplied per the requirements of A.A.C. R-18-9-E301.

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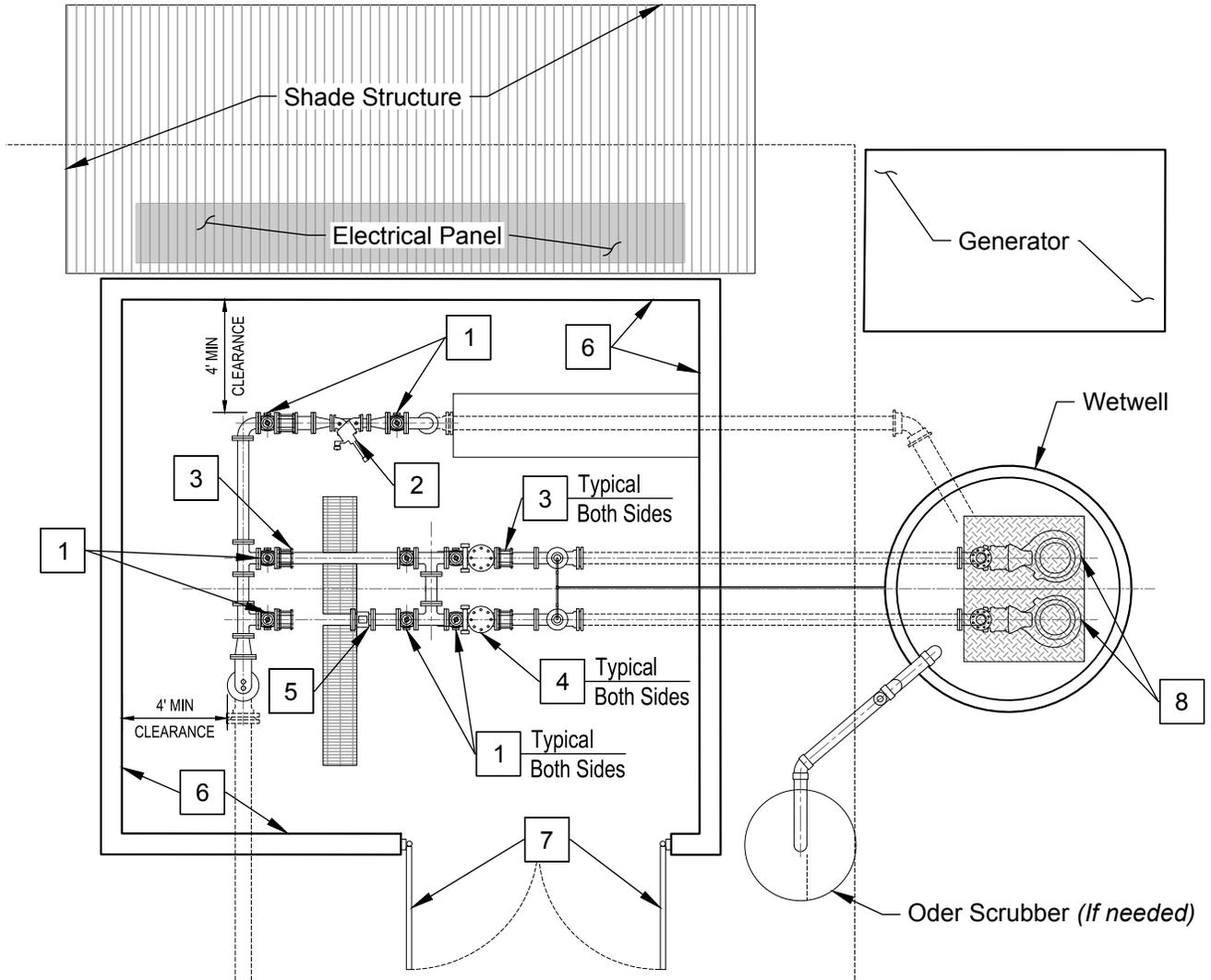
Lift Station Design
Sample Site Layout

Project No.: Lift Station
Date: 07/25/2025
Designed By: GMG

Exhibit
LS1

Bar Measures 1 inch

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Legend

- 1 Plug Valve
- 2 Surge Relief Valve
- 3 Flanged Harnessed Coupling
- 4 Check Valve
- 5 Flowmeter
- 6 Building
- 7 Double-swing doors, 8 ft. min.
- 8 Submersible Wastewater Pump



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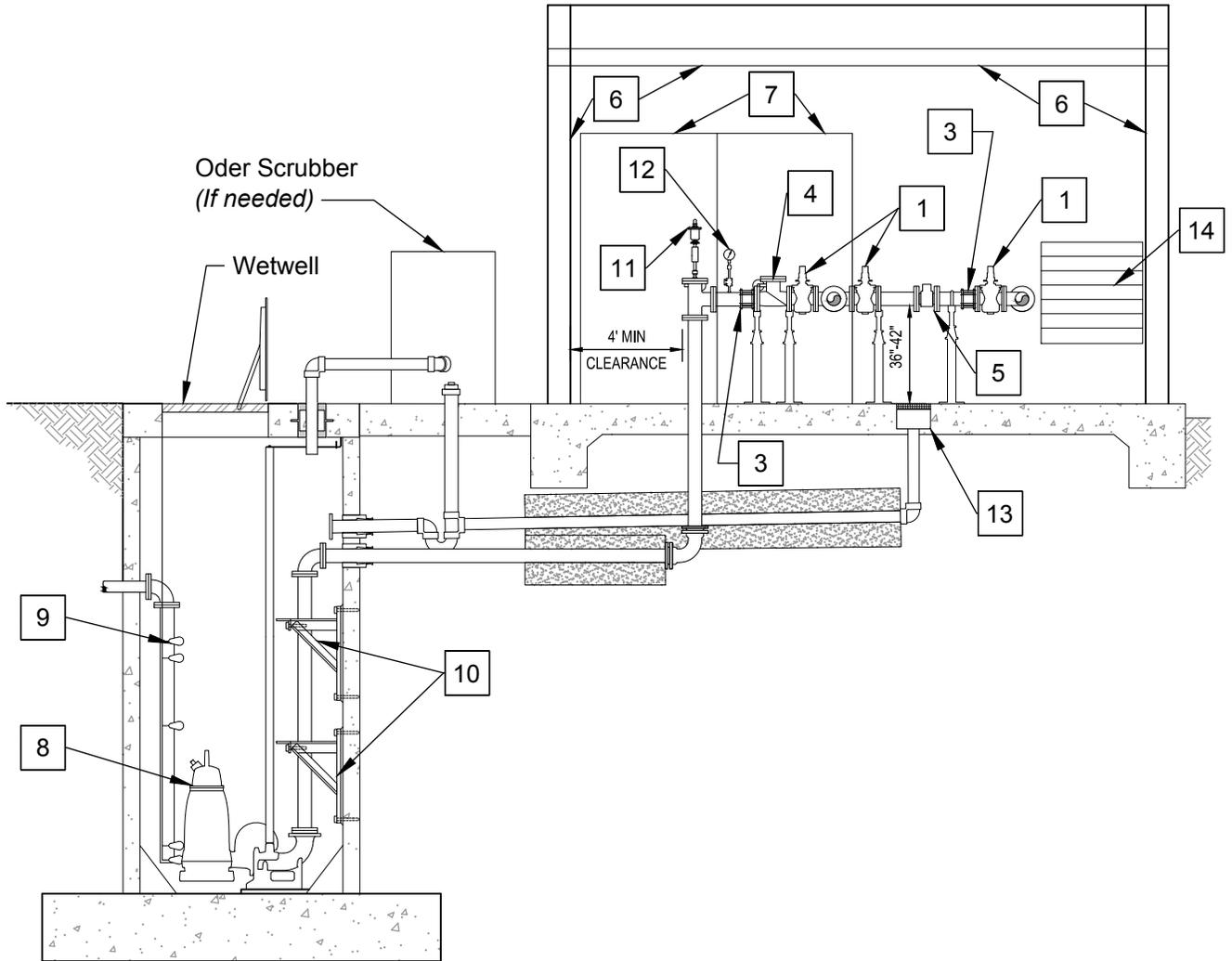
Lift Station Design
Sample Plan Layout

Project No.: Lift Station
Date: 07/25/2025
Designed By: GMG

Exhibit
LS2

Bar Measures 1 inch

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Legend

- | | | | |
|---|--------------------------------|----|---------------------------------|
| 1 | Plug Valve | 10 | Vertical Pipe Support Bracket |
| 3 | Flanged Harnesses Coupling | 11 | Air Relief Valve |
| 4 | Check Valve | 12 | Pressure Gauge Assembly |
| 5 | Flowmeter | 13 | Building Floor Drain to Wetwell |
| 6 | Building | 14 | Intake Louver |
| 7 | Double-swing doors, 8 ft. min. | | |
| 8 | Submersible Wastewater Pump | | |
| 9 | Floats - Use float hanger tree | | |



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Lift Station Design
Sample Profile Layout

Project No.: Lift Station

Date: 07/25/2025

Designed By: GMG

Exhibit
LS3

Bar Measures 1 inch