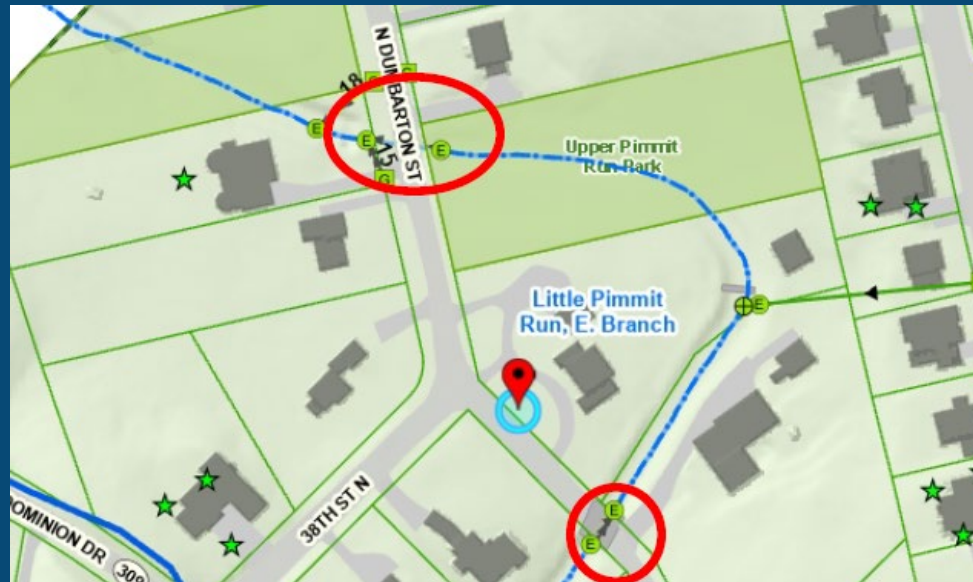


# N Dumbarton Culvert Replacements

## Community Meeting

Riyam Alobaidi  
Elizabeth Thurber

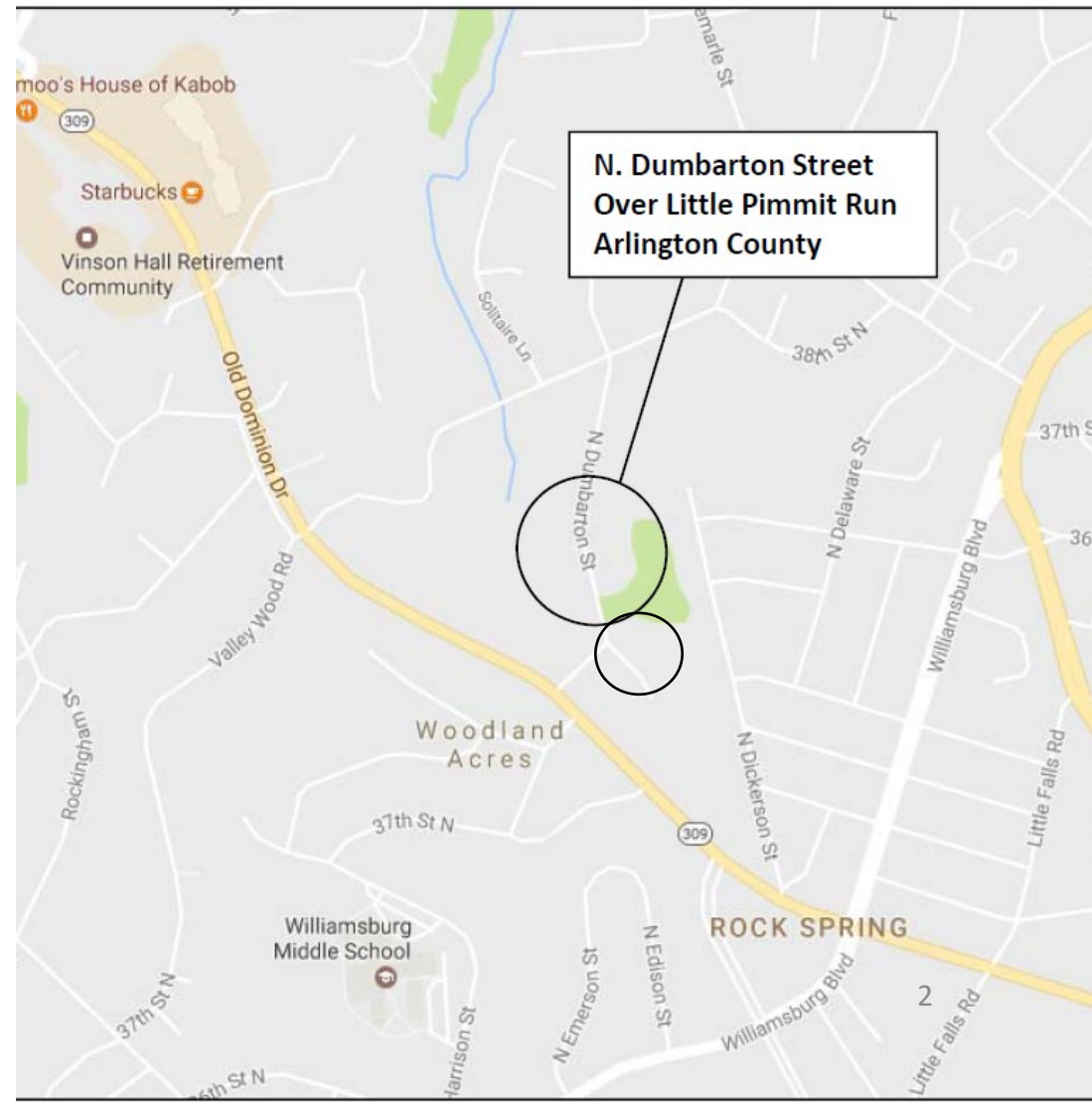
May 1<sup>st</sup> 2023



# N Dumbarton Street Culvert Replacements

## AGENDA

- Objectives of this meeting
- Project area location
- Existing culverts
- Why are we doing this project
- Project description
- Related activities
- Anticipated schedule for plan and construction
- Review of the FEMA letter recipients will receive
- Floodplain Map & ordinance Updates
- Questions and contact information



# Objectives of this meeting

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- **Explain overall project**
- **Explanation of FEMA letter that will be mailed to you**
- **Describe the information included in the FEMA letter**
- **Discuss the FEMA floodplain map & ordinance updates**

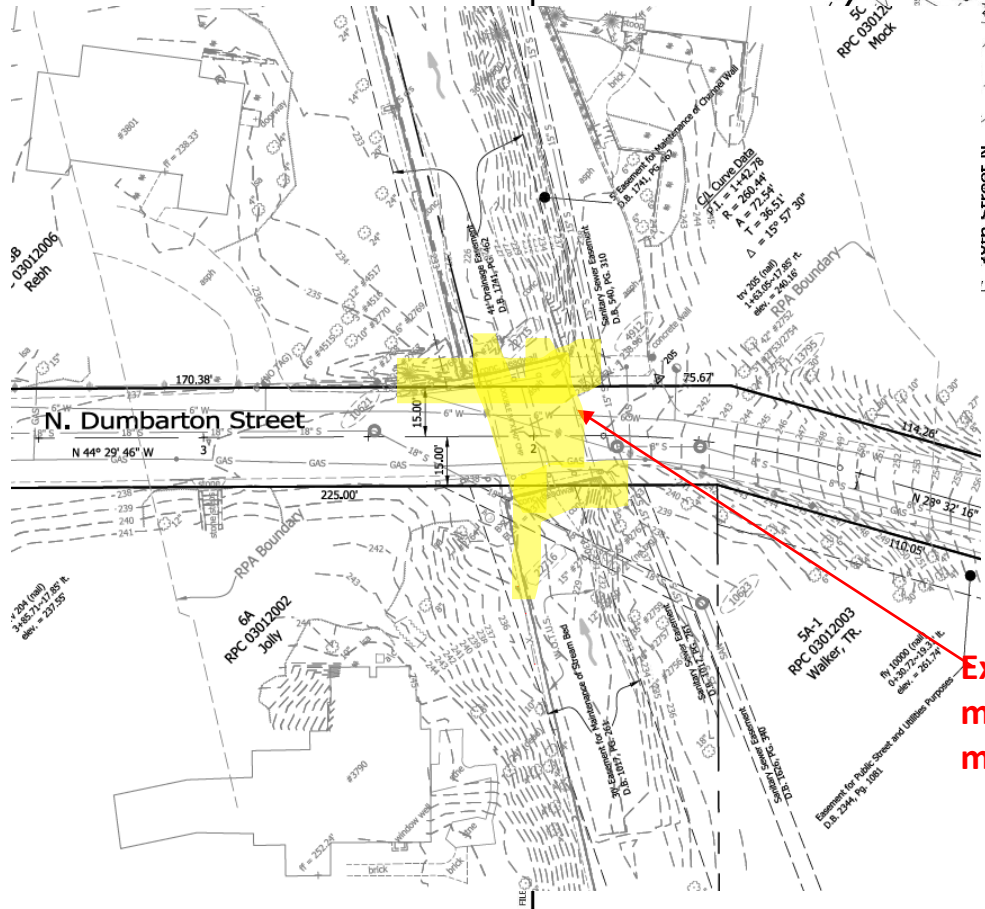


# Project Area location

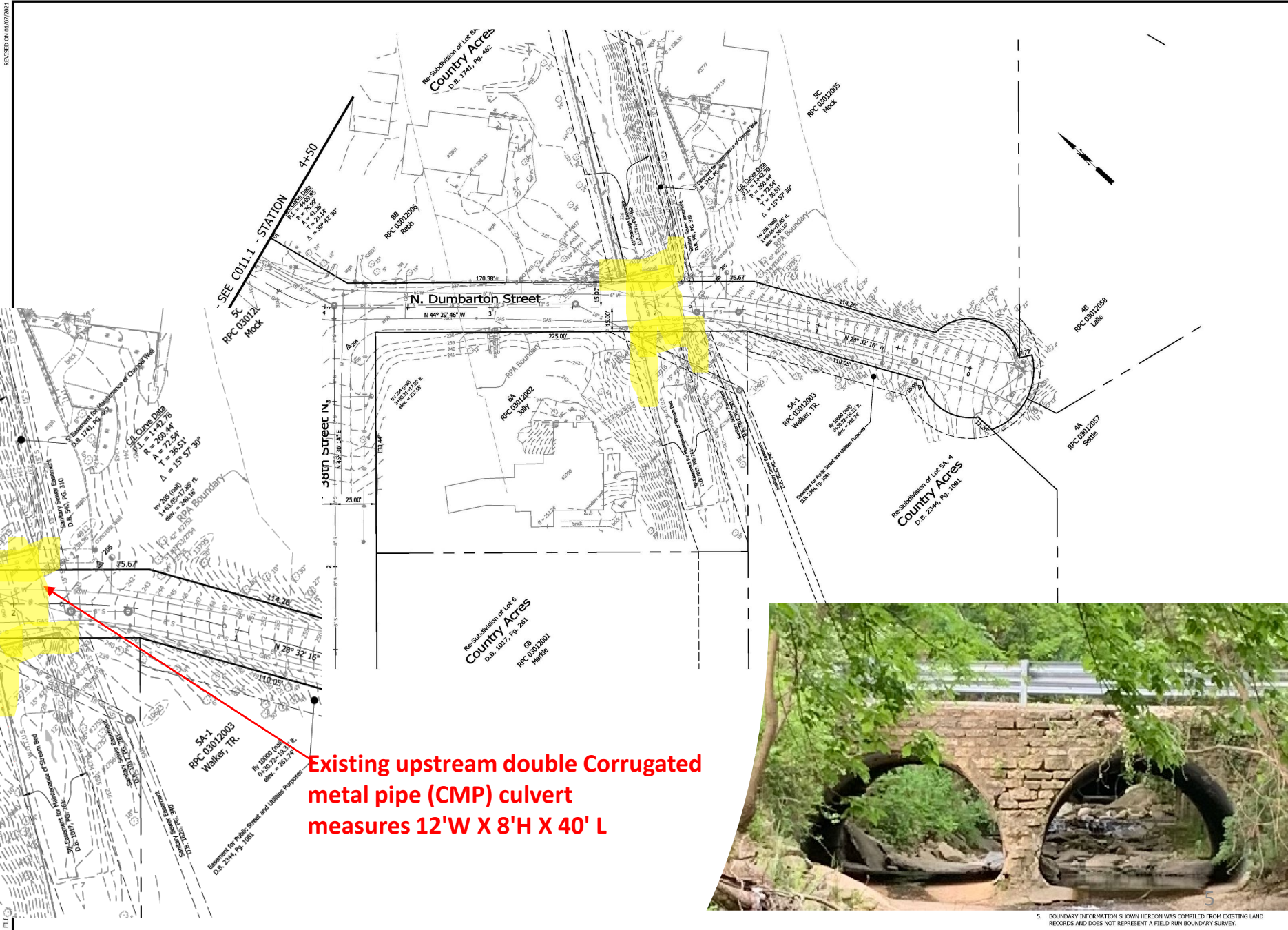




# Existing Upstream Double Culvert



**Existing upstream double Corrugated metal pipe (CMP) culvert measures 12'W X 8'H X 40' L**



ARLI VIRI

DEPARTMENT OF ENVIRONMENTAL FACILITIES & ENGINEERING  
2100 CLARNDON AVENUE  
ARLINGTON, VA 22201  
PHONE: 703.243.7000  
FAX: 703.243.7001  
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SEAL

APPROVALS

DESIGN TEAM ENGINEER

CONSTRUCTION MANAGER

WATER, SEWER, STORMWATER ENGINEER

TRANSPORTATION ENGINEER

PROJECT MANAGER

REVISION

REVISION 1

REVISION 2

N. DUMBARTON CULVERT REPLACEMENTS  
100% SUBMISSION  
PROJECT NUMBER: S036  
N. DUMBARTON STREET

DESIGNED: M. LEWIS  
DRAWN: M. LEWIS  
CHECKED: J. FELDMAN  
PLOTTED: FEBRUARY 2021  
SCALE: 1" = 40'

5. BOUNDARY INFORMATION SHOWN HEREON WAS COMPILED FROM EXISTING LAND RECORDS AND DOES NOT REPRESENT A FIELD RUN BOUNDARY SURVEY.

N. DUMBARTON CULVERT REPLACEMENTS



# Existing Downstream double culvert



**Existing Downstream double Corrugated metal pipe (CMP) culvert measures 12'W X 8'H X 80'L**



APPROVALS  
DESIGN TEAM ENGINEER  
CONSTRUCTION MANAGER  
WATER, SEWER, STREETS  
TRANSPORTATION DIRECTOR  
PROJECT MANAGER

REVISIONS

REVISION 1	
REVISION 2	

N. DUMBARTON CULVERT REPLACEMENTS  
100% SUBMISSION  
PROJECT NUMBER: 5036  
N. DUMBARTON STREET

DESIGNED: M. LEONARD  
DRAWN: M. LEONARD  
CHECKED: J. FILSON  
PLOTTED: FEBRUARY 14 2021  
SCALE:





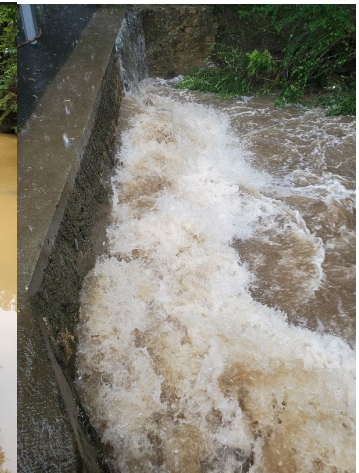
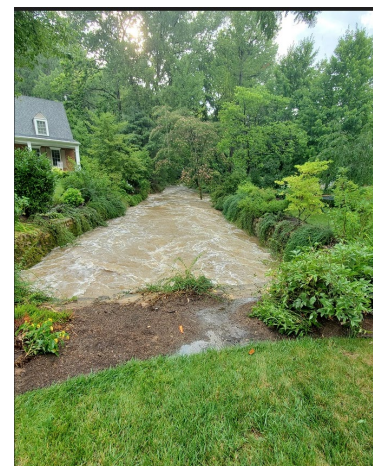
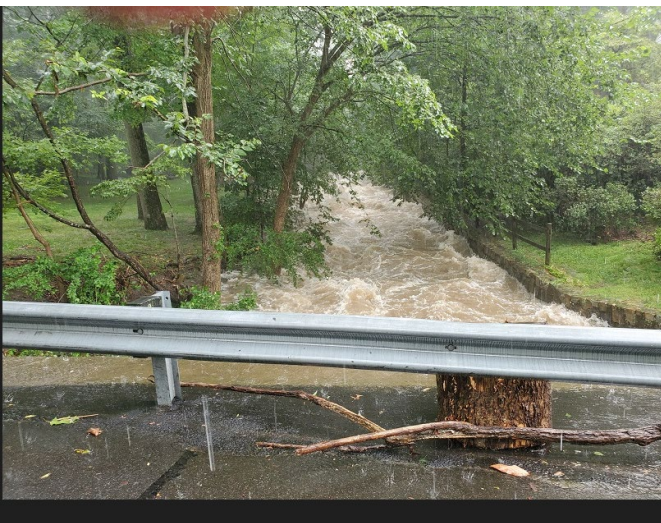
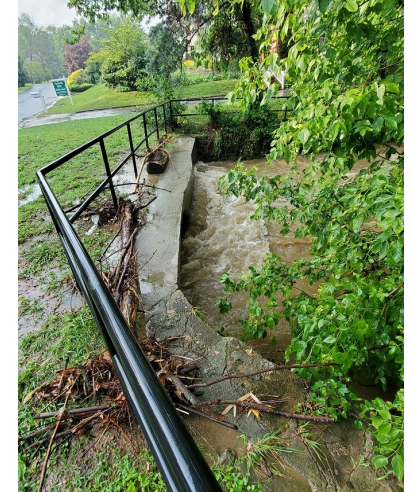
# Why are we doing this project?

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- **The culverts have reached the end of their useful life. They have been repeatedly repaired and are at risk of failure.**
- **Culverts are under capacity. They have overtopped, flooding the road multiple times.**
- **The existing culverts are nearly structurally deficient with a condition rating of 4.**
- **There is severe corrosion of the barrel inverts with areas of 100% section loss and undermining.**
- **The stone headwalls are cracked with missing mortar and stones.**
- **The fill on top of the culverts is settling around the headwalls creating open cavities.**
- **Continued erosion adjacent to the stream.**



# Why are we doing this project





# Site Constraints

---

- **Limited and Narrow Existing Right-of-Way**
- **Floodplains**
- **Proximity of Existing Homes to Floodplains**
- **The presence of other utilities**

# Project description

## Upstream culvert

## Upstream project includes:

- 1- Proposed precast arch culvert measuring 27'W x 9.4'H x 40.1' L
- 2- proposed wing wall
- 3- install riprap along the eroding areas of the channel
- 4- Install proposed 15-inch RCP with an inlet.
- 5- Replace handrail

### CONSTRUCTION NOTES

- 1 PROP STANDARD DROP INLET DI-1, VDOT ROAD & BRIDGE STANDARDS (104.01)
- 2 CONNECT PROPOSED PIPE TO EXISTING STRUCTURE PER ARL CONSTR SPEC 02505 - 3.5
- 3 RESTORE DRIVEWAY WITH RESIDENTIAL CONCRETE DRIVEWAY ENTRANCE (STANDARD) ARL STD (R-2.4A)
- 4 REPLACE EXISTING ASPHALT WITH 5" BM-25.0A AND 2" SM-9.5A (SEE C006.1 FOR TYPICAL SECTION)
- 5 EXISTING APRON AND DRIVEWAY TO BE REPLACED UP TO LIMITS SHOWN.
- 6 INSTALL PAVED FLUME WITH ASPHALT CURB INTO STR. 1-1. SET FLUME WIDTH EQUAL TO INLET CONCRETE APRON WIDTH
- 7 REPLACE EXISTING GUARDRAIL
- 8 INSTALL ARCH CULVERT PER UPSTREAM CULVERT REPLACEMENT DETAILS. SEE SHEETS C042.12-C042.23
- 9 INSTALL CLASS II DRY RIP RAP. SEE SHEET C075.1 FOR HYDRAULIC CALCULATIONS. ENSURE RIP RAP TIES INTO BANKS.
- 10 RE-GRADE RESIDENTIAL LAWNS AS IN EXISTING CONDITIONS. LANDSCAPE TO BE RE-STABILIZED AS SHOWN IN LANDSCAPING PLANS. SEE SHEET C091.2
- 11 SURVEY BENCHMARK TO BE RE-LOCATED PRIOR TO CONSTRUCTION
- 12 ALLOW FOR 1' STRIP OF SOIL BETWEEN RIPRAP AND DRIVEWAY TO ALLOW FOR LANDSCAPING
- 13 TEMPORARILY RELOCATE EXISTING MAILBOX DURING CONSTRUCTION AND RESTORE TO EXISTING CONDITIONS POST-CONSTRUCTION
- 14 EXISTING CURB TO REMAIN IN PLACE
- 15 EXISTING LIGHT POLE TO REMAIN IN PLACE
- 16 THE MINIMUM BOTTOM ELEVATION OF THE LEAN CONCRETE SUBFOOTER IS TO BE EITHER 1 FOOT BELOW THE CALCULATED SCOUR DEPTH OR THE TOP OF ROCK ELEVATION WITH RQD>50, WHICHEVER IS HIGHER. CONTRACTOR TO CONFIRM ROCK ELEVATION IN THE FIELD.
- 17 CONSTRUCT ASPHALT CURB TO DIRECT FLOW OVER PROPOSED WINGWALL INTO RIPRAP





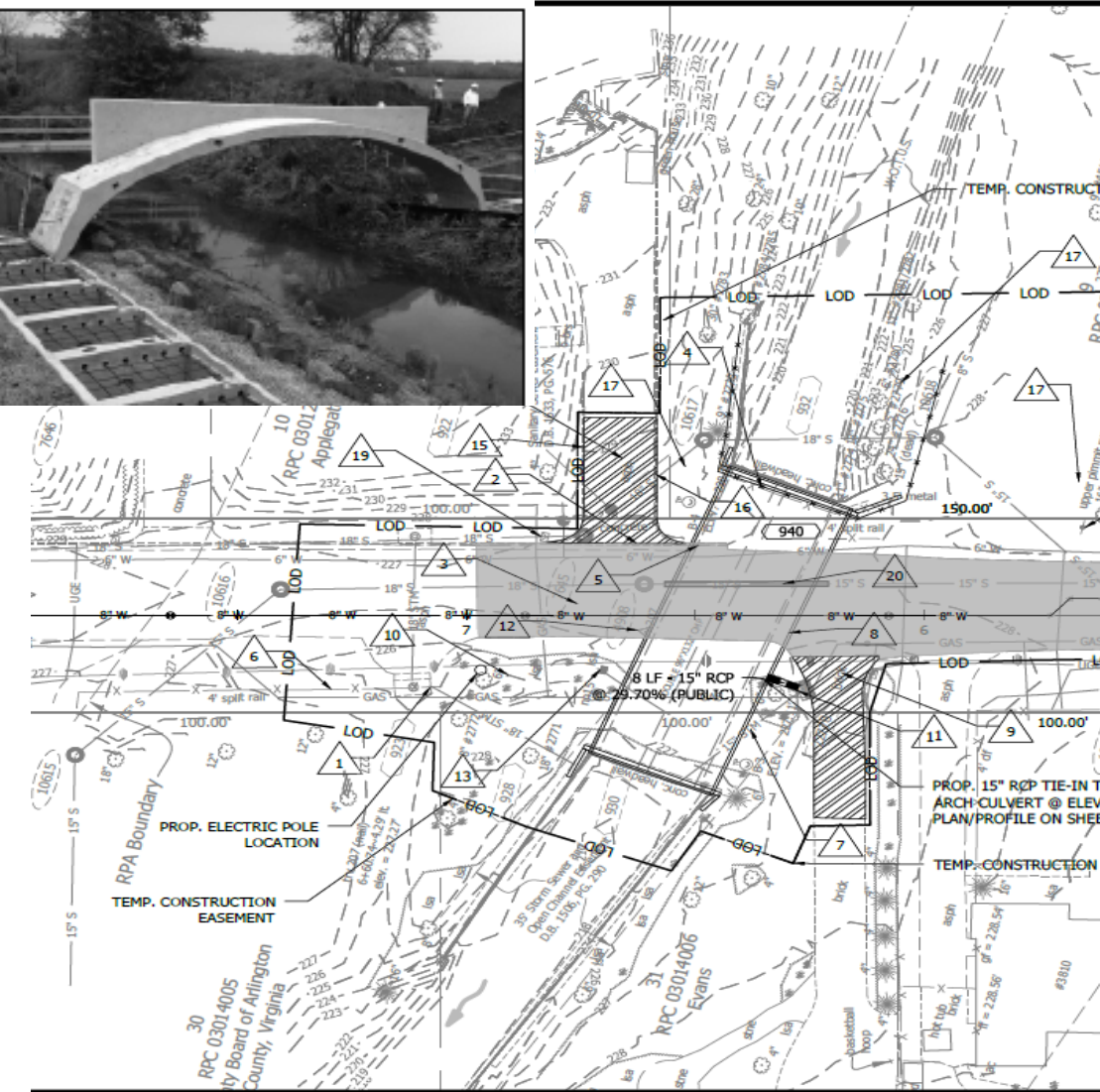
# Project description

## Downstream culvert



### Downstream project includes:

- 1- Proposed precast arch culvert measuring 28'W x 10.3'H x 80.2' L
- 2- proposed wing wall
- 3- Proposed 15" RCP tie-in to proposed culvert
- 5- Replace handrail



### CONSTRUCTION NOTES

- 1 EXISTING PIPE TO BE DISCONNECTED FROM EXISTING WALL AND RECONNECTED POST-CONSTRUCTION. AVOID IMPACTS DURING CONSTRUCTION. ENSURE POSITIVE DRAINAGE INTO STREAM IN CASE OF STORM EVENT.
- 2 RESTORE DRIVEWAY WITH RESIDENTIAL CONCRETE DRIVEWAY ENTRANCE (STANDARD) ARL STD (R-2.4A)
- 3 REPLACE EXISTING ASPHALT WITH 5" BM-25.0A AND 2" SM-9.5A (SEE C006.1 FOR TYPICAL SECTION)
- 4 REPLACE EXISTING HANDRAIL WITH PIPE HANDRAIL (ARLINGTON COUNTY DETAIL R-3.1)
- 5 RESTORE CURB AND GUTTER WITH CURB AND GUTTER (C-2) ARL STD (R-2.0)
- 6 EXISTING FENCE TO BE REMOVED, STORED AND REINSTALLED AFTER CONSTRUCTION
- 7 REMOVE EXISTING PIPE. ENSURE POSITIVE DRAINAGE INTO STREAM IN CASE OF STORM EVENT
- 8 INSTALL ARCH CULVERT PER DOWNSTREAM CULVERT REPLACEMENT DETAILS. SEE SHEETS C042.01-C042.11
- 9 EXISTING BRICK DRIVEWAY TO BE REPLACED WITH ASPHALT DRIVEWAY
- 10 RE-GRADE LAWNS AS IN EXISTING CONDITIONS. SOD LAWNS AND PROVIDE LANDSCAPING AS SHOWN IN THE LANDSCAPING PLANS. SEE SHEET C091.1
- 11 EXISTING NON-STANDARD DRIVEWAY INLET TO BE REMOVED AND STORED DURING CONSTRUCTION AND RE-INSTALLED
- 12 SURVEY BENCHMARK TO BE RE-LOCATED PRIOR TO CONSTRUCTION
- 13 EXISTING POWERLINE POLE TO BE RELOCATED BY OTHERS
- 14 PARK SIGN TO BE RESTORED TO EXISTING CONDITIONS AFTER CONSTRUCTION
- 15 EXISTING CURB TO REMAIN IN PLACE
- 16 EXISTING CURB TO BE REPLACED IF DISTURBED
- 17 LANDSCAPING TO BE RE-STABILIZED PER LANDSCAPING PLANS. SEE SHEET C091.1
- 18 EXISTING APRON AND DRIVEWAY TO BE REPLACED UP TO FIRST CONCRETE CRACK OR UP TO DEMOLITION POINT, WHICHEVER IS LONGER.
- 19 TEMPORARILY RE-LOCATE MAILBOX DURING CONSTRUCTION TO ALLOW POSTAL ACCESS
- 20 INSTALL 21" STEEL ENCASUREMENT AROUND EXISTING 15" SANITARY SEWER PIPE AND SURROUND ENCASUREMENT WITH MINIMUM 6" LAYER OF CONCRETE. SEE SHEET C041.3 FOR ENCASUREMENT DETAIL.
- 21 CONTRACTOR SHALL REQUEST PERMISSION FROM ARLINGTON COUNTY DEPARTMENT OF PARKS AND RECREATION TO USE THIS AREA PRIOR TO MOBILIZATION.

N. DUMBARTON ST. AT STR. 940 - ROADWAY

# Related Activities

The culvert replacement project includes the following tasks:

## ➤ **FEMA Analysis**

- Before replacing the culverts, we prepared a FEMA analysis called a conditional letter of map revision (CLOMR)
- The analysis includes updating the floodplain map and ordinance and demonstrating impacts to base flood elevations

## ➤ **Easements**

- We require temporary and permanent easements for some properties adjacent to this project

# Related Activities:

---

## ➤ Replacement of utilities

- We will need to replace the water main and gas lines.

## ➤ Temporary relocation of power poles

- In some areas, we may need to temporarily relocate the power poles and Verizon communication lines

## ➤ Tree Removal

- We will need to remove some private and public trees in the project area

## ➤ Replacement of driveways, aprons, or temporary relocations of mailboxes is necessary in some areas affected by the project.



# Federal Funding

---

- **The upstream culvert has been deemed eligible for federal funding**, which will be overseen by the Virginia Department of Transportation. An application for the downstream culvert has been submitted under a different program but has yet to receive a response.
- **What does federal funding entail for upstream properties?**

Federally funded projects receive compensation for both temporary and permanent easements, as well as for any landscaping work. Additionally, property owners have the option to hire their preferred landscaping professional to complete the work.

# Anticipated schedule for plan and construction

- **Construction Schedule is still being determined**
  - VDOT has a lengthy process to comply with due to grant funding
  - Expect more clarity within the next six months as the project progresses
- **Separate Construction Schedules**
  - The upstream and downstream culvert projects may be constructed separately.
  - The decision was made in order to minimize traffic congestion and because of project funding
  - Downstream culvert may start earlier, depending on Federal funding



# Review of the FEMA letter recipients will receive

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- As part of the CLOMR process, we are required to send certified letters to any property owner who is impacted by the changes to the floodplain and floodway.
- The purpose of the letter is to inform property owners about the project.
- One of the objectives of this meeting is that those who are about to receive the letters understand what the letter means and what changes will affect their property.
- The Engineering hydraulic analysis of the proposed culverts and resulting water surface elevations has been accepted by FEMA.
- Certified letters are not sent prior to the acceptance by FEMA of the Engineering hydraulic analysis because too many changes to the analysis occur during its review.
- Final approval of the CLOMR will occur after we send the certified letters.
- Letters will be sent soon after this public meeting.
- You will still be able to ask staff questions about the project and the impacts to your property.

# Sample Letter



## Draft copy of Individual legal notice to all impacted property owners

{Date}  
{Affected property owner name}  
{Affected property owner mailing address}

Re: Notification of increases in 1% (100-year) annual chance Special Flood Hazard Areas and/or water-surface elevations

Dear Mr./Ms./Mr. & Mrs. {Affected property owner}

The Flood Insurance Rate Map (FIRM) for a community depicts the Special Flood Hazard Area (SFHA) land which has been determined to be subject to a 1% (100-year) or greater chance of flooding in any given year. The floodway is the portion of the floodplain that includes the channel of a river or other watercourse and the adjacent land area that must be reserved in order to discharge the 1% annual chance (base) flood without cumulatively increasing the water-surface elevation by more than a designated height. The FIRM is used to help the community with floodplain management.

Arlington County is applying for a Conditional Letter of Map Revision from the Federal Emergency Management Agency (DHS-FEMA) to revise FIRM 51013C0017C for Arlington County, Virginia along Little Pimmit Run and Little Pimmit Run Tributary. Arlington County is proposing to use a 80.2 feet length 27'x10.3' PRECAST ARCH CULVERT to replace the downstream existing structure which consists of two corrugated steel pipe culverts and to also use a 40.1 feet length 27'x9.4' PRECAST ARCH CULVERT to replace the upstream existing structure which consists of two corrugated steel pipe culverts. Both culverts are located at North Dumbarton Street in Little Pimmit Run.

The proposed project will result in increases in the 1% annual chance base water-surface elevations for Little Pimmit Run and Little Pimmit Run Tributary.

Once the project has been completed, a Letter of Map Revision (LOMR) request should be submitted that will, in part, revise the following flood hazards along Little Pimmit Run and Little Pimmit Run Tributary.

1. The floodway will be revised from the Fairfax/Arlington County border to just upstream of Little Pimmit Run Tributary along Little Pimmit Run. The floodway will increase slightly in some areas and decrease slightly in other areas. Overall, the changes are minor.
2. Base Flood Elevations (BFEs) will increase and decrease along Little Pimmit Run and will increase along Little Pimmit Run Tributary.
3. The SFHA will increase and decrease. The changes are minor.

This letter is to inform you of the proposed changes in the 1% annual chance water-surface elevations and SFHA areas on your property located at {insert physical address}.

If you have any questions or concerns about the proposed project or its effect on your property, you may contact Mrs. Elizabeth L. Thurber of Arlington County at 2100 Clarendon Blvd., Suite 705, Arlington, VA 22201 from 8:00am to 5:00 pm between Monday and Friday, or email at [Ethurber@arlingtonva.us](mailto:Ethurber@arlingtonva.us).

Sincerely,

Elizabeth L. Thurber, P.E.

Floodplain Administrator  
**Department of Environmental Services**  
Office of Sustainability and Environmental Management Stormwater Infrastructure Arlington County  
2100 Clarendon Boulevard, Suite 705  
Arlington, Virginia 22201  
703-228-3363 [Ethurber@arlingtonva.us](mailto:Ethurber@arlingtonva.us)

## Note that the letter states that:

1. Base Flood Elevations will both increase and decrease
2. Floodway will both increase and decrease.

Following slides will explain the statement that there will be both increases and decreases in base flood elevations and the floodway.

Everyone gets the same letter.



# What impacts to the floodplains does the CLOMR depict:

Some impacts may be on parcels owned by the County and will not impact any private property.

Two County Parks parcels are already mostly floodplain parcels.

Right-of-way for N Dumbarton St. May have some impacts, but this isn't private property.



# Process for Analysis

As the analysis moves through each step, computed base flood elevations change somewhat from model to model based on differences in software versions and the computational methods used, changes in topography, adjustments to stationing and cross section locations and geo referencing of all the data.

The process is used to determine the size of the culverts that will fit in the available physical space and minimize impacts to adjoining properties

- **Begin with effective FEMA data (maps and models)**
- **Duplicate that information using up-to-date software versions**
- **Correct cross sections and stationing**
  - **Add, remove or adjust cross sections if appropriate & correct vertical datum**
  - **Geo reference (change stationing for more accurate stream geometry)**
- **Create Existing Conditions Model**
  - **Incorporate better/more recent topography**
  - **Incorporate new stream geometry (erosion or migration)**
  - **Account for changes in friction coefficients**
- **Analyze the proposed culverts**
- **Compare results from Duplicated, corrected effective model to Existing conditions = some slight increases, but they are due to updated stream geometry not the proposed culverts**
- **Compare results from proposed culverts model to: Existing Conditions model = no increase in BFE's**

# Comparison showing no increase in BFE's for Proposed Culverts v. Existing Conditions

There is no increase in BFEs due to this proposed project. Please see the detailed map with comparison table showing on For 316AD02\_Exhibit for 65.12s.pdf

PROPOSED CONDITIONS					EXISTING CONDITIONS					DIFF. (PROPOSED - EXISTING)				
	REGULAR 100YR.		FLOODWAY			REGULAR 100YR.		FLOODWAY			REGULAR 100YR.		FLOODWAY	
River Sta	W.S. Elev	Top Width	W.S. Elev	Top Width	River Sta	W.S. Elev	Top Width	W.S. Elev	Top Width	River Sta	W.S. Elev	Top Width	W.S. Elev	Top Width
	(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)
1275	223.21	144.09	223.21	140.29	1275	223.21	144.09	223.21	140.29	1275	0.0	0.0	0.0	0.0
1306	225.03	251.46	225	120	1306	225.03	251.46	225	120	1306	0.0	0.0	0.0	0.0
1321	Bridge		Bridge		1321	Bridge		Bridge		1321	Bridge		Bridge	
1348	225.95	323.31	226.73	120	1348	225.95	323.31	226.73	120	1348	0.0	0.0	0.0	0.0
1418	225.62	141.15	226.38	44	1418	225.62	141.15	226.38	44	1418	0.0	0.0	0.0	0.0
1485	225.99	85.99	226.07	43	1485	225.99	85.99	226.07	43	1485	0.0	0.0	0.0	0.0
1558	227.83	179.31	227.82	93.29	1558	227.83	179.31	227.82	93.29	1558	0.0	0.0	0.0	0.0
1566	227.8	144.06	227.77	100	1566	227.8	144.06	227.77	100	1566	0.0	0.0	0.0	0.0
1609	Bridge		Bridge		1609	Culvert		Culvert		1609	Culvert		Culvert	
1655	228.94	126	229.71	107	1655	230.28	176.79	230.65	107	1655	-1.3	-50.8	-0.9	0.0
1714	230.65	169.36	230.68	145	1714	230.79	172.19	231.17	145	1714	-0.1	-2.8	-0.5	0.0
1747	230.58	165.71	230.6	150	1747	230.73	169.48	231.12	150	1747	-0.1	-3.8	-0.5	0.0
1803	230.51	162.17	230.53	130	1803	230.67	164	231.07	130	1803	-0.2	-1.8	-0.5	0.0
1876	230.42	150	230.47	119.78	1876	230.58	164.23	231.01	119.78	1876	-0.2	-14.2	-0.5	0.0
1961	231.78	185.35	231.8	178.71	1961	231.78	185.35	231.8	178.71	1961	0.0	0.0	0.0	0.0
2008	232.94	194.45	232.93	185.91	2008	232.94	194.45	232.93	185.91	2008	0.0	0.0	0.0	0.0
2022	Bridge		Bridge		2022	Bridge		Bridge		2022	Bridge		Bridge	
2031	233.11	178.95	233.1	174.57	2031	233.11	178.95	233.1	174.57	2031	0.0	0.0	0.0	0.0
2098	233.1	139.97	233.1	137.5	2098	233.1	139.97	233.1	137.5	2098	0.0	0.0	0.0	0.0
2124	233.3	110.4	233.3	109.25	2124	233.3	110.4	233.3	109.25	2124	0.0	0.0	0.0	0.0
2133	233.64	98.1	233.64	95	2133	233.64	98.1	233.64	95	2133	0.0	0.0	0.0	0.0
2175	234.54	73.65	234.56	71.16	2175	234.54	73.65	234.53	71.46	2175	0.0	0.0	0.0	-0.3
2264	234.7	52.68	234.71	52	2264	234.7	52.68	234.69	52.3	2264	0.0	0.0	0.0	-0.3
2282	235.7	41.48	235.69	41.39	2282	235.7	41.48	235.69	40.89	2282	0.0	0.0	0.0	0.5
2304	Bridge		Bridge		2304	Culvert		Culvert		2304	Culvert		Culvert	
2325	241.55	98.29	242	58	2325	243.78	152.14	244.48	75	2325	-2.2	-53.9	-2.5	-17.0
2356	241.56	127.55	242.09	101	2356	243.76	141.85	244.51	101	2356	-2.2	-14.3	-2.4	0.0
2385	241.59	107.29	242.15	92	2385	243.76	122.73	244.54	92	2385	-2.2	-15.4	-2.4	0.0
2469	241.5	101.77	242.05	86.38	2469	243.78	120.59	244.53	86.38	2469	-2.3	-18.8	-2.5	0.0
2575.37	241.42	97.44	241.9	60	2575.37	243.8	132.34	244.42	60	2575.37	-2.4	-34.9	-2.5	0.0
2640.81	243.33	61.82	243.29	37.5	2640.81	243.96	72.28	244.86	37.5	2640.81	-0.6	-10.5	-1.6	0.0
2747.48	245.44	27.78	245.43	26.38	2747.48	245.44	27.78	245.43	26.38	2747.48	0.0	0.0	0.0	0.0



# Overview of Floodplain Impacts

## Impacted Lots:

- 3916
- 3900
- 3810
- 3801
- 3777
- 3790
- 5028
- 5271
- 3905

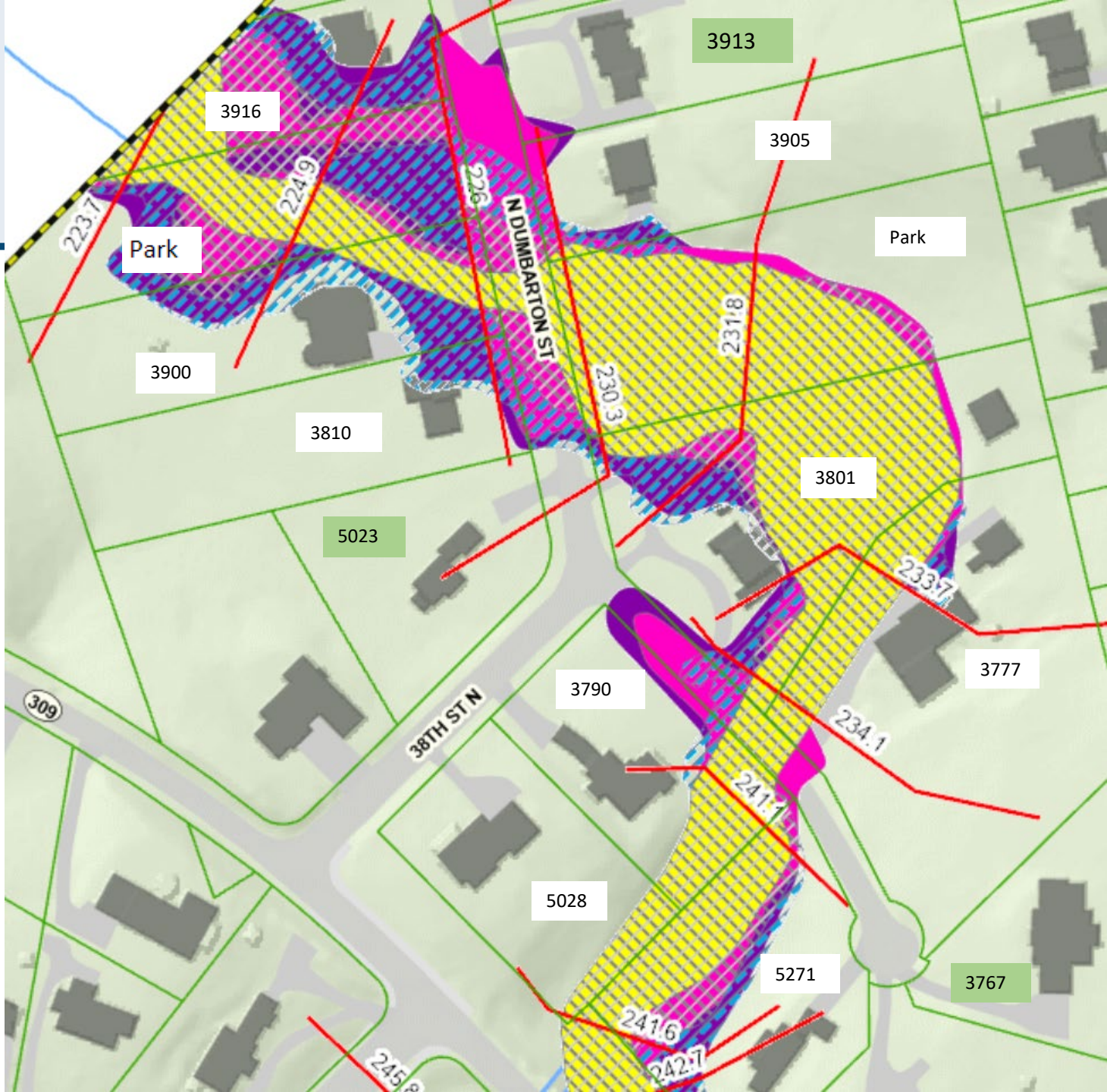
Preliminary Flood Zones (2022)

- A,
- AE,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE

FLOOD HAZARD

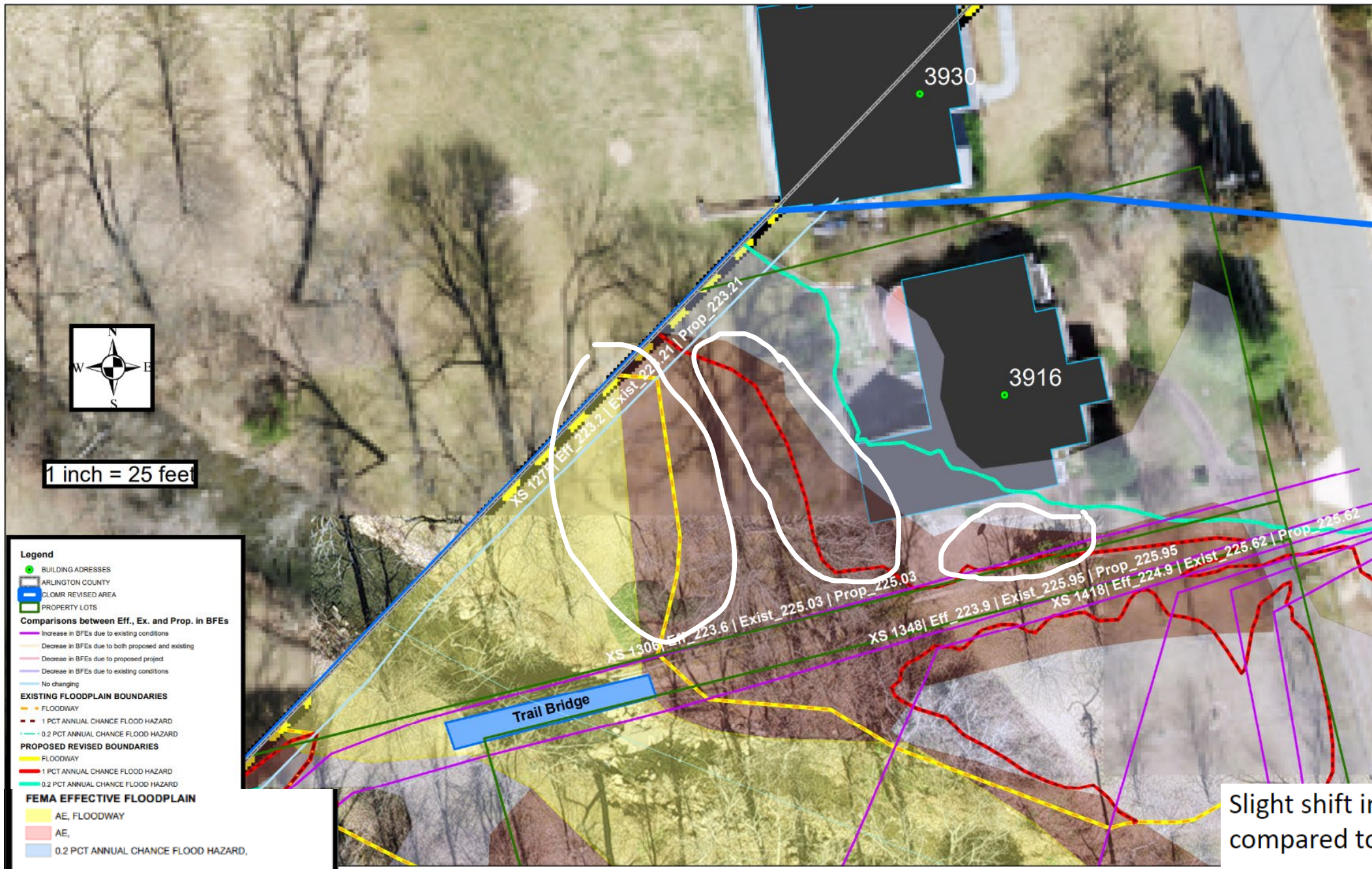
Effective Flood Zones

- Effective Base Flood Plain
- 0.2 % Annual Chance Flood Hazard





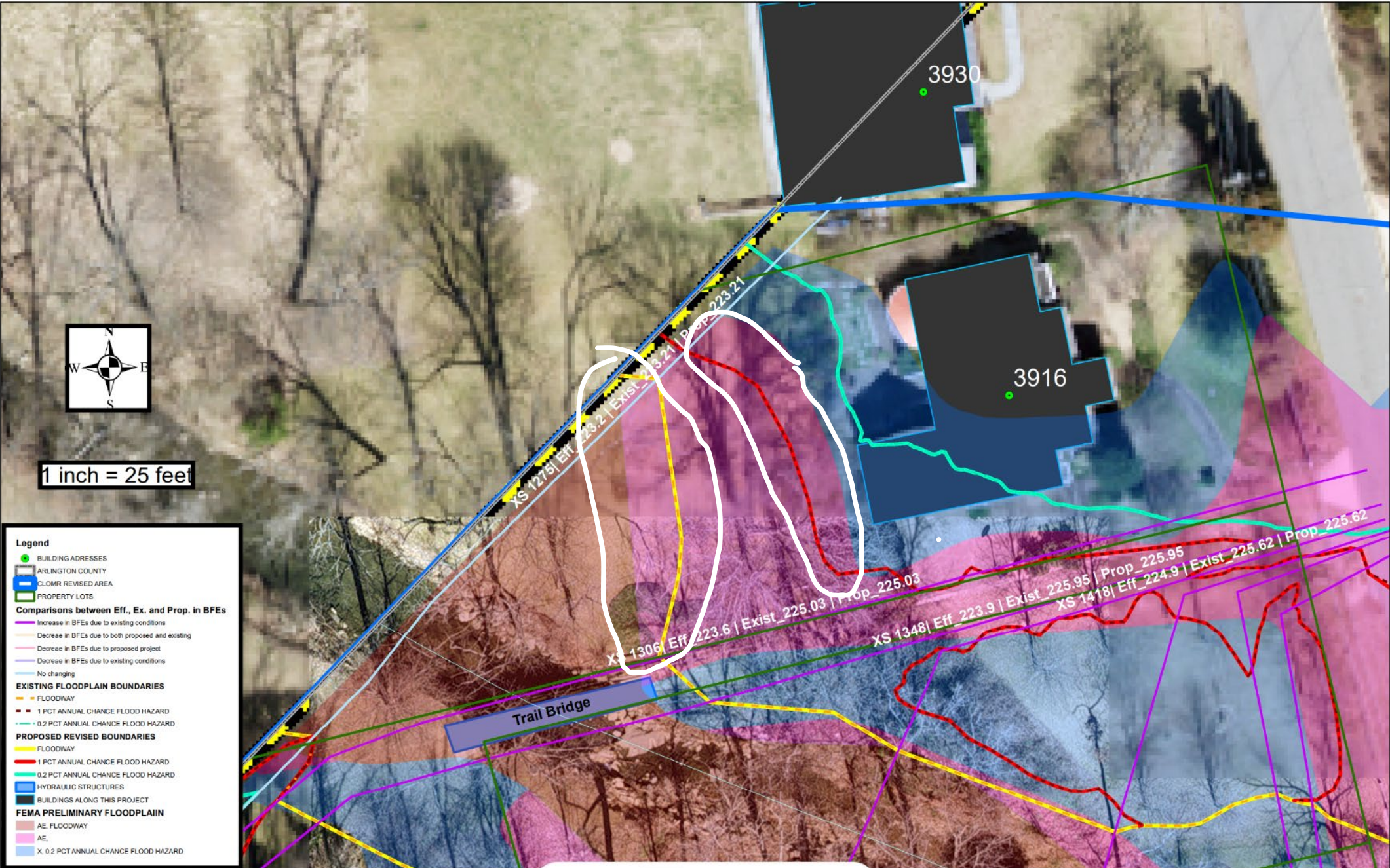
# BFES AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA EFFECTIVE FOR 3916



Slight shift in SFHA boundary compared to effective. 22



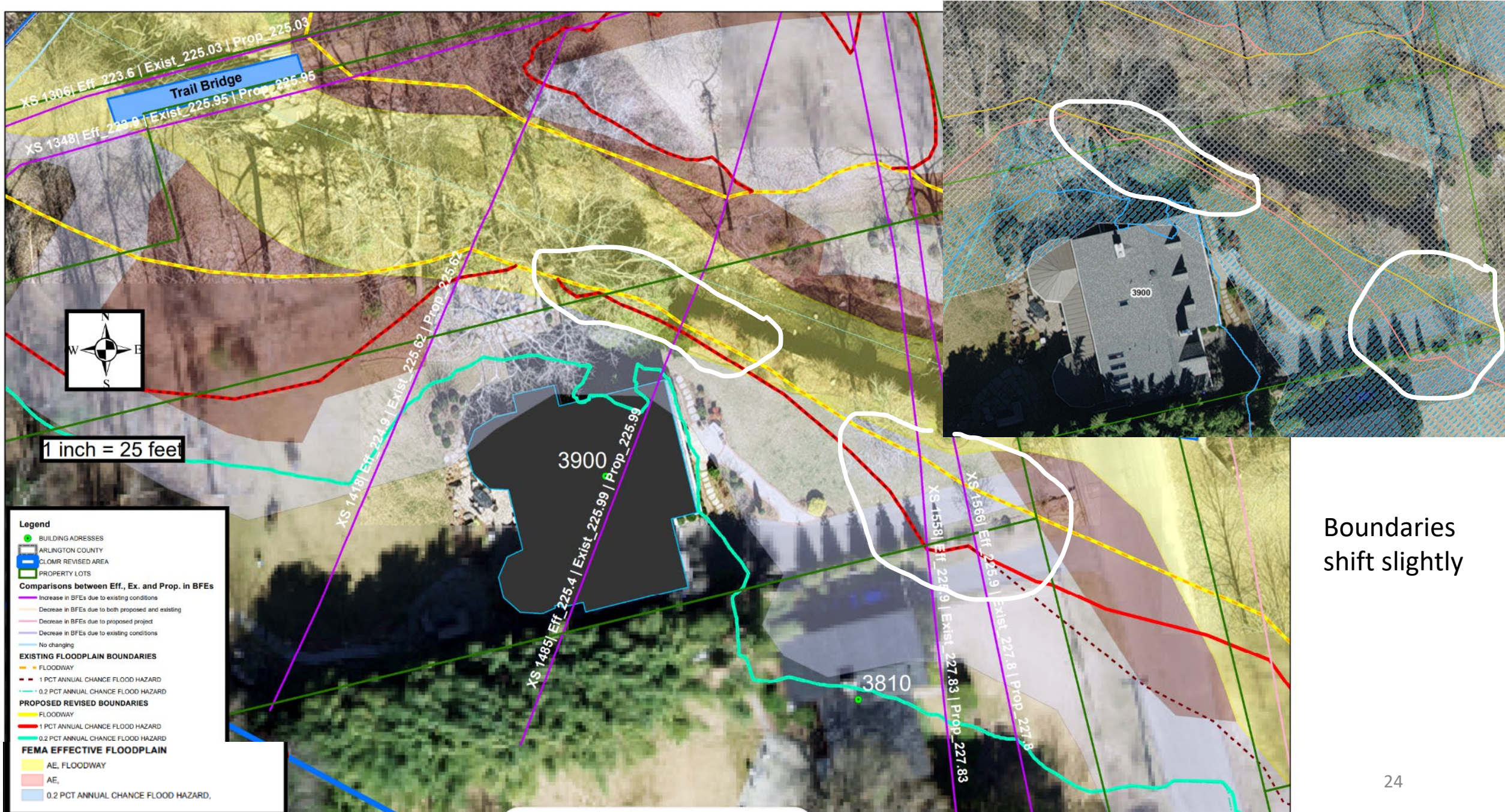
# BFEs AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA PRELIMINARY FOR 3916



Slight shift in SFHA boundary



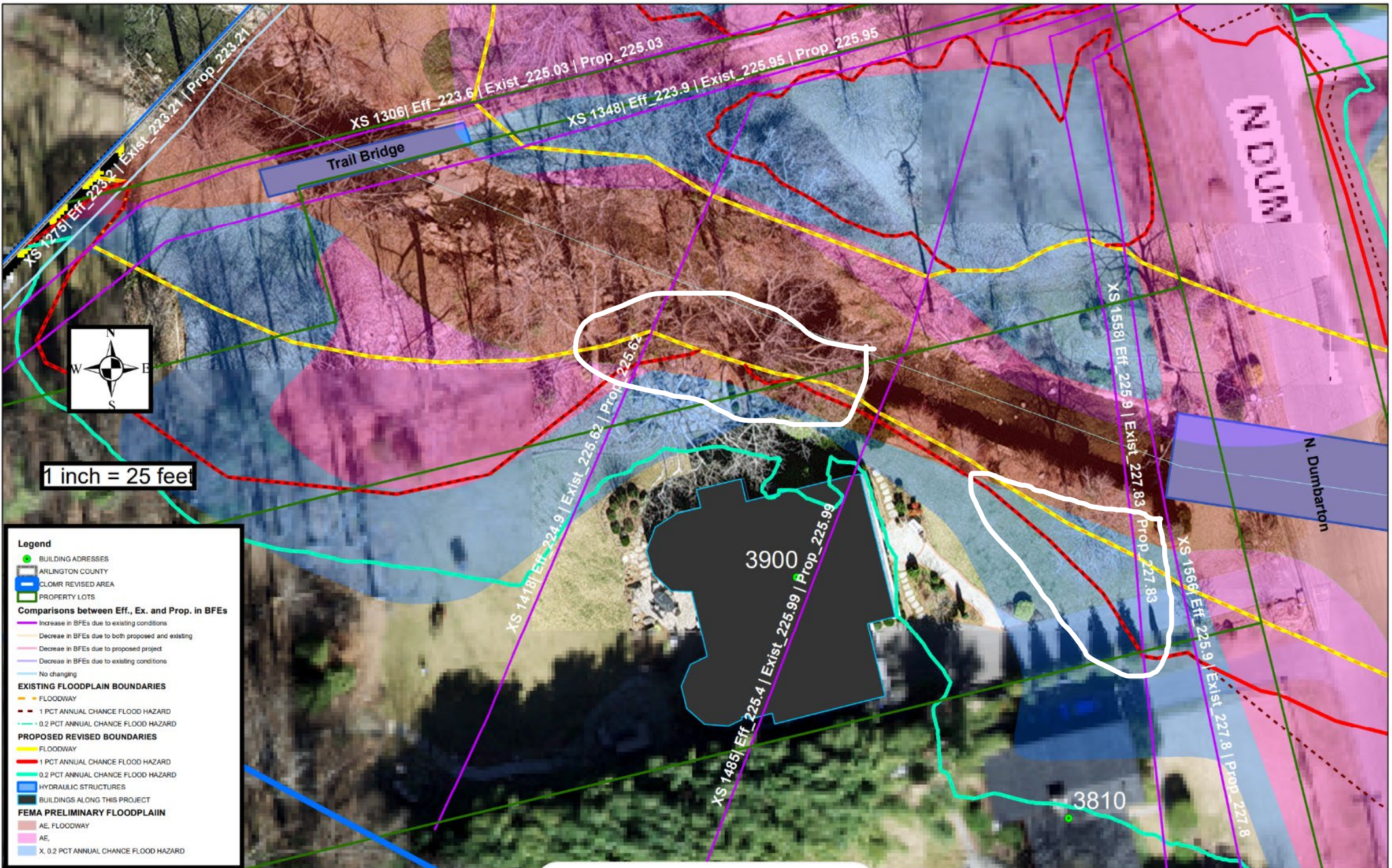
# BFES AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA EFFECTIVE FOR 3900



Boundaries shift slightly

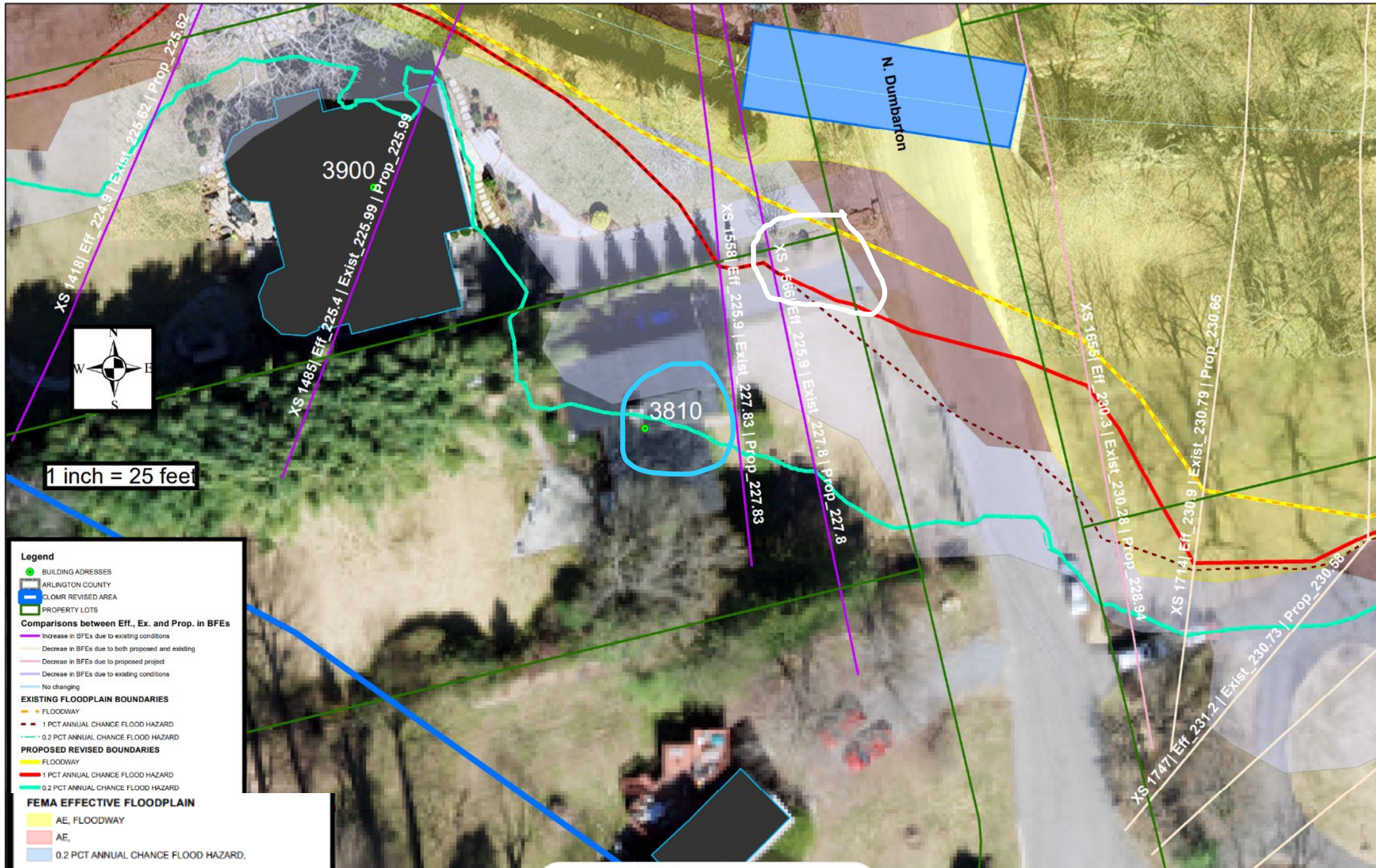


# BFES AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA PRELIMINARY FOR 3900



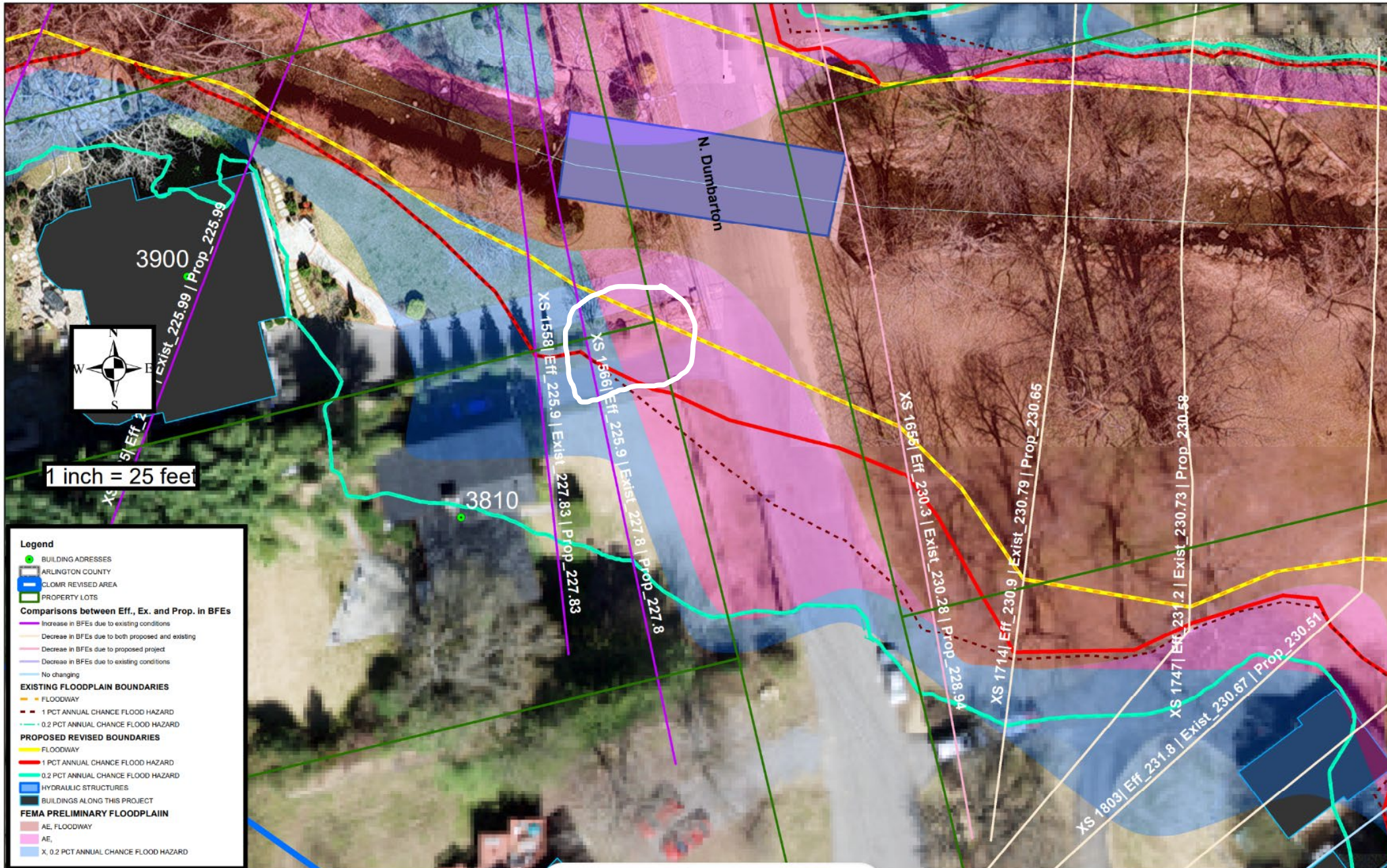


# BFES AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA EFFECTIVE FOR 3810



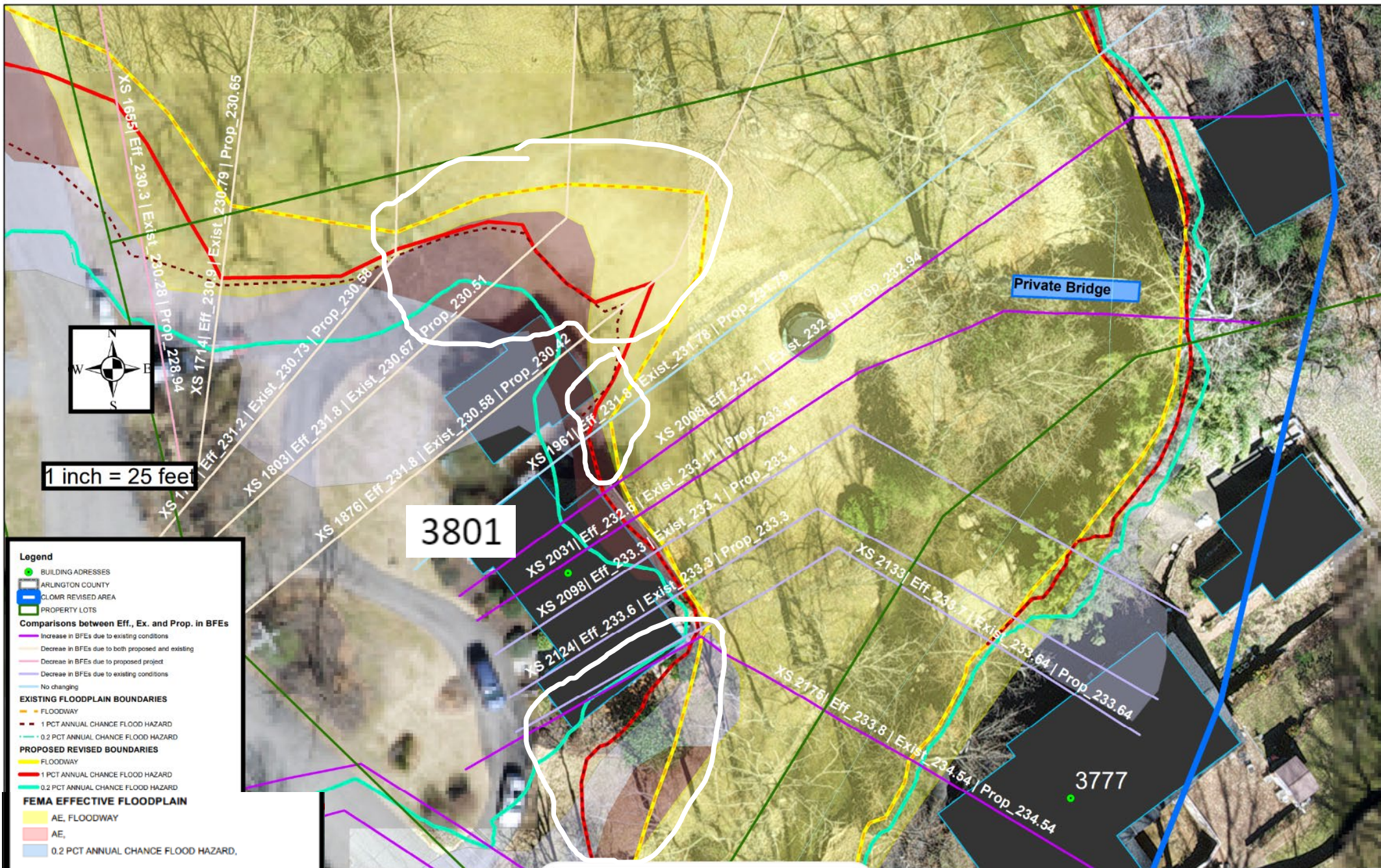


# BFES AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA PRELIMINARY FOR 3810



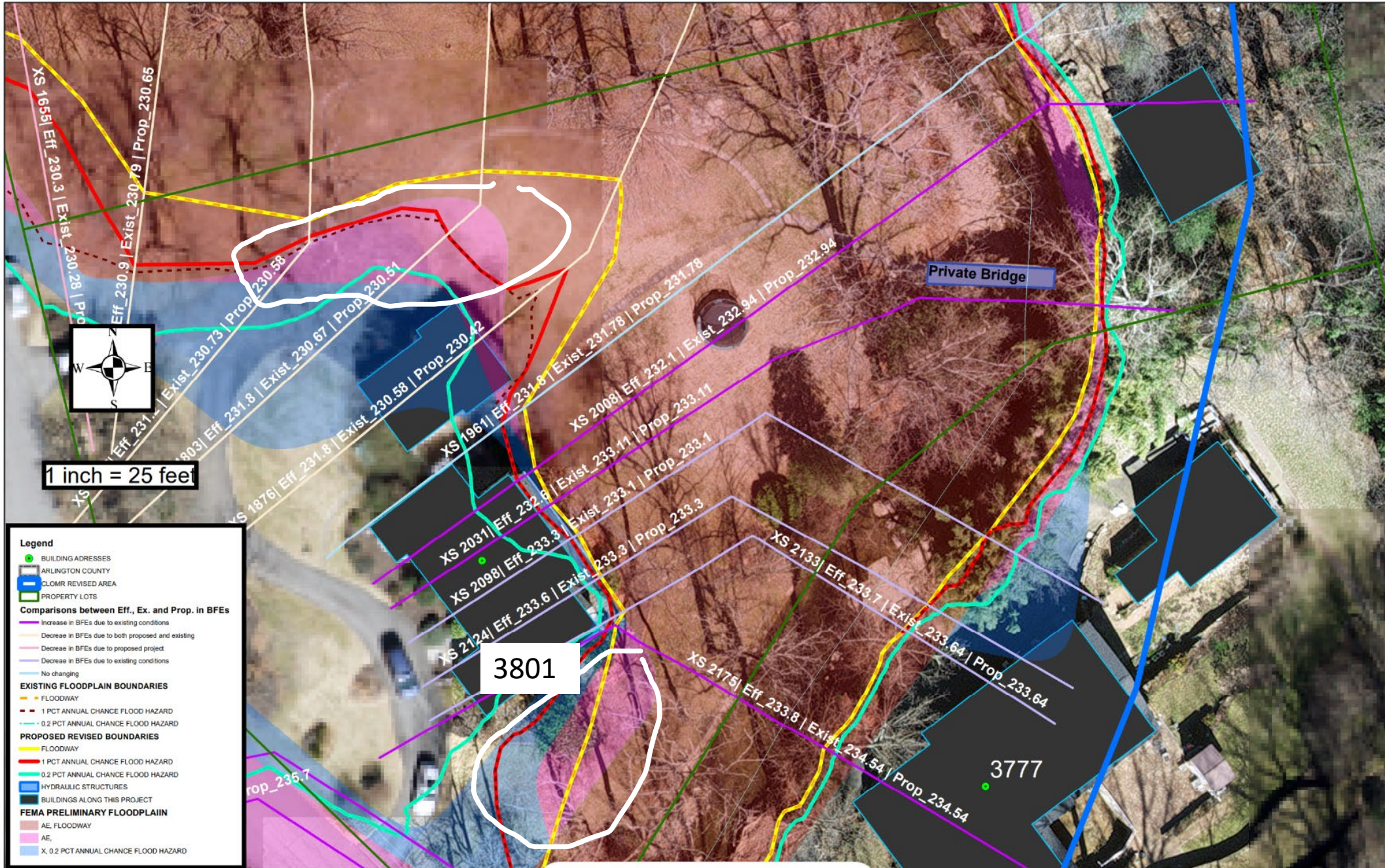


# BFEs AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA EFFECTIVE FOR 3801



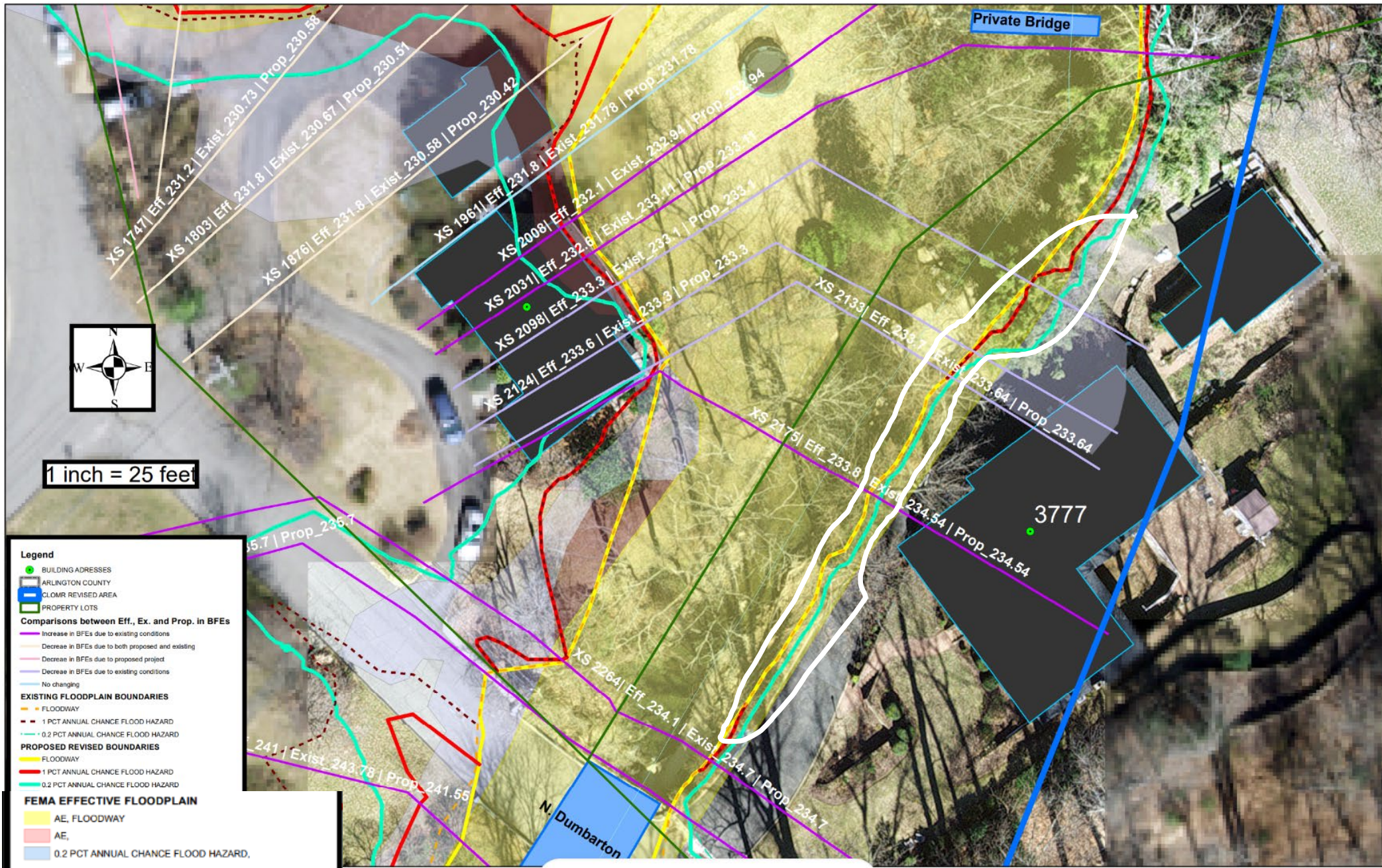


# BFEs AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA PRELIMINARY FOR 3801



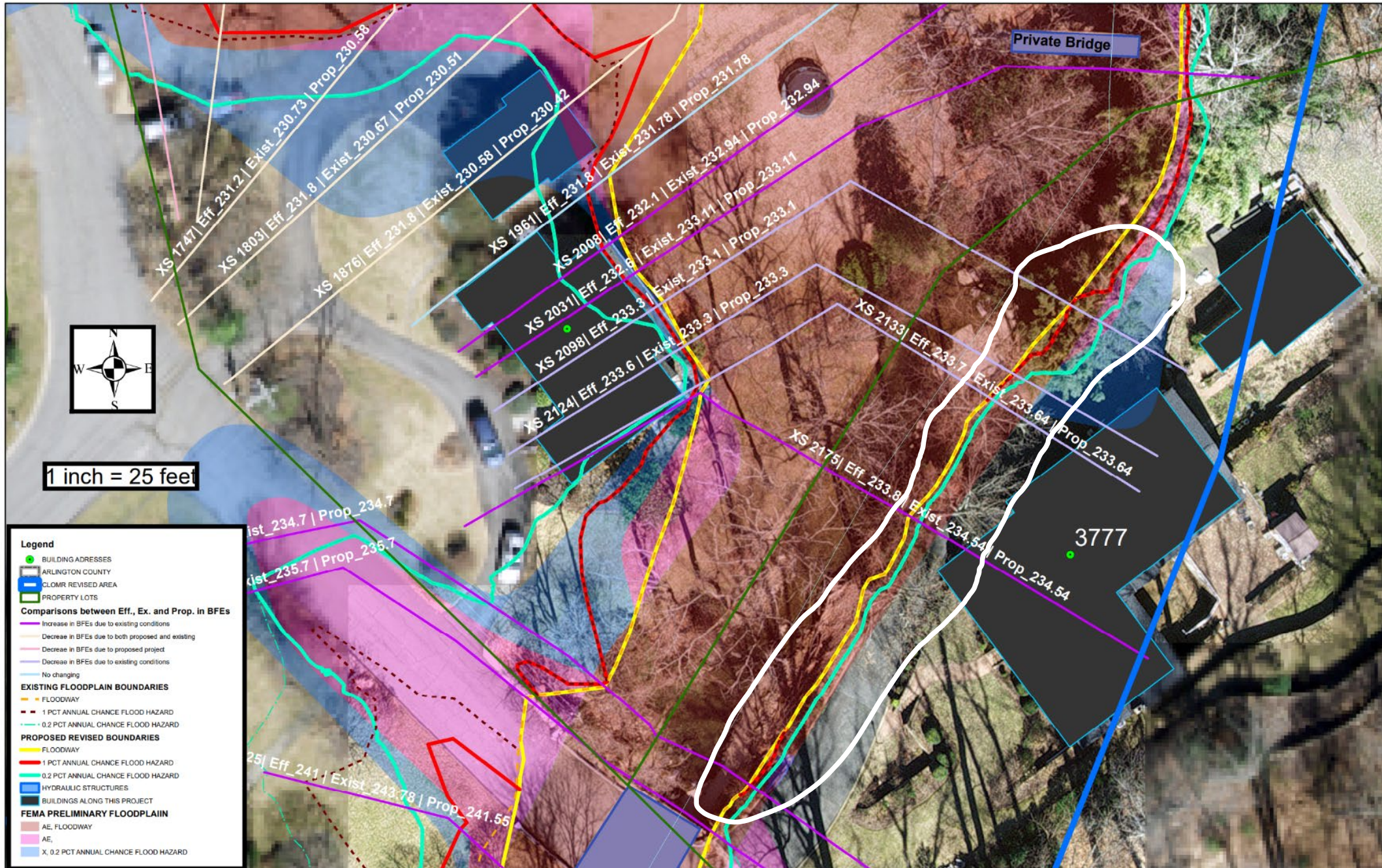


# BFEs AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA EFFECTIVE FOR 3777





# BFEs AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA PRELIMINARY FOR 3777






# BFEs AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA EFFECTIVE FOR 3790





## Proposed Floodplain


 ZONE AE, FLOODWAY

 ZONE X(0.2%Floodplain)

 ZONE AE(1%Floodplain)

 Effective Flood Zones

 Effective Base Flood Plain

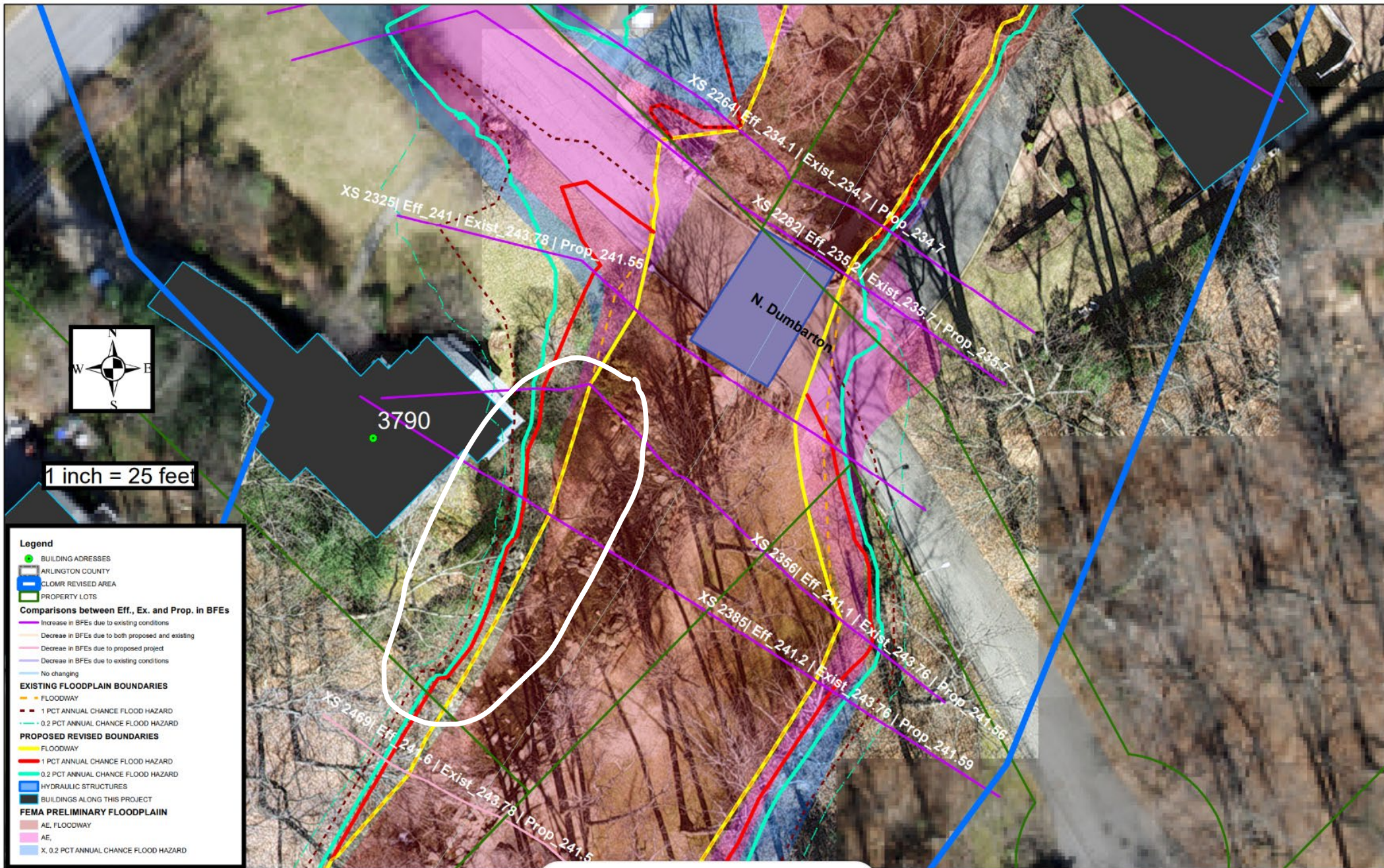
 0.2 % Annual Chance Flood

Hazard

Slight shift in SFHA boundary compared to effective.



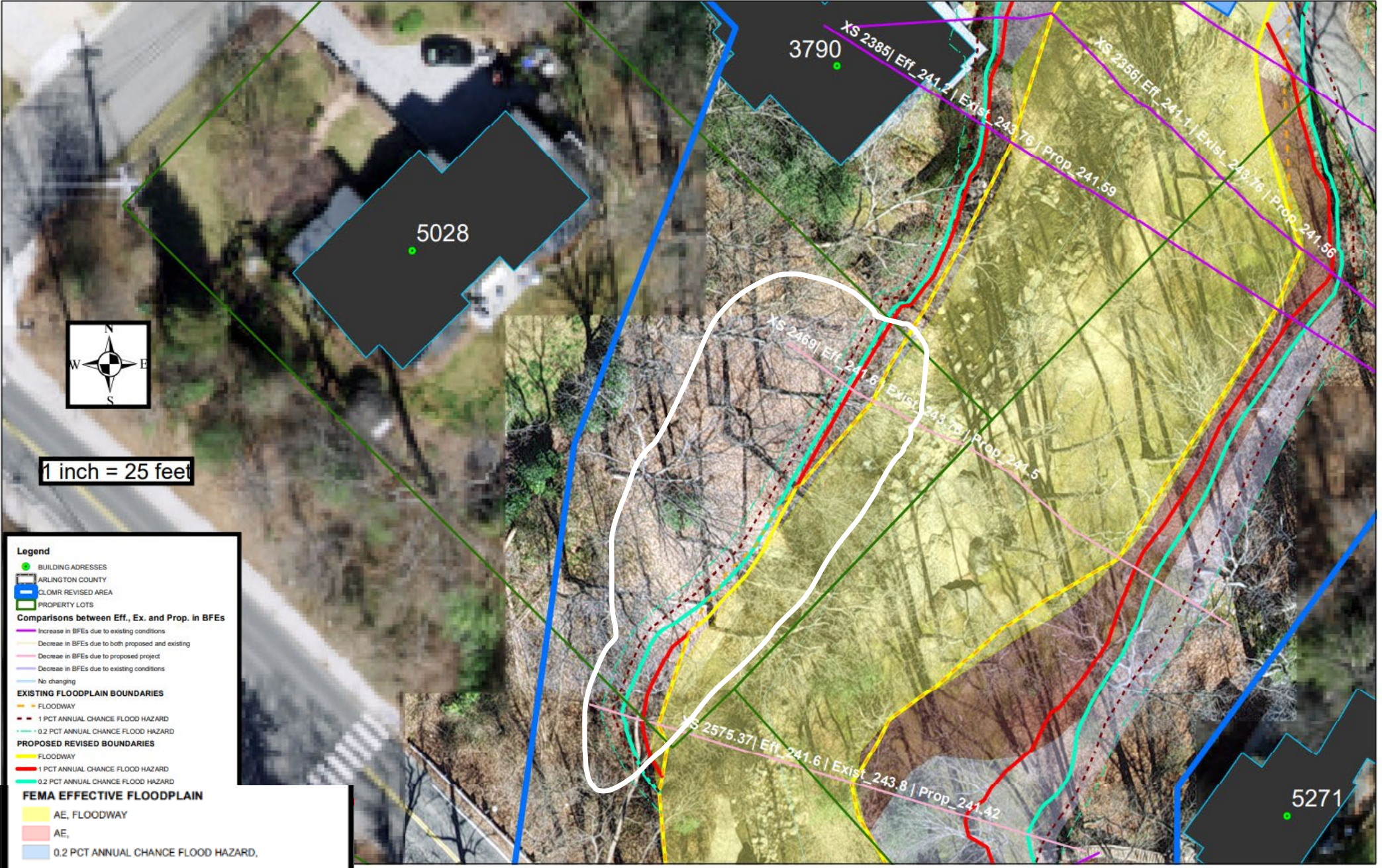
# BFEs AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA PRELIMINARY FOR 3790



Slight shift in SFHA boundary, proposed BSF will be lower than the Existing Conditions

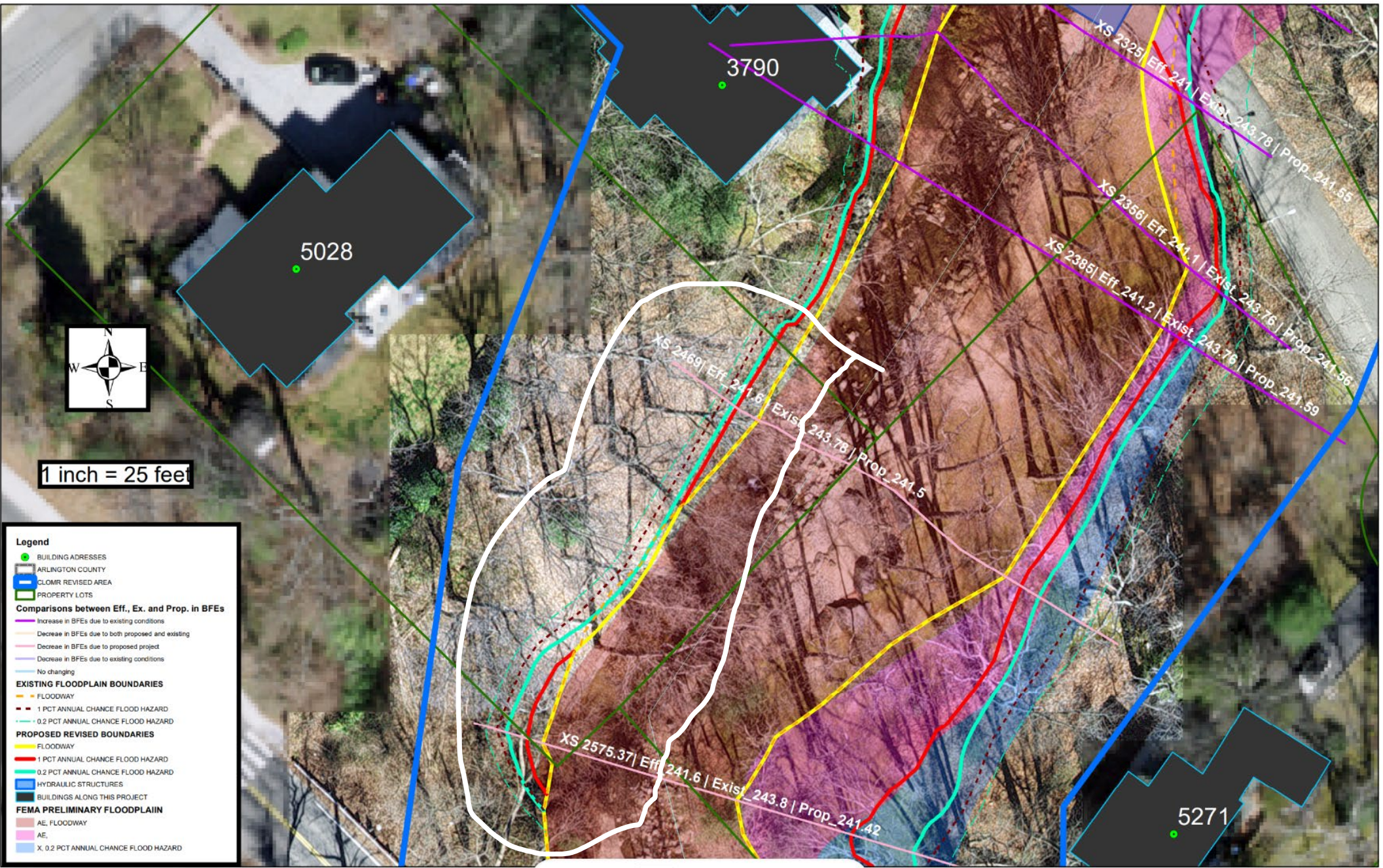


# BFEs AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA EFFECTIVE FOR 5028





# BFES AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA PRELIMINARY FOR 5028



**Legend**

- BUILDING ADDRESSES
- ARLINGTON COUNTY
- CLOMR REVISED AREA
- PROPERTY LOTS

**Comparisons between Eff., Ex. and Prop. in BFES**

- Increase in BFES due to existing conditions
- Decrease in BFES due to both proposed and existing
- Decrease in BFES due to proposed project
- Decrease in BFES due to existing conditions
- No changing

**EXISTING FLOODPLAIN BOUNDARIES**

- FLOODWAY
- 1 PCT ANNUAL CHANCE FLOOD HAZARD
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD

**PROPOSED REVISED BOUNDARIES**

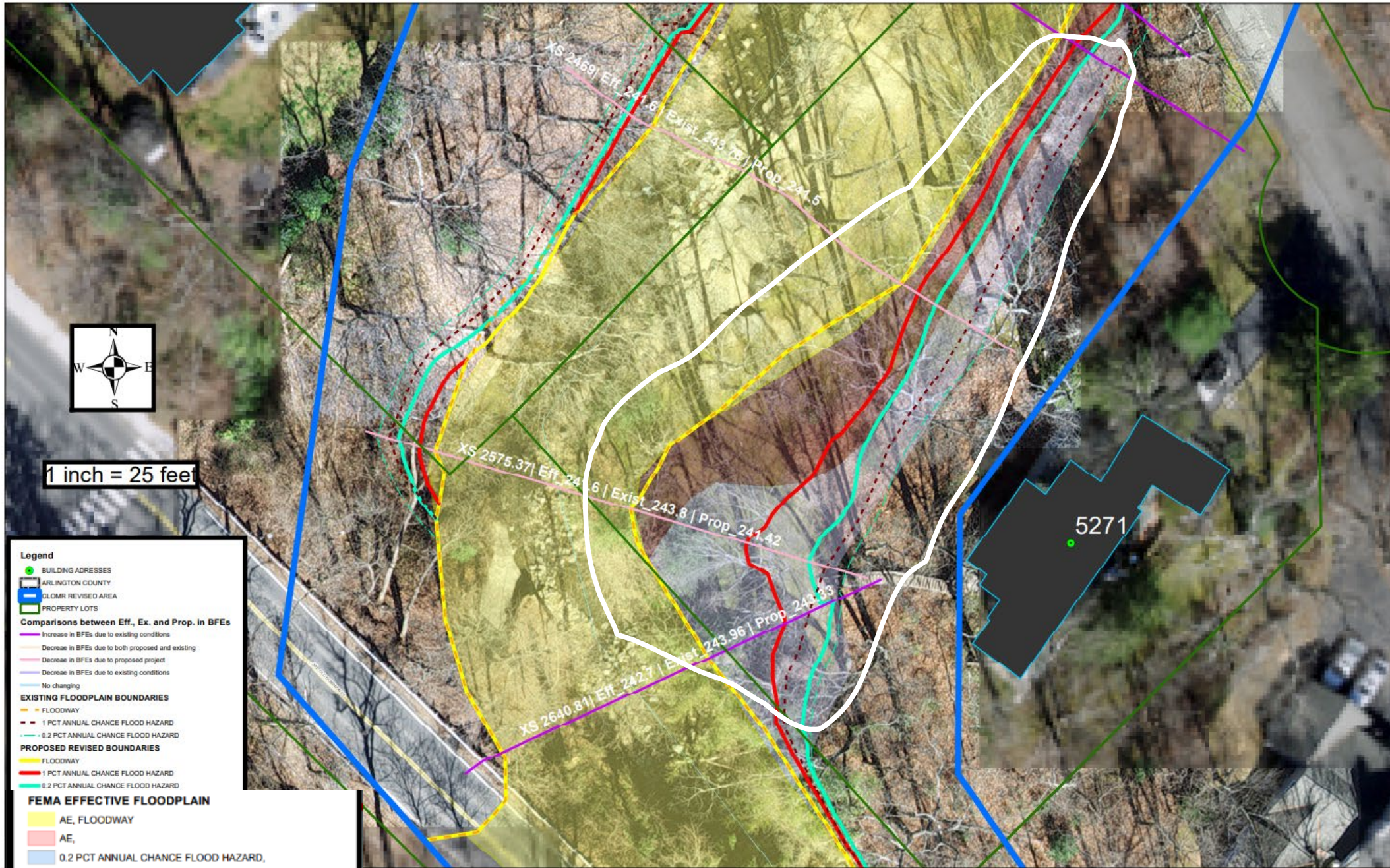
- FLOODWAY
- 1 PCT ANNUAL CHANCE FLOOD HAZARD
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- HYDRAULIC STRUCTURES
- BUILDINGS ALONG THIS PROJECT

**FEMA PRELIMINARY FLOODPLAIN**

- AE, FLOODWAY
- AE,
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD

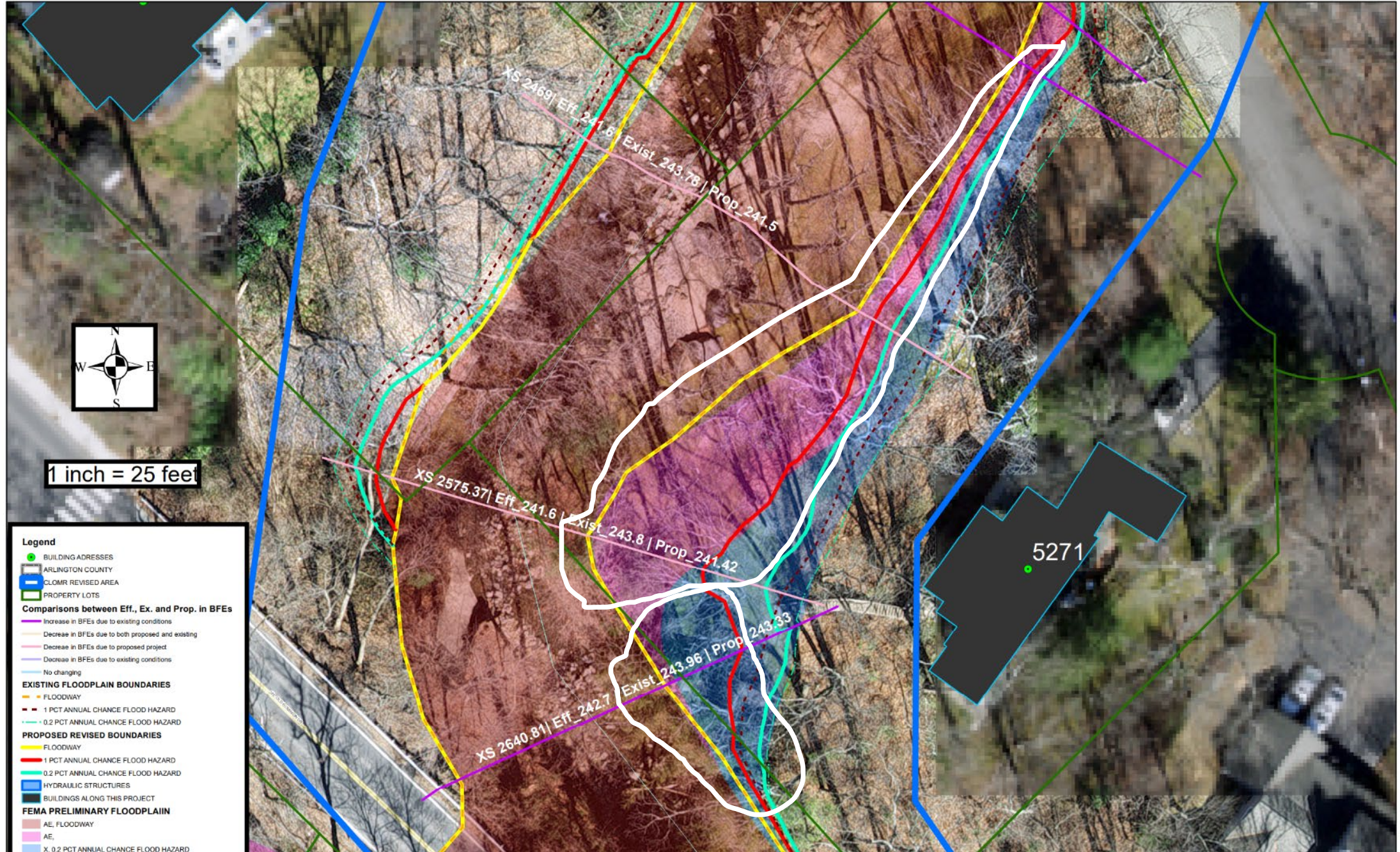


# BFEs AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA EFFECTIVE FOR 5271





# BFEs AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA PRELIMINARY FOR 5271



- Legend**
- BUILDING ADDRESSES
  - ▭ ARLINGTON COUNTY
  - ▭ CLOMR REVISED AREA
  - ▭ PROPERTY LOTS
- Comparisons between Eff., Ex. and Prop. in BFEs**
- █ Increase in BFEs due to existing conditions
  - █ Decrease in BFEs due to both proposed and existing
  - █ Decrease in BFEs due to proposed project
  - █ Decrease in BFEs due to existing conditions
  - █ No changing
- EXISTING FLOODPLAIN BOUNDARIES**
- █ FLOODWAY
  - █ 1 PCT ANNUAL CHANCE FLOOD HAZARD
  - █ 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- PROPOSED REVISED BOUNDARIES**
- █ FLOODWAY
  - █ 1 PCT ANNUAL CHANCE FLOOD HAZARD
  - █ 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
  - █ HYDRAULIC STRUCTURES
  - █ BUILDINGS ALONG THIS PROJECT
- FEMA PRELIMINARY FLOODPLAIN**
- █ AE, FLOODWAY
  - █ AE
  - █ X 0.2 PCT ANNUAL CHANCE FLOOD HAZARD

XS 2469 | Eff. 247.6 | Exist. 243.78 | Prop. 241.5

XS 2575.37 | Eff. 241.6 | Exist. 243.8 | Prop. 241.42

XS 2640.81 | Eff. 242.7 | Exist. 243.96 | Prop. 243.33

5271



# BFEs AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA EFFECTIVE FOR 3905





# BFEs AND FLOODPLAIN COMPARISON BETWEEN PROPOSED AND FEMA PRELIMINARY FOR 3905



Preliminary Flood Zones (2022)

- AE
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE

PROPOSED\_REVISIED\_LN

- FLOODWAY
- 1 PCT ANNUAL CHANCE FLOOD

HAZARD

- 0.2 PCT ANNUAL CHANCE FLOOD

HAZARD



# Floodplain Map & Ordinance Updates

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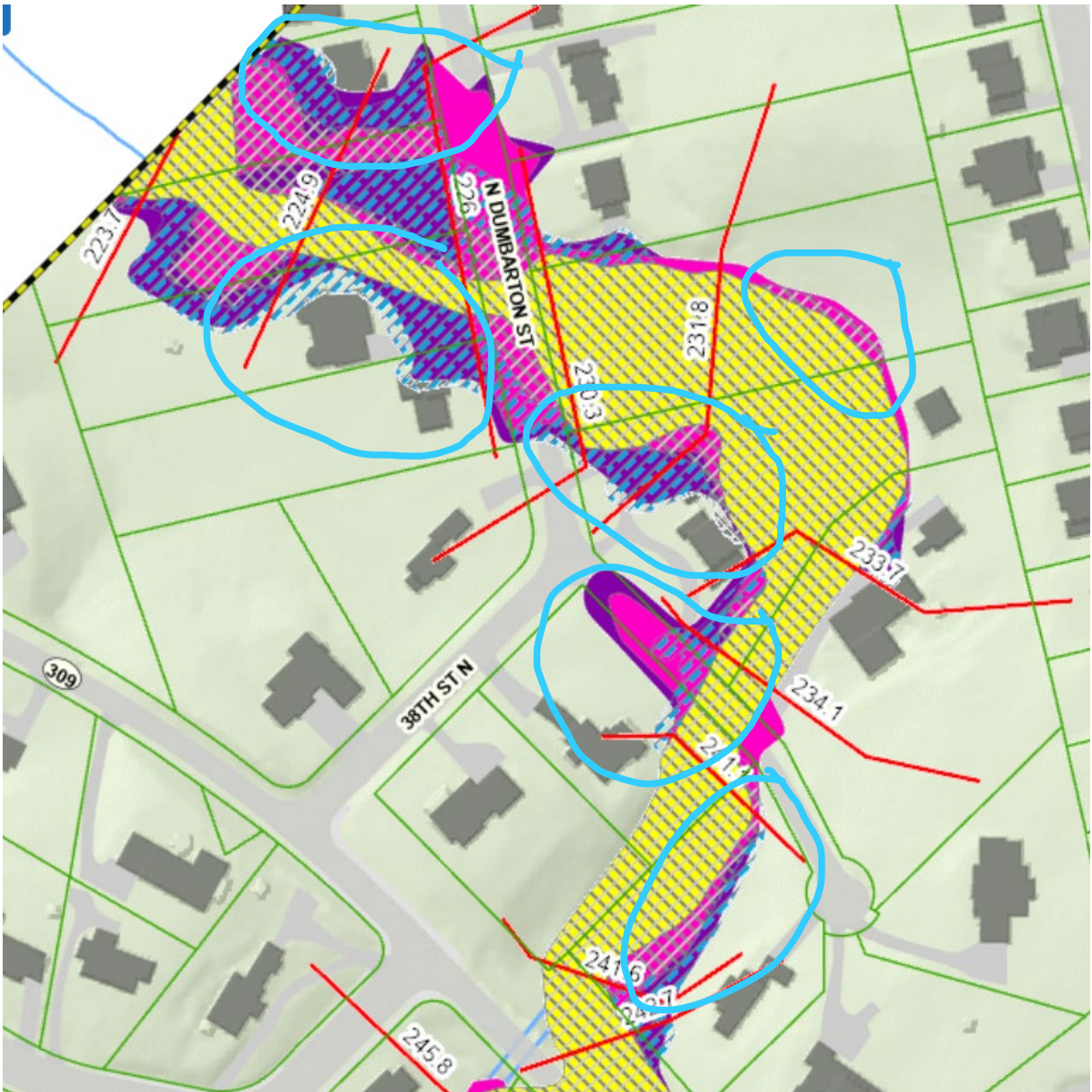
- FEMA is in the process of updating the Flood Insurance Rate Maps for Arlington County
- Process has been a long one – first preliminary maps were issued in 2020
- Changes to this watershed are minor
- Letter of Final Determination (LFD) expected May 16, 2023.
- New building permit applications after that date will be reviewed in light of the preliminary maps.



# FEMA Floodplain Map Update

Detail of Preliminary floodplains compared to Effective – changes are small

[ACMaps \(arlingtonva.us\)](http://ACMaps.arlingtonva.us)



Preliminary Flood Zones (2022)

- A,
- AE,
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE

FLOOD HAZARD

Effective Flood Zones

- Effective Base Flood Plain
- 0.2 % Annual Chance Flood

Hazard

Blue circles are areas where the preliminary maps differ from the current effective maps.

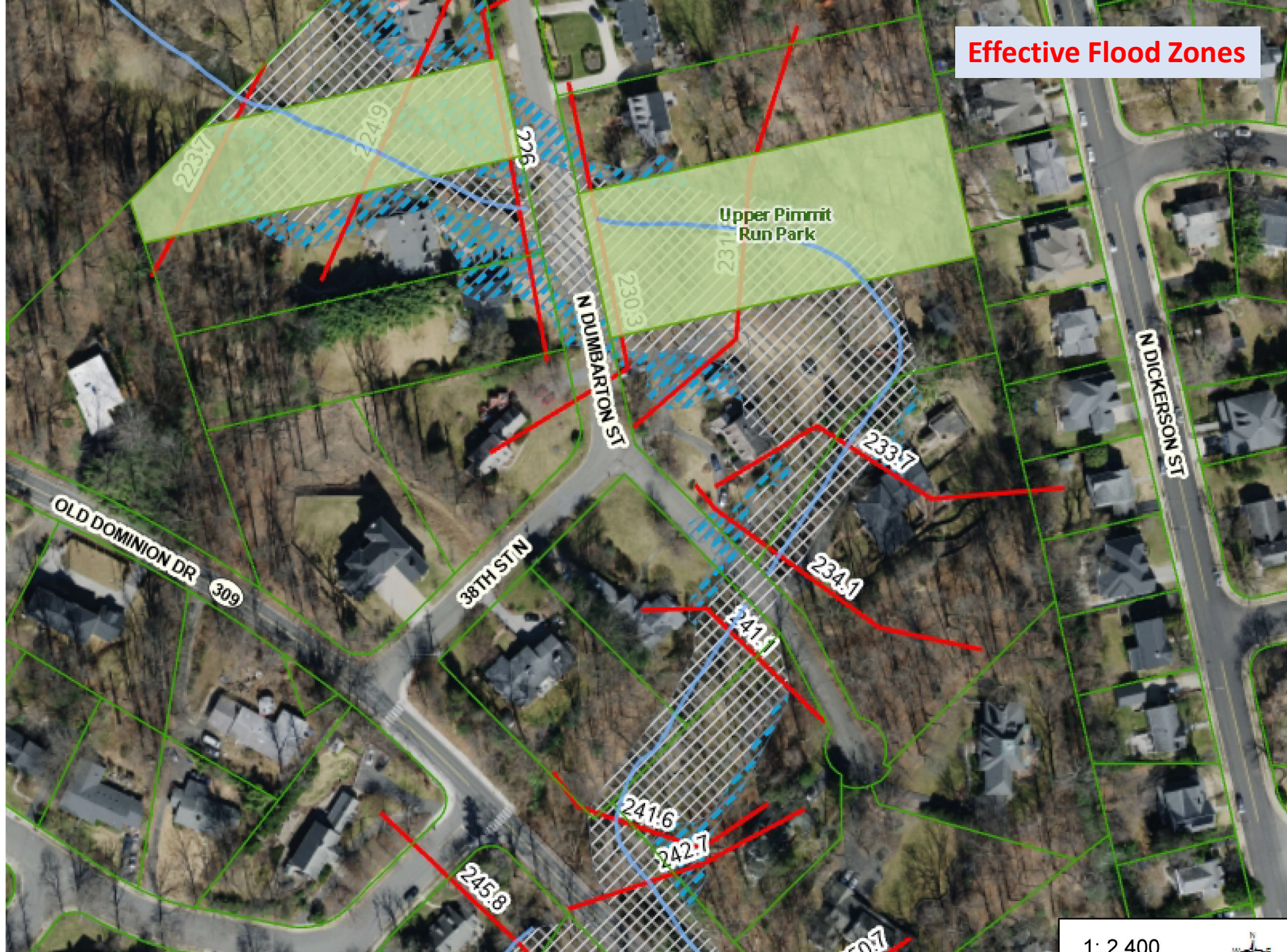
Overall, changes are minor and many are related to the 500-year flood zone.

500-year flood zone is mostly **not** regulated in Arlington County\*.

\*The updated floodplain ordinance will regulate the storage of government and medical records in the 500-year flood zone. Such storage will be prohibited.



# Effective Flood Zones

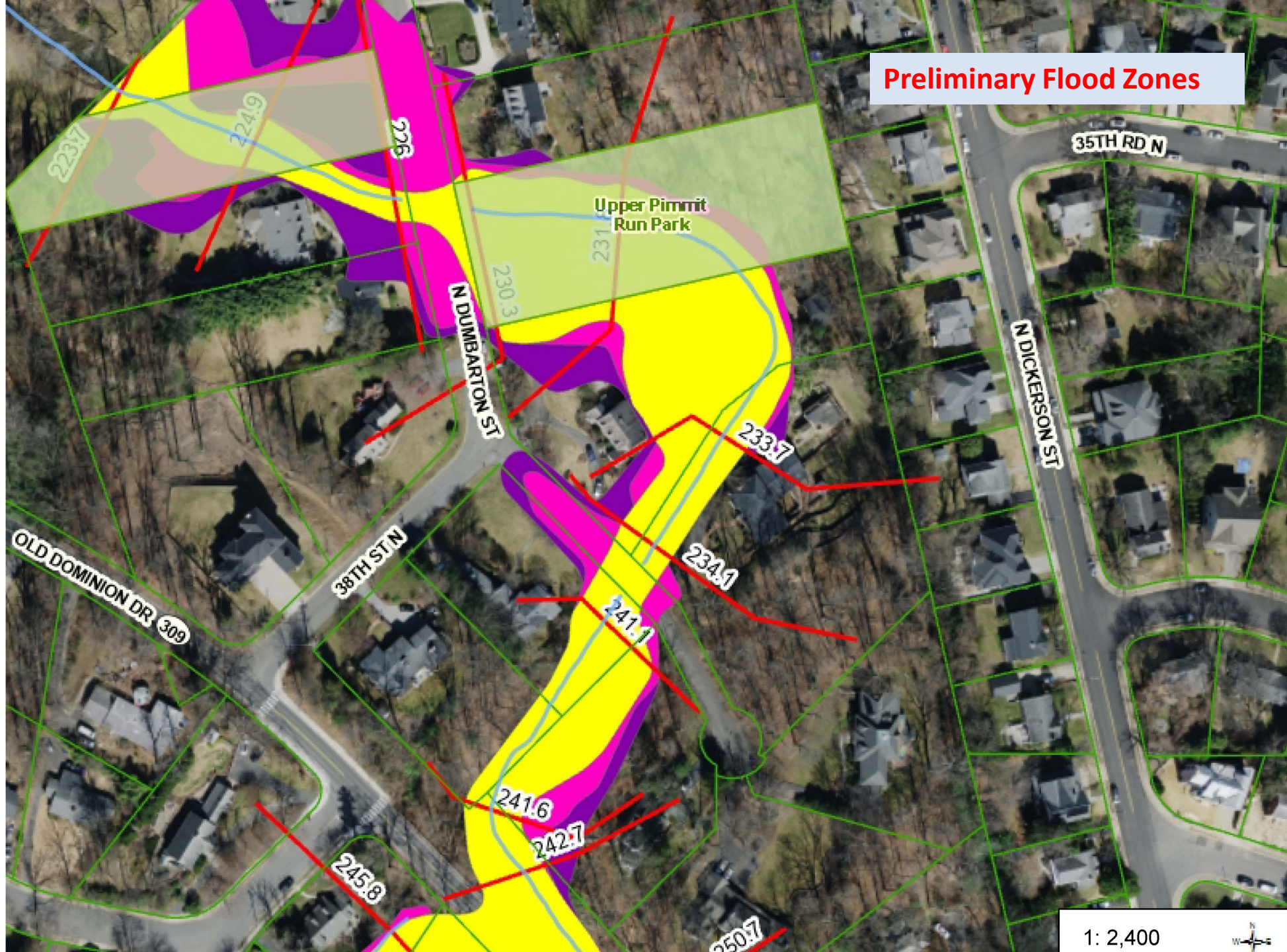


- Legend**
- Pond
  - Streams
  - Parks**
    - Arlington County DES
    - Arlington County Park
    - NVRPA Park
    - Private Open Space
    - State Department
  - Parcels
  - Cross Sections (2022)
  - Effective Flood Zones**
    - Effective Base Flood Plain
    - 0.2 % Annual Chance Flood Hazard
  - County Line
  - Buildings
  - Driveway
  - Sidewalk
  - Parking Lot
  - Bridge
  - Road
  - Streams
  - National Airport
  - Potomac River
  - County Polygon
  - HillShade 2017

1:2 400



# Preliminary Flood Zones



## Legend

- Pond
- Streams
- Parks**
  - Arlington County DES
  - Arlington County Park
  - NVRPA Park
  - Private Open Space
  - State Department
- Parcels
- Cross Sections (2022)
- Preliminary Flood Zones (2022)**
  - A,
  - AE,
  - AE, FLOODWAY
  - X, 0.2 PCT ANNUAL CHANCE FLC
- County Line
- Buildings
- Driveway
- Sidewalk
- Parking Lot
- Bridge
- Road
- Streams
- National Airport
- Potomac River
- County Polygon
- HillShade 2017

1: 2,400

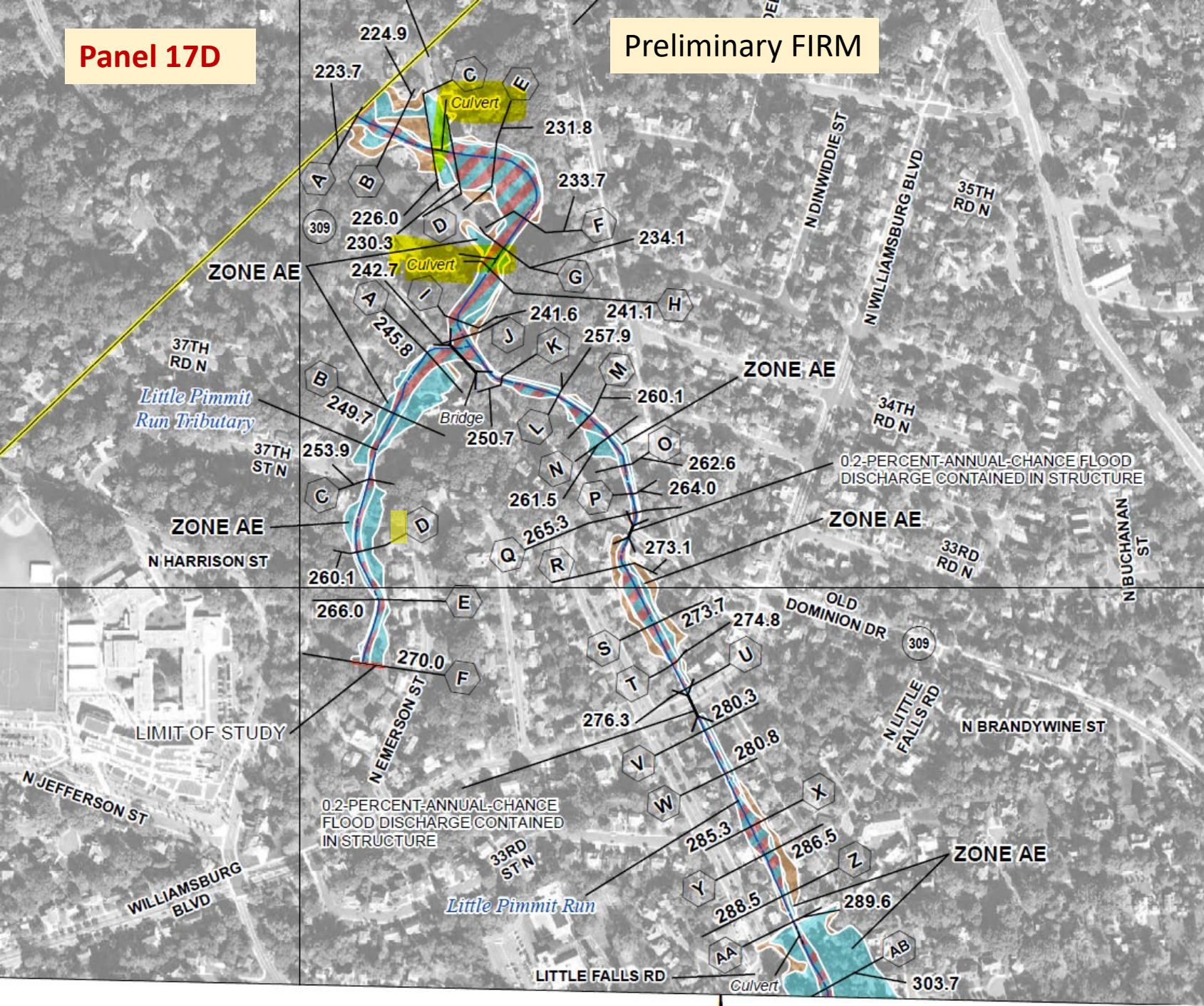


Notes



**Panel 17D**

**Preliminary FIRM**



**FLOOD HAZARD INFORMATION**

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT  
 THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING  
 DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT  
[HTTPS://MSC.FEMA.GOV](https://MSC.FEMA.GOV)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes, Zone X
OTHER AREAS		Area with Flood Risk due to Levee Zone D
		NO SCREEN Areas of Minimal Flood Hazard Zone X
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
		18.2 Cross Sections with 1% A
		17.4 Water Surface Elevation
		Coastal Transect

**FEMA**  
 NATIONAL FLOOD INSURANCE PROGRAM  
 National Flood Insurance Program

**NATIONAL FLOOD INSURANCE PROGRAM  
 FLOOD INSURANCE RATE MAP**

ARLINGTON COUNTY, VIRGINIA  
 (All Jurisdictions)



FEMA

PANEL 17 of 83

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
ARLINGTON COUNTY	515520	0017	D

**PRELIMINARY  
 9/18/2020**

VERSION NUMBER  
 2.6.4.6  
 MAP NUMBER  
 51013C0017D  
 MAP REVISED



## Tentative Schedule for updated FIRM and Floodplain Ordinance:

Step / Milestone	Start Date	End Date	Notes
Revised Preliminary Issued	04/29/2022	n/a	County received / downloaded files
30-Day comment period	04/29/2022	05/29/2022	County provided comments to FEMA
Prep work for Appeal Start	June 2022	July 2022	FEMA's contractor will begin prep work for the Appeal Period*
FR notice prepared, submitted, and published	July 2022 (submitted)	08/02/2022 (published)	FEMA's contractor will prepare and submit the <i>Federal Register</i> notice for publication
Newspaper publications (2)	09/29/2022 (tentative)	10/06/2022 (tentative)	FEMA's contractor will contact local newspaper and arrange for 2 publications
Appeal Period (90 days)	10/06/2022	01/06/2023	FEMA's contractor will mail out the Appeal Start letter <b>There was no appeal for Little Pimmit Run</b>
Prep work to ready the study for LFD	Jan. 2023	Mar. 2023	FEMA's contractor will begin prep work for completing the study*
Study is independently reviewed by another contractor	May 2023	June 2023	Independent contractor has 60 days to review and approve the study
Letter of Final Determination	May 2023	Nov 2023	Independent contractor has 60 days to review and approve the study
New Study Effective Date	Nov 2023	n/a	County will receive new products



## Floodplain Ordinance Update

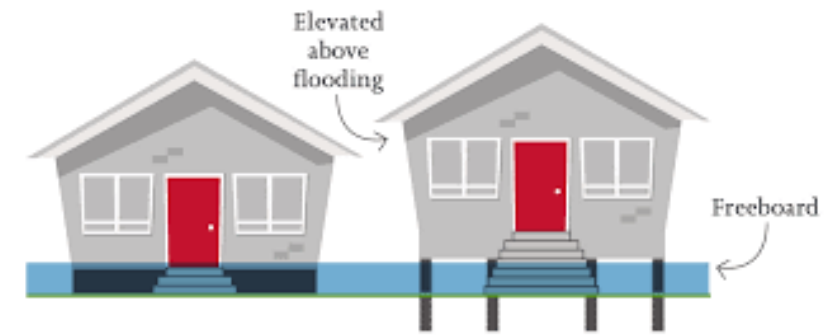
- Required due to FIRM updates
- Must be approved by DCR and FEMA
- Must conform to model ordinance
- Must be adopted within 6 months after Letter of Final Determination (LOD) or approximately November 16, 2023

Overall, proposed changes are minor



# Proposed changes to Floodplain Ordinance

- Increase in required freeboard (distance above base flood elevation) from 12 to 18 inches, or
- Buildings in 100-year floodplain must be watertight 2 feet above the base flood elevation (previous requirement 1 foot)
- Accessory structures cannot be larger than 600 feet
- No emergency service records, medical records or government records can be stored in 500-year floodplain





# Questions

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## Project Team

- Riyam Alobaidi, Project Manager, [ralobaidi@arlingtonva.us](mailto:ralobaidi@arlingtonva.us)
- Elizabeth Thurber, Infrastructure Program Manager, [ethurber@arlingtonva.us](mailto:ethurber@arlingtonva.us)
- Jennifer Tastad, Infrastructure Team Leader, [Jtastad@arlingtonva.us](mailto:Jtastad@arlingtonva.us)
- Aileen Winqvist, Communications Manager, [Awinqvist@arlingtonva.us](mailto:Awinqvist@arlingtonva.us)
- Guosheng Qiu, Senior Engineer

**Project Website:** <https://www.arlingtonva.us/Government/Projects/Project-Types/Environment-Projects/Dumbarton-St-Culvert-Replacement>