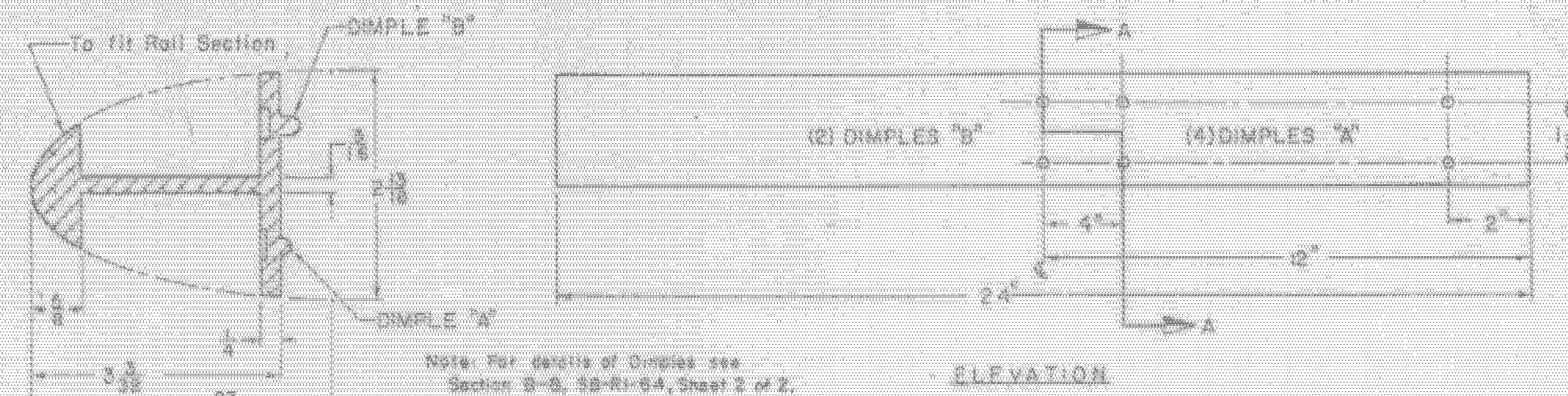


ELEVATION

Note: Rail posts are to be set normal to grade unless otherwise designated on Bridge Plans.

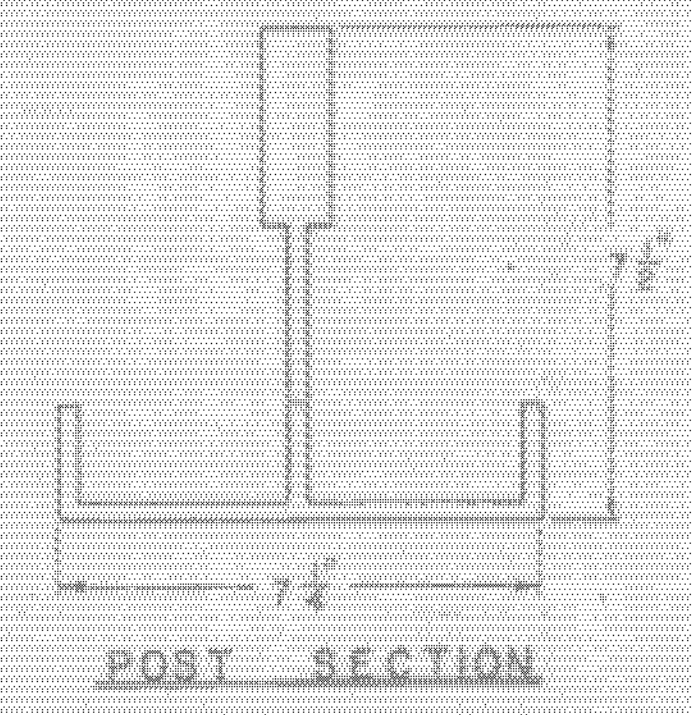
Allowable stresses:  
Rolling 21,000 psi  
Post 17,000 psi



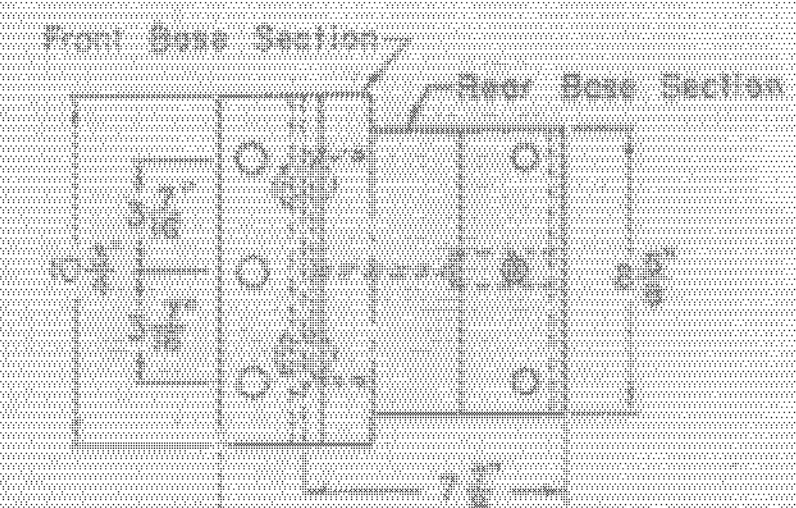
HAND RAIL SPLICE DETAILS

GENERAL NOTES

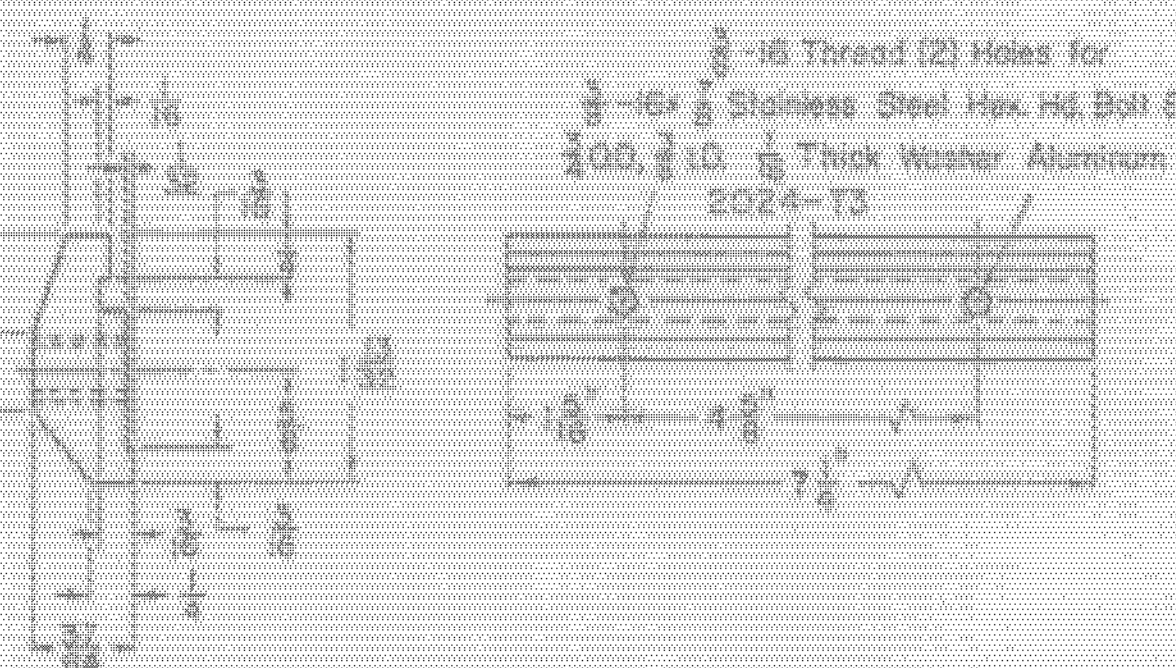
- DESIGN SPECIFICATIONS: Designed in accordance with 1954 Interim A.A.S.H.O. Specifications and current A.S.T.M. Standards.
- Open holes as noted.
  - Aluminum bolts shall be made from material conforming to ASTM B211, alloy 2024-T4, and shall have an anodic coating .0002 in. minimum thickness with dichromate or boiling water seal.
  - Material for Anchor Bolts shall conform to either (a) A.S.T.M. A276 type 430 Stainless Steel except with a minimum of 100,000 psi ultimate strength, or (b) A.S.T.M. A325 High Strength Steel bolts with suitable nuts and plain hardened washers, galvanized in accordance with A.S.T.M. A123.
  - Material for set screws and cap screws to be stainless steel A.S.T.M. A276.
  - Material for aluminum nuts shall be A.S.T.M. B211 Alloy 6061-T6 or Alloy 6062-T9 with suitable lubricant. Aluminum nuts to be American Standard finished hexagon (thick nuts class 2B thread). Lower steel nuts shall conform to A.S.T.M. A307. All nuts to comply with American hex. A.S.A. Spec. B-16.2.
  - Exposed ends of rail tube shall be closed with drive-in type roll end caps. Caps may be either (a) Aluminum alloy permanent mold castings complying to A.S.T.M. Spec. B109 Alloy 5B 70 Al-Be, or (b) Sand mold castings complying to A.S.T.M. Spec. B29 Alloy 5B 70 A.
  - Weld filler wire shall be A.S.T.M. B235, Alloy ER-5356. All welding shall be metal inert gas process.
  - End of tube sections are to be sawed or milled. Cut ends are to be true, smooth, and free from burrs or ragged edges.
  - Rolling system shall be continuous, with each rail section attached to a min. of three posts. Each joint in rail length shall be spliced as detailed, with splices occurring in the same panel.
  - Anchor bolts are to be preset in concrete. For spacing of rolling posts see Bridge Plans.
  - Rolling is to be paid for per linear foot and the cost shall include all hardware and post connections necessary to erect railing.
  - Material for posts, post bases, splice bars, and rolls shall be A.S.T.M. B221, Alloy 6061-T6.
  - Material for aluminum washers shall be A.S.T.M. B-209 Alloy Anodized 2024-T3. Material for rivets shall be A.S.T.M. B-316 Alloy 6061 heat treated to the T6 temper. Rivets shall be button head and cone point, cold driven as per drawing. Alternate rivet material shall be A.S.T.M. B221 Alloy 6061-T6.
  - Material for anchor channel bars shall conform to A.S.T.M. A7 or A36.
  - All aluminum surfaces in contact with post pads shall be given 1 shop coat of zinc chromate paint.
  - Prior to fabrication shop drawings shall be submitted to the Department of Highways for approval.
  - Fabric pad shall be preformed fabric in accordance with A.A.S.H.O. Spec. 210.3 (K) and shall be furnished by the railing fabricator. Pads shall be two pieces each 3' wide under each post.



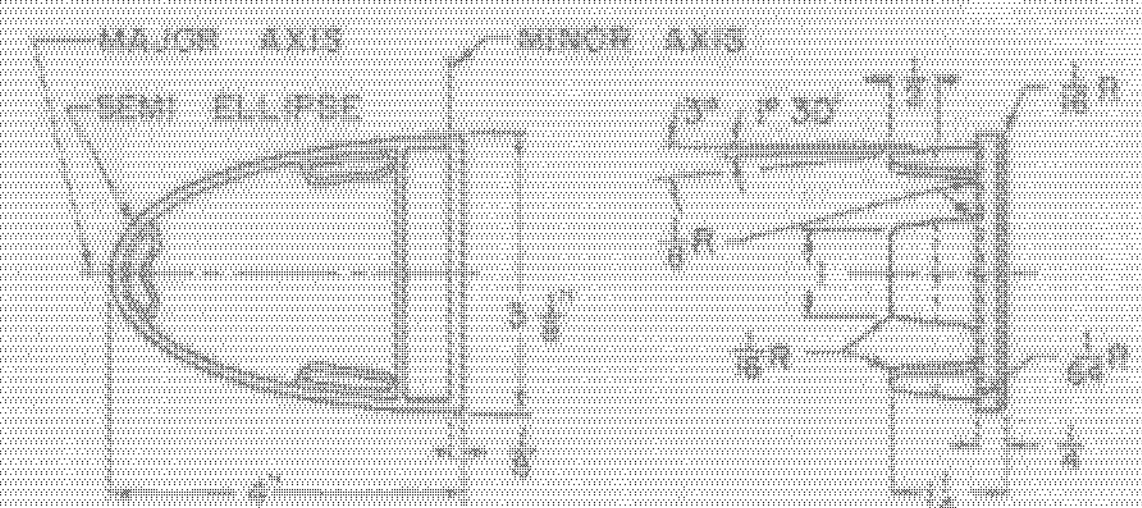
POST SECTION



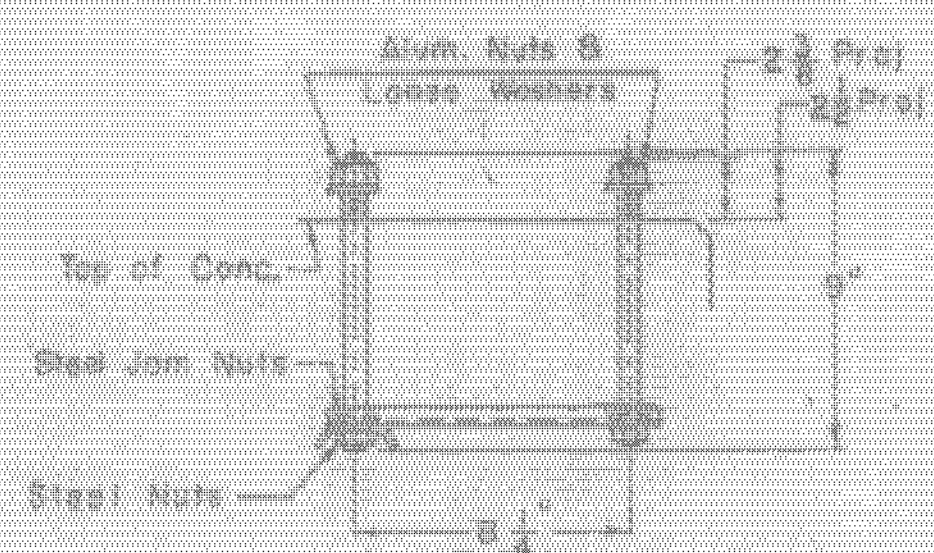
BOTTOM VIEW OF BASE



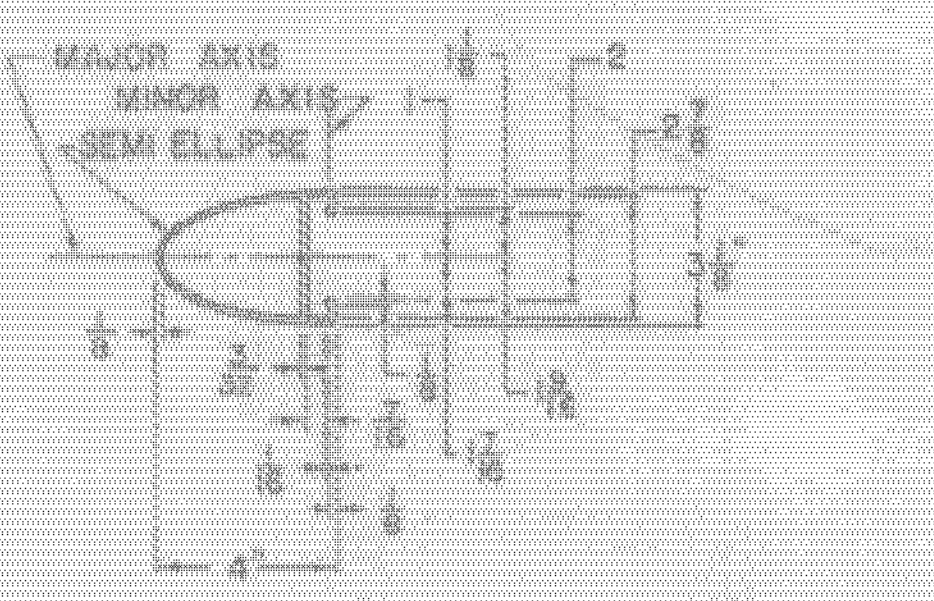
HAND RAIL POST CONNECTION



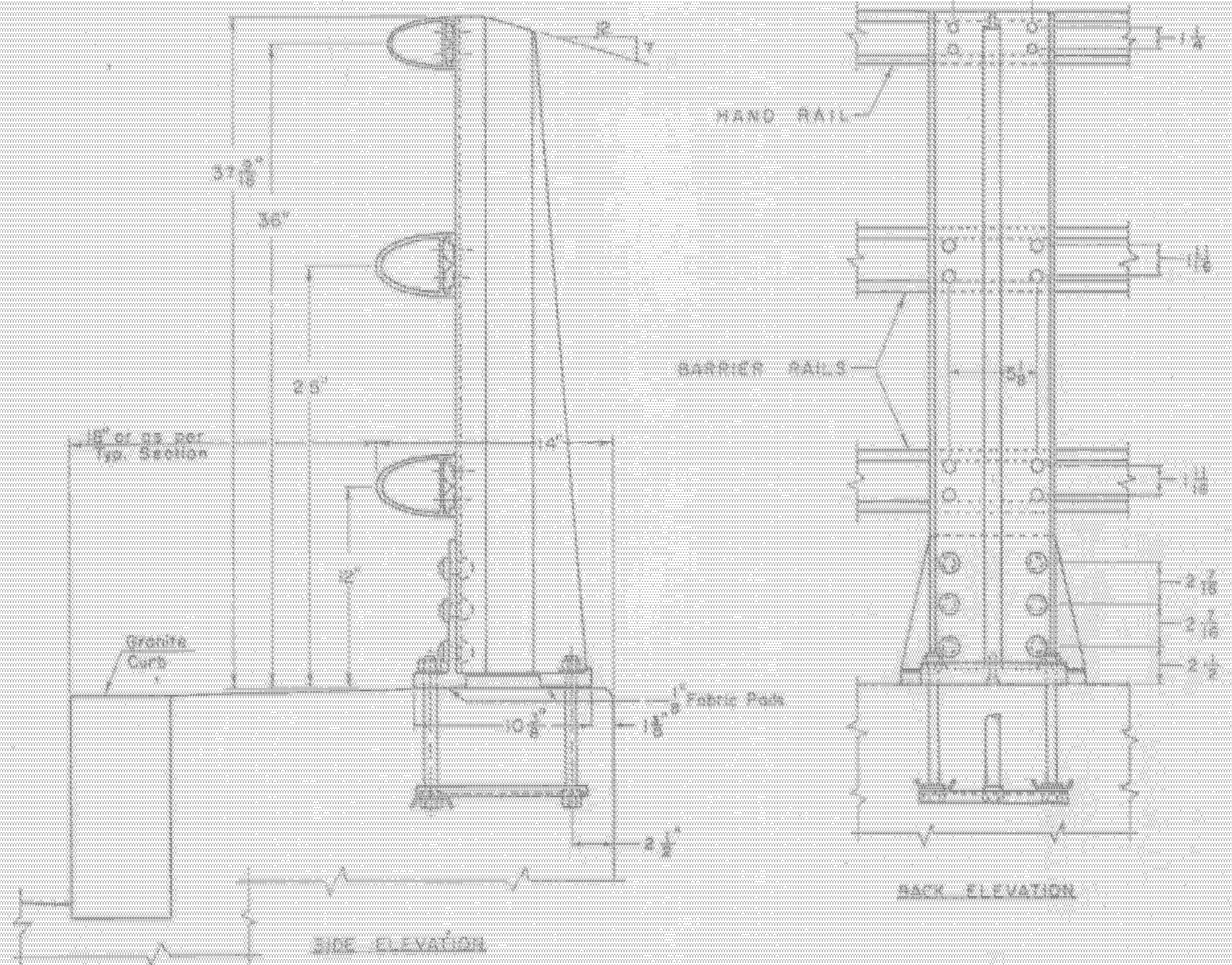
HAND RAIL END CAP



POST ANCHOR ASSEMBLY



HAND RAIL SECTION



RAIL POST DETAILS

- Revisions & Corrections
- Series Rod Depth increased to 4" for 8'-0" Post Spacing. Nov. 25, 1964 W.B.T.
  - Aluminum alloys revised to current ASTM Standards, Weld filler wire added Jan. 12, 1965 W.B.T.
  - Minor corrections to conform to manufacturer's current coating practices. Jan. 26, 1965 W.B.T.
  - Anomalous rivet material added. Mar. 23, 1965 W.B.T.
  - Alloy designations revised. Dec. 5, 1965 W.B.T.
  - Alloy B063-T6 removed from Note 12, but projection increased from 1 1/2" to 2 1/2" B. 24 June 21, 1965 W.B.T.

Drawn By: W.B.T. Oct. 1964  
 Traced By: W.B.T. Oct. 1964  
 Checked By: W.M.S. Oct. 1964  
 Recommended for Approval: [Signature] Date: 10/21/64  
 Recommended for Approval: [Signature] Date: 10/21/64  
 Approved: [Signature] Date: 10/21/64

Revisions & Corrections (Cont.)

- Permanent mold castings for roll end caps added. Nov. 5, 1966 W.M.S.
- Allowable stresses in rolling and post added. Dec. 5, 1966 W.M.S.
- Optional stainless or high-strength steel anchor bolts allowed. Dec. 5, 1966 W.M.S.

ALUMINUM BRIDGE RAILING DETAILS

MILTON-HIGHGATE  
IM MEMB(26)

SHEET 45 OF 70  
BRIDGE 86S  
FOR REFERENCE ONLY

STATE OF VERMONT  
DEPARTMENT OF HIGHWAYS  
STANDARD STRUCTURES

SB-RI-64 Sheet 1 of 2