

7/12/2016

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0001	STATE	J/P PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
8	OKLA	24750(04)		51	127

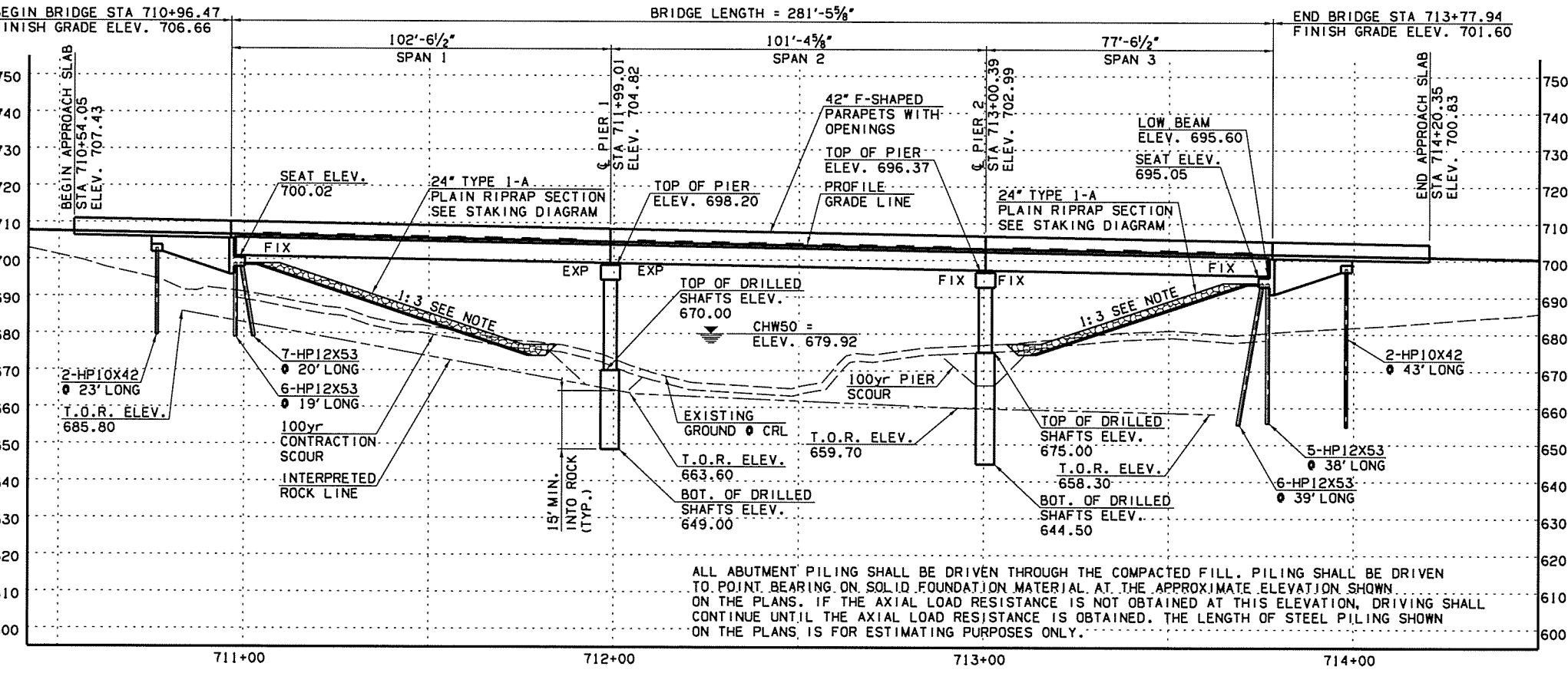
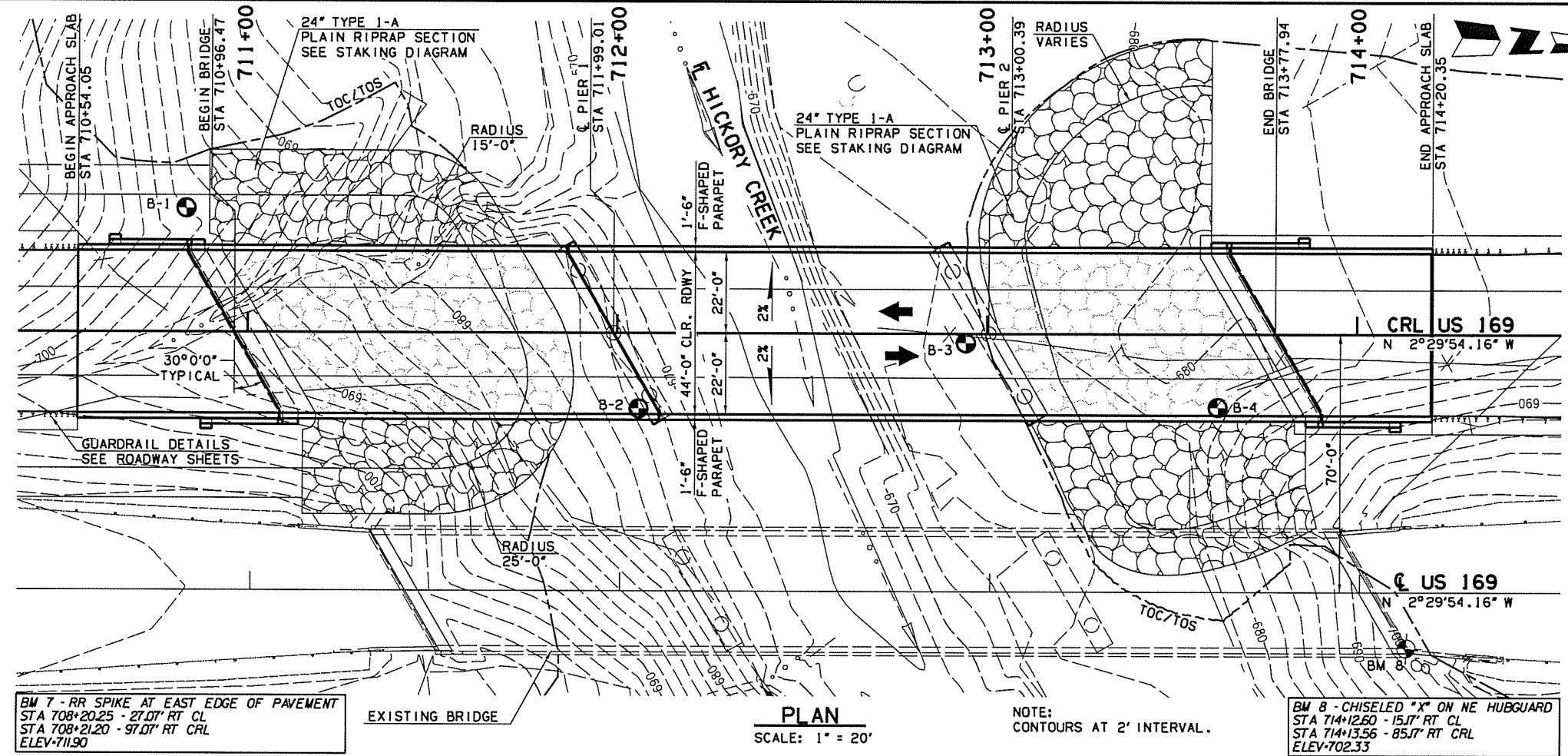
DESIGN DATA

LOADING
 HL-93, OKLAHOMA OVERLOAD TRUCK OR 315 OVERLOAD TRUCK
 20 PSF FUTURE WEARING SURFACE.
 LRFR OPERATING RATING = 1.80

DESIGN
 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION,
 EXCEPT FOR PILES WHICH SATISFY AASHTO STANDARD
 SPECIFICATIONS FOR HIGHWAY BRIDGES, 16TH EDITION WITH
 NO INTERIMS.
 ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE
 ANSI/AWS D1.6 STRUCTURAL WELDING CODE - STAINLESS STEEL

MATERIAL
 CONCRETE:
 CLASS AA $f'_c = 4,000$ PSI
 CLASS A $f'_c = 3,000$ PSI
 REINFORCING STEEL:
 STRUCTURAL STEEL M270 (GRADE 50W) $F_y = 60,000$ PSI
 STAINLESS STEEL A240 (TYPE 316) $F_y = 50,000$ PSI
 STAINLESS STEEL A320, CLASS 2, (GRADE B8M) $F_y = 30,000$ PSI
 STAINLESS STEEL A320, CLASS 2, (GRADE B8M) $F_y = 58,000$ PSI

FOUNDATION DESIGN
ABUTMENT 1 (HP 12X53 PILING)
 FACTORED PILE REACTION = 75.62 TONS/PILE
ABUTMENT 2 (HP 12X53 PILING)
 FACTORED PILE REACTION = 78.06 TONS/PILE
PIER 1 (60" DIA. DRILLED SHAFTS)
 MAX. FACTORED REACTION = 550.20 T/SHAFT
 FACTORED FRICTION RESISTANCE (9 TSF) = 636.20 T/SHAFT
 FACTORED BEARING RESISTANCE (60 TSF) = 824.70 T/SHAFT
 TOTAL FACTORED RESISTANCE = 1460.80 T/SHAFT
 BEARING RESISTANCE FACTOR = 0.7
 FRICTION RESISTANCE FACTOR = 0.45
 FRICTION DEPTH OF ROCK NEGLECTED (FEET) = 5
PIER 2 (60" DIA. DRILLED SHAFTS)
 MAX. FACTORED REACTION = 522.20 T/SHAFT
 FACTORED FRICTION RESISTANCE (9 TSF) = 636.20 T/SHAFT
 FACTORED BEARING RESISTANCE (60 TSF) = 824.70 T/SHAFT
 TOTAL FACTORED RESISTANCE = 1460.80 T/SHAFT
 BEARING RESISTANCE FACTOR = 0.7
 FRICTION RESISTANCE FACTOR = 0.45
 FRICTION DEPTH OF ROCK NEGLECTED (FEET) = 5



ELEVATION
 SCALE HORIZ. 1" = 20'
 VERT. 1" = 20'

HYDRAULIC DATA

TOTAL DA = 16.12 SQ MI
 CONTROLLED DA = 0 SQ MI
 EFFECTIVE DA = 16.12 SQ MI
 Q2 = 1390 cfs
 V2 = 3.67 fps
 CHW2 = 672.27
 Q5 = 2750 cfs
 V5 = 5.00 fps
 CHW5 = 674.78
 Q10 = 4050 cfs
 V10 = 5.92 fps
 CHW10 = 676.57
 Q25 = 6200 cfs
 V25 = 7.01 fps
 CHW25 = 678.82

Q50 = 7750 cfs
 V50 = 7.74 fps
 CHW50 = 679.92
 Q100 = 9480 cfs
 V100 = 8.37 fps
 CHW100 = 681.06

- 100yr PIER SCOUR = 8.92'
- 100yr CONTRACTION SCOUR = 1.14'
- 100yr TOTAL SCOUR = 10.06'
- QOT > Q500 = 14300 cfs
- V500 = 9.48 fps
- CHW500 = 683.97
- 500yr PIER SCOUR = 9.60'
- 500yr CONTRACTION SCOUR = 1.16'
- 500yr TOTAL SCOUR = 10.76'

BRIDGE LENGTH = 281.47'

VERTICAL DATA

BRIDGE A @ STA. 712+37.21 CONST. CONVENTIONAL 100'-100'-75' TYPE IV
 P.C. BEAM SPANS, 44'-0" CLR. RDY. SKEW 30°RF, F-SHAPED PARAPET
 TO BE REMOVED EXISTING BRIDGE @ STA. 712+72.00, 80'-100'-80'
 PLATE GIRDER SPANS, 30' CLR. RDY W/2-18"S.C. SKEW 30°RF

Design	SAK	6/16	US 169 OVER HICKORY CREEK	NOWATA COUNTY
Drawn	WZB	6/16	BRIDGE A	
Checked	AEJ	6/16		
Approved	SAK	6/16		
Squad	BENHAM			

Job Piece No. 24750(04) Sheet No. 51

GENERAL PLAN AND ELEVATION