

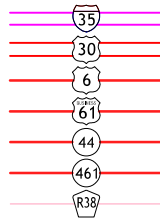
DECK JOINT REPAIR LETTING DATE 1/22/2020
MBIN-380-6(559)19--OM-57

LINN COUNTY

LINN COUNTY - DESIGN 320 & 420

LEGEND

INTERSTATE ROUTE
FREEWAY OR EXPRESSWAY ROUTE
U.S. NUMBERED ROUTE
BUSINESS ROUTE
STATE NUMBERED ROUTE
UNSIGNED ROUTE
COUNTY NUMBERED ROUTE
SECONDARY ROAD OR ADJOINING CITY STREET
CITY STREET
PARK, INSTITUTION, OR FEDERAL ROAD
RAILROAD
CORPORATION LINE
SECTION LINE
CUL-DE-SAC
SECTION, TOWNSHIP & RANGE NUMBERS



9, T-81N, R-30W



PLANS OF PROPOSED IMPROVEMENTS ON THE

INTERSTATE ROAD SYSTEM

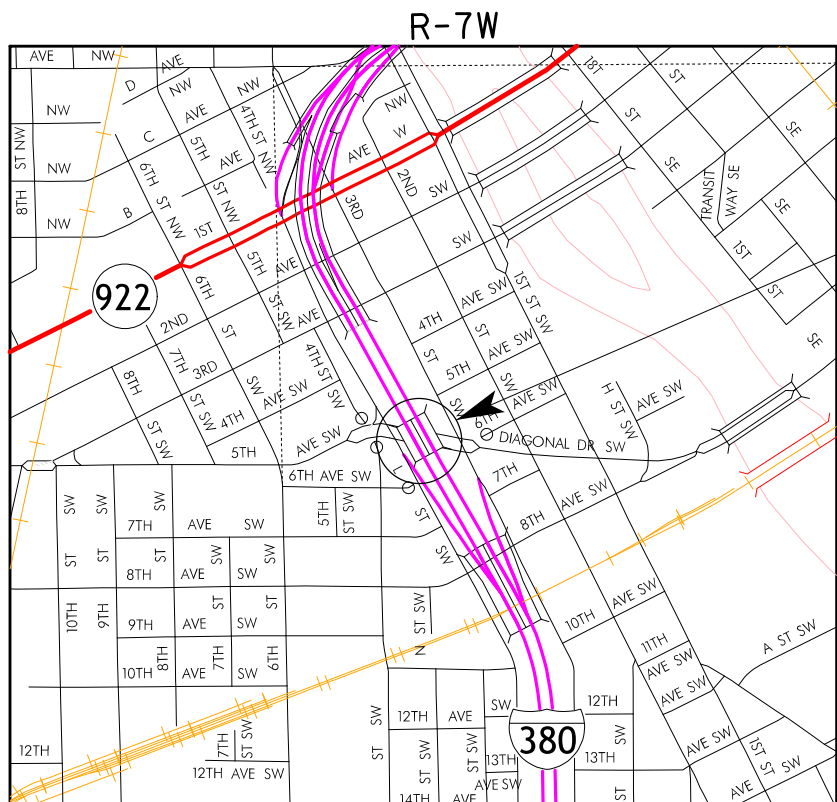
LINN COUNTY

DECK JOINT REPAIR

I-380 OVER 5TH AVE. S.W.

0.3 MILE SOUTH OF IA 922

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.



DESIGN NO. 320 & 420
FHWA NO. 607110 & 607100

LOCATION MAP
PART OF THE CITY OF CEDAR RAPIDS

PROJECT DIRECTORY NAME: 5738006018

ENGLISH STANDARD
BRIDGE PLANS

STANDARD ISSUED REVISED

REVISIONS



1-800-292-8989

www.iowaonecall.com



STANDARD ROAD
PLANS

STANDARD ROAD PLANS ARE LISTED
ON SHEET NUMBER C.2

DESIGN DATA URBAN

REFER TO INDIVIDUAL SITUATION
PLANS FOR TRAFFIC DATA
INFORMATION

	TOTAL SHEETS
	43
PROJECT NUMBER	
MBIN-380-6(559)19--OM-57	
R.O.W. PROJECT NUMBER	
PROJECT IDENTIFICATION NUMBER	
18-57-380-060	

INDEX OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE BRIDGE QUANTITIES - DESIGN 320
2-13	DESIGN 320 - BRIDGE PLANS
14	ESTIMATE BRIDGE QUANTITIES - DESIGN 420
14-25	DESIGN 420 - BRIDGE PLANS
C.1	ESTIMATE ROADWAY QUANTITIES
B.1-J.14	ROADWAY PLANS

INDEX OF SEALS

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

STRUCTURAL DESIGN



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 Anthony J. Bower Date 10/29/2019
Printed or Typed Name

My license renewal date is December 31, 2020

Pages or sheets covered by this seal: SHEETS I THRU 25

DESIGN TEAM Stanley Consultants Inc.

ENGLISH

IOWA DOT * OFFICE OF BRIDGES AND STRUCTURES

FILE NO. 31615

LINN COUNTY

PROJECT NUMBER MBIN-380-6(559)19--OM-57

SHEET NUMBER

10/29/2019 9:59:57 AM 09039 pw:\SCI-PWINTG-2.stanleygroup.com:Datasource-1\Documents\Infrastructure Business Unit\PRJ.IADOT\28576\28576.03 - FY20 - BM Repair Final Design\11-CADD\Linn320420\BrFinal\BRG.57380559.dgn 570320s000 11x17-.pdf.pltcf

ESTIMATED BRIDGE QUANTITIES - DESIGN 320					
ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
1.	2401-6750001	REMOVALS, AS PER PLAN	LS	1.00	
2.	2403-0100000	STRUCTURAL CONCRETE (MISC.)	CY	21.0	
3.	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	3540	
4.	2413-0698074	DECK REPAIR, CLASS A	SY	3.0	
5.	2413-1200000	STEEL EXTRUSION JOINT WITH NEOPRENE	LF	139.0	
6.	2413-1200100	NEOPRENE GLAND INSTALLATION AND TESTING	LF	139.0	
7.	2533-4980005	MOBILIZATION	LS	1.00	

ESTIMATE REFERENCE INFORMATION

ITEM NO.	DESCRIPTION
1.	INCLUDES ITEMS AS DESCRIBED IN THE GENERAL NOTES ON THIS SHEET AND REMOVAL NOTES ON DESIGN SHEET 5. INCLUDES COST OF HANDLING AND DISPOSAL OF EXPANSION PLATE AS NOTED IN THE GENERAL NOTES.
2.	INCLUDES FURNISHING AND PLACING ALL RESILIENT JOINT FILLER. INCLUDES ALL INSTALLATION COST FOR DOWELS. INCLUDES CLEANING EXISTING CONCRETE RAILS, ABUTMENT BACKWALLS AND ABUTMENT SEATS. INCLUDES FURNISHING AND PLACING CONCRETE SEALER ON EXISTING CONCRETE RAILS, ABUTMENT BACKWALLS AND ABUTMENT SEATS. INCLUDES COST TO FURNISH AND INSTALL 11 FEET OF 2" STEEL CONDUIT AND TWO EXPANSION FITTINGS. INCLUDE REMOVING EXISTING 'E-JOINT' AT ABUTMENT BACKWALLS. INCLUDES COST TO FURNISH AND INSTALL NEW 'E-JOINT' AT BOTH ABUTMENTS.
4.	INCLUDES COST OF LABOR AND EQUIPMENT TO REMOVE METAL LANE PAVEMENT MARKERS AND ADJACENT UNSOUND CONCRETE AND COMPLETE CLASS A DECK REPAIR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
5.	INCLUDES ALL NECESSARY HARDWARE AND ACCESSORIES INCLUDING THE ANCHORAGE SYSTEM, TEMPORARY ERECTION MATERIAL, AND STEEL COVER PLATES AND ACCESSORIES. EXCLUDES INSTALLATION OF NEOPRENE GLAND. EXPANSION CONDITIONS DO NOT ALLOW THE USE OF THE DS BROWN JOINT FOR THIS INSTALLATION.
6.	INCLUDES INSTALLATION OF NEOPRENE GLAND AND WATER TESTING OF JOINT.

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.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2002. REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60. CONCRETE IN ACCORDANCE WITH SECTION 8, f'c = 4.0 KSI. STRUCTURAL STEEL IN ACCORDANCE WITH SECTION 10. ASTM A709 GRADE 36, GRADE 50, AND GRADE 50W (AASHTO M270 GRADE 36, GRADE 50, AND GRADE 50W).

DOWEL SETTING NOTES:

THE BARRIER RAIL 6b2 AND BACKWALL 4b1 BARS SHALL BE SET AS VERTICAL DOWELS IN DRILLED HOLES. ALL HOLES ARE TO BE 10" DEEP. THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. EITHER OF THE FOLLOWING SYSTEMS MAY BE USED AS A BONDING AGENT FOR VERTICAL DOWELS BUT ONLY SYSTEM "A" MAY BE USED FOR HORIZONTAL DOWELS:

A. POLYMER GROUT SYSTEM IN ACCORDANCE WITH ARTICLE 2301.03,E, OF THE STANDARD SPECIFICATIONS

B. HYDRAULIC CEMENT GROUT SYSTEMS. DRILLED HOLES ARE TO BE 2½ TIMES THE DOWEL DIAMETER AND ARE TO BE BLOWN CLEAN WITH COMPRESSED AIR IMMEDIATELY PRIOR TO PLACING GROUT. THE HYDRAULIC CEMENT GROUT SHALL BE ONE OF THOSE APPROVED IN MATERIALS I.M. 491.13 AND SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

THE PRICE BID FOR "STRUCTURAL CONCRETE (MISC.}" SHALL INCLUDE THE COSTS OF SETTING BARS AS DOWELS IN THE EXISTING ABUTMENTS.

ROADWAY QUANTITIES SHOWN ON SHEET C.1

TRAFFIC CONTROL PLAN

1-380 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
2170	ORIGINAL DESIGN
385	BRIDGE DECK OVERLAY & CONCRETE BARRIER RETROFIT
212	REPAIR & BARRIER RAIL BRIDGE DECK OVERLAY
320	DECK JOINT REPAIR

SHOP DRAWING SUBMITTALS

SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS SHOWN IN THE TABLE BELOW. (NOTE ADDITIONAL SHOP DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH ARTICLE 1105.03 OF THE STANDARD SPECIFICATIONS.)

SUBMITTAL REQUIREMENTS FOR SHOP DRAWINGS SHOULD BE IN ACCORDANCE WITH ARTICLE 1105.03, OF THE STANDARD SPECIFICATIONS, FOR HIGHWAY AND BRIDGE CONSTRUCTION OF THE IOWA DEPARTMENT OF TRANSPORTATION.

SHOP DRAWINGS SHALL BE SUBMITTED WITH THE FOLLOWING NAMING CONVENTION:
(Paren) County_DesignNumber_SubmittalDescription.pdf
Example: (090)_BlackHawk_Design915_DeckDrains.pdf

1	STEEL EXTRUSION EXPANSION DEVICE
2	CURB PLATES

GENERAL NOTES:

THIS DESIGN IS FOR REPAIRS TO THE EXISTING 267'-0 x 52'-0 CONTINUOUS WELDED PLATE GIRDER BRIDGE, ON S.B. 1-380 OVER 5TH AVE SW. 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. 2170, 385, AND 212). REPAIRS SHALL CONSIST OF:

1. REMOVE AND REPLACE EXPANSION JOINTS AT ABUTMENTS.
2. CLEAN AND SEAL ABUTMENT SEATS AND BACKWALL.
3. CLEAN AND SEAL BARRIER RAIL.
4. REMOVE METAL LANE MARKERS AND PERFORM CLASS A CONCRETE REPAIR AS REQUIRED.

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

FAINT LINES ON PLANS INDICATE THE EXISTING STRUCTURE.

KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM VERTICAL.

THE LUMP SUM BID FOR "REMOVALS, AS PER PLAN" SHALL INCLUDE ALL COSTS ASSOCIATED WITH REMOVING PORTIONS OF THE ABUTMENT BACKWALLS, PORTIONS OF THE BARRIER RAILS, PORTIONS OF THE DECK, CONCRETE ABUTMENT DIAPHRAGMS, AND THE EXPANSION JOINTS AT EACH END OF THE BRIDGE. REMOVALS OF SCHEDULED ITEMS 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 CITY AND UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

1-380 WILL BE OPEN TO TRAFFIC DURING CONSTRUCTION. SEE TRAFFIC CONTROL PLAN NOTE. CONSTRUCTION SHALL BE DONE IN STAGES WITH AT LEAST TWO LANES OF TRAFFIC MAINTAINED AT ALL TIMES.

CONCRETE REMOVAL SHALL BE INITIATED WITH A ¾" SAW CUT WHEREVER POSSIBLE.

IT IS THE INTENT OF THESE PLANS TO REUSE THE EXISTING STEEL SHEAR STUDS ON TOP OF THE GIRDERS. THE CONTRACTOR SHALL EXERCISE CARE NOT TO DAMAGE THESE SHEAR STUDS DURING PARTIAL REMOVAL OF THE CONCRETE DECK OPERATION. ANY REPLACEMENT OF DAMAGED SHEAR STUDS WILL BE AS DIRECTED BY THE ENGINEER AND REPAIRED AT NO COST TO THE STATE.

A SCRAPE SAMPLE WAS TAKEN FROM AN AREA OF THIS BRIDGE TO GET AN INDICATION OF THE EXISTENCE OF AND LEVEL OF TOTAL LEAD AND TOTAL CHROMIUM. ANALYSIS OF TOTAL LEAD ON THIS SAMPLE WAS 350,000 PARTS PER MILLION (PPM) AT THE EXPANSION PLATE. ANALYSIS OF TOTAL CHROMIUM ON THIS SAMPLE WAS 750 PPM AT THE EXPANSION PLATE. THESE ANALYSES SHOW THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. LEVELS INDICATED BY THESE TESTS COULD CREATE CONDITIONS ABOVE REGULATORY LIMITS FOR HEALTH AND SAFETY REQUIREMENTS. NO OTHER CONSTITUENTS WERE ANALYZED. THE BIDDER SHOULD NOT RELY ON THE IOWA DOT'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.

THE CONTRACTOR SHALL CONDUCT THEIR OPERATIONS IN SUCH A MANNER THAT ANY PAINT REMOVED DURING DEMOLITION IS CONTAINED, COLLECTED, AND DISPOSED OF IN ACCORDANCE WITH SECTION 2508, OF THE STANDARD SPECIFICATIONS. BEFORE DELIVERY OF ANY SCRAP STEEL THE CONTRACTOR SHALL PROVIDE A WRITTEN NOTICE TO THE RECEIVING FACILITY. THIS NOTICE SHALL AT A MINIMUM INCLUDE:

1. A NOTICE THAT THE SCRAP STEEL IS COATED WITH PAINT THAT HAS REGULATED MATERIALS AT LEVELS WHICH COULD BE HAZARDOUS TO EMPLOYEES OR THE ENVIRONMENT.
2. A COPY OF THE SCRAPE SAMPLE PROVIDED IN THE CONTRACT DOCUMENTS.
3. A SIGNATURE BLOCK FOR THE RECEIVING FACILITY TO CONFIRM THEIR RECEIPT OF THIS INFORMATION.

A COPY OF THIS NOTICE, SIGNED BY THE RECEIVING FACILITY, SHALL BE RETURNED TO THE ENGINEER BEFORE ANY SCRAP STEEL IS REMOVED FROM THE PROJECT.

THE COST OF HANDLING AND DISPOSAL OF ANY PAINTED STEEL OR REMOVED PAINT IS INCIDENTAL TO THE REMOVAL BID ITEM.

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 INCLUDE IN THE UNIT PRICE BID ITEM "STRUCTURAL CONCRETE (MISC)".

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.

THE "DECK REPAIR, CLASS A" BID ITEM INCLUDES COST TO REMOVE METAL PAVEMENT MARKERS AND UNSOUND CONCRETE IMMEDIATELY ADJACENT TO MARKERS. THE ESTIMATED QUANTITY OF 3.0 SY IS APPROXIMATE AND THE ACTUAL QUANTITY IS DETERMINED BY THE ENGINEER AT THE TIME OF REPAIR.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5d1 IS ⅝ INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

DESIGN FOR REPAIRS TO A 40°06'27.8" SKEW (L.A.)

267'-0 x 52'-0 CONTINUOUS WELDED PLATE GIRDER S.B. BRIDGE

53'-0 END SPANS72'-9 & 88'-3 INTERIOR SPAN

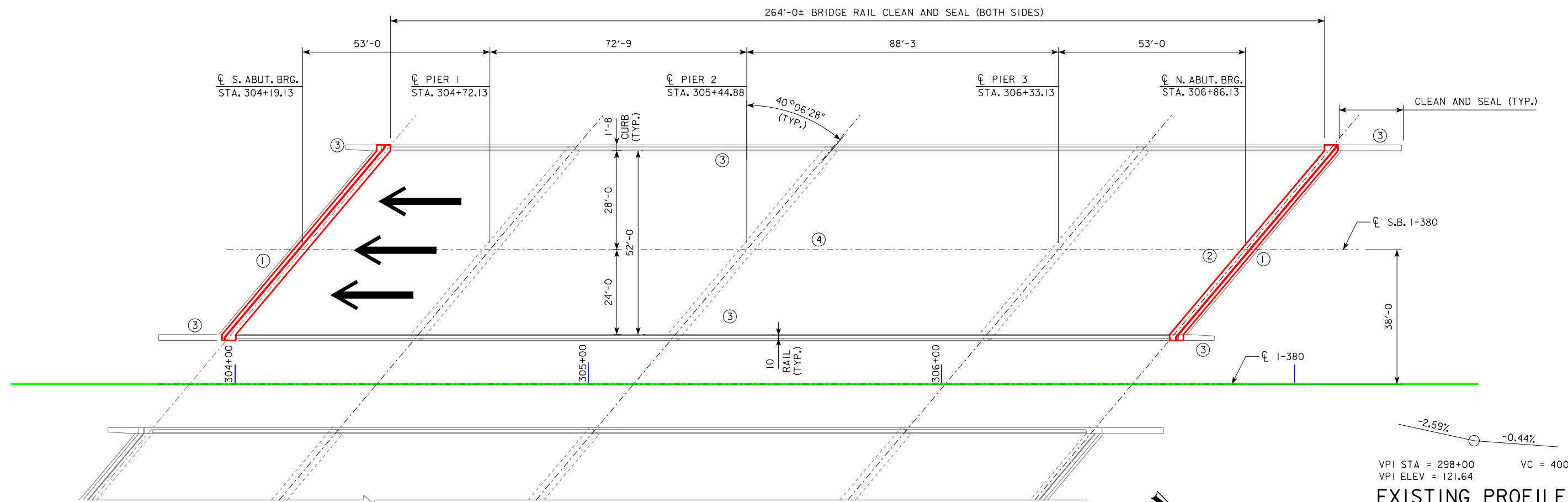
QUANTITIES & GENERAL NOTES

STA. 305+12.87 @ 1-380NOVEMBER 2019

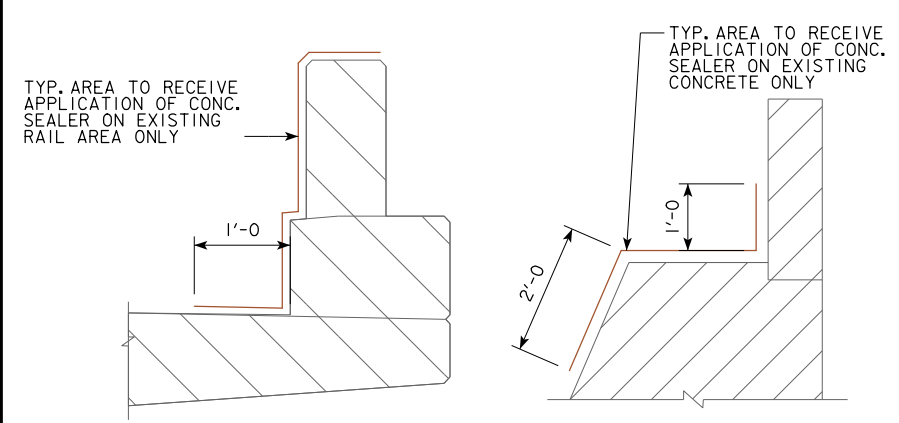
LINN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 12FILE NO. 31615DESIGN NO. 320



SITUATION PLAN



DETAIL OF CONCRETE SEALER AREA

- REPAIR LEGEND**
1. REMOVE AND REPLACE EXPANSION JOINTS AT ABUTMENTS.
 2. CLEAN AND SEAL ABUTMENT SEATS AND BACKWALL.
 3. CLEAN AND SEAL BARRIER RAIL.
 4. REMOVE METAL LANE MARKERS AND PERFORM CLASS A CONCRETE REPAIR AS REQUIRED.

EXISTING PROFILE
GRADE I-380

LOCATION

S.B. I-380 OVER 5TH AVE SW
T-83N R-7W
SECTION 28
RAPIDS TOWNSHIP
LINN COUNTY
FHWA NO. 607110
MAINT. NO. 5719.4L380
LONGITUDE: -91.674033°
LATITUDE: 41.971363°

TRAFFIC ESTIMATE

2018 AADT 61,900 V.P.D.
TRUCKS 11 %
INCLUDES NB AND SB LANES

NOTE: THE COST OF FURNISHING AND PLACING CONCRETE SEALER IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (MISC.)."

DESIGN FOR REPAIRS TO A 40°06'27.8" SKEW (L.A.)

**267'-0 x 52'-0 CONTINUOUS
WELDED PLATE GIRDER S.B. BRIDGE**

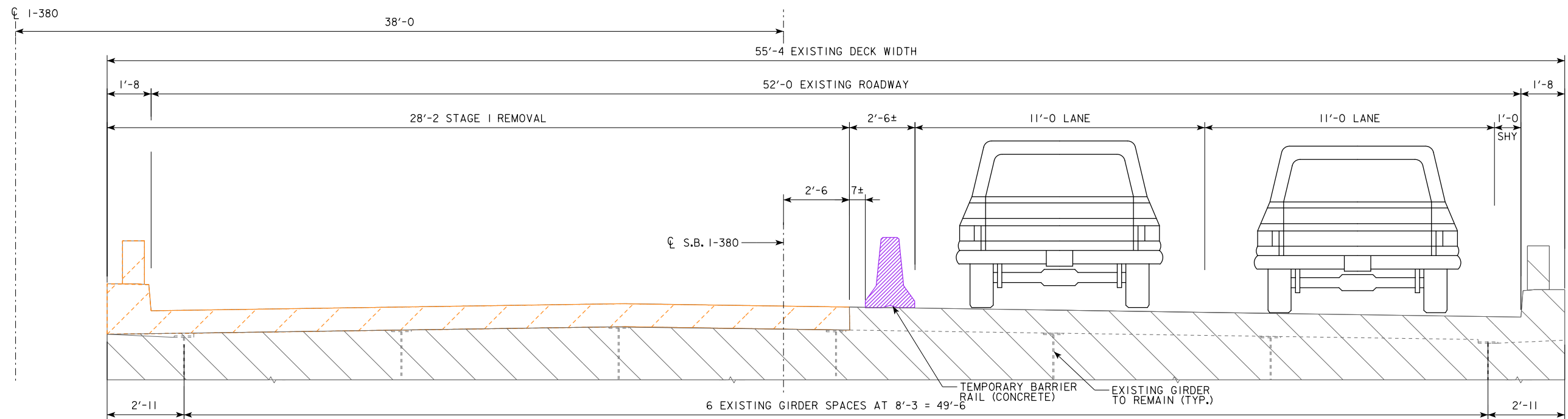
53'-0 END SPANS 72'-9 & 88'-3 INTERIOR SPAN

SITUATION PLAN

STA. 305+12.87 CL I-380 NOVEMBER 2019

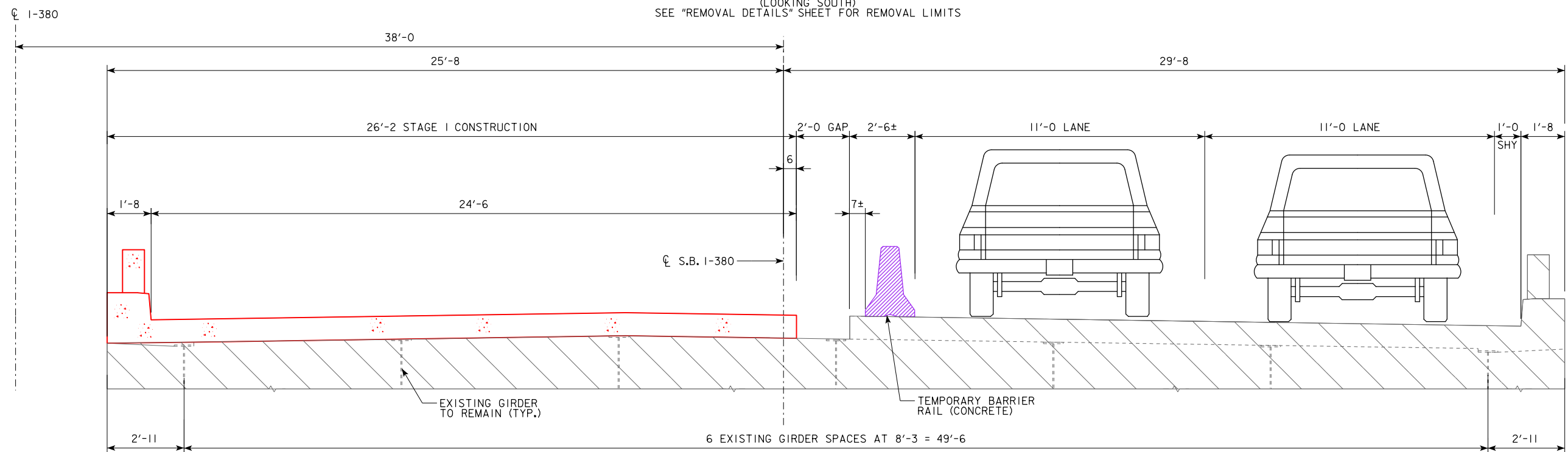
LINN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 2 OF 12 FILE NO. 31615 DESIGN NO. 320



TRANSVERSE SECTION - STAGE I REMOVAL

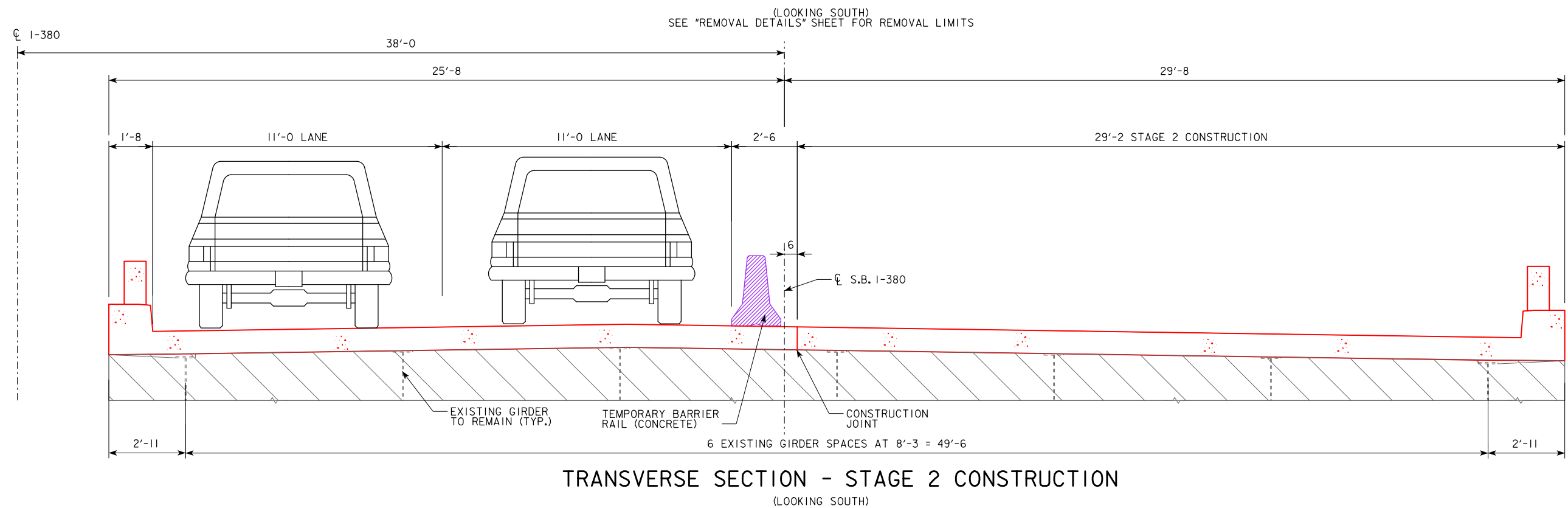
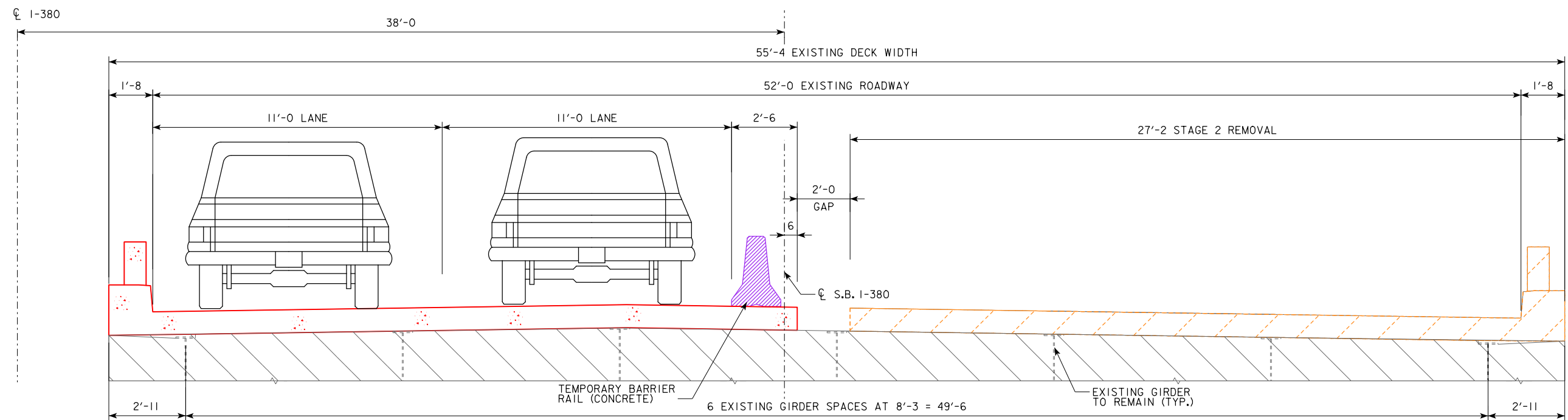
(LOOKING SOUTH)
SEE "REMOVAL DETAILS" SHEET FOR REMOVAL LIMITS



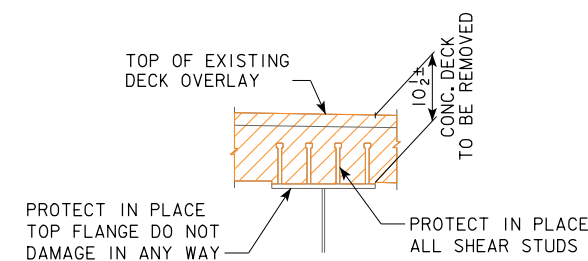
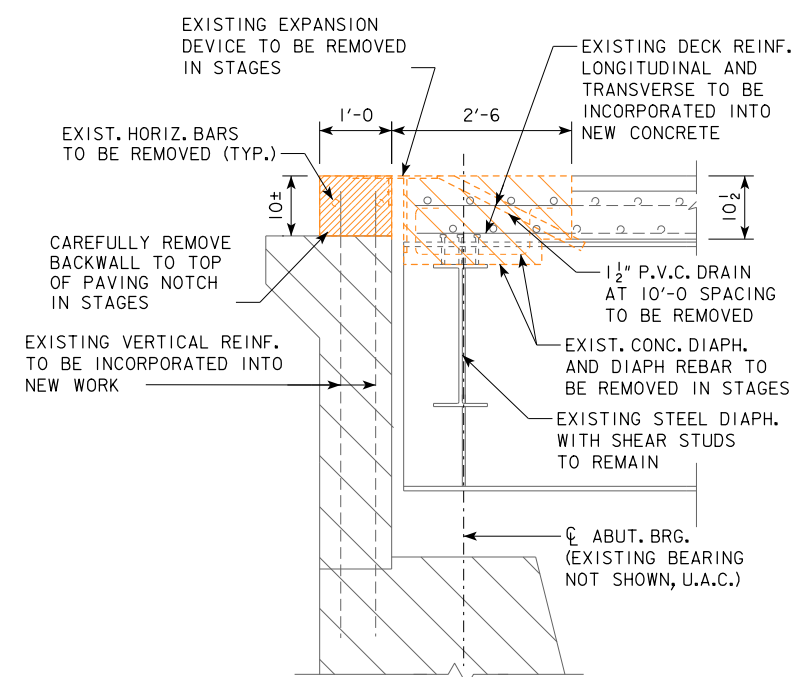
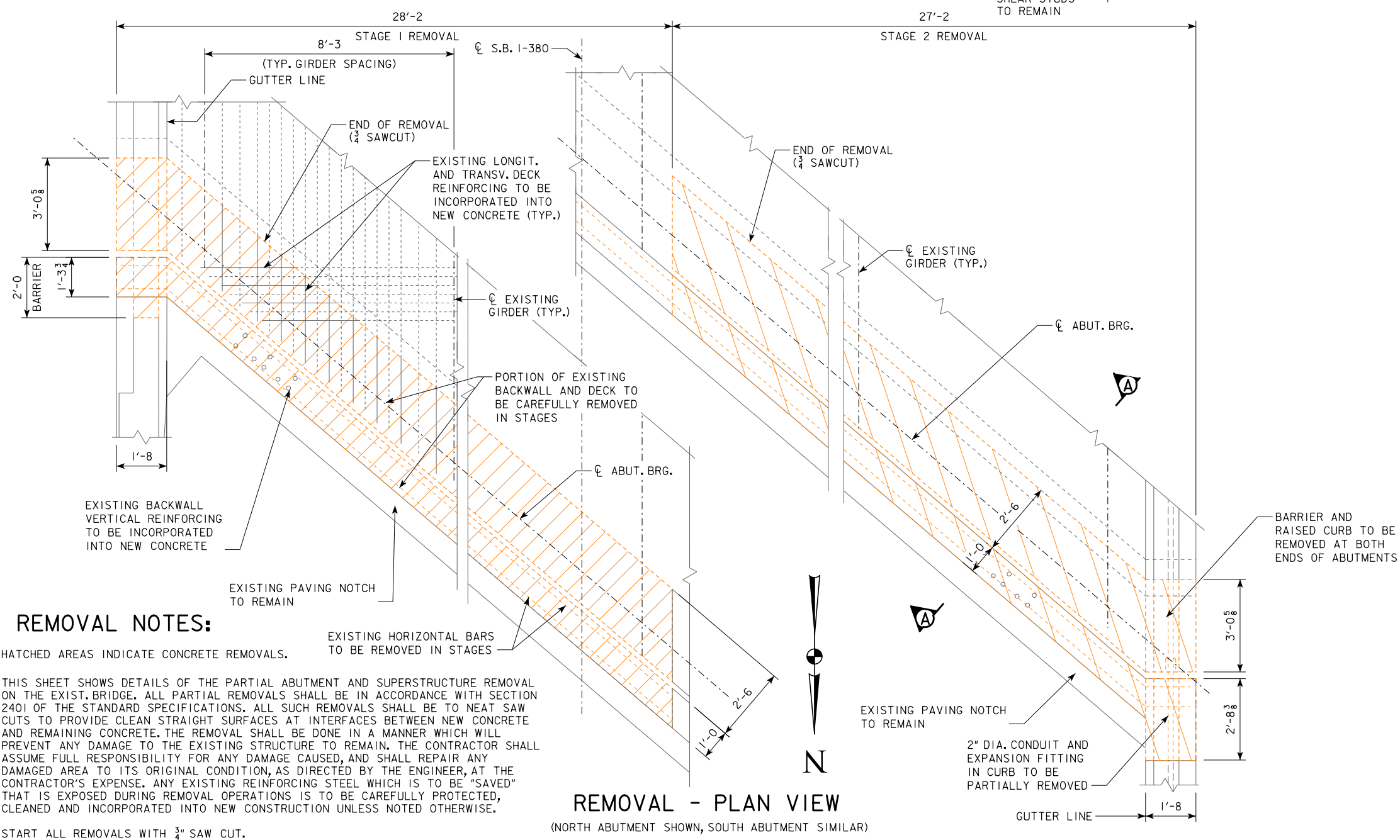
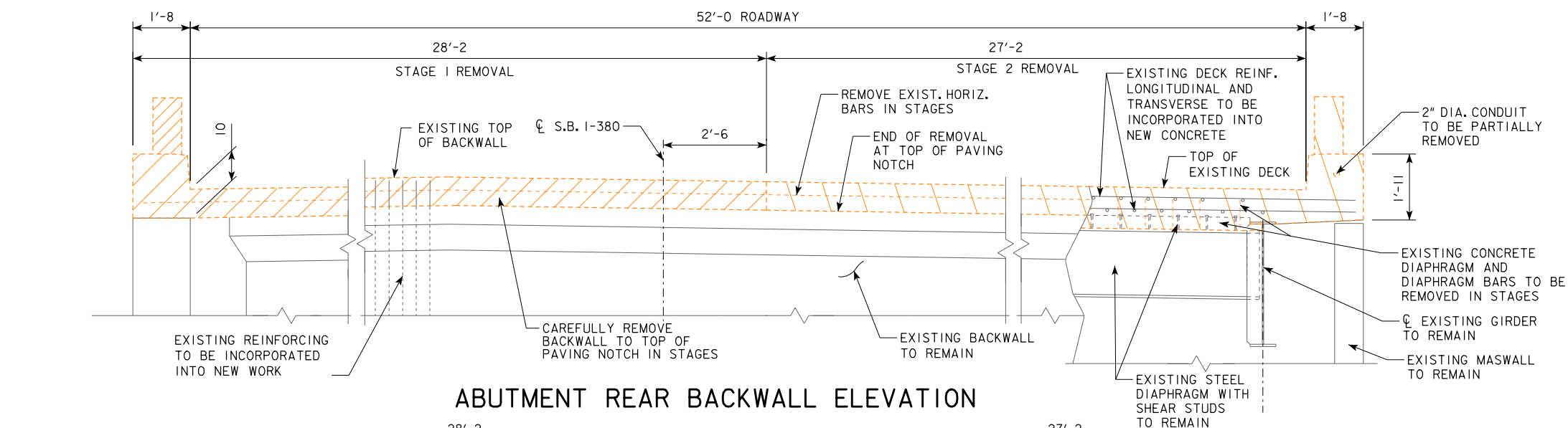
TRANSVERSE SECTION - STAGE I CONSTRUCTION

(LOOKING SOUTH)

DESIGN FOR REPAIRS TO A 40°06'27.8" SKEW (L.A.)
267'-0 x 52'-0 CONTINUOUS
WELDED PLATE GIRDER S.B. BRIDGE
 53'-0 END SPANS 72'-9 & 88'-3 INTERIOR SPAN
STAGING DETAILS I
 STA. 305+12.87 $\pm$ I-380 NOVEMBER 2019
LINN COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 3 OF 12 FILE NO. 31615 DESIGN NO. 320

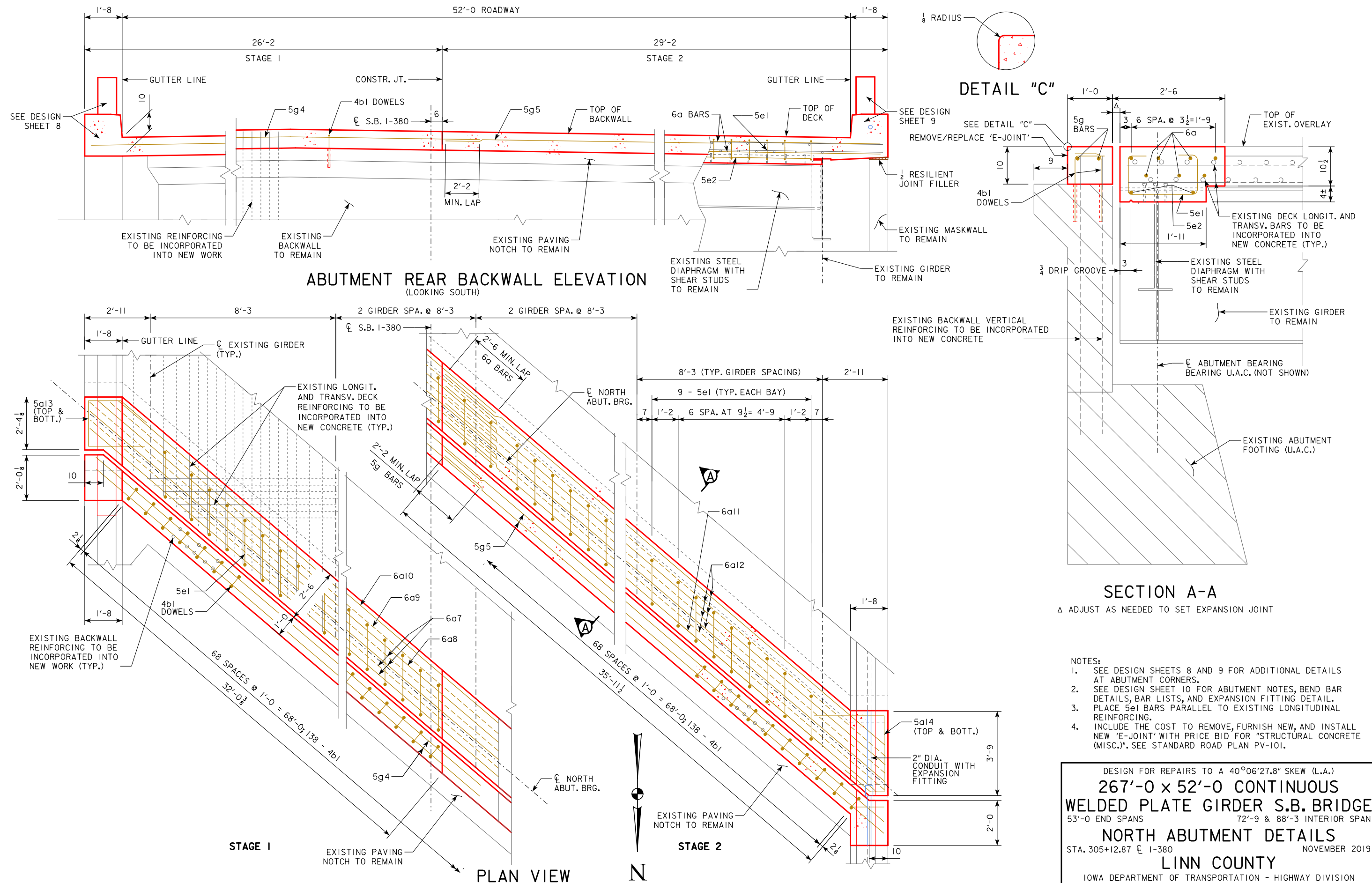


DESIGN FOR REPAIRS TO A 40°06'27.8" SKEW (L.A.)
267'-0 x 52'-0 CONTINUOUS
WELDED PLATE GIRDER S.B. BRIDGE
53'-0 END SPANS 72'-9 & 88'-3 INTERIOR SPAN
STAGING DETAILS 2
STA. 305+12.87 CL 1-380 NOVEMBER 2019
LINN COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 4 OF 12 FILE NO. 31615 DESIGN NO. 320

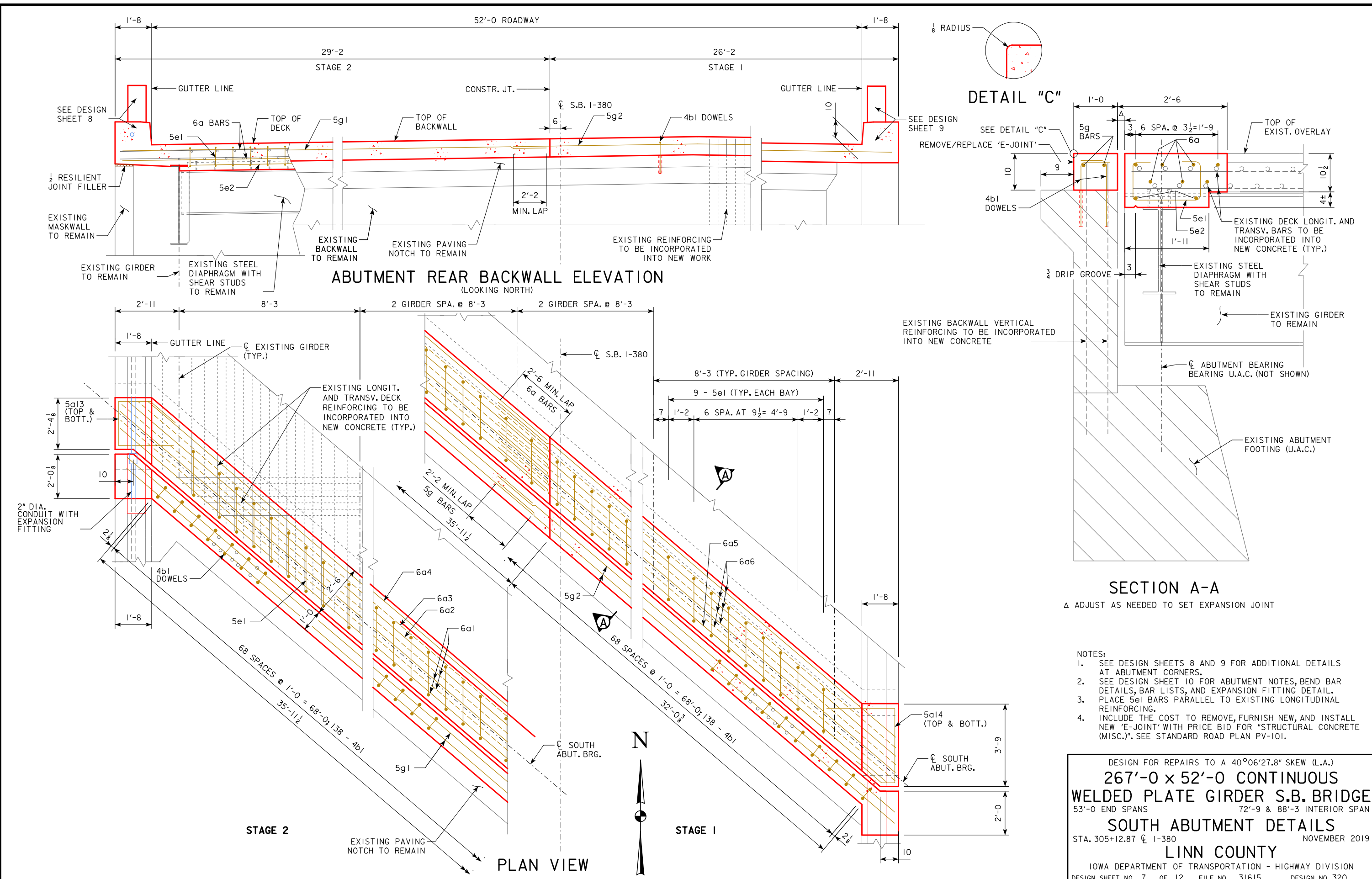


NOTES:
1. REMOVAL DETAILS SHOWN APPLY TO ABUTMENT AND
END OF DECK. SEE DESIGN SHEETS 8 AND 9
FOR ADDITIONAL REMOVAL DETAILS AT CORNERS
AND BARRIERS.

DESIGN FOR REPAIRS TO A 40°06'27.8" SKEW (L.A.)
267'-0 x 52'-0 CONTINUOUS
WELDED PLATE GIRDER S.B. BRIDGE
53'-0 END SPANS 72'-9 & 88'-3 INTERIOR SPAN
REMOVAL DETAILS
STA. 305+12.87 @ 1-380 NOVEMBER 2019
LINN COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 5 OF 12 FILE NO. 31615 DESIGN NO. 320



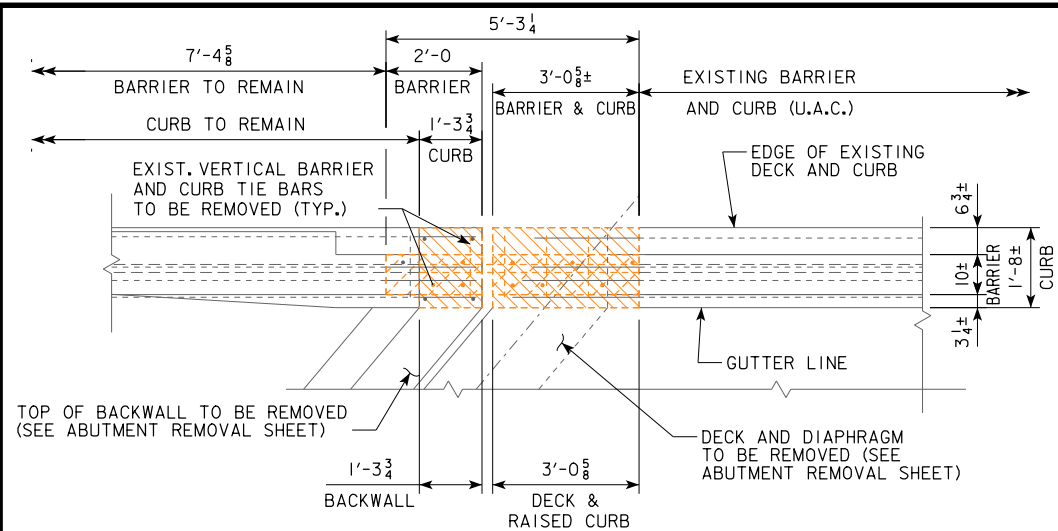
DESIGN FOR REPAIRS TO A 40°06'27.8" SKEW (L.A.)
267'-0" x 52'-0" CONTINUOUS
WELDED PLATE GIRDER S.B. BRIDGE
 53'-0" END SPANS 72'-9" & 88'-3" INTERIOR SPAN
NORTH ABUTMENT DETAILS
 STA. 305+12.87 @ 1-380 NOVEMBER 2019
LINN COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 6 OF 12 FILE NO. 31615 DESIGN NO. 320



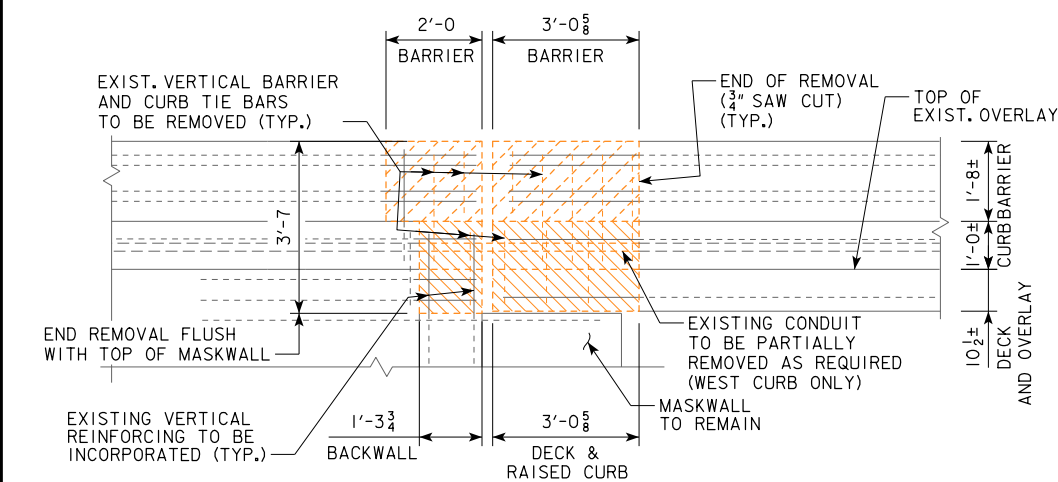
NOTES:

1. SEE DESIGN SHEETS 8 AND 9 FOR ADDITIONAL DETAILS AT ABUTMENT CORNERS.
2. SEE DESIGN SHEET 10 FOR ABUTMENT NOTES, BEND BAR DETAILS, BAR LISTS, AND EXPANSION FITTING DETAIL.
3. PLACE 5e1 BARS PARALLEL TO EXISTING LONGITUDINAL REINFORCING.
4. INCLUDE THE COST TO REMOVE, FURNISH NEW, AND INSTALL NEW 'E-JOINT' WITH PRICE BID FOR "STRUCTURAL CONCRETE (MISC.)". SEE STANDARD ROAD PLAN PV-101.

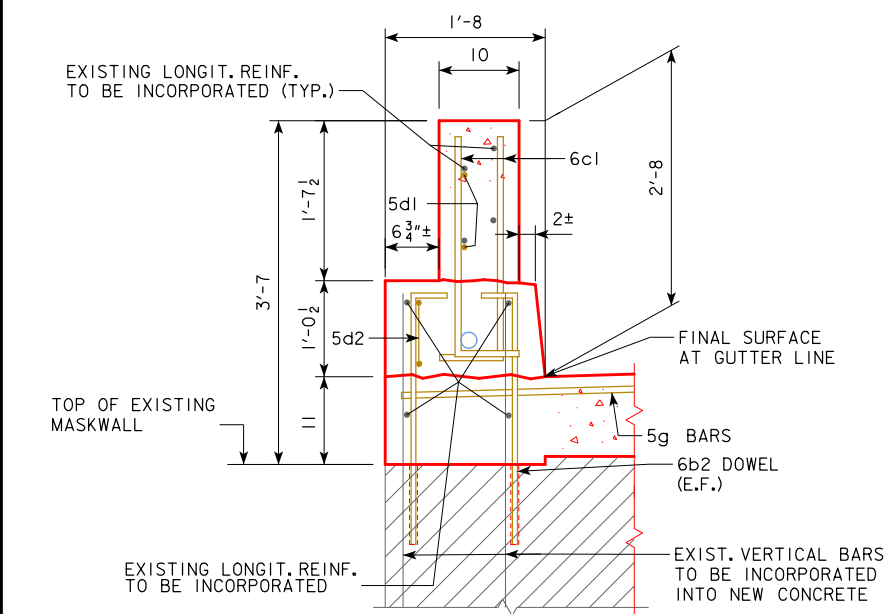
DESIGN FOR REPAIRS TO A 40°06'27.8" SKEW (L.A.)
**267'-0 x 52'-0 CONTINUOUS
WELDED PLATE GIRDER S.B. BRIDGE**
53'-0 END SPANS 72'-9 & 88'-3 INTERIOR SPAN
SOUTH ABUTMENT DETAILS
STA. 305+12.87 CL 1-380 NOVEMBER 2019
LINN COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 7 OF 12 FILE NO. 31615 DESIGN NO. 320



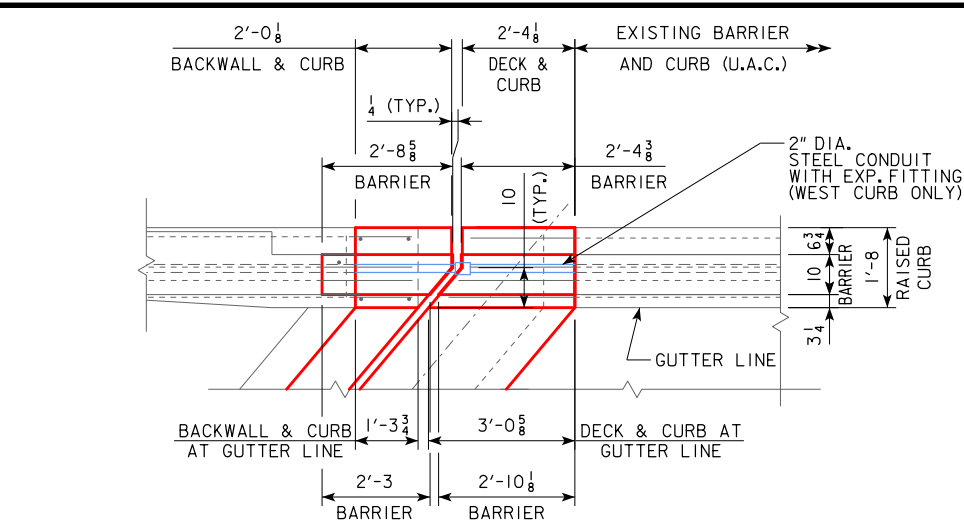
PART REMOVAL PLAN



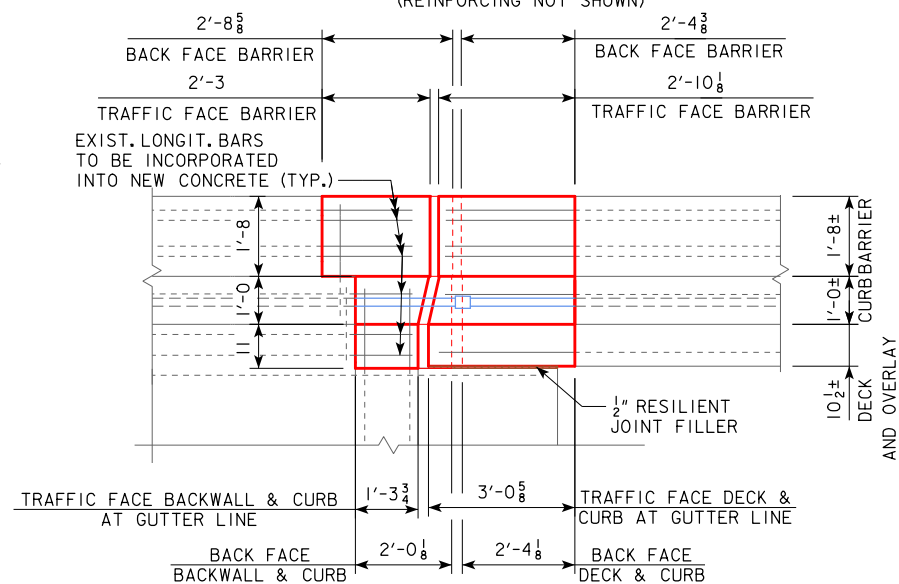
PART REMOVAL ELEVATION



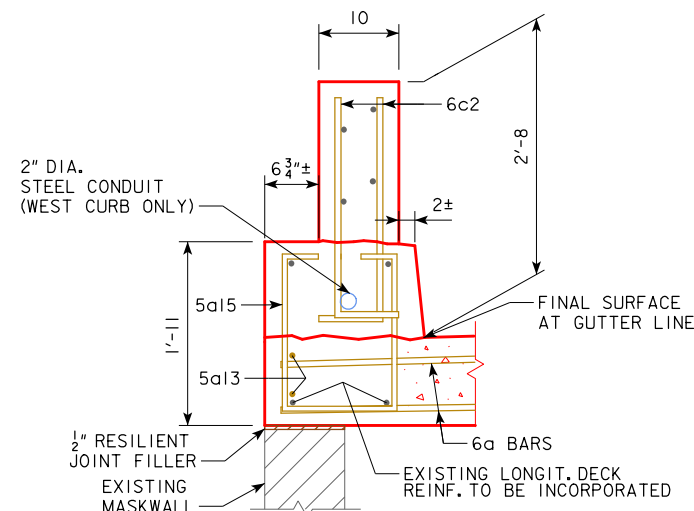
SECTION A-A



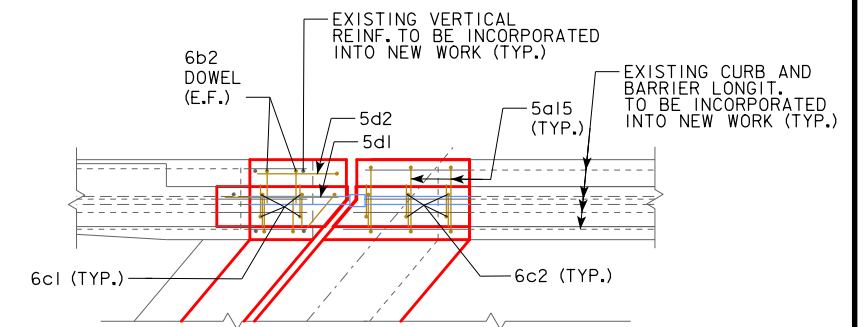
PART PLAN VIEW
(REINFORCING NOT SHOWN)



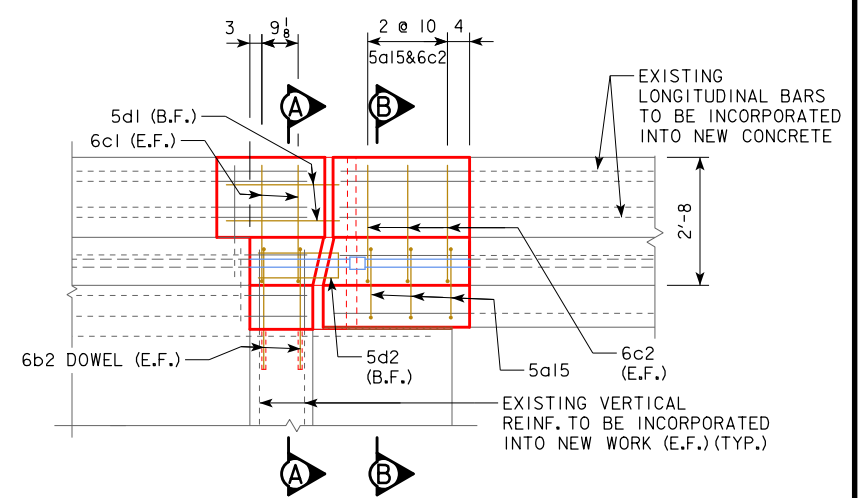
PART ELEVATION VIEW
(REINFORCING NOT SHOWN)



SECTION B-B



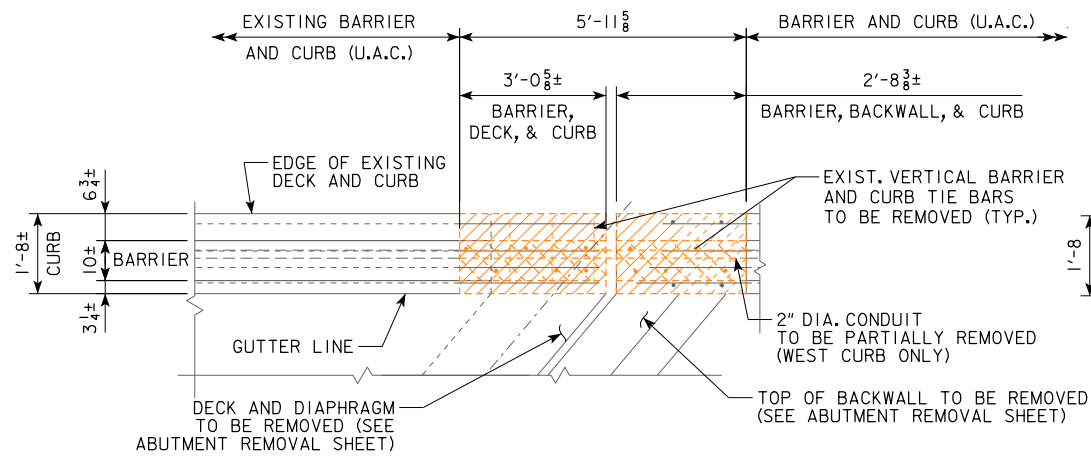
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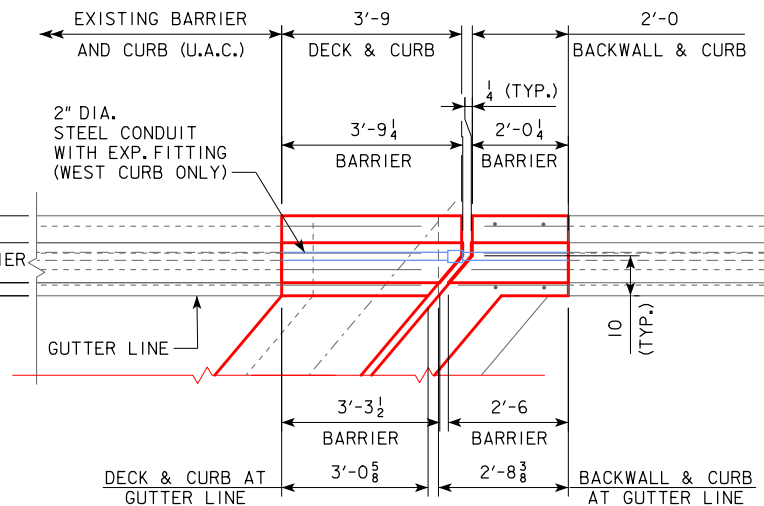
PART ELEVATION VIEW
(REINFORCING SHOWN)

- NOTES:
- THIS SHEET IS FOR THE WEST CORNER OF THE SOUTH ABUTMENT AND EAST CORNER OF THE NORTH ABUTMENT. SEE DESIGN SHEET 9 FOR OTHER LOCATIONS.
 - SEE DESIGN SHEET 10 FOR ABUTMENT NOTES, REINFORCING, BENT BAR DETAILS, AND EXPANSION FITTING DETAIL.
 - INCORPORATE VERTICAL AND LONGITUDINAL REINFORCING INTO NEW WORK WHERE POSSIBLE. CUT AS REQUIRED TO MAINTAIN CLEAR COVER.
 - CONSTRUCTION JOINT BETWEEN BARRIER AND CURB AND OPTIONAL CONSTRUCTION JOINT BETWEEN DECK/BACKWALL AND RAISED CURB SHALL BE INTENTIONALLY ROUGHENED.
 - EXISTING CONDUIT WITH EXPANSION FITTING IN WEST CURB TO BE PARTIALLY REMOVED AND REPLACED AS REQUIRED.

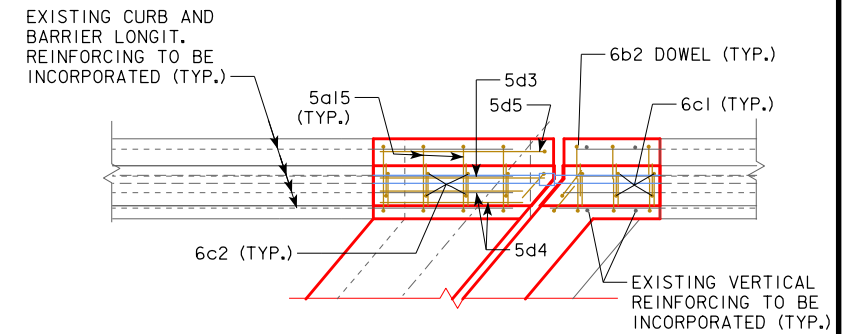
DESIGN FOR REPAIRS TO A 40°06'27.8" SKEW (L.A.)
267'-0" x 52'-0" CONTINUOUS WELDED PLATE GIRDER S.B. BRIDGE
 53'-0" END SPANS 72'-9" & 88'-3" INTERIOR SPAN
S.W. AND N.E. CURB & BARRIER DETAILS
 STA. 305+12.87 @ 1-380
LINN COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 8 OF 12 FILE NO. 31615 DESIGN NO. 320



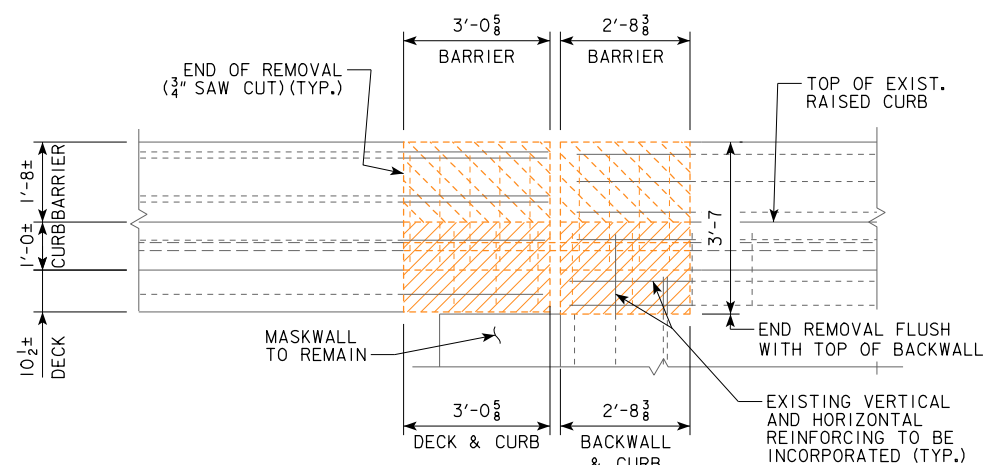
PART REMOVAL PLAN



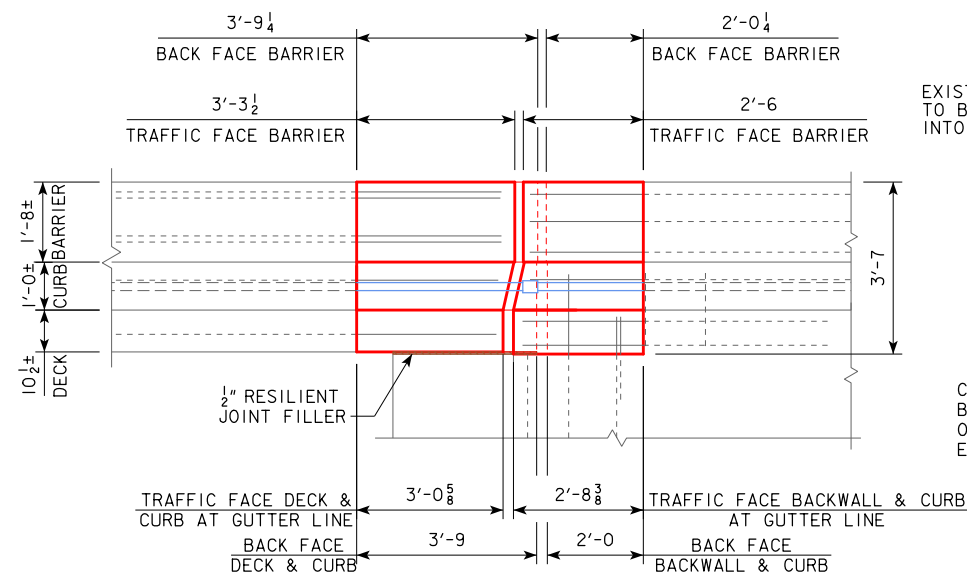
PART PLAN VIEW
(REINFORCING NOT SHOWN)



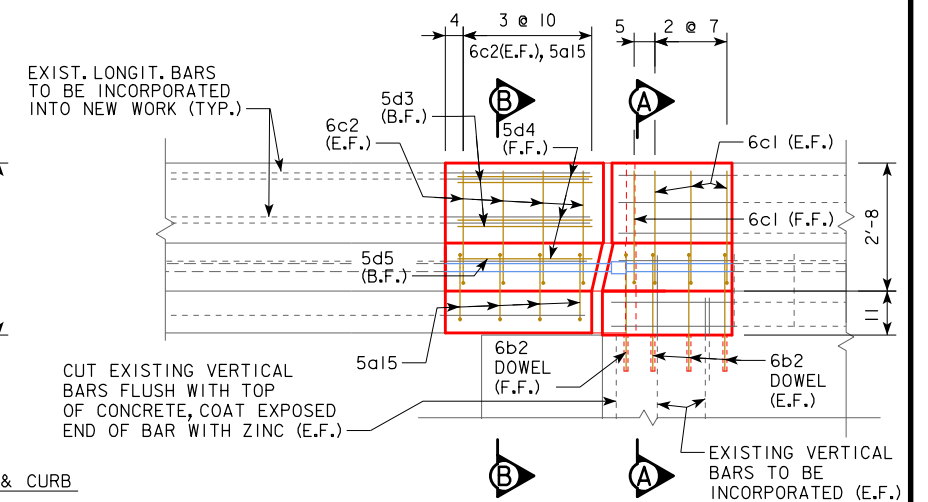
PART PLAN VIEW
(REINFORCING SHOWN)



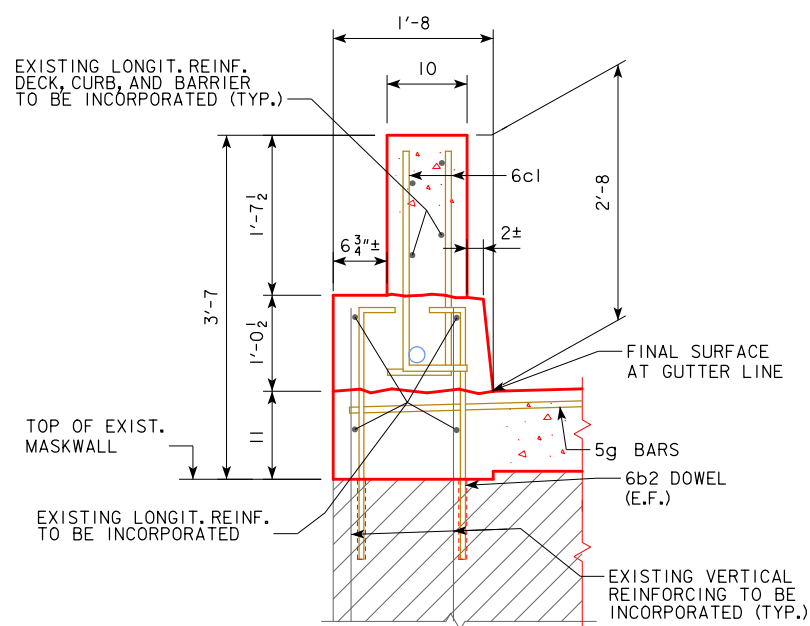
PART REMOVAL ELEVATION



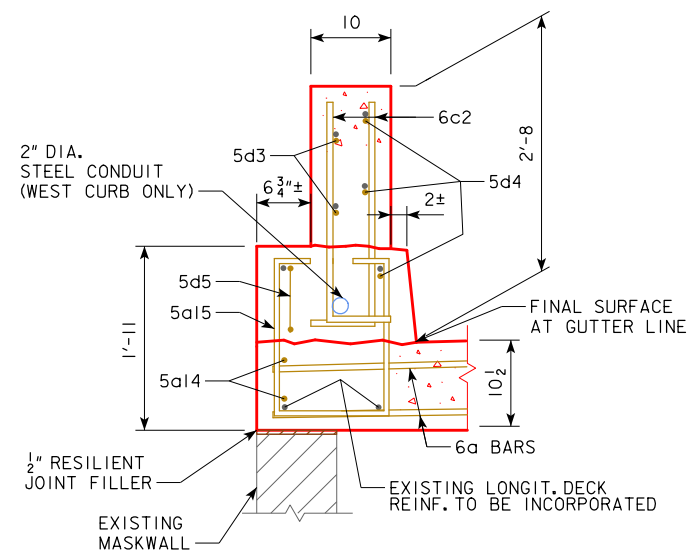
PART ELEVATION VIEW
(REINFORCING NOT SHOWN)



PART ELEVATION VIEW
(REINFORCING SHOWN)



SECTION A-A



SECTION B-B

- NOTES:
- THIS SHEET IS FOR THE WEST CORNER OF THE NORTH ABUTMENT AND EAST CORNER OF THE SOUTH ABUTMENT. SEE DESIGN SHEET 8 FOR OTHER LOCATIONS.
 - SEE DESIGN SHEET 10 FOR ABUTMENT NOTES, REINFORCING, BENT BAR DETAILS, AND EXPANSION FITTING DETAIL.
 - INCORPORATE VERTICAL AND LONGITUDINAL REINFORCING INTO NEW WORK WHERE POSSIBLE. CUT AS REQUIRED TO MAINTAIN CLEAR COVER.
 - CONSTRUCTION JOINT BETWEEN BARRIER AND CURB AND OPTIONAL CONSTRUCTION JOINT BETWEEN DECK/BACKWALL AND RAISED CURB SHALL BE INTENTIONALLY ROUGHENED.
 - EXISTING CONDUIT WITH EXPANSION FITTING IN WEST CURB TO BE PARTIALLY REMOVED AND REPLACED AS REQUIRED.

DESIGN FOR REPAIRS TO A 40°06'27.8" SKEW (L.A.)
267'-0" x 52'-0" CONTINUOUS WELDED PLATE GIRDER S.B. BRIDGE
 53'-0" END SPANS 72'-9" & 88'-3" INTERIOR SPAN
N.W. AND S.E. CURB & BARRIER DETAILS
 STA. 305+12.87 ± 1-380 NOVEMBER 2019
LINN COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 9 OF 12 FILE NO. 31615 DESIGN NO. 320

ABUTMENT NOTES:

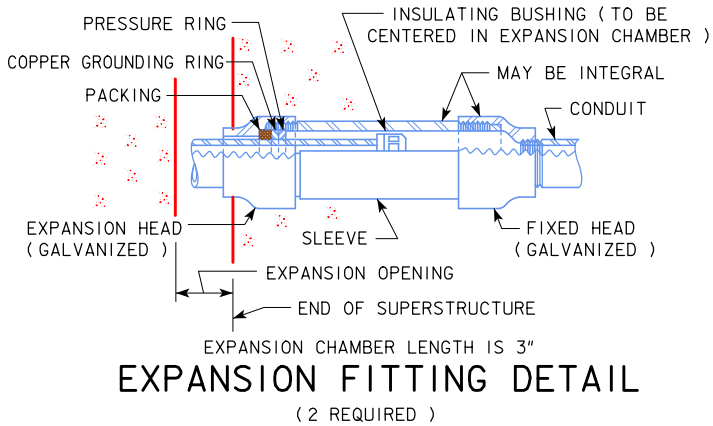
MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

CONCRETE SEALER SHALL BE APPLIED TO THE ABUTMENT BEARING SEAT IN ACCORDANCE WITH ARTICLE 2403.03, P, 3 OF THE STANDARD SPECIFICATIONS. IN ADDITION TO THE REQUIREMENTS OF ARTICLE 2403.03, P, 3, SEALER SHALL BE APPLIED TO THE WASH BETWEEN THE ABUTMENT SEAT STEPS AND AREAS INDICATED ON DESIGN SHEET 2.

THE COST OF FURNISHING AND PLACING CONCRETE SEALER IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (MISC.)".

IF NECESSARY TO PREVENT DAMAGE TO THE END OF THE BRIDGE DECK AND BACKWALL FROM CONSTRUCTION EQUIPMENT, AN APPROPRIATE METHOD OF PROTECTION APPROVED BY THE ENGINEER SHALL BE PROVIDED BY THE BRIDGE CONTRACTOR AT NO EXTRA COST TO THE STATE.

THE TOP OF THE ABUTMENT BACKWALLS AS SHOWN SHALL BE CONSTRUCTED USING STRUCTURAL CONCRETE CLASS C. PROMPTLY AFTER THE CONCRETE HAS BEEN PLACED AND VIBRATED AS PROVIDED IN ARTICLES 2403.03, C, AND 2403.03, D, OF THE STANDARD SPECIFICATIONS, IT SHALL BE HAND FINISHED TO PROVIDE A SMOOTH SURFACE WITH THE PROPER CROWN. THE CONTRACTOR MAY ELECT TO USE FORMWORK WHICH IS MARKED OR TRIMMED TO THE CORRECT ELEVATION AND CROWN TO PROVIDE THE LIMITS FOR THE HAND FINISHING.



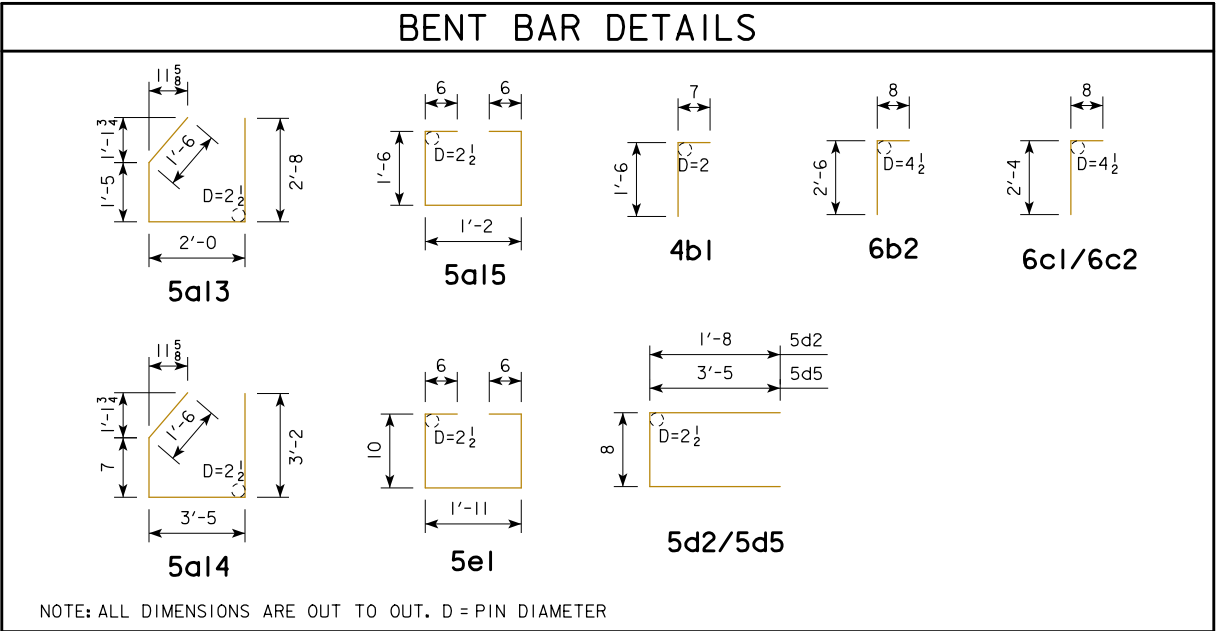
REINFORCING BAR LIST - SOUTH ABUTMENT AND DECK END					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6a1	DECK TRANSVERSE TOP & BOTTOM - STAGE 2		4	37'-8	226
6a2	DECK TRANSVERSE TOP - STAGE 2		1	37'-3	56
6a3	DECK TRANSVERSE BOTTL. - STAGE 2		1	36'-7	55
6a4	DECK TRANSVERSE TOP - STAGE 2		1	36'-0	54
6a5	DECK TRANSVERSE TOP - STAGE 1		1	36'-3	54
6a6	DECK TRANSVERSE TOP & BOTTOM - STAGE 1		6	36'-8	330
5a13	DECK ENDS TOP & BOTTOM - STAGE 2		2	7'-7	16
5a14	DECK ENDS TOP & BOTTOM - STAGE 1		2	8'-8	18
5a15	DECK CURB HOOP		7	5'-2	38
4b1	ABUTMENT BACKWALL DOWEL		138	2'-1	192
6b2	ABUTMENT BACKWALL ENDS DOWEL		11	3'-2	52
6c1	ABUTMENT BARRIER VERTICAL		12	3'-0	54
6c2	DECK BARRIER VERTICAL		15	3'-0	68
5d1	BARRIER, HORIZ. BACK FACE, SW		2	2'-3	5
5d2	CURB, HORIZ. BACK FACE, SW		1	4'-0	4
5d3	BARRIER, HORIZ. BACK FACE, SE		2	3'-5	7
5d4	BARRIER, HORIZ. FRONT FACE, SE		3	3'-0	9
5d5	CURB, HORIZ. BACK FACE, SE		1	7'-6	8
5e1	ABUTMENT DIAPHRAGM HOOP		54	4'-7	258
5e2	ABUTMENT DIAPHRAGM BETWEEN GIRDERS		12	9'-0	113
5g1	BACKWALL LONGIT. - STAGE 2		2	36'-10	77
5g2	BACKWALL LONGIT.FRONT FACE - STAGE 1		2	36'-5	76
REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)					1770

REINFORCING BAR LIST - NORTH ABUTMENT AND DECK END					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6a7	DECK TRANSVERSE TOP & BOTTOM - STAGE 1		4	36'-7	220
6a8	DECK TRANSVERSE TOP - STAGE 1		1	36'-0	54
6a9	DECK TRANSVERSE BOTTL. - STAGE 1		1	35'-5	53
6a10	DECK TRANSVERSE TOP - STAGE 1		1	34'-10	52
6a11	DECK TRANSVERSE TOP - STAGE 2		1	37'-4	56
6a12	DECK TRANSVERSE TOP & BOTTOM - STAGE 2		6	37'-9	340
5a13	DECK ENDS TOP & BOTTOM - STAGE 1		2	7'-7	16
5a14	DECK ENDS TOP & BOTTOM - STAGE 2		2	8'-8	18
5a15	DECK CURB HOOP		7	5'-2	38
4b1	ABUTMENT BACKWALL DOWEL		138	2'-1	192
6b2	ABUTMENT BACKWALL ENDS DOWEL		11	3'-2	52
6c1	ABUTMENT BARRIER VERTICAL		12	3'-0	54
6c2	DECK BARRIER VERTICAL		15	3'-0	68
5d1	BARRIER, HORIZ. BACK FACE, NE		2	2'-3	5
5d2	CURB, HORIZ. BACK FACE, NE		1	4'-0	4
5d3	BARRIER, HORIZ. BACK FACE, NW		2	3'-5	7
5d4	BARRIER, HORIZ. FRONT FACE, NW		3	3'-0	9
5d5	CURB, HORIZ. BACK FACE, NW		1	7'-6	8
5e1	ABUTMENT DIAPHRAGM HOOP		54	4'-7	258
5e2	ABUTMENT DIAPHRAGM BETWEEN GIRDERS		12	9'-0	113
5g4	BACKWALL LONGIT. - STAGE 1		2	35'-6	74
5g5	BACKWALL LONGIT.FRONT FACE - STAGE 2		2	37'-9	79
REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)					1770

CONCRETE PLACEMENT QUANTITIES

LOCATION	SOUTH ABUT.	NORTH ABUT.
ABUTMENT BACKWALL & CURBS	2.6	2.6
DECK END, ABUTMENT DIAPHRAGM, & CURBS	7.3	7.3
BARRIER RAILS	0.6	0.6
TOTAL (C.Y.)	10.5	10.5

BENT BAR DETAILS



DESIGN FOR REPAIRS TO A 40°06'27.8" SKEW (L.A.)

267'-0 x 52'-0 CONTINUOUS

WELDED PLATE GIRDER S.B. BRIDGE

53'-0 END SPANS72'-9 & 88'-3 INTERIOR SPAN

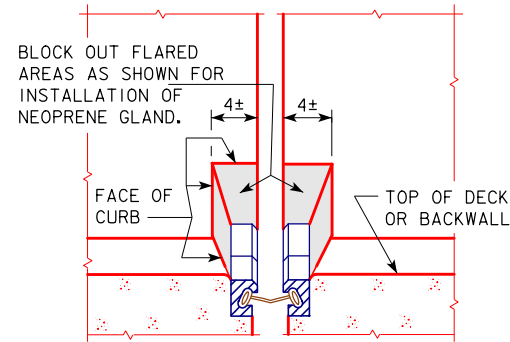
ABUTMENT DETAILS

STA. 305+12.87 @ 1-380NOVEMBER 2019

LINN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

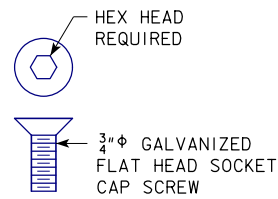
DESIGN SHEET NO. _10_ OF _12_ FILE NO. _31615_ DESIGN NO. 320



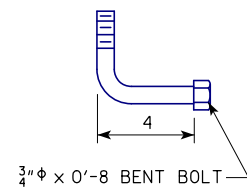
BLOCKOUT DETAIL

(DRAWN FOR 0° SKEW FOR ILLUSTRATIVE PURPOSES)

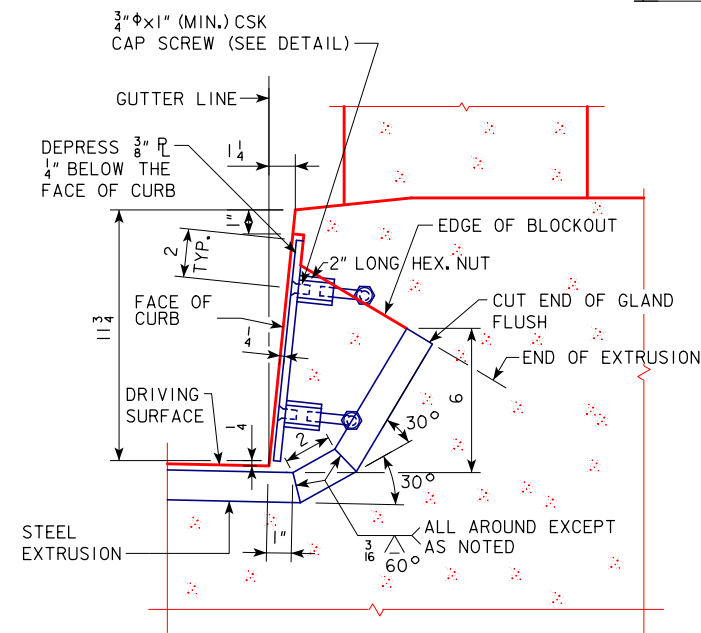
CONTRACTOR TO NOTE THAT THE CAP SCREW ANCHORAGE SYSTEM FOR THE $\frac{3}{8}$ " CURB PLATES ARE ALWAYS TO BE PLACED ON THE ONCOMING TRAFFIC SIDE.



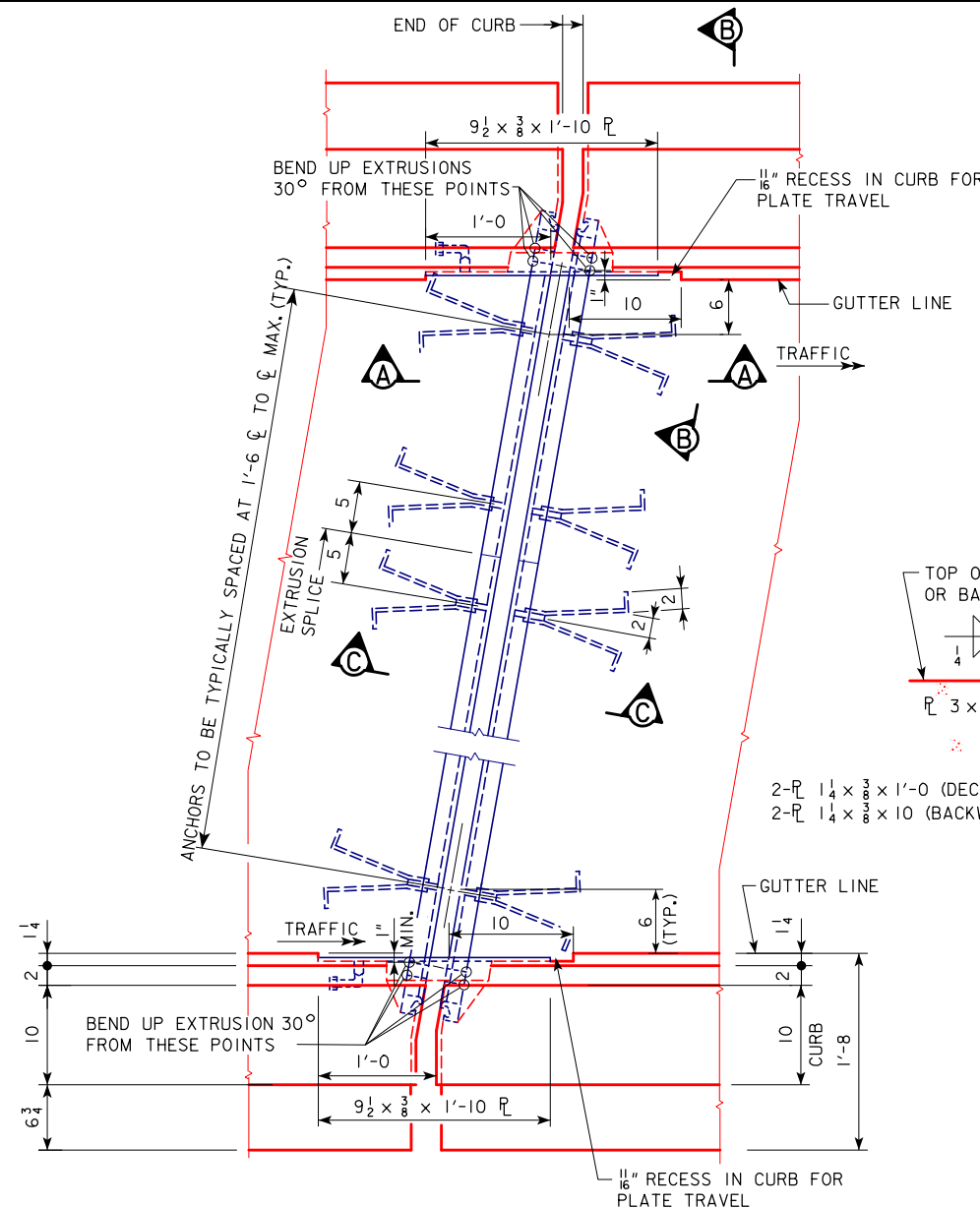
CAP SCREW DETAIL



BENT BOLT DETAIL

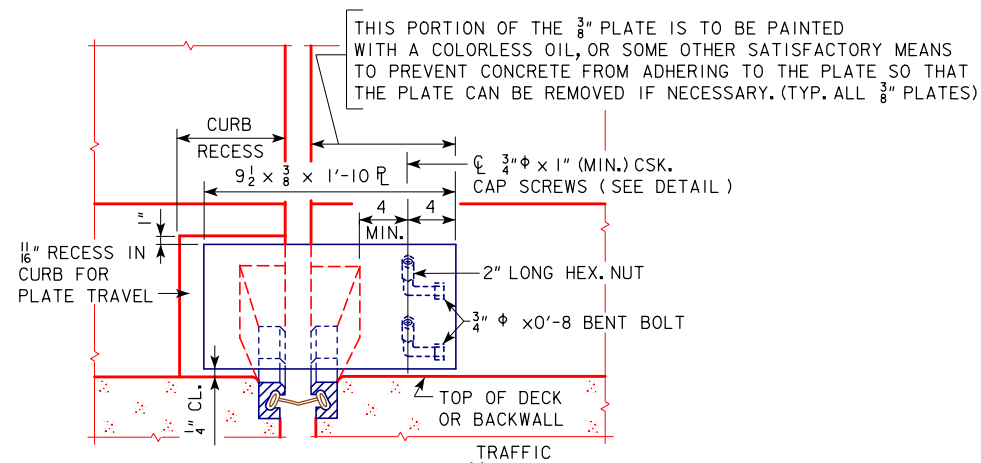


SECTION B-B



PART PLAN VIEW OF EXPANSION DEVICE

NOTE:
IT IS INTENDED THAT THE $\frac{1}{16}$ INCH RECESSED AREA BE FORMED SO THAT WHEN THE $\frac{3}{8}$ " PLATE IS INSTALLED THE PLATE WILL BE ABLE TO MOVE FREELY IN THIS RECESSED AREA.



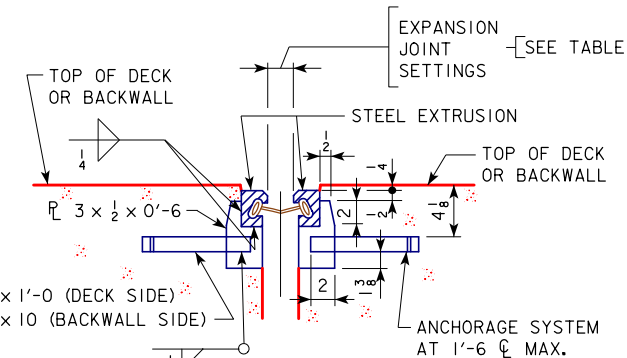
SECTION A-A

CURB PLATE NOTE:

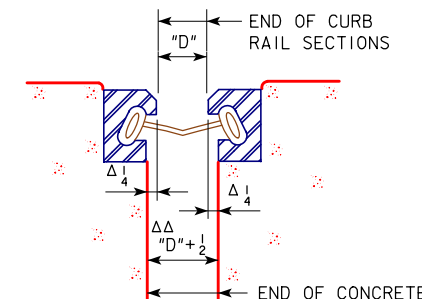
THE MATERIAL USED FOR THE CURB PLATES IS TO BE ASTM A36 STEEL. THE BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A307. THE PLATES, BOLTS, NUTS AND CAP SCREWS ARE TO BE GALVANIZED IN ACCORDANCE WITH ARTICLE 4100.07 OF THE STANDARD SPECIFICATIONS.

EXPANSION JOINT SETTINGS			
MANUFACTURER	90°F	50°F	10°F
WATSON-BOWMAN & ACME CORP.	1 1/2"	1 13/16"	2 1/8"

NOTE: JOINT SETTINGS FOR OTHER TEMPERATURES ARE PROPORTIONAL. TEMPERATURES SHOWN ARE CONCRETE DECK TEMPERATURES ON THE UNDERSIDE OR SHADED PORTION OF THE DECK.



SECTION C-C



EXPANSION OPENING DETAIL

Δ THIS DIMENSION MAY VARY SLIGHTLY DEPENDING ON MANUFACTURER FURNISHING THE JOINT.

ΔΔ USED FOR ALL OUT TO OUT DIMENSIONS OF SLAB. THE DIMENSION MAY VARY SLIGHTLY DEPENDING ON MANUFACTURER FURNISHING THE JOINT.

TABLE OF APPROVED EXPANSION DEVICES

MANUFACTURER	TYPE OF STEEL EXTRUSION	NEOPRENE GLAND	MINIMUM OPENING FOR GLAND INSTALLATION	CORRESPONDING MAXIMUM DECK TEMPERATURE
WATSON-BOWMAN & ACME CORP.	A	SE-300	1 1/2"	90°
APPROVED EQUAL				

NOTE:
SEE DESIGN SHEET 12 FOR EXPANSION DEVICE NOTES CONTAINING THE STEEL EXTRUSION NOTES, NEOPRENE GLAND NOTES, AND WATERTIGHT INTEGRITY TESTING AND REPAIR NOTES.

DESIGN FOR REPAIRS TO A 40°06'27.8" SKEW (L.A.)
267'-0 x 52'-0 CONTINUOUS WELDED PLATE GIRDER S.B. BRIDGE
53'-0 END SPANS 72'-9 & 88'-3 INTERIOR SPAN
EXPANSION DEVICE DETAILS
STA. 305+12.87 & 1-380 NOVEMBER 2019
LINN COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 11 OF 12 FILE NO. 31615 DESIGN NO. 320

STEEL EXTRUSION NOTES:

THE CONTRACTOR SHALL SUBMIT FOR APPROVAL SHOP DRAWINGS OF THE EXPANSION DEVICES SHOWING LAYOUT, MATERIAL TO BE USED, AND PROVISIONS FOR THE HOLDING DEVICE DURING PLACEMENT OF CONCRETE.

THE EXPANSION DEVICE SHALL BE GALVANIZED AFTER WELDING. ALL CURB PLATES INCLUDING THEIR ANCHORAGES SHALL BE GALVANIZED.

THE EXPANSION DEVICE IS TO BE PARALLEL TO GRADE.

CAP SCREWS SHALL BE COUNTERSUNK $\frac{1}{16}$ " BELOW TOP OF THE PLATE. THE MINIMUM GRADE OF STRUCTURAL STEEL FOR THE EXPANSION DEVICE SHALL BE ASTM A36.

BLOCKOUT DETAILS MAY BE ALTERED FROM THOSE SHOWN PROVIDED THE GLAND MAY BE INSTALLED AND REMOVED IF NECESSARY AND THE CURB AREA REMAINS WATERTIGHT.

SHOP SPLICES OF THE STEEL EXTRUSION WILL BE PERMITTED. PRIOR TO MAKING SHOP SPLICES STEEL EXTRUSION PIECES SHALL HAVE A MINIMUM LENGTH OF 15 FEET. THE INDIVIDUAL LENGTH OF PIECES SHALL BE CHOSEN SO THAT A MINIMUM NUMBER OF SPLICES IS REQUIRED. ALL PIECES SHALL BE JOINED WITH A PREQUALIFIED PARTIAL PENETRATION SINGLE GROOVE WELD DETAILED ON THE SHOP DRAWING. ALL SURFACES NOT IN CONTACT WITH CONCRETE ARE TO BE GROUND FLUSH. NO WELD SHALL BE PERMITTED IN THE INTERNAL SECTION OF THE EXTRUSION WHERE THE NEOPRENE GLAND IS TO BE INSTALLED.

THE NUMBER OF FEET OF STEEL EXTRUSION INSTALLED SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT BASED ON PLAN QUANTITIES. THE PRICE BID FOR "STEEL EXTRUSION JOINT W/NEOPRENE" SHALL INCLUDE THE COST OF FURNISHING BUT NOT THE COST OF INSTALLING THE NEOPRENE GLAND. THE CONTRACT PRICE BID FOR "STEEL EXTRUSION JOINT W/NEOPRENE" SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING STEEL EXTRUSIONS. THIS WORK WILL CONSIST OF FURNISHING ALL REQUIRED MATERIALS, (INCLUDING THE $\frac{3}{8}$ " PLATES AT THE CURBS AND THEIR ANCHORAGE SYSTEMS), AND THE INSTALLATION AND ADJUSTMENT OF THE EXPANSION JOINTS IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THE FURNISHING AND INSTALLATION OF ALL NECESSARY HARDWARE AND ACCESSORIES AS SUPPLIED BY THE EXPANSION JOINT MANUFACTURER ARE TO BE INCLUDED IN THIS WORK, INCLUDING THE ANCHORAGE SYSTEM AND ANY TEMPORARY ERECTION MATERIAL. ALL WORK AND MATERIALS FOR THE INSTALLATION OF THE EXPANSION JOINTS ARE TO COMPLY WITH THE WRITTEN RECOMMENDATIONS OF THE EXPANSION JOINT MANUFACTURER.

FIELD CONSTRUCTION NOTES:

IF THE STEEL EXTRUSION IS SPLICED IN THE FIELD, THE SPLICE LOCATION SHALL BE DETAILED ON THE SHOP DRAWINGS. THE CONNECTION DETAILS SHALL INCLUDE TAB PLATES AND PREPARED ENDS TO ACCOMMODATE THE NECESSARY WELDING. SEE DETAILS IN THESE PLANS.

GALVANIZED COATING DAMAGE BY FIELD WELDING SHALL BE REPAIRED IN ACCORDANCE WITH MATERIALS I.M. 410.

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.

WATERTIGHT INTEGRITY TESTING AND REPAIR NOTES:

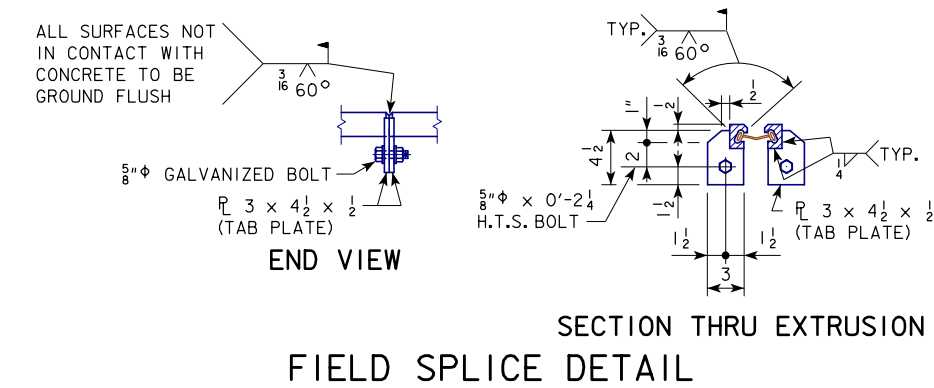
AFTER INSTALLATION OF EACH NEOPRENE GLAND, THE CONTRACTOR SHALL PERFORM WATERTIGHT INTEGRITY TESTS AT THE DECK LEVEL TO DETECT ANY LEAKAGE. THE TESTS ARE TO CHECK FOR LEAKAGE AT THE UPTURNED ENDS OF THE EXPANSION DEVICE AND FOR LEAKAGE ALONG THE EXPANSION DEVICE ACROSS THE DECK AND ANY MEDIANS OR SIDEWALKS. 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 40°06'27.8" SKEW (L.A.)

267'-0 x 52'-0 CONTINUOUS

WELDED PLATE GIRDER S.B. BRIDGE

53'-0 END SPANS72'-9 & 88'-3 INTERIOR SPAN

EXPANSION DEVICE NOTES

STA. 305+12.87 ± 1-380NOVEMBER 2019

LINN COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 12 OF 12FILE NO. 31615DESIGN NO. 320

100-1D 10-18-05				
PROJECT DESCRIPTION				
Perform repair work on I-380 bridges over 5th Ave SW/Diagonal Dr SW.				

100-0A 10-28-97					
ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT)					
Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2518-6910000	SAFETY CLOSURE	EACH	2	
2	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	108.63	
3	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS	STA	521.40	
4	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	EACH	16	
5	2527-9263180	PAVEMENT MARKINGS REMOVED	STA	108.63	
6	2527-9263190	SYMBOLS AND LEGENDS REMOVED	EACH	16	
7	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	1600.0	
8	2528-8445110	TRAFFIC CONTROL	LS	1.00	
9	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS)	CDAY	14	
10	2551-0000110	TEMPORARY CRASH CUSHION	EACH	4	
11	2599-9999009	REMOVE AND REINSTALL EXISTING STEEL BEAM GUARDRAIL	LF	100.0	
12	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN DIA.	LF	300.0	
13	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	300.0	

100-4A 10-29-02		
ESTIMATE REFERENCE INFORMATION		
Item No.	Item Code	Description
1	2518-6910000	SAFETY CLOSURE Refer to Tab 108-13A on Sheet C.2 for locations and additional details. Refer also to J sheets.
2	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED
3	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS
4	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED
5	2527-9263180	PAVEMENT MARKINGS REMOVED
6	2527-9263190	SYMBOLS AND LEGENDS REMOVED Refer to Tab 108-22 and Tab 108-29 on Sheet C.3 for locations and additional details. Refer also to J sheets.
7	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE Refer to Tab 108-33 on Sheet C.2 for locations and additional details. Refer also to Sheet B.1.
8	2528-8445110	TRAFFIC CONTROL Refer to Tab 108-23A on Sheet J.1 for details.
9	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS) Refer to J sheets for details.
10	2551-0000110	TEMPORARY CRASH CUSHION Refer to Tab 108-30 on Sheet C.2 for locations and additional details.
11	2599-9999009	REMOVE AND REINSTALL EXISTING STEEL BEAM GUARDRAIL This item is for the removal and reinstallation of steel beam guardrail. Quantity is estimated at 25 linear feet at each of the four approach corners of the two bridges. Method of Measurement: Linear feet of guardrail satisfactorily removed and reinstalled. Basis of Payment: Payment will be at the contract unit price per linear foot. Payment includes removing, storing, and reinstalling existing guardrail, including furnishing all materials, equipment, tools, and labor necessary to complete said work. Payment also includes furnishing any materials that are not serviceable at the time of reinstallation, including posts, spacer blocks, offset brackets, end anchors, terminal devices, hardware, delineators, and object markers.
12	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN DIA. Refer to Tab 100-19 on Sheet C.1. The tabulation includes estimated locations for placement of perimeter and slope sediment control device to address possible erosion during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements.
13	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE This item is included for perimeter and slope sediment control device removal required for staging reasons, for replacement (replacement to be paid separately), or for areas that have achieved 70% permanent growth.

100-19 04-19-16						
PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE						
Possible Standards: EC-204						
Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
304+00.00	304+00.00	Med.			40.0	
306+50.00	306+50.00	Med.			40.0	
303+20.00	303+50.00	Rt			40.0	SE corner of NB Bridge
305+70.00	306+00.00	Rt			40.0	NE corner of NB Bridge
304+30.00	304+60.00	Lt			40.0	SW corner of SB bridge
306+80.00	307+10.00	Lt			40.0	NW corner of SB bridge

232-3B 04-16-19
EROSION CONTROL (URBAN SEEDING)
Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed area as follows: Place seed and fertilize according to the requirements of Article 2601.03,C,4 and Section 4169 of the Standard Specifications. Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications. Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are incidental to mobilization and will not be paid for separately.

