

JOHN YONAN, P.E.
Superintendent



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Chief Engineer

COOK COUNTY

DEPARTMENT OF TRANSPORTATION AND HIGHWAYS

PAULINO LEYVA, P.E.
Presenter

MIDWESTERN STATES REGIONAL
IN-PLACE RECYCLING CONFERENCE
SEPTEMBER 2013

108TH AVENUE – 179TH STREET TO 163RD PLACE

CONSTRUCTION SEASON: 2012

GENERAL CONTRACTOR: Gallagher Asphalt Corporation

RECYCLE CONTRACTOR: Rock Solid Stabilization & Reclamation

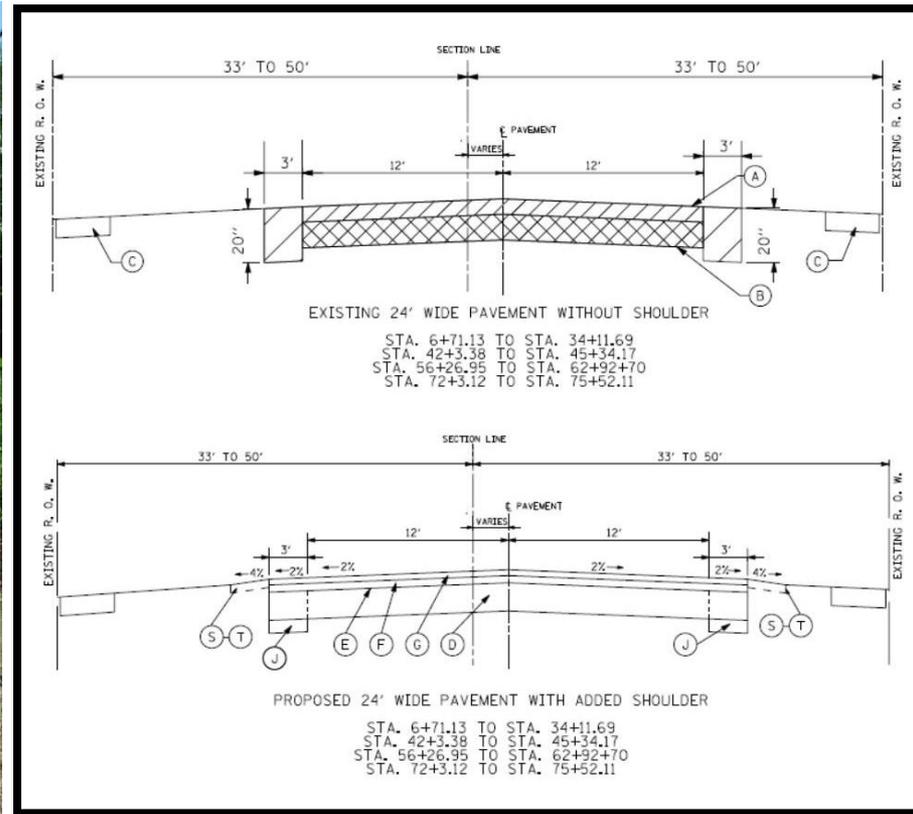
SUMMARY:

- Existing HMA surface was milled, 4 in.
- 3 – 6 foot Shoulder Widening
- The existing HMA/pozzolanic base was Cold In-Place Recycled to a depth of 10 in. along with the newly placed shoulder base
- Resurfacing
- Extensive earthwork, storm sewer and guardrail work was added throughout the project corridor to adjust to widening of the roadway
- Also included pavement striping, steel plate beam guardrail removal and replacement, driveway apron resurfacing, drainage additions and adjustments, parkway and ditch restoration with topsoil and sodding, detour routing and traffic protection

WORKED WELL

Millings from the existing surface for shoulder widening

- Cost effective
 - New 6 in. aggregate subbase
 - No additional cost for the aggregate for the 10 in. base



- Greener solution for millings, huge diesel and time savings
- Road widener

WORKED WELL

Cores of existing base were an accurate representation

- Had there been an area where the HMA/pozzolanic base was not a min. of 10 in. in depth and we mixed clay into the CIR cross-section, this process would not work

Mix Design

- Unique to the project samples
- Moisture content sensitive
- Emulsion Estimate



WORKED WELL

Contractor Performing CIR

- Contractor has extensive experience with the process
- Good equipment
- Thorough and confident in their work
- Customer service oriented



One way traffic

- Equipment is oversized
- An overlap of CIR at centerline for staged construction



WORKED WELL

Class D Patches Removal with grinder vs. traditional methods



- More efficient in time and labor
- Grinder removes to desired depth allowing more precise depth control of patches
- Does not disturb the surrounding pavement or base

LESSONS LEARNED

Initial survey of widening projects

- Guardrail warrants
- Ditch reshaping/regrading
- Sewer/culvert work
- Watermain/utility adjustments
- Fire hydrant adjustments
- Driveway slopes



LESSONS LEARNED

Special Provision for Cold Recycled In-Place Bituminous Base Course

- Means, methods, and equipment specified for the excavation of the shoulder widening did not work for this project due to existing shoulders and ditches
- IDOT Standard Specification 202.06 was more suitable, it costs the same and it addresses earth shoulders to remain in place
 - “The excavated material shall be used to...grade and reshape the shoulders to the new gradeline shown on the plans after the pavement resurfacing has been completed.”
 - “surplus excavation not needed for the shoulder reshaping...shall be disposed”

LESSONS LEARNED

CIR has a fluff factor

Excess material needed to be hauled away to keep existing grades

- At right turn lanes that remained in place
- Through intersections
- Where existing shallow ditches were complete filled in with excess
- Special attention needed with staged construction to match pavement grades



LESSONS LEARNED

- Level Binder not extensively needed





108TH AVENUE
179TH STREET to 163RD PLACE
COLD IN-PLACE RECYCLING



Building Better Roads
**COOK COUNTY
HIGHWAY DEPARTMENT**



Working for You
**JOHN YONAN, P.E.
SUPERINTENDENT**
PAULINO LEYVA, P.E.
Resident Engineer



Spring 2012



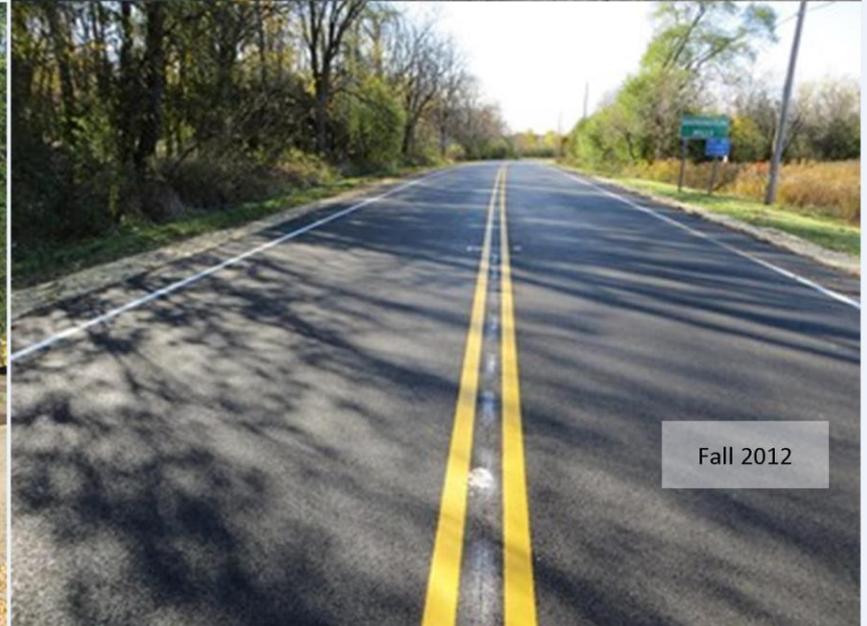
Fall 2012



PENNY ROAD

Dundee Rd to New Sutton Rd

Villages: Barrington Hills
South Barrington



OTIS ROAD

Village of Barrington Hills

Resident Engineer: Hassan Mohebbi

CONSTRUCTION SEASON: 2000

CONTRACTOR: Curran Contracting

SUMMARY: Mill existing 3 inch HMA Surface, Cold In-Place Recycle existing 6 inch base, resurface with binder and surface.



RIDGELAND AVENUE – STEGER ROAD TO SAUK TRAIL

CONSTRUCTION SEASON: 2010

SCOPE: Roadway realignment/reconstruction, pavement rehabilitation including hot-in-place recycling by the heater scarification method as well as minor drainage improvements.

GENERAL CONTRACTOR: Iroquois Paving Corporation

RECYCLE CONTRACTOR: Gallagher Asphalt Corporation

AWARD AMOUNT: \$ 3,297,251.53

FINAL AMOUNT: \$ 3,287,253.83

COST OF RECYCLE: \$ 74,387.11

SUMMARY: Hot-in-place recycling was used to rehabilitate existing pavement that was not to be reconstructed. The existing surface was removed to a depth of 1 ½ inches, the existing pavement was then hot-in-place recycled to a depth of 1 ½ inches, then the pavement was resurfaced with 1 ½ inches of surface. Binder and level binder were not used/required. Additionally, Harlem Ave from the CN Railroad to Route 30 was added to the project using the same procedure, at a cost (including surfacing) of \$ 238,769.00.

FLOSSMOOR ROAD- CICERO AVE TO KEDZIE AVE

CONSTRUCTION SEASON: 2008

SCOPE: Bituminous pavement overlay including minor drainage improvement. Pavement recycling (heater scarification method) was added as a change order to the contract.

GENERAL CONTRACTOR: Gallagher Asphalt Corp.

RECYCLE CONTRACTOR: Gallagher Asphalt Corp.

AWARD AMOUNT: \$ 1,311,304.30

FINAL AMOUNT: \$ 1,140,903.93

COST OF CLASS D PATCHING - PLAN: \$ 212,800.00

COST OF RECYCLE – ACTUAL: \$ 117,935.75

SAVINGS OVER PLAN METHOD: \$ 94,864.75

SUMMARY: The original plans called for 1 ½ inch grind and overlay of the existing surface with quantities for patching 10% of the pavement area. The contractor proposed using hot-in-place recycling (heater scarification method) in lieu of patching, resulting in less disruption of traffic and a savings to the contract.



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