

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



CITY OF PORTLAND BUILDING PERMIT



This is to certify that

FOLAN MARY A /CUSTOM FLOAT SERVICES

Located at

153 STEVENS AVE

PERMIT ID: 2012-65656

CBL: 178 E003001

has permission to **Installing temporary ADA Handicapped Ramp**

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be procured prior to occupancy.

Fire Prevention Officer


Code Enforcement Officer / Plan Reviewer

12/21/12

**THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY
THERE IS A PENALTY FOR REMOVING THIS CARD**

BUILDING PERMIT INSPECTION PROCEDURES
Please call 874-8703 (ONLY)
or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

REQUIRED INSPECTIONS:

Footings/Setbacks

Close-in/Elec./Plmb./Framing

Final Inspection

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.

City of Portland, Maine - Building or Use Permit

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 201265656	Date Applied For: 12/19/2012	CBL: 178 E003001
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Location of Construction: 153 STEVENS AVE	Owner Name: FOLAN MARY A	Owner Address: 153 STEVENS AVE	Phone:
Business Name:	Contractor Name: CUSTOM FLOAT SERVICES	Contractor Address: 36 UNION WHARF Portland	Phone (207) 772-3796
Lessee/Buyer's Name	Phone:	Permit Type: Additions - Dwellings	

Proposed Use: Single Family	Proposed Project Description: Installing temporary ADA Handicapped Ramp **EMERGENCY ISSUE**
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Dept: Zoning **Status:** Approved **Reviewer:** Marge Schmuckal **Approval Date:** 12/19/2012
Note: **Ok to Issue:**

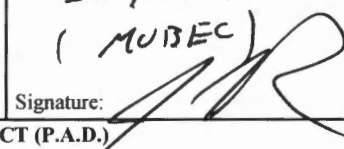
Dept: Building **Status:** Approved w/Conditions **Reviewer:** Jon Rioux **Approval Date:** 12/21/2012
Note: **Ok to Issue:**

- 1) Separate permits are required for any electrical: plumbing, sprinkler, fire alarm, HVAC systems, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.
- 2) Ramps shall comply with Section R311.8, see attachment.
- 3) Note: Dwight Glidden from Alpha One stated that the ramp will be "free standing" unattached to the primary structure.


City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 2012-65656	Issue Date:	CBL: 178 E003001
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Location of Construction: 153 STEVENS AVE	Owner Name: FOLAN MARY A	Owner Address: 153 STEVENS AVE	Phone:
Business Name:	Contractor Name: CUSTOM FLOAT SERVICES	Contractor Address: 36 UNION WHARF Portland ME 04101	Phone: (207) 772-3796
Lessee/Buyer's Name	Phone:	Permit Type: Additions - Dwellings	Zone: R3
Past Use: Single Family	Proposed Use: Single Family	Permit Fee: \$40.00	Cost of Work: \$2,000.00
Proposed Project Description: Installing temporary ADA Handicapped Ramp **EMERGENCY ISSUE**		FIRE DEPT: <input type="checkbox"/> Approved <input type="checkbox"/> Denied <input checked="" type="checkbox"/> N/A	INSPECTION: Use Group: R3 Type: SB IRC, 2009 (MUBEC)
		Signature:	Signature: 
PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)			
Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied			
		Signature:	Date:

Permit Taken By: bjs	Date Applied For: 12/19/2012	Zoning Approval
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<ol style="list-style-type: none"> This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules. Building permits do not include plumbing, septic or electrical work. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work.. 	Special Zone or Reviews <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input checked="" type="checkbox"/> Date: <u>12/19/12</u>	Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date:	Historic Preservation <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: 
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CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE



General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: <u>153 Stevens Avenue</u>		
Total Square Footage of Proposed Structure/Area <u>215</u>		Square Footage of Lot <u>10333</u>
Tax Assessor's Chart, Block & Lot Chart# Block# Lot# <u>178 E003 001</u>	Applicant * <u>must</u> be owner, Lessee or Buyer* Name <u>Mary A FOLAN</u> Address <u>153 Stevens Ave</u> City, State & Zip <u>Portland, ME 04102</u>	Telephone: <u>774-5539</u>
Lessee/DBA (If Applicable) RECEIVED DEC 19 2012 Dept. of Building Inspections City of Portland Maine	Owner (if different from Applicant) Name _____ Address _____ City, State & Zip _____	Cost Of Work: \$ <u>1885⁰⁰</u> C of O Fee: \$ _____ Total Fee: \$ <u>40.00</u>
Current legal use (i.e. single family) <u>SINGLE FAMILY</u> If vacant, what was the previous use? _____ Proposed Specific use: <u>CRITICAL ACCESS RAMP</u> Is property part of a subdivision? _____ If yes, please name _____ Project description: <u>Temporary ADA HANDICAP RAMP</u> <u>5x43</u>		
Contractor's name: <u>Custom Float Services</u> Address: <u>36 Union Wharf</u> City, State & Zip <u>Portland, ME 04101</u> Telephone: <u>772-3796</u> Who should we contact when the permit is ready: <u>Candace Scripture</u> Telephone: <u>653-6059</u> Mailing address: _____		

Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature: Candace Scripture Date: 12/14/12

This is not a permit; you may not commence ANY work until the permit is issue

alphaOne*Powering Independent Living***Critical Access Ramp Program
Installation Form**

Name Mary A. FOLAN **Date:** 12/03/12
Address: 153 Stevens Avenue **Male**
 Portland, Maine 04102 **Female**
County: Cumberland
Phone: (207) 774-5539; 650-2778 (daughter Tricia)
E-mail: NA

Approximate Height To Threshold: 38 inches**Length Of Ramp Suggested:** At least 38 feet of lineal slope**Proposed Configuration:** SEE ATTACHED CONTINUATION SHEET**Components Suggested:** SEE ATTACHED CONTINUATION SHEET**Description of Site & Conditions:** Level ground; paved driveway**Comments:** Ms. FOLAN does not use her garage and needs space for only one car in the driveway. The ramp can extend down the driveway and partially obstruct access to the garage.

The best location for the ramp is at the rear deck accessed by a side door on the other side of the house. This door is 35 inches wide and from the outside pushes open from left to right. There is no screen door. The deck is in good condition. There is a 3 ½ inch "lip" from the door threshold to the deck. The deck should be leveled with the door and then slope down towards the back yard. It is 38 inches from the deck to the paved walkway. After crossing the deck behind the house the ramp should begin over the stairs and extend 13 feet, beyond the side of the house, to a small landing on the driveway. From there the ramp should turn to the front of the house, sloping down 25 feet to end on the pavement. The driveway is level. There must be clearance along the side of the house to access the pipes to the oil tank, and the electric meter.

Funding is from Portland. The home is not located on a floodplain and no tie downs are required.

ILS: Dwight E. Glidden, Independent Living Assistant**Date Submitted:** December 12, 2012



Powering Independent Living

Grant Agreement

This Grant Agreement is between Alpha One with its principal office at 127 Main Street, South Portland, Maine 04106 and Mary A. Folan..... whose address is 153 Stevens Avenue, Portland, Maine
(the "Grantee") 04102

If I am approved for the Critical Access Ramp program, I understand that I will be participating in a wheelchair ramp program in which I will receive one moveable ramp built in accordance with the Minnesota Ramp Project design. I acknowledge and agree to the following:

1. This program provides a ramp only. The intent of this program is to help provide critical access from a doorway to the ground. It does not include other access features such as pathways to and from the ramp or any other access features inside the home.
- ~~2.~~ If I am renting, I am current with my rent and am in good standing with my landlord.
- ~~3.~~ If I am renting, my landlord acknowledges my ramp installation plans (see Landlord's Acknowledgement).
4. If I no longer have need of the ramp, I will contact Alpha One so that they can reclaim it to serve someone else with a disability.
5. If I abandon the ramp, Alpha One can reclaim it to serve someone else with a disability.
- ~~6.~~ If I rent, the landlord understands that the ramp should be returned to Alpha One if it is abandoned.
7. Once the ramp is installed, I understand that I am responsible for the proper care and maintenance of the ramp and that I am responsible for all liability pertaining to it. Alpha One strongly recommends that the grantee acquire adequate renter or homeowner liability insurance coverage for the ramp.
8. The grantee will help provide builders access to work areas and will provide sufficient space for work vehicles, equipment, and space for managing material and debris.
9. The Critical Access Program is limited to one ramp per person.
10. This program does not relocate ramps, only provides the initial installation service. Moving a ramp to subsequent locations will be the responsibility of the consumer. Alpha One can assist with exploring resources to relocate the ramp.

"Tip Sheet for New Ramps" hand delivered



Powering Independent Living

Grant Agreement

- 11. Upon any future removal of the ramp, I understand that I am responsible for addressing any site issues that may be present after removal. These would include refurbishing the porch including rails, steps, lawn repairs, yard fill, shrubbery, and all other related changes that were a result of accommodating the installation of the ramp.
- 12. The installation of the ramp is based on an assumed structural soundness of the property. Neither Alpha One nor the contractor will be responsible for remedying pre-existing conditions that may impact the installation, apparent or hidden, such as termite damage, water damage, code violations, or other conditions. If such conditions are discovered during the installation of the ramp the contractor will notify Alpha One and the property owner before proceeding with the installation.

Alpha One strongly advises that you acquire adequate renter or homeowner liability insurance coverage for your ramp.

Patricia Folan-Densmore
Grantee Name (Please Print)

Patricia Folan-Densmore
Grantee Signature

December 3, 2012
Date

Steph B. Glidden
Alpha One Representative (Please Print)

Steph B. Glidden
Alpha One Representative Signature

December 3, 2012
Date

Critical Access Ramp Program Installation for mi

CONTINUATION SHEET PAGE 2

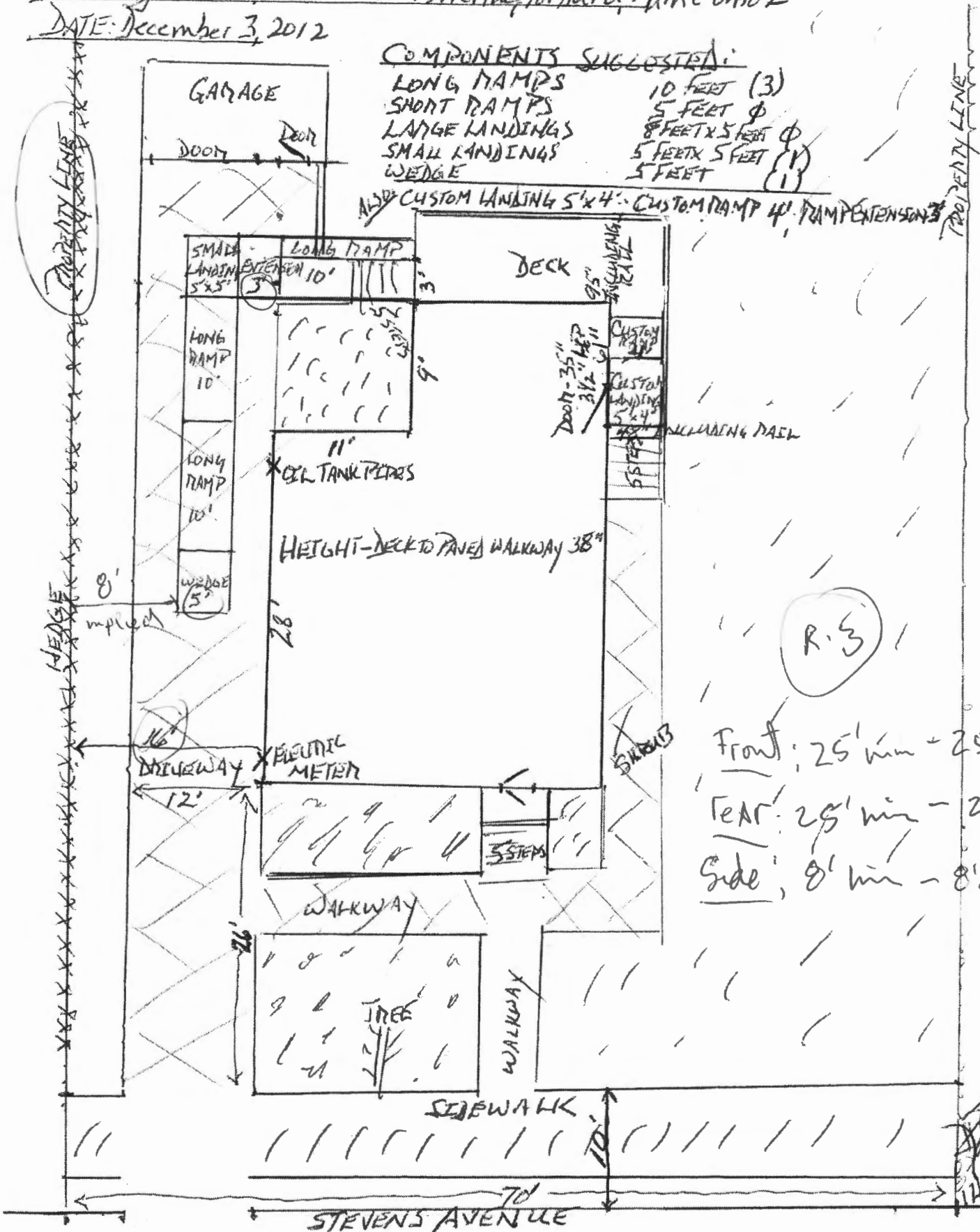
RE: Mary A. FOLAN, 153 Stevens Avenue, Portland, Maine 04102

DATE: December 3, 2012

COMPONENTS SUGGESTED:

- LONG RAMP 10 FEET (3)
- SHORT RAMP 5 FEET (1)
- LARGE LANDINGS 8 FEET X 5 FEET (1)
- SMALL LANDINGS 5 FEET X 5 FEET (1)
- WEDGE 5 FEET (1)

ALSO CUSTOM LANDING 5' X 4' - CUSTOM RAMP 4' - RAMP EXTENSION 3'



R.S.

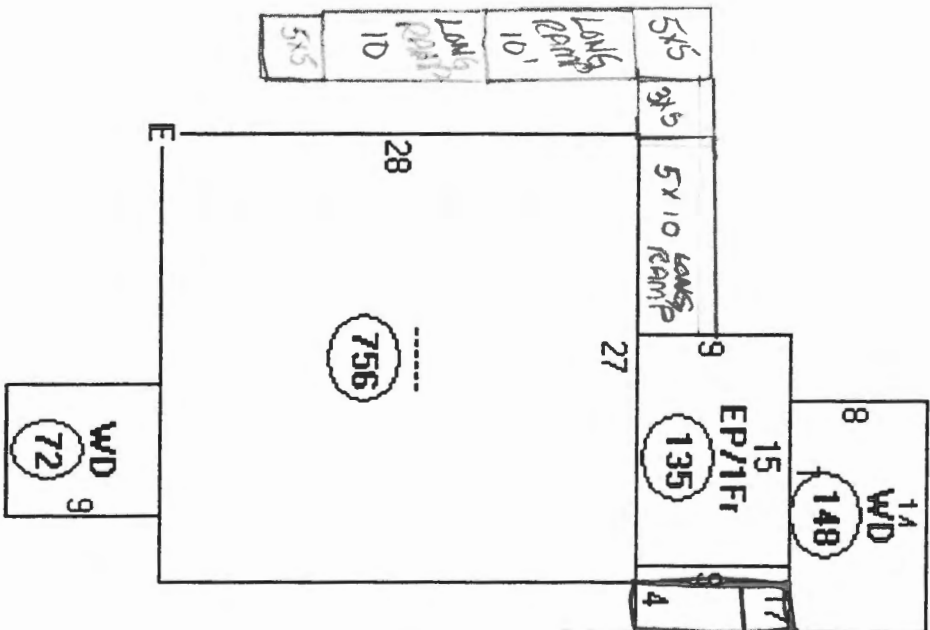
Front: 25' min - 25' show
 Rear: 25' min - 25' show
 Side: 8' min - 8' show

12/03/2012

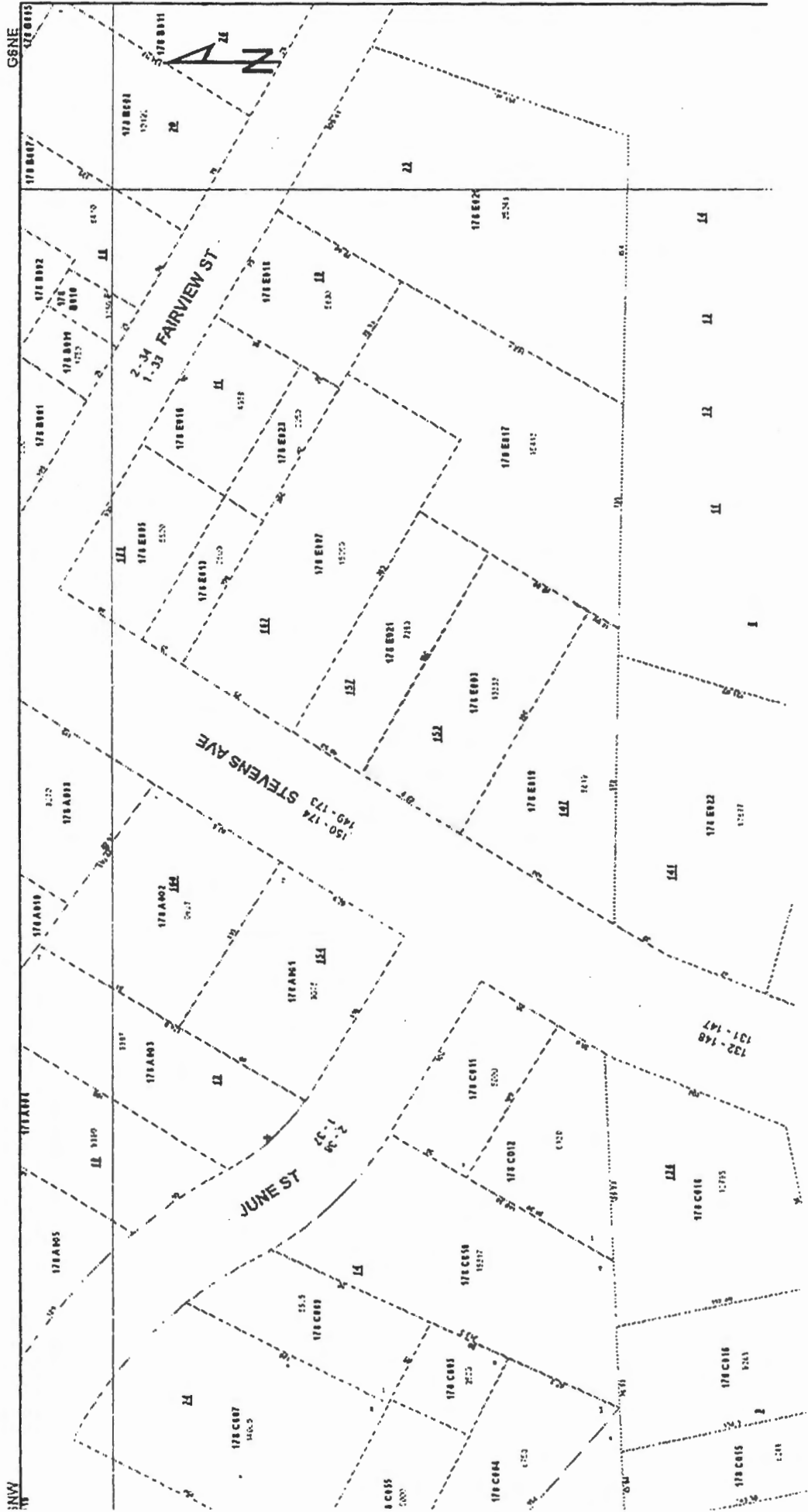


Copyright 2011 Esri. All rights reserved. Wed Dec 19 2012 04:48:08 PM.

COMPONENT DETAIL



5x2' landing on top of deck
 5x4' landing on top of deck existing deck



Assessor's Office | 389 Congress Street | Portland, Maine 04101 | Room 115 | (207) 874-8486

City Home Departments City Council E-Services Calendar Jobs

This page contains a detailed description of the Parcel ID you selected. Press the **New Search** button at the bottom of the screen to submit a new query.

Current Owner Information:

Services

- Applications
- Doing Business
- Maps
- Tax Relief
- Tax Roll
- Q & A

CBL	178 E003001
Land Use Type	SINGLE FAMILY
Property Location	153 STEVENS AVE
Owner Information	FOLAN MARY A 153 STEVENS AVE PORTLAND ME 04102
Book and Page	7249/236
Legal Description	178-E-3 STEVENS AVE 153
Acres	10333 SF 0.2372

Current Assessed Valuation:

TAX ACCT NO.	25110	OWNER OF RECORD AS OF APRIL 2012
		FOLAN MARY A
LAND VALUE	\$92,800.00	153 STEVENS AVE
BUILDING VALUE	\$128,200.00	PORTLAND ME 04102
HOMESTEAD EXEMPTION	(\$10,000.00)	
NET TAXABLE - REAL ESTATE	\$211,000.00	
TAX AMOUNT	\$3,971.02	

[browse city services a-z](#)

[browse facts and links a-z](#)



Best viewed at 800x600, with Internet Explorer

Any information concerning tax payments should be directed to the Treasury office at 874-8490 or [e-mailed](#).

Building Information:

Building 1	
Year Built	1920
Style/Structure Type	OLD STYLE
# Stories	2
# Units	1
Bedrooms	4
Full Baths	1
Total Rooms	7
Attic	UNFIN
Basement	FULL
Square Feet	1647
View Sketch	View Map View Picture



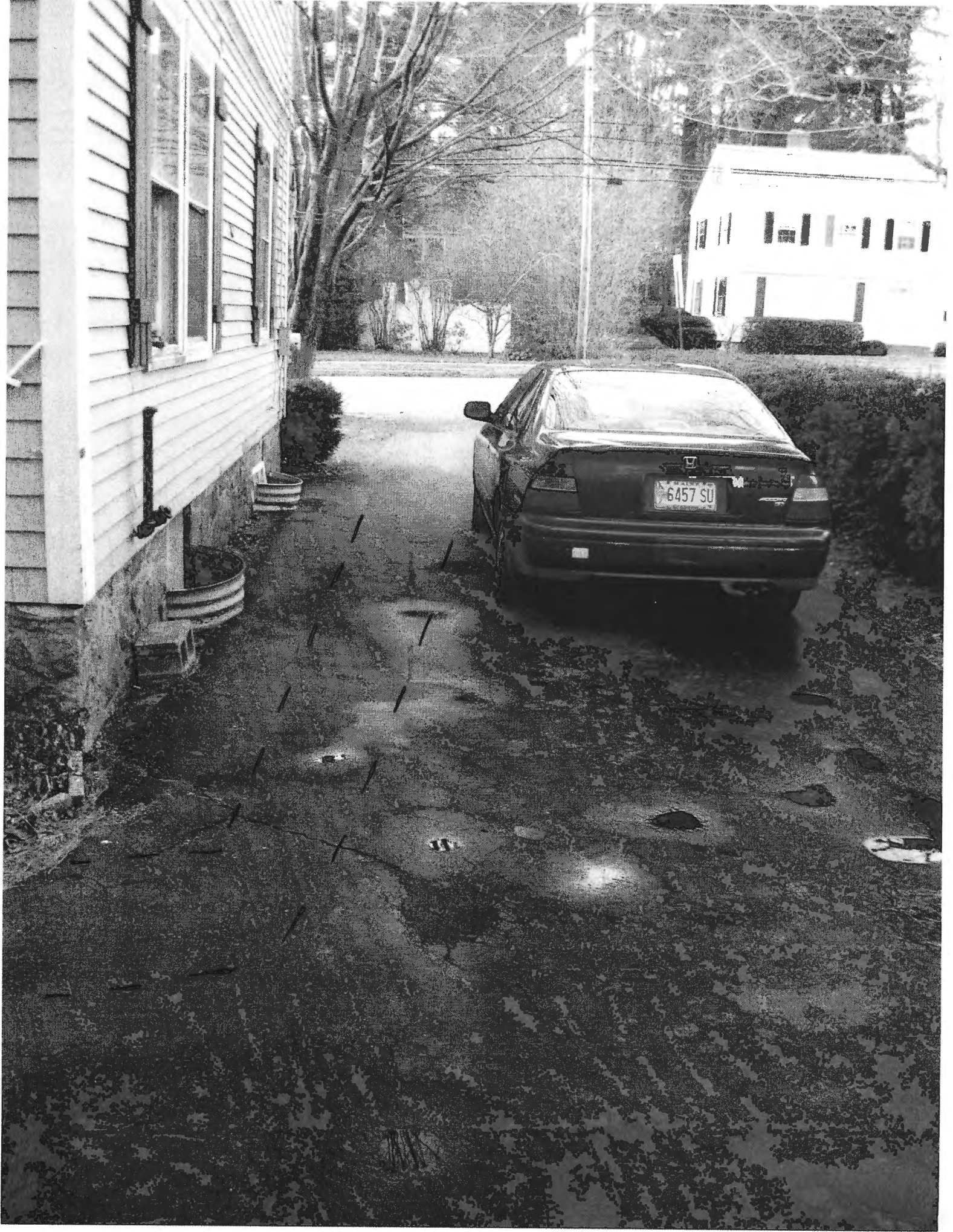
Outbuildings/Yard Improvements:

Building 1	
Year Built	1930
Structure	GARAGE-WD/CB
Size	19X20
Units	1
Grade	C
Condition	F

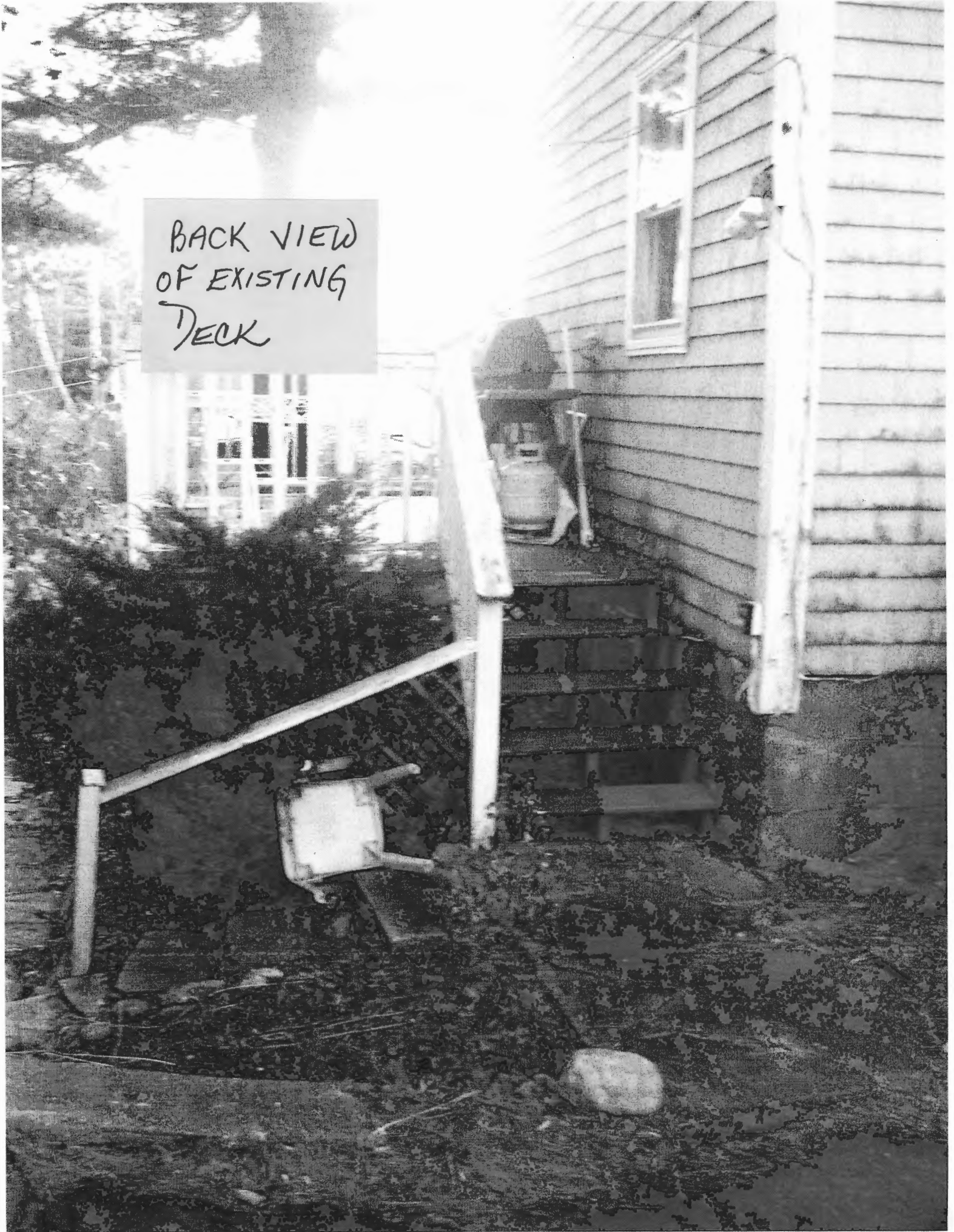
Sales Information:

Sale Date	Type	Price	Book/Page
6/27/1986	LAND + BUILDING	\$0.00	7249/236

[New Search!](#)



BACK VIEW
OF EXISTING
DECK







Custom Float Services, Inc.

December 19, 2012

City of Portland
Inspections Division
389 Congress Street, Room 315
Portland, Me. 04101-3509

RECEIVED
DEC 19 2012
Dept. of Building Inspections
City of Portland Maine

RE: 178 E 003 001
153 Stevens Avenue Critical Access Ramp Permit

To Whom It May Concern:

Per my conversation with Administrative Assistant, Lannie, on Tuesday December 18th, we hope to clarify the scope of this ramp project and address questions presented to us.

Please find attached a detailed material list for each component. We do not use cement footings; the posts rest on 4 x 4 pressure treated pads.

We are not replacing existing stairs or doors; the ramp will be built over existing deck and stairs. A small "wedge" will be installed at the existing door to provide a smooth transition to ramp.

The outer edge of the ramp will be 4 feet from the edge of the driveway and 8 feet from the side property line.

Please find additional details regarding our slope/height ratios used for the Critical Access Program. I have also attached photos of two ramps we have installed within the past month in the City of Portland.

As I shared with Ms. Dobson, the City of Portland has terminated funding the Alpha One Critical Access Program. There will be no funding effective 12/31/12. We hope to meet this deadline and hope to receive approval before 12/31/12.

We thank you for your assistance.

Candace Scripture
Custom Float Services
653-6059 (cell)

38 Union Wharf • P.O. Box 7302 • Portland, Maine 04112
Tel 207-772-3796 • 1-888-844-9666 • Fax 207-347-7283
www.customfloat.com • info@customfloat.com

Critical Access Ramp Program Installation for WI

CONTINUATION SHEET, PAGE 2

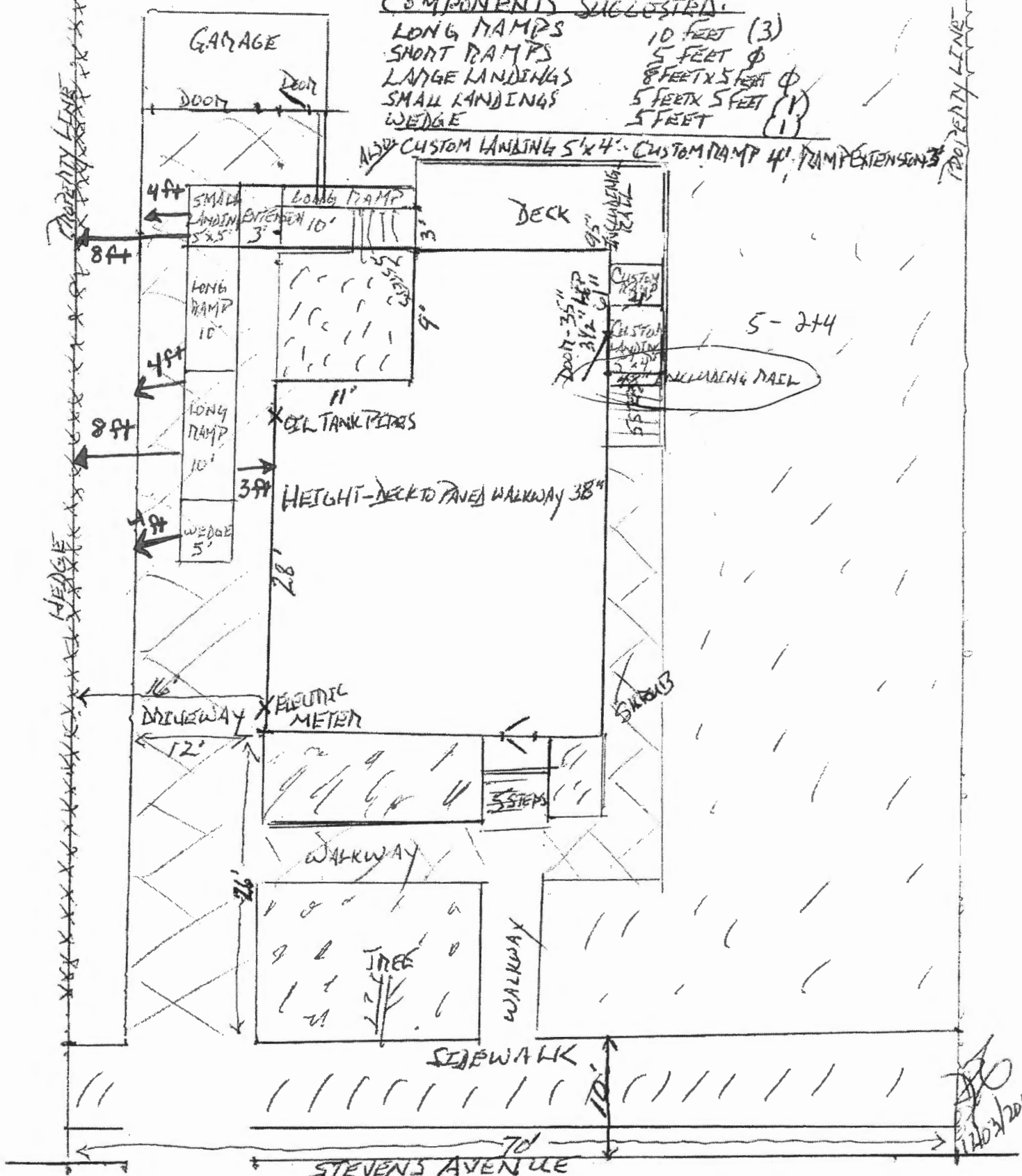
RE: MARYA FOLAN, 153 STEVENS AVENUE, PORTLAND, MAINE 04102

DATE: December 3, 2012

COMPONENTS SUGGESTED:

- LONG RAMPS 10 FEET (3)
- SHORT RAMPS 5 FEET (1)
- LARGE LANDINGS 8 FEET X 5 FEET (1)
- SMALL LANDINGS 5 FEET X 5 FEET (1)
- WEDGE 5 FEET (1)

ADD CUSTOM LANDING 5' X 4' - CUSTOM RAMP 4' - RAMP EXTENSION 3'



Handwritten signature and date: 12/3/2012

153 stevens avenue



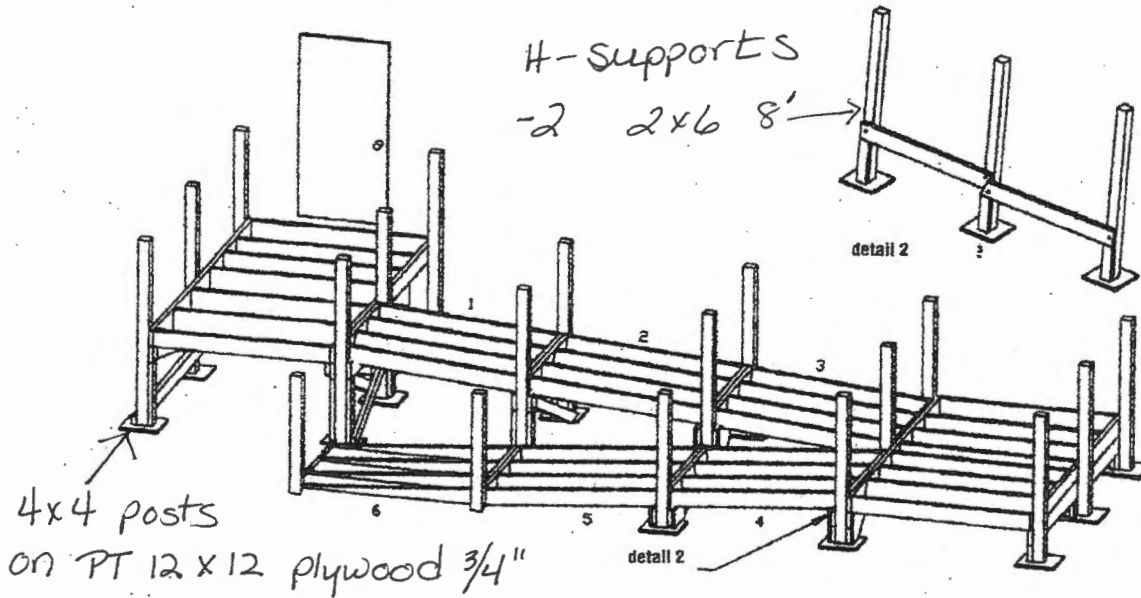
▼ Attach string line from top of level landing to point where ramp will end.

▼ Bolt Module #4 to landing with $3/8" \times 4"$ carriage bolts. Match module slope to string.

↑ FASTENERS

▼ Attach cross support for Module #4 as shown in detail 2.

▼ Cross supports for the junction of Modules #4 and #5 will be attached to the 4x4 at the junction of Modules #2 and #3.



Note: The same options for transition to the ground are used for this design. Guardrail/handrail options are also the same except the inside guardrail on the lower portion of the ramp will be attached to the center 4x4's. Between modules 3 & 4 some 2x2x30" spindles will need to be screwed in place from inside the ramp.

COMPONENT
MODULES
MATERIALS

- () Large Landing 8x5:
 - 4 2x6 10'
 - 2 2x6 8'
 - 10 5/4 x 6 8' Decking
 - 10 2x6 joist hangers

- () Long Ramp 5x10:
 - 4 2x6 10'
 - 1 2x6 8'
 - 5 5/4 x 6 14' Decking

- () Small Landing 5x5:
 - 4 2x6 10'
 - 5 5/4 x 6 10' Decking
 - 6 2x6 joist hanger

- () Short Ramp 5x5:
 - 2 2x6 10'
 - 1 2x6 8'
 - 3 5/4 x 6 14' decking

- () Wedge 5x5:
 - 1 2x6 10'
 - 1 2x4 8'
 - 3 5/4 x 6 14' Decking

The logo for Alpha One is a white rounded rectangle with a black border. Inside, the word "alpha" is in a lowercase, sans-serif font, followed by a stylized "O" that contains a white circle with a black outline, and then the word "ne" in the same lowercase, sans-serif font.

alpha One

The Critical Access Ramp Program

The critical Access ramp program is a project provided through funding from Maine's Office of Community Development, Maine State Housing, and HUD. It is designed to enable people to obtain a well-built wheelchair ramp for their home quickly and efficiently. Families and individuals with low to moderate incomes who are not able to enter or leave their home because of an inability to use stairs would have an opportunity to obtain a wheelchair ramp within approximately 2-3 weeks anywhere in Maine. The program will address several critical obstacles faced by people in the past: Getting a ramp quickly, getting a functioning and safe ramp that meets applicable codes, requirements, and recommendations, and getting a high quality ramp that can go with a person when they move.

A comprehensive independent living evaluation will be done at a person's home by Alpha One and will include a site evaluation for a ramp. Modular ramp components will be pre-fabricated out of pressure treated wood and stockpiled in ready-to-go inventories. Trained, professional installers would then pick up, deliver, and build the modules into a ramp quickly and efficiently. People would not have to go into nursing homes, miss essential medical treatments, or remain trapped in their homes isolated from family and community. The components can also be disassembled and re-built if the consumer moves to a new location – people would not have to seek funds to build a new ramp each time they moved. This program will also be available to families and individuals who rent and will not be limited to homeowners only (home ownership is a requirement for most grant and low-interest loan programs).

The problem of obtaining ramps has been a long term barrier for people with disabilities and promises to grow more urgent in the years to come as we all age and more and more of us need ramps. This program is a giant step toward meeting that need in a comprehensive and effective way.

Candace Scripture

From: Dwight Glidden [DGlidden@alphaonenow.org]
Sent: Friday, July 27, 2012 1:49 PM
To: Scott Dyer; Roberta Gagne; Candace Scripture
Cc: Brad Strause; Bethany Mogan
Subject: Modifications to Critical Access Ramp in Wells
Attachments: MUBEC 09IRC - handrails guards07262012.pdf; ATT00001.txt

This follows my conversation on Wednesday with Nick regarding the ramp installed for Julie HARRINGTON in Wells. The Code Enforcement Officer had indicated the ramp required modification of the “handrails” to meet code.

We asked Jill Johanning, Maine Licensed Architect at our sister agency, “Access Design” to review the applicable codes and advise us if the ramp needed to be modified.

Today she clarified the relevant provisions of the Maine Uniform Building and Environment Code (MUBEC) codified from the 2009 International Residential Code (IRC). MUBEC became the statewide building code in 2010, but smaller communities were later exempted.

MUBEC does not require “handrails” for ramps that are built to our design using a 1:12 slope. The rails that are installed are not “handrails” as defined by the MUBEC, but instead are “guards”.

Jill also advised that the CEO is concerned about how far the “guards” extend beyond the last support post. The CEO at Wells wants to shorten them, but the “guards” are below the height requirement and doing so will make the ramp less safe. Jill is researching this further and will advise if a design change is necessary.

Jill spoke with the Code Enforcement Officer at Wells and advised us that she understands the situation is resolved and that no further action is required.

For more detail, attached is a copy of the relevant sections of the IRC, and here is my review:

Section R311.7 regulates stairways, and has a provision for handrails.

The IRC requirements for ramps is different, and found in Section R311.8. It states:

- “Ramps shall have a maximum slope of 1 unit vertical in 12 units horizontal...” with an exception “where it is technically infeasible to comply because of site constraints, ramps may have a maximum slope of one unit vertical in eight horizontal...”. (Section R311.8.1);
- “Handrails shall be provided on at least one side of all ramps exceeding a slope of one unit vertical in 12 units horizontal... Where a ramp exceeds a slope of one unit vertical in 12 units horizontal... the code requires that a handrail be installed on at least one side to assist ramp users. Therefore, ramps would require handrails when the exception to Section R311.8.1 was utilized. This provision differs from that of the IBC, where a slope of one unit vertical in 20 units horizontal...and a ramp rise of 6 inches ... establishes the limit. (underscoring added). A designer might choose to provide handrails, edge protection and / or guards on a ramp as a safety concern, even if it is not

literally a requirement. If the purpose of the ramp is for wheelchair access, ICC A117.1 would be a good resource for information.” (Section 311.8.3)

- “*Guards* shall be located along open sided walking surfaces, including stairs, ramps, and landings, that are located more than 30 inches ... measured vertically to the floor or *grade* below at any point within 36 inches ... horizontally to the edge of the open side.... The guard provisions of the code address the issue of protecting occupants from falling from any type of elevated walking surface...” (Section R312.1).

Essentially a ramp does not require a “handrail” unless it exceeds the 1:12 slope that we use in our design. The ramp does require a “guard”, which is defined and regulated under a different section. The design of our ramp includes “guards” on each exposed side, but not “handrails” as defined by the 2009 IRC (now adopted as MUBEC).

I called Nick this morning. He had already looked at the code himself and I believe we agree that our current design for ramps meets its’ provisions.

Dwight Glidden



Powering Independent Living

Alpha One – I L Assistant

800.640.7200 (tty/v)

www.alphaonenow.org

not be apparent in initial rough inspections. Treads with a tread depth of at least 11 inches (279 mm) are allowed with or without a nosing projection. The code does not require solid risers, but where the height of the stairway exceeds 30 inches (762 mm), either solid risers or another method to limit the opening between adjacent treads is needed. This is consistent with the guard provisions of Section R312, where a 4-inch (102 mm) sphere is used to determine compliance.

R311.7.4.4 Exterior wood/plastic composite stair treads. Wood/plastic composite stair treads shall comply with the provisions of Section R317.4.

- ❖ Stair treads made of wood/plastic composite materials must meet the requirements for installation, labeling and compliance with ASTM D 7032 stated in Section R317.4, in addition to the requirements of Section R311.7.4.

R311.7.5 Landings for stairways. There shall be a floor or landing at the top and bottom of each stairway.

A flight of stairs shall not have a vertical rise larger than 12 feet (3658 mm) between floor levels or landings. The width of each landing shall not be less than the width of the stairway served. Every landing shall have a minimum dimension of 36 inches (914 mm) measured in the direction of travel.

Exception: A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided a door does not swing over the stairs.

- ❖ A landing is required at the top and bottom of each stairway; however, a landing is not required at the top of interior stairways, including an enclosed garage, if a door does not swing over the stairway (see Commentary Figure R311.7.5).

The code states that flights must be interrupted by a landing or floor such that they do not have a total rise of more than 12 feet (3658 mm). As with the width of stairways in Section R311.7.1, the width of landings for

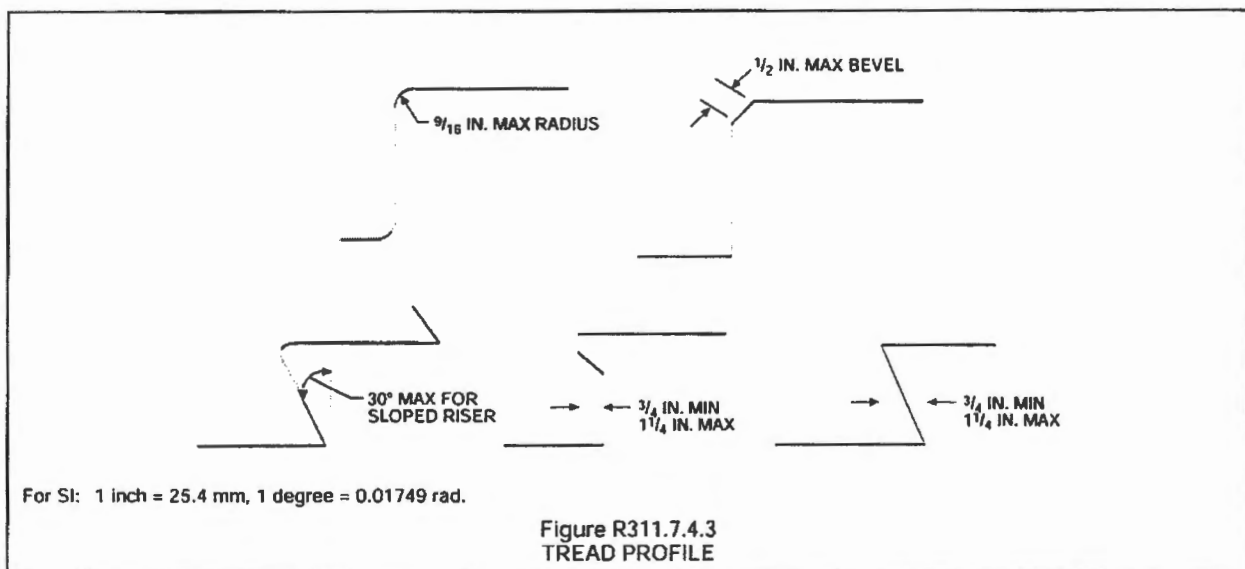
stairways is measured perpendicular to the direction of travel. It is not the intent to require specifically shaped landings. Landings may have curved or segmented periphery edges provided the width perpendicular to the direction of travel is not less than the stairway served. The minimum dimension of 36 inches (914 mm) in the direction of travel is intended to provide a minimum depth at the landing that cannot be overstepped in descent of a straight run stairway. It also serves to limit the minimum angle of turn of a landing to 90 degrees (1.57 rad) for at least 36 inches (914 mm).

R311.7.6 Stairway walking surface. The walking surface of treads and landings of stairways shall be sloped no steeper than one unit vertical in 48 inches horizontal (2-percent slope).

- ❖ The slope of the walking surfaces must provide drainage to stairs and landings that may be subjected to accumulation of liquids, such as water, rain or melting snow. The use of such a slope, called a "wash," is a common technique used on all stairs to allow the nosing to be at a lower elevation than the remainder of the tread surface. This technique of building the flight to a slightly shorter total rise than the actual condition slopes the entire flight forward and better accommodates the placement of the user's foot as it slides onto the tread. It also serves to prevent long-term wear and tear at the nosing limiting problematic maintenance and safety issues. This section provides a limit of the slope to maintain a safe walking surface. This requirement applies to all stairs and landings, both exterior and interior.

R311.7.7 Handrails. Handrails shall be provided on at least one side of each continuous run of treads or flight with four or more risers.

- ❖ The provision of handrails increases the level of safety when used by the occupants while ascending and de-



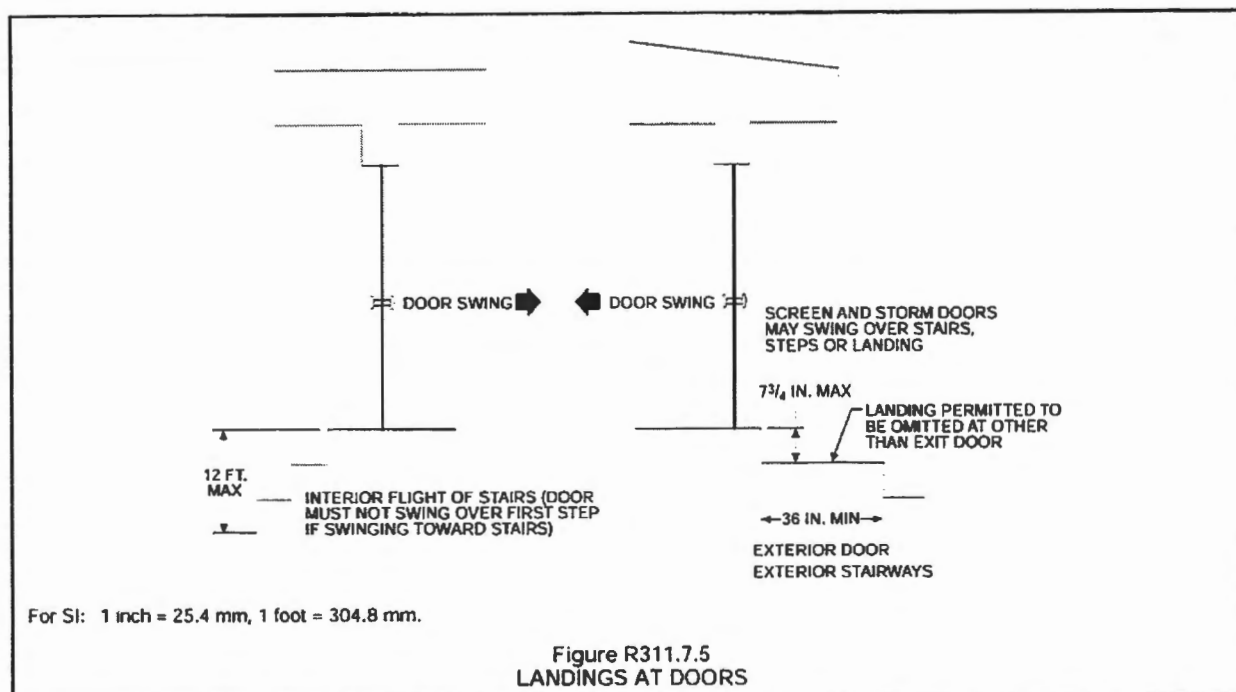


Figure R311.7.5
LANDINGS AT DOORS

scending stairs. Handrails are used for guidance, stabilization, pulling and to assist in arresting a fall. This section states that a handrail must be provided on at least one side of flights of four or more risers. Handrails may be provided on both sides and this eliminates choosing the best side to securely attach the handrail. Otherwise, the generally preferred location is for use by the right hand in descent when feasible. Sections R311.7.7.1 through R311.7.7.3 contain provisions essential to the height, continuity and grip size of the handrail provided.

R311.7.7.1 Height. Handrail height, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of ramp slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm).

Exceptions:

1. The use of a volute, turnout or starting easing shall be allowed over the lowest tread.
2. When handrail fittings or bendings are used to provide continuous transition between flights, the transition from handrail to guardrail, or used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed the maximum height.

❖ Where handrails are required, they must be installed at a height within the limits of at least 34 inches (864 mm) and not more than 38 inches (965 mm). This height is to be measured vertically to the top of the handrail from the plane adjoining the tread nosings of the flight or the surface of the ramp slope. Exception 1 allows common starting fittings used as terminals over the lowest tread to fall outside the required height

range. Exception 2 allows transition fittings to exceed the required height when used to provide a continuous rail at changes in the pitch of the rail within the stairway.

R311.7.7.2 Continuity. Handrails for stairways shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1 1/2 inch (38 mm) between the wall and the handrails.

Exceptions:

1. Handrails shall be permitted to be interrupted by a newel post at the turn.
2. The use of a volute, turnout, starting easing or starting newel shall be allowed over the lowest tread.

❖ This required handrail is to be continuous for the length of the flight. Where stairway flights are separated by landings or floor levels, handrails are not required (see Commentary Figure R311.7.7.2). The term "continuous" means not only that a single handrail must run from the top riser to the bottom riser, but it also indicates that users should be able to grasp the handrail and maintain their grasp without having to release the rail where it is supported. There is no requirement within the code for installation of a second handrail, but depending on the design and the placement of the required handrail, the requirement for a guard should be reviewed. The two exceptions to this section create situations where the graspable portion of the handrail may not be completely continuous from the top riser to the

bottom riser. These traditional situations are well known to the occupants and have not been shown to represent a safety hazard requiring their restriction.

The ends of handrails are to be returned to the wall or floor, or to end in some type of terminal that will not catch clothing or limbs. A clear space of at least 1½ inches (38 mm) is necessary between the handrail and any abutting wall. This distance will permit the fingers to slide past any adjacent rough surface that may cause injury, and it will provide an adequate distance so that the handrail may be quickly grabbed as an assist in the arrest of a fall.

R311.7.7.3 Grip-size. All required handrails shall be of one of the following types or provide equivalent graspability.

1. Type I. Handrails with a circular cross section shall have an outside diameter of at least 1¼ inches (32 mm) and not greater than 2 inches (51 mm). If the handrail is not circular, it shall have a perimeter dimension of at least 4 inches (102 mm) and not greater than 6¼ inches (160 mm) with a maximum cross section of dimension of 2¼ inches (57 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).
2. Type II. Handrails with a perimeter greater than 6¼ inches (160 mm) shall have a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of ¾ inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of at least 5/16 inch (8 mm) within 7/8 inch (22 mm) below the widest portion of the profile. This required depth shall continue for at least ¾ inch (10 mm) to a level that is not less than 1¾ inches (45 mm) below the tallest portion of the profile. The minimum width of the handrail above the recess shall be 1¼ inches (32 mm) to a maximum of 2¾ inches (70 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

❖ To be effective, a handrail must be easily grasped by the vast majority of users. If it is too large, it is difficult for a user to get a strong enough grip to provide the needed support. If it is too small the fingers wrap and

interfere with the thumb and palm and cannot close in a sufficient grip. For this reason Type I rails have minimum and maximum perimeters to restrict their use to the effective size range. Tests have proven it is beneficial to have graspable recesses for the fingers and opposing thumb such that wider and taller shapes can provide graspability comparable to rails within the Type I size range limitations. The Type II handrail code provides specifics to the location and depth of the recess as it relates to the variables of crown height and width to ensure the design is of a graspable shape. The mountings of smaller profiles can cause interference, as well. Care should be taken to minimize the interference caused by brackets and balusters supporting profiles that require the bottom mounting surface to be grasped.

The code specifies that the handrail be either a Type I or Type II, or be equivalently graspable. A Type I can be either circular or noncircular in shape. See Commentary Figure R311.7.7.3(1) for examples of Type I handrails.

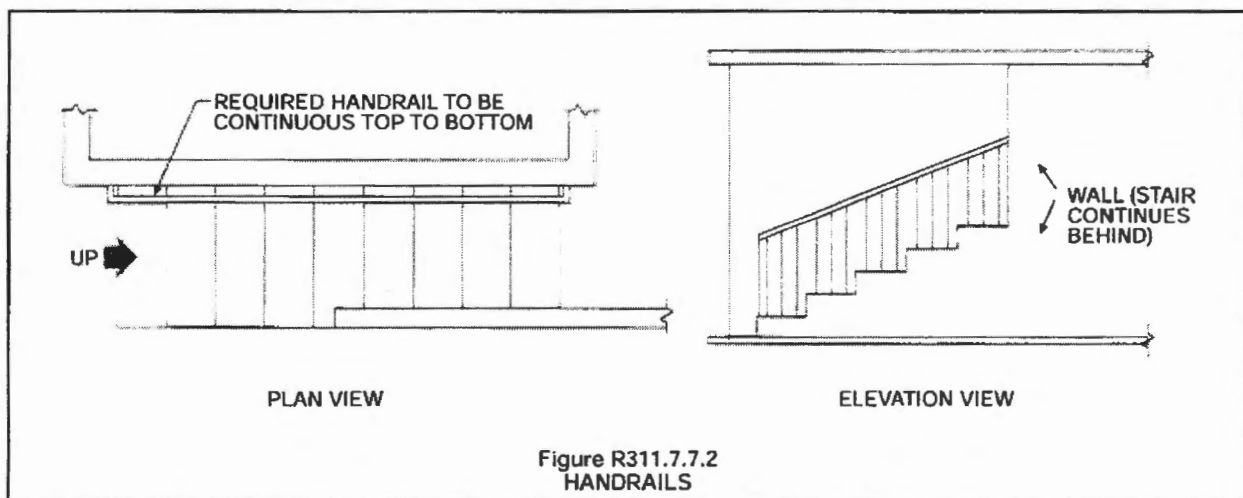
A Type II handrail has a perimeter larger than 6¼ inches (160 mm) with graspable finger recess area on both sides of the profile. See Commentary Figure R311.7.7.3(2) for the limitations of a Type II handrail.

R311.7.7.4 Exterior wood/plastic composite handrails. Wood/plastic composite handrails shall comply with the provisions of Section R317.4.

❖ Handrails made of wood/plastic composite materials must meet the requirements for installation, labeling and compliance with ASTM D 7032 stated in Section R317.4, in addition to the general requirements for handrails in this section.

R311.7.8 Illumination. All stairs shall be provided with illumination in accordance with Section R303.6.

❖ This section contains a reference to the illumination provisions of Section R303.6. The proper illumination of stairways is an important part of stairway safety. This lighting can assist users by making sure the level



changes do not occur in areas with shadows or in contrasting light, which would therefore make them difficult to see. See the commentary to Section R303.6 for additional information.

R311.7.9 Special stairways. Spiral stairways and bulkhead enclosure stairways shall comply with all requirements of Section R311.7 except as specified below.

❖ Sections R311.7.9.1 and R311.7.9.2 are exceptions to the general requirements for stairways as prescribed in Section R311.7.

R311.7.9.1 Spiral stairways. Spiral stairways are permitted, provided the minimum clear width at and below the handrail shall be 26 inches (660 mm) with each tread having a 7½-inch (190 mm) minimum tread depth at 12 inches (914 mm) from the narrower edge. All treads shall be identical, and the rise shall be no more than 9½ inches (241 mm). A minimum headroom of 6 feet 6 inches (1982 mm) shall be provided.

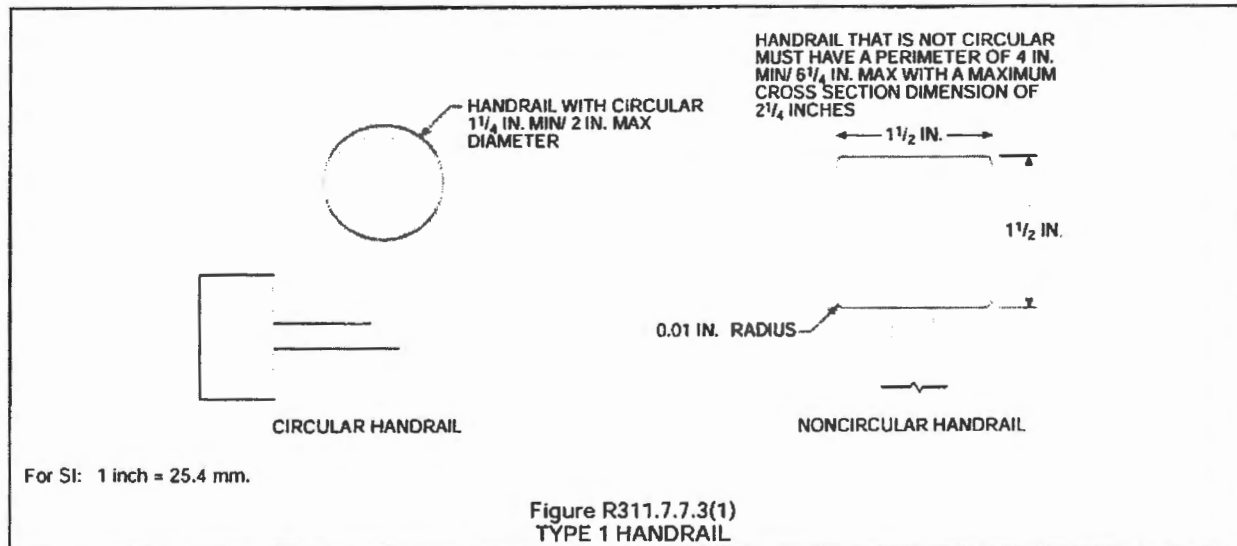
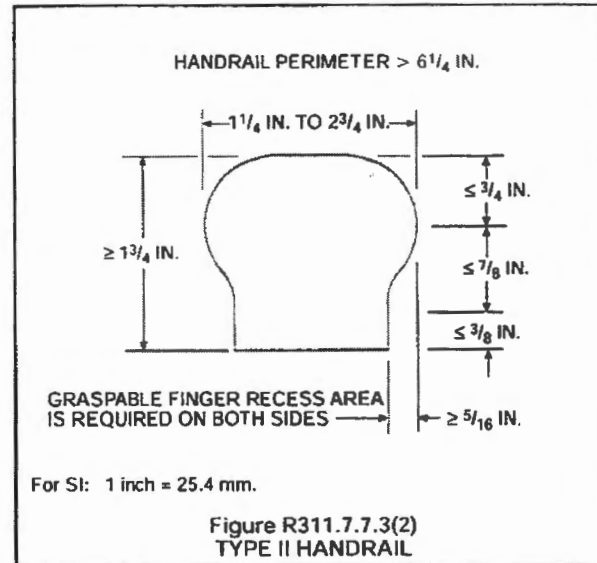
❖ A spiral stairway is one of two types of special stairs that the code permits. Although a spiral stair may be difficult to use to move furniture from one level to another, the code places no limitations on its use within the egress system if it meets the size requirements of this section. A spiral stairway that meets these requirements may provide the only means of egress from a level within an individual dwelling regardless of the occupant load or size of area served.

A spiral stairway is one in which the treads radiate from a central pole. Such a stair must provide a clear width of at least 26 inches (660 mm) at and below the handrail. Each tread must be identical and have a minimum dimension of 7½ inches (191 mm) at a point 12 inches (305 mm) from its narrow end. The stair must have at least 6 feet, 6 inches (1981 mm) of headroom measured vertically from the leading edge of the tread. The rise between treads can be as much as, but not more than, 9½ inches (241 mm). Commentary Figure

R311.7.9.1 shows the required dimensions of a spiral stairway.

R311.7.9.2 Bulkhead enclosure stairways. Stairways serving bulkhead enclosures, not part of the required building egress, providing access from the outside *grade* level to the *basement* shall be exempt from the requirements of Sections R311.3 and R311.7 where the maximum height from the *basement* finished floor level to *grade* adjacent to the stairway does not exceed 8 feet (2438 mm) and the *grade* level opening to the stairway is covered by a bulkhead enclosure with hinged doors or other *approved* means.

❖ This section exempts exterior "bulkhead enclosure stairways" from the landing stairway and handrail requirements found in Chapter 3, and it therefore permits a situation that has been fairly common in some areas.



See Commentary Figure R311.7.9.2 for an illustration of the requirements. Because these stairways are not a part of the building's egress system and serve only as a convenient way to access the basement from the exterior, the code exemption will not greatly affect the occupants' safety. Through this exemption, the size of the enclosure that is needed to provide weather protection for the stairway is greatly reduced.

R311.8 Ramps.

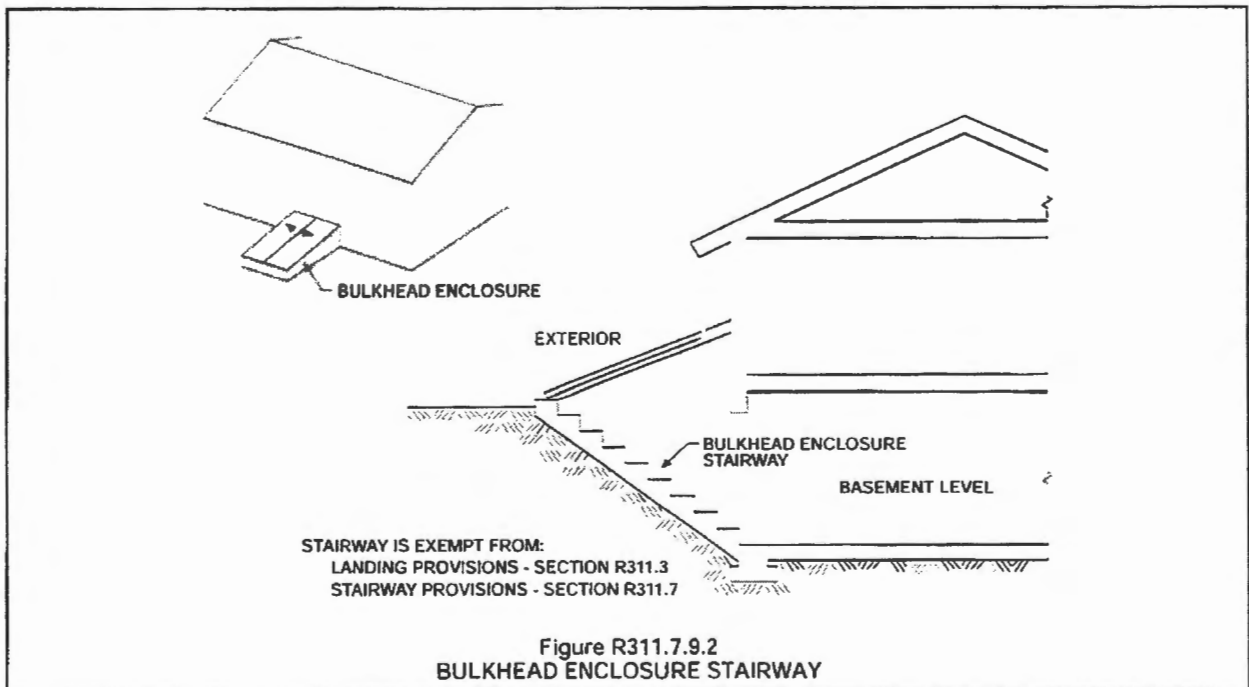
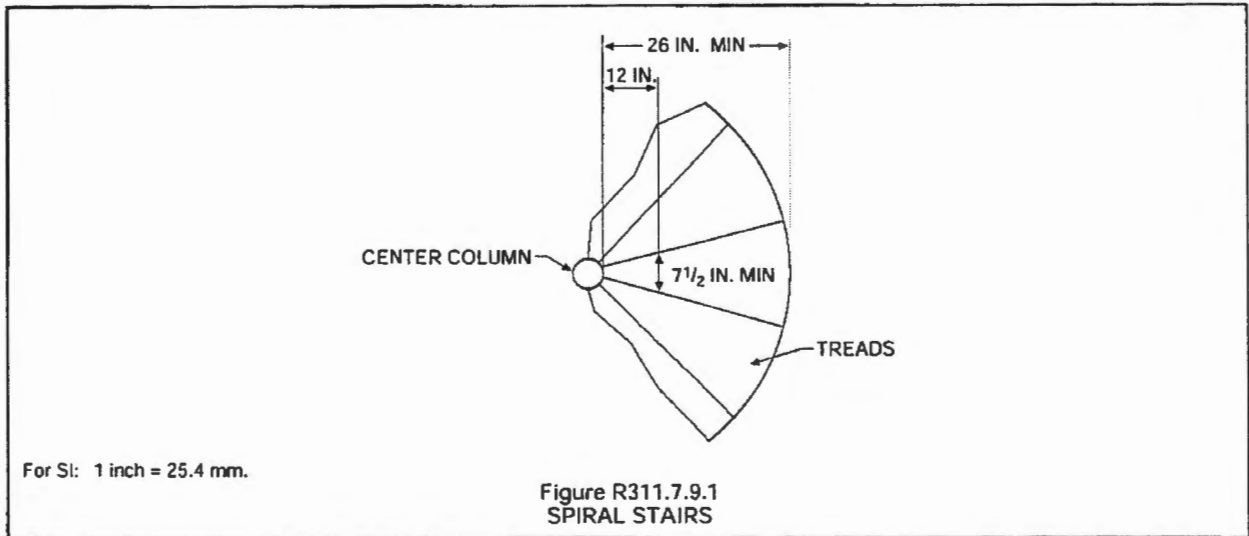
❖ Section R311.8 states the code requirements for ramps when they are used to access, or within, a dwelling.

"Ramps" are defined in Section 202 as being a walking surface that has a running slope steeper than one unit vertical in 20 units horizontal (5-percent slope).

R311.8.1 Maximum slope. Ramps shall have a maximum slope of 1 unit vertical in 12 units horizontal (8.3 percent slope).

Exception: Where it is technically infeasible to comply because of site constraints, ramps may have a maximum slope of one unit vertical in eight horizontal (12.5 percent slope).

❖ Section R311.8.1 places a maximum slope of one unit vertical in 12 units horizontal (8.3-percent slope) on



ramps. This requirement applies to all ramps, including those on circulation routes and those leading to and from an exit. This maximum slope matches what is permitted by the IBC for ramps that are not a part of the means of egress. Egress ramps under the IBC also have a maximum slope limit of 1:12 so that the requirements are consistent with accessibility provisions.

R311.8.2 Landings required. A minimum 3-foot-by-3-foot (914 mm by 914 mm) landing shall be provided:

1. At the top and bottom of ramps.
2. Where doors open onto ramps.
3. Where ramps change direction.

❖ The code requires a minimum 3-foot-by-3-foot (914 mm by 914 mm) landing at three specific locations on ramps. Landings should be provided at the top and bottom of each ramp run. When a ramp leaves or approaches a door, there needs to be a level landing to allow someone to open the door from a level surface. A change in direction could be any angle; however, these provisions are not intended to prohibit curved ramps. These dimensions are not tied to the actual width of the ramp. Item 2, dealing with doors that open onto ramps, calls for a larger size landing if it is also required by Section R311.3. The specified landing dimensions coordinate with the requirements for nonaccessible dwelling units, which are found in exceptions in the IBC. While not a requirement, if the ramp is intended to serve as part of an accessible route, the landing should be sized as indicated in ICC A117.1 in order to allow full wheelchair access.

R311.8.3 Handrails required. Handrails shall be provided on at least one side of all ramps exceeding a slope of one unit vertical in 12 units horizontal (8.33-percent slope).

❖ Where a ramp exceeds a slope of one unit vertical in 12 units horizontal (8.3-percent slope) the code requires that a handrail be installed on at least one side to assist ramp users. Therefore, ramps would require handrails when the exception to Section R311.8.1 was utilized. This provision differs from that of the IBC, where a slope of one unit vertical in 20 units horizontal (5-percent slope) and a ramp rise of 6 inches (152 mm) establishes the limits. A designer might choose to provide handrails, edge protection and/or guards on a ramp as a safety concern, even if it is not literally a requirement. If the purpose of the ramp is for wheelchair access, ICC A117.1 would be a good resource for information.

R311.8.3.1 Height. Handrail height, measured above the finished surface of the ramp slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm).

❖ Where handrails are required, they must be installed at a height within a range of at least 34 inches (864 mm) and not more than 38 inches (965 mm), measured vertically from the finished surface of the ramp

slope. This height should be measured to the top of the handrail.

R311.8.3.2 Grip size. Handrails on ramps shall comply with Section R311.7.7.3.

❖ The grip size for handrails along ramps is the same as that required for stairways (see commentary, Section R311.7.7.3).

R311.8.3.3 Continuity. Handrails where required on ramps shall be continuous for the full length of the ramp. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1½ inches (38 mm) between the wall and the handrails.

❖ The continuity requirement for the ramp handrail is similar to the continuity requirement for the stair handrail (see commentary, Section R311.7.7.2).

SECTION R312 GUARDS

R312.1 Where required. *Guards* shall be located along open-sided walking surfaces, including stairs, ramps and landings, that are located more than 30 inches (762 mm) measured vertically to the floor or *grade* below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Insect screening shall not be considered as a *guard*.

❖ The guard provisions of the code address the issue of protecting occupants from falling from any type of elevated walking surface. The provisions in Section R312 provide the scoping requirements, as well as the general construction requirements for the guards. Besides this section, code users should be aware that Section R301.5 contains the design load criteria for guards.

Section R312.1 establishes stairs, ramps and landings as examples of open-sided walking surfaces, but this is not an all-inclusive list of locations where guards are required. This section gives further specifics, to define the minimum elevation of the walking surface as greater than 30 inches (762 mm) that requires a guard. It also recognizes that a guard is needed to minimize falls if the elevation exceeds the 30-inch (762 mm) height at any point within 36 inches (914 mm) of the edge of the walking surface in consideration of such conditions as a sloping site or sudden drop. The scoping requirement for guards along open sides of stairs only applies to that portion of the stairway that is more than 30 inches (762 mm) above the determined point on the grade or floor below (see Commentary Figure R312.1).

Insect screening lacks sufficient strength to prevent someone from falling under a top rail. For this reason a guard is required for porches and decks enclosed with insect screening where the walking surface is located more than 30 inches (762 mm) above a floor or grade below.

R312.2 Height. Required *guards* at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be

not less than 36 inches (914 mm) high measured vertically above the adjacent walking surface, adjacent fixed seating or the line connecting the leading edges of the treads.

Exceptions:

1. *Guards* on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
2. Where the top of the *guard* also serves as a handrail on the open sides of stairs, the top of the *guard* shall not be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.

❖ Where guards are required by Section R312.1, Section 312.2 specified a minimum height for those guards. The code provides for guards at open sides along walking surfaces and gives examples, but this list is not to be considered all inclusive. Required guards must be of an adequate height to minimize someone from falling off the edge of the walking surface. Therefore, the code establishes 36 inches (914 mm) as the minimum acceptable height for most walking surfaces. However, Exceptions 1 and 2 recognize that the minimum height for handrails along stairways is 34 inches (864 mm), therefore, there is a special allowance at the top of the guard along stairways that is consistent with the height of handrails.

Guard heights are determined by measuring vertically from the walking surface or the line connecting the nosings of the treads on stairways; however, when fixed seating is adjacent to a guard the height of the guard is to be measured from the seat where children might be inclined to stand or walk. See Commentary

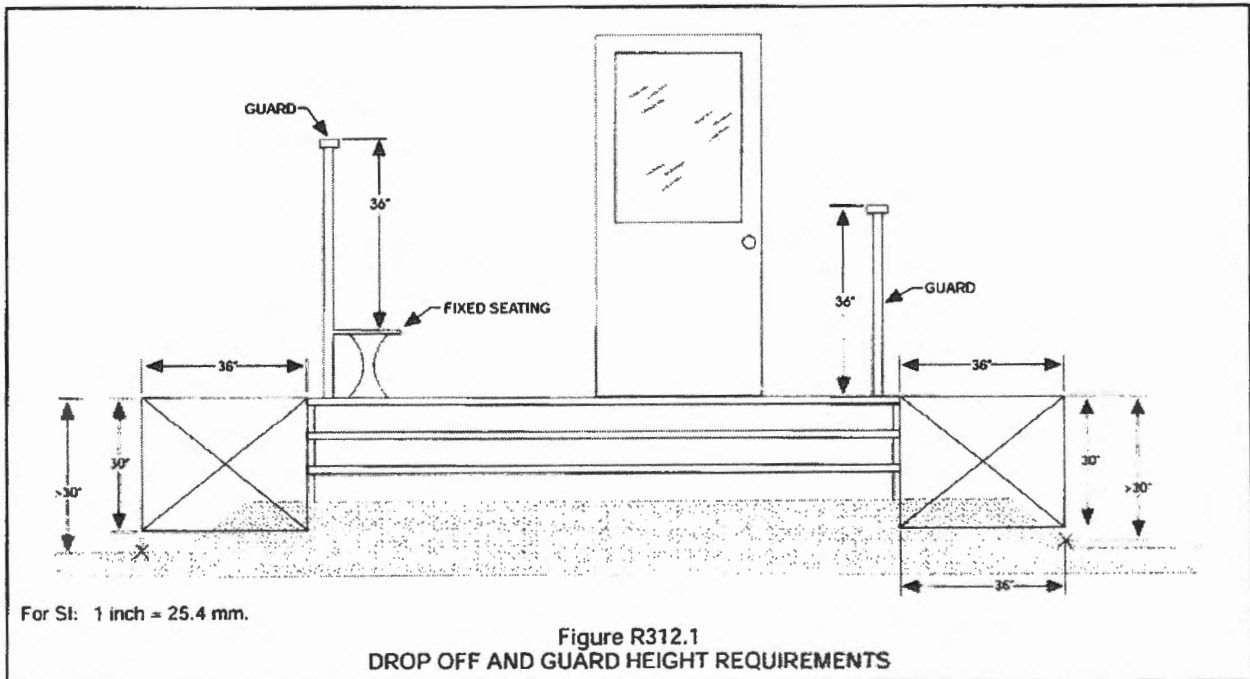
Figures R312.1, R312.2(1) and R312.2(2) for examples of how this provision is applied.

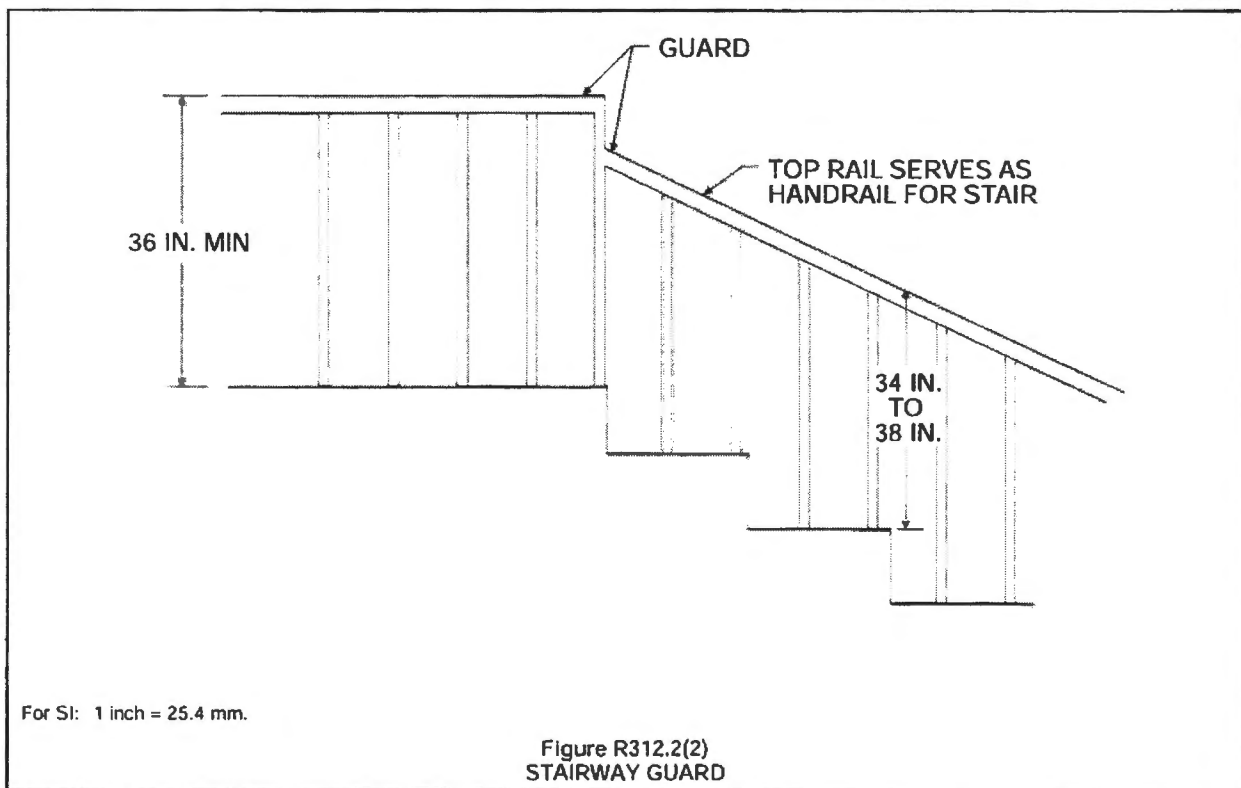
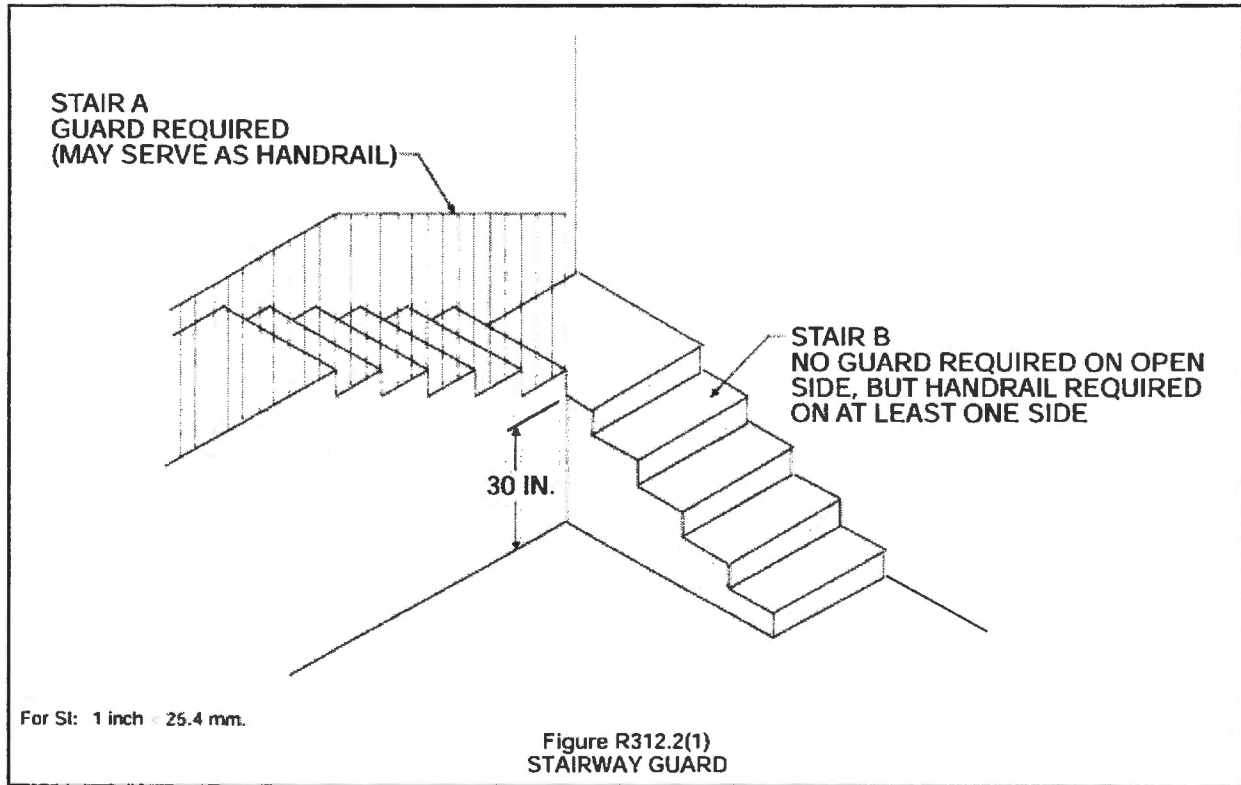
R312.3 Opening limitations. Required *guards* shall not have openings from the walking surface to the required *guard* height which allow passage of a sphere 4 inches (102 mm) in diameter.

Exceptions:

1. The triangular openings at the open side of a stair, formed by the riser, tread and bottom rail of a *guard*, shall not allow passage of a sphere 6 inches (153 mm) in diameter.
2. *Guards* on the open sides of stairs shall not have openings which allow passage of a sphere $4\frac{3}{8}$ inches (111 mm) in diameter.

❖ Guards must be constructed so they prohibit smaller occupants, such as children, from falling through them. To prohibit people from slipping through a guard, any required guard would need to have supports, spindles, intermediate rails or some type of ornamental pattern so that a 4-inch (102 mm) sphere cannot pass through it. This spacing was chosen based on the head size and the chest depth of a child who had not yet developed an ability to crawl. The code does allow two exceptions for this spacing requirement. A $4\frac{3}{8}$ -inch (111 mm) sphere rule is used for the guard on the open side of stair treads. This minor difference of just $\frac{3}{8}$ inch (9.5 mm) allows the use of just two balusters at each tread greatly reducing costs with no limitation of safety. A 6-inch (152 mm) sphere rule is used for the triangular area formed by the riser, tread and bottom rail of a guard along the open side of a stair because the triangular shape is more restrictive (see Commentary Figure R312.3).







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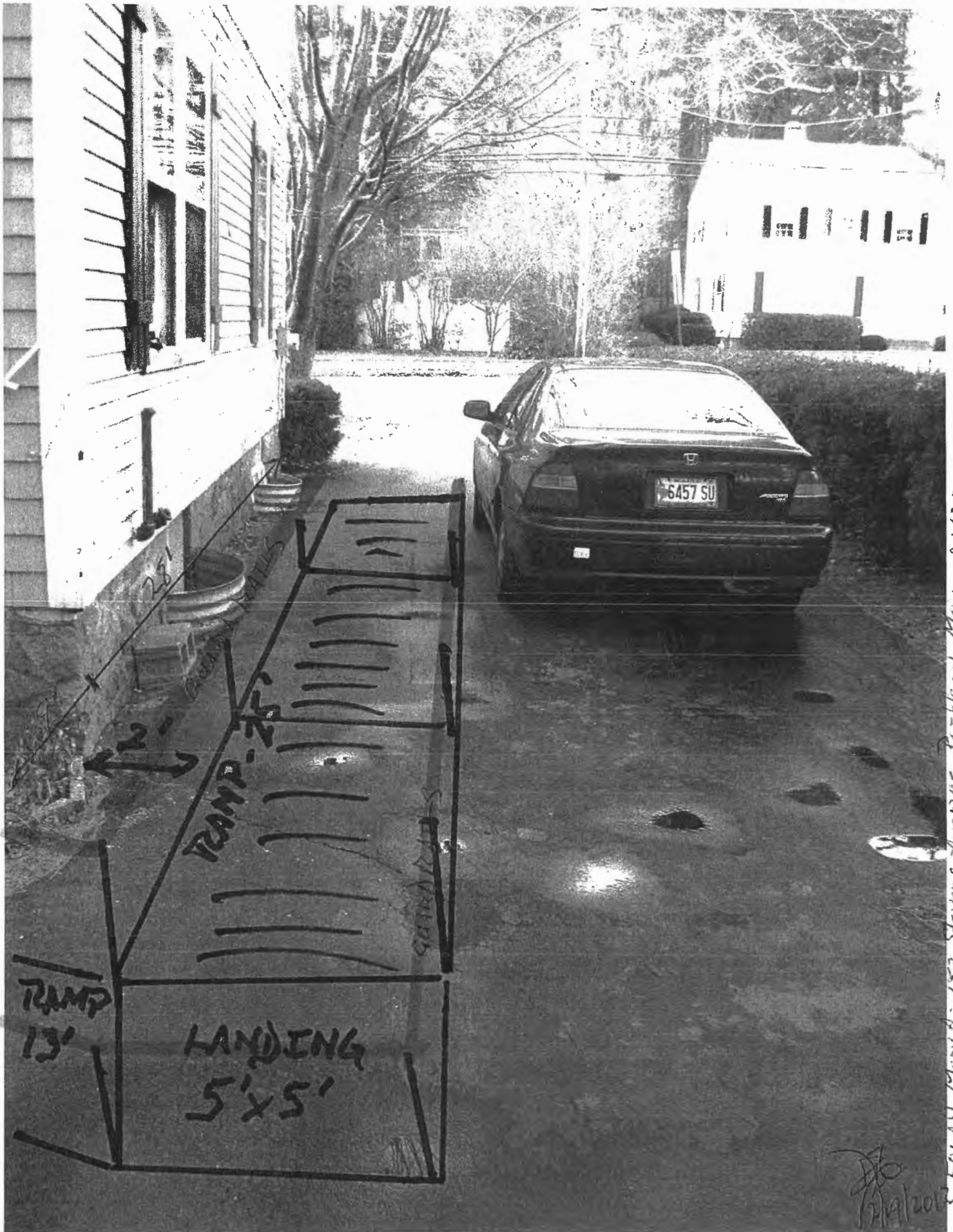
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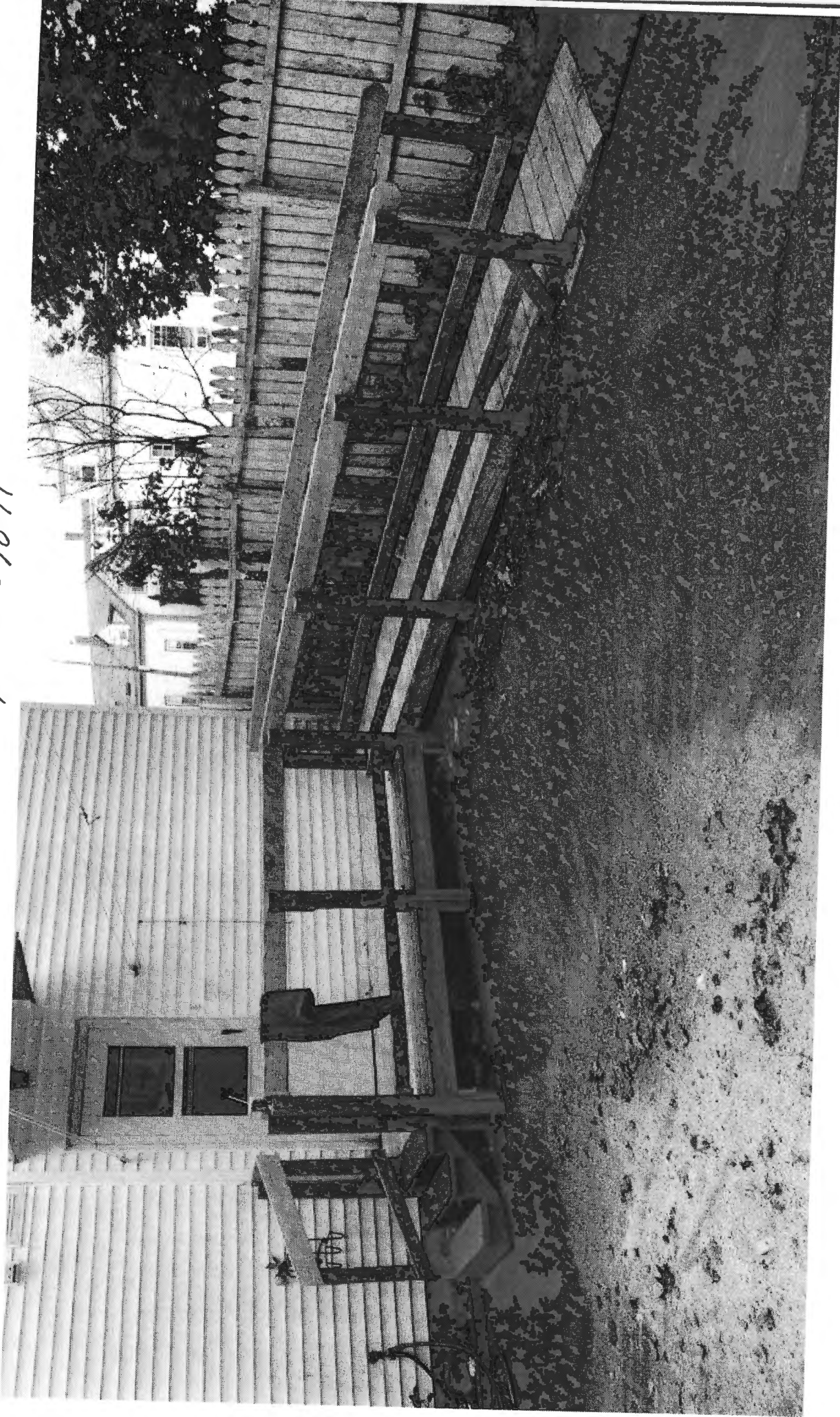
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