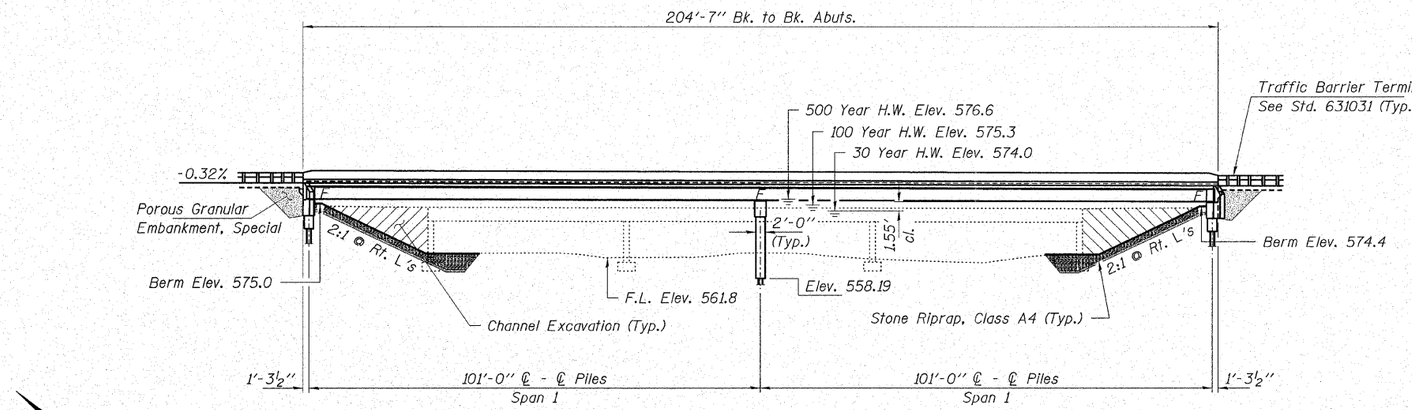
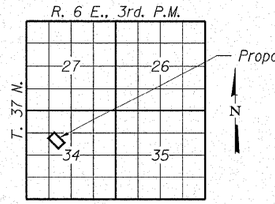
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 15	96-00044 -00-BR	KENDALL	55	38
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 87325

BIG ROCK CREEK
BUILT 200 BY
KENDALL COUNTY
SEC. 96-00044-00-BR
F.A.U. 6477 / C.H. 15
STR. NO. 047-3150
LOADING HS 20-44

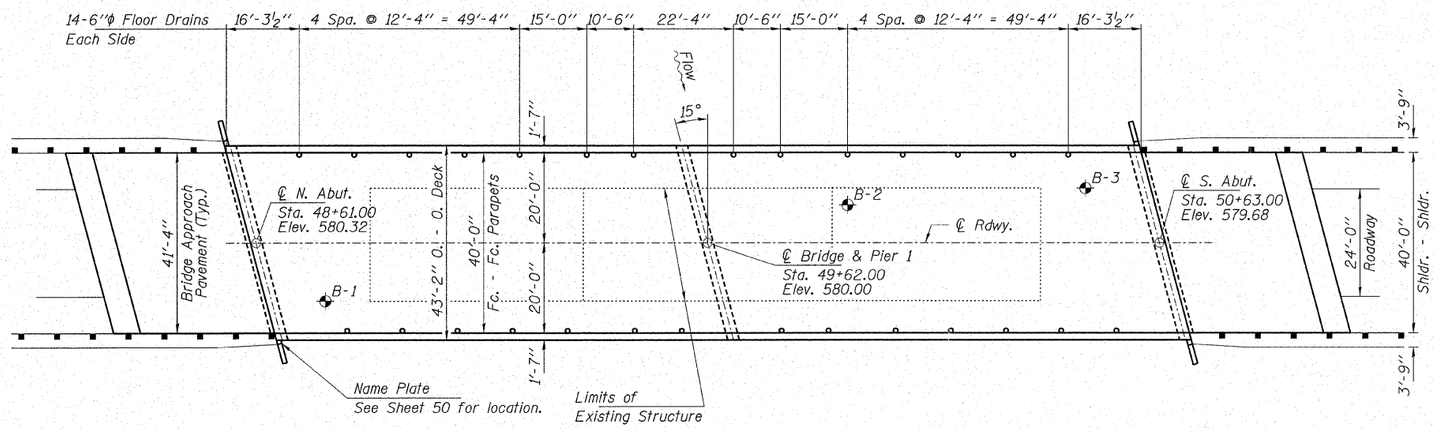


ELEVATION



LOCATION SKETCH

NAME PLATE
See Std. 515001



PLAN

GENERAL NOTES

Fasteners shall be high strength bolts (AASHTO M 164, Type 3). Bolts $\frac{7}{8}$"ϕ, open holes $\frac{15}{16}$"ϕ, unless otherwise noted.
Calculated weight of Structural Steel = 307,700 lbs.
All structural steel shall be AASHTO M 270 Grade 50W.
No field welding is permitted except as specified in the contract documents.
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
These components are the wide flange beams and all splice plate material.
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provision.
Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two $\frac{1}{8}$" adjusting shims, of the dimension of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.
The Contractor shall drive test piles to 110% of the norminal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.
Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 3 in. Those areas shall be primed in the shop with a Department approved zinc rich primer. No field painting shall be required. All structural steel shall be cleaned as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".
The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
See Sheet 53 for Boring Logs.
Superelevation transition shall begin at Sta. 50+70
The Bridge Approach pavement shall be constructed without the curb detail.

TOTAL BILL OF MATERIAL

	ITEM	UNIT	SUPER	SUB	TOTAL
	Channel Excavation	Cu. Yd.		550	550
	Porous Granular Embankment, Special	Ton		225	225
	Stone Riprap, Class A4	Ton			1,870
	Filter Fabric	Sq. Yd.			1,662
	Bridge Approach Pavement	Sq. Yd.	276		276
	Removal of Existing Structures	Each			1
	Structure Excavation	Cu. Yd.		85	85
	Underwater Structure Excavation Protection-Location 1	Each		1	1
	Floor Drains	Each	28		28
	Concrete Structures	Cu. Yd.		89.2	89.2
	Concrete Superstructure	Cu. Yd.	301.6		301.6
	Bridge Deck Grooving	Sq. Yd.	909		909
	Concrete Encasement	Cu. Yd.		5.0	5.0
*	Protective Coat	Sq. Yd.	1,357		1,357
	Furnishing & Erecting Structural Steel	L. Sum	1		1
	Stud Shear Connectors	Each	2,814		2,814
	Reinforcement Bars, Epoxy Coated	Pound	63,840	10,340	74,180
	Bar Splicers	Each	82		82
	Furnishing Steel Piles HP12x53	Foot		756	756
	Driving Piles	Foot		756	756
	Test Pile Steel HP12x53	Each		2	2
	Pile Shoes	Each		27	27
	Name Plates	Each		1	1
	Geocomposite Wall Drain	Sq. Yd.		64.6	64.6
	Concrete Headwalls For Pipe Drains	Each		4	4
	Pipe Underdrains For Structure, 4"	Foot		152	152

*Quantity includes the Bridge Approach Pavment.

DESIGN SPECIFICATIONS

2002 AASHTO & Applicable Interims

LOADING HS 20-44

Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES

f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (Reinforcement)
fy = 50,000 p.s.i. (Structural Steel) (M270 Gr. 50W)
n = 9

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.04g
Site Coefficient (S) = 1.0

WATERWAY INFORMATION

Drainage Area = 191.0 Sq. Mi. Low Grade Elev. 574.1 @ Sta. 55+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	30	3,370	1,080	1,800	574.0	0.2	0.1	574.2	574.0
Base	100	4,720	1,080 ①	2,040	575.3	0.2	0.1	575.4	575.3
Overtopping									
Max. Calc.	500	5,910	1,080 ②	2,150 ③	576.6	0.2	0.1	576.9	576.7

Approach Roadway Flow Area =
① 540 Sq. Ft.
② 1,520 Sq. Ft.
③ 100 Sq. Ft.

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 for the style of structure and complies with requirements of the current "AASHTO Standard Specifications for Highway Bridges".

Michael G. Berry 3/13/07
ILLINOIS STRUCTURAL NO. 081-4622

LICENSED STRUCTURAL ENGINEER ★ MICHAEL G. BERRY 081-4622 SPRINGFIELD, IL. ★ STATE OF ILLINOIS

Expires 11-30-08

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-06-0030-i	DATE: 03/12/07
DESIGNED: S.W.M.	CHECKED: M.G.B.
DRAWN: D.B.	

GENERAL PLAN AND ELEVATION

SECTION 96-00044-00-BR
FOX RIVER DRIVE / C.H. 15
KENDALL COUNTY
STRUCTURE NO. 047-3150 / STATION 49+62