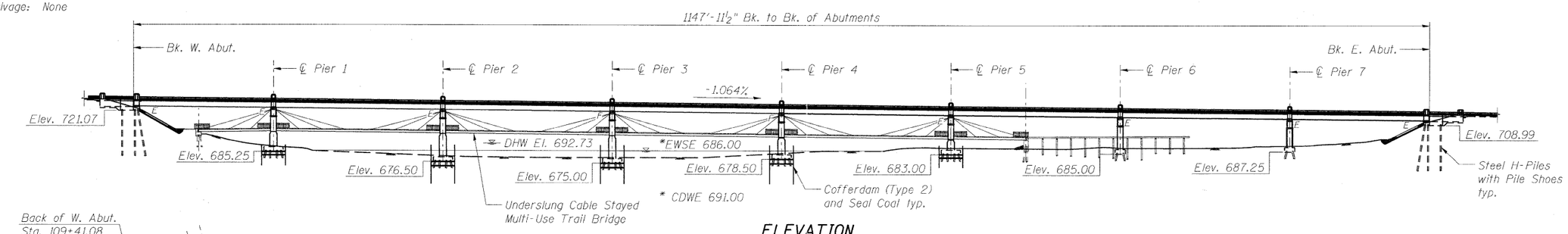
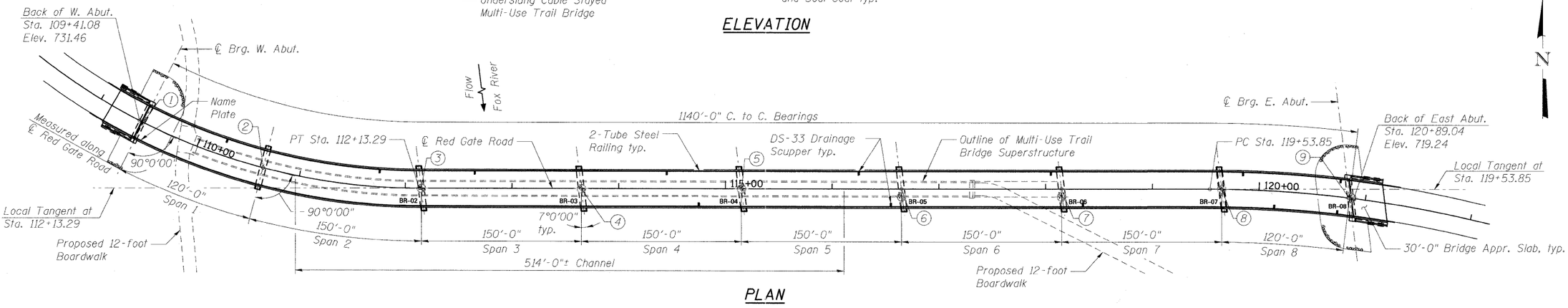
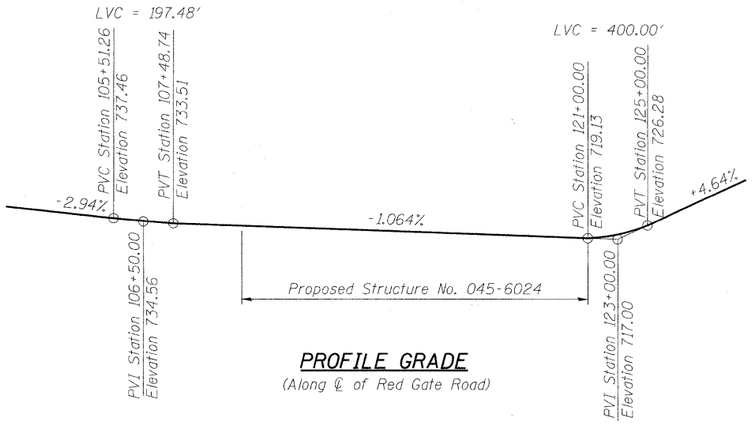
Benchmark: Steel Rod at GPS Monument KAN31 2B (Elev. 754.27)
Existing Structure: None
Salvage: None



ELEVATION



PLAN



PROFILE GRADE

(Along ℄ of Red Gate Road)

LEGEND

Boring Location

CURVE DATA

(RDGTCUR2)
PI = Sta. 110+12.06
Δ = 42°06'27" (LT)
R = 575.00'
T = 221.34'
L = 422.58'
E = 41.13'
e = 2.5%
TR = 66.00'
SE Run = 82.00'
PC = Sta. 107+90.72
PT = Sta. 112+13.29

(RDGTCUR3)
PI = Sta. 121+41.99
Δ = 19°51'14" (RT)
R = 1,075.00'
T = 188.14'
L = 372.50'
E = 16.34'
e = N.C.
TR = N/A
SE Run = N/A
PC = Sta. 119+53.85
PT = Sta. 123+26.35

STATION 115+15.00
BUILT 2012 BY
CITY OF ST. CHARLES
SEC. 04-00092-00-BR
LOADING HL-93
STR. NO. 045-6024

NAME PLATE

See Std. 515001

DESIGN SPECIFICATIONS

2010 AASHTO LRFD Bridge Design Specifications

2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

LOADING HL-93

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

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.089g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.152g
Soil Site Class = D

DATA POINTS

①	℄ Brg. W. Abut. Sta. 109+45.00 Elev. 731.42	⑥	℄ Brg. Pier 5 Sta. 116+65.00 Elev. 723.76
②	℄ Pier 1 Sta. 110+65.00 Elev. 730.14	⑦	℄ Pier 6 Sta. 118+15.00 Elev. 722.16
③	℄ Pier 2 Sta. 112+15.00 Elev. 728.54	⑧	℄ Pier 7 Sta. 119+65.00 Elev. 720.56
④	℄ Pier 3 Sta. 113+65.00 Elev. 726.95	⑨	℄ Brg. E. Abut Sta. 120+85.00 Elev. 719.29
⑤	℄ Pier 4 Sta. 115+15.00 Elev. 725.35		

WATERWAY INFORMATION

Drainage Area = 1,540 sq. mi. Low Grade Elev. 724.45 @ Sta. 116+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	7,535	4,932.62	4,582.56	690.91	N/A	0.07	N/A	690.98
Design	50	11,225	6,614.41	6,145.64	692.72	N/A	0.08	N/A	692.80
Base	100	12,250	7,026.82	6,536.23	693.15	N/A	0.08	N/A	693.23
Overtopping									
Max. Calc.	500	16,875	8,773.78	8,104.34	694.89	N/A	0.08	N/A	694.97

DESIGN SCOUR ELEVATION TABLE

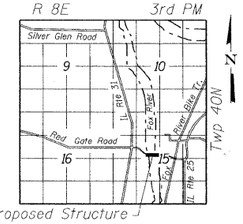
Design Scour Elevation (ft.)	W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	Pier 6	Pier 7	E. Abut.
	721.07	685.25	676.31	674.93	678.49	684.14	684.17	686.21	708.99

I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THIS BRIDGE IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADINGS 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.

STATE OF ILLINOIS · HOSSAM M. ABDELRAZIG · 081-005537 · REGISTERED STRUCTURAL ENGINEER

EXPIRATION DATE 11-30-12
DATE OCTOBER 20, 2011

ALFRED BENESCH & COMPANY



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
RED GATE ROAD OVER FOX RIVER
"PUBLIC WATER"
SEC. 04-00092-00-BR
KANE COUNTY
STATION 115+15.00
STRUCTURE NO. 045-6024

benesch engineers · scientists · planners
Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10092

FILE NAME = 0456024_001_GP&E.dgn	USER NAME = akeaschall	DESIGNED - MFH	REVISED -
		CHECKED - AJK	REVISED -
	PLOT SCALE =	DRAWN - RMG	REVISED -
	PLOT DATE = 11/9/2011	CHECKED - AJK	REVISED -

CITY OF ST. CHARLES

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 045-6024 RED GATE ROAD OVER FOX RIVER
SHEET NO. S1 OF S56 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	04-00092-00-BR	KANE	440	223
		CONTRACT NO. 63650		
	ILLINOIS FED. AID PROJECT			

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