Floodproof Construction Requirements

CITY OF FARGO
BUILDING INSPECTION DIVISION

The State of North Dakota requires that you call *1-800-795-0555* at least two business days before you dig.

This handout does not address any covenants or easements assigned to the property, nor does it relieve you of code compliance with items which may not have been included from the 2009 International Residential Code (IRC).

REQUIREMENTS TO OBTAIN A BUILDING PERMIT FOR FLOOD PROOF CONSTRUCTION

ALL PLANS MUST BE DRAWN TO SCALE

1. Floodproofing Certification Form from a registered professional engineer. Required before Permit issuance.
2. Plot plan showing existing elevations of property.
3. Plot plan showing exact location of new building or addition and existing buildings.
4. Floor plan(s) of new building(s).
5. Elevation views of all sides of building. Elevation plans must show grade.
6. Foundation wall sections showing required construction details per City flood proof specifications. (See enclosed details.)
7. Foundation plans showing drain tile location and footings.

THE FOLLOWING ITEMS ARE INCLUDED IN THIS PACKET

A. Foundation details from floodproofing code.

B. Inspection log for foundation. Inspections will be completed by Inspection Department.

C. Flood Hazard Acknowledgement form to be completed prior to permit issuance.

D. Residential Floodproofing Certificate. (OMB) Form 1660-0033. (Expires 6/30/2010)

A CERTIFICATE OF OCCUPANCY WILL BE REQUIRED BEFORE BUILDING OCCUPANCY

CITY OF FARGO POLICY STATEMENT FOR FLOODPROOFING ELEVATION REQUIREMTENTS

Referenced to the following:

Fargo Municipal Code Article 21-06 (Flood Plain Management)
Floodproofing Code of the City of Fargo, North Dakota, prepared by Moore Engineering, Inc., Revised December 9, 1975

Applicable to the following:

This Policy Statement shall regulate development in or adjacent to the 100 year flood plain for all areas platted after the enactment of the ordinance adopting this Policy Statement, October 5, 1998.

I. Structures Within the Flood Plain (See Exhibits A & A-1)

All construction within the flood plain to meet all existing and revised floodproofing codes to include the following elevation and fill requirements:

A. Elevations

Lowest opening including area walls	2.5' above BFE (Base Flood Elevation)
Fill around building	2.0' above BFE
Fill 25' away from building	At BFE

B. Infrastructure Elevations

1. All streets to be constructed to BFE plus 1.0'.
2. All sanitary sewer facilities including private sewer connection manholes, cleanouts, etc. to be protected to an elevation of BFE plus 2.5'. Protection measures to include sealing and/or elevating.
3. Storm sewers to be protected to an elevation of BFE plus 1.0' and isolated from other storm sewer systems.

C. Floodway Setback

All structures to be set back 100' from floodway line.

D. Letter of Map Revisions (LOMR)

Encourage construction outside Special Flood Hazard Area (SFHA) or removal by Letter of Map Revision (LOMR) via fill or ring dike.

II. Structures Within 150' of 100 Year Flood Plain Line (Including areas removed from SFHA by LOMR; See Exhibits B & B-1)

A. Elevations

Lowest opening including area walls	2.5' above BFE
Fill around building	2.5' above BFE
Fill across width of lot for flood protective line of defense (minimum 10' wide)	2.5' above BFE
Fill 25' away from buildings	At BFE

Maximum fill depths of five feet (5') for placement of building in areas removed from SFHA by LOMR.

B. Foundations

Setback dimensions are referenced to the 100year flood plain line at the side(s) of the flooding source such as adjacent to a river or drainage ditch.

1. Standard concrete foundations "Required" for all construction within 50' of 100 year flood plain line.
2. Construction to all floodproof codes "Recommended" within 150' of the 100 year flood plain line.
3. Construction to all floodproof codes "required" within 25' of the 100 year flood plain line.

C. Floodway Setback
All structures to be set back 100' from floodway line.

D. Certifications
Elevation Certificate required for all structures (provided by City)
Floodproof Certification required for floodproof foundations

E. LOMR Areas
LOMR application must include primary flood protection line to protect the entire LOMR area to elevation BFE plus 2.5'.

III. Structures in LOMR Areas More Than 150' from the 100 Year Flood Plain Line (See Exhibits C & C-1)

A. Primary Flood Protection Line
Must be protected by a primary flood protection line elevated 2.5' above the BFE. This protection line would be placed on lots or streets adjacent to the 100 year flood plain line.

B. Elevations

Lowest opening including area walls	2.5' above BFE
Fill around building	2.0' above BFE

C. Foundations
No special requirements

D. Certifications
Elevation Certificate required (provided by the City)

IV. Floodproof Foundations

A. Additional concrete reinforcing requirements

1. Place three additional horizontal rebar at the corners of the foundation wall (#4 "L" rebar 36" x 36").
2. Place diagonal rebar (#4 x 36") at bottom corners of basement window penetrations.

EXHIBIT A

STRUCTURES WITHIN THE 100 YEAR FLOOD PLAIN

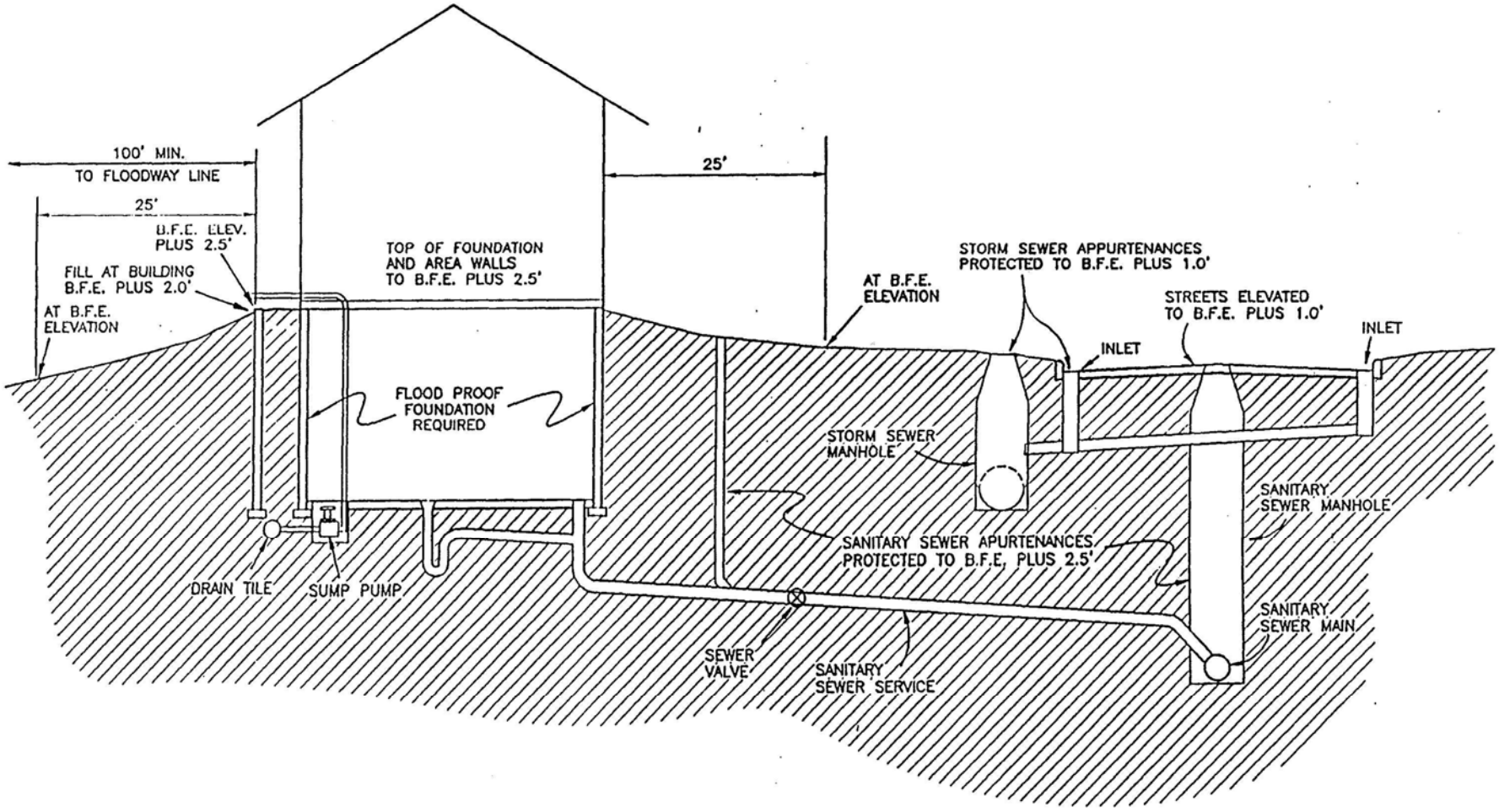


EXHIBIT A-1

FLOODPROOFING CODE REVISIONS FOR STRUCTURES WITHIN THE 100 YEAR FLOOD PLAIN

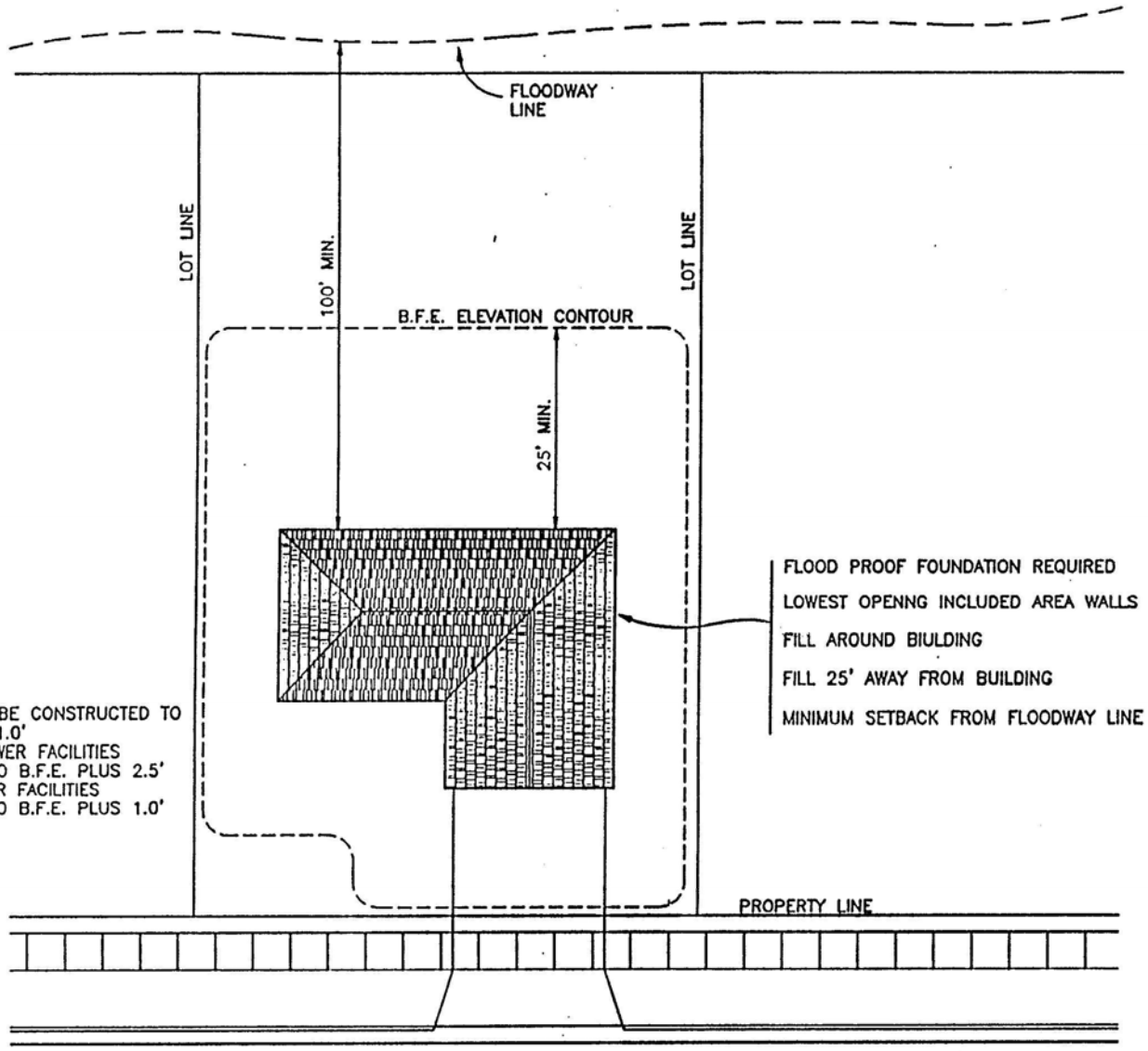


EXHIBIT B

STRUCTURES WITHIN 150' OF THE 100 YEAR FLOOD PLAIN LINE
(INCLUDING AREAS REMOVED FROM SFHA BY LOMR)

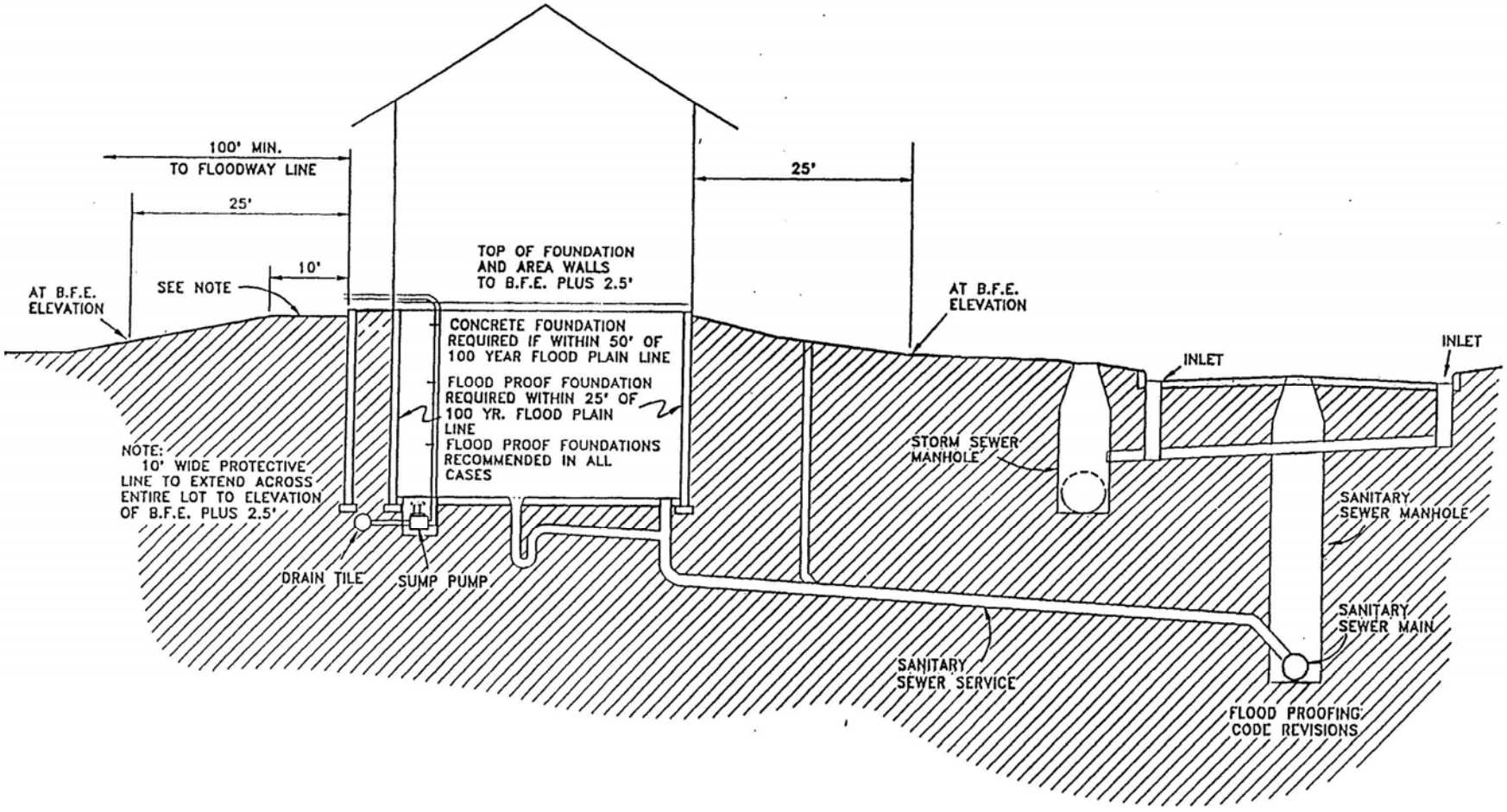


EXHIBIT B-1

FLOODPROOFING CODE REVISIONS FOR STRUCTURES WITHIN 150' OF THE 100 YEAR FLOOD PLAIN LINE
(INCLUDING AREAS REMOVED FROM SFHA BY LOMR)

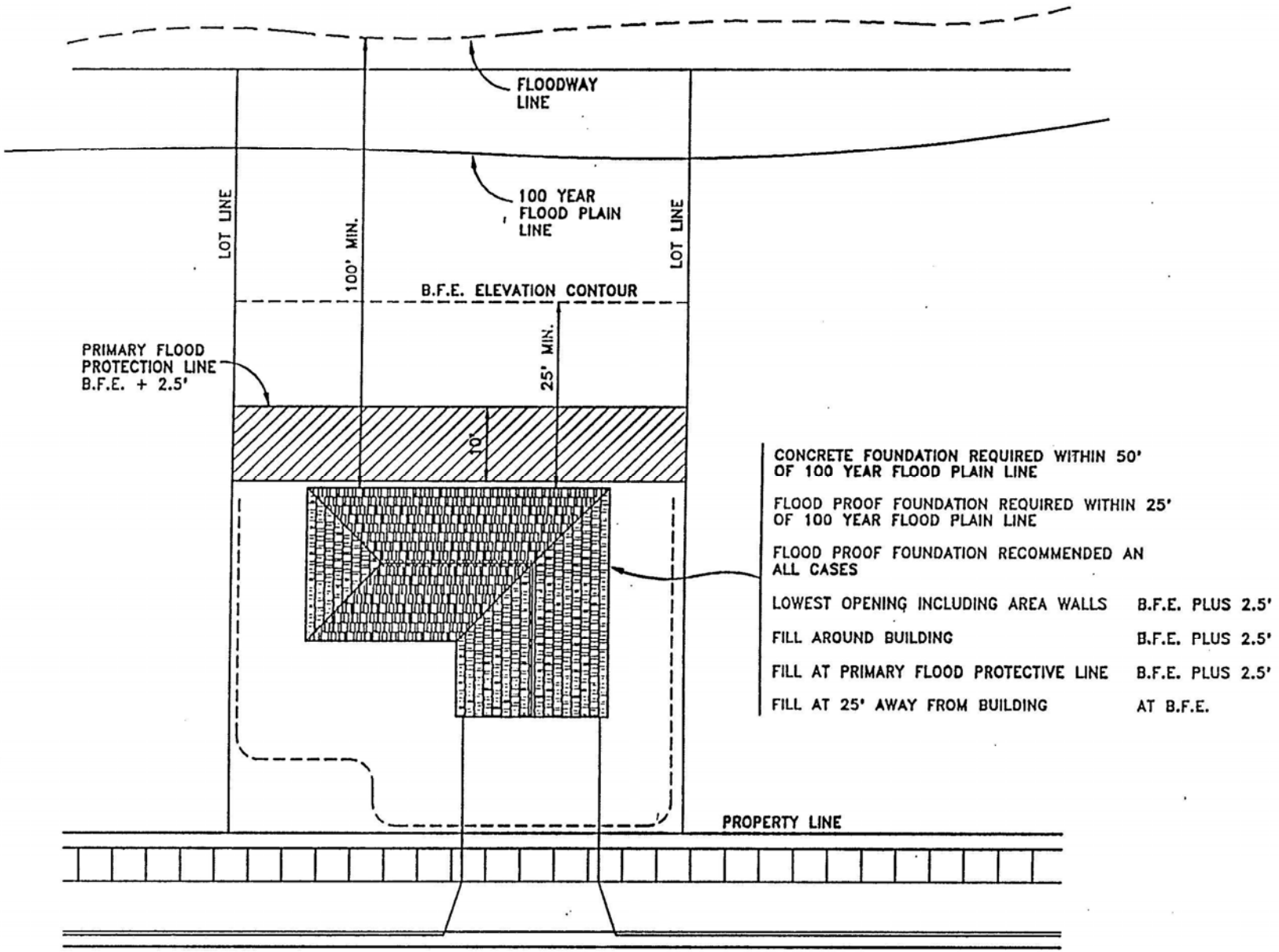


EXHIBIT C

STRUCTURES IN LOMR AREA MORE THAN 150' FROM 100 YEAR FLOOD PLAIN LINE

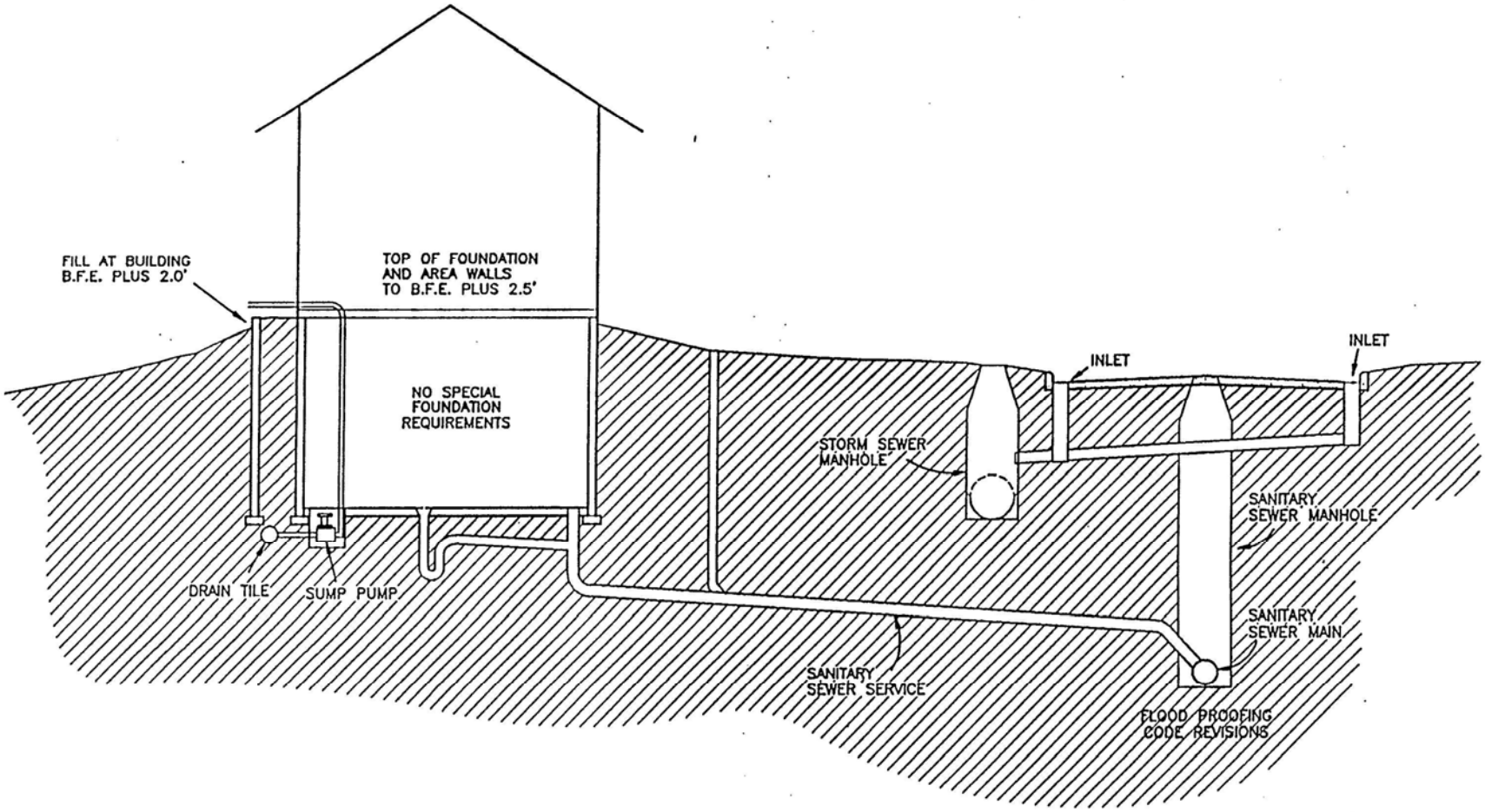
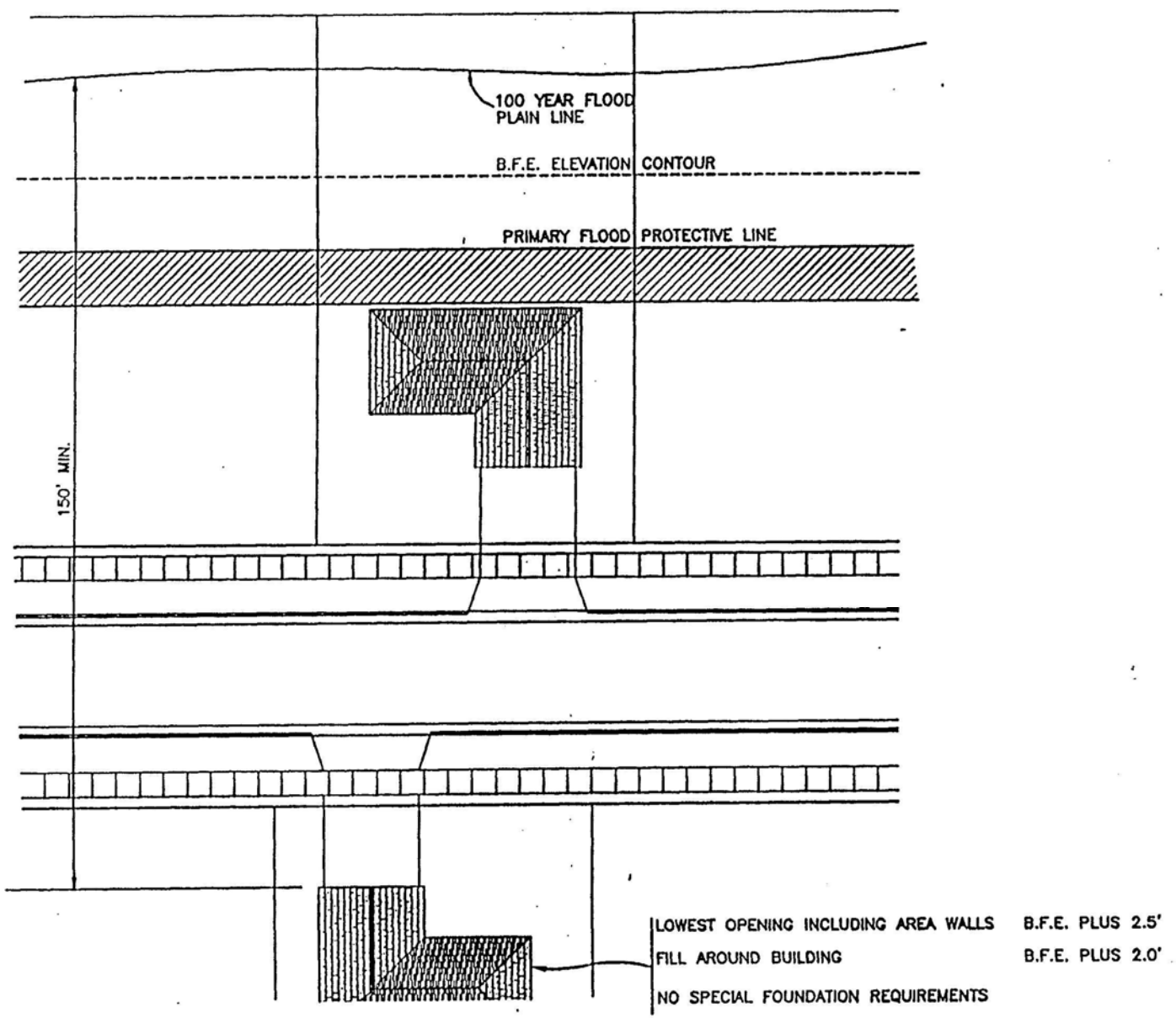
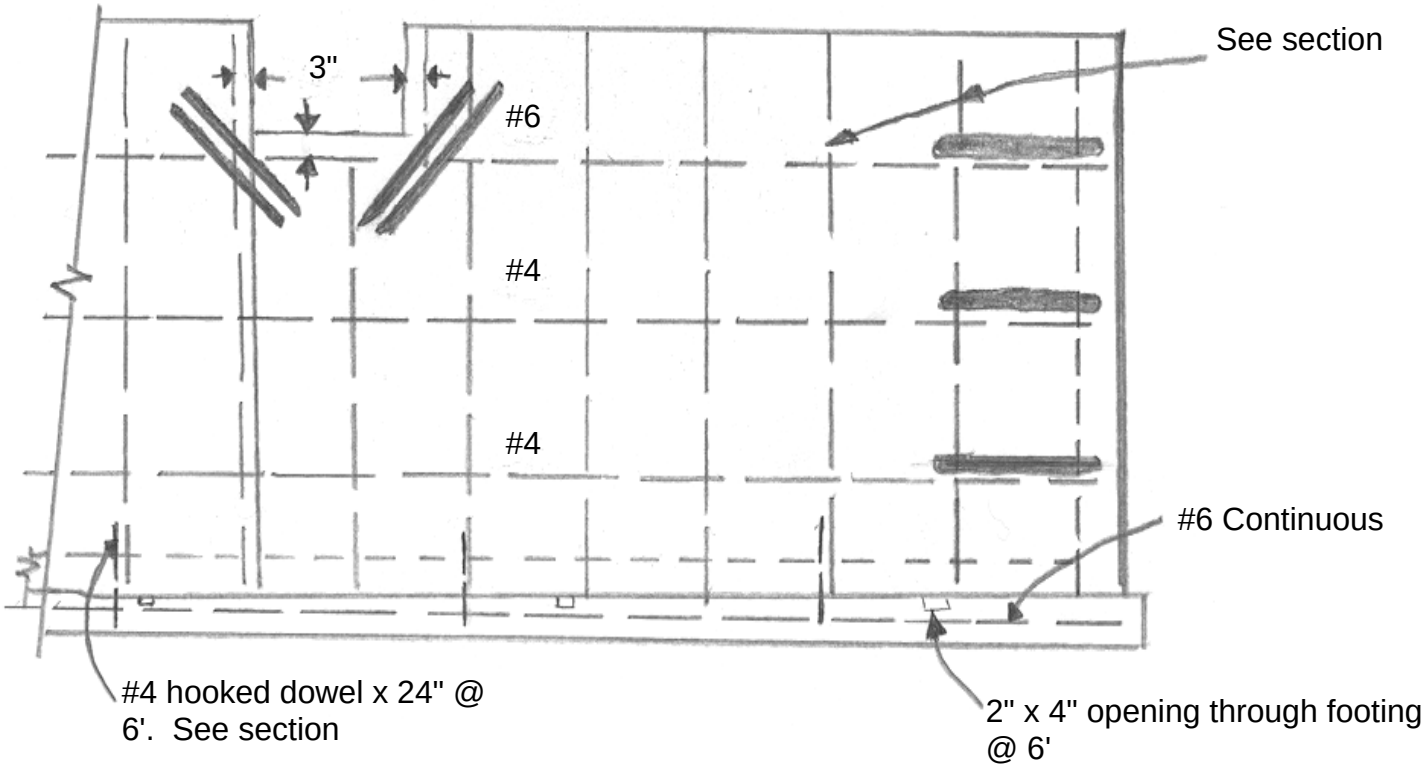


EXHIBIT C-1

FLOODPROOFING CODE REVISIONS FOR STRUCTURES IN LOMR AREAS MORE THAN 150' FROM THE 100 YEAR FLOOD PLAIN LINE

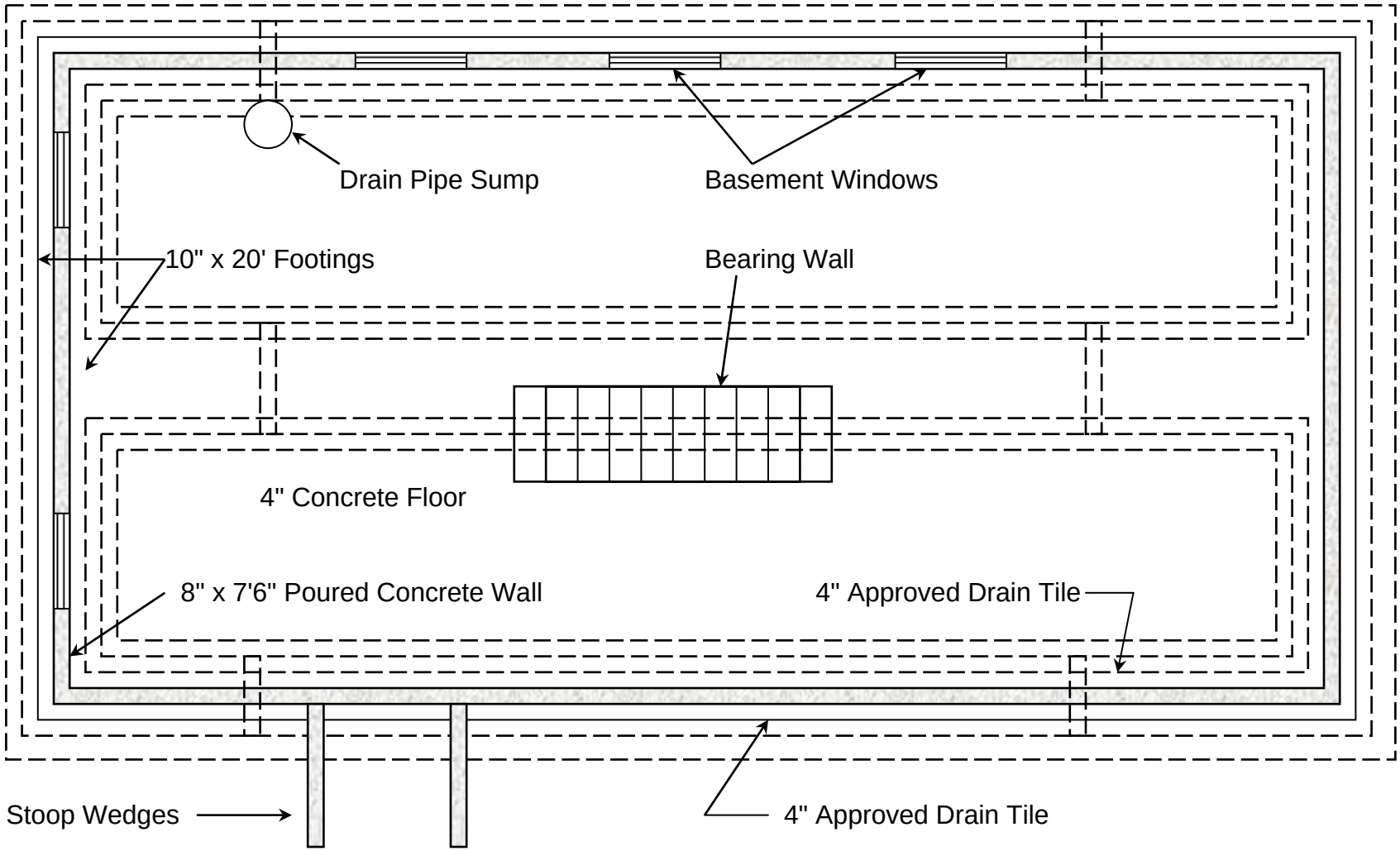


WINDOW WELL DETAIL



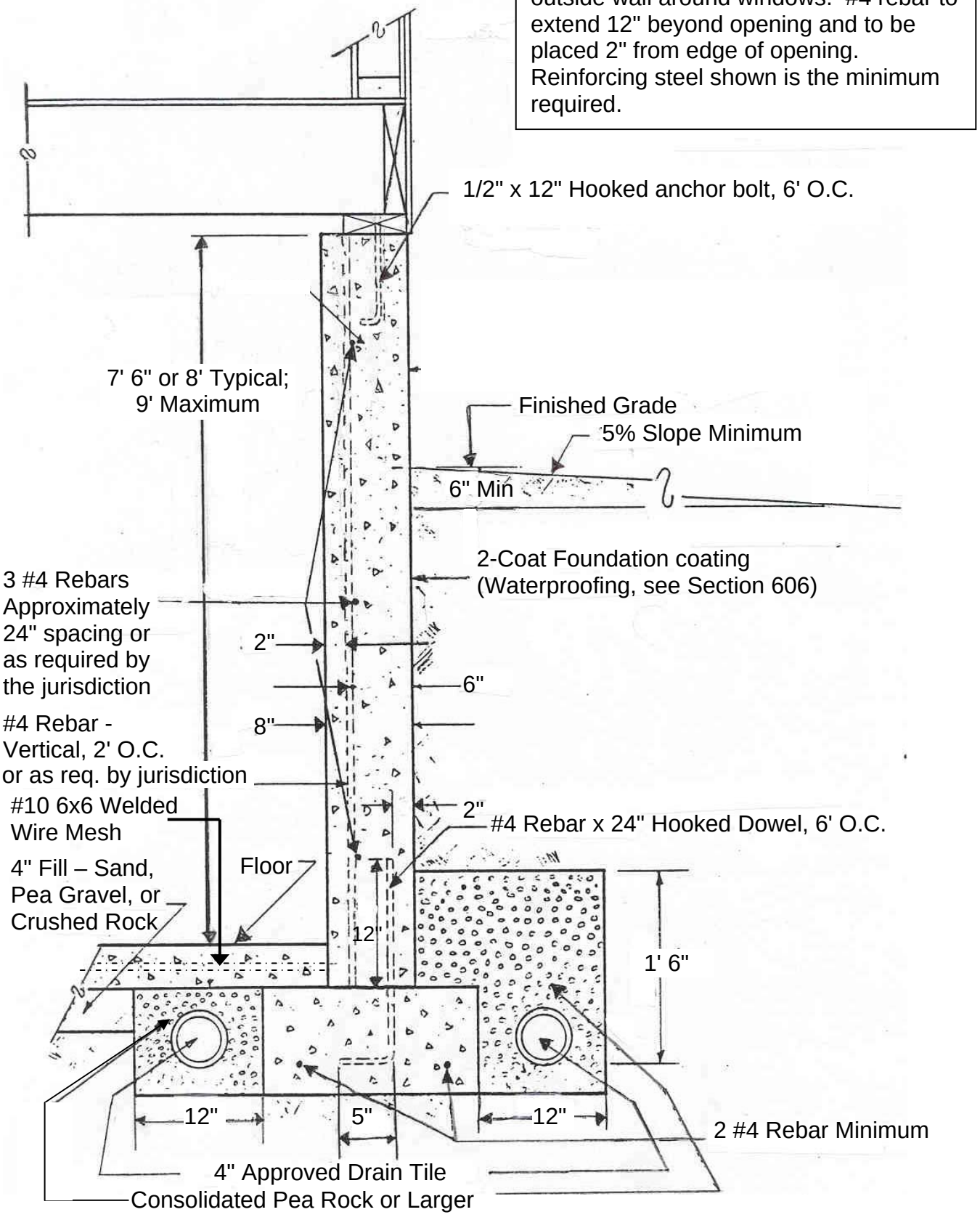
FOOTING AND FOUNDATION WALL PLAN

Note: Contractor may use continuous footings or sufficient pad footings as required.

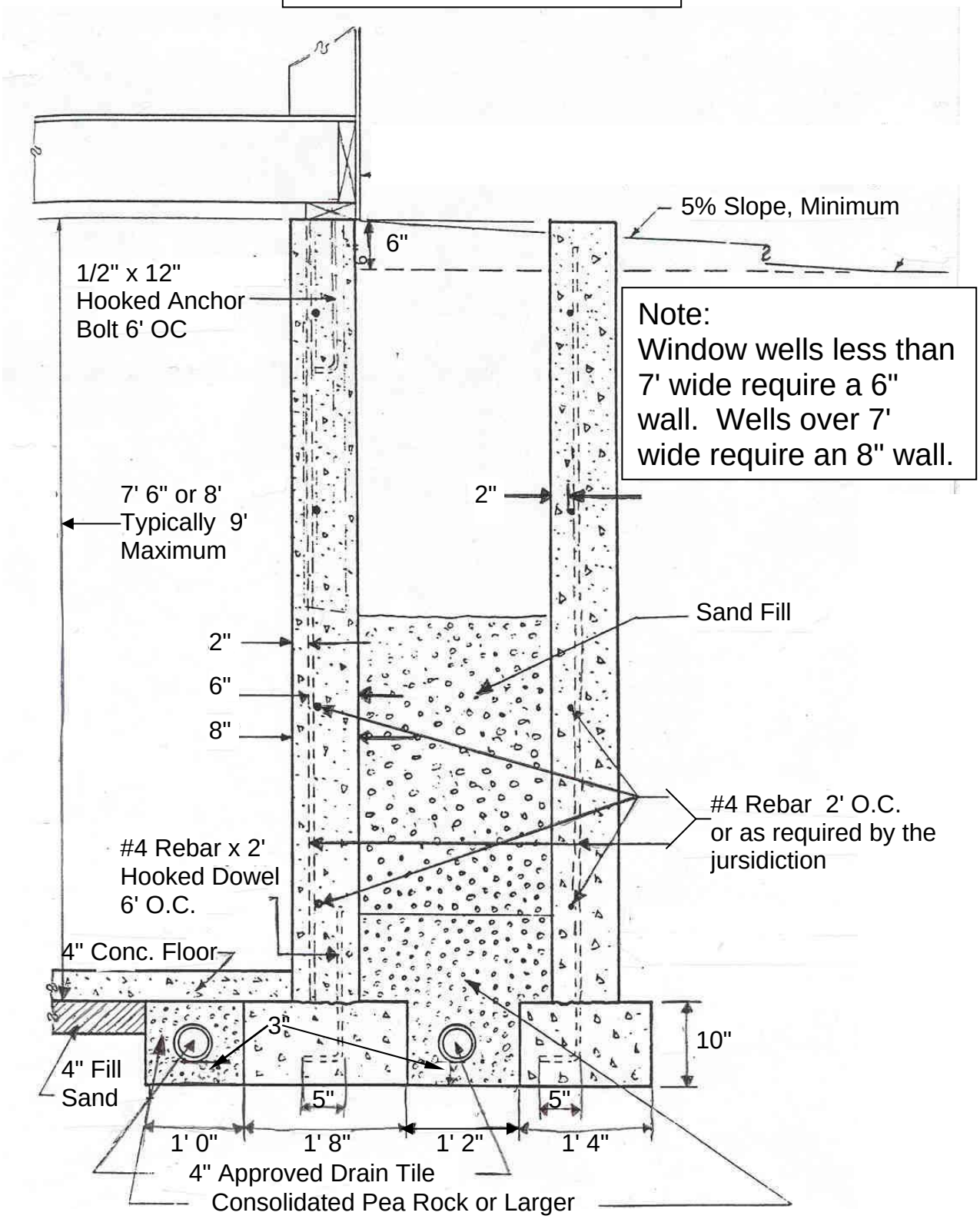


TYPICAL WALL SECTION

Note: Install #4 rebar 2" from inside and outside wall around windows. #4 rebar to extend 12" beyond opening and to be placed 2" from edge of opening. Reinforcing steel shown is the minimum required.



DEEP WINDOW WELL



Fargo Inspections

City of Fargo
200 Third Street North
701-241-1561 phone
701-476-6779 fax

FLOOD PROOFING INSPECTION CARD*

Owner: _____

Address:_____

100 Year Flood Elevation:_____ Flood Protection Elevation: _____

Elevation Certification "Flood Protection Elevation"

Point of Risk: _____

Inspector: _____ Date:_____

1. Footing Date:_____Inspector:_____
   Comments: _____
2. Foundation Date:_____Inspector:_____
   Comments: _____
3. Waterproofing Date:_____Inspector:_____
   Comments: _____
4. Drain Tile Date:_____Inspector:_____
   Comments: _____
5. Sewer Line Date:_____Inspector:_____
   Comments: _____
6. Sewer Valve Date:_____Inspector:_____
   Comments: _____
7. Concrete Floor Date:_____Inspector:_____
   Comments: _____

ACKNOWLEDGEMENT OF FLOOD HAZARD

The undersigned hereby acknowledges receipt of this flood hazard acknowledgement document. This document is given out by the City of Fargo Building Inspections Division at the time a builder obtains a building permit for new building construction within the preliminarily designated floodway.

The building permit holder acknowledges that the land on which the building permit has been issued is within the preliminarily designated floodway. The permit holder is thus informed of the hazards associated with building structures in the floodway. The building permit holder is further informed that the City of Fargo and its agencies cannot insure flood protection, maintenance of access, sewer service, water service, police and fire protection, and any and all other utility services during a period of flooding. The building permit holder further acknowledges that these areas have been preliminarily designated by FEMA as floodway and are likely to be officially designated as the floodway in the future by FEMA which may adversely affect property values and flood insurance rates. The building permit holder also agrees to notify the owner of the property to be built upon (if the permit holder is not the property owner) and will notify subsequent purchasers of the subject property of the existence of this floodway hazard acknowledgement. By acceptance of the building permit, the undersigned agrees to the foregoing conditions.

Receipt of this floodway hazard document is acknowledged this _____ day

of _____, 201__.

_____

_____

Department of Homeland Security
Federal Emergency Management Agency

RESIDENTIAL BASEMENT FLOODPROOFING CERTIFICATE

See Reverse Side for Paperwork Burden Disclosure Statement

O.M.B. No. 1660-0033
Expires August 31, 2013

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**
	Policy Number
BUILDING STREET ADDRESS *(Including Apt., Unit Number)*	Company NAIC 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

SECTION II – FLOODPROOFING INFORMATION *(By a Registered Professional Engineer or Architect)*

Floodproofing Design Elevation Information:

Building is floodproofed to an elevation of _____. ____feet.
(Elevation datum used must be the same as that on the FIRM.)

Elevation of the top of the basement floor is _____. ____feet.
(Note: The floodproofing design elevation must be at least one foot above the Base Flood Elevation [BFE])

SECTION III – CERTIFICATION *(By a Registered Professional Engineer or Architect)*

Residential Floodproofed Basement Construction Certification:

I certify that, based upon development and/or review of structural design specifications, and plans for construction, including consideration of the depth, velocity, and duration of flooding and the type and permeability of soils at the site, the design and methods of construction of the floodproofed basement to be used are in accordance with accepted standards of practice for meeting the following provisions:

- Basement area, together with attendant utilities and sanitary facilities, is watertight to the floodproofing design elevation with walls that are impermeable to the passage of water without human intervention; and
- Basement walls and floor are capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy resulting from flooding to the floodproofing design elevation; and have been designed so that minimal damage will occur from floods that exceed the floodproofing design elevation; and
- Building design, including the floodproofing design elevation, complies with community requirements.

I certify that the information on this certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code Section 1001.

CERTIFIER'S NAME	LICENSE NUMBER *(or affix Seal)*	
TITLE	COMPANY NAME	
ADDRESS	CITY / STATE / ZIP	
SIGNATURE	PHONE NO.	DATE

Copies of this certificate must be given to: 1) the community official; 2) the insurance agent; and 3) the building owner.

PAPERWORK BURDEN DISCLOSURE STATEMENT

Residential Basement Floodproofing Certificate

FEMA Form 086-0-24

Public reporting burden for this data collection is estimated to average 3.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and submitting this Residential Basement Floodproofing Certificate. You are not required to respond to this collection of information unless a valid OM B control number is displayed in the upper right corner of this Residential Basement Floodproofing Certificate.

Send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472, Paperwork Reduction Project (1660-0033) **NOTE: Do not send your completed form to this address.**