

ARKANSAS STATE HIGHWAY
AND TRANSPORTATION
DEPARTMENT

UNION PACIFIC RAILROAD COMPANY

Rec'd From
DFL 10/5/93

NOV 19 1991



RECEIVED
BRIDGE DIVISION

1000 West Fourth Street, North Little Rock, Arkansas 72114
(501) 373-2009

November 18, 1991

Grade Separation:
AR: McGehee
Highway 65 O.P.
M.P. 407.50 Wynne Sub
(State Job 20021)

Mr. Veral Pinkerton
Bridge Engineer
A.H.T.D.
P.O. Box 2261
Little Rock, AR 72203

Dear Mr. Pinkerton:

Please reference your letter of October 28, 1991, addressed to Mr. S. J. McLaughlin, transmitting revised plans for the replacement of the overpass at the above location.

Please revise the plans to show a minimum 6' between base of rail and top of proposed footing, and include complete dimensions of footings. As the proposed piers are within 25' of centerline, it is requested that crashwalls be included, or that additional detail be provided on the exhibit to show the piers are in compliance with AREA 2.1.5.1, copy attached. Also attached is Dwg. 106613, Shoring Requirements and Dwg. 82495 Barriers and Clearances, for future reference.

Call if you have any questions.

Yours truly,

A handwritten signature in cursive script that reads "Joel P. Adams".

Joel P. Adams, Manager
Industry and Public Projects

CC: R.G. Lang
File

2.1.5 Pier Protection

2.1.5.1 Adjacent to Railroad Tracks

Piers supporting bridges over railways and with a clear distance of less than 25 feet from the centerline of a railroad track shall be of heavy construction or shall be protected by a reinforced concrete crash wall, to limit damage by the redirection and deflection of railroad equipment. Crash walls for piers from 12 to 25 feet clear from the centerline of track shall have a minimum height of 6 feet above the top of rail. Piers less than 12 feet clear from the centerline of track shall have a minimum height of 12 feet above the top of rail.

When two or more columns compose a pier, a wall at least 2 feet, 6 inches thick shall connect the columns (see Figure 1). When a pier consists of a single shaft, it shall be protected by a crash wall parallel to the track. The wall shall be at least 2 feet 6 inches thick and extend for a distance of at least 12 feet parallel to the track centered about the pier (see Figure 1).

The face of the crash wall shall extend at least 6 inches beyond the face of the pier on the side adjacent to the track and 1 foot parallel to the track, and shall be anchored to the columns and footings with adequate steel reinforcement. The base of crash walls shall extend to at least 4 feet below the lowest surrounding grade.

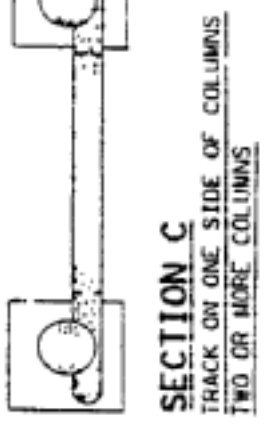
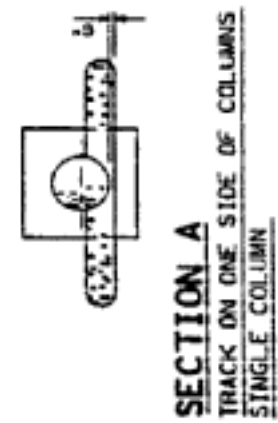
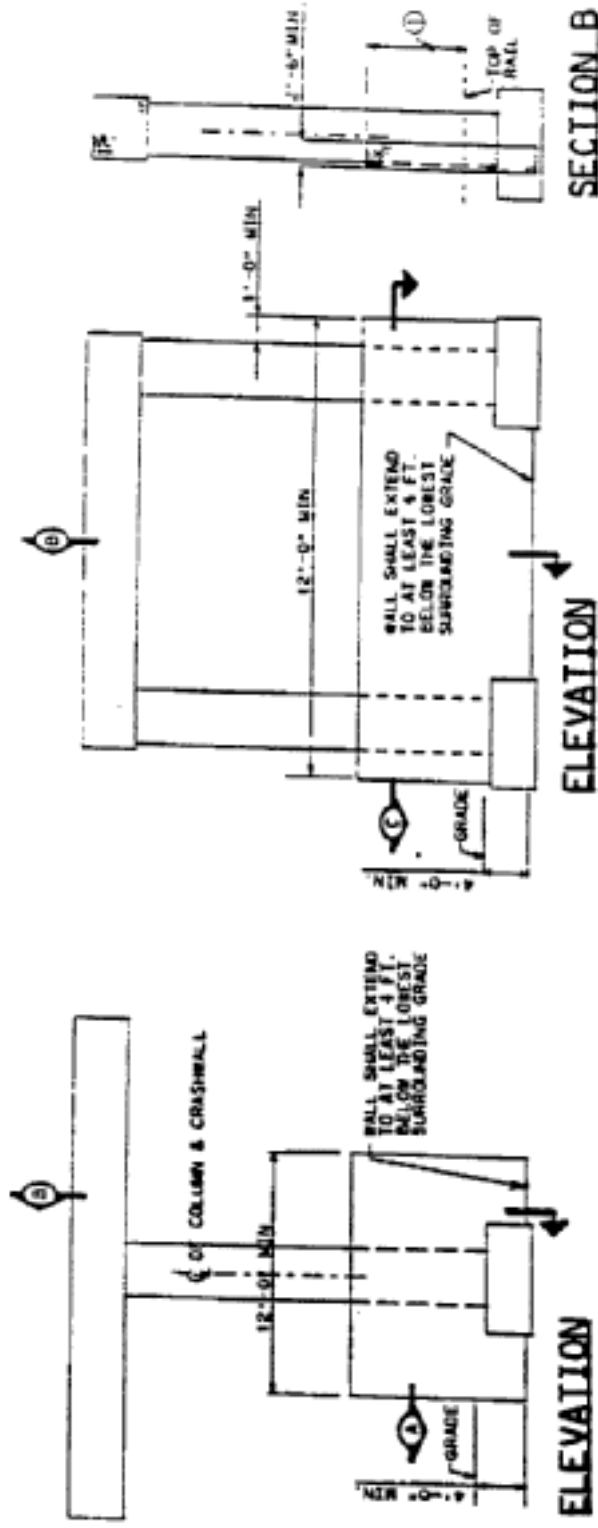
Piers with a cross-sectional area equal to or greater than that required for the crash wall, and with the larger of its dimensions parallel to the track, shall be considered to be of heavy construction.

Consideration may be given to provide protection for bridge piers over 25 feet from the centerline of track as conditions warrant. In making this determination, consideration may be given to such factors as horizontal and vertical alignment of the track, embankment height, and an assessment of the risk of serious damage in the case of a collision.

Where the above criteria are inappropriate, adequate alternative provisions may be made.

2.1.5.2. Over Navigable Streams

Piers located adjacent to channels of navigable waterways shall have a protection system in accordance with Part 23, this chapter.

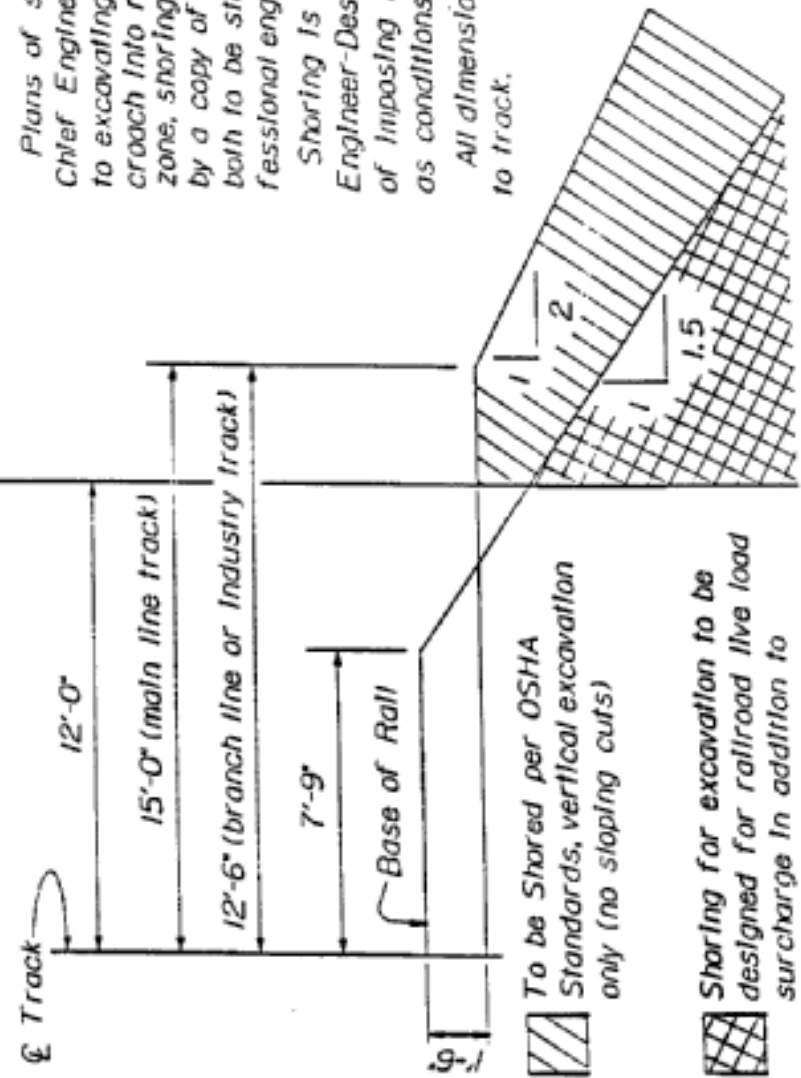


① 12'-0" ABOVE HIGHEST RAIL FOR PIERS WITHIN 12 FT OF CENTER LINE OF TRACK
 5'-0" ABOVE HIGHEST RAIL FOR PIERS WITHIN 25 FT OF CENTER LINE OF TRACK

FIGURE 1
 PIER PROTECTION

Excavation permitted this side of this line

No excavation permitted this side of this line



Plans of shoring to be submitted to Chief Engineer-Design for approval prior to excavating. For excavations which encroach into railroad live load surcharge zone, shoring plans to be accompanied by a copy of the design calculations, and both to be stamped by a registered professional engineer.

Shoring is subject to approval of Chief Engineer-Design who reserves the option of imposing more stringent requirements as conditions warrant.

All dimensions measured at right angle to track.

To be Shored per OSHA Standards, vertical excavation only (no sloping cuts)

Shoring for excavation to be designed for railroad live load surcharge in addition to soil pressure

- Applicable railroad live load:
 - Branch line or Industry track Cooper E65
 - Main line-temporary shoring Cooper E72
 - Main line-permanent retaining wall Cooper E80

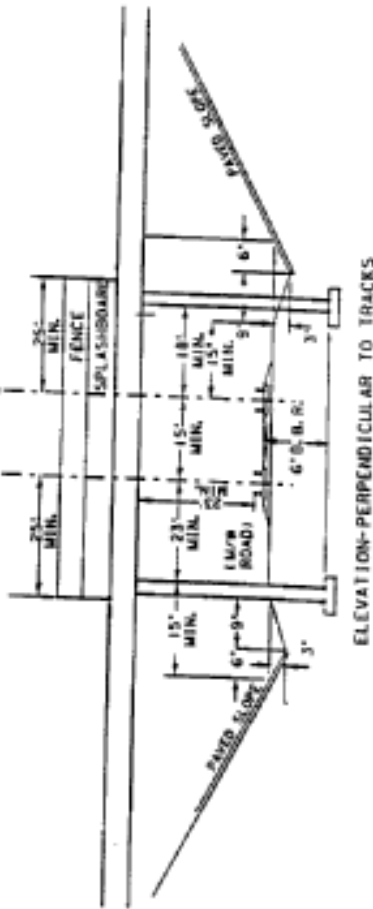
Union Pacific Railroad Co.	
GENERAL	
SHORING REQUIREMENTS	
DATE	106613
SCALE	AS SHOWN
NO. OF SHEETS	1
TOTAL NO. OF SHEETS	1



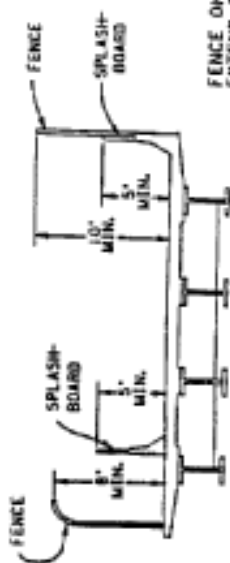
SHORING TO BE DESIGNED TO INCLUDE COPPER E-72 SURCHARGE, AND SHORING, OR PORTION OF FOUNDATION PERMITTED WITHIN 12' FROM & OF NEAREST TRACK.

EXISTING R.L. TRACK

FUTURE R.L. TRACK



ELEVATION-PERPENDICULAR TO TRACKS



VIADUCT CROSS SECTION

LIGHTS ARE TO BE INSTALLED ON UNDERSIDE OF VIADUCTS WHERE SHADOWS CAST BY THE VIADUCTS WOULD INTERFERE WITH RAILROAD OPERATIONS.

FENCE ON PEDESTRIAN SIDE IS TO EXTEND COMPLETELY ACROSS STRUCTURE OR RAILROAD RIGHT-OF-WAY, WHICH EVER IS SHORTER.

SPLASHBOARDS ARE REQUIRED WHERE SWITCHING IS PERFORMED OR WHERE THERE ARE OTHER FREQUENT ACTIVITIES. DRAINAGE IS TO BE DIVERTED AWAY FROM TRACKS AND NOT DISCHARGED ONTO TRACKS AND ROADBEDS.

SPACE IS TO BE RESERVED FOR ONE OR MORE FUTURE TRACKS AS REQUIRED BY LONG RANGE PLAN OR OTHER OPERATING REQUIREMENTS. WHERE PROVISION IS MADE FOR MORE THAN TWO TRACKS, SPACE IS TO BE PROVIDED FOR ROAD ON BOTH SIDES OF TRACKS.

SIDE CLEARANCE IS TO BE 20' MINIMUM WHERE SNOW PLOWS ARE OPERATED. ADDITIONAL SIDE CLEARANCE MAY BE REQUIRED TO ACCOMMODATE R.R. POLE LINE, EXPANDED DRAINAGE FACILITIES, ETC.

TOP OF FOOTING MUST BE AT LEAST 1" BELOW FLOW LINE OF DITCH AND 6" B. B. /R. 1(MIN).

OVERHEAD CLEARANCE IS TO BE 23' MINIMUM ABOVE TOP OF HIGHEST RAIL. ADDITIONAL CLEARANCE MAY BE REQUIRED IF SAG OF VERTICAL CURVE MUST BE ADJUSTED.

CULVERTS MAY BE INSTALLED ON OPPOSITE SIDE OF COLUMN FROM TRACK IN LIEU OF STANDARD RAILROAD DITCHES WHEN APPROVED BY CHIEF ENGINEER. MAINTENANCE OF CULVERTS IS TO BE AT OUTSIDE PARTY EXPENSE.

CRASHWALLS ARE TO BE PROVIDED PER A. R. E. A. SPECIFICATIONS FOR PIERS WITHIN 25' OF CENTERLINE OF TRACK.

WHEN FEASIBLE, COMMUNICATION AND SIGNAL WIRE LINES WILL BE PLACED ON THE SAME POLES.

CALL 1-800-336-9193 TO DETERMINE FIBER OPTIC LOCATION.

EXCEPTIONS TO THESE STANDARDS MUST BE APPROVED BY UNION PACIFIC RAILROAD'S CHIEF ENGINEER.

**UNION PACIFIC RAILROAD COMPANY
BARRIERS AND CLEARANCES
TO BE PROVIDED AT
HIGHWAY AND STREET OVERPASSES**

NO SCALE
OFFICE OF CHIEF ENGINEER
OMAHA, NEBRASKA FEBRUARY 10, 1972
C. E. UWG, MD. 82-495
REVISED: MARCH 30, 1990