

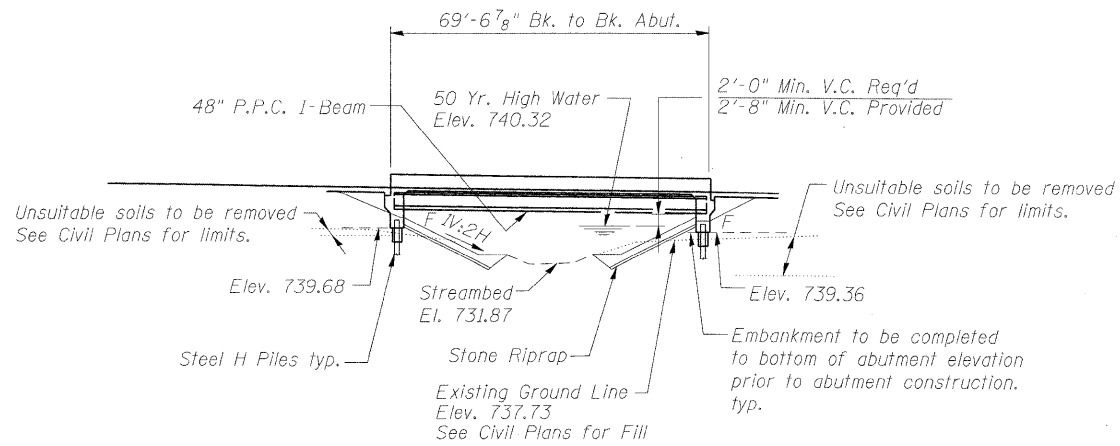
Benchmark BM-24:  
 "Aluminum Disk" set in concrete, 0.50± mile east of Stearns Road and  
 Dunham Road at the south side of Stearns Road. Elev. 762.678  
 No existing structure.

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

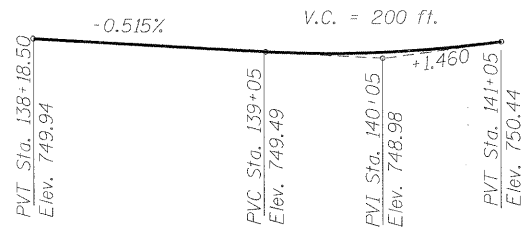
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		KANE	545	350
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET SS- 1  
 OF 22 SHEETS

Contract # 63074



**ELEVATION**



**PROFILE GRADE**  
 (WB IL 25/Stearns Rd.)

STATION 138+59.20  
 F.A.P. 2503  
 SECTION 06-00214-15-BR  
 BUILT 2011 BY  
 STATE OF ILLINOIS  
 LOADING HL-93  
 STRUCTURE NO. 045-2035

**NAME PLATE**  
 See std. 515001

**LOADING HL-93**  
 Allow 50#/sq. ft. for future wearing surface.  
**DESIGN SPECIFICATIONS**  
 2007 AASHTO LRFD Bridge Design Specifications (4th ed.)  
 with 2008 Interims

**DESIGN STRESSES**

**FIELD UNITS**

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)

**PRECAST PRESTRESSED UNITS**

$f'_c = 6,000$  psi  
 $f'_ci = 5,000$  psi  
 $f_{pu} = 270,000$  psi ( $1/2$ "  $\phi$  low lax. strands)  
 $f_{pb1} = 201,960$  psi ( $1/2$ "  $\phi$  low lax. strands)

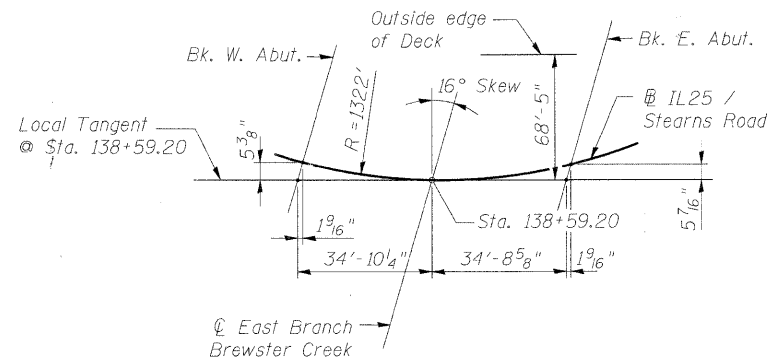
**CURVE DATA**

Along @ IL Rte 25  
 $\Delta = 13^\circ 58' 39"$  (LT)  
 $D = 4^\circ 20' 02"$   
 $R = 1322.00'$   
 $T = 162.06'$   
 $L = 322.51'$   
 $E = 9.90'$   
 $S.E. = 0.035$  ' / ' /

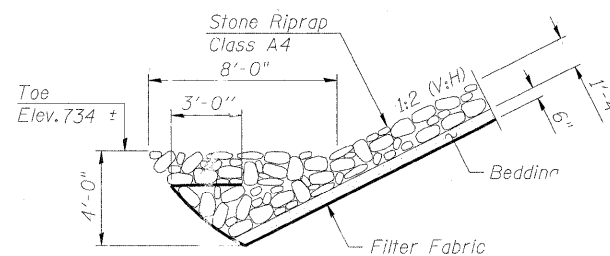
P.C. STA. = 138+18.50  
 P.T. STA. = 141+41.01  
 P.I. STA. = 139+80.56  
 SE Attained Sta. 504+18.73  
 to Sta. 506+62.93  
 SE Removed Sta. 140+89.21  
 to Sta. 143+33.41

**SEISMIC DATA**

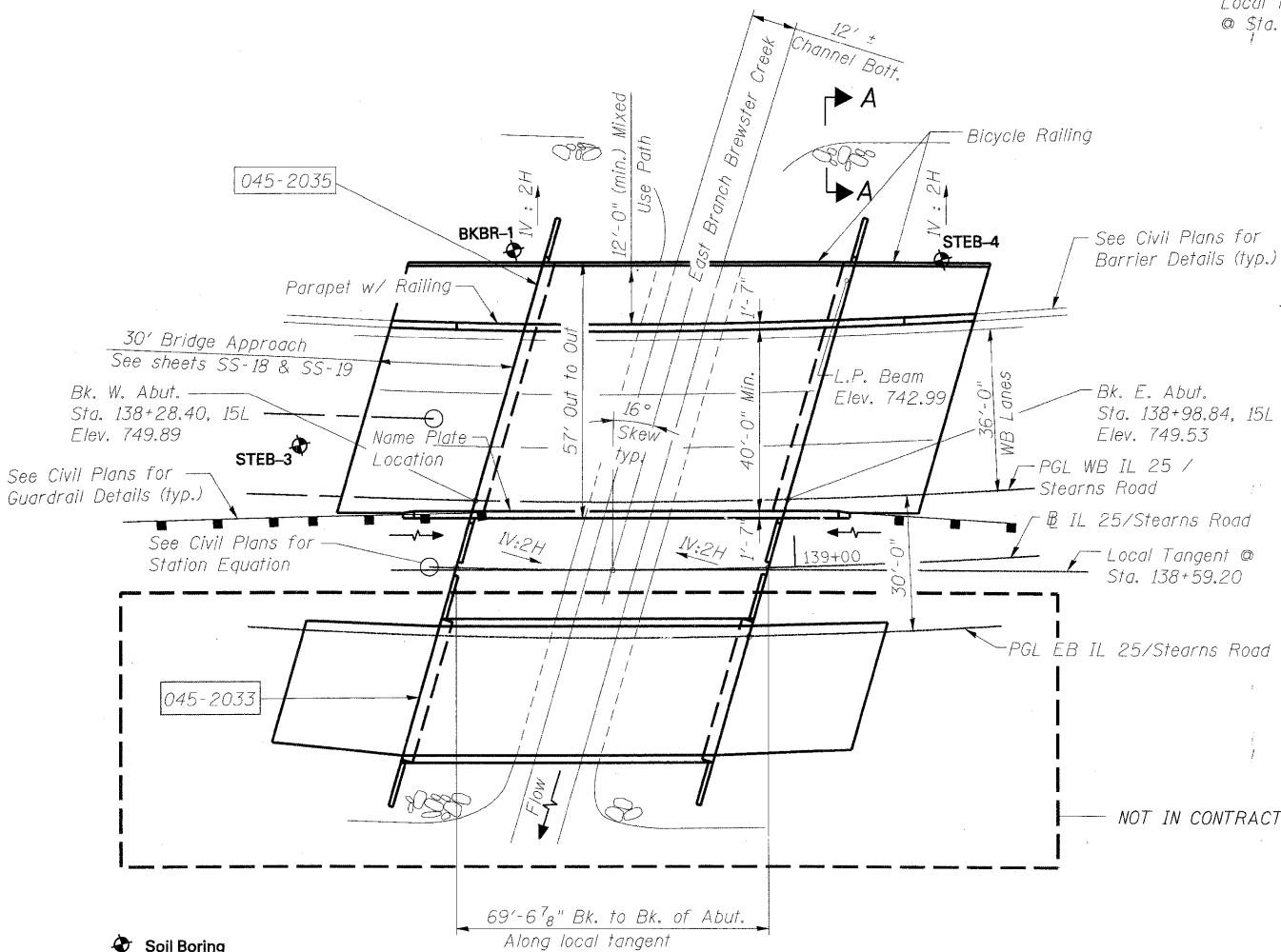
Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.08 g  
 Design Spectral Acceleration at 0.2 sec. ( $S_{D0.2}$ ) = 0.14 g  
 Soil Site Class = D



**OFFSET SKETCH**



**SECTION A-A**



**PLAN**

**DESIGN SCOUR ELEVATION TABLE**

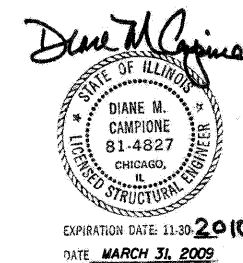
Design Scour Elevation (ft.)	W. Abut.	Piers	E. Abut.
	736.68	N/A	736.36

**WATERWAY INFORMATION**

Drainage Area = 5.497 Sq. mi.

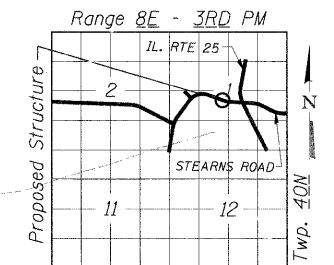
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist. Prop.	Nat. H.W.E.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	50	529	N/A 302.8	740.32	N/A 0.04	N/A 740.36
Base	100	678	N/A 331.7	740.65	N/A 0.07	N/A 740.72
Overtopping	>500**	4412	N/A 474.7	N/A	N/A	N/A 749.00
Max. Calc.	500*	1000	N/A 352.0	741.32	N/A 0.17	N/A 741.49

\* 500-Year Flowrate determined from analytical frequency curve - WSEL's Extrapolated  
 \*\* Overtopping occurs above the 500-Year WSEL under proposed conditions



**APPROVED**  
 FOR STRUCTURAL ADEQUACY ONLY

*Ralph E. Anderson*  
 Engineer of Bridges and Structures



**LOCATION SKETCH**

**GENERAL PLAN AND ELEVATION**  
**IL 25/STEARNS ROAD OVER THE**  
**EAST BRANCH OF BREWSTER CREEK**  
**F.A.P. 2503 - SEC. 06-00214-15-BR**  
**KANE COUNTY**  
**STATION 138+59.20**  
**STRUCTURE NO. 045-2035**

**benesch**  
 Engineers • Surveyors • Planners  
 205 North Michigan Avenue, Suite 2400  
 Chicago, Illinois 60601  
 312-565-0450  
 Job # 3944

DESIGNED	AJK
CHECKED	AAV
DRAWN	AYR
CHECKED	HMA/DMC

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 11/22/26 AM  
 3/30/2009