Project: 20250232 (FRA-33-2456 BRIDGE HIT)			PID 117444
Subject: Quantity Calc			
Computed by:	CAD	Date:	8/13/2026
Checked by:	CAS	Date:	8/18/2026

REFER TO QTY BASEMAP FOR CAD MEASUREMENTS:

ITEM 202E11203 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

Steel Weight

Weight of Existing =	15486	LBS
Removal Cost =	$400.00	/ton

Concrete Weight

Volume of Existing =	36	CY
Removal Cost =	$750.00	/CY

Cost = $30,097 **SAY = $35,000**

ITEM 202E75267 - VANDAL PROTECTION FENCE REMOVED AND RESET, AS PER PLAN

REPAIR LENGTH = 107.5 FT **SAY = 108 FT**

ITEM 509E10000 - EPOXY COATED STEEL REINFORCEMENT

TOTAL REINFORCING WEIGHT = 7037 LB (FROM REBAR TABLE) **SAY = 7037 LB**

ITEM 511E34444 - CLASS QC2 CONCRETE, BRIDGE DECK

REPLACEMENT LENGTH =	100.33	FT
REPLACEMENT WIDTH =	6	FT
REPLACEMENT THICKNESS =	0.75	FT
HAUNCH AREA =	1.09	SF
TOTAL VOLUME =	20.77	CY

SAY = 21 CY

ITEM 511E34448 - CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET)

RAILING REPLACEMENT LENGTH =	100.33	FT
RAILING AREA =	3.9305461	SF
TOTAL VOLUME =	14.61	CY

SAY = 15 CY

ITEM 512E10050 - SEALING OF CONCRETE SURFACES (NON-EPOXY)

EXPOSED PARAPET PERIMETER (CAD MEASURED) = 8.55 FT

REPLACEMENT LENGTH = 100.33 FT

TOTAL AREA = 104.85 SY (add 10% for variable o-hang) **SAY = 105 SY**

ITEM 512E10300 - SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN

*Assuming sealing goes 6" up on parapet

Sealing Width = 1.00 ft

Length of Sealing = 109.83 FT

TOTAL AREA = 12.20 SY **SAY = 13 SY**

ITEM 513E10301 - STRUCTURAL STEEL MEMBERS, LEVEL 5, AS PER PLAN (MAIN MEMBERS)

BEAM

SECTION 1 WEIGHT =	220.99	LBS/FT
LENGTH OF SECTION 1 BEAM =	24.22	FT
SECTION 2 WEIGHT =	199.06	LBS/FT
LENGTH OF SECTION 2 BEAM =	40.36	FT
SECTION 3 WEIGHT =	222.46	LBS/FT
LENGTH OF SECTION 3 BEAM =	6.50	FT

WEIGHT = 14834.4 LB

SPLICE PLATES

SPLICE 1 WEB =	1542.73	LBS
SPLICE 1 FLANGE =	2157.79	LBS
SPLICE 2 WEB =	1542.73	LBS
SPLICE 2 FLANGE =	2157.79	LBS

WEIGHT = 7401.04 LB

STIFFENER

*Use taller stiffener for all calculations

STIFFENER HEIGHT =	34.00	IN
STIFFENER WIDTH =	6.00	IN
STIFFENER THICKNESS =	0.375	IN
STEEL DENSITY =	490	PCF
NO. OF STIFFENERS =	16	
STIFFENER VOLUME =	0.71	CF
STIFFENER WEIGHT =	**347.1**	**LB**

TOTAL WEIGHT MAIN MEMBERS = 22582.5 LBS **SAY = 22583 SY**

ITEM 513E10201 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN (SECONDARY MEMBERS)

CROSSFRAMES

(CROSSFRAMES ARE NUMBERED STARTING AT PIER 3. THERE ARE 7 CROSSFRAMES IN BEAM 1 LENGTH WHCH WE ARE ASSUMING WILL NEED TO BE REPLACED. THERE IS 1 AT BEAM 4 THAT NEEDS REPLACED)

GIRDERS SPACING =	9.84375	FT	(SPAN 4)
BEAM WEB HEIGHT =	2.83	FT	
HORIZONTAL STRUT LENGTH =	9.844	FT	
DIAGONAL STRUT LENGTH =	10.15543	FT	

3 CROSS FRAMES HAVE 2 DIAGONALS AND 2 HORIZONTALS. THE OTHERS HAVE 2 DIAGONALS AND 1 HORIZONTAL.

L3x3x5/16

HORIZONTAL CROSS FRAME STRUTS TO BE REPLACED =	8	EA
DIAGONAL CROSS FRAME STRUTS TO BE REPLACED =	10	EA
TOTAL LENGTH =	180.3043	FT
WEIGHT OF L3x3x5/16 =	6.1	LBS/FT
TOTAL WEIGHT =	1099.85623	

MC18X42.7

DIAPHRAGM AT SHORTER BEAM WILL BE MC18X42.7 =	420.328125	LBS
TOTAL WEIGHT =	1260.98438	LBS
TOTAL WEIGHT =	**2360.84**	**LBS**

SAY = 2362 LBS

ITEM 513E95030 - STRUCTURAL STEEL, MISC., REPAIR OF DAMAGED MEMBERS, DRILLING

ALL BOLT HOLES AT SPLICE AT AT GIRDER 4 REPAIR

NO. OF HOLES TO BE DRILLED =	162	EACH
TOTAL COST =	**162**	EACH

SAY = 162 EACH

ITEM 514E20001 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (TWO COATS)

*ASSUME HEAT STRAIGHTENING EXTENDS TO FIRST CROSSFRAME PASSED THE SPLICE TO THE SOUTH AND THE SECOND CROSS FRAME PASSED THE SPLICE TO THE NORTH

1 DEEPER SECTION HEAT STRAIGHTENING LIMIT PLUS 2 FT=	62.72	FT				
PERIMETER =	9.01	FT				
AREA =	565.28	SF				
BEAM 1 SHALLOW SECTION =	40.3645833	FT				
PERIMETER =	7.58	FT				
AREA =	306.10	SF				
BEAM 4 =	5	FT	8.457808			
PERIMETER =	8.70	FT				
AREA =	43.50	SF				
STIFFENERS:						
AREA OF ONE STIFFENER =	2.921875	FT				
# OF STIFFENERS =	16					
AREA =	46.75	SF				
CROSS FRAMES: X SHAPED						
TOTAL LENGTH =	180.3043	FT				
PERIMETER =	1	FT	314.7			
AREA =	180.3043	SF				
CROSS FRAMES: CHANNELS			1.468065			
TOTAL LENGTH =	29.53125	FT				
PERIMETER =	4.31666667	FT				
AREA =	127.476563	SF				
				AT G1, SAY =	***1191***	***SF***
TOTAL AREA =	**1269.41**	**SF**		***AT G4, SAY =***	***79***	***SF***

ITEM 516E13200 - 1/2" PREFORMED EXPANSION JOINT FILLER

CAD AREA =	3.93054612	SF			
NO. OF LOCATIONS =	2				
TOTAL AREA =	7.86109224	SF	**SAY =**	**8**	***SF***

ITEM 516E47001 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

TOTAL COST =	$40,000.00	$			
TOTAL =	**1.00**	**LS**	**SAY =**	***1.00***	

ITEM 849E10000 - DAMAGE ASSESSMENT

TOTAL COST =	$8,000.00	$			
TOTAL =	**1.00**	**LS**	**SAY =**	***1.00***	

ITEM 849E10500 - SURFACE PREPARATION

TOTAL COST =	$5,000.00	$			
TOTAL =	**1.00**	**LS**	**SAY =**	***1.00***	

ITEM 849E10600 - REPAIRING DAMAGED MEMBERS BY GRINDING

TOTAL HOURS =	4	HOUR			
TOTAL =	**4.00**	**HOUR**	**SAY =**	***4.00***	***HR***

ITEM 849E10700 - STRAIGHTENING DAMAGED MEMBERS

*Assume 10' past splice to the south and 20' past splice to the north

LENGTH OF HEAT STRAIGHTENING =	30.00	FT			
TOTAL LENGTH =	**30.00**	**FT**	**SAY =**	***30***	***FT***

ITEM 513E95000 - STRUCTURAL STEEL, MISC.: REPAIR OF DAMAGED MEMBERS, COMPLETE PENETRATION WELDING

LENGTH AT GIRDER 4 =	1.30	FT			
TOTAL LENGTH =	**1.30**	**FT**	**SAY =**	***2***	***FT***

ITEM 513E95000 - STRUCTURAL STEEL, MISC.: REPAIR OF DAMAGED MEMBERS, FILLET WELDING

Intermediate Crossframe Type B

WELD LENGTH PER CROSSFRAME (TO STIFFENER) =	13	IN
NO. CROSSFRAME ENDS =	15	
STIFFENER WELD LENGTH =	39	IN
NO. SIDES =	2	
NO. STIFFENERS =	3	

Intermediate Crossframe Type B with Top Chord

WELD LENGTH PER CROSSFRAME (TO STIFFENER) =	13	IN
NO. CROSSFRAME ENDS =	28	
STIFFENER WELD LENGTH =	39	IN
NO. SIDES =	2	
NO. STIFFENERS =	4	

Intermediate Diaphragm

WELD LENGTH PER CHANNEL (TO STIFFENER) =	13	IN
NO. CHANNEL ENDS =	2	
CONNECTION PLATE 3 WELD LENGTH =	**INCLUDED IN BEAM ITEM**	
CONNECTION PLATE 4 WELD LENGTH =	33.25	IN
NO. SIDES =	2	
INTERMEDIATE DIAPHRAGM LOCATIONS =	3	
TOTAL LENGTH =	115.21	FT

AT G1, SAY = ***96*** ***FT***
AT G4, SAY = ***20*** ***FT***

ITEM 512E10600 - CONCRETE REPAIR BY EPOXY INJECTION

LENGTH =	13.00	FT
TOTAL LENGTH =	**13.00**	**FT**

SAY = ***13 FT***

ITEM 513E95030 - STRUCTURAL STEEL, MISC.:, REPAIR OF DAMAGED MEMBERS, COPE HOLES

LENGTH =	1.00	EA
TOTAL LENGTH =	**1.00**	**EA**

SAY = ***1 EA***

ITEM 516E45305 - REFURBISH BEARING DEVICE, AS PER PLAN

BEARING AT GIRDER 1	1.00	EA
TOTAL =	**1.00**	**EA**

SAY = ***1 EA***