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STRAIGHTENING PROCEDURE

3/21/2018

ODOT 170627

GUERNSEY COUNTY, OHIO

849.13 STRAIGHTENING WORK PLAN

- A. See Page 3.
- B. See Page 2.
- C. See Page 2.
- D. See Page 4 & 5.
- E. See Page 6.
- F. Not Applicable.
- G. Not Applicable.
- H. Not Applicable.
- I. See Page 3.
- J. Paint to be removed prior to applying heat.
- K. Not Applicable.



*Diane M. Bednar*  
3/23/18

**\*NOTE: ALL WORK SHALL BE DONE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 849**

PREPARER: MATT KOCHIS  
INITIALS: MBK  
DATE: 3/21/18

CHECKER: DIANE BEDNAR  
INITIALS: DMB  
DATE: 3/23/18

50 South Fourth Street - P.O. Box 577 Newark, Ohio 43058-0577 - (740)-345-4503  
An Equal Opportunity Employer

This plan was prepared in compliance with contract documents.



PAGE 2

Repair Procedure: Damaged Beam or Girder

Project ODOT 170627 Beam Straightening Guernsey County, Ohio

In the past five years, Ron Newsom of Armstrong Steel Erectors, Inc. has performed heat straightening on (4) Ohio Department of Transportation Projects. They are:

- ODOT 160536 – Montgomery County, Ohio
- ODOT 160289 – Lucas County, Ohio
- ODOT 179010 – Ashland County, Ohio
- ODOT 179013 – Van Wert County, Ohio

Heat straightening will be supervised by a person who has the knowledge and experience to properly perform the work.

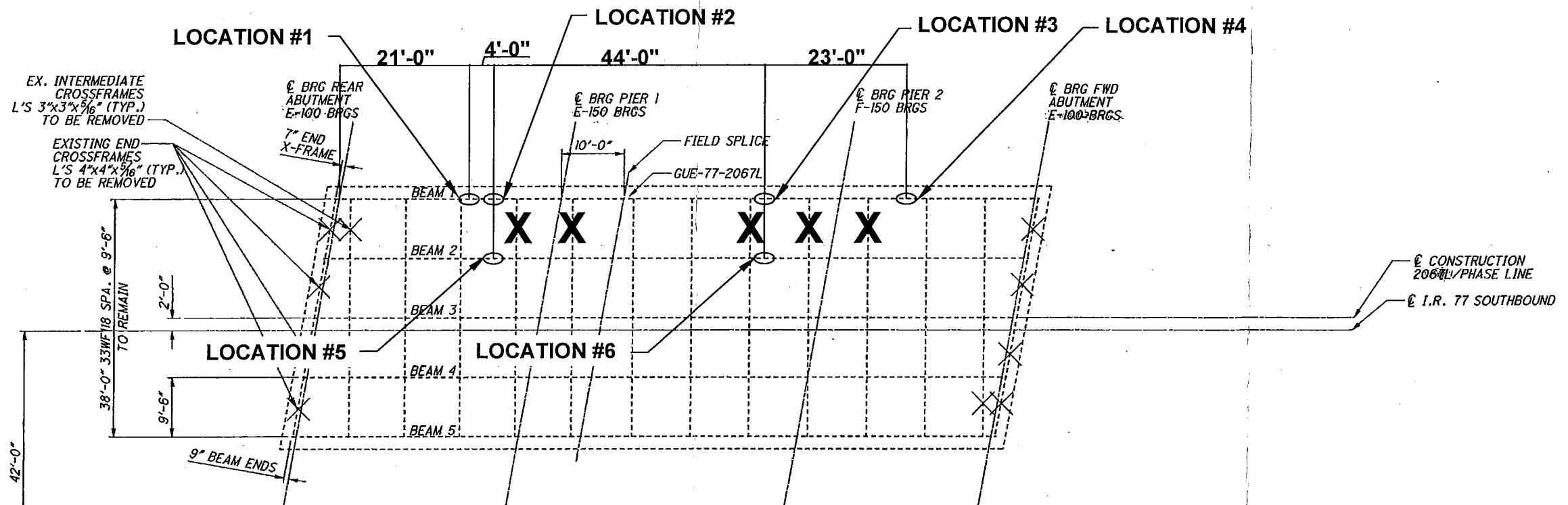
1. The heat will be applied at or below 1200° F (650° C), and monitored with pyrometric sticks.
2. Torch tips size should be limited to 1" diameter (Maximum).
3. The heat straightening shall be accomplished with the use of "V" heats or triangular heats. The base of the "V" shall not exceed 6 inches. The "V" is heated from the apex to the base in a manner such that the only place showing color is directly under the torch. The entire "V" shall not be heated simultaneously nor shall it be reheated until after it has cooled to the touch. Forced cooling will not be used. The straightening shall be accomplished with as little mechanical force as possible.
4. Process will be finished when straightness tolerances are met.

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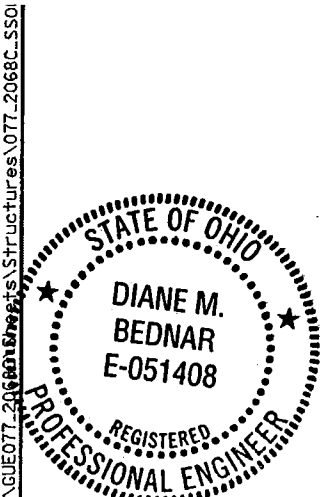
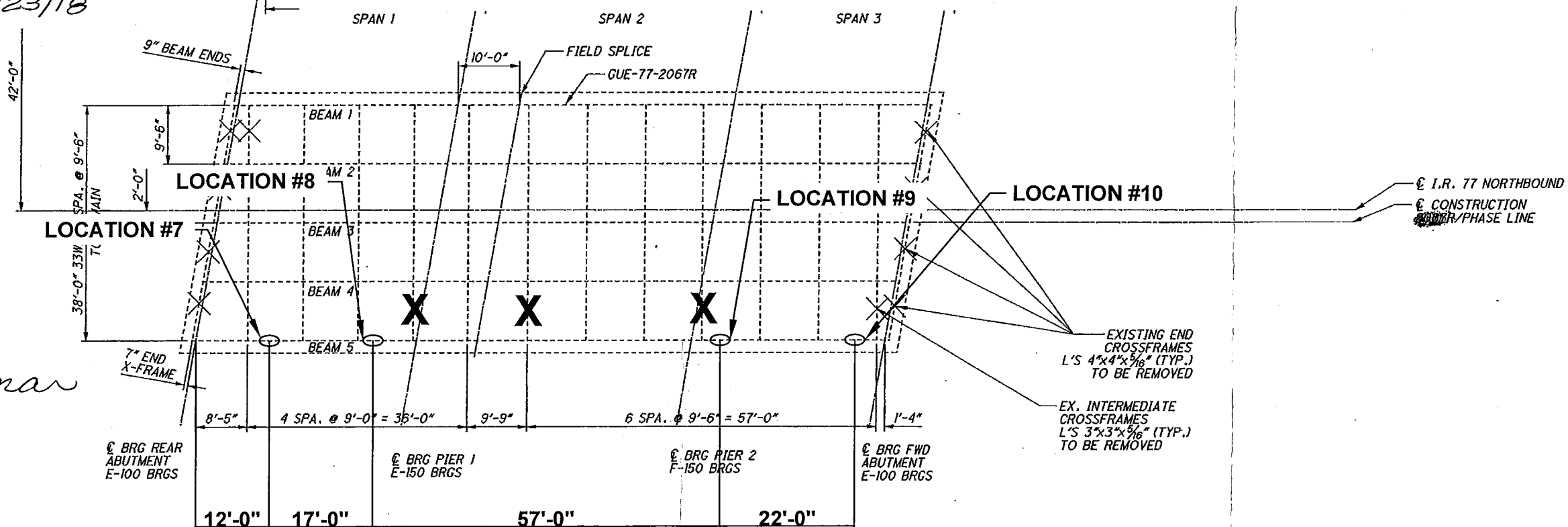
CHECKER: OMB 3/23/18



PREPARER: MBK 3/21/18

CHECKER: DMB 3/23/18

**'X' - INDICATES THE LOCATION OF THE CROSSFRAMES TO BE REMOVED AND REPLACED. ONLY REMOVE ON SET OF CROSSFRAMES AT A TIME.**



*Diane M. Bednar*  
3/23/18

**LEGEND**

X - TO BE REMOVED

NOTE: REMOVE MARKED EXISTING END & IN ITEM 202 REMOVAL MISC.: EXISTING CROSSFRAMES

**ARMSTRONG STEEL ERECTORS  
ERECTION PLAN**

This Plan Was Prepared  
In Compliance With  
Contract Documents.

38PM Jnelson

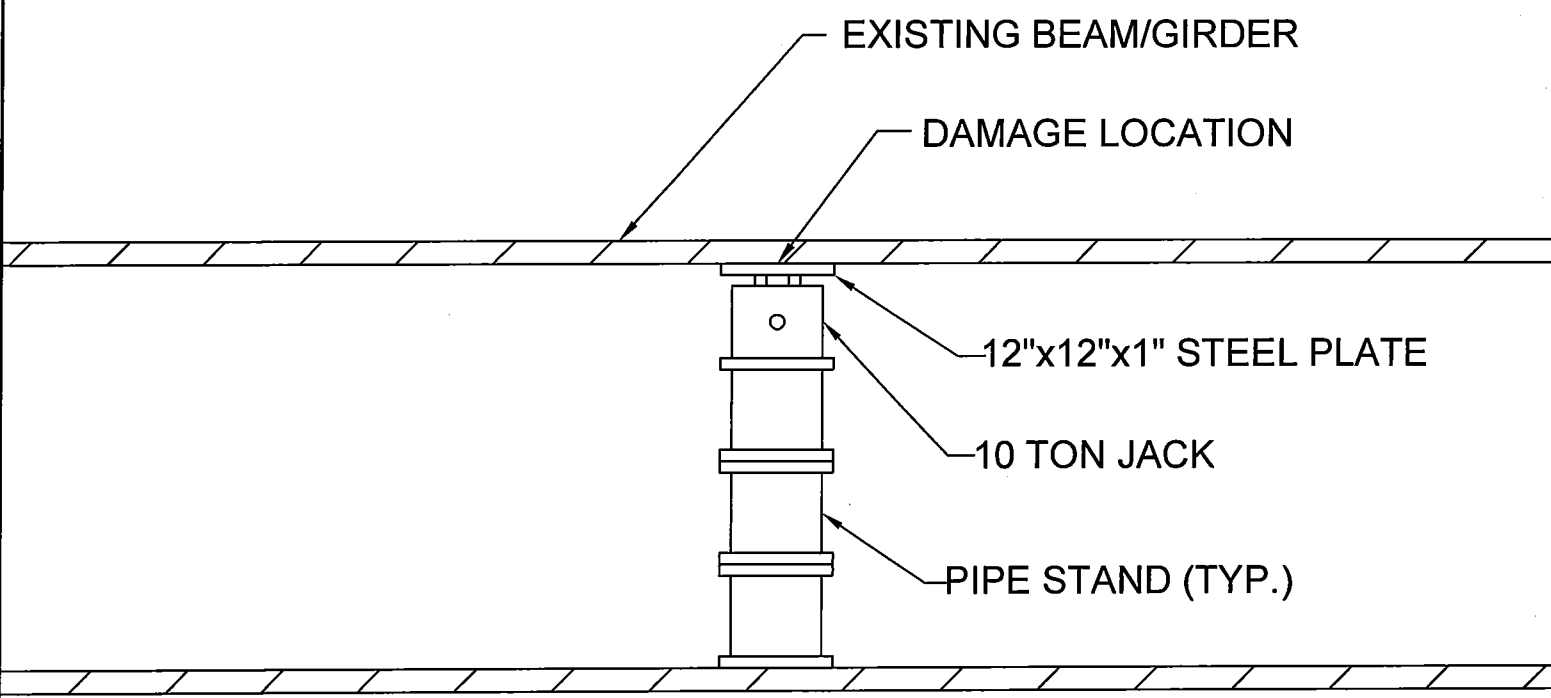
25-AUG

I:\ProjectData\GUE\93017\Design\Structures\GUE077-2067R\Structures\077-2068C.SSO

DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 5	DATE 08/22/17	REVIEWED JDR	DRAWN JKS	DESIGNED JKS
STRUCTURE FILE NUMBER 3003450/3003485	STRUCTURE FILE NUMBER 3003450/3003485	REVISOR JDR	CHECKED JDR	
EXISTING FRAMING PLAN BRIDGE NO GUE-77-2067 (LEFT AND RIGHT BRIDGES) OVER C.R. 86				
GUE-77-VAR. PID No. 83017				
17/38				
45/69				

Br. No.: GUE-77-2067 L/R  
Customer: SHELLY AND SANDS  
Project: ODOT 627-17  
County: GUERNSEY COUNTY  
Page: 4

NOTE: FOR LOCATIONS 1-10



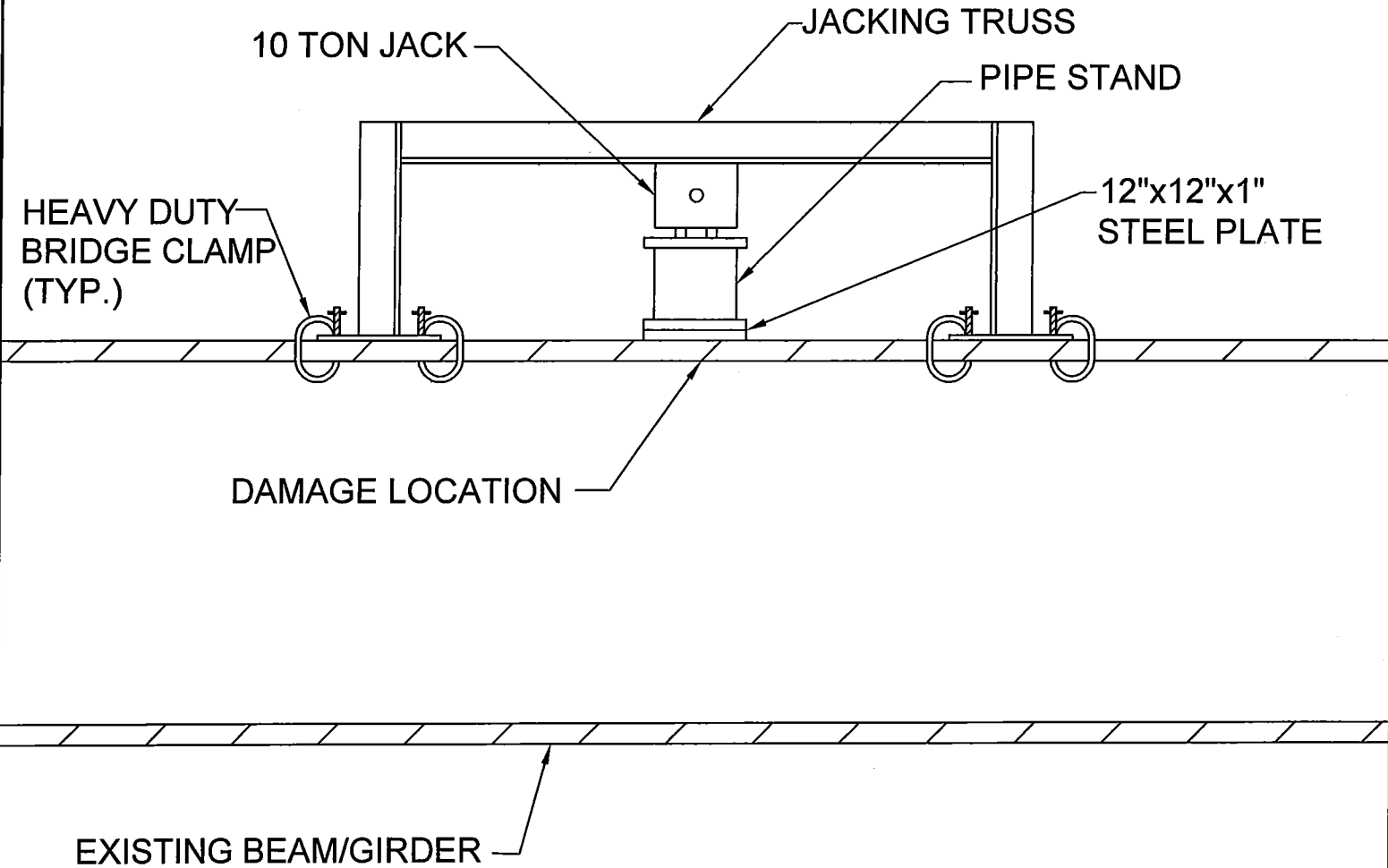
DETAIL 'A'

PREPARER: *MBK 3/21/18*  
CHECKER: *DMB 3/23/18*

ARMSTRONG STEEL  
ERECTORS, INC.

Br. No.: GUE-77-2067 L/R  
Customer: SHELLY AND SANDS  
Project: ODOT 627-17  
County: GUERNSEY COUNTY  
Page: 5

NOTE: TO BE USED IF ANY FLANGES ARE BENT UPWARD.



DETAIL 'B'

PREPARER: *MBK 3/21/18*

CHECKER:

ARMSTRONG STEEL  
ERECTORS, INC.

## E. CALCULATION OF STRESSES FROM JACKING

ASSUME A36 STEEL

USE 10 TON JACK

CHECK AT MAXIMUM CAPACITY = 20,000 LBS.

6" X 6" PLATE (MINIMUM)

FROM SS849 ALLOWED A MAXIMUM  
OF 50% OF  $F_y$ 

$$F_y = 36,000 \text{ LBS/IN}^2 \quad F_{y50\%} = 18,000 \text{ LB/IN}^2$$

$$F = 20,000 \text{ LBS/36 IN}^2 = 556 \text{ PSI} < 18,000 \text{ psi}$$

(OK)

AMTAD