



Mr. Jack Cahalan, Township Supervisor
Lower Saucon Township
RE: Meadows Road Bridge, Hellertown

July 7, 2008

Dear Mr. Cahalan,

I finally visited the Meadows Road Bridge for a second time just a few weeks ago. I had been there previously in October of 07 after it had rained and when the water was higher than on this more recent visit. The first 12 photos were from the 07 visit and I could not get under the arch like I was able to do more recently.

Photos #13-24 are from the visit I took a few weeks ago and I was able to see the crack that is a close to continuous separation at the arch ring and can be seen in part in photo # 20,21. Also, the plywood sections propped up on the underside of the arch barrel can be seen in photo #22. I am sure this was some temporary measure to stop chinking stones which were falling loose and allowing a larger section of the barrel to drop to help inhibit the arch barrel from getting worse.

The plane of the wall and arches on the upstream side are in fairly good condition in my opinion, see photo #18,23. However, the fact that material has fallen out from near the center underside and that the wall on the downstream side is far out of plumb causes much concern in the remaining service life of the bridge in its current condition. See photos # 16,17.

I believe the bridge may have been helped in a better manner in the past had the tie rods been placed not in the center top of arches, as they now are, but between the arches.

Taking in these few observations, and if there is a historic preservation goal in mind to keep this unique 4 span stone arch bridge in service but into a more robust condition so that it is capable of future traffic and load demands, I believe a preservation model can be achieved, restoring it "as found" and remaining a one lane bridge.

If the goal is to make the bridge a two-lane bridge then I think it is possible to document the current position of all the stones and utilize them in reconstructing outer walls, full stone arch "veneers" and parapets to be laid in a similar fashion as what currently exists. This approach would be sympathetic to the aesthetic value of what now exists and to honor the hands of the original builders even though the sub-structure would actually be concrete and steel.

In any event the engineering work must be carried out by a firm with experience in dealing with old mass-masonry structures and historic preservation work coupled with knowledge in modern bridge engineering. I can faithfully direct you to a first class firm that is well versed in both of these areas and has a successful history in achieving substantial remedies required by highway departments as well as meeting the needs of maintaining local cultural heritage for the county and its residents.

Please contact me at your earliest convenience and I will forward the information regarding the engineering firm of Mott MacDonald and their lead engineer John Addison who worked with me recently on another historically sensitive stone arched bridge in Saco, ME.

Sincerely,

Andrew deGruchy, President.



1: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



2: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



3: ARCH REMAINS WITHIN AN INCH OF ORIGINAL POSITION



4: WALLS HAVE SPREAD OUTWARD CONSIDERABLY



5: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



6: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



7: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



8: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



9: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



10: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



11: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



12: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



1: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



2: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



3: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



4: THROUGH TIES WOULD BE BETTER PLACED BTWN ARCHES



5: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



6: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



19: SOME CRACKS EXACERBATED BY HARD CEMENT REPAIRS



20: THESE CRACKS ARE CONSISTANT WITH OUTWARD MVMT



21: MEADOWS ROAD BRIDGE, HELLERTOWN, PA



22: TEMPORARY MEASURES ARE INADEQUATE FOR LONG SVC



23: OPPOSITE SDE APPRS AT A REASONABLE PLANE FRM MVMT



24: THROUGH TIES WOULD BE BETTER PLACED BTWN ARCHES