



I. DESIGN PHASE

- A. The Institute shall review and approve design documentation based on the requirements specified in this document and in the RFP. The design drawings and associated documents shall represent 100% of the intended and agreed upon scope for the PV project. The Contractor shall be solely responsible for providing complete design and engineering, compliant with all applicable laws and the requirements of this RFP and any resulting Contract, by and through appropriately licensed design professionals, including, without limitation, licensed architects and registered professional engineers employed or under direct contract with Contractor. The design professionals so engaged shall serve as the Architect or Engineer of Record and the Design Professional in General Responsible Charge of all construction in accordance with the Field Act, Education Code sections 17280 et seq.
- B. Upon Contract Execution, Contractor will be given Notice to Proceed (NTP) for the design phase of the project. Upon NTP, Contractor may begin due diligence and site discovery in close coordination with Institute staff for site access and scheduling.
- C. The Contractor shall conduct design review meetings, maintain and distribute formal meeting minutes for each stage of the process, which shall include, at a minimum, the following design stages:

<u>Design Stage</u>	<u>Time from Contract Execution</u>
30% Design	within 5 weeks
50% Submittal	within 8 weeks
90% Final Design	within 12 weeks

- D. The Contractor shall submit an electronic submittal package for each Design Stage including, but not limited to the items outlined in Table 1 on the following page.
- E. The Contractor shall submit the design stage package no less than five (5) business days prior to the design review meeting. The Contractor shall address all Institute comments in writing no more than five (5) business days from the date formal Institute comments have been received. Institute comments shall be incorporated into each successive stage of the design review. Comment responses shall be provided for each phase of design review.
- F. The Institute will formally approve, in writing, each phase of the design upon the Institute’s determination that the design is progressing at or beyond the percentage completion expected at stage. The Contractor shall not enter a subsequent design phase without the approval of the Institute. The Contractor is solely responsible for obtaining approvals from the Institute and all other Authorities Having Jurisdiction (AHJs).
- G. Drawing sheets to be submitted in one full coordinated plan set document.

ATTACHMENT A3: SUBMITTALS & PROJECT ACCEPTANCE

RFP for Design Build Contract: Solar Power Generation System at
Ocean Discovery Institute



Table 1 – Design Submittal Packages

Submittal Requirement	30% Design	50% Design	90% Final
1. Cover Sheet (TOC, project details, designers of record, PV summary table ¹ , etc.)	X	X	X
2. PV System Sizes & Production Estimates (see Item G, below)	X		X
3. Overall Site Plan with PV Array Names, Interconnection IDs, Conduit Routes, Tree/Light Removal, etc.	X		X
4. Interconnection Equipment Assessment (see Item G, below)	X		X
5. Interconnection Plan			X
6. Electrical Site Plan Drawings, incl. Balance of System	X		X
7. Electrical Single Line Diagrams	X		X
8. DC String Wiring Plans			X
9. Demolition Plans			X
10. Structural Drawings			X
11. Equipment Pad and Mounting Details			X
12. Signage, Trenching, Installation, and Grounding Details			X
13. Monitoring System Details			X
14. Lighting Plan, Details and Photometric Plans			X
15. Complete Design Package Sufficient for DSA or AHJ Review			X
16. All specifications related to the Scope of Work (see Item I, below)		X	X
17. Geotechnical Reports and Associated Drawings		X	X
18. Equipment Manufacturer's Cut Sheets and Details		X	X
19. Interconnection Application & Any Utility Correspondence		X	X
20. Complete list of all Subcontractors, incl. specialty		X	X
21. Contractor's Commissioning Protocol (see Section III below)			X
22. Construction Schedule	Prelim		Detailed

Notes:

1. PV System Summary Table shall include the following with details for each array: Array No/Name, Dimensions, Azimuth, Tilt, Module Model/Count, Inverter Model/Count, Nameplate, No. of Strings, Canopy Column Count

ATTACHMENT A3: SUBMITTALS & PROJECT ACCEPTANCE

RFP for Design Build Contract: Solar Power Generation System at
Ocean Discovery Institute



- H. The Contractor shall submit a System Size Spreadsheet showing all system sizes by site, year one production (kWh), and associated yields (kWh/kWp) per item 2 in Table 1. The spreadsheet shall be submitted at each phase of design as noted above and prior to construction. All final system designs shall be within 5% of contracted target production and must receive written approval from customer before submittal to the AHJ. Along with the System Size Spreadsheet, the Contractor shall submit updated PV modeling and shade analysis prior to construction and post construction phase using approved modeling software and assumptions.
- I. The Contractor shall conduct an interconnection equipment assessment for each interconnection site. Any issues with existing Institute or Utility equipment that may prevent the system from interconnection to the Utility must be identified at the time of the 30% Design submittal. Costs for any upgrades shall be per B2 Cost Proposal Form.
- J. The Contractor shall submit a complete specification packet as part of the 90% Submittal. Specification Divisions that shall be included, if they are part of the Scope of Work for the Project, are:
 - 1. Electrical (General and Solar PV)
 - 2. Cutting and Patching
 - 3. Subsurface Investigation
 - 4. Concrete Forming, Reinforcing, and Finishing
 - 5. Structural Steel Framing
 - 6. Metal Fabrications
 - 7. Roof Patch and Repair
 - 8. Painting and Coating
 - 9. Signage
 - 10. Testing and Commissioning
 - 11. Exterior Lighting and Controls
 - 12. Earthwork
 - 13. Vegetation Clearing and Control
 - 14. Pavement Specialties and Striping
 - 15. Fencing and Gates
- K. The Contractor shall submit complete electronic copies of all Final Approved Permit Set drawings prior to Construction.
- L. The Contractor shall coordinate community outreach meetings with the Institute.

II. CONSTRUCTION PHASE

- A. Institute shall provide formal NTP for construction upon receipt of acceptable 100% Design Plan Set with all necessary AHJ approvals and all required proof of bonding.

ATTACHMENT A3: SUBMITTALS & PROJECT ACCEPTANCE

RFP for Design Build Contract: Solar Power Generation System at
Ocean Discovery Institute



- B. Prior to beginning construction, Contractor shall:
1. Provide a comprehensive onsite Construction Management and Safety Plan for the construction of the Project in accordance with all applicable laws, policies and OSHA compliant safety practices. Plan should include, at a minimum, address of local emergency medical facilities, project directory, information on Sub-Contractors, coordination with Institute staff during specific construction tasks, and communication protocols.
 2. Provide an updated Detailed Construction Schedule and a three week look-ahead.
 3. Obtain all required permits and approvals from the AHJ(s) and the Utility(ies) prior to starting Construction, in coordination with the Institute, and shall make copies available to the Institute of all permit applications and approvals.
- C. The Contractor shall provide Manufacturers' Installation Manuals for major project components, including, but not limited to: PV modules, inverters, racking or mounting structure, monitoring systems, BESS systems, EV charging systems, other major electrical equipment, and lighting. When approved by the Institute, recommended installation standards shall become the basis for commissioning, inspecting and accepting or rejecting actual installation procedures used on the work.
- D. Prior to ordering equipment and materials, the Contractor shall verify all measurements at each project site and notify the Institute in writing on any discrepancies between the drawings and site measurements.
- E. The Contractor shall coordinate with the DSA inspector for any in-shop inspections that may be required before fabrication of the solar PV system.
- F. Any proposed changes to design shall be submitted in writing to the Institute for approval before any changes are made. Submittal for changes shall contain all necessary details of the proposed changes and an updated system size and production spreadsheet.
- G. CONSTRUCTION SUBMITTALS: The following documents and schedules shall be provided by the Contractor as listed:

Table 2 – Construction Submittals

Construction Submittal	Submittal Schedule
1. Construction Mgt & Safety Plan	No later than 15 days prior to site mobilization.
2. Construction Schedule	- Three week look-ahead schedule updated and submitted weekly prior to the weekly meeting. - Detailed schedule regularly maintained and provided every two weeks or as-requested.
3. Manufacturers' Installation Manuals	No later than 5 days after construction kickoff meeting.
4. Weekly Meeting minutes	No later than the day prior to the next scheduled project meeting.
5. Test Reports	As available
6. Factory Tests	As available
7. Field Tests	As available

ATTACHMENT A3: SUBMITTALS & PROJECT ACCEPTANCE

RFP for Design Build Contract: Solar Power Generation System at
Ocean Discovery Institute



Construction Submittal	Submittal Schedule
8. Design Deviations/ Requests for Information	As-needed. All deviations shall be accurately and legibly detailed by the Contractor and approved by Designer of Record, then presented to the Institute/Institute Reps in the form of an RFI. All changes shall be recorded on as-built drawings at the time of the change.
9. Proposed Change Orders	Prior to commencing any changed work. Shall be formally submitted and approved by the Institute/Institute Rep in writing.

III. COMMISSIONING PHASE

- A. The Contractor shall notify the Institute and Institute representatives prior to commencing commissioning and provide a schedule for all commissioning activities.
- B. Contractor shall provide electricians and support to Institute and Institute representative for verification of commissioning and workmanship, including providing reasonable notice prior to conducting commissioning activities so Institute representatives may observe.
- C. A detailed/comprehensive Commissioning Report; submitted 15 days after commissioning has been completed on a site-by-site basis.
- D. Commissioning shall proceed per the approved commissioning plan submitted during the Design Phase. At a minimum, system commissioning protocol shall include:
 1. Conductors
 - 1.1. AC & DC conductor inspection / megger testing
 - 1.2. Wire management check
 - 1.3. DC string Voc/sc testing and recording
 - 1.4. Confirm all conduits & junction boxes are installed properly/watertight
 2. Inspection of DC fusing and disconnects
 3. Inspection of AC components: AC Disconnect, Main Switch Board, AC Combiner Panel Boards, Breakers, Fuses, Terminations, Phasing, OCPD operation, etc.
 4. Grounding & bonding system inspection & continuity testing
 5. Inverters
 - 5.1. Inverter inspections & tests per manufacturer instructions
 - 5.2. Inverter start-up & confirm proper inverter settings
 - 5.3. Inverter output tests - Confirm PV system AC output as expected based on design, insolation and inverter readings
 6. IV Curve Trace, Performance testing and recording
 7. Thermal Imaging
 - 7.1. Check all electrical components while systems are energized
 - 7.2. Spot check, Modules, Inverters, Disconnects, AC system etc.
 8. Torque spot check on mechanical and electrical terminations
 9. Inspection of corrosion control measures
 10. Confirm signage and placards meet plans
 11. Workmanship evaluation
 12. Inspection of DAS / CT metering and monitoring equipment

13. Weather station component inspection and performance audit
14. Confirm web-based monitoring interface operations
15. Lighting Controls
 - 15.1. Confirm canopy lighting levels match photometric design
 - 15.2. Verify component installations
 - 15.3. Confirm lighting controls function as specified
16. Commissioning of any other major electrical infrastructure installed on the project per manufacturer requirements

IV. CLOSEOUT PHASE

- A. Contractor shall submit complete digital “as-built” Record Drawings for all sites for review and approval. Final as-built plans shall be provided in both AutoCAD (CAD) and portable document format (PDF) prior to Commercial Operation Date (COD). Contractor shall submit one set of final compiled Record Drawings for the Institute. The Record Drawings shall incorporate all changes from permit plan sets captured on all as-built sketches, details, and clarifications. Locations of work buried under or outside each building, including, without limitation, all utilities, plumbing and electrical lines and conduits. All deviations from the sizes, locations and other features of installations shown in Issue for Construction (IFC) plan sets and contract documents must be captured in detail in as-built Record Drawings. All horizontal boring, trench routes and depths to be recorded and transferred from logs to record drawings. All canopy column footing depths shall also be recorded and coordinated into as built drawings.
- B. The Contractor shall submit documentation of Punch List Completion for items under control of the Contractor within 30 days of the Institute issuing the Final Punch List. The document must be signed and show proof of completion of each item.
- C. The Contractor shall submit executed Performance Guarantee (PeGu) Agreement amendment(s) within 30 days of PTO at all sites. All performance tables and commercial operation dates must be updated with the final as-built statistics.
- D. Contractor shall provide DSA closed and certified documentation for all projects.
- E. Any other Project documentation required by the Institute.
- F. The Contractor shall submit to the Institute a comprehensive Operations and Maintenance (O&M) Manual for each system, within 30 days of the Utility granting Permission to Operate (PTO) for that system. O&M manuals shall consist of three (3) hard copy and (3) soft copies on USB flash drive in PDF format, provided as a single, bookmarked PDF document. The document shall be a well-organized, comprehensive and custom document created for each site which includes, but is not limited to:
 1. System Description and Overview
 2. Simplified site plan that shows array naming convention, inverter locations, and disconnects
 3. Predicted performance data, including expected production over time
 4. Safety Details, including shut down procedures
 5. Contact information for the system installer and maintenance personnel

ATTACHMENT A3: SUBMITTALS & PROJECT ACCEPTANCE

RFP for Design Build Contract: Solar Power Generation System at
Ocean Discovery Institute



6. As-built drawings. During construction, Contractor shall incorporate all information on all As-Builts, sketches, details, and clarifications, and prepare one set of final Record Drawings for the Institute. The Record Drawings shall incorporate onto one set of electronic drawings, all changes from all As-Builts, sketches, details, and clarifications. The Contractor shall deliver the Record Drawings to the Institute at completion of the construction. Locations of work buried under or outside each building, including, without limitation, all utilities, plumbing and electrical lines and conduits. All deviations from the sizes, locations and other features of installations shown in Issue for Construction (IFC) plan sets and contract documents.
7. Complete material list of all items furnished and installed, including but not limited to the following: PV Modules, inverters, wiring, combiner boxes, panelboards, switch gear, optimizers, disconnects, boxes, metering and DAS equipment, etc. PV System operation details
8. System testing and commissioning documentation
9. PTO and any other pertinent Utility documentation
10. Maintenance information, including schedules and responsibilities for ongoing maintenance
11. Troubleshooting and repair, including responses to typical issues
12. All warranties, cut sheets and manuals for major equipment
13. Performance guarantee details, including schedule of performance reporting and example format
14. Monitoring system login and operation details
15. Any other information that may be required for the Institute to easily and safely interact with, confirm performance, troubleshoot, maintain and/or service the materials and equipment installed under this Contract.
16. CAD (electronic format) "as-built" files of all drawings, provided as separate files from the Manual PDF



V. Project Closeout Submittals

Contractor shall deliver the following document submittals to Institute in order to attain Institute approval for the listed project closeout milestone.

Table 3 – Closeout Document Submittals

Substantial Completion	
1	AHJ Substantial Completion Notice (As-needed for Interconnect)
2	Schedule for Project Closeout
3	Commissioning Protocol
4	Utility Interconnection Request Submitted
Commercial Operation Date - COD (All Substantial Completion items plus:)	
5	Utility Permission-to-Operate (PTO) Notice
6	Contractor Commissioning Documentation
7	AHJ(s) Acceptance/Completion Documentation
8	As-Built Plan Sets (w/ Data Sheets for Major Equip.)
9	Record of all trenching/boring routes & depths and canopy column footing depths.
10	As-Built Performance Modeling & 8760 Data
11	Punchlist – Major/Safety Items Signed Off by Institute/Inspectors
12	O&M Manual Draft
13	Major Equipment Cut Sheets/Warranty Documentation
14	DAS Login Access and Credentials & Verification of Function
15	Subcontractor Notices of Completion
16	Contractor Formal Commercial Operation Notice
Final Completion/Acceptance (All COD items plus:)	
17	Punchlist – All Lists Signed Off
18	O&M Manual Final
19	Cx/Inspection Completed
20	Operation and Safety Training (for Owner)
21	All Change Orders/Payments Finalized
22	Final Amended Executed Contracts (O&M & PeGu)
23	Inverter/Data Logger Serial Numbers, IDs, Locations Provided and Functional
24	DSA Closeout Documentation Complete and Submitted
25	Owner Notice of Acceptance

ATTACHMENT A3: SUBMITTALS & PROJECT ACCEPTANCE

RFP for Design Build Contract: Solar Power Generation System at
Ocean Discovery Institute



VI. Submittal Dates

(To be negotiated with selected Contractor)

Submittal Item	Date
30% Submittal	[TBD]
50% Design Submittal	[TBD]
90% Design Submittal	[TBD]
Final Approved Permit Set, Submitted to DSA	[TBD]
Construction Management Plan	[TBD]
Construction Schedule Submittal	[TBD]
Commissioning Reports	[TBD]
O&M Manual	[TBD]
Punch List Completion Documents	[TBD]
As Built – Record Drawings	[TBD]
O&M Contract Agreement Amendment(s)	[TBD]
PeGu Agreement Amendment(s)	[TBD]