

## **CONSULTING ENGINEER’S CONTRACT DELIVERABLES**

### **List of Deliverables**

1. Inception Report (*including risk management and mitigation procedures*)
2. Topographical Survey Report
3. Geotechnical Survey Report
4. Conceptual Design and Preliminary Cost Estimates
5. Structural Calculation and Detailed Design Report
6. Construction Execution Report
7. Engineer’s Cost Estimate
8. Draft Final Report on structural retrofit preferred solution
9. Final Report
10. Consultant’s Monthly Progress Report – Design Phase
11. Tender Documents
12. Consultant’s Monthly Progress Report–Supervision and Construction Phase

# 1. INCEPTION REPORT

## Table of Contents

1. Executive Summary
2. Introduction
3. Purpose of Report
4. Scope of Services
5. Project Deliverables
6. Proposed Methodology
7. Mobilization and Staffing
8. Services to be Outsourced
9. General Design Deliverables
  - 9.1 *Topographic Survey*
  - 9.2 *Geotechnical investigation*
  - 9.3 *Structural condition assessment of existing lighthouse structure*
  - 9.4 *Structural Retrofit design*
  - 9.5 *Structural Design of new public restroom facility*
  - 9.6 *Drainage design (if required)*
  - 9.7 *Pavement design (if required)*
10. Design Codes, Criteria and Methodology
  - 7.1 *Condition assessment survey as per ASCE 31-03*
  - 7.2 *Assumptions made*
  - 7.3 *Methodology to determine mechanical properties of structural components*
  - 7.4 *Results of destructive and non-destructive testing if required*
  - 7.5 *Safety Objectives chosen from ASCE 41-06*
  - 7.6 *Load paths*
  - 7.7 *Computer Modelling of existing structure*
  - 7.8 *Analysis method chosen from ASCE 41-06 with justification*
  - 7.9 *Methodology for generating earthquake loading in each orthogonal direction and natural period of structure*
  - 7.10 *Load combinations*
  - 7.11 *Define force controlled and deformation-controlled components*
  - 7.12 *Methodology for determining capacities of existing primary structural components*
  - 7.13 *Present retrofit alternatives*
  - 7.14 *Repeat iterative process to ensure basic safety objectives met as per ASCE 41-06*

**Note:** This document is intended to guide the Consultant. Deliverable submissions should include but are not limited to the items provided in this guide.

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  - 6.2 *Findings*
7. Laboratory Testing
8. Site and Subsurface Conditions
  - 8.1 *General*
  - 8.2 *Description of each Soil Strata*
  - 8.3 *Groundwater Elevation*
  - 8.4 *Chemical Characteristics of Subsurface Soil*
  - 8.5 *Unique Site Conditions (e.g. artesian conditions, quicksand ,etc.)*
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  - 10.2 *Key Design Parameters*
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    - 10.2.9 *Modulus of Subgrade Reaction*
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  - 5.8 *Any Other Factors Affecting Concept Development*
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  - 6.1 *Structural calculations for existing lighthouse structure*
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  - 7.2 *Constructability (e.g. Construction Methodology, Materials, etc.)*
  - 7.3 *LCCA and Preliminary Cost Estimates*
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  - 5.4 *Software*
  - 5.5 *Structure Geometry*
  - 5.6 *Design Loads*
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  - 6.3 *Mechanical properties of primary structural components determined via assumptions or testing*
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  - 6.5 *Earthquake load generation & Load paths*
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    - 6.9.2 *Preferred retrofit solution with justification*
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  - 5.7 *Public Facilities/Stakeholders Impacted*
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  - 3.2 *Geotechnical Investigations*
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6. Structural Designs
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  - 6.2 *Detailed design report for new public restroom facility*
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  - 6.4 *Detailed sketches for new public restroom facility*
7. Land Issues
8. Environmental Impact
9. Construction Execution Report
10. Tender Documents

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  - 2.2 *Site Condition Assessment*
  - 2.3 *Structure condition assessment*
  - 2.4 *Design Criteria*
3. Field Investigations
  - 3.1 *Topographical Surveys*
  - 3.2 *Geotechnical Investigations*
4. Drainage Design (if required)
5. Civil Works Design
  - 5.1 *Geometric Layout*
6. Structural Designs
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  - 6.3 *Full drawing package for lighthouse structure retrofit*
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7. Land Issues
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9. Construction Execution Report
10. Tender Documents

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**Note:** This document is intended to guide the Consultant. Deliverable submissions should include but are not limited to the items provided in this guide.

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