FOOTING DESIGN LOADS

STRENGTH LIMIT STATE

BEARING

NOMINAL BEARING RESISTANCE q_n	=	X	ksf
EFFECTIVE FOOTING WIDTH B'	=	X	ft
EFFECTIVE FOOTING LENGTH L'	=	X	ft
RESISTANCE FACTOR Φ_b	=	X	
FACTORED BEARING RESISTANCE $q_n = q_n \Phi_b$	=	X	ksf
FACTORED APPLIED LOAD $\gamma Q/(B'L')$	=	X	ksf

SLIDING

NOMINAL SLIDING RESISTANCE R_n	=	X	kips
RESISTANCE FACTOR Φ	=	X	
FACTORED SLIDING RESISTANCE $R_R = R_n \Phi$	=	X	kips
FACTORED APPLIED LOAD γV	=	X	kips

SERVICE LIMIT STATE

PRESUMPTIVE BEARING CAPACITY q_p	=	X	ksf
BASED UPON FOOTING SETTLEMENT	=	X	inches OR LESS
EFFECTIVE FOOTING WIDTH B'	=	X	ft
EFFECTIVE FOOTING LENGTH L'	=	X	ft
RESISTANCE FACTOR Φ	=	X	
FACTORED PRESUMPTIVE BEARING RESISTANCE Φq_p	=	X	ksf
FACTORED APPLIED LOAD $\gamma Q/(B'L')$	=	X	ksf

EXTREME LIMIT STATE

BEARING

NOMINAL BEARING RESISTANCE q_n	=	X	ksf
EFFECTIVE FOOTING WIDTH B'	=	X	ft
EFFECTIVE FOOTING LENGTH L'	=	X	ft
RESISTANCE FACTOR Φ	=	1.0	
FACTORED BEARING RESISTANCE Φq_n	=	X	ksf
FACTORED APPLIED LOAD $\gamma Q/(B'L')$	=	X	ksf

SLIDING

NOMINAL SLIDING RESISTANCE R_n	=	X	kips
RESISTANCE FACTOR Φ	=	1.0	
FACTORED SLIDING RESISTANCE ΦR_n	=	X	kips
FACTORED APPLIED LOAD γV	=	X	kips

PILE DESIGN LOADS FOR NON-INTEGRAL ABUTMENTS & PIERS

STRENGTH LIMIT STATE

NOMINAL AXIAL RESISTANCE R_n	=	X	kips
AXIAL RESISTANCE FACTOR Φ	=	X	
FACTORED AXIAL RESISTANCE ΦR_n	=	X	kips
MAX. APPLIED AXIAL LOAD Q	=	X	kips
MIN. APPLIED AXIAL LOAD Q	=	X	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	=	X	kips
FACTORED LATERAL APPLIED LOAD γV	=	X	kips

SERVICE LIMIT STATE

NOMINAL LATERAL RESISTANCE R_n	=	X	kips
BASED UPON ¼" OF HORIZONTAL MOVEMENT			
LATERAL RESISTANCE FACTOR Φ	=	1.0	
FACTORED LATERAL RESISTANCE ΦR_n	=	X	kips
FACTORED LATERAL APPLIED LOAD γV	=	X	kips

EXTREME LIMIT STATE

NOMINAL AXIAL RESISTANCE R_n	=	X	kips
AXIAL RESISTANCE FACTOR Φ	=	1.0	
FACTORED AXIAL RESISTANCE ΦR_n	=	X	kips
MAX. APPLIED AXIAL LOAD Q	=	X	kips
MIN. APPLIED AXIAL LOAD Q	=	X	kips
LATERAL RESISTANCE FACTOR Φ	=	1.0	
FACTORED LATERAL RESISTANCE ΦR_n	=	X	kips
FACTORED LATERAL APPLIED LOAD γV	=	X	kips

PILE DESIGN LOADS FOR INTEGRAL ABUTMENT

STRENGTH LIMIT STATE

NOMINAL AXIAL RESISTANCE R_n	=	X	kips
AXIAL RESISTANCE FACTOR Φ	=	X	
FACTORED AXIAL RESISTANCE ΦR_n	=	X	kips
MAX. APPLIED AXIAL LOAD Q	=	X	kips
MIN. APPLIED AXIAL LOAD Q	=	X	kips

PILE DESIGN DATA FOR SCOUR

FOUNDATIONS DESIGNED FOR THE FOLLOWING SCOUR DEPTHS BELOW THE BOTTOM OF THE PILE CAP/TOP OF DRILLED SHAFT.

ABUTMENT	=	X	ft
PIER	=	X	ft

SPREAD FOOTING DESIGN DATA FOR SCOUR

TOP OF FOOTING ELEVATION	=	X	ft
SCOUR ELEVTION	=	X	ft

MSE WALLS

THE FOLLOWING TABLE SUMMARIZES THE SOIL INFORMATION TO BE USED IN THE WALL DESIGN. OTHER INFORMATION NEEDED FOR THE WALL DESIGN CAN BE FOUND IN THE ITD GEOTECHNICAL ENGINEERING REPORT AVAILABLE AT THE DISTRICT RESIDENT'S OFFICE.

MSE WALL DESIGN PARAMETERS

SOIL	WET UNIT WEIGHT (pcf)	COHESION (psf)	FRICTION ANGLE (DEGREE)	ALLOWABLE BEARING CAPACITY (ksf)	ULTIMATE BEARING CAPACITY ** (ksf)
WALL BACKFILL	*	*	*	N/A	N/A
RETAINED SOIL				N/A	N/A
FOUNDATION SOIL					

* - TO BE DETERMINED BY THE CONTRACTOR
** - RESISTANCE FACTOR =

ELASTOMERIC BEARINGS

DESIGN PROCEDURE: METHOD A
GRADE 4 (_) DUROMETER POLYISOPRENE
GRADE 3 (_) DUROMETER POLYCHLOROPRENE
DESIGN LOADS: (SERVICE 1)
ABUTMENT..... X kips
PIER..... X kips

DESIGN PROCEDURE: METHOD B
SHEAR MODULUS (_) PSI
GRADE 4 POLYISOPRENE
GRADE 3 POLYCHLOROPRENE
DESIGN LOADS: (SERVICE 1)
ABUTMENT..... X kips
PIER..... X kips

ORIGINAL STORED AT: ITD BRIDGE SECTION - Boise, Idaho

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED
DESIGN CHECKED
DETAILED
DWG. CHECKED
CORRECTIONS

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY
CADD FILE NAME
Standards\Bridge Standard Drawings\
B17_1C.DGN
DRAWING DATE:
JUNE 2022

IDAHO TRANSPORTATION DEPARTMENT
YOUR Safety→YOUR Mobility→YOUR Economic Opportunity
APPROVED BY:
BRIDGE ENGINEER _____ DATE: _____

ENGLISH
PROJECT NO.

DESIGN AND GENERAL NOTES - SHEET 2
BRIDGE LRFD DESIGN MANUAL, B17.1C

BRIDGE PLANS
BRIDGE KEY NO.
COUNTY | KEY NO.
BRIDGE DWG. NO. | SHEET OF