| ROUTE NO. | SEC | COUNTY | | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|---|
| FAS RTE 1588 | * | ADAMS | | 20 | 16 |
| FED. ROAD DIST. NO. 7 | D.J. ILLINOIS | PROJECT | | | |

*\* 04-00185-00-BR*

## JACK AND REMOVE EXISTING BEARINGS PROCEDURES

1. Jacking and Cribbing shall be done after existing deck removal is completed.

2. The Contractor shall submit for approval by the Engineer plans for jacking and cribbing, prior to commencing any work at the bearings. The maximum dead load reaction with the deck removed (per bearing) at the east and west abutments = 4 kips. The minimum jack capacity at each beam shall be 8 kips at the east and west abutments.

3. Top of beam elevations shall be measured prior to jacking and shall remain the same after bearings are in place.

4. There shall be at least one jack per bearing and the jack shall be placed close to the bearing. The steel shall be raised a maximum of $\frac{1}{4}$" and shall be blocked in position until after the completion of the installation of new bearings.

5. Burn the existing anchor bolts flush with the concrete surface, grind smooth, and seal with epoxy. The rockers and top and bottom plates shall be removed. The top plate shall be removed using the air-arc method. Grind smooth all weld material remaining on the bottom flange. Cost of removing anchor bolts, rockers, top plates, and bottom plates shall be included with "Jack and Remove Existing Bearings."

6. Anchor bolts shall be set before bolting diaphragms over supports.

7. The new concrete abutment seats, elastomeric bearings, and end diaphragms shall be in place and the jacks lowered before the new concrete deck is poured.

Remove existing Bearing including Bottom ℞, Rocker and welded Top ℞
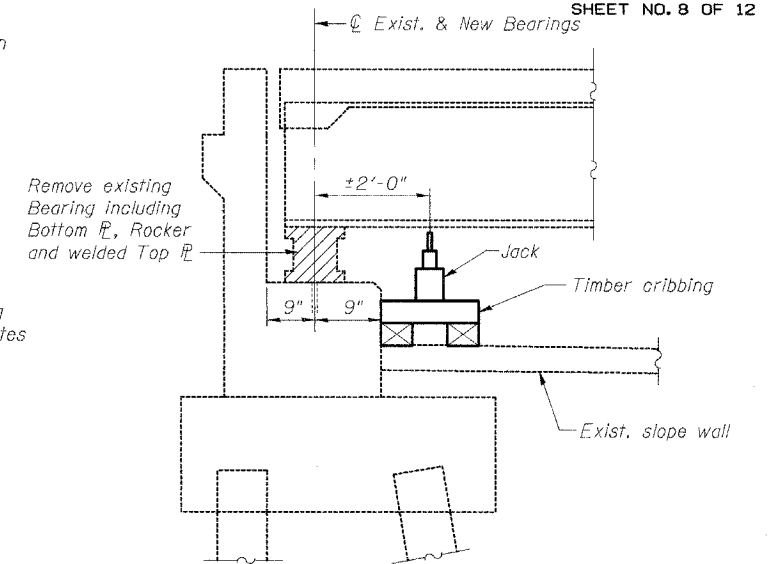
### AT EAST AND WEST ABUTMENTS
(Dimensions at Rt L's)

### EXISTING BEARING REMOVAL DETAIL

### INTERIOR BEAM MOMENT TABLE

| | | 0.4 Sp. 1 & 0.6 Sp. 3 | Piers 1 & 2 | 0.5 Sp. 2 |
|---|---|---|---|---|
| Is | (in⁴) | 7,450 | 7,450 | 7,450 |
| Ic (n) | (in⁴) | 18,132 | | 18,132 |
| Ic (3n) | (in⁴) | 13,156 | | 13,156 |
| Ss | (in³) | 448 | 448 | 448 |
| Sc (n) | (in³) | 634 | | 634 |
| Sc (3n) | (in³) | 569 | | 569 |
| | | | | |
| $D$ | (k/') | 0.71 | 0.99 | 0.71 |
| $M_D$ | ('k) | 182 | 395 | 132 |
| $s_D$ | (k/') | 0.28 | | 0.28 |
| $Ms_D$ | ('k) | 78 | | 67 |
| $M_L$ | ('k) | 345 | 198 | 348 |
| M (Imp) | ('k) | 94 | 52 | 90 |
| $\frac{5}{3}[M_L+M(Imp)]$ | ('k) | 732 | 417 | 730 |
| Ma | ('k) | 1,289 | 1,055 | 1,208 |
| fs_D non-comp | (ksi) | 4.9 | 10.6 | 3.5 |
| fs_D (comp) | (ksi) | 1.6 | | 1.4 |
| fs $\frac{5}{3}$(L+Imp) | (ksi) | 13.9 | 11.2 | 13.8 |
| fs (Overload) | (ksi) | 20.4 | 21.7 | 18.8 |
| fs (Total) | (ksi) | 26.5 | 28.3 | 24.4 |
| VR | (kips) | 32.0 | | 34.2 |

### INTERIOR BEAM REACTION TABLE

| | | W. & E. Abuts. | Piers 1 & 2 |
|---|---|---|---|
| $R_D$ | (kips) | 22.7 | 70.4 |
| $R_L$ | (kips) | 30.0 | 37.0 |
| Imp. | (kips) | 8.1 | 7.3 |
| R (Total) | (kips) | 60.8 | 114.7 |

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).

Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

Ic(3n) and Sc(3n) 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)

VR is the maximum Live Load + Impact shear range in span.

Ma (Applied Moment)=$1.3[M_D + Ms_D + \frac{5}{3}(M_L + M_{Imp})]$.

fs (Overload) is the sum of the stresses due to $M_D + Ms_D + \frac{5}{3}(M_L + M_{Imp})$.

fs (Total) is the sum of the stresses due to $1.3[M_D + Ms_D + \frac{5}{3}(M_L + M_{Imp})]$.

$M_D$ - Moment due to dead loads on non-composite section.

$Ms_D$ - Moment due to dead loads on composite section.

$M_L$ - Moment due to live load on non-composite or composite section.

$M_{(Imp)}$ - Moment due to live load impact on non-composite or composite section.

### BILL OF MATERIAL

| Item | Unit | Total |
|---|---|---|
| Jack and Remove Existing Bearings | Each | 12 |

| | BGJ | MW | | | | Ø3/Ø4 |
|---|---|---|---|---|---|---|
| REV. NO. | DRAWN | CHKD. | APPD. | | DESCRIPTION | DATE |

### F.A.S. RTE. 1588 OVER MCKEE CREEK
### SECTION 04-00185-00-BR
### Project RS-1588 (106)
### ADAMS COUNTY

### MOMENT & REACTION TABLES, JACK AND REMOVE EXISTING BEARINGS STRUCTURE NUMBER 001-3026 STATION 314+60.75

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4/14/2004

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