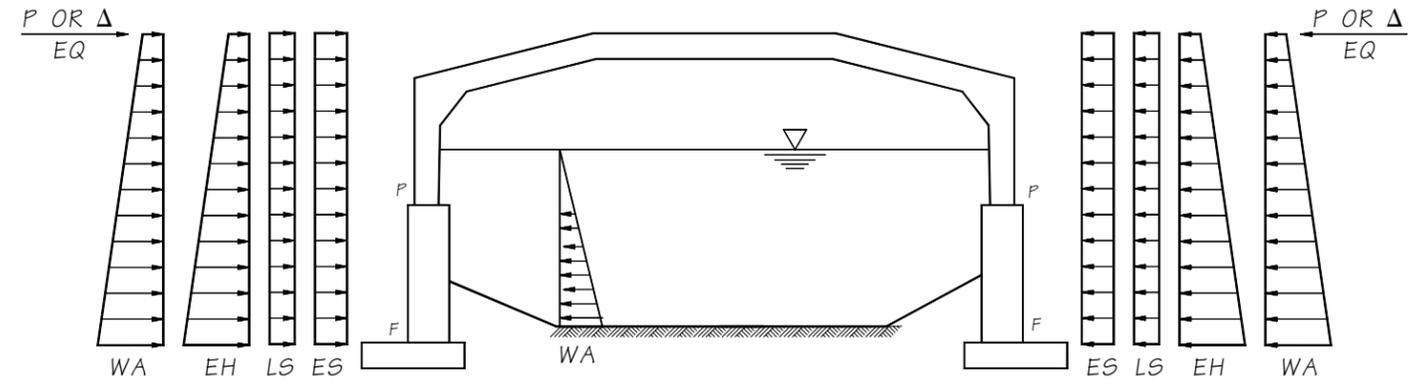
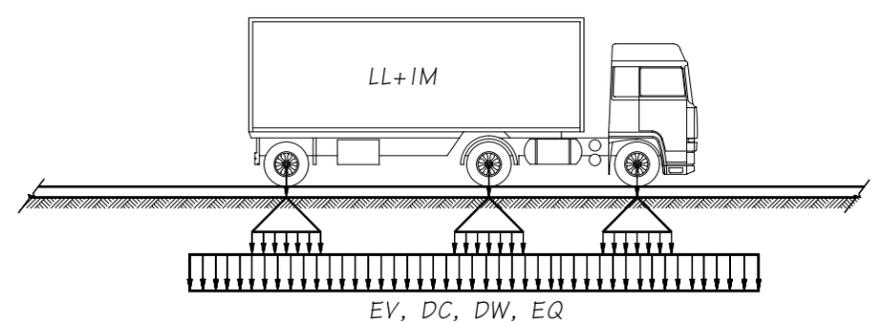


GEOMETRY

SEE BRIDGE STANDARD DRAWING 8.3-A1 FOR DIMENSIONS



LOADING DIAGRAM

P = PINNED CONNECTION
F = FIXED CONNECTION

LOAD COMBINATIONS:

FOR SPLIT BOX BURIED STRUCTURES THE FOLLOWING COMBINATIONS SHALL BE INVESTIGATED AT THE LIMIT STATES SHOWN, IN ACCORDANCE WITH BDM SECTION 8.3.3-B.

$$\begin{aligned} \text{STRENGTH I} &= \gamma DC + \gamma DW + \gamma EH + \gamma EV + \gamma ES \\ &\quad + 1.75 LS + 1.75 (LL+IM) + 1.00 WA + 1.00 BY + \gamma \\ \text{SERVICE} &= 1.00 DC + 1.00 DW + 1.00 EH + 1.00 EV + 1.00 ES + 1.00 LS \\ &\quad + 1.00 (LL+IM) + 1.00 WA + 1.00 BY + \gamma \\ \text{EXTREME I} &= 1.00 DC + 1.00 DW + 1.00 EH + 1.00 EV + 1.00 ES + 1.00 LS \\ &\quad + \gamma (LL+IM) + 1.00 WA + 1.00 BY + 1.00 EQ \\ \text{EXTREME II} &= 1.00 DC + 1.00 DW + 1.00 EH + 1.00 EV + 1.00 ES + 1.00 LS \\ &\quad + 0.50 (LL+IM) + 1.00 WA + 1.00 BY + 1.00 IC \end{aligned}$$

- DC = DEAD LOAD OF STRUCTURAL COMPONENTS γ FOR DC = 1.25 MAX./0.90 MIN.
- DW = DEAD LOAD OF WEARING SURFACE γ FOR DW = 1.50 MAX./0.65 MIN.
- EH = HORIZONTAL EARTH PRESSURE γ FOR EH & EV = 1.35 MAX./0.90 MIN.
- ES = EARTH SURCHARGE γ FOR ES = 1.50 MAX./0.75 MIN.
- EQ = EARTHQUAKE $\gamma = 1.20$ FOR DEFORMATIONS, 0.50/1.00 FOR ALL OTHER EFFECTS
- EV = VERTICAL EARTH PRESSURE $\gamma = 0.50$
- LL + IM = LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE
- LS = LIVE LOAD SURCHARGE
- WA = HYDRO-STATIC PRESSURE
- BY = BUOYANCY
- IC = ICE LOAD

LOADING NOTES:

1. K SHOULD BE USED IN EH COMPUTATIONS FOR ALL LIMIT STATES, UNLESS OTHERWISE NOTED BY GEOTECHNICAL ENGINEER.
2. EQ LOADING INCLUDES BOTH LATERAL RACKING DEFORMATION AND VERTICAL SEISMIC MOTION.
3. EXTREME II LIMIT STATE LOAD COMBINATION RELATES TO SCOUR AND ICE DESIGN.
4. LOADS AND LOAD FACTORS FOR CONSTRUCTION SHALL BE IN ACCORDANCE WITH BDM SECTION 3.6.

NOTES:

- ① AS DETERMINED BY THE HYDRAULIC ENGINEER
- ② AS DETERMINED BY THE GEOTECHNICAL ENGINEER

LAST REVISED: 07/07/2023

8.3-A1-4 SHEET

Bridge Design Engr.	M:\STANDARDS\Buried Structures\BURIED STRUCTURES\8.3_A1_4 Three_Sided General Load Combinations.MAN							
Supervisor				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By				10	WASH.			
Checked By				JOB NUMBER				
Detailed By								
Bridge Projects Engr.								
Prelim. Plan By								
Architect/Specialist	DATE	REVISION	BY	APPD				

BRIDGE AND STRUCTURES OFFICE



BURIED STRUCTURES	BRIDGE SHEET NO.
THREE-SIDED STRUCTURE GENERAL LOAD COMBINATIONS	SHEET OF SHEETS