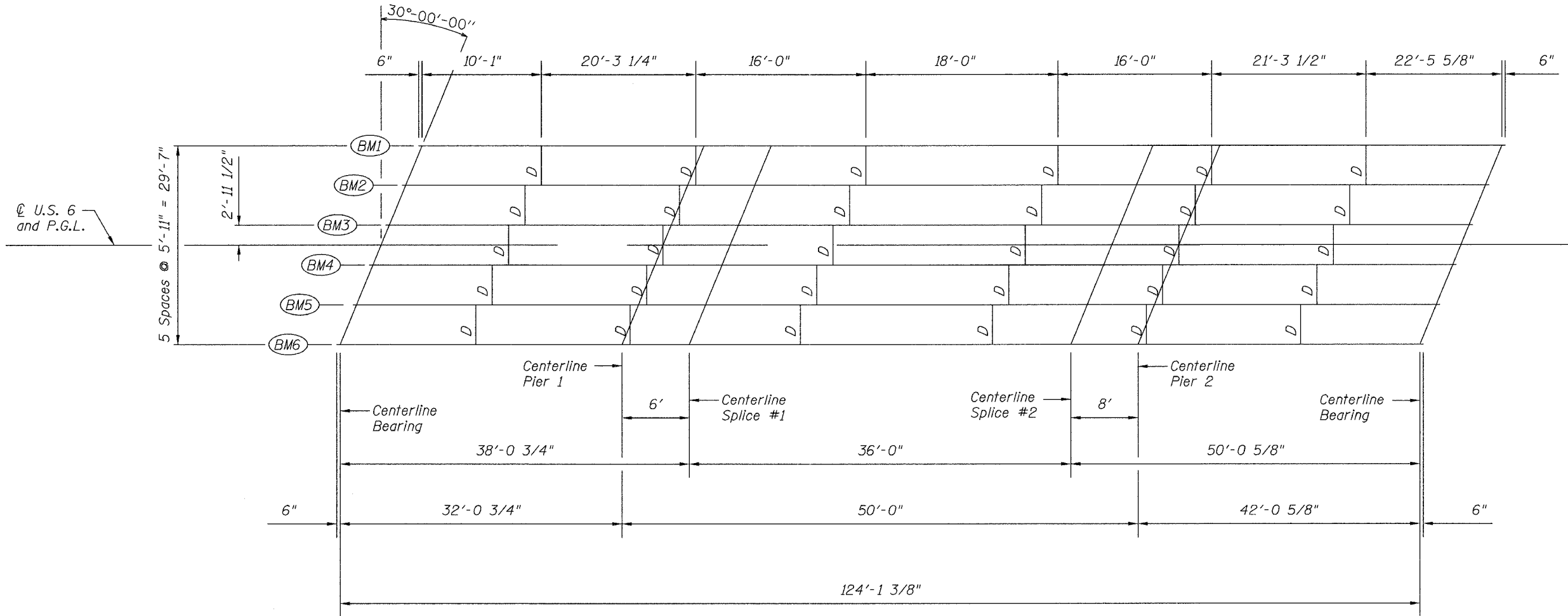


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
FAP 2247	13X-BR-1	BUREAU	51	19
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

Contract #64938

Legend  
D= W8x28



FRAMING PLAN

	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3
$I_s$ ( $in^4$ )	1830	1830	1830	1830	1830
$I_c (n)$ ( $in^4$ )	6214	-	6214	-	6214
$I_c (3n)$ ( $in^4$ )	4716	-	4716	-	4716
$S_s$ ( $in^3$ )	154	154	154	154	154
$S_c (n)$ ( $in^3$ )	253	-	253	-	253
$S_c (3n)$ ( $in^3$ )	229	-	229	-	229
$Z$ ( $in^3$ )	-	-	-	-	-
$Q$ ( $k/l$ )	0.64	1.06	0.64	1.06	0.64
$M_L$ ( $k$ )	34.8	167.8	73.1	215.8	78.4
$s_L$ ( $k/l$ )	0.42	-	0.42	-	0.42
$M_{sL}$ ( $k$ )	28.4	-	65.2	-	59.4
$M_L$ ( $k$ )	145.2	102.8	241.6	112.7	228.2
$M (Imp)$ ( $k$ )	43.5	30.9	70.0	32.7	63.9
$S_3[M_L + M(Imp)]$ ( $k$ )	314.5	222.8	519.3	242.3	486.8
$M_a$ ( $k$ )	491.0	507.8	854.9	595.6	812.0
$M_u$ ( $k$ )	1366	-	1366	-	1366
$f_s L$ (non-comp) ( $ksi$ )	2.71	13.08	5.70	16.82	6.11
$f_s L$ (comp) ( $ksi$ )	1.49	-	3.42	-	3.11
$f_s S_3(L + Imp)$ ( $ksi$ )	14.92	17.36	24.63	18.88	23.09
$f_s$ (Overload) ( $ksi$ )	19.12	30.44	33.75	35.70	32.31
$f_s$ (Total) ( $ksi$ )	-	39.57	-	46.41	-
$VR$ ( $k$ )	43.0	-	49.0	-	46.0

	W. Abut.	Pier 1	Pier 2	E. Abut.
$R_L$ ( $k$ )	11.7	47.6	54.7	17.1
$R_L$ ( $k$ )	30.3	37.9	38.7	33.1
$Imp.$ ( $k$ )	9.1	11.4	11.3	9.9
$R$ (Total) ( $k$ )	51.1	96.9	104.7	60.1

$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $f_s$  (Total & Overload).

$I_c (n)$  and  $S_c (n)$  are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

$I_c (3n)$  and  $S_c (3n)$  are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)

$VR$  is the maximum Live Load + Impact shear range in span.

$Z$  is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.

$M_a$  (Applied Moment) =  $1.3[M_L + M_{sL} + S_3(M_L + M(Imp))]$ .

The Plastic Moment capacity ( $M_u$ ) is computed according to AASHTO 10.48.1 and 10.50.1.1.

$f_s$  (Overload) is the sum of the stresses due to  $M_L + M_{sL} + S_3(M_L + M(Imp))$ .

$f_s$  (Total) (Non-compact section) is the sum of the stresses due to  $1.3[M_L + M_{sL} + S_3(M_L + M(Imp))]$ .

Note:  
All beams and splice plates shall be NTR (notch toughness-zone 2) and M270 Grade 50W.

FRAMING PLAN  
FAS ROUTE 2247 (U.S. 6)  
OVER BRUSH CREEK  
SECTION 13X-BR-1  
BUREAU COUNTY  
STA. 1510+65.80  
SN 006-0169

DESIGNED	JDA
CHECKED	JKC
DRAWN	NG
CHECKED	JDA