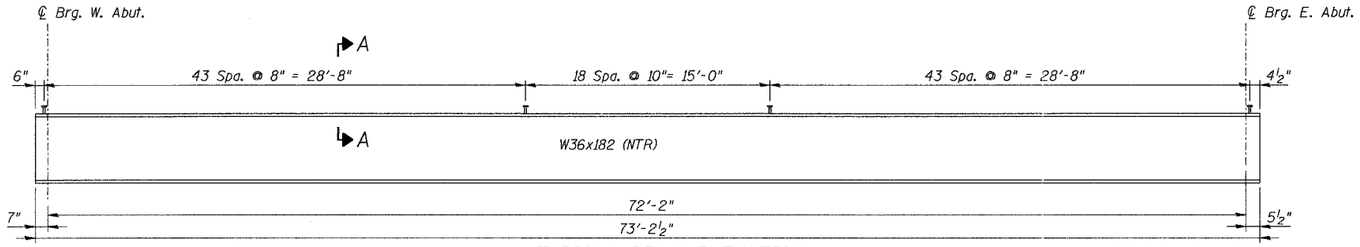
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
533	119R-2B	McHenry	64	27
REG. ROAD DIST.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 13 OF 21 SHEETS

Contract #62336

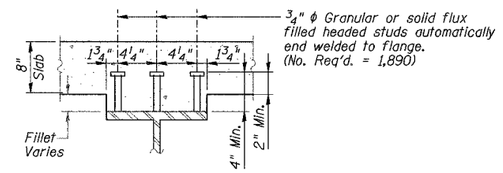


TYPICAL BEAM ELEVATION

INTERIOR BEAM MOMENT TABLE		0.5 Span
I_s	(in^4)	11.300
I_c (n)	(in^4)	28.521
I_c (3n)	(in^4)	20.706
S_s	(in^3)	621.9
S_c (n)	(in^3)	896.9
S_c (3n)	(in^3)	806
DC1	(k/')	0.98
M_{DC1}	('k)	621
DC2	(k/')	0.25
M_{DC2}	('k)	163
DW	(k/')	0.33
M_{DW}	('k)	217
M_{LL+Imp}	('k)	1072
M_u (Strength I)	('k)	3021.4
$\phi_f M_n$, $\phi_f M_{nc}$	('k)	4494.3
f_s DC1	(ksi)	11.97
f_s DC2	(ksi)	2.44
f_s DW	(ksi)	3.21
f_s 1.3(LL+I)	(ksi)	18.64
f_s (Service II)	(ksi)	36.26
f_s (Total)(Strength I)	(ksi)	45.5
V_f	(k)	24.1

INTERIOR GIRDER REACTION TABLE HL93 Loading		Abut.
R_{DC1}	(k)	34.44
R_{DC2}	(k)	9.02
R_{DW}	(k)	12.02
R_{LL+Imp}	(k)	81.66
R_{Total}	(k)	137.13

TOP OF BEAM ELEVATIONS (For Fabrication only)	℄ Brg. W. Abut.	℄ Brg. E. Abut.
Beam 1	837.982	837.982
Beam 2	838.123	838.123
Beam 3	838.233	838.233
Beam 4	838.233	838.233
Beam 5	838.123	838.123
Beam 6	837.982	837.982



SECTION A-A

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.

$I_c(n)$, $S_c(n)$ — Composite moment of intertia 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.

$I_c(3n)$, $S_c(3n)$ — 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.

DC1 — Un-factored non-composite dead load.

M_{DC1} — Un-factored moment due to non-composite dead load.

DC2 — Un-factored long-term composite (superimposed excluding future wearing surface) dead load.

M_{DC2} — Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load.

DW — Un-factored long-term composite (superimposed future wearing surface only) dead load.

M_{DW} — Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load.

M_{LL+Imp} — Un-factored live load moment plus dynamic load allowance (impact).

M_u(Strength I) — Factored design moment.
$1.25\ (M_{DC1} + M_{DC2}) + 1.5M_{DW} + 1.75M_{LL+Imp}$

$\phi_f M_n$ — Compact composite positive moment capacity computed according to Article 6.10.7.1.

$\phi_f M_{nc}$ — Compact non-composite negative moment capacity computed according to Article A6.1.1.

f_s(Service II) — Sum of stresses as computed from the moments below.
$M_{DC1} + M_{DC2} + M_{DW} + 1.3M_{LL+Imp}$

f_s(Total)(Strength I) — Sum of stresses as computed from the moments below on non-compact section.
$1.25\ (M_{DC1} + M_{DC2}) + 1.5M_{DW} + 1.75M_{LL+Imp}$

V_f — Factored shear range computed according to Article 6.10.10.

NOTES:
Work this Sheet with Sheet 12 of 21.
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
All Structural Steel on this Sheet shall be AASHTO M270 Grade 50W Steel.

BILL OF MATERIAL

Item	Unit	Total
Stud Shear Connectors	EACH	1,890

DESIGNED	J.Z.
CHECKED	S.D.H.
DRAWN	M.S.M.
CHECKED	S.D.H.

BEAM DETAILS

IL Route 176 over the Kishwaukee River
F.A.P. RTE 533, SECTION 119R-2B
McHENRY COUNTY
STATION 10+00.00
S.N. 056-0078

DATE: 10-05-07

GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC
CHICAGO ILLINOIS

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