GENERAL NOTES

Fasteners shall be ASTM F3125 A325 Type 1, mechanically galvanized bolts. Bolts $\frac{7}{8}$ -in. Ø, holes $\frac{15}{16}$ -in. Ø, unless otherwise noted.

No field welding is permitted except as specified in the contract documents.

The Contractor shall test the existing welds by non-destructive methods within 2 ft. of the end of the existing cover plates for cracks after removal of the existing concrete deck. Dye penetrant (PT), magnetic particle (MT), or other approved testing method shall be performed by qualified personnel approved by the Engineer. If cracks are found, report them to the Bureau of Bridges and Structures for disposition. The cost of testing is included in Removal of Existing Concrete Deck. The cost of crack repair, if necessary, will be paid for according to Article 109.04 of the Standard Specifications.

Reinforcement bars designated (E) shall be epoxy coated.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer.

Any cracks that cannot be removed by grinding $\frac{1}{4}$ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Concrete Sealer shall be applied to the designated areas of the abutment bearing seats and back walls (including abutment hatch block on back walls) and top of pier caps under expansion joints.

All new structural steel shall be shop painted with an inorganic zinc rich primer per AASHTO M300, Type 1.

Cleaning and field painting of structural steel shall be done under a separate painting contract.

Up to $\frac{1}{4}$ may be ground off the bridge deck and the bridge approach slabs.

Attention is called to ground wires connecting the existing pier caps to beam webs at Piers 2, 5, and 9. These shall be left undisturbed, and if damaged shall be repaired at the contractor's expense.

All existing drainage system components attached to the structure shall be removed and disposed of in accordance with the applicable portions of Section 501. Existing concrete anchors shall be cut flush with the concrete surface, and attachments to existing girders shall be cut 4 to 6 inches clear of the web. Cost included with Removal of Existing Concrete Deck No. 1.

This project requires a US Army Corps of Engineers (USACE) 404 permit that has been secured by IDOT. As a condition of this permit the contractor will need to submit an in-stream work plan to the Will/South Cook Soil and Water Conservation District (SWCD) for approval. Guidelines on acceptable in-stream work techniques can be found on the USACE website.

Work shall conform to all provisions of the Erosion Control Plan.

Haul Roads, In-Stream Work Pads and Causeways, if needed, shall be constructed in accordance with the Recurring Special Provision Check Sheet #8.

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Highway Standard 601101).



SER NAME = 611blb DESIGNED - BLB REVISED - 1 12/21/21 BLB **GENERAL D** STATE OF ILLINOIS HECKED - AS REVISED · 2 1/4/22 BLB BAXTER STRUCTURE NO. OT SCALE = DRAWN BLB REVISED **DEPARTMENT OF TRANSPORTATION** SHEET SA-03 OF SA PLOT DATE = 1/4/2022 REVISED DATE - 10/21/2021

Specifications.

TOTAL BILL OF MA	TERIA	, =		
ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Ton		1011	1011
Filter Fabric	Sq Yd		254	254
Concrete Removal	Cu Yd		42.5	42.5
Bridge Rail Removal	Foot	2751		2751
Removal of Existing Concrete Deck No. 1	Each	1		1
Protective Shield	Sq Yd	2658		2658
Structure Excavation	Cu Yd		126	126
Cofferdam (Type 2) (Location - 1)	Each		1	1
Cofferdam (Type 2) (Location – 2)	Each		1	1
Floor Drains	Each	16		16
Concrete Structures	Cu yd		58.8	58.8
Concrete Superstructure	Cu Yd	2177.2		2177.2
Protective Coat	Sq Yd	7720		7720
Concrete Superstructure (Approach Slab)	Cu Yd	121.6		121.6
Furnishing and Erecting Structural Steel	Pound			10410
Stud Shear Connectors	Each	13830		13830
Reinforcement Bars, Epoxy Coated	Pound	548,590	10450	559,040
Bar Splicers	Each		88	88
Name Plates	Each	1		1
Preformed Joint Strip Seal	Foot	171		171
Elastomeric Bearing Assembly, Type I	Each	48		48
Elastomeric Bearing Assembly, Type III	Each	6		6
Anchor Bolts, %"	Each		72	72
Anchor Bolts, 1"	Each		36	36
Granular Backfill for Structures	Cu Yd		116	116
Concrete Sealer	Sq Ft		1106	1106
Epoxy Crack Injection	Foot		129	129
Geocomposite Wall Drain	Sq Yd Sq Yd	5166	64	64 5166
Bridge Deck Grooving (Longitudinal)	Each	5166		5166
Jack and Remove Existing Bearings	Pound	73840		73840
Structural Steel Repair Structural Repair of Concrete (Depth Equal to or	Pouna	73840		73640
less than 5 Inches)	Sq Ft		350	350
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq Ft		220	220
Drainage Scuppers, DS-12M10	Each	16		16
Diamond Grinding (Bridge Section)	Sq Yd	5822		5822
Modular Expansion Joint 6"	Foot	41		41
Pipe Underdrains for Structures 4"	Foot		110	110
Slope Wall Repair	Sq Yd		300	300
Temporary_Support_System, Location_1	Each		1	11
Cofferdam Excavation (Special)	Cu Yd	· - · - ·	688	688 I
				· - · - ·



DATA	RTE. SECTION			COUNTY	SHEETS	NO. 117 2H49	
016-2468	330 2018-133-BR	COOK	308	117			
010-2400					CONTRACT	NO. 62	2H49
A-73 SHEETS			ILLINOIS				



1/6/2022

TOP OF RAIL AND MINIMUM VERTICAL CLEARANCE SUMMARY

(Offsets are measured along the tracks.)

(Offsets are measured along the tracks.)							
TRACK	LEFT (W	'EST)	([NB La 0.00'	Grange Rd RIGHT (EAST)	MIN. VERT. CLR.	
1421	<u>601.90</u> 227.23'	<u>601.80</u> 131.06'	<u>601.87</u> 36.33'	<u>601.84</u> 9.67' 601.83 55.07'	<u>602.09</u> 223.16 [']	26'-6"	
1422	602.47 256.29'				<u>602.78</u> 233.38 ⁱ	25'-10"	
1423	<u>602.14</u> 270.73 [,]	<u>601.98</u> 124.31'	<u>602.26</u> 46.45'	<u>602.42</u> 0.54' 602.33 51.93'	<u>602.31</u> 247.28 [']	26'-1"	
1424	<u>601.26</u> 261.43 [,]				<u>601.09</u> 252.93'	27'-4"	
1515		599.34 /103.99' 503.75	7.73 797.45 3.08		<u>597.53</u> 264.41'	31'-3"	

DESIGN STRESSES FIELD UNITS (Exist. Construction) f'c = 3,500 psi fs = 40,000 psi (Reinforcement) fy = 36,000 psi (Structural Steel) FIELD UNITS (New Construction)

f'c = 3,500 psi

f'c = 4,000 psi (Superstructure Concrete)

fy = 60,000 psi (Reinforcement)

fy = 36,000 psi (M270 Grade 36)

LOADING HS20-44

Allow 25#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

SEISMIC DATA

Seismic Performance Category (SPC) = A Bedrock Acceleration Coefficient (A) = 0.038Site Coefficient (S) = 1

W					
<u>N.B. U.S. RTE 12/2</u> DES PLAINES RIVE	20/4 R, S		RD) OVI		
<u> </u>)0К ⁻ А. б	<u>COUNTY</u> <u>8+86.55</u> IMBER 016-246	-		
ELEVATION III . 016-2467	F.A.I. RTE. 330	SECTION 2018-133-BR	COUNTY COOK CONTRACT	TOTAL SHEETS 308 NO. 62	SHEET NO. 190 2H49
		11,11,010			

TOP OF



1/6/2022 1:12:49 PM

RAIL AND						SUMMARY
(011	sets are					
LEFT	(WEST)	ζ	NB La 0.00'	Grange RIGHT	Rd (EAST)	MIN. VERT. CLR.
<u>601.80</u> 224.98 ⁰	<u>601.72</u> 128.93'	<u>601.73</u> 44.68'	<u>601.72</u> 36.44'	<u>601.80</u> 109.76'	<u>601.96</u> 197.66'	25'-3"
601.96 217.15 [,]	<u>601.90</u> 120.17'	601.82 36.63'	601.74 46.03'	<u>601.82</u> 111.98'	<u>602.00</u> 199.87'	25'-5"
<u>601.97</u> 207.48'	601.93 110.76'	<u>601.85</u> 27.02'	601.82 54.61'	<u>601.86</u> 121.21 [,]	601.94 209.76'	25'-5"
<u>601.89</u> 198.45	<u>601.89</u> 102.76'	<u>601.88</u> 18.36'	601.91 62.63'	601.96 129.59'	<u>602.05</u> 219.03'	25'-6"
<u>601.87</u> 206.48'	<u>601.69</u> 131.47'	601.63 39.83'	<u>601.58</u> 18.42'	<u>601.74</u> <u>131.35'</u>	<u>601.85</u> 232.08'	25'-11"
602.21 239.24' 602.22	166.33' 602.22	77.63	8.55' 8.55' 602.13 61.01'		<u>602.27</u> 196.47'	25'-6"
<u>601.77</u> 230.46 [′]	501 E2		601.50 14.86' 601.53	09.77	<u>601.77</u> 204.94 [,]	26'-3"
<u>601.50</u> 222.39'		601.23 62.40'	601.35 22.29' 601.55	76.47'	<u>601.68</u> 212.99 [,]	26'-5"
<u>601.53</u> 191.26'	<u>601.52</u> 124.37'	<u>601.51</u> 60.58'	<u>601.55</u> 3.51' 601.58	13.48'	<u>601.69</u> 210.50'	26'-3"
<u>601.33</u> 183.71 [.]	601.37 117.53'	<u>601.28</u> 52.53'	<u>601.20</u> 11.64' 601.24	80.90'	601.39 217.91'	26'-8"
<u>601.90</u> 233.00'	<u>601.77</u> 142.20 [,]	<u>601.59</u> <u>39.69'</u>	<u>601.49</u> 2.32' 601.51 47.10'		601.69 181.32'	26'-5"

BEAM REACTIONS FOR TEMPORARY SHORING AND CRIBBING

		Pier 4	Pier 9	Pier 15	Pier 21	Pier 25	Pier 29
R₽ (Steel only)	(k)	7.6	10.3	10.3	11.5	12.7	15.9
R₽ (Const.)	(k)	4.3	5.1	5.1	5.0	5.5	5.2
RŁ (Const.)	(k)	5.2	5.9	5.9	6.0	6.5	5.2
R (Total)	(k)	17.1	21.4	21.4	22.5	24.6	26.2

1. Both dead and live construction loads 20 psf.

2. The reaction loads shown above are service loads.

3. The reaction loads shown above are for each beam.

	<u>GENERAL PLAN & ELEVATION IV</u>								
	N.B. U.S. RTE 12/20/45 (LA GRANGE RD) OVER								
	DES PLAINES RIVE	R, S	ANTA FE DR. 8	& BNSF	RR				
	FAP 330,	SEC	С. 2018–133–ВР	2					
"46"	<u> </u>	ОК	COUNTY						
'50" '05"	<u>ST</u>	A. 6	8+86.55						
10"	STRUCTUR	E NL	JMBER 016-246	<u>57</u>					
ELE\	ATION IV	F.A.I. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.			
016-2467 330 2018-133-BR COOK 308					191				
				CONTRACT	NO. 62	2H49			
3 - 104 S	SHEETS								

GENERAL NOTES

- 1. Fasteners shall be ASTM F 3125 Grade A325 Type 1, mechanically galvanized bolts. Bolts $\frac{7}{8}$ in. Dia., holes $\frac{15}{16}$ in. Dia., unless otherwise noted.
- All structural steel shall be AASHTO M 270 Grade 36. 2.
- No field welding is permitted except as specified in the contract 3 documents.
- The Contractor shall test the existing welds by non-destructive 4. methods within 2 ft. of the end of the existing cover plates for cracks after removal of the existing concrete deck. Dve penetrant (PT). magnetic particle (MT), or other approved testing method shall be performed by qualified personnel approved by the Engineer. If cracks are found, report them to the Bureau of Bridges and Structures for disposition. The cost of testing is included in Removal of Existing Concrete Deck. The cost of crack repair, if necessary, will be paid for according to Article 109.04 of the Standard Specifications.
- 5. Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck, all heavy or loose rust, 6. loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existina concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding $\frac{1}{4}$ in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

- If the Contractor elects to use cantilever forming brackets on the 7. exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations
- Plan dimensions and details relative to existing plans are subject to 8. nominal construction variations. The Contractor Widening, repair or rehabilitation of existing structures. Bridge Manual Section 3 -Design Page 3-5 Jan 2012 shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- Bearing seat surfaces shall be constructed or adjusted to the 9. designated elevations within a tolerance of $\frac{1}{8}$ in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- 10. Concrete Sealer shall be applied to the reconstructed abutment backwalls and all areas at top of the reconstructed pier caps at Piers 4, 9, 15, 21, 25 & 29.
- 11. Cleaning and field painting of structural steel shall be done under a separate painting contract.
- 12. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- 13. All new structural steel shall be shop painted with an inorganic zinc rich primer per AASHTO M300, Type 1.

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SB-9 to 10	Top of Deck Elevations (Unit 2)	S
SB-11 to 12	Top of Deck Elevations (Unit 3)	S
SB-13 to 14	Top of Deck Elevations (Unit 4)	S
SB-15 to 16	Top of Deck Elevations (Unit 5)	S
SB-17 to 18	Top of Deck Elevations (Unit 6)	S
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	·	SE
	NEOS SOM	SE





14. This project requires a US Army Corp of Engineers (USACE) 404 permit that has been secured by IDOT. As a condition of the permit the Contractor will need to submit a in-stream work plan to the Will/South Cook Soil and Water Conservation District (SWCD) for approval. Guidelines an acceptable in-stream work techniques can be found on the USACE website.

Riprap Class A4

Match streambed

Bedding -

Filter Fabric

elevation

- 15. Work shall conform to all provisions of the Erosion Control Plan.
- Haul Roads, In-Stream Work Pads and Causeways, if needed, shall be constructed 16. in accordance with the Recurring Special Provision Check Sheet #8.
- 17. To facilitate stud shear connector placement, lead based primer may be required to be removed at areas within 5-ft of supports. The cost of removal will be paid for according to Article 109.04 of the Standard Specifications.

1	
₽	Excav for a Excav

Streambed

Pier Stem

Note:

SECTION A-A

*Included	in <u>the</u>	cost	of I	Pipe	Under	rdr
Structure	s.					$\sqrt{1}$
	·_ · ·					<u> </u>

All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls or 2'-0" from the end of the wingwalls when the wings are parallel to the abutment. The pipe shall extend under the wingwall, if necessary, until intersecting the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

		L		··-·-·································	
	USER NAME = mc	DESIGNED - E. VAYSMAN	REVISED - 12/21/2021 J.A.L.		GENERAL DA
		CHECKED - G. HATLESTAD	REVISED _ 2 1/4/2022 G.J.H.	STATE OF ILLINOIS	
CUUTECH	PLOT SCALE = N/A	DRAWN - E. VAYSMAN	REVISED -	DEPARTMENT OF TRANSPORTATION	STRUCTURE NO. 0
CIVILTECH	PLOT DATE = 1/5/2022	DATE - 10/21/2021	REVISED -		SHEET SB-5 OF SB-104
(5/2022 2:50:44 BM					

2:50:44 PI

TOTAL BILL OF MATERIAL

TOTAL BIL		MAILNIA		
Description	Unit	Sub	Super	Total
Stone Riprap, Class A4	Ton	201		201
Filter Fabric	Sq. Yd.	53		53
Concrete Removal	Cu. Yd.	221.6		221.6
Bridge Rail Removal	Foot		5,535	5,535
Removal of Existing Concrete Deck No. 2	Each		1	1
Protective Shield	Sq. Yd.		12,891	12,891
Structure Excavation	Cu. Yd.	150		150
Cofferdam (Type 2) (Location – 3)	Each	1		1
Concrete Structures	Cu. Yd.	222.0	30.2	252.2
Concrete Superstructure	Cu. Yd.		4,462.1	4,462.1
Protective Coat	Sq. Yd.		15,346	15,346
Concrete Superstructure (Approach Slab)	Cu. Yd.		123.3	123.3
Furnishing and Erecting Structural Steel	Pound		2,585	2,585
Stud Shear Connectors	Each		24,832	24,832
Reinforcement Bars, Epoxy Coated	Pound	58,800	1,013,100	1,071,900
Bar Splicer	Each	98		98
Name Plates	Each		1	1
Preformed Joint Strip Seal	Foot		442	442
Elastomeric Bearing Assembly, Type II	Each		6	6
Anchor Bolts, 1"	Each		24	24
Anchor Bolts, 1 1/4"	Each		376	376
Granular Backfill for Structures	Cu. Yd.	119		119
Concrete Sealer	Sq. Ft.	1,043		1,043
Epoxy Crack Injection	Foot	26		26
Geocomposite Wall Drain	Sq. Yd.	79		79
Cofferdam Excavation (Special)	Cu. Yd.	152		152
Bridge Deck Grooving (Longitudinal)	Sq. Yd.		10,260	10,260
High Load Multi-Rotational Bearings, Guided Expansion, 350k	Each		36	36
High Load Multi-Rotational Bearings,	Each		18	18
Guided Expansion, 750k High Load Multi-Rotational Bearings,	Each		4	4
Guided Expansion, 900k High Load Multi-Rotational Bearings,	Each		18	18
Fixed - 750k	Each		18	18
Jack and Remove Existing Bearings	Each		64	64
Structural Steel Repair	Pound		25,073	25,073
Structural Repair of Concrete (depth equal to or less than 5 inches)	Sq. Ft.	2,010		2,010
Drainage Scuppers, DS-12	Each		61	61
Drainage System for Structures	L. Sum		1	1
Diamond Grinding (Bridge Section)	Sq. Yd.		11.409	11,409
Modular Expansion Joint 6"	Foot		41	41
Removal of Existing Bearings	Each		24	24
Pipe Underdrains for Structures 4"	Foot	167	/	167
Slope Wall Repair	Sq. Yd.	200		200
Temporary Shoring and Cribbing	Each	72		72
emperary shoring and erissing	Lacit	/ ~		/ ~

