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Handling Issues for Lead and Asbestos in Bridge Construction

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15. Abstract:
The goal of this research was to survey the state of the regulatory environment and common practices in other state DOTs to learn how other states deal with the issue of lead-based paint and asbestos-containing materials in bridge maintenance and repair for the state's 32,000 existing bridges. The survey included 40 questions to all 50 state DOTs, with 39 responding. The survey responses were evaluated to formulate primary recommendations intended to decrease TxDOT liability in the short term. Among the primary recommendations were to train TxDOT personnel on appropriate OSHA regulations, limit TxDOT worker exposure to hazardous materials, and establish oversight of contractor controls and safety protocols. The study also led to several secondary recommendations to designed to limit TxDOT liability in the long term, such as conducting a study of all bridges to determine the exact location, quantity, and nature of both LBP and ACM, conduct a study of ambient air monitors to measure airborne lead concentrations, and determine the economics of encasing ACM and LBP wastes in concrete.

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by

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1. Introduction

1.1 Background

According to TxDOT officials there are approximately 32,000 bridges owned by the State of Texas. Each of these bridges, whether steel, concrete, timber, or some combination thereof, has the potential for containing hazardous materials such as lead-based paint (LBP) and asbestos-containing material (ACM). To clarify, this paper uses the specific material terms, LBP and ACM, as well as general substance terms, lead and asbestos. When discussing specific materials, LBP and ACM are used, when discussing the general substance and related dangers, lead and asbestos are used.

While lead has been an invaluable substance in the creation of modern society dating back to the Ancient Romans, in recent decades it has been discovered that the use of lead brings potential health risks. Additionally, the more modern substance asbestos also has many health risks associated with its use.

Starting in 1970 and continuing today, the U.S. government has regulated the use of heavy metal-containing substances, including LBP and ACM, as well as other materials, through the Environment Protection Act of 1970 and the Occupational Safety and Health Act of 1970, and the agencies established by these respective acts. These agencies have, over time, established guidance and regulations intended to protect the environment, as well as the common worker. This guidance is necessary to keep workers safe and free of work-related injuries and illnesses, and, as a byproduct, reduce the liability and health coverage costs of the companies employing those workers. Furthermore, these regulations and standards protect the environment so that in the future, humanity will continue to thrive in a state of good health and well-being.

In Texas, as with most other states in the U.S., both LBP and ACM can be found on bridges in many different forms. LBP is used in steel bridge structures to protect against corrosion of the metal due to exposure to weather elements and anti-icing chemicals. LBP, once widely-used, now must be removed from many structures to prevent soil and water contamination.

ACM, though typically found in smaller amounts than LBP, is used in many types of bridge structures. ACM is used in the coatings on some timber bridges, the cement used to connect bearing pads to concrete bridge structures, and in some cases is used as a coating on steel structures. ACM was included in some concrete paints to increase its adhesion and performance. The matter of ACM is one of slightly less concern, as most ACM comes in the form of cements and mastics, which are largely exempt from OSHA Code of Federal Regulations (29 CFR 1926.62). If the asbestos fibers remain non-friable, ACM issues are of less concern in relation to EPA regulations as well.

1.2 Problem Statement

Until recently, the Department of State Health Services (DSHS) had not applied regulations and standards enacted by the various federal agencies to highway structures. Once DSHS began enforcing these standards, several fines were levied on TxDOT due to non-compliance, as some

structures did not fully meet the requirements of the standards. Therefore, research into understanding TxDOT's liability and identifying preventative measures were deemed necessary.

The current problem caused by DSHS enforcing these standards is two-fold. The first and primary concern, TxDOT needs to know what its requirements are, and what the requirements of the contractors are under these standards as they relate to LBP and ACM handling and disposal. By ascertaining the requirements of TxDOT in various cases and those that are contracted by TxDOT, it is possible to greatly reduce the cost and liability to TxDOT and increase worker health and safety.

Secondly, TxDOT needs to know how to comply with these standards in a cost-effective manner without increasing undue burden. This problem required a survey of various states to determine common practices in performing construction and maintenance activities where workers are exposed to LBP and ACM as well as LBP and ACM disposal practices. Ultimately, information from other states may be used to development successful implementation programs in Texas.

The solution to the aforementioned problems was identified through various research processes. First, a review of the applicable federal standards and regulations as well as any published reviews or interpretations was conducted. This process resulted in the production of several lists of frequently asked questions relating to working with and disposing of lead and asbestos. These lists were then used to form the most basic of the formal recommendations, which will be discussed in a subsequent section of this report.

The next step was to perform a phone survey of various state DOTs to determine the general state of the industry throughout the U.S. This survey was performed in multiple steps. The first step was to determine what answers were needed to ascertain the state of the industry. A question list, based on the goals of the project and TxDOT's own questions, was developed and approved by TxDOT in late spring 2007. The phone survey was conducted of the various state DOTs to answer these questions. The data gained from this survey lead to the development of the more advanced formal recommendations as well as a refinement of the basic recommendations. The data itself is discussed further beginning in Section 2 of this report.

The final work conducted to answer the research questions was to compile the gathered data both from the literature review and the phone survey. The data compilation was then used to create formal recommendations intended to reduce TxDOT's liability and costs.

1.2.1 Review of Current Practices

As noted above, only recently has it been determined that TxDOT maintenance and construction activities fall under the federal regulations of the DSHS. Although TxDOT does take steps to protect its workers from exposure to LBP and ACM and to protect itself from liability due to the existence of these substances in Texas bridges, TxDOT was not fully in compliance with these newly-applied DSHS regulations.

Among the policies TxDOT currently has in place is the requirement that contractors, "Comply with all federal, state, and local laws, ordinances, and regulations that affect the performance of the work." This can be found in TxDOT document S007 in Appendix 1: TxDOT Internal

Documents. However, the actual regulations are not listed in the contract leaving the responsibility of keeping abreast of applicable regulations to the contractor.

Additionally, TxDOT does not currently allow any hazardous materials to be used in bridge projects. If it is suspected that materials being used on a project may contain hazardous substances, they are to be tested. If hazardous materials are confirmed, the material is to be removed. This requirement is found in TxDOT document S006 in Appendix 1: TxDOT Internal Documents.

Protection of workers requires the workers be knowledgeable of hazards in an area. To that end, SP006-030, an amendment to S006, states, “The plans will indicate locations or elements where [ACM] have been found.” SP006-030 may be found in Appendix 1 of this report. Having foreknowledge of the location of ACM is important as it makes abatement easier and more efficient.

While these current TxDOT policies are sufficient to provide some worker protection and liability coverage, they are not as extensive as they could be. The results of this research project will provide practices to further protect TxDOT employees from hazardous materials exposure as well as provide liability protection for TxDOT.

1.2.2 Paper Overview

In this report, several topics will be discussed that lead to the development of the formal recommendations. First is a discussion of the state of the industry in lead and asbestos handling in bridge construction and maintenance. Second is a discussion of the federal regulations intended to create a better understanding of how those regulations affect TxDOT and TxDOT activities. Third is a discussion of the data gathered throughout this project. These discussions culminate in a discussion and explanation of the formal recommendations being made. These recommendations are a combination of practices for TxDOT to employ as well as recommendations for future research; all are intended to decrease TxDOT’s liability and increase worker safety and efficiency.

2. Overview of Research Results

Phase One of this research project was a literature review of applicable state and federal regulations. This literature review was then summarized into a lead FAQ and an asbestos FAQ. These FAQs are found in Appendices 2 and 3, respectively.

The intent of the FAQ questions is to provide a concise summary of the main issues of concern to TxDOT, as identified by the project supervisor and supervisory committee. The FAQ's may be provided to TxDOT personnel, contractors and other individuals interested in lead and asbestos issues. Due to their length, they are not included in the project summary but may be used as stand-alone documents.

Phase Two of this project was the formulation of a phone survey based on the requests for information by TxDOT, followed by the execution of that phone survey to gather information on the state of the industry across the U.S. and the formulation of recommendations for TxDOT. The raw data collected from the phone survey may be found in Appendix 4: Results of Phone Survey. Certain responses to the phone survey are discussed below.

2.1 Phone Survey Question List

Questions for the phone survey were garnered primarily from the original research request from TxDOT. These questions were used in the survey as they most easily answered TxDOT's questions. Further questions were developed to correlate the way other states comply with federal regulations. The question list, as well as the raw data responses from each state contacted, may be found in Phone Survey Raw Data in Appendix 4: Results of Phone Survey. This raw data provides a listing of the states contacted and the responses. At times in the data, responses to certain questions are blank. This is due to the fact that these questions were answered either implicitly or explicitly in an earlier question. As this is raw data, no formatting has been performed to fill in these blank data fields. TxDOT Lead and Asbestos Contacts, also found in Appendix 4, contains a listing of which states were completed successfully in the form of a notation of "done."

2.2 Survey Responses

The most obvious of the survey questions was, "Are contractors that are hired to demolish steel structures required to comply with OSHA Regulation Standard 1926.62 (Lead in Construction)?" Though this question seems very simple, and a few times answers similar to, "isn't everyone?" were given, the question itself is actually very important. Nearly all states surveyed answered that contractors are required to meet regulatory requirements, though not all have this requirement included in their contracts. Approximately 95% (19 out of 20) of respondents claimed to have requirements of contractors to meet all OSHA lead requirements.

Another question that led to multiple recommendations was, "How are LBP-coated steel members handled?" Along with various subsequent answers, it was discovered that most states

transfer ownership, and thereby liability, of demolished steel to the contractor. Roughly 85% of state DOTs handle steel disposal issues in this way. Ten percent do not allow excess steel to be transferred to the contractors control and the steel must be disposed of by the DOT in some other way. There was a non-response of 5% on this issue for the states surveyed.

Another issue is the removal of LBP from steel bridges. The responsible party for removing LBP from bridges before cutting members varies by state. Some states have the DOT remove the paint, whereas in other states, the LBP is removed by the contractor. In some cases, subcontractors remove the paint before beginning maintenance and demolition activities. The aforementioned summary is reflected in the phone survey answers in Appendix 4.

One of the most common responses from the asbestos portion of this survey was that many states claim not to have any, or at least very little, ACM present on bridges within the state, indicating that many states are currently trying to minimize as much ACM use as possible. Those states that do have ACM present on their bridges have programs in place to identify the location and dispose of ACM present, so as to make removal easier and quicker in the event of future work on those bridges.

Unfortunately, one of the other common responses when dealing with ACM is that many states do not know if or how much ACM is present on any bridges. This could potentially lead to dangerous and costly situations for those states when it is discovered mid-project that there is in fact ACM present on a bridge. These two common, yet essentially opposite, responses lead to the development of one of the more important secondary recommendations, which is to have TxDOT perform a study of its bridges to determine the location and quantity of ACM present on bridges within the State of Texas.

One of the areas of concern for TxDOT comes from the painting of bridges, so a key question in the phone survey was whether or not the state DOT requires any licensing or certification for painting contractors. The responses to this set of questions ranged from states requiring no special certification to states requiring certification beyond federal standards. Many states, including TxDOT, requires certification use the Society for Protective Coatings (SSPC) QP certification requirements, which can be found at http://www.sspc.org/certification/default.html. Caltrans has its own version of these standards, which can be found in Appendix 4. It may be noted that painting certification is not discussed in depth in this report. The dangers of LBP come from paint removal, not paint application. LBP removal work should be done by contractors who are required to meet OSHA requirements, as recommended below.

One of the largest areas of concern aside from protecting workers is that of disposing of the LBP, ACM, and other paint-related waste materials. However, it is not necessarily the disposal itself that is in question, but who is responsible for disposal. Many states (10 out of 20) make proper disposal of ACM the sole responsibility of the contractor. This approach provides relief to the DOT from liability concerns stemming from disposal issues. The federal regulations dealing with disposal of hazardous materials make the transport of such materials from the generation site to the disposal or processing site the sole responsibility of the company transporting those materials. This is further reflected in the results from the phone survey.

Finally, an area of interest in the phone survey was whether the DOT uses an ambient air monitor to determine airborne lead and asbestos concentrations. This is an idea that evolved during background research and is discussed in more detail in a subsequent section of this report. Most states do not use any ambient air monitors, though the contractors employed may use them. These monitors are especially useful on jobs that have very short turnaround times.

Some states perform the tasks of removing and disposing of LBP and ACM in truly unique ways. One of these outliers comes from the Colorado DOT. In the matter of dealing with LBP and paint removal wastes, the recommendation was made to mix the waste materials with concrete and to then dispose of the waste in a landfill. However, a cost-benefit analysis should be performed to ensure this is a cost effective treatment/disposal option.

Another far outlier comes from the Louisiana Department of Transportation and Development. According to LDOTD, the Supreme Court ruled that state agencies, such as LDOTD, are exempt from worker safety regulations. While it was not explicitly mentioned, follow-up research shows that this is a state Supreme Court decision, not a Federal Supreme Court decision. This makes LDOTD not liable for worker safety; however, they still take steps to comply with the worker safety regulations in order to protect their workers.

The Alabama DOT is the only DOT surveyed that claims that it does not require contractor compliance with OSHA regulations. However, they do claim that the state requires compliance with OSHA regulations. This is a situation very similar to the one that evolved into the impetus for this project from TxDOT. It should be noted, however, that several people within the Alabama DOT were contacted in order to complete the survey for that state. Of these, only one claimed Alabama DOT does not require contractor compliance with OSHA regulations. This shows a larger problem of lack of proper communication and education. Whichever recommendations TxDOT chooses to implement, it is of great importance that the new policies be communicated to everyone within the department.

Survey results illustrate different disposal approaches between two worker-friendly and environmentally-conscious states. The NYSDOT recommends that steel members with LBP should be smelted with the paint in place. This causes the smelter to take liability for the LBP. Once the steel is smelted, the lead may be removed as a byproduct of the smelting process and treated as a byproduct. This in turn means that the lead removed during smelting is entirely the responsibility of the smelter, not the DOT. Several other states also recommend this approach, though most do not concern themselves with what happens to the steel after it has been transferred to the contractor. However, CalTrans does not recommend smelting steel with the LBP in place, though they do not necessarily forbid it.

These are some of the results from the phone survey, which have lead to the most important formal recommendations. More in-depth information regarding the survey results may be found in Appendix 4: Results of Phone Survey.

3. Worker Safety Regulations

Worker safety is of paramount concern on jobsites involving heavy machinery and heavy material, such as on bridge construction and maintenance jobsites. Described below is the protection of workers when dealing with lead and asbestos.

3.1 Lead Worker Safety

The OSHA regulation dealing with lead is federal standard 29 CFR 1926.62, hereafter known as the lead standard, and is summarized in Appendix 2: Lead FAQs. This regulation spells out "employer" requirements to protect "employees" from harm. In the lead standard, the employer is defined as company or contractor actually doing the work; this can be both a relief and a burden for TxDOT.

If TxDOT uses a contractor to complete work on a bridge project that involves lead, that contractor is considered the employer and is therefore required to fully comply with this regulation. It will be shown later that the same is true for asbestos. However, if TxDOT personnel are used to complete work on a bridge project, TxDOT must be considered the employer and is responsible for protecting those employees working on the project. This protection includes biological monitoring, protective clothing and equipment, and any healthcare-related costs. Furthermore, all of this protection, whether it is the responsibility of TxDOT or a contractor, must be provided at no cost to the employee.

The lead standard applies only to those employees who are occupationally exposed, or, in other words, those employees whose jobs require them to be exposed to dangers from LBP. To clarify this point, examples of jobs where workers are occupationally exposed would be (29 CFR 1926.62 Paragraph D):

- Scraping/sanding LBP;
- Rivet busting in the presence of LBP; and
- Welding materials with LBP.

Examples of some jobs where workers are <u>not</u> occupationally exposed are:

- Clerical staff;
- Workers not working in an area with LBP present; and
- Those people who may have to transit through an area with LBP present, but for an insignificant amount of time.

While it is not necessarily a bad practice to have biological monitoring for those employees not occupationally exposed to lead, it is done almost exclusively at the employer's discretion. <u>For this reason, TxDOT, or any agency hiring outside contractors to perform work, should not be held financially responsible for the cost of monitoring employees who are not occupationally exposed to lead.</u>

There are times, however, when employees not occupationally exposed may need to be monitored as required by the lead standard. These instances may occur because an individual

employee feels that he or she is being exposed to lead hazards. This type of situation is handled on a case-by-case basis. As such, it is the responsibility of the employer to provide the monitoring for that individual employee. While the employee being monitored may not be considered occupationally exposed, the monitoring is required if requested. Therefore, if and only if the original bid includes costs for required biological monitoring, TxDOT is responsible for paying for the monitoring costs associated with these individual employees as required.

Another issue is the determination of whether or not someone is occupationally exposed to lead. This is done through the biological monitoring mentioned above. Assuming that an employee has sufficient protection from the dangers of his or her work, the biological monitoring should show little to no lead in the bloodstream. However, if the protection is insufficient, high levels of lead may be detected in the blood. High or low blood lead levels (BLL) measurements determine whether an employee is at risk of occupational lead exposure. The results from BLL monitoring are used to determine the protection required for workers. Several categories have been set up to protect workers during the initial assessment of lead exposure.

3.1.1 Jobs and Worker Exposure

There are three categories used to protect workers during this initial assessment based on the work being done. 29 CFR 1926.62 does not name these exposure category levels, so for the purpose of this document, these categories will be labeled Category I, Category II, and Category III, where Category I pertains to the lowest exposure risk and Category III pertains to the highest exposure risk. The exposure of each is based on some multiple of the permissible exposure limit (PEL), which is the amount of airborne lead an employee may be exposed to without permanent harm.

Category I includes the following jobs (29 CFR 1926.62 Paragraph D):

- Manual demolition of structures containing LBP;
- Manual scraping/sanding of LBP;
- Heat gun applications involving LBP;
- Power tool cleaning with a dust collection system where LBP may be present
- Spray painting with LBP; and
- Any additional jobs where the employer believes that exposure may be greater than PEL but not more than 10 times the PEL.

Category II includes the following jobs (29 CFR 1926.62 Paragraph D):

- Using lead-containing mortar;
- Lead burning – a common activity when demolishing steel structures with LBP;
- When LBP is present
    - Rivet busting;
    - Power tool cleaning without a dust collection system;
    - Cleanup activities using dry expendable abrasives; and
    - Abrasive blasting enclosure movement and removal.

Category III includes the following jobs (29 CFR 1926.62 Paragraph D):

- Abrasive blasting;

- Welding;
- Cutting; and
- Torch burning.

Category I jobs are based on expected exposures between the PEL and 10 times the PEL, Category II jobs are based on expected exposures between 10 and 50 times the PEL, and Category III jobs are based on expected exposures above 50 times the PEL (29 CFR 1926.62 Paragraph D). Once an assessment of actual lead exposure has been completed, the protection for workers may be adjusted depending on the actual exposure.

Often bridge work is performed in a short turnaround time so that the blood work analysis may not be complete by the time the bridge work is finished. For this reason it is recommended that TxDOT look into tracking worker exposure to determine worker exposure to lead. Also, each of the job categories listed above has worker protection measures required to protect the worker during initial assessment. When TxDOT is performing work on short-term repair projects, it is conceivable that the initial assessment period would continue beyond the project period. Therefore, by following the worker protection measures already set up for initial assessment, workers will remain safe for the job they are doing.

Additionally there are certain non-biological techniques for determining worker exposure, as discussed below.

3.1.2 Non-Biological Assessment Techniques

One of the non-biological methods of determining employee lead exposure is to use objective data from previous jobs under similar conditions within the past 12 months. For example, if TxDOT is demolishing two identical bridges six months apart that are in similar environmental conditions, the data gathered from the first bridge may be applied to the second bridge to determine actual employee exposure. However, if the bridges are not in similar condition, or if a different method of demolition is used, the objective data from the first bridge may not be applied to the second bridge. Additionally, if the demolition is being performed 13 months apart, or for technical arguments 12 months and 1 day, the objective data also may not be applied to the second bridge. Collecting data of this kind is very valuable as it allows expediting of the initial exposure assessment - which may lower project costs - as well as decreases the amount of time used to make the exposure assessment. Time and monetary savings translate into a more economically efficient project for TxDOT.

Another method that may be used for monitoring worker lead exposure is the use of ambient air monitors. Ambient air monitors determine actual airborne lead concentrations in an area of a jobsite. This information may then be used to determine whether the employees are being exposed to levels of lead beyond the PEL. Additionally, if a bridge or other structure containing LBP is being demolished or undergoing maintenance in a residential area, or an area where winds may carry that airborne lead to a residential area, these monitors can ensure that the amount of airborne lead will not affect the nearby residents. This is increasingly important in a world where population is becoming more concentrated, amplifying the effects of airborne lead exposure. However, ambient air monitor results typically have a certain turn-around time since

the samples must be analyzed in a lab. This point is addressed later in the section for future research ideas.

Upon assessment of employee exposure through whichever method is determined, the employer must use certain work practices as well as protective equipment to give adequate protection to their employees. These practices and equipment requirements are outlined in the lead FAQ with references to there location in 29 CFR 1926.62. There are many forms of protection available to ensure worker exposure is minimized, including but not limited to:

- Respirators;
- Protective clothing;
- Isolation barriers; and
- Clean rooms.

These are just a few of the many options for protecting employees.

3.2 Asbestos Worker Safety

The worker safety regulation dealing with asbestos is found in federal standard 29 CFR 1926.1101, hereafter known as the asbestos standard, and is summarized in the asbestos FAQ found in Appendix 3: Asbestos FAQs. As with the lead standard, this is an OSHA regulation that spells out what the "employer" is required to do to protect the "employee" from harm. In the asbestos standard, the employer is defined as company or contractor actually doing the work.

As mentioned previously in the discussion of the lead standard, if TxDOT hires a contractor to complete asbestos-related work on a bridge project, that contractor is considered the employer by the asbestos standard. If, on the other hand, TxDOT uses TxDOT employees to perform asbestos-related work on bridge projects, TxDOT is to be considered the employer and is held responsible by the asbestos standard. However, unlike the lead standard, TxDOT does have certain responsibilities as the bridge owner.

These owner responsibilities are simple but important. It is the responsibility of TxDOT as the bridge owner to determine the location, amount, and nature of ACM in bridges. TxDOT must then relay this information to any employer who has employees working on that bridge. For example, if TxDOT has three contractors working on a bridge which has ACM present, it is TxDOT's responsibility to inform the three contractors of the location, amount, and nature of the ACM present so the contractors can take steps to protect their own employees.

However, paragraph a8 of the Asbestos Standard (29 CFR 1926.1101) exempts "asbestos-containing asphalt roof coatings, cements and mastics," because the asbestos fibers are expected to remain bound up in the mastic and cannot become friable. Although there has been some confusion that the cements and mastics exemption is only for the roofing industry, the paragraph does not identify exemptions or application for any one industry, but rather provides the exemptions for specific types of materials. Therefore, cement and mastic containing asbestos, which has been used in securing bearing pads in TxDOT bridges are exempt from the Asbestos Standard.

As with the lead standard, the financial responsibility for monitoring employees is that of the employer. Also, only those employees who are occupationally exposed or believe they are occupationally exposed need to be monitored. Therefore, these costs must be included in the bid contract for TxDOT to be able to choose the lowest cost contractor for the job.

Unlike LBP-related work, exposure from ACM-related work cannot be determined from blood tests. This is because asbestos is fibrous and is inhaled. As such, asbestos resides in and deteriorates the lungs, and does not enter the bloodstream. Therefore, the asbestos standard does not require such biological monitoring. However, employees must be examined prior to asbestos abatement by a licensed physician to ensure that the employee is capable of doing the work required.

Working with ACM has a considerably higher potential for hazard than working with LBP, and therefore should only be performed by properly trained individuals. For this reason, paragraph k of 29 CFR 1926.1101 gives certain training requirements for those employees who are exposed to asbestos or who are performing asbestos-related work. The training requirements vary with the type of work being performed; however the training does include the following:

- The methods of recognizing ACM;
- The effects of asbestos; and
- The proper use of respirators.

Furthermore, all asbestos-related work must be supervised by a "competent person." The asbestos standard defines a competent person as one who can identify existing asbestos hazards in the workplace and select the appropriate control strategy for asbestos exposure, and who has the authority to take prompt corrective measures to eliminate the asbestos exposure. This competent person must have training beyond that of the average asbestos worker and in accordance with 29 CFR 1926.1101 Paragraph E. This competent person is responsible for supervising all asbestos related work being done as well as for doing the initial exposure assessment.

Supervising is performed by making frequent and regular inspections of the jobsite, materials, and equipment. For Class I asbestos work, which according to the asbestos standard is that work related to thermal system insulation (TSI) removal and surfacing ACM removal, inspections must be made at least once per shift, due to a typically higher asbestos concentration in these materials. For all other asbestos-related work, inspections must be made at intervals sufficient to determine whether or not conditions have changed. Additionally, an inspection must be performed anytime requested by an employee.

The initial exposure assessment, also performed by a competent person, is done in similar manner to that of an LBP assessment. Air monitoring is the primary method to determine airborne asbestos concentrations and worker exposure. Samples from these monitors must be analyzed by a lab capable of analyzing such samples, and cannot be done in the field (29 CFR 1926.1101). Even though the asbestos standard spells out the method to be used in analyzing these samples, it will not be discussed in this report as the lab performing the analysis, not TxDOT, is required to know and comply with these methods. Additionally, as with the lead

standard, objective data from similar projects in similar conditions within the last 12 months may be used in the initial assessment.

3.3 **Disposal Regulations**

Department of State Health Services (DSHS) disposal requirements and waste classification come from various portions of EPA's regulations, as indicated in 40 CFR including chapters 26, 30, and 61. Complying with LBP and ACM disposal requirements is required by the companies hauling the wastes and the landfills accepting these wastes, both of which become responsible for waste liability by taking custody for the waste during the processes before and at final disposal. TxDOT's responsibility regarding waste liability is discussed below in the event that TxDOT vehicles and workers transport the waste off-site. Therefore, this section describes the requirements for choosing landfill facilities for final disposal and TxDOT disposal activities not permitted by EPA regulations. Additionally, ACM disposal and the Asbestos NESHAP regulations as it pertains to demolition practices are summarized in a document created under contract from the EPA by TRC Environmental Corporation. This document is included in Appendix 3: Asbestos FAQs.

The EPA does, however, give some special guidance on the disposal of ACM. When transporting ACM and ACM waste, there may be no visible asbestos emissions from the vehicle hauling the waste (40 CFR 61 Subpart M). This requirement is in addition to the requirement of 29 CFR 1926.1101, for ACM to be placed in plastic bags at least 6 mils thick and sealed.

The question of whether or not concrete-containing asbestos can be recycled and how it is recycled is an issue of concern for TxDOT officials. At the present time, the EPA does not allow for the recycling of any form of asbestos-containing concrete (ACC). This is spelled out in the NESHAP summary produced by TRC Environmental. ACC must be treated as ACM waste and disposed of as such. This does not include surface ACM such as asbestos-containing cements and mastics which can be removed, and are in fact not covered by 29 CFR 1926.62.

29 CFR 1926.1101 states that water may be used to help isolate asbestos during removal, since wet asbestos fibers cannot become airborne and therefore cannot be inhaled. This is primarily intended for small areas where asbestos is being removed by hand. However, often in bridges, ACM is removed during general demolition by cranes with wrecking balls or by excavators with various attachments. The EPA, at present, allows for the entire area to be wetted down to isolate the fibrous asbestos during the use of this equipment. This is spelled out in the NESHAP summary. So, for example, if a bridge with some amount of ACM is being demolished with a large excavator, keeping the entire work area thoroughly wet is adequate to isolate the asbestos fibers from the workers conducting the demolition work as well as other workers on the jobsite.

In the case of a small area being wetted, the ACM waste must be collected from the water so that it may be disposed. In the case of wetting a large worksite, neither OSHA nor EPA documents say that the runoff water must be collected and disposed. It would, however, be best for as much of the ACM waste to be collected from this runoff as possible. Traditional storm water collection methods may be used to keep the runoff water onsite. However, the best approach is to limit

runoff and apply a minimum amount of water to keep the asbestos wet during demolition activities.

Also, it should be noted that by wetting down a large bridge during demolition, a considerable amount of water would have to be used. In light of occasional drought conditions, this method should be used sparingly. Use of water in small enclosures requires considerably less water and may be more usable.

3.4 Conflicts with State Regulations

During the course of the regulatory investigation, it was discovered that there may be a conflict between the asbestos standard and the Texas Asbestos Health Protection Rules (TAHPR). TAHPR does not explicitly allow for the asbestos-containing mastic and cement exemption, which is allowed for by 29 CFR 1926.1101(a)(8). However, according to Department of State Health Services (DSHS) officials (Raper, 2007), these materials are not regulated by TAHPR, meaning the exemption provided by federal regulations is allowed in Texas. Additionally, TAHPR applies to public buildings, whereas bridges are not considered public buildings. For this reason, bridge projects are exempt from TAHPR.

4. Official Recommendations

Over the course of this project, several obvious recommendations became apparent. These recommendations have been divided into two separate groups. The primary recommendations are recommended for immediate implementation and intended to decrease TxDOT potential liability in the short-term. The secondary recommendations consist of recommendations that are intended to decrease TxDOT potential liability over the long-term and are primarily in the form of future research project ideas.

4.1 Summary of Primary Recommendations

1. Train TxDOT personnel on appropriate OSHA regulations;
2. Limit TxDOT worker exposure to hazardous materials;
3. Establish oversight of contractor controls and safety protocols;
4. Give excess demolition material and responsibility thereof to the contractor;
5. Have TxDOT or subcontractor remove LBP before demolition or maintenance work commences;
6. Recycle/smelt steel with LBP in place;
7. Properly encase all waste for disposal;
8. Appoint a TxDOT asbestos expert within the DOT to oversee asbestos-related work; and
9. Keep a listing of licensed asbestos abatement contractors.

4.2 Discussion of Primary Recommendations

4.2.1 Continue Training TxDOT Personnel on Appropriate OSHA Regulations and Limit TxDOT Worker Exposure To Hazardous Materials

These two recommendations go hand in hand. It is possible to use TxDOT employees for bridge maintenance work. However, when TxDOT employees are used to do work involving LBP, ACM, or other hazardous materials, TxDOT becomes the employer as defined by the applicable OSHA regulations. This, therefore, greatly increases TxDOT's liability and responsibility.

Should a TxDOT employee be exposed to asbestos and later develop a form of lung disease due to this exposure, that person could be a permanent financial burden to TxDOT. However, should contract labor be used and a similar situation occur, TxDOT may not be held responsible for that person's future medical costs as that person is not a TxDOT employee. This is only one reason why TxDOT employees should have limited exposure to materials such as LBP or ACM.

A second reason for limiting TxDOT exposure is the more obvious short-term concern that TxDOT then becomes legally and financially responsible for monitoring and protecting their employees when working around LBP or ACM. By removing TxDOT personnel from a jobsite, the responsibility for TxDOT to monitor those persons is likewise removed.

By using contract labor whenever possible, TxDOT will limit both its immediate legal and financial responsibilities and well as long-term healthcare costs. However, it is not always possible to solely use contract labor. Often for oversight reasons TxDOT personnel must be on

the jobsite to inspect projects and ensure they are being conducted in accordance with TxDOT policies and specifications. For this reason, when TxDOT personnel are used on a jobsite, they should be well-trained in all appropriate hazardous material handling requirements and worker safety.

Training TxDOT personnel has several benefits. The first is immediate safety; workers that do not understand the safety considerations or dangers of a certain job or process pose a greater risk to themselves and those around them than those workers that do understand these issues. For this reason, appropriate training for TxDOT personnel serves the very real purpose of making a safer workplace, which should then lead to a better and more efficient project.

Second, by giving training in matters of working with LBP and ACM to TxDOT employees that must be on a jobsite will allow them to better find and correct unsafe work conditions and habits among those around them. This will also lead to a safer work environment, which means less liability for TxDOT and by extension less liability for the contractors who will benefit from well-trained TxDOT personnel.

Finally, if TxDOT personnel are well-trained, the example above of a TxDOT employee becoming detrimentally exposed to asbestos should not happen, as that TxDOT employee will have a greater understanding of the risks involved and will take the necessary steps to prevent it from the exposure from happening. This will then reduce TxDOT's long-term liability and healthcare costs. The training that should be required by TxDOT is that described in 29 CFR 1926.62 and 1926.1101. However, in the event of TxDOT personnel visiting the site, TxDOT will be responsible for the worker protection equipment as well as sampling the biological monitoring to ensure worker safety from LBP and ACM. Therefore, TxDOT would be responsible for the monitoring of the "asbestos expert, " which will be discussed in more detail later in the text.

4.2.2 Establish Oversight of Contractor Controls and Safety Protocols

One of the simplest ways of reducing TxDOT liability is to have some form of oversight of contractor controls and safety protocols used to protect employees from LBP and ACM exposure. The recommended form of this oversight is to have the contractors submit in writing a copy of all safety practices, engineering controls, and other protocols employed to protect their workers on a project.

Currently TxDOT has contractors answer the following questions during a Pre-Construction Conference:

- Does the contractor have a defined safety program? List the goals and people responsible, a letter designating a safety officer, minutes of the safety meeting, issue resolution, etc.
- How does the contractor's management support the safety program?
- Does the contractor's safety program include discussion with employees to promote safe conditions and practices in their work?
- How are the job-related injuries and illnesses investigated, recorded and reported by the contractor?

- What does the contractor do to keep informed on government safety regulations and standards?

A general form of these protocols should be submitted with the contractor's bid as well as a more specific form if new circumstances should arise during the project. For example, if a bridge assumed not to contain ACM is discovered mid-project to contain ACM, a more specific set of protocols may need to be developed by the contractor to deal with that situation. A copy of these new protocols would then be submitted to TxDOT before work commences.

This will allow TxDOT to, through trained personnel, find any possible flaws in the work practices and safety protocols that could potentially compromise worker safety. Additionally, TxDOT will be able to use this data for the initial exposure assessments as well as in protecting their own workers on future projects in which they need similar safety protocols and work practices.

4.2.3 Give Excess Demolition Material and Responsibility Thereof to the Contractor

One of the common practices of other state DOTs is to give excess demolition materials to the contractor performing the demolition work. The purpose of this is that the contractor, in addition to taking away the physical material, also takes responsibility for the material.

Of the states surveyed that choose to use this option, most tend to cease all contact with the material once it is transferred to the control of the contractor. There are no controls or checks in place by the DOT to ensure that the waste material does not negatively impact the surrounding environment.

However, it is still possible for this material to have a negative environmental impact, such as leaching of lead from the LBP. Leaching may occur if the material coated with the LBP is exposed to an acidic solution. To ensure that TxDOT has liability protection in place, some form of oversight is needed.

For TxDOT to continuously oversee the condition of all material would increase costs for TxDOT, rather than decrease cost and liability. Therefore, the simplest form of oversight is to require first that TxDOT give written notice that the material may contain LBP, ACM, or both. This ensures that the contractor cannot later claim ignorance of the presence of hazardous materials.

4.2.4 Have TxDOT or subcontractor remove LBP before demolition or maintenance work commences

One issue of concern to TxDOT is the removal of paint in cutting locations. As indicated in the phone survey section of the document, the answer varies between states. In some states, the DOT must identify and remove the LBP before maintenance or demolition work may begin. In other states, the prime contractor performs LBP removal. Another option is the hiring of a subcontractor to perform the LBP removal work.

The project advisors have indicated that contractors often cannot remove the lead due to bonding or insurance issues or do not want to deal with LBP. Subsequently TxDOT has been forced to use separate specialty contractors to remove LBP prior to cutting of the beams by the prime contractor. The specialty contracts can be somewhat expensive and difficult to set up, and require significant coordination with the prime contractor. Project advisors would like guidance and recommendations on future procedures regarding the removal of LBP at cutting locations.

The researchers believe the issues relate to the size of the project. If only a few cuts are necessary, then workers wearing appropriate personal protective equipment should be protected from airborne lead released during the cutting of steel members. Although this is a potential approach, the researchers suggest requesting and obtaining the data from the blood monitoring of the employees performing the work. A statistically large enough data set will indicate if any unforeseen issues arise regarding this approach and work safety. Ultimately, the researchers believe TxDOT should move towards LBP removal before cutting steel members commences.

For large projects, the researchers suggest that the LBP be removed. Again, due to the magnitude of the project, TxDOT may want to use their personnel; however, a subcontractor is the recommended approach as they may be able to complete the job more quickly and safely as they should be prepared to protect their works from LBP exposures. The researchers suggest a benefit cost analysis be performed for each project to determine the most economical course of action. As everyone will be required to meet all federal and state LBP requirements, worker safety will be protected whether the work is performed by TxDOT personnel or a subcontractor.

In the event the benefit cost analysis indicates the work should be performed by a subcontractor, the researchers suggest using a separate contract from the main demolition contract. This allows more control over the contract. Additionally, a separate contract should minimize future issues with the prime contractor.

4.2.5 Recycle/Smelt Steel with LBP in Place

As mentioned previously, by transferring ownership of materials to other entities, responsibility is also transferred. This transfer of ownership can be accomplished through having steel members smelted, the most common form of steel recycling, with any lead based coatings still in place. This allows the LBP to be removed during the smelting process where it becomes a byproduct of the process. As a byproduct, it becomes the responsibility of the smelter/recycler, not TxDOT.

4.2.6 Properly Encase All Waste for Disposal

In the case of smelting LBP-containing steel, there is little need for encasement of waste. However, for waste removal debris and ACM waste, it is necessary to ensure that the waste materials do not become airborne during transport at a jobsite or to a waste facility. OSHA regulations require that there are no visible emissions of asbestos from the transport during transit. Also, OSHA requires that ACM be encased before the end of a work shift (29 CFR 1926.1101 paragraph I). Since LBP does not easily become airborne, these requirements do not exist for LBP waste, though it too must be encased eventually for disposal.

Several methods have been determined for the encasement of these waste materials. First, for both lead and asbestos waste products, it may be best to encase waste material in concrete. By encasing these materials in concrete, they are ensured not to become airborne at anytime. Additionally, it will be difficult for the lead to leach into the soil if encased within the concrete. This problem will be discussed in the subsequent section on future research. This method can potentially be costly, and therefore further study may have to be conducted to determine when it is a cost-effective option.

In the case that concrete is not used to contain LBP or ACM waste and debris, either for reasons of economics or a choice by TxDOT, the simplest solution is provided for in 29 CFR 1926.62 and 1926.1101. For asbestos, all waste must be disposed of in impermeable bags at least 6 mils thick, or some other impermeable material that can protect at least as well. This 6 mil thickness requirement is not in place for lead, however, for ease of use and consistency, this report recommends that a 6 mil minimum thickness be in place for both lead and asbestos wastes. This minimum thickness will help ensure that no waste materials become airborne or leach into the surrounding environment.

4.2.7 Appoint a TxDOT Asbestos Expert within the DOT to Oversee Asbestos-Related Work

In nearly all industries there are people who specialize in one particular aspect of a job, especially with complex or high risk areas, to ensure the job is performed properly. Asbestos compliance is of great importance and complexity. Therefore, it is in TxDOT's best interests to employ one or more asbestos experts to ensure that all asbestos-related work is done properly and complies with all applicable federal and state regulations.

This "asbestos expert(s)" would be responsible for several areas concerning asbestos. First, they would be responsible for ensuring that all asbestos-related work is performed in accordance with all applicable regulations. The position would require a great deal of knowledge concerning asbestos; therefore, this person will be required to have all OSHA/EPA asbestos training required for asbestos removal workers. The required training is spelled out in 29 CFR 1926.1101. The training would allow the asbestos expert to serve in the capacity of a competent person as required by 29 CFR 1926.1101 for all asbestos work. Though it was previously recommended that TxDOT limit personnel exposure to ACM or use as a person trained in asbestos regulations, there may be times when it is necessary to use TxDOT personnel as the "asbestos expert".

Secondly, the asbestos expert would be responsible for ensuring that all personnel working with ACM are properly trained and that workers do not act above their level of training. This person would also be responsible for coordinating the necessary training for TxDOT personnel in matters of ACM handling and disposal.

The asbestos expert's required expertise in matters of ACM removal makes this person uniquely qualified to review ACM removal and usage procedures for TxDOT and to make recommendations on potential improvements. This would allow the department to continually

update its procedures and guidance as laws continue to evolve and change, without having to contract new research projects such as this one, saving TxDOT money and time.

Finally, throughout this recommendation, one "asbestos expert" has been mentioned. At over 260,000 square miles and containing more than 32,000 bridges, Texas has a definite requirement for more than one single asbestos expert. The ideal system would be for one asbestos expert to be placed in each of TxDOT's geographical districts to handle the ACM work in each of those districts. There would then be another asbestos expert at the state headquarters to coordinate asbestos-related work activities throughout the state from an upper-management position.

4.2.8 Preferred Asbestos Abatement Contractor

The problem facing TxDOT's need to find the most qualified contractor for asbestos abatement is that often, choosing the most qualified contractor does not mean choosing the least expensive contractor, which is required of TxDOT. Although TxDOT may not be legally able to set preferred contractors, the researchers retain this recommendation for noteworthy purposes. Other states use this route and acknowledging preferred contractors may provide TxDOT with the information to pursue this route in the future. The benefits of a preferred contractor are outlined below.

First, a more experienced company will likely be able to perform these tasks using fewer people. This effectively levels the playing field so that the only variables in the bidding will be a matter of the number of employees working on a project and how much they are paid, the abatement methods used and safety procedures employed, and the equipment costs. Additionally, they will be able to use equipment and personnel more efficiently, thus lowering removal and, likely, disposal costs. Requiring preferred asbestos contractors ensures that only experienced and well-qualified contractors will be able to perform the necessary work.

Secondly, during meetings with TxDOT, it was made known that TxDOT could retain contractors on extended contracts, also known as evergreen contracts, to perform multiple jobs over a certain period of time. This option allows TxDOT to hire a contractor and keep them under contract for an extended time without bidding specific jobs to the lowest bidder. The preferred asbestos contractor approach may be especially beneficial after TxDOT has identifies the companies that do the best job of protecting worker safety and conducting the construction and maintenance as required. However, should this option be used, it would be in TxDOT's interest to continue to designate new contractors as a preferred contractor in the event that they surpass the currently preferred contractor, which could help prevent a contractor under an extended contract from becoming complacent in their work. In time, companies may obtain a special certification from TxDOT as being a specialized asbestos contractor.

4.3 Summary of Secondary Recommendations

1. Conduct a study of all bridges to determine the actual location, quantity, and nature of both LBP and ACM;
2. Conduct a study of ambient air monitors for the purpose of measuring airborne lead concentrations, to determine the best monitor for TxDOT activities;

3. Conduct a study to show under which circumstances are workers free from risk of lead or asbestos exposure on bridge projects;
4. Determine economics of encasing ACM and LBP wastes in concrete;
5. Study the recycling of asbestos-containing concrete.

4.4 Discussion of Secondary Recommendations

The following secondary recommendations are of equal importance, but are discussed separately as they are not intended to immediately lower TxDOT's liability. Instead, they are intended as future research projects for TxDOT to undertake, which may help TxDOT in areas of exposure assessment and liability reduction.

4.4.1 Conduct a Study of all Bridges to Determine the Actual Location, Quantity, and Nature of LBP and ACM

Through the course of the phone survey, it was determined that some states have actively located and removed both LBP and ACM, ensuring that these substances will not be of concern in future bridge projects.

As was previously mentioned, in December of 2006 TxDOT had to pay $40,000 to remove LBP from the Bear Creek Bridge. Much of that cost was due to monitoring worker exposure to lead, for which TxDOT was not technically responsible. Using this information as well as knowing an approximate number of bridges in Texas, we may determine a rough estimate for what it may cost to remove all LBP by using change orders as was done with the Bear Creek Bridge. If it is assumed that a reasonable cost is no more than $30,000, and if it is assumed that no more than one-third of Texas bridges contain LBP, we find that it would cost roughly $320 million to remove LBP in this manner. For the sake of argument, $30,000 has been chosen as a reasonable cost for a project on the scale of the Bear Creek Bridge based on the fact that TxDOT was overcharged during this project. This is likely a conservative estimate as there are many bridges of larger scale than the Bear Creek Bridge. This number is not intended to be an estimate of actual costs for removal of paint from bridges. It is intended solely as an illustration of possible costs if work is done without knowing the presence of LBP or ACM. While TxDOT may be required to pay for some level of monitoring, it would likely be less than the amount illustrated here.

If, instead, the location of LBP and ACM was known, TxDOT would be able to take steps to dispose of these materials when work is being performed, rather than discovering LBP and ACM during the project. Additionally, it would be possible for TxDOT to garner funding at times to perform this removal before any demolition or renovation work was performed.

4.4.2 Conduct a Study of Ambient Air Monitors to Measure Airborne Lead Concentrations

Several states responding to the phone survey portion of this research stated they either use their own ambient air monitors or allow contractors to use ambient air monitors to determine airborne lead levels. This method is less expensive than biological monitoring and can determine exact airborne lead levels.

Although most states leave the choice of analyzer up to the contractor, one particular analyzer was identified. The AeroLead Analyzer, produced by ELS Technology (Parker, CO) claims to be able to sample and quantify lead concentrations for as little as 10% of the normal cost of off-site laboratory testing (http://www.elstechnology.com/metals/index.html). This particular analyzer has been used by the U.S. Department of Defense during renovation of certain facilities as well as in large open-air transportation projects (Jolly, 2007).

The AeroLead, however, is not the only analyzer on the market. Further study into finding an airborne lead monitor that best suits TxDOT's needs is necessary. Factors to be considered in selecting an ambient air monitor are cost, survivability, and applicability to TxDOT projects beyond bridge projects.

4.4.3 Conduct a Study To Show Under Which Circumstances Workers Are Free From Risk of Lead or Asbestos Exposure on Bridge Projects

At various stages during research, the research supervisors wanted to know if there was a point when a job could be determined to be free of risk from LBP and ACM exposure. The current regulations do not allow for a job to be considered to be free of risk without some sort of objective data showing that a job is in fact safe. To this end, TxDOT could conduct a study of various bridge projects to determine the jobs are truly free of risk from LBP and ACM exposure.

Although the current CFRs require that any objective data be less than 12 months old, it may be possible, after sufficient study, to request exemptions from OSHA and EPA requirements. These exemptions would allow TxDOT to work more efficiently as there would be fewer potentially unnecessary requirements in the way of conducting work.

4.4.4 Determine Economics of Encasing ACM and LBP Wastes in Concrete

As previously mentioned, it may be possible to encase all waste materials in concrete to ensure it does not become airborne or leach into the soil. However, concrete is in high demand, making it a somewhat expensive commodity. For this reason, it may not always be economical to use concrete to encase waste products rather than heavy plastic.

4.4.5 Recycle Asbestos-Containing Concrete (ACC)

It was previously mentioned that current EPA regulations do not allow for the recycling of ACC. Furthermore, concrete cannot be abraded or ground to remove asbestos or treated in any way that causes the asbestos to become friable. However, the U.S. Department of Energy commissioned a report by Jantzen and Pickett (Jantzen, 2007) of the Westinghouse Savannah River Company in the recycling of radioactive and non-radioactive ACM. While the EPA currently does not allow recycling of ACC, this academic report shows a potential for recycling ACM, which causes the asbestos to become non-friable and therefore non-hazardous through means of chemical alteration. This report is included as a sign of potential future work that TxDOT should investigate. Should this process of recycling be allowed by the EPA, the altered ACM could potentially be use as aggregate for glassphalt and glasscrete.

4.5 Summary of Recommendations

The following is a list of the recommendations and their importance to reducing TxDOT's costs and liability.

1. Continue Training TxDOT personnel on appropriate OSHA regulations –
    - Ensuring that all TxDOT personnel are properly trained will ensure that work is done safer and more efficiently, thereby reducing costs and liability.

2. Establish oversight of contractor controls and safety protocols –
    - By having some form of oversight of contractor safety controls and protocols, TxDOT will ensure that work is being done safely and properly, thereby decreasing liability by association.

3. Limit TxDOT worker exposure to hazardous materials –
    - By limiting the exposure of TxDOT personnel to hazardous materials, TxDOT protects its workers and decreases liability, as TxDOT would then not be considered an employer as defined by 29 CFR 1926.62 and 1926.1101.

4. Give excess demolition material and responsibility thereof to the contractor –
    - By giving excess material to contractors, TxDOT also gives responsibility and liability for that material to the contractors.

5. Have TxDOT or subcontractor remove LBP before demolition or maintenance work commences
    - Although for small job, the LBP may remain in place during cutting, the researchers suggest hiring a subcontractor or performing the work themselves to remove LBP.

6. Recycle/smelt steel with LBP in place –
    - By smelting steel with LBP in place, the lead becomes a byproduct of the smelting process, further removing liability from TxDOT, or the contractor if the material is first given to a contractor and then sold for smelting.

7. Properly encase all waste for disposal –
    - By fully encasing waste materials so that they cannot reenter the surrounding environment, TxDOT is ensuring that minimal harm can come to the environment or to the people in that environment, thereby reducing liability.

8. Appoint a TxDOT asbestos expert within the DOT to oversee asbestos-related work –
    - Appointment of an "asbestos expert" will ensure that there is always a reliable knowledgebase present at TxDOT to ensure that asbestos work is done in accordance with all applicable regulations.

9. Designate a preferred asbestos abatement contractor(s) –
    - Prequalify abatement contractors that can be used for the majority of asbestos removal work. This will ensure that the contractor most experienced in bridge projects is used.

10. Conduct a study of all bridges to determine the actual location, quantity, and nature of both LBP and ACM –
    - Determining the location and quantity of LBP and ACM in bridge projects prior to performing work will allow TxDOT to take the appropriate steps to ensure that the removal work is done correctly and lower TxDOT costs.

11. Conduct a study of ambient air monitors for the purpose of measuring airborne lead concentrations –
    - Ambient air monitors allow assessment of worker exposures in less time than more expensive biological monitoring or offsite laboratory analysis.

12. Conduct a study to show workers under certain conditions are never at risk of lead or asbestos exposure on bridge projects –
    - Although current regulations allow objective data no more than 12 months old when doing an initial exposure assessment, it may be possible to obtain an exemption if it can be shown that certain jobs are free from exposure at all times under certain repeatable conditions.

13. Determine economics of encasing ACM and LBP wastes in concrete –
    - Proper encasement of waste materials is of great importance. Using concrete to encase materials is highly effective, though it is necessary to determine under what conditions is it not economically viable.

14. Recycle asbestos-containing concrete –
    - Though recycling of ACM is not currently allowed, there is potential for recycling in the future. Conducting more research and feasibility studies, or at the very least staying up-to-date on current research, could help TxDOT stay at the cutting edge of a potential new way of dealing with ACM waste.

Appendix 1
TxDOT Internal Documents

MEMORANDUM

Texas Department of Transportation

TO: Administration
District Engineers
Division Directors
Office Directors

DATE: January 26, 2007

FROM: Amadeo Saenz, Jr., P.E.

SUBJECT: Guidance for Handling Asbestos in Construction Projects

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Attached please find a *Summary of Asbestos Procedures for TxDOT Projects*. This guidance document is a collaborative effort from the Bridge Division (BRG), Environmental Affairs Division (ENV) and Construction Division (CST).

The document outlines and explains the following steps to comply with state and federal regulations regarding asbestos containing materials (ACM) on construction projects:

1. Identify all bridge demolition projects or renovation projects
2. Inspect each project for ACM in accordance with the procedures herein
3. Notify the Texas Department of State Health Services (DSHS)
4. Amend notifications as necessary
5. Pay all fees
6. Abate any ACM which might be disturbed by project activities

Each step is explained in detail, and attachments in the document provide a form for the initial assessments and requirements for testing, instructions for filling out the DSHS notification form, DSHS Regional Office locations and contact information, a list of common notification scenarios and a list of relevant specifications for ACM related work.

The document has been reviewed by DSHS to insure that we are in compliance with the applicable rules and procedures.

A link to this guidance document will be posted on the intranet sites for BRG, ENV, and CST. Please contact Brian D. Merrill, P.E., of BRG, at (512) 416-2232 or bmerrill@dot.state.tx.us for additional information or clarification.

Attachment

Texas Department of Transportation
Summary of Asbestos Procedures for TxDOT Projects

Issued January 11, 2007

Overview. Many TxDOT projects are regulated under the National Emission Standards for Hazardous Air Pollutants (NESHAP) found in 40 CFR 61 Subpart M. These Federal standards were first developed to address asbestos found in buildings but have been expanded to include demolition and renovation work on bridges and other pubic facilities (such as retaining walls). In Texas, the Department of State Health Services (DSHS) is responsible for administering these regulations. The following information and procedures have been prepared as guidance for TxDOT personnel.

Definitions. Asbestos Containing Material (ACM) is defined under Federal and State rules as any material that contains greater than one percent asbestos based on examination by an approved laboratory method. Regulated Asbestos Containing Material (RACM) is ACM that is found in the following quantities: 260 linear feet of pipe, 160 square feet on other components (coatings), or 35 cubic feet where length or area could not be previously measured.

Affected Activities. This guidance applies to the following TxDOT activities:

1. Bridge demolition activities.
2. Renovation activities.

Follow this guidance regardless of the stage of the project (i.e. planning, design or construction). Refer to the Right of Way Manual for guidance on clearing structures from the right of way and the Occupational Safety Manual for asbestos issues related to TxDOT offices and workplace facilities.

Asbestos issues should be identified and addressed early in the project development to minimize impacts to construction and project costs. Special specifications and special provisions are available for all of the various options mentioned in this guidance and for typical asbestos abatement work.

Steps to Comply with State and Federal Regulations

1. **Identify all bridge demolition projects or renovation projects.**
2. **Inspect each project for ACM in accordance with the procedures herein.**
3. **Notify the Department of State Health Services.**
4. **Amend notifications as necessary.**
5. **Pay all fees.**
6. **Abate any ACM which might be disturbed by project activities.**

Step 1: Identify all bridge demolition projects or renovation projects.

Demolition – bridge projects involving wrecking or removing structures including any related handling operations, such as cleaning up construction debris. The definition of demolition will primarily apply only to bridge replacement project. Replacing load supporting members such as decks, girders, columns, or caps due to damage is not considered to be demolition work and should be handled as renovation work.

Bridge demolitions subject to asbestos assessment and notification are limited to span-type structures, including supports, erected over a depression or an obstruction, such as water, highway, or railway. Structures consisting of culverts or pipes constructed entirely of concrete or metal do not constitute a bridge subject to these procedures.

Renovation – non-demolition projects involving the altering of a facility or facility components in any way that may disturb ACM. Examples of renovation work that may disturb ACM include the following:

- Bridge widening
- Re-decking a bridge is considered to be renovation work
- Coating removal on retaining walls, median barriers, bridges and;
- Removal of buried or suspended conduits.

Routine Maintenance Activities - the potential for disturbing ACM should always be considered, but a documented assessment is not required for certain routine maintenance activities including but not limited to:

- Asphalt overlays or seal coats for pavement
- Repair/change-out of guardrail, walls or fencing consisting of uncoated concrete, steel, or wood.
- Addition of conduits/piping and lighting.
- Sealing of cracks.
- Repairs affecting only asphalt, uncoated concrete, or uncoated steel.
- Modification of drainage openings that does not disturb coated concrete or other suspect ACM.
- Change-outs of reflectors or signs.

Step 2: Inspect each renovation project and bridge demolition project for ACM.

Inspect each in accordance with the one of the following procedures:

A. Districts may conduct an initial assessment using TxDOT personnel to determine the potential for ACM on the project. This initial assessment may be performed by TxDOT personnel familiar with the identification of potential ACM. All personnel performing the initial assessment should be familiar with the common sources of ACM on TxDOT facilities. It is recommended that districts have staff trained in ACM identification. Training providers for the initial inspector training class can be found at http://www.dshs.state.tx.us/asbestos/Training/ATPLST.pdf Districts need to document the results of this assessment on the *Initial Asbestos Assessment Form* (Attachment A). Maintain a copy of this form in the project files. Should the initial assessment identify suspected ACM, hire a licensed asbestos consultant to inspect the bridge to sample and test suspect materials as outlined in the paragraph below.

B. Obtain the services of a licensed asbestos consultant to inspect the renovation or the bridge demolition project. GSD standard specification 910-38-06 "Inspect, Sample and Test for Asbestos Containing Materials and Monitor Abatement Projects" may be used to acquire inspection & monitoring services through a District purchase of service. (Note: This purchase of service does not fall under the highway maintenance service statutes for purchase of services under $15,000). Funding for the services will be through the district budgets. Request that the consultant's report reference bridges by their Structure Number or Bridge ID Number. Inform BRG Construction and Maintenance Branch or ENV Pollution Prevention and Abatement Branch of any findings indicating the presence of ACM. Maintain a copy of the consultant's bridge survey report in the project files. ENV also has evergreen engineering contracts available for the asbestos inspection. Contact ENV Pollution Prevention and Abatement Branch for assistance with these contracts.

   When suspected ACM are found, the consultants typically test the material using Polarized Light Microscopy (PLM by EPA 600/R-93/116). If these results indicate the presence of ACM at 5% or less, it is recommended to request another test using the Point Count (EPA Point Count - 400 points) method. There have been several cases where positive test results using PLM were overturned using the more accurate point count method. The estimated cost for inspecting a bridge is around $1600, however actual costs will vary depending on the location, complexity of the inspection, and the number of bridges to be inspected per mobilization. A PLM test costs approximately $15 while the point count method is about $50.

Step 3: Notify the Texas Department of State Health Services (DSHS) as required.

Notification must be made using DSHS Form APB#5, "Demolition/Renovation Notification Form". The Form and instructions can be found on the DSHS Asbestos Programs Branch web page at http://www.dshs.state.tx.us/asbestos/notification.shtm . The DSHS notification form must be hand-delivered or mailed (and postmarked) to the DSHS Austin offices **at least 10 working days prior to commencing the work**. Fax or e-mails are not currently accepted.

When ACM is identified, have an asbestos consultant assist in the preparation of the notification form.

When ACM is not present, TxDOT personnel may complete the DSHS notification form. See Appendix B for additional guidance on completing this form.

In some instances, multiple notifications may be required. Refer to Attachment D for common notification scenarios. Depending on whether the work is demolition or renovation the notification process will be handled in the following manner:

Demolition Work:
Notification is required for all bridge demolition projects even when ACM is not present.

For demolition projects with multiple bridges and where ACM is not present, a single notification form to DSHS may be filed. The notification must include information on each bridge. This may be done by attaching a list of bridges that includes the description/location for each bridge. For the start date, provide the best estimate possible but make sure the submission date is at least 10 working days before any start date for demolition. DSHS defines the start date as the date where some visible form of demolition activities or related handling operations begins. DSHS has indicated that the end date for demolition without ACM is not critical for their operations so the project end date can be used.

Individual notifications are required for each bridge where ACM is present and demolition start and completion dates are required to be accurate and require amendments as discussed below in Step 4.

Renovation Work:
Submit a notification for all renovation work that will disturb ACM above the regulatory thresholds. The regulatory thresholds for ACM are 260 linear feet of pipe, 160 square feet on other components (coatings), or 35 cubic feet where length or area could not be previously measured. These lengths, areas, and volumes are cumulative for the project.

Notification is not required for renovation projects when ACM is not present; when the ACM is not disturbed or when the ACM is present below the regulatory threshold.

Step 4: Amend Notifications as Necessary

For demolitions with ACM and renovations that require notification, amend the DSHS notification form if the demolition or renovation start or completion dates change (Note: the start date is particularly important because DSHS inspectors often schedule site visits to coincide with the start of ACM related activities).

For projects involving the demolition of one or more bridges where ACM is not present, only changes to the start dates for demolition work on the first bridge will require amended notification to DSHS.

Submit amended notifications no less than 24 hours prior to the change and follow-up with a call, fax, or e-mail to the DSHS regional office responsible for your area. Include with the amendment a copy the original notification or the previous amendment, if any. Submission of the amended dates to DSHS regional offices by fax or e-mail is acceptable. However, always send the original amended notification to the DSHS Austin office by mail. Keep copies of all notifications and records of any discussions with DSHS in the project files.

Refer to Attachment C for DSHS office locations and contact information and Attachment D for common notification scenarios.

Step 5: Pay the DSHS notification fee for each notification, upon receipt of the invoice.

The fee is based on the amount of asbestos reported (from $55 for no asbestos up to a maximum of $3,210). The DSHS invoice will be submitted to the person listed in the "facility owner" section of the notification form. Finance Division recommends that each district establish a single point of contact for all DSHS invoicing. The district accounting office should process payment with appropriate signature approval and charge information and allocate to object 439 (fees). Contact Finance Division's Voucher Processing Branch for assistance with processing payments for asbestos related services or fees. FIN and DSHS are working on a direct-billing or credit card process that will automatically pay the assessed fees but this system is not in effect at this time.

Step 6: Abate any ACM which might be disturbed by project activities.

It is the Department's stated policy that asbestos abatement should be performed separately from the prime contract wherever possible. Abatement must be performed by a DSHS licensed abatement contractor. Districts can use either construction or contracted routine maintenance funds for these contracts. If maintenance funds are utilized for an abatement contract, an Automated Budget Request can be made to charge the abatement work to the construction project. Options for conducting the ACM abatement are listed below. Refer to Attachment "E" for Special Provisions and Specification relating to asbestos work. The options listed below can be utilized for abatement either before or during construction unless otherwise noted. If possible, it is preferred to abate ACM before construction. Abating ACM during construction will require significant coordination between the prime contractor and abatement contractor to minimize scheduling conflicts, traffic control, and impacts to the public, duplicated activities or unnecessary downtime. Contracting options for abatement during construction are as follows:

1. Establish an evergreen district-wide contract for asbestos abatement where the contractor is utilized on a call-out basis. The special specification for asbestos abatement (SS 5414) listed in Exhibit E will work for this type of contract. This type of contract may be more useful for larger, urban districts that have a higher probability of encountering ACM. If federal funds are used to fund this work, the special provisions listed for Federal-Aided Maintenance Required Checklist must be included in the proposal. Refer to http://www.dot.state.tx.us/apps/specs/chklst.asp?year=3&fund=F&contract=R for a listing of these special provisions.

2. Develop the abatement project PS&E for a normally let construction or maintenance project. The special specification for asbestos abatement (SS 5414) and the SP006-028 listed in Exhibit E will work for this type of contract. Routine maintenance contracts for this work can be either state-let or local-let projects depending on the estimated cost.
3. Procure an abatement contractor using a purchase of service contract. TxDOT may execute a purchase order for highway maintenance services estimated at less than $15,000 as a purchase of service instead of using the normal routine maintenance contract letting procedures when TxDOT determines that:
    i. the project does not require detailed specifications;
    ii. there is a need to expedite the project; or
    iii. it would be otherwise impractical to use the letting procedures.

    For additional information refer to the Purchasing Manual concerning the use of purchase of services.
4. Perform the abatement work with an Emergency Contract. A District Engineer (DE) who identifies an emergency situation may immediately request a certification of emergency through from the deputy executive director. The notification shall describe the facts and nature of the emergency. Upon receiving authorization to proceed, procedures may be initiated for the procurement and award of an emergency contract. All such notifications will be documented in writing. Use of emergency contracts can be justified when unknown ACM are found at a late date, implementation of these requirements has an impact on a previously or about to be let project, and the delay in acquiring a separate

contractor will have a significant impact on the prime contractor's work schedule and may result in significant payments to address damages. Refer to the Maintenance Contract Manual at http://txdot-manuals/dynaweb/colinfra/mct for more information regarding emergency contracting procedures.

5. Use the Prime Contractor to abate ACM during construction. Inclusion of ACM abatement work in the construction contract bid documents will require Administration approval and will only be considered when the following conditions are met:

   A Work for removal of the structure is so intrinsic with the abatement work that the work cannot be separated. (e.g. There are asbestos containing bearing pads in the structure that are attached and removal will require demolition or lifting of the structure.)
   B The abatement work will require additional lane/road closures that could be reduced if the prime contractor performed the work in conjunction with the other structure work. This criterion applies to high traffic volume locations where the impact to traffic is severe.
   C Having two separate contractors perform work creates excessive risk to the department. (e.g. Coordination and timing would put the department at excessive risk for claims or additional risk is generated for the public.)

   Under this scenario, ACM abatement is included in the construction contract plans. If previously unknown ACM are encountered on a project, ACM abatement can be handled as a change order under the contract if the contractor is willing and able.

   While the Department does not require a Contractor to remediate or remove hazardous materials (unless otherwise shown in the plans) that they did not introduce onto the work location, if the Contractor is willing and able to remediate the contamination, the contract can be modified to address the cleanup. The term "able" means they have the expertise, licenses, and insurance to perform the remediation. In order to incorporate the remediation work into the contract, a Supplemental Agreement must be executed between the Department and the Contractor. A Supplemental Agreement is a formal agreement between the contracting parties amending the contract. A Supplemental Agreement is signed by a department representative, a Contractor representative, and is approved by the surety. If the Contractor is willing and able to conduct the remediation, coordinate with the Construction Division for verification of qualifications and filing of the required insurance certificates.

Contacts for more information:

The following are Division contacts for these asbestos procedures:

BRG	Brian D. Merrill, P.E.	512-416-2232	BMERRILL@dot.state.tx.us
CST	John Jameson	512-416-2432	JJAMESO@dot.state.tx.us
ENV	Rodney Concienne	512-416-3012	RCONCIE@dot.state.tx.us

Asbestos Guidance Document - Attachment “A”

Initial Asbestos Assessment Form

Initial Asbestos Assessment Form

Structure Information
TxDOT District (Name/Number): _____
County (Name/Number): _____
Structure Number: _____ Highway: _____
Facility Crossed/Structure Name _____
Location: _____
Contact Bridge Inspection Coordinator for bridge information

Initial Inspection: This initial assessment may be performed by TxDOT personnel familiar with the identification of potential asbestos containing material (ACM) or by a licensed asbestos consultant. All TxDOT personnel performing the initial assessment should be trained in the identification of ACM.

Do project activities have the potential to disturb the following?

- Coated pipelines or asbestos cement utility lines? ___YES ___NO
- Waterproofing mastics, caulk or coatings? ___YES ___NO
- Concrete stain, paint, opaque sealer or coating? ___YES ___NO
- Painted or coated steel? ___YES ___NO
- Insulation or joint compounds (fiber board and sealants)? ___YES ___NO
- Felt bearing pads on pan girders or flat slab bridges? ___YES ___NO
- Any other suspected ACM? ___YES ___NO

If YES to <u>any</u> of the above questions, retain a licensed asbestos consultant to conduct a confirmatory inspection and testing. Continue with DSHS notification and abatement requirements as necessary.

If NO to <u>all</u> of the above questions, the initial asbestos assessment is complete. Proceed with DSHS notification as required (Note: All demolition projects require notification to DSHS). Maintain a copy of this assessment form in the project file.

Name_____ Title_____

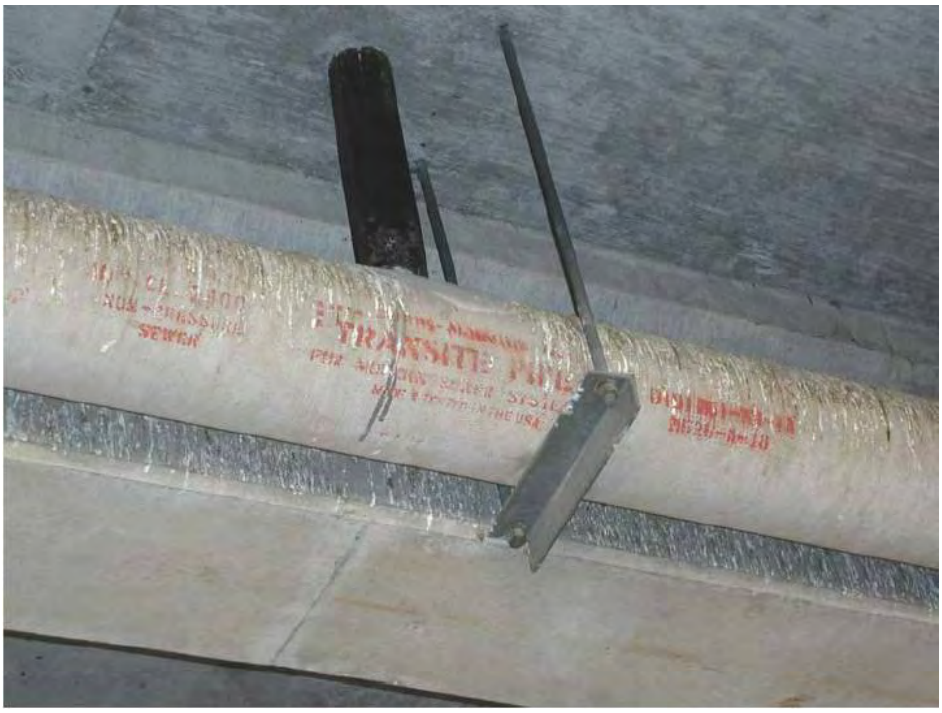
Phone _____

Signature _____ Date _____

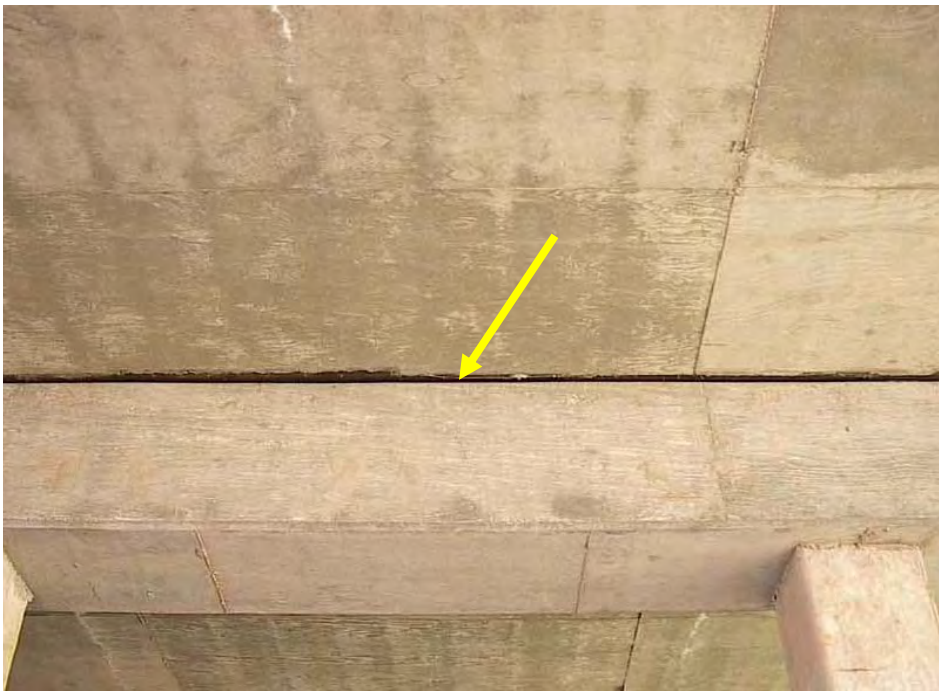
Common Sources of ACM on Bridges

Coatings on concrete: it should be assumed that any paint on concrete could contain asbestos and should be tested by a licensed inspector.

Mastic used to adhere or seal flashing



Transite pipe (contains asbestos)



Roofing felt or fiberboard bearing material

Rail Post Isolator Pad

Coatings on wood posts or timber piles

Asbestos Guidance Document - Attachment “B”

Instructions for Completing DSHS Asbestos Notification Form for a Typical Bridge Demolition Project, No Asbestos Present, Includes Completed Sample Form

Instructions for Completing DSHS Asbestos Notification Form

The following are step by step instructions for completing each item in the DSHS Notification Form for a typical bridge demolition project ***with no asbestos present****. It is recommended that an asbestos consultant assist with form preparation and submittal for abatement projects or when asbestos is present on the structure. For complete instructions refer to the form instructions available on the DSHS Asbestos Program's Branch web site. Also refer to the generic TxDOT example form found in this Attachment.*

Item 1 Abatement Contractor Information: Write "N.A." in the spaces provided for the abatement contractor information.
Demolition Contractor Information: Write the name of the demolition contractor and provide the contact information.

Item 2 Project Consultant or Operator: Write "N.A.".

Item 3 Facility Owner: Usually this will be the TxDOT District. Provide contact information for the designated person at the District. This person will receive the invoice for the notification fee from DSHS. For off system bridges, indicate: "Texas Dept. of Transportation for Facility Owner" and use the district's designated person as the contact.

Item 4 Description or Facility Name: Provide a bridge name or description along with the Structure number or Bridge ID number. For address provide a description of the location as found in the Bridge Database and county, plus city if applicable. Indicate "N/A" for the zip. Facility phone and contact would be the Area Engineer or designated district contact. Description of Area/Room number is "N.A". Prior use is "Bridge". Future Use is "N.A". Provide age of bridge and size (square ft.). Number of floors is "N.A.". School? Answer "No". Note: If the notification is for multiple bridges on a single project attach a list including the following information for each bridge: Highway & Feature Crossed (bridge name), Structure Number, Location (as found in Bridge Database), City (if applicable) Size, and Age. See sample list at the end of the DSHS Form.

Item 5 Type of Work: Mark "Demolition", and complete the information regarding the work schedule.

Item 6 Type of Building; Mark "NESHAP Only Facility". Facility occupied?: "No".

Item 7 Notification Type: Mark "Original" unless it is an amendment. If it is an amendment, fill in the amendment number and resubmit using the same form, with amended items circled. The rest of number 7 is for emergency notifications and would generally be "N.A".

Item 8 Procedures for Unexpected Asbestos: "Stop work, restrict access, contact project manager and asbestos consultant, and notify DSHS."

Item 9 Asbestos Survey Information: Survey Performed? Answer "Yes". Provide the survey date which is the date of the consultant inspection or the date of the TxDOT initial asbestos inspection. When using only the TxDOT assessment form, the Inspector License Number will be "NA". Analytical method is generally "PLM" (polarized light microscopy). If no suspect materials were identified leave the analytical method blank. Laboratory license number would be in the survey report or write "N.A., no suspect materials" when no suspect materials were identified to sample. If a consultant report was provided, the asbestos survey, inspector & lab info will be available from their inspection report. Inspector license # may be "NA" for in-house inspections.

Item 10 Description of planned demolition or renovation work, type of material, and methods to be used: Briefly describe how the bridge will be demolished (i.e. dismantling of bridge using heavy equipment, demolition using controlled explosives, etc).

Item11 Description of work practices and engineering controls used to prevent asbestos emissions: Write "N.A."

Item 12 Table of Asbestos Containing Materials: Mark the "No Asbestos Present" box above the table. *If asbestos materials are present, seek assistance from a DSHS licensed consultant.*

Item 13 Waste Transporter Name: Write "N/A, no asbestos"

Item 14 Waste Disposal Facility: Write "N.A, no asbestos"

Item 15 Information on Structurally Unsound Facilities: "N.A."

Item 16 Scheduled Dates of Asbestos Abatement: "N.A."

Item 17 Scheduled Dates of Demolition: Provide the best estimate of the start date for demolition. DSHS defines this start date as the date where some visible form of demolition activities or related handling operations begins. For projects with multiple bridges and no asbestos (or cumulative asbestos less than NESHAP thresholds), provide the start date for the first bridge, based on project time-line best estimates. Amended notification is required only when the start date for the first bridge changes, not for each bridge within the project. Make sure that the indicated start date will be at least 10 working days from the date the notification is postmarked.

TxDOT's designated employee, or a delegated consultant, should sign the form.

Mail the form to DSHS at the address on the form postmarked ***at least 10 working days*** prior to the demolition start date. Facsimiles or electronic transmissions are not acceptable for the original notification.

FOR OFFICE USE ONLY ☐ TAHPA ☐ NESHAP ☐ TH ☐ L VIOLATION? ☐ YES ☐ NO

DEMOLITION / RENOVATION NOTIFICATION FORM

TEXAS Department of State Health Services

NOTE: CIRCLE ITEMS THAT ARE AMENDED
NOTIFICATION#_____

1) Abatement Contractor: N.A. DSHS License Number:_____
Address :_____City: _____State: _____Zip: _____
Office Phone Number: (____)_____Job Site Phone Number:(____)_____
Site Supervisor:_____DSHS License Number:_____
Site Supervisor:_____DSHS License Number:_____
Trained On-Site NESHAP Individual:_____Certification Date:_____

Demolition Contractor:[Name of Contractor]_____Office Phone Number(XXX)XXX-XXXX_____
Address:[Contractor Address]_____City:[Contractor City]_____State:XX_____Zip:[XXXXX]

2) Project Consultant or Operator: N.A. DSHS License Number:_____
Mailing Address:_____
City:_____State_____ Zip_____ Office Phone Number:_(____)_____
:

3) Facility Owner: Texas Department of Transportation
Attention:[Name of District Contact – this person will receive the invoice for the notification fee]_____
Mailing Address:[Address for District Contact]_____
City: [District Contact City]_____State:TX_____ Zip: [XXXXX] Owner Phone Number(XXX)XXX-XXXX

****Note: The invoice for the notification fee will be sent to the owner of the building at the address listed in this section after the project is completed.**

4) Description or Facility Name: [Bridge Name/Descr. & Bridge ID #] or See Attached List *for mult bridges*]
Physical Address:[Hwy #, describe physical location]_County:[XXXXX]_____City: [XXXXX]____Zip: N/A
Facility Phone Number (XXX)XXX-XXXX_____Facility Contact Person:[A.E. or other District Contact]_____
Description of Area/Room Number:N/A
Prior Use:Bridge_____Future Use:N.A.
Age of Building/Facility: [Age – years]Size: [sq ft] _Number of Floors:N.A.___ School (K - 12): ☐ YES **X** NO

5) Type of Work **(CHECK ONLY ONE):** **X** **Demolition** ☐ **Renovation (Abatement)** ☐ **Annual Consolidated**
Work will be during: **X** Day ☐ Evening ☐ Night ☐ Phased Project
Description of work schedule: [i.e. working Monday – Friday]_____

6) Type of Building **(CHECK ONLY ONE):** ☐ **Public Building** ☐ **Federal Facility** ☐ **Industrial Site** **X** **NESHAP-Only Facility** Is Building/Facility Occupied? ☐ YES **X** NO

7) Notification Type **(CHECK ONLY ONE):**
X **Original (10 Working Days)** ☐ **Amendment** ☐ **Cancellation** ☐ **Emergency** ☐ **Ordered (see item 15)**
If this is an amendment, which amendment number is this?___ (**Enclose copy of original and/or last amendment**)
If an emergency, who did you talk with at DSHS?_____Emergency#:_____
Date and Hour of Emergency (HH/MM/DD/YY):____/____/____/____
Description of the sudden, unexpected event and explanation of how the event caused unsafe conditions or would cause
equipment damage (computers, machinery, etc_____
_____

8) Description of procedures to be followed in the event that unexpected asbestos is found or previously non-friable asbestos material becomes crumbled, pulverized, or reduced to powder: Stop work, restrict access, contact project manager and asbestos consultant , notify DSHS._____

9) Was an Asbestos survey performed? **X** YES ☐ NO Date:XX /XX /XX DSHS Inspector License No: N.A____
Analytical Method: **X** PLM ☐ TEM ☐ Assumed DSHS Laboratory License No: [License #] or [N/A -no suspect material found] (For TAHPA (public building) projects: an assumption must be made by a DSHS Licensed Inspector)
10) Description of planned demolition or renovation work, type of material, and method(s) to be used:[Briefly describe demolition methods and type of bridge]

11) Description of work practices and engineering controls to be used to prevent emissions of asbestos at the demolition/renovation:N.A._____

12) ALL applicable items in the following table must be completed: **IF NO ASBESTOS PRESENT CHECK HERE X**

Asbestos-Containing Building Material ***Type***	**Approximate amount of Asbestos**		**Check unit of measurement**					
	Pipes	Surface Area	Ln Ft	Ln M	SQ Ft	SQ M	Cu Ft	Cu M
RACM to be removed								
RACM NOT removed								
Interior Category I non-friable removed								
Exterior Category I non-friable removed								
Category I non-friable NOT removed								
Interior Category II non-friable removed								
Exterior Category II non-friable removed								
Category II non-friable NOT removed								
RACM Off-Facility Component								

13) Waste Transporter Name: N/A, no asbestos.
DSHS License Number:___ Address: _____City:_____State:___
Zip:_____ Contact Person: _____ Phone Number: _____

14) Waste Disposal Site Name: N.A. – no asbestos [bridge materials become property of hwy contractor / retained by TxDOT]
Address:_____City: _____ State: Zip:
Telephone: (___)_____ TCEQ Permit Number: _____

15) For structurally unsound facilities, attach a copy of demolition order and identify Governmental Official below:
Name:_____N.A._____Registration No: _____
Title:_____
Date of order (MM/DD/YY)_____/___/_____ Date order to begin (MM/DD/YY) ____/___/__

16) Scheduled Dates of Asbestos Abatement (MM/DD/YY) Start: N.A.___/____/_____ Complete: ___/____/_____

17) Scheduled Dates Demolition/Renovation (MM/DD/YY) Start: XX / XX / XX Complete: XX / XX / XX
**** Note: If the start date on this notification can not be met, the DSHS Regional or Local Program office *Must* be contacted by phone prior to the start date. Failure to do so is a violation in accordance to TAHPA, Section 295.61.**

I hereby certify that all information I have provided is correct, complete, and true to the best of my knowledge. I acknowledge that I am responsible for all aspects of the notification form, including, but not limiting, content and submission dates. The maximum penalty is $10,000 per day per violation.

[TxDOT or Delegated Consultant signs]_____ [XXXXXXXXXXXXXXX]_____ [XX-XX-XX]___ (XXX)XXX-XXXX_____
(Signature of Building Owner/ Operator or Delegated Consultant/Contractor) (Printed Name) (Date) (Telephone)

(XXX)XXX-XXXX_____
(Fax Number)

MAIL TO: ENVIRONMENTAL HEALTH NOTIFICATIONS GROUP
DEPARTMENT OF STATE HEALTH SERVICES
PO BOX 143538
AUSTIN, TX 78714-3538
PH: 512-834-6612, 1-888-778-9440

Faxes are not accepted ***Faxes are not accepted***

Form APB#5, dated 05/01/05. For assistance in completing form, call 1-888-778-9440

List of Bridges for DSHS Form APB#5

TxDOT District: _____
County: _____
Highway: _____
Project Number: _____
CSJ: _____

Structure Name	Structure Number	Location	City	Age	Size (sq. ft.)

Attachment “C”

DSHS Asbestos Program - Regional Office Contacts and Map

DSHS ASBESTOS PROGRAM – Regional Office Contacts and Map

Asbestos Regional and Local Program Inspectors

Public Health Region 1

Toxic Substances Control Staff

IH – Ben Gordon, R.S. (Lubbock)
(806) 767-0442
Fax: (803)767-0437

ASB – Brett Naugher, R.S.(Canyon)
(806) 655-7151 x 216
brett.naugher@dshs.state.tx.us
Fax: (803) 655-7159

Regional Office Locations

Lubbock
1109 Kemper, 79403-2523
(806) 744-3577
Canyon
300 Victory Dr., 79015
(806) 655-7151

Public Health Region 2/3

Toxic Substances Control Staff

IH – Ken McBride, P.E. (Arlington)
(817) 264-4683
Fax: (817) 264-4719

ASB – Robert Aguirre (Arlington)
(817) 264-4675
robertb.aguirre@dshs.state.tx.us
Frank Rodriguez (Arlington)
(817) 264-4513
frankj.rodriguez@dshs.state.tx.us
Ted Wyman
(817) 264-4738
tedc.wyman@dshs.state.tx.us
Fax: (817) 264-4719
Kelley Waller (Abilene)
(325) 795-5863
kelley.waller@dshs.state.tx.us
Fax: (325) 795-5853

Regional Office Locations

Arlington
1301 S. Bowen Road, Suite 200,76010
(817) 264-4500
Abilene
4601 S. 1st Street, 79605
(325) 795-5851

Public Health Region 4/5north

Toxic Substances Control Staff

IH – Cecil Fambrough, R.S.
(903) 533-5241
Fax: (903) 535-7594

ASB – Mark Ellis
(903) 533-5272
mark.ellis@dshs.state.tx.us
Fax: (903) 535-7594

Regional Office Location

Tyler
1517 W. Front Street, 75702-7854
(903) 595-3585

Public Health Region 6/5south

Toxic Substances Control Staff

IH – Violet Ilegbodu, PHD
(713) 767-3271
Fax: (713) 767-3299

ASB – Gary Williams
(713) 767-3253
gary.williams@dshs.state.tx.us
Bill Reid
(713) 767-3270
william.reid@dshs.state.tx.us
Mary Salazar
(713) 767-3260
mary.Salazar@dshs.state.tx.us
Timothy Beavers
(713) 767-3299
timothy.beavers@dshs.state.tx.us
Fax: (713) 767-3299

Regional Office Location

Houston
5425 Polk Ave., Suite J, 77023
(713) 767-3258

Public Health Region 7

Toxic Substances Control Staff

IH – Mike Meriage (Temple)
(254) 778-6744 x2710
Fax: (254) 778-4066

ASB – Jorge Montemayor (Austin)
(512) 834-6770 x 2169
jorge.montemayor@dshs.state.tx.us
Fax: (512) 834-4524
Gene Mikeska (Waco)
(254) 757-0370
gene.Mikeska@dshs.state.tx.us
Fax: (254) 753-0879

Regional Office Locations

Temple
2408 S. 37th Street, 76504-7168
(254) 778-6744
Austin
8407 Wall Street, Suite N340, 78754
(512) 834-6770
Waco
225 West Waco Dr., 76707
(254) 750-5459

Public Health Region 8

Toxic Substances Control Staff

IH – Bill Lloyd
(210) 949-2172
Fax: (210) 949-2146

ASB – Kirk Loftin
(210) 949-2108
kirk.loftin@dshs.state.tx.us
Frank Martinez
(210) 949-2173
frank.martinez@dshs.state.tx.us
Fax: (210) 949-2146

Regional Office Location

San Antonio
7430 Louis Pasteur Drive,78229
(210) 949-2000

Public Health Region 9/10

Toxic Substances Control Staff

IH – Jim Duran (El Paso)
(915) 629-3209
Fax: (915) 834-7842

ASB – Elizabeth Dembicky (El Paso)
(915) 629-3253
elizabeth.diembicky@dshs.state.tx.us
Fax: (915) 834-7842
Roman Zarate (Midland)
(432) 571-4114
roman.zarate@dshs.state.tx.us
Fax: (432) 684-3932

Regional Office Locations

El Paso
401 East Franklin, Suite 210, 79901
(915) 834-7675
Midland
2301 N. Big Spring, Suite 300, 79705
(432) 683-9492

Public Health Region 11

Toxic Substances Control Staff

IH – William Ashton, R.S.
(956) 4444-3201

ASB – E. "J. R." Arevalo
(956) 4444-3213
eustolio.arevalo@dshs.state.tx.us

Regional Office Location

Harlingen
601 W. Sesame Drive, 78550-7996
(956) 423-0130
Fax: (956) 4444-3299

El Paso – City Air Quality Program

Asbestos Inspections

ASB – Jesus "Chewy" Reynoso
(915) 543-3661
Fax: (915) 543-3665

El Paso
1148 Airway Blvd., 79925
(915) 771-5801

Attachment “D”

Asbestos Notification Scenarios

Asbestos Notification Scenarios

Case	Project Description	# of Notifications	Explanation of Notifications	Notification Date*	Amended Notifications Required?
1	Removing one or more bridges, ACM not present	1	One notification at beginning of project required for demolition: indicate no ACM present; list all bridges on same form (may require attachment)	Best estimate of demolition start date for first bridge	Amendments are required only if the start date for the first bridge changes. Amend the original notification if the start date of actual demolition for the first bridge moves up or if the date is pushed back enough that there is no visible preparation activities at the site.
2	Removing one or more bridges, ACM is present and is abated separately	2	1st notification is for asbestos abatement work (renovation). 2nd notification is for bridge demo work per Case #1	1: Actual start of abatement work 2: Est. start date for demo work	Required if start date for 1st notification (abatement work) changes. See case 1 for demo work.
3	Removing one or more bridges, ACM is present and is abated during demolition	1+	One notification required for abatement with demolition. Indicate ACM is present. This is not the preferred method but may have to be used in certain cases where abatement cannot be performed separately from the demolition. May require multiple notifications if bridges are done at different times.	Actual start date for demolition	Required if start date for demolition work changes
4	Removing non-bridge structures (culverts, retaining walls, median barriers) No ACM present	0	Not required per NESHAP	N/A	N/A

Case	Project Description	# of Notifications	Explanation of Notifications	Notification Date*	Amended Notifications Required?
5	Removing non-bridge structures (culverts, retaining walls, median barriers,…) ACM is present	1	Notification required for asbestos abatement only (renovation)	Actual start date for abatement work	Required if start date for abatement work changes
6	Widening one or more bridges, no ACM present, not removing any girders	0	Not required per NESHAP	N/A	N/A
7	Widening one or more bridges, ACM is present, not removing any girders	1	Notification only for asbestos abatement	Actual start date for abatement	Required only if start date of abatement changes.
8	Widening one or more bridges and some girders must be removed, no ACM present	0	Replacing girders is considered a renovation. Notifications are not required for renovations where ACM is not present	N/A	N/A
9	Widening one or more bridges and removing some girders; ACM is present,	1	Notification is only for asbestos abatement	1: start date for abatement	Amendment of notification required if dates change.

Case	Project Description	# of Notifications	Explanation of Notifications	Notification Date*	Amended Notifications Required?
10	Projects where coatings (i.e.: paint) are to be removed, no ACM present	0	Not required for renovation work that does not disturb ACM	N/A	No
11	Projects where coatings (i.e.: paint) are to be removed, ACM is present	1	Removal of ACM is considered a renovation.	Actual start date for abatement work	Required if start date changes
12	Redecking projects; No ACM present	0	Notification is not required for renovation work that does not disturb ACM	N/A	N/A
13	Replacement of decks, girders, columns, or caps. No ACM present	0	Replacing load supporting members is considered to be a renovation. Notification is not required if ACM is not present	N/A	Not required for non-ACM projects. See #9 for projects with ACM
14	Asbestos is discovered during a project.	1	Removal of ACM is renovation work if it exceeds the threshold quantities	Abatement start date	Required if abatement start date changes

Note: For DSHS notification purposes, a bridge is defined as a span-type structure.
*** Initial notification must be postmarked at least 10 working days prior to start date.**

Attachment “E”

Special Provisions and Specifications for Asbestos Issues

The following Special Provisions or Specifications have been developed to address asbestos (and in some cases, lead) where it is encountered on construction or maintenance projects. They are awaiting final approval but should be available on the TxDOT website very soon.

SP006-028, “Control of Materials” This special provision should only be used for the specialty contracts to remove or abate asbestos. It modifies Article 6.10 thus requiring the contractor to remove the hazardous materials. This SP will also work for lead abatement or removal contracts.

SP006-029, “Control of Materials” This statewide Special Provision is to go into all construction or maintenance contracts except those contracts solely for asbestos or lead abatement. It informs the contractor that TxDOT will abate lead or asbestos separately from the prime contract. It also covers painting projects where the primary work is to remove lead paint and repaint a structure.

SP007-300, “Legal Relations and Responsibilities” This special provision should only be used for the specialty contracts to remove or abate asbestos. It should not be included in our general contracts.

SS 5414, “Asbestos Abatement” This special specification is intended for the specialty contracts to provide asbestos abatement. It will not be included in our general construction or maintenance contracts.

Lead Mitigation C.O. from DAL
$62,000

SiteManager
Construction Management Software

CHANGE ORDER NBR. 39 REPORT DATE: **01/03/07**

CONTRACT ID:	805018042
PROJECT:	NH 2005(186)
CONTRACT:	02053201
CONTRACT PRICE:	$22,509,208.52
CONTRACTOR:	MCCARTHY BUILDING COMPANIES, INC.
DESCRIPTION:	Lead paint abatement
CO AMOUNT:	$62,016.00
3RD PARTY AMOUNT:	$0.00

HIGHWAY:	MH
DISTRICT:	18
COUNTY:	DALLAS
AREA ENGINEER:	GARY BAILEY, P.E.
AREA NUMBER:	054
REASON: 2D -	ENVIRONMENTAL REMEDIATION
CO TYPE:	STATE LETTER OF AUTH - PARTICIPATING
APPRV LEVEL:	District Engineer

DESCRIBE THE REASON FOR THE CHANGE ORDER AND WHAT IS BEING CHANGED. WHEN NECESSARY, INCLUDE EXCEPTIONS TO THIS AGREEMENT:

The purpose of this change order is to compensate the Contractor for the removal and disposal of bridge beams coated with lead based paint. These beams are part of North and Southbound Bear Creek bridge on Beltline Road.

"By signing this change order, the contractor agrees to waive any and all claims for additional compensation due to any and all other expenses; additional changes for time, overhead and profit; or loss of compensation as a result of this change and that this agreement is made in accordance Item 4 and the Contract. Exceptions should be noted in explanation above."

THE CONTRACTOR

BY: _____ 1-3-07 DATE

TYPED/PRINTED NAME: RICK BARNES 1-3-07 DATE

TYPED/PRINTED TITLE: Chief Estimator / Director 1-3-07 DATE

AREA ENGINEER: _____ 1-5-07 DATE

AREA ENGINEER'S SEAL:

STATE OF TEXAS
GARY D. BAILEY
46652
REGISTERED PROFESSIONAL ENGINEER

DISTRICT ENGINEER: _____ DATE

DIRECTOR, CONSTRUCTIO: _____ DATE

AED For Eng. Operations: _____ DATE

FHWA: _____ DATE

Texas Department of Transportation
Buckle up.
Brian Merrill
512-416-2402

1-888-GoTxTag www.TxTag.org

CONTRACT ID 805018042 CHANGE ORDER NBR. 39 Page 2 of 2

CONTRACT ITEMS

PROJECT NBR 805018042

CATG NBR	LINE ITEM	ITEM CODE	SP NBR	DESCRIPTION	UNIT	UNIT PRICE	ORIG + PREV REV QTY	QTY THIS CO	NEW QTY	AMOUNT THIS CO
001	1432	96080566		UNIQUE CHANGE ORDER ITEM 66	DOL	62,016.00000	0.000	1.000	1.000	$62,016.00
		CO DESCR		Remov lead paint Bear Crk bridge, CO 39, pd. LS						

CHANGE ORDER AMOUNT $62,016.00

CHANGE ORDER ITEM OR LUMP SUM JUSTIFICATION

CSJ:	8050-18-042	**CO No.:**	39
County:	Dallas	**Highway:**	MH
Area Office:	NORTHWEST	**CO Amount:**	$ 60,016.00
Item No.:	9608 0566		
Description:	REMOVE LEAD PAINT BEARCREEK BRIDGE		

I have reviewed the attached "Contractor's Cost Breakdown" and agree that the unit price(s) as shown are fair and reasonable based on the following reason(s):

☐ Change Order unit price of $ _____ compares favorably with bid price of $ _____ on Federal Project Number _____ .

☐ Unit price compares favorably with District average bid price of $ _____ or Statewide average bid price of $ _____.

☒ Labor and equipment rental rates compare favorably with current rates for this area, and materials (if any) seem to be reasonably priced.

☐ Unique Justifying Conditions:

Brad Braden
Signature

ES II
Title

1/5/07
Date

Dallas District Form (Rev. 4/18/05)

McCarthy Building Companies, Inc.
Project NH 2005 (186)
Control 8050-18-042
Highway: BELT LINE ROAD
County DALLAS
File: Form 198-Lead Abatement

Print Date: 12/4/2006 FORM198 XLS

LABOR BURDEN 55.00%
TAX 8.250%
SERVICE/PARTS 40.00%
OVERTIME FCTR 10.00%

TAKE-OFF DATE 12/4/2006
REVISION DATE
REVISION TIME
WORK CATEGORY

TAKE-OFF BY CEK
PRICED BY CEK
KEYPUNCHED BY CEK

ITEM	DESCRIPTION	LBR CRW	EQM CRW	QTY	UOM	PROD	MANUAL INPUT UNIT/CREW COST LBR	MTL	EQM	SUB	MH/CH	TL MH	CREW COST LBR	EQM	PROD UNIT COST LBR	EQM	TOTAL COST LBR	MTL	EQM	SUB	LINE TOTAL
	Lead removal Sub Price for Lead Based Paint Removal			1	LS					~~59144.00~~ 58478.00							0	0	0	59144	59144
																	0	0	0	0	0
																	0	0	0	0	0
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																	0	0	0	59144	59144
							*** SERVICE/PARTS						40.00% OF $		0 OF EQM				0		0
							Overtime Factor						10.00% OF $		OF LBR		0				0
	TOTAL COST = $62,722.21						SUBTOTAL										0	0	0	59144	59144
	DIVIDE BY =			1	LS		LABOR BURDEN						55.00% OF $		0 OF LBR		0				0
	PAY QUANTITY			1	LS		TAXES ON *** ITEMS ONLY						8.250% OF $		0 OF MTL			0			0
	UNIT PRICE = $62,722.21						TOTAL COST				TL MH=	0					0	0	0	59144	~~59144~~ 58478.00

Days Requested: 0

COMPENSATION						
LABOR @	25.00%	$0.00				$0.00
MATERIAL @	25.00%		$0.00			$0.00
EQUIPMENT @	15.00%			$0.00		$0.00
SUBCONTRACTS @	5.00%				~~$2,957.20~~ 2923.90	~~$2,957.20~~ 2923.90
COST						~~$62,101.20~~ 61,401.90
Bond @	1.00%					~~$621.01~~ 614.10
TOTAL COSTS						~~$62,722.21~~ $62016.00

STOMPER DEMOLITION COMPANY, INC.

Concrete & Bridge Demolition Specialists
Since 1981

December 29, 2006

McCarthy Building Companies, Inc.
Irving, TX

Ref: Proj: NH 2005 (186)
Cnty: Dallas
Hwy: Beltline Road Bear Creek Lead Painted Bridge Beam Demolition
Cntl: 8050-18-042

Dear Sir,

Thank you for allowing us to submit the following quotation.

Scope of Work:

- **Lead Paint Bridge Beam Demolition**

Stomper Demolition Co., Inc. will torch cut for removal, bridge beams coated with lead based paint of the Bear Creek North and Southbound bridges.

Two mobilizations are included.

Bridge beams with lead paint will be torch cut, all federal and state laws and safety guidelines will be complied with by Stomper Demolition Co. and its' personnel.

Notes:

The Contractor will identify and *clearly mark* all underground improvements, including but not limited to: utilities, box culvert, and fiber optic cables prior to commencement of demolition operations. Use of this information will allow Stomper Demolition Co., Inc. to conduct operations in a manner as to endeavor not to damage the aforementioned items.

Stomper Demolition Co., Inc. can and will where allowed, work extended hours and will endeavor to insure that our production rate exceeds the Contractors removal production. We request at least seven working days notice prior to mobilization.

This quote will become, in its entirety, a permanent part of any contract and will remain in effect for ninety days after the bid date. The wording of this quote supersedes all wording in any contract or agreement.

3525 LISTON LANE, EULESS, TEXAS 76040 / 817-540-1162 / FAX 817-354-5316
www.stomperdemo.com

Torch Cut Lead Paint Bridge Beams for Removal:

Personal Lead Exposure Air Monitoring:	$18,876.00
Employee Environmental PPE	$13,244.00
Supervision	$ 8434.00
Burning Rigs (4 Ea.)	$ 6,924.00
Mobile Environmental Containment Unit	$11,000.00

All markup included.

Lump Sum: **$58,478.00** ✓

Additional mobilizations: $1,500.00 / Each
Delay time: $250. / Hr.
*There will be a 5% premium for night or weekend work.

The contractor will be responsible for the following:

- Removal or remediation of any Hazardous Materials except lead paint.
- Provide an access road to the work site.
- Dewatering of work site if required.
- Wildlife and migratory bird control or protection.
- All traffic control including flagging, signs, barricades, fencing, detours, roadway improvements, etc.
- Restoration of landscaping.
- Relocation of utilities.
- Sawcut, sweeping and dust control.
- Silt fencing, protective structures, such as false decking, etc.
- All engineering and layout.
- Lighting for any night operations if requested.
- Bond

Payment Terms:

Payment shall be due five days after the contractor receives payment from the owner, and in no case later than 45 days following completion of the work described above. Finance charges will apply if the amount due is unpaid 10 days after the due date. A service charge of 1.5% per month (annual rate of 18%) will be added to the account balance until payment in full has been received. In the event the account becomes delinquent and it is necessary to make collection, the customer agrees to pay all collection costs, reasonable attorney fees and court costs. All retainage will be returned within 60 days following completion of operations by Stomper Demolition Co., Inc. Bond is not included.

If you have any questions or need further information, please do not hesitate to call.

Sincere Regards,

Patrick Todd
Stomper Demolition Co., Inc.

3525 LISTON LANE, EULESS, TEXAS 76040 / 817-540-1162 / FAX 817-354-5316
www.stomperdemo.com

McCARTHY
920 SOUTH BELT LINE ROAD IRVING TEXAS 75060 (972) 313-3336 FAX (972) 313-3339 www.mccarthy.com

December 4, 2006

Kenny Krishnan
Texas Department of Transportation
12000 Greenville Avenue
Dallas, Texas 75243

Project: NH 2005 (186)
Control: 8050-18-042
Highway: Belt Line Road
County: Dallas

RE: Change Order Pricing for Lead on Bear Creek Beams
Document Number LTR-094
PCO - 0045

CO 39

Mr. Krishnan

McCarthy Building Companies, Inc. respectfully submits the attached pricing for Lead Abatement on the Beams to be removed at Bear Creek Bridge. McCarthy requests no additional time be added to the schedule at this time. Once this change order is approved and McCarthy can begin work the schedule will be evaluated and additional time will be requested

If the aforementioned work extends McCarthy's completion date past the original contract schedule McCarthy will expect compensation for extended daily operating costs. McCarthy's daily operating cost rate is estimated at $4,815per day for the total extended overhead and job duration equipment. Please be advised that this is an estimated figure and subject to change based on actual equipment and personnel on site at the time of this potential schedule delay. McCarthy reserves the right to request additional compensation due to price escalation, delays and inefficiencies.

If you should have any questions or require additional information please contact me at (972) 313-3336.

Sincerely,
McCarthy Building Companies, Inc.

Chris Kelly
Project Superintendent

Cc: Rick Barnes – Project Director
File 3590

MEMORANDUM

Texas Department of Transportation

TO: District Engineers **DATE:** January 26, 2007

FROM: Amadeo Saenz, Jr., P.E.

SUBJECT: Hazardous Materials Contracting

While it is the department's intent to dispose of hazardous materials in the right of way prior to construction, there are occasions when contractors discover contaminated materials during the construction phase. Typically, these materials are contaminated with asbestos or petroleum from leaking underground storage tanks.

In accordance with the *Construction Contract Administration Manual*, Chapter 12, Section 1, mitigation or abatement of hazardous materials is to be performed by a separate contractor through an environmental consultant contract or a project specific conventional or emergency contract. If the hazardous material mitigation or abatement cannot be performed prior to construction, construction plans should include details for the coordination needed between the prime contractor and the specialty contractor. See Example Contract A. (Page 196).

Inclusion of mitigation or abatement operations in the construction contract bid documents require Administration's approval. The inclusion will only be considered when any of the following conditions are met:

- Project work activities are so intrinsic with the mitigation or abatement operations that the work cannot be separated. (e.g. There are asbestos containing bearing pads in the structure that are attached and removal will require demolition or lifting of the structure or contaminated groundwater will be encountered during the installation of a storm sewer.)
- The mitigation or abatement operations will require additional lane/road closures that could be reduced if the prime contractor performed the work in conjunction with their other structure work. This criteria applies to high traffic volume locations where the impact to traffic is severe.
- Having two separate contractors perform work creates excessive risk to the department. (e.g. Coordination and timing would put the department at excessive risk for claims or additional risk would be generated for the public. It might also be the case that there are too many mobilizations needed, adding unnecessary cost for a separate contractor.)

Our goal is to plan for mitigation or abatement operations prior to the construction letting by letting a separate contract for the hazardous material work. This memorandum supplements my May 4, 2005 memorandum by adding the following:

- information regarding available mitigation and abatement contractors,
- contract requirements and qualifications for mitigation contractors, and
- contracting procedures for handling hazardous materials, both prior to construction letting and in the case where unknown hazardous materials are encountered, after the construction contract letting.

Consulting Resources for Initial Site Assessments and Remediation Plans
As outlined in the May 4, 2005 memorandum, the Environmental Affairs Division (ENV) consultants are available to assist in developing management plans to deal with hazardous materials. When unknown hazardous materials are encountered in the field, perform an initial site assessment using one of ENV's environmental engineering or scientific services consultants. ENV can make an initial determination on the presence of hazardous materials. The district may then use an ENV environmental engineering service contract, Evergreen, to determine the extent of contamination and prepare a remediation action plan. A district also may use a district engineering consultant to prepare the remediation action plan if there is an engineering component to the work. Funding for ENV Evergreen consultant work will be through ENV's budget. Districts have the option of acquiring and funding their own environmental engineering services contract.

Additional information regarding Texas Department of Transportation (TxDOT) procedures for handling hazardous materials during advanced planning; right-of-way acquisition; design; and construction is located at http://crossroads/org/env/NRMintranet/env-ppa.html in ENV's *Hazardous Materials in Project Development Guidance Document.*

Contracting for Hazardous Material Mitigation or Abatement Operations
Once a remediation action plan has been developed, the contracting options for remediation of contaminated materials are listed below. Funding for the work will be out of the district's construction or maintenance budget.

- **Contract Letting** – Procure a specialty contractor to handle contamination prior to or during the construction contract through a construction or routine maintenance letting. (Estimate at least four months to begin field work after the PS&E for the work are complete by the district.)

- **Maintenance Contract through Purchase of Services Procedures** – Procure a specialty contractor to handle contamination during construction by purchase of services method. The maximum dollar amount for this type of procurement is $15,000 and requires one week to begin field work after the details of the work are complete. TxDOT may award a maintenance contract estimated at less than $15,000 as a purchase of service under the Purchasing Act, Government Code, Title 10, Subtitle D, instead of using the normal letting procedures when TxDOT determines that:
  - the project does not require detailed specifications;
  - there is a need to expedite the project; or
  - it would be otherwise impractical to use the normal letting procedures.

  For more information concerning the use of purchase of services, refer to the Purchasing Manual. These purchases normally take no more than one week to complete. Contact your district purchaser for more information concerning the procedures necessary to complete this type of procurement. Funding is out of a district's construction or maintenance budget.

- **Emergency Contract** – When hazardous materials are found late, near or after letting, procure a specialty contractor to handle contamination during construction by emergency procurement methods. Once the details for the work are complete and Administration has approved the emergency certification, the procurement process and initiation of work may take as little as one day, See Example Contract B. In accordance with the Transportation Code, Chapter 223, Subchapter C, TxDOT is authorized, under certain conditions, to award highway improvement contracts in cases of an emergency situation. Emergency contracts can be justified when unknown hazardous materials are encountered and a delay in removing the hazardous materials could affect our ability to protect public health, safety, and welfare or significantly increase costs to the department due to possible delays on the project.

  A district engineer who identifies an emergency situation in the geographic area under his or her jurisdiction should immediately request a certification of emergency from the deputy executive director. The Maintenance Division (MNT) should be copied on this request. The notification will describe the facts and nature of the emergency. Upon receiving authorization to proceed, the procurement may be initiated and an emergency contract awarded. All such notifications will be documented in writing. Contact MNT for any questions associated with emergency contracts.

  A list of potential remediation contractors is included with this memorandum, remediation contractor link, or you may contact ENV for assistance in identifying remediation contractors.

  To be eligible for an emergency contract award, a contractor must be included in the department's list of prequalified bidders, or must complete a TxDOT Bidder's Questionnaire form. This questionnaire can be submitted with the bid.

- **Prime Contractor** – When hazardous materials are found during construction, and if the contractor is willing and "able", has the expertise, licenses, and insurance to perform the remediation, the contract can be modified, by Supplemental Agreement, to address the remediation work. This method will require coordination with the Construction Division (CST) for verification of qualifications and filing of insurance certificates. Work can begin upon receipt of the details for the work and execution of a change order.

The following Web sites contain lists of consultants or contractors who conduct various hazardous materials remediation work. The lists are provided in the following categories:

- Leaking Petroleum Storage Tank Remediation Contractors - http://www.tceq.com/remediation/pst_rp/license.html
- Lead-based Paint Consultants – http://www.tdh.state.tx.us/beh/lead/Findind.htm
- Asbestos Consultants – http://www.dshs.state.tx.us/asbestos/whocan.shtm
- Asbestos Abatement Contractors – http://www.dshs.state.tx.us/asbestos/whocan.shtm

Insurance

In addition to the standard department required insurance, depending on the cost and type of environmental remediation, require the remediation contractor to obtain and maintain a specified amount of Contractor Pollution Liability (CPL) coverage. CPL insurance helps protect a wide range of pollution risks associated with construction projects. CPL insurance addresses:

- third-party claims for bodily injury and/or property damage and
- remediation costs stemming from pollution incidents resulting from the contractor's covered operations.

Typically, a minimum of $1,000,000 coverage for CPL is required. If the remediation project is costly and complex, up to $2,000,000 of coverage may be required. The exact amount of coverage should be included in the contract and will need to be determined on a project-by-project basis. The amount of coverage is influenced by numerous items including total project cost, remediation cost, complexity of remediation, remediation technology chosen for the project and the hazardous materials/wastes involved. Contact CST for assistance in determining the amount of insurance coverage necessary.

For asbestos abatement work, the Texas Department of State Health Services (DSHS) distinguishes between "asbestos contractors" and "asbestos consultants." Asbestos contractors need the pollution liability insurance mentioned above in order to get their asbestos contractor's license, and asbestos consultants need errors and omissions insurance as defined by DSHS to get their license. Currently, Special Provision 007-300 (2004 Specifications) is available for use in projects with asbestos related work.

Required Licenses or Registrations

As required by Standard Specification Article 7.2, contractors are required to obtain all required permits and licenses in order to conduct the contracted work. This includes any licensing requirements related to the remediation of hazardous materials.

Licenses for Leaking Petroleum Storage Tank (LPST)

Often, the hazardous material that TxDOT encounters is from an LPST. In accordance with state law, any entity who performs or coordinates regulated LPST corrective action services in the State of Texas, must be registered with the Texas Commission on Environmental Quality (TCEQ) as an LPST Corrective Action Specialist. Additionally, any individual who supervises any corrective action required on an LPST site in the State of Texas must be licensed with TCEQ as an LPST Corrective Action Project Manager. Corrective action services include measures to determine and report the extent of a release in progress, to halt and prevent future releases of regulated substances, site cleanup of surface and subsurface contamination, site closure, and post-remediation monitoring or any other action reasonably necessary to protect public health and environmental safety.

Licenses for Asbestos Abatement

Licenses are also required to perform asbestos abatement work in public buildings, bridges and highway structures such as retaining walls. These licenses are required for contractors, supervisors, workers, consultants, management planners, inspectors, air monitors, laboratories, transporters, and training providers. The DSHS is the regulatory agency that manages the asbestos program.

Contact the following individuals in the areas noted for guidance and assistance:

- Rodney Concienne, ENV, (512) 416-3012 - acquiring consultants and requirements for mitigation prior to construction for all materials except hazardous paint and asbestos
- Maxine Jacoby, BRG, (512) 416-2751 - hazardous paint removal
- Brian Merrill, BRG, (512) 416-2232 - asbestos abatement
- John Jameson, CST, (512) 416-2432 - construction contract management during construction
- Monica Merrill, MNT, (512) 416-2519 - emergency contracts
- Vickie Graff, GSD, (512) 374-5441 - purchase of services contracts

cc: Thomas R. Bohuslav, P.E., Director, Construction Division
Scott Burford, Director, General Services Division
William R. Cox, P.E., Director, Bridge Division
Mark A. Marek, P.E., Director, Design Division
Dianna Noble, P.E., Director, Environmental Affairs Division
Zane L. Webb, P.E., Director, Maintenance Division

Regarding Disposal of Painted Structural Steel					
State DOT	Requirements for disposal	Requirements for cutting up steel	Treatment of lead-based vs. non lead-based painted steel disposal	contact info	email
AL	Unless designated for salvage, all materials from structures to be removed from the project become the property of the contractor	No	ALDOT does not treat the removal of structures with lead base paint differently than non lead based paint	Jim Bearrentine Hazardous Materials Coordinator AL DOT Materials and Test Bureau Hazardous Materials Section 3700 Fairground Road Montgomery, AL 36130 (334) 206-2284	bearrentinej@dot.state.al.us
CA	In general, the steel becomes the property of the Contractor and he is responsible for debris containment when handling such steel. A debris containment and collection program must be submitted	No	It is treated the same. The contractor is informed of the paint systems on the steel.	Andy Rogerson	andy_rogerson@dot.ca.gov
CO	letter of certification from the contractor. The letter must state that the contractor acknowledges that there is lead in the paint and accepts the responsibility for appropriate disposal.	Indirectly, yes. We have nothing that specifically addresses this case.	We assume all structures older than 1987 have lead based paint. We have not had to dispose of any that are newer at this time.	Dana Christensen	
FL	Deliver to licensed recycling or to site designated by the engineer	cut to fit the requirements of the recycling facility	all materials used to coat a steel component that are considered to hazardous materials are treated the same whether lead based or not	STEVEN PLOTKIN, P.E. State Construction Structures Engineer FL DOT 605 Suwannee Street, Tallahassee, FL 32399-0450 Phone: (850) 414-4155, 994-4155 sc Phone: (904) 360-5551, 824 5551 sc	steve.plotkin@dot.state.fl.us
GA	Place solid waste material either in the embankment (provided the material is satisfactory for embankment construction) or in a Department-approved solid waste disposal site.	No	a supplemental agreement would be initiated & the contractor would be responsible for proper disposal		Donald.Wishon@dot.state.ga.us
ID	For painted steel that does not contain lead base paint the steel becomes salvageable material and becomes the property of the contractor	Typically hydraulic sheers and cranes	For painted steel that contains lead base paint the material must be sent to a designated recycler	Ron Wright Chemist Supervisor Idaho Transportation Department Phone: 208-334-8453 Cell: 208-859-1301 Fax: 208-334-4411	Ron.Wright@itd.idaho.gov
KS	None	None	None	Curt Niehaus Operations Engineer Bureau of Materials & Research Kansas DOT	Curt@ksdot.org
LA	If it is lead based and the paint is in good, dispose of at a scrap metal recycling facility; If lead paint is in disrepair, remove and disposed of as a hazardous waste	Not in general	Lead paint is noted on the plans and levels of contamination provided if possible	Mike Ricca	MikeRicca@dotd.louisiana.gov
ME	tell the Contractor that the paint on this structure is lead-based	No	we rely only on our Standard Specifications.	Eric Shepherd Assistant Program Manager Maine DOT Bridge Program	Eric.Shepherd@maine.gov

MN	The no lead painted steel is treated as an industrial waste and is reused or recycled; lead based painted steel is disposed of by the contractor	Contractor is responsible to follow all OSHA regulations	All lead paint that has been identified as peeling must be stabilized by coating with a paint or similar material that will prevent the peeling paint from flaking during demolition, or must be scraped	Mr. Mark Vogel, P.E. Mn/DOT Office of Environmental Services phone: (651) 284-3790	mark.vogel@dot.state.mn.us
NC	They must comply with federal and state regulations.	No	Depending on the re-useability of the steel, it can be cleaned and reused or taking to a salvage yard.	Chris Peoples Chemical Testing Engineer Materials and Tests Unit NC DOT 919 329-4090	cpeoples@dot.state.nc.us
NH	existing parts/bridge becomes the property of the Contractor and shall be satisfactorily disposed of by the Contractor.	if there is lead-based paint (LBP) on the steel Contractor has to meet OSHA requirements for demolition of hazardous materials	There is no NHDOT specific language addressing LBP.	Jerry Zoller Bridge Design 603-271-2731	jzoller@dot.state.nh.us
NV	refer to section 107.14 for general disposal requirements	no special requirements	The determination of hazardous materials in the existing paint system would be made prior to contract advertising and, if applicable, verbiage would be included in the documents alerting bidders to this and directing them to treat and dispose of as a hazardous waste.	Todd Stefonowicz NDOT Bridge Division 1263 S. Stewart St Carson City, NV 89712 phone 775.888.7550 fax 775.888.7405	
NY	metals (steel, iron, etc.)...Surplus and used materials, unless identified otherwise, become the property of the Contractor			Orlando Picozzi	opicozzi@dot.state.ny.us
OH	None	OH has no control	Contractor responsibility	Lloyd Welker Ohio DOT 614-275-1351	Lloyd.Welker@dot.state.oh.us
SC	no restrictions except to say that the material disposal has to comply with the latest government regulatory agencies' requirements.	No	We only inform them of its present. It is up to the contractor to address any issues with the material; ie. worker protection or disposal requirements.	Charles Matthews, P.E. Bridge Construction Engineer Phone No: 803.737.1490	MatthewsCL@scdot.org
SD	contractor is required to comply with existing regulations and laws for the disposal of that steel	No		Tom Gilsrud Bridge Maintenance Engineer SDDOT (605) 773-3285	Tom.Gilsrud@state.sd.us
UT	any material removed from the project site to be disposed in accordance with applicable permits and environmental regulations	No	any material removed from the project site to be disposed in accordance with applicable permits and environmental regulations	Timothy Biel, P.E. Engineer for Materials Construction and Materials Division, UT DOT 4501 South 2700 West, 4th Floor Box 148290 Salt Lake City, UT 84114-8290 Office: (801) 965-4859 Fax: (801) 965-4101	tbiel@utah.gov
WV	The contractor is allowed to take the steel and sell it to a salvager or a fabricator for reuse	No	The contractor is allowed to take the steel and sell it to a salvager or a fabricator for reuse	Greg Bradford Materials Control Division 304-558-9882	GBRADFORD@dot.state.wv.us

WY	The contractor is required to deliver the steel to a licensed recycler or a public agency or if private entity wishes to accept ownership of painted structural steel elements for the purpose of reuse, the DOT may allow this to occur	Not specifically but we include a note on the plans that advises the contractor of the hazard of lead paint	we don't place any restrictions on the type or manner of disposal of non painted materials	Jerry Ellerman	Jerry.Ellerman@dot.state.wy.us

ITEM 6

CONTROL OF MATERIALS

6.1. Source Control. Use only materials that meet Contract requirements. Unless otherwise specified or approved, use new materials for the work. Secure the Engineer's approval of the proposed source of materials to be used before their delivery. Materials can be approved at a supply source or staging area but may be reinspected in accordance with Article 6.4, "Sampling, Testing, and Inspection."

A. Buy America. Comply with the latest provisions of Buy America as listed at 23 CFR 635.410. Use steel or iron materials manufactured in the United States except when:

- the cost of materials, including delivery, does not exceed 0.1% of the total Contract cost or $2,500, whichever is greater;
- the Contract contains an alternate Item for a foreign source steel or iron product and the Contract is awarded based on the alternate Item; or
- the materials are temporarily installed.

Provide a notarized original of the FORM D-9-USA-1 with the proper attachments for verification of compliance.

Manufacturing is any process that modifies the chemical content, physical shape or size, or final finish of a product. Manufacturing begins with initial melting and mixing and continues through fabrication (cutting, drilling, welding, bending, etc.) and coating (paint, galvanizing, epoxy, etc.).

B. Buy Texas. For construction or routine maintenance Contracts without federal funds, buy materials produced in Texas when the materials are available at a comparable price and in a comparable period of time. Provide documentation of purchases or a description of good-faith efforts on request.

6.2. Material Quality. Correct or remove materials that fail to meet Contract requirements or that do not produce satisfactory results. Reimburse the Department for cost incurred if additional sampling and testing is required by a change of source.

Materials not meeting Contract requirements will be rejected, unless the Engineer approves corrective actions. Upon rejection, immediately remove and replace rejected materials.

If the Contractor does not comply with this Article, the Department may remove and replace defective material. The cost of testing, removal, and replacement will be deducted from the estimate.

6.3. Manufacturer Warranties. Transfer to the Department warranties and guarantees required by the Contract or received as part of normal trade practice.

6.4. Sampling, Testing, and Inspection. Incorporate into the work only material that has been inspected, tested, and accepted by the Department. Remove, at the Contractor's expense, materials from the work locations that are used without prior testing and approval or written permission of the Engineer.

The material requirements and standard test methods in effect at the time the proposed Contract is advertised govern. Unless otherwise noted, the Department will perform testing at its expense. In addition to facilities and equipment required by the Contract, furnish facilities and calibrated equipment required for tests to control the manufacture of construction Items. If requested, provide a complete written statement of the origin, composition, and manufacture of materials.

All materials used are subject to inspection or testing at any time during preparation or use. Material which that has been tested and approved at a supply source or staging area may be reinspected or tested before or during incorporation into the work, and rejected if it does not meet Contract requirements. Copies of test results are available upon request. Do not use material that, after approval, becomes unfit for use.

Unless otherwise noted in the Contract, all testing must be performed within the United States and witnessed by the Engineer. If materials or processes require testing outside the contiguous 48 United States, reimburse the Department for inspection expenses.

6.5. Plant Inspection and Testing. The Engineer may but is not obligated to inspect materials at the acquisition or manufacturing source. Material samples will be obtained and tested for compliance with quality requirements. Materials produced under Department inspection are for Department use only unless released in writing by the Engineer.

If inspection is at the plant, meet the following conditions unless otherwise specified:

- Cooperate fully and assist the Engineer during the inspection.
- Ensure the Engineer has full access to all parts of the plant used to manufacture or produce materials.
- In accordance with pertinent Items and the Contract, provide a facility at the plant for use by the Engineer as an office or laboratory.
- Provide and maintain adequate safety measures and restroom facilities.
- Furnish and calibrate scales, measuring devices, and other necessary equipment.

The Engineer may provide inspection for periods other than daylight hours if:

- continuous production of materials for Department use is necessary due to the production volume being handled at the plant and
- the lighting is adequate to allow satisfactory inspection.

6.6. Storage of Materials. Store and handle materials to preserve their quality and fitness for the work. Store materials so that they can be easily inspected and retested. Place materials under cover, on wooden platforms, or on other hard, clean surfaces as necessary or when directed.

Obtain approval to store materials on the right of way. Storage space off the right of way is at the Contractor’s expense.

6.7. Department-furnished Material. The Department will supply materials as shown on the plans. The cost of handling and placing materials supplied by the Department will not be paid for directly but is subsidiary to the Item in which they are used. Assume responsibility for materials upon receipt.

6.8. Use of Materials Found on the Right of Way. Material found in the excavation areas and meeting the Department's specifications may be used in the work. This material will be paid for at the Contract bid price for excavation and under the Item for which the material is used.

Do not excavate or remove any material from within the right of way that is not within the limits of the excavation without written permission. If excavation is allowed within a right of way project-specific location (PSL), replace the removed material with suitable material at no cost to the Department as directed.

6.9. Recycled Materials. Hazardous wastes, as defined in 30 TAC 335, proposed for recycling will not be allowed in Department Contracts. Nonhazardous recyclable materials (NRMs) may be used unless disallowed or restricted by the Specification for the Item. Determine if NRMs are regulated under 30 TAC 312, 330, 332, 334, or 335, and comply with all general prohibitions and requirements. Furnish a written certification, sealed by a licensed professional engineer, that the NRMs are used in accordance with DMS-11000, "Evaluating and Using Nonhazardous Recyclable Materials Guidelines."

6.10. Hazardous Materials. Use materials that are free of hazardous materials as defined in Item 1, "Definition of Terms."

Notify the Engineer immediately when a visual observation or odor indicates that materials in required material sources or on sites owned or controlled by the Department may contain hazardous materials. The Department is responsible for testing and removing or disposing of hazardous materials not introduced by the Contractor on sites owned or controlled by the Department. The Contractor is not required to test, remediate, or remove hazardous materials that the Contractor did not introduce onto the work locations. The Engineer may suspend the work wholly or in part during the testing, removal, or disposition of hazardous materials on sites owned or controlled by the Department.

When a visual observation or odor indicates that materials delivered to the work locations by the Contractor may contain hazardous materials, have an approved commercial laboratory test the materials for contamination. Remove, remediate, and dispose of any of these materials found to be contaminated. Testing, removal, and disposition of hazardous materials introduced onto the work locations by the Contractor will be at the Contractor's expense. Working day charges will not be suspended and extensions of working days will not be granted for activities related to handling hazardous material delivered by the Contractor.

6.11. Surplus Materials. Take ownership of surplus materials unless otherwise shown on the plans or directed. Remove and dispose of materials in accordance with federal, state, and local regulations. If requested, provide an appropriate level of documentation to verify proper disposal. When materials are disposed of on private property, provide written authorization from the property owner for the use of the property for this purpose, upon request.

SPECIAL PROVISION

006---030

Control of Materials

For this project, Item, Item 006, "Control of Materials," of the Standard Specifications is amended hereby with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 6.9. Recycled Materials is voided and replaced by the following:

The Department will not allow hazardous wastes, as defined in 30 TAC 335, proposed for recycling. Use nonhazardous recyclable materials (NRMs) only if the Specification for the Item does not disallow or restrict use. Determine if NRMs are regulated under 30 TAC 312, 330, 332, 334, or 335, and comply with all general prohibitions and requirements. Use NRMs in accordance with DMS-11000, "Evaluating and Using Nonhazardous Recyclable Materials Guidelines," and furnish all documentation required by that Specification.

Article 6.10. Hazardous Materials is voided and replaced by the following:

Use materials that are free of hazardous materials as defined in Item 1, "Definition of Terms."

Notify the Engineer immediately when a visual observation or odor indicates that materials in required material sources or on sites owned or controlled by the Department may contain hazardous materials. Except in the case of Section 6.10.A.1.a, "Cleaning and Painting Steel" below, the Department is responsible for testing and removing or disposing of hazardous materials not introduced by the Contractor on sites owned or controlled by the Department as indicated below. The plans will indicate locations where paint on steel is suspected to contain hazardous materials and where regulated asbestos containing materials have been found. The Engineer may suspend work wholly or in part during the testing, removal, or disposition of hazardous materials on sites owned or controlled by the Department, except in the case of Section 6.10.A.1.a.

When a visual observation or odor indicates that materials delivered to the work locations by the Contractor may contain hazardous materials, have an approved commercial laboratory test the materials for contamination. Remove, remediate, and dispose of any of these materials found to be contaminated. Testing, removal, and disposition of hazardous materials introduced onto the work locations by the Contractor will be at the Contractor's expense. Working day charges will not be suspended and extensions of working days will not be granted for activities related to handling hazardous material delivered by the Contractor.

A. Painted Steel Requirements. As shown on the plans, existing paint on steel may contain hazardous materials. Perform work in accordance with the following:

1. Removing Paint from Steel.

a. Cleaning and Painting Steel. For contracts that are primarily for painting existing steel, perform the work in accordance with Item 446, "Cleaning and Painting Steel."

b. Other Contracts. For all other projects when an existing paint must be removed to perform other work, perform paint removal work in accordance with Item 446, "Cleaning and Painting Steel" unless the paint is shown or determined to contain hazardous materials. If the paint is shown or determined to contain hazardous materials, the Department will provide for a separate contractor to remove paint prior to or during the Contract to allow dismantling of the steel for the Contractor's salvaging, reuse, or recycling or where paint must be removed to perform other work. For steel that is dismantled by unbolting, no paint stripping will be required. Use care to not damage existing paint. When dismantling is performed using flame or saw-cutting methods to remove steel elements coated with paint containing hazardous materials, the plans will show stripping locations. Coordinate with the separate contractor for stripping work to be performed during the Contract.

2. Removal and Disposal of Painted Steel. For Contracts where painted steel is to be removed and disposed of by the Contractor, painted steel may be reused or disposed of at a steel recycling or smelting facility. If the paint is shown or determined to contain hazardous materials, maintain and make available to the Engineer invoices and other records showing the reuse owner or for recycling, records obtained from the recycling or smelting facility showing the received weight of the steel and the facility name. Painted steel to be retained by the Department will be shown on the plans.

B. Asbestos Requirements. The plans will indicate locations or elements where asbestos containing materials (ACM) have been found. At these locations or at locations where previously unknown ACM has been found, the Department will arrange for abatement by a separate contractor during the Contract. For work at these locations, notify the Engineer of proposed dates of demolition or removal of structural elements with ACM at least 60 days before work is to begin to allow the Department sufficient time to abate the asbestos.

When the work by a separate contractor for removal of paint or asbestos abatement is to be performed during the Contract, provide traffic control as shown on the plans and coordinate and cooperate with the separate contractor. Continue other work detailed in the plans not directly involved in the paint removal or asbestos abatement work. Coordinate with the Department the timing of the separate contractor's work in advance in order to allow the Department to schedule work with the separate contractor. Work for the traffic control and other work will not be paid for directly but will be subsidiary to pertinent Items.

SPECIAL PROVISION

006---031

Control of Materials

For this project, Item 006, "Control of Materials," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 6.9. Recycled Materials is voided and replaced by the following:

The Department will not allow hazardous wastes, as defined in 30 TAC 335, proposed for recycling. Use nonhazardous recyclable materials (NRMs) only if the Specification for the Item does not disallow or restrict use. Determine if NRMs are regulated under 30 TAC 312, 330, 332, 334, or 335, and comply with all general prohibitions and requirements. Use NRMs in accordance with DMS-11000, "Evaluating and Using Nonhazardous Recyclable Materials Guidelines," and furnish all documentation required by that Specification.

Article 6.10 Hazardous Materials. The second paragraph is voided and replaced by the following:

Notify the Engineer immediately when a visual observation or odor indicates that materials on sites owned or controlled by the Department may contain hazardous materials. Except as noted herein, the Department is responsible for testing and removing or disposing of hazardous materials not introduced by the Contractor on sites owned or controlled by the Department unless otherwise specified. The plans will indicate locations where paint on steel is suspected to contain lead and where regulated asbestos containing materials have been found. For work at these locations, remove the lead or asbestos as specified in the pertinent items. Except for lead or asbestos indicated on the plans, the Engineer may suspend work wholly or in part during the testing, removal, or disposition of hazardous materials on sites owned or controlled by the Department unless otherwise specified.

ITEM 7

LEGAL RELATIONS AND RESPONSIBILITIES

7.1. Laws to be Observed. Comply with all federal, state, and local laws, ordinances, and regulations that affect the performance of the work. The Contractor is not required to comply with city electrical ordinances not included in this Contract. Indemnify and save harmless the State and its representatives against any claim arising from violation by the Contractor of any law, ordinance, or regulation.

This Contract is between the Department and the Contractor only. No person or entity may claim third-party beneficiary status under this Contract or any of its provisions, nor may any non-party sue for personal injuries or property damage under this Contract.

7.2. Permits, Licenses, and Taxes. Procure all permits and licenses; pay all charges, fees, and taxes; and give all notices necessary and incidental to the due and lawful prosecution of work, except for permits provided by the Department and as specified in Article 7.19, "Preservation of Cultural and Natural Resources and the Environment."

7.3. Patented Devices, Material, and Processes. Indemnify and save harmless the State from any claims for infringement from the Contractor's use of any patented design, device, material, process, trademark, or copyright selected by the Contractor and used in connection with the work. Indemnify and save harmless the State against any costs, expenses, or damages that it may be obliged to pay, by reason of this infringement, at any time during the prosecution or after the completion of the work.

7.4. Insurance and Bonds. As specified in Article 3.4, "Execution of Contract," provide the Department with the Department's Certificate of Insurance verifying the types and amounts of coverage shown in Table 1.

Table 1
Insurance Requirements

Type of Insurance	Amount of Coverage
Commercial General Liability Insurance	$600,000 combined single limit
Business Automobile Policy: Bodily Injury Property Damage	 $250,000 each person $500,000 each occurrence $100,000 each occurrence
Workers' Compensation	Statutory

By signing the Contract, the Contractor certifies compliance with all applicable laws, rules, and regulations pertaining to workers' compensation insurance or legitimate alternates. This certification includes all subcontractors. Pay all deductibles stated in the policy. Subcontractors must meet the requirements of Table 1 either through their own coverage or through the Contractor's coverage.

The coverage listed in Table 1 must remain in force until final acceptance. If the insurance lapses for any reason, stop all work until the Department receives an acceptable certificate of insurance.

Commercial general liability and business automobile policies must include an endorsement naming the State as an additional named insured. Policies issued for coverage listed in Table 1 must include a waiver of subrogation endorsement in favor of the State.

Provide a substitute Surety on the Contract bonds in the original full Contract amount within 15 days of notification if the Surety is declared bankrupt or insolvent, the Surety's underwriting limitation drops below the Contract amount or the Surety's right to do business is terminated by the State. The substitute Surety must be authorized by the laws of the State and acceptable to the Department. Work will be suspended until a substitute Surety is provided. Working day charges will be suspended for 15 days or until an acceptable Surety is provided, whichever is sooner.

7.5. Restoring Surfaces Opened by Permission. Do not authorize anyone to make an opening in the highway for utilities, drainage, or any other reason without written permission from the Engineer. Repair all openings as directed. Payment for repair of surfaces opened by permission will be made in accordance with pertinent Items or Article 4.2, "Changes in the Work." Costs associated with openings made with Contractor authorization but without Department approval will not be paid.

7.6. Sanitary Provisions. Provide and maintain adequate, neat, and sanitary toilet accommodations for employees, including State employees, in compliance with the requirements and regulations of the Texas Department of Health or other authorities having jurisdiction.

7.7. Public Safety and Convenience. Manage construction to minimize disruption to traffic. Make every effort to ensure the safety and convenience of the public and property as provided in the Contract and as directed. Follow the safety provisions of all applicable rules, codes, and regulations. Keep all portions of the highway open to traffic, unless otherwise shown on the plans. Maintain the roadway in a good and passable condition. Provide for ingress and egress to adjacent property in accordance with the Contract and as directed. Provide suitable drainage of the roadway and erect temporary structures as required.

If at any time during construction, the approved plan of operation does not accomplish the intended purpose due to any condition affecting the safe handling of traffic, immediately make necessary changes, as directed, to correct the unsatisfactory conditions.

Store all equipment not in use in a manner and at locations that will not interfere with the safe passage of traffic.

Provide qualified flaggers in accordance with Section 502.2.B, "Flaggers," for the safety and convenience of the traveling public and workers, as directed.

If the Engineer determines that any of the requirements of this Article have not been met, the Engineer may take any necessary corrective action. However, this will not change the legal responsibilities set forth in the Contract. The cost for this work will be deducted from any money due or to become due to the Contractor.

7.8. Hauling and Loads on Roadways and Structures. Comply with federal and state laws concerning legal gross and axle weights. Except for the designated Interstate system,

vehicles with a valid yearly overweight tolerance permit may haul materials to the work locations at the permitted load. Provide copies of the yearly overweight tolerance permits to the Engineer upon request. Construction equipment is not exempt from oversize or overweight permitting requirements on roadways open to the traveling public.

Protect existing bridges and other structures that will remain in use by the traveling public during and after the completion of the Contract. Construction traffic on roadways, bridges, and culverts within the limits of the work, including any structures under construction that will remain in service during and after completion of the Contract is subject to legal size and weight limitations.

Additional temporary fill may be required by the Engineer for hauling purposes for the protection of certain structures. This additional fill will not be paid directly but will be subsidiary.

Replace or restore to original condition any structure damaged by the Contractor's operations.

The Engineer may allow equipment with oversize or non-divisible overweight loads to operate without a permit within the work locations on pavement structures not open to the traveling public. Submit Contractor-proposed changes to traffic control plans for approval, in accordance with Item 502, "Barricades, Signs, and Traffic Handling." The following sections further address overweight allowances. The Department will make available to the Contractor any available plans and material reports for existing structures.

A. Overweight Construction Traffic Crossing Structures. The Engineer may allow crossing of a structure not open to the public within the work locations, when divisible or non-divisible loads exceed legal weight limitations, including limits for load-posted bridges. Obtain written permission to make these crossings. Submit for approval a structural analysis by a licensed professional engineer indicating that the excessive loads should be allowed. Provide a manufacturer's certificate of equipment weight that includes the weight distribution on the various axles and any additional parts such as counterweights, the configuration of the axles, or other information necessary for the analysis. Submit the structural analysis and supporting documentation sufficiently in advance of the move to allow for review by the Engineer. Permission may be granted if the Engineer finds that no damage or overstresses in excess of those normally allowed for occasional overweight loads will result to structures that will remain in use after Contract completion. Provide temporary matting or other protective measures as directed.

Schedule loads so that only one vehicle is on any span or continuous unit at any time. Use barricades, fences, or other positive methods to prevent other vehicular access to structures at any time the overweight load is on any span or continuous unit.

B. Construction Equipment Operating on Structures. Cranes and other construction equipment used to perform construction operations that exceed legal weight limits may be allowed on structures. Before any operation that may require placement of equipment on a structure, submit for approval a detailed structural analysis prepared by a licensed professional engineer.

Submit the structural analysis and supporting documentation sufficiently in advance of the use to allow for review by the Engineer. Include all axle loads and

configurations, spacing of tracks or wheels, tire loads, outrigger placements, center of gravity, equipment weight, and predicted loads on tires and outriggers for all planned movements, swings, or boom reaches. The analysis must demonstrate that no overstresses will occur in excess of those normally allowed for occasional overweight loads.

C. Hauling Divisible Overweight Loads on Pavement Within the Work Locations. The Engineer may allow divisible overweight loads on pavement structures within the work locations not open to the traveling public. Obtain written approval before hauling the overweight loads. Include calculations to demonstrate that there will be no damage or overstress to the pavement structure.

7.9. Barricades, Warning and Detour Signs, and Traffic Handling. Provide, install, move, replace, maintain, clean, and remove all traffic control devices as shown on the plans and as directed. If details are not shown on the plans, provide devices and work in accordance with the TMUTCD and as directed. When authorized or directed, provide additional signs or traffic control devices not required by the plans.

If an unexpected situation arises that causes the Contractor to believe that the traffic control should be changed, make all reasonable efforts to promptly contact the Engineer. Take prudent actions until the Engineer can be contacted.

If the Engineer determines that any of the requirements of this Article have not been met, the Engineer may take any necessary corrective action. However, this will not change the legal responsibilities set forth in the Contract. The cost for this work will be deducted from any money due or to become due to the Contractor.

The Engineer may authorize or direct in writing the removal or relocation of project limit advance warning signs. When project limit advance warning signs are removed before final acceptance, traffic control in accordance with the TMUTCD may be used for minor operations as approved. Removal or relocation of project limit advance warning signs does not imply final acceptance.

7.10. Using Explosives. Do not endanger life or property. When required by the plans or requested, provide a written blasting plan. The Department retains the right to reject the blasting plan. Store all explosives securely and clearly mark all storage places with "DANGER – EXPLOSIVES." Store, handle, and use explosives and highly flammable material in compliance with federal, state, and local laws, ordinances, and regulations. Assume liability for property damage, injury, or death resulting from the use of explosives.

Give at least a 48-hr. advance notice to the appropriate Roadmaster before doing any blasting work involving the use of electric blasting caps within 200 ft. of any railroad track.

7.11. Protecting Adjacent Property. Protect adjacent property from damage. If any damage results from an act or omission on the part of or on behalf of the Contractor, take corrective action to restore the damaged property to a condition similar or equal to that existing before the damage was done.

7.12. Responsibility for Damage Claims. Indemnify and save harmless the State and its agents and employees from all suits, actions, or claims and from all liability and damages

for any injury or damage to any person or property due to the Contractor's negligence in the performance of the work and from any claims arising or amounts recovered under any laws, including workers' compensation and the Texas Tort Claims Act. Indemnify and save harmless the State and assume responsibility for all damages and injury to property of any character occurring during the prosecution of the work resulting from any act, omission, neglect, or misconduct on the Contractor's part in the manner or method of executing the work; from failure to properly execute the work; or from defective work or material.

Pipelines and other underground installations that may or may not be shown on the plans may be located within the right of way. Indemnify and save harmless the State from any suits or claims resulting from damage by the Contractor's operations to any pipeline or underground installation. At the pre-construction conference, submit the scheduled sequence of work to the respective utility owners so that they may coordinate and schedule adjustments of their utilities that conflict with the proposed work.

If the Contractor asserts any claim or brings any type of legal action (including an original action, third-party action, or cross-claim) against any Commissioner or individual employee of the Department for any cause of action or claim for alleged negligence arising from the Contract, the Contractor will be ineligible to bid on any proposed Contract with the Department during the pendency of the claim or legal action.

7.13. Responsibility for Hazardous Materials. Indemnify and save harmless the State and its agents and employees from all suits, actions, or claims and from all liability and damages for any injury or damage to any person or property arising from the generation or disposition of hazardous materials introduced by the Contractor on any work done by the Contractor on State owned or controlled sites. Indemnify and save harmless the State and its representatives from any liability or responsibility arising out of the Contractor's generation or disposition of any hazardous materials obtained, processed, stored, shipped, etc., on sites not owned or controlled by the State. Reimburse the State for all payments, fees, or restitution the State is required to make as a result of the Contractor's actions.

7.14. Contractor's Responsibility for Work. Until final acceptance of the Contract, take every precaution against injury or damage to any part of the work by the action of the elements or by any other cause, whether arising from the execution or from the nonexecution of the work. Protect all materials to be used in the work at all times, including periods of suspension.

When any roadway or portion of the roadway is in suitable condition for travel, it may be opened to traffic as directed. Opening of the roadway to traffic does not constitute final acceptance.

Repair damage to all work until final acceptance. Repair damage to existing facilities in accordance with the Contract or as directed by the Engineer. Repair damage to existing facilities or work caused by Contractor operations at the Contractor's expense. Repair work for damage that was not due to the Contractor's operations will not be paid for except as provided below.

A. Reimbursable Repair. Except for damage to appurtenances listed in Section 7.14.B.1, "Unreimbursed Repair," the Contractor will be reimbursed for repair of damage caused by:

- motor-vehicle, watercraft, aircraft, or railroad-train incident;
- vandalism; or
- Acts of God, such as earthquake, tidal wave, tornado, hurricane, or other cataclysmic phenomena of nature.

B. Appurtenances.

1. Unreimbursed Repair. Reimbursement will not be made for repair of damage to the following temporary appurtenances, regardless of cause:

- signs,
- barricades,
- changeable message signs, and
- other work zone traffic control devices.

Crash cushion attenuators and guardrail end treatments are the exception to the above listing and are to be reimbursed in accordance with Section 7.14.B.2, "Reimbursed Repair."

2. Reimbursed Repair. Reimbursement will be made for repair of damage due to the causes listed in Section 7.14.A, "Reimbursable Repair," to appurtenances (including temporary and permanent crash cushion attenuators and guardrail end treatments) not listed in Section 7.14.B.1, "Unreimbursed Repair."

C. Roadways and Structures. Until final acceptance, the Contractor is responsible for all work constructed under the Contract. The Department will not reimburse the Contractor for repair work to new construction, unless the failure or damage is due to one of the causes listed in Section 7.14.A, "Reimbursable Repair."

The Department will be responsible for the cost for repair of damage to existing roadways and structures not caused by the Contractor's operations.

D. Detours. The Contractor will be responsible for the cost of maintenance of detours constructed under the Contract, unless the failure or damage is due to one of the causes listed in Section 7.14.A, "Reimbursable Repair." The Engineer may consider failures beyond the Contractor's control when determining reimbursement for repairs to detours constructed. The Department will be responsible for the cost of maintenance of existing streets and roadways used for detours or handling traffic.

E. Relief from Maintenance. The Engineer may relieve the Contractor from responsibility of maintenance as outlined in this Section. This relief does not release the Contractor from responsibility for defective materials or work or constitute final acceptance.

1. Isolated Work Locations. For isolated work locations, when all work is completed, including work for Article 4.6, "Final Cleanup," the Engineer may relieve the Contractor from responsibility for maintenance.

2. Work Except for Vegetative Establishment and Test Periods. When all work for all or isolated work locations has been completed, including work for Article 4.6, "Final Cleanup," with the exception of vegetative establishment and maintenance periods and test and performance periods, the Engineer may relieve the Contractor from responsibility for maintenance of completed portions of work.

3. **Work Suspension.** When all work is suspended for an extended period of time, the Engineer may relieve the Contractor from responsibility for maintenance of completed portions of work during the period of suspension.

F. Basis of Payment. When reimbursement for repair work is allowed and performed, payment will be made in accordance with pertinent Items or Article 4.2, "Changes in the Work."

7.15. Electrical Requirements.

A. Definitions.

1. **Electrical Work.** Electrical work is:

   a. work performed under:
   - Item 610, "Roadway Illumination Assemblies,"
   - Item 614, "High Mast Illumination Assemblies,"
   - Item 616, "Performance Testing of Lighting Systems,"
   - Item 617, "Temporary Roadway Illumination,"
   - Item 618, "Conduit,"
   - Item 620, "Electrical Conductors,"
   - Item 621, "Tray Cable,"
   - Item 622, "Duct Cable,"
   - Item 628, "Electrical Services,"
   - Item 652, "Highway Sign Lighting Fixtures,"
   - Item 680, "Installation of Highway Traffic Signals," or
   - Item 684, "Traffic Signal Cables";

   b. work performed under other Items that involves either the distribution of electrical power greater than 50 volts or the installation of conduit and duct banks;

   c. the installation of conduit and wiring associated with Item 624, "Ground Boxes," and Item 656, "Foundations for Traffic Control Devices"; and

   d. the installation of the conduit system for communication and fiber optic cable.

   Electrical work does not include the installation of the communications or fiber optic cable, or the connections for low voltage and inherently power limited circuits such as electronic or communications equipment. Assembly and placement of poles, structures, cabinets, enclosures, manholes, or other hardware will not be considered electrical work as long as no wiring, wiring connections, or conduit work is done at the time of assembly and placement.

2. **Specialized Electrical Work.** Specialized electrical work is work that includes the electrical service and feeders, sub-feeders, branch circuits, controls, raceways, and enclosures for the following:
   - pump stations,
   - moveable bridges,
   - ferry slips,
   - motor control centers,
   - facilities required under Item 504, "Field Office and Laboratory,"
   - rest area or other public buildings,

- weigh-in-motion stations,
- electrical services larger than 200 amps,
- electrical services with main or branch circuit breaker sizes not shown in the Contract, and
- any 3-phase electrical power.

3. **Certified Person.** A certified person is a person who has passed the test from the Texas Engineering Extension Service (TEEX) "TxDOT Electrical Systems" course. Submit a current and valid TEEX certification upon request.
4. **Licensed Electrician.** A licensed electrician is a person with a current and valid unrestricted master electrical license, or unrestricted journeyman electrical license that is supervised or directed by an unrestricted master electrician. An unrestricted master electrician need not be on the work locations at all times electrical work is being done, but the unrestricted master electrician must approve work performed by the unrestricted journeyman. Licensed electrician requirements by city ordinances do not apply to on state system work.

   The unrestricted journeyman and unrestricted master electrical licenses must be issued by a city in Texas with population of 50,000 or greater that issues licenses based on passing a written test and demonstrating experience.

   The Engineer may accept other states' electrical licenses. Submit documentation of the requirements for obtaining that license. Acceptance of the license will be based on sufficient evidence that the license was issued based on:
   - passing the NEC Block Test or the NEC Southern Building Code Test and
   - demonstrating sufficient electrical experience commensurate with general standards for an unrestricted master and unrestricted journeyman electrician.

B. Work Requirements. Table 2 sets forth the qualifications required to perform electrical work and specialized electrical work.

Table 2
Work Requirements

Type of Work	Qualifications to Perform Work
Electrical work with plans	Licensed electrician, certified person, or workers directly supervised by a licensed electrician or certified person
Electrical work without plans	Licensed electrician or workers directly supervised by a licensed electrician
Specialized electrical work	Licensed electrician or workers directly supervised by a licensed electrician
Replace lamps, starting aids, and changing fixtures	Licensed electrician, certified person, or workers directly supervised by a licensed electrician or certified person
Conduit in precast section with approved working drawings	Inspection by licensed electrician or certified person
Conduit in cast-in-place section	Inspection by licensed electrician or certified person
All other electrical work (troubleshooting, repairs, component replacement, etc.)	Licensed electrician or workers directly supervised by a licensed electrician

"Directly supervised by a licensed electrician" means that a licensed electrician is present during all electrical work. "Directly supervised by a licensed electrician or certified person" means that a licensed electrician or certified person is present during all electrical work.

A non-certified person may install conduit in cast-in-place concrete sections if the work is checked by a certified person before concrete placement.

If the plans specify IMSA certification or the completion of other electrical installation courses for traffic signal installation and maintenance, a licensed electrician or certified person will be required only for the installation of conduit, ground boxes, electrical services, pole grounding, and electrical conductors installed under Item 620, "Electrical Conductors."

7.16. Work Near Railroads.

A. General. If the work crosses or is in close proximity to a railroad, do not interfere with the use or operation of the railroad company's trains or other property. Assign responsible supervisory personnel to ensure that tracks and adjacent areas are clear of debris, road materials, and equipment. It is the Contractor's responsibility to contact the railroad to determine the railroad's requirements for work within the railroad right of way and to comply with the requirements. The Department will not reimburse the Contractor for any cost associated with these requirements.

If the work requires construction within 25 ft. horizontally of the near rail or if the tracks may be subject to obstruction due to construction operations, notify the Engineer and Roadmaster at least 3 days before performing work. The railroad company will provide flaggers during this work. If railroad flaggers will be needed longer than 2 consecutive days, request them at least 30 days before performing work within the railroad right of way.

Flaggers provided by the railroad company will be paid for by the Department.

Do not store material or equipment in the Railroad's right of way within 15 ft. of the centerline of any track. Do not place any forms or temporary falsework within 8.5 ft. horizontally from the centerline or 22 ft. vertically above the top of rails of any track, unless otherwise shown on the plans.

B. Temporary Crossings. If a temporary crossing is needed, obtain permission from the railroad company before crossing the tracks. Execute the "Agreement for Contractor's Temporary Crossing" if required by the Railroad Company. Ensure that the tracks are left clear of equipment and debris that would endanger the safe operation of railroad traffic. Provide a crossing guard on each side of the crossing to direct equipment when hauling across the tracks. Stop construction traffic a safe distance away from the crossing upon the approach of railroad traffic.

Work for temporary crossings will not be paid for directly, but is subsidiary to Items of the Contract. Work performed by the railroad company for the temporary crossing, except flaggers, will be at the Contractor's expense.

7.17. Personal Liability of Public Officials. Department employees are agents and representatives of the State and will incur no liability, personal or otherwise, in carrying

out the provisions of the Contract or in exercising any power or authority granted under the Contract.

7.18. Abatement and Mitigation of Excessive or Unnecessary Noise. Minimize noise throughout all phases of the Contract. Exercise particular and special efforts to avoid the creation of unnecessary noise impact on adjacent noise sensitive receptors in the placement of non-mobile equipment such as air compressors, generators, pumps, etc. Place mobile and stationary equipment to cause the least disruption of normal adjacent activities.

All equipment associated with the work must be equipped with components to suppress excessive noise and these components must be maintained in their original operating condition considering normal depreciation. Noise-attenuation devices installed by the manufacturer such as mufflers, engine covers, insulation, etc. must not be removed nor rendered ineffectual nor be permitted to remain off the equipment while the equipment is in use.

7.19. Preservation of Cultural and Natural Resources and the Environment. If the Contractor initiates changes to the Contract and the Department approves the changes, the Contractor is responsible for obtaining clearances and coordinating with the appropriate regulatory agencies.

A. Cultural Resources. Cease all work immediately if a site, building, or location of historical, archeological, educational, or scientific interest is discovered within the right of way. The site, building, or location will be investigated and evaluated by the Department.

B. Texas Pollutant Discharge Elimination System (TPDES) Permits and Storm Water Pollution Prevention Plans (SWP3). The Department will file the Notice of Intent (NOI) and the Notice of Termination (NOT) for work shown on the plans in the right of way. Adhere to all requirements of the SWP3.

C. Work in Waters of the United States. For work in the right of way, the Department will obtain any required Section 404 permits from the U.S. Army Corps of Engineers before work begins. Adhere to all agreements, mitigation plans, and standard best management practices required by the permit. When Contractor-initiated changes in the construction method changes the impacts to waters of the U.S., obtain new or revised Section 404 permits.

D. Work in Navigable Waters of the United States. For work in the right of way, the Department will obtain any required Section 9 permits from the U.S. Coast Guard before work begins. Adhere to the stipulations of the permits and associated best management practices. When Contractor-initiated changes in the construction method changes the impacts to navigable waters of the U.S., obtain new or revised Section 9 permits.

E. Work Over the Recharge or Contributing Zone of Protected Aquifers. Make every reasonable effort to minimize the degradation of water quality resulting from impacts relating to work over the recharge or contributing zones of protected aquifers, as defined and delineated by the TCEQ. Use best management practices and perform work in accordance with Contract requirements.

F. Project-Specific Locations. For all project-specific locations (PSLs) on or off the right of way (material sources, waste sites, parking areas, storage areas, field offices, staging areas, haul roads, etc.), signing the Contract certifies compliance with all applicable laws, rules, and regulations pertaining to the preservation of cultural resources, natural resources, and the environment as issued by the following or other agencies:

- Occupational Safety and Health Administration,
- Texas Commission on Environmental Quality,
- Texas Department of Transportation,
- Texas Historical Commission,
- Texas Parks and Wildlife Department,
- Texas Railroad Commission,
- U.S. Army Corps of Engineers,
- U.S. Department of Energy
- U.S. Department of Transportation,
- U.S. Environmental Protection Agency,
- U.S. Federal Emergency Management Agency, and
- U.S. Fish and Wildlife Service.

All subcontractors must also comply with applicable environmental laws, rules, regulations, and requirements in the Contract. Maintain documentation of certification activities including environmental consultant reports, Contractor documentation on certification decisions and contacts, and correspondence with the resource agencies. Provide documentation upon request.

Obtain written approval from the Engineer for all PSLs in the right of way not specifically addressed in the plans. Prepare an SWP3 for all Contractor facilities, such as asphalt or concrete plants located within TxDOT right of way. Comply with all TCEQ permit requirements for portable facilities, such as concrete batch plants, rock crushers, asphalt plants, etc. Address all environmental issues, such as Section 404 permits, wetland delineation, endangered species consultation requirements, or archeological and historic site impacts. Obtain all permits and clearances in advance.

SPECIAL SPECIFICATION

5414

Asbestos Abatement

1. **Description.** Abate and remove asbestos containing materials (ACM) at indicated locations on public facilities. Abatement operations may be subject to the requirements of the National Emissions Standards for Hazardous Air Pollutants (NESHAP), the Texas Asbestos Health Protection Rules (TAHPR), the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH). The plans will indicate the location, type, and approximate quantities of ACM.

2. **Qualifications.** For asbestos abatement work, provide personnel or subcontractors that are licensed, registered, or accredited by the Texas Department of State Health Services (DSHS) and insured for the appropriate asbestos related activity.

   Provide an on-site supervisor, or insure the subcontractor has a supervisor, meeting the requirements under OSHA for a "Competent Person" for all work involving ACM where the asbestos content is greater than 1%. The competent person must be familiar with and experienced in asbestos abatement and other related work and must enforce the use of all safety procedures and equipment. The supervisor must be knowledgeable of all EPA, OSHA and NIOSH requirements and guidelines. Provide documentation of the supervisor's qualifications to the Engineer.

3. **Notifications.** Submit required notifications to DSHS. Assume responsibility for insuring that all required notifications are submitted by the deadlines and in the manner required by DSHS. Provide copies of all required notifications to the Engineer. No time extensions or suspension of time charges will be made for failure to submit timely notifications or revised notifications.

4. **Construction.** Employ an Individual Asbestos Consultant or an Asbestos Consulting Agency licensed by DSHS to develop an Asbestos Abatement Plan (AAP) for the indicated materials. The AAP must comply with all applicable provisions of NESHAP, TAHPR and OSHA. Include in the AAP the acceptable removal or abatement methods, worker protection requirements, air monitoring provisions, temporary storage of removed ACM, and the proposed method and location for disposal of ACM. Provide a copy of the AAP to the Engineer. Approval of the AAP by the Engineer is not required.

   Use qualified personnel or subcontractors as specified herein to remove or abate ACM as described in the AAP. Do not deviate from the requirements in the AAP unless written approval is obtained from the developer of the AAP or the AAP is properly revised. Retain the services of the developer of the AAP throughout the duration of abatement work to ensure compliance with the AAP and applicable regulations. The developer of the AAP and the abatement subcontractor can be the same entity. The developer of the AAP is responsible for ensuring compliance with all applicable regulations.

5. **Storage and Disposal.** ACM that has been removed may be temporarily stored on-site provided the storage methods comply with the provisions in the AAP. Do not allow any accidental release of dust. Take removed ACM to a disposal facility licensed or approved to accept such materials as indicated in the AAP. Comply with NESHAP and TAHPR regulations regarding handling and transporting ACM. Take coating chips and spent abrasives with no ACM present to an appropriate disposal facility. Transport all materials in a manner to prevent accidental release of dust. In accordance with NESHAP, indicate on any shipping manifest for containers of ACM that the Department is the generator of the waste, the name of the transporter, the name of the administering agency (DSHS), and the name of the disposal facility.

6. **Measurement.** This Item will be measured as outlined below for the types of ACM indicated in the plans.

   a. **Coatings:** Coatings on concrete, steel or wood by the square foot measured in place;

   b. **Conduit:** by the foot measured in place

   c. **Other:** Mastics, sealants, fiberboard or roofing felt bearings or other items listed in the plans by the cubic foot of material removed and collected for disposal.

7. **Payment.** The work performed in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Asbestos Abatement" of the type specified (Coatings, Conduit or Other). This price is full compensation for developing the AAP, filing of required notifications, providing DSHS or OSHA certified personnel, containment systems, collection systems, equipment, labor, transportation and disposal of waste materials, and incidentals.

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Appendix 2
Lead FAQs

Question	Answer	Location in Standard
Who is the "employer"?	29 CFR 1926.62 refers to the employer. For the purpose of this documentation, the employer is the company doing the work. Furthermore, 29 CFR 1926.62 will hereafter be referred to as the “standard.”	
What jobs are covered by 29 CFR 1926.62?	All construction jobs involving occupational exposure to lead. Occupational exposure is that exposure that an employee can be expected to receive due to the nature of his/her job.	Paragraph A, Scope
How much lead can a worker be exposed to in an 8-hour shift?	50 micrograms per cubic meter.	Paragraph C, Permissible Exposure Limit
How much lead can a worker be exposed to in a shift that's not 8-hours?	This answer is determined by an equation found within the standard. It is given by dividing 400 by the number of hours in the shift.	Paragraph C, Permissible Exposure Limit
How do you determine how much lead an employee is exposed to?	A sample of each work shift must be taken using either biological or air monitoring to determine what the likely lead exposure is for each employee.	Paragraph D, Exposure Assessment
How is the sampling done?	Typically sampling is done through biological monitoring, meaning blood tests. Air sampling can also be performed.	Paragraph D, Exposure Assessment
How are employees protected during sampling if you do not know the exposure?	There are three categories of jobs that have exposures over the Permissible Exposure Limit (PEL). The workers performing these jobs must have adequate protection during the initial assessment. The level of protection is based on the job being performed.	Paragraph D, Exposure Assessment
What jobs are included in the above three categories?	The jobs are listed in paragraph D part 2. On the low end of exposure they include manual scraping and sanding of lead based coatings. The medium exposure category includes rivet busting where lead based coatings are present. The high exposure category includes welding and cutting of materials with lead based coatings. These are not all of the jobs listed for each category, merely a representative sample. The standard should be consulted for a list of the other jobs in each category and the PEL.	Paragraph D, Exposure Assessment
Are there ways to determine lead exposure without sampling workers?	Yes; if there is objective data from previous jobs conducted less than 12 months prior or from manufacturers that show that a certain method or material does not provide a lead risk, that data may be substituted.	Paragraph D, Exposure Assessment

What if an employee thinks that they are being exposed to lead above their level of protection?	If the employee thinks that their lead exposure is above that of their level of protection, the employer must provide adequate protection and consider the employee concerns when doing the initial assessment.	Paragraph D, Exposure Assessment
What is the frequency of monitoring if your exposure is above the action level?	The monitoring frequency depends on the amount of exposure and is explained in the exposure assessment portion of the standard. Different exposure levels require different frequencies of monitoring. The higher the exposure, the more frequent the monitoring.	Paragraph D, Exposure Assessment
How are employees kept safe from lead exposure?	Once an assessment has been completed, the employer must institute engineering and work practice controls to keep exposure levels low whenever feasible.	Paragraph E, Methods of Compliance
What about when those controls are not enough?	When these controls are feasible but do not provide enough protection, multiple controls may be used such as respirators, gloves, masks, and protective clothing.	Paragraph E, Methods of Compliance
What controls are considered appropriate?	Appropriate controls are determined by the amount of exposure. Respirators and protective equipment are discussed in paragraphs F and G of the standard, respectively. Generally, any protective equipment must be able to bring the employees lead exposure below the PEL.	Paragraph F and Paragraph G
How can someone determine what controls are in effect to protect employees?	The employer is required to develop a written compliance program that identifies the lead exposure and the controls and practices in place to protect the employees.	Paragraph E, Methods of Compliance
What happens to the compliance plan if things change?	The plan must be updated every 6 months to keep up with changing conditions.	Paragraph E, Methods of Compliance
Who provides a respirator?	The employer must provide a respirator to anyone who is exposed to lead at or above the PEL as well as anyone who requests one even if their exposure is below the PEL.	Paragraph F, Respiratory Protection
Does the respirator have to be a NIOSH respirator?	No, it may be either a NIOSH or MSHA approved respirator.	Paragraph F, Respiratory Protection
How is the respirator chosen?	This standard contains a respirator selection table which provides the appropriate protection based on airborne lead levels.	Paragraph F, Respiratory Protection

How is protective equipment or clothing chosen?	The protective equipment and clothing are selected based on the type of lead compound and lead form. There are certain lead compounds that may cause skin and eye irritation. When these compounds are present, appropriate protective equipment and clothing must be provided by the employer as indicated in Paragraph G. Also, when an employee is exposed to certain high levels of lead, protective clothing and equipment must be provided. Furthermore, the protective clothing and equipment may be cleaned and re-used unless rendered unserviceable.	Paragraph G, Protective Work Clothing and Equipment
Are there any procedures for how the clothing/equipment should be put on or removed?	Yes. There are procedures for putting on and removing protective clothing and equipment as well as clean up of these items that should be followed when appropriate.	Paragraph G, Protective Work Clothing and Equipment
Who is responsible for providing the respirators and other protective equipment?	The employer is financially and legally responsible for providing protective equipment clothing and respirators as well as repairs and replacement of such items. All of this is at no cost to the employee even if wear of such items is requested by the employee and not necessary due to lead exposure.	Paragraph F and Paragraph G
Are there any requirements for keeping work surfaces free of lead dust and debris?	Yes; work surfaces should be kept as free of lead as practical.	Paragraph H, Housekeeping
What is the preferred method of keeping surfaces clean?	Using a vacuum equipped with a HEPA filter.	Paragraph H, Housekeeping
Is using compressed air allowed for clean up?	No, this is strictly prohibited.	Paragraph H, Housekeeping
Does the employer provide any way to clean up after working with lead?	Yes. The employer must provide hand washing facilities to anyone exposed occupationally to lead. Also, the employer must provide change areas, showers when possible, and separate eating areas to anyone exposed above the PEL. All of these methods should be used when feasible to reduce the risk of employee exposure to lead.	Paragraph I, Hygiene Facilities and Practices
Can protective clothing be worn in these eating areas or does it have to be removed first?	Protective clothing should be removed unless all surface lead dust has been removed.	Paragraph I, Hygiene Facilities and Practices
How do we know that the equipment, clothing, and work practices are keeping employees safe from lead?	In order to protect employees and ensure that all controls are functioning properly, periodic medical surveillance of workers must be performed.	Paragraph J, Medical Surveillance

What does the medical surveillance consist of?	There are two parts to the surveillance program. The first part consists of biological monitoring to track the blood lead level (BLL). The second part is made up of medical examinations. **The medical surveillance portion of this standard is one of great importance in protecting employees. For this reason it will not be reproduced here to avoid the possibility of omitting information. Paragraph J of this standard should be read and understood.**	Paragraph J, Medical Surveillance
Is an employee penalized if he/she is removed from a job for medical reasons involving lead?	No. An employee may be removed from a high exposure job and placed in a lower exposure job at anytime for reasons of high BLL or medical opinion. When this happens, the employee may not be subject to a loss of earnings, seniority, or other benefits.	Paragraph K, Medical Removal Protection
How long can an employee be removed from a job?	An employee can be temporarily removed for medical reasons for up to 18 months, or until that job is completed, whichever happens first.	Paragraph K, Medical Removal Protection
When can an employee go back to work?	There are several reasons that an employee is removed from work including high BLL and other medical conditions making the worker more susceptible to lead poisoning. Due to this, there are several conditions for an employer returning an employee to work in the former job. These are all discussed in paragraph K.	Paragraph K, Medical Removal Protection
Is there still protection if an employer removes a worker from a job for medical reasons, even if the standard does not require removal?	Yes. When this happens, the employee may not be subject to a loss of earnings, seniority, or other benefits	Paragraph K, Medical Removal Protection
Can respirators be used instead of removing the employee from the job for medical reasons?	No.	Paragraph K, Medical Removal Protection
Does the employer have to train the employees in regards to lead protection?	Yes. The employer has to provide training for all employees exposed to lead above the action level or who may come in contact with lead compounds that cause irritation.	Paragraph L, Employee Information and Training
What has to be contained in the training?	The training must include the content of this standard and its appendices, the operations that could result in lead exposure, proper use of respirators, the purpose and description of the medical surveillance and medical removal programs, the compliance plan, and the employee's right of access to records.	Paragraph L, Employee Information and Training
How often does training have to be done?	At a minimum, the training must be conducted annually.	Paragraph L, Employee Information and Training

Are there any signage requirements?	A standard warning sign, found in Paragraph M, must be posted in any area where lead exposure exceeds the PEL.	Paragraph M, Signs
Does the employer keep records of the monitoring, initial assessment, or medical surveillance?	Yes; the employer must keep records of <u>all</u> exposure monitoring as well as for medical removal of employees.	Paragraph N, Recordkeeping
How long do these records have to be maintained?	These records are to be maintained for at least 30 years.	Paragraph N, Recordkeeping
Who can view these records?	Any employee or a representative they designate may view those records involving environmental monitoring, the employee's BLL monitoring, the employee's personal medical records, or the medical removal records at any time. These records are also made available to the employees union with the exception of the personal medical records.	Paragraph N, Recordkeeping
May workers or others observe the monitoring process?	Yes. An employee or representative they designate may observe the monitoring process of that employee at anytime. Results of such monitoring may be made available to the observer when they become available.	Paragraph O, Observation of Monitoring
Each paragraph has far more additional information to answer more exacting standards. For a simple overview of this standard, see Appendix B of this standard. This is not a legal document and should not be used as such. For questions, please refer to 29 CFR 1926.62 and its appendices.		
Is lead considered a hazardous material?	Yes	40 CFR 261.3
What are TxDOTs responsibilities for the disposal of lead?	TxDOT is responsible for making a hazardous waste determination, obtaining an EPA ID number, and recordkeeping and reporting as required.	40 CFR 262.10
Are there special requirements for lead disposal beyond universal hazardous waste disposal requirements?	No	40 CFR
Who is responsible for the waste during transport?	The company transporting the hazardous waste is responsible for the waste during transport. Transport is from the point where the sealed asbestos waste is taken from the generation site to the disposal site.	40 CFR 763

Appendix 3
Asbestos FAQs

Question	Answer	Location in Standard
Who is the "employer"?	29 CFR 1926.1101 refers to the employer. For the purpose of this documentation, the employer is the company or contractor doing the work. Furthermore, 29 CFR 1926.1101 will hereafter be referred to as the standard.	
What jobs are affected by this standard?	The jobs regulated by this standard are all construction jobs involving occupational exposure to asbestos. Construction jobs are defined as those done for construction, alteration, and/or repair, including painting and redecorating. However, this standard does not apply to asbestos-containing asphalt roof coatings, cements, and mastics. Although this standard does not apply to certain ACM common in bridges, some older wood bridges may still have asbestos coatings and so TxDOT is not categorically exempt from this standard.	Paragraph A, Scope and Application
How much asbestos may a worker be exposed to in an 8 hour work shift?	This standard sets the Permissible Exposure Limit (PEL) at 0.1 fibers per cubic centimeter	Paragraph C, Permissible Exposure Limits
How much asbestos may a worker be exposed to in a work shift longer than 8 hours?	No guidance is given in this standard for a work shift lasting for more or less than 8 hours.	
Are there different types of asbestos work?	Yes, there are 4 different types or levels of asbestos work. They are Class I, II, III, and IV. Class I involves the removal of Thermal System Insulation (TSI) and surfacing material containing asbestos. Class II involves the removal of ACM that is not TSI or surfacing material. Class III involves maintenance and repair work where ACM, including TSI and surfacing, is likely to be disturbed. Class IV involves custodial and maintenance work where asbestos is not likely to be disturbed as well as clean up of waste and debris from the previous three classes.	Paragraph B, Definitions
Asbestos removal is typically done on jobsites with other companies working in different areas, what has to be done to protect the employees of these other companies?	Typically, work involving asbestos removal should be isolated; however, these isolation systems can fail and expose other workers not working on asbestos removal to an asbestos hazard. Therefore, it is the responsibility of the other employers, those not working on asbestos removal, to ensure that there employees are safe from asbestos hazards by ascertaining the integrity of an enclosure or effectiveness of control methods used.	Paragraph D, Multi-employer worksites

Does the employer working on the asbestos removal carry some responsibility?	Beyond isolating the asbestos work, this employer's responsibility is only to his/her employees. However, the facility owner must communicate possible asbestos hazards to any other employers having employees on a jobsite.	
If there is an asbestos hazard created, who is responsible for abating it?	In the event that a hazard is created to other employees on a multi-employer worksite, it is the responsibility of the contractor who created or controls the source of the asbestos that created the hazard to abate it. This means, for example, that if there is a breach in an enclosure system, then the contractor that erected the system must take responsibility.	Paragraph D, Multi-employer worksites
Who is responsible for supervising the asbestos abatement work?	All asbestos removal work must be supervised by a competent person. This standard defines a competent person as one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, and who has the authority to take prompt corrective measures to eliminate the asbestos exposure. In addition, for Class I and Class II work, someone who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisors, or its equivalent and, for Class III and Class IV work, who is trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92 (a)(2).	Paragraph E, Regulated Areas
How is asbestos exposure limited?	Asbestos exposure and the migration of asbestos to other areas of a worksite is limited by the fact that all Class I, II, and III work is performed in regulated areas with proper controls dictated by the asbestos Class.	Paragraph E, Regulated Areas

What is required for a regulated area to protect workers?	First, these regulated areas must be demarcated so as to limit the number of people in the regulated area and limit asbestos exposure to those outside the regulated area. This is typically handled through the use of critical barriers or negative pressure enclosures. Second, access to these areas is limited to only those people authorized and necessary to be within the regulated area. Additionally, no one may eat, drink, smoke, chew tobacco or gum, or apply cosmetics within the regulated area. Finally, when it is necessary to use respirators within the regulated area, respirators must be supplied by the employer.	Paragraph E, Regulated Areas
How do you know if an employee has been exposed to asbestos?	This standard sets forth requirements for sampling. An airborne sample is collected that is representative of an 8-hour work shift and analyzed by an analytic laboratory to determine asbestos exposure. The exact method of sampling and analysis is described in Appendices A and B of the standard. Sampling will be done with devices specifically manufactured for this work and analyzed by an analytical laboratory or similar method.	Paragraph F, Exposure Assessments and Monitoring
Is there any biological monitoring required?	Asbestos is a fibrous material that stays in the lungs and does not typically enter the blood. Due to this there are not any biological monitoring requirements for asbestos work. However, there is a requirement for workers to be examined by a licensed physician or under the supervision of a licensed physician prior to commencing asbestos abatement work to ensure that they are physically capable of working. Additional frequency requirements are laid out in paragraph m(2) of this standard. The exams must be provided for by the employer at no cost to the employee and at a reasonable time and place.	Paragraph M, Medical Surveillance
How is an initial assessment of worker exposure to asbestos done?	The initial assessment is based on results from monitoring, observations, and objective data that can show that an employee will or will not be exposed to asbestos above the PEL. For example, if it is already known that a structure does not contain asbestos, then a negative exposure assessment would result from that objective data.	Paragraph F, Exposure Assessments and Monitoring

Who performs the initial assessment?	The initial assessment must be performed by a competent person. This competent person may be employed by TxDOT, the contractor doing the work, or a third party.	Paragraph F, Exposure Assessments and Monitoring
What is the frequency of monitoring?	The frequency of monitoring is based on the nature of the work being done. For Class I and II work where a negative exposure assessment has not been made, representative samples must be taken daily unless the employees are using supplied-air respirators operated in the pressure demand mode, or other positive pressure mode respirators. For all other work, periodic samples must be taken.	Paragraph F, Exposure Assessments and Monitoring
When can the monitoring be terminated?	The daily monitoring can only be stopped when it is shown by statistically reliable measurements that exposure is below the PEL and excursion limit. Additionally, anytime that there is a change in the work process that may lead to an increase in asbestos exposure, monitoring must be resumed.	Paragraph F, Exposure Assessments and Monitoring
Other than using regulated areas, how are employees protected from exposure?	There are a number a work practices that should be used based on the nature of the work being performed as well as some that should be used regardless of the exposure Class. Some of the basic controls are using vacuums with HEPA filters to clean up dust and debris, use of wet methods, those methods which keep the ACM wet, during handling, mixing, removal, and cleanup except when those wet methods create new risks such as electrical shock. Additionally the use of isolation systems and ventilation to keep/move air away from workers should be used. These are just some of the basic controls that should be used, for a full list see paragraph g of this standard.	Paragraph G, Methods of Compliance

What are the controls for Class I work?	There are many controls for Class I work that must be used. Some of these are that all HVAC systems must be isolated in the regulated area by sealing with a double layer of 6 mil plastic or equivalent as well as impermeable drop cloths being placed on surfaces below asbestos removal and on all objects in the regulated area. Additionally, several isolation systems may be used including negative pressure enclosures (NPE), glove bags, negative pressure glove bags, water spray process systems, or an alternate system which will enclose, contain or isolate the processes or source of airborne asbestos dust, or otherwise capture or redirect such dust before it enters the breathing zone of employees. However, one of these isolation systems must be used.	Paragraph G, Methods of Compliance
What are the controls for Class II work?	Class II work must make use of critical barriers or other isolation systems. However, the many other controls are based on the nature of the work being performed. Due to the extensive detail, please refer to paragraphs g(7) and g(8).	Paragraph G, Methods of Compliance
What are the controls for Class III work?	Class III work must utilize wet methods and, if feasible, local ventilation. When the disturbance involves chipping, sanding, cutting, drilling, or abrading of TSI or surfacing material, impermeable drop clothes must be used and the disturbance should be isolated using mini-enclosures, glove bags, or other isolation systems. When the PEL is exceeded or a negative exposure assessment is not provided, respirators as well as one of the isolation systems listed for Class I work must be used.	Paragraph G, Methods of Compliance
What are the controls for Class IV work?	Class IV work will utilize the basic controls for all asbestos removal listed above with wet methods mandated. Additionally, if the Class IV work occurs in an area where other workers are required to wear respirators, then the workers performing Class IV work must also wear respirators.	Paragraph G, Methods of Compliance
NOTE	**The controls listed above are just a sample of what is required. To go into sufficient detail here of the many different controls of this standard would create a long and unreadable document. For this reason, Paragraph g of this standard should be consulted to ensure compliance.**	

What work classes require respirators?	Respirators are required for all Class I work. They are required for Class II work when the ACM is not removed in an intact state. They are required for both Class II and Class III work when a negative exposure assessment has not been conducted and when wet methods are not used, except for removal of ACM from sloped roofs when a negative-exposure assessment has been conducted and ACM is removed in an intact state. Also, respirators must be used anytime the PEL or excursion limit have been exceeded and also during emergencies.	Paragraph H, Respiratory Protection
How is a respirator chosen?	Respirators are chosen by the employer in accordance with paragraph h(3) of this standard and must be provided at no cost to employees.	Paragraph H, Respiratory Protection
Are there requirements for protective equipment other than respirators?	Yes. Protective clothing, including coveralls, gloves, foot covers, and head covers, must be provided and required by the employer anytime that the PEL or excursion limit has been exceeded. Protective clothing is also required for any job where a required negative exposure assessment is not produced, or for any employee performing Class I operations which involve the removal of over 25 linear or 10 square feet of TSI or surfacing ACM. Furthermore, the protective clothing and equipment may be cleaned and re-used, unless rendered unserviceable.	Paragraph I, Protective Clothing
Are there any requirements for antechambers connected to the regulated area?	This standard requires the use of decontamination area, clean change room, equipment room, and shower area, when feasible, for Class I jobs involving the removal of over 25 linear or 10 square feet of TSI or surfacing ACM. The layout and use of these rooms is prescribed in paragraph j(1) of this standard. Also, for jobs other than those mentioned above, only an equipment room is required, the requirements for the equipment room are found in paragraph j(2).	Paragraph J, Hygiene facilities and practices for employees
Are these the only separate areas required for workers doing asbestos removal?	Anytime that food and beverages are consumed at the worksite where employees are performing Class I asbestos work, the employer shall provide lunch areas in which the airborne concentrations of asbestos are below the permissible exposure limit and/or excursion limit.	Paragraph J, Hygiene facilities and practices for employees

Who determines the location of asbestos prior to work?	It is the responsibility of the facility owner, typically TxDOT, to determine the presence, location, and quantity of ACM. This may be done by contracting an outside company that specializes in testing for asbestos.	Paragraph K, Communication of Hazards
Does the facility owner have to inform anyone of the location of the ACM?	The facility owner must notify prospective employers bidding for work whose employees can reasonably be expected to work in or adjacent to areas containing such material. In addition notification must be made to employees of the owner who will work in or adjacent to areas containing such material; and, on multi-employer worksites, all employers of employees who will be performing work within or adjacent to areas containing such materials.	Paragraph K, Communication of Hazards
How is this notification done?	Notification either shall be in writing, or shall consist of a personal communication between the owner and the person to whom notification must be given or their authorized representatives.	Paragraph K, Communication of Hazards
What happens if an employer discovers undisclosed ACM during construction?	The employer must convey information concerning the presence, location and quantity of such newly discovered ACM and/or PACM to the owner and to other employers of employees working at the work site, within 24 hours of the discovery.	Paragraph K, Communication of Hazards
NOTE:	The facility owner may prove that the ACM or PACM does not contain more than 1 percent asbestos by the methods listed in paragraph k(5)(ii).	Paragraph K, Communication of Hazards
What are the signage requirements for areas containing asbestos?	Signs are required at the entrance to all regulated areas at such a distance that a person may take steps to protect themselves before entering the area. Anytime that respirators are required there must be signage stating that fact. Also all products containing asbestos must be labeled as such. The wording for these signs and labels can be found in paragraphs k(7)(ii) and k(8)(iii). Additionally paragraph k(8) includes situations where labels are not required. As it is always safer to label things as ACM than to not, these situations are not listed, but should be read separately.	Paragraph K, Communication of Hazards

A "competent person" is required to have special training, are the employees removing the asbestos required to have any special training?	Yes. The employer must provide training, at no cost to the employee, to anyone performing Class I, II, III, or IV work and anyone likely to be exposed above the PEL. The exact details of what is required in the training are too great to list here and can be found in paragraph k(9) of this standard. However, the training does include methods of recognizing ACM, the effects of asbestos, and the proper use of respirators.	Paragraph K, Communication of Hazards
How is asbestos waste disposed of?	Asbestos waste, scrap, debris, bags, containers, equipment, and contaminated clothing consigned for disposal shall be collected and disposed of in sealed, labeled, impermeable bags or other closed, labeled, impermeable containers except in roofing operations where the procedures specified in paragraph (g)(8)(ii) of this section apply.	Paragraph I, Housekeeping
NOTE	**Due to the dangerous nature of asbestos, even though there isn't biological monitoring by way of blood testing as with lead, there are still medical surveillance guidelines. Other than what has already been mentioned above, these guidelines will not be listed in this document so as to not risk omission of important information. The medical surveillance guidelines can be found in paragraph (m) of this standard and should be fully understood.**	
A competent person is required to supervise asbestos removal and ensure safe work practices and compliance of workers with this section. How does the competent person ensure safety and compliance?	The competent person shall make frequent and regular inspections of the jobsite, materials, and equipment. For Class I work, there must be an inspection at least once per shift. Class II, III, and IV work inspections must be made at intervals sufficient to assess whether conditions have changed. Additionally, an inspection should be performed whenever it is requested by an employee.	Paragraph O, Competent Person
Each paragraph has far more additional information to answer more exacting standards. This is not a legal document and should not be used as such. For questions, please refer to 29 CFR 1926.1101 and its appendices.		
Is asbestos considered a hazardous material?	Yes	41 CFR 261.3
What are TxDOTs responsibilities for the disposal of lead and asbestos?	TxDOT is responsible for making a hazardous waste determination, obtaining an EPA ID number, and recordkeeping and reporting as required.	40 CFR 262.10

Are there special requirements for asbestos disposal beyond universal hazardous waste disposal requirements?	Yes. There may be no visible asbestos fiber emissions during transport.	40 CFR
Who is responsible for the waste during transport?	The company transporting the hazardous waste is responsible for the waste during transport. Transport is from the point where the **sealed** asbestos waste is taken from the generation site to the disposal site.	40 CFR 763

Demolition Practices Under the Asbestos NESHAP

SECTION 1

DEMOLITION PRACTICES AND NONFRIABLE MATERIALS

INTRODUCTION

EPA revised the asbestos NESHAP regulations on November 20, 1990 (see 40 CFR Part 61 Subpart M). Although the NESHAP has not been revised to alter its applicability to friable and nonfriable asbestos-containing materials (ACM), nonfriable asbestos materials are now classified as either Category I or Category II material.

Category I material is defined as asbestos-containing resilient floor covering, asphalt roofing products, packings and gaskets. Asbestos-containing mastic is also considered a Category I material (EPA determination - April 9, 1991). Category II material is defined as all remaining types of non-friable ACM not included in Category I that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable asbestos-cement products such as transite are an example of Category II material.

The asbestos NESHAP specifies that Category I materials which are not in poor condition and not friable prior to demolition do not have to be removed, except where demolition will be by intentional burning. However, regulated asbestos-containing materials (RACM) and Category II materials that have a high probability of being crumbled, pulverized, or reduced to powderas part of demolition must be removed before demolition begins.

PURPOSE

EPA has identified a need to address how specific demolition practices affect Category I and II nonfriable ACM. The purpose of this manual is to provide asbestos NESHAP inspectors with such information.

This manual is intended to apply primarily to demolition and cleanup activities for buildings that contain Category I nonfriable ACM. Although references will be made to Category II nonfriable ACM, for the purposes of this document, it and all other RACM will be assumed to have been removed prior to the start of actual demolition activities. Work practices associated solely with building renovations will not be addressed.

This manual is designed to assist the asbestos NESHAP inspector in identifying practices that normally do or do not make Category I nonfriable ACM become regulated asbestos-containing material (RACM). Applicability determinations (both formal and informal) provided by the Regional NESHAP Coordinators have been incorporated into the appropriate sections of this document in an effort to promote nationwide consistency in applying the asbestos NESHAP to these demolition practices.

Activities associated with site cleanup such as segregation, reduction, and on and offsite disposal

of ACM are discussed because they may take place during or after the major demolition activities at a site and consequently may influence a demolition contractor's choice of methods.

DEFINITIONS

The following definitions taken from the November 20, 1990 revision of the asbestos NESHAP regulation are provided for ease of reference.

Adequately wet means sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.

Asbestos-containing waste materials means mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovations operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.

Category I nonfriable asbestos-containing material (ACM) means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than one percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.

Category II nonfriable ACM means any material, excluding Category I nonfriable ACM, containing more than one percent asbestos as determined using the methods specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Cutting means to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching.

Demolition means the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

Facility means any institutional, commercial, public, industrial, or residential structure, installation, or building (including any structure, installation, or building containing condominiums or individual dwelling units operated as a residential cooperative, but excluding residential buildings having four or fewer dwelling units); any ship; and any active or inactive waste disposal site. For purposes of this definition, any building, structure, or installation that contains a loft used as a dwelling is not considered a residential structure, installation, or building. Any structure, installation or building that was previously subject to this subpart is not excluded, regardless of its current use or function.
Facility component means any part of a facility including equipment.

Friable asbestos material means any material containing more than one percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763 section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

Grinding means to reduce to powder or small fragments and includes mechanical chipping or drilling.

In poor condition means the binding of the material is losing its integrity as indicated by peeling, cracking, or crumbling of the material.

Inactive waste disposal site means any disposal site or portion of it where additional asbestos-containing waste material has not been deposited within the past year.

Installation means any building or structure or any group of buildings or structures at a single demolition or renovation site that are under the control of the same owner or operator (or owner or operator under common control).

Nonfriable asbestos-containing material means any material containing more than one percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Owner or operator of a demolition or renovation activity means any person who owns, leases, operates, controls, or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls, or supervises the demolition or renovation operation, or both.

Planned renovation operations means a renovation operation, or a number of such operations, in which some RACM will be removed or stripped within a given period of time and that can be predicted. Individual nonscheduled operations are included if a number of such operations can be predicted to occur during a given period of time based on operating experience.

Regulated asbestos-containing material (RACM) means (a) Friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart. Remove means to take out RACM or facility components that contain or are covered with RACM from any facility.

Renovation means altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions.

Resilient floor covering means asbestos-containing floor tile, including asphalt and vinyl floor tile, and sheet vinyl floor covering containing more than one percent asbestos as determined using polarized light microscopy according to the method specified in appendix A, subpart F, 40 CFR part 763, Section 1, Polarized Light Microscopy.

Strip means to take off RACM from any part of a facility or facility components.

Visible emissions means any emissions, which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material, or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.

Waste generator means any owner or operator of a source covered by this subpart whose act or process produces asbestos-containing waste material.

Waste shipment record means the shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

SECTION 2

PRE-DEMOLITION BUILDING STATUS

This section discusses several factors that can affect the approach to demolition taken by a demolition contractor. It is being included because events that have taken place prior to the start of actual demolition work can influence the methodology(ies) chosen by demolition contractors. These events can be evaluated by an inspector, allowing for prediction of "hidden" potential problem areas. Reinforcement and clarification of applicable components of the asbestos NESHAP regulations are also included in this section.

STATE AND LOCAL REGULATIONS

State and local asbestos regulations are sometimes more stringent than the asbestos NESHAP regulations. This does not imply, however, that Category I nonfriable ACM is necessarily removed from a building prior to demolition. Contractors surveyed during research conducted in the preparation of this manual indicated that they typically treated Category I nonfriable ACM as RACM only when the owner or operator of the building being demolished was a state or local government agency or when project specifications explicitly specified that one or more of theCategory I nonfriable ACM materials be removed prior to the start of demolition.

UNSAFE BUILDING DECLARATIONS

Several contractors surveyed utilized state or local mechanisms to have buildings declared unsafe as a means to avoid NESHAP requirements during and after demolition activities. However, a State or local agency should not issue a demolition order unless the facility is structurally unsound and in danger of imminent collapse. These conditions should be confirmed

independently, and a demolition order should not be based solely on the representation of the contractor or the contractor's agent.

Although issuance of a demolition order may have an effect on notification requirements under the asbestos NESHAP (see 61.145(a)(3)), it has no effect on requirements for disposal procedures for RACM after demolition activities. Also, waste segregation/reduction activities, addressed in Section 5 of this manual, are subject to the asbestos NESHAP provisions whether or not a building has been declared unsafe.

ABATEMENT PRIOR TO DEMOLITION

Demolition contractors typically require that a building owner/operator accept responsibility for the removal of all asbestos-containing materials found during the building inspection prior to the start of demolition activities. Several contractors indicated that if suspect ACM became exposed during demolition activities, and there was no prior knowledge of its existence at the start of demolition activities, that potential asbestos NESHAP requirements would be disregarded unless a change order was immediately processed by the owner/operator requesting the time and materials necessary to achieve compliance with the asbestos NESHAP. Such practices are in direct violation of the asbestos NESHAP.

INTENTIONAL BURNING

As stated in the November 1990 asbestos NESHAP revision (see 61.145(c)(10)): "If a facility is demolished by intentional burning, all RACM, including Category I and Category II nonfriable ACM, must be removed in accordance with the NESHAP before burning." Abandoned buildings utilized by fire departments for practice exercises involving partial burning are subject to this requirement.

For buildings which are still structurally sound but which have previously been subjected to partial or total, intentional or unintentional burning, an inspection for the condition of all ACM should be conducted. Category I ACM should be examined for friability and condition. Friable materials or Category I materials that are friable and in poor condition must be removed prior to any further demolition activity.

SECTION 3

DEMOLITION PRACTICES BY TYPE OF ACM

INTRODUCTION

For many years now the applicability of the asbestos NESHAP to demolitions involving Category I nonfriable ACMs (packings, gaskets, resilient floor coverings and mastic, and asphaltic roofing materials) has been the topic of much debate. Since significant amounts of airborne asbestos fibers are not believed to be produced from such materials during normal demolition activities, however, the asbestos NESHAP, in most cases, does not require their removal prior to demolition.

Category I materials are considered RACM only when they "will be or have been subjected to sanding, grinding, cutting, or abrading", they are in "poor condition" and "friable", or the structure in which they are located will be demolished by burning. (Definitions for these terms and additional information concerning Category I nonfriable ACM can be found in the preamble to the November 1990 revised asbestos NESHAP (SUPPLEMENTARY INFORMATION, Section IV - Significant Comments..., Demolition and Renovation, Nonfriable ACM and Broken ACM).

The following information details specific pre-demolition and demolition practices and their impact on Category I nonfriable ACM. The information has been compiled from telephone surveys of demolition contractors, the viewing of activities at a number of demolition sites, and formal and informal EPA applicability determinations. The effects of various demolition practices on asbestos-cement products are also discussed. Since the applicability of the asbestos NESHAP to Category II nonfriable materials is determined on a case-by-case basis, it is hoped that this additional information will help foster nationwide consistency in the application of the regulation to these materials.

As you will see, many of the various demolition techniques described do not, by themselves, cause Category I nonfriable ACM to become RACM. However, in many cases, post-demolition waste consolidation, cleanup, and recycling efforts can cause both Category I nonfriable ACM and Category II nonfriable ACM to become RACM. If that is likely to happen, such materials must be considered RACM and be treated as such. Post-demolition activities which can affect Category I and II materials will be detailed later in this manual.

RESILIENT FLOOR COVERING (TILES)

Depending on the types of activities occurring at a demolition site, floor tiles (and mastic) may or may not become subject to the provisions of the asbestos NESHAP.

Pre-demolition Floor Tile Removal

Although not usually required by the asbestos NESHAP, removal of asbestos-containing resilient floor tiles may occur prior to demolition. Such removal may be required when the substrate to which the floor covering is attached (particle board, wood, concrete) is to be recycled or salvaged.

Since the presence of mastic is not desirable on materials intended for resale or recycling, contractors use a variety of methods to remove this material as well.

A wide variety of floor tile removal methods exists, some of which cause the floor tiles and mastic to become RACM and subject to the provisions of the asbestos NESHAP. The following describes various removal methods and the applicability of the asbestos NESHAP to them.

Water/Amended Water/Solvents

Water, amended water, or solvents may be spread onto floor tiles in order to loosen them. After a period of soaking, the tiles may be removed using long-handled scrapers (ice chippers), or gas- or electrically-powered mechanical chisels. In cases where tile breakage is minimal, the floor tiles are not considered RACM.

However, where breakage is extensive, the tiles are RACM and are subject to the provisions of the asbestos NESHAP.

Dry Ice

Although rarely used for this purpose nowadays, dry ice (frozen carbon dioxide) can be used to remove floor tiles. When dry ice is applied to the tiles, the intense cold causes the tiles to contract and detach from the substrate. As long as the tiles are not extensively damaged, they are not considered RACM.

Infrared Machines

Infrared machines may be used in the removal of floor tiles. These machines heat the flooring, thereby softening the tiles and adhesive, and allow for its easy removal. Since most tiles detach intact, they are not friable, and therefore are not considered RACM.

Shot-blasters

Shot-blasters are sometimes used in the removal of floor tiles. These machines direct a barrage of small pellets (shot) against the tiles and continually vacuum up and separate the mixture of pulverized tile and pellets. The pellets are reused immediately and the pulverized materials are segregated for disposal. EPA allows the use of shot-blasters only on wetted floor tiles. Floor tiles and mastic removed by shot-blasters are considered RACM and are therefore subject to the asbestos NESHAP.

Demolition with Floor Tiles in Place

Since ordinary demolition activities do not include the sanding, grinding, cutting and abrading of floor tiles, floor tiles and associated mastic that are not in poor condition and not friable are not considered RACM and are allowed to remain in place during demolition.

ASPHALT ROOFING PRODUCTS

The pre-demolition terms and conditions (governmental regulations, contract specifications) discussed in Section 2 also influence the handling of asbestos-containing roofing materials.

Pre-demolition Roof Removal

If preliminary assessment has determined that roofing materials contain asbestos, and regulations or contract specifications dictate removal of such material prior to demolition, licensed abatement contractors may be required to do the removal. Alternatively, the demolition

contractor may undertake the operation.

Roofs may be removed in a variety of ways. Demolition personnel may use sledge hammers, pry bars, axes, adzes, shovels, ice chippers and roof-cutting saws to remove the roofing materials. They also may use tractor-mounted rotating blade cutters, power plows and power slicers. Use of roof-cutting saws, either hand-or power-driven, or tractor-mounted, are of great concern, since they can generate asbestos-containing dust from roofing materials. The sawing of Category I nonfriable ACM roofing material and the debris created by the sawing are regulated by the asbestos NESHAP. Since power plows and power slicers do not sand, grind, cut or abrade the roofing materials, their use and resultant debris are not subject to the asbestos NESHAP regulation. Category I nonfriable ACM roofing squares that have been decontaminated may be disposed of with other demolition debris or at an asbestos landfill.

Demolition with Roofing Materials in Place

Since demolition activities do not include sanding, grinding, cutting, or abrading, Category I asbestos-containing roofing materials not in poor condition and not friable are not considered RACM and are allowed to remain in place during demolition.

ASBESTOS-CEMENT PRODUCTS

Asbestos-cement products (such as transite) are commonly used for duct insulation, pipes, and siding. Being a Category II nonfriable ACM, asbestos-cement products need to be removed prior to demolition if they have a high probability of becoming crumbled, pulverized, or reduced to powder during demolition activities. EPA believes that most demolition activities will subject such Category II nonfriable ACM to the regulation.

Whether asbestos-cement products are subject to the asbestos NESHAP should be determined by the owner or operator on a case-by-case basis based on the demolition techniques to be used. In general, if contractors carefully remove asbestos-cement materials using tools that do not cause significant damage, the materials are not considered RACM and can be disposed of with other construction debris.

However, if demolition is accomplished through the use of cranes (equipped with wrecking balls, clamshells or buckets), hydraulic excavators, or implosion/explosion techniques, asbestos-cement products will be crumbled, pulverized or reduced to powder, and are subject to the provisions of the asbestos NESHAP.

Some demolition contractors do not treat significantly damaged asbestos-cement products as RACM; they mix it with other demolition debris and dispose of it in direct violation of the waste-disposal provisions of the asbestos NESHAP.

SECTION 4

DEMOLITION PRACTICES BY METHOD

Methods of destruction employed at demolition sites include the use of heavy machines, explosions/implosions, and hand methods. All of these methods cause Category II nonfriable ACM to become RACM; however, Category I nonfriable ACM (packings, gaskets, resilient floor coverings, asphaltic roofing materials, mastic) that is not in poor condition and not friable prior to the demolition operation may be subjected to most of these techniques without becoming RACM. The following describes various demolition techniques and their effects on nonfriable materials. All Category I nonfriable ACM referenced is presumed not to be in poor condition and not friable prior to the demolition operation.

HEAVY MACHINERY RAZING OPERATIONS

For the purposes of this document heavy machinery (or equipment) includes large motorized vehicles such as bulldozers with rakes, top loaders, backhoes, skid loaders/bobcats, hydraulic excavators, and other similar machinery used for transporting, moving, or dislodging of materials at a demolition site. Cranes equipped with wrecking balls, clamshells, or buckets are also considered heavy machinery.

Heavy machinery is used at demolition sites for both razing operations and post-demolition activities. "Razing", the process which reduces a building's structural skeleton to rubble, typically occurs after the building's interior has been gutted by hand.

Use of heavy machinery during the razing process causes Category II nonfriable ACM, but not Category I nonfriable ACM to become RACM. Use of such equipment during subsequent operations, such as waste consolidation, however, is a major concern which will be addressed in Section 5 of this document.

Bulldozers and Similar Machinery

Included in this grouping of heavy machinery are all types of bulldozers, backhoes, top loaders and skid loaders/bobcats commonly used in conjunction with hand methods to raze buildings. Bulldozers move on tracks whereas backhoes, top loaders, and skid loaders operate on rubber tires.

Only if a great deal of working space exists at a site, and a precisely-controlled demolition is not necessary, can bulldozers such as 977 loaders and D-9s be used to demolish a building. These bulldozers are typically equipped with giant rakes designed to ram building walls and move debris.
977's or D-9s may be used to undermine a building, but hydraulic excavators (discussed later in this section) are usually used for this purpose. Backhoes and top loaders are mainly used for moving debris and tearing off sections of walls and other building components.

Skid loaders, machines commonly used to load skids or pallets onto trucks, may be specially equipped with a type of ram for use during demolitions and are usually of the "bobcat" type.

The razing of a building using the heavy machinery described above causes Category II nonfriable ACM, but not Category I nonfriable ACM to become RACM.

Hydraulic Excavators

Hydraulic excavators, such as EL-300s, 225s or 215s, resemble a combination bulldozer/backhoe and operate on tracks. They are easier to use and provide greater control during demolition than the bulldozers described above. However, since they too raze buildings by ramming and tearing, like bulldozers, their use in congested areas is limited. Nearby buildings must be protected from the falling debris; plywood may be applied over the windows and rubber tires may be used to cushion and prevent damage to walls of adjacent structures.

On rare occasions, hydraulic excavators may be used to topple one-or two-story buildings by means of an undermining process. The strategy is to undermine the building while controlling the manner and direction in which it falls. The demolition project manager (who in many jurisdictions must be licensed by the city or state) must determine where undermining is necessary so that a building falls in the desired manner and direction. The walls are typically undermined at a building's base, but this is not always the case as building designs may dictate otherwise. Safety and cleanup considerations are also taken into account in determining the methods to be used.

Since the toppling of a building constitutes a safety hazard and generates enormous quantities of dust, many cities and towns will not approve of this method of demolition. Where the practice is allowed, the contractor may be required to keep the structure wet during demolition. Hydrant permits may be required and, because of the wetting restrictions, such demolitions may be impossible to accomplish during the winter.

Hydraulic excavators are also used to conduct cleanup activities such as excavation, fill burial, material reduction, and material load-out. The use of hydraulic excavators during the razing process causes Category II nonfriable ACM, but not Category I nonfriable ACM to become RACM.

Cranes (Wrecking Ball, Clamshell, Bucket)

Although often employed in the past, particularly during demolitions of high-rise structures, cranes are now rarely used. They are expensive to operate and usually not necessary, since renovation has displaced demolition as the method of choice in dealing with many out-of-date structures. Cranes are currently used only in situations where other equipment cannot be employed.

Cranes may be equipped with wrecking balls, clamshells or buckets, which are used in a variety of ways. All three may be dropped or swung against the structure to demolish it. When employed in this manner, clamshells provide the greatest force of the three and result in the fastest, most efficient demolition projects.

Buckets and clamshells allow a greater degree of control than wrecking balls. Buckets may be raised to the level where internal demolition of the building is taking place and be used merely to transport and segregate hand-loaded demolition materials collected from within. Clamshells can

take big bites out of the structure and facilitate the segregation of demolition debris.

When demolition is accomplished by crane, the process can begin at the roof and progress continually downward, or alternate up and down. Materials are segregated to the greatest degree possible as the demolition progresses so that the need for post-demolition handling is minimized. In the case of high-rise structures, the interiors are usually gutted by hand prior to razing.

Effect on Category I Materials

The use of cranes during the razing process does not cause Category I nonfriable ACM to become RACM; therefore, Category I materials which are not in poor condition and not friable may remain in the building during such demolition.

Effect on Category II Materials

The use of wrecking balls on asbestos-cement (A/C) siding (a Category II nonfriable ACM) on buildings is specifically addressed in the November 1990 asbestos NESHAP revision (see SUPPLEMENTARY INFORMATION, Section IV - Significant Comments..., Demolition and Renovation, Nonfriable ACM):

"...the A/C siding on a building that is to be demolished using a wrecking ball is very likely to be crumbled, or pulverized with increased potential for the release of significant levels of asbestos fibers. Such material in this instance should be removed prior to demolition."

Therefore, A/C siding, although a nonfriable material, is considered RACM when a wrecking ball is being used to demolish the structure. Whenever buckets and clamshells are to be swung like wrecking balls, A/C materials should also be considered RACM.

EXPLOSIONS/IMPLOSIONS

Building implosions utilizing explosive devices constitute a rarely-used demolition technique. In simplest form, this method is accomplished through the use of explosive charges placed strategically throughout a building so that the building collapses in on itself and debris does not radiate outward to any appreciable distance. Relatively large quantities of dust are created, however, and the direction and magnitude of transport are matters of concern.
Effect on Category I Materials

The asbestos NESHAP does not require the removal of Category I nonfriable ACM that is not in poor condition and not friable prior to building implosions. Normal implosion techniques do not cause nonfriable materials to become RACM. The destruction of buildings during military target practice is considered to be another form of explosive demolition. Category I materials may remain in place during target practice. However, if it can be expected that the building and ACM will burn as a result of explosive demolition, the ACM must be removed prior to demolition.

Recent examination of asbestos-containing floor tiles and roofing materials contained in a large building demolished by implosion revealed that the floor tile was in fair to good condition and

had not become friable. Tiles had been broken up into small quantities of large pieces as the individual floors collapsed upon each other. The roofing materials were similarly affected; they too remained nonfriable following demolition by implosion.

EPA does not consider Category I material to be RACM as a result of building implosions. If, however, Category I materials are to be subjected to sanding, grinding, cutting, or abrading after demolition, they must be treated as RACM and be removed from the building before demolition.

Effect on Category II Materials

Category II materials, such as transite, found in or on buildings scheduled for implosion/explosion destruction must be removed before such demolition. Such materials are considered RACM because they have "a high probability of becoming crumbled, pulverized or reduced to powder" during such activities.

HAND METHODS OF DEMOLITION

This section of the manual addresses hand methods employed during demolition and includes segregation activities which take place during demolition (as opposed to cleanup) and their effects on Category I materials. "Hand methods", for the purposes of this manual, refer to the use of motorized and non-motorized tools that can be operated by hand and are not used for transportation. The methods discussed include not only those used in the gutting of building interiors prior to razing, but also those used during razing itself. Unless otherwise noted, "hand methods" refers to those methods that do not significantly damage the ACM and therefore do not cause Category I nonfriable ACM to become RACM.

Most buildings of ten floors or less are currently razed at least partially, if not fully, by hand. Hand methods allow much greater control over a building's collapse than other methods and permit easier segregation of demolition materials for resale or recycling than other demolition methods. In addition, hand methods may be required because of workspace limitations.

Depending on the size of the job and demolition schedule, the size of a demolition crew may vary from as few as five individuals to 30 or more. As a general rule, workers use relatively inexpensive tools such as pry bars, hand-held saws, power saws, sledge hammers, axes, bolt cutters, and acetylene torches during gutting and razing operations.

As the gutting/salvage activities progress, demolition debris is typically deposited into a trailer or dumpster strategically placed outside a window of the building being demolished. The window frame is removed and materials are loaded into the storage containers by hand, or, where possible, by bobcats operating within the building. Many jobs require the use of dust-tight chutes for the transport of such debris.

On the rare occasion where onsite burial of demolition debris is allowed, the first activity to take place in the building is the removal of the first story's flooring. This is done so that as waste materials accumulate on upper floors, they can be sent down into the basement through the center of the building, typically through elevator shafts, for disposal. Chutes may be used if

elevator shafts are not available. Such onsite disposal typically is allowed only for noncombustible materials such as cement and brick. Waste consolidation activities which occur in the basement area are of great concern to EPA and are discussed in Section 5 of this manual.

Excess demolition wastes are loaded out for transport to a landfill that accepts construction debris. If no basement area exists, or if materials cannot be sent into dumpsters or trailers immediately as previously described, debris may be stored in piles scattered around the site. These materials may subsequently be moved by hand or through the use of light or heavy machinery. Section 5 of this manual details such operations.

Floor Removal and Disposition

The techniques used in removing flooring depend upon its ultimate fate. Where it is in poor condition and incapable of being reused or recycled, the flooring is typically ripped out using pry bars and sledge hammers and sent offsite for disposal. Sometimes wood flooring and other debris is burned to reduce the volume of waste. In this case, the asbestos must be removed prior to burning the wood debris. Since demolition debris disposal costs are so high ($100 - $500 per 60-100 cubic yard load) as much salvage/recycling of materials is done as possible.

Wood or particle board flooring is sometimes segregated and sold to recycling centers where it is chipped up and sold as filler or mulch (composting, gardening, etc.). If resilient asbestos-containing floor covering is attached to such flooring it is considered RACM and must be removed prior to recycling. Tiles are often chipped or scraped off the substrate using the methods described in Section 3.

Large planks and joists, and beams (both wooden and steel) may also be saved if they are in good condition. Wooden planks are usually lifted with pry bars, whereas the larger joists and beams are segregated for reuse following the razing of the structure.

Where demolition debris will be recycled, any asbestos remaining on the debris must be removed prior to any recycling that will sand, grind, cut, or abrade the asbestos or otherwise cause it to become RACM.

Roof Removal and Disposition

On occasion one may find that the roof of a building being demolished is removed before the building is razed. Such removal may be required when buildings are very close to one another, or when the roofing contains asbestos-containing materials.

There are two major types of roofing: "built-up roofing" and "sheet goods". Built-up roofing contains multiple layers of felt and asphalt. Sheet goods typically consist of a single layer of material.

Roofs are often taken out by hand, typically by using pry bars, sledge hammers, axes, adzes, bolt cutters, ice chippers, shovels and roof-cutting saws. If the roof contains asbestos materials (felt, cork, etc.), an asbestos removal contractor may be employed to remove it. Some abatement

contractors wet the roof with plain or amended water and then use shrouded power saws whose exhaust is HEPA-filtered to cut the roofing into manageable (often 2' x 3') pieces. After the pieces are lifted, the edges may be encapsulated. Other abatement contractors may build a full containment and establish a reduced pressure environment prior to removing the roofing materials.

Depending upon the contractors involved and the condition of the asbestos-containing roof debris, the debris may or may not be segregated from other demolition debris. Abatement contractors may store roof debris in lined dumpsters onsite and dispose of it at an asbestos landfill; if the asbestos-containing roofing material is not in poor condition and is not friable however, it may be disposed of in a landfill which accepts ordinary demolition waste.

Asbestos-containing roofing material may not be ground up for recycling into other products.

Work Progression

Demolition crews typically work downward, floor by floor. Materials such as doors, windows, electrical and other fixtures which can be salvaged are removed first. Interior partitions are then ripped, cut, or knocked out using various hand-held tools including sledge hammers, axes, adzes and pry bars. Brick is generally segregated immediately after being knocked out of walls so it can be examined at the site by potential buyers. Ceilings are also ripped out using pry bars, axes and sledge hammers. Steel and other metal materials are typically placed in separate debris piles from other materials. Work proceeds in a similar floor/wall, floor/wall pattern until the first floor is once again reached.

Sawing/Cutting Operations

In order to raze a building by hand, load-bearing members must be cut. Based upon the composition, thickness, and condition of the structural member being cut, saws selected range from hand saws to Sawz-alls and gas-driven carbide blade hand saws. Large bolt cutters are also used to cut steel members. Category I materials subjected to sawing or cutting are subject to the provisions of the asbestos NESHAP; however, typical demolition sawing/cutting operations rarely involve such materials.

Grinding Operations

Grinding operations are not common occurrences at most demolition sites. On occasion, however, asbestos-containing mastic and remaining pieces of floor tile may be ground off concrete destined for recycling. Category I material so treated is RACM and is subject to the provisions of the asbestos NESHAP.

Pulverizing Operations

On occasion, asbestos-containing floor tiles are removed from their substrate by hand, using either hand-held ice choppers or electrically- or gas-powered mechanical chippers. If use of such methods pulverizes, crumbles or reduces the floor tiles to powder, the tiles must be considered

RACM and must be handled in accordance with the requirements of the asbestos NESHAP.

Summary

On rare occasions Category I nonfriable ACM may be subjected to hand methods involving the uncontrolled drilling, cutting, sawing, grinding or abrading of such materials; under these circumstances Category I materials are considered RACM.

ONSITE WASTE HANDLING PROCEDURES

INTRODUCTION

At the present time it is not demolition operations and ordinary cleanup activities but the post-demolition activities involving waste consolidation and recycling of Category I and II materials which are of greater concern. If such activities subject either Category I or II nonfriable ACM to sanding, grinding, cutting or abrading, the materials become RACM and are then subject to the provisions of the asbestos NESHAP.

In general, since cleanup activities such as loading waste debris onto trucks for disposal do not subject nonfriable materials to sanding, grinding, cutting or abrading, such materials are not considered asbestos-containing waste materials and are not regulated by the asbestos NESHAP.

However, waste consolidation efforts which involve the use of jack hammers or other mechanical devices such as grinders to break up asbestos-containing concrete or other materials covered or coated with Category I nonfriable ACM, are subject to the regulation.

In addition, operations such as waste recycling which sand, grind, cut, or abrade Category I or II nonfriable ACM are subject to the asbestos NESHAP. When these types of activities are performed, Category I and II nonfriable ACM become RACM.

The following details the post-demolition activities of waste consolidation (segregation and reduction), waste load-out and onsite waste disposal and their effects on nonfriable ACM.

WASTE CONSOLIDATION

Waste consolidation operations involve segregation and reduction activities that have as their ultimate goal the resale, recycling, and disposal of demolition debris.

Segregation of Demolition Debris

Demolition contractors segregate demolition debris primarily to maximize their profits. As much material as possible is collected for resale and recycling (e.g., wood, brick, steel and concrete); the remaining debris is most often transported offsite for disposal.

Segregation may involve cutting and grinding operations, the breaking and tearing apart of materials to separate them by material type, and the transport of materials within the demolition

site boundaries.

Since segregation activities may be accomplished using hand methods and heavy equipment, nonfriable ACM may or may not become friable in the process. The following text details various segregation activities and describes their effects on nonfriable materials.

Segregation by Hand

Materials such as wood, brick and steel are generally separated from other demolition debris using equipment such as sledgehammers, prybars, adzes and axes. If any hand equipment is used to cut, sand, grind, or abrade Category I or II materials, RACM is thus created and the provisions of the asbestos NESHAP apply.

Material Transport

Since heavy equipment is often used to move and segregate demolition debris, questions have been raised concerning the effect of such transport particularly on Category I nonfriable ACM.

If Category I nonfriable ACM is transported across a demolition site in the bucket of a top loader, backhoe, hydraulic excavator or other similar vehicle, it is not considered RACM since it is not subjected to sanding, grinding, cutting or abrading during this activity.

Use of bulldozers, on the other hand, is expected to have a greater impact on Category I materials. However, EPA has stated that "...if the bulldozer is moving the debris or picking it up to be put in a vehicle and inadvertently runs over Category I material, then it is not subject to the NESHAP standard" (see Appendix I). Consequently, the moving of debris by bulldozers, whether by carrying it in a bucket or pushing it along the ground does not in itself cause Category I nonfriable ACM to become RACM.

Category II nonfriable ACM subjected to sanding, grinding, cutting or abrading during collection and transport is considered RACM and thus subject to the asbestos NESHAP.

Vehicular Traffic Impact

Rubber-tired Vehicles

If nonfriable ACM is intentionally run over by rubber-tired vehicles as a means of segregation, it does not automatically become RACM but must be examined for damage. If it has become extensively damaged, i.e., it was sanded, ground, cut or abraded during segregation, it becomes RACM and is subject to the NESHAP regulation.

Tracked Vehicles

Although tractor treads present greater risks of causing extensive damage to nonfriable ACM, limiting their use at demolition sites is not considered practical. Intentionally running over nonfriable ACM with tractor treads as a means of segregation is considered grinding; material

thus treated becomes RACM.

Intentional segregation in this manner is addressed in the preamble to the revised asbestos NESHAP (SUPPLEMENTARY INFORMATION, Section IV, Significant Comments and Changes to the Proposed Revisions, Demolition and Renovation, Nonfriable ACM):

"Examples of practices...included the breaking of nonfriable insulation from steel beams by repeatedly running over the beams with a crawler tractor...these and other similar practices involving nonfriable asbestos material were considered to render nonfriable ACM into dust capable of becoming airborne."

Reduction of Demolition Debris

Reduction activities are of the greatest concern to EPA, since they are most likely to cause both Category I and Category II nonfriable ACM to become RACM.

Category I Reduction

The use of bulldozers to reduce the volume of Category I materials causes them to become RACM as discussed elsewhere in this manual and in the following EPA correspondence:

"If, after a demolition, material left in the facility... is intentionally ground up (such as repeatedly running over the debris with a bulldozer to compact the material), then 61.150(a)(3) applies. The material must be adequately wetted and kept adequately wet during collection and transport to a site or facility operated in accordance with 61.154 or 61.155." (See Appendix I).

Reduction by the use of sledgehammers does not normally cause Category I nonfriable ACM to become RACM. The use of pneumatic hammers, however, whether hand-operated or attached to heavy machinery, does cause these materials to become RACM. The use of cranes with clamshells or other heavy machinery with rakes or buckets to partially reduce Category I nonfriable ACM is permissible if the material is left recognizable in its original form. Extensively damaged Category I ACM (that which has been sanded, ground, cut, or abraded) becomes RACM. Consolidating waste materials containing Category I nonfriable ACM in the hole (basement) of a building and subsequently grinding or crushing it via bulldozer subjects the operation to the asbestos NESHAP.

For wood/tile debris, demolition crews sometimes use tree chippers to grind the material up. Any Category I nonfriable ACM subjected to this treatment becomes RACM.

Category II Reduction

Reduction of Category II materials such as asbestos-cement pipe and concrete following demolition is also a matter of concern.

Asbestos-Cement Pipe

EPA considers asbestos-cement pipe to be a "facility component" (as defined in 40 CFR 61.141) of the facility which owns or utilizes the pipe. In addition, EPA considers asbestos- cement pipe to be Category II nonfriable asbestos containing material. This material becomes "regulated asbestos containing material" (RACM), as defined in 40 CFR 61.141, when it becomes "friable asbestos material" or when it "has a high probability of becoming or has become crumbled, pulverized or reduced to powder by the forces expected to act on the material during the course of demolition or renovation operations regulated by [40 CFR Part 61 Subpart M]." Consequently, the crushing of asbestos-cement pipe with mechanical equipment will cause this material to become RACM. The demolition and renovation provisions in 40 CFR 61.145 and the waste disposal provisions in 40 CFR 61.150 apply to asbestos-cement pipe where the pipe is considered RACM, and the amount of pipe being removed and crushed is at least 260 linear feet for a single renovation project or during a calendar year for individual nonscheduled operations.

Concrete

At certain demolition sites demolition contractors may rent and operate large concrete-pulverizing machines called PC-400s. Since the asbestos content of concrete is rarely known, use of such machines is a matter of concern to EPA. Under no circumstances should asbestos-containing concrete, or concrete to which asbestos-containing resilient flooring is attached, be subjected to such treatment.

Onsite Waste Disposal

As mentioned in other sections of this manual, using heavy machinery to crush demolition debris containing Category I or II nonfriable ACM in place prior to or during burial, can cause the ACM to become RACM subject to the provisions of sections 61.150 (waste disposal) and 61.151 (inactive waste disposal sites) or 61.154 (active waste disposal sites). If Category I or II materials are not rendered friable, they are not subject to the asbestos NESHAP.
EPA has recently responded to a question regarding the onsite disposal of crushed asbestos-cement pipe, a Category II material. The response is applicable as well to the burying of Category I material which has been sanded, ground, cut or abraded. In its correspondence EPA stated that the practice of backfilling and burying crushed asbestos-cement pipe in place causes these locations to become active waste disposal sites subject to the requirements of 61.154. Furthermore, if no additional asbestos-containing waste material is buried at that location for a year, the site becomes an inactive waste disposal site subject to the requirements of 61.151(e) and 61.154(h). Consequently, the owner of the land would be required to comply with the requirements for active and inactive waste disposal sites.

In order to avoid the creation of a waste disposal site which is subject to the Asbestos NESHAP, it was suggested that the owners or operators of the pipe consider other options for dealing with it. If the pipe is left in place or removed in such a way that it is not crumbled, pulverized or reduced to power, it would not be subject to the NESHAP. If the pipe must be crushed, the creation of an active waste disposal site can be avoided by removing the pipe from the site and transporting it to a landfill which accepts asbestos waste material.

An alternative method suggested involved the pumping of grout into the buried lines which are

no longer in service.

Waste Load Out

As mentioned previously, waste load out activities generally do not cause Category I nonfriable ACM to become RACM. Top loaders are typically used to deposit demolition debris containing Category I nonfriable ACM into trucks for hauling to landfills that accept construction debris.

Recent EPA correspondence discusses the hauling and ultimate disposal of both Category I and Category II ACM as follows:

It is required under 61.150(a)(3) that asbestos-containing waste material be kept adequately wet. Asbestos-containing waste material as applied to demolitions and renovations includes RACM waste and materials contaminated with asbestos including disposable equipment and clothing. Category I or Category II nonfriable ACM that has been contaminated by RACM, and cannot be decontaminated (e.g., building debris in a pile contaminated with RACM) must be treated as asbestos-containing waste material. Category I or Category II ACM that does not meet the definition of RACM after a demolition or renovation, and is not contaminated with RACM, is not asbestos-containing waste material and is not subject to the wetting requirement of 61.150(a)(3).

Category I or II nonfriable ACM that is not subject to 61.150(a)(3) would still have to be disposed of in a landfill that accepts building debris, in a landfill that operates in accordance with 61.154, or at a facility that operates in accordance with 61.155. This waste material would not be allowed to go to any facility that would sand, grind, cut or abrade the non-RACM waste or otherwise turn it into RACM waste (such as a cement recycling facility). In addition, if Category I or II nonfriable ACM is sanded, ground, cut or abraded during disposal at a landfill, before it is buried, it is subject to the NESHAP. (See Appendix I).

SECTION 6

OFFSITE WASTE HANDLING PROCEDURES

The issues discussed in this section include landfills, recycling centers, conversion facilities, and renovation activities. Since EPA has taken a "cradle to grave" approach regarding the disposition of ACM, responsibility for the ultimate fate of Category I ACM rests with all individuals involved in handling the material.

Landfills

Category I and II ACM that has become RACM must be disposed of in a landfill that operates in accordance with 61.150 and 61.154, or in an EPA-approved conversion facility described in 61.155 of the asbestos NESHAP.

Category I and II nonfriable ACM which has not become RACM during demolition may be disposed of in a landfill that normally accepts construction debris. However, if Category I or II

nonfriable ACM is sanded, ground, cut or abraded before it is buried at the landfill, it is subject to the asbestos NESHAP.

Recycling Centers

At the present time, EPA does not allow either Category I or II nonfriable demolition debris to go to any facility (e.g., a cement recycling facility) that will sand, grind, cut or abrade it or otherwise turn it into RACM waste. Recycling facilities which cause non-RACM waste to become RACM waste are subject to the provisions of the asbestos NESHAP (See Appendix I).

Conversion Facilities

Conversion facilities are addressed in Section 61.155 of the November 1990 revised asbestos NESHAP. Owners/operators of such facilities must handle ACWM according to the provisions of the asbestos NESHAP.

DISCLAIMER

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How to Recycle Asbestos Containing Materials

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Abstract

The current disposal of asbestos containing materials (ACM) in the private sector consists of sealing asbestos wetted with water in plastic for safe transportation and burial in regulated land fills. This disposal methodology requires large disposal volumes especially for asbestos covered pipe and asbestos/fiberglass adhering to metal framework, e.g. filters. This "wrap and bury" technology precludes recycle of the asbestos, the pipe and/or the metal frameworks. Safe disposal of ACM at U.S. Department of Energy (DOE) sites, likewise, requires large disposal volumes in landfills for non-radioactive ACM and large disposal volumes in radioactive burial grounds for radioactive and suspect contaminated ACM. The availability of regulated disposal

sites is rapidly diminishing causing recycle to be a more attractive option. Asbestos adhering to metal (e.g., pipes) can be recycled by safely removing the asbestos from the metal in a patented hot caustic bath which prevents airborne contamination/inhalation of asbestos fibers. The dissolution residue (caustic and asbestos) can be wet slurry fed to a melter and vitrified into a glass or glass-ceramic. Palex glasses, which are commercially manufactured, are shown to be preferred over conventional borosilicate glasses. The Palex glasses are alkali magnesium silicate glasses derived by substituting MgO for B2O3 in borosilicate type glasses. Palex glasses are very tolerant of the high MgO and high CaO content of the fillers used in forming asbestos coverings for pipes and found in boiler lashing, e.g. hydromagnesite ($3MgCO_3 \cdot Mg(OH)_2 \cdot 3H_2O$) and plaster of paris, gypsum ($CaSO_4$). The high temperate of the vitrification process destroys the asbestos fibers and renders the asbestos non-hazardous, e.g. a glass or glass-ceramic. In this manner the glass or glass-ceramic produced can be recycled, e.g., glassphalt or glasscrete, as can the clean metal pipe or metal framework.

Introduction

The safe disposal of asbestos containing materials (ACM) in the private sector and at U.S. Department of Energy (DOE) nuclear sites has become problematic. The ACM includes asbestos and fiberglass insulation, boiler lashing, transite, floor tiles, and asbestos covered pipe. The current disposal technique is to seal the ACM and adhering metal (pipe, framework, duct work) in plastic for safe transportation to a burial site. Burial of wrapped asbestos covered pipe and/or duct work necessitates large disposal volumes in regulated disposal sites, e.g. landfills and burial grounds, and expensive removal operations. The availability of regulated disposal sites for ACM has become problematic and expensive.

Technologies have been developed by the private sector and the U.S. Department of Energy's (DOE) Savannah River Site (SRS) to convert hazardous ACM to a non-hazardous amorphous non-crystalline solid (NCS), glass. Conversion to an NCS eliminates the ACM and fiberglass inhalation hazards which can lead to silicosis and/or asbestosis of the human lung and ultimate death. [1-4].

Asbestos covered pipe comprises the largest volume ACM at SRS. The radioactive and/or suspect radioactive ACM is disposed of in the SRS on-site burial ground. The non-radioactive ACM is disposed of in off-site landfills. In order to be cost effective on a life-cycle basis, the non-hazardous NCS product should provide for a large volume reduction in order to minimize disposal costs for both radioactive (Any radioactive NCS product must also meet the SRS burial ground Performance Assessment (PA) criteria for radionuclides of concern.)and non-radioactive ACM and/or have potential to be recycled (e.g. non-radioactive ACM). The process should also decontaminate the adhering metal, e.g. pipe or duct work, sufficiently that the metal is no longer considered ACM or suspect ACM. In this manner the metal may also be recycled.

It is well known that treatment is more costly (~$330/ton for a 100 ton per day Joule heated melter system) (Per APEX Report on WSRC Subcontract AA07218N (October 13, 1995).) than the current "wrap in plastic and bury" disposal methodologies (~$110/ton) for non-radioactive asbestos. However, treatment eliminates the continuing liability associated with disposal of non-radioactive asbestos-containing wastes in landfills and offers the opportunity for some profit of

the recycle material as aggregate in roadways (glassphalt or glasphalt) or in construction (glasscrete) and recycle of the adhering metal. Therefore, an in depth cost evaluation must consider a value added factor for the additional benefits of recycling.

For disposal of radioactive or suspect radioactive asbestos, including asbestos covered pipe in radioactive burial grounds, the disposal costs of the current "wrap in plastic and bury" are $\$42/ft^3$ for a low level radioactive burial ground and $\$760/ft^3$ for a radioactive (transuranic) burial ground (Westinghouse Savannah River Company 1997 Radiological Worker Training Manual, Rev. 11 (Sept, 1999).). Volume reduction technologies for ACM are, therefore, cost effective, e.g., 99% volume reduction reduces the cost of an equivalent amount of asbestos covered pipe to $\$0.42/ft^3$ and $\$7.60/ft^3$, respectively.

Asbestos Mineralogy and Health Risks

Asbestos (A commercial term for a group of silicate minerals that readily separate into thin, strong fibers that are flexible, heat resistant, and chemically inert, and are used in a wide variety of industrial products. A mineral of the asbestos group, especially chrysotile (by far the most important), amosite, and crocidolite [R.L. Bates and J.A. Jackson, "Dictionary of Geological Terms", American Geological Institute, Doubleday Publishers, New York, New York (1984).) is a generic designation referring usually to any one of a variety of six different types of naturally occurring mineral fibers [5]. These fibers are extracted during commercial processing from certain varieties of hydrated silicate minerals comprising two mineral families: the serpentines and the amphiboles. The serpentine group contains only one fibrous variety of asbestos called chrysotile (also known as chrysotile asbestos, $Mg_3[Si_2O_5](OH)_4$). The amphibole group contains five fibrous varieties of asbestos known as anthophyllite ($(Mg,Fe^{2+})_7[Si_8O_{22}](OH)_2$), amosite ($(Fe^{2+},Mg)_7[Si_8O_{22}](OH)_2$), crocidolite ($Na_2Fe^{3+}_2(Fe^{2+},Mg)_3[Si_8O_{22}](OH)_2$), tremolite ($Ca_2Mg_5[Si_8O_{22}](OH)_2$), and actinolite ($Ca_2(Mg,Fe^{2+})_5[Si_8O_{22}](OH)_2$). Chrysotile asbestos comprised >98% of the world production of asbestos in 1988 while amosite and crocidolite each comprised an additional 1% [5]. The quantities of anthophyllite, actinolite, and tremolite asbestos is insignificant compared to the other three. On a world wide basis the relative incidence of a mesothelioma **(**a tumor of the layer of squamous cells of the epithelium lining of the pleura, peritoneum, or pericardium (The American Heritage Dictionary, Second College Edition, Houghton Mifflin, Boston, MA (1982).) occuring at an asbestos implant site in rats is 60-75% for crocidolite, ~60% for amosite, and ~58% for chrysotile asbestos [1].

Mineralogic and Chemical Makeup of SRS Asbestos

Samples of SRS transite board, asbestos removed from pipe, and boiler lashing were analyzed by x-ray diffraction (XRD). Table I lists the crystalline species contained in these types of SRS asbestos. The transite board is primarily chrysotile asbestos. The asbestos covered pipe and the boiler lashing are primarily amosite asbestos admixed with large concentrations of magnesium hydroxide carbonate (hydromagnesite).

Table II lists the chemical composition of the SRS asbestos covered pipe analyzed in this study. Since asbestos covered pipe comprises the largest volume ACM at SRS, this material was completely dissolved and analyzed by wet chemical technicques, e.g. Inductively Coupled

Plasma Spectroscopy, Atomic Absorption, Ion-Chromotography, and Ion-Selective Electrode (Table II). Since the SiO_2 content of this material is relatively low, one can assume that almost all of the silica participates in the formation of the asbestos mineral amosite, $(Fe^{2+},Mg)_7[Si_8O_{22}](OH)_2$. Converting all of the SiO_2 to moles of amosite, and assuming that the amosite is all Fe^{2+} allows one to calculate the amount of amosite in the asbestos pipe covering: 25% of the pipe covering is amosite asbestos. Mass balance calculations demonstrate that the remaining 75% of the pipe covering is hydromagnesite a hydroxide carbonate species and not an asbestos mineral. Therefore, 75% of the asbestos covered pipe is a non-asbestos mineral filler. Note that the boiler lashing also contains hydromagnesite filler. During high temperature conversion of the ACM material and filler, the CO_3^-, OH- and H_2O contributions (~47%) of the converted materials will be vaporized as steam and CO2 gas.

Table I. Mineralogic Content of SRS Asbestos

SRS Asbestos Type	Mineralogic Content	Chemical Makeup
Transite	Clinochrysotile Asbestos Quartz Vaterite/Calcite	$Mg_3[Si_2O_5](OH)_4$ SiO_2 $CaCO_3$
Pipe Covering	Amosite Asbestos Hydromagnesite	$(Fe^{2+},Mg)_7[Si_8O_{22}](OH)_2$ $3MgCO_3 \cdot Mg(OH)_2 \cdot 3H_2O$
Boiler Lashing	Amosite Asbestos Hydromagnesite	$(Fe^{2+},Mg)_7[Si_8O_{22}](OH)_2$ $3MgCO_3 \cdot Mg(OH)_2 \cdot 3H_2O$

Table II. Chemical Composition of Asbestos Covering SRS Pipe (~25 wt% Amosite Asbestos and ~75 wt% Hydromagnesite)

Oxide	Wt%	Oxide	Wt%
Al_2O_3	0.35	**P_2O_5**	0.08
CaO	1.29	**SiO_2**	8.07
Cr_2O_3	0.03	**TiO_2**	0.02
Fe0	10.10	**ZnO**	0.01
K_2O	0.06	**Cl**	0.156
MgO	33.74	**SO_4**	0.185
MnO	0.13	**CO_2**	28.55*
Na_2O	0.01	**$H_2O + OH^-$**	18.42*
NiO	0.01	**SUM**	101.21

* the amount of CO2, H2O, and OH- present was calculated by a mass balance from the primary mineralogic species identified by XRD in Table I.

A similar wet chemical and x-ray diffraction analysis of the black tar paper covering the pipe indicates that it is SiO2 rich (~25wt%) material with ~40wt% organics. The remaining chemistry is dominated by ~10wt% H2O and OH-, ~10 %MgO, and 10% Na2O, and 5% Fe2O3. The inorganic fraction is composed of chrysotile (3MgO,2SiO2,2H2O), Talc (H2O, 3MgO, 4 SiO2), a clinochlore (4H2O, 5MgO, Al2O3, 3SiO2), and a trace of muscovite mica (2H2O, K2O, 3Al2O3,SiO2). Only one of these minerals, chrysotile, is an asbestos mineral which can only be present at ~1.5wt% based on the amount of MgO available (There are 7 moles of MgO in chrysotile so 10wt%/7 = 1.42 wt% chrysotile).

Hot Caustic Dissolution Of Asbestos

A caustic-acid-caustic dissolution methodology was developed for dissolution of contaminated fiberglass HEME/HEPA filters from the SRS High Level Waste glass melter off-gas system [6-7]. These filters are housed in metal filter frames. The fiberglass was found to convert to silica gel after the first dissolution step in 5 wt% NaOH at 90°C for 48 hours [7]. After the NaOH dissolution, the HEME/HEPA filter frames were found to be clean. Air sparging [8] of the tank accelerated the reaction and was necessary to ensure the total conversion. The dissolution solutions (NaOH) and the dissolution residues (silica gel) are glass forming elements that are sent back to the DWPF melter and vitrified. A patent was applied for and granted [7] that umbrellas the use of the DWPF dissolution methodology on all fibrous high silica containing materials, including asbestos.

Since asbestos covered pipe is the largest volume of ACM and the most difficult to deal with at the SRS, the one step NaOH dissolution methodology was tested on a 7" section of an asbestos covered pipe without separating the asphalt cover or the metal wires that tightly hold the asphalt around the ACM and the pipe (Figure 1). The hot 5 wt% NaOH solution was not sparged, not bubbled, not stirred, and 2000mL of solution was used on a 7" long segment of pipe.

The 48 hour dissolution in hot 5%NaOH did nothing to the asphaltic material covering the pipe. This was confirmed by a second x-ray diffraction analysis, e.g. the same phases were present in the asphaltic material before and after the 48 hour treatment. Although the tar paper contains ~40% organics it can be vitrified along with the ACM since the tar paper comprises only a small amount (by weight or volume) of the overall material being processed.

The white ACM material was partially converted after the 48 hour dissolution. All of the hydromagnesite had been converted and the amosite asbestos had been partially converted. X-ray diffraction of the converted ACM indicated that magnesium hydroxide (Mg(OH)2) sodium carbonate (Na2CO3) were present as decomposition products of the non-asbestos phase, hydromagnesite. X-ray diffraction of the amosite asbestos were broad instead of sharp indicating that the crystalline structure of this phase had been partially destroyed, e.g. became amorphous. The NaOH solution was analyzed and found to contain high concentrations of Al and Si

indicating that the silicate based asbestos minerals were indeed dissolving. The NaOH plus dissolved ACM was the consistency of

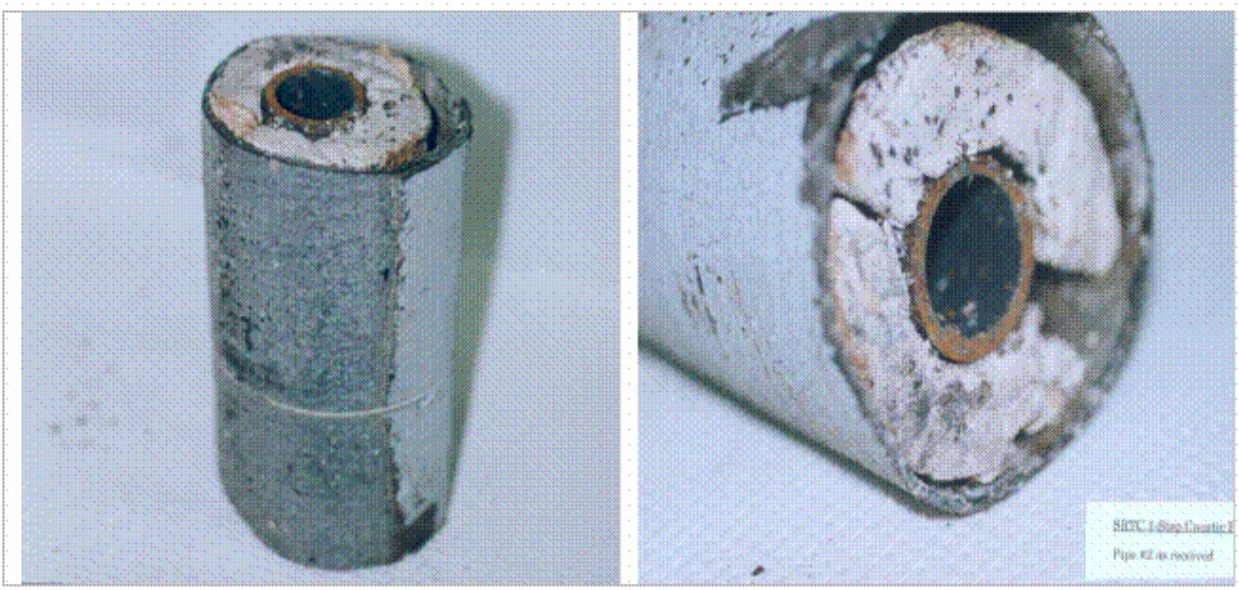

Figure 1. The 7" long as-received sections of pipe showing how the tar paper is loosely wired to the ACM covered pipe. Note how the ACM is in 2 clam-shell or c-shaped sections with a 1/4" to 1/2" gap between the sections of ACM and between the ACM and the pipe. This allows the hot NaOH solution to interact with the ACM down the entire length of pipe without removing the tar paper.

"lumpy oatmeal" and could easily be fed to a melter for vitrification. The final vitrification completes the conversion of the ACM to an NCS.

If the asphaltic material covering the pipe is loosened, pierced, or removed to allow better reaction between the ACM and the solution, and/or if the tank is agitated slightly the ACM will convert more completely in the dissolution tank before being pumped to a melter. If the pipe is not sufficiently clean, a rinse in HNO_3 can sufficiently decontaminate the iron pipe as the surface of the pipe reacts with the acid to form various iron oxides and hydroxides. The iron oxides and hydroxides spall off releasing the adhering ACM so that the pipe can be recycled. These smaller amounts of ACM and iron oxides/hydroxides can be admixed with the converted ACM from the caustic only process during the vitrification process.

Vitrification of Dissolution Solution and Residues

The ACM composition before NaOH dissolution is given in Table II. Since ~47 wt% of the ACM volatilizes during vitrification, the composition of the ACM contains ~60 wt% MgO on an oxide (glass forming) basis. The composition of the ACM after dissolution in 5wt% NaOH for 48 hours contains between 16-27 wt% MgO on an oxide (glass forming) basis. The high MgO content makes dissolution of this material into borosilicate glass difficult, e.g. there is a high potential for the ACM to not completely dissolve in borosilicate glass.

In 1939, Riedel in Czechoslovakia invented a series of low thermal expansion Palex type glasses by replacing the B_2O_3 in borosilicate type glasses with MgO. These glasses (including Palex 5/13 in Table III below) were produced commercially [9]. The Palex glasses are known to form at a maximum of 8 wt% alkali oxides (Na_2O + K_2O), 5 wt% Al_2O_3 or ZnO, and a maximum of 15 wt% MgO. This glass was used as fire-proof and heat resistant laboratory glassware. It was the forerunner of our current day Pyrex laboratory glassware. The Palex glasses are also very tolerant of BaO and CaO and can acccomodate the gypsum (CaSO4) plaster often found associated with asbestos covered pipe. Palex glasses with BaO substituted for MgO/CaO were made by Schott Glass and were used for the manufacture of baby milk bottles [10].

The Palex glasses are more tolerant of large concentrations of MgO and CaO than the borosilicate glasses as they are essentially alkali magnesium silicate glasses. Up to 60 wt% ACM was accommodated into the Palex glasses in this study. Since the commerical Palex type glass melts in excess of 1450°C (composition 5/13 in Table III), 4-7 wt% Li_2O was substituted in some glass formulations per the SRTC Lithia Additive Melting Process (LAMP™) (patent pending) to lower the melt temperature to ~1150°C (see Table III).

The Palex type glasses have the flexibility to be melted at high temperatures (≥ 1250°C) using cheaper K_2O or Na_2O glass forming additives if volatile hazardous or radioactive species are not of concern. Alternatively, the Palex glasses can be melted at lower temperatures (~1150°C) using more expensive Li_2O glass forming additives if volatile radionuclides or hazardous constituents are of concern or if the melter materials of construction necessitate lower temperatures. In all cases totally amorphous glass and/or a mixture of amorphous glass and a non-asbestos mineral spinel were formed at either 1150°C or 1250°C indicating that all of the ACM was converted to an amorphous form and all of the hazards from inhalation of asbestos fibers removed.

The volume reduction achieved by vitrification (Figure 2) can be expressed as:

$[1-(Vol_{glass}/Vol_{ACM+pipe})]*100 = [1-(14.13cc/4703cc)]*100= 99.7\%$

Alternatively, one could calculate the volume reduction without including the contribution from the pipe, e.g. 400 grams of ACM made 31.3 grams of glass product. Since amosite asbestos has a density of 2.85 g/cc and the measured waste glass has a density of 2.37g/cc, the relative volumes of waste and product can be calculated as 140 cc of ACM and 17.7 cc of glass. The volume reduction is then expressed as: $[1-(Vol_{glass}/Vol_{ACM})]*100 = 90.6\%$

Table III. Asbestos Containing Palex Glasses Developed by SRTC

GLASS OXIDE	PALEX 5/13 [30]	ACM PALEX #1	ACM PALEX #2	ACM PALEX #3	ACM PALEX #4	ACM PALEX #5
Al_2O_3	0.00	0.43	0.43	0.43	0.22	0.22
CaO	0.00	0.74	0.74	0.74	0.37	0.37

Cr_2O_3	0.00	0.30	0.30	0.30	0.15	0.15
Fe_20_3	0.00	19.72	19.72	19.72	9.86	9.86
K_2O	3.50	0.16	0.16	4.16	0.08	7.08
Li_2O	0.00	---	4.00	---	7.00	---
MgO	15.00	13.72	13.72	13.72	6.86	6.86
MnO	0.00	0.17	0.17	0.17	0.09	0.09
Na_2O	3.50	17.48	17.48	17.48	8.74	8.74
NiO	0.00	0.13	0.13	0.13	0.07	0.07
P_2O_5	0.00	0.06	0.06	0.06	0.03	0.03
SiO_2	79.00	47.01	43.01	43.01	66.51	66.51
TiO_2	0.00	0.06	0.06	0.06	0.03	0.03
ZnO	0.00	0.02	0.02	0.02	0.01	0.01
OXIDE SUM	101.00	100.00	100.00	100.00	100.00	100.00
WASTE LOADING (Wt%)	N/A	60	60	60	30	30
Additives (Wt%)		40 SiO2	36 SiO2 4 Li2O	36 SiO2 4 K2O	63 SiO2 7 Li2O	63 SiO2 7 K2O
Amorphous		Yes	No NiFe2O4	Yes	Yes	Yes
MELT TEMP (°C)	≥ 1450	1250	>1250	1250	1150	1250

Conclusions

Vitrification of ACM (asbestos covered pipe) after dissolution in NaOH at 90°C was demonstrated in SRTC using the patented reference process [7] for dissolution/vitrification of radioactively contaminated fiberglass filters for the Defense Waste Processing Facility (DWPF). In the DWPF the fiberglass is dissolved in the hot NaOH in a large metal basket and the tank is fitted with sparging rings to accelerate the dissolution. Once clean, the adhering filter framework which is metal is lifted out of the tank in the metal basket. The dissolved fiberglass filter gelatinous residue and the NaOH dissolution solution are fed directly as a slurry to the DWPF melter for vitrification. The totally wet processing of ACM in hot NaOH solution minimizes inhalation hazards of ACM during treatment.

Figure 2. Volume reductions achievable with the caustic-only or caustic-acid-caustic dissolution methodologies coupled with Joule Heated Ceramic Melting (JHCM).

The melter is operated at an atmosphere slightly less than atmospheric to contain any particulate asbestos fibers and any radioactive or hazardous constituents. The NaOH dissolution solution is one of the glass forming chemical fluxes needed to vitrify the ACM. If the ACM is non-radioactive, the treated ACM material can be poured out of the melter into a disposal can and allowed to cool or water quenched into large vats for recycle. The process is semi-continuous. The resulting ACM product is a totally amorphous non-hazardous glass that is free of undissolved ACM. If the ACM is radioactive or suspect radioactive, the glass atomistically bonds any radioactive or hazardous constituents that were either in or on the original ACM material including Pb paint.

For non-radioactive non-hazardous ACM, the resulting glass can enter the recycle market along with the decontaminated metal pipe, duct work or filter frames. For radioactive or suspect radioactive ACM a volume reduction of 99.7% is achievable which minimizes disposal/burial costs considerably. The pipe is rendered non-radioactive and can be recycled.

Acknowledgement

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Appendix 4
Results of Phone Survey

Name:
Position/Title:
State:
Agency:
Phone:
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBP be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Fred Conway
Position/Title:
State: Alabama
Agency: DOT
Phone: 334-242-6007
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes
How are LBP coated steel members handled?
don't have many if any with LBP that are removed, coated a few and required to contain and dispose paint and blast material.
What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
con, generally subcontracts unless just painting
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
haven't recycled many if any, if have not aware
Are members salvaged with the paint on or is it removed?
paint on
Can steel with LBP be smelted or recycled?
don't know
If paint is removed from the salvaged members, how is it disposed?
don't know
How is steel disposed of if not smelted or recycled?
Generally just sold for scrap
Are contractors allowed to keep steel with the paint on?
yes
If metal is sold for scrap, does the salvage company take official responsibility?
yes
If sold foor scrap, does salvage company have to be specially license?
don't know

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
not formally
Are there criteria for identifying a coating as LBP?
may be something in standard construction standards
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
yes
If so, are there established procedures for making the waste determination?
no
Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
yes
If so, is this rule utilized?
don't know, supposed to be
Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:

How are ACM handled in bridge projects?

Are ACM tested for prior to work?

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If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:
Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Buddy Cox
Position/Title:
State: Alabama
Agency: DOT
Phone: 334-206-2270
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
n, contractor does that
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes,
How are LBP coated steel members handled?
unless paint is removed, then no testing requirements
What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBP be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

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Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Barry Fagan
Position/Title: construction
State: Alabama
Agency: DOT
Phone: 334-242-6209
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
not prior to, only for bridge coating projects
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
don't enforce OSHA safety regs, required but not by DOT
How are LBP coated steel members handled?
up to contractor
What are the state regulatory requirements for cutting and removing steel?
not aware of any
Does DOT remove LBP from areas to be cut prior to demolition work?
no
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?
no
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
con or sub
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
don't deal with recycled
Are members salvaged with the paint on or is it removed?
contractor choice
Can steel with LBP be smelted or recycled?
contractor choice
If paint is removed from the salvaged members, how is it disposed?
contractor choice
How is steel disposed of if not smelted or recycled?
contractor choice
Are contractors allowed to keep steel with the paint on?
yes
If metal is sold for scrap, does the salvage company take official responsibility?
contractor choice
If sold foor scrap, does salvage company have to be specially license?
not by aldot

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
no
Are there criteria for identifying a coating as LBP?
maybe requirements of environmental of ADEM, not aware of them.
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
yes
If so, are there established procedures for making the waste determination?
yes, require TCLP every 20 yds of waste generated and require contractors use materials that render waste nonhazardous
Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
no
If so, is this rule utilized?
n/a
Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
contractor
How are waste disposal facilities for paint and paint removal waste selected?
contractor choice
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
yes

Asbestos:
How are ACM handled in bridge projects?
asbestos materials are generally in structures tha are being removed being made way for roads, not generally in bridges
Are ACM tested for prior to work?
yes
If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?
prior
What procedures are in place for dealing with asbestos once found?
trat as extra work, contractors secures a sub and DOT pays for it as extra work
Who performs abatementremoval; owner, contractor, sub-contractor, or third party?
sub
How is ACM disposed of?
contractor responsibility
Who is responsible for disposal?
contractor
Who is financially responsible for abatement/removal?
DOT
How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?
not familiar*
Are there additional state refulations on asbestos removal, handling, or disposal?
not familiar

Other:
Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
ALDOT doesn't have insurance to cover that
What procedures/requirements are in place if ACM or LBP is shipped across state lines?
contractor responsibility to do that and provide manifests and documentations
Is there anyone else within the DOT that may provide more information?
Jim Bearrentine 334-206-2284
Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
no
If yes, what type?

Name: Bill Ballard
Position/Title: State Environmental Coordinator
State: Alaska
Agency: DOT
Phone: 907-465-6954
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes
How are LBP coated steel members handled?
agreement with department of environmental conservation dispoed in accordance with state statutes
What are the state regulatory requirements for cutting and removing steel?
no
Does DOT remove LBP from areas to be cut prior to demolition work?
yes
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?
no, just meet appropriate regulatory stds
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
project specific
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
department doesn't
Are members salvaged with the paint on or is it removed?
most often, removed and then lead is taken off
Can steel with LBO be smelted or recycled?
not sure, think requiring all lbp steel to have lead removed first
If paint is removed from the salvaged members, how is it disposed?
contractor takes to approved disposal site
How is steel disposed of if not smelted or recycled?
don't know, usually up to contracor
Are contractors allowed to keep steel with the paint on?
don't know, probably yes
If metal is sold for scrap, does the salvage company take official responsibility?
don't know, probably yes
If sold foor scrap, does salvage company have to be specially license?
no

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
no
Are there criteria for identifying a coating as LBP?
no
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
yes
If so, are there established procedures for making the waste determination?
no
Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
no
If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
contractor
How are waste disposal facilities for paint and paint removal waste selected?
closest
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
yes

Asbestos:
How are ACM handled in bridge projects?
same as lead, contractor responsible for bringing on specialist
Are ACM tested for prior to work?
not generally
If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?
during
What procedures are in place for dealing with asbestos once found?
same as with any other contamination, contractor stops work and assess sit and provide plan
Who performs abatementremoval; owner, contractor, sub-contractor, or third party?
site specific
How is ACM disposed of?
approved landfill
Who is responsible for disposal?
contractor
Who is financially responsible for abatement/removal?
dot
How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?
don't know
Are there additional state refulations on asbestos removal, handling, or disposal?
no

Other:
Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
no
What procedures/requirements are in place if ACM or LBP is shipped across state lines?
no
Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
case by case basis
If yes, what type?

Name:
Position/Title:
State:
Agency:
Phone:
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes
How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?
maintenance yes
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highwa
yes
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
sub con or third
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
don't know, haven't done anything recently
Are members salvaged with the paint on or is it removed?
paint on
Can steel with LBP be smelted or recycled?
no policy
If paint is removed from the salvaged members, how is it disposed?
osha and epa specs
How is steel disposed of if not smelted or recycled?
property of contractor
Are contractors allowed to keep steel with the paint on?
yes
If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
don't know
Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
don't know
If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
don't know
If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
dk
How are waste disposal facilities for paint and paint removal waste selected?
dk
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?
hasn't been an issue
Are ACM tested for prior to work?
no
If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?
not aware

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
dk
What procedures/requirements are in place if ACM or LBP is shipped across state lines?
d
Is there anyone else within the DOT that may provide more information?
environmental division
Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Thor Anderson
Position/Title:
State:
Agency:
Phone: 602-712-8637
E-mail: tanderson@dot.state.az.us
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBP be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name:
Position/Title:
State:
Agency:
Phone:
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP remova

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBP be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Pat Martinek
Position/Title: HazMat
State: Colorado
Agency: DOT
Phone: 303-757-9787
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Andy Lurkey
Position/Title: HazMat Specialist
State: Colorado
Agency: DOT
Phone: 303-512-5520
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes, lead
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes, all contractors
How are LBP coated steel members handled?
depends, recycled, leave lead on, worked on with torch abate lead paint with substance that ties lead up or taken off
What are the state regulatory requirements for cutting and removing steel?
No
Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'
companies required to have health safety officer on scene
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
varies
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
no
Are members salvaged with the paint on or is it removed?
removed or abated or coated with pain that binds up lead
Can steel with LBO be smelted or recycled?
don't know, let recyclers worry
If paint is removed from the salvaged members, how is it disposed?
recommend mixing with cement and send to landfill
How is steel disposed of if not smelted or recycled?
landfill
Are contractors allowed to keep steel with the paint on?
yes
If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?
no

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?
samples taken and analyzed for lead
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
no
If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
not aware
If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
environmental pro in CDOT
How are waste disposal facilities for paint and paint removal waste selected?
economics, all licensed
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
handled by CDOT staff, yes and no

Asbestos:
How are ACM handled in bridge projects?
Identified and abated
Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?
nonfriable , do nothing to make it friable
Who performs abatementremoval; owner, contractor, sub-contractor, or third party?
special contractual by one firm
How is ACM disposed of?
rapped in plastic and sent to landfill
Who is responsible for disposal?
same as abatement
Who is financially responsible for abatement/removal?
contractor carries insurance, CDOT responsible because it is generator
How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?
Yes, controversial

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
if they don't perform accordinf to contract, required to post bond
What procedures/requirements are in place if ACM or LBP is shipped across state lines?
No, has to be shipped
Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
contractors required to meet air quality concentrations
If yes, what type?

Name: Edgar T Hurle
Position/Title: Director of Office of Intermodal and Environmental Planning
State: Connecticut
Agency: DOT
Phone: 860-594-2920
E-mail: Edgar.Hurle@po.state.ct.us
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Greg Dorosh
Position/Title: Principal Engineer of Environmental Compliance
State: Connecticut
Agency: DOT
Phone: 860-594-3404
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBP be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Jason Hastings
Position/Title:
State: Delaware
Agency: DOT
Phone: 302-760-2310
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes
How are LBP coated steel members handled?
paint is removed and disposed as hazmat
What are the state regulatory requirements for cutting and removing steel?
no
Does DOT remove LBP from areas to be cut prior to demolition work?
yes
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
sub
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
don't use recycled members
Are members salvaged with the paint on or is it removed?
removed
Can steel with LBP be smelted or recycled?
yes
If paint is removed from the salvaged members, how is it disposed?
taken to approved hazmat disposal site
How is steel disposed of if not smelted or recycled?
contractor responsibility
Are contractors allowed to keep steel with the paint on?
yes
If metal is sold for scrap, does the salvage company take official responsibility?
yes
If sold foor scrap, does salvage company have to be specially license?
probably

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
steel structures painting council
Are there criteria for identifying a coating as LBP?
test paint sample through lab
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
no
If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
dk
If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
department of natural resources permits, contractor
How are waste disposal facilities for paint and paint removal waste selected?
approved by department of natural resources
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
yes

Asbestos:
How are ACM handled in bridge projects?
contractor responsible for disposing
Are ACM tested for prior to work?
if there's a possibility known
If so, how are they tested for?
dk
If found, is abatement/removal done prior to work, or during?
part of contract
What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?
contractor
How is ACM disposed of?
treated as contaminated material, same as lead paint
Who is responsible for disposal?
contractor
Who is financially responsible for abatement/removal?
dot
How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?
dk
Are there additional state refulations on asbestos removal, handling, or disposal?
no

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
don't believe insurance covers, make contractor finish or withold payment
What procedures/requirements are in place if ACM or LBP is shipped across state lines?
dk
Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
no
If yes, what type?

Name: Carolyn Ismart
Position/Title: Office of Environmental Management Manager
State: Florida
Agency: DOT
Phone: 850-414-5209
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:

How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Cheryl Hudson
Position/Title: HazMat
State: Florida
Agency: DOT
Phone: 850-414-5332
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Dean Perkins
Position/Title:
State: Florida
Agency: DOT
Phone: 850-414-4359
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?
Treat as ACM, s Licensed consultants to do survey, hire abatement contractor during project or before, surface before, hard to get to during
Are ACM tested for prior to work?
yes
If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?
as contaminated waste according to NESHAP and EPA requirements, wetted bagged
Who is responsible for disposal?
DOT because owner, abatement contractor does disposal
Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?
EPA, counties may have environmental, St.Petersburg, orange, dade, duval

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
Demo contractor is not responsible for ACM, hire separate CAR contractors to handle HazMat, hold bridge contractor harmless,ultinately DOT responsibility
What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?
Bob Crim, 850-414-5269
Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
Not usually
If yes, what type?

Name: Bob Crim
Position/Title:
State: Florida
Agency: DOT
Phone: 850-414-5269
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes, lvll1 and 2 contamination assesment for lead and asbestos
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
can't answer
How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?
Department EP, test lead on street sweepings, so yes, don't know about bridge specific
Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Rob Robertson
Position/Title: Structures
State: Florida
Agency: DOT
Phone: 850-414-4283 (wrong number)
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Tom Malerk
Position/Title: Materials
State: Florida
Agency: DOT
Phone: 352-955-6620
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Jonthan Cox
Position/Title: NEPA/GEPA Section Manager
State: Georgia
Agency: DOT- Environmental Analysis Bureau
Phone: 404-699-3475
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Bill Ingalsbe
Position/Title: Assistant State Bridge Engineer
State: Georgia
Agency: DOT
Phone: 404-656-5284
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBP be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Ben Ravun
Position/Title: Bridge Maintenance Engineer
State: Georgia
Agency: DOT
Phone: 404-635-8179
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes
How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?
no
Does DOT remove LBP from areas to be cut prior to demolition work?
not required
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'
yes
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
con
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
no
Are members salvaged with the paint on or is it removed?
on
Can steel with LBP be smelted or recycled?
don't know, can be recycled, material become contractor property
If paint is removed from the salvaged members, how is it disposed?
in accordance with environmental regs in specicifc landfills
How is steel disposed of if not smelted or recycled?
contractor
Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?
no

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
not sure, require something
Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
yes
If so, are there established procedures for making the waste determination?
not sure if spec'd or if rely on other criteria
Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
not sure
If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
not sure,
How are waste disposal facilities for paint and paint removal waste selected?
selected by contractor
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
don't know

Asbestos:

How are ACM handled in bridge projects?

Are ACM tested for prior to work?
don't have any asbestos ibn bridges
If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:
Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?
contractor responsibility
Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
yes
If yes, what type?

Name: Jamie Ho
Position/Title: Engineering Program Manager, Construction and Maintenance Branch
State: HI
Agency: DOT
Phone: 808-587-2185
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBP be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name:
Position/Title:
State:
Agency:
Phone:
E-mail:
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Lead: Demolition/Removal of Steel Structures with Coatings
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How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

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Who is financially responsible for abatement/removal?

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What procedures/requirements are in place if ACM or LBP is shipped across state lines?

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If yes, what type?

Name:
Position/Title:
State:
Agency:
Phone:
E-mail:
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Lead: Demolition/Removal of Steel Structures with Coatings
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Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
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Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

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E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes, chromium
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes
How are LBP coated steel members handled?
if demo, let contractor know levels then up to them to inform whoever taking steel too
What are the state regulatory requirements for cutting and removing steel?
no
Does DOT remove LBP from areas to be cut prior to demolition work?
no
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'
no, just osha compliance
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
contractor
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
yes, passed on to recycler
Are members salvaged with the paint on or is it removed?
paint
Can steel with LBO be smelted or recycled?
don't know
If paint is removed from the salvaged members, how is it disposed?
non hazardous, permitted landfill, otherwise hazardous waste liandfill, additional testing required
How is steel disposed of if not smelted or recycled?
all recycled
Are contractors allowed to keep steel with the paint on?
yes, once informed of obce on it, it's there's
If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
medical health and safety plan, no spcc unless under osha
Are there criteria for identifying a coating as LBP?
environmental control company takes scrape samples, otherwise no
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
yes, do sampling and provide results
If so, are there established procedures for making the waste determination?
yes, take representative samples
Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
no
If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
typically contractor signing on dot behalf
How are waste disposal facilities for paint and paint removal waste selected?
no haz sites in iowa, shipped out of state, need to know where it's going, don't do audit.
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
have to give work plan, included in that

Asbestos:

How are ACM handled in bridge projects?
required under neshap to inspect for asbestos, anything accesible is removed prior, if not removed during
Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?
regular landfills authorized to accept asbestos, nearest landfill
Who is responsible for disposal?
asbestos aabatement companies on contract
Who is financially responsible for abatement/removal?
dot
How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?
require abatement notification in copy
Are there additional state refulations on asbestos removal, handling, or disposal?
iowa osha rules

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
require certain amount of liability insurance
What procedures/requirements are in place if ACM or LBP is shipped across state lines?
no, just manifesting
Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
yes, for lead abatement require air monitoring, for asbestos rely on osha required personal air monitors
If yes, what type?
BM10 total suspended particulate

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Agency: Kentucky Transportation Cabinet - Division of Environmental Analysis
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E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

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Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:

How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Bob Keiser
Position/Title: UST/Hazmat/Lead Districts 2,3,4,6,8,12
State: Kentucky
Agency: DOT
Phone: 502-564-7250
E-mail: Bob.Keiser@ky.gov
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

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What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Noel Ardoin
Position/Title: Environmental Administrator
State: Louisiana
Agency: Department of Transportation and Development - Office of Engineering
Phone: 225-242-4501
E-mail: NoelArdoin@dotd.louisiana.gov
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

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Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

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Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

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Position/Title: Field Operations Engineer
State: Louisiana
Agency: Department of Transportation and Development - Office of Operations
Phone: 225-379-1570
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Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes, when demolish something, that material becomes contractor property, spec away responsibility.
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes
How are LBP coated steel members handled?
see above, fairly obvious when red lead primer is on it.
What are the state regulatory requirements for cutting and removing steel?
don't know, when cutting steel use vacuum shrouded needle gun, dispose of waste as hazmat

Does DOT remove LBP from areas to be cut prior to demolition work?
don't know, in maintenace yes
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?
When being removed by contractor, subject to laws that protect personnel, october several years ago, supreme court ruled there's no worker protection laws of any kind that pertain to state workers.
When contracted out follow osha. Sometimes overcoat LBP, catch runoff water and chips that fall off.
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
project engineer signs off on project.

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?
paint on
Can steel with LBO be smelted or recycled?
don't know,

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?
given to the contractor, contractor can do what he wants with it
Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
yes
Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
don't know, if LBP is removed it is hazardous

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?
don't know

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:

How are ACM handled in bridge projects?

Are ACM tested for prior to work?
don't use asbestos on bridges
If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name:
Position/Title:
State:
Agency:
Phone:
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How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

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Position/Title: Director
State: Maine
Agency: DOT - Environmental Office
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E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?
Just OSHA
Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

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Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos: No know asbestos issues
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:
Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?
Dwight Dowdy, Groundwater and hazardous waste 6243103
Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
Require contractor to do soil testing prior to paint removal and after
If yes, what type?

Name: Dwight Dowdy
Position/Title: Groundwater and Hazardous Waste
State: Maine
Agency: DOT
Phone: 207-624-3103
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes
How are LBP coated steel members handled?
contractor is recipient of sreel, given notification that it's coated in LBP, if sent for recycling they can take advantage of regulations classifying it as non regulated if recycled
What are the state regulatory requirements for cutting and removing steel?
no
Does DOT remove LBP from areas to be cut prior to demolition work?
yes
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'
osha compliant and medical monitorinf
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
contractor, could subcontract
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
smelting, no, reuse yes
Are members salvaged with the paint on or is it removed?
on
Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?
regulated d008 waste
How is steel disposed of if not smelted or recycled?
Dot reuse a lot fr temp bridges
Are contractors allowed to keep steel with the paint on?
yes, given notification
If metal is sold for scrap, does the salvage company take official responsibility?
yes
If sold foor scrap, does salvage company have to be specially license?
no

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
yes
Are there criteria for identifying a coating as LBP?
prior to 80 is LBP
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
yes
If so, are there established procedures for making the waste determination?
TCLP analysis
Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
no
If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
dor rep
How are waste disposal facilities for paint and paint removal waste selected?
g through RFQ every 4 years and select vendors based on that
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
yes

Asbestos:

How are ACM handled in bridge projects?
managed as state regulated waste, double bagged and placed in secure landfill by abatement contractor
Are ACM tested for prior to work?
prior
If so, how are they tested for?
sent out for analysis through certified lab, also based on generator knowledge, her on side of caution
If found, is abatement/removal done prior to work, or during?
during
What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?
contractor
How is ACM disposed of?

Who is responsible for disposal?
dot as generator
Who is financially responsible for abatement/removal?
dot
How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?
detailed in specs
Are there additional state refulations on asbestos removal, handling, or disposal?
yes

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
state self insured, so no
What procedures/requirements are in place if ACM or LBP is shipped across state lines?
name of receiver and associated permits
Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
yes, used prior for baseline and periodically during
If yes, what type?
don't know

Name:
Position/Title:
State:
Agency:
Phone:
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBP be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Jeff Pierce
Position/Title: Planning Division Head
State: Mississippi
Agency: DOT
Phone: 601-359-7685
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Mitch Carr
Position/Title: Bridge Division Head
State: Mississippi
Agency: DOT
Phone: 601-359-7200
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
not sure
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
when MDOT is aware of lead then provisions put into contract to that effect
How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?
don't know
Does DOT remove LBP from areas to be cut prior to demolition work?
not sure
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures
have to have training, don't know which cert
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
con
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
no
Are members salvaged with the paint on or is it removed?
on
Can steel with LBO be smelted or recycled?
becomes contractor property
If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
don't know
Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
don't know
If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
don't know
If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
project engineer
How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:

How are ACM handled in bridge projects?
occasionally old bridges with pipe drains, don't know
Are ACM tested for prior to work?
not usually
If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?
don't know
What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?
don't know
How is ACM disposed of?
don't know
Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Brad Lewis
Position/Title:
State: Mississippi
Agency: DOT
Phone: 601-359-7300
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:
Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name:
Position/Title:
State:
Agency:
Phone:
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

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Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

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If found, is abatement/removal done prior to work, or during?

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Who is financially responsible for abatement/removal?

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Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name:
Position/Title:
State: Montana
Agency: DOT
Phone:
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:

How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Len Sand
Position/Title: Highway Environmental Program Manager (EPM)
State: Nebraska
Agency: Department of Roads
Phone: 402-479-4411
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:
Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: David Schoenmaker
Position/Title:
State: Nebraska
Agency: Department of Roads
Phone: 402-479-3924
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Sam Fallaha
Position/Title: Assistant Bridge Engineer
State: Nebraska
Agency: Department of Roads
Phone: 402-479-4389
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes
How are LBP coated steel members handled?
don't recall specs exactly, protective gear for workers, protective equipment, ensure lead is collected
What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?
yes
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures
no, ask that contractor has hygenists
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
subcontractor or contractor, con ultimately responsible
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
becomes property of contractor, ownership and liability transferred
Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?
handled as hazmat and shipped to hazardous waste site
How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?
test samples specs written according to sample
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
don't remember, ask contractor to collect and treat as hazardous, already predetermined
If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
don't know
How are waste disposal facilities for paint and paint removal waste selected?
have to be certified to accept hazwaste, contractor submits documentation that waste site receives material
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
yes

Asbestos:
How are ACM handled in bridge projects?
no ACM on bridges
Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:
Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?
only waste management process, have to get department of environmental quality approval
Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
yes
If yes, what type?
don't k now

Name: William Hauser
Position/Title:
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Agency: DOT
Phone: 603-271-3226
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:
Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name:
Position/Title:
State:
Agency:
Phone:
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:
Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Brian DeWaltt
Position/Title: Construction Group
State: New York
Agency: DOT
Phone: 518-457-9688
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes, NYS standards are more stringent
How are LBP coated steel members handled?
Painting, total removals SSPC10 standard for cleanliness, most of the time done in containment with abrasive blasts recyclable steel grit, capturing all abrasive and lead, demo,
don't remove paint from bridges to be demolished, if steel is recycled scrapped and smelted lead goes with it, long as large amounts of paint don't flake off not a big deal, if chopped up and sold to scrap lead is included and cooked or skimmed off as biproduct.

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?
not sure, proposed a spec chage to do that, met with storm of controversy, using long lances and respirators. Sit specific project safety and health plan
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
con or sub, don't allow third
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
no, not a significant one
Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?
don't know, contractors problem, all material becomes property of contractor
Are contractors allowed to keep steel with the paint on?
yes
If metal is sold for scrap, does the salvage company take official responsibility?
yes
If sold foor scrap, does salvage company have to be specially license?
not normally

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
yes
Are there criteria for identifying a coating as LBP?
don't believe so
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
no, put waste profiles in contracts with lead base paint, have oddity called dumb dumb paint, LBP impregnated with asbestos, looks lumpy, apparently experimented with for short time.
If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
No, DEC 360 has solid waste guidelines, lead is hazardous waste
If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
3 or 4, national standard EPA manifest, construction engineer signs for dept, contractor hires certified hauler who signs for hauler,
receiving facility has to sign and return to DOT, copies to DEC possibly to EPA also. EPA HazWaste Manifest required as of last fall
How are waste disposal facilities for paint and paint removal waste selected?
contractor selects them, LBP has to go to hazwaste facility. Typically closest one
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
yes

Asbestos:
How are ACM handled in bridge projects?
series of specs on handling and removing, have to be certified by state DOL as licensed remediation contractor, for asbestos, DOT aren't even allowed inside perimeter,
hire specialized consultants who do monitoring, all have to be licensed
Are ACM tested for prior to work?
yes
If so, how are they tested for?
don't know
If found, is abatement/removal done prior to work, or during?
either, usually during, especially for highway
What procedures are in place for dealing with asbestos once found?
use standard specs for AACM removal, if unexpected back up and have it tested and direct contractor to hire a licensed firm
Who performs abatementremoval; owner, contractor, sub-contractor, or third party?
certified contractor
How is ACM disposed of?
don't know, licensed hauler hauls to disposal facility that accepts it
Who is responsible for disposal?
see above
Who is financially responsible for abatement/removal?
owner, typically DOT, If asbestos is on utility under bridge then utility company is responsible
How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?
don't know, contractors responsibility
Are there additional state refulations on asbestos removal, handling, or disposal?
yes, DEC has stuff on haz waste, NYS DOL regulates certified asbestos removal workers and contractors

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
hope so, have insurance requirements
What procedures/requirements are in place if ACM or LBP is shipped across state lines?
EPA manifest
Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
Yes, air quality monitoring around many projects involvig paint removal
If yes, what type?
don't know, real time monitoring and long duration monitoring

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Position/Title:
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Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:
Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?
John Emmerson, Bridge Maintenance Engineer, 919-733-4362
Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

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Position/Title: Bridge Maintenance Engineer
State: North Carolina
Agency: DOT
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E-mail: jemerson@dot.state.nc.us
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Gary Doerr
Position/Title:
State: North Dakota
Agency: DOT
Phone:
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes
How are LBP coated steel members handled?
shipped off to recycler
What are the state regulatory requirements for cutting and removing steel?
no
Does DOT remove LBP from areas to be cut prior to demolition work?
no
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
third party in last
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
no
Are members salvaged with the paint on or is it removed?
with it on, not usually much left
Can steel with LBO be smelted or recycled?
don't know, don't know why they couldn't
If paint is removed from the salvaged members, how is it disposed?
landfilled
How is steel disposed of if not smelted or recycled?
typically recycled, recycler sent it off to smelter, don't run into in recent history
Are contractors allowed to keep steel with the paint on?
have done on some county structures, most county structures don't have paint
If metal is sold for scrap, does the salvage company take official responsibility?
don't know
If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
qp1/qp2
Are there criteria for identifying a coating as LBP?
don't think so, assume anything in 70's and before is LBP, test as removal goes on.
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
yes
If so, are there established procedures for making the waste determination?
yes, outlined in specs, how much to test and how often
Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
probably, test for lead, rules for disposal
If so, is this rule utilized?
yes
Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
IAW state health department, final sign off
How are waste disposal facilities for paint and paint removal waste selected?
approved based on paint characteristics from health dept
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
yes, part of overall project planning and qualtiy control

Asbestos:

How are ACM handled in bridge projects?
don't have a lot of asbestos, only in insulated pipe under bridge, handled by asbestos abatement contractor who removed it and disposed of it.
Are ACM tested for prior to work?
yes
If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?
during
What procedures are in place for dealing with asbestos once found?
contract removes it
Who performs abatementremoval; owner, contractor, sub-contractor, or third party?
asbestos abatement contractor
How is ACM disposed of?
bagged and liandfilled
Who is responsible for disposal?
contractor
Who is financially responsible for abatement/removal?
ultimately DOT, normally a subcontractor/third party, don't normally bid for it, done by change order
How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?
handled through third party who notifies dot and health dept and workers
Are there additional state refulations on asbestos removal, handling, or disposal?
no

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
hasn't happened, would assume bonded and insured to do project
What procedures/requirements are in place if ACM or LBP is shipped across state lines?
don't know if dot has any, sure health dept has gyuidelines
Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
yes
If yes, what type?

Name:
Position/Title:
State:
Agency:
Phone:
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBO be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)
Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:
How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:
Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Bob Rusch
Position/Title: Division Manager - Bridge Division
State: Oklahoma
Agency:
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E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
generally no, by year brisge is built, know when lead is present and color of coating, very little testing
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes, encase structures and haul to cat c and d landfill and treat waste for hazmat
How are LBP coated steel members handled?
see above
What are the state regulatory requirements for cutting and removing steel?
dept of environmental quality doesn't monitor cutting closely, spec talks about at least for welding to remove 3 inches either side of weld, leave ro contractor to follow osha regs
Does DOT remove LBP from areas to be cut prior to demolition work?
yes
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?
used to require qp2, right now require c3, competent person training, or qp2 when using odot personnel to do the jobs.
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
con responsible for haz waste, third party inspecting
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
Dept is the owner of the steel beams, can't give away liability||||| if bridge is replaced, make beams property of contractor who can sell to county, owner is aware of LBP
Are members salvaged with the paint on or is it removed?
never removed
Can steel with LBO be smelted or recycled?
yes
If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?
don't know, assume ends up in contractors yard
Are contractors allowed to keep steel with the paint on?
yes
If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
yes
Are there criteria for identifying a coating as LBP?
put on plans that steel may have lead paint, even repaints that have zinc, some lead may have been left on, tend to recommend using removal notes as with lead even if it's zinc, warn that may contain
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
yes, TCLP soil testing
If so, are there established procedures for making the waste determination?
yes, see above
Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
no, read section 512 of standard spec
If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
resident engineer as generator
How are waste disposal facilities for paint and paint removal waste selected?
selected by contractor, some haul out of state, one site in state that accepts hazardous waste
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
yes, in the spec

Asbestos:

How are ACM handled in bridge projects?

Are ACM tested for prior to work?
no
If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?
contractor
How is ACM disposed of?
landfill
Who is responsible for disposal?
company doing abatement
Who is financially responsible for abatement/removal?
contractor initial payment, then through contractor task order pay contractor, ultimately DOT
How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?
yes, dept of labor, stricter than federal

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
Never had that come up
What procedures/requirements are in place if ACM or LBP is shipped across state lines?
none in place, whether waste is haz or not, treated as haz, ship to approved waste disposal site
Is there anyone else within the DOT that may provide more information?
Jerry Anderson 405-521-3026
Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
within 300 feet of school, air monitoring is required or 2 times the height of the bridge
If yes, what type?
PN10, HERA protocol

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Position/Title: HazMat Coordinator
State: Oregon
Agency: DOT
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E-mail: bart.g.bretherton@odot.state.or.us
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?

How are LBP coated steel members handled?

What are the state regulatory requirements for cutting and removing steel?

Does DOT remove LBP from areas to be cut prior to demolition work?

If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?

Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?

Are members salvaged with the paint on or is it removed?

Can steel with LBP be smelted or recycled?

If paint is removed from the salvaged members, how is it disposed?

How is steel disposed of if not smelted or recycled?

Are contractors allowed to keep steel with the paint on?

If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?

Are there criteria for identifying a coating as LBP?

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:

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If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

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How is ACM disposed of?

Who is responsible for disposal?

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Are there additional state refulations on asbestos removal, handling, or disposal?

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If yes, what type?

Name: Kevin Goeden
Position/Title: Bridge Design
State: South Dakota
Agency: DOT
Phone: 605-773-3285
E-mail: kevin.goeden@state.sd.us
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
no
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes, aware that structure has paint containing lead
How are LBP coated steel members handled?
don't know, assume disposed of properly
What are the state regulatory requirements for cutting and removing steel?
don't think so
Does DOT remove LBP from areas to be cut prior to demolition work?
don't know, in plans no
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures'
not from dot persepctive
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
depends on project, part of large project sub, painting con
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
don't know, could be
Are members salvaged with the paint on or is it removed?
with paint on
Can steel with LBP be smelted or recycled?
don't know
If paint is removed from the salvaged members, how is it disposed?
not on dot side
How is steel disposed of if not smelted or recycled?
contractor takes it
Are contractors allowed to keep steel with the paint on?
yes
If metal is sold for scrap, does the salvage company take official responsibility?

If sold foor scrap, does salvage company have to be specially license?
don't know

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
not in standard specs, may be job by job notes, not in general
Are there criteria for identifying a coating as LBP?
no
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
don't know
If so, are there established procedures for making the waste determination?

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

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Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
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Name:
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Name: Shane Marshall
Position/Title: Environmental Services Director
State: Utah
Agency: DOT
Phone: 801-965-4384
E-mail: smarshall@utah.gov
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
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What procedures/requirements are in place if ACM or LBP is shipped across state lines?

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Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Boyd Wheeler
Position/Title:
State: Utah
Agency: DOT
Phone: 801-964-4456
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings
Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?

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Name: Richard Tetreault
Position/Title: Director of Program Development
State: Vermont
Agency: Arency of Transportation
Phone: 802-828-2663
E-mail: richard.tetreault@state.vt.us
Address:

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Name: Andrew Shively
Position/Title: Hazardous Materials & Wate Coordinator
State: Vermont
Agency: Agency of Transportation
Phone: 802-828-2797
E-mail: andrew.shiveley@state.vt.us
Address:

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If yes, what type?

Name: Kendal Walus
Position/Title: State Structure and Bridge Engineer
State: Virginia
Agency: DOT
Phone: 804-786-4575
E-mail: Kendal.Walus@VDOT.Virginia.gov
Address:

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Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

How are waste disposal facilities for paint and paint removal waste selected?

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

Asbestos:

How are ACM handled in bridge projects?

Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

If yes, what type?

Name: Jugesh Kapur
Position/Title:
State: Washington
Agency: DOT
Phone: 360-705-7207
E-mail:
Address:

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior t demolishing steel structures?
yes
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
yes
How are LBP coated steel members handled?
special removal techniques so there's no leaching, well confined
What are the state regulatory requirements for cutting and removing steel?
yes
Does DOT remove LBP from areas to be cut prior to demolition work?
yes
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?
applies to companies yes
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
con or sub
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
yes to the agency
Are members salvaged with the paint on or is it removed?
on
Can steel with LBP be smelted or recycled?
after lead is removed
If paint is removed from the salvaged members, how is it disposed?
don't know
How is steel disposed of if not smelted or recycled?
usualyy, lead is removed and then recycled
Are contractors allowed to keep steel with the paint on?
don't thik so
If metal is sold for scrap, does the salvage company take official responsibility?
don't know, contractor responsibility
If sold foor scrap, does salvage company have to be specially license?

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
yes
Are there criteria for identifying a coating as LBP?
maybe
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
yes
If so, are there established procedures for making the waste determination?
yes, don't know
Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

If so, is this rule utilized?

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
project engineer
How are waste disposal facilities for paint and paint removal waste selected?
don't know
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
yes

Asbestos:

How are ACM handled in bridge projects?
not familiar, ACM is very uncommon
Are ACM tested for prior to work?

If so, how are they tested for?

If found, is abatement/removal done prior to work, or during?

What procedures are in place for dealing with asbestos once found?

Who performs abatementremoval; owner, contractor, sub-contractor, or third party?

How is ACM disposed of?

Who is responsible for disposal?

Who is financially responsible for abatement/removal?

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

Are there additional state refulations on asbestos removal, handling, or disposal?

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
insurance has to be bought by contractor for this
What procedures/requirements are in place if ACM or LBP is shipped across state lines?
sure there are
Is there anyone else within the DOT that may provide more information?

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
tink yes
If yes, what type?

State	Title	Name	Phone	Email	
Alabama DOT					done
	Bridge Engineer	William F (Fred) Conway	334-242-6007	conwayf@dot.state.al.us	
Alaska DOT					done
	State Environmental Coordinator	Bill Ballard	907-465-6954	bill_ballard@dot.state.ak.us	
Colorado DOT					done
	Environmental Programs Branch Manager	Brad Beckham	303-757-9533		
	Environment Planning and Policy Section Manager	Roland Westl	303-757-9788		
	HazMat	Pat Martinek	303-757-9787		
	HazMat Specialist	Andy Lurkey	303-512-5520		
Connecticut DOT					
	~~Director of Office of Intermodal and Environmental Planning~~	~~Edgar T Hurle~~	~~860-594-2920~~	~~Edgar.Hurle@po.state.ct.us~~	
	Transportation Assistant Planning Director of Policy	Cynthia S Holden	860-594-2922	Cynthia.Holden@po.state.ct.us	
Florida DOT					
	Office of Environmental Management Manager	Carolyn Ismart	850-414-5209		
	HazMat	Cheryl Hudson	850-414-5332		
	Environmental Quality Performance Section Manager	Buddy Cunill	850-414-5280		
Georgia DOT- Environmental Analysis Bureau					done
	NEPA/GEPA Section Manager	Jonthan Cox	404-699-3475		
Indiana DOT					done
	Environmental Services Manager	Tom Duncan	313-232-5512	tduncan@indot.in.gov	
	Environmental Assesment Manager	Lyle Sadler	317-233-6972		
Iowa DOT - Office of Location and Environment					done
	Director	Jim Rost	515-239-1798		
	Environmental Studies	Multiple contacts online			
	Regulated Materials	Brad Azeltine	515-239-1938		
	Regulated Materials	Mary Kay Soldberg	515-239-1741		
Kentucky Transportation Cabinet - Division of Environmental Analysis			502-564-7250		
	UST/Hazmat/Lead Districts 2,3,4,6,8,12	Bob Keiser		Bob.Keiser@ky.gov	
	UST/Hazmat/Lead Districts 1,5,7,9,10,11	Chris Cummins		Chris.Cummins@ky.gov	
Louisiana Department of Transportation and Development - Office of Engineering					done
	Environmental Administrator	Noel Ardoin	225-242-4501	NoelArdoin@dotd.louisiana.gov	
	Chief Bridge Engineer	Hossein Ghara	225-379-1302		
Louisiana Department of Transportation and Development - Office of Operations					
	Field Operations Engineer	Jay Carnell	225-379-1570	JayCarnell@dotd.louisiana.gov	
Maryland DOT					
	Director of Engineering And Procurement	John Contestible	410-865-1122		
Maine DOT - Environmental Office					done
	~~Director~~	~~Kathy Fuller~~	~~207-624-3100~~		
	Groundwater and Hazardous Waste	Dwight Dowdy	207-624-3103		
Mississippi DOT					
	Environmental Division Head	Clairborne Barnwell	601-359-7920		
	Planning Division Head	Jeff Pierce	601-359-7685		
	Construction Division	Brad Lewis	601-359-7301		
Missouri DOT					
	Environmental Studies		573-526-4778		
	Contact	Mark Kross	573-751-4606		
Montana DOT					
	Hazardous Material Waste Section		406-444-7647		
Nebraska Department of Roads					done
	~~Environmental Section Manager~~	~~Cindy Veys~~	~~402-479-4410~~		
	~~Highway Environmental Program Manager (EPM)~~	~~Len Sand~~	~~402-479-4411~~		
	~~Highway EPM, Environmental Permits~~	~~Jason Jurgens~~	~~402-479-4418~~		
		David Schoenmaker	402-479-3924		
New Hampshire DOT					
	Environment	William Hauser	603-271-3226		
New Mexico DOT - Environmental Design Bureau					
	Bureau Administrator	Judith Duncan	505-827-5223	judith.duncan@state.nm.us	
	Human and Natural Resources Staff, Program Manager	Steve Reed	505-827-5254	steve.reed@state.nm.us	
New York State DOT					done
	Environmental Analysis	Mary Ivey	518-457-5672		
	Office of Structures	George Christian	518 457-6827		
North Carolina DOT					
	~~Environmental Operations Section~~	~~Ken Pace~~	~~919-733-2920~~	~~kpace@dot.state.nc.us~~	
	Bridge Maintenance Engineer	John Emerson		jemerson@dot.state.nc.us	
North Dakota DOT					done
	Planning & Programming		701-328-2513		
Ohio DOT - Diviosion of Planning > Environmental Services					done
	Administrator	Timothy Hill	614-644-0377	Time.Hill@dot.state.oh.us	
	Multiple Sub listing online				
Oklahoma DOT - Planning & Research Division					done
	Environmental Studies Branch Manager	John Hartley	405-521-3050		
	Division Manager - Bridge Division	Bob Rusch	405-521-2606		

Phode Island DOT - Environmental and Intermodal Planning			
Deputy Chief Engineer		401-222-2023	
Environmental Associate Chief Engineer		401-222-2023	
South Carolina DOT			
Planning and Environmental Director	Ron Patton	803-737-1444	
Planning Chiefs	Michael Dennis	803-737-1445	
	Mark Pleasant	803-737-1437	
	Kevin Sheppard	803-737-1619	
South Dakota			
Bridge Design	Kevin Goeden	605-773-3285	kevin.goeden@state.sd.us
Tennessee DOT			
Environmental & Planning Chief	Ed Cole	615-741-2848	
Environmenatl Division	Doug Delaney	615-741-2612	
Structures Director	Ed Wasserman	615-741-3351	
Utah DOT			
Environmental Services Director	Shane Marshall	801-965-4384	smarshall@utah.gov
NEPA Air/Water Quality	Jerry Chaney	801-965-4317	jchaney@utah.gov
Structures	Boyd Wheeler	801-964-4456	bwheeler@utah.gov
Vermont Agency of Transportation			
Director of Operations	Sam Lewis	802-828-2709	
Director of Program Development	Richard Tetreault	802-828-2663	richard.tetreault@state.vt.us
Director of Policy & Planning	Mel Adams	802-8228-3441	mel.adams@state.vt.us
Hazardous Materials & Wate Coordinator	Andrew Shiveley	802-828-2797	andrew.shiveley@state.vt.us
Virginia DOT			
Environmental Division	Multiple contacts online		
State Structure and Bridge Engineer	Kendal R. Walus	804-786-4575	Kendal.Walus@VDOT.Virginia.gov
Assistant State Structure and Bridge Engineer	Julius Volgyi	804-786-7537	Julius.Volgyi@VDOT.Virginia.gov

Name: Juliet Denniss
Position/Title: Environmental Supervisor
State: Ohio
Agency: Department of Transportation, Office of Environmental Sevices
Phone: 614-466-7942
E-mail: juliet.denniss@dot.state.oh.us
Address: 1980 West Broad Street, Columbus, Ohio 43223

Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior to demolishing steel structures?
No, coatings are tested after removal
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
Contract language requires compliance with all OSHA requirements.
How are Lead Based Paint (LBP) coated steel members handled?
As long as the beams stay in tact, there is no issue.
What are the state regulatory requirements for cutting and removing steel?
They must comply with OSHA and all federal, state and local regulations and laws.
Does DOT remove LBP from areas to be cut prior to demolition work?
No
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?
N/A
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?

The Contractor is ultimately responsible by contract, but he has the option to subcontract this work if he chooses.
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
It has not been identified as an issue at this time
Are members salvaged with the paint on or is it removed?
Normally with the paint on.
Can steel with LBP be smelted or recycled?
Contractor takes ownership of the material and is responsible for legal disposal
If paint is removed from the salvaged members, how is it disposed?
N/A
How is steel disposed of if not smelted or recycled?
N/A
Are contractors allowed to keep steel with the paint on?
Yes
If metal is sold for scrap, does the salvage company take official responsibility?
Contractor takes ownership of the material and is responsible for legal disposal
If sold for scrap, does salvage company have to be specially license?
Contractor takes ownership of the material and is responsible for legal disposal

Lead: Paint Removal Projects (Surface Preparation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
No
Are there criteria for identifying a coating as LBP?

Based on generator knowledge our general specification makes Contractor aware that the existing paint may contain lead.

Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?

The Contractor must have the abrasive waste tested for lead, arsenic, chromium and cadmium and the results are sent to ODOT where the following guideline is used. If the lead, arsenic, and/or chromium leaches more than 5 mg/L the waste or 1.0 mg/L got cadmium, it is characterized as a hazardous waste.

If so, are there established procedures for making the waste determination?

Yes, see above

Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?

No

If so, is this rule utilized?

N/A

Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?

The waste disposal facility prepares the manifests and the ODOT engineer signs the waste manifest.

How are waste disposal facilities for paint and paint removal waste selected?

These are selected by the contractor as part of their bid package

Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?

No. The contract stipulates that the Contractor must comply with all Federal, State, and local environmental protection laws, regulations and ordinances including, but not limited to, air quality, waste containment and waste removal. The Contractor is also advised that various governmental bodies are involved with solid and hazardous waste disposal and the Contractor is responsible for complying with laws enforced by the various governmental bodies.

Asbestos:

How are Asbestos Containing Materials (ACM) handled in bridge projects?

An asbestos survey is conduct on the bridge prior to the project's sale. If asbestos is found and the bridge will be demolished or the asbestos is ion the area of renovation, a plan note for asbestos removal is placed in the plans. If it is not removed/impacted during a renovation project, then asbestos containing materials (ACM) is left in place. All ACM is properly remove and dispose of the material by the contractor in accordance with Ohio Administrative Code (OAC) 3745-20. Also if ACM has fallen from the structure prior to construction activity, then a plan note is developed and placed in the plans. All asbestos removal is conducted by contractor licensed by the Ohio Department of Health as an Abatement Contractor.

Are ACM tested for prior to work?

Yes, in buildings that will be demolished and bridges that will have work performed.

If so, how are they tested for?

An asbestos hazard evaluation specialist licensed by the Ohio Department of Health conducts an asbestos survey of the bridge. Most bridge inspections are conducted by a consultant but a few of the Districts also have an asbestos hazard evaluation specialist on staff. Samples are obtained and submitted for analysis by the asbestos hazard evaluation specialist. Samples are not submitted for TEM analysis.

If found, is abatement/removal done prior to work, or during?

The asbestos abatement is handled through a plan note in the construction plans and is considered to be part of the contract work. This is the same for bridges and buildings.

What procedures are in place for dealing with asbestos once found?

For unknown ACM, the work is conducted as under force account. The contractor is directed to hire a licensed abatement contractor to remove the asbestos. This is noted in the Construction Inspection Manual of Procedures (MOP) under section 202 (http://www.dot.state.oh.us/construction/OCA/Manuals/2006_MOP/Web_Manual/main.htm)

Who performs abatement/removal; owner, contractor, sub-contractor, or third party?

This is conducted as part of the construction contract and is performed by the contractor or by a subcontractor.

How is ACM disposed of?

It is placed in a landfill lincensed and permitted to receive ACM.

Who is responsible for disposal?

The contractor arranges for the material to be placed in a licensed and permitted landfill.

Who is financially responsible for abatement/removal?

ODOT

How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?

The notification form is partially filled out as part if the asbestos inspection report. The contractor is responsible for submitting the form to the Ohio EPA or the delegated air authority within the proper time limits.

Are there additional state regulations on asbestos removal, handling, or disposal?

Yes, the Ohio EPA has regulations/standards for Asbestos Waste delegated under the Ohio Administrative Code (OAC) 3745-20.

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?

The contractor must obtain a bond from a bonding company. If the contractor fails to properly remove and/or handle these materials, ODOT contacts the bonding company.

What procedures/requirements are in place if ACM or LBP is shipped across state lines?

There are no formal procedures

Is there anyone else within the DOT that may provide more information?

See Below

Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?

This is the responsibility of the contractor for OSHA compliance.

If yes, what type?

The contractor is responsible for choosing the appropriate monitoring and ODOT does not provide guidance or specify the type of monitoring equipment used.

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E-mail: craig.kerscher@dot.state.oh.us
Address: 1980 West Broad Street, Columbus, Ohio 43223

Name: Scott Le Blanc. PE
Position/Title: State Construction Structures Engineer
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Agency: Department of Transportation, Office of Construction Administration
Phone: 614-644-6628
E-mail: scott.leblanc@dot.state.oh.us
Address: 1980 West Broad Street, Columbus, Ohio 43223

Name: Ron Trivisonno
Position/Title: State Construciton Hydraulics Engineer
State: Ohio
Agency: Department of Transportation, Office of Construction Administration
Phone: 614-644-6588
E-mail: ron.trivisonno@dot.state.oh.us
Address: 1980 West Broad Street, Columbus, Ohio 43223

ASBESTOS SURVEY (BRIDGE REMOVAL)

Portions of the work being performed under this contract are subject to the provisions of Regulation 11, Rule 2 of the Bay Area Air Quality Management District (BAAQMD). The Contractor shall be fully informed of the provisions of that Rule and shall conduct the work accordingly.

At least 25 working days prior to beginning bridge removal, the Contractor shall conduct an asbestos survey covering the areas of the bridges being removed for this contract. The survey shall be performed by a person who is certified by the Division of Occupational Safety and Health (DOSH) as having completed an accredited Asbestos Hazard Emergency Response Act training course. The sampling investigation shall be consistent with the U.S. Environmental Protection Agency's Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance. The results of the survey shall be reported to the Engineer within 5 working days of its completion. Asbestos content in suspected material shall be confirmed by polarized light microscopy performed by a laboratory certified by the Department of Health Services and accredited by the National Institute of Standards and Technology (NIST). The laboratory shall use the test method specified in 40 CFR, Part 763, Subpart E, Appendix E, Section 1, "Polarized Light Microscopy," to analyze the samples for asbestos.

In the event that regulated asbestos-containing material (RACM), as defined in Rule 2, is discovered during the survey, the RACM shall be removed prior to bridge removal, when possible, in conformance with the provision in "Asbestos-Containing Material" of these special provisions.

The Contractor shall prepare and submit an Asbestos Survey Report with the required notification of intent to demolish or renovate to the BAAQMD at least 10 working days, as defined in Rule 2, prior to beginning demolition, even where no RACM is present.

Attention is directed to Sections 7-1.01, "Laws to be Observed," 7-1.04, "Permits and Licenses," and 7-1.09, "Public Safety," of the Standard Specifications.

The contract lump sum price paid for asbestos survey (bridge removal) shall include full compensation for furnishing all labor, material, tools, equipment, and incidentals and for doing all the work involved in performing an asbestos survey, complete in place, including sample collection, analysis, and report preparation as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

ASBESTOS-CONTAINING MATERIAL

Removal of regulated asbestos-containing material, as defined in Regulation 11, Rule 2 of the Bay Area Air Quality Control Board, shall conform to the provisions of Rule 2 and Section 1529, "Asbestos," of the Construction Safety Orders, Title 8, of the California Code of Regulations and these special provisions.

Attention is directed to Section 7-1.06, "Safety and Health Provisions," and Section 7.101C, "Contractor's Licensing Laws," of the Standard Specifications. Work practices and worker health and safety during any work that results in disturbance of asbestos-containing material shall conform to Section 1529, "Asbestos," of the Construction Safety Orders, Title 8, of the California Code of Regulations. All work including the work to identify and determine the extent of asbestos encountered during bridge demolition/alteration and the removal and disposal of ACM shall be performed by a contractor who is registered pursuant to Section 6501.5 of the Labor Code and certified pursuant to Section 7058.6 of the Business and Professions Code.

The Contractor shall prepare an Asbestos Health and Safety Plan to prevent or minimize exposure to asbestos. The Contractor's attention is directed to Title 8, California Code of Regulations, Sections 5192 (b)(4)(B) and 1529 and Occupational Safety and Health Guidance Manual published by the National Institute of Occupational Safety and Health, Occupational Safety and Health Administration, and US Environmental Protection Agency for elements of the site safety plan. The Health and Safety Plan shall contain a minimum but not limited to: identification of key personnel for the project, job hazard analysis for the work assignments, summary of risk assessment, air monitoring plan, personal protective equipment, delineation of work zones on-site, decontamination procedures, general safe work practices, security measures, emergency response plans and worker training.

The Contractor shall obtain all certifications and registrations required to do the work and certify in writing to the Engineer that the personnel performing the work have completed a training program appropriate for the work involved. Written notification of exposure monitoring results shall be submitted to the Engineer upon completion of the monitoring. A copy of any required written certification of the adequacy of alternative work practices shall be submitted to the Engineer before performing any work.

The requirements of subsection (d), "Multi-employer worksites," of Section 1529, "Asbestos," of the Construction Safety Orders, Title 8, of the California Code of Regulations shall be observed during performance of the work. This shall not be construed as relieving the Contractor from the Contractor's responsibilities as provided in Section 8-1.01, "Subcontracting," of the Standard Specifications.

Any friable asbestos-containing material, or non-friable asbestos-containing material that is damaged during the work so that it becomes friable or is in a finely divided or powdered state, shall be wetted and sealed in leak-tight, non-returnable containers, such as bags of 0.15-mm thick plastic, cartons, drums, or cans. Bulk friable asbestos-containing material, or non-friable asbestos-containing material that may become friable during transport, that will not fit into containers without

additional breaking shall be double-wrapped, sealed, and wetted. Trailers, drop-boxes, or other vehicles used for transport of bulk materials shall be lined with plastic sheeting and covered with a tarp. Each container and wrapped material shall be properly labeled, manifested, and transported to a permitted waste management facility in conformance with federal, state, and local regulations. Packaging, storage, transporting, and disposing of ACM shall conform to Division 4.5 of Title 22, California Code of Regulations.

The Engineer will provide the Contractor with a US Environmental Protection Agency Generator Identification Number for disposal of friable asbestos-containing material. The Engineer will also provide the Contractor with the Department's Board of Equalization Generator Identification Number, which shall be included on each manifest as the State Generator's ID. The Engineer will sign all hazardous waste manifests as the generator. The Contractor shall include the project contract number on each manifest along with the other mandatory information.

Other material that has been in contact with friable, finely divided, or powdered asbestos-containing material shall be cleaned thoroughly before removal from the work area.

The work performed under this section will be measured by units, by the meter, by area in square meters, or by any other unit designated in the contract item for abandoning, obliterating, removing, salvaging, reconstructing, adjusting, modifying, remodeling, relaying, relocating or resetting the various highway facilities specified in the Standard Specifications, these special provisions, and as shown on the plans.

Removal, transportation, and disposal of asbestos-containing material will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications.

REMOVE CONCRETE

Concrete, where shown on the plans to be removed, shall be removed.

The pay quantities of concrete to be removed will be measured by the cubic meter, measured before and during removal operations.

Concrete removed shall be disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

10-1.27 EARTHWORK

Earthwork shall conform to the provisions in Section 19, "Earthwork," of the Standard Specifications and these special provisions.

Spoils from the Contractor's operations shall not be discharged into the waterway. Spoils shall include, but not be limited to, synthetic slurry, material in contact with synthetic slurry, cement or washings, and concrete or grout fill for piling. Spoils, excess concrete, and grout resulting from any construction shall be disposed of outside the highway right of way in accordance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way, " of the Standard Specification.

It is anticipated that the Contractor will encounter existing pier ruins, including riprap and large boulders, existing timber piles, or other construction debris such as concrete blocks and bricks, during pile driving for constructing the proposed access trestle extension and temporary support at Pier 5. The Contractor shall remove existing pier ruins that interfere with pile driving. Removing existing pier ruins will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications.

Surplus excavated material except hazardous material shall become the property of the Contractor and shall be disposed of outside the highway right of way in accordance with the provisions in Section 7-1.13 of the Standard Specifications.

Where a portion of the existing surfacing is to be removed, the outline of the area to be removed shall be cut on a neat line with a power-driven saw to a minimum depth of 50 mm before removing the surfacing. Full compensation for cutting the existing surfacing shall be considered as included in the contract price paid per cubic meter for roadway excavation and no additional compensation will be allowed therefor.

Full compensation for removing existing asphalt pavement, concrete sidewalk and curb and gutter in the vicinity of Wanda Street as shown on the plans shall be considered as included in the contract price paid per cubic meter for roadway excavation and no additional compensation will be allowed therefor.

The portion of imported borrow placed within 1.5 m of the finished grade shall have a Resistance (R-Value) of not less than 15.

Imported borrow will be measured and paid for by the cubic meter and the quantity to be paid for will be computed in the following manner:

A. The total quantity of embankment will be computed in conformance with the provisions for roadway excavation in Section 19-2.08, "Measurement," of the Standard Specifications, on the basis of the planned or authorized cross section for embankments as shown on the plans and the measured ground surface.

California Home Thursda

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DOSH home page

Public safety page

What's new at DOSH

Contact us

Cal/OSHA enforcement

Employer assistance

A – Z index

Invoice/Penalty payment options

How to:

- File a health and safety complaint
- Develop an injury and illness prevention program
- Develop a partnership with Cal/Osha

Obtain

- A no-cost penalty-free consultation
- Educational products
- A permit from Cal/OSHA

Asbestos information

Publications

Advisory committees

Proposed regulations

Policy and procedures for enforcement

Young workers

Title 8 regulations

Federal OSHA

Division of Occupational Safety and Health (DOSH)

Protects workers and the public from safety hazards through its Cal/OSHA, elevator, amusement ride, aerial tramway, ski lift and pressure vessel programs, and provides consultative assistance to employers.

My CA
Advanc

Feature

- Comprehensiv & health traini instruction req
- Homeland sec

Asbestos

The Division of Occupational Safety and Health administers a number of programs which are aimed exposure to asbestos fibers in the workplace.

Enforcement of asbestos standards

The Cal/OSHA enforcement unit enforces California's Asbestos Standards in Construction (8 CCR S Shipyards (8 CCR Section 8358) and General Industry (8 CCR Section 5208).

The Cal/OSHA enforcement unit also enforces the General Industry Standard relating to Non-Asbes Tremolite, Anthophyllite, and Actinolite (8 CCR Section 5208.1).

If you wish to file a complaint with Cal/OSHA about exposure to asbestos fibers or non-abestotiform workplace, contact the Cal/OSHA enforcement unit district office nearest to your workplace.

Asbestos contractor registration

For contractors and employers who remove asbestos (having an asbestos fiber content of more thar greater than 100 square feet in extent), see asbestos contractor registration.

Asbestos consultant and site surveillance technician certification

Consultants planning and overseeing asbestos removal projects greater than 100 square feet in ext asbestos Consultant and site surveillance technician certification to view the certified consultant and surveillance technician database. See also applicable Title 8 regulations (8 CCR Sections 1529(q) a

Asbestos trainers approval

To obtain information about the division's program for approving asbestos trainers, see asbestos tra

Safety&Health Fact Sheet

CONSULTATION CAL OSHA SERVICE

March 2002

Cal/OSHA Consultation Service
California Department of Industrial Relations
P. O. Box 420603 • San Francisco, CA 94142-0603

Lead in Construction

Special Emphasis Program

Cal/OSHA is conducting a Special Emphasis Program to reduce the hazard from **lead in construction** affecting workers, their families and the public.

Why a Special Emphasis Program now?

Cal/OSHA is particularly concerned about lead in construction because of:

- Recognition of significant risk to children from take-home lead, even at very low levels of exposure.
- A boom in housing and public works renovation and rehabilitation projects that disturb lead paint.
- The need for greater protection for workers, their families and the public through a focused inspection and consultation effort.

What are the goals of this program?

Significantly reduce lead exposures for workers, their families and the public by:

- Increased enforcement and consultation to get the word out to contractors, workers, and owners of buildings and other structures that lead is a significant hazard in the construction business.
- Informing employers of regulations they must follow when lead may be present on a construction job.
- Informing workers of the hazards of lead on the job, and to their families, especially children, from lead carried into vehicles or homes on their bodies, shoes or clothing.

What steps do I take to comply with the Cal/OSHA regulation for lead in construction?

Section 1532.1 in Title 8 of the California Code of Regulations makes construction employers responsible, by law, for basic steps in compliance.

Step 1—Recognize the hazard. Lead can be present in a wide range of materials including paints and other coatings, lead mortars, and base metals to be welded on or treated with abrasive blasting. Look at the age of the building or structure, the presence of coatings and other materials that may contain lead, and information from the property owner.

Send samples of materials to be disturbed to a laboratory for lead analysis. Laboratories accredited by the U.S. Environmental Protection Agency National Lead Laboratory Accreditation Program are listed at www.leadlisting.org. Testing methods for lead must meet requirements of Title 8 Section 1532.1(d)(9).

Step 2—On all construction jobs where lead is present the following is required:

- **Housekeeping.** Lead dust on surfaces, especially in eating areas, must be controlled by HEPA vacuuming, wet clean-up, or other effective methods.
- **Hand and face washing.** Workers must have washing facilities with soap and clean water.
- **Training.** Workers must receive training on lead hazards and how to protect themselves.
- **A written compliance program** to assure control of hazardous lead exposures.
- **Exposure determination.** Employers must assess the amounts of lead breathed by workers. This is usually done by employee breathing-zone air sampling. Air sampling results are used to determine if the protective measures in Step 4 must be taken, as well as the type of respirator that must be worn for protection.

Step 3—For certain highly hazardous tasks, called trigger tasks, special protective measures must be taken—including specified respirators—until the employer determines that worker airborne exposures to lead are below levels specified in Section 1532.1.

- **Level 1 trigger tasks**

Any of the following with lead-containing coatings or materials: spray painting, manual demolition, manual scraping or sanding, use of heat gun, power tool cleaning with dust collection system.

Minimum required respirator: half-mask respirator with N-100, R-100 or P-100 filters.

- **Level 2 trigger tasks**

Any of the following with lead-containing coatings or materials: using lead-containing mortar, lead burning, rivet busting, power tool cleaning without dust collection system, clean-up activities using dry expendable abrasives, abrasive blasting enclosure movement or removal.

Cal/OSHA Consultation Service Offices

For telephone assistance and to request a no-cost consultation at your workplace:

Fresno 559-454-1295	San Bernardino 909-383-4567
Oakland 510-622-2891	San Diego 619-767-2060
Sacramento 916-263-5765	Santa Fe Springs 562-944-9366
	Van Nuys 818-901-5754

Or toll-free **1-800-963-9424**

Minimum required respirator: air-supplied hood or helmet, or loose fitting hood or helmet powered air-purifying respirator with N-100, R-100 or P-100 filters.

■ **Level 3 trigger tasks**

Abrasive blasting, welding, cutting, or torch burning on structures where lead-containing coatings or materials are present.

Minimum required respirator: half-mask supplied air respirator operated in a positive pressure mode.

Pre-job notification is required for jobs involving all trigger tasks. Written notification must reach the nearest Cal/OSHA district office or be made online at www.dir.ca.gov/dosh/Permits.html at least 24 hours before the job starts. See Section 1532.1(p) for details on required information and types of jobs covered.

Protective measures required for all trigger tasks until worker airborne exposures are shown to be below levels specified in Section 1532.1:

- Respirators, protective equipment and clothing.
- Clothing change areas.
- Initial blood testing for lead and zinc protoporphyrin.
- Basic lead hazard, respirator, and safety training.

Also, Section 1532.1(i)(6) requires regulated areas with warning signs for all trigger tasks.

In addition to the specific trigger tasks, whenever there is reason to believe that any other task may cause a hazardous lead exposure, the above protective measures must be taken until the exposure is shown to be below the airborne Permissible Exposure Limit (PEL).

Step 4—Where air sampling shows employee exposures above the PEL from any operation, the following controls are required in addition to those for trigger tasks: respirators appropriate to the levels of exposure measured, clean areas for eating and clothing change, showers, full worker training, and medical monitoring with routine blood testing for lead and zinc protoporphyrin (ZPP).

Certification. On jobs at residential and public access buildings, workers exposed to lead above the PEL—and their supervisors—must receive state-approved training and be certified by the California Dept. of Health Services. **[TIP: Information on lead worker certification—phone 800-597-LEAD—or go to www.childlead.com and click on "Prevention"]**

What's in it for me?

Consider the alternatives to compliance: fines up to $70,000 per violation, medical removal payments to workers with high blood lead levels, and costly job shutdowns.

Some companies find that following the Cal/OSHA regulation increases their business because clients want jobs that are safe for both workers and the environment.

Where can I get help?

The Cal/OSHA Consultation Service helps employers at no cost. Employers can request an industrial hygienist to come to a construction job site, show how air sampling is done and assist in employee training. The Consultation Service is independent of Cal/OSHA's Enforcement Unit.

Questions frequently asked

Q. Before starting work on a job that involves disturbance of paint or other coatings, am I required to have a sample of the paint analyzed for lead content?

A. This is the best way to begin assessing the lead hazard at the jobsite. While not specifically required by the Cal/OSHA regulation, material sampling—combined with knowledge of the tasks being done—is the best indicator of the chance of high airborne lead levels, and can help guide the air sampling and exposure control efforts and the choice of required respirators.

Q. If I'm already doing air monitoring and protecting workers with respirators during tasks with high exposures, why do I also need to do blood lead and ZPP monitoring?

A. Blood lead and ZPP monitoring are tools that help assess workers' total exposure to lead—including through ingestion, unmonitored operations, and lead contamination in the vehicle and home. It is the most important benchmark for answering the question: "Am I protecting my workers from the hazards of lead on the job?"

Q. How do I get started with a lead medical monitoring program and where do I find a physician to do this?

A. The Department of Health Services Occupational Lead Poisoning Prevention Program listed below can help you get started with this program.

— More resources —

- At the Cal/OSHA website you can find all Title 8 regulations, including Section 1532.1 for lead in construction: **www.dir.ca.gov/dosh**
- California Department of Health Services Occupational Lead Poisoning Prevention Program website: www.dhs.ca.gov/ohb/olppp phone: 510-622-4332
- Painting and Decorating Contractors of America website: www.pdca.org ▪phone: 703-383-0800
- SSPC: Society for Protective Coatings website: www.sspc.org ▪phone: 412-281-2331
- The National Lead Service Providers' Listing System website: www.leadlisting.org

Structure Construction - Advance Notice to Contractors/Subcontractors

Advance Notice to Contractors/Subcontractors

CALTRANS' SSPC QP REQUIREMENT NOTICE

NOTICE TO CONTRACTORS/SUBCONTRACTORS
REQUIREMENTS FOR CONTRACTORS
TO BE SSPC QP1, QP2 AND QP3 CERTIFIED

Any contractor or subcontractor engaged in:

> surface preparation and coating of structural steel, hazardous paint removal, collection, or containment or, shop painting of structural steel

shall meet the following requirements:

If only surface preparation and coating application are required by the contract, and the total area of steel to be painted **is greater than 3,000 square meters** (32,300 square feet), **then SSPC-QP 1 Certification** will be required. If the total area of steel to be painted is **less than or equal to 3,000 square meters** (32,300 square feet), **then SSPC-QP 1 Certification will not be required**, however, the work must be **performed in accordance with SSPC-QP 1 requirements**. New and existing paint contractors/subcontractors can use the projects in this classification to obtain their SSPC-QP 1 Certification.

If hazardous paint removal is a part of the contract, and the total steel area of paint removal **exceeds 50 square meters** (540 square feet), **then SSPC-QP 2 Certification** will be required. If the total steel area of paint removal is **less than or equal to 50 square meters** (540 square feet), **then SSPC-QP 2 Certification will not be required**, however, the work must be **performed in accordance with SSPC-QP 2 requirements**.

If shop painting of structural steel is a part of the contract, and the total area of steel to be shop painted **exceeds 50 square meters** (540 square feet), **then SSPC-QP 3 Certification** will be required. The AISC's Sophisticated Paint Endorsement (SPE) quality program will be considered equivalent to SSPC-

QP3. If the total area of steel to be shop painted is **less than or equal to 50 square meters** (540 square feet), **then SSPC-QP 3 Certification will not be required, however, the work must be performed in accordance with SSPC-QP 3 requirements**.

On jobs requiring **Certification(s)**, no Contractor or Subcontractor will be permitted to commence work requiring Certification without having a current SSPC Certification(s) in good standing.

If a Contractor or Subcontractor suffers a loss of Certification during the performance of contract work that requires Certification, the Engineer will permit the completion of the remaining work without certification, if the work remains in compliance with all SSPC Certification requirements.

The QP 1 Certification Program is based on SSPC-QP 1, "Standard Procedure for Evaluating Painting Contractors (Field Application to Complex Industrial Structures)." The QP 2 Certification Program is based on SSPC-QP 2, "Standard Procedure for Evaluating Painting Contractors (Field Removal of Hazardous Coatings from Complex Structures)." The QP 3 Certification Program is based on SSPC-QP 3, "Standard Procedure for Evaluating Qualifications of Shop Painting Applicators." Additional information about contractor certification can be obtained from SSPC's website at www.sspc.org or contact Susan Prokopchak from SSPC at 412-281-2331, ext. 210.

Questions pertaining to this notice should be directed to John Rogers, CALTRANS,Division Of Maintenance, Structure Maintenance and Investigations. He can be reached at (916) 227-8627, fax (916) 227-8357 or e-mail <John_C_Rogers @dot.ca.gov>

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Temporary crash cushion modules shall be placed on movable pallets or frames conforming to the dimensions shown on the plans. The pallets or frames shall provide a full bearing base beneath the modules. The modules and supporting pallets or frames shall not be moved by sliding or skidding along the pavement or bridge deck.

A Type R or P marker panel shall be attached to the front of the crash cushion as shown on the plans, when the closest point of the crash cushion array is within 3.6 m of the traveled way. The marker panel, when required, shall be firmly fastened to the crash cushion with commercial quality hardware or by other methods determined by the Engineer.

At the completion of the project, temporary crash cushion modules, sand filling, pallets or frames, and marker panels shall become the property of the Contractor and shall be removed from the site of the work. Temporary crash cushion modules shall not be installed in the permanent work.

Temporary crash cushion modules placed in conformance with the provisions in "Public Safety" of these special provisions will not be measured nor paid for.

10-1.26 EXISTING HIGHWAY FACILITIES

The work performed in connection with various existing highway facilities shall conform to the provisions in Section 15, "Existing Highway Facilities," of the Standard Specifications and these special provisions.

Except as otherwise provided for damaged materials in Section 15-2.04, "Salvage," of the Standard Specifications, the materials to be salvaged shall remain the property of the State, and shall be cleaned, packaged, bundled, tagged, and hauled to the District Recycle Center at the San Francisco-Oakland Bay Bridge warehouse supply area adjacent to the San Francisco-Oakland Bay Bridge Toll Plaza, and stockpiled.

The Contractor shall notify the Engineer and the District Recycle Coordinator, telephone (510)286-6111 a minimum of 48 hours prior to hauling salvaged material to the Recycle Center.

Except for legal holidays, the District Recycle Center is open from 8:00 AM to 12 Noon and from 1:00 PM to 2:30 PM, Mondays through Fridays.

Plans of the existing bridges may be requested by fax from the Office of Structure Maintenance and Investigations, 1801 30th Street, Sacramento, CA, Fax (916) 227-8357.

Plans of the existing bridges, pertaining to the work required and available to the Contractor, are reproductions of the original contract plans and working drawings and do not necessarily show normal construction tolerances and variances. Where dimensions of new construction required by this contract are dependent on the dimensions of the existing bridges, the Contractor shall verify the controlling field dimensions for all members prior to submitting working drawings and ordering, fabricating or installing material. The Contractor shall be responsible for adjusting dimensions of the work to fit existing conditions.

The Contractor shall certify in writing that field dimensions have been verified and shall include the certification with the working drawing submittal. Full compensation for conforming to the above requirements shall be considered as included in the contract prices paid for the various contract items of work and no additional compensation will be allowed therefor.

EXISTING PAINT SYSTEMS

The existing paint systems on Bridge Number 23-0015L/R consist of red lead, zinc, and chlorinated rubber undercoats and phenolic aluminum finish coat. Any work that disturbs the existing paint system will expose workers to health hazards and will (1) produce debris containing heavy metal in amounts that exceed the thresholds established in Titles 8 and 22 of the California Code of Regulations or (2) produce toxic fumes when heated. All debris produced when the existing paint system is disturbed shall be contained.

Debris Containment and Collection Program

Prior to starting work, the Contractor shall submit a debris containment and collection program to the Engineer in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications, for debris produced when the existing paint system is disturbed. The program shall identify materials, equipment, and methods to be used when the existing paint system is disturbed and shall include working drawings of containment systems, loads applied to the bridge by containment structures, and provisions for ventilation and air movement for visibility and worker safety.

If the measures being taken by the Contractor are inadequate to provide for the containment and collection of debris produced when the existing paint system is disturbed, the Engineer will direct the Contractor to revise the operations and the debris containment and collection program. The directions will be in writing and will specify the items of work for which the Contractor's debris containment and collection program is inadequate. No further work shall be performed on the items until the debris containment and collection program is adequate and, if required, a revised program has been approved for the containment and collection of debris produced when the existing paint system is disturbed.

The Engineer will notify the Contractor of the approval or rejection of the submitted or revised debris containment and collection program within 2 weeks of submittal of the Contractor's program or revised program.

The State will not be liable to the Contractor for failure to approve all or any portion of an originally submitted or revised debris containment and collection program, nor for delays to the work due to the Contractor's failure to submit an acceptable program.

Full compensation for the debris containment and collection program, including all revisions and amendments, shall be considered as included in the contract price paid for the item of work causing the existing paint system to be disturbed, and no additional compensation will be allowed therefor.

Safety and Health Provisions

Attention is directed to Section 7-1.06, "Safety and Health Provisions," of the Standard Specifications. Work practices and worker health and safety shall conform to the California Code of Regulations, Title 8, Construction Safety Orders, including Section 1532.1, "Lead."

The Contractor shall furnish the Engineer a written Code of Safe Practices and shall implement an Injury and Illness Prevention Program and a Hazard Communication Program in conformance with the requirements of Construction Safety Orders, Sections 1509 and 1510.

Prior to starting work that disturbs the existing paint system, and when revisions to the program are required by Section 1532.1, "Lead," the Contractor shall submit the compliance programs required in subsection (e)(2), "Compliance Program," of Section 1532.1, "Lead," of the Construction Safety Orders to the Engineer in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. The compliance programs shall include the data specified in subsections (e)(2)(B) and (e)(2)(C) of Section 1532.1, "Lead." Approval of the compliance programs by the Engineer will not be required. The compliance programs shall be reviewed and signed by a Certified Industrial Hygienist (CIH) who is certified in comprehensive practice by the American Board of Industrial Hygiene (ABIH). Copies of all air monitoring or jobsite inspection reports made by or under the direction of the CIH in conformance with Section 1532.1, "Lead," shall be furnished to the Engineer within 10 days after the date of monitoring or inspection.

Full compensation for furnishing the Engineer with the submittals and for implementing the programs required by this safety and health section shall be considered as included in the contract price paid for the item of work causing the existing paint system to be disturbed, and no additional compensation will be allowed therefor.

Debris Handling

Debris produced when the existing paint system is disturbed shall not be stored or released to the ground or surface waters. Debris accumulated inside the containment system shall be removed before the end of each work shift. Once the debris is evacuated from containment system, it shall be stored for transport in approved, rigid, leakproof containers and shall be handled in a manner that prevents spillage or release.

Disposal of debris produced when the existing paint system is disturbed shall be performed in conformance with all applicable Federal, State, and Local hazardous waste laws. Laws that govern this work include:

A. Health and Safety Code, Division 20, Chapter 6.5 (California Hazardous Waste Control Act).
B. Title 22; California Code of Regulations, Division 4.5, (Environmental Health Standards for the Management of Hazardous Waste).
C. Title 8, California Code of Regulations.

Except as otherwise provided herein, debris produced when the existing paint system is disturbed shall be disposed of by the Contractor at an approved Class 1 disposal facility in conformance with the requirements of the disposal facility operator. The debris shall be hauled by a transporter currently registered with the California Department of Toxic Substances Control using correct manifesting procedures and vehicles displaying current certification of compliance. The Contractor shall make all arrangements with the operator of the disposal facility and perform any testing of the debris required by the operator.

At the option of the Contractor, the debris produced when the existing paint system is disturbed may be disposed of by the Contractor at a facility equipped to recycle the debris, subject to the following requirements:

A. Copper slag abrasive blended by the supplier with a calcium silicate compound shall be used for blast cleaning.
B. The debris produced when the existing paint system is disturbed shall be tested by the Contractor to confirm that the solubility of the heavy metals is below regulatory limits and that the debris may be transported to the recycling facility as a non-hazardous waste.
C. The Contractor shall make all arrangements with the operator of the recycling facility and perform any testing of the debris produced when the existing paint system is disturbed that is required by the operator.

Full compensation for debris handling and disposal shall be considered as included in the contract price paid for the item of work causing the existing paint system to be disturbed, and no additional compensation will be allowed therefor.

Work Area Monitoring

Work Area Monitoring (Location A)
Carquinez Bridge (1927 Truss)
(Bridge No. 23-0015L)

Work Area Monitoring (Location B)
Carquinez Bridge ("A4W" Line)
(Bridge No. 23-0015L)

Work Area Monitoring (Location C)
Carquinez Bridge
(Bridge No. 23-0015R)

The Contractor shall perform work area monitoring of the ambient air and soil in and around the work area at the bridge site to verify the effectiveness of the containment system. The work area monitoring shall consist of collecting, analyzing, and reporting air and soil test results and recommending the required corrective action when specified exposure levels are exceeded. The work area monitoring shall be carried out under the direction of a CIH. The samples shall be collected at locations designated by the Engineer.

Air samples shall be collected and analyzed in conformance with National Institute for Occupational Safety and Health (NIOSH) methods. Air samples for lead detection shall be collected and analyzed in conformance with NIOSH Method 7082, with a limit of detection of at least 0.5 $\mu g/m^3$. Air samples for detection of other metals shall be collected and analyzed in conformance with NIOSH Method 7300, with a limit of detection of at least one percent of the appropriate Permissible Exposure Limits (PELs) specified by the California/Occupational Safety and Health Administration (Cal/OSHA). Alternative methods of sample collection and analysis, with equivalent limits of detection, may be used at the option of the Contractor.

The airborne metals exposure, outside either the containment system or work areas, shall not exceed the lower of either: (1) 10 percent of the Action Level specified for lead by Section 1532.1, "Lead," of the Construction Safety Orders, or (2) 10 percent of the appropriate PELs specified for other metals by Cal/OSHA.

The air samples shall be collected at least once per week during progress of work that disturbs the existing paint system. All air samples shall be analyzed within 48 hours at a facility accredited by the Environmental Lead Laboratory Accreditation Program of the American Industrial Hygiene Association (AIHA). When corrective action is recommended by the CIH, additional samples may be required by the Engineer to be taken, at the Contractor's expense.

The Contractor shall furnish the Engineer a written soil sampling plan prior to beginning work that identifies the locations for twenty soil samples. Ten soil samples shall be collected prior to the start of work, and 10 soil samples shall be collected within 36 hours following completion of removal and cleaning operations of existing steel. Soil samples collected within the 36-hour period shall be within a 0.5 meter radius of the initial soil samples. Where the removal and cleaning operations extend over large areas of soil or many separate areas of soil at each bridge site, the samples shall be collected at various times during the contract when determined by the Engineer. A soil sample shall consist of 5 plugs, each 19 mm in diameter and 13 mm deep, taken at each corner and center of a one square meter area. Soil samples shall be analyzed for total lead and zinc in conformance with Method 3050 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846 published by the United States Environmental Protection Agency.

There shall be no increase in the concentrations of heavy metal in the soil in the area affected when the existing paint system is disturbed. When soil sampling, after completion of work that disturbs the existing paint system, shows an increase in the concentrations of heavy metal, the area affected shall be cleaned and resampled at the Contractor's expense until soil sampling and testing shows concentrations of heavy metal less than or equal to the concentrations collected prior to the start of work.

In areas above the Carquinez Straits, there shall be no visible discharge of dust, debris, or construction materials into the receiving waters. In areas where there is no exposed soil, there shall be no visible increase in the concentrations of heavy metal on the area affected when the existing paint system is disturbed. Any visible increase in the concentrations of heavy metal, after completion of work that disturbs the existing paint system, shall be removed at the Contractor's expense.

Air and soil sample laboratory analysis results, including results of additional samples taken after corrective action as recommended by the CIH, shall be submitted to the Engineer. The results shall be submitted both verbally within 48 hours after sampling and in writing with a copy to the Contractor, within 5 days after sampling. Sample analysis reports shall be prepared by the CIH as follows:

A. For both air and soil sample laboratory analysis results, the date and location of sample collection, sample number, contract number, bridge number, full name of the structure as shown on the contract plans, and District-County-Route-Kilometer Post will be required.
B. For air sample laboratory analysis results, the following will be required:

1. List of emission control measures in place when air samples were taken.
2. Air sample results shall be compared to the appropriate PELs.
3. Chain of custody forms.
4. Corrective action recommended by the CIH to ensure airborne metals exposure, outside either the containment system or work areas, is within specified limits.

C. For soil sample laboratory analysis results, the concentrations of heavy metal expressed as parts per million will be required.

Work area monitoring will be paid for on the basis of a lump sum price.

The contract lump sum price paid for work area monitoring for the locations shown in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in collecting and analyzing samples of ambient air and soil for heavy metals, complete in place, including reporting the test results, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Containment System

At the option of the Contractor, the containment system shall consist of either (1) a ventilated containment structure, (2) vacuum shrouded surface preparation equipment and drapes, tarps, or other suitable containment materials, or (3) an equivalent containment system. The containment system shall provide full enclosure of the work area including all sides, top and bottom surfaces to contain all water, resulting debris, and visible dust produced when the existing paint system is disturbed.

The containment system shall provide the clearances specified under "Maintaining Traffic" of these special provisions, except that when no clearances are specified a vertical clearance of 4.6 m and a horizontal clearance of 9.8 m shall be provided for the passage of public traffic.

Falsework or supports for the ventilated containment structure shall not extend below the vertical clearance level over the waterway nor to the ground line at locations within the roadbed.

The containment system shall provide the minimum clearances as required under "Relations with Railroad Company" of these special provisions for the passage of railroad traffic.

The ventilated containment structure shall conform to the provisions for falsework in Section 51-1.06, "Falsework," of the Standard Specifications.

The minimum total design load of the ventilated containment structure shall consist of the sum of the dead and live vertical loads. Dead load shall consist of the actual load of the ventilated containment structure. Live loads shall consist of a uniform load of not less than 2160 Pa, which includes 960 Pa of sand load, applied over the area supported, and in addition, a moving 4.5 kN concentrated load shall be applied to produce maximum stress in the main supporting elements. Assumed horizontal loads need not be included in the design of the ventilated containment structure.

The ventilated containment structure shall be supported with either rigid or flexible supports. The rigid or flexible containment materials on the containment structure shall retain airborne particles but may allow airflow through the containment materials. Flexible materials shall be supported and fastened to prevent escape of abrasive and blast materials due to whipping from traffic or wind and to maintain clearances.

All mating joints between the ventilated containment structure and the bridge shall be sealed. Sealing may be by overlapping of seams when using flexible materials or by using tape, caulking, or other sealing measures.

Multiple flap overlapping door tarps shall be used at entry ways to the ventilated containment structure to prevent dust or debris from escaping.

Baffles, louvers, flapper seals, or ducts shall be used at make-up air entry points to the ventilated containment structure to prevent escape of abrasives and resulting surface preparation debris.

The ventilated containment structure shall be properly maintained while work is in progress and shall not be changed from the approved working drawings without prior approval of the Engineer.

The ventilation system in the ventilated containment structure shall be of the forced input airflow type with fans or blowers.

Negative air pressure shall be employed within the ventilated containment structure and will be verified by visual methods by observing the concave nature of the containment materials while taking into account wind effects or by using

smoke or other visible means to observe airflow. The input airflow shall be properly balanced with the exhaust capacity throughout the range of operations.

The exhaust airflow of the ventilation system in the ventilated containment structure shall be forced into dust collectors (wet or dry) or bag houses.

Full compensation for the containment system shall be considered as included in the contract price paid for the item of work causing the existing paint system to be disturbed, and no additional compensation will be allowed therefor.

Protective Work Clothing and Hygiene Facilities

Wherever there is exposure or possible exposure to heavy metals or silica dust at the bridge site, the Contractor shall, for State personnel: (1) furnish, clean, and replace protective work clothing and (2) provide access to hygiene facilities. The furnishing, cleaning, and replacement of protective work clothing and providing access to hygiene facilities shall conform to the provisions of subsections (g), "Protective work clothing and equipment," and (i), "Hygiene facilities and practices," of Section 1532.1, "Lead," of the Construction Safety Orders, and will be required for no more than 3 people.

The protective work clothing and access to hygiene facilities shall be provided during exposure or possible exposure to heavy metals or silica dust at the bridge site and during the application of the undercoats of paint.

Protective work clothing and hygiene facilities shall be inspected and approved by the Engineer before being used by State personnel.

The protective work clothing shall remain the property of the Contractor at the completion of the contract.

Full compensation for protective work clothing and access to hygiene facilities for State personnel shall be considered as included in the contract price paid for the item of work causing the existing paint system to be disturbed, and no additional compensation will be allowed therefor.

ABANDON CULVERT

Existing culverts, where shown on the plans to be abandoned, shall be abandoned in place or, at the option of the Contractor, the culverts shall be removed and disposed of. Resulting openings into existing structures that are to remain in place shall be plugged with commercial quality concrete containing not less than 300 kg of cement per cubic meter.

Abandoning culverts in place shall conform to the following:

A. Culverts that intersect the side slopes shall be removed to a depth of not less than one meter measured normal to the plane of the finished side slope, before being abandoned.
B. Culverts 300 mm in diameter and larger, shall, at the Contractor's option, be backfilled with either sand, controlled low strength material or slurry cement backfill conforming to the provisions in Section 19-3.062, "Slurry Cement Backfill," of the Standard Specifications by any method acceptable to the Engineer that completely fills the pipe. Sand backfill material shall be clean, free draining, and free from roots and other deleterious substances.
C. The ends of culverts shall be securely closed by a 150 mm thick tight fitting plug or wall of commercial quality concrete.

Culverts shall not be abandoned until their use is no longer required. The Contractor shall notify the Engineer in advance of any intended culvert abandonment.

If the Contractor elects to remove and dispose of a culvert or pipeline which is specified to be abandoned, as provided herein, backfill specified for the pipe will be measured and paid for in the same manner as if the culvert or pipeline has been abandoned in place.

Backfill will be measured by the cubic meter determined from the dimensions of the culverts and pipelines to be abandoned.

The contract price paid per cubic meter for sand backfill shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in backfilling culverts and pipelines with sand, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Controlled low strength material and slurry cement backfill, if used at the Contractor's option, will be measured and paid for by the cubic meter as sand backfill.

Full compensation for concrete plugs, pipe removal, structure excavation, and backfill shall be considered as included in the contract unit price paid for abandon culvert and no additional compensation will be allowed therefor.

ABANDON INLET

Existing drainage inlets, where shown on the plans to be abandoned, shall be abandoned.

The top portion of the inlets shall be removed to a depth of one m below finished grade.

Frames and grates shall be salvaged. Full compensation for salvaging existing frames and grates shall be considered as included in the contract unit price paid for abandon inlet and no separate payment will be made therefor.

10–1.28 HAZARDOUS MATERIAL, GENERAL

Attention is directed to "Earthwork" of these special provisions regarding the removal and disposal of material described in this section.

Contaminants have been discovered through testing within the project limits. Testing consisted of collecting and analyzing in situ samples within the project limits. Summary tables of the test results are included in the "Materials Information." The complete reports titled: Site Investigation Report, Soil and Groundwater Investigation Carquinez Bridge Demolition Project, dated April 2004; Site Investigation Report, Crockett Interchange and South Approach, dated July 2000; and Site Investigation Report, Carquinez Bridge Seismic Upgrade, dated July 1997, are available for inspection at the office of the Duty Senior, 111 Grand Avenue, Oakland, CA 94612, email; duty_senior_district04@dot.ca.gov, telephone number; (510) 286-5209. These test results have been used for disposal characterization of material within the excavation limits and shall not be construed as identifying all locations within the project limits that contain contaminants.

Wherever the following terms are used in the contract documents, the meaning and intent shall be interpreted as provided below:

A. RCRA (Resource Conservation Recovery Act) Hazardous Material – Material that contains contaminants at concentrations equal to or greater than the threshold limit concentrations listed in Section 66261.24 (a) (1) of Title 22 of the California Code of Regulations.
B. Non-RCRA Hazardous Material – Material that contains contaminants at concentrations equal to or greater than the threshold limit concentrations listed in Section 66261.24 of Title 22 of the California Code of Regulations, excluding Section 66261.24 (a) (1).

Characterization and disposal of additional material resulting from excavations performed outside of the pay limits shown on the plans, specified in the Standard Specifications, or specified or directed by the Engineer, for the Contractor's convenience, shall be at the Contractor's expense. This resultant material shall be presumed to be either RCRA material or Non-RCRA material if the test results for the location indicate that the material being excavated is RCRA material or Non-RCRA material. The Contractor shall dispose of the resultant material in conformance with the provisions in "Earthwork" of these special provisions. When the material must be removed from highway right of way, the Contractor shall furnish replacement material suitable for the purpose intended in conformance with the provisions in Section 19, "Earthwork," of the Standard Specifications.

APPLICABLE RULES AND REGULATIONS

Excavation, transport and disposal of RCRA material and Non-RCRA material shall be in conformance with the rules and regulations of the following agencies:

United States Department of Transportation (USDOT)
United States Environmental Protection Agency (USEPA)
California Environmental Protection Agency (CAL-EPA)
1. Department of Toxic Substance Control (DTSC)
2. Integrated Waste Management Board
3. Regional Water Quality Control Board, Region 2 (RWQCB)
4. State Air Resources Board

Bay Area Air Quality Management District (BAAQMD)
California Division of Occupational Safety and Health Administration (CAL-OSHA)

PERMITS AND LICENSES

The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work, including registration for transporting vehicles carrying RCRA material and Non-RCRA material, in conformance with the provisions in Section 7-1.04, "Permits and Licenses," of the Standard Specifications. Prior to transporting RCRA material and Non-RCRA material, the Contractor shall submit a copy of the transporter's valid hazardous waste transporter registration to the Engineer.

The Engineer will obtain the Environmental Protection Agency Generator Identification Number and Board of Equalization Identification Number and sign all manifests as the Generator. The Contractor shall notify the Engineer at least 5 working days in advance of beginning hazardous waste transport and at least 24 hours in advance of subsequent loads.

SITE HEALTH AND SAFETY PLAN

The Contractor shall prepare a detailed Site Health and Safety Plan for all site personnel, including State personnel, that identifies potential health and safety hazards associated with each operation and specifies work practices that will be used to protect workers from those hazards in conformance with the DTSC and CAL-OSHA regulations. At a minimum, the Site

Health and Safety Plan shall identify key site safety personnel, describe risks associated with the work, describe training requirements, describe appropriate personal protective equipment, describe any site-specific medical surveillance requirements, describe any periodic air monitoring requirements, define appropriate site work zones, and describe any decontamination requirements. The Site Health and Safety Plan shall be submitted at least 15 working days prior to beginning any excavation work for review and acceptance by the Engineer. Prior to submittal, the Contractor shall have the Site Health and Safety Plan approved by an industrial hygienist certified by the American Board of Industrial Hygiene. Subcontractors shall use the Site Health and Safety Plan prepared by the Contractor or prepare and submit a separate Site Health and Safety Plan in conformance with the provisions in this section.

SAFETY TRAINING

Prior to performing any work, all personnel, including State personnel, shall complete a safety training program that communicates the potential health and safety hazards associated with work on the site and instructs the personnel in procedures for doing the work safely. The level of training provided shall be consistent with the personnel's job function and conform to CAL-OSHA regulations. The training, including subsequent training required until completion of the project, shall be provided by the Contractor. The Contractor shall provide a certification of completion of the Safety Training Program to all personnel. Personal protective equipment required by State personnel to inspect the work shall be provided by the Contractor. The number of State personnel requiring the above mentioned safety training program and personal protective equipment will be 25.

PAYMENT

Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work affected by this section and no additional compensation will be allowed therefor.

HAZARDOUS MATERIAL EXCAVATION

Hazardous material excavation shall consist of excavating RCRA material and Non-RCRA material identified in the following table as being within excavation limits shown on the plans, specified in the Standard Specifications, or specified or directed by the Engineer and stockpiling and disposing of the material as specified in this section.

Locations	Classification	Vertical Limits (m)
Bent AW9	Non-RCRA	OG to 0.3 below OG
Bent AW10	Non-RCRA	OG to depth of bridge removal
Bent AW11	Non-RCRA	OG to depth of bridge removal
Bent AW12	Non-RCRA	OG to depth of bridge removal
Bent AW13	RCRA	OG to depth of bridge removal
Pier 6A	RCRA	OG to depth of bridge removal
Pier 6B	RCRA	OG to depth of bridge removal
BP (Station 4+00 to 4+80)	Non-RCRA	OG to 0.5 below OG

Excavated RCRA material and Non-RCRA material shall be managed as follows:

A. RCRA material and Non-RCRA material – Haul and dispose of the material at a permitted hazardous waste management facility in conformance with the provisions of Section 2521 of Title 23 of the California Code of Regulations, Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications, and these special provisions.

RCRA material and Non-RCRA material shall be transferred directly from the excavation to a registered transport vehicle, a storage container approved for transport of hazardous waste by the United States Department of Transportation, or a stockpile location approved by the Engineer. RCRA material and Non-RCRA material shall not be stockpiled on C&H property. Stockpile locations for RCRA material and Non-RCRA material shall be maintained as follows:

A. The material shall not contain free liquids that separate readily from the material. The presence or absence of free liquids shall be demonstrated by United States Environmental Protection Agency Method 9095 as modified by Section 66264.314 of Title 22 of the California Code of Regulations.
B. The material shall be stored on undamaged 1.5-mm high-density polyethylene or an equivalent impermeable barrier unless the stockpiling location is on a paved surface. If the location is on a paved surface the thickness of the barrier can be reduced to 0.5-mm high-density polyethylene or its equivalent. The dimensions of the barrier shall exceed the dimensions of the stockpile at all times. Any seams in the barrier shall be sealed to prevent leakage.
C. At the end of each day or prior to a storm event the material shall be covered with undamaged 0.3-mm polyethylene or an equivalent impermeable barrier to prevent windblown dispersion and precipitation run-off and run-on. When more than one sheet is required to cover the material, the sheets shall be overlapped a minimum of 0.45-m in a manner that prevents water from flowing onto the material. The cover shall be secured in a manner that keeps it in place at all times. Driven anchors shall not be used except at the perimeter of the stockpile. The cover shall be inspected and maintained in conformance with the provisions in "Water Pollution Control" of these special provisions.

These stockpiling requirements apply to temporary storage outside of an excavation or a transport container including, but not limited to, staging of excavated material next to the excavation prior to pick up by loading equipment, accumulating material for full transport loads, and awaiting test results required by a disposal facility. The removal of RCRA material and Non-RCRA material stockpiles shall begin within 90 days of accumulating 100 kg of RCRA material and Non-RCRA material. After final removal has occurred the Contractor shall be responsible for any cleanup deemed necessary by the Engineer.

RCRA material and Non-RCRA material on exteriors of transport vehicles shall be removed and placed either into the current transport vehicle or the excavation prior to the vehicle leaving the loading area. No RCRA material and Non-RCRA material shall be deposited on public roads. The Contractor shall clean up significant spillage during the transport of the RCRA material and Non-RCRA material to the satisfaction of the appropriate administering agency.

Attention is directed to "Hazardous Material, General" of these special provisions.

Sampling and Analysis

The Contractor shall test the material to be excavated for any additional acceptance requirements of the disposal facility. Sampling and analysis shall be performed using the sampling and analysis procedure approved by the Engineer and the disposal facility.

The Contractor may perform additional tests on the material to be excavated for confirmation of the classification as RCRA material or Non-RCRA material. Sampling and analysis shall be based on guidelines in USEPA, SW 846, "Test Methods for Evaluating Solid Waste, Volume II: Field Manual Physical/Chemical Methods." Changes in classification of materials will be handled in accordance with Section 4-1.03, "Changes," of the Standard Specifications.

The Contractor shall submit, for approval by the Engineer, a Sampling and Analysis Plan that describes the scope of the investigation, along with the name, address, and certification number of the testing laboratory, 15 working days prior to beginning any sampling or analysis for additional disposal facility requirements, reclassification of material, or characterization of material outside of the excavation pay limits shown on the plans. The Sampling and Analysis Plan shall be prepared under the guidance of a registered professional experienced in site characterization. The Engineer will make the final decision on reclassification or characterization of material after review of the test data. Six working days shall be allowed for review of test data.

Operations shall be conducted in a manner that prevents increases in the quantities of hazardous material resulting from mixing with material containing lower contaminant concentrations. No additional compensation will be made for material requiring reclassification due to failure to segregate the material after excavation.

MEASUREMENT AND PAYMENT

RCRA material and Non-RCRA material will be measured in conformance with the Standard Specifications and these special provisions for the type of excavation involved.

The contract unit price paid per cubic meter for roadway excavation (Non-RCRA) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in excavating, stockpiling, loading, sampling and analyzing, hauling, and disposing of Non-RCRA material from the "BP" Line, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in excavating, stockpiling, loading, sampling and analyzing, hauling, and disposing of RCRA and Non-RCRA material excavated for bridge removal shall be considered as included in the contract lump sum price paid for bridge removal and no additional payment will be allowed therefore.

Department of Toxic Substances C

California Hazardous Waste Classification

Classification Requirements

Two sets of waste classification standards are used in California: Federal and State.

Federal The Federal statutory responsibilities passed by Congress and implemented by Environmental Protection Agency (US EPA) are outlined in the Statute: Chapte Code (Resource Conversation and Recovery Act or RCRA).

The regulations adopted by US EPA from the authority given in the Statute are Code of Federal Regulations (40 CFR).

State Similarly, California requirements and statutory responsibilities are outlined in th implemented by DTSC: California Health and Safety Code (HSC), Division 20, (Hazardous Waste Control Law.

Regulations adopted from the Statute are found in the California Code of Regul Title 22 CCR.

Unlike the Federal statutes, California's statutes have specific requirements normally found in regulations, while all the federal specific requirements are found in 40 CFR. To locate all the requirements for hazardous waste management in California, you must consult with both the HSC and Title 22 CCR, whereas, to determine the federal requirements, you only need to consult 40 CFR.

California is to administe hazardous program ins Federal pro

The Department of Toxic Substances Control (DTSC) is a department of the California Environmental Protection Age

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Lead: Demolition/Removal of Steel Structures with Coatings

Does your agency test for and identify lead and/or other metals in coatings prior to demolishing steel structures?
Yes, our agency test and informs the Contractor of any hazardous materials. The hazardous materials are noted in the Special Provisions for each contract. Please see the "Existing Paint System" section of the attached sample Special Provisions' Debris Containment requirements.
Are contractors that are hired to demolish steel structures required to comply with OSHA 1926.62 (Lead in Construction)?
Yes, but in California we have Cal/OSHA. Contractors must comply with Section 1532.1 in Title 8 of the California Code of Regulations. See the following link: http://www.dir.ca.gov/title8/1532%5F1.html
How are Lead Based Paint (LBP) coated steel members handled?
Demolished steel members become the property of the Contractor
What are the state regulatory requirements for cutting and removing steel?
Work must comply with the above noted Section 1532.1. Plus, Air Quality Control Board requirements must be met.
Does DOT remove LBP from areas to be cut prior to demolition work?
Varies by project but all work must comply with above noted requirements.
If paint is removed prior to cutting, are there license/certification requirements for the workers handling or removing the LBP or the companies performing LBP removal on highway structures?
Company must be SSPC QP 2 certified if the area of paint removal is greater than 50 square meters (540 sq feet). See attached SSPC QP Requirements
Who is responsible for completing the paint removal work; contractor, subcontractor, or third party?
Either the Contractor or subcontractor, but they must be SSPC QP2 certified if the above noted removal limits are exceeded.
Does your agency consider recycled steel members with LBP coatings to present a significant long-term environmental liability to the agency or its contractors?
Answer Pending
Are members salvaged with the paint on or is it removed?
Usually salvaged with the paint on
Can steel with LBP be smelted or recycled?
Yes.
If paint is removed from the salvaged members, how is it disposed?
Paint is disposed of in accordance with all Federal, State and local hazardous waste laws. See the "Debris Handling" section of the attached sample Special Provision
How is steel disposed of if not smelted or recycled?
Answer Pending
Are contractors allowed to keep steel with the paint on?
Yes.
If metal is sold for scrap, does the salvage company take official responsibility?
Answer pending
If sold for scrap, does salvage company have to be specially license?
Answer pending

Lead: Paint Removal Projects (Surface Preperation for Cleaning & Painting of Highway Structures)

Does your state/agency require SPCC QP and/or other certification for contractors performing lead based paint removal?
Yes, we require SSPC QP 2 Certification when the above noted paint removal limits are exceeded. See the attached SSPC QP Requirements document
Are there criteria for identifying a coating as LBP?
Coating with a lead concentration greater than 600 ppm.
Is the Painting Contractor responsible for waste characterization (hazardous vs non hazardous) for paint removal debris?
See attached "Debris Handling" section of the attached sample Debris Containment Special Provision
If so, are there established procedures for making the waste determination?
See attached "Debris Handling" section of the attached sample Debris Containment Special Provision
Does your state have a Universal Waste Rule for Paint & Paint-Related Wastes?
See attached "Debris Handling" document
If so, is this rule utilized?
See attached "Debris Handling" document
Who prepares and signs off on waste disposal manifests, waste disposal profiles, and related waste documents?
See attached "Debris Handling" document
How are waste disposal facilities for paint and paint removal waste selected?
See attached "Debris Handling" document
Is the painting contractor required to file a detailed Waste Management Plan with the DOT prior to commencing with paint removal activities?
See attached "Debris Handling" document

Asbestos:

How are Asbestos Containing Materials (ACM) handled in bridge projects?
See attached sample Asbestos Survey (Bridge Removal) and Asbestos-Containing Material Special Provision document
Are ACM tested for prior to work?
See attached sample Asbestos Survey (Bridge Removal) and Asbestos-Containing Material Special Provision document
If so, how are they tested for?
See attached sample Asbestos Survey (Bridge Removal) and Asbestos-Containing Material Special Provision document
If found, is abatement/removal done prior to work, or during?
See attached sample Asbestos Survey (Bridge Removal) and Asbestos-Containing Material Special Provision document
What procedures are in place for dealing with asbestos once found?
See attached sample Asbestos Survey (Bridge Removal) and Asbestos-Containing Material Special Provision document
Who performs abatementremoval; owner, contractor, sub-contractor, or third party?
See attached sample Asbestos Survey (Bridge Removal) and Asbestos-Containing Material Special Provision document
How is ACM disposed of?
See attached sample Asbestos Survey (Bridge Removal) and Asbestos-Containing Material Special Provision document
Who is responsible for disposal?
See attached sample Asbestos Survey (Bridge Removal) and Asbestos-Containing Material Special Provision document
Who is financially responsible for abatement/removal?
See attached sample Asbestos Survey (Bridge Removal) and Asbestos-Containing Material Special Provision document
How is asbestos notification handled under the Asbestos NESHAP Standard for demolition and renovation?
See attached sample Asbestos Survey (Bridge Removal) and Asbestos-Containing Material Special Provision document
Are there additional state refulations on asbestos removal, handling, or disposal?
See attached sample Asbestos Survey (Bridge Removal) and Asbestos-Containing Material Special Provision document

Other:

Does insurance provide coverage if contractor fails in removal or handling of ACM or LBP?
Answer pending
What procedures/requirements are in place if ACM or LBP is shipped across state lines?
Answer pending
Is there anyone else within the DOT that may provide more information?
I'm waiting to hear from others here at Caltrans regarding the unanswered questions. I will forwrad you additional information as soon as I receive the answers.
Does your state use ambient air monitors to determine airborne lead or asbestos concentrations?
Yes for airborne lead.
If yes, what type?
See the Work Monitoring Section of the attached sample Debris Containment Special Provision

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