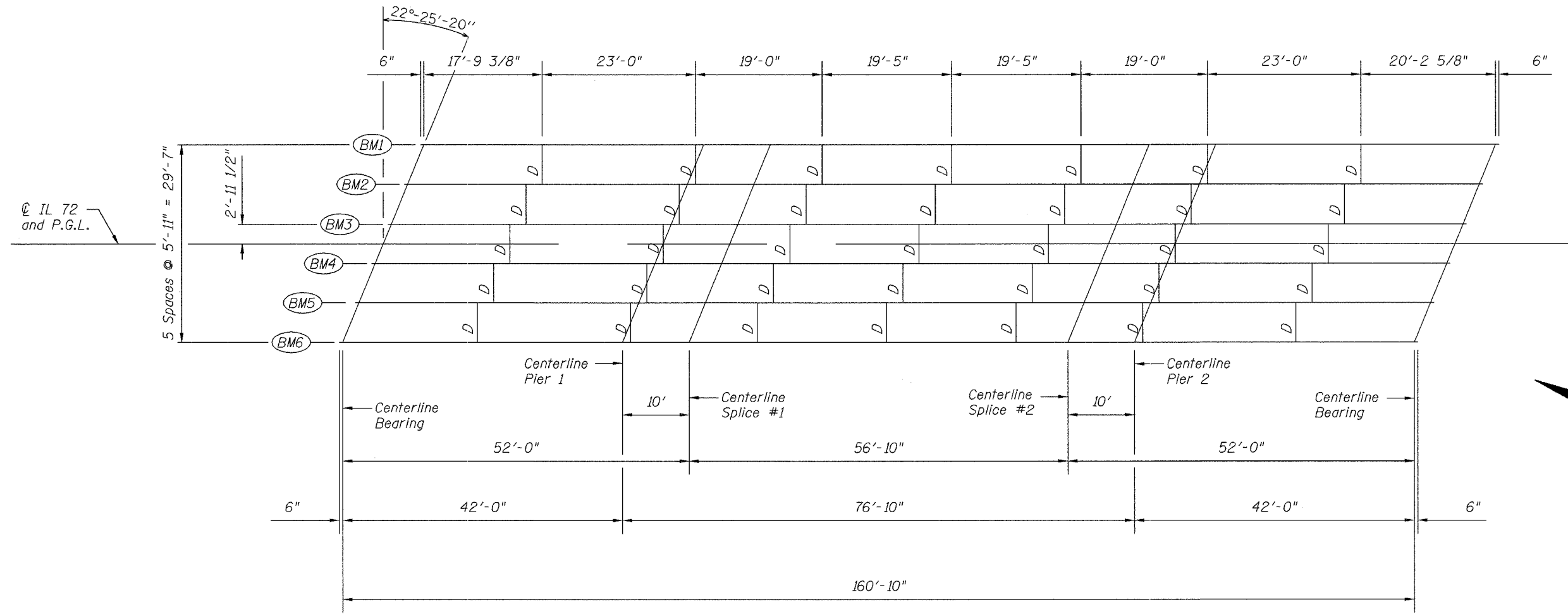


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
FAP 553	125 VBR-1	DEKALB	55	22
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

Contract #64858

Legend  
D= W16x36



FRAMING PLAN

	0.4 Sp. 1	Pier	0.5 Sp. 2
$I_s$ ( $in^4$ )	4470	4470	4470
$I_c (n)$ ( $in^4$ )	-	-	12534
$I_c (3n)$ ( $in^4$ )	-	-	9163
$S_s$ ( $in^3$ )	299.0	299.0	299.0
$S_c (n)$ ( $in^3$ )	-	-	454.5
$S_c (3n)$ ( $in^3$ )	-	-	408.9
$Z$ ( $in^3$ )	-	-	-
$\phi$ ( $k'$ )	1.11	1.11	0.69
$M\phi$ (k)	58.8	437.9	218.1
$s\phi$ ( $k'$ )	-	-	0.42
$M_s\phi$ (k)	-	-	158.7
$M\phi$ (k)	213.5	214.6	418.0
$M$ (Imp) (k)	64.0	53.6	104.5
$S_3[M\phi + M(Imp)]$ (k)	462.5	447	870.8
$M\phi$ (k)	677.7	1150.4	1621.9
$M_u$ (k)	-	-	1878.6
$F_s\phi$ (non-comp) (ksi)	2.36	17.57	8.75
$F_s\phi$ (comp) (ksi)	-	-	4.66
$F_s^{S_3}(L + Imp)$ (ksi)	18.56	17.94	22.99
$F_s$ (Overload) (ksi)	20.92	35.51	36.40
$F_s$ (Total) (ksi)	27.2	46.17	-
$V_R$ (k)	48.4	-	51.1

	Abut.	Pier 1 & 2
$R\phi$ (k)	12.8	76.1
$R\phi$ (k)	32.6	41.3
$I_{mp}$ (k)	9.8	8.5
$R$ (Total) (k)	55.2	125.9

$I_s$  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)  
 $V_R$  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) =  $1.3[M\phi + M_s\phi + S_3(M\phi + M(Imp))]$ .  
 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  $M\phi + M_s\phi + S_3(M\phi + M(Imp))$ .  
 $f_s$  (Total) (Non-compact section) is the sum of the stresses due to  $1.3[M\phi + M_s\phi + S_3(M\phi + M(Imp))]$ .

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

FRAMING PLAN  
IL RTE 72 OVER  
IOWA CHICAGO & EASTERN RAILROAD  
FAP ROUTE 553  
SECTION 125VBR-1  
DEKALB COUNTY  
STA. 144+14.40  
SN 019-0047

DESIGNED	JKC
CHECKED	JLS
DRAWN	ARR
CHECKED	JKC