APPENDIX B
Water and Drainage Reference Documents
May 3, 1995

Mr. Bryan T. Groden, P.E.
District Deputy Director
Ohio Department of Transportation
District 12
5500 Transportation Boulevard
Garfield Heights, Ohio 44125-5396

Attention: Mr. Dennis J. Knaus, P.E. &
Mr. Craig Hebebrand, P.E.

Re: CUY-6-14.99; PID: 5561; 758-94
Detroit-Superior (Veterans’ Memorial) Bridge
Ground Slope Stability

Dear Mr. Groden:

This letter is written in reply to questions raised in your April 21, 1995 letter regarding the ground slope stability effects on the referenced bridge. The history and options in connection with the slope stability were discussed with Mr. Craig Hebebrand during a May 1, 1995 meeting in your offices.

A report that accompanied the 1988 TS&L drawings for this project addressed the ground movement problem as it affects the bridge. Slope stability analyses were performed which indicated that the slope could be considered marginally stable. A rise in the water level and/or an increase in the intensity of the surface loading can cause slope failure. Recommendations were made in the report and in each annual bridge inspection report through 1994 that action be taken to dewater the slope prior to awarding a contract to rehabilitate the bridge. Although the standing water in the west station area adjacent to the south wall has been eliminated, the ground, both inside and outside the bridge, still appears damp.

As noted in our 1994 annual bridge inspection report the ground slope stability as it affects the bridge has been and continues to be a concern. An inclinometer installed in 1991 generally indicates a slow movement to the southeast toward the river along a plane at about Elevation 555 (river bottom @ approximately Elevation 547). Although the readings show a relatively slow, steady movement, major shifting and cracking of the south wall, adjacent columns, ceiling and floor in the area of the west station has occurred in the thirty years since a landslide took place.
May 22, 1995

Reference is made to the enclosed letter, dated May 3, 1995, from Mr. Charles A. Baumgartner, regarding the stability of the slope at the southwest corner of the Detroit-Superior Bridge. Reference is also made to your letter, dated April 10, 1995, which requested the cancellation of the slope dewatering project and the consideration of the use of drilled shafts in the design of the retaining wall and column footings.

Please be advised that at this time the dewatering of the slope remains the recommended course of action. Specifically, water and sewer lines should be inspected and any leaks found should be repaired and horizontal drains should be installed in the slope. Please be further advised that there is insufficient geotechnical information available at this time to permit any conclusions to be drawn regarding the feasibility of using other methods (i.e., drilled shafts, soil nailing, soil injection, etc.) to stabilize the slope.

Based on the County's opinion that the dewatering option is not economically justifiable, the Department recommends that the County initiate a more extensive geotechnical investigation to obtain the information required to determine the most economical and prudent course of action.

If you have any questions, or if you desire additional discussion on this matter, please do not hesitate to contact this office.

Respectfully,

Bryan T. Groden, P.E.
District Deputy Director

Dennis J. Knauts, P.E.
Planning and Design Engineer

WEST SIDE STATION - DRAINAGE PLAN

NOTES:
1. ALL INFORMATION SHOWN IS FROM THE USG ORIGINAL PLANS
   COUNTY OF CUYAHOGA, DETROIT-SUPERIOR BRIDGE. SEE EXISTING
   PLANS, INCLUDING SHEET A-145-8, PLAN OF DRAINAGE SYSTEM
   OF WEST SIDE STATION, FOR ADDITIONAL INFORMATION.

2. DRAIN STANDING WATER IN EXISTING WATERWORKS TUNNEL AND
   BYPASS TUNNEL AND REMOVE ANY REMAINING SEDIMENT IN THE
   TUNNEL. THIS WORK SHALL BE INCLUDED FOR PAYMENT UNDER ITEM
   5B - STRUCTURE DRAINAGE, MSC-1 TUNNEL DEWATERING.

3. INSPECT THE EXISTING DRAINAGE FACILITIES IN THE STATION AREA
   AS OUTLINED IN THE GENERAL NOTES. PAYMENT FOR INSPECTION
   OF EXISTING DRAINAGE FACILITIES SHALL BE INCLUDED IN THE
   CONTRACT PRICE FOR ITEM SPECIAL - PIPE CLEANOUT.

4. COORDINATE ACCESS TO THE WATERWORKS TUNNEL WITH THE CITY OF
   CLEVELAND DIVISION OF WATER.
   ATTN OUT SINGER
   200 LAKESIDE AVE.
   CLEVELAND OHIO 44114
   OFFICE: 216-664-2444 EXT 5555

LEGEND:
- EXISTING FLOOR DRAIN
- EXISTING MANHOLE
- EXISTING DRAINAGE INLET
- EXISTING PIPE
- EXPANSION JOINT
- WEST SIDE STATION COLUMN