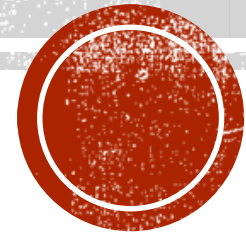
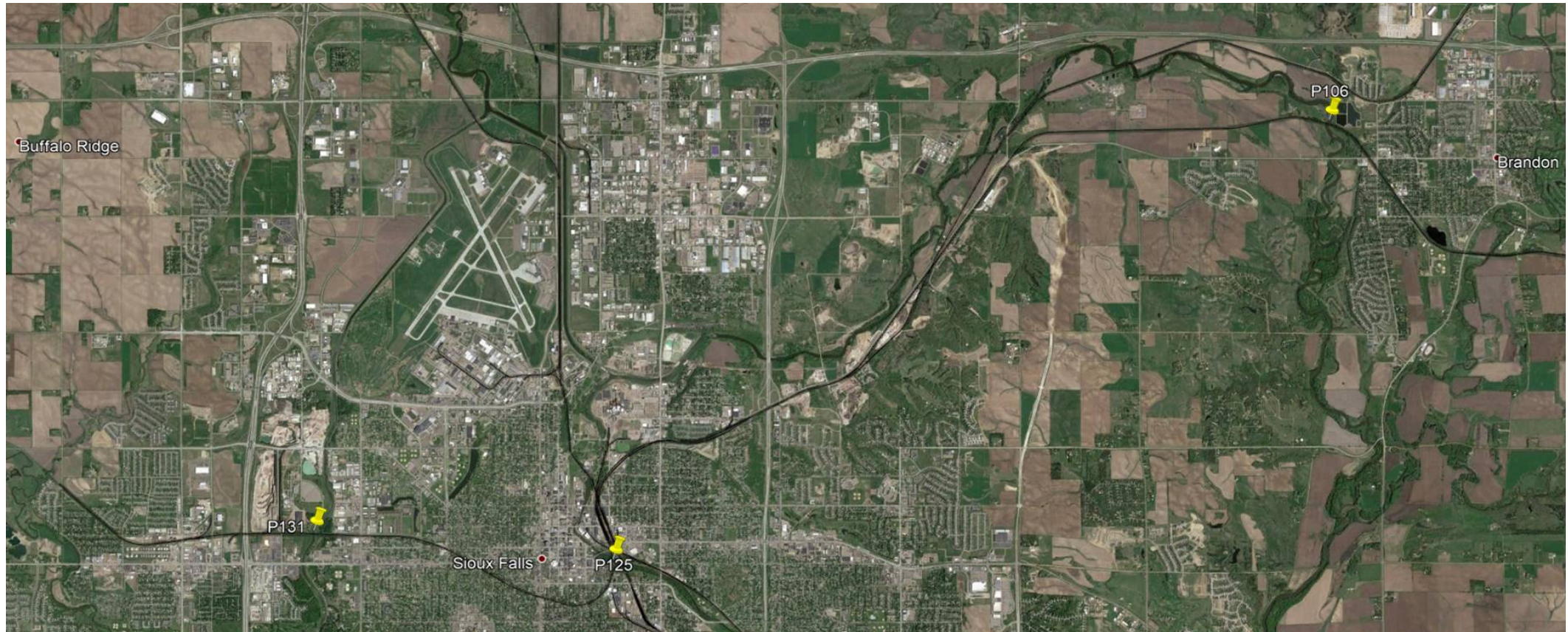


ELLIS & EASTERN CO 2019 STC GRANT

Sioux Falls Area Bridges
October 16, 2019



STC BRIDGE LOCATIONS



STC BRIDGES

Bridge P131 Built in 1892



Bridge 125 Built in 1893



**P106 BUILT IN 1887
BY LASSIG BRIDGE AND IRON WORKS OF CHICAGO**



P131 ISSUES

P131 Ties



P131 Shims



P125 GAP & APPROACH





P106 BRIDGE

- Replace and Repair
 - Stringers
 - Deck Ties
 - Piles & Caps



COTTONSEED RAILCAR & WAREHOUSE





COTTONSEED FOR SOUTH DAKOTA DAIRIES



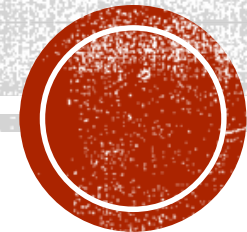
Proposed Project Funding.

Please note the CRISI and Grant Guidance specifies costs to be determined in Year of Expenditure

	2019 Dollars	YOE Dollars
Construction	\$3,648,110	\$3,751,000
Design Eng	\$250,000	\$273,000
Const Administration	\$200,000	\$228,000
Const Contingency	\$364,800	\$418,400
Environmental Contingency	\$200,000	\$229,400
Total	\$4,663,000	\$4,899,400

Ellis and Eastern is proposing a match level of 20%, making the funding split \$3,919,520 federal and \$979,880 provided by Ellis and Eastern. Ellis and Eastern is not requesting state funds. Ellis and Eastern understands that preliminary engineering and the cost of the environmental determination are not grant eligible.

THE NUMBERS



Ellis and Eastern - Sioux Falls Area Bridges

This STC project request is to improve three bridges in the Sioux Falls area. Two of the bridges (P125 and P131) are currently in use and need repair. The third bridge (P106) is near Brandon and is out of service. The purpose of the project is to repair P125 and P131 to maintain current traffic levels without the possibility of bridge failure. P106 is urgently needed to improve operational efficiency by allowing for staging of cars and car storage east of P106. The work scope in the STC Grant for P106 is to do enough work to open the bridge to light traffic. Ellis and Eastern is also applying for a CRISI Grant. The CRISI grant project will restore traffic between Sioux Falls and Worthington and allow Sioux Falls area shippers access to the Union Pacific. If the CRISI grant request is awarded, traffic levels will greatly increase on the line coming into Sioux Falls from the east. Bridge P106 will be further improved with the CRISI project to handle the loads and traffic levels at that time.

Support Economic Growth and Development

The Ellis & Eastern Co. (E&E) rail line runs from MM 65.5 (Ellis, SD) to MM 41.5 (Valley Springs, SD) in South Dakota and currently has many different shippers taking advantage of the BNSF interchange. Cottonseed LLC. from La Crosse, WI was successfully recruited by the SD Governor's Office of Economic Development and recently opened a warehouse facility in Sioux Falls, SD and is preparing to transport cottonseed for the SD dairy industry within a 200-mile radius of Sioux Falls. Five pounds of cottonseed in a cow's 100 lb. daily ration will increase the amount of milk produced and the important components for cheese production. Dairy producers have had to truck cottonseed in the past, the nearest source being Missouri. Today, dairy farmers now have access to high quality cottonseed sourced from Louisiana, Georgia, Texas and other southern states and it is being shipped by railcar, saving each producer thousands of dollars in fixed feed costs. In turn the SD cheese plants are procuring higher quality milk for the cheese each produces.

Other SD manufacturers use the E&E short line rail to obtain dimensional lumber for their custom truss businesses and engineered wood frame buildings for the agricultural and commercial sectors. The E&E helps move aggregates to ready mix and asphalt plants that supply building and road materials for contractors in the region. Fly ash, cement & rebar are all moved by E&E to assist in road construction by contractors. The SD DOT & City of Sioux Falls move road salt to its many distribution points by bulk shipping via the E&E and BNSF.

Ensure Connectivity for Critical Industries

The E&E rail line allows shippers to gain access to SD customers. The dairy industry in South Dakota continues to grow with a recent \$250 million expansion of a local cheese plant. The expansion capacity equals the production of 85,000 cows. Cottonseed LLC SD warehouse is prepared to distribute nearly a million pounds of cottonseed a week, enough to feed nearly 200,000 cows. This entails 10 railcars arriving on the E&E line by-weekly and transloaded into

the warehouse and being available for local delivery. The E&E moves approximately 100 railcars of aggregate a week during construction season. Road construction and general construction industries play a vital role in keeping the growing demand for infrastructure viable.

Maintain State Railroad Assets in State of Good Repair

The E&E SD line is privately owned; however, the E&E has the collaborative ability to ship products on state-owned rail lines and other regional & national carriers.

Reduce Highway Impacts

The E&E assists its shippers in reducing heavy truck traffic by shipping sand by rail. The customers in 2018 saved 226,128 local and state road miles by using rail service. One SD manufacturer that uses 120 railcars of lumber a year, reduces 285,600 road truck miles by using rail service. The aggregate customers save nearly 153,600 heavy road truck miles on local and state highways. These examples remove 21,476 trucks each year making passenger highway travel much safer.

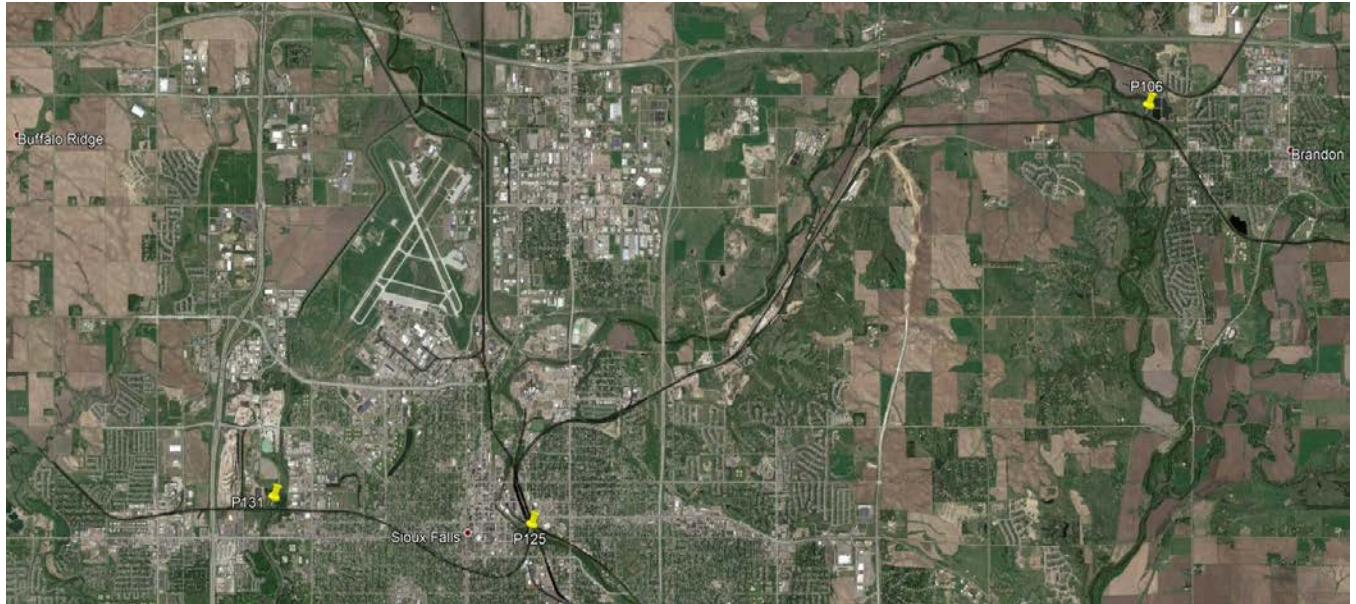
Improve Railroad Safety, Security and Resiliency

The E&E, with the aid of this Special Transportation Circumstances (STC) grant will improve the safety and security of not only the rail line and the products being shipped, but most importantly, the public. The three bridges that will be repaired and improved are over public waterways and are close to pedestrian and passenger vehicle traffic. The E&E is continuously collaborating with local, county and state entities to improve highway-rail grade crossings. The E&E constantly strives to offer its shippers and customers a safe, reliable and efficient rail system. The E&E continues to grow its customer base and moves to nearly 10,000 railcars per year. The long-term strategy is to become an integral short line connector for the area Class I rail lines to open new markets for industrial plastics, ethanol, automotive, fertilizer, grain, lumber, frozen food and many others. The E&E is a resilient example of a short line railroad having a long-term impact on the South Dakota economy.

Project Summary

This project will repair three bridges in the Sioux Falls area. P106 will have deck ties replaced, some approach stringers replaced, replace piles and caps, and strengthen some of the steel elements of the main span. The project for P125 will replace stringers with new stronger 4 ply chords. The project for P131 will be to replace deck ties. Attached is an estimate that detail the work by bridge.

P125 and P131 are in Sioux Falls and P106 is just west of Brandon. See photo below:



STC Bridge Locations

If the SD RR Board approves this project as an STC grant, Ellis and Eastern will have a full grant package ready for submission by the mid November grant submission deadline.

Award notifications - May 2020
 Obtaining environmental – March 2021
 Grant agreement negotiations – June 2021
 Bidding and bid award – August 2021
 Construction Starts – October 2021
 Construction Complete – Sept 2022

Proposed Project Funding.

Please note the CRISI and Grant Guidance specifies costs to be determined in Year of Expenditure

	2019 Dollars	YOE Dollars
Construction	\$3,648,110	\$3,751,000
Design Eng	\$250,000	\$273,000
Const Administration	\$200,000	\$228,000
Const Contingency	\$364,800	\$418,400
Environmental Contingency	\$200,000	\$229,400
Total	\$4,663,000	\$4,899,400

Ellis and Eastern is proposing a match level of 20%, making the funding split \$3,919,520 federal and \$979,880 provided by Ellis and Eastern. Ellis and Eastern is not requesting state funds.

Ellis and Eastern understands that preliminary engineering and the cost of the environmental determination are not grant eligible.

Project and Plans Readiness

Ellis and Eastern has identified the work that needs to be completed and a has developed a cost estimate. Upon notice of grant selection by the State Railroad Board, Ellis and Eastern will begin preliminary design (30% plans) of the project.

Environmental Readiness

Environmental will begin once the preliminary design has been completed. The project elements are all within the existing right of way and are contained to replacement of existing wood elements and strengthening of existing steel elements. The essential character of the bridges will not be altered.

Overall Benefit

The benefit cost study assumed that P125 and P131 bridges will need to be upgraded to maintain the existing sand traffic from Corson and the growing cotton seed traffic from Missouri. If the bridges cannot handle that traffic, the traffic volumes will move by truck. Bridge P106 needs to be repaired enough to offer some operational flexibility that is sorely needed. If Ellis and Eastern is successful in obtaining a CRISI grant, P106 will be upgraded to handle 286,000lb rail cars. The remainder of the assumptions are as provided by FRA's guidelines (trucking cost per mile, drivers wages, truck emissions). The cost for rail transportation is subtracted from the cost of truck transportation to obtain a net benefit. For this project the discounted benefit is \$150.3 million, and the discounted cost is \$4.06 million leaving a benefit cost ratio of 37:1.

Year	Calendar Year	Truck trips sand move from Luverne if project not completed	Road trip truck miles from Luverne to Sioux Falls	Truck trips Kansas City to Sioux Falls per week cotton seed	Road trip truck miles from Kansas City to Sioux Falls - Cotton seed	Rail cotton seed used and sand - costs assume 25% of truck costs	Total truck miles saved by modal shift	Truck Driver value of hourly time savings - Table A-3	Highway maint costs savings	Commercial Truck Operation costs saved Table A-5	Net modal shift cost savings truck costs less rail cost	Cost savings due to reduced fatalities	Cost savings due to reduced injury crashes	Cost savings due to reduced property damage crashes	Emission benefit VOC	Emission benefit NOx	Emission benefit SO2	Emission benefit PM	Emission benefit CO2	Emission benefits reduced VOC, NOx, PM, SO2 calculated per mile of truck movement avoided and emissions value in short tons	Total benefits	construction cost - with inflation - See FRA Inflation Work sheet - 2019 dollars	discounted construction cost 7% NPV - 2019 dollars	Total benefits	7% NPV benefits	Benefits only 7% npv
	2020																				\$104,000	\$91,879	\$18,121	\$152,452,621		
	2021																				\$3,856,000	\$3,147,645	\$-835,000	\$3,147,645		
	2022																									
1	2023	11707	772,862	50	4,000,000	\$1,074,749	4,776,662	\$2,732,251	\$907,566	\$4,296,996	\$3,224,247	\$550,271	\$403,506	\$9,866	\$4,274	\$200,857	\$1,841				\$268,712	\$4,096,539	\$4,096,539	\$5,042,117		
2	2024	12958	776,862	52	4,164,160	\$1,118,000	4,906,002	\$2,821,121	\$942,400	\$4,444,002	\$3,348,001	\$571,182	\$418,993	\$10,249	\$4,408	\$208,846	\$1,989				\$271,047	\$4,407,304	\$4,407,304	\$4,893,127		
3	2025	12420	819,717	54	4,330,726	\$1,158,050	5,104,444	\$2,846,054	\$978,084	\$4,635,399	\$3,476,549	\$593,181	\$435,081	\$10,746	\$4,408	\$216,574	\$1,412				\$289,761	\$4,730,106	\$4,730,106	\$4,748,599		
4	2026	12793	844,309	56	4,530,955	\$1,203,359	5,348,264	\$3,059,207	\$1,016,170	\$4,813,438	\$3,610,078	\$616,120	\$451,791	\$11,159	\$4,785	\$224,893	\$4,301				\$300,896	\$9,065,416	\$9,065,416	\$4,608,398		
5	2027	13176	869,638	58	4,684,114	\$1,249,594	5,553,752	\$3,176,748	\$1,055,213	\$4,998,376	\$3,748,782	\$639,792	\$469,150	\$11,587	\$4,969	\$233,533	\$4,466				\$312,451	\$9,413,721	\$9,413,721	\$4,472,391		
6	2028	13572	895,727	61	4,871,478	\$1,297,921	5,797,205	\$3,288,844	\$1,095,769	\$5,190,465	\$4,092,864	\$694,382	\$447,181	\$12,053	\$5,190	\$242,959	\$4,618				\$324,440	\$9,775,530	\$9,775,530	\$4,440,452		
7	2029	13979	922,599	63	5,066,337	\$1,347,531	5,986,636	\$3,425,671	\$1,137,988	\$5,390,003	\$4,042,532	\$689,925	\$505,912	\$12,495	\$5,358	\$251,853	\$4,816				\$336,934	\$10,155,368	\$10,155,368	\$4,212,457		
8	2030	14398	950,277	66	5,268,991	\$1,399,355	6,219,268	\$3,557,421	\$1,181,661	\$5,597,341	\$4,198,006	\$716,460	\$525,369	\$12,976	\$5,564	\$261,518	\$5,002				\$349,889	\$10,541,785	\$10,541,785	\$4,082,866		
9	2031	14830	978,785	68	5,479,750	\$1,453,171	6,458,538	\$3,694,282	\$1,227,122	\$5,812,682	\$4,393,512	\$744,023	\$545,581	\$13,475	\$5,778	\$271,579	\$5,194				\$363,354	\$10,947,349	\$10,947,349	\$3,967,823		
10	2032	15275	1,008,149	71	5,698,940	\$1,509,095	6,707,089	\$3,836,455	\$1,274,347	\$6,036,380	\$4,527,385	\$772,657	\$566,577	\$13,994	\$6,002	\$282,031	\$5,394				\$377,337	\$11,368,652	\$11,368,652	\$3,850,956		
11	2033	15732	1,038,283	74	5,926,890	\$1,567,195	6,965,291	\$3,994,147	\$1,324,055	\$6,268,762	\$4,701,572	\$802,402	\$588,369	\$14,512	\$6,210	\$293,888	\$5,602				\$391,851	\$11,806,100	\$11,806,100	\$3,727,575		
12	2034	16205	1,069,545	77	6,163,974	\$1,627,542	7,233,519	\$4,137,573	\$1,374,369	\$6,510,357	\$4,882,825	\$833,301	\$611,047	\$15,052	\$6,472	\$304,567	\$5,817				\$406,954	\$12,260,961	\$12,260,961	\$3,627,576		
13	2035	16691	1,101,631	80	6,416,533	\$1,692,237	7,512,164	\$4,296,958	\$1,427,311	\$6,765,948	\$5,070,711	\$865,401	\$634,586	\$15,613	\$6,721	\$315,884	\$6,041				\$422,630	\$12,733,271	\$12,733,271	\$3,505,855		
14	2036	17182	1,134,680	83	6,686,954	\$1,759,368	7,861,635	\$4,462,335	\$1,482,111	\$7,021,471	\$5,266,303	\$898,748	\$659,038	\$16,277	\$6,980	\$328,056	\$6,274				\$438,914	\$13,223,928	\$13,223,928	\$3,417,314		
15	2037	17708	1,168,711	87	6,973,632	\$1,833,029	8,202,263	\$4,640,546	\$1,539,447	\$7,282,128	\$5,489,088	\$933,181	\$684,411	\$16,865	\$7,249	\$340,761	\$6,516				\$455,814	\$13,718,653	\$13,718,653	\$3,268,957		
16	2038	18279	1,203,782	90	7,273,978	\$1,893,321	8,454,760	\$4,831,243	\$1,598,804	\$7,573,248	\$5,679,963	\$969,380	\$710,832	\$17,557	\$7,529	\$353,838	\$6,747				\$473,420	\$14,263,189	\$14,263,189	\$3,119,389		
17	2039	18786	1,239,896	94	7,499,417	\$1,966,345	8,739,313	\$4,998,887	\$1,660,469	\$7,865,381	\$5,899,036	\$1,006,769	\$738,248	\$18,241	\$7,819	\$367,485	\$7,028				\$489,689	\$14,813,112	\$14,813,112	\$2,912,822		
18	2040	19350	1,277,093	97	7,799,394	\$2,042,209	9,076,486	\$5,191,750	\$1,724,132	\$8,168,838	\$6,126,628	\$1,045,611	\$766,731	\$18,937	\$8,121	\$381,663	\$7,299				\$510,638	\$15,384,828	\$15,384,828	\$2,803,067		
19	2041	19919	1,315,495	101	8,111,369	\$2,121,024	9,426,775	\$5,392,112	\$1,791,287	\$8,484,287	\$6,361,073	\$1,085,964	\$795,221	\$19,688	\$8,424	\$396,393	\$7,581				\$530,345	\$15,978,574	\$15,978,574	\$2,684,039		
20	2042	20520	1,354,867	105	8,455,824	\$2,202,980	9,796,682	\$5,600,276	\$1,860,231	\$8,816,622	\$6,608,717	\$1,127,888	\$837,963	\$20,427	\$8,760	\$411,695	\$7,874				\$550,818	\$16,595,420	\$16,595,420	\$2,567,657		
21	2043	21144	1,395,514	110	8,773,257	\$2,287,973	10,168,771	\$5,816,537	\$1,932,066	\$9,151,894	\$6,863,920	\$1,171,442	\$895,001	\$21,216	\$9,088	\$427,593	\$8,178				\$571,089	\$17,236,272	\$17,236,272	\$2,473,840		
22	2044	21778	1,437,379	114	9,124,187	\$2,378,352	10,561,566	\$6,046,216	\$2,006,698	\$9,505,400	\$7,120,657	\$1,216,682	\$892,182	\$22,096	\$9,449	\$444,110	\$8,494				\$594,188	\$17,902,069	\$17,902,069	\$2,362,511		
23	2045	22432	1,480,500	118	9,489,155	\$2,468,172	10,969,655	\$6,274,643	\$2,084,134	\$9,872,690	\$7,404,517	\$1,263,704	\$926,655	\$22,887	\$9,815	\$461,270	\$8,822				\$617,147	\$18,593,788	\$18,593,788	\$2,253,595		
24	2046	23105	1,524,615	123	9,868,721	\$2,561,568	11,395,636	\$6,517,160	\$2,164,791	\$10,254,273	\$7,690,795	\$1,312,547	\$962,471	\$23,772	\$10,194	\$479,089	\$9,163				\$643,000	\$19,312,444	\$19,312,444	\$2,157,020		
25	2047	23798	1,570,663	128	10,263,470	\$2,662,080	11,834,133	\$6,769,124	\$2,248,485	\$10,650,759	\$7,988,040	\$1,363,292	\$999,681	\$24,651	\$10,580	\$497,821	\$9,517				\$669,782	\$20,059,094	\$20,059,094	\$2,062,715		
26	2048	24512	1,617,783	133	10,674,009	\$2,765,613	12,301,791	\$7,030,905	\$2,335,440	\$11,062,632	\$8,296,959	\$1,416,014	\$1,038,342	\$25,646	\$10,987	\$516,866	\$9,885				\$691,528	\$20,834,835	\$20,834,835	\$2,000,612		
27	2049	25247	1,666,316	139	11,100,969	\$2,872,839	12,787,285	\$7,302,887	\$2,425,784	\$11,490,557	\$8,617,917	\$1,470,791	\$1,078,590	\$26,638	\$11,423	\$536,860	\$10,268				\$718,280	\$21,640,807	\$21,640,807	\$2,106,465		
28	2050	26005	1,726,396	144	11,545,038	\$2,983,796	13,281,613	\$7,585,471	\$2,519,550	\$12,915,582	\$8,951,387	\$1,527,703	\$1,077,868	\$27,693	\$11,885	\$557,834	\$10,605				\$746,074	\$22,478,195	\$22,478,195	\$2,105,374		
29	2051	26785	1,787,795	150	12,006,808	\$3,099,386	13,774,603	\$7,748,037	\$2,579,071	\$13,397,140	\$9,297,857	\$1,586,834	\$1,161,601	\$28,719	\$12,334	\$579,217	\$11,078				\$774,962	\$23,344,231	\$23,344,231	\$2,072,253		
30	2052	27598	1,850,829	156	12,487,080	\$3,219,280	14,307,909	\$8,184,124	\$2,617,175	\$13,877,138	\$9,617,839	\$1,648,771	\$1,208,652	\$29,802	\$12,801	\$601,643	\$11,506				\$804,955	\$24,252,195	\$24,252,195	\$1,981,884		
31	2053	28416	1,875,453	162	12,986,564	\$3,343,954	14,862,017	\$8,501,074	\$2,623,783	\$13,875,835	\$10,031,862	\$1,712,104	\$1,255,460	\$30,889	\$13,297	\$624,943	\$11,952				\$836,129	\$25,191,420	\$25,191,420	\$1,890,993		
	Salvage/residual value	294,043				\$31,498,457	233,241,295		\$32,475,207	\$248,637,241		\$1,825,837	\$576,234								\$15,538,081	\$48,140,563		\$45,000,000	\$150,262,200	

BCA Spreadsheet – right click to open, click worksheet object, click open

Party Tasked with Developing the Application

Ellis and Eastern will develop the STC Grant application and will pay for the costs associated with developing the application.

Photos

P131

P131 Date Plate



P131 ties



P131 shims



Wave in east approach to P131



P106

P106 Debris



P106 Ties

P125



P125 Approach

Construction Estimate

Ellis & Eastern South Dakota Mainline (Brandon East)

286k Car Upgrade Cost Opinion

Valley Springs, SD to Brandon,SD Line Segment (MP44.0 - MP 51.0)

The following construction cost opinion based on bid results from comparable work performed on midwestern railroads over the past 3 years, with the exception of the cost opinion for the steel strengthening that is based on the bid results for similar steel strengthening work on E&E Bridges P-125 & P-131. All cost data was adjusted for inflation as needed. The work scope listed below will allow the these bridges reliably carry trains of loaded 286k cars at speeds up to 25MPH. Improvements to rail, track, and ballast required to allow reliable 286k operation are included elsewhere. The scope of work for Bridges P-92 and P-103 are based on the inspection performed by Osmose in 2009. The steel strengthening scope is based on the rating results for similar steel spans in E&E Bridges P-125 & P-131.

BRIDGE	WORK TASK 1 - Replace deck tie, increase depth as needed for 286k demand				WORK TASK 2 - Fully replace stringer chords with new 4-ply 8"x18" chords				WORK TASK 3 - Cut-out deteriorated pile and install timber post				WORK TASK 4 - Remove deteriorated cap, cut-off piles and install deeper cap				deteriorated bent with a frame bent.				WORK TASK 6 - Steel strengthening to improve capacity of main truss span. *				TOTAL COST PER BRIDGE									
	UNIT	UNIT COST	QTY	COST	UNIT	UNIT COST	QTY	COST	UNIT	UNIT COST	QTY	COST	UNIT	UNIT COST	QTY	COST	UNIT	UNIT COST	QTY	COST	UNIT	UNIT COST	QTY	COST										
Bridge P-106 EA (MP 50.7)	TIE	\$445.00	155	\$68,975	SPAN	\$9,857.14	14	\$138,000	POST	\$6,200.00	8	\$49,600	CAP	\$7,800.00	12	\$93,600					LUMP	\$448,850.00	1	\$448,850.00	\$350,175									
Bridge P-106 MS (MP 50.7)	TIE	\$575.00	130	\$74,750																					\$523,600									
Bridge P-106 WA (MP 50.7)	TIE	\$445.00	123	\$54,735	SPAN	\$9,954.55	11	\$109,500	POST	\$6,200.00	2	\$12,400	CAP	\$7,800.00	9	\$70,200									\$246,835									
Bridge P-125 EA (MP 58.7)					LF	\$8,521.74	46	\$392,000																	\$392,000									
Bridge P-125 EA (MP 58.7)					LF	\$8,521.74	46	\$392,000																	\$392,000									
Bridge P-131 EA (MP 61.58)					LF	\$7,894.74	228	\$1,686,000																	\$1,686,000									
Bridge P-131 EA (MP 61.58)	TIE	\$575.00	100	\$57,500																					\$57,500									
Total Work Task 1:				508	Total Work Task 2:				345	Total Work Task 3:				10	Total Work Task 4:				21	Total Work Task 5:				0	Total Work Task 6:				1	PROJECT TOTAL:				\$3,648,110
				\$255,960					\$2,717,500					\$62,000					\$163,800					\$0					\$448,850					

* - For detailed break down of WORK TASK 6 steel strengthening costs, please see tables below:

WORK TASK 6 Sub Task Description	Bridge P-106 Main Span			
	UNIT	UNIT COST	QTY	COST
Floorbeam Strengthening	EA	\$13,850.00	11	\$152,350
Top Chord Strengthening	PANEL	\$12,750.00	12	\$153,000
Diagonal Strengthening	EA	\$12,250.00	8	\$98,000
Sheet Replacement	LUMP	\$45,500.00	1	\$45,500
Total Bridge P-106:				\$448,850