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## **Plum Brook Station Reference**

# **Structural Design Reference**

*Approved by Plum Brook Management Office/7030:*

**NASA - Glenn Research Center  
Cleveland, OH 44135**

<b>Glenn Research Center Plum Brook Station Reference</b>	<b>Title: Structural Design Reference</b>	

**Procedure Owner: Plum Brook Management Office**  
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**Change Record**

<b>Rev.</b>	<b>Effective Date</b>	<b>Description</b>
Initial	11-01-98	Initial Release for the Structural Design Reference.

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## 1.0 INTRODUCTION

This document outlines the reference material to be used in Structural Design as applied to testing facilities and systems.

### 1.1 Purpose

To provide a starting point for Structural Engineers, as well as Engineers from other disciplines, to undertake structural design work in conjunction with work being performed at the testing facilities and systems. It is assumed that the Structural Engineer is qualified and experienced in the structural design and can lend both expertise and assistance.

### 1.2 Scope

This reference covers all test sites and all Task Orders performed at Plum Brook. The listed references are intended to cover the basic structural engineering work, as well as its application to the special requirements of aerospace structural engineering.

## 2.0 REFERENCES

### 2.1 Applicable Documents

Document Number	Document Title
1	Standard Handbook for Civil Engineers, Frederick S. Merritt, Published by McGraw-Hill.
2	Building Code Requirements for Reinforced Concrete (ACI 318-89) and Commentary-ACI 318R-89, published by American Concrete institute.
3	Manual of Steel Construction, Published by the American Institute of Steel Construction.
4	Aluminum Design Manual, Published by The Aluminum Association.
5	Standards and Specifications for Highway Bridges, Published by The American Association of State Highway and Transportation Officials (AASHTO)

### 2.2 Quality Records and Forms

Refer to ISO 9000 introductory document prepared by Jeff Sultzbaugh.

### 2.3 Definitions

<b>PB</b>	Plum Brook
<b>PBMO</b>	Plum Brook Management Office
<b>FM</b>	NASA-PBMO Facility Manager
<b>SSC</b>	Support Service Contractor

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<b>WCO</b>	Work Control Office
<b>TT</b>	Task Team
<b>TM</b>	SSC-Task Manager
<b>TO</b>	Task Order
<b>WO</b>	Work Order
<b>PR</b>	Purchase Requisition
<b>EV</b>	Earned Value
<b>WBS</b>	Work Breakdown Structure
<b>OS</b>	Organizational Structure
<b>PB-C/SCS</b>	Plum Brook Cost/Schedule Control System

### 3.0 RESPONSIBILITIES\*

#### 3.1 Task Manager

Responsible for overseeing all activities associated with a test program.

#### 3.2 Engineering Manager

The Manager of the Test Site Services Engineering Group that is comprised of Test Operations Engineers, and Instrumentation and Controls Engineers.

#### 3.3 Structural Engineer

The Engineer with primary responsibility for performing the structural analysis and design. This includes all aspects of preparing for and performing a complete structural analysis and design of a Plum Brook testing facility or system, whether in build-up or operation of the structure involved.

#### 3.4 NASA Facility Manager

The NASA PBMO Manager who is responsible for all activities at the Test Facility. There are currently four NASA Facility Managers, one for each of the four major test facilities that are active at Plum Brook Station. The NASA Facility Manager is responsible for Test Facility.

\*For any other performing organization please refer to the document "Roles/Responsibilities" available in the ISO 9001 Procedure/Work Instruction Manual.

### 4.0 PROCEDURE

<u>Responsible Person/Org.</u>	<u>Block No.</u>	<u>Activity</u>
Task Manager	<b>4.1</b>	Requests Structural Design.
Engineering Manager	<b>4.2</b>	Assign Structural Design.

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<b><u>Responsible Person/Org.</u></b>	<b><u>Block No.</u></b>	<b><u>Activity</u></b>
Structural Engineer	<b>4.3</b>	Performs Structural Design.
Facility Manager	<b>4.4</b>	Approves Structural Design.