



Schematic Design

**Town of Orleans
Old Firehouse**

Orleans, MA

PMC LLC
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Hingham
MA 02043
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Prepared for:

CBI Consulting Inc.

September 29, 2017



Town of Orleans
Old Firehouse
Orleans, MA

29-Sep-17

Schematic Design

MAIN CONSTRUCTION COST SUMMARY

**Estimated Construction
Cost**

ORLEANS OLD FIREHOUSE

WINDOW & DOOR REPLACEMENT		\$763,083
SITework		\$54,110

SUBTOTAL TRADE COSTS		\$817,193
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Design Contingency	10.0%	\$81,719
Escalation Allowance (Summer 2018 Construction)	4.00%	\$32,688
SUBTOTAL		\$931,600

General Conditions	15.0%	\$122,579
Insurances	2.0%	\$16,344
Bond	1.00%	\$8,172
Fee	10.0%	\$81,719

Construction Contingency		By Owner
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TOTAL ESCALATED TO START OF CONSTRUCTION		\$1,160,414
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Town of Orleans

Old Firehouse

Orleans, MA

29-Sep-17

Schematic Design

This Schematic Design estimate was produced from outline drawings and quantities prepared by CBI Consulting Inc. dated September 26th, 2017. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

This estimate includes all direct construction costs, general contractor's overhead and profit and design contingency. Cost escalation assumes start dates indicated.

Bidding conditions are expected to be public bidding under Chapter 149 of the Massachusetts General Laws to pre-qualified general contractors, and pre-qualified sub-contractors, open specifications for materials and manufactures.

The estimate is based on prevailing wage rates for construction in this market and represents a reasonable opinion of cost. It is not a prediction of the successful bid from a contractor as bids will vary due to fluctuating market conditions, errors and omissions, proprietary specifications, lack or surplus of bidders, perception of risk, etc. Consequently the estimate is expected to fall within the range of bids from a number of competitive contractors or subcontractors, however we do not warrant that bids or negotiated prices will not vary from the final construction cost estimate.

ITEMS NOT CONSIDERED IN THIS ESTIMATE

Items not included in this estimate are:

- All professional fees and insurance
- Building Permit costs
- Land acquisition, feasibility, and financing costs
- All Furnishings, Fixtures and Equipment
- Items identified in the design as Not In Contract (NIC)
- Items identified in the design as by others
- Owner supplied and/or installed items (e.g. draperies, furniture and equipment)
- Rock excavation; special foundations (unless indicated by design engineers)
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)
- Construction or occupancy phasing or off hours' work, (except as noted in this estimate)



Town of Orleans
 Old Firehouse
 Orleans, MA

29-Sep-17

Schematic Design

CONSTRUCTION COST SUMMARY				
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>%</i>
Old Firehouse				
A10	FOUNDATIONS			
	B1010 Standard Foundations	\$3,943		
	A1020 Special Foundations	\$0		
	A1030 Lowest Floor Construction	\$678	\$4,621	0.6%
B20	EXTERIOR CLOSURE			
	B2010 Exterior Walls	\$91,241		
	B2020 Windows	\$36,771		
	B2030 Exterior Doors	\$24,721	\$152,733	20.0%
B30	ROOFING			
	B3010 Roof Coverings	\$0		
	B3020 Roof Openings	\$0	\$0	
C10	INTERIOR CONSTRUCTION			
	C1010 Partitions	\$59,910		
	C1020 Interior Doors	\$24,395		
	C1030 Specialties / Millwork	\$35,154	\$119,459	15.7%
C30	INTERIOR FINISHES			
	C3010 Wall Finishes	\$19,661		
	C3020 Floor Finishes	\$39,260		
	C3030 Ceiling Finishes	\$44,563	\$103,484	13.6%
D20	PLUMBING			
	D2010 Plumbing	\$90,000	\$90,000	11.8%
D30	HVAC			
	D3010 HVAC	\$115,000	\$115,000	15.1%
D40	FIRE PROTECTION			
	D4010 Fire Protection	\$0	\$0	0.0%
D50	ELECTRICAL			
	D5010 Service & Distribution	\$115,625	\$115,625	15.2%
E12	FURNISHINGS			
	E1210 Service & Distribution	\$20,632	\$20,632	2.7%
F20	SELECTIVE BUILDING DEMOLITION			
	F2010 Building Elements Demolition	\$41,529		
	F2020 Hazardous Components Abatement	\$0	\$41,529	5.4%
TOTAL DIRECT COST (Trade Costs)			\$763,083	100.0%



Schematic Design Estimate

GFA 2,875

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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ORLEANS OLD FIREHOUSE

GROSS FLOOR AREA CALCULATION

Level 1 2,875

TOTAL GROSS FLOOR AREA (GFA)						2,875	sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

033000 CONCRETE

Strip footings to exterior walls - 2'-0" x 1'-0"

Formwork	20	sf	12.00	240
Re-bar	60	lbs	1.20	72
Concrete material; 3,000 psi	1	cy	120.00	120
Placing concrete	1	cy	180.00	180

Foundation walls at exterior - 8" thick

Formwork	80	sf	18.00	1,440
Re-bar	200	lbs	1.20	240
Concrete material; 4,000 psi	1	cy	125.00	125
Placing concrete	1	cy	180.00	180

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Dampproofing foundation wall and footing	60	sf	2.85	171
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072100 THERMAL INSULATION

Insulation to foundation walls; 2" thick	40	sf	2.25	90
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312000 EARTHWORK

Strip footings to exterior walls - 2'-0" x 1'-0"

Excavation	12	cy	40.00	480
Store on site for reuse	12	cy	25.00	300
Backfill with existing fill	1	cy	25.00	25

Miscellaneous

Perimeter drain	10	lf	28.00	280
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SUBTOTAL

3,943

A1020 SPECIAL FOUNDATIONS

SUBTOTAL

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A1030 LOWEST FLOOR CONSTRUCTION

033000 CONCRETE

New Slab on grade, 5" thick

Rigid insulation, 1"	40	sf	1.57	63
Vapor barrier	40	sf	1.00	40
Compact existing sub-grade	40	sf	0.50	20
Mesh reinforcing 15% lap	46	sf	0.86	40
Concrete - 5" thick; 4,000 psi	1	cy	125.00	125
Placing concrete	1	cy	120.00	120
Finishing and curing concrete	40	sf	3.00	120

072100 THERMAL INSULATION

Underslab insulation 2"	40	sf	2.25	90
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GFA 2,875

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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ORLEANS OLD FIREHOUSE

57	312000	EARTHWORK					
58		Slabs					
59		Gravel base, 12"	1	cy	38.00	38	
60		Compact sub-grade	40	sf	0.55	22	
61		SUBTOTAL					678

TOTAL - FOUNDATIONS							\$4,621
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A20 BASEMENT CONSTRUCTION

68	A2010	BASEMENT EXCAVATION					
69		Excavation in Site					
70		SUBTOTAL					

72	A2020	BASEMENT WALLS					
73		Retaining walls included above					
74		SUBTOTAL					-

TOTAL - BASEMENT CONSTRUCTION							
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B10 SUPERSTRUCTURE

81	B1010	FLOOR CONSTRUCTION					
82		SUBTOTAL					-

85	B1020	ROOF CONSTRUCTION					
86		SUBTOTAL					

TOTAL - SUPERSTRUCTURE							
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B20 EXTERIOR CLOSURE

93	B2010	EXTERIOR WALLS					
95	070001	WATERPROOFING, DAMPPROOFING AND CAULKING					
96		Air and vapor barrier	2,300	sf	6.00	13,800	
97		AVB at window openings	321	lf	5.00	1,605	
98		Miscellaneous sealants	2,300	sf	1.00	2,300	
99		SUBTOTAL					
100	072100	THERMAL INSULATION					
101		Insulation, 3" rigid	2,300	sf	3.00	6,900	
102		SUBTOTAL					
103	074000	SIDING					
104		5 1/2" white cedar shingles	2,300	sf	12.00	27,600	
105		1 x 4 trim to windows and doors	378	lf	9.00	3,402	
106		SUBTOTAL					
107	092900	GYPSUM BOARD ASSEMBLIES					
108		6" stud w/ 1layer 5/8"	2,300	sf	15.00	34,500	
109		SUBTOTAL					



Schematic Design Estimate

GFA 2,875

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
ORLEANS OLD FIREHOUSE								
110	090007 PAINTING							
111	Paint trim	378	lf	3.00	1,134			
112	SUBTOTAL					91,241		
113								
114	B2020 WINDOWS							
115								
116	061000 ROUGH CARPENTRY							
117	Wood blocking at openings	321	lf	12.00	3,852			
118								
119	070001 WATERPROOFING, DAMPPROOFING AND CAULKING							
120	Backer rod & double sealant	321	lf	9.00	2,889			
121								
122	080001 METAL WINDOWS							
123	Windows w/ screen	231	sf	130.00	30,030			
124	SUBTOTAL					36,771		
125								
126	B2030 EXTERIOR DOORS							
127								
128	061000 ROUGH CARPENTRY							
129	Wood blocking at openings	57	lf	4.00	228			
130								
131	079200 JOINT SEALANTS							
132	Backer rod & double sealant	57	lf	9.00	513			
133								
134	081400 WOOD DOORS							
135	Clad wood door - double	2	ea	2,400.00	4,800			
136	Clad wood door - single	1	ea	1,200.00	1,200			
137								
138	083050 OVERHEAD DOORS							
139	Overhead sectional door 8'-0" x 8'-0"	1	ea	4,160.00	4,160			
140	Overhead sectional door 16'-0" x 8'-0"	1	ea	8,320.00	8,320			
141								
142	084110 ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS							
143								
144	087100 DOOR HARDWARE							
145	Hardware	5	leaf	900.00	4,500			
146								
147	090007 PAINTING							
148	Finish doors and frames	5	ea	200.00	1,000			
149	SUBTOTAL					24,721		
150								
151	TOTAL - EXTERIOR CLOSURE						\$152,733	
152								
153								
154	B30 ROOFING							
155								
156	B3010 ROOF COVERINGS							
157	SUBTOTAL					-		
158								
159	B3020 ROOF OPENINGS							
160	SUBTOTAL					-		
161								
162	TOTAL - ROOFING							
163								



Schematic Design Estimate

GFA 2,875

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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ORLEANS OLD FIREHOUSE

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C10 INTERIOR CONSTRUCTION

C1010 PARTITIONS

070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Miscellaneous sealants at partitions	2,650	sf	0.30	795		
092900	GYPSUM BOARD ASSEMBLIES						
	3 5/8" MS w/ 1 lyr GWB bs, insulated	2,650	sf	14.50	38,425		
	Furring to exterior wall	2,069	sf	10.00	20,690		
	SUBTOTAL					59,910	

C1020 INTERIOR DOORS

061000	ROUGH CARPENTRY						
	Wood blocking at openings	193	lf	4.00	772		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Backer rod & double sealant	193	lf	2.50	483		
081400	WOOD DOORS						
	Wood door & frame - single	9	ea	800.00	7,200		
	Wood door & frame - double	2	ea	1,600.00	3,200		
087100	DOOR HARDWARE						
	Hardware	13	loc	800.00	10,400		
090007	PAINTING						
	Finish doors and frames	13	ea	180.00	2,340		
	SUBTOTAL					24,395	

C1030 SPECIALTIES / MILLWORK

064020	INTERIOR ARCHITECTURAL WOODWORK						
	Window sills, solid surface	60	lf	45.00	2,700		
061000	ROUGH CARPENTRY						
	Wood blocking at interiors	2,875	gsf	1.50	4,313		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Miscellaneous sealants throughout building	2,875	sf	1.75	5,031		
101100	VISUAL DISPLAY SURFACES						
	Markerboards/Tackboards	1	ls	3,000.00	3,000		
102110	TOILET COMPARTMENTS						
	ADA	2	ea	1,900.00	3,800		
	Typical	4	ea	1,600.00	6,400		
	Urinal	1	ea	800.00	800		
102800	TOILET ACCESSORIES						
	Single bathroom	1	rms	1,200.00	1,200		
	Large bathroom	2	rms	3,000.00	6,000		



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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ORLEANS OLD FIREHOUSE

218

219

104000 SIGNAGE

220

Room Signs

13

loc

120.00

1,560

221

222

104400 FIRE PROTECTION SPECIALTIES

223

Fire extinguisher cabinets

1

ea

350.00

350

224

SUBTOTAL

35,154

225

226

TOTAL - INTERIOR CONSTRUCTION

\$119,459

227

228

C20 STAIRCASES

229

230

C2010 STAIR CONSTRUCTION

231

SUBTOTAL

-

232

233

C2020 STAIR FINISHES

234

SUBTOTAL

-

235

236

TOTAL - STAIRCASES

237

238

239

C30 INTERIOR FINISHES

240

241

C3010 WALL FINISHES

242

243

090002 TILE

244

Wall tile 4' high

440

sf

25.00

11,000

245

246

090007 PAINTING

247

Paint to GWB

6,929

sf

1.25

8,661

248

SUBTOTAL

19,661

249

250

C3020 FLOOR FINISHES

251

252

033000 CONCRETE

253

Sealed concrete

1,290

sf

3.00

3,870

254

255

090002 TILE

256

Ceramic tile to bathrooms

550

sf

25.00

13,750

257

Tile base

190

lf

20.00

3,800

258

259

096400 WOOD FLOORING

260

Hardwood flooring

835

sf

16.00

13,360

261

Wood base

320

lf

14.00

4,480

262

SUBTOTAL

39,260

263

264

C3030 CEILING FINISHES

265

266

092900 GYPSUM BOARD ASSEMBLIES

267

GWB ceilings

2,875

sf

14.00

40,250

268

269

090007 PAINTING

270

Paint to GWB ceilings

2,875

sf

1.50

4,313

271



Schematic Design Estimate

GFA 2,875

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
ORLEANS OLD FIREHOUSE								
272	SUBTOTAL					44,563		
273	TOTAL - INTERIOR FINISHES							103,484
274	D10 CONVEYING SYSTEMS							
275	D1010 ELEVATOR							
276	SUBTOTAL							-
277	TOTAL - CONVEYING SYSTEMS							
278	D20 PLUMBING							
279	D20 PLUMBING, GENERALLY							
280	Allowance for plumbing; replace existing fixtures; connections to new and existing piping	1	ls	90,000.00	90,000			
281	SUBTOTAL							90,000
282	TOTAL - PLUMBING							\$90,000
283	D30 HVAC							
284	D30 HVAC, GENERALLY							
285	Allowance for HVAC; Option #1	2,875	sf	40.00	115,000			
286	SUBTOTAL							115,000
287	TOTAL - HVAC							\$115,000
288	D40 FIRE PROTECTION							
289	D40 FIRE PROTECTION, GENERALLY							
290	Not required							
291	SUBTOTAL							-
292	TOTAL - FIRE PROTECTION							
293	D50 ELECTRICAL							
294	D50 ELECTRICAL							
295	New electrical service; overhead	1	ls	15,000.00	15,000			
296	Allowance for new electrical systems	2,875	sf	35.00	100,625			
297	SUBTOTAL							115,625
298	TOTAL - ELECTRICAL							\$115,625
299	E10 EQUIPMENT							
300	E10 EQUIPMENT, GENERALLY							



Schematic Design Estimate

GFA 2,875

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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ORLEANS OLD FIREHOUSE

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SUBTOTAL

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TOTAL - EQUIPMENT

E20 FURNISHINGS

E2010 FIXED FURNISHINGS

122100 WINDOW TREATMENTS

Manual shades at exterior glazing 231 sf 7.00 1,617

123553 CASEWORK

New kitchen counter, base cabinets and counter 16 lf 600.00 9,600

New wall cabinets 6 lf 340.00 2,040

Shelving in storage 30 lf 200.00 6,000

124810 ENTRANCE FLOOR MAT AND FRAMES

Recessed floor grille 25 sf 55.00 1,375

SUBTOTAL

20,632

E2020 MOVABLE FURNISHINGS

All movable furnishings to be provided and installed by owner

SUBTOTAL

NIC

TOTAL - FURNISHINGS

\$20,632

F20 SELECTIVE BUILDING DEMOLITION

F2010 BUILDING ELEMENTS DEMOLITION

Remove existing partitions 1,700 sf 3.00 5,100

Remove existing exterior doors 4 ea 75.00 300

Remove existing windows 192 sf 8.00 1,536

Remove existing siding 4,567 sf 4.00 18,268

Remove existing interior doors 11 ea 75.00 825

Remove existing toilet partitions 3 ea 50.00 150

Remove existing floor finishes 2,875 sf 1.60 4,600

Remove existing ceiling finishes 2,875 sf 2.00 5,750

Miscellaneous demolition/protection 1 ls 5,000.00 5,000

SUBTOTAL

41,529

F2020 HAZARDOUS COMPONENTS ABATEMENT

See Summary

SUBTOTAL

TOTAL - SELECTIVE BUILDING DEMOLITION

\$41,529



Schematic Design Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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SITWORK

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G	SITWORK
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G10 SITE PREPARATION & DEMOLITION

Miscellaneous demolition	1	ls	2,500.00	2,500	
<u>Site Earthwork</u>					
Excavate and backfill for new landing and stairs	1	ls	5,000.00	5,000	
SUBTOTAL					7,500

G20 SITE IMPROVEMENTS

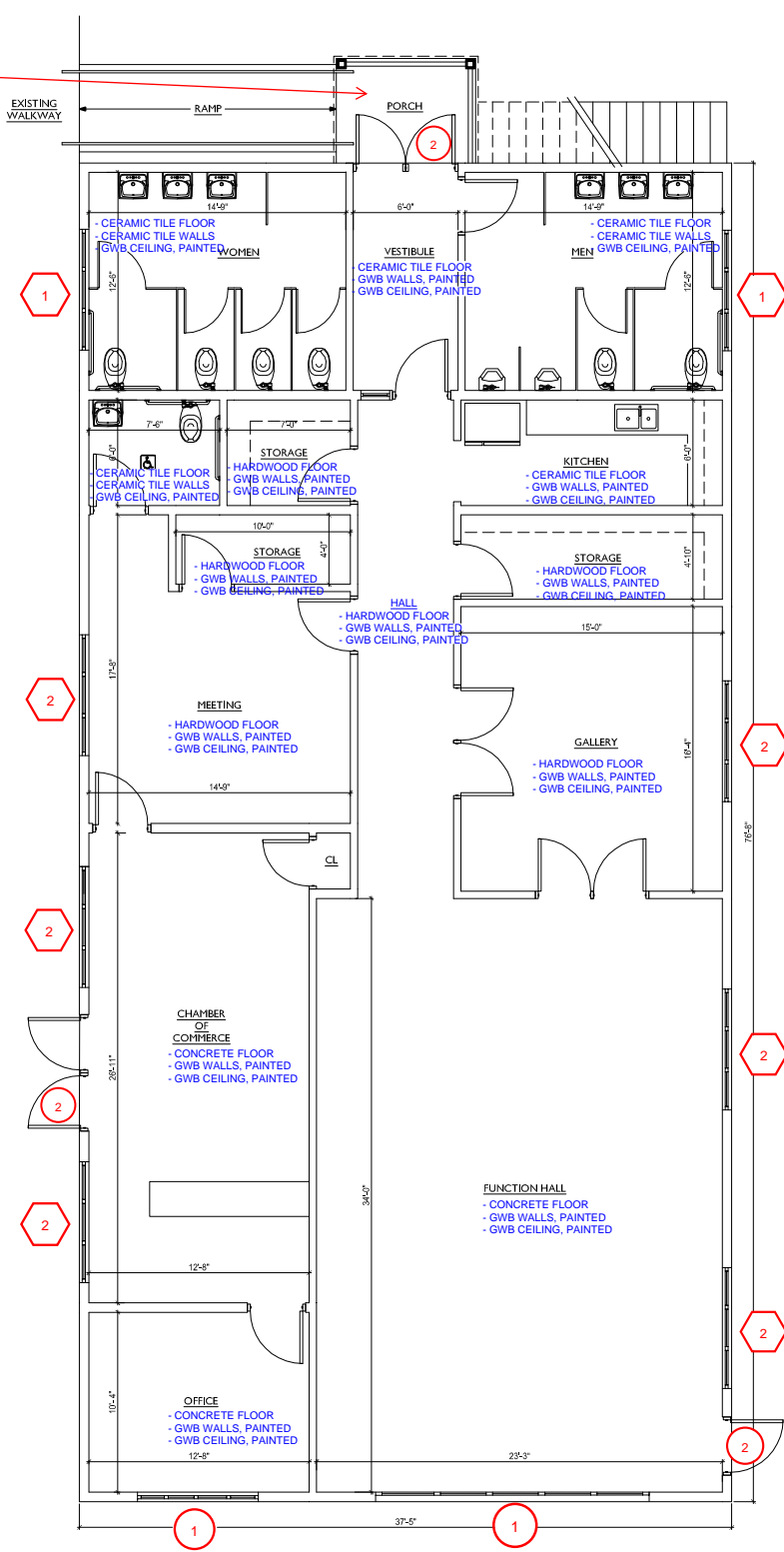
<u>Stairs & Ramps</u>					
Concrete to stair treads	30	lfr	280.00	8,400	
Composite decking to landings	96	sf	45.00	4,320	
composite decking ramp	75	sf	50.00	3,750	
Hand railings at stairs and ramps	50	lf	140.00	7,000	
Guardrail at landings	34	lf	200.00	6,800	
Framing to new porch	96	sf	40.00	3,840	
Tie into existing building	1	ls	1,500.00	1,500	
<u>Concrete Retaining Wall</u>					
<u>Foundation</u>					
Formwork	20	sf	14.00	280	
Re-bar	60	lbs	1.20	72	
Concrete material; 4,000 psi	1	cy	128.00	128	
Placing concrete	1	cy	200.00	200	
<u>Wall</u>					
Formwork	240	sf	18.00	4,320	
Re-bar	300	lbs	1.20	360	
Concrete material; 4,000 psi	5	cy	128.00	640	
Placing concrete	5	cy	200.00	1,000	
Miscellaneous site improvements	1	ls	2,500.00	2,500	
<u>Landscaping</u>					
Landscape allowance	1	ls	1,500.00	1,500	
SUBTOTAL					46,610

TOTAL - SITE DEVELOPMENT	\$54,110
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- REAR ENTRANCE**
- ENLARGED AREA WELL
 - NEW UPPER & LOWER PORCHES
 - CELLULAR PVC TRIM, PAINTED
 - CONCRETE RAMP W/ PAINTED METAL PIPE RAILS
 - NEW STAIR TO 2ND FL PORCH
 - SEE MARKED UP REAR ELEVATION PHOTO

- EXTERIOR**
- ARCHITECTURAL ASPHALT ROOF (AT PITCHED ROOF ONLY)
 - CEDAR SHINGLE SIDING W/ BLEACHING OIL
 - CELLULAR PVC TRIM, PAINTED
 - ALL NEW FRAMED OPENINGS FOR DOORS & WINDOWS (AT 1ST FLOOR ONLY)

- INTERIOR**
- ALL NEW WALL/PARTITION FRAMING
 - ALL NEW FINISHES
 - NARRATIVE FOR NEW MEP TO BE SUBMITTED BY BLW ENGINEERS
 - THE 2ND FLOOR IS STORAGE AND ISN'T PART OF THE SCOPE AT THIS TIME



1 3 INDIVIDUAL AWNING WINDOWS @ 29"x21" (ANDERSON 400)



2 3 INDIVIDUAL DOUBLE HUNG WINDOWS @ 26"x64" (ANDERSON 400)



1 OVERHEAD SECTIONAL DOOR,
1 @ 8'-0"x8'-0"
1 @ 16'-0"x8'-0"
(ARM-R-LITE 'TITAN' W/ 1" INSULATED GLASS AND ENERGY EFFICIENCY PACKAGE)



2 CLAD WOOD DOOR,
2 @ 6'-0"x7'-0"
1 @ 3'-0"x7'-0"
(MARVIN COMMERCIAL DOOR)

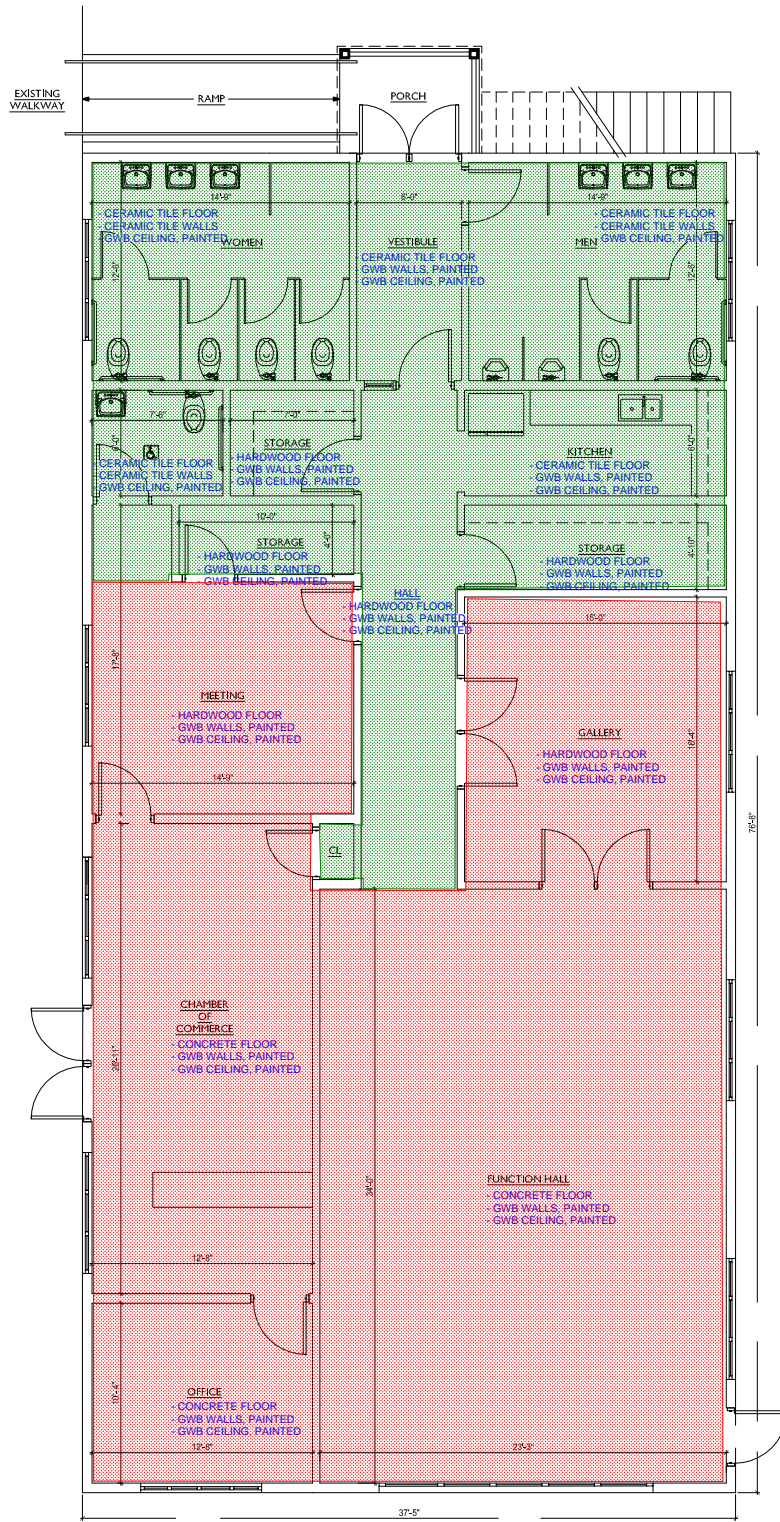
250 DORCHESTER AVE
BOSTON, MA 02127
P: (617) 268-8977
F: (617) 464-2971
CBI@CBICONSULTINGINC.COM

CBI
CONSULTING INC

DATE 9/26/2017
REVISION

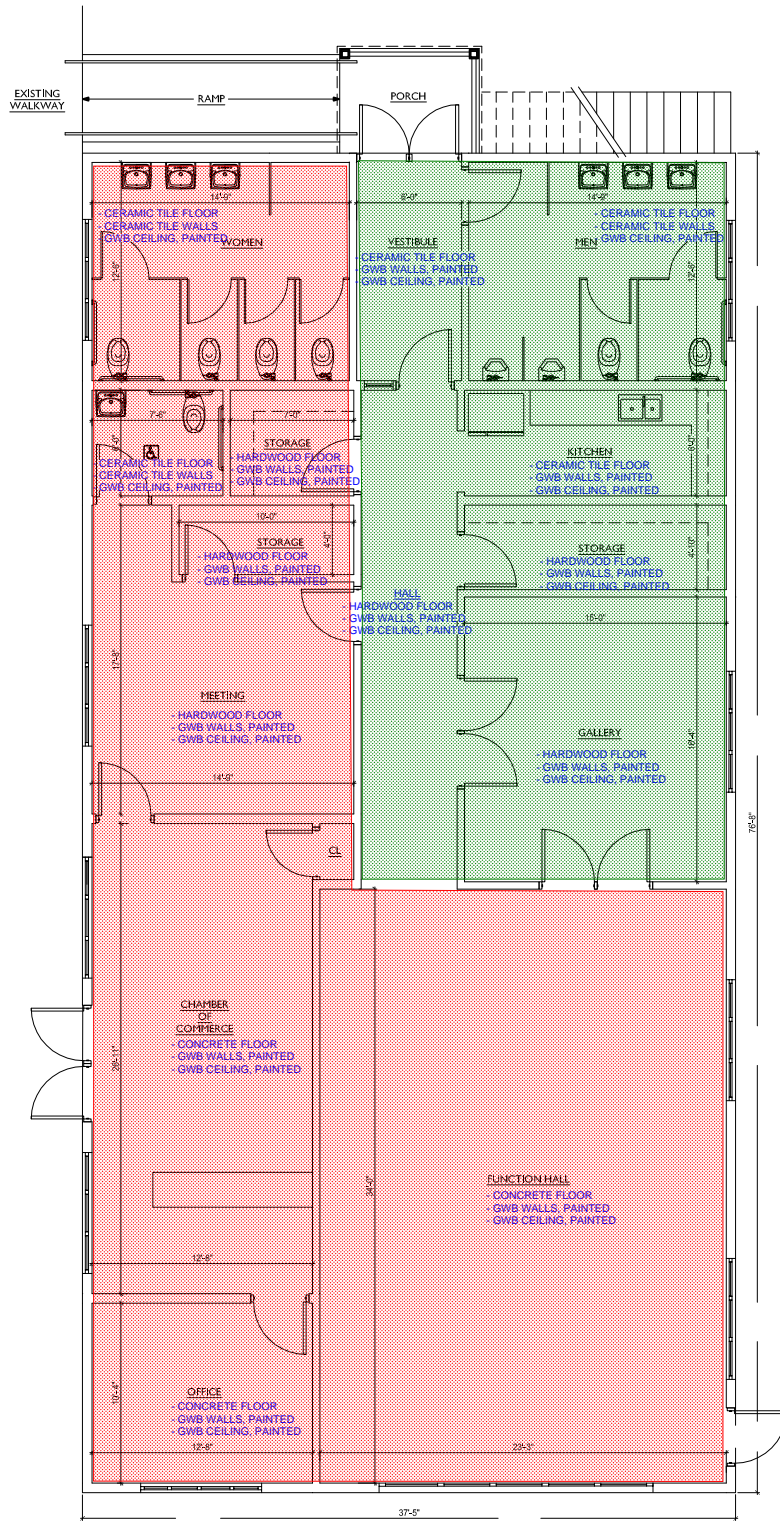
ORLEANS OLD FIREHOUSE		DESCRIPTION PROPOSED PLAN
CHECKED		
1/16" = 1'-0"		

SHEET No.
PROJ.# 16027




7'-6" ceiling
 10'-0" ceiling

	250 DORCHESTER AVE BOSTON, MA 02127 P: (617) 268-8977 F: (617) 464-2971 CBI@CBICONSULTINGINC.COM	ORLEANS OLD FIREHOUSE		SHEET No.
	DATE 9/26/2017 REVISION	CHECKED	DESCRIPTION	
			PROPOSED PLAN 1/16" = 1'-0"	



basement
 slab on grade

	250 DORCHESTER AVE BOSTON, MA 02127 P: (617) 268-8977 F: (617) 464-2971 CBI@CBiconsultinginc.com	ORLEANS OLD FIREHOUSE		SHEET No.
	DATE 9/26/2017	CHECKED	DESCRIPTION	PROJ.# 16027
	REVISION		PROPOSED PLAN 1/16" = 1'-0"	



September 29, 2017

Greg Christensen
CBI Consulting, Inc
250 Dorchester Ave.
Boston, MA 02127

Re: Old Firehouse Renovations
Orleans, MA

The following are HVAC, Plumbing, Fire Protection and Electrical systems renovation recommendations. Option #1 renovation would be minor renovation and Option #2 would be a major renovation and would include replacing all existing systems.

HVAC

Option #1 – Minor Renovation

Replace existing hot water boilers, pumps and water specialties with new oil fired hot water boilers, pumps and water specialties. There currently is no natural gas available within the building and the existing boiler utilizes fuel oil to heat the building.

Limited cooling within the building shall be provided with a new Variable Refrigerant (VRF) system. Space cooling shall be through ducted and ductless fan coil units. Air cooled condensing units shall be installed outdoors and the refrigerant distribution box shall be installed with the mechanical space. Refrigerant pipe shall be extended from the outdoor air cooled heat pump to the refrigerant distribution box and then to each fan coil. Each fan coil shall be controlled with a wall mounted thermostat.

Option #2 – Major Renovation

Remove all existing HVAC systems, including the hot water heating system in its entirety.

Heating and cooling throughout the building shall be provided with a new Variable Refrigerant (VRF) system. Space heating and cooling shall be through ducted and ductless fan coil units. Air cooled heat pump shall be installed outdoors and the refrigerant distribution box shall be installed with the mechanical space. Refrigerant pipe shall be extended from the outdoor air cooled heat pump, to the refrigerant distribution box and then to each fan coil. Each fan coil shall be controlled with a wall mounted thermostat.

Ventilation shall be provided with Energy Recovery Ventilators (ERV) with heat exchangers. Outdoor air and exhaust air ductwork shall extend from the outdoors, to the ERV and extended to each space throughout the building. The supply air shall be tempered with electric heat to heat the supply outdoor air to 60 degrees.

Toilet exhaust shall be through ceiling exhaust fans and exhaust ductwork extended to the outdoors.

Entrance vestibules shall be heated with electric heaters.



Mechanical and storage rooms shall be heated with electric heaters.

Plumbing

Option #1 – Minor Renovation

Remove/replace all existing plumbing fixtures in kind with new water conservation devices. Fixtures shall include but not be limited to: floor mounted flush valve toilets, wall mounted urinals with flush valves, wall mounted lavatories with metering faucets, installation of mixing valves at all lavatories and stainless steel drop in kitchen sinks with wrist blade handle faucets.

Provide insulation of all exposed existing hot water and cold water piping locating the mechanical room.

Remove existing exterior hose bib, replace with new frost proof wall hydrant.

Remove existing abandoned miscellaneous sanitary piping.

Option #2 – Major Renovation

Remove all existing plumbing systems in their up to the building foundation.

Utilities

It is the intent of this narrative to reuse the existing 1 ½” water service and 4” sanitary services. The plumber shall be responsible for the installation of a new 1” water meter.

Domestic Hot & Cold Water

Cold water and hot water shall be distributed to all fixtures requiring such.

Domestic hot water shall be produced via (1) 20 gallon 4.5kW electric tank type hot water heater(s) located in the mechanical closet. Water shall be stored and distributed at a temperature of 120F. Point of use mixing valves shall be provided at each hand sink and lavatory to mix the water to suitable hand washing temperatures. All water piping shall be copper type L with fiberglass insulations.

Sanitary Drainage System

Sanitary drainage and vent systems shall be provided to all plumbing fixtures. Plumbing fixtures shall be as noted on Architectural drawings and shall include but not be limited to the following: floor mounted lavatories with concealed carriers, wall mounted toilets, floor drains, hose bibs and urinals. Each bathroom and mechanical room shall be provided with a floor drain and hose bib. All plumbing fixtures shall be equipped with commercial grade faucets and/or flushometers.

Electrical

Option #1 – Minor Renovation

Provide a new overhead 400 amp, 120/208 volt 3-phase 4-wire electrical service, from utility pole in front of the building. Provide a new 320 amp-rated exterior meter socket, a new interior 400 amp, main circuit breaker 42 circuit panelboard, to be used to provide circuit breakers for existing loads as well as the new HVAC and plumbing loads.



Provide a complete addressable fire alarm control system, including an addressable fire alarm control panel, manual pull stations within 5 feet of all exit ways, on each building level, smoke detectors in each room, and 30 feet on center in open areas and hallways, strobe-only devices in the conference rooms and bathrooms, horn/strobe devices throughout the building, heat detectors in mechanical and electrical rooms, an exterior rotating beacon, an exterior-mounted keybox, an autodialer with two dedicated phone lines. The existing inefficient light fixtures should all be replaced with new energy efficient LED fixtures. Automatic controls including wall and ceiling occupancy sensors should be provided to replace the existing wall switches. New LED exit signs with internal batteries should be provided to illuminate the means of egresses to meet code. The new proposed light fixtures should be provided with emergency modules, to provide emergency lighting throughout the facility. Each exterior exit door should be provided with an exterior emergency light to provide illumination at the exterior means of egress. All new spaces should be provided with new 120 volt, 20 amp receptacles; bathrooms should be provided with ground-fault type receptacles. Provide new power wiring branch circuitry to all new proposed HVAC and plumbing fixtures requiring power. Provide new landscaping and exterior bollards and pole lights, matching the new exterior fixtures in the back of the property. The fixtures should be provided with banner arms, to hang signs/announcements of town activities, or meetings scheduled in the facility. The new exterior fixtures should be controlled via photocell and time clock. Provide infrastructure (conduit, floor boxes, ceiling junction boxes, wall boxes) to support future audio/visual equipment for the meeting room.

Option #2 - Major Renovation

In addition to all the scope listed in the Electrical Option #1, the following scope should also be provided: all lighting, receptacles, switching devices, panelboards and their associated branch circuitry, should be removed in their entirety.