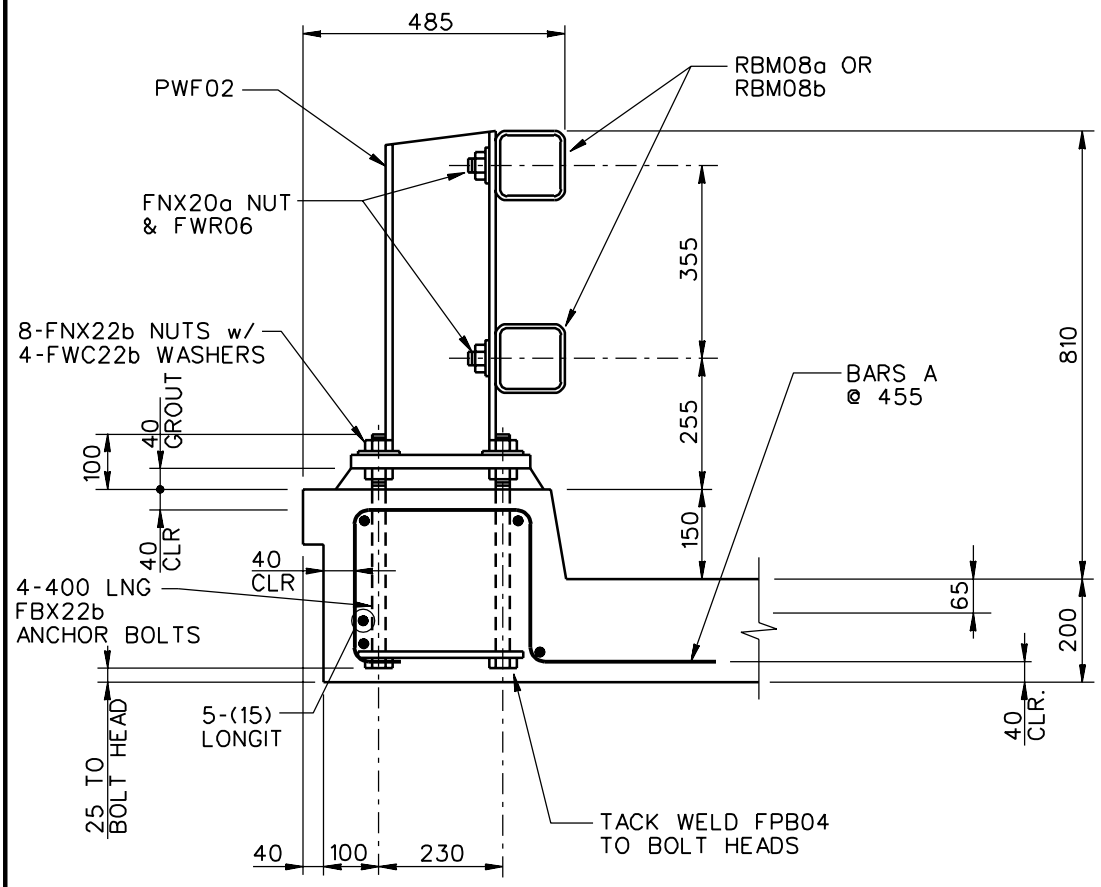


1994

2-TUBE CURB-MOUNTED BRIDGE RAILING

SBB01a	
SHEET NO.	REF. NO.
1 of 4	

INTENDED USE

This steel post-and-beam system is a general purpose AASHTO Performance Level one bridge railing also known as the Oregon 2-tube bridge rail. This system was number 12 in the 1986 FHWA Memorandum on crash-tested bridge railings.

This drawing and specification address only the bridge railing and not the design or detailing of the bridge deck. Only reinforcement directly related to the bridge rail is shown. Bridge decks should be designed to develop the full strength of the bridge railing.

COMPONENTS

Concrete shall develop a minimum 28-day strength of not less than 28 MPa. The concrete shall use a cement conforming to AASHTO M85 (ASTM C150) Type I or II. Reinforcing steel shall be Grade 400 MPa and shall conform to either of the following:

(a) Epoxy-coated deformed bars as specified in AASHTO M284M (ASTM D3963M).

(b) AASHTO M31M (ASTM A615M) deformed and plain billet steel reinforcing bars for use with calcium nitrite corrosion inhibitor (30% calcium nitrite solution).

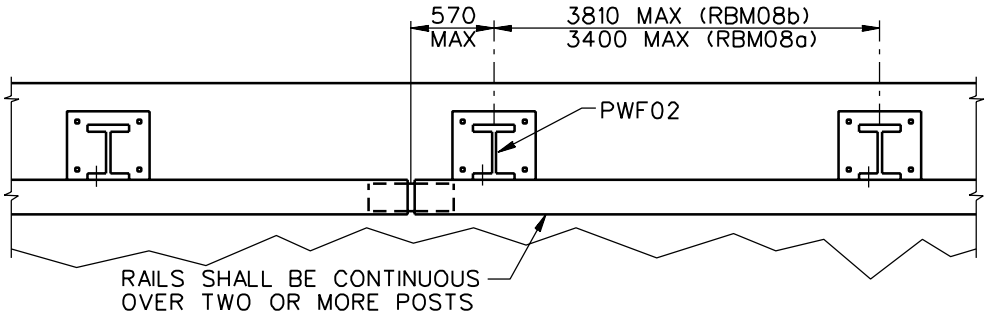
Unit Length = 6800

	Designator	Component	Number
	FBX22b	Anchor bolt (400 mm) and nuts	8
	FNX20a	Rail-post attachment nuts	4
	FNX22b	Leveling nuts	8
	FPB04	Anchor plate	2
	FWC22b	Anchor bolt washers	8
	FWR06	Plate washers	4
	PWF02	Post	2
	RBM08a	Square tube rail	2
or	RBM08b	Square tube rail	2

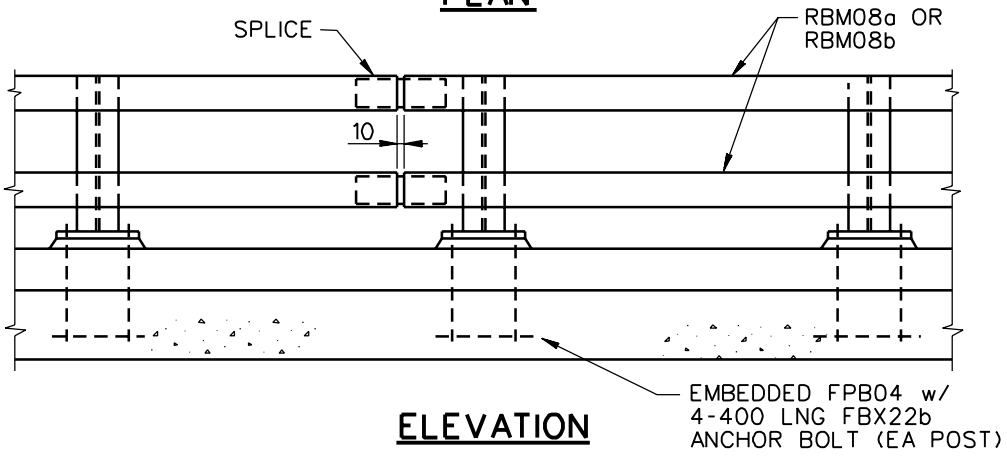
2-TUBE CURB-MOUNTED BRIDGE RAILING

SBB01a

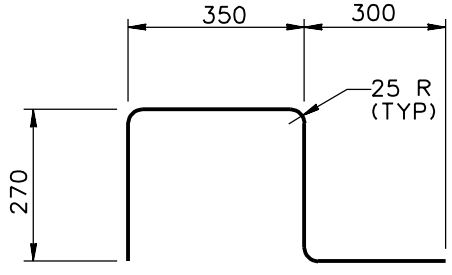
SHEET NO.	DATE
2 of 4	03-05-06



PLAN



ELEVATION



BAR A (15)

1994

2-TUBE CURB-MOUNTED BRIDGE RAILING

SBB01a

SHEET NO.	REF. NO.
3 of 4	

REFERENCES

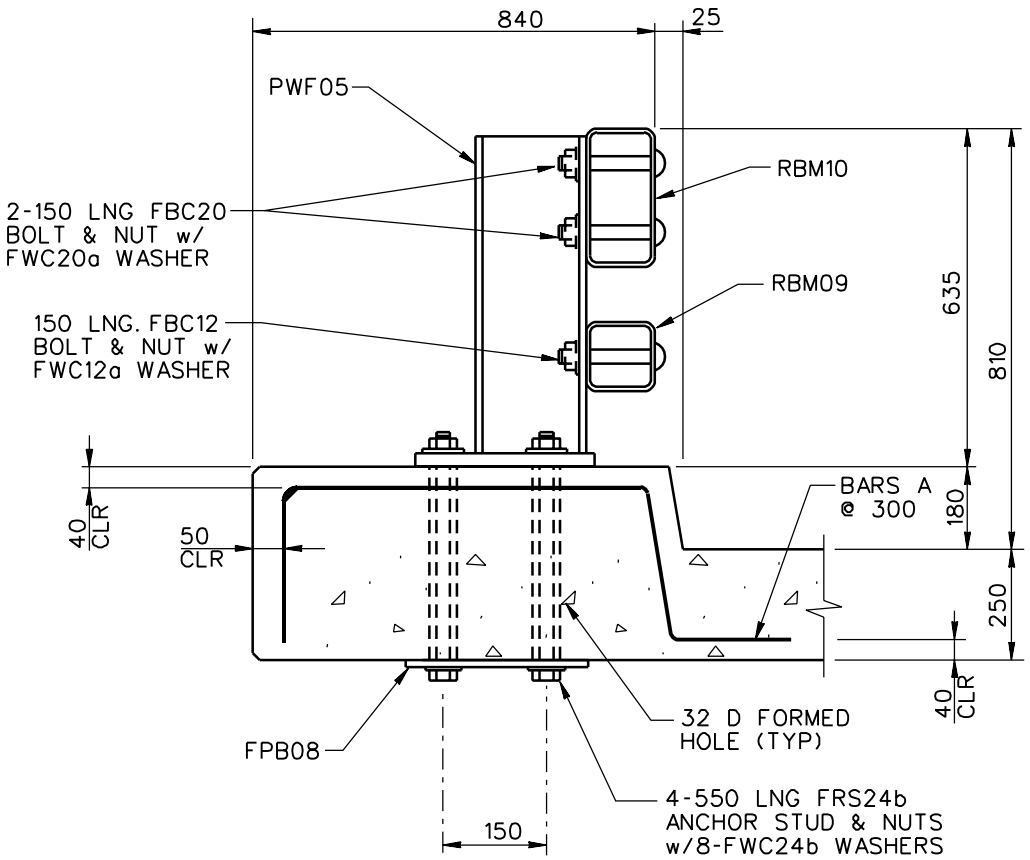
R.D. Morgan, *Bridge Rails*, Memorandum to Regional FHWA Administrators, Federal Highway Administration, Washington, D.C., August 28, 1986.

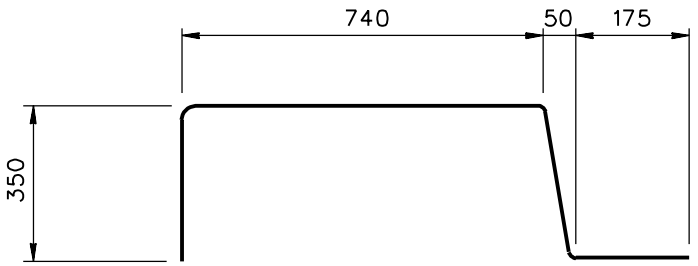
M.E. Bronstad, J.D. Michie, L.R. Calcote, K.L. Hancock, and J.B. Mayer. Bridge Rail Designs and Performance Standards, Federal Highway Administration, FHWA-RD-87-049, Washington, D.C., 1987.

2-TUBE CURB-MOUNTED BRIDGE RAILING

SBB01a

SHEET NO.	DATE
4 of 4	03-05-06





BAR A (15)

1994

2-TUBE CURB-MOUNTED BRIDGE RAILING

SBB01b

SHEET NO.	REF. NO.
1 of 4	

INTENDED USE

This steel post-and-beam system is a general purpose AASHTO Performance Level two bridge railing also known as the Illinois 2399-1 bridge railing. This bridge railing is shown as system number 21 in the 1990 FHWA list of crash tested bridge railings.

This drawing and specification address only the bridge railing and not the design or detailing of the bridge deck. Only reinforcement directly related to the bridge rail is shown. Bridge decks should be designed to develop the full strength of the bridge railing.

COMPONENTS

Concrete shall develop a minimum 28-day strength of not less than 28 MPa. The concrete shall use a cement conforming to AASHTO M85 (ASTM C150) Type I or II. Reinforcing steel shall be Grade 400 MPa and shall conform to either of the following:

(a) Epoxy-coated deformed bars as specified in AASHTO M284M (ASTM D3963M).

(b) AASHTO M31M (ASTM A615M) deformed and plain billet steel reinforcing bars for use with calcium nitrite corrosion inhibitor (30% calcium nitrite solution).

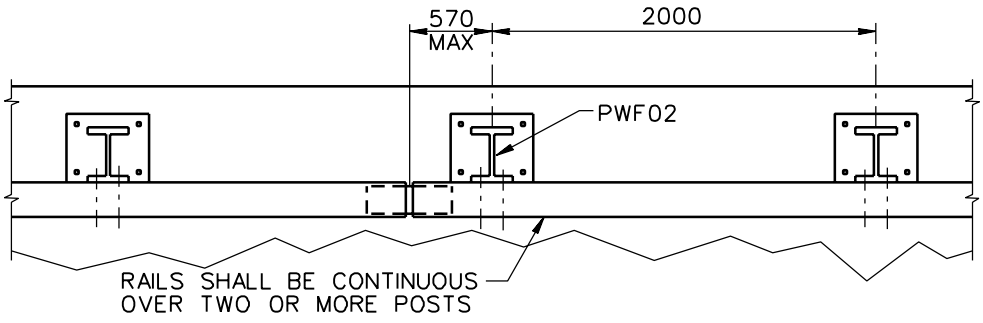
Unit Length = 4000

Designator	Component	Number
FBC12	Rail-post bolt (150 mm) and nut	4
FBC20	Rail-post bolt (150 mm) and nut	4
FBX16a	Splice bolt (40 mm)	8
FPB08	Anchor plate	2
FRS24b	Anchor stud (550 mm) and nut	8
FWC12a	Washer	2
FWC20a	Washer	4
FWC24b	Washers	16
PWF05	Post	2
RBM09	Box beam rail	1
RBM10	Box beam rail	1

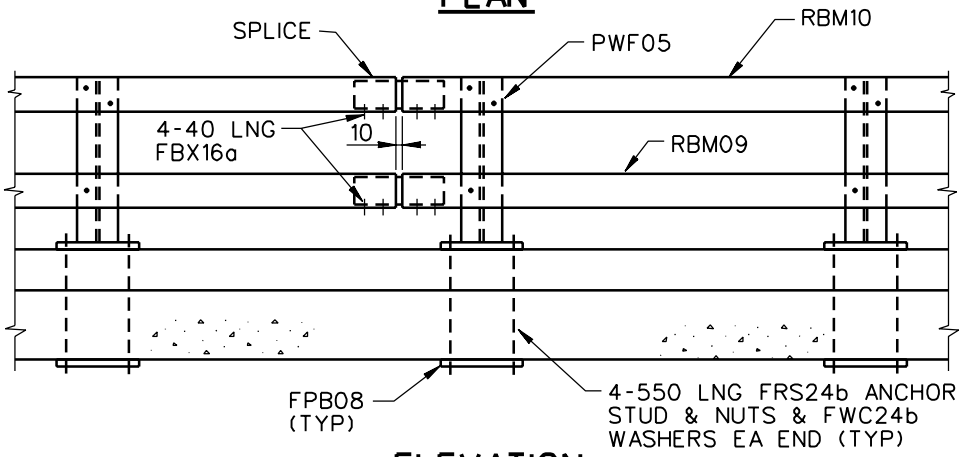
2-TUBE CURB-MOUNTED BRIDGE RAILING

SBB01b

SHEET NO.	DATE
2 of 4	03-05-06



PLAN



ELEVATION

1994

2-TUBE CURB-MOUNTED BRIDGE RAILING

SBB01b

SHEET NO.	REF. NO.
3 of 4	

REFERENCES

C.E. Buth, T.J. Hirsch, and W. L. Menges, "*Testing of New Bridge Rail and Transition Designs*, FHWA Report No. FHWA-RD-93-058, Federal Highway Administration, Washington, D.C., May 1993.

T. O. Willet, *Crash Tested Bridge Rails*, Memorandum to Regional FHWA Administrators, Federal Highway Administration, Washington, D.C., August 13, 1990.

2-TUBE CURB-MOUNTED BRIDGE RAILING

SBB01b

SHEET NO.	DATE
4 of 4	03-05-06