

PRE-CONSTRUCTION ROLES AND RESPONSIBILITIES MATRIX

| CONSTRUCTION MANAGEMENT SERVICES | REQUIRED OF CONTRACTOR | REQUIRED OF DESIGN CONSULTANT | REQUIRED OF ARRC/ OTHERS |
|---|------------------------|-------------------------------|--------------------------|
| PHASE: <u>PRE-CONSTRUCTION</u> | | | |
| <u>INITIAL PROJECT SCOPING MEETING (WORKSHOP)</u> | | | |
| A. CM/GC AND PARTNERING INTRO SESSION | | | |
| B. PROJECT SITE VISIT AND INSPECTION | | | |
| C. PROJECT STATUS, GOALS, ELEMENTS, OBJECTIVES, DESIGN SCHEDULE REVIEW | | | |
| D. IDENTIFY PROJECT RISKS AND DEVELOP INITIAL RISK MANAGEMENT PLAN AND RISK REGISTER | | | |
| E. REVIEW APPLICABLE ENVIRONMENTAL DOCUMENTS (CatEx, ROD, FONSI, ETC.) | | | |
| F. INDEPENDENT DESIGN AND AS-BUILT REVIEW | | | |
| G. DEVELOP PROJECT SCHEDULE AND TASKS | | | |
| H. SCHEDULE BI-WEEKLY PROGRESS, FIR, FOR, AND MILESTONES MEETINGS | | | |
| I. IDENTIFY DESIGN CRITERIA | | | |
| J. DISCUSSION OF POSSIBLE EARLY DELIVERY AND LONG LEAD TIME ITEMS | | | |
| K. ANALYSIS OF PROJECT PHASING AND MULTIPLE PS&E PACKAGES | | | |
| L. DEVELOP DOCUMENT REVIEW CONVENTION STANDARDS AND NAMING CONVENTIONS STANDARD | | | |
| M. QUESTION AND ANSWER SESSION | | | |
| N. PROGRESS MEETINGS | | | |
| O. ARRC/PM, C/PM, CMGC/PM | | | |
| P. PROJECT MEETING MINUTES | | | |
| <p>The managers and team members will meet periodically as required (<i>typically at two-week intervals</i>). These progress meetings will be used to coordinate and track the work effort and resolve problems. The meetings will review the following:</p> <ul style="list-style-type: none"> • Activities required to be complete since last meeting (<i>Action Items</i>) • Problems and challenges encountered/anticipated and potential solutions • Project Schedule Updates (Design and Construction) • Action Items • Coordination and communication required with: <ul style="list-style-type: none"> ○ Team Members ○ ARRC Specialty Units ○ Other <p>The ARRC PM will provide meeting minutes that include details discussed, notes, and all action items relating to the meeting within one week of the meeting.</p> | | | |

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| A. <u>PROJECT DEVELOPMENT PROCESS</u> | | | |
| Project Management | | | |
| The ARRC/PM will coordinate all the work tasks being accomplished by all parties to ensure project work completion stages are on schedule. The C/PM and CMGC/PM shall coordinate all the work tasks being accomplished by their respective teams to make sure project work completion stages are on schedule | | | |
| Communication and Consensus Building | | | |
| The ARRC/PM is responsible for the consensus building and facilitating the communication between all members of the Project Team. This does not dismiss the responsibility of all team members to communicate with the ARRC/PM and the ARRC Project Management Team when required. | | | |
| Weekly Update Newsletter | | | |
| The ARRC/PM will publish a weekly update newsletter to document the weekly or bi-weekly progress of the schedule, estimate, team meetings, action items, and pertinent information for the FHWA, ARRC management, and Project Team members. | | | |
| Maintain Updated Contact List | | | |
| Establish and maintain a computerized list of all appropriate interested parties for the communication process. The list will be used for notices regarding public meetings, mailings, newsletters, or other communication as appropriate. | | | |
| B. <u>MEETINGS</u> | | | |
| Graphics support and presentations | | | |
| Each Project Team member is responsible for the graphics, documents, reports, plans, specifications, and written reviews from each specific scope of work item. Presentation of these documents and their reviews will be available on the shared project server after the meeting has been adjourned. | | | |
| Provide Local Office | | | |
| The ARRC/PM will obtain and maintain an office within the project area to conduct small group meetings and provide displays/information to the public. This office may have work spaces for Project Team members, meeting rooms with graphics support and capacity for the entire team to attend. Additional offices or meeting spaces may be considered at the Project Workshop. | | | |
| PM Updates on Progress | | | |
| The ARRC/PM, CMGC/PM, and the C/PM will all update the team members at the scheduled meetings as to their progress on deliverables, challenges, and the feedback/comments they need. | | | |
| Project Discussion | | | |
| The team members need to come prepared to discuss any and all reservations, ideas, and challenges to the project. Open and honest dialogue is the key to the success of project delivery. | | | |

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| C. <u>2. PRELIMINARY DESIGN</u> | | | |
| Preliminary Track, Geometric, Structural, Environmental, etc. Design | | | |
| ARRC/PM will coordinate all design activities with required ARRC specialty units, the Contractor, the Design Consultant, and other outside entities. Design Consultant is responsible for the civil and structural design, plans, specifications, and estimate packages at each formal review. | | | |
| Environmental - gathering data, analysis, and mitigation development | | | |
| Environmental clearances | | | |
| ROW, specialty, and local clearances | | | |
| Hazardous material investigation | | | |
| ARRC processes (forms, clearances) | | | |
| Utility coordination | | | |
| Conduct field survey of project area | | | |
| Field and project research | | | |
| Hazardous material investigation | | | |
| Field survey and existing feature development | | | |
| Construction requirements | | | |
| Innovation development, proposal, and tracking | | | |
| Check and field verify all applicable as-built plans | | | |
| Provide construction plans, specifications, and estimates | | | |
| Plot/develop all required information on the plans in accordance with all applicable ARRC policies and procedures and all industry standards for civil, electrical, ITS, and structural design. | | | |
| Develop construction cost model for Engineer Estimator and ICE | | | |
| Develop and calculate quantities | | | |
| Risk Register development | | | |
| Initiate and Track DBE and Subcontractor Plan | | | |
| Constructability reviews and reports | | | |
| Construction Phasing Plan | | | |
| Value Engineering proposals | | | |

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| Cost savings reviews | | | |
| Preliminary construction schedule | | | |
| Long lead time GMP submissions and proposals | | | |
| Long lead time negotiations | | | |
| Long lead time item procurement | | | |
| Opinion of probable construction cost Estimate #1 | | | |
| FIR (Field Inspection Review) Preparation | | | |
| Coordinate, complete, and compile the plans with inputs from other branches: materials, hydraulics, environmental, traffic, right of way, maintenance, safety, and Staff Bridge, if applicable. | | | |
| The FIR plans and specifications shall comply with ARRC requirements and shall include: title sheet, typical sections, general notes, plan/profile sheets, and preliminary layouts. | | | |
| The plans shall be submitted to the ARRC/PM and the CMGC/PM for preliminary review at least two weeks prior to the FIR. | | | |
| The plans will be reproduced by _____. | | | |
| Prepare the Engineer's Estimate for work described in the FIR plans based on estimate quantities. | | | |
| Prepare the FIR Opinion of Probable Construction Cost (OPCC #1) | | | |
| ARRC Form 1048 Project Scoping Procedures Completion | | | |
| Field Inspection Review Meeting | | | |
| Review FIR PS&E package and provide written reviews, comments, and redlines. | | | |
| Attend the FIR. | | | |
| Provide post-FIR revisions and memo. | | | |
| Provide list of all deviations from the standard design criteria and written justification for each. | | | |
| Update DBE and Subcontractor Plan. | | | |
| Update Risk Register and Cost Model. | | | |

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| Final Roadway, Geometric, Structural, Environmental, SWMP, etc. Design | | | |
| ARRC/PM will coordinate all design activities with required ARRC specialty units, the Contractor, the Design Consultant, and other outside entities. Design Consultant is responsible for the civil and structural design, plans, specifications, and estimate packages at each formal review. | | | |
| Environmental - gathering data, analysis, and mitigation development | | | |
| Final environmental clearances | | | |
| Final environmental permits | | | |
| ROW, specialty, and local clearances | | | |
| FIPI justification for sole sourcing | | | |
| Final utility coordination | | | |
| Develop and calculate final quantities | | | |
| ARRC processes (forms, clearances) | | | |
| Update Risk Register, formal risk assessment meeting | | | |
| Constructability reviews and reports | | | |
| Construction Phasing Plan | | | |
| Value Engineering proposals | | | |
| Final construction requirements | | | |
| Innovation development, proposal, and tracking | | | |
| Cost Savings reviews | | | |
| Final Office Review (FOR) Construction Schedule | | | |
| Long lead time GMP submissions and proposals | | | |
| Long lead time negotiations | | | |
| Long lead time item procurement | | | |
| Opinion of Probable Construction Cost Estimate #2 | | | |
| Provide FOR level construction plans, specifications, and estimates | | | |

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| Develop and calculate final quantities | | | |
| FOR (Final Office Review) Preparation | | | |
| Coordinate, complete, and compile the FOR plans with inputs from other branches: materials, hydraulics, environmental, traffic, right of way, maintenance, safety, and Staff Bridge if applicable. | | | |
| The FOR plans and specifications shall comply with ARRC requirements and shall include: title sheet, typical sections, general notes, plan/profile sheets, and preliminary layouts. | | | |
| The plans shall be submitted to the ARRC/PM and the CMGC/PM for preliminary review at least two weeks prior to the FOR. | | | |
| The FOR plans will be reproduced by _____. | | | |
| Prepare the Engineer’s Estimate for work described in the FOR plans based on estimate quantities. | | | |
| Prepare the Opinion of Probable Construction Cost (OPCC #2) based on the FOR Design. | | | |
| FOR (Final Office Review) Meeting | | | |
| Review FOR PS&E package and provide written reviews, comments, and redlines | | | |
| Attend the FOR meeting | | | |
| Post-FOR revisions and memo | | | |
| Provide list of all deviations from the standard design criteria and written justification for each. | | | |
| Provide a FOR Construction Plan | | | |
| Obtain final environmental and access permits | | | |
| Finalize construction cost model for Engineer Estimator and ICE | | | |
| Update DBE and Subcontractor Plan | | | |
| Update Risk Register | | | |

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| GMP Proposal and Negotiations | | | |
| Notify ARRC/PM at a point where GMP proposals can be sufficiently prepared. | | | |
| Supply cost model and assumptions to ICE and Engineer Estimate. | | | |
| Supply Electronic Bid Schedule (EBS) Example to CM/GC Contractor for GMP. | | | |
| Prepare and submit early work or final construction GMP proposals. | | | |
| Procure independent cost estimate. | | | |
| Submit an electronic EBS to the ARRC/PM for each phase. | | | |
| Review the early work and final GMP proposals and compare to Engineer’s Estimate and ICE. | | | |
| Negotiate final GMPs for each phase. | | | |
| CM/GC and ARRC have three attempts to negotiate assumptions and prepare GMP estimates. After the third opening, ARRC reserves the right to prepare the bid package for advertisement. | | | |
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