

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	111,790

NOTES:

All of the seismic steel brackets, threaded rods, bolts, washers, and nuts utilized in the seismic retrofit shall be hot dipped galvanized.

Eight 1.50" diameter high strength ASTM A320 L7 hot dipped galvanized threaded rods shall be installed at each of the main girders. Each rod shall be installed with hot dipped galvanized washers and nut. Each threaded rod shall be one continuous piece with couplers not allowed. The nuts utilized on the threaded rods shall be ASTM A194 Grade 4 heavy hex nuts. The washers utilized on the threaded rods shall be ASTM F436 circular Type 1 hardened steel washers. A seismic restraint system shall be installed at each main girder.

ASTM A325X bolts (threads excluded) with diameters of $\frac{7}{8}$ inch shall be utilized to attach the seismic brackets to the existing main girders. The nuts utilized with the A325 bolts shall be ASTM A194 Grade 4 heavy hex nuts. The washers utilized with the bolts shall be ASTM F436 circular Type 1 hardened steel washers.

The seismic brackets shall be hot dipped galvanized according to ASTM A123, with a minimum coating grade of 50.

The high strength threaded rods, bolts, washers, and nuts shall be hot dipped galvanized according to ASTM A153 and ASTM F2329.

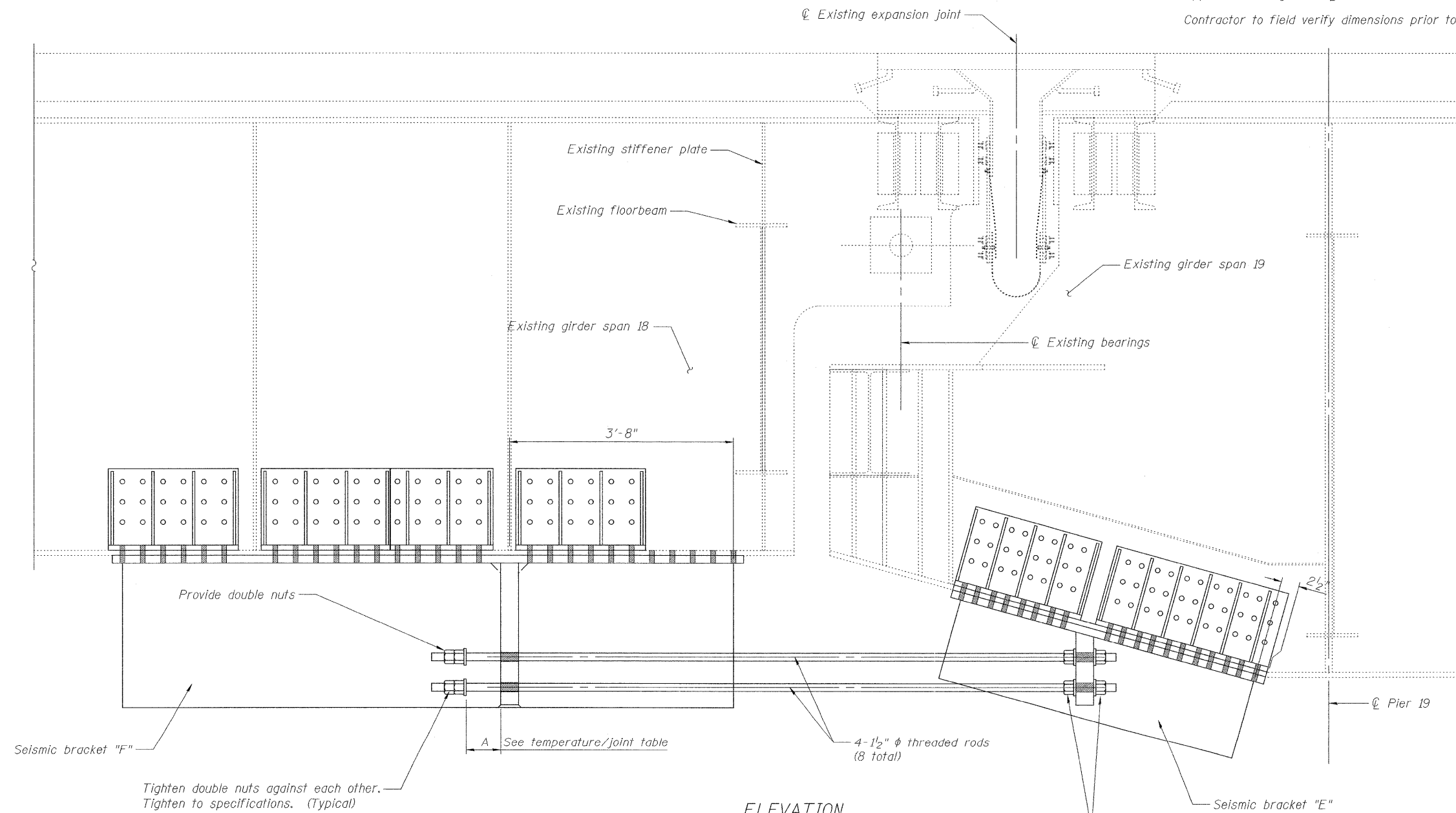
Brackets and connections are 125% stronger than the restrainer rod.

Approximate length of $1\frac{1}{2}$ " ϕ threaded rod is $\pm 12'-6"$.

Contractor to field verify dimensions prior to bracket fabrication.

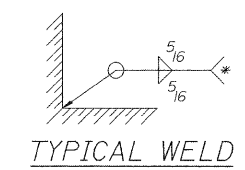
TEMPERATURE / JOINT TABLE

Temp (F) Joint	A	
	Pier 19	Pier 24
20°	5 $\frac{1}{8}$ "	4 $\frac{1}{2}$ "
35°	6"	5 $\frac{3}{4}$ "
50°	7"	7"
65°	8"	8 $\frac{1}{4}$ "
80°	8 $\frac{7}{8}$ "	9 $\frac{1}{2}$ "
95°	9 $\frac{7}{8}$ "	10 $\frac{3}{4}$ "
110°	10 $\frac{3}{4}$ "	12"



ELEVATION

Note:
Existing bearings not shown for clarity
Pier 19 shown; Pier 24 similar



* A partial joint penetration weld is acceptable in lieu of the above weld criteria, in areas where there is limited access to weld.

SEISMIC RESTRAINER NEAR PIERS 19 & 24 - 1

DESIGNED	NJM
CHECKED	RM
DRAWN	JVK
CHECKED	NJM

PARSONS
400 WOODS MILL RD. SOUTH, SUITE 330
CHESTERFIELD, MO. 63017
PHONE: 314.434.2900

SHEET NO.	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
30	270	60B-I-8	MADISON	49	43
36 SHEETS					
CONTRACT NO. 76A92					
FED. ROAD DIST. NO. 8 ILLINOIS FED. AID PROJECT					

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