

Administration

The Contractor has the responsibility for management and performance of the Work. ~~CDOT shall have the right to visit the Site and observe the Work for the purposes of determining whether the Work is proceeding in conformance with the requirements of the Contract Documents. CDOT will perform all Quality Assurance testing and Verification on the project.~~

Scope Management

Work Breakdown Structure (WBS)

The Contractor shall submit to CDOT an ~~Preliminary Baseline Initial~~ Schedule for Acceptance, including a detailed, organized hierarchical division of the Work Breakdown Structure (WBS) for completing each element of the Work.

The following ~~Table, (Work Breakdown Structure) list~~ represents ~~Levels I-VI~~, the minimum levels of the WBS that all cost and schedule information shall roll-up ~~to~~. However, further detail may be provided by the Contractor ~~for Levels V and VI~~ to ensure a clear understanding of the Contract. The Contractor shall submit its ~~Preliminary Baseline Initial~~ Schedule broken down to the WBS ~~level V~~ Activities and proposed Work segments.

The Accepted WBS shall be the basis for organizing all Work under the Contract, and shall be used to structure the Contract Schedules, and other cost control systems.

The WBS Breakdown of Design and Construction Components shall ~~conform to the following levels include:~~

Field Office (Special)

Field Laboratory (Class 2)

Sanitary Facility

Mobilization

Highway Design and Construction

Roadway Design

Stormwater Design

Culverts

Removals

Utilities

Earthwork

Geotechnical and Roadway Pavements

Guardrail

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- Signing, Pavement Marking, Lighting, and ITS
- Maintenance of Traffic
- Water Quality / Environmental Management
- Public Information
- Bridge Design and Construction
- Removals
- Bridge Design
- Bridges (substructure and superstructure)
- Contract Modification Orders

The Contractor shall prepare and submit to CDOT the following CPM schedules with appropriate Methods Statements as described later in this section:

- Initial Schedule
- Project Schedule
- Monthly Progress Schedule

Each of the CPM schedules shall be cost loaded for the WBS provided above.

Allocation of Contract Price

Contractor shall allocate the Contract Price among the WBS Activities such that all roadway activities and each structure have a price allocation that accurately indicates the cost of each activity. Actual monthly payments to Contractor shall be based on the determination of physical progress considering labor, materials equipment resources utilized, design hours, or other physical units acceptable to the CDOT Project Engineer. Such progress payments to the Contractor shall be able to be computed accurately from the updates of the WBS schedule. The Contractor's allocation of the Contract Price shall be approved by the CDOT Project Engineer. Each of the activities shall be allocated a cost and a physical unit that will allow objective determination of activity completion. The cost of Traffic Control, Water Quality / Environmental Management, and Public Information will be paid by straight line calculation through the life of the project. The cost of Public Information shall not exceed 2 percent of the Contract Price. The cost of Mobilization shall not exceed 5 percent of the Contract Price.

Requests for unbalanced costs will be rejected if the Department determines that any of the allocated costs are materially unbalanced to the potential detriment of the Department. Unbalanced costs are defined in subsection 102.07 of the Standard Specifications for Road and Bridge Construction.

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Work Activities

The WBS breakdown shall show the work activities broken down to level four by the Contractor for roadway activities and by structure location into enough subcomponents to accurately track production on the project. Monthly payment to the Contractor shall be based on the percent completed with dollar value attached for each of the WBS work activities, as a percentage of the Contract Price. The project is level one, the WBS Breakdown of Design and Construction Components are level two, roadway components and structures are level three, and work activities are level four.

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Methods Statement

A Methods Statement shall be prepared for each of the level four work activities listed in the schedule, for any critical path items in the schedule, and for any feature not listed in the schedule that the Contractor considers a controlling factor for timely completion. The Methods Statement shall be completed in accordance with subsection 108.03 of the Standard Specifications for Road and Bridge Construction.

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Cost Management

Progress Payment Calculations

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CDOT will base progress payments on a mutually agreed estimate of percent complete of the work not on measured quantities. The Contractor shall progress the activities identified on the Project Schedule for determining the Monthly Progress Schedule. The accepted Monthly Progress Schedule will determine the amount of the Contractor's progress payments, based on the work activities identified by the Contractor. Percent complete shall be calculated using project scheduling software meeting the requirements of this section, where progress is measured based on physical percent of work that is complete considering labor, materials, equipment resources used, design hours, or other physical units acceptable to CDOT. Such progress payments to the Contractor shall be able to be computed accurately from the updates of the WBS schedule.

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Partial payment for stored materials shall only be made per subsection 109.07 of the Standard Specifications for Road and Bridge Construction.

The Contractor's invoice shall not include a request for payment for documented nonconforming work. The payment to the Contractor will be the amount shown on the Contractor's approved invoice as modified for appropriate price reductions for nonconforming work, if any, retainage, incentive/disincentive payments, and any deductions.

Invoice Submittals

The Contractor shall submit invoices to CDOT each month for review within three Working Days following prior month's end. Each monthly invoice shall be submitted in draft form for review in a Progress Status Meeting on a date mutually agreeable to the Contractor and CDOT. Draft monthly invoice submittals shall be transmitted with at least one paper copy and one electronic copy.

The Contractor shall submit to CDOT for Approval a final monthly invoice within five Days after each Progress Status Meeting, as defined below. Final invoice submittals shall include one paper copy and one electronic copy.

Invoice Documents

The invoice documents shall include:

1. Invoice Cover Sheet.

The cover sheet shall indicate the following information:

- A. Project number and title.
- B. Invoice number (numbered consecutively starting with "1").
- C. Period covered by the invoice (specific calendar dates).
- D. Total earned to date for the Project as a whole and for each Work activity. The breakdown is required because retainage will be calculated and withheld on each work segment, and partially released upon achievement of completion of each Work segment.
- E. Date that invoice was signed.

2. Updated Monthly Progress Schedule.

No invoice shall be approved nor payment made if there is not a current Accepted Monthly Progress Schedule in place. The status date of the Monthly Progress Schedule, coinciding with the payment invoice date, is the last date of each month. The data date for use in calculating the monthly progress schedule shall be the first Calendar Day of the following month.

The Contractor shall make all corrections to the Monthly Progress Schedule requested by CDOT and resubmit the Monthly Progress Schedule within seven Days. If the Contractor does not agree with the CDOT comments, the Contractor shall provide written notice of disagreement within seven Days from the receipt of the comments. If necessary, the item(s) in disagreement shall be resolved in a meeting held for that purpose.

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3. Job Progress Narrative Report in accordance with Section 108.03(c)(3) of the Standard Specifications for Road and Bridge Construction.

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No invoice will be reviewed or processed until all invoice documents are received by CDOT.

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Progress Status Meetings

A Progress Status Meeting shall be conducted each time a draft monthly invoice submittal is made. The meeting shall be used to verify, address and finalize the following:

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1. Actual start dates.
2. Actual and planned Completion Deadlines.
3. Earned value of Work that has been accepted in-place.
4. Activity percent complete.
5. Incorporation of approved Change Orders.
6. Status of outstanding Nonconforming Work.
7. Completion of Value Engineering Change Proposals, if any.
8. Work performance.
9. Job Progress Narrative Report (Section 108.03(c)(3) of the Standard Specifications for Road and Bridge Construction).
10. Critical Path(s).

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Following the Progress Status Meeting, and upon approval of the final monthly invoice, payment shall be Approved within seven Days.

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WBS Activities and Schedule Modifications

When it becomes necessary to add, combine, eliminate, or modify Contract specified WBS Activities to reflect modifications to the Work, such changes shall be Approved by CDOT in accordance with the Contract and consequently reflected in subsequent schedule submittals under the Contract Modification Orders WBS component.

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TABLE

Level I:	DESIGN-BUILD PROGRAM
Program Level – CDOT use only: The summary of all program components	
Level II:	MAJOR PROGRAM ELEMENTS
Major Program Elements:	
□ Price Proposal	
Level III:	CONTRACT COMPONENTS
Design/Build Contract Components: (this is the Contractor's highest level)	
□ Breakdown of Major Components of the Contract:	
• Project Management	
• Utilities	
• Design	
• Geotechnical and Pavements	
• Earthwork	
• Drainage	
• Bridges and Minor Structures	
• Walls	
• Environmental Management	
• Signing, Pavement Marking, Signals, Lighting, ITS	
• Maintenance of Traffic	
• Maintenance During Construction	
Level IV:	CONTRACT SUBCOMPONENTS
Design-Build Contract Subcomponents:	
□ Breakdown of all major subcomponents of the Contract	
□ The Contractor to define certain Activities at this level (work areas)	
□ Basis for Price Proposal	
Level V:	CONTRACT SUBCOMPONENTS AND WORK ACTIVITIES
Breakdown of the Contract Sub-components and Work Activities:	
□ Minor subcomponents (bridge substructures & superstructures, etc.)	
□ The Contractor to define certain Activities at this level (work areas, phases, etc.)	
□ Basis for progress payments	
Schedules – The following GPM schedules shall be cost loaded to this level:	
□ Preliminary Baseline Schedule	
□ Original Baseline Schedule (or Revised Baseline Schedule, if applicable)	
□ Current Baseline Schedule	
□ Monthly Progress Schedule	
□	
Level VI:	WORK SUB-ACTIVITIES

~~Breakdown defined by the Contractor:~~

~~□ The Contractor to define all Activities at this level~~

~~Schedules – No specific Contract schedules are required at this level.~~

~~However, level VI Activities are required as a component of the Monthly Progress Schedule.~~

Cost Management

Progress Payment Calculations

~~CDOT will base progress payments on a mutually agreed estimate of percent complete of the Work, not on measured quantities. The Contractor shall progress the Activities identified on the Approved Original Baseline Schedule, the Current Baseline Schedule or the Approved Revised Baseline Schedule, if applicable, for determining the Monthly Progress Schedule. The Accepted Monthly Progress Schedule will determine the amount of the Contractor's progress payments. Percent complete shall be calculated using project scheduling software meeting the requirements of this section, where progress is measured based on percent complete/Days remaining.~~

~~Partial payment for stored materials shall only be made as allowed in the Contract. The Contractor's invoice shall not include a request for payment for Nonconforming Work documented by the Contractor's Quality Manager or CDOT.~~

~~The payment to the Contractor will be in the amount shown on the Contractor's Approved invoice less retainage and any deductions.~~

Invoice Submittals

~~The Contractor shall submit invoices to CDOT each month. Each monthly invoice shall be submitted in draft form for review within three Working Days following prior month's end. Draft invoice submittals shall include one paper copy (color) and one electronic copy (CD).~~

~~The Contractor shall submit to CDOT for Approval each final monthly invoice within three Working Days of each progress status meeting. Final invoice submittals shall include one paper copy (color) and one electronic copy (CD).~~

Invoice Content

Invoice Documents

~~The requirements for the supporting documents to be included with the invoice form shall be finalized by the Contractor in consultation with CDOT within twenty Working Days after NTP11. The Contractor shall provide an invoice format in compliance with~~

~~the criteria outlined below. Once the invoice format has been Approved by CDOT, the format shall not change unless subsequently Approved by CDOT.~~

~~The invoice documents shall include:~~

~~1. Invoice Cover Sheet.~~

~~The cover sheet shall indicate the following information:~~

- ~~A. Project number and title.~~
- ~~B. Invoice number (numbered consecutively starting with “1”).~~
- ~~C. Period covered by the invoice (specific calendar dates).~~
- ~~D. Total earned to date for the Project as a whole and for each Work segment. The breakdown is required because retainage will be calculated and withheld on each Work segment, and partially released upon achievement of Segment Completion of each Work segment.~~
- ~~E. Nonconforming Work and amount withheld identified~~
- ~~F. Authorized signature and title of signatory.~~
- ~~G. Date that invoice was signed.~~

~~2. Monthly Progress Report.~~

~~The monthly progress report shall include the following:~~

- ~~A. Brief narrative description of Activity and progress for each Work segment and the Project as a whole, including design and construction. Identify start date and completion dates on Work segment(s), areas, and Activities.~~
- ~~B. Update of progress with respect to Utilities.~~
- ~~C. Identify any Completion Deadlines achieved during the period.~~
- ~~D. Summary of quality program efforts, including result of design reviews.~~
- ~~E. Identify problems/issues that arose during the period and remaining issues to be resolved.~~
- ~~F. Summarize resolution of problems/issues raised in previous monthly progress reports or resolved during the period.~~
- ~~G. Summary of Project accidents (frequency and severity) and corrective actions taken.~~
- ~~H. Identify critical schedule issues and proposed resolution.~~
- ~~I. Discuss schedule variations from Milestone Completion Deadlines that have slipped or improved.~~
- ~~J. Identify requested and/or required CDOT actions for the next period.~~

~~The format and detail level required for submittal of the monthly progress report shall be established by CDOT, in consultation with the Contractor within twenty~~

~~Working Days after NTP11. The monthly progress report shall be on Contractor letterhead in 8-1/2 inch by 11 inch format.~~

~~3. Updated Monthly Progress Schedule.~~

~~No invoice shall be Approved nor payment made if there is not a current Accepted Monthly Progress Schedule and Current Baseline Schedule in place. The status date of the Monthly Progress Schedule, coinciding with the payment invoice date, is the last date of each month. The data date for use in calculating the monthly progress schedule shall be the first Working Day of the following month.~~

~~The Contractor shall make all corrections to the Monthly Progress Schedule requested by CDOT and resubmit the Monthly Progress Schedule. If the Contractor does not agree with CDOT's comments, the Contractor shall provide written notice of disagreement within five Working Days from the receipt of the comments. The items in disagreement shall be resolved in a meeting held for that purpose, if necessary.~~

~~4. Certification by Contractor's Quality Manager.~~

~~The Contractor shall submit a certificate signed by its quality manager certifying that:~~

- ~~A. All Contract Work, including that of designers, Subcontractors, Suppliers, and fabricators has been checked and/or inspected by the Contractor's quality program staff and that all Work, except as specifically noted in the certification, conforms to the requirements of the Contract Documents.~~
- ~~B. The Quality Control Document, and all of the measures and procedures provided therein, are functioning properly and are being followed.~~

~~No invoice will be reviewed or processed until all invoice documents are received by CDOT.~~

Progress Status Meetings

The Contractor shall schedule and hold a progress status meeting approximately eight Working Days following prior month's end or five Working Days after the receipt of the draft payment submittal, whichever occurs earliest. The progress status meeting shall address and finalize the following:

- ~~1. Actual start dates.~~
- ~~2. Actual and planned Completion Deadlines.~~

- ~~3. Earned value of Work that has been Accepted and reported in-place, based on installed quantities and stored materials.~~
- ~~4. Activity percent complete.~~
- ~~5. Incorporation of Approved Change Orders.~~
- ~~6. Verification of Unit Price items, if any.~~
- ~~7. Interest incurred.~~
- ~~8. Status of outstanding Nonconforming Work and Warranties.~~
- ~~9. Completion of Value Engineering Change Proposals.~~
- ~~10. Work performance.~~
- ~~11. Critical Path(s) and analysis of potential performance areas.~~

~~Following the progress status meeting, and upon Approval of the final monthly invoice, payment shall be issued within seven Working Days.~~

Schedule Management

General

~~The Work specified in this subsection includes preparing, progressing, revising, and submitting of Contract Schedules.~~

~~The Contract Schedules shall represent a practical plan to complete the Work within the Completion Deadlines and convey the intent in the manner of the prosecution and progress of the Work.~~

~~The Contract Schedules shall include the planned execution of the Work in accordance with the Contract Documents. The Contract Schedules shall include involvement and coordination with other contractors, Utility Owners, Governmental Persons, engineers, architects, Subcontractors, and suppliers in the development of the Original Baseline Schedule, Revised Baseline Schedule, and updating of subsequent Monthly Progress Schedules.~~

~~The Contract Schedules shall represent the requirements of the Contract Documents and the Work shall be executed in the sequence and duration indicated in the Contract Schedules.~~

~~All Contract Schedule submittals are subject to review, Acceptance and/or Approval by CDOT.~~

~~All Contract Schedules shall be developed consistent with the Accepted WBS and the Completion Deadlines.~~

Schedule ~~and Term~~ Definitions

Contract Schedules

Contract Schedules shall include the ~~Preliminary Baseline Initial~~ Schedule, ~~Original Baseline Project~~ Schedule, ~~Current Baseline Schedule, Revised Baseline Schedule,~~ and Monthly Progress Schedule. ~~These schedules are defined below or in the Project Special Provision, Revision to Section 108, Project Schedule, later in this section., Recovery Schedule, and the As-Built Schedule.~~

1. ~~Preliminary Baseline Initial~~ Schedule

~~The Preliminary Baseline Schedule is defined as the initial Project schedule for the purpose of initiating Work on the Project. It shall be a GPM schedule with Activity detail for the first three months following NTP1 and shall be cost loaded to WBS Level V. The Preliminary Baseline Schedule shall conform to the Accepted WBS and include all Contractor defined WBS Level IV and V Activities. See Project Special Provision, Revision to Section 108, Project Schedule, later in this section.~~

2. ~~Original Baseline Project~~ Schedule

~~The Original Baseline Schedule is defined as the Contractor's original plan for the Project from NTP1 through Final Acceptance. It shall be a detailed GPM schedule with Work Activities and Completion Deadlines included for the full term of the Project. The Original Baseline Schedule shall be developed from the Preliminary Baseline Schedule and shall conform to the Accepted WBS and include all Contractor defined WBS Level IV and V Activities. The Original Baseline Schedule shall not change after Approval. The Original Baseline Schedule shall be cost loaded to WBS Level V and when summarized for the aggregate costs of WBS Level V Activities, shall equal the WBS Level IV prices set forth in the Proposal Documents. See Project Special Provision, Revision to Section 108, Project Schedule, later in this section.~~

3. ~~Current Baseline Schedule~~

~~The Current Baseline Schedule is defined as the Original Baseline Schedule with cost and schedule changes from Approved Change Orders and Work Orders~~

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~~incorporated. It shall be updated monthly with only Approved cost and schedule changes. This schedule will not show progress but shall maintain the original data date from the Original baseline Schedule as a baseline. The Current Baseline Schedule shall be submitted to CDOT for Acceptance with each monthly invoice.~~

~~The Current Baseline Schedule shall be cost loaded to WBS Level V and when summarized for the aggregate costs of WBS Level V Activities, shall equal the WBS Level IV prices set forth in the Proposal Documents and Approved Change Orders.~~

~~4. Revised Baseline Schedule~~

~~The Revised Baseline Schedule is defined as the Contractor's plan for the Project which is current with progress to date. This schedule shall reflect the planned execution of the Work for the remainder of the Project along with a respread of the remaining resources and quantities to represent the estimate to complete. The Revised Baseline Schedule shall include all Approved Change Orders, Work Orders, and Completion Deadlines. A Revised Baseline Schedule must be Approved by CDOT; such Approval shall only apply to the scheduled Work that is planned after the schedule's data date.~~

~~The Revised Baseline Schedule shall be prepared by the Contractor when requested by CDOT. The Contractor may request that CDOT review a Revised Baseline Schedule at any time. However, such review will be undertaken if CDOT agrees with the need for that review.~~

~~The Revised Baseline Schedule shall be cost loaded to WBS Level V and when summarized for the aggregate costs of WBS Level V Activities, shall equal the WBS Level IV prices set forth in the Proposal Documents and Approved Change Orders.~~

~~5.3. Monthly Progress Schedule~~

~~The Approved Original Baseline Project Schedule, ~~Current Baseline Schedule or the Revised Baseline Schedule if one has been Approved,~~ shall be used as the basis to establish the Monthly Progress Schedule. It shall be updated every month to show the actual progress of Work and the earned value of Work accomplished, including Approved Change Orders and Work Orders.~~

The Monthly Progress Schedule shall be cost loaded to WBS Level V and when summarized for the aggregate costs of WBS Level V Activities, shall equal the WBS Level IV prices set forth in the Proposal Documents and Approved Change Orders. In addition, The Monthly Progress Schedule shall include WBS Level VI

detail for the upcoming three months of design and construction on the Project, except that cost loading to WBS Level VI is not required for the three month look-ahead.

~~6. Float~~

~~Float is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date, for each and every Activity in the schedule. Float shall be for the benefit of all parties to the Contract and not for the exclusive benefit of the Contractor. Suppression or consumption of Float by extended Activity duration, dummy Activities, or preferential sequencing shall not be allowed. Critical Activities shall be defined as Activities with a total Float less than ten Days.~~

Schedule ~~and Software~~ Requirements

~~1. Scheduling Software~~

~~Scheduling software shall be in conformance with Section 108.03(c) of the 2011 Standard Specifications for Road and Bridge Construction.~~

~~2. General Scheduling Constraints~~

- ~~A. All Contract Schedules shall be in the same master data file, including: design, submittals, procurement, and construction schedules. These Work Activity schedules shall all tie together logically to present a total Critical Path analysis in the same master data file.~~
- ~~B. The only constraints allowed to be included in the schedule are the Contract Deadlines. No intermediate completion constraints or start constraints shall be allowed unless they are included in the Contract. Unless Approved by CDOT, all Activities must have at least one predecessor and one successor, except for NTP11 (no predecessor) and Project Acceptance (no successor).~~
- ~~C. All Activities that start or complete out of sequence shall be re-scheduled (logic corrected) to reflect the actual sequence of events.~~
- ~~D. Actual start and completion dates shall be accurately input. Prior to changing or correcting any previous actual dates identified in the Contract schedules, a narrative shall be written to CDOT requesting Approval to change such a date.~~
- ~~E. If any logic is changed after the Approval of the Original Baseline Schedule or Revised Baseline Schedule, if one exists, a narrative by Activity code shall accompany the Monthly Progress Schedule stating the reason the logic changed and the benefit to CDOT. If CDOT does not~~

~~agree with the reason for the logic change, the Monthly Progress Schedule will not be Accepted.~~

~~F. All Activity identification codes for a specific Activity description created in any Contract Schedule shall remain unchanged and connected to its original Activity description through Final Acceptance. An Activity description may only be changed to clarify an Activity's original scope.~~

~~3.1. CPM Requirements~~

~~A. The critical path shall be determined according to CPM principles and shall be highlighted in RED on all schedules to distinguish critical Activities from other Activities. A diamond, flag, or other symbol shall highlight milestones.~~

~~A.~~

~~B. The CPM shall have all major procurement Activities identified for any item with more than 90 days lead time for delivery. This shall include shop drawing submittal and approval, lead times for the fabrication and delivery of materials and equipment, and installation of materials and equipment.~~

~~C. The CPM shall be sufficiently detailed to accurately depict all the Work. Activity durations shall be an estimate in Working Days of the time required to perform each Activity. No individual Activity will have a duration exceeding 30 Working Days. Activities with durations of less than five Working Days shall be held to the absolute minimum. For an equipment or material fabrication item whose duration exceeds 30 Working Days, several Activities, none exceeding 30 Working Days, shall be used. Each Activity shall have a detailed description.~~

~~D. Contract Completion Deadline dates shall be shown on the CPM. These dates shall be input as finish constraint dates and shall agree with such dates specified in the Contract.~~

~~4. Schedule Output Format~~

~~The Contractor shall submit Contract Schedules, charts, and graphs in Adobe PDF format on CD along with the monthly progress reports. Contract Schedules shall also be submitted on printouts on 11-inch by 17-inch color, landscape format unless otherwise required herein or as requested by CDOT.~~

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Execution

~~**WBS Activities and Schedule Modifications**~~

~~When it becomes necessary to add, combine, eliminate or modify Contract specified WBS Level IV or V Activities to reflect modifications to the Work, such changes shall be made through a Change Order that has been Approved by CDOT in accordance with the Contract and consequently reflected in subsequent schedule submittals. Alternately, if a proposed addition, combination, elimination, or modification of WBS Level IV or V Activities would not be the subject of a Change Order, then the consequent realignment of funds between Level V schedule Activities may be Approved by CDOT in accordance with the Contract and thereafter reflected in the required schedule submittals.~~

~~**Preliminary Baseline Schedule**~~

~~The Contractor shall submit the Preliminary Baseline Schedule to CDOT for Acceptance within fifteen Working Days following NTP1. The Preliminary Baseline Schedule shall be in accordance with the Contract requirements at the time of the NTP1, consistent with the Accepted WBS, and be cost loaded to WBS Level V Activities for the first six months following NTP1. The breakdown of Activities to WBS Level V shall be in accordance with the Accepted WBS and include Contractor defined detail necessary to provide measurable schedule progress. The Accepted Preliminary Baseline Schedule shall provide an intermediate schedule during the production of the Original Baseline Schedule and shall establish a payment schedule for the first six months following NTP1.~~

~~**Original Baseline Schedule**~~

~~The Original Baseline Schedule shall show the sequence and interdependence of Activities required for complete performance of the Work beginning with the date of NTP1, and concluding with the date of Final Acceptance and shall comply with the following:~~

- ~~1. The actual number of Activities in the schedule shall be sufficient to assure adequate planning of the Work and to permit monitoring and evaluation of progress and the analysis of time impacts. Activity durations shall be expressed in Working Days. The Work calendar shall clearly identify Holidays and other non-Working Days as well as special events as described herein.~~
- ~~2. The Contractor shall schedule deliverables made for review by CDOT in a manner that distributes reviews across time to minimize concentration of review work in any one discipline.~~

- ~~3. Provide a graphic representation of all Activities necessary to complete the Work.~~
- ~~4. Identify all Work Activities that are critical in ensuring the timely achievement of Completion Deadlines.~~
- ~~5. Identify all associated dates with respect to the work of other project contractors that are critical in ensuring the timely, orderly, and efficient completion of the Work.~~
- ~~6. Identify all Completion Deadlines set forth in the Contract.~~

~~Not later than 90 Days after issuance of NTP1, the Contractor shall submit to CDOT for Approval the final Original Baseline Schedule. Once Approved, this schedule shall become the Original Baseline Schedule against which all progress and revisions shall be measured.~~

~~The Original Baseline Schedule will be reviewed by CDOT for purposes of determining:~~

- ~~1. Compliance with applicable provisions of the Contract Documents; and~~
- ~~2. The logic of the proposed CPM Schedule is sound and consistently developed and demonstrates a logical sequencing and interdependence of Activities required for the timely and orderly achievement of all Work Activities and Milestones and segments, including completion of the Work within the Completion Deadlines.~~

~~Upon Approval by CDOT, the Original Baseline Schedule shall be employed as the basis for the Monthly Progress Schedule by the Contractor in its scheduling and performance of the Work.~~

Monthly Progress Schedule

The Monthly Progress Schedule shall be submitted each month to CDOT for Acceptance, concurrent with the invoice submittal as required herein. The Monthly Progress Schedule shall include all information current as of the status date.

For the three month look-ahead portion of the Monthly Progress Schedule which establishes the WBS Level VI Activities, the Contractor shall provide sufficient detail to convey a schedule that provides weekly schedule control and shall specifically identify:

1. Completion Deadlines, if any, phasing of design, construction, testing, and staging of the Work as specified shall be prominently identified. Particular attention shall be given to release for construction dates, site availability,

construction staging, and maintenance and protection of traffic requirements of the Contract.

2. Procurement, fabrication, preparation of mock-ups and prototypes, delivery, installation, and testing of materials and equipment, including factory testing and demonstration testing, and any long lead time (over 90 Days) orders for material and equipment.
3. Interface coordination and dependencies with proceeding, concurrent, and follow on contractors.
4. Work to be performed by other contractors and agencies that may affect the schedule.

Prior to the progress status meeting, the Contractor shall obtain from the design team, Subcontractors, suppliers, and field staff the necessary information as required to accurately reflect progress to date.

Document Management

The Contractor shall establish and maintain its own Document Control System (DCS) to store and record the large quantity of correspondence, drawings, progress reports, technical reports, specifications, Contract Documents, deliverables, calculations, and administrative documents generated under the Contract. Document Control, storage, and retrieval methods shall include the use of both hard copies and electronic records. The Contractor's DCS shall handle all Project documents.

All correspondence of the Contractor to and from CDOT and its representatives with respect to the Contract shall be serialized, and the Contractor shall maintain separate incoming and outgoing correspondence logs. At a minimum, a serialization similar to the following is required:

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by CDOT personnel, the Contractor shall replace the facilities within seven Days, except that CDOT shall be responsible for costs incurred.

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The Contractor shall provide:

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1 Each Field Office Class (Special)

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1 Each Field Laboratory Class 2

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2 Each Sanitary Facilities for CDOT staff use next to the field office and field laboratory.

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All field facilities shall conform to CDOT Standard Specifications and Standard Plans in effect at the time of bidding.

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Design-Build Field Office

The Contractor shall provide a field office as defined in Project Special Provision, Revision to Section 620, Field Facilities provided later in this section, class 2, as per CDOT M&S Standards, at a locations to be determined by the Contractor and Accepted by CDOT. The field office shall have a minimum of ~~twelve~~ parking spaces, all contained within the security fence or approved equivalent.

Design-Build Field Laboratory

The Contractor shall provide a field laboratory, class 2, as per CDOT M&S Standards, at a locations to be determined by the Contractor and Accepted by CDOT. It shall provide a minimum of four parking spaces per laboratory, all contained within the security fence. The field laboratories shall be provided to CDOT at least ~~fifteen~~ 30 Days Working Days, to allow for lab inspection, calibration and certification, prior to commencement of any field Activities involving earthwork of any type, analysis of mix designs, or planned placement of concrete or HMA.

Computer and Network Requirements

See attached Project Special Provision, Revision of Section 620, Field Facilities.

Additional Requirements

Project Directory

The Contractor shall maintain and furnish to CDOT a project directory listing the names, addresses and telephone (office, home, cellular, facsimile and beeper) numbers of the Key Personnel and critical support staff of the Contractor and each Subcontractor. The

project directory shall be submitted to CDOT within 30 Days following the first NTP1.
The Contractor shall update the Project Directory quarterly for the duration of the Work.

Working Conditions

All Work under this Contract shall comply with the requirements and standards specified by the Williams-Steiger Occupational Safety and Health Act of 1970, 29 U.S.C. §651, et seq., Public Law 91-596, as well as other applicable Federal, State, and local laws. The Contractor shall not require any laborer or mechanic to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to his/her health and safety.

Deliverables

At a minimum, the Contractor shall submit the following to CDOT for review, Approval and/or Acceptance:

Deliverable	Acceptance or Approval	Schedule
Work Breakdown Structure	Acceptance	Within fifteen Working Days following NTP1.
Invoice Format	Approval	Within 20 Days of NTP1.
Draft monthly invoices	Acceptance	Within three Working Days following prior month's end
Final monthly invoices	Approval	Within three Working <u>five</u> Days following progress status meeting
Monthly invoice format changes	Approval	At least fifteen Days prior to first invoice
Preliminary Baseline <u>Initial</u> Schedule	Acceptance	Within fifteen Working Days following NTP1
Original Baseline <u>Project</u> Schedule	Approval	Within 45 Days following NTP1 <u>CDOT Acceptance of Initial Schedule</u>
Current Baseline <u>Schedule</u>	Acceptance	(same as monthly invoices)
Revised Baseline <u>Schedule</u>	Approval	Upon CDOT's or Contactor's request
Monthly Progress Schedule	Acceptance	(same as monthly invoices)
Project directory	(none)	Within 30 Days of NTP1

All deliverables shall also conform to the requirements of Section 3, Quality Management.

REVISION OF SECTION 108
PROJECT SCHEDULE

Section 108 of the Standard Specifications is hereby revised for this project as follows:

Subsection 108.03 shall include the following:

CDOT will review schedule submittals; such review shall not constitute an Approval of the Contractor's construction means, methods, sequencing, or its ability to complete the Work in a timely manner.

Subsection 108.03 (c) delete the first sentence of the second paragraph and replace with the following:

Subsection 108.03(c) shall include the following:

When the Contractor uses Primavera Scheduling software, one licensed copy of the Primavera software shall be provided to CDOT. If other scheduling software is Approved by CDOT, the Contractor shall provide one licensed copy of that software to CDOT. Software shall be installed on the laptop computer to be provided under Project Special Provision, Revision to Section 620, Field Facilities

Subsection 108.03 (c) shall include the following:

Changes in logic and/or durations shall not be made without first providing written notification to CDOT for the Contractor's need to change. Consideration will be given for Contractor changes as they are determined to be reasonable by narrative explanation. Acceptance or rejection of such changes is without liability. Logic or Duration changes to simply accommodate a perception of still being on-schedule will not be Accepted.

A revision of the Schedule may include a Recovery Schedule. At the discretion of CDOT, when the most current Accepted Schedule Update no longer represents the actual prosecution and progress of the work, CDOT shall require a Recovery Schedule. If it is determined that a Recovery Schedule is required, it shall be provided to CDOT for review within 15 calendar days of written notification. The Recovery Schedule shall include the original Contract work and all Approved Change Order work. CDOT's review of the Recovery Schedule will not exceed seven calendar days. Revisions required as a result of CDOT's review shall be submitted within seven calendar days. When Accepted by CDOT in writing, the Recovery Schedule shall become the Project Schedule. All cost related to performing the work in the Recovery Schedule will not be paid for separately, but shall be included in the work. Failure to provide the required schedule information at the required times will result in denial of the relative portion of

progress payments until such time that the schedule information is submitted in the correct format at the sole option of CDOT.

The following requirements have been defined to create consistency across all project schedules for purpose of analysis.

- (1) Dependencies between activities shall be indicated so that it may be established as to the effect the progress of any one activity would have on the Schedule. Dependencies shall make use of Finish-to-Start (FS), Start-to-Start (SS), or Finish-to-Finish logic ties. Use of Start-to-Finish (SF) logic ties shall not be allowed without written justification and Acceptance prior to implementation. Leads or lags will not be used when the creation of an activity will perform the same function (e.g., concrete cure time). Dependencies shall not make use of negative lags. The use of any lead or lag shall require a written explanation by the Contractor in a narrative.
- (2) All activities, except Notice-to-Proceed and Final Completion, are required to have at least one predecessor and one successor.
- (3) Date and time constraints, other than those required by the contract, will not be allowed unless Accepted by CDOT.
- (4) Define at least two (2) calendars for the schedule. Calendar 1 for workdays, is to reflect Saturdays, Sundays, and all Holidays as non-workdays; and that Calendar 2 for calendar days, is to reflect Saturdays, Sundays, and Holidays as workdays.
- (5) The schedule should be broken down into logical areas of work.
- (6) Summary Activities
 - i. The Contractor shall include special activities that are a Summary of a chain of activities. The start of the activity will be the start date of the first activity in the chain and the finish date will be the finish date of the last activity in the chain.
 - ii. Included in the Summary area should be a Summary activity designated as Contract Time. The summary activity shall have Notice-to-Proceed as its predecessor, with a SS 0 relationship; and Contractual Substantial Completion as its successor, with a FF 0 relationship. Calendar 2 shall be used for all Summary activities. The duration of this activity must not exceed the contract time.
 - iii. The purpose of these Summary activities is to provide monitoring of the contract time and Area progress.

(7) Tasks related to the submittal/procurement of material or equipment shall be included as separate activities in the project schedule.

(8) The Contractor's original network diagram submittal shall become the Project Schedule once it is Accepted by CDOT. The Project Schedule shall be duplicated and utilized as the Schedule Update and shown graphically over the Project Schedule.

(9) The following logic relationships will be required in any precedence diagram method used:

i. All logical relationships shall be Finish-to-Start (FS), with the following exceptions:

- at the start or origin, activities may be start to start (SS)
- at a milestone or at the conclusion of the network, activities may be Finish-to-Finish (FF)
- use in Summary activities

ii. Lag factor use should be limited. When used, they should be identified as a functional activity (i.e., concrete curing).

iii. Accepted Schedules shall only contain Contract Required Early Start and/or Early Finish Constraints.

iv. The retained logic mode is required for schedule calculations.

Any deviations / change from these logic specifications require written request to be reviewed for Acceptance from CDOT prior to implementation, to prevent manipulations to give false results.

Use of float suppression techniques, such as preferential sequencing (arranging critical path through activities more susceptible to CDOT caused delay):

- a. Special lead/lag logic restraints,
- b. Zero total or free float constraints,
- c. Imposing constraint dates other than as required by the contract,

shall be cause for rejection of the Project Schedule or its Updates. The use of Resource Leveling or similar software features used for the purpose of artificially adjusting activity durations to consume float and influence the critical path is expressly prohibited.

Definitions of Float (or Slack):

- a. Free Float is the length of time the start of an activity can be delayed without delaying the start of a successor activity.

- b. Total Float is the length of time along a given network path that the actual start and finish of an activity or activities can be delayed without delaying the project completion date.
- c. Project Float is the length of time between the Contractor's Early Completion or Substantial Completion and the Contract Completion Date.
- d. Project Float is for the benefit of the Project and for the mutual use of CDOT and the Contractor.

Negative float will not be a basis for requesting time extensions. Any extension of time will be addressed in accordance with the Section 108.08, Determination and Extension of Contract Time. Scheduled completion dates that extend beyond the contract or phase completion dates (evidenced by negative float) may be used in computation for assessment of payment withholdings. The use of this computation is not to be construed as a means of acceleration.

In Subsection 108.03 (c) delete subsection (1) and replace with the following:

The Initial Schedule is defined as the initial Project schedule for the purpose of initiating Work on the Project. It shall be a CPM schedule with Activity detail for the first six months following NTP1 and shall be cost loaded to WBS Level V. The Initial Schedule shall conform to the Accepted WBS and include all Contractor defined WBS Level IV and V Activities. In addition, the Initial Schedule shall include WBS Level IV Activities that describe the time period after the first six months following NTP1 and through the completion of the Project. The Accepted Initial Schedule shall provide an intermediate schedule during the production of the Project Schedule and shall establish a payment schedule for the first six months following NTP1.

In Subsection 108.03 (c) (2), delete the first and second paragraphs and replace with the following:

The Project Schedule is defined as the Contractor's original plan for the Project from NTP1 through Final Acceptance. It shall be a detailed CPM schedule with Work Activities and Completion Deadlines included for the full term of the Project. The Project Schedule shall be developed from the Initial Schedule and shall conform to the Accepted WBS and include all Contractor defined WBS Level IV and V Activities. The Project Schedule shall not change after Approval. The Project Schedule shall be cost loaded to WBS Level V, and when summarized for the aggregate costs of WBS Level V Activities, shall equal the WBS Level IV prices set forth in the Proposal Documents.

CDOT's review of the Project Schedule will not exceed seven calendar days. Revisions required as a result of CDOT's review shall be submitted within seven calendar days.

Work shall not continue beyond the first three months following NTP1 until the Project Schedule is Accepted in writing, unless otherwise approved by CDOT.

Subsection 108.03 (c) (2) Project Schedule shall include the following:

The schedules shall include all activities required for contract completion. The Project Schedule shall be submitted to CDOT for Acceptance.

- a. Within seven calendar days after receipt of the complete Project Schedule, CDOT will communicate in writing, its comments and concerns to the Contractor. Within seven calendar days, the Contractor shall adjust the Schedule to incorporate comments from CDOT and re-submit.
- b. Upon CDOT receipt and Acceptance of revisions to the Project Schedule, it shall become part of the Contract Documents. Payment to the Contractor shall be withheld until such schedule, satisfactory in form and substance to CDOT, has been Accepted.

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Subsection 108.03 (c) (3) Schedule Updates shall include the following:

A Monthly Progress Schedule shall accompany the monthly Application for Payment, reflecting physical progress since previous month's submittal.

The Contractor shall submit one plotted copy of the Monthly Progress Schedule, at least 24 inches wide and long enough to show the full Time Scaled Logic Diagram, and the following columns: Task ID, Description, Duration, Total Slack, Percent Complete, Early Start and Finish, Late Start and Finish, Actual Start, and Actual Finish dates.

The Schedule Update shall show the actual status of all activities, including those in progress, completed, or not started, by the use of Actual start and Actual finish dates. For all Activities that have a Contractor remaining duration equal to zero days, the Activity shall be shown as 100% complete. Any percentage less than 100% shall have a remaining duration in whole 1 day increments. In addition, Activities having a remaining duration of zero cannot be claimed as less than 100% complete.

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in the CPM scheduling software system. Actual Start and Actual Finish dates on the CPM schedule shall match the dates of actual work accomplished in the field and not on projected completion dates.

Upon Engineer request, the Contractor shall provide a computer generated report using a recognized schedule comparison software listing ALL changes made between the previous schedule and current updated schedule. The report will identify the name of

- Two dry erase writing boards 72 Inch x 48 Inch
- Fire Extinguisher: Two 20# dry chemical

- Water Supply: Drinking water, dispensed from an acceptable cooling device both hot and cold.

- Heating and Air Conditioning: Adequate capacity air conditioning and 100,000 BTU capacity heating, connected to ducting and thermostat controlled. Filters to be supplied and changed by the Contractor.

- Electrical: A minimum of eighteen 4 FT double 40 watt tube fluorescent light fixtures located over desks and conference tables and twenty eight duplex outlets. One duplex outlet will be located in the closet. Circuit breaker box will be located in the closet in a safe, accessible location.

- Network (Ethernet Cat5) Outlets. Twenty eight outlets colocated with the electrical duplex outlets. These outlets will connect CDOT and consultant staff to the High Speed Internet described later in this section.

- Closet: 30 square feet with two shelves (minimum 12 Inch depth) fitted on each wall. The closet shall be equipped with closet light with switch, and duplex outlet(s) for powering the computer networking equipment described later in this section which shall be located in the closet.

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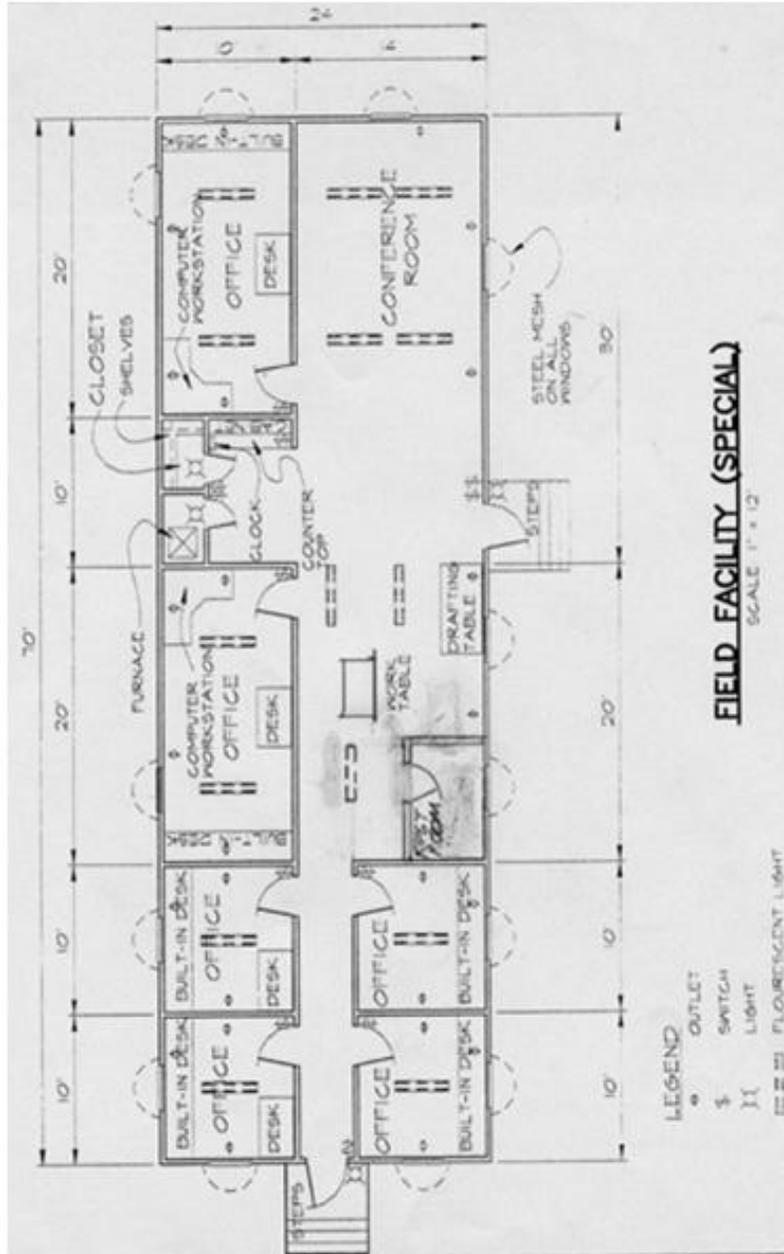
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As an alternative to providing a Field Office (Special) in accordance with this specification, suitable office space may be provided, if approved by CDOT.

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The Contractor shall maintain all furnished equipment in good working condition and shall replace or repair any nonfunctional equipment within five Working Days.

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Electrical Grounding:

Proper grounding is important to protect occupants using computer equipment and phones in the event of electrical storms and also for the protection of the equipment itself.

If the site will have more than onetwo field trailers housing CDOT computers, where one Trailer will serve as the office and the other will serve as the lab, the two trailers will shall set together and share a common electrical ground seand allow computer cabling ean to be installed without spanning driveways.

The field office shall be equipped with a facsimile machine, copy machine, and telephone service and conform to the following:

In subsection 620.02, delete item (1) and replace with following:

Facsimile Machine: The Contractor shall provide all details to CDOT for approval, prior to installation of the facsimile machine. The facsimile machine shall print on plain paper and shall be capable of sending documents of all sizes up to and including 11"x17". It must be able to perform sequential broadcast, polling and delayed transmissions with a minimum ten-page memory. The Contractor shall install and maintain the fax machine in the Engineer's field office. Should the fax machine require repair and be out of service for more than twenty-four hours, a replacement shall be provided and installed by contractor within twenty-four hours. The Contractor shall provide a roll around stand for the fax machine, including a stock of printer paper and toner.

In subsection 620.02, delete item (2) and replace with the following:

The Contractor shall provide a dry, desk top copy machine with a stationary platen, by a reputable manufacturer (such as Canon, Minolta, Panasonic, Ricoh, Toshiba, or equal), as approved by CDOT.

The copy machine shall be capable of making at least 15 copies per minute. Maximum size of original shall be 11" by 17" and a copy paper size shall be 5-1/2" by 8-1/2" to 11" by 17" with standard intermediate sizes and shall have an automated document feeder capable of feeding a stack of up to 25 originals ranging in size from 5-1/2" by 8-1/2 to 11" by 17". The copy machine shall have two standard paper cassettes accommodating paper sizes of 5-1/2" by 8-1/2" to 11" by 17". Each cassette shall accept 250 sheets for a total of 500 sheets of paper capacity. The copy machine shall have a single sheet bypass for manual copying onto special stock not in paper cassettes and shall be capable of using paper sizes of 5-1/2" by 8-1/2" to 11" by 17".

The copy machine shall have an automatic exposure control to automatically control exposure level for each original with a manual light/dark exposure control and shall be capable of copying original documents of both sheets and bound documents. The copy machine shall be capable of making 1 to 99 continuous copies and shall be capable of copying onto light weight paper of 16# or onto heavier paper of 32#. The copy machine shall be capable of zoom magnification/reduction from 70% to 150% in 1% increments. The copy machine shall have sorting capabilities. A plastic dust cover for the copy machine shall be provided.

The Contractor shall provide paper, supplies, parts, and repairs for the copy machine. Additional toner cartridges for the copier shall be provided and replaced by the Contractor as required and directed by CDOT.

The Contractor shall also provide a roll-around stand for the copy machine.

Copy/Fax/Scanner/Network Printer units that create PDF files and rely on connectivity across the CDOT IP network violate CDOT cyber security policies and are not permitted to be installed on the CDOT network.

In subsection 620.02, delete item (3) and replace with the following;

Telephones & Cabling:

Telephone lines shall be of type full business (1FB).

The number of line to be determined by the CDOT project Manager. Three lines shall be provided as described below. In addition, the Contractor shall provide up to ten cellular phones for use by CDOT from NTP1 until 45 calendar days after Final Acceptance.

-Of the setype full business (1FB) lines:

One line will-shall be dedicated for the facsimile machine and is-toeshall be located in the office trailer. If DSL is available, this line will also carry the single High Speed DSL line (see High Speed Internet section below for more information). When ordering the DSL, specify that it is to be located on the fax 1FB.

One line will-shall serve as the office phone and will-shall be located in the field office trailer.

If a Lab trailer exists, one line will-shall serve as the Labfield laboratory phone and shall be located in the lab.

Order phone lines through the Telco provider's (Qwest, CenturyTel, etc.) business office to optimize cost efficiencies with regard to basic, local and long distance plans and charges.

All phones will-shall be speakerphones.

At the discretion of the CDOT project Manager and dependent on the number of phone circuits installed, the type of phones may be of the multi-line type to fully utilize the phone service.

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-Cabling of phones ~~must~~shall be industry standard.

Labeling ~~must~~shall be completed on all wall jacks, ports, and phones with the actual phone numbers. This cabling ~~is to~~shall be performed by the Telco or other certified technicians, past the demark to the wall jacks. The phone wall jacks will be located by ~~CDOT~~the Project Manager.

The Contractor shall be responsible for maintaining all phones and circuits in good operating condition at all times during this project.

2
REVISION OF SECTION 620
FIELD FACILITIES

High Speed Internet:

Note: The contractor shall contact the CDOT Regional Network Analyst (Mike Vencius 719-546-5737) for the most recent specifications of required network equipment (see Network Equipment section below) and of high-speed provider restrictions and limitations.

The contractor shall provide the field location with a high-speed internet connection and equipment. Important note: High Speed Internet access can be difficult to achieve in rural areas. It is strongly recommended that site selection for the trailer be made with consideration of the availability of High Speed Internet access. If none is available, ~~the~~ CDOT ~~project manager will~~shall be notified immediately in case site relocation is necessary.

The preferred type of High Speed Connection shall ~~preferably~~ be T1 or DSL type. The throughput shall be a minimum of 1.5 Mbps download /896 Kbps upload or better speed. IP addressing shall be DHCP.

If T1 or DSL is not available, Cable or wDSL (Wireless DSL) may suffice if above specified throughput speeds are achieved and approved by CDOT.

~~As a last resort Aircards for each computer perhaps augmented with a cellular signal booster equipment may suffice.~~

~~Note that sSatellite type broadband and cellular Aircards ARE NOT acceptable internet connection methods will NOT work for CDOT purposes.~~

A UPS (battery Backup) with a minimum rating of 750va (volt amp) shall be provided to protect the DSL router and other network equipment.

Network Equipment:

If there are multiple trailers or buildings on at the field locationsite, the Ccontractor will need to shall provide the cabling and surge suppression equipment necessary. ~~The cost could be as low as under \$100 or as High as \$800 depending on the situation.~~

The contractor shall also provide additional equipment needed for CDOT network security. Note that this equipment is in addition to the DSL modem provided by the internet provider.

If CDOT computers will reside in more than one trailer, as with a field laboratory, then fiber and transceivers, or cat 5e copper cabling with surge suppressors will need to purchased and installed as per CDOT IT. ~~If CDOT computers will reside in more than one trailer, as with a MAT lab, then fiber will need to purchased and installed as per CDOT IT.~~

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Contact the CDOT Regional Network Analyst for current specifications for this network equipment. Procuring this equipment may take time, so haste in contacting the CDOT Regional Network Analyst is recommended. It is not unusual for this equipment to take over a month to procure due to back orders.

Contact CDOT Regional Network Analyst (Mike Vencius 719-546-5737).

If Cisco network equipment is deemed required by CDOT IT, then the current cost of this specialized equipment is approximately \$800.00 to \$1300.00 depending on site requirements. If Cisco equipment is not needed, the cost will be determined on whether additional buildings need to be connected. The cost then may range from \$100 to \$500. If No Cisco equipment is needed and no additional buildings need to be connected and if Wifi is available, there may be no additional cost for Network Equipment. Note current cost of this specialized equipment is approximately \$800.00 to \$1300.00 depending on site requirements.

3
REVISION OF SECTION 620
FIELD FACILITIES

Important Cyber Security issue: At project conclusion, all network equipment ~~will be~~ returned to the CDOT Regional Network Analyst for removal of CDOT confidential data and network configuration.

~~**Facsimile Machine:** The Project Engineer must approve this machine. The facsimile machine shall print on plain paper and shall be capable of sending documents of all sizes up to and including 11"x17". It must be able to perform sequential broadcast, polling and delayed transmissions with a minimum ten-page memory. The Contractor shall install and maintain the fax machine in the Engineer's field office. Should the fax machine require repair and be out of service for more than twenty-four hours, a replacement is to be provided and installed by contractor within twenty-four hours. The Contractor shall provide a roll-around stand for the fax machine paper and supplies.~~

~~Contractor will provide and maintain stock of printer paper and toner.~~

Computer Accessories: CDOT has restrictions and limitations with regard to the type of equipment permitted to be connected and supported on its computers and network. Due to the constantly changing nature of the computer field, contact the CDOT Regional Network Analyst for the latest recommendations and cautions before purchasing any requested equipment such as printers, scanners, cameras, etc.

It is imperative that any accessories be compatible with the CDOT standard computer operating system: **Windows 7 64 bit.**

Warning: Some devices will only work on Windows 32 bit and not the required 64 bit version.

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~~For Example: Copy/Fax/Scanner/Network Printer units that create PDF files and rely on connectivity across the CDOT IP network violate CDOT cyber security policies and are not permitted to be installed on the CDOT network.~~

~~All printers and copiers shall be able to produce 11x17 copies and prints.~~

All equipment ~~is to~~shall be new with warranties.

~~Contractor will provide and maintain stock of printer paper and toner for any provided printers, scanners, and fax machines.~~

Miscellaneous Equipment: The Contractor shall provide and maintain:

One HP Color Laserjet 5550n printer capable of printing 11" x 17" or equivalent HP product, as approved by CDOT Regional Network Analyst.

Four Canon Powershot SX150 IS (with 4GB SD card) digital cameras capable of recording HD video or equivalent.

One Epson GT-20000 Flatbed Scanner capable of color scanning 11" x 17" or equivalent.

One laptop computer, 15.6 Inch screen, Windows 7 64bit, i7 processor, 750GB hard drive, to connect with HP Color Laserjet 5550n printer and/or copy machine.

Contractor shall provide and maintain stock of printer paper and toner for provided printer.

All equipment listed under miscellaneous will be returned to the Contractor at end of the project.

Subsection 620.06 shall include the following:

The Field Office and Field Laboratory shall be provided with all-weather surfacing and all-weather access, and a securely fenced and lighted yard with adequate area to accommodate state and consultant vehicles and state employee parking (minimum twelve vehicles). The location of the field facilities shall be approved by CDOT. Acceptable all-weather surfacing shall be concrete or asphalt paving, and shall be approved by CDOT. The yard in which field facilities are located shall be fenced with a permanent 72" chain-link fence, and must be fenced separately from the Contractor's field office and yard.

The Field Office (Special) shall be for the exclusive use of Department and Consultant personnel.

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Field facilities shall be fully functional for CDOT's use from NTP1 until 45 calendar days after Final Acceptance or until CDOT requests removal in writing, whichever time is less.

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Subsection 620.07 shall include the following:

The Contractor shall provide cleaning service on a weekly basis for both the Field Office (Special) and Field Lab (Class 2).

The Contractor shall provide CDOT with a Security System for the Field Office (Special) and Field Lab (Class 2). This system shall be monitored 24 hours per day and shall include Police and CDOT employee notification. The Contractor shall install and maintain the system and pay all monthly service fees. The Security System and Insurance shall be provided at all times that the Office and Lab are on the project.

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The Contractor shall provide insurance for full replacement of all contents of the Field Office (Special) and Field Laboratory (Class 2) due to theft, fire, or any other cause. Proof of insurance shall be provided to CDOT (coverage amount shall be a minimum of \$100,000). The Contractor shall replace all equipment damaged or stolen within five working days. Insurance shall be provided at all times that the office or laboratory is on the project.

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Subsection 620.08 shall include the following:

All costs included in this specification, as well as all incidental costs, to include water and sewer connection, shall be included in the original contract price for the pay items listed below.