

Highlands Borough Special Flood Hazard Area Inspection & Plan Review Checklist

This Checklist does not represent all items required to be detailed or inspected for compliance with the construction and floodplain regulations

DFE=Design Flood Elevation ♦ BFE=Base Flood Elevation ♦ SI=Substantial Improvement Items marked with an asterisk (*) are not required to be verified/collected at time of inspection			
Permit #:	Flood Zone: <input type="checkbox"/> A <input type="checkbox"/> Coastal A <input type="checkbox"/> V	Design Flood Elevation:	
Address:	Blk:	Lot:	Qual:

DOCUMENT COMPLIANCE REQUIREMENTS

NA	F	P	NA=Non-Applicable F=Fail (No) P=Pass (Yes)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Floodplain/released construction plans on site
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Specifications for engineered openings provided (if not on plans)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*Foundation Location and Elevation Certificate for lowest floor and as-built elevation (must be submitted prior to vertical construction)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*Final Elevation Certificates provided (2)-signed & sealed
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*Pile Certification Log- Pile Foundations only (collected after driven & before vertical construction)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*V Zone Engineering Certification provided (construction in V and Coastal A Zones only)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*Deed Restriction- Habitable Buildings w/enclosure greater than 6 feet in height

FLOODPLAIN COMPLIANT CONSTRUCTION – ALL STRUCTURES

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No portion of the building is located within a V Zone (A Zone construction only)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Structural systems of building/structure anchored to resist flotation/collapse/lateral movement
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lowest enclosed area used solely for vehicle parking, building access or limited storage
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Habitable structures: Situated at/above adjoining exterior grade along at least one entire exterior wall, providing positive drainage of the enclosed area (enclosures/crawlspace/basements below grade on all sides are prohibited)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Flood openings provided in enclosed area (total net opening not less than 1 square inch for each square foot of enclosed area. Openings shall be not less than 3 inches (76 mm) in any direction.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Foundation & break away walls of each enclosed areas provided with compliant openings <ul style="list-style-type: none"> ♦ Minimum 2 openings on different sides of each enclosed area. Bottom of openings not more than 1 foot above higher of final interior grade/floor and finished exterior grade
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Engineered openings allow automatic entry/exit of floodwaters & min. 3" in all directions
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Electrical systems/equipment/components located at/above DFE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Panelboards/disconnects/circuit breakers more than 5 ft above floor has platform for access
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Plumbing appliances/fixtures/systems located at/above DFE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Heating/ventilating/air-conditioning/mechanical systems located at/above DFE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Duct systems located at/above the DFE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Materials below DFE conform to the provisions of FEMA TB-2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Break away walls free of systems/fixtures/equipment/components/electrical wiring/conduits
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Water supply/sanitary sewage systems designed to minimize/eliminate infiltration of floodwaters
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Underground/above-ground tank anchored in accordance with ASCE 24 and N.J.A.C. 7:13
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Foundation walls meets following standards: (unsupported height measured from the finished grade of the under-floor space to the top of the wall) <ul style="list-style-type: none"> ♦ Unsupported height of 6-inch plain masonry walls shall be not more than 3 feet ♦ Unsupported height of 8-inch plain masonry walls shall be not more than 4 feet ♦ Unsupported height of 8-inch reinforced masonry walls shall be not more than 8 feet
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Metal connectors/fasteners/screws/bolts/nails are stainless steel/corrosion resistant/galvanized
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wood is preservative treated as required (AWPA U1) or heartwood of naturally decay resistant
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Electrical conduits/cables below DFE waterproofed/secured & conform to NEC for wet locations

FLOODPLAIN COMPLIANT CONSTRUCTION – ALL STRUCTURES, continued

NA	F	P	NA=Non-Applicable	F=Fail (No)	P=Pass (Yes)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Elevator components located at/above DFE		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Elevator components below DFE constructed of flood damage-resistant materials		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*Elevator equipped with controls to prevent cab from descending below DFE		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Attached Deck/Porch continuation of structure and supported by compliant foundation (ASCE 1.5.3)		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concrete slab for parking pads/enclosure floor/landing/deck/walkway/patio below BFE structurally independent of primary foundation of building or is structurally connected and capable of resisting flood loads and effects of scour due to slab (other than Coastal A and V Zones)		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Chimney/fireplace extend below DFE , but is supported vertically & independent of structure (other than Coastal A and V Zones)		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Aboveground tank elevated at/above DFE or installed to resist flood-related loads/floating debris (other than Coastal A and V Zones)		

ADDITIONAL REQUIREMENTS FOR STRUCTURES REGULATED BY THE IBC	<input type="checkbox"/> Section Not Applicable
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Documentation by Design Professional submitted detail/state: (other than Coastal A and V Zones)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*Elevation of the lowest floor
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*Design will provide for equalization of hydrostatic flood forces in accordance with ASCE 24-2.7.2.2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enclosed area below DFE without flood openings complies with ASCE 24-2.7.2.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*Dry floodproofed nonresidential building includes statement that the dry floodproofing designed in accordance with ASCE 24 shall include the flood emergency plan specified in ASCE 24-6.2.3

Documentation by Design Professional submitted detail/state: (Coastal A and V Zones)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Elevation of the bottom of the lowest horizontal structural member at/above BFE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Building and foundation is designed in accordance with ASCE 24
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Breakaway walls designed are designed in accordance with ASCE 24
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Breakaway walls without flood openings are designed to provide for equalization of hydrostatic flood forces in accordance with ASCE 24-2.7.2.2

ADDITIONAL REQUIREMENTS FOR STRUCTURES IN <u>COSTAL A & V ZONES</u>	<input type="checkbox"/> Section Not Applicable
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	New/ SI building/foundation constructed according to plans/specifications conforming w/ ASCE 24
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	New building is landward of the reach of mean high tide
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Structure is NOT a manufactured home
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No basement or enclosure below grade on all sides
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No use of fill for structural support of building
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*New/ SI construction of habitable building has lowest horizontal structural member, utilities, and sanitary facilities elevated at/above DFE (must be confirmed by an Elevation Certificate)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Attached Decks and Porches: Decks/porch structurally connected to structure has lowest horizontal structural at/above DFE and supported on approved foundations in conformance with ASCE Chapter 4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Detached Decks and Porches: Is below the DFE , and is designed and constructed to remain intact/anchored or foundation conform to ASCE 24-1.5.3, AND is frangible and break away
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	New/ SI construction has space below lowest floor free of obstruction (no walls) or constructed with non-supporting breakaway walls, open wood latticework, or insect screening intended to collapse
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	New/ SI construction with fully enclosed area below lowest floor used solely for parking/access/storage
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

ADDITIONAL REQUIREMENTS FOR STRUCTURES IN COSTAL A & V ZONES, Cont. Section Not Applicable

NA	F	P	NA=Non-Applicable	F=Fail (No)	P=Pass (Yes)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enclosures within the DFE are: <ul style="list-style-type: none"> <input type="checkbox"/> At or above the adjoining exterior grade along at least one entire exterior wall (for positive drainage) <input type="checkbox"/> Is designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters (or structure is non-residential, designed in accordance with ASCE 24 and certified by Design Professional in a Floodproofing Certificate and Elevation Certificate. <input type="checkbox"/> Be constructed to meet the requirements of ASCE 24 Chapter 4 (COASTAL A and V ZONES) <input type="checkbox"/> *Have openings documented on an Elevation Certificate and have breakaway wall construction documented on a Breakaway Wall Certificate unless the designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters <input type="checkbox"/> *Have a deed restriction for enclosure greater than six feet, recorded in the Office of the County Clerk 		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*Deed restrictions must explain/disclose: <ul style="list-style-type: none"> <input type="checkbox"/> Enclosure is likely to be inundated by floodwaters which may result in damage and/or inconvenience <input type="checkbox"/> Depth of flooding that the enclosure would experience to the Flood Hazard Area DFE <input type="checkbox"/> Deed restriction prohibits habitation of the enclosure and explains that converting the enclosure into a habitable area may subject the property owner to enforcement 		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	New/SI construction enclosures is less than 295 square feet		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Foundation Type is as checked below and found compliant: <ul style="list-style-type: none"> <input type="checkbox"/> Deep Foundation - constructed in erodible soils founded on piles/drilled shafts/caissons/other types of deep foundations (ASCE 5.5.5) <input type="checkbox"/> Shallow Foundation - where surface or subsurface conditions consist of nonerodible soils or rock that prevent deep foundations (ASCE 4.5.1) 		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EROSION CONTROL STRUCTURES: Bulkheads, seawalls, revetments, and other erosion control structures not connected to foundation/structure <ul style="list-style-type: none"> ◆ (Bulkheads/seawalls/revetments/other erosion control shall be designed/constructed so as not to direct floodwaters or increase flood forces or erosion impacts on the foundation or superstructure of any structure) 		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concrete slab for parking pads/enclosure floor/landing/deck/walkway/patio (permitted to be beneath or adjacent to structure) are designed and constructed to be structurally independent of the primary foundation system of the structure and frangible and break away (ASCE 9.3) <ul style="list-style-type: none"> ◆ Reinforcing of concrete slabs and welded wire reinforcement is NOT permitted ◆ Slabs NOT permitted to have turned down edges and maximum slab thickness is 4" ◆ Slab must be self-supporting/functional under base flood conditions/erosion/uplift pressures, main structure shall be capable of resisting any added flood loads and effects of local scour due to the presence of the slabs 		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Aboveground tanks elevated to DFE and NOT located under elevated structures or attached to structures at elevations below DFE		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Chimney/fireplace base does not extend below DFE		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Chimney/fireplace base supported vertically on piles/column foundations, and foundation embedment is at least as deep as the structure foundation or deeper where necessary		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

ADDITIONAL REQUIREMENTS FOR <u>NON-RESIDENTIAL STRUCTURES</u>			<input type="checkbox"/> Section Not Applicable
NA	F	P	<i>NA=Non-Applicable</i> <i>F=Fail (No)</i> <i>P=Pass (Yes)</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	New/ SI construction (lowest floor), utilities, mechanicals, sanitary facilities elevated at/above DFE <ul style="list-style-type: none"> ◆ Must be confirmed by an Elevation Certificate
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*New/ SI construction together with attendant utility and sanitary facilities is below DFE , AND Structure meets the requirements of ASCE 24 Chapters 2 and 7; and is constructed according to the design plans and specifications provided at permit application and signed by a licensed design professional, is certified by that individual in a Floodproofing Certificate, and is confirmed by an Elevation Certificate (see ASCE 22-Chapter 6 for floodproofing requirements) <ul style="list-style-type: none"> ◆ Wet floodproofing must be done to DFE ◆ Dry floodproofing of nonresidential structures and nonresidential areas of mixed-use structures is NOT permitted in Coastal A and V Zones ◆ Dry floodproofing of residential structures or residential areas of mixed-use structures is NOT permitted
Inspection Date: / /			Inspector:

Notes: