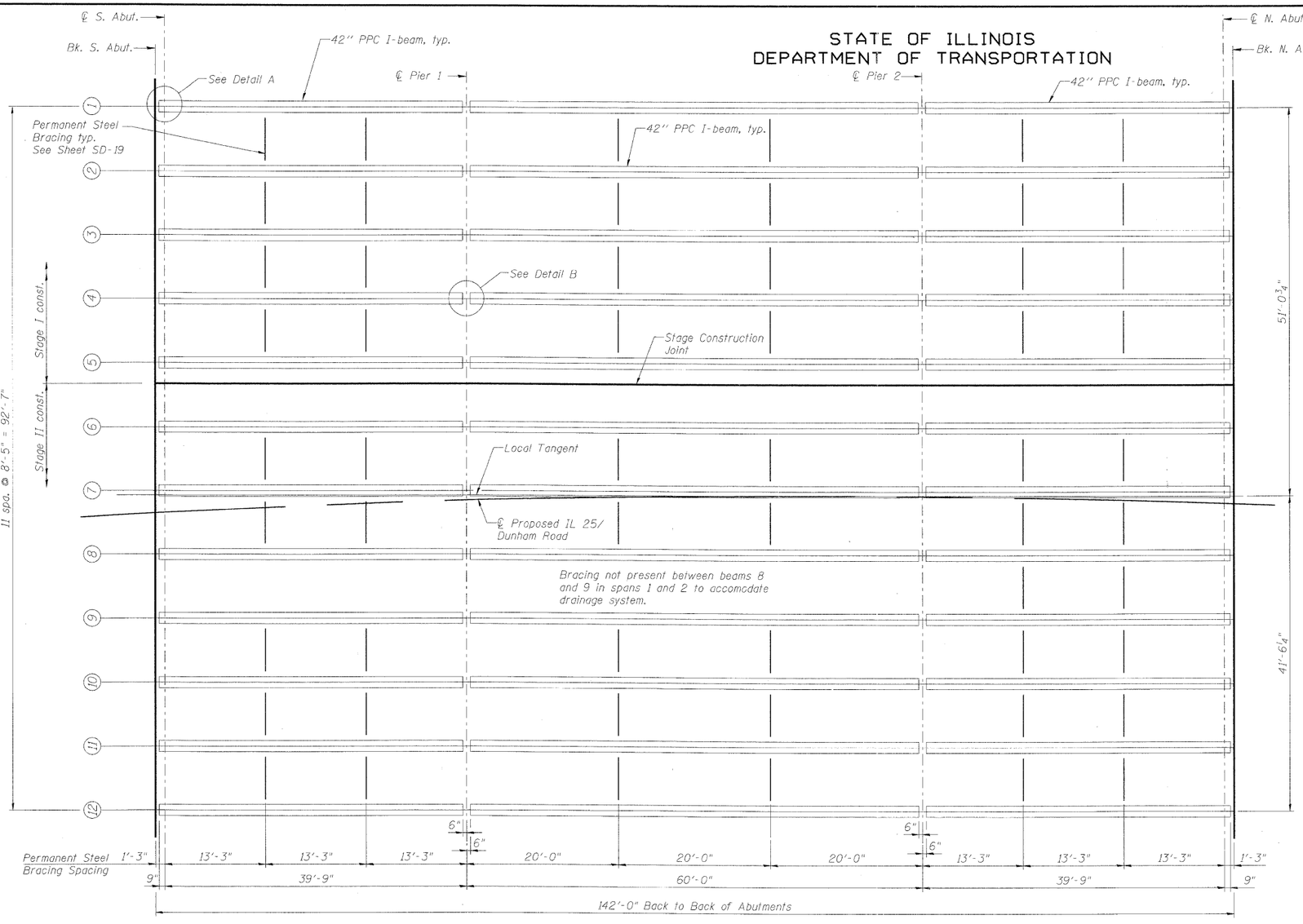
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

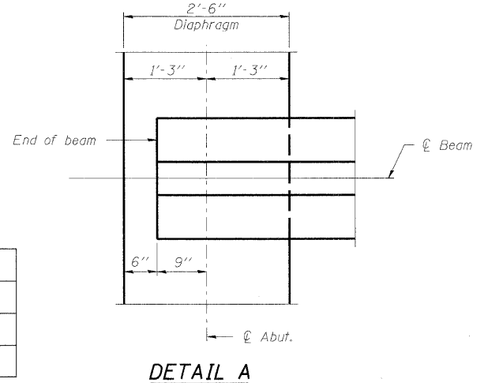
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
-	-	KANE	545	331
-	-			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET SD- 16
OF 34 SHEETS

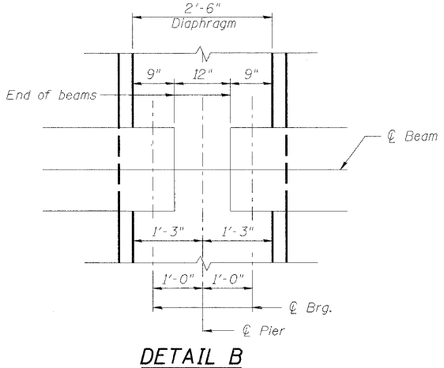
Contract # 63074



PLAN



DETAIL A



DETAIL B

DESIGNED	AJK
CHECKED	AAY
DRAWN	AYR
CHECKED	DMC

INTERIOR BEAM MOMENT TABLE

		0.4 Sp. 1 0.6 Sp. 3	Pier 1 or 2	0.5 Sp. 2
I	(in^4)	90956	-	90956
I'	(in^4)	307250	-	307250
S_b	(in^3)	5153	-	5153
S_b'	(in^3)	9082	-	9082
S_t	(in^3)	3736	-	3736
S_t'	(in^3)	19001	-	19001
$DC1$	($k/'$)	1.33	-	1.33
M_{DC1}	('k)	252	-	576
$DC2$	($k/'$)	0.08	0.08	0.08
M_{DC2}	('k)	7	-19	14
DW	($k/'$)	0.42	0.42	0.42
M_{DW}	('k)	38	-104	73
M_{L+Imp}	('k)	517	-583	583

INTERIOR BEAM REACTION TABLE
HL93 Loading

			Abut.	Pier 1 Span 1 Pier 2 Span 3	Pier 1 Span 2 Pier 2 Span 2
	R_{DC1}	(k)	26.6	26.6	39.4
*	R_{DC2}	(k)	1.1	2.2	2.2
*	R_{DW}	(k)	5.6	11.6	11.6
*	R_{L+Imp}	(k)	64.8	78.7	84.5
	R_{Total}	(k)	98.1	119.0	137.6

* 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.

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.).

FRAMING PLAN
IL 25/DUNHAM ROAD OVER THE EAST BRANCH OF BREWSTER CREEK
F.A.P. 360 - SEC. 06-00214-15-BR
KANE COUNTY
STATION 276+36.96
STRUCTURE NO. 045-2032

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alfred benesch & company
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Job # 3944

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