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SECTION 01 26 14
REQUEST FOR INFORMATION

PART 1 – GENERAL

1.1 SUMMARY

This Section covers the general requirements for the Contractor's Requests For Information, and pertains to all portions of the Contract Documents.

1.2 RELATED REQUIREMENTS

- A. Section 01 11 13, Work Covered by the Contract Documents
- B. Section 01 33 00, Submittal Procedures

1.3 REQUESTS FOR INFORMATION

- A. The Contractor shall examine all Contract Documents; shall verify all figures in the Contract Documents before laying out the Work; shall promptly notify the Authority of all errors, discrepancies, inconsistencies, or omissions that it discovers; and, in instances where such nonconformities are discovered, shall obtain specific instructions in writing from the Authority by utilizing the RFI process before proceeding with the Work.
- B. When the Contractor is unable to determine from the Contract Documents the exact material, process, or system to be installed, the Contractor shall ask the Authority to clarify the indeterminate item. Wherever possible, such clarification shall be requested at the next appropriate project meeting, with the response entered into the meeting minutes. When clarification at the meeting is not possible, either because of the urgency of the need or the complexity of the item, the Contractor shall prepare and submit a written RFI to the Authority in the form and format established by the Authority.
- C. The Contractor's performance of work affected by such nonconformities prior to the Authority's response shall be at the Contractor's risk; however, the Contractor shall continue to perform any incidental work not affected by the nonconformity
- D. In the event of any doubt or question concerning the true meaning of the Contract Documents, or should it appear that the Work to be done or any of the matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the Contractor shall submit a RFI to the Authority for such further written explanations as may be reasonably necessary, and shall conform to the written explanation given as if it were part of the Contract Documents. The decision of the Authority in such cases shall be final.
- E. RFIs shall be submitted on the latest RFI form provided by the Authority. Forms shall be completely filled in, and, if prepared by hand, shall be fully legible after photocopying. Each page of attachments to RFIs shall bear the RFI number in the lower right-hand corner. Each RFI shall reference a drawing number or a Specification Section. RFIs from Subcontractors or Material suppliers shall be

submitted through, reviewed by, and signed by the Contractor prior to submittal to the Authority.

- F. The Contractor shall submit RFIs in a timely manner to avoid delays to the progress of the Work. RFIs prepared and submitted by the Contractor shall be complete, and shall include all information or references necessary for The Authority to respond.
- G. The Authority will respond to RFIs in a timely manner. The target response time for RFIs will be 10 working days, but will be no longer than 20 working days. In the event that there are numerous RFIs pending, the Contractor shall cooperate with the Authority in establishing a priority for responding to the RFIs.
- H. In the event that an RFI is reviewed by a third-party (including Railroad Operators and authorities having jurisdiction), allow up to an additional 10 working days time for OCTA's response.
- I. Authority's response to RFI may include a request for additional information in which case Authority's time for response will date from time of receipt of additional information.
- J. The Contractor shall not assert any claims for delay or interference against the Authority if the Contractor fails to submit any RFI in a timely manner to the Authority (taking into account the time allowed for a response period allowed for the Authority).
- K. The response to an RFI shall not, by itself, constitute authorization for the Contractor to perform any Change Work that causes an adjustment to either the Period of Performance or the Contract Amount.
- L. RFIs shall not be used for the following purposes:
 - 1. To request approval of submittals
 - 2. To request approval of substitutions
 - 3. To request changes that entail additional cost or credit
 - 4. To request different methods of performing work other than those drawn or specified
- M. In the event the Contractor believes that a clarification by the Authority results in additional cost, the Contractor shall not proceed with the Work indicated by the RFI until a Change Order is prepared and approved. Neither answered nor unanswered RFIs shall be construed as approval to perform extra work or entitlement to adjust Period of Performance or the Contract Amount.
- N. Unanswered RFIs will be returned with a stamp or notation indicating "Not Reviewed."
- O. The Contractor shall prepare and maintain a log of RFIs and, at any time so requested by the Authority, the Contractor shall furnish copies of the log showing all outstanding RFIs. The Contractor shall note all unanswered RFIs in the log.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

PART 4 – MEASUREMENT AND PAYMENT

Work of this Section is considered incidental to Work under other payment items and no separate measurement or payment will be made to the Contractor for Work of this Section.

END OF SECTION 01 26 14

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SECTION 01 29 73 SCHEDULE OF VALUES

PART 1 -GENERAL

1.1 SUMMARY

This Section specifies administrative and procedural requirements necessary to prepare and process the Schedule of Values.

1.2 RELATED REQUIREMENTS

- A. Section 01 22 00, Unit Prices
- B. Section 01 22 05, Lump-Sum Prices
- C. Section 01 23 00, Options

1.3 DEFINITIONS

Schedule of Values: A tabulation furnished by the Contractor and approved by the Authority, allocating portions of the Contract Price to various portions of the Work which shall be used as the basis for reviewing the Contractor's applications for payment.

1.4 SCHEDULE OF VALUES DEVELOPMENT

- A. Coordinate preparation of the Schedule of Values with preparation of the Contractor's construction schedule.
- B. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
 - 1. Application for Payment forms with continuation sheets
 - 2. Submittal schedule
 - 3. Items required to be indicated as separate activities in the Contractor's construction schedule
- C. Where the Work is separated into phases requiring separately phased payments, provide values correlated with each phase of payment. Where the Contractor's construction schedule defines separate elements of the Work, provide values correlated with each element.
- D. Format and Content: Use the Specification sections as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification section.
- E. Identification: Include the following Project identification on the Schedule of Values:

1. Project name and location
 2. Authority's project number
 3. The Contractor's name and address
 4. Segment and Phase of project
 5. Date of submittal
- F. Arrange the Schedule of Values in a manner consistent with the format of CSI Master Format 2004.
- G. Arrange the Schedule of Values in tabular form, with separate columns to indicate the following for each item listed:
1. Related Specification Section or Division
 2. Description of the Work
 3. Name of Subcontractor
 4. Name of manufacturer or fabricator
 5. Name of supplier
 6. Change Orders (numbers) that affect value
- H. Provide a breakdown of the Contract Price in enough detail to facilitate continued evaluation of applications for payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of one half of one percent of the Contract Price.
- I. Include separate line items under the Contractor and principal subcontracts for project closeout requirements in an amount totaling one half of one percent of the Contract Price and five percent of the subcontract amount.
- J. Each item of the Schedule of Values shall include its proportionate share of profit, and all other expenses involved.
1. The summation of extensions of quantities and unit prices and related costs shall equal the amount of the lump-sum price of the applicable Contract bid item indicated in the Schedule of Quantities and Prices.
 2. Round amounts to the nearest whole dollar; the total shall equal the Contract Price.
 3. Provide a separate line item in the Schedule of Values for mobilization and demobilization for each time and part and phase of the work where the Contractor is required to mobilize and demobilize its operations.
 4. Provide separate line items in the Schedule of Values for the preparation of submittals, for each stage of completion, and for total installed value of that part of the Work.
 5. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.

6. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general profit for each item.
 7. Mobilization and Demobilization and other major cost items that are not direct cost of actual work in place may be shown either as separate line items in the Schedule of Values or distributed within the costs allocated to the values of Time-Related Overhead, at the Contractor's option.
- K. The Contractor shall be responsible for the accuracy of the quantities and values used in the Schedule of Values. No adjustment in compensation will be made due to differences between the quantities shown in the Schedule of Values furnished by the Contractor and the quantities required to complete the Work as shown on the Contract Drawings and as specified in these Contract Documents.
- L. The Authority will not approve the Schedule of Values if the amounts are unreasonable and unbalanced. The Contractor shall provide any supporting documentation necessary for the Authority to determine acceptability.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION

3.1 PREPARATION

At the Preconstruction Meeting or within 7 days after the effective date of the Notice to Proceed, the Contractor shall submit to the Authority a detailed Schedule of Values that must be approved by the Authority prior to the Contractor's first application for progress payment.

3.2 APPROVAL

Upon approval by the Authority, the Schedule of Values will form a basis for determining the compensation payable to the Contractor based on actual progress of Work, in accordance with the approved progress schedule, with respect to each Contract bid item to be paid by lump sum. No progress payment for Contract bid items to be paid by lump sum shall be made without an approved Schedule of Values.

3.3 REVIEW AND RESUBMITTAL

If review by the Authority indicates that changes to the Schedule of Values are required, the Contractor shall revise and resubmit in the same manner as the original Schedule of Values was approved.

3.4 SCHEDULE UPDATING

Update and resubmit the Schedule of Values before each application for payment when Change Orders or Change Directives result in a change in the Contract Price.

PART 4 - MEASUREMENT AND PAYMENT

Work of this Section is considered incidental to Work under other payment items and no separate measurement or payment will be made to the Contractor for Work of this Section.

END OF SECTION 01 29 73

**SECTION 01 31 00
PROJECT MANAGEMENT AND COORDINATION**

PART 1 - GENERAL

1.1 SUMMARY

This Section contains administrative provisions for coordinating construction operations and general project coordination procedures on the Project.

1.2 RELATED REQUIREMENTS

- A. Section 01 11 16, Work by SCRRA
- B. Section 01 14 16, Coordination with SCRRA
- C. Section 01 43 23, Contractor Qualifications and Requirements

1.3 COORDINATION

- A. Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation. Schedule construction operations in the sequence required to obtain the best results, where installation of one part of the Work depends on installation of other components (before or after its own installation). Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair. Make adequate provisions to accommodate items scheduled for later installation.
- B. Each Contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work.
- C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings. Prepare similar memoranda for the Authority and for separate Contractors if coordination of their Work is required.
- D. Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include but are not limited to the following:
 - 1. Preparation of Contractor's construction schedule.
 - 2. Preparation of Contractor's Schedule of Values.
 - 3. Installation and removal of temporary facilities and controls.

4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Pre-installation conference.
 7. Project closeout activities.
 8. Startup and adjustment of systems (commissioning).
- E Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water and materials. Coordinate use of temporary utilities to minimize waste.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other sections of these Specifications for disposition of salvage materials that are designated to be owner's property.

1.4 PROJECT MEETINGS

- A. General: Authority will schedule and conduct weekly meetings and conferences at the Project site, unless otherwise indicated.
- B. Preconstruction Conference: The Authority will schedule and conduct a preconstruction conference before starting construction, at a time convenient to the Authority, but no later than 15 days after execution of the Agreement.
1. Conference will review responsibilities and personnel assignments.
 2. Attendees: Authorized representatives of Authority and their consultants; the Contractor and its superintendent; major Subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule, Critical work sequencing and long-lead items
 - b. Emergency Procedures and Contact Information
 - c. Phasing
 - d. Site access and the Contractor's ON-SITE laydown, storage, and staging area
 - e. Designation of key personnel and their duties

- f. Lines of communications
 - g. Procedures for processing field change directives (CDs) and Change Orders
 - h. Procedures for RFIs
 - i. Procedures for testing and inspecting
 - j. Procedures for processing Applications for Payment
 - k. Distribution of the Contract Documents
 - l. Submittal procedures
 - m. Sustainable design requirements
 - n. Preparation of record documents
 - o. Use of the premises [and existing buildings]
 - p. Work restrictions
 - q. Working hours
 - r. Worksite safety and first aid requirements
 - s. Authority's occupancy requirements
 - t. Responsibility for Mobilization and Demobilization and controls
 - u. Procedures for moisture and mold control
 - v. Procedures for disruptions and shutdowns
 - w. Construction waste management and recycling
 - x. Parking availability
 - y. Office, work, and storage areas
 - z. Equipment deliveries and priorities
 - aa. Security
 - bb. Progress cleaning
- C. Pre-installation Conferences: Conduct a pre-installation conference at the Project site before each construction activity that requires coordination with other construction or as part of a job hazard analysis (JHA) as required by the Contract Documents and associated Level 1 Health, Safety, and Environmental Specifications
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Authority of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents

- b. Related RFIs
 - c. Related Change Orders
 - d. Submittals
 - e. Possible conflicts
 - f. Manufacturer's written recommendations
 - g. Mobilization and Demobilization and controls
 - h. Space and access limitations
 - i. Testing and inspecting requirements
 - j. Installation procedures
 - k. Coordination with other work
 - l. Protection of adjacent work
 - m. Safety requirements
- 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 - 4. Reporting: Distribute minutes of the meeting to each party present, the Authority, and to other parties requiring information.
 - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work, and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Authority will schedule and conduct a Project closeout conference, at a time convenient to all attendees, but no later than 90 days prior to the scheduled date of Substantial Completion.
- 1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 - 2. Attendees: Authorized representatives of the Authority, the Engineer, Authority Commissioning personnel, and their consultants; the Contractor and its project manager; major Subcontractors; Suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of record documents
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance
 - c. Submittal of written warranties

- d. Requirements for preparing operations and maintenance data
 - e. Requirements for demonstration and training
 - f. Preparation of the Contractor's punch list
 - g. Procedures for processing Applications for Payment at Substantial Completion and for final payment
 - h. Submittal procedures
 - i. Coordination of separate contracts
 - j. Authority's partial occupancy requirements
 - k. Installation of Authority's furniture, fixtures, and equipment
 - l. Responsibility for removing Mobilization and Demobilization and controls
4. Minutes: Record and distribute meeting minutes to Authority and all attendees.
- E. Progress Meetings: Authority will conduct progress meetings at weekly intervals.
- 1. Coordinate dates of meetings with preparation of payment requests.
 - 2. Attendees: In addition to representatives of Authority, each Contractor, Subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.
 - a. The Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule in relation to the Contractor's construction schedule. Determine how construction that has fallen behind schedule will be remedied; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Review the schedule for the next period.
 - c. Review present and future needs of each entity present, including the following:
 - 1. Interface requirements
 - 2. Sequence of operations
 - 3. Status of submittals
 - 4. Deliveries

5. Off-site fabrication
6. Access
7. Site utilization
8. Mobilization and Demobilization and controls
9. Progress cleaning
10. Quality and work standards
11. Status of correction of deficient items
12. Field observations
13. Status of RFIs
14. Status of proposal requests
15. Pending changes
16. Status of Change Orders
17. Pending claims and disputes
18. Documentation of information for payment requests

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION (Not used)

PART 4 - MEASUREMENT AND PAYMENT

Work of this Section is considered incidental to Work under other payment items and no separate measurement or payment will be made to the Contractor for Work of this Section.

END OF SECTION 01 31 00

**SECTION 01 31 99
PERIOD OF PERFORMANCE**

PART 1 - GENERAL

1.1 SUMMARY

This Section includes administrative and procedural requirements for a standard Notice-to-Proceed process, and defines allowable conditions for Contract Time extensions.

1.2 RELATED REQUIREMENTS

- A. Section 01 29 73, Schedule of Values
- B. Section 01 33 00, Submittal Procedures

1.3 DEFINITIONS

- A. Notice to Proceed: OCTA written authorization to proceed with the Contract Work, as specified.
- C. Contract Time: As stated in the Contract, the original duration of the Contract in calendar days plus Change Order adjustments

1.4 COMMENCEMENT OF WORK

The Authority will issue a Notice to Proceed to the Contractor following execution of the Contract. The Contractor is not authorized to perform any work until the Contractor has received the Notice to Proceed from the Authority. Should the Contractor begin Work in advance of receiving the Notice to Proceed, such Work shall be considered as having been done at the Contractor's own risk. The Notice to Proceed will initiate the Contract Time. The Notice to Proceed will be a notice for the Contractor to proceed with Contract Work and diligently prosecute the same to completion within the Contract Time.

1.5 PERIOD OF PERFORMANCE

The date of the Notice to Proceed is the start date for the Contract Period of Performance.

1.6 DELAYS AND TIME EXTENSIONS

- A. Delays beyond the Contractor's control: The Contractor will be granted an extension of time and will not be assessed with liquidated damages for any delay in substantially completing the Work (or parts thereof) beyond the time set forth in the Contract, provided that such delay was caused by unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include acts of a public enemy, fire, floods, adverse weather, tidal waves, earthquakes, hurricanes, epidemics, quarantine restrictions, strikes, labor disputes and freight embargoes, or negligent acts of the Authority.

- B. Authority caused delays: In the event the Contractor is actually and necessarily delayed by any act or omission on the part of the Authority (as determined by the Authority), and provided that the Contractor notifies the Authority in writing within 5 days from the beginning of any such delay, specifying the act or omission causing such delay, the time for completion of the Work may be extended at the sole discretion of the Authority. In all cases, any extension of time is contingent on all of the following:
1. That the cause is not due to the fault or negligence of the Contractor, and the Contractor has taken reasonable precautions to prevent the delays and minimize the effects thereof.
 2. That the Contractor submits a Request for Change (RFC) specifying the nature of the delay and the measures that have been or will be taken to prevent or minimize the delay. Failure to submit written notice within this time period shall constitute an absolute waiver of any claim for a time extension. The RFC submitted by the Contractor shall also include a Time Impact Analysis as required in the Specification.
 3. No extension of time will be granted under this Section for any Authority caused delay in which (1) the performance of Work would have been concurrently delayed by the Contractor induced causes, including an act or omission of the Contractor or its Subcontractors, or (2) remedies are included or excluded by any other provision of the Contract. Only the actual delay necessarily resulting from the causes specified in this Section shall be grounds for an extension of time. In case the Contractor is delayed at any time or for any period by two or more of the causes specified in this Section, the Contractor shall not be entitled to a separate extension for each one of the causes; only one extension will be granted for the entire delay.
 4. No extension of time will be granted for a delay caused by a shortage of materials unless the Contractor furnishes to the Authority (a) documentary proof that the Contractor has diligently made every effort to obtain such materials from all known sources within reasonable reach of the work site(s), and (b) further proof, in the form of schedule data as required under Section 01 32 17, Construction Project Schedule, that the inability to obtain such materials when originally planned did in fact cause a delay in Substantial Completion of a portion of the Work or the entire Work, one that could not be compensated for by revising the sequence of the Contractor's operations.
 5. The term "shortage of materials," as used in this Section, shall apply only to materials, articles, parts, or equipment that are not custom items; it and shall not apply to equipment, materials, parts, or articles that are processed, made, constructed, fabricated, or manufactured to meet the specific requirements of the Contract Documents. Only conditions not in the control of the Contractor that result in the physical shortage of materials will be considered as a cause for extension of time, and no consideration will be given to any claim that material could not be obtained at a reasonable, practical, or economical cost or price, unless it is shown to the

satisfaction of the Engineer that such material could have been obtained only at exorbitant prices entirely out of line with current rates, taking into account the quantities involved and the usual practices in obtaining such quantities.

- C. When inclement weather at the Project site affects Critical Path activities, the Contractor may provide the Authority with a written request for a weather impact day that fully describes the inclement weather delay on the Critical Path activities. Excusable, non-compensable Contract time extensions for weather delays will only be considered for such delays that affect activities on the critical path of the Contract, as defined by the schedule current at the time of the delay. Such time extensions, if approved, will be non-compensable and shall be requested by the Contractor in accordance with Contract Change Order procedures subject to the following:

1. A weather delay day is defined as a day on which the Contractor is prevented by inclement weather or conditions resulting immediately therefrom, as determined by the Authority from proceeding with at least 75 percent of the normal labor and equipment force engaged on Critical Path activities for at least 60 percent of the total daily time being currently spent on the Critical Path activities. Weather delays may consist of days lost to inclement weather conditions, days lost to dry out of exposed soil, or days lost to site clean-up due to inclement weather but only after the weather impact area affecting the Critical Path activities has exhausted the allotted cumulative Rain Day Impact Allowance.
2. The table below lists the typical number of inclement weather days per month. Only days lost due to weather in a given month in excess of the number listed for that month will be considered for a time extension. Weather delay days are not cumulative from month to month. Contractor shall include Tasks and associated schedule logic in the Project Schedule to include days for inclement weather in the overall duration of the Project.

Typical Number of Days of Inclement Weather

<u>Month</u>	<u>No. of Days</u>	<u>Month</u>	<u>No. of Days</u>
January	5	July	0
February	5	August	0
March	5	September	0
April	4	October	0
May	3	November	3
June	0	December	5

3. Weather impact days will not be granted for inclement weather that occurs on non-scheduled workdays. If the effects of inclement weather from a non-scheduled work day carry forward to a scheduled work day and affects the Critical Path as noted above, then the scheduled work day will be considered affected by weather.

4. If the Contractor asks to work a specific weekend or holiday and gives the Authority advance written notification of critical-path work to be performed, and if a substantial amount of precipitation occurs that prevents the work from being performed, that day can be claimed as a weather impact day. Any unused rain day allowance at the end of the project will be shown as available float to the Substantial Completion milestone.
- D. Time Extensions for Critical Path activities only: No extensions of time will be granted for delays that have no measurable impact on the completion of the Work (or parts thereof) under the Contract Documents. When extensions of time are granted, they shall be limited to the period equivalent to the actual number of days lost on the Critical Path or controlling operations of the Project Baseline Schedule or other applicable construction schedule, taking into account the extent to which that delay could be decreased by reasonable mitigation measures by the Contractor. All requests for extensions of time shall be supported with a critical path analysis showing the critical path and impacts on it. The Contractor's failure to submit this analysis will be sufficient cause for denial of any request for a time extension.
- E. An extension of time granted shall not release the Contractor's Surety from its obligations. Work shall continue and be carried on in accordance with all provisions of the Contract. The Contract shall remain in full force and effect during the continuance and until completion and acceptance of the Work covered by the Contract, unless formally suspended or terminated in accordance with the terms of the Contract. Permitting the Contractor to finish the Work, or any part thereof, after the time fixed for completion (or after the date to which the time for completion may have been extended), and/or making payments to the Contractor after any such periods, shall not constitute a waiver on the part of the Authority of any rights under the Contract.
- F. Neither the granting of an extension of time beyond the date fixed for the completion of any part of the Work nor the performance and acceptance of any part of the Work after the time specified for the completion of the Work shall be deemed to be a waiver by the Authority of the Authority's right to terminate the Contract for abandonment or failure to complete within the time specified, or to impose and deduct damages as may be specified.
- G. In all cases in which the Contractor either Claims or intends to Claim a delay, the Contractor shall comply with those provisions contained in the Contract.

PART 2 - PRODUCTS (Not used)**PART 3 - EXECUTION** (Not used)**PART 4 – MEASUREMENT AND PAYMENT**

Work of this Section is considered incidental to Work under other payment items and no separate measurement or payment will be made to the Contractor for Work of this Section.

END OF SECTION 01 31 99

SECTION 01 32 17 CONSTRUCTION PROJECT SCHEDULE

PART 1 – GENERAL

1.1 SUMMARY

Scheduling of work under the Contract shall be performed by the Contractor in accordance with these Specifications. Development of the schedule and project status reporting requirements shall employ computerized Critical Path Method (CPM) scheduling.

All schedules prepared by the Contractor shall meet the requirements for access, sequencing, construction staging, order of work, work to be performed by Metrolink and the City of Anaheim, delivery of materials, intermediate contract milestones and completion dates as specified in the Contract Documents.

The accepted schedule, including the most recent accepted update (the Current Schedule), shall be the basis for evaluating job progress and time extension requests. Responsibility for developing the schedule and monitoring actual progress as compared to the accepted schedule rests with the Contractor.

Inaccuracy of the schedule or failure of the schedule to include any element of the work shall not relieve the Contractor from responsibility for accomplishing all of the work in accordance with the Contract requirements.

1.2 GENERAL

- A. The scheduling and execution of the Work in accordance with the Contract Documents are the responsibility of the Contractor. Schedules shall represent a practical plan to complete the Work within the Contract Time and shall convey the Contractor's intent in the manner of prosecution and progress of the Work. The submittal of schedules shall be understood to be the Contractor's representation that the schedule meets the requirements of the Contract Documents and that the Work will be executed in the sequence and duration indicated in the schedule.
- B. Schedules shall be consistent with the time and work requirements of the Contract. The Contractor shall execute the Work in the sequence indicated on the current approved schedule.
- C. The Contractor shall involve and coordinate with all Subcontractors, including SCRRA Signal Contractor, third parties, and material suppliers in the development and updating of schedules.
- D. Review or acceptance of schedules by Authority shall not waive any contract requirements and shall not relieve the Contractor of any obligation or responsibility for submitting complete and accurate information.

- E. If after a schedule has been accepted or approved by the Authority, either the Contractor or the Authority discovers that any aspect of the schedule has an error or omission, the Contractor shall correct it on the next Progress Schedule.
- F. Errors or omissions on schedules shall not relieve the Contractor from finishing all work within the Contract Time.
- G. The Contractor shall adjust, add to, or clarify any portion of a schedule which the Authority determines to be insufficient for monitoring the Work or to be impractical for any reason.
- H. Use of float suppression techniques such as preferential sequencing or logic, special lead/lag logic restraints and extended activity durations will be cause for rejection of schedule submittal.

1.3 SOFTWARE

- A. All schedules shall be prepared using the latest version of Primavera Professional Project Management software (latest version) or substantially equivalent CPM scheduling software conforming to the scheduling requirements specified by the Contract Documents and as specified herein; and approved in writing by the Authority prior to use by the Contractor.
- B. Contractor shall provide to the Authority one (1) licensed copy of the software that it utilizes to prepare the CPM schedule for the Authority's exclusive use at the time that it submits the first CPM schedule and until final acceptance and final payment for the work of the Contract

1.4 RELATED SECTIONS

- A. Section 01 29 73, Schedule of Values
- B. Section 01 31 99, Period of Performance

1.5 DEFINITIONS

- A. Activity: A task, event or other project element on a schedule that contributes to completing the project. Activities have a description, start date, finish date, duration and one or more logic ties.
- B. Actual Dates: The actual start or finish date of an activity which occurs prior to the data date. Dates occurring after the data date are forecasted dates and are not actual dates.
- C. Bar Chart (Gantt Chart): A graphic display of schedule-related information in which activities or other project elements are listed down the left side of the chart, dates are shown across the top, and activity durations are shown as date-placed horizontal bars.

- D. **Baseline Schedule:** The initial schedule representing the Contractor's work plan on the first working day of the project as approved by the Authority.
- E. **Contract Completion Date:** Contracted original completion date defined by the duration of the project.
- F. **Controlling Operation:** The activity, within that series of activities defined as the applicable critical path, which if delayed or prolonged will delay the scheduled completion date of the Work.
- G. **Critical Path:** The longest continuous chain of activities for the project that has the least amount of total float of all chains. In general, a delay on the critical path will extend the scheduled completion date.
- H. **Critical Path Method (CPM):** A network based planning technique using activity durations and the relationships between activities to mathematically calculate a schedule for the entire project.
- I. **Data Date:** The day after the date through which a schedule is current. Everything occurring earlier than the data date is "as-built" and everything on or after the data date is "planned."
- J. **Early Completion Date:** A scheduled completion date which is earlier than the contract completion date.
- K. **Free Float:** The amount of time an activity can be delayed before affecting a subsequent activity.
- L. **Hammock Activity:** An activity added to the network to span an existing group of activities for summarizing purposes.
- M. **Milestone:** A marker in a network which is typically used to mark a point in time or denote the beginning or end of a sequence of activities. A milestone has zero duration, but will otherwise function in the network as if it were an activity.
- N. **Narrative Report:** A document submitted with each schedule that discusses topics related to project progress and scheduling.
- O. **Near Critical Path:** A chain of activities with total float exceeding that of the critical path but having no more than 10 working days of total float.
- P. **Open Ended Activity:** An activity without at least one predecessor and one successor.
- Q. **Out of Sequence Activities:** Any activity which actually starts in a sequence other than shown in the current approved schedule.
- R. **Progress Schedule:** A current schedule developed from the baseline or subsequent schedule through regular monthly review to incorporate as-built progress and any planned changes.

- S. Revision: A change in the schedule that modifies logic, adds or deletes activities, or alters activities, sequences, or durations.
- T. Scheduled Completion Date: The planned date of completion of the Work shown on the current approved schedule.
- U. Time Impact Analysis: A schedule and narrative report developed specifically to demonstrate what effect a proposed change or delay has on the current scheduled completion date.
- V. Total Float: The amount of time that an activity or chain of activities can be delayed before extending the scheduled completion date.

1.6 SUBMITTALS

- A. Baseline Schedule: Submit Baseline Schedule to the Authority within 7 calendar days following the date of the Notice to Proceed for review.
 - 1. No Payments for Mobilization will be processed or approved by the Authority until the Baseline Schedule has been submitted to the Authority.
 - 2. Payments for Mobilization will be limited to less than 20% of Mobilization Price as shown in the Contract Schedule of Values, until the final Baseline Schedule complying with the requirements of the Contract and revised to correctly address Authority comments has been submitted by the Contractor.
 - 3. With the exception of Mobilization, the Contractor shall not construct any Contract Work or access the OCTA right-of-way until the Baseline Schedule has been approved in writing by the Authority.
- B. 90-Day Preliminary Schedule: Submit 90-Day Preliminary Schedule to the Authority within 14 calendar days following date of the Notice to Proceed for review and approval.
- C. Progress Schedule: Progress Schedule is due as part of the submittal of progress payment application for review and approval. The data date shall be set one day after the period in that month's progress payment application period.
- D. Final Progress Schedule shall be submitted within 14 calendar days following Substantial Completion for review and approval.
- E. Subcontractor Documentation:
 - 1. Submit with the Baseline Schedule all Subcontractor schedules utilized in the development of the Baseline Schedule.
 - 2. Submit with the Baseline Schedule, a statement on Subcontractor's letterhead, certifying that Subcontractor has reviewed and concurs with the Baseline Schedule and that Subcontractor's related schedule has been reasonably incorporated, including activity duration

F. Scheduler Qualifications:

1. The Contractor shall have a scheduler or scheduling consultant, from the Contract NTP until final acceptance by Authority, whose responsibility is to perform scheduling services required in this contract. The designated person may have any other duties associated with this Project as long as those services do not conflict with or prevent the scheduler from fulfilling his/her scheduling obligations on the Project.
2. The Contractor shall submit for Authority's acceptance the resume of its proposed scheduler or scheduling consultant within five (5) days from the NTP. Minimum qualifications include five (5) years CPM scheduling experience using Primavera software products with at least three (3) years of work experience on projects similar to the size and nature of this contract. To permit Authority verification of scheduler qualifications and CPM capabilities, the resume shall provide the names of contact persons for at least two referenced projects with current telephone and address information. Authority shall review and advise the Contractor of acceptance or rejection of the proposed candidate within five (5) days after receipt of the resume. Authority reserves the right to request replacement of a previously accepted scheduler or consultant if Authority feels that the job performance of the aforementioned scheduler or consultant relative to the requirements of this Contract is unsatisfactory. Authority also reserves the right to refuse replacement of the Contractor's scheduler or consultant if Authority feels that that such replacement will negatively affect Contractor's conformance with the Project's scheduling requirements. Authority's acceptance of the Contractor's scheduler or scheduling consultant is a prerequisite to the payment of the any progress payments.

- G. Three Week Look Ahead Schedule: Submit first Three-Week Look Ahead Schedule at Pre-Construction Meeting. Submit three hard copies of the weekly thereafter at Construction Progress Meetings until Substantial Completion.

1.7 SUBMITTAL DETAILS

- A. Each submittal of Baseline, Preliminary and Progress Schedules shall include the elements listed herein.
- B. Electronic Data: Compact discs or flash drive containing schedule, schedule data, and narrative. Submit two (2) sets of compact discs or one (1) flash drive. Schedule data shall be saved in P6 (.xer) format and shall contain all files of the schedule that can be restored by the Authority for its evaluation and analysis.
 1. The electronic copy shall be a full data set of all schedule data fields, layouts, views and filters such that Authority will be able to restore, open, display, modify and print schedule information and reports in the same manner as the Contractor utilizing the CPM scheduling software.
 2. The electronic copy of the schedule shall also contain an Adobe Acrobat PDF file of each of the paper reports submitted with each schedule, with file names that clearly identify each report using the report title

- C. Gantt Activity Bar Charts: Show activities grouped by work areas and sorted by early start. Submit six (6) hard copies, 11 by 17 inch, and two (2) color E-size plots, 34 inch by 44 inch.
- D. Narrative Reports: Submit three hard copies.

1.8 GENERAL REQUIREMENT FOR ALL SCHEDULES

- A. Activity descriptions shall be clear and concise and shall identify the location of the work task if identical work tasks occur in other locations. Utilizing activity codes to differentiate between identically described tasks is not acceptable.
- B. If requested by the Engineer, the Contractor shall furnish a written explanation of the Contractor's determination of durations for activities. Such explanation shall include the number of crews, crew composition, estimated production units per crew hour, number of shifts per day, number of hours in a shift and the number of workdays. If requested by the Engineer, the Contractor shall provide a list of the major items of construction equipment intended for use on the Contract's operations including types, number of units, unit capacities and the proposed time each piece of equipment will be on the project, keyed to the activities on which the equipment will be used.
- C. Activities shall be included representing the procurement of each major item or type of material or equipment, including separate activities for preparation of the submittal, Authority review and approval, placement of the order, delivery time, and inspection at the job site
- D. Dependencies (logical relationships) between activities shall be shown. Logical relationships other than finish-to-start relationships and the use of lead or lag relationships shall be kept to a minimum and only used when that is the most reasonable method for depicting the relationship between the tasks. The Contractor shall provide a complete explanation of the use of logical relationships other than finish-to-start relationships when requested by the Engineer
- E. Activities for Authority review and acceptance of submittals and shop drawings for all contract-required material and equipment shall be included. Activities that are dependent on submittal acceptance or material delivery shall not be scheduled to start earlier than expected acceptance or delivery dates. The schedule and duration for Authority review and approval of submittals and shop drawings shall be as specified in the Technical Specifications and/or the Technical Submittals List. The Contractor shall be responsible for all impacts resulting from late submittal or re-submittal of shop drawings and other items

- F. Time shall be included for Quality Control testing required by the contract documents by the Contractor, submittal of operating and maintenance manuals, developing punch lists, completing punch list items, and clean-up for the work included in any completion milestone or contract completion.
- G. The interface with the work of other contractors and agencies such as, but not limited to, utility companies and the Metrolink signal construction contractor, shall be indicated and activities included showing work by others that is related to work tasks of the Contractor. Durations of the work tasks performed by others shall be those indicated in the contract documents, or if not specified, the duration provided by the Engineer.
- H. Detailed subcontractor's work activities shall be shown. When requested by Authority, Contractor shall submit, on subcontractor letterhead, a statement by the subcontractor certifying that the subcontractor concurs with the Contractor's incorporation into the baseline schedule of the subcontractor's related schedules, including activity durations.
- I. The Contractor is permitted to use any reasonable activity coding structure and/or work breakdown structure (WBS), acceptable to the Engineer, to develop the schedule and group and organize the work activities for reporting purposes. The Contractor shall also implement and utilize activity coding requested by the Engineer that Authority may require to produce desired schedule reports. The Contractor's proposed Organizational, WBS and/or Activity Code structures for the schedule and the Engineer's requirements for activity coding shall be discussed during the Schedule Planning Meeting described above. The Contractor shall accommodate the Engineer's activity coding requests to the fullest extent practical.
- J. The number of critical path or near-critical path activities shall be kept to a minimum. The baseline schedule's critical and near-critical activities shall not exceed twenty percent (20%) of the total number of activities contained in the baseline schedule. Near-critical activities are defined as those having a total float value that is ten (10) or fewer work days more than the total float value of the schedule's longest path. If the Contractor believes that it is necessary to exceed that percentage, it shall submit a formal request to the Engineer with its baseline schedule submission explaining the need to exceed the limit.
- K. Failure by the Contractor to include any element of work required for performance of the Contract or failure to properly sequence the work shall not excuse the Contractor from completing all work within the Contract Time.

1.9 BASELINE SCHEDULE

- A. Baseline Schedule shall utilize computerized Critical Path Method (CPM) network scheduling.
- B. Baseline Schedule shall show the order in which the Contractor proposes to carry out the work with logical links between work activities, and calculations made using the critical path method to determine the controlling operation or operations. Ensure that activity sequences are logical and that schedule shows a coordinated plan for complete performance of the work.
- C. Baseline Schedule shall include the entire scope of work through the end of Contract Time. Show how the Contractor plans to complete the Work. Show the activities that define the critical path. Show float on other activities. Keep multiple critical paths and near-critical paths to a minimum. A total of not more than 30 percent of the baseline schedule activities shall be critical or near critical, unless otherwise authorized by the Authority.
- D. The data date for the Baseline Schedule shall be the date of Notice to Proceed and shall include actual dates and durations for work completed. Baseline Schedule shall not attribute negative float or negative lag to any activity.
- E. Baseline Schedule shall define non-working days as days restricted from performance of construction work under Section 01 14 00 Work Restrictions, and the following 9 holidays: New Year's Day, Martin Luther King Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day after Thanksgiving Day and Christmas Day.
- F. Float: Float shall not be considered as time for the exclusive use of or benefit of either the Authority or the Contractor, but shall be considered as a jointly owned, expiring resource available to the project and shall not be used to the financial detriment of either party. Use of float suppression techniques such as preferential sequencing, special lead/lag logic restraints, extended activity durations or imposed constraints will be cause for rejection of the Baseline Schedule and subsequent Progress Schedules. The Contractor shall not create artificial activities that eliminate any or all float in the project schedule.

G. Constrained Start and Completion Activities:

1. The schedule shall clearly identify the activities illustrating accomplishment of the time(s) for completion of the Project set forth in the Contract. Specified milestone and final completion dates, and start date restrictions, must be adhered to and shall be clearly identified in the schedule through the use of separate activities appropriately named.
2. Contract Milestone constrained dates may not be changed without the written consent of the Authority.
3. Contract work start restrictions shall be constrained by "Start No Earlier Than" constraints.
4. Contract completion milestones shall be constrained by "Finish No Later Than" constraints.
5. "Mandatory", "Start On", and "Finish On" constraints shall not be used.
6. The number of calendar days between NTP and Contract Completion date ("Contract Time") shall be the number of days in the Agreement, and as subsequently modified by Change Order. Number of calendar days between NTP and Contract Completion shall be identified within the schedule with the use of a hammock activity using a calendar-day calendar, and such number of days shall be equal to the Contract Time. Milestone completion activities with contractually required durations shall be treated in a similar manner with separate hammock activities for each milestone.

H. Calendar: Utilize multiple schedule calendars to identify and differentiate between day and night shift work and any weekend activity work.

I. Retained Logic: When schedule calculations are performed, the "Retained Logic" setting shall be used.

J. Early Completion: The Contractor may submit a Baseline or Progress Schedule showing an early scheduled completion date provided that the requirements of the Contract are met.

1. The difference between the early completion date and the contract completion date is considered float. Float time shall not be for the exclusive benefit of either the Authority or the Contractor. Float shall be a resource available to both parties.
2. Authority is not required to accept or approve a schedule with an early completion date.
3. The Contractor shall not be entitled to extra compensation in the event an agreement is reached on an early completion date and the Contractor completes the Work, regardless of the reason, beyond the early completion date but within the Contract Time.

4. Changes to Contract Time or contract completion date shall be by Contract Change Order.
- K. **Baseline Narrative Report:** Submit a narrative report with the Baseline Schedule describing the schedule development process, activity coding structure, basis of proposed durations, work sequence, approach or methods the Contractor intends to employ in the Work, and explanation of early scheduled completion date, if proposed.

1.10 BASELINE SCHEDULE ACTIVITIES

- A. **Activity Coding:** The Contractor shall develop its own activity coding structure. Activities shall be coded to a level sufficient to allow for multiple sorting such as that specified for tabular reports under "Tabular Reports" and "Gantt Activity Bars" in the Section entitled "Submittal Details" herein.
- B. **General Activity Requirements:** Baseline schedules shall include activities to show the following, as applicable:
 1. Project characteristics, salient features, or interfaces, including those with outside entities that could affect time of completion.
 2. Project start date, scheduled completion date and other milestones.
 3. Work performed by the Contractor, Subcontractors, Suppliers and Third Parties.
 4. Submittal development, delivery, review and approval, including those from the Contractor, Subcontractors, third parties, and suppliers which impact the critical path.
 5. All submittals as listed in the Schedule of Submittals.
 6. Procurement, delivery, installation, and testing of materials, plants, and equipment.
 7. Acquisition of permits.
 8. Utility notification and relocation noted to be performed by others.
 9. Installation and removal of falsework and shoring.
 10. Major traffic routing switches.
 11. Final cleanup.
 12. Work performed by other Contractors and entities.

13. Demobilization, punchlist and project closeout activities.
- C. The number of activities shall be sufficient to assure adequate planning of the project, to permit monitoring and evaluation of progress, and to do an analysis of time impacts.
 - D. Each schedule activity shall include the following:
 1. A clear, legible and unique description, including the location of work.
 2. Start and finish dates.
 3. Duration not less than one full day, except for milestone activities, and not more than 15 working days, with the exception of submittals, fabrication, procurement, and summary activities, unless otherwise approved by Authority.
 4. At least one predecessor and one successor activity, except for project start and finish milestones.
 5. Contractually required constraints. Use of any other types of constraints is not allowed without prior approval by the Authority.
 6. Activity codes for responsibility, phase, area, stage, work shifts, and contract bid item numbers. Code for responsibility shall denote the entity performing the activity, i.e. Authority, Contractor, Subcontractor, or utility.
 7. Cost-Loading: Cost loading shall be made to the activities in accordance with the detail requirements set forth in this Section.

1.11 PRELIMINARY SCHEDULE

- A. Preliminary 90-Day Construction Schedule shall be submitted to the Authority at Pre-Construction meeting. The Schedule shall contain all procurement, construction activities and the Contractor's intended sequencing of work for first 90 calendar days following NTP, whichever occurs first. Accepted Preliminary 90-Day Schedule shall be updated monthly and submitted until the Contractor's Baseline Schedule is developed and accepted by Authority.
- B. Updates to Preliminary 90-Day Schedule are basis for payment to the Contractor during the first three-month period. Timely submittal and acceptance of such updates shall be a condition precedent to payment by Authority.
- C. Preliminary 90-Day Schedule shall also identify activities and milestones that will or may affect or be affected by activities of the Authority, Utilities, Railroads and other third parties.

- D. Partial cost loading for purpose of Progress and Earned Value Measurement as described in Section 1.11 covering the Work for first 90-Days after the NTP shall be submitted with the Preliminary 90-Day Schedule.

1.12 PROGRESS SCHEDULE

- A. Progress Schedule shall consist of an updated schedule based on the Baseline Schedule.
- B. Release of Progress payments will be dependent on receipt and approval of an acceptable Progress Schedule.
- C. Preliminary Progress Schedule: A Preliminary Progress Schedule for purpose of monthly progress review meeting is required 3 working days prior to the monthly status data date.
- D. For the detail procedures for Monthly Progress Review Meeting and the required formats for Preliminary Progress Schedule, refer to Section 1.11-A.
- E. Include the following information in the Progress Schedule: Status of work actually completed to date and the work yet to be performed as planned; actual activity start dates, and finish dates, as applicable; and durations for work that has been completed as the work actually occurred, including Authority submittal review and Contractor resubmittal times. Show approved time adjustments and project completion dates. Show approved Contract Change Order work. Show weather delay days which have already occurred and have been acknowledged by the Authority in writing.
- F. Modifications shown in Progress Schedule: The Contractor may include modifications such as adding or deleting activities or changing activity constraints, durations or logic that do not (1) alter the critical path(s) or near critical path(s) or (2) extend the scheduled completion date compared to that shown on the current accepted schedule. The Contractor shall state in writing the reasons for any changes to planned work. If any proposed changes in planned work will result in (1) or (2) above, then the Contractor shall submit a time impact analysis as described herein.
- G. Change logic relationships of out-of-sequence activities to reflect actual work sequence.
- H. Progress Narrative Report: Submit Narrative Report containing detailed comprehensive descriptions of the following information with every Progress Schedule submittal:
 - 1. Description of work completed during the reporting period, including progress made on activities on the current critical path.
 - 2. Explanation of any lack of work on activities on the critical path during the reporting period.
 - 3. Description of the current critical path.

4. Explanation of changes to the critical path, including changes to logic or activity durations, and scheduled completion date since the last schedule submittal. Include explanation of work activities performed out of sequence from the approved schedule.
 5. Status of major activities on the current critical path, including percent complete, and amount of time ahead or behind schedule. Provide description and explanation of any delays encountered during the reporting period, including impacts on other activities, milestones, and completion dates.
 6. Description of proposed corrective actions and schedule adjustments to mitigate delays and bring the project back on schedule.
 7. Status of permits, change orders, submittals, potential claims, time adjustments, material and equipment procurement, non-conformance reports, and any other pending items on the current critical path.
 8. Description of activities on the critical path to be performed in the next update period.
 9. Any other information pertinent to the status of the project as determined by the Contractor or requested by the Authority.
- I. Final Progress Schedule: Prepare and submit an updated, as-built Progress Schedule with actual start and finish dates for all activities and documented changes from the Preliminary Progress Schedule. Include a narrative report. The Contractor shall provide a written certificate with this submittal signed by the Contractor's project representative and an officer of the company stating, "To my knowledge and belief, the enclosed final update schedule reflects the actual start and finish dates of the actual activities for the project contained herein." An officer of the company may delegate in writing the Authority to sign the certificate to a responsible manager.

1.13 PROGRESS AND EARNED VALUE MEASUREMENT

- A. As a part of the monthly update cycle, a progress review meeting utilizing the Preliminary Update Schedule, will be held at least 3 working days prior to the data date between the Contractor and the Authority.
1. The schedule shall be based on the approved Progress Schedule from the previous month.
 2. The format shall include added blank columns in which the Contractor will pencil in the updated information including start dates, finish dates, percent completes, and remaining durations. The Contractor shall indicate activities for which Physical Percent Complete is used. The anticipated actual progress between the meeting date and the data date shall also be projected and included in the Preliminary Update Schedule. The format for the draft update schedule is shown below.

← Previous Period → ← This Period →											
Activity ID	Activity Description	OO	RD	%	Early Start	Early Finish	%	RD	Start	Finish	Comments
02720.2 STORM DRAINS - YARD											
02720.2.04 18" PVC SD PIPE, 11" INV											
0470	Exc/Lay/BF 18" SD Line A 25+48 to 27+55	3	0	100	23APR08A	24APR08A					
0580	Exc/Lay/BF 18" SD Line C 29+62 to 30+00	1	0	100	13MAY08A	13MAY08A					
0640	Exc/Lay/BF 18" SD Line B 21+29 to 27+50	4	2	50	27MAY08A	04AUG08	100	0		10AUG08	
0645	Exc/Lay/BF 18" SD Line B 27+50 to 27+50	1	0	100	23JUL08A	31JUL08A					
0630	Exc/Lay/BF 18" SD @ Laurel	4	4	0	07AUG08	12AUG08	50	3	09AUG08		Physical %
Subtotal		79	8	54	23APR08A	12AUG08					

3. Any logic revisions that need to be incorporated into the Progress Schedule shall be brought to the Authority's attention in the monthly progress review meeting for Authority's initial review, including, but not limited to, fixing the logic of out-of-sequence activities, adding any approved time impact fragnets, reflecting the Contractor's work plan changes, and any other minor logic revisions.
- B. Except as otherwise specified, only construction and general requirement activities shall be cost loaded. The sum of the budgeted costs of all activities in the project schedule shall equal the contract price. Activity costs shall not be input as resources.
1. Each construction activity shall have a nonzero budgeted cost that represents the direct cost of the work. Front-end loading of costs is not permitted and shall result in rejection of the schedule.
 2. In the scheduling software, cost account numbers shall be defined to exactly mirror the contract bid item numbers. All activities shall be assigned with a cost account number which corresponds to the contract bid item number whether or not the activity has a dollar value assigned. The sum of the budgeted cost of all activities coded with a particular cost account (i.e., sub-level activities under a particular bid item) shall equal to the amount of the matching bid item.
 3. Each activity's cost loading should be made based on the predefined cost account numbers so that a Schedule of Value report can be generated from the scheduling software after the entire cost loading is done. The format of the Schedule of Value shall be the same as the Schedule of Quantities of Price in the contract document.
 4. Activity's percent complete shall be determined by estimating percent of Work in place.
- C. The amount of monthly progress payment shall match the sum of the Earned Values generated from the cost loaded activities as a result of updating the Progress Schedule.

1. The organization of Earned Value Report shall be the same as the breakdown of Schedule of Value submitted during the initial schedule development which was developed according to predefined cost account numbers corresponding to the contract bid item numbers.
 2. The Schedule of Value shall be the base from which an Earned Value Report will be generated each month. The Earned Value Report shall be attached to each monthly payment application submittal package.
- D. After the monthly progress review meeting, the Contractor shall formally update the monthly Progress Schedule based on the agreed-upon schedule update data. Then the monthly Earned Value Report shall be generated and included in the monthly Progress Schedule submittals, which shall be submitted no later than 5 working days after the data date. The Earned Value Report shall be a direct output from the scheduling software which shows subtotal for each Schedule of Value grouping category and grand total for the entire project. The Earned Value Report format is shown below.

Activity ID	Activity Description	Budgeted Cost	%	Previous Actual \$	This Period \$	Actual \$ to Date	Cost to Complete	Cost at Completion
02720.2 STORM DRAINS - YARD								
02720.2.04 18" PVC SD PIPE, 11' INV								
0470	Exc/Lay/BF 18" SD Line A 25+48 to 27+95	20,000.00	100	20,000	0	20,000.00	0.00	20,000.00
0580	Exc/Lay/BF 18" SD Line C 29+62 to 30+00	17,812.00	100	10,000	7,812	17,812.00	0.00	17,812.00
0540	Exc/Lay/BF 18" SD Line B 21+29 to 27+50	20,000.00	50	5,000	5,000	10,000.00	10,000.00	20,000.00
0545	Exc/Lay/BF 18" SD Line B 27+50 to 27+90	10,000.00	100	3,000	7,000	10,000.00	0.00	10,000.00
0630	Exc/Lay/BF 18" SD @ Laurel	4,400.00	0	0	0	0.00	4,400.00	4,400.00
Subtotal		72,212.00	80	38,000	19,812	57,812.00	14,400.00	72,212.00

1.14 THREE-WEEK LOOK AHEAD SCHEDULE

- A. Three-Week Look Ahead Schedule shall contain one week of historical information and three weeks of planned activities in support of and consistent with the Baseline Schedule or current Progress Schedule.
- B. Format: An electronic spreadsheet or other format acceptable to the Authority. Label each activity to match the Activity ID number on the current Progress Schedule. Highlight the critical path. Data date shall be within current week.
- C. Level of Detail: Greater than in the Baseline Schedule or Progress Schedule.
- D. Clearly show each activity requiring track access during specified work windows; schedule activities performed during single or multiple track outage work windows utilizing an hourly time scale.
- E. Show weather delay days which have already occurred and have been acknowledged by the Authority in writing.
- F. Show demobilization and punchlist activities through to Final Completion.

1.15 REVIEW AND RESUBMITTALS

- A. The Authority will review and return the Contractor's schedule submittals and deliverables with a written response according to the following schedule from the date of receipt from the Contractor.
 - 1. Baseline Schedule: within 15 working days.
 - 2. Progress Schedule: within 10 working days
- B. The Authority will review and return resubmittals to the Contractor with a written response according to the following schedule from the date of receipt from the Contractor.
 - 1. Baseline Schedule: within 7 working days
 - 2. Progress Schedule: within 5 working days
- C. If the Contractor does not agree with the Authority's comments, provide written notice of disagreement within 5 working days from the receipt of the Authority's comments. Resolve any Authority's comments with which the Contractor disagrees in a meeting held for that purpose.
- D. The first of each type of submittal and deliverable submitted by the Contractor will be reviewed for format, as well as content. The Authority may require format changes. Once the format has been approved, submit subsequent submittals and deliverables in the approved format.
- E. Baseline Schedule Review Meeting: Within 10 working days after the submittal of the Baseline Schedule, the Authority will conduct a Baseline Schedule Review Meeting with the Contractor.
 - 1. The Contractor shall have its Project Manager, construction management personnel, individual performing scheduling and major Subcontractor representatives, in attendance.
 - 2. Meeting topics will include the following:
 - a. The Contractor's presentation of Baseline Schedule submittal including explanation of critical path, critical path activities, resources and production rates of work activities, and other items related to scheduling of work.
 - b. General review and discussion of schedule format, activities and information potentially missing from the schedule.
- F. Recovery Schedule: If Contractor's actual progress of the Work falls ten (10) working days behind the approved Baseline Schedule for the Contract completion date, the Contractor shall prepare and submit a Recovery Schedule within five (5) working days to explain and display how the Contractor intends to regain compliance with the Contract completion date. The Recovery Schedule shall detail the Contractor's plan for bringing the work back on schedule. The Contractor's plan for recovery shall conform to all other Contract requirements. Incorporate revisions accepted by the

Authority in the next Progress Schedule. Do not incorporate proposed revisions in the Progress Schedule prior to their acceptance.

1.16 TIME IMPACT ANALYSIS

- A. If the Contractor requests an extension of time for the completion of an interim milestone date or Contract completion date, justification in the form of a Time Impact Analysis (TIA) for such extension shall be furnished. The Authority will determine whether or not the Contractor is entitled to an extension of time under the provisions of the Contract. Submission of a TIA based on revised activity logic, duration, and a cost is required for approval of any time extension. The cost of preparing time impact analyses or subsequent schedule revisions shall be borne solely by the Contractor.
- B. Illustrate the impacts of each change or delay on the current Contract completion date or interim milestone, as appropriate. Use the approved Progress Schedule which has a data date closest to and prior to the event for which an extension is being requested.
- C. Include a schedule showing all schedule logic revisions, duration changes, cost changes, and additions or deletions of activities for the work in question and its relationship to other activities on the Progress Schedule. Provide additional supporting evidence if requested by the Authority.
- D. The Authority's determination as to the total number of days of time extension will be based upon the current schedule for the time period in question, and all other relevant information. Actual delays in activities which, according to the Progress Schedule, do not affect the critical path or the Contract completion date will not be the basis for a time extension.
- E. The Authority will review the facts and advise the Contractor in writing of the Authority's decision. If the Authority determines that the Contractor is entitled to an extension of time to an interim milestone, the Contract completion date will remain the same, unless the Authority specifies another date. Any change to Contract milestones or to the Contract completion date will be made by Change Order.
- F. If the Authority has not yet made a full determination as to the amount of time extension to be granted and the parties are unable to agree as to the amount of extension to be reflected in the Progress Schedule, reflect that amount of time extension in the Progress Schedule as determined to be appropriate by the Authority for such interim purpose. It is understood and agreed that such interim determination by the Authority for the purposes of this Section will not be binding upon either party for any other purpose, and that, after the Authority has made a final determination as to any time extension, revise the Progress Schedule in accordance with the final decision.

1.17 INCLEMENT WEATHER CONDITION

The Contractor shall allow for inclement weather in the Baseline Schedule by incorporating an activity titled "Rain Day Impact Allowance" as the last activity prior to the Substantial Completion milestone. No other activities may be concurrent with it. The duration of the Rain Day Impact Allowance activity will be based on Section 01 31 99, Period of Performance.

PART 2 – PRODUCTS (Not Used)**PART 3 – EXECUTION (Not Used)****PART 4 – MEASUREMENT AND PAYMENT**

Work of this Section is considered incidental to Work under other payment items and no separate measurement or payment will be made to the Contractor for Work of this Section.

END OF SECTION 01 32 17

SECTION 01 32 33
PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

This Section includes administrative and procedural requirements for the following:

- A. Preconstruction photographs
- B. Construction photographs
- C. Final completion construction photographs

1.2 RELATED REQUIREMENT

- A. Section 01 33 00, Submittal Procedures
- B. Section 01 77 00, Substantial Completion

1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit a key plan of the Project site marked with location and direction of each photograph.
- B. Digital Photographs: Submit image files within 7 days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 10 megapixels.
 - 2. Format: Minimum of 1,600 by 1,200 pixels and 400 dpi, in unaltered JPG format original files having the same aspect ratio as the sensor, uncropped, date- and time-stamped, in a folder named by the date of the photographs, and accompanied by a key plan file.
 - 3. Identification: Provide the following information with each image description using file metadata tags:
 - a. Name of Project
 - b. Name of the Contractor
 - c. Date photograph was taken (or date stamped by digital camera)
 - d. Description of the vantage point, indicating location, direction (by compass point), and elevation or story of construction
 - e. Unique sequential identifier keyed to the accompanying key plan

PART 2 - PRODUCTS**2.1 PHOTOGRAPHIC MEDIA**

- A. Digital Images: Provide images in JPG format, produced by a digital camera with a minimum sensor size of 10 megapixels, and at an image resolution of not less than 1,600 by 1,200 pixels and 400 dpi.

PART 3 - EXECUTION**3.1 CONSTRUCTION PHOTOGRAPHS**

- A. General: Take photographs that are in focus so as to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
- B. Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or any modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at the Project site, available at all times for reference. Identify images in the same manner as used for those submitted to the Engineer.
- C. Preconstruction Photographs: Seven (7) days before commencement of construction, take photographs of the Project site and surrounding properties including existing items that are to remain during construction. These photographs shall be taken from different vantage points, as directed by the Authority.
 - 1. Flag construction limits before taking construction photographs.
 - 2. Take photographs to show existing conditions adjacent to the property before starting the Work.
 - 3. Take photographs of existing buildings either on or adjoining the property to accurately record physical conditions at start of construction.
 - 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- D. Construction Photographs:
 - 1. When utility pipes, conduits, and ducts are installed but not covered
 - 2. When footings and foundations are complete
 - 3. When rail and special track is installed
 - 4. When finish grade is complete
- E. Final Completion Construction Photographs: Take color photographs after the date of Substantial Completion for submission as Project record documents.

PART 4 - MEASUREMENT AND PAYMENT

Work of this Section is considered incidental to Work under other payment items and no separate measurement or payment will be made to the Contractor for Work of this Section.

END OF SECTION 01 32 33

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SECTION 01 33 00 SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

This Section includes requirements for the submittal schedule and procedural requirements for submitting Shop Drawings, Product Data, Samples, administrative and miscellaneous (non-administrative) work-related submittals.

1.2 RELATED REQUIREMENTS

- A. Section 01 25 00, Substitution Procedures
- B. Section 01 60 00, Product Requirements
- C. Section 01 78 39, Project Record Documents

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require the Authority's responsive action. Action submittals are those submittals indicated in individual Specification Sections as action submittals.
- B. Informational Submittals: Written and graphic information and physical samples that do not require a response from the Authority. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals so described in individual Specification Sections.
- C. Plans and Procedures: Include narrative descriptions, diagrams, equipment, procedures for excavation, demolition, site clearing, maintenance of traffic, etc
- D. Certificates: Include certified Material test reports, certification of proper disposal of demolition Materials, or tickets demonstrating compliance with Materials, tests or Specifications indicated.
- E. Equipment: Include equipment Specifications, manufacturer information and demonstration of suitability of equipment for intended use.
- F. Product Data: Include standard printed information on Materials, products and systems to be furnished by the Contractor for this Contract.
- G. Shop Drawings: Include detailed manufacturing and layout information, demonstrating the Contractor's approach to meeting the intent of the Plans and Specifications.

- H. Samples: Include physical examples of Materials either for limited visual inspection or (where indicated) for confirmation, testing, and analysis by the Authority.
- I. Miscellaneous Submittals: Such submittals shall be related directly to the Work, but not necessarily administrative related. Include Work schedule, phasing plans, warranties, guarantees, maintenance agreements, workmanship bonds, survey data and reports, physical work records, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance Materials, overrun stock (and similar information) and, devices and Materials applicable to the Work but not processed as Shop Drawings, Product Data or samples.

1.4 PATENTS

In the event that any patented article, material, or process is to be installed or used in the performance of the Work as shown on the drawings or particular specifications thereof, the Contractor shall pay the royalty chargeable and shall save, keep, and bear the Authority harmless from (a) all damage, costs, and expenses by reason of any infringement of the patent or any failure to pay the royalty chargeable for use thereof, or (b) any loss to the Authority in the event that the Authority is enjoined from using such patented article or material, or (c) the incidental damage caused by the loss of use and damage to Authority property in removing same, and (d) the cost of replacing the article or material the use of which is enjoined. It is further provided that the Bond for faithful performance shall be deemed to expressly apply to this provision of the specifications.

1.5 CONTRACTOR PREPARED DRAWINGS, PRODUCT DATA, AND SAMPLES

The Contract Documents shall be supplemented by shop drawings, working drawings, equipment layout drawings, coordination drawings, lift drawings, product data, samples, and similar submittals prepared by the Contractor or its Subcontractors or Suppliers, of any tier. These materials and similar submittals shall be furnished as required for coordination of the Contractor's work, as required for the coordination of the work with forces of the Authority or other Contractors working for the Authority, as required by the various sections of the specifications, or as requested by the Authority. The purpose of the submittal is to demonstrate for those portions of Work for which submittals are required the manner in which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents.

When shop drawings, working drawings, equipment layout drawings, coordination drawings, lift drawings, product data, samples or similar submittals are required by any section of the specifications or have been requested by the Authority or the Engineer, the Contractor shall coordinate all Work under the various sections of the Specifications to ensure that no interferences occur in the areas, structures, or rooms for which such drawings have been required, and that necessary clearances are provided.

1.6 SUBMITTAL SCHEDULE

Submit a schedule of submittals, arranged in chronological order by dates required by the construction schedule. When establishing dates, include the time required for review,

ordering, manufacturing, fabrication, and delivery. Include additional time required for making submittal corrections or modifications noted by the Authority, and additional time for handling and reviewing submittals required by those corrections.

- A. Coordinate the submittal schedule with the list of subcontracts, the Schedule of Values, and the Contractor's construction schedule.
- B. Submit Initial Submittal Schedule 15 days after issuance of Notice to Proceed. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work, and those required early because of long lead time for manufacture or fabrication. Indicate if a submittal is on the critical path for project completion.
- C. Final Submittal: Submit concurrently with the first complete submittal of the Contractor's construction schedule. Submit a revised submittal schedule to reflect changes in the current status and timing for submittals.
- D. Format: Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal
 - 2. Specification Section number and title
 - 3. Submittal category (action or informational)
 - 4. Name of Subcontractor
 - 5. Description of the Work covered
 - 6. Scheduled date for the Authority's final release or approval
 - 7. Scheduled dates for purchasing
 - 8. Scheduled dates for delivery and installation
 - 9. Activity or event number
 - 10. Float

1.7 PROCESSING REQUIREMENTS FOR SUBMITTALS

- A. General: Electronic digital copies of CAD drawings of the Contract Drawings (Plans) will be provided by the Authority for the Contractor's use in preparing submittals, subject to completion and return of the Authority's release form.
- B. Coordination: Coordinate preparation and processing of submittals with the performance of construction activities. Transmit each submittal sufficiently in advance of related construction activities to avoid delay.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on an approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate the transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of the need to review submittals concurrently for coordination.
 5. The Contractor shall show his executed internal review and approval marking. Submittals, which are received from sources other than through the Contractor's office or which have not undergone Contractor review, will be returned marked "without action."
 6. The Authority reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on the first full working day after the Authority receives the submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 14 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. In the event that Submittal is reviewed by a third party (including Railroads Operators and authorities having jurisdiction), allow up to an additional 14 working day's time for Authority's response. The Authority will advise the Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in the same manner as an initial submittal.
 3. Resubmittal Review: Allow seven days for review of each resubmittal.
 4. Concurrent Consultant Review: Where concurrent review of submittals is required, allow 21 days for initial review of each submittal.
 5. Submittals received after 2 PM will not be processed until the following working day which will be recorded as the receipt of submittal date.
- D Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. The Authority will return, without review, any submittals received from sources other than the Contractor.
1. Transmittal Form: Provide locations on the form for the following information:

- a. Project name
 - b. Date
 - c. Destination (To:)
 - d. Source (From:)
 - e. Names of Subcontractor, manufacturer, and supplier
 - f. Category and type of submittal
 - g. Submittal purpose and description
 - h. Specification Section number and title
 - i. Indication of full or partial submittal
 - j. Drawing number and detail references, as appropriate
 - k. Transmittal number, numbered consecutively
 - l. Submittal and transmittal distribution record
 - m. Remarks
 - n. Signature of transmitter
 2. On an attached separate sheet, prepared on the Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by the Authority on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include the same identification information as on the related submittal.
 3. Include the following information as keywords in the electronic file metadata:
 - a. Project name
 - b. Project Identification Number
 - c. Number and title of the appropriate Specification Section
 - d. Manufacturer name
 - e. Product name
- E. Identification and Information: Place a permanent label or title block on each paper copy submittal item for identification. Indicate the name of the firm or entity that prepared each submittal on the label or the title block. Provide a space approximately 3 by 4 inches on the label or beside the title block to record the Contractor's review and approval markings and action taken by the Authority. Include the following information for processing and recording action taken:
1. Project name
 2. Date
 3. Name of Design Consultant

4. Name of Contractor
 5. Name of Subcontractor
 6. Name of supplier
 7. Name of manufacturer
 8. Submittal number or other unique identifier, including revision identifier. The Submittal number shall use the Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
 9. The number and title of the appropriate Specification Section
 10. Drawing number and detail references, as appropriate
 11. Location(s) where product is to be installed, as appropriate
 12. Other necessary identification
- F. For electronic submittal Identification and Information, incorporate in each file as follows:
1. Assemble the complete submittal package into a single indexed file, with links enabling navigation to each item.
 2. Name the file with its submittal number or another unique identifier, including revision identifier. The file name shall use a project identifier and the Specification Section number, followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
 3. Provide a means for insertion to permanently record the Contractor's review and approval markings and action taken by the Authority.
- G. Identify Applicable standards, ASTM, ACI, OSHA, etc. and identify options requiring selection by the Authority.
- H. Deviations: Identify deviations from the Contract Documents on submittals.
- I. Resubmittals: Make resubmittals in the same form and with the same number of copies as the initial submittal.
1. Note the date and content of the previous submittal.
 2. Note the date and content of the revision in the label or title block, and clearly indicate the extent of revision.
 3. Resubmit submittals until they are stamped with action by reviewer.
- J. Distribution: Furnish copies of final submittals to manufacturers, Subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as

necessary for performance of construction activities. Show distribution on the transmittal forms.

- K. Use for Construction: Retain full copies of approved submittals on the Project Site. Use only final submittals that are marked with approval notation from the Engineer's action stamp.

1.8 SUBMITTAL REQUIREMENTS FOR COMMISSIONING

A. Normal Submittals:

1. Submit copy of normal submittals for equipment to be commissioned to the Authority.
2. Authority will review and approve normal submittals applicable to systems being commissioned for compliance with commissioning needs, concurrent with the Authority's review.

B. Data for Commissioning: Authority will request specific information needed about each piece of commissioned equipment or system. Information requested includes, but is not limited to, the following:

1. Detailed manufacturer's installation and start-up procedures
2. Operating, troubleshooting, and maintenance procedures
3. Full details of Authority-contracted tests, if any
4. Fan and pump curves
5. Full factory testing reports, if any
6. Full warranty information, with responsibilities of the Authority to keep warranty in force clearly defined
7. Installation and checkout materials actually shipped inside equipment and actual field checkout sheet forms to be used by factory or field technicians

C. Authority may request additional documentation necessary for the commissioning process. Requests by Authority may precede, be concurrent with, or follow normal submittals.

D. The Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Authority's review.

1.9 CONFORMANCE OF SUBMITTALS

- A. The Contractor is responsible for conformance of all submittals prepared by the Contractor or its Subcontractors or suppliers, of any tier, with all requirements of the Contract Documents. Where required by California law, or as specified in the Contract Documents, submittals shall be signed and sealed by a Professional

Engineer licensed in the State of California, or Land Surveyor licensed in the State of California as applicable.

- B. The Contractor shall show his executed internal review and approval marking. Submittals, which are received from sources other than through the Contractor's office or which have not undergone Contractor review, will be returned marked "without action."
- C. Acceptance of shop drawings, working drawings, equipment layout drawings, coordination drawings, lift drawings, product data, samples, and similar submittals shall not relieve the Contractor from responsibility for deviations from the Contract Documents, nor from responsibility for errors or omissions of any sort with such drawings and data. Neither shall the acceptance of such drawings and data by the Authority relieve the Contractor from responsibility for the correct installation, or for the proper operation in service, of items requiring submittal of such drawings and data.

PART 2 - PRODUCTS

2.1 SUBMITTAL PERFORMANCE REQUIREMENTS

- A. Any Work performed without an approved submittal will be done at the Contractor's own risk
- B. The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Authority's review of Shop Drawings, Product Data, Samples, or similar submittals unless the Contractor has specifically informed the Authority in writing of such deviation at the time of the submittal and given written acceptance to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals by the Authority's review thereof.
- C. Direct specific attention in writing or on resubmitted shop Drawings, Product Data, Samples, or similar submittals to revisions other than those requested by the Authority on previous submittals.

2.2 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. The required types of submittals are indicated in individual Specification Sections.
 - 1. Submit electronic submittals via e-mail as PDF electronic files. The information provided in the electronic files shall be legible when printed on 11" x 17" paper. The Authority will return the annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - 2. Action Submittals: Submit five paper copies of each submittal, unless otherwise indicated. The Authority will return three copies.

3. Make copies of the returned copy as required for distribution and for operations and maintenance manuals. Mark up and retain one returned copy as a Project Record Document.
 4. Informational Submittals: Submit six paper copies of each submittal, unless otherwise indicated. The Authority will not return copies.
 5. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 01 77 19, Project Closeout.
 6. Certificates and Certifications Submittals: Provide a statement that includes the signature of the entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity who is an Engineer or Architect recognized to practice engineering or architecture in the State of California.
 7. Provide a notarized statement on original paper copy certificates and certifications where indicated.
 8. Test and Inspection Reports Submittals: Comply with requirements specified in Section 01 40 00, Quality Requirements.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment. A Safety Data Sheet shall be submitted for each product.
1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts
 - b. Manufacturer's product specifications
 - c. Standard color charts
 - d. Statement of compliance with specified referenced standards
 - e. Testing by recognized testing agency
 - f. Application of testing agency labels and seals
 - g. Notation of coordination requirements
 - h. Availability and delivery time information
 - i. Manufacturer's written recommendations
 - j. Manufacturer's installation instructions
 - k. Mill reports

- l. Standard product operation and maintenance manuals
 - m. Approval number of organizations or agencies as required by agencies having jurisdiction
 - n. Notation of dimensions verified by field measurements
 - o. Notation of coordination requirements
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring
 - b. Printed performance curves
 - c. Operational range diagrams
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings
 - 5. Submit Product Data before or concurrent with Samples
 - 6. Submit Product Data in the following format:
 - a. PDF electronic file: Make copies of the returned copy as required for distribution and for operations and maintenance manuals. Mark up and retain one returned copy as a Project Record Document.
 - b. Product data: Submit six paper copies unless otherwise indicated. The Authority will return three copies. Make copies of the returned copy as required for distribution and for operations and maintenance manuals. Mark up and retain one returned copy as a Project Record Document.
- C. Shop Drawings, Working Drawings, Equipment Layout Drawings, and Coordination Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on the Engineer's digital data drawing files is otherwise permitted. Unless otherwise approved by the Authority or indicated in specific sections of the Specifications, Shop Drawings shall be scaled sufficiently large to accurately show all pertinent aspects of the item and its relationship to the Work. The Contractor shall additionally submit the shop drawing on electronic media in MicroStation Intergraph Format.
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products
 - b. Product Schedules
 - c. Compliance with specified standards
 - d. Notation of coordination requirements
 - e. Notation of dimensions established by field measurement

- f. Relationship and attachment to adjoining construction clearly indicated
 - g. Seal and signature of California registered professional engineer if specified
 - h. Dimensions and clearances
 - i. Fabrication and installation drawings
 - j. Roughing-in and setting diagrams
 - k. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring. Differentiate between manufacturer-installed and field-installed wiring
 - l. Templates and patterns
 - m. Design calculations
 - n. Approval number of organizations or agencies with jurisdiction for the Work.
- 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8½ by 11 inches but no larger than 24 by 36 inches.
- 3. Submit Shop Drawings in the following format:
 - a. PDF electronic file: Make copies of the returned copy as required for distribution and for operations and maintenance manuals. Mark up and retain one returned copy as a Project Record Document.
 - b. Opaque copies: Submit four of each submittal. Mark up and retain one returned copy as a Project Record Document.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements, and for a comparison of these characteristics between the submittal and the actual component as delivered and installed.
 - 1. Transmit Samples that contain multiple, related components (such as accessories) together in one submittal package.
 - 2. Identification: Attach a label on the unexposed side of Samples that includes the following:
 - a. Generic description of Sample
 - b. Product name and name of manufacturer
 - c. Sample source
 - d. Submittal Number and title of applicable Specification Section
 - 3. Disposition: Maintain sets of approved Samples at the Project site, available for quality-control comparisons throughout the course of

construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

- a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Authority's property, are the property of the Contractor.
4. Samples Detailed Work drawings shall be submitted by the Contractor for temporary structures and for such other temporary Work as may be required for construction, but which does not become an integral part of the completed Project. Submittals shall include back-up calculations or any information needed to explain the structure or system or its intended use.
5. Where a submittal involves engineering computations or original design Work is depicted, the submittal shall show the name, the State of California registration number, seal, and signature of the Professional Engineer certifying that such computations or design Work are correct and in conformance with standards, codes, and acceptable engineering practice.
6. Number of Initial Selection Samples: Submit four full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from a manufacturer's product line. The Authority will return the submittal with options selected.
7. Samples for Verification: Submit full-size units or Samples of the size indicated, prepared from the same material to be used for the Work, cured and finished in the manner specified, physically identical with the material or product proposed for use, and showing the full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
8. Number of Verification Samples: Submit four sets of Samples. Mark up and retain one returned Sample set as a Project record sample.
 - a. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - b. If variations in color, pattern, texture, or other characteristics are inherent in the material or product represented by a Sample, submit at least four sets of paired units that show the approximate limits of the variations.
9. The Contractor shall submit 1 reproducible set and 5 copies of each shop drawing submittal. Distribution of submitted shop and working drawings by the Contractor for the Authority's use will be performed by the Authority.

The Contractor shall make and distribute all copies required for his purposes.

- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating the types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include a unique identifier for each product.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.
 5. Submit the product schedule in the following format:
 - a. PDF electronic file: Mark up and retain one returned copy as a Project Record Document.
 - b. Paper copies: Submit four paper copies of the product schedule or list, unless otherwise indicated. The Authority will return two copies. Mark up and retain one returned copy as a Project Record Document.
- F. Certificates of Compliance: Certificates of Compliance shall be submitted by the Contractor to the Authority for those Materials and products for which no samples and test results are specified. The certificates shall:
1. State that the product complies with the respective Contract Specification and Contract Drawing requirements.
 2. Be accompanied by a certified copy of test results pertaining to the product. All test equipment used shall be verified to be in calibration at the time of each test and test reports shall so indicate. No test shall be made without such verification. When required by the Contract Documents or by law, certified test results shall be sealed by a Professional Engineer licensed to practice in the State of California.
 3. Show product represented and its location in the Contract, producer's name, product trade name and catalog number as applicable, place of product origin, test date, testing organization's name and address, quantity of the product to be furnished, and the related Contract Drawing and Specification section numbers.
- G. Where required by the Specification or if requested by the Authority, submit the following written statements on the manufacturer's letterhead:
1. Certification that the manufacturer, its products or materials complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

2. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results verifying the material's compliance with requirements in the Contract Documents.
3. Product Test Reports: Submit written reports indicating the current product produced by the manufacturer complies with requirements in the Contract Documents. Base reports on an evaluation of tests performed by the manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
4. Research Reports: Submit written evidence, from a model code organization acceptable to jurisdictional authorities that the product complies with the building code in effect for the Project. Include the following information:
 - a. Name of evaluation organization
 - b. Date of evaluation
 - c. Time period when report is in effect
 - d. Product and manufacturers' names
 - e. Description of product
 - f. Test procedures and results
 - g. Limitations of use
5. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of the product to determine compliance with performance requirements in the Contract Documents.
6. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
7. Field Test Reports: Submit reports indicating and interpreting results of field tests performed either during installation of the product or after the product is installed in its final location to verify compliance with requirements in the Contract Documents.
8. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, a list of applicable codes and regulations, and calculations. Include a list of assumptions and other performance and design criteria, and a summary of

loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

9. **Manufacturer's Instructions:** Prepare written or published information that documents the manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include the name of the product and the name, address, and telephone number of the manufacturer. Include the following, as applicable:
 - a. Preparation of substrates
 - b. Required substrate tolerances
 - c. Sequence of installation
 - d. Required installation tolerances
 - e. Required adjustments
 - f. Recommendations for cleaning and protection
10. **Manufacturer's Field Reports:** Prepare written information documenting the factory-authorized service representative's tests and inspections. Include the following, as applicable:
 - a. Name, address, and telephone number of the factory-authorized service representative making the report
 - b. Statement on condition of substrates and their acceptability for installation of product
 - c. Statement that products at Project site comply with requirements
 - d. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken
 - e. Results of operational and other tests and a statement of whether observed performance complies with requirements
 - f. Statement whether conditions, products, and installation will affect warranty
 - g. Other required items indicated in individual Specification Sections

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with an approval stamp before submitting to the Authority.

- B. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Section 01 77 19, Project Closeout.
- C. Approval Stamp: Stamp each submittal with a uniform approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that the submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 AUTHORITY'S ACTION

- A. The Authority will not review submittals that do not bear the Contractor's approval stamp, and will return such submittals without action.
 - 1. The review is not conducted for the purpose of determining the accuracy and completeness of other details, such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor.
 - 2. Compliance with specified characteristics is the Contractor's responsibility; it is not considered part of the Authority's review and indication of action taken.
 - 3. Acceptance of submittals with deviations shall not relieve the Contractor from responsibility for additional costs of changes required to accommodate such deviations. Deviations included in submittals without prior acceptance are excepted from review of submittals, whether noted or not on returned copy.
 - 4. Review of a separate item shall not indicate acceptance of the assembly of which the item is a part.
 - 5. Make only those revisions required or accepted by the Authority.
 - 6. Notations by the Authority which increase Contract Cost or Contract Time shall be brought to the Authority's attention, in writing as a Request for Change, before proceeding with Work.
 - 7. When professional certification of performance criteria of materials, systems, or equipment is required by the Contract Documents, the Authority shall be entitled to rely on the accuracy and completeness of such calculations and certifications.
- B. Action Submittals: The Authority will review each submittal, make marks to indicate corrections or modifications required, and return it. The Authority will stamp each submittal with an action stamp and mark the stamp appropriately to indicate the action required.
- C. Informational Submittals: The Authority will review each submittal and will generally not return it (it will be returned if it does not comply with requirements). The Authority will forward each submittal to the appropriate party.

- D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from the Authority.
- E. Incomplete submittals are not acceptable; they will be considered nonresponsive, and will be returned without review.
- F. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

3.3 SUBMITTAL STATUS

- A. Submittals reviewed by the Authority and returned to the Contractor will be marked with one of the following designations:
 - 1. NO Exceptions Taken.
 - 2. Approved as Noted.
 - 3. Revise and Resubmit.
 - 4. Rejected.
 - 5. No Action Taken.
- B. The Contractor shall not proceed with procurement, manufacture or fabrication of items submitted for review, until such submittals have been designated by the Authority as "No Exceptions Taken" or "Approved as Noted." Until submittal items receive such designation by the Authority, any costs associated with procurement for these items shall be at the Contractor's risk.

3.4 SUBMITTALS DESIGNATED AS "CONFORMS" OR "CONFORMS WITH CORRECTIONS AS NOTED"

- A. Each copy of the submittal so designated by the Authority will be identified accordingly by being so stamped and dated. One reproducible copy will be returned to the Contractor.
- B. The Contractor shall take responsibility for and bear all cost of damages, which may result from the ordering of any material or from proceeding with any part of the Work prior to being marked "No Exceptions Taken" or "Approved as Noted" by the Authority.
- C. Where drawings are stamped "Approved as Noted", the Authority shall indicate the corrected detail or information as required.
- D. Submittals stamped "NO Exceptions Taken" do not relieve the Contractor from the responsibility of performance of Work as intended in the Plans and Specifications.

3.5 SUBMITTALS DESIGNATED AS “REVISE AND RESUBMIT,” OR “REJECTED. RESUBMIT”

- A. Each copy of the submittal so designated by the Authority will be identified accordingly by being so stamped and dated. One reproducible copy will be returned to the Contractor.
- B. If corrections to the submittals are required, copies returned to the Contractor will be marked "Rejected, Resubmit", or "Revise and Resubmit" and the required corrections shall be made on the re-submittal copies.
- C. Re-submittals will be processed in the same manner as first submittals. On every re-submittals, the Contractor shall note in writing any revisions other than the corrections requested by the Authority on previous submittals. Re-submittals shall use the same number as original submittal but will be modified by adding another decimal point and a sequential alphabetical suffix to identify each resubmittal (e.g., 0610000.01.A, 0610000.01.B, etc.)..
- D. The Contractor shall notify the Authority prior to execution of any correction, which constitutes a change of the Contract requirements indicated on the submittals.

3.6 SUBMITTALS DESIGNATED AS “NO ACTION TAKEN”

- A. Each copy of the submittal so designated by the Authority will be identified accordingly by being so stamped and dated. One reproducible copy will be returned to the Contractor.
- B. Submittals made by the Contractor that are not required by the Contract Documents or were not otherwise requested shall be designated “No Action Taken.”

PART 4 – MEASUREMENT AND PAYMENT

Work of this Section is considered incidental to Work under other payment items and no separate measurement or payment will be made to the Contractor for Work of this Section.

END OF SECTION 01 33 00

SECTION 01 35 15
MAINTENANCE AND PROTECTION OF RAILROAD TRAFFIC

PART 1 - GENERAL

1.1 SUMMARY

This section sets forth the procedures for Contractor work on or near track structures.

1.2 RELATED REQUIREMENTS

- A. Section 01 14 00, Work Restrictions
- B. Section 01 14 16, Coordination with SCRRA
- C. Section 01 35 23, OCTA Site Safety Requirements

1.3 WORK ON TRACK AND TRACK STRUCTURES

- A. The Contractor's work on the track structure prior to returning the track to full service, shall be protected by speed restrictions for train traffic consistent with the direction of the SCRRA, who will interpret the current issue of the SCRRA "Track Maintenance and Engineering Instructions," and the Track Safety Standards of the FRA. The Contractor shall comply with the SCRRA interpretation of all requirements relating to work on track and track structures.
 - 1. In order to minimize impacts to the SCRRA quality of passenger service, the Work will be arranged so that there are not more than two locations with speed restrictions due to the Contractor's work at any time on any passenger route, and the cumulative amount of such delay is not to exceed 4 minutes per train at any time for each passenger route. Such speed restrictions are to be computed compared to the speeds contained in the latest effective SCRRA Timetable.
 - 2. If the number of locations with speed restrictions or the amount of delay exceeds these limits, SCRRA will prohibit the Contractor from beginning any additional Work. The Contractor will not be entitled to any payment for failure to obtain access to the track for Work on occasions when SCRRA denies new Work locations due to excessive speed restrictions at existing Work locations.

1.4 WORK ADJACENT TO LIVE TRACK

- A. Safety and Delay of Trains
 - 1. The Work shall be coordinated so that there will be no delay to trains, or interference in any manner with the operation of trains. If it is impossible to perform the Work in such a manner, the Authority and SCRRA must approve an alternate method before starting the Work.

2. Only as permitted by the SCRRA's Operating Dept. will SCRRA allow the Contractor to take more than one adjacent mainline or controlled siding track out of service.
- B. The Contractor shall abide by the instructions of SCRRA, its authorized inspectors, EICs, watchmen, and other designated Authority work forces. Returning the track to service after the Contractor's work near an operating railroad track, during construction on an interim basis only, shall be the sole responsibility of SCRRA at the end of the work window.
- C. If damage is sustained by any of the existing or new communications or signal equipment, underground or aboveground, as a result of the Contractor's operations, whether the damage sustained was intentional or not, the Contractor shall be liable for the following incurred costs:
 1. Replacement of the damaged equipment
 2. Any necessary inspection and testing of the system, before and after replacement of the damaged equipment
 3. Any other costs incurred as a direct, or indirect, result of disruption to normal train operations
- D. If the location of underground signal equipment interferes with the work, refer to Section 01 14 16, Coordination with SCRRA, for coordination requirements.

1.5 WORK WINDOWS

- A. Refer to Section 01 14 00, Work Restrictions, for designated work windows for each project location.

PART 2 - PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

PART 4 - MEASUREMENT AND PAYMENT

Work of this Section is considered incidental to Work under other payment items and no separate measurement or payment will be made to the Contractor for Work of this Section.

END OF SECTION 01 35 15

SECTION 01 35 23 SITE SAFETY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

Work specified in this Section consists of initiating, maintaining, and supervising all safety precautions and programs and assuring a safe Work Site and safe operations around active tracks. The Contractor shall be solely responsible for ensuring that all Work performed under the Contract is performed in strict compliance with all applicable Federal, State, local occupational safety regulations and SCRRRA rules and requirements adopted to protect all operations. This includes the proper manner of protecting the tracks, signals, fiber optic cables, pipe lines, other Property, and tenants or licensees upon, adjacent to, across (under or over), and along OCTA (and SCRRRA Member Agency) Property during the construction or maintenance activities on or adjacent to Railway Property. This Work includes furnishing, operating, maintaining, and utilizing safety equipment and providing protective equipment, safeguards, and safety devices on construction equipment.

1.2 RELATED REQUIREMENTS

- A. Section 01 14 00, Work Restrictions
- B. Section 01 14 16, Coordination with SCRRRA
- C. Section 01 43 23, Contractor Qualifications and Requirements
- D. Section 01 35 44, Environmental Safety and Health Program

1.3 REFERENCE STANDARDS & REQUIREMENTS

Comply with the provisions of all local, State, and Federal regulations; with all applicable Specifications, standards, and recommended practices; and with Authority and SCRRRA policies, procedures and requirements. Where the State and Federal regulations have differing requirements, the Contractor shall comply with that which is more stringent. These requirements include but are not limited to:

- A. CalOSHA: California State Occupational Safety and Health Administration
- B. CPUC: California Public Utilities Commission General Orders
- C. FRA: 49 CFR Part 214
- D. SCRRRA: General Code of Operating Rules, Maintenance-of-Way Safety Instructions, Roadway Worker On-Track Safety Manual, Rules and Requirements for Construction on Railway Property (SCRRRA Form No. 37), SCRRRA System

Safety Program Plan (dated 2009) and Bridge Worker Safety Policy. See SCRRA website for more information.

- E. California Code of Regulations (CCR) Title 8, and CFR Title 29.

1.4 SUBMITTALS

The Contractor shall submit to the Authority for review and approval the submittals listed below. The Contractor shall obtain Authority approval of the following submittals prior to mobilization:

- A. Site Specific Injury and Illness Prevention Program (IIPP) including a Site Specific Emergency Action Plan, to be revised and resubmitted as conditions warrant. This Program shall include details of procedures, equipment and training in accordance with Cal OSHA requirements including work in confined spaces, lock out/tag out and fall protection procedures to ensure that the Contractor's and sub-Contractor's workers are properly protected. An Environmental Health and Safety Plan per Section 01 35 44 and as further detailed in the Level 3 Health, Safety, and Environmental Specification shall be submitted by the Contractor and Approved in writing by the Authority prior to the Contractor beginning Work.
- B. Qualifications and certifications of designated lead and other safety representatives, and other first aid providers. This includes the qualifications and certifications of individuals who will serve as qualified or competent persons as defined in CCR Title 8. These supervisory individuals are designated by the Contractor to supervise special high risk/high hazard safety programs such as fall protection, excavation, hazardous substances operations and confined space entry.
- C. Work Plans for all excavation for which a protective system is required by CCR Title 8 Article 6. This includes plans and drawings for any ground support system to be used during the excavation and the slopes and configurations of sloping or benching systems. Any engineered shoring within the railroad load influence zone shall be designed by a Professional Engineer, Structural or Civil, licensed in the State of California.
- D. Safety Data Sheets and other records as required by jurisdictional agencies.
- E. Immediate notification to the SCRRA's Dispatch and Operations Center (DOC) is required for injury to any individual; the Contractor shall submit an injury report to the Authority within 24 hours of said injury.
- F. All cranes and on-track equipment operated on the Project Site by the Contractor and or sub-Contractors of any tier require annual and four-year certifications. Any crane subjected to upset, overloading, side pulling, shock loading or support failure, shall be re-certified to allow further use.

1.5 SAFETY AND HEALTH PERSONNEL

- A. Provide a Safety Representative in accordance with the Level 3 Health Safety, and Environmental Specification and as described in Section 01 43 23, Contractor

Qualifications and Requirements, who shall coordinate and supervise on-site safety and health, including training and testing the Contractor's personnel so that they may become qualified in SCRRA Roadway Worker Protection (RWP) requirements. The Contractor shall ensure that only those Safety representative(s) accepted by the SCRRA for employment on the Site is/are present at the Site whenever work is in progress at the Site. The absence of the required Safety Representative shall result in the immediate stoppage of all work at the Site. In order to avoid Work stoppages in the event of an expected or unexpected absence due to vacation, illness, personal emergency, resignation or termination of the assigned Safety Representative(s), the Contractor shall ensure adequate safety personnel, whose qualifications have been submitted to and approved by the Authority and SCRRA are available. The Safety Representative(s) shall have the Authority to direct immediate correction of any unsafe or unhealthful condition and, as necessary, to stop Work until appropriate corrective measures have been completed, attend required meetings, be fully cognizant of all Project-specific safety practices, processes, rules and procedures, and maintain regular contact with Authority-designated safety personnel.

- B. The Contractor's Safety Representative shall have no other duties unless those duties are specified elsewhere or approved by the Authority. The Safety Representative shall not be utilized in any other Authority Contract or any other project without prior written consent from the Authority.
- C. The Contractor's Safety Representative shall be responsible for overseeing safety procedures for Work performed around active tracks and shall be qualified under the Employee-in-Charge (EIC) part of the SCRRA Roadway Worker Protection training before any Work begins.
- D. At NTP, or the project kick-off meeting, the Authority shall provide contact numbers for all entities to be contacted in case of emergency. This will include the Metrolink Chief Dispatcher, the Metrolink Sheriff's Dispatcher, Metrolink signal emergencies and grade crossing problems, Metrolink signal and communications cable locations, and required Authority notifications.

1.6 ROADWAY WORKERS

- A. Before starting Work on Authority property, all Contractor or Subcontractor personnel working within Authority right of way must be qualified, trained, and currently certified under SCRRA's Roadway Worker Protection (RWP).
 - 1. Required training and testing of personnel to be qualified under RWP shall be conducted by SCRRA. All training for Contractor personnel shall be renewed annually.
 - 2. The Contractor shall reproduce, and distribute to each employee during the training session, the SCRRA *Roadway Worker Policy Manual*.

1.7 CONSTRUCTION AND SAFETY EQUIPMENT

- A. The Contractor shall conform to requirements of the Authority, SCRRA, CalOSHA, CPUC, and to applicable codes and regulations of Federal, State, and local authorities having jurisdiction over job-site safety including compliance with the safety standards of the FRA for roadway worker protection per 49 CFR, Part 214, Railroad Workplace Safety. The Contractor shall provide and maintain such lights, protective devices, barricades, Type K railing, changeable message signs (CMS), and warning signs as are necessary for the safety of personnel and the public, or as otherwise required by OCTA. The Contractor shall be solely responsible for the timely erection, maintenance, repair, replacement, and removal of such safeguards, without necessity of receiving specific instructions from OCTA, or any other authority having jurisdiction.
- B. As identified in the IIPP, the Contractor shall provide job specific fall protection from hazards such as: skylights (at any angle), floor and wall openings, leading edges, and steel erection. Methods of protection may include: fixed systems (guardrails, covers, nets, etc.) and personal fall arrest systems.
- C. All equipment, tools and or other items used to complete the Work shall be inspected by the Contractor to ensure compliance with applicable regulatory standards. Equipment shall be used in accordance with the respective manufacturer's design, directions, and intended use.

1.8 TESTING EQUIPMENT

Testing equipment, as applicable to Work Site safety, shall conform to the requirements of the California Code of Regulations, Title 8, Division of Industrial Safety, unless indicated otherwise.

1.9 IDENTIFICATION OF CONTRACTOR/SUBCONTRACTOR PERSONNEL

- A. All construction personnel Contractor personnel shall be identified with the employee's company name or logo affixed to the employee's hardhat, identification badge, or other identification acceptable to SCRRA. All Contractor personnel shall wear hard hats affixed with the SCRRA Roadway Worker Protection trained sticker, denoting current certification. Failure to comply will result in revocation of employee's permission to access Work Site.
- B. Contractor personnel shall wear hard hats, orange safety vests or orange T-shirts with reflective strips, safety glasses, and safety shoes at all times while on the Project.

1.10 CLEARANCE REQUIREMENTS

During operations adjacent to live track, all Work within 25 feet of the live track, within 50 feet of any main track switch or as directed by the EIC must be stopped when trains are approaching and equipment and employees moved to a safe distance from the tracks unless otherwise approved. All Contractor equipment within the Authority Right of Way will stop Work when trains are approaching.