

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

Contents

Pre-Construction

Section 1: Floodproof Construction Requirements Checklist

Section 2: Lot Information (for illustration purposes only)

Section 3: Floodplain Development Permit Application & City Form A

Section 4: Standard Floodproof Construction Details

Construction

Section 5: Floodproofing Inspection Record

Post-Construction

Section 6: Property Survey (11" x 17")

Section 7: Elevation Certificate (FEMA Form)

Section 8: Residential Basement Floodproofing Certificate (FEMA Form)



verify the following:

Floodproof construction details are clearly shown

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

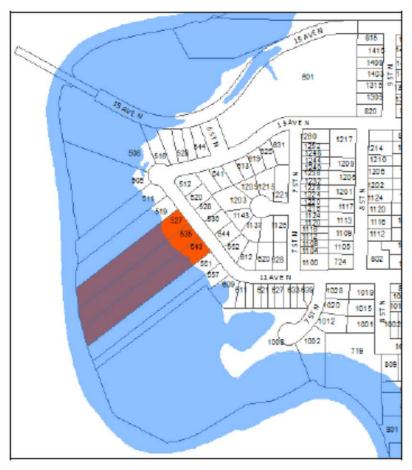
	1 I N N E S O T A						
Step 1	Check the City of Moorhead website for lot information to determine if floodproof construction requirements are applicable.						
	For new construction, if the lot is in or touched by the 100-year floodplain and included on the list at the website below, proceed to Step 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/floodpla	nin/permits.asp					
	For existing built lots, the mapping tools lot is in the 100-year floodplain. City Engapplicable requirements.						
	http://www.cityofmoorhead.com/the_city/floodpla	ain/maps.asp					
	Permitted Use		П				
	Provisional Use (LOMR-F)		Ä				
	Conditional Use						
	All construction in the 100-year Developm	floodplain requires o ent Permit.	ı Floodplain				
Step 2	: Floodproof construction requirements pathis document.	ckage and required of	elevation forms are attached to				
	Floodplain Development Permit Application City Form A (completed by City, signed by app Floodproof construction details	olicant)					
Step 3:	If construction will vary from the detail developed and signed by a profession Minnesota. Construction plans for basements in the	al engineer or arch	itect licensed in the State of not show sleeping rooms or a				
	kitchen. Basements can be designed for utility space.	bathrooms, closets, h	aalls, storage rooms, laundry or				

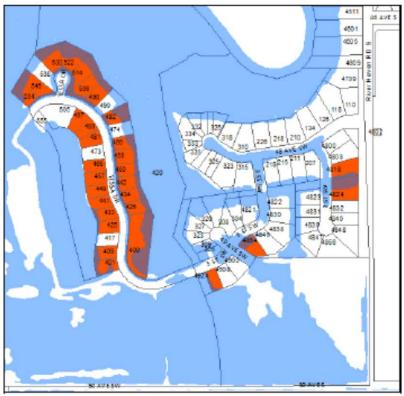
When submitting the plans to the City for issuance of a Floodplain Development Permit,

	Critical elevations are clearly shown			
	Floodplain Development Permit Application is completed			
	Plans signed by an engineer or architect (for the floodproofing that vary from the standard detail sheets)	ne plans		
Step 4:	Submit plans to the City.			
	1 set of plans submitted to the Engineering Department			
	1 set of plans submitted to Building Codes			
Step 5:	The City will issue a Floodplain Development Permit Use Permit for LOMR-F lots (Planning and Zonin (Building Codes). Post the Floodplain Development leads to the Floodplain D	g Departme	nt), and a Buil	ding Permit
Step 6:	Proceed to construction. Inspections listed below inspections in the Engineer/Architect column must or architect and certified on a signed inspection republic will void the floodproof certification.	be complete	d by the builder	r's engineer
		Building	Engineer/	
	N. B. El III. (DED.)	Codes	Architect	
	Place Base Flood Elevation (BFE) stake			
	Elevation check on footings before concrete is placed			
	Footings	Ш		
	Foundation/rebar			
	Waterproofing			
	Drain tile			
	Concrete floor/poly	_		
	Sanitary sewer valve			
	Sanitary sewer line			
	Joist blocking	Ш		
	Finish grading (LAG)		Ш	
Step 7:	Complete the following documents for a post-construction	ction submit	tal 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 Certificate of Occupancy.	n Step 7, Bui	lding Codes wil	l issue a

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





Dam	:+	NI	_
Per	ш	IN	o.



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.				
PROJ	ECT ADDRESS:	PARCEL NO.:				
LEGA	AL DESCRIPTION:					
	oid delay in processing the appet location.	plication, please provide a map attached to this application showing the				
A.	STRUCTURAL DEVELOPM	IENT				
	ACTIVITY New Structure Addition Alteration Repair/Maintenance Relocation Demolition Replacement Flood Mitigation	STRUCTURE TYPE ☐ Residential (☐ 1-4 family or ☐ more than 4 family) ☐ Non-residential, commercial, office, etc. (Floodproofed? ☐ Yes) ☐ Warehouse ☐ Combined Use (Residential & Commercial) ☐ Manufactured (Mobile) Home (In mobile home park? ☐ Yes) ☐ Shed/Storage ☐ Deck ☐ Porch/3-Season Porch ☐ Garage ☐ Fence ☐ Other:				
B.	OTHER DEVELOPMENT A	CTIVITIES				
	 □ Clearing □ Grading □ Fill □ Drilling □ 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 □ Watercourse Alteration (including dredging & channeling modifications) □ Other (please specify) 					
C.	Estimated Project Cost: \$					

APPLICANT (printed): ADDRESS PHONE NO. **NAME** APPLICANT SIGNATURE: _____ DATE: ____ CONTRACTOR CERTIFICATION: I HEREBY CERTIFY THAT I WAS HIRED BY THE APPLICANT TO CONSTRUCT THE PROJECT TO FLOODPLAIN REQUIREMENTS. CONTRACTOR (printed): ADDRESS COMPANY NAME PHONE NO. CONTRACTOR SIGNATURE: _____ DATE: _____ ENGINEER AND/OR ARCHITECT CERTIFICATION: I HEREBY CERTIFY THAT I WAS HIRED BY THE APPLICANT AND/OR CONTRACTOR TO PERFORM FLOODPROOF REQUIREMENTS, SITE INSPECTIONS AND SUBMIT POST-CONSTRUCTION DOCUMENTS TO THE City of Moorhead. ENGINEER AND/OR ARCHITECT (printed): _____ (If Applicable) ADDRESS COMPANY NAME PHONE NO. ENGINEER AND/OR ARCHITECT SIGNATURE: _____ DATE: _____ **SECTION 3: FLOODPLAIN DETERMINATION (To be completed by the Engineering Department)** The proposed development is located on FIRM Panel Number/Suffix. Effective Date ______. A copy of the relevant area on the FIRM is attached. The proposed development: ☐ Is NOT located in the SFHA. ☐ Is located in the SFHA as shown on the effective FIRM, but has been removed by a: ☐ Letter of Map Revision Based on Fill (LOMR-F) FEMA Case No. _____ ☐ Letter of Map Amendment (LOMA) FEMA Case No. _____ ☐ Is located in the SFHA as shown on the effective FIRM, and must be removed by a Letter of Map Revision Based on Fill (LOMR-F) FEMA Case No. ☐ Is located or partially located in the SFHA FIRM Zone(s): ______ BFE: _____ ft. Datum: □ NAVD 88 □ NGVD 29 ☐ Is located in the floodway. ☐ See section 4 for additional information required for permit issuance. SECTION 4: Additional Information Required (To be completed by the Engineering 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).

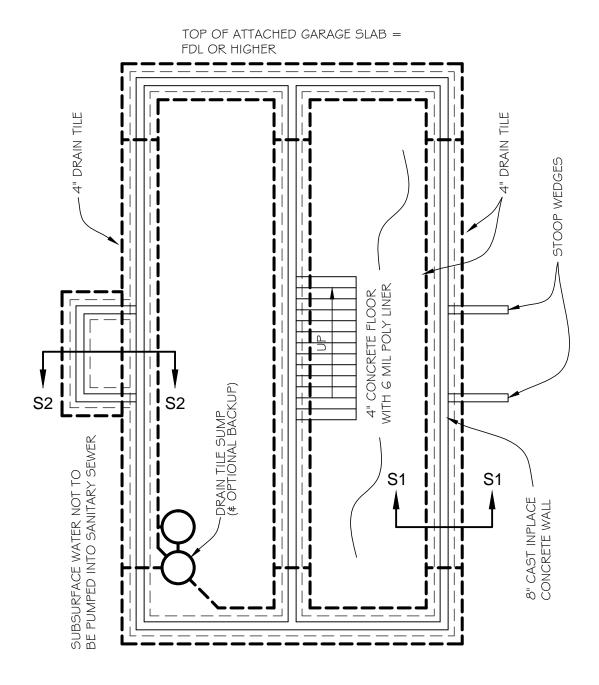
APPLICANT CERTIFICATION: I HEREBY CERTIFY THAT ALL DATA ON THE APPLICATION FORMS, PLANS AND SPECIFICATIONS ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

□ 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 □ proposed fill elevation 15 ft. from the structure □ 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) $\,$

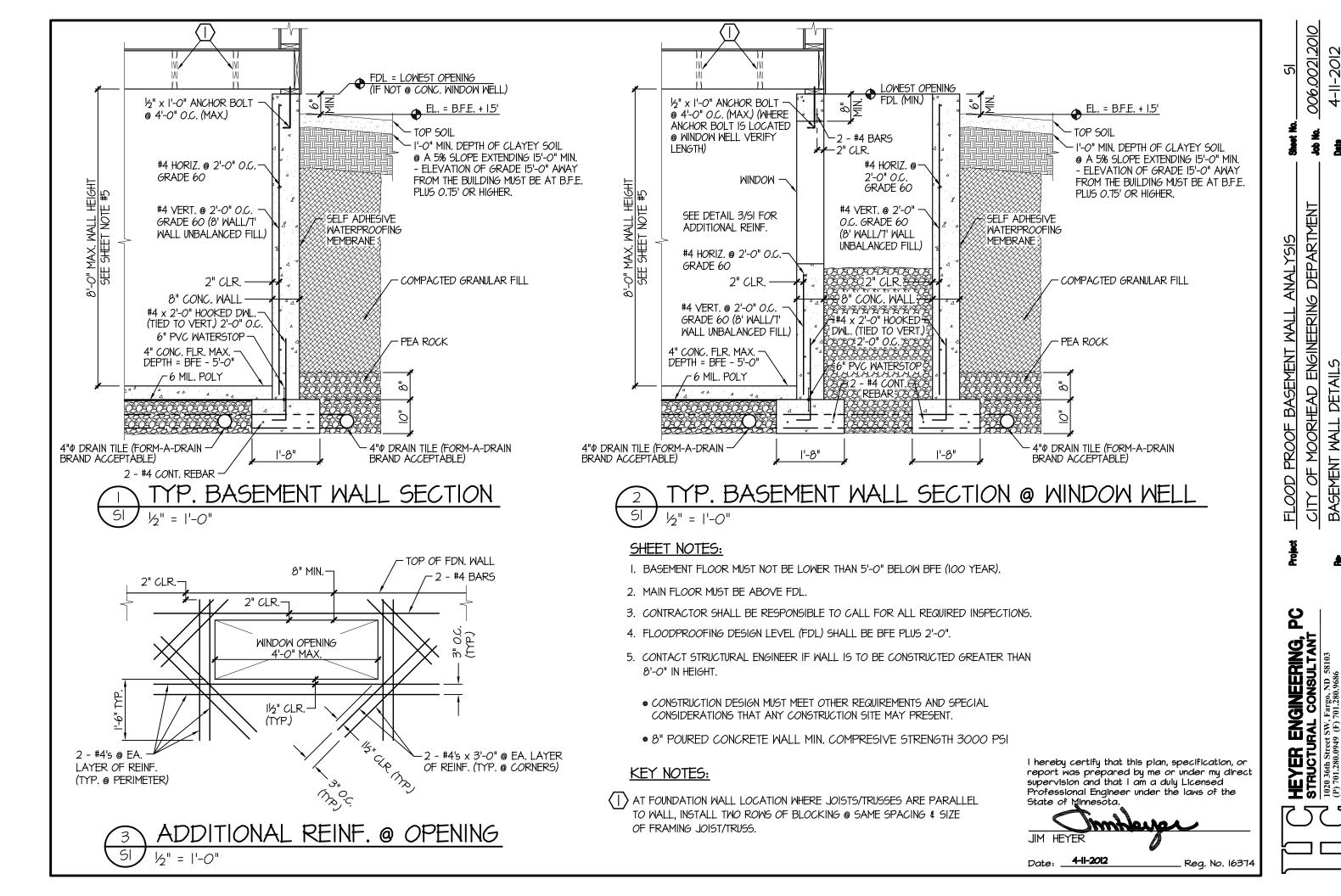
Parcel No. Permit No.								
	A. Gen	eral Info	ormatio	n				
Applicant's Name (Last, First, M.I.):								
Address:		Projec	t Locatio	n:				
Phone: Email:								
B. Project Information Floodplain District Type of Project Floodproofing Design Level (FDL) (to the								
Floodplain District ☐ Floodway	Type of Project ☐ New Structure	□R	elocatio	n				old) (to the nts & crawlspace
☐ Flood Fringe	☐ Addition		emolitic				•	•
	☐ Flood Mitigation		eplacem		A. Base Flood Elevation (BFE) =ft.			
Effective Flood Insurance Study: FIS Effective Date:	☐ Repair/Maintenance	⊔ A	lteration	l 	B. Freeboard required by ordinance = $\underline{2.0}$ ft. FDL (A + B) = $\underline{}$ ft.			
Community /Panel #:	Type of Structure							MD 1000
Flood Zone:	☐ Residential (☐ 1-4 fa	mily or □	more th	nan 4)	Datum:	NGVD.	1929 □ NA	VD 1988
FIS Cross-section:	☐ Non-residential, com		office, et	с.	Regulatory	Flood P	rotection Fl	evation (RFPE)
Flooding Source:	(Floodproofed? ☐ Yo ☐ Warehouse	es)						Slab-on-grade
Zoning Determination	☐ Combined Use (Resid	lential &	Comme	cial)				ft. *
☐ Permitted Use	☐ Manufactured (Mobil			, , ,				ft.
☐ Provisional Use Permit (PUP)	(In mobile home parl	x? □ Yes)) plus stage = ft.	
☐ Conditional Use Permit (CUP)	☐ Shed/Storage ☐ Deck						1929 🗖 NA	
☐ Variance	☐ Porch/3-Season Porch	ı			Comments:			
Hearing date:	☐ Garage						ied by a Pro	fessional
DNR Notified:	☐ Fence				Engineer o	r Archit	ect.	
Planning Dept. Initials:	☐ Other:							
	C. Con	struction	n Inform	nation				
				iired FDL	Required RFPE 42.2' River		Recommended 42.2' River Stage	
a. Top of bottom flooring (slab-on-grade, b space)	pasement or crawl			>BFE - 5 ft. = > RI		> RFP	E =	
b. Top of next higher floor				> FDL =			E =	
c. Attached garage (top of slab)				> FDL =		> RFP	E =	
d. Lowest elevation of machinery or equipment				> FDL. =		> RFP	E =	
e. Lowest adjacent (finished) grade (LAG)						BFE + (B5"	=	
f. Lowest compacted fill elevation at 15 ft.	from building		> BFE + 0.75 = >		> BFE	=		
I have been informed and understand of the structure be built to a river stag	•		odplair initials	_	er recommen	ds that	the lowest a	djacent grade
D. Project Cost Factors for	or additions, improveme	ents or re	epairs/r	naintena	nce (for non	conforn	ning structu	res)
a. Cost of improvements/repairs/maintenan	ice (including cost of labor	r and all s	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) with				out any improvements \$				
e. Percentage cost of improvements/repairs								%
All floodproof construction inspections in Property Flood Survey (as-built), inspect forms must be completed and submitted	tion certification form, F	EMA ele	evation o	ertificate	, and FEMA			
I hereby certify that all data on the appli specifications are true and correct to the			I herel	y certify	that the BFI	E has be	en reviewed :	and is correct.
			Signa	ture of E	ngineer or A	rchitect		D ate
Signature of Applicant or Contractor	Date							



CONTRACTOR SHALL BE RESPONSIBLE TO CALL FOR ALL REQUIRED INSPECTIONS.

FOOTING & FOUNDATION WALL PLAN

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



RIFFE

Flood	olain	Dev.	Per	mit	#

MN License #

(Engineer/Architect)

Date



Print Name

ENGINEERING DEPARTMENT 500 CENTER AVENUE MOORHEAD, MN 56560 (218) 299-5390 BUILDING CODES 500 CENTER AVENUE MOORHEAD, MN 56560 (218) 299-5424

	FLOC	DDPRO	OFIN	G INSPECTION REPORT
Permit Applicant:				Phone Number:
Property Address	Property Address:			Parcel Number:
			IN	SPECTIONS
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)				
Engine Building	er and/or Ard g Codes mus	chitect must	complete inspectior	odproof inspection report. e all inspections listed above. ns of footings, sewer line, sewer valve, and joist blocking in pections.
			CE	ERTIFICATION
I certify that th	e above-refe	erenced insp	ections h	have been completed by me or under my direct supervision

and the construction activities were verified to meet federal, state and local requirements.

Signature

Property Flood Survey Form (as-built) Parcel-ID: _____ Property Address: Subdivision\Legal Description: _____ Latitude: Is this property in or touched by the Special Flood Hazard Area (SFHA) as shown on the Flood Insurance Rate Map (FIRM) Community/Panel Number: _____ Effective Date: _____ FIS Cross-section: _____ Flood Zone(S): ____ LOMA/LOMR Received: Yes No Date Received: Approved Denied FEMA Case Number: Approved Denied FEMA Case Number: Year Constructed: Type of Structure: _____ FEMA Elevation Certificate Building Diagram Number: _____ 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 MN License# Title: Signature: 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	FOR INSURANCE COMPANY USE				
A1. Building Owner's Name	Policy Number:				
 Building Street Address (including Apt., Unit, Suite Box No. 	. Route and Company NAIC Number:				
City	State	ZIP Code			
		<u>•</u>			
A3. Property Description (Lot and Block Numbers, Tax	x Parcel Number, Legal De	escription, etc.)			
A4. Building Use (e.g., Residential, Non-Residential, A	Addition, Accessory, etc.)				
A5. Latitude/Longitude: Lat.	Horizontal Datum: NAD 1927 NAD 1983				
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.					
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-206-fy-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 INSURANCE COMPANY USE

STREET ADDRESS (Including Apt., Unit Number)

OTHER DESCRIPTION (Lot and Block Numbers, etc.)

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

Indicate elevation datum used for Base Flood Elevation shown above: In NGVD 1929 IN NAVD 1988 Other/Source: