Municipal Streets Seminar
2015 ASBURY ROAD PAVEMENT REHABILITATION PROJECT

Robert Schiesl
Assistant City Engineer

Greg Doeden
Civil Engineer
ROADWAY HISTORY AND INFORMATION

- CONSTRUCTED IN 1991, 0.50 MILE IN LENGTH
- ROADWAY WIDTH OF 41’ BOC - BOC (2.5’ C.&G. ON EACH SIDE WITH 3 - 12’ LANES)
- PAVEMENT THICKNESS 8” PCC, NONE DOWELED
- URBAN FEDERAL FUNCTIONAL CLASSIFICATION - MINOR ARTERIAL
- ADT = 7,342 (WESTBOUND LANE) 7,684 (EASTBOUND LANE)
- THE CITY DECIDED TO DO A REHAB PROJECT TO EXTEND THE LIFE OF THE PAVEMENT, WHICH INCLUDED DOWEL BAR RETROFIT, DIAMOND GRINDING AND CLEAN JOINTS / SEAL
- THIS TYPE OF REHAB ON A CONCRETE ROADWAY WAS THE FIRST FOR THE CITY
PROJECT INFORMATION

- LETTING DATE: MARCH 5, 2015
- ESTIMATE: $334,510
- BIDS RECEIVED: 3 BIDS, RANGE $317,620 - $347,500
- LOW BID: $317,620
- CONTRACTOR: IOWA EROSION CONTROL, INC.
- WORKING DAYS: 45
- COMPLETION DATE: AUGUST 7, 2015

- FAVORABLE BID - UNIT PRICES ALLOWED CITY TO ADD ADDITIONAL WORK TO INCLUDE REHAB TO CENTER TURN LANE, ADDITIONAL FULL DEPTH REPAIRS, AND JOINT SEALING
PROJECT STAGING - TRAFFIC CONTROL

- 3 - 12’ LANES, EAST BOUND, WEST BOUND, CENTER TURN LANE
- MAINTAIN 1-LANE EAST BOUND, 1-LANE WEST BOUND AT ALL TIMES
- PHASE 1 - REHAB WEST BOUND LANE
  SHIFT WEST BOUND TRAFFIC TO CENTER LANE
- PHASE 2 - REHAB EAST BOUND LANE
  SHIFT EAST BOUND TRAFFIC TO CENTER LANE

CHANGE - ADJUST TRAFFIC CONTROL PLAN

- SAFETY CONCERNS AND AVAILABLE LANE WIDTH WORK ZONE
  WHEN REHAB TO CENTER TURN LANE OCCURRED
- PHASE 3 & 4 - SETUP DETOUR AND ONLY ALLOWED ONE
  DIRECTION OF TRAFFIC AT ALL TIMES, EITHER 1-LANE EAST
  BOUND, OR 1-LANE WEST BOUND
EXISTING PAVEMENT CONDITION

FULL DEPTH PATCHES REQUIRED
EXISTING PAVEMENT CONDITION

JOINT DETERIATION

JOINT FAULTING
CUT SLOTS FOR DOWEL BAR PLACEMENT
CUT SLOTS FOR DOWEL BAR PLACEMENT
REMOVING CONCRETE FROM SLOTS
REMOVING CONCRETE FROM SLOTS
CLEANING OUT SLOTS
PLACEMENT OF DOWEL BARS
PLACEMENT OF DOWEL BARS
GROUT QUALITY CONTROL

- USED IOWA DOT DEVELOPMENTAL SPECIFICATIONS FOR DOWEL BAR RETROFIT (DS-12018)
- MIX DESIGN WAS DONE BY WESTERN MATERIAL OUT OF ARCHIE, MO.
- SLUMP RANGE  4.0 - 8.0 INCHES
- AIR CONTENT  4.0 - 6.0%
- BECAUSE GROUT WAS FAST SETTING - QUALITY CONTROL WAS BASED ON COMpressive STRENGTH FOR 3 HOUR & 24 HOUR
- SPECIFIED STRENGTH FOR 3 HOUR BREAK - 3,000 PSI
  ✓ ACTUAL RANGE OF STRENGTH ACHIEVED  3,077 - 3,554 PSI
- SPECIFIED STRENGTH FOR 24 HOUR BREAK - 5,000 PSI
  ✓ ACTUAL RANGE OF STRENGTH ACHIEVED 5,341 - 6,387 PSI
GROUT PLACEMENT
GROUT PLACEMENT
GROUT PLACEMENT
FULL DEPTH PATCH, PCC
FULL DEPTH PATCH, PCC
DIAMOND GRIND PROCEDURE

- SUDAS SPECIFICATION FOR RIDEABILITY - 22 INCHES/MILE
- BASED THE PROFILING ON A .2 BAND WIDTH
- WESTBOUND LANE BEFORE GRINDING = 42.96 PI (INCHES/MILE)
  - WESTBOUND LANE AFTER GRINDING = 12.36 PI (INCHES/MILE)
- EASTBOUND LANE BEFORE GRINDING = 53.33 PI (INCHES/MILE)
  - EASTBOUND LANE AFTER GRINDING = 10.61 PI (INCHES/MILE)
- CENTER TURN LANE BEFORE GRINDING = 37.71 PI (INCHES/MILE)
  - CENTER TURN LANE AFTER GRINDING = 13.38 PI (INCHES/MILE)
DIAMOND GRIND
DIAMOND GRIND
CRACK AND JOINT CLEANING AND FILLING

- THIS OPERATION WAS VERY LABOR INTENSIVE
- FIRST - THE CONTRACTOR WET SAWED THE EXISTING JOINTS TO REMOVE BACKER ROD AND OLD SEALANT
- SECOND - POWER WASHED JOINTS TO REMOVE OLD SEALANT
- THIRD - SAND BLASTED THE JOINTS
- FOURTH - AIR BLASTED THE JOINTS TO REMOVE SAND AND DRY JOINT
- FIFTH - APPLIED A CONCRETE SEALER (PAVX100) ON THE JOINTS AS A TEST TO EVALUATE HOW WELL THE JOINT REPELS MOISTURE
- SIXTH - APPLIED HOT POUR TO SEAL THE JOINTS
CRACK AND JOINT CLEANING AND FILLING
CRACK AND JOINT CLEANING AND FILLING
CRACK AND JOINT CLEANING AND FILLING
CRACK AND JOINT CLEANING AND FILLING

07/17/2015 14:03
COMPLETED PROJECT
COMPLETED PROJECT - DETAILS

- PROJECT WAS COMPLETED ON TIME: 29 WORKING DAYS
  CONTRACT: 45 DAYS

- FINAL CONSTRUCTION COST: $354,822 $31 / SY

- TOTAL PROJECT COST: $400,791 $35 / SY
  INCLUDES: DESIGN, CONSTRUCTION, INSPECTION

- DOWEL BARS INSTALLED: 3,300

- FULL DEPTH PATCHES, PCC: 350 SY

- DIAMOND GRINDING: 11,600 SY

- TRAFFIC CONTROL: $37,000
Asbury Road Rehabilitation

Dubuque, Iowa
Summer 2015
QUESTIONS

Robert Schiesl
Assistant City Engineer
bschiesl@cityofdubuque.org

Greg Doeden
Civil Engineer
gdoeden@cityofdubuque.org