

FILE NAME = 04-FEB-2021 09:04
DATE/TIME = 04-FEB-2021 09:04
USER = rhamhardt

PROJECT MANAGER

CHECK

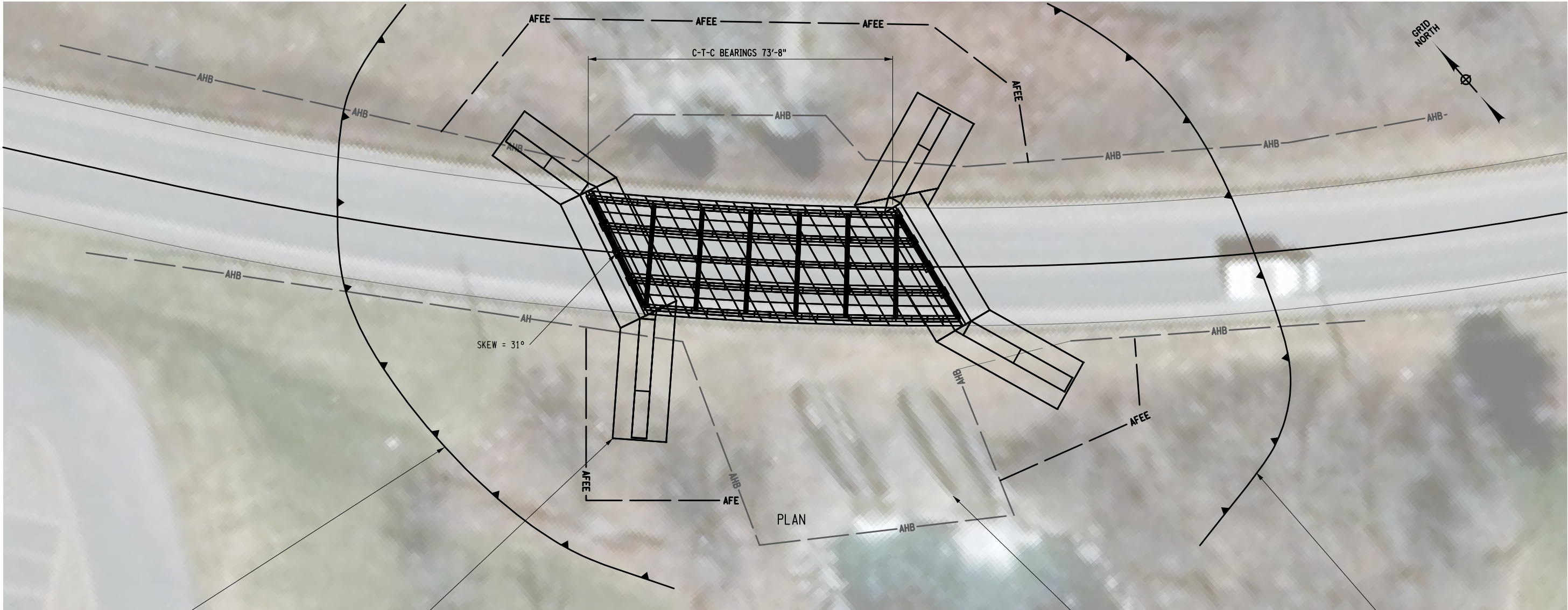
DRAFTING

CHECK

DESIGN

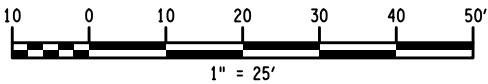
JOB MANAGER

DESIGN SUPERVISOR



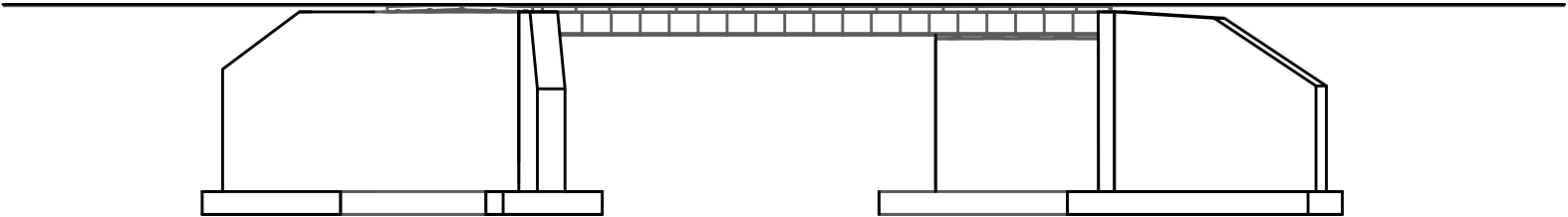
APPROXIMATE CUT LINE FOR LAYBACK

PROPOSED CURVED STEEL MULTI-GIRDER BRIDGE



EXISTING DOUBLE BARREL CULVERT

APPROXIMATE CUT LINE FOR LAYBACK



ELEVATION

- NOTES:
1. CURRENT ROADWAY = 10' LANES 3' SHOULDERS BOTH LANES
 2. FREQUENT DAMMING DUE TO HUNG DEBRIS, SCOUR, AND HYDRAULIC VULNERABILITY NOTED IN LAST INSPECTION REPORT.
 3. MODEL SHOWN IS TO SCALE BUT IS FOR CONCEPTUAL PURPOSES ONLY EXACT DIMENSIONS TO BE DETERMINED DURING FINAL DESIGN
 4. EXACT BRIDGE LOCATION, SUBSTRUCTURE TYPE, AND SUPERSTRUCTURE TYPE TO BE DETERMINED DURING FINAL DESIGN
 5. PROPOSED BRIDGE LOCATION IS IN A HORIZONTAL CURVE, CURVED GIRDER RADIUS IS APPROXIMATELY 850'
 6. ROW LIMITS ARE APPROXIMATE, ADDITIONAL ROW AQUISITION IS ANTICIPATED WITH THIS PROPOSED SOLUTION
 7. APPROACH SLABS AND NECESSARY ROADWAY RECONSTRUCTION NOT SHOWN

THIS DRAWING IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE DRAWING CONTENTS ARE NOT AN APPROVED FINAL CONSTRUCTION CONTRACT DOCUMENT.

COUNTY:

REGION:

PIN

BRIDGES

CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

CONTRACT NUMBER

DRAWING NO.
SHEET NO.



U.S. CUSTOMARY UNITS **PRELIMINARY COST ESTIMATE WORKSHEET (NEW AND REPLACEMENT BRIDGES)**

P.I.N.
BRIDGE

Fire House Road

B.I.N.

2205660

PS&E

Reall Creek

3/15/19

Anticipated Year of Construction

2019

OVER

NUMBER of SPANS:

1

SPAN ARRANGEMENT

74

ABUTMENT TYPE

semi-integral

SKEW

31.00

DEG

CURVED GIRDERS

Yes

RADIUS

850.00

ft

SUPERSTRUCTURE:

steel curved

Alternate Design:

Timber

☐

Inverset

☐

Slab

☐

WZTC By:

off site detour

PREPARED BY:

M. Fuller

DATE:

03/29/18

Shoulder Break Area Calculation Data * See Shoulder Break Area Diagram for dimensions.

<div>31</div> <div>Average Skew</div> <div>(Degrees)</div>	<div>20</div> <div>* Over Roadway</div> <div>Height (ft)</div> <div>(From Roadway to to bottom of culvert)</div>	<div>55</div> <div>* Bottom Angle</div> <div>Length (ft)</div> <div>(Length of barrel for culvert)</div>	<div>30</div> <div>Bridge</div> <div>Width (ft)</div> <div>(Width of opening for culvert)</div>	<div>4,725</div> <div>* Shoulder Break Area</div> <div>(Square Feet)</div>
1A.) Base: (\$ / ft ² SB AREA)	\$115	DOT Regions 1 - 7 & 9 =\$115 steel, Multi-Span Add \$15; Regions 8 & 10 = \$173, Multi-Span Add \$27. DOT Regions 1 - 7 & 9 =\$129 adjacent concrete box, Multi-Span Add \$31; Regions 8 & 10 = \$149, Multi-Span Add \$43. DOT Regions 1 - 7 & 9 =\$165 next beam or spread box, Multi-Span Add \$31; Regions 8 & 10 = \$190, Multi-Span Add \$43. DOT Regions 1 - 7 & 9 =\$117 concrete I-beam or N.E. bulb-T, Multi-Span Add \$31; Regions 8 & 10 = \$135,Multi-Span Add \$43. RR Bridge = \$317. THIS IS NOT A BID PRICE PER SHOULDER BREAK AND SHOULD NOT BE THE SOLE FACTOR IN DETERMINING TYPE OF BRIDGE Notes: 1) Base costs are based on single span bridge designs with integral abutments with average pile lengths. 2) RR Bridge cost estimates based on a limited amount of in house data.		
1B.) Culverts & three sided structures with horizontal openings	\$0	Culvert - DOT Regions 1 - 7 & 9 = \$166 Regions 8 & 10 = \$249; 3 Sided Frame - DOT Regions 1 - 7 & 9 = \$176 Regions 8 & 10 = \$264. <i>NO "BASE BRIDGE" COST SHOULD BE ENTERED IN SECTION 1 IF USING THESE COSTS.</i>		
2.) Foundations:	\$6	Spread footing, add \$14. All abutment types footings on rock subtract \$20. 3 sided frame average pile length add \$3; Poor soil or pile length > 39 ft add \$17. Integral abutments average pile length add \$10; Poor soil or pile length > 39 ft add \$20. All other abutments & piers with average pile length add \$6; Poor soil or pile length > 39 ft add \$31.		
3.) Abutments:	\$0	Abutments 20 to 30 ft add \$8. MSE Walls supporting CIP stub abutments are addressed as contingecies below.		
4.) Cofferdams: Water depths based on bottom of footing Divide cost on right by shoulder break ft ²	\$1	Costs based on bridges up to 49 ft wide. Minor Water Diversion (Sand Bags) \$3500 per bridge. Abutments in 4 ft to 6 ft of water \$6,000 per unit. Substructure in 5 ft to 8 ft water \$15,000; 8 ft to 12 ft of water \$24,000 ; 12 ft to 14 ft of water \$26,000. Canal Pier Protection Cofferdam System \$145,000 per unit (Max Water Height Retained to 13 feet). Tremie Seals And Associated Forms \$200,000 per unit.		
5.) Span Adjustment:	\$4	Each foot > average span length of 66 feet add - Concrete 0.31 or Steel 0.46 \$/ Ft (Ex. 138 ft Conc. -> 72Ft *0.31\$/Ft). Thru Truss add \$226. Use the span adjustment with trusses also.		
6.) Curved Girders:	\$16	1601 ft radius or less add \$16; 1601 ft to 2499 ft add \$3; 2499 ft to 3001 ft add \$3.		
7.) Long Wing Walls:	\$16	For total combined wingwall length > 60 ft calculate adjustment using the LongWingWallCosts worksheet.		
8.) Stage Construct.:	\$0	Minor wingwall \$12; WZTC On superstructure staged with sheet piling or GRES add \$15. WZTC On superstructure staged with H-Pile wall lagging add \$75. Down state multiply factor by 1.5.		
9.) Miscellaneous:	\$45	Bridge width less than 30 ft add \$50; Paint or galvanize steel girders add \$45; Paint steel trusses add \$50. Protection walls other than for staging.		
TOTAL BRIDGE COST \$ / ft ² SB AREA =	\$204			

Shoulder Break Area (ft ²)	4,725	X	Cost / ft ²	\$204	=	BRIDGE ONLY COST	\$961,753
Contingencies:	Remove existing bridge						
	Work Zone Traffic Control (WZTC)						
	Detour structure						
	Channel work						
	Slope protection, other than for channel work						
	Utilities						
	Aesthetics (e.g. Form liners, decorative railing, lights & stone facades)						
	MSE for abutments. Specified "Plain" \$53, "As Shown" \$102 per ft ² of MSE						
	Overhead (e.g.Construction office, computer software & hardware, office supplies)						
	Input as decimal for anticipated year of letting:						
Simple Inflation Rate For SFY:	13/14 to 14/15 - 3.0%; 14/15 to 15/16 - 3.0%; 15/16 to 16/17 - 3.0%;						-0.060
	TOTAL BRIDGE SHARE (Includes additional 4 % for mobilization)				= \$		940,210



PART C: PROJECT ESTIMATE

*Input values for the following project costs. A detailed project estimate should be attached in PART G of the application.

Description	Costs
Construction	\$1,040,000
Field Change Payment, 5% and Mobilization, 4%	\$93,600
Construction Inspection	\$80,000
Right of Way	\$0
Design (Preliminary & Final)	\$150,000
Total Project Cost	\$1,363,600

Other Funds Already Secured (This is not the Local Match. Local Match is calculated below)	
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Description of
Other Funds:

Bridge Projects

Total BridgeNY Funds Requested (95%)	\$1,295,420
Total Local Match (5%)	\$68,180

Culvert Projects

Total BridgeNY Funds Requested (100%)	\$1,363,600
Total Local Match (0%)	\$0

Suggested values for Design, Right of Way, and Construction Inspection costs are provided as a percentage of the total construction cost. These values are provided for reference only. The Sponsor is responsible for all costs input into the application. There are situations where costs may be more or less than the ranges given. Const. Cost in table includes 5% field change payment and 4% mobilization.

	Low Range (% of Const. Cost)	High Range (% of Const. Cost)	Calculated Low Value (from user input)	User Input Value (repeated from above)	Calculated High Value (from user input)
Construction Inspection	10%	12%	\$113,360	\$80,000	\$136,032
Right of Way	0%	5%	\$0	\$0	\$56,680
Design (Preliminary & Final)	20%	25%	\$226,720	\$150,000	\$283,400