

TP ATTACHMENT 4-1 – WORK BREAKDOWN STRUCTURE

The following Work Breakdown Structure (WBS) must be the basis for organizing all Work under the Contract Documents and must be used to structure the Baseline Schedule and other cost control systems, including the payment progress process.

Match the WBS to the level structure as noted in Table A4-1, which represents the minimum levels of the WBS that all cost and schedule information must rollup to. Provide further detail where noted based on Design-Builder's plans for execution and as necessary for the schedule of values for payment requests.

**TABLE A4-1
WBS REQUIREMENTS**

1. SR-91 CIP
 - 1.1 Project Management
 - 1.1.1. Administration
 - 1.1.1.1. Project Management
 - 1.1.1.2. Quality Program
 - 1.1.1.3. Health and Safety Program
 - 1.1.2. Environmental Management Program
 - 1.1.3. Public Outreach
 - 1.1.4. Bonding and Finance
 - 1.1.5. Permits
 - 1.1.5.1. (By all necessary permits, Governmental Approvals, or agreements)
 - 1.1.6. (Additional subsections as determined by Design-Builder w/ RCTC concurrence)
 - 1.2. Design
 - 1.2.1. Environmental
 - 1.2.1.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.2.2. Railroad
 - 1.2.2.1. BNSF
 - 1.2.3. Roadway
 - 1.2.3.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.2.4. Drainage
 - 1.2.4.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.2.5. Geotechnical
 - 1.2.5.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.2.6. Structures
 - 1.2.6.1. Bridges
 - 1.2.6.1.1. (By Bridge No.)
 - 1.2.6.2. Retaining Wall
 - 1.2.6.2.1. (by Retaining Wall No)
 - 1.2.6.3. Noise Walls
 - 1.2.6.3.1. (by Noise Wall No)
 - 1.2.6.4. Miscellaneous Structures
 - 1.2.6.4.1. (by Miscellaneous Structure No)

- 1.2.7. Traffic
 - 1.2.7.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.2.7.1.1. Signing
 - 1.2.7.1.2. Traffic Signal Systems
 - 1.2.7.1.3. Roadway Illumination
 - 1.2.8. Transportation Management Systems
 - 1.2.8.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.2.9. Land Survey
 - 1.2.9.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.2.10. Maintenance of Traffic
 - 1.2.10.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.2.11. Toll Infrastructure
 - 1.2.11.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.2.12. Aesthetics and Landscaping
 - 1.2.12.1. Aesthetic and Landscape Concept Development
 - 1.2.12.2. (By subsections determined by Design-Builder w/ RCTC concurrence)
- 1.3. Property Acquisition
 - 1.3.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.3.2. (By Parcel No.)
 - 1.3.3. Additional Properties
 - 1.3.4. Parcel Close-out
- 1.4. Utility Relocation
 - 1.4.1. City of Corona
 - 1.4.1.1. Sewer
 - 1.4.1.2. Water
 - 1.4.2. (by Other Utility Owner)
 - 1.4.2.1. Negotiate Agreements
 - 1.4.2.2. Locate Existing Utilities
 - 1.4.2.3. Prepare Utility Assembly
 - 1.4.2.4. Construct Utility Adjustment
- 1.5. Construction
 - 1.5.1. Mobilization
 - 1.5.2. Railroad
 - 1.5.2.1. BNSF
 - 1.5.2.1.1. Bridges
 - 1.5.2.1.2. Trackwork
 - 1.5.3. Roadway
 - 1.5.3.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.5.3.1.1. Cross Streets and Local Roads
 - 1.5.3.1.1.1. Erosion Control
 - 1.5.3.1.1.2. Earthwork
 - 1.5.3.1.1.3. Pavement and Pvmt. Markings
 - 1.5.3.1.1.4. Other Rdwy Appurtenances (Barriers, Guardrail, Impact Attenuators)
 - 1.5.3.1.1.5. Fencing

- 1.5.3.1.2. Mainlines and Ramps
 - 1.5.3.1.2.1. Erosion Control
 - 1.5.3.1.2.2. Earthwork
 - 1.5.3.1.2.3. Pavement and Pvm. Markings
 - 1.5.3.1.2.4. Other Rdwy Appurtenances (Barriers, Guardrail, Impact Attenuators)
- 1.5.3.1.3. Managed Toll Lanes
 - 1.5.3.1.3.1. Erosion Control
 - 1.5.3.1.3.2. Earthwork
 - 1.5.3.1.3.3. Pavement and Pvm. Markings (Including Pavement Rehabilitation Work)
 - 1.5.3.1.3.4. Other Rdwy Appurtenances (Barriers, Guardrail, Impact Attenuators)
- 1.5.4. Drainage
 - 1.5.4.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.5.4.1.1. Cross Culverts
 - 1.5.4.1.1.1. (by location)
 - 1.5.4.1.2. Local Roads
 - 1.5.4.1.2.1. Trunkline
 - 1.5.4.1.2.2. Inlets and Laterals
 - 1.5.4.1.3. Mainlanes, Managed Toll Lanes, and Ramps
 - 1.5.4.1.3.1. Trunkline
 - 1.5.4.1.3.2. Inlets and Laterals
 - 1.5.4.1.4. Cross Streets
 - 1.5.4.1.4.1. (by Street)
 - 1.5.5. Structures
 - 1.5.5.1. Bridges
 - 1.5.5.1.1. (By Bridge No.)
 - 1.5.5.1.1.1. Foundations
 - 1.5.5.1.1.2. Substructure
 - 1.5.5.1.1.3. Superstructure
 - 1.5.5.1.1.4. Finishes
 - 1.5.5.1.1.5. Seismic Monitoring (Where required)
 - 1.5.5.2. Retaining Walls
 - 1.5.5.2.1. (By Retaining Wall No.)
 - 1.5.5.3. Noise Walls
 - 1.5.5.3.1. (By Noise Wall No.)
 - 1.5.5.4. Miscellaneous Structures
 - 1.5.5.4.1. (By Miscellaneous Structure No.)
 - 1.5.6. Traffic
 - 1.5.6.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.5.6.1.1. Sign and Sign Support Structures
 - 1.5.6.1.2. Traffic Signal Systems
 - 1.5.6.1.2.1. (by location)
 - 1.5.6.1.3. Roadway Illumination
 - 1.5.6.1.3.1. Mainlines and Ramps
 - 1.5.6.1.3.2. Local Roads
 - 1.5.6.1.3.3. Cross Streets
 - 1.5.6.1.3.3.1. (by Crossing Street)
 - 1.5.7. Transportation Management Systems

- 1.5.7.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.5.7.1.1. Conduits
 - 1.5.7.1.2. CCTV
 - 1.5.7.1.3. Vehicle Detection
 - 1.5.7.1.4. DMS
 - 1.5.7.1.5. Lane Control Signals
- 1.5.8. Maintenance of Traffic
 - 1.5.8.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.5.8.1.1. Traffic Mgmt. Strategy
 - 1.5.8.1.2. Traffic Control
 - 1.5.8.1.3. Temporary Detours
- 1.5.9. ETTM Infrastructure
 - 1.5.9.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.5.9.1.1. ETTM Changeable Message Signs (CMSs)
 - 1.5.9.1.2. Cameras
 - 1.5.9.1.3. ETTM Communications Conduit Network
 - 1.5.9.1.4. Tolling Zone
 - 1.5.9.1.5. Toll Utility Building (TUB)
- 1.5.10. Aesthetics and Landscaping
 - 1.5.10.1. (By subsections determined by Design-Builder w/ RCTC concurrence)
 - 1.5.10.1.1. Trees & Shrubs
 - 1.5.10.1.2. Seeding & Sodding
 - 1.5.10.1.3. Plants and Ground Cover
 - 1.5.10.1.4. Hardscapes
 - 1.5.10.2. Plant Establishment Period