



# GRANGER PUBLIC SAFETY BUILDING

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## Project Goals and Requirements

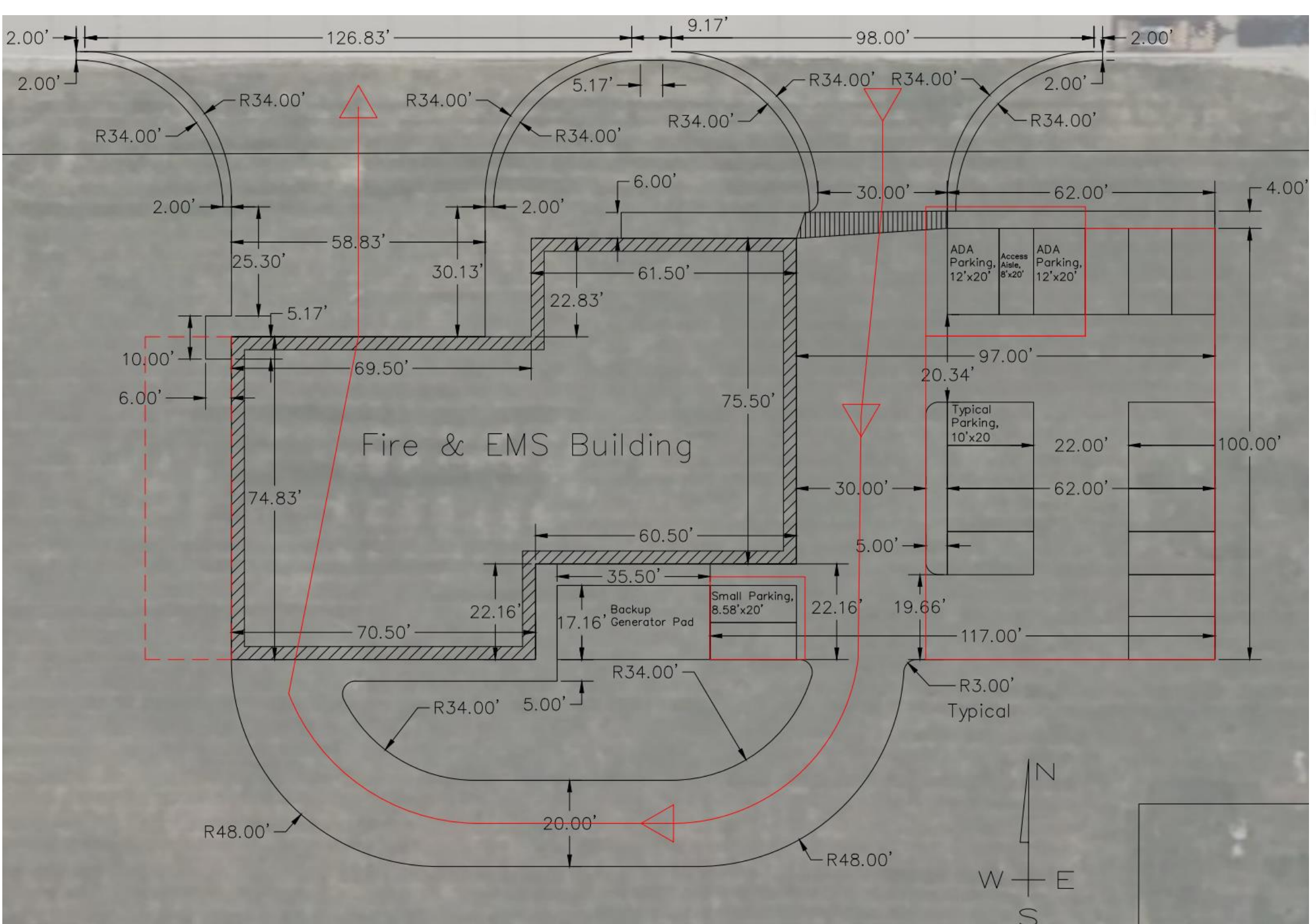
This project presents the preliminary design of a one-story emergency services facility in Granger, Iowa, housing Fire/EMS, Police, and City Hall. The building was designed to enhance emergency preparedness and response in the short term and be adaptable to future staffing changes and growth. The proposed design was required to provide three unobstructed apparatus bays for Fire/EMS vehicles, adequate office space grouped by department, secure evidence storage, and prisoner transfer areas for the Police department and controlled public access to the building. A conference room and a kitchen to be shared by all departments were also required.



Site Location

## Site Layout and Utilities

The proposed site layout supports emergency response, public access, and future growth. A pull-through circulation drive improves apparatus movement while separating emergency traffic from parking and pedestrian areas. The building footprint was kept compact to reduce cost and preserve usable site space. Grading directs drainage away from the building and toward the creek to the west. Sixteen standard parking spaces and one ADA parking space with access aisle.



Site Plan



Exterior isometric view facing Southwest

## Architectural Design

The apparatus bays were grouped into a single, 18-foot-tall space on the West side of the building. This keeps high-activity, vehicle-based functions isolated from the administrative spaces. Fire/EMS support spaces (gear storage/decontamination), are adjacent to the apparatus bays. Two police bays on the East and includes secure areas like evidence storage and investigation rooms placed to maintain restricted access. City Hall and public-facing spaces are more centralized and accessible, with reception near the main entrance to guide visitors. There is dedicated storage for each department, and flexible spaces for operational changes. The design incorporates a hot, warm, and cool zoning strategy that helps reduce cross contamination throughout the building and improves overall safety for occupants. A hardened safe room, based on the FEMA P-361 recommendations, is proposed for the center of the administrative area. This safe room has the capacity to protect roughly 160 people during an EF-4 tornado.



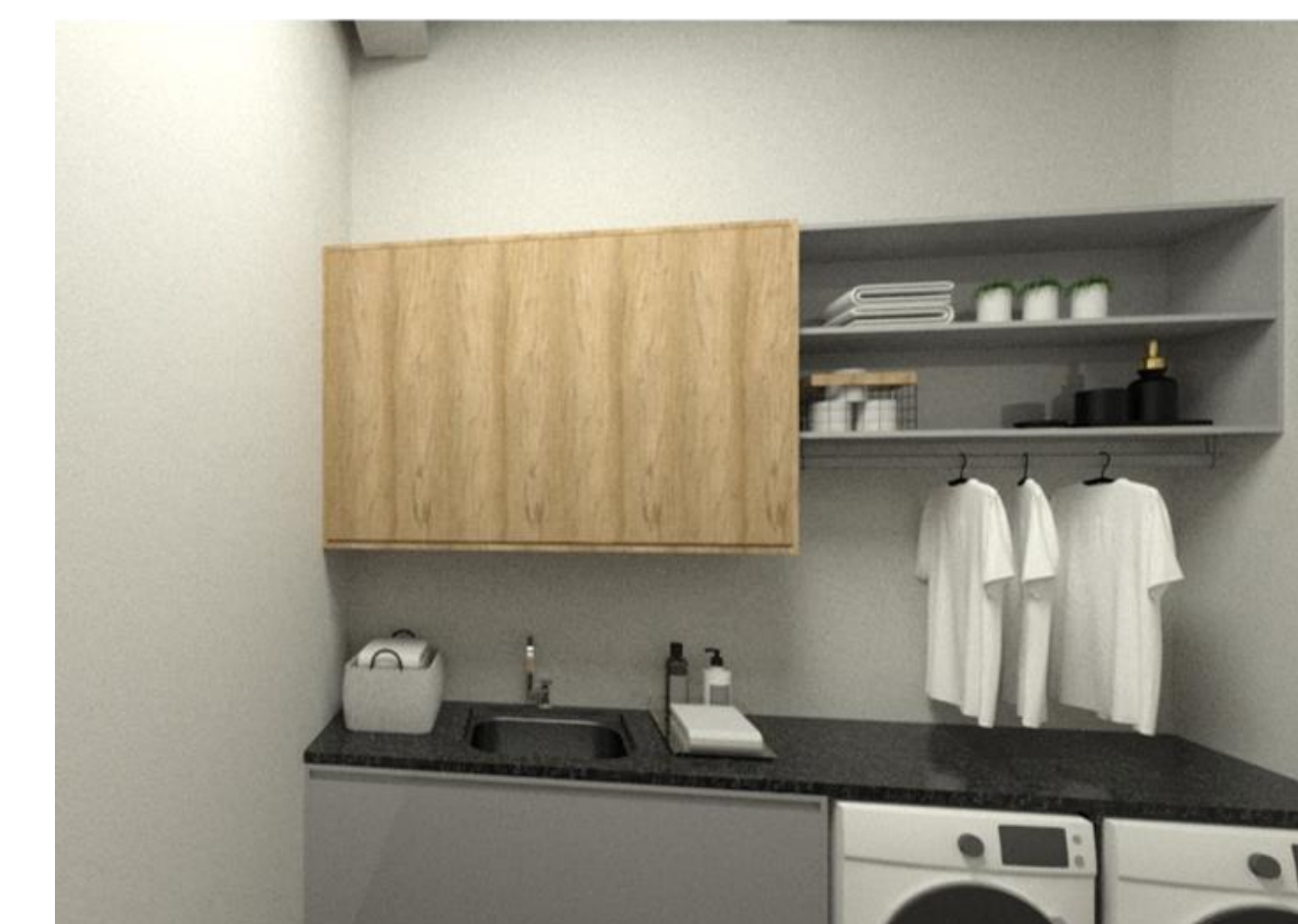
Architectural Plan with fire code and safe room



Conference room



City Hall office space



Decontamination (wash) room



Kitchen / Day Room

## Structural Design

The structural system selected for this facility was comprised of precast concrete bearing walls supporting a structural steel roof system. These materials were selected since they provide a durable, cost-effective, structure with the strength to resist the larger loads required of an emergency response facility. The superstructure is supported by a shallow foundation system embedded 3'-6" below finish grade. The apparatus bays required a 6" thick reinforced concrete floor slab to support the weight of the Fire/EMS vehicles. In addition, long-span steel joists were utilized for the apparatus bay roof system so the bays would not be obstructed.



Exterior isometric view facing West

## Construction Cost Estimate

The proposed design delivers a flexible, efficient, and code compliant facility that supports current operations and future growth. The layout ensures safe emergency response, secure operations, and long-term adaptability without major structural changes. The construction cost for this facility is estimated to be \$2.5 million dollars. This includes materials and labor for the building and site construction, a 5% construction contingency, and 10% construction administration fee. The cost estimate was based on square foot cost found from the Iowa Department of Revenue's Unit Cost Schedule.