

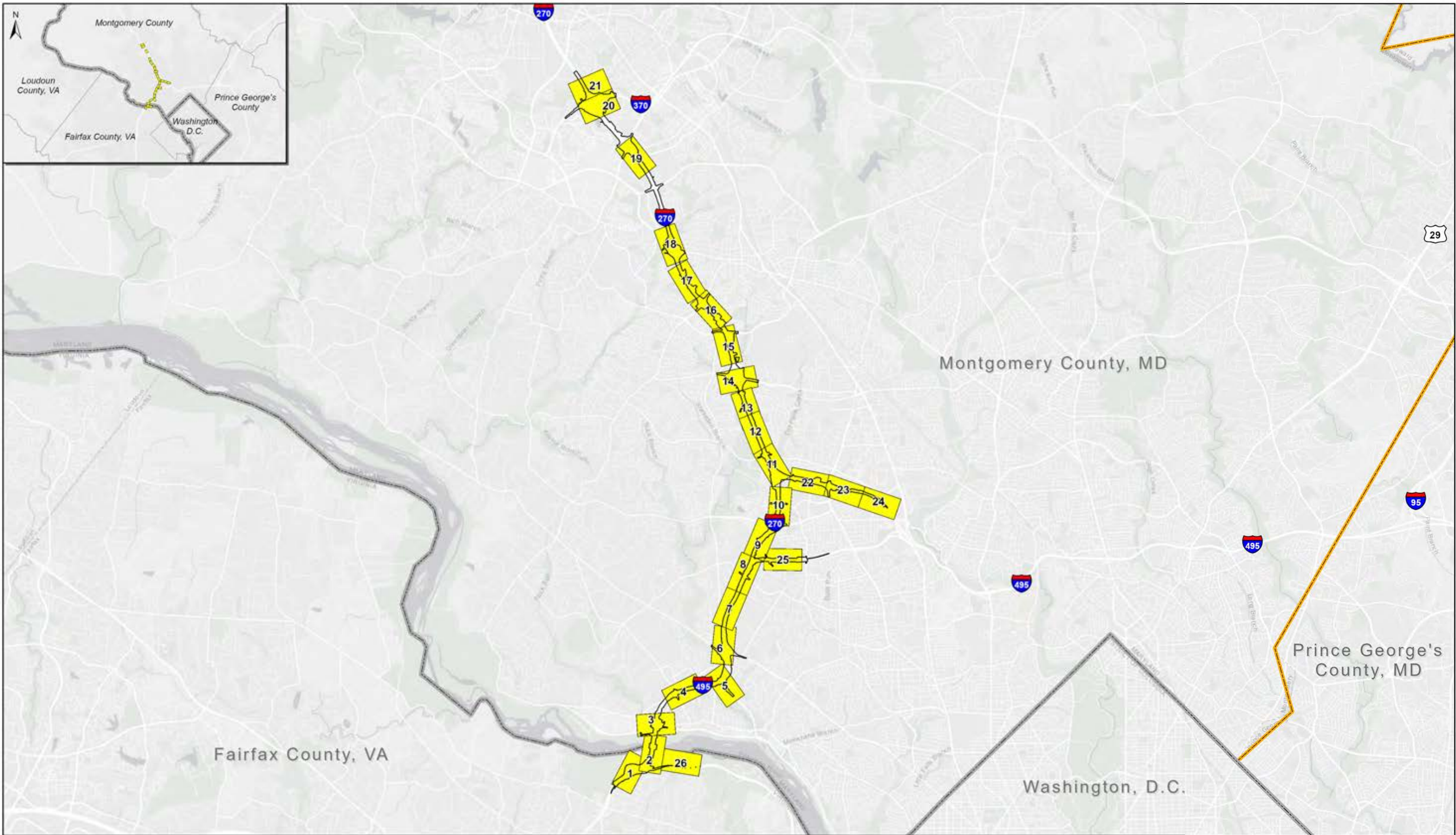
# Wetland and Waterway Impact Plates



**OP LANES™**  
M A R Y L A N D

I-495 & I-270 Managed Lanes Study





**LEGEND**

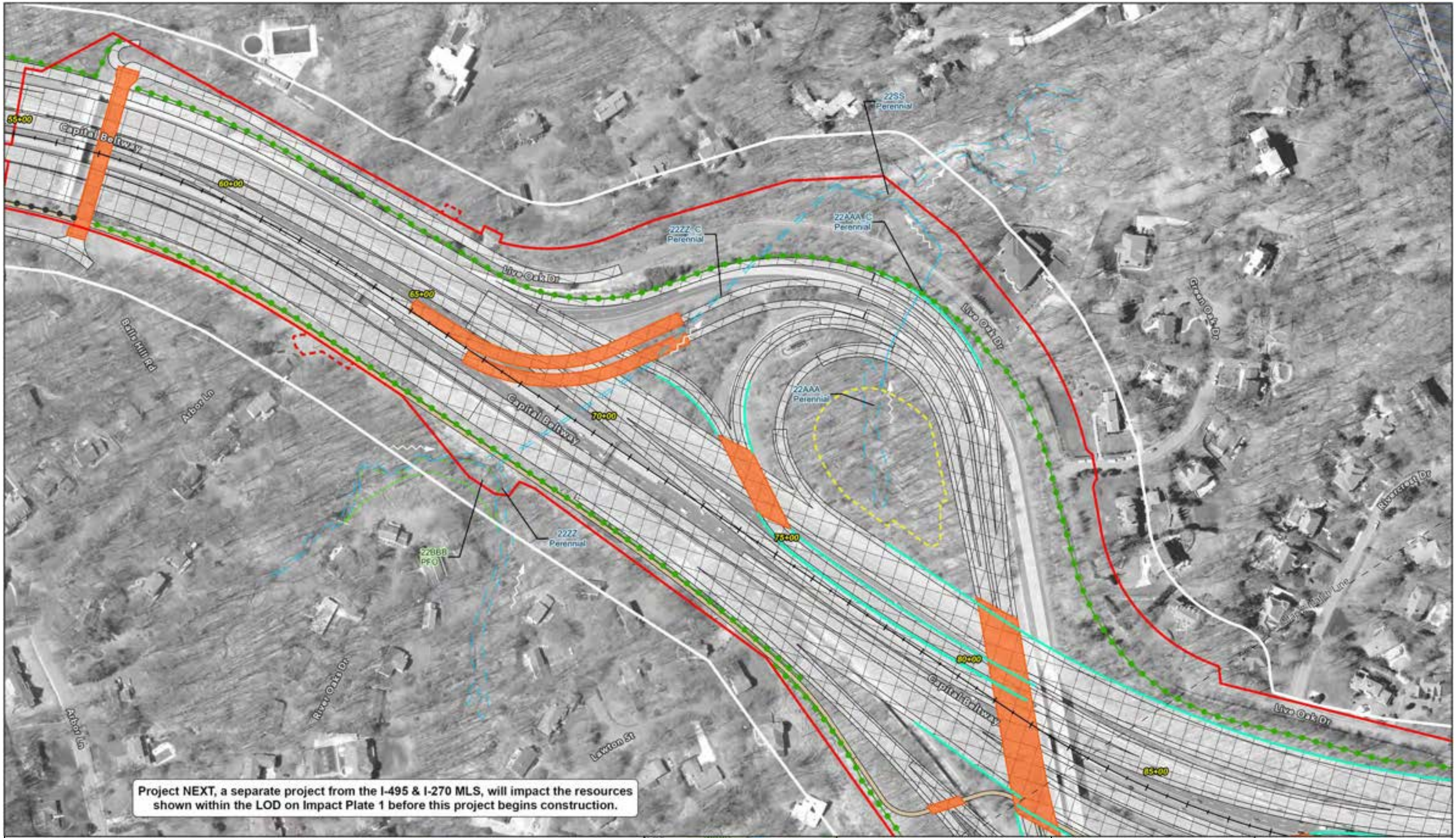
- Impact Plate
- Limit of Disturbance
- State Boundary
- County Boundary

0 0.75 1.5 3 Miles

June 2022

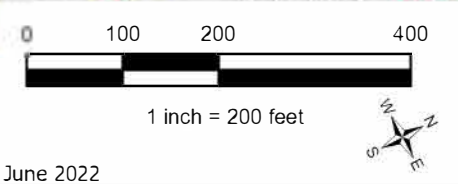
**Wetland and Waterway  
Impact Plates  
Key Sheet**

**MANAGED  
LANES STUDY**



**Project NEXT, a separate project from the I-495 & I-270 MLS, will impact the resources shown within the LOD on Impact Plate 1 before this project begins construction.**

- |                               |                            |                                 |                      |                            |
|-------------------------------|----------------------------|---------------------------------|----------------------|----------------------------|
| RPA Limit of Disturbance Temp | Proposed Retaining Wall    | Bridge                          | Waterway Impact Perm | Wetland Buffer Impact Perm |
| RPA Limit of Disturbance Perm | New/Augmented Pipe/Culvert | Limit Of Improved SWM / Storage | Waterway Impact Temp | Wetland Buffer Impact Temp |
| Delineation Limits            | Relocated Channel          | Limit Of Restoration            | Culvert Impact Perm  | Stream No Impact           |
| Proposed Pavement             | Proposed SWM - Pond        | Limit Of Stabilization          | Culvert Impact Temp  | Wetland No Impact          |
| Noise Wall Proposed           | Proposed SWM - Swale       | Shared Use Path                 | Wetland Impact Perm  | Wetland Buffer No Impact   |
| Noise Wall Existing           | Proposed SWM - Vault       | Flow Direction                  | Wetland Impact Temp  | FEMA 100-Year Floodplain   |

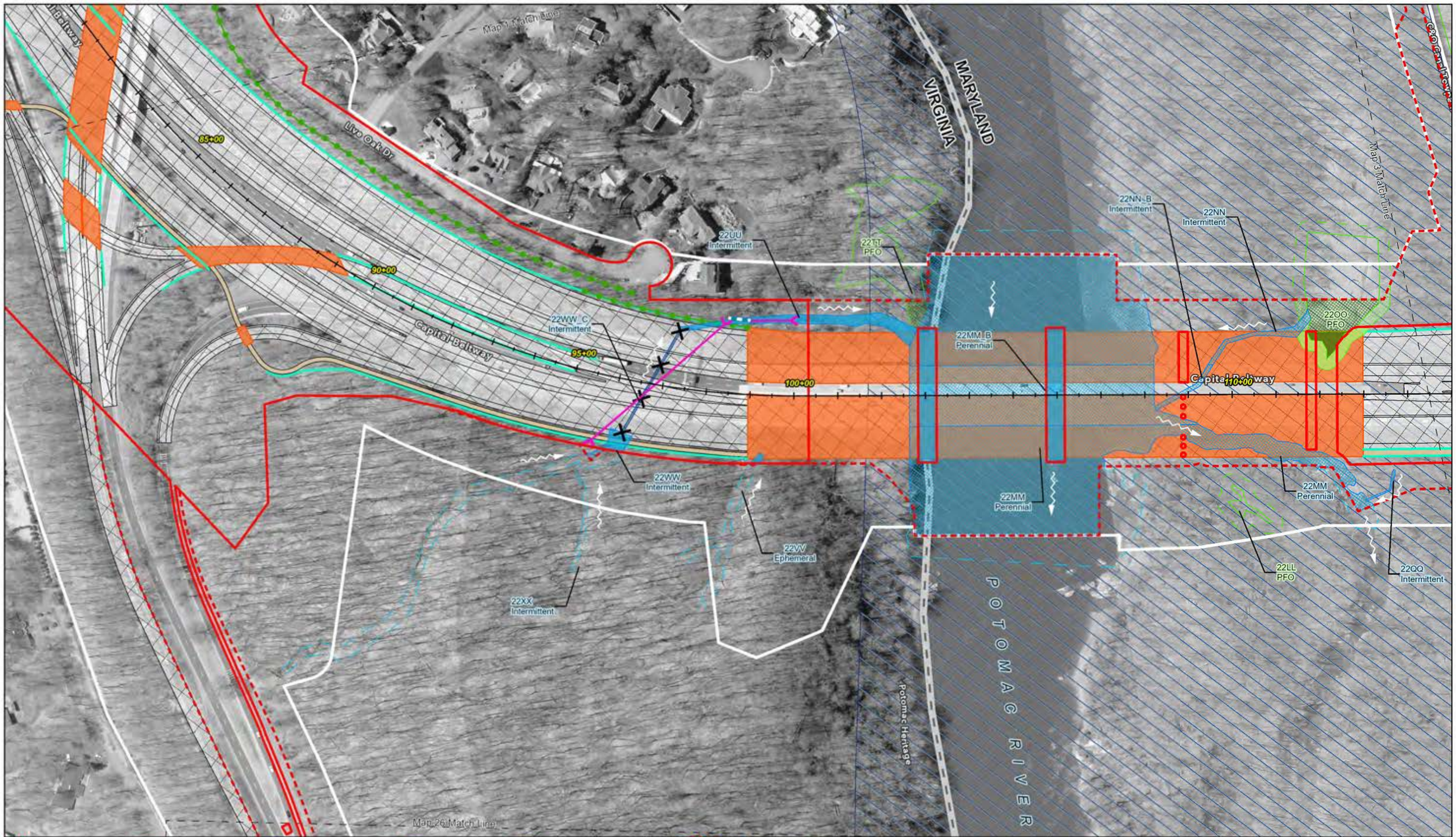


**Virginia  
Wetland and Waterway  
Impact Plates**

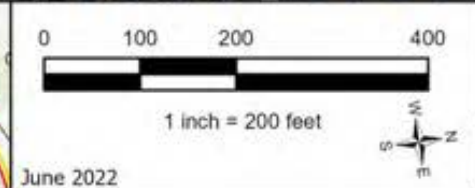
Mainline Impact Plate 1



June 2022

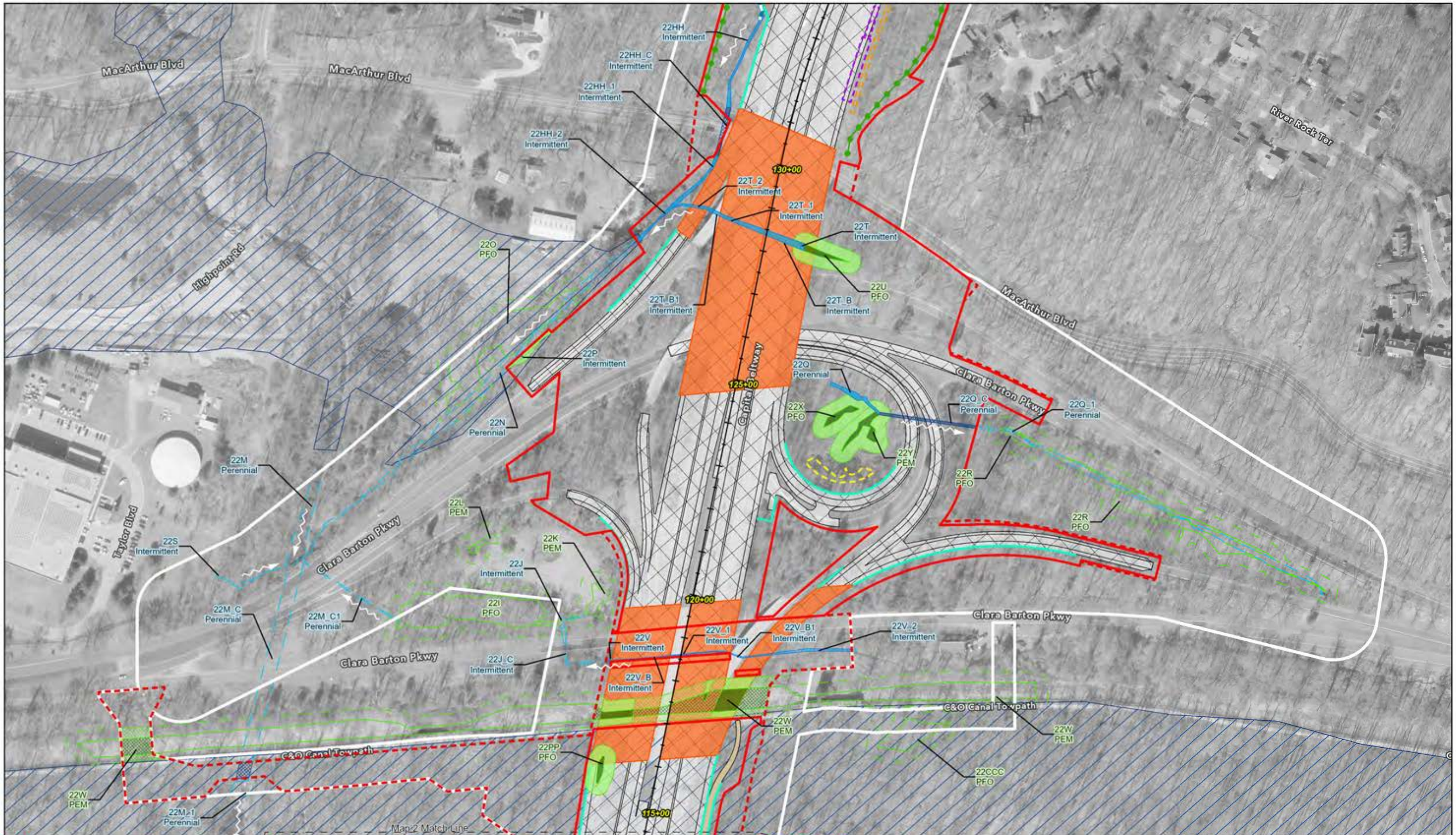


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|-------------------------------|----------------------------|---------------------------------|----------------------|----------------------------|
| RPA Limit of Disturbance Temp | Proposed Retaining Wall    | Bridge                          | Waterway Impact Perm | Wetland Buffer Impact Perm |
| RPA Limit of Disturbance Perm | New/Augmented Pipe/Culvert | Limit Of Improved SWM / Storage | Waterway Impact Temp | Wetland Buffer Impact Temp |
| Delineation Limits            | Relocated Channel          | Limit Of Restoration            | Culvert Impact Perm  | Stream No Impact           |
| Proposed Pavement             | Proposed SWM - Pond        | Limit Of Stabilization          | Culvert Impact Temp  | Wetland No Impact          |
| Noise Wall Proposed           | Proposed SWM - Swale       | Shared Use Path                 | Wetland Impact Perm  | Wetland Buffer No Impact   |
| Noise Wall Existing           | Proposed SWM - Vault       | Flow Direction                  | Wetland Impact Temp  | FEMA 100-Year Floodplain   |

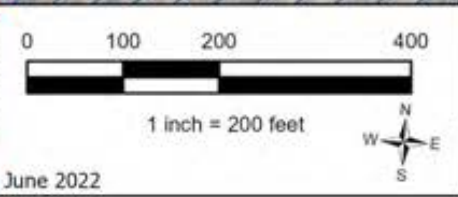


**Virginia**  
**Wetland and Waterway**  
**Impact Plates**  
 Mainline Impact Plate 2





RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



**Maryland  
Wetland and Waterway  
Impact Plates**

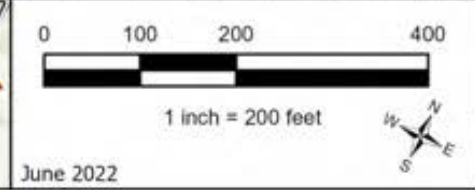
Mainline Impact Plate 3



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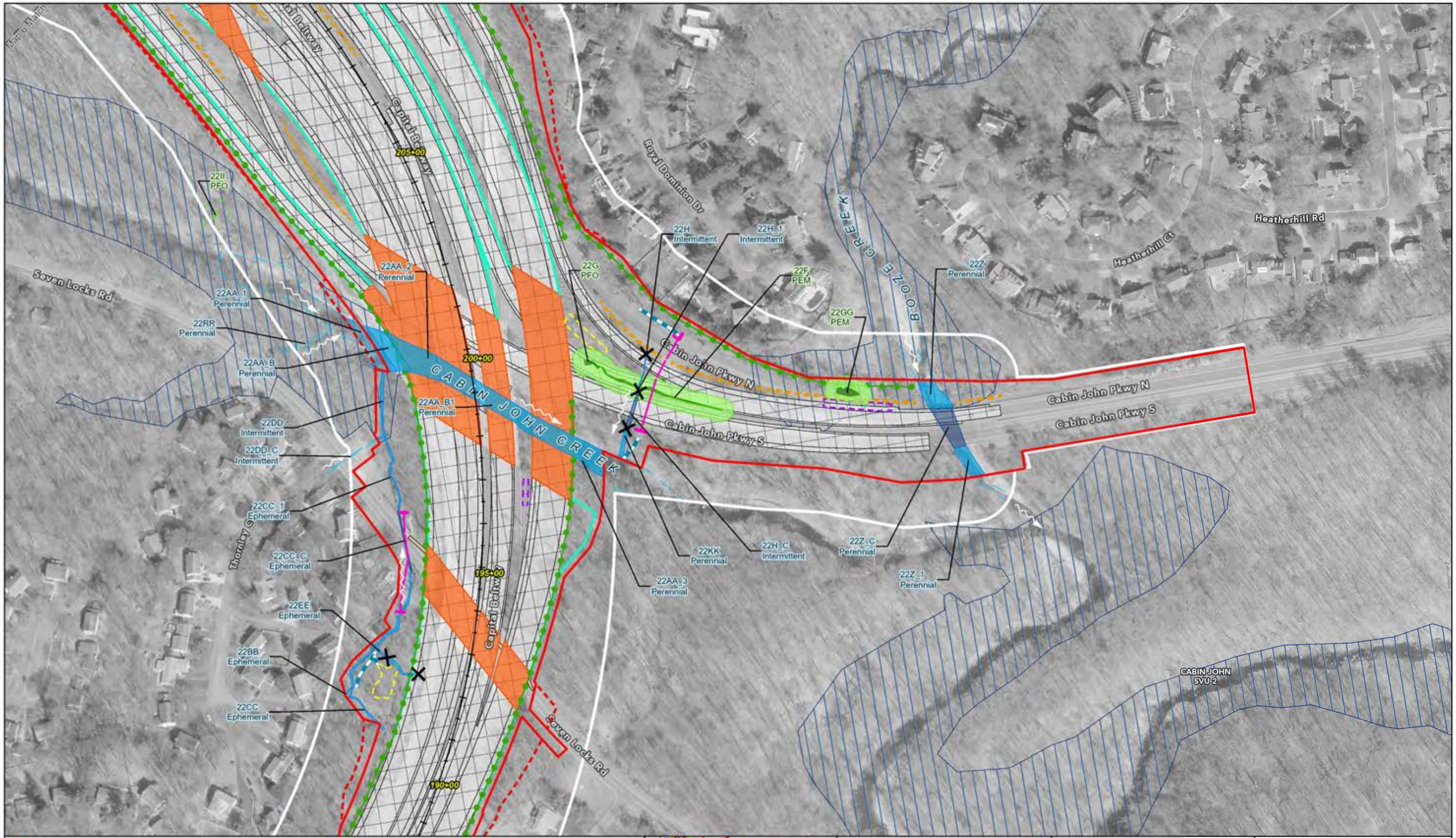


RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

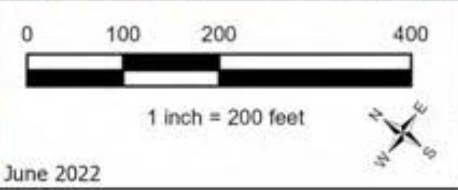


**Maryland  
Wetland and Waterway  
Impact Plates**  
Mainline Impact Plate 4





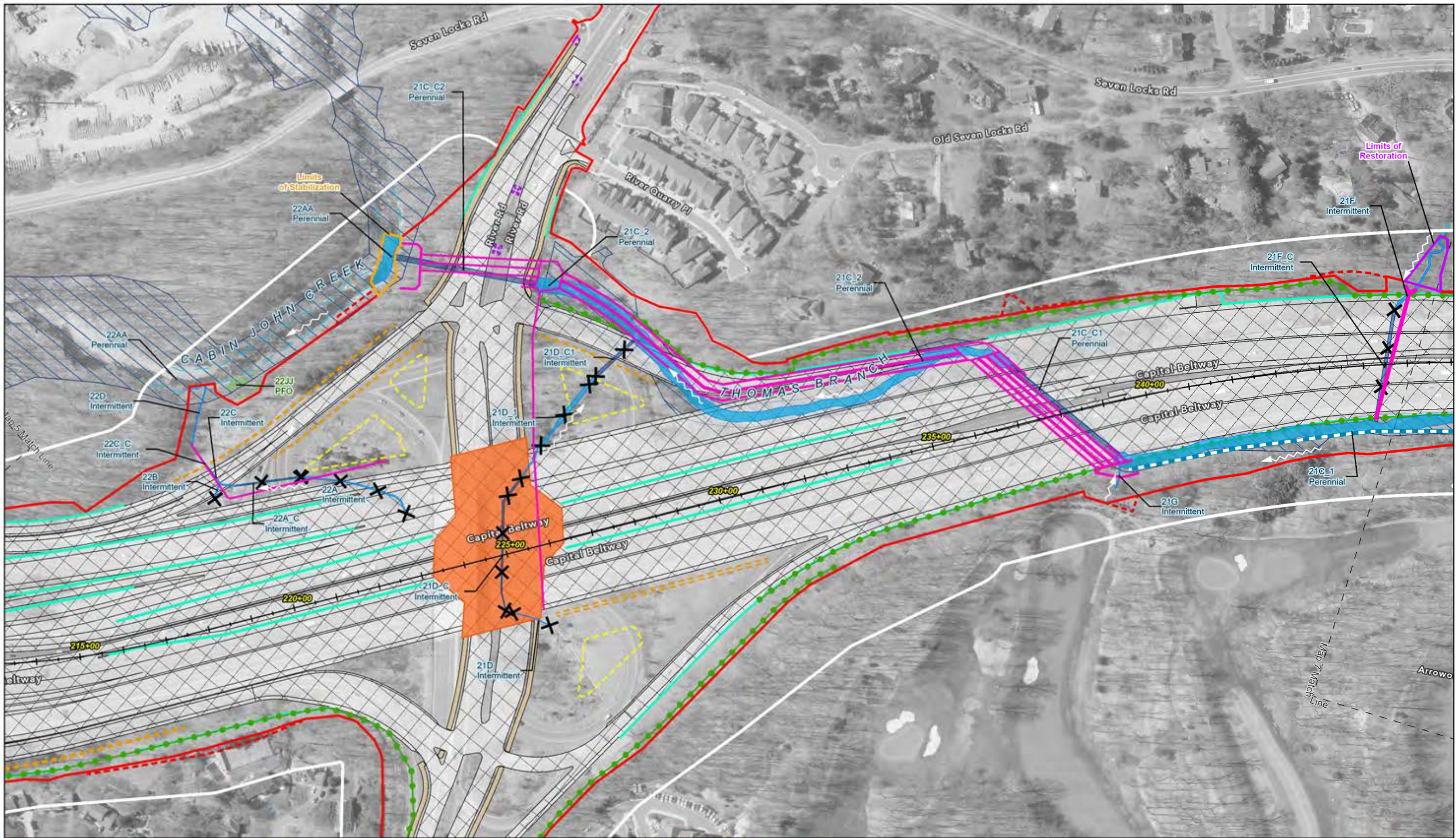
RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



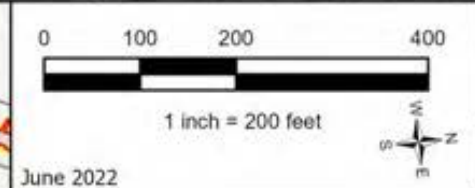
**Maryland  
Wetland and Waterway  
Impact Plates**  
Mainline Impact Plate 5





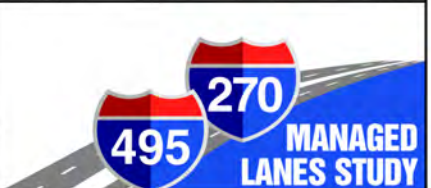


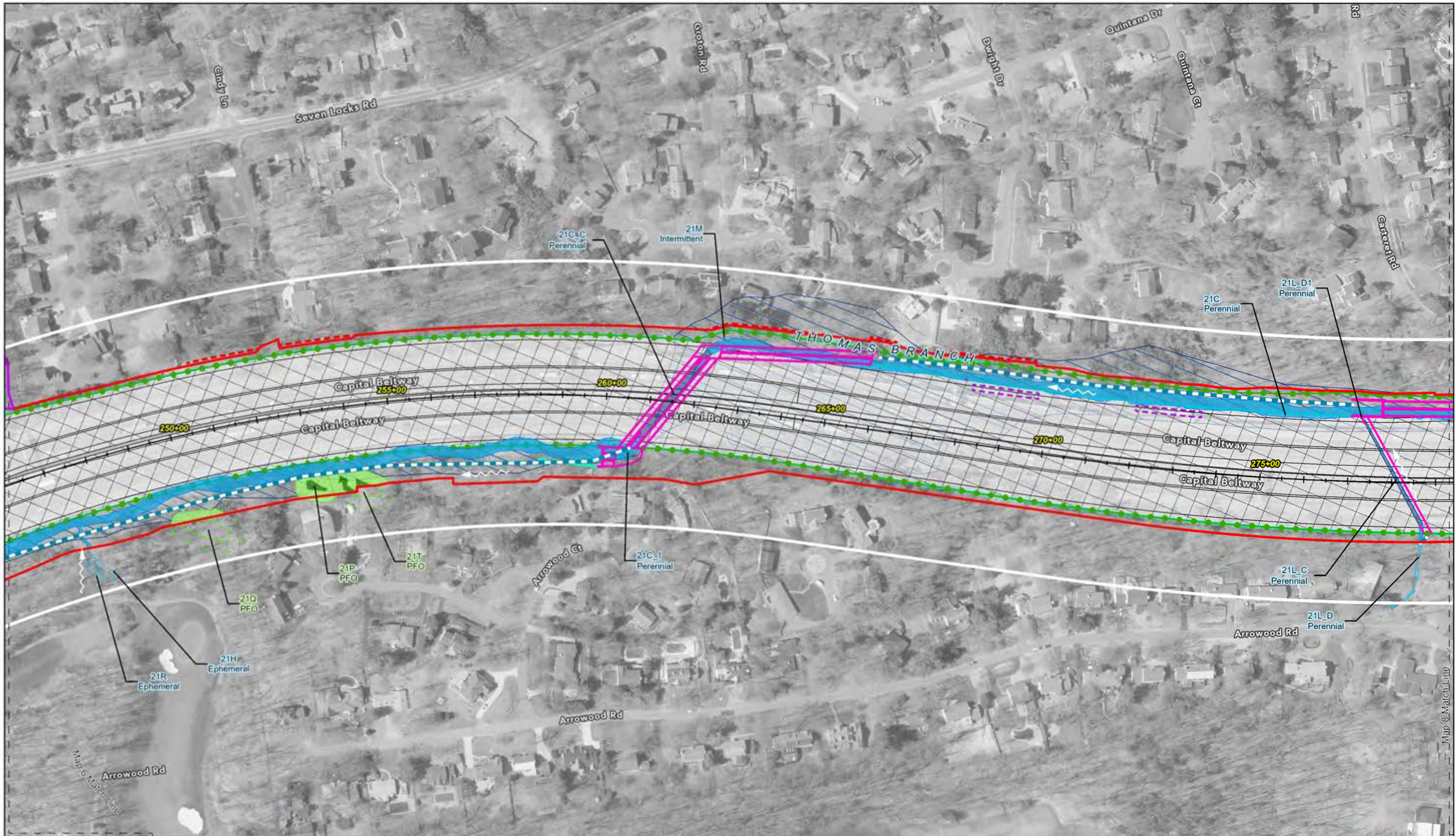
- |                               |                            |                                 |                      |                            |
|-------------------------------|----------------------------|---------------------------------|----------------------|----------------------------|
| RPA Limit of Disturbance Temp | Proposed Retaining Wall    | Bridge                          | Waterway Impact Perm | Wetland Buffer Impact Perm |
| RPA Limit of Disturbance Perm | New/Augmented Pipe/Culvert | Limit Of Improved SWM / Storage | Waterway Impact Temp | Wetland Buffer Impact Temp |
| Delineation Limits            | Relocated Channel          | Limit Of Restoration            | Culvert Impact Perm  | Stream No Impact           |
| Proposed Pavement             | Proposed SWM - Pond        | Limit Of Stabilization          | Culvert Impact Temp  | Wetland No Impact          |
| Noise Wall Proposed           | Proposed SWM - Swale       | Shared Use Path                 | Wetland Impact Perm  | Wetland Buffer No Impact   |
| Noise Wall Existing           | Proposed SWM - Vault       | Flow Direction                  | Wetland Impact Temp  | FEMA 100-Year Floodplain   |



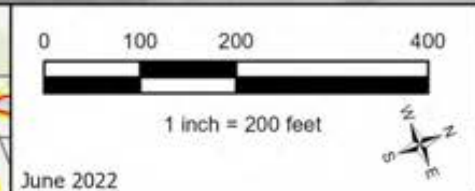
**Maryland  
Wetland and Waterway  
Impact Plates**

Mainline Impact Plate 6



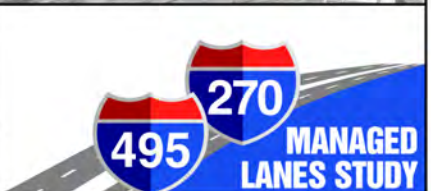


RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



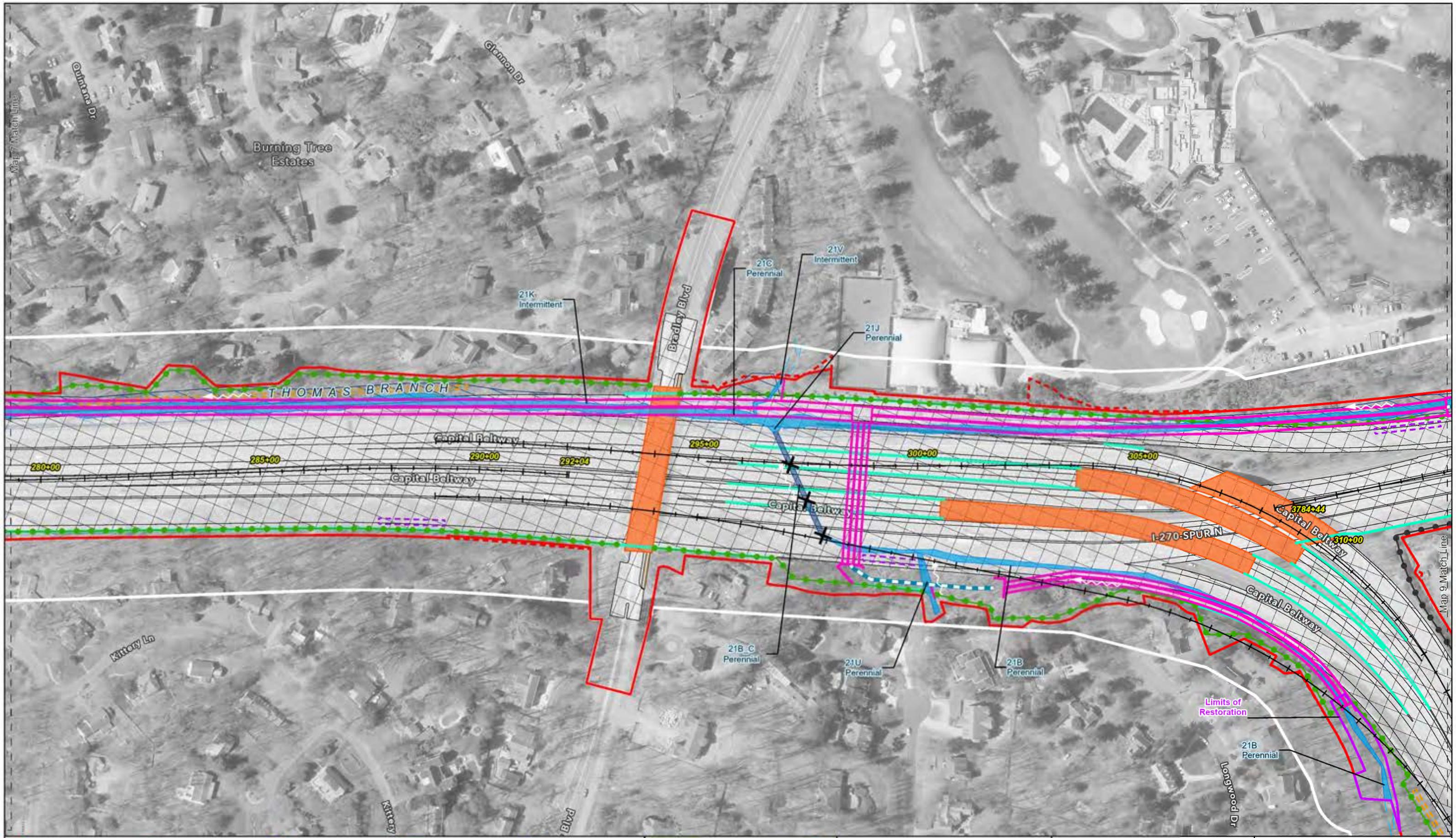
**Maryland  
Wetland and Waterway  
Impact Plates**

Mainline Impact Plate 7

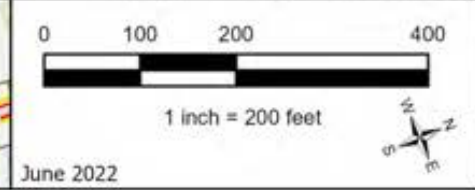


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Map & Match Line



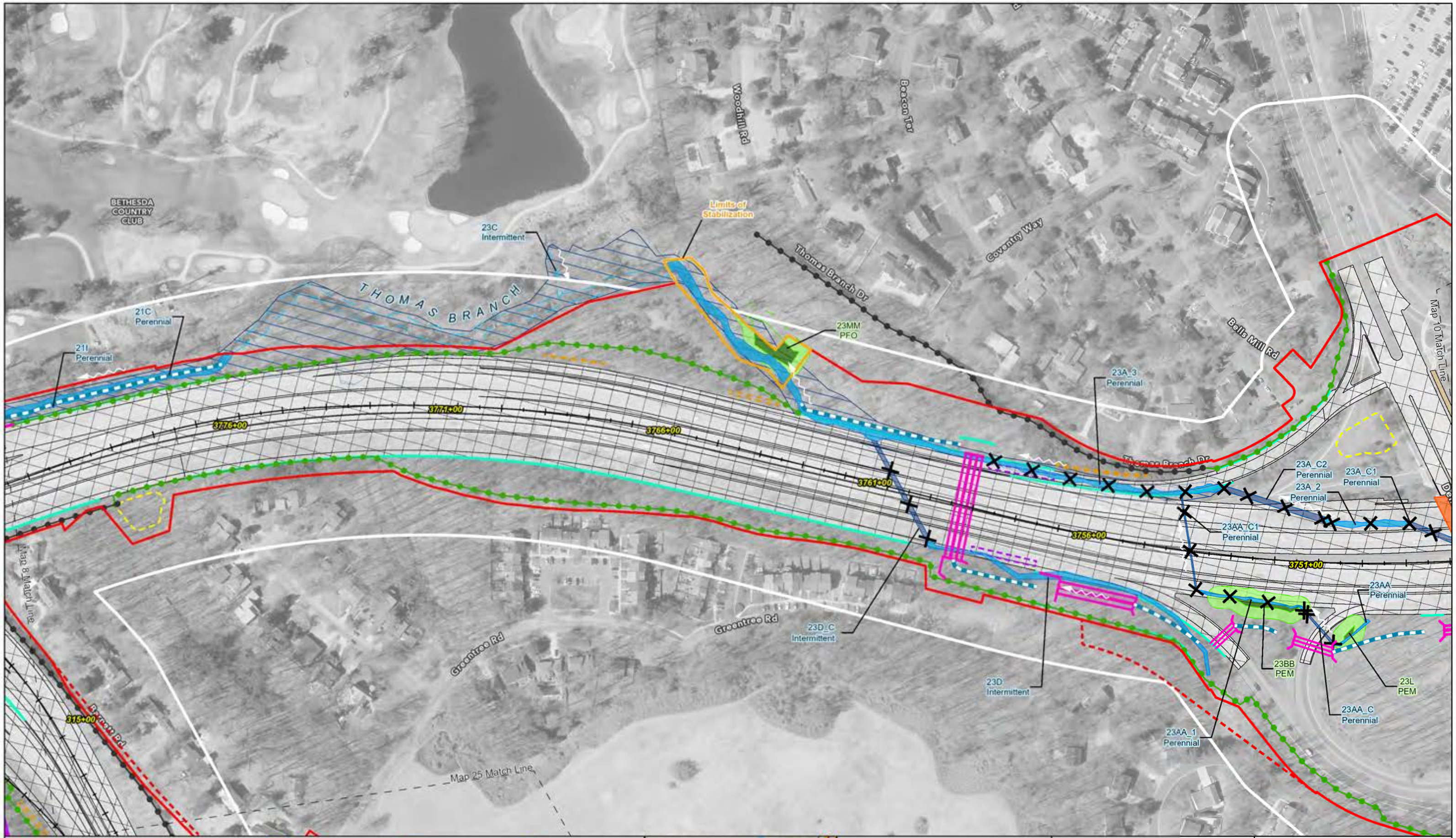
RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



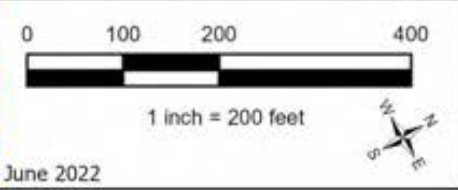
**Maryland  
Wetland and Waterway  
Impact Plates**

Mainline Impact Plate 8





- |                               |                            |                                 |                      |                            |
|-------------------------------|----------------------------|---------------------------------|----------------------|----------------------------|
| RPA Limit of Disturbance Temp | Proposed Retaining Wall    | Bridge                          | Waterway Impact Perm | Wetland Buffer Impact Perm |
| RPA Limit of Disturbance Perm | New/Augmented Pipe/Culvert | Limit Of Improved SWM / Storage | Waterway Impact Temp | Wetland Buffer Impact Temp |
| Delineation Limits            | Relocated Channel          | Limit Of Restoration            | Culvert Impact Perm  | Stream No Impact           |
| Proposed Pavement             | Proposed SWM - Pond        | Shared Use Path                 | Culvert Impact Temp  | Wetland No Impact          |
| Noise Wall Proposed           | Proposed SWM - Swale       | Shared Use Path                 | Wetland Impact Perm  | Wetland Buffer No Impact   |
| Noise Wall Existing           | Proposed SWM - Vault       | Flow Direction                  | Wetland Impact Temp  | FEMA 100-Year Floodplain   |

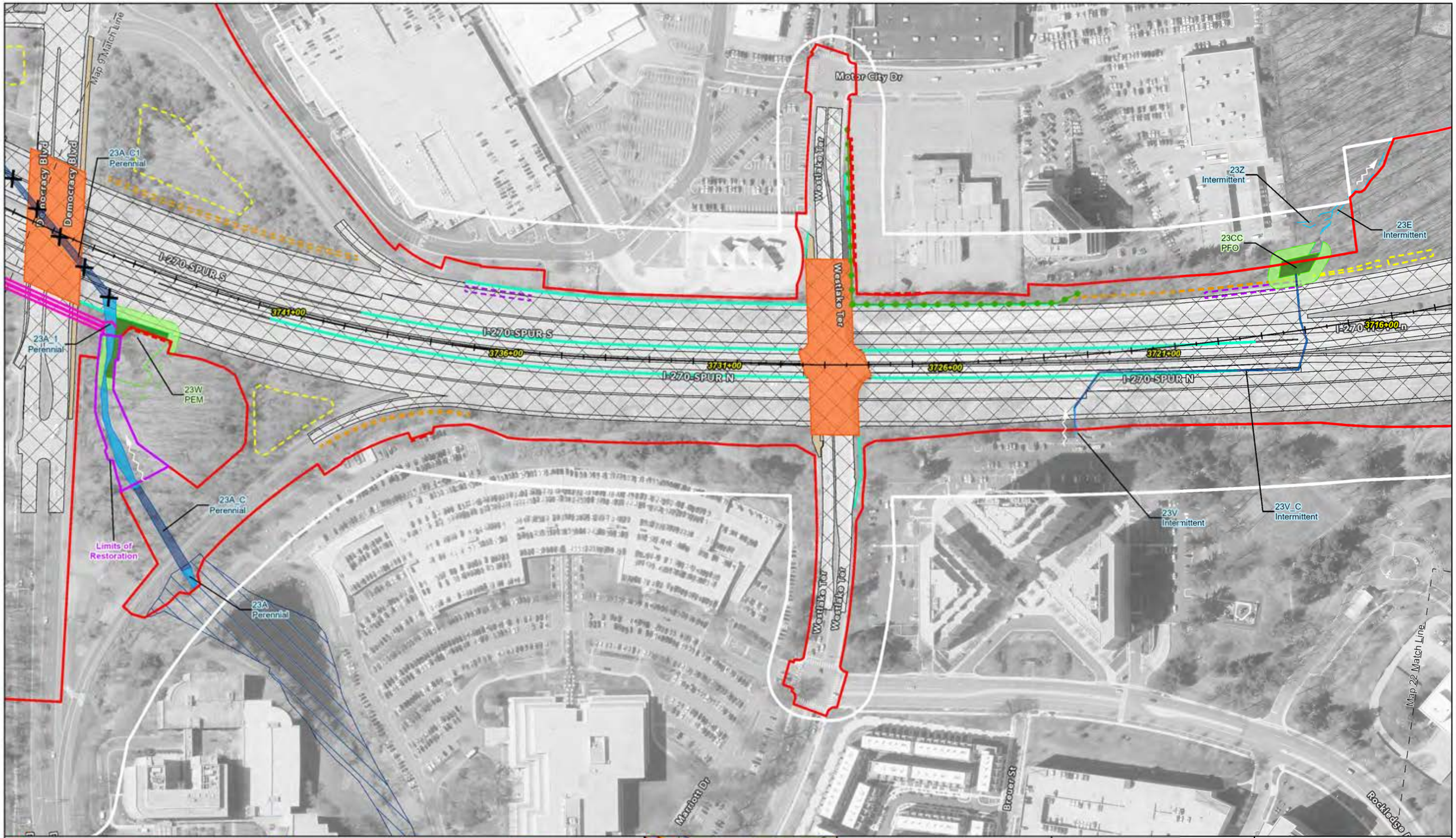


**Maryland  
Wetland and Waterway  
Impact Plates**

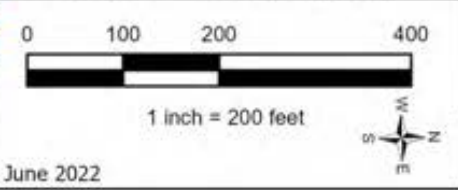
Mainline Impact Plate 9



June 2022



- RPA Limit of Disturbance Temp
- RPA Limit of Disturbance Perm
- Delineation Limits
- Proposed Pavement
- Noise Wall Proposed
- Noise Wall Existing
- Proposed Retaining Wall
- New/Augmented Pipe/Culvert
- Relocated Channel
- Proposed SWM - Pond
- Proposed SWM - Swale
- Proposed SWM - Vault
- Bridge
- Limit Of Improved SWM / Storage
- Limit Of Restoration
- Limit Of Stabilization
- Shared Use Path
- Flow Direction
- Waterway Impact Perm
- Waterway Impact Temp
- Culvert Impact Perm
- Culvert Impact Temp
- Wetland Impact Perm
- Wetland Impact Temp
- Wetland Buffer Impact Perm
- Wetland Buffer Impact Temp
- Stream No Impact
- Wetland No Impact
- Wetland Buffer No Impact
- FEMA 100-Year Floodplain

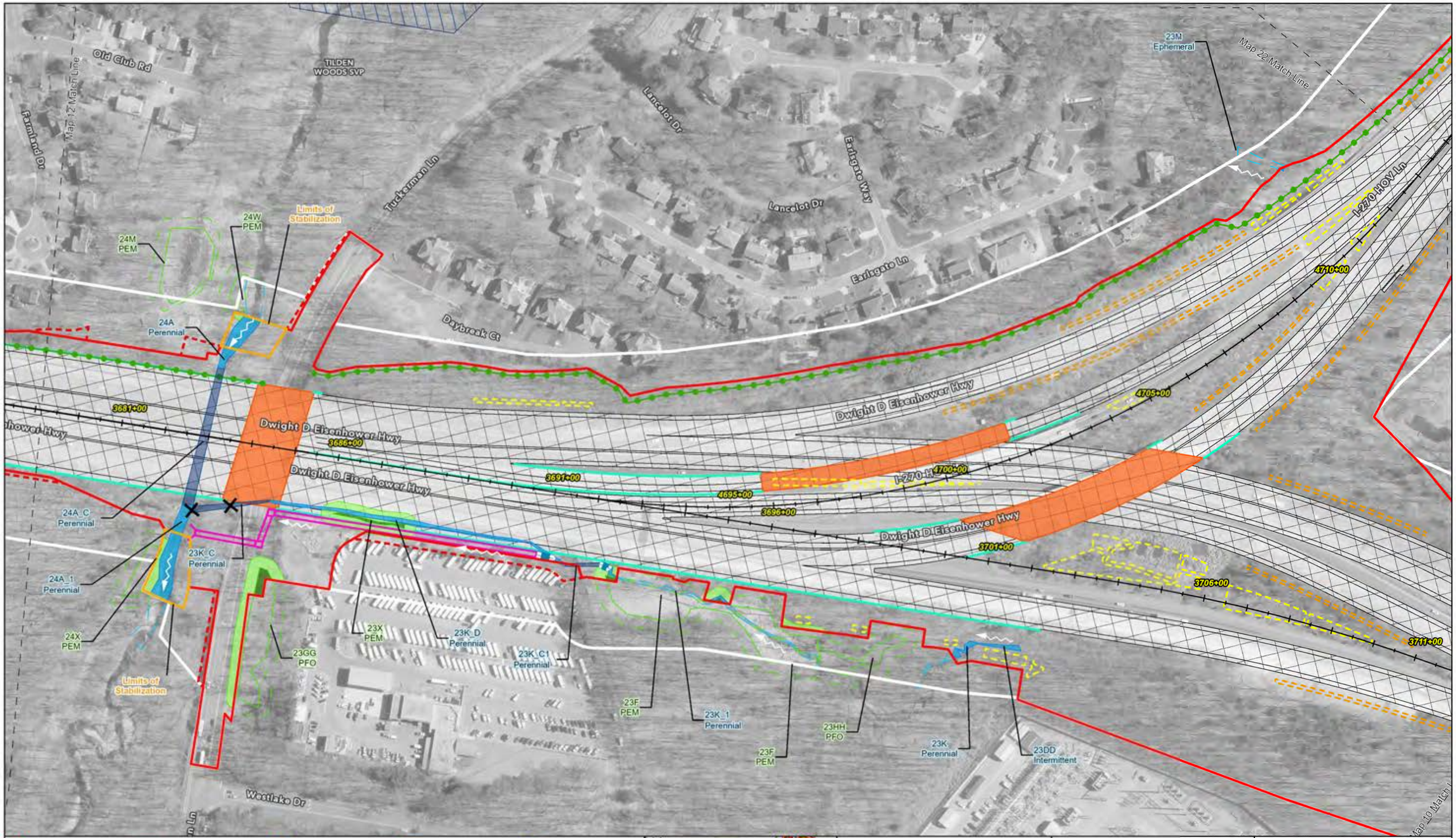


**Maryland  
Wetland and Waterway  
Impact Plates**

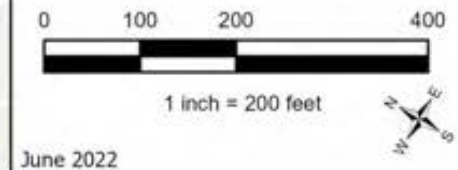
Mainline Impact Plate 10



June 2022



RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

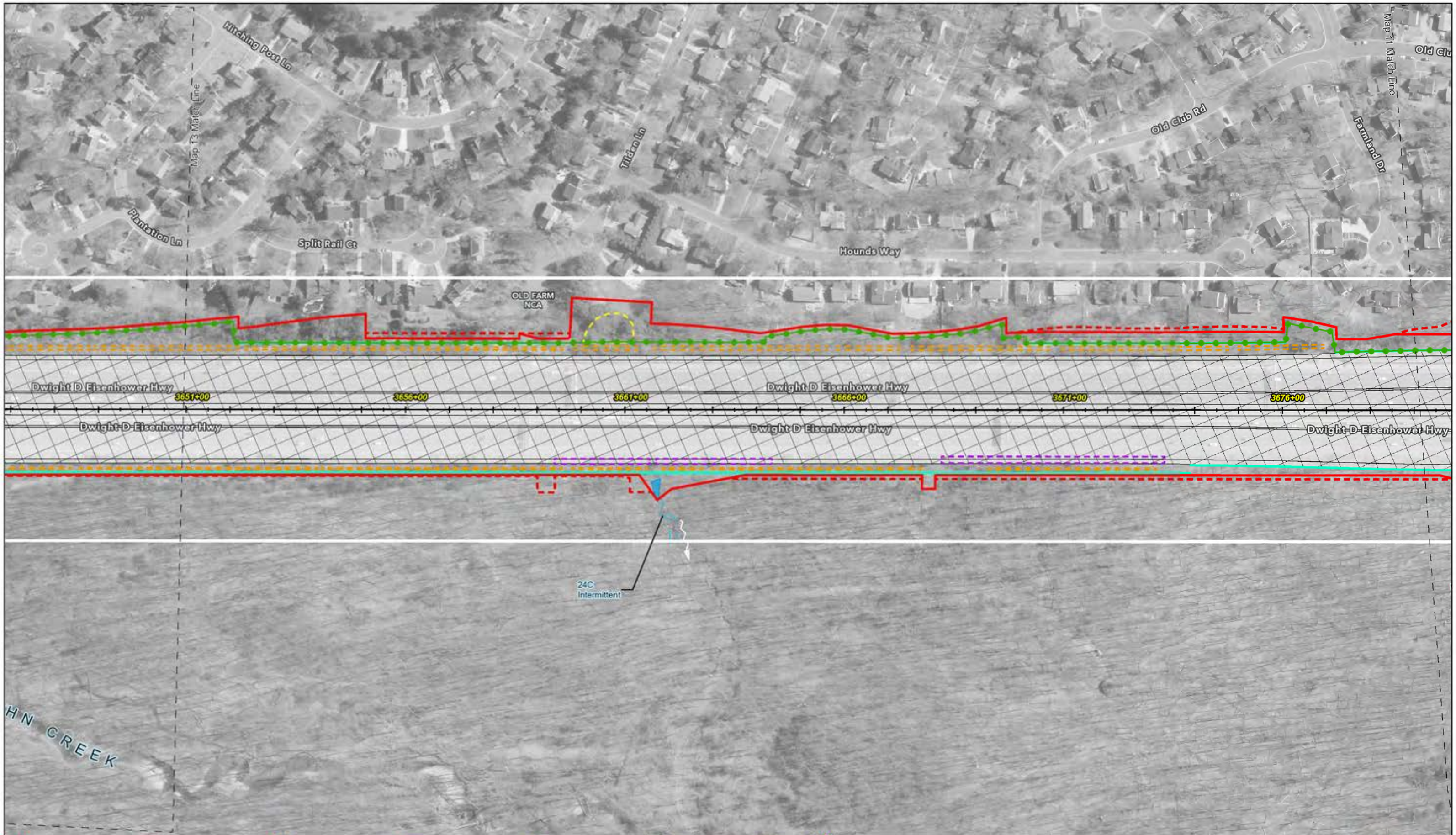


June 2022

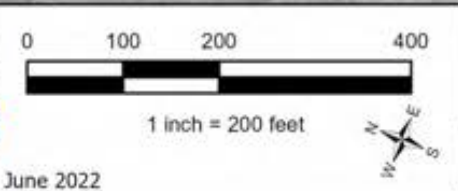
**Maryland  
Wetland and Waterway  
Impact Plates**

Mainline Impact Plate 11





RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

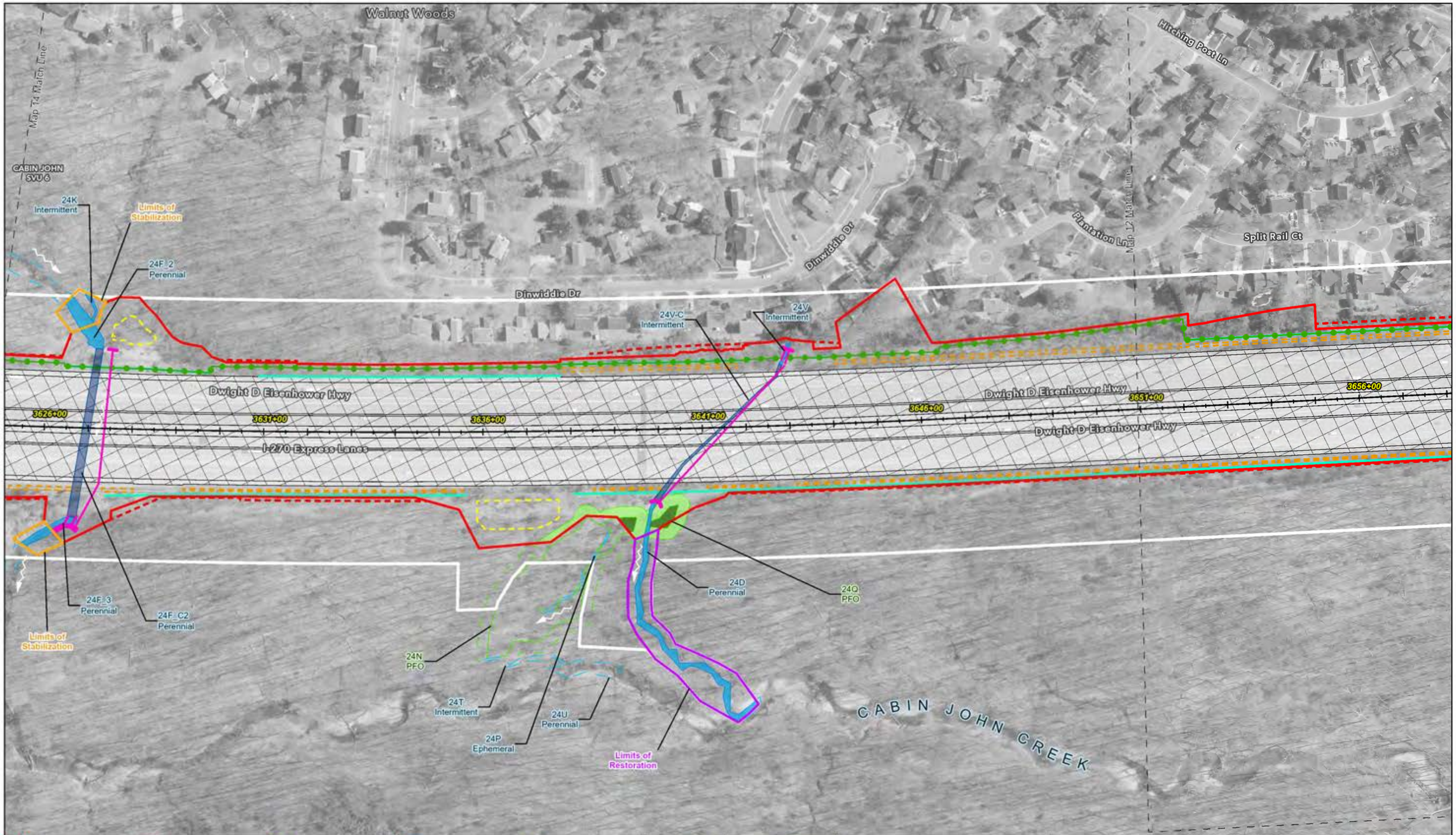


**Maryland  
Wetland and Waterway  
Impact Plates**

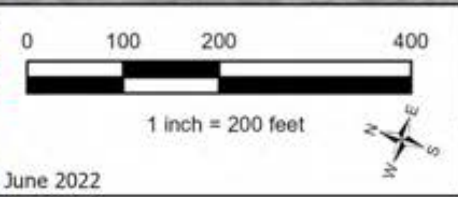
Mainline Impact Plate 12



June 2022



RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



**Maryland  
Wetland and Waterway  
Impact Plates**

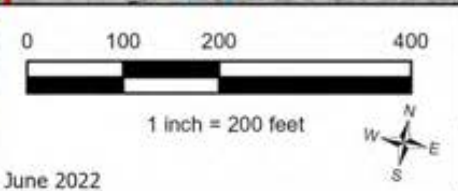
Mainline Impact Plate 13



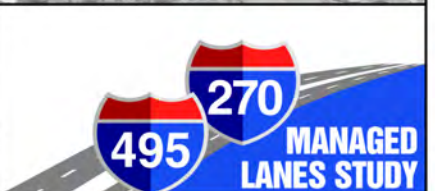


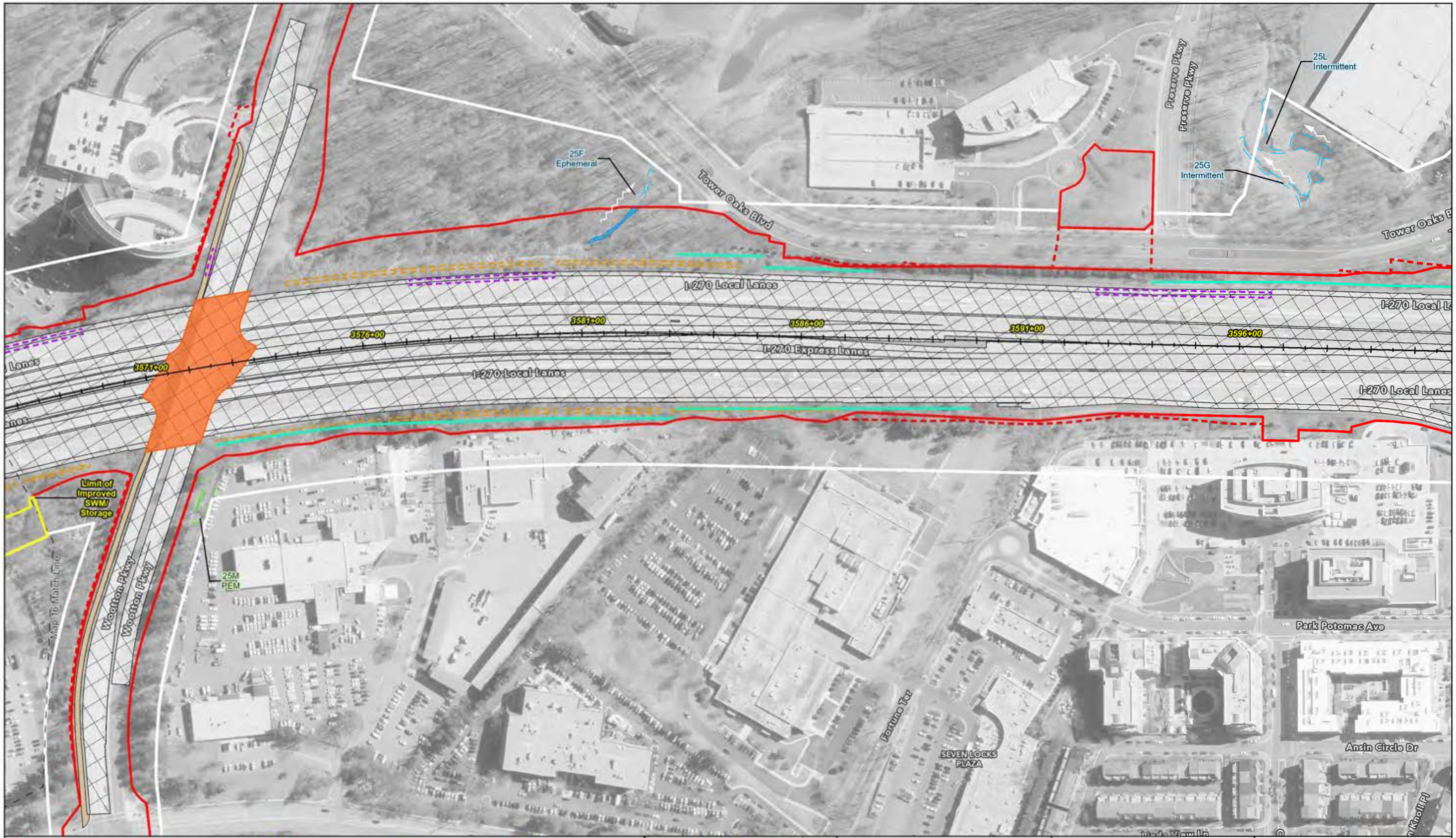


RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

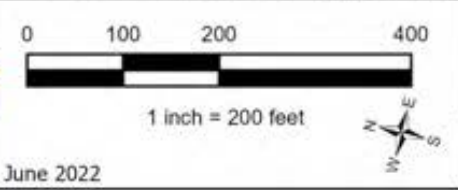


**Maryland  
Wetland and Waterway  
Impact Plates**  
Mainline Impact Plate 14





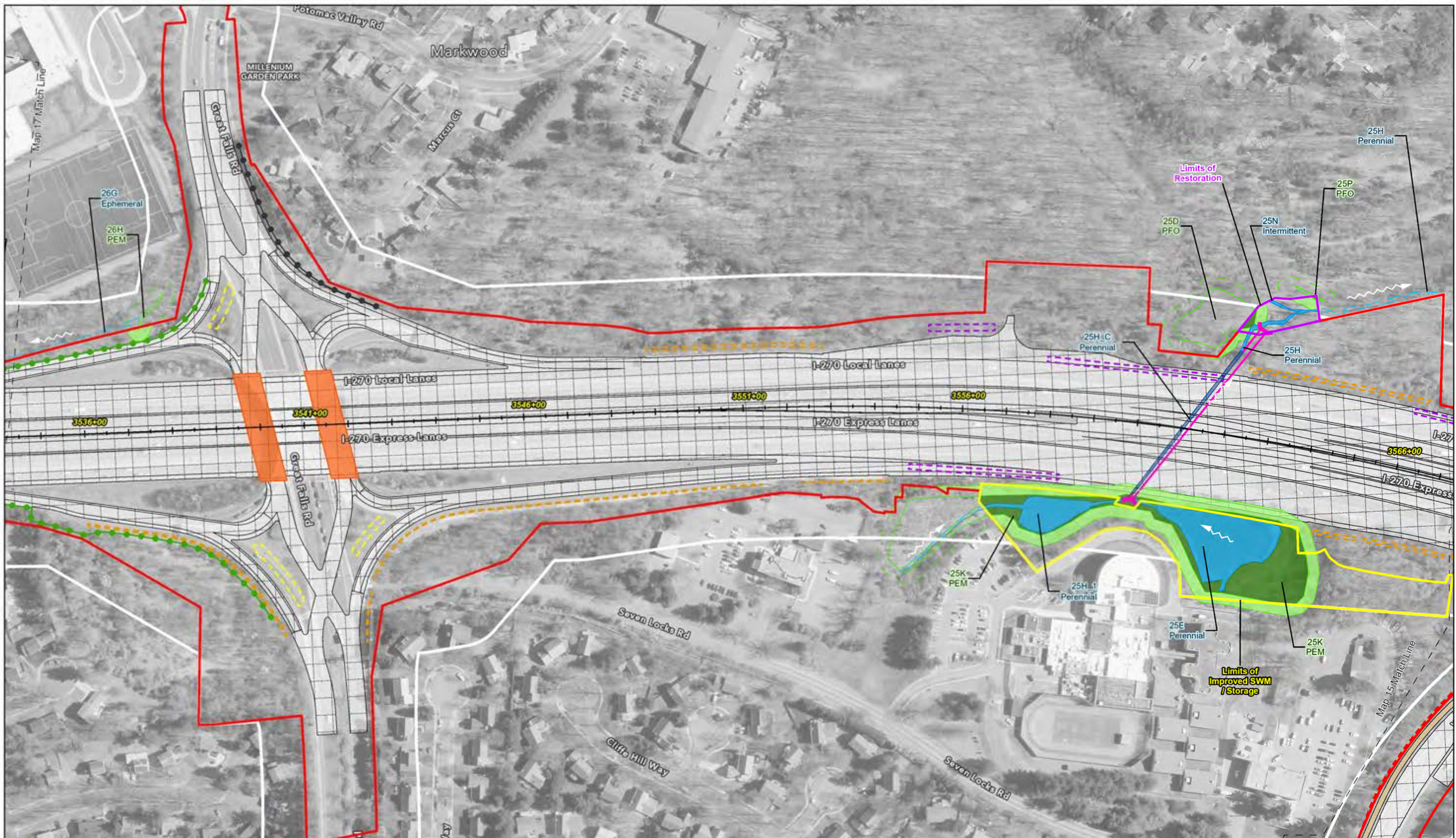
RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



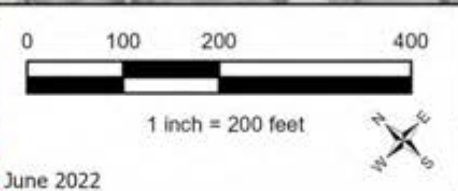
**Maryland  
Wetland and Waterway  
Impact Plates**

Mainline Impact Plate 15



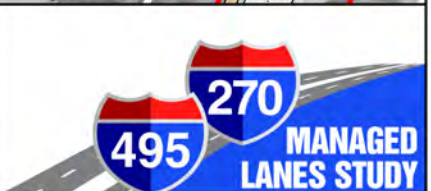


RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



**Maryland  
Wetland and Waterway  
Impact Plates**

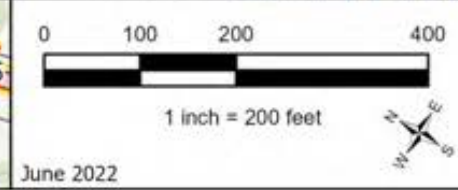
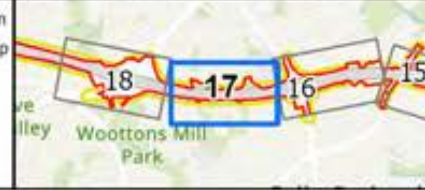
Mainline Impact Plate 16



June 2022



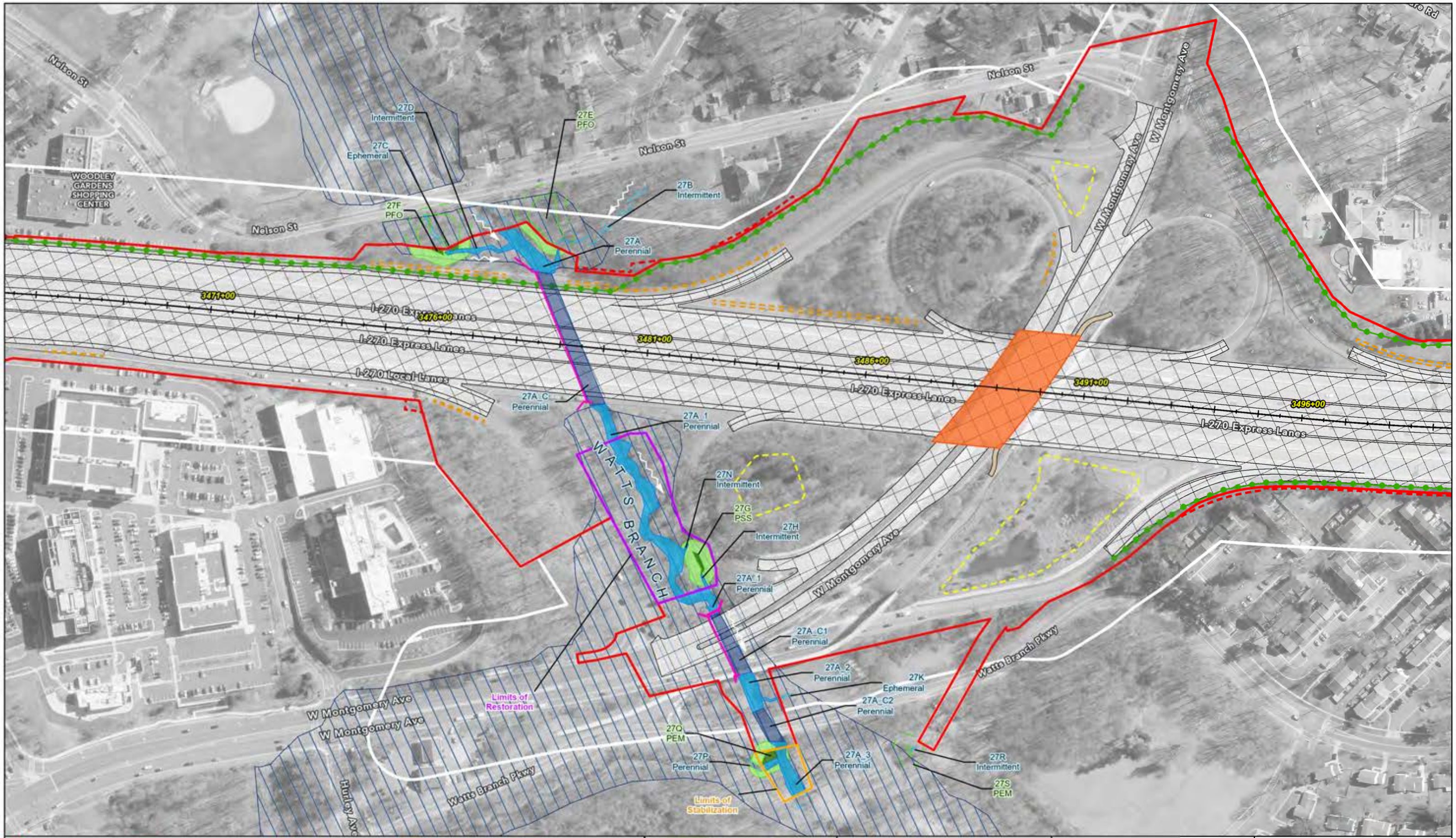
RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



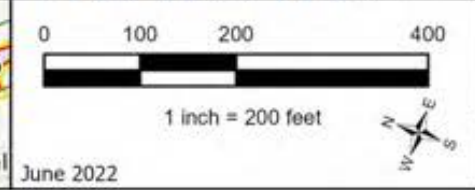
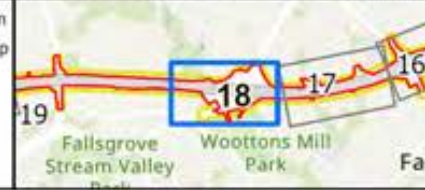
**Maryland  
Wetland and Waterway  
Impact Plates**

Mainline Impact Plate 17





RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

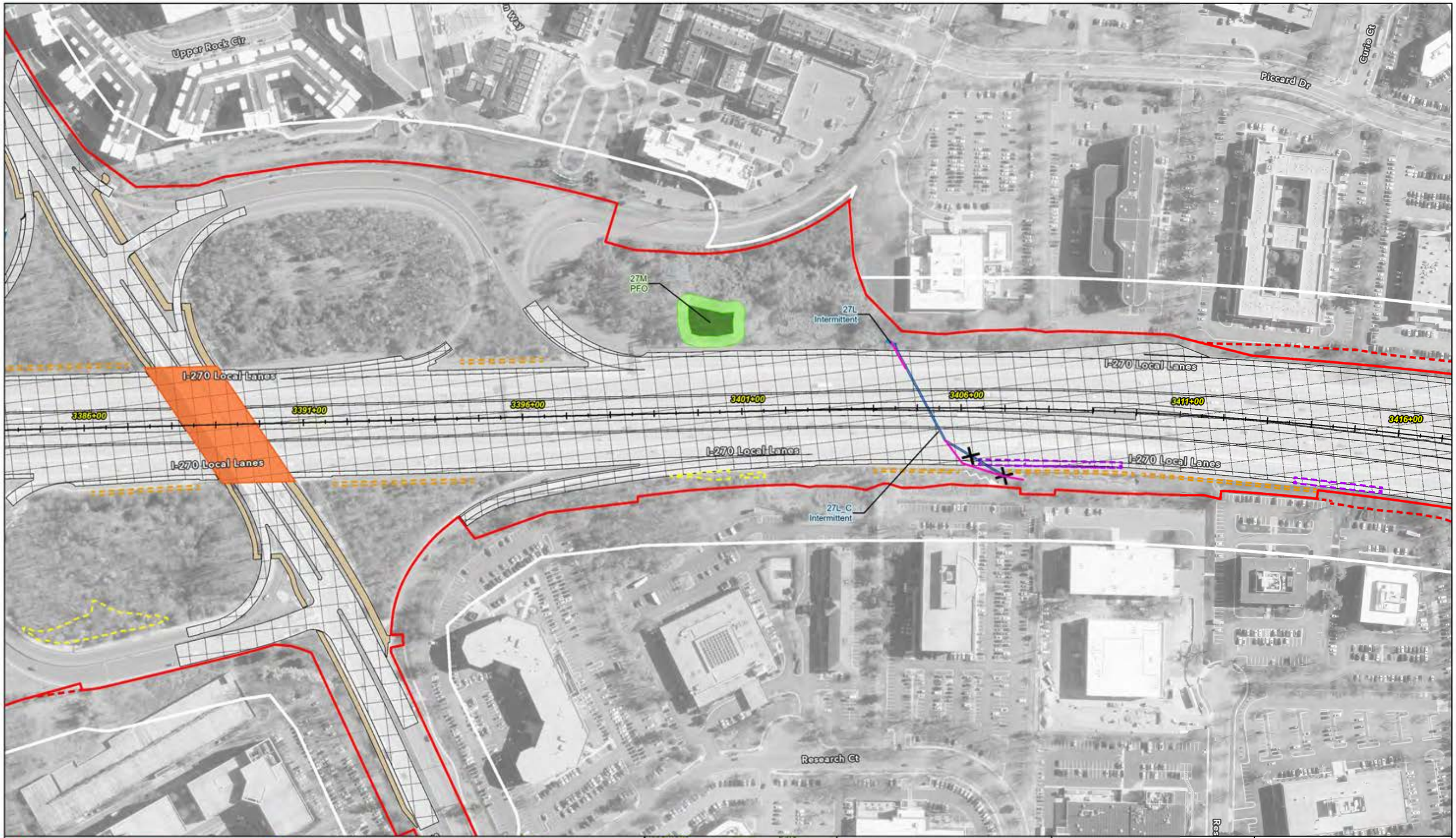


**Maryland  
Wetland and Waterway  
Impact Plates**

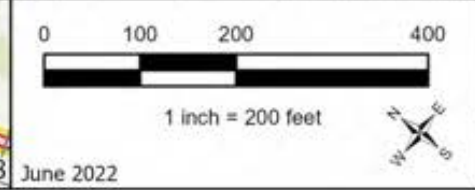
Mainline Impact Plate 18



June 2022



- RPA Limit of Disturbance Temp
- RPA Limit of Disturbance Perm
- Delineation Limits
- Proposed Pavement
- Noise Wall Proposed
- Noise Wall Existing
- Proposed Retaining Wall
- New/Augmented Pipe/Culvert
- Relocated Channel
- Proposed SWM - Pond
- Proposed SWM - Swale
- Proposed SWM - Vault
- Bridge
- Limit Of Improved SWM / Storage
- Limit Of Restoration
- Limit Of Stabilization
- Shared Use Path
- Flow Direction
- Waterway Impact Perm
- Waterway Impact Temp
- Culvert Impact Perm
- Culvert Impact Temp
- Wetland Impact Perm
- Wetland Impact Temp
- Wetland Buffer Impact Perm
- Wetland Buffer Impact Temp
- Stream No Impact
- Wetland No Impact
- Wetland Buffer No Impact
- FEMA 100-Year Floodplain



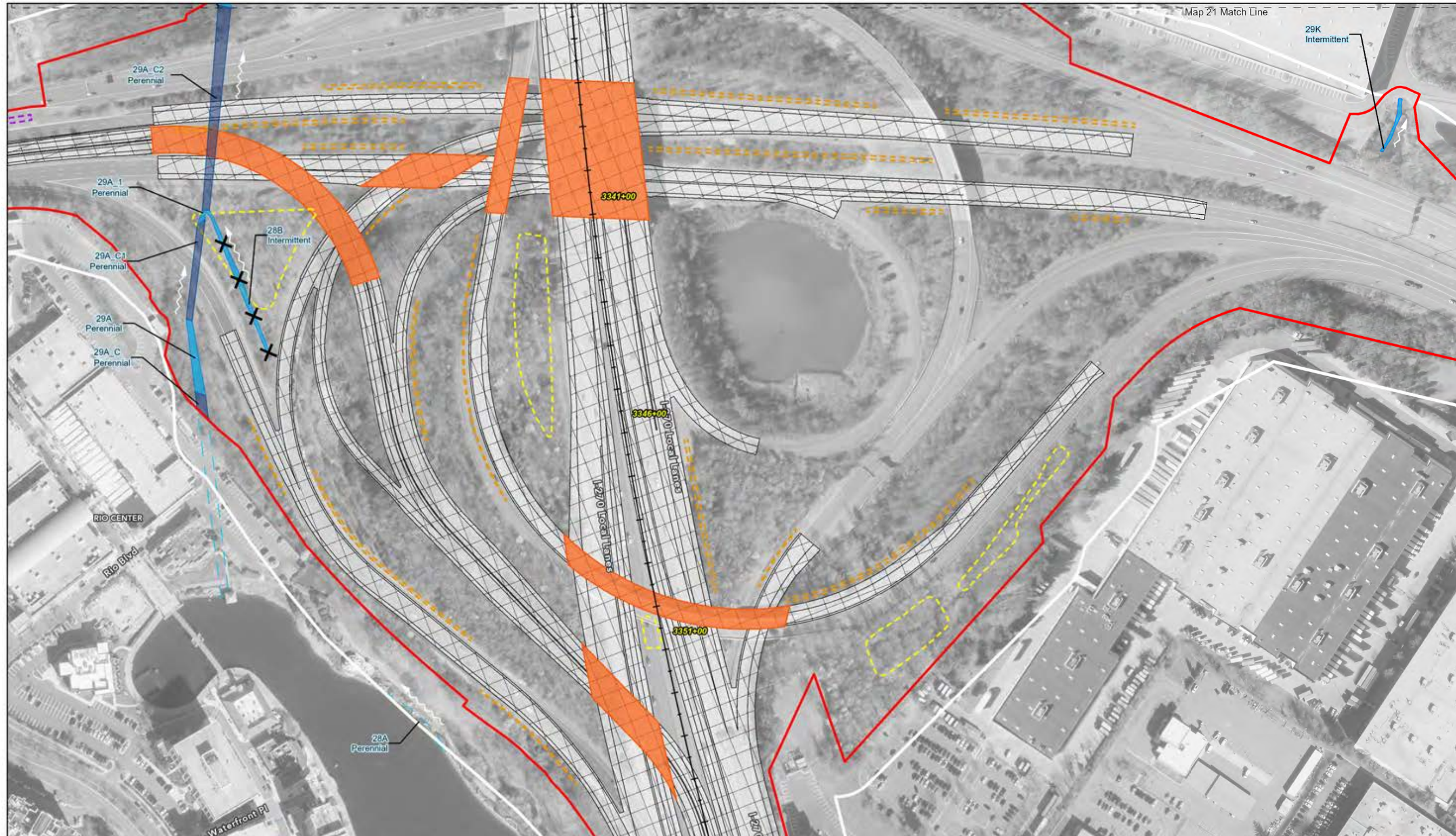
**Maryland  
Wetland and Waterway  
Impact Plates**

Mainline Impact Plate 19

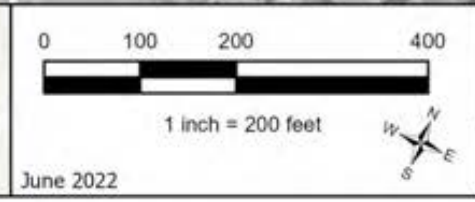


June 2022

29K Intermittent

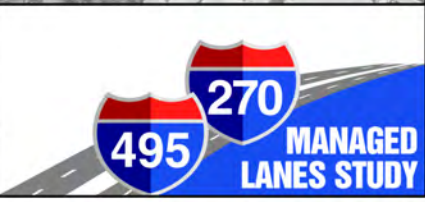


RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Shared Use Path	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



**Maryland  
Wetland and Waterway  
Impact Plates**

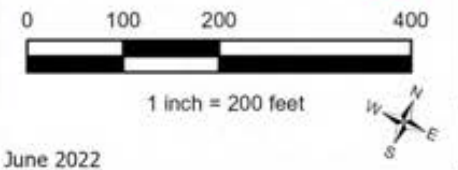
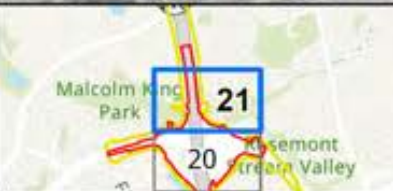
Mainline Impact Plate 20





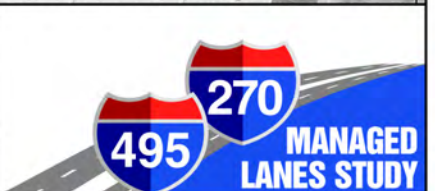
Map 20 Match Line

RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain

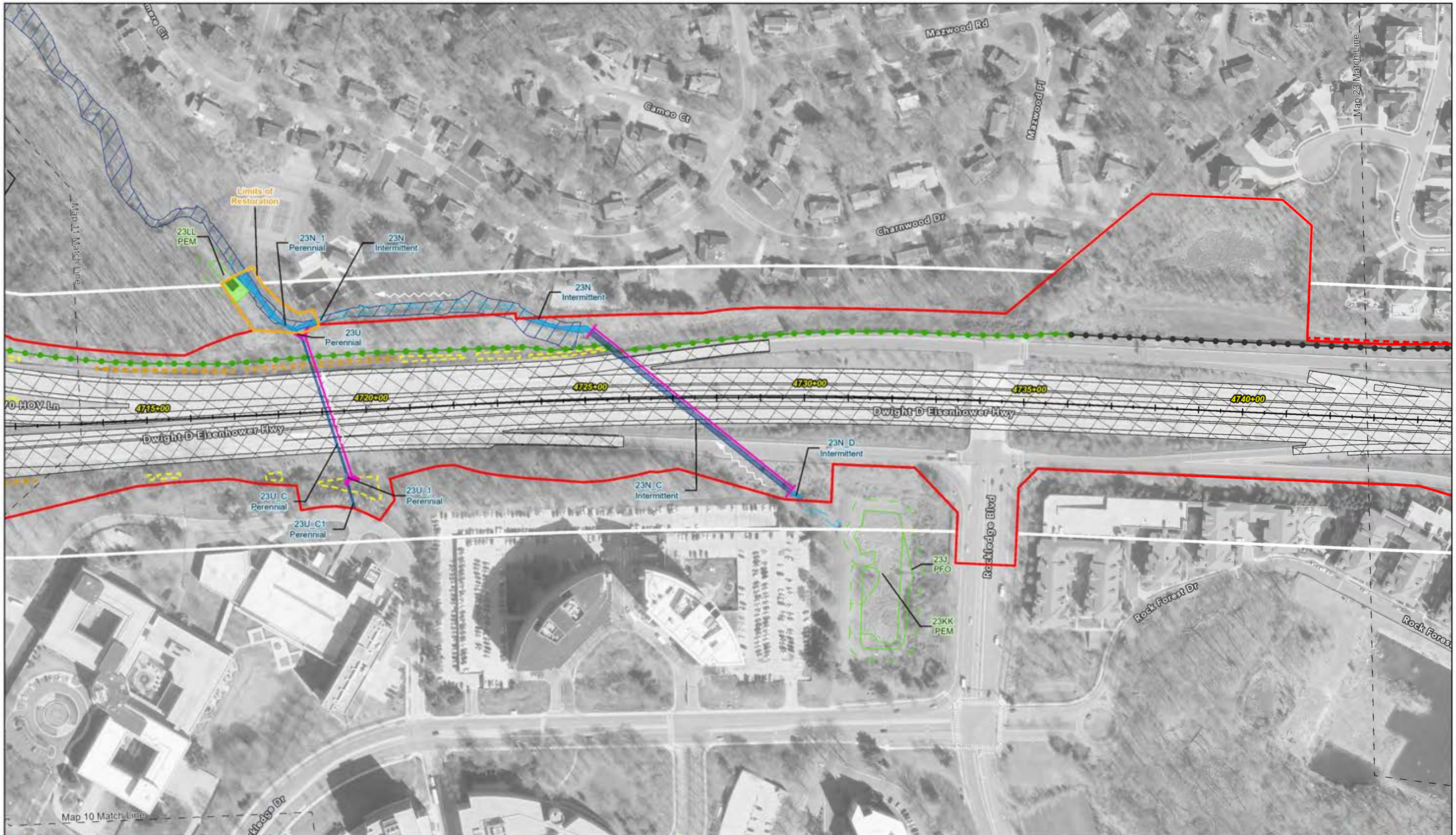


June 2022

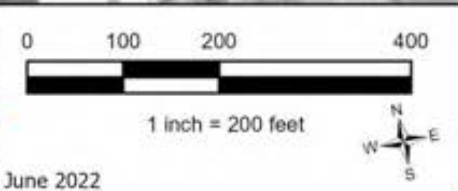
**Maryland  
Wetland and Waterway  
Impact Plates**  
Mainline Impact Plate 21







RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



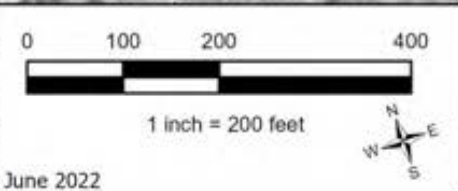
**Maryland  
Wetland and Waterway  
Impact Plates**

Mainline Impact Plate 22



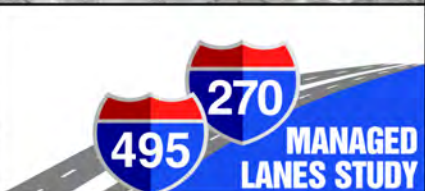


RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



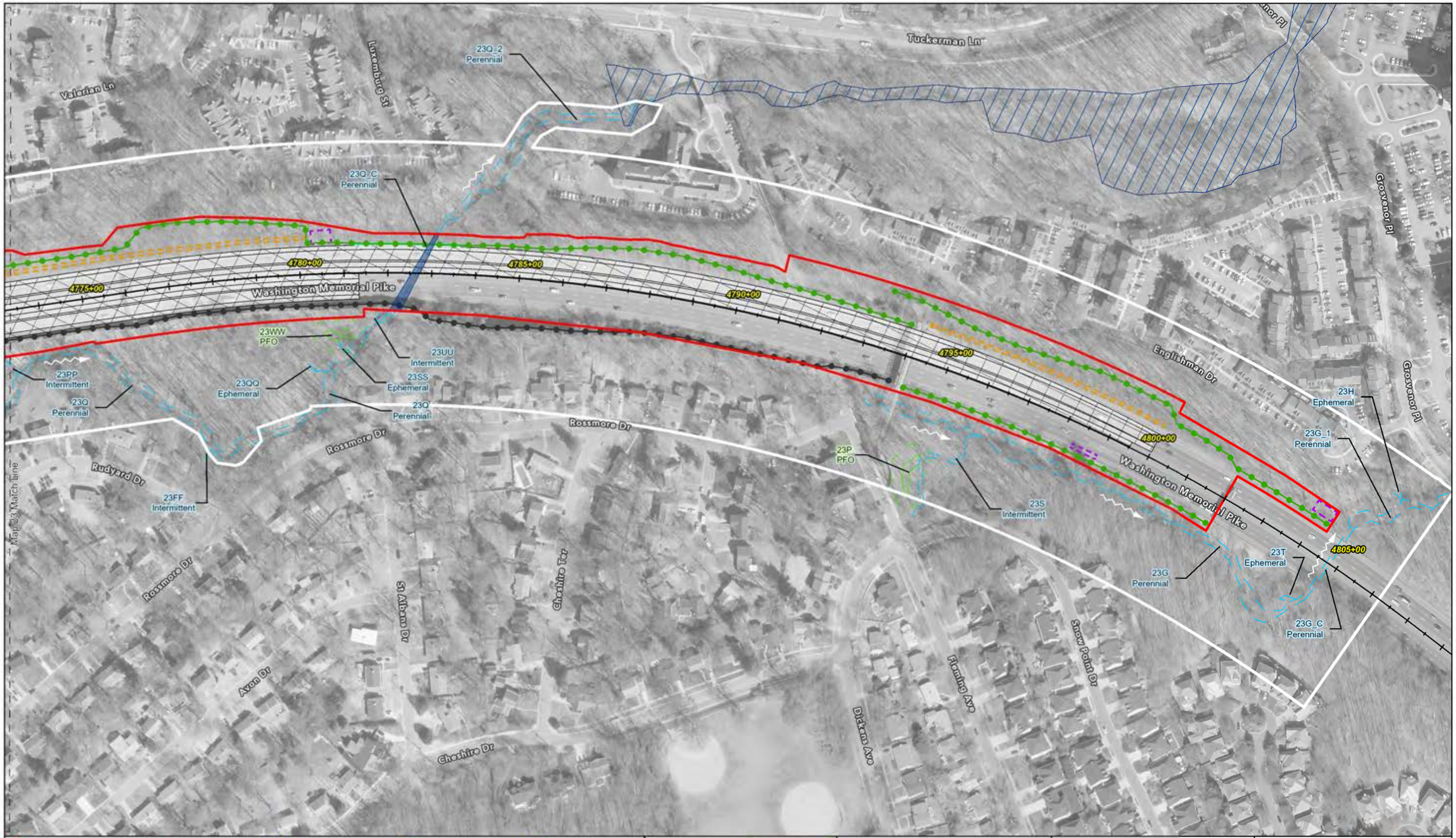
**Maryland  
Wetland and Waterway  
Impact Plates**

Mainline Impact Plate 23

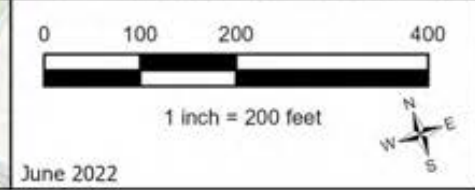


Map 24 Match Line

June 2022



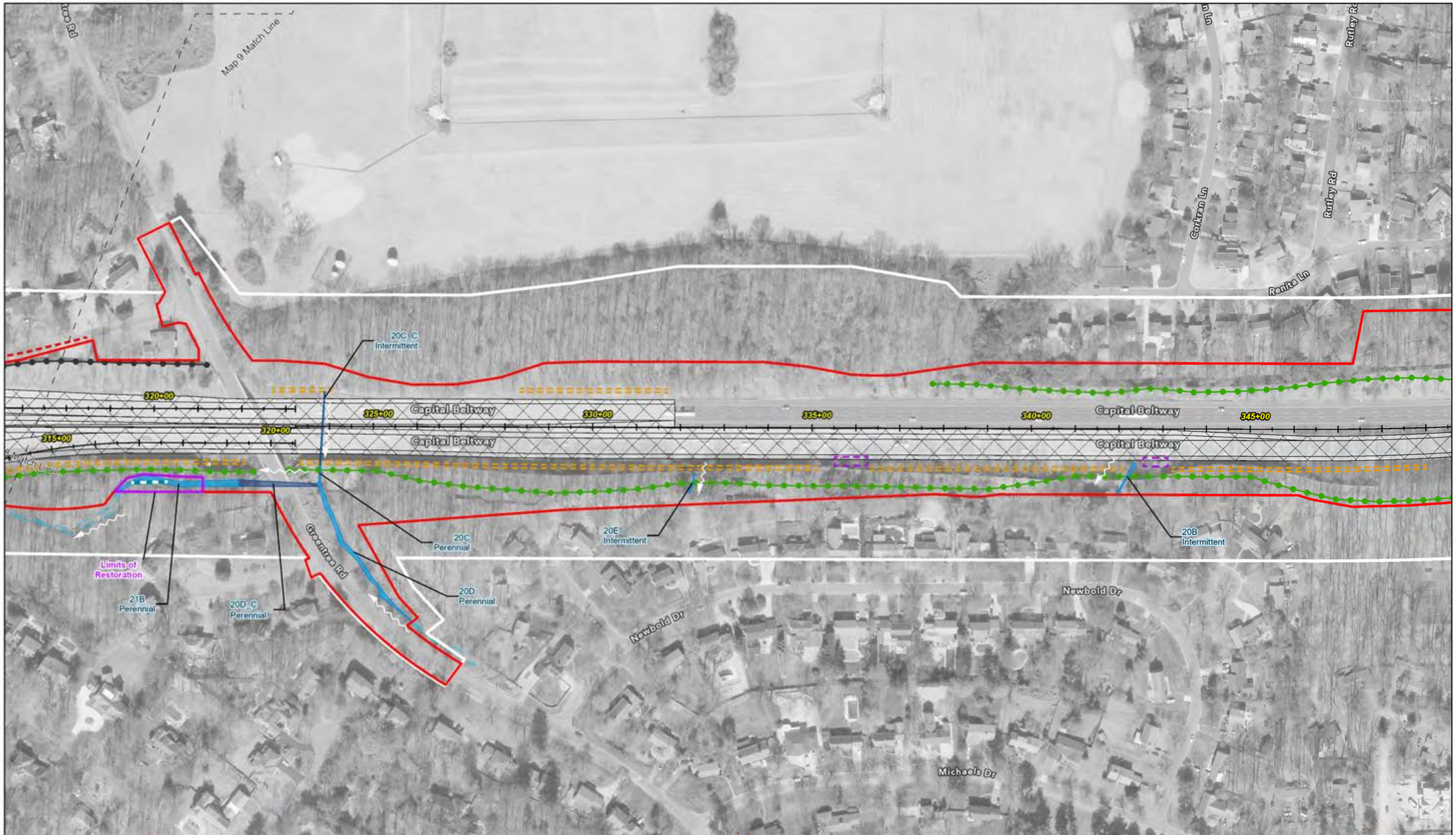
RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Limit Of Stabilization	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Shared Use Path	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault	Flow Direction	Wetland Impact Temp	FEMA 100-Year Floodplain



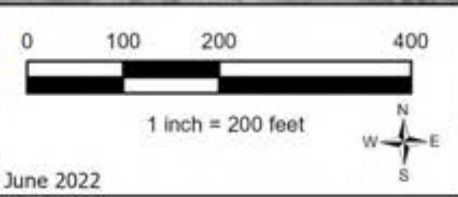
**Maryland  
Wetland and Waterway  
Impact Plates**

Mainline Impact Plate 24





RPA Limit of Disturbance Temp	Proposed Retaining Wall	Bridge	Waterway Impact Perm	Wetland Buffer Impact Perm
RPA Limit of Disturbance Perm	New/Augmented Pipe/Culvert	Limit Of Improved SWM / Storage	Waterway Impact Temp	Wetland Buffer Impact Temp
Delineation Limits	Relocated Channel	Limit Of Restoration	Culvert Impact Perm	Stream No Impact
Proposed Pavement	Proposed SWM - Pond	Shared Use Path	Culvert Impact Temp	Wetland No Impact
Noise Wall Proposed	Proposed SWM - Swale	Flow Direction	Wetland Impact Perm	Wetland Buffer No Impact
Noise Wall Existing	Proposed SWM - Vault		Wetland Impact Temp	FEMA 100-Year Floodplain



**Maryland  
Wetland and Waterway  
Impact Plates**

Mainline Impact Plate 25





NEW HOPE  
ISLAND  
CONSERVATION  
PARK

Potomac Heritage

LOD is limited to existing pavement  
and thus Dead Run will not be impacted.

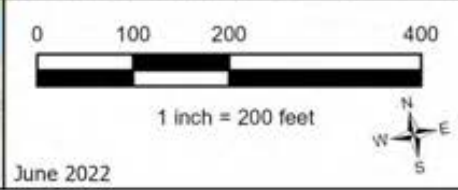
Dead Run

George Washington Memorial Pkwy

George V

Map 2 Match Line

- |                               |                            |                                 |                      |                            |
|-------------------------------|----------------------------|---------------------------------|----------------------|----------------------------|
| RPA Limit of Disturbance Temp | Proposed Retaining Wall    | Bridge                          | Waterway Impact Perm | Wetland Buffer Impact Perm |
| RPA Limit of Disturbance Perm | New/Augmented Pipe/Culvert | Limit Of Improved SWM / Storage | Waterway Impact Temp | Wetland Buffer Impact Temp |
| Delineation Limits            | Relocated Channel          | Limit Of Restoration            | Culvert Impact Perm  | Stream No Impact           |
| Proposed Pavement             | Proposed SWM - Pond        | Limit Of Stabilization          | Culvert Impact Temp  | Wetland No Impact          |
| Noise Wall Proposed           | Proposed SWM - Swale       | Shared Use Path                 | Wetland Impact Perm  | Wetland Buffer No Impact   |
| Noise Wall Existing           | Proposed SWM - Vault       | Flow Direction                  | Wetland Impact Temp  | FEMA 100-Year Floodplain   |



**Virginia  
Wetland and Waterway  
Impact Plates**  
Mainline Impact Plate 26



# MDE IMPACT SUMMARY TABLES



**OP-LANES™**  
M A R Y L A N D

I-495 & I-270 Managed Lanes Study

**June 2022**

# MDE IMPACT TABLES

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## MDE IMPACT TABLES

### IMPACT ID DESIGNATION KEY

FEATURE NAMING CONVENTION <sup>1</sup>	DESCRIPTION
IMPACT ID_ <b>1</b> <sup>2</sup>	Used to designate separate segments of a waterway feature to characterize differences such as channel type, classification, watershed, or geography.
IMPACT ID_ <b>C</b>	Used to designate a culvert channel type, usually flowing between two segments of a waterway feature that have different channel types. Some features may have a “culvert” channel type without the “_C” designation if they do not have multiple segments.
IMPACT ID_ <b>D</b>	Used to designate a ditch channel type. Some features may have a “ditch” channel type without the “_D” designation if they do not have multiple segments.
IMPACT ID_ <b>B</b>	Used to designate features that are bridged. All features that are underneath bridges are given this designation.
IMPACT ID_ <b>C1</b>	Used to designate more than one culverted, bridged, or ditched section of a feature.

<sup>1</sup> Impact IDs are not limited to one naming convention. An impacted feature may have multiple designations (e.g. 11M, 11M\_1, 11M\_B).

<sup>2</sup> Impact IDs with “\_1” are not limited to one number. An impacted feature may have multiple segments (e.g. 21C\_1, 21C\_2).

# MDE IMPACT TABLES

## SUMMARY OF IMPACTS TO WATERWAYS BY HUC 8 WATERSHED

WATERSHED	WATERWAYS (SF)			WATERWAYS (LF)		
	Intermittent	Perennial	Total	Intermittent	Perennial	Total
<b>02070008</b>	<b>87,456</b>	<b>848,410</b>	<b>935,866</b>	<b>11,660</b>	<b>28,029</b>	<b>39,689</b>
Permanent	79,494	533,725	613,219	10,476	26,913	37,389
Temporary	7,962	314,685	322,647	1,184	1,116	2,300
<b>02070010</b>	<b>635</b>	<b>3,246</b>	<b>3,881</b>	<b>204</b>	<b>203</b>	<b>407</b>
Permanent	635	3,246	3,881	204	203	407
<b>Total</b>	<b>88,091</b>	<b>851,656</b>	<b>939,747</b>	<b>11,864</b>	<b>28,232</b>	<b>40,096</b>

## SUMMARY OF IMPACTS TO WETLANDS BY HUC 8 WATERSHED

IMPACT TYPE	WETLANDS (SF)				WETLANDS (AC)			
	PEM	PFO	PSS	Total	PEM	PFO	PSS	Total
Permanent	115,107	37,346	481	152,934	2.64	0.86	0.01	3.51
Temporary	11,454	9,666	0	21,120	0.26	0.22	0.00	0.48
<b>Total</b>	<b>126,561</b>	<b>47,012</b>	<b>481</b>	<b>174,054</b>	<b>2.91</b>	<b>1.08</b>	<b>0.01</b>	<b>4.00</b>

NOTE: All wetlands and their buffers are located in the Middle Potomac-Catoctin (HUC8 02070008) watershed.

## SUMMARY OF IMPACTS TO WETLAND BUFFERS BY HUC 8 WATERSHED

IMPACT TYPE	WETLAND BUFFER (SF)				WETLAND BUFFER (AC)			
	PEM	PFO	PSS	Total	PEM	PFO	PSS	Total
Permanent	146,183	121,535	4,841	272,559	3.36	2.79	0.11	6.26
Temporary	14,479	3,455	0	17,934	0.33	0.08	0.00	0.41
<b>Total</b>	<b>160,662</b>	<b>124,990</b>	<b>4,841</b>	<b>290,493</b>	<b>3.69</b>	<b>2.87</b>	<b>0.11</b>	<b>6.67</b>

NOTE: All wetlands and their buffers are located in the Middle Potomac-Catoctin (HUC8 02070008) watershed.

# MDE IMPACT TABLES

*SUMMARY OF IMPACTS TO WATERWAYS BY MDE 8-DIGIT WATERSHED*

WATERSHED	WATERWAYS (SF)			WATERWAYS (LF)		
	Intermittent	Perennial	Total	Intermittent	Perennial	Total
<b>02140202</b>	<b>48,736</b>	<b>413,580</b>	<b>462,316</b>	<b>5,310</b>	<b>4,748</b>	<b>10,058</b>
Permanent	40,852	101,980	142,832	4,136	3,714	7,850
Temporary	7,884	311,600	319,484	1,174	1,034	2,208
<b>02140206</b>	<b>635</b>	<b>3,246</b>	<b>3,881</b>	<b>204</b>	<b>203</b>	<b>407</b>
Permanent	635	3,246	3,881	204	203	407
<b>02140207</b>	<b>38,720</b>	<b>434,830</b>	<b>473,550</b>	<b>6,350</b>	<b>23,281</b>	<b>29,631</b>
Permanent	38,642	431,745	470,387	6,340	23,199	29,539
Temporary	78	3,085	3,163	10	82	92
<b>Total</b>	<b>88,091</b>	<b>851,656</b>	<b>939,747</b>	<b>11,864</b>	<b>28,232</b>	<b>40,096</b>

*SUMMARY OF IMPACTS TO WETLANDS BY MDE 8-DIGIT WATERSHED*

WATERSHED	WETLANDS (SF)				WETLANDS (AC)			
	PEM	PFO	PSS	Total	PEM	PFO	PSS	Total
<b>02140202</b>	<b>82,552</b>	<b>33,710</b>	<b>481</b>	<b>116,743</b>	<b>1.90</b>	<b>0.77</b>	<b>0.01</b>	<b>2.68</b>
Permanent	71,455	24,044	481	95,980	1.64	0.55	0.01	2.20
Temporary	11,097	9,666	0	20,763	0.25	0.22	0.00	0.48
<b>02140207</b>	<b>44,009</b>	<b>13,302</b>	<b>0</b>	<b>57,311</b>	<b>1.01</b>	<b>0.31</b>	<b>0.00</b>	<b>1.32</b>
Permanent	43,652	13,302	0	56,954	1.00	0.31	0.00	1.31
Temporary	357	0	0	357	0.01	0.00	0.00	0.01
<b>Total</b>	<b>126,561</b>	<b>47,012</b>	<b>481</b>	<b>174,054</b>	<b>2.91</b>	<b>1.08</b>	<b>0.01</b>	<b>4.00</b>

# MDE IMPACT TABLES

## SUMMARY OF IMPACTS TO WETLAND BUFFERS BY MDE 8-DIGIT WATERSHED

WATERSHED	WETLAND BUFFER (SF)				WETLAND BUFFER (AC)			
	PEM	PFO	PSS	Total	PEM	PFO	PSS	Total
<b>02140202</b>	<b>62,980</b>	<b>67,537</b>	<b>4,841</b>	<b>135,358</b>	<b>1.45</b>	<b>1.55</b>	<b>0.11</b>	<b>3.11</b>
Permanent	48,599	64,082	4,841	<b>117,522</b>	1.12	1.47	0.11	<b>2.70</b>
Temporary	14,381	3,455	0	<b>17,836</b>	0.33	0.08	0.00	<b>0.41</b>
<b>02140207</b>	<b>97,682</b>	<b>57,453</b>	<b>0</b>	<b>155,135</b>	<b>2.24</b>	<b>1.32</b>	<b>0.00</b>	<b>3.56</b>
Permanent	97,584	57,453	0	<b>155,037</b>	2.24	1.32	0.00	<b>3.56</b>
Temporary	98	0	0	<b>98</b>	0.00	0.00	0.00	<b>0.00</b>
<b>Total</b>	<b>160,662</b>	<b>124,990</b>	<b>4,841</b>	<b>290,493</b>	<b>3.69</b>	<b>2.87</b>	<b>0.11</b>	<b>6.67</b>

# MDE IMPACT TABLES

## SUMMARY OF IMPACTS TO 100-YEAR FLOODPLAINS

ASSOCIATED WATERWAY	RELATED FEATURES	FIRM PANEL	IMPACT PLATE	HUC 8 NAME	PERMANENT IMPACT (SF)	TEMPORARY IMPACT (SF)	TOTAL IMPACT (SF)	TOTAL IMPACT (AC)
Watts Branch 1	27A, 27A_C, 27D	24031C0333D, 51059C0075E	18	Middle Potomac-Catoctin	14,366	108	14,474	0.33
Watts Branch 2	27A_1, 27A_2, 27A_3, 27A_C1, 27A_C2, 26C_1	24031C0333D, 51059C0075E	17, 18	Middle Potomac-Catoctin	136,456	0	136,456	3.13
Thomas Branch 1	23A, 23A_C	24031C0345D, 51059C0075E	10	Middle Potomac-Catoctin	4,918	0	4,918	0.11
Thomas Branch 2	21C, 21C_1, 21C_2, 21C_C, 21C_C1, 23A_3	24031C0345D, 24031C0435D, 51059C0075E	6, 7, 8, 9	Middle Potomac-Catoctin	581,793	2,313	584,106	13.41
Cabin John Creek	22AA, 22AA_1, 22AA_2, 22AA_B, 22AA_B1, 22DD	24031C0435D, 51059C0160E	5, 6	Middle Potomac-Catoctin	30,058	3,386	33,444	0.77
Potomac River	22HH_2, 22M_C, 22MM, 22MM_B, 22NN, 22NN_B, 22P, 22QQ, 22UU	24031C0435D, 51059C0160E	2, 3	Middle Potomac-Catoctin	158,691	315,859	474,550	10.89
Unnamed tributary to Old Farm Creek	23N, 23N_C, 23U	24031C0342D, 51059C0075E	22	Middle Potomac-Catoctin	8,369	0	8,369	0.19
Booze Creek	22Z, 22Z_C	24031C0435D, 51059C0160E	5	Middle Potomac-Catoctin	42,362	0	42,362	0.97
Muddy Branch	29B, 29B_1, 29B_C, 29P	24031C0327D, 51059C0075E	21	Middle Potomac-Catoctin	67,903	0	67,903	1.56
Rock Run	22HH_2, 22M, 22N	24031C0435D, 51059C0160E	3	Middle Potomac-Catoctin	2,849	0	2,849	0.07
Unnamed tributary to Muddy Branch	29D_D	24031C0327D, 51059C0075E	21	Middle Potomac-Catoctin	3,460	0	3,460	0.08
Unnamed tributary to Watts Branch	26C_1, 26C_C, 26C_C1	24031C0333D, 51059C0075E	17	Middle Potomac-Catoctin	0	1,591	1,591	0.04
<b>TOTAL</b>					<b>1,051,225</b>	<b>323,257</b>	<b>1,374,482</b>	<b>31.55</b>

NOTE: Floodplain impacts are not shown in their entirety on the impact plates

# MDE IMPACT TABLES

## PLATE 2 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
22MM	Perennial	Open Channel	14,142	167	Permanent
22MM	Perennial	Open Channel	243,446	855	Temporary
22MM_B	Perennial	Bridge	11,563	0	Permanent
22MM_B	Perennial	Bridge	67,060	140	Temporary
22NN	Intermittent	Open Channel	3,474	276	Temporary
22NN_B	Intermittent	Bridge	10	8	Permanent
22NN_B	Intermittent	Bridge	1,589	159	Temporary
22QQ	Intermittent	Open Channel	469	106	Temporary

## PLATE 2 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
2200	PFO	2,471	5,706	Permanent
2200	PFO	9,666	3,455	Temporary

## PLATE 2 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Potomac River	73,160	Permanent
Potomac River	198,809	Temporary

# MDE IMPACT TABLES

## PLATE 3 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
22HH	Intermittent	Ditch	1,157	230	Permanent
22HH_1	Intermittent	Ditch	925	154	Permanent
22HH_2	Intermittent	Open Channel	608	117	Permanent
22HH_C	Intermittent	Culvert	422	47	Permanent
22HH_C	Intermittent	Culvert	590	67	Temporary
22M_C	Perennial	Culvert	1,094	39	Temporary
22P	Intermittent	Open Channel	26	10	Permanent
22Q	Perennial	Open Channel	1,112	136	Permanent
22Q_C	Perennial	Culvert	1,263	223	Permanent
22T	Intermittent	Open Channel	127	9	Permanent
22T_1	Intermittent	Open Channel	261	35	Permanent
22T_2	Intermittent	Open Channel	497	92	Permanent
22T_B	Intermittent	Bridge	1,803	153	Permanent
22T_B1	Intermittent	Bridge	194	28	Permanent
22V	Intermittent	Ditch	190	76	Temporary
22V_1	Intermittent	Ditch	2	1	Permanent
22V_1	Intermittent	Ditch	91	40	Temporary
22V_2	Intermittent	Ditch	1,083	255	Temporary
22V_B	Intermittent	Bridge	331	168	Temporary
22V_B1	Intermittent	Bridge	2	2	Permanent
22V_B1	Intermittent	Bridge	67	27	Temporary



# MDE IMPACT TABLES

*PLATE 3 – WETLAND IMPACTS*

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
22K	PEM	0	44	Temporary
22O	PFO	0	1,512	Permanent
22PP	PFO	643	5,433	Permanent
22U	PFO	1,007	7,449	Permanent
22W	PEM	4,099	5,469	Permanent
22W	PEM	11,023	13,378	Temporary
22X	PFO	1,120	6,040	Permanent
22Y	PEM	1,791	9,133	Permanent

*PLATE 3 – FLOODPLAIN IMPACTS*

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Potomac River	117,050	Temporary
Potomac River	85,531	Permanent
Rock Run	2,849	Permanent

*PLATE 4 – WETLAND IMPACTS*

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
22E	PEM	237	4,256	Permanent

# MDE IMPACT TABLES

PLATE 5 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
22AA_1	Perennial	Open Channel	1,439	24	Permanent
22AA_1	Perennial	Open Channel	2,912	53	Temporary
22AA_2	Perennial	Open Channel	5,477	99	Permanent
22AA_3	Perennial	Open Channel	10,295	332	Permanent
22AA_B	Perennial	Bridge	3,245	42	Permanent
22AA_B1	Perennial	Bridge	8,112	201	Permanent
22DD	Intermittent	Open Channel	945	167	Permanent
22H	Intermittent	Ditch	170	78	Permanent
22H_1	Intermittent	Open Channel	51	10	Permanent
22H_C	Intermittent	Culvert	760	95	Permanent
22KK	Perennial	Open Channel	556	58	Permanent
22Z	Perennial	Open Channel	3,177	75	Permanent
22Z_1	Perennial	Open Channel	2,210	81	Permanent
22Z_C	Perennial	Culvert	3,601	99	Permanent

PLATE 5 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
22F	PEM	928	10,820	Permanent
22G	PFO	850	8,444	Permanent
22GG	PEM	804	4,339	Permanent

PLATE 5 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Booze Creek	42,362	Permanent
Cabin John Creek	1,773	Temporary
Cabin John Creek	22,689	Permanent

# MDE IMPACT TABLES

PLATE 6 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
21C_1	Perennial	Open Channel	15,733	645	Permanent
21C_2	Perennial	Open Channel	30,835	1,233	Permanent
21C_C1	Perennial	Culvert	4,836	321	Permanent
21C_C2	Perennial	Culvert	3,824	328	Permanent
21D	Intermittent	Ditch	105	106	Permanent
21D_1	Intermittent	Ditch	1,952	291	Permanent
21D_C	Intermittent	Culvert	1,035	316	Permanent
21D_C1	Intermittent	Culvert	798	119	Permanent
21F	Intermittent	Open Channel	1,054	228	Permanent
21F_C	Intermittent	Culvert	1,837	258	Permanent
21G	Intermittent	Ditch	128	54	Permanent
22A	Intermittent	Ditch	724	269	Permanent
22A_C	Intermittent	Culvert	439	152	Permanent
22AA	Perennial	Open Channel	3,545	181	Permanent
22AA	Perennial	Open Channel	1	1	Temporary
22B	Intermittent	Ditch	99	36	Permanent
22C	Intermittent	Ditch	146	51	Permanent
22C_C	Intermittent	Culvert	203	91	Permanent
22D	Intermittent	Ditch	305	144	Permanent

PLATE 6 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Cabin John Creek	1,613	Temporary
Cabin John Creek	7,369	Permanent
Thomas Branch 2	79,181	Permanent

# MDE IMPACT TABLES

## PLATE 7 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
21C	Perennial	Open Channel	39,681	1,702	Permanent
21C_1	Perennial	Open Channel	38,400	1,487	Permanent
21C_C	Perennial	Culvert	3,633	252	Permanent
21L_C	Perennial	Culvert	1,743	270	Permanent
21L_D	Perennial	Ditch	298	40	Permanent
21L_D1	Perennial	Ditch	83	20	Permanent
21M	Intermittent	Ditch	57	25	Permanent

## PLATE 7 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
21P	PFO	709	3,844	Permanent
21Q	PFO	0	2,342	Permanent
21T	PFO	1,054	3,935	Permanent

## PLATE 7 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Thomas Branch 2	298,330	Permanent
Thomas Branch 2	1,974	Temporary

# MDE IMPACT TABLES

*PLATE 8 – WATERWAY IMPACTS*

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
21B	Perennial	Open Channel	15,123	1,547	Permanent
21B_C	Perennial	Culvert	2,746	261	Permanent
21C	Perennial	Open Channel	67,012	3,286	Permanent
21J	Perennial	Ditch	243	13	Permanent
21K	Intermittent	Open Channel	28	5	Permanent
21U	Perennial	Open Channel	2,082	143	Permanent
21V	Intermittent	Open Channel	827	115	Permanent
21V	Intermittent	Open Channel	78	10	Temporary

*PLATE 8 – FLOODPLAIN IMPACTS*

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Thomas Branch 2	111,623	Permanent
Thomas Branch 2	340	Temporary

## MDE IMPACT TABLES

### PLATE 9 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
21C	Perennial	Open Channel	10,501	551	Permanent
21I	Perennial	Open Channel	22	6	Permanent
23A_2	Perennial	Open Channel	2,301	200	Permanent
23A_3	Perennial	Open Channel	21,607	1,460	Permanent
23A_C1	Perennial	Culvert	1,619	147	Permanent
23A_C2	Perennial	Culvert	2,977	236	Permanent
23AA	Perennial	Open Channel	551	104	Permanent
23AA_1	Perennial	Open Channel	1,332	257	Permanent
23AA_C	Perennial	Culvert	453	101	Permanent
23AA_C1	Perennial	Culvert	675	220	Permanent
23D	Intermittent	Ditch	7,793	775	Permanent
23D_C	Intermittent	Culvert	2,456	255	Permanent

### PLATE 9 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
23BB	PEM	1,406	10,320	Permanent
23L	PEM	253	3,661	Permanent
23MM	PFO	2,932	4,520	Permanent

### PLATE 9 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Thomas Branch 2	92,659	Permanent

# MDE IMPACT TABLES

*PLATE 10 – WATERWAY IMPACTS*

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23A	Perennial	Open Channel	732	44	Permanent
23A_1	Perennial	Open Channel	7,762	454	Permanent
23A_C	Perennial	Culvert	4,185	216	Permanent
23A_C1	Perennial	Culvert	4,001	260	Permanent
23V	Intermittent	Ditch	117	51	Permanent
23V_C	Intermittent	Culvert	2,245	777	Permanent

*PLATE 10 – WETLAND IMPACTS*

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
23CC	PFO	2,985	7,657	Permanent
23W	PEM	3,981	6,751	Permanent
23W	PEM	357	44	Temporary

*PLATE 10 – FLOODPLAIN IMPACTS*

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Thomas Branch 1	4,918	Permanent

## MDE IMPACT TABLES

PLATE 11 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23DD	Intermittent	Open Channel	641	98	Permanent
23K	Perennial	Open Channel	766	89	Permanent
23K_1	Perennial	Open Channel	598	102	Permanent
23K_C	Perennial	Culvert	1,711	178	Permanent
23K_C1	Perennial	Culvert	505	64	Permanent
23K_C1	Perennial	Culvert	122	20	Temporary
23K_D	Perennial	Ditch	5,035	691	Permanent
23K_D	Perennial	Ditch	50	8	Temporary
24A	Perennial	Open Channel	4,008	138	Permanent
24A_1	Perennial	Open Channel	6,789	224	Permanent
24A_C	Perennial	Culvert	6,427	320	Permanent

PLATE 11 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
23F	PEM	365	3,677	Permanent
23GG	PFO	1,389	8,384	Permanent
23X	PEM	1,039	8,732	Permanent
24W	PEM	0	264	Permanent
24X	PEM	91	1,855	Permanent



## MDE IMPACT TABLES

*PLATE 12 – WATERWAY IMPACTS*

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
24C	Intermittent	Open Channel	600	44	Permanent

*PLATE 13 – WATERWAY IMPACTS*

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
24D	Perennial	Open Channel	8,048	697	Permanent
24F_2	Perennial	Open Channel	3,902	135	Permanent
24F_3	Perennial	Open Channel	2,276	134	Permanent
24F_C2	Perennial	Culvert	7,102	390	Permanent
24K	Intermittent	Open Channel	449	67	Permanent
24V	Intermittent	Open Channel	292	52	Permanent
24V_C	Intermittent	Culvert	2,544	425	Permanent

*PLATE 13 – WETLAND IMPACTS*

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
24N	PFO	917	6,399	Permanent
24Q	PFO	1,744	5,471	Permanent

# MDE IMPACT TABLES

## PLATE 14 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
24F_C1	Perennial	Culvert	3,688	191	Permanent

## PLATE 14 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
24R	PFO	0	2,240	Permanent

## PLATE 15 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
25M	PEM	0	81	Permanent
25M	PEM	0	54	Temporary

## MDE IMPACT TABLES

*PLATE 16 – WATERWAY IMPACTS*

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
25E	Perennial	Open Channel	27,438	360	Permanent
25H	Perennial	Open Channel	1,589	220	Permanent
25H_1	Perennial	Open Channel	10,254	336	Permanent
25H_C	Perennial	Culvert	2,682	420	Permanent
25N	Intermittent	Open Channel	350	72	Permanent

*PLATE 16 – WETLAND IMPACTS*

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
25D	PFO	637	3,032	Permanent
25K	PEM	34,215	45,608	Permanent
25P	PFO	85	1,185	Permanent
26H	PEM	10	1,374	Permanent

# MDE IMPACT TABLES

PLATE 17 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
26B	Intermittent	Open Channel	5,791	432	Permanent
26B_1	Intermittent	Open Channel	315	22	Permanent
26B_C	Intermittent	Culvert	6,809	306	Permanent
26B_C1	Intermittent	Culvert	489	47	Permanent
26C	Intermittent	Open Channel	2,814	373	Permanent
26C_1	Intermittent	Open Channel	388	30	Permanent
26C_C	Intermittent	Culvert	4,317	360	Permanent
26C_C1	Intermittent	Culvert	376	22	Permanent
26J	Intermittent	Open Channel	191	31	Permanent
26K	Intermittent	Open Channel	3,920	328	Permanent
26L	Intermittent	Open Channel	69	11	Permanent

PLATE 17 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
26A	PFO	12,406	22,370	Permanent
26D	PEM	817	4,096	Permanent
26E	PEM	356	3,543	Permanent
26E	PEM	74	959	Temporary
26F	PEM	63,439	18,032	Permanent

PLATE 17 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Unnamed tributary to Watts Branch	1,591	Temporary
Watts Branch 2	5,396	Permanent

# MDE IMPACT TABLES

PLATE 18 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
27A	Perennial	Open Channel	4,702	141	Permanent
27A_1	Perennial	Open Channel	15,652	648	Permanent
27A_2	Perennial	Open Channel	2,914	89	Permanent
27A_3	Perennial	Open Channel	3,463	131	Permanent
27A_C	Perennial	Culvert	10,081	325	Permanent
27A_C1	Perennial	Culvert	4,089	152	Permanent
27A_C2	Perennial	Culvert	2,472	85	Permanent
27B	Intermittent	Open Channel	352	46	Permanent
27D	Intermittent	Open Channel	1,468	162	Permanent
27H	Intermittent	Open Channel	207	35	Permanent
27N	Intermittent	Open Channel	98	19	Permanent
27P	Perennial	Open Channel	529	39	Permanent

PLATE 18 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
27E	PFO	0	2,108	Permanent
27F	PFO	535	3,562	Permanent
27G	PSS	481	4,841	Permanent
27Q	PEM	706	2,656	Permanent
27S	PEM	0	40	Permanent

PLATE 18 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Watts Branch 1	14,366	Permanent
Watts Branch 1	108	Temporary
Watts Branch 2	131,060	Permanent

## MDE IMPACT TABLES

*PLATE 19 – WATERWAY IMPACTS*

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
27L	Intermittent	Open Channel	101	19	Permanent
27L_C	Intermittent	Culvert	1,632	405	Permanent

*PLATE 19 – WETLAND IMPACTS*

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
27M	PFO	5,862	9,902	Permanent

*PLATE 20 – WATERWAY IMPACTS*

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
28B	Intermittent	Ditch	3,222	354	Permanent
29A	Perennial	Open Channel	2,956	169	Permanent
29A_1	Perennial	Open Channel	280	26	Permanent
29A_C	Perennial	Culvert	1,065	48	Permanent
29A_C1	Perennial	Culvert	3,346	224	Permanent
29A_C2	Perennial	Culvert	10,314	461	Permanent
29K	Intermittent	Open Channel	896	129	Permanent

## MDE IMPACT TABLES

*PLATE 21 – WATERWAY IMPACTS*

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
29A_2	Perennial	Open Channel	5,233	280	Permanent
29A_C2	Perennial	Culvert	101	4	Permanent
29B_C	Perennial	Culvert	6,703	366	Permanent
29D_D	Intermittent	Ditch	1,363	119	Permanent

*PLATE 21 – FLOODPLAIN IMPACTS*

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Muddy Branch	67,903	Permanent
Unnamed tributary to Muddy Branch	3,460	Permanent

# MDE IMPACT TABLES

PLATE 22 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23N	Intermittent	Open Channel	2,095	199	Permanent
23N_1	Perennial	Open Channel	2,225	184	Permanent
23N_C	Intermittent	Culvert	6,176	583	Permanent
23N_D	Intermittent	Ditch	275	33	Permanent
23U	Perennial	Ditch	184	31	Permanent
23U_1	Perennial	Open Channel	77	18	Permanent
23U_C	Perennial	Culvert	1,225	317	Permanent
23U_C1	Perennial	Culvert	274	68	Permanent

PLATE 22 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
23LL	PEM	570	1,476	Permanent

PLATE 22 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Unnamed tributary to Old Farm Creek	6,292	Permanent
Unnamed tributary to Old Farm Creek	2,077	Permanent



# MDE IMPACT TABLES

*PLATE 23 – WATERWAY IMPACTS*

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23R_C	Intermittent	Culvert	635	204	Permanent

*PLATE 24 – WATERWAY IMPACTS*

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
23Q_C	Perennial	Culvert	3,246	203	Permanent

*PLATE 25 – WATERWAY IMPACTS*

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
20B	Intermittent	Open Channel	351	83	Permanent
20C	Perennial	Ditch	112	37	Permanent
20C_C	Intermittent	Culvert	455	169	Permanent
20D	Perennial	Open Channel	3,027	390	Permanent
20D_C	Perennial	Culvert	1,895	180	Permanent
20E	Intermittent	Open Channel	140	47	Permanent
21B	Perennial	Open Channel	3,261	289	Permanent

# Compensatory Stormwater Management Wetland and Waterway Impact Plates

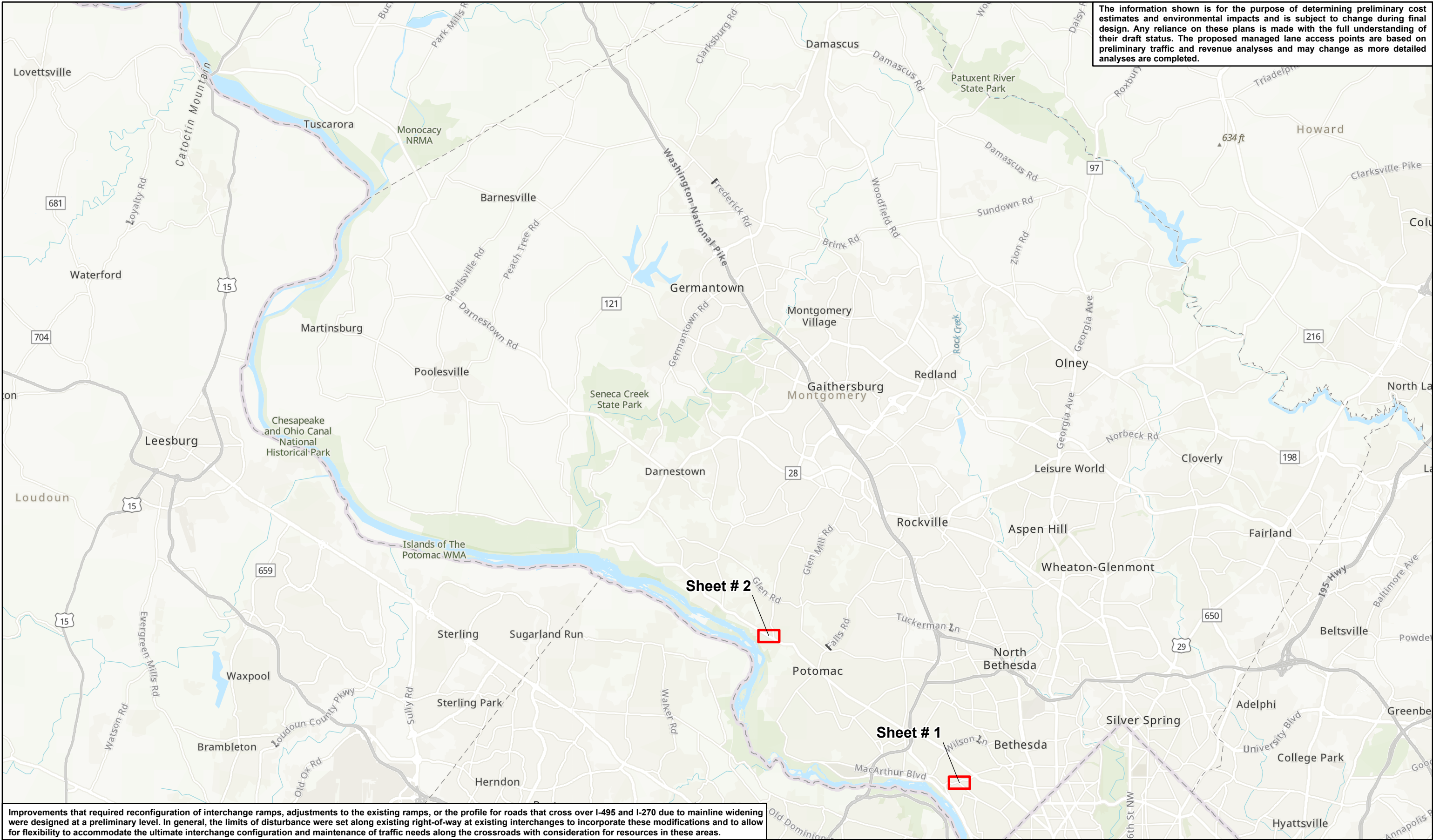


**OP LANES™**  
M A R Y L A N D

I-495 & I-270 Managed Lanes Study



The information shown is for the purpose of determining preliminary cost estimates and environmental impacts and is subject to change during final design. Any reliance on these plans is made with the full understanding of their draft status. The proposed managed lane access points are based on preliminary traffic and revenue analyses and may change as more detailed analyses are completed.

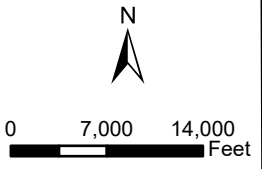


Improvements that required reconfiguration of interchange ramps, adjustments to the existing ramps, or the profile for roads that cross over I-495 and I-270 due to mainline widening were designed at a preliminary level. In general, the limits of disturbance were set along existing right-of-way at existing interchanges to incorporate these modifications and to allow for flexibility to accommodate the ultimate interchange configuration and maintenance of traffic needs along the crossroads with consideration for resources in these areas.

 Plate Number

May 2022

**Key Map**



**Wetland and Waterway  
Impact Plates  
Compensatory SWM**

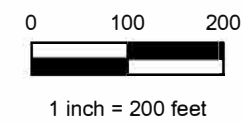
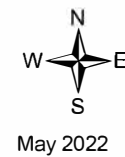




Limit of Disturbance - SWM Site  
 Delineation Limits - SWM Site

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<span style="background-color: #4682b4; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Culvert Impact	<span style="border: 1px solid #4682b4; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Culvert - No Impact
<span style="background-color: #008000; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Wetland Impact	<span style="border: 1px solid #008000; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Wetland - No Impact
<span style="background-color: #90ee90; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Wetland Buffer Impact	<span style="border: 1px dashed #90ee90; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Wetland Buffer - No Impact

FEMA 100-Year Floodplain













### Wetland and Waterway Impact Plates


Compensatory SWM Impact Plate 1




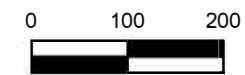


 Limit of Disturbance - SWM Site  
 Delineation Limits - SWM Site

 Waterway Impact	 Waterway - No Impact
 Culvert Impact	 Culvert - No Impact
 Wetland Impact	 Wetland - No Impact
 Wetland Buffer Impact	 Wetland Buffer - No Impact

 FEMA 100-Year Floodplain

  
 May 2022

  
 0 100 200  
 1 inch = 200 feet

**Wetland and Waterway Impact Plates**

Compensatory SWM Impact Plate 2



# COMPENSATORY SWM MDE IMPACT SUMMARY TABLES



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M A R Y L A N D

I-495 & I-270 Managed Lanes Study

**May 2022**





# MDE IMPACT TABLES

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SUMMARY OF IMPACTS TO FLOODPLAIN .....	1
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PLATE 1 – FLOODPLAIN IMPACTS .....	2
PLATE 2 – WATERWAY IMPACTS .....	2

# MDE IMPACT TABLES

## SUMMARY OF IMPACTS TO WATERWAYS BY HUC-8 WATERSHED

IMPACT TYPE	WATERWAYS (SF)				WATERWAYS (LF)			
	Ephemeral	Intermittent	Perennial	Total	Ephemeral	Intermittent	Perennial	Total
Permanent	0	79	1,676	1,755	0	29	156	185
<b>Total</b>	<b>0</b>	<b>79</b>	<b>1,676</b>	<b>1,755</b>	<b>0</b>	<b>29</b>	<b>156</b>	<b>185</b>

Note: All waterway impacts are within the Middle Potomac-Catoctin (02070008) HUC-8 Watershed.

## SUMMARY OF IMPACTS TO 100-YEAR FLOODPLAIN BY HUC-8 WATERSHED

ASSOCIATED WATERWAY	RELATED FEATURES	FIRM PANEL	IMPACT PLATE	HUC 8 NAME	PERMANENT IMPACT (SF)	TEMPORARY IMPACT (SF)	TOTAL (SF)	TOTAL (AC)
Minnehana Branch	32L, 32M	24031C0435D	1	Middle Potomac-Catoctin (02070008)	3,458	0	3,458	0.08

## MDE IMPACT TABLES

### *PLATE 1 – WATERWAY IMPACTS*

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	SITE
32L	Perennial	Open Channel	1,173	95	WAS-3622
32M	Perennial	Open Channel	503	61	WAS-3622

### *PLATE 1 – FLOODPLAIN IMPACTS*

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Minnehaha Branch	3,458	Permanent

### *PLATE 2 – WATERWAY IMPACTS*

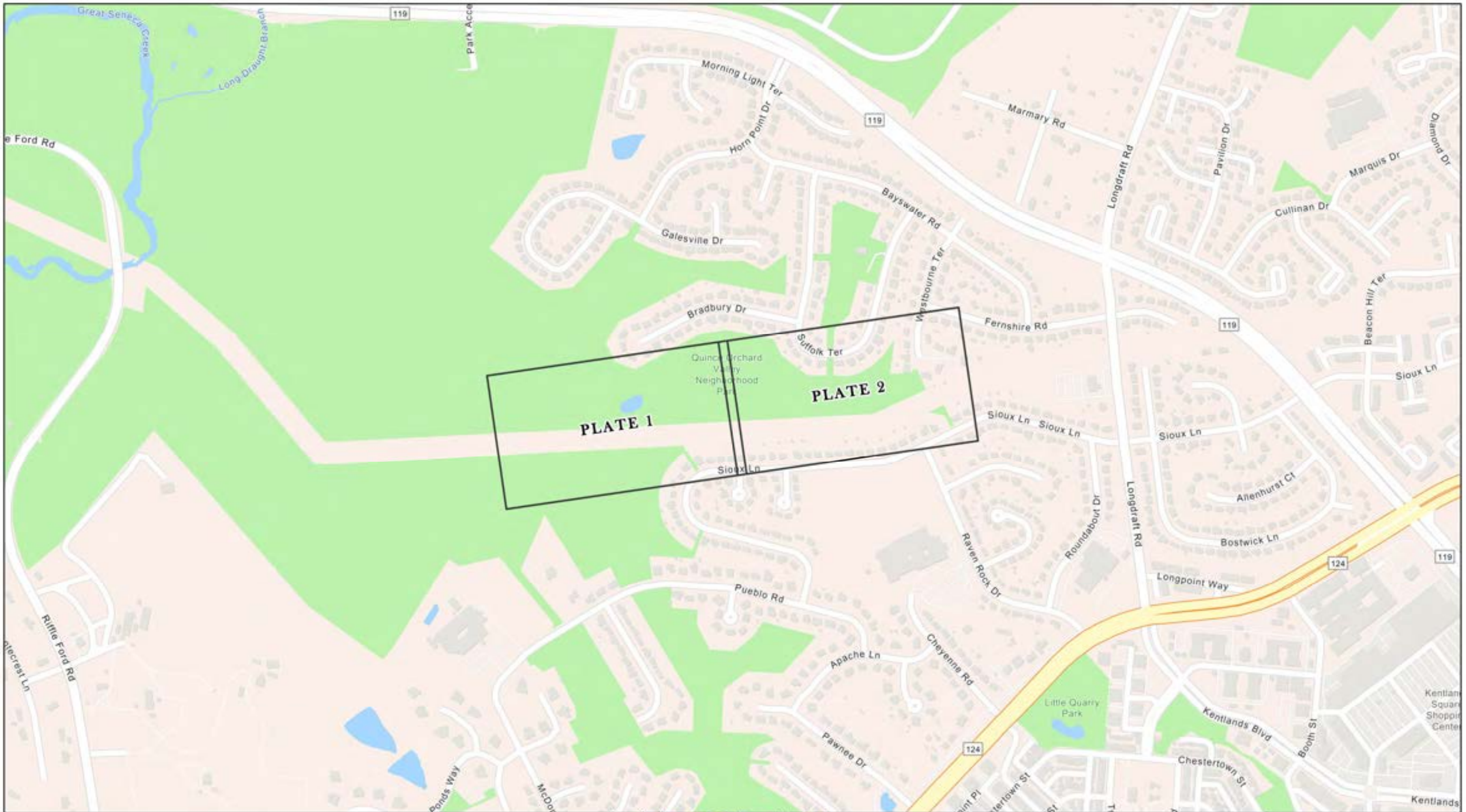
IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	SITE
31000	Intermittent	Open Channel	79	29	WAS-4641

# 404 Mitigation Wetland and Waterway Impact Plates and Tables



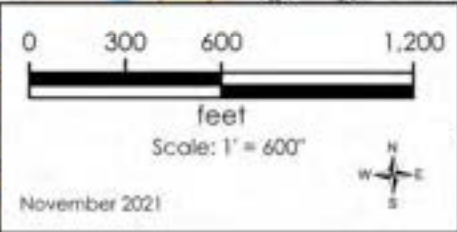
**OP•LANES™**  
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I-495 & I-270 Managed Lanes Study



**Legend**

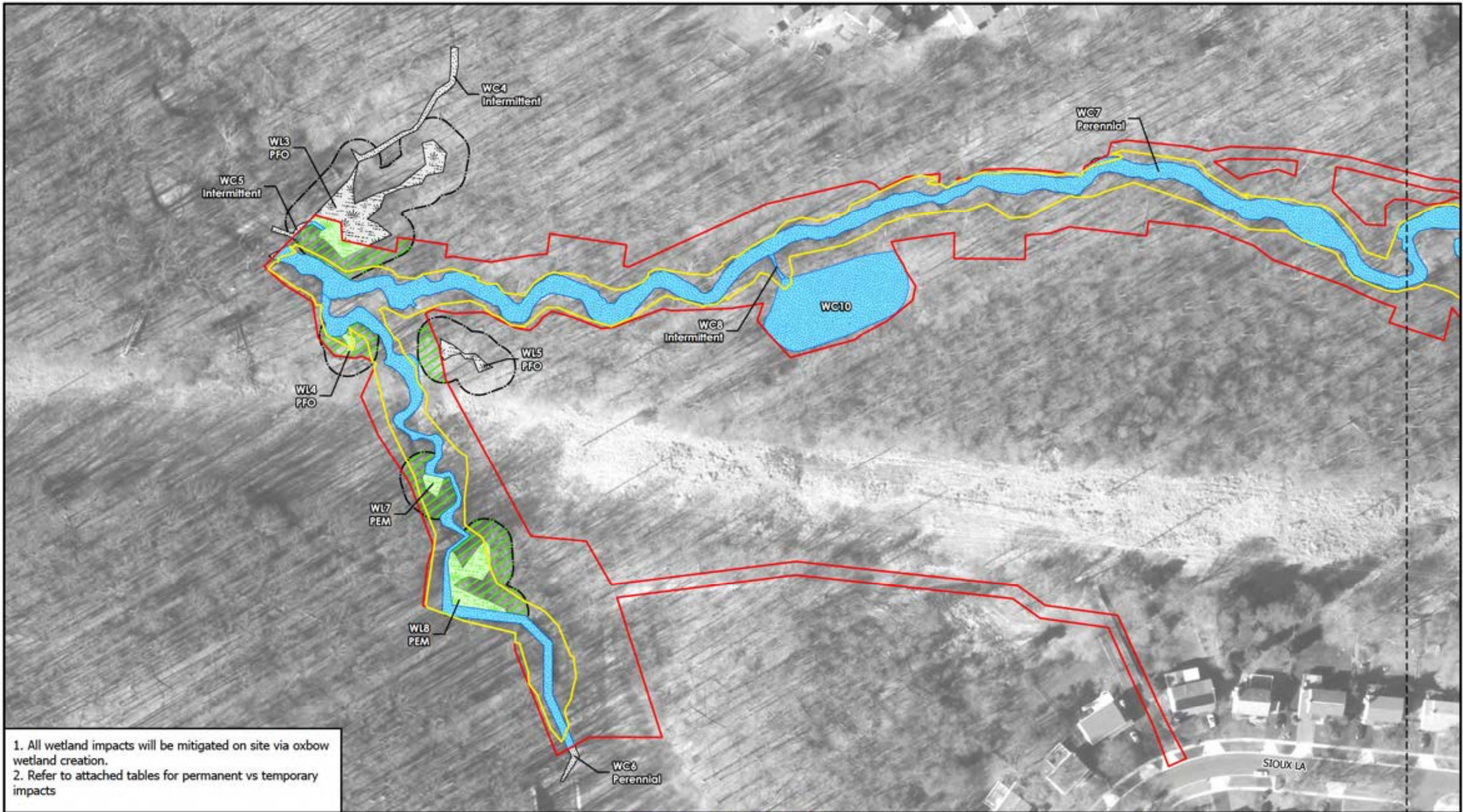
□ Impact Plate



**CA-5  
Wetland and Waterway  
Impact Plates**

Key Sheet

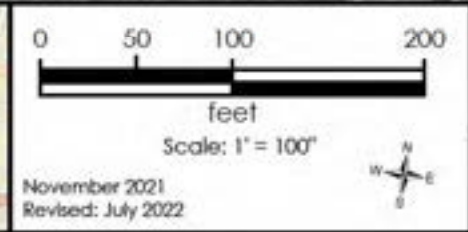
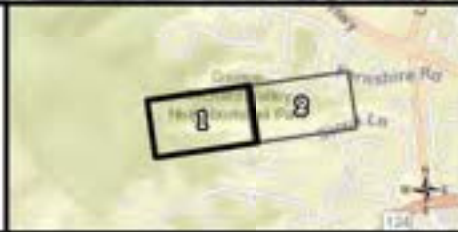




1. All wetland impacts will be mitigated on site via oxbow wetland creation.  
 2. Refer to attached tables for permanent vs temporary impacts

Legend	
Limit of Disturbance	Wetland Buffer
Limit of Grading Area	Wetland, Outside LOD
Sheet Boundary	Water, Outside LOD

Impacts	
Waterway	
Wetland	
Buffer	



**CA-5  
Wetland and Waterway  
Impact Plates**

Page 1 of 2





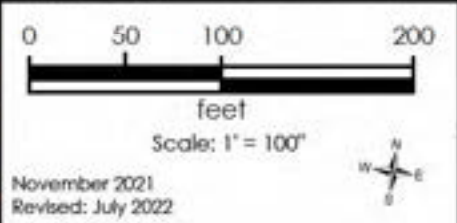
1. All wetland impacts will be mitigated on site via oxbow wetland creation.  
 2. Refer to attached tables for permanent vs temporary impacts

**Legend**

- Limit of Disturbance
- Limit of Grading Area
- Sheet Boundary
- Welland Buffer
- Welland, Outside LOD
- Water, Outside LOD

**Impacts**

- Waterway
- Welland
- Buffer



**CA-5  
Wetland and Waterway  
Impact Plates**

Page 2 of 2



# UNNAMED TRIBUTARY TO GREAT SENICA CREEK (CA-5) MITIGATION SITE IMPACTS

Table E-1: MDE Waterway Impacts Summary

RESOURCE TYPE	TEMPORARY IMPACT (LF)	TEMPORARY IMPACT (SF)	PERMANENT IMPACT (LF)	PERMANENT IMPACT (SF)
Perennial	3,605	65,994	0	0
Intermittent	322	2126	0	0
<b>Total:</b>	<b>3,927</b>	<b>68,120</b>	<b>0</b>	<b>0</b>

Table E-2: USACE Waterway Impacts Summary

RESOURCE TYPE	TEMPORARY IMPACT (LF)	TEMPORARY IMPACT (SF)	PERMANENT IMPACT (LF)	PERMANENT IMPACT (SF)
Perennial	0	0	3,605	54,392
Intermittent	0	0	322	2,126
Open Water	0	0	0	11602
Ephemeral	0	0	0	0
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>3,927</b>	<b>68,120</b>

Table E-3: MDE Wetland Impacts Summary

RESOURCE TYPE	TEMPORARY WETLAND IMPACT (SF)	TEMPORARY WETLAND BUFFER IMPACT (SF)	PERMANENT WETLAND IMPACT (SF)	PERMANENT WETLAND BUFFER IMPACT (SF)
PFO	3,515	14,029	0	0
PSS	0	0	0	0
PEM	2378	6689	0	0
<b>Total:</b>	<b>5,893</b>	<b>20,718</b>	<b>0</b>	<b>0</b>

All wetland impacts will be mitigated on site via oxbow wetland creation.

Table E-4: USACE Wetland Impacts Summary

RESOURCE TYPE	TEMPORARY WETLAND IMPACT (SF)	PERMANENT WETLAND IMPACT (SF)
PFO	2,343	1,172
PSS	0	0
PEM	0	2378
<b>Total:</b>	<b>2,343</b>	<b>3,550</b>

All wetland impacts will be mitigated on site via oxbow wetland creation.



# UNNAMED TRIBUTARY TO GREAT SENICA CREEK (CA-5) MITIGATION SITE IMPACTS

Table E-5: MDE Waterway Feature Impacts

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	TEMPORARY IMPACT (LF)	TEMPORARY IMPACT (SF)	PERMANENT IMPACT (LF)	PERMANENT IMPACT (SF)	IMPACT TYPE
WC2	Perennial	Open Channel	47	327	0	0	Restoration
WC3	Intermittent	Open Channel	139	667	0	0	Restoration
WC5	Intermittent	Open Channel	21	112	0	0	Restoration
WC6	Perennial	Open Channel	759	7,369	0	0	Restoration
WC7	Perennial	Open Channel	2799	46,696	0	0	Restoration
WC8	Intermittent	Open Channel	30	95	0	0	Restoration
WC9	Intermittent	Open Channel	132	1,252	0	0	Restoration
WC10	Perennial	Waterway	0	11,602	0	0	Enhancement
<b>Total:</b>			<b>3,927</b>	<b>68,120</b>	<b>0</b>	<b>0</b>	

Table E-6: USACE Waterway Feature Impacts

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	TEMPORARY IMPACT (LF)	TEMPORARY IMPACT (SF)	PERMANENT IMPACT (LF)	PERMANENT IMPACT (SF)	IMPACT TYPE
WC2	Perennial	Open Channel	0	0	47	327	Restoration
WC3	Intermittent	Open Channel	0	0	139	667	Restoration
WC5	Intermittent	Open Channel	0	0	21	112	Restoration
WC6	Perennial	Open Channel	0	0	759	7,369	Restoration
WC7	Perennial	Open Channel	0	0	2799	46,696	Restoration
WC8	Intermittent	Open Channel	0	0	30	95	Restoration
WC9	Intermittent	Open Channel	0	0	132	1,252	Restoration
WC10	Open Water	Pond	0	0	0	11,602	Enhancement
<b>Total:</b>			<b>0</b>	<b>0</b>	<b>3,927</b>	<b>68,120</b>	

# UNNAMED TRIBUTARY TO GREAT SENICA CREEK (CA-5) MITIGATION SITE IMPACTS

Table E-7: MDE Wetland Feature Impacts

IMPACT ID	CLASSIFICATION	TEMPORARY WETLAND IMPACT (SF)	TEMPORARY WETLAND BUFFER IMPACT (SF)	PERMANENT WETLAND IMPACT (SF)	PERMANENT WETLAND BUFFER IMPACT (SF)	IMPACT TYPE
WL1	PFO	0	85	0	0	Restoration
WL2	PFO	618	5,332	0	0	Restoration
WL3	PFO	1,042	2,953	0	0	Restoration
WL4	PFO	177	1,645	0	0	Restoration
WL5	PFO	0	1,338	0	0	Restoration
WL6	PFO	1,678	2,676	0	0	Restoration
WL7	PEM	349	2,183	0	0	Restoration
WL8	PEM	2,029	4,506	0	0	Restoration
<b>Total:</b>		<b>5,893</b>	<b>20,718</b>	<b>0</b>	<b>0</b>	

All wetland impacts will be mitigated on site via oxbow wetland creation.

Table E-8: USACE Wetland Feature Impacts

IMPACT ID	CLASSIFICATION	TEMPORARY WETLAND IMPACT (SF)	PERMANENT WETLAND IMPACT (SF)	IMPACT TYPE
WL1	PFO	0	0	Restoration
WL2	PFO	618	0	Restoration
WL3	PFO	1,042	0	Restoration
WL4	PFO	0	177	Restoration
WL5	PFO	0	0	Restoration
WL6	PFO	683	995	Restoration
WL7	PEM	0	349	Restoration
WL8	PEM	0	2,029	Restoration
<b>Total:</b>		<b>2,343</b>	<b>3,550</b>	

All wetland impacts will be mitigated on site via oxbow wetland creation.

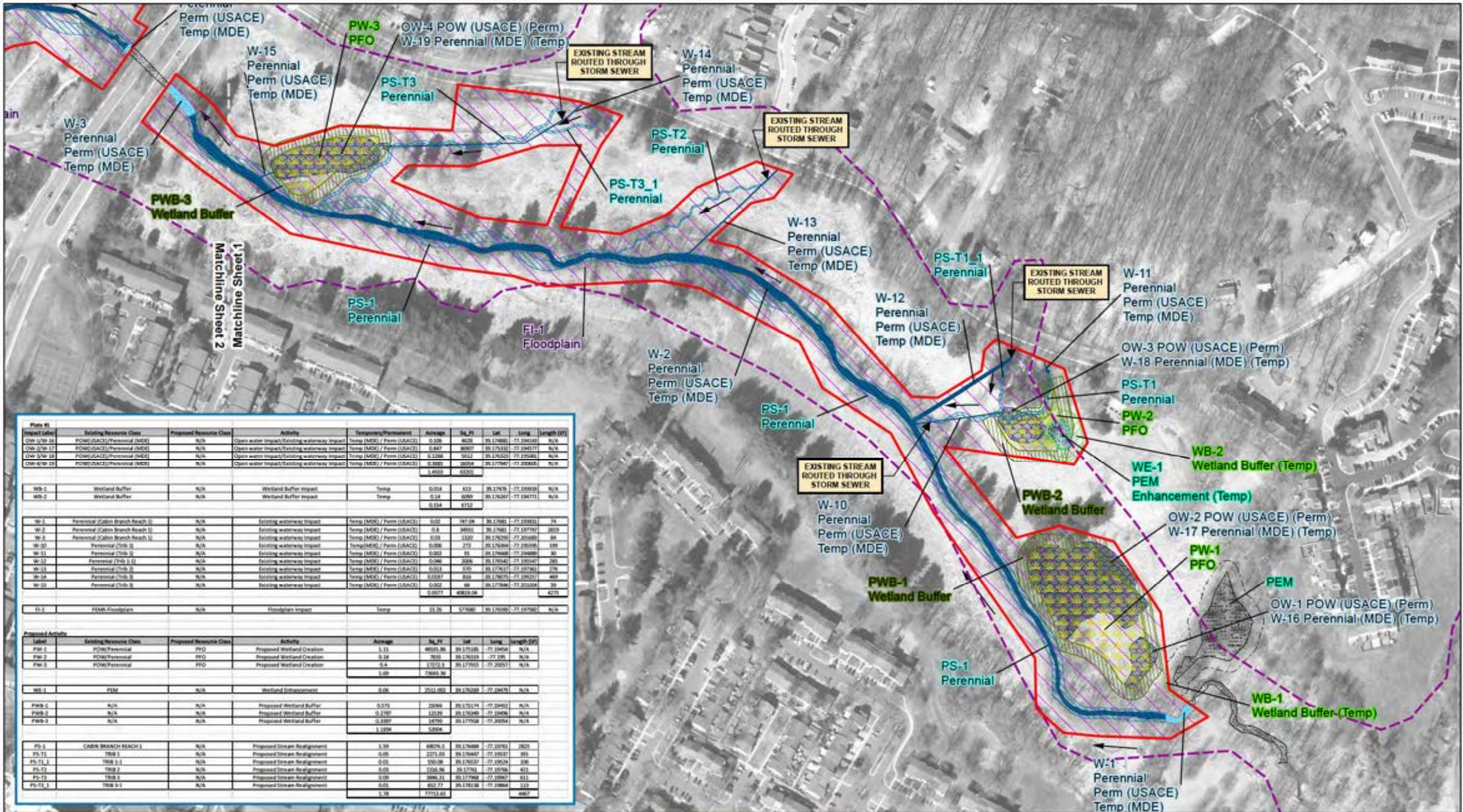


Plate #	Existing Resource Class	Proposed Resource Class	Activity	Temporary/Permanent	Average	%LPI	Lat	Long	Length (ft)
OW-1/W-16	POW(USACE)/Perennial (MDE)	N/A	Open water Impact/Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.028	4029	35.17880	-77.19410	N/A
OW-2/W-17	POW(USACE)/Perennial (MDE)	N/A	Open water Impact/Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.847	30807	35.17532	-77.19477	N/A
OW-3/W-18	POW(USACE)/Perennial (MDE)	N/A	Open water Impact/Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.028	3612	35.17532	-77.19580	N/A
OW-4/W-19	POW(USACE)/Perennial (MDE)	N/A	Open water Impact/Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.585	38054	35.17587	-77.20080	N/A
					1.493	43209			
WB-1	Wetland Buffer	N/A	Wetland Buffer Impact	Temp	0.004	613	35.17675	-77.19938	N/A
WB-2	Wetland Buffer	N/A	Wetland Buffer Impact	Temp	0.14	6399	35.17687	-77.19471	N/A
					0.144	6712			
W-1	Perennial (Cabin Branch Reach II)	N/A	Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.02	197.04	35.17905	-77.19933	74
W-2	Perennial (Cabin Branch Reach II)	N/A	Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.8	34915	35.17905	-77.19792	2819
W-3	Perennial (Cabin Branch Reach II)	N/A	Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.02	1320	35.17920	-77.20088	84
W-20	Perennial (Trib II)	N/A	Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.006	272	35.17994	-77.19199	139
W-11	Perennial (Trib II)	N/A	Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.003	95	35.17988	-77.19489	30
W-12	Perennial (Trib II)	N/A	Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.040	2006	35.17940	-77.19047	285
W-13	Perennial (Trib II)	N/A	Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.013	570	35.17917	-77.19761	276
W-14	Perennial (Trib II)	N/A	Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.0287	838	35.17925	-77.19921	469
W-15	Perennial (Trib II)	N/A	Existing waterway Impact	Temp (MDE) / Perm (USACE)	0.002	98	35.17946	-77.20004	39
					0.0077	4833.06			4275
FI-1	Floodplain	N/A	Floodplain Impact	Temp	11.26	57588	35.17658	-77.19792	N/A
<b>Proposed Activity</b>									
Label	Existing Resource Class	Proposed Resource Class	Activity	Average	%LPI	Lat	Long	Length (ft)	
PW-1	POW/Perennial	PFO	Proposed Wetland Creation	1.13	4810.86	35.17548	-77.19454	N/A	
PW-2	POW/Perennial	PFO	Proposed Wetland Creation	0.18	7835	35.17638	-77.195	N/A	
PW-3	POW/Perennial	PFO	Proposed Wetland Creation	0.4	1722.5	35.17765	-77.20057	N/A	
				1.69	7369.36				
WE-1	PEM	N/A	Wetland Enhancement	0.06	2511.882	35.17638	-77.19475	N/A	
PWB-1	N/A	N/A	Proposed Wetland Buffer	0.375	15264	35.17574	-77.19292	N/A	
PWB-2	N/A	N/A	Proposed Wetland Buffer	0.238	12729	35.17648	-77.19486	N/A	
PWB-3	N/A	N/A	Proposed Wetland Buffer	0.887	34799	35.17768	-77.20054	N/A	
				1.499	60944				
PS-1	CABIN BRANCH REACH I	N/A	Proposed Stream Realignment	1.39	6026.1	35.17648	-77.19762	2823	
PS-T1	Trib I	N/A	Proposed Stream Realignment	0.05	2171.83	35.17647	-77.19527	891	
PS-T1_1	Trib 1.1	N/A	Proposed Stream Realignment	0.05	590.86	35.17637	-77.19524	206	
PS-T2	Trib 2	N/A	Proposed Stream Realignment	0.03	1316.96	35.1761	-77.19764	411	
PS-T3	Trib 3	N/A	Proposed Stream Realignment	0.09	3846.21	35.17798	-77.19967	611	
PS-T3_1	Trib 3.1	N/A	Proposed Stream Realignment	0.05	602.77	35.17818	-77.19964	119	
				1.19	7713.62			4867	

**LEGEND**

- Limits of Disturbance ▭ Existing Wetlands ▭
- Proposed Stream Realignment ▭ Existing Waterways ▭
- 100 Year Floodplain ▭ Wetland Buffer ▭
- Proposed PFO Wetland ▭ Flow Direction →
- Proposed PFO Wetland Buffer ▭

**IMPACTS**

- Waterway (Perm) ▭
- Waterway (Temp) ▭
- Waterway (Outside) ▭
- Wetland Buffer (Temp) ▭
- Wetland Enhancement ▭
- Open Water (USACE) (Perm) ▭
- Perennial (MDE) (Perm) ▭
- Open Water (Temp) ▭
- Floodplain ▭

Scale: 1" = 200'

February 2021

**Wetland and Waterway Impact Plates**

Plate 01 of 02

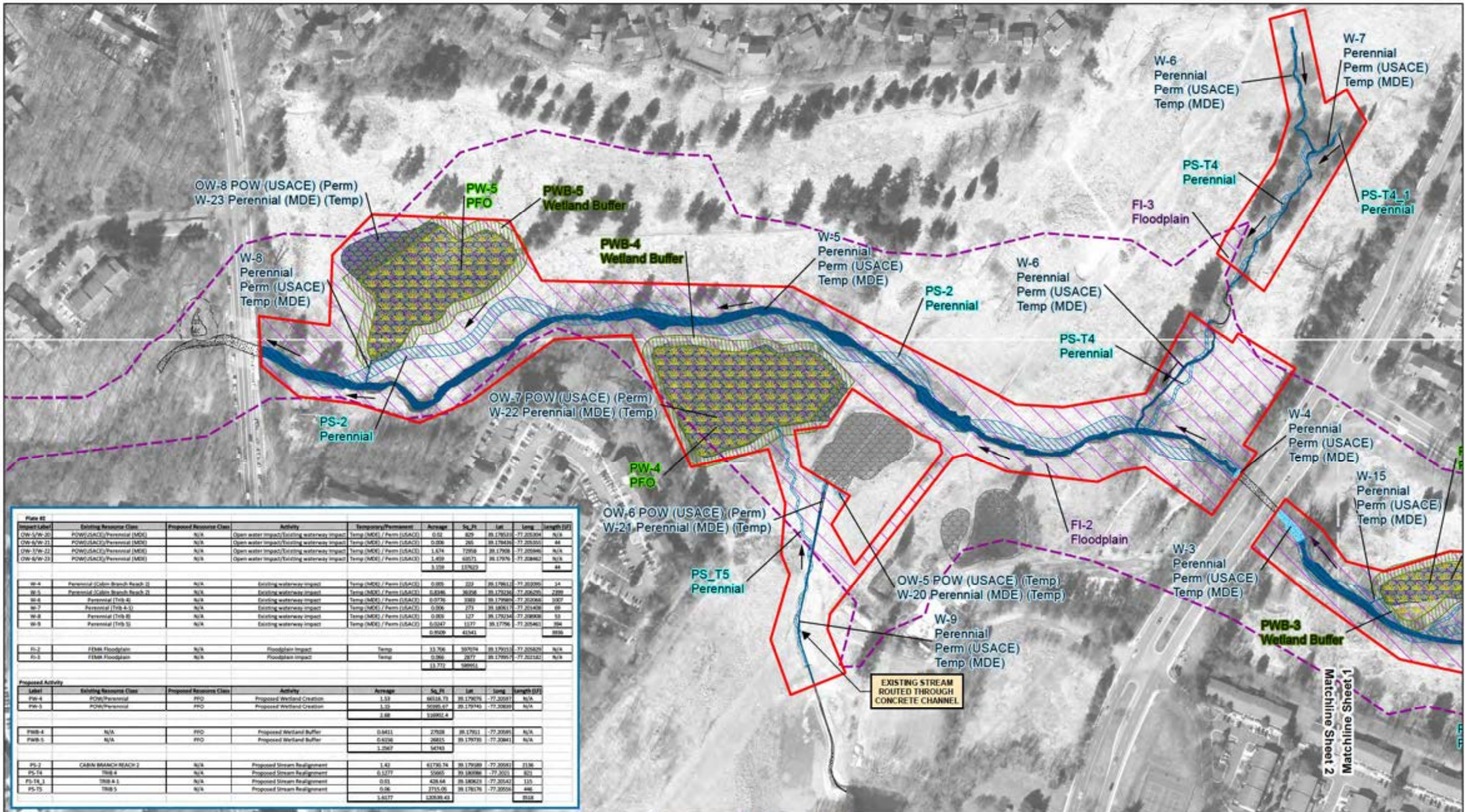


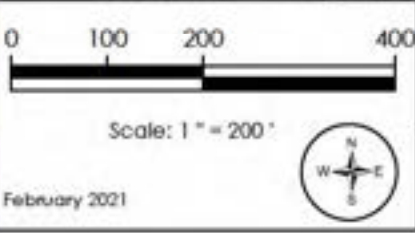
Plate #1	Impact Label	Existing Resource Class	Proposed Resource Class	Activity	Temporary/Permanent	Average	Sq. Ft.	Eat	Long	Length (ft)	
	OW-5/W-20	POW/USACE/Perennial (MDE)	N/A	Open water impact/Existing waterway impact	Temp (MDE) / Perm (USACE)	0.02	629	88.179513	-77.205894	N/A	
	OW-6/W-21	POW/USACE/Perennial (MDE)	N/A	Open water impact/Existing waterway impact	Temp (MDE) / Perm (USACE)	0.006	265	88.179438	-77.205350	44	
	OW-7/W-22	POW/USACE/Perennial (MDE)	N/A	Open water impact/Existing waterway impact	Temp (MDE) / Perm (USACE)	1.674	12958	88.17958	-77.205946	N/A	
	OW-8/W-23	POW/USACE/Perennial (MDE)	N/A	Open water impact/Existing waterway impact	Temp (MDE) / Perm (USACE)	1.459	60571	88.17976	-77.208462	N/A	
						3.139	137023			44	
	W-4	Perennial (Trib 2)	N/A	Existing waterway impact	Temp (MDE) / Perm (USACE)	0.005	222	88.179613	-77.202990	14	
	W-5	Perennial (Trib 2)	N/A	Existing waterway impact	Temp (MDE) / Perm (USACE)	0.0286	3626	88.179538	-77.206290	2289	
	W-6	Perennial (Trib 4)	N/A	Existing waterway impact	Temp (MDE) / Perm (USACE)	0.0726	1363	88.179669	-77.205866	1007	
	W-7	Perennial (Trib 4-1)	N/A	Existing waterway impact	Temp (MDE) / Perm (USACE)	0.006	273	88.180611	-77.201438	69	
	W-8	Perennial (Trib 8)	N/A	Existing waterway impact	Temp (MDE) / Perm (USACE)	0.003	127	88.179234	-77.208336	13	
	W-9	Perennial (Trib 3)	N/A	Existing waterway impact	Temp (MDE) / Perm (USACE)	0.0247	1127	88.17796	-77.205461	84	
						0.0509	4341			889	
	FI-2	F100 Floodplain	N/A	Floodplain impact	Temp	13.706	36704	88.179513	-77.205620	N/A	
	FI-3	F100 Floodplain	N/A	Floodplain impact	Temp	0.069	2977	88.179915	-77.202182	N/A	
						13.775	39681				
	<b>Proposed Activity</b>										
	Label	Existing Resource Class	Proposed Resource Class	Activity	Average	Sq. Ft.	Eat	Long	Length (ft)		
	PW-4	PFO/Perennial	PFO	Proposed Wetland Creation	1.33	46138.73	88.179276	-77.205911	N/A		
	PW-5	PFO/Perennial	PFO	Proposed Wetland Creation	1.33	52995.67	88.179740	-77.20839	N/A		
					2.66	99134.4					
	PWB-4	N/A	PFO	Proposed Wetland Buffer	0.6411	27028	88.17951	-77.20585	N/A		
	PWB-5	N/A	PFO	Proposed Wetland Buffer	0.6326	26815	88.179735	-77.20841	N/A		
					1.2737	53843					
	PS-2	CABIN BRANCH REACH 2	N/A	Proposed Stream Realignment	1.43	61793.74	88.179589	-77.20593	1136		
	PS-T4	Trib 4	N/A	Proposed Stream Realignment	0.1377	5660	88.180366	-77.201	621		
	PS-T4_1	Trib 4-1	N/A	Proposed Stream Realignment	0.03	428.64	88.180623	-77.20142	135		
	PS-T5	Trib 5	N/A	Proposed Stream Realignment	0.06	2715.06	88.179176	-77.20504	446		
					1.6077	13088.43			638		

**LEGEND**

- Limits of Disturbance
- Proposed Stream Realignment
- 100 Year Floodplain
- Proposed PFO Wetland
- Proposed PFO Wetland Buffer
- Existing Wetlands
- Existing Waterways
- Wetland Buffer
- Flow Direction

**IMPACTS**

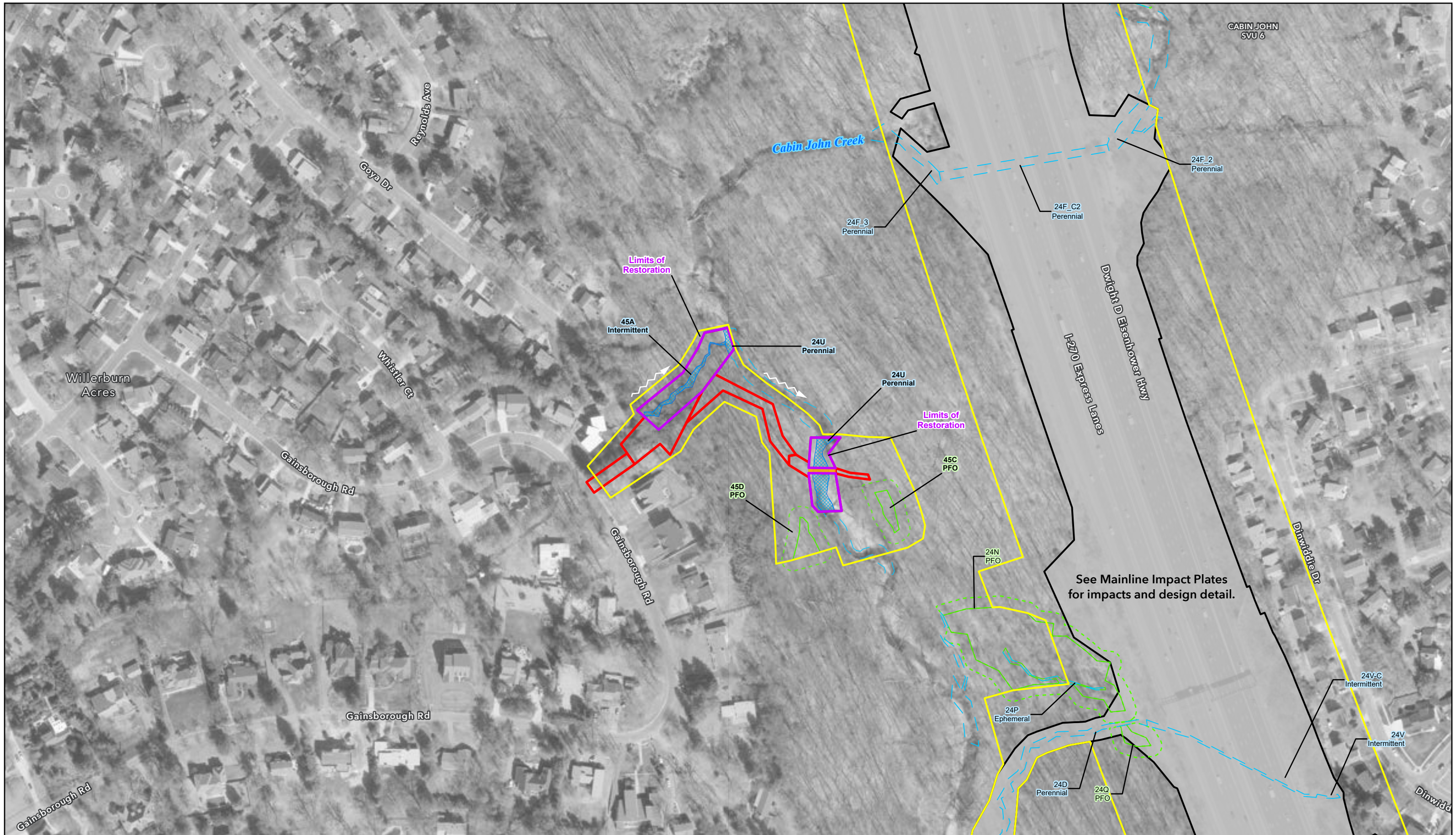
- Waterway (Perm)
- Waterway (Temp)
- Waterway (Outside)
- Wetland Buffer (Temp)
- Wetland Enhancement
- Open Water (USACE) (Perm)
- Perennial (MDE) (Perm)
- Open Water (Temp)
- Floodplain



**Wetland and Waterway Impact Plates**

Plate 02 of 02



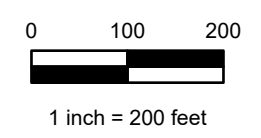


- ▬ LOD - Park Mitigation
- MLS Mainline
- Corridor Study Boundary

- Limit Of Restoration
- Limit Of Stabilization
- Aerial Structure

- Wetland Impact (Temp)
- Wetland Buffer Impact (Temp)
- Waterway Impact (Temp)
- FEMA Impact
- Delineated Wetland
- Delineated Wetland Buffer
- Delineated Waterway

NOTE: All impacts are considered Temporary.



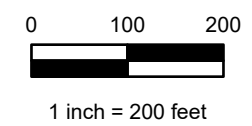
**Wetland and Waterway Impact Plates**  
Park Mitigation Impact Plate 1





- |                         |                        |                              |                           |
|-------------------------|------------------------|------------------------------|---------------------------|
| LOD - Park Mitigation   | Limit Of Restoration   | Wetland Impact (Temp)        | Delineated Wetland        |
| MLS Mainline            | Limit Of Stabilization | Wetland Buffer Impact (Temp) | Delineated Wetland Buffer |
| Corridor Study Boundary | Aerial Structure       | Waterway Impact (Temp)       | Delineated Waterway       |
|                         |                        | FEMA Impact                  |                           |

NOTE: All impacts are considered Temporary.



### Wetland and Waterway Impact Plates

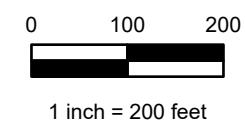
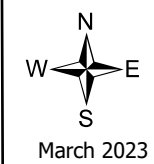
Park Mitigation  
Impact Plate 2





- |                         |                        |                              |                           |
|-------------------------|------------------------|------------------------------|---------------------------|
| LOD - Park Mitigation   | Limit Of Restoration   | Wetland Impact (Temp)        | Delineated Wetland        |
| MLS Mainline            | Limit Of Stabilization | Wetland Buffer Impact (Temp) | Delineated Wetland Buffer |
| Corridor Study Boundary | Aerial Structure       | Waterway Impact (Temp)       | Delineated Waterway       |
|                         |                        | FEMA Impact                  |                           |

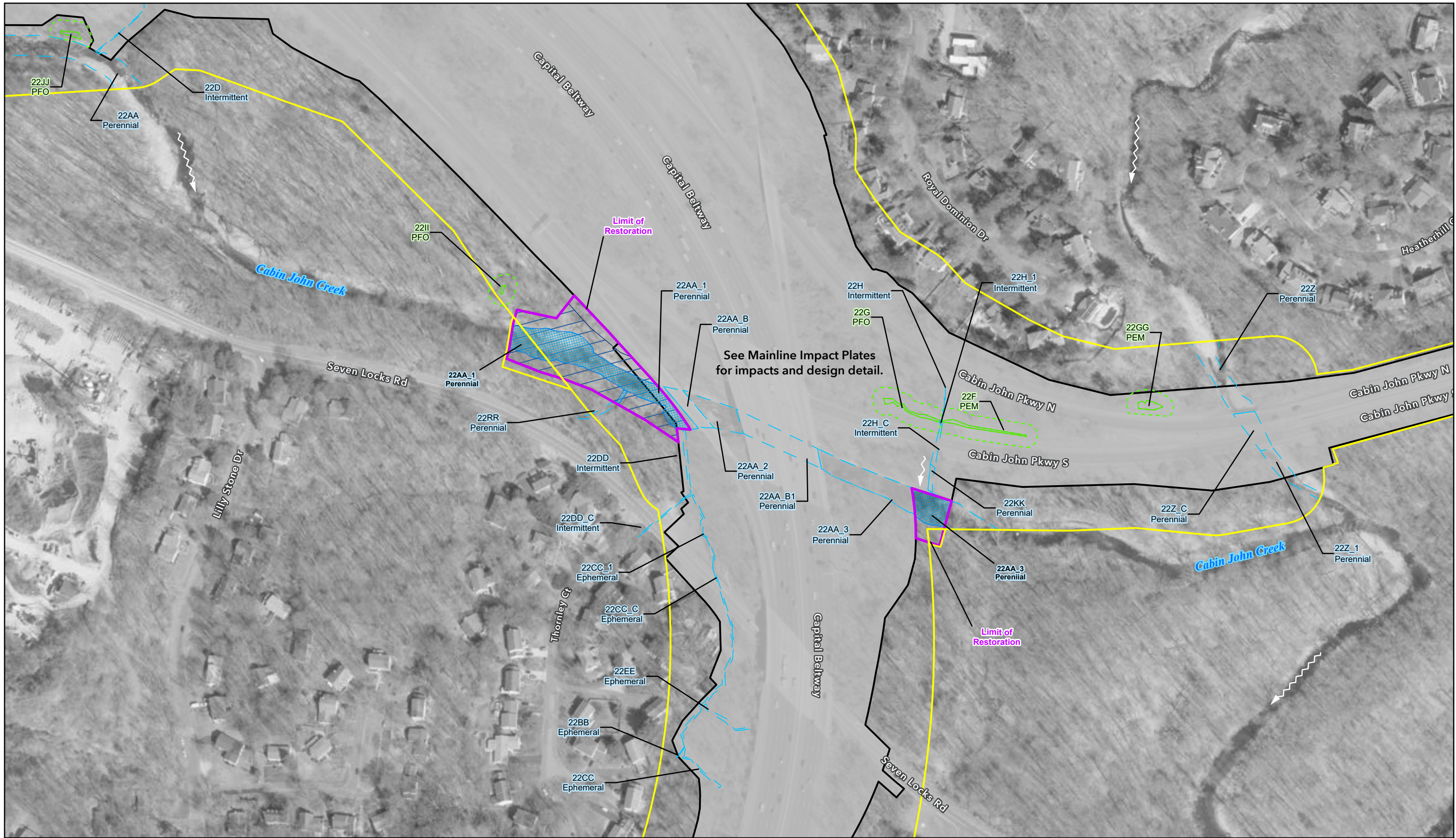
NOTE: All impacts are considered Temporary.



**Wetland and Waterway Impact Plates**

*Park Mitigation Impact Plate 3*





LOD - Park Mitigation  
 MLS Mainline  
 Corridor Study Boundary

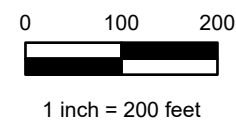
Limit Of Restoration  
 Limit Of Stabilization  
 Aerial Structure

Wetland Impact (Temp)  
 Wetland Buffer Impact (Temp)  
 Waterway Impact (Temp)  
 FEMA Impact  
 Delineated Wetland  
 Delineated Wetland Buffer  
 Delineated Waterway

NOTE: All impacts are considered Temporary.



March 2023



### Wetland and Waterway Impact Plates

Park Mitigation  
Impact Plate 4







# **MDE IMPACT SUMMARY TABLES PARK MITIGATION**



**OP LANES™**  
M A R Y L A N D

I-495 & I-270 Managed Lanes Study

**April 2023**

# MDE PARK MITIGATION IMPACT TABLES

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# MDE PARK MITIGATION IMPACT TABLES

## SUMMARY OF IMPACTS TO WATERWAYS

IMPACT TYPE	WATERWAYS (SF)				WATERWAYS (LF)			
	Ephemeral	Intermittent	Perennial	Total	Ephemeral	Intermittent	Perennial	Total
Permanent	0	0	0	0	0	0	0	0
Temporary	0	4,779	34,153	38,932	0	657	915	1,572
<b>Total</b>	<b>0</b>	<b>4,779</b>	<b>34,153</b>	<b>38,932</b>	<b>0</b>	<b>657</b>	<b>915</b>	<b>1,572</b>

NOTE: All waterways are located in the Middle Potomac-Catoctin (USGS HUC8 02070008) watershed.

## SUMMARY OF IMPACTS TO WETLANDS

IMPACT TYPE	WETLANDS (SF)				WETLANDS (AC)			
	PEM	PFO	PSS	Total	PEM	PFO	PSS	Total
Permanent	0	0	0	0	0	0	0	0
Temporary	0	106,485	0	106,485	0	2.44	0	2.44
<b>Total</b>	<b>0</b>	<b>106,485</b>	<b>0</b>	<b>106,485</b>	<b>0</b>	<b>2.44</b>	<b>0</b>	<b>2.44</b>

NOTE: All wetlands and their buffers are located in the Middle Potomac-Catoctin (USGS HUC8 02070008) watershed.

## SUMMARY OF IMPACTS TO WETLAND BUFFERS

IMPACT TYPE	WETLAND BUFFER (SF)				WETLAND BUFFER (AC)			
	PEM	PFO	PSS	Total	PEM	PFO	PSS	Total
Permanent	0	0	0	0	0	0	0	0
Temporary	370	33,500	0	33,870	0.01	0.77	0	0.78
<b>Total</b>	<b>370</b>	<b>33,500</b>	<b>0</b>	<b>33,870</b>	<b>0.01</b>	<b>0.77</b>	<b>0</b>	<b>0.78</b>

NOTE: All wetlands and their buffers are located in the Middle Potomac-Catoctin (USGS HUC8 02070008) watershed.

# MDE PARK MITIGATION IMPACT TABLES

## SUMMARY OF IMPACTS TO 100-YEAR FLOODPLAINS

ASSOCIATED WATERWAY	RELATED FEATURES	FIRM PANEL	IMPACT PLATE	HUC 8 NAME	PERMANENT IMPACT (SF)	TEMPORARY IMPACT (SF)	TOTAL IMPACT (SF)	TOTAL IMPACT (AC)
Cabin John Creek	22AA_1, 22RR	24031C0435D, 51059CO160E	4	Middle Potomac-Catoctin	0	48,141	48,141	1.11
Potomac River	22OO, 22EEE, 22M_1	24031C0435D, 51059CO160E	5	Middle Potomac-Catoctin	0	157,084	157,084	3.61
<b>TOTAL</b>					<b>0</b>	<b>205,225</b>	<b>205,225</b>	<b>4.72</b>

# MDE PARK MITIGATION IMPACT TABLES

*PLATE 1 – WATERWAY IMPACTS*

<b>IMPACT ID</b>	<b>CLASSIFICATION</b>	<b>CHANNEL TYPE</b>	<b>IMPACT (SF)</b>	<b>IMPACT (LF)</b>	<b>IMPACT TYPE</b>
24U	Perennial	Open Channel	5,568	227	Temporary
45A	Intermittent	Open Channel	2,218	279	Temporary

# MDE PARK MITIGATION IMPACT TABLES

*PLATE 2 – WATERWAY IMPACTS*

<b>IMPACT ID</b>	<b>CLASSIFICATION</b>	<b>CHANNEL TYPE</b>	<b>IMPACT (SF)</b>	<b>IMPACT (LF)</b>	<b>IMPACT TYPE</b>
45E	Perennial	Open Channel	558	43	Temporary
45E_B	Perennial	Bridge	165	11	Temporary
45E_1	Perennial	Open Channel	775	42	Temporary

# MDE PARK MITIGATION IMPACT TABLES

*PLATE 3 – WATERWAY IMPACTS*

<b>IMPACT ID</b>	<b>CLASSIFICATION</b>	<b>CHANNEL TYPE</b>	<b>IMPACT (SF)</b>	<b>IMPACT (LF)</b>	<b>IMPACT TYPE</b>
45F	Intermittent	Open Channel	2,561	378	Temporary



# MDE PARK MITIGATION IMPACT TABLES

*PLATE 4 – WATERWAY IMPACTS*

<b>IMPACT ID</b>	<b>CLASSIFICATION</b>	<b>CHANNEL TYPE</b>	<b>IMPACT (SF)</b>	<b>IMPACT (LF)</b>	<b>IMPACT TYPE</b>
22AA_1	Perennial	Open Channel	21,104	387	Temporary
22AA_3	Perennial	Open Channel	5,197	84	Temporary
22RR	Perennial	Open Channel	318	38	Temporary

*PLATE 4 – FLOODPLAIN IMPACTS*

<b>FLOODPLAIN</b>	<b>IMPACT (SF)</b>	<b>IMPACT TYPE</b>
Cabin John Creek	48,141	Temporary

# MDE PARK MITIGATION IMPACT TABLES

## PLATE 5 – WATERWAY IMPACTS

IMPACT ID	CLASSIFICATION	CHANNEL TYPE	IMPACT (SF)	IMPACT (LF)	IMPACT TYPE
22M_1	Perennial	Open Channel	468	83	Temporary

## PLATE 5 – WETLAND IMPACTS

IMPACT ID	CLASSIFICATION	IMPACT (SF)	BUFFER IMPACT (SF)	IMPACT TYPE
2200	PFO	40,284	13,370	Temporary
22EEE	PFO	66,201	20,130	Temporary
22FFF	PEM	0	370	Temporary

## PLATE 5 – FLOODPLAIN IMPACTS

FLOODPLAIN	IMPACT (SF)	IMPACT TYPE
Potomac River	157,084	Temporary