Village of Calumet
427 5th Street--Agnitz Block
Structural Assessment

October 18, 2017

Division1 Design
SURVEY · DESIGN · ENGINEER

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October 18, 2017

Village of Calumet
Attn: Jeff Ratcliffe, Owner's Representative
PO Box 724
Houghton MI 49931

RE: 427 5th Street
Structural Assessment Report

Dear Jeff:

The inspection of 427 5th Street in the Village of Calumet has been completed. The initial drone inspection was conducted on June 7th, 2017 which included the roof and front façade. On August 3rd a second inspection was conducted which included the attic space, second floor, first floor, basement and exterior.

The following is a list of concerns and deficiencies noted during the inspection:

Roof/Attic

- There is a bracing system in place for the front wall which is attached to the roof structure.
- There is an area on the South side of the building with a gap at the top which can allow moisture infiltration and/or pigeon access.

Second Floor

- There is a gap which is the result of the front wall displacement.
- The bearing wall separating the south and north halves of the building appears to have experienced significant moisture damage and has settled. Areas of the second level are barricaded due to unstable framing and supports.
- The rear steps to the first level are impassable.

First Floor

- Moisture damage is evident in the ceiling near the center bearing wall.
- Temporary supports are in place for the second level framing due to rotting.
- Portions of the first level are barricade due to unstable framing.
- The bearing wall in the center of the building has settled.
- Some of the floor boards have buckled.

Basement

- Some of the floor joists are in need of reinforcement.
- A portion of the first floor framing appears charred from a previous fire.
- A section of the beam supporting the center bearing wall has settled and is rotted.
- An intermediate beam supporting the North side floor joists is leaning and in need of reinforcement/realignment.
- Supports for the front entry stairs need reinforcement.

Exterior

- The wood members protruding from the front façade are deteriorating.
- Portions of the upper sandstone on the front façade are in need of tuck-pointing.
- There is a section of brick missing on the South elevation in need of replacement.
- The front of the building has some wood cornice framing members which will continue to deteriorate over time and may allow moisture infiltration.

The majority of structural deficiencies observed are due to long term moisture infiltration. Other deficiencies are the result of an apparent fire.

Recommendations:

1. Monitor the front wall and bracing system in place for any additional movement and reinforce if required.
2. Infill the brick gap on the South side to eliminate moisture access.
3. Protect wood cornice framing on the front façade to provide further deterioration.
4. Tuck-point the upper sandstone on front façade.
5. Reinforce and replace bearing wall framing along center wall.
6. Reinforce and replace floor framing in deteriorated areas of the first and second floors.
7. Replace back interior stairs.
8. Remove the rear shed.
9. Remove and reinforce an y charred floor framing/decking.
10. Reinforce/replace beam support in the basement supporting the center bearing wall.
11. Prepare and paint basement structural steel supports to prevent further corrosion.

Select photos of the inspection which highlight areas of concern are attached. Also included are basic floor plans with concern areas noted. An opinion of cost is attached for the recommendations discussed above.

If you have any questions please contact me.

Sincerely,

Barry J. Givens, P.E.
Division1Design

PHOTO DOCUMENTATION

Figure 1—Drone view of the front facade.

Figure 2—Drone view of the top of front façade showing wood cornice framing members.

Figure 3—Drone view of the front façade with bracing plates visible.

Figure 4—Drone view of the South side roof and top of façade.

Figure 5—Drone view of the roof.

Figure 6—Drone close up view of the roof hatch and flashing at wall/roof line.

Figure 7—Ceiling moisture damage view from the first floor.

Figure 8—View of buckled wood flooring on first level.

Figure 9—View of ceiling moisture damage from the first level.

Figure 10—View of interior bearing wall which has settled.

Figure 11—View of rotted second floor framing.

Figure 12—View of impassable rear stairs due to moisture damage.

Figure 13—View of moisture damage at the first floor ceiling.

Figure 14—View of rotted second floor framing.

Figure 15—View of barricade areas of the second floor due to rotted floor framing.

Figure 16—Close up view of moisture damage at the second level.

Figure 17—View of gap in corner at the front wall at the second level.

Figure 18—View of deflected interior bearing wall at the second level.

Figure 19—View in the attic of the roof framing.

Figure 20—View in the attic of the bracing of the front wall to the roof structure.

Figure 21—View of in basement of steel framing corrosion.

Figure 22—View of rotted support beam in basement.

Figure 23—View of corroded steel in roof of porch area in basement.

Figure 23—View of settlement of support in the basement.

Figure 24—View of wood beams need of reinforcement/replacement.

Figure 25—View of leaning beams basement.

Figure 26—View of wood column base which has cracked in the basement.

Figure 27—View of charred first floor framing.

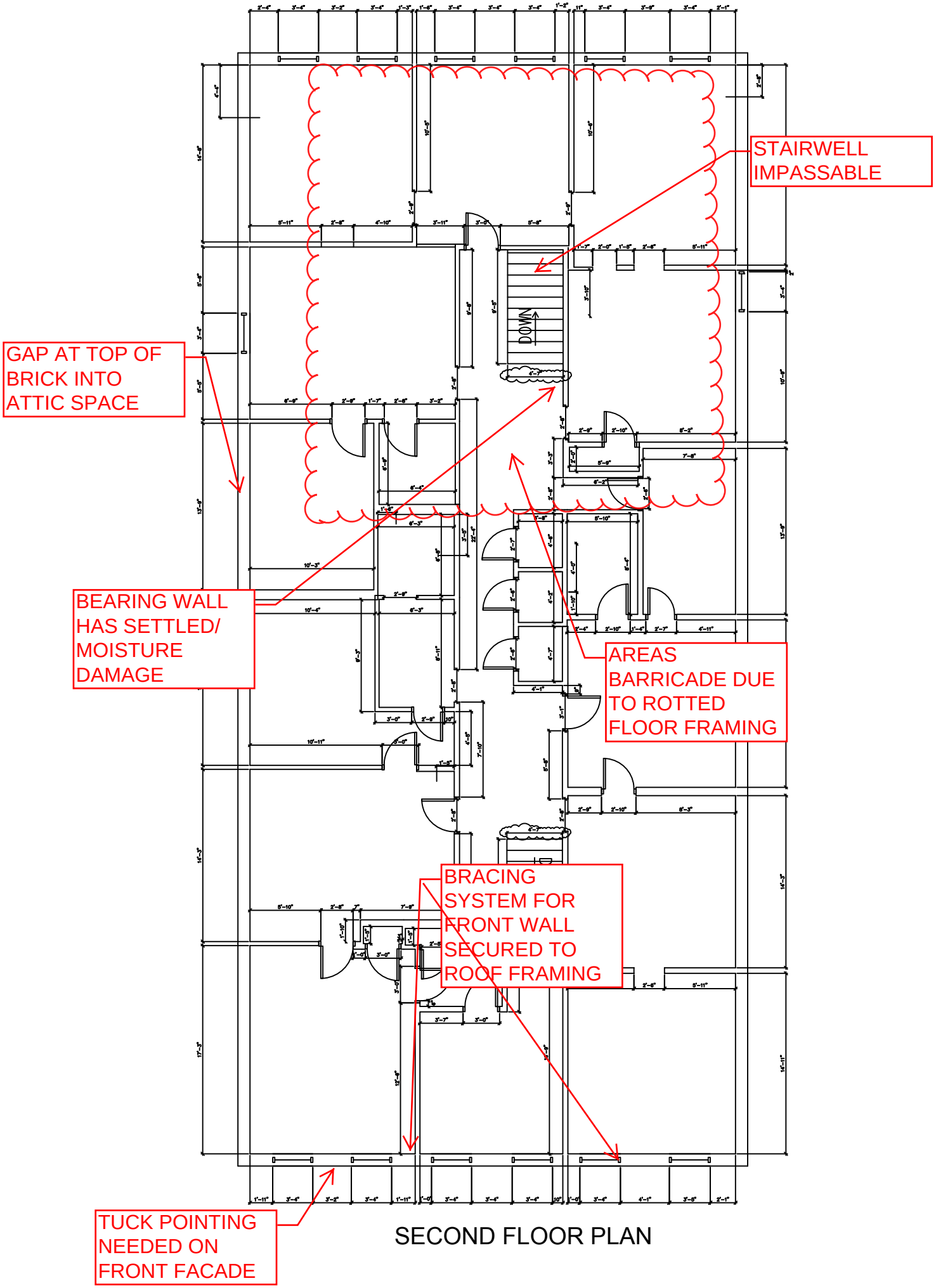
Figure 28—View of the rear building exterior.

Figure 29—View of dilapidated shed at the rear of the building.

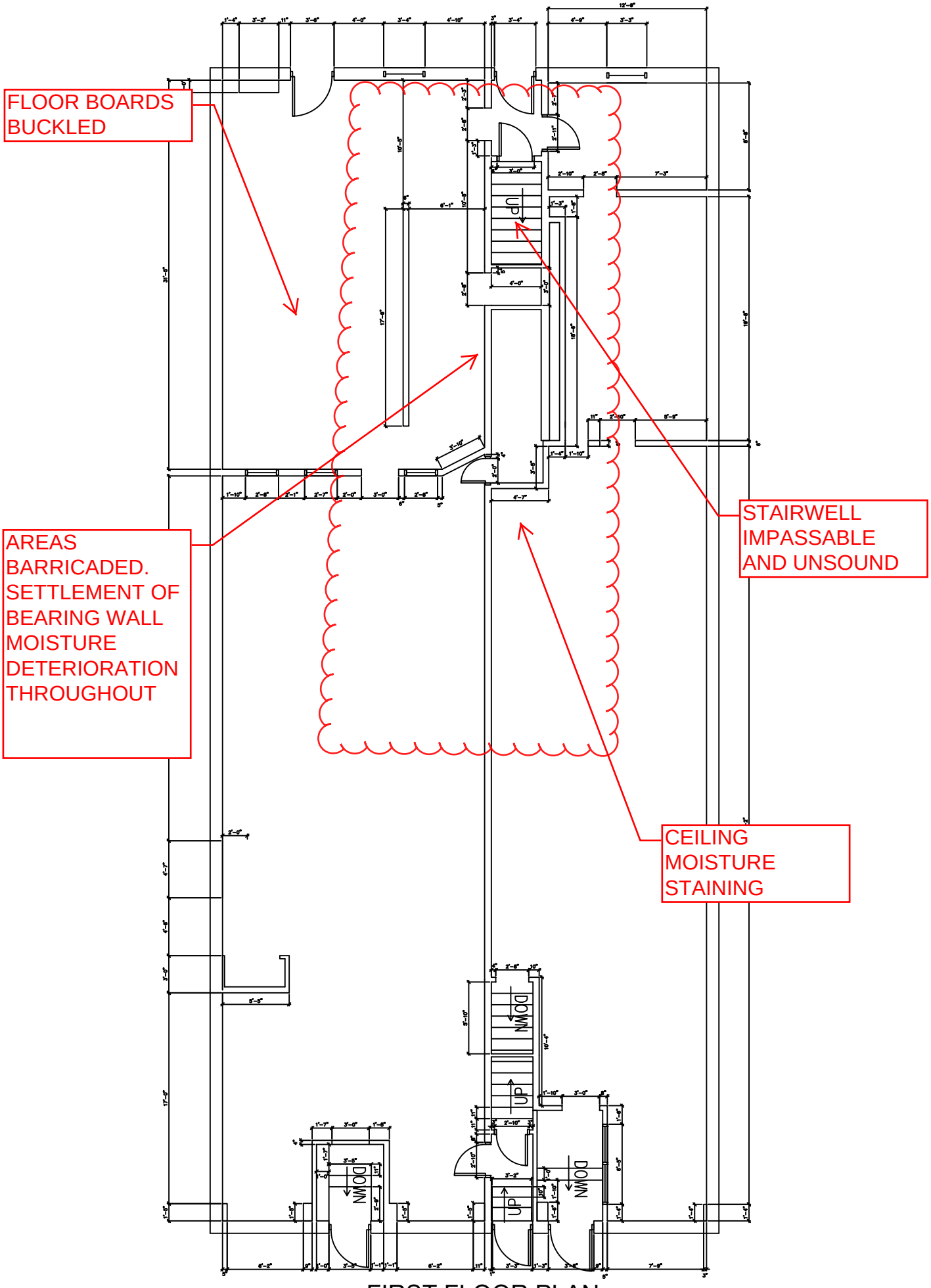
Figure 30—View of top of front façade with deteriorated masonry joints visible.

Figure 31—View of the South elevation of the building.

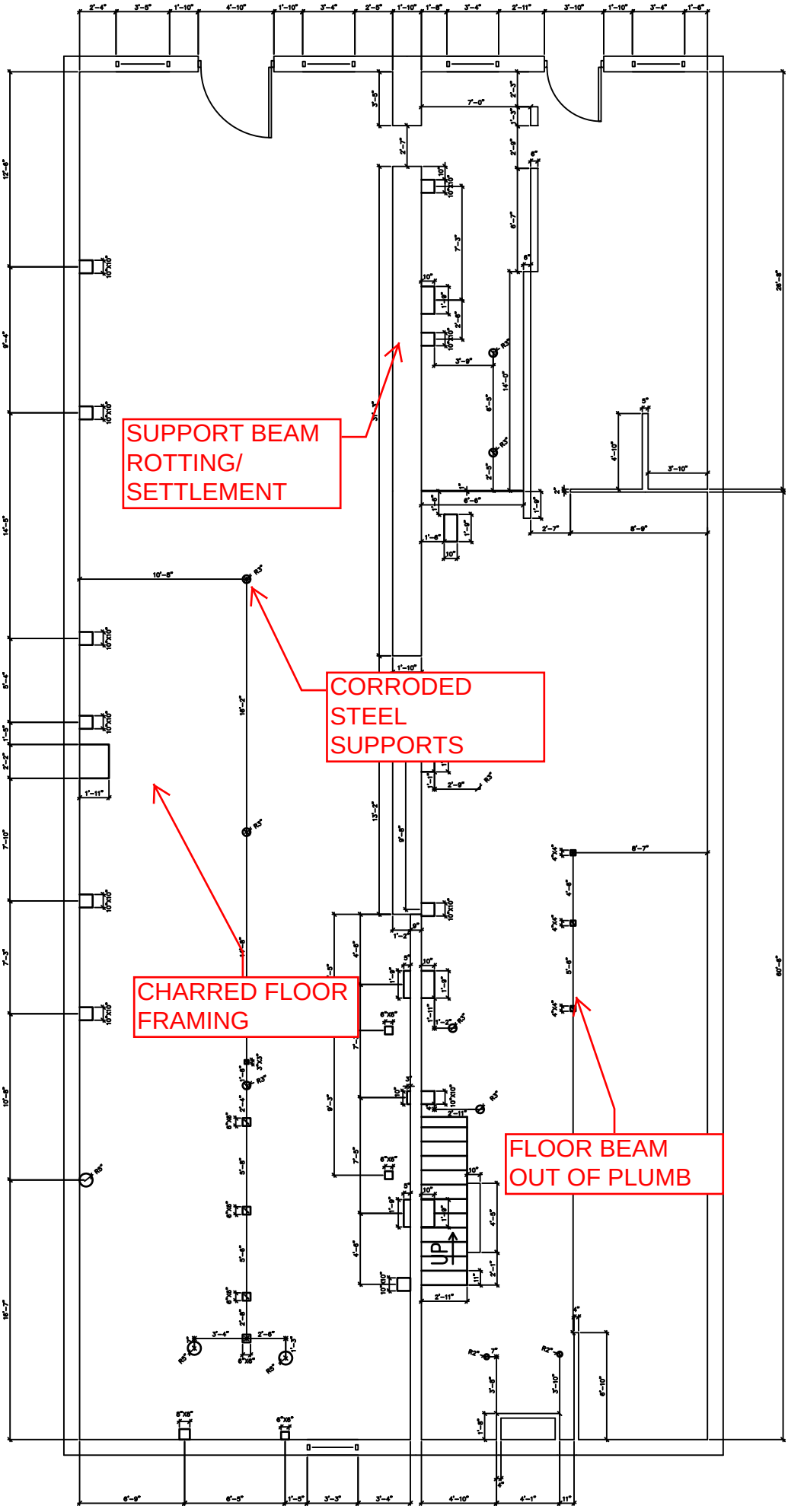
Figure 32—View of brick gap at the top of the South elevation.



SECOND FLOOR PLAN



FIRST FLOOR PLAN



BASEMENT PLAN

COST OPINION

427 5TH STREET					
STABILIZATION		QUANTITY	UNITS	COST/UNIT	COST
	DEMOLITION	800	SFT	$ 2.00	$ 1,600.00
	WALL FRAMING	720	SFT	$ 7.00	$ 5,040.00
	SHORE/SUPPORT	1	LSUM	$ 2,000.00	$ 2,000.00
	DISPOSAL	1	LSUM	$ 3,000.00	$ 3,000.00
	MASONRY TUCKPOINT	300	SFT	$ 20.00	$ 6,000.00
	DEMOLISH SHED	1	LSUM	$ 500.00	$ 500.00
	REIN. HEADERS/BEAMS	1	LSUM	$ 4,000.00	$ 4,000.00
	FLOOR FRAMING/DECK	4000	SFT	$ 3.00	$ 12,000.00
	NEW STAIRS	1	EACH	$ 2,000.00	$ 2,000.00
	STEEL -REFINISH	1	LSUM	$ 2,000.00	$ 2,000.00
				SUBTOTAL =	$ 38,140.00
			15%	DESIGN/ENG.	$ 5,721.00
			10%	CONTINGENCY	$ 3,814.00
				EST. TOTAL =	$ 48,000.00