

**AGREEMENT**  
**BETWEEN**  
**THE CITY OF ANN ARBOR**  
**AND**  
**THE WASHTENAW COUNTY ROAD COMMISSION**  
**REGARDING THE**  
**EAST HURON RIVER DRIVE BRIDGE OVER PITTSFIELD-ANN ARBOR DRAIN**  
**REHABILITATION PROJECT**

This Agreement ("Agreement") is made and entered into this 17<sup>th</sup> day of February, 2017, by and between the Washtenaw County Road Commission, a Michigan public corporation, hereinafter referred to as "WCRC", and the City of Ann Arbor, a Michigan municipal corporation, hereinafter referred to as "City", for the purpose of fixing the rights and obligations of the parties relative to the East Huron River Drive Bridge over Pittsfield-Ann Arbor Drain (Malletts Creek) Rehabilitation Project. The project is hereinafter referred to as the "Project." A cost estimate with relevant details for a component of the Project is set forth on Exhibit A, which is attached hereto and incorporated herein by reference.

Whereas, the WCRC is undertaking a rehabilitation project on the bridge which carries East Huron River Drive over Pittsfield-Ann Arbor Drain (Malletts Creek);

Whereas, the City owns two sanitary sewers which are supported by the bridge beams under the bridge deck;

Whereas, the City owned sanitary sewer supports under the bridge are in need of rehabilitation;

Whereas, the City and the WCRC have reached an understanding with each other regarding the payment for the Project and desire to enter into this Agreement to establish the rights and responsibilities of the WCRC and the City relative to the Project.

Therefore, in consideration of the premises and of the mutual undertakings of the parties and in conformity with applicable law, the City and the WCRC agree:

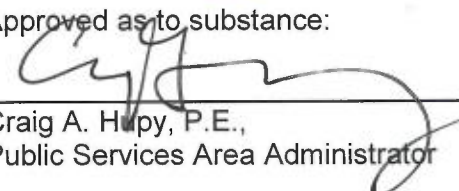
1. The WCRC shall undertake and complete the Project in accordance with the terms of this Agreement.
2. The WCRC and/or contractors retained by the WCRC through the Michigan Department of Transportation (MDOT) will perform the rehabilitation work on the sanitary sewer supports as indicated in Exhibit A.
3. The City will fund all costs associated with the sanitary sewer supports rehabilitation work which are estimated, but not guaranteed at \$20,000 as set forth in Exhibit A.

4. Notwithstanding the City's funding of the sanitary sewer support work, the parties agree that responsibility for managing the construction and overseeing the work rests with the WCRC.
5. Each of the persons signing this Agreement represents and warrants that he or she has authority to sign this Agreement on behalf of the WCRC or the City, respectively.

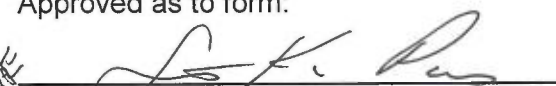
CITY OF ANN ARBOR,  
a Michigan municipal corporation

By:   
Howard S. Lazarus, City Administrator

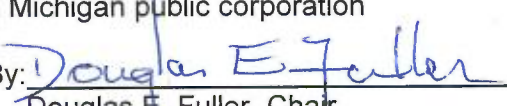
Approved as to substance:

  
Craig A. Hupy, P.E.,  
Public Services Area Administrator

Approved as to form:

  
Stephen K. Postema, City Attorney

WASHTENAW COUNTY  
ROAD COMMISSION,  
a Michigan public corporation

By:   
Douglas E. Fuller, Chair

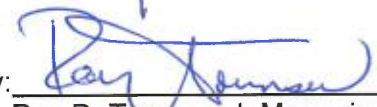
By:   
Roy D. Townsend, Managing Director

EXHIBIT A

| Category | Item Number  | Item Description                     | Item Units | Breakdown Item Quantity | Estimated Unit Price | Extended Amount | Supp. Desc. require | Supplemental Description             | Supplemental Description Part Two | Quantity  | Item Line No. | Item Line Method |
|----------|--------------|--------------------------------------|------------|-------------------------|----------------------|-----------------|---------------------|--------------------------------------|-----------------------------------|-----------|---------------|------------------|
| 0002     | SN1097130010 | Beam Plate, Seal Perimeter           | FT         | 320.000                 | 3.00000              | 960.000         |                     |                                      |                                   | 320.000   | 0003          | 0015             |
| 0002     | SN1097150047 | Steel Str, Cleaning, Partial, Type 4 | LS         | 1.000                   | 7,500.00000          | 7,500.000       |                     | (SN: 10975)                          |                                   | 1.000     | 0004          | 0020             |
| 0002     | SN1097150048 | Steel Str, Coating, Partial, Type 4  | LS         | 1.000                   | 5,000.00000          | 5,000.000       |                     | (SN: 10975)                          |                                   | 1.000     | 0001          | 0025             |
| 0002     | SN1098507060 |                                      | DLR        | 5,000.000               | 1.00000              | 5,000.000       |                     | Asbestos Materials, Rem and Disposal |                                   | 5,000.000 | 0005          | 0030             |
| 0002     | SN1097127051 |                                      | LS         | 1.000                   | 1,000.00000          | 1,000.000       |                     | Bridge Cleaning (SN: 10975)          |                                   | 1.000     | 0002          | 0010             |

19,460.000

**JOB NO. 126686A**

**MISC QUANTITIES**

LS Bridge Cleaning (Sfr. 10975) and Disposal  
 LK Address Labels, Sign, and Pole  
 L Steel Structure, Cleaning, Type 4 (Sanitary Sewer)  
 L Steel Structure, Coating, Type 4 (Sanitary Sewer)

**JOB NO. 126686A**

TWO 4" TIE RODS MUST BE INSTALLED IN THE SOUTH FACE OF EACH BAY WHICH ARE HUNG FROM THE DECK (NOT SHOWN HERE)

**JOB NO. 126686A**

SANITARY SEWER LOCATIONS SHOWN ARE NOT AS SHOWN ON THE ORIGINAL CONTRACTS AND ARE SHIFTED 1 BAY TO THE SOUTH.

**JOB NO. 126686A**

NOTE: BRAN CONNECTIONS HAVE PREVIOUSLY BEEN REPAIRED.

**JOB NO. 126686A**

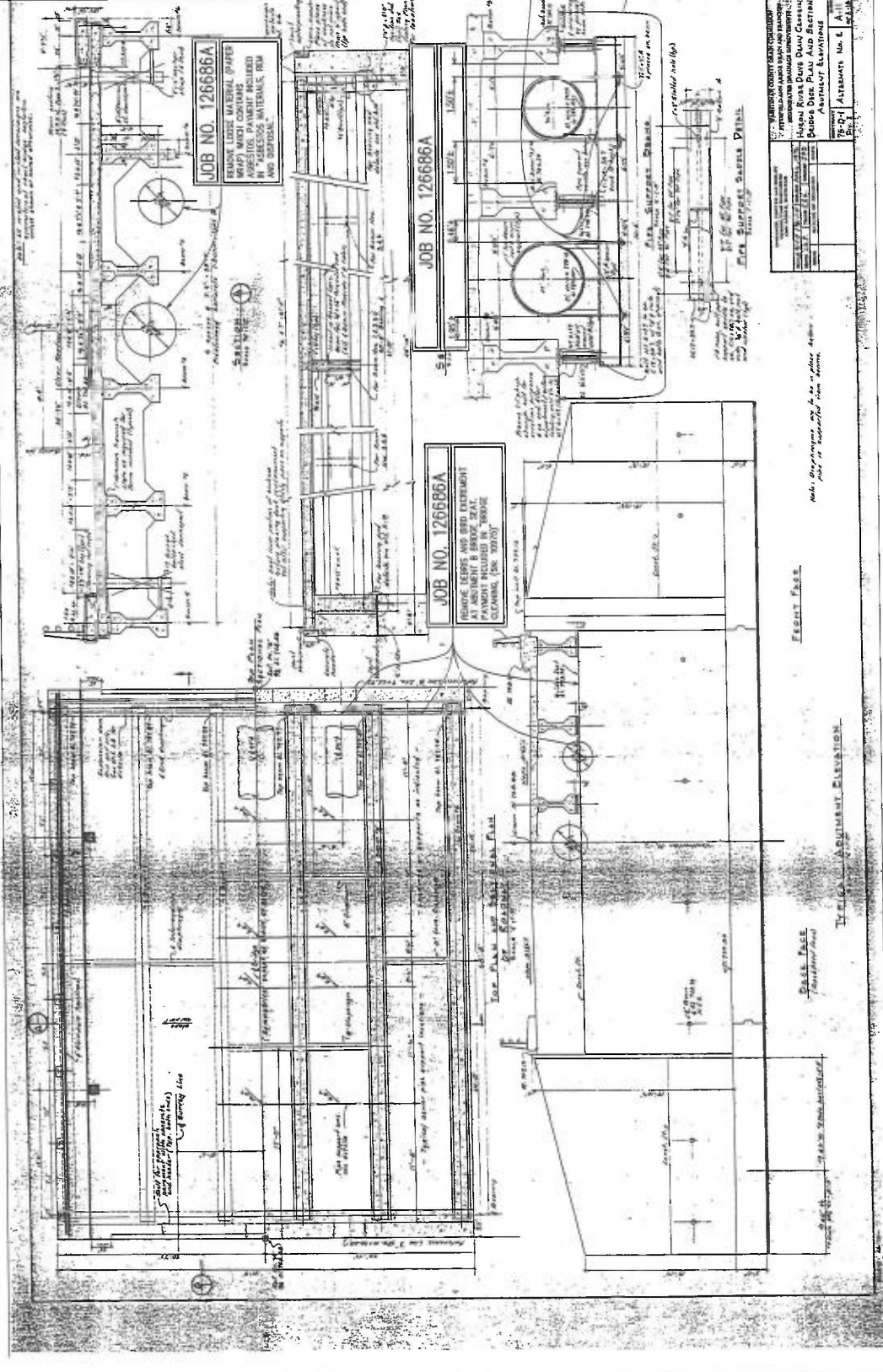
CHECK NUTS FOR LOOSE FIT AND TIGHTEN AS NECESSARY. DO NOT OVER TIGHTEN. PAINTMENT WILL NOT BE MADE SEPARATELY BUT IS CONSIDERED INCLUDED IN OTHER ITEMS.

**JOB NO. 126686A**

LIMITS OF CLEAN AND COAT SANITARY SEWER SHALL BE THE POINTS OF CONNECTION WITH CLEANING AND COATING SEAL ALL ANGLES BETWEEN CONNECTION PLATES/MEMBERS. THE ESTIMATED AREA OF STRUCTURAL STEEL TO BE COATED IS 800 SQUARE FEET.

**JOB NO. 126686A**

NOTE: THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED BY THE LEGEND BOX BELOW LABELED WITH THE PROJECT'S JOB NUMBER.



| PLAN REVISIONS |      | DATE |      | AUTH |      | DESCRIPTION |             |
|----------------|------|------|------|------|------|-------------|-------------|
| NO.            | DATE | NO.  | DATE | NO.  | DATE | NO.         | DESCRIPTION |
|                |      |      |      |      |      |             |             |
|                |      |      |      |      |      |             |             |

|   |   |  |   |  |   |                      |                                      |
|---|---|--|---|--|---|----------------------|--------------------------------------|
| <p><b>Bergmann</b><br/>         Includes all required permits</p> | <p><b>Washington</b><br/>         Engineering Company</p> | <p>DATE: 10/20/08<br/>         DESIGNER: BERGMAN<br/>         ISC: BRITTON</p> | <p>CS: MCS 8161<br/>         JUN: 126686A</p> | <p>SANITARY SEWER SUPPORT REHABILITATION<br/>         SN: 10975<br/>         HURON RIVER DRIVE OVER PITTSFIELD-ANN ARBOR DRAIN</p> | <p>DRAWN BY: BERGMAN<br/>         CHECKED: BERGMAN<br/>         FILE: SNURS_126686A.dwg</p> | <p>PROPOSED WORK</p> | <p>DRAWING SHEET<br/>         16</p> |
|---|---|--|---|--|---|----------------------|--------------------------------------|

WASHTENAW COUNTY  
ROAD COMMISSION

SPECIAL PROVISION  
FOR  
ASBESTOS REMEDIATION

2017 PM BRIDGES:BA

1 of 12

11-02-16

**a. Description.** This work consists of providing all labor, materials, and equipment for removing and disposing of loose portions of regulated asbestos containing materials (RACM) prior to performing rehabilitation activities under the bridge. This work also consists of protecting areas of non-friable asbestos containing materials that are to remain in place, from the work being performed as part of this project. Ensure that all activities are carried out in compliance with applicable federal, state and local laws and regulations. Submit the required notification to regulatory agencies and revise this notification as necessary. Reimburse the Department for any fines or remediation costs incurred as a result of failure to be in compliance with this special provision and/or all federal, state, and local laws and regulations.

**b. Definitions.**

*Asbestos Abatement Firm:* Firm engaged to perform actual removal and disposal work, either as a Contractor or subcontractor.

*Regulated Asbestos Containing Material:* The term "regulated asbestos containing material" is abbreviated RACM.

*Owner's Consultant:* Firm engaged by the owner to identify and measure regulated asbestos containing materials, or to inspect demolition operations, including monitoring air quality.

**c. Submittals.**

Initial submittals: Submit the following documents to the Engineer at the pre-abatement meeting:

- 1) License from the State of Michigan in accordance with Act 135 P.A. 1986 (Asbestos Abatement Contractors Licensing Act).
- 2) Copy of notification sent to appropriate federal, state, and local agencies.
- 3) Schedule of removal, specifying work locations, length and number of shifts, foreman's name, and crew size.

Waste Disposition Submittals: Submit to the Engineer, waste shipment record stating that asbestos waste has been properly disposed. Submit the following:

- 1) Receipts (trip tickets) from approved landfill.
- 2) Asbestos Waste Shipment Record: As follows:

- a) Prior to removing RACM from the project site, provide the Engineer with a completed waste shipment record fully complying with Section 61.150 of the NESHAP standard, and 49 CFR Part 172.200 of the U.S. Department of Transportation, and including all required information.
- b) Ensure that the landfill operator provides a signed copy of the waste shipment record to the Engineer within 35 days of the date that RACM is removed from the project site. If waste is not transported directly from the project site to the landfill, the waste shipment record shall reflect each transfer.
- c) The Engineer will not make final payment prior to receipt of the signed waste shipment record.

**d. Notification.** Renovation or demolition activities of any structure requires notification of the MDEQ, regardless of the presence or absence of RACM. Complete a separate Notification of Intent to Renovate/Demolish (form EQP 5661) for each structure. If RACM that exceed the threshold values identified on the notification form are present, or if abatement and/or demolition procedures cause an unregulated asbestos containing material to become regulated, the Department of Licensing and Regulatory Affairs (LARA) must also be notified. Structure renovation requires notification when RACM exceeding threshold amounts identified on the notification form will be disturbed. Sign the form as owner/operator and submit to the address specified on the notification form a minimum of 10 work days (10 calendar days for LARA notification) prior to the start date of the demolition or renovation. The start date includes the date of removal of any RACM.

An asbestos project fee must be submitted with the notification form for LARA notifications. Send a check or money order, made payable to the State of Michigan, for the amount determined by the calculation identified on the form.

If the amount of RACM to be removed, stripped or disturbed changes by 20 percent or more, of the amount noted on the original notification, prepare and submit a revised notification form. Send the revised form to both agencies and to the Engineer. Show all changes by carefully crossing out the original data and legibly adding the revised data. Attach a check or money order to the revised notification form for the additional asbestos project fee and submit to LARA.

Changes in starting or completion dates require submittal of a revised notification form. A revised start date cannot shorten the notification time period identified on the notification form. If the project will begin on a date later than the date in the original notice, call the MDEQ office identified on the notification form before the previously scheduled start date to notify them of the new start date and follow up with a written notification form postmarked no later than the previously scheduled start date. If the project will start earlier than the original start date (or latest revision), provide the new start date at least 10 work days before the beginning of the project. Under no circumstances can an asbestos removal project begin on a date other than the date in the notification (or the latest revised notification).



The National Emission Standards for Hazardous Air Pollutants (NESHAP), Asbestos regulation 40 CFR 61, Sub-Part M requires that if at least 260 linear feet of friable asbestos materials, at least 160 square feet, or 35 cubic feet of friable asbestos materials, or other facility components are stripped or removed while renovating a facility, all the requirements of section 61.147 apply.

Pre-Abatement Meeting: Approximately 2 weeks prior to scheduled start of the abatement project, the Engineer will hold a pre-abatement meeting with the individuals indicated below:

- 1) Contractor representative.
- 2) Asbestos Abatement Firm's representative.
- 3) Owner's consultant.
- 4) Owner's Representative.
- 5) Owner's building maintenance personnel.

The meeting agenda will include:

- 1) Review of the scope of work.
- 2) Removal methods to be used.
- 3) Review of Contractor's initial submittals.
- 4) A walk-through survey of the site, if appropriate.

For small projects, the meeting may be suspended at the discretion of the Engineer. If the meeting is suspended, deliver required initial submittals to the Engineer 2 weeks prior to the start of work.

To permit adequate time to schedule air monitoring, notify the Engineer not less than 10 days prior to planned start of all removal operations.

The Owner will retain a professional independent industrial hygiene consultant to collect air samples and oversee the project to insure that compliance with applicable codes, regulations, including 29 CFR 1926.1101, NESHAP, and P.A. 135. The consultant will collect background, contiguous, work area, personal, and post-abatement air samples. The Engineer will provide one copy of the report to the Contractor if requested.

- 1) If contiguous sampling indicates airborne fiber concentrations above 0.01 fibers/cc or background level, work will be stopped unless otherwise approved by the Engineer. Work may resume when the source of contamination has been corrected and the contamination has been cleaned to the satisfaction of the Engineer.
- 2) Glovebag, entire structures, and full enclosure clearance sampling will be by the aggressive PCM method when feasible. Enclosures must be fully dry before sampling.

**e. Asbestos Removal Activity.** Ensure at the time of any asbestos removal, stripping or disturbance, the Asbestos Abatement firm is on site. Ensure staff is trained and possess the means and authority for complying with the rules and regulations for

handling and disposing of RACM. They must have in their possession documentation showing successful completion of the Contractor/Supervisor Asbestos training course and directly supervised by a competent person as described in 29 CFR 1926.1101. The supervisor/competent person must complete responsibility checklists throughout all phases of the project.

Conduct asbestos abatement operations in a manner that fully protects Contractor's and subcontractor's employees, the general public, and the surrounding environment from exposure to asbestos and other safety and health hazards.

Protect adjacent areas, materials and surfaces from damage due to demolition operations, including but not necessarily limited to the following:

- 1) Water damage.
- 2) Dirt, dust and debris.
- 3) Abrasion.
- 4) Cuts and scratches.
- 5) Holes from fasteners for temporary barriers.

All asbestos work shall be conducted within a regulated area that complies with the following requirements:

- 1) Post a sufficient number of signs required by 29 CFR 1926.1101 at the asbestos abatement area and at every work area entrance, so that the Engineer, their staff, any public individual, and other contractor's employees have an opportunity to take protective measures before exposing themselves to asbestos. Place banners if necessary to secure open areas. Include information on signs indicating location and quantity of asbestos-containing material.

Allow only authorized, properly protected personnel to enter the regulated area. Immediately report unauthorized individuals entering the work area to the Engineer and Owner's Consultant.

When required, provide employees and inspectors authorized to enter the regulated area with protective work clothing consisting of disposable Dupont "Tyvek" (or equivalent) full body coveralls, head covers, boots, and other necessary safety gear, including a hard hat and eye protection.

Provide respiratory protection to employees as required by current OSHA regulations including 29CFR 1910.134 and 1926.1101.

- 1) Provide asbestos abatement workers with powered air purifying respirators (PAPR) with full facepiece and HEPA filters for adequate protection during asbestos material removal operations. Respiratory protection may be downgraded if negative exposure assessment indicates that less protection is required.
- 2) A half-face respirator or PAPR must be worn while tearing down and setting up enclosures, while glovebagging, and during pre-cleaning and post-cleaning work.



- 3) Do not allow respirators to be pulled away from faces while in the work area.
- 4) Maintain an extra PAPR unit on site at all times for the duration of the abatement project.
- 5) Provide full facepiece supplied-air respirators operated in pressure demand mode equipped with air auxiliary and pressure self-contained breathing apparatus or HEPA egress filters if required for measured fiber concentrations.

Maintain at each job site and post the following documents:

- 1) Copy of MDEQ/LARA notification.
- 2) Employee respiratory protection program.
- 3) Michigan Right-To-Know poster.
- 4) Material Safety Data Sheet locator.
- 5) Company standard operating procedure.
- 6) This specification Section.
- 7) Material Safety Data Sheets for products used on job.
- 8) CFR 1926.1101.
- 9) CFR, Part 61 (NESHAP).
- 10) The foreman's or supervisor's Contractor/Supervisor Accreditation Certificate.
- 11) State of Michigan Accreditation Certificates and Medical Approval for each worker.

Use the following engineering controls and work practices for all asbestos abatement operations, regardless of measured exposure levels:

- 1) Vacuum cleaners equipped with HEPA filters to collect all asbestos-containing dust and debris.
- 2) Wet methods to control exposures during asbestos removal and clean-up, except where proven to be infeasible.
- 3) Prompt clean-up and disposal of asbestos-contaminated wastes and debris in leak-proof containers.
- 4) Establish a decontamination area, adjacent and connected to the regulated area, if the Project requires the removal of more than 25 linear feet, or 10 square feet of thermal systems insulation or surfacing RACM.
- 5) Establish an equipment area adjacent to the regulated area if the Project requires the removal of less than 25 linear feet or 10 square feet of thermal systems insulation or surfacing RACM.

Do not use any of the following equipment or work practices during asbestos abatement operations, regardless of measured exposure levels:

- 1) High-speed abrasive disc saws not equipped with point-of-cut HEPA ventilation or HEPA filtered exhaust air enclosures.
- 2) Blowing with compressed air to remove asbestos-containing materials.
- 3) Dry sweeping, shoveling, or other dry methods to clean up asbestos-containing dust and debris.
- 4) Employee rotation as a means of reducing employee exposure to asbestos.

Prior to renovation of the structure, remove all loose material from the surface of the pipes. Protect all areas of the pipes near the supports that are to be cleaned and coated.

Protect areas of the pipes that may be encountered during placement of the riprap in the stream. Protect areas of the pipes during removal of debris from the abutment bridge seat.

There are two situations for which the requirement for adequately wetting the material does not apply. The first case is when the temperature at the point of wetting is below 32 degrees Fahrenheit. Ensure the temperature is recorded at the beginning, middle and end of each work day. Provide a signed copy of the temperature records to the Engineer for the project file at the end of each day of abatement activity. The second situation involves renovation operations where wetting would unavoidably damage equipment or present a safety hazard. For these operations, submit a request in writing for a waiver for not wetting the RACM to the MDEQ, Air Quality Division, Asbestos Program.

#### *Asbestos Removal By Full Enclosure Method*

**Preparation of the Work Area:** Complete the following preparation work prior to beginning asbestos removal operations:

- 1) Install critical barriers over each opening into the regulated area. The following requirements are in addition to, not in lieu of, other indicated surface and object protection requirements:
  - a) Seal each opening between the work area and adjacent areas with not less than 2 layers of 4-mil polyethylene sheeting. Use an expanding-polyurethane foam gun to seal areas with large numbers of pipes, conduits and beams. Openings include, but are not necessarily limited to, windows, skylights, doorways, elevator hoistway openings, corridor entrances, drains, ducts, grills, grates, and diffusers.
  - b) Seal intake and exhaust vents and duct seams within the regulated area with not less than 2 layers of 6-mil polyethylene sheeting.
- 2) Protection of Surfaces and Objects: The following requirements are in addition to, not in lieu of, indicated work area sealing requirements. Cover the following surfaces and objects as follows:
  - a) Protect all surfaces beneath all removal activity. Remove moveable objects from the work area, and cover fixed objects with impermeable dropcloths or plastic sheeting with edges securely sealed with tape.
  - b) Cover open tanks with plywood or other solid material.
  - c) Provide clean, fresh air to mechanical equipment, where required to maintain proper performance of equipment.
  - d) Fully pre-clean all covered surfaces with amended water and a HEPA vacuum.
  - e) Cover walls with not less than 2 layers of 4-mil polyethylene sheeting. Construct free-standing enclosure walls of not less than 6-mil polyethylene sheeting, with supports spaced not more than 3 feet on-center.

- f) Cover floors with not less than 2 layers of 6-mil polyethylene sheeting. Avoid seams where possible. If seams are necessary, overlap not less than 12 inches and tape joints. Extend sheeting 12 inches up the side walls leaving no seams at the wall and floor joint. Immediately repair punctures and leaks, and clean up seepage.
- 3) Cleaning: Do not use cleaning methods that raise dust, such as sweeping or using vacuum cleaners not equipped with HEPA filters. Do not disturb asbestos materials during pre-cleaning phases.
    - a) Treat water removed from the enclosure as asbestos contaminated waste. Fully seal floor drains.
  - 4) Deactivate or install ground-fault circuit interrupters on each electrical circuit within the enclosure.
  - 5) Construct a three-chambered decontamination facility that is adjacent to and connected to the regulated area, and that consists of a dirty room, a shower room, and a clean room in series. Construct decontamination facilities that are exposed to weather of lumber and exterior grade plywood. Secure the facility when not in use.
    - a) Supply the equipment room with properly labeled, impermeable bags and containers for the containment and disposal of contaminated protective equipment.
    - b) Construct showers that comply with the requirements of 29 CFR 1910.141 (d) (3), with the shower room adjacent to both the equipment room and the clean room. Filter water waste and shower water through a 5 micron filter, or remove water from site as asbestos waste.
    - c) Equip the clean room with a locker or appropriate storage container for each employee.
  - 6) Employee Decontamination Facilities: Comply with the following requirements:
    - a) Access the work area only through an approved decontamination system. Lock or block other entrances. Seal emergency exits (for use during a fire or accident) with polyethylene sheeting and tape.
    - b) Seal the waste pass-out, except during the removal of asbestos waste from the enclosure.
    - c) Entrance To The Regulated Area: Employees shall enter the decontamination area through the clean room, remove and store clothing, and put on protective clothing and respiratory protection before passing through to the equipment room.
    - d) Exit From The Regulated Area: Employees shall exit the regulated area by removing gross contamination and debris from their protective clothing. The clothing shall be removed and disposed of in the equipment room into labeled impermeable bags or containers. Employees shall then shower and enter the clean room before changing into street clothes.

- 7) Local Exhaust Ventilation: Maintain portable air filtration units with a HEPA filter in use during asbestos abatement operations requiring enclosures. Units shall conform to OSHA Standard 1926.1101, Appendix F, and shall be designed in accordance with 40 CFR 61, Subpart M, Section 61.153.
  - a) Exhaust directly to building exterior. Provide a backup portable air filtration unit at each removal enclosure. Start up ventilation units prior to initiating asbestos removal operations and run until the Engineer has approved their shut-down after cleaning, sampling, visual inspection, and tear-down.
  - b) Direct air movement within the enclosure away from the employees' work area and toward the air filtration device.
  - c) Provide not less than 4 air changes per hour within the enclosure.
  - d) Within the enclosure, through the period of its use, maintain a pressure differential of not less than minus 0.02 water gage with respect to ambient conditions outside the enclosure.
  
- 8) Visually inspect the enclosure for breeches and smoke-test for leaks before work begins, and before the start of each work shift. Make all modifications to the enclosure prior to starting removal work.

**Asbestos Removal Operations:** Comply with the following requirements for asbestos removal operations:

- 1) Immediately preceding asbestos removal, apply a fine mist of amended water (water and wetting agent) to the asbestos materials and the surrounding area. Keep surrounding areas wet by spraying periodically with amended water. Maintain a high humidity environment to assist in fiber settling.
- 2) Remove asbestos material using two-person teams, on staging platforms, if necessary.
- 3) Remove the wet asbestos material as intact sections or components. Carefully lower the material to the floor or place directly into container. Never drop or throw asbestos material on the floor.
- 4) At working heights between 15 and 50 feet above the floor, place removed asbestos materials in containers at the elevated levels and lower to floor, or place onto inclined chutes or scaffolding for subsequent collection and placement into containers. Clean all debris at the completion of each workday.
- 5) Once the asbestos material is at ground level, pack in labeled 6-mil polyethylene bags, wet and, if appropriate, hold in drums prior to starting the next section.
- 6) Use 2 sealed and labeled 6-mil thick bags for storage and transportation of asbestos waste. Standing water shall be in each bag
- 7) Wrap large components removed intact in two layers of 6-mil polyethylene sheeting, label, and secure with tape for transport to the landfill. Comply with all wetting requirements.
- 8) Treat wires, hangers, steel bands, nails, screws, metal lath, tin sheeting, and similar sharp objects removed with asbestos material as asbestos waste. Place in drums for disposal.
- 9) Label containerized asbestos waste in accordance with OSHA, EPA, and Department of Transportation regulations, as follows:

- a) Label each container with OSHA label that contains the following information:

**DANGER  
CONTAINS ASBESTOS FIBERS  
AVOID CREATING DUST  
CANCER AND LUNG  
DISEASE HAZARD**

- b) Label each container with Owner's and Asbestos Abatement Firm's names and addresses as required by NESHAP. Owner's address is 301 E. Huron, Ann Arbor, MI 48104.
- c) Label each container with Class 9 Label required by DOT and identify waste as "RQ, Asbestos NA 2212."
- 10) Prepare a complete and accurate NESHAP Waste Shipment Record (special manifest). Assure all information required by the U.S. Department of Transportation regulation is included. Under "special handling instructions" provide the required DOT identification information: RQ Asbestos 9, NA 2212, PG III.
- a) Do not remove waste from site until Engineer has signed and verified the shipment record.
- 11) Remove containerized asbestos waste daily from site, or store on site in a locked or secured location until ready for final disposal. Obtain approval of Owner's Representative of the location of disposal containers. Outdoor waste containers shall be fully enclosed and locked. Mark vehicles used to transport waste during the loading and unloading of asbestos waste with a visible sign, as required by NESHAP.
- 12) Each container shall have excess water evident, or the asbestos waste shall be mixed in a slurry.

**Post-Removal Operation Requirements:** After completion of asbestos removal and clean-up operations, comply with the following requirements:

- 1) The Asbestos Abatement Firm representative, in presence of the Engineer, shall inspect the entire work area for asbestos. Include decontamination unit, all plastic sheeting, seals over doorways, windows, and all other openings.
- a) If any suspect asbestos is found, repeat final cleaning operation, until the visual inspection is satisfactory to the Engineer and the asbestos removal firm. Asbestos not scheduled to be removed as part of the project is exempt.
- 2) Encapsulate all walls, floors, ceilings, other exposed surfaces, and decontamination facilities after completing the work area inspection.
- a) Remove the inner polyethylene barrier that is not integral to maintaining negative pressure in the enclosure at this time, and post-abatement air samples will be collected by the Owner's consultant. Immediately clean any asbestos-containing materials observed behind these secondary barriers.
- 3) When post-abatement fiber levels are greater than either 0.01 fiber/cc or background level, repeat cleanup operation until the area is below either 0.01 fibers/cc or background level.

- 4) When the post-abatement samples are in compliance, and the Engineer has completed the visual inspection, the enclosure shall be removed.
  - a) Turn off HEPA filter exhaust units only after all barriers have been removed.
  - b) A final visual inspection will then be conducted by the Engineer before the Contractor is released from the removal site. The final inspection will include tape, polyethylene sheet, debris, and equipment.

*Removal By Negative Pressure Glove Bag Systems*

- 1) Equipment and Materials: Use the following equipment and materials for each glovebag procedure:
  - a) Glovebags fabricated of 6-mil thick plastic without seams at the bottom.
  - b) HEPA vacuum system attached to the glovebag and run continuously during operation.
  - c) Protective suits and respirators.
  - d) Plastic sheeting.
  - e) Wetting agent.
  - f) Encapsulant.
- 2) Procedures: Comply with the following glovebag method requirements:
  - a) Wrap loose and friable material adjacent to the removal area in 2 layers of 6-mil thick plastic, or otherwise render intact.
  - b) Place plastic sheeting on the floor and equipment beneath each glovebag.
  - c) Wet-wipe or HEPA vacuum dust and dirt from insulation to be removed.
  - d) Install glovebags to completely cover the circumference of pipe or other structure where work is to be done.
  - e) Smoke-test glovebags for leaks. Seal leaks prior to use.
  - f) Insert and seal equipment that penetrates the bag (spray wands, vacuum nozzles) before insulation is disturbed.
  - g) Wet the insulation to be removed before, during, and after the removal.
  - h) Provide only bags capable of withstanding constant wetting and evacuation through a HEPA filtered device.
  - i) During the performance of glovebag operations removing thermal systems, insulation, or surfacing materials, employ not less than 2 persons, working simultaneously, for each task.
  - j) Wipe insulation residue from the pipe prior to application of an encapsulant.
  - k) Spray the pipe and glovebag with an encapsulant before the bag is removed from the pipe.
  - l) Seal exposed insulation ends with a heavy grade mastic.
  - m) Follow glovebag manufacturer's instructions.
  - n) Comply with requirements for asbestos waste disposal indicated in "Removal by Full Enclosure Method" of this Section.
- 3) Unacceptable Conditions and Procedures and Conditions: In general, do not use the glovebag method in conditions that prevent safe completion of the removal process. The following procedures are not allowed during glovebag removal:



- a) Removing severely damaged insulation.
- b) Overloading glovebag.
- c) Sliding or moving insulation or glovebag along pipe.
- d) Squeezing bags to remove air.
- e) Placing glovebags on pipes or other surfaces that exceed 150 deg. F.
- f) Using a glovebag more than once.

If during the project, the Engineer or Owner's Consultant determines that work practices either violate applicable rules and regulations or endanger employees, the Contractor's on-site representative shall stop operations immediately and take corrective action. Cooperate fully with Engineer or Owner's Consultant.

#### *Removal Of Non-Friable Asbestos-Containing Materials*

General: For each type of non-friable asbestos-containing material indicated, comply with the following requirements:

1. Comply with requirements of this specification.
2. Conduct non-friable material removal operations to prevent the material from becoming friable during the removal and disposal process. No visible emissions are permitted. If the material does not remain substantially intact, comply with the requirements for friable asbestos removal specified herein.
3. Place impermeable drop cloths on surfaces beneath removal activity.
4. Do not conduct asbestos removal unless the Owner's Consultant is present at the site and Engineer has been notified.

Non-Friable Asbestos Containing Exterior Sealant, Caulk, Putty and Window Glazing: Remove exterior non-friable asbestos-containing sealants, caulk, putty and window glazing using the following technique:

1. Any existing loose material shall be HEPA vacuumed prior to removal.
2. The material shall be thoroughly wetted prior to and during its removal.
3. The material should be removed as intact as possible. Manual methods such as scraping or raking shall be used, unless power tools are used that are equipped with HEPA ventilation. If power tools are used comply with this specification (see Asbestos Removal by Full Enclosure Method).
4. Asbestos containing materials removed, shall be immediately bagged or wrapped and kept wetted until transferred to a closed receptacle.
5. If the material becomes friable during the abatement process, comply with the requirements for friable asbestos removal specified in (Asbestos Removal by Full Enclosure Method) of this specification.
6. Dispose of all asbestos containing materials, including those removed by the entire structures method, per the requirements of this Section.

**f. Waste Shipment and Disposal.** Arrange for a licensed waste transporter to transport all waste RACM immediately and directly to a licensed Type II landfill. Non-friable asbestos containing material in good condition can be disposed of at a Type III landfill.

**g. Measurement and Payment.** A budgeted amount has been established for payment for the investigation, removal and disposal of RACM. Obtain prior documented approval of the Engineer for final details and costs of the investigation, removal and disposal of the RACM. Payment for work completed under this special provision will be paid at actual cost after providing proof of payment to the Engineer for review and approval. Provide documentation (invoices, proof of payment, etc.) from the accredited asbestos inspector, the licensed asbestos abatement Contractor and the licensed disposal facility. These direct costs and the LARA asbestos project fee will be reimbursed from the budgeted amount.

Payment will not be made for this item of work until all necessary documentation is provide to the Engineer as detailed herein.

| <b>Pay Item</b>                            | <b>Pay Unit</b> |
|--|-----------------|
| Asbestos Materials, Rem and Disposal ..... | Dollars         |

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
BRIDGE CLEANING

OPR:JD

1 of 2

APPR:JAB:JG:09-16-16

**a. Description.** This work consists of providing all labor, material, and equipment to remove all accumulated foreign material from the entire bridge, including the bridge deck, sidewalk, curbs, abutment tops, pier tops, trusses, interior of truss members, lower flanges of beams or girders, expansion joints, bearings and bridge drain systems to the extent shown on the plans, or as directed by the Engineer.

**b. Materials.** Provide potable water in accordance with section 911 of the Standard Specifications for Construction.

**c. Construction.**

1. Provide cleaning equipment consisting of hand tools, power brooms, air compressors, water tanks and water pumps with associated delivery hardware necessary to properly flush, clean, and remove all foreign material from the bridge structure. Other types of cleaning equipment may be used with the Engineer's approval.

2. Prior to cleaning with water pressure, remove all accumulated foreign material from the bridge including the bridge deck, sidewalk, curbs, abutment tops, pier tops, trusses, interior of truss members, lower flanges of beams or girders, expansion joints, bearings, bridge drain systems and other locations specified, and as directed by the Engineer. Remove the accumulated sand, gravel, dirt, bird nests and excreta and other foreign materials with hand brooms, hand shovels, scrapers, vacuum cleaners or other methods acceptable to the Engineer. Collect this removed material and dispose of at an approved waste area according to Federal, State and Local regulations. Do not at any time allow this removed material to fall or be disposed of in the water or on the land below the bridge.

3. Use sufficient water under pressure to remove salt contaminants, dirt, and other detrimental foreign matter without damaging the concrete, coatings, or removing paint from any structural steel. Stop the cleaning operation if damage to existing paint coverage occurs. In this situation, adjust the water pressure to remove foreign material without damaging or removing existing paint coverage.

4. Flush all deck drains and scuppers with water under pressure after the accumulated foreign material in them has been properly removed. Drain systems may have to be taken apart to remove large blockages of accumulated foreign material. Should this be necessary, return them to their original configuration immediately after cleaning. Ensure drain systems drain properly after cleaning.

**d. Measurement and Payment.** The completed work, as described, will be measured as a lump sum and paid for at the contract price using the following pay item:

OPR:JD

2 of 2

12RC712(A545)

09-16-16

**Pay Item**

**Pay Unit**

Bridge Cleaning (Structure No.).....Lump Sum