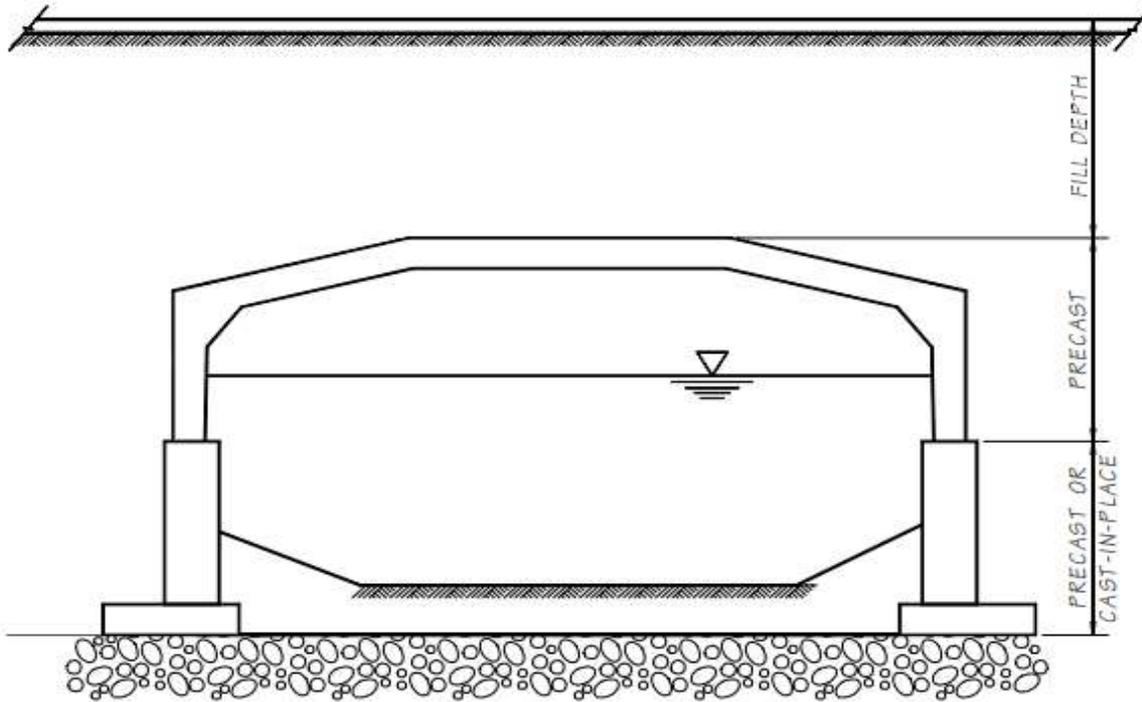


Project \_\_\_\_\_ Supv. GDS BRG. No. \_\_\_\_\_  
 SR \_\_\_\_\_ Made By WJM-III Chk'd By \_\_\_\_\_ Date 7/13/2023

Code  
Reference

## 8.3-A4-2

# PRECAST THREE-SIDED BURIED STRUCTURE DESIGN EXAMPLE



## I. GENERAL DEFINITIONS

**Buried Structure** ~ A specific term for a structure built or assembled inside an excavation employing embankment or trench methods, which works with granular backfill to derive its support from both the structure and the surrounding soil through soil-structure interaction.

**Three-Sided Structure** ~ A rigid frame, chorded, or arch reinforced concrete structure with vertical walls and an integral top slab placed on a reinforced concrete foundation units (comprising a footing, or a footing with an integral stem wall).

**Fill Depth** ~ The total backfill and surfacing depth above the top of the Buried Structure when supporting a Roadway. When not supporting a Roadway, the total backfill above the top of the

## II. DESIGN SPECIFICATIONS

- A - WSDOT Bridge Design Manual, M23-50, 2023, and Interims
- B - WSDOT Geotechnical Design Manual, M46-03, 2023, and Interims
- C - WSDOT Standard Specifications, M41-10, 2023, and Interims
- D - AASHTO LRFD Bridge Design Specifications, 9th Edition, and Interims
- E - AASHTO Technical Manual for Design and Construction of Road Tunnels - Civil Elements, 2010 Edition
- F - NFPA 502 Standard for Road Tunnels, Bridges, and Other Limited Access Highways, 2020
- G - ASTM C1504 - 19 Standard Specification for Manufacture of Precast Concrete Three-Sided Structures
- H - ACI 318 - 19 Building Code Requirements for Structural Concrete

BDM

GDM

SS

ABS

ATM

NFPA

ASTM

ACI