

SUMMARY OF QUANTITIES

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5154	04-00343-00-BR	WINNEBAGO	92	2
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

CODE NO.	ITEM	UNIT	QUANT. TOTAL	CONSTRUCTION - TYPE CODES				
				I000 ROADWAY	X071-2A KISHWAUKEE BRIDGE	X171-2A R.R. BRIDGE	Y080	NON-PART. Y030-1E
1	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	51	51				
2	20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	36	36				
3	20100500	TREE REMOVAL, ACRES	2.9	2.9				
4	20200410*	EARTH EXCAVATION (SPECIAL)	207	207				
5	20201200*	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	21	21				
6	20300100	CHANNEL EXCAVATION	1,960		1,960			
7	20400800	FURNISHED EXCAVATION	17,744	17,744				
8	20700220	POROUS GRANULAR EMBANKMENT	215		115	100		
9	25000200 Δ	SEEDING, CLASS 2	4.28	4.28				
10	25000312 Δ	SEEDING, CLASS 4A	0.39	0.39				
11	25000320 Δ	SEEDING, CLASS 5	0.39	0.39				
12	25000350 Δ	SEEDING, CLASS 7	4.67	4.67				
13	25000400 Δ	NITROGEN FERTILIZER NUTRIENT	421	421				
14	25000500 Δ	PHOSPHOROUS FERTILIZER NUTRIENT	421	421				
15	25000600 Δ	POTASSIUM FERTILIZER NUTRIENT	421	421				
16	25100115 Δ	MULCH METHOD 2	4.67	4.67				
17	25100630	EROSION CONTROL BLANKET	843	843				
18	26000300	TEMPORARY DITCH CHECKS	2	2				
19	28100109	STONE RIPRAP, CLASS A5	1,244		1,244			
20	28200200	FILTER FABRIC	1,244		1,244			
21	35100100	AGGREGATE BASE COURSE, TYPE A	79	79				
22	35600712	HOT-MIX ASPHALT BASE COURSE WIDENING, 9"	494	494				
23	40200800*	AGGREGATE SURFACE COURSE, TYPE B	200	200				
24	40600100	BITUMINOUS MATERIALS (PRIME COAT)	1,426	1,426				
25	40600300	AGGREGATE (PRIME COAT)	10.6	10.6				
26	40600635	LEVELING BINDER (MACHINE METHOD), N70	3,164	3,164				
27	40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	431	431				
28	40603340	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70	920	920				
29	42001165	BRIDGE APPROACH PAVEMENT	428	428				
30	44300200	STRIP REFLECTIVE CRACK CONTROL TREATMENT	4,952	4,952				
31	48100100	AGGREGATE SHOULDERS, TYPE A	319	319				
32	48203100	HOT-MIX ASPHALT SHOULDERS	1,859	1,859				
33	50100100	REMOVAL OF EXISTING STRUCTURES	2		1	1		
34	50200100	STRUCTURE EXCAVATION	758		364	424		
35	50200300	COFFERDAM EXCAVATION	584		584			
36	50200500	COFFERDAMS	2		2			
37	50300100	FLOOR DRAINS	50		44	6		
38	50300225	CONCRETE STRUCTURES	634.3		372.2	262.1		
39	50300255	CONCRETE SUPERSTRUCTURE	674.1		463.7	210.4		
40	50300260	BRIDGE DECK GROOVING	1,955		1,357	598		
41	50300265	SEAL COAT CONCRETE	326.7		326.7			
42	50300300	PROTECTIVE COAT	3,054		2,030	1,024		
43	50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	1		0.8	0.2		
44	50500505	STUD SHEAR CONNECTORS	10,548		6,840	3,708		
45	50800205	REINFORCEMENT BARS, EPOXY COATED	218,210		143,330	74,880		

CODE NO.	ITEM	UNIT	QUANT. TOTAL	CONSTRUCTION - TYPE CODES				
				I000 ROADWAY	X071-2A KISHWAUKEE BRIDGE	X171-2A R.R. BRIDGE	Y080	NON-PART. Y030-1E
46	50800515	BAR SPLICERS	132		66	66		
47	51100500*	BITUMINOUS COATED AGGREGATE SLOPEWALL 6"	516			516		
48	51200457	FURNISHING METAL SHELL PILES 12" X 0.250"	4,312		3,488	824		
49	51202305	DRIVING PILES	4,312		3,488	824		
50	51203200	TEST PILE METAL SHELLS	8		4	4		
51	51500100	NAME PLATES	2		1	1		
52	52000110	PREFORMED JOINT STRIP SEAL	188.0		82.5	85.5		
53	52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	18		6	12		
54	52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	12		6	6		
55	52100520	ANCHOR BOLTS, 1"	24			24		
56	52100530	ANCHOR BOLTS, 1 1/4"	96		72	24		
57	54200220*	PIPE CULVERTS, CLASS D, TYPE 1 15"	40	40				
58	58700300	CONCRETE SEALER	486		238	248		
59	59100100	GEOCOMPOSITE WALL DRAIN	110		64	46		
60	60100060	CONCRETE HEADWALLS FOR PIPE DRAINS	8		4	4		
61	60109580*	PIPE UNDERDRAINS FOR STRUCTURES 4"	307		160	147		
62	63000000 Δ	STEEL PLATE BEAM GUARD RAIL, TYPE A	1,942	1,942				
63	63100085 Δ	TRAFFIC BARRIER TERMINAL, TYPE B	8	8				
64	63100167 Δ	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)	8	8				
65	66700095*	PERMANENT SURVEY MARKERS	2		1	1		
66	67000400	ENGINEER'S FIELD OFFICE, TYPE A	18	18				
67	67100100	MOBILIZATION	1	0.50	0.25	0.25		
68	70101700*	TRAFFIC CONTROL AND PROTECTION	1	1				
69	70300100	SHORT-TERM PAVEMENT MARKING	564	564				
70	70301000	WORK ZONE PAVEMENT MARKING REMOVAL	188	188				
71	78000400 Δ	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	10,502	10,502				
72	78201000 Δ	TERMINAL MARKER - DIRECT APPLIED	8	8				
73	78200410* Δ	GUARDRAIL MARKERS, TYPE A	37	37				
74	78200420* Δ	GUARDRAIL MARKERS, TYPE B	18	18				
75	A2000810* Δ	TREE, ACER PLATANOIDES CRIMSON KING (CRIMSON KING NORWAY MAPLE), 1-1/4" CALIPER, BALLED AND BURLAPPED	3	3				
76	A2001710* Δ	TREE, ACER SACCHARUM (SUGAR MAPLE) 1-1/4" CALIPER, BALLED AND BURLAPPED	8	8				
77	X0323017*	TEMPORARY INFORMATIONAL SIGNS	4	2	1	1		
78	X0323082*	DRAINAGE SCUPPERS, DS-33	2			2		
79	X0323230*	DRAINAGE SCUPPERS, DS-11	6		6			
80	X0325641	HIGH LOAD MULTI-ROTATION BEARINGS, GUIDED EXPANSION, 250K	6		6			
81	X6320100*	GUARDRAIL REMOVAL SPECIAL	3,423	3,423				
82	XX006285*	PERIMETER EROSION BARRIER, SPECIAL	5,024	5,024				
83	Z0004800*	BITUMINOUS MIXTURE FOR PATCHING	25	25				
84	Z0005400*	BREAKER-RUN CRUSHED STONE	43	43				
85	Z0013798*	CONSTRUCTION LAYOUT	1	0.20	0.40	0.40		
86	Z0041500*	PLUG EXISTING CULVERTS	2	2				
87	Z0048665*	RAILROAD PROTECTIVE LIABILITY INSURANCE	1			1		
88	Z0076600*	TRAINEES	1,000				1,000	
89	XX007179 Δ	71 LSR CABLE RELOCATION	1					1

Δ SPECIALTY ITEMS

Revised 2-17-09

EXISTING STRUCTURE NO. 101-0026
A four span Steel Beam and RC Deck Bridge on Concrete Stub Abutments and Concrete Piers at Sta. 129+84, Skewed 35° Lt. Ahead. Traffic to be maintained utilizing a defour. No Salvage.

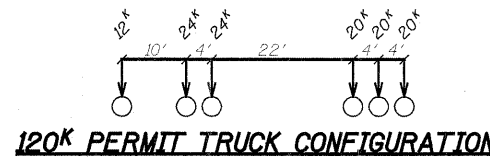
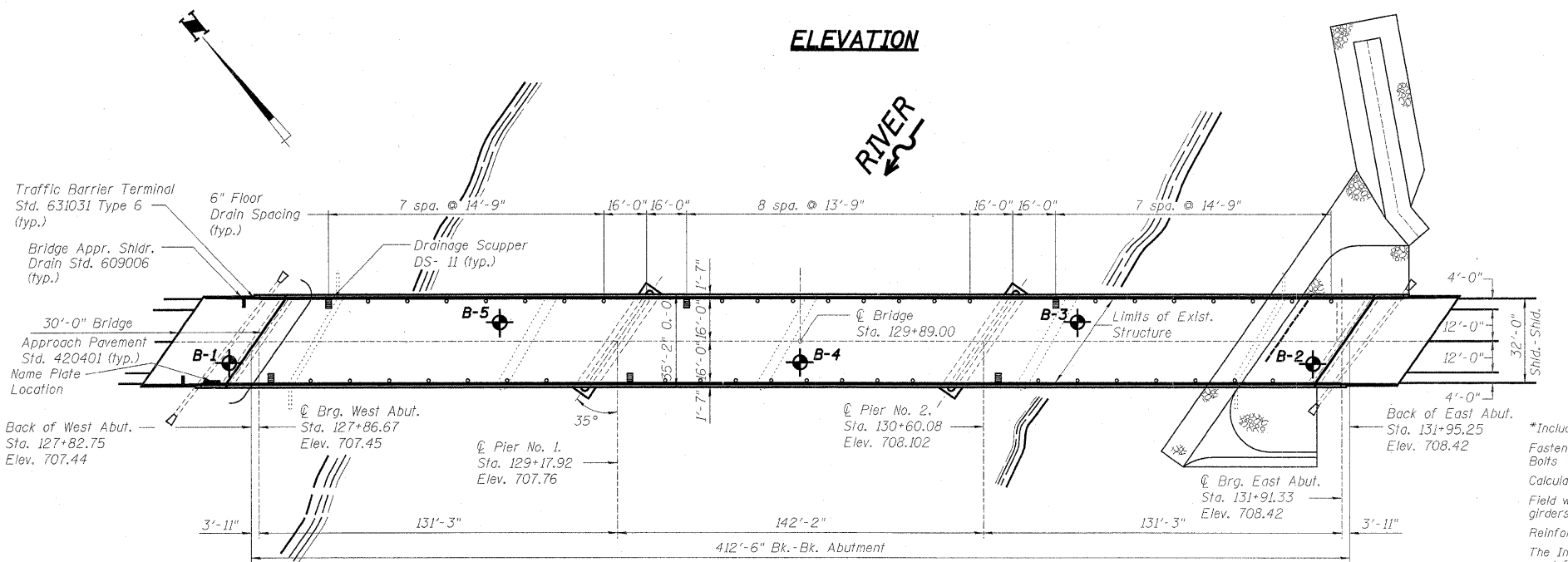
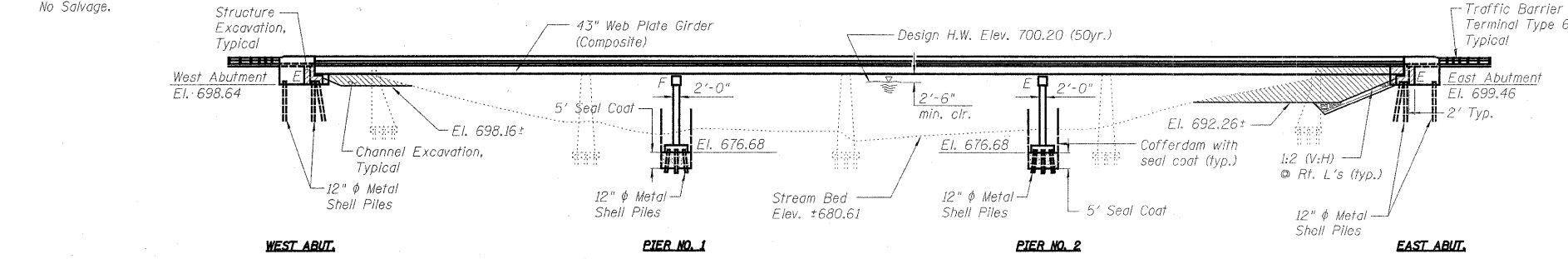
BENCH MARK: Cut square on S.E. bridge headwall, Elevation 707.58'

PROJECT	SECTION	COUNTY	SHEET	TOTAL
5154	04-00343-00-BR	WINNEBAGO	92	47
FED. ROAD DIST. NO. 7		ILLINOIS	FED. ROAD PROJECT-BRM-5099(75)	

Structural Sheet 1B of 21B

BILL OF MATERIAL - BRIDGE

ITEM	UNIT	SUB	SUPER	TOTAL
Channel Excavation	Cu. Yd.	1,960		1,960
Porous Granular Embankment	Cu. Yd.	115		115
Stone Riprap, Class A5	Sq. Yd.	1,244		1,244
Filter Fabric	Sq. Yd.	1,244		1,244
Removal of Existing Structures	Each	1		1
Structure Excavation	Cu. Yd.	364		364
Cofferdam Excavation	Cu. Yd.	584		584
Cofferdams	Each	2		2
Floor Drains	Each		44	44
Concrete Structures	Cu. Yd.	372.2		372.2
Concrete Superstructure	Cu. Yd.		463.7	463.7
Bridge Deck Grooving	Sq. Yd.		1,357	1,357
Seal Coat Concrete	Cu. Yd.	326.7		326.7
Protective Coat	Sq. Yd.		2,030	2,030
Furnishing and Erecting Structural Steel	L. Sum		0.8	0.8
Stud Shear Connectors	Each		6,840	6,840
Reinforcement Bars, Epoxy Coated	Pound	37,960	105,370	143,330
Bar Splicers	Each	66		66
Furnishing Metal Shell Piles 12"	Foot	3,488		3,488
Driving Piles	Foot	3,488		3,488
Test Pile Metal Shells	Each	4		4
Name Plates	Each		1	1
Preformed Joint Strip Seal	Foot		82.5	82.5
Elastomeric Bearing Assembly, Type I	Each		6	6
Elastomeric Bearing Assembly, Type II	Each		6	6
Anchor Bolts, 1/4"	Each		72	72
Concrete Sealer	Sq. Ft.	238		238
Geocomposite Wall Drain	Sq. Yd.	64		64
Concrete Headwalls for Pipe Drains	Each	4		4
Pipe Underdrains for Structures 4"	Foot	160		160
Permanent Survey Markers	Each		1	1
Drainage Scuppers, DS-II	Each		6	6
High Load Multi-Relation Bearings, Guided Expansion - 250K	Each		6	6



GENERAL NOTES

*Includes Deck, Approach Pavement and Top & Inside Face of Parapet Only.
Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 3/8" φ, holes 5/8" φ, unless otherwise noted.
Calculated weight of Structural Steel = 633,300 Pounds
Field welding of construction accessories will not be permitted to beams or girders.
Reinforcement bars designated (E) shall be epoxy coated.
The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be gray, Munsell No. 5B 7/1. See Special Provision for "Cleaning and Painting New Metal Structures".
Anchor bolts shall be set before bolting diaphragms over supports.
The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50.
The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the wide flange beams and all splice plate material except fill plates.
Reinforcement bars shall conform to the requirements of ASTM A706, Grade 60 (IL, Modified). See Special Provisions.
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. (For Type I Elastomeric Bearings, two 1/8" adjusting shims shall be provided for each bearing and placed as detailed).
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.
Concrete Sealer shall be applied to the seat area of the East and West Abutments.
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
All construction joints shall be bonded.
Layout of the Slope Protection System may be varied in the field to suit ground conditions as directed by the engineer.

COMMITMENTS

The Kishwaukee River is a Class I stream listed on the Illinois Natural Areas Inventory, is listed in the National Park Service's Nationwide Rivers Inventory, and is on the INHS list of Biological Significant Streams. Therefore, instream work must be minimized whenever possible.
The piers for the Kishwaukee River bridge will be built with cofferdams to minimize siltation. Drilled shafts will not be used.
The existing bridge shall be dismantled by saw-cutting the structure and removing it a piece at a time without dropping it into the water. This will minimize any debris from falling into the river during the removal process. No explosives will be used during the demolition process.
Any asphalt base on the bridge shall be removed by a technique that would prevent this material from discharge into the river.
A causeway will not be permitted. A tramway may be used to provide access to the new structure.
Time and work in the stream shall be minimized.
After construction is completed, all trace of the existing bridge, equipment, and construction materials shall be removed from the river and the bridge site.
Seal coat thickness design is based on the Estimated Water Surface Elevation (EWSE). Cofferdam design details and proposed changes in seal coat thickness shall be submitted for approval with the cofferdam design to the Engineer.

WATERWAY INFORMATION

Drainage Area = 1099 mi² Low Grade Elev. = 701.6 ft. @ Sta. 119+50

Flood	Freq. Yr.	Q ft ³ /s	Opening ft ² Exlst.	Prop.	Nat. H.W.E. ft	Head - ft Exlst.	Prop.	Headwater Elev. - ft Exlst.	Prop.
Design	50	26027	3757	3929	700.2	0.1	0.03	700.3	700.2
Base	100	31112	3940	4144	700.9	0.1	0.03	701.0	701.0
Overtopping	200±	35314	4080	4306	701.5	0.2	0.03	701.7	701.5
Max. Calc.	500	44426	-	-	-	-	-	-	-

DESIGN SPECIFICATIONS

Design in Accordance with 2002 AASHTO Specifications
LOADING HS20-44 & IDOT 120K PERMIT LOAD
Allow 50 lbs./ft.² for future wearing surface.

DESIGN STRESSES

FIELD UNITS
f_c = 3,500 psi
f_y = 60,000 psi (Reinf.)
f_y = 50,000 psi (M270 GRADE 50)

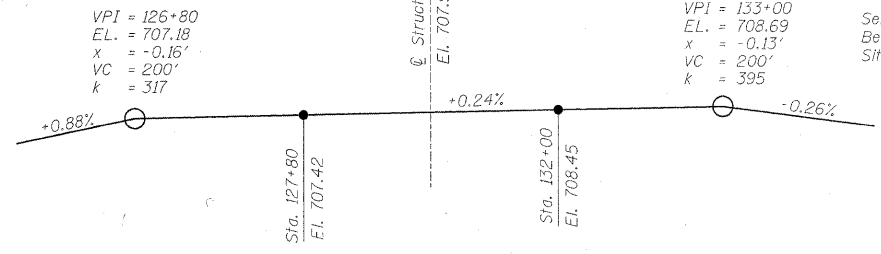
SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.033
Site Coefficient (s) = 1.0

KISHWAUKEE RIVER
BUILT 2009 BY
WINNEBAGO COUNTY
SECTION 04-00343-00-BR
F.A.U. ROUTE 5154 STA. 129+89
LOADING HS20 & IDOT 120K PERMIT LOAD
STR. NO. 101-0171

NAME PLATE LETTERING

Refer To Sid. 515001



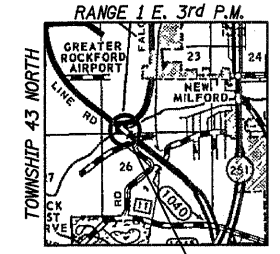
PROFILE GRADE

(along @ Roadway)



DATE: 11/19/2009
EXPIRES 11/30/08

"I Certify That To The Best Of My Knowledge, Information And Belief, This Bridge Design Is Structurally Adequate For The Design Loading Shown On The Plans. The Design Is An Economical One Complies With Requirements Of The Current "AASHTO Standard Specifications For Highway Bridges."



LOCATION SKETCH

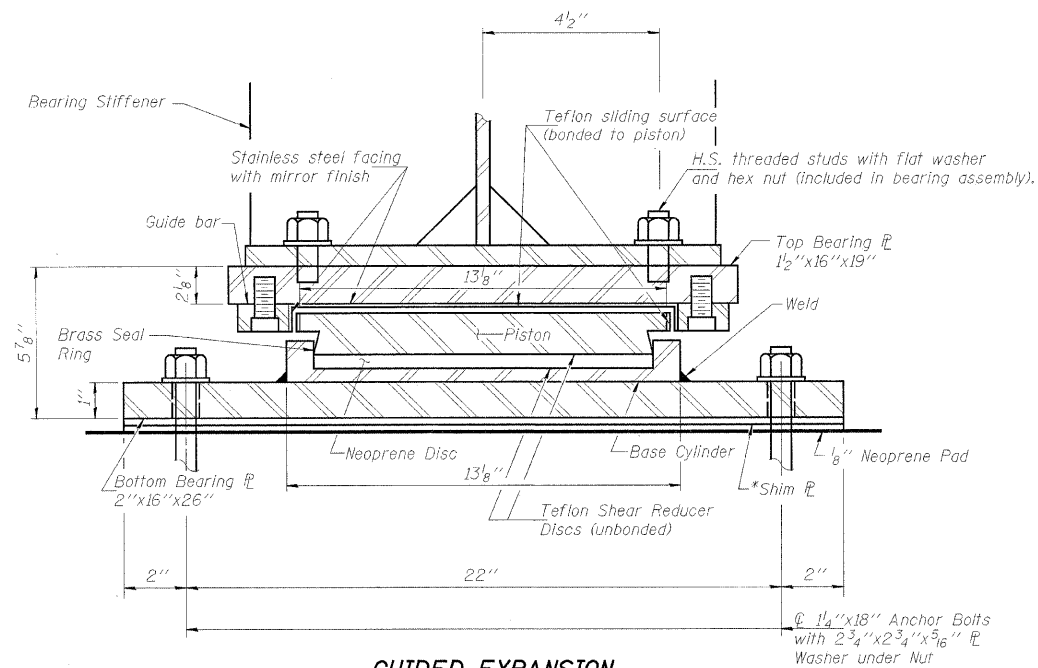
GENERAL PLAN AND ELEVATION
BELTLINE ROAD OVER KISHWAUKEE RIVER
FAU ROUTE 5154 SECTION 04-00343-00-BR
WINNEBAGO COUNTY
STA. 129+89 (S.N. 101-0171)

WILLET, HOFMANN & ASSOCIATES, INC.
CONSULTING ENGINEERS
Land Surveying - Transportation - Structural
Environmental - Architecture
809 East Second Street Dixon, Illinois 61021
Phone 815.284.3381 Fax 815.284.3385
Design Firm #184-00918
www.willett-hofmann.com

Designed By: M. R. Leslie
Date: 10/05
Checked By: B. K. Converse
Date: 10/05
Drawn By: R. D. Allen
Date: 10/05

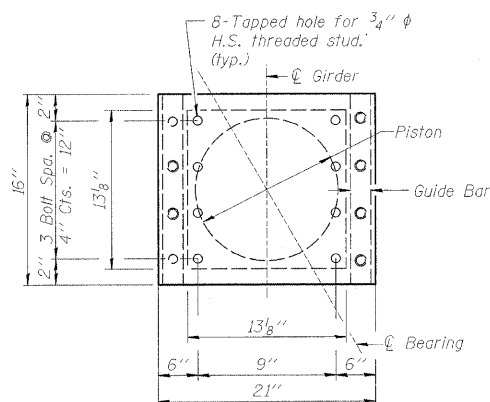
PROJECT	SECTION	COUNTY	SHEETS	SHEET
5154	04-00343-00-BR	WINNEBAGO	92	58
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-BRM-5099(75)		

Structural Sheet 12B of 21B

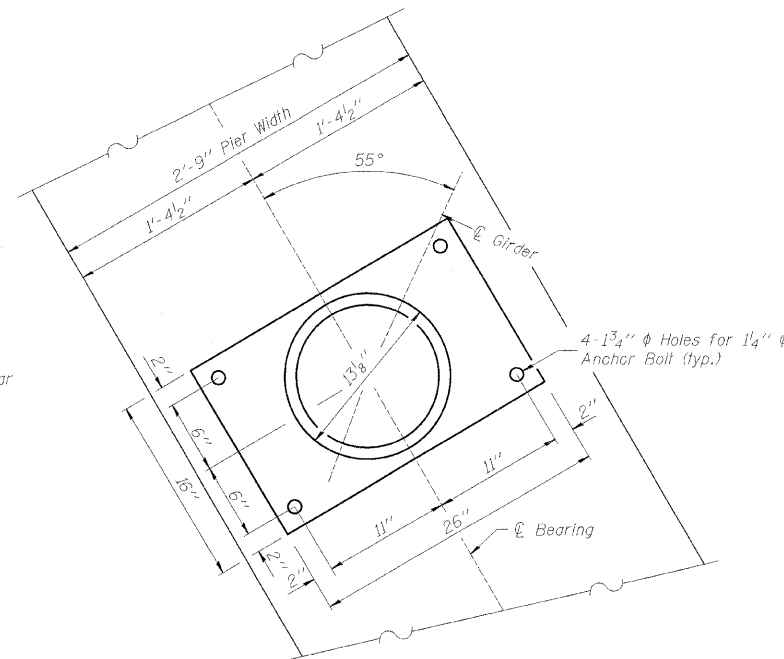


* Additional 1/8" Shim required for Beam 3

GUIDED EXPANSION BEARING - 250K
(Pier #2)



TOP BEARING P AND PISTON PLAN



BOTTOM BEARING P AND BASE CYLINDER PLAN

POT Bearing DATA	
	Pier #2 (Exp.)
Dead load	184.0k
Live Load	61.8k
Vert. Design Load	245.8k
Impact	12.4k
Total	504.0k
Long Load	0
Trans. Loads	
Wind	82.5k
Earthquake	37k
Expansion Length	142'-2"

NOTES:

All P's of the Bearing Assembly shall be AASHTO M 270M Grade 50.

Base P Thickness was determined by using a Pot φ of 13 1/8".

Cost of field drilling is included with "Furnishing & Erecting Structural Steel".

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Relation Bearings, Guided Expansion - 250k	Each	6
Anchor Bolts, 1 1/4"	Each	24

Revised 2-17-09

POT BEARINGS
BELTLINE ROAD OVER KISHWAUKEE RIVER
FAU ROUTE 5154 SECTION 04-00343-00-BR
WINNEBAGO COUNTY
STA. 129+89 (S.N. 101-0171)