



NORTHWOOD - AWARD WINNING PAVING PROJECT, 1993 Project Report #16

Worth FN-105-2(16)--21-98 Central Avenue Improvement Northwood, Iowa

April, 1994

Although 1993 will long be remembered by midwesterners for its record rainfall and catastrophic floods, the 1,940 residents of Northwood will recall it with pride as the year when Central Avenue (Iowa 105) was repaved with Portland Cement Concrete (PCC) between 6th and 11th Streets through the business district. Included in the overall project were AC overlays on approach segments between 4th and 16th Streets, plus one-block sections of 7th, 8th, 9th, and 10th Streets. The addition of new sidewalks with ornamental brick inserts and the use of cast iron street lighting fixtures created the appearance of a modern thriving community which is representative of Northwood, Iowa.

Founded in a timbered area along the Shell Rock River of north central Iowa near the Minnesota state boundary, Northwood was selected in 1864 as the Worth County seat. The original frame Courthouse survives as a local residence, followed by a masonry building built in 1879 that now serves the Historical Society. The present Courthouse was built in 1893 at a cost of \$8,100 and remains in operation, while proudly displaying a recent addition needed to enhance its functions. Early travelers followed the Imperial Highway from Lansing to Sioux Falls or the Jefferson Highway between Winnipeg, Canada and New Orleans, until redesignated Iowa 105 and US 65. Much of the original PCC construction on Iowa 105 (Central Avenue) was done in 1928. After 65 years of exemplary performance, a new urban pavement satisfying modern traffic needs was justified.

In 1992, Worth County and the Iowa Department of Transportation (IDOT) agreed to a jurisdictional transfer when rural Iowa 105 became part of the

Secondary Road system. However, that portion within the city limits of Northwood remained a Primary route. After local officials initiated negotiations, an agreement was reached whereby the costs and responsibilities for a new roadway would be divided between the city and IDOT.

Northwood retained Bolton & Menk Consulting Engineers, Fairmont, Minnesota, to provide technical management, preliminary plans, project design and construction inspection, subject to approval by IDOT of specified standards, specifications and procedures. After concurring with letting results and the contract award, IDOT committed to reimburse the city for costs of eligible items based on bid prices for actual quantities placed upon completion of the work.

IDOT participation was generally limited to 100 percent of the center 24 feet of Iowa 105 approach sections, the center 48 feet of new PCC pavement from midblock between 7th & 8th Streets to 11th Street, and portions of certain longitudinal and outlet storm sewers. Northwood agreed to finance traditional items such as project administration, off-project work, sewer and utility adjustments, parking lanes, sidewalks, lighting and detour/traffic control.

Bill Douglass of Bolton & Menk was lead engineer for the project. Following the bid opening, the City on April 13, 1993 awarded the prime contract to Wicks Construction, Inc., Decorah, Iowa (ICPA member) for \$1,185,130. The Wicks bid was lowest of six bids submitted. IDOT allocated \$517,300 based on initial costs. Of the city share, property owners would be assessed about \$242,600 and the remaining \$449,500 financed with general obligation bonds. Project costs equalled about \$903,507 for Central Avenue work, \$226,630 for AC overlays and \$34,992

for municipal parking lots. Note: adjustments in these figures will be made after required audits and final payments are agreed upon.

The project length totalled 3,987.6 lineal feet or 0.756 miles. Design year 2010 traffic volumes were projected to 2,542 vpd (BOP) and 5,200 vpd (EOP), with 7.6% and 4.4% trucks respectively.

The standard typical CBD section for the 48 ft. mainline PCC pavement consisted of 4 - 8" x 12' driving lanes and a 6" x 10.62' parking lane each side that included conventional 6" x 2'6" curb and gutter units, all on a 3" Class A aggregate base. Perforated pipe drains 4" in diameter and wrapped with geotextile fabric were placed up to 4 ft. deep in porous backfill behind back of curb each side, to accommodate sidewalk and pavement subgrade drainage. Sidewalks extending about 14.5 ft. from back of curb to each fronting building were constructed 4" thick on a 3" fine aggregate base. Immediately behind the curb, a 34" wide row of 2 3/8" brick pavers was placed, seated on 1" of graded sand and 6" of class A aggregate. For the roadway pavement, CD joints were required within street intersection areas, along with 12' x 12' joint spacing. In mid-block locations, C-joints were spaced 12' x 20'.

Of the 139 bid items, major contract quantities were:

12,850 S.Y.	8" PCC pavement - mainline
2,226 S.Y.	6" PCC pavement - parking lanes
1,702 L.F.	30" curb and gutter
582 S.Y.	Sidewalk - paver brick
2,483 Tons	ACC - Type A surface/binder and base
1,250 S.Y.	Sod

As Wicks and his subcontractors met the usual challenge of removals, utility adjustments, sewer installations and grade preparation, heavy rains slowed progress somewhat but the project remained generally on schedule, benefitted by sandy soil drainage. Concurrently, the City Council considered and approved the decorative red brick paver strip set in "Court Brick" pattern for color contrast, adding flag holders to 27 light poles, refurbishing the landmark 1906 Dillon Jewelry Clock, and rehabilitating the turn-of-the-century cast iron Humane Society water fountain/horse trough in front of City Hall. As a substitute for losing several large shade trees, future additions may include placing shrubbery planters, bicycle racks and trash receptacles.

Northwood residents confronted the usual construction project complications with good humor and a positive attitude. When removal work requiring traffic detouring began, downtown merchants kicked off a summer-long promotion designed to attract customers. Dubbed the "Main Street Mania", weekly specials were advertised such as pie and ice cream socials, a barbecue night and a pancake breakfast. A white-elephant auction was held and a "When Will it End" raffle gave shoppers the chance to enter their guess. The individual coming closest to the actual completion date won \$1,000 in "Northwood Dollars" from the Chamber of Commerce. To accommodate customers, signs were placed in alleys that designated rear entrances to business places, 5 ft. of existing storefront sidewalk was left in place as long as possible on Central Avenue, temporary gravel pedestrian crossings were maintained across streets and alleys, special night time lighting was installed and parking areas were designated through cooperative efforts of the businesses, city and IDOT.

As autumn approached, the new PCC paving was near completion, ACC overlays were wrapping up and the paver brick inlays were almost finished. When the new "Victorian" style twin luminaire street lamps became operational and the Dillon Clock was restored to its traditional position, snow began to fall on the new Central Avenue facility and the people of Northwood could look back with justifiable pride on a memorable summer and forward to an eventful future.

In fact, the completed project looked so good the Iowa Concrete Paving Association (ICPA) at their 30th Annual Workshop presented the City of Northwood, Wicks Construction, Inc. and Bolton & Menk Consulting Engineers with their 1993 Municipal "Pavement Excellence" award. In keeping with one of its founding objectives, the 30-year-old industry organization presents plaques to winning project principals "to encourage quality of product and workmanship in concrete paving construction," said Gordon Smith, ICPA Executive Vice-President.

For additional information, please contact the Iowa Concrete Paving Association, (515) 278-0606.