

# FLOODPROOF CONSTRUCTION REQUIREMENTS

For lots touched by the Special Flood Hazard Area (100-yr floodplain) or lots with an approved FEMA Letter of Map Revision

> ENGINEERING DEPARTMENT (218)299-5390

8/29/2016

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Floodproof Construction Requirements Checklist FEMA Special Flood Hazard Areas (100-year Floodplain)

**Step 1:** Check the City of Moorhead website for lot information to determine if floodproof construction requirements are applicable.

For new construction, if the lot is in or touched by the 100-year floodplain and included on the list at the website below, proceed to Step 2. If the lot in the 100-year floodplain but is not listed, a Conditional Use Permit (CUP) may be required. Contact the City Planning & Zoning Director for assistance.

http://www.cityofmoorhead.com/the\_city/floodplain/permits.asp

For existing built lots, the mapping tools at the website below can be used to determine if the lot is in the 100-year floodplain. City Engineering staff is available to assist in determining the applicable requirements.

http://www.cityofmoorhead.com/the\_city/floodplain/maps.asp

Permitted Use Provisional Use (LOMR-F) Conditional Use

### All construction in the 100-year floodplain requires a Floodplain Development Permit.

**Step 2:** Floodproof construction requirements package and required elevation forms are attached to this document.

Floodplain Development Permit Application	
City Form A (completed by City, signed by applicant)	
Floodproof construction details	

### Step 3: Plans

If construction will vary from the detail sheets within this packed then the plans must be developed and signed by a professional engineer or architect licensed in the State of Minnesota.

Construction plans for basements in the floodplain must not show sleeping rooms or a kitchen. Basements can be designed for bathrooms, closets, halls, storage rooms, laundry or utility space.

When submitting the plans to the City for issuance of a Floodplain Development Permit, verify the following:

Floodproof construction details are clearly shown

Critical elevations are clearly shown Floodplain Development Permit Application is completed Plans signed by an engineer or architect (for the floodproofing portions of the plans that vary from the standard detail sheets)

 $\square$ 

**Step 4:** Submit plans to the City.

set of plans submitted to the Engineering Department
 set of plans submitted to Building Codes

- **Step 5:** The City will issue a Floodplain Development Permit (Engineering Department), Provisional Use Permit for LOMR-F lots (Planning and Zoning Department), and a Building Permit (Building Codes). Post the Floodplain Development Permit on-site with the Building Permit.
- **Step 6:** Proceed to construction. Inspections listed below must be performed. All floodproofing inspections in the Engineer/Architect column must be completed by the builder's engineer or architect and certified on a signed inspection report. Failure to certify these inspections will void the floodproof certification.

Building Codes	Engineer/ Architect
	Building Codes

Step 7: Complete the following documents for a post-construction submittal to the City.

Signed inspection report (completed by engineer or architect)	
Property Flood Survey	
FEMA Elevation Certificate	
FEMA Residential Basement Floodproofing Certificate	

**Step 8:** Upon submission and verification of the documents in Step 7, Building Codes will issue a Certificate of Occupancy.

Below are the thirty-six (36) buildable vacant properties in the City of Moorhead that are touched by the FEMA 100 Year Floodplain that will require a Floodplain Development Permit and Floodproof Basement Certificate. (\* This List is current as of December 2012)

Parcel-ID	Land Address	Addition \ Subdivision	Block	Lot	BFE	FDL
587910240	4916 3RD ST SW	TESSA TERRACE 2ND ADD	3	3	905.2	907.2
587920160	401 TESSA DR	TESSA TERRACE 3RD ADD	1	16	905.3	907.3
587920150	409 TESSA DR	TESSA TERRACE 3RD ADD	1	15	905.3	907.3
587910140	4854 3RD ST SW	TESSA TERRACE 2ND ADD	1	14	905.3	907.3
587920130	425 TESSA DR	TESSA TERRACE 3RD ADD	1	13	905.3	907.3
587920340	400 TESSA DR	TESSA TERRACE 3RD ADD	2	18	905.3	907.3
587920120	433 TESSA DR	TESSA TERRACE 3RD ADD	1	12	905.3	907.3
587920330	426 TESSA DR	TESSA TERRACE 3RD ADD	2	17	905.3	907.3
587920110	441 TESSA DR	TESSA TERRACE 3RD ADD	1	11	905.3	907.3
587920320	434 TESSA DR	TESSA TERRACE 3RD ADD	2	16	905.3	907.3
587920100	449 TESSA DR	TESSA TERRACE 3RD ADD	1	10	905.3	907.3
587910010	4824 2ND ST SW	TESSA TERRACE 2ND ADD	1	1	905.3	907.3
587920310	442 TESSA DR	TESSA TERRACE 3RD ADD	2	15	905.2	907.2
587920090	457 TESSA DR	TESSA TERRACE 3RD ADD	1	9	905.2	907.2
587920300	450 TESSA DR	TESSA TERRACE 3RD ADD	2	14	905.2	907.2
587920080	465 TESSA DR	TESSA TERRACE 3RD ADD	1	8	905.2	907.2
587900210	4816 2ND ST SW	REPLAT TESSA TERRACE 1ST ADD	2	4	905.2	907.2
587920290	458 TESSA DR	TESSA TERRACE 3RD ADD	2	13	905.2	907.2
587920280	466 TESSA DR	TESSA TERRACE 3RD ADD	2	12	905.2	907.2
587920060	481 TESSA DR	TESSA TERRACE 3RD ADD	1	6	905.2	907.2
587920050	489 TESSA DR	TESSA TERRACE 3RD ADD	1	5	905.2	907.2
587920040	497 TESSA DR	TESSA TERRACE 3RD ADD	1	4	905.2	907.2
587920260	482 TESSA DR	TESSA TERRACE 3RD ADD	2	10	905.2	907.2
587890010	554 TESSA DR	TESSA COURT ADD	1	1	905.2	907.2
587920240	498 TESSA DR	TESSA TERRACE 3RD ADD	2	8	905.2	907.2
587890020	546 TESSA DR	TESSA COURT ADD	1	2	905.2	907.2
587890070	506 TESSA DR	TESSA COURT ADD	1	7	905.2	907.2
587890060	514 TESSA DR	TESSA COURT ADD	1	6	905.2	907.2
587890040	530 TESSA DR	TESSA COURT ADD	1	4	905.2	907.2
587890050	522 TESSA DR	TESSA COURT ADD	1	5	905.2	907.2
580030010	304 43RD AVE S	ALLYSON PKWY 1ST ADD	1	1	904.6	906.6
584290080	3737 10TH ST S	MALLARD CREEK 4TH ADD	1	8	904.0	906.0
580930130	543 11TH AVE N	BRIDGEVIEW POINTE 2ND ADD	2	5	899.1	901.1
580930120	535 11TH AVE N	BRIDGEVIEW POINTE 2ND ADD	2	4	899.1	901.1
580930110	527 11TH AVE N	BRIDGEVIEW POINTE 2ND ADD	2	3	899.1	901.1
586570070	3510 RIVERVIEW CIR S	RIVERVIEW ESTATES 2ND ADD	1	7	904.0	906.0



Permit No.



## FLOODPLAIN DEVELOPMENT PERMIT APPLICATION

### SECTION 1: GENERAL PROVISIONS:

- 1. Applicant must either be the owner of the property or have written authorization from the owner(s).
- 2. Applicant must complete Sections 1 & 2. The Engineering Department will complete sections 3 & 4.
- 3. Applicant must provide additional information in Section 4 prior to permit issuance.
- 4. For floodproofed structures applicant must submit two complete plan sets (1 for Engineering and 1 for Building Codes).
- 5. No work of any kind may start until a permit is issued.
- 6. False statements made in this application may result in permit revocation.
- 7. If the permit is revoked, all work must cease.
- 8. Development or structures shall not be used or occupied until a Certificate of Occupancy is issued.
- 9. The permit will expire if no work is commenced within six months of permit issuance.
- 10. Other permits may be required to fulfill local, state, and federal regulatory requirements.
- 11. Applicant gives consent to the City Engineer or his/her representatives to make reasonable inspections required to verify compliance.

#### **SECTION 2: DESCRIPTION OF WORK (check all applicable boxes):**

After completing Section 2, Applicant must submit form to the Engineering Department for review.

#### PROJECT ADDRESS: \_\_\_\_\_ PARCEL NO.: \_\_\_\_\_

### LEGAL DESCRIPTION:\_\_\_\_\_

To avoid delay in processing the application, please provide a map attached to this application showing the project location.

#### A. STRUCTURAL DEVELOPMENT

ACTIVITY	STRUCTURE TYPE
□ New Structure	$\Box$ Residential ( $\Box$ 1-4 family or $\Box$ more than 4 family)
□ Addition	□ Non-residential, commercial, office, etc. (Floodproofed? □ Yes)
□ Alteration	□ Warehouse
Repair/Maintenance	Combined Use (Residential & Commercial)
Relocation	□ Manufactured (Mobile) Home (In mobile home park? □ Yes)
Demolition	□ Shed/Storage
Replacement	Deck
Flood Mitigation	□ Porch/3-Season Porch
-	Garage
	□ Fence
	• Other:

#### Β. OTHER DEVELOPMENT ACTIVITIES

Grading 🗖 Fill Drilling □ Clearing

Excavation (other than structural development checked above)

- □ Subdivision (new or expansion)
- Drainage Improvements (including culvert work)
- □ Road. Street or Bridge Construction
- □ Private Well or Septic/Drain Field
- U Watercourse Alteration (including dredging & channeling modifications)
- □ Other (please specify)

Estimated Project Cost: \$\_\_\_ C.

# APPLICANT CERTIFICATION: I HEREBY CERTIFY THAT ALL DATA ON THE APPLICATION FORMS, PLANS AND SPECIFICATIONS ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

APPLICANT (printed):

NAME	ADDRESS	PHONE NO.
APPLICANT SIGNATURE:	D	DATE:
CONTRACTOR CERTIFICATION: I HEREB CONSTRUCT THE PROJECT TO FLOODPL		BY THE APPLICANT TO
CONTRACTOR (printed):		
COMPANY NAME	ADDRESS	PHONE NO.
CONTRACTOR SIGNATURE:	D	ATE:
ENGINEER AND/OR ARCHITECT CERTIFIC APPLICANT AND/OR CONTRACTOR TO P INSPECTIONS AND SUBMIT POST-CONST	ERFORM FLOODPROOF REQUIR	REMENTS, SITE
ENGINEER AND/OR ARCHITECT (printed): (If Applicable)		
COMPANY NAME	ADDRESS	PHONE NO.
ENGINEER AND/OR ARCHITECT SIGNAT	URE:	DATE:
SECTION 3: FLOODPLAIN DETERMIN	ATION (To be completed by the E	ngineering Department)
The proposed development is located on FIRM Effective Date		
<ul> <li>The proposed development:</li> <li>Is <u>NOT</u> located in the SFHA.</li> <li>Is located in the SFHA as shown on the effect</li> </ul>	ctive FIRM, but has been removed by	/ a:
Letter of Map Revision Based on Fil	l (LOMR-F) FEMA Case No	
Letter of Map Amendment (LOMA)	FEMA Case No	
□ Is located in the SFHA as shown on the effect Based on Fill (LOMR-F)		a Letter of Map Revision
□ Is located or partially located in the SFHA FIRM Zone(s): BFE Datum: □ NAVD 88 □ NGVD 29	: ft.	
<ul><li>Is located in the floodway.</li><li>See section 4 for additional information requ</li></ul>	uired for permit issuance.	
SECTION 4: Additional Information Requ	ired (To be completed by the Engi	neering Department)

The applicant must submit the documents checked below before a permit can be issued:

□ Subdivision or other development plans (including future development master plan).

- □ A site plan showing the location of all existing structures, water bodies, adjacent roads, lot dimensions, easements, proposed grading/fill, and proposed development/buildings to the extent known.
- □ Supplemental Data for Grading/Building Permit in SFHA (Form A).
- Building plans (drawn to scale) (2 sets required if floodproofed) and specifications, including where applicable:
  - floodproofing details per City floodproof construction requirements or as designed by a Professional Engineer or Architect.
  - **proposed elevation of the first floor**
  - proposed elevation of lowest floor (including basement)
  - proposed lowest adjacent grade to the structure
  - D proposed fill elevation 15 ft. from the structure
  - U types of water-resistant materials used below the first floor
  - details for floodproofing of utilities located below the first floor
  - details of enclosures below the first floor, if applicable
  - details for anchoring structures, if applicable
- □ Plans showing the extent of watercourse relocation and/or landform alterations, if applicable.
- LOMR-F and Community Acknowledgement Form upon completion of construction.
- □ No fill or construction may be placed in the floodway without a conditional use permit and a "No-Rise" certificate.
  - □ "No-Rise" Certificate Certification from a registered engineer that the proposed activity in a regulatory floodway will not result in an increase in the BFE. A copy of all data and hydraulic/hydrologic calculations supporting this finding must be submitted.
- □ A geotechnical review is recommended for slope stability issues.

□ Other:

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

TITLE:



## SUPPLEMENTAL DATA FOR GRADING/BUILDING PERMIT IN SFHA (FORM A)

MOORHEAD			Parce	el No.		Permit	No.	
	A. Ger	neral Inf	ormatio	on				
Applicant's Name (Last, First, M.I.):								
Address:			e e	ct Locatio	n:			
Phone:			Email					
Elooduloin District		oject Info	ormatio	n	Floodnmoot	Sing Dog	ian Lovel (FI	$\mathbf{N}$ ) (to the
Floodplain District Floodway	<b>Type of Project</b> New Structure	🗆 R	elocatio	n			ign Level (FI oot): Baseme	nts & crawlspace
□ Flood Fringe	Addition		emolitio		A. Base Flo	od Eleva	ation (BFE) =	ft.*
Effective Flood Insurance Study:	<ul> <li>Flood Mitigation</li> <li>Repair/Maintenance</li> </ul>		eplacen					$ce = \underline{2.0 ft}.$
FIS Effective Date:		- 1	interation		<b>FDL</b> $(A + I)$	-	-	
Community /Panel #: Flood Zone:	<b>Type of Structure</b>		<b>1</b> 4	h	Datum:	NGVD	1929 🗖 NA	VD 1988
FIS Cross-section:	□ Residential (□ 1-4 fa □ Non-residential, com							
Flooding Source:	(Floodproofed? 🗖 Y		,					evation (RFPE) Slab-on-grade
Zoning Determination	□ Warehouse □ Combined Use (Resid	dential &	Comme	rcial)				-
Permitted Use	□ Manufactured (Mobil		comme	iciai)				ft. * =ft.
Provisional Use Permit (PUP)	(In mobile home par	k? 🗖 Yes	)				.) plus stage –ft.	It.
Conditional Use Permit (CUP)	<ul> <li>Shed/Storage</li> <li>Deck</li> </ul>				Datum:	NGVD	1929 🗖 NA	VD 1988
	Porch/3-Season Porch	h			Comments:		e 11 D	e · 1
Hearing date:	Garage				*BFE mus Engineer o		fied by a Pro tect.	lessional
DNR Notified:		Fence   Engineer or Architect.						
Planning Dept. Initials:								
	C. Con	nstruction	n Infor	mation		1		Recommended
Structure Elevation Requirement	5	Prope	osed	Requ	uired FDL	Requ	uired RFPE	42.2' River Stage
a. Top of bottom flooring (slab-on-grade, space)	basement or crawl			>BFE - 5	ft. =	> RFF	PE =	
b. Top of next higher floor			> FDL =	= 2		PE =		
c. Attached garage (top of slab)				> FDL =	L=		PE =	
d. Lowest elevation of machinery or equip building (describe equipment				> FDL. =		> RFF	PE =	
e. Lowest adjacent (finished) grade (LAG	)			BFE + 1.5	5 =	BFE + (B5"	+= ?)	
f. Lowest compacted fill elevation at 15 f				> BFE + 0		> BFE		
I have been informed and understand of the structure be built to a river sta			odplain initials	-	er recommei	nds that	the lowest a	djacent grade
D. Project Cost Factors	for additions, improvem	ents or r	epairs/1	maintena	nce (for non	confor	ning structu	res)
a. Cost of improvements/repairs/maintenance (including cost of labor and all supplies) \$								
b. Cost of previous improvements/ repairs/maintenance \$								
c. Total cost of improvements/repairs/maintenance (a + b) \$					\$			
d. Estimated market value of existing structure (not including land value) without any improvements \$								
e. Percentage cost of improvements/repair	rs/maintenance ( $c \div d$ )*100	, (must be	e < 50%	for appro-	val).			%
All floodproof construction inspections Property Flood Survey (as-built), inspe forms must be completed and submitte	ction certification form, F	FEMA ele	evation	certificate	e, and FEMA			
I hereby certify that all data on the app specifications are true and correct to th			I here	by certify	that the BF	E has be	en reviewed	and is correct.
Signature of Applicant or Contractor	Date		Signa	ture of E	ngineer or A	rchitect		Date



CONTRACTOR SHALL BE RESPONSIBLE TO CALL FOR ALL REQUIRED INSPECTIONS.

# FOOTING & FOUNDATION WALL PLAN

SCALE:  $\frac{1}{8}$ " = 1'-0"

City of Moorhead

**Engineering Department** 







ENGINEERING DEPARTMENT **500 CENTER AVENUE** MOORHEAD, MN 56560 (218) 299-5390

**BUILDING CODES 500 CENTER AVENUE** MOORHEAD, MN 56560 (218) 299-5424

# **FLOODPROOFING INSPECTION REPORT**

Permit Applicant: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Property Address: \_\_\_\_\_ Parcel Number: \_\_\_\_\_

## INSPECTIONS

Inspection Type	Inspection Date	Inspected By	Photo	Comments
BFE Stake				BFE Benchmark:
Elev. Check				Elevation of footings must be checked before concrete is placed.
Footing				
Foundation & rebar				
Waterproofing				
Drain Tile				
Concrete Floor & Poly				
Finish Grading (LAG)				

**Note:** Photographs must be submitted with Floodproof inspection report. Engineer and/or Architect must complete all inspections listed above. Building Codes must complete inspections of footings, sewer line, sewer valve, and joist blocking in addition to other routine construction inspections.

### **CERTIFICATION**

I certify that the above-referenced inspections have been completed by me or under my direct supervision and the construction activities were verified to meet federal, state and local requirements.

# Property Flood Survey Form (as-built)

Parcel-ID:
Property Address:
Subdivision\Legal Description:
Longitude: Latitude:
Is this property in or touched by the Special Flood Hazard Area (SFHA) as shown on the Flood Insurance Rate Map (FIRM) 🗌 Yes 🗌 No
Community/Panel Number: Effective Date: FIS Cross-section:
Flood Zone(S):
LOMA/LOMR Submitted: Yes No Date Submitted:
LOMA/LOMR Received: 🗌 Yes 🗌 No Date Received: 🗋 Approved 🗋 Denied FEMA Case Number:
Year Constructed:
Type of Structure:
Benchmark Used (NAVD88):
Base Flood Elevation (BFE): ft.
Floodproofing Design Level (FDL):ft. or Regulatory Flood Protection Elevation (RFPE):ft.
Basement Information:
Floodproof Basement: 🗆 Yes 🛛 No
Walk-out Basement: 🛛 Yes 🗆 No Elevation: ft.
Basement Floor or Crawlspace Elevation: ft. Square Feet:
Basement Equipment:
Main Floor Elevation:,ft. Square Feet:
Garage Floor Elevation:ft. Square Feet: Attached Garage: 🔲 Yes 🔲 No
Lowest Opening:ft.
Lowest Ground on Lot: ft.
Lowest Adjacent Grade:ft. Highest Adjacent Grade:ft. Ground 15' from Building:ft.
Deck Stairs Elevation:ft. Attached to House 🛛 Yes 🗖 No
Top of Private Dike:ft.
Survey Date:

Survey

Signature: Date: Date:				
	Signature:	MN License#	Title:	Date:

# FEMA Elevation Certificate

# Visit this link for most current FEMA Elevation Certificate

https://www.fema.gov/about/glossary/elevation-certificate

U.S. DEPARTMENT OF HOMELAND SECURITY Federal Emergency Management Agency National Flood Insurance Program OMB No. 1660-0008 Expiration Date: November 30, 2018

## **ELEVATION CERTIFICATE**

Important: Follow the instructions on pages 1-9.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

	SECTION A – PROPERTY INFO	FOR INSURANCE	COMPANY USE		
A1.	Building Owner's Name	Policy Number:			
A2.	Building Street Address (including Apt., Unit, Suite, and Box No.	d/or Bldg. No.) or P.O.	Route and	Company NAIC Nur	mber:
	City	State		ZIP Code	
			-		
A3.	Property Description (Lot and Block Numbers, Tax Par	rcel Number, Legal De	scription, etc.)		
A4.	Building Use (e.g., Residential, Non-Residential, Addit	ion, Accessory, etc.)			
A5.	Latitude/Longitude: Lat. Long	j	Horizontal Datur	n: NAD 1927	NAD 1983
A6.	Attach at least 2 photographs of the building if the Cert	tificate is being used to	o obtain flood insur	ance.	
A7.	Building Diagram Number				
A8.	For a building with a crawlspace or enclosure(s):				
	a) Square footage of crawlspace or enclosure(s)	sq ft			

FEMA Floodproof Basement Certificate Visit this link for the most up to date certificate https://www.fema.gov/sites/default/files/documents/ fema\_nfip-basement-floodproofing-certificate-form-206fy-21-122.pdf

U.S. DEPARTMENT OF HOMELAND SECURITY FEDERAL EMERGENCY MANAGEMENT AGENCY National Flood Insurance Program RESIDENTIAL BASEMENT FLOODPROOFING CERTIFICATE

OMB No. 1660-0033 Expiration Date: November 30, 2016

For use ONLY in communities that have been granted an exception by FEMA to allow the construction of floodproofed residential basements in Special Flood Hazard Areas.

BUILDING OWNER'S NAME	FOR	FOR INSURANCE COMPANY USE		
STREET ADDRESS (Including Apt., Unit Number)	POL	POLICY NUMBER		
OTHER DESCRIPTION (Lot and Block Numbers, etc.)	CON	APANY NAIC NUMBER		
CITY	STATE	ZIP CODE		

#### SECTION I – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

Provide the following from the FIRM and flood profile (from Flood Insurance Study)								
COMMUNITY NUMBER	PANEL NUMBER	SUFFIX	DATE OF FIRM	ZONE	BASE FLOOD ELEVATION (In AO Zones, Use Depth)	NAME OF FLOODING SOURCE(S) AFFECTING BUILDING		
					for no count, the beginn			
Indicate elevation datum used for Base Flood Elevation shown above: NGVD 1929 NAVD 1988 Other/Source:								