

BRIDGE DECK OVERLAY LETTING DATE 2-16-2021
IMN-080-6(395)206--0E-48

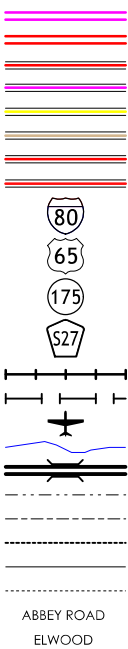
IOWA COUNTY - DESIGN 121/221

IOWA COUNTY

LEGEND

INTERSTATE HIGHWAY
PRIMARY HIGHWAY-DIVIDED
PRIMARY HIGHWAY
PORTLAND CEMENT CONCRETE ROAD
ASPHALT ROAD
BITUMINOUS ROAD
GRAVEL ROAD
EARTHEN ROAD

INTERSTATE HIGHWAY
UNITED STATES HIGHWAY
STATE HIGHWAY
COUNTY HIGHWAY
RAILROAD
PIPELINE
AIRPORT
HYDROLOGY
BRIDGE
STATE BOUNDARY
COUNTY BOUNDARY
CORPORATE BOUNDARY
TOWNSHIP LINE
SECTION LINE
ROAD NAMES
UNINCORPORATED PLACE



PLANS OF PROPOSED IMPROVEMENTS ON THE

INTERSTATE ROAD SYSTEM

IOWA COUNTY

BRIDGE DECK OVERLAY

I-80 OVER SR V38

AT JUNCTION SR V38

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.

	TOTAL SHEETS
	53
PROJECT NUMBER	
IMN-080-6(395)206-0E-48	
R.O.W. PROJECT NUMBER	
PROJECT IDENTIFICATION NUMBER	
16-48-080-030	

INDEX OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE SHEET - DESIGN 121
3-15	DESIGN 121 - BRIDGE PLANS
16	ESTIMATE SHEET - DESIGN 221
17-29	DESIGN 221 - BRIDGE PLANS
C.1	ESTIMATE SHEET FOR ROADWAY
A.1 - U.2	ROADWAY SHEETS

REVISIONS



STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET NUMBER C.2

DESIGN DATA RURAL

REFER TO INDIVIDUAL SITUATION PLANS FOR TRAFFIC DATA INFORMATION

INDEX OF SEALS

SHEET NO.	NAME	TYPE
I	DEAN G. BIERWAGEN	STRUCTURAL DESIGN
A.1	TAYLOR R. THEULEN	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 Dean G. Bierwagen Date 9/14/2020
Printed or Typed Name

My license renewal date is December 31, 2020

Pages or sheets covered by this seal: SHEETS 1 THRU 29 OF 53

PROJECT DIRECTORY NAME: 4808003016

DESIGN TEAM Stanley Consultants Inc.

ENGLISH

IOWA DOT * BRIDGES AND STRUCTURES BUREAU

FILE NO. 31539

IOWA COUNTY

PROJECT NUMBER IMN-080-6(395)206--0E-48

SHEET NUMBER 1

ESTIMATED BRIDGE QUANTITIES - DESIGN 221					
ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
1.	2401-6750001	REMOVALS, AS PER PLAN	LS	1.00	
2.	2402-2720000	EXCAVATION, CLASS 20	CY	24.0	
3.	2403-0100000	STRUCTURAL CONCRETE (MISC.)	CY	30.5	
4.	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	5497	
5.	2413-0698074	DECK REPAIR, CLASS A	SY	165.1	
6.	2510-6745640	REMOVAL OF EXISTING P.C. OVERLAY	SY	550.4	
7.	2533-4980005	MOBILIZATION	LS	1.00	
		ALTERNATE AA OPTION 1			
8A.	2413-0698066	DECK OVERLAY (CLASS 0 PCC)	SY	550.4	
		ALTERNATE AA OPTION 2			
8B.	2413-0698067	DECK OVERLAY (CLASS HPC-0 PCC)	SY	550.4	

ESTIMATE REFERENCE INFORMATION

ITEM NO.	DESCRIPTION
1.	INCLUDES ITEMS AS DESCRIBED IN THE "GENERAL NOTES" ON DESIGN SHEET 2 AND "REMOVAL NOTES" ON DESIGN SHEET 6. DOES NOT INCLUDE REMOVAL OF APPROACH PAVEMENT AND GUARDRAIL. 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 EXTRA COST TO THE STATE.
2.	INCLUDES EXCAVATION AT EXISTING ABUTMENTS. INCLUDES COST OF TEMPORARY SHORING DURING STAGED CONSTRUCTION.
3.	INCLUDES ALL INSTALLATION COST FOR DOWELS. INCLUDES FURNISHING AND PLACING ALL RESILIENT JOINT FILLER REQUIRED. INCLUDES FURNISHING AND INSTALLING 1 INCH DIAMETER PLASTIC CONDUIT IN BARRIER ENDS.
4.	INCLUDES MECHANICAL SPLICES IN THE ABUTMENT BACKWALL AND SLAB.
8A/8B.	INCLUDES CLEANING EXISTING CONCRETE AT CURBS AND BARRIERS. INCLUDES FURNISHING AND PLACING CONCRETE SEALER AT CURBS AND BARRIERS.

ROADWAY QUANTITIES
SHOWN ON SHEET C.1

DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)

125'-10 x 40'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM E.B. BRIDGE

38'-11½ END SPANS47'-11 INTERIOR SPAN

ESTIMATED BRIDGE QUANTITIES

STA. 58+57.18, 37.0' RT. (CL 1-80)DECEMBER 2020

IOWA COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 14FILE NO. 31539DESIGN NO. 221

GENERAL NOTES:

THIS DESIGN IS FOR THE REPAIRS TO THE EXISTING 125'-10 x 40'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE, ON EASTBOUND I-80 OVER S.R. V38. ELECTRONIC COPIES OF ORIGINAL DESIGN 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 NO. 162, 178, 282 AND 210). REPAIR SHALL CONSIST OF:

1. REMOVE EXISTING OVERLAY, SCARIFY DECK, COMPLETE CLASS A REPAIRS, AND OVERLAY THE BRIDGE WITH PCC.
2. REMOVE BACKWALL AND CONCRETE DIAPHRAGM. INSTALL NEW SEMI-INTEGRAL ABUTMENT.
3. REMOVE BARRIER END SECTIONS AND PARTIALLY REMOVE BARRIERS TO ACCOMMODATE ABUTMENT RECONSTRUCTION.
4. SEAL TOP AND INSIDE FACE OF EXISTING BARRIER RAILS.
5. REMOVE AND REINSTALL EXISTING GUARDRAIL ON WEST BRIDGE APPROACH.
6. REMOVE GUARDRAIL FROM SOUTHEAST CORNER OF BRIDGE.
7. REMOVE AND REPLACE FIRST PANEL OF APPROACHES (20'-0).

FAINT LINES ON PLANS INDICATE THE EXISTING STRUCTURE.

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 STARTING DATE.

EASTBOUND I-80 WILL BE OPEN TO TRAFFIC DURING CONSTRUCTION. SEE TRAFFIC CONTROL PLAN NOTE.

THE LUMP SUM BID FOR "REMOVALS AS PER PLAN" INCLUDE ALL COSTS ASSOCIATED WITH REMOVING THE ABUTMENT BACKWALLS AND DIAPHRAGMS, PORTIONS OF THE BARRIERS, AND PORTIONS OF THE DECK AND CURBS AT THE ABUTMENTS. 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 EXTRA COST TO THE STATE.

IT SHALL BE THE BRIDGE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SITES FOR EXCESS EXCAVATED MATERIAL. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES.

NO PRELIMINARY DECK SURVEY IS SHOWN. THE PLAN QUANTITY FOR "DECK REPAIR, CLASS A" IS ESTIMATED AS 30% OF THE TOTAL DECK AREA. THE ACTUAL QUANTITY IS DETERMINED BY THE ENGINEER AFTER THE P.C.C. OVERLAY HAS BEEN REMOVED. ACTUAL SPALLED AND HOLLOW AREAS AS DETERMINED BY THE ENGINEER SHALL BE REPAIRED.

PRESENT DECK THICKNESS IS ABOUT 7½ INCHES, INCLUDING EXISTING OVERLAY. THE CONTRACTOR SHALL EXERCISE CARE IN REMOVING CONCRETE IN ORDER TO PREVENT UNNECESSARY UNBONDING OF REINFORCING STEEL.

CONSTRUCTION SHALL BE DONE IN STAGES WITH AT LEAST TWO LANES TRAFFIC MAINTAINED DURING REQUIRED HOURS, IN ACCORDANCE WITH "TRAFFIC CONTROL PLAN" NOTE.

CONSTRUCTION STAGES 4, 5, & 6 AS DETAILED ON THESE PLANS MAY BE REVISED AT THE CONTRACTOR'S OPTION SUBJECT TO THE ENGINEER'S APPROVAL.

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

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

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.

READY MIX TRUCKS ARE NOT ALLOWED ON THE PREPARED PORTION OF THE BRIDGE DECK.

THE TOP AND INTERIOR FACES OF THE EXISTING CONCRETE BARRIERS ARE TO BE CLEANED AND SEALED IN ACCORDANCE WITH ARTICLE 2403.03, P, OF THE STANDARD SPECIFICATIONS. IF NEW SECTIONS OF BARRIERS ARE CONSTRUCTED, THE NEW SECTIONS SHALL NOT BE SEALED. ALL COSTS ASSOCIATED WITH CLEANING AND SEALING OF THE CONCRETE BARRIERS SHALL BE INCLUDE IN THE UNIT PRICE BID ITEM "DECK OVERLAY".

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5d1 IS 5⁄8 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.

CONSTRUCTION STAGES FOR WESTBOUND I-80 (STAGES 1, 2, & 3) AS DETAILED IN DESIGN NO. 121 MAY BE REVERSED WITH EASTBOUND I-80 (STAGES 4, 5, & 6) AS DETAILED IN DESIGN NO. 221 AT THE CONTRACTOR'S OPTION SUBJECT TO THE ENGINEER'S APPROVAL.

THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING (SHEET PILE OR OTHER) TO PREVENT THE EARTH UNDER THE TRAFFIC LANE, FROM SLOUGHING IN DURING CONSTRUCTION. ALL COST OF SHORING, WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO DIRECT PAYMENT WILL BE MADE. ALL MATERIAL USED FOR SHORING SHALL REMAIN THE PROPERTY OF THE CONTRACTOR, SHORING IS TO BE REMOVED ONLY AFTER BACKFILLING HAS BEEN COMPLETED. THE CONTRACTOR SHALL SUBMIT SHORING PLANS FOR REVIEW. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, ARTICLE 1107.07 OF THE STANDARD SPECIFICATIONS, STILL APPLIES.

THE BRIDGE DECK IS COVERED WITH A 1¾ INCH THICK PORTLAND CEMENT CONCRETE OVERLAY. THE CONTRACTOR SHALL NOTE THE REDEFINING OF THE CLASSIFICATION LINE (BOUNDARY BETWEEN REPAIR AND OVERLAY) FOR THIS PROJECT DUE TO THE EXISTING 1¾ INCH OVERLAY. THE CLASSIFICATION LINE WILL BE DEFINED AS 2 INCHES BELOW THE TOP OF EXISTING OVERLAY. THIS WILL NECESSITATE THE REMOVAL OF THE EXISTING BRIDGE DECK OVERLAY BEFORE PLACING THE PROPOSED NEW BRIDGE DECK OVERLAY.

ALL COSTS ASSOCIATED WITH THE REMOVAL OF THE EXISTING OVERLAY SHALL BE INCLUDED IN THE BID ITEM "REMOVAL OF EXISTING P.C.C. OVERLAY". REMOVAL OF EXISTING OVERLAY SHALL BE COMPUTED IN SQUARE YARDS FROM THE MEASUREMENT OF AREAS REMOVED. THE CONTRACTOR WILL BE PAID THE CONTRACT PRICE PER SQUARE YARD FOR FURNISHING ALL EQUIPMENT AND LABOR NECESSARY TO REMOVE THE CONCRETE TO WITHIN ¼ INCH ABOVE THE CLASSIFICATION LINE. ALL COSTS, INCLUDING FURNISHING EQUIPMENT AND LABOR, ASSOCIATED WITH REMOVAL OF THE NEXT ¼ INCH OF CONCRETE (TO THE CLASSIFICATION LINE) SHALL BE INCLUDED IN THE BID ITEM "DECK OVERLAY".

UPON COMPLETION OF THE REMOVAL OF CONCRETE DOWN TO THE CLASSIFICATION LINE, THE ENGINEER SHALL DETERMINE THE AREAS OF BRIDGE DECK TO BE REPAIRED AS "DECK REPAIR, CLASS A". ACTUAL HOLLOW AREAS, AS DETERMINED BY THE ENGINEER, SHALL BE REPAIRED.

BEFORE PROCEEDING WITH BRIDGE DECK OVERLAY AND BRIDGE DECK REPAIR THE CONTRACTOR MAY COMPLETE ALL STAGES OF OTHER CONSTRUCTION. ANY CONSTRUCTION SHALL HAVE STAGE LIMITS, TEMPORARY BARRIER RAIL AND TRAFFIC CONTROL AS DETAILED ON THESE PLANS. TEMPORARY BARRIER RAIL AND TRAFFIC CONTROL MAY BE ADJUSTED TO FIT THE ACTUAL WORK AND STORAGE AREA. WHEN BACKWALLS AND/OR APPROACH SECTIONS ARE TO BE REBUILT TO A RAISED SURFACE, AND WHEN DECK OVERLAY IS NOT A PART OF THE SAME STAGE, THE CONTRACTOR SHALL PROVIDE FOR PROFILE TRANSITION WITH H.M.A. SURFACING. PROFILE TRANSITION SHALL BE TAPERED AT A RATE OF 25'-0 FOR 1½ INCHES OF RAISE. THE H.M.A. TRANSITION MATERIAL SHALL BE A COMMERCIAL GRADE HOT SURFACING MIX OR A MIX APPROVED BY THE ENGINEER H.M.A. MAY BE PLACED BY HAND METHODS AND MAY BE COMPACTED BY ANY APPROVED METHOD. ALL COSTS FOR ADDITIONAL TRAFFIC CONTROL, REPOSITIONING OF BARRIER AND H.M.A. SURFACING SHALL BE BORNE BY THE CONTRACTOR.

SURFACE PREPARATION SHALL BE ACCORDING TO ARTICLE 2413.03, B AND C OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL ENSURE THE VERTICAL EDGE OF THE STAGE 4 AND 5 OVERLAY IS PREPARED FOR PLACEMENT OF THE NEW CONCRETE FOR STAGE 5 AND 6 BY SANDBLASTING OR SHOT BLASTING, FOLLOWED BY AN AIR BLAST. ENSURE THIS CLEANING REMOVES ALL DIRT, OIL, AND OTHER FOREIGN MATERIAL. ENSURE IT REMOVES ALL UNSOUND CONCRETE, LAITANCE, OR LOOSE MATERIAL FROM THE SURFACE AND EDGES AGAINST WHICH THE SURFACE MIXTURE IS TO BE PLACED. THE CLEANING SHOULD ROUGHEN THE SURFACE IN ORDER TO PROVIDE SATISFACTORY BOND WITH THE SURFACING MIXTURE.

SCREED EXTENSION OR OVERLAY BEYOND THE LONGITUDINAL CONSTRUCTION JOINT MAY BE LESS THAN THE 6 INCHES REQUIRED BY ARTICLE 2413.03, A, 4, OF THE STANDARD SPECIFICATIONS. THE ENGINEER MAY REQUIRE ADDITIONAL VIBRATION OR SPECIAL FINISHING PROCEDURES ADJACENT TO THE LONGITUDINAL CONSTRUCTION JOINT.

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.

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.

DOWEL SETTING NOTES:

THE 5d10 BARRIER BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 10" DEEP. THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE GROUT 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.

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

I	TEMPORARY SHORING

DESIGN HISTORY AT THIS SITE (INCLUDES THIS DESIGN)	
DES. NO.	TYPE OF WORK
162	ORIGINAL DESIGN
178	RETROFIT RAIL
282	BRIDGE DECK OVERLAY
210	BARRIER END SECTIONS
221	BRIDGE DECK OVERLAY

TRAFFIC CONTROL PLAN

NOTE: E.B. I-80 WILL BE OPEN TO THRU TRAFFIC. REFER TO THE TRAFFIC CONTROL PLAN SHOWN ON SHEET J.1.

DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)

125'-10 x 40'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM E.B. BRIDGE

38'-11½ END SPANS 47'-11 INTERIOR SPAN

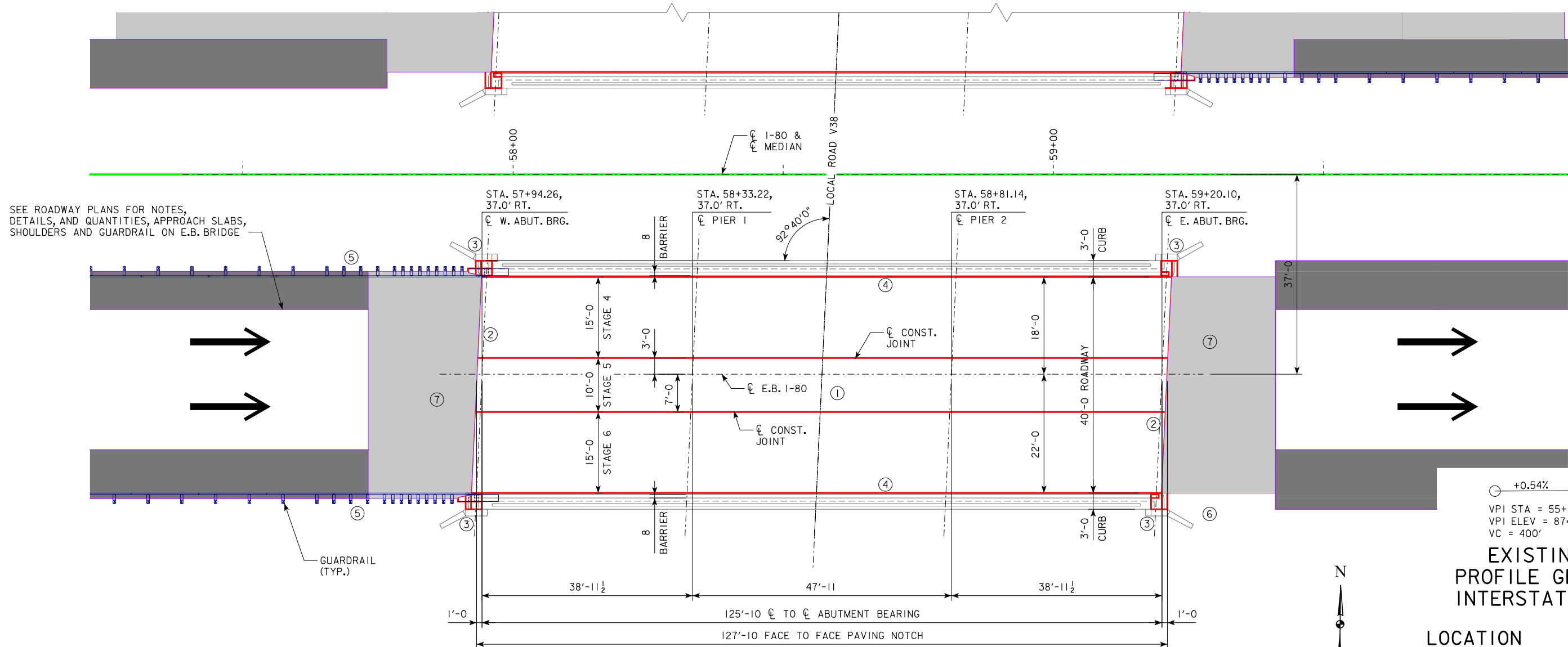
GENERAL NOTES

STA. 58+57.18, 37.0' RT. (☒ I-80) DECEMBER 2020

IOWA COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 14 FILE NO. 31539 DESIGN NO. 221



SITUATION PLAN

- REPAIR SHALL CONSIST OF:
- ① REMOVE EXISTING OVERLAY, SCARIFY DECK, COMPLETE CLASS A REPAIRS, AND OVERLAY THE BRIDGE WITH PCC.
 - ② REMOVE BACKWALL AND CONCRETE DIAPHRAGM. INSTALL NEW SEMI-INTEGRAL ABUTMENT.
 - ③ REMOVE BARRIER END SECTIONS AND PARTIALLY REMOVE BARRIERS TO ACCOMMODATE ABUTMENT RECONSTRUCTION.
 - ④ SEAL TOP AND INSIDE FACE OF EXISTING BARRIER RAILS.
 - ⑤ REMOVE AND REINSTALL EXISTING GUARDRAIL ON WEST BRIDGE APPROACH.
 - ⑥ REMOVE GUARDRAIL FROM SOUTHEAST CORNER OF BRIDGE.
 - ⑦ REMOVE AND REPLACE FIRST PANEL OF APPROACHES.

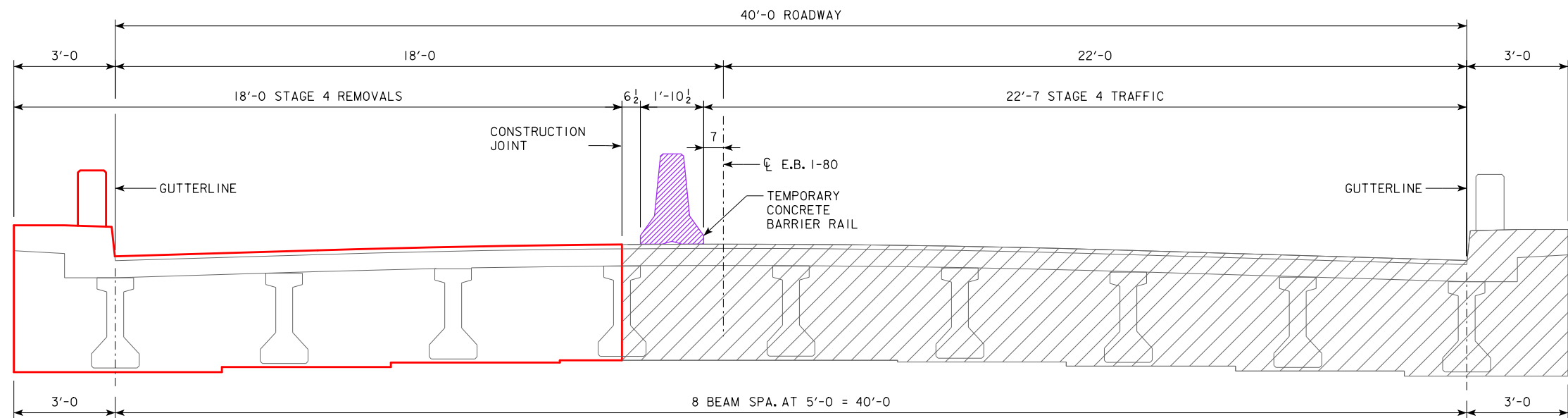
+0.54%
VPI STA = 55+50
VPI ELEV = 874.10
VC = 400'
**EXISTING
PROFILE GRADE
INTERSTATE 80**

LOCATION
E.B. I-80 OVER SECONDARY ROAD V38
T-80N R-12W
SECTION 32
HARTFORD TOWNSHIP
IOWA COUNTY
FHWA NO. 29720
MAINT. NO. 4805.8R080
LATITUDE: 41.695963°
LONGITUDE: -92.279831°

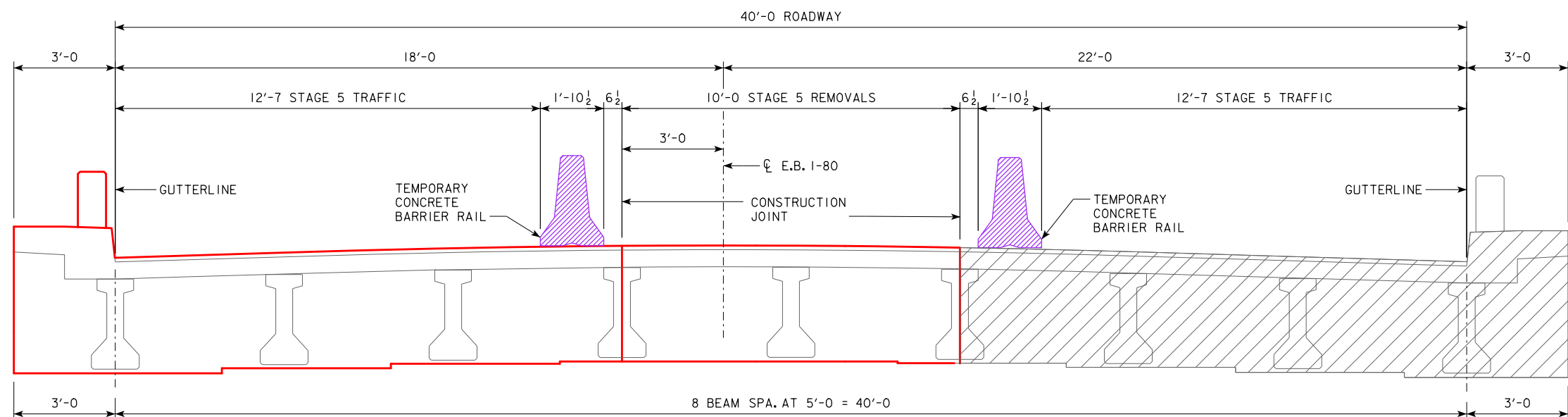
TRAFFIC ESTIMATE

2018 AADT	<u>28,900</u>	V.P.D.
TRUCKS	<u>28</u>	%
TOTAL 20 YEAR DESIGN ESALS	<u>24,000,000</u>	
INCLUDES EB AND WB LANES		

DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)
**125'-10 x 40'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM E.B. BRIDGE**
38'-11½ END SPANS 47'-11 INTERIOR SPAN
SITUATION PLAN
STA. 58+57.18, 37.0' RT. (CL I-80) DECEMBER 2020
IOWA COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 3 OF 14 FILE NO. 31539 DESIGN NO. 221

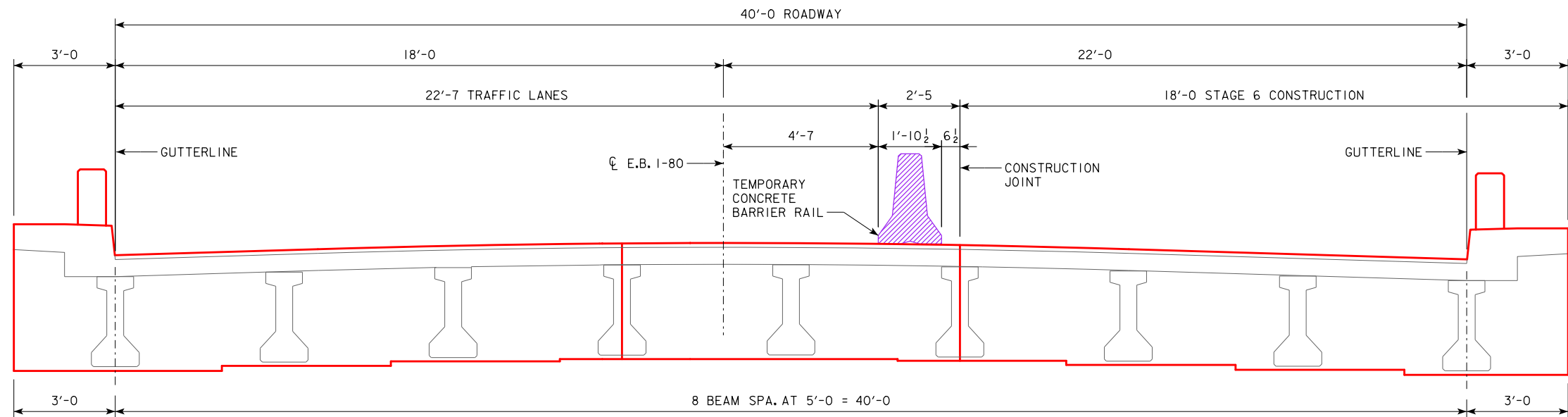


TYPICAL SECTION STAGE 4 CONSTRUCTION AT ABUTMENT
(LOOKING EAST)



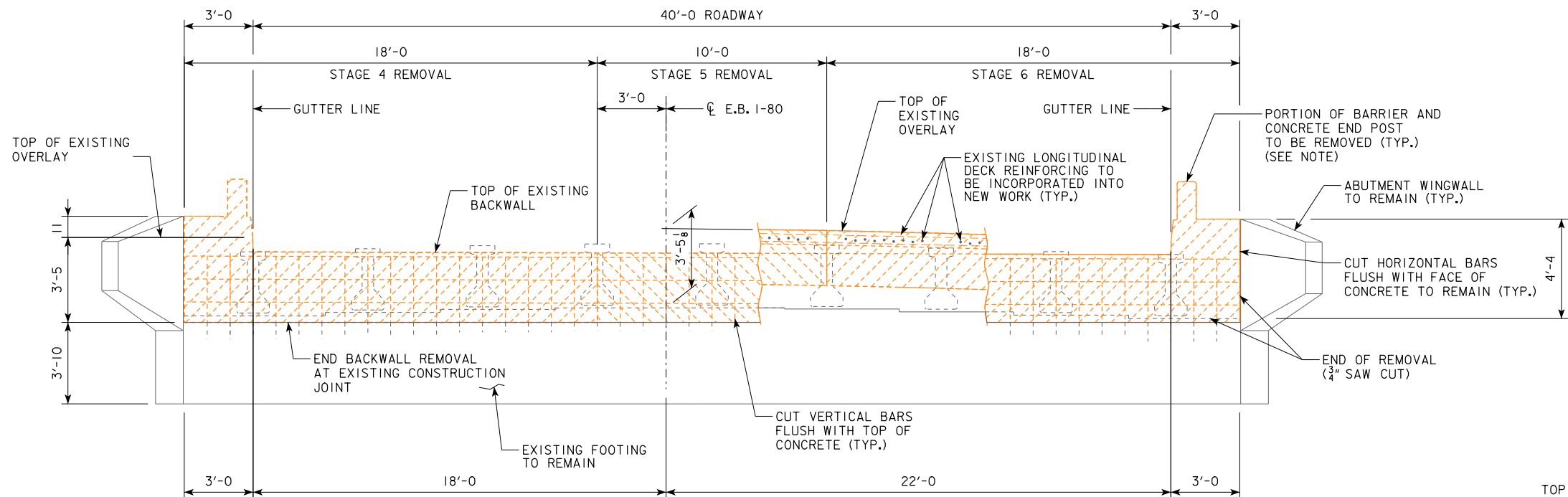
TYPICAL SECTION STAGE 5 CONSTRUCTION AT ABUTMENT
(LOOKING EAST)

DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)
**125'-10 x 40'-0 PRETENSIONED
 PRESTRESSED CONCRETE BEAM E.B. BRIDGE**
 38'-11 1/2" END SPANS 47'-11" INTERIOR SPAN
STAGING DETAILS
 STA. 58+57.18, 37.0' RT. (E.B. I-80) DECEMBER 2020
IOWA COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 4 OF 14 FILE NO. 31539 DESIGN NO. 221

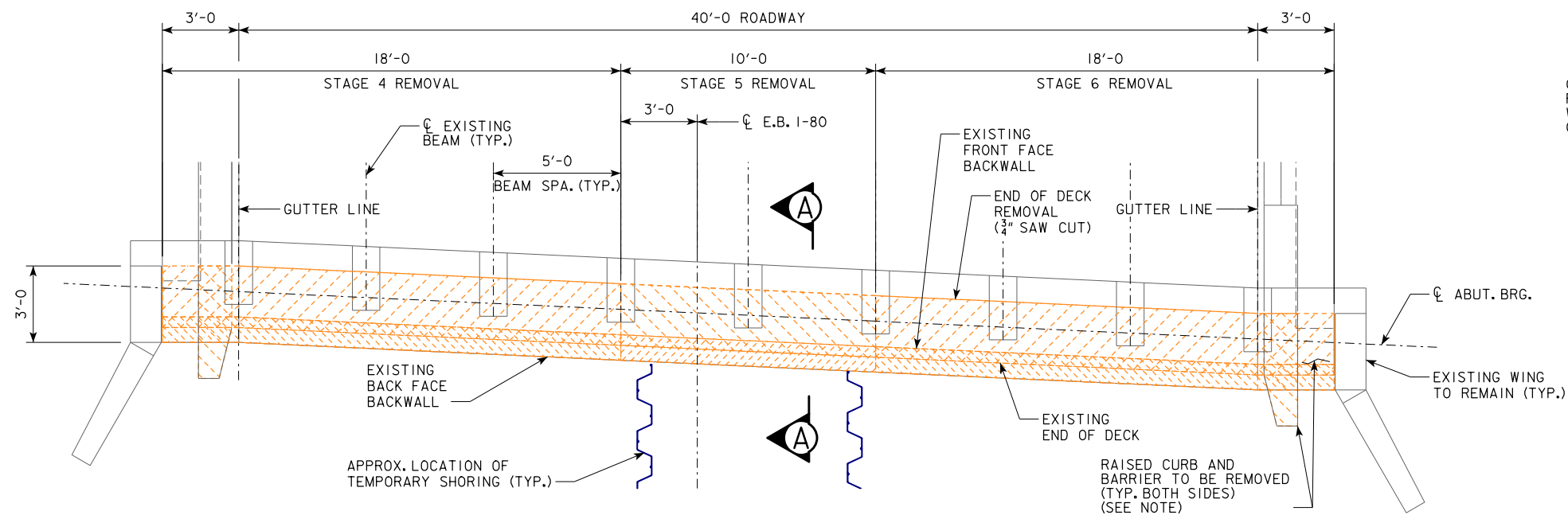


TYPICAL SECTION STAGE 6 CONSTRUCTION AT ABUTMENT
(LOOKING EAST)

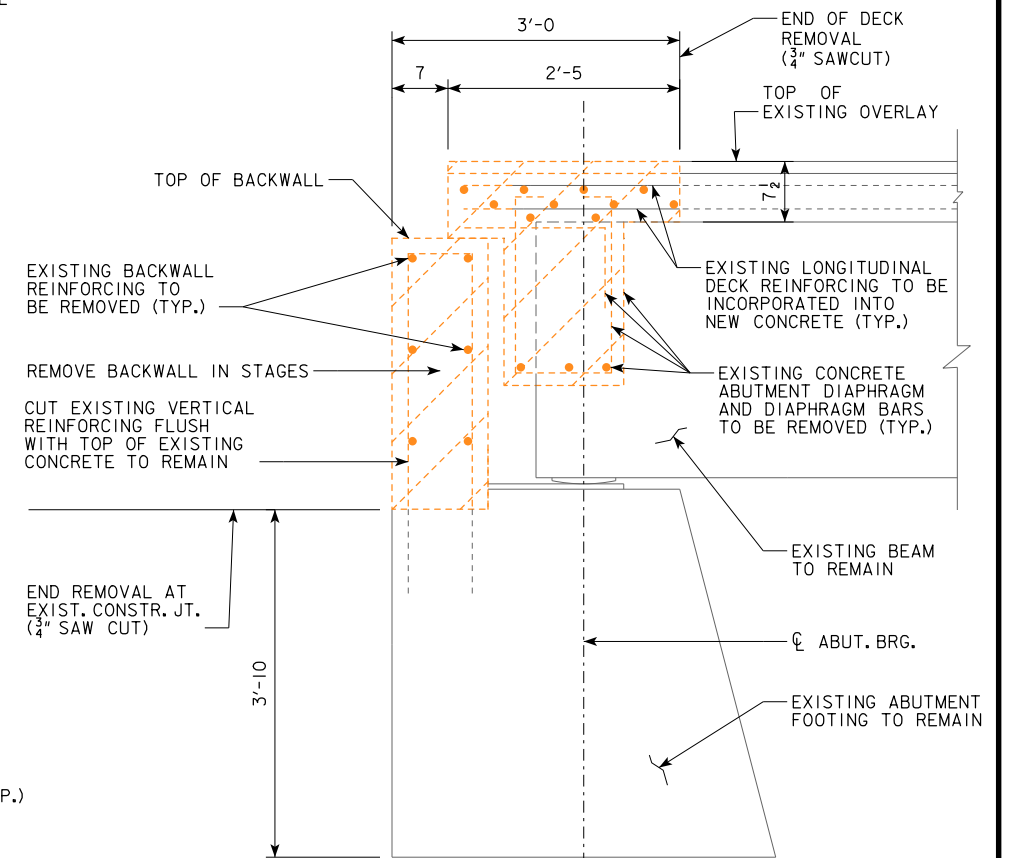
DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)
**125'-10 x 40'-0 PRETENSIONED
 PRESTRESSED CONCRETE BEAM E.B. BRIDGE**
 38'-11 1/2" END SPANS 47'-11" INTERIOR SPAN
STAGING DETAILS
 STA. 58+57.18, 37.0' RT. (CL I-80) DECEMBER 2020
IOWA COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 5 OF 14 FILE NO. 31539 DESIGN NO. 221



ABUTMENT REAR BACKWALL ELEVATION
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)



REMOVAL - PLAN VIEW
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)



SECTION A-A

REMOVAL NOTES:

HATCHED AREAS INDICATE CONCRETE REMOVALS.

THIS SHEET SHOWS DETAILS OF THE PARTIAL SUPERSTRUCTURE REMOVAL ON THE EXISTING BRIDGE. ALL PARTIAL REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. ALL SUCH REMOVALS SHALL BE TO NEAT SAW CUTS TO PROVIDE CLEAN STRAIGHT SURFACES AT INTERFACES BETWEEN NEW CONCRETE AND REMAINING CONCRETE. THE REMOVAL SHALL BE DONE IN A MANNER WHICH WILL PREVENT ANY DAMAGE TO THE EXISTING STRUCTURE TO REMAIN. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE CAUSED, AND SHALL REPAIR ANY DAMAGED AREA TO ITS ORIGINAL CONDITION, AS DIRECTED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE. ANY EXISTING REINFORCING STEEL WHICH IS TO BE "SAVED" THAT IS EXPOSED DURING REMOVAL OPERATIONS IS TO BE CAREFULLY PROTECTED, CLEANED AND INCORPORATED INTO NEW CONSTRUCTION UNLESS NOTED OTHERWISE.

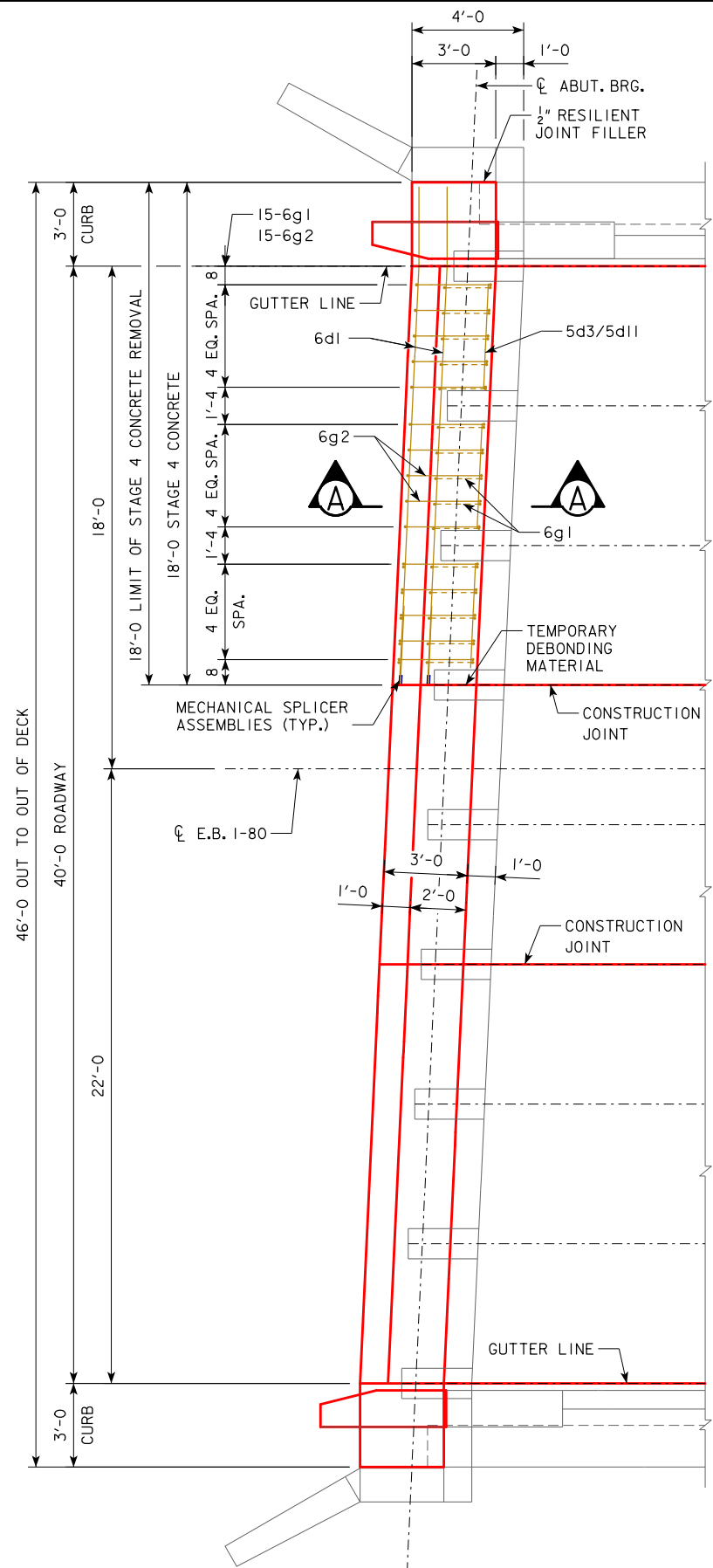
START ALL REMOVALS WITH 3/4" SAWCUT.

NOTE:

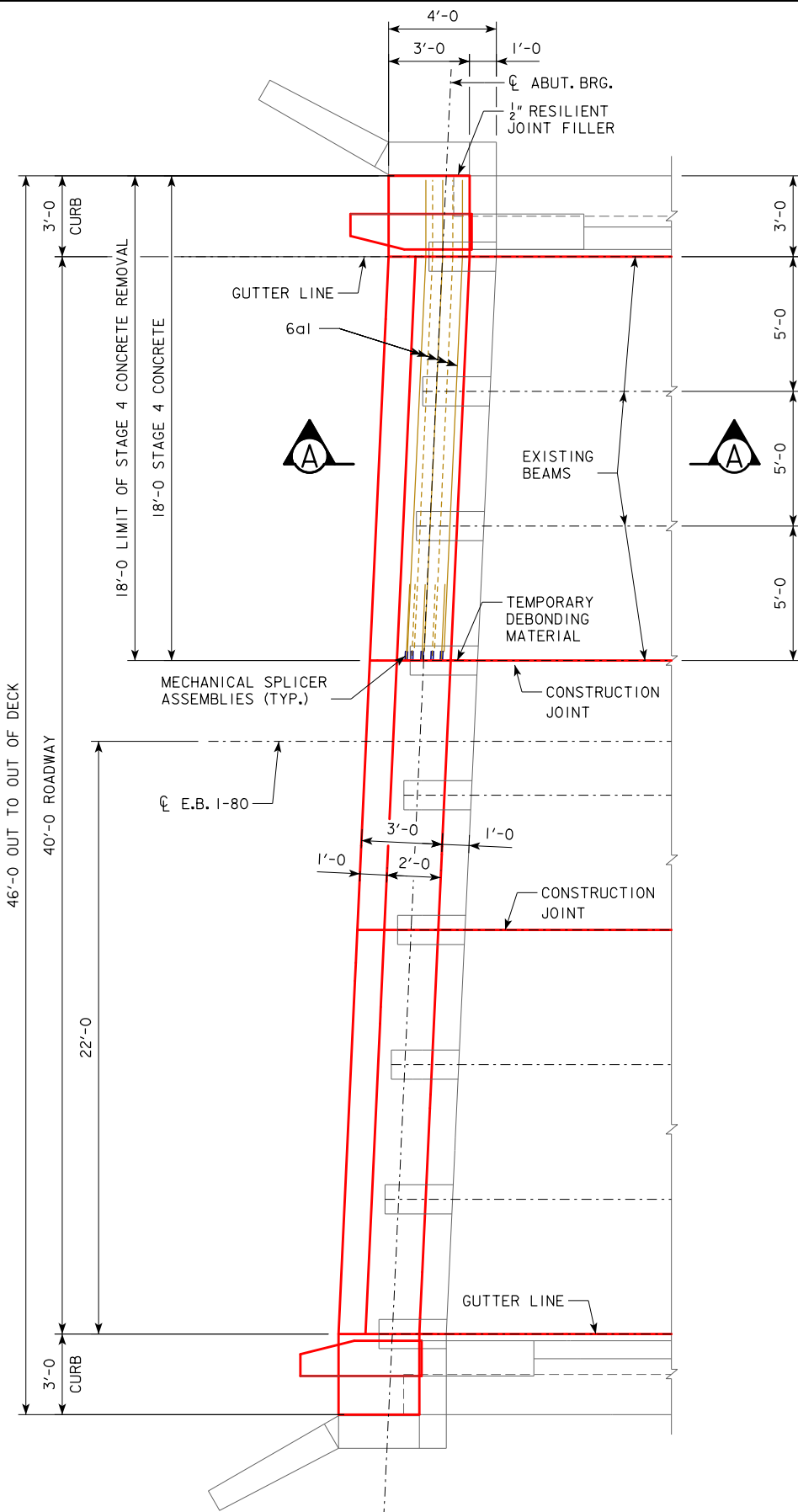
- FOR BARRIER AND CURB REMOVAL DETAILS, SEE DESIGN SHEET 11 FOR WEST ABUTMENT AND DESIGN SHEET 12 FOR EAST ABUTMENT.



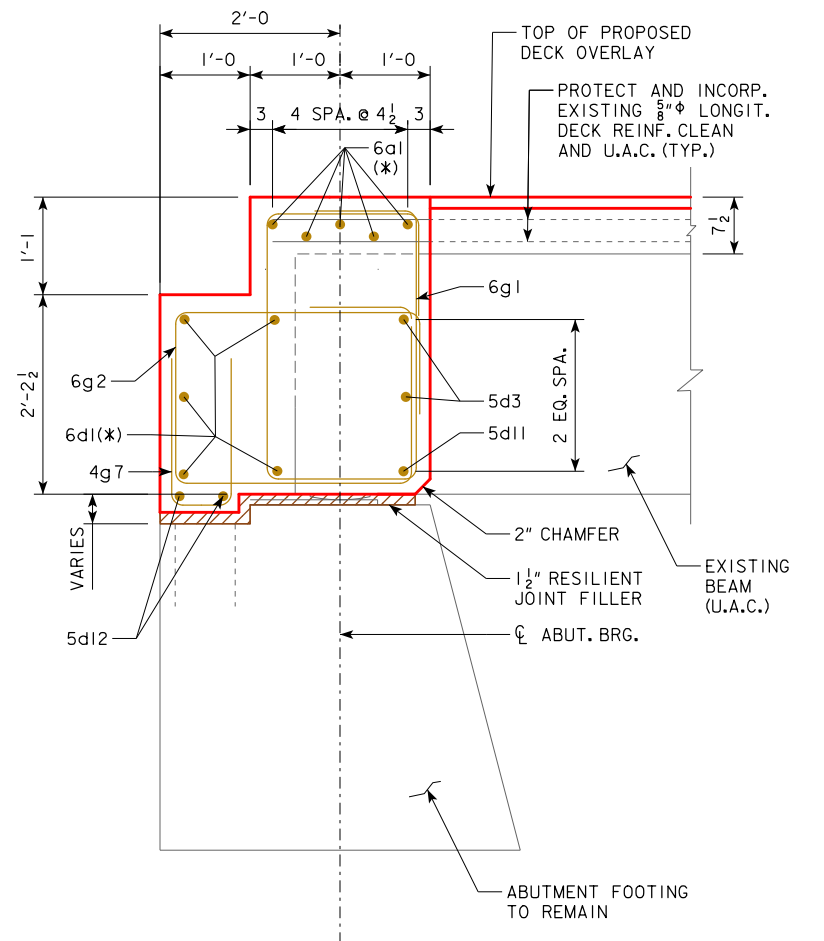
DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)	
125'-10 x 40'-0 PRETENSIONED	
PRESTRESSED CONCRETE BEAM E.B. BRIDGE	
38'-11 1/2 END SPANS	47'-11 INTERIOR SPAN
REMOVAL DETAILS	
STA. 58+57.18, 37.0' RT. (CL I-80)	DECEMBER 2020
IOWA COUNTY	
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION	
DESIGN SHEET NO. 6 OF 14	FILE NO. 31539
DESIGN NO. 221	



ABUTMENT BACKWALL PLAN VIEW - STAGE 4
(SLAB REINF. NOT SHOWN FOR CLARITY)
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)



SLAB PLAN VIEW - STAGE 4
(ABUT. BACKWALL REINF. NOT SHOWN FOR CLARITY)
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)

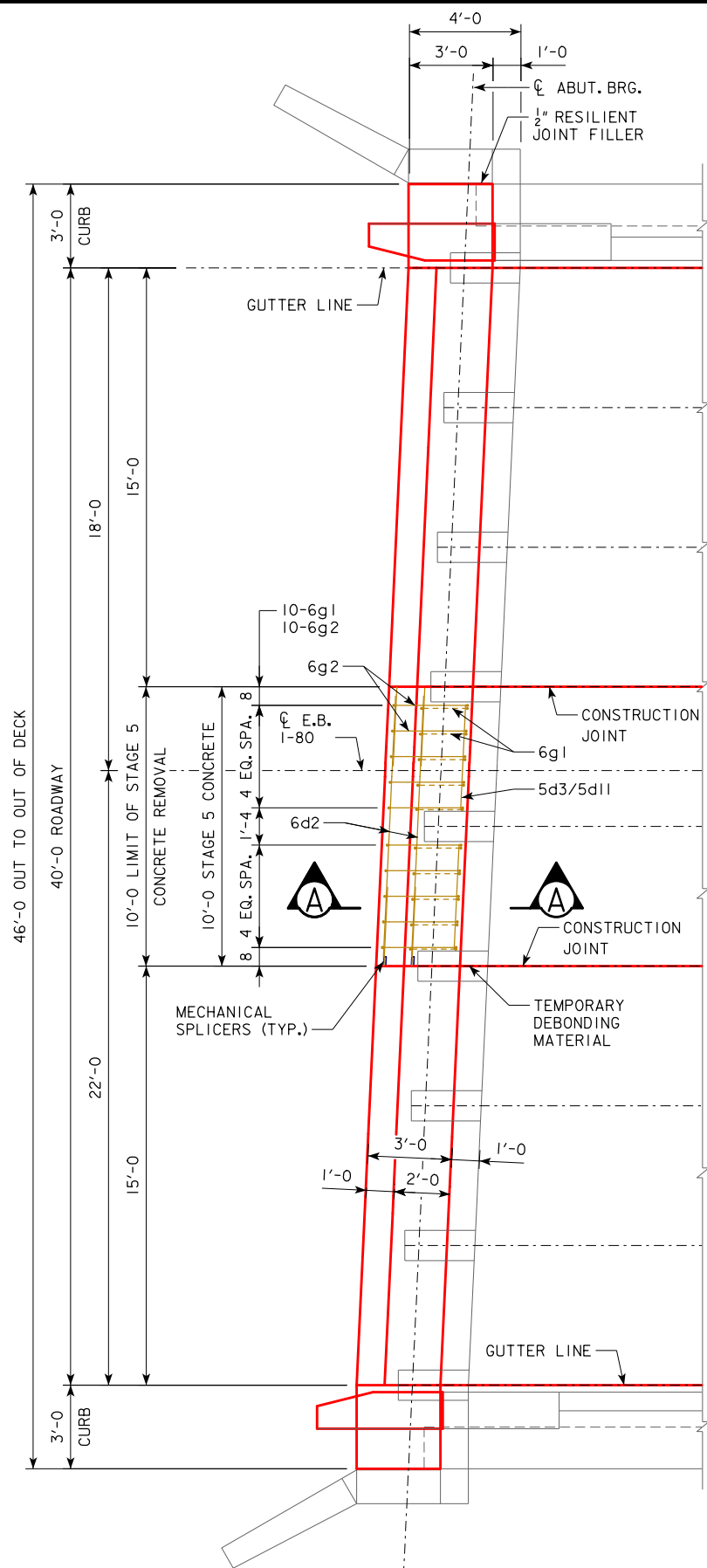


SECTION A-A

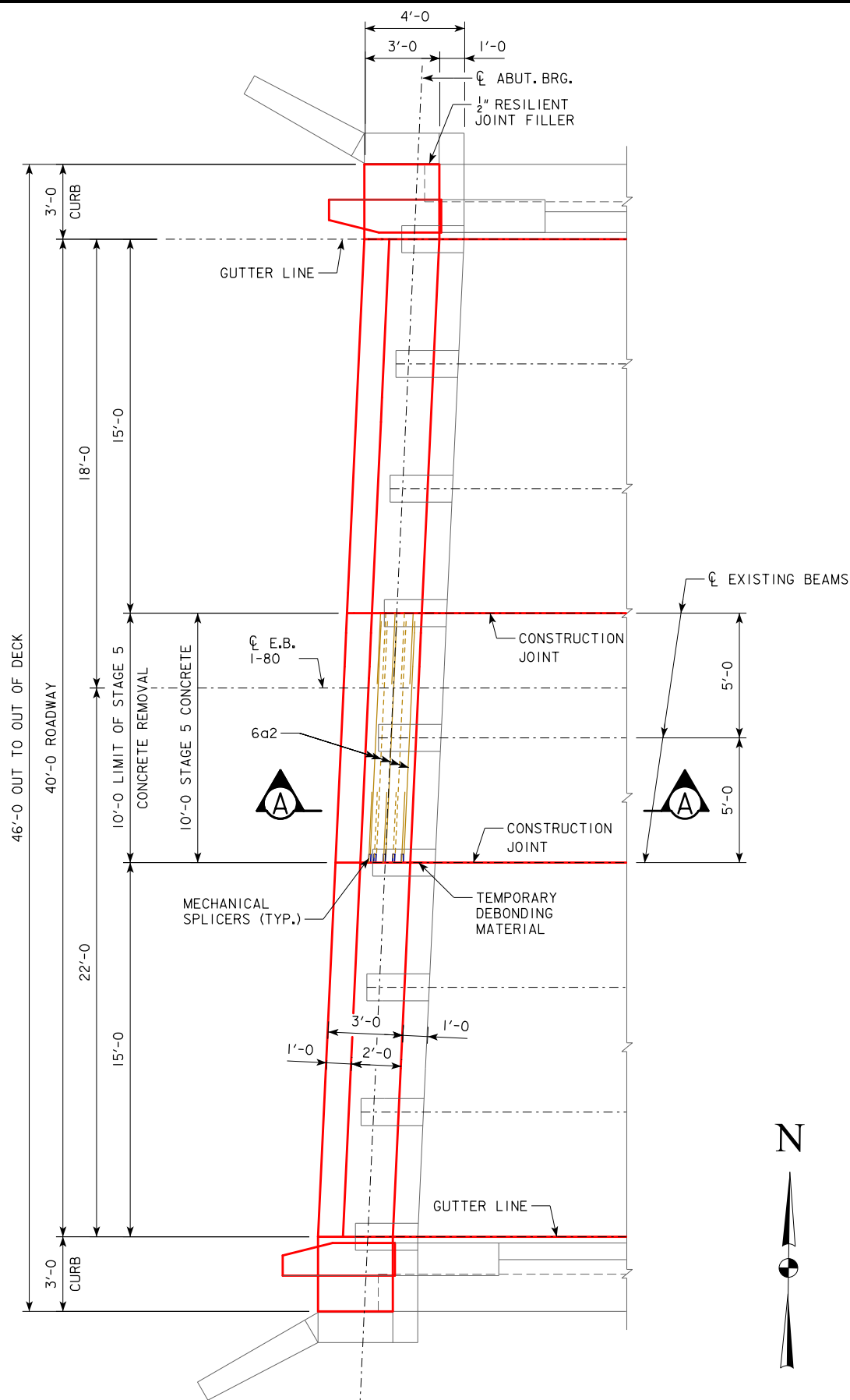
(*) MECHANICAL SPLICE ASSEMBLIES
USED AT CONSTRUCTION JOINT. SEE
DESIGN SHEET 13 FOR DETAILS.

- NOTES:
1. SEE DESIGN SHEET 13 FOR MECHANICAL SPLICE DETAILS.
 2. FOR BARRIER AND CURB DETAILS, SEE DESIGN SHEET 11 FOR WEST ABUTMENT AND DESIGN SHEET 12 FOR EAST ABUTMENT.
 3. DECK AND TOP OF BACKWALL TO MATCH EXISTING GRADE.
 4. NO DIAPHRAGM CONCRETE SHALL BE PLACED UNDER BEAMS. BEARINGS SHALL BE FREE TO SLIDE.
 5. SEE DESIGN SHEET 13 FOR ABUTMENT NOTES, BENT BAR DETAILS AND BAR LIST.

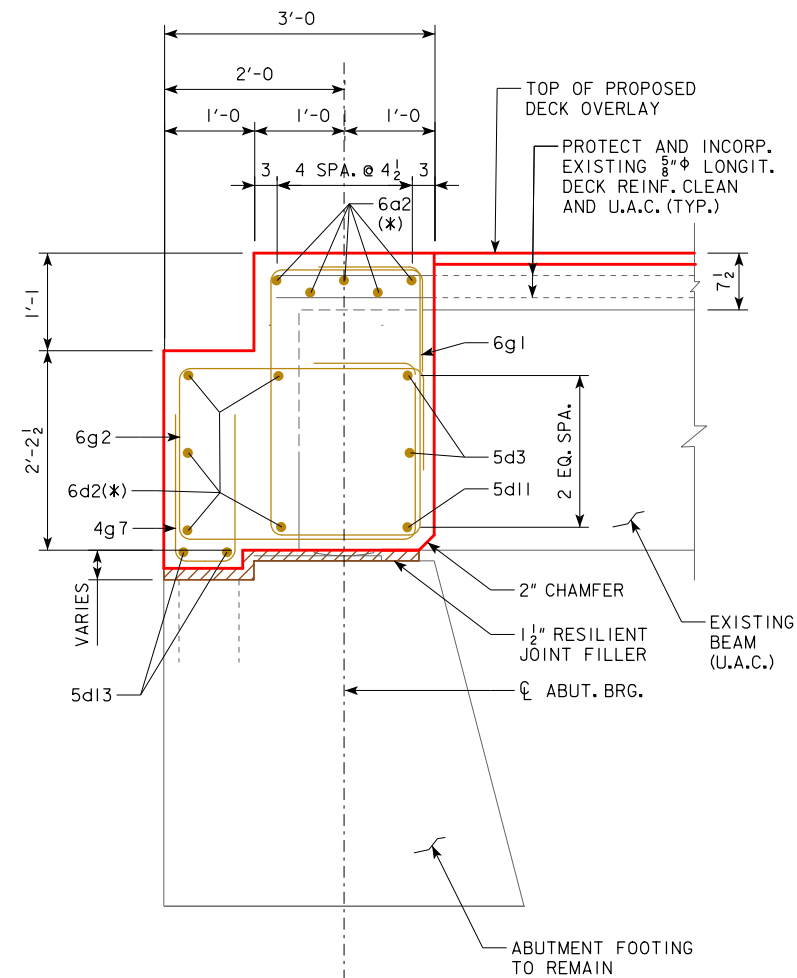
DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)
**125'-10 x 40'-0 PRETENSIONED
 PRESTRESSED CONCRETE BEAM E.B. BRIDGE**
 38'-11 1/2" END SPANS 47'-11" INTERIOR SPAN
ABUTMENT REPAIR DETAILS
 STA. 58+57.18, 37.0' RT. (CL I-80) DECEMBER 2020
IOWA COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 7 OF 14 FILE NO. 31539 DESIGN NO. 221



ABUTMENT BACKWALL PLAN VIEW - STAGE 5
(SLAB REINF. NOT SHOWN FOR CLARITY)
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)



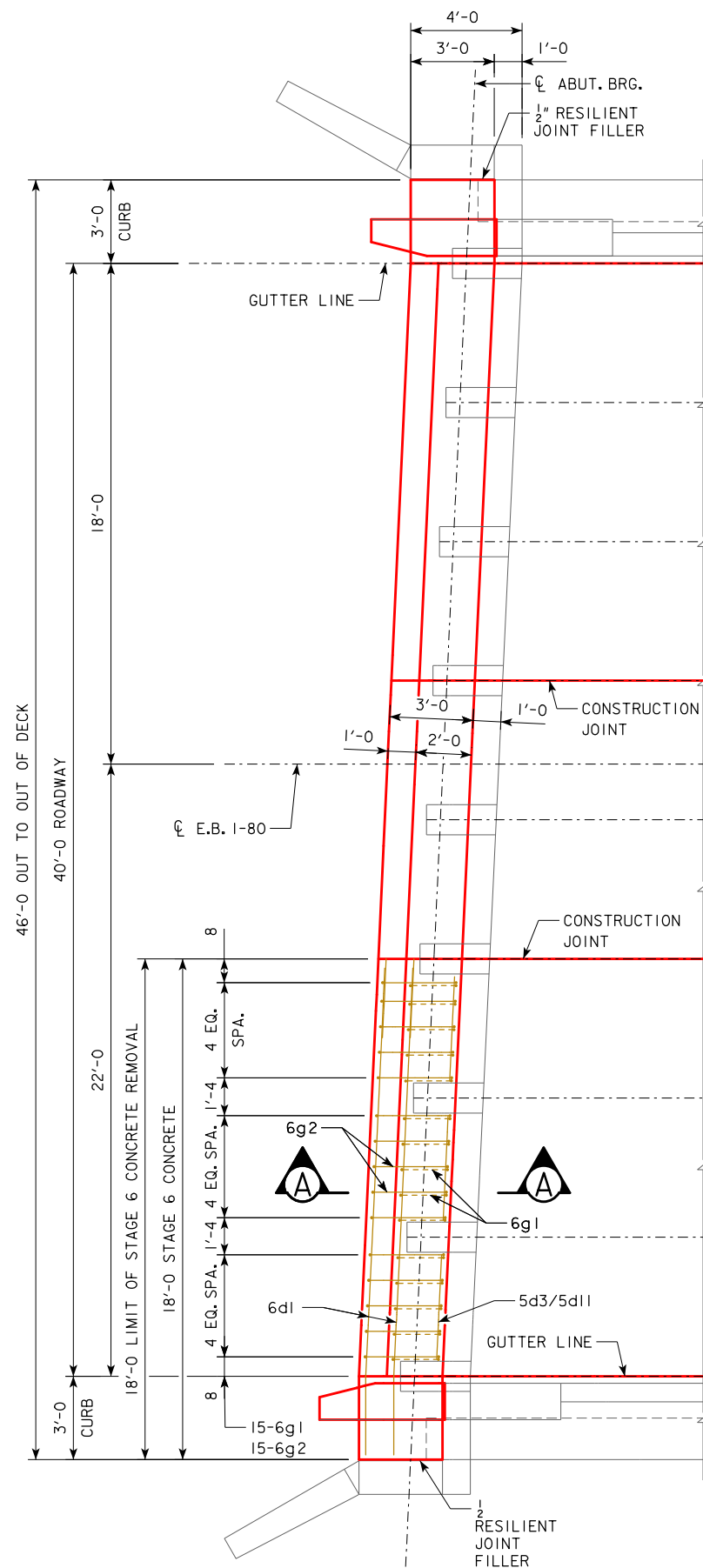
SLAB PLAN VIEW - STAGE 5
(ABUT. BACKWALL REINF. NOT SHOWN FOR CLARITY)
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)



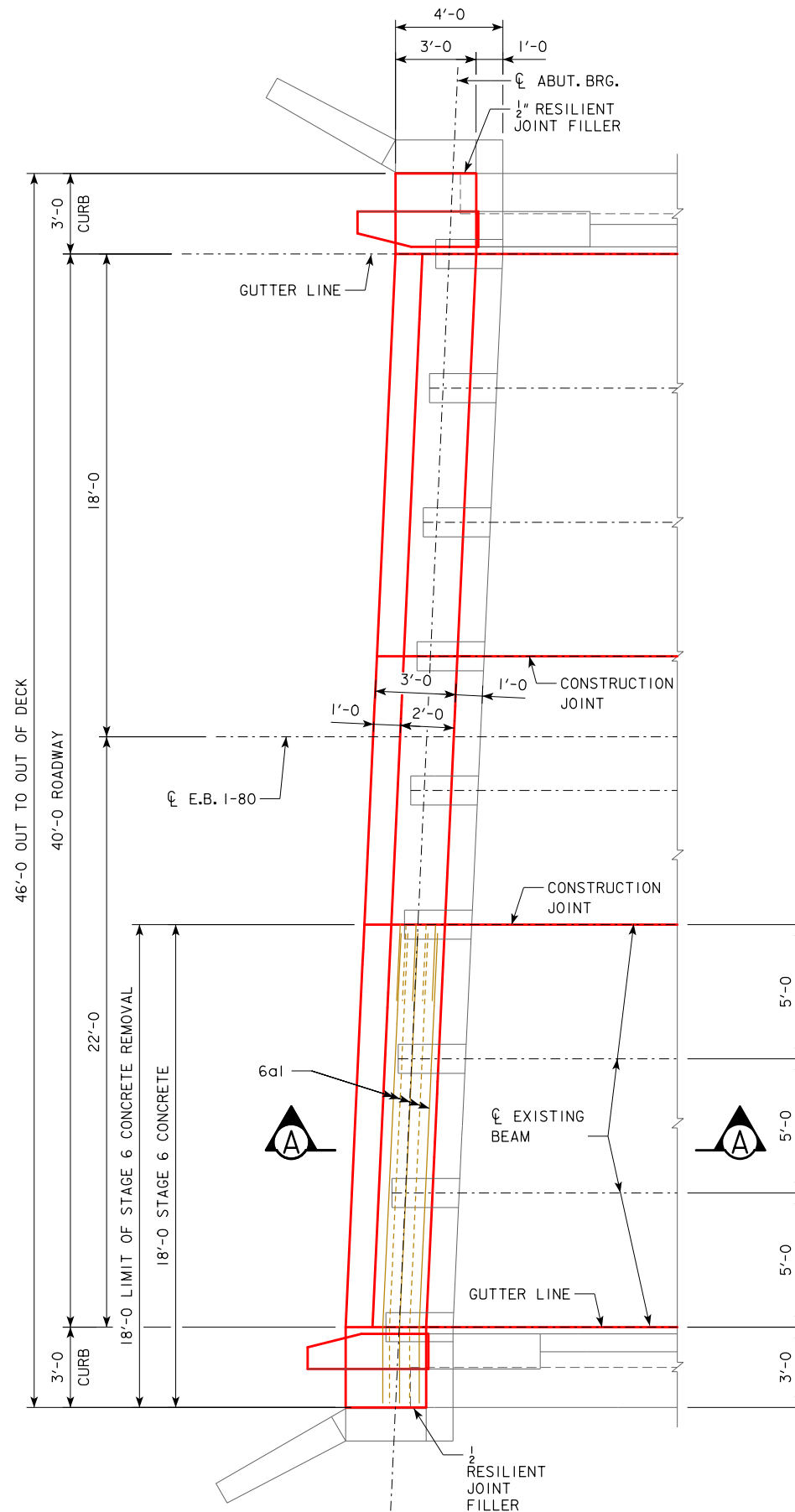
SECTION A-A
(*) MECHANICAL SPlice ASSEMBLIES
USED AT CONSTRUCTION JOINT. SEE
DESIGN SHEET 13 FOR DETAILS.

- NOTES:
1. SEE DESIGN SHEET 13 FOR MECHANICAL SPlice DETAILS.
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 3. DECK AND TOP OF BACKWALL TO MATCH EXISTING GRADE.
 4. NO DIAPHRAGM CONCRETE SHALL BE PLACED UNDER BEAMS. BEARINGS SHALL BE FREE TO SLIDE.
 5. SEE DESIGN SHEET 13 FOR ABUTMENT NOTES, BENT BAR DETAILS AND BAR LIST.

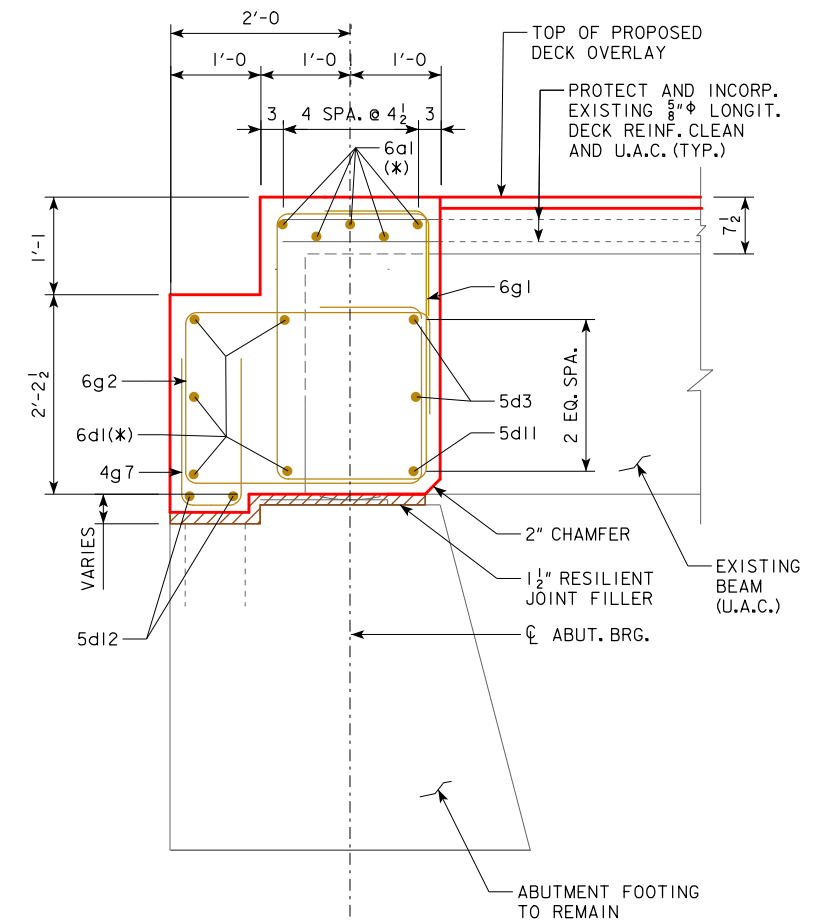
DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)
**125'-10 x 40'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM E.B. BRIDGE**
38'-11½ END SPANS 47'-11 INTERIOR SPAN
ABUTMENT REPAIR DETAILS
STA. 58+57.18, 37.0' RT. (CL I-80) DECEMBER 2020
IOWA COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 8 OF 14 FILE NO. 31539 DESIGN NO. 221



ABUTMENT BACKWALL PLAN VIEW - STAGE 6
(SLAB REINF. NOT SHOWN FOR CLARITY)
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)



SLAB PLAN VIEW - STAGE 6
(ABUT. BACKWALL REINF. NOT SHOWN FOR CLARITY)
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)

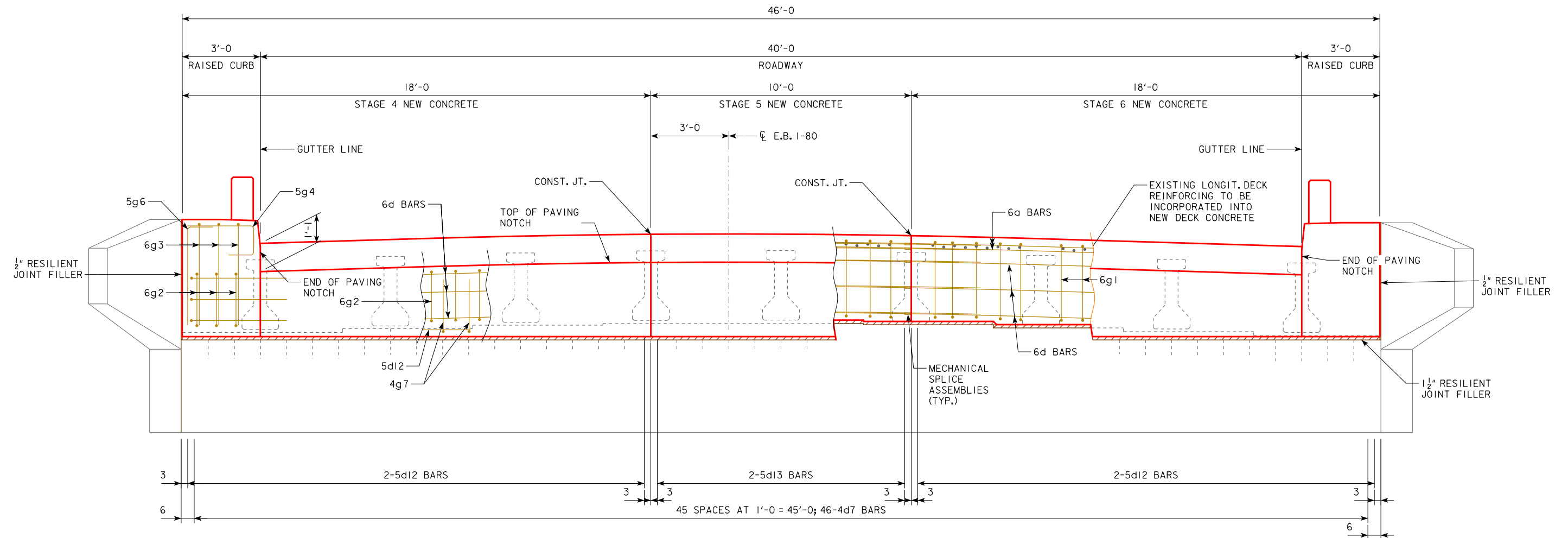


SECTION A-A

(*) MECHANICAL SPLICE ASSEMBLIES
USED AT CONSTRUCTION JOINT. SEE
DESIGN SHEET 13 FOR DETAILS.

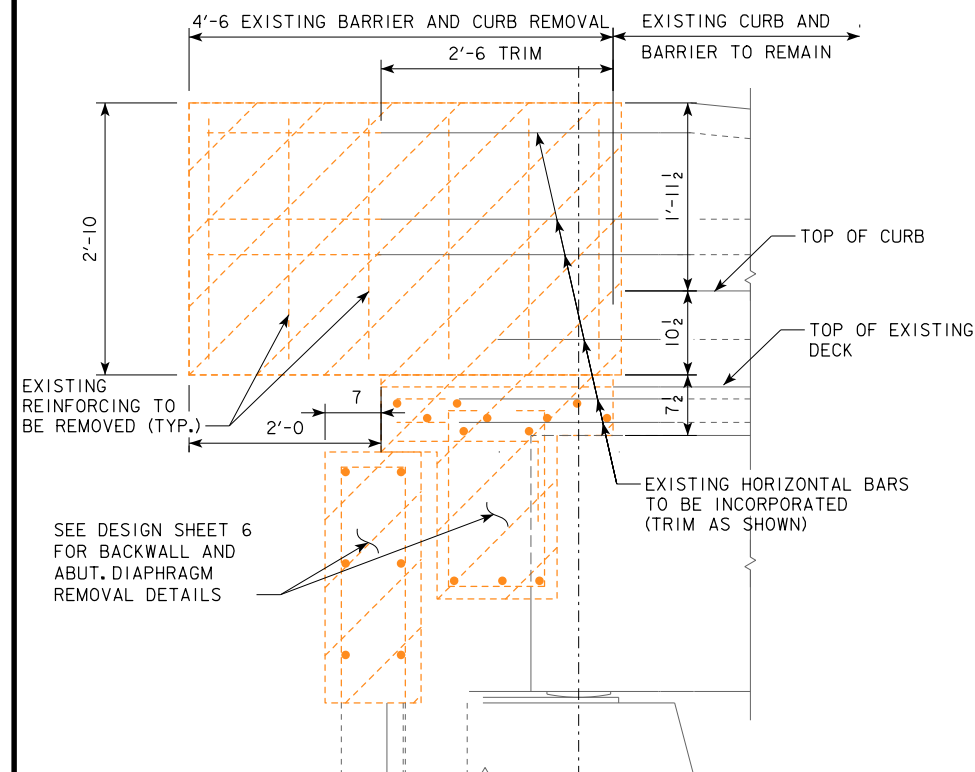
- NOTES:
1. SEE DESIGN SHEET 13 FOR MECHANICAL SPLICE DETAILS.
 2. FOR BARRIER AND CURB DETAILS, SEE DESIGN SHEET 11 FOR WEST ABUTMENT AND DESIGN SHEET 12 FOR EAST ABUTMENT.
 3. DECK AND TOP OF BACKWALL TO MATCH EXISTING GRADE.
 4. NO DIAPHRAGM CONCRETE SHALL BE PLACED UNDER BEAMS. BEARINGS SHALL BE FREE TO SLIDE.
 5. SEE DESIGN SHEET 13 FOR ABUTMENT NOTES, BENT BAR DETAILS AND BAR LIST.

DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)
**125'-10 x 40'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM E.B. BRIDGE**
38'-11 1/2" END SPANS 47'-11" INTERIOR SPAN
ABUTMENT REPAIR DETAILS
STA. 58+57.18, 37.0' RT. (CL I-80) DECEMBER 2020
IOWA COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 9 OF 14 FILE NO. 31539 DESIGN NO. 221

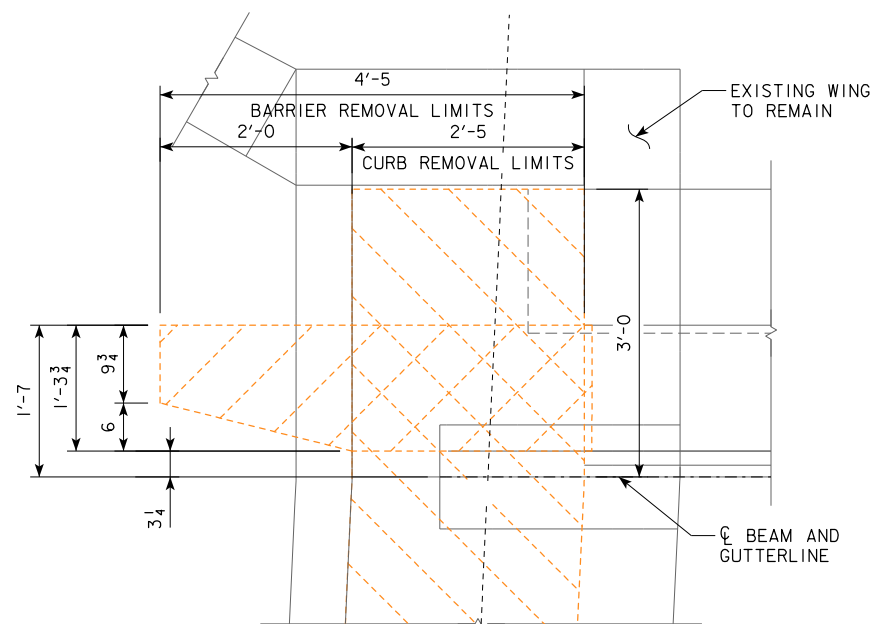


PROPOSED ABUTMENT BACKWALL ELEVATION
(WEST ABUTMENT LOOKING EAST SHOWN, EAST ABUTMENT SIMILAR)

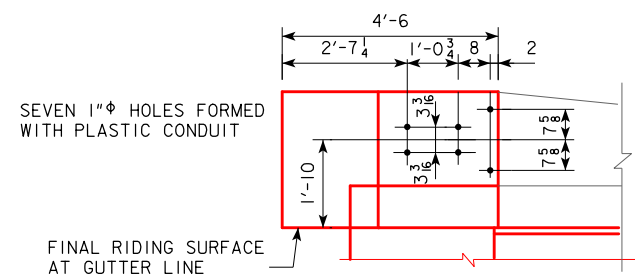
DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)
125'-10 x 40'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM E.B. BRIDGE
 38'-11½ END SPANS 47'-11 INTERIOR SPAN
ABUTMENT DETAILS
 STA. 58+57.18, 37.0' RT. (CL I-80) DECEMBER 2020
IOWA COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 10 OF 14 FILE NO. 31539 DESIGN NO. 221



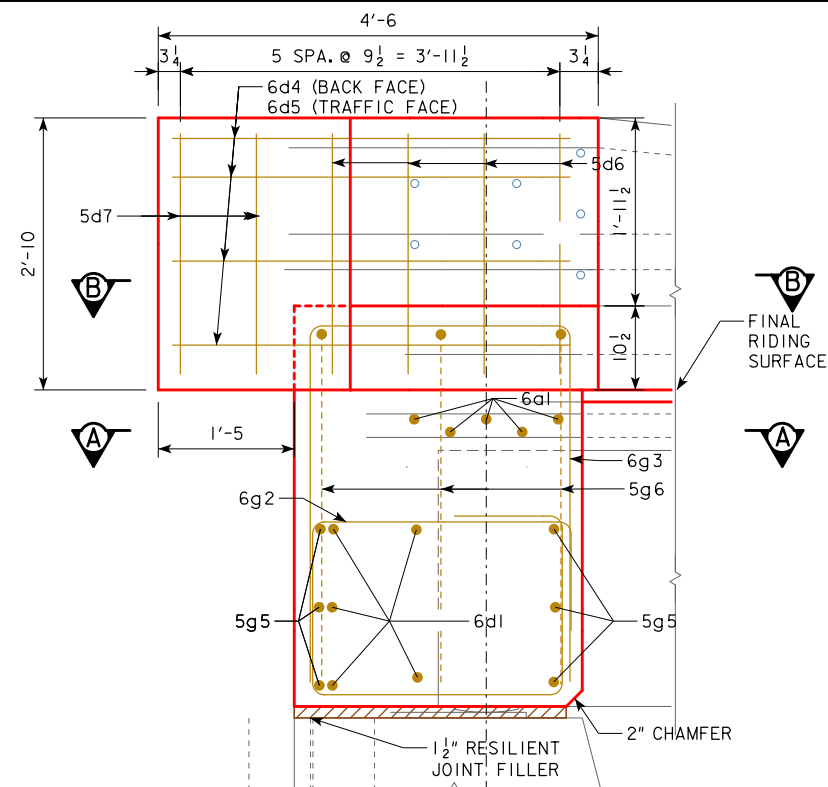
END SECTION PART REMOVAL ELEVATION
AT GUTTERLINE



END SECTION PART REMOVAL PLAN

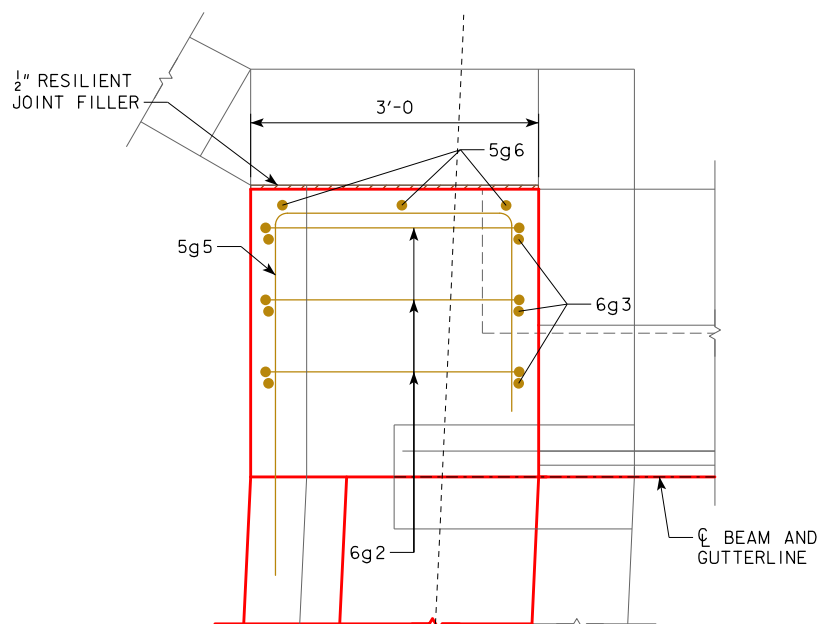


GUARD RAIL CONNECTION



PART ELEVATION VIEW
AT GUTTERLINE

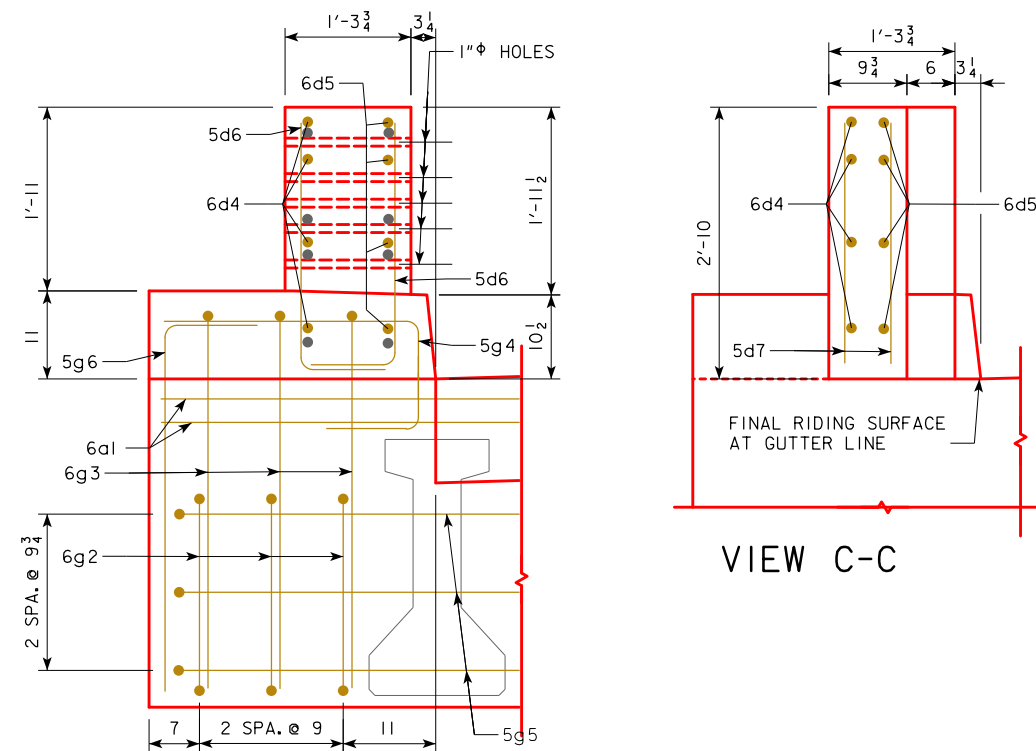
PROVIDE 7 HOLES FORMED WITH 1" ϕ PLASTIC CONDUIT. COST TO BE INCLUDED IN PRICE FOR "STRUCTURAL CONCRETE (MISC.)".



SECTION A-A
(DECK STEEL NOT SHOWN)

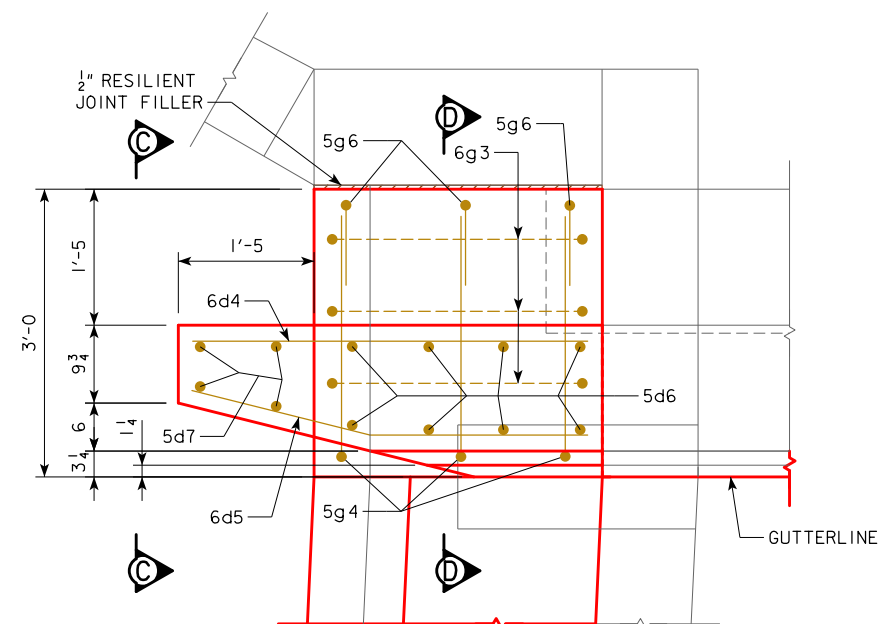
NOTES:

1. THIS SHEET IS FOR THE NORTHWEST AND SOUTHWEST CORNER BARRIER END SECTIONS. SEE DESIGN SHEET 12 FOR THE NORTHEAST AND SOUTHEAST CORNER BARRIER END SECTION.
2. SEE DESIGN SHEET 13 FOR ABUTMENT NOTES, BAR LIST, AND BENT BAR DETAILS.
3. INCORPORATE EXISTING REINFORCING INTO NEW WORK WHERE POSSIBLE. CUT BARS AS REQUIRED TO MAINTAIN CLEAR COVER.
4. CONSTRUCTION JOINT UNDER BARRIER SHALL BE INTENTIONALLY ROUGHENED.



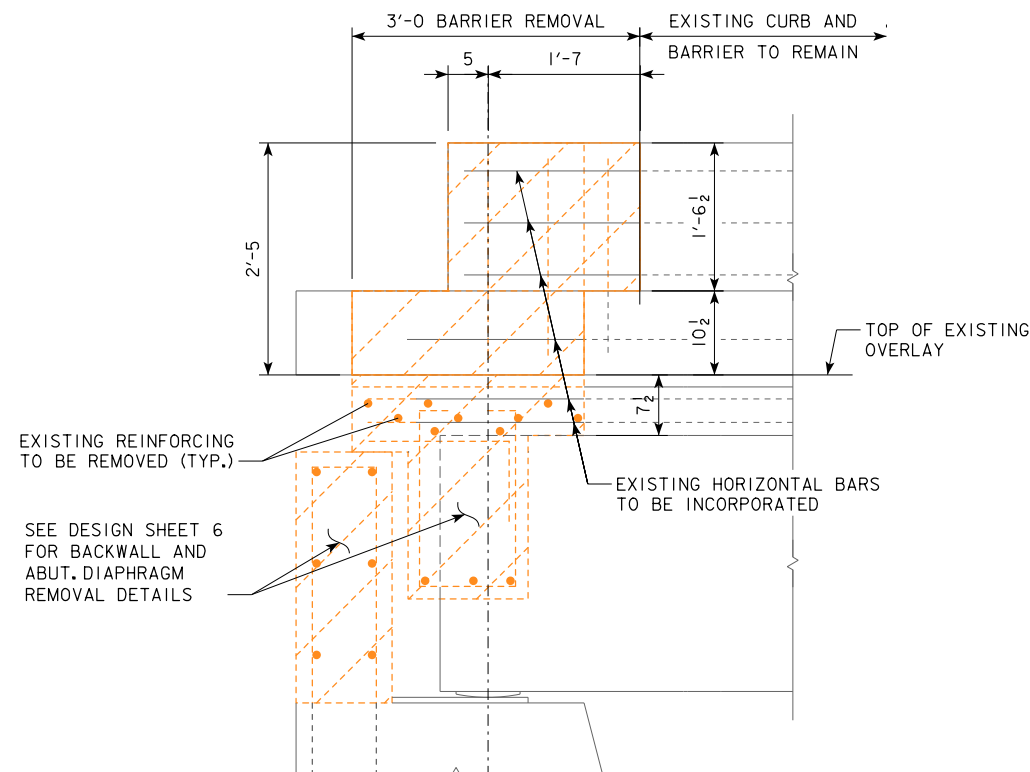
SECTION D-D

VIEW C-C

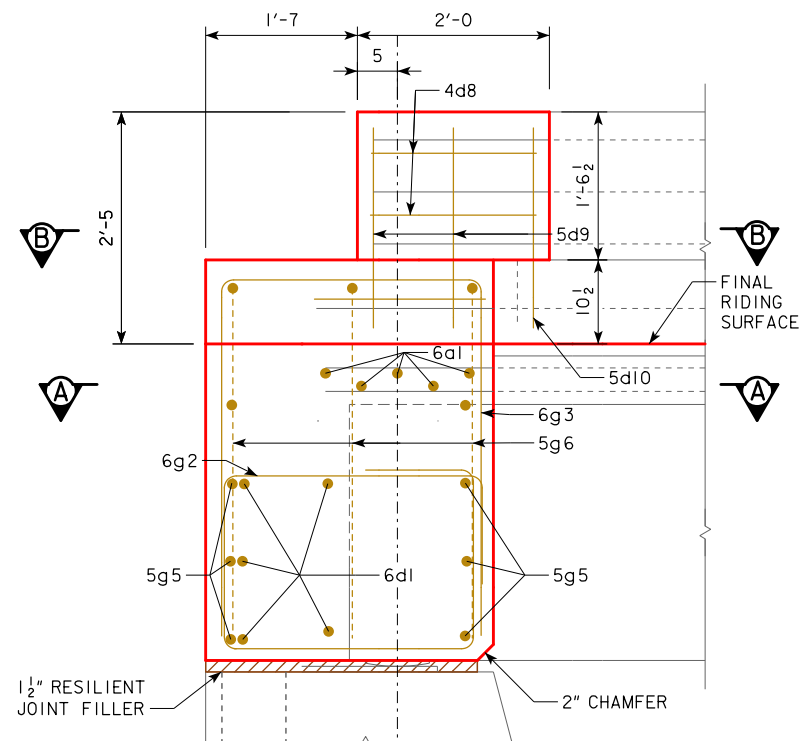


SECTION B-B
(DECK STEEL NOT SHOWN)

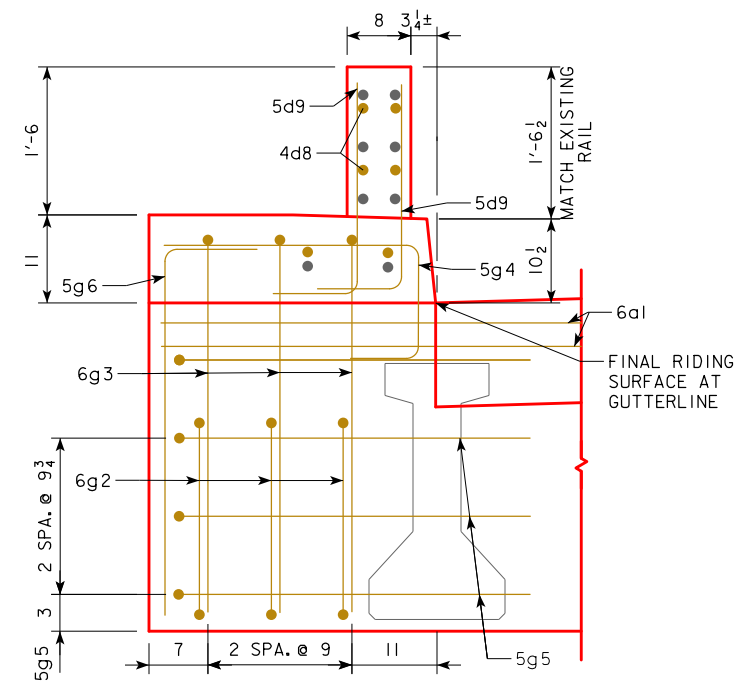
DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)
**125'-10 x 40'-0 PRETENSIONED
 PRESTRESSED CONCRETE BEAM E.B. BRIDGE**
 38'-11 1/2' END SPANS 47'-11' INTERIOR SPAN
CURB AND BARRIER DETAILS
 STA. 58+57.18, 37.0' RT. (CL 1-80) DECEMBER 2020
IOWA COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 11 OF 14 FILE NO. 31539 DESIGN NO. 221



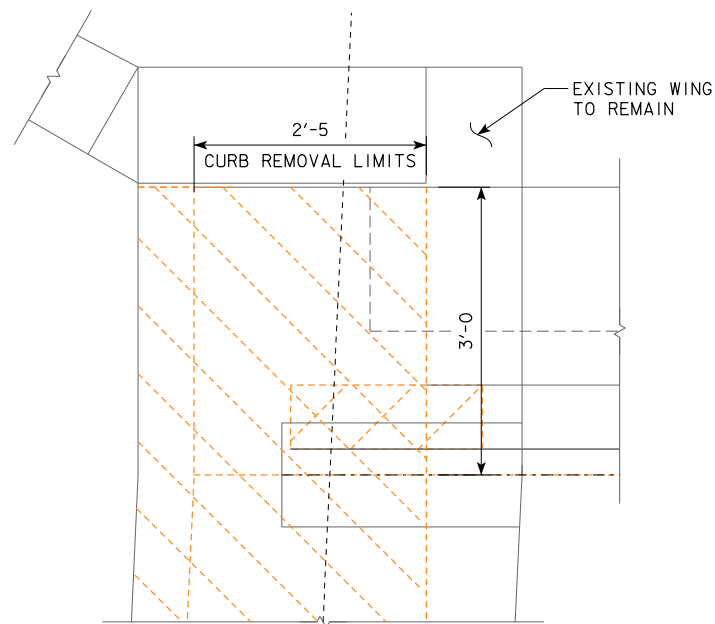
END SECTION PART REMOVAL ELEVATION
AT GUTTERLINE



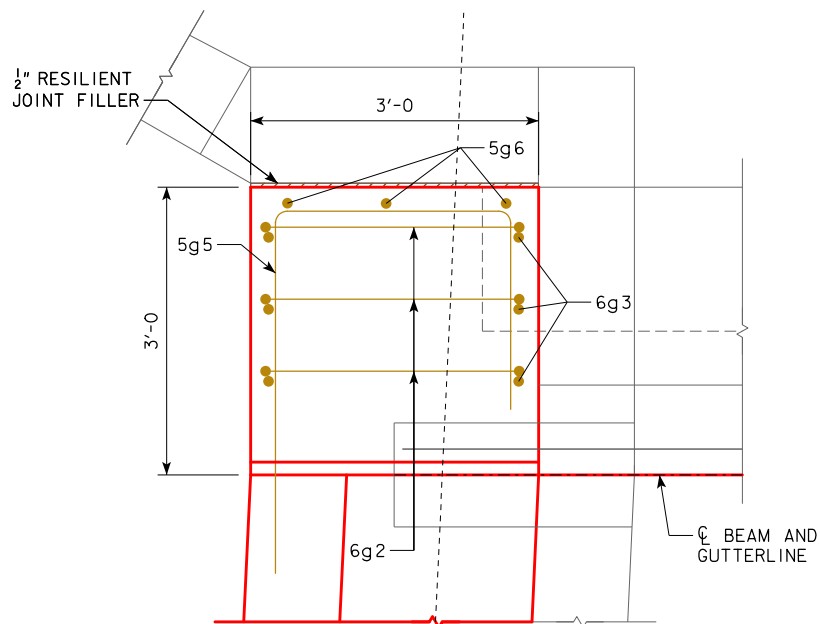
PART ELEVATION VIEW
AT GUTTERLINE



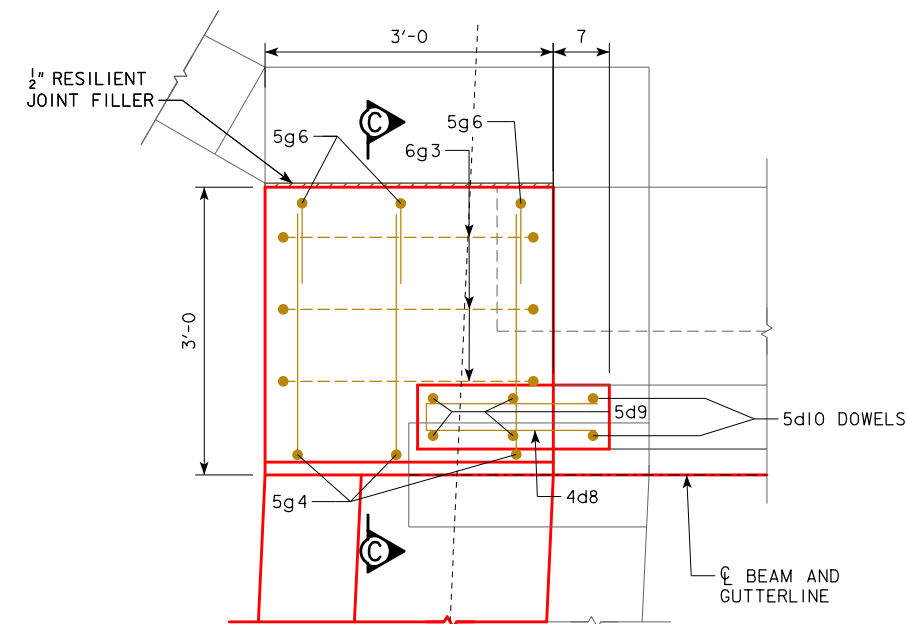
SECTION C-C



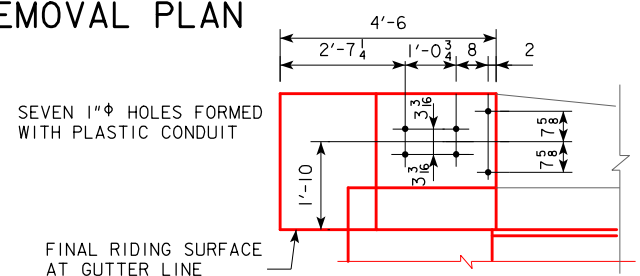
END SECTION PART REMOVAL PLAN



SECTION A-A
(DECK STEEL NOT SHOWN)



SECTION B-B
(DECK STEEL NOT SHOWN)



GUARD RAIL CONNECTION

NOTES:

1. THIS SHEET IS FOR THE NORTHEAST AND SOUTHEAST CORNER BARRIER END SECTIONS. SEE DESIGN SHEET 11 FOR THE NORTHWEST AND SOUTHWEST CORNER BARRIER END SECTION.
2. SEE DESIGN SHEET 13 FOR ABUTMENT NOTES, BAR LIST, AND BENT BAR DETAILS.
3. INCORPORATE EXISTING REINFORCING INTO NEW WORK WHERE POSSIBLE. CUT BARS AS REQUIRED TO MAINTAIN CLEAR COVER.
4. CONSTRUCTION JOINT UNDER BARRIER SHALL BE INTENTIONALLY ROUGHENED.
5. SEE DESIGN SHEET 2 FOR DOWEL SETTING NOTE.

DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)
**125'-10 x 40'-0 PRETENSIONED
 PRESTRESSED CONCRETE BEAM E.B. BRIDGE**
 38'-11 1/2' END SPANS 47'-11' INTERIOR SPAN
CURB AND BARRIER DETAILS
 STA. 58+57.18, 37.0' RT. (CL 1-80) DECEMBER 2020
IOWA COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 12 OF 14 FILE NO. 31539 DESIGN NO. 221

ABUTMENT NOTES:

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

THE COST OF RESILIENT JOINT JOINT FILLER 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.

REINFORCING BAR LIST - WEST ABUT. DIAPH., END OF
DECK, BARRIERS AND CURBS

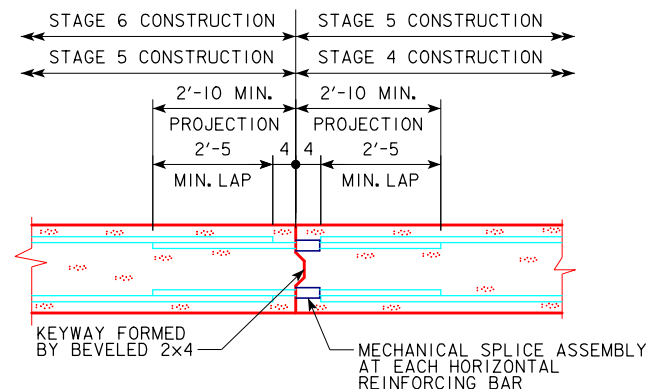
[illegible]

MECHANICAL SPLICE ASSEMBLIES:

THE 6a1, AND 6a2 DECK SLAB BARS, 6d1 AND 6d2 BARS IN THE ABUTMENT BACKWALLS SHALL BE SPLICED AT THE LOCATIONS SHOWN USING MECHANICAL SPLICE ASSEMBLIES. MECHANICAL SPLICE ASSEMBLIES CONSIST OF MECHANICAL SPLICERS AND REINFORCING SPLICE BARS AS REQUIRED TO FACILITATE THE USE OF THE MECHANICAL SPLICER. THE MECHANICAL SPLICE ASSEMBLY USED SHALL MEET THE REQUIREMENTS OF MATERIALS I.M. 451 APPENDIX E. REINFORCING SPLICE BARS SHALL BE A MINIMUM OF 3 INCH DIA.

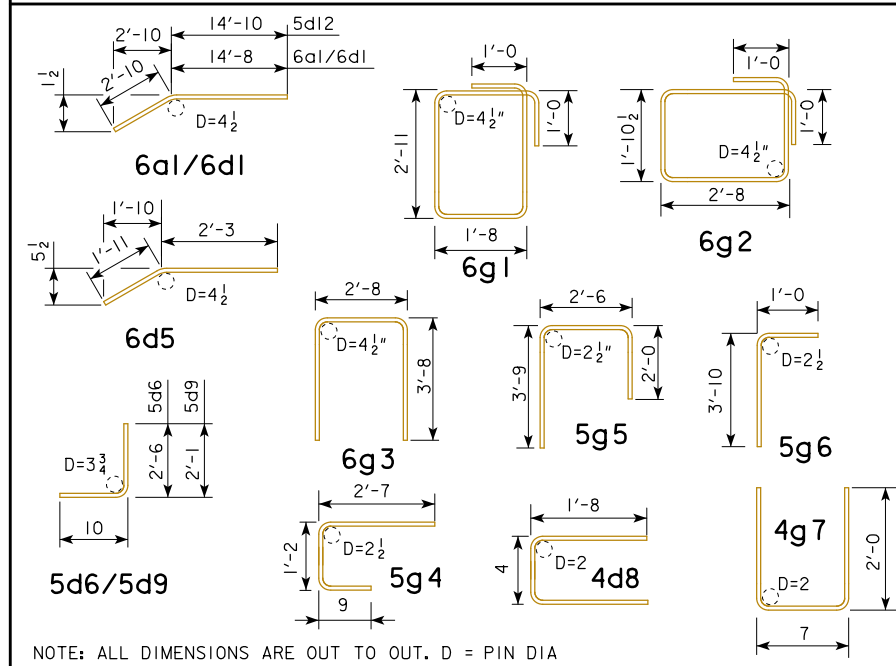
ALL MECHANICAL SPLICE ASSEMBLIES TO BE USED IN SHALL BE EPOXY COATED.

THE COST OF ALL SPLICE ASSEMBLIES IS TO BE INCLUDED IN THE PRICE BID FOR "REINFORCING STEEL EPOXY COATED" AND NO SEPARATE PAYMENT WILL BE MADE. THE WEIGHT OF MECHANICAL SPLICE ASSEMBLIES IS NOT INCLUDED IN THE QUANTITY SHOWN FOR "REINFORCING STEEL EPOXY COATED". A TOTAL OF 40 EPOXY COATED SPLICE ASSEMBLIES WILL BE REQUIRED (20 FOR EACH ABUTMENT).



MECHANICAL SPLICE DETAIL

BENT BAR DETAILS



NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIA

REINFORCING BAR LIST - EAST ABUT. DIAPH., END OF DECK, BARRIERS AND CURBS

EPOXY COATED	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT	
	6a1	DECK TRANSV. - STAGE 4/6		10	17'-6	263	
	6a2	DECK TRANSV. - STAGE 5		5	9'-4	70	
	6d1	ABUT. DIAPH. LONGIT. NOTCH - STAGE 4/6		10	17'-6	263	
	6d2	ABUT. DIAPH. LONGIT. NOTCH - STAGE 5		5	9'-4	70	
	5d3	ABUT. DIAPH. LONGIT.		16	4'-4	72	
	4d8	END SECTION, HORIZ.		4	4'-6	12	
	5d9	END SECTION, VERTICAL		8	2'-11	24	
	5d10	END SECTION, VERTICAL, DOWEL		4	2'-1	9	
	5d11	ABUT. DIAPH. LONGIT.		8	3'-5	29	
	5d12	ABUT. ABUT. NOTCH LONGIT. - STAGE 4/6		4	17'-8	74	
	5d13	ABUT. DIAPH NOTCH - STAGE 5		2	9'-8	20	
	6g1	TRANSVERSE ABUT. DIAPH.		40	11'-2	671	
	6g2	TRANSVERSE ABUT. DIAPH.		46	11'-1	766	
	6g3	TRANSVERSE ABUT. DIAPH. CORNERS		6	10'-0	90	
	5g4	CURB, HORIZONTAL		6	4'-6	28	
	5g5	DIAPH. CORNER, HORIZ.		6	8'-3	52	
	5g6	DIAPH. CORNER, VERTICAL		6	4'-10	30	
	4g7	ABUTMENT BOTTOM NOTCH		46	4'-7	141	
	</						

CONCRETE PLACEMENT QUANTITIES

LOCATION	WEST ABUTMENT		EAST ABUTMENT	
	ABUTMENT	BARRIER	ABUTMENT	BARRIER
STAGE 4	5.71	0.56	5.71	0.10
STAGE 5	3.17	0.00	3.17	0.00
STAGE 6	5.71	0.56	5.71	0.10
TOTAL (C.Y.)	14.59	1.12	14.59	0.20

DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)

125'-10 x 40'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM E.B. BRIDGE

38'-11½ END SPANS 47'-11 INTERIOR SPAN

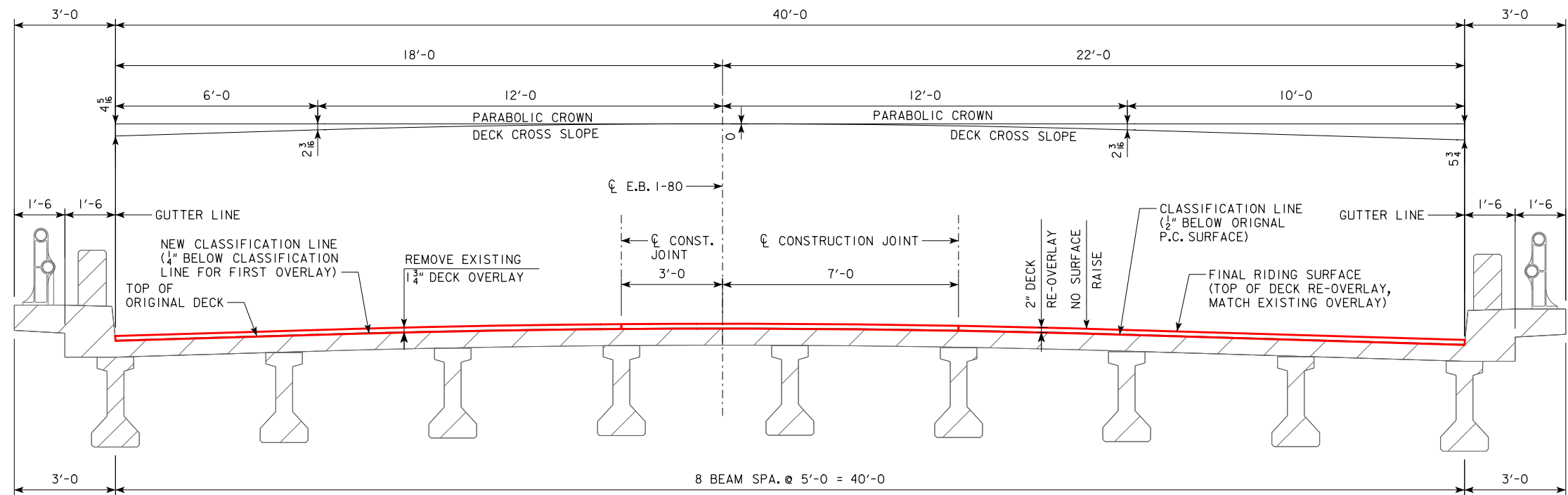
SUPERSTRUCTURE DETAILS

STA. 58+57.18, 37.0' RT. (C/L 1-80) DECEMBER 2020

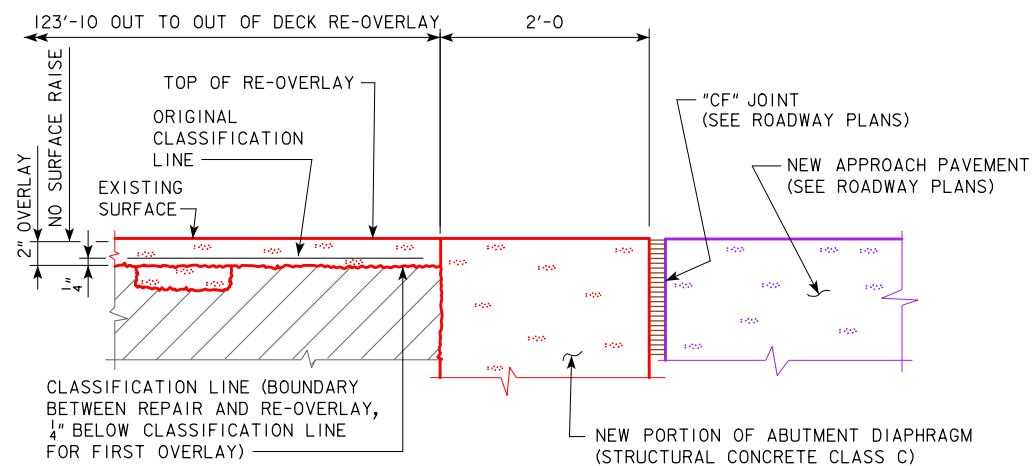
IOWA COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

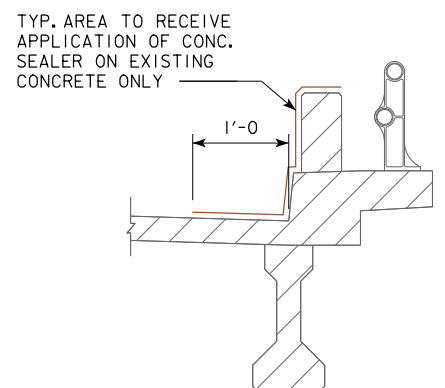
DESIGN SHEET NO. 13 OF 14 FILE NO. 31539 DESIGN NO. 221



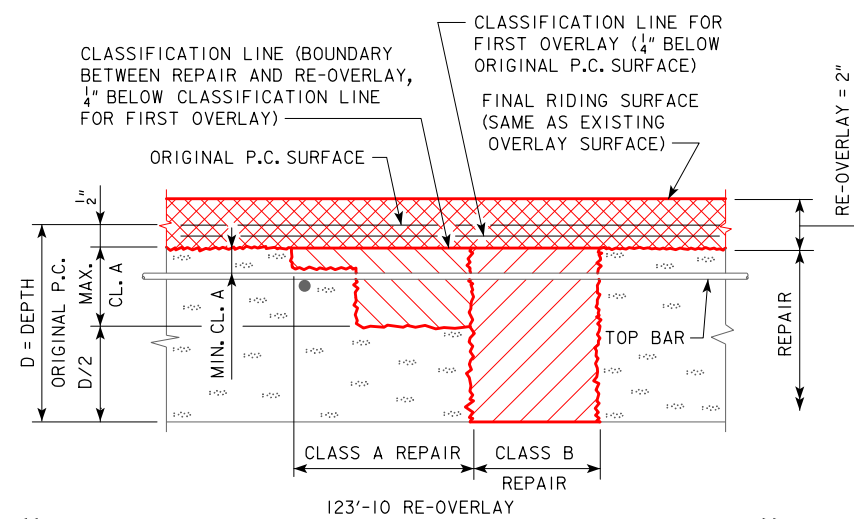
TYPICAL CROSS SECTION
(LOOKING EAST)



PART LONGITUDINAL SECTION ALONG ROADWAY
BOTH ABUTMENTS



DETAIL OF CONCRETE
SEALER AREA



REPAIR AND RE-OVERLAY DEFINITION

NOTE:
THE COST OF FURNISHING AND PLACING CONCRETE SEALER IS
TO BE INCLUDED IN THE PRICE BID FOR "DECK OVERLAY".

DESIGN FOR REPAIRS TO 2°40' SKEW (L.A.)
**125'-10" x 40'-0" PRETENSIONED
PRESTRESSED CONCRETE BEAM E.B. BRIDGE**
38'-11 1/2" END SPANS 47'-11" INTERIOR SPAN
DECK OVERLAY DETAILS
STA. 58+57.18, 37.0' RT. (CL. I-80) DECEMBER 2020
IOWA COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 14 OF 14 FILE NO. 31539 DESIGN NO. 221

		100-1D 10-18-05	
PROJECT DESCRIPTION			
This project involves bridge deck overlays and approach work on eastbound and westbound I-80 over county road V38, located at the junction of county road V38.			

[illegible]

ESTIMATE REFERENCE INFORMATION		
Item No.	Item Code	Description
1	2102-0425070	SPECIAL BACKFILL Refer to Tab 112-9 on Sheet C.4 for locations. 6" thickness. Refer to Detail 7158 on Sheet B.1 for additional details.
2	2123-7450000	SHOULDER CONSTRUCTION, EARTH Refer to Tab 112-9 on Sheet C.4 for locations. Refer to Detail 7158 on Sheet B.1 for additional details.
3	2301-0685550	BRIDGE APPROACH PAVEMENT, AS PER PLAN
4	2301-0690203	BRIDGE APPROACH, BR-203 Refer to Tab 112-6 on Sheet C.3 for details and locations. Refer to Sheet U.1-U.2 for eastbound approaches locations and details.
5	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE Refer to Tab 100-28 on Sheet C.2 for location and additional details.
6	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL Refer to Tab 110-7A on Sheet C.2 for locations and additional details.
7	2505-6765006	REMOVE AND REINSTALL FORMED STEEL BEAM GUARDRAIL This item is for the removal and installation of existing steel beam guardrail. Quantity is estimated at 20 linear feet at SW and NW corners of the EB bridge and 70 linear feet at NE and SE corners of the WB bridge. 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.

[illegible]

FILE NO.	31539	ENGLISH	DESIGN TEAM	Stanley Consultants Inc.		IOWA	COUNTY	PROJECT NUMBER	IMN-080-6(395)206--0E-48	SHEET NUMBER	C.1
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102-5
04-18-17

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth	Type	Depth	Type	Depth	Type	Depth	Source	Type	Durability Class	Type	
1	Iowa	I-80	EB	204.8	209.65	1990		IR-80-6(136)193	PCC	11.5	GSB	9					SULLY MINE	C.LST.	I		
2	Iowa	I-80	WB	204.8	209.65	1992		IR-80-6(157)205	PCC	12	GSB	9					SULLY MINE	C.LST.	I		

108-30
04-16-13

CRASH CUSHIONS

* Bid Item

① Lane(s) to which the installation is adjacent.

② Complete this section when using the Temporary Crash Cushion bid item and Earthwork is needed for Sand Barrel placement. Refer to BA-500

No.	① Direction of Traffic	Location Station	Side	Obstacle Width	Crash Cushion (Select One)*					Sand Barrel Details ②					Earthwork*		Spare Parts Kit (Select One)*		Obstacle Description	Remarks
					Temporary	Temporary Redirective	Temporary Severe Use	Permanent	Permanent Severe Use	V	W	X	Y	Z	Excavation Class 10	Embankment in Place	Permanent	Permanent Severe Use		
1	EB	56+98.00	Lt	2.00			X											Temporary Barrier Rail	Stage 1 - EB	
2	EB	56+85.00	Lt	2.00			X											Temporary Barrier Rail	Stage 2 - EB	
3	EB	56+98.00	Rt	2.00			X											Temporary Barrier Rail	Stage 3 - EB	
4	WB	60+71.00	Rt	2.00			X											Temporary Barrier Rail	Stage 4 - WB	
5	WB	60+84.00	Rt	2.00			X											Temporary Barrier Rail	Stage 5 - WB	
6	WB	60+71.00	Lt	2.00			X											Temporary Barrier Rail	Stage 6 - WB	

108-33
10-15-19

TEMPORARY BARRIER RAIL

Possible Standard: BA-401 Possible Detail: 560-7

* Not a bid item. Anchorage requirements are based on TBR locations shown in the plans. TBR alignments that vary from what is shown in the plans may result in additional TBR sections requiring anchorage.

No.	Station to Station		Length	(Select One)		Anchored*	Modular Glare Screen System	Remarks
				Concrete	Steel			
				BA-401	560-7			
1	56+98.00	59+66.00	262.5	X		Yes	No	Stage 1 - EB
2	56+85.00	59+66.00	575.0	X		Yes	No	Stage 2 - EB
3	56+98.00	59+66.00	262.5	X		Yes	No	Stage 3 - EB
4	57+00.00	60+71.00	375.0	X		Yes	No	Stage 4 - WB
5	57+00.00	60+85.00	775.0	X		Yes	No	Stage 5 - WB
6	57+00.00	60+71.00	375.0	X		Yes	No	Stage 6 - WB
		Total:	2625.0					

112-6
04-18-17

BRIDGE APPROACH SECTION

Refer to the BR Series.

* Not a bid item

Location				Approach Pavement					Standard Road Plans BR Series			Subdrain							Remarks	
Bridge Station	End	Skew Ahead		Thickness	Pay Length	Non-Reinf. Pavement Area	Single-Reinf. Pavement Area	Double-Reinf. Pavement Area	Approach	Fixed or Movable Abutment	Abutting Pavement	* Perforated Subdrain 4"	* Subdrain Outlet		* Porous Backfill	* Class 'A' Crushed Stone Backfill	* Modified Subbase	* Polymer Grid		* Special Backfill
		Degrees																		
		LEFT	RIGHT										Inches	FT						
58+58.90	W	3		12.0	20.0			92.7	Mod BR-203	Movable	BR-211						116.0	100.4		EB
58+58.90	E	3		12.0	20.0			89.3	Mod BR-203	Movable	BR-211						113.5	98.2		EB
58+58.90	W	3		12.0	70.0	86.7	57.8	89.3	BR-203	Movable	BR-211	50.0	57+37.00	0	0.2	0.2	253.7	268.5		WB
58+58.90	E	3		12.0	70.0	86.7	57.8	92.6	BR-203	Movable	BR-211	50.0	59+85.00	0	0.2	0.2	256.2	271.1		WB
					Totals:	173.3	115.6	363.9							0.4	0.4	739.3	738.2		

FILE NO. 31539

ENGLISH

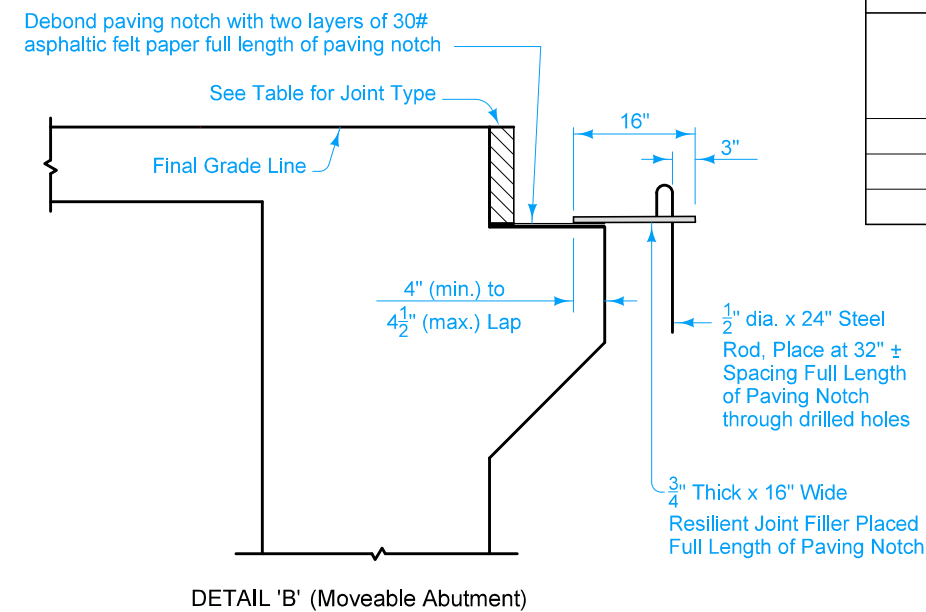
DESIGN TEAM Stanley Consultants Inc.

IOWA COUNTY

PROJECT NUMBER IMN-080-6(395)206--0E-48

SHEET NUMBER C.3

11/24/2020 12:09:01 PM 8725 c:\projects\datasource-1\common\d0839436\SHI_48080395_C01.xlsm



JOINT TYPE FOR MOVEABLE ABUTMENT BRIDGES		
Joint	Maximum Bridge Length	
	Concrete Beam or Slab	Steel Girder
CF-1	370'	250'
CF-2	465'	320'
CF-3	575'	400'

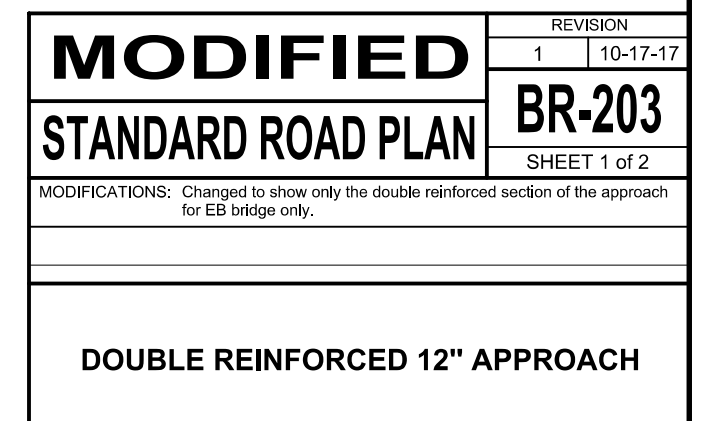
- ① 2" min. to 2 1/2" max. clear to bent bar.
- ② Minimum lap length: #5 Bars - 18"
#6 Bars - 27"
#8 Bars - 48"
- ③ If bridge is skewed, place additional #5 bar parallel to skewed face.

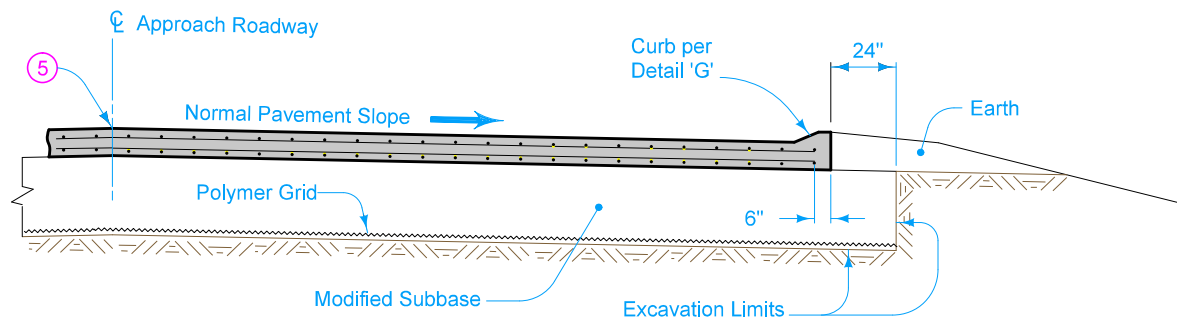
For joint details, refer to [PV-101](#).

For curb details, see Detail 'G'.

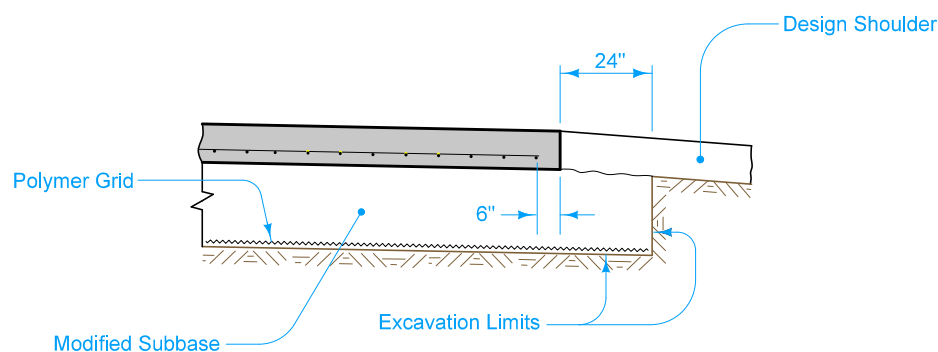
All transverse bars are #5.

Contract Item:
Bridge Approach Pavement, As Per Plan.
Tabulation:
112-6

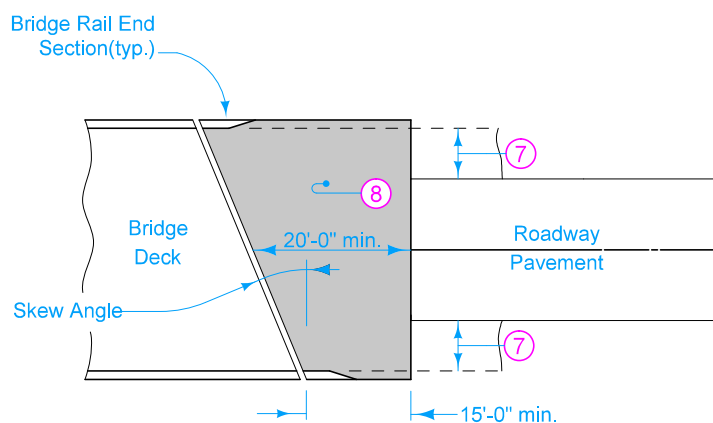




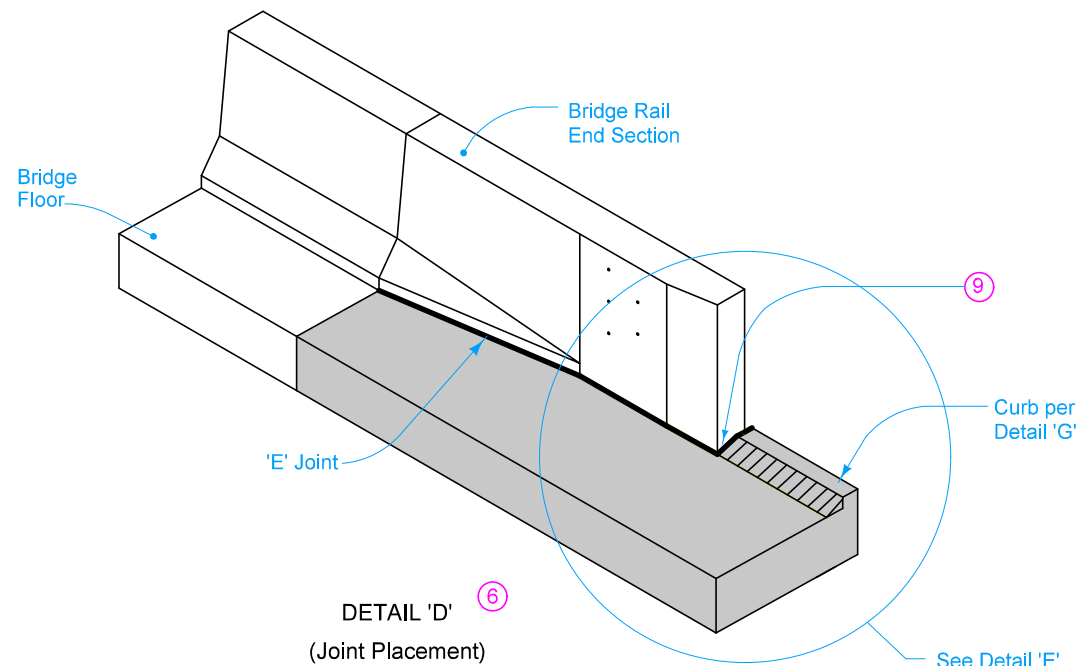
SECTION A-A



SECTION B-B



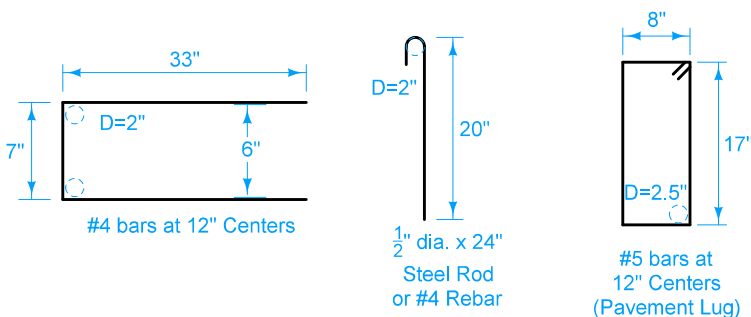
APPROACH PAVEMENT
LAYOUT AT A SKEW



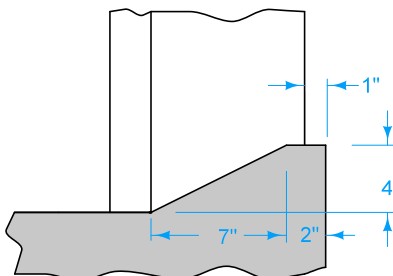
DETAIL 'D'
(Joint Placement)

- ⑤ Longitudinal Joint (**PV-101**):
Single pour - Saw cut joint per Detail B.
Two pours - Use 'KS-2' joint.
- ⑥ Refer to **BR-211**.
- ⑦ Design shoulder width.
- ⑧ Reinforced bridge approach section.
- ⑨ Expansion joint at end of Bridge Rail End Section: Place joint filler the full depth of the bridge approach pavement. In areas with curb, place full depth of pavement plus curb and shape material to fit the shape of the curb per Section B-B of **PV-101**. Seal joint per Detail F of **PV-101**.

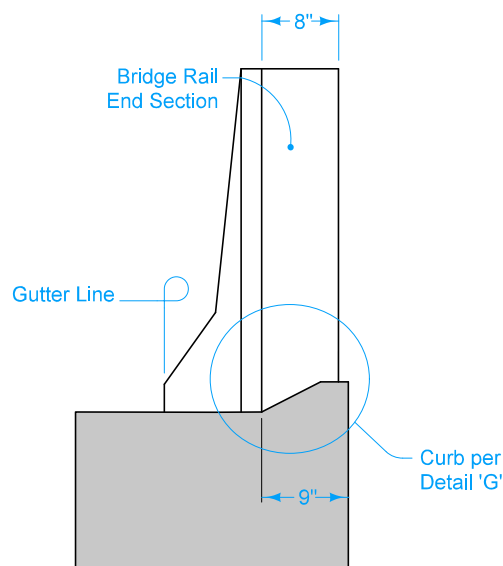
- Moveable Abutment Bridges: Flexible Foam Expansion Joint Filler complying with Section **4136** of the Standard Specifications. Minimum filler width is the abutment 'CF' joint width. Joint length as required to completely fill from back side of curb to front face of bridge wing.



BENT BAR SHAPES



DETAIL 'G'



DETAIL 'E'
(Back of Curb Placement)

MODIFIED STANDARD ROAD PLAN	REVISION	
	1	10-17-17
BR-203		
SHEET 2 of 2		
MODIFICATIONS: Changed to show only the double reinforced section of the approach for EB bridge only.		
DOUBLE REINFORCED 12" APPROACH		