



MEMORANDUM

TO: ARCHITECTURAL REVIEW BOARD
FROM: Kate Schwartz, Historic Resources Planner
DATE: February 5, 2020 (for the February 10, 2020 hearing)
SUBJECT: Certificate of Appropriateness for exterior alteration at 203 Ford Street

ISSUE

Ed Whelan requests to make alterations to the former Washington Woolen Mills building to convert it to mixed use, including the construction of entry stairs on Ford Street, installation of metal fencing and rooftop railings, construction of three elevator shafts, and the addition of six basement windows along Caroline Street.

RECOMMENDATION

Approval of the installation of fencing, installation of rooftop railings, and reconstruction of the covered stair roof in accordance with the submitted documentation.

Continuation of the consideration of window replacement, installation of new windows, construction of three elevator shafts, and construction of entry stairs on Ford Street to the next regular meeting of the ARB to allow the applicant to provide additional information.

APPLICABLE HISTORIC DISTRICT DESIGN STANDARDS & GUIDELINES

Roofs (Historic District Handbook, pg. 80)

10. Install new elements, such as vents and skylights, without diminishing the original design of the building.

Windows (Historic District Handbook, pg. 84)

1. Retain original windows.
6. Windows should only be replaced when they are missing or beyond repair. Replacement should be based on physical evidence and photo documentation rather than the availability of stock windows or windows from other buildings. Avoid changing the physical and visual characteristics of windows by using inappropriate materials or finishes that alter the sash, depth of reveal, muntin configuration, glazing, or appearance of the frame.

7. Avoid changing the number, location, size, or glazing pattern of a building's windows by cutting new openings, enlarging existing openings, blocking in windows, or installing replacement sash that do not fit the window opening.

Exterior Architectural Elements – Entrances (Historic District Handbook, pg.95)

2. Avoid removing historic material from entrances. In addition, do not add materials that create a different historic appearance.

Historic District Window Policy

B. Repairing Original Windows

1. Metal windows, typically made of steel or aluminum, are often mistakenly not deemed worthy of preservation due to the assumption that they cannot be repaired or made energy efficient except at great expense. Repair and retrofit of these windows can be more economical than wholesale replacement, and all too often, replacement units are unlike the originals in design and appearance. Rust and flaking paint on steel windows can be removed and elements repainted using a rust-inhibiting primer. Missing screws, fasteners, and hinges can often be replaced through a variety of suppliers, and operating performance can be improved through lubrication of hinges or other moveable parts. Elastomeric caulk can be used to seal surrounds and prevent air infiltration.

BACKGROUND

The former Washington Woolen Mills Pants Factory located on Ford Street between Princess Anne and Caroline Streets was constructed c.1905. The Woolen Mills had been in operation since 1860, but was located in a large three-story brick building, adjacent to the extant structures, that burned in 1876, was rebuilt, and burned again in 1910. The pants factory was initially constructed as the two-story, front-gabled wing with its length running parallel to Caroline Street. The adjoining gable-roofed wing that extends to the west was constructed by 1912. By 1930, the building was converted to a shoe factory, and the two-story section over a raised basement that extends east to Caroline Street was constructed in the 1940s. The building is characterized by its American bond brick construction and detailing; long, low massing; and banks of segmental-arch windows. This is a contributing structure in the Historic District.

The applicant proposes several alterations as the first phase of an adaptive reuse project for this former industrial building. A number of components are included in this application:

- **Entry Stairs on Ford Street**

The applicant proposes to construct a set of wood entry steps leading to the elevated first floor entry centered on the front-gabled façade on Ford Street. The doors were likely used for loading when the building was still in industrial use. The stairs would be constructed of wood, open underneath, with painted aluminum handrails with scrolled ends running along either side. The simple design proposed appears to be compatible with the character of the

site and would not adversely impact character-defining features; however, fully-dimensioned plan view and elevation drawings should be provided prior to approval of the design.

- **Fencing**

Fencing is proposed to be installed surrounding the new entry stairs on Ford Street and lining the edge of the property above Caroline Street. The fencing would be four feet in height, constructed of painted aluminum, with square pickets and pointed finials topping each picket. The fence will top the existing stone wall along Caroline Street and another section will enclose an area the same width as the building façade on Ford Street. The fence will extend to the front property line and paired gates will provide access. The material and design of the proposed fencing is compatible with the character of the site and district, and approval as submitted is recommended.

- **Parapet Railing**

The wing constructed in the 1940s is topped by a flat roof and surrounded by a brick parapet. The applicant proposes to use this space as a rooftop deck and requests to install metal-framed cable railings surrounding all three exposed sides. The railings would be set to the inside of the 30-inch parapet wall and will be four feet in height. The railings includes painted metal squared posts and top rail with horizontal cables running through the posts. The railings will be minimally visible from the street level and the simple design is compatible with the mid-century character of this addition. Approval as submitted is recommended.

- **Rebuild Existing Stair Roof**

A set of enclosed wood stairs runs along the east side of the original section of the building to access the second floor. The height of the enclosure does not meet the current building code and the applicant is requesting to raise the roof eight inches. All other aspects of the design will remain and the materials will be replaced in kind. The elevated roof will cross one second-story window, and the applicant proposes to provide a gap between the roof and the window to avoid any impacts and prevent water from gathering on the wood sill. Approval of the request as submitted is recommended.

- **Replacement of 1940s Windows and Addition of Basement Windows**

Large, multi-light, steel windows are typical on the 1940s building addition that projects toward Caroline Street. The applicant proposes to reuse this portion of the building for several residential units, but the existing windows, while operable, do not meet the building code standards for clear opening. Additionally, the applicant has indicated that the metal frames are in poor condition. These are proposed to be replaced with new windows that match the appearance of the existing, but include double-paned glass and meet the egress

requirements of the code. Six new matching windows are also proposed to be added at the basement level on the north and south elevations, aligned with the windows above.

A detailed condition assessment has not been provided for the existing windows, so a determination regarding replacement cannot be made at this time. Thorough photography and assessment should be submitted to the ARB, and a site visit may be scheduled at the discretion of the ARB and applicant, to fully evaluate the existing windows. Rather than replacing all windows, the applicant should also evaluate if a smaller number of windows could be replaced to meet the code requirement. This component of the application should be continued to allow the applicant to provide additional information.

- **Conceptual Review of Elevator Locations**

The applicant seeks to add three elevator shafts to the building: two attached to the south side elevation of the 1940s wing and one attached to the rear of the building. The selected locations appear to impact those areas added to the building latest in its history or where previous alterations have occurred. These areas may be appropriate; however a decision cannot be made until further details are provided. The drawings also appear to show the construction of another entryway on the east side of the original building; however, no further details have been provided. This item is provided to the Board for discussion at this time.

Approval of the installation of fencing, installation of rooftop railings, and reconstruction of the covered stair roof in accordance with the submitted documentation is recommended at this time.

Continuation of the consideration of window replacement, installation of new windows, construction of three elevator shafts, and construction of entry stairs on Ford Street to the next regular meeting of the ARB to allow the applicant to provide additional information is recommended.

APPROVAL CRITERIA

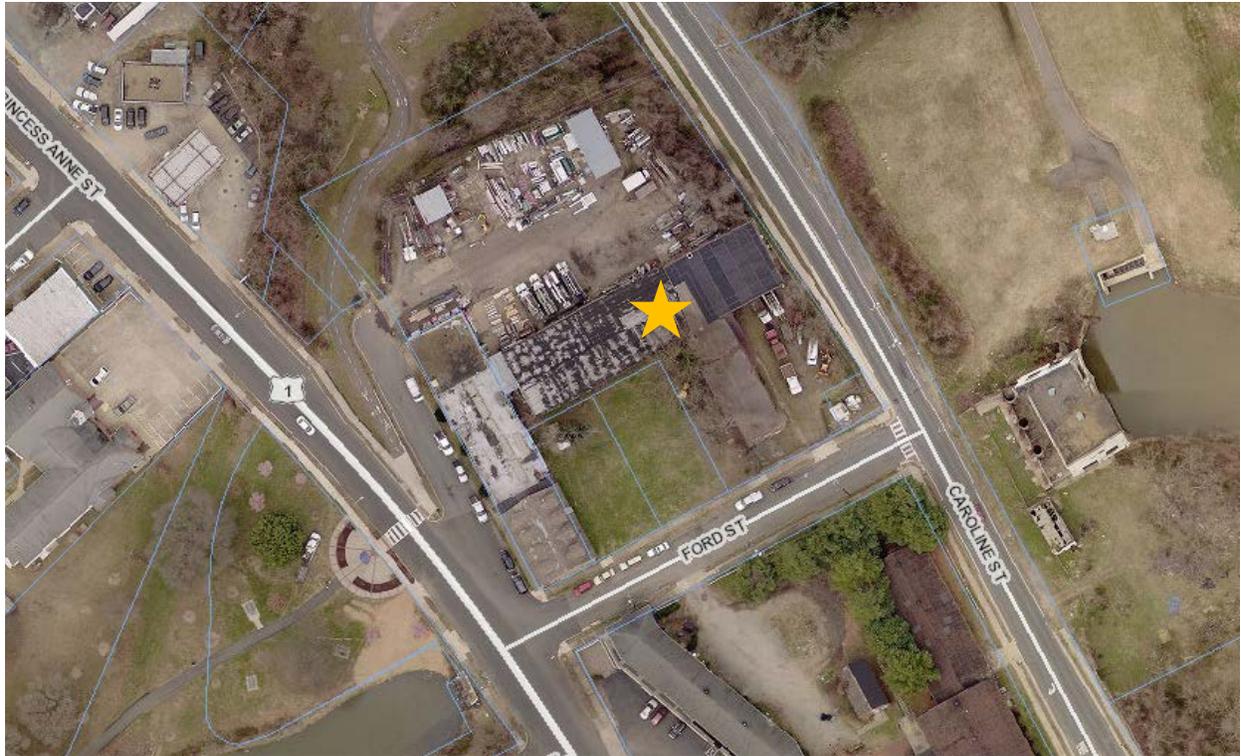
Criteria for evaluating proposed changes are found in City Code § 72-23.1(D)2 and are based on the United States Secretary of the Interior’s Standards for Rehabilitation.

S	D	NA	S – satisfies D – does not satisfy NA – not applicable
X			(1) Every reasonable effort shall be made to provide a compatible use for a property by requiring minimal alteration of the building, structure, or site and its environment, or by using a property for its originally intended purposes.
X			(2) The distinguishing original qualities or character of a building, structure, or site and its environment shall not be destroyed. The removal or alteration of any historical material or distinctive architectural features should be avoided when possible.

X			(3) All buildings, structures, and sites shall be recognized as products of their own time. Alterations that have no basis and which seek to create an earlier appearance shall be discouraged.
X			(4) Changes which may have taken place in the course of time are evidence of the history and development of a building, structure, or site and its environment. These changes may have acquired significance in their own right, and this significance shall be recognized and respected.
X			(5) Distinctive stylistic features or examples of skilled craftsmanship which characterize a building, structure, or site shall be treated with sensitivity.
X			(6) Deteriorated architectural features shall be repaired rather than replaced, wherever possible. If replacement is necessary, the new material should match the material being replaced in composition, design, color, texture, and other visual qualities. Replacement of missing architectural features should be based on historic, physical, or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other buildings or structures.
		X	(7) The surface cleaning of structures shall be undertaken with the gentlest means possible. Sandblasting and other cleaning methods that will damage the historic building materials shall not be undertaken.
		X	(8) Every reasonable effort shall be made to protect and preserve archaeological resources affected by or adjacent to any project.
X			(9) Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant historical, architectural, or cultural material, and such design is compatible with the size, scale, color, material, and character of the property, neighborhood, or environment.
X			(10) Wherever possible, new additions or alterations to structures shall be done in such a manner that, if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired.

Attachments:

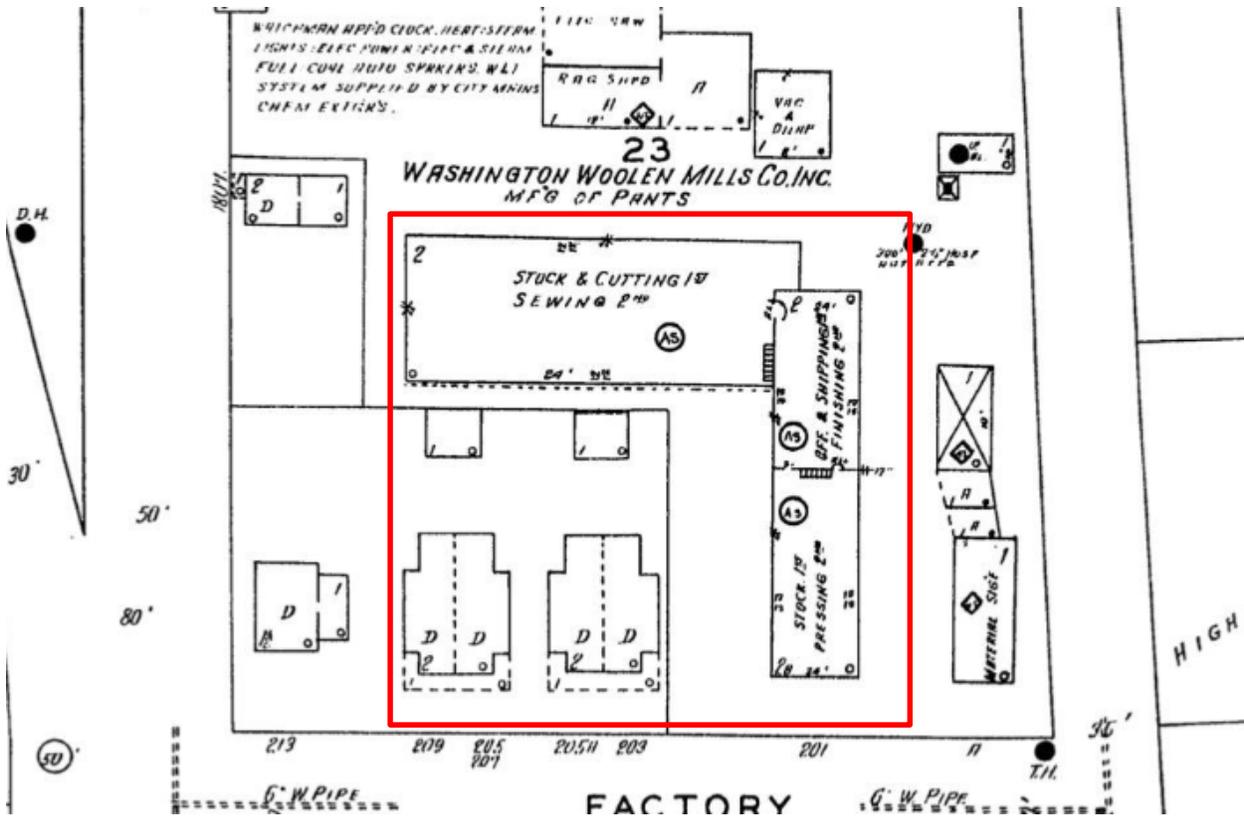
1. Aerial photograph and front elevation view
2. Historic photographs and maps
3. Existing Conditions
4. Site drawing
5. Detail specifications



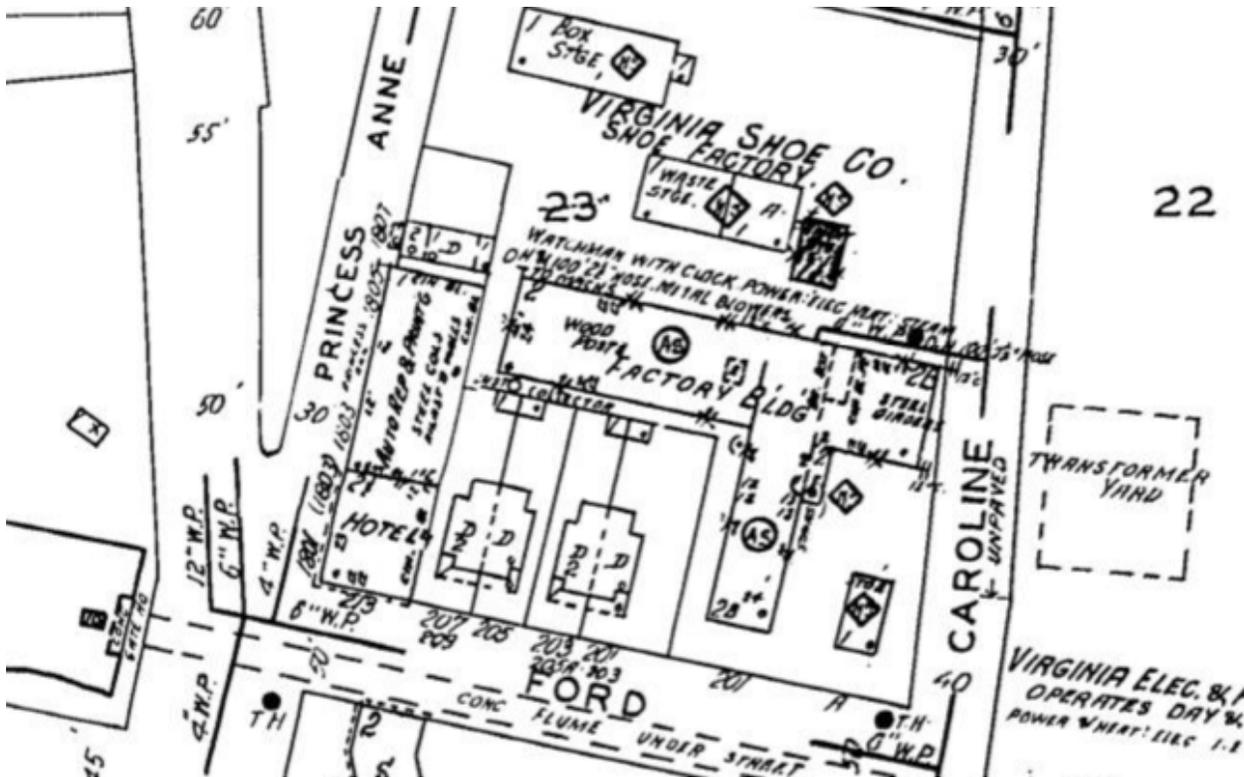
AERIAL



FRONT (SOUTH) ELEVATION



1927 Sanborn Fire Insurance Map



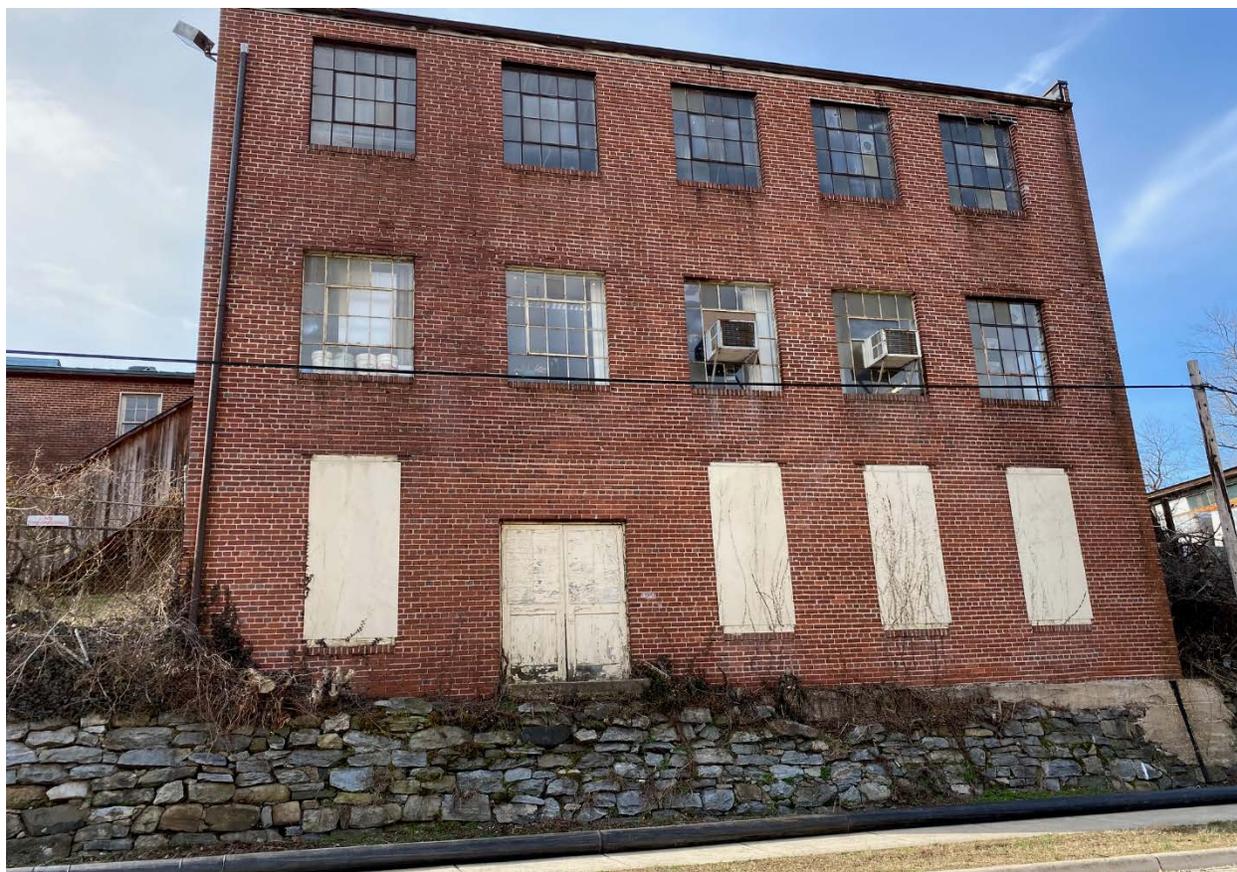
1947 Sanborn Fire Insurance Map



View looking north from Ford Street



View looking west from Caroline Street



View looking west from Caroline Street



View looking southwest from Caroline Street

January 17, 2020

Kate

City of Fredericksburg
Architectural Review Board
Community Planning and Building Department
715 Princess Anne Street Room 209
Fredericksburg, VA 22404

Dear Kate,

We are continuing the process of catching up on the 50 years maintenance neglect at Woolen Mill, Fredericksburg Shoe Company and Mary Washington Hotel.

I think we need to revisit the history of 1800 Princess Anne street. I have attached a note on the back of the doors in the old Hotel. It is signed Mary Washington Hotel. I always thought Mary Washington Hotel was on the Hardees' property. It must have operated as Mary Washington Hotel on this site above Dowling Signs presently. Please let me know if you have further information on the subject.

I have also included an application for your review. I believe, at this time we need to apply for a Certificate of Appropriateness for these activities.

1. ~~Soffits, Eaves, Gutters and Downspouts. Green to match metal roof~~ *lx-kind*
2. Stairs entering doors on 203 Ford Street
3. Fence around front entrance at Ford Street and over stone wall on Caroline Street
4. Roof top rails
5. Existing stairs raise roof to meet code 8"
6. Residential Elevator location – one four story and one two story
7. Parking lot side Elevator location – two story
8. Replace windows to look like existing Caroline Street wing – add 6 windows in basement

Please let me know if you have any questions or if I need to add anything.

Best Regards,



Ed Whelan
1707 Princess Anne Street
Fredericksburg, VA 22401

PERMANENT
EASEMENT
L.R. #070002006

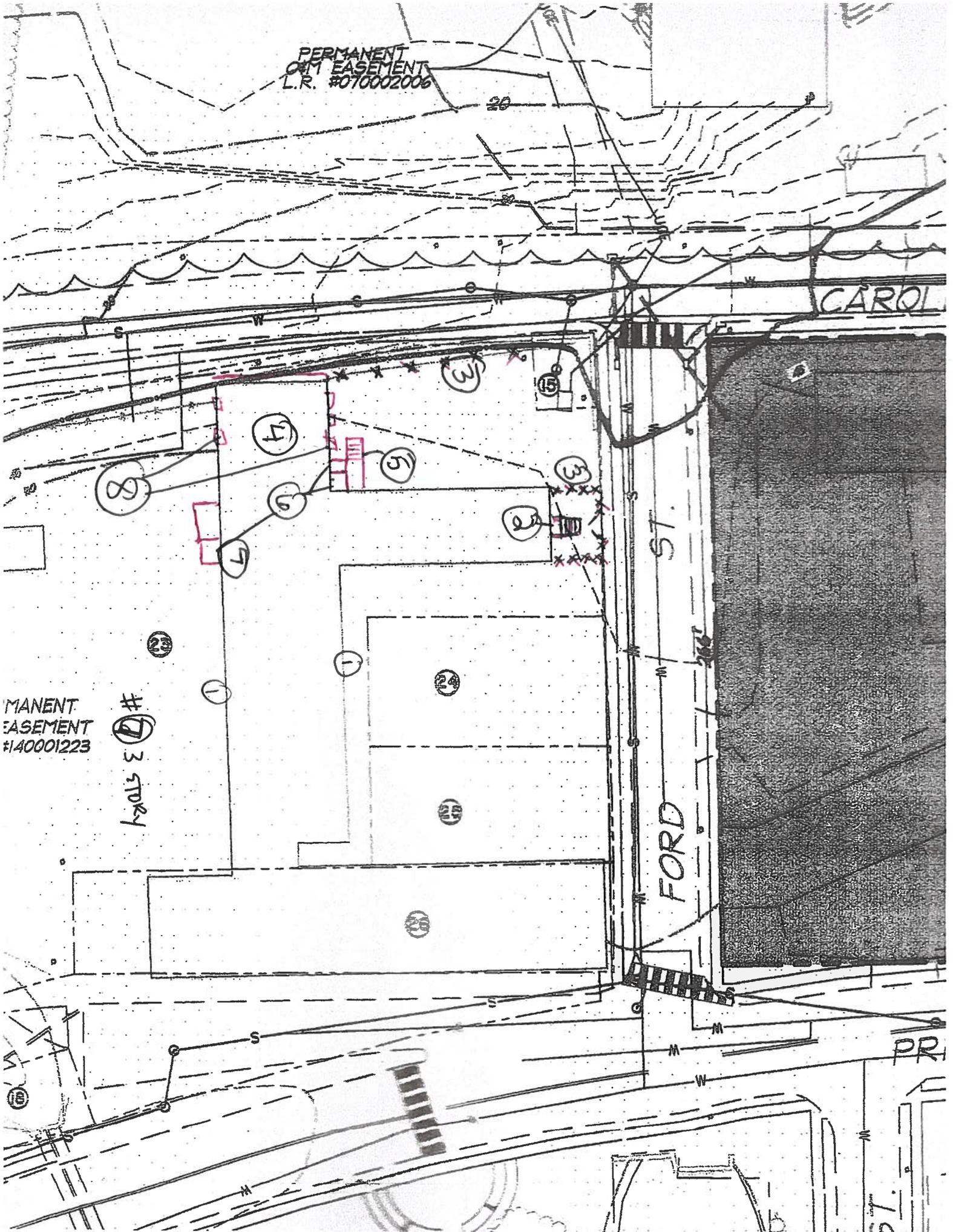
CAROL

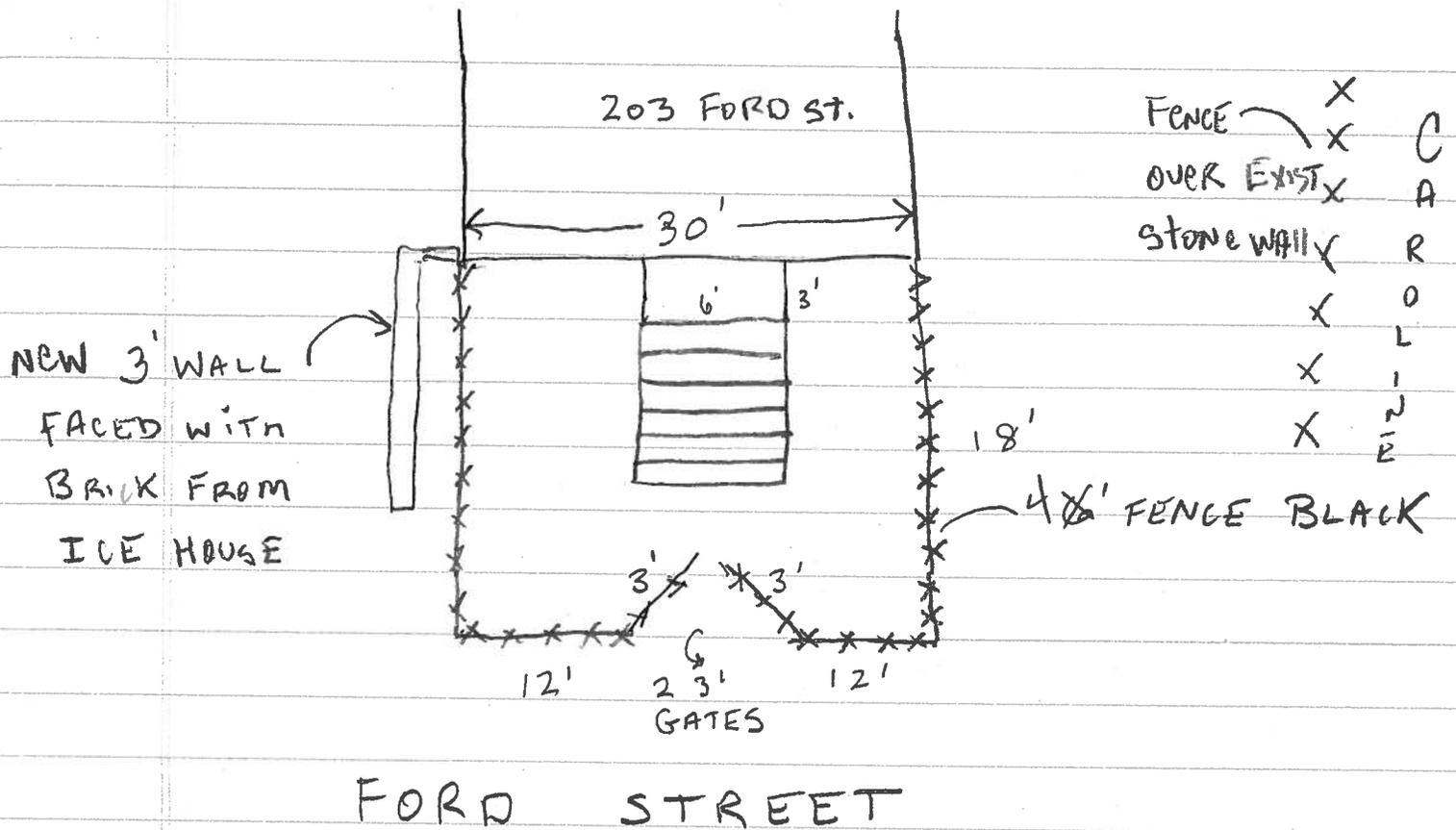
ST.

FORD

PERMANENT
EASEMENT
#140001223

3 STORY





STAIRS WROUGHT IRON HAND RAILS BLACK
SEE PHOTO: 1/2 SOLID PICKETS

1 3/4 COVER RAIL

1" POST TUBING

1" BOTTOM CHANNEL RAIL

LAMB TONGUE

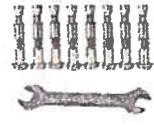
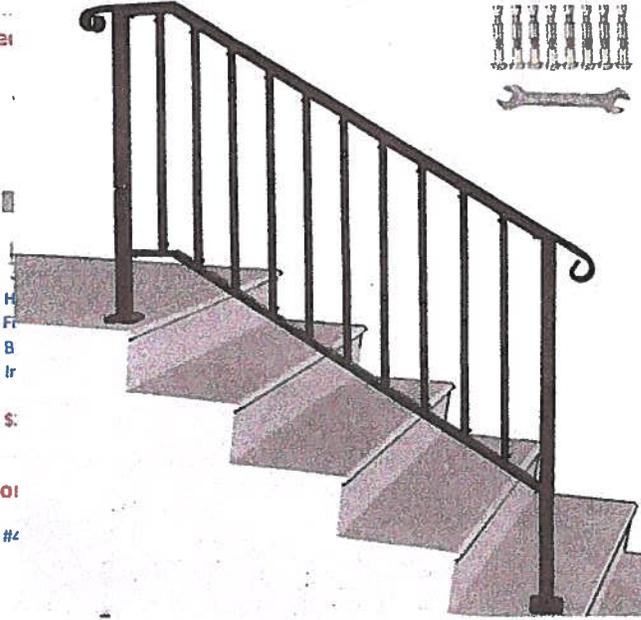
STAIRS PRESSURE TREATED STAINED GRAY 1 1/4"
RISERS SKIRTING CREAM COLOR MATCH

EXISTING WINDOWS ON BUILDING

Sponsored products related to



LOVSHARE Handrail Picket #4 Fits 4 or 5 Steps Matte Black Stair Rail Wrought Iron Handrail with Mounts - Black Sand - Stair H...
 21
 \$385.98



Aluminum Handrail Direct AHR 3' Handrail Section with Mounts - Black Sand - Stair H...
 3
 \$89.95

Happybuy Fits 4 or 5 Stair Rail Handrail with Hand Rail

Size Name: 4
 Color: Black
 Dec Blar Bal
 \$42
 Ad fee: back

What other items do customers also buy?

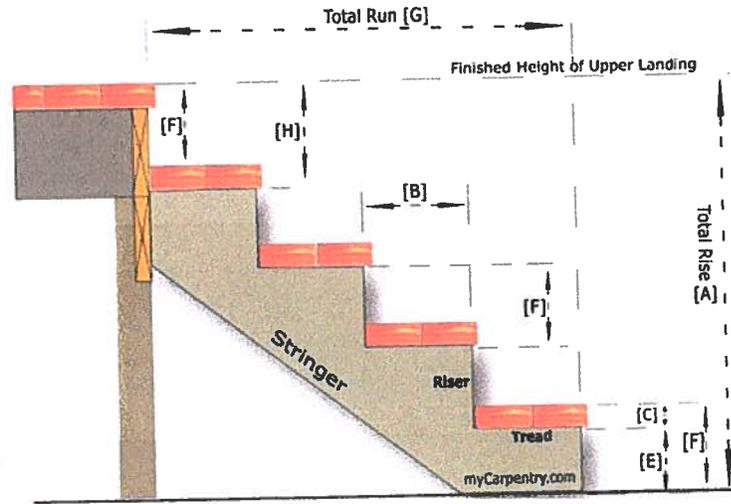


Happybuy Handrail Arch #4
 21
 \$325.98

Happybuy 5 Step Handrail Fits 4 or 5 Steps Matte Black Stair Rail Wrought Iron Handrail with

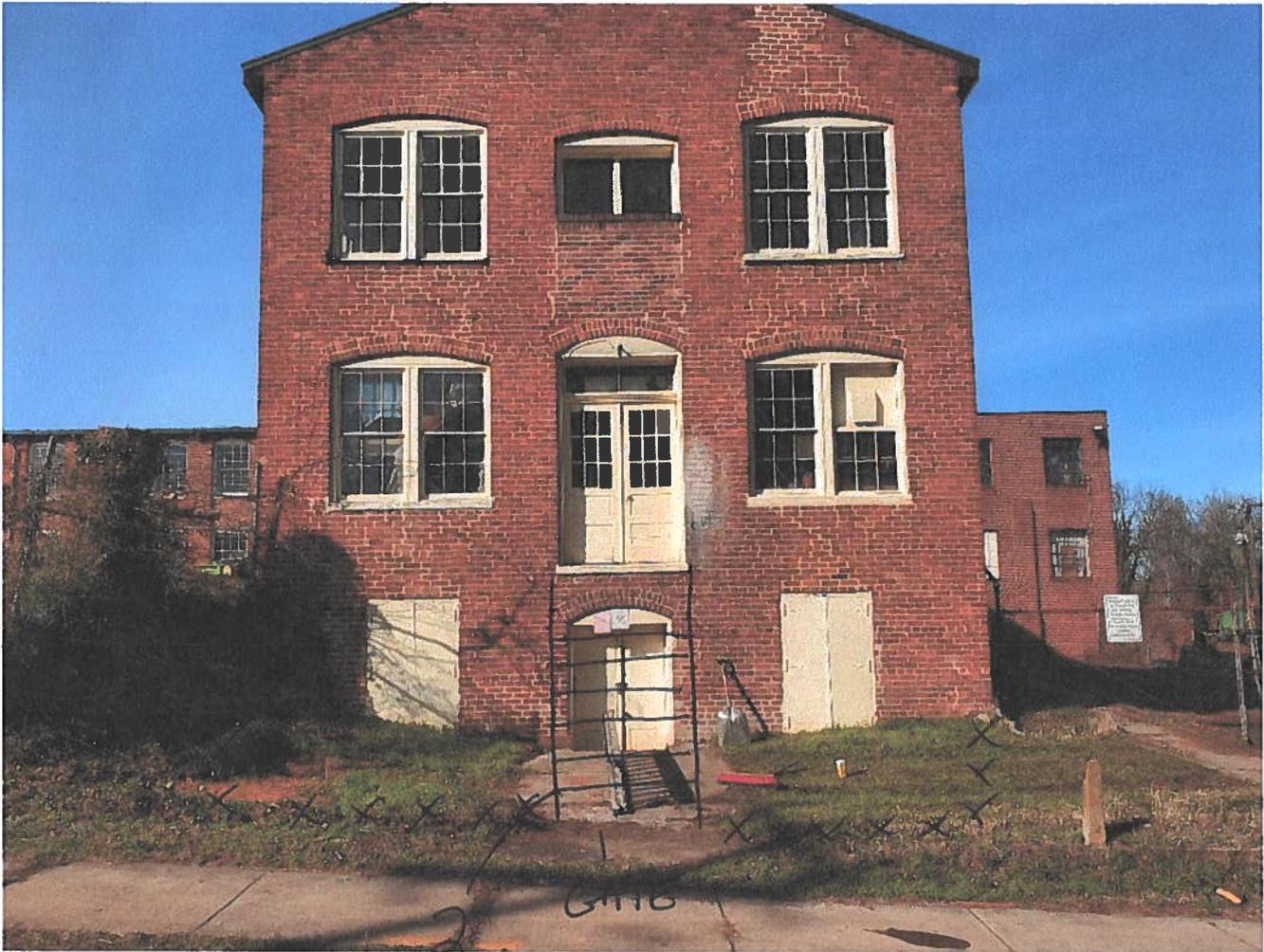


Azek steps and Traditional - Stair Rail
 www.houzz.com
 View Image



Building & Construction
 www.mycarpentry.com
 View Image

2



#2

From: 5408417039 <5408417039@pm.sprint.com>
To: innkeeperfc1 <innkeeperfc1@aol.com>
Date: Tue, Jan 7, 2020 4:17 pm

Sent from my mobile.

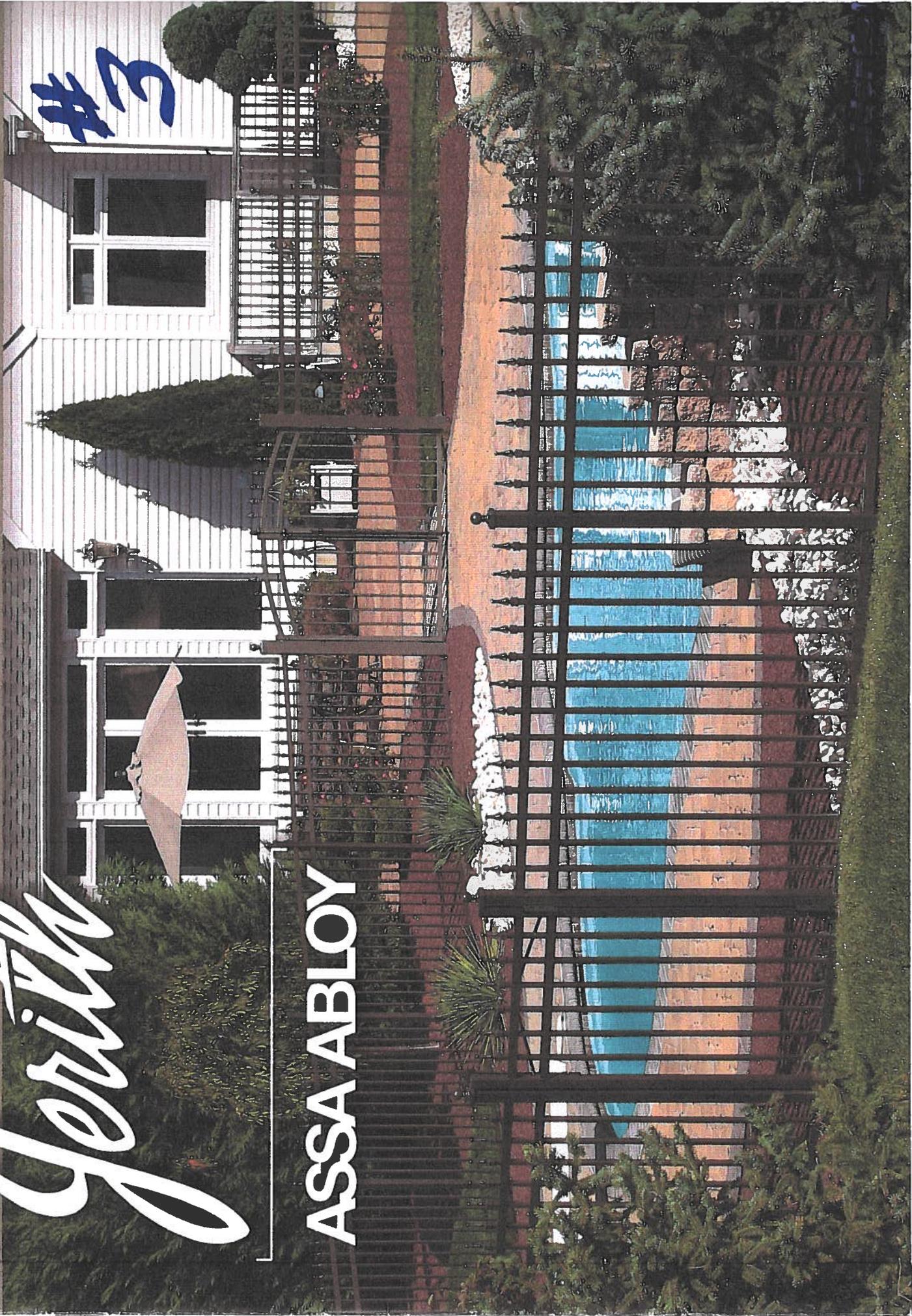


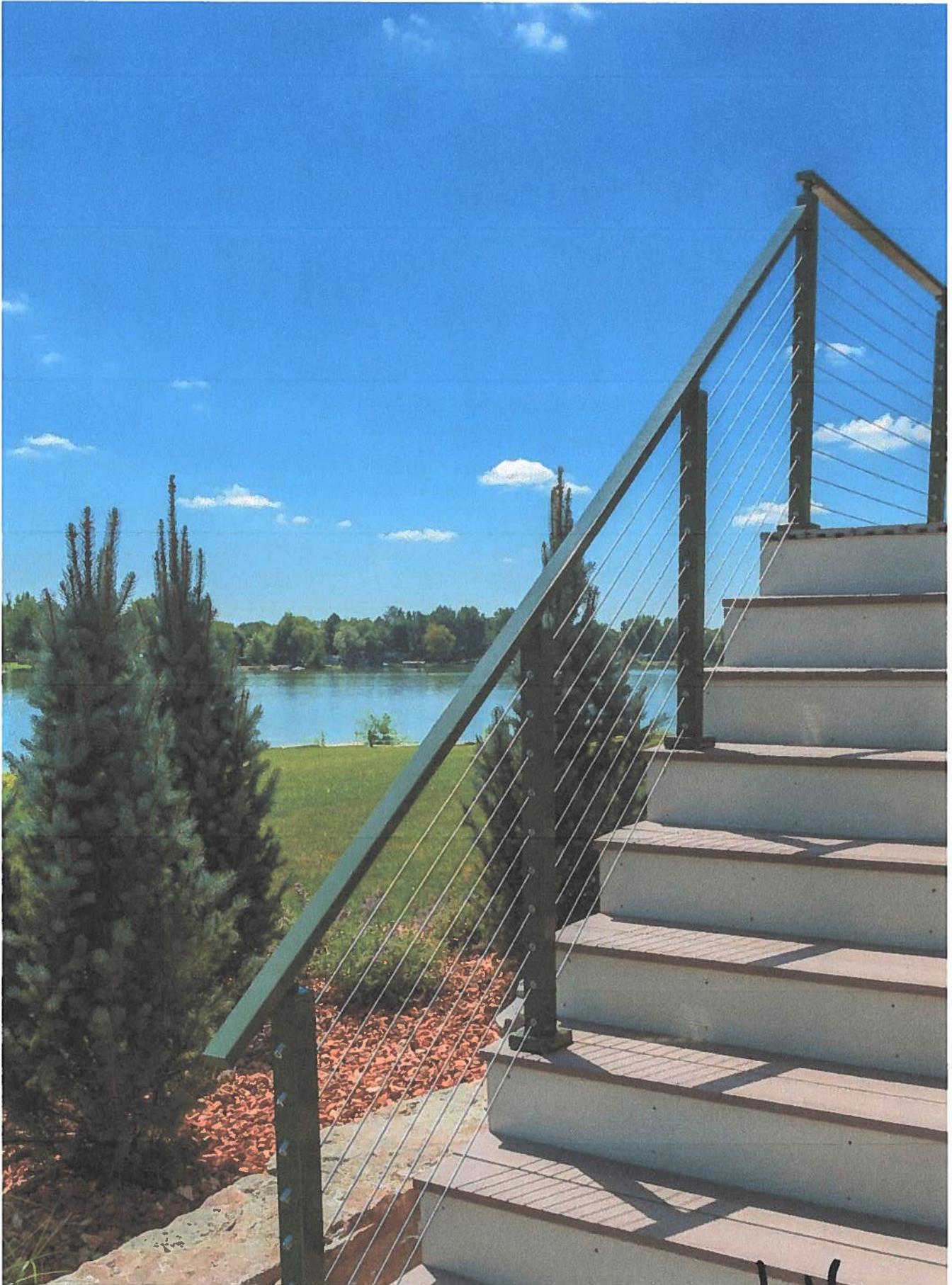
#2

Aluminum Fences of Distinction™

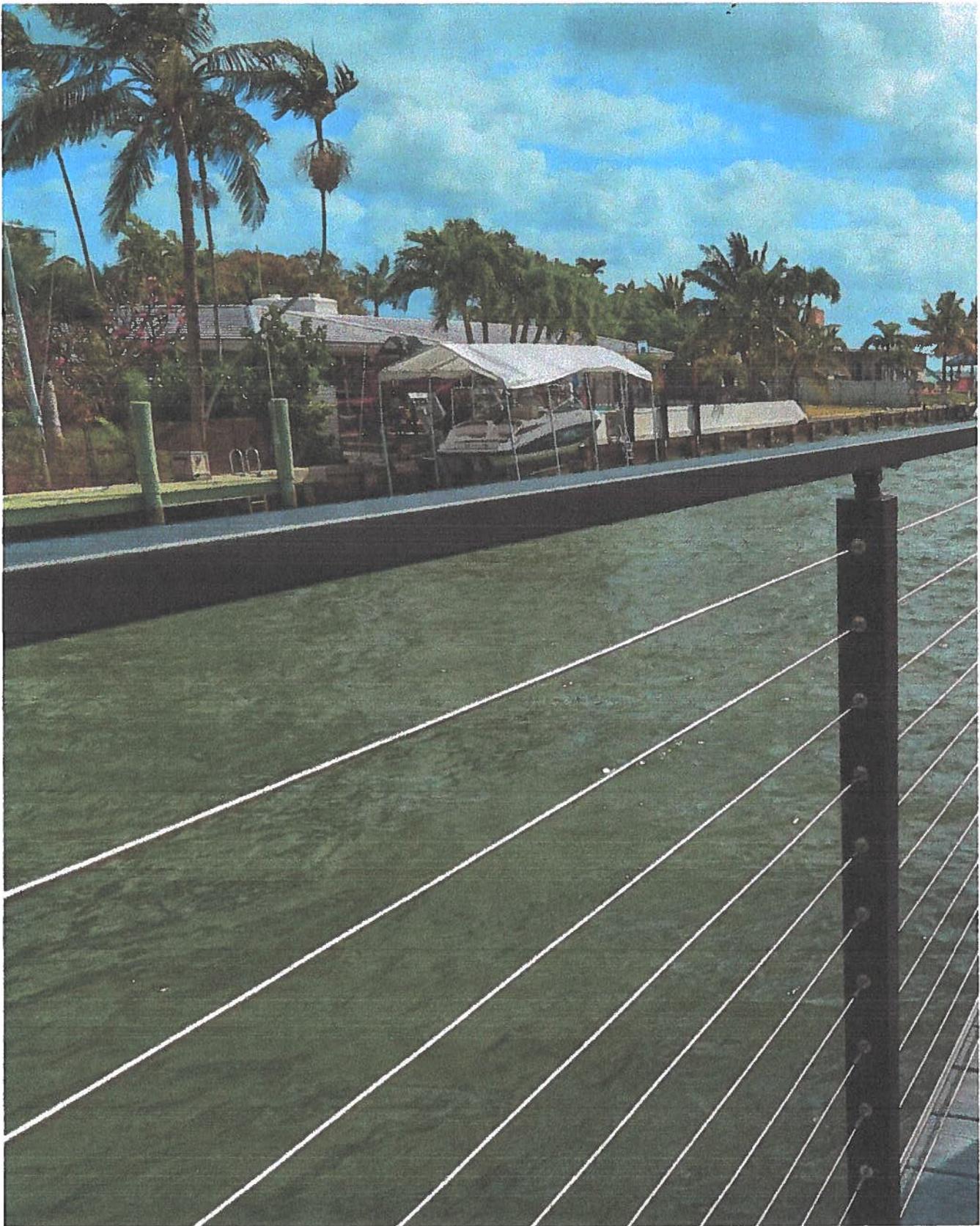
Yerith

ASSA ABLOY

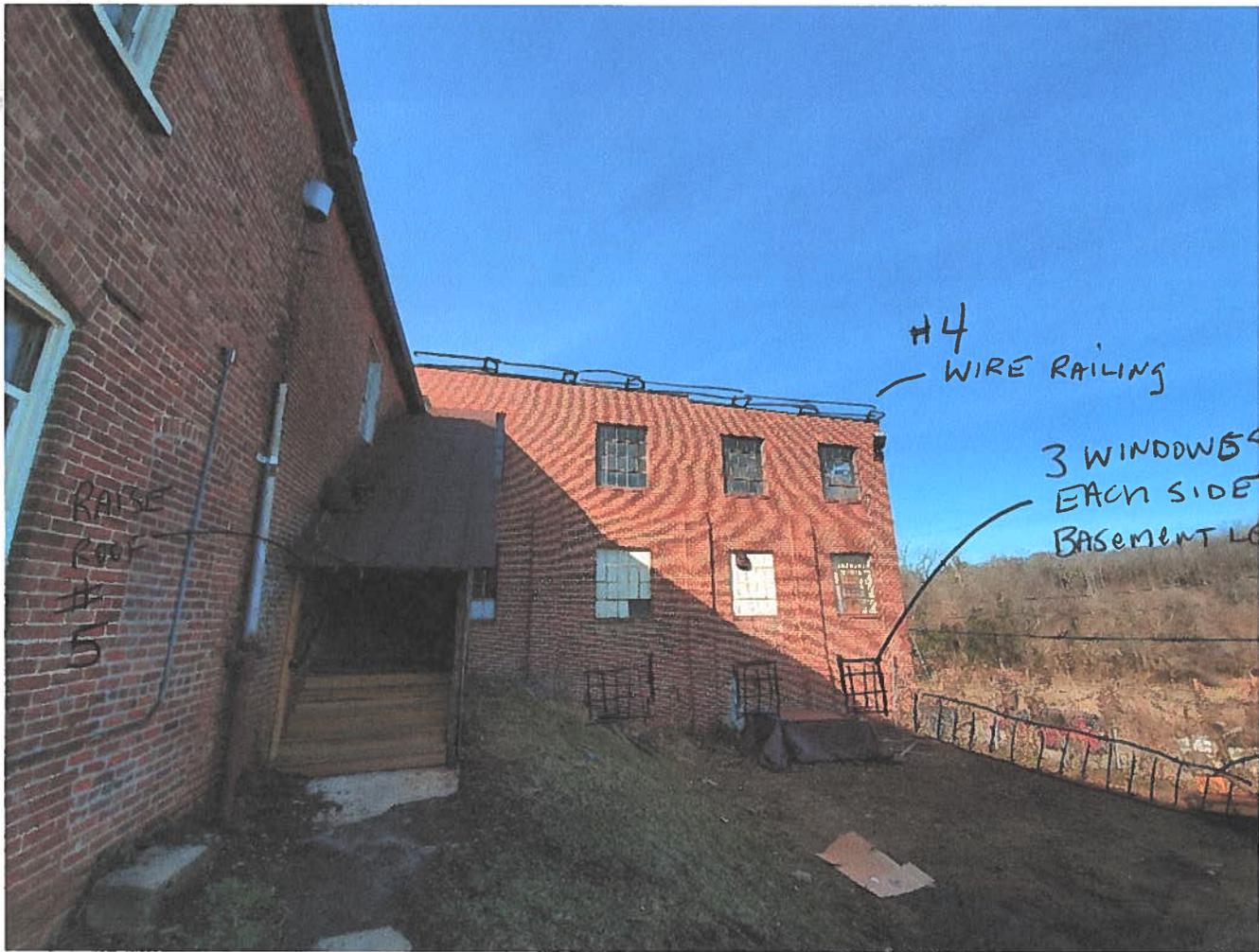




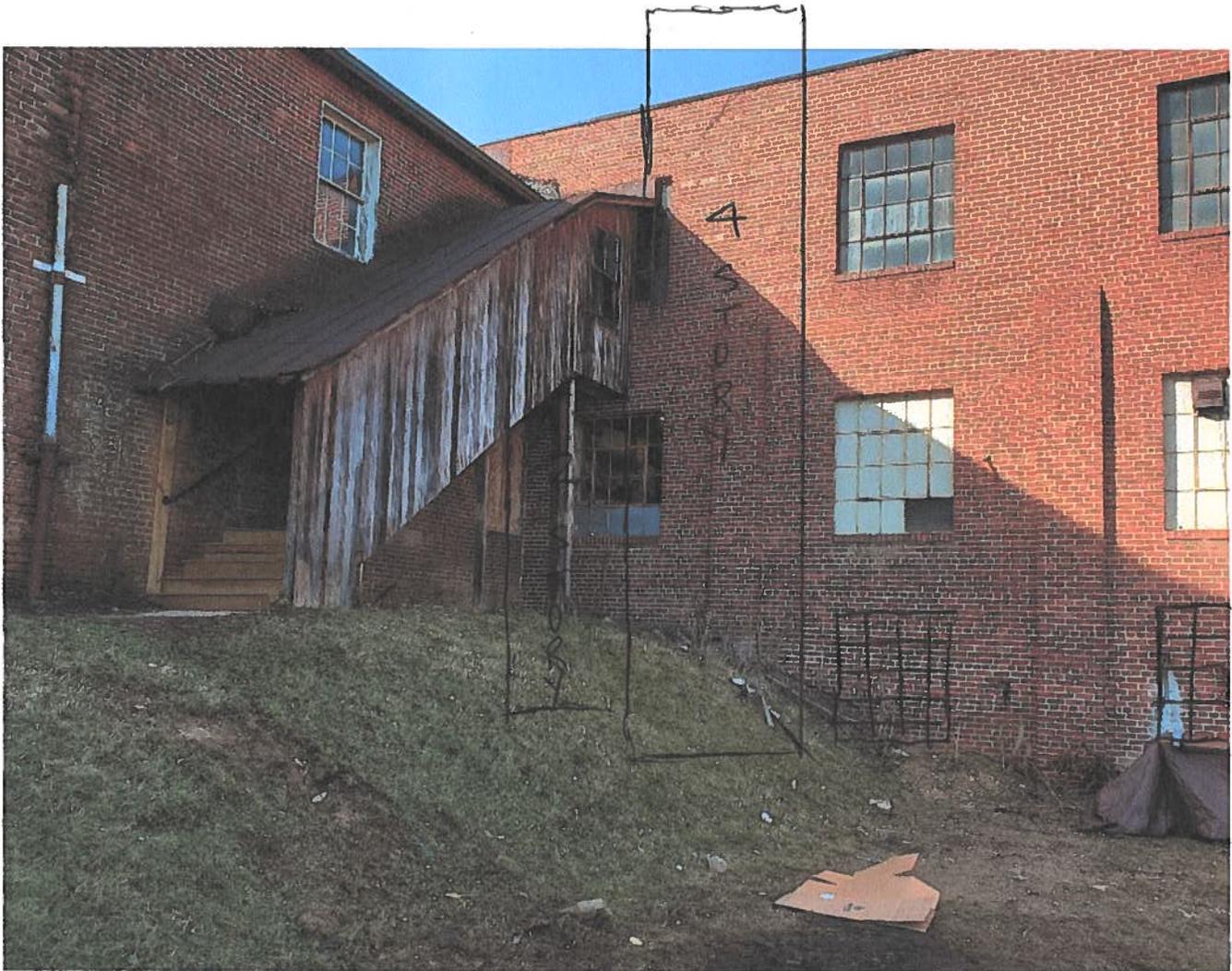
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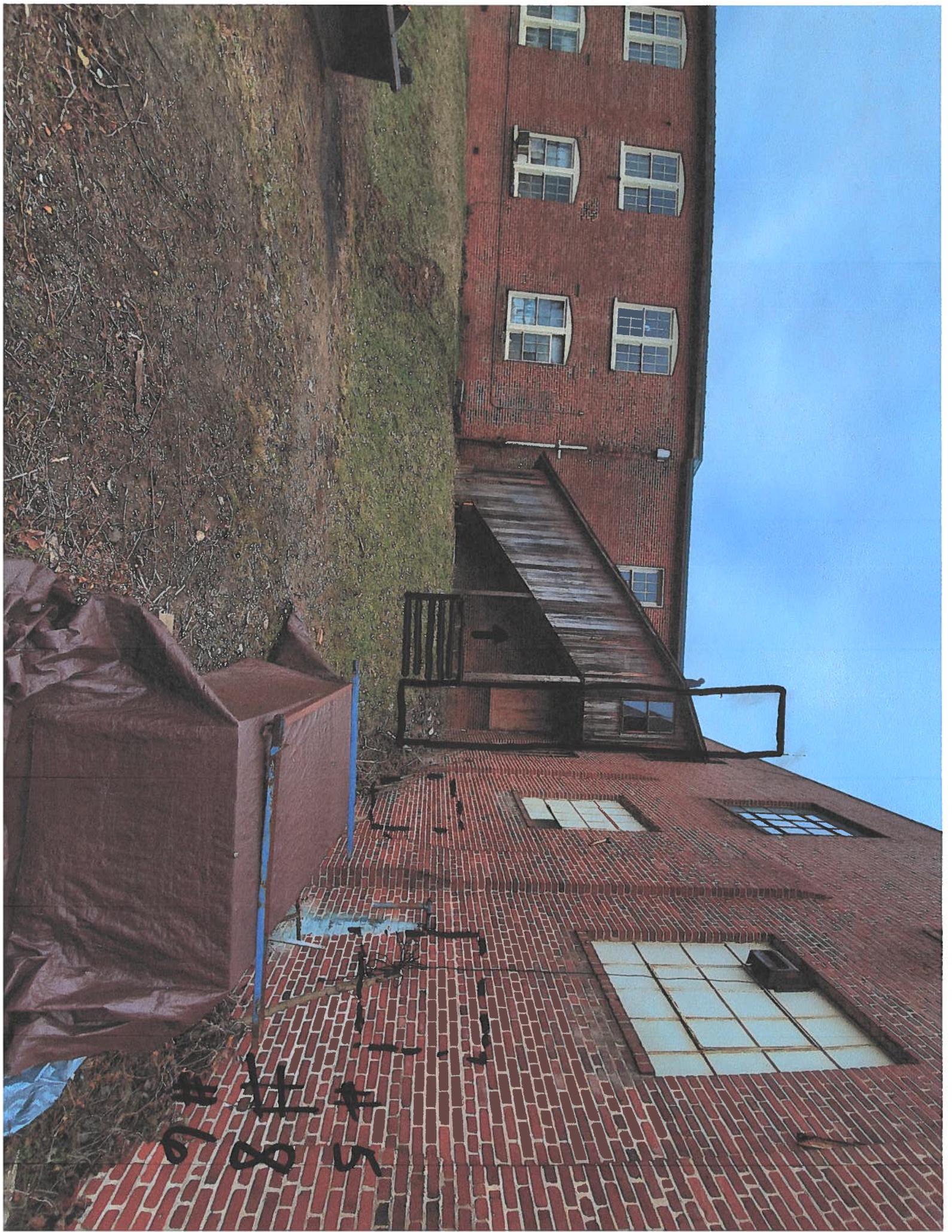


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1 4 STORY ELEVATOR
1 2 STORY ELEVATOR

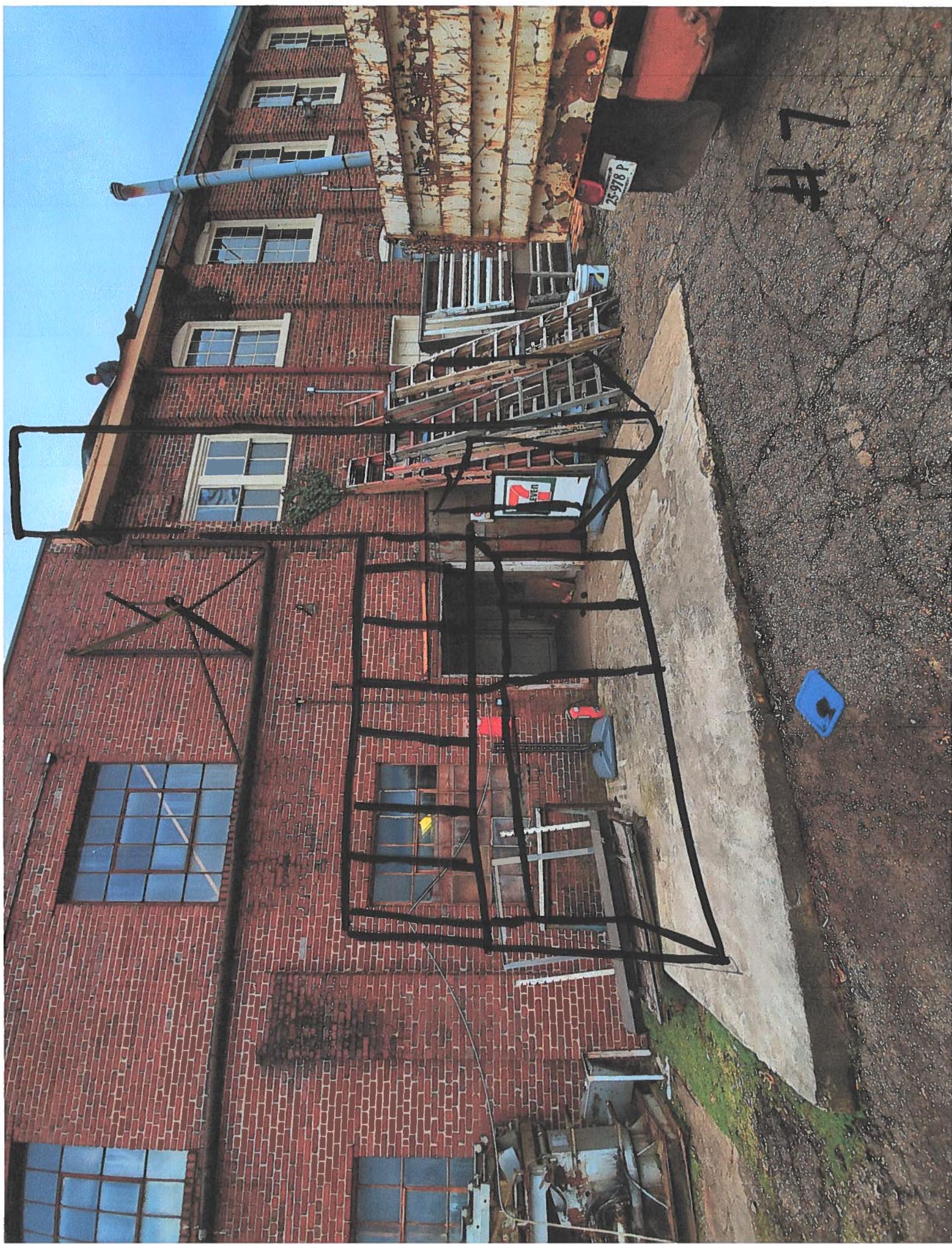
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#7



25-978 P

LH

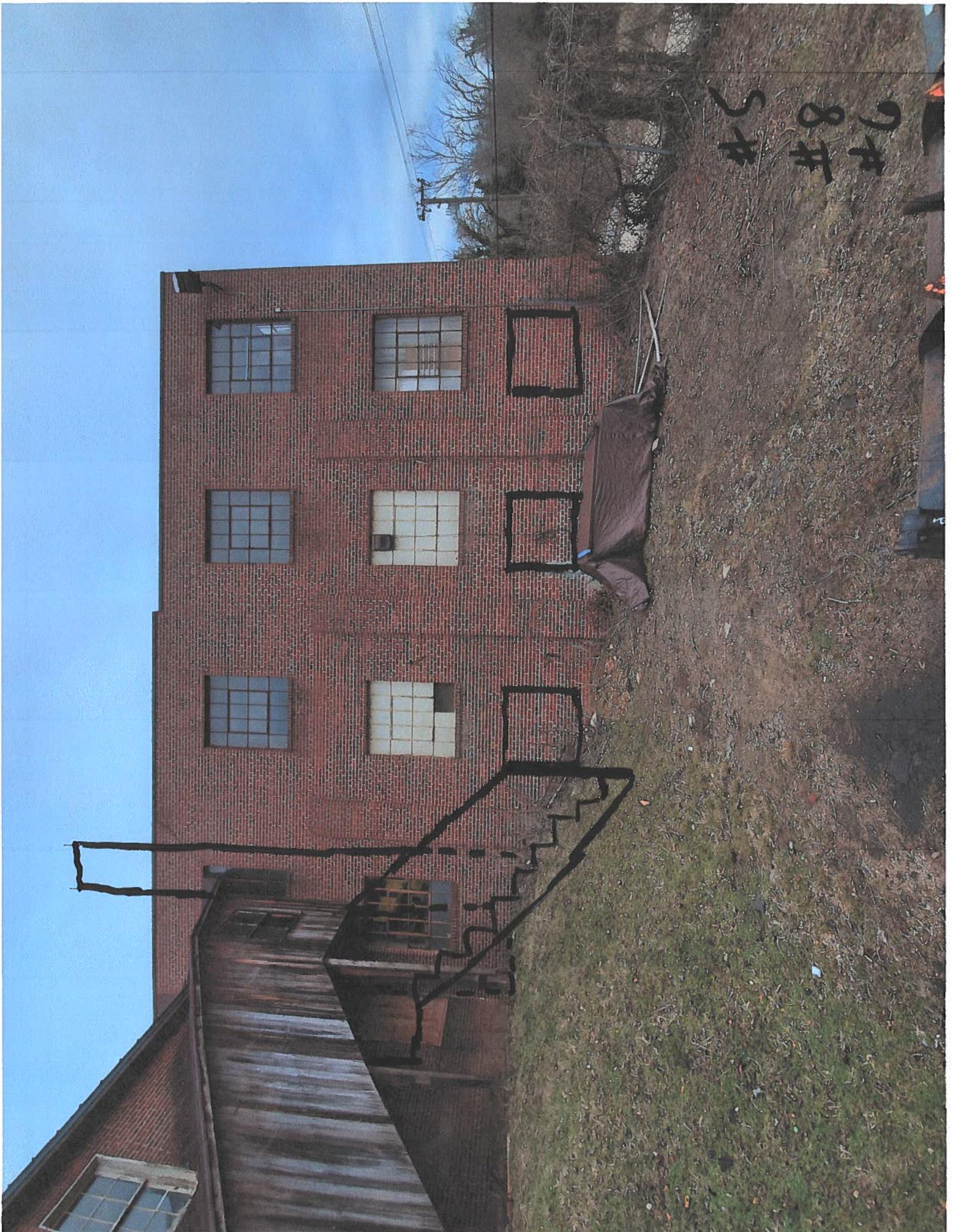


L7 #

148-23-2400
PENN STATE
148-23-2400

PA
148-23-2400
PENN STATE
148-23-2400

148-23-2400
PENN STATE
148-23-2400



#5
#8
#6





Wrought Iron Rail

Side Walk

#8





COMPOSE

- Reply
- Reply All
- Forward
- Delete
- Spam
- More

Search Mail

Today on AOL

New Mail 826

Old Mail

White Supply and Glass

Bill Altman (baltman3@verizon.net)

To: you [Details](#) [Slideshow](#)

Renovation 1.JPG (5.5 MB)

Renovation 2.JPG (3.8 MB)

Renovation 3.JPG (5.0 MB)

Renovation be



8



YOW 225 TU

RECEIVED

JAN 28 2020

Thermally Broken Operable Window for Insulating Glass

BY: _____



OPERABLE WINDOWS

A Quality Window at a Great Value

The YOW 225 TU windows have been designed and engineered to provide the highest level of quality. The windows have an overall depth of 2-1/4" and are thermally broken by means of our ThermoBond Plus® technology developed at YKK AP. These windows may be installed as independent units or adapted to fit into most YKK AP storefronts, window wall, or curtain wall systems. The vents are flush with the frame thus eliminating unsightly overlap. YOW 225 TU windows are available in a variety of configurations to accommodate project requirements.

Product Options & Features

- AAMA/WDMA/CSA 101/I.S. 2/A 440-11
 - ◆ AW-65 (Operable), AW-100 (Fixed)
- Available configs: Casement Outswing, Project Out and In, Fixed
- Standard Heavy Duty Hardware
- Factory glazing and screens available
- Head/Jamb Receptors and Stacking Mullions
- ThermoBond Plus® thermal break
- Accepts 1" insulated glass

U-Factor Values as low as 0.32*

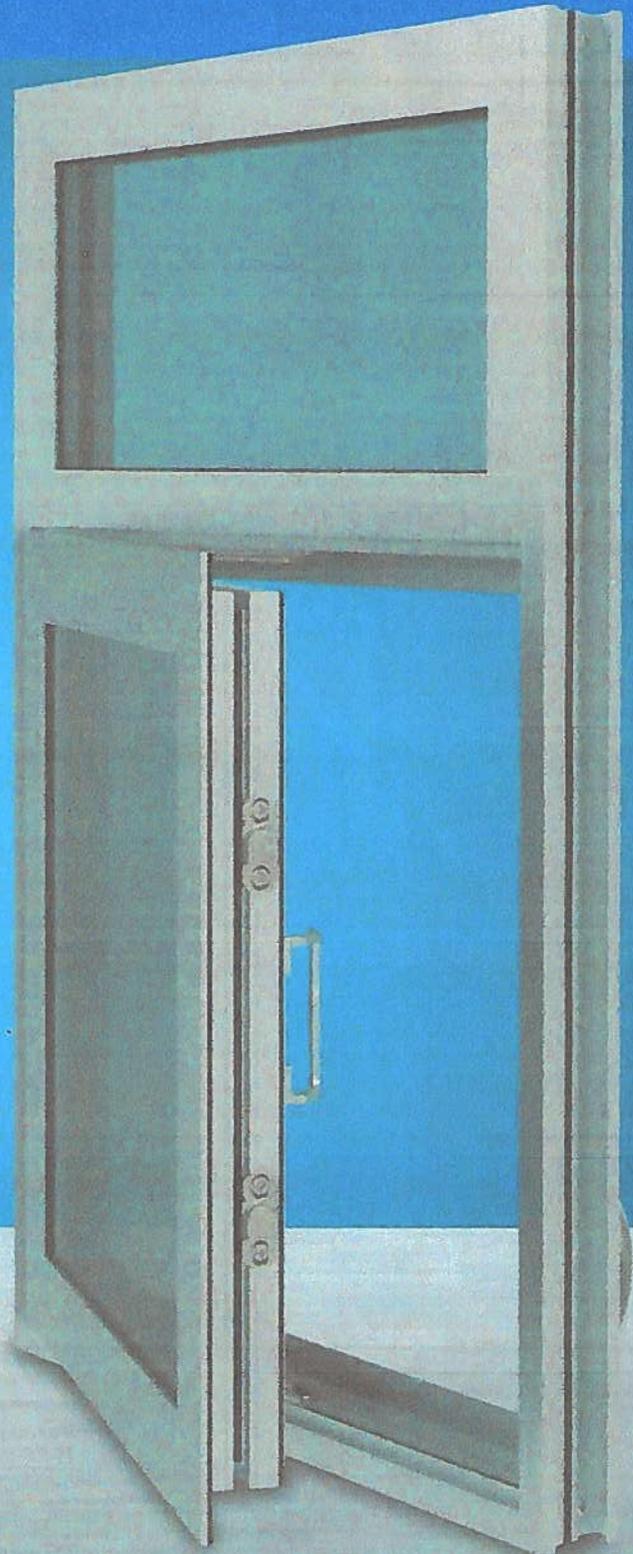
CRF Minimum 53_{frame} & 64_{glass}

*Based on AAMA 507. Lower values may be achieved through further simulation.



**YKK
ap**

Quality
inspires



YOW 225 TU

SYSTEM SPECIFICATIONS

Base Depth	Glazing & Config	Glass	Air Infiltration	Water Infiltration	Acoustical Performance
2-1/4"	Laminated & Casement Out, Project Out, Project In or Fixed	1" IGU with Low-E (C.O.G. U-factor: 0.29)	0.10 CFM/FT ² (1.83 m ³ /h·m ²) @ 6.24 PSF (299 Pa)	Static Operable: 12 PSF (575 Pa) Static Fixed: 15 PSF (718 Pa)	Operable STC: 33 Operable OITC: 26 Fixed STC: 32 Fixed OITC: 27
Testing Standards			ASTM E 283	ASTM E 331 & AAMA 501	ASTM E 90 & 1332
Product Testing			AW-65 Operable, AW-100 Fixed, AAMA/WDMA/CSA/101/I.S.2/A440-11		
Available Finishes			Factory Anodized (AAMA 612) and Organic Paints (AAMA 2605)		

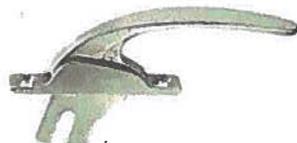
Thermal Performance						
1" IGU	BTU/hr·ft ² ·°F					
C.O.G U-Factor	0.30	0.28	0.26	0.24	0.22	0.20
Fixed	0.40	0.38	0.37	0.35	0.34	0.32
Project Out	0.53	0.52	0.51	0.50	0.48	0.47
Casement Out	0.53	0.52	0.51	0.50	0.49	0.47
Testing Standards	AAMA 507					

CRF	
Frame	Glass
58	64
53	72
55	74
AAMA 1503	

HARDWARE OPTIONS



Cam Handle (Standard)



Multi Point Handle



Pole Cam Handle (Optional)



Custodial Cam Handle (Optional)



Roto Operator Crank Handle - Project



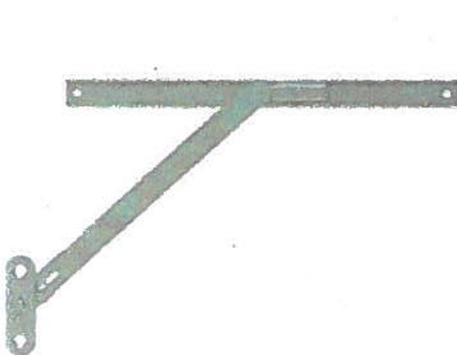
Roto Operator - Project



Roto Operator Crank Handle - Casement



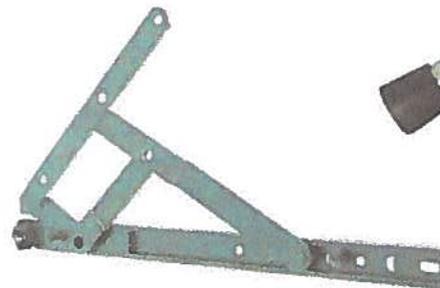
Roto Operator - Casement



Friction Device



Keyed Limit Device



4 Bar Hinge



Window Pole

Additional information including CAD details, CSI specifications, Test Reports and Installation instructions are available online at:

www.ykkap.com/commercial/product/architectural-windows/yow-225-tu/

CSI MASTERFORMAT SECTION NUMBER
CSI MASTERFORMAT SECTION TITLE
YKK AP PRODUCT SERIES

08 51 13
ALUMINUM WINDOWS
YKK AP YOW 225 TU FIXED & OPERABLE
WINDOW SERIES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Fixed and Operable Aluminum Window Systems

1. YKK AP Series YOW 225 TU ThermaBond Plus® Fixed Aluminum Window System.
- ~~2.~~ YKK AP Series YOW 225 TU ThermaBond Plus® Operable Aluminum Window System.

B. Related Sections:

1. Sealants: Refer to Division 7 Joint Treatment Section for sealant requirements.
2. Glass and Glazing: Refer to Division 8 Glass and Glazing Section for glass and glazing requirements.
3. Single Source Requirement: All products listed below shall be by the same manufacturer.
 - a. Section 08 32 13 Sliding Aluminum - Framed Glass Doors
 - b. Section 08 41 13 Aluminum - Framed Entrances and Storefronts
 - c. Section 08 44 13 Glazed Aluminum Curtain Walls
 - d. Section 08 44 33 Sloped Glazing Assemblies

1.02 TEST AND PERFORMANCE REQUIREMENTS

A. All test unit sizes and configurations shall conform to the minimum sizes in accordance with AAMA/WDMA/CSA/I.S.A 440-05, with a performance class of AW, performance grade 65 (Operable), 100 (Fixed). Windows shall also comply with the following specific performance requirements indicated.

1. Air Infiltration: When tested in accordance with ASTM E 283-91 at differential static pressure of 6.24 PSF (299 Pa), completed window systems shall have maximum allowable infiltration of 0.10 CFM/FT² (1.83 m³/h·m²).
2. Water Infiltration: No uncontrolled water other than condensation on indoor face of any component when tested in accordance with ASTM E 331-93 and E547-86 at a minimum test pressure differential of 12 PSF (575 Pa) operable, 15 PSF (718 Pa) fixed.
3. Uniform Load Structural Test: Provide aluminum window systems that comply with AAMA/WDMA/CSA 101/I.S.A440-11 voluntary specifications for aluminum and polyvinylchloride (PVC) prime windows and glass doors, guidelines for specified AW rated product.
4. Thermal Movement: Provide for thermal movement caused by 180 degrees F. (82.2 degrees C.) surface temperature, without causing buckling stresses on glass, joint seal failure, undue stress on structural elements, damaging loads on fasteners, reduction of performance, or detrimental effects.
5. Thermal Performance: When tested in accordance with AAMA 1503 and NFRC 102:
 - a. Condensation Resistance Factor (CRF): A minimum of 57 (Fixed), 53 (Operable).
 - b. Thermal Transmittance U Value: 0.39 (Fixed), 0.52 (Casement & Project) BTU/HR/FT²/°F or less.
6. Acoustical Performance: When tested in accordance with ASTM E 90 and ASTM E 1332, the Sound Transmission Class (STC) shall not be less than 33 for operable, 32 for fixed units.
7. Life Cycle Testing: When tested in accordance with AAMA 910, there shall be no damage to fasteners, hardware parts, or any other damage that would cause the specimen to be inoperable. Resistance to air leakage and water penetration resistance test results shall not exceed the gateway performance.

Note: Performance based on lab testing and will vary by configuration and glass type; contact YKK AP engineering for AAMA 507 Certificate of Compliance, to demonstrate compliance with NFRC for various glass types.

1.03 SUBMITTALS

- A. General: Prepare, review, approve, and submit specified submittals in accordance with "Conditions of the Contract" and Division 1 Submittals Sections. Product data, shop drawings, samples, and similar submittals are defined in "Conditions of the Contract."
- B. Product Data: Submit product data for each type window series specified.
- C. Substitutions: Whenever substitute products are to be considered, supporting technical data, samples, and test reports must be submitted ten (10) working days prior to bid date in order to make a valid comparison.
- D. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, accessories, finish colors and textures.
- E. Samples: Submit verification samples for colors on actual aluminum substrates indicating full color range expected in installed system.
- F. Quality Assurance / Control Submittals:

1. Test Reports: Submit certified test reports showing compliance with specified performance characteristics and physical properties.
 2. Installer Qualification Data: Submit installer qualification data.
- G. Closeout Submittals:
1. Warranty: Submit warranty documents specified herein.
 2. Project Record Documents: Submit project record documents for installed materials in accordance with Division 1 Project Closeout (Project Record Documents) Section.

1.04 QUALITY ASSURANCE

A. Qualifications:

1. Installer Qualifications: Installer experienced (as determined by contractor) to perform work of this section who has specialized in the installation of work similar to that required for this project. If requested by Owner, submit reference list of completed projects.
 2. Manufacturer Qualifications: Manufacturer capable of providing field service representation during construction process.
- B. Mock-Ups (Field Constructed): Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Architect's acceptance of finish color, and workmanship standard.
1. Mock-Up Size:
 2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
 3. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.
- C. Pre-Installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements.

1.05 PROJECT CONDITIONS / SITE CONDITIONS

- A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

1.06 WARRANTY

- A. Project Warranty: Refer to "Conditions of the Contract" for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by an authorized company official.
1. Warranty Period: Manufacturer's one (1) year standard warranty commencing on the substantial date of completion for the project provided that the warranty, in no event, shall start later than six (6) months from the date of shipment by YKK AP America Inc.

EDITOR NOTE: Longer warranty periods are available at additional cost.

PART 2 PRODUCTS

2.01 MANUFACTURERS (Acceptable Manufacturers/Products)

- A. Acceptable Manufacturers: YKK AP America Inc.
270 Riverside Parkway, Suite 100
Austell, GA 30168
Telephone: (678) 838-6000; Fax: (678) 838-6001
- *1. Operable Window System: YKK AP YOW 225 TU ThermaBond Plus® Aluminum Window System.
2. Fixed Window System: YKK AP YOW 225 TU ThermaBond Plus® Aluminum Window System.
- B. Window Framing System:
1. AAMA Designation: AW-65 (Operable), AW-100 (Fixed).
 2. Description: The windows shall be extruded aluminum with integral structural thermal break; 2 1/4" frame depth; Vents shall be flush with frame and have mitered corner construction; Factory-assembled.
 3. Configuration: The thermally broken windows shall be (select one or more) Fixed, Casement (outswing or inswing), or Project (in or out).
 4. Thermal Barrier: Provide continuous thermal barrier by means of a poured and debridged pocket consisting of a two-part, chemically curing high density polyurethane which is bonded to the aluminum by YKK ThermaBond Plus®. Systems employing non structural type thermal barriers are not acceptable.

5. Glazing: Exterior glazing tape with silicone cap bead; 1" insulating units; Interior EPDM wedge gaskets; Aluminum interior glazing beads; Factory or bench glazed. Glazing thickness as specified in Division 8 glass and glazing sections.

2.02 MATERIALS

- A. Extrusions: ASTM B 221 (ASTM B 221M), 6063-T5 Aluminum Alloy.
- B. Aluminum Sheet:
 1. Anodized Finish: ASTM B 209 (ASTM B 209M), 5005-H14 Aluminum Alloy, 0.050" (1.27 mm) minimum thickness.
 2. Painted Finish: ASTM B 209 (ASTM B 209M), 3003-H14 Aluminum Alloy, 0.080" (1.95 mm) minimum thickness.

2.03 ACCESSORIES

- A. Manufacturer's Standard Accessories:
 1. Hardware: Standard concealed stainless steel 4 bar hinges for casement outswing and projected vents, exposed white bronze butt hinges for casement inswing vents, white bronze cam handles and strikes; Optional white bronze roto-operators for casement outswing vents, stainless steel support arms for casement inswing vents, aluminum/white bronze push bars for project out vents, white bronze custodial locks or multi-locks in lieu of cam handles, stainless steel limit stop device.
 2. Fasteners: All fasteners shall be AISI 300 series (except for self-drilling, which are to be series 400) stainless steel.
 3. Sealant: Non-skinning type, AAMA 803.3
 4. Glazing: Setting blocks, edge blocks, and spacers in accordance with ASTM C 864, shore durometer hardness as recommended by manufacturer; Glazing gaskets in accordance with ASTM C 864.

2.04 RELATED MATERIALS (Specified In Other Sections)

- A. Glass: Refer to Division 8 Glass and Glazing Section for glass materials.

2.05 FABRICATION

- A. Shop Assembly: Fabricate and assemble units with joints only at intersection of aluminum members with uniform hairline joints; rigidly secure, and sealed in accordance with manufacturer's recommendations.

2.06 FINISHES AND COLORS

- A. YKK AP America Anodized Plus® Finish:

CODE	DESCRIPTION
YS1N*	Clear Anodized Plus®
YH3N	Champagne Anodized Plus®
YB1N	Medium Bronze Anodized Plus®
YB5N	Dark Bronze Anodized Plus® *
YK1N*	Black Anodized Plus®
YW3N	White Anodized Plus®
M	Mill Finish

* Indicates standard finish usually carried as inventory.

Anodized Plus® is an advanced sealing technology that completely seals the anodic film yielding superior durability (See AAMA 612).

- B. Anodized Finishing: Prepare aluminum surfaces for specified finish; apply shop finish in accordance with the following:
 1. Anodic Coating: Electrolytic color coating followed by an organic seal applied in accordance with the requirements of AAMA 612-02. Aluminum extrusions shall be produced from quality controlled billets meeting AA-6063-T5.
 - a. Exposed Surfaces shall be free of scratches and other serious blemishes.
 - b. Extrusions shall be given a caustic etch followed by an anodic oxide treatment and then sealed with an organic coating applied with an electrodeposition process.
 - c. The anodized coating shall comply with all of the requirements of AAMA 612-02: Voluntary Specifications, Performance Requirements and Test Procedures for Combined Coatings of Anodic Oxide and Transparent Organic Coatings on Architectural Aluminum. Testing shall demonstrate the ability of the finish to resist damage from mortar, salt spray, and chemicals commonly found on construction sites, and to resist the loss of color and gloss.
 - d. Overall coating thickness for finishes shall be a minimum of 0.7 mils.
- C. High Performance Organic Coating Finish:
 1. Type Factory applied two-coat 70% Kynar resin by Arkema or 70% Hylar resin by Solvay Solexis, fluoropolymer based coating system, Polyvinylidene Fluoride (PVF-2), applied in accordance with YKK AP procedures and meeting AAMA 2605 specifications.

2. Colors: Selected by Architect from the following:
 - a. Standard coating color charts.
 - b. Custom coating color charts.
 - c. Color Name and Number:
- D. Finishes Testing:
 1. Apply 0.5% solution NaOH, sodium hydroxide, to small area of finished sample area; leave in place for sixty minutes; lightly wipe off NaOH; Do not clean area further.
 2. Submit samples with test area noted on each sample.

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS / RECOMMENDATIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, installation instructions, and product carton instructions. The latest installation manual is available at www.ykkap.com.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions.

3.03 PREPARATION

- A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.
 1. Aluminum Surface Protection: Protect aluminum surfaces from contact with lime, mortar, cement, acids, and other harmful contaminants.

3.04 INSTALLATION

- A. General: Install manufacturer's system in accordance with shop drawings, and within specified tolerances.
 1. Protect aluminum members in contact with masonry, steel, concrete, or dissimilar materials using nylon pads or bituminous coating.
 2. Shim and brace aluminum system before anchoring to structure.
 3. Verify window system allows water entering system to be collected in gutters and wept to exterior. Verify weep holes are open, and metal joints are sealed in accordance with manufacturers installation instructions.
 4. Locate expansion mullions where indicated on reviewed shop drawings.
 5. Seal metal to metal window system joints using sealant recommended by system manufacturer.

3.05 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Upon request, provide manufacturer's field service consisting of site visit for inspection of product installation in accordance with manufacturer's instructions.
- B. Field Test: Conduct field test to determine watertightness of window system. Conduct test in accordance with AAMA 502-11.

3.06 ADJUSTING AND CLEANING

- A. Adjusting: Adjust operating items for operation in accordance with manufacturer's recommendations.
- B. Cleaning: The General Contractor shall clean installed products in accordance with manufacturer's instructions prior to owner's acceptance, and remove construction debris from project site. Legally dispose of debris.
- C. Protection: The General Contractor shall protect the installed product's finish surfaces from damage during construction.

END OF SECTION

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This document supersedes all previous versions.

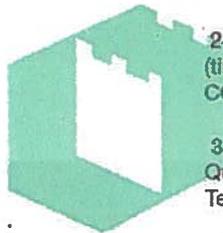
**ARCHITECTURAL GUIDE SPECIFICATION
SECTION 08 81 00 GLASS GLAZING**

Note to Specifiers:

The specifications below are suggested as desirable inclusions in glass and glazing specifications (section 08 81 00), but are not intended to be complete. An appropriate and qualified Architect or Engineer must verify suitability of a particular product for use in a particular application as well as review final specifications. Oldcastle BuildingEnvelope® assumes no responsibility or liability for the information included or not included in these specifications.

PRODUCTS

Approved Glass Fabricator Oldcastle BuildingEnvelope®
Glass Description FLOAT GLASS



1. USA - Annealed float glass shall comply with ASTM C1036, Type I, Class 1 (clear), Class 2 (tinted), Quality-Q3. Canada - Annealed float glass shall comply with CAN/CGSB-12.3-M, Quality-Glazing.
2. USA- Heat-strengthened float glass shall comply with ASTM C1048, Type I, Class 1 (clear), Class 2 (tinted), Quality Q3, Kind HS. Canada - Heat-strengthened float glass shall comply with CAN/CGSB-12.9-M, Type 2-Heat-Strengthened Glass, Class A-Float Glass.
3. USA - Tempered float glass shall comply with ASTM C1048, Type I, Class 1 (clear), Class 2 (tinted), Quality Q3, Kind FT. Canada - Tempered float glass shall comply with CAN/CGSB-12.1-M, Type 2-Tempered Glass, Class B-Float Glass.
4. USA - Laminated glass to comply with ASTM C1172. Canada - Laminated glass to comply with CAN/CGSB-12.1-M, Type 1-Laminated Glass, Class B-Float Glass.
5. Glass shall be annealed, heat-strengthened or tempered as required by codes, or as required to meet thermal stress and wind loads.

Sealed Insulating Glass (IG) Vision Glass (Vertical) GENERAL

1. IG units consist of glass lites separated by a dehydrated airspace that is hermetically dual sealed with a primary seal of polyisobutylene (PIB) and a secondary seal of silicone or an organic sealant depending on the application.
2. USA - Insulating glass units are certified through the Insulating Glass Certification Council (IGCC) to ASTM E2190. Canada - Insulating Glass units are certified through the Insulating Glass Manufacturers Alliance (IGMA) to either the IGMAC certification program to CAN/CGSB-12.8, or through the IGMA program to ASTM E2190.

IG VISION UNIT PERFORMANCE CHARACTERISTICS

1. Exterior Lite
1/4" PPG Solarban® 60 on Solexia® Low-E #2
2. Interior Lite
1/4" Clear
3. 1/2" Cavity
1/2 inch (90% Argon Fill)

4. Performance Characteristics

Thermal		Optical	
Winter U-factor/U-value:	0.24	Visible Light Transmittance:	61%
Summer U-factor/U-value:	0.22	Visible Light Reflectance (outside):	9%
Solar Heat Gain Coefficient:	0.31	Visible Light Reflectance (inside):	12%
Shading Coefficient:	0.36	Total Solar Transmittance:	25%
Relative Heat Gain (Btu/hr-ft²):	75	Total Solar Reflectance (outside):	10%
Light to Solar Gain:	1.97	Ultraviolet Transmittance:	10%

Contact Oldcastle BuildingEnvelope® at 866-Oldcastle (653-2278) for samples or additional information concerning performance, strength, deflection, thermal stress or application guidelines. GlasSelect® calculates center of glass performance data using the Lawrence Berkeley National Laboratory (LBNL) Window 7.4 program (version 7.4.8.0) with Environmental Conditions set at NFRC 100-2010. Gas Library ID#1 (Air) is used for Insulating Glass units with air. Gas Library ID#9 (10% Air/90% Argon) is used for Insulating Glass units with argon. Monolithic glass data is from the following sources: 1. LBNL International Glazing Database (IGDB) version 53.0; 2. Vendor supplied spectral data files. Laminated glass data is from the following sources: 1. LBNL International Glazing Database (IGDB) version 53.0; 2. LBNL Optics 6 (version 6.0 Maintenance Pack 1); 3. Vendor supplied spectral data files; 4. Vendor supplied data. 5. Based on vendor testing, clear acid-etched glass performance data is estimated using regular clear glass of equivalent thickness. Thermal values are in Imperial units.