



**STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION**



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Phone: 860-594-3128

November 10, 2016

Subject: FAP Nos. 0843(236), 0843(234) & 0843(235)
Project Nos. 63-699, 63-700 & 63-701: Rehabilitation of Multiple Bridges I-84 East and West Bound, City of Hartford.

NOTICE TO CONTRACTORS:

This is to notify all concerned and especially the prospective bidders that the bid opening for the subject project has been previously postponed Two (2) additional weeks from November 9, 2016 to November 23, 2016 at 2:00 P.M. in the Conference Room of the Department of Transportation Administration Building, 2800 Berlin Turnpike, Newington, Connecticut.

Addendum No. 2 is attached

Please send all future questions to <http://dot-contractsqanda.ct.gov/Default.aspx>

Philip J. Melchionne

For: Gregory D. Straka
Contracts Manager
Division of Contracts Administration

NOVEMBER 9, 2016
REHABILITATION OF MULTIPLE BRIDGES I-84 EASTBOUND & WESTBOUND
FEDERAL AID PROJECT NOS. 0843(236), 0843(234), 0843(235)
STATE PROJECT NOS. 0063-0699, 0063-0700, 0063-0701
CITY OF HARTFORD

ADDENDUM NO. 2

This Addendum addresses the following questions and answers contained on the “CT DOT QUESTIONS AND ANSWERS WEBSITE FOR ADVERTISED CONSTRUCTION PROJECTS”:

Question and Answer Nos. 4, 6, 8, 12, 13, 15, 16, 17, 20, 21, 22, 24, 25, 26, 27, 31, 33, 34, 38, 40, 41, 44, 45, 47, 48, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 62, 64, 68, 69, 71, & 72

SPECIAL PROVISIONS

NEW SPECIAL PROVISIONS

The following Special Provisions are hereby added to the Contract:

- NOTICE TO CONTRACTOR – RAILROAD INSURANCE INFORMATION
- NOTICE TO CONTRACTOR – TRACK MONITORING
- NOTICE TO CONTRACTOR – REMOVAL AND CLEANING FOR AREAS OF HUMAN HABITATION
- ITEM #0969030A – PROJECT COORDINATOR (MINIMUM BID)

REVISED SPECIAL PROVISIONS

The following Special Provisions are hereby deleted in their entirety and replaced with the attached like-named Special Provisions:

- NOTICE TO CONTRACTOR – COORDINATION WITH CTFASTRAK
- NOTICE TO CONTRACTOR – ALLOWABLE TRACK OUTAGES
- NOTICE TO CONTRACTOR – RAILROAD SPECIFICATIONS
- NOTICE TO CONTRACTOR – WORK ON OR ABOVE AMTRAK PROPERTY
- NOTICE TO CONTRACTOR – HAZARDOUS MATERIALS INVESTIGATIONS
- NOTICE TO CONTRACTOR – CONTRACT DURATION
- NOTICE TO CONTRACTOR – PARKING AREAS
- SECTION 1.08 – PROSECUTION AND PROGRESS
- ITEM #0101143A – HANDLING AND DISPOSAL OF REGULATED ITEMS

- ITEM #0201001A – CLEARING AND GRUBBING
- ITEM #0406137A – SURFACE PATCH (TEMPORARY)
- ITEM #0601039A – MODIFY BRIDGE PARAPET
- ITEM #0601044A – BRIDGE PARAPET CAP
- ITEM #0601070A – CLASS “S” CONCRETE
- ITEM #0601983A – PIER PROTECTION
- ITEM #0603081A – STRUCTURAL STEEL REPAIRS (SITE 1)
- ITEM #0603082A – STRUCTURAL STEEL REPAIRS (SITE 2)
- ITEM #0603083A – STRUCTURAL STEEL REPAIRS (SITE 3)
- ITEM #0603531A – REPAIR DAMAGED GIRDER
- ITEM #0969064A – CONSTRUCTION FIELD OFFICE, LARGE
- ITEM #1002301A – LIGHT STANDARD ANCHORAGE

PLAN SHEETS

REVISED PLAN SHEETS

The following revised Plan Sheets are hereby added to the Contract:

- SHEET NO. 01.02.01.A2 LIST OF REVISIONS
- SHEET NO. 01.04.15.A2 PROPERTY TRANSFERS
- SHEET NO. 01.04.16.A2 PROPERTY TRANSFERS
- SHEET NO. 01.04.17.A2 PROPERTY TRANSFERS
- SHEET NO. 01.08.007.A2 GENERAL PLAN – 2
- SHEET NO. 01.08.008.A2 GENERAL PLAN - 3
- SHEET NO. 01.08.010.A2 GENERAL PLAN -5
- SHEET NO. 01.08.011.A2 TYPICAL SECTION AND NOTES
- SHEET NO. 01.08.013.A2 STRUCTURAL NOTES
- SHEET NO. 01.08.064.A2 SUBSTRUCTURE REPAIR – BRIDGE 3160B
PIERS NO. ML25 & ML26
- SHEET NO. 01.08.083.A2 SUBSTRUCTURE REPAIR – BRIDGE 3303 PIERS
NO. A9 & A10
- SHEET NO. 01.08.087.A2 SUBSTRUCTURE REPAIR – DETAILS 1
- SHEET NO. 01.08.088.A2 SUBSTRUCTURE REPAIR – DETAILS 2
- SHEET NO. 01.08.089.A2 SUBSTRUCTURE REPAIR – DETAILS 3
- SHEET NO. 01.08.090.A2 CONCRETE KEEPER BLOCK
- SHEET NO. 01.08.091.A2 FRAMING PLAN – 1
- SHEET NO. 01.08.092.A2 FRAMING PLAN – 2
- SHEET NO. 01.08.093.A2 FRAMING PLAN – 3
- SHEET NO. 01.08.094.A2 FRAMING PLAN – 4
- SHEET NO. 01.08.095.A2 FRAMING PLAN – 5
- SHEET NO. 01.08.096.A2 FRAMING PLAN ADDITIONAL REPAIRS
- SHEET NO. 01.08.099.A2 EXPANSION BEARING REPLACEMENT - 1
- SHEET NO. 01.08.100.A2 EXPANSION BEARING REPLACEMENT - 2

- SHEET NO. 01.08.101.A2 EXPANSION BEARING REPLACEMENT – 3
- SHEET NO. 01.08.102.A2 TEMPORARY SUPPORT OF STRUCTURE - 1
- SHEET NO. 01.08.103.A2 TEMPORARY SUPPORT OF STRUCTURE – 2
- SHEET NO. 01.08.105.A2 DECK JOINT SEAL DETAILS - 1
- SHEET NO. 01.08.107.A2 DECK END REPAIR DETAILS - 1
- SHEET NO. 01.08.110.A2 DECK END REPAIR DETAILS - 4
- SHEET NO. 01.08.115.A2 MEDIAN DETAILS - 1
- SHEET NO. 01.08.124.A2 DRAINAGE REPAIR PLAN
- SHEET NO. 01.10.02.A2 LIGHTING PLAN – 1
- SHEET NO. 01.10.03.A2 LIGHTING PLAN – 2
- SHEET NO. 01.10.04.A2 LIGHTING PLAN – 3
- SHEET NO. 01.10.05.A2 LIGHTING PLAN – 4
- SHEET NO. 01.10.06.A2 LIGHTING PLAN – 5
- SHEET NO. 01.10.08.A2 LIGHTING DETAIL – 2
- SHEET NO. 02.04.02.A2 GENERAL PLAN AND ELEVATION
- SHEET NO. 02.04.03.A2 TYPICAL SECTION AND NOTES
- SHEET NO. 02.04.13.A2 KEEPER BLOCK DETAILS - 1
- SHEET NO. 02.04.15.A2 FRAMING PLAN – 1
- SHEET NO. 02.04.16.A2 FRAMING PLAN - 2
- SHEET NO. 02.04.17.A2 STRUCTURAL STEEL REPAIRS – 1
- SHEET NO. 02.04.18.A2 STRUCTURAL STEEL REPAIRS – 2
- SHEET NO. 02.04.19.A2 STRUCTURAL STEEL REPAIRS – 3
- SHEET NO. 02.04.22.A2 TEMPORARY SUPPORT OF STRUCTURE – 1
- SHEET NO. 02.04.32.A2 DECK END REPAIR DETAILS - 2
- SHEET NO. 02.04.38.A2 PAINTING & CONTAINMENT
- SHEET NO. 03.04.02.A2 GENERAL PLAN AND ELEVATION
- SHEET NO. 03.04.11.A2 KEEPER BLOCK DETAILS - 1
- SHEET NO. 03.04.14.A2 STRUCTURAL STEEL REPAIRS - 1
- SHEET NO. 03.04.18.A2 TEMPORARY SUPPORT OF STRUCTURE – 1
- SHEET NO. 03.04.28.A2 DECK END REPAIR DETAILS - 2
- SHEET NO. 03.04.33.A2 PAINTING AND CONTAINMENT

CONTRACT ITEMS

NEW CONTRACT ITEM

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>
<u>0969030A</u>	<u>PROJECT COORDINATOR</u>	<u>LS</u>	<u>LS</u>

REVISED CONTRACT ITEMS

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>ORIGINAL QUANTITY</u>	<u>REVISED QUANTITY</u>
<u>0503889A</u>	<u>JACKING EXISTING SUPERSTRUCTURE</u>	<u>10 EACH</u>	<u>5 EACH</u>
<u>0603081A</u>	<u>STRUCTURAL STEEL REPAIRS (SITE NO. 1)</u>	<u>908 CWT</u>	<u>945 CWT</u>
<u>0101143A</u>	<u>HANDLING AND DISPOSAL OF REGULATED ITEMS</u>	<u>\$7,000.00 EST</u>	<u>\$14,000.00 EST</u>

The Detailed Estimate Sheets do not reflect these changes.

The Bid Proposal Form has been revised to reflect these changes.

There will be no change in the number of calendar days due to this Addendum.

The foregoing is hereby made a part of the contract.

NOTICE TO CONTRACTOR – RAILROAD INSURANCE INFORMATION

GENERAL INSURANCE INFORMATION

Please refer to Notice to Contractor – Bridge Sites for a general description of Bridge Site Locations.

Bridge Site No. 1

Normal speed of passenger trains south of MP 36.00 is 80 MPH and north of MP 36.00 is 20 MPH.

Normal Speed of freight south of MP 36.00 is 50 MPH and north of MP 36.00 is 10 MPH.

The project Site includes overhead structures at railroad mileposts M.P. 35.96, 35.95, 36.07, 36.31, 36.35, and 36.37.

In the project area, there are in a 24 hour weekday period:

<u>12</u>	Scheduled Amtrak Weekday Trains
<u>Unknown</u>	Anticipated Extra Trains *
<u>8 (Average)</u>	Freight Trains (Each Train makes 2 moves through the Area)
<u>Unknown</u>	Other Trains (Single Direction Maintenance Movements)

* - Quantity may vary

Bridge Site No. 2 & Bridge Site No. 3

Normal speed of passenger trains south of MP 36.00 is 80 MPH and north of MP 36.00 is 20 MPH.

Normal Speed of freight south of MP 36.00 is 50 MPH and north of MP 36.00 is 10 MPH.

The project Site includes overhead structures at railroad mileposts M.P. 36.71 and 36.73.

In the project area, there are in a 24 hour weekday period:

<u>12</u>	Scheduled Amtrak Weekday Trains (Friday)
<u>Unknown</u>	Anticipated Extra Trains *
<u>8 (Average)</u>	Freight Trains (Each Train makes 2 moves through the Area)
<u>Unknown</u>	Other Trains (Single Direction Maintenance Movements)

* - Quantity may vary

NOTICE TO CONTRACTOR – TRACK MONITORING

If any work that could potentially affect the stability of the track is occurring within 50 feet of a track, or within the influence line of a track, then monitoring points shall be established by the contractor along the track and the position of the track shall be monitored by the Contractor. The influence line descends from a point one foot horizontally away from the outside end of the tie bottom one unit vertically for every unit and a half horizontally.

The Contractor shall develop a monitoring plan and submit it to Amtrak for approval prior to the start of construction. The Contractor may not begin any work that may affect the stability of the track until the plan has been approved by the Railroad. The monitoring plan must include plans of all proposed monitoring points and shall include a construction schedule for the work that may affect the track. The Contractor shall submit the monitoring plan 30 days in advance of planned construction and shall provide schedule updates for changes to the plan not less than two weeks in advance of construction.

The costs of developing a monitoring plan for the approval of the Railroad, establishing monitoring points, and monitoring the track position shall not be directly compensated. The costs shall be considered as incidental to the construction and included in the general cost of the project and the items for which monitoring may be necessary.

All work close enough to foul a track must only be performed under the direction of qualified railroad personnel. People performing track monitoring are classified as Roadway Workers and must be trained in “Amtrak Contractor Roadway Worker Protection”.

Monitoring: Each location shall include a point on the top of rail marked with paint or crayon on the field side of the rail and used for vertical measurements, and a point on the tie for horizontal measurements. In wood ties, the point shall be marked with a PK nail or similar surveyor’s marker; on concrete or steel ties the point shall be marked with paint.

Reference points shall be established along the track beginning at the point where the work is closest to the track. Points shall continue to be placed at intervals of 50 feet along the track to the point where the work ends or does not meet the conditions outlined above, and then at 50 feet, 100 feet, and 200 feet away from the end point(s). Where more than one track may be affected, points shall be established on each track that could be affected.

Monitoring points shall be established to within 0.001 feet, and monitoring shall be done to 0.01 feet.

Monitoring shall be performed at the beginning and end of every shift of work, Points shall be measured, the measurements recorded, and the numbers compared with previous measurements. All points shall be measured each time monitoring occurs, except for the points 200 feet away from the end of work; these points shall only be measured if any of the other measurements

exceeds an allowable deviation. Monitoring records shall be submitted weekly to the Resident Engineer, unless the track is found to have moved (see below).

Notifications: If track is found to have moved either vertically or horizontally by more than one half of the Amtrak Maintenance limits as specified in the table below (from Amtrak’s MW-1000) for the particular class of track involved, then all work shall cease immediately and the contractor shall immediately notify the designated Amtrak Project Engineer, Work may not resume until the designated Amtrak Project Engineer has inspected the site and approved. The contractor’s submitted

Track Maintenance: Deficiencies in track surface and alignment caused by construction activities shall be corrected solely by Amtrak forces at the Contractor’s expense.

TRACK CLASS	MAX. PASSENGER SPEED (MPH)	CROSS LEVEL (INCHES) The Difference in Cross Level Between Any Two Points Less Than		DEVIATION FROM UNIFORM PROFILE (INCHES)		DEVIATION FROM HORIZONTAL ALIGNMENT (INCHES)	DEVIATION FROM HORIZONTAL ALIGNMENT (INCHES)
		10'	62'	31' CHORD	62' CHORD	31' CHORD	62' CHORD
MAINTENANCE LIMITS							
1	15	1	2 1/4	N/A	2 1/4	2 3/4	3 3/4
2	30	1	1 5/8	N/A	2	1 1/2	2 1/4
3	60	1	1 1/2	N/A	1 5/8	7/8	1 1/4
4	80	1	1 1/4	N/A	1 1/2	3/4	1
5	90	1	1 1/8	N/A	1	3/8	1/2
6	110	3/4	1	3/4	3/4	3/8	1/2
7	125	3/4	1	3/4	3/4	3/8	3/8
8	160	3/4	1	3/4	3/4	3/8	3/8
9	200	3/4	1	3/4	3/4	3/8	3/8
1/2 MAINTENANCE LIMITS							
1	15	1/2	1 1/8	N/A	1 1/8	1 3/8	1 7/8
2	30	1/2	4/5	N/A	1	3/4	1 1/8
3	60	1/2	3/4	N/A	4/5	4/9	5/8
4	80	1/2	5/8	N/A	3/4	3/8	1/2
5	90	1/2	4/7	N/A	1/2	1/5	1/4
6	110	3/8	1/2	3/8	3/8	1/5	1/4
7	125	3/8	1/2	3/8	3/8	1/5	1/5
8	160	3/8	1/2	3/8	3/8	1/5	1/5
9	200	3/8	1/2	3/8	3/8	1/5	1/5

NOTICE TO CONTRACTOR – REMOVAL AND CLEANING FOR AREAS OF HUMAN HABITATION

The Contractor is hereby advised that there may exist areas of human habitation under Bridge No. 01765 and 01766. When suspected areas of human habitation are encountered within the under bridge work area the Contractor shall immediately notify the Engineer. The Contractor shall perform no work within areas of human habitation until directed to by the Engineer.

The Engineer is responsible, with the assistance of other State agencies, for the prior notification and eviction of people living illegally within the State Right-of-Way. The Contractor has no responsibility for these specific actions.

When directed by the Engineer, the Contractor with State Police oversight shall remove all solid waste and restore the area to its original condition as directed by the Engineer.

All solid waste shall be removed by the Contractor and disposed of in accordance to Item No. 0101143A – Handling and Disposal of Regulated Items.

ITEM #0969030A – PROJECT COORDINATOR (MINIMUM BID)

Article 1.05.08 – Schedules and Reports of the Standard Specifications is hereby amended by the following:

Add the following:

Description: Under this item the Contractor shall furnish the services of an administrative employee, entitled the Project Coordinator, for this Project, to coordinate and expedite all phases of the work required for the Project and to ensure that the construction schedule is maintained.

The minimum lump sum bid for this item shall be equal to 0.5% of the Contractor's total bid. Failure of the Contractor to bid at least the minimum amount will result in the Department adjusting the Contractor's bid to include the minimum bid amount for this item.

The Project Coordinator's resume shall be submitted for approval by name, in writing, within seven (7) calendar days of the award of the Contract, and shall not be changed without prior written notice to the Department.

This resume must demonstrate the Project Coordinator is experienced and versatile in the preparation, interpretation and modification of Critical Path Method (CPM) construction schedules. This must include successful completion of at least three (3) construction projects of similar complexity, where they served in a lead scheduling capacity. If the Contractor does not have a person in their company that has these skills, then the Contractor shall engage the services of a Consultant, subject to the approval of the Engineer, for the scheduling work required. If a Consultant is engaged, they shall be present at the first meeting, along with the Project Contractor, prepared to discuss, in detail, the methods and techniques they propose to use. Thereafter, the Project Coordinator or the Consultant responsible for updating the CPM Schedule shall attend all meetings between the Contractor, its Subcontractors, and any other meetings, which will affect the CPM schedule. The Contractor shall prepare CPM Schedules utilizing the latest version of Primavera Project Planner software.

When the Contract is administered under Section 1.20, the following requirement shall also apply:

The Project Coordinator shall have, in addition to the above noted requirements, a minimum of eight (8) years' experience related to commercial/industrial building construction as a Project Coordinator performing duties similar to those required herein. The Project Coordinator shall have knowledge of all trades involved in the construction, including civil/site work, environmental work, concrete work, masonry work, steel work, wood work, electrical work, and mechanical work. Other combinations of experience and education totaling ten (10) years in commercial building construction will be considered subject to the approval of the Engineer.

Computer Software and Printer: The Contractor shall provide the following equipment with all the required maintenance and repairs (to include labor and parts) throughout the Contract life. The Engineer reserves the right to expand or relax the specification to adapt to the software and hardware limitations and availability.

The Contractor shall provide the Engineer with a licensed copy registered in the Department's name of the latest versions of the software listed and maintain customer support services offered by the software producer for the duration of the project. The Contractor shall deliver to the Engineer all supporting documentation for the software and hardware including any instructions or manuals.

Software – Minimum Specification: The Contractor shall provide the Engineer with a licensed copy of the latest version of the Oracle Primavera Contractor – Deluxe Version scheduling software, registered in the Department's name, and maintain the Primavera customer support service contract over the duration of the project.

Printer: An addition printer shall be provided that meets the printer specifications noted under contract item for "Construction Field Office" and is compatible with the software.

The Contractor is responsible for service and repairs to all computer hardware. All repairs must be performed within 24 hours. If the repairs require more than a 24 hours then a replacement must be provided.

Construction Methods: The Project Coordinator shall attend all meetings between the Contractor and the Department, the Contractor and its Subcontractors, and any other meetings that affect the progress of the job. The Project Coordinator shall be knowledgeable of the status of all parts of the work throughout the length of the Contract.

Please delete any reference to Bar Chart under 1.05.08 – Schedule and Reports and replace with the following:

Critical Path Method (CPM)

Please add the following:

Proper relationship between all major activities shall be indicated. Node numbers shall be coded such that the major activities shown on the Critical Path Schedule shall be easily referenced to the Detailed Project Schedule when it is developed. Break down the work covered under each Special Provision, or Division and Section of Article 1.20 of the Standard Specifications, into individual activities required and logically group related activities together within the CPM.

All documents, which require approval by the Department, shall be clearly identified within the schedule. The Department and any outside agency shall be allocated a minimum number of calendar days in accordance with Article 1.20-1.05.02. If Article 1.20 does not apply, then the

Department shall be allocated a minimum of thirty (30) calendar days (exclusive of weekends and holidays) for review and approval of each submittal. Any submittals requiring approval by an outside Agency (ConnDEEP, Coast Guard, Army Corps of Engineers, etc.) shall be allocated a minimum of sixty (60) calendar days. The Department shall not be held responsible for any delay associated with the approval or rejection of any substitution or other revisions proposed by the Contractor.

The schedule shall indicate the logic of the work for the major elements and components of work under the Contract, such as the planned mobilization of plant and equipment, sequences of operations, procurement of materials and equipment, duration of activities, type of relationship, lag time (if any), and such other information as it is necessary to present a clear statement of the intended activities.

The schedules shall consist of a network technique of planning, scheduling and control, shall be a clear statement of the logical sequence of work to be done, and shall be prepared in such a manner that the Contractor's work sequence shall be optimized between early start and late start restraints. The Contractor shall use the same criteria in a consistent manner throughout the term of the project. If, at any time, the Contractor alters logic, original durations, and descriptions, adds activities or activity codes or in any way modifies the Baseline Schedule, they must notify the Engineer of the change, in writing, presenting in detail the reasons for the change. The Engineer reserves the right to approve or reject any such change.

The critical path of the project must be identified on the CPM schedule. The critical path is the longest-duration path through the network. The significance of the critical path is that the activities that lie on it cannot be delayed without delaying the project. Because of its impact on the entire project, critical path analysis is an important aspect of project planning.

The critical path can be identified by determining the following four parameters for each activity:

1. ES - Earliest Start Time: the earliest time at which the activity can start given that its precedent activities must be completed first.
2. EF - Earliest Finish Time: equal to the earliest start time for the activity plus the time required to complete the activity.
3. LF - Latest Finish Time: the latest time at which the activity can be completed without delaying the project.
4. LS - Latest Start Time: equal to the latest finish time minus the time required to complete the activity.

The *float time* for an activity is the time between its earliest and latest start time, or between its earliest and latest finish time. Float is the amount of time that an activity can be delayed past its earliest start or earliest finish without delaying the project. Delays to activities on the critical

path through the project network in which no float exists, that is, where $ES=LS$ and $EF=LF$ will delay the project.

Float available in the schedule, at any time shall not be considered for the exclusive use of either the Department or the Contractor. During the course of Contract, any float generated due to the efficiencies of either party is not for the sole use of the party generating the float; rather it is a shared commodity to be reasonably used by either party. Project float will be a resource available to both the Department and the Contractor.

Each CPM Schedule submittal shall be in the form of an activity on node diagram (precedence diagramming method) and shall include at a minimum; an Early Start computer sort, a Total Float computer sort, an Activity Number computer sort, a Schedule Diagram in the Time Scaled Logic format and a backup data CD-ROM which includes all Primavera project files. The diagrams may be requested printed out by the Department and shall be on 22" x 34" sheets. Additional, more detailed diagrams for important aspects or phases of the work may be required on large or complex projects.

Activity I.D. numbers shall be keyed to the item numbers assigned on the detailed estimate sheet. The first three digits (four digits for highway illumination, signing, traffic signals and utility work) of the activity I.D. number shall be identical to the first three digits of the item number in the Contract. The remaining digits may be used to provide unique, orderly and sequential I.D. numbers for each activity.

Activity codes shall be added to the schedule dictionary at the direction of the Engineer. At a minimum, activity codes for responsibility (prime, subcontractor by name), location of work (bridge #, span #, sta. #, site, building, type of work, etc.) and stage or phase number should be included.

1. Recovery Schedules: If, in the opinion of the Engineer, the updated schedule indicates that the Project has fallen behind schedule, or that a revision in sequence of operations may be necessary for any other reason, absent a justifiable time extension, the Contractor shall immediately institute all necessary steps to improve the Project's progress and shall submit such revised network diagrams, tabulations and operational plans, as may be deemed necessary by the Engineer, to demonstrate the manner in which an acceptable rate of progress will be regained.

Should the Contractor not demonstrate an ability to regain an acceptable rate of progress, the Engineer shall require the schedule to be resource loaded with the next monthly update. No additional compensation will be allowed for resource loading the schedule.

2. As-Built Schedules: Within thirty (30) days of completion of the project, including all corrective work, the Contractor shall submit an "As-Built Schedule" showing the actual progress of work. The Contractor shall submit three prints of this final CPM Schedule and one project backup data CD-ROM which include all Primavera project files for the Engineer's exclusive use.

The following shall also apply to Contracts administered under Section 1.20:

3. Daily Construction Reports: The Project Coordinator shall assist the Engineer in the preparation of a daily construction report by ensuring that each of the Contractor's employees and subcontractors working on the Project Site on a given day signs the Engineer's sign-in sheet for that day; and by keeping and providing to the Engineer its own daily list of employees and subcontractors who worked on the Project Site on that day.

Method of Measurement: Within ten (10) calendar days of the award of the Contract, the Contractor shall submit to the Engineer for approval a breakdown of its lump sum bid price for this item detailing:

1. The development cost to prepare the Baseline Schedule in accordance with these specifications. Development costs shall not exceed 25% of the total cost of the item and shall include costs to furnish and install all specified hardware.
2. The cost to provide the services of the Project Coordinator, including costs to prepare and submit the Monthly Updates and Narrative; furnish and submit any Recovery Schedules; furnish and submit Two Week Look Ahead Schedules and maintenance of and supplies for the specified hardware noted above. A per month cost will be derived by taking this cost divided by the number of Contract months remaining from the date of acceptance of the Baseline Schedule.
3. The cost of submission and certification of the As-Built Schedule in accordance with these specifications. The submission and certification costs shall be no less than 2% of the total cost of the item.
4. Substantiation showing that the costs submitted are reasonable based on the Contractor's lump sum bid.

Upon approval of the payment schedule by the Engineer, payments for work performed will be made as follows:

1. Upon approval of the "Baseline" Schedule by the Engineer, the lump sum development cost will be certified for payment.
2. Upon receipt of each monthly narrative and update of the "Baseline" Schedule, the per month cost for the services of the Project Coordinator will be certified for payment.
3. Upon approval of the As-Built Schedule by the Engineer, the lump sum submission and certification cost will be certified for payment.

Basis of Payment: This service will be paid for at the Contract lump sum price for "Project Coordinator" complete, which price shall include the preparation and submission of all schedules, narratives, updates, reports and submittals. The lump sum price shall also include the cost of providing a complete, licensed copy of the Primavera software which will remain the property of the Engineer, and all materials, equipment, labor and work incidental of this service.

The lump sum price will be certified for payment as described in "Method of Measurement" subject to the following conditions:

1. Any month where the monthly update of the "Baseline" CPM schedule is submitted late, without authorization from the Engineer, will result in the following actions:
 - a. The monthly payment for the Project Coordinator item will be deferred to the next monthly payment estimate. If any monthly submittal is more than thirty (30) calendar days late, there will be no monthly payment for the services of the Project Coordinator.
 - b. The greater of 5% of the monthly payment estimate or \$25,000 will be retained from the monthly payment estimate until such time as the Contractor submits all required reports.
 - c. If in the opinion of the Engineer, the Contractor is not in compliance with this specification, the Engineer may withhold all Contract payments.
2. In the event the Contract time extends beyond the original completion date by more than thirty (30) calendar days, and a time extension is granted to the Contractor, the Department may require additional CPM updates which will be paid for at the per month cost for the services of the Project Coordinator.
3. If the Contractor is not in compliance with this specification or has failed to submit a "Baseline" schedule, monthly update, or a Recovery Schedule for any portion of the work, the Engineer will withhold all Contract payments until the schedule is submitted to, and approved by, the Engineer.

<u>Pay Item</u>	<u>Pay Unit</u>
Project Coordinator	L.S.

NOTICE TO CONTRACTOR – COORDINATION WITH CTfastrak

The Contractor may not perform any construction activities which will impact operations of the CTfastrak during normal hours of operation. The Contractor is required to complete and submit a CTfastrak Guideway Access Request Program (GARP) Access Request Form no less than 2-weeks prior to the desired date of access. The Contractor may occupy both the northbound and southbound roadways of the CTfastrak and the median between the roadways, in order to perform construction activities on the substructure and superstructure of the bridge, during the allowable Operations Shutdown Times indicated in the table below.

CTfastrak Operations Shutdown Times

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Start	1:00 AM	9:30 PM SU	1:00 AM	1:00 AM	1:00 AM	1:00 AM	1:00 AM
Clear By	6:30 AM	4:00 AM	4:00 AM	4:00 AM	4:00 AM	4:00 AM	5:00 AM

The Contractor may not begin any construction activities, which will concurrently impact operations of both directional bounds of the CTfastrak, until the time indicated in the row labeled “Start”. The Contractor must have all construction equipment, materials and debris removed from the roadways by the time indicated in the row labeled “Clear By”.

During full closure periods, access to the guideway will be restricted through the use of “Ramp Closed” and “Roadway Closed” signs as well as the placement of Construction Barricades Type III.

In addition to the allowable full closure periods of both directional bounds listed above, the Contractor may implement one-way alternating traffic and close one directional bound, through the work zone, between 9:00AM and 3:00PM and between 9:00PM and 1:00AM, with the approval of the Engineer and in coordination with the CTfastrak Operations Center. During that time period, the Contractor will be responsible for providing traffic control in accordance with requirements of Item No. 0971001A – Maintenance & Protection of Traffic and Item No. 0970007 - Trafficperson (Uniformed Flagger).

The Bus Operations Center (BOC) must be contacted for approval to implement the work request immediately prior to site setup. The BOC Dispatch Hotline may be contacted at 860-522-3191.

Liquidated Damages per Hour

Should all construction equipment, materials and debris not be removed from the roadways by the time indicated in the row labeled “Clear By”, the Contractor shall be penalized \$2,000 per hour (or portion thereof) per direction of roadway in liquidated damages. The Contractor may

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temporarily store equipment and material and stockpile construction debris within the median area between the roadways, with the approval of the Engineer. Specific scheduling of construction activities or other anticipated impacts must be coordinated with the Engineer and the CTfastrak Operations Center.

Temporary Structures

Any temporary structures or work platforms erected by the Contractor within the Guideway shall be removed at the end of the work shift and prior to resumption of bus traffic unless approved by CT Transit and the Engineer in writing. Temporary overhead structures to remain shall be positioned such that a minimum of 14'-1" of vertical clearance to the roadway surface is maintained at all locations. Temporary structures alongside the roadway shall be positioned outside of Guideway paved surfaces behind existing barriers or walls, or within the existing median.

Access

The Contractor shall access the guideway using the Asylum Street Ramps. Access shall only be permitted during the time periods agreed to by CTfastrak.

NOTICE TO CONTRACTOR – ALLOWABLE TRACK OUTAGES

Portions of this construction project are over single main line railroad territory with a high frequency of passenger and freight train passage. In order to complete the work, the Contractor will need to use a combination of Track Out of Service and Foul Time granted by the railroad.

It should be expressly understood that: a) actual length of time for any track usage is contingent upon operating schedules at time of construction, other third-party project work, operational issues on the Northeast Corridor, resources, planned and unplanned maintenance work; b) programmed Amtrak construction and maintenance work requiring track usage within the same operating block will have priority, therefore contract work requiring track usage, if scheduled within the same time frame must be coordinated with such work; and c) the potential times for track usage are not guaranteed and are for normal operating conditions.

The Contractor is forewarned that the Bridges included in Site No. 1 are south of Hartford Union Station and the Bridges included in Site Nos. 2 & 3 are north of Hartford Union Station. The Railroad will determine the track outage impacts associated with trains entering and exiting the Station.

The Contractor is notified that Site No. 1 is not adjoined with Site Nos. 2 & 3. Although the Contractor shall make every attempt to coordinate outages at the three sites, railroad protection should be assumed to require separate protection. The Railroad will also determine if the multiple bridges within Site No. 1 will require separate protection due to the length of separation between the bridge spans.

General Requirements:

Unless otherwise authorized by the Railroad, operations directly over or adjacent to operating right-of-way will be performed as follows:

1. The Contractor's operations shall be planned and staged to avoid track usage unless absolutely necessary. Track usage is granted by Amtrak based on need, not for the convenience of the Contractor.
2. Tracks may be made available for track outages dependent upon the work required and as railroad operating conditions allow. The hours of track availability are varied, limited and change depending on operating constraints and other requirements. Every effort will be made to support the Contractor's requirements. However, because of the limited availability of track outage time, the Contractor is to plan operations to minimize required track outages.
3. All track outages are subject to Amtrak approval and must be requested from Amtrak at least 2 weeks in advance. Decisions regarding track outages are subject to review by Amtrak.

4. Any delays resulting from deviation from the indicated times will be considered excusable but non-compensable delays.
5. No track outages will be permitted on weekends either immediately before or after major holidays, as defined elsewhere in these specifications.
6. The Contractor is required to execute Amtrak's current Temporary Permit to Enter Upon Property. Attached for reference is a copy of Amtrak's Temporary Permit which includes Amtrak's Safety and Insurance requirements. All requests for a Temporary Permit should be directed to:

Amtrak Engineering Construction Department

By Mail to:

Director I&C Projects
Amtrak - National Railroad Passenger Corporation
30th Street Station, 4S-027, Mail Box 64
2955 Market Street
Philadelphia, PA 19104
(215) 349-1393

By Fax or Email to:

(215) 349-3550 or MCGRATM@AMTRAK.COM

7. All Contractor employees who will work on Amtrak property are required to attend "Amtrak Contractor Roadway Worker Protection" safety training, and the Railroad require appropriate evidence of insurance in accordance with the attached requirements prior to entry on Amtrak's property.
8. The Contractor shall plan to perform all construction activities during railroad Foul Time. Foul time will be granted by the Railroad between the passage of regularly scheduled trains and will be dependent on the type of work proposed and the ability of the Contractor to clear the track within the time frame specified by the railroad.
9. In the event that the Contractor requires a Track Out of Service to perform work, it is anticipated that track outages of significant duration will only be available to the Contractor on Saturday nights, into Sunday morning from approximately 11pm to 6am.

Amtrak
Engineering Construction
4th Floor - South Tower
30th Street Station (Mail Box 64)
Philadelphia, PA 19104

Temporary Permits to Enter Upon Amtrak Property (PTEs)

Requests for Temporary Permits to Enter Upon Amtrak Property (PTEs) must be submitted to Amtrak in writing and include the following information:

1. Name of company requesting the permit (include address and telephone number)
2. Who's attention the permit should be addressed to
3. Permittee's e-mail address
4. Exact location of work (including railroad milepost, if known)
5. Specific work activity being performed on railroad property (please provide dollar value of the contract if work being performed is other than surveys or bridge inspections)
6. Projected duration of work being performed on railroad property
7. Contact, phone and address where invoices should be sent for payment by Permittee.

Note: *Temporary Permits for performing any environmental or geotechnical tests or studies (e.g., air, soil or water sampling) may be issued subsequent to completion of Amtrak's environmental review and approval process. Requests are reviewed on a case-by-case basis. Depending on the site specific circumstances, a separate Site Access Agreement that addresses environmental liability issues may be required prior to any Temporary Permit.*

All PTE Requests must be submitted to the Amtrak Engineering Construction Department by fax, e-mail or mail as noted below:

- Faxed to (215) 349-3550 or MCGRATM@AMTRAK.COM
- Email to mcgratm@amtrak.com
- Mailed to the following address:

Director I&C Projects
National Railroad Passenger Corporation
30th Street Station (Mail Box 64)
Philadelphia, PA 19104

Due to the heavy volume of requests for Temporary Permits to Enter Upon Amtrak Property, the processing time for initial Permit requests is approximately 30 business days.

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AMTRAK
HR – Employee Development
30th and Market Streets – 3 North – Box 1
Philadelphia, PA 19104
Fax Number 215-349-3731

Contractor Orientation Training Request

This is in response to your request for Amtrak's Contractor Orientation Training. Note: Our training delivery has changed. Starting October 1, 2012, Instructor Led classroom training will no longer be offered and has been replaced with a computer based training program that is available 24 hours / 7 days per week. Offered at a cost of \$18.00 per person, this training can be completed at www.amtrakcontractor.com and requires participants to register on the website before accessing the course. Participants completing this course are required to be able to Read, Comprehend and Demonstrate in English their understanding of the materials presented, as well as all the safety instructions, briefings and warnings. Before taking this course, participants will be required to provide a current photo and have the capability of uploading the photo electronically. At the end of this course, participants are required to pass a comprehensive test to receive a temporary certificate that is valid for three weeks. A Photo ID card, which is valid for one calendar year from the date of issue, will be mailed to the participant. Each participant will be given three (3) opportunities to pass the test. If unable to pass on the 3rd attempt, the participant will be unable to retake the test for 30 days.

The safety of Amtrak's passengers and all employees working on the property (Amtrak and Contractor personnel) remains our highest priority. For your protection, Amtrak requires that your employees comply with all safety regulations ("Specifications Regarding Safety and Protection of the Railroad Traffic Property").

All contractors must notify the Amtrak Project Manager or Engineer assigned to your project before entering onto railroad property and before coming within twenty-five (25 feet) of the centerline of the track or energized wire. Amtrak's Project Manager or Engineer assigned to your project will assist you with obtaining a temporary "Permit to Enter upon Property" and will arrange for protection if needed. Safety violations will result in the immediate suspension of work within the railroad's property limits.

Thank You

HR - Employee Development

Rev.9/28/12

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NOTICE TO CONTRACTOR – RAILROAD SPECIFICATIONS

The contractor is hereby notified that all railroad specifications contained elsewhere herein shall be made a part of this contract, and that the contractor shall be bound to comply with all requirements of such specifications. The requirements and conditions set forth in the subject specifications shall be binding on the contractor just as any other specification would be.

SECTION 01141A – SAFETY AND PROTECTION OF RAILROAD TRAFFIC AND PROPERTY

PART 1 - GENERAL

1.1 SCOPE

- A. This specification describes the safety procedures and protection provisions for Contractors and Permittees entering and working upon railroad property.
- B. Use of this specification is as required by Amtrak, as described in Amtrak Engineering Practice EP3014.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.3 DEFINITIONS

- A. CHIEF ENGINEER: Amtrak Chief Engineer
- B. RAILROAD: National Railroad Passenger Corporation (Amtrak), and/or the duly authorized representative
- C. ENGINEERING PRACTICE: Amtrak Engineering Practices establish a system of uniform practices, notices and instructions for the Amtrak Engineering Department, providing current, permanent and temporary, departmental procedures and policies.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PRE-ENTRY MEETING

- A. Before entry of Permittee and/or Contractors onto Railroad's property, a pre-entry meeting shall be held at which time Permittee and/or Contractors shall submit for written approval of the Chief Engineer, plans, computations and a detailed description of proposed methods for accomplishing the work, including methods for protecting Railroad's traffic. Any such written approval shall not relieve Permittee and/or Contractor of their complete responsibility for the adequacy and safety of their operations.

3.2 RULES, REGULATIONS AND REQUIREMENTS

- A. Railroad traffic shall be maintained at all times with safety and continuity, and Permittee and/or Contractors shall conduct their operations in compliance with all rules, regulations, and requirements of Railroad (including these Specifications) with respect to any work performed on, over, under, within or adjacent to Railroad's property. Permittee and/or Contractors shall be responsible for acquainting themselves with such rules, regulations and requirements. Any violation of Railroads safety rules, regulations, or requirements shall be grounds for the immediate suspension of the Permittee and/or Contractor work, and the re-training of all personnel, at the Permittee's expense.

3.3 MAINTENANCE OF SAFE CONDITIONS

- A. If tracks or other property of Railroad are endangered during the work, Permittee and/or Contractor shall immediately take such steps as may be directed by Railroad to restore safe conditions, and upon failure of Permittee and/or Contractor to immediately carry out such direction, Railroad may take whatever steps are reasonably necessary to restore safe conditions. All costs and expenses of restoring safe conditions, and of repairing any damage to Railroad's trains, tracks, right-of-way or other property caused by the operations of Permittee and/or Contractors, shall be paid by Permittee.

3.4 PROTECTION IN GENERAL

- A. Permittee and/or Contractors shall consult with the Chief Engineer to determine the type and extent of protection required to insure safety and continuity of railroad traffic. Any Inspectors, Track Foremen, Track Watchmen, Flagman, Signalmen, Electric Traction Linemen, or other employees deemed necessary by Railroad, at its sole discretion, for protective services shall be obtained from Railroad by Permittee and/or Contractors. The cost of same shall be paid directly to Railroad by Permittee. The provision of such employees by Railroad, and any other precautionary measures taken by Railroad, shall not relieve Permittee and/or Contractors from their complete responsibility for the adequacy and safety of their operations.

3.5 PROTECTION FOR WORK NEAR ELECTRIFIED TRACK OR WIRE

- A. Whenever work is performed in the vicinity of electrified tracks and/or high voltage wires, particular care must be exercised, and Railroad's requirements regarding clearance to be maintained between equipment and tracks and/or energized wires, and otherwise regarding work in the vicinity of electrified tracks, must be strictly observed. No employees or equipment will be permitted to work near overhead wires, except when protected by a Class A employee of Railroad. **Permittee and/or Contractors must supply an adequate length of grounding cable (4/0 copper with approved clamps) for each piece of equipment working near or adjacent to any overhead wire.**

3.6 FOULING OF TRACK OR WIRE

- A. No work will be permitted within twenty-five (25) feet of the centerline of track or the energized wire or have potential of getting within twenty-five (25) feet of track wire without the

approval of the Chief Engineer's representative. Permittee and/or Contractors shall conduct their work so that no part of any equipment or material shall foul an active track or overhead wire without the written permission of the Chief Engineer's representative. When Permittee and/or Contractors desire to foul an active track, they must provide the Chief Engineer's representative with their site-specific work plan a minimum of twenty-one (21) working days in advance, so that, if approved, arrangements may be made for proper protection of Railroad. Any equipment shall be considered to be fouling a track or overhead wire when located (a) within fifteen (15) feet from the centerline of the track or within fifteen (15) feet from the wire, or (b) in such a position that failure of same, with or without a load, would bring it within fifteen (15) feet from the centerline of the track or within fifteen (15) feet from the wire and requires the presence of the proper Railroad protection personnel.

- B. If acceptable to the Chief Engineer's representative, a safety barrier (approved temporary fence or barricade) may be installed at fifteen (15) feet from centerline of track or overhead wire to afford the Permittee and/or Contractor with a work area that is not considered fouling. Nevertheless, protection personnel may be required at the discretion of the Chief Engineer's representative.

3.7 TRACK OUTAGES

- A. Permittee and/or Contractors shall verify the time and schedule of track outages from Railroad before scheduling any of their work on, over, under, within, or adjacent to Railroad's right-of-way. Railroad does not guarantee the availability of any track outage at any particular time. Permittee and/or Contractors shall schedule all work to be performed in such a manner as not to interfere with Railroad operations. Permittee and/or Contractors shall use all necessary care and precaution to avoid accidents, delay or interference with Railroad's trains or other property.

3.8 DEMOLITION

- A. During any demolition, the Contractor must provide horizontal and vertical shields, designed by a Professional Engineer registered in the state in which the work takes place. These shields shall be designed in accordance with the Railroad's specifications and approved by the Railroad, so as to prevent any debris from falling onto the Railroad's right-of-way or other property. A grounded temporary vertical protective barrier must be provided if an existing vertical protective barrier is removed during demolition. In addition, if any openings are left in an existing bridge deck, a protective fence must be erected at both ends of the bridge to prohibit unauthorized persons from entering onto the bridge.
- B. Ballasted track structure shall be kept free of all construction and demolition debris. Geotextiles or canvas shall be placed over the track ties and ballast to keep the ballast clean.

3.9 EQUIPMENT CONDITION

- A. All equipment to be used in the vicinity of operating tracks shall be in "certified" first-class condition so as to prevent failures that might cause delay to trains or damage to Railroad's property. No equipment shall be placed or put into operation near or adjacent to operating tracks without first obtaining permission from the Chief Engineer's representative. **Under no**

circumstances shall any equipment or materials be placed or stored within twenty-five (25) feet from the centerline of an outside track, except as approved by the Site Specific Safety Work Plan. To insure compliance with this requirement, Permittee and/or Contractors must establish a twenty-five (25) foot foul line prior to the start of work by either driving stakes, taping off or erecting a temporary fence, or providing an alternate method as approved by the Chief Engineer's representative. Permittee and/or Contractors will be issued warning stickers which must be placed in the operating cabs of all equipment as a constant reminder of the twenty-five (25) foot clearance envelope.

3.10 STORAGE OF MATERIALS AND EQUIPMENT

- A. No material or equipment shall be stored on Railroad's property without first having obtained permission from the Chief Engineer. Any such storage will be on the condition that Railroad will not be liable for loss of or damage to such materials or equipment from any cause.
- B. If permission is granted for the storage of compressed gas cylinders on Railroad property, they shall be stored a minimum of 25 feet from the nearest track in an approved lockable enclosure. The enclosure shall be locked when the Permittee and/or Contractor is not on the project site.

3.11 CONDITION OF RAILROAD'S PROPERTY

- A. Permittee and/or Contractors shall keep Railroad's property clear of all refuse and debris from its operations. Upon completion of the work, Permittee and/or Contractors shall remove from Railroad's property all machinery, equipment, surplus materials, falsework, rubbish, temporary structures, and other property of the Permittee and/or Contractors and shall leave Railroad's property in a condition satisfactory to the Chief Engineer.

3.12 SAFETY TRAINING

- A. All individuals, including representatives and employees of Permittee and/or Contractor, before entering onto Railroad's property and before coming within twenty-five (25) feet of the centerline of the track or energized wire must first attend Railroad's Contractor Orientation Computer Based Training Class. The Contractor Orientation Class will be provided electronically at **www.amtrakcontractor.com**. Upon successful completion of the course and test, the individual taking the course will receive a temporary certificate without a photo that is valid for three weeks. The individual must upload a photo of himself/herself that will be embedded in the permanent ID card. The photo ID will be mailed to the individual's home address and must be worn/displayed while on Railroad property. Training is valid for one calendar year. All costs of complying with Railroad's safety training shall be at the sole expense of Permittee and/or Contractor. The Permittee and/or Contractor shall appoint a qualified person as its Safety Representative. The Safety Representative shall continuously ensure that all individuals comply with Railroad's safety requirements. All safety training records must be maintained with the Permittee's and/or Contractor's site specific work plan.

3.13 NO CHARGES TO RAILROAD

- A. It is expressly understood that neither these Specifications, nor any document to which they are attached, include any work for which Railroad is to be billed by Permittee and/or Contractors, unless Railroad gives a written request that such work be performed at Railroad's expense.

END OF SECTION 01141A

 ENGINEERING PRACTICES	ORIGINAL ISSUE DATE 01/25/01	NUMBER EP3014	
	REVISED DATE 10/01/2012		
TITLE MAINTENANCE AND PROTECTION OF RAILROAD TRAFFIC DURING CONTRACTOR OPERATIONS	RECOMMENDED by <i>John Brun</i>	DATE <i>10/01/12</i>	PAGE 1
	APPROVED by CHIEF ENGR, STRUCTURES <i>James Richter</i>	DATE <i>10/01/12</i>	OF 2

SCOPE AND NATURE

This practice provides procedures for Contractors to follow, when working on Amtrak Right-of-Way, adjacent to Amtrak tracks, to assure the protection of trains and maintenance of scheduled railroad operations.

SPECIAL REFERENCE

Note: This information was included under former Engineering Practice 1305.

Contractors shall comply with procedures detailed in the following specifications, when applicable:

Section	Title	Revision No.	Revision Date
01141A	Safety and Protection of Railroad Traffic and Property	4	10/01/12
01142A	Submission Documentation Required for Amtrak Review and Approval of Plans for Bridge Erection, Demolition and Other Crane/ Hoisting Operations over Railroad Right-of-Way	1	12/15/05
01520A	Requirements for Temporary Protection Shields for Demolition and Construction of Overhead Bridges and Other Structures	1	08/07/01
02261A	Requirements for Temporary Sheeting and Shoring to Support Amtrak Tracks	3	06/20/08

SPECIAL MATERIALS

Not Applicable

PROCEDURE

1. The Contractor shall conform to the applicable specifications.
2. Amtrak I&C shall assure that agencies and other third parties proposing construction on or adjacent to Amtrak Right-of-Way conform to Amtrak requirements detailed herein.
3. Amtrak Design and Construction shall review the Contractor's proposed design and construction procedures for conformance with specifications, with sound engineering design practice and with the procedures detailed in the applicable Engineering Practice documents.

TITLE MAINTENANCE AND PROTECTION OF RAILROAD TRAFFIC DURING CONTRACTOR OPERATIONS	ORIGINAL ISSUE DATE 01/25/01	NUMBER EP3014
	REVISED DATE 10/01/2012	
		PAGE 2 OF 2

4. Amtrak Construction shall monitor the activities of the Contractor on-site to assure compliance/ adherence to approved procedures throughout the construction period.

REPORTING

As detailed in the specifications.

RESPONSIBILITY

Amtrak I&C Staff	Comply with Procedure
Director Project Initiation & Development	Assure Compliance
Amtrak Design Staff	Comply with Procedure
Director Structures Design	Assure Compliance
Amtrak Construction Staff	Comply with Procedure
Deputy Chief Engineer Construction	Assure compliance

SECTION 01142A – SUBMISSION DOCUMENTATION REQUIRED FOR AMTRAK REVIEW AND APPROVAL OF PLANS FOR BRIDGE ERECTION, DEMOLITION AND OTHER CRANE/ HOISTING OPERATIONS OVER RAILROAD RIGHT-OF-WAY**PART 1 - GENERAL****1.1 SCOPE**

- A. Amtrak requires that a site-specific work plan for accomplishing hoisting operations be prepared for every applicable project, and for each type of lift on a project.
 - 1. The plan shall demonstrate adherence to Amtrak safety rules.
 - 2. The plan shall demonstrate constructibility.
 - 3. The plan shall minimize impact to rail operations.
 - 4. The approved plan will provide the basis for field inspection/ verification of the actual work.
- B. Preparation, review and approval of the Crane/ Hoisting site-specific work plan does not relieve the Contractor from meeting other Amtrak requirements for adequate planning and documentation of proposed work procedures within the Right-of-Way of the railroad..
- C. Current Amtrak safety rules shall be adhered to in every respect.
- D. Use of this specification is as required by Amtrak, as described in Amtrak Engineering Practice EP3014.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.3 DEFINITIONS

- A. CHIEF ENGINEER: Amtrak Vice President, Chief Engineer
- B. RAILROAD: National Railroad Passenger Corporation (Amtrak), and/or the duly authorized representative
- C. ENGINEERING PRACTICE: Amtrak Engineering Practices establish a system of uniform practices, notices and instructions for the Amtrak Engineering Department, providing current, permanent and temporary, departmental procedures and policies.

1.4 SUBMISSION REQUIREMENTS

- A. Unless otherwise directed in the Contract, the Contractor shall submit five sets of plans and calculations to the authorized representative of the Chief Engineer, Structures, whose name and address will be provided at the project pre-construction meeting.
- B. Submitted calculations and plans shall be signed and sealed by a Professional Engineer, registered in the State in which the work will be performed.

- C. The Contractor shall revise and resubmit plans and calculations as many times as necessary, until a complete and correct site-specific work plan for crane/ hoisting operations has been approved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

- 3.1 THE CONTRACTOR SHALL PROVIDE, AT A MINIMUM, THE FOLLOWING INFORMATION FOR REVIEW AND APPROVAL BY AMTRAK ENGINEERING STRUCTURES:
 - A. Plan view showing location(s) of cranes, operating radii, with delivery and/or disposal locations shown. Provide all necessary dimensions for locating the elements of the plan.
 - B. Plans and computations showing the weight of the pick.
 - C. Crane rating sheets, demonstrating that cranes are adequate for 150% of the calculated pick weight. That is, the cranes shall be capable of picking 150% of the load, while maintaining normal, recommended factors of safety. The adequacy of the crane for the proposed pick shall be determined by using the manufacturer's published crane rating chart and not the maximum crane capacity. Crane and boom nomenclature is to be indicated.
 - D. Calculations demonstrating that slings, shackles, lifting beams, etc. are adequate for 150% of the calculated pick weight.
 - E. Location plan showing obstructions, indicating that the proposed swing is possible. "Walking" of load using two cranes will not be permitted. Rather, multiple picks and repositioning of the crane may be permitted to get the load to the needed location for the final pick, if necessary.
 - F. Data sheet listing types and sizes of slings and other connecting equipment. Include copies of catalog cuts for specialized equipment. Detail attachment methods on the plans.
 - G. A complete procedure, indicating the order of lifts and any repositioning or re-hitching of the crane or cranes.
 - H. Temporary support of any components or intermediate stages, as may be required.
 - I. A time schedule of the various stages, as well as a schedule for the entire lifting process.

END OF SECTION 01142A

SECTION 01520A – REQUIREMENTS FOR TEMPORARY PROTECTION SHIELDS FOR DEMOLITION AND CONSTRUCTION OF OVERHEAD BRIDGES AND OTHER STRUCTURES

PART 1 - GENERAL

1.1 SCOPE

- A. This engineering practice describes items to be included in the design and construction of temporary protection shields for construction overhead and near to Amtrak tracks.
- B. Use of this specification is as required by Amtrak, as described in Amtrak Engineering Practice EP3014.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.3 DEFINITIONS

- A. CHIEF ENGINEER: Amtrak Vice President, Chief Engineer
- B. RAILROAD: National Railroad Passenger Corporation (Amtrak), and/or the duly authorized representative
- C. ENGINEERING PRACTICE: Amtrak Engineering Practices establish a system of uniform practices, notices and instructions for the Amtrak Engineering Department, providing current, permanent and temporary, departmental procedures and policies.

1.4 SUBMISSION REQUIREMENTS

- A. Unless otherwise directed in the Contract, the Contractor shall submit five sets of plans and calculations to the authorized representative of the Chief Engineer, Structures, whose name and address will be provided at the project pre-construction meeting.
- B. Submitted calculations and plans shall be signed and sealed by a Professional Engineer, registered in the State in which the work will be performed.
- C. The Contractor shall revise and resubmit plans and calculations as many times as necessary, until a complete and correct site-specific work plan for crane/ hoisting operations has been approved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 CONTRACTORS WORKING ON OVERHEAD OR NEARBY DEMOLITION AND/OR CONSTRUCTION ADJACENT TO AMTRAK TRACKS, SHALL CONFORM TO THE FOLLOWING

...TEMPORARY PROTECTION SHIELDS...

01520A - 1

DESIGN AND CONSTRUCTION REQUIREMENTS FOR TEMPORARY PROTECTION SHIELDING:

- A. The Contractor shall maintain a specified level of protection to railroad facilities, during demolition and construction activities that occur overhead and nearby Amtrak tracks, as shown on the Contract Plans, as detailed in the Contract Specifications, and as described below.
- B. Prior to the start of construction, the Contractor shall submit to Amtrak for review and approval, detailed, site specific plans for temporary protection shields. The plans will be reviewed as to the methods of erection, and as to whether or not the proposed installation will provide the required level of protection. No construction shall proceed until the Contractor has received written approval of the Contractor's complete, site specific plans, from Amtrak.
- C. The Contractor shall design the protection shields to conform to all applicable and governing federal, state and local laws and regulations.
- D. Drawings for the proposed temporary protection shields shall be signed and sealed by a Licensed Professional Engineer. Complete design calculations, clearly referenced to the drawings, and easy to review, shall be provided with submission of drawings.
- E. Protection shields shall be designed for the following, minimum load and size criteria.
 - 1. The horizontal shield design liveload on horizontal surfaces shall be the greater of a minimum of 100 pounds per square foot (psf) [5000 Pascals] or the anticipated liveload to be produced by the Contractor's anticipated operations. When determining the appropriate design live load, the designer shall consider factors such as the physical capacity of proposed debris-catching platforms to retain materials, and the type of equipment the platforms might support. Positive means of demolition and construction controls shall be provided to assure that debris that may collect on the shield will not exceed the design live load. The horizontal protection shield, in plan view, shall cover no less than the area directly over the tracks plus ten feet minimum beyond the centerline of the outermost tracks.
 - 2. The vertical shield shall be designed to carry a minimum 30 psf [1500 Pascals] allowance for wind load. The vertical shield shall extend a minimum of 6'-6" [1950 millimeters] above the top of the adjacent surface, such as curb or sidewalk. Anti-climb wings shall be installed at each end, as necessary, to restrict access to the railroad property.
- F. The vertical and horizontal clearance envelopes required for maintenance of railroad operations, shall be indicated on the site specific work plans. These clearances are subject to review and approval by Amtrak. If applicable, both temporary and permanent envelopes shall be indicated on the plans. The temporary protection shields shall be installed outside the limits of these minimum vertical and horizontal clearances shown on the site specific work plans.
- G. In electrified territory, temporary protection shields shall be bonded and grounded.
- H. Temporary protection shields shall be designed and constructed to prevent dust, debris, concrete, formwork, paint, tools, or anything else from falling onto the railroad property below.
- I. The temporary protection shields shall be attached to the structure in accordance with site specific work plans submitted by the Contractor and approved by Amtrak. Drilling in structural members and welding will generally not be permitted in members that are scheduled to remain in place in the reconstructed structure. For existing members scheduled for demolition or for later reconstruction, any proposed attachment shall be designed with consideration of potential existing, deteriorated conditions.
- J. The Contractor shall provide the Amtrak on-site representative, for review and approval prior to any construction activity in the effected area, a proposed construction schedule for the installation, maintenance and removal of the temporary protection shields.

- K. The temporary protection shields shall be installed prior to the start of any other work over the railroad in the effected areas. No construction shall proceed until the Amtrak on-site representative reviews and approves the Contractor's installed protection. Before proceeding with the work, Amtrak must be satisfied, in its sole judgment, that sufficient protection has been provided to proceed with the work.
- L. The Contractor shall install and remove temporary protection shields only when an Amtrak representative is on-site.
- M. The Contractor shall not install or remove temporary protection shields during train operations.
- N. Temporary protection shields shall remain in place for the duration of construction activities over and nearby the railroad in the effected areas. The Contractor may remove temporary construction only after approved by Amtrak on-site representatives.
- O. Where site specific conditions impose insurmountable restrictions to the design of temporary construction conforming to the limitations listed above, the design of temporary construction shall be developed in close coordination with Amtrak design review personnel. The Chief Engineer, Structures shall provide final approval of temporary construction that does not conform to the above limitations.

END OF SECTION 01520A

SECTION 02261A – REQUIREMENTS FOR TEMPORARY SHEETING AND SHORING TO SUPPORT AMTRAK TRACKS

PART 1 - GENERAL

1.1 SCOPE

- A. This engineering practice describes items to be included in the design and construction of temporary sheeting and shoring construction adjacent and proximate to Amtrak tracks.
- B. Use of this specification is as required by Amtrak, as described in Amtrak Engineering Practice EP3014.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.3 DEFINITIONS

- A. CHIEF ENGINEER: Amtrak Vice President, Chief Engineer
- B. RAILROAD: National Railroad Passenger Corporation (Amtrak), and/or the duly authorized representative
- C. ENGINEERING PRACTICE: Amtrak Engineering Practices establish a system of uniform practices, notices and instructions for the Amtrak Engineering Department, providing current, permanent and temporary, departmental procedures and policies.

1.4 SUBMISSION REQUIREMENTS

- A. Unless otherwise directed in the Contract, the Contractor shall submit five sets of plans and calculations to the authorized representative of the Chief Engineer, Structures, whose name and address will be provided at the project pre-construction meeting.
- B. Submitted calculations and plans shall be signed and sealed by a Professional Engineer, registered in the State in which the work will be performed.
- C. The Contractor shall revise and resubmit plans and calculations as many times as necessary, until a complete and correct site-specific work plan for temporary sheeting and shoring has been approved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 CONTRACTORS INSTALLING TEMPORARY CONSTRUCTION SHEETING AND SHORING TO SUPPORT AMTRAK TRACKS SHALL CONFORM TO THE FOLLOWING:

- A. Footings for all piers, columns, walls, or other facilities shall be located and designed so that any temporary sheeting and shoring for support of adjacent track or tracks during construction, will not be closer than toe of ballast slope. The dimension from gage of rail to toe of ballast, along tangent track, is 7'-5"; see dimensions on Track standard plans for curved track dimensions.
- B. USE OF SHEETING: When support of track or tracks is necessary during construction of the above-mentioned facilities, interlocking steel sheeting, adequately braced and designed to carry Cooper E80 live-load plus 50 percent impact allowance is required. Soldier piles and lagging will be permitted for track support ONLY when required penetration of steel sheet piling cannot be obtained, due to site-specific conditions that make steel sheet piling placement impracticable, in the opinion of the authorized, Amtrak design review engineer.
1. For usual soil conditions and limited excavations, sheeting is required when the near-track excavation extends beneath or nearer to the track than the Theoretical Railroad Embankment Line. The Theoretical Railroad Embankment Line is defined as a line that starts at grade, ten foot from the centerline of the outer track, and extends downward, away from the track, at a slope of 1-1/2 horizontal to one vertical.
 2. For special soil conditions, such as soft organic soils and rock conditions, and for unusual excavation conditions, temporary supports for excavations may be necessary even when the limits fall beyond the Theoretical Railroad Embankment Line, requiring site specific analysis by a professional, geotechnical engineer.
 3. See Sketch SK-1, "Normal Requirements for Sheet Piling Adjacent to Tracks".
- C. Exploratory trenches, three feet deep and 15 inches wide in the form of an "H", with outside dimensions matching the proposed outside dimensions of sheeting, shall be hand dug, prior to placing and driving the sheeting, in any area where railroad or utility underground installations are known or suspected. These trenches are for exploratory purposes only, and shall be backfilled and immediately compacted, in layers. This work shall be performed only in the presence of a railroad inspector.
- D. Absolute use of track is required while driving sheeting adjacent to running track. Track usage shall be prearranged per standard procedures, through the Amtrak project representative.
- E. Cavities adjacent to sheet piling, created by pile driving, shall be filled with sand, and any disturbed ballast shall be restored and tamped immediately.
- F. Sheet piling cutoffs
1. During construction, sheeting shall be cut off at an elevation no higher than the top of tie.
 2. At the completion of construction activities involving the use of sheet piling, sheet piling may be pulled if there will be no adverse impact to the railroad track support bed, as determined by the Amtrak site engineer. This will generally be permitted when both of these conditions are met:
 - a. the sheeting face is at least ten feet distant from the centerline of track, and
 - b. the bottom of the excavation that the sheeting supported prior to backfilling, does not fall within an assumed influence zone under the tracks. The assumed influence

zone is defined as the area, as seen in cross-sectional view, falling beneath the Theoretical Underground Track Disturbance Line. This line is defined as a line that starts at the end and bottom of the ties, and extends from the track outward and downward at a one-to-one (45-degree) slope.

3. Sheet piling that is to be left in-place, shall be cut off below the ground line
 - a. at least eighteen inches below final ground line at the sheeting, and
 - b. no higher than 24 inches below the elevation of the bottom of the nearest ties
 4. See Sketch SK-1, "Normal Requirements for Sheet Piling Adjacent to Tracks".
- G. The excavation adjacent to the track shall be covered, ramped and protected by handrails, barricades and warning lights, as required by applicable safety regulations, and as directed by Amtrak.
- H. Final backfilling of excavation shall conform to project specifications.
- I. The Contractor shall provide Amtrak with a detailed schedule of proposed construction operations, detailing each step of the proposed temporary construction operations in proximity to Amtrak tracks, so that Amtrak may review and approve the proposed operations, and may properly inspect and monitor operations.
- J. Drawings for the proposed temporary sheeting and shoring shall be signed and sealed by a Licensed Professional Engineer. Complete design calculations, clearly referenced to the drawings, and easy to review, shall be provided with submission of drawings.
- K. Where site specific conditions impose insurmountable restrictions to the design of temporary construction conforming to the limitations listed above, the design of temporary construction shall be developed in close coordination with Amtrak design review personnel. The Chief Engineer, Structures shall provide final approval of temporary construction that does not conform to the above limitations.
- When Amtrak grants approval for sheeting closer than standard minimum clearances, the Contractor shall develop a survey plan, if not already required by the project, for the adjacent tracks, to be conducted prior to, during, and after the temporary sheeting construction operations. If settlement is detected, construction operations shall be suspended until the track has been returned to its initial condition, and stabilized, as determined by the Amtrak project site representative.
2. The Contractor shall stockpile ten (10) tons of approved ballast at the project site, and maintain that amount in ready reserve, to allow for the possible need to restore track profile.
- L. Particular care shall be taken in the planning, design and execution of temporary construction, as relates to railroad slope protection and drainage facilities. Erosion and sediment control best management practices shall be designed and employed, as approved by Amtrak. Any unintended disruption to railroad drainage facilities, caused by the temporary construction, shall be promptly remedied, as directed by the Engineer, solely at the Contractor's cost.
- M. The following Information Sketch is attached:
1. Figure No. SK-1: Normal Requirements for Sheet Piling Adjacent to Track

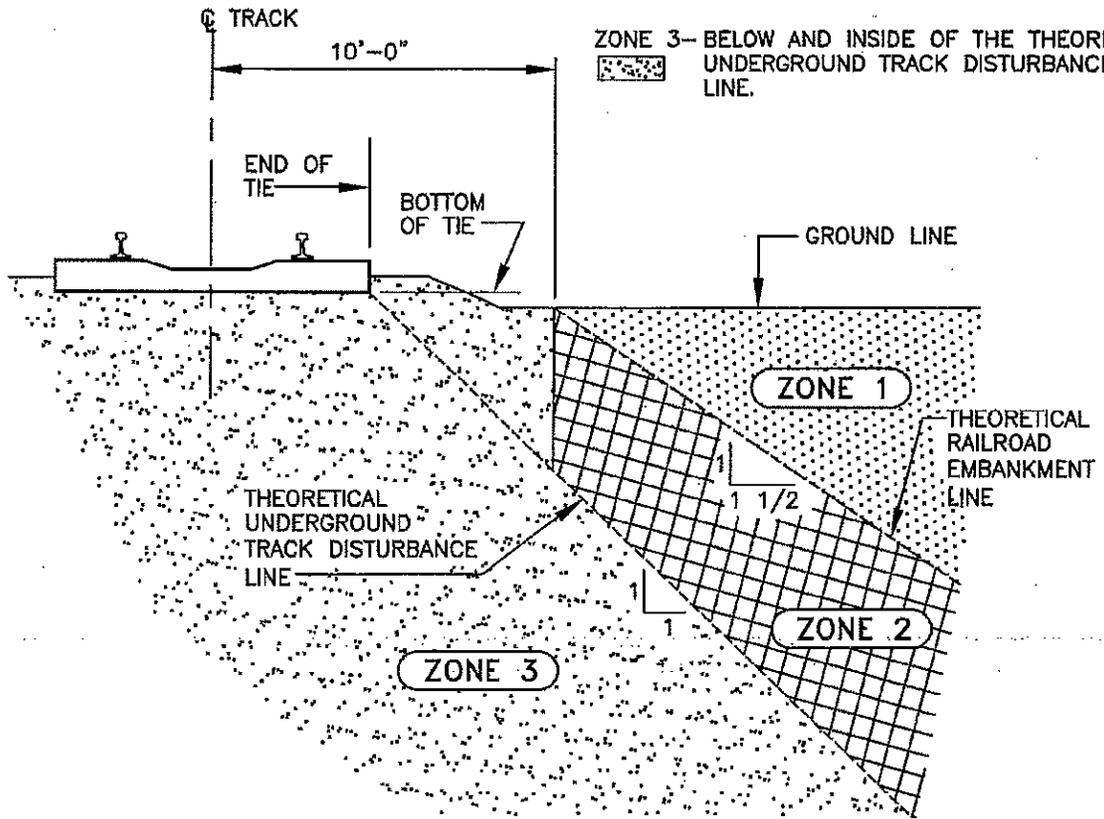
END OF SECTION 02261A

LEGEND

ZONE 1—ABOVE AND OUTSIDE THE THEORETICAL RAILROAD EMBANKMENT LINE.

ZONE 2—FARTHER THAN 10 FEET FROM THE CENTERLINE OF TRACK, BELOW THE THEORETICAL RAILROAD EMBANKMENT LINE AND ABOVE THE THEORETICAL UNDERGROUND TRACK DISTURBANCE LINE.

ZONE 3—BELOW AND INSIDE OF THE THEORETICAL UNDERGROUND TRACK DISTURBANCE LINE.



**NORMAL REQUIREMENTS FOR SHEET PILING
ADJACENT TO TRACK**

- ① EXCAVATIONS WITHIN ZONE 1 — ABOVE AND OUTSIDE OF THE THEORETICAL RAILROAD EMBANKMENT LINE — DO NOT NORMALLY REQUIRE SHEETING TO PROTECT RAILROAD ROAD BED. SHEETING MAY BE REQUIRED FOR OTHER REASONS.
- ② EXCAVATIONS WHOSE BOTTOMS EXTEND INTO ZONE 2 REQUIRE SHEETING, BUT THE SHEETING MAY NORMALLY BE PULLED AFTER THE EXCAVATION HAS BEEN BACKFILLED.
- ③ EXCAVATIONS WHOSE BOTTOMS EXTEND INTO ZONE 3 WILL NORMALLY REQUIRE THE SHEETING TO BE LEFT IN PLACE AND CUT-OFF PER REQUIREMENTS.

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			Design No:	1 of 1
			Sheet No.	SK-1
		Designed: CJR	Drawn: JLM	Date: 8/06/01

 ENGINEERING PRACTICES	ORIGINAL ISSUE DATE 04/24/01	NUMBER EP3016	
	REVISED DATE N/A		
TITLE STORM WATER DRAINAGE AND DISCHARGE FROM ADJACENT PROPERTY ONTO AMTRAK RIGHT-OF-WAY	RECOMMENDED by Anthony Scorpio	DATE 4/25/01	PAGE 1
	APPROVED by CHIEF ENGR, STRUCTURES James Richter	DATE 4/27/01	OF 2

SCOPE AND NATURE

There are many areas along the railroad corridor that are receiving storm water from adjacent property that results in flooding during the smallest of storms. Increased storm water flow to the railroad property increases deposits of excessive amounts of sedimentation and could cause fouling of the track structure. With the introduction of the High Speed Rail Trains, passenger safety is of the utmost importance. Diminished track support from flooding and sedimentation will not be allowed.

It is Amtrak's policy to limit the resultant discharge and drainage of storm water from the development of adjacent properties to no more than pre-existing conditions, as demonstrated by engineering analyses through governmental regulatory processes.

It is Amtrak's policy to protect the railroad right-of-way from sediment, erosion and excess runoff during all stages of construction activities on adjacent properties, as demonstrated by engineering analyses through governmental regulatory processes.

SPECIAL REFERENCE

The following policy is to augment Specification 02861 of EP3005, Pipeline Occupancy Requirements and Specifications, and other Amtrak I&C, design and construction standards.

SPECIAL MATERIALS

N/A

PROCEDURE

The discharge of storm water onto railroad property will be prohibited for all construction projects on or adjacent to Railroad property, unless the applicant can demonstrate that there will be a "zero net runoff" result in the peak flow and total volume based on a 100 Year Storm event, and that receiving waters downstream will not be impacted.

Computations indicating this design and suitable topographic plans, prepared by a Professional Engineer, licensed in the state in which the work will be performed, shall be submitted to the Chief Engineer for approval at least 60 days in advance of construction. If the drainage is to discharge into an existing drainage channel on or under the Railroad Right of Way, a hydraulic analysis of the existing structures must be included.

Formal approval of the proposed design, by the appropriate governmental agency or agencies, must be submitted with the computations. Control of soil erosion and sedimentation must be demonstrated on the design plans in accordance with the appropriate state and local regulations.

TITLE STORM WATER DRAINAGE AND DISCHARGE FROM ADJACENT PROPERTY ONTO AMTRAK RIGHT-OF-WAY	ORIGINAL ISSUE DATE 04/24/01	NUMBER EP3016
	REVISED DATE N/A	
		PAGE 2 OF 2

The Contractor shall be responsible for control of the site and protection of railroad property during the entire construction project, through completion. The design of sedimentation, erosion and runoff control during construction shall accommodate conditions of every phase of construction.

Review, monitoring and approval process:

1. The Contractor shall conform to this Amtrak policy, and demonstrate conformance by standard Amtrak review submissions and approvals, as noted above.
2. Amtrak I&C shall assure that agencies and other third parties proposing construction on or adjacent to Amtrak Right-of-Way conform to Amtrak policy detailed herein.
3. Amtrak Design and Construction shall review the Contractor's proposed design and construction procedures for conformance with Amtrak policy, as demonstrated through appropriate engineering analyses and the government regulatory process.
4. Amtrak Construction shall monitor the activities of the Contractor on-site to assure compliance/ adherence to approved procedures throughout the construction period.

REPORTING

N/A

RESPONSIBILITY

Amtrak I&C Staff	Comply with Procedure
Director I&C	Assure Compliance
Amtrak Design Staff	Comply with Procedure
Director Structures Design	Assure Compliance
Amtrak Construction Staff	Comply with Procedure
Sr. Director Construction	Assure compliance



June 13, 2008

SPEC NO. 150 ©

STORMWATER MANAGEMENT POLICY

Scope

This specification is for designing stormwater management drainage facilities on property adjacent to Amtrak's Right-of-Way. These requirements are closely allied with the needs associated with the safety of high speed rail passenger service.

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1. Introduction

- 1.1. This specification has been developed to outline the National Railroad Passenger Corporation's (Amtrak) policies, criteria, and methodologies regarding hydrologic/hydraulic design of proposed developments adjacent to the Amtrak's right-of-way.
- 1.2. Reference to this specification will provide definitive guidelines for preparing thorough hydrologic/hydraulic design analyses in conformance with the requirements of Amtrak's Engineering Practices, Amtrak's Specification 63, and as specified herein. Close adherence to the provisions of this specification will reduce the review process time for hydrologic/hydraulics approval.

2. Policy

- 2.1. Amtrak reserves the right to review any development adjacent to the Amtrak ROW or facilities to ensure that: 1) the proposed development will not adversely affect the railroad and 2) improvements on Amtrak's land are in conformance with Amtrak's design criteria, construction specifications, and standard details.
- 2.2. Adverse impacts may include flooding, erosion, structural damage, and/or any safety hazard that may occur.
- 2.3. All submittals must be sent to Amtrak's Director of I & C Projects. The Director of I & C Projects will review the development plans and computations to confirm that:
 - All inlets, pipes, channels and other storm drain facilities constructed on Amtrak's property meet Amtrak criteria.
 - The hydraulic design of proposed drainage facilities, which connect directly to Amtrak drainage facilities either upstream or downstream, are adequate.
 - On-site drainage systems for proposed developments, which do not connect directly to Amtrak drainage facilities, will not indirectly result in an adverse impact to Amtrak facilities or ROW.
 - Proposed improvements do not create safety or erosion hazards.
 - Work within or adjacent to Amtrak does not cause an increases in flow or total runoff towards the railroad.
- 2.4. Amtrak's approval will not be issued until a complete set of final plans and computations as specified in these criteria has been received and reviewed.
- 2.5. These plans and computations must also be reviewed and approved by the local stormwater management-approving agency (town, city, county, state, etc.). Amtrak is not an approving agency for stormwater management facilities.

- 2.6. All storm water facilities must be designed to accommodate a storm with a 100 year recurrence interval as determined by using either the Soil Conservation Service (SCS) or the Rational Method, whichever is appropriate.
- 2.7. The applicant must also supply Amtrak with copies of all of the other approvals that are required for the proposed development; e.g., Non-Tidal Wetland and Waterway Permits, Tidal Wetlands License, Army Corps of Engineers Permits, Point Discharge Permits etc.
- 2.8. Computations must be provided that demonstrate that discharge from the proposed development for storm intervals of a 2; 5; 10; 25; and 100 year storms does not raise the existing flood water levels on the railroad property.
- 2.9. All storm water retention or detention facilities constructed up-gradient of the Amtrak right of way that may pose a risk to train operations must be constructed, inspected and maintained in accordance with the latest edition of the United States Department of Agriculture, Soil Conservation Service - Technical Release 60. Impoundment structures shall be considered a Class "C" dam. Relief from this requirement can only be obtained by submission of a letter from the appropriate State agency that regulates dam safety stating that Technical Release 60 does not apply at this specific location. The State agency must then dictate the classification of the proposed structure and the level of inspection and maintenance required.

Amtrak does not consider the United States Department of Agriculture Natural Resources Conservation Service – Conservation Practice Standard – Pond No - Code 378 to be applicable unless it is dictated as noted above. Code 378 clearly states the following:

“CONDITIONS WHERE PRACTICE APPLIES

This standard establishes the minimum acceptable quality for the design and construction of low hazard (class “a”) ponds if:

1. Failure of the dam **will not result in loss of life**; damage to homes, commercial or industrial buildings, main highways, or **railroads**; or in interruption of the use or service of public utilities.”

- 2.10. Most importantly, Amtrak’s review or lack of review does not release the owner, developer or their consultant from liability.

3. Submittal Requirements

- 3.1. The following material (if appropriate) shall be submitted for hydrologic/hydraulic review by Amtrak:

1. County approved stormwater management (SWM) plans and computations or documentation from the County regarding their waiver of SWM.
2. Pre-development drainage area map for the entire watershed, clearly indicating the existing contours both on site and off site. (1”=200’ scale or larger)
3. Post-development drainage area map for the entire watershed, clearly indicating the proposed contours both on site and off site. (1”=200’ scale or larger)

4. A set of the latest approved post-development site plans, clearly indicating existing topographical features, proposed structure details, typical sections, pipe profiles, and contour grading.
5. Complete storm drainage plan and hydraulic gradient profiles of both the existing and proposed storm drainage system from the proposed development for storm intervals of 2; 5; 10; 25; and 100 year.
6. Complete hydraulic analyses for cross-culverts under Amtrak for the 100-year storm utilizing the Soil Conservation Service (SCS) Method.
7. Complete storm sewer design computations for proposed closed storm drainage system for the 100-year storm utilizing the Rational Method.
8. Complete hydraulic gradient computations for proposed and existing storm drainage systems for the 100-year storm, utilizing the Rational Method.
9. Complete analyses, utilizing the SCS Method, for:
 - a. Channels adjacent to the Amtrak ROW for the 100-year storm.
 - b. Inlet / outlet channels to culverts for the 100-year storm.
10. Complete hydrologic analysis/back-up data (eg.: t_c , t_c path, curve numbers, soil types, TR-20 Schematic Diagrams, land uses, etc.).

3.2. The following standard programs can be used for the design computations:

- Culvert Analysis or HY-8 Computer Analysis
- Peak Discharge using TR-55 *or* TR-20 Computer Analysis
- Rational or Modified Rational Methods may be used for areas less than 20 acres.
- Alternative methods required by local governing or regulating authorities, provided they are more restrictive than the above and use the 100 year storm event as the design standard.

3.3. Calculation shall be provided to show the derivation of the Runoff Curve Number (RCN) for the TR - 20 computer input forms. Supplementary computations sheets showing the derivation of “times of concentration” (t_c) must also be submitted. TR-55 worksheets may be used to show these computations.

3.4. All computations are to be neatly prepared, well organized, and appropriately labeled so they can be easily reviewed. The computations shall also include references to all design charts and publications used in the preparation of the computations.

3.5. The pre- and post-development drainage area information shall include:

- An outline of the total drainage area to the point being analyzed and all sub-areas within the total watershed that are pertinent to the computations. The drainage area shall not be limited to the development site.
- The soil types within the watershed.
- The land uses within the watershed.
- All time-of-concentration (t_c) flow paths investigated, showing the limits of overland flow, swale flow, ditch flow, pipe flow, stream flow, etc. The chosen path shall be clearly differentiated from all other paths investigated. When the t_c path changes with the recurrence interval, each path must be clearly identified.
- Existing and proposed storm drain and stormwater management systems (both on site and off site) serving the development and surrounding watershed.
- Drainage area and cross section numbers that agree with the design computations and computer output data.

4. Methodology

4.1. The following methods shall be used in performing hydrologic computations for development projects that are to be reviewed by Amtrak.

1. The "United States Soil Conservation Service Hydrograph Method", utilizing either the TR-55 Tabular Hydrograph Method or the TR-20 program, shall be used for determining the discharges for design and analysis of culverts, SWM facilities, and open channels.
2. The Graphical Peak Discharge Method may be used only when development is within a homogeneous watershed (watershed subdivision not required), and reservoir routing is not required.
3. The Rational Method shall be used for determining the discharges for design and analysis of closed drainage systems (those consisting of pipes and similar structures). The Rational Method may also be used for areas of 20 acres or less. The Rational Method is defined by the following equation:

$$Q=CiA$$
Where :
Q - peak flow (cfs).
C - dimensionless runoff coefficient.
i - rainfall intensity (in/hr).
A - catchment area (acres).
4. Alternative methods that may be required by local governing or regulating authorities, provided they are more restrictive than the above and use the 100 year storm event as the design standard.

5. Hydrology

- 5.1. The hydrologic computations shall be performed in conformance with the Methodology noted in Section 4 above for the site and as specified herein.
- 5.2. The following analyses may be required depending on the resulting adequacy of the drainage facilities:
 1. Pre-development (existing).
 2. Post-development analysis for the project site with full potential development in accordance with existing zoning for the site. Should this analysis demonstrate adequacy of the existing and/or proposed drainage facilities, no further analysis is required.
- 5.3. The entire watershed to the point of investigation is to be included in the hydrologic computations.
- 5.4. The latest available version of TR-55 or TR-20 is to be used in determining runoff by the Soil Conservation Service Method unless a different method is allowed by the provisions of paragraph 3.2 above. The standard SCS 24 hr. Type II rainfall distribution (Table #2) is to be used for the TR-20 program. The selection of sub-areas and cross sections for the reach routings for development of composite hydrographs shall be suitably justified and documented.
- 5.5. The applicant shall determine a representative time of concentration based upon land use, slopes, and soil groups. Several paths should be investigated in the process and the path representing the greatest contribution of runoff chosen (the most representative time is not necessarily the longest time). All flow paths shall be indicated on the drainage area maps and supported by backup computations.
- 5.6. Special considerations in unique circumstances may require other additional methods of analysis. Contact with the Amtrak's Director of I & C Projects is recommended when the designer is considering special cases.

6. Culvert Analyses

- 6.1. The applicant shall provide an analysis for all proposed culverts under Amtrak and for all existing culverts that may be affected as a result of the proposed development. This may include culverts that are located beyond the property boundaries. These analyses shall include a review of the stability/capacity of the downstream channel and design of outfall protection measures.
- 6.2. Definition of a culvert: Any culvert under the railroad with or without a headwall, end section or protective end, whose primary function is to convey off-site runoff through the railroad, is considered to be a culvert. This definition applies even if an extended downstream storm drainage system is connected to the culvert. In addition, an entrance culvert parallel to the railroad with a downstream storm drainage system connected to it may also be considered a culvert. In these cases, a hydraulic gradient based upon the SCS methodology discharges will be required to determine the tailwater for the upstream culvert.

- 6.3. The headwater pool elevation for the design flood must not be higher than the bottom of the railroad tie based upon the proposed development and existing conditions for the off site portion of the watershed. The bottom of the railroad tie is approximately 1.43 feet below the top of the rail.
- 6.4. The post-development headwater pool elevations shall be determined taking into consideration the following:
 - Storage at the inlet of the culvert if appropriate.
 - Overflow into or from an adjacent drainage basin.
 - Tailwater elevations from downstream drainage, headwater pools, floodplains, and storm-water management facilities.
 - Extension of the culvert to accommodate railroad embankment widening.
 - Outflow from upstream storm-water management facilities.
- 6.5. Storm drain extensions that are proposed downstream of an existing culvert under Amtrak shall be adequately sized to handle the ultimate development of the watershed, as allowed by zoning, regardless of the capacity of the culvert. The plans must include profiles of all proposed culvert extensions.
- 6.6. Any development adjacent to an Amtrak facility must ensure that an existing flooding problem on the Amtrak facility will not be worsened as a result of the proposed development. In the event of increased discharges, applicants may (subject to county and state approval) upgrade or supplement an existing culvert to reduce the runoff to pre-development levels or below. Adequacy of the outfall must be addressed should this option be pursued. Should this prove to be infeasible, a storm-water management facility may be required.
- 6.7. Headwalls shall be provided on pipes. All culverts must have a minimum diameter of 18 inches for a length of less than 60 feet and 24 inches for a length of 60 feet or greater. As with all drainage design, railroad safety and stability is paramount in considering the location of culvert headwalls and end sections.
- 6.8. With any other special circumstance, coordination with Amtrak Engineering is recommended.

7. Off-site Drainage Design

- 7.1. All proposed development adjacent to Amtrak shall include a storm drainage system along Amtrak's property that will intercept existing and proposed flows and discharge the system in accordance with Amtrak criteria. Waivers to this policy must be reviewed and approved by Amtrak Engineering.
- 7.2. The applicant shall prepare a pre- and post-development analysis for watercourses when runoff from the proposed development is directed toward the Amtrak property. Additional detention or diversion will be required if the peak discharge (cfs) from the development increases.

- 7.3. The applicant shall utilize one of the following options if Amtrak's review finds that an adequate drainage system has not been specified:
1. Provide additional inlet capacity;
and/or
 2. Revise the site plan to reduce runoff to Amtrak. This may include re-grading for the proposed development and/or additional inlets or detention on-site.

8. Closed Storm Drainage Systems

- 8.1. The applicant shall provide an analysis for all existing and proposed storm drainage systems under or adjacent to Amtrak which may be affected as a result of the proposed development. This frequently includes systems that are located beyond the property boundaries.
- 8.2. The 100-year post development storm, utilizing the Rational Method, shall be used for storm drainage pipe designs. Pipes should be initially sized to convey this discharge at or below full flow.
- 8.3. The submittal for review shall include the following:
- Plans, profiles and construction methods for the proposed system to meet the design requirements of Amtrak's EP 3005- Pipeline Occupancy – Specification 02081A.
 - Completed Storm Sewer Design for the 100-year storm frequency.
 - Hydraulic gradient computations for a 100-year storm. This must be plotted on the pipe profiles and be below the top of grate or manhole cover.
- 8.4. Channel conditions downstream from the storm drain outlet pipe and/or the Hydraulic Grade Line (HGL) of an existing downstream storm drain shall be carefully reviewed to determine the beginning elevation for the hydraulic gradient computations. Additionally, when a proposed system is directed toward a stormwater management facility, the 100-year water surface elevation must be used as the controlling tailwater elevation. A complete discussion of assumptions and backup computations shall be provided.
- 8.5. The 100-year storm hydraulic gradient shall be developed for the proposed storm drainage systems for post-development conditions to determine if flooding of the Railroad is exacerbated by the post development runoff. An analysis of the existing system must be performed to determine if flooding occurs or worsens as a result of the proposed development. If so, appropriate design revisions must be made.
- 8.6. The surface overflow flood route shall be plotted for all projects for the pre- and post-development conditions to identify potential flooding hazards.
- 8.7. General design requirements for designing pipes within the Amtrak ROW are found in Amtrak's Engineering Practice EP 3005 – "Pipeline Occupancy – Specification 02081A

9. Open Channels

- 9.1. The applicant shall provide an analysis for all proposed channels adjacent to Amtrak and any existing channel that may be affected as a result of the proposed development. This may include channels that are located beyond the property boundaries. All proposed channels are to be designed such that no adverse impact to the Railroad occurs.
- 9.2. The water surface elevations for new open channels for a 100-year frequency storm shall be at least 1 in. below the bottom of the railroad tie elevation.
- 9.3. Open channels shall be checked for velocity, depth of flow and type of lining for the design storm including locations in the channel where:
 - Other swales and ditches outlet into the channel
 - The typical section of the channel changes significantly (eg: the channel changes from a “vee” section to a trapezoidal section, the bottom width increases 2 feet or more, etc.). No “vee” ditches will be permitted on railroad property.
 - The grade of the channel changes (either flattens or steepens)
- 9.4. Specific items, that the design and analysis of the channels must include are:
 - Depth limitations as stated above.
 - All channels must have linings, which will not erode at design velocities.
 - Tributary channels shall be designed to intersect the railroad side ditch at an angle of between 30° and 60°.
 - Ditches must not change percent of grade in close proximity to headwalls or end sections. Changes in slopes at these locations may cause undermining or clogging of the structure, due to changes in velocity, and are therefore not allowed.

10. Stormwater Management (SWM)

- 10.1. SWM approval is the responsibility of the local approving agency. Amtrak is not an approving agency for SWM facilities. Amtrak is solely concerned with potential impacts to Amtrak facilities due to inadequate SWM.
- 10.2. The applicant shall provide complete design computations and construction plans for all proposed SWM facilities that are adjacent to Amtrak. All SWM facilities are to be designed or analyzed with the SCS Hydrograph Method. No other methods will be allowed. The SCS "Short-cut Method" is not acceptable. The SWM computations shall address the appropriate pre- and post-development discharge rates. In addition, computations based on the functional storm may be required so that Amtrak can perform a complete evaluation of the development. All soils data (soil type, runoff coefficient, etc) for water quality management shall be included with the SWM computations.
- 10.3. All SWM facilities for private development must be located outside Amtrak property.

10.4. The following should be considered when designing SWM facilities:

- Ponds downstream of railroad facilities must be adequately sized so that the hydraulic operation of upstream drainage systems for the railroad is not impacted.
- Emergency spillways directing flow onto Amtrak will not be allowed. The emergency spillway must discharge flow away from Amtrak or into an adequate channel where flow will not impact railroad operations.
- All detention facility designs must comply with the requirements contained in the Soil Conservation Service Publication TR – 60
- All dams adjacent to and upstream of Amtrak are to be Class “C” per TR-60 unless as determined in paragraph 2.9 above.
- A breach routing plan is required. A breach routing plan must route water away from Amtrak.
- Use of existing Amtrak SWM, such as detention basins, facilities by private applicants is not allowed.

NOTICE TO CONTRACTOR – WORK ON OR ABOVE AMTRAK PROPERTY

The Contractor is hereby notified that work to be accomplished under this contract is to be performed on or above property owned by the National Railroad Passenger Corporation (Amtrak). The Contractor's work must be accomplished simultaneously with ongoing daily railroad operations. Such operations include, but are not limited to the passage of trains, flagging, inspection, repair, construction, reconstruction, and maintenance of the railroad right-of-way and facilities. In addition to Amtrak operations, Central New England Railroad has similar daily railroad operations within the railroad right of way below the bridge.

The Contractor will be required to perform the following on or above Amtrak Right of Way:

Project 63-699

1. Modify existing bridge parapets
2. Replace the median between the spans and the adjacent Bridge Deck
3. Replace drainage downspouts
4. Modify existing and install new IMS conduit
5. Remove, salvage, and reinstall light standards on new anchorages
6. Remove existing and install new illumination conduit.
7. Perform structural steel repairs to beam ends.
8. Install containment system, abrasive blast clean, and paint beam ends
9. Install containment system, abrasive blast clean, and paint beams full length
10. Install temporary supports and replace bridge bearings.
11. Construct temporary grade crossing

Project 63-700 & 701

1. Modify existing bridge parapets
2. Remove, salvage, and reinstall light standards on new anchorages
3. Install new illumination conduit.
4. Perform structural steel repairs to splice and install new structural steel
5. Install containment system, abrasive blast clean, and paint beam ends at pin/hanger locations
6. Perform overhead bridge deck patching
7. Replace bridge deck joint, deck end and parapet section.

The Contractor is advised that Amtrak controls all activity and the Department expects that these conditions may cause delays and possibly a complete suspension of construction activity. If the Contractor is delayed or suspended in the completion of work by Amtrak

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operations or restrictions, the Contractor will be entitled to a time extension for every full day that he can demonstrate that the delays affected the completion date of the contract. This extension of time will be considered non-compensable and the Contractor will not be entitled to any additional compensation for damages incurred for all direct and indirect costs including, but not limited to, all delay and impact costs, and inefficiencies.

There is a potential for limitations on track outages and extraordinary requirements for vehicular access coordination. The Contractor must conduct his work within such limitations. This will require night work and may require premium time (weekend work) or double shifts. The Contractor is fully responsible to complete the contract work.

The Contractor shall be responsible for the coordination of the work of his various subcontractors. The Contractor shall coordinate his operations with those of the Railroad in carrying out railroad force account work.

The Contractor's employees, and the employees of all subcontractors, who will be entering the jobsite within Railroad territory, must be qualified in the Railroad's "Amtrak Contractor Roadway Worker Protection" program. Qualification will require a safety training class of approximately two (2) hours, offered by Amtrak. The Contractor will arrange for the class, and is responsible for ensuring that all employees on the jobsite have been trained. The Contractor is responsible for all fees associated with the safety training class. No additional compensation will be allowed to the Contractor for employees' time for attending the class.

The Contractor must make his own arrangements with the railroad Company for the use of Railroad equipment or changes in Railroad facilities made solely to facilitate the Contractor's operations. The expense incurred by making such arrangements shall not be part of this contract.

The Contractor is notified the Contract plans may not reflect the current configuration of the railroad. Furthermore, the existing track structure may differ from the historical configuration of the railroad. It shall be the Contractor's responsibility to prepare a site specific work plan based on railroad facilities in their current configuration.

Railroad Specifications:

The Contractor is hereby notified that the following railroad specifications are included as part of this Notice and shall be made a part of this contract. The Contractor shall be bound to comply with all requirements of these specifications.

SECTION 01141A – SAFETY AND PROTECTION OF RAILROAD TRAFFIC AND PROPERTY

SECTION 01142A - SUBMISSION DOCUMENTATION REQUIRED FOR AMTRAK REVIEW AND APPROVAL OF PLANS FOR BRIDGE ERECTION, DEMOLITION AND

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OTHER CRANE/ HOISTING OPERATIONS OVER
RAILROAD RIGHT-OF-WAY

SECTION 01520A - REQUIREMENTS FOR TEMPORARY PROTECTION
SHIELDS FOR DEMOLITION AND CONSTRUCTION
OF OVERHEAD BRIDGES AND OTHER
STRUCTURES

SECTION 02261A - REQUIREMENTS FOR TEMPORARY SHEETING
AND SHORING TO SUPPORT AMTRAK TRACKS

EP3016 - STORM WATER DRAINAGE AND DISCHARGE
FROM ADJACENT PROPERTY ONTO AMTRAK
RIGHT OF WAY

SPEC. NO. 150 - STORMWATER MANAGEMENT POLICY

Contractor Requirements for Work Affecting Amtrak Railroad

The Contractor shall be governed by the terms of the Contract and the referenced sections of the document entitled “State of Connecticut Department of Transportation, Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816,” dated 2004, and supplemental specifications thereto dated January 2016, with the following additions:

1. All matters requiring National Railroad Passenger Corporation (Amtrak) approval or coordination shall be directed to:

Mr. Earl Watson III
Director I&C Projects
Amtrak - National Railroad Passenger Corporation
30th Street Station, 4S-027, Box 64
2955 Market Street
Philadelphia, PA 19104
(215) 349-3306

2. All matters requiring Central New England Railroad approval or coordination shall be directed to:

Mr. Amedee J. Belliveau
President
Central New England Railroad
P.O. Box 311196
44 Cedar Ridge Road

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Newington, CT 06131
860-666-1636
860-841-2802

3. In general, unless otherwise authorized by Amtrak, operations directly over or adjacent to operating right-of-way will be performed during the time periods noted in the “Notice to Contractor – Allowable Track Outages”, elsewhere in these special provisions.

Temporary at-grade crossings across any tracks in the project area for vehicles and equipment for ANY purpose shall be approved by AMTRAK. A Temporary Grade Crossing shall be permitted to allow access to the subject bridges. All vehicles, equipment and materials for demolition, stockpiling, and associated activities shall be delivered via existing at-grade crossings. Railroad property shall be accessed as shown on the Contract Plans.

Any work involving rail, ties, and other track components on active tracks, unless specifically designated otherwise within the contract, will be performed by Amtrak employees. The Contractor may not remove abandoned track (out of service) unless given prior written approval from Amtrak and the Engineer.

All tracks within the project limits shall be assumed to be operating / live, unless otherwise designated by Amtrak.

NOTICE TO CONTRACTOR – HAZARDOUS MATERIALS INVESTIGATIONS

A limited hazardous materials site investigation has been conducted at Bridge Nos. 01765, 01766, 03160A, 03160B, 03160C, 03160D, 03301 & 03303, I-84 EB/WB over Amtrak & Local Roads in Hartford, Connecticut. The scope of inspection was limited to the representative components projected for impact.

The results of the investigation indicated the presence of lead based paint on the structural steel/metal bridge components at Bridge Nos. 01765, 01766, 03160A, 03160B, 03160C, 03160D, 03301 & 03303 that are projected for impact.

Results obtained from TCLP waste stream sampling and analysis for leachable lead associated with structural steel/metal bridge and railing components at Bridge Nos. 01765, 01766, 03160A, 03160B, 03160C, 03160D, 03301 & 03303 characterized the paint waste stream as **RCRA Hazardous waste (>5.0mg/l).**

All steel and metal generated from work tasks (painted or not) shall be segregated and recycled as scrap metal at a scrap metal recycling facility. The recycling of scrap metal (regardless of lead paint concentration) is exempt from USEPA RCRA and CTDEEP Hazardous Waste Regulation.

At Bridge No 01765, brown/beige vertical joint caulking on the abutment wall was sampled and found to contain asbestos. Also, old grey caulking at the base of the old railing system at Bridge Nos. 03160D & 03303 was sampled and found to contain asbestos.

At Bridge No. 01766, dark gray caulking on the abutment wall and black railing support pad were sampled and found to contain no asbestos. Black road tar, black drain tar, black vapor barrier, orange bearing pads, grey rubbery caulking and grey mortar-like caulking at drain pipe were sampled at Bridge Nos. 03160A, 03160B, 03160C, 03160D, 03301 & 03303 and found to contain no asbestos.

Potential universal waste (UW) and Connecticut Regulated Waste (CRW) halogen mercury/PCB light fixtures were also identified on the underside of Bridge Nos. 03160A, 03160B, 03160C, 03160D, 03301 & 03303 above the roadways and are projected to be impacted.

Bird/pigeon guano accumulations were not specifically identified but may be present on the bridges.

Homeless activity was observed at Bridge Nos. 01765 & 01766, including but not limited to bedding and trash with potential for sharps which could contain blood borne pathogens & biohazardous waste concerns.

The Contractor is hereby notified that these hazardous materials requiring special management or disposal procedures will be encountered during various construction activities conducted within

the project limits. The Contractor will be required to implement appropriate health and safety measures for all construction activities impacting these materials. These measures shall include, but are not limited to, air monitoring, engineering controls, personal protective equipment and decontamination, equipment decontamination and personnel training. **WORKER HEALTH AND SAFETY PROTOCOLS WHICH ADDRESS POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE SPECIFIC HAZARDS ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.**

The Department, as Generator, will provide an authorized representative to sign all manifests and waste profile documentation required by disposal facilities for disposal of hazardous materials.

The Sections which shall be reviewed by the Contractor include, but are not limited to, the following:

- Item No. 0020904A – Lead Compliance for Abrasive Blast Cleaning
- Item No. 0603222A – Disposal of Lead Debris from Abrasive Blast Cleaning
- Item No. 0020903A – Lead Compliance for Miscellaneous Exterior Tasks
- Item No. 0020801A – Asbestos Abatement
- Item No. 0020765A – Guano Abatement
- Item No. 0101143A – Handling and Disposal of Regulated Items

The Contractor is alerted to the fact that a Department environmental consultant may be on site for abatement and related activities, to collect environmental samples (if necessary), and to observe site conditions for the State.

Information pertaining to the results of the limited hazardous materials investigation discussed can be found in the document listed below. This document shall be available for review at the Office of Contracts, 2800 Berlin Turnpike, Newington, Connecticut.

- HazMat Inspection Letter, Bridge No. 01765, I-84 EB over Amtrak & Local Roads, Hartford, CT, TRC Environmental Corporation, April 26, 2016.
- HazMat Inspection Letter, Bridge No. 01766, I-84 WB over Amtrak & Local Roads, Hartford, CT, TRC Environmental Corporation, April 26, 2016.
- HazMat Inspection Letter, Six (6) Bridges (Bridge Nos. 03160A, 03160B, 03160C, 03160D, 03301 & 03303), Aetna Viaduct, I-84 EB/WB over Amtrak & Local Roads, Hartford, CT, TRC Environmental Corporation, May 25, 2016.

NOTICE TO CONTRACTOR – CONTRACT DURATION

The Contractor is hereby notified that this is not to be considered an ordinary project by any means and that due to the inconvenience to the traveling public that it causes, extra manpower, equipment and work shifts will be required to complete the work at multiple sites in accordance within the specified contract time, and in compliance with milestone dates noted herein and elsewhere within these documents.

The Contractor will be required to complete the following tasks within the allotted period for construction:

- Repair steel stringers.
- Repair steel girders.
- Repair steel pier cap girders.
- Repair concrete columns, pier caps, and abutments.
- Erect temporary supports and replace bearings.
- Abrasive Blast Clean and Paint all stringer and girder beam ends and the full length of median stringers below median deck repair areas.
- Remove and replace the bituminous wearing surface and waterproofing membrane in multiple stages at designated areas.
- Remove and patch deteriorated bridge deck concrete, including partial and full depth areas from above and below.
- Remove and/or replace bridge downspout pipes.
- Modify the curb and construct a cap on the existing parapet.
- Replace median.
- Replace bridge deck adjacent to the median.

The list above shall not be considered all inclusive of this project. Additional construction items, incidental to the work noted above are also required as part of this contract.

The above noted scope items are to be performed under the limitations noted within these contract documents, and shall be performed with the minimum impact to the highway traffic, local traffic, railroad operations, and parking operations. Coordination with the Connecticut Department of Transportation, the City of Hartford, CTfastrak, and Amtrak Railroad will be required of the Contractor. This coordination shall include any and all necessary approvals, workzone coordination, access, and all work to secure necessary outside agency personnel, including police officers and railroad flagmen, for protection of all assets during construction.

Milestones: The Contractor shall meet the following Milestones during Construction.

Season 1 Milestones

1. Site No. 1 (Bridge 3160A/C)
 - a. Complete all Parapet Modifications to the Right Parapet Barriers
 - b. Complete parapet modifications to the Left Parapet exiting the median region
 - c. Roadway Lighting Modifications
 - d. Substructure Concrete Repairs
 - e. Clean & Paint Structural Steel
 - f. Structural Steel Repairs
 - g. Replace Deck Joints and Concrete Deck Ends

2. Site No. 1 (Bridge 3160B/D)
 - a. Complete all Parapet Modifications to the Right Parapet Barriers
 - b. Complete parapet modifications to the Left Parapet entering the median region
 - c. Roadway Lighting Modifications
 - d. Substructure Concrete Repairs
 - e. Clean & Paint Structural Steel
 - f. Structural Steel Repairs
 - g. Replace Deck Joints and Concrete Deck Ends

3. Site No. 1 (Bridge 3301)
 - a. Complete all Parapet Modifications to the Right Parapet Barriers
 - b. Complete parapet modifications to the Left Parapet entering the median region
 - c. Roadway Lighting Modifications
 - d. Substructure Concrete Repairs
 - e. Clean & Paint Structural Steel
 - f. Structural Steel Repairs

4. Site No. 1 (Bridge 3303)
 - a. Complete all Parapet Modifications to the Right Parapet Barriers
 - b. Complete parapet modifications to the Left Parapet entering the median region
 - c. Roadway Lighting Modifications
 - d. Substructure Concrete Repairs
 - e. Clean & Paint Structural Steel *
 - f. Structural Steel Repairs

5. Site No. 2 (Bridge 1765)
 - a. Complete all Top of Deck Work, Deck Patching, Membrane, Overlay, Line Striping.
 - b. Complete all Parapet Modifications to the Right Parapet Barriers
 - c. Complete parapet modifications to the Left Parapet entering the median region
 - d. Roadway Lighting Modifications
 - e. Substructure Concrete Repairs
 - f. Clean & Paint Structural Steel *
 - g. Replace Deck Joints and Concrete Deck Ends

6. Site No. 3 (Bridge 1766)
 - a. Complete all Top of Deck Work, Deck Patching, Membrane, Overlay, Line Striping.
 - b. Complete all Parapet Modifications to the Right Parapet Barriers
 - c. Complete parapet modifications to the Left Parapet entering the median region
 - d. Roadway Lighting Modifications
 - e. Substructure Concrete Repairs
 - f. Clean & Paint Structural Steel *
 - g. Replace Deck Joints and Concrete Deck Ends

* - Cleaning and Painting adjacent to steel repairs and bearing replacement may occur in Season 2.

Season 1 Parking Area Milestones

See “Notice to Contractor – Parking Areas” for Area Locations. The State will cancel parking area leases to allow the Contractor’s access to complete the work according to the following schedule. See Section 1.08 of these Special Provisions for additional information.

Parking Area 1:	63 Calendar Days (45 Weekdays)
Parking Area 2:	63 Calendar Days (45 Weekdays)
Parking Area 3(W):	126 Calendar Days (90 Weekdays)*
Parking Area 3(E):	105 Calendar Days (75 Weekdays)*
Parking Area 4 :	175 Calendar Days (125 Weekdays)
Parking Area 5 :	175 Calendar Days (125 Weekdays)**
Parking Area 6 :	81 Calendar Days (60 Weekdays)***
Parking Area 7:	42 Calendar Days (30 Weekdays)

- * - See Section 1.08 for coordination between Parking Areas 3(W) and 3(E).
 ** - The Contractor is permitted to move this work period to Season 2. If the work in Parking Area 5 is performed in Season 1, it shall be done concurrently with the work in Parking Area 4.
 *** - See Section 1.08 for additional limitations on the workzone in Parking Area 6.

Parking Area B (11 Spaces):	84 Calendar Days (60 Weekdays)
Parking Area B (14 Spaces):	84 Calendar Days (60 Weekdays)
Parking Area B (3 Spaces for Gate Access):	Contract Duration

Season 2 Milestones

1. Site No. 1 (Bridge 3160A/C)
 - a. Median & Adjacent Deck
 - b. Remaining Parapet Work

2. Site No. 1 (Bridge 3160B/D)
 - a. Median & Adjacent Deck
 - b. Remaining Parapet Work

3. Site No. 1 (Bridge 3301)
 - a. Remaining Parapet Work

4. Site No. (Bridge 3303)
 - a. Remaining Parapet Work
 - b. Bearing Replacement & Painting

5. Site No. 2 (Bridge 1765)
 - a. Superstructure Repairs & Painting
 - b. Bearing Replacement & Painting

6. Site No. 3 (Bridge 1766)
 - a. Superstructure Repairs & Painting
 - b. Bearing Replacement & Painting

Season 2 Parking Area Milestones

See “Notice to Contractor – Parking Areas” for Area Locations. The State will cancel parking area leases to allow the Contractor’s access to complete the work according to the following schedule. See Section 1.08 of these Special Provisions for additional information.

Parking Area 1:	No Lease Cancellations
Parking Area 2:	No Lease Cancellations
Parking Area 3(W) :	84 Calendar Days (60 Weekdays)
Parking Area 3(E) :	84 Calendar Days (60 Weekdays)
Parking Area 4 :	238 Calendar Days (170 Weekdays)
Parking Area 5 :	No Lease Cancellations*
Parking Area 6 :	No Access
Parking Area 7:	56 Calendar Days (40 Weekdays)

* - See note included with Season 1 Milestones.

Parking Area B (11 Spaces):	84 Calendar Days (60 Weekdays)
Parking Area B (14 Spaces):	84 Calendar Days (60 Weekdays)
Parking Area B (3 Spaces for Gate Access):	Contract Duration

By bidding on this project, the Contractor is certifying that sufficient manpower and resources are readily available to allow completion of this construction project within the limitations noted herein. Liquidated Damages may apply, as defined elsewhere in these specifications, in the event that milestones are not met or permitted durations are exceeded.

NOTICE TO CONTRACTOR – PARKING AREAS

The following parking areas are impacted by the Projects.

Area & Description	Location & Access
Area A Hartford Financial Services Group	North End of Spruce Street Access Point: No Contractor Access
Area B Spruce Street GHTD Lot	West of Spruce Street and bound to the South by Asylum Street, to the West by Interstate I-84 WB, to the North by Myrtle Street. Access Point: Gate to Spruce Street at the Northeast end of the lot.
Area 1 State of Connecticut DAS LOT B	South of Capitol Ave. and bound to the East by Laurel Street, to the North by Capitol Avenue, to the South by private property, and to the West by Bridge Abutments Access Point: Gate to Laurel Street at the Southeast corner of the lot.
Area 2 State of Connecticut DAS LOT A	South of Capitol Ave. and bound to the West by Laurel Street, to the North by Capitol Avenue, to the South by private property, and to the East by Park Place Access Point: Gate to Laurel Street at the Southwest corner of the lot.
Area 3(W) Aetna Lot West of Sigourney Street	Specifically the portion of this parking area West of Pier ML-12, with the entire parking area defined as follows: North of Capitol Ave. and bound to the West by private property, to the North by Amtrak Railroad, to the South by Capitol Avenue, and to the East by a gated fence below Pier ML20. State owned areas of this parking lot are bound by privately owned parking areas. Access Point: Gate to Capitol Avenue at the South End of the lot.
Area 3(E) Aetna Lot East of Sigourney Street	Specifically the portion of this parking area East of Pier ML-12, with the entire parking area defined as follows: North of Capitol Ave. and bound to the West by private property, to the North by Amtrak Railroad, to the South by Capitol Avenue, and to the East by a gated fence below Pier ML20. State owned areas of this parking lot are bound by privately owned parking areas. Access Point: Gate to Capitol Avenue at the South End of the lot.
Area 4 State of Connecticut DAS – OPM Lot	South of Amtrak Railroad and bound to the West by a gated fence below Pier ML20, to North by a concrete wall at the Railroad ROW boundary, to the South by a fence at the South Pier Column Line, and to the East by a Fence at Pier ML29. Access Point: Gate from Area 3 adjacent to Pier ML20. Easements are in place to allow access to State Owned portions of Area 3.
Area 5 DAS - Flower Street West Lot	West of Flower Street and bound to the West by Pier ML31, to the North by a fence, to the South by a concrete wall at the Railroad ROW boundary (CTfastrak), and to the East by Flower Street. Access Point: Direct access from Flower Street North
Area 6 Hartford Courant	West of Flower Street, bound to the north by Railroad ROW, to the West by State Property, to the South by Greater Hartford Flood Property. Access Point: The Contractor shall remove fence at the West edge of the lot to permit access from Parking Area 4.
Area 7 Armory Lot	South of Amtrak Railroad and bound to the West by Bituminous Driveway to Hungerford Street, to the East by a brick building, and to the south by chain link fence. Access Point: Direct access from Hungerford Street Easement.

The Contractor is hereby notified that, with the exception of the parking lot at the North end of Spruce Street (identified as Parking Area “A”), and the Hartford Currant Lot (identified as Parking Area 6) all parking areas directly below the viaduct structures are State owned property and are currently leased to various organizations. The leaseholders will be permitted to occupy the parking lots upon cancellation of the leases. As noted elsewhere in these special provisions, the Contractor shall be responsible for adhering to a schedule identifying impacts to the parking areas during construction. The Contractor’s operations shall be performed within the limitations noted in these contract documents and shall meet the milestones within this contract.

Protective Fencing: At all locations where the Contractor has been granted the right to remove fencing, temporary barriers and fencing shall be provided at the locations shown on the plans to prevent unwanted access to areas of parking lots that are intended to remain in service.

At all locations where protective fencing is furnished with gates, the gates shall be provided with locks configured to allow the Owner, Occupant, Contractor to access through the gate without any other party’s presence.

Contact information for coordination with occupants of State owned lots shall be as follows:

	Parking Area B	Parking Areas 1, 2, 3, 4 & 5,	Parking Area 3(W) & 3(E)	Parking Area 7
Contact Person	DJ Gonzalez	Douglas J. Moore	Mr. John Walsh	Jon Mullen
Managing Organization	Greater Hartford Transit District	Department of Administrative Services (DAS)	Aetna Life Insurance Co.	Military Department Construction & Facilities Management
Telephone	(860) 209-9554 ext 3080	(860) 713-5885	(860) 273-1759	(860) 524-4947

The Contractor shall refer to the Special Provision for Section 1.08.04 – Limitations of Operations, for governing specific limitations on parking areas during construction.

The Contractor will be required to coordinate operations affecting the privately owned parking lots for the Hartford Courant and for the Hartford Financial Services Group.

Parking Area 6 - Hartford Courant: Refer to the Contract plans for further information on easements obtained for Temporary Work areas within the Hartford Courant property. The property accessed by the Contractor within this parking area includes land owned by 285 Broad Street, LLC & Amtrak Railroad. All coordination within this lot shall be made through the Hartford Courant as the managing organization.

Parking Area 7 – Armory Lot: Refer to the Contract plans for further information on the Temporary Work area within the Armory Lot property. All coordination within this lot shall be made through the Military Department Construction & Facilities Management Office.

Parking Area A - The Hartford Financial Services Group, Inc.: The Contractor will be required to inform the Hartford Financial Services Group, Inc. of any construction operations that affect, or have the potential to affect access to Parking Area A, located at the North end of Spruce Street. Refer to the Contract plans for further information in this area. Within this privately owned parking area, Contractor activities shall not be permitted. Construction operations that affect access to this parking area, such as crane picks or the erection of overhead elements, shall be limited in duration and shall only be permitted when the parking area is closed. The Contractor shall assume such impacts will be during overnight hours and the schedule for such outages will be subject to the approval of the manager of Parking Area A.

All coordination with privately owned parking lots:

	Parking Area 7	Parking Area A
Contact Person	Mr. Hans Keck Mr. Fritz Pameijer	Facilities
Organization	The Hartford Courant	The Hartford Financial Services Group, Inc.
Telephone	(860) 241-3958	(860) 547-5000

SECTION 1.08 – PROSECUTION AND PROGRESS

Article 1.08.04 - Limitation of Operations - Add the following:

In order to provide for traffic operations as outlined in the Special Provision "Maintenance and Protection of Traffic," the Contractor will not be permitted to perform any work which will interfere with the described traffic operations on all project roadways as follows:

Route I-84

On the following State observed Legal Holidays:

New Year's Day

Good Friday, Easter Sunday*

Memorial Day

Independence Day

Labor Day

Columbus Day

Thanksgiving Day**

Christmas Day

The following restrictions also apply:

On the day before and the day after any of the above Legal Holidays.

On the Friday, Saturday, and Sunday immediately preceding any of the above Holidays celebrated on a Monday.

On the Saturday, Sunday, and Monday immediately following any of the above Holidays celebrated on a Friday.

* From 6:00 a.m. the Thursday before the Holiday to 8:00 p.m. the Monday after the Holiday.

** From 6:00 a.m. the Wednesday before the Holiday to 8:00 p.m. the Monday after the Holiday.

During all other times

The Contractor shall maintain and protect traffic as shown on the accompanying "Limitation of Operations" charts, which dictate the minimum number of lanes that must remain open for each day of the week, except as noted in Deviation from Limitation of Operations, below.

**Project No. 63-699, 63-700, 63-701
Limitation of Operations Chart
Minimum Number of Through Lanes to Remain Open**

I-84 Westbound Hartford Number of Through Lanes: 3								I-84 Westbound Hartford Number of Through Lanes: 4							
Hour Beginn -ing	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Hour Beginn -ing	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Mid	1	1	1	1	1	1	1	Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1	1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1	2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1	3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1	4 AM	1	1	1	1	1	1	1
5 AM	2	2	2	2	2	1	1	5 AM	2	2	2	2	2	1	1
6 AM	E	E	E	E	E	2	1	6 AM	E	E	E	E	E	2	1
7 AM	E	E	E	E	E	2	2	7 AM	E	E	E	E	E	2	2
8 AM	E	E	E	E	E	3	2	8 AM	E	E	E	E	E	3	2
9 AM	3	3	3	3	3	3	3	9 AM	4	4	4	4	4	3	3
10 AM	3	3	3	3	3	3	3	10 AM	4	4	4	4	4	4	4
11 AM	3	3	3	3	3	3	3	11 AM	4	4	4	4	4	4	4
Noon	3	3	3	3	3	3	3	Noon	4	4	4	4	4	4	4
1 PM	3	3	3	3	3	3	3	1 PM	4	4	4	4	4	4	4
2 PM	3	3	3	3	3	3	3	2 PM	4	4	4	4	4	4	4
3 PM	E	E	E	E	E	3	3	3 PM	E	E	E	E	E	4	4
4 PM	E	E	E	E	E	3	3	4 PM	E	E	E	E	E	4	4
5 PM	E	E	E	E	E	3	3	5 PM	E	E	E	E	E	4	4
6 PM	3	3	3	3	3	3	3	6 PM	4	4	4	4	4	4	4
7 PM	3	3	3	3	3	3	3	7 PM	3	3	3	4	4	3	4
8 PM	3	3	3	3	3	3	3	8 PM	3	3	3	3	3	3	3
9 PM	2	2	2	3	3	3	3	9 PM	2	2	2	3	3	3	3
10 PM	2	2	2	2	3	2	2	10 PM	2	2	2	2	3	2	2
11 PM	1	1	1	2	2	2	2	11 PM	1	1	1	2	2	2	2

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period.

GENERAL

**Project No. 63-699, 63-700, 63-701
Limitation of Operations Chart
Minimum Number of Lanes to Remain Open**

I-84 Eastbound Hartford Number of Through Lanes: 3								I-84 Eastbound Hartford Number of Through Lanes: 4							
Hour Beginn -ing	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Hour Beginn -ing	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Mid	1	1	1	1	1	1	1	Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1	1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1	2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1	3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1	4 AM	1	1	1	1	1	1	1
5 AM	2	2	2	2	2	1	1	5 AM	2	2	2	2	2	1	1
6 AM	E	E	E	E	E	2	1	6 AM	E	E	E	E	E	2	1
7 AM	E	E	E	E	E	3	2	7 AM	E	E	E	E	E	3	2
8 AM	E	E	E	E	E	3	2	8 AM	E	E	E	E	E	3	2
9 AM	3	3	3	3	3	3	3	9 AM	4	4	4	4	4	4	3
10 AM	3	3	3	3	3	3	3	10 AM	4	4	4	4	4	4	3
11 AM	3	3	3	3	3	3	3	11 AM	4	4	4	4	4	4	4
Noon	3	3	3	3	3	3	3	Noon	4	4	4	4	4	4	4
1 PM	3	3	3	3	3	3	3	1 PM	4	4	4	4	4	4	4
2 PM	3	3	3	3	3	3	3	2 PM	4	4	4	4	4	4	4
3 PM	E	E	E	E	E	3	3	3 PM	E	E	E	E	E	4	4
4 PM	E	E	E	E	E	3	3	4 PM	E	E	E	E	E	4	4
5 PM	E	E	E	E	E	3	3	5 PM	E	E	E	E	E	4	4
6 PM	3	3	3	3	3	3	3	6 PM	4	4	4	4	4	4	4
7 PM	3	3	3	3	3	3	3	7 PM	3	3	3	4	4	3	3
8 PM	3	3	3	3	3	3	3	8 PM	3	3	3	3	4	3	3
9 PM	2	2	2	3	3	3	2	9 PM	2	2	2	3	3	3	2
10 PM	2	2	2	2	2	2	2	10 PM	2	2	2	2	2	2	2
11 PM	1	1	1	1	2	2	1	11 PM	1	1	1	1	2	2	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period

GENERAL

Ramps and Turning Roadways

The Contractor will not be allowed to perform any work that will interfere with the existing traffic operations on all ramps, and exit only lanes on:

Monday through Friday between 6:00 a.m. and 8:00 p.m.
Saturday between 9:00 a.m. and 8:00 p.m.
Sunday between 11:00 a.m. and 8:00 p.m.

The Contractor must coordinate State Projects #63-699, 63-700, & 63-701 on all Detours and M&PT operations.

Eastbound I-84

The Contractor will be permitted to close the eastbound Sisson Ave. on-ramp and detour traffic as shown on the detour plan contained in the contract documents.

The Contractor shall not be permitted to close the Exit 46 (Sisson Avenue) and Exit 47 (Sigourney Street) on- ramps in the eastbound direction simultaneously.

The Contractor will be permitted to close the Exit 47 (Sigourney St.) on-ramp and Exits #48A & 48B off ramps simultaneously in the eastbound direction during the exit only lane and right lane closures and detour traffic as shown on the detour plan contained in the contract documents.

The Contractor shall not be permitted to close the Exit # 49 off ramp, concurrent with an Exit # 48 (Capitol Avenue) exit ramp closure in the eastbound direction.

The Contractor will be permitted to close the Exit # 49 off ramp in the eastbound direction during the exit only lane and right lane closures and detour traffic as shown on the detour plan contained in the contract documents.

The Contractor shall not be permitted to close the Broad Street on ramp, concurrent with a Sisson Avenue and Sigourney Street on- ramp closure in the eastbound direction.

The Contractor will be permitted to close the eastbound Broad Street on-ramp and detour traffic as shown on the detour plan contained in the contract documents.

Westbound I-84

The Contractor will be permitted to close the westbound on ramp from Chapel Street and detour traffic as shown on the detour plan contained in the contract documents. This closure shall not be permitted simultaneously with a closure of the westbound on ramp from Capitol Avenue.

The Contractor shall be permitted to close the westbound on ramp from Capitol Avenue & Asylum Street and detour traffic as shown on the detour plan contained in the contract documents. This closure shall not be permitted simultaneously with a closure of the westbound on ramp from Chapel Street.

The Contractor will be permitted to close the Exit # 48 off-ramp in the westbound direction during the right through lane and exit only lane closures and detour traffic as shown on the detour plan contained in the contract documents.

The Contractor shall not be permitted to close the Exit # 48 ramp, concurrent with an Exit 46 (Sisson Avenue) or Exit 47 (Sigourney Street) exit ramp closure in the westbound direction.

The Contractor will be permitted to close the Exit # 47 off-ramp in the westbound direction during the right through lane and exit only lane closures and detour traffic to Exit #46 as shown on the detour plan contained in the contract documents. This closure shall not be permitted simultaneously with an Exit #46 closure.

The Contractor shall not be permitted to close the Exit 46 (Sisson Avenue) and Exit 47 (Sigourney Street) exit ramps in the westbound direction simultaneously.

Permissible Deviation from Limitation of Operations Chart

The Contractor shall be permitted extended hours of two lane service on I-84 to allow replacement of bridge joints to the extents shown on the Contract Plans.

The Contractor will be permitted to reduce service as follows:

I-84 EB

Friday 9 pm to Saturday 8 am	11 hours
Saturday 9 pm to Sunday 10 am	13 hours

I-84 WB

Friday 9 pm to Saturday 9 am	12 hours
Saturday 9 pm to Sunday 10 am	13 hours

During these time periods, the Contractor will be permitted to reduce traffic to two lanes. In the event that the Limitation of Operations Charts indicate that the Contractor may further reduce traffic to a single lane, the Contractor is permitted to adjust the traffic pattern to do so, provided that two lane service is restored by the time identified in the Limitation of Operations Charts.

The Contractor shall provide a minimum 4 weeks advance notification prior to the planned extended work hours. The Department will prohibit the extended hours on weekends when special events are scheduled at the locations noted herein.

Special Events

The Contractor will not be allowed to perform any work that will interfere with the existing traffic operations from four hours prior to scheduled events at the XL Center, Xfinity Theatre, Convention Center, Expo Center, Yard Goat Baseball Stadium, and Rentschler Field between 8:00 p.m. and 12:00 a.m. This restriction is in addition to the restrictions noted above for I-84 and the associated ramps and exit only lanes.

A schedule of special events at these facilities shall be requested through the City of Hartford Police Department and shall form the basis of the Contractor's schedule for limited construction operations. Ongoing special events coordination throughout the construction project shall be the responsibility of the Contractor.

All Other Roadways

The Contractor will not be allowed to perform any work that will interfere with the existing traffic operations on all City of Hartford roadways:

- Monday through Friday between 6:00 a.m. and 8:00 p.m.
- Saturday between 9:00 a.m. and 8:00 p.m.
- Sunday between 11:00 a.m. and 8:00 p.m.

PARKING AREAS

In order to provide for parking lot operations as outlined in the Notice to Contractor – Parking Areas the Contractor will not be allowed to perform any work that will interfere with existing parking lot occupancy except as follows:

Parking Area A (Private Lot)

The Contractor will not be permitted to occupy the parking area or impede access. The Contractor shall perform work interfering with traffic on Spruce Street within the limitations noted above for "All Other Roadways". Temporary roadway closures for the purpose of erection of overhead construction shall be scheduled during times when Parking Area A is closed.

Parking Area B (State Owned Lot, Managed by Greater Hartford Transit District - GHTD)

The Contractor will have access to this parking lot through a gate on Spruce Street for the duration of the project.

The Contractor will be granted passage from Parking Area B to the area below the bridges through the gate at the Southwest corner of the lot. The Contractor may take 3 spaces in front of this gate for the duration of the project.

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The Contractor may take up to 14 spaces at the North end of Parking Area B below and adjacent to Span 6 for 3 months. The Contractor will be limited to taking 11 spaces at the West side of Parking Area B, adjacent to the bridge structure for 3 months. The 14 spaces at the North end of the parking area and the 11 spaces at the west side of the parking area may not be taken simultaneously. Each 3 month period may be scheduled in Season 1 and/or Season 2.

The Contractor will be permitted to schedule construction work zones no less than 1 week in advance for all construction operations. The Contractor will only be permitted to occupy the areas designated. The Contractor shall not impede access to any parking spaces which remain in service.

Parking Areas 1 & 2 (“DAS LOT B” & “DAS LOT A”)
State Owned Lots, Managed by DAS

The Contractor is required to perform the work in Parking Areas 1 & 2 simultaneously. This work shall be performed in advance of any work performed within Parking Areas 4 & 5 and occupancy of these lots may not be concurrent with any activities requiring the closure of Parking Areas 4 & 5.

The State will cancel parking leases as follows:

Season 1:	Parking Area 1 (DAS Lot B):	63 Calendar Days (45 Weekdays)
Season 1:	Parking Area 2 (DAS Lot A):	63 Calendar Days (45 Weekdays)
Season 2:	Parking Area 1 (DAS Lot B):	No Lease Cancellations
Season 2:	Parking Area 2 (DAS Lot A):	No Lease Cancellations

Parking Area 3 (“Aetna Lot”)
State Owned Lot Bound by Private Lot, Managed by Aetna,

The State will secure access easements cross privately owned property and to enable the Contractor to enter State Property freely from the existing gate on Capitol Avenue for the duration of the project. For the duration of the project, the Contractor shall be permitted access to and the right to move through and throughout State owned property within Lots 3W and 3E, provided that such occupancy and the movement of vehicles does not prohibit the use of the parking areas.

To permit Contractor operations that prohibit the use of portions of the parking areas, the State will cancel parking leases as follows:

Season 1:	Parking Area 3W (West of Sigourney):	126 Calendar Days (90 Weekdays)
Season 1:	Parking Area 3E (East of Sigourney):	105 Calendar Days (75 Weekdays)
Season 2:	Parking Area 3W (West of Sigourney):	84 Calendar Days (60 Weekdays)
Season 2:	Parking Area 3E (East of Sigourney):	84 Calendar Days (60 Weekdays)

Occupancy that prohibits the use of parking spaces within Parking Area 3W and 3E shall not be permitted concurrently unless the parking area Managing Organization deems the total number of spaces occupied by the contractor and the means of access between areas north and south of the

bridges provided and protected by the contractor to be acceptable. Such acceptance must be secured in writing from the parking area Managing Organization identified in the “Notice to Contractor - Parking Areas”.

State owned areas within Parking Area 3 (Aetna Lot) are bound by privately owned parking lots which may be occupied during construction.

Parking Area 3 shall remain active for parking occupancy use during construction activities and the Contractor’s use of the Parking Area 3 will be limited to temporary work zone areas for construction activities only. Mobilization or storage will be permitted within the temporary work zone areas but not permitted within the active parking occupancy areas. The Contractor shall delineate the temporary work zone areas with temporary barricades to clearly define the impacted spaces. The temporary work areas shall be returned for use as parking spaces as repairs are completed. Access to other temporary work zone areas will be permitted as inactive temporary work areas are returned for parking space occupancy. The Contractor shall coordinate and schedule construction activities for minimal loss of parking space occupancy use.

The Contractor will be permitted to schedule multiple temporary construction work zone areas in advance for all construction activities and operations. The temporary construction work zone areas will be limited to an area not to exceed fifty (50) parking spaces each and the total number of parking spaces impacted for all parking spaces shall not exceed two-hundred (200) parking spaces. The Contractor shall not obstruct the access to or use of any parking spaces which remain in service. Where temporary supports have been erected outside of the Contractor’s work zone, all parking spaces impacted by their presence shall be included in the number of parking spaces impacted.

Vehicular access between Parking Areas 3W and 3E shall be maintained at all times. Vehicular access between north side and south side of the parking areas shall be maintained at all times.

Pedestrian stair access to Sigourney Street shall be maintained at all times. Temporary shielding shall be provided as necessary to maintain the pedestrian access during construction activities at no additional cost. Parking spaces below the Sigourney Street shall remain available for use during construction.

Construction access to the parking areas will be limited to one dedicated construction entrance at Parking Area 3W. The dedicated construction entrance would be removed after the construction activities have been completed. The construction entrances shall not impact parking access or occupancy.

Cooperation of the Contractor shall be provided to the Managing Organization to ensure that there will be minimal disruption for parking occupancy and access for parking areas during the construction activities.

Parking Areas 4 & 5 (“OPM Lot” & “Flower Street West Lot”)
State Owned Lots, Managed by DAS

This work shall be performed after completion of work performed within Parking Areas 1 & 2 and occupancy of these lots may not be concurrent with any activities requiring the closure of Parking Areas 1 & 2.

Portions of Parking Area 4 “OPM Lot” are owned by Amtrak Railroad. These areas are subject to an easement in favor of the Department for overhead bridge purposes, Project 63-95; Serial 333B.

The State will cancel parking leases as follows:

Season 1:	Parking Area 4 (OPM Lot):	175 Calendar Days (125 Weekdays)
Season 1:	Parking Area 5 (Flower Street West):	175 Calendar Days (125 Weekdays)*
Season 2:	Parking Area 4 (OPM Lot):	238 Calendar Days (170 Weekdays)
Season 2:	Parking Area 5 (Flower Street West):	No Lease Cancellations*

* - The Contractor is permitted to move this work period to Season 2. If the work in Parking Area 5 is performed in Season 1, it shall be done concurrently with the work in Parking Area 4.

Parking Area 6 (Hartford Courant Parking Area) (Private Lot)

The Contractor will only be permitted to occupy the areas designated in the Contract Plans.

The Contractor shall remove existing fence to allow access from Parking Area 4 (OPM Lot) to Parking Area 6 (Hartford Courant). The gate must provide access between adjacent State Owned Parcels of land.

This work shall be performed concurrently with the activities requiring the closure of parking Area 4 with the following exception: Contractor access to the Hartford Courant parking area will be permitted from the first Monday in June through the last Friday in August. All work which may impact this parking area must be completed within this time period, as the Contractor will not be granted access to this parking area outside of this window.

Season 1:	Parking Area 6 (Hartford Courant):	81 Calendar Days (60 Weekdays)
Season 2:	Parking Area 6 (Hartford Courant):	No Access Easement

Parking Area 7 (Armory)

The Contractor shall provide a temporary gate with locks at any location where an existing gate is removed. The Contractor shall maintain vehicular access to the remaining area of the lot and pump station throughout construction. Locks shall be configured to allow the Military or the Contractor to access through the gate without each other’s presence.

The State will allow the contractor to perform work within the lot as follows:

Season 1:	Parking Area 7 (Armory):	42 Calendar Days (30 Weekdays)
Season 2:	Parking Area 7 (Armory):	56 Calendar Days (40 Weekdays)

Construction Staking

For roadways where the existing pavement markings are to be re-established, the Contractor shall establish control points from the existing pavement markings in accordance with Section 9.80 Construction Staking. This work will be paid for under Item No. 0980001 "Construction Staking".

Bituminous Concrete Milling and Deck Repair Requirements

The Contractor shall schedule the operations so that pavement milling and/or re-paving operations shall be full width across a travel lane at the end of a work day/work night. Any longitudinal joint shall be positioned at the lane line and configured in accordance with the Standard Specifications.

A concrete patching operation must be started the next working day after the milling operation is completed and performed on a continuous basis within the work week (minimum of five (5) working days per week, weather permitting, and only when possible within the allowable time frame as specified in the "Limitation of Operations" charts). Dedicated crews must be assigned to each work area. The Contractor shall include in the bid, provisions for sufficient crews, equipment, and material dedicated to accomplish the work for each section of roadway. The Contractor shall also provide sufficient additional equipment to function in the event of equipment malfunction or breakdown. A contingency plan, meeting the requirements of the Engineer, shall also be in place to permit mobilization of spare equipment in the event of need.

If after milling the bituminous overlay, the exposed surface of the concrete bridge deck is deemed by the Engineer to be unsafe for travel due to severe surface deterioration, the Contractor must immediately ensure a clear roadway, free from debris through sweeping, followed by patching the roadway as outlined in the Special Provision "ITEM #0601318A - PARTIAL DEPTH PATCH". In the event that the Engineer determines that insufficient time remains between the completion of the post-milling inspection and the required opening time for traffic, the Engineer may instruct the Contractor to temporarily patch the roadway as outlined in the Special Provision "ITEM # 0406137A SURFACE PATCH (TEMPORARY)". Such temporary patches shall only be permitted where sufficient deck strength remains to support traffic.

The Contractor shall perform the deck repair work, the milling of existing pavement, and the installation of the new bituminous concrete pavement in accordance with the Special Provisions that are contained elsewhere in the contract documents.

It is recommended that the Contractor utilize the various lane closures that will be required for the above work to perform the other work required, such as structural steel work, parapet work, and expansion joint work, whenever possible.

Lane Closure Restrictions

It is anticipated that work on adjacent City projects may be ongoing simultaneously with these projects. The Contractor shall be responsible to coordinate with those projects so that proper traffic flow is maintained at all times on all project roadways and this coordination must be acceptable to the Engineer.

It is anticipated that the Connecticut Department of Administrative Services (DAS) may have a facility construction project underway during the 2017 and 2018 construction seasons. The project includes the planned construction of a Thermal Plant at 340 Capitol Avenue, Hartford, CT.

The Contractor will not be allowed to perform any work that will interfere with existing traffic operations on an expressway when any other Contractor is restricting existing traffic operations on that expressway within one mile of a lane closure on this project unless the Contractors have coordinated the closure and this coordination is acceptable to the Engineer.

The Contractor will not be allowed to close a lane if a Contractor working on an adjacent project has the opposite lane closed unless there is at least a one mile clear area length where the entire roadway is open to traffic, measured from the end of the first work area to the beginning of the signing pattern for the next work area.

Other Limitations

The field installation of a signing pattern shall constitute interference with existing traffic operations and shall not be allowed except during the allowable periods.

Longitudinal dropdowns will not be allowed during those periods when the maximum number of through traffic lanes is required as shown in the Limitation of Operations charts contained herein.

The Contractor shall schedule operations so that pavement removal and deck repair shall be completed full width across the bridge section by the end of a workday (worknight). All transverse height differentials on all roadway surfaces shall be tapered to negate any "bump" to traffic as approved by the Engineer. Material for this taper shall be as approved by the Engineer. The cost of this work is included under item no. 0971001A, Maintenance and Protection of Traffic.

The Contractor will not be permitted to laterally cross any expressway with construction vehicles. Construction vehicles shall merge with the mainline traffic flow and utilize existing interchanges. All protective systems and traffic control devices as called for by the Contract or ordered by the Engineer must be on-hand and available in sufficient quantity for immediate installation prior to any stage change.

No roadway, with the exception of transition areas, shall be open to traffic unless the appropriate pavement markings have been installed. The transition areas shall have pavement markings applied immediately upon opening to traffic.

HIGHWAY ILLUMINATION

The Contractor is required to stage the installation/removal of light poles so that continuous nighttime roadway illumination meeting current levels is maintained throughout construction. The Contract documents include provisions for five (5) new light standards to permit the Contractor to install and energize light standard brackets using a combination of night work from the top of deck and day-time from manlifts alongside or below the bridge structures. Split operations are expected to be necessary to allow pole replacement and energizing while complying with lane closure restrictions and illumination requirements since the poles can be installed at night but energized during the day. The Contractor shall only be permitted to increase the quantity of new light standards and decrease the quantity of relocated light standards at the approval of the Resident Engineer. Surplus light standards that are removed and not re-installed shall become the property of the Contractor.

CTfastrak BUSWAY

The Contractor is required to receive written approval from the Busway prior to the following activities:

1. Mobilization or the start construction activities within any areas on site, where access is restricted by the *CTfastrak* infrastructure.
2. Performance of construction activities that may impact the operations of *CTfastrak*.
3. Storage of construction materials or equipment within the *CTfastrak* right-of-way.
4. Performance of construction activities that may prevent access to *CTfastrak* from currently established access points.

Any portion of the *CTfastrak* infrastructure damaged during construction activities, which prevents operation of service, will be repaired immediately to the satisfaction of the Engineer, at the Contractor's expense. Upon completion of construction, any elements of the *CTfastrak* infrastructure disturbed during construction shall be restored to their original condition prior to construction to the satisfaction of the Engineer, at the sole expense of the Contractor.

AMTRAK RAILROAD

The Contractor is required to comply with Amtrak railroad requirements identified in Notice to Contractor elsewhere in these specifications.

INCIDENT MANAGEMENT SYSTEM

The Contractor will not be allowed to perform any work that will disrupt the normal operation of the Incident Management System (IMS) as follows:

- On Monday through Friday from 5:00 a.m. to 9:00 p.m.
- On Saturday and Sunday.
- On the day before or after any of the Legal Holidays listed below:

New Years Day

Good Friday

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

- On the Saturday, Sunday and Monday following Thanksgiving Day.
- On the Friday, Saturday and Sunday immediately preceding any of the above Legal holidays celebrated on a Monday.
- On the Saturday, Sunday and Monday immediately following any of the above Legal holidays celebrated on a Friday.

In order to maintain continuous operation of the Incident Management System, the Contractor shall adhere to the requirements in the special provision “Notice to Contractor – Installation Qualifications” and “Notice to Contractor – IMS Installation”.

ITEM 0101143A – HANDLING AND DISPOSAL OF REGULATED ITEMS

Description:

Work under this item shall include the management (handling and disposal) of regulated items and all associated work by persons who are employed by a CTDEEP permitted Spill Contractor and trained/certified in accordance with OSHA Hazard Communication regulations. Regulated items include hazardous and other materials and wastes, the disposal of which is restricted by Federal and/or State laws and regulations, and which may be a component of equipment or other items located on-site. Regulated items include those listed herein, or additional similar items identified on site by the Engineer. Work under this item does not include asbestos containing materials, lead paint, contaminated or hazardous soils.

Activities shall be performed in accordance with, but not limited to, the current revision of the USEPA & CTDEEP Hazardous Waste Regulations (40 CFR 260-282, 22a-209 and 22a-449(c)), USEPA PCB Regulations (40 CFR 761), USEPA Protection of Stratospheric Ozone (40 CFR 82), OSHA Hazard Communication (29 CFR 1910.1200), OSHA Hazardous Waste & Emergency Response Regulations (29 CFR 1910.120), USDOT Hazardous Materials Regulation (49 CFR 171-180), OSHA, RCRA, CERCLA, CAA, TSCA, and all other laws and regulations.

The work activities include the removal, handling, packing, labeling, transport, manifesting, and recycling or disposal of various regulated items at the Project site prior to beginning planned renovation/demolition activities.

The Contractor is solely responsible for verifying actual locations and quantities of the items with hazardous/regulated material/waste constituents and for their proper handling and disposal. The recycling or proper disposal, as appropriate, of all regulated items shall be completed prior to the initiation of any demolition or renovation activities.

Materials:

All materials shall be suitable for the management of regulated items and shall meet all applicable federal, state and local regulations. Such materials include, but are not limited to, proper containers, packing materials, labels, signs, shipping papers, personnel protective equipment (PPE) and spill kits.

Construction Methods:

(1) Allowable Disposal/Recycling Facilities

Disposal facilities for RCRA-hazardous, TSCA-hazardous, Connecticut Regulated, and Universal wastes shall be chosen from among those listed below. No other facility shall be used for these types of wastes without the written approval of the Engineer.

Advanced Disposal Services
Greentree Landfill
635 Toby Road
Kersey, PA 15846
Phone: (814) 265-1744 Fax: (814) 265-8745
MSW, C&D, asbestos, PCB remediation waste <50
ppm, petroleum contaminated soils, nonhazardous solid
wastes

Phone: (215) 428-1700 Fax: (215) 428-1704
Petroleum contaminated soil

Clean Harbors Environmental Services, Inc.
2247 South Hwy. 71,
Kimball, NE 69145
Phone: (308) 235-1012 Fax: (308) 235-4307
RCRA liquid, solid & sludge

Allied Waste Niagara Falls Landfill, LLC
5600 Niagara Falls Blvd.
Niagara, NY 14304
Phone: (716) 285-3344 Fax: (716) 285-3398
Non-hazardous waste, industrial solid waste, municipal
sewage treatment sludge, contaminated soil & debris,
asbestos waste, C&D debris, industrial process sludge

Clean Harbors Environmental Services, Inc.
2900 Rockefeller Ave.,
Cleveland, OH 44115
Phone: (216) 429-2401 Fax: (216) 883-1918
RCRA liquid: aqueous organic & inorganic wastewater

American Lamp Recycling, LLC
26 Industrial Way
Wappingers Falls, NY 12590
Phone: (845) 896-0058 Fax: (845) 896-1520
Mercury containing device, universal waste

Clean Harbors of Baltimore, Inc.
1910 Russell St,
Baltimore, MD 21230
Phone: (410) 244-8200 Fax: (410) 752-2647
RCRA liquid: aqueous organic & inorganic wastewater

Bridgeport United Recycling, Inc.
50 Cross Street
Bridgeport, CT 06610
Phone: (203) 334-1666 Fax: (203) 334-1439
RCRA & CRW waste oil, fuel, wastewater

Clean Harbors of Braintree, Inc.
1 Hill Avenue,
Braintree, MA 02184
Phone: (781) 380-7134 Fax: (781) 380-7193
RCRA & TSCA liquid & solid

Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Phone: (732) 541-8909 Fax: (732) 541-8105
Street sweepings, asphalt & petroleum cont soils

Clean Harbors of Connecticut, Inc.
51 Broderick Road,
Bristol, CT 06010
Phone: (860) 583-8917 Fax: (860) 583-1740
RCRA & CRW liquid

Clean Earth of Philadelphia, Inc.
3201 South 61 St.,
Philadelphia, PA 19153
Phone: (215) 724-5520 Fax: (215) 724-2939
Petroleum contaminated soil

Clean Harbors of Woburn
(Murphy's Waste Oil Services, Inc.)
252 Salem Street,
Woburn, MA 01801
Phone: (781) 935-9066 Fax: (781) 935-8615
RCRA liquid: oil, oil/water mixtures; CRW oil filters,
oily soil & debris, F001/F002 contaminated oils,
antifreeze

Clean Earth of New Jersey, Inc. (aka CENJ)
115 Jacobus Ave,
South Kearny, NJ 07105
Phone: (973) 344-4004 Fax: (973) 344-8652
RCRA liquid and solid, asbestos

Clinton Landfill
242 Church Street
Clinton, MA 01510
Phone: (978) 365-4110 Fax: (978) 365-4106
Comm-97 Soils

Clean Earth of Southeast Pennsylvania, Inc.
7 Steel Road,
Morrisville, PA 19067

Colonie Landfill (Waste Connections, Inc.)
1319 Loudon Rd, Cohoes,
New York 12047
Phone: (518) 783-2827 Fax: (518) 786-7331
Non-haz. wastes, special wastes, contaminated soil

Cranston Sanitary Landfill
1690 Pontiac Avenue
Cranston, RI 02920
Phone: (413) 522-3688 Fax: (413) 522-3330
Urban Fill, Cont soil, C&D, ash, street sweepings,
catch basin cleanings

Cumberland County Landfill
(aka Community Refuse Services
Managed by Interstate Waste Services)
135 Vaughn Road,
Shippensburg, PA 17257
Phone: (717) 729-2060 Fax: (717) 423-6822
Municipal solid waste, non-hazardous waste

Cycle Chem (aka General Chemical Corp.)
217 South First Street,
Elizabeth, NJ 07206
Phone: (908) 355-5800 Fax: (908) 355-0562
RCRA, TSCA liquid and solid

Environmental Quality Company:
Wayne Disposal Facility
(aka EQ Michigan Disposal Waste Treatment Plant
and Wayne Disposal Inc. Site #2)
49350 North I-94 Service Drive
Belleville, MI 48111
Phone: (734) 697-2200 Fax: (734) 699-3499
RCRA & TSCA liquid and solid

Environmental Quality Detroit Inc.
1923 Frederick Street,
Detroit MI 48211
Phone: (734) 329-8017 Fax: (313) 923-3375
RCRA & CRW liquid wastewater

EQ Pennsylvania (formerly Envirite of PA)
730 Vogel song Road,
York, PA 17404
Phone: (717) 846-1900 Fax: (717) 854-6757
RCRA liquid & solid

Environmental Soil Management of New York,
LLC (ESMI of New York)

304 Towpath Road,
Fort Edward, NY 12828
Phone: (518) 747-5500 Fax: (518) 747-1181
Petroleum contaminated soil

Environmental Soil Management of NH
67 International Dr.,
Loudon, NH 03307
Phone: (603) 783-0228 Fax: (603) 783-0104
Petroleum contaminated soil

EnviroSafe Corporation Northeast (formerly Jones
Environmental Services, soon to be Triumvirate)
263 Howard Street,
Lowell, MA 01852
Phone: (978) 453-7772 Fax: (978) 453-7775
RCRA & TSCA liquid and solid

Hazelton Creek Properties, LLC*
(Hazelton Mine Reclamation Project)
280 South Church St.,
Hazelton, PA 18201
Phone: (570) 574-1010 Fax: (570) 457-3395
Fresh, brackish or marine dredge material, coal ash,
cement kiln dust, lime kiln dust, co-gen ash, regulated
fill
*Please note that if this facility is to be used, each bin
letter will require an additional 10 day (or more) waiting
period on top of the 15 day lab period designated in the
specs to allow for PADEP review.

Heritage Hazardous Waste Landfill (Heritage
Environmental Services, LLC)
4370 W County Rd 1275 N
Roachdale, IN 46172
Phone: (765) 435-2704 Fax: (315) 687-3898
Hazardous Wastes, Asbestos

Manchester Landfill
311 Olcott Street
Manchester, CT 06040
Phone: (860) 647-3248 Fax: (860) 647-3238
MSW, non-haz waste, cont soil, non-friable ACM

Mostoller Landfill
(Managed by Interstate Waste Services)
7095 Glades Pike,
Summerset, PA 15501
Phone: (717) 729-2060 Fax: (814) 444-0127
Municipal solid waste, C&D debris, residual waste,
sewage sludge, incinerator ash, asbestos

Northeast Lamp Recycling, Inc.
250 Main Street,
East Windsor, CT 06088
Phone: (860) 292-1992 Fax: (860) 292-1114
CRW solid waste, mercury containing devices &
universal waste

Northland Environmental, LLC
(aka PSC Environmental Systems)
275 Allens Ave.,
Providence RI 02905
Phone: (401) 781-6340 Fax: (401) 781-9710
RCRA liquid and solid

Ontario County Landfill
(Managed by Casella Waste)
3555 Post Farm Road,
Stanley, NY 14561
Phone: (585) 526-4420 Fax: (585) 526-5459
Municipal solid waste, non-hazardous waste solid,
special wastes including asbestos, ash from
boilers/incinerators, contaminated soil, demo debris

Paradise Heating Oil, Inc.
Quimby Street,
Ossining, NY 10562
Phone: (631) 926-2576 Fax: (718) 294-2226
CRW waste oil liquid

Phoenix Soil, LLC
58 North Washington Street
Plainville, C 06062
Phone: (860) 747-8888 Fax: (203) 757-4933
Contaminated soil

Red Technologies Soil
232 Airline Avenue
Portland, CT 06980
Phone: (860) 342-1022 Fax: (860) 342-1042
Temp storage/transfer cont soil

Republic Environmental Systems (aka Philip
Services Corporation (PSC) Republic)
2869 Sandstone Dr.,
Hatfield PA 19440
Phone: (215) 822-8995 Fax: (215) 997-1293
RCRA & TSCA industrial solid & sludge, aqueous
waste, contaminated soil, PCB waste, oil & petroleum
waste, organic waste

Republic Services Conestoga Landfill
420 Quarry Road
Morgantown, PA 19543
Phone: (717) 246-4640 Fax: (480) 718-4337
MSW, C&D, residual waste, cont soil, asbestos

Soil Safe, Inc.
378 Route 130, Logan Township,
Bridgeport NJ 08085
Phone: (410) 872-3990 x1120
Fax: (410) 872-9082
Soil contaminated with petroleum or metals, some
industrial waste solids

The Southbridge Recycling and Disposal Park
165 Barefoot Road
Southbridge, MA 01550
Phone: (508) 765-9723 Fax: (508) 765-6812
MSW, C&D, cont soil for cover

Stablex Canada, Inc.
760 Industrial Blvd.
Blainville Quebec J7C 3V4
Phone: (450) 430-9230 Fax: (450) 430-4642
RCRA liquid and solid, industrial wastes

Ted Ondrick Company, LLC
58 Industrial Road,
Chicopee, MA 01020
Phone: (413) 592-2566 Fax: (413) 592-7451
Petroleum contaminated soil

Tradebe Treatment & Recycling, Northeast, LLC
126 Gracey Aveue
Meriden, CT 06451
Phone: (203) 238-8114 Fax: (203) 238-6772
RCRA, CRW wastewater oil, haz waste fuels, haz
& non-haz wastewater

Tunnel Hill Reclamation
2500 Township Road, 205 Route 2
New Lexington, OH 43764
Phone: (914) 713-0203 Fax: (914) 713-0672
Municipal solid waste, non-hazardous waste,
contaminated soils

Upton Site Remediation, LLC
(formerly Upton Landfill)
Maple Avenue,

Upton, MA 01568
Phone: (413) 522-3688 Fax: (413) 522-3330
Contaminated soil for use as cover material under
MADEP COMM-97 policy

Waste Management of NH
TLR III Refuse Disposal Facility
90 Rochester Neck Road, PO Box 7065
Rochester, NH 03839
Phone: (603) 330-2197 Fax: (603) 330-2130
Solid: MSW, C&D, PCB remediation waste (<50ppm),
virgin petroleum contaminated soil, CRW solid waste

Waste Management: RCI Fitchburg Landfill
101 Fitchburg Princeton Road
Westminster, MA 01473
Phone: (978) 355-6821 Fax: (978) 355-6317
MSW, non-hazardous waste, C&D, contaminated soil
for use as cover material under MADEP COMM-97
policy, treated lumber, asbestos

The category of material accepted by each facility listed above is for informational purposes only. The Contractor shall verify facility acceptance of each type of regulated item.

(2) Submittals

Thirty (30) days prior to commencement of work involving the management of regulated items, the Contractor shall submit to the Engineer for approval, the following documentation:

1. Copy of Spill Contractor Permit registration issued by the CTDEEP.
2. Hazard communication training for all employees performing this work.
3. Names of the treatment facilities, recycling facilities and/or disposal facilities the Contractor intends to use to receive each type of regulated item.
4. Hazardous Material Transporter USDOT Certificate of Registration for each waste transporter.
5. Hazardous Material Transporter Permit for the State of Connecticut, the destination state(s), and all other applicable states for each waste transporter.

Contractor shall provide the Engineer with a minimum of 48 hours notice in advance of scheduling, changing or canceling work activities.

(3) Regulated Item Management Provisions

(a) General Requirements

The Contractor's OSHA Competent Person shall be in control on the job site at all times during hazardous material management work activities. This person must be capable of identifying existing hazards, possess the authority to implement corrective measures to reduce/eliminate the hazards, comply with applicable Federal, State and Local regulations that mandate work practices, and be capable of performing the work of this contract. All employees who perform regulated material management related work shall be properly trained and qualified to perform such duties.

All labor, materials, tools, equipment, services, testing, insurance, and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations, industry standards and codes, and these specifications, shall be provided by the Contractor.

Ladders and/or scaffolds shall be in compliance with OSHA requirements, and of adequate length, strength and sufficient quantity to support the scope of work. Use of ladders/scaffolds shall be in conformance with OSHA 29 CFR 1926 Subpart L and X requirements.

Work performed at heights exceeding six feet (6') shall be performed in accordance with the OSHA Fall Protection Standard 29 CFR 1926 Subpart M including the use of fall arrest systems as applicable.

Inventory data from investigative surveys throughout the buildings are included herein and are presented for informational purposes only. Under no circumstances shall this information be the sole means used by the Contractor for determining the quantities or extent of the regulated items to be managed. The Contractor shall be responsible for verification of all field conditions affecting performance of the work. The Contractor shall submit to the Engineer for concurrence any additional items not listed herein that it believes to be regulated items included under this item. However, compliance with applicable requirements is solely the responsibility of the Contractor.

The Engineer will provide a Project Monitor to monitor the activities of the Contractor and inspect the work required. Environmental sampling shall be conducted as deemed necessary by the Engineer. Spill areas shall be cleaned by the Contractor until accepted by the Engineer. The Engineer may sample the spill area to demonstrate Contractor compliance with an acceptable standard.

(b) Personnel Protection

Prior to commencing work, the Contractor shall provide hazard communication training to all employees as necessary in accordance with OSHA 29 CFR 1926.59 and 29 CFR 1910.1200 and instruct all workers in all aspects of personnel protection, work procedures, emergency procedures and use of equipment including procedures unique to this project. Worker health and safety protocols that address potential and/or actual risk of exposure to site specific hazards are solely the responsibility of the Contractor.

The Contractor shall provide respiratory protection that meets the requirements of OSHA as required in 29 CFR 1910.134 and 29 CFR 1926.1000. A formal respiratory protection program, including appropriate medical surveillance, must be implemented in accordance with OSHA standards. The Contractor shall, as necessary, conduct exposure assessment air sampling, analysis and reporting to ensure the workers are afforded appropriate respiratory protection.

The Contractor shall provide and require all workers to wear appropriate personnel protective equipment, including protective clothing and respiratory protection, as required, within regulated work areas which exceed OSHA Personnel Exposure Limits (PELs) or when handling hazardous materials.

(c) Regulated Item Management Work Procedures

The Contractor shall not begin work until the Project Monitor is on-site.

Prior to beginning work on-site, the Contractor shall prepare waste characterization profile forms for each type of waste stream to be generated and forward such forms to the Engineer for review, approval and signature. Upon approval, the Contractor shall forward such forms to the appropriate disposal facilities for acceptance.

The Contractor shall utilize all appropriate engineering controls and safety and protective equipment while performing the work in accordance with OSHA, USEPA, USDOT, CTDEEP and Connecticut Department of Public Health DPH regulations.

The Contractor shall employ work practices so as to minimize the disturbance of the constituents in the regulated items, and prevent breakage and spills. In the event of a spill, the Contractor shall cordon off the area and notify the Engineer. The Contractor is responsible to have spills and the effected areas decontaminated to the acceptance of the Engineer by personnel trained in hazardous waste operator emergency response.

The Contractor shall carefully and properly remove, handle, pack, label and manifest all of the regulated items in waste containers specified and suitable to contain the waste in accordance with all federal and state regulations.

Prior to transportation and recycling and/or disposal, all proper USEPA, OSHA, CTDEEP and USDOT labels and placards shall be affixed to the waste containers and hazardous materials shipping papers such as waste manifests/bills of lading shall be completed.

Prior to construction activity which would disturb such materials, properly remove, handle, pack, label, transport, manifest and recycle or dispose of the regulated items from those listed below:

The following hazardous/regulated materials, wastes and items have been identified beneath bridges 03160A, 03160B, 03160C, 03160D, 03301 and 03303:

- **Universal waste (UW) - mercury lamps – Luminaire Light Fixtures**
- **Connecticut Regulated Waste – PCB/DEHP ballasts – Luminaire Light Fixtures**

Homeless activity was observed beneath/at Bridges 01765 & 01766, including, but not limited to human waste, sharps, bedding/clothing, etc with the potential for contamination with human fluids presenting a potential exposure to blood borne pathogens and a need for management/disposal as biohazardous waste.

- **Biohazardous/Blood Borne Pathogen (BBP) Waste – human fecal waste, sharps, bedding, clothing with potential for contamination with human fluids.**

Upon discovery of any previously unidentified regulated items during renovation activities, the Contractor shall immediately notify the Engineer and work shall cease in that area

until the Engineer can determine the extent of any impact and proper handling procedures are implemented.

Efforts shall be made to recycle the constituents of the regulated items rather than dispose of them in accordance with the waste minimization efforts required under RCRA.

RCRA hazardous waste shall not be stored on the job site in excess of 90 calendar days from the accumulation start date.

Connecticut Regulated Waste shall not be transported to a RCRA or TSCA permitted facility for disposal, unless otherwise allowed by the Engineer in writing.

All non-RCRA hazardous waste materials, regulated waste materials and recyclable waste items shall be manifested separately from RCRA and TSCA hazardous waste, and documented properly on non-hazardous waste manifests, waste shipment records, bills of lading or other appropriate shipping papers for transportation to the recycling and/or disposal facility.

The Contractor shall prepare each lab pack list and shipping document (manifests, waste shipment records, bills of lading, etc.) with all of the required information completed (including types of waste, proper shipping name, categories, packing numbers, amounts of waste, etc.) in accordance with applicable federal and state regulations. The document will be signed by an authorized agent representing ConnDOT as the Generator for each load that is packed to leave the site.

The Contractor shall forward the appropriate original copies of shipping papers to the Engineer the same day the regulated items leave the project site.

All vehicles departing the site transporting hazardous materials shall display proper USDOT placards, as appropriate for the type of waste being transported.

(d) Project Closeout Documents:

Within thirty (30) days after completion of the on-site project work, the Contractor shall submit to the Engineer copies of the following completed documents:

1. Hazardous Waste Manifests
2. Waste Shipment Records/Bills of Lading
3. Recycling Receipts

Documents 1. through 3. must include the signature of an authorized disposal facility representative acknowledging receipt of hazardous materials.

Method of Measurement:

The work of “Handling and Disposal of Regulated Items” shall be provided for in accordance with Article 1.04.05 – Extra Work.

Basis of Payment:

The work of “Handling and Disposal of Regulated Items” shall be paid for in accordance with Article 1.04.05 – Extra Work, which price shall include the management, removal, handling, packing, labeling, transport, manifesting, recycling or disposal of the regulated constituents in the specific equipment/items scheduled for impact at the project site, and all equipment, materials, tools and labor incidental to the work.

Final payment will not be made until completed copies of all Manifest(s), Waste Shipment Records, Bills of Lading and/or Recycling Receipts have been provided to the Engineer. Once completed and facility-signed copies have been received in their entirety, the Engineer will make the final payment.

<u>Pay Item</u>	<u>Pay Unit</u>
Handling and Disposal of Regulated Items	Estimate

END OF SECTION

ITEM #0201001A – CLEARING AND GRUBBING

Article 2.01 Clearing and Grubbing, shall be supplemented as follows:

Article 2.01.01 - Description: Add the following:

The work specified in this section consists of clearing the ground of trees, stumps, brush, refuse, rubbish, trash, debris, dislodged materials and cut vegetation, all within the limits of construction of this Contract. The limits of this specified work shall provide for a useable width to accomplish the work as shown on the Contract Drawings. Removal of any concrete foundations in conflict with the proposed work shall be removed under this item. This item shall also include the removal of any extraneous Modified Riprap, Crushed Stone, or any other aggregate materials not used to achieve the final grades and lines as shown on the Contract Drawings.

Disposal of materials shall be in a manner acceptable to the Engineer. When directed by the Engineer, the Contractor shall remove all non-hazardous solid waste and restore the area to its original condition.

Article 2.01.05 - Basis of Payment: Add the following:

All costs incidental to the removal and disposal of temporary precast barrier curbs, concrete foundations, extraneous aggregate material, objectionable debris, etc., will be included in the price of "Clearing and Grubbing."

ITEM # 0406137A – SURFACE PATCH (TEMPORARY)

Description: Work under this item shall consist of placing portland cement based temporary surface patches on the deteriorated bridge deck surface and removing the temporary surface patches prior to permanent patching.

Temporary surface patches may be required after the completion of bridge deck milling and prior to opening the roadway to traffic as directed by the Engineer to ensure a clear roadway, safe for travel. Temporary surface patch areas shall be determined by the Engineer and shall only be compensated if the Engineer determines that the area of the deteriorated deck may not remain as-is, and insufficient time is available for the Contractor to permanently patch the deck prior to opening the span to traffic.

Throughout construction, the Engineer may also direct the Contractor to place temporary surface patches at areas of the bridge deck which have degraded and are in need of immediate patch work but are not being patched under other items until a later time.

This work shall also include the replacement of any failed temporary surface patches, as required by the Engineer.

This work shall not include the placement of permanent patches, nor shall it cover additional patch areas identified after the deck has been opened to traffic, unless directed by the Engineer. Such work shall be governed by the Special Provision “ITEM #0601318A - PARTIAL DEPTH PATCH” and paid for accordingly.

Materials: Surface patching materials shall be a concrete composed of a quick setting cement, fine aggregate, coarse aggregate and water. This concrete shall harden within 40 minutes, and develop minimum compressive strengths of 1,000 psi within one hour after set and 3,000 psi within three days.

The Contractor shall design and submit a quick setting mix to the Engineer for approval. The mix proportions and method of application shall be in accordance with the manufacturer’s recommendations. Sources of supply of all the materials shall be clearly indicated.

Patching products not currently approved by the Department may also be substituted provided that the Contractor submits to the Department the manufacturer’s literature and a sufficient quantity of the proposed patching materials for field testing and evaluation. Further information regarding approval procedures may be obtained by contacting the Department’s Research and Materials Testing Laboratory at 280 West Street, Rocky Hill, CT 06067. No substituted patching material shall be used until it has been approved in writing by the Department.

Bituminous patching materials may be submitted for consideration as an approved alternate temporary surface patching material provided that the Contractor demonstrates through a field test, that the bituminous material is capable of performing to the satisfaction of the Engineer under the traffic conditions anticipated while the temporary surface patch remains in service. Bituminous material may be proposed for ‘Short Term’ temporary patches, but may not be substituted for ‘Long Term’ temporary patches, which are to remain in service beyond 14 days.

In the event that an approved alternate product fails to perform adequately after acceptance, the Department may prohibit further use, in favor of an approved patching product.

Construction Methods:

1) Inspection of the Slab: After milling operations have been completed and prior to the opening of the bridge deck to traffic, the Contractor shall grant the Engineer access to evaluate the bridge deck to ensure that the deck condition is sufficient for providing a clear roadway, safe for travel. The Engineer shall determine areas that must be patched prior to opening lanes to traffic, either by placement of permanent patches, as governed by Special Provision “ITEM #0601318A - PARTIAL DEPTH PATCH”, or by placement of temporary surface patches as dictated herein.

2) Surface Preparation – Short Term Temporary Patches: Areas to be temporarily surface patched, which are to be permanently patched within 14 days of placement of the temporary patch, shall be either sandblasted or water blasted, followed by air blasting in order to remove all loose particles and dust. All blasting operations shall be performed using techniques approved by the Engineer, taking care to protect all pedestrians, traffic, and adjacent property. All compressed air sources shall have properly sized and designed oil separators, attached and functional, to allow delivered air at the nozzle that is oil-free. The temporary patch area shall be cleaned of all additional loose or powder-like rust, oil, solvent, grease, dirt, dust, bitumen, loose particles, and foreign matter just prior to patching.

The entire concrete surface to be patched shall be saturated, surface dry prior to placing patching materials. All free water shall be removed from the patch area.

3) Surface Preparation – Long Term Temporary Patches: Areas to be temporarily surface patched, which are to be permanently patched at a time greater than 14 days from the placement of the temporary patch, shall be prepared as follows:

a) Removal of Deteriorated Concrete: All deteriorated concrete designated for removal under this construction item shall be removed within the limits shown on the plans and where ordered by the Engineer. The lateral limits of each temporary patch area to be repaired will be delineated by the Engineer and suitably marked. Where several temporary patch areas to be repaired are very close together, the Engineer may combine these individual patches into a large area. Feather edges of temporary patch areas shall preferably be squared up to a roughly vertical edge in an approved manner to improve temporary patch durability.

All deteriorated concrete shall be removed by hand-held concrete breakers, such as jack hammers. Hydro-demolition methods will not be permitted

The weight of pneumatic hammers when used shall not exceed 25 pounds for concrete removal above the top reinforcing steel nor 15 pounds for concrete removal below the top reinforcing steel.

The depth of concrete removal shall be sufficient to include all spalled, delaminated, or otherwise deteriorated concrete that may compromise the performance of the temporary patch.

Where the existing reinforcing steel is damaged or corroded, it may remain in place, unless otherwise instructed by the Engineer, until such time as the area is revisited and permanently patched.

The Engineer shall examine the underside of the bridge deck for pop-outs caused by the removal of the deteriorated concrete. When pop-outs are encountered on the underside of the deck due to removal of concrete, the Engineer shall determine if the areas must be repaired and paid for under the Item "Full Depth Patch (High Early Strength Concrete)" prior to opening to traffic.

b) Surface Preparation: Reinforcing steel which is in the proper position in the slab shall be left in place and cleaned of bond inhibiting particles.

Reinforcing bar wire ties and vertical supports shall be installed on inadequately supported and/or vibrating reinforcing steel, as directed by the Engineer.

The concrete surface and reinforcing steel to receive temporary patching material shall be either sandblasted or water blasted, followed by air blasting in order to remove all loose particles and dust. All blasting operations shall be performed using techniques approved by the Engineer, taking care to protect all pedestrians, traffic, and adjacent property. All compressed air sources shall have properly sized and designed oil separators, attached and functional, to allow delivered air at the nozzle that is oil-free. The temporary patch area shall be cleaned of all additional loose or powder-like rust, oil, solvent, grease, dirt, dust, bitumen, loose particles, and foreign matter just prior to patching.

The entire concrete surface to be patched shall be saturated, surface dry prior to placing patching materials. All free water shall be removed from the patch area.

4) Mixing, Placing, and Finishing: Mixing and placing concrete should not be done unless the ambient temperature is above 35°F. All mixing shall be accomplished by means of a standard drum-type portable mixer. A continuous type mobile mixer may be used if permitted by the Engineer. The Contractor shall calibrate the mobile mixer under supervision of the Engineer. Calibration shall be in accordance with the applicable sections of ASTM method C685. The

total mix shall be limited to the quantity that can be mixed and placed in 15 minutes. The concrete mix shall be spread evenly and compacted to a level slightly above the deck surface. Vibration, spading or rodding shall be used to thoroughly compact concrete and fill the entire patch area. Where practical, internal vibration shall be used in cases where concrete has been removed below the reinforcing steel. Hand tamping shall be used to consolidate concrete in smaller patches, including popouts.

After the concrete has been spread evenly and compacted to a level slightly above the pavement surface, the concrete shall be hand screeded to achieve a uniform surface finish smooth and even with adjacent concrete.

Where temporary patches are provided at areas where the bituminous wearing surface remains, the temporary patch shall extend to the top level of the wearing surface.

Finishing operations shall be completed before initial set takes place.

Failed temporary patches shall be replaced by the Contractor at no additional cost to the Department.

5) **Marking:** All Short Term and Long Term Temporary Patches shall be spray painted in a manner acceptable to the Engineer to identify the patched areas as temporary. The marking shall include the date that temporary patching was performed. All temporary patches must be removed and replaced with a permanent patch, governed by the item for "PARTIAL DEPTH PATCH" or "FULL DEPTH PATCH" at the completion of the project.

Method of Measurement: This work will be measured for payment by the number of square feet of temporary surface patches placed on the bridge deck prior to opening the deck to traffic. Temporary surface patch areas shall be determined by the Engineer and shall only be compensated if the Engineer determines that the area of the deck may not remain as-is, and insufficient time is available for the Contractor to patch the deck prior to opening the span to traffic.

Basis of Payment: This work will be paid for at the contract unit price per square foot of deck concrete receiving a "Surface Patch (Temporary)", complete in place and accepted, which price shall include, surface preparation of patch areas, patch placement, and all materials, equipment, tools, labor and work incidental thereto.

No additional compensation shall be made for the material, labor, equipment, traffic control, and/or additional incidental costs associated with the replacement of failed temporary patches at the direction of the Engineer. Nor shall any additional compensation be made to remove temporary patches.

<u>Pay Item</u>	<u>Pay Unit</u>
Surface Patch (Temporary)	Square Foot

ITEM #0601039A – MODIFY BRIDGE PARAPET

ITEM #0601044A – BRIDGE PARAPET CAP

Description: Work under this item shall consist of the complete modification of bridge and wingwall parapets from a safety walk shape to a sloped curb along with parapet and wingwall end treatments as shown on the plans, as directed by the Engineer and in accordance with these specifications.

At locations where a Bridge Parapet Cap is proposed, this work includes the removal of existing steel and aluminum bridge rail components, mounted on the top of the existing concrete parapet. This work also includes removal of existing parapet mounted chain link fence at areas where a Bridge Parapet Cap is Proposed.

This work includes the removal of precast barrier elements presently mounted on the safety walk and anchored to the parapet face.

Aluminum bridge rail components deemed suitable for salvage by the Engineer shall remain the property of the Department. See Notice to Contractor – Salvaged Material.

Materials:

Concrete: The concrete shall be a Contractor designed portland cement concrete, air entrained, with a maximum size coarse aggregate of 3/8” and a minimum 28 day compressive strength (f’c) of 4000 psi.

The Contractor shall submit to the Engineer a concrete mix design for approval. The Contractor shall further provide a certificate stating that the mix submitted shall meet the requirements.

Coarse aggregate shall consist of broken stone, having a maximum size of 3/8”, conforming to the requirements of Article M.03.01.

Fine aggregate, Water, Air Entraining Admixture and Retarder Admixture shall conform to the requirements of Article M.03.01.

The air entraining feature may be obtained by the use of either air entraining portland cement or an approved air entraining admixture. The entrained air content shall not be less than four (4) percent or more than six (6) percent.

Portland Cement shall conform to the requirements of M.03.01, except that Type III or Type IIIA portland cement may be used at no additional cost to the State.

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The Contractor may submit, for the approval of the Engineer, a water reducing admixture for the purpose of increasing workability and reducing the water requirement for the concrete.

When the Engineer has previously approved the use of a high range water reducer in the concrete mix, the entrained air content shall be not less than five (5) percent nor more than eight (8) percent.

The addition to the mix of calcium chloride or an admixture containing calcium chloride will not be permitted.

Adhesive Bonding Material: The adhesive bonding material shall be a resin compound specially formulated to anchor steel bars in holes drilled into concrete for the purpose of resisting tension pull out. The materials shall be from the Department's approved product list.

A Materials Certificate will be required in accordance with Article 1.06.07, certifying the conformance of the adhesive bonding material to the requirements set forth in the Manufacturer's specifications.

Junction Box Covers: Replacement junction box covers shall be fabricated from ASTM A709 Grade 36 structural steel to meet existing mounting details. Covers shall comply with the requirements of Section M.06.02. Covers shall be galvanized in accordance with Section M.06.03.

Reinforcing: The reinforcing shall be uncoated and conform to ASTM A615, Grade 60.

Non-Shrink Grout: Non-shrink, non-staining grout shall conform to Subarticle M.03.05.

Joint Seal: Joint seal shall conform to the requirements of Subarticle M.03.08.

Construction Methods: Existing precast barrier curb, anchor bolts, and wood shims shall be removed from the existing safety walk. The existing safety walk portion of the parapet, steel curb plates, and stone curb shall be removed to the limits shown on the plans.

Anchor bolts between the precast barrier curb and the vertical face of parapet shall be removed to a depth not less than 1/2" below the surface of concrete and the recess shall be filled with non-shrink, non-staining grout.

If, after removal of precast barrier elements, the covers of the existing cast iron junction boxes are missing, the Contractor shall replace the covers with new galvanized steel covers.

The existing steel bridge rail and chain link fence components shall be removed and properly disposed of. The existing aluminum bridge rail components shall be removed and salvaged as directed by the Engineer. Care shall be taken during removal of the existing bridge rail systems so as not to damage any components which are to remain in service or are to be salvaged.

The parapet and wingwall end treatments that require modifications shall be reconstructed as shown on the plans. Care shall be taken not to damage the portion of the parapet that is to remain in place.

Removal of the concrete shall be accomplished by pneumatic hammers approved by the Engineer. The weight of the pneumatic hammers shall not exceed 30 lb. Existing reinforcing, designated to remain in place, shall be cleaned of loose rust, concrete, and other foreign matter, and if required, cut and bent as shown on the plans.

Holes for the additional reinforcing shall be drilled into the concrete as shown on the plans. Drilling methods shall not cause spalling, cracking, or other damage to the existing concrete. The weight of the drill shall not exceed 20 lb. Those areas damaged by the Contractor shall be repaired by him, in a manner suitable to the Engineer, at no expense to the State. The hole diameter shall be as recommended by the Manufacturer of the chemical anchoring material for the specific diameter of the reinforcing steel bar.

A pachometer shall be used to locate existing steel. If existing reinforcing bars are encountered during the drilling operation, the hole shall be relocated to clear the existing reinforcing as directed by the Engineer. Uncompleted holes shall be filled with grout and finished smooth to the contour of the surrounding concrete surface.

Fabrication and placement of reinforcing steel shall conform to the requirements of Article 6.02.03. The reinforcing steel and the chemical anchoring material shall be installed in the holes prepared in accordance with the chemical anchoring material Manufacturer's recommendations.

Mixing, placing, curing, and finishing of the concrete shall be in accordance with Article 6.01.03.

Any newly placed concrete having a hollow sound when sounded with a hammer shall be replaced by the Contractor at his expense by a method acceptable to the Engineer.

Non-shrink grout shall be placed to finish the roughened deck areas, adjacent to the gutterline, smooth and flush with the surrounding deck.

The existing vertical faces of the parapet shall be protected during the pouring and finishing of the modified section to prevent concrete staining. Any staining or discoloration of existing concrete caused by the Contractor shall be cleaned at the Contractor's expense by a method acceptable to the Engineer.

Method of Measurement: This work to modify the bridge parapet, which includes the removal of the concrete safety curb and granite stone curbing, drilling and grouting of dowels into deck concrete for reconstructed curbs, furnishing and placing reinforcement, and placing and finishing concrete for the reconstructed curbs, will be measured for payment as the number of linear feet of modified bridge parapet, measured along the new gutterline, constructed in accordance with the contract plans. Barrier transition length shall not be included in this

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measurement. Removal and disposal of precast barrier segments, anchor bolts, and wood shims is included but shall not be measured. The work to furnish and install new steel junction box covers is included but shall not be measured.

The work to construct the bridge parapet cap, which includes drilling and grouting dowels into the top of the concrete parapets, furnishing and placing of reinforcement and placing of concrete for the reconstructed cap, will be measured in linear feet along the top of the parapet cap from the start and end points identified on the plans. Removal of existing steel and aluminum bridge railing components, removal of parapet mounted chain link fence, and salvage of aluminum bridge railing components is incidental to the item "Bridge Parapet Cap" and is not measured. Barrier transition length shall not be included in this measurement.

Basis of Payment: This work will be paid for at the contract unit price, per linear foot, for "Modify Bridge Parapet" or "Bridge Parapet Cap" complete in place, which price shall include all materials, equipment, tools and labor incidental thereto.

Pay Item

Modify Bridge Parapet
Bridge Parapet Cap

Pay Unit

L.F.
L.F.

ITEM #0601070A – CLASS “S” CONCRETE

Description:

Work under this item shall conform to Section 6.01—Concrete for Structures as supplemented and amended to provide for a Class “S” superplasticized concrete.

6.01.01—Description: Add the following:

Class “S” concrete, may be used to fill and repair voids in horizontal and vertical surfaces of concrete areas greater than one inch (1”) deep (exclusive of deck slabs and concrete pavement), as detailed on the plans or as directed by the Engineer.

Work under this item shall consist of locating and removing loose concrete, deteriorated concrete, and concrete overlaying hollow areas; patching these areas, as well as spalled and scaled areas, with Class “S” Concrete formed to the original contour. The work shall also include perimeter sawcutting, sandblasting and cleaning areas to be patched and filled. The work shall include sandblasting, cleaning, and priming any exposed reinforcing steel, prior to placing the concrete. Exposed reinforcing steel shall be coated with a NEPCOAT approved zinc rich primer prior to placing of new concrete. Locating areas of concrete in need of repair shall be performed during a hands-on inspection of the existing structure. Labor, materials, and equipment necessary to complete the hands-on inspection, and to provide access for the Resident Engineer to perform a hands-on inspection to verify the extent of repairs is incidental to this work.

At locations where access to substructure is obstructed by pier protection, such as guide rail, timber guards, or other means, the work to remove and reinstall protective elements in kind is incidental to this item.

At locations where access to substructure is obstructed by state owned fences, the work to remove and reinstall fencing is incidental to this item.

This work includes placement of welded wire fabric or reinforcement in patch areas to the limits identified on the plans.

The Contractor shall not perform any repair work without prior approval of the Engineer for location, limits and types of repairs. The Contractor’s schedule shall include adequate time for the Resident Engineer to verify and approve the proposed work.

The Class “S” Concrete for patching shall be tinted to match the existing concrete color at all exterior surfaces.

6.01.02—Materials: Add the following

Primer: The single component zinc primer shall be one of the following:

Kolor-Zinc No. 0100

Manufactured by: Keeler & Long, Inc.
856 Echo Lake Road
Watertown, CT 06795

Carboline 676

Manufactured by: Carboline
350 Hanley Industrial Court
St. Louis, MO 63144

Zinc Plate 49 Organic Primer

Manufactured by: Con-Lux Coatings, Inc.
Talmadge Road, Box 847
Edison, NJ 08818

Certification: A Materials Certificate and a Certificate of Compliance shall be required for the zinc primer in accordance with Article 1.06.07, certifying the conformance of this material to the requirements stated herein.

Portland Cement Materials: shall conform to Section M.03 as modified herein.

M.03.01 – Component Materials is supplemented as follows

1—Coarse Aggregate: is supplemented with the following:

(c) **Gradation**: Course aggregate for the Class “S” concrete shall meet the following gradation requirements:

For Class “S”: The required grading shall be obtained by using 100% 3/8-inch coarse aggregate.

3—Cement: Add the following: Type I or II Portland Cement shall be used for Class “S” concrete.

5—Admixtures: add the following:

(c) - **Superplasticizing Admixtures**: The superplasticizer shall be a high-range water reducer (HRWR) capable of increasing the slump of the mix from approximately 2.5” to 7” upon the addition of the amount recommended by the respective manufacturer. The HRWR shall conform to ASTM C494 Type F or Type G and shall be approved by the Engineer. The use of this material shall be in strict accordance with the respective manufacturer’s written instructions and procedures.

M.03.02 – Mix Design Requirements is supplemented as follows:

2. Non-Standard ConnDOT Mix Designs: include Class “S” superplasticized concrete requirements as follows:.

The Class “S” concrete shall have a minimum 3,000-psi compressive strength at 28 days.

<u>Type</u>	<u>Proportion By Wt.</u>	<u>Water per Bag</u>	<u>Cement Factor</u>
Class “S”	<u>Approximate</u> 1:2.16:2.20	<u>Gals.. Max.</u> 5.7	<u>Bags/Cubic Yard.</u> 7.0

M.03.04 —Curing Materials: is supplemented as follows:

(3) Liquid Membrane-Forming Compound: replace this section with the following:

No liquid membrane-forming compound shall be used for Class “S” concrete.

6.01.03—Construction Methods: is supplemented with the following text.

Where this specification deviates from the Standard Specifications, Form 816, the intent of this text shall govern.

4—Acceptance Testing and Test Specimens: Add the following:

(a) Temperature, Air Content and Slump: Add the following:

Class “S” concrete shall contain not less than 6.5 percent and not more than 8.5 percent entrained air at the time of placement.

Class “S” concrete shall have a slump range of 2 to 4 inches prior to the addition of the HRWR and form 6 to 8 inches slump after the addition of the HRWR. The addition rates of the air-entraining admixture (A.E.A.) and the HRWR will vary. Frequent field testing of the air content and slump prior to and after addition of the HRWR will be the determining factor of actual addition rates for each admixture.

3-Transporation and Delivery of Concrete: Add the following:

(c) Mixing Concrete:

For hand mixing of Class “S” concrete, the Contractor shall provide scale(s) approved by the Engineer in which cement and aggregate can be accurately weighed for the required mix proportions.

The Contractor shall also have measuring graduates marked in ounces for the proportioning of the A.E.A. and the HRWR. Do Not mix the A.E.A. and the HRWR together before adding to the mix; the resultant solution will not work. Do not add the A.E.A. and the HRWR at the mixer simultaneously; these admixtures must be added separately in the mixing cycle. All manufactured materials shall be stored, mixed and used in strict accordance with the written recommendations of the respective manufacturers.

9--Curing Concrete: Replace part (a) as follows:

(a) Curing Methods:

1. **Forms-In-Place Method:** Formed surfaces of Class “S” concrete shall be cured by retaining the forms in place without loosening. Water shall be applied to the forms until for the duration of the seven (7) day curing period at a frequency determined by the Engineer.

Add the following:

14--Material Storage: The Contractor shall store and maintain the A.E.A and the HRWR materials in clean original containers as delivered by the manufacturer.

15--Work Procedure: Before any concrete is removed, the Engineer shall perform a hands on inspection to determine the exact limits and locations of all areas to be repaired under this item. The limits of each area to be repaired shall be suitably marked. The Contractor shall provide scaffolding or other access as required for the Engineer’s inspection. The Contractor shall not perform any work without prior approval of the Engineer for locations, limits, and types of repairs.

The perimeter of each patch shall be saw cut to the depth shown on the plans. Care shall be taken not to cut existing reinforcement. In the event that reinforcement intended to remain is damaged, repair it at the Engineer’s direction and at no additional cost to the Department.

Loose and deteriorated concrete shall be chipped away back to sound concrete. The exposed surfaces shall be thoroughly sandblasted and vacuumed immediately prior to forming.

Hollow areas in the existing concrete shall be completely exposed by chipping away back to sound concrete and thoroughly sandblasted and vacuumed immediately prior to forming.

Spalled and scaled areas shall be cleaned of all loose and deteriorated concrete. The exposed surfaces shall be thoroughly sandblasted and vacuumed immediately prior to forming.

All surfaces of exposed concrete and reinforcing steel shall be free of oil, solvent, grease, dirt, dust, bitumen, rust, loose particles and foreign matter. Prior to sandblasting of concrete and steel surfaces, all petroleum contamination on these surfaces shall be removed by appropriate solvent or detergent cleaning operations.

Extreme care shall be taken where reinforcing steel is uncovered not to damage the steel or its bond in the surrounding concrete. Pneumatic tools shall not be placed in direct

contact with reinforcing steel. Maximum 15 pound size hammers shall be used for chipping and removal where existing reinforcing steel may be encountered. Exposed reinforcing shall remain in place except where specifically indicated for removal by direction of the Engineer. Exposed reinforcing steel shall be sandblasted in accordance with SSPC-SP6, Commercial Blast Cleaning, to remove all contaminants, rust and rust scale.

The exposed blast cleaned reinforcing steel shall be coated with an approved zinc rich primer by brush. All application of the zinc primer shall be in accordance with the manufacturer's printed instructions.

For this special provision, the depth of removal shall be minimum of 1" below or behind the reinforcing steel.

Where the existing reinforcing steel is severely corroded or damaged, it shall be cut out and replaced with new reinforcing steel of the same size and spacing. Where existing steel is determined by the Engineer to have insufficient cover, it shall be either replaced or adjusted as directed. New steel shall be attached behind existing steel with a minimum length for lap splices as required by AASHTO or as directed by the Engineer. Concrete shall be removed to a minimum depth of 1" behind the new steel.

When using sandblasting equipment, all work shall be shielded for the protection of the public.

All compressed air equipment used in cleaning shall have properly sized and designed oil separators to ensure the delivery of oil-free air at the nozzle.

Adequate measures shall be taken by the Contractor to prevent concrete chips, tools and/or materials from entering into adjacent roadway lanes or dropping to areas below the structure. All debris shall be promptly swept up and removed from the site. All materials removed shall be satisfactorily disposed of by the Contractor.

All excavated areas on vertical surfaces of concrete members shall be formed using forms coated with a plastic or similar film to preclude the use of form release agents. Forms and support systems shall be properly designed in accordance with M.6.01.03-3. Forms shall be so designed that placement access shall be allowed at the top of each respective formwork assembly for contiguous void areas.

Do not use bonding compounds before or during the placement of this concrete material unless approved by the Engineer.

Concrete surfaces against which this material is to be placed shall be sound, tight, and thoroughly roughened by the removal and sandblasting procedures specified above. The exposed concrete surfaces shall be dampened with fresh water immediately prior to

placement of the fresh concrete by “hosing” down the areas behind the forms as thoroughly as possible.

Placement of the fresh concrete shall be in the maximum height lifts possible under the circumstances and all freshly placed concrete shall be consolidated during placement with adequately sized and effective vibrators.

Following curing and stripping, the exposed faces of new concrete shall be finished off with the use of the appropriate tools to blend in the physical appearance to the surrounding areas as much as possible.

Cured patches shall be sounded by the Engineer to detect the presence of any hollow spots. Such spots shall be removed and replaced by the Contractor at his expense until a patch acceptable to the Engineer is in place.

6.01.04--Method of Measurement: Add the following:

Measure “Class “S” Concrete” for payment by the actual volume in cubic yards of concrete placed and accepted by the Engineer. Wire fabric and reinforcing steel required during performance of this work is incidental and is not measured.

6.01.05—Basis of Payment: Add the following:

1--Concrete: Add the following

Class “S” concrete will be paid for at the contract unit price per cubic yard for “Class S Concrete,” complete in place, which price shall include performing hands-on inspection, providing access to the Engineer for hands-on inspection, locating and removing unsound material, sawcutting, sandblasting, cleaning, zinc primer coating, forming, placing, curing, stripping and finishing new concrete, and all materials, debris shields, access, equipment, tools, labor and clean-up incidental thereto. Welded wire fabric, as shown on the plans, is incidental to placement of the “Class S Concrete” patches and is included in the contract unit price.

Removal and reinstallation of existing column protection to allow access to patching areas is incidental to this item.

Removal and reinstallation of fencing, to allow access to patching areas is incidental to this item.

Pay Item

Class S Concrete

Pay Unit

Cubic Yard

ITEM #0601983A – PIER PROTECTION

Description: Under this item, the Contractor shall replace deteriorated pier protection elements that have been removed to allow access to perform concrete repairs to existing piers. Replacement shall be performed for pier protection elements shown on the plans and/or deemed by the Engineer to be unsuitable for reinstallation.

The work to remove and reinstall existing pier protection to permit access for concrete repairs shall not be included here, but shall be considered incidental to the work to perform “Class “S” Concrete” repairs.

The Resident Engineer and the Contractor shall jointly inspect pier protection prior to removal to determine the areas where existing elements are unsuitable for reuse. This item shall not cover elements damaged by the Contractor during removal unless the Resident Engineer determines that the existing elements could not have been removed in a manner that prevents damage and permits reuse.

At locations where existing pier protection elements do not interfere with access to the pier for repair, the elements may remain in their current location regardless of condition, unless replacement is ordered by the Engineer.

Materials:

Materials used to replace pier protection shall be of the type and dimensions used in the original pier protection. All elements shall meet the requirements of the applicable sections of the Standard Specifications.

Construction Method:

Construct new pier protection upon completion of pier repairs. Pier protection shall be fastened in a manner consistent with the original attachment method or in a manner approved by the Resident Engineer. The Contractor shall not create new holes in the piers for the purpose of fastening pier protection.

Method of Measurements:

The work to erect replacement “Pier Protection” shall be paid for at each column for which the Resident Engineer determines that replacement pier protection is required.

Basis of Payment: This work will be paid for at the contract unit price for “Pier Protection” at each column, which shall include the cost of all material, equipment, labor, and incidental expenses necessary to satisfactorily install the pier protection.

Removal and reinstallation of pier protection shall not be included, as it is incidental to the item “Class “S” Concrete”.

<u>Pay Item</u>	<u>Pay Unit</u>
Pier Protection	Each

ITEM #0603081A – STRUCTURAL STEEL REPAIRS (SITE NO. 1)

ITEM #0603082A – STRUCTURAL STEEL REPAIRS (SITE NO. 2)

ITEM #0603083A – STRUCTURAL STEEL REPAIRS (SITE NO. 3)

Refer to Notice to Contractor – Bridge Sites for limits of Sites No. 1-3.

Work under this item shall conform to the requirements of Section 6.03 – Structural Steel of the Standard Specifications as amended and supplemental herein:

6.03.01 - Description:

After the third paragraph, add the following:

This special provision provides additional requirements for the surface preparation, shop painting, and field touch-up painting of new structural steel.

Also add the following:

Under this item, new structural steel plates and shapes shall be furnished and installed to repair existing structural steel members as indicated in the Contract documents and described herein.

The work shall include the following primary elements:

- Repair plates, fill plates, and stiffener angles at girder web repairs. (Painted)
- Repair plates and fill plates at girder flange repair areas. (Painted)
- Repair plates and fill plates at cap girder repair areas. (Painted)
- Steel tab plates, angles, splice plates, etc. necessary to reconnect existing diagonal members removed or modified to allow installation of girder web repairs. (Painted)
- End & intermediate cross frames, gusset plates, and diaphragm channels. (Painted)
- Bent cross frame strut elements. (Painted)
- Interfering cross frame diagonal elements. (Painted)
- Jacking stiffeners. (Painted)
- Seismic locks. (Galvanized)
- Keeper plates and studs embedded in keeper blocks. (Galvanized)
- Cast-in headed anchor bolts and un-headed drilled in anchor bolts for steel keeper installation. (Galvanized)
- Counterweight mounted steel keeper & receiver. (Galvanized)
- Bottom flange brace angles. (Galvanized)
- Bolsters and beveled sole plates. (Galvanized)
- Weep and drainage pipe supports and un-headed anchors. (Galvanized)

In addition to furnishing and installing the new structural steel, the work item shall involve cutting and removal of existing structural steel elements, welding, drilling, localized cleaning, grinding, cutting bearing stiffeners, cutting bracing and cross frame members, and all necessary work to complete the structural steel work. Existing structural steel was originally coated with lead paint. Disposal of demolished and removed structural members, in accordance with these special provisions, is included.

The steel load plate, vulcanized to the elastomeric bearings, and the steel shims required between the bearings and the bolsters or beveled sole plates are not included in this item. These items are included in the Item "Bearing Replacement with Elastomeric Bearing Pads".

Unless furnished galvanized, the new steel shall be painted after erection has been completed in accordance with the special provision for "Abrasive Blast Cleaning and Field Painting of Beam Ends (Site No. X)" or "Localized Paint Removal and Field Painting of Existing Steel". Stainless steel shall not be galvanized or painted.

6.03.02 - Materials: Unless otherwise noted on the plans, the materials for this work shall conform to the requirements of Connecticut Department of Transportation Standard Specifications Section M.06. Shop applied coatings shall conform to Article M.06.03- 'Galvanizing' or Article M.07.02 – 'Coating Systems for Structural Steel'.

After the second paragraph, add the following:

“ Painting materials for this work shall conform to the following:

- The Contractor shall select a three-coat system from the qualified product List A or B, issued by the Northeast Protective Coating Committee (NEPCOAT). The approved NEPCOAT listings may be found at the NEPCOAT website at <http://www.nepcoat.org/>
- Note: The List B Carboline Company system that specifies Carboguard 888 is not eligible for use under this special provision at this time.
- The system chosen shall have a prime coat that has achieved a Class 'B' slip coefficient for faying surfaces. Top coat paint color shall be as noted on the plans.
- Both the shop painted and field touchup applied coating systems shall be of the same three-coat system. A compatible organic zinc rich primer shall be used for any necessary field touch up.
- The same coating material manufacturer shall furnish all materials for the complete coating system. Intermixing of materials within and between coating systems will not be permitted.
- Thinning of paint shall conform to the manufacturer's written instructions.”

Also add the following:

Epoxy-Based Filler: Shall conform to ASTM C881, Grade 3. The epoxy based filler material shall be Flexolith[®] Gel as manufactured by Tamms, Kop-Coat A-788 as manufactured by Carboline, Steel-Seam FT910 as manufactured by Sherwin-Williams, or Engineer approved equivalent product.

Shear Studs: Stud shear connectors shall conform to the requirements of M.06.02-(4).

Non-Shrink Grout: Non-shrink, non-staining grout shall conform to the requirements of M.03.05.

Shim Plates: Shims shall be placed between plies of structural steel, where noted on the plans, and shall be pre-drilled to suit the bolt pattern. Shims shall be cut to the dimensions of the assembled parts and drilled for all bolts that pass through the shims. Shims less than ¼-inch thick shall be Stainless Steel ASTM A240 Type 304. Shims ¼-inch or greater in thickness shall be Carbon Steel ASTM A709 Grade 50. Carbon steel shims shall be prime coated. In general, sufficient thickness shall be furnished to secure 1/64-inch variations of the shim allowance plus one shim equal to the full allowance. For example, a ½ inch nominal shim pack shall consist of the following thickness variations: one ½-inch, one ¼-inch, one 1/8-inch, one 1/16-inch, one 1/32-inch, and two-1/64-inch.

High Zinc Dust Content Paint: Zinc paints shall contain not less than 65% zinc dust (by weight) in the dried paint film and shall be approved for use by the Resident Engineer.

6.03.03 - Construction Methods: *Add the following:*

The work shall be performed and scheduled to conform within the requirements of Article 1.08 and as described herein.

2. Submittals: *Add the following:*

- (a) Shop Drawings: Field measurements shall be performed to verify all necessary dimensions prior to shop drawing submittals. The Contractor shall be responsible to verify all necessary dimensions, including existing fastener spacing to complete the work. Where shop drawing dimensions are based on existing fastener spacing, the Contractor shall submit supporting documentation, including field measurements, as part of the shop drawing submittal.

4. Field Erection: *Add the following:*

- (d) Field Assembly: The Contractor shall be responsible for coordinating the erection of structural steel.

The Contractor shall complete all bolting work that has been started prior to the end of the work shift.

Where grout is required between concrete surfaces and structural steel members, it shall be performed as part of this item. Replacement diaphragm channels shall be grouted into contact with the existing bridge deck above using non-shrink, non-staining grout.

- (e) Welded Connections: *Add the following:*

The Contractor will perform the following inspection of field welds:

1. MT test 10% of the total length of field welds performed to connect cross frame elements.
2. MT test at least 25% of each field weld performed to connect new bearing stiffeners to girder webs.
3. MT test 100% of each field weld performed to connect new bearing stiffeners to girder flanges.
4. MT test at least 10% of the total field weld length performed to connect new bearing sole plates to girder bottom flanges at bearings.

Galvanized members that are to be welded after galvanizing shall be masked 1 inch (25 millimeters) on either side of the weld line prior to galvanizing. After welding, the weld areas shall be cleaned in accordance with the SSPC-SP3 "Power Tool Clean" and coated with High Zinc Dust Content paint. The galvanizing shall be repaired in accordance with ASTM A780 "Repair of Hot Dip Galvanizing". The paint shall be applied such as to achieve a dry film thickness of a minimum of 3 mils (76.2 micrometers) and not more than 5 mils (127 micrometers). Application methods shall be in accordance with the manufacturer's recommendations.

(f) High Strength Bolted Connections: *Add the following:*

Connections between new and previously painted structural steel members shall have painted faying surfaces blast cleaned in accordance with the special provision for "Abrasive Blast Cleaning and Field Painting of Beam Ends (Site No.)" or "Localized Paint Removal and Field Painting of Existing Steel". Faying surfaces shall only receive a prime coat that meets the Class B requirements for Slip Coefficient and Creep resistance. Prime coat shall be completely cured prior to member assembly. Top coat paint shall not be permitted between the assembled plies. Any paint other than the prime coat, including inadvertent overspray, shall be removed prior to assembly.

Also Revise Subarticle 4(f) "Field Erection - High Strength Bolted Connections" as follows:

Replace the first sentence of the fourth paragraph "Surface Conditions: At the time of assembly ... other foreign material." with the following:

" Connection faying surfaces within portions of structural steel designated to be painted shall receive a single coat of primer in accordance with requirements stipulated elsewhere in this special provision."

Delete the fifth paragraph of Subarticle 4(f) and the three bulleted paragraphs after it: "Paint is permitted on ... wire brushing is not permitted."

After the last paragraph of Article 6.03.03, before Tables A through C, add the following:

" The painting application shall be done in compliance with the following requirements:

Qualifications of Shop Painting Firm: All shop painting of structural steel must be performed by and in an enclosed shop that is certified by the SSPC Painting Contractor Certification Program QP-3, entitled “Standard Procedure for Evaluating Qualifications of Shop Painting Contractors” in the enclosed shop category or by a shop that holds an AISC Quality Certificate with a “Sophisticated Paint Endorsement” in the enclosed shop category. The firm shall be fully certified, including endorsements, for the duration of the surface preparation and coating application. A copy of the subject certification shall be provided to the Engineer prior to commencing any surface preparation or coating application.

The shop painting firm is required to have at least one (1) **Coating Application Specialist (CAS) (SSPC ACS/NACE No. 13)**-certified (Level II-Interim Status-Minimal) craft-worker. CAS-certified (Level II-Interim Status-Minimal) craft-worker(s) are required for all crews/craft-workers up to four (4) crew members. For each crew larger than four (4), an additional CAS-certified (Level II-Interim Status-Minimal) craft-worker shall be present on each painting/blasting crew during blast cleaning and spray application (Atmospheric and Immersion Service) operations. A crew-member is a person who is on the job performing hand-held nozzle blast cleaning and/or spray application of protective coatings on a steel structure. The certification(s) must be kept current for the duration of the Project work.

The complete coating system shall be applied in an enclosed shop except for field touch-up painting which shall be applied after all bolts are fully tensioned and deck formwork removed. The enclosed shop shall be a permanent facility with outside walls to grade and a roof where surface preparation and coating activities are normally conducted in an environment not subject to outdoor weather conditions or blowing dust.

Quality Control Inspection of Shop Painting: The firm performing shop painting of the structural steel shall have a written quality control (QC) program. A copy of the QC program and record keeping procedures shall be provided to the Engineer prior to commencing any surface preparation or coating application. The program shall contain, but not be limited to, the following:

1. Qualifications of QC staff.
2. Authority of QC staff. QC staff must have the authority to stop non-conforming work.
3. Procedure for QC staff to advise operation supervisor, in writing, of non-conforming work.
4. Sample copy of QC inspection reports that will document compliance with specifications.
5. Procedure for calibrating inspection equipment and recording calibration.
6. Procedure for repairing defective coating applications.

The Contractor or Shop shall provide at least one Quality Control Inspector for the duration of the shop application to provide Quality Control. The QC Inspector must be a National Association of Corrosion Engineers (NACE) Certified Coating Inspector Level 3 with Peer Review. The QC Inspector shall verbally inform the Engineer on a daily basis, of the progress and any corrective actions performed on the coating work. The QC Inspector shall be present during all cleaning and coating operations.

The Contractor or Shop shall be responsible for purchasing and providing the latest version of the NACE Coating Inspector Log Book(s) and all necessary inspection tools. The Contractor's QC Inspector shall stamp the front page of each inspector's log book used during painting operations. The stamped book(s) shall indicate the inspector's NACE certification number, certification expiration date and shall also be signed. All daily coating activity shall be recorded in the Log Book. Copies of the log entries shall be provided on a daily basis to the Department's Quality Assurance (QA) shop representative. Upon completion of the coating, the log book(s) shall then be furnished to the Department's QA shop representative.

Technical Advisor: The Contractor or Shop shall obtain the services of a technical advisor who is employed by the coating manufacturer to assist the Engineer and shop painting firm during this work. The technical advisor shall be a qualified representative and shall be made available at the Shop upon request by the QC Inspector or the Engineer.

Surface Preparation: The following steps shall be performed prior to abrasive blast cleaning of steel members:

1. All corners and edges shall be rounded to a 1/16-inch radius or chamfered to a 1/16-inch chamfer.
2. All fins, slivers and tears shall be removed and ground smooth.
3. All rough surfaces shall be ground smooth.
4. Flame cut edges shall be ground over their entire surface such that any hardened surface layer is removed, and subsequent abrasive blast cleaning produces the specified surface profile depth.

Immediately before abrasive blast cleaning all steel members shall be solvent cleaned in accordance with SSPC-SP1 - "Solvent Cleaning."

Abrasive blast cleaning shall be performed in accordance with SSPC-SP 10 - "Near White Blast Cleaning" using a production line shot and grit blast machine or by air blast. The abrasive working mix shall be maintained such that the final **surface profile** is within the range described herein.

The QC Inspector shall test the abrasive for oil, grease or dirt contamination in accordance with the requirements of ASTM D7393 and document the test results. Contaminated abrasive shall not be used to blast clean steel surfaces. The blast machine shall be cleared of all contaminated abrasive and then solvent cleaned thoroughly in accordance with SSPC-SP 1 "Solvent Cleaning." New uncontaminated abrasive shall be added. Abrasive shall be tested for contaminants in accordance with the requirements of ASTM D7393 prior to the start of blast cleaning operations and at least every four hours during the blast cleaning operations.

All compressed air sources shall have properly sized and designed oil and moisture separators, attached and functional, to allow air at the nozzle, either for blast cleaning, blow-off, painting or breathing, to be oil-free, and moisture-free. The equipment shall have sufficient pressure to accomplish the associated work efficiently and effectively.

The QC Inspector shall perform the blotter test and document the results at the start of each blasting shift and at least every four hours during the blasting operation to ensure that the compressed air is free of oil and moisture. The blotter test shall be performed in accordance with the procedure outlined in ASTM D4285. For contaminated air sources, the oil and moisture separators shall be drained and the air retested.

No surface preparation or coating shall be done when the relative humidity is at or above 80 percent or when the surface temperature of the steel is less than five (5) degrees Fahrenheit above the dewpoint temperature as determined by a surface thermometer and an electric or sling psychrometer.

Surface Profile: The steel surface profile shall be 1 to 3 mils. Each girder or beam shall have the surface profile measured at a minimum of three locations in accordance with the test requirements of ASTM D4417, Method C. Smaller pieces such as diaphragms shall have the surface profile measured at a minimum of three locations on one piece at the beginning of abrasive blast operations and at least every four hours and at the end of abrasive blast cleaning operations. This measurement shall be performed with both coarse (0.8-2.0 mils) and extra coarse (1.5-4.5 mils) replica tape. During this measurement, special attention shall be given to areas that may have been shielded from the blast wheels, such as the corners of stiffeners and connection plates. The impressed tapes shall be filed in the NACE Coating Inspector's Log Book.

Application Methods: The coating system shall be applied by spray equipment of a type and size capable of applying each coat within the required thickness range. The applicator shall strictly adhere to the manufacturer's written recommendations for application methods, cure times, temperature and humidity restrictions and recoat times for each individual coat of the specified system. However, in no case shall coatings be applied in ambient conditions that exceed the relative humidity and dewpoint temperature control limits specified herein. Brushes shall be used in areas where spray application will not achieve acceptable results. Brushing technique shall be performed in a manner that will provide a uniform, blended finish.

Conventional spray equipment with mechanical agitators shall be used for prime coat application.

All storage, mixing, thinning, application and curing techniques and methods shall be accomplished in strict accordance with the printed material data sheets and application instructions published by the respective coating material manufacturer.

Surfaces shall be painted with the specified prime coat material before the end of the same work shift that they were blast cleaned and before any visible rust back occurs. Applied coatings shall not have runs, sags, holidays, pinholes or discontinuities.

The dry film thickness shall be within the range specified in the manufacturer's printed literature for the specified coating system. Dry film thickness shall be measured in accordance with SSPC-PA 2. The prime, intermediate and top coats shall be of contrasting colors as determined by the Engineer. There shall be no color variation in the topcoat as determined by comparison with Federal Standard 595.

Areas Requiring Special Treatment: All steel surfaces shall receive the three-coat shop applied system as specified except the following particular area types which shall be treated as follows:

1. Faying surfaces of connections shall receive a single application of primer. The dry film thickness shall be no greater than the thickness tested on the coating manufacturer's Certified Test Report for slip coefficient.
2. All steel surfaces within four (4) inches of field welds shall receive a single mist coating of primer at 0.5 - 1.5 mils dry film thickness.
3. Top surfaces of top flanges that will be in contact with concrete shall receive a single mist coating of primer at 0.5 - 1.5 mils dry film thickness.
4. Edges and shop welds shall be locally hand-stripped with a brush in the longitudinal direction with an additional coat of an appropriate zinc-rich primer prior to application of the full intermediate coat. The application of the striping materials shall be in accordance with the coatings manufacturer's written instructions. The striping material shall be a contrasting color to distinguish it from the primer and intermediate coats.
5. The interior surfaces of box girders, including bracing, shall be prepared in accordance with these specifications then coated with the first two coats of the three-coat system. The intermediate coat in these areas shall be white and match Federal Standard 595 Color Number 27925.

Adhesion: Adhesion strength of the fully coated assemblies shall be the more restrictive of the manufacturer's specified adhesion strength or at least 600 psi for systems with organic zinc primers and at least 250 psi for systems with inorganic zinc rich primers measured as per ASTM D4541 using apparatus under Annex A4. All adhesion test locations shall be recoated in accordance with this specification at no additional cost. The QC Inspector shall perform adhesion strength tests every 500 sf and shall document the adhesion strength test results.

If adhesion test results are less than the specified value, but equal to or greater than 80% of the specified value, four (4) additional adhesion tests shall be taken within the 500 sf area of the failed test. If any of the additional adhesion tests are less than the specified value, the coating shall be removed from the entire piece and re-applied at the Contractor's expense. If any adhesion tests are less than 80% of the specified value, the entire coating system shall be removed from the piece and re-applied at the Contractor's expense.

Smaller pieces such as diaphragms shall be analyzed in lots that have an overall coated surface area of approximately 500 sf.

Protection of Coated Structural Steel: All fully coated and cured assemblies shall be protected from handling and shipping damage with the prudent use of padded slings, dunnage, separators and tie downs. Loading procedures and sequences shall be designed to protect all coated surfaces. Erection marks for field identification of members and weight marks shall be affixed in such a manner as to facilitate removal upon final assembly without damage to the coating system.

Field Touch-Up Painting of Shop Applied Coating: Field touch-up painting shall be undertaken by the Contractor for the purpose of completing coating applications of masked-off

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#0603083A

areas at splices, connections, and for the repair of coated surfaces damaged during shipment or construction, as directed by the Engineer. The Aesthetics of any field painting is very important. Every effort must be made to perform any field painting in a professional manner that does not affect the appearance or aesthetic value of the structural steel in any way. Significant color variations or texture changes between the shop painting and field painting will not be allowed. The Contractor will be required to perform any additional field painting work required to provide consistent color and texture throughout the structural steel. This is especially true for all Fascia surfaces and areas exposed to public view. The Engineer will be the sole judge on color variations and textures variations of the field painting.

The Painting Contractor shall submit for approval by the Engineer a complete coating application procedure for all touch-up painting and corrective work. .

The field applied coating for touch-up painting shall be the same system used in the shop applied application. The intermediate and topcoat material for field touch-up painting shall be from the same lot and batch used in the shop provided its shelf life has not expired. If the shelf life has expired, the same material of the same color from a different lot and batch shall be used.

Field application of coatings shall be in accordance with the manufacturer's written application guidelines and these specifications. All areas cleaned to bare metal must be coated with zinc-rich primer before any visible rusting occurs.

After all concrete is placed and the forms are removed, all rust, scale, dirt, grease, concrete splatter and other foreign material shall be completely removed from all painted surfaces. All surfaces to be field painted shall also be cleaned by solvent cleaning in accordance with SSPC-SP 1, hand tool cleaning SSPC-SP 2, and power tool cleaning SSPC-SP 3 and SSPC-SP 11. Areas cleaned to SSPC-SP 11 must have a 1-3 mil profile and must be primed prior to rusting. All debris generated from cleaning operations must be contained and properly disposed of by the Contractor.

Bolts, nuts, washers and surrounding areas shall receive brush applications of intermediate and topcoat after final tensioning. Careful attention shall be given to bolted connections to insure that all bolts, nuts and washers are fully coated and that no gaps are left unfilled and uncoated.

Damage to the coating system that extends to the steel surface (such as scratches, gouges or nicks), shall have the entire three-coat system locally reapplied after power tool cleaning to bare metal in **accordance with SSPC-SP 11. The coating system adjacent to the damage shall be feathered back to increase** the surface area for touch up painting. The area cleaned to SSPC-SP 11 shall be primed with a zinc-rich primer before rusting occurs.

Damage to the coating system that extends back only to the prime or intermediate coat, shall only have the topcoat applied. Application of the touch-up materials in these damaged areas shall be performed by brush only.

During any field painting the Contractor shall protect property, pedestrians, vehicular and other traffic upon, underneath, or in the vicinity of the bridge, and also all portions of the bridge superstructure and substructure against damage or disfigurement from errant coating materials.

Tarps shall be used to collect all surface preparation debris. The Contractor shall be responsible for disposing of all removed materials, including tarps.

Contractor – Subcontractor Qualifications: Contractors and subcontractors doing field touchup painting work are required to be certified by the SSPC Painting Contractor Certification Program (PCCP) to QP-1, entitled “Standard Procedure for Evaluating Qualifications of Painting Contractors (Field Application to Complex Structures)” at the time of field touchup coating application.

Contractors and subcontractors are required to have at least one (1) **Coating Application Specialist (CAS) (SSPC ACS/NACE No. 13)**-certified (Level II-Interim Status-Minimal) craft-worker. CAS-certified (Level II-Interim Status-Minimal) craft-worker(s) are required for all crews/craft-workers up to four (4) crew members. For each crew larger than four (4), an additional CAS-certified (Level II-Interim Status-Minimal) craft-worker shall be present on each painting/blasting crew during blast cleaning and spray application (Atmospheric and Immersion Service) operations. A crew member is a person who is on the job performing hand-held nozzle blast cleaning and/or spray application of protective coatings on a steel structure. The certification(s) must be full, not interim, and must be kept current for the duration of the Project work. If a Contractor’s, subcontractor’s or any craft-worker’s certification expires, the firm will not be allowed to do any work on this item until the certification is reissued.

Requests for extension of time for any delay to the completion of the Project due to an inactive certification will not be considered and liquidated damages will apply. At the option of the Engineer, if such a delay will adversely impact the successful and timely completion of the Project, the Department may require the Contractor to engage another SSPC certified contractor to do the painting work at the prime contractor’s expense.

Quality Control Inspection of Field Touchup Painting: The Contractor performing field touchup painting of the structural steel shall have a written quality control (QC) program. A copy of the QC program and record keeping procedures shall be provided to the Engineer prior to commencing any surface preparation or coating application. The program shall contain, but not be limited to, the following:

1. Qualifications of QC staff.
2. Authority of QC staff. QC staff must have the authority to stop non-conforming work.
3. Procedure for QC staff to advise operation supervisor, in writing, of non-conforming work.
4. Sample copy of QC inspection reports that will document compliance with specifications.
5. Procedure for calibrating inspection equipment and recording calibration.
6. Procedure for repairing defective coating applications.

The Contractor shall provide at least one (1) Coating Inspector who is a National Association of Corrosion Engineers (NACE) Certified Coating Inspector Level 3 with Peer Review for the duration of the field application to provide Quality Control. The QC Inspector shall verbally inform the Engineer on a daily basis, of the progress and any corrective actions performed on the coating work. The QC Inspector shall be present during all cleaning and coating operations.

The Contractor shall be responsible for purchasing and providing the latest version of the NACE Coating Inspector Log Book(s) and all necessary inspection tools. The Contractor's QC Inspector shall stamp the front page of each inspector's log book used during painting operations. The stamped book(s) shall indicate the inspector's NACE certification number, certification expiration date and shall also be signed. All daily coating activity shall be recorded in the Log Book. Copies of the log entries shall be provided on a daily basis to the Department's Quality Assurance (QA) field representative. Upon completion of the coating, the log book(s) shall then be furnished to the Department's QA field representative.

General: The word "PAINTED" followed by the month and year the painting of the structure is completed along with the ConnDOT Project Number and the manufacturer's abbreviations for each of the three coats, shall be stenciled on the inside of a fascia girder at mid-depth of the girder in three (3) inch high block letters located near the abutment, so as to be clearly visible from the ground below. Paint for stenciling information shall be of a contrasting color and be compatible with the topcoat."

(4)(h) Girder and Cap Girder Web Repairs: *Add the following:*

Where perforations in existing structural steel exist, the edges of the loss shall be neatly trimmed to a minimum thickness of 1/8" and a minimum radius of 1" shall be provided at all corners. Fill plates shall be placed in the trimmed areas prior to the application of epoxy filler material.

All work for the girder repairs shall be performed after localized cleaning and prime coating of the repair areas. The Contractor, in conjunction with the Engineer, shall document any increased levels of deterioration at the noted girder locations, which may be revealed after the cleaning operation. The additional deteriorated steel locations, dimension of the deterioration and approximate section loss shall be included in the documentation. Based on the location of the additional deterioration and the section loss, increased repairs will be required as ordered by the Engineer. The increased dimensions of steel repair locations shall be included in the shop drawing submittal. The Contractor shall fully cooperate with the Engineer to determine the necessary repairs for the girders.

An epoxy-based filler shall be provided at plate repair areas where deterioration has occurred on the steel surface. Uneven or perforated surfaces shall receive an epoxy-based filler to remove possible areas where moisture or water may be trapped after the repair plates have been installed.

6.03.04 – Method of Measurement: The following will be included in this item:

"Structural Steel Repairs (Site No. X)" shall be measured in accordance with Connecticut Department of Transportation Standard Specifications Section 6.03.04, on the net weight determined by computation.

Installation of un-headed anchor bolts in existing concrete, furnished under this item, shall be included for measurement under the item “Drilling Holes and Grouting Dowels”.

Removal of existing fasteners and selective removal of existing structural steel components to permit installation of structural steel under this item shall be considered incidental to the work and shall not be measured.

The placement of non-shrink grout between existing concrete elements and the replacement cross frames is incidental to the proper installation and function of the cross frames and shall not be measured.

Cutting existing flange interference is not measured.

6.03.05 – Basis of Payment: The following will be included in this item:

“Structural Steel Repairs (Site No. X)” shall be paid for in accordance with Connecticut Department of Transportation Standard Specifications Section 6.03.05, at the contract unit price per hundredweight. The unit price per hundredweight of steel shall include the cost of all materials, equipment, labor, and incidental expenses required to satisfactory complete the work in accordance with the Contract documents. The various structural steel work items shall also include the existing steel modification and removal; fastener removal with high strength galvanized bolt replacement; localized cleaning and all necessary work to complete the work.

Removal and replacement of fasteners required shall be included for the various steel work items and shall be included in the cost. No separate payments will be provided for this work.

Cutting existing flanges, to eliminate interference is included in the payment for this item.

Add the following at the end of the second paragraph:

Payment for either method for new structural steel, complete in place, shall also include shop painting, all field touch-up painting and corrective or repair field painting, QC Inspector(s), QC Log Book(s) and testing equipment, technical advisor, “Painted” stencil, equipment, tools and labor incidental thereto.

<u>Pay Item</u>	<u>Pay Unit</u>
Structural Steel Repairs (Site No. 1)	CWT
Structural Steel Repairs (Site No. 2)	CWT
Structural Steel Repairs (Site No. 3)	CWT

ITEM #0603531A – REPAIR DAMAGED GIRDER

Work under this item shall conform to the requirements of Section 6.03 – Structural Steel of the Standard Specifications as amended and supplemental herein:

Description: The following will be included in this item.

Work under this item shall include repairs to damaged areas of existing girders due to misalignment and or impact damage.

Under this item, the Contractor shall perform field repair welding and grinding of weld repair areas in existing damaged girder flange and flange splice plates to correct impact damage.

This work includes mitre-cutting existing structural steel members to provide increased clearance and eliminate interferences at locations shown on the plans.

Materials: Materials shall meet the requirements of Section 6.03.02 of the Standard Specifications.

Construction Methods: The Contractor shall perform the repairs as shown on the plans and as noted herein. Surface finish of existing plates after grinding smooth shall be 250 microinches.

The Contractor shall notify the Engineer immediately if any of the existing plates exhibit severe deterioration or cracking in addition to the areas identified on the plans, either before or after repairs.

Inspect repair areas and perform non-destructive testing per AWS D1.5.

Method of Measurement: Delete the entire article and add the following:

This item shall not be directly measured, but shall be paid for at the agreed upon lump sum price to perform the girder repairs as shown on the drawings. The work to provide access to the damaged areas is incidental to the work and is not measured.

Basis of Payment: Delete the entire article and add the following:

Payment shall be made at the contract lump sum price for “Repair Damaged Girder” to remove the existing transverse welds as shown on the drawings. This work shall include all materials, equipment, labor, and incidental expenses required to satisfactory complete the work in accordance with the Contract documents.

<u>Pay Item</u>	<u>Pay Unit</u>
Repair Damaged Girder	Lump Sum

ITEM #0969064A – CONSTRUCTION FIELD OFFICE, LARGE

Description: Under the item included in the bid document, adequate weatherproof office quarters with related furnishings, materials, equipment and other services, shall be provided by the Contractor for the duration of the work, and if necessary, for a close-out period determined by the Engineer. The office, furnishings, materials, equipment, and services are for the exclusive use of CTDOT forces and others who may be engaged to augment CTDOT forces with relation to the Contract. The office quarters shall be located convenient to the work site and installed in accordance with Article 1.08.02. This office shall be separated from any office occupied by the Contractor. Ownership and liability of the office quarters shall remain with the Contractor.

Furnishings/Materials/Supplies/Equipment: All furnishings, materials, equipment and supplies shall be in like new condition for the purpose intended and require approval of the Engineer.

Office Requirements: The Contractor shall furnish the office quarters and equipment as described below:

Description \ Office Size			Large	
Minimum Sq. Ft. of floor space with a minimum ceiling height of 7 ft.			1000	
Minimum number of exterior entrances.			2	
Minimum number of parking spaces.			10	

Office Layout: The office shall have a minimum square footage as indicated in the table above, and shall be partitioned as shown on the building floor plan as provided by the Engineer.

Tie-downs and Skirting: Modular offices shall be tied-down and fully skirted to ground level.

Lavatory Facilities: For field offices sizes Small and Medium the Contractor shall furnish a toilet facility at a location convenient to the field office for use by CTDOT personnel and such assistants as they may engage; and for field offices sizes Large and Extra Large the Contractor shall furnish two (2) separate lavatories with toilet (men and women), in separately enclosed rooms that are properly ventilated and comply with applicable sanitary codes. Each lavatory shall have hot and cold running water and flush-type toilets. For all facilities the Contractor shall supply lavatory and sanitary supplies as required.

Windows and Entrances: The windows shall be of a type that will open and close conveniently, shall be sufficient in number and size to provide adequate light and ventilation, and shall be fitted with locking devices, blinds and screens. The entrances shall be secure, screened, and fitted with a lock for which four keys shall be furnished. All keys to the construction field office shall be furnished to the CTDOT and will be kept in their possession while State personnel are using the office. Any access to the entrance ways shall meet applicable building codes, with appropriate handrails. Stairways shall be ADA/ABA compliant and have non-skid tread surfaces. An ADA/ABA compliant ramp with non-skid surface shall be provided with the Extra-Large field office.

Lighting: The Contractor shall equip the office interior with electric lighting that provides a minimum illumination level of 100 foot-candles at desk level height, and electric outlets for each desk and drafting table. The Contractor shall also provide exterior lighting that provides a minimum illumination level of 2 foot-candles throughout the parking area and for a minimum distance of 10 ft. on each side of the field office.

Parking Facility: The Contractor shall provide a parking area, adjacent to the field office, of sufficient size to accommodate the number of vehicles indicated in the table above. If a paved parking area is not readily available, the Contractor shall construct a parking area and driveway consisting of a minimum of 6 inches of processed aggregate base graded to drain. The base material will be extended to the office entrance.

Field Office Security: Physical Barrier Devices - This shall consist of physical means to prevent entry, such as: 1) All windows shall be barred or security screens installed; 2) All field office doors shall be equipped with dead bolt locks and regular day operated door locks; and 3) Other devices as directed by the Engineer to suit existing conditions.

Electric Service: The field office shall be equipped with an electric service panel, wiring, outlets, etc., to serve the electrical requirements of the field office, including: lighting, general outlets, computer outlets, calculators etc., and meet the following minimum specifications:

- A. 120/240 volt, 1 phase, 3 wire
- B. Ampacity necessary to serve all equipment. Service shall be a minimum 100 amp dedicated to the construction field office.
- C. The electrical panel shall include a main circuit breaker and branch circuit breakers of the size and quantity required.
- D. Additional 120 volt, single phase, 20 amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed at each desk and personal computer table (workstation) location.
- E. Additional 120 volt, single phase, 20 amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed, for use by the Telephone Company.
- F. Additional 120-volt circuits and duplex outlets as required meeting National Electric Code requirements.
- G. One exterior (outside) wall mounted GFI receptacle, duplex, isolated ground, 120 volt, straight blade.
- H. After work is complete and prior to energizing, the State's CTDOT electrical inspector, must be contacted at 860-594-2240. (Do Not Call Local Town Officials)
- I. Prior to field office removal, the CTDOT Office of Information Systems (CTDOT OIS) must be notified to deactivate the communications equipment.

Heating, Ventilation and Air Conditioning (HVAC): The field office shall be equipped with sufficient heating, air conditioning and ventilation equipment to maintain a temperature range of 68°-80° Fahrenheit within the field office.

Telephone Service: The Contractor shall provide telephone service with unlimited nation-wide calling plan. For a Small, Medium and Large field office this shall consist of the installation of two (2) telephone lines: one (1) line for phone/voice service and one (1) line dedicated for the facsimile machine. For an Extra-Large field office this shall consist of four (4) telephone lines: three (3) lines for phone/voice service and one (1) line dedicated for facsimile machine. The Contractor shall pay all charges.

Data Communications Facility Wiring: Contractor shall install a Category 6 568B patch panel in a central wiring location and Cat 6 cable from the patch panel to each PC station, Smart Board location, Multifunction Laser Printer/Copier/Scanner/Fax, terminating in a (Category 6 568B) wall or surface mount data jack. The central wiring location shall also house either the data circuit with appropriate power requirements or a category 5 cable run to the location of the installed data circuit. The central wiring location will be determined by the CTDOT OIS staff in coordination with the designated field office personnel as soon as the facility is in place.

For Small, Medium and Large field offices the Contractor shall run a CAT 6 LAN cable a minimum length of 25 feet for each CTDOT networked device (including but not limited to: smartboards and Multi-Function Laser Printer/Copier/Scanner/Fax) to LAN switch area leaving an additional 10 feet of cable length on each side with terminated RJ45 connectors. For an Extra-Large field office the Contractor shall run CAT 6 LAN cables from workstations, install patch panel in data circuit demark area and terminate runs with RJ45 jacks at each device location. Terminate runs to patch panel in LAN switch area. Each run / jack shall be clearly labeled with an identifying Jack Number.

The Contractor shall supply cables to connect the Wi-Fi printer to the Contractor supplied internet router and to workstations/devices as needed. These cables shall be separate from the LAN cables and data Jacks detailed above for the CTDOT network.

The number of networked devices anticipated shall be at least equal to the number of personal computer tables, Multi-Function Laser Printer/Copier/Scanner/Fax, and smartboards listed below.

The installation of a data communication circuit between the field office and the CTDOT OIS in Newington will be coordinated between the CTDOT District staff, CTDOT OIS staff and the local utility company once the Contractor supplies the field office phone numbers and anticipated installation date. The Contractor shall provide the field office telephone number(s) to the CTDOT Project Engineer within 10 calendar days after the signing of the Contract as required by Article 1.08.02. This is required to facilitate data line and computer installations.

Additional Equipment, Facilities and Services: The Contractor shall provide at the field Office at least the following to the satisfaction of the Engineer:

Furnishing Description	Office Size		
		Large	
	Quantity		
Office desk (2.5 ft. x 5 ft.) with drawers, locks, and matching desk chair that have pneumatic seat height adjustment and dual wheel casters on the base.		5	
Standard secretarial type desk and matching desk chair that has pneumatic seat height adjustment and dual wheel casters on the base.		-	
Personal computer tables (4 ft. x 2.5 ft.).		5	
Drafting type tables (3 ft. x 6 ft.) and supported by wall brackets and legs; and matching drafters stool that have pneumatic seat height adjustment, seat back and dual wheel casters on the base.		1	
Conference table, 3 ft. x 12 ft.		-	
Table – 3 ft. x 6 ft.		-	
Office Chairs.		8	
Mail slot bin – legal size.		1	
Non-fire resistant cabinet.		2	
Fire resistant cabinet (legal size/4 drawer), locking.		2	
Storage racks to hold 3 ft. x 5 ft. display charts.		1	
Vertical plan racks for 2 sets of 2 ft. x 3 ft. plans for each rack.		2	
Double door supply cabinet with 4 shelves and a lock – 6 ft. x 4 ft.		1	
Case of cardboard banker boxes (Min 10 boxes/case)		2	
Open bookcase – 3 shelves – 3 ft. long.		2	
White Dry-Erase Board, 36" x 48" min. with markers and eraser.		1	
Interior partitions – 6 ft. x 6 ft., soundproof type, portable and freestanding.		6	
Coat rack with 20 coat capacity.		-	
Wastebaskets - 30 gal., including plastic waste bags.		1	
Wastebaskets - 5 gal., including plastic waste bags.		6	
Electric wall clock.		-	
Telephone.		1	
Full size stapler 20 (sheet capacity, with staples)		5	
Desktop tape dispensers (with Tape)		5	
8 Outlet Power Strip with Surge Protection		6	
Rain Gauge		1	
Business telephone system for three lines with ten handsets,		-	

intercom capability, and one speaker phone for conference table.				
Mini refrigerator - 3.2 c.f. min.			1	
Hot and cold water dispensing unit. Disposable cups and bottled water shall be supplied by the Contractor for the duration of the project.			1	
Microwave, 1.2 c.f. , 1000W min.			1	
Fire extinguishers - provide and install type and *number to meet applicable State and local codes for size of office indicated, including a fire extinguisher suitable for use on a computer terminal fire.			*	
Electric pencil sharpeners.			2	
Electronic office type printing calculators capable of addition, subtraction, multiplication and division with memory and a supply of printing paper.			2	
Small Multi-Function Laser Printer/Copier/Scanner/Fax combination unit, network capable, as specified below under <u>Computer Related Hardware and Software</u> .				
Large Multi-Function Laser Printer/Copier/Scanner/Fax combination unit, network capable, as specified below under <u>Computer Related Hardware and Software</u> .			1	
Field Office Wi-Fi Connection as specified below under <u>Computer Related Hardware and Software</u>			1	
Wi-Fi Printer as specified below under <u>Computer Related Hardware and Software</u> .			1	
Digital Camera as specified below under <u>Computer Related Hardware and Software</u> .			3	
Video Projector as specified below under <u>Computer Related Hardware and Software</u> .			-	
Smart Board as specified below under <u>Computer Related Hardware and Software</u> .			-	
Infrared Thermometer, including annual third party certified calibration, case, and cleaning wipes.			1	
Concrete Curing Box as specified below under Concrete Testing Equipment.			1	
Concrete Air Meter and accessories as specified below under Concrete Testing Equipment as specified below. Contractor shall provide third party calibration on a quarterly basis.			1	
Concrete Slump Cone and accessories as specified below under Concrete Testing Equipment.			1	
First Aid Kit			1	
Flip Phones as specified under <u>Computer Related Hardware and Software</u> .			-	

Smart Phones as specified under <u>Computer Related Hardware and Software</u> .	-	-	-	-
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The furnishings and equipment required herein shall remain the property of the Contractor. Any supplies required to maintain or operate the above listed equipment or furnishings shall be provided by the Contractor for the duration of the project.

Computer Related Hardware and Software: The CTDOT will supply by its own means the actual Personal Computers for the CTDOT representatives. The Contractor shall supply the Field Office Wi-Fi Connection, Wi-Fi Printer, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projectors, and Smart Board(s) as well as associated hardware and software, must meet the requirements of this specification as well as the latest minimum specifications posted, as of the project advertising date, at CTDOTs web site <http://www.ct.gov/dot/cwp/view.asp?a=1410&q=563904>

Within 10 calendar days after the signing of the Contract but before ordering/purchasing the Wi-Fi Printer (separate from the Multifunction Laser Printer/Copier/Scanner/Fax), Field Office Wi-Fi, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projector(s) and Smart Board(s) as well as associated hardware, the Contractor must submit a copy of their proposed order(s) with catalog cuts and specifications to the Administering CTDOT District for review and approval. The Wi-Fi Printer, Wi-Fi Router, Flip Phones, Smart Phones, digital cameras, Projector(s) and Smart Board(s) will be reviewed by CTDOT District personnel. The Multifunction Laser Printer/Copier/Scanner/Fax will be reviewed by the CTDOT OIS. The Contractor shall not purchase the hardware, software, or services until the Administering CTDOT District informs them that the proposed equipment, software, and services are approved. The Contractor will be solely responsible for the costs of any hardware, software, or services purchased without approval.

The Contractor and/or their internet service provider shall be responsible for the installation and setup of the field office Wi-Fi, Wi-Fi printer, and the configuration of the wireless router as directed by the CTDOT. Installation will be coordinated with CTDOT District and Project personnel.

After the approval of the hardware and software, the Contractor shall contact the designated representatives of the CTDOT administering District, a minimum of 2 working days in advance of the proposed delivery or installation of the Field Office Wi-Fi Connection, Wi-Fi Printer, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projectors and Smart Board(s), as well as associated hardware, software, supplies, and support documentation.

The Contractor shall provide all supplies, paper, maintenance, service and repairs (including labor and parts) for the Wi-Fi printers, copiers, field office Wi-Fi, fax machines and other equipment and facilities required by this specification for the duration of the Contract. All repairs must be performed with-in 48 hours. If the repairs require more than a 48 hours then an equal or better replacement must be provided.

Once the Contract has been completed, the hardware and software will remain the property of the Contractor.

First Aid Kit: The Contractor shall supply a first aid kit adequate for the number of personnel expected based on the size of the field office specified and shall keep the first aid kit stocked for the duration that the field office is in service.

Rain Gauge: The Contractor shall supply install and maintain a rain gauge for the duration of the project, meeting these minimum requirements. The rain gauge shall be installed on the top of a post such that the opening of the rain gauge is above the top of the post an adequate distance to avoid splashing of rain water from the top of the post into the rain gauge. The Location of the rain gauge and post shall be approved by the Engineer. The rain gauge shall be made of a durable material and have graduations of 0.1 inches or less with a minimum total column height of 5 inches. If the rain gauge is damaged the Contractor shall replace it prior to the next forecasted storm event at no additional cost.

Concrete Testing Equipment: If the Contract includes items that require compressive strength cylinders for concrete, in accordance with the Schedule of Minimum Testing Requirements for Sampling Materials for Test, the Contractor shall provide the following equipment.

- A) Concrete Cylinder Curing Box – meeting the requirements of Section 6.12 of the Standard Specifications.
- B) Air Meter – The air meter provided shall be in good working order and meet the requirements of AASHTO T 152.
- C) Slump Cone Mold – Slump cone, base plate, and tamping rod shall be provided in like-new condition and meet the requirements of AASHTO T119, Standard Test Method for Slump of Hydraulic-Cement Concrete.

All testing equipment will remain the property of the Contractor at the completion of the project.

Insurance Policy: The Contractor shall provide a separate insurance policy, with no deductible, in the minimum amount of five thousand dollars (\$5,000) in order to insure all State-owned data equipment and supplies used in the office against all losses. The Contractor shall be named insured on that policy, and the CTDOT shall be an additional named insured on the policy. These losses shall include, but not be limited to: theft, fire, and physical damage. The CTDOT will be responsible for all maintenance costs of CTDOT owned computer hardware. In the event of loss, the Contractor shall provide replacement equipment in accordance with current CTDOT equipment specifications, within seven days of notice of the loss. If the Contractor is unable to provide the required replacement equipment within seven days, the CTDOT may provide replacement equipment and deduct the cost of the equipment from monies due or which may become due the Contractor under the Contract or under any other contract. The Contractor's financial liability under this paragraph shall be limited to the amount of the insurance coverage required by this paragraph. If the cost of equipment replacement required by this paragraph should exceed the required amount

of the insurance coverage, the CTDOT will reimburse the Contractor for replacement costs exceeding the amount of the required coverage.

Maintenance: During the occupancy by the CTDOT, the Contractor shall maintain all facilities and furnishings provided under the above requirements, and shall maintain and keep the office quarters clean through the use of weekly professional cleaning to include, but not limited to, washing & waxing floors, cleaning restrooms, removal of trash, etc. Exterior areas shall be mowed and clean of debris. A trash receptacle (dumpster) with weekly pickup (trash removal) shall be provided. Snow removal, sanding and salting of all parking, walkway, and entrance ways areas shall be accomplished during a storm if on a workday during work hours, immediately after a storm and prior to the start of a workday. If snow removal, salting and sanding are not completed by the specified time, the State will provide the service and all costs incurred will be deducted from the next payment estimate.

Method of Measurement: The furnishing and maintenance of the construction field office will be measured for payment by the number of calendar months that the office is in place and in operation, rounded up to the nearest month.

There will not be any price adjustment due to any change in the minimum computer related hardware and software requirements.

Basis of Payment: The furnishing and maintenance of the Construction Field Office will be paid for at the Contract unit price per month for “Construction Field Office, Large,” which price shall include all material, equipment, labor, service contracts, licenses, software, repair or replacement of hardware and software, related supplies, utility services, parking area, external illumination, trash removal, snow and ice removal, and work incidental thereto, as well as any other costs to provide requirements of this specified this specification.

<u>Pay Item</u>	<u>Pay Unit</u>
Construction Field Office, Large	Month

ITEM #1002301A – LIGHT STANDARD ANCHORAGE

Description: Work under this item shall consist of furnishing, fabricating, and erecting new galvanized structural steel light standard anchorages mounted to the exterior vertical face of the bridge parapet. The work also includes removing existing light standard anchor bolts to the limit shown on the plans, patching concrete after the existing anchor bolts are removed, drilling holes and anchoring new anchor rods, and furnishing and installing new structural steel light standard brackets and anchor rods. The Contractor shall perform work as indicated on the plans, in accordance with this special provision, and as directed by the Engineer.

Work to relocate existing light standards from their currently installed locations to the locations shown on the contract plans is not included, but shall be covered under the item for “Remove and Reinstall Light Standard”.

Materials: The materials shall conform to the following requirements:

1. **Structural Steel:** Fabricated steel anchorages shall meet the requirements of Article M.06.02. Structural steel shall be galvanized in accordance with Article M.06.03.
2. **Anchor Rods and Hardware:** Threaded anchor rods shall be galvanized steel and conform to the requirements of ASTM F1554, Grade 55. Hex nuts shall be galvanized steel and conform to the requirements ASTM A563. Washers shall conform to the requirements of ASTM F436. Bolts, nuts, and washers shall be galvanized after fabrication to meet the requirements of ASTM A153.
3. **Chemical Anchoring Material:** The chemical anchor material shall be a resin compound specially formulated to anchor rods drilled into concrete for the purpose of resisting tension pullout. The chemical anchor material shall be epoxy or polyester polymer resin. It shall contain no metals or products that promote corrosion of steel. The Contractor shall supply the Engineer with a Certified Test Report and Materials Certificate for the chemical anchor material in conformance with Article 1.06.07. The Contractor shall also provide, when requested by the Engineer, samples of the chemical anchors for testing and approval. Chemical anchor material shall be listed on the CTDOT Qualified Products List, shall be suitable for long term tension and cyclic loading, and shall approved by the Engineer for the specified use.
4. **Non-Shrink Grout:** Non-shrink grout shall conform to Article M.03.05.

All materials shall be approved by the Engineer before use.

Construction Methods: Fabricate and erect galvanized structural steel anchorages in accordance with Section 6.03.03 of the Standard Specifications.

Before fabricating any materials, the Contractor shall submit manufacturer's specifications and installation requirements for the chemical anchoring material to the Engineer for review in accordance with Article 1.05.02.

After removal of the existing light standard, the Contractor shall remove the existing anchor bolts 1" below the top of the concrete parapet as shown on the plans. Anchor bolts shall be removed by sawing or grinding. The use of flame cutting equipment is not allowed. Care shall be taken so as to minimize damage to the adjacent parapet concrete and to avoid damage to the existing encased conduit.

After the anchor bolts have been removed, the pocket formed during removal of each existing anchor bolt shall be patched flush with the adjacent top of parapet using non-shrink grout.

Holes for the new anchor rods shall be located as shown on the plans. The holes shall clear the existing reinforcement, existing conduit, and existing anchor bolts to remain, and provide the minimum cover as shown on the plans. A pachometer shall be used to locate existing reinforcing steel.

Each hole shall conform to the manufacturer's recommendations for the diameter of the dowel being anchored such that the anchored rods will be able to develop the forces indicated on the plans. Regardless of the manufacturer's required depth, the anchor rods shall be embedded to a minimum depth as indicated on the plans.

Hole drilling methods shall not cause spalling, cracking, or other damage to the existing concrete to remain. The weight of the drill used to create the hole shall not exceed 13 lbs. Those areas damaged by the Contractor shall be repaired by him in a manner suitable to the Engineer and at no expense to the State.

Anchor rods shall be of the diameter indicated on the plans, and shall have a length such that the proper embedment into the concrete, and projection out of the concrete, are achieved.

Prior to placing the chemical anchoring material in the holes, the holes shall be cleaned of all dirt, moisture, concrete dust and other foreign material, and shall be further prepared in accordance with the manufacturer's requirements. The anchor rod and the chemical anchoring material shall be installed in the holes in accordance with the chemical anchoring material manufacturer's recommendations.

The anchor rods shall be set and secured in place in their proper position, horizontally and vertically, by means of a template that matches the light standard bolt hole configuration.

During all operations, the Contractor, as directed by the Engineer, shall take adequate precautions to prevent any materials from dropping to the area below, which may result in damage to any existing construction or to adjoining property. Should any damage occur to the structure as a result of the Contractor's operations, the Contractor shall make repairs at his own

expense. The repair work shall be approved in advance and shall be of a quality acceptable to the Engineer.

Method of Measurement: This work will be measured for payment by the number of light standard anchorages, completed and accepted by the Engineer. For the purposes of this special provision, one light standard anchorage shall consist of the structural steel anchorage and the grouping of bolts required to support a single light standard.

Basis of Payment: This work will be paid for at the contract unit price each for "Light Standard Anchorage", complete in place, which price shall include removing existing light standard anchor bolts, patching concrete after the existing anchor bolts are removed, drilling holes for new anchor rods, and furnishing and installing new structural steel light standard brackets and anchor rods, and all materials, equipment, tools, labor and work incidental thereto.

<u>Pay Item</u>	<u>Pay Unit</u>
Light Standard Anchorage	ea.