

Managing Flood Storage Impacts with RI's Freshwater Wetlands Regulatory Program

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OFFICE OF WATER RESOURCES



Freshwater Wetland Jurisdictional Areas

- Freshwater Wetlands (swamps, ponds, marshes, etc.)
- Rivers and Streams; Lakes & Ponds
- Floodplain
- Buffers and Buffer Zones
- Areas Subject to Storm Flowage; Areas Subject to Flooding

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“Floodplain”



- As defined in R.I. Gen. Laws § 2-1-20(7), that land area adjacent to a river or stream or other body of flowing water which is, on the average, likely to be covered with flood waters resulting from a one hundred (100) year frequency storm. A “one hundred (100) year frequency storm” is one that is to be expected to be equaled or exceeded once in one hundred (100) years; or may be said to have a one percent (1%) probability of being equaled or exceeded in any given year.



FEMA does not designate any floodplain presence along this watercourse

FEMA indicates presence of floodplain

AE Zone

102

Maple Valley Rd

Maple Valley Rd

Pottersville

Maple Valley Rd

0.2mi

71 67878 41 72669 Degrees



A Zone

Glacelinton Pond

Mackay Rd

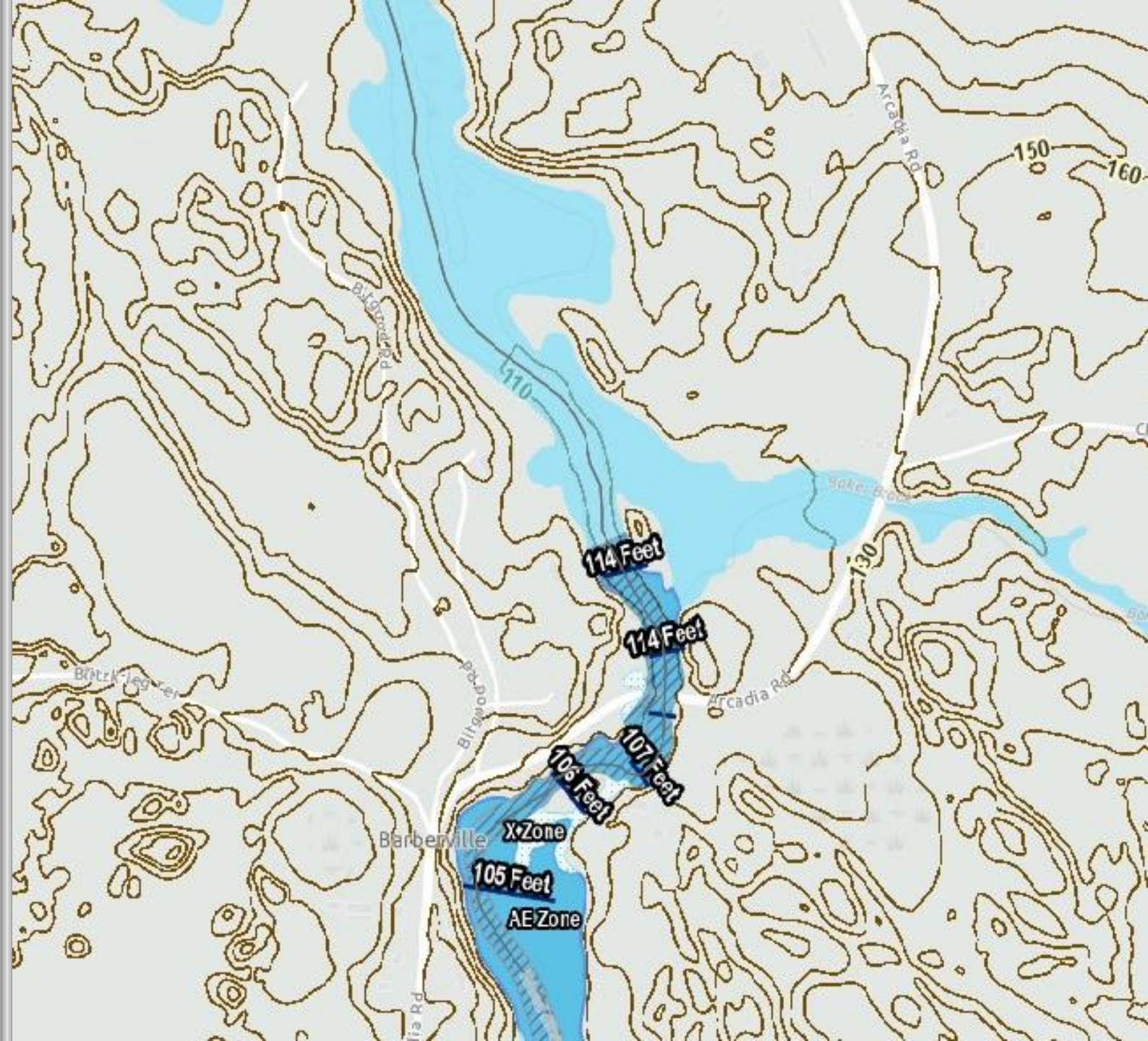
Pond House Rd

Options for determination of floodplain limits

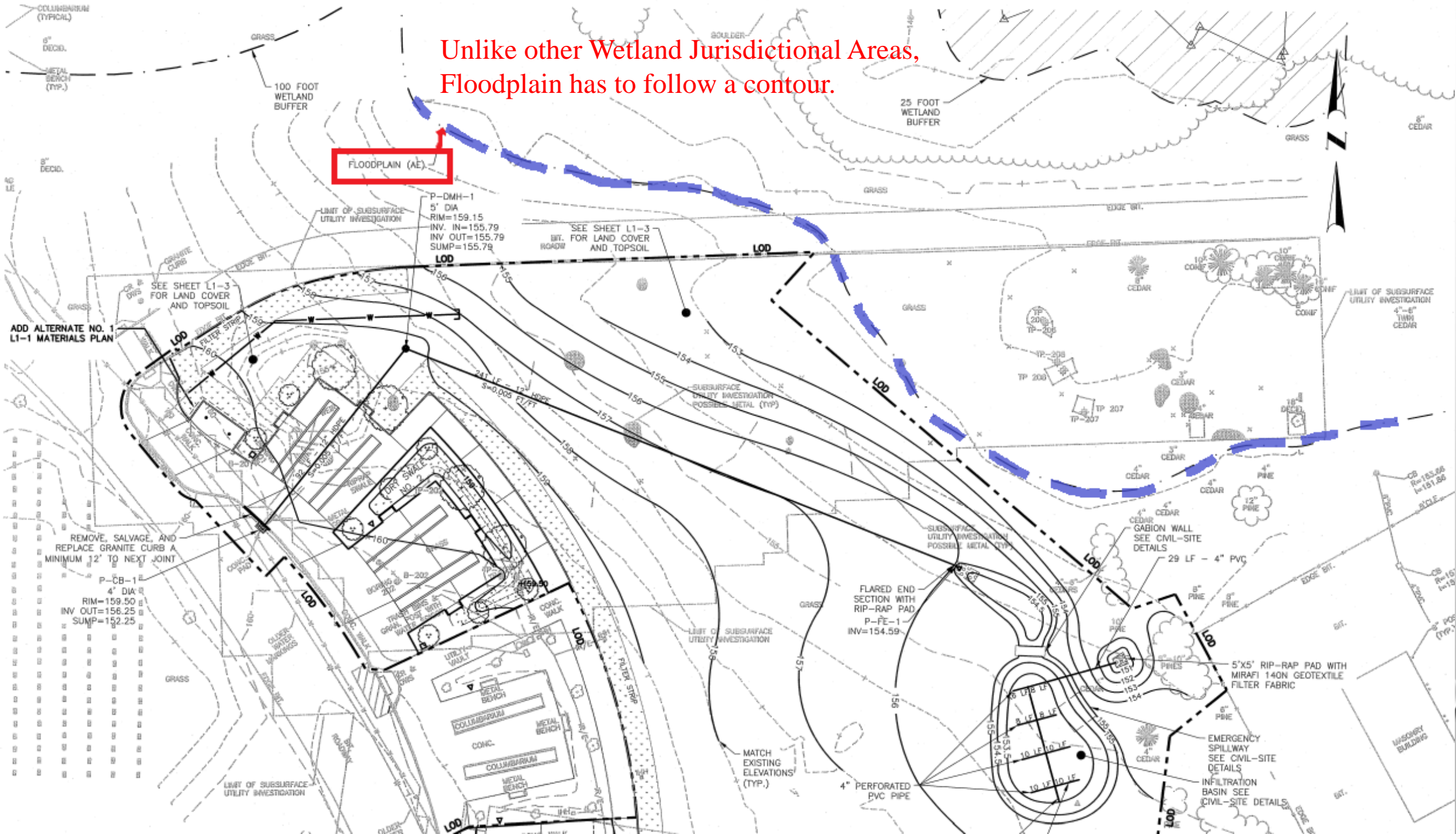
- If FEMA has done a flood study that identifies a Base Flood Elevation, RIDEM accepts that. The applicant needs to match it to the site and the elevation, as surveyed using North American Vertical Datum 1988 (NAVD1988)



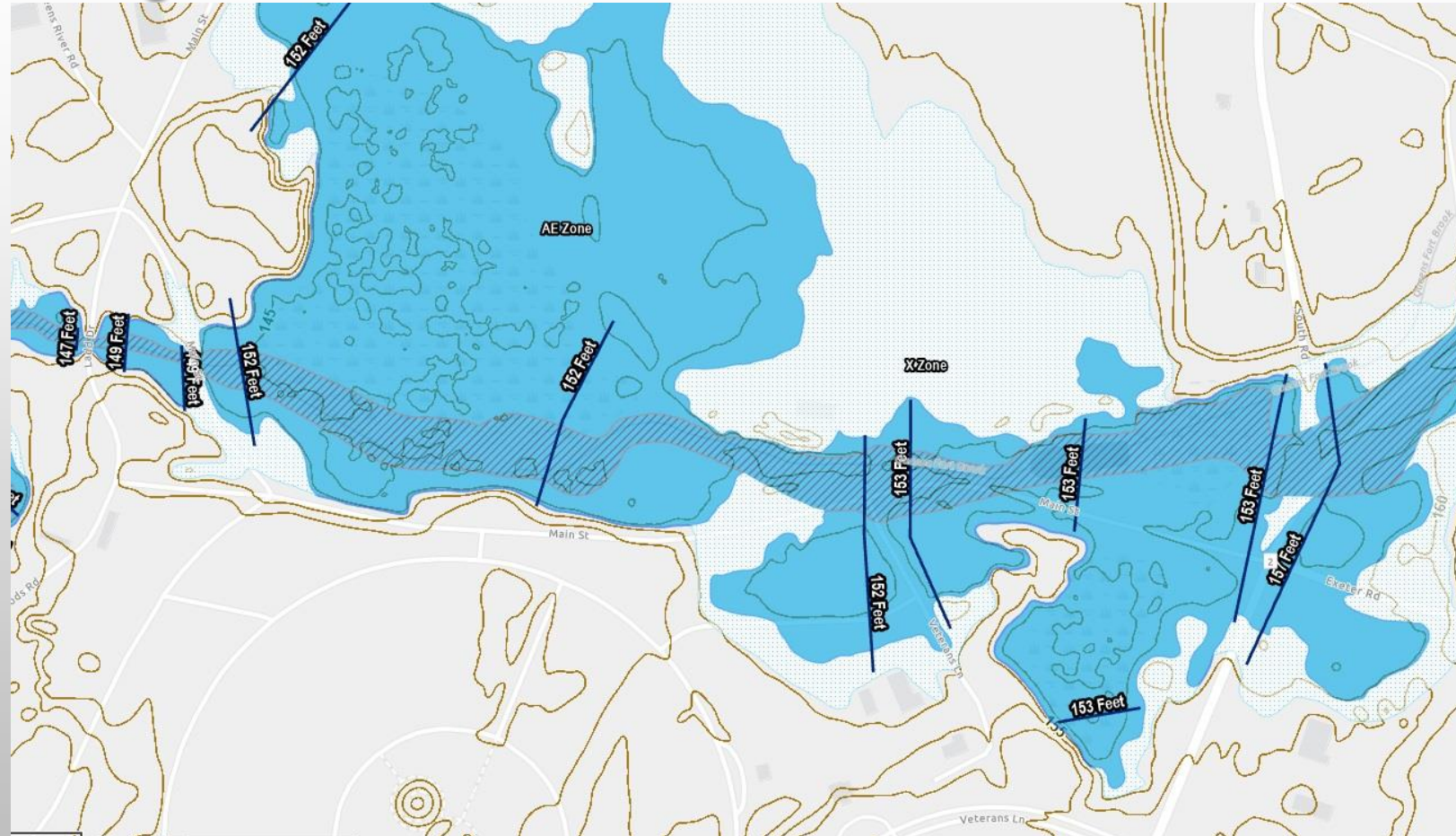
- Often FEMA has mapped floodplain, but not provided any Base Flood Elevation.
- Even more frequently, FEMA has not mapped any floodplain along a river or stream (or dammed segment of watercourse)
- In either of the above cases, a Professional Engineer would have to perform a study to establish the Base Flood Elevation for the floodplain, again using NAVD88.



Unlike other Wetland Jurisdictional Areas,
Floodplain has to follow a contour.



Floodway

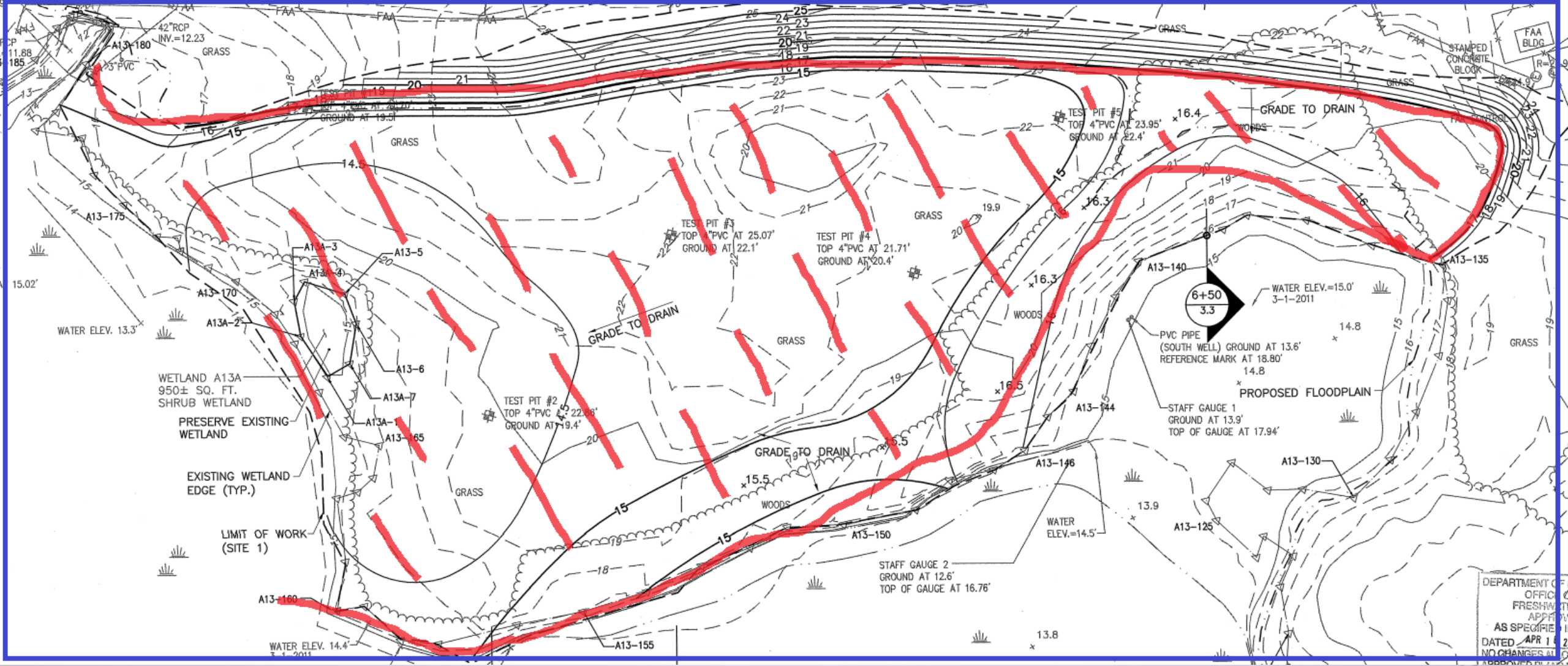


- “The channel of a river or stream and any immediately adjacent areas that must be kept free of encroachment to allow 100-year floodwaters to be carried without increase in flood heights or flows or without endangering life or property”
- If FEMA depicts a floodway, that limit can be used to identify floodway limits on plans
- If there is no designated Floodway, we define the floodway limits to correspond to the edge of a river or stream.

- RIDEM's Flood Protection Standard (Section 3.7.1 of the Wetlands Rules)

1. **Flood Storage Capacity:** Projects and activities taking place in a floodplain **shall not result in any net reduction in flood storage capacity** and **shall not reduce the rate** at which floodwater is stored by the floodplain.
2. **Floodway obstruction:** Projects and activities taking place within or adjacent to rivers or streams **shall not encroach into** floodway limits with any fill, structure or other development





Volumetric Compensation via Excavation

DEPARTMENT OF
 OFFICE OF
 FRESHWATER
 APPLICATIONS
 AS SPECIFIED
 DATED APR 1 2011
 NO CHANGES ALLOWED

Rules and Guidelines for Volumetric Compensation

- Compensation to be provided on a **foot-per-foot elevation basis**.
- Compensation area must have **unrestricted hydraulic connection** to affected floodplain and must provide the **same rate** of storage capture/discharge over the course of a flood as pre-existing conditions.
- Compensation area must be located in **same stretch of the watercourse**.
- Compensation area must **precede or be created simultaneously** as the displacement.
- Cannot utilize voids under buildings or decks; all areas within the footprint of a structure **are considered to be filled area (displacement)**.

Floodway Obstruction Standard

- Easy to meet the standard...don't place any fill or structure within the limits of floodway!



In Practice, this means:

- Roadway, driveway or other crossings over streams and rivers must utilize a culvert or bridge span at least **as wide as the floodway.**
- Other structures, such as fences, buildings, docks, solar panels, etc. **must remain outside of the floodway limits.**

If a standard cannot be met, an applicant needs to seek a Variance in order to obtain a permit.

The Rules include minimum requirements to obtain a variance.

Guidance is provided on the nature of documentation to be provided to make their case.



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Regulatory Provisions and Guidance Pertaining to Floodplain and Floodway Standards of the RIDEM Freshwater Wetland Program

This guidance package has been developed to provide design engineers with information on relevant regulations and definitions with respect to floodplains and floodways, as well as provide helpful tips and techniques regarding the determination of floodplain and floodway limits, calculation of displacement, and design of effective compensation for impacts.

In addition, this guidance document contains visual examples of several different methods commonly used to perform floodplain displacement and volumetric compensation analysis.

Please note: This guidance package is for general informational purposes only and is not meant to be used as a substitute for the RI Fresh Water Wetlands Act (R.I.G.L. §2-1-18 et. seq.) or the Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act (250-RICR-150-15-3; "FWW Rules"). In general, applications involving the identification of floodplain or floodway limits, or that involve alterations to these areas, must be prepared by a Rhode Island Registered Professional Engineer. Refer to FWW Rules Section 3.8.6 for specific requirements regarding the use of professionals.



- [HTTP://WWW.DEM.RI.GOV/WETLANDS](http://www.dem.ri.gov/wetlands)
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