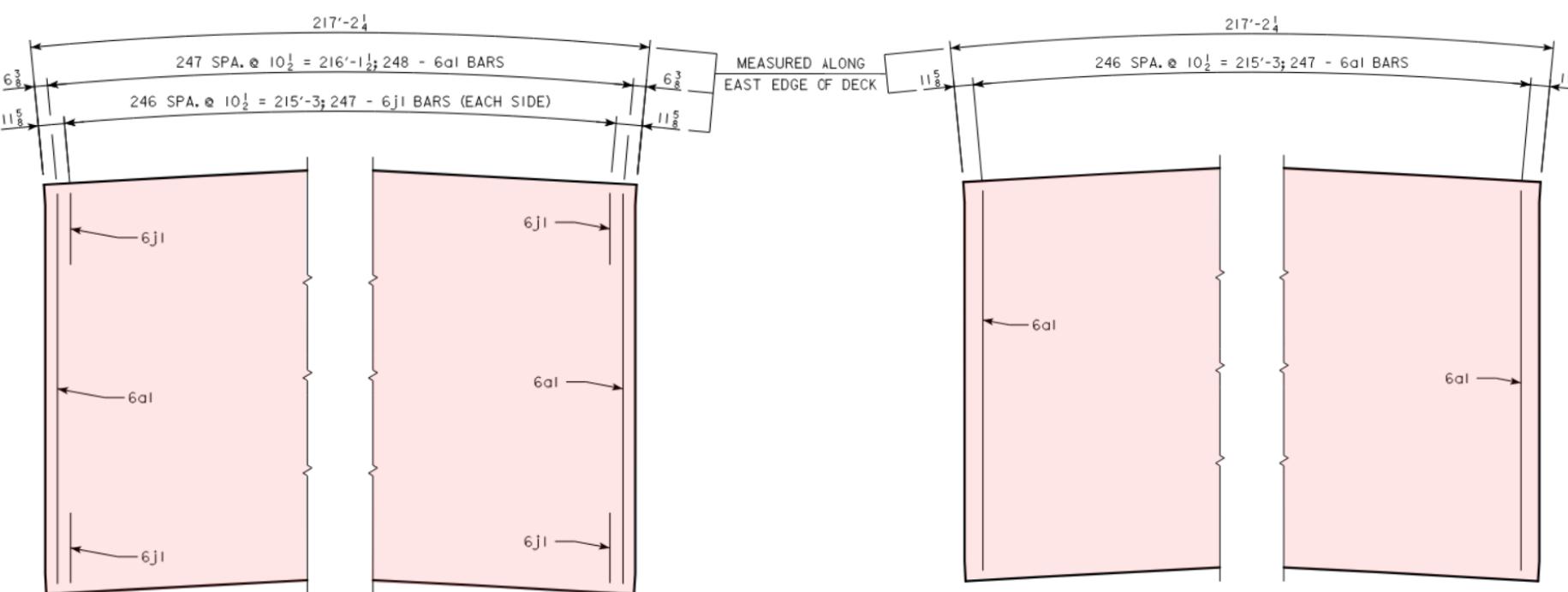


#### NOTES:

1.

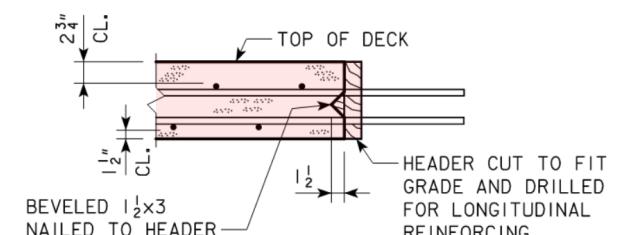
● MEASURED PERPENDICULAR TO LOCAL TANGENT OF RAMP B.

### CONCRETE PLACEMENT DIAGRAM & LONGITUDINAL REINFORCING LAYOUT



TOP TRANSVERSE REINFORCING LAYOUT

BOTTOM TRANSVERSE REINFORCING LAYOUT



### PERMISSIBLE TRANSVERSE DECK CONSTRUCTION JOINT

#### NOTES:

CONCRETE DECK SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED. (AN APPROVED ALTERNATE PROCEDURE IS TO PLACE THE CONCRETE DECK IN ONE CONTINUOUS POUR BEGINNING AT ONE END OF THE BRIDGE.) ALTERNATE PROCEDURES FOR PLACING DECK CONCRETE MAY BE SUBMITTED FOR APPROVAL TOGETHER WITH A STATEMENT OF THE PROPOSED METHOD AND EVIDENCE THAT THE CONTRACTOR POSSESSES THE NECESSARY EQUIPMENT AND FACILITIES TO ACCOMPLISH THE REQUIRED RESULTS. THE BRIDGE ENGINEER SHALL REVIEW ANY ALTERNATE PROCEDURES. THE COST OF ANY ADDITIONAL ANALYSIS AND PLAN MODIFICATIONS SHALL BE PAID FOR BY THE CONTRACTOR. THE ENGINEER SHALL DETERMINE IF A RETARDING ADMIXTURE IS REQUIRED TO MAINTAIN PLASTICITY OF THE CONCRETE DECK DURING PLACEMENT.

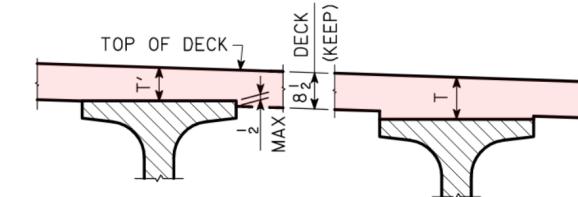
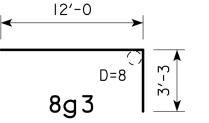
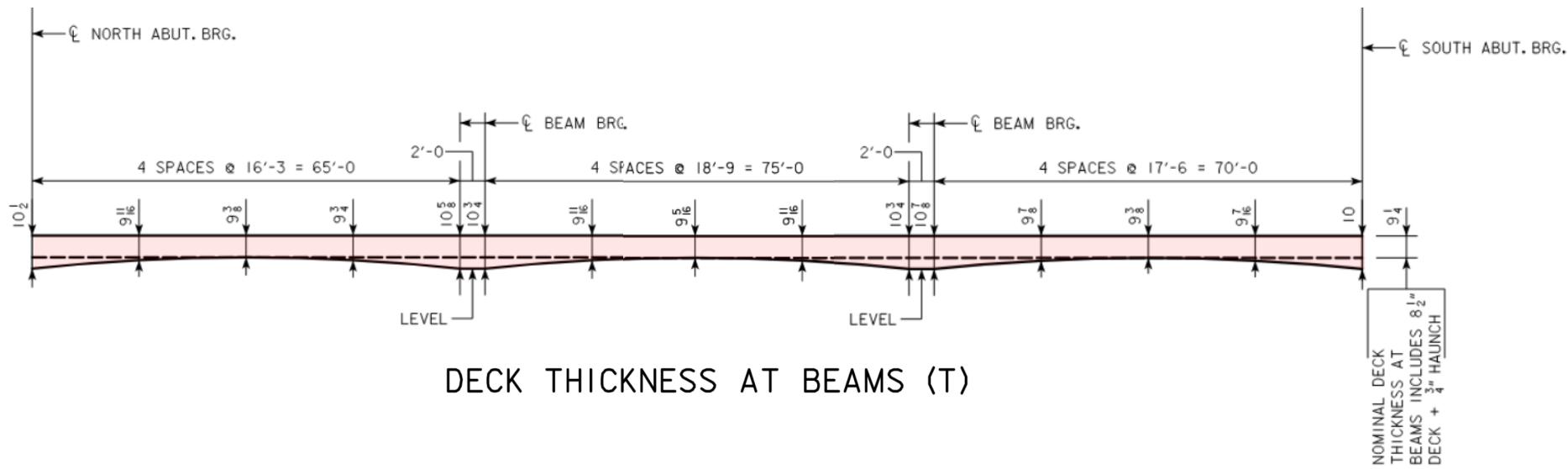
DECK CONCRETE SECTIONS SHALL CURE FOR A MINIMUM OF 48 HOURS AND SHALL ACHIEVE A MINIMUM STRENGTH OF 75% OF THE 28 DAY DECK CONCRETE STRENGTH PRIOR TO REMOVING DECK HEADERS AND BEGINNING AN ADJACENT POUR.

Unit Test Instruction for the Design-to-Construction Data Exchange

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Drawn By DHC Reviewed By GMS		L1-Br01-Deck01 / 01



REINFORCING BAR LIST					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6al	DECK TRANSV. TOP & BOTT.	—	495	30'-10	22,924
5bl	DECK LONGIT. TOP & BOTT.	—	426	37'-10	16,810
8b2	DECK LONGIT. TOP AT PIERS	—	64	19'-8	3,361
8g3	ABUT. DIAPH. VERT. B.F.	—	52	15'-3	2,117
6jl	TOP OF DECK TRANSV. (AT RAIL)	—	494	6'-3	4,637
REINFORCING STEEL STAINLESS - TOTAL (LBS.)					49,849



### DECK THICKNESS DETAILS

NOTE:  
THE DECK THICKNESS (T) AT BEAMS IS BASED ON THE ANTICIPATED BEAM CAMBER AND DEFLECTIONS. THESE VALUES ARE USED BY THE DESIGNER TO SET BEAM ELEVATIONS AND ESTIMATE CONCRETE QUANTITIES. REFER TO THE HAUNCH DATA DETAILS SHEET FOR ADDITIONAL INFORMATION TO AID THE CONTRACTOR IN SETTING THE FIELD HAUNCHES REQUIRED FOR CONSTRUCTION.

### NOTES:

#### Deck Concrete:

Bid Item Number: 2403-7000210

Bid Item Name: High Performance Structural Concrete

Bid Item Notes: Refer to the "Developmental Specifications for High Performance Concrete for Structures" for additional information.

#### Epoxy Coated Reinforcing:

Bid Item Number: 2404-7775005

Bid Item Name: Reinforcing Steel, Epoxy Coated

Bid Item Notes:

#### Stainless Steel Reinforcing:

Bid Item Number: 2404-7775005

Bid Item Name: Reinforcing Steel, Stainless Steel

Bid Item Notes:

Unit Test Instruction for the Design-to-Construction Data Exchange

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.	.	.
1	12/8/23	.

No. Date Issue / Revision Notes

Unit Test Description Unit Test / Sheet No.

Level 1 Deck

Drawn By Reviewed By

DHC GMS

**BIM**  
FOR  
BRIDGES  
AND STRUCTURES  
TPF-5(372)

**HDR** **jō consulting**

L1-Br01-Deck01 / 02

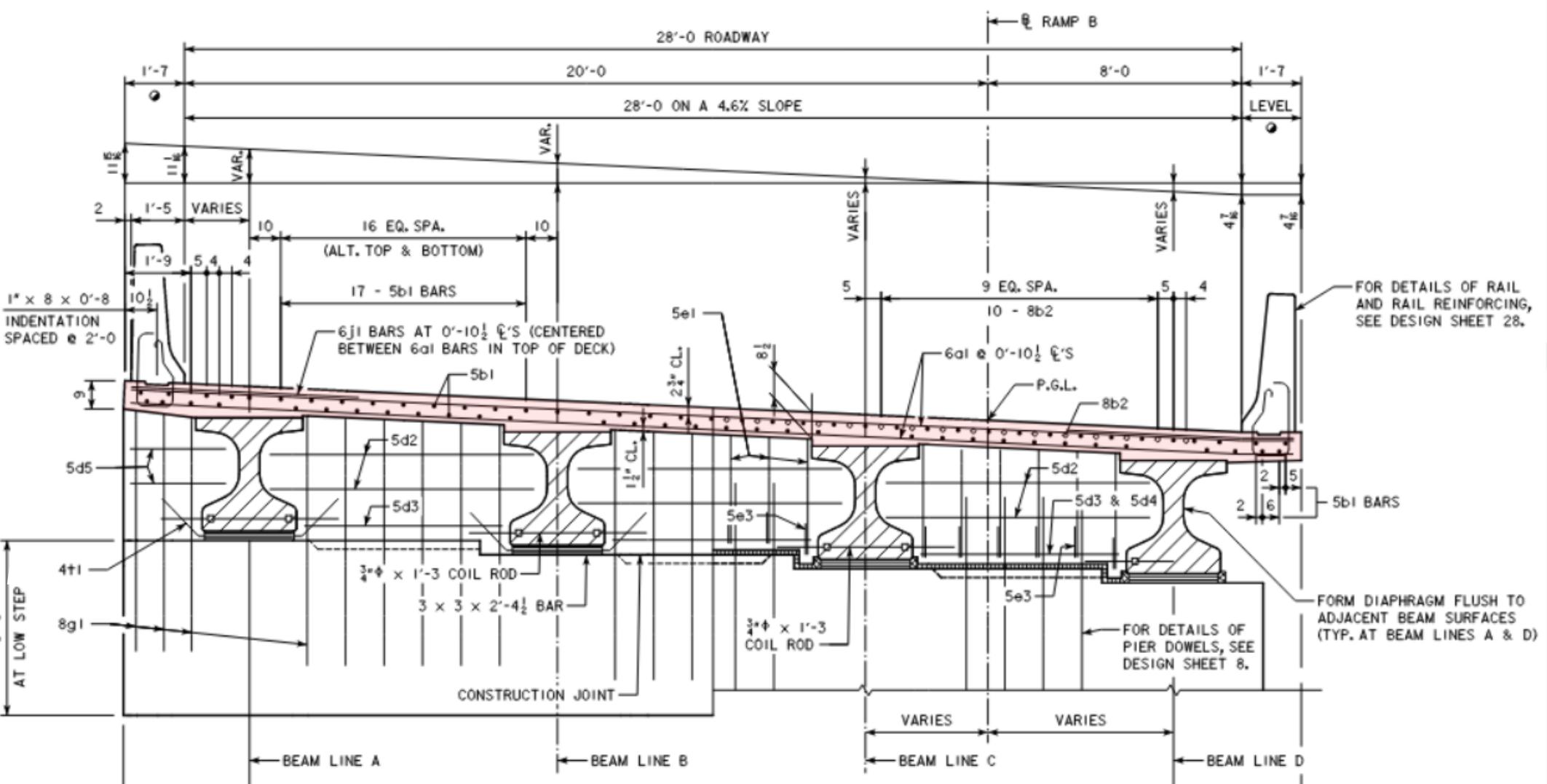
## SUPERSTRUCTURE NOTES:

THE BRIDGE DECK AS SHOWN INCLUDES  $\frac{3}{4}$ " INTEGRAL WEARING SURFACE. FORMS FOR THE DECK AND BARRIER RAIL ARE TO BE SUPPORTED BY THE PRESTRESSED CONCRETE BEAMS.

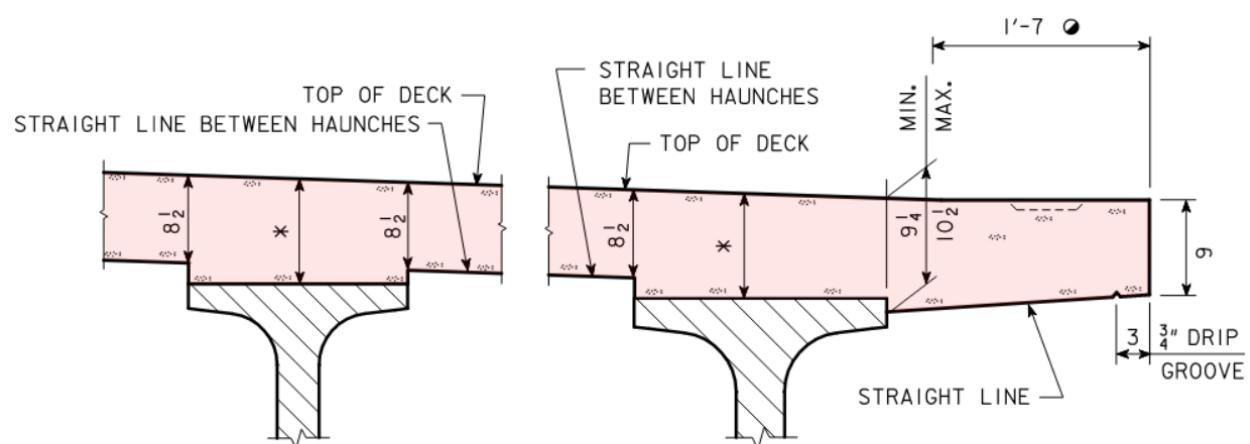
CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

ALL DECK AND DIAPHRAGM REINFORCING IS TO BE WIRED IN PLACE AND ADEQUATELY SUPPORTED BEFORE CONCRETE IS PLACED.

TOP TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND  $2\frac{3}{4}$ " CLEAR BELOW TOP OF DECK. BOTTOM TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND  $1\frac{1}{2}$ " CLEAR ABOVE BOTTOM OF DECK. TOP AND BOTTOM REINFORCING STEEL IS TO BE SUPPORTED BY INDIVIDUAL BAR CHAIRS SPACED AT NOT MORE THAN 3'-0" CENTERS LONGITUDINALLY AND TRANSVERSELY, OR BY CONTINUOUS ROWS OF BAR HIGH CHAIRS OR DECK BOLSTERS SPACED 4'-0" APART. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS, BAR HIGH CHAIRS, AND DECK BOLSTERS.



HALF SECTION NEAR ABUTMENT  
(LOOKING AHEAD STATION)



INTERIOR BEAMS

EXTERIOR BEAMS

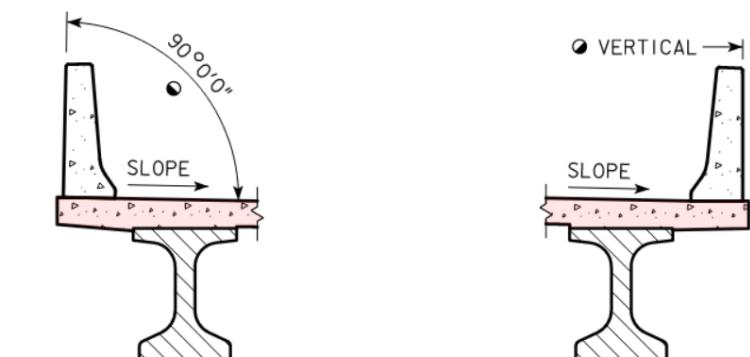
## TYPICAL DECK AND HAUNCH DETAIL

\* FOR DECK THICKNESS OVER BEAMS SEE  
HAUNCH AND CAMBER DETAILS ON  
DESIGN SHEET 18.

NOTES:  
1.

- WHERE THE DECK SLOPES TOWARDS THE BARRIER RAIL, THE DECK UNDER THE BARRIER RAIL SHALL BE PLACED LEVEL AND THE BARRIER RAIL SHALL BE PLACED VERTICAL. WHERE THE DECK SLOPES AWAY FROM THE BARRIER RAIL, THE DECK UNDER THE BARRIER RAIL SHALL BE PLACED ALONG THE SAME CROSS SLOPE AS THE DECK AND THE BARRIER RAIL SHALL BE PLACED PERPENDICULAR TO THE TOP OF THE DECK. SEE BARRIER RAIL ORIENTATION DETAILS, THIS SHEET.

HALF SECTION NEAR PIER  
(LOOKING AHEAD STATION)



BARRIER RAIL  
ORIENTATION DETAIL  
(SHOWING "DECK SLOPES AWAY  
FROM THE BARRIER RAIL")

BARRIER RAIL  
ORIENTATION DETAIL  
(SHOWING "DECK SLOPES  
TOWARDS THE BARRIER RAIL")

Unit Test Instruction for the  
Design-to-Construction Data Exchange

No.	Date	Issue / Revision Notes	Unit Test / Sheet No.
1	12/8/23		
Unit Test Description			Level 1 Deck
Drawn By <b>DHC</b> Reviewed By <b>GMS</b>			

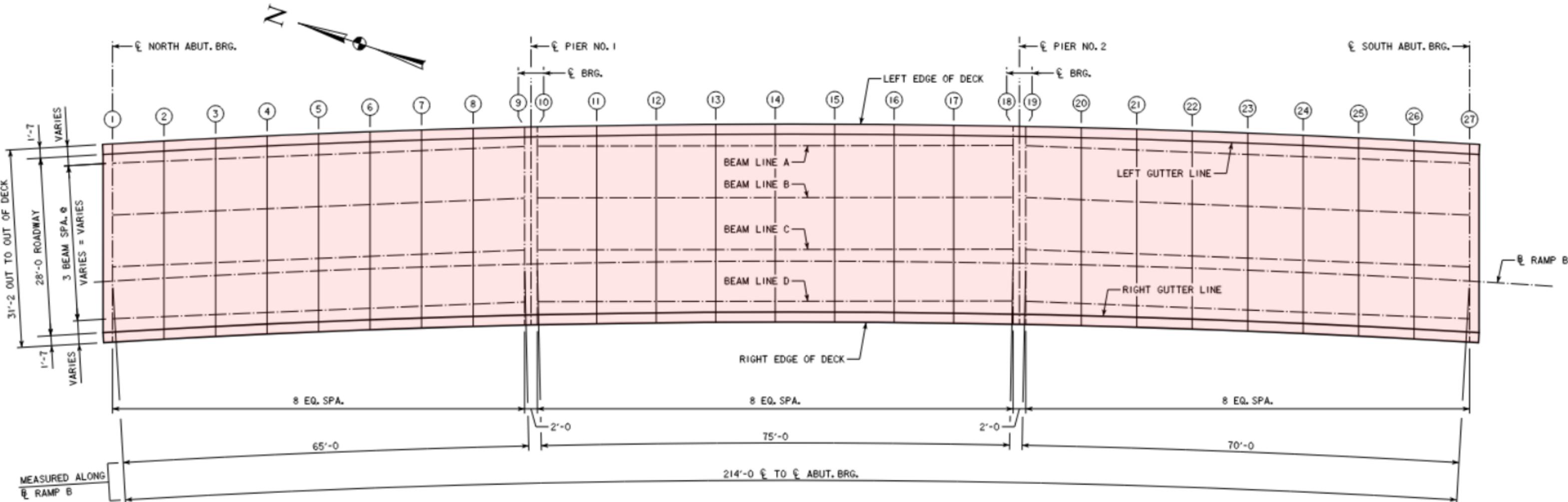
**BIM**  
FOR  
BRIDGES  
AND STRUCTURES  
TPF-5(32)

**HDR**

**jō** consulting

TABLE OF TOP OF DECK ELEVATIONS

	POINT	LINE	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳	㉑	㉒	㉓	㉔	㉕	㉖	㉗
	POINT	LINE	¢ NORTH ABUT. BRG.	¢ PIER NO. 1 BEARINGS								¢ PIER NO. 2 BEARINGS								¢ SOUTH ABUT. BRG.									
LEFT EDGE OF DECK		961.30	961.35	961.40	961.45	961.51	961.56	961.61	961.66	961.72	961.73	961.79	961.84	961.89	961.94	961.99	962.03	962.07	962.11	962.11	962.15	962.17	962.20	962.22	962.24	962.26	962.27	962.28	
LEFT GUTTER LINE		961.22	961.28	961.33	961.38	961.43	961.49	961.54	961.59	961.64	961.66	961.71	961.77	961.82	961.87	961.92	961.96	962.00	962.03	962.04	962.07	962.10	962.13	962.15	962.17	962.19	962.20	962.21	
BEAM LINE A		961.16	961.20	961.25	961.30	961.35	961.41	961.46	961.52	961.58	961.59	961.64	961.74	961.79	961.83	961.88	961.92	961.97	961.98	962.00	962.02	962.05	962.07	962.09	962.11	962.13	962.14		
BEAM LINE B		960.78	960.83	960.87	960.92	960.98	961.03	961.08	961.14	961.20	961.21	961.26	961.31	961.36	961.41	961.46	961.50	961.55	961.59	961.60	961.62	961.65	961.67	961.69	961.71	961.73	961.75	961.77	
BEAM LINE C		960.40	960.45	960.50	960.55	960.60	960.65	960.71	960.76	960.82	960.84	960.89	960.94	960.99	961.03	961.08	961.13	961.17	961.22	961.23	961.25	961.27	961.30	961.32	961.34	961.36	961.38	961.40	
BEAM LINE D		960.30	960.35	960.40	960.46	960.51	960.56	960.61	960.67	960.72	960.73	960.79	960.85	960.90	960.95	961.00	961.04	961.08	961.12	961.15	961.18	961.21	961.23	961.25	961.27	961.28	961.29		
RIGHT GUTTER LINE		959.92	959.98	960.03	960.08	960.14	960.19	960.24	960.30	960.35	960.36	960.42	960.48	960.53	960.58	960.63	960.67	960.71	960.75	960.76	960.79	960.81	960.84	960.86	960.88	960.90	960.91	960.93	
RIGHT EDGE OF DECK		959.92	959.98	960.03	960.08	960.14	960.19	960.24	960.30	960.35	960.36	960.42	960.48	960.53	960.58	960.63	960.67	960.71	960.75	960.76	960.79	960.82	960.84	960.86	960.88	960.90	960.91	960.93	



TOP OF DECK ELEVATIONS & HAUNCH LOCATIONS

NOTES:

1.

Unit Test Instruction for the Design-to-Construction Data Exchange		
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1	10/19/23	.
No.	Date	Issue / Revision Notes
Unit Test Description		Unit Test / Sheet No.
Level 1 Deck		
Drawn By	Reviewed By	
DHC	GMS	

**BIM** FOR BRIDGES AND STRUCTURES TPF-5(372)

**HDR**

jō consulting

L1-Br01-Deck01 / 04

## SPECIFICATIONS:

DESIGN: AASHTO LRFD 8TH ED, SERIES OF 2017, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

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, INCLUDING THE FOLLOWING SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT:

- "DEVELOPMENTAL SPECIFICATIONS FOR HIGH PERFORMANCE CONCRETE FOR STRUCTURES",
- "DEVELOPMENTAL SPECIFICATIONS FOR MAINTENANCE WORK ON RAILROAD RIGHT-OF-WAY (UNION PACIFIC RAILROAD)",
- "SPECIAL PROVISIONS FOR E-BUILDER".

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

DURING CONSTRUCTION OF THIS PROJECT THE BRIDGE CONTRACTOR WILL BE REQUIRED TO COORDINATE OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME IS SHOWN ON SHEET J.I OF THESE PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING STABILITY OF PRESTRESSED CONCRETE BEAMS DURING ERECTION AND CONSTRUCTION UP THROUGH THE CONCRETE BRIDGE DECK REACHING ITS FULL 28-DAY STRENGTH. THE CONTRACTOR SHALL PROVIDE SUFFICIENT TEMPORARY ANCHOR BRACING AT BEAM ENDS AND TEMPORARY INTERMEDIATE BRACING AS NEEDED TO ENSURE PRESTRESSED BEAM STABILITY. PARTIALLY OR FULLY INSTALLED PERMANENT BRACING AS SHOWN IN THESE DESIGN PLANS SHALL NOT BE ASSUMED SUFFICIENT TO BRACE PRESTRESSED BEAMS DURING ERECTION AND CONSTRUCTION. TEMPORARY BRACING SHALL NOT BE WELDED TO PRESTRESSED BEAM STIRRUPS.

LONGITUDINAL GROOVING SHOWN ELSEWHERE IN THESE PLANS.

## DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH ED, SERIES OF 2017, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

- REINFORCING STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60 FOR EPOXY COATED AND NON-COATED, AND GRADE 60 OR 75 FOR STAINLESS.
- CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5,  $f'_c = 4.0$  KSI, EXCEPT PRESTRESSED BEAM CONCRETE AS NOTED.
- PRESTRESSED CONCRETE BEAMS, SEE DESIGN SHEET 19.
- STRUCTURAL STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 6, ASTM A709 GRADE 50 (AASHTO M270 GRADE 50), EXCEPT AS NOTED.

## GENERAL NOTES:

THIS BRIDGE IS DESIGNED FOR HL-93 LOADING, PLUS 20 LBS. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

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.

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.

Faint lines on plans indicate the existing structure.

EXCAVATION QUANTITIES FOR THE PIERS ARE BASED ON THE ASSUMPTION THAT ABUTMENT FILLS ARE IN PLACE PRIOR TO STARTING CONSTRUCTION OF THE PIERS.

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.

THE BRIDGE CONTRACTOR SHALL PREBORE HOLES FOR ABUTMENT PILES. HOLES SHALL BE BORED TO THE ELEVATIONS SHOWN ON THE "LONGITUDINAL SECTION ALONG B RAMP B" ON DESIGN SHEET 4. PILES SHALL BE DRIVEN THROUGH THE HOLES TO AT LEAST THE SPECIFIED DESIGN BEARING.

ABUTMENT PILES SHALL NOT BE DRIVEN FOR A MINIMUM OF 75 DAYS FOLLOWING COMPLETION OF APPROACH FILLS. THE TIME PERIOD BETWEEN COMPLETION OF FILLS AND DRIVING PILES MAY BE CHANGED AS ORDERED BY THE ENGINEER BASED UPON REVIEW OF SETTLEMENT PLATES.

THE APPROACH FILLS AS SHOWN ARE TO BE DONE AS PART OF THE TIED PROJECT IM-035-3(194)87--13-77 AND ARE TO BE IN PLACE BEFORE ABUTMENT PILES ARE DRIVEN. THE BRIDGE CONTRACTOR IS TO LEVEL OFF AND SHAPE THE BERMS TO THE ELEVATIONS AND DIMENSIONS SHOWN. DRESSING OF SLOPES OUTSIDE THE BRIDGE AREA NOT DISTURBED BY THE BRIDGE CONTRACTOR SHALL BE PAID FOR AS EXTRA WORK.

CONCRETE BARRIER RAILS PLACED USING THE SLIPFORM METHOD WILL REQUIRE THE USED OF A CLASS BR CONCRETE IN ACCORDANCE WITH ARTICLE 2513.03, A,2 OF THE STANDARD SPECIFICATIONS. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. CLASS D CONCRETE IS NOT PERMITTED FOR CONCRETE BARRIER RAILS (CAST-IN-PLACE OR SLIPFORMED METHOD).

ALL REINFORCING IS TO BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS POURED.

ALL EXPOSED CONCRETE CORNERS, 90 DEGREES OR SHARPER TO BE FILLETED WITH A  $\frac{3}{4}$ " DRESSED AND BEVELED STRIP, UNLESS NOTED OTHERWISE.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION ( $5\text{al} \text{ is } \frac{5}{8}$  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

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No.	Date	Issue / Revision Notes
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Drawn By		Reviewed By
DHC		GMS
Unit Test / Sheet No.		
L1-Br01-Deck01 / 05		