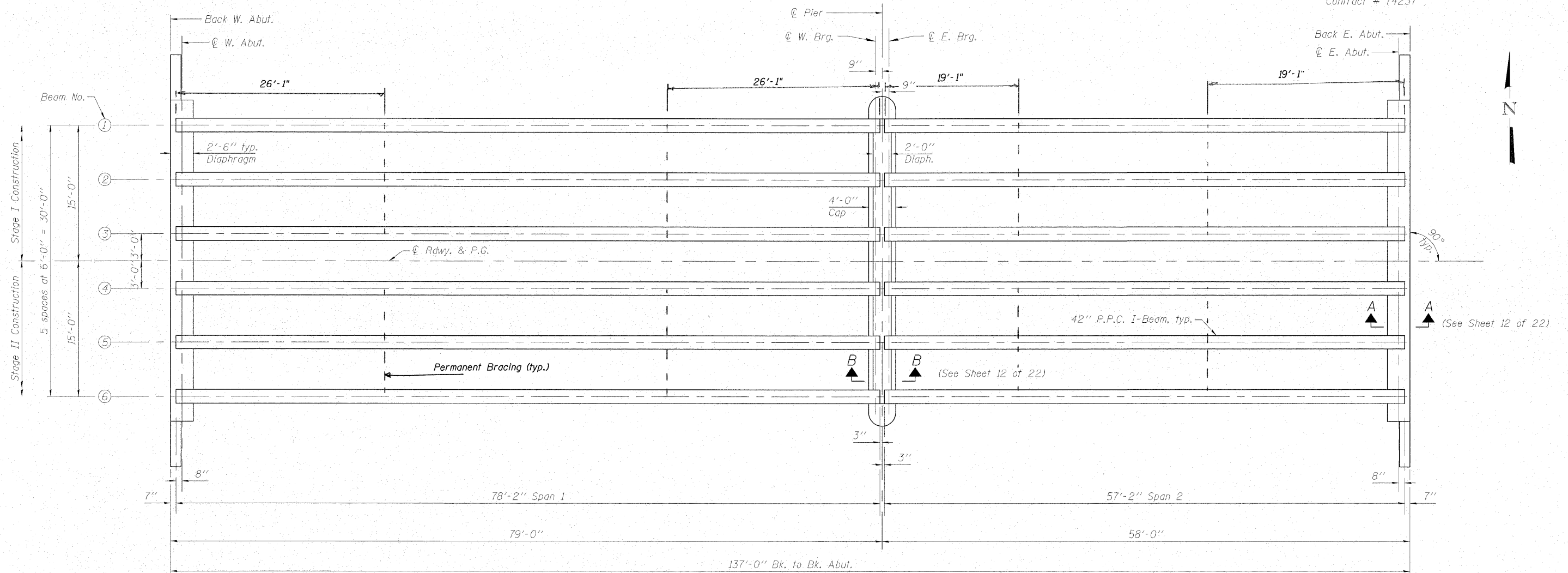


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 773 IL 121	(108BR- 3)B-1	CUMBERLAND	96	48
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 13  
22 SHEETS

Contract # 74237



**FRAMING PLAN**

	0.4 Sp. 1	Pier	0.6 Sp. 2
$I$	90956	90956	90956
$I'$	267907	—	267907
$S_b$	5153	5153	5153
$S_b'$	8665	—	8665
$S_t$	3736	3736	3736
$S_t'$	24179	—	24179
$DC1$	1.102	1.102	1.102
$M_{DC1}$	799.4	—	425.9
$DC2$	0.150	0.150	0.150
$M_{DC2}$	72.4	91.0	21.6
$DW$	0.267	0.267	0.267
$M_{DW}$	128.9	162.0	38.4
$M_L + Imp$	871.6	773.3	624.8

- $I$ : Non-composite moment of inertia of beam section ( $in^4$ ).
- $I'$ : Composite moment of inertia of beam section ( $in^4$ ).
- $S_b$ : Non-composite section modulus for the bottom fiber of the prestressed beam ( $in^3$ ).
- $S_b'$ : Composite section modulus for the bottom fiber of the prestressed beam ( $in^3$ ).
- $S_t$ : Non-composite section modulus for the top fiber of the prestressed beam ( $in^3$ ).
- $S_t'$ : Composite section modulus for the top fiber of the prestressed beam ( $in^3$ ).
- $DC1$ : 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.).

	W. Abut.	Pier		E. Abut.
		Span 1	Span 2	
$R_{DC1}$	(k)	42.8	42.8	31.3
* $R_{DC2}$	(k)	4.7	6.4	2.7
* $R_{DW}$	(k)	8.3	11.4	4.7
* $R_L + Imp$	(k)	68.7	51.0	62.6
$R_{Total}$	(k)	124.5	111.6	101.3

\* The total  $R_{DC2}$ ,  $R_{DW}$  and  $R_L + Imp$  are assumed to be distributed evenly to each bearing line at a pier regardless of the span ratios. The bearing design at a pier is based on the maximum reactions of either span.



DESIGNED - BAS
CHECKED - KEF
DRAWN - SGM
CHECKED - RJA

**FRAMING PLAN**  
IL ROUTE 121 OVER MULE CREEK  
F.A.P. RTE. 773 - SECTION (108BR-3)B-1  
CUMBERLAND COUNTY  
STATION 399+34.00  
STRUCTURE NO. 018-0062