

# Gym Redesign

Firm: KGM Engineering  
Client: Town of Essex, IA

**KGM** Engineering

# Mapping

Project  
Scope and  
Current  
Condition

Outside  
Design  
Features

First Floor  
Design  
Features

Basement  
Design  
Features

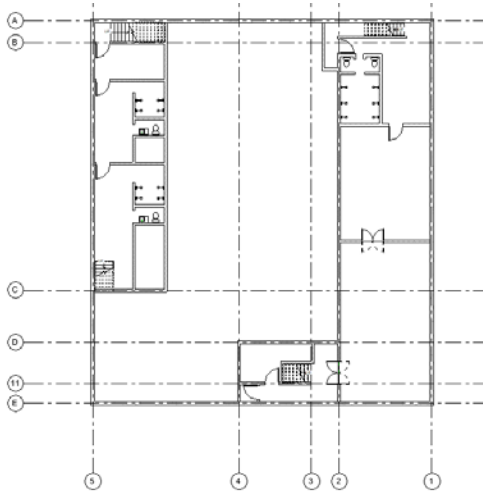
Cost  
Estimation



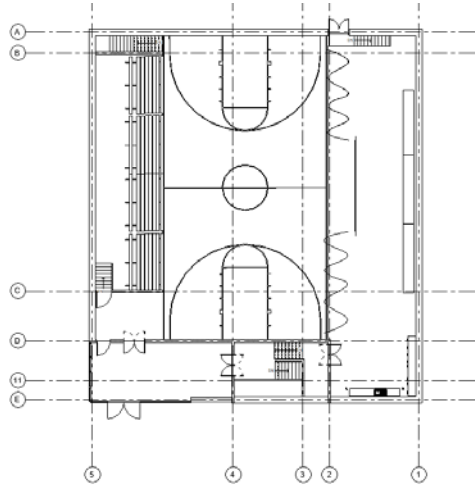
# Project Scope



# Building Details



Basement



First Floor



Project  
Scope and  
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Outside  
Design  
Features

First Floor  
Design  
Features

Basement  
Design  
Features

Cost  
Estimation

# Parking Lot Design



Project  
Scope and  
Current  
Condition

Outside  
Design  
Features

First Floor  
Design  
Features

Basement  
Design  
Features

Cost  
Estimation

# Exercise Equipment Addition





# The Floor Addition



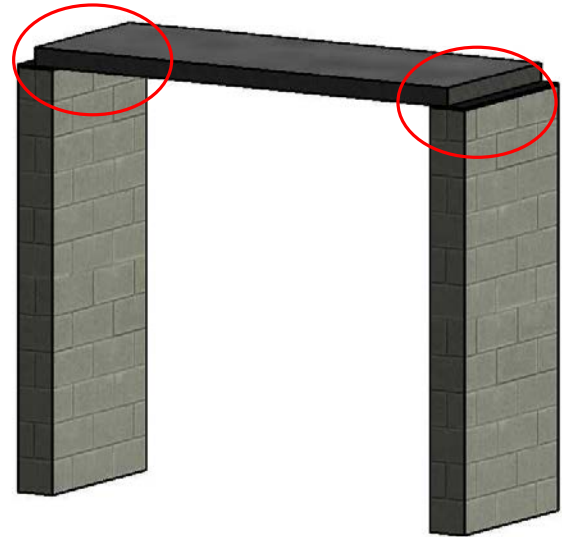
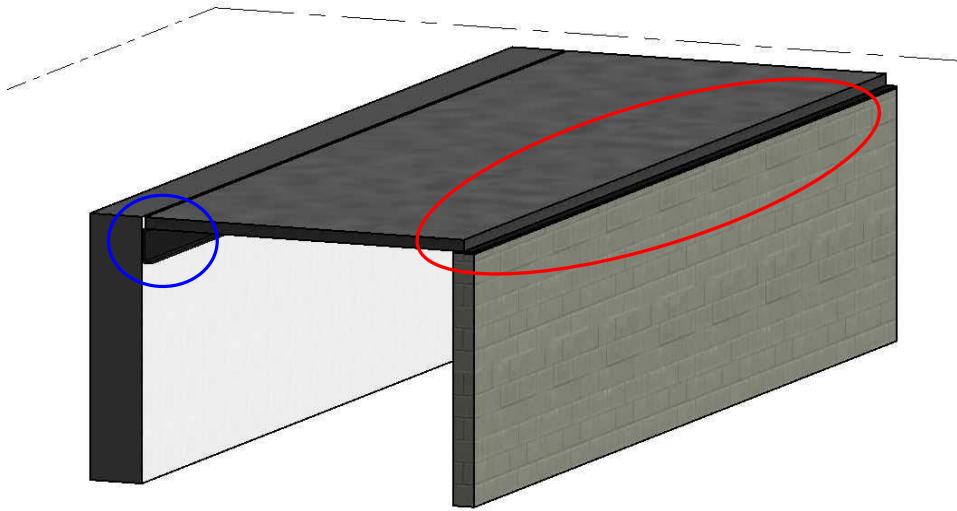
C Channel



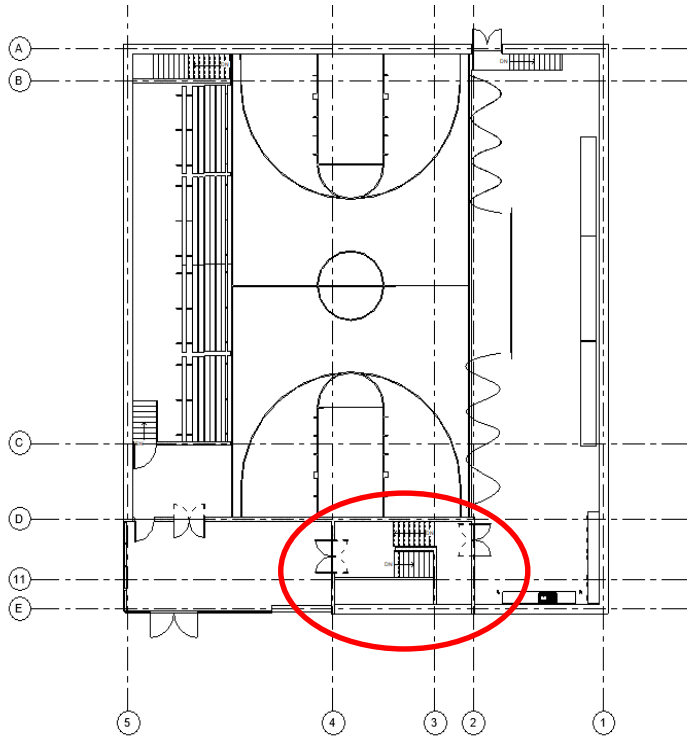
Metal Bearing Plate



Floor System



# ADA Lift Accessibility



Project  
Scope and  
Current  
Condition

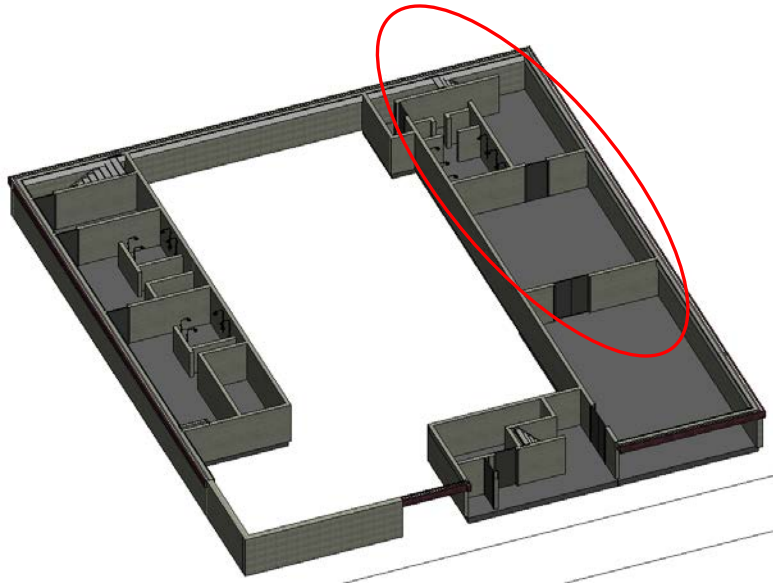
Outside  
Design  
Features

First Floor  
Design  
Features

Basement  
Design  
Features

Cost  
Estimation

# Storm Shelter Design



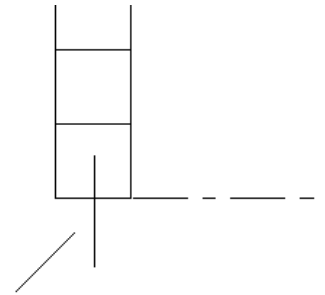
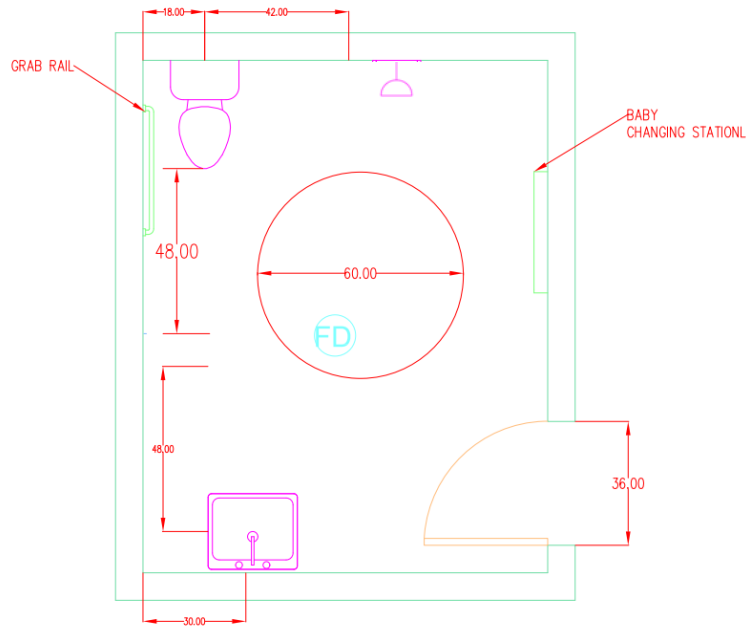
Existing Condition



# Storm Shelter Window and Door Replacements



# Bathroom and Wall Design

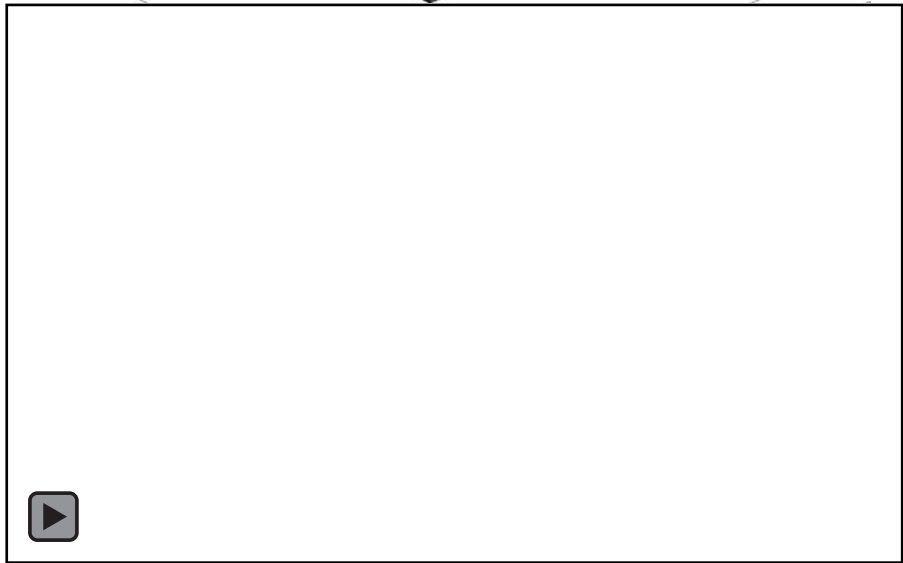
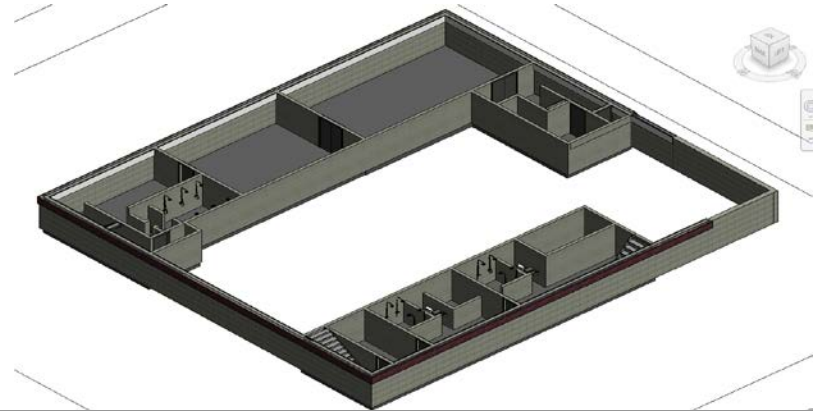


0.75" DIAMETER REBAR  
CMU Wall Elevation View



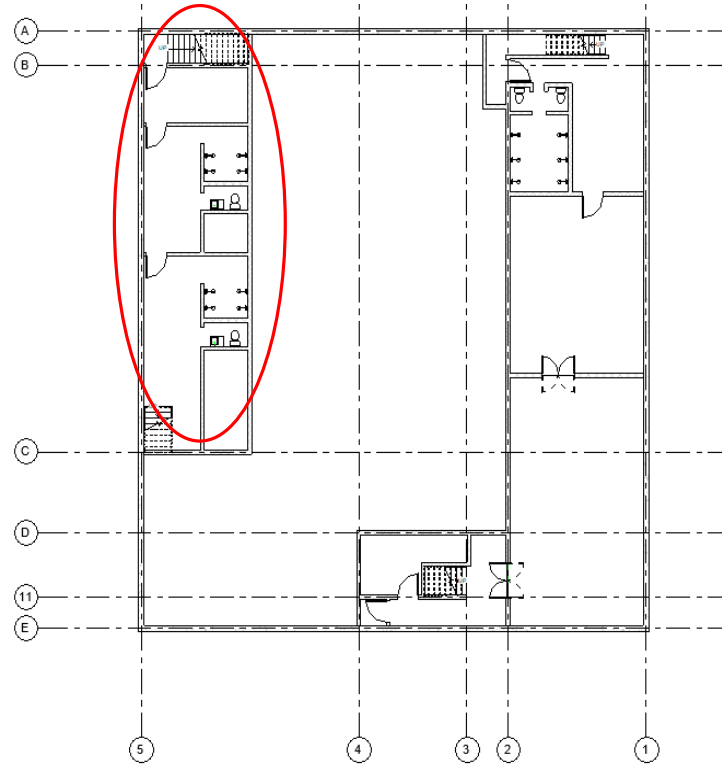
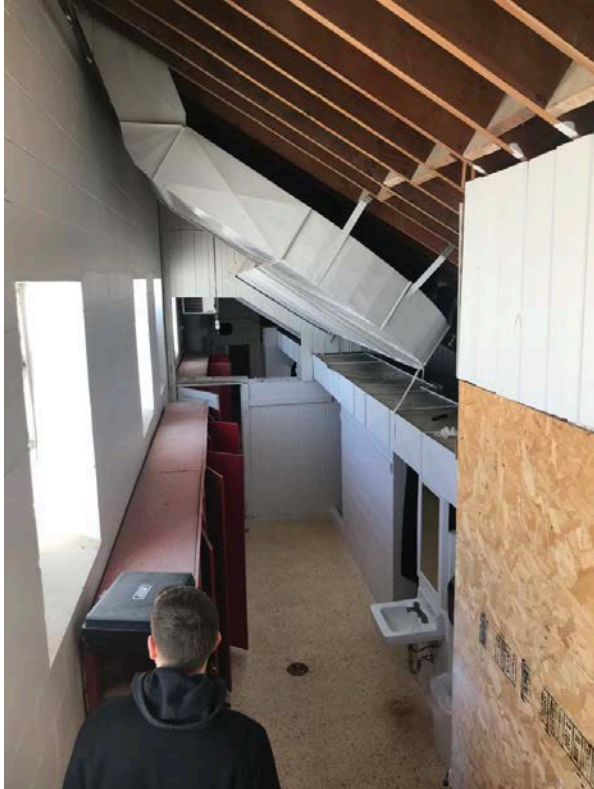
Ground Face Design

# Community Area Redesign



# Locker Room Area

Initial Area





# Floor Design

Standards/Codes/Manuals:

- Vulcraft Steel Roof and Floor Deck Catalog,
- ASCE 7
- 14th Edition Steel Construction Manual
- The Home Depot



**ADA Compliant**

# Storm Shelter

Standards/Codes/Manuals:

- 2014 ICC 500/NSSA Standard for the Design and Construction of Storm Shelters,
- Strength of Masonry Walls Under Compressive and Transverse Loads from the National Bureau of Standards
- ACI 318

Models/Floor Plans/Detail Designs: **Revit and AutoCAD**



**AUTOCAD**<sup>®</sup>

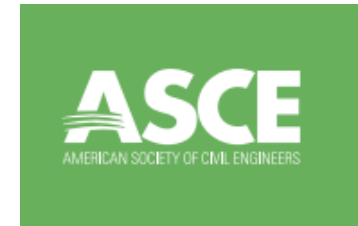
Calculations produced On: **Mathcad**



# Storm Shelter Details

Standards/Codes/Manuals:

- StormDefend,
- Securall
- ADA Compliant Restrooms
- IBC



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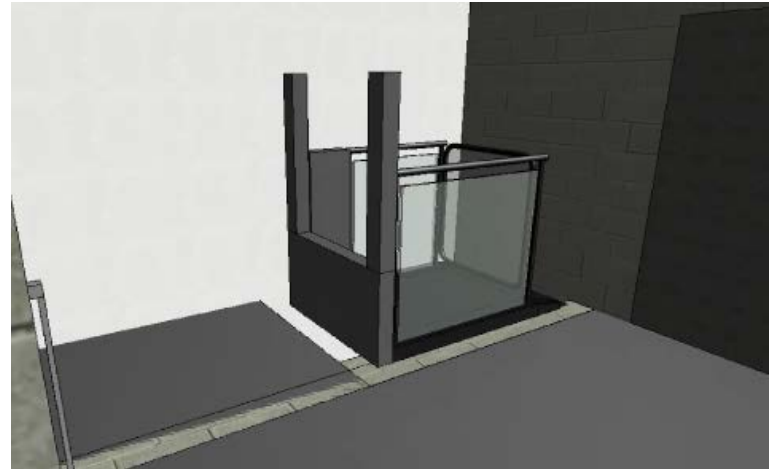
# Storm Shelter Cost

Storm Shelter Cost	
Bathrooms	\$19,300.00
Storm Proofing	\$31,000.00
Total cost w/ 10% contingency	<b>\$55,500.00</b>



# ADA Accessibility of Lower Level

ADA Accesibility Cost	
Vertical Platform Lift	\$67,000.00
Demolition of Elevated Concrete Slab	\$300.00
Construction of Concrete Slab	\$140.00
Total cost w/ 10% contingency	<b>\$74,500.00</b>



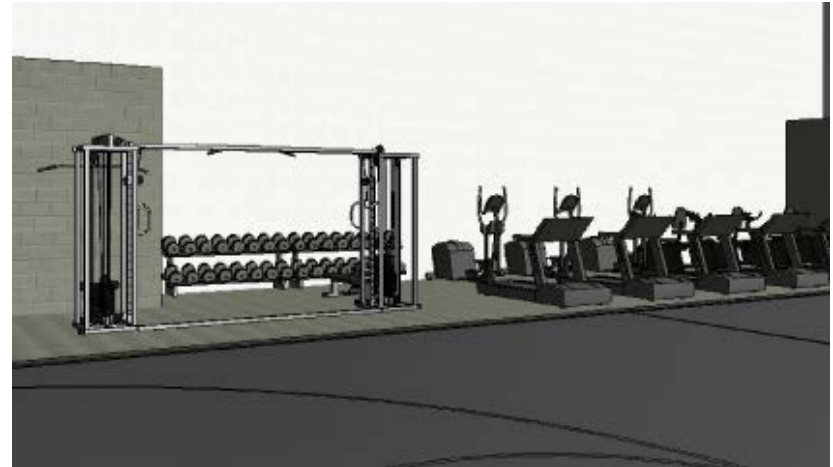
# Community Area Kitchen Renovation Cost

Kitchen Renovation Cost	
Unit Kitchen	\$7,175.00
Countertop	\$2,100.00
Partition Walls	\$2,625.00
Total cost w/ 10% contingency	\$13,100.00



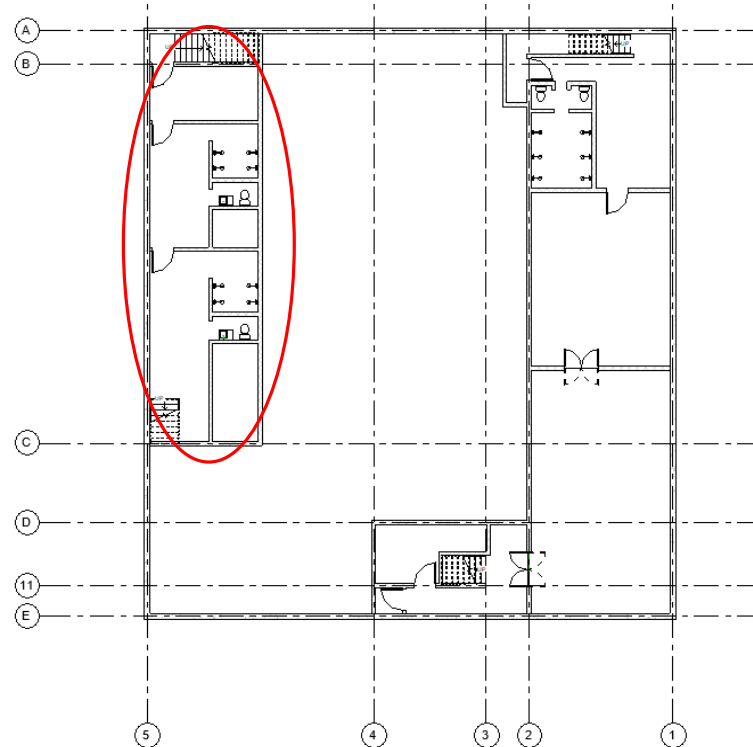
# Fitness Area Cost

Fitness Area Cost	
Bleacher Demolition	\$4,000.00
Floor Addition	\$6,800.00
Fitness Equipment	\$16,400.00
Netting Divider	\$4,900.00
Partition Wall	\$1,700.00
<b>Total cost w/ 10% contingency</b>	<b>\$37,200.00</b>



# Locker Room Renovation Cost

Locker Room Renovation Cost	
Demolition	\$3,700.00
Replacements	\$28,500.00
Total cost w/ 10% contingency	<b>\$35,200.00</b>



# Parking Lot Cost

Gravel

\$8,000.00



100 YR Storm Runoff

0.622 cfs

Asphalt

\$54,250.00



100 YR Storm Runoff

1.081 cfs

Concrete

\$83,400.00



100 YR Storm Runoff

1.081 cfs

Pervious Brick

\$175,000.00



100 YR Storm Runoff

0.386 cfs



# Project Total Estimated Cost

Storm Shelter	\$55,500.00
Vertical Lift	\$74,500.00
Kitchen Renovation	\$13,100.00
Fitness Area	\$37,200.00
Locker Room Renovation	\$35,200.00
Parking Lot Upgrade	\$8,000.00

**\$223,500.00**



Questions?

