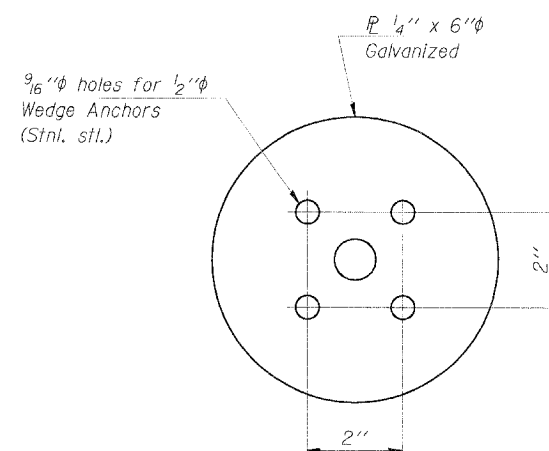
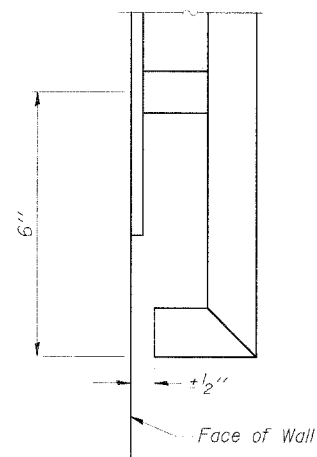
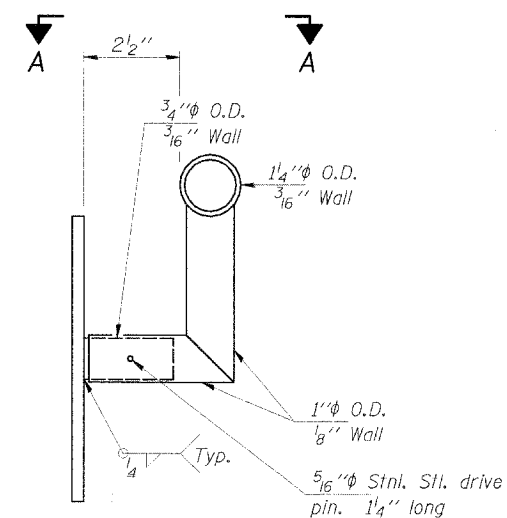


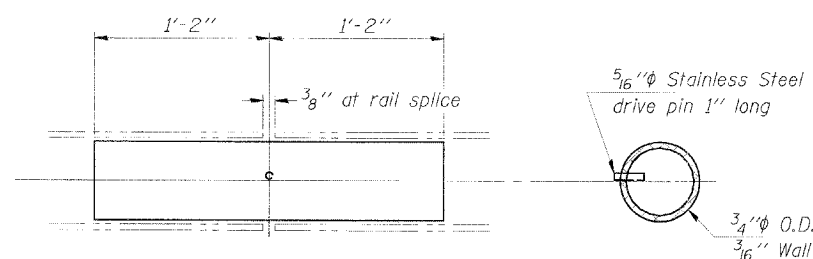
PARTIAL LONG. SECTION



PIPE HANDRAIL DETAILS



SECTION A-A



RAIL SPLICE

NOTES

Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for PIPE HANDRAIL.

Aluminum alloy rail shall conform to ASTM B221 alloy 6061-T6 or 6351-T5 with min. yield 35 ksi, min. tensile 38 ksi, and elongation of 10% in 2 inches.

All joints in rail shall be spliced per detail.

All plates shall conform to the requirements of AASHTO M-270 Grade 36.

All plates shall be galvanized after shop fabrication in accordance with AASHTO M-111 and ASTM A-385.

1/2" wedge anchors shall be stainless steel and shall have a minimum working shear level of 4,000 pounds and a working pullout load of 2,000 pounds.

BILL OF MATERIAL

Item	Unit	Quantity
Pipe Handrail	Foot	170

**HLR**  
 Rice, Berry and Associates  
 A Division of Hampton,  
 Lenzin and Terwilliger, Inc.  
 Civil & Structural Engineers  
 801 S. Durkin Drive  
 Springfield, Illinois 62704  
 217-546-3400  
 P.O. Box 1036  
 DuQuoin, Illinois 62832  
 618-790-4637  
 Account Number  
 03-05-0181-1  
 Date: 6-09-04  
 DESIGNED: P.S.L. CHECKED: J.L.B. DRAWN: D.S.S.

**TUNNEL DETAILS III**  
**SECTION 99-00243-00-PV**  
**BIKE PATH UNDER RANDALL ROAD**  
**KANE COUNTY**  
**STATION 11+25**