

ASBESTOS ASSESSMENT REPORT

D030925

PIN 0229.40.101

**BRIDGE REHABILITATION
- Carl's Straight Path Over
Long Island Expressway (I-495) -
(BIN 1049350)**

TOWN OF HUNTINGTON, SUFFOLK COUNTY
(NYSDOT REGION 10)

Prepared For:

New York State Department of Transportation

August 2013



L. K. McLean Associates, P.C.

437 South Country Road, Brookhaven, N.Y., 11719

Asbestos Assessment Report

Bridge Rehabilitation
– Carll’s Straight Path over Long Island Expressway (I-495) –
(BIN 1049350)
Town of Huntington, Suffolk County

PIN 0229.40.101

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Executive Summary

In accordance with our Asbestos Term Agreement (Downstate - D030925) with New York State Department of Transportation (NYSDOT), L.K. McLean Associates, P.C. (LKMA) performed an inspection and sampling of the structure associated with the **Bridge Rehabilitation – Carll's Straight Path over Long Island Expressway (BIN 1049350), Town of Huntington, Suffolk County (PIN 0229.40.101)** for the presence of asbestos-containing materials (ACM).

Prior to the field inspection of the structure, available As-Built diagrams and provided utility diagrams were reviewed to determine the potential presence of ACM and suspect asbestos-containing material (SACM).

The inspections were performed between August 1 and August 9, 2013 by LKMA staff (Thomas Luck - Certificate #06-14004, and Kevin Quinn - Certificate #05-01744) who are New York State Department of Labor (NYSDOL) certified asbestos inspectors.

The purpose of the inspection was to identify the location, quantity and general removal options (including cost estimate) of the asbestos-containing materials (greater than 1% weight) present in the structures in accordance with New York State Industrial Code Rule 56 (ICR 56).

A total of 26 bulk samples of the following types of materials were collected from the bridge:

- Bearing Pad
- Caulkings
- Concrete Coating
- Joint Fillers
- Joint Sealer

In addition, the following known asbestos containing materials (ACM) were identified on the As-Built diagrams and/or in the field and, therefore, did not require sampling:

- Bond Breaker Slip Sheet

Furthermore, suspect asbestos containing materials (SACM) identified but not sampled due to inaccessibility included:

- Concrete Encased Fiber Telephone Ducts underneath the left (west) side sidewalk.
- Buried Fiber Telephone Ducts underneath approach road sidewalk/grass areas on the left (west) side.

The samples were delivered to Enviroscience Laboratories, Inc., 2150 Smithtown Avenue, Ronkonkoma, N.Y., for analysis by Polarized Light Microscopy (PLM), and by Transmission Electron Microscopy (TEM), where applicable. In accordance with the NYSDOT protocol, if PLM analysis did not detect any asbestos in non-friable organically bound (NOB) samples, the laboratory was instructed to re-analyze the samples from each set of homogeneous materials using TEM analysis until a positive result for asbestos was found or all samples of the group were analyzed.

A summary of the identified asbestos-containing materials (i.e., >1% asbestos by weight) found at the structure and identification of unsampled suspect asbestos-containing material, along with a description, location, and quantity, are presented in Table 1 following this section. The table shows that both ACM and SACM were identified at the bridge. Figure 1 is an illustration of the structure depicting the location of the identified materials.

Table 2 summarizes the sampling locations, material descriptions, and analytical results for all samples collected. A site location map of the structure inspected is provided in Figure 2. Photographs of the identified ACM and SACM are presented in Appendix H. Other appendices are listed in the Table of Contents.

Table 1

Summary of Identified Asbestos-Containing Materials (ACM) & Suspect Asbestos-Containing Materials (SACM)

Bridge Rehabilitation

Carl's Straight Path over Long Island Expressway (I-495)

(BIN 1049350)

PIN 0229.40.101

ACM Type / Location	Sample I.D.	% Asbestos	Approx. Quantity*	Removal Options	NYSDOT Item No.
<ul style="list-style-type: none"> • Asbestos Containing Materials (ACM) <ul style="list-style-type: none"> - Bond Breaker A bond breaker slip sheet located between the top of abutment backwalls and the bottom of the overlying bridge deck. - Caulking The firm, dark grey, caulking present around the bridge rail post base plates. This material is not uniformly present. • Suspect Asbestos Containing Materials (SACM) <ul style="list-style-type: none"> - Concrete-Encased Pipe As per the record plans, there are (6) - 3 1/2 in. dia. Fiber Telephone Ducts encased in concrete underneath the left (west) sidewalk of the bridge. - Buried Pipe It is assumed that the concrete-encased Fiber Telephone Ducts under the left (west) sidewalk extend into the approaches, to the Service Roads, as buried ducts. 	Positive for Asbestos as per Record Plans		80 ft ²	BV14	210.3312
	CK3 - A, B, C	1.7%	266 ft.	BV14	210.3411
	Assumed Positive for Asbestos		Abatement To Be Conducted By Utility Company		
	Assumed Positive for Asbestos		Abatement To Be Conducted By Utility Company		

* Quantity presented is total of homogeneous materials from all observed locations.

ft. = Linear Feet

ft² = Square Feet

ea. = Individual pieces or units

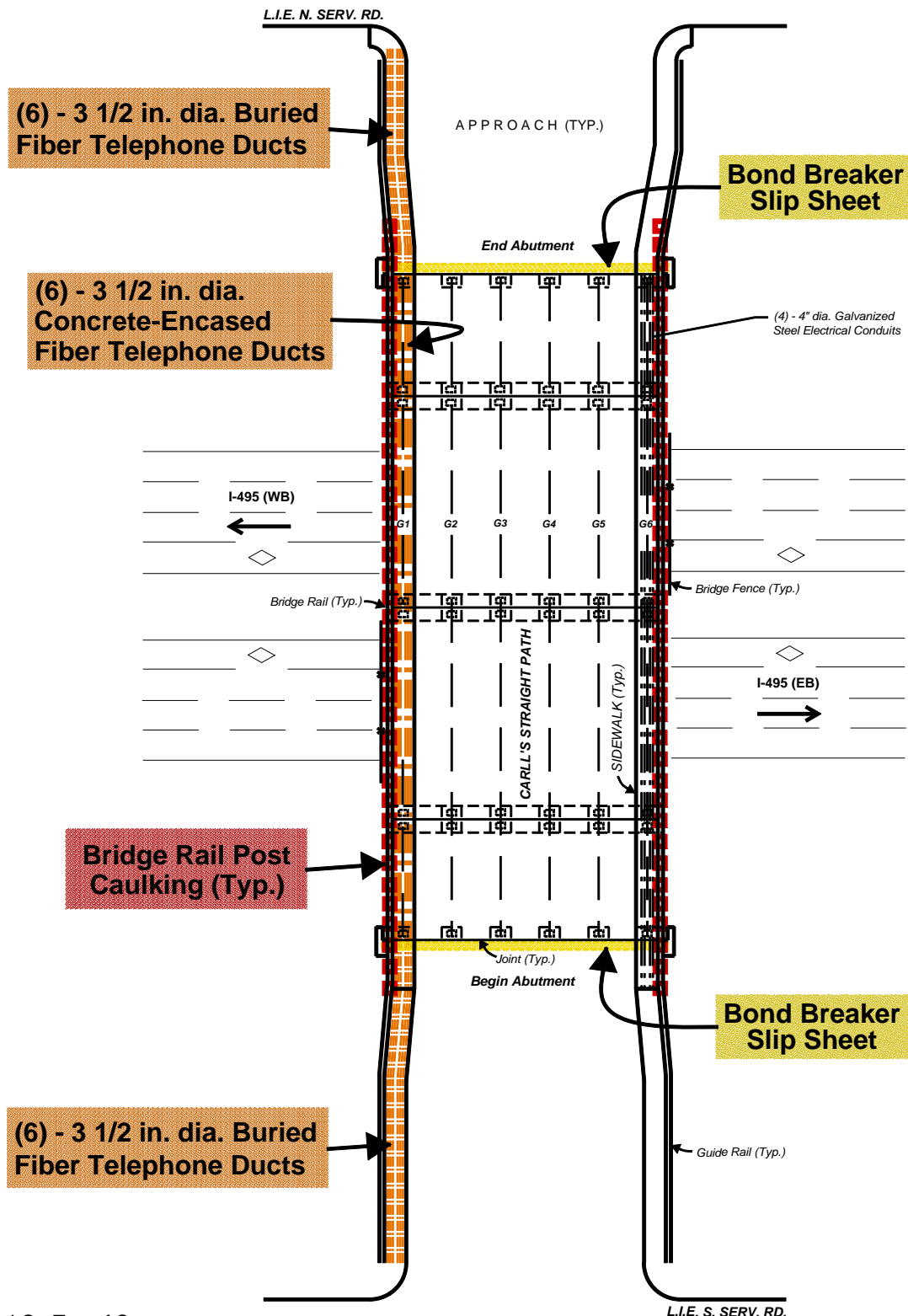
Asbestos Containing Material (ACM) & Suspect Asbestos Containing Material (SACM) Locations

Carl's Straight Path over L.I.E. (I-495)

Town of Huntington, Suffolk County

BIN 1049350 PIN 0229.40.101

Orientation = N



Material On Top of Structure ———

Material Beneath Structure - - - - -

Note: See Table 1 for quantities of ACM & SACM.

G = Girder
NOT TO SCALE

FIGURE 1

1.0 INTRODUCTION

In accordance with our Asbestos Term Agreement (Downstate - D030925) with New York State Department of Transportation (NYSDOT), L.K. McLean Associates, P.C. (LKMA) performed an inspection and sampling of the structure associated with the **Bridge Rehabilitation – Carll's Straight Path over Long Island Expressway (BIN 1049350), Town of Huntington, Suffolk County (PIN 0229.40.101)** for the presence of asbestos-containing materials (ACM).

A general site location map is presented in Figure 2 at the end of this section.

The inspections were performed between August 1 and August 9, 2013 by LKMA staff (Thomas Luck - Certificate #06-14004, and Kevin Quinn - Certificate #05-01744) who are New York State Department of Labor (NYSDOL) certified asbestos inspectors.

The scope of work consisted of the following tasks:

- Review available record plans to determine the potential presence of ACM and/or SACM at the existing structure.
- Conduct a site visit and a visual inspection of the bridge to identify potential locations of ACM.
- Collect bulk samples of suspected ACM from each homogenous area in accordance with standard industry protocols.
- Submit bulk samples to a New York State Department of Health (NYSDOH) or United States Environmental Protection Agency (USEPA) approved laboratory participating in the Environmental Laboratory Approval Program (ELAP). Analyze the samples using Polarized Light Microscopy (PLM) to determine the amount of asbestos present. Continue to analyze Non-Friable Organically Bound (NOB) samples of a homogeneous sample set using Transmission Electron Microscopy (TEM) until a positive ACM result is confirmed or all NOB samples in the set are analyzed.
- Document the results of the investigation findings in a report which includes:
 - a. A summary of the data collection techniques and laboratory analysis procedures used.
 - b. Identification of the location, type and quantities of ACM observed which contain greater than 1% asbestos.
 - c. Applicability of NYSDOL approved "Blanket Variance 14" and identification of which ACM can be removed under this variance.
 - d. Recommendation of specifications suitable for ACM removal and supply supplemental information which may be required.
 - e. Cost estimate for the removal of ACM containing greater than 1% asbestos by weight.

PIN 0229.40.101



2.0 ASBESTOS SURVEY

This inspection consisted of a visual survey along with sample collection of suspect ACM present at the subject structure. In addition, record plans for the bridge were available and were reviewed during the inspection. A list of the provided records plans that were examined is presented in Appendix A.

In accordance with the NYSDOT scope of work, three bulk samples (when possible) of suspect ACM were collected from each homogeneous material observed. A total of 26 bulk ACM samples from the structure were collected for laboratory analysis.

The sampling was conducted using protocol established by the USEPA and as required by NYSDOL's Industrial Code Rule 56. Utilizing amended water and a knife, chisel or pliers a small amount of suspect ACM was obtained and placed immediately into a zip-lock bag and sealed. The bag was then labeled and the sample information recorded on a sampling log/chain-of-custody form. All samples were "double-bagged" for shipment to the analytical laboratory. Sampling locations were marked with a covering of orange or red spray paint and labeled with the sample number.

A description of the suspect ACM sampled during the field survey and/or identified from a review of the provided record plans is presented below:

- **Bearing Pad (BP)**

Three (3) samples of a firm, tan, woven cloth bearing pad were collected. This material is present under the bridge bearings. The non-friable material was in good condition.

- **Caulking (CK)**

Three different caulking materials were observed on the structure from which a total of 9 samples were collected:

CK1 – Three (3) samples of a soft, grey caulking were collected. This material is present in the longitudinal joints between the back of the metal curb protection plate and the concrete sidewalks. The non-friable material was in good condition.

CK2 – Three (3) samples of a firm, grey, bendable caulking were collected. This material is present in the transverse sidewalk joints. The non-friable material was in good condition.

CK3 – Three (3) samples of a firm, dark grey, caulking were collected. This material is present around the base plates of the bridge rail posts. The non-friable material was in fair condition, and not uniformly present.

- **Concrete Coating (CC)**

Three (3) samples of a thin, light tan, paint-like concrete coating were collected. This material is present on the vertical faces of abutment backwalls, pedestals, and piers. The non-friable material was in good condition.

- **Joint Filler (JF)**

Three different joint filler materials were observed on the structure from which a total of 8 samples were collected:

JF1 – Two (2) samples of a thick, firm, brown, fibrous joint filler were collected. This material is only present in the longitudinal joint between the back of concrete curb and the sidewalk handicap ramp at the southeast corner of Carll's Straight Path and the L.I.E. North Service Rd. The non-friable material was in good condition.

JF2 – Three (3) samples of a thin, firm, dark brown, flaky joint filler were collected. This material is present in the transverse sidewalk joints on the right side of the End Approach. The non-friable material was in good condition.

JF3 – Three (3) samples of a thin, black, paper-like joint filler were collected. This material is only present in the Pier 2 transverse joint, underneath the grey caulking (CK2) and black joint sealer (JS1) materials. The non-friable material was in good condition.

- **Joint Sealer (JS)**

Three (3) samples of a soft, black, bituminous joint sealer were collected. This material is present in various roadway/sidewalk transverse joints, and longitudinally along the base of the metal curb protection plate. The non-friable material was in good condition, and not uniformly present.

- As indicated on the As-Built Diagrams (1960), the bond breaker slip sheet between the top of the abutment backwalls and bottom of the bridge deck is an asbestos-containing material and, therefore, was not sampled. Visual inspection confirmed the non-friable material to be present and in good condition.
- As indicated on the As-Built Diagrams (1960), there are (6) - 3½" dia. Fiber Telephone Ducts encased in concrete underneath the left (west) sidewalk of the bridge. Due to inaccessibility, this suspect asbestos-containing material (SACM) was not observed or sampled. However, as indicated by the Region, abatement of this material will be the responsibility of the utility company.
- It is assumed that the Concrete-Encased Fiber Telephone Ducts underneath the left (west) sidewalk extend under both approach road sidewalk/grass areas as buried pipe. Due to inaccessibility, this suspect asbestos-containing material (SACM) was not observed or sampled. However, as indicated by the Region, abatement of this material will be the responsibility of the utility company.
- Several test holes were progressed in the pavement to a depth of 2½", down to the top of the concrete deck slab; however, evidence of a waterproofing membrane beneath the asphalt wearing surface was not detected.

The bulk ACM sampling log/chain-of-custody forms for the samples collected are presented in Appendix B. The location from which each sample was collected is shown on the bridge diagram presented in Appendix C.

Samples collected were identified using an alpha/numeric descriptor. The system established uses the Bridge Identification Number, a code for type of material being sampled (see Asbestos Sample Legend in Appendix D) and the set for the number of homogenous types observed, and the number of samples from that homogenous type that was collected. For example:

Sample ID number: 1060020 - JF1 - A

Means: BIN 1060020 – Joint Filler (1st type) – first sample

In addition, for bridge sampling projects, the description of the sampling locations provided is based on the methodology presented in the NYSDOT Bridge Inspection Manual. The “Begin” side is determined as the side of the bridge someone would stand on while looking across the bridge in the direction of the bridge orientation (a compass heading established and provided by NYSDOT). The opposite side of the bridge is the “End” side. Bridge Span sections would be labeled sequentially starting from the Begin Abutment towards the End Abutment. Girders within each Span would be labeled sequentially from left to right. Some terms used for the identification of various bridge elements from which samples were collected are presented in the diagrams found in Appendix E.

3.0 LABORATORY ANALYSIS

3.1 Analytical Procedures

The bulk samples were delivered to Enviroscience Consultants, Inc. laboratories (Enviroscience), located at 2150 Smithtown Avenue, Ronkonkoma, New York. This laboratory is accredited by the New York State Environmental Laboratory Accreditation Program (ELAP #11681) and the National Voluntary Laboratory Accreditation Program (NVLAP # 200531-0). Accreditation certifications for the laboratory are provided in Appendix F.

The samples were analyzed by Polarized Light Microscopy (PLM). Bulk sample analysis is accomplished by using a polarized light microscope equipped with dispersion staining as described by the Interim Method for the Determination of Asbestos in Bulk Insulation, Federal Register/Volume 47, No. 103/May 27, 1987. The method of analysis involves the immersion of a suspect material in a solution of known refractive index and the subjection to illumination by polarized light. The resulting color displays enable mineral identification.

According to ELAP guidelines, quantitative Transmission Electron Microscopy (TEM) analysis is the only method that can be used to determine if Non-friable Organically Bound (NOB) materials can be considered non-asbestos containing. Therefore, NOB samples determined to be inconclusive by PLM analysis must be verified through TEM analysis. According to NYSDOT protocol, the laboratory was instructed to re-analyze the samples from each set of homogeneous NOB materials using TEM analysis, until a positive result for asbestos was found or all samples of the group were analyzed.

3.2 Analytical Results

A summary of all the laboratory analysis results of the bulk samples collected is presented in Table 2 at the end of this section. The laboratory analysis reports are included in Appendix G.

The laboratory analysis indicated that one (1) of the materials collected contained greater than 1% asbestos by weight.

Photographs of the asbestos-containing material, and suspect asbestos-containing material identified in record plans, are presented in Appendix H.

Table 2 Asbestos Sample Laboratory Analysis Results


BIN 1049350 - Carll's Straight Path over L.I.E. (I-495)

Sample I.D.	Sample Description	Sampling Location	Asbestos Content (%)	
			PLM*	TEM*
1049350 - BP1-A	Bearing Pad - Tan, firm, woven sheet	End Abutment, right side edge of Bearing #2	Not Detected	Not Detected
1049350 - BP1-B		End Abutment, front right corner of Bearing #4	Not Detected	Not Detected
1049350 - BP1-C		Begin Abutment, front corner of Bearing #3	Not Detected	Not Detected
1049350 - CC1-A	Concrete Coating- Light Tan, thin, paint-like	End Abutment, front right vertical chamfer of Pedestal 2	Not Detected	Not Detected
1049350 - CC1-B		End Abutment, left side vertical face of Pedestal 3	Not Detected	Not Detected
1049350 - CC1-C		Begin Abutment, right side vertical face of Pedestal 4	Not Detected	Not Detected
1049350 - CK1-A	Caulking - Grey, soft	Span 2, right side, back of metal curb, 18' from Pier 1	Not Detected	Not Detected
1049350 - CK1-B		Span 3, right side, back of metal curb, 15' from Pier 2	Not Detected	Not Detected
1049350 - CK1-C		Span 3, left side, back of metal curb, 3' from Pier 3	Not Detected	Not Detected
1049350 - CK2-A	Caulking - Grey, firm, bendable	Pier 1, right side, transverse sidewalk joint, outside edge	Not Detected	Not Detected
1049350 - CK2-B		Pier 3, right side, transverse sidewalk joint, outside edge	Not Detected	Not Detected
1049350 - CK2-C		Pier 2, left side, transverse sidewalk joint, near metal curb	Not Detected	Not Detected
1049350 - CK3-A	Caulking - Dark Grey, firm, crumbly	Right side of bridge, base of rail post #8, end of Span 1	1.7% Chrysotile	Not Analyzed
1049350 - CK3-B		Left side of bridge, base of rail post #32, beginning of Span 4	Not Analyzed	Not Analyzed
1049350 - CK3-C		Left side of bridge, base of rail post #10, beginning of Span 2	Not Analyzed	Not Analyzed
1049350 - JF1-A	Joint Filler - Brown, thick, firm, fibrous	Longitudinal joint between curb and sidewalk ramp, SE corner of Carll's Straight Path & L.I.E. N. Serv. Rd.	Not Detected	Not Analyzed
1049350 - JF1-B			Not Detected	Not Analyzed

Table 2 Asbestos Sample Laboratory Analysis Results

BIN 1049350 - Carll's Straight Path over L.I.E. (I-495)

Sample I.D.	Sample Description	Sampling Location	Asbestos Content (%)	
			PLM*	TEM*
1049350 - JF2-A	Joint Filler - Dark Brown, thin, firm, flaky	End Approach, right side, transverse sidewalk joint, 42' from End Abutment	Not Detected	Not Analyzed
1049350 - JF2-B		End Approach, right side, transverse sidewalk joint, 22' from End Abutment	Not Detected	Not Analyzed
1049350 - JF2-C		End Approach, right side, transverse sidewalk joint, 13' from End Abutment	Not Detected	Not Analyzed
1049350 - JF3-A	Joint Filler - Black, thin, paper-like	Pier 2, right side, transverse sidewalk joint, behind curb	Not Detected	Not Detected
1049350 - JF3-B		Pier 2, right side, transverse sidewalk joint, outside edge	Not Detected	Not Detected
1049350 - JF3-C		Pier 2, left side, transverse sidewalk joint, behind curb	Not Detected	Not Detected
1049350 - JS1-A	Joint Sealer - Black, soft, bituminous	Begin Approach, right side, along base of curb, 2' from Begin Abutment	Not Detected	Not Detected
1049350 - JS1-B		Pier 1, right side, transverse joint, edge of travel lane	Not Detected	Not Detected
1049350 - JS1-C		Pier 1, left side, transverse joint, in shoulder area	Not Detected	Not Detected

 = Sample, or homogeneous group, positive for asbestos.

* Trace = Less than or equal to 1% asbestos content and not considered an ACM.

4.0 ABATEMENT INFORMATION

4.1 Material Quantities, Variances and Removal Item Numbers

Table 1 and Figure 1 present a summary of the identified ACM and SACM found at the site according to laboratory analysis, as-built notes, and/or field observations. The estimated quantities of materials presented were based on observations made during the field investigation, and a review of the record plans. Appropriate Variances (included in Appendix I) and NYSDOT recommended Item Numbers are indicated for each ACM and/or SACM identified.

For the indicated materials, suggested wording for the Item Number identified (as indicated in NYSDOT Standard Specification – Section 210 – Removal and Disposal of Asbestos Containing Material [Buildings, Bridges and Highways] presented in Appendix J) is as follows:

Asbestos Containing Materials

- **Bond Breaker**
Item Number: 210.3312 - Removal and Disposal of Bond Breaker/Filler ACM (Blanket Variance #14), Square Foot
- **Caulking**
Item Number: 210.3411 - Removal and Disposal of Caulking ACM (Blanket Variance #14), Foot

4.2 Supplemental Information

SPECIAL NOTE

ASBESTOS REMOVAL SUPPLEMENTAL REQUIREMENTS

PIN 0229.40.101

This Special Note applies specifically to the following payment Items:

210.3312 - Removal and Disposal of Bond Breaker/Filler ACM (BV14), Square Foot
210.3411 - Removal and Disposal of Caulking ACM (BV14), Foot

All requirements of this Special Note are hereby made part of the requirements of the referenced payment items. All Contractor costs associated with these requirements will be included in the price bid for the pay items.

1. General Certification and Licensing Requirements

The Contractor shall note that the project involves asbestos removal. The Contractor performing the asbestos removal shall be a licensed New York State asbestos abatement

contractor. All persons involved in performing the asbestos abatement work shall be properly and appropriately certified as identified in Subpart 56-3 of the New York State Department of Labor Industrial Code Rule 56 (ICR 56), and shall comply with all applicable laws, rules, and regulations. This includes all individuals involved in all portions of the asbestos work, including managing, supervising, designing, inspecting and/or performing the work.

2. Preparatory Actions

No demolition, remodeling, renovation, or repair work shall commence on the structure until all necessary asbestos abatements have occurred. All Asbestos-containing Material (ACM), Presumed ACM (PACM), or Suspect ACM (SACM) impacted by demolition, remodeling, renovation, or repair of the structure shall be removed as per ICR 56 prior to access or disturbance by uncertified trades or personnel. If any construction activities reveal additional or previously unidentified ACM, PACM, or SACM, then all activities shall cease in the area where the materials are observed until appropriate abatement actions of those materials are completed.

3. Location of Asbestos Containing Material

The following asbestos-containing materials (ACM) have been identified:

BIN	Bridge Location	ACM Present	ACM Quantity
1049350	Carll's Straight Path over L.I.E. (I-495)	- Bond Breaker slip sheet on top of abutment backwalls.	80 ft ²
		- Caulking around the bridge rail post base plates.	266 ft.

The location of the ACM is detailed in the Asbestos Assessment Report, August 2013, which can be reviewed at NYSDOT Region 10 office.

The Contractor shall verify the location of the ACM and any asbestos debris and/or contaminated materials that may be in the vicinity of the bridge abutments and piers.

These quantity estimates represent only an approximation for the convenience of the contractor in estimating the overall extent of asbestos removal required.

4. Pre-Abatement Meeting

This project requires a pre-abatement meeting. The Engineer-In-Charge (EIC) shall invite all parties involved with the project to this meeting.

Before the pre-abatement meeting, the Contractor is required to submit to the EIC the following information:

- A. A valid New York State Department of Labor (NYSDOL) Asbestos Handling License;
- B. Copies of NYSDOL Handlers and Supervisors Certificates;
- C. Copies of all current respirator fit tests and medical exam certifications;
- D. Asbestos waste hauler documentation and a copy of NYS DEC Part 364 permit;
- E. NYSDOL, EPA, local (if applicable) notifications. Notifications must be in place a minimum of 10 days prior to the start of the job;
- F. NYSDOL asbestos handling license for OSHA monitoring firm;
- G. Copies of NYSDOH ELAP registrations for OSHA monitoring analysis laboratory;
- H. Insurance coverage documentation consistent with Section 107-06;
- I. Emergency contact numbers;
- J. Detailed project schedule and work plan, including all phases;
- K. Name of EPA approved landfill as well as copies of all permits;
- L. Copies of all Regulatory Variances to be used for Abatement work.

5. Notification

The EIC shall notify the NYSDOT Regional Construction Environmental Coordinator at least ten (10) business days before the Pre-Abatement Meeting is scheduled for this project.

The Contractor shall notify the EIC no later than forty-five (45) calendar days prior to the scheduled abatement of the ACM.

6. Abatement

The Contractor shall perform abatement procedures on the:

- **Bond Breaker Slip Sheet** utilizing **Item Number 210.3312**
- **Caulking** utilizing **Item Number 210.3411**

The Contractor shall base its bid upon the quantity of these materials at their respective locations in their undisturbed states, and be paid based upon the quantity of these materials at their respective locations, including any surfaces in contact with the identified material(s).

The Contractor shall be paid only for actually removed quantities of asbestos materials, to be quantified in the field, and to be verified by the Engineer in charge (EIC). If additional asbestos containing materials are identified during construction/demolition activities that are not identified in asbestos abatement design, the Contractor shall be paid for the removal of these materials at the NYSDOT approved unit cost agreed upon in this contract.

The Contractor is responsible for removing the ACM in accordance with Industrial Code Rule 56 and following the approved identified variance, Blanket Variance 14 (BV14) provided separately as variance File Number 12-0577, or per a Site Specific Variance (SSV) yet to be prepared.

The Contractor is responsible for planning the removal, including scoping, timing, phasing, and removal methods to be utilized. All removal operations shall be performed within the

context of the general construction staged operation. Any necessary sampling (for OSHA compliance) and analysis shall be performed by the Contractor. Removal of asbestos-contaminated debris shall be part of the asbestos project and be performed by certified persons.

The Contractor shall progress the abatement project without stopping to initiate another project.

Abatement of Telephone Conduits encased in the concrete sidewalk and/or buried in approach areas will be the responsibility of the utility company.

7. Compliance Air Monitoring

The Contractor shall **not** include in his/her bid the asbestos abatement Project and/or Air Monitoring services as required under Subpart 56-4 of ICR 56. NYSDOT shall provide the Project and/or Air Monitoring via use of a Consultant.

8. Project Documentation

The Contractor shall provide the EIC with two (2) complete sets of record documents, including chain-of-custody records, worker sign in/sign out sheets, proof of worker certifications, and other such records requested or as required by law to be kept on record.

These records shall be assembled as a single, logical report, with all information bound together.

9. Post-Abatement

After successful completion of post-abatement clearance air monitoring (if required) and the removal of the decontamination facilities of the ACM abatement, uncertified persons may re-enter the work area(s).

The project will be considered to be complete, and final payments may be dispersed, only after receipt of the NYSDOT Asbestos Representative (Project Monitor) final report (closure report). This report will only be distributed from the NYSDOT Representative upon the Representative's receipt and verification of all asbestos Contractor's close-out documentation (i.e., waste manifest(s), Supervisor's daily logs, Sign-in/Sign-out sheets, and OSHA personal air monitoring results). Only legible copies of the waste manifest(s) will be accepted.

END OF SPECIAL NOTES

APPENDIX A

Provided Record Plans

0229.40.101 - Bridge Rehabilitation

Site #	BIN	Carried	Crossed	Town	County	Orient.	Record Plans and Notes
	1049350	Carl's Straight Path	Long Island Expressway (I-495)	Huntington	Suffolk	N	1960 - F.A.L.I.E. 60-3 - built (sheets 57-65) 1998 - D257829 - rehab (sheets 122-123, 135)

rpr = repair
repl = replace

APPENDIX B

Bulk ACM Sampling Log/Chain-of-Custody Forms



L. K. McLean Associates, P.C.

Bulk ACM Sample Log

437 South Country Road, Brookhaven, N.Y. 11719

TEL. (631) 286-8668

FAX (631) 286-6314

NYSDOT Contract D 030925 PIN 0229.40.101		Project Site Bridge Rehabilitation, Town of Brookhaven, Suffolk County Site: Carll's Straight Path over L.I.E. (I-495) BIN: 1049350		Inspectors T. Luck K. Quinn	Sampling Date 8/1/2013
SAMPLE I.D.	LOCATION (Floor, Room, Side, Height, Unit)	DESCRIPTION (Type, Color, Size, Layer, Condition)	Photo Number	ANALYSIS (PLM, TEM)	TURN @ (Hours)
1049350- JS1-A	BEGIN APPROACH, RIGHT SIDE, BASE OF CURB, 2' FROM BEGIN ABUTMENT.	BLACK JOINT SEALER GOOD CONDITION, NON-FRIABLE		See Note	3 Days
1049350- JS1-B	PIER 1, RIGHT SIDE, TRANSVERSE JOINT, EDGE OF TRAVEL LANE	" "			
1049350- JS1-C	PIER 1, LEFT SIDE, TRANSVERSE JOINT, SHOULDER AREA	" "			
1049350- CK1-A	SPAN 2, RIGHT SIDE, BACK OF METAL CURB, 18' FROM PIER 1	GREY CAULKING GOOD CONDITION, NON-FRIABLE			
1049350- CK1-B	SPAN 3, RIGHT SIDE, BACK OF METAL CURB, 15' FROM PIER 2	" "			
1049350- CK1-C	SPAN 3, LEFT SIDE, BACK OF METAL CURB, 3' FROM PIER 3	" "			
1049350- CK2-A	PIER 1, RIGHT SIDE, TRANSVERSE SIDEWALK JOINT, OUTSIDE EDGE	GREY CAULKING GOOD CONDITION, NON-FRIABLE			
Sample Chain-of-Custody Record					
	Name (print)	Signature:	Date:	Time:	
Released By:	THOMAS W. LUCK	Thomas W. Luck	8/1/13	3:15	
Received By:	P. NEUSCH	P. Neusch	8/1/13	15:15	
Released By:					
Received By:					
Comments: Analyze samples until first positive stop.				Delivery Method: Hand	



L. K. McLean Associates, P.C.

Bulk ACM Sample Log

437 South Country Road, Brookhaven, N.Y. 11719

TEL. (631) 286-8668 FAX (631) 286-6314

NYSDOT Contract D 030925 PIN 0229.40.101		Project Site Bridge Rehabilitation, Town of Brookhaven, Suffolk County Site: Carl's Straight Path over L.I.E. (I-495) BIN: 1049350		Inspectors T. Luck K. Quinn		Sampling Date 8/1/2013	
SAMPLE I.D.	LOCATION (Floor, Room, Side, Height, Unit)	DESCRIPTION (Type, Color, Size, Layer, Condition)		Photo Number	ANALYSIS (PLM, TEM)	TURN @ (Hours)	
1049350- CK2-B	PIER 3, RIGHT SIDE, TRANSVERSE SIDEWALK JOINT, OUTSIDE EDGE	GREY CAULKING GOOD CONDITION, NON-FRIABLE			See Note	3 Days	
1049350- CK2-C	PIER 2, LEFT SIDE, TRANSVERSE SIDEWALK JOINT, NEAR METAL CURB	" "				↓	
1049350- CK3-A	RIGHT SIDE OF BRIDGE, BASE OF RAIL POST #8, END OF SPAN 1	DARK GREY CAULKING GOOD CONDITION, NON-FRIABLE					
1049350- CK3-B	LEFT SIDE OF BRIDGE, BASE OF RAIL POST #32, BEGINNING OF SPAN 4	" "					
1049350- CK3-C	LEFT SIDE OF BRIDGE, BASE OF RAIL POST #10, BEGINNING OF SPAN 2	" "					
1049350- JF1-A	LONGITUDINAL JOINT BETWEEN CURB & SIDEWALK, SE CORNER OF CARL'S STRAIGHT PATH & L.I.E. N. SIDE RD.	BROWN JOINT FILLER GOOD CONDITION, NON-FRIABLE					
1049350- JF1-B	" "	" "					

Sample Chain-of-Custody Record

	Name (print)	Signature:	Date:	Time:
Released By:	THOMAS W. LUCK	Thomas W. Luck	8/1/13	3:15
Received By:	P. NEUSCH	P. Neusch	8/1/13	15:15
Released By:				
Received By:				
Comments: Analyze samples until first positive stop.			Delivery Method: Hand	



L. K. McLean Associates, P.C.

Bulk ACM Sample Log

437 South Country Road, Brookhaven, N.Y. 11719

TEL. (631) 286-8668

FAX (631) 286-6314

NYSDOT Contract		Project Site		Inspectors	Sampling Date
D 030925 PIN 0229.40.101		Bridge Rehabilitation, Town of Brookhaven ^{Huntington} , Suffolk County Site: Carll's Straight Path over L.I.E. (I-495) BIN: 1049350		T. Luck K. Quinn	8/1/2013
SAMPLE I.D.	LOCATION (Floor, Room, Side, Height, Unit)	DESCRIPTION (Type, Color, Size, Layer, Condition)	Photo Number	ANALYSIS (PLM, TEM)	TURN @ (Hours)
1049350- JF2-A	END APPROACH, RIGHT SIDE, TRANSVERSE SIDEWALK JOINT, 42' FROM END ABUTMENT	DARK BROWN JOINT FILLER GOOD CONDITION, NON-FRIABLE		See Note	3 Days
1049350- JF2-B	END APPROACH, RIGHT SIDE, TRANSVERSE SIDEWALK JOINT, 22'	" "			
1049350- JF2-C	END APPROACH, RIGHT SIDE, TRANSVERSE SIDEWALK JOINT, 13' FROM END ABUTMENT	" "			
1049350- BP1-A	END ABUTMENT, RIGHT SIDE EDGE OF BEARING # 2	TAN BEARING PAD GOOD CONDITION, NON-FRIABLE			
1049350- BP1-B	END ABUTMENT, FRONT RIGHT CORNER OF BEARING # 4	" "			
1049350- BP1-C	BEGIN ABUTMENT, FRONT CORNER OF BEARING # 3	" "			
1049350- CC1-A	END ABUTMENT, FRONT RIGHT VERTICAL CHAMFER OF PEDESTAL 2	LIGHT TAN CONCRETE COATING GOOD CONDITION, NON-FRIABLE			↓
Sample Chain-of-Custody Record					
	Name (print)	Signature:		Date:	Time:
Released By:	THOMAS W. LUCK	Thomas W. Luck		8/1/13	3:15
Received By:	P. NEUSCH	P. Neusch		8/1/13	15:15
Released By:					
Received By:					
Comments: Analyze samples until first positive stop.				Delivery Method: Hand	



437 South Country Road, Brookhaven, N.Y. 11719

TEL. (631) 286-8668

FAX (631) 286-6314

LKMA No. 11030.066



437 South Country Road, Brookhaven, N.Y. 11719

TEL. (631) 286-8668 FAX (631) 286-8669

LKMA No. 11030.066

APPENDIX C

Sample Location Plans

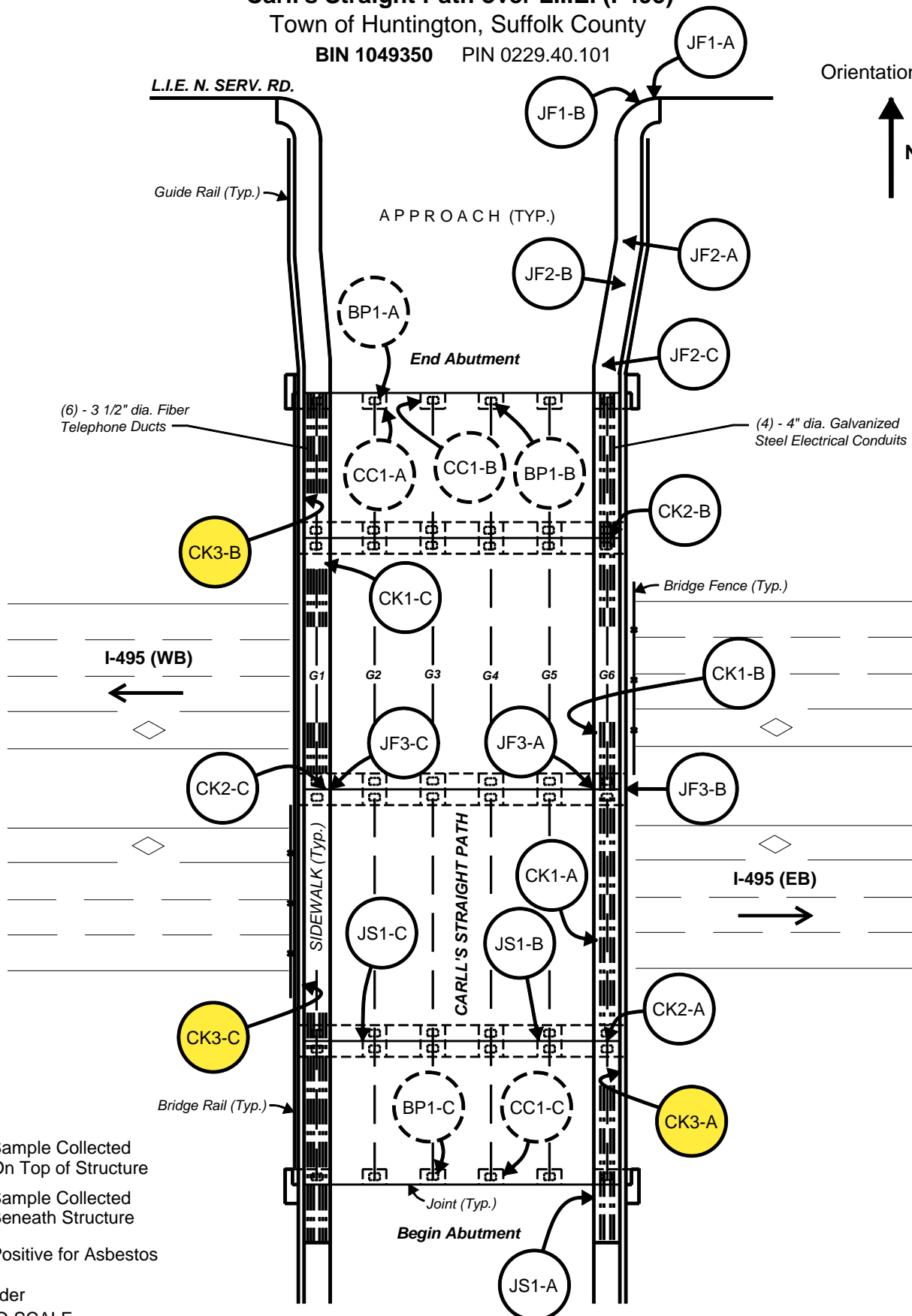
Bulk Asbestos Sample Location Plan

Carll's Straight Path over L.I.E. (I-495)

Town of Huntington, Suffolk County

BIN 1049350 PIN 0229.40.101

Orientation = N



- Sample Collected On Top of Structure
- Sample Collected Beneath Structure
- Positive for Asbestos

G = Girder
NOT TO SCALE

APPENDIX D

Sample Legend

Asbestos Sample Legend

Bridge Inspections

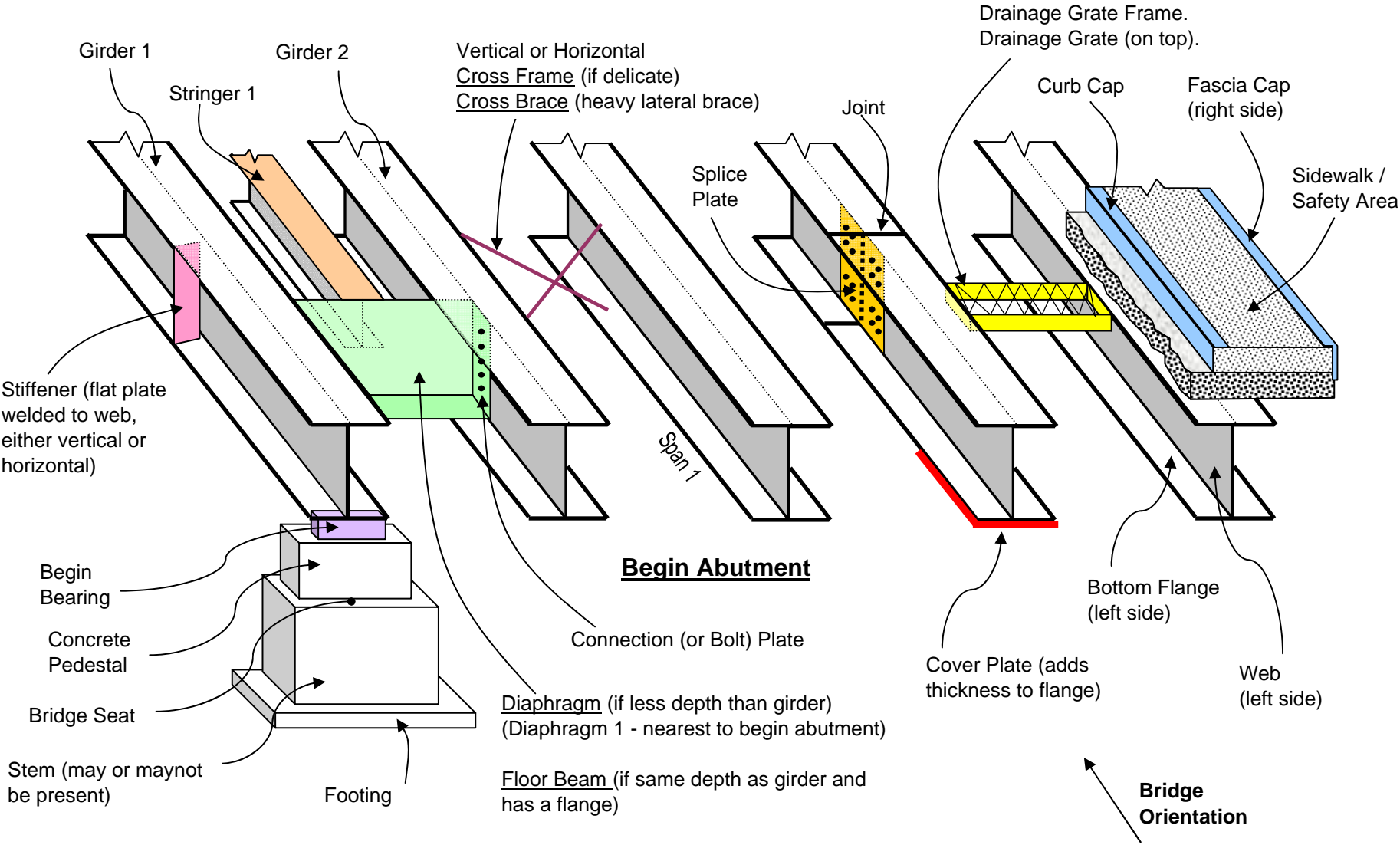
Sample I.D. Abbreviations	Material	Description
AD	Adhesive	- Typically beneath railing posts.
AP	Asphalt Pavement	- Bridge Deck Wearing Surface.
AS	Abutment Sleeve	- Pipe in abutment through which utility pipes enter. Sometimes it is a transite material.
BB	Bond Breaker	- Graphite slip sheet between abutment backwall & deck slab.
BF	Bituminous Filler	- Hard, shiny, black, bituminous material filling void spaces.
BP	Bearing Pad	- Bond breaker between bearing plate and concrete pedestal.
BM	Bituminous Material (Item 61)	- Thin, black, bituminous, water proofing coating.
BR	Backer Rod	- A type of joint filler material present under joint sealer.
BRP	Break Pad	- Friction pad material on machine and motor brakes of draw bridges.
C	Conduit	- Typically runs underneath deck slab on supports.
CC	Concrete Coating	- Hard, thick, paint-like coating on concrete members, particularly pier caps.
CF	Crack Filler	- Material placed in cracks on surface of bridge deck to act as a filler.
CK	Caulking	- Typically around the base of railing posts.
COT	Coating	- Coating materials on stone used as an armored joint, or on utility pipes, or elsewhere.
CS	Conduit Sealer	- Conduit/duct sealer materials.
CT	Ceiling Tile	- Tile panels as ceiling materials on pedestrian underpasses.
DP	Drainage Pipe	- Masonry/Cement pipe used for drainage of abutments.
G	Gasket	- Around inner lip of utility box cover.
IN	Insulation	- Insulation material. Found under jacketing of water main or other utility pipes.
JF	Joint Filler	- At abutment joints, etc. (a.k.a., Expansion mat'l).
JS	Joint Sealer	- Any joint cover material, caulking, sealant, etc.
JM	Joint Material	- Miscellaneous material present in joint other than Joint Filler or Joint Sealer.
MM	Masonry Mortar	- Mortar used in brick and stone work.
PS	Paint Sample	- Structural steel under deck, hand rails.
PW	Pipe Wrapping	- Material used to wrap the outside of utility pipes.
RP	Railing Pad	- Beneath guide rail posts.
SC	Stucco Coating	- Cement-like stucco wall coating
SI	Spray-On Insulation	- Insulation/corrosion protection applied to structural steel members.
T	Tar	- Black, bituminous materials.
TCT	Traffic Counter Tape	- Woven material with adhesive backing.
TP	Tar Paper	- Black, fibrous, sheet construction material.
WM	Waterproofing Membrane	- Rubberized sheet with embedded fiber weave.

APPENDIX E

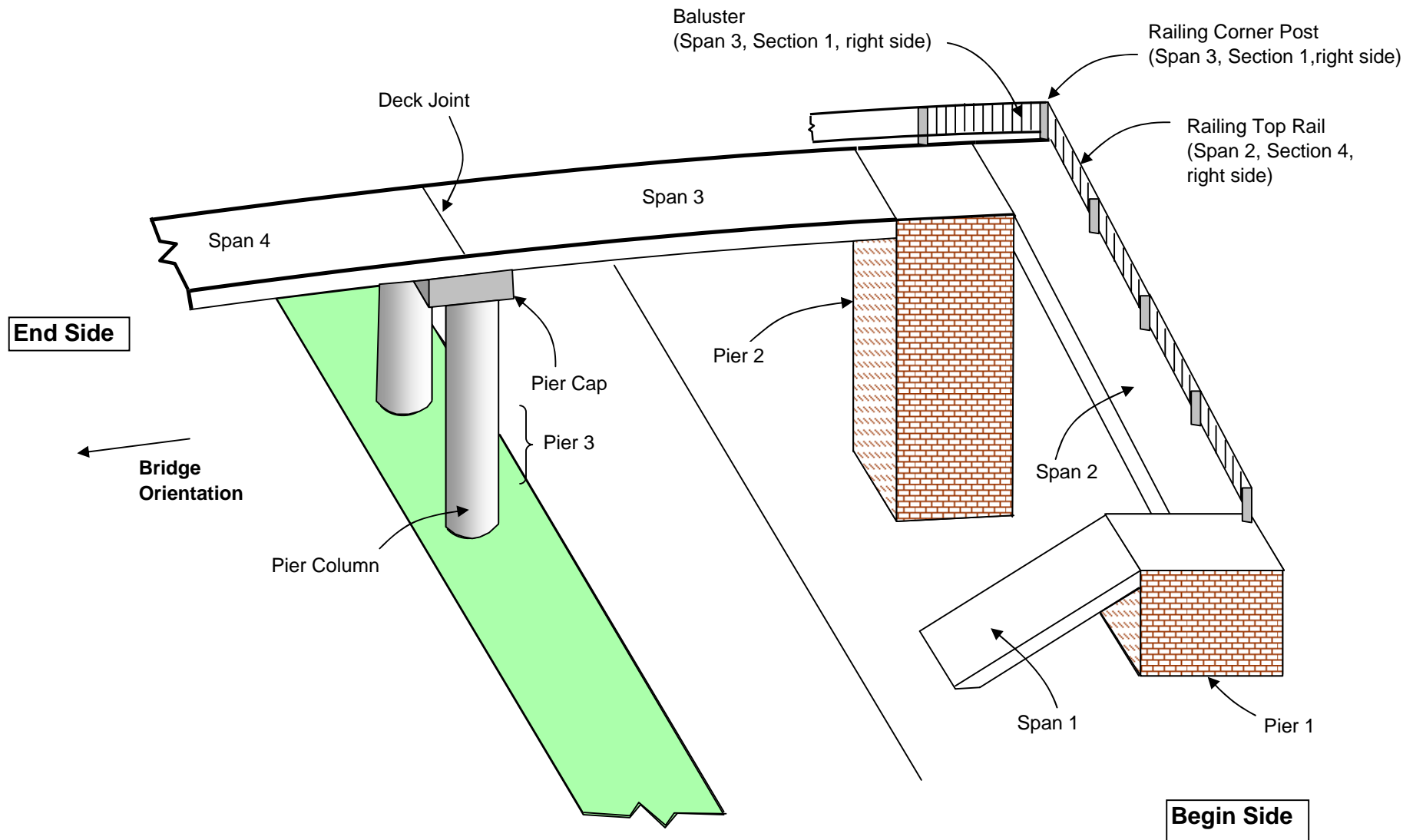
Bridge Element Diagrams

BRIDGE ELEMENTS

End Abutment



PEDESTRIAN BRIDGES



APPENDIX F

Licenses and Accreditations

New York State – Department of Labor

Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY 12240

ASBESTOS HANDLING LICENSE

Louis K. Mc Lean Associates, Engineers & Surveyors, P.C.

437 South Country Road

Brookhaven, NY 11719

FILE NUMBER: 00-0848

LICENSE NUMBER: 28593

LICENSE CLASS: RESTRICTED

DATE OF ISSUE: 10/18/2012

EXPIRATION DATE: 11/30/2013

Duly Authorized Representative – Raymond G DiBiase:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.



Eileen M. Franko, Acting Director
For the Commissioner of Labor

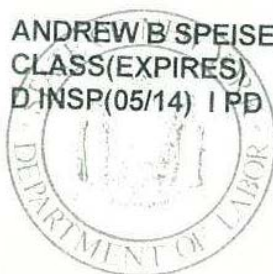
ANDREW B. SPEISER

STATE OF NEW YORK - DEPARTMENT OF LABOR

ASBESTOS CERTIFICATE



ANDREW B SPEISER
CLASS(EXPIRES)
D INSP(05/14) I PD (05/14)



CERT# 95-12614
DMV# 286784662

MUST BE CARRIED ON ASBESTOS PROJECTS



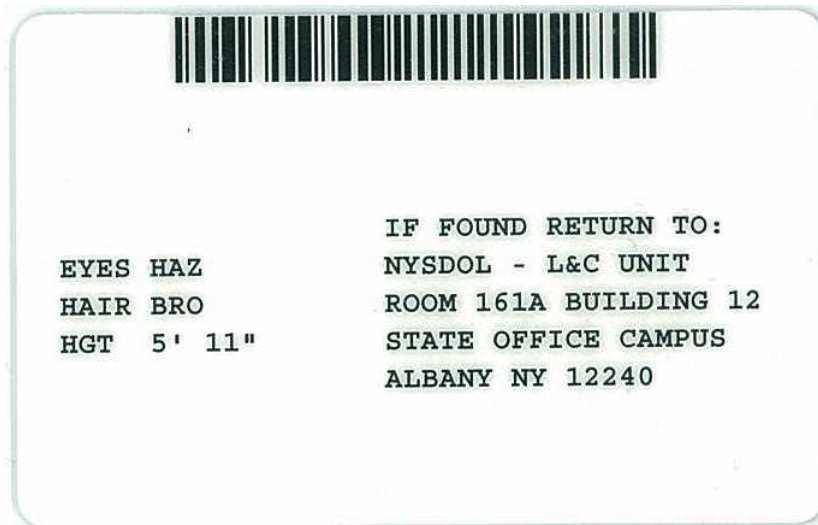
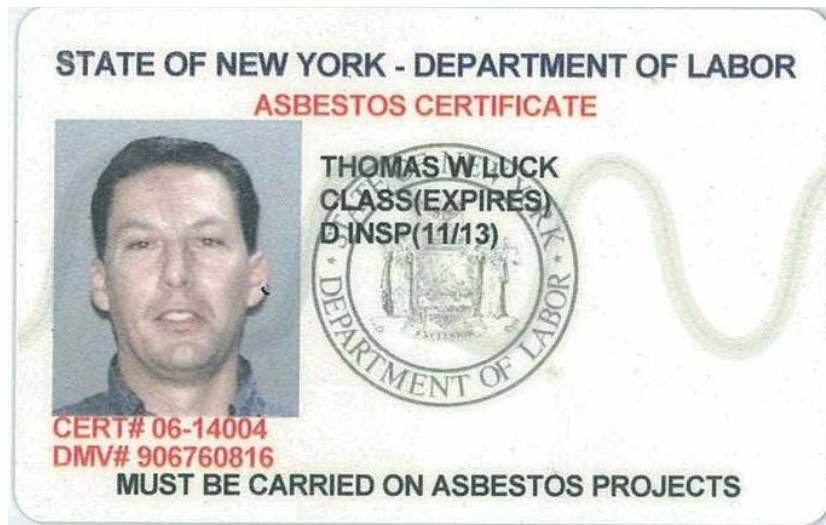
EYES GRN
HAIR BRO
HGT 5' 11"

IF FOUND RETURN TO:
NYSDEL - L&C UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240

A – Asbestos Handler
B – Restricted Handler-Allied Trades
C – Air Sampling Technician
D – Inspector
E – Management Planner

F – Operations and Maintenance
G – Supervisor
H – Project Monitor
I – Project Designer

THOMAS W. LUCK



A – Asbestos Handler
B – Restricted Handler-Allied Trades
C – Air Sampling Technician
D – Inspector
E – Management Planner

F – Operations and Maintenance
G – Supervisor
H – Project Monitor
I – Project Designer

KEVIN B. QUINN

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE



KEVIN B QUINN
CLASS(EXPIRES)
D-INSP(01/14) H-PM (01/14)



CERT# 05-01744
DMV# 186324119

MUST BE CARRIED ON ASBESTOS PROJECTS



EYES BLU
HAIR BRO
HGT 5' 08"

IF FOUND RETURN TO:
NYSDOL - L&C UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240

A – Asbestos Handler
B – Restricted Handler-Allied Trades
C – Air Sampling Technician
D – Inspector
E – Management Planner

F – Operations and Maintenance
G – Supervisor
H – Project Monitor
I – Project Designer

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2014
Issued April 01, 2013

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. GLENN L. NEUSCHWENDER
ENVIROSCIENCE CONSULTANTS, INC.
2150 SMITHTOWN AVENUE SUITE 3
RONKONKOMA, NY 11779

NY Lab Id No: 11681

*is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:*

Drinking Water Miscellaneous

Asbestos

EPA 100.2



Serial No.: 48789

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.



NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2014
Issued April 01, 2013

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. GLENN L. NEUSCHWENDER
ENVIROSCIENCE CONSULTANTS, INC.
2150 SMITHTOWN AVENUE SUITE 3
RONKONKOMA, NY 11779

NY Lab Id No: 11681

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual

Serial No.: 48790

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2014
Issued April 01, 2013

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. GLENN L. NEUSCHWENDER
ENVIROSCIENCE CONSULTANTS, INC.
2150 SMITHTOWN AVENUE SUITE 3
RONKONKOMA, NY 11779

NY Lab Id No: 11681

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Miscellaneous Air

Asbestos

40 CFR 763 APX A No. III

YAMATE, AGARWAL GIBB

Fibers

NIOSH 7400 A RULES

Serial No.: 48791

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.



**National Voluntary
Laboratory Accreditation Program**



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Enviroscience Consultants, Inc.
2150 Smithtown Ave.
Ronkonkoma, NY 11779
Mr. Edward Detweiler
Phone: 631-580-3191 Fax: 631-580-3195
E-Mail: edetweiler@envirohealth.org
URL: <http://www.envirohealth.org>

BULK ASBESTOS FIBER ANALYSIS (PLM)

NVLAP LAB CODE 200531-0

NVLAP Code Designation / Description

18/A01	EPA-600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples
--------	--

2012-10-01 through 2013-09-30

Effective dates

For the National Institute of Standards and Technology

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200531-0

Enviroscience Consultants, Inc.
Ronkonkoma, NY

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

BULK ASBESTOS FIBER ANALYSIS

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

2012-10-01 through 2013-09-30

Effective dates



A handwritten signature in black ink, appearing to read "James R. Mulla".

For the National Institute of Standards and Technology



**National Voluntary
Laboratory Accreditation Program**



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Enviroscience Consultants, Inc.
2150 Smithtown Ave.
Ronkonkoma, NY 11779
Mr. Edward Detweiler
Phone: 631-580-3191 Fax: 631-580-3195
E-Mail: edetweiler@envirohealth.org
URL: <http://www.envirohealth.org>

AIRBORNE ASBESTOS FIBER ANALYSIS (TEM)

NVLAP LAB CODE 200531-0

NVLAP Code Designation / Description

18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.
--------	--

2012-10-01 through 2013-09-30

Effective dates

For the National Institute of Standards and Technology

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200531-0

Enviroscience Consultants, Inc.
Ronkonkoma, NY

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

AIRBORNE ASBESTOS FIBER ANALYSIS

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).*

2012-10-01 through 2013-09-30

Effective dates



A handwritten signature in black ink, which appears to read "James R. Mullen".

For the National Institute of Standards and Technology

APPENDIX G

Laboratory Analysis Data Sheets

ENVIROSCIENCE CONSULTANTS, INC.

2150 SMITHTOWN AVE. • RONKONKOMA, NY 11779 • (631) 580-3191

344 MAIN ST., SUITE 101 • MT. KISCO, NY 10549 • (914) 666-8933

ELAP # 11681; NVLAP Lab Code 200531-0

ASBESTOS BULK SAMPLE RESULTS

CLIENT:	LK McLean Associates, PC	SAMPLE DATE:	8/1/2013
PROJECT NAME:	Bridge Rehabilitation, Town of Huntington, Suffolk County (LKMA# 11030.066)	DATE RECEIVED:	8/1/2013
JOB #:	10048	AREA:	Site: Carll's Straight Path over L.I.E. (I-495)
PAGE #:	1 of 5	SAMPLER:	Luck / Quinn
		CUSTODY #:	8301

Sample #	Description	Color	Location	Result	% Asbestos-type	% Non-asbestos Fibers-type	% Matrix-type
1049350-JS1-A	Joint sealer; good condition; non-friable	Black	Begin approach, right side, base of curb, 2' from begin abutment	None Detected by TEM		None Detected	94.3% organics and carbonates 5.7% silicates and opaques
1049350-JS1-B	Joint sealer; good condition; non-friable	Black	Pier 1, right side, transverse joint, edge of travel lane	None Detected by TEM		None Detected	77.7% organics and carbonates 22.3% silicates and opaques
1049350-JS1-C	Joint sealer; good condition; non-friable	Black	Pier 1, left side, transverse joint, shoulder area	None Detected by TEM		None Detected	98.7% organics and carbonates 1.3% silicates and opaques
1049350-CK1-A	Caulking; good condition; non-friable	Gray	Span 2, right side, back of metal curb, 18' from Pier 1	None Detected by TEM		None Detected	60.5% organics and carbonates 39.5% silicates and opaques
1049350-CK1-B	Caulking; good condition; non-friable	Gray	Span 3, right side, back of metal curb, 15' from Pier 2	None Detected by TEM		None Detected	60.9% organics and carbonates 39.1% silicates and opaques
1049350-CK1-C	Caulking; good condition; non-friable	Gray	Span 3, left side, back of metal curb, 3' from Pier 3	None Detected by TEM		None Detected	58.6% organics and carbonates 41.4% silicates and opaques

Key:

This method (ELAP 198.6) does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.

Trace - Asbestos found is 1% or less; not considered ACM.

None Detected - No asbestos found in samples using polarized light microscopy (PLM).

None Detected by TEM - No asbestos found in samples using transmission electron microscopy (TEM) and polarized light microscopy (PLM) was found to be negative.

Negative by Weight - After matrix reduction, the remainder is less than 1% and, therefore, cannot fulfill the definition of asbestos containing material.

Inconclusive - No asbestos found in non-friable organically bound samples using polarized light microscopy (PLM).

Method: EPA 600/M4-82/20, ELAP Item 198.6 This report may not be reproduced without the express permission of Enviroscience. This report cannot be used to claim endorsement of products by NVLAP or any agency of the U.S. Government. Test results only reflect conditions at the time the samples were taken.

Analyzed by:



Date Analyzed: 8/5/2013

ENVIROSCIENCE CONSULTANTS, INC.

2150 SMITHTOWN AVE. • RONKONKOMA, NY 11779 • (631) 580-3191

344 MAIN ST., SUITE 101 • MT. KISCO, NY 10549 • (914) 666-8933

ELAP # 11681; NVLAP Lab Code 200531-0

ASBESTOS BULK SAMPLE RESULTS

CLIENT:	LK McLean Associates, PC	SAMPLE DATE:	8/1/2013
PROJECT NAME:	Bridge Rehabilitation, Town of Huntington, Suffolk County (LKMA# 11030.066)	DATE RECEIVED:	8/1/2013
JOB #:	10048	AREA:	Site: Carll's Straight Path over L.I.E. (I-495)
PAGE #:	2 of 5	SAMPLER:	Luck / Quinn
		CUSTODY #:	8301

Sample #	Description	Color	Location	Result	% Asbestos-type	% Non-asbestos Fibers-type	% Matrix-type
1049350-CK2-A	Caulking; good condition; non-friable	Gray	Pier 1, right side, transverse sidewalk joint, outside edge	None Detected by TEM		None Detected	56.8% organics and carbonates 43.2% silicates and opaques
1049350-CK2-B	Caulking; good condition; non-friable	Gray	Pier 3, right side, transverse sidewalk joint, outside edge	None Detected by TEM		None Detected	54.6% organics and carbonates 45.4% silicates and opaques
1049350-CK2-C	Caulking; good condition; non-friable	Gray	Pier 2, left side, transverse sidewalk joint, near metal curb	None Detected by TEM		None Detected	51.6% organics and carbonates 48.4% silicates and opaques
1049350-CK3-A	Caulking; good condition; non-friable	Dk. gray	Right side of bridge, base of rail post #8, end of Span 1	1.7% Asbestos	1.7% Chrysotile	6.4% talc	87.3% organics and carbonates 4.6% silicates and opaques
1049350-CK3-B	Caulking; good condition; non-friable	Dk. gray	Left side of bridge, base of rail post #32, beginning of Span 4	Not Analyzed			
1049350-CK3-C	Caulking; good condition; non-friable	Dk. gray	Left side of bridge, base of rail post #10, beginning of Span 2	Not Analyzed			

Key:

This method (ELAP 198.6) does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.

Trace - Asbestos found is 1% or less; not considered ACM.

None Detected - No asbestos found in samples using polarized light microscopy (PLM).

None Detected by TEM - No asbestos found in samples using transmission electron microscopy (TEM) and polarized light microscopy (PLM) was found to be negative.

Negative by Weight - After matrix reduction, the remainder is less than 1% and, therefore, cannot fulfill the definition of asbestos containing material.

Inconclusive - No asbestos found in non-friable organically bound samples using polarized light microscopy (PLM).

Method: EPA 600/M4-82/20, ELAP Item 198.6 This report may not be reproduced without the express permission of Enviroscience. This report cannot be used to claim endorsement of products by NVLAP or any agency of the U.S. Government. Test results only reflect conditions at the time the samples were taken.

Analyzed by:

Date Analyzed: 8/5/2013

ENVIROSCIENCE CONSULTANTS, INC.

2150 SMITHTOWN AVE. • RONKONKOMA, NY 11779 • (631) 580-3191

344 MAIN ST., SUITE 101 • MT. KISCO, NY 10549 • (914) 666-8933

ELAP # 11681; NVLAP Lab Code 200531-0

ASBESTOS BULK SAMPLE RESULTS

CLIENT:	LK McLean Associates, PC	SAMPLE DATE:	8/1/2013
PROJECT NAME:	Bridge Rehabilitation, Town of Huntington, Suffolk County (LKMA# 11030.066)	DATE RECEIVED:	8/1/2013
		AREA:	Site: Carll's Straight Path over L.I.E. (I-495)
JOB #:	10048	SAMPLER:	Luck / Quinn
PAGE #:	3 of 5	CUSTODY #:	8301

Sample #	Description	Color	Location	Result	% Asbestos-type	% Non-asbestos Fibers-type	% Matrix-type
1049350-JF1-A	Joint filler; good condition; non-friable	Brown	Longitudinal joint between curb & sidewalk, SE corner of Carll's Straight Path & LIE N Service Rd.	None Detected		80.0% cellulose	20.0% binders
1049350-JF1-B	Joint filler; good condition; non-friable	Brown	Longitudinal joint between curb & sidewalk, SE corner of Carll's Straight Path & LIE N Service Rd.	None Detected		80.0% cellulose	20.0% binders
1049350-JF2-A	Joint filler; good condition; non-friable	Dk. brown	End approach, right side, transverse sidewalk joint, 42' from end abutment	None Detected		80.0% cellulose	20.0% binders
1049350-JF2-B	Joint filler; good condition; non-friable	Dk. brown	End approach, right side, transverse sidewalk joint, 22' from end abutment	None Detected		80.0% cellulose	20.0% binders

Key:

This method (ELAP 198.6) does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.

Trace - Asbestos found is 1% or less; not considered ACM.

None Detected - No asbestos found in samples using polarized light microscopy (PLM).

None Detected by TEM - No asbestos found in samples using transmission electron microscopy (TEM) and polarized light microscopy (PLM) was found to be negative.

Negative by Weight - After matrix reduction, the remainder is less than 1% and, therefore, cannot fulfill the definition of asbestos containing material.

Inconclusive - No asbestos found in non-friable organically bound samples using polarized light microscopy (PLM).

Method: EPA 600/M4-82/20, ELAP Item 198.6 This report may not be reproduced without the express permission of Enviroscience. This report cannot be used to claim endorsement of products by NVLAP or any agency of the U.S. Government. Test results only reflect conditions at the time the samples were taken.

Analyzed by:

Date Analyzed: 8/5/2013

ENVIROSCIENCE CONSULTANTS, INC.

2150 SMITHTOWN AVE. • RONKONKOMA, NY 11779 • (631) 580-3191

344 MAIN ST., SUITE 101 • MT. KISCO, NY 10549 • (914) 666-8933

ELAP # 11681; NVLAP Lab Code 200531-0

ASBESTOS BULK SAMPLE RESULTS

CLIENT:	LK McLean Associates, PC	SAMPLE DATE:	8/1/2013
PROJECT NAME:	Bridge Rehabilitation, Town of Huntington, Suffolk County (LKMA# 11030.066)	DATE RECEIVED:	8/1/2013
JOB #:	10048	AREA:	Site: Carll's Straight Path over L.I.E. (I-495)
PAGE #:	4 of 5	SAMPLER:	Luck / Quinn
		CUSTODY #:	8301

Sample #	Description	Color	Location	Result	% Asbestos-type	% Non-asbestos Fibers-type	% Matrix-type
1049350-JF2-C	Joint filler; good condition; non-friable	Dk. brown	End approach, right side, transverse sidewalk joint, 13' from end abutment	None Detected		80.0% cellulose	20.0% binders
1049350-BP1-A	Bearing pad; good condition; non-friable	Tan	End abutment, right side edge of Bearing #2	None Detected by TEM		None Detected	55.9% organics and carbonates 44.1% silicates and opaques
1049350-BP1-B	Bearing pad; good condition; non-friable	Tan	End abutment, front right corner of Bearing #4	None Detected by TEM		None Detected	74.9% organics and carbonates 25.1% silicates and opaques
1049350-BP1-C	Bearing pad; good condition; non-friable	Tan	Begin abutment, front corner of Bearing #3	None Detected by TEM		None Detected	66.1% organics and carbonates 33.9% silicates and opaques
1049350-CC1-A	Concrete coating; good condition; non-friable	Lt. tan	End abutment, front right vertical chamfer of Pedestal 2	None Detected by TEM		None Detected	66.9% organics and carbonates 33.1% silicates and opaques

Key:

This method (ELAP 198.6) does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.

Trace - Asbestos found is 1% or less; not considered ACM.

None Detected - No asbestos found in samples using polarized light microscopy (PLM).

None Detected by TEM - No asbestos found in samples using transmission electron microscopy (TEM) and polarized light microscopy (PLM) was found to be negative.

Negative by Weight - After matrix reduction, the remainder is less than 1% and, therefore, cannot fulfill the definition of asbestos containing material.

Inconclusive - No asbestos found in non-friable organically bound samples using polarized light microscopy (PLM).

Method: EPA 600/M4-82/20, ELAP Item 198.6 This report may not be reproduced without the express permission of Enviroscience. This report cannot be used to claim endorsement of products by NVLAP or any agency of the U.S. Government. Test results only reflect conditions at the time the samples were taken.

Analyzed by:



Date Analyzed: 8/5/2013

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ELAP # 11681; NVLAP Lab Code 200531-0

ASBESTOS BULK SAMPLE RESULTS

CLIENT:	LK McLean Associates, PC	SAMPLE DATE:	8/1/2013
PROJECT NAME:	Bridge Rehabilitation, Town of Huntington, Suffolk County (LKMA# 11030.066)	DATE RECEIVED:	8/1/2013
JOB #:	10048	AREA:	Site: Carll's Straight Path over L.I.E. (I-495)
PAGE #:	5 of 5	SAMPLER:	Luck / Quinn
		CUSTODY #:	8301

Sample #	Description	Color	Location	Result	% Asbestos-type	% Non-asbestos Fibers-type	% Matrix-type
1049350-CC1-B	Concrete coating; good condition; non-friable	Lt. tan	End abutment, left side vertical face of Pedestal 5	None Detected by TEM		None Detected	60.6% organics and carbonates 39.4% silicates and opaques
1049350-CC1-C	Concrete coating; good condition; non-friable	Lt. tan	Begin abutment, right side vertical face of Pedestal 4	None Detected by TEM		None Detected	65.6% organics and carbonates 34.4% silicates and opaques

Key:

This method (ELAP 198.6) does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.

Trace - Asbestos found is 1% or less; not considered ACM.

None Detected - No asbestos found in samples using polarized light microscopy (PLM).

None Detected by TEM - No asbestos found in samples using transmission electron microscopy (TEM) and polarized light microscopy (PLM) was found to be negative.

Negative by Weight - After matrix reduction, the remainder is less than 1% and, therefore, cannot fulfill the definition of asbestos containing material.

Inconclusive - No asbestos found in non-friable organically bound samples using polarized light microscopy (PLM).

Method: EPA 600/M4-82/20, ELAP Item 198.6 This report may not be reproduced without the express permission of Enviroscience. This report cannot be used to claim endorsement of products by NVLAP or any agency of the U.S. Government. Test results only reflect conditions at the time the samples were taken.

Analyzed by:



Date Analyzed: 8/5/2013

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ELAP # 11681; NVLAP Lab Code 200531-0

ASBESTOS BULK SAMPLE RESULTS

CLIENT:	LK McLean Associates, PC	SAMPLE DATE:	8/9/2013
PROJECT NAME:	Bridge Rehabilitation, Town of Huntington, Suffolk County (LKMA# 11030.066)	DATE RECEIVED:	8/9/2013
JOB #:	10048	AREA:	Site: Carll's Straight Path over L.I.E. (I495)
PAGE #:	1 of 1	SAMPLER:	K. Quinn
		CUSTODY #:	8405

Sample #	Description	Color	Location	Result	% Asbestos-type	% Non-asbestos Fibers-type	% Matrix-type
1049350-JF3-A	Joint filler; paper thin, friable between concrete slabs under caulk material	Black	Transverse joint, center pier, sidewalk, east side	None Detected by TEM		None Detected	79.9% organics and carbonates 20.1% silicates and opaques
1049350-JF3-B	Joint filler; paper thin, friable between concrete slabs under caulk material	Black	Transverse joint, center pier, sidewalk, east side	None Detected by TEM		None Detected	59.6% organics and carbonates 40.4% silicates and opaques
1049350-JF3-C	Joint filler; paper thin, friable between concrete slabs under caulk material	Black	Transverse joint, center pier, sidewalk, west side	None Detected by TEM		None Detected	73.5% organics and carbonates 26.5% silicates and opaques

Key:

ACM: Asbestos Containing Materials contain more than 1% asbestos (shown in bold type).

This method (ELAP 198.6) does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.

Trace - Asbestos found is 1% or less; not considered ACM.

None Detected - No asbestos found in samples using polarized light microscopy (PLM).

None Detected by TEM - No asbestos found in samples using transmission electron microscopy (TEM) and polarized light microscopy (PLM) was found to be negative.

Negative by Weight - After matrix reduction, the remainder is less than 1% and, therefore, cannot fulfill the definition of asbestos containing material.

Inconclusive - No asbestos found in non-friable organically bound samples using polarized light microscopy (PLM).

Method: EPA 600/M4-82/20, ELAP Item 198.6 This report may not be reproduced without the express permission of Enviroscience. This report cannot be used to claim endorsement of products by NVLAP or any agency of the U.S. Government. Test results only reflect conditions at the time the samples were taken.

Analyzed by:



Date Analyzed: 8/12/2013

APPENDIX H

Photographs of Asbestos Containing Materials

Carl's Straight Path over L.I.E. (I-495)

BIN 1049350

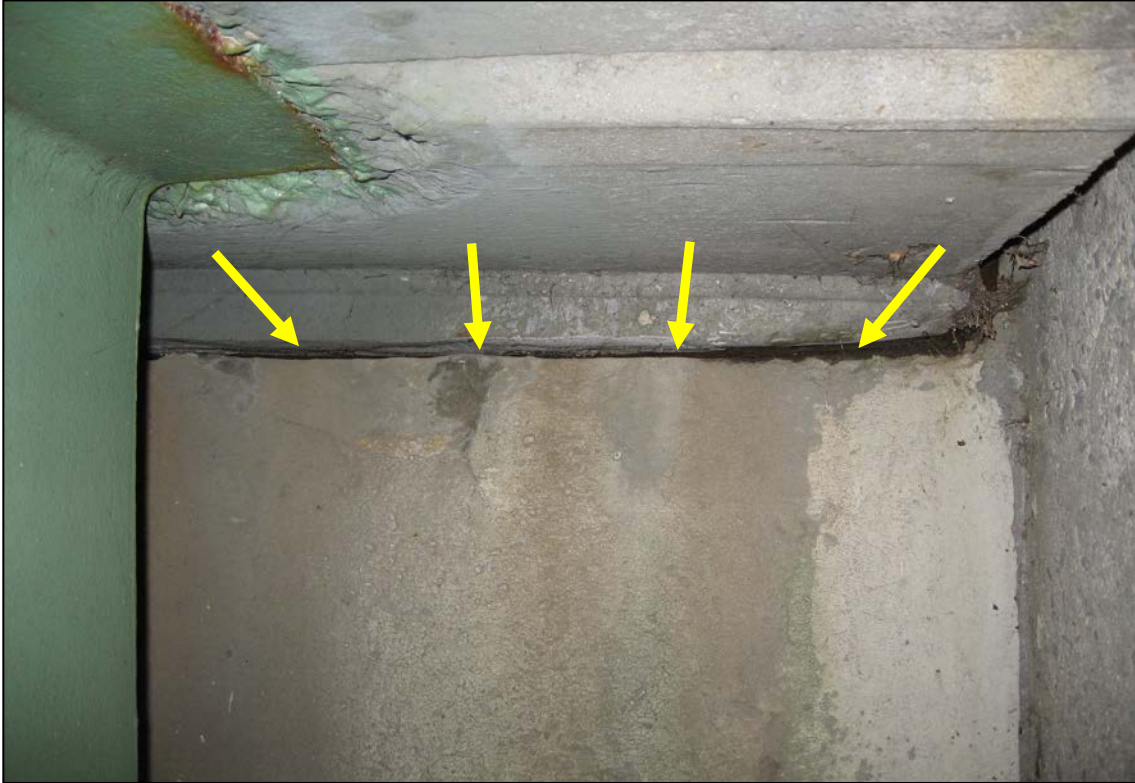


Photo 1 - The bond breaker slip sheet, between the top of the abutment backwalls and bottom of the overlying bridge deck (Typ.), is an ACM as per the record plans. Photo is looking north, at the right side of the End Abutment.

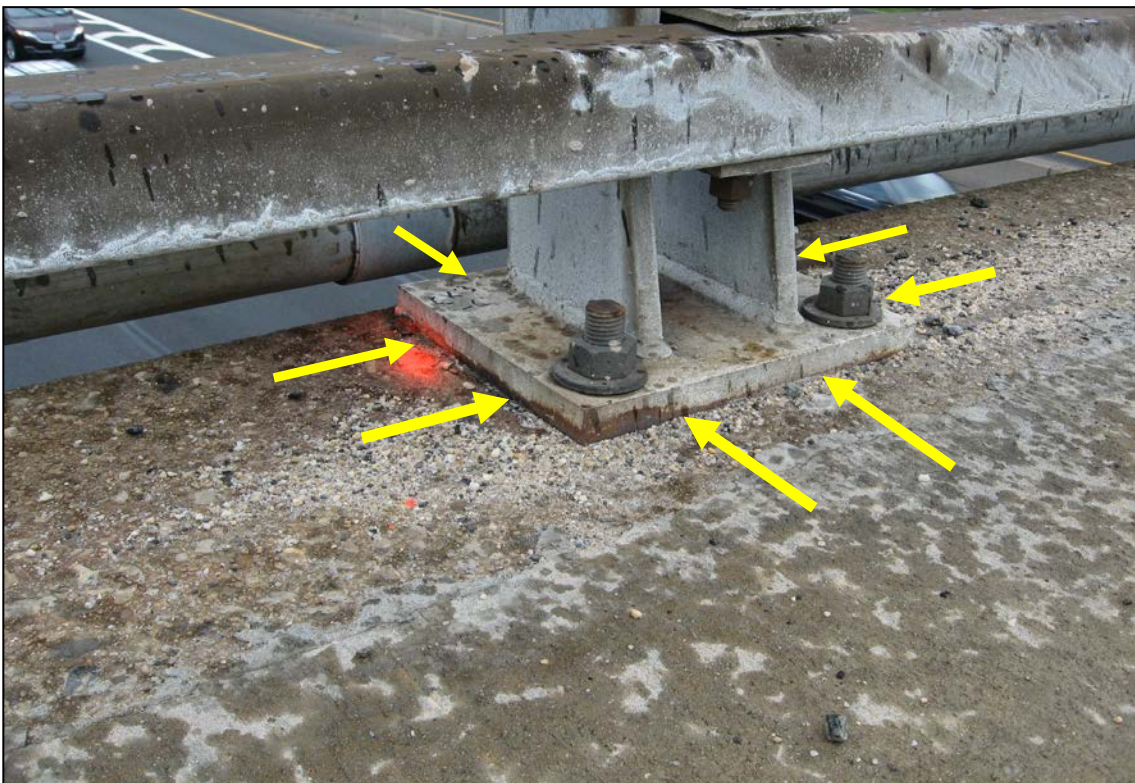


Photo 2 - The firm, dark grey, caulking (CK3), present around the bridge rail post base plates, is an ACM. Photo is looking west, at sample CK3-C, taken from Rail Post #10, on the left side of the bridge at the beginning of Span 2.

Carll's Straight Path over L.I.E. (I-495)

BIN 1049350

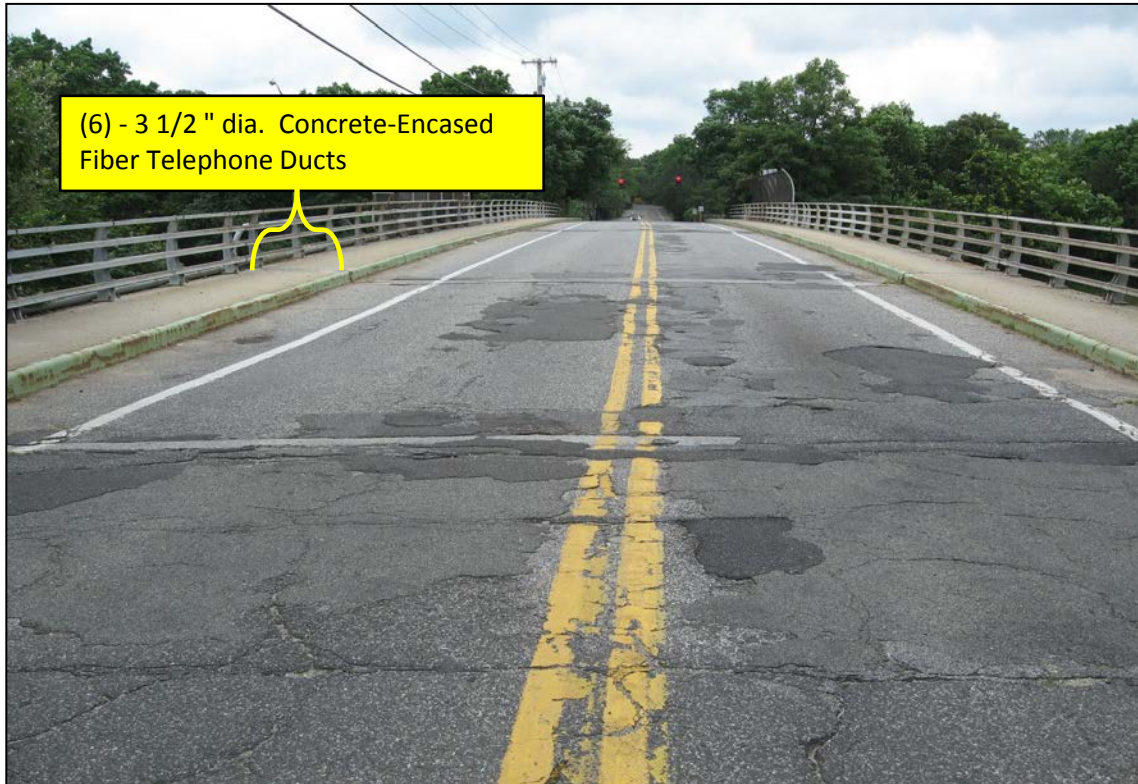


Photo 3 - As indicated on the record plans, the (6) - 3 1/2" dia. Concrete-Encased Fiber Telephone Ducts, underneath the left (west) sidewalk, is a SACM. Photo is looking north, across the bridge deck, from the Begin Abutment.



Photo 4 - It is assumed that the (6) - 3 1/2" dia. Concrete-Encased Fiber Telephone Ducts, underneath the left sidewalk of the bridge, extend under the grass area along the left side of the Begin Approach road, to the north side of the L.I.E. S. Serv. Rd., as buried pipe. Photo is looking north, towards the Begin Abutment.

Carll's Straight Path over L.I.E. (I-495)

BIN 1049350



Photo 5 - It is assumed that the (6) - 3 1/2" dia. Concrete-Encased Fiber Telephone Ducts, underneath the left sidewalk of the bridge, extend under the asphalt path along the left side of the End Approach road, to the south side of the L.I.E. N. Serv. Rd., as buried pipe. Photo is looking north, from the End Abutment.

APPENDIX I

New York State Variances

STATE OF NEW YORK
DEPARTMENT OF LABOR
STATE OFFICE BUILDING CAMPUS
ALBANY, NEW YORK 12240-0100

Variance Petition

of

New York State Department of Transportation

Petitioner

in re

Premises: NYSDOT, NYSTA, NYSCC
NYS Bridges, Right of Ways and Highways
STATEWIDE (Blanket Variance #14)

File No. 12-0577

STATEWIDE
DECISION

Cases 1-2

ICR 56

The Petitioner, pursuant to Section 30 of the Labor Law, having filed Petition No. 12-0577 on May 18, 2012 with the Commissioner of Labor for a variance from the provisions of Industrial Code Rule 56 as hereinafter cited on the grounds that there are practical difficulties or unnecessary hardship in carrying out the provisions of said Rule; and the Commissioner of Labor having reviewed the submission of the petitioner dated May 10, 2012; and

Upon considering the merits of the alleged practical difficulties or unnecessary hardship and upon the record herein, the Commissioner of Labor does hereby take the following actions:

Case No. 1

ICR 56-11.6(b)(1)

Case No. 2

ICR 56-11.6(b)(3)

VARIANCE GRANTED. The Petitioner's proposal to follow the procedures delineated in the attached 18 page submittal to remove various non-friable ACM materials from surfaces and substrates on Bridges, Highways and Right of Ways statewide is accepted; subject to the Conditions noted below:

THE CONDITIONS

1. As written with modifications noted.

In addition to the conditions required by the above specific variances, the Petitioner shall also comply with the following general conditions:


GENERAL CONDITIONS

1. A copy of this DECISION and the Petitioner's proposals shall be conspicuously displayed at the entrance to the personal decontamination enclosure.
2. This DECISION shall apply only to the removal of asbestos-containing materials from the aforementioned areas of the subject premises.
3. The Petitioner shall comply with all other applicable provisions of Industrial Code Rule 56-1 through 56-12.
4. The NYS Department of Labor Engineering Service Unit retains full authority to interpret this variance for compliance herewith and for compliance with Labor Law Article 30. Any deviation to the conditions leading to this variance shall render this variance Null and Void pursuant to 12NYCRR 56-12.2. Any questions regarding the conditions supporting the need for this variance and/or regarding compliance hereto must be directed to the Engineering Services Unit for clarification.
5. This DECISION shall terminate on June 30, 2015.

Date: June 5, 2012

By

COLLEEN C. GARDNER
COMMISSIONER OF LABOR

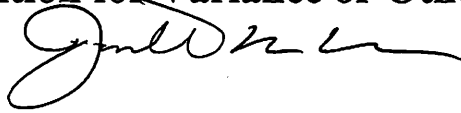


Christopher G. Alonge, P.E.
Associate Safety and Health Engineer

PREPARED BY: Edward A. Smith, P.E.
Senior Safety and Health Engineer

REVIEWED BY: Christopher G. Alonge, P.E.
Associate Safety and Health Engineer

Petition for Variance or Other Relief


Description of Work:

Demolition, renovation and maintenance of bridges and highways

Affected Structures:

State and County owned bridges and highways throughout New York State

Affected Agencies:

New York State Department of Transportation (NYSDOT)
 New York State Thruway Authority (NYSTA)
 New York State Canal Corporation (NYSCC)
 County Highway Departments Statewide

Nature of Work:

Removal of nonfriable asbestos-containing materials from surfaces and substrates on bridges and highways

Reason for Request for Variance

NYSDOT, NYSTA, NYSCC and County Highway Departments Statewide encounter a wide variety of nonfriable asbestos-containing materials as part of maintenance and construction programs and demolition, renovation and maintenance of bridge and highway facilities. These include various bond breakers, joint fillers, caulks, grouts, sealers, coatings, utility conduits and similar type applications, and make up greater than 90% of asbestos abatement work associated with bridge and highway work each year.

In 1997, 2000, 2003, 2006 and 2009 NYSDOT petitioned and received approval for Blanket Variances (File Numbers 9701065, 001228, 030708, 060339 and 090440) which have been greatly successful in simplifying bridge and highway asbestos project design and facilitating abatement associated with construction and maintenance work. These variances have been necessary due to both infeasible engineering controls required in 12 NYCRR 56 and associated economic burden in applying the asbestos regulation to exterior abatement on active bridge and highway projects.

This new blanket variance petition is proposed as a means to continue to incorporate safe, effective abatement methods for the multiple nonfriable asbestos applications NYSDOT, NYSTA, NYSCC and County Highway Departments Statewide encounter during bridge and highway work.

It is the intention of NYSDOT, NYSTA, NYSCC and County Highway Departments Statewide to provide an equivalent, if not higher, level of protection for removal workers and the general public, while permitting the proper removal of the nonfriable asbestos materials in a cost effective manner. The proposed procedures will not expose removal workers or the general public to unacceptable levels of asbestos fibers, and are a reasonable approach for the careful and controlled removal of nonfriable asbestos-containing materials from bridges and highway right-of-way.

Proposal

The following work procedures for small and large projects shall always apply during abatement of any nonfriable asbestos-containing transite, tars, bond breakers, joint fillers, caulks, grouts, sealers, coatings, utility conduits or similar type applications from bridges and highway right-of-way:

1. Regulatory relief is requested from provisions of ICR 56 Subpart 56-11.6 (b) (1). The portion(s) of the bridge or highway right-of-way actively being worked on shall be considered to be the asbestos work area(s). Delineation of the asbestos work area(s) shall consist of construction fencing a minimum of 4 feet in height. For bridge work, this delineation shall apply to either the above or below deck portion of the bridge, depending on where the actual abatement is taking place. Asbestos work area(s) shall be internal to any and all necessary traffic control. All traffic control shall conform to the NYSDOT Standard Specifications, the Manual of Uniform Traffic Control Devices (MUTCD) and the project contract documents. Traffic control not including concrete safety shape barrier shall include use of stationary shadow vehicle(s) in accordance with §619-1.02 Basic Maintenance and Protection of Traffic of NYSDOT Standard Specifications. In areas where it is possible to access the nonfriable materials from the ground when working below a bridge deck, or from equipment on the ground (scaffold or mechanical lift), the work area will be considered that which is delineated by the construction fence. In areas where a work platform must be suspended from the bridge, the work area will be considered to be the area between the platform and the underside of the bridge deck. The area inside the construction fence shall be considered to be the asbestos work area. The asbestos work area shall be accessible through only one entrance/exit. The vacation of the asbestos work area(s) and use of warning signs shall comply with Industrial Code Rule 56-7.4 (a, b & c). Work area access shall be limited to NYSDOL certified personnel during abatement activities.
2. Regulatory relief is requested from provisions of ICR 56 Subpart 56-11.6 (b) (3). A remote personal decontamination enclosure system, sited as close as practicable to the asbestos work area and otherwise complies with ICR 56 Subpart 56-7.5, shall be utilized.
3. During non-shift periods when abatement activities are not taking place, the designated pathway to the remote personal decontamination enclosure system, as defined in ICR 56 Subpart 56-7.5 (d)(4), may be temporarily taken down.
4. A waste decontamination enclosure system shall be utilized in conformance with ICR 56 Subpart 56-7.5 (f).
5. Where high volume traffic conditions do not allow partial or entire bridge or highway closure for the entire duration of the asbestos removal involving nonfriable asbestos materials located within or directly below the bridge deck, approach or highway, procedures including plasticizing with 2 layers of 6 mil polyethylene under steel plating may be used to temporarily isolate the work area prior to re-opening the affected travel lane(s) to traffic. Thereafter, when traffic volume decreases and asbestos removal operations can resume, work area isolation of the bridge will again be in accordance with methods in place prior to temporary isolation.

6. All nonfriable asbestos-containing waste shall not be mixed with other non-asbestos construction and demolition debris for purposes of onsite storage and transport. In addition, facilities accepting nonfriable asbestos-containing waste shall not pulverize the waste as defined in Subpart 360-7, Section 7.1(c)(2) of 6 NYCRR Part 360. All waste disposal shall be by appropriate legal method.

The additional following procedures/requirements shall apply to the removal of concrete-encased, nonfriable bond breaker material:

1. Sawcutting or removal of asphalt and or concrete to within 6 inches of the non-friable bond breaker material shall involve no contact with the bond breaker and be performed prior to establishment of the regulated work area. Equipment operators performing saw cut(s) or asphalt/concrete removal that does not impact or disturb asbestos-containing bond breaker material shall have a minimum of documented and current 2 hour OSHA asbestos awareness training. All subsequent abatement activities, including but not limited to, regulated work area establishment, bond breaker exposure and abatement/clean-up work shall be performed by NYSDOL certified handlers, including mechanical equipment operators used under condition 4 below.
2. During all regulated abatement activities, a full-time certified project monitor is required to be present onsite to ensure that no visible emissions and no friable asbestos debris occurs.
3. Due to removal techniques requiring partial demolition of the bridge deck and abutments in order to access the bond breaker material, plasticizing of the affected bridge deck, median or sidewalk, as determined by the project monitor, will be limited to critical coverage (i.e., drains, grates, etc.) with four layers of 6 mil fire retardant polyethylene.
4. Due to hardships incurred in manual demolition of asphalt/concrete in order to access the encased bond breaker material, it is proposed that mechanical equipment be utilized to turn over sections of the asphalt/concrete and isolate the area surrounding the bond breaker using wet methods.
5. Nonfriable bond breaker material shall be physically removed as intact as possible from the area of initial mechanical access either using manual methods or removed and disposed of as a whole or partial concrete component. All waste disposal shall be by appropriate legal method.
6. Cleaning methods shall include HEPA vacuuming and wet wiping of the entire impacted area and any debris and/or contamination shall be disposed of as asbestos-containing waste.

7. Excess water generated from the removal or cleaning process shall be disposed of as asbestos-containing waste or filtered through a 5 micron filtration system prior to discharge to a sanitary sewer, as permitted per applicable codes.

The additional following procedures/requirements shall apply to the removal of concrete-encased, nonfriable utility conduits:

1. All regulated work area establishment and abatement work shall be performed by NYSDOL certified handlers.
2. Construction fence will be placed along both sides of the work area where utility conduits are being removed from medians and bridge sidewalks.
3. Due to removal techniques requiring partial demolition of the concrete in order to access the utility conduit(s), plasticizing of the affected median or sidewalk will be limited to critical coverage (i.e., drains, grates, etc.) with four layers of 6 mil fire retardant polyethylene.
4. Due to hardships incurred in manual demolition of concrete in order to access the encased utility conduit(s), it is proposed that jack-hammers and/or concrete saws be utilized to initially break up or section the concrete and isolate the area surrounding the conduits using wet methods.
5. Nonfriable utility conduits will be physically removed as intact as possible from the area of initial mechanical access using manual means and wet methods and wrapped in two (2) layers of 6 mil polyethylene and sealed with duct tape.
6. Cleaning methods shall include HEPA vacuuming and wet wiping of the entire access area and any debris and/or contamination shall be disposed of as asbestos contaminated waste.
7. Excess water generated from the removal or cleaning process will be disposed of as asbestos waste or filtered through a 5 micron filtration system prior to discharge to a sanitary sewer, per applicable codes.

The additional following procedures/requirements shall apply to the removal of nonfriable utility conduits buried in bridge approaches, highway right-of-way or similar feature:

1. Removal of asphalt and/or soil overburden to within 6 inches of the nonfriable buried utility conduit(s) shall involve no contact with the utility and be performed by power shovel or similar mechanical means prior to establishment of the regulated work area. Equipment operators performing asphalt and/or soil overburden removal shall have a minimum of 2 hours of documented and current OSHA asbestos awareness training. All subsequent regulated work area establishment, utility exposure and abatement work shall be performed by NYSDOL certified supervisor(s) and handlers.
2. Hand tools or other manual methods shall be used to expose the conduit(s) on all sides in the area designated for removal.
3. Areas of utility conduit at locations of proposed cuts/disconnections shall be removed within commercially available glovebags and negative pressure tent enclosures. Intact lengths of conduits shall be wrapped in 2 layers of 6 mil polyethylene and sealed with duct tape.
4. Earth surfaces within the removal area shall be scraped clean of any residual asbestos debris and/or contamination and be disposed of as asbestos contaminated waste.
5. A project monitor visual inspection, performed in accordance with ICR 56 Subpart 56-9.2 (e) (1), shall be conducted for each glovebag/tent operation and for each entire asbestos abatement regulated work area prior to tent or general work area tear down.

The additional following procedures/requirements shall apply to the removal of nonfriable suspended utility conduit(s) from bridge components or similar features:

1. All regulated work area establishment and abatement work shall be performed by NYSDOL certified handlers.
2. Areas of transite, nonfriable coated utility conduit at locations of proposed cuts/disconnections shall be removed within commercially available glovebags and negative pressure tent enclosures. Intact lengths of conduits shall be wrapped in 2 layers of 6 mil polyethylene and sealed with duct tape.
3. Removal of non-friable tarpaper shall be performed within a scaffold or platform supported 6-mil polyethylene shroud. A single layer of 6-mil polyethylene sheeting will be provided on the walls and floor of the scaffold or platform to ensure proper ground and water protection. The contractor shall provide proper traction surfaces to ensure safety of the workers during work on the scaffold or platform. The polyethylene sheeting shall be wet wiped or HEPA-vacuumed at the end of each shift or before tear-down and movement to a new poly-shrouded work area.
4. A project monitor visual inspection, performed in accordance with ICR 56 Subpart 56-9.2 (e) (1), shall be conducted for each glovebag/tent operation and for each entire asbestos abatement regulated work area prior to tent or general work area tear down.

The additional following procedures/requirements shall apply to the removal, renovation, repair or minor painting of structural steel components having nonfriable asbestos-containing coatings:

1. All regulated work area establishment and abatement work shall be performed by NYSDOL certified handlers. Equipment operators performing steel component transfer onsite where the cab of the equipment is within the regulated work area shall possess a minimum of a Restricted Asbestos Handler Certificate. Equipment operators performing steel component transfer onsite where the cab of the equipment is outside the regulated work area and the operated equipment causes no disturbance of the asbestos-containing coating(s) shall have a minimum of documented and current 2 hour OSHA asbestos awareness training. Steel workers performing work associated with rigging steel components for transfer and onsite or transport placement shall possess a minimum of an Operations and Maintenance Certificate.
2. Prior to any steel removal, renovation, repair or painting work, coatings which are loose and susceptible to falling off during the work shall be removed from the entire work area using manual methods. Coatings shall also be removed in localized areas where work requires steel cutting, welding, etc. This shall include an approximate 12 inch removal swath, spanning the entire length of each cut or repair. For re-painting, removal areas shall include the entire area to be repainted. Any mechanical removal methods used for this localized work shall include use of HEPA shrouded tools.
3. Removal of nonfriable coated structural members shall be performed without disturbance of the coatings and all dismemberment shall be directed by a licensed asbestos abatement contractor.
4. Any onsite storage of non-friable coated steel members shall include wrapping in two (2) layers of 6 mil polyethylene and sealed with duct tape.
5. Any visible coating debris generated during the dismemberment, cutting or loading activities shall be cleaned up by the licensed asbestos abatement contractor. Earth surfaces within the removal area shall be scraped clean of any residual asbestos debris and/or contamination.
6. Personnel air samples, collected and analyzed for OSHA personal worker protection purposes, shall be collected every day during abatement activities. All results shall be included in the daily project log for the project.
7. A project monitor visual inspection, performed in accordance with ICR 56 Subpart 56-9.2 (e) (1), shall be conducted for each asbestos abatement regulated work area prior to work area tear down.
8. All loose asbestos and lead coating waste, accumulated during the steel removal activities, shall be packaged, transported and disposed of in accordance with Attachment A. - Treatment and Disposal of Asbestos and Lead-Based Coating Waste.

9. Steel members with intact lead/asbestos coatings qualify for scrap metal exclusion under 6NYCRR Part 371.1 (g)(1)(iii)(b), if recycled. For all steel beam recycling, New York State Department of Environmental Conservation (NYSDEC) notifications, required under NYCRR Part 371.1 (c)(7), shall be made and copies posted onsite prior to any steel member removal from the site.

The additional following procedures/requirements shall apply to the removal of nonfriable asbestos-containing coatings from concrete surfaces using manual or HEPA Shrouded Tools:

1. Any necessary platform and containment rigging shall involve no asbestos coating disturbance and be performed prior to establishment of the regulated work area. Platform and containment riggers shall have a minimum of 2 hours of current OSHA asbestos awareness training. All subsequent regulated work area establishment and abatement work shall be performed by NYSDOL certified handlers.
2. Polyethylene tent/poly shrouds shall be used at the active work area where masonry coatings are being removed and a single layer of 6-mil polyethylene sheeting will be provided on the walls and floor of the scaffold or platform to ensure ground and water protection. The tent/poly shroud shall be adequately supported for the duration of the abatement activities. The contractor shall also provide proper traction on poly surfaces to ensure the safety of the abatement workers while performing work on the scaffold or platform.
3. The area inside the polyethylene sheeting shall be considered to be the asbestos work area.
4. Prior to any gross removal work, masonry coatings which are loose and susceptible to falling off during the work shall be removed from the entire work area using manual methods. Gross removal shall include use of HEPA exhausted shrouded tools.
5. Personnel air samples, collected and analyzed for OSHA personal worker protection purposes, shall be collected every day during abatement activities. All results shall be included in the daily project log for the project.
6. A project monitor visual inspection, performed in accordance with ICR 56 Subpart 56-9.2 (e) (1), shall be conducted for each asbestos abatement regulated work area prior to work area tear down.
7. All asbestos waste shall be removed from the enclosure utilizing flex tubing directly to exterior enclosed containers by vacuum equipment equipped with HEPA filtration. All bulk waste material shall be suctioned into an enclosed, lined container by vacuum methods. All other waste not able to be vacuumed up and contaminated tools/equipment shall pass through the waste decontamination enclosure system.

The additional following procedures/requirements shall apply to the removal of nonfriable structural steel or masonry coatings by wet-blast method:

1. Any necessary platform and lead containment rigging shall involve no asbestos coating disturbance and be performed prior to establishment of the regulated work area. Platform and lead containment riggers shall have a minimum of documented and current 2 hour OSHA asbestos awareness training. All subsequent regulated work area establishment and abatement work shall be performed by NYSDOL certified handlers.
2. Enclosure and ventilation filtration of the asbestos work area shall conform with construction details as provided in the NYSDOT Class A Containment System For Paint Removal (See Attachment B.),
3. An internal single layer of at least 9 mil impermeable, fire-retardant sheeting will also be provided on the walls and floor of the enclosure and sealed in accordance with 56-7.11 (e). This sheeting can be cleaned and reused for multiple phases of a single project, but must be disposed of at the end of the project. Any temporary onsite storage of this sheeting between phases of the project shall be in accordance with the manufacturers recommendations.
4. The enclosure shall apply to either the above or below deck portion of the bridge, depending on where the abatement is taking place. The area inside the enclosure shall be considered to be the asbestos work area.
5. The personal and waste decontamination enclosure system(s) shall be attached to the work area unless physical restrictions prevent attachment. Any necessary remote decontamination enclosure systems shall be sited as close as practicable to the asbestos work area.
6. Coating removal methodology shall include use of pneumatically delivered blast abrasive that includes water injection. The volume of water will be controlled at the nozzle and will include a maximum percentage ratio of abrasive to water of 75:25. Percentages will be adjusted accordingly in order to eliminate any abrasive emissions inside the enclosure. All nozzle delivery technology shall be proposed by the contractor and approved by the facility owner's Project Engineer.
7. Personnel air samples, collected and analyzed for OSHA personal worker protection purposes, shall be collected every day during abatement activities. All results shall be included in the daily project log for the project.
8. A project monitor visual inspection, performed in accordance with ICR 56 Subpart 56-9.2 (e) (1), shall be conducted for each asbestos abatement regulated work area prior to work area tear down.
9. All asbestos or asbestos/lead waste shall be removed from the enclosure utilizing PVC flex tubing directly to exterior enclosed containers by vacuum equipment equipped with HEPA filtration. All bulk waste material will be suctioned into an enclosed, lined container by vacuum methods. All other waste not able to be vacuumed up and contaminated tools/equipment shall pass through the waste decontamination enclosure system.
10. All asbestos/lead waste shall be packaged, transported and disposed of in accordance with Attachment A. - Treatment and Disposal of Asbestos and Lead-Based Coating Waste.

ATTACHMENT A.

TREATMENT AND DISPOSAL OF ASBESTOS AND LEAD-BASED COATING WASTE

DESCRIPTION

The work shall consist of accumulating, packaging, labeling, loading, transporting, treating, and disposing of lead-based paint and asbestos coating waste declared to be a hazardous waste containing lead and asbestos.

Paint/Asbestos Coating Removal Waste. For purposes of this item, paint removal waste is defined as removed paint and coating materials combined with any materials used to remove the waste. The paint and asbestos coating removal waste will be referred to throughout the item text as "waste". The waste contains the following:

Asbestos Coating: Asbestos fibers, titanium dioxide, chromium oxide, yellow iron oxide, lampblack, dried tung oil, fillers, driers and other miscellaneous materials.

Paint: Lead based paint containing basic lead silica chromate, titanium dioxide, chromium dioxide, magnesium silicate, linseed oil, alkyd resin, fillers, driers, and other miscellaneous materials.

Moisture: Water added during packaging to ensure wetting of asbestos.

Testing of the typical sample indicates asbestos fibers at approximately 10-20% by weight, thereby requiring handling and disposal as an asbestos containing material and adherence to 40 CFR Part 61. Also, based on testing of a typical waste sample by the Toxicity Characteristic Leaching Procedure (TCLP), the waste is considered a lead characteristic hazardous waste of EPA waste code number, D008. Although chromium is present in the waste, the results of the TCLP procedure indicated concentrations of chromium well below TCLP criteria for hazardous waste due to chromium. TCLP semi-volatiles and non-volatiles were all non-detectable. The analysis results are attached.

The waste is a DOT Hazardous Material; proper shipping description is as follows: Hazardous waste, solid, n.o.s., 9, NA3077, PG III, RQ (D008, Asbestos). *Note: The RQ (reportable quantity) description is required for any containers containing more than the reportable quantity of 10 pounds listed on the hazardous substance list for hazardous waste code D008.*

The waste does not contain PCB's, pesticides, cyanides, or greater than 1000 ppm halogenated organic compounds. The waste is not a RCRA reactive, corrosive or ignitable, or a source-listed or chemical product-listed waste. It is not radiological or etiological.

The waste shall be handled and disposed of following all of the requirements for both a RCRA hazardous waste of code D008 and an asbestos containing waste. All testing of the waste necessary to satisfy the requirements of the chosen Disposal Facility or Transporter shall be the responsibility of the Contractor.

Hazardous Waste Disposal Facility. Prior to generating any waste, the Contractor shall supply the Engineer with a letter from a legally permitted Hazardous Waste Disposal Facility, stating that the facility has agreed to accept the waste, containing both lead and asbestos, generated by the work requirements of this project; is authorized to accept the waste under the requirements of the State of residence; has the required capacity to treat and dispose of the material; and will provide, or assure the ultimate disposal method indicated on the Uniform Hazardous Waste Manifest and Asbestos Waste Shipping Record. The letter shall be signed by a representative of the Disposal Facility who is legally authorized to sign such an agreement. The Engineer shall be given the original signed letter; facsimile copies will not be acceptable.

Waste Transport. All waste resulting from paint/coating removal operations shall be in transit to the disposal site no later than 45 calendar days subsequent to 1000 kilograms of waste accumulated at the site, or two weeks following demobilization of the site, whichever occurs first.

**- TREATMENT AND DISPOSAL OF ASBESTOS AND LEAD-BASED
COATING WASTE**

Waste shall be accumulated, handled, packaged, loaded, transported, treated and disposed in accordance with all applicable Federal, State and local laws, rules, regulations, and codes. The Contractor's failure to comply with the aforementioned deadlines may result in actions described under Basis of Payment of this item.

Waste Transporter. Waste shall be transported by only permitted waste transporters holding current 6NYCRR Part 364 Waste Transporter Permits for transport of hazardous or industrial wastes to the selected facility. The Contractor must show evidence that they or their contracted hauler have current permits to remove the waste to the selected facility.

Minimum Work Requirements. The Contractor is hereby notified that this work requires the following as a minimum:

- A. Waste transporter identification number issued by USEPA.
- B. Disposal facility identification number issued by USEPA. (This will be supplied by the disposal facility).
- C. Generator site identification number issued by USEPA. (This will be supplied by the Department through the Engineer).
- D. Conformance to 6NYCRR364. Part 364 governs waste transporters. The Contractor shall furnish a copy of the Part 364 permit to the Engineer.
- E. Conformance to 6NYCRR372. Part 372 governs manifest requirements.
- F. Conformance to 6NYCRR373. Part 373 governs treatment, storage and disposal facilities and contains specific generator requirements.
- G. Conformance to 40 CFR 268. Part 268 includes the Federal prohibitions for land disposal of untreated hazardous wastes. The disposal facilities must first treat the waste to meet uniform treatment standards.
- H. Conformance to 40 CFR 61. Part 61 includes asbestos waste shipment records, marking, labeling, packaging and disposal requirements.
- I. Conformance to 49 CFR 172-173. Parts 172-173 govern the transportation of hazardous materials.
- J. Conformance to 12NYCRR56 or approved variance for the project. Part 56 governs asbestos handling requirements.

NOTE: 6NYCRR regulations are administered by the N.Y.S. Department of Environmental Conservation, Albany, NY. 12NYCRR regulations are administered by the N.Y.S. Department of Labor. Title 40 of the Code of Federal Regulations (CFR) are administered by the US Environmental Protection Agency, Region II, N.Y., N.Y. Title 49 of the CFR is administered by the US Dept of Transportation, Washington, D.C.

MATERIALS

Waste containerization and onsite storage shall comply with the requirements of 12NYCRR56 and/or approved asbestos variances for the project as applicable and by the applicable sections of 6NYCRR Parts 372 and 373 for on site accumulation of hazardous wastes. The Contractor shall supply all containers, equipment and supplies for storage and disposal. Off-site transport of the wastes shall be in double-bagged 150 micron polyethylene bags that are placed within USDOT approved drums or rollofs. The Contractor shall furnish the Engineer with a signed statement from the Disposal Facility that the containers proposed for use by the Contractor are acceptable to the Facility. All equipment and containers or rollofs must meet the requirements for transport of both asbestos and hazardous wastes and shall be approved by the Engineer prior to use. The dry volume capacity of the containers, in cubic meters, shall be clearly marked upon each container, in a location easily readable by the Engineer.

- TREATMENT AND DISPOSAL OF ASBESTOS AND LEAD-BASED

COATING WASTE

CONSTRUCTION DETAILS

Containers. All generated waste shall be collected and sealed concurrent with generation. Containerization shall be double-bagged within two 150 micron polyethylene bags placed within containers or rollofs that meets the requirements of 49 CFR 172-173 for transport on public roadways. Measures must be taken to prevent the blowing or dispersion of the waste during loading operations and while being transported. Drums and rollofs shall be closed during storage and transport. Contractor shall inspect drums and rollofs in storage, correct any deterioration, and document at least weekly inspection. No waste shall be left exposed to the elements at the end of the working day.

All containers and rollofs shall be located in a place secured from traffic and in a manner acceptable to the Engineer.

Each containers and rollofts shall be labeled in accordance with US Department of Transportation regulations.

Each container or rolloff shall be permanently labeled as a hazardous waste in the following manner:

HAZARDOUS WASTE: Federal law prohibits improper disposal. If found, contact the nearest police, or public safety authority, or the US Environmental Protection Agency.

Generator's Name: NYSDOT

Manifest Document No

Date:

BIN:

Note: The date shall be the generation date. It shall be entered by the Engineer using permanent marking material supplied by the Contractor.

In addition, containers shall be permanently labeled as an asbestos dust hazard as required by 40 CFR Part 61.

Labeling. All labeling, marking (except mark date), and placarding shall be the responsibility of the Contractor and shall be done under the supervision of the Engineer. This work shall be completed to the Engineer's satisfaction prior to the filling or transportation of any particular container or rolloff. All label markings shall be permanent, printed in English, displayed on a background of contrasting color unobscured by other labels, or attachments. Labeling shall be located away from other markings that could substantially reduce its effectiveness.

Document Preparation. All document preparation and distribution, including any Uniform Hazardous Waste Manifests, Asbestos Waste Shipment Records, Land Disposal Restriction Notifications, and Shipping Emergency Response Information shall be the responsibility of the Contractor. The Engineer will sign the Generator's Certification on the Hazardous Waste Manifest. The LDR (Land Disposal Restricted) certifications shall be completed and attached to the manifest, as required by 40 CFR

COATING WASTE **- TREATMENT AND DISPOSAL OF ASBESTOS AND LEAD-BASED**

Part 268 "Land Disposal Restrictions". All waste shall be documented, transported, treated, and disposed as required by Federal, State, and local laws, regulations, and codes.

Multiple Collection. It is permissible for the transporting vehicle to pick up containerized paint waste debris from one or more bridge sites for delivery to an authorized treatment, storage and disposal facility (TSDF) if the following conditions are met:

1. The materials picked up at each site must be essentially identical in physical and chemical characteristics. No materials other than the NYSDOT paint and asbestos coating waste debris may be included if wastes from several individual sites are combined on the same vehicle.
2. All of the component shipment are presumed to be both a D008 hazardous waste and an asbestos waste and shall be disposed of as such.
3. A hazardous waste manifest and asbestos waste shipment record are prepared for each generating bridge site. Each manifest and record must reflect the quantity in cubic meters shipped from each bridge. In sum total, the manifests and records accompanying the shipment must account for the entire volume transported.
4. All component shipments are intended to be conveyed to the same TSDF, and the TSDF has agreed to accept the consolidated load.

Paint and Asbestos Coating Waste Stabilization.

For the purposes of this item, treatment of the lead in paint/coating waste as required by the Federal land disposal restriction regulations (40 CFR 268) is presumed to require stabilization of the waste such as mixing it with Portland cement and water as necessary at the permitted hazardous waste Treatment or Disposal facility. The stabilized waste shall meet the uniform treatment standards prior to disposal in a permitted hazardous waste landfill.

COATING WASTE**- TREATMENT AND DISPOSAL OF ASBESTOS AND LEAD-BASED**

If the Department is fined or penalized as a result of the Contractor's performance or lack thereof on this item, in addition to other remedies the Department may possess, said fine or penalty will be deducted from monies due the Contractor.

The extent of the Contractor's compliance with the provisions under timeliness of disposal will be considered as relevant in any future determination of an award to the Contractor as the lowest responsible bidder for any project under the supervision of the Department.

ATTACHMENT B.

visible discharge the Contractor shall immediately stop work and perform necessary repairs to the containment enclosure or modifications to cleaning operations to the Engineer's satisfaction.

The Engineer may direct the Contractor to stop all work activities and immediately clean up all waste materials within the enclosure when threatening weather conditions exist or are predicted. This measure may be exercised when an apparent threat exists that could cause the release of waste material to the surrounding environment, such as high winds or heavy rain.

If the wind velocity causes the containment enclosure to billow, or to emit dust, or to otherwise be a hazard in the opinion of the Engineer, the Contractor shall immediately cease work and clean up all the debris. Under severe conditions the Contractor shall disassemble the containment enclosure.

G. Releases From the Containment. For structures that are located over or adjacent to water, if floating waste materials form on the water surface, they shall be contained from moving upstream or downstream by the use of floating water booms. Floating waste material shall be collected daily, or more frequently.

Any waste material that is released outside the containment enclosure shall be immediately cleaned up using vacuums. Care shall be taken on pavement and other surfaces to collect all waste material so as to prevent it from being redistributed into the air and environment by traffic or other means.

All used filters from dust collectors, vacuums, and straw and screening from dam devices, shall be disposed of in accordance with all applicable Local, State, and Federal Laws, regulations and codes. The cost for disposing of these materials shall be included in the lump sum price bid for this item.

570-3.08 Class A Containment. Fifteen (15) days prior to the start of any abrasive-blast cleaning or paint removal work, the Contractor shall submit for approval detailed working drawing(s) of the Class A containment system that is to be supplied for each structure. The drawings shall be prepared and stamped by a Professional Engineer. Six (6) complete copies of the working drawings shall be submitted for approval.

The working drawings shall detail the proposed containment enclosure and include the following information at a minimum:

- Plan and elevation of the containment enclosure in relation to the structure.
- The type of solid or rigid floor and working platform with appropriate safety and fall protection measures. A description of worker access to the enclosure and the procedures and equipment that will be used to provide fall-protection. If a barge or another type of floating platform is used, include details regarding its construction, such as materials and dimensions, how the platform will be tied-off, how the debris will be collected and off-loaded, etc.
- A description of how the existing drainage will be routed through the enclosure.
- A description of the type of material(s) for the containment walls, floor, and ceiling.
- The type of support structure that will be used for the floor, walls, and ceiling, including the attachment of the enclosure materials to the support structure.
- The method by which the enclosure will be supported or attached to the bridge, i.e., rollers, clamps. Welding, bolting, or similar connections will not be allowed.
- The method that will be used to seal the joints (seams) formed when fabricating the containment enclosure, and the method that will be used to seal the mating joints between the containment enclosure and the bridge structure.
- The method that will be used to seal the entryway. At a minimum, the use of multiple overlapping door tarps shall be provided to minimize dust escape through the entryway.
- The ventilation system including open-air make-up points, dust collector and exhaust fan(s), location, type of equipment, manufacturer's data sheets, and airflow capacities.
- The type, size, and configuration of auxiliary lighting provided inside the containment enclosure. All lighting must be explosion proof.
- A design analysis of the loads on the structure due to the containment enclosure including: maximum dead and live loads of the enclosure, the workers, blast abrasive, and equipment; maximum allowable load for the floor and working platform; wind loads imposed on the structure by the enclosure; and maximum wind velocity that the containment enclosure is designed to withstand.

- If the containment system is supported by the structure, the working drawing submittal shall include certification by the Professional Engineer that the loads imposed do not cause the overall stress level of any element of the bridge to exceed the Operating Rating Allowable Stresses defined in AASHTO Manual for Maintenance Inspection of Bridges.
- The analysis shall account for all loads on the structure, including the enclosure dead load, worker live load, blast-abrasive load, equipment load, wind load, structure dead load, and highway live load using H20 loading unless other-wise specified plus impact. The highway live load used for analysis purposes shall be either an HS20 truck or equivalent lane loading, whichever is greater, unless a different highway live load is shown in the contract documents. Except as noted, the analysis shall use the loadings and design assumptions in the NYSDOT Standard Specifications for Highway Bridges.
- Details on how the enclosure is assembled, disassembled and moved to a new location on the structure as surface preparation work progresses. Indicate how the dust collector will be included in the containment enclosure. All other pertinent details relating to the containment enclosure shall be included with the working drawings as notes or as written narrative.
- Details on how the use of the enclosure will be coordinated with the maintenance and protection of traffic. Encroachments onto roadways and clearances over waterways and railroads shall be clearly identified.

A. General. The containment system includes the cover panels, screens, tarps, scaffolds, supports, and shrouds used to enclose an entire work area. The purpose of the containment is to prevent all debris generated during surface preparation from entering the environment and to facilitate the controlled collection of the debris for disposal.

The containment shall meet the requirements of SSPC-Guide 6, Class 1A. The containment shall have air impenetrable-walls, rigid or flexible framing, fully sealed joints, and resealable entry ways. Negative air shall be achieved by forced air flow. Exhaust air shall be filtered.

Flexible covers for flooring shall be impermeable and will be allowed only if the ground or paved surfaces are smooth enough to vacuum debris. If a smooth surface is not available, rigid materials shall be used for the floor of the enclosure.

B. Containment Operations. All abrasive-blast cleaning and paint removal work, and all work associated with the collection of paint waste debris, including the subsequent air blow-down or vacuuming of debris from the steel surfaces on the structure in preparation for painting and inspection, shall be performed inside the containment enclosure.

The Contractor shall attempt to limit workers from entering or exiting the containment enclosure when blast cleaning and paint removal operations are being performed.

C. Waste Collection. All waste material that results from abrasive blasting and paint removal operations shall be cleaned up and collected from the floor, walls, and other surfaces inside of the containment enclosure by vacuuming. Sweeping, shoveling, or other mechanical means to remove the waste materials will not be allowed unless the containment is intact and the vacuuming system is operating. Clean up operations shall be performed daily, prior to inspection, before new paint is applied or before a prolonged work stoppage, such as for weather interruptions.

Prior to disassembly or moving of the paint enclosure, the inside surfaces of the enclosure (walls, floors, ceiling, etc.) shall be cleaned of dust and other spent material by vacuuming. The Contractor shall take all measures necessary to prevent the release of waste material during moving or removal of the containment.

All vacuum equipment that is used for collection and cleanup work shall be equipped with HEPA filters. All used filters from dust collectors, vacuums, and straw and screening from dam devices, shall be disposed of in accordance with all applicable local, State, and Federal Laws, regulations, and codes. The cost for disposing of these materials shall be included in the lump sum price bid for this item.

D. Ventilation. The size of the exhaust-fan system supplied shall be designed to produce an average minimum cross-draft air velocity or an average minimum downdraft air velocity inside the containment enclosure. For enclosures designed with horizontal air flow, the exhaust fan shall have

the capacity to produce an average minimum cross-draft velocity of 100 fpm, based on theoretical calculations. For enclosures designed with vertical air flow, the exhaust fan shall have the capacity to produce an average minimum downdraft velocity of 50 fpm, based on theoretical calculations. Forced exhaust air shall flow into dust collectors. The dust collectors shall be used and appropriately sized for the type, size of particulate matter, volume, and velocity of air moved through the containment. All air exhausted from the containment enclosure shall pass through the dust collection system.

Proper operation of the ventilation system shall be maintained after each assembly of the containment and during all phases of work.

E. Lighting. Light intensity by natural or artificial means inside the containment enclosure shall be maintained at a minimum of 50 foot-candles on the steel surface. During inspection activities, light shall be maintained at a minimum of 100 foot-candles. Auxiliary lighting shall be provided as necessary. The Contractor shall provide the Engineer with one portable light meter with a scale of 0 to 100 foot-candles. This meter will be returned to the Contractor at the completion of work. All lighting used in the containment shall be explosion-proof.

F. Containment Performance. NYSDOT will perform air quality monitoring (AQM) for ambient particulate and lead during abrasive blasting/cleanup. Real-time AQM will be used for all Class A containments. High-volume AQM may be used in addition to real-time AQM. The effectiveness of the containment and accessory equipment in preventing unacceptable levels of particulate and lead emissions will be assessed based on established AQM criteria for both the real-time and high-volume monitoring. Throughout the duration of work, there shall be no visible discharges. If the Engineer observes a visible discharge, the Contractor shall immediately stop work and perform necessary repairs to the containment enclosure or modifications to blast cleaning operations to the Engineer's satisfaction.

The Engineer may direct the Contractor to stop all work activities and require the Contractor to immediately clean up all waste materials within the enclosure when severe weather conditions exist or are predicted. This measure may be exercised when an apparent threat exists that could cause the release of waste material to the surrounding environment, such as high winds or heavy rain.

If the wind velocity causes the containment enclosure to billow or to emit dust, or to otherwise be a hazard in the opinion of the Engineer, the Contractor shall immediately cease work and cleanup all the debris. If severe conditions are predicted, the Contractor shall disassemble the containment enclosure.

G. Releases From the Containment. For structures that are located over or adjacent to water, if floating waste materials form on the water surface, they shall be contained from moving upstream or downstream by the use of floating water booms. Floating waste material shall be collected daily, or more frequently.

Any waste material that is released outside the containment enclosure shall be immediately cleaned up using vacuums. Care shall be taken on pavement and other surfaces to collect all waste material so as to prevent it from being redistributed into the air and environment by traffic or other means.

All used filters from dust collectors, vacuums, and straw and screening from dam devices, shall be disposed of in accordance with all applicable Local, State, and Federal Laws, regulations and codes. The cost for disposing of these materials shall be included in the lump sum price bid for this item.

570-4 METHOD OF MEASUREMENT.

570-4.01 Lead-Exposure Control Plan (LECP). The work under the Lead Exposure Control Plan will be measured for payment on a lump sum basis.

570-4.02 Medical Testing. The work under medical testing will be measured for payment on a dollars-cents basis.

APPENDIX J

NYSDOT Removal Item Numbers

SECTION 210 - REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING MATERIAL (BUILDINGS, BRIDGES AND HIGHWAYS)

210-1 DESCRIPTION. This work shall consist of removal and disposal of asbestos- containing material (ACM) from locations designated in the Contract Documents and/or where directed by the Engineer. Additional contract-specific requirements may be found on the plans or in the proposal in a Special Note entitled "Asbestos Remediation Supplemental Requirements."

210-2 MATERIALS. All materials used in the performance of the work shall comply with all applicable regulatory standards. Respirators and filters shall comply with NIOSH and MSHA standards. HEPA filtration systems shall comply with ANSI Z9.2-79.

210-3 CONSTRUCTION DETAILS. Prior to beginning any work under this item, the Contractor shall supply the Engineer with proof that the firm performing the work has a valid asbestos handling license; that its insurance coverage whether provided by the Contractor or the Asbestos Subcontractor, is consistent with §107-06 Insurance and includes an asbestos-specific, occurrence-type policy with no deductible or sunset clause; that its project supervisor is a NYSDOL certified asbestos project supervisor; that all employees engaged in the work are properly certified and have current physical examinations and respirator fit tests; and that the proper notification of work beginning on the asbestos project has been given to the New York State Department of Labor (NYSDOL) and the United States Environmental Protection Agency (USEPA). The Contractor shall schedule a coordination meeting between the Asbestos Subcontractor and the Department contracted Asbestos Project Monitor to be held at least two (2) weeks before the start of any asbestos abatement work. The meeting shall be held at the Engineer's Field Office unless otherwise approved by the Engineer.

The Contractor shall remove and dispose of ACMs in accordance with 12 NYCRR 56 or, if indicated, an approved variance thereof promulgated by the New York State Department of Labor (NYSDOL); the National Emission Standards for Hazardous Air Pollutants (NESHAP), promulgated by the United States Environmental Protection Agency (USEPA); and the Occupational Safety and Health Administration (OSHA). In the event of a conflict between these specification requirements and laws, rules and regulations of Federal, State, or local agencies, the more restrictive shall apply.

ACM shall be disposed of in accordance with 40 CFR Part 61 and all other requirements and laws, rules, and regulations of applicable Federal, State, or local agencies. Disposal sites which accept ACM for disposal shall be permitted by the New York State Department of Environmental Conservation (NYSDEC). If disposed of out-of-state, the rules, regulations, and laws of that state shall apply.

After the work is completed, the Contractor shall provide the Engineer with two copies of Daily Logs, Visitor Logs, Final Visual Inspection Logs and OSHA Air Monitoring records. The Contractor shall also provide the Engineer with a written certification that the material was disposed of in an approved waste disposal site. For friable waste this certification shall be in the form of a Waste Shipment Record. For non-friable waste this certification shall include the name and address of the waste disposal site or sites used.

210-4 METHOD OF MEASUREMENT. The quantity of ACM to be measured for payment will be determined by one of the following methods:

210-4.01 Square Foot. The quantity to be measured will be the area, measured to the nearest 0.1 square foot, of asbestos-containing material removed and disposed of.

210-4.02 Foot. The quantity to be measured will be the length, measured to the nearest 0.1 foot, of asbestos-containing material removed and disposed of.

210-4.03 Lump Sum. The quantity will be measured for payment on a lump sum basis.

210-4.04 Fixed Price Lump Sum. The lump sum shown in the itemized proposal for this item will be considered the price bid even though payment will be made for the work performed. Should the amount shown be altered, the altered figures will be disregarded and the original price will be used to determine the total contract bid amount. Payments will be based on one or both of the following:

A. Agreed Price. An Agreed Price will be based on a cost analysis submitted by the Contractor and agreed to by the State prior to performing the work. The submittal shall include a detailed estimate from the licensed asbestos removal contractor for the cost of the removal and disposal.

B. Force Account. A separate Force Account will be maintained for the total asbestos removal work performed on each building, structure, or highway included in the work.

210-5 BASIS OF PAYMENT. Payment for the work under this specification shall include all labor, materials, equipment, and asbestos-related fees and insurances necessary to satisfactorily complete the work.

Payment shall not include maintenance and protection of traffic devices outside the regulated asbestos work area.

210-5.01 Square Foot, Foot, or Lump Sum Bid Items. Payment for 75% of the completed quantity will be made upon the Project Monitor's written concurrence with the Contractor's certification as to the following: that the building, structure, and/or highway is visually free of asbestos; that the removal of the asbestos containing material was performed as required; that the final clearance air monitoring results meet the acceptable level specified in 12 NYCRR 56; and, that the building(s), bridge(s), and/or highway(s) are certified by the asbestos Contractor to be available for normal demolition.

The remainder of the payment for completed work will be made upon receipt by the Engineer of a certified statement from the disposal facility, signed by an official thereof, that the asbestos-containing material has been accepted and disposed of in accordance with all applicable laws, codes, rules, and regulations.

210-5.02 Fixed Price Lump Sum. The fixed price lump sum published in the proposal is an amount estimated by the State to be adequate to complete the work. Payments under this work will be made by Force Account or by Agreed Price, or by a combination thereof.

Payment for 75% of the Agreed Price or Force Account charges will be made upon the Project Monitor's written concurrence with the Contractor's certification that the building, structure, and/or highway is visually free of asbestos; the removal of the asbestos containing material was performed as required; that the final clearance air monitoring results meet the acceptable level specified in 12 NYCRR 56; and, that the building(s), bridge(s), and/or highway(s) are certified by the asbestos Contractor to be available for subsequent demolition and/or construction.

The remainder of the payment for completed work will be made upon receipt by the Engineer of a written certification that the ACM was disposed of in an approved waste disposal site.

Asbestos-specific insurance premiums will be reimbursed as the actual and identifiable cost of the portion of the premium attributable to the work performed under the Fixed Price Lump Sum Item. No overhead or profit will be allowed on asbestos specific insurance premiums.

Payment will be made under:

Item No.	Item	Pay Unit
Roofing (Buildings)		
210.1002	Removal and Disposal of Roofing ACM	Square Foot
210.1003	Removal and Disposal of Roofing ACM	Lump Sum
210.1004	Removal and Disposal of Roofing ACM	Fixed Price Lump Sum
Siding (Buildings)		
210.1102	Removal and Disposal of Siding ACM	Square Foot
210.1103	Removal and Disposal of Siding ACM	Lump Sum
210.1104	Removal and Disposal of Siding ACM	Fixed Price Lump Sum
Window Caulking and/or Glazing (Buildings)		
210.1201	Removal and Disposal of Caulk/Glazing ACM	Foot
210.1203	Removal and Disposal of Caulk/Glazing ACM	Lump Sum
210.1204	Removal and Disposal of Caulk/Glazing ACM	Fixed Price Lump Sum
Flooring/Mastic (Buildings)		
210.1302	Removal and Disposal of Flooring/Mastic ACM	Square Foot
210.1303	Removal and Disposal of Flooring/Mastic ACM	Lump Sum
210.1304	Removal and Disposal of Flooring/Mastic ACM	Fixed Price Lump Sum
Ceilings (Buildings)		
210.1402	Removal and Disposal of Ceiling ACM	Square Foot
210.1403	Removal and Disposal of Ceiling ACM	Lump Sum
210.1404	Removal and Disposal of Ceiling ACM	Fixed Price Lump Sum
Thermal System Insulation (Buildings)		
210.1501	Removal and Disposal of Thermal System Insulation ACM	Foot
210.1502	Removal and Disposal of Thermal System Insulation ACM	Square Foot
210.1503	Removal and Disposal of Thermal System Insulation ACM	Lump Sum
210.1504	Removal and Disposal of Thermal System Insulation ACM	Fixed Price Lump Sum
Miscellaneous (Buildings)		
210.2901XX	Removal and Disposal of Miscellaneous ACM	Foot
210.2902XX	Removal and Disposal of Miscellaneous ACM	Square Foot

210.2903XX	Removal and Disposal of Miscellaneous ACM	Lump Sum
210.2904XX	Removal and Disposal of Miscellaneous ACM	Fixed Price Lump Sum

Concrete Encased Pipe (Bridges & Highways)

210.3001	Removal and Disposal of Concrete-Encased Pipe ACM	Foot
210.3003	Removal and Disposal of Concrete-Encased Pipe ACM	Lump Sum
210.3004	Removal and Disposal of Concrete-Encased Pipe ACM	Fixed Price Lump Sum
210.3011	Removal and Disposal of Concrete-Encased Pipe ACM (BV14)	Foot
210.3013	Removal and Disposal of Concrete-Encased Pipe ACM (BV14)	Lump Sum
210.3014	Removal and Disposal of Concrete-Encased Pipe ACM (BV14)	Fixed Price Lump Sum

Underground Pipe (Bridges & Highways)

210.3101	Removal and Disposal of Underground Pipe ACM	Foot
210.3103	Removal and Disposal of Underground Pipe ACM	Lump Sum
210.3104	Removal and Disposal of Underground Pipe ACM	Fixed Price Lump Sum
210.3111	Removal and Disposal of Underground Pipe ACM (BV14)	Foot
210.3113	Removal and Disposal of Underground Pipe ACM (BV14)	Lump Sum
210.3114	Removal and Disposal of Underground Pipe ACM (BV14)	Fixed Price Lump Sum

Suspended Pipe (Bridges & Highways)

210.3201	Removal and Disposal of Suspended Pipe ACM	Foot
210.3203	Removal and Disposal of Suspended Pipe ACM	Lump Sum
210.3204	Removal and Disposal of Suspended Pipe ACM	Fixed Price Lump Sum
210.3211	Removal and Disposal of Suspended Pipe ACM (BV14)	Foot
210.3213	Removal and Disposal of Suspended Pipe ACM (BV14)	Lump Sum
210.3214	Removal and Disposal of Suspended Pipe ACM (BV14)	Fixed Price Lump Sum

Bond Breaker/Filler (Bridges & Highways)

210.3302	Removal and Disposal of Bond Breaker/Filler ACM	Square Foot
210.3303	Removal and Disposal of Bond Breaker/Filler ACM	Lump Sum
210.3304	Removal and Disposal of Bond Breaker/Filler ACM	Fixed Price Lump Sum
210.3312	Removal and Disposal of Bond Breaker/Filler ACM (BV14)	Square Foot
210.3313	Removal and Disposal of Bond Breaker/Filler ACM (BV14)	Lump Sum
210.3314	Removal and Disposal of Bond Breaker/Filler ACM (BV14)	Fixed Price Lump Sum

Caulking (Bridges & Highways)

210.3401	Removal and Disposal of Caulking ACM	Foot
210.3403	Removal and Disposal of Caulking ACM	Lump Sum
210.3404	Removal and Disposal of Caulking ACM	Fixed Price Lump Sum
210.3411	Removal and Disposal of Caulking ACM (BV14)	Foot
210.3413	Removal and Disposal of Caulking ACM (BV14)	Lump Sum
210.3414	Removal and Disposal of Caulking ACM (BV14)	Fixed Price Lump Sum

Miscellaneous (Bridges & Highways)

210.4801XX	Removal and Disposal of Miscellaneous ACM	Foot
210.4802XX	Removal and Disposal of Miscellaneous ACM	Square Foot
210.4803XX	Removal and Disposal of Miscellaneous ACM	Lump Sum
210.4804XX	Removal and Disposal of Miscellaneous ACM	Fixed Price Lump Sum
210.4811XX	Removal and Disposal of Miscellaneous ACM (BV14)	Foot
210.4812XX	Removal and Disposal of Miscellaneous ACM (BV14)	Square Foot
210.4813XX	Removal and Disposal of Miscellaneous ACM (BV14)	Lump Sum
210.4814XX	Removal and Disposal of Miscellaneous ACM (BV14)	Fixed Price Lump Sum

Item Number Codes

210.xxyzXX

where xx equals Category

10-28 Buildings, 29 Miscellaneous (Buildings)

30-47 Bridges and Highways, 48 Miscellaneous (Bridges and Highways)

where y equals BV

1-9 In order of listing within the category, 0 No BV

where z equals Payment Method

1=Foot, 2=Square Foot, 3=Lump Sum, 4=Fixed Price Lump Sum

where XX denotes serialization (applicable to only miscellaneous items)