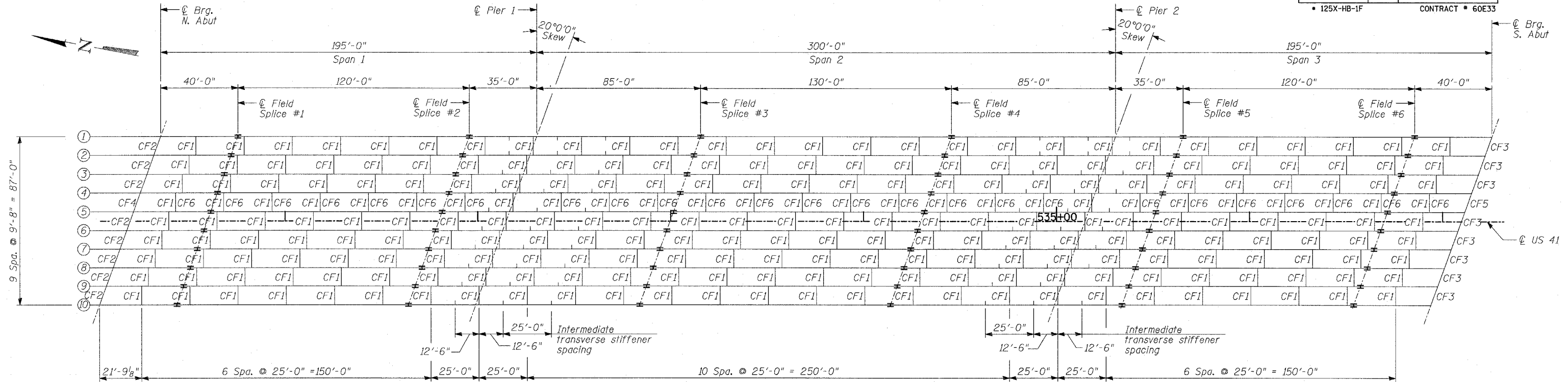


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. - S-29 S-66 SHEETS
346	*	LAKE	23	17	
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		
125X-HB-1F		CONTRACT # 60E33			



FRAMING PLAN

	0.4 Sp. 1 & 0.6 Sp. 3	Pier	0.5 Sp. 2
I_s	(in ⁴) 127,652	382,990	203,212
$I_c(n)$	(in ⁴) 264,482	---	407,843
$I_c(3n)$	(in ⁴) 192,285	---	293,119
S_s	(in ³) 2,965	7,979	5,555
$S_c(n)$	(in ³) 3,962	---	6,936
$S_c(3n)$	(in ³) 3,544	---	6,324
W	(k/ft.) 1.43	2.47	1.57
M_D	(k) 2,185	15,606	6,421
s_D	(k/ft.) 0.65	---	0.65
M_{sD}	(k) 1,202	---	2,892
M_L	(k) 2,813	4,572	4,606
M (Imp)	(k) 440	613	542
$^{5/8}[M_L + M(Imp)]$	(k) 5,422	8,642	8,580
M_a	(k) 11,452	31,522	23,261
M_u	(k) 17,609	---	24,653
$f_s \ell$ non-comp (k.s.i.)	8.84	23.47	13.87
$f_s \ell$ (comp) (k.s.i.)	4.08	---	5.49
$f_s^{5/8}(\ell + Imp)$ (k.s.i.)	16.39	13.00	14.84
f_s (Overload) (k.s.i.)	29.31	36.47	34.2
f_s (Total) (k.s.i.)	---	47.41	---
VR	(k) 87.5	---	101.0

	Abut.	Pier
R_D	(k) 124.9	631.6
R_L	(k) 72.8	178.9
Imp.	(k) 11.4	24.0
R (Total)	(k) 209.1	834.5

- I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).
- $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).
- $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).
- W : Un-factored non-composite dead load (kips/ft.).
- M_D : Un-factored moment due to non-composite dead load (kip-ft.).
- s_D : Un-factored long-term composite (superimposed) dead load (kips/ft.).
- M_{sD} : Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
- M_L : Un-factored live load moment (kip-ft.).
- M_{Imp} : Un-factored moment due to impact (kip-ft.).
- M_a : Factored design moment (kip-ft.).
- M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
- f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M_D + M_{sD} + \frac{5}{8}(M_L + M_{Imp})$
- f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M_D + M_{sD} + \frac{5}{8}(M_L + M_{Imp})]$
- VR: Maximum ℓ + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).

NOTES:

All structural steel for girders and splices shall conform to the requirements of AASHTO M270, Grade 50. All other structural steel shall conform to the requirements of AASHTO M270, Grade 36.

TYLIN INTERNATIONAL

DESIGNED	- SP
CHECKED	- AD
DRAWN	- MAF
CHECKED	- AD

FRAMING PLAN

FAP 346 (U.S. ROUTE 41 - SKOKIE
HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-0209