



Statement of Work Fabrication of BSC Install Work Platforms

The following documents are incorporated into and made a part this purchase order. Click on the following LIGO Document Control Center (DCC) links to access these documents or go on line to the LIGO Public DCC at <https://dcc.ligo.org/> to access the DCC#.

1.0 Terms:

<u>DCC #</u>	<u>Description</u>
C080185-v1	Laser Interferometer Gravitational Wave Observatory (LIGO) Commercial Items or Services Contract General Provisions California Institute of Technology “Institute”, LIGO Rev 11/12/08
F0810001-v4	Technical Direction Memorandum.

2.0 Quality Control:

<u>DCC #</u>	<u>Description</u>
Q0900001-v4	Advanced LIGO Supplier Quality Requirements, dated 2/10/10, describes following contractor/supplier QA/QC actions for this procurement:
3.1 Pre-Award Inspection	3.9 Discrepant Material Storage
<input checked="" type="checkbox"/> 3.2 Supplier In Process Quality Control	<input checked="" type="checkbox"/> 3.10 Quality Records
3.3 In Process Inspection	3.11 Drawing and Specification Change Control
<input checked="" type="checkbox"/> 3.4 Pre-Ship Inspection	<input checked="" type="checkbox"/> 3.12 Welding Certification
3.5 Receiving Inspection	<input checked="" type="checkbox"/> 3.13 End Item Data Package (including Certifications of Compliance)
3.6 Discrepant Material	4.1 Design Verification
3.7 Material Review Action	4.2 Raw Material Procurement
3.8 Material Review Actions at Contractor	<input checked="" type="checkbox"/> 4.3 Traceability of Materials
	4.4 Calibration Program
	4.5 Critical Interface
	<input checked="" type="checkbox"/> 4.6 Cleanliness
	<input checked="" type="checkbox"/> 4.7 Packaging
	<input checked="" type="checkbox"/> 4.8 Storage
	<input checked="" type="checkbox"/> 4.9 Transport
	4.10 Customs

For the above list the Supplier shall: 1) Identify the corresponding sections/paragraphs in their existing QA/QC system 2) meet or exceed the design requirements contained in the attached engineering documents for each area called out.

LIGO prefers to utilize the vendors existing QA/QC programs to the fullest extent possible consistent with the LIGO QA and QC requirements. All bidders are requested to submit a written description/plan of their existing QA/QC system with their quotes. The bidder must also submit QA/QC plans for managing subcontractor work and materials.

In the event that a prospective contractor lacks an existing quality system, the contractor/vendor shall develop and implement a quality assurance program in compliance with requirements negotiated at contract/PO award.

3.0 Scope:

This SOW is for the Design and Fabrication of custom work platforms detailed in the specification and descriptions document E1000654-v5 (see Sec 6.0 below) included in this package. The Seller must develop the detailed design of the components, fabricate them and deliver them to the LIGO sites. All proposals must include the following items:

- Lump Sum Price for all Components (FOB LIGO Sites)
- Separate pricing for each main component (A,B,C,D,E AND STAIRCASE)
- Alternate bid for the E module and staircase fabricated from carbon steel and painted (instead of unpainted aluminum) as detailed in the specification.
- Estimated weights for each major component.

The required components are part of the Advanced LIGO upgrade of the Laser Interferometer Gravitational-Wave Observatory (LIGO). LIGO is operated by Caltech and the Massachusetts Institute of Technology (MIT) under a NSF grant and includes two observatories, one located in the Hanford Reservation (near Richland, WA) and a second in Livingston, LA.

The California Institute of Technology (Caltech) is the Buyer for these components. The Seller is the successful bidder who is awarded this contact.

3.1 It is the Seller's responsibility to follow these requirements or to propose alternate procedures and specifications to meet the requirements. All alternate approaches must be approved by the Buyer before use.

3.2 Seller is responsible for the detailed Engineering/Design and Fabrication of Aluminum Structural Work Platforms, Stair Modules and Walking Plates that are detailed herein. The design shall meet all detailed requirements of specification E1000654-v5 (see Sec 6.0 below).

3.3 The following component quantities are required at each LIGO delivery locations:

LIGO SITE	Platform A, B, C, D	Platform E	Stair Module	Walking Plates (Sets)
Hanford WA	4 ea	4	4	4
Livingston LA	2 ea	2	2	2

All components shall be delivered to the applicable LIGO sites FOB jobsite per the schedule in Section 4 below.

4.0 Schedule

All components shall be designed and fabricated per the following schedule:

- Kickoff Meeting - 1 week after PO award
- PDR meeting - 3 weeks after PO award
- FDR Meeting - 15 Feb 2011
- Delivery of first set of WA Site components by: 01 April 2011 *
- Delivery of all LA Site components by: 01 July 2011

*Note: Supplier shall propose a staggered delivery schedule for the balance of WA site component deliveries.

5.0 End Item Data Package

At the time of delivery of the parts, the Supplier shall also provide the following data, as a minimum:

- Any as-built modifications (with approval of the LIGO Contracting Officer) as mark-ups to the drawings
- Dimensional & QC inspection reports—this shall include a report showing that parts have been inspected and fall within specified tolerances.
- Certificate or statement of compliance with all contract and drawing process restrictions.

6.0 Included Documents

The following documents detail the requirements for the equipment. The Seller must develop the detailed design drawings:

DCC #	Description
E1000654-v5	Specification-BSC Install Work Platforms
D961093-v1	BSC Chamber, Lower Shell (Reference only)
D961106-v1	BSC Chamber, Bottom Half Flange (Reference only)
D970412-v1	BSC Chamber (Reference only)
D1001990-v2	Platform Walkway (Platforms A-D)
D1002410-v1	Walking Plates
D1002926-v1	Platform E (Module E)
D1003029-v1	BSC Platform Installation Example

7.0 Delivery Requirements

The deliveries are FOB at these destinations, i.e. the contractor has responsibility for shipping title and control of goods until they are delivered and the transportation has been completed. The contractor selects the carrier and is responsible for the risk of transportation and for filing claims for loss or damage.

7.1 Shipping Location:

These items will be shipped to:

LIGO Hanford Observatory (LHO)
Attn: Jodi Fauver and Terry Santini
127124 North Route 10
Richland, WA 99354

LIGO Livingston Observatory (LLO)
Attn: Bryan Smith and Willie Hawkins
19100 LIGO Lane
Livingston, LA 70754

7.2 Shipping Containers:

The contractor is responsible for providing shipping containers and transportation which protects these parts from damage and contamination from the transportation environment (weather, handling, accidents, etc.). Mating edges of parts should be especially protected from damage during shipping.

8.0 Manufacturing

8.1 Precedence

This Statement of Work (SOW) is meant to convey the scope and nature of the requested work. If there is a conflict between the SOW and the drawings/technical specification, the drawings/technical specification has precedence.

8.2 Materials

Material is specified in E1000654-v5(see Sec 6.0 above). No materials may be substituted or added without prior knowledge and testing by LIGO.

8.3 Finishing

Surface finish is defined in Specification E1000654-v5(see Sec 6.0 above) . Localized scratches, digs and blemishes should be minimized.