



Beacon City Hall Design

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Presentation Outline

Background Information

Design Process and Elements

- Structural Design
- Site Planning
- Parking Lot and Sidewalk Design

Cost Estimate and Recommendations

- Larger building – 36'x60'
- Make everything ADA Accessible
- Additional Parking
- Demolition Plan





Elm St

Elm St

Elm St

Grant St

Sheridan St

Reid St

Reid St

Reid St

Grant St

T39

Project Scope



Building Size and
Features

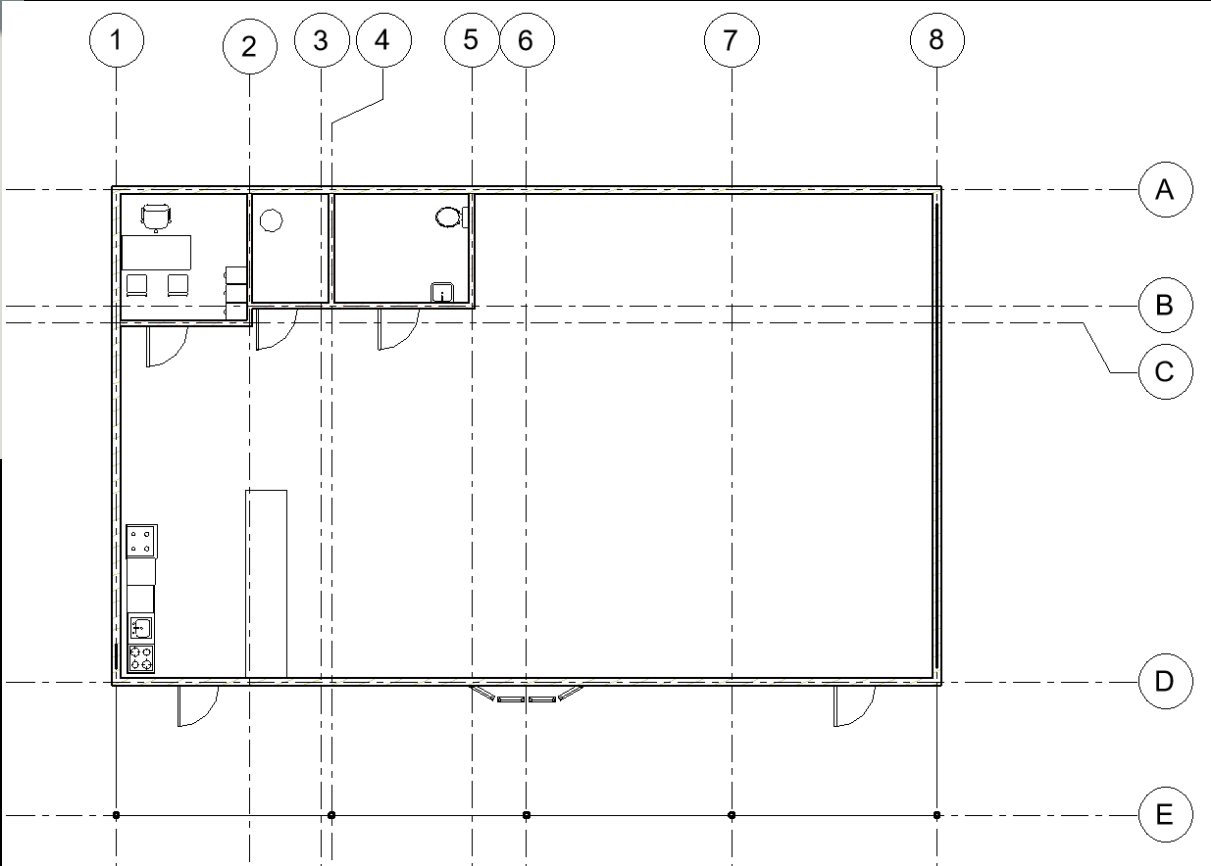


Structural Design



Site Plan & Features

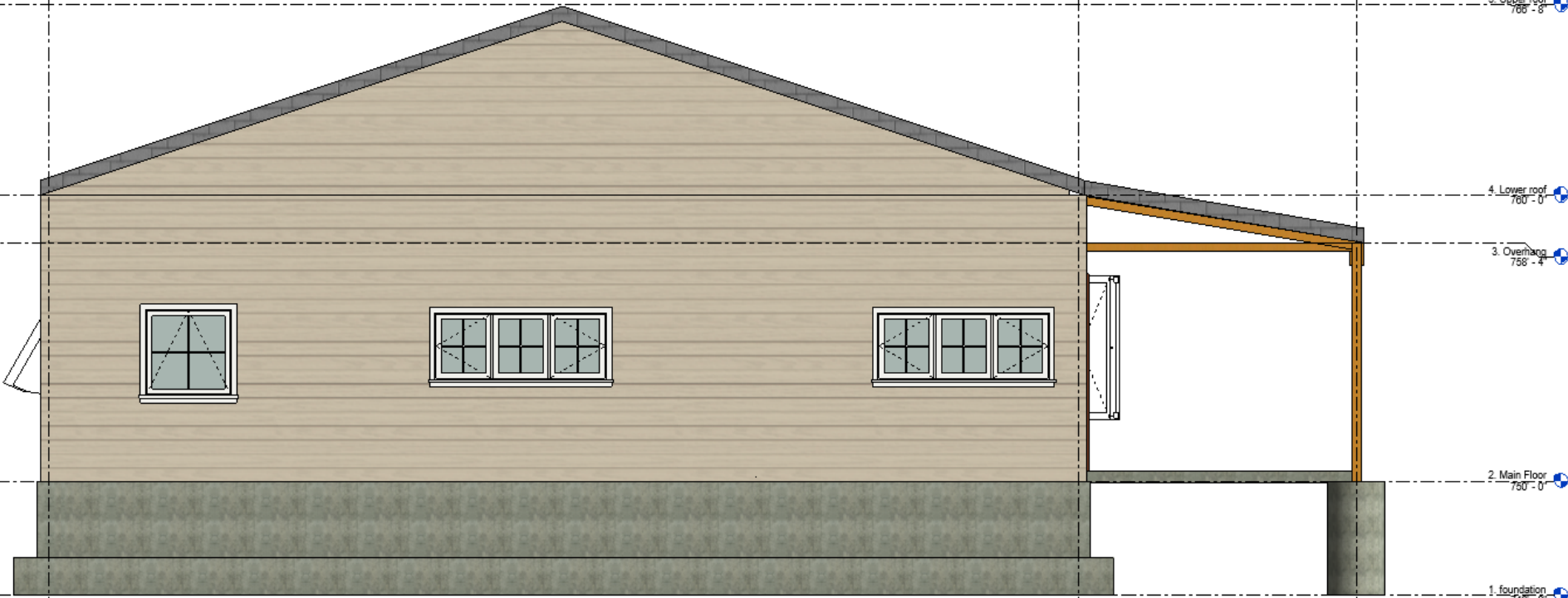
Structural Analysis and Floor Plan



A

D

E



5. Upper roof
768'-8"

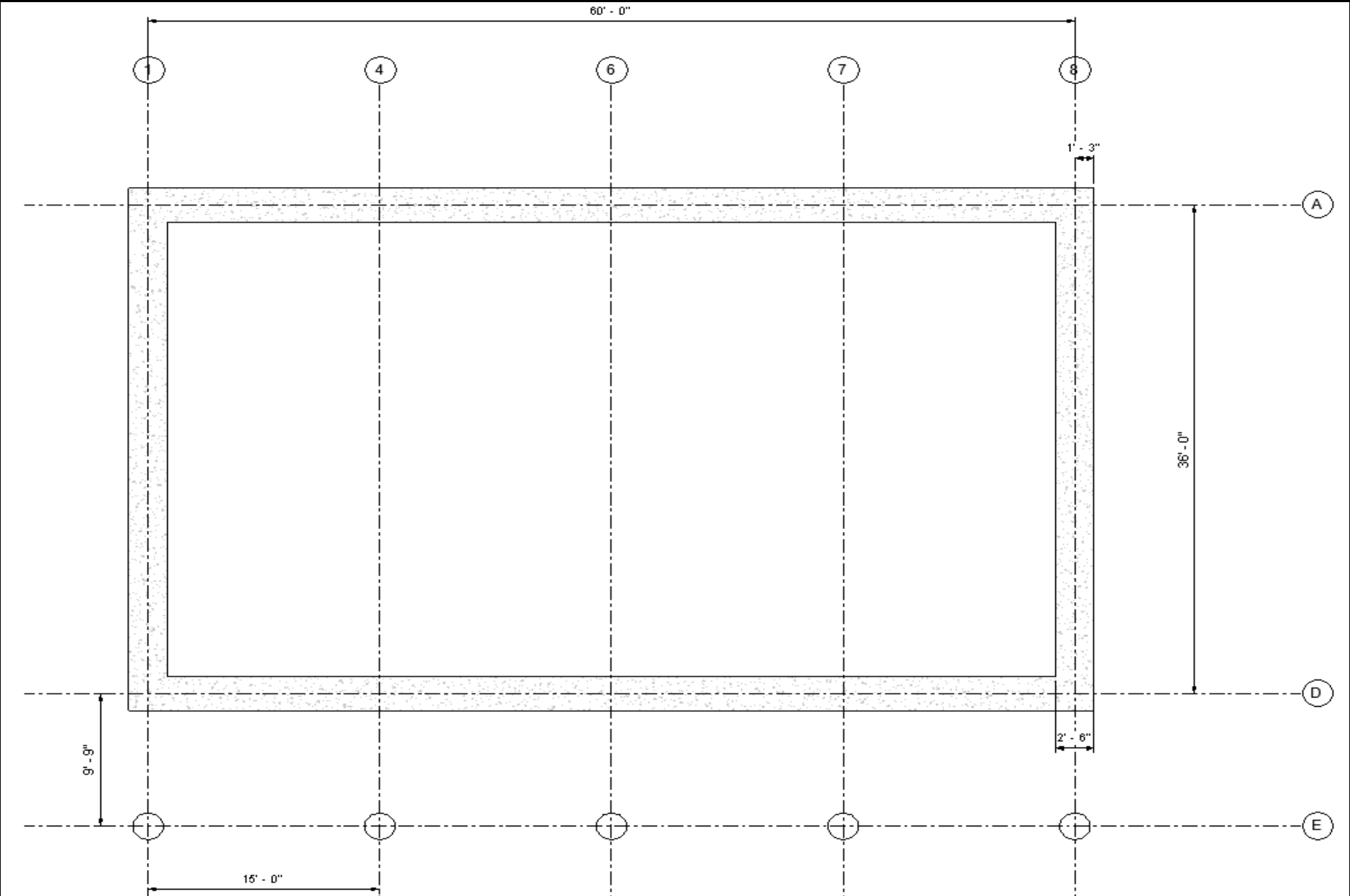
4. Lower roof
760'-0"

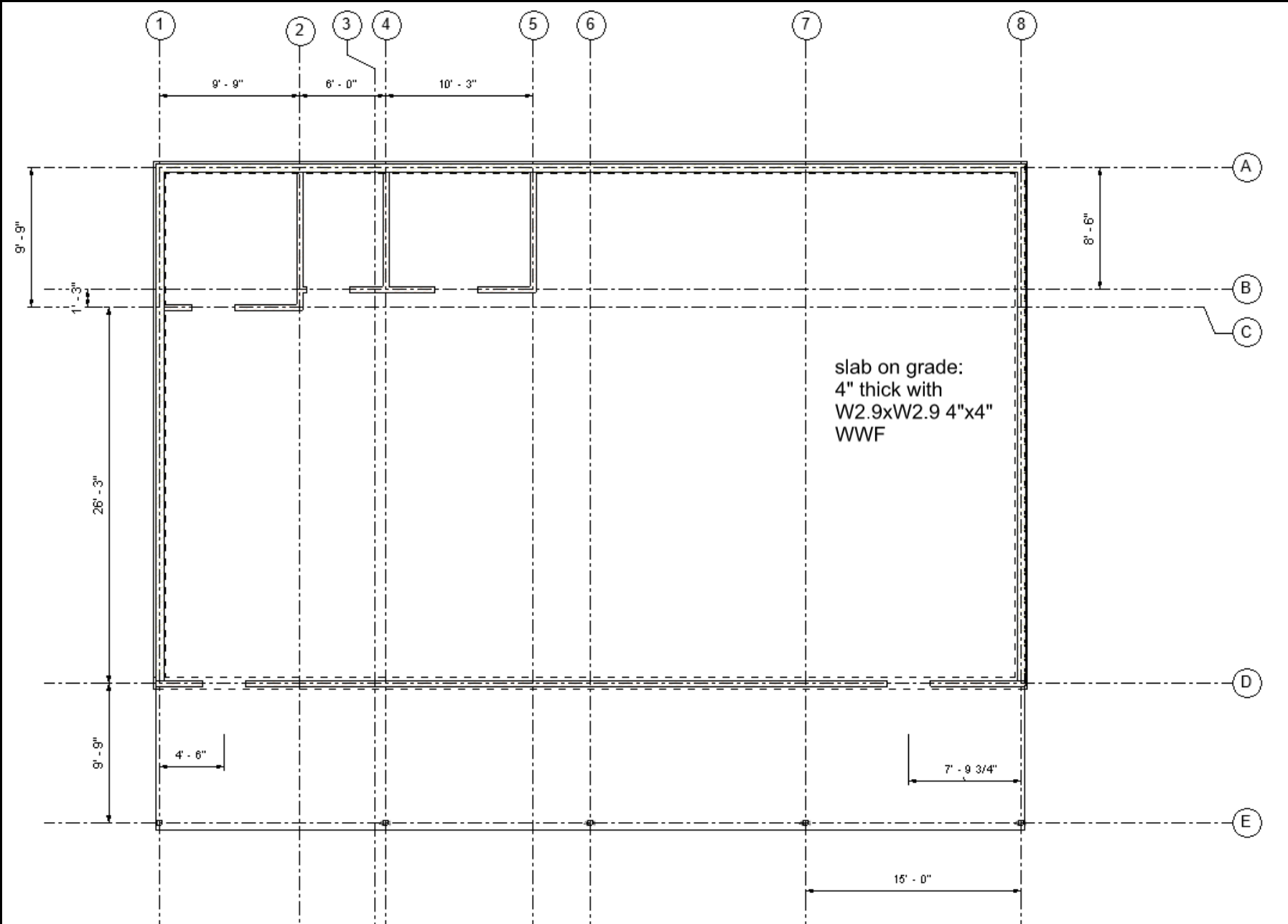
3. Overhang
758'-4"

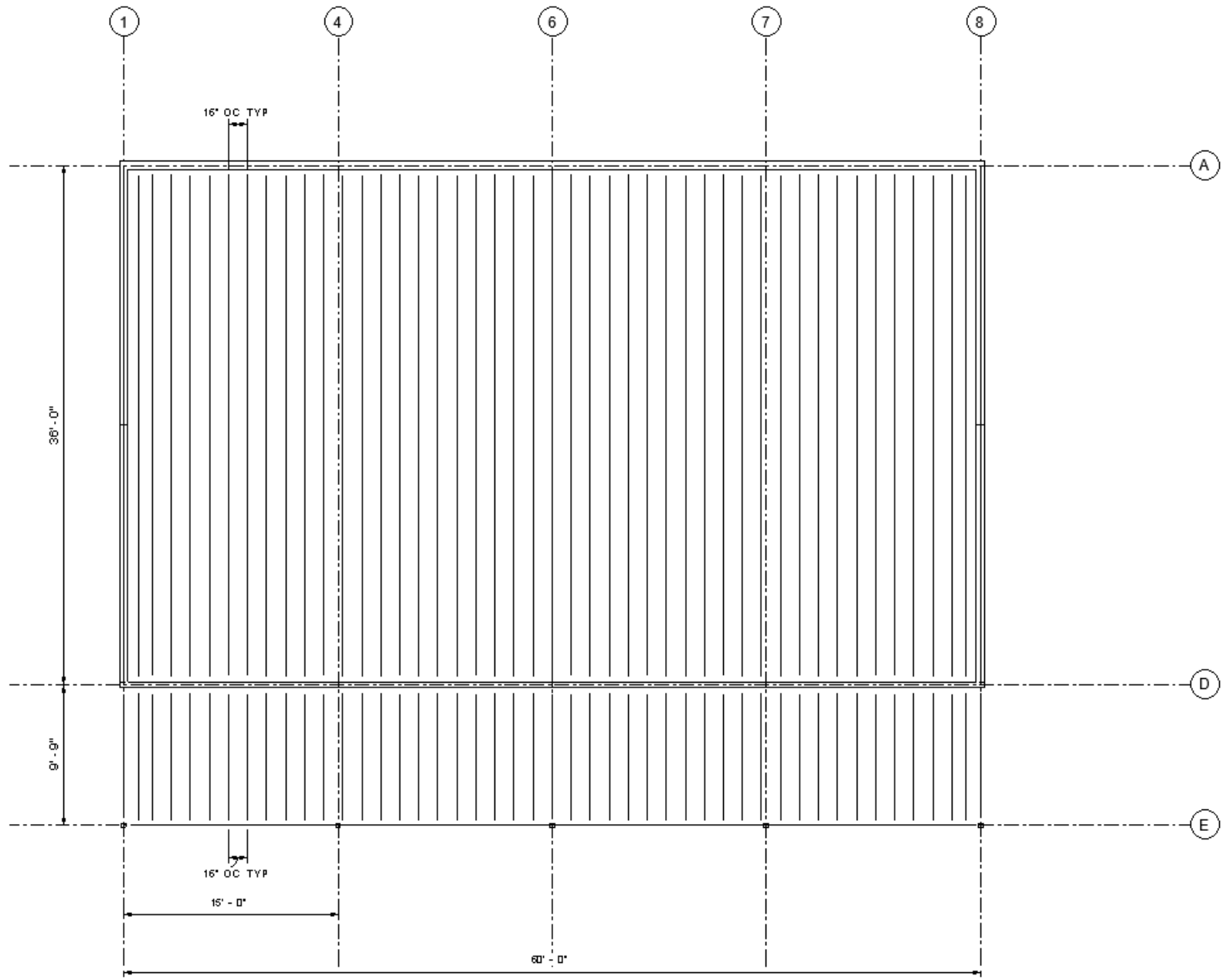
2. Main Floor
750'-0"

1. foundation
748'-0"

36' - 0"

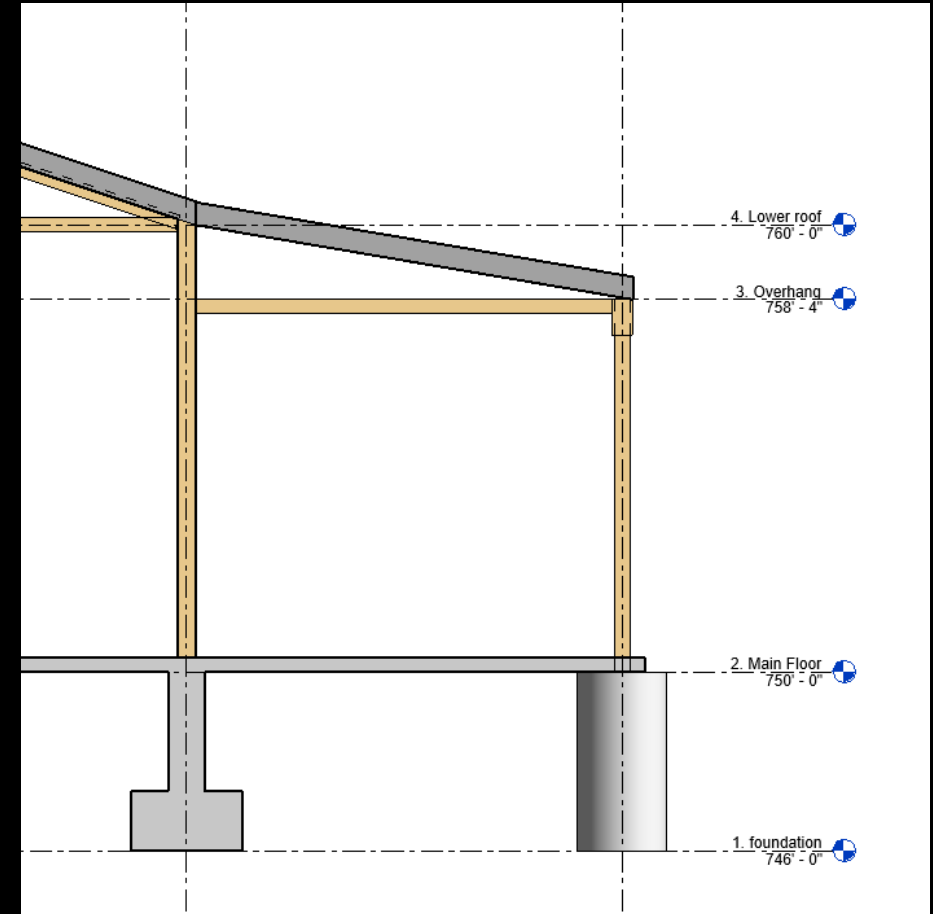
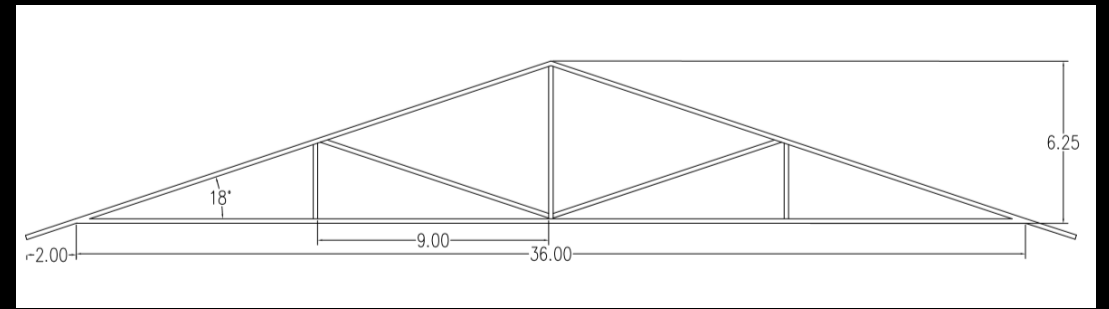




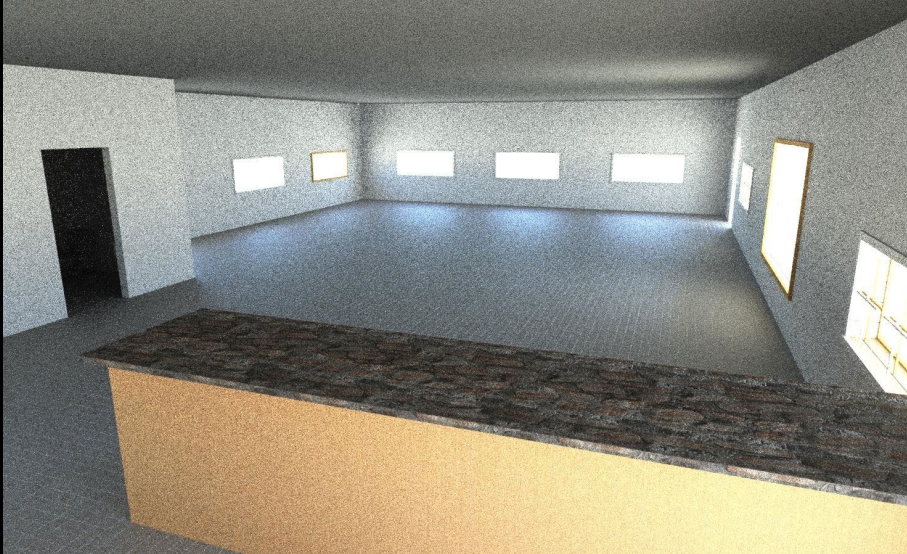
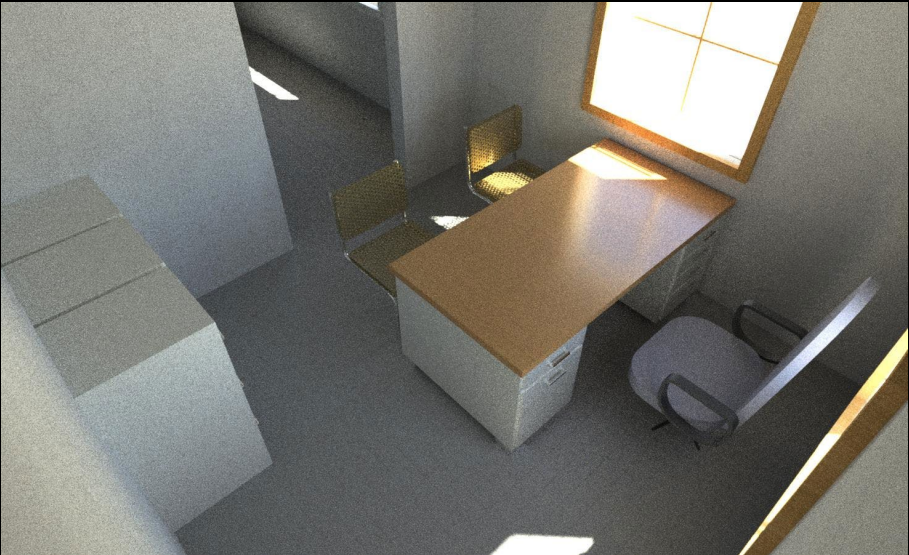


Structural Components

- Roof: Howe (K) 4 panel truss system @ 16" OC
- Structural walls: 2x6 sawn lumber @16" OC
- Interior walls : 2x4 sawn lumber @24" OC
- Sheathing is rated 32/16 OSB ½" thick
- Wall single bottom plate and double top plate
- Exterior beam : 60'x9"x5.5" with 4"x4"column supports every 15'
- 4" thick floor slab with WWF reinforcement
- Continuous strip foundation around load bearing walls
- 24" diameter Concrete Sonotube foundation for column supports



Building Interior Components



Site Design



BUILDING LOCATION
& FEATURES



UTILITY
INFORMATION



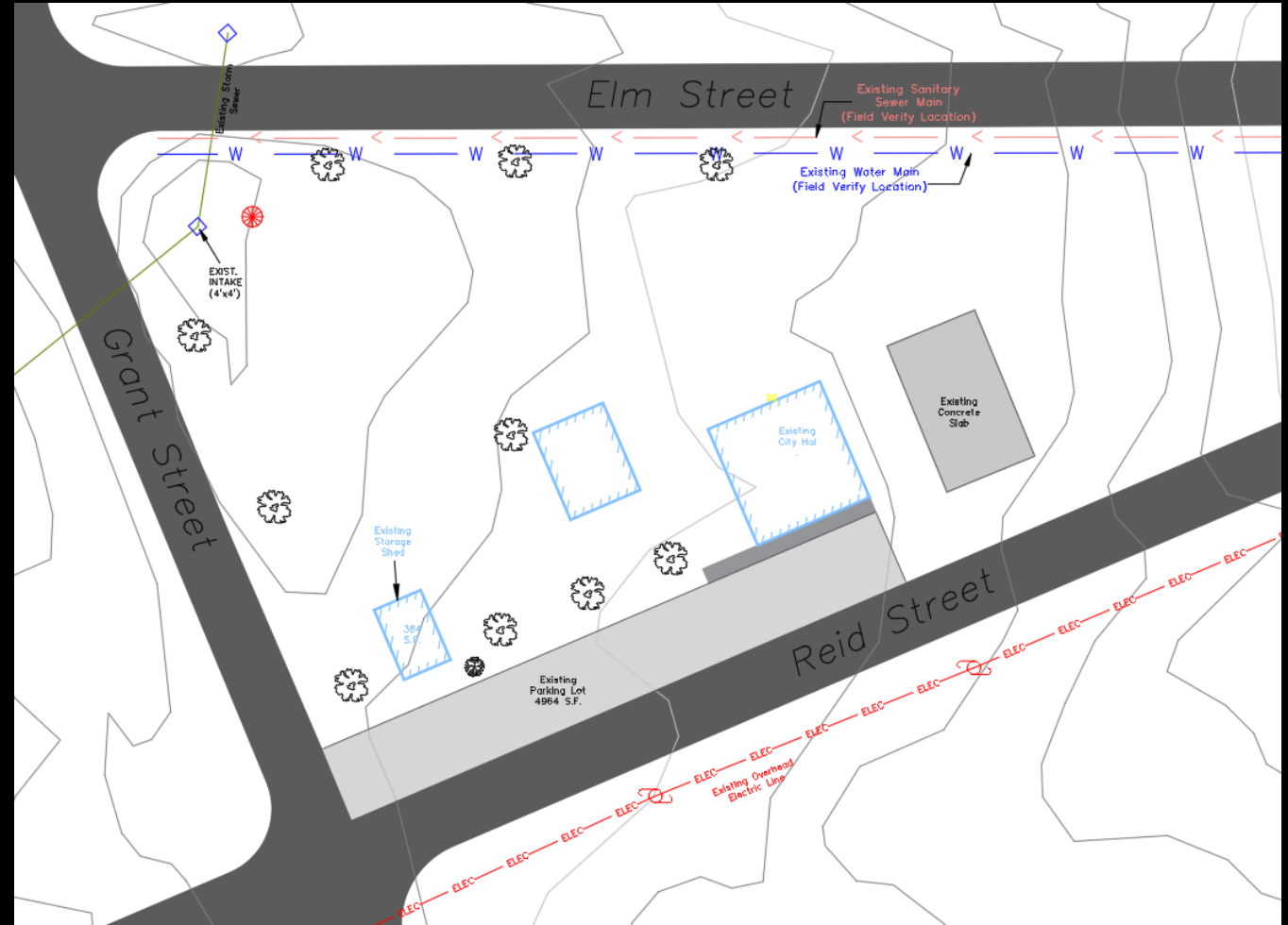
GRADING AND
RUNOFF



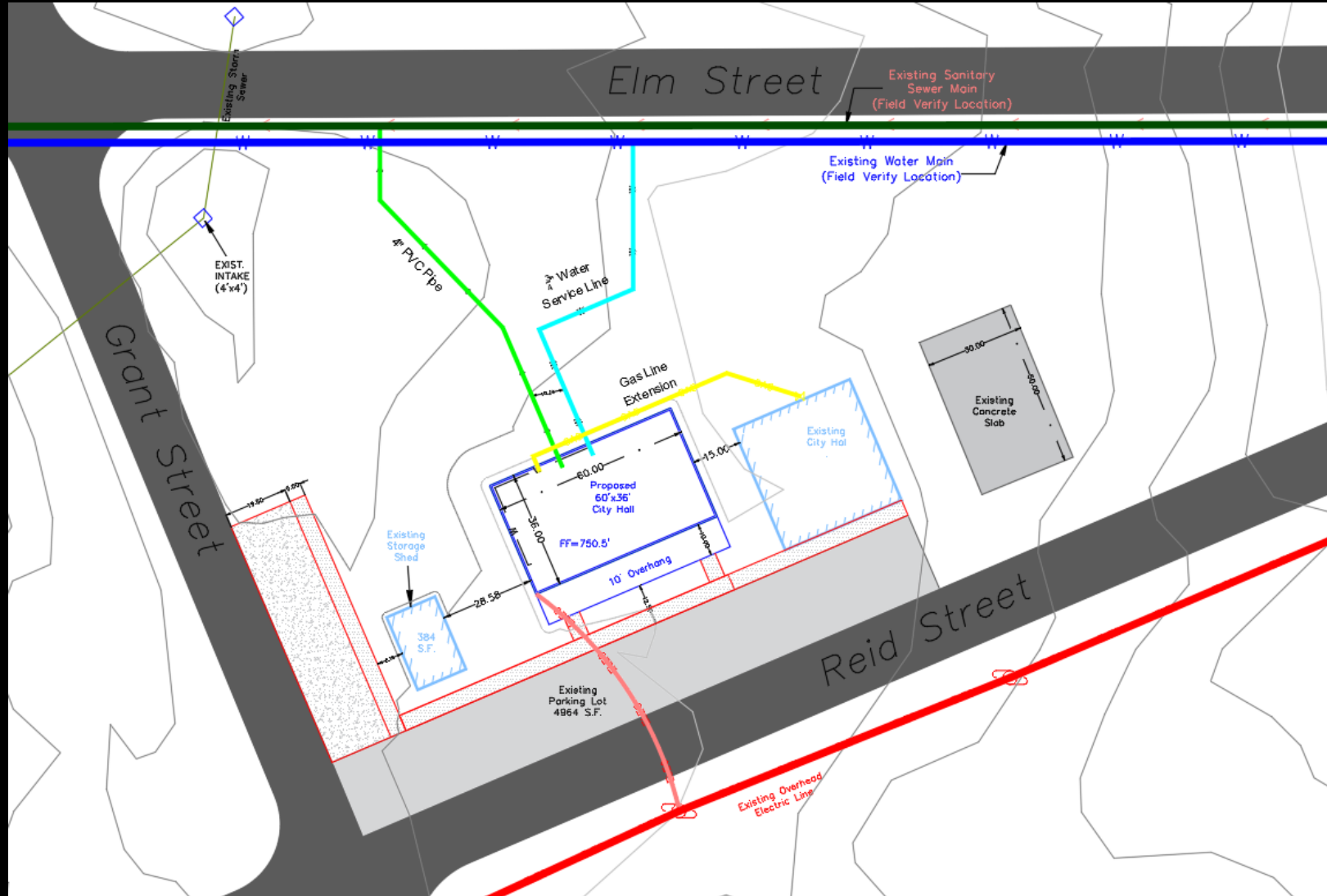
EROSION CONTROL
& DEMOLITION

Existing Conditions

- Parking Lot
- On site Utilities



Proposed Building & Utility Locations



Utility Information

Sanitary Sewer

- 4" PVC Pipe
- 2-5% Slopes, 8 Feet Deep

Water Service

- $\frac{3}{4}$ " PVC Pipe
- 60" Below Finished Grade

Parking Lot & Sidewalk Addition

ADA Accessibility

2% Cross Slope

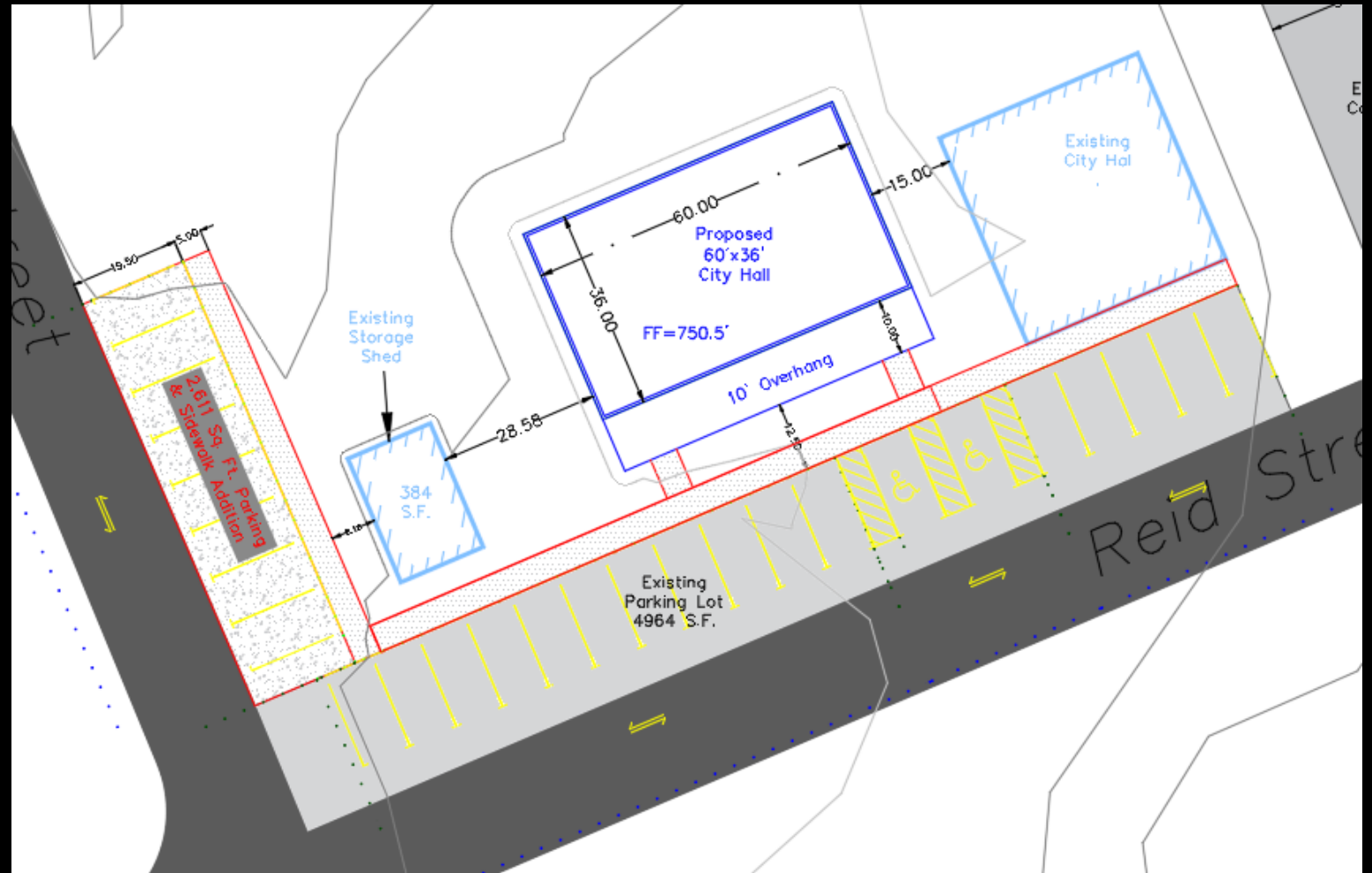
5% Running Slope

1% Drainage



Parking Lot & Sidewalk Addition

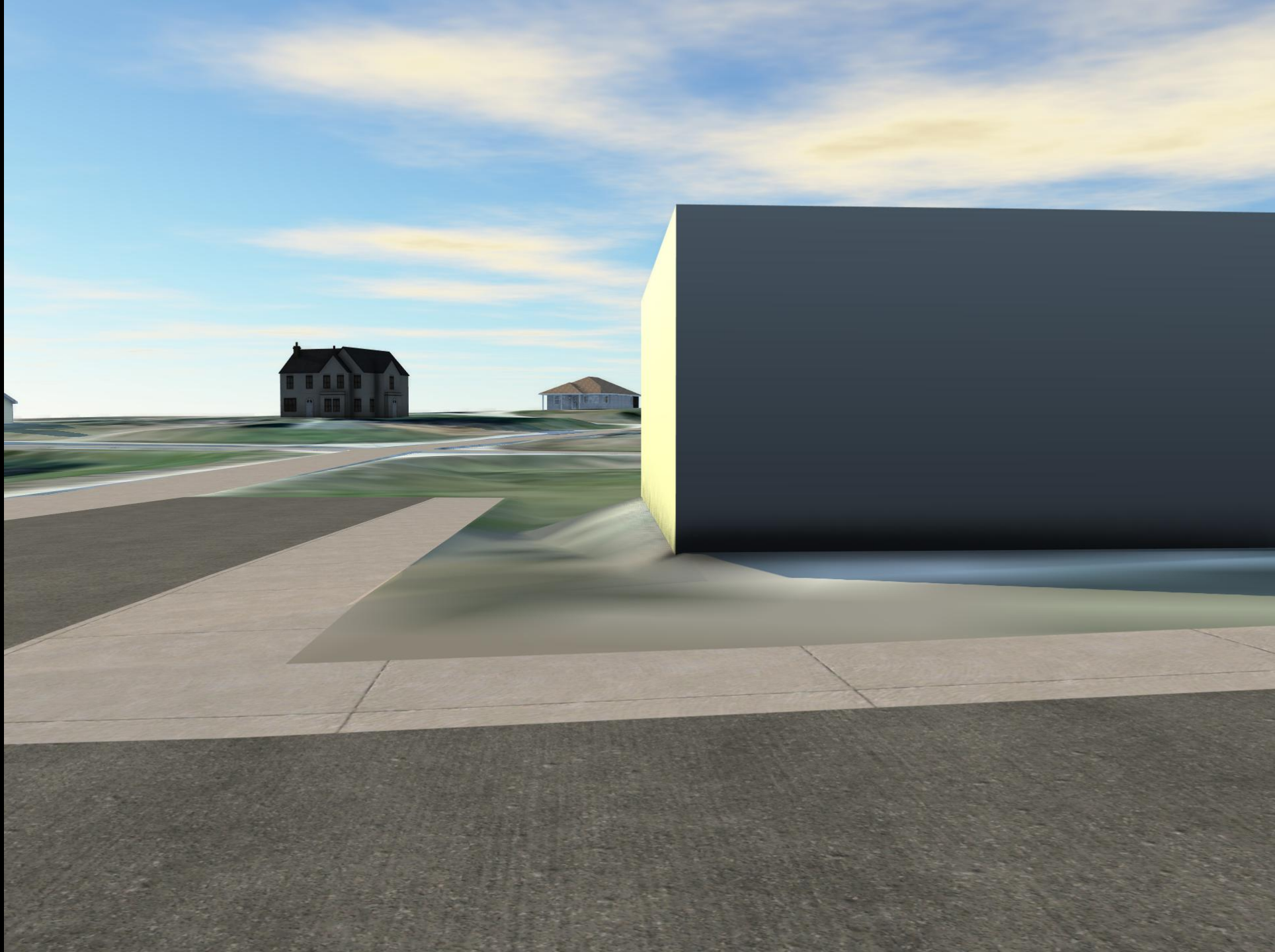
- 2,600 Square Feet
- 20-year Design Life
- 6" PCC on 12" Subgrade
- Painted Stalls
- 4" Sidewalk on 4" Base
- 5 Foot Wide



Site Grading







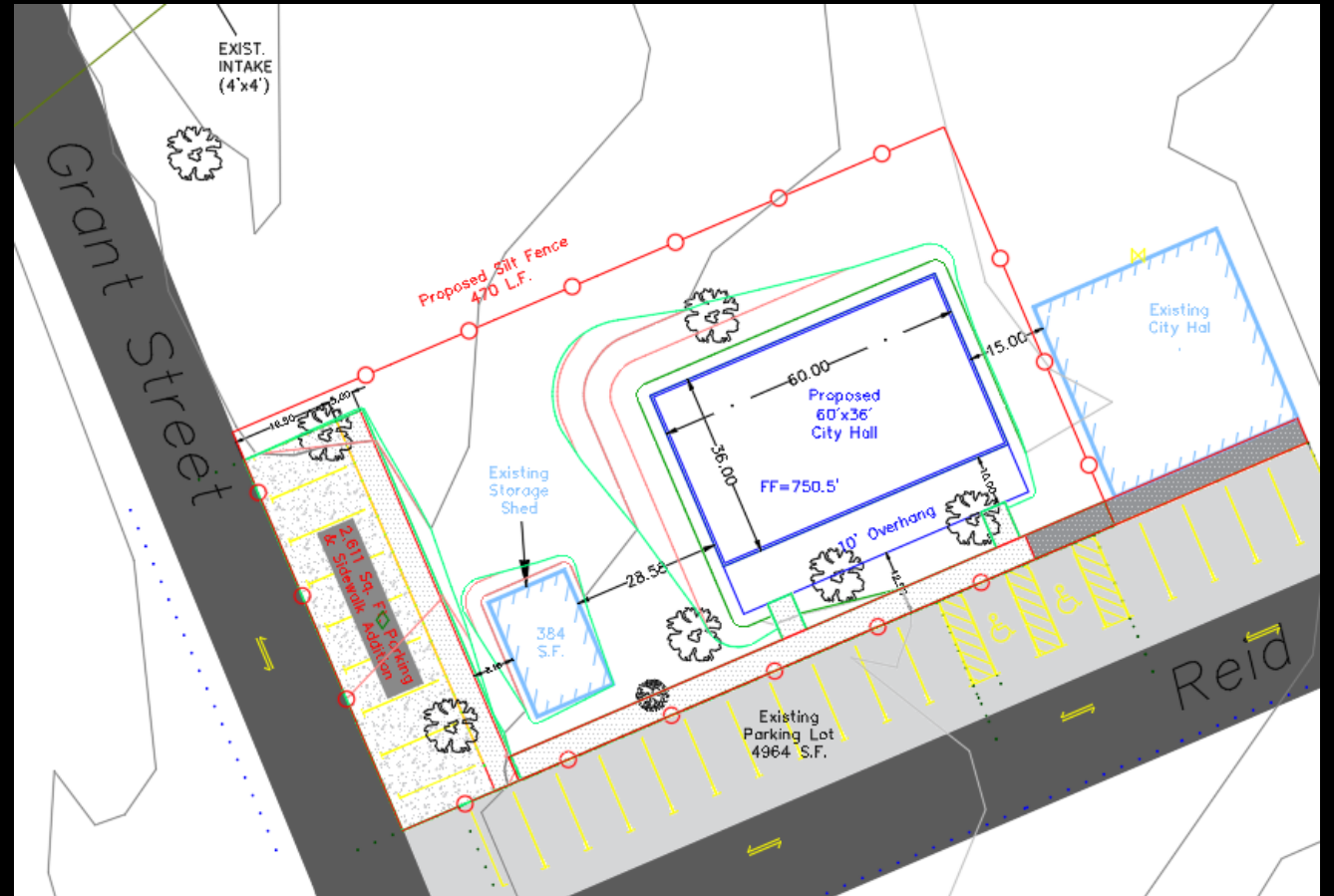


Stormwater Runoff

- Rational Method ($Q=CiA$)
- 25-year Design Storm
- 5 Minute Concentration
- Rainfall Intensity of 9.53 in/hr
- 1.34 Acres
- 15.6% to 21.6% Impervious
- 0.532 cfs Discharge Increase

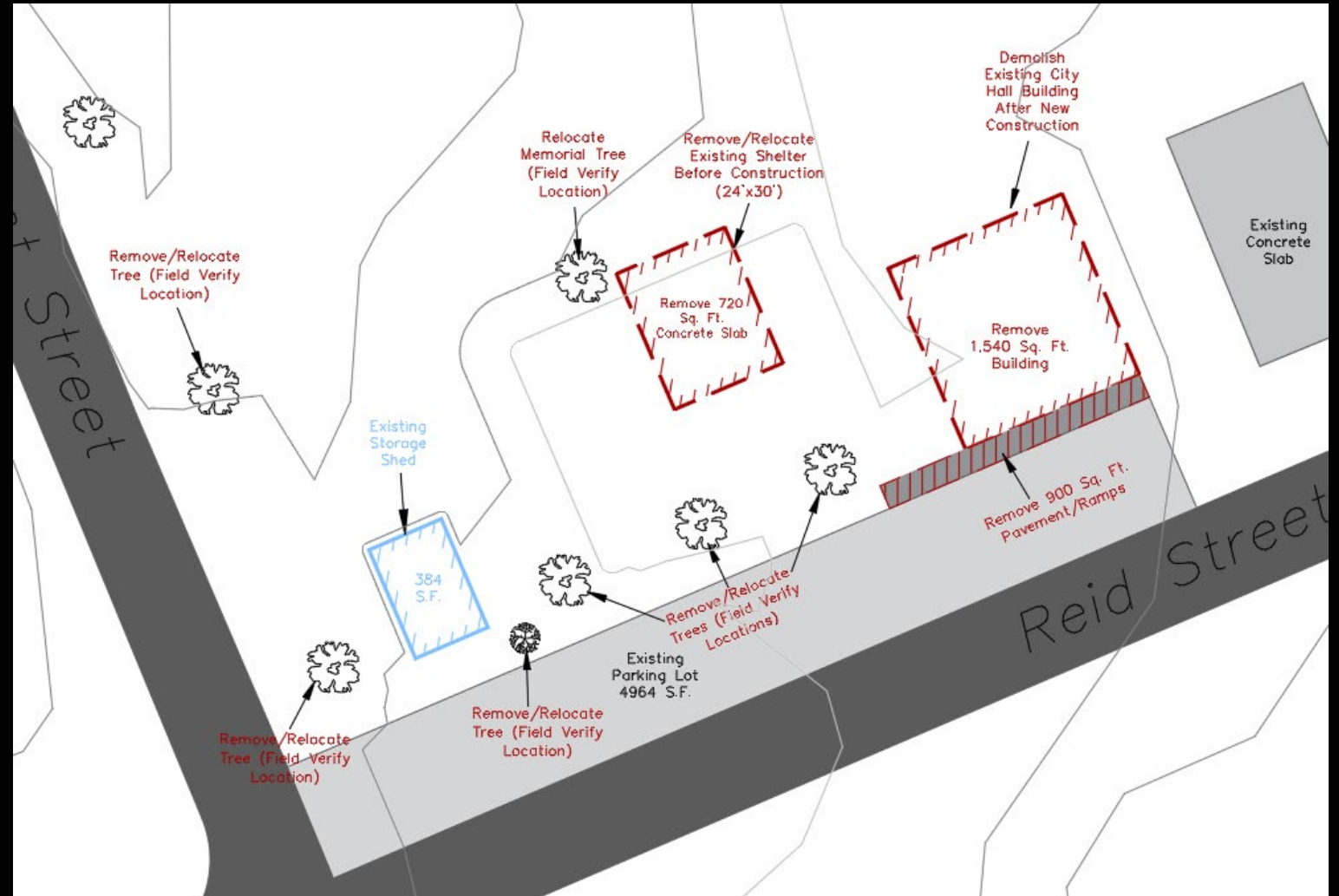
Erosion Control

- Less than 1 Acre disturbed
- Silt Fence



Demolition

- Picnic Shelter
- Relocate/Remove Trees
- Existing City Hall



Item	Description	Unit	Unit Price			Quantity	Total Price		
			Material Price	Instillation Price	Total Price		Material Price	Instillation Price	Total Price
Substructure									
Wall Foundation	4', direct chute, .123 concrete, 10" thick	LF	\$ 27.00	\$ 59.50	\$ 86.50	192	\$ 5,184.00	\$ 11,424.00	\$ 16,608.00
Strip Footing	Load 5.1 KLF, soil capacity 3 KSF, 24"widex12"deep, reinf	LF	\$ 18.90	\$ 25.00	\$ 43.90	192	\$ 3,628.80	\$ 4,800.00	\$ 8,428.80
Slab on Grade	4" thick, light industrial, reinforced	SF	\$ 3.07	\$ 4.01	\$ 7.08	2160	\$ 6,631.20	\$ 8,661.60	\$ 15,292.80
Excavation & Backfill	per 1000 sq.ft, 4' sand,gravel, or common earth, clay excavation, bank run gravel borrow for backfill	SF	\$ 2.05	\$ 2.40	\$ 4.45	1000	\$ 2,050.00	\$ 2,400.00	\$ 4,450.00
Shell									
Wood Columns	4"x4", 10'x8' bay size, 10' height	SF	\$ 0.04	\$ 0.03	\$ 0.07	400	\$ 15.11	\$ 12.44	\$ 27.56
Wood Pitched Roof	2"x6", 16" O.C.	SF	\$ 1.42	\$ 1.74	\$ 3.16	2909	\$ 4,133.50	\$ 5,059.55	\$ 9,193.05
Exterior Walls	2"x6" studs, 16"O.C, 8" fiber cement siding	SF	\$ 4.99	\$ 11.10	\$ 16.09	1920	\$ 9,580.80	\$ 21,312.00	\$ 30,892.80
Wood Windows	Double Hung, insulated glass, 3'x5'6"	per unit	\$ 360.00	\$ 310.00	\$ 670.00	2	\$ 720.00	\$ 620.00	\$ 1,340.00
Wood Windows	Casement, insulated glass, 7'11"x6'3"	per unit	\$ 1,375.00	\$ 365.00	\$ 1,740.00	1	\$ 1,375.00	\$ 365.00	\$ 1,740.00
Wood Windows	Casement, insulated glass, 5'11"x5'2"	per unit	\$ 960.00	\$ 305.00	\$ 1,265.00	4	\$ 3,840.00	\$ 1,220.00	\$ 5,060.00
Wood Exterior Doors	Birch, Single Door, Hinged, 2'6"x	per opening	\$ 2,100.00	\$ 340.00	\$ 2,440.00	2	\$ 4,200.00	\$ 680.00	\$ 4,880.00
Shingles	Asphalt Roofing,Strip Shingles, 4"Slope, inorganic class A 210-235 psf	SF	\$ 0.93	\$ 1.26	\$ 2.19	2909	\$ 2,705.64	\$ 3,665.71	\$ 6,371.35
Roof Insulation	Sprayed Foam, Open-Cell	Board Ft	\$ 0.50	\$ 1,500.00	\$ 0.50	2909	\$ 1,454.65	\$ 1,500.00	\$ 2,954.65
Interiors									
Walls	5/8" FR drywall, 2x4 @ 24"O.C., nothing	SF	\$ 1.23	\$ 2.89	\$ 4.12	1692	\$ 2,081.16	\$ 4,889.88	\$ 6,971.04
Walls	5/8" FR drywall, 2x4 @ 24"O.C., same	SF	\$ 2.08	\$ 4.78	\$ 6.86	517.5	\$ 1,076.40	\$ 2,473.65	\$ 3,550.05
Interior Doors	Single Leaf Wood, 3'x7', birch, hollow core	per opening	\$ 435.00	\$ 223.00	\$ 658.00	4	\$ 1,740.00	\$ 892.00	\$ 2,632.00
Bath	Dispenser, towel, surface mounted	each	\$ 47.50	\$ 39.00	\$ 86.50	1	\$ 47.50	\$ 39.00	\$ 86.50
Bath	Grab bar, 1-1/4" diam., 12" long	each	\$ 33.00	\$ 26.00	\$ 59.00	2	\$ 66.00	\$ 52.00	\$ 118.00
Bath	Mirror, framed with shelf, 18"x24"	each	\$ 204.00	\$ 31.50	\$ 235.50	1	\$ 204.00	\$ 31.50	\$ 235.50
Bath	Toilet paper dispenser	each	\$ 19.45	\$ 21.00	\$ 40.45	1	\$ 19.45	\$ 21.00	\$ 40.45
Paint	Primer + 1 coat	SF	\$ 0.14	\$ 0.80	\$ 0.94	2727	\$ 381.78	\$ 2,181.60	\$ 2,563.38
Floor Finish	Vinyl, composition tile, maximum	SF	\$ 1.91	\$ 1.13	\$ 3.04	2160	\$ 4,125.60	\$ 2,440.80	\$ 6,566.40
Ceiling Finish	5/8" FR drywall	SF	\$ 0.63	\$ 2.57	\$ 3.20	2160	\$ 1,360.80	\$ 5,551.20	\$ 6,912.00
Services									
Toilet	Tank type, floor mounted, two piece close coupled	each	\$ 705.00	\$ 855.00	\$ 1,560.00	1	\$ 705.00	\$ 855.00	\$ 1,560.00
Bath Sink	Wall hung,Vitreous China, 20"x27", handicap	each	\$ 1,575.00	\$ 985.00	\$ 2,560.00	1	\$ 1,575.00	\$ 985.00	\$ 2,560.00
Kitchen Sink	Countertop, PE on Cl, 32"x21" double bowl	each	\$ 765.00	\$ 955.00	\$ 1,720.00	1	\$ 765.00	\$ 955.00	\$ 1,720.00
Water Heater	Gas Fired WH, residential, 100F rise, 30 gal tank	each	\$ 2,675.00	\$ 1,575.00	\$ 4,250.00	1	\$ 2,675.00	\$ 1,575.00	\$ 4,250.00
HVAC	48,000 BTU system	each	\$ 3,500.00	\$ 2,500.00	\$ 6,000.00	1	\$ 3,500.00	\$ 2,500.00	\$ 6,000.00
Sprinklers	Wet pipe, light hazard, 2000 SF	SF	\$ 5.75	\$ 3.59	\$ 9.34	2160	\$ 12,420.00	\$ 7,754.40	\$ 20,174.40
Equipment & Furnishing									
Kitchen	Single Oven, 30"wide, economy	each	\$ 945.00	\$ 119.00	\$ 1,064.00	1	\$ 945.00	\$ 119.00	\$ 1,064.00
Kitchen	Refrigerator, no frost, 10-12 CF, economy	each	\$ 495.00	\$ 99.50	\$ 594.50	1	\$ 495.00	\$ 99.50	\$ 594.50
Kitchen	Sink Base Cabinet, 36" wide, average	per unit	\$ 565.00	\$ -	\$ 565.00	1	\$ 565.00	\$ -	\$ 565.00
Kitchen	Base Unit, 24" deep, 35" high, one door below 18"wide, average	per unit	\$ 425.00	\$ -	\$ 425.00	12	\$ 5,100.00	\$ -	\$ 5,100.00
Kitchen	Base Unit, 24" deep, 35" high, one door below 15"wide, average	per unit	\$ 400.00	\$ -	\$ 400.00	2	\$ 800.00	\$ -	\$ 800.00
Kitchen	Wall Unit, 12" deep, 30" high, two doors, 36" wide, average	per unit	\$ 575.00	\$ -	\$ 575.00	2	\$ 1,150.00	\$ -	\$ 1,150.00
Kitchen	Countertop, Stock plastic laminate, 24" wide	LF	\$ 35.00	\$ -	\$ 35.00	14	\$ 490.00	\$ -	\$ 490.00
Site Work									
Flagpole	Aluminum, tapered, 20' high	each	\$ 1,200.00	\$ 720.00	\$ 1,920.00	1	\$ 1,200.00	\$ 720.00	\$ 1,920.00
Demolition	Single Family, 1 story, wood, 1600SF	each	\$ 2,325.00	\$ 2,200.00	\$ 4,525.00	1	\$ 2,325.00	\$ 2,200.00	\$ 4,525.00
Parking Lot	Fixed form 24' pass, 6" thick	SY	24.5	1.18	\$ 25.68	202	\$ 4,949.00	\$ 238.36	\$ 5,187.36
Sidewalk	Concrete, 4",4" gravel base, 5' wide	LF	\$ 13.45	\$ 18.80	\$ 32.25	70	\$ 941.50	\$ 1,316.00	\$ 2,257.50
Tree Removal	Removal of trees	each	\$ 500.00	\$ -	\$ 500.00	7	\$ 3,500.00	\$ -	\$ 3,500.00
Grading	Fine grading for parking lots	SY	\$ -	\$ 0.95	\$ 0.95	88	\$ -	\$ 83.60	\$ 83.60
Grading	Rough grading for site 410-1000 SF, hand labor	each	\$ -	\$ 1,000.00	\$ 1,000.00	1	\$ -	\$ 1,000.00	\$ 1,000.00

Project Cost

Material & Installation	Cost
Substructure	\$ 35,200.00
Shell	\$ 54,400.00
Interior	\$ 25,800.00
Services	\$ 31,600.00
Equipment & Furnishing	\$ 8,500.00
Site Work	\$ 16,100.00
Contingency (10%)	\$ 17,200.00
Overhead and Profit (25%)	\$ 42,900.00
Total Price	\$ 232,000.00

Full Process of Design

Site design to ensure efficient use of the plot

Structural design for building components

Addition of parking and extra sidewalk for safety

ADA Accessibility

Relocation and deconstruction of existing elements

Walk-through Video

- <https://www.youtube.com/watch?v=mSC27mk-MHM&feature=youtu.be>

Questions?