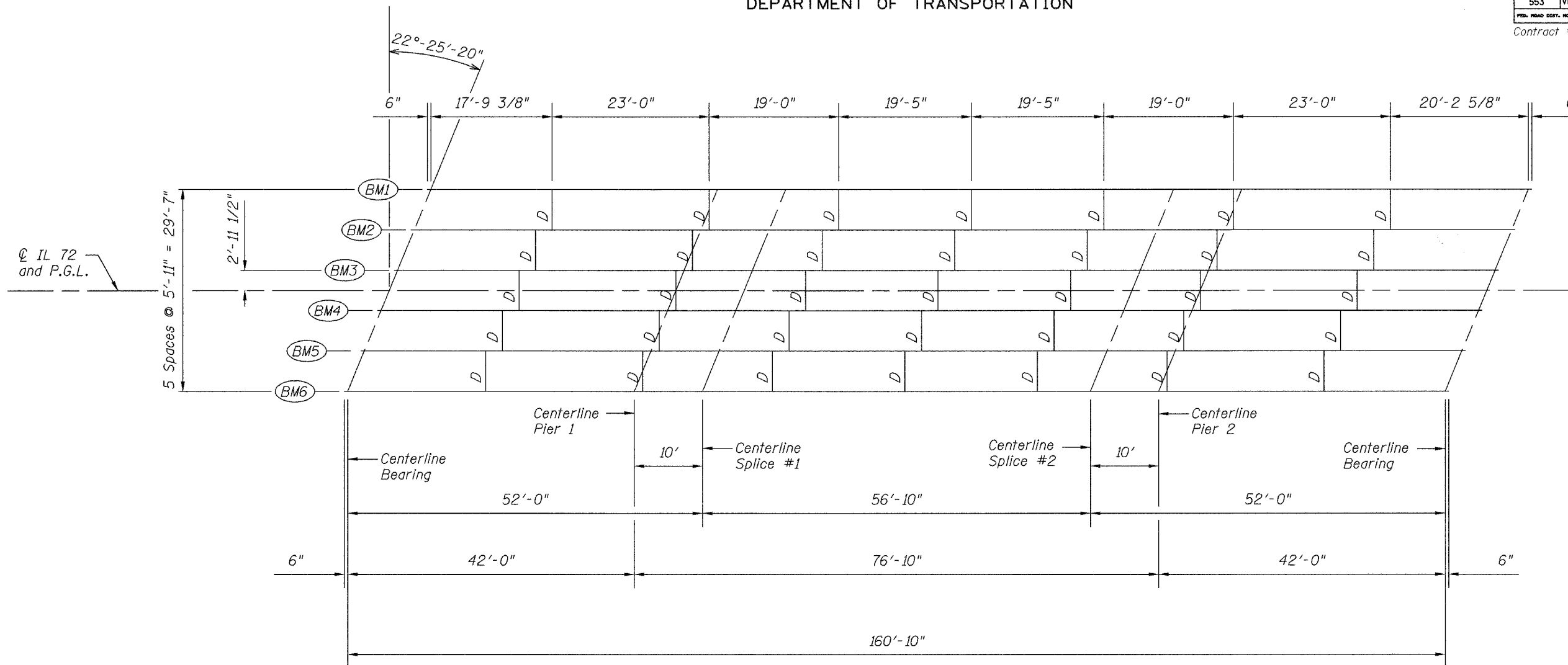


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 7
FAP 553	125 VBR-1F	DEKALB	15	9	13 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Contract #64B90



Legend
D= W16x36

FRAMING PLAN

INTERIOR GIRDER MOMENT TABLE			
	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)	-	-	-
ϕ (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
$5/8[M\phi + M(imp)]$ (k)	462.5	447	870.8
M_a (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
$f_s 5/8(\phi + imp)$ (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	-
VR (k)	48.4	-	51.1

INTERIOR GIRDER REACTION TABLE		
	Abut.	Pier 1 & 2
$R\phi$ (k)	12.8	76.1
$R\phi$ (k)	32.6	41.3
$Imp.$ (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)

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) = $1.3[M\phi + M_s\phi + 5/8(M\phi + M(imp))]$.
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 $M\phi + M_s\phi + 5/8(M\phi + M(imp))$.

f_s (Total) (Non-compact section) is the sum of the stresses due to $1.3[M\phi + M_s\phi + 5/8(M\phi + M(imp))]$.

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

DESIGNED	JKC
CHECKED	JLS
DRAWN	ARR
CHECKED	JKC

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