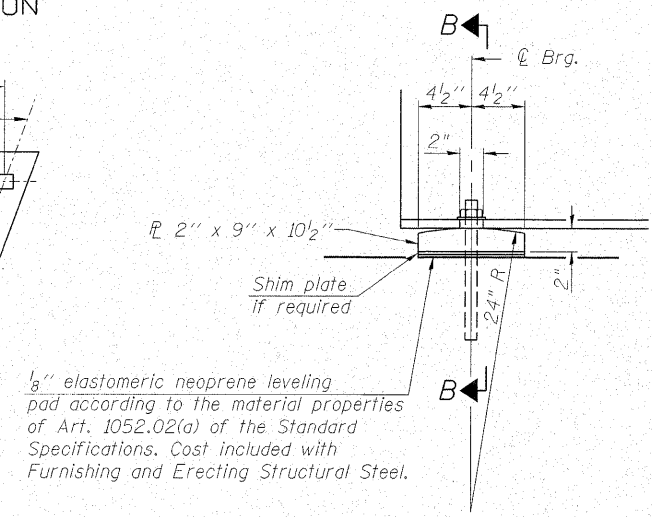
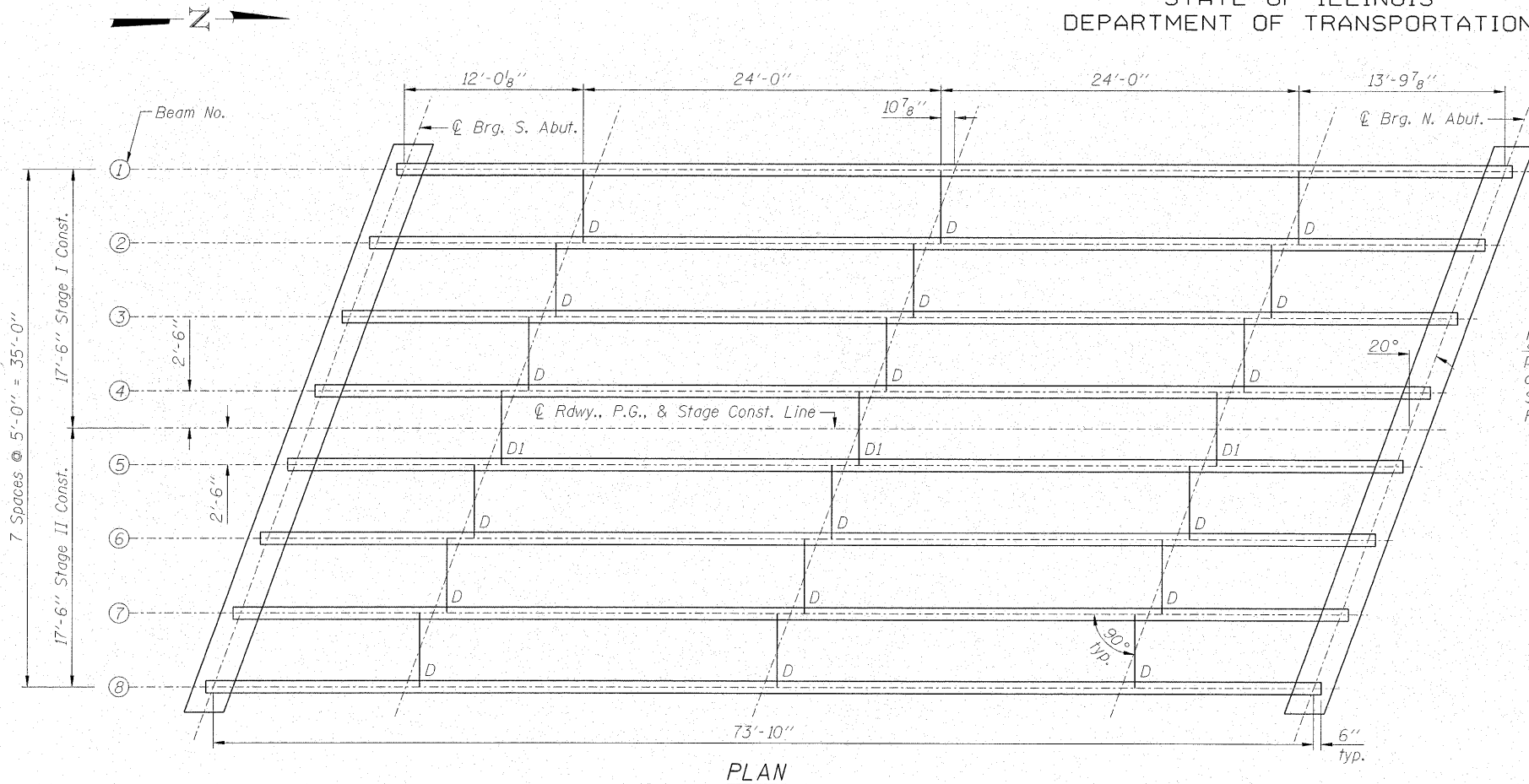


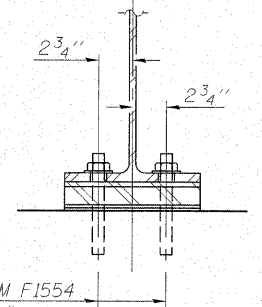
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 12
FAP 770 IL 128	(I15BR) B-1	SHELBY	39	29	19 SHEETS
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT			

Contract # 74233

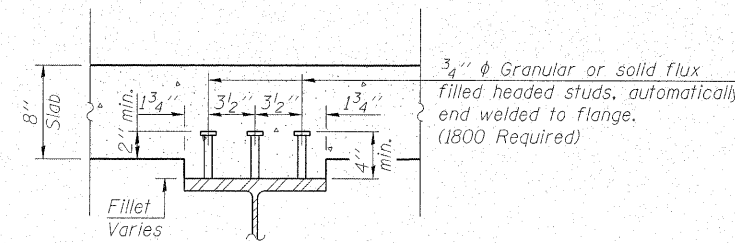


ELEVATION AT ABUTMENT
FIXED BEARING



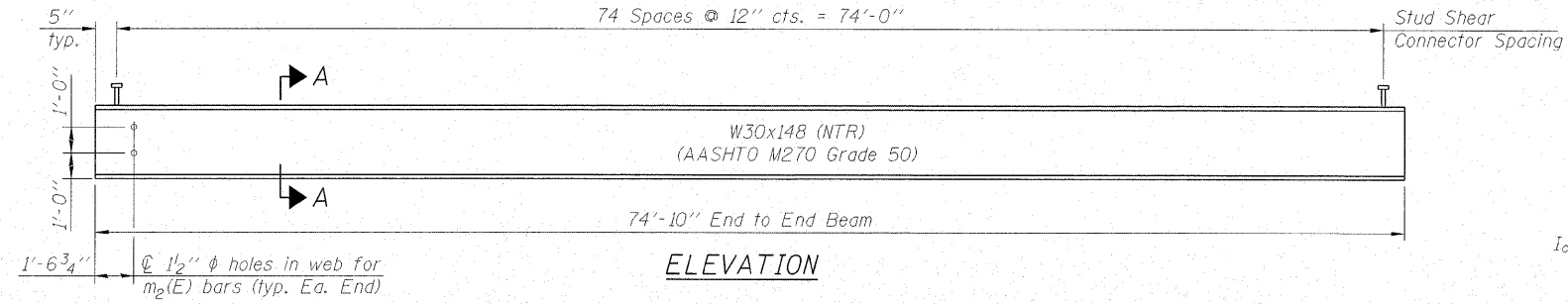
1" ϕ x 12" anchor bolts (ASTM F1554 Grade 36) with 2 1/4" x 2 1/4" x 5/16" ϕ washer under nut. 1 1/2" x 2" slotted hole in flange. 1 1/2" ϕ holes in bearing plate. Contractor has the option of cast in place or drilled installation.

SECTION B-B



SECTION A-A

	(k)	Abut.
R _{DC1}	(k)	25.5
R _{DC2}	(k)	4.2
R _{DW}	(k)	8.3
R _{M + Imp}	(k)	68.6
R _{Total}	(k)	106.6



ELEVATION

TOP OF BEAM ELEVATIONS
(For Fabrication Only)

Location	ϕ Brg. S. Abut.	ϕ Brg. N. Abut.
Beam 1	654.63	654.66
Beam 2	654.72	654.76
Beam 3	654.80	654.85
Beam 4	654.87	654.93
Beam 5	654.87	654.93
Beam 6	654.78	654.85
Beam 7	654.70	654.78
Beam 8	654.59	654.68

Notes:
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
For details of steel diaphragms, see sheet 11 of 19.
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 on diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (F_y = 36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
Two 3/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

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).
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 + Imp}: 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 + Imp}
 $\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (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 + Imp}
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 + Imp}
V_r: Factored shear range computed according to Article 6.10.10.

	(in ⁴)	(in ³)
I _s	(in ⁴)	6680
I _c (n)	(in ⁴)	15936
I _c (3n)	(in ⁴)	11501
S _s	(in ³)	436
S _c (n)	(in ³)	613
S _c (3n)	(in ³)	549
DC1	(k/ft)	0.690
M _{DC1}	(k)	472.3
DC2	(k/ft)	0.113
M _{DC2}	(k)	77.4
DW	(k/ft)	0.225
M _{DW}	(k)	154.0
M _{L + Imp}	(k)	884.5
M _u (Strength I)	(k)	2466
$\phi_r M_n$, $\phi_r M_{nc}$	(k)	2952.6
f _s DC1	(ksi)	12.999
f _s DC2	(ksi)	1.692
f _s DW	(ksi)	3.366
f _s 1.3(L + I)	(ksi)	22.509
f _s (Service II)	(ksi)	40.566
f _s (Total Strength I)	(ksi)	—
V _r	(k)	23.4

STRUCTURAL STEEL
IL ROUTE 128 OVER
ROBINSON CREEK TRIBUTARY
F.A.P. RTE. 770 - SECTION (I15BR)B-1
SHELBY COUNTY
STATION 408+75.45
STRUCTURE NO. 087-0031

DESIGNED - BAS
CHECKED - KEF
DRAWN - LAD
CHECKED - RJA / KEF