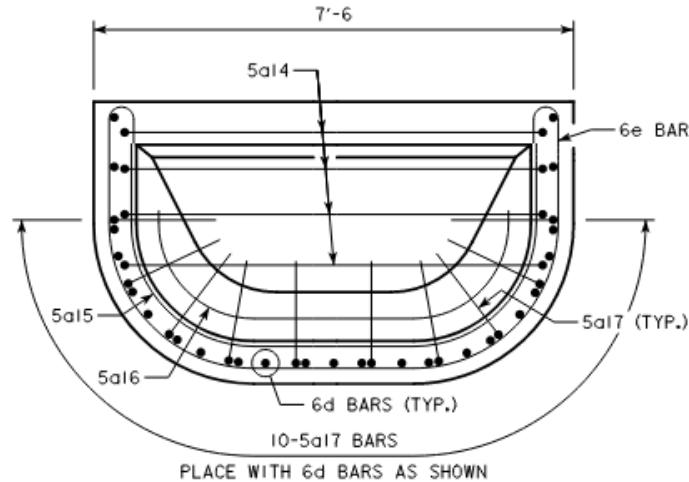
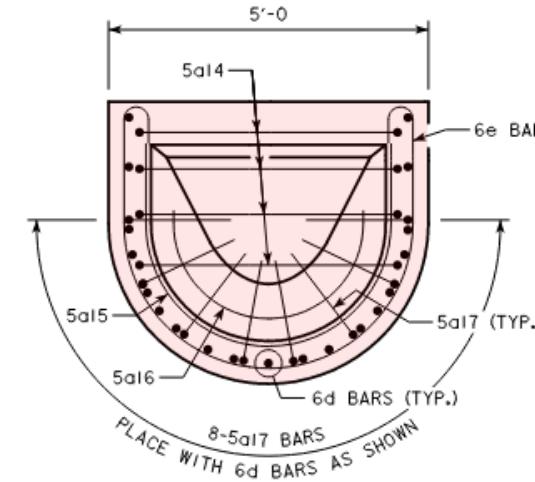


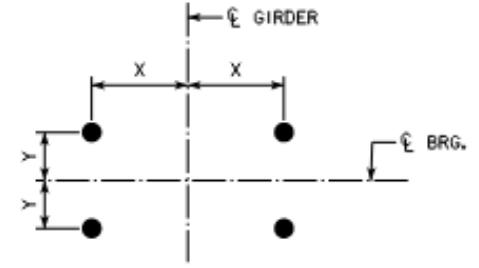
CAP END REINFORCEMENT DETAIL
(SURFACE REINFORCING AND CAP STIRRUPS NOT SHOWN FOR CLARITY)



VIEW H-H
(SHOWING PIER NO. 5A)



VIEW H-H
(SHOWING PIER NOS. 1 THRU 4)



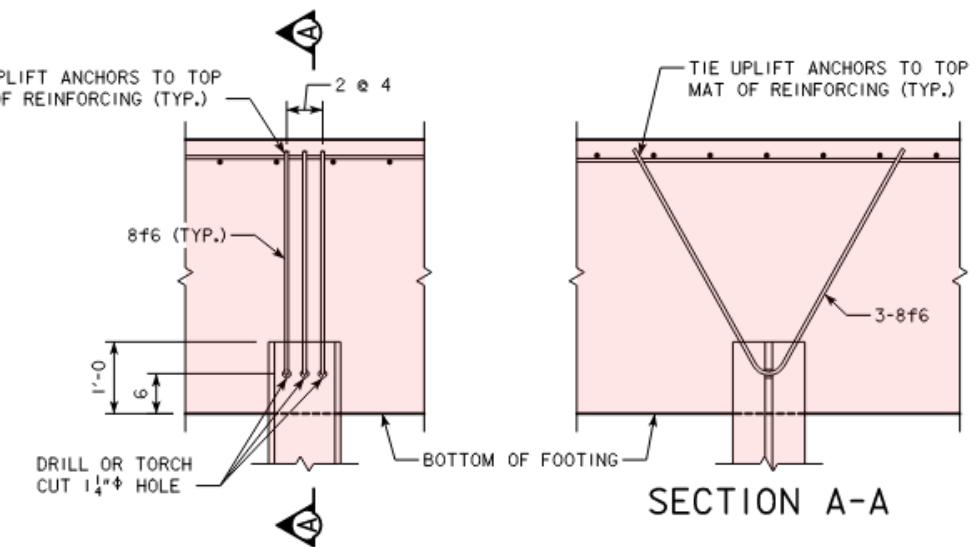
ANCHOR BOLT LOCATION
(FOR ADDITIONAL DETAILS AND NOTES,
SEE DISC BEARING DETAILS SHEETS)

ANCHOR BOLT LOCATION		
LOCATION	X (IN.)	Y (IN.)
PIER NOS. 1-4	16	6
PIER NOS. 5 BK. & 5A BK.	16	5.5

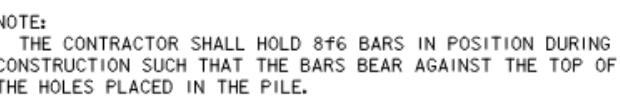
MECHANICAL SPLICING ASSEMBLY NOTES:

THE VERTICAL COLUMN BARS SHALL BE SPLICED AT THE LOCATIONS SHOWN ON THE PIER 1 DETAIL SHEETS 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.

THE COST OF ALL SPLICE ASSEMBLIES IS TO BE INCLUDED IN THE PRICE BID FOR "REINFORCING STEEL" AND NO SEPARATE PAYMENT WILL BE MADE. THE WEIGHT OF MECHANICAL SPLICE ASSEMBLIES IS NOT INCLUDED IN THE QUANTITY SHOWN FOR "REINFORCING STEEL".

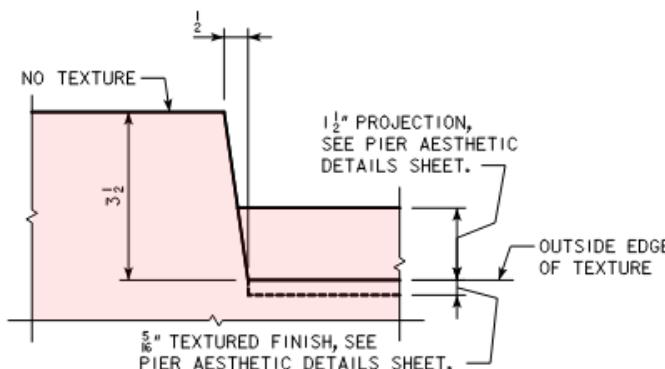


PILE UPLIFT ANCHOR DETAIL

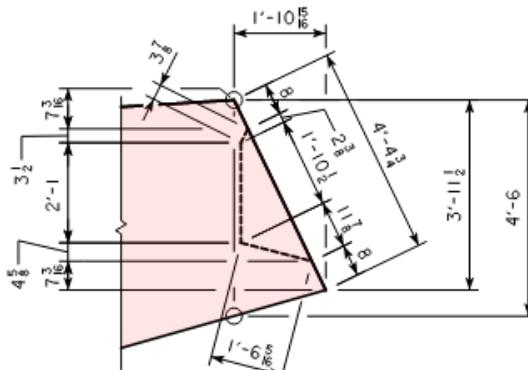


REFER TO DESIGN NO. 120 OF THIS PROJECT
FOR 3D PDF OF PIER CAP END. 7'-6" WIDE CAP
SHOWN. 5'-0" WIDE CAP SIMILAR.

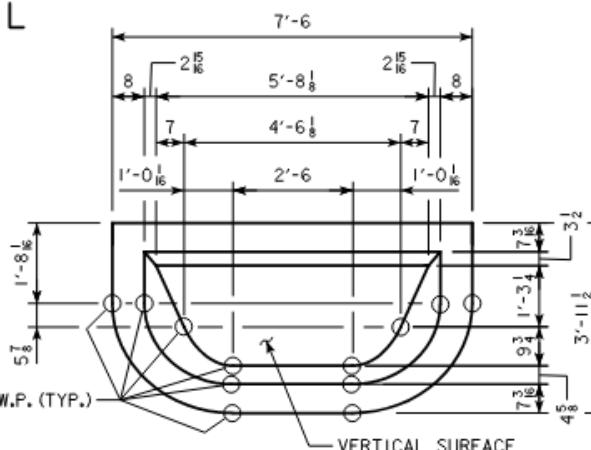
NOTE:
FOR LOCATION OF DETAILS 1-3,
SEE PIER DETAILS SHEET.



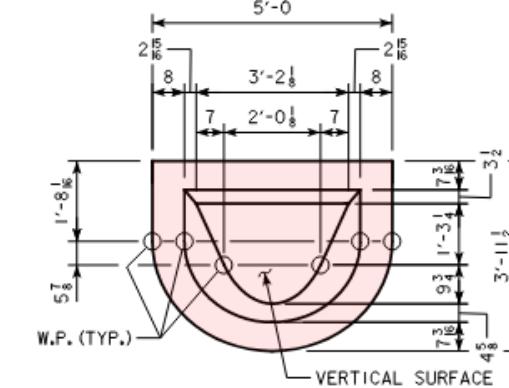
DETAIL 3



DETAIL I



DETAIL 2
(SHOWING PIER NO. 5A)



DETAIL 2
(SHOWING PIER NOS. 1 THRU 4)

NOTES:

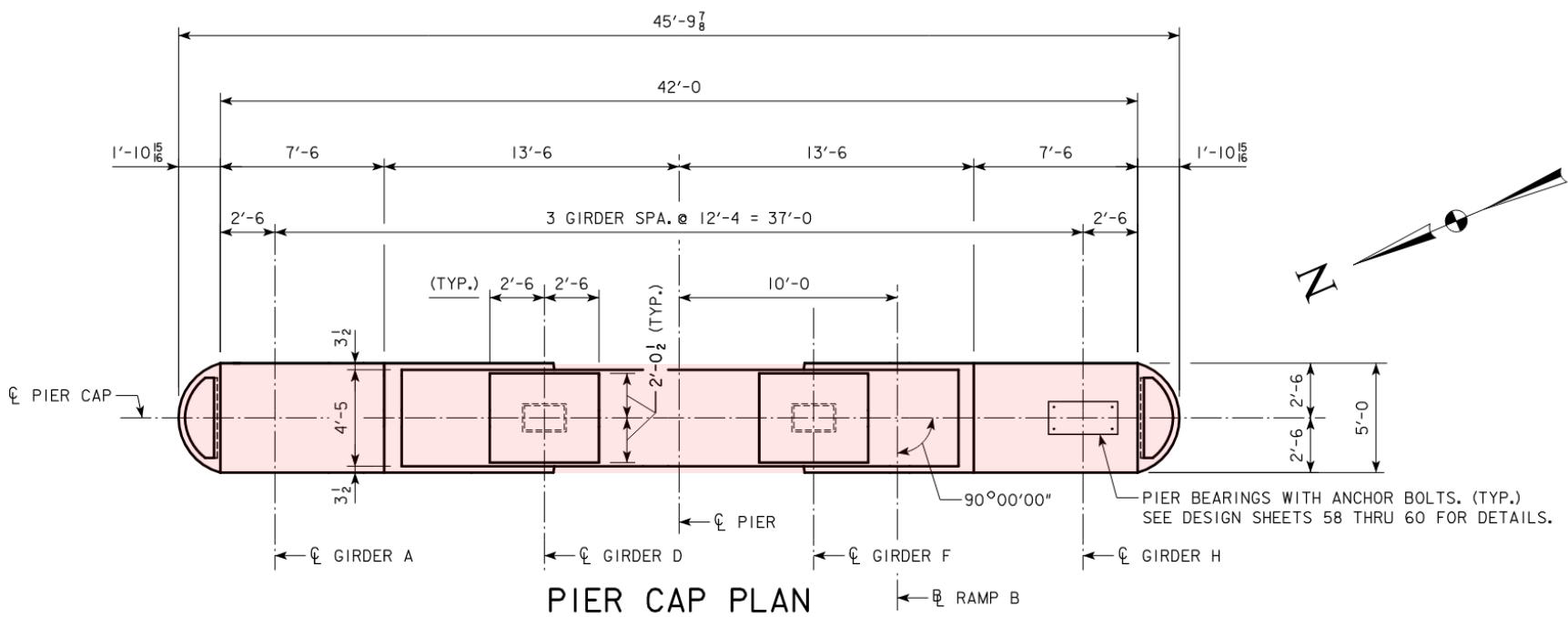
1. For the full plan set and additional structure information, see Br3-Steel and Concrete-Iowa DOT.pdf.

PIER FORMS NOTES:

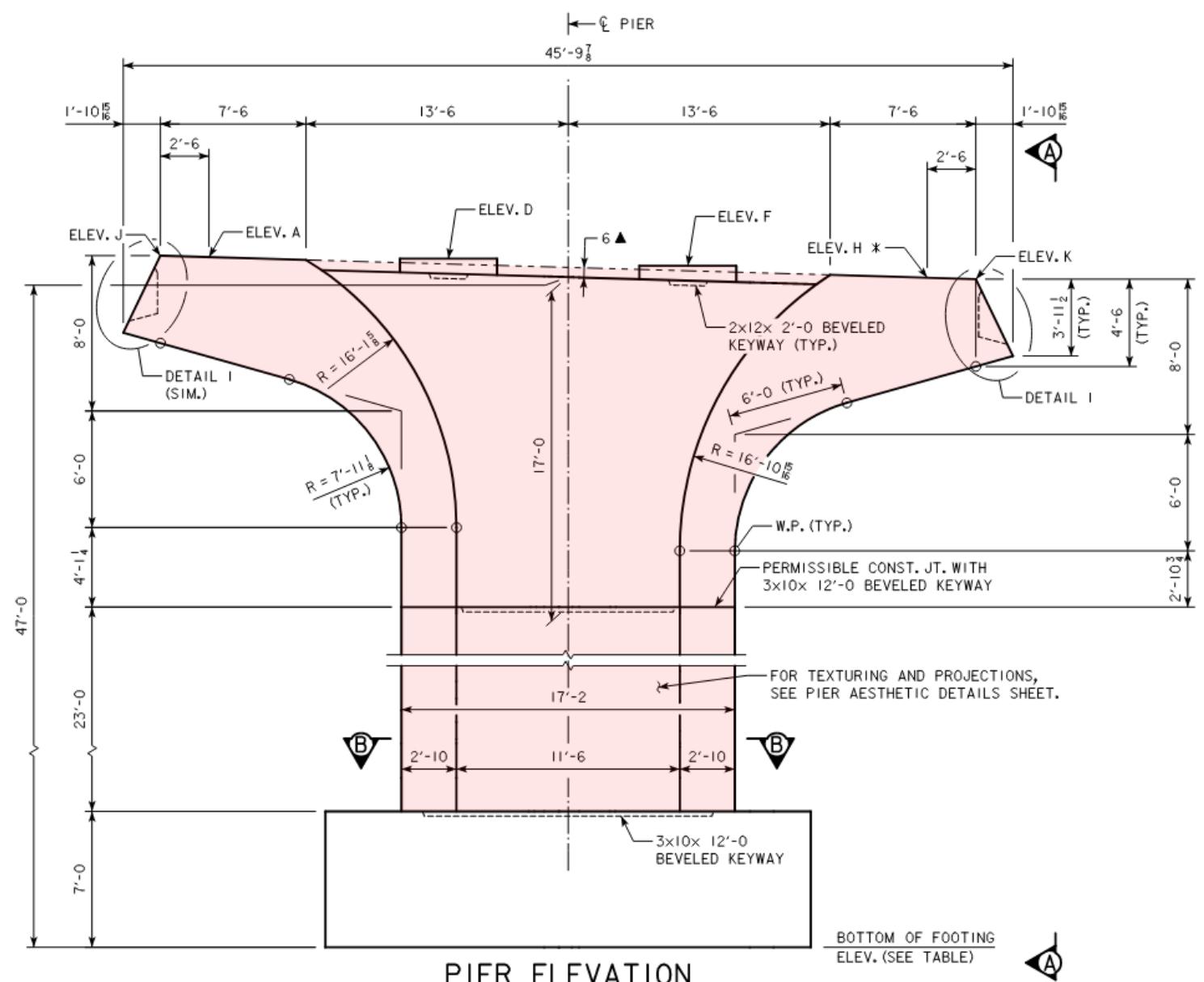
THE USE OF STEEL FORMS IS REQUIRED FOR THE FORMING OF ALL PIER CONCRETE SURFACES FROM THE TOP OF FOOTING TO THE TOP OF PIER CAP. USE OF UNFACE LUMBER OR PLYWOOD IS ALLOWED ONLY FOR BLOCKING AND SPACERS TO CREATE RECESSES AND TO SUPPORT FORM LINERS. DO NOT USE PLAIN PLYWOOD-FACED FORMS OR PLAIN LUMBER FOR ANY PORTION OF THE FINISHED PIER COLUMN OR CAP SURFACES.

DUE TO THE COMPLEX GEOMETRY OF THE PIER CAP END RECESSES, A 3D BIM MODEL WILL BE MADE AVAILABLE TO THE CONTRACTOR FOR POSSIBLE USE IN AUTOMATED MACHINING OF EXPANDED POLYSTYRENE FOAM, PLASTIC OR OTHER MATERIAL TO CREATE FORM INSERTS OR INTERMEDIATE PROCESS MOLDS.

Unit Test Instruction for the Design-to-Construction Data Exchange			 TPF-5(372)
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1	12/5/23	.	
No.	Date	Issue / Revision Notes	
Unit Test Description			Unit Test / Sheet No.
Level 3 Hammerhead Pier			
Drawn By AMN	Reviewed By MJY	L1-Br03-Pier02 / 01	



PIER CAP PLAN

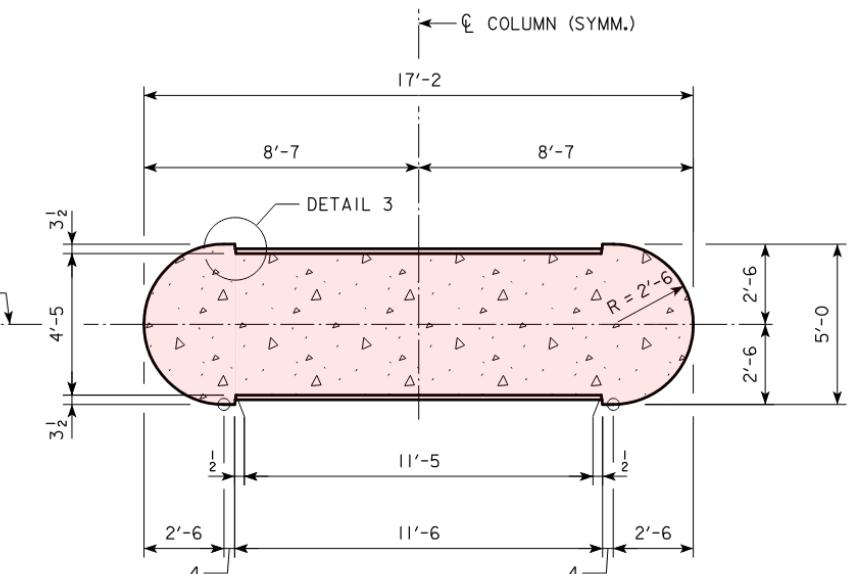


PIER ELEVATION

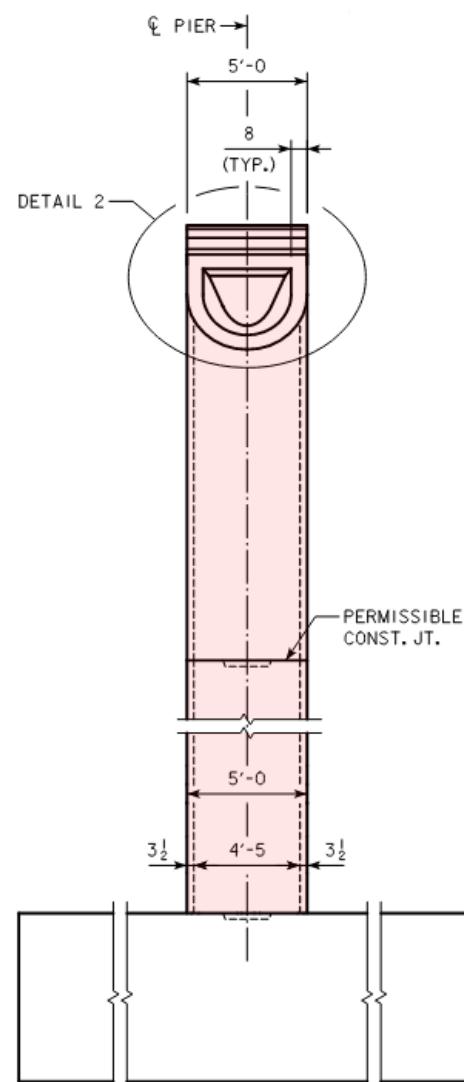
VIEW A-A

PIER ELEVATIONS		
LOCATION	PLAN **	AS-BUILT
ELEV. A	773.86	
ELEV. D	773.53	
ELEV. F	773.17	
ELEV. H*	772.80	
ELEV. J	773.94	
ELEV. K	772.73	
BOTT. OF FTG.	725.83	

- LOW STEP
- ELEVATIONS AND PEDESTAL HEIGHT DEPENDENT ON FINAL BEARING HEIGHT, WHICH SHALL BE DETERMINED BY BEARING MANUFACTURER. CONTRACTOR SHALL VERIFY BEARING HEIGHT WITH MANUFACTURER, AND ADJUST ELEVATIONS IF NECESSARY, PRIOR TO PLACING CONCRETE.



SECTION B-B



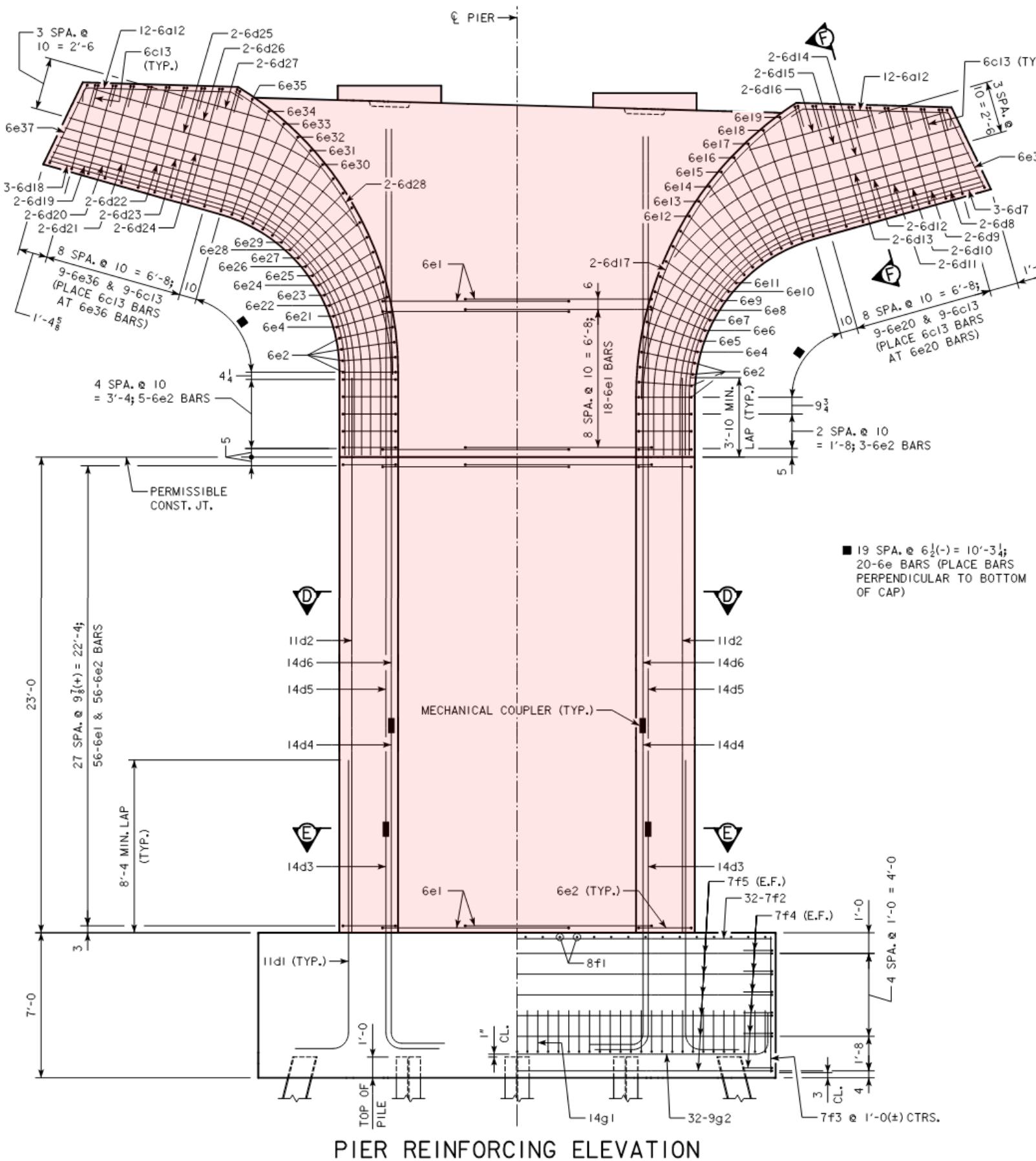
NOTES:

- ## 1. MEASURED PERPENDICULAR TO A LINE FROM FROM ELEV. A TO ELEV. H.

Unit Test Instruction for the Design-to-Construction Data Exchange			
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Unit Test Description			Unit Test / Sheet No.
Level 3 Hammerhead Pier			
Drawn By AMN		Reviewed By MJY	

L1-Br03-Pier02 / 02

L1-Br03-Pier02 / 02



PIER PILE NOTES:

THE CONTRACT LENGTH OF 75 FEET FOR THE PIER NO. I PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 275 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65. PIER PILES ALSO WERE DESIGNED FOR A FACTORED TENSION FORCE OF 27 KIPS.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.76. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF FOOTING.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR PIER NO. I PILES IS 181 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY TO ACHIEVE BEARING, THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 212 TONS AT ONE-DAY OR LATER RETAPS. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. IN NO CASE SHALL A PILE BE EMBEDDED LESS THAN 10 FEET. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

PILE DIMENSIONS ARE AT BOTTOM OF FOOTING. BATTER PILES 1x4 IN DIRECTION SHOWN.

38 - HPI4x73 STEEL BEARING PILING ARE REQUIRED.

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

1 12/5/23

No. Date Issue / Revision Notes

Unit Test Description

Level 3 Hammerhead Pier

Drawn By

AMN

Reviewed By

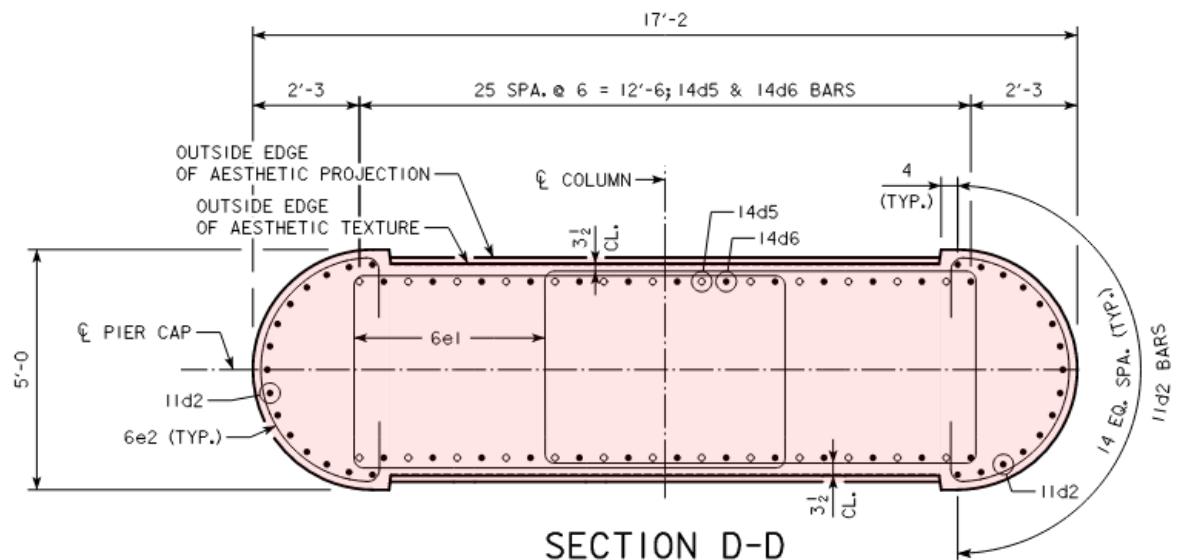
MJY

BIM
FOR
BRIDGES
AND STRUCTURES
TPF-5(372)

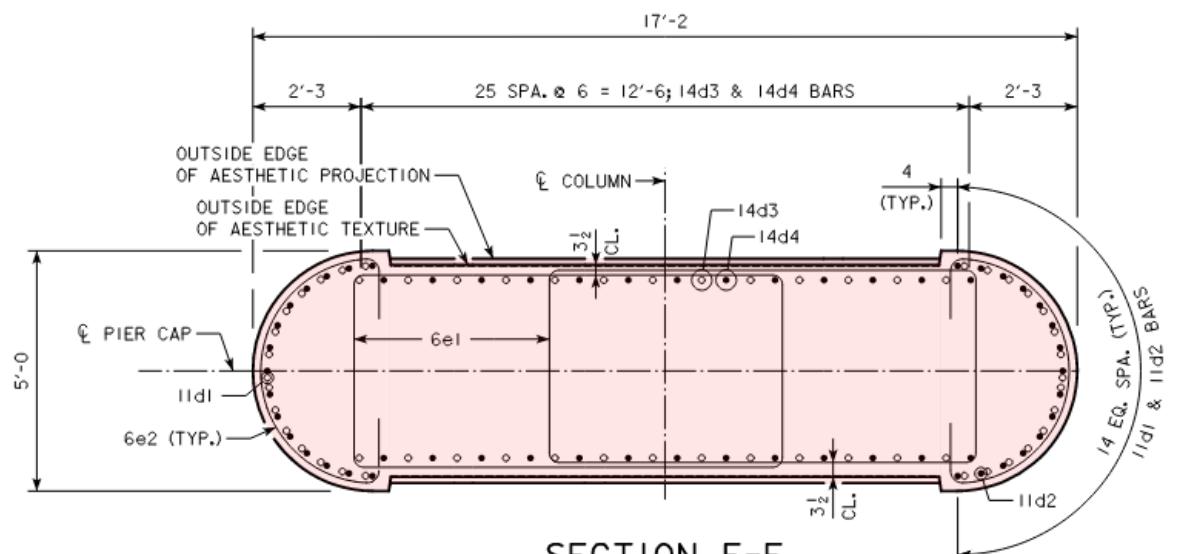
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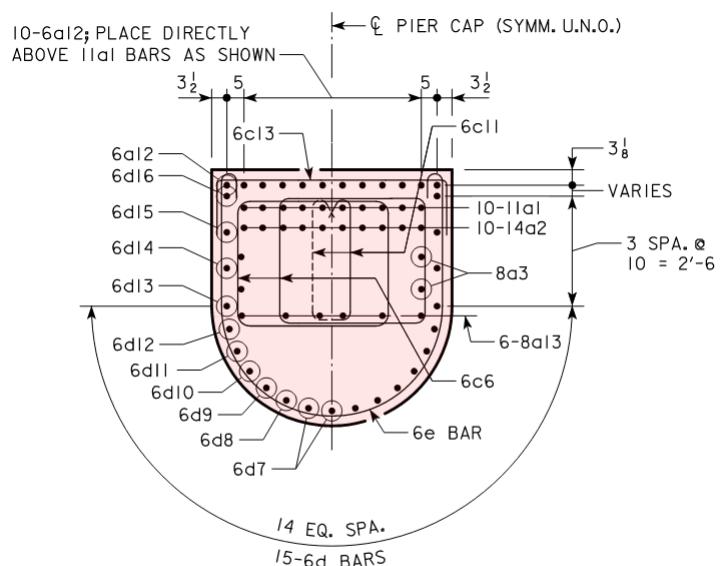
L1-Br03-Pier02 / 03



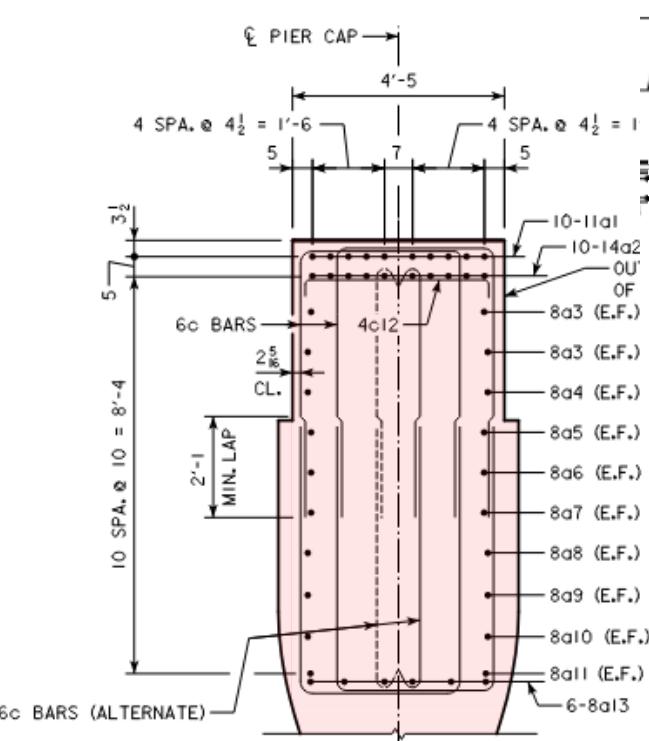
SECTION D-D



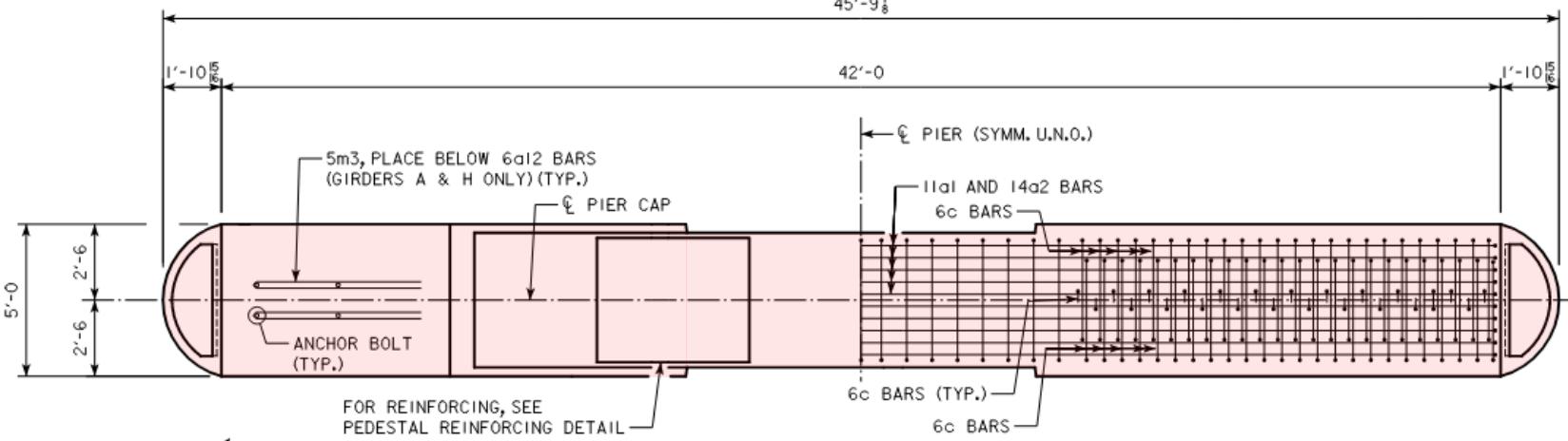
SECTION E-E



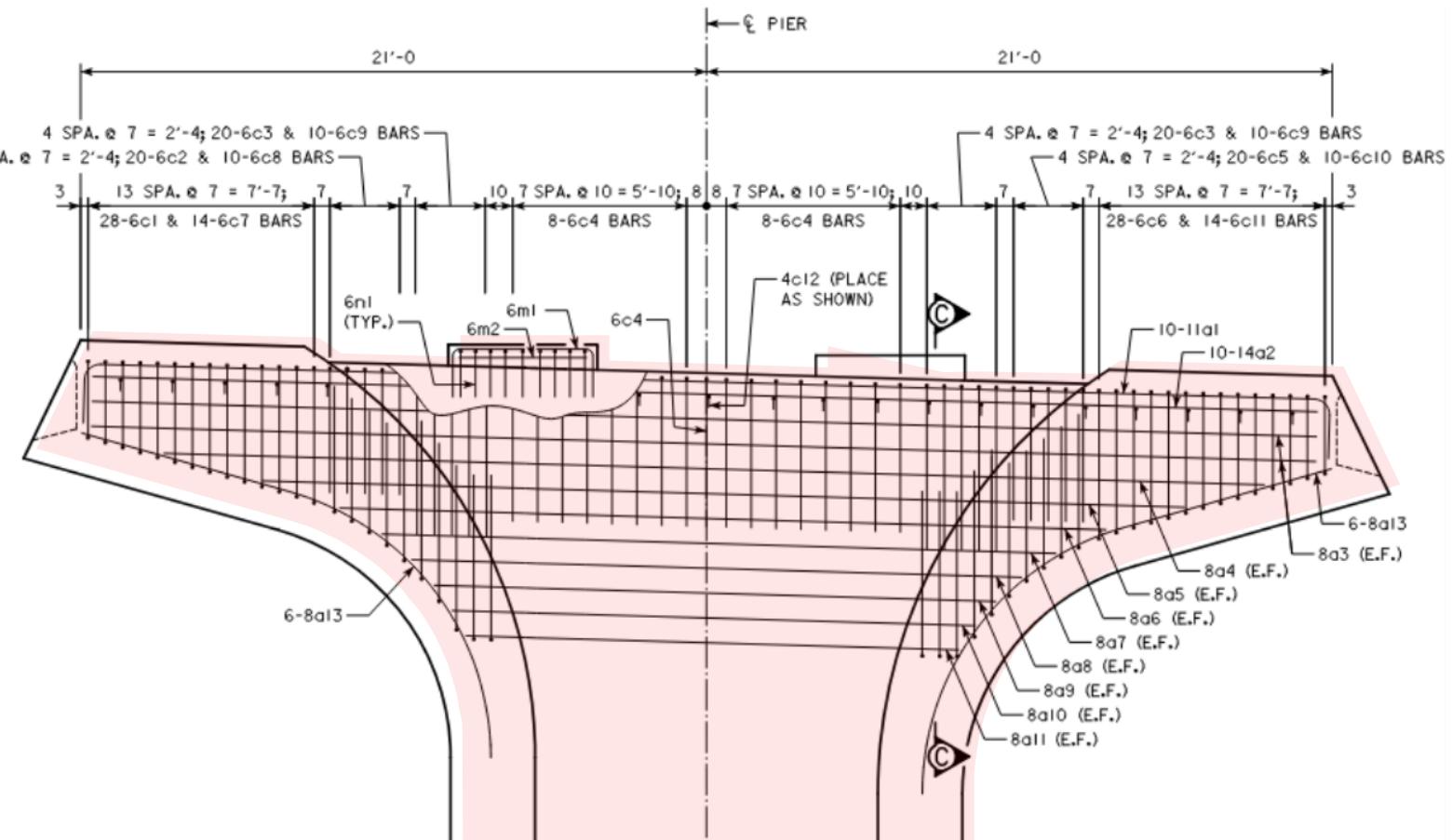
SECTION F-F
(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR)



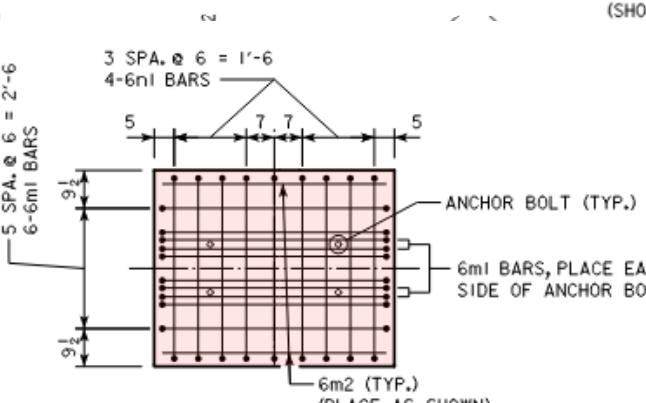
SECTION C-C
(PEDESTAL NOT SHOWN)



PIER CAP REINFORCING PLAN



PIER ELEVATION



(PLACE AS SHOWN)

PEDESTAL REINFORCING DETAIL

Unit Test Instruction for the Design-to-Construction Data Exchange			  
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1	12/5/23	.	
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Unit Test Description			Unit Test / Sheet No.
Level 3 Hammerhead Pier			
Drawn By AMN		Reviewed By MJY	L1-Br03-Pier01 / 04

BENT BAR DETAILS

