

Walser Kia Dealership – Structural and Civil Design



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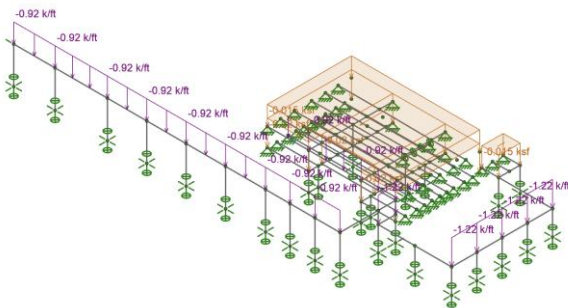
Jose Capa Salinas

DESIGN CONSTRAINTS:

- **Structural:** Elements safely resist all design loads and meet serviceability limits.
- **Geotechnical:** Foundation supports poor soils within allowable bearing and settlement limits.
- **Civil/Stormwater:** All stormwater is captured, stored, and reused onsite with no wetland discharge.
- **Environmental and Zoning Criteria:** Wetland buffers remain undisturbed; erosion control meets city standards
- **Sustainability and Ethics:** Follow NSPE ethics, ensure fairness, reuse rainwater, and reduce impervious area.

PROJECT SUMMARY:

A new state-of-the-art automotive dealership is being developed in Minnetonka, Minnesota, near the intersection of Highways 394 and 494. The facility will serve as both a vehicle sales showroom and a full-service maintenance center, designed to provide an efficient and modern customer experience. The project integrates multiple engineering disciplines—civil, structural, and geotechnical—to create a safe, sustainable, and functional site layout. Engineers must address the site's poor soil conditions, drainage management, and environmental constraints while ensuring long-term durability and compliance with local and state regulations. This development represents a collaborative effort to integrate performance, safety, and sustainability into one cohesive design.



RISA-3D rendered model of proposed dealership structure with applied dead loads and boundary conditions.



CAD model view of proposed dealership structure and site grading interaction.

DESIGN GOAL:

The goal aims to present a 50% design review for a proposed car dealership, addressing key civil and structural elements for permitting and construction. The review ensures the site, utilities, foundations, and structure meet all codes, standards, and site conditions.