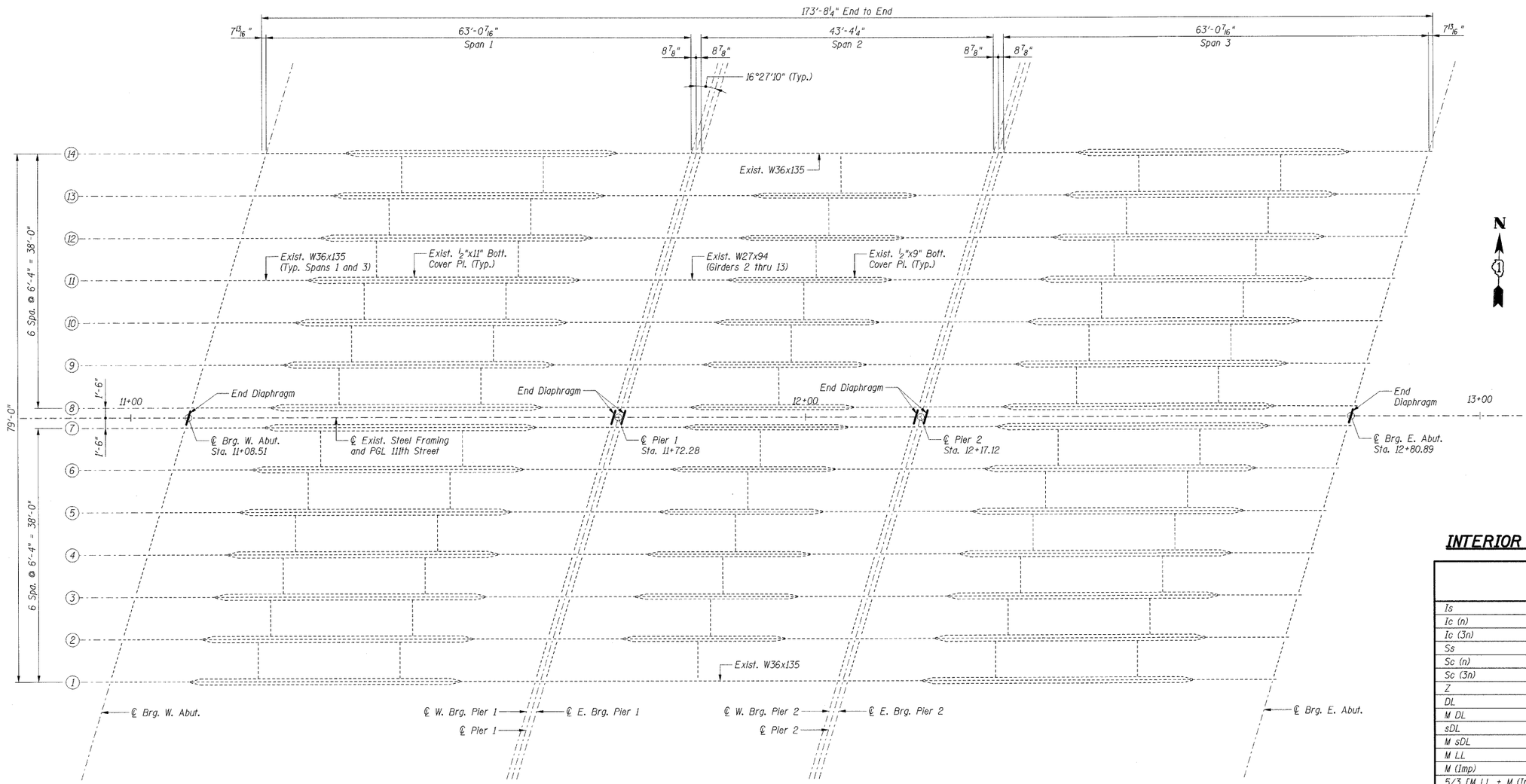
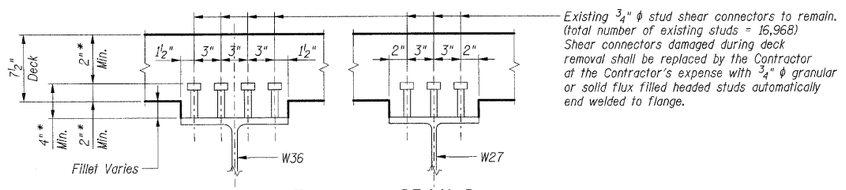
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021.1B-R	COOK	101	077
STA.	TO STA.			
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 62532



EXISTING FRAMING PLAN

(Existing W36 and W27 Composite Girders to Remain)



Existing $\frac{3}{4}$" ϕ stud shear connectors to remain. (total number of existing studs = 16,968) Shear connectors damaged during deck removal shall be replaced by the Contractor at the Contractor's expense with $\frac{3}{4}$" ϕ granular or solid flux filled headed studs automatically end welded to flange.

SPAN 1 OR 3 **SPAN 2**

EXISTING SHEAR CONNECTOR DETAIL

* Stud heights and vertical clearances apply to replacement studs (if required).

Notes:

1. For diaphragm details see Sheet S-014.

INTERIOR GIRDER MOMENT TABLE

		0.5 Span 1 or 0.5 Span 3	0.5 Span 2
Is	(in^4)	9370	3998
Ic (n)	(in^4)	25782	12941
Ic (3n)	(in^4)	18261	9262
Ss	(in^3)	583	332
Sc (n)	(in^3)	845	510
Sc (3n)	(in^3)	762	463
Z	(in^3)		
DL	(k/ft)	0.805	0.757
M DL	(k-ft)	396	176
sDL	(k/ft)	0.424	0.424
M sDL	(k-ft)	211	100
M LL	(k-ft)	492	288
M (Imp)	(k-ft)	131	86
5/3 [M LL + M (Imp)]	(k-ft)	1038	623
Ma	(k-ft)	2138	1168
Mu	(k-ft)	3117	1911
fs DL (non-comp)	(ksi)	8.2	6.4
fs DL (comp)	(ksi)	3.3	2.6
fs 5/3 [M LL + M (Imp)]	(ksi)	14.7	14.6
fs (Overload)	(ksi)	26.2	23.6
fs (Total)	(ksi)		
VR	(k)	50.0	48.0

INTERIOR GIRDER REACTION TABLE

		Span 1 or 3	Span 2
R DL	(k)	38.5	25.4
R LL	(k)	39.6	36.8
Imp.	(k)	10.5	10.9
R (Total)	(k)	88.6	73.2

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total and Overload).
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total and Overload).
VR is the maximum Live Load + Impact shear range within the composite portion of the span.
Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.
Ma (Applied Moment) = 1.3 [M DL + M sDL + 5/3 (M LL + M (Imp))].
Mu is the maximum bending strength. (compact, braced section)
fs (Overload) is the sum of the stresses due to M DL + M sDL + 5/3 (M LL + M (Imp)).
fs (Total) is the sum of the stresses due to 1.3 [M DL + M sDL + 5/3 (M LL + M (Imp))]. (non-compact section)

SHT. S-013

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. ROUTE 57 (INTERSTATE 57)
111TH STREET BRIDGE DECK REPLACEMENT
111th STREET OVER I-57
SN 016-0989 STA. 556+99.89
COOK COUNTY

STEEL FRAMING PLAN

DRAWN BY: CCE
DATE: 01/16/09 CHECKED BY: JLR

TENG
TENG & ASSOCIATES, INC.
ENGINEERS/ARCHITECTS/PLANNERS
205 N. MICHIGAN AVE., CHICAGO, IL 60601
TELEPHONE 312.616.0000

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