


TO: MODIFIED BY EI 78-035 EFFECTIVE 10/19/1978 Director, Preliminary Plan Review Bureau		<h1>ENGINEERING INSTRUCTION</h1> <p>NEW YORK STATE DEPARTMENT OF TRANSPORTATION</p>	
SUPERSEDED BY EI 79-048 EFFECTIVE 3/20/1980		SUBJECT: Heavy Post Blocked-Out Corrugated Beam Guide Railing and Median Barrier Subject Code: 7.27-1-606; 7.27-2-606	
Distribution: <input checked="" type="checkbox"/> Main Office <input checked="" type="checkbox"/> Regions <input type="checkbox"/> Special		Code: <u>EI 77-32</u> Date: <u>June 28, 1977</u> Supersedes:	
APPROVED:  <u>Deputy Chief Engineer (Facilities Design)</u>			

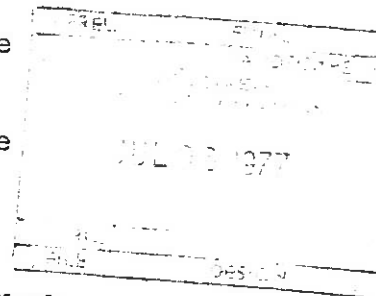
We are transmitting the following standard Sheets and Specifications:

- Standard Sheet 606-8 Heavy Post Blocked-out Corrugated Beam Guide Railing and Median Barrier.
- Standard Sheet 606-9 Heavy Post Blocked-out Corrugated Beam Guide Railing Approach Treatments.
- Standard Sheet 606-11 Heavy Post Blocked-out Corrugated Beam Guide Railing Installation at Fixed Objects.
- Special Note Titled, Heavy Post Blocked-out Corrugated Beam Guide Railing and Median Barrier.

The Standard Sheets are being sent under separate cover.

This is a new design in New York and has been approved for use in New York City, non-State maintained roads, or highways, and State Maintained roads, or highways, where substantial amounts of corrugated beam on heavy posts are now in service and usable, and would have to be removed and replaced with box beam to meet deflection criteria. Other applications of this guide rail system shall be submitted to the Deputy Chief Engineer (Facilities Design) for approval on a project by project basis.

This guide rail system is extremely stiff with a basic deflection of 4 ft. which can be reduced to 2 ft. by reducing the post spacing 3 feet 1-1/2 inches. This system is composed of the G4S guide rail and MB4S median barrier systems shown in NCHRP Report 118 and has been concurred with by FHWA. You should note, that this system will produce more vehicular damage and has the potential of producing more personal injuries than systems with S 3x5.7 posts. Extreme caution should be exercised in the selection of this system to preclude the construction of a hazard which is greater than the object or hazard you intend to protect the motorist from. The ideal approach terminal is constructed by embedding the end of the rail and the anchor into a cut slope keeping the rail vertical. If this is not possible one of the approach treatments shown on Standard Sheet 606-9 should be used.



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Beam Guide Railing and Median Barrier

The Design Engineer will have to detail the approach details for the installations where he intends to embed them into the back slope and these details shall be submitted, to the Deputy Chief Engineer Facilities Design for his approval, with the Advance Detail Plans.

For guide rail and median barrier connection to bridge rail see BDD 77-45 and BDD 77-46 which will be issued by the Structures Design and Construction Subdivision.

We will be issuing Standard Sheet 606-10 Heavy Post Blocked-out Corrugated Beam Median Barrier Approach End Treatment at a later date. In the meantime the Design Engineer must submit his design for the median barrier approach end treatment for approval on a project by project basis.

MDG:WEH:ELZ

HEAVY POST BLOCKED-OUT CORRUGATED BEAM
GUIDE RAILING AND MEDIAN BARRIER

Make the following changes to the Standard Specifications of January 2, 1973:

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Under Subsection 606-1, DESCRIPTION, insert the following after "Corrugated Beam Guide Railing and Mall Barrier":

Heavy Post Blocked-Out Corrugated Beam Guide Railing and Median Barrier.

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Under Subsection 606-2, MATERIALS, add the following:

Epoxy Polysulfide Grout	721-03
Anchor Bolts	723-60

also, add the following Subsection:

606-2.05 Heavy Post Blocked-Out Corrugated Beam Guide Railing and Median Barrier. The material requirements for Corrugated Beam Guide Railing and Mall Barrier shall apply except that posts, offset beams, soil plates, back-up plates, expansion anchors, and hardware shall be as detailed on the Standard Sheets for Heavy Post Blocked-Out Corrugated Beam Guide Railing and Median Barrier.

A. Offset Beams. Offset beams shall be fabricated from steel conforming to ASTM A36.

B. Back-up Plates. Back-up plates shall conform to the requirements for corrugated rails.

C. Galvanized Bolts, Nuts, and Washers. Galvanized bolts, nuts, and washers, used to attach the offset beams to the posts and the rails to the offset beams, shall conform to the requirements of ASTM A325.

D. Anchor Bolts. Anchor bolts, when required, shall conform to the requirements of Subsection 723-60.

E. Grout. Grout for anchor bolts shall conform to the requirements of Subsection 721-03.

F. Concrete. When cement concrete encasement is required for the posts, the concrete shall conform to the requirements for Class A Concrete specified in Section 501, Portland Cement Concrete, General.

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Under Subsection 606-3.01 General Add the following sentence to the first paragraph at the top of the page:

When anchoring devices are required for heavy post blocked-out systems they shall be grouted with § 721-03, "Epoxy Polysulfide Grout."

Also, change the title of Subsection 606-3.04 to read as follows:

606-3.04 Corrugated Beam Guide Railing and Mall Barrier, and Heavy Post Blocked-Out Corrugated Beam Guide Railing and Median Barrier.

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Under Subsection 606-3.04, add the following as the last paragraph:

For heavy post blocked-out corrugated beam guide railing connections to walls (trailing ends) drill the holes for the expansion anchors to the depths and diameters specified by the manufacturer. The holes shall be drilled with care to avoid damage to the wall. Any damage caused by the drilling operation shall be repaired by the Contractor to the satisfaction of the Engineer.

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Add the following Subsection:

606-4.14 Heavy Post Blocked-Out Corrugated Beam Guide Railing Connections to Walls (Trailing Ends). Guide railing connections shall be measured by the number furnished and installed in accordance with the plans, specifications, standard sheets, and as directed by the Engineer.

Also, under Subsection 606-5.01, Guide Railing and Median Barrier Types, revise the list of types to read as follows:

- A. Box Beam Guide Railing
- B. Box Beam Guide Railing (Shop Curved)
- C. Box Beam Median Barrier
- D. Box Beam Median Barrier (Shop Curved)
- E. Corrugated Beam Guide Railing
- F. Heavy Post Blocked-Out Corrugated Beam Guide Railing
- G. Corrugated Beam Mall Barrier
- H. Heavy Blocked-Out Corrugated Median Barrier
- I. Cable Guide Railing
- J. Concrete Median Barrier

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Add the following to TABLE 606-1, PAYMENT FACTORS FOR GUIDE RAIL POST SPACINGS:

Payment Factor	1.0	1.8
Rail Type	Post Spacing Center to Center	
Heavy Post Blocked-Out Corrugated Beam	6'-3"	3'-1 1/2"

Also, add the following Subsection:

606-5.06 Heavy Post Blocked-Out Corrugated Beam Guide Railing Connections to Walls (Trailing Ends). The price bid for each guide railing connection shall include the cost of all labor, material, equipment and the repair of any damage caused by the Contractor's operations.

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Add the following pay items:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
606.32	Heavy Post Blocked-Out Corrugated Beam Guide Railing	Linear Foot
606.33	Heavy Post Blocked-Out Corrugated Beam Median Barrier	Linear Foot
606.34	Anchorage Units for Heavy Post Blocked-Out Corrugated Beam Guide Railing	Each
606.36	Heavy Post Blocked-Out Corrugated Beam Guide Railing Connections to Walls (Trailing Ends)	Each

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