

DESIGN NOTES

DESIGN SPECIFICATIONS

IN ACCORDANCE WITH : "AASHTO LRFD BRIDGE DESIGN SPECIFICATION" 4th EDITION, WITH THE 2008 INTERIMS,
AND AASHTO / AWS "BRIDGE WELDING CODE" D1.5.

DESIGN PROCEDURES

DECK DESIGNED USING EMPIRICAL METHOD. RAILING CONFORMS TO TL-x. DESIGN SPEED IS mph.
ABUTMENT/PIER DESIGNED TO RESIST THE VEHICULAR COLLISION FORCE.
THE FOLLOWING PROPRIETARY COMPUTER SOFTWARE PROGRAMS WERE USED TO FACILITATE THE STRUCTURAL ANALYSIS:

NAME	VERSION	RELEASE DATE	NAME	VERSION	RELEASE DATE

DESIGN LOADS

PERMANENT LOADS

DC UNIT WEIGHT OF REINFORCED CONCRETE 0.150 kcf
 UNIT WEIGHT OF STRUCTURAL STEEL 0.490 kcf
 METAL DECK FORMS 0.017 ksf
DW FUTURE WEARING SURFACE 0.028 ksf
 UTILITIES xxx klf
 FUTURE UTILITIES xxx klf
EV UNIT WEIGHT OF SOIL xxx kcf
EH ACTIVE PRESSURE xxx kcf
 AT REST PRESSURE xxx kcf

TRANSIENT LOADS

LL HL-93 INCLUDING PAIR OF DESIGN TANDEM IN NEGATIVE MOMENT REGIONS
 SINGLE LANE ADTT (year) xxx
IM DYNAMIC ALLOWANCE APPLIED TO TRUCK & TANDEM
LS LIVE LOAD SURCHARGE AT ABUTMENT x.xx feet
 LIVE LOAD SURCHARGE AT WING WALL x.xx feet
TU UNIFORM TEMPERATURE RANGE XX° F TO 120° F
 BASE SETTING TEMPERATURE XX° F

EXTREME EVENT LOADS

EQ SITE CLASS x
 ACCELERATION COEFFICIENT SD₁ 0.xx g
 SEISMIC PERFORMANCE ZONE X
CT VEHICULAR COLLISION FORCE 400 k
IC ICE CRUSHING STRENGTH xxx ksf
 ICE THICKNESS x.xx feet

FOOTING DESIGN LOADS

STRENGTH LIMIT STATE

NOMINAL BEARING RESISTANCE q_n = X ksf
EFFECTIVE FOOTING WIDTH B' = xx ft
EFFECTIVE FOOTING LENGTH L' = xx ft
RESISTANCE FACTOR ϕ = X
FACTORED BEARING RESISTANCE q_R = q_nϕ_p = xx ksf
FACTORED APPLIED LOAD γQ/(B'L') = xx ksf
SLIDING
NOMINAL SLIDING RESISTANCE R_n = X kips
RESISTANCE FACTOR ϕ = xx
FACTORED SLIDING RESISTANCE R_R = R_nϕ = xx kips
FACTORED APPLIED LOAD γV = xx kips

SERVICE LIMIT STATE

PRESUMPTIVE BEARING CAPACITY q_p = X ksf
BASED UPON FOOTING SETTLEMENT = X inches OR LESS
EFFECTIVE FOOTING WIDTH B' = xx ft
EFFECTIVE FOOTING LENGTH L' = xx ft
RESISTANCE FACTOR ϕ = 1.0
FACTORED PRESUMPTIVE BEARING RESISTANCE ϕq_p = xx ksf
FACTORED APPLIED LOAD γQ/(B'L') = xx ksf

EXTREME LIMIT STATE

NOMINAL BEARING RESISTANCE q_n = X ksf
EFFECTIVE FOOTING WIDTH B' = xx ft
EFFECTIVE FOOTING LENGTH L' = xx ft
RESISTANCE FACTOR ϕ = 1.0
FACTORED BEARING RESISTANCE ϕq_n = xx ksf
FACTORED APPLIED LOAD γQ/(B'L') = xx ksf
SLIDING
NOMINAL SLIDING RESISTANCE R_n = X kips
RESISTANCE FACTOR ϕ = 1.0
FACTORED SLIDING RESISTANCE ϕR_n = xx kips
FACTORED APPLIED LOAD γV = xx kips

PILE DESIGN LOADS

STRENGTH LIMIT STATE

NOMINAL AXIAL RESISTANCE R_n = X kips
AXIAL RESISTANCE FACTOR ϕ = xx
FACTORED AXIAL RESISTANCE ϕR_n = xxx kips
MAX. APPLIED AXIAL LOAD Q = xx kips
MIN. APPLIED AXIAL LOAD Q = xx kips
NOMINAL LATERAL RESISTANCE R_n = X kips
BASED UPON 2" OF HORIZONTAL MOVEMENT
LATERAL RESISTANCE FACTOR ϕ = 1.0
FACTORED LATERAL RESISTANCE ϕR_n = xx kips
FACTORED LATERAL APPLIED LOAD γV = xx kips

SERVICE LIMIT STATE

NOMINAL LATERAL RESISTANCE R_n = X kips
BASED UPON 1/4" OF HORIZONTAL MOVEMENT
LATERAL RESISTANCE FACTOR ϕ = 1.0
FACTORED LATERAL RESISTANCE ϕR_n = xx kips
FACTORED LATERAL APPLIED LOAD γV = xx kips

EXTREME LIMIT STATE

NOMINAL AXIAL RESISTANCE R_n = X kips
AXIAL RESISTANCE FACTOR ϕ = 1.0
FACTORED AXIAL RESISTANCE ϕR_n = xxx kips
MAX. APPLIED AXIAL LOAD Q = xx kips
MIN. APPLIED AXIAL LOAD Q = xx kips
LATERAL RESISTANCE FACTOR ϕ = 1.0
FACTORED LATERAL RESISTANCE ϕR_n = xx kips
FACTORED LATERAL APPLIED LOAD γV = xx kips

R E V I S I O N S				DESIGNED	SCALES SHOWN ARE FOR 34" X 22" PRINTS ONLY	ORIGINAL SIGNED BY:	IDAHO TRANSPORTATION DEPARTMENT		English	DESIGN AND GENERAL NOTES 1 OF 2		BRIDGE PLANS	
NO.	DATE	BY	DESCRIPTION	DESIGN CHECKED						WEATHERING STEEL GIRDER BRIDGE RAILROAD BRIDGE		BRIDGE LRFD MANUAL, PAGE B17.1C	
				DETAILED	CADD FILE NO.							COUNTY	KEY NO.
				DWG. CHECKED	\\prj00000\bridge\ b17_1c.dgn								
				CORRECTIONS	DRAWING DATE: APR 2008	DATE SIGNED: <u>DATE</u>					BRIDGE DRAWING NO.	SHEET	
						INTERNAL-STORED-AT-ITD-BRIDGE SECTION							OF