

LOAD AND RESISTANCE FACTOR DESIGN

DESIGN DATA

CLASS "AA" CONCRETE $F'_c = 4,000$ PSI
 CLASS "A" CONCRETE $F'_c = 3,000$ PSI
 REINFORCING STEEL (Gr. 60) $F_y = 60,000$ PSI
 STRUCTURAL STEEL AASHTO M270 (Gr. 50W) $F_y = 50,000$ PSI
 STAINLESS STEEL A240 (TYPE 316) $F_y = 30,000$ PSI

LOADING: HL-93 OR OKLAHOMA OVERLOAD TRUCK
 20 PSF FUTURE WEARING SURFACE

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION,
 WITH 2016 INTERIM REVISIONS.
 ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.
 ANSI/AWS D1.6 STRUCTURAL WELDING CODE - STAINLESS STEEL.

LFD OPERATING RATING: HS 60.41

FOUNDATION DATA

ABUTMENTS (HP12x53 PILING):

- (1) MAXIMUM FACTORED PILE REACTION = 103.0 TONS/PILE

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56	BOTTOM SLAB REINFORCING PLAN
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58	TYPE IV P.C. BEAM DETAILS
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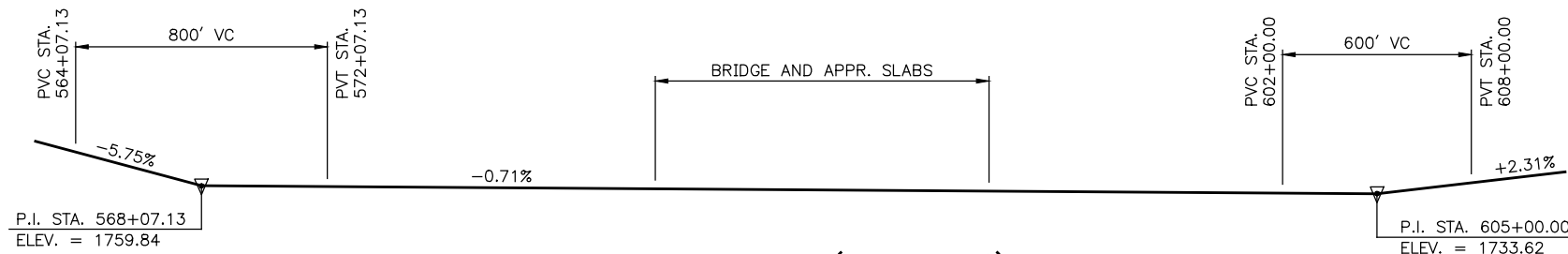
THE FOLLOWING STANDARDS SHALL BE REQUIRED:

TR4-2-00E B40-C-TR4-0-1-01E
 EJ-SQ-04E B40-C-TR4-0-2-01E
 EJ-DTL-02E LECS-4-1
 HP1-2-01E PUD-3-2
 B40-C-AS-03E

PIERS (72" DIAMETER DRILLED SHAFTS)	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	PIER 7	PIER 8	PIER 9
FACTORED REACTION (TONS/SHAFT) =	701.4	734.3	757.7	741.0	730.1	751.6	822.7	829.3	854.1
NOMINAL UNIT BEARING RESISTANCE (TSF) =	60.0	36.7	60.0	60.0	60.0	60.0	43.1	60.0	60.0
BEARING RESISTANCE FACTOR =	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
FACTORED BEARING RESISTANCE (TONS/SHAFT) =	1187.5	726.1	1187.5	1187.5	1187.5	1187.5	852.2	1187.5	1187.5
NOMINAL UNIT FRICTION RESISTANCE (TSF) =	9.0	4.0	9.0	9.0	9.0	9.0	5.1	9.0	9.0
FRICTION RESISTANCE FACTOR =	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
FACTORED FRICTION RESISTANCE (TONS/SHAFT) =	687.1	322.3	687.1	687.1	687.1	687.1	385.6	687.1	687.1
DEPTH OF ROCK NEGLECTED FOR FRICTION (FT.) =	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
MINIMUM DEPTH INTO ROCK (FT.) =	15.0	15.5	15.0	15.0	15.0	15.0	15.0	15.0	15.0
TOTAL FACTORED RESISTANCE (TONS/SHAFT) =	1874.6	1048.4	1874.6	1874.6	1874.6	1874.6	1237.8	1874.6	1874.6

- (1) ABUTMENT PILING SHALL BE DRIVEN THROUGH THE COMPACTED FILL. PILING SHALL BE DRIVEN TO POINT BEARING ON SOLID FOUNDATION MATERIAL AT THE APPROXIMATE ELEVATION SHOWN ON THE PLANS. IF THE FACTORED PILE CAPACITY IS NOT OBTAINED AT THIS ELEVATION, DRIVING SHALL CONTINUE UNTIL THE FACTORED PILE CAPACITY IS OBTAINED. THE LENGTH OF STEEL PILING SHOWN ON THE PLANS IS FOR ESTIMATING PURPOSES ONLY.

EXISTING BRIDGE NOTE:
 THE EXISTING BRIDGE SHALL BE REMOVED IN ACCORDANCE WITH THE NOTES ON SHEET NO. 6.



FINISH GRADE DATA (CRL S.H. 30)

SUMMARY OF QUANTITIES - BRIDGE "A"

DESCRIPTION	UNIT	ABUTS.	PIERS	SUPSTR.	APPR. SLABS	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	202.00				202.00
CLSM BACKFILL	CY	188.00				188.00
PRESTRESSED CONCRETE BEAMS (TYPE IV)	LF			4,983.30		4,983.30
APPROACH SLAB	SY				281.20	281.20
SAW-CUT GROOVING	SY			4,452.00	266.60	4,718.60
SEALED EXPANSION JOINT	LF			172.80		172.80
CONCRETE RAIL (TR4)	LF			2,019.40	120.00	2,139.40
STRUCTURAL STEEL	LB			4,500.00		4,500.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA			40.00		40.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA			60.00		60.00
CLASS AA CONCRETE	CY			1,144.90		1,144.90
CLASS A CONCRETE	CY	96.80	511.00			607.80
CLASS C CONCRETE	CY					23.10
REINFORCING STEEL	LB		4,970.00			4,970.00
EPOXY COATED REINFORCING STEEL	LB	13,120.00	107,700.00	302,570.00		423,390.00
CLASS B BRIDGE DECK REPAIR	SY					75.00
CLASS C BRIDGE DECK REPAIR	SY					25.00
PILES, FURNISHED (HP10x42)	LF	274.00				274.00
PILES, FURNISHED (HP12x53)	LF	907.00				907.00
PILES, DRIVEN (HP10x42)	LF	274.00				274.00
PILES, DRIVEN (HP12x53)	LF	907.00				907.00
(PL) PILOT HOLES	LF	196.00				196.00
PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1.00				1.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	140.00	675.00	3,717.00	56.00	4,588.00
DRILLED SHAFTS 72" DIAMETER	LF		878.00			878.00
CROSSHOLE SONIC LOGGING	EA		4.00			4.00
SEALER CRACK PREPARATION	LF			204.00		204.00
SEALER RESIN	GAL			3.00		3.00
TYPE I-A PLAIN RIPRAP	TON	3,590.00				3,590.00
TYPE I-A FILTER BLANKET	TON	680.00				680.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	84.00				84.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	80.00				80.00
REMOVAL OF EXISTING BRIDGE STRUCTURE	LSUM					1.00

- (1) BONDING BETWEEN THE ANCHOR PLATE AND BEARING PAD IS REQUIRED ON ALL EXPANSION BEARINGS AT EXPANSION PIERS. BONDING IS NOT REQUIRED ON FIXED BEARINGS OR EXPANSION BEARINGS AT CONTINUOUS EXPANSION PIERS.

HYDRAULIC DATA

TOTAL D.A.	= 1208.70 sq. mi.	Q25	= 129703 cfs
CONTROLLED D.A.	= 0.00 sq. mi.	V25	= 9.30 fps
EFFECTIVE D.A.	= 1208.70 sq. mi.	Q25 CHW	= 1739.76 ft.
Q2	= 17076 cfs	Q50	= 181171 cfs
V2	= 4.86 fps	V50	= 10.04 fps
Q2 CHW	= 1727.70 ft.	Q50 CHW	= 1742.96 ft.
Q5	= 46249 cfs	Q100	= 249944 cfs
V5	= 6.37 fps	V100	= 11.10 fps
Q5 CHW	= 1732.58 ft.	Q100 CHW	= 1746.10 ft.
Q0.T. = Q9.7	= 75200 cfs	Q500	= 486789 cfs
V0.T.	= 7.83 fps	V500	= 11.77 fps
O.T. CHW	= 1735.70 ft.	Q500 CHW	= 1754.27 ft.
O.T. ELEV.	= 1735.25 ft.	Q0.T. = Q9.7	Q100
Q10	= 76801 cfs	MAX. CALC. TOTAL SCOUR	= 19.83 ft.
V10	= 7.90 fps	CONTRACTION SCOUR	= 7.37 ft.
Q10 CHW	= 1735.86 ft.	PIER SCOUR	= 12.46 ft.
			13.79 ft.

CONST. (10-100') PRESTRESSED CONCRETE BEAM SPANS;
 40'-0" CLR. RDWY. W/ CONC. TRAFFIC RAILS (TR4) SKEWED 0°

GENERAL PLAN AND ELEVATION (BRIDGE "A")
 (SHEET 3 OF 3)

C.R.L. STA. 586+80.46