

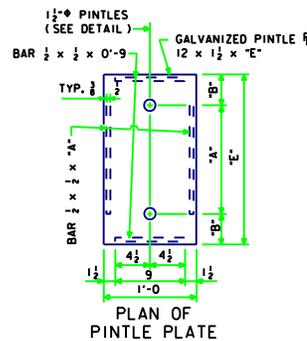
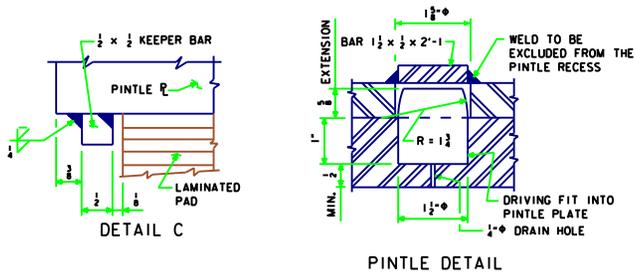
SLOPE<sub>SPAN 1</sub> = 100%  $\frac{P/G \text{ ELEV. } \bullet \text{ NEAR ABUT.} - P/G \text{ ELEV. } \bullet \text{ PIER 1}}{\text{SPAN 1 LENGTH}}$

SLOPE<sub>SPAN 2</sub> = 100%  $\frac{P/G \text{ ELEV. } \bullet \text{ PIER 1} - P/G \text{ ELEV. } \bullet \text{ PIER 2}}{\text{SPAN 2 LENGTH}}$

SLOPE<sub>SPAN 3</sub> = 100%  $\frac{P/G \text{ ELEV. } \bullet \text{ PIER 2} - P/G \text{ ELEV. } \bullet \text{ FAR ABUT.}}{\text{SPAN 3 LENGTH}}$

SLOPE CALCULATION FORMULA

**FIXED PIER BEARING NOTES:**  
 IF CALCULATED SLOPE FOR A GIVEN SPAN EXCEEDS 1.4%, THE NEOPRENE BEARING PADS AT THE FIXED PIER FOR THAT SPAN SHALL BE TAPERED. REFER TO TABLE FOR DIMENSIONS OF TAPERED PADS.  
 COST OF NEOPRENE PADS SHALL BE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".



**EXPANSION PIER BEARING NOTES:**  
 SURFACES MARKED "V" SHALL BE FINISHED ANS1 250.  
 PINTLE PLATES ARE A PART OF THE SUPERSTRUCTURE "STRUCTURAL STEEL QUANTITY".  
 COSTS OF ANCHORED CURVED SOLE PLATES AND NEOPRENE PADS ARE TO BE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".  
 THE SOLE PLATES AND PINTLE PLATES SHALL BE GALVANIZED. ALL WELDING SHALL BE COMPLETED PRIOR TO GALVANIZING. THE SURFACE OF THE PINTLE PLATE IN CONTACT WITH THE LAMINATED NEOPRENE PADS SHALL BE FREE OF PROJECTIONS DUE TO THE GALVANIZING.  
 SOLE PLATES ARE TO BE SET IN FORMS WHEN BEAMS ARE CAST AND THE BOTTOM OF BEAMS FORMED OUT AS SHOWN TO EXCLUDE CONCRETE.  
 SOLE PLATES SHALL COMPLY WITH ONE OF THE FOLLOWING :  
 ASTM A 852  
 ASTM A 514 GRADE B  
 ASTM A 709 GRADE HPS 70W

EXPANSION PIER

FIXED PIER

VARIABLE DIMENSIONS		
	BEAM BOTTOM FLANGE WIDTH	
	1'-5	1'-8
"A"	0'-6	1'-0
"B"	0'-5 1/2	0'-4
"C"	1'-3 1/2	1'-6 1/2
"E"	1'-5	1'-8
"F"	1'-3	1'-6

LATEST REVISION DATE  
 Approved by BRIDGE ENGINEER  
 Thomas L. Mc Donald

**Iowa Department of Transportation**  
**Highway Division**  
 STANDARD DESIGN - 24' ROADWAY, THREE SPAN BRIDGE  
**PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES**  
 HL93 SUPERSTRUCTURE DECEMBER, 2006 HS25 SUBSTRUCTURE

PIER BEARING DETAILS H24-41-06