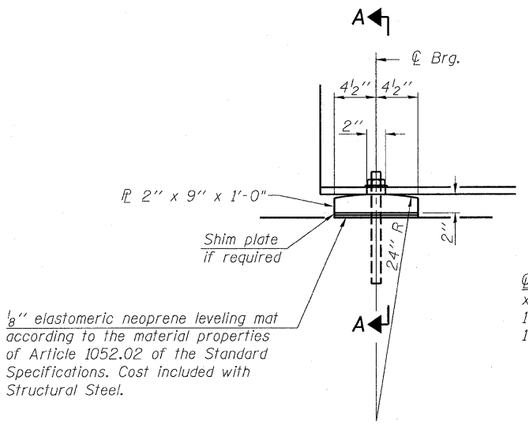
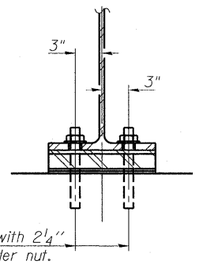
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

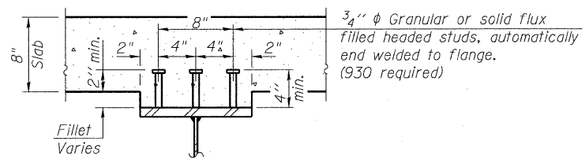


ELEVATION AT ABUTMENT

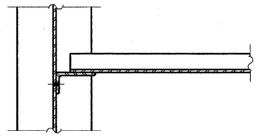


SECTION A-A

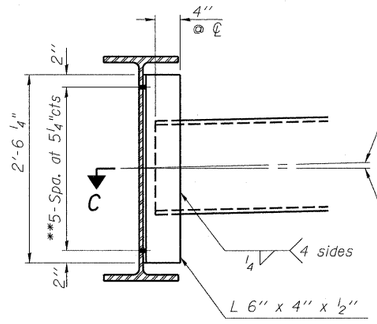
FIXED BEARING



SECTION B-B

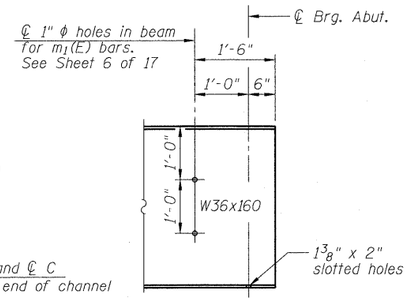


SECTION C-C



INTERIOR DIAPHRAGM D
20 Required

Note:
Two hardened washers required for each set of oversized holes.
*Alternate channel (C15x50) is permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.
The alternate, if utilized, shall be provided at no additional cost to the Department.
**¾" ϕ HS bolts, 15/16" ϕ holes



TYP. END OF BEAM ELEVATION

INTERIOR GIRDER MOMENT TABLE			0.5 Span
	I_s	(in^4)	9760
	$I_c(n)$	(in^4)	23,693
	$I_c(3n)$	(in^4)	18,329
	S_s	(in^3)	542
	$S_c(n)$	(in^3)	761
	$S_c(3n)$	(in^3)	716
	DC1	(k/')	0.855
	M_{DC1}	('k)	675.5
	DC2	(k/')	0.020
	M_{DC2}	('k)	15.8
	DW	(k/')	0.30
	M_{DW}	('k)	237.0
	M_{L+IM}	('k)	1179.8
	M_u (Strength I)	('k)	3284.3
*	$\phi_f M_n$	('k)	3847.6
	f_s DC1	(ksi)	15.0
	f_s DC2	(ksi)	0.26
	f_s DW	(ksi)	4.0
	f_s 1.3(L+IM)	(ksi)	24.2
	f_s (Service II)	(ksi)	43.5
	f_s (Total)(Strength I)	(ksi)	
**	V_f	(k)	27.2

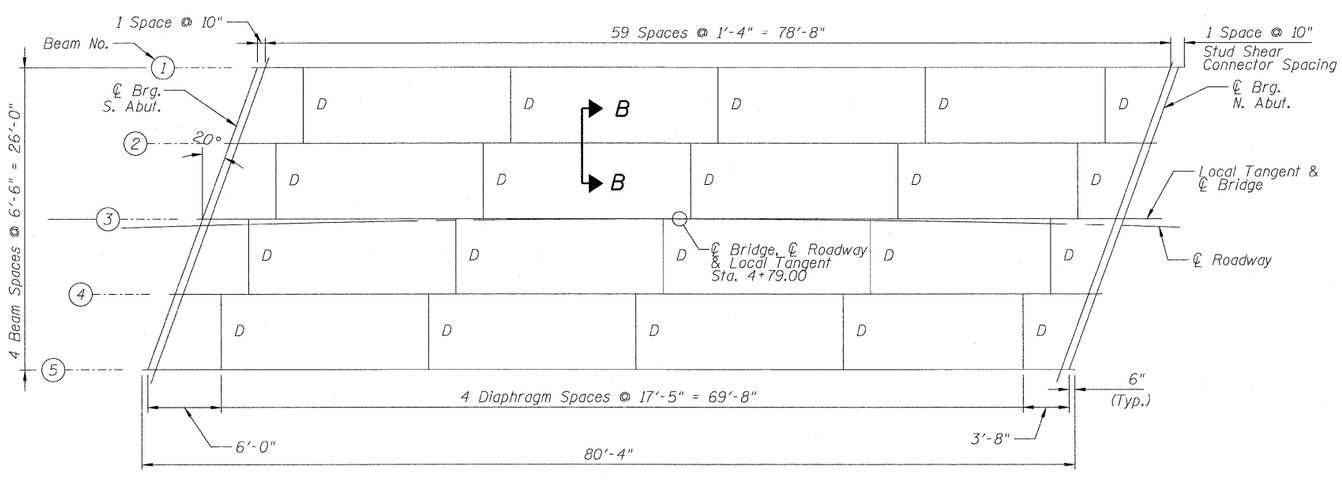
* Compact sections
** Non-Compact and slender sections

INTERIOR GIRDER REACTION TABLE		Abut.
R_{DC1}	(k)	34.0
R_{DC2}	(k)	0.80
R_{DW}	(k)	11.9
R_{L+IM}	(k)	85.3
R_{Total}	(k)	132.0

Notes:
All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s(Total-Strength I, and Service II) due to non-composite dead loads ($in.^4$ and $in.^3$).
$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s(Total-Strength I, and Service II) due to short-term composite live loads ($in.^4$ and $in.^3$).
$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s(Total-Strength I, and Service II) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).
Z: Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations ($in.^3$).
DC1: Un-factored non-composite dead load (kips/ft.).
M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$
$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
$\phi_f M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).
f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{L+IM}$
f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$
V_f: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.



FRAMING PLAN
(All Beams W36x160 "NTR" - M270 GR. 50)

STRUCTURAL STEEL DETAILS
F.A.S. ROUTE 454
SECTION 04-00070-00-BR
SCHUYLER COUNTY
STATION 4+79.00
S.N. 085-3055

GREENE & BRADFORD, INC.
OF SPRINGFIELD
CONSULTING ENGINEERS
350 CONSTITUTION DRIVE
SPRINGFIELD, ILLINOIS 62711-7007
PROFESSIONAL DESIGN FIRM 184-001179
PROFESSIONAL & STRUCTURAL ENGINEERING CORPORATION
(217) 793-8944, (217) 793-5277 (FAX) E-MAIL - code@greenebradford.com

DESIGNED	NIEWINSKI
CHECKED	TRELLO
DRAWN	VERENSKI
CHECKED	TRELLO

SHEET NO. 8	F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17 SHEETS	454	04-00070-00-BR	SCHUYLER	30	16
			CONTRACT NO. 93499		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

G&B PROJECT: -
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USER NAME = franky