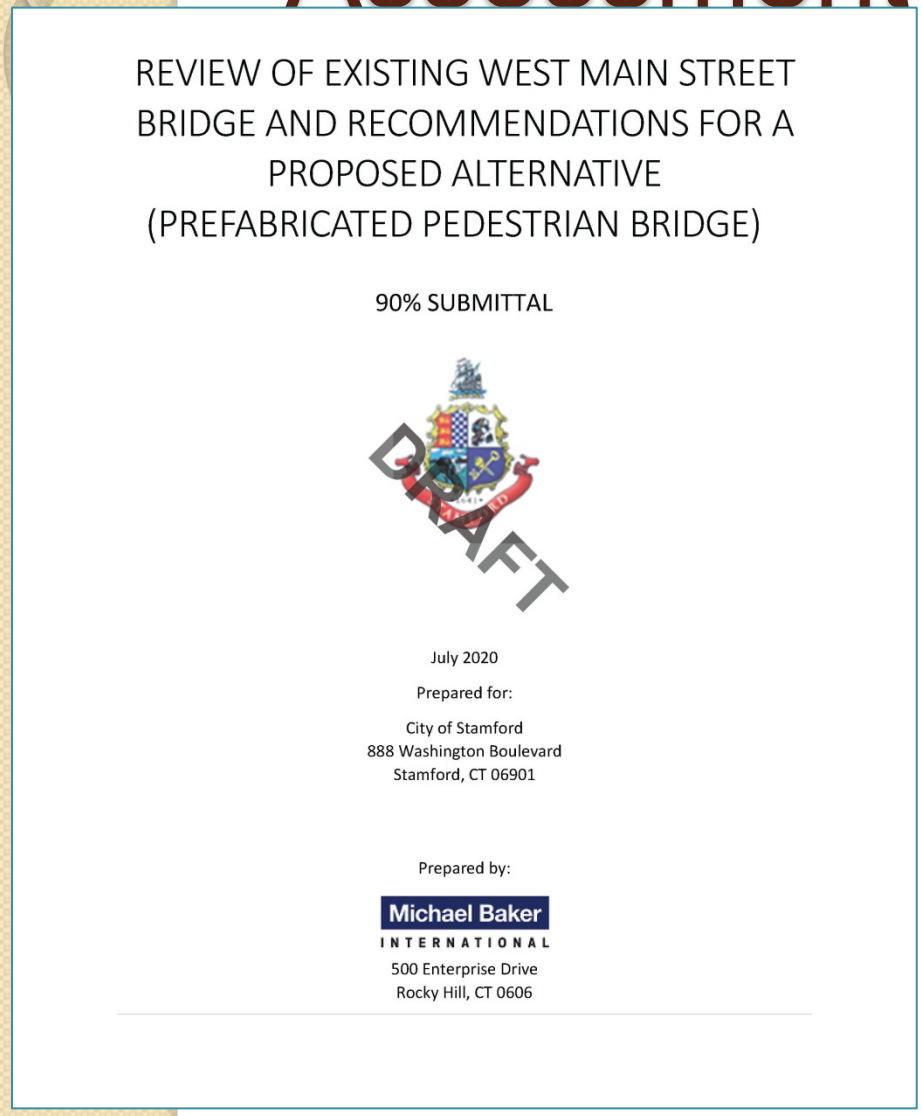
REVIEW OF WEST MAIN STREET PEDESTRIAN BRIDGE (POST-BID ASSESSMENT)

TO

BOARD OF REPRESENTATIVES
OPERATIONS COMMITTEE

12/30/2019 - Review Item Held
1/28/2020 - Report Made & Held by Committee 8-0-0
7/28/2020 – Progress Update

Michael Baker Int. Assessment


REVIEW OF EXISTING WEST MAIN STREET BRIDGE AND RECOMMENDATIONS FOR A PROPOSED ALTERNATIVE (PREFABRICATED PEDESTRIAN BRIDGE)

90% SUBMITTAL

DRAFT

July 2020

Prepared for:

City of Stamford
888 Washington Boulevard
Stamford, CT 06901

Prepared by:

Michael Baker INTERNATIONAL
500 Enterprise Drive
Rocky Hill, CT 0606

West Main Street Assessment following the receipt of 3 RFP proposal response:

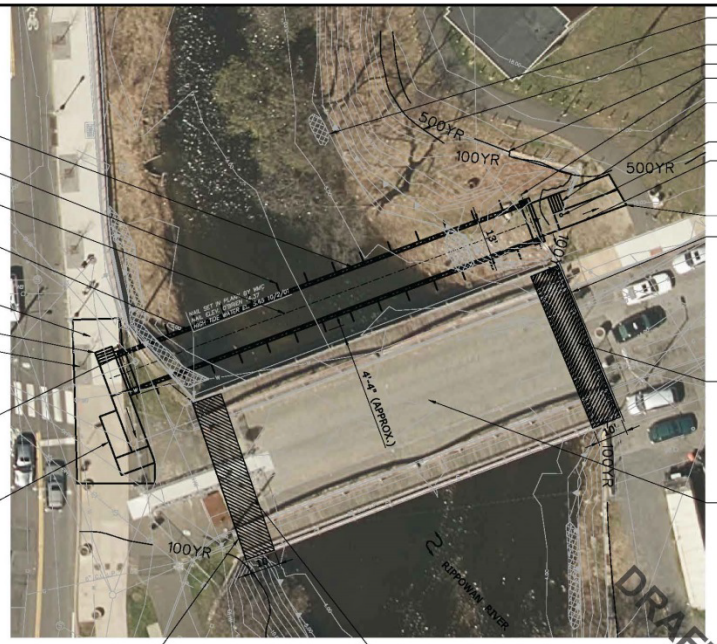
- Friday 4/11/20, Admin. selects Baker to perform assessment from 3 RFP responses submitted.
- 4/23/20 P.O. issued to M. Baker
- 5/6/20 M. Baker conducts site assessment in field
- 5/11/20 Legal changes PO indemnity language and send to M. Baker
- M. Baker submits 60% report June 2020
- M. Baker submits 90% draft report

Michael Baker Scope of Work

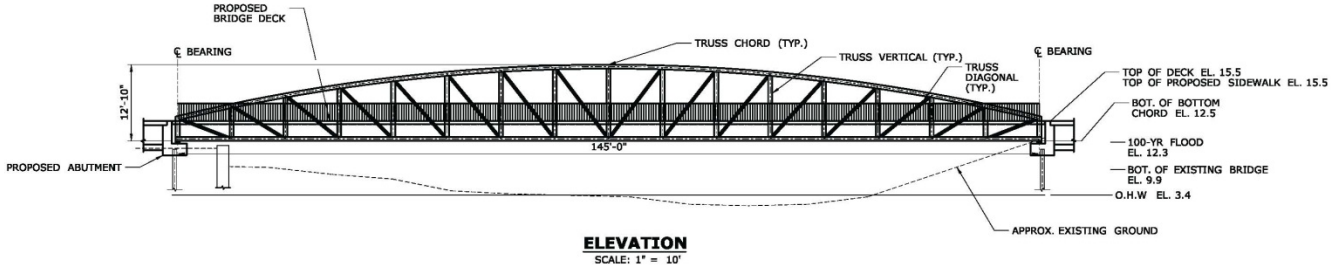
1) Review of Existing Documents and Site Visit
2) Alternative Analysis
3) Bid Factors Analysis (recap Appendix C)
4) Permitting
5) Cost Estimate & Schedule

Preferred Prefabricated Pedestrian Bridge Alternative

Figure 4: Rendering of preferred alternative



PLAN
SCALE: 1" = 20'



ELEVATION
SCALE: 1" = 10'

NOTES:

1. PROPOSED BRIDGE TO BE A STEEL PREFABRICATED BOWSTRING TRUSS. FINAL DESIGN OF TRUSS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND FABRICATOR.
2. EXISTING BRIDGE TO REMAIN FOR DEMOLITION BY THE CITY OF STAMFORD AT A LATER DATE EXCEPT FOR AREAS INDICATED.
3. PROPOSED SELECTIVE DEMOILITION OF EXISITNG BRIDGE TO BE LIMITED TO DECK REMOVAL NECESSARY TO PREVENT FURTHER PEDESTRIAN USE.
4. PROPOSED BRIDGE TO BE DESIGN FOR THE ACCEPTANCE OF FUTURE UTILITY RELOCATIONS. NO UTILITY RELOCATIONS ARE INCLUDED IN THIS CONTRACT. ANTICIPATED UTILITIES ARE: (1) 12" WATER MAIN, (1) 6" GAS MAIN, (1) 6x6 DUCT BANK.
5. PROPOSED BRIDGE MEMBERS SHALL BE WEATHERING STEEL OF THE FOLLOWING GRADES:
   HSS: ASTM 847
   ALL OTHER STRUCTURAL STEEL: ASTM A709-50W.
6. ELEVATIONS ARE BASED ON NAVD 88. ELEVATIONS SHOWN ARE TAKEN FROM SURVEY MAP DATED 10/16/2018 BY ROCCO V. D'ANDREA, INC.

NOT FOR CONSTRUCTION

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 7/2/2020

DESIGNER/DRAFTER: J. McKENNA
CHECKED BY: D. WHITTAKER

Filename: ...\SB..MSH..BR02475..15-339..GPE..Alt LocatIone..with ramps

SIGNATURE/ BLOCK:

Michael Baker INTERNATIONAL

PROJECT TITLE: **WEST MAIN STREET PEDESTRIAN BRIDGE STUDY REPORT**

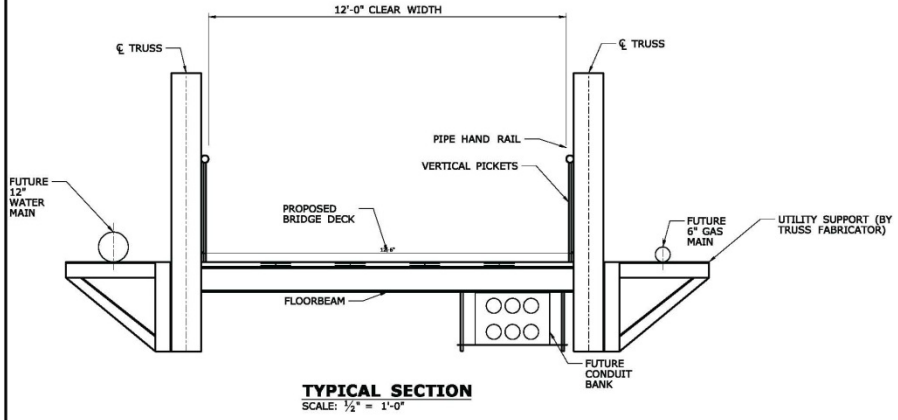
TOWN: **STAMFORD**

DRAWING TITLE: **ALT 1 - GENERAL PLAN AND ELEVATION**

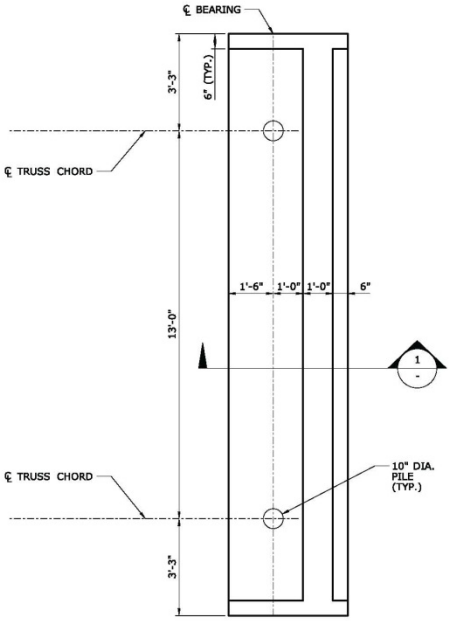
PROJECT NO. -

DRAWING NO. **S-01**

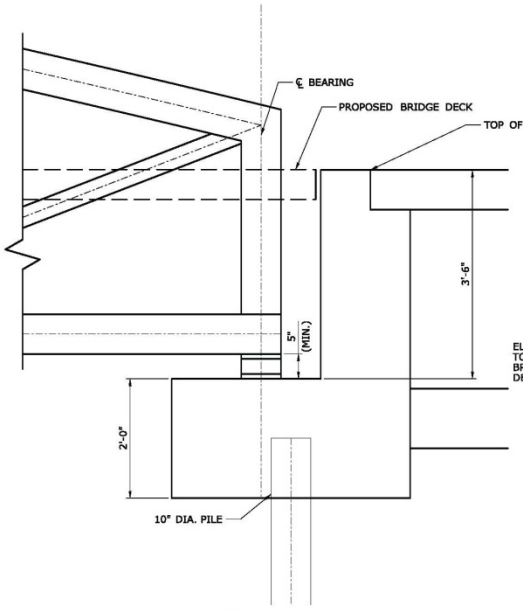
SHEET NO.



TYPICAL SECTION
SCALE: ½" = 1'-0"



TYPICAL ABUTMENT PLAN
SCALE: ½" = 1'-0"



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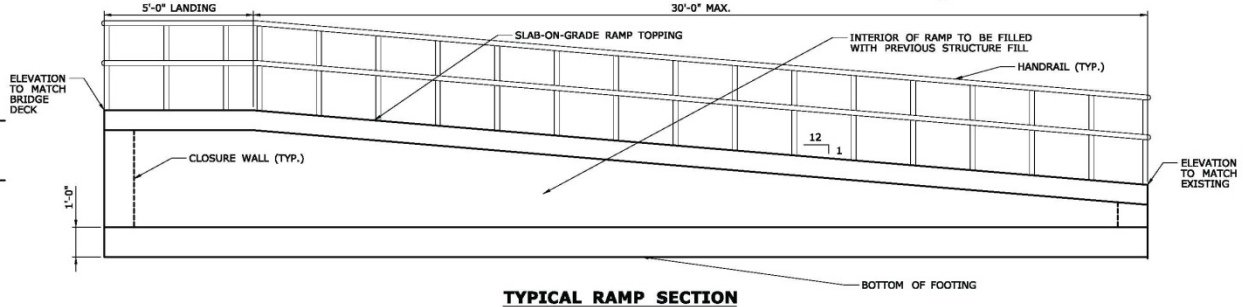
1 - SECTION
SCALE: ½" = 1'-0"



TYPICAL RAMP SECTION
SCALE: ½" = 1'-0"
NOTE: MAX ALLOWABLE SLOPE SHOWN

NOT FOR CONSTRUCTION

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 7/2/2020

DESIGNER/DRAFTER: J. McKENNA
CHECKED BY: D. WHITTAKER

Filename: ...\S0_MSH_MAIN STREET PED BRIDGE_XSECTION

SIGNATURE/BLOCK:
Michael Baker INTERNATIONAL

PROJECT TITLE:
WEST MAIN STREET PEDESTRIAN BRIDGE STUDY REPORT

TOWN: **STAMFORD**

DRAWING TITLE: **TYPICAL SECTION AND ABUTMENT**

PROJECT NO. -

DRAWING NO. **S-03**

SHEET NO.

Approach Ramps & Sidewalk

The 100-Year Floodplain is identified in previous reports as Elevation 12.3’. Truss manufacturers have indicated an approximate dimension of 3.0’ is required from the bottom of the low chord on the truss to the top of deck level to accommodate structural elements of the truss. Assuming the truss is installed with the lowest structural element above the 100-Year Floodplain elevation, the top of deck will be located at approximately elevation 15.5’.

Existing grade on both the East and West abutments varies between approximate Elevation 13.0’ and Elevation 14.0’. This will require access stairs and ramps from existing grade to the elevation of the deck at both abutments. The Baker Report considers stairs and ramps of between 1.5’ and 2.5’ high to access the bridge. Ramps and stairs shall be designed for accessibility and adhere to ADA guidelines.

Hydraulic Modeling

TABLE 1

Hydraulic Modeling Results – Existing vs. Proposed with the Main Street Bridge Removed

Cross Section ID	Distance from Bridge Opening^	100-year Water Surface Elevation (ft NAVD88)		
		Existing Conditions	Proposed Conditions	Difference (feet)
3790	-252 feet	12.56	11.96	-0.60
3585	-82 feet	12.01	11.20	-0.81
3536	- 5 feet	12.23	11.49	-0.74
3510	Main Street Bridge			
3484	32 feet	11.49	11.50	+0.01
3400	99 feet	11.13	11.13	0.00
3365	158 feet	10.62	10.62	0.00

^ - A negative distance is measured in the upstream direction from the upstream bridge opening. A positive distance is measured in the downstream direction from the downstream bridge opening.

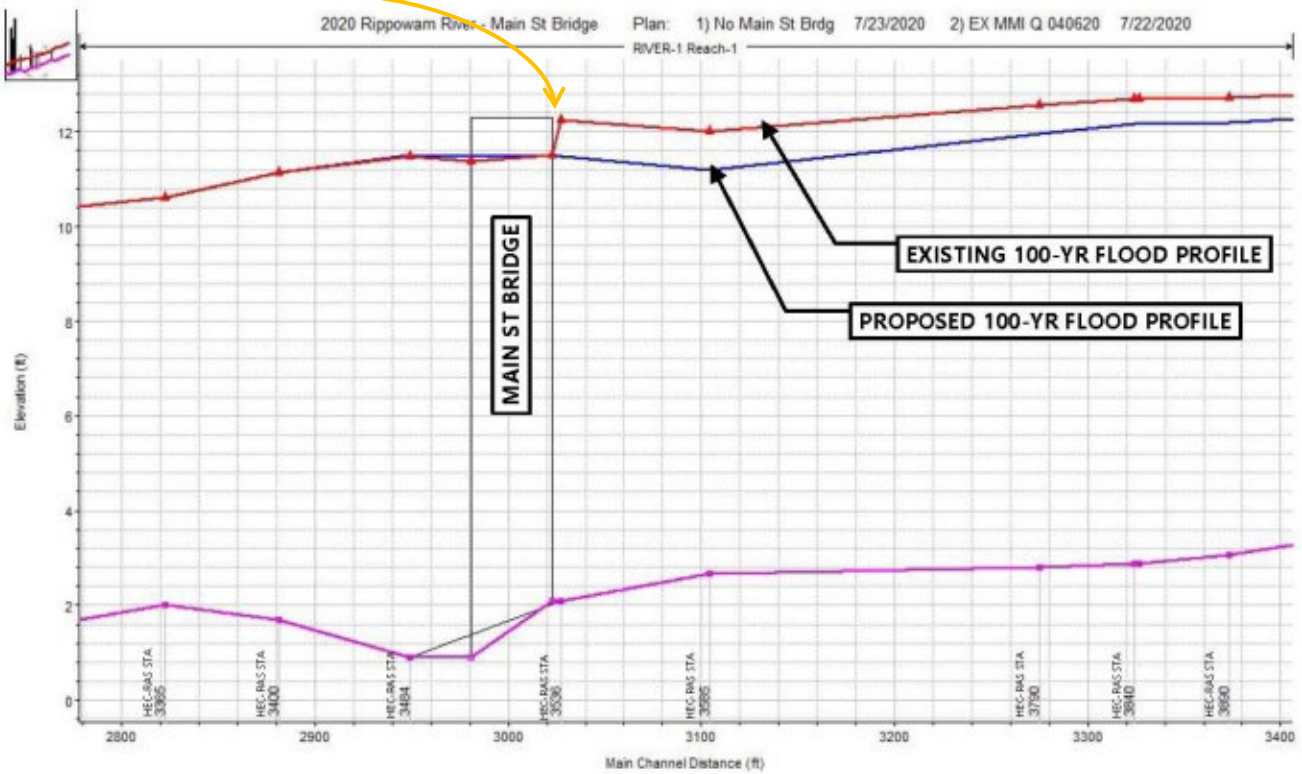
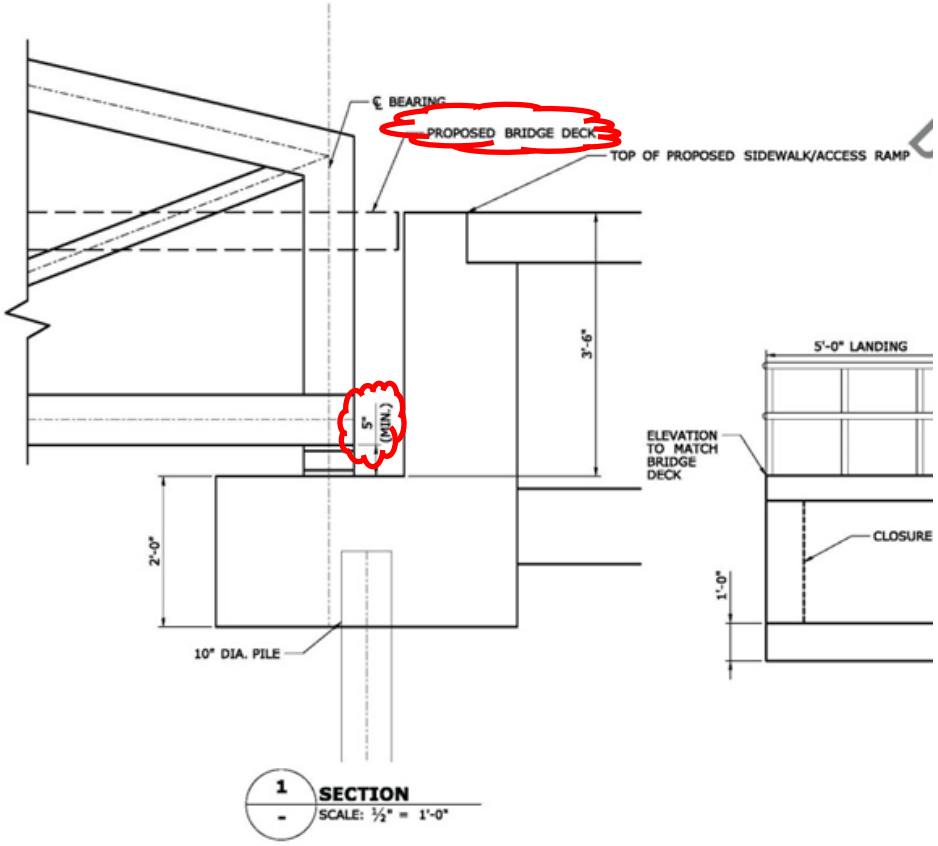


Figure 1: Existing versus Proposed Flood Profiles for the Base (100-year) Flood

Depth of Prefab Structure

For a 10-20% premium, the prefabricator may be able to reduce the depth of the standard superstructure by approx. 6".



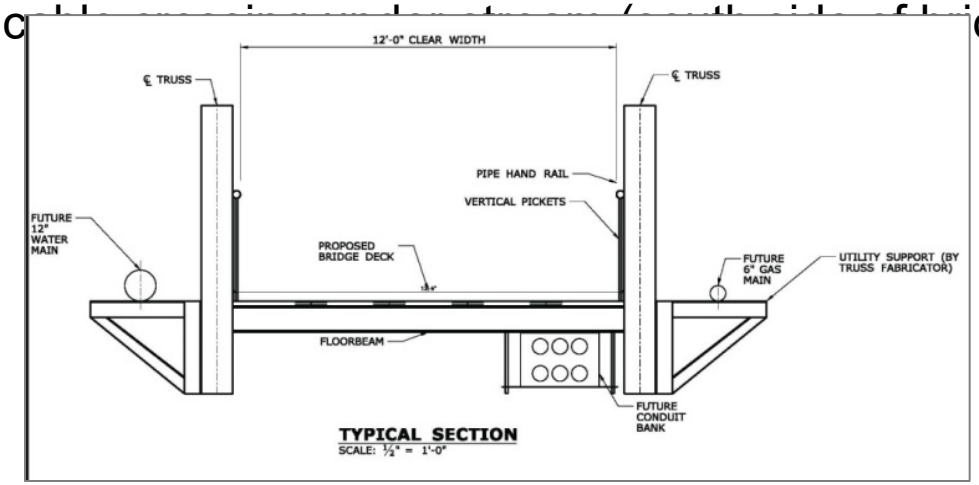
Utilities

The following utilities are on the existing bridge and need to be relocated

- Gas
- Electric
- Telephone

The following utilities are within the river channel.

- Water is under the stream but is not active. Aquarian wants to place new water line on new bridge.
- SNET c dge)



City notified the utilities on September 14, 2018. Our office has also reminded the utilities over the phone on a number of occasions since that meeting.


Cable Crossing
Do Not Anchor
Before Dredging Call 1-800-922-4455
SNET
07/27/2020 13:42

Schedule and Estimate

8. Project Schedule and Estimate

A project schedule and estimate for the preferred alternative were prepared. The project schedule consists of engineering tasks, permitting task, and an assumed construction schedule. The following durations are assumed for this project:

- Final Design: 4.5 Months
- Permitting Review & Approval: 6.5 Months (concurrent with Design and Bid Letting)
- Bid Letting: 4.5 Months
- Construction: 9.0 Months
- Total duration of the project: 18.0 Months

A construction estimate was prepared based on the proposed preferred alternative. The following construction costs are estimated for this project:

- Construction: $1.66 million
- CEI: $0.08 million
- Final Design Engineering: $0.16 million
- Contingency: $0.16 million
- Total Project Cost: $2.07 million

Additional information on the project schedule and estimate can be found in Appendix D.

Funding sources: DEEP Grant to Mill River $2M – WMC Design for existing rehab $191,128 – M. Baker Assessment $25K = $1,783,872

Value engineering items

- Replace concrete deck with a timber deck. Reduces service life of deck structure.
- Reduce width of pedestrian bridge from 12' wide to 10' wide. Reduce load carrying capability from 20 tons to 10 tons.
- Reduce ramping structures. Requires lowering of 100 year flood stage.
- Eliminate selective demo of existing bridge deck on east and west sides. Utilize fencing.

Conclusion

Still more works to finalize the Baker study:

- Minimize ramping
- Value engineering


Q&A