

REPAIR OF THE UNIVERSALLY ACCESSIBLE NEW HAVEN RIVER FISHING PLATFORM AT EAGLE PARK

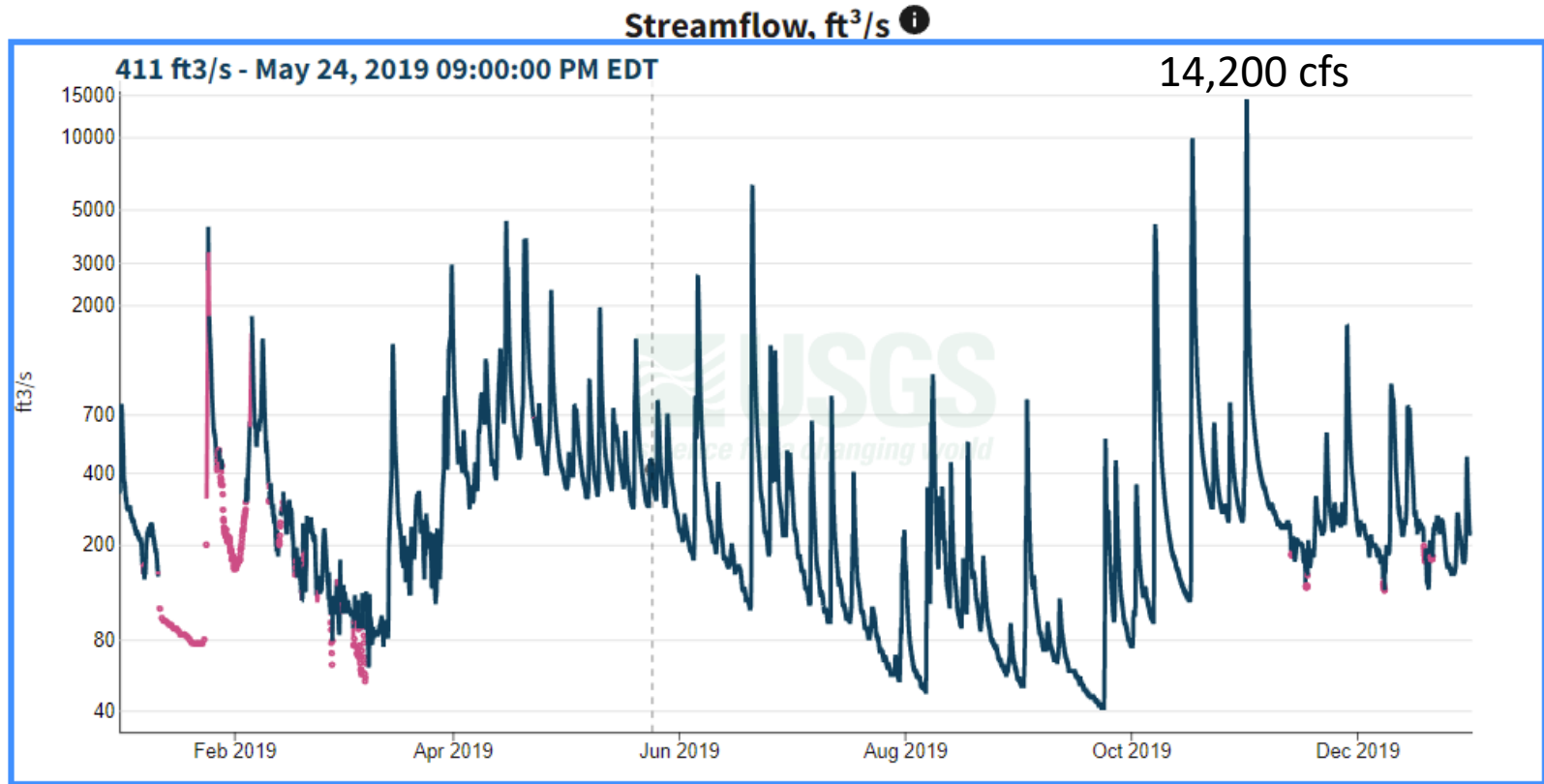
BRISTOL, VERMONT



global environmental and advisory solutions



HALLOWEEN 2019 FLOOD



(USGS, 2019)

USGS 04282525 New Haven @ Brooksville
Gage Drainage Area = 115 square miles

Site Drainage Area - Estimated with StreamStats = 47.9 square miles

HALLOWEEN 2019 FLOOD

Date	Time	Discharge at Gage (cfs)	Scaled Discharge at Site (cfs)
11/1/2019	7:15AM	14,200	6,377

(USGS, 2019)

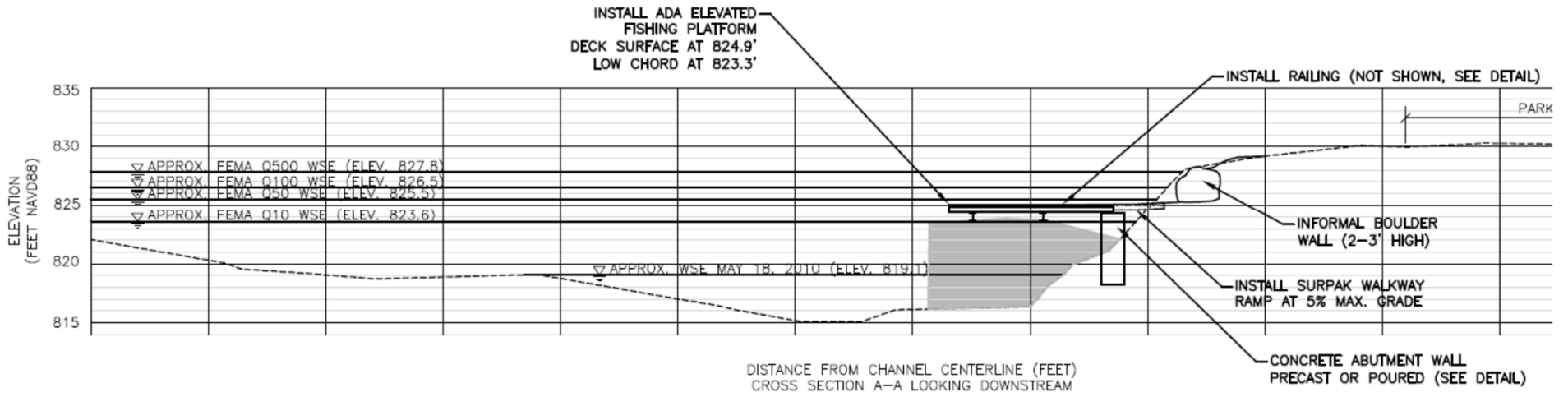
Recurrence	Statistic	Flow (cfs)
2	50-percent AEP flood	1,660
5	20-percent AEP flood	2,560
10	10-percent AEP flood	3,240
25	4-percent AEP flood	4,250
50	2-percent AEP flood	5,100
100	1-percent AEP flood	6,020
200	0.5-percent AEP flood	7,040
500	0.2-percent AEP flood	8,560

(StreamStats, Olson 2014)

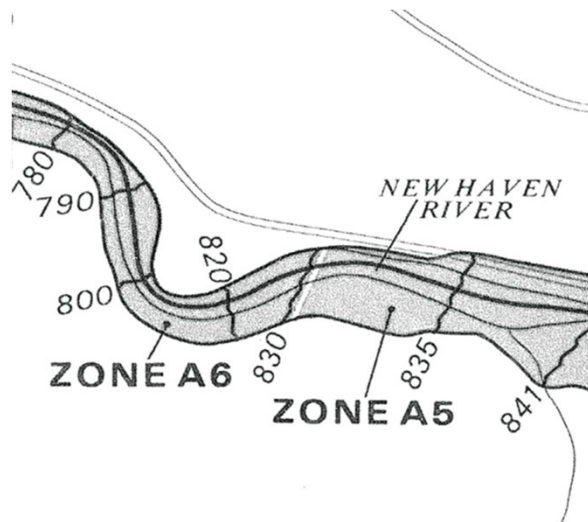
← Q100+

Estimated Q100 flood
level = 826.5 feet
NAVD88

FLOOD LEVELS



(MMI, 2010)



(FEMA, 1986)











(P. Dominico, 7/1/2017)

ALTERNATIVES ANALYSIS



Objectives

- Repair platform and walkway
- Make platform more flood resilient
- Make walkway more flood resilient
- Minimize future maintenance needs
- Simplify future flood recovery work
- Minimize construction cost

ALTERNATIVES ANALYSIS

Alternative		Objectives					Initial Opinion of Probable Construction Cost	Recommended for Implementation
ID	Description	Repair platform and walkway	Make platform more flood resilient	Make walkway more flood resilient	Minimize future maintenance needs	Simplify future flood recovery work		
0	Do nothing	NO	NO	NO	no	NO	\$0	No
1	Repair broken brackets on platform	YES	yes	N/A	yes	yes	\$5846.50	<u>Yes</u>
2	Retrofit railings to be removable	N/A	YES	N/A	yes	yes	\$8,000 to \$9,000	<u>Yes</u>
3	Retrofit railings to be foldable	N/A	yes	N/A	yes	yes	N/A	No
4	Brace boulders, wall, and platform together	N/A	yes	N/A	no	no	\$20,000 to \$25,000	No
5	Install concrete foundation with haunches for walkway	yes	N/A	yes	yes	no	\$85,000 to \$110,000	No
6	Install helical piles, pressure treated wood base, and matching trex treads	YES	N/A	YES	yes	YES	\$85,000 to \$110,000	No
7	Install helical piles, aluminum tubing base, and matching trex treads	YES	N/A	YES	yes	YES	\$90,000 to \$120,000	<u>Yes</u>

DESIGN SKETCHES

Re-level platform and repair damaged brackets.




DESIGN SKETCHES

Consider retrofitting the railings to be removable during predicted floods and spring thaw. Railings to be chained to eagle park sign and reinstalled following flood.



DESIGN SKETCHES



New trex boardwalk supported on helical piles with aluminum framing.

DESIGN SKETCHES

A photograph of a gravel walkway in a lush, green landscape. The walkway is bordered by large, dark rocks on the left side, which are partially covered in grass. To the right of the walkway is a dense thicket of green foliage. In the background, a river flows through a wooded area, with a metal railing visible. A white line is drawn across the gravel path, pointing to the text below.

Approximate limit of
new supported walkway
at past high flood level.

DESIGN SKETCHES



DESIGN SKETCHES

Fill edges with existing boulders and fill voids with gravel. Supplement existing material to create smooth transition.

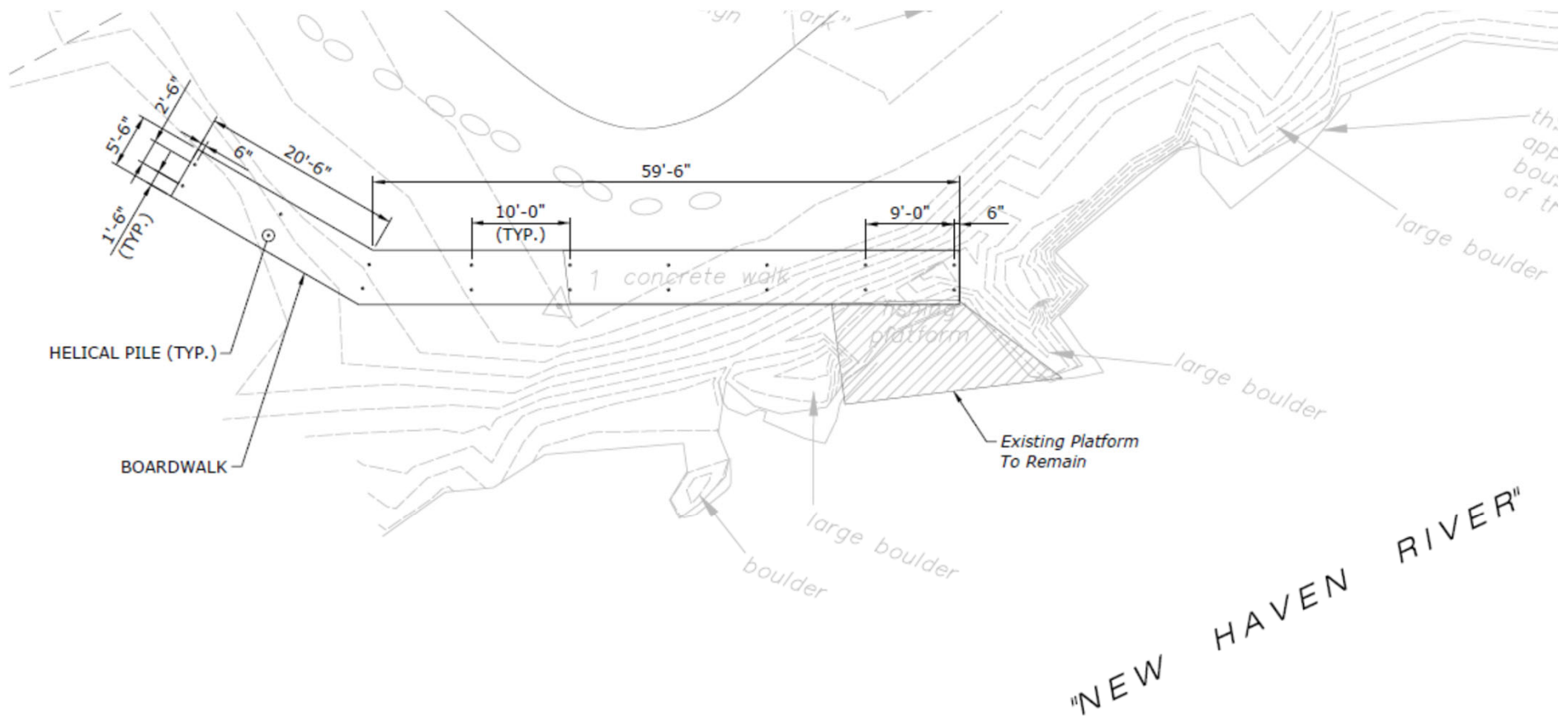


DESIGN SKETCHES

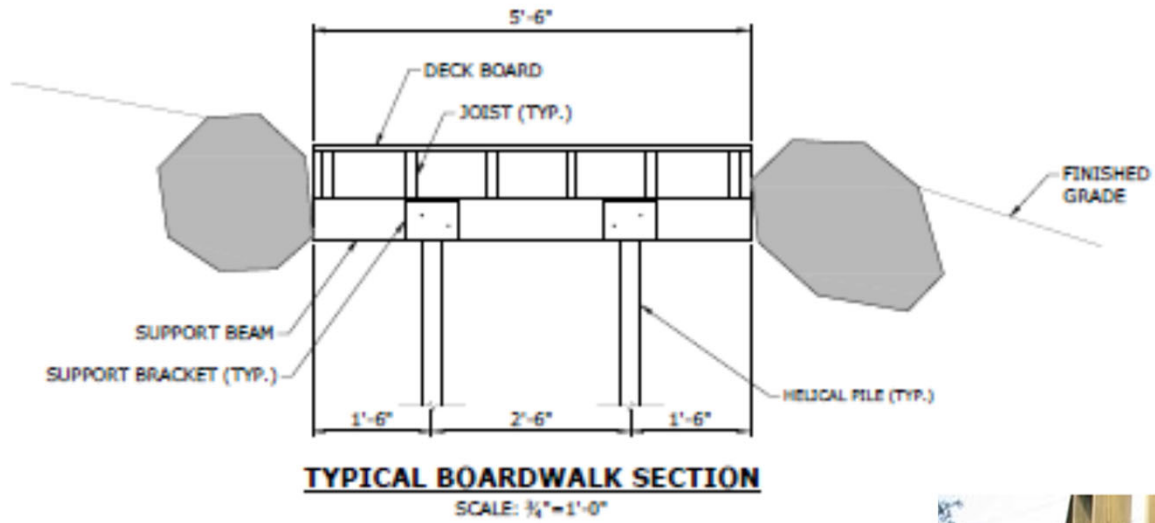
Adjust eroded boulders and fill voids with stone and gravel to reduce undermining on path during flooding.



DESIGN SKETCHES



DESIGN SKETCHES



DESIGN SKETCHES



THANK YOU



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And
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For
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Presented By:  Jury Chair
March 2013



Roy Schiff, PhD, PE
Principal Water Resources Engineer and Scientist

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