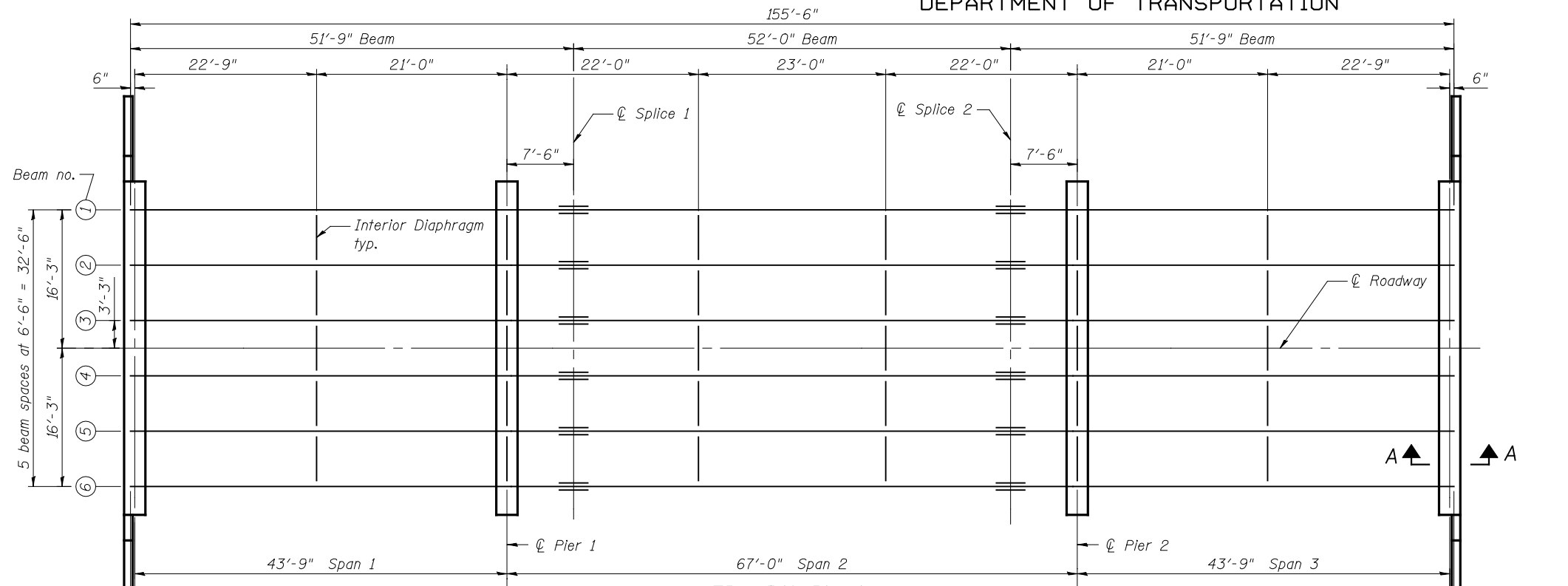
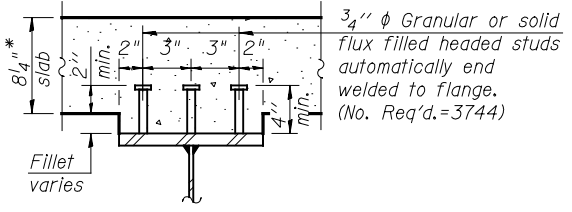


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



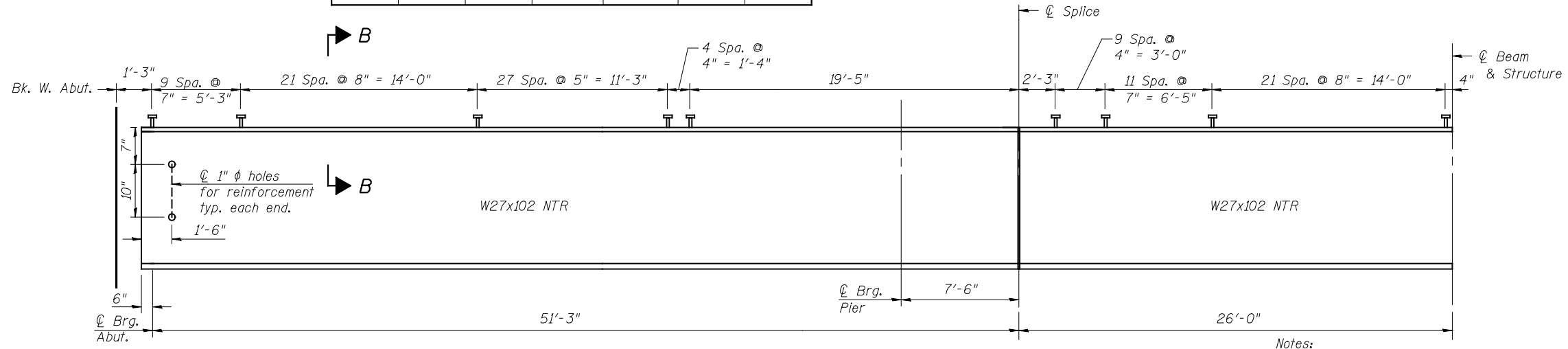
FRAMING PLAN
TOP OF BEAM ELEVATIONS
(For Fabrication Only)

Beam	Location					
	℄ Brg. W. Abut.	℄ Brg. Pier 1	℄ Splice 1	℄ Splice 2	℄ Brg. Pier 2	℄ Brg. E. Abut.
1	677.90	677.90	677.90	677.90	677.90	677.90
2	678.03	678.03	678.03	678.03	678.03	678.03
3	678.13	678.13	678.13	678.13	678.13	678.13
4	678.13	678.13	678.13	678.13	678.13	678.13
5	678.03	678.03	678.03	678.03	678.03	678.03
6	677.90	677.90	677.90	677.90	677.90	677.90



SECTION B-B
* Before grinding according to Bridge Smoothness Specification

	Abut.	Pier
R_{DC1} (k)	11.2	49.3
R_{DC2} (k)	2.4	9.2
R_{DW} (k)	4.7	18.5
R_{L+IM} (k)	58.8	91.5
R_{Total} (k)	77.1	168.5



OUTSIDE BEAM
(Full beam, typ.)

BEAM ELEVATION

Space Stud Shear Connectors symmetrically about the centerline of structure.

CENTER BEAM
(Half beam)

Notes:
All structural steel shall be AASHTO M270 Gr. 50W.
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.
See sheet 11 of 17 for details of splices, bearings, and diaphragms.
See sheet 6 of 17 for Section A-A.

	0.4 Sp. 1 0.6 Sp. 3	Pier 1 or 2	0.5 Sp. 2
I_s (in ⁴)	3,620	3,620	3,620
$I_c(n)$ (in ⁴)	10,439	--	10,439
$I_c(3n)$ (in ⁴)	7,764	--	7,764
S_s (in ³)	267	267	267
$S_c(n)$ (in ³)	405	--	405
$S_c(3n)$ (in ³)	367	--	367
$DC1$ (k/')	0.783	0.783	0.783
M_{DC1} (k)	80	260	179
$DC2$ (k/')	0.150	0.150	0.150
M_{DC2} (k)	18	41	44
DW (k/')	0.300	0.300	0.300
M_{DW} (k)	37	81	87
$M_L + IM$ (k)	421	319	638
M_u (Strength I) (k)	915	1,057	1,526
* $\phi_f M_n, \phi_f M_{nc}$ (k)	2,155	1,113	2,155
f_s DC1 (ksi)	3.6	11.7	8.0
f_s DC2 (ksi)	0.6	1.8	1.4
f_s DW (ksi)	1.2	3.6	2.8
f_s 1.3(L+IM) (ksi)	16.2	18.6	24.6
f_s (Service II) (ksi)	21.6	35.8	36.9
** f_s (Total)(Strength I) (ksi)	--	--	--
V_f (k)	20.0	--	19.0

* Compact sections
** Non-Compact and slender sections
 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 (in⁴ and in³).
 $I_c(n), S_c(n)$: 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 (in⁴ and in³).
 $I_c(3n), S_c(3n)$: 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 (in⁴ and in³).
Z: Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations (in³).
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.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	L. Sum	1
Stud Shear Connectors	Each	3744
Anchor Bolts, 1"	Each	48

STRUCTURAL STEEL & FRAMING PLAN
U.S. 136 OVER PRAIRIE CREEK
STRUCTURE NO. 057-0245

SHEET 10 OF 17	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	315	120BR-1	MCLEAN	49	21
STA. 126+95.70			CONTRACT NO. 70524		
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		

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DATE: 09/30/2009 14:48

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DESIGNED: CMF	DRAWN: RNH
CHECKED: TMM	CHECKED: TMM