

# A d d e n d u m

Iowa Department of Transportation  
Office of Contracts

Date of Letting: January 20, 2016  
Date of Addendum: December 18, 2015

<b>B.O.</b>	<b>Proposal ID</b>	<b>Proposal Work Type</b>	<b>County</b>	<b>Project Number</b>	<b>Addendum</b>
020	40-0204-051-A	BRIDGE DECK OVERLAY	HAMILTON	BRFN-017-3(37)--39-40 BRFN-020-4(51)--39-40 IMN-035-5(102)147--0E-40	20JAN020.A01

Make the following changes to the PROPOSAL SCHEDULE OF PRICES:

Delete Proposal Line No. 0770 2413-0698074 DECK REPAIR, CLASS A; 72.300 SY

Add Proposal Line No. 0794 2599-9999003 ('CUBIC YARD' ITEM) CONCRETE REPAIR,  
REPLACE VARIABLE DEPTH CONCRETE; 6.000 CY

Add Proposal Line No. 0795 2599-9999018 ('SQUARE YARDS' ITEM)  
HYDRODEMOLITION REMOVAL; 915.600 SY

Add Proposal Line No. 0796 2599-9999018 ('SQUARE YARDS' ITEM)REMOVAL, CLASS  
A; 91.600 SY

Delete Proposal Line No. 1140 2413-0698074 DECK REPAIR, CLASS A; 105.100 SY

Add Proposal Line No. 1194 2599-9999003 ('CUBIC YARD' ITEM) CONCRETE REPAIR,  
REPLACE VARIABLE DEPTH CONCRETE; 8.800 CY

Add Proposal Line No. 1195 2599-9999018 ('SQUARE YARDS' ITEM)  
HYDRODEMOLITION REMOVAL; 1,012.000 SY

Add Proposal Line No. 1196 2599-9999018 ('SQUARE YARDS' ITEM)REMOVAL, CLASS  
A; 101.200 SY

If the above changes are not made, they will be made as shown here.

Make the following change to the plans:

BRFN-017-3(37)--39-40

SHEET NUMBER 2:

Add the following note to the ESTIMATE REFERENCE INFORMATION for the item 2599-9999018 HYDRODEMOLITION REMOVAL:

“INCLUDES HYDRODEMOLITION OF THE FULL DECK AREA AS DESCRIBED ON DESIGN SHEET 5.”

In General Notes, Replace

“NO PRELIMINARY DECK SURVEY IS SHOWN. THE PLAN QUANTITY FOR "CLASS A DECK REPAIR" IS ESTIMATED AS 72.3 SY BASED ON HAND SOUNDING OF THE DECK, PLUS A 25% INCREASE FOR ESTIMATING PURPOSES.”

With

“NO PRELIMINARY DECK SURVEY IS SHOWN. THE PLAN QUANTITY FOR "DECK REPAIR, REPLACE VARIABLE DEPTH CONCRETE" IS ESTIMATED AS 6.0 CY BASED ON HAND SOUNDING OF THE DECK, PLUS A 25% INCREASE FOR ESTIMATING PURPOSES. AN AVERAGE DEPTH OF REPAIR OF 3" IS ASSUMED FOR ESTIMATING PURPOSES.”

Add the attached SHEET NUMBER 6 to the Plan

Make the following change to the plans:

IMN-035-5(102)147--0E-40

SHEET NUMBER 2:

Add the following note to the ESTIMATE REFERENCE INFORMATION for the item 2599-9999018 HYDRODEMOLITION REMOVAL:

“INCLUDES HYDRODEMOLITION OF THE FULL DECK AREA AS DESCRIBED IN THESE PLANS”

In General Notes, Replace

“NO PRELIMINARY DECK SURVEY IS SHOWN. THE PLAN QUANTITY FOR "CLASS A DECK REPAIR" IS ESTIMATED AS 105.1 SY BASED ON HAND SOUNDING OF THE DECK, PLUS 25% INCREASE FOR ESTIMATING PURPOSES”

With

“NO PRELIMINARY DECK SURVEY IS SHOWN. THE PLAN QUANTITY FOR "DECK REPAIR, REPLACE VARIABLE DEPTH CONCRETE" IS ESTIMATED AS 8.8 CY BASED ON HAND SOUNDING OF THE DECK, PLUS 25% INCREASE FOR ESTIMATING PURPOSES. AN AVERAGE DEPTH OF REPAIR OF 3" IS ASSUMED FOR ESTIMATING PURPOSES.”

SHEET NUMBER 3:

In list of repairs, replace

“DECK REPAIR, CLASS A”

With

“DECK REPAIR, REPLACE VARIABLE DEPTH CONCRETE”

Add the Attached SHEET NUMBER 13 to the Plan



HYDRODEMOLITION NOTES :

IT IS THE INTENT TO USE THE HYDRODEMOLITION PROCESS TO REMOVE ALL UNSOUND CONCRETE AS DIRECTED BY THE ENGINEER BY USING A HIGH PRESSURE WATER STREAM. REMOVALS SHALL CREATE A VERY ROUGH BONDABLE SURFACE FOR NEW CONCRETE TO ADHERE TO. ALL HMA PATCH MATERIAL SHALL BE REMOVED PRIOR TO HYDRODEMOLITION. CONCRETE PATCH MATERIAL CAN REMAIN IF DETERMINED TO BE SOUND.

THE COMPLETE BRIDGE DECK SURFACE SHALL BE MILLED TO A DEPTH OF 1/4 INCH BEFORE HYDRODEMOLITION BEGINS.

THE CONTRACTOR SHALL USE SELF-PROPELLED HYDRODEMOLITION EQUIPMENT THAT PROVIDES A HIGH PRESSURE WATER JET STREAM FOR CONCRETE REMOVALS. THIS EQUIPMENT SHALL BE CAPABLE OF REMOVING ANY UNSOUND CONCRETE, AS WELL AS REMOVING RUST AND CONCRETE PARTICLES FROM EXPOSED REINFORCING STEEL.

CLEAN POTABLE WATER SHALL BE PROVIDED FOR HIGH PRESSURE REMOVALS AND THE EXCESS WATER RECLAIMED USING VACUUM METHODS OF COLLECTION, THEN FILTERED AND REUSED AS MUCH AS PRACTICAL.

OPERATION OF THE HYDRODEMOLITION EQUIPMENT SHALL BE PERFORMED AND SUPERVISED BY QUALIFIED PERSONNEL CERTIFIED BY THE EQUIPMENT MANUFACTURER.

THE CONTRACTOR SHALL ENSURE CONTAINMENT OF ALL DISLODGED MATERIAL-FLYING DEBRIS AND EXCESS WATER WITHIN THE EXISTING ROADWAY AND NOT ALLOW DEBRIS OR WATER TO ENTER ADJACENT TRAVEL LANES OR TRAFFIC,OR BELOW THE WORK AREA.

CALIBRATING HYDRODEMOLITION :

PRIOR TO THE COMMENCEMENT OF THE REMOVAL OPERATION WITH HYDRODEMOLITION, THE EQUIPMENT SHALL BE CALIBRATED ON TWO SECTIONS DESIGNATED BY THE ENGINEER TO PRODUCE THE DESIRED REMOVAL OF EXPOSED REINFORCING STEEL. THE CALIBRATION SHALL BE PRODUCING RESULTS SATISFACTORY TO THE ENGINEER. THE FIRST SECTIONS WILL BE APPROXIMATELY 100 SQUARE FEET EACH, CONSISTING OF ONE SECTION OF SOUND CONCRETE THEN ONE SECTION OF DETERIORATED CONCRETE. THE CALIBRATION SHALL NOT INCLUDE ANY AREAS OF EXISTING OVERLAY OR PATCH MATERIAL. THE CONTRACTOR WILL DOCUMENT THE FOLLOWING INITIAL SETTINGS:

- 1. WATER PRESSURE GAUGE (13,000 PSI MINIMUM)
- 2. WATER FLOW RATE (GAL PER MINUTE, MINIMUM 1) - VERIFY NEED FOR THIS VALUE
- 3. MACHINE STAGING CONTROL (STEP)
- 4. NOZZLE SIZE
- 5. NOZZLE SPEED (TRAVEL)

AFTER THE INITIAL TEST ON SOUND CONCRETE, THE EQUIPMENT SHALL THEN BE MOVED TO THE DETERIORATED AREA TO VERIFY THAT INITIAL SETTINGS WILL FULLY REMOVE UNSOUND CONCRETE WITHIN THE DESIGNATED AREA. THE INITIAL SETTINGS MAY NEED TO BE ADJUSTED TO FULLY REMOVE THE EXPOSED REINFORCING STEEL. THE CONTRACTOR SHALL DOCUMENT THE FINAL EQUIPMENT SETTINGS RESULTING FROM THE CALIBRATION PROCESS.

CONCRETE BRIDGE DECK REMOVAL BY HYDRODEMOLITION :

AFTER CALIBRATION OF THE EQUIPMENT, CONCRETE REMOVAL BY HYDRODEMOLITION SHALL BE CONDUCTED ON THE BRIDGE DECK. THE REMOVAL SETTINGS WILL BE VERIFIED AS THE CONTRACTOR REMOVES THE EXPOSED REINFORCING STEEL. THE FINAL SETTINGS WILL BE PROVIDED TO THE ENGINEER. CALIBRATION OF THE HYDRODEMOLITION EQUIPMENT SHALL BE CONDUCTED FOR EVERY DAY OF OPERATION AND, IF NECESSARY, RE-CALIBRATED TO INSURE REMOVAL OF KNOWN AREAS OF DELAMINATED CONCRETE AS WELL AS TO GUARD AGAINST EXCESSIVE REMOVAL OF SOUND CONCRETE. HANDCHIPPING MAY BE USED IN AREAS THAT ARE INACCESSIBLE TO THE SELF-PROPELLED OR HAND OPERATED HYDRODEMOLITION EQUIPMENT. HANDCHIPPING TOOLS (15 LBS. MAXIMUM) MAY BE HAND OR MECHANICALLY DRIVEN.

ADDITIONAL REMOVAL :

AFTER CONCRETE BRIDGE DECK REMOVAL BY HYDRODEMOLITION HAS BEEN COMPLETED FOR THE CONSTRUCTION PHASE, THE DECK WILL UNDERGO FINAL SOUNDING TO ASSURE THAT ALL UNSOUND CONCRETE HAS BEEN REMOVED. THE PREPARED DECK SURFACE WILL BE COMPLETELY DRY PRIOR TO FINAL SOUNDING AND WILL CONSIST OF AS MANY SUCCESSIVE SOUNDINGS AS REQUIRED TO ENSURE THAT ALL DELAMINATED OR UNBONDED CONCRETE HAS BEEN REMOVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER USE OF THE HYDRODEMOLITION. HANDCHIPPING TOOLS MAY BE HAND OR MECHANICALLY DRIVEN AND OPERATED IN ACCORDANCE WITH ARTICLE 2413.03 OF THE STANDARD SPECIFICATIONS.

IN ADDITION, WHERE REINFORCING STEEL IS EXPOSED AND CONCRETE AND STEEL ARE NO LONGER BONDED, REMOVE ANY CONCRETE TO CLEAR AT LEAST 1/4 INCH AROUND THE EXPOSED BARS. UNBONDED BARS SHALL DETERMINED BY THE ENGINEER MORE THAN ONE-HALF OF THE BARS PER LINE MAY BE EXPOSED AND STILL DETERMINED TO BE BONDABLE. DO NOT USE BARS PER LINE MORE THAN ONE-HALF OF THE BARS PER LINE TO BE EXPOSED. THE CONTRACTOR SHALL BE TAKEN TO ENSURE THAT NO DAMAGE IS DONE TO ANY REINFORCING BARS EXPOSED DURING THE REMOVAL PROCESS. ANY DAMAGE DONE SHALL BE REPAIRED BY THE CONTRACTOR AS APPROVED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.

FULL DEPTH REPAIR OF BRIDGE FLOOR :

WHERE THE DECK IS SOUND FOR LESS THAN HALF OF ITS ORIGINAL DEPTH, THE CONCRETE SHALL BE REMOVED FULL DEPTH (DESIGNATED AS CLASS B REPAIR) EXCEPT FOR LIMITED AREAS AS DETERMINED BY THE ENGINEER.

PREPARATION OF BRIDGE FLOOR PRIOR TO OVERLAY PLACEMENT :

VACUUMING OF DEBRIS AND WATER SHALL BE DONE IMMEDIATELY AFTER ANY HYDRODEMOLITION WORK. CONTRACTOR IS TO ENSURE ALL WATER RUN-OFF AND RESIDUAL MATERIAL IS CONTAINED WITHIN THE WORK AREA AND COLLECTED FOR DISPOSAL. DISPOSE OF EXCESS WATER AND DEBRIS AS APPROVED BY THE ENGINEER.

CLEANING OF THE HYDRODEMOLITION DEBRIS AND SLURRY SHALL BE PERFORMED WITH A VACUUM SYSTEM EQUIPPED WITH DUST CONTROL DEVICES AND CAPABLE OF REMOVING WET DEBRIS AND WATER IN THE SAME PASS. THE VACUUM EQUIPMENT SHALL BE CAPABLE OF WASHING THE DECK WITH PRESSURIZED WATER DURING THE VACUUM OPERATION TO DISLODGE ALL DEBRIS AND SLURRY FROM THE BRIDGE DECK SURFACE. CLEANING SHALL BE DONE BEFORE DEBRIS AND SLURRY IS ALLOWED TO DRY ON THE BRIDGE DECK SURFACE.

AFTER COMPLETION OF HYDRODEMOLITION AND ADDITIONAL REMOVALS, BUT NOT MORE THAN 24 HOURS AFTER THE HYDRODEMOLITION, THE ENGINEER SHALL HAVE THE BRIDGE DECK SURFACE SANDBLASTED OR WATER BLASTED TO EXPOSE THE COARSE AGGREGATES AND TO REMOVE LAITANCE FROM THE SURFACE. EXPOSED REINFORCING STEEL AND THE CONCRETE UNDER AND AROUND THE EXPOSED STEEL SHALL BE THOROUGHLY CLEANED BY SANDBLASTING OR WATER BLASTING. THE SURFACE SHALL BE CLEANED USING COMPRESSED AIR TO REMOVE ALL DUST, CHIPS AND WATER. AIR LINES FOR SANDBLASTING AND COMPRESSED AIR CLEANING SHALL BE EQUIPPED WITH OIL TRAPS.

BID ITEM INFORMATION :

THE BID ITEM "HYDRODEMOLITION REMOVAL" SHALL INCLUDE ALL COSTS FOR HYDRODEMOLITION, CLEAN-UP, WATER CONTROL, DISPOSAL, AND FINAL CLEAN-UP IN PREPARATION FOR "CONCRETE REPAIR, REPLACE VARIABLE DEPTH CONCRETE".

THE BID ITEM "CONCRETE REPAIR, REPLACE VARIABLE DEPTH CONCRETE", CUBIC YARDS, HYDRODEMOLITION REMOVAL, AND HAND REMOVAL FOR THE FIELD MEASUREMENT OF THIS ITEM, THE CONCRETE REQUIRED FOR THE DECK OVERLAY (63.3 CUBIC YARDS) WILL BE DEDUCTED FROM THE TOTAL CONCRETE VOLUME PLACED DURING THE OVERLAY OPERATION. THE 63.3 CUBIC YARD QUANTITY WAS DETERMINED USING A 21 INCH OVERLAY THICKNESS (1 1/2 INCH NOMINAL PLUS 1/2 INCH ALLOWABLE VARIATION). IT IS ASSUMED THE OVERLAY OPERATION WILL PLACE ALL DECK CONCRETE (EXCLUDING AREAS OF CLASS B REPAIR) IN ONE OPERATION.

THE BID ITEM "DECK OVERLAY (CLASS 0 PPC)" OR "DECK OVERLAY (CLASS HPC-0 PPC)" SHALL INCLUDE THE COST OF THE 63.3 CUBIC YARDS OF CONCRETE MATERIAL NOTED AS A DEDUCTION WHEN CALCULATING THE "CONCRETE REPAIR, REPLACE VARIABLE DEPTH CONCRETE" PAY QUANTITY.

THE BID ITEM "REMOVALS, CLASS A" SHALL INCLUDE COST OF LABOR AND EQUIPMENT REQUIRED TO REMOVE UNSOUND CONCRETE AND UNBONDED CONCRETE AROUND EXPOSED REINFORCING STEEL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER USE OF TOOLS AND BE PAID FOR BY CONTRACT UNIT PRICE PER SQ. YD.

THE ENGINEER WILL DETERMINE THE SQ. YD. OF "REMOVALS, CLASS A" BY MEANS OF SURFACE DIMENSIONS OF THE AREAS TO BE REMOVED TO THE NEAREST 0.1 SQ. YD.

CONCERNING ADJUSTMENT OF PRICE FOR OVERRUN OR UNDERRUN OF THE CONTRACT QUANTITY, "REMOVALS, CLASS A" WILL NOT BE CONSIDERED A MAJOR ITEM OF WORK.

DEFECTS IN EMBEDDED REINFORCING STEEL DUE TO CORROSION WHICH HAS REDUCED THE CROSS SECTIONAL AREA OF THE STEEL BY 25% OR GREATER SHALL HAVE NEW REINFORCING STEEL OF THE SAME SIZE OR GREATER CROSS SECTIONAL AREA LAPPED TO EACH SIDE OF THE DAMAGED AREA. 2'-2" LAP LENGTHS SHALL BE USED. NEW REINFORCEMENT SHALL BE EPOXY COATED. NEW REINFORCEMENT SHALL BE PAID FOR AS AN EXTRA WORK ORDER.

WHERE THE DECK IS UNSOUND FOR MORE THAN HALF OF ITS ORIGINAL DEPTH AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF FULL DEPTH REMOVAL (DESIGNED AS CLASS B REPAIR), THE WORK SHALL BE PAID FOR AS EXTRA WORK.

DESIGN FOR REPAIRS TO A 2°36' (L.A.) SKEW

287'-0" X 32' CONTINUOUS

WELDED GIRDER BRIDGE

50'-0" END SPANS

2 - 93'-6" INTERIOR SPANS

HYDRODEMOLITION NOTES

NOVEMBER, 2015

HAMILTON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

STA. 2134+53.1 (SR D-20)

DESIGN SHEET NO. 12 OF 12

FILE NO. 31065

PROJECT NUMBER IHW-035-5U(02)147-0E-40

HAMILTON COUNTY

SHEET NUMBER 13