



KUSTOMFLO

GREATER VERSATILITY FOR ROBOTIC DELIVERY SYSTEM

DELIVERY SYSTEM

Location: Austin, TX

Installation: September 2025

PROJECT DETAILS

Client: Pipedream Labs Inc.

Manufacturer: Soleno LLC

PRODUCT DESCRIPTION

Diameter: 108" and 24"

Length: 50'

Profile Information: Closed profile

Joints: Electrofusion

SITE CONDITIONS

Trench Depth: 12.8'

Trench Dimensions: 101' x 15'

Cover: 2.8'

Backfill Material: Mostly Class I, mixed with native soil in some areas

Surface Material: 6" concrete pad

CONTEXT

Pipedream Labs, a research and product development company based in Austin, Texas, has developed a robotic delivery system designed to transform the way supermarkets handle internal logistics. Their system enables rapid, contactless transport of goods through a network of **KUSTOMFLO** piping, with robots delivering items directly to designated stalls in the service area.

KUSTOMFLO piping was selected as the foundational infrastructure for its adaptability and watertight integrity. These features allow for seamless integration into the store's layout, including two lines that connect it to three service areas, where customers receive their groceries quickly and contactless through robotic delivery. The made-to-order pipe structures ensured precise fit and function, while protecting the robotic system from environmental exposure. For this project, **KUSTOMFLO** delivered the reliability and customizable design needed to bring Pipedream's vision to life.



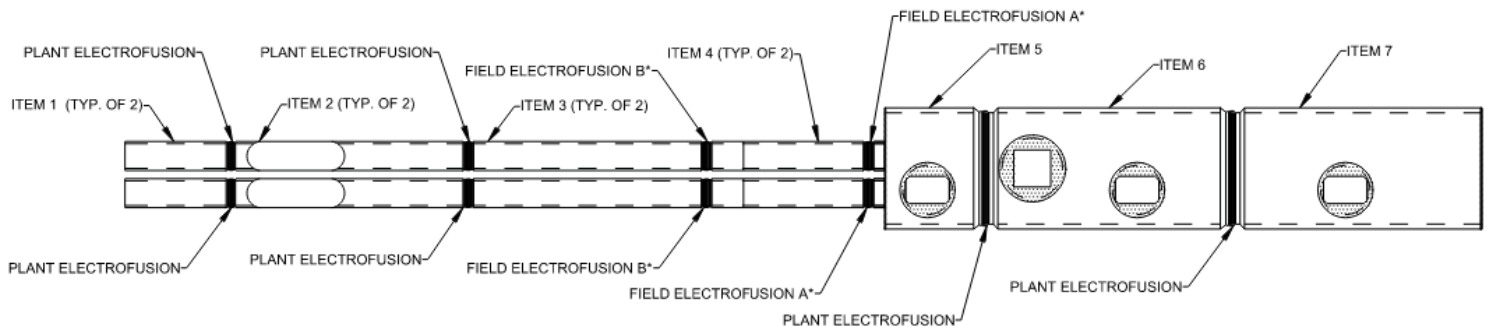
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CHALLENGE

Pipedream placed an order for the **KUSTOMFLO** pipe system from Soleno in mid-July. To accommodate their tight construction schedule, pipes and accessories started to be manufactured in early August. Throughout the process, Soleno worked closely with the Pipedream team, adapting to evolving design needs and ensuring every component met the exact specifications required.

The project structures included a 108-inch main pipe with four risers: Three 48-inch concentric and one 60-inch tangential. Custom-designed covers were designed to accommodate the unique geometry required by Pipedream. There were also two 24-inch pipes that connected the main structure to the store. Each of these pipes had cutouts that served as the entrances for loading robots with goods to enter the system.

By early September 2025, the final pipe shipment was delivered to the site. The system was produced as seven unique items, all to be connected via electrofusion joints. The electrofusion process was optimized to fuse items at the plant prior to shipping, where the total connected length could still be efficiently transported to the site. This process saved time on-site by reducing the number of separate items to be installed in the trench, and reducing the total number of field connections. Soleno technicians were on-site to perform the remaining electrofusion jointing and internal welding at the seam.



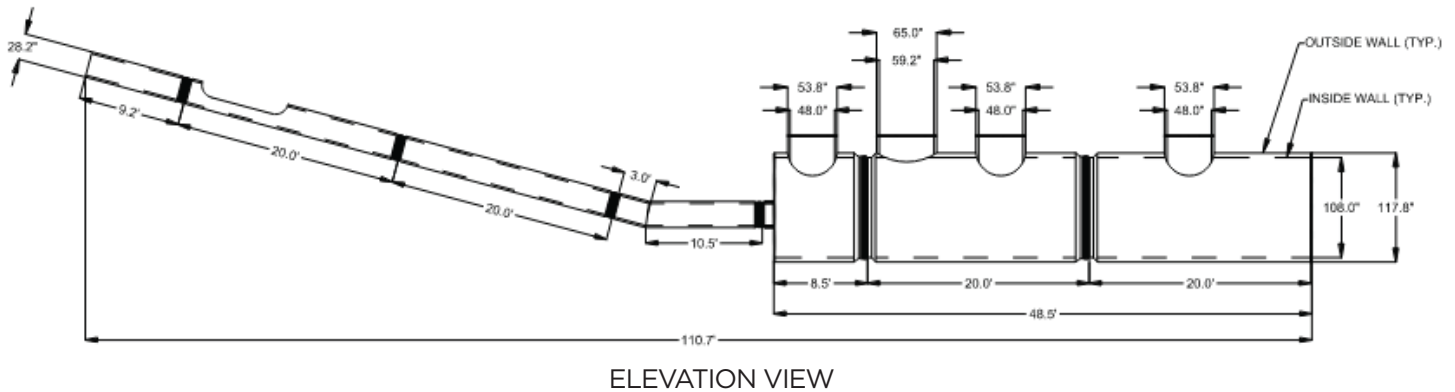
SOLUTION

Soleno's electrofusion process ensured a completely watertight system, effectively protecting the integrated rail components from corrosion and water damage. Throughout the project, Pipedream introduced several design modifications, and Soleno demonstrated exceptional flexibility by customizing its KustomFlo pipes to meet each new specification.

The lightweight design of the pipes and accessories further facilitated handling, installation, and connection, contributing to a smooth and efficient construction process. The project was successfully completed on September 3rd, highlighting the efficiency, timeliness, and adaptability of Soleno's KUSTOMFLO piping system.



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- **Lightweight:** The **KUSTOMFLO** pipes are significantly lighter than traditional concrete subsurface structures, increasing maneuverability and decreasing installation time.
- **Durability:** **KUSTOMFLO** is made of HDPE, an inert material that is highly resistant to corrosion and chemical degradation, thereby offering a substantially longer service life compared to concrete or steel alternatives
- **Reduced Shipping Costs:** Lighter pipe materials led to lower transportation expenses, reducing overall project costs.
- **Improved Maneuverability:** Using only a small excavator, the pipes were safer and easier to handle and position on-site, streamlining the installation process.
- **Customizable:** **KUSTOMFLO** is customizable and can adapt quickly to design modifications.
- **Simplified Assembly:** The system's design enabled quick, efficient field assembly, with six electrofusions completed in-house and four performed on-site—further simplifying and accelerating the installation process.



“The installation involved customized pipe geometries and engineered interfaces to connect directly with proprietary robotic assemblies. Soleno delivered components with consistent dimensional accuracy and watertight performance, both essential for long-term system durability. Equally important, their team was fast, flexible, and easy to work with. They took the time to understand the unique engineering demands of our system and produced components that installed seamlessly in the field.”

Soleno’s technical capability and project responsiveness played a critical role in the successful deployment of this first-of-its-kind installation, and we look forward to working with them on future phases of the Pipedream network.”

— Sara Fox, PE

Director of Civil Engineering & Construction | Pipedream Labs

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