

INTEROFFICE MEMORANDUM

DATE: July 21, 1981

TO: Messrs. Parker, Gee and Barnett

FROM: Dan L. Flowers

SUBJECT: Evaluation of Structural Concrete when test cylinders break low.

- I. Verify with Resident Engineer the adequacy of sampling, making, curing, transporting and testing of test cylinders. Were any deviations from normal experienced?
- II. Check in-place strength of the hardened concrete by using the non-destructive "Rebound Hammer Test". Should rebound hammer indicate further problems with low strength in-place concrete, then test cores (min. of 3 (three) taken randomly) should be taken by Materials and Research and the in-place core strengths determined.
- III. Report core strengths to Bridge Design by memorandum from Construction Engineer. Obtain report from Bridge Design as to structural adequacy of in-place structure on basis of the core strengths.
- IV. If integrity of in-place structure is adequate for design intent, a determination of an equitable price adjustment must be made in order to satisfy the intent of contract compliance.
- V. (a) Average of 3 cores must be at least 85 percent of f'_c (specified strength).

(b) No core shall be less than 75 percent of f'_c .
- VI. If conditions of V above are generally met, then price reduction would be as follows:

$$\text{Price Reduction} = 1 - \frac{(\text{Avg. of 3 core strengths})^2}{(\text{Specified Strength})^2}$$
- VII. If conditions of V above are not met or other factors dictate, then decision of disposition of the low concrete strength problem shall be based on engineering/management decision.

DLF:LBD

Dan L. Flowers
State Construction Engineer

cc: Director
Chief Engineer
Asst. Chief Engr. - Operations
Asst. Chief Engr. - Design