DECK JOINT REPAIR
MB-061-6(529)190--77-31

LETTING DATE
11/19/2019

LEGEND

- INTERSTATE HIGHWAY
- PRIMARY HIGHWAY-DIVIDED
- PRIMARY HIGHWAY
- PORTLAND CEMENT CONCRETE ROAD
- ASPHALT ROAD
- BITUMINOUS ROAD
- GRAVEL ROAD
- EARTHEN ROAD
- INTERSTATE HIGHWAY (80)
- UNITED STATES HIGHWAY (65)
- STATE HIGHWAY (175)
- COUNTY HIGHWAY (S27)
- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE
- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- ROAD NAMES — ABBEY ROAD
- UNINCORPORATED PLACE — ELWOOD

IOWA DOT
Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE

PRIMARY ROAD SYSTEM
DUBUQUE COUNTY

DECK JOINT REPAIR
US 61 OVER EAST NINTH STREET & CANADIAN PACIFIC RAILROAD
FRA NO. 924706B

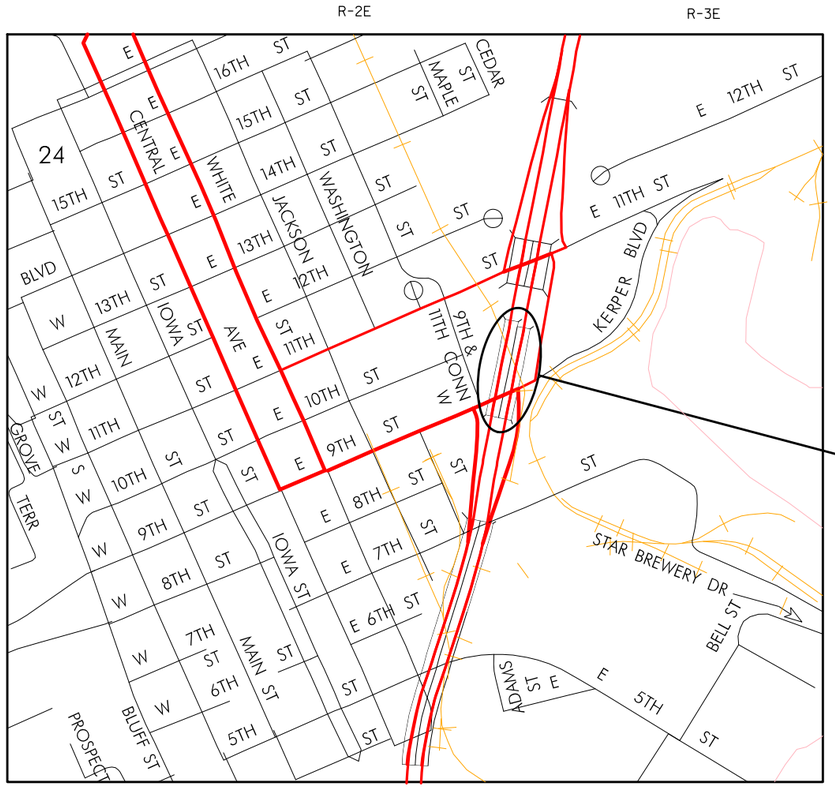
THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

ENGLISH STANDARD BRIDGE PLANS		
STANDARD	ISSUED	REVISED
REVISIONS		

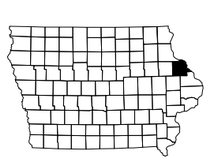
TOTAL SHEETS
7
PROJECT NUMBER
MB-061-6(529)190--77-31
R.O.W. PROJECT NUMBER
PROJECT IDENTIFICATION NUMBER
18-31-061-020

INDEX OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE BRIDGE QUANTITIES - DESIGN 120
2-3	DESIGN 120 - BRIDGE PLANS
4	ESTIMATE BRIDGE QUANTITIES - DESIGN 220
4-5	DESIGN 220 - BRIDGE PLANS
C.1	ESTIMATE ROADWAY QUANTITIES
C.1-J.1	ROADWAY PLANS



DESIGN NO. 120/220



LOCATION MAP
PART OF CITY OF DUBUQUE

PROJECT DIRECTORY NAME: 3106102018

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET NUMBER C.1

DESIGN DATA URBAN

REFER TO INDIVIDUAL SITUATION PLANS FOR TRAFFIC DATA INFORMATION

INDEX OF SEALS

SHEET NO.	NAME	TYPE
1	ANTHONY J. BOWER	STRUCTURAL DESIGN
C.1	GREGORY S. SHUGER	ROADWAY DESIGN

STRUCTURAL DESIGN

LICENSED PROFESSIONAL ENGINEER Anthony J. Bower 19231 IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature — Date: 8/19/2019

Anthony J. Bower
Printed or Typed Name

My license renewal date is December 31, 2020

Pages or sheets covered by this seal: SHEETS 1 THRU 5

DUBUQUE COUNTY

DUBUQUE COUNTY DESIGN 120 & 220

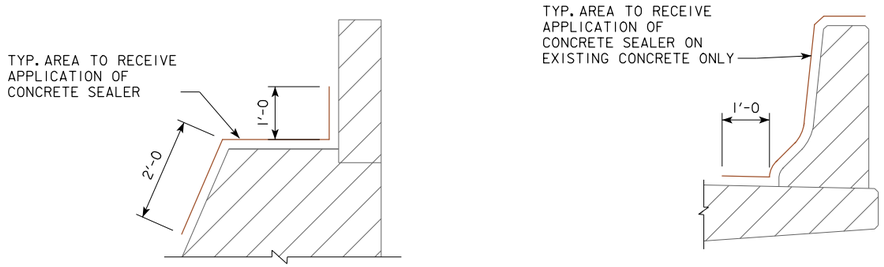
ESTIMATED BRIDGE QUANTITIES - DESIGN 120

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
1.	2401-6750001	REMOVALS, AS PER PLAN	LS	1.0	
2.	2413-1200100	NEOPRENE GLAND INSTALLATION AND TESTING	LF	77.0	

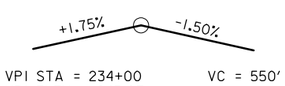
ESTIMATE REFERENCE INFORMATION

ITEM NO.	DESCRIPTION
1.	INCLUDES ALL WORK FOR REMOVAL AND OFF-SITE DISPOSAL OF EXISTING NEOPRENE GLAND. REMOVAL OF SCHEDULED ITEMS SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO MATERIAL NOT TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED AT NO COST TO THE STATE. INCLUDES CLEANING EXISTING CONCRETE RAIL, ABUTMENT SEATS AND BACKWALLS, FURNISHING AND PLACING CONCRETE SEALER.
2.	INCLUDES INSTALLATION OF NEOPRENE GLAND AND WATER TESTING OF JOINT.

ROADWAY QUANTITIES SHOWN ON SHEET C.1



DETAIL OF CONCRETE SEALER AREA



EXISTING PROFILE GRADE US 61

SPECIFICATIONS:

DESIGN: AASHTO SERIES OF 2002.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

GENERAL NOTES:

THIS DESIGN IS FOR REPAIRS TO THE EXISTING 466'-0 x 37'-0 CONTINUOUS STEEL GIRDER BRIDGE, ON S.B. U.S. 61 OVER E. NINTH ST. AND CANADIAN PACIFIC RAILROAD. ELECTRONIC COPIES OF ORIGINAL PLANS ARE AVAILABLE TO THE CONTRACTOR AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. DIMENSIONS SHOWN ON THESE PLANS ARE BASED ON DESIGN PLANS (DESIGN NOS. 1089 AND 109). REPAIRS SHALL CONSIST OF:

1. REMOVE AND REPLACE NEOPRENE GLAND IN THE EXPANSION JOINT AT BOTH ABUTMENTS.
2. CLEAN AND SEAL ABUTMENT SEATS AND BACKWALL.
3. CLEAN AND SEAL BARRIER RAIL.

"REMOVALS AS PER PLAN" INCLUDE ALL COSTS ASSOCIATED WITH REMOVING THE EXISTING NEOPRENE GLANDS. REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO OTHER PORTIONS OF THE EXISTING STRUCTURE NOT NOTED FOR REMOVAL SHALL BE THE RESPONSIBILITY OF THE BRIDGE CONTRACTOR AND SHALL BE REPAIRED AT NO COST TO THE STATE.

THE BRIDGE CONTRACTOR SHALL WORK IN SUCH A MANNER THAT EQUIPMENT AND MATERIALS SHALL NOT BE ALLOWED TO INTERFERE WITH TRAIN TRAFFIC OR BE ALLOWED TO FALL ON THE RAILROAD TRACKS. INTERFERENCE ABOVE THE RAILROAD TRACK AREA SHALL BE COORDINATED WITH THE RAILROAD.

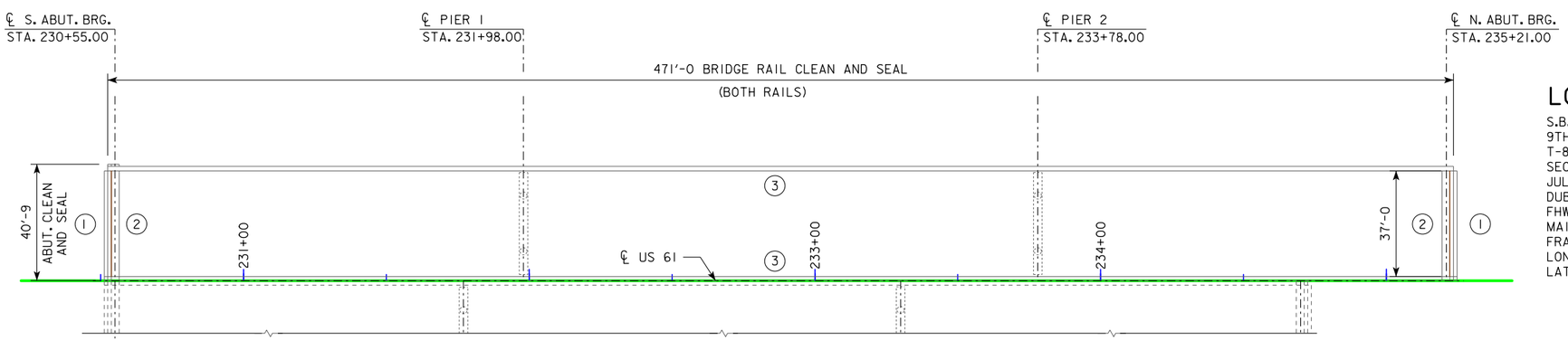
ALL DIMENSIONS AND DETAILS SHOWN IN THESE PLANS PERTINENT TO NEW CONSTRUCTION SHALL BE VERIFIED IN THE FIELD BY THE BRIDGE CONTRACTOR BEFORE STARTING CONSTRUCTION.

FAINT LINES ON PLANS INDICATE EXISTING PORTIONS OF THE BRIDGE.

CONSTRUCTION SHALL BE DONE IN STAGES WITH AT LEAST ONE LANE TRAFFIC MAINTAINED AT ALL TIMES IN ACCORDANCE WITH "TRAFFIC CONTROL PLAN" NOTE.

THE TOP AND INTERIOR FACES OF THE EXISTING CONCRETE RAILING ARE TO BE CLEANED AND SEALED IN ACCORDANCE WITH ARTICLE 2403.03, P, OF THE STANDARD SPECIFICATIONS. IF NEW SECTIONS OF RAIL ARE CONSTRUCTED, THE NEW SECTIONS SHALL NOT BE SEALED. ALL COSTS ASSOCIATED WITH CLEANING AND SEALING OF THE CONCRETE RAILS SHALL BE INCLUDED IN THE LUMP SUM BID ITEM "REMOVALS, AS PER PLAN".

IN ADDITION TO THE REQUIREMENTS OF ARTICLE 2413.03, G, OF THE STANDARD SPECIFICATIONS, BOTH EXPOSED ABUTMENT BRIDGE SEATS AND WASH SURFACES SHALL HAVE AN APPLICATION OF CONCRETE SEALER IN ACCORDANCE WITH ARTICLE 2403.03, P, 3, OF THE STANDARD SPECIFICATIONS.



SITUATION PLAN

LOCATION

S.B. U.S. 61 OVER
9TH STREET
T-89N R-3E
SECTION 19
JULIEN TOWNSHIP
DUBUQUE COUNTY
FHWA NO. 601130
MAINT. NO. 3189.9L061
FRA NO. 924706B
LONGITUDE: -90.660625°
LATITUDE: 42.504389°

TRAFFIC CONTROL PLAN

US 61 WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLAN SHOWN ON ROADWAY SHEET J.1.

DESIGN HISTORY AT THIS SITE

(INCLUDES THIS DESIGN)

DES. NO.	TYPE OF WORK
1089	ORIGINAL DESIGN
109	EXPANSION JOINT REPLACEMENT
120	BRIDGE JOINT REPAIR

TRAFFIC ESTIMATE

2018 AADT	10,700	V.P.D.
TRUCKS	9	%
TOTAL DESIGN ESALs	2,812,000	

REPAIR LEGEND

1. REMOVE AND REPLACE NEOPRENE GLAND IN THE EXPANSION JOINT AT BOTH ABUTMENTS.
2. CLEAN AND SEAL ABUTMENT SEATS AND BACKWALL.
3. CLEAN AND SEAL BARRIER RAIL.

DESIGN FOR REPAIRS TO A 0° SKEW

466'-0 x 37'-0 CONTINUOUS STEEL GIRDER S.B. BRIDGE

143'-0 END SPANS — 180'-0 CENTER SPAN

EST. QUANTITIES & SITUATION PLAN

STA. 231+21.50 — SEPTEMBER 2019

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 2 FILE NO. 31614 DESIGN NO. 120

DESIGN TEAM Stanley Consultants Inc. | DUBUQUE COUNTY | PROJECT NUMBER MB-061-6(529)190--77-31 | SHEET NUMBER 2

NEOPRENE GLAND NOTES:

THE NEOPRENE GLAND IS TO BE PLACED AS ONE CONTINUOUS PIECE FROM END TO END OF THE STEEL EXTRUSION.

THE NEOPRENE GLAND SHALL CONFORM TO ASTM-2628 MODIFIED TO EXCLUDE RECOVER TEST AND COMPRESSION SET.

THE CONTRACTOR SHALL INSTALL THE GLAND ABOVE THE MINIMUM TEMPERATURE OF 45° AND THE MINIMUM JOINT OPENING AND CORRESPONDING MAXIMUM DECK TEMPERATURE SHOWN IN THESE PLANS. THE DECK TEMPERATURE SHALL BE MEASURED BY RECORDING THE SURFACE TEMPERATURES ON THE UNDERSIDE OF THE DECK ADJACENT TO THE JOINTS. IF THE DECK TEMPERATURE DOES NOT FALL WITHIN THE SPECIFIED TEMPERATURE RANGE BEFORE THE CONTRACTOR HAS COMPLETED ALL OTHER REQUIRED WORK, IT WILL BE NECESSARY FOR THE CONTRACTOR TO RETURN TO THE PROJECT SITE TO COMPLETE INSTALLATION AND TESTING OF THE NEOPRENE GLAND. IF THE CONTRACTOR IS REQUIRED TO RETURN TO THE PROJECT SITE AFTER ALL OTHER REQUIRED WORK HAS BEEN COMPLETED, THE CONTRACTOR SHALL COMPLETE INSTALLATION AND TESTING OF NEOPRENE GLAND AT NO EXTRA CHARGE TO THE STATE.

THE NUMBER OF FEET OF NEOPRENE GLAND INSTALLED SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT BASED ON PLAN QUANTITIES. THE PRICE FOR "NEOPRENE GLAND INSTALLATION AND TESTING" SHALL BE FULL COMPENSATION FOR INSTALLING AND TESTING OF THE NEW NEOPRENE GLAND. THIS WORK WILL CONSIST OF CLEANING THE EXTRUSION, INSTALLATION OF THE NEOPRENE GLAND AND WATER TIGHT TESTING OF THE EXPANSION JOINT SYSTEM. ALL WORK AND MATERIALS NECESSARY FOR THE INSTALLATION OF THE NEOPRENE GLAND SHALL COMPLY WITH THE RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURER. THE PRICE BID FOR "NEOPRENE GLAND INSTALLATION AND TESTING" SHALL INCLUDE ALL WATERTIGHT INTEGRITY TESTING, LEAK REPAIRS AS DIRECTED BY THE ENGINEER, AND SUBSEQUENT WATERTIGHT TESTING UNTIL A LEAK FREE INSTALLATION IS ACHIEVED.

NEOPRENE GLANDS SHALL BE D.S. BROWN A2R-400 AT BOTH ABUTMENTS. MINIMUM OPENING FOR GLAND INSTALLATION IS 2".

COLD WEATHER CONSIDERATIONS:

JOINT OPENING WIDTH SHALL BE VERIFIED IN THE FIELD. NEOPRENE GLAND SHALL BE INSTALLED WHEN "MIN. GLAND OPENING FOR INSTALLATION" IS MEASURED. FIELD MEASUREMENTS TO DATE INDICATE EXISTING JOINT OPENINGS MAY BE TIGHTER THAN TYPICALLY EXPECTED. COOLER TEMPERATURES WILL RESULT IN LARGER JOINT OPENING.

WATERTIGHT INTEGRITY TESTING AND REPAIR NOTES:

AFTER INSTALLATION OF EACH NEOPRENE GLAND, THE CONTRACTOR SHALL PERFORM WATERTIGHT INTEGRITY TESTS AT THE DECK LEVEL TO DETECT ANY LEAKAGE. THE TESTS ARE TO CHECK FOR LEAKAGE AT THE UPTURNED ENDS OF THE EXPANSION DEVICE AND FOR LEAKAGE ALONG THE EXPANSION DEVICE ACROSS THE DECK AND ANY MEDIANS OR SIDEWALKS. THE CONTRACTOR MAY CONDUCT A SINGLE TEST OF THE ENTIRE DEVICE INCLUDING UPTURNED ENDS OR MAY CONDUCT SEPARATE TESTS OF UPTURNED ENDS AND ONE OR MORE TESTS OF OVERLAPPING LENGTHS BETWEEN THE UPTURNED ENDS.

AT EACH UPTURNED END OF THE EXPANSION DEVICE, THE CONTRACTOR SHALL BLOCK OUT ON THE DECK AT LEAST 3 FEET OF THE EXPANSION DEVICE LEADING TO THE UPTURNED END AND FLOOD THE AREA. A MINIMUM WATER DEPTH OF 3" SHALL BE MAINTAINED AT THE GUTTERLINE FOR AT LEAST 30 MINUTES. DURING THE TEST, THE INSPECTOR SHALL OBSERVE FOR ANY OVERFLOW AT THE UPTURNED END. AT THE CONCLUSION OF THE TEST THE INSPECTOR WILL EXAMINE THE UNDERSIDE OF THE JOINT FOR LEAKAGE. THE EXPANSION DEVICE IS CONSIDERED WATERTIGHT IF THE INSPECTOR OBSERVES NO OVERFLOW DURING THE TEST AND IF NO DRIPPING WATER OR WATER DROPLETS ARE VISIBLE IN THE UNDERDECK AREAS NEAR THE UPTURNED END.

THE CONTRACTOR SHALL TEST THE EXPANSION DEVICE BETWEEN UPTURNED ENDS BY BLOCKING OUT AND COVERING THE DEVICE WITH PONDED OR FLOWING WATER TO A DEPTH OF AT LEAST 1" AT ALL POINTS, FOR AT LEAST 30 MINUTES. VERTICAL CURB SURFACES MAY BE TESTED WITH AN UNNOZZLED HOSE DELIVERING APPROXIMATELY ONE GALLON PER MINUTE DIRECTED TO FLOW OVER THE ENTIRE CURB HEIGHT FOR 30 MINUTES. AT THE CONCLUSION OF THE TEST, THE INSPECTOR WILL EXAMINE THE UNDERSIDE OF THE JOINT FOR LEAKAGE. THE EXPANSION DEVICE IS CONSIDERED WATERTIGHT IF NO DRIPPING WATER OR WATER DROPLETS ARE VISIBLE IN THE UNDERDECK AREAS ALONG THE FULL LENGTH OF THE EXPANSION JOINT. DAMP CONCRETE THAT DOES NOT SHOW DRIPPING WATER OR WATER DROPLETS IS NOT CONSIDERED A SIGN OF LEAKAGE.

IF THE EXPANSION DEVICE LEAKS AT AN UPTURNED END OR ALONG ITS LENGTH, THE CONTRACTOR SHALL LOCATE THE LEAK(S) AND TAKE REPAIR MEASURES TO STOP THE LEAKAGE. THE REPAIR MEASURES SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER PRIOR TO BEGINNING CORRECTIVE WORK.

IF MEASURES TO ELIMINATE LEAKAGE ARE TAKEN, THE CONTRACTOR SHALL PERFORM SUBSEQUENT WATERTIGHT INTEGRITY TESTS SUBJECT TO THE SAME CONDITIONS AS THE ORIGINAL TEST.

DESIGN FOR REPAIRS TO A 0° SKEW

466'-0 x 37'-0 CONTINUOUS STEEL GIRDER S.B. BRIDGE

143'-0 END SPANS 180'-0 CENTER SPAN

EXPANSION DEVICE NOTES

STA. 231+21.50 SEPTEMBER 2019

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 2 FILE NO. 31614 DESIGN NO. 120

ESTIMATED BRIDGE QUANTITIES - DESIGN 220

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
1.	2401-6750001	REMOVALS, AS PER PLAN	LS	1.0	
2.	2413-1200100	NEOPRENE GLAND INSTALLATION AND TESTING	LF	77.0	
			LS		

ESTIMATE REFERENCE INFORMATION

ITEM NO. DESCRIPTION

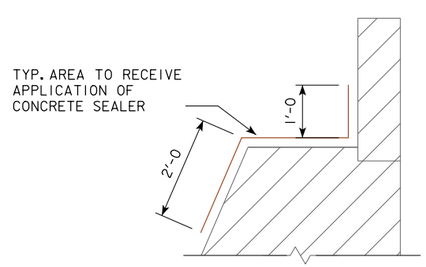
1. INCLUDES ALL WORK FOR REMOVAL AND OFF-SITE DISPOSAL OF EXISTING NEOPRENE GLAND. REMOVAL OF SCHEDULED ITEMS SHALL BE IN ACCORDANCE WITH SECTION 2401, OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO MATERIAL NOT TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED AT NO COST TO THE STATE. INCLUDES COST OF FURNISHING AND INSTALLATION OF CONCRETE JOINT REPAIR BETWEEN NORTH ABUTMENT WING AND APPROACH ROADWAY AS SHOWN IN THE SITUATION PLAN ON THIS SHEET, INCLUDING REMOVAL OF EXISTING DETERIORATED JOINT MATERIAL. INCLUDES CLEANING EXISTING CONCRETE RAIL, ABUTMENT SEATS AND BACKWALLS, FURNISHING AND PLACING CONCRETE SEALER.

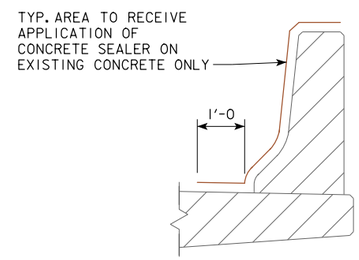
2. INCLUDES INSTALLATION OF NEOPRENE GLAND AND WATER TESTING OF JOINT.

ROADWAY QUANTITIES SHOWN ON SHEET C.1

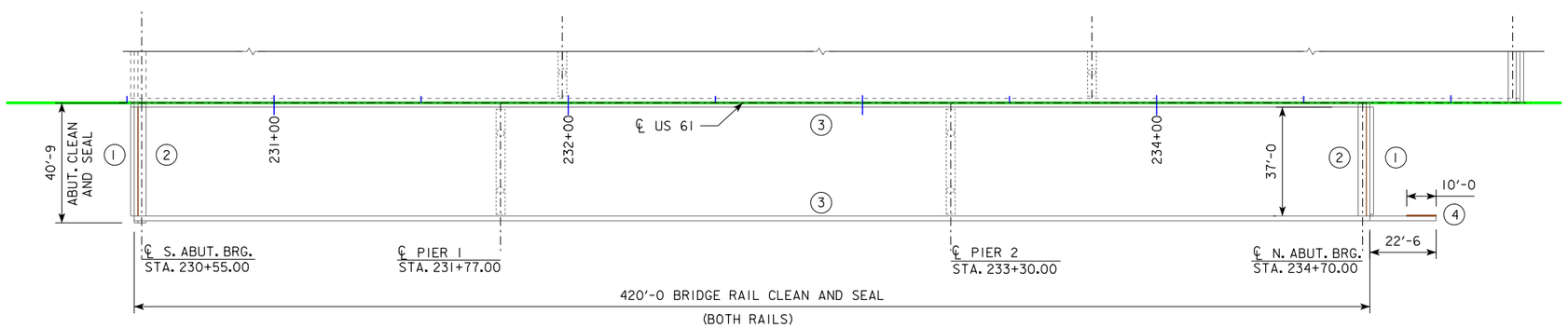
VPI STA = 234+00 VC = 550'
VPI ELEV = 643.07

EXISTING PROFILE GRADE US 61





DETAIL OF CONCRETE SEALER AREA



SITUATION PLAN

SPECIFICATIONS:

DESIGN: AASHTO SERIES OF 2002.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

GENERAL NOTES:

THIS DESIGN IS FOR REPAIRS TO THE EXISTING 415'-0 x 37'-0 CONTINUOUS STEEL GIRDER BRIDGE, ON N.B. U.S. 61 OVER E. NINTH ST. AND CANADIAN PACIFIC RAILROAD. ELECTRONIC COPIES OF ORIGINAL PLANS ARE AVAILABLE TO THE CONTRACTOR AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. DIMENSIONS SHOWN ON THESE PLANS ARE BASED ON DESIGN PLANS (DESIGN NOS. 1089 AND 109). REPAIRS SHALL CONSIST OF:

1. REMOVE AND REPLACE NEOPRENE GLAND IN THE EXPANSION JOINT AT BOTH ABUTMENTS.
2. CLEAN AND SEAL ABUTMENT SEATS AND BACKWALL.
3. CLEAN AND SEAL BARRIER RAIL.
4. PARTIALLY REMOVE AND REPLACE JOINT MATERIAL BETWEEN EAST WING OF NORTH ABUTMENT AND NORTH APPROACH ROADWAY.

"REMOVALS AS PER PLAN" INCLUDE ALL COSTS ASSOCIATED WITH REMOVING THE EXISTING NEOPRENE GLANDS AND EXISTING JOINT MATERIAL BETWEEN THE EAST WING OF THE NORTH ABUTMENT AND THE NORTH APPROACH ROADWAY. REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO OTHER PORTIONS OF THE EXISTING STRUCTURE NOT NOTED FOR REMOVAL SHALL BE THE RESPONSIBILITY OF THE BRIDGE CONTRACTOR AND SHALL BE REPAIRED AT NO COST TO THE STATE.

THE BRIDGE CONTRACTOR SHALL WORK IN SUCH A MANNER THAT EQUIPMENT AND MATERIALS SHALL NOT BE ALLOWED TO INTERFERE WITH TRAIN TRAFFIC OR BE ALLOWED TO FALL ON THE RAILROAD TRACKS. INTERFERENCE ABOVE THE RAILROAD TRACK AREA SHALL BE COORDINATED WITH THE RAILROAD.

ALL DIMENSIONS AND DETAILS SHOWN IN THESE PLANS PERTINENT TO NEW CONSTRUCTION SHALL BE VERIFIED IN THE FIELD BY THE BRIDGE CONTRACTOR BEFORE STARTING CONSTRUCTION.

FAINT LINES ON PLANS INDICATE EXISTING PORTIONS OF THE BRIDGE.

CONSTRUCTION SHALL BE DONE IN STAGES WITH AT LEAST ONE LANE TRAFFIC MAINTAINED AT ALL TIMES IN ACCORDANCE WITH "TRAFFIC CONTROL PLAN" NOTE.

THE TOP AND INTERIOR FACES OF THE EXISTING CONCRETE RAILING ARE TO BE CLEANED AND SEALED IN ACCORDANCE WITH ARTICLE 2403.03, P, OF THE STANDARD SPECIFICATIONS. IF NEW SECTIONS OF RAIL ARE CONSTRUCTED, THE NEW SECTIONS SHALL NOT BE SEALED. ALL COSTS ASSOCIATED WITH CLEANING AND SEALING OF THE CONCRETE RAILS SHALL BE INCLUDED IN THE LUMP SUM BID ITEM "REMOVALS, AS PER PLAN".

IN ADDITION TO THE REQUIREMENTS OF ARTICLE 2413.03, G, OF THE STANDARD SPECIFICATIONS, BOTH ABUTMENT BRIDGE SEATS SHALL HAVE AN APPLICATION OF CONCRETE SEALER IN ACCORDANCE WITH ARTICLE 2403.03, P, 3, OF THE STANDARD SPECIFICATIONS.

REMOVE LOOSE OR DETERIORATED EXISTING JOINT MATERIAL ALONG TOE OF EAST RAIL ON ABUTMENT WING ALONG OUTSIDE EDGE OF NORTH APPROACH. INSTALL NEW JOINT FILLER AND SEAL IN ACCORDANCE WITH ARTICLE 4136.03, A, OF THE STANDARD SPECIFICATIONS. USE SELF EXPANDING TYPE UNLESS OTHERWISE APPROVED BY ENGINEER. ALL COST ASSOCIATED WITH REMOVAL OF EXISTING JOINT MATERIAL AS WELL AS FURNSHING AND INSTALLING NEW JOINT MATERIAL UP TO 10 LF SHALL BE INCLUDED IN THE LUMP SUM BID ITEM "REMOVALS, AS PER PLAN".

TRAFFIC CONTROL PLAN

US 61 WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLAN SHOWN ON ROADWAY SHEET J.1.

LOCATION

N.B. U.S. 61 OVER
9TH STREET
T-89N R-3E
SECTION 19
JULIEN TOWNSHIP
DUBUQUE COUNTY
FHWA NO. 601125
MAINT. NO. 3189.9R061
FRA NO. 924706B
LONGITUDE: -90.660972°
LATITUDE: 42.502885°

DESIGN HISTORY AT THIS SITE

(INCLUDES THIS DESIGN)

DES. NO.	TYPE OF WORK
1089	ORIGINAL DESIGN
109	EXPANSION JOINT REPLACEMENT
220	BRIDGE JOINT REPAIR

TRAFFIC ESTIMATE

2018 AADT	10,750	V.P.D.
TRUCKS	12	%
TOTAL DESIGN ESALs	3,767,000	

REPAIR LEGEND

1. REMOVE AND REPLACE NEOPRENE GLAND IN THE EXPANSION JOINT AT BOTH ABUTMENTS.
2. CLEAN AND SEAL ABUTMENT SEATS AND BACKWALL.
3. CLEAN AND SEAL BARRIER RAIL.
4. PARTIALLY REMOVE AND REPLACE JOINT MATERIAL BETWEEN EAST WING OF NORTH ABUTMENT AND NORTH APPROACH ROADWAY.

N

DESIGN FOR REPAIRS TO A 0° SKEW

415'-0 x 37'-0 CONTINUOUS STEEL GIRDER N.B. BRIDGE

122'-0 END SPAN 153'-0 CENTER SPAN 140'-0 END SPAN

EST. QUANTITIES & SITUATION PLAN

STA. 231+21.50 SEPTEMBER 2019

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 2 FILE NO. 31614 DESIGN NO. 220

NEOPRENE GLAND NOTES:

THE NEOPRENE GLAND IS TO BE PLACED AS ONE CONTINUOUS PIECE FROM END TO END OF THE STEEL EXTRUSION.

THE NEOPRENE GLAND SHALL CONFORM TO ASTM-2628 MODIFIED TO EXCLUDE RECOVER TEST AND COMPRESSION SET.

THE CONTRACTOR SHALL INSTALL THE GLAND ABOVE THE MINIMUM TEMPERATURE OF 45° AND THE MINIMUM JOINT OPENING AND CORRESPONDING MAXIMUM DECK TEMPERATURE SHOWN IN THESE PLANS. THE DECK TEMPERATURE SHALL BE MEASURED BY RECORDING THE SURFACE TEMPERATURES ON THE UNDERSIDE OF THE DECK ADJACENT TO THE JOINTS. IF THE DECK TEMPERATURE DOES NOT FALL WITHIN THE SPECIFIED TEMPERATURE RANGE BEFORE THE CONTRACTOR HAS COMPLETED ALL OTHER REQUIRED WORK, IT WILL BE NECESSARY FOR THE CONTRACTOR TO RETURN TO THE PROJECT SITE TO COMPLETE INSTALLATION AND TESTING OF THE NEOPRENE GLAND. IF THE CONTRACTOR IS REQUIRED TO RETURN TO THE PROJECT SITE AFTER ALL OTHER REQUIRED WORK HAS BEEN COMPLETED, THE CONTRACTOR SHALL COMPLETE INSTALLATION AND TESTING OF NEOPRENE GLAND AT NO EXTRA CHARGE TO THE STATE.

THE NUMBER OF FEET OF NEOPRENE GLAND INSTALLED SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT BASED ON PLAN QUANTITIES. THE PRICE FOR "NEOPRENE GLAND INSTALLATION AND TESTING" SHALL BE FULL COMPENSATION FOR INSTALLING AND TESTING OF THE NEW NEOPRENE GLAND. THIS WORK WILL CONSIST OF CLEANING THE EXTRUSION, INSTALLATION OF THE NEOPRENE GLAND AND WATER TIGHT TESTING OF THE EXPANSION JOINT SYSTEM. ALL WORK AND MATERIALS NECESSARY FOR THE INSTALLATION OF THE NEOPRENE GLAND SHALL COMPLY WITH THE RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURER. THE PRICE BID FOR "NEOPRENE GLAND INSTALLATION AND TESTING" SHALL INCLUDE ALL WATERTIGHT INTEGRITY TESTING, LEAK REPAIRS AS DIRECTED BY THE ENGINEER, AND SUBSEQUENT WATERTIGHT TESTING UNTIL A LEAK FREE INSTALLATION IS ACHIEVED.

NEOPRENE GLANDS SHALL BE D.S. BROWN A2R-400 AT BOTH ABUTMENTS. MINIMUM OPENING FOR GLAND INSTALLATION IS 2".

COLD WEATHER CONSIDERATIONS:

JOINT OPENING WIDTH SHALL BE VERIFIED IN THE FIELD. NEOPRENE GLAND SHALL BE INSTALLED WHEN "MIN. GLAND OPENING FOR INSTALLATION" IS MEASURED. FIELD MEASUREMENTS TO DATE INDICATE EXISTING JOINT OPENINGS MAY BE TIGHTER THAN TYPICALLY EXPECTED. COOLER TEMPERATURES WILL RESULT IN LARGER JOINT OPENING.

WATERTIGHT INTEGRITY TESTING AND REPAIR NOTES:

AFTER INSTALLATION OF EACH NEOPRENE GLAND, THE CONTRACTOR SHALL PERFORM WATERTIGHT INTEGRITY TESTS AT THE DECK LEVEL TO DETECT ANY LEAKAGE. THE TESTS ARE TO CHECK FOR LEAKAGE AT THE UPTURNED ENDS OF THE EXPANSION DEVICE AND FOR LEAKAGE ALONG THE EXPANSION DEVICE ACROSS THE DECK AND ANY MEDIANS OR SIDEWALKS. THE CONTRACTOR MAY CONDUCT A SINGLE TEST OF THE ENTIRE DEVICE INCLUDING UPTURNED ENDS OR MAY CONDUCT SEPARATE TESTS OF UPTURNED ENDS AND ONE OR MORE TESTS OF OVERLAPPING LENGTHS BETWEEN THE UPTURNED ENDS.

AT EACH UPTURNED END OF THE EXPANSION DEVICE, THE CONTRACTOR SHALL BLOCK OUT ON THE DECK AT LEAST 3 FEET OF THE EXPANSION DEVICE LEADING TO THE UPTURNED END AND FLOOD THE AREA. A MINIMUM WATER DEPTH OF 3" SHALL BE MAINTAINED AT THE GUTTERLINE FOR AT LEAST 30 MINUTES. DURING THE TEST, THE INSPECTOR SHALL OBSERVE FOR ANY OVERFLOW AT THE UPTURNED END. AT THE CONCLUSION OF THE TEST THE INSPECTOR WILL EXAMINE THE UNDERSIDE OF THE JOINT FOR LEAKAGE. THE EXPANSION DEVICE IS CONSIDERED WATERTIGHT IF THE INSPECTOR OBSERVES NO OVERFLOW DURING THE TEST AND IF NO DRIPPING WATER OR WATER DROPLETS ARE VISIBLE IN THE UNDERDECK AREAS NEAR THE UPTURNED END.

THE CONTRACTOR SHALL TEST THE EXPANSION DEVICE BETWEEN UPTURNED ENDS BY BLOCKING OUT AND COVERING THE DEVICE WITH PONDED OR FLOWING WATER TO A DEPTH OF AT LEAST 1" AT ALL POINTS, FOR AT LEAST 30 MINUTES. VERTICAL CURB SURFACES MAY BE TESTED WITH AN UNNOZZLED HOSE DELIVERING APPROXIMATELY ONE GALLON PER MINUTE DIRECTED TO FLOW OVER THE ENTIRE CURB HEIGHT FOR 30 MINUTES. AT THE CONCLUSION OF THE TEST, THE INSPECTOR WILL EXAMINE THE UNDERSIDE OF THE JOINT FOR LEAKAGE. THE EXPANSION DEVICE IS CONSIDERED WATERTIGHT IF NO DRIPPING WATER OR WATER DROPLETS ARE VISIBLE IN THE UNDERDECK AREAS ALONG THE FULL LENGTH OF THE EXPANSION JOINT. DAMP CONCRETE THAT DOES NOT SHOW DRIPPING WATER OR WATER DROPLETS IS NOT CONSIDERED A SIGN OF LEAKAGE.

IF THE EXPANSION DEVICE LEAKS AT AN UPTURNED END OR ALONG ITS LENGTH, THE CONTRACTOR SHALL LOCATE THE LEAK(S) AND TAKE REPAIR MEASURES TO STOP THE LEAKAGE. THE REPAIR MEASURES SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER PRIOR TO BEGINNING CORRECTIVE WORK.

IF MEASURES TO ELIMINATE LEAKAGE ARE TAKEN, THE CONTRACTOR SHALL PERFORM SUBSEQUENT WATERTIGHT INTEGRITY TESTS SUBJECT TO THE SAME CONDITIONS AS THE ORIGINAL TEST.

DESIGN FOR REPAIRS TO A 0° SKEW

415'-0 x 37'-0 CONTINUOUS STEEL GIRDER N.B. BRIDGE

122'-0 END SPAN 153'-0 CENTER SPAN 140'-0 END SPAN

EXPANSION DEVICE NOTES

STA. 231+21.50 SEPTEMBER 2019

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 2 FILE NO. 31614 DESIGN NO. 220

100-1D
10-18-05

PROJECT DESCRIPTION

Perform bridge repair work on NB and SB US 61 bridges over E. 9th St and Canadian Pacific Railroad in Dubuque, IA.

100-0A
10-28-97

ESTIMATED ROADWAY QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2528-8445110	TRAFFIC CONTROL	LS	1	
2	2533-4980005	MOBILIZATION	LS	1	
3	2595-0005125	RAILROAD PROTECTIVE LIABILITY INSURANCE FOR DME	LS	1	

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2528-8445110	TRAFFIC CONTROL
		Refer to Standard Road Plans and J sheets for further information.
2	2533-4980005	MOBILIZATION

3	2595-0005125	RAILROAD PROTECTIVE LIABILITY INSURANCE FOR DME
		Refer to Developmental Specification DS-15047.

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
SI-881	04-16-19	Special Signs for Workzones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-402	04-21-15	Work Within 15 ft of Traveled Way
TC-418	10-15-19	Lane Closure on Divided Highway
TC-420	10-16-18	Lane Closure at Ramps

ROADWAY DESIGN

LICENSED PROFESSIONAL ENGINEER
GREGORY S. SHUGER
19731
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: Gregory S. Shuger Date: 8/16/2019

Gregory S. Shuger
Printed or Typed Name

My license renewal date is December 31, 20 19

Pages or sheets covered by this seal: C.1 and J.1.

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. US 61 will remain open and maintained with a minimum of one lane in each direction for the duration of the project.

2. Traffic control shall be in accordance with the J sheets and Standard Road Plans shown on Tab 105-4 in C sheets.

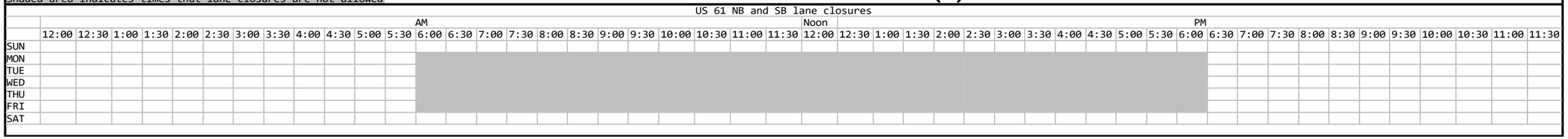
3. Traffic control on this project shall be in accordance with the Standard Road Plans. For additional complementary information, refer to Part 6 of the Manual on Uniform Traffic Control Devices and the current Standard Specifications.

108-23B
10-17-17

* This is to only be used in conjunction with Tabulation 108-23A
Shaded area indicates times that lane closures are not allowed

TRAFFIC CONTROL CLOSURE TABLE(S)

US 61 NB and SB lane closures



108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
None noted.												

108-26A
08-01-08

STAGING NOTES

It is not the intent to confine the Contractor's activities to the areas of suggested stages alone. It is understood that some of the various steps may occur simultaneously. The Contractor may conduct several operations concurrently, provided that traffic is maintained and that these operations do not conflict with the staging indicated herein.

STAGE 1
NB & SB US 61
Shift traffic to inside lanes and close outside lanes utilizing Standard Road Plan TC-418.
Perform bridge repair work.

STAGE 2
NB & SB US 61
Shift traffic to outside lanes and close inside lanes utilizing Standard Road Plan TC-418.
Perform bridge repair work.

111-01
04-17-12

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
BRFN-61-8(139)--39-31	Bridge Cleaning
BRFN-61-8(147)--39-31	Bridge Cleaning