## GENERAL NOTES FOR TEXTURED CONCRETE FORM LINERS:

SEE INDIVIDUAL DESIGN SHEETS FOR SPECIFIC NOTES AND DETAILS DESCRIBING THE FEATURES WHICH INCORPORATE TEXTURED CONCRETE. WORK PERFORMED TO CREATE TEXTURED CONCRETE SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR FORMWORK AND THE FOLLOWING:

FORM THE TEXTURED CONCRETE SURFACE USING A FORM LINER SYSTEM MADE OF HIGH-STRENGTH URETHANE ELASTOMER, PLASTIC OR FLEXIBLE FOAM MATERIALS CAPABLE OF WITHSTANDING ANTICIPATED CONCRETE POUR PRESSURES WITHOUT LEAKAGE OR CAUSING PHYSICAL DEFECTS. FORM LINERS SHALL EASILY ATTACH TO FORMS AND BE REMOVABLE WITHOUT CAUSING CONCRETE SURFACE DAMAGE. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS FOR ATTACHING FORM LINERS TO THE CONCRETE FORMS. IF RECOMMENDED BY THE FORM LINER MANUFACTURER, USE STRUCTURAL BACKERS TO PREVENT DEFORMATION OF THE LINER DURING LOADING OF THE FORMS. THE LINERS SHALL BE DESIGNED TO FORM SURFACES CONFORMING TO THE DESIGN INTENT INCLUDING THE SHAPE, LINES AND DIMENSIONS SHOWN IN THE PLANS AND TO AVOID VISIBLE PATTERN REPEATS. MATCH PATTERN FEATURES AT FORM LINER JOINTS TO MINIMIZE PATTERN REPEATS AND MAKE THE FORMED CONCRETE SURFACE APPEAR UNIFORM AND CONTINUOUS WITHOUT VISIBLE SEAMS AND FORM MARKS. WHEN JOINTS ARE UNAVOIDABLE, MAKE JOINTS ALONG MAIN FEATURES OF THE PATTERN IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DO NOT MIX FORM LINERS FROM DIFFERENT MANUFACTURERS WHEN FORMING ANY INDIVIDUAL TEXTURE ON THE PROJECT.

FORM LINER EDGES FOLLOWING CURVES ARE TO BE CUT CLEANLY AND PARALLEL TO THE CURVE. USE ADEQUATE BLOCKING, SEALING AND OTHER MEANS IN ORDER TO MAINTAIN THE APPROPRIATE DEPTH AND CHARACTER OF TEXTURE AT CUT EDGES OF LINERS AND TO PREVENT MORTAR LEAKAGE.

DURING LOADING OF FORMS WITH CONCRETE, TAKE EXTRA CARE TO ADEQUATELY VIBRATE CONCRETE IN ORDER TO MAINTAIN ALL INTENDED FEATURES OF THE FORM LINER IN THE FINAL SURFACE AND TO PREVENT VOIDS. FOLLOWING REMOVAL OF FORMS, FINISH MINOR DEFECTS TO BLEND WITH THE BALANCE OF THE SURFACE TEXTURE. THE COMPLETED SURFACE SHALL BE FREE OF BLEMISHES, SURFACE VOIDS AND CONSPICUOUS FORM MARKS TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL CORRECT ANY SURFACE DEFECTS AT NO ADDITIONAL COST TO THE PROJECT.

VERIFY THAT RELEASE AGENTS USED ARE COMPATIBLE WITH FORM LINER MATERIAL, AND ARE NON-STAINING. APPLY RELEASE AGENT IN ACCORDANCE WITH THE FORM LINER MANUFACTURER'S RECOMMENDATIONS.

IF USED, FORM TIES SHALL BE MADE OF NON-CORROSIVE MATERIALS WHEN THE PORTION PERMANENTLY EMBEDDED IN THE CONCRETE IS LESS THAN $1\frac{1}{2}$ INCHES FROM THE FINISHED SURFACE. POSITION FORM TIES AND ACCESSORIES IN STONE PATTERN MORTAR JOINTS IF APPLICABLE AND AT HIGH POINTS OF FINISHED WALL.

STRIP FORMWORK USING TECHNIQUES IN ACCORDANCE WITH LINER MANUFACTURER'S RECOMMENDATIONS AFTER THE CONCRETE HAS ACHIEVED THE STRENGTHS AND CURE TIMES REQUIRED BY THE PLANS AND APPLICABLE SPECIFICATIONS. CLEAN AND REPAIR FORM LINER SURFACES PRIOR TO USE. DO NOT USE SPLIT, FRAYED, DELAMINATED OR OTHERWISE DAMAGED FORM LINERS.

ALL COSTS ASSOCIATED WITH CONCRETE TEXTURING AND FORM LINERS ARE TO BE INCLUDED IN THE BID ITEM, "STRUCTURAL CONCRETE (BRIDGE)".

## GENERAL NOTES FOR CONCRETE RUSTICATION:

STRIPS AND PANELS USED AS INSERTS WITHIN CONCRETE FORMS TO CREATE THE RUSTICATION FEATURES MAY BE MADE OF WOOD, STEEL, NYLON, PLASTIC OR OTHER NONPOROUS MATERIAL CAPABLE OF WITHSTANDING ANTICIPATED CONCRETE PORE PRESSURES WITHOUT PHYSICAL DEFECTS. WOOD INSERTS, IF USED, SHALL BE FREE OF WARP, TWIST, CHECKS OR CRACKS, AND SHALL BE PRESOAKED PRIOR TO PLACEMENT OF CONCRETE IN THE FORMS.

RUSTICATION INSERTS SHALL EASILY ATTACH TO FORMS AND SHALL NOT ALLOW LEAKAGE OF CONCRETE BETWEEN THE FORM AND THE INSERT. WHEN STEEL FORMS ARE USED, RUSTICATION STRIPS MAY BE RIGIDLY ATTACHED TO THE INSIDE SURFACES OF THE FORMS. WHEN STEEL FORMS ARE NOT USED, RUSTICATION STRIPS AND OTHER INSERTS FOR SMALL RECESSES ON EXPOSED CONCRETE SURFACES SHALL BE FASTENED TO THE FORMS IN A MANNER THAT WILL PERMIT THEM TO REMAIN IN PLACE WHEN THE FORMS ARE REMOVED. LEAVE INSERTS IN PLACE UNTIL THEY CAN BE REMOVED WITHOUT DAMAGE TO THE SURROUNDING CONCRETE.

THE INSERTS SHALL BE DESIGNED TO FORM SURFACES AND FEATURES CONFORMING TO THE DESIGN INTENT INCLUDING THE SHAPE, LINES, DEPTHS, DIMENSIONS SHOWN IN THE PLANS. CREATE INSERTS USING A MINIMUM NUMBER OF SPLICE JOINTS IN THEIR LENGTH. SPLICES, IF USED, SHALL BE TIGHTLY JOINED SO AS NOT TO ALLOW GAPS OR LEAKS, AND SHALL NOT CREATE ANY CHANGE IN ALIGNMENT OR SHAPE OF THE RUSTICATION FEATURE. DO NOT LOCATE FORM TIES WITHIN CONCRETE RUSTICATIONS.

FOR RUSTICATION FEATURES FOLLOWING THE PERIMETER OF ROUNDED SURFACES, IT MAY BE NECESSARY TO USE MULTIPLE LAYERS OF INSERT MATERIAL IN ORDER TO ACHIEVE THE RADIUS CURVE. THIS IS ACCEPTABLE, PROVIDED THAT THE FINAL SHAPE, LINE, DEPTH, AND DIMENSION OF THE FEATURES ARE MAINTAINED IN THE FINAL RESULT.

DURING LOADING OF FORMS WITH CONCRETE, TAKE EXTRA CARE TO ENSURE PROPER CONSOLIDATION OF CONCRETE AROUND ALL RUSTICATION INSERTS TO PRESERVE THE SHAPE, LINE AND DEPTH OF ALL INTENDED FEATURES IN THE FINAL CONCRETE SURFACE. FOLLOWING REMOVAL OF FORMS, REPAIR ALL DEFECTS TO ACHIEVE THE RUSTICATION FEATURES AS SPECIFIED IN THE PLANS. PATCH VOIDS, HONEYCOMB AREAS, ETC., IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. IF SURFACES WILL NOT RECEIVE A COATING, ADD WHITE CEMENT TO THE PATCHING MORTAR TO LIGHTEN IT IN ORDER TO MATCH OR BE SLIGHTLY LIGHTER THAN SURROUNDING CONCRETE WHEN DRY. COMPLETED SURFACE SHALL BE FREE FROM BLEMISHES, SURFACE VOIDS AND CONSPICUOUS FORM MARKS TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL CORRECT ANY SURFACE DEFECTS TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE PROJECT.

ALL COSTS ASSOCIATED WITH CONCRETE RUSTICATION ARE TO BE INCLUDED IN THE BID ITEM "STRUCTURAL CONCRETE (BRIDGE)".

## FUTURE JACKING NOTES:

PROVISIONS FOR JACKING HAVE BEEN INCLUDED IN THIS DESIGN TO ALLOW FOR FUTURE BEARING MAINTENANCE.

THE JACKING STIFFENERS ARE DESIGNED BASED ON THE COMBINED DEAD AND LIVE LOAD REACTIONS TABULATED IN THE MOMENT AND REACTION TABLES LISTED IN THESE PLANS.

JACKING IS ASSUMED TO BE ACCOMPLISHED BY APPLICATION OF ONE JACK PLACED ON EACH SIDE OF BEARING ASSEMBLY AT CONTINUOUS SUPPORTS AND BY APPLICATION OF A SINGLE JACK PLACED IN FRONT OF BEARING ASSEMBLY AT END SUPPORTS.

JACKS ARE ASSUMED TO BE CENTERED UNDER THE WEB AND JACKING STIFFENER LOCATIONS SHOWN IN THESE PLANS. SHIM PLATES ARE ASSUMED TO BE USED TO PROVIDE A LEVEL JACKING SURFACE AND TO LIMIT BEARING STRESSES ON CONCRETE IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE JACKING TO SIZE AND DESIGN THE REQUIRED JACKING EQUIPMENT AND CRIBBING AND TO ESTABLISH THE PROCEDURE FOR JACKING AND BEARING REPLACEMENT OR REPAIRS SUBJECT TO APPROVAL OF THE ENGINEER. THE ACTUAL DESIGN LOADINGS SHALL BE BASED ON THE LOADINGS EXPECTED FROM THE CONTRACTOR'S PROPOSED JACKING AND MAINTENANCE OF TRAFFIC PLAN AND SHOULD CONSIDER ANY ADDITIONAL DEAD LOAD PRODUCED BY IMPOSING DIFFERENTIAL DISPLACEMENTS.

WHEN JACKING AT EXPANSION JOINTS, CONSIDERATION SHOULD BE GIVEN TO PROTECTING ANY BARRIER COVER PLATES, EMBEDDED CONDUIT, AND EXPANSION JOINTS THAT WILL REMAIN.

CONSIDERATION SHALL BE GIVEN TO ANY THERMAL MOVEMENTS AND VIBRATIONS THAT MAY OCCUR DURING THE PERIOD THAT THE STRUCTURE IS RESTING ON JACKS OR CRIBBING.

FUTURE MAINTENANCE OPERATIONS SHALL BE CONDUCTED IN A MANNER SUCH THAT THE STRUCTURE WILL NOT BE DAMAGED.

### MOMENT TABLE (FT-KIPS)

| | POSITIVE MOMENT SPAN NO. 6B | | NEGATIVE MOMENT PIER NO. 6A | | POSITIVE MOMENT SPAN NO. 7B | | NEGATIVE MOMENT PIER NO. 7A | | POSITIVE MOMENT SPAN NO. 8B | |
|---|---|---|---|---|---|---|---|---|---|---|
| | GIRD. A & D | GIRD. B & C | GIRD. A & D | GIRD. B & C | GIRD. A & D | GIRD. B & C | GIRD. A & D | GIRD. B & C | GIRD. A & D | GIRD. B & C |
| DC1 | 2100 | 2255 | -5220 | -5347 | 2249 | 2238 | -5102 | -5115 | 1932 | 1956 |
| DC2 | 487 | 487 | -1055 | -1042 | 621 | 625 | -1060 | -1049 | 482 | 482 |
| DW | 290 | 348 | -577 | -646 | 325 | 358 | -560 | -610 | 258 | 288 |
| LL + IMPACT (TRUCK + LANE) | 3659 | 3386 | -3604 | -3126 | 4020 | 3362 | -3554 | -3048 | 3399 | 3043 |
| LL + IMPACT (TANDEM + LANE) | 3103 | 2871 | -2688 | -2320 | 3425 | 2864 | -2651 | -2272 | 2880 | 2579 |
| TOTAL | 6536 | 6476 | -10456 | -10161 | 7215 | 6583 | -10276 | -9822 | 6071 | 5769 |

### REACTION TABLE (KIPS)

| | PIER NO. 5A AHEAD BRG. | | PIER NO. 6A | | PIER NO. 7A | | SOUTH ABUTMENT | |
|---|---|---|---|---|---|---|---|---|
| | GIRD. A & D | GIRD. B & C | GIRD. A & D | GIRD. B & C | GIRD. A & D | GIRD. B & C | GIRD. A & D | GIRD. B & C |
| DC1 + DC2 | 88 | 94 | 326 | 332 | 321 | 323 | 82 | 83 |
| DW | 10 | 12 | 32 | 36 | 31 | 34 | 8 | 9 |
| LL + IMPACT (MAX.) | 105 | 127 | 208 | 249 | 199 | 232 | 94 | 110 |
| TOTAL | 203 | 233 | 566 | 617 | 551 | 589 | 184 | 202 |

## MOMENT AND REACTION TABLE NOTES:

MOMENTS AND REACTIONS ARE UNFACTORED.
DC1 COMPRISES ALL NON-COMPOSITE DEAD LOADS TO GIRDER AND DECK DEAD WEIGHT.
DC2 COMPRISES DEAD LOAD DUE TO BARRIER RAILS.
DW COMPRISES DEAD LOAD DUE TO FUTURE WEARING SURFACE.

DESIGN FOR 0° SKEW ON 3,300' RADIUS CURVE

566'-6 X VARIES CONTINUOUS WELDED GIRDER BRIDGE

171'-0, 226'-0, 169'-6 SPANS

GENERAL NOTES

STA. 2543+48.27 (℄ RAMP B) APRIL 2018

JOHNSON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 4 OF 31 FILE NO. 30864 DESIGN NO. 420