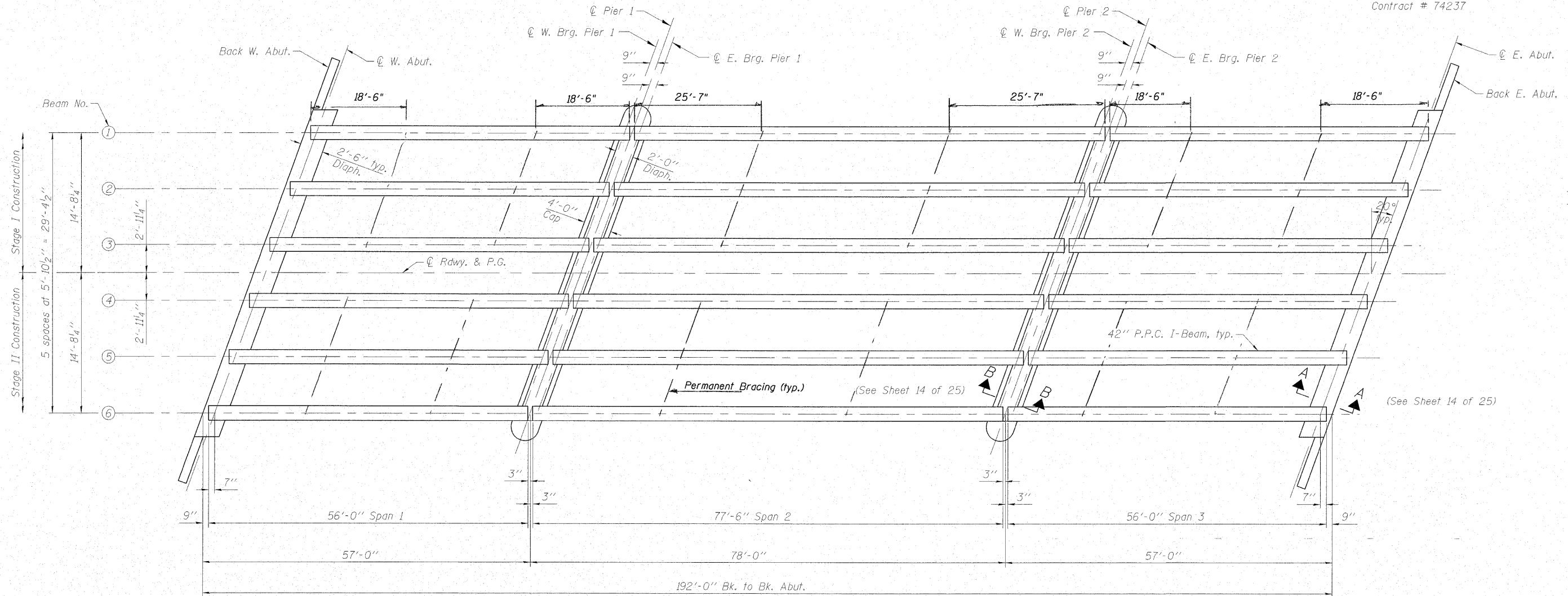


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. FA 773 IL 121	SECTION (109B) B-1	COUNTY CUMBERLAND	TOTAL SHEETS 96	SHEET NO. 72	SHEET NO. 15 25 SHEETS
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-		

Contract # 74237



FRAMING PLAN

	0.4 Sp. 1 0.6 Sp. 2	Pier 1 or 2	0.5 Sp. 2
I	(in ⁴) 90956	90956	90956
I'	(in ⁴) 265907	—	265907
S_b	(in ³) 5153	5153	5153
S_b'	(in ³) 8639	—	8639
S_t	(in ³) 3736	3736	3736
S_t'	(in ³) 23699	—	23699
$DC1$	(k/ft) 1.089	1.089	1.089
M_{DC1}	(k) 406.2	—	828.2
$DC2$	(k/ft) 0.150	0.150	0.150
M_{DC2}	(k) 27.8	70.3	43.8
DW	(k/ft) 0.267	0.267	0.267
M_{DW}	(k) 49.5	125.2	77.9
$M_{\frac{1}{2} + Imp}$	(k) 600.1	650.5	666.1

- I : Non-composite moment of inertia of beam section (in⁴).
- I' : Composite moment of inertia of beam section (in⁴).
- S_b : Non-composite section modulus for the bottom fiber of the prestressed beam (in³).
- S_b' : Composite section modulus for the bottom fiber of the prestressed beam (in³).
- S_t : Non-composite section modulus for the top fiber of the prestressed beam (in³).
- S_t' : Composite section modulus for the top fiber of the prestressed beam (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.).
- $M_{\frac{1}{2} + Imp}$: Un-factored live load moment plus dynamic load allowance (Impact) (kip-ft.).

	Abut.	Pier 1 Span 1 Pier 2 Span 3	Pier 1 Span 2 Pier 2 Span 2
R_{DC1}	(k) 30.4	30.4	42.5
* R_{DC2}	(k) 2.9	5.6	5.6
* R_{DW}	(k) 5.2	10.1	10.1
* $R_{\frac{1}{2} + Imp}$	(k) 65.8	47.4	47.4
R_{Total}	(k) 104.3	93.5	105.6

* The total R_{DC2} , R_{DW} and $R_{\frac{1}{2} + Imp}$ 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 BIG MUDDY CREEK
F.A.P. RTE. 773 - SECTION (109B)B-1
CUMBERLAND COUNTY
STATION 574+84.00
STRUCTURE NO. 018-0063