

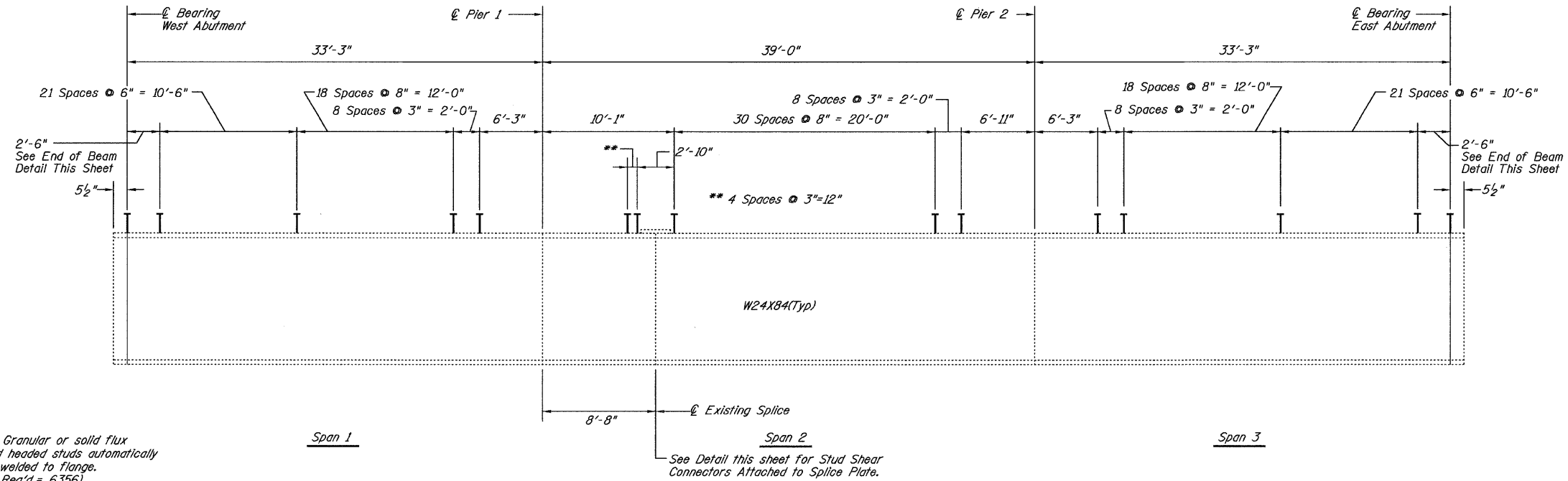
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	*	BUREAU	116	91
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

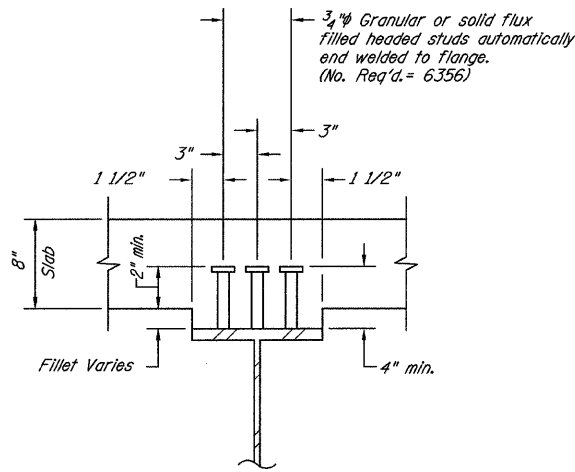
SHEET NO. 13

29 SHEETS

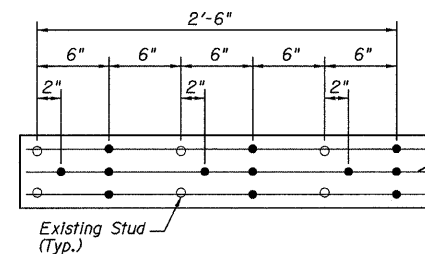
Contract #66623
* (06-1, 2)RS-3, I



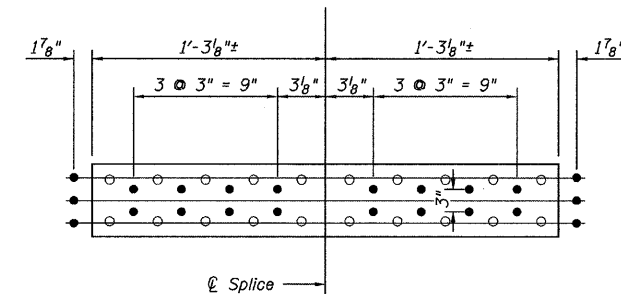
BEAM ELEVATION SHOWING STUDS
454 Studs Per Beam



SHEAR CONNECTOR DETAIL



END OF BEAM DETAIL



STUD SHEAR CONNECTOR ATTACHED TO SPLICE PLATE DETAIL

	0.4 Sp. 1 & 0.6 Sp. 3	Pier 1 & 2	0.5 Sp. 2
I_s (in ⁴)	2370	2370	2370
I_c (in ⁴)	7799	-	7799
I_c (3n) (in ⁴)	5912	-	5912
S_s (in ³)	196.7	196.7	196.7
S_c (in ³)	318.5	-	318.5
S_c (3n) (in ³)	288.3	-	288.3
Z (in ³)	-	-	-
Q (k')	0.77	1.19	0.77
M_R (k)	61.7	144.5	45.5
s_R (k')	0.42	-	0.42
$M_s R$ (k)	38.5	-	36.4
M_L (k)	188.1	88.9	193.3
M (Imp) (k)	56.4	26.7	58.0
$S_2(M_L + M(Imp))$ (k)	407.5	192.7	418.8
M_a (k)	660.1	438.4	650.9
M_u (k)	1016.7	-	1108.7
$f_s R$ (non-comp) (ksi)	3.76	8.81	2.78
$f_s R$ (comp) (ksi)	1.60	-	1.52
$f_s S_2(L + Imp)$ (ksi)	15.35	11.76	15.78
f_s (Overload) (ksi)	20.71	20.57	20.07
f_s (Total) (ksi)	-	26.74	-
V_R (k)	48.9	-	51.7

	Abut.	Pier 1 & 2
R_R (k)	15.5	47.4
R_L (k)	34.7	39.6
$Imp.$ (k)	10.5	11.9
R (Total) (k)	60.7	98.9

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 and $S_{c(w)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

I_c and $S_{c(3w)}$ 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)

V_R 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) = $1.3(M_R + M_s R + S_2(M_L + M(Imp)))$.

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 $M_R + M_s R + S_2(M_L + M(Imp))$.

f_s (Total) (Non-compact section) is the sum of the stresses due to $1.3(M_R + M_s R + S_2(M_L + M(Imp)))$.

DESIGNED	JKC
CHECKED	JLS
DRAWN	NOE
CHECKED	JKC

CHAMLIN ASSOCIATES
PERU ILLINOIS MORRIS

FRAMING DETAILS
F.A.I. 80 (I-80) OVER DRAINAGE DITCH
SECTION (06-1, 2)RS-3, I
BUREAU COUNTY
SN 006-0009 (EB)
SN 006-0010 (WB)
STA. 423+15