

STATE OF LOUISIANA

INTERSTATE-12 WIDENING

DESIGN-BUILD PROJECT

O'NEAL LANE INTERCHANGE TO WALKER

EAST BATON ROUGE AND LIVINGSTON PARISHES

STATE PROJECT NOS. 454-01-0047 AND 454-02-0025

SCOPE OF SERVICES PACKAGE

CONTRACT DOCUMENTS

APPENDIX 108B

BASELINE PROGRESS SCHEDULE



APPENDIX 108B

**BASELINE PROGRESS SCHEDULE
(Critical Path Method Schedule)**

1.0 DESCRIPTION

The schedule submitted in accordance with DB Section 108 shall be prepared using the Critical Path Method (CPM).

1.1 GENERAL

The Project shall be planned and documented using the Baseline Progress Schedule, a conventional CPM schedule in the form of an activity on node diagram based on the principles defined by the 2004 issue of the Construction Planning & Scheduling Manual published by the Associated General Contractors of America (AGC). The schedule shall be used for coordination and monitoring of all Work under the Contract, including all activities of Subcontractors, design, and construction; shall compare the Work performed to the Contract time and phasing requirements; and shall assign necessary resources for inspection and administration of the Contract.

Acceptance of the schedule by the Department's Project Manager shall not be construed to imply approval of any particular method or sequence of construction or to relieve the Design-Builder of providing sufficient Materials, Equipment, and labor to guarantee completion of the Project in accordance with the Contract. Acceptance shall not be construed to modify or amend the Contract or the date of completion therein.

Failure by the Design-Builder to include in the Baseline Progress Schedule any element of Work required for the performance of the Contract shall not excuse the Design-Builder from completing all Work required within the completion date(s) specified in the Contract notwithstanding acceptance of the schedule by the Department's Project Manager.

Float contained in the Baseline Progress Schedule is not for the exclusive use and benefit of either the Louisiana Department of Transportation and Development (LA DOTD) or the Design-Builder.

If the Design-Builder fails to comply with the provisions of this Appendix 108B – Baseline Progress Schedule, the Department's Project Manager may suspend payment for Price Center (PC) 1, as per Part 2 – DB Section 100, DB Section 109.

1.2 SCHEDULE SUBMITTALS

A) Ninety Day Schedule

Within 15 Calendar Days following the Contract Award, the Design-Builder shall submit to the Department's Project Manager, a detailed schedule for the first 90 days of Work and a generalized schedule for the balance of the Work. The detailed portion of this schedule shall meet the requirements of Section 1.2(B). The 90-day schedule must be consistent with the Proposed Baseline Progress Schedule submitted with the Proposal unless otherwise agreed by the LA DOTD.

The 90-day schedule will be reviewed by the Department's Project Manager and revised

by the Design-Builder to incorporate the Department's Project Manager's comments and to correct deficiencies. Upon acceptance by the Department's Project Manager, the 90-day schedule shall be used for all Project scheduling activities and updated monthly until the issuance of the accepted Baseline Progress Schedule.

B) Baseline Progress Schedule

Within 45 Calendar Days following the Contract Award, the Design-Builder shall prepare and submit a Baseline Progress Schedule for the entire Project to the Department's Project Manager for review and Approval. The Baseline Progress Schedule must be consistent with the proposed Baseline Progress Schedule submitted with the Proposal unless otherwise agreed by the LA DOTD.

The Design-Builder will incorporate into this schedule all Project activities, activities for the placement of orders and anticipated delivery dates of Materials and Equipment, activities assigned to Subcontractors, activities assigned to the LA DOTD or the Department's Project Manager and other outside agencies (such as, Design Reviews and permit reviews), and all utility Work or work by other contractors within or near the Contract limits.

C) Schedule Updates

See Section 3.3.

2.0 MATERIALS

The Design-Builder shall furnish, maintain, and operate a Primavera P3 system that can produce a CPM network diagram using the precedence diagramming method and other reports and graphics as described within this Appendix 108B – Baseline Progress Schedule. In addition, the Design-Builder shall provide a microcomputer with Primavera P3 and necessary peripheral hardware for use by the Department's Project Manager in monitoring the scheduling system meeting this specification.

3.0 SCHEDULE REQUIREMENTS

3.1 GENERAL

The Design-Builder's Baseline Progress Schedule shall meet the following requirements:

A) Baseline Progress Schedule Format

The Design-Builder shall use the precedence diagramming methods. The Work Breakdown Schedule (WBS) of the Baseline Progress Schedule shall be formatted in a manner consistent with the pricing and payment method contained in the Contract.

B) Project Calendars

Holidays and non-Work days shall be established in coordination with the Department's Project Manager.

C) Activities Data

1) Activity Identification Number

Each activity shall have a unique identification number.

2) Activity Description

Each activity shall be clearly described. Use of descriptions referring to percent of a multi-element item (i.e., construct deck 50%) will not be acceptable. Separate activities shall represent different elements of multi-element activities (i.e., construct forms, install rebars, and pour concrete). Multiple activities with the same Work description shall include a location description.

3) Activity Duration

The Design-Builder shall subdivide the Work into individual activities having durations of no longer than 30 Working Days each. Exceptions to this rule will be reviewed by the Department's Project Manager on an activity by activity basis. If multiple shifts and/or overtime are anticipated during the development of activity durations, a list of affected activities and the shift/overtime assumptions shall be provided to the Department's Project Manager. If requested by the Department's Project Manager, the Design-Builder shall furnish production rates or other information needed to justify the reasonableness of activity time durations.

4) Expected seasonal weather conditions, such as precipitation and temperature, shall be included by the Design-Builder in the planning and scheduling of activities.

5) Start and Finish Dates

The earliest start date, earliest finish date, latest start date, and latest finish date shall be shown for each activity.

6) Total float shall be shown for each activity. Total float is the full amount of time by which the start on an activity may be delayed without causing the Project to last longer.

7) The Baseline Progress Schedule shall contain none of the following:

- a) Excessive leads or lags, as determined solely by the Louisiana Department of Transportation and Development;
- b) Assigned constraints, except as specified in the Contract Documents or as specifically allowed by the Department's Project Manager;
- c) Multiple calendars, except as allowed by the Contract Documents; or
- d) Retained logic.

8) Activity Codes

Activities shall be coded to allow for the following summaries:

- a) Responsible party for the accomplishment of each activity (i.e., Design-Builder, Subcontractor, LA DOTD, and utility owner). The name of each Subcontractor shall be included as soon as they are approved by the LA DOTD. Only one party can be responsible for an activity;

- b) Phase/stage during which activity is planned to be accomplished, including design; and
- c) Area/location (i.e., Bridges, ramps, and mainline station).

9) Activity Constraints

The Design-Builder shall not constrain the start or completion of any activity unless specifically required by the Contract or specifically allowed by the Department's Project Manager.

10) Activity Resources

The required labor and Equipment shall be shown for each activity as follows:

- a) Labor may be shown by trade, however, at a minimum the Department's Project Manager will accept total Person Working Days per activity or crew Working Days per activity. If crew Working Days are used, the crew size shall be indicated in the coding (i.e., a crew designated as PAVE4 equals a four Person paving crew); and
- b) Major Equipment, such as, pile drivers, large cranes, asphalt paving Equipment, and concrete finishing machines shall be shown for each activity.

11) Material Quantities

Material quantities for each activity shall be indicated in the resource fields or the LA DOTD bid item number, whichever the Design-Builder prefers to utilize, when they become available. Material descriptions, such as, concrete, asphalt, guide railing, and signs shall be used. Material quantities will be used to verify the reasonableness of the activity durations and to ensure that all Work required by the Design-Builder is accounted for within the schedule.

12) Price Center Designations

Price Center designations for labor, Material, and Equipment shall be included in the cost account fields for each activity resource.

13) Activity Price

The total price per activity shall be included. The total of the price-loaded schedule shall equal the Contract Price. A labor, Material, and Equipment cost breakdown is not required, but may be provided at the Design-Builder's option.

D) Sequence of Operations

The logic diagram or PERT chart shall show the sequence and interdependence of activities required for complete performance.

E) Review of the Baseline Progress Schedule

The Design-Builder shall submit to the Department's Project Manager three copies of the logic diagram (PERT chart) and three copies of the following activities listings:

1) Activity Number Sort

Activities listed in ascending order of their numbers.

2) Total Float/Early Start Sort

Activities listed in ascending order based on amount of their float with consideration of activity early start dates.

An electronic back-up copy of the computerized Baseline Progress Schedule also shall be provided.

The Department's Project Manager will review the Baseline Progress Schedule and then hold a discussion meeting with the Design-Builder. Within two weeks from this meeting the Design-Builder shall make adjustment to the Baseline Progress Schedule to eliminate conflicts, objections, and ambiguities found by the Department's Project Manager. The Design-Builder shall submit for review three copies of the revised schedule materials as described above.

Upon completion of the final review by the Department's Project Manager, the Design-Builder shall incorporate the final revisions and submit two copies of the schedule diskettes containing the computerized Baseline Progress Schedule and three copies of each of the revised logic diagram (PERT chart) and computer printouts. The logic diagram (PERT chart) shall be on 279 mm by 425 mm size sheets and not a continuous diagram. This final submission shall be submitted for approval within one week of the Design-Builder's receipt of the revisions.

3.2 LIST OF SUBMITTALS

Within 60 Calendar Days of the Contract Award, the Design-Builder shall provide a list of submittals required under the Contract (i.e., Design Plans, Project Specifications, shop drawings, required permits, and erection/demolition plans). The list shall show a schedule submission date for each submittal and identify the earliest activity affected by each of these submittals. This list shall be revised and updated monthly with each schedule submission.

3.3 SCHEDULE UPDATING

A) Monthly Progress Reports and Projections

The Design-Builder shall update the schedule monthly along with the monthly progress report. Each update shall show actual dates of activities started and completed; the percent of Work completed to date on each activity started, but not yet completed; and the status of procurement of critical Materials. The updated schedule data shall be submitted to the Department's Project Manager on computer disk or Compact Disc – Read Only Memory (CD-ROM). The Design-Builder also shall provide updated activity number and total float/early start sorts, a 60 Working Day look-ahead bar chart by early start, and a narrative report. The narrative report shall include a description of problem areas, current and anticipated delaying factors and their estimated impact on performance of other activities and mandated contract dates, and the explanation of corrective action taken or proposed. *See* DB Sections 108-2.1 and 108-2.2.

The Department's Project Manager shall conduct a monthly review of the updated schedule. The review shall occur after receipt of the Design-Builder's updated information and shall serve as a forum to discuss slippages, remedies, revisions, and other relevant issues. The Design-Builder's appropriate design, construction, and scheduling personnel shall attend these working sessions. These reviews may result in the need for

submission of revised schedules.

B) Logic diagram (PERT chart) Updates

The logic diagram (PERT chart) shall be updated by the Design-Builder every four months.

3.4 CHANGES TO THE ACCEPTED BASELINE PROGRESS SCHEDULES

The Baseline Progress Schedule shall accurately reflect the manner in which the Design-Builder intends to proceed with the Project and shall incorporate the impact of delays and Change Orders when these factors can be accurately determined. All changes made to the schedule (i.e., the addition of activities, changes in logic, or changes in activity durations) shall be submitted in writing and are subject to written acceptance by the Department's Project Manager before inclusion in the Baseline Progress Schedule.

To initiate changes to the approved schedules, the Design-Builder shall meet with the Department's Project Manager and provide the information necessary to prepare a revised (updated) logic diagram (PERT chart) and computer-generated schedule listing.

3.5 COMPLIANCE WITH THE SCHEDULE

The Design-Builder shall employ and supply a sufficient force of workers, Materials, and Equipment and shall prosecute the Work with such diligence so as to maintain the rate of progress indicated on the approved schedule to prevent Work stoppage and ensure completion of the Project within the Contract time. Any additional or unanticipated costs or expense required to maintain the schedule, shall be solely the Design-Builder's obligation and shall not be charged to the LA DOTD unless provided for in other provisions of the Contract.

In the event a notice is received of a change to the Contract which is likely to cause or is causing delays, the Design-Builder shall notify the Department's Project Manager in writing within ten Calendar Days, of the effect, if any, of such change, or Extra Work, suspension, or other conditions upon the Baseline Progress Schedule and shall state in what respects, if any, the approved Baseline Progress Schedule should be revised with the reasons therefore. The reasons for these revisions must be succinct, comprehensive, and factual to merit consideration.

4.0 PROGRESS CHECK POINTS AND PAYMENT

Specified schedule submittals and schedule updates shall be considered Progress Check Points.

The cost of preparing and updating the CPM schedule and meeting all other requirements of this specification shall be included in PC 1.

Payment will be made under Price Center 1 as per Part 2 – DB Section 100, Section 109.