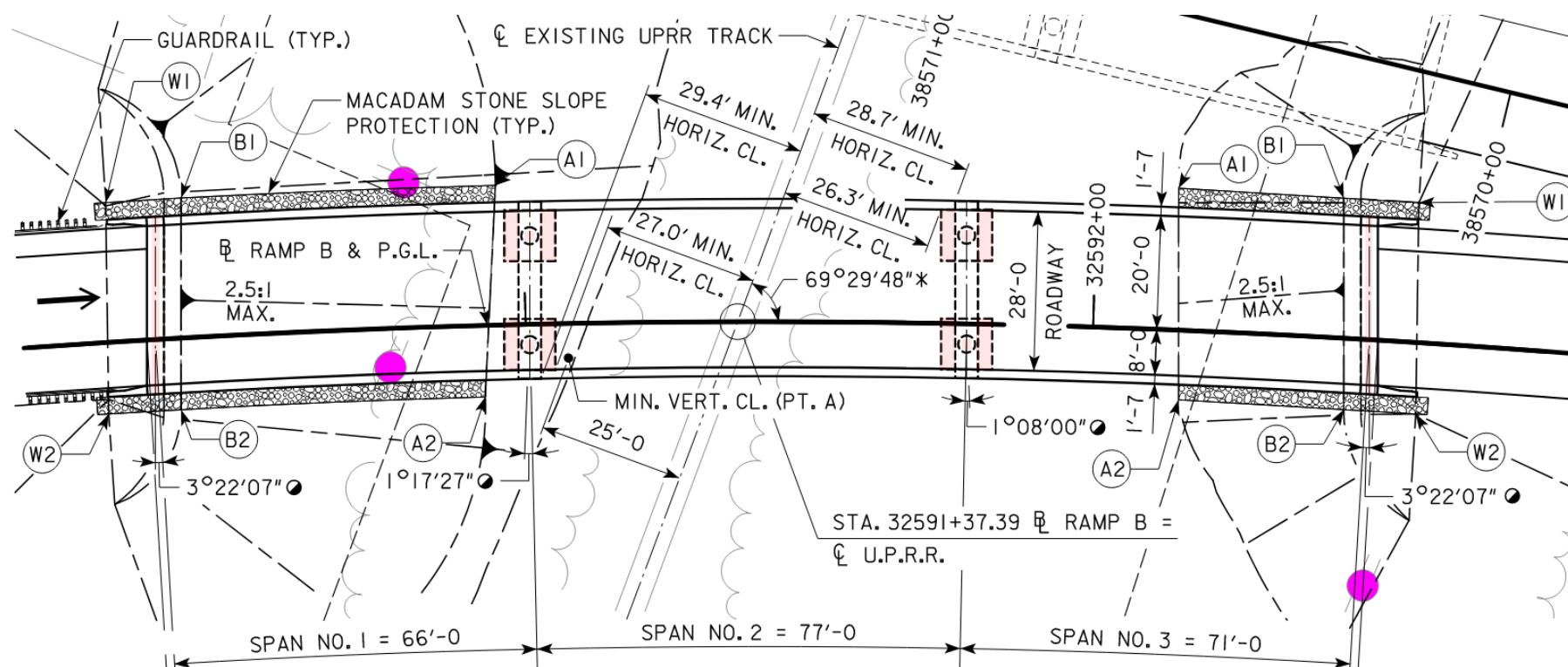


970	<b>Q N. ABUT. BRG.</b> ELEV. 960.30	<b>Q PIER NO. 1</b> ELEV. 960.73	<b>Q PIER NO. 2</b> ELEV. 961.12	<b>Q S. ABUT. BRG.</b> ELEV. 961.29	970
960	PROPOSED GRADE	ELEV. 954.40	TOP OF BERM ELEV. 955.44	LOW STEP ELEV. 956.94	960
950	LOW STEP ELEV. 955.90	LOW STEP ELEV. 956.48	24.17' MIN. VERT. CL. (PT. A)	2.5:1 MAX. (NORMAL)	950
940	(NORMAL)	F	F	(NORMAL)	940
930	BOTT. ABUT. FTG. ELEV. 952.40	MACADAM STONE SLOPE PROTECTION (TYP.)	UPRR	BOTT. ABUT. FTG. ELEV. 953.44	930
920	BOTT. OF PREBORE ELEV. 942.40	BOTT. FTG. ELEV. 924.98	EXISTING GROUND	BOTT. OF PREBORE ELEV. 943.44	920
910	75' HP10x57 STEEL BEARING PILING	105' HP10x57 STEEL BEARING PILING	BOTT. FTG. ELEV. 925.36	75' HP10x57 STEEL BEARING PILING	910
900	75' HP10x57 STEEL BEARING PILING		100' HP10x57 STEEL BEARING PILING		900

LONGITUDINAL SECTION ALONG B RAMP B



SITUATION PLAN

NOTES:

For the full plan set and additional structure information, see Br1-Precast and Cast Concrete-Iowa DOT.pdf.

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

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No. Date Issue / Revision Notes

Unit Test Description

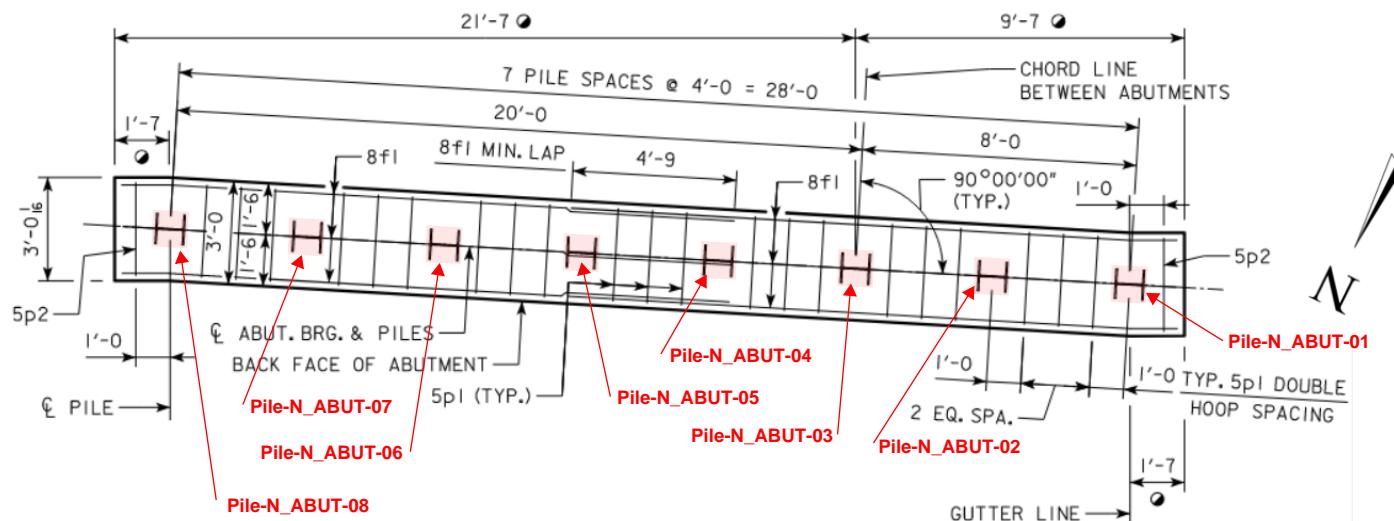
Level 2 Piles 01

Drawn By	Reviewed By
DHC	MJY



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L2-Br01-Piles01 / 01



**NORTH ABUTMENT PILE PLAN**

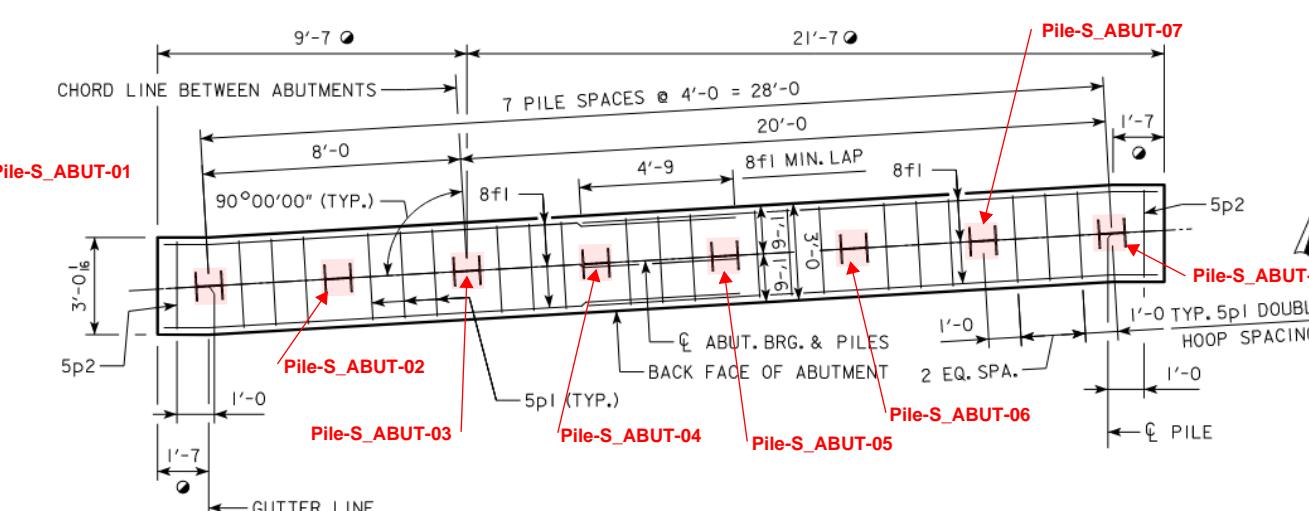
8 - HPI0x57 STEEL BEARING PILING REQUIRED  
AT THE NORTH ABUTMENT.

**NORTH ABUTMENT PILE NOTES:**

THE CONTRACT LENGTH OF 75 FEET FOR THE NORTH ABUTMENT PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 113 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.78. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF PREBORE.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR NORTH ABUTMENT PILES IS 73 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY TO ACHIEVE BEARING THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 87 TONS AT ONE-DAY RETAP. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.



**SOUTH ABUTMENT PILE PLAN**

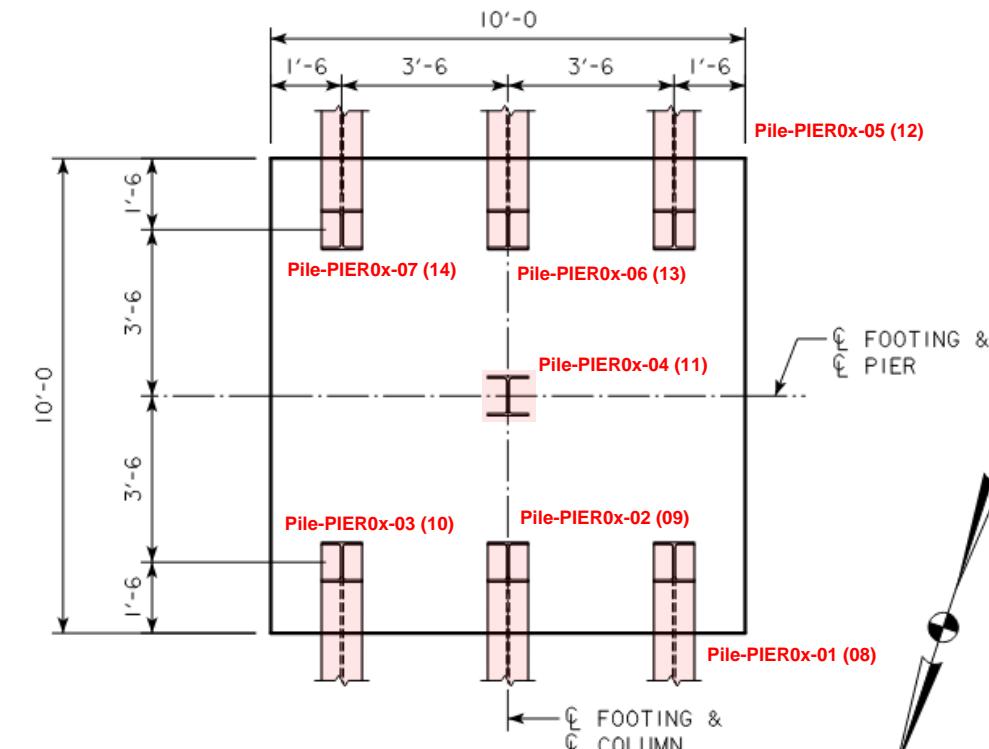
**SOUTH ABUTMENT PILE NOTES:**

THE CONTRACT LENGTH OF 75 FEET FOR THE SOUTH ABUTMENT PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 113 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.78. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF PREBORE.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR SOUTH ABUTMENT PILES IS 73 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY TO ACHIEVE BEARING THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 87 TONS AT ONE-DAY RETAP. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

8 - HPI0x57 STEEL BEARING PILING REQUIRED  
AT THE SOUTH ABUTMENT.



**PILE LAYOUT**  
(TYP. FOR ALL PIER FOOTINGS)

**PIER PILE NOTES:**

THE CONTRACT LENGTH OF 105 FEET FOR THE PIER NO. 1 PILES, AND 100 FEET FOR THE PIER NO. 2 PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 204 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65. THE FACTORED AXIAL LOAD INCLUDES A FACTORED DEAD LOAD OF 6 KIPS PER PILE TO ACCOUNT FOR FUTURE RAILROAD PIER PROTECTION.

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 PILES IS 134 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY TO ACHIEVE BEARING THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 157 TONS AT ONE-DAY RETAP. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

PILE DIMENSIONS ARE AT BOTTOM OF FOOTING. BATTER PILES 1:4 IN DIRECTION SHOWN.

ALL BATTERED PILE SHALL BE TRIMMED TO A HORIZONTAL LINE TO AID IN THE PLACEMENT OF REINFORCING.

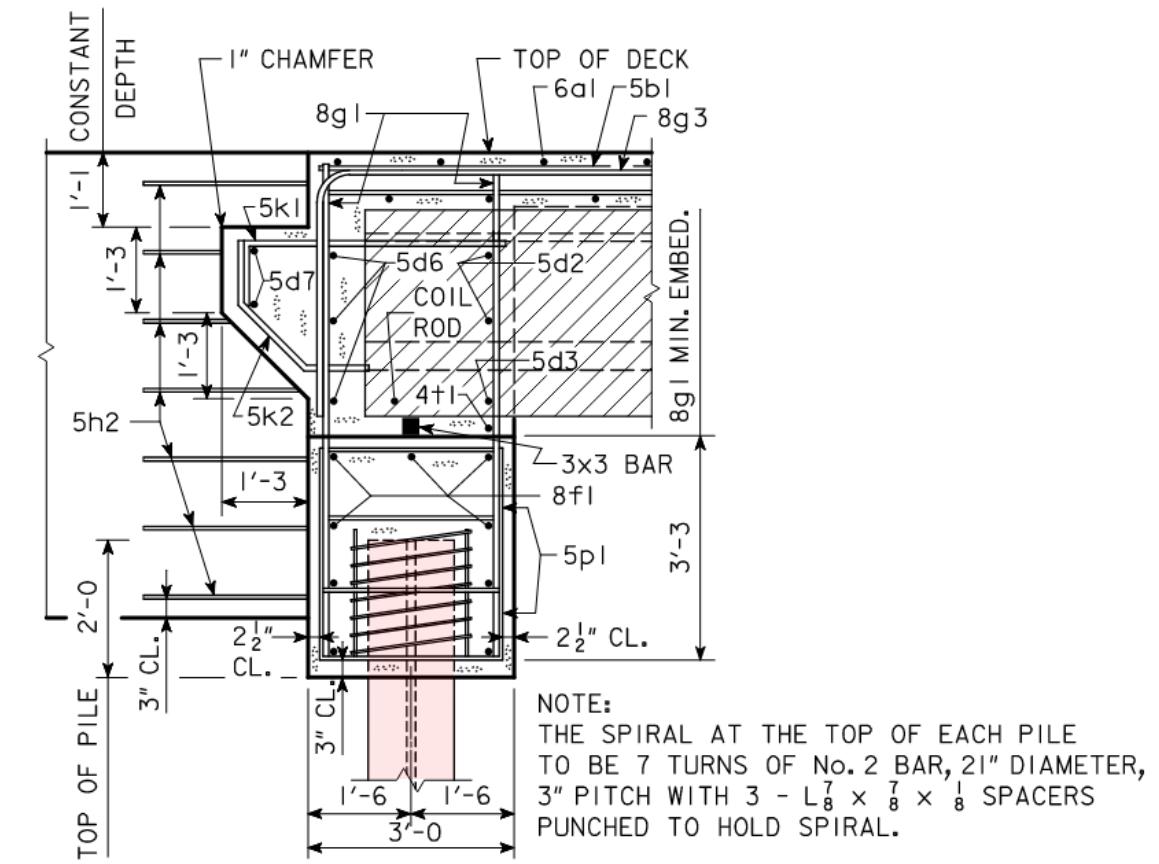
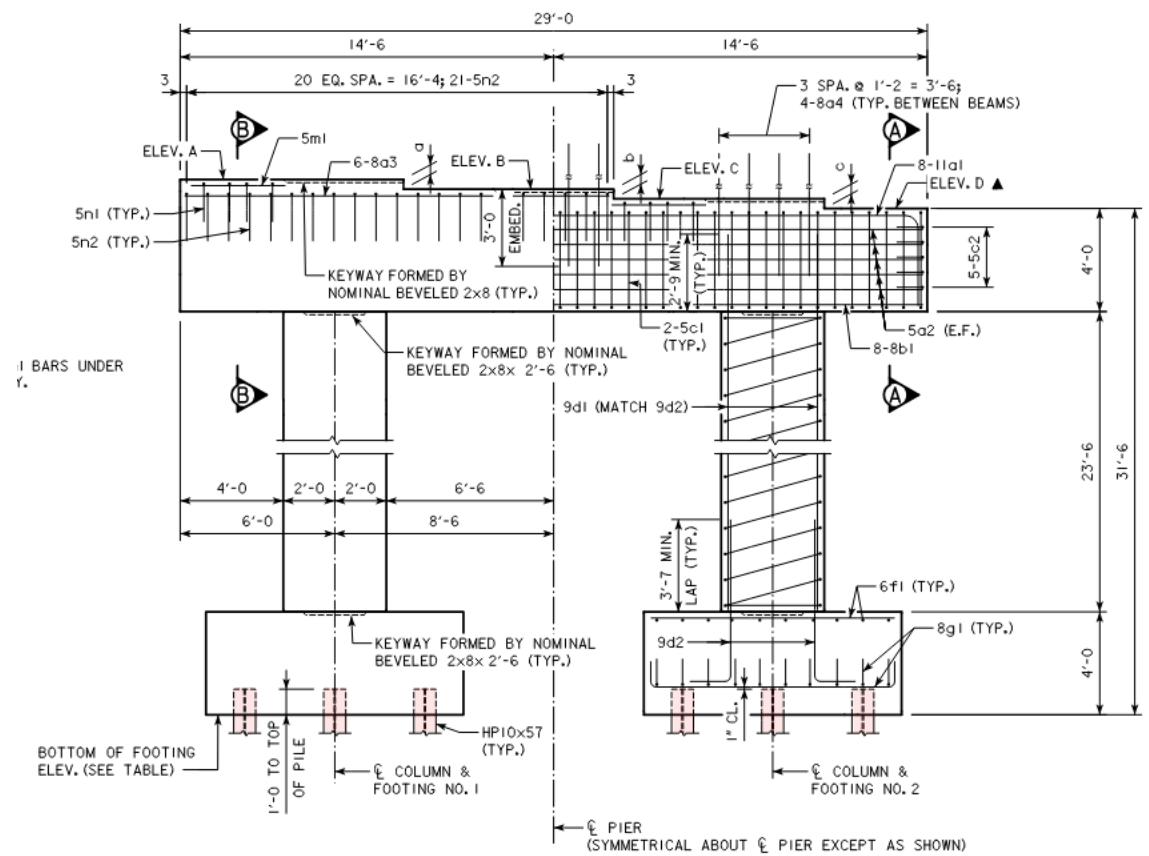
7 - HPI0x57 STEEL BEARING PILING ARE REQUIRED FOR EACH FOOTING AT PIER NOS. 1 AND 2.

**NOTES:**

1. Pile naming - Piles for Abutments as on this sheet. Piles for Piers as 01 thru 14 for each Pier, using pattern on this page. All numbers run left-to-right, top-to-bottom, when North properly oriented.

Unit Test Instruction for the Design-to-Construction Data Exchange			<b>BIM</b> FOR BRIDGES AND STRUCTURES TPF-5(372)
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1	01/2/24	.	
No.	Date	Issue / Revision Notes	
Unit Test Description			Unit Test / Sheet No.
Level 2 Piles 01			
Drawn By	Reviewed By		
DHC	MJY		

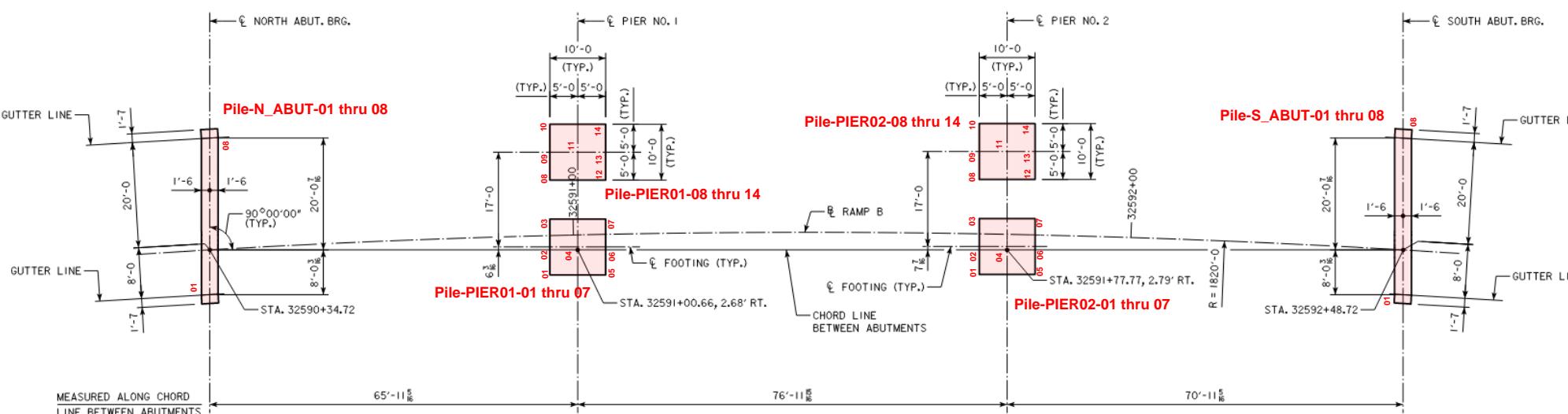
**L2-Br01-Piles01 / 02**



#### NOTES:

1. Pile naming - Piles for Abutments as on previous sheet. Piles for Piers as 01 thru 14 for each Pier, using pattern on this page. All numbers run left-to-right, top-to-bottom, when North properly oriented.

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

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No. Date Issue / Revision Notes

Unit Test Description

Level 2 Piles 01

Drawn By DHC Reviewed By MJY

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

**HDR**

**jō** consulting

L2-Br01-Piles01 / 03