

East Burke Dam Removal

Presented By

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Acknowledgements

Jessica Louisos, Brian Cote, Jim MacBroom, Milone & MacBroom
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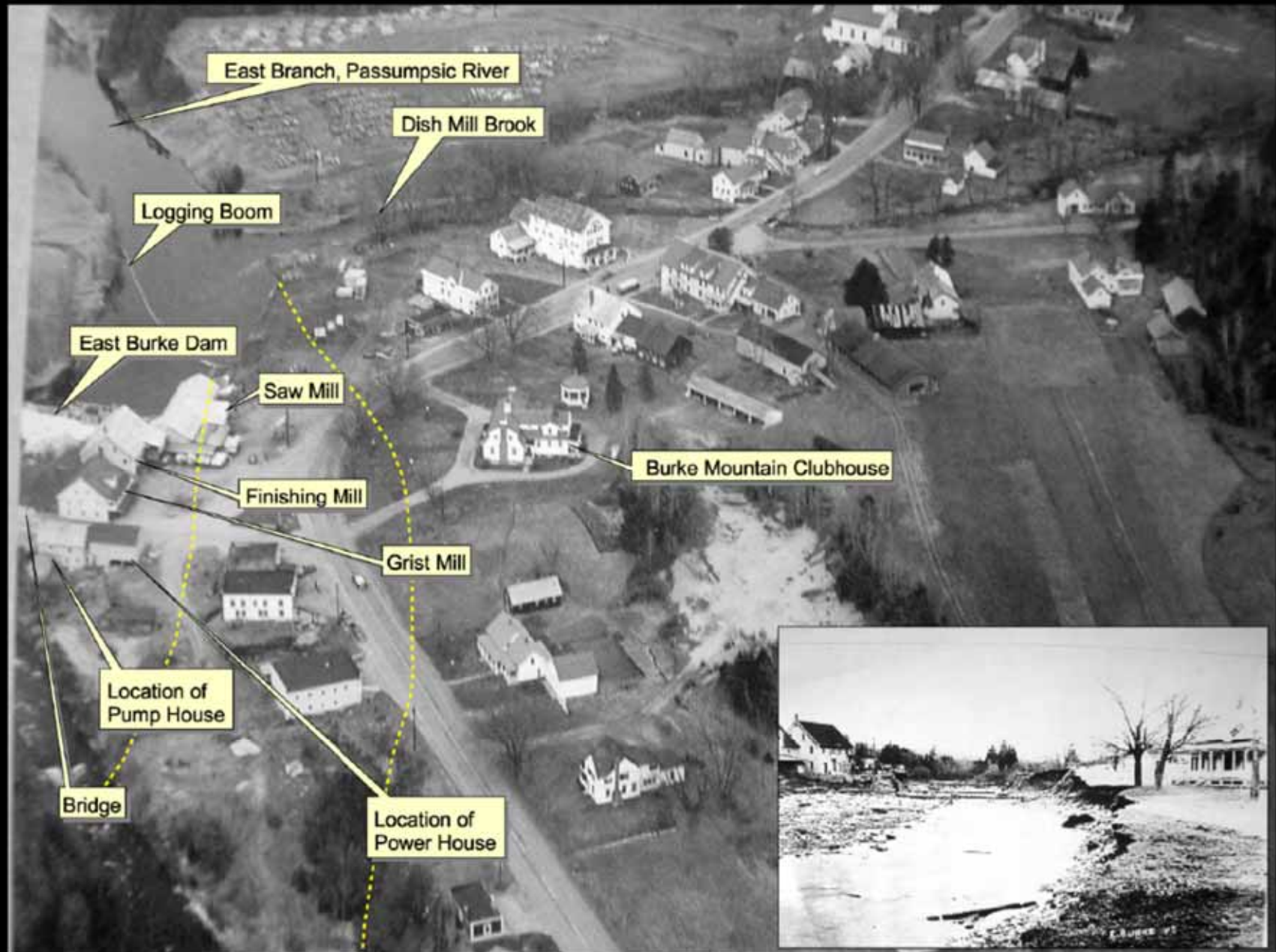
Norwich University | December 7, 2017





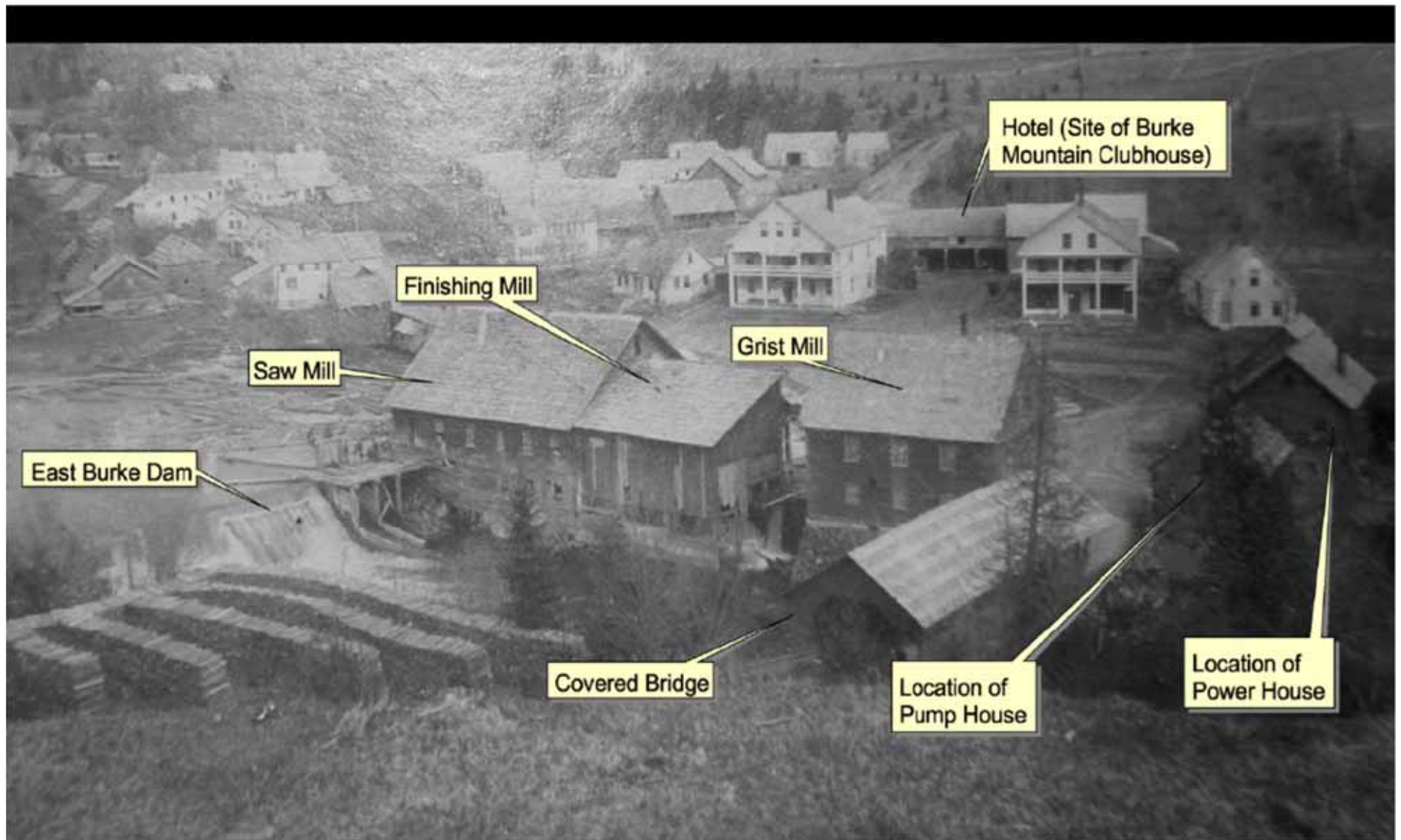
Source: Google Maps, 2017

1890's



Source: Vermont Historical Society





View east, ca. early 1890s

Project Components

- Sediment Management Recommendation
- Hydraulic Modeling and Morphology
- Photo-Simulations
- Wetland Delineation and Functions
- Floodplain Information
- Permitting
- Final Design
- Construction



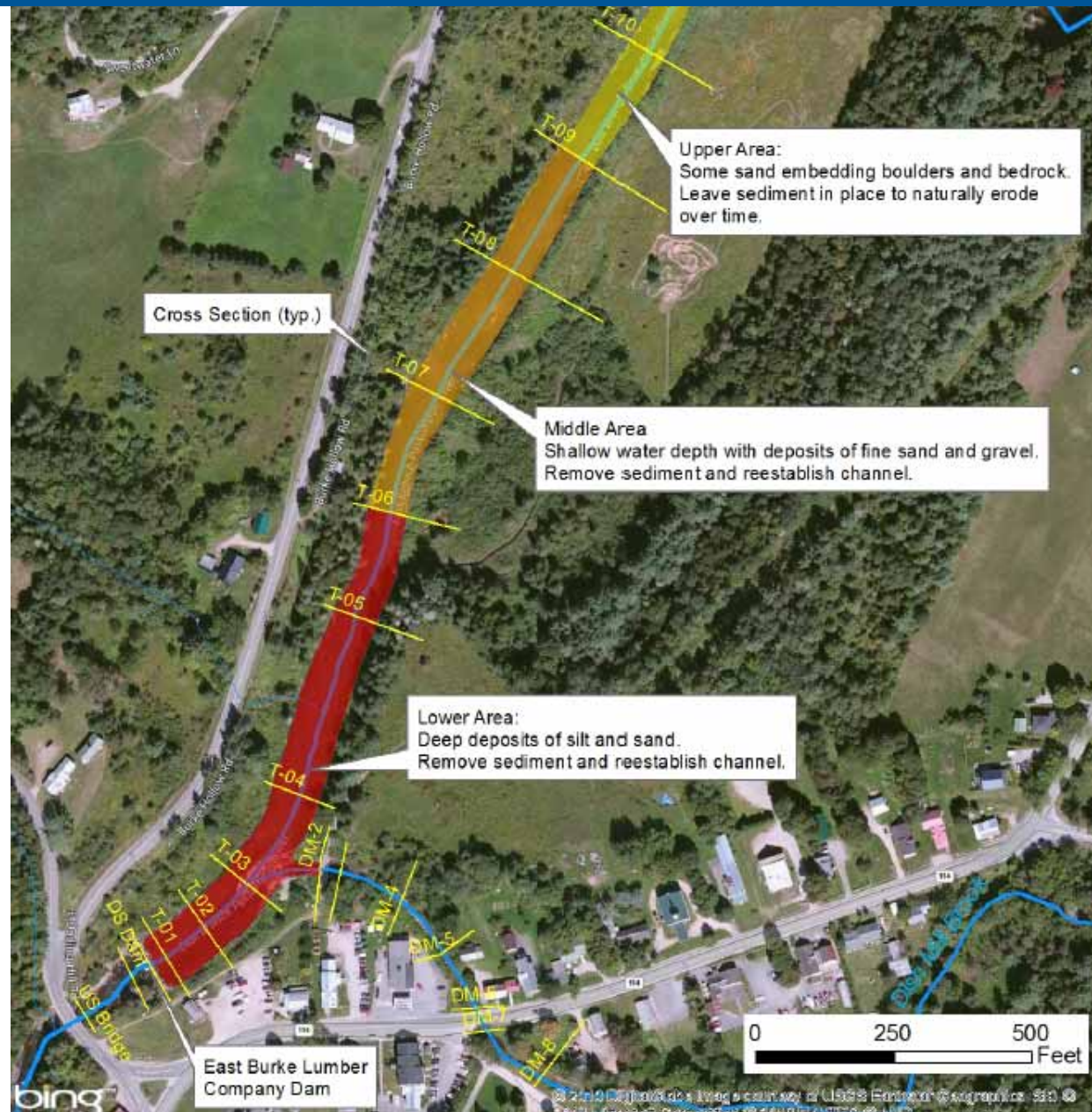




9/19/2016



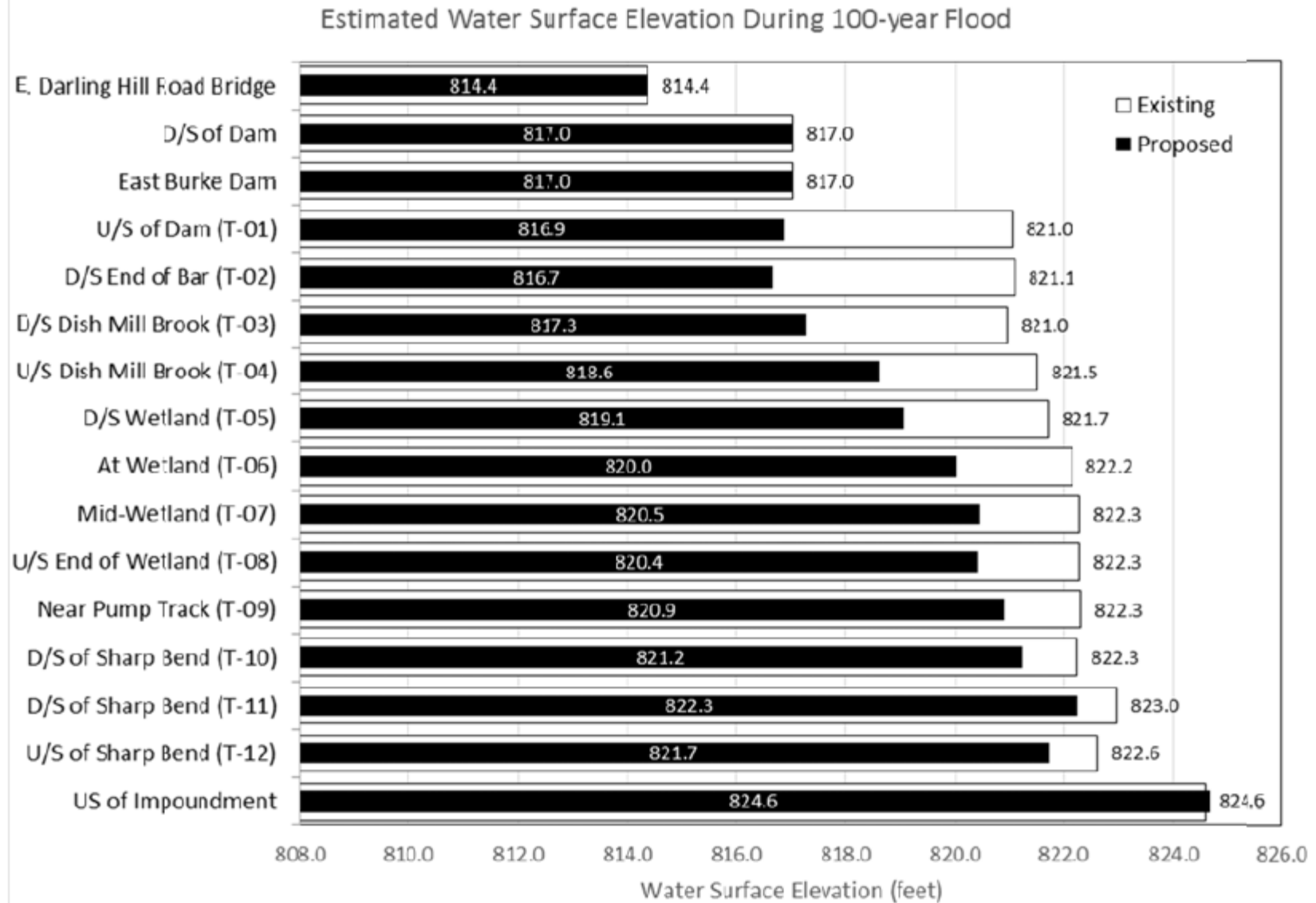
Sediment



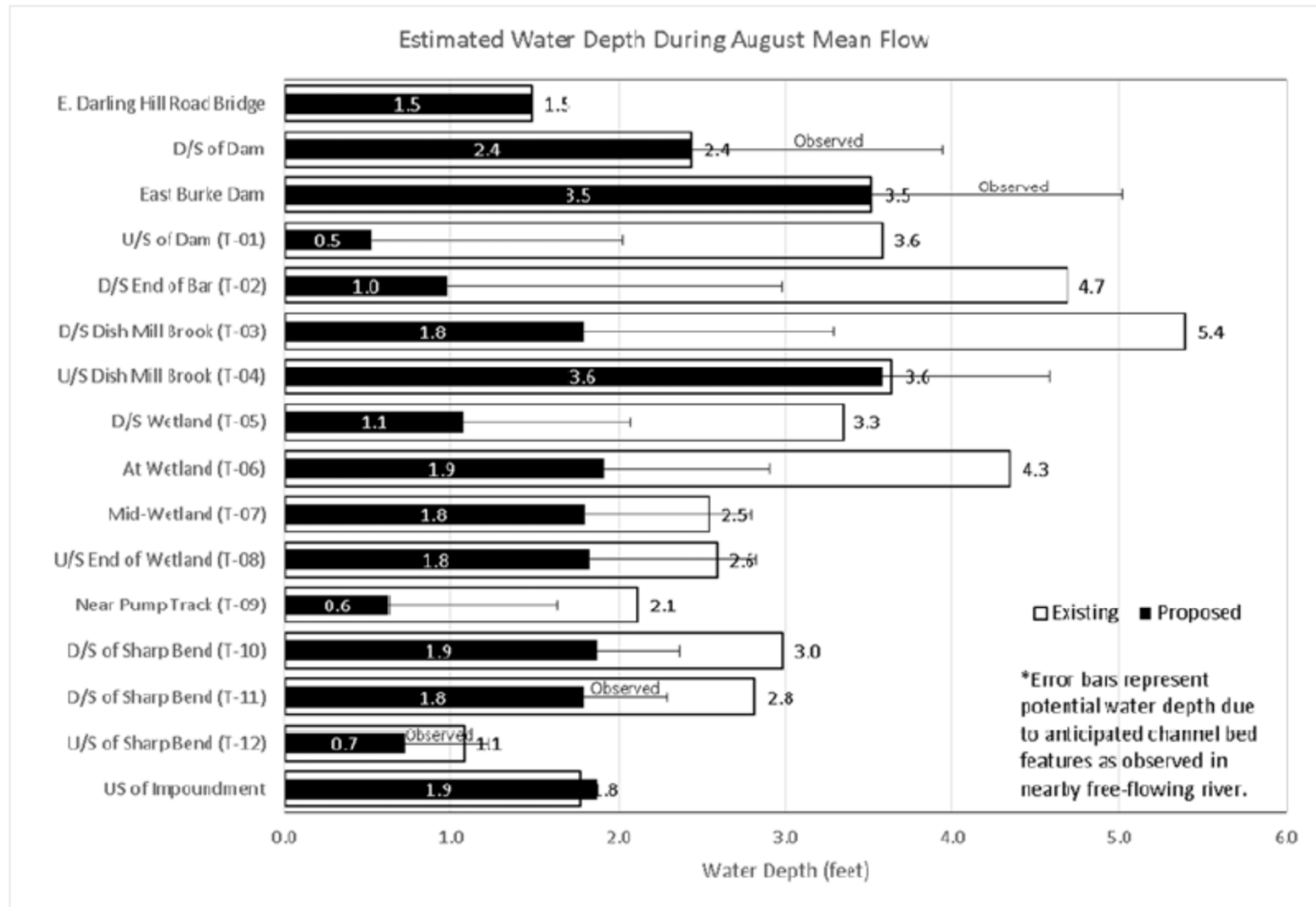
Sediment

Location	Impoundment Length (feet)	Sediment	Water	Proposal
Upper (T-9 to T-11)	550	Volume = 1,200 cubic yards. Sand dunes are embedding coarser material that is still visible. Sediment thickness is about 1 foot.	Some flowing water exists. Submerged riffles are visible at upstream end of impoundment.	Leave sediment in place to naturally erode.
Middle (T-6 to T-9)	900	Volume = 4,600 cubic yards. Bedrock in channel is fully covered by sediment. Thickness is 2 to 3 feet. Main channel is fully covered.	Shallow water depth. Submerged riffles are just visible.	Remove sediment and reestablish the channel.
Lower (T-0 to T-6)	850	Volume = 11,000 cubic yards. Deep (3 to 6+ feet) deposits of fine sediment and organic material are smothering the full channel bed width.	Ponded	Remove sediment and reestablish the channel.

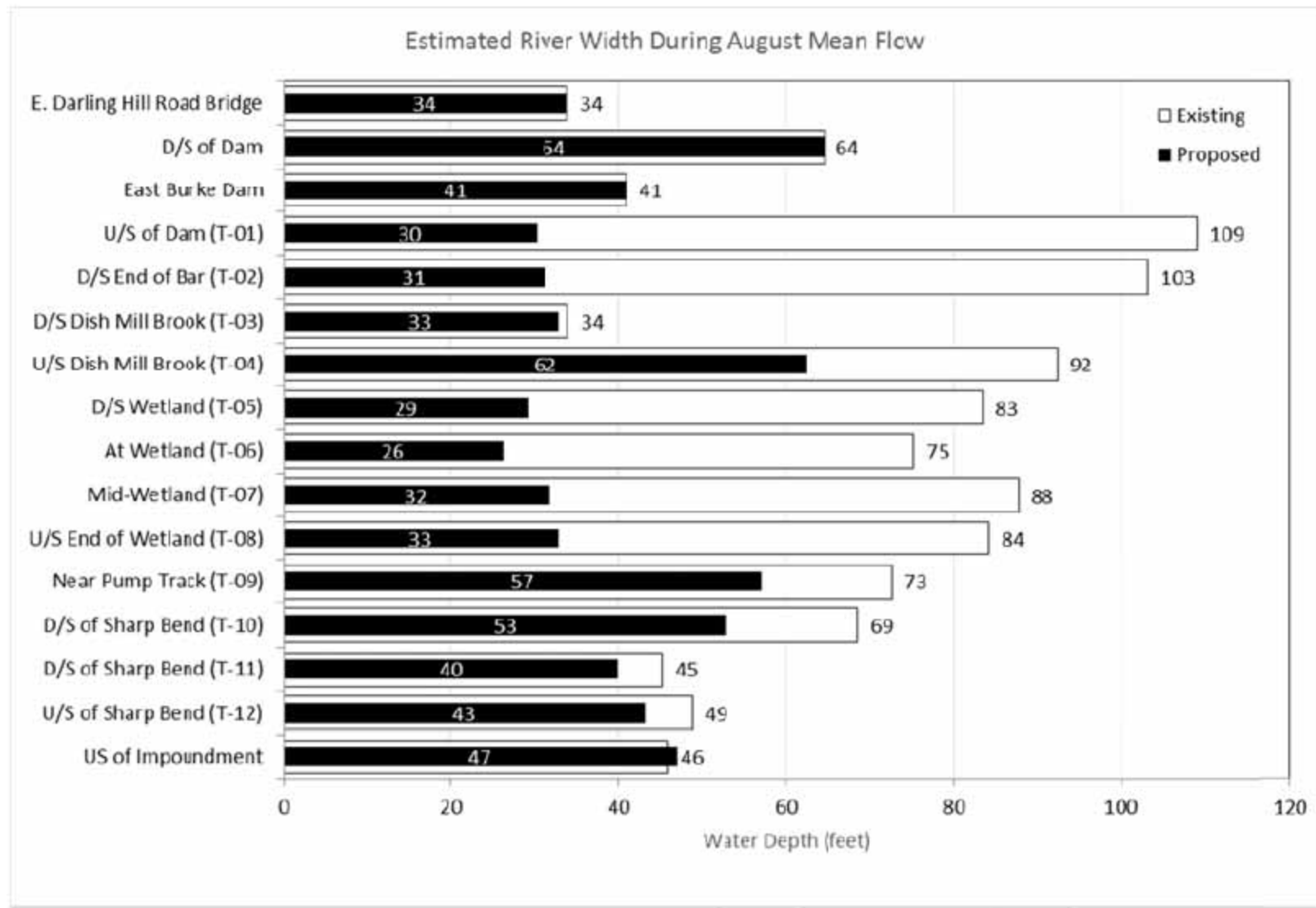
Hydraulics



Hydraulics



Hydraulics



Geomorphology

Location	Distance to Dam (feet)*	Bankfull (2-year flow)		Normal (mean annual flow)	
		Width (feet)	Depth (feet)	Width (feet)	Depth (feet)
Upstream of impoundment on first tight meander bend	2,800	61	4.5	33	1.5
Upstream end of impoundment	2,300	65	4	N/M	N/M
Between bridge and dam	74	70	4	32	1
East Burke Dam	0				
East Darling Hill Road Bridge opening	-170	45	N/M	N/M	N/M
220' downstream of bridge	-390	68	4	35	2
540' downstream of bridge	-700	68	4.8	41	1.8
Design	N/A	65	4	30	2

N/M = Not measured.

*Distance < 0 indicates downstream of dam.

Geomorphology

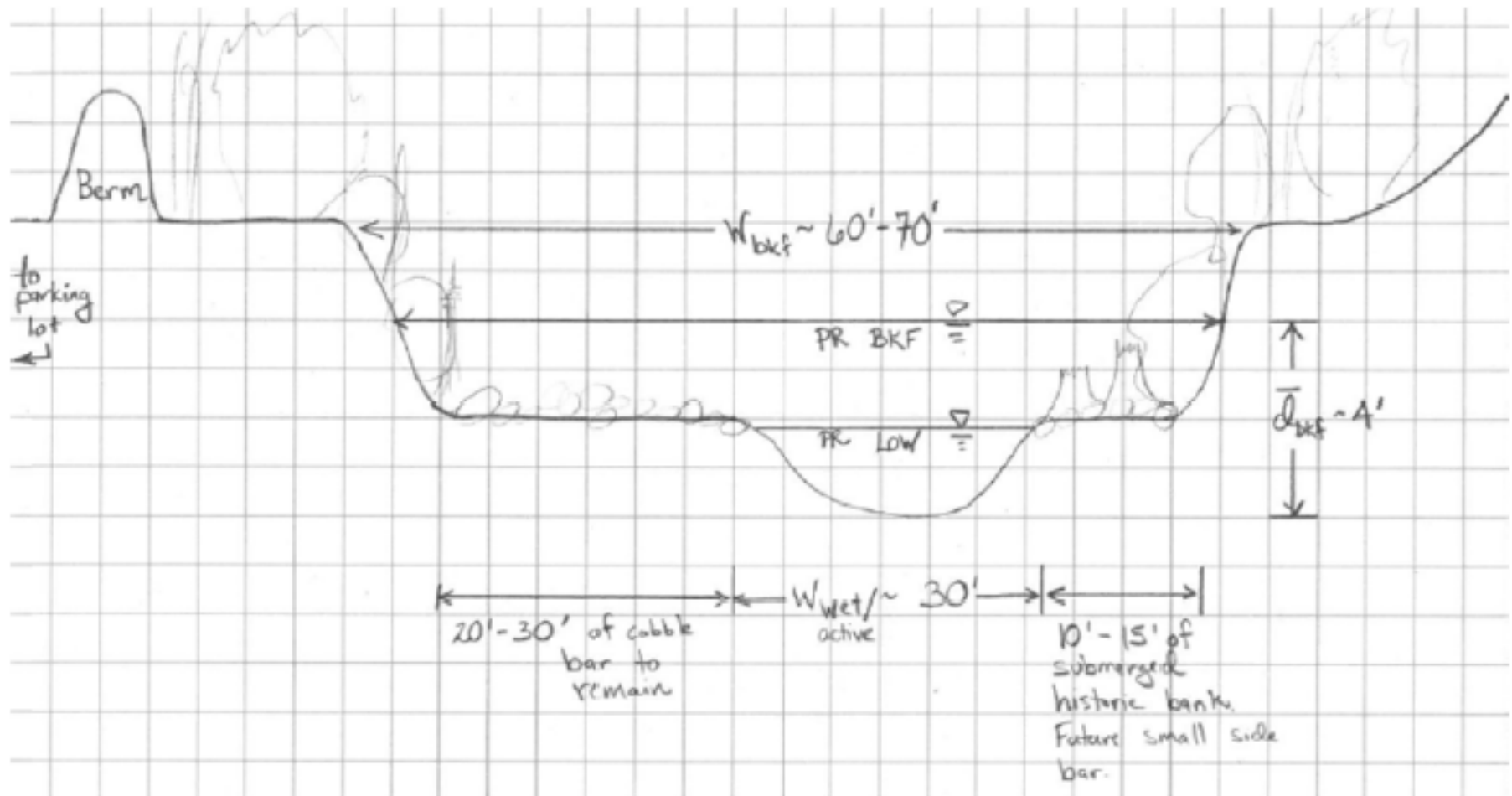
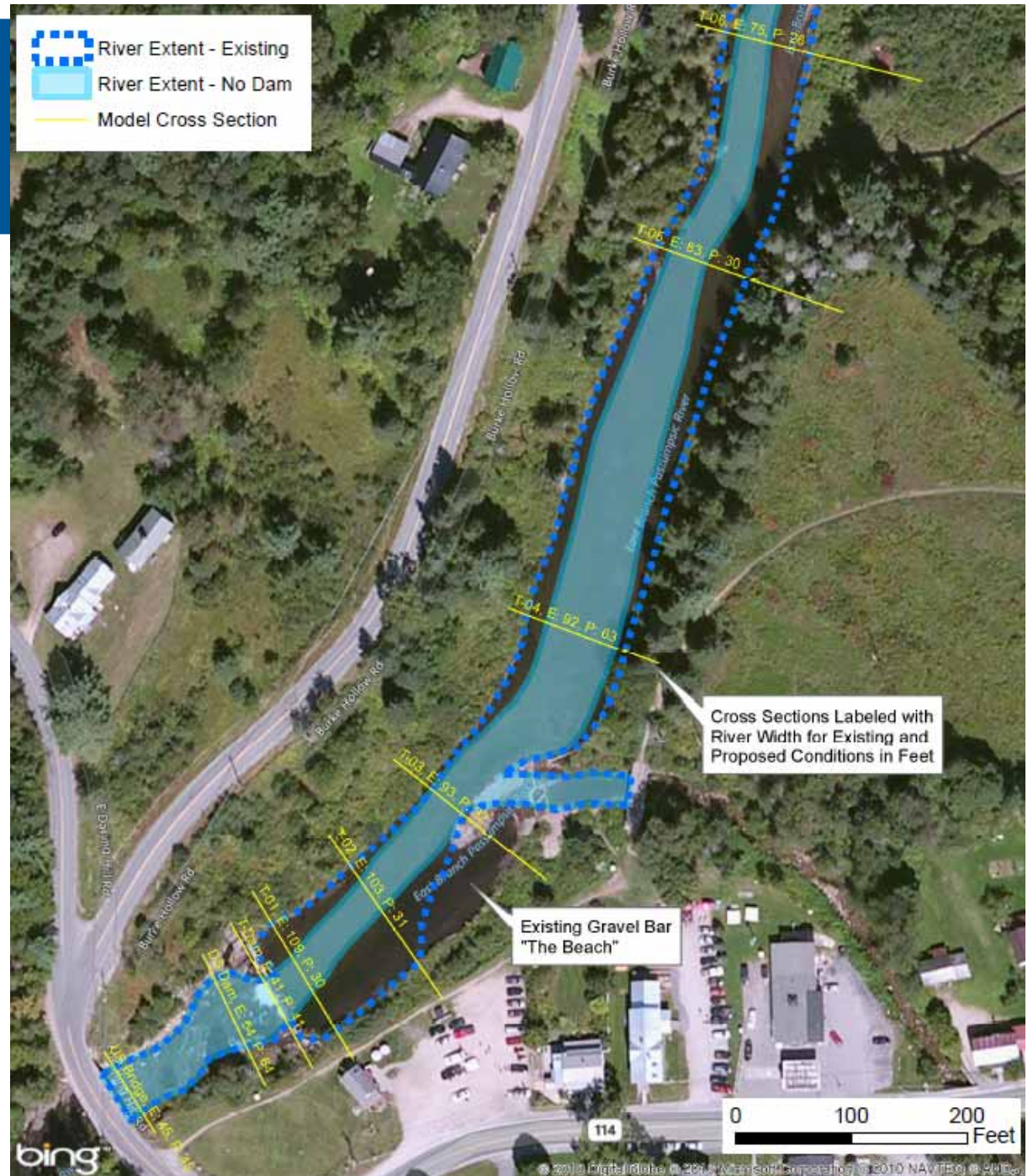


Photo-Simulations





Existing Conditions at Typical September Flow
Looking Upstream from East Darling Hill Road
East Burke Dam on the East Branch Passumpsic River

(Source: MMI, September 20, 2016)



Dam Removed – Low (Mean August) Flow
Looking Upstream from East Darling Hill Road
East Burke Dam on the East Branch Passumpsic River



Dam Removed – Average (Mean Annual) Flow
Looking Upstream from East Darling Hill Road
East Burke Dam on the East Branch Passumpsic River



Dam Removed – 2-Year Flood Flow
Looking Upstream from East Darling Hill Road
East Burke Dam on the East Branch Passumpsic River



**Existing Conditions at Typical September Flow
Looking Downstream from Mountain Bike / Snowmobile Bridge
East Burke Dam on the East Branch Passumpsic River**

(Source: MMI, September 20, 2016)



Dam Removed – Low (Mean August) Flow
Looking Downstream from Mountain Bike / Snowmobile Bridge
East Burke Dam on the East Branch Passumpsic River

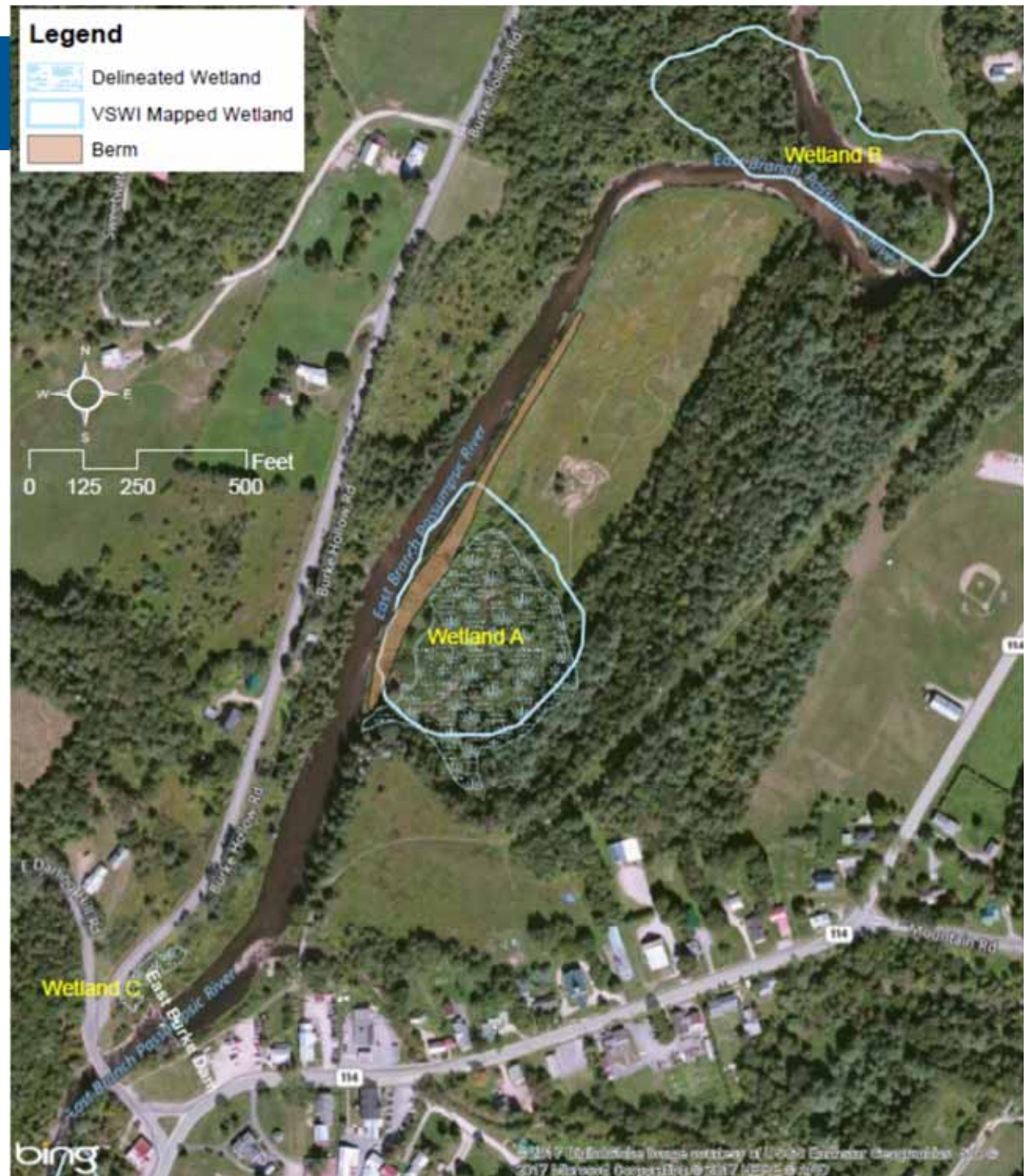


**Dam Removed – Average (Mean Annual) Flow
Looking Downstream from Mountain Bike / Snowmobile Bridge
East Burke Dam on the East Branch Passumpsic River**



Dam Removed – 2-Year Flood Flow
Looking Downstream from Mountain Bike / Snowmobile Bridge
East Burke Dam on the East Branch Passumpsic River

Wetlands



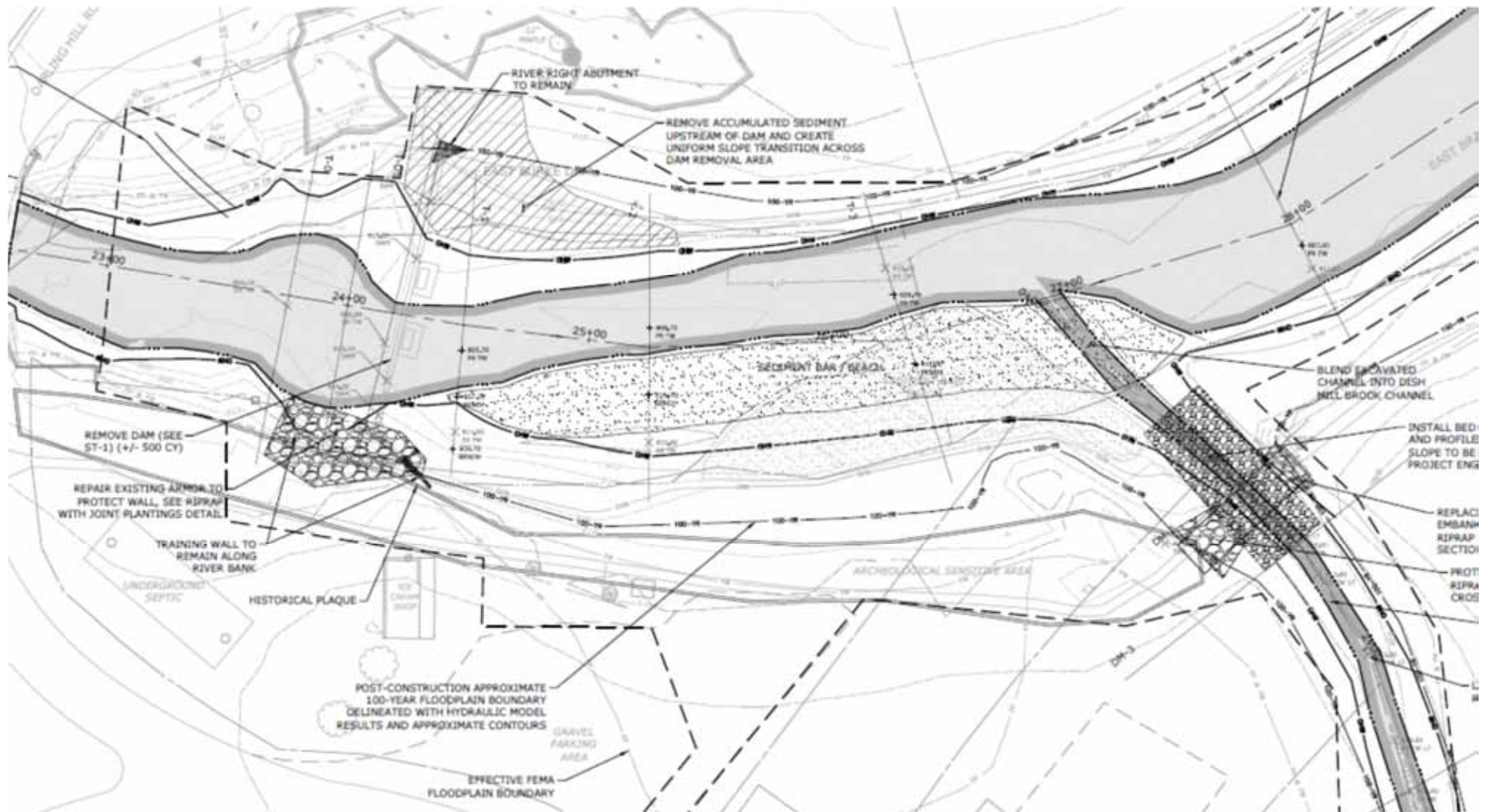
Wetlands



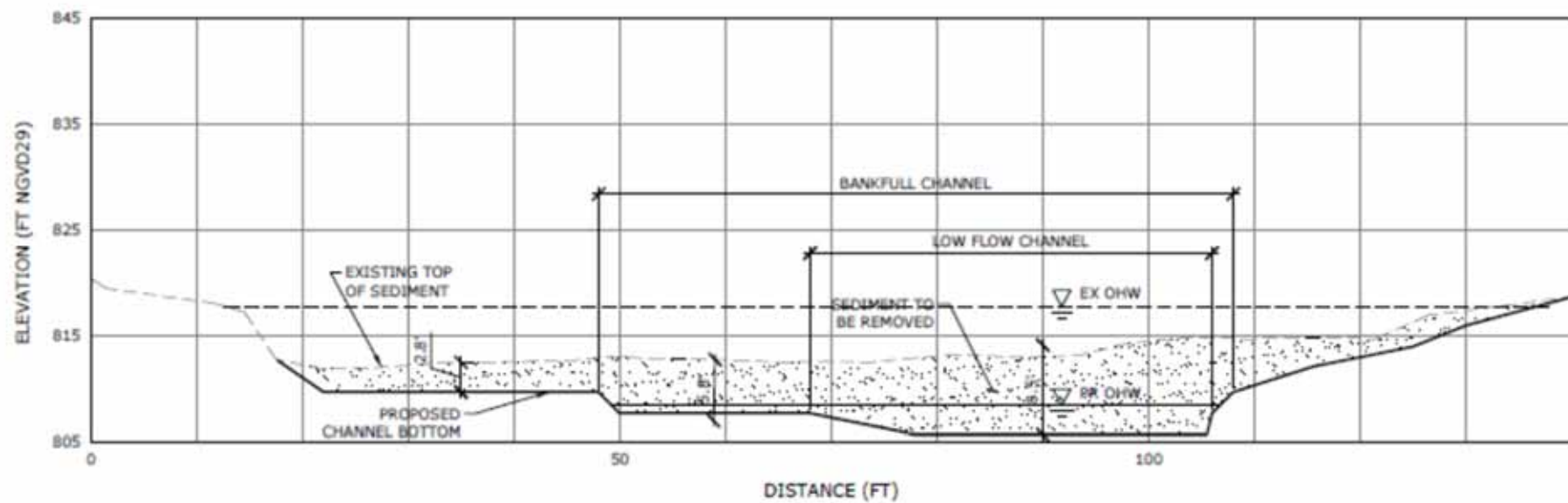
Wetlands



Design

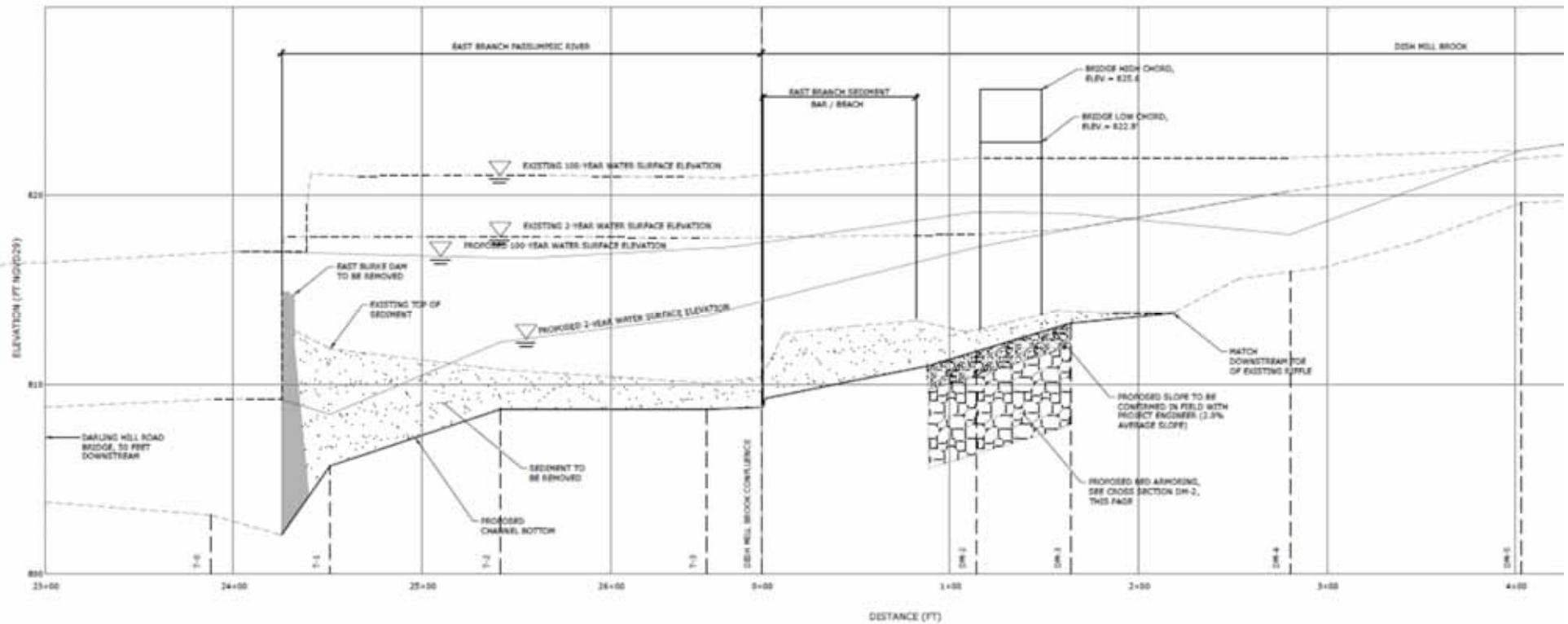


Design

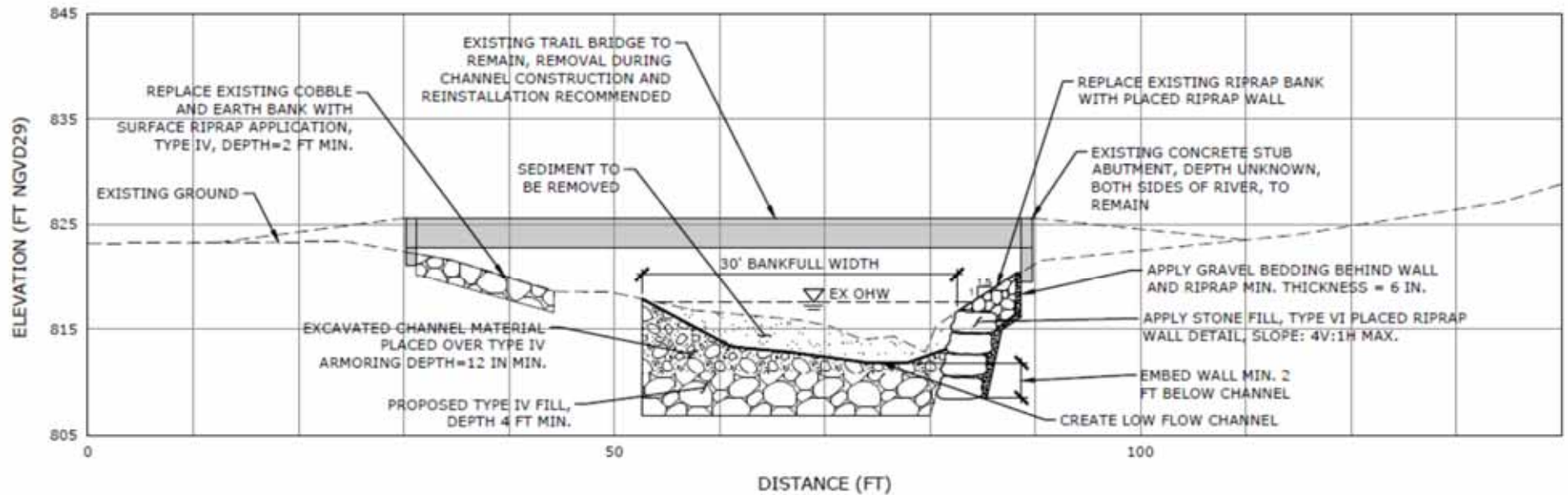


SECTION T-01

Design



Design



SECTION DM-2



10/10/2017



10/11/2017



10/12/2017



10/13/2017





10/19/2017



10/23/2017



10/27/2017



11/2/2017



11/6/2017



11/7/2017





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PRE

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Thank You

