



SOUTH 11TH STREET PROFILING PROJECT

Project Report #15

Oskaloosa, Iowa

October, 1993

Rehabilitating old pavements in the most cost-effective manner is a challenge that annually confronts many road authorities throughout Iowa. Current economic conditions require the evaluation of all feasible alternatives to insure that the expenditure of limited revenues will achieve long term performance. During his 12-year tenure in Oskaloosa, Iowa, City Engineer Larry Stevens has 1) secured public support for a 100 block portland cement concrete paving program, 2) designed several innovative solutions for reconstructing inadequate streets and 3) added systems segments to enhance area development.

originally paved in 1930, 18 ft. wide using the 10"-7"-10" thickened edge PCC standard design, the highway was later widened to 25 ft. in width. The portion from Tenth Avenue to A Avenue East (Iowa 92) included a 6" mountable curb on each side in order to conduct surface drainage to storm sewer intakes and to control access from frontage development.



When the Iowa State Highway Commission constructed relocated US-63 in southeast Oskaloosa in 1960, the old route on South Eleventh Street was jurisdictionally transferred to the city after having been placed in a good state of repair. Although



As testimony to the durability of the original river gravel coarse aggregate concrete, minor maintenance patching and contraction joint resealing was performed in 1986 and other patches were installed in 1990. Stevens had contemplated a surface rehabilitation project in 1988 to enhance riding qualities and level faulted joints but deferred that work to finance higher priority needs in the city.



With City Council approval for 1993 programming, a decision was made to proceed with the first extensive surface profiling/diamond grinding project in Oskaloosa. Traffic volumes (1990) within the 5,280 ft. project limits were 3,000 ADT from BOP to Tenth Avenue, 3,450 ADT to Seventh Avenue and 4,620 ADT to EOP. Plans specified that grinding would be limited to the center 20 ft., leaving the widening units and curb generally undisturbed. Because of previous repairs, no patching or joint sealing was needed. "Before" riding conditions tested 70.4"-SBL and 71.65 "-NBL by profilometer trace. Based on Iowa Department of Transportation specifications (Art.2532), a minimum reduction in profile by 65% , to 24.5", was required. The city assumed responsibility for cleaning up grind materials deposited on road shoulders.



At the August 16, 1993 letting, Concrete Textures, Inc. of Des Moines, Iowa submitted the low bid of \$5.75 per square yard or \$64,112.50 for 11,150 s.y. of pavement surface profiling/diamond grinding. CTI used a single Target machine with 36 in. head,

proceeding in subsequent passes from centerline out to specified edge limits. Water was supplied by a nurse truck and one-way traffic conducted through the work zone by flaggers. While grinding proceeded in typical fashion, aggregate hardness limited forward speed to approximately 7 ft. per minute. This condition had been anticipated by CTI in preparing their bid and accounted for the relatively high unit price.



City Engineer Stevens is pleased with the end result and feels this is another example of getting the "biggest bang for the buck." "In my experience, the alternative of AC overlays on PCC is not practical or feasible because they tend to debond and quickly show reflective cracking or shoving and rutting. Drainage on the pavement is also negatively affected. For surface restoration such as our South Eleventh St. project, the best buy was diamond grinding."

Additional information on the project may be obtained by contacting:

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