

Bidding Requirements, Contract Forms and Conditions of the Contract
ADDENDUM
Section 00900

ADDENDUM No. 2

Date November 7, 2013

City of Austin

Project Name North Acres Wastewater – Tunnel

C.I.P. No. 4857.026

This Addendum forms a part of Contract and clarifies, corrects or modifies original Bid Documents, dated October 7, 2013. Acknowledge receipt of this addendum in space provided on bid form. Failure to do so may subject bidder to disqualification.

A. Project Manual Revisions:

1. Remove and replace the table of contents with the attached document.
2. Remove and replace specification section 00810 with the attached document.
3. Add the following text to 01020 Allowances, section 3.3 Schedule of Allowances:

"B. Allowance #2-Asbestos and Lead Abatement at Jonwood Lift Station: The Owner is currently investigating whether asbestos or lead materials are incorporated into the existing Jonwood Lift Station installation. If it is determined that asbestos and/or lead materials are present, the OWNER will issue a Change Directive to the Contractor to retain the services of a qualified firm to remove and dispose of the items containing asbestos and/or lead. The qualified firm shall obtain all permits necessary for removal and disposal of asbestos and/or lead materials, and shall remove and dispose these materials according to the requirements of applicable Federal, State and Local laws. Contractor shall coordinate these services so as not to delay demolition of the Jonwood Lift Station according to the Contract Documents.

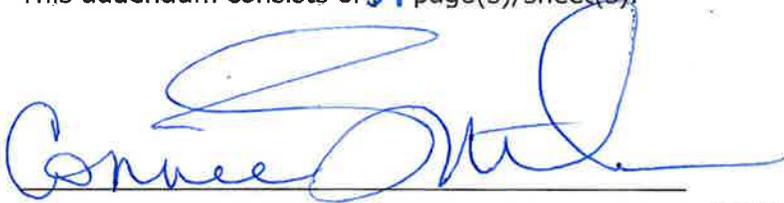
C. Allowance #3-Asbestos and Lead Abatement at Windsor Hill Lift Station: The Owner is currently investigating whether asbestos or lead materials are incorporated into the existing Windsor Hill Lift Station installation. If it is determined that asbestos and/or lead materials are present, the OWNER will issue a Change Directive to the Contractor to retain the services of a qualified firm to remove and dispose of the items containing asbestos and/or lead. The qualified firm shall obtain all permits necessary for removal and disposal of asbestos and/or lead materials, and shall remove and dispose these materials according to the requirements of applicable Federal, State and Local laws. Contractor shall coordinate these services so as not to delay demolition of the Windsor Hill Lift Station according to the Contract Documents."

4. Add specification sections 01901, 01902, 01904, 01906, 01910, 01911, 01915, 01917 attached.

B. Drawing Revisions:

Delete drawings D-02, D-03, D-04 and D-05 dated 9/25/2013 and replace with drawings D-02, D-03, D-04 and D-05 dated 11/6/2013.

This addendum consists of 59 page(s)/sheet(s).



Approved by OWNER



Approved by ENGINEER/ARCHITECT



END

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	01900	03/12/12	Prohibition of Asbestos Containing Materials
*	01900a	06/05/06	Statement of Non-Inclusion of Asbestos Containing Material (E/A Prior to Design)
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VOL. 2 10/09/00 **MBE/WBE Procurement Program Package**

VOL. 3 04/12/12 **ROCIP Project Safety Manual**

END



SCOPE OF WORK

FOR

ASBESTOS ABATEMENT

AND LEAD REMEDIATION

ACTIVITIES

at

WOOD CLIFF STATION 2

1615 Brushy Creek Cove

BY

CITY OF AUSTIN

QUALITY AND STANDARDS MANAGEMENT DIVISION

DEPARTMENT OF PUBLIC WORKS

505 BARTON SPRINGS ROAD

AUSTIN, TEXAS 78704

(512) 974-7154

OCTOBER 9, 2013

DIVISION 1 - GENERAL REQUIREMENTS

- 01901 Scope of Work - Asbestos Abatement
- 01902 Project Coordination - Asbestos Abatement
- 01904 Codes and Regulations - Asbestos Abatement
- 01906 Air Monitoring Testing Laboratory Services
- 01910 Worker Protection - Asbestos Abatement
- 01911 Respiratory Protection
- 01915 Work Area Clearance (PCM)
- 01917 Disposal of Asbestos Containing Waste Materials

10.9.13

C. Wade Mullin

Licensed Asbestos Consultant

License Number 10-5093

Expiration Date 2/7/2015

**SCOPE OF WORK
FOR
DEPARTMENT OF PUBLIC WORKS**

PROJECT/WORK IDENTIFICATION

General: Project name is Asbestos Abatement and Lead Remediation –1615 Brushy Creek Cove, Austin, Texas.

PART 1 - GENERAL: THIS PROJECT IS TO BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF TAC 25, SECTION 15, ARTICLE 4477-3A, 29 CFR 1926.62 AND 29 CFR 1926.1101. ALL LEAD REMEDIATION ON THIS PROJECT IS TO BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF 25 TAC, SECTION 295, ARTICLE 9209, 29 CFR 1910.1025, 29CFR1926.62 AND 40CFR part E and subpart L.

The location and approximate quantities of asbestos materials provided in these specifications are estimates only and do not include any hidden materials not identified. The Contractor is responsible to field verify for actual quantities which these plans and specifications represent. No additional compensation will be made to the Contractor(s) for differences between the estimated quantities and the actual quantities unless prior written approval is obtained from the Owner or his representative.

1.01 Summary of Work:

Briefly and without force and effect upon the contract documents, the work of the contract can be summarized as follows:

The purpose of this project is to remove and dispose of asbestos containing materials (ACM) associated with approximately 19 square feet of pipe and valve gaskets in a valve vault. The contractor is required to remove all ACM using negative pressure enclosures and wet methods.

Once the contractor has established negative pressure enclosure the pipe /valve gaskets can be removed by manually unbolting sections of pipe and soaking the gaskets with amended water or encapsulant. The contractor will scrape all gasketing material from the metal pipe surface with wire brushes using wet methods and HEPA vacuums. All ACM will be kept adequately wet and promptly bagged for waste disposal.

The Contractor shall use properly secured spiral-reinforced duct for the HEPA-exhaust. The duct shall be attached to the exhaust ports of the HEPA Filtration units using clamps or fasteners to assure that the duct work stays secured to the exhaust ports.

The Contractor will be required to repair any damage to the facility or equipment of the Owner as the result of the abatement project. Any replacement items (paint, wall coverings, panels, etc.) will be of equal quality and color of the damaged items. This work shall be accomplished at the completion of the abatement project and prior to the Owner re-occupying the space. The project will not be considered complete until the repair work has been done and found acceptable by the Owner.

All asbestos containing materials shall be wetted with amended water or a removal encapsulant prior to and during the removal. The contractor can start the removal

process after the Owner's Representative is satisfied that the ACM has been adequately wetted. The Owner's Representative has been given the authority to present the contractor with either a written or verbal Stop Work Order if they notice that any ACM is being removed without it being adequately wetted or if they become aware of any deviation from the project specifications or Department of State Health Services Regulations.

All interior removal work shall be conducted using full containments as specified in the appropriate sections of the Master Specification. Final clearance for asbestos shall be obtained by PCM method as outlined in the Master Specification.

All equipment used on this project (i.e. HEPA-vacuums, negative air machines) shall be free of any visible debris and operational. The Owner's Representative along with the contractor's designated supervisor shall inspect all equipment prior to it being brought into the work area. If any debris found on the equipment is suspected to be ACM, the equipment shall be wet wiped and decontaminated. The decontamination of the equipment shall not take place on the project site. **All painted metal materials scheduled for removal shall be recycled.**

In addition to asbestos removal, the contractor will remove and recycle all painted metals components prior to demolition. The medium green paint on all interior metal pipes, valves, bolts in the Valve Vault and exterior ground level Wet Well components including manhole covers, frames and other equipment contains Lead above the detection limit and is covered under current OSHA regulations for Lead in Construction. **The contractor is required to remove all Lead containing paint coated metal equipment and stage for recycling.**

All painted metal items, including any structural steel, shall be taken to a reclamation/salvaging facility approved to accept this type of material for recycling purposes. The contractor shall provide the name and location of the proposed recycling facility planned to receive the painted metals for recycling. The contractor shall also provide adequate documentation (Chain of Custody) detailing the delivery of the materials to the reclamation facility and the acceptance of the material by the reclamation facility. The transporter and reclamation/salvaging facility shall have all applicable licenses, insurance, and permits necessary to perform the work required under this contract.

All equipment used on this project shall be free of any visible debris and operational. The Owner's Representative along with the Remediation Contractor's designated supervisor shall inspect all equipment prior to it being brought into the work area. If any debris is found on the equipment it will be suspected to be Lead (Pb) contaminated. All contaminated equipment shall be HEPA vacuumed, wet wiped and decontaminated. **The decontamination of the equipment shall take place on the project site per Section 01935 - Project Decontamination. Decontaminate all tools and equipment that come in contact with Lead(Pb) containing paint. If equipment is unable to be decontaminated, dispose of in accordance with Section 01938 Disposal of Waste Materials - Lead(Pb) Containing Materials.**

The Contractor shall adequately staff this project such that it will be completed in accordance with the Contract Documents. If the project is not completed within this time frame, the Owner will backcharge the Contractor for any charges incurred by the Owner for additional Owner Representative services required to complete this project.

The Contractor shall submit the names and resumes (including pertinent project experience) of at least two (2) properly licensed supervisors to be used to conduct this lead (Pb) contamination remediation project. If the supervisors submitted are approved by the Owner, the Contractor shall ensure that at least one of these project supervisors are on site throughout the project including final tear down operations. The Contractor shall not substitute an approved project supervisor without the prior approval of the Owner.

All Contractor worker and supervisory personnel at the work site shall properly trained, equipped and possess valid and current Texas Department of State Health Services Lead (Pb) Licenses and associated training certificates. During all phases of this project, the Contractor project site supervisor shall remain at the project site during all work activities.

The Contractor shall submit a work plan detailing the work procedures they will employ. This work plan shall be reviewed and approved by the Owner's Representative prior to any removal work.

The Contractor shall provide all workers working in the vicinity of active electrical sources with appropriate protective equipment including insulating gloves, boots, and non-conductive tools (while HEPA-Vacuuming).

The abatement must comply with these Specifications, the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), State of Texas and local regulations. Whenever there is a conflict or overlap of the above references, the most stringent provisions are applicable.

The Contractor will inform the Owner and Owner's Representative of any hidden or unidentified conditions which may result in a change order or additional cost to the bid price of the contract.

This notice will require written approval by the Owner's Representative prior to accomplishing the additional work.

ASBESTOS ABATEMENT

The abatement of all interior ACM shall be performed using full negative pressure containments.

ASBESTOS AND LEAD CONTAINING MATERIALS

The following asbestos containing materials are known to be present at work sites at 1615 Brushy Creek Cove, Austin Texas. If any other materials are found, which are suspected of containing asbestos or lead, notify immediately the Owner's Representative. The amount of ACM and lead containing paint listed below are approximate. The Contractor shall field verify the quantities.

LOCATION	ITEM	APPROXIMATE AMOUNT	TYPE OF ASBESTOS
Various locations	gasket	19 Square feet	60% Chrysotile
Metal	paint	400 square feet	> DL

1.02 INSPECTION:

Prior to commencement of work, inspect all areas in which work will be performed. Prepare a listing of damage to structure, surfaces, equipment or of surrounding properties which could be misconstrued as damage resulting from the work. Photograph or video tape existing conditions as necessary to document conditions. Submit to Owner's Representative prior to starting work.

1.03 PLAN OF ACTION:

Submit a detailed plan of the procedures proposed for use in complying with the requirements of this Specification. Include in the plan the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Expand upon the use of portable HEPA ventilation system, closing out of the area HVAC system, method of removal to prohibit visible emissions in work area, and packaging of removed asbestos debris. The plan must be approved by the Owner's Representative prior to commencement of work.

1.04 POTENTIAL ASBESTOS HAZARD:

The disturbance or dislocation of asbestos containing materials may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health hazard to workmen and building occupants. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the jobsite of the seriousness of the hazard and of proper work procedures which must be followed.

Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified asbestos containing materials, take appropriate continuous measures as necessary to protect the building from the contamination with airborne asbestos. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.

1.05 CONTRACTOR USE OF PREMISES:

General: The Contractor shall limit his use of the premises to the work indicated.

Use of the Site: Confine operations at the site to the areas permitted under the contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project abatement.

Keep existing driveways, parking spaces and entrances serving the premises clear and available to the Owner and his employees at all times.

Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage to areas indicated at the pre-abatement meeting.

Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place or accessible to unauthorized persons.

Use of existing toilets within the building by the Contractor and his personnel, will not be permitted.

Owner Occupancy: The building will not be occupied by the Owner during the asbestos abatement project.

1.06 SUBMITTALS

Before the Start of Work: Submit the following to the Owner and Owner's Representative for review. Do not begin work until these Submittals are returned with Owner's Representative's action

stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

Allow 3 days time for review of submittals.

- A. **Plan of Action:** Submit as a written report.
- B. **Inspection:** Submit written report on inspection carried out as required by this section. Include copies of all photographs, videotapes, etc.
- C. **Alternative Methods:** Submit, in writing, any alternative methods proposed to accomplish the work of this contract.
- D. **Pre-work Biological monitoring** for project workers as delineated in Section 01931 Worker Protection- Lead(Pb) Containing Materials.
- E. **Submit copies of valid and current Texas Department of State Health Services Lead (Pb) Licensing and associated training certificates for all worker and supervisory personnel at the work site. In addition, copies of the appropriate DOT certifications required for the manifesting and transporting of hazardous materials must be submitted.**

SPECIAL SPECIFICATIONS

In addition to the work procedures outlined in the Master Specification which apply to the project described herein, the following Special Specifications apply:

In addition to Section 01912 of the Master Specification, the decontamination units located outside the facility shall be constructed using plywood with a hinged lockable door. Louvers shall be located on the door to allow for make-up air once the door is locked at the end of each work day. The contractor is responsible for testing the effectiveness of the louver system prior to utilization. The decontamination units shall be constructed in a manner that is secure enough to prevent access into the facility once the door is locked.

The contractor shall conduct all abatement work in accordance with the current revisions to the Department of State Health Services Rules, T.A.H.P.R. dated March 2003.

- END OF SECTION -

SECTION 01902

PROJECT COORDINATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 ABATEMENT TIME:

The use of insufficient labor or equipment for abatement purposes or inadequate scheduling of materials or equipment will not be allowed as cause for delay. Extension of time or extra cost will not be allowed for failure to complete the project on time due to insufficient labor or equipment.

1.03 ADMINISTRATIVE AND SUPERVISORY PERSONNEL:

Subcontractor performing the ACM removal shall provide a full-time Asbestos Superintendent on site who is licensed in accordance with Texas Civil Statutes, Article 4477-3a, paragraph 289.144, and all adoptions to Article 4477-3A, and experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Competent Person as required by OSHA in 29 CFR 1926 for the Contractor and is the Contractor's representative responsible for compliance with all applicable federal, state and local regulations, particularly those relating to asbestos containing materials.

Asbestos Workers: All workers actively involved in the removal and replacement of asbestos material will be Licensed Asbestos Workers with the State of Texas.

1.06 DAILY LOG

General: Maintain within the decontamination unit a daily log documenting the dates and time of, but not limited to, the following items:

Personnel, by name, entering and leaving the work area, air monitoring results, and any equipment/supplies decontaminated and brought out through the decontamination unit.

1.07 SPECIAL REPORTS:

General: Except as otherwise indicated, submit special reports directly to the Owner's Representative or the Owner within one day of occurrence requiring special report, with copy to others affected by occurrence.

Reporting Unusual Events: When an event of unusual and significant nature occurs at site (examples: failure of negative pressure system, rupture of temporary enclosures), prepare and submit a special report listing chain of events, persons participating, response by contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise Owner in advance at earliest possible date.

Reporting Accidents: Prepare and submit reports of significant accidents, at site and anywhere else work is in progress. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

1.08 CONTINGENCY PLAN:

Contingency Plan: Prepare a contingency plan for emergencies including fire, accident, power failure, negative air system failure, or any other event that may require modification or abridgment of decontamination or work area isolation procedures. Include in plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency.

Post: In clean room of the personnel decontamination unit telephone numbers and locations of emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.

1.09 NOTIFICATIONS

Notify other entities at the job site of the nature of the asbestos abatement activities, location of asbestos containing materials, requirements relative to asbestos set forth in these specifications and applicable regulations.

Notify Emergency Service Agencies including fire, police, ambulance or other agency that may service the abatement work site in case of an emergency. Notification is to include methods of entering work area, emergency entry and exit locations, and other information needed by agencies providing emergency services.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

- END OF SECTION -

SECTION 01904

CODES AND REGULATIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the contract, and other Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF THE WORK:

This section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.

Requirements include adherence to work practices and procedures set forth in applicable codes, regulations and standards.

Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations and standards.

1.03 CODES AND REGULATIONS:

General Applicability of Codes, Regulations and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.

Contractor Responsibility: The contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State and local regulations. The contractor shall hold the Owner and Owner's Representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.

Federal Requirements: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:

Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final rules, Title 29, Part 1910, section 1001 and part 1926, Section 1101 of the Code of Federal Regulations
Respiratory Protection; Title 29, Part 1910, Section 134 of the Code of Federal Regulations
Construction Industry; Title 29, Part 1926, of the Code of Federal Regulations

Construction Industry
Title 29, Part 1926 of the Code of Federal Regulations

Access to Employee Exposure and Medical Records, Title 29, Part 1910, Section 2 of the Code of Federal Regulations

Hazard Communication; Title 29, Part 1910, Section 1200 of the Code of Federal Regulations

Specifications for Accident Prevention Sign and Tags; Title 29, Part 1910, Section 145 of the Code of Federal Regulations

U.S. Department of Transportation:

Hazardous Substances
Title 49, Part 171 and 172 of the Code of Federal Regulations

U.S. Environmental Protection Agency (EPA) including but not limited to:

Asbestos Abatement Projects Rule 40

40 CFR Part 763

CPTS 62044, FRL 2843-9

Title 34, Part 231, Appendix C, Procedures for Containing and Removing Building Materials Containing Asbestos

Title 40, Part 61, Sub-part A of the Code of Federal Regulations National Emission Standard for Asbestos

Title 40, Part 61, Sub-part M (Revised Sub-part B) of the Code of Federal Regulations

American National Standards Institute (ANSI) Publication:

Z9.2-79 Fundamentals Governing the Design and Operation of Local Exhaust Systems

American Society for Testing and Materials (ASTM) Publication:

E 849-82 Safety and Health Requirements relating to Occupational Exposure to Asbestos

State Requirements: Texas Civil Statutes, Article 4477-3a, and all adoptions, (TAHPR) Asbestos Exposure in Public Buildings, requires licensure of persons engaged in the removal or encapsulation of asbestos, or other asbestos related activities in all buildings of public occupancy or access.

Local Requirements: Abide by all local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials.

1.04 STANDARDS:

General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.

Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all standards pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying area adjacent to the site. The Contractor shall hold the Owner and the Owner's Representative harmless for failure to comply with any applicable standard on the part of himself, his employees, or his sub-contractors.

Standards: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

American National Standards Institute (ANSI)
1430 Broadway
New York, New York 10018
(212) 354-3300

Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2-79

Practices for Respiratory Protection
Publication Z288.2-80

American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103
215/299-5400

Safety and Health Requirements Relating to Occupational Exposure to Asbestos E 849-82

Specification for Encapsulants for Friable Asbestos Containing Building Materials Proposal P-189

"Guide" Specification - 02080 Asbestos Removal AIA Service Corporation
1735 New York Avenue NW
Washington, DC

AWCI Guide Specifications for the abatement of asbestos release from spray-or trowel applied materials in buildings and other structural designs

U.S. Department of Commerce

National Institute of Standards & Technology

National Engineering Lab

Center for Building Technology

1.05 EPA GUIDANCE DOCUMENTS:

EPA Guidance Documents: Which discuss asbestos abatement work or hauling and disposal of asbestos waste materials are listed below for the Contractor's information only. These documents do not describe the work and are not a part of the work of this contract. EPA maintains an information number (800-334-8571), publications can be ordered from (800-424-9065) and (554-1404 in Washington, DC):

Asbestos-Containing Materials in School Buildings - A Guidance Document
Part 1 & 2 (Orange Books)

EPA C00090 (out of print)

Guidance for Controlling Asbestos-Containing Materials in Buildings
EPA 560/5-85-024 (Purple Book)

Friable Asbestos-Containing Materials in Schools: Identification and Notification Rule (40 CFR Part 763)

Evaluation of the EPA Asbestos-In-Schools Identification and Notification Rule
EPA 560/5-84-005

Asbestos in Buildings: National Survey of Asbestos-Containing Friable Materials
EPA 560/5-84-006

Asbestos in Buildings: Guidance for Service and Maintenance Personnel
EPA 560/5-85-018

Asbestos Waste Management Guidance
EPA 530-SW-85-007

Asbestos Fact Book
EPA Office of Public Affairs

Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials

Commercial Laboratories with Polarized Light Microscopy Capabilities for Bulk Asbestos Identification.

A Guide to Respiratory Protection for the Asbestos Abatement Industry
EPA-560-OPTS-86-001

1.06 NOTICES:

U.S. Environmental Protection Agency notification to the USEPA is mandated by the National Emission Standards for Hazardous Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M) for any project which involves the removal of asbestos containing materials. The Texas Department of Health requires written notification no less than ten working days prior to any asbestos abatement activity, renovation or O&M activity affecting ACM, or any demolition in facilities or public buildings.

Written notification as required by USEPA National Emission Standards for Hazardous Air Pollutants (NESHAPS) and the Department of State Health Services shall be submitted by the Contractor to the following address:

Asbestos Notification Section
Department of State Health Services
P.O. Box 143538
Austin, Texas 78714-3538

Changes in the information on the notice will necessitate the refiling of an amended notice by the Contractor.

Notification: The following information will be included in the notification sent to the NESHAP contact:

Name and address of owner or operator.

Description of the facility being demolished or renovated, including the size, age, and prior use of the facility.

Estimate of the approximate amount of friable asbestos material present in the facility in terms of linear feet of pipe, and surface area of other facility components.

Location of the facility being renovated.

Scheduled starting and completion dates of renovation.

Nature of planned renovation and method(s) to be used.

Procedures to be used to comply with the requirements of USEPA National Emission Standards for Hazardous Air Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M).

Name and location of the waste disposal site where the friable asbestos waste material will be deposited.

Supplement information may be required on the Contractor's part to obtain approval. The Contractor will provide whatever information requested by the regulatory agencies.

1.07 NOTICES:

Submit notices required by federal, state and local regulations together with proof of timely transmittal to agency requiring the notice.

Permits: All asbestos waste is to be transported by an entity maintaining a current "Industrial Waste Hauler Permit" specifically for asbestos containing materials, as required for transporting of asbestos containing materials to a disposal site.

Licenses: Maintain current State Asbestos Abatement Contractor License or local jurisdiction for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

- END OF SECTION -

SECTION 01906

AIR MONITORING TESTING LABORATORY SERVICES

PART 1 - GENERAL - The area and final clearance air monitoring will be accomplished under the direction of a Certified Industrial Hygienist retained by the Owner.

1.01 DESCRIPTION OF THE WORK:

This section describes air monitoring carried out by the Owner to verify that the building beyond the work area and the outside environment remain uncontaminated. This section also sets forth airborne fiber levels both inside and outside the work area as action levels, and describes the action required by the Contractor if an action level is met or exceeded.

Not in contract sum: This section describes work being performed by the Owner's Representative. This work is not in the Contract Sum.

Air monitoring required by OSHA is responsibility of the Contractor and is not covered in this section.

1.02 RELATED DOCUMENTS:

Drawings and general provisions of the contract, and other Division-1 Specification sections, apply to work of this section.

Air Monitoring: During work area clearance is described in Section 01915 Work Area Clearance.

1.03 AIR MONITORING:

Work Area Isolation: The purpose of the Owner's Representative air monitoring will be to detect faults in the work area isolation such as:

Contamination of the inside of the building outside the work area with airborne asbestos fibers,

Failure of filtration or rupture in the negative pressure system,

Contamination of the exterior of the building with airborne asbestos fibers.

Should any of the above occur, the contractor shall immediately cease asbestos abatement activities until the fault is corrected. Work shall not recommence until authorized by the Owner's Representative.

Work Area Airborne Fiber Count: The Owner's Representative will monitor airborne fiber counts in the work area. The purpose of this air monitoring will be to detect airborne fiber counts which may significantly challenge the ability of the work area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.

Work Area Clearance: Will be collected to determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to a level defined by final clearance criteria. The Owner's Representative will ensure samples are collected and analyzed in

accordance with this requirement. The Owner's Representative will be conducting air monitoring throughout the course of the project.

1.04 AIRBORNE FIBER COUNTS:

Inside Work Area: Where a containment is used, maintain an average airborne fiber concentration in the work area of less than 0.1 fibers per cubic centimeter. If the fiber count rises above this figure for any sample taken, revise work procedures to lower fiber counts. If the Time Weighted Average (TWA) fiber count for any work shift or 8 hour period exceeds 0.2 fibers per cubic centimeter, stop all work, leave negative air system in operation and notify Owner's Representative. Do not recommence work until authorized in writing by Owner's Representative.

If airborne fiber counts exceed 0.1 fibers per cubic centimeter for any period of time cease all work until fiber counts fall below 0.1 fibers per cubic centimeter and notify Owner's Representative. Do not recommence work until authorized in writing by the Owner's Representative.

Outside Work Area: If any air sample taken outside of the work area exceeds the base line established below, immediately and automatically stop all work. If this air sample was taken inside the building and outside of critical barriers around the work area immediately erect new critical barriers as set forth in Section 01909 Temporary Containments to isolate the affected area from the balance of the building. Erect critical barriers at the next existing structural isolation of the involved space (e.g. wall, ceiling, floor).

Decontaminate the affected area in accordance with Section 01914 Cleaning & Decontamination Procedures.

Respiratory protection as set forth in Section 01911 Respiratory Protection shall be worn in affected area until area is cleared for reoccupancy in accordance with Section 01915 Work Area Clearance.

Leave critical barriers in place until completion of work and insure that the operation of the negative pressure system in the work area results in a flow of air from the balance of the building into the affected area.

If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a temporary decontamination facility consisting of a shower room and changing room as set forth in Section 01912 Decontamination Units. After cleaning and decontamination of the affected area remove the shower room and leave the changing room in place as an air lock.

After certification of visual inspection in the work area remove critical barriers separating the work area from the affected area. Final air samples will be taken within the entire area as set forth in the section on work area clearance.

Effect on Contract Sum: Complete corrective work with no change in the contract sum if high airborne fiber counts were caused by Contractor's activities. The contract sum and schedule will be adjusted for additional work caused by high airborne fiber counts beyond the Contractor's control.

1.05 ANALYTICAL METHODS:

The following methods will be used by the Owner's Representative in analyzing filters used to collect air samples during the abatement process.

Cellulose ester filters will be analyzed using NIOSH 7400 method, Issue 2. This analysis will be carried out at an AIHA accredited laboratory located off the job site or on site by a representative of

the C.I.H. who has successfully completed a NIOSH 582 course or equivalent and is a successful participant in the Asbestos Analysis Registry (AAR).

For clearance samples collected using full containments, and for work areas that will be reoccupied, analysis will be performed using TEM method.

1.06 SAMPLE VOLUMES:

General: The number and volume of air samples taken by the Owner will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical method used.

1.07 SCHEDULE OF AIR SAMPLES:

Before Start of Work: The Owner's Representative will secure the following air samples to establish a base line before start of work.

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA 25 mm	DETECTION LIMIT (FIBERS/CC)	MINIMUM VOLUME	RATE LPM
Outside Abatement Area	1	Cellulose Ester 0.80 micron	0.005	1500	10
Abatement Area	2	Cellulose Ester 0.80 micron	0.005	1500	10

Base Line: Is an action level expressed in fibers per cubic centimeter which is the highest actual result from the background sampling process minus the blank counts.

During Abatement: The Owner has retained the services of an independent consultant to provide inspections and air sampling at the areas being abated throughout the course of the project.

Periodic sampling shall be conducted as follows:

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA 25 mm	DETECTION LIMIT (FIBERS/CC)	MINIMUM VOLUME	RATE LPM
Inside Each Work Area	2/day	Cellulose Ester 0.80 micron	0.01	960	2-10
Outside Work Area	2/day	Cellulose Ester 0.80 micron	0.01	960	2-10
Output Negative Pressure System	2/day	Cellulose Ester 0.80 micron	0.01	960	2-10

Clean Room	2/day	Cellulose Ester 0.80 micron	0.01	960	2-10
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If airborne fiber counts exceed allowed limits additional samples will be taken as necessary to monitor fiber levels.

Clearance Samples: Upon successful completion of a visual inspection of an abatement area, as scheduled by the contractor, the Owner's Representative will obtain samples as described in Section 01915 - Work Area Clearance.

NOTE: Retesting of clearance samples will be at the Contractor's expense.

Inspection: The C.I.H. or his Representative (Owner's Representative), in addition to providing air monitoring services will provide periodic, on-site inspection of all work activities. Twenty-four (24) hour advance notice of work is required. The following project points shall be key, critical inspections:

1. **Inspection of Work Area(s) and Containments Prior to Start of Removal:** Removal operations shall not proceed until the Owner's Representative has completed inspection of the work area preparations and provided written approval to proceed.
2. **Inspection During Removal:** The Owner's Representative will conduct periodic inspections throughout the duration of the project.
3. **Inspection of the Work Area(s) or Containment After Completion of Removal Work, but Prior to Encapsulation of Surfaces:** A visual inspection of the work site and/or containment area and removal surface will be conducted at this point by the Owner's Representative and encapsulation will not proceed until written approval to do so has been received by the Contractor. The Owner shall be contacted by their on-site representative so that they have the opportunity to accompany their on-site representative during the visual inspection.
4. **Work Area(s) or Containment Clearance, After Encapsulation and Prior to Work Area or Containment Disassembly:** Air clearance tests shall be conducted after a visual inspection of the containment area has been accomplished and the work area has been encapsulated. Clearance air samples shall be collected once the encapsulant has completely dried. A level of ≤ 0.01 fibers per cubic centimeter of air sampled on ALL filters, as evaluated by PCM will be required for clearance.

For TEM clearance sampling, clearance air samples shall be collected prior to encapsulation of the substrate and the work area. A level of ≤ 70 st/mm² on all samples collected, as evaluated by TEM will be required for clearance. Once clearance has been achieved, the substrate and work area shall be encapsulated while the negative pressure containment remains operational. After the encapsulant has dried, the containment shall be disassembled.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 ADDITIONAL TESTING:

The Contractor may conduct his own air monitoring and laboratory testing. If the contractor elects to do this, the cost of such air monitoring and laboratory testing shall be included in the contract sum.

3.02 PERSONAL MONITORING:

Perform air monitoring as required to meet OSHA requirements for maintenance of Time Weighted Averaged (TWA) fiber counts for types of respiratory protection provided. Owner Representatives will not be performing air monitoring to meet these OSHA requirements as part of this contract. A copy of the personnel monitoring results shall be submitted to the Owner's Representative at least every three (3) days.

Retests and Reinspections:

Additional sample collection and inspections by the Owner's Representative, if required due to failure of the Contractor to achieve clearances, containment failure, retests, etc. will be backcharged by the Owner to the Contractor at the Owner's cost for time and testing.

Testing Outside of Project Schedule:

If the Contractor fails to achieve completion within the contract time schedule, the costs of inspections and air monitoring services will be backcharged to the Contractor by the Owner at the Owner's cost for time and testing.

- END OF SECTION -

SECTION 01910

WORKER PROTECTION

PART 1 - GENERAL

THE MINIMUM RESPIRATORY PROTECTION DURING REMOVAL WILL BE HALF FACE DUAL CARTRIDGE RESPIRATORS EQUIPPED WITH HEPA CARTRIDGES. THE CONTRACTOR SHALL PROVIDE INFORMATION TO ASSURE THAT THE ABOVE RESPIRATORY PROTECTION IS SUFFICIENT IN ACCORDANCE WITH 29 CFR 1926.1101 NEGATIVE EXPOSURE ASSESSMENT REQUIREMENTS.

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK:

This section describes the equipment and procedures required for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

Respiratory protection is specified in Section 01911.

1.04 WORKER TRAINING:

Train, in accordance with 29 CFR 1926 and 40 CFR part 763, all workers in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. Include but do not limit the topics covered in part 763 to the following:

Methods of recognizing asbestos.

Health effects associated with asbestos.

Relationship between smoking and asbestos in producing lung cancer.

Nature of operations that could result in exposure to asbestos.

Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:

- Engineering controls
- Work practices
- Respirators
- Housekeeping procedures
- Hygiene facilities
- Protective clothing
- Decontamination procedures
- Emergency procedures
- Waste disposal procedures

Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1910.134.

Appropriate work practices for the work.

Requirements of medical surveillance program.

Review of 29 CFR 1926.

Work practices including hands on or on-job training.

Personal decontamination procedures.

Air monitoring, personal and area.

1.05 MEDICAL EXAMINATIONS:

Provide medical examinations for all workers who may encounter an airborne fiber level of 0.1 f/cc or greater for an 8 hour time weighted average. In the absence of specific airborne fiber data, provide medical examination for all workers who will enter the work area for any reason. Examination shall, as a minimum, meet OSHA requirements as set forth in 29 CFR 1926. In addition, provide an evaluation of the individual's ability to work in environments capable of producing heat stress in the worker.

1.06 SUBMITTALS:

Before start of work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative action stamp indicating that the submittal is returned for unrestricted use.

State and local License: Submit evidence that all workers have been trained, certified and accredited as required by state or local code or regulation.

Certificate Worker Acknowledgment: Submit an original signed copy of the Certificate of Worker's Acknowledgment found at the end of this section, for each worker who is to be at the job site or enter the work area.

Report from medical examination: Conducted within last 12 months as part of compliance with OSHA medical surveillance requirements for each worker who is to enter the work area. Submit, at a minimum, for each worker the following:

Name and Social Security Number

Physicians written opinion from examining physician including at a minimum the following:

Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos.

Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.

Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.

Copy of information that was provided to physician in compliance with 29 CFR 1926.

Statement that the worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker.

PART 2 - EQUIPMENT

2.01 PROTECTIVE CLOTHING:

Coveralls: Provide disposable full-body coveralls and disposable head covers and require that they be worn by all workers in the work area. Provide a sufficient number for all required changes for all workers in the work area.

Hard Hats: Provide head protectives (hard hats) as required by OSHA for all workers and provide spares for use by Owner. Label hats with same warning labels as used on disposal bags. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the work area throughout the work. Thoroughly clean, decontaminate and bag hats before removing them from work area at the end of the work.

Goggles: Provide eye protectives (goggles) as required by OSHA for all workers involved in scraping, spraying, or any other activity which may potentially cause eye injury.

Gloves: Provide work gloves to all workers and require that they be worn at all times in the work area. Do not remove gloves from work area, dispose of an asbestos contaminated waste at the end of the work.

2.02 ADDITIONAL PROTECTIVE EQUIPMENT:

Respirators, disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the Owner and other authorized representatives. Provide two (2) respirators and six (6) complete coveralls and, where applicable, six (6) respirator filter changes per day.

PART 3 - EXECUTION

3.01 GENERAL:

Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of fiber count in the work area.

Each time work area is entered, workers shall wear two protective suits.

3.02 DECONTAMINATION PROCEDURES:

Require all workers to adhere to the following personal decontamination procedures whenever they leave the work area:

When exiting area, still wearing respirators, all workers shall HEPA-vacuum the outer suit prior to removing it. Once this is done, the inner suit shall then be HEPA-vacuumed and removed.

Once the workers have HEPA-vacuumed and removed both protective suits, the respirators shall be wet wiped using a damp cloth or wet wipes. After the respirator has been cleaned, the workers shall remove the respirator and wet wipe their face using damp cloths or wet wipes. All other areas exposed during removal shall be wet cleaned using damp cloths or wet wipes. The respirator filters shall be removed from the respirator and stored in sealed bags. The respirators shall be thoroughly cleaned, inside and out, and stored in a sealed bag or locker separate from the filters.

Require that workers NOT eat, drink, smoke, chew gum or tobacco in the work area. To eat, chew, drink or smoke, workers shall follow the procedure described above, then dress in street clothes before entering the non-work areas of the building.

3.03 CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT:

Following this section is a Certificate of Worker Training. After each worker has been included in the contractor's Respiratory Protection Program, completed the training program, and medical examination, secure a fully executed copy of this form.

3.04 MEASUREMENT AND PAYMENT:

No separate measurement or payment for work performed under this Section. The work and materials presented herein will generally not be paid for directly, but shall be included in the unit price bid for the item of construction in which this item is used.

END OF SECTION -

SECTION 01911

RESPIRATORY PROTECTION

PART 1 - GENERAL - THE MINIMUM RESPIRATORY PROTECTION DURING REMOVAL WILL BE HALF FACE DUAL CARTRIDGE RESPIRATORS EQUIPPED WITH HEPA CARTRIDGES. THE CONTRACTOR SHALL PROVIDE INFORMATION TO ASSURE THAT THE ABOVE RESPIRATORY PROTECTION IS SUFFICIENT IN ACCORDANCE WITH 29 CFR 1926.1101 NEGATIVE EXPOSURE ASSESSMENT REQUIREMENTS.

1.01 **RELATED DOCUMENTS:**

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 **DESCRIPTION OF WORK:**

Instruct and train each worker involved in asbestos abatement in proper respiratory use and require that each worker always wear a respirator, properly fitted on the face in the work area from the start of any operation which may cause airborne asbestos dust until the work area is completely decontaminated. Use respiratory protection appropriate for the dust level encountered in the work place or as required for other toxic or oxygen-deficient situations encountered.

1.03 **STANDARDS:**

Except to the extent that more stringent requirements are written directly into the contract documents, the following regulations and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more the stringent requirement.

1.04 **SUBMITTALS:**

Before start of work submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.

Product Data: Submit manufacturer's product information for each component used, including NIOSH and MSHA Certifications for each component in an assembly and/or for entire assembly.

System Diagram: When a Type "C" supplied air respiratory system is required by the work, submit drawing showing assembly of components into a complete supplied air respiratory system. Include diagram showing location of compressor, filter banks, backup air supply tanks, hose line connections in work area(s), routing of air lines to work area(s) from compressor.

Operating Instruction: Submit complete operating and maintenance instructions for all components and systems as a whole. Submittal is to be in bound manual form suitable for field use.

Respiratory Protection Program: Submit level of respiratory protection intended for each operation required by the project. Submit this information on a "Respiratory Protection Program" form.

Historic Airborne Fiber Data: Submit airborne asbestos fiber count data calculated by an independent air monitoring firm within the last 12 months to substantiate selection of proposed respiratory protection. Data submitted shall include at least the following for each procedure required by the work:

Date of Measurements

Employees Monitored

Operations Monitored and Control Methods Used

Sampling and Analytical Methods Used and Evidence of their Accuracy

Number, Duration, and Results of Samples Taken

PART 2 - EQUIPMENT

2.01 AIR PURIFYING RESPIRATORS:

Respirator Bodies: Provide half face or full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit.

Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH and MSHA certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z228.2 (1980). In addition, a chemical cartridge section may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH/MSHA certification.

Non-permitted respirators: Do not use single use, disposable or quarter face respirators.

PART 3 - EXECUTION

3.01 GENERAL:

Respiratory Protection Program: Comply with ANSI Z88.2 - 1980 "Practices for Respiratory Protection" and OSHA 29 CFR 1910 and 1926.

Require that respiratory protection be used at all times that there is any possibility of disturbance of asbestos-containing materials whether intentional or accidental.

Require that a respirator be worn by anyone in a work area at all times, regardless of activity, during a period that starts with any operation which could cause airborne dust until the area has been cleared for re-occupancy in accordance with Section 01915.

Regardless of airborne fiber levels: Require that the minimum level of respiratory protection used be a half face dual cartridge respirator equipped with high efficiency filters.

Do not allow the use of single-use, disposable, or quarter-face respirators for any purpose.

3.02 FIT TESTING:

Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection course of training set up and administered by a Certified Industrial Hygienist. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which he has been trained and fit.

On a weekly basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.

Upon each wearing: Require that each time an air-purifying respirator is put on that it be checked for fit with a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2 (1980).

3.03 TYPE OF RESPIRATORY PROTECTION REQUIRED:

Provide respiratory protection as indicated in paragraph below. Where paragraph below does not apply, determine the proper level of protection by dividing the expected or actual airborne fiber count in the work area by the "protection factors" given below. The level of respiratory protection which supplies an airborne fiber level inside the respirator, at the breathing zone of the wearer, at or below the permissible exposure limit (PEL) is the minimum level of protection allowed.

3.04 PERMISSIBLE EXPOSURE LIMIT (PEL):

8-Hour Time Weighted Average (TWA) of asbestos fibers to which any worker may be exposed shall not exceed the following.

Fibers: For purposes of this section, fibers are defined as all fibers regardless of composition as counted in the OSHA Reference Method (ORM), NIOSH 7400 procedure, or asbestos fibers of any size as counted using either a scanning or transmission electron microscope.

Time Weighted Average (TWA) - 0.1 fibers/cubic centimeter

Excursion Limit - 1.0 fiber/cubic centimeter over any thirty (30) minute sampling period.

3.05 RESPIRATORY PROTECTION FACTOR:

<u>RESPIRATOR TYPE</u>	<u>PROTECTION FACTOR</u>
Air purifying: Negative pressure respirator High efficiency filter Half facepiece	10
Air purifying: Negative pressure respirator High efficiency filter Full facepiece	50
Powered-air purifying (PAPR): Positive pressure respirator High efficiency filter Half or Full facepiece	100

Type C supplied air: Positive pressure respirator Continuous-flow Half or full facepiece	100
Type C supplied air: Positive pressure respirator Pressure demand Full facepiece	1000
Type C supplied air: Positive pressure respirator Pressure demand Full facepiece Equipped with a auxiliary positive pressure Self-contained breathing apparatus (SCBA)	1000

3.06 AIR PURIFYING RESPIRATORS:

Negative pressure - half or full face mask: Supply a sufficient quantity of respirator filters approved for asbestos so that workers can change filters during the work day. Require that respirators be wet-rinsed and filters discarded each time a worker leaves the work area. Require that new filters be installed each time a worker re-enters the work area. Store respirators and filters at the job site in the changing room and protect totally from exposure to asbestos prior to their use.

Powered air purifying - half or full face mask: Supply a sufficient quantity of high efficiency respirator filters approved for asbestos dust so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior housing of respirator including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords to be washed each time a worker leaves the work area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

3.07 MEASUREMENT AND PAYMENT:

No separate measurement or payment for work performed under this Section. The work and materials presented herein will generally not be paid for directly, but shall be included in the unit price bid for the item of construction in which this item is used.

- END OF SECTION -

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT _____ DATE _____

PROJECT ADDRESS _____

SUBCONTRACTOR'S NAME _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you. By signing this certification you are assuring the owner that your employer has met these obligations to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. I have a copy of the written respiratory protection manual issued by my employer. I have been equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

- Physical characteristics of asbestos
- Health hazards associated with asbestos
- Respiratory protection
- Use of protective equipment
- Negative pressure systems
- Work practices including hands on or on-job training
- Personal decontamination procedures
- Air monitoring, personal and area

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months which was paid for by my employer. This examination included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

Signature _____

Printed Name _____

Social Security Number _____

Witness _____

SECTION 01915

WORK AREA CLEARANCE (PCM)

PART 1 - GENERAL: CLEARANCE AIR SAMPLES WILL BE COLLECTED AND THE SAMPLES FROM THE WORK AREAS WILL BE ANALYZED USING PCM METHOD.

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division - 1 Specification sections, apply to work of this section.

1.02 CONTRACTOR RELEASE CRITERIA:

The work is complete when the work area is visually clean and airborne fiber levels have been reduced to the level specified below.

1.03 AIR MONITORING:

To determine if the elevated airborne fiber counts encountered during demolition operations have been reduced to the specified level, the Owner's Representative will secure samples and analyze them according to the following procedures.

Fibers Counted: "Fibers" referred to in this section shall be as defined in NIOSH Method 7400, Issue 2.

1.04 SAMPLING:

The type of sample to be collected will be determined by the CIH retained by the Owner. In the case of aggressive air sampling, the sampling techniques are as follows:

There are not standards available for flow rate of leaf blowers or large fans. However this information is not critical to the success of the procedure.

Before sampling pumps are started the exhaust from forced air equipment (leaf blower with at least 1 horsepower electric motor) will be swept against the abated area and all surfaces. This procedure will be continued for five (5) minutes per 10,000 cubic feet of room volume.

1.05 SCHEDULE OF AIR SAMPLES:

GENERAL: The number and volume of air samples taken and analytical methods used by the Owner will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical instruments used.

Visual Inspection: Required as a prerequisite of air testing, is set forth in section 01914.

Air Monitoring: Performed by the Owner during abatement work, is described in section 01906.

If results of the first set of air samples show that the Contractor has not achieved clearance level, it is the Contractor's responsibility to perform the additional work required for clearance. In addition, the Contractor will be responsible for all costs involved with any additional air sampling to be performed (cost of analysis and collection).

PHASE CONTRAST MICROSCOPY (PCM):

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA	DETECTION LIMIT (FIBERS/CC)	MINIMUM VOLUME (LITERS)	FLOW RATE LPM
Inside Affected Functional Space	5 (minimum)	Mixed Cellulose Ester 0.80 Micron	0.01	1500	2-10

Analysis: Fibers on each filter will be measured using PCM procedures in accordance with NIOSH 7400, Issue 2.

Release Criteria: Decontamination of the work site is complete when every work area sample is below or equal to 0.01 f/cc of air sampled or the baseline whichever is higher.

Phase Contract Microscopy: The services of a testing laboratory will be employed by the Owner to perform laboratory analysis of the air samples. A microscope and technician will be set up on site so that verbal results can be obtained immediately. If site conditions dictate that the testing laboratory cannot set up on site, verbal results shall be relayed to the Owner as well as the contractor within four hours of the collection of the clearance samples. A complete record certified by the testing laboratory of all air monitoring tests and results will be furnished to the Owner.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

- END OF SECTION -

SECTION 01917

DISPOSAL OF ASBESTOS-CONTAINING WASTE MATERIAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and Division-1 Specification sections, apply to work of this section.

1.02 DISPOSAL:

Friable asbestos-containing waste material and debris that is packaged in accordance with the provision of this specification may be disposed of at designated sanitary landfills when certain precautions are taken.

Notice to appropriate Environmental Protection Agency regional office.

Notice and permit from appropriate State and/or local Agencies.

See Section 01904 for agency locations and code.

Dispose of non-friable asbestos containing material in accordance with applicable regulations.

1.03 SUBMITTALS:

Submit copies of all manifests, including DOT shipping receipts, and landfill site receipts to Owner's Representative within 15 calendar days of project completion.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 GENERAL:

Carefully load containerized waste on sealed trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the material.

Do not store disposal bagged material outside of the work area. Take bags from the work area directly to a sealed truck or dumpster. Label containers or bags with the name of the waste generator and the location at which the waste was generated.

Do not transport disposal bagged material on open trucks. Double bagged material may be transported on open trucks if they are first loaded in sealed drums. Label drums with the same warning label as bags. Uncontaminated drums may be reused. Treat drums that have been contaminated as asbestos-containing waste and dispose of in accordance with the specification.

Advise the sanitary landfill operator at least twenty-four hours in advance of transport of the quantity of material to be delivered.

At the burial site, sealed plastic bags shall be carefully removed from the truck. If bags are broken or damaged in transit, leave in the truck and clean entire truck and contents by wet wiping and HEPA-vacuuming the entire area. Place all debris inside new bags properly sealed and labeled.

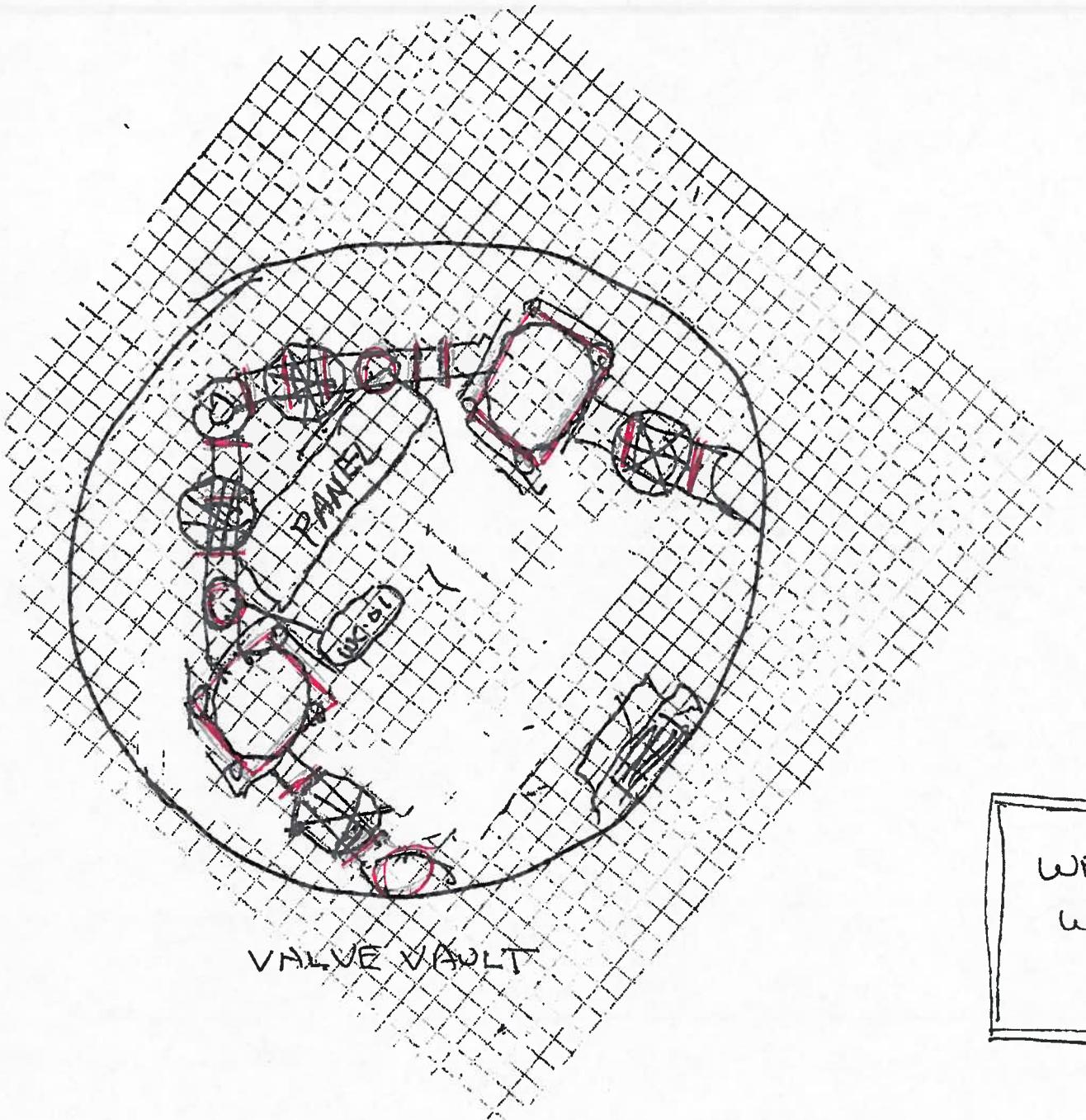
Retain receipts from landfill for material disposed of.

Final payment may be withheld by the Owner until all the properly executed manifests have been submitted to the Owner's Representative.

3.02 MEASUREMENT AND PAYMENT:

No separate measurement or payment for work performed under this Section. The work and materials presented herein will generally not be paid for directly, but shall be included in the unit price bid for the item of construction in which this item is used.

- END OF SECTION -



ACM LEGEND

 GASKETS

* ALL GASKETS IN VALVE VAULT CONSIDERED ASBESTOS-CONTAINING

FIGURE 2
ASBESTOS LOCATION DRAWING

Wood Cliff Lift Station #2
1615 Brushy Creek Cove
Austin, Texas

City of Austin Request No's: 13202 & 13137L

Terracon Project No: 96137494

CWade M 10.9.13

Bidding Requirements, Contract Forms and Conditions of the Contract
SUPPLEMENTAL GENERAL CONDITIONS
 Section 00810

The Supplemental General Conditions contained herein amend or supplement the General Conditions, Section 00700.

ARTICLE 1 - DEFINITIONS

Add the following definition:

"1.20 Engineer/Architect (E/A): Add the following:

Name: Chris Dormier, P.E.
Black & Veatch Corporation
Address: 1707 Directors Boulevard, Suite 940
Austin, TX 78744"

Add the following definitions:

"1.51 Insurance Cost Form - Section 00425 of the Contract, submitted by CONTRACTOR with its Bid, used to notify OWNER of insurance costs not included in CONTRACTOR's Bid as a result of the OWNER providing insurance through ROCIP.

1.52 Payment Form - A form used by the ROCIP Administrator to notify the OWNER's Project Manager that all required insurance information and documentation has been received from CONTRACTOR.

1.53 OWNER's ROCIP Administrator - The insurance broker responsible for administering the OWNER's Rolling Owner Controlled Insurance Program (ROCIP).

1.54 Rolling Owner Controlled Insurance Program (ROCIP) - A specialized insurance program provided by OWNER for specifically identified Capital Improvements Program (CIP) projects."

Add the following definition:

"1.57 Allowance - Allowance is defined as "a not-to-be-exceeded amount", either individually or in the aggregate, which is established between the Owner and the Contractor as part of its Bid Proposal when the precise scope of a particular line item(s) has not been defined to a level which is adequate for the Contractor to provide a definitive line item pricing for that particular scope of Work. The use of any Allowances by the Contractor will be subject to the Owner's sole approval and it is the Owner's intent to minimize the use of Allowances to the fullest extent possible. For any Allowances which the Owner allows the Contractor to use, the following rules shall apply: (i) Allowances shall cover the cost to the Contractor of the Cost of Work; (ii) Contractor's overhead and profit associated with the stated Allowance shall be included in the Allowance; and (iii) upon completion of the portion of the Work subject to an Allowance, the Contract Amount for that portion of the Work will be adjusted based upon the approved actual cost of the Work, which will not exceed the approved aggregate amount of the Allowances."

ARTICLE 2 - PRELIMINARY MATTERS

2.1 Delivery of Agreement, Bonds, Insurance, etc.: Add the following:

"2.1.1 CONTRACTOR shall complete enrollment in the Rolling Owner Controlled Insurance Program (ROCIP) within seven (7) Calendar Days after written notification of award of Contract."

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.1 Availability of Lands: Add the following:

"Field Notes and Special Provisions to Easements, where applicable, are attached to Section 00810. All Work associated with Special Provisions to Easements shall be subsidiary to the entire Bid, unless otherwise specified.

Should the actions of the CONTRACTOR, or its Subcontractors, Vendors, or Suppliers, cause the Work to be delayed to the point that the ending date of an easement has been exceeded, the CONTRACTOR shall be responsible to reimburse the OWNER for any additional costs required to extend the period of rights to the easement in order to complete the Work. This delay shall be considered to be any period of time required by the CONTRACTOR to fully and satisfactorily execute the Work that is in addition to the original Contract duration, as modified by any executed Contract change orders."

ARTICLE 5 - BONDS AND INSURANCE

"5.3 Insurance:

5.3.1 CONTRACTOR Provided Insurance

CONTRACTOR shall provide insurance coverages described in paragraph(s) 5.3.1.1 and 5.3.1.2 (and 5.3.1.5 and 5.3.1.6, as required) for all Work required by the Contract through the end of the warranty period (with the exception of Builders' Risk, which is required only until the Work is accepted by OWNER). In addition, CONTRACTOR shall provide insurance coverages described in Paragraph(s) 5.3.1.3 and 5.3.1.4 from Substantial Completion of the Work (in accordance with Section 00700 General Conditions Paragraph 14.11) to the end of the warranty period.

Subcontractors performing Work which involves asbestos, hazardous material or pollution defined as asbestos or any other excluded contractor as described in 5.3.2.1 will not be enrolled in the Rolling Owner Controlled Insurance Program (ROCIP) and must provide insurance as specified in paragraphs 5.3.1.1 through 5.3.1.6.

In the event that the Rolling Owner Controlled Insurance Program (ROCIP) or the coverage it provides to the Project is terminated for any reason, whether prior to the start of Work or any time during the Work, upon thirty (30) days Written Notice from OWNER, CONTRACTOR shall purchase and maintain as minimum the insurance coverages described in Paragraphs 5.3.1.3 and 5.3.1.4, for all Work remaining under the Contract through the end of the warranty period. All insurance secured by CONTRACTOR, Subcontractors and Sub-subcontractors pursuant to OWNER's requirements under this provision shall be in accordance with Article 5 of the General Conditions and paragraph 5.3.1.1 of this section. If CONTRACTOR is required to provide insurance as described in paragraphs 5.3.1.3 and 5.3.1.4, OWNER shall reimburse CONTRACTOR for the reasonable cost of providing the insurance described therein based upon the "Total Cost of Insurance for Base Bid" (plus total of all "Total Cost of Insurance for Alternates" selected by OWNER) as stated by CONTRACTOR in Contract Section 00425 (Insurance Cost Form) pro rated to take into account the Contract Time and Work remaining for performance of CONTRACTOR's obligations under the Contract.

5.3.1.1 General Requirements.

- .1** CONTRACTOR shall carry insurance in the types and amounts indicated below for the duration of the Contract, which shall include items owned by OWNER

in the care, custody and control of CONTRACTOR prior to and during construction and warranty period.

- .2 CONTRACTOR must complete and forward the Certificate of Insurance, Section 00650, to OWNER before the Contract is executed as verification of coverage required below. CONTRACTOR shall not commence Work until the required insurance is obtained and until such insurance has been reviewed by OWNER. Approval of insurance by OWNER shall not relieve or decrease the liability of CONTRACTOR hereunder and shall not be construed to be a limitation of liability on the part of CONTRACTOR. CONTRACTOR must also complete and forward the Certificate of Insurance, Section 00650, to OWNER whenever a previously identified policy period has expired as verification of continuing coverage.
- .3 CONTRACTOR's insurance coverage is to be written by companies licensed to do business in the State of Texas at the time the policies are issued and shall be written by companies with A.M. Best ratings of B+VII or better, except for hazardous material insurance which shall be written by companies with A.M. Best ratings of A- or better.
- .4 All endorsements naming the OWNER as additional insured, waivers, and notices of cancellation endorsements as well as the Certificate of Insurance shall indicate: City of Austin, Contract Management Department, P.O. Box 1088, Austin, Texas 78767.
- .5 The "other" insurance clause shall not apply to the OWNER where the OWNER is an additional insured shown on any policy. It is intended that policies required in the Contract, covering both OWNER and CONTRACTOR, shall be considered primary coverage as applicable.
- .6 If insurance policies are not written for amounts specified below, CONTRACTOR shall carry Umbrella or Excess Liability Insurance for any differences in amounts specified. If Excess Liability Insurance is provided, it shall follow the form of the primary coverage.
- .7 OWNER shall be entitled, upon request and without expense, to receive certified copies of policies and endorsements thereto and may make any reasonable requests for deletion or revision or modification of particular policy terms, conditions, limitations, or exclusions except where policy provisions are established by law or regulations binding upon either of the parties hereto or the underwriter on any such policies.
- .8 OWNER reserves the right to review the insurance requirements set forth during the effective period of this Contract and to make reasonable adjustments to insurance coverage, limits, and exclusions when deemed necessary and prudent by OWNER based upon changes in statutory law, court decisions, the claims history of the industry or financial condition of the insurance company as well as CONTRACTOR.
- .9 CONTRACTOR shall not cause any insurance to be canceled nor permit any insurance to lapse during the term of the Contract or as required in the Contract.
- .10 CONTRACTOR shall be responsible for premiums, deductibles and self-insured retentions, if any, stated in policies. All deductibles or self-insured retentions shall be disclosed on the Certificate of Insurance.
- .11 CONTRACTOR shall provide OWNER thirty (30) days written notice of erosion of the aggregate limits below occurrence limits for all applicable coverages indicated within the Contract.

- .12 If OWNER owned property is being transported or stored off-site by CONTRACTOR, then the appropriate property policy will be endorsed for transit and storage in an amount sufficient to protect OWNER's property.
- .13 The insurance coverages required under this contract are required minimums and are not intended to limit the responsibility or liability of CONTRACTOR.

5.3.1.2

Business Automobile Liability Insurance. Provide coverage for all owned, non-owned and hired vehicles. The policy shall contain the following endorsements in favor of OWNER:

- a) Waiver of Subrogation endorsement CA 0444;
- b) 30 day Notice of Cancellation endorsement CA 0244; and
- c) Additional Insured endorsement CA 2048.

Provide coverage in the following types and amounts:

- .2 A minimum combined single limit of \$<1,000,000 minimum> per occurrence for bodily injury and property damage.

5.3.1.3

Workers' Compensation And Employers' Liability Insurance. Coverage shall be consistent with statutory benefits outlined in the Texas Workers' Compensation Act (Section 401). CONTRACTOR shall assure compliance with this Statute by submitting two (2) copies of a standard certificate of coverage (e.g. ACCORD form) to Owner's Representative for every person providing services on the Project as acceptable proof of coverage. The Certificate of Insurance, Section 00650, must be presented as evidence of coverage for CONTRACTOR. Workers' Compensation Insurance coverage written by the Texas Workers Compensation Fund is acceptable to OWNER. CONTRACTOR's policy shall apply to the State of Texas and include these endorsements in favor of OWNER:

- a) Waiver of Subrogation, form WC 420304; and
- b) 30 day Notice of Cancellation, form WC 420601.

The minimum policy limits for Employers' Liability Insurance coverage shall be as follows:

- .1 \$100,000 bodily injury per accident, \$500,000 bodily injury by disease policy limit and \$100,000 bodily injury by disease each employee.

5.3.1.4

Commercial General Liability Insurance. The Policy shall contain the following provisions:

- a) Contractual liability coverage for liability assumed under the Contract and all contracts relative to this Project.
- b) Completed Operations/Products Liability for the duration of the warranty period.
- c) Explosion, Collapse and Underground (X, C & U) coverage.
- d) Independent Contractors coverage (Contractors/ Subcontractors work).
- e) Aggregate limits of insurance per project, endorsement CG 2503.
- f) OWNER listed as an additional insured, endorsement CG 2010.
- g) 30 day notice of cancellation in favor of OWNER, endorsement CG 0205.
- h) Waiver of Transfer of Recovery Against Others in favor of OWNER, endorsement CG 2404.

Provide coverages A&B with minimum limits as follows:

- .2 A combined bodily injury and property damage limit of \$<1,000,000 minimum> per occurrence.

5.3.1.5 Builders' Risk Insurance. CONTRACTOR shall maintain Builders' Risk Insurance or Installation Insurance on an all risk physical loss form in the Contract Amount. Coverage shall continue until the Work is accepted by OWNER. OWNER shall be a loss payee on the policy. If off-site storage is permitted, coverage shall include transit and storage in an amount sufficient to protect property being transported or stored.

5.3.1.6 Hazardous Materials Insurance.

For Work which involves asbestos or any hazardous materials or pollution defined as asbestos, CONTRACTOR or Subcontractor responsible for the Work shall comply with the following insurance requirements in addition to those specified above:

- .1 Provide an asbestos abatement endorsement to the Commercial General Liability policy with minimum bodily injury and property damage limits of \$1,000,000 per occurrence for coverages A&B and products/completed operations coverage with a separate aggregate of \$1,000,000. This policy shall not exclude asbestos or any hazardous materials or pollution defined as asbestos, and shall provide "occurrence" coverage without a sunset clause. The policy shall provide 30 day Notice of Cancellation and Waiver of Subrogation endorsements in favor of OWNER.
- .2 CONTRACTOR or Subcontractor responsible for transporting asbestos or any hazardous materials defined as asbestos shall provide pollution coverage. Federal law requires interstate or intrastate transporters of asbestos to provide an MCS 90 endorsement with a \$5,000,000 limit when transporting asbestos in bulk in conveyances of gross vehicle weight rating of 10,000 pounds or more. Interstate transporters of asbestos in non-bulk in conveyances of gross vehicle weight rating of 10,000 pounds or more must provide an MCS 90 endorsement with a \$1,000,000 limit. The terms "conveyance" and "bulk" are defined by Title 49 CFR 171.8. All other transporters of asbestos shall provide either an MCS 90 endorsement with minimum limits of \$1,000,000 or an endorsement to their Commercial General Liability Insurance policy which provides coverage for bodily injury and property damage arising out of the transportation of asbestos. The endorsement shall, at a minimum, provide a \$1,000,000 limit of liability and cover events caused by the hazardous properties of airborne asbestos arising from fire, wind, hail, lightning, overturn of conveyance, collision with other vehicles or objects, and loading and unloading of conveyances.
- .3 CONTRACTOR shall submit complete copies of the policy providing pollution liability coverage to OWNER.

5.3.1.7 Professional Liability Insurance. For Work which requires professional engineering or professional survey services to meet the requirements of the Contract, including but not limited to excavation safety systems, traffic control plans, and construction surveying, the CONTRACTOR or Subcontractors, responsible for performing the professional services shall provide Professional Liability Insurance with a minimum limit of \$500,000 per claim and in the aggregate to pay on behalf of the assured all sums which the assured shall become legally obligated to pay as damages by reason of any negligent act, error, or omission committed with respect to all professional services provided in due course of the Work of this Contract.

5.3.2 OWNER Controlled Insurance.

5.3.2.1 OWNER has procured, and will maintain at its own expense a Rolling Owner Controlled Insurance Program (ROCIP) with the following coverage for OWNER, CONTRACTOR, each Subcontractor and their respective Sub-subcontractors while engaged in Work under the Contract. It is not the intent of this ROCIP to cover architects, engineers (not including design/build subcontractors), consultants, vendors, suppliers (who do not perform or subcontract installation), material dealers, guard services, janitorial services, truckers. Moreover, this ROCIP will not provide coverage for:

- .1 Contractors and subcontractors whose main function is abating asbestos or removing hazardous materials and/or waste from the project site;
- .2 Others whose sole function is to transport, pickup, deliver or carry materials, supplies, tools, equipment, parts or other items to or from the project site;
- .3 Any employee(s) of the Contractor or an enrolled subcontractor of any tier that does not work and/or generate payroll at the Project Site

5.3.2.2 Workers' Compensation and Employers' Liability Insurance. All states including monopolistic.

- .1 Workers' Compensation - Statutory Benefits for Texas or state of hire as required by statute.
- .2 Employers' Liability. Limits of \$1,000,000 bodily injury each accident. \$1,000,000 bodily injury by disease, each employee. \$1,000,000 bodily injury by disease, policy limit.
- .3 Endorsements:
 - (a) Alternate Employer Endorsement WC 00 03 01
 - (b) Designated Workplaces Exclusion Endorsement WC 00 03 02
 - (c) Federal Employers' Liability Act Coverage Endorsement WC 00 01 04 A
 - (d) Longshoremen's and Harbor Workers' Compensation Act Coverage Endorsement WC 00 01 06 A
 - (e) Maritime Coverage Endorsement WC 00 02 01 A
 - (f) Named Insured Endorsement WC 99 20 16
 - (g) Notice of Cancellation WC 99 20
 - (h) Pending Rate Change Endorsement WC 00 04 04 (if applicable)
 - (i) Policy Period Endorsement WC 00 04 05 (if applicable)
 - (j) Premium Discount Endorsement WC 00 04 06
 - (k) Rate Change Endorsement WC 00 04 07 (if applicable)
 - (l) Sole Agent - Controlled Insurance Program WC 99 16 70
 - (m) Sole Proprietor, Partners, Officers and Others Coverage Endorsement WC 00 03 10
 - (n) Terrorism Risk Insurance Program Reauthorization Act Disclosure Endorsement WC 00 04 22 A
 - (o) Texas Deductible Endorsement WC 99 06 74
 - (p) Texas Health Care Network Endorsement WC 42 04 08
 - (q) Texas Waiver of Our Right to Recover From Others Endorsement WC 42 03 04A

- (r) Unintentional Errors and Omissions Endorsement WC 99 16 71
- (s) Voluntary Compensation and Employers Liability Coverage Endorsement WC 00 03 11 A (Employees. All officers and employees not subject to the workers compensation law.)
- (t) Workers Compensation and Employers Liability Insurance Policy WC 00 00 00 A
- (u) Employers Liability Coverage Endorsement WC 00 03 03 C
- (v) Knowledge and Notice of Occurrence Endorsement WC 99 16 69

5.3.2.3 Commercial General Liability Insurance.

- .1 Limits of Liability:
 - a) \$4,000,000 General Aggregate Limit
 - b) \$4,000,000 Products-Completed Operations Aggregate Limit
 - c) \$2,000,000 Personal and Advertising Injury
 - d) \$2,000,000 Each Occurrence
 - e) \$1,000,000 Damages to Premises Rented to You Limit (Any one premises. Subject to occurrence limit)
 - f) \$10,000 Medical Expense Limit (Any one person. Subject to occurrence limit)
 - g) Aggregate limits will be reinstated annually during the 5-year project period. For 10 Year Completed Operations Extension, the Products Completed Operations Aggregate will be shared with the latest annual policy period during which a policy issued by us was in effect.
- .2 Policy Form. Commercial General Liability Coverage Form CG 00 01 (12/07 Edition).
- .3 Forms:
 - (a) Advertisement Redefined LC 29 08 10 11
 - (b) Amendment - Non-Cumulation of Liability LC 25 13 08 08
 - (c) Asbestos Exclusion LC 21 01 06 05
 - (d) Blanket Additional Insured LN 20 01 06 05
 - (e) Bodily Injury Redefined LC 29 09 10 11
 - (f) Bodily Injury to Co-Employees - Supervisors and Good Samaritans LC 04 17 08 07
 - (g) Broad Form Named Insured Endorsement LN 99 05 07 05
 - (h) Cap on Losses From Certified Acts of Terrorism CG 21 70 01 08
 - (i) Common Policy Conditions IL 00 17 11 98
 - (j) Composite Rate Endorsement LC 99 12 06 05
 - (k) Contractual Liability - Railroads CG 24 17 10 01
 - (l) Deductible - Damages and Supplementary Payments LC 03 02 06 05
 - (m) Discrimination Exclusion LC 21 04 06 05
 - (n) Earlier Notice Of Cancellation Provided By Us CG 02 24 10 93
 - (o) Exclusion - Contractors - Professional Liability CG 22 79 07 98
 - (p) Joint and Several Amendment LC 99 28 08 09
 - (q) Joint Defense Endorsement LC 22 02 08 09
 - (r) Knowledge of Occurrence LC 99 02 06 07
 - (s) Lead Exclusion LC 21 06 06 07
 - (t) Mold And Mold Related Construction Defect LN 21 01 06 05

- (u) Non-owned Watercraft Amended LN 04 01 06 05
- (v) Notice of Occurrence LC 99 01 06 05
- (w) Nuclear Energy Liability Exclusion Endorsement (Broad Form) IL 00 21 09 08
- (x) Per Project and Per Location Combined Aggregate Limits - With Optional Capped Limits Endorsement LG 31 78 05 05 (20,000,000 capped limits)
- (y) Personal and Advertising Injury - Definition of Publication LC 29 04 08 08
- (z) Personal and Advertising Injury - Occurrence Redefined LC 29 06 08 08
- (aa) Policyholder Disclosure - Terrorism Risk Insurance Act GPO 4887 12 07
- (bb) Professional Health Care Services by Employee Coverage LC 04 02 06 05
- (cc) Reasonable Force LC 04 01 06 05
- (dd) Recording and Distribution of Material or Information in Violation of Law Exclusion CG 00 68 05 09
- (ee) Silica Exclusion Endorsement LC 21 02 06 05
- (ff) Texas Changes - Duties IL 01 68 03 12
- (gg) Texas Changes - Employment Related Practices Exclusion CG 26 39 12 07
- (hh) Total Pollution Exclusion With a Building Heating Equipment Exception and a Hostile Fire Exception CG 21 65 12 04
- (ii) Unintentional Failure to Disclose LC 99 03 06 07
- (jj) Waiver Of Transfer Of Rights Of Recovery Against Others To Us CG 24 04 05 09 Any person or organization with whom you have agreed in writing to waive any right of recovery prior to a loss.
- (kk) Wrap-Up Insurance Program - Amendment of Coverage LC 04 23 08 09
- (ll) CG 21 70 01 08 – Cap on Losses from Certified Acts of Terrorism
- (mm) 21 76 01 08 – Exclusion of Punitive Damages Related to a Certified Act of Terrorism
- (nn) CG 26 86 01 08 – Arkansas Exclusion of Punitive Damages Related to a Certified Act of Terrorism
- (oo) CG 26 93 01 08 – Alaska Exclusion of Punitive Damages Related to a Certified Act of Terrorism
- (pp) CG 21 88 01 07– Conditional Exclusion of Terrorism Involving Nuclear, Biological or chemical Terrorism Relating to Disposition of Federal Terrorism Risk Insurance Act)
- (qq)

5.3.2.4 Umbrella/Excess Liability Insurance.

- .1 \$50,000,000 Each Occurrence
- .2 \$50,000,000 Products-Completed Operations Aggregate
- .3 \$50,000,000 Other Aggregate (Where Applicable)
- .4 Umbrella/Excess includes a Completed Operations Extension period of Ten (10) years.

5.3.2.5 General Provisions.

- .1 Coverage Availability. All insurance specified herein shall be maintained continuously until Substantial Completion of the Project except as provided in

Section 5.3.1. All insurance shall provide for OWNER to take occupancy of the Work or any part thereof during the term of said insurance.

- .2 Insurance Policies and Certificates. The Broker and/or Insurers will issue Policies for Worker's Compensation and Binders for General Liability to CONTRACTOR, each Subcontractor and each Sub-subcontractor participating in the ROCIP.
- .3 CONTRACTOR, Subcontractor and Sub-subcontractors agree to comply with the requirements of the ROCIP including enrollment, record keeping, reporting, auditing, and claim requirements.
- .4 The first five thousand dollars (\$5,000) of any insurable general liability property damage loss will be the responsibility of and paid by the CONTRACTOR and deducted from the contract amount.
- .5 Contract Insurance Cost.
 - a) CONTRACTOR agrees not to duplicate or include any portion of their normal insurance cost, including Subcontractor insurance costs, in their Bid or in Change Orders (if any) for the coverages provided by OWNER under paragraphs 5.3.2.2 through 5.3.2.4.
 - b) CONTRACTOR stipulates that the insurance costs as defined in the Insurance Cost Form (Section 00425), submitted with the Bid and part of the Contract, is the amount that would have been included in the Bid if OWNER elected not to provide such coverage.
 - c) CONTRACTOR agrees to the audit conditions specified in the Insurance Cost Form (Section 00425).
 - d) In the event OWNER elects not to include CONTRACTOR's Work under the ROCIP coverages, the insurance amounts reported in the Insurance Cost Form (Section 00425) will be added to the Contract Amount on a pro rated basis.
 - e) CONTRACTOR shall agree to cooperate fully with OWNER's ROCIP Administrator and Project Manager in providing the necessary insurance data and information as required in the Bid Documents and associated documents and submittals furnished and required by OWNER during the duration of the Project or until OWNER furnished coverages are terminated. Failure to provide insurance information or documents/submittals to the OWNER's ROCIP Administrator and OWNER's Representative within specified time periods, by CONTRACTOR, any Subcontractor or Sub-subcontractor will result in withholding of progress payments to CONTRACTOR by OWNER. The Green Form can be withheld due to failure to provide insurance information or documents within specified time periods.
- .6 Governing Conditions. In the event of conflict between Insurance Policy Terms and Conditions and the coverage conditions specified herein, the insurance policies will govern.
- .7 CONTRACTOR Furnished Insurance.
 - a) Automobile Liability Insurance. CONTRACTOR and all Subcontractors, Sub-subcontractors and vendors shall maintain Automobile Liability Insurance as specified in paragraphs 5.3.1.1 and 5.3.1.2, at their own expense. CONTRACTOR must submit Certificates of Insurance for all Subcontractors to OWNER prior to their commencing Work on the Project.

b) Vendors, Suppliers and Haulers Required Insurance

- a. Workers' Compensation and Employers' Liability Insurance. Vendors, suppliers, haulers, and other non-ROCIP participants as outlined in 5.3.2.1 shall provide workers' compensation insurance as specified in paragraphs 5.3.1.1 and 5.3.1.3.

This coverage requirement does not apply to motor carriers who are required pursuant to Texas Civil Statutes, Article 6675c to register with the Texas Department of Transportation and to provide accidental insurance coverage pursuant to Texas Civil Statutes, Article 6675c.

This coverage requirement does not apply to sole proprietors, partners, and corporate officers who meet the requirements of the Texas Workers' Compensation Act (Act), Article 406.09(c) and who are explicitly excluded from coverage in accordance with the Act.

- b. Automobile Liability Insurance. Vendors, suppliers, haulers and other non-ROCIP participants as outlined in 5.3.2.1 shall provide workers' compensation insurance as specified in paragraphs 5.3.1.1 and 5.3.1.2.
- c. Commercial General Liability Insurance. Vendors, suppliers, haulers, and other non-ROCIP participants as outlined in 5.3.2.1 shall provide Commercial General Liability Insurance as specified in paragraphs 5.3.1.1 and 5.3.1.4.

.8 Other Insurance.

- a) The ROCIP as outlined herein is intended to afford broad coverage and relatively high limits of liability, but it may not provide all the insurance needed or desired by CONTRACTOR, Subcontractors or Sub-subcontractors. Any insurance or limits of liability greater than those provided by the ROCIP or other coverages which CONTRACTOR, Subcontractors or Sub-subcontractors may be required by Law to carry or may need for its own protection, shall be at their own expense and the cost therefore may not be included in the Bid.
- b) If CONTRACTOR chooses to have such policies endorsed to recognize the Project site during the construction period, coverage should be excess and/or Difference In Conditions (DIC) of the OWNER's ROCIP as determined by CONTRACTOR or Subcontractor. OWNER shall be endorsed as additional insured.
- c) Any policy of insurance covering CONTRACTOR, any Subcontractor or any Sub-subcontractor for its owned and leased machinery, water craft, vehicles, tools, or equipment (used in connection with the Project) for physical loss or damage shall provide a Waiver of Subrogation Rights against OWNER, Project Manager, if applicable, CONTRACTOR, Subcontractor, or Sub-subcontractor that is insured under the ROCIP, including the employees, agents or assigns of any one of them.

- .9 Mutual Waiver of Property Damage and Right of Recovery. To the extent of coverage provided by the Builder's Risk Insurance, OWNER has waived its rights to recover physical damage or loss to its property against CONTRACTOR, Subcontractors and Sub-subcontractors. CONTRACTOR, Subcontractors and Sub-subcontractors shall also waive any and all rights each may have to recover physical damage or loss to the property of each against OWNER, its designees, E/A, and other contractors engaged in the Project. This waiver of the right of recovery for property damage shall be binding upon any property, automobile or equipment insured in respect to any subrogation rights which such insurer may possess by virtue of any payments of damage or loss. CONTRACTOR, Subcontractors and Sub-subcontractors agree as a condition of performing Work on the Project to execute such documents and coverage described herein and the waiver(s) of subrogation as described herein.

- .10 Certificates of Insurance. CONTRACTOR shall submit three (3) copies of the required Certificates of Insurance (Section 00650) for CONTRACTOR and all Subcontractors and Sub-subcontractors to OWNER prior to their commencing Work on the job site. CONTRACTOR and all Subcontractors and Sub-subcontractors shall provide the following information on the Certificate of Insurance:

Workers' Compensation (off-site)
General Liability (off-site)
Umbrella/Excess Liability (off-site)
Automobile Liability - Primary (CONTRACTOR must provide hired/non-owned)

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.6 Permits, Fees: Add the following:

"OWNER will obtain and pay for the following permits, licenses and/or fees:

- .1 Site Development Permit.
- .2 Building Permit(s). OWNER's responsibility for obtaining and paying for the Building Permit(s) shall be limited to the following where applicable: the required Electrical Service (Aid of Construction) Fee, Water and Wastewater Tap Fees, Water and Wastewater Capital Recovery Fees, and Septic Permit Fee. The OWNER's responsibility for obtaining and paying for the Building Permit(s) excludes securing and paying for the following where applicable: Driveway Permit (Concrete) Fee, Electrical Permit, Mechanical Permit, Plumbing Permit, Water Engineering Inspection Fee, Temporary Use of Right-of Way Permit, the gas company's Gas Yard Line Contribution Fee, and any other permits/fees not listed above.
- .3 Texas Department of Transportation

6.7 Laws and Regulations: Add the following:

"6.7.4 This Work is subject to the Texas Pollution Discharge Elimination System (TPDES) permitting requirements for the installation and maintenance of temporary and permanent erosion and sediment controls and storm water pollution prevention measures throughout the construction period.

OWNER has prepared a Storm Water Pollution Prevention Plan (SWPPP). Reference Section 01096 for this SWPPP.

OWNER shall file the Owner's Notice of Intent and Notice of Termination to the Texas Commission on Environmental Quality (TCEQ). OWNER shall pay the TPDES storm water application fee.

CONTRACTOR's responsibilities are as follows.

- .1 File a Notice of Intent (NOI) form with the TCEQ at least two (2) days prior to start of construction activity and pay for the permit. Form is available from OWNER or on the Internet at <http://www.tceq.state.tx.us/assets/public/permitting/waterquality/forms/20022.pdf>.

The form shall be mailed or submitted online to the TCEQ. If submitting online, the web address is <https://www6.tceq.state.tx.us/steers/>. If CONTRACTOR has not already registered to use the TCEQ online application submittal service, it will take up to ten (10) Working Days to receive a user name and password. CONTRACTOR shall take this timeframe into consideration if applying online. A Time Extension shall not be granted for this timeframe.

The mailing address is:

Texas Commission on Environmental Quality
Storm Water & General Permits Team; MC-228
P.O. Box 13087
Austin, TX 78711-3087

A copy of the completed Notice of Intent (NOI) form must also be mailed to the local Municipal Separate Storm Sewer Systems (MS4) representative:

TPDES Program Coordinator
City of Austin – WPD – ERM
P.O. Box 1088
Austin, TX 78767

- .2 Obtain a signed certification statement from all Subcontractors responsible for implementing the erosion and sediment control measures. This statement shall indicate that the Subcontractor understands the permit requirements. The certified statement forms shall be attached to and become part of the SWPPP.
- .3 Post a notice near the main entrance of the Work with the following information.
 - The TPDES permit number for the Work or a copy of the NOI if a permit number has not yet been assigned,
 - The name and telephone number of a local contact person,
 - A brief description of the Work, and
 - The location of the SWPPP if the site is inactive or does not have an on-site location to store the plan.

If posting this information near a main entrance is infeasible due to safety concerns, the notice must be posted in a local public building. If the Work is linear (pipeline, highway, etc.), the notice must be placed in a publicly accessible location near where construction is actively underway and moved as necessary. For linear Work, multiple postings of the information may be required by OWNER (e.g. postings at both ends of the Work).
- .4 Maintain all erosion and sediment control measures and other protective measures identified in the SWPPP in effective operating condition.
- .5 Perform inspections every five (5) working days and after every ½ inch rainfall event, noting the following observations on an inspection form provided by OWNER:
 - Locations of discharges of sediment or other pollutants from the site.
 - Locations of storm water / erosion / sedimentation controls that are in need of maintenance.
 - Locations of storm water / erosion / sedimentation controls that are not performing, failing to operate, or are inadequate.
 - Locations where additional storm water / erosion / sedimentation controls are needed.

- .6 Maintain at Work site at all times a copy of the SWPPP (with all updates, as described below) and inspection reports.
- .7 Update the SWPPP as necessary to comply with TPDES permitting requirements, which includes noting changes in erosion / sedimentation controls and other best management practices that are part of the SWPPP and which may be necessary due to the results of inspection reports. Any SWPPP revisions or updates must be signed and certified by a Certified Professional in Erosion and Sedimentation Control (CPESC) or a Registered Professional Engineer. If the SWPPP includes engineering calculations, then SWPPP must be sealed and signed by a Registered Professional Engineer.
- .8 File a Notice of Termination with the TCEQ within thirty (30) days of final stabilization on all portions of the Work site. Form is available from OWNER or on the Internet at <http://www.tceq.state.tx.us/assets/public/permitting/waterquality/forms/20023.pdf>.
The NOT shall be mailed to:
Storm Water & General Permits Team; MC-228
P.O. Box 13087
Austin, TX 78711-3087
(512) 239-4671
- .9 Upon completion of the Work, provide TPDES records to OWNER."

6.11 Safety and Protection: Add the following to paragraph 6.11.2:

- "**6.11.2** CONTRACTOR shall comply with all provisions of the "Project Safety Manual" provided by OWNER as part of its insurance coverage program under the Rolling Owner Controlled Insurance Program (ROCIP). This program is in addition to CONTRACTOR's existing safety program, not in lieu of that program."

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.7 Warranty Period: Add the following:

- "**13.7.5** OWNER will utilize a "Warranty Item Form" (attached at the end of this Section) for the purpose of providing Written Notice of warranty defects to CONTRACTOR. CONTRACTOR shall date, sign, complete and return the form to OWNER when the defect is corrected, including such information on or attached to the form to describe the nature of the repairs or corrections that were made. If the defect cannot be corrected in seven (7) Calendar Days, CONTRACTOR shall provide a written explanation to the Owner's Representative describing the repairs needed and the time required to complete the repairs."

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.1 Application for Progress Payment: Delete 14.1.6.3 and replace with the following:

- “.3 Contract time statement form signed by CONTRACTOR and Owner’s Representative. If CONTRACTOR does not agree with the number of accumulated days charged, CONTRACTOR shall file a Claim in accordance with Article 16.1, Filing of Claims.”
- “.4 Payroll Authorization and Certificates of Insurance. CONTRACTOR shall provide monthly payroll reports (including CONTRACTOR and all Subcontractors and Sub-subcontractors) to the ROCIP Insurance Administrator on forms provided by the ROCIP Administrator or on other mutually agreed upon forms. In addition, Contractor shall assure that current certificates of insurance are provided as necessary for CONTRACTOR and all Subcontractors and Sub-subcontractors. A Payment Form signed by the ROCIP Administrator shall be submitted with each Application for Payment. Failure to submit this form will result in withholding of payment. The ROCIP Insurance Administrator will generate the Payment Form upon receipt of the monthly payroll report and required certificates of insurance.”

14.4 Decisions to Withhold Payment:

Reference 14.4.1; add the following:

- “.16 failure of CONTRACTOR to meet the ROCIP and/or Safety Program requirements.
- “.17 property damage losses that are the responsibility of the CONTRACTOR (reference section 00810, 5.3.2.5.4)”

14.7 Substantial Completion:

Reference 14.7.1, and add the following two provisions:

- “**14.7.1.1** For water and wastewater lines construction, Substantial Completion means that the Work, including all testing and disinfection, has been completed and accepted and the line(s) placed into service. A certificate of Substantial Completion will not be issued. Work that remains after Substantial Completion could include the final pavement of roadways, adjustment of structures to final grade and revegetation. Owner’s Representative will issue a notice specifying what portion of the Work is partially completed for the purpose of payment and what Work remains to be done on the portion being accepted as Substantially Complete. This subsection 14.7.1.1 changes the 00700 General Conditions definition of Substantial Completion.”

14.8 Partial Utilization: Delete 14.8.1 and replace with the following (changes to the original text are identified by underlining):

- “.1 OWNER at any time may request CONTRACTOR to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to Owner’s Representative that such part of the Work is substantially complete and request Owner’s Representative to issue a notice specifying what portion of the Work is substantially complete for the purpose of payment and what Work remains to be done on the portion being accepted. CONTRACTOR at any time may notify Owner’s Representative that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request Owner’s Representative to issue a notice specifying what portion of the Work is partially completed for the purpose of payment and what Work remains to be done on the portion being accepted. The provisions of paragraphs 14.7.1 and 14.7.2 will apply with respect to the notice specifying what portion of the Work is partially completed for the purpose of payment and what Work remains to be done on the portion being accepted.”

14.10 Final Application for Payment: Add the following paragraph(s) to 14.10:

- “.10 Documentation required by the ROCIP.”
- “.11 TPDES records in accordance with 6.7.4.”

14.11 Final Payment and Acceptance:

Add the following to paragraph 14.11.1:

“If the sole remaining, unfinished item of the Work is revegetation or other permanent erosion control, including, if applicable, tree mitigation, (collectively, the “revegetation”), the CONTRACTOR may execute a zero-cost “Revegetation Change Order” for such Work and post fiscal security acceptable to Owner to ensure completion of the revegetation.

The fiscal security will be a bond, letter of credit, or cash escrow in a form promulgated by OWNER and posted with OWNER’s Watershed Protection Department.

Upon receipt of the executed Revegetation Change Order and fiscal security, the Owner’s Representative will issue a conditional letter of final acceptance to the CONTRACTOR for the Work, excluding the revegetation, which establishes the Final Completion Date for that Work and initiates the one year warranty period.

This revegetation must be accomplished within 120 Calendar Days of the date of Final Completion of the balance of the Work or such other stipulated time for completion directed in the Change Order. When the revegetation has been established, OWNER will inspect for final acceptance of that portion of the Work and, as applicable, initiate the one year warranty period for that Work.

If the revegetation is not completed within the 120 Calendar Days or such other time set forth in the Change Order, the OWNER, at its option, may complete the Work using the posted fiscal security.”

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.3 Owner May Terminate with Cause: Add the following paragraph to 15.3.1:

- “.8 if CONTRACTOR fails to meet the ROCIP and/or Safety Program requirements;”

WARRANTY ITEM NO. _____ (PROJECT NAME)

The General Conditions of the Contract require that Warranty Defects be corrected within 7 days after written notice is received.

TO: _____
contractor name address / telephone / fax / email

ATTENTION OF: _____

FROM: _____
project manager name / address / telephone / fax / email

PROJECT: _____
name / location / CIP ID number

END OF ONE YEAR WARRANTY: _____

SUBJECT: _____

- If checked, the damage requires immediate attention. The Contractor has been called.
- If checked, the Consultant has been asked to consult with the Contractor on the problem.

PLEASE CORRECT OR REPAIR THE FOLLOWING ITEM(S):

DATE OF REQUEST _____ **SIGNATURE** _____
Project Manager

- XC:
- _____ Phone No. _____
 - _____ Phone No. _____
 - _____ Phone No. _____
 - _____ Phone No. _____

RESPONSE FROM CONTRACTOR: DATE CORRECTION WAS MADE: _____

The Contractor must endeavor to correct the defect within 7 calendar days after written notice is given. If the defect cannot be corrected in that time, Contractor shall provide a written explanation to the Owner's Representative describing the repairs needed and the time required to complete the repairs.

Description of corrections made:

DATE OF REPLY _____ **SIGNATURE** _____

When the repair is complete, the contractor should return a copy to each of the following:

- _____ Phone No. _____

END

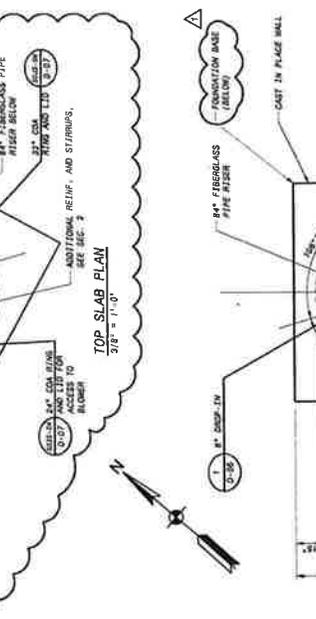
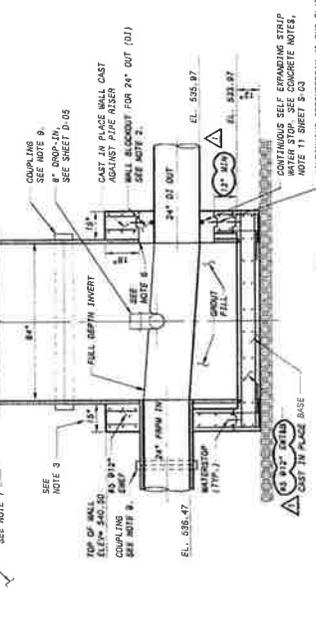
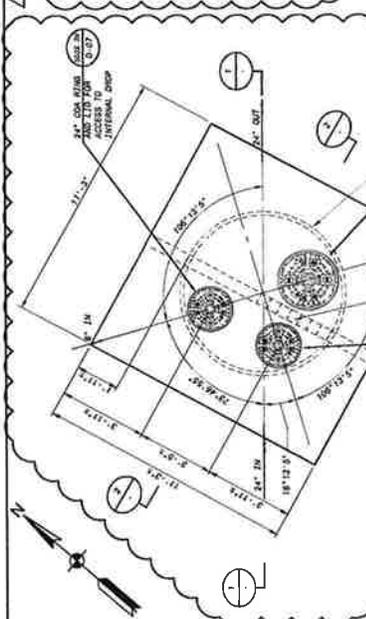
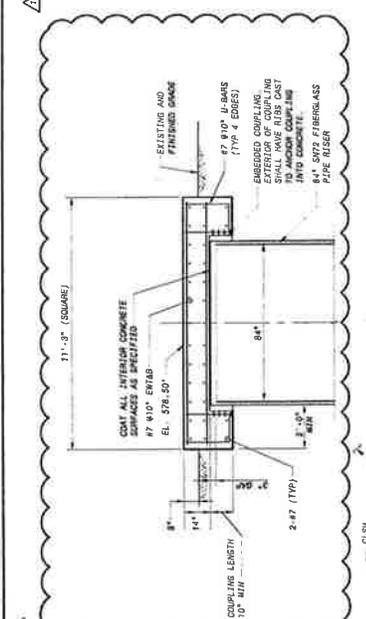
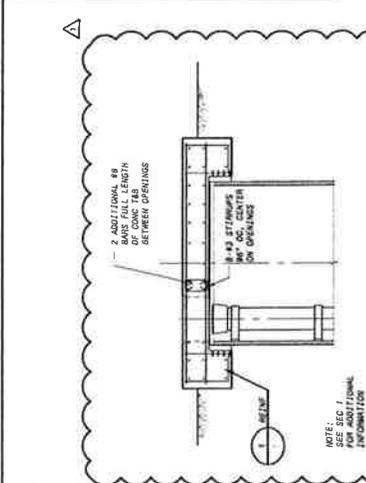
NO.	DATE	REVISIONS
1	1/17/13	ISSUE FOR CONSTRUCTION
2		
3		
4		
5		
6		
7		
8		
9		
10		

BLACK & VEATCH
 A Division of Jacobs
 10000 North Central Expressway
 Suite 200
 Dallas, Texas 75243
 Phone: 972.382.2200
 Fax: 972.382.2201

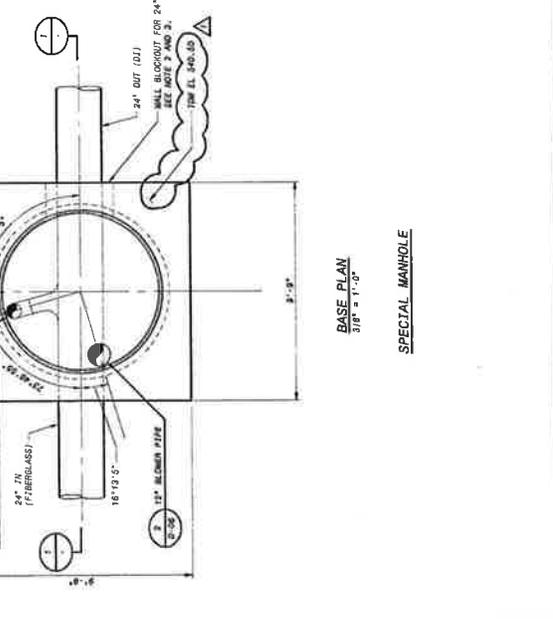
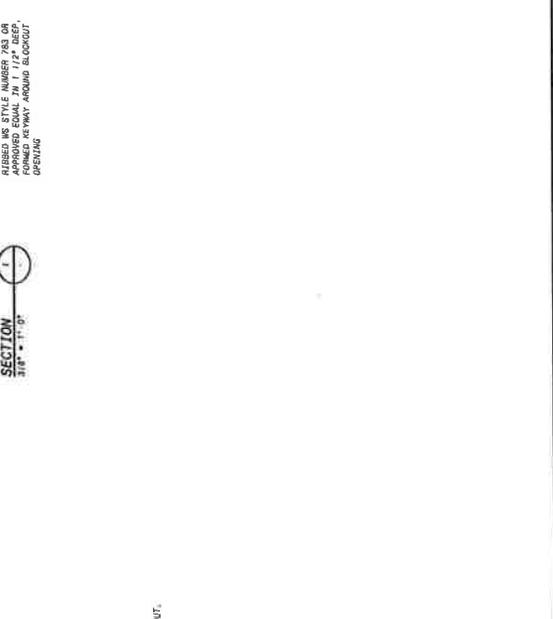
City of Austin, Texas
 Austin Water Utility
 10000 North Central Expressway
 Suite 200
 Dallas, Texas 75243
 Phone: 972.382.2200
 Fax: 972.382.2201

NORTH ACRES - WASTEWATER TUNNEL
 SPECIAL MANHOLE - STATION 3+54.01

PROJECT NO.	160115
DATE	1/17/13
SCALE	AS SHOWN
DRAWN BY	ADR
CHECKED BY	
APPROVED BY	
DATE	
PROJECT NO.	160115
DATE	1/17/13
SCALE	AS SHOWN
DRAWN BY	ADR
CHECKED BY	
APPROVED BY	
DATE	



- NOTES:**
1. PROVIDE INSIDE DROP AND BLOWER PIPE PER DETAILS SHEET D-05.
 2. SEE SHEET S-02 FOR DETAIL ON WALL BLOODOUTS, STARTER AND WALLS. ADDITIONAL REINFORCING AT OPENINGS IN SLABS AND WALLS.
 3. WALL PROGRESS MARKS. REINFORCING STEEL TO BE FORMED SQUARE. RISER TO BE USED AS INSIDE PANEL MANUFACTURER RECOMMENDATIONS.
 4. SET FIRST RISER SECTION IN FRESH CONCRETE PER RISER MANUFACTURER RECOMMENDATIONS.
 5. FIRST RISER SECTION SHALL BE PLACED PLUMB & LEVEL PRIOR TO SETTING ADDITIONAL SECTIONS.
 6. PROVIDE OPENING OR DOWNHOLE IN RISER FOR INSTALLATION OF 24" OUT.
 7. BACKFILL GRAFT ANNUAL SPACE WITH CLUM TO BOTTOM OF TOP SLAB. GRAFT SHALL CONFORM TO CITY OF AUSTIN STANDARD #25.
 8. U-SHAPED JOINTS SHALL MEET THE APPLICABLE SECTION OF SECTION 506.4.
 9. PROVIDE COUPLING PER MANUFACTURER'S RECOMMENDATIONS.
 10. CONCRETE SHALL BE CLASS 55 PER CITY OF AUSTIN SPECIFICATION #053.



FOR STRUCTURAL

BASE PLAN
 3/8" x 1'-0"

SPECIAL MANHOLE
 3/8" x 1'-0"

NO.	DATE	REVISIONS
1	11/11/11	ISSUE FOR CONSTRUCTION
2	01/23/12	REVISED PER CITY OF AUSTIN COMMENTS

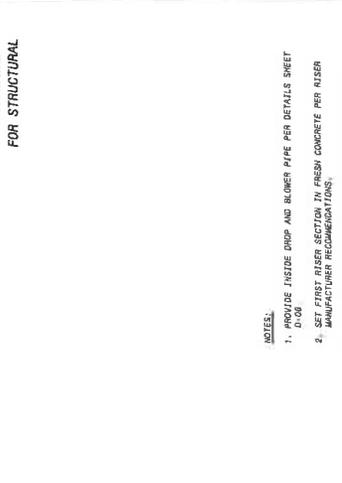
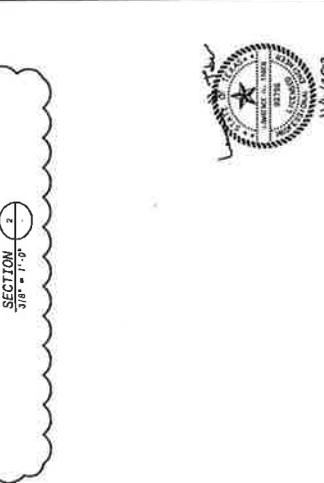
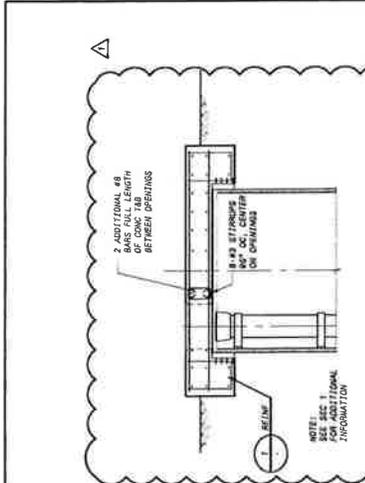
BLACK & VEATCH
 BLACK & VEATCH ENGINEERING
 1100 N. MOORE AVENUE
 SUITE 200
 AUSTIN, TEXAS 78701
 TEL: 512.476.2000
 FAX: 512.476.2001
 WWW.BV.COM

City of Austin, Texas
AUSTIN WATER
 Austin Water Utility

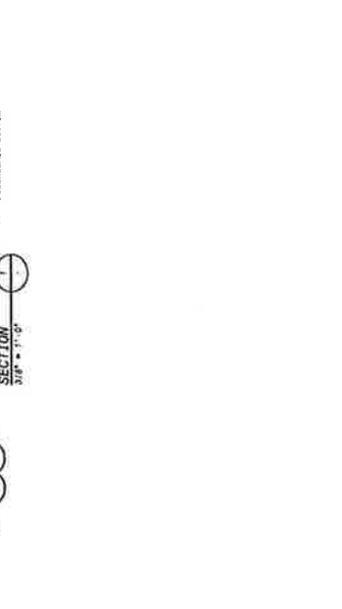
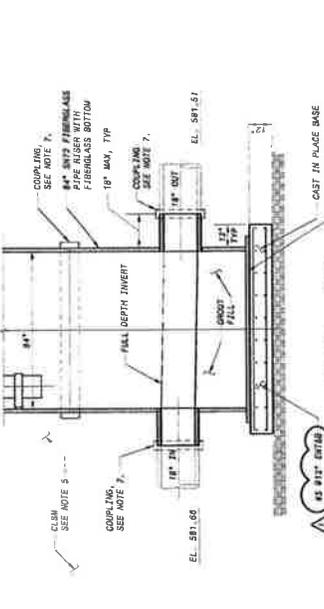
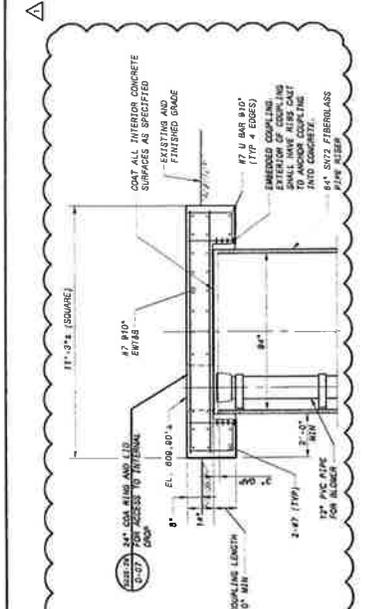
Professional Engineer Seal:
 State of Texas
 License No. 11111
 Exp. 12/31/12
 Name: [Signature]

NORTH ACRES - WASTEWATER TUNNEL
 SPECIAL MANHOLE AT STATION 25+20

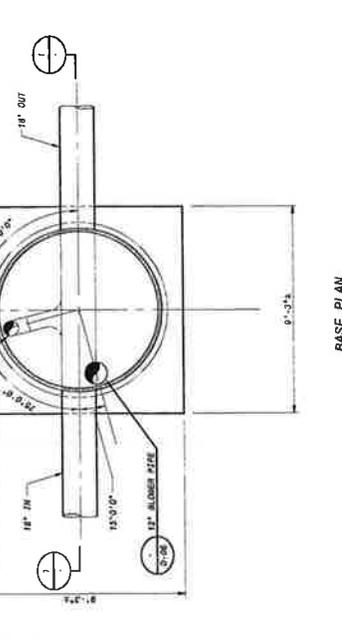
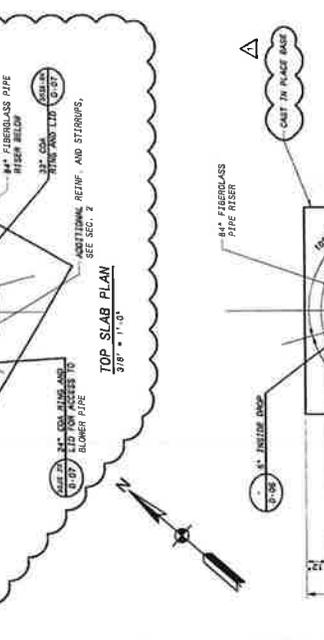
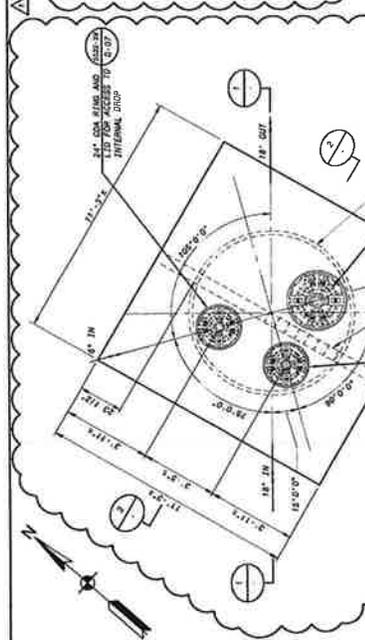
PROJECT NO.	15000000
DATE	11/11/11
DESIGNED BY	APR
CHECKED BY	APR
APPROVED BY	APR
PROJECT NO.	15000000
SHEET NO.	24 OF 53



- NOTES:**
1. INCLUDE INSIDE DIMP AND BLOWER PIPE PER DETAILS SHEET 24-01.
 2. SET FIRST REIN SECTION IN FRESH CONCRETE PER REIN MANUFACTURER RECOMMENDATIONS.
 3. FIRST REIN SECTION SHALL BE PLACED PLUMB & LEVEL PRIOR TO SETTING ADDITIONAL SECTIONS.
 4. SEE SHEET 24-02 FOR DETAIL ON ADDITIONAL REINFORCING AT OPENINGS IN SLABS AND WALLS.
 5. BACKFILL SHIRT ANNUAL SPACE WITH CLSM TO BOTTOM OF TOP SLAB. CLSM SHALL CONFORM TO CITY OF AUSTIN STANDARD 405B.
 6. U-SHAPED INVERT SHALL MEET THE APPLICABLE SECTION OF SECTION 405-1.
 7. PROVIDE COUPLING PER MANUFACTURER'S RECOMMENDATIONS.
 8. CONCRETE SHALL BE CLASS SS PER CITY OF AUSTIN SPECIFICATION 405C.



- NOTES:**
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