verdantas

Zambarano Hospital

Building Demolition

Procurement & Contract Bidding
Project Specifications | 2090 Wallum Lake Road, Burrillville, RI 02859

Prepared for:
Rhode Island Department of Administration
Division of Capital Assessment Management and Maintenance
1 Capitol Hill
Providence, RI 02908-5850

Prepared by:
Verdantas
1005 Main Street
Suite No.: 8120
Pawtucket, RI 02860

Verdantas Project No: 19018

MAY 2025

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DIVISION 01 – GENERAL REQUIREMENTS INDEX

SECTION 01000
SUMMARY OF WORK

PART 1.00 - GENERAL

1.01 PROJECT DESCRIPTION

Rhode Island Department of Administration, Division of Capital Asset Management and Maintenance (the Owner), located at One Capitol Hill, Providence, RI, is requesting the abatement and demolition of up to 11 buildings along with associated utilities and associated site preparation for the property located at 2090 Wallum Lake Road, Burrillville, RI (the Site). It is the intent of the RIDOA to conduct all matters applicable to the proper abatement and demolition of these buildings within the Zambarano Hospital campus.

The Site work consists of up to 11 vacant buildings and a network of underground utility tunnels. The contractor shall be responsible for the removal and disposal, abatement and proper backfill to existing grades in accordance with the provided plans. Onsite work shall only be conducted between 07:30 and 15:30 unless explicit approval has been received from the Owner at least 24 hours prior to the proposed work times.

A Site Hazardous Materials Inspection Report dated October 2, 2024, along with Abatement Plans dated October 21, 2024 were prepared for the Site to determine any potential hazardous materials that shall be removed prior to demolition activities. The Contractor shall follow applicable reports and guidance documents to ensure the proper disposal of any and all potentially hazardous materials, in accordance with the Rhode Island Department of Health and OSHA standards.

1.02 SCOPE OF WORK (BASE BID)

The base bid work covered by this Contract shall include the following activities, conducted in accordance with the contract bid documents and under the supervision of the Owner and the Engineer:

1. Mobilization and Demobilization including a 40’ office trailer, completed permits and submittals, demobilization, and as described in the Measurement and Payments.

2. Furnish and Install Erosion Controls and Temporary Construction Fence. Excludes erosion controls and temporary fence around Hamblet House (Building #4) and Children’s Infirmary (Building #5).

3. Abatement and Demolition of Danford & Barnes House (Buildings #2 &3), two (2) four (4) story buildings, approximately 53,000 SF floor area.

4. Abatement and Demolition of Providence Center (Building #6), approximately 30,000 SF two (2) story building with basement.

5. Demolition of Screen House, (Building 46) approximately 300 SF

6. Abatement and Demolition of Laundry Building (Building #7), approximately 7,500 SF with basement.

7. Demolition of Old Superintendent Garage (Building #17), approximately 600 SF

8. Abatement and Demolition of Staff Cottage A (Building #18), two (2) story with basement, approximately 4,300 SF

9. Abatement and Demolition of Staff Cottage B (Building #19) two (2) story with basement, approximately 6,800 SF

10. Abatement and Demolition of Staff Cottage C (Building #20) two (2) story with basement, approximately 4,300 SF.

11. Abatement and Demolition of Underground Utility Tunnels. Excludes tunnel segment that branches from Hamblet House (Building #4).

12. Backfill and Compact Demolished Building Areas and Tunnels with Common Borrow to Existing grade with a minimum of 2' of clean soil over assumed impacted soils. Excludes Hamblet House (Building #4), Children's Infirmary (Building #5), and the tunnel segment that branches from Hamblet House (Building #4).

13. Cut and Cap Existing Utility lines to facilitate building and tunnel demolition. Excludes existing utilities for Hamblet House (Building #4) and Children's Infirmary (Building #5).

14. Disconnect Electrical Distribution & Remove Electrical Feeders to facilitate building and tunnel demolition. Excludes existing electrical distribution and feeders for Hamblet House (Building #4) and Children's Infirmary (Building #5).

15. Furnish and Install New Steam Lines underground as shown.

16. Remove and Dispose (including abatement) of Existing Utilities within tunnels. Includes the removal of the existing septic tank and four (4) associated manholes. Excludes tunnel segment that branches from Hamblet House (Building #4).

17. Furnish and Install New Spare Conduits includes trenching and installing four (4) 4" PVC conduits with pull strings from the underground utility tunnel to existing Beasley Hospital Building as shown.

18. Remove and Replace Water Line located within the Laundry (Building #7) to facilitate demolition and to restore service to the existing hydrant following demolition.

19. Perimeter Soil Excavation and Associated Backfill includes excavation of the top 2 feet along a 10 foot perimeter around each building to be demolished and backfill building graves with assumed impacted soils. Excludes perimeter soil excavation from Hamblet House (Building #4) and Children's Infirmary (Building #5).

20. New Tunnel Electrical Service Panel and Connections shall be furnished and installed to restore select services within the utility tunnel to remain.

21. Tunnel CLSM Backfill will include pouring CLSM within the tunnel segment around high voltage lines to remain in place.

22. AOC-1 TPH impacted Soil Excavation and Stockpile as shown for impacted soil adjacent to the Providence Center (Building #6).

23. AOC-2 Chlordane Impacted Soil Excavation and Stockpile as shown for impacted soil adjacent to the Children's Infirmary (Building #5).

Refer to the drawings for a detailed layout and scope of each aspect of the project.

In addition to the general construction activities described previously, the work encompassed by the subject contract shall include, but is not limited to the following documentation:

- Coordination with the Owner and the Owners' representatives
- Payment and Performance Bonds as described under General Conditions
- Specific Insurance coverage as described under General Conditions
- Demolition Permits for each building, submitting Abatement Plans to RIDOH.
- Provide a job trailer for the duration of the project.
- Provide temporary sanitary facilities for the duration of the project.
- Construction and maintenance of a temporary construction fence.
- Mobilize all equipment to the job site that is needed to complete the work and then decontaminate and demobilize same upon completion.
- Prepare for work by preparing and submitting for approval HASP, Traffic Control, Storm Water Management / Erosion Control Plan, Shop drawings, as well as all other submittals required to complete the work.
- Provide pest control during demolition activities.
- Install erosion control systems per the drawings.
- Provide all equipment and materials needed to control dust within the project limits as directed by the Engineer.
- Site clearing, and erosion control, including removal and disposal of all debris
- Earth excavation, soil handling, hauling, placement, compaction, grading and off-site disposal of excess soils if required.
- Furnish, install, compact and grade new clean fill material
- Maintain the site and control erosion during the work until such time that vegetative cover has been established and accepted by the Owner

All work items listed above shall be completed in accordance with all Local, State, and Federal regulations and industry standard best practices as pertaining to each work item.

1.03 SCOPE OF WORK (ADD ALTERNATE)

The work covered by this Contract shall include the following activities, conducted in accordance with the contract bid documents and under the supervision of the Owner and the Engineer:

1. Retaining Wall and Slab shall include furnishing and installing new 2'x2'x4' precast concrete block retaining wall with safety railing, along with a new concrete slab for storage containers and providing new electrical services for storage containers.

2. Temporary Storage Containers shall include furnishing and installing five (5) 40'x8' storage containers, where two (2) of the containers will be equipped with temperature control.

3. Abatement and Demolition of Hamblet House (Building #4, three (3) story building, approximately 16,000 SF floor area) and Children's Infirmary (Building #5, two (2) story building, approximately 16,000 SF floor area). Associated work for abatement and demolition of these buildings and associated tunnels includes but is not limited to furnishing and installing a temporary fence and erosion controls, disconnecting electrical feeders, perimeter soil excavations and associated backfilling of building graves with assumed impacted soils, and all associated utility removal.

4. Backfill and Compact Demolished Building Areas and Tunnels with Common Burrow to Existing Grade for Phase 3 with a minimum of 2' of clean soil over assumed impacted soils

5. Plug & Fill Existing Abandoned Steam Lines with CLSM flowable fill.

Refer to the drawings for a detailed layout and scope of each aspect to the project.

In addition to the general construction activities described previously, the work encompassed by the subject contract shall include, but is not limited to the following documentation:

- Coordination with the Owner and the Owners' representatives
- Payment and Performance Bonds as described under General Conditions
- Specific Insurance coverage as described under General Conditions
- Provide a job trailer for the duration of the project.
- Provide temporary sanitary facilities for the duration of the project.
- Construction and maintenance of a temporary construction fence.
- Mobilize all equipment to the job site that is needed to complete the work and then decontaminate and demobilize same upon completion.
- Prepare for work by preparing and submitting for approval HASP, Traffic Control, Storm Water Management / Erosion Control Plan, Shop drawings, as well as all other submittals required to complete the work.
- Provide pest control during demolition activities.
- Install erosion control systems per the drawings.
- Provide all equipment and materials needed to control dust within the project limits as directed by the Engineer.
- Site clearing, and erosion control, including removal and disposal of all debris
- Earth excavation, soil handling, hauling, placement, compaction, grading and off-site disposal of excess soils if required.
- Furnish, install, compact and grade new clean fill material
- Maintain the site and control erosion during the work until such time that vegetative cover has been established and accepted by the Owner

All work items listed above shall be completed in accordance with all Local, State, and Federal regulations and industry standard best practices as pertaining to each work item.

1.04 SPECIAL REQUIREMENTS

A. The Contractor will coordinate the construction schedule with the owner's representative to ensure that access to areas is permitted during the planned time.

B. The Contractor shall be responsible for removing and protecting any equipment that may interfere with the construction operations. Immediately upon completion of construction activities in each area, the contractor shall be responsible for maintaining the site in a finished condition until accepted by the Owner.

C. The Contractor shall be responsible for verifying the existing and forecasted weather conditions to determine when the conditions are acceptable for work conditions and may be performed in full compliance with the construction storm water management plan.

D. The Contractor shall be always prepared to protect any uncompleted work from the rapid changes in the weather. If work continues during sudden rains the Contractor shall be responsible to protect the work area.

1.05 FORM OF SPECIFICATION

A. These specifications are written in imperative and abbreviated form. Imperative language of Specification sections is directed at Contractor, unless specifically noted otherwise. Incomplete sentences in Specifications shall be completed by inserting "shall," "Contractor shall," "shall be," and similar mandatory phrases by inference in same manner as they are applied to notes on Drawings. Words "shall be" shall be supplied by inference where colon (:) used within sentences or phrases. Except as worded to contrary, fulfill (perform) indicated requirements whether stated imperatively or otherwise.

B. Items of work are specified by section. Specifications or requirements of one or more sections may apply or be referenced in other sections.

C. The Contractor shall provide work described and comply with requirements stated in each Specification section and Drawings unless specifically assigned to other Contractors or Owner.

1.06 WORK BY OTHERS

A. The Contractor shall limit activities to the areas designated so as to not interfere with work by other on-site contractors or tenants.

1.07 MILESTONES

A. The Contractor shall adhere to the schedule items outlined in the specifications. The construction schedule shall be submitted to the Engineer for approval within fourteen (14) days of execution of the Contract. Limit activities to the areas designated to not interfere with work by other on-site contractors or staff. It is the intent of this contract to begin project work 21 days from issue of P.O. and substantial completion of Phase 1 by November 14, 2025. Substantial completion of Phase 2 & Phase 3 shall be achieved by March 1, 2026.

1.08 CONTRACTORS USE OF PREMISE

A. The Contractor shall limit use of premises for work and storage of materials to allow for the following.

1. Work by other contractors.

2. Owner / Tenant occupancy.

B. The Contractor shall conduct operations to ensure least inconvenience to the owner, facility tenants and other contractors.

C. The Contractor shall assume full responsibility for protection and safekeeping of site areas, Contractor’s equipment and products, under this Contract.

D. The Contractor shall confine operations to areas within the contract limits indicated and shall not disturb portions of the site beyond areas in which Work is indicated.

E. The Contractor shall keep driveways, roads, and entrances serving premises clear, clean and available to Owner and public at all times except when approved by Engineer and shall not use these areas for parking or storage of materials.

F. The Contractor shall not use any of the facilities of the tenants or neighbors at any time.

G. The Contractor shall schedule deliveries to minimize space and time requirement for storage of materials and equipment on Site.

PART 2 - PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

SECTION 01150
MEASUREMENT AND PAYMENT

PART 1.0 - GENERAL

1.1 This section describes the measurement of and the payment for the work to be done under the items listed in the Bid.

1.2 Each Unit or Lump-Sum Price stated in the Bid shall constitute full compensation for all labor, equipment, materials and all incidental and appurtenant work required or necessary to satisfactorily complete the specified work in the accordance with the Drawings and Specifications.

1.3 Appurtenant items of work shown on the Drawings or specified or required to complete the work but not listed separately under the list of items in the Bid shall be included in the cost of payment under the various applicable bid items of work and no separate payment will be made for such items. It shall be the responsibility of the Contractor to verify any missing or incomplete items.

1.4 All existing work removed or damaged by the Contractor's operations shall be replaced to the satisfaction of the Owner at no additional expense to the Owner.

1.5 The limits of work shown on the plans shall be considered to be the pay limits. If the Contractor carries work beyond the designated limits without prior approval of the Owner or the Owner's Representative, then the Contractor shall restore that additional area at his own expense. Any work conducted beyond the specified pay limits, unless approved in writing by the Owner, shall not be measured for payment.

1.6 Estimated quantities of work or any other construction under this contract may change depending on actual field conditions. Any increase or decrease in quantities shall in no way affect this Contract, the unit price of the work item or give cause for claims or liabilities for damages.

1.7 Proposed items of work under this Contract are given for use in comparing bids and the right is especially reserved by the Owner to diminish them as may be deemed necessary or desirable by the Owner to meet available funding. Such changes to the proposed items of work shall in no way affect this Contract, nor give cause for claims or liabilities for damages.

1.8 The Owner has the right to delete any item or items from the Contract.

1.9 All unit prices and bids shall be representative of the work to be undertaken or of items to be supplied. Unbalanced bids shall not be permitted and may be the basis for disqualification of the bid.

1.10 All work for this project is to be done in accordance with the latest edition of International Building Code as amended, and the specifications accompanying these Contract Documents. Standard details for this project are the details accompanying these Contract Documents.

1.11 It shall be the Contractors responsibility to verify all quantities before submitting his/her bid proposal. The Contractor shall include the cost of permits, bonds, delivery, overhead, and other indirect costs in his/her bid items.

PART 2.0 – BASE BID MEASUREMENT AND PAYMENT

2.01 BID ITEM 1. MOBILIZATION AND DEMOBILIZATION

A. Measurement:
Mobilization and Demobilization shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, coordination with the RIDOA and the Owner's Representative, preparing and submitting RIPDES CGP, preparing and submitting a HASP, preparing and submitting a rodent plan, providing a temporary office trailer for the duration of the project, permitting, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 1 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.02 BID ITEM 2. EROSION CONTROL & TEMPORARY CONSTRUCTION FENCE

A. Measurement:
Erosion Control and Temporary Construction Fence shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, coordination with the RIDOA and the Owner's Representative on shop drawing submittals, Furnish and Install erosion controls for each demolition area, as well as stockpiles areas, including furnishing and installing a 6' high post-driven galvanized chain-link temporary construction fence with gates for each demolition area as shown on plans, as well as all associated activities, completed and accepted by the Engineer. Erosion controls and temporary construction fence for the Hamblet House and Children's Infirmary are not included in Bid Item 2 and shall be paid under Add Alternate Bid Item 3.

B. Payment:
The accepted quantity for Bid Item 2 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.03 BID ITEM 3. ABATEMENT AND DEMOLITION OF DANFORD & BARNES HOUSE

A. Measurement:
Abatement and Demolition of Danford & Barnes House shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, coordination with the RIDOA and the Owner's Representative on shop drawing submittals and associated work hours and staging areas, post proper signage of possible hazards on site during construction, obtaining required State and Local permits prior to starting work, compliance with an asbestos abatement plan in accordance with RIDOH regulations as prepared by the Engineer, abatement, demolition and disposal of the building including foundation and slab, removal and disposal of sidewalks associated with the buildings, removal and disposal of materials within the buildings, including loading material for disposal, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 3 shall be paid for at the contract Price of Lump Sum, complete and

accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.04 BID ITEM 4. ABATEMENT AND DEMOLITION OF PROVIDENCE CENTER

A. Measurement:
Abatement and Demolition of Providence Center shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, coordination with the RIDOA and the Owner's Representative on shop drawing submittals and associated work hours and staging areas, post proper signage of possible hazards on site during construction, obtaining required State and Local permits prior to starting work, compliance with an asbestos abatement plan in accordance with RIDOH regulations as prepared by the Engineer, abatement, demolition and disposal of the building including foundation and slab, removal and disposal of sidewalks associated with the buildings, removal and disposal of all materials within the buildings, including loading material for disposal, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 4 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.5 BID ITEM 5. DEMOLITION OF SCREEN HOUSE

A. Measurement:
Demolition of Screen House shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, coordination the Owner's Representative on shop drawing submittals and associated work hours and staging areas, post proper signage of possible hazards on site during construction, obtaining required State and Local permits prior to starting work, compliance with demolition plan as prepared by the Engineer, demolition and disposal of the building including foundation and slab, removal and disposal of sidewalks associated with the buildings, removal and disposal of all materials within the buildings, including loading material for disposal, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 5 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.06 BID ITEM 6. ABATEMENT AND DEMOLITION OF LAUNDRY BUILDING

A. Measurement:
Abatement and Demolition of Laundry Building shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, coordination with the RIDOA and the Owner's Representative on shop drawing submittals and associated work hours and staging areas, post proper signage of possible hazards on site during construction, obtaining required State and Local permits prior to starting work, compliance with an asbestos abatement plan in accordance with RIDOH regulations as prepared by the Engineer, abatement, demolition and disposal of the building including foundation and slab, removal and disposal of

sidewalks associated with the buildings, removal and disposal of all materials within the buildings, including loading material for disposal, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 6 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.07 BID ITEM 7. DEMOLITION OF OLD SUPERINTENDENT GARAGE

A. Measurement:
Demolition of Old Superintendent Garage shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, coordination with the Owner's Representative on shop drawing submittals and associated work hours and staging areas, post proper signage of possible hazards on site during construction, obtaining required State and Local permits prior to starting work, compliance with demolition plans as prepared by the Engineer, demolition and disposal of the building including foundation and slab, removal and disposal of sidewalks associated with the buildings, removal and disposal of all materials within the buildings, including loading material for disposal, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 7 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.08 BID ITEM 8. ABATEMENT AND DEMOLITION OF STAFF COTTAGE A

A. Measurement:
Abatement and Demolition of Staff Cottage A shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, coordination with the RIDOA and the Owner's Representative on shop drawing submittals and associated work hours and staging areas, post proper signage of possible hazards on site during construction, obtaining required State and Local permits prior to starting work, compliance with an asbestos abatement plan in accordance with RIDOH regulations as prepared by the Engineer, abatement, demolition and disposal of the building including foundation and slab, removal and disposal of sidewalks associated with the buildings, removal and disposal of all materials within the buildings, including loading material for disposal, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 8 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.09 BID ITEM 9. ABATEMENT AND DEMOLITION OF STAFF COTTAGE B

A. Measurement:
Abatement and Demolition of Staff Cottage B shall be measured by Lump Sum. The work measured under

this item shall include but not be limited to, coordination with the RIDOA and the Owner's Representative on shop drawing submittals and associated work hours and staging areas, post proper signage of possible hazards on site during construction, obtaining required State and Local permits prior to starting work, compliance with an asbestos abatement plan in accordance with RIDOH regulations as prepared by the Engineer, abatement, demolition and disposal of the building including foundation and slab, removal and disposal of sidewalks associated with the buildings, removal and disposal of all materials within the buildings, including loading material for disposal, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 9 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.10 BID ITEM 10. ABATEMENT AND DEMOLITION OF STAFF COTTAGE C

A. Measurement:
Abatement and Demolition of Staff Cottage C shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, coordination with the RIDOA and the Owner's Representative on shop drawing submittals and associated work hours and staging areas, post proper signage of possible hazards on site during construction, obtaining required State and Local permits prior to starting work, compliance with an asbestos abatement plan in accordance with RIDOH regulations as prepared by the Engineer, abatement, demolition and disposal of the building including foundation and slab, removal and disposal of sidewalks associated with the buildings, removal and disposal of all materials within the buildings, including loading material for disposal, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 10 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.11 BID ITEM 11. ABATEMENT AND DEMOLITION OF UNDERGROUND UTILITY TUNNELS

A. Measurement:
Abatement and Demolition of Underground Utility Tunnels shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, coordination with the RIDOA and the Owner's Representative on shop drawing submittals and associated work hours and staging areas, post proper signage of possible hazards on site during construction, obtaining required State and Local permits prior to starting work, coordinating with the local fire department, compliance with an asbestos abatement plan in accordance with RIDOH regulations as prepared by the Engineer, abatement, demolition and disposal of the tunnels, as well as all associated activities, completed and accepted by the Engineer. Bid Item 11 excludes the tunnel segment that branches from Hamblet House which shall be covered by Add Alternate Bid Item 3.

B. Payment:
The accepted quantity for Bid Item 11 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.12 BID ITEM 12. BACKFILL AND COMPACT DEMOLISHED BUILDING AREAS AND TUNNELS AND AOC-1 WITH COMMON BURROW TO EXISTING GRADE

A. Measurement:
Backfill and Compact Demolished Building Areas and Tunnels with Common Borrow to Existing Grade shall be measured by Cubic Yard. The work measured under this item shall include but not be limited to, furnishing and backfilling with clean fill material, with an assumed quantity of 7,000 CY, and compaction over demolished building graves, tunnel graves, AOC-1, and as shown on the plans, as well as all associated activities, including constructing the earthen barriers over impacted soils backfilled in building graves, completed and accepted by the Engineer. Prior to bringing fill material onto the subject site, the contractor shall submit documents for review and approval by the engineer, certifying that all fill material brought onto the site from another location is clean fill by analysis for priority pollutant 13 metals, polycyclic aromatic hydrocarbons, total petroleum hydrocarbons and volatile organic compounds. All analytical results must meet the Rhode Island Department of Environmental Management (RIDEM) residential direct exposure criteria for soil. Bid Item 12 excludes backfill of building graves for the Hamblet House and Children's Infirmary, as well as the tunnel segment that branches from Hamblet House which shall be carried in Add Alternate Bid Item 4.

B. Payment:
The accepted quantity for Bid Item 12 shall be paid for at the contract Price of Cubic Yard, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.13 BID ITEM 13. CUT AND CAP EXISTING UTILITY LINES

A. Measurement:
Cut and Cap existing utility lines to facilitate the demolition for each building such as water lines, sewer lines, stormwater lines shall be measured by Lump Sum. The work measured under this item shall include but not be limited to cut and capping existing utility lines such as water, sewer, stormwater lines to each building as well as all associated activities, completed and accepted by the Engineer. Bid item 13 excludes the cutting and capping of utilities for Hamblet House and the Children's Infirmary which shall be carried in Add Alternate Bid Item 3.

B. Payment:
The accepted quantity for Bid Item 13 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.14 BID ITEM 14. DISCONNECT ELECTRICAL DISTRIBUTION & REMOVE ELECTRICAL FEEDERS

A. Measurement:
Disconnect Electrical Distribution & Remove Electrical Feeders shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, coordination with the RIDOA and the Owner's Representative as well as Disconnecting existing electrical distribution feeders as shown on plans to facilitate the demolition of each building as well as all associated activities, completed and accepted by the Engineer. Bid Item 14 excludes connections to Hamblet House and the Children's Infirmary which shall be carried in

Add Alternate Bid Item 3.

B. Payment:
The accepted quantity for Bid Item 14 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.15 BID ITEM 15. FURNISH AND INSTALL NEW STEAM LINES

A. Measurement:
Furnish & Install New Steam Lines shall be measured by Lump Sum. The work measured under this item shall include but not be limited to furnishing and installing new steam lines as shown on plans, including, trenching, bedding, backfill, compaction, completing tie-in at each end to existing steam lines as well as all associated activities, completed and accepted by the Engineer. The contractor shall plan on completing the tie-in within an eight-hour shutdown period.

B. Payment:
The accepted quantity for Bid Item 15 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.16 BID ITEM 16. REMOVE AND DISPOSE EXISTING UTILITIES

A. Measurement:
Remove and Dispose Existing Utilities shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, removal and disposal of existing utilities within tunnels, including, water, electric, steam, and communication lines as well as all associated activities, completed and accepted by the Engineer. Included in Bid Item 16 is the removal and disposal of the existing septic tank and four (4) sanitary manholes, existing sanitary lines associated with septic tank and manholes shall be cut and capped, and the area properly backfilled an compacted to restore existing conditions. Bid Item 16 excludes existing utilities in the tunnel segment that branches from Hamblet House which shall be covered by Add Alternate Bid Item 3.

B. Payment:
The accepted quantity for Bid Item 16 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.17 BID ITEM 17. FURNISH AND INSTALL NEW SPARE CONDUITS

A. Measurement:
Furnish & Install New Spare Conduits shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, furnishing and installing new (4) 4” dia. PVC conduits and pull strings as shown on plans, (conduits under roadways and parking shall be concrete encased) including, trenching, bedding, backfill, compaction, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:

The accepted quantity for Bid Item 17 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.18 BID ITEM 18. REMOVE AND REPLACE WATER LINE

A. Measurement:
Remove and Replace Water Line shall be measured by Lump Sum. The work measured under this item shall include but not be limited to cutting and capping existing water lines at the Laundry building, furnishing and install new 2" type K copper pipe to restore service to the fire hydrant as shown on the design plans, and testing the fire hydrant to ensure acceptable flow, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 18 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.19 BID ITEM 19. PERIMETER SOIL EXCAVATION AND ASSOCIATED BACKFILL

A. Measurement:
Perimeter Soil Excavation & Associated Backfill shall be measured by Lump Sum. The work measured under this item shall include but not be limited to excavating existing soil to a depth of 2 feet along a 10-foot-wide perimeter around each demolished building and backfilling and compacting the assumed impacted soil into building graves, including any associated stockpiling on site and covering soil stockpile with poly sheeting, completed and accepted by the Engineer. Bid Item 19 excludes soil excavation and associated backfill for the Hamblet House and Children's Infirmary which shall be carried in Add Alternate Bid Item 3.

B. Payment:
The accepted quantity for Bid Item 19 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.20 BID ITEM 20. NEW TUNNEL ELECTRICAL SERVICE PANEL AND CONNECTIONS

A. Measurement:
New Tunnel Electrical Service Panel and Connections shall be measured by Lump Sum. The work measured under this item shall include but not be limited to furnishing and install new electrical panel, wiring, breakers, outlets, and all other appurtenances for the installation as shown on the design plans, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 20 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.21 BID ITEM 21. TUNNEL CLSM BACKFILL

A. Measurement:
Tunnel CLSM Backfill shall be measured by Cubic Yards. The work measured under this item shall include but not be limited to plugging the tunnel adjacent to the high voltage lines as indicated on the plans and backfilling with CLSM excavatable flowable fill with a compressive strength of 150 psi at 28 days, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 21 shall be paid for at the contract Price of Cubic Yards, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.22 BID ITEM 22. AOC-1 TPH IMPACTED SOIL EXCAVATION AND STOCKPILE

A. Measurement:
AOC-1 TPH Impacted Soil Excavation & Stockpile shall be measured by Cubic Yards. The work measured under this item shall include but not be limited to excavating existing TPH impacted soil to a depth of 2 feet in the 11,600 SF AOC-1 area as shown on the plans and as directed by the Engineer, and stockpiling material on site for disposal, including covering soil stockpile with poly sheeting. The contractor shall coordinate with the Engineer to complete sampling and analysis of the stockpile soil for disposal characterization as well as all associated activities, completed and accepted by the Engineer. Disposal costs shall be carried separate in Bid Items 24, 25, & 26 and Part 4.0 – Unit Price.

B. Payment:
The accepted quantity for Bid Item 22 shall be paid for at the contract Price of Cubic Yards, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.23 BID ITEM 23. AOC-2 CHLORDANE IMPACTED SOIL EXCAVATION AND STOCKPILE

A. Measurement:
AOC-2 Chlordane Impacted Soil Excavation & Stockpile shall be measured by Cubic Yards. The work measured under this item shall include but not be limited to excavating existing Chlordane impacted soil to a depth of 2 feet in the 1,500 SF AOC-2 area as shown on the plans and as directed by the Engineer, and stockpiling material on site for disposal, including covering soil stockpile with poly sheeting. The contractor shall coordinate with the Engineer to complete sampling and analysis of the stockpile soil for disposal characterization as well as all associated activities, completed and accepted by the Engineer. Disposal costs shall be carried separate in Bid Items 24, 25, & 26 and Part 4.0 – Unit Price.

B. Payment:
The accepted quantity for Bid Item 23 shall be paid for at the contract Price of Cubic Yards, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.24 BID ITEM 24. SOIL TRANSPORTATION AND DISPOSAL AS ALTERNATE COVER MATERIAL

A. Measurement:
Soil Transportation and Disposal as Alternate Cover Material shall be measured by Ton. The work measured under this item shall include but not be limited to loading, hauling, transportation and disposal of soil as Alternate Cover Material to RIRRC or other permitted facility with an assumed quantity of 1,000 tons, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 24 shall be paid for at the contract Price of Ton, based on weight slips complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.25 BID ITEM 25. SOIL TRANSPORTATION AND DISPOSAL AS SOLID WASTE

A. Measurement:
Soil Transportation and Disposal as Solid Waste shall be measured by Ton. The work measured under this item shall include but not be limited to loading, hauling, transportation and disposal of soil as Solid Waste to RIRRC or other permitted facility with assumed quantity of 1,000 tons, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 25 shall be paid for at the contract Price of Ton, based on weight slips complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

2.26 BID ITEM 26. SOIL TRANSPORTATION AND DISPOSAL AS HAZARDOUS WASTE

A. Measurement:
Soil Transportation and Disposal as Hazardous Waste shall be measured by Ton. The work measured under this item shall include but not be limited to loading, hauling, transportation and disposal of soil as Hazardous Waste to an approved permitted facility with an assumed quantity of 225 tons, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Bid Item 26 shall be paid for at the contract Price of Ton, based on weight slips complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

PART 3.0 – ADD ALTERNATE MEASUREMENT AND PAYMENT

3.01 ADD ALTERNATE BID ITEM 1. RETAINING WALL AND SLAB

A. Measurement:
Retaining Wall and Slab shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, excavating and stockpiling existing embankment soil, furnishing and installing new 2'x2'x4' precast concrete block retaining wall, including safety railing, furnish and install CIP concrete slab including reinforcement as shown on plans, furnishing and installing electric conduit, wiring, panels, controls as shown on plans to provide electric service to storage containers, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Add Alternate Bid Item 1 shall be paid for at the contract Price of Lump Sum complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

3.02 ADD ALTERNATE BID ITEM 2. TEMPORARY STORAGE CONTAINERS

A. Measurement:
Temporary Storage Containers shall be measured by Lump Sum. The work measured under this item shall include but not be limited to, Furnishing and Installing a total of five (5) 40'x8' Storage Containers with internal and external lights. Two (2) of the storage containers shall provide temperature control as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Add Alternate Bid Item 2 shall be paid for at the contract Price of Lump Sum complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

3.03 ADD ALTERNATE BID ITEM 3. ABATEMENT AND DEMOLITION OF HAMBLET HOUSE & CHILDREN'S INFIRMARY

A. Measurement:
Abatement and Demolition of Hamblet House and Children's Infirmary shall be measured by Lump Sum. The work measured under this item shall include demolition of and around the Hamblet House and Children's infirmary similar to work performed in the base bid including but not be limited to,

- Coordination with the RIDOA and the Owner's Representative on shop drawing submittals and associated work hours and staging areas, post proper signage of possible hazards on site during construction, obtaining required State and Local permits prior to starting work, and compliance with an asbestos abatement plan in accordance with RIDOH regulations as prepared by the Engineer;
- Furnish and install erosion controls for the demolition area around Hamblet House and Children's Infirmary, as well as stockpiles areas, including furnishing and installing a 6' high post-driven galvanized chain-link temporary constriction fence with gates for the demolition area as shown on plans;
- Disconnect existing electrical distribution feeders as shown on plans adjacent to the Children's Infirmary to facilitate the demolition of Hamblet House and the Children's Infirmary;
- Abatement, demolition and disposal of the building including foundation and slab, removal and

disposal of sidewalks associated with the buildings, removal and disposal of all materials within the buildings, including loading material for disposal;

- Excavate existing soil to a depth of 2 feet along a 10-foot-wide perimeter around Hamblet House and the Children's Infirmary and backfilling the assumed impacted soil into building graves;
- Removal and disposal of existing utilities within the tunnel adjacent to Hamblet House, including water, electric, steam, and communication lines;
- Abatement, demolition and disposal of the tunnel segment connected to Hamblet House to the proposed limits;
- Cut and capping existing utility lines such as water, sewer, stormwater lines to each building,

as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Add Alternate Bid Item 3 shall be paid for at the contract Price of Lump Sum, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

3.04 ADD ALTERNATE BID ITEM 4. BACKFILL AND COMPACT DEMOLISHED BUILDING AREAS AND TUNNELS WITH COMMON BURROW TO EXISTING GRADE FOR PHASE 3

A. Measurement:
Backfill and Compact Demolished Building Areas and Tunnels with Common Borrow to Existing Grade For Phase 3 shall be measured by Cubic Yard. The work measured under this item shall include but not be limited to, furnishing and backfilling with clean fill material and compaction at building graves and tunnel demolition limits for Hamblet House, Children's Infirmary, the tunnel segment that branches from Hamblet House, and AOC-2 with an assumed quantity of 2,000 cubic yards, as well as all associated activities, completed and accepted by the Engineer. Prior to bringing fill material onto the subject site, the contractor shall submit documents for review and approval by the engineer, certifying that all fill material brought onto the site from another location is clean fill by analysis for priority pollutant 13 metals, polycyclic aromatic hydrocarbons, total petroleum hydrocarbons and volatile organic compounds. All analytical results must meet the Rhode Island Department of Environmental Management (RIDEM) residential direct exposure criteria for soil.

B. Payment:
The accepted quantity for Add Alternate Bid Item 4 shall be paid for at the contract Price of Cubic Yard, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

3.05 ADD ALTERNATE BID ITEM 5. PLUG & FILL EXISTING ABANDONED STEAM LINES

A. Measurement:
Plug and Fill Existing Abandoned Steam Lines shall be measured by Cubic Yards. The work measured under this item shall include but not be limited to, plugging the existing abandoned steam line manholes located near the main hospital building and the manhole located near Wallum Lake Rd, and backfilling the steam line ducts with CLSM excavatable flowable fill with a compressive strength of 150 psi at 28 days, as well as all associated activities, completed and accepted by the Engineer.

B. Payment:
The accepted quantity for Add Alternate Bid Item 5 shall be paid for at the contract Price of Cubic Yards, complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

PART 4.0 – UNIT PRICES

4.01 UNIT PRICE ITEM 1. SOIL TRANSPORTATION AND DISPOSAL AS ALTERNATE COVER MATERIAL CREDIT

A. Measurement:
Soil Transportation and Disposal as Alternate Cover Material Credit shall be measured by Ton. The work measured under this item shall include but not be limited to loading, hauling, transportation and disposal of soil as Alternate Cover Material to RIRRC or other permitted facility, as well as all associated activities, completed and accepted by the Engineer. This unit price shall be determined by the Contractor as a credit for each ton less than the 1,000 tons of alternate cover material transportation and disposal as covered in Bid Item 24.

B. Payment:
The accepted quantity for Unit Price Item 1 shall be paid for at the contract Price of Ton, based on weight slips complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

4.02 UNIT PRICE ITEM 2. SOIL TRANSPORTATION AND DISPOSAL AS ALTERNATE COVER MATERIAL EXCESS

A. Measurement:
Soil Transportation and Disposal as Alternate Cover Material shall be measured by Ton. The work measured under this item shall include but not be limited to loading, hauling, transportation and disposal of soil as Alternate Cover Material to RIRRC or other permitted facility, as well as all associated activities, completed and accepted by the Engineer. This unit price shall be determined by the Contractor for each additional ton beyond the 1,000 tons of solid waste transportation and disposal as covered in Bid Item 25.

B. Payment:
The accepted quantity for Unit Price Item 2 shall be paid for at the contract Price of Ton, based on weight slips complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

4.03 UNIT PRICE ITEM 3. SOIL TRANSPORTATION AND DISPOSAL AS SOLID WASTE CREDIT

A. Measurement:
Soil Transportation and Disposal as Solid Waste shall be measured by Ton. The work measured under this item shall include but not be limited to loading, hauling, transportation and disposal of soil as Solid Waste to RIRRC or other permitted facility with assumed quantity of 1,000 tons, as well as all associated activities, completed and accepted by the Engineer. This unit price shall be determined by the Contractor as a credit for each ton less than the 1,000 tons of solid waste transportation and disposal as covered in Bid Item 25.

B. Payment:
The accepted quantity for Unit Price Item 3 shall be paid for at the contract Price of Ton, based on weight slips complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

4.04 UNIT PRICE ITEM 4. SOIL TRANSPORTATION AND DISPOSAL AS SOLID WASTE EXCESS

A. Measurement:
Soil Transportation and Disposal as Solid Waste shall be measured by Ton. The work measured under this item shall include but not be limited to loading, hauling, transportation and disposal of soil as Solid Waste to RIRRC or other permitted facility with assumed quantity of 1,000 tons, as well as all associated activities, completed and accepted by the Engineer. This unit price shall be determined by the Contractor for each additional ton beyond the 1,000 tons of solid waste material transportation and disposal as covered in Bid Item 25.

B. Payment:
The accepted quantity for Unit Price Item 4 shall be paid for at the contract Price of Ton, based on weight slips complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

4.05 UNIT PRICE ITEM 5. SOIL TRANSPORTATION AND DISPOSAL AS HAZARDOUS WASTE CREDIT

A. Measurement:
Soil Transportation and Disposal as Hazardous Waste shall be measured by Ton. The work measured under this item shall include but not be limited to loading, hauling, transportation and disposal of soil as Hazardous Waste to an approved facility with an assumed quantity of 225 tons, as well as all associated activities, completed and accepted by the Engineer. This unit price shall be determined by the Contractor as a credit for each ton less than the 225 tons of hazardous waste transportation and disposal as covered in Bid Item 26.

B. Payment:
The accepted quantity for Unit Price Item 5 shall be paid for at the contract Price of Ton, based on weight slips complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

4.06 UNIT PRICE ITEM 6. SOIL TRANSPORTATION AND DISPOSAL AS HAZARDOUS WASTE EXCESS

A. Measurement:
Soil Transportation and Disposal as Hazardous Waste shall be measured by Ton. The work measured under this item shall include but not be limited to loading, hauling, transportation and disposal of soil as Hazardous Waste to an approved facility with an assumed quantity of 225 tons, as well as all associated activities, completed and accepted by the Engineer. This unit price shall be determined by the Contractor for each additional ton beyond the 225 tons of hazardous waste transportation and disposal as covered in Bid Item 26.

B. Payment:
The accepted quantity for Unit Price Item 6 shall be paid for at the contract Price of Ton, based on weight slips complete and accepted, including permits, taxes, transportation, disposal, labor, materials, tools, equipment, testing and all other incidentals necessary to complete the work in accordance with the plans, as directed by the Engineer and to the satisfaction of the Owner.

END OF SECTION

SECTION 01175
TEMPORARY FACILITIES

PART 1.00 - GENERAL

1.01 WORK INCLUDED

A. The Contractor shall provide all temporary facilities enumerated herein or required for the proper completion of the work.

B. Temporary facilities shall include but not limited to:

Sanitary Facilities
Electrical Power
Water Supply
Lockable Trailer/Storage Container
Temporary Job Site Office Trailer

PART 2.00 - FACILITIES

2.01 SANITARY FACILITIES

A. Adequate sanitary conveniences for use of workman on the premises, properly secluded from public observance, shall be provided and maintained by the Contractor, in accordance with local and state health requirements, and in such a manner and at such points as shall be approved by these authorities, and their use shall be strictly enforced. Sanitary waste shall be treated and disposed of in a manner satisfactory to the Owner and the local and state authorities. Under no circumstances shall sanitary wastes be allowed to flow on the surface of the ground.

2.02 ELECTRICAL POWER

A. The Contractor shall provide all temporary electrical power required to operate equipment for the duration of the Contract.

B. The securing of all permits and approvals from the regulating utility companies shall be the responsibility of the Contractor. All unauthorized sources of power, such as from neighboring homes, shall be prohibited.

2.03 WATER SUPPLY

A. The Contractor shall provide all water required for abatement, dust suppression, and equipment operation for the duration of the Contract.

B. The securing of all permits and approvals from the regulating utility companies shall be the responsibility of the Contractor. All unauthorized sources of water, such as from neighboring homes, shall be prohibited.

2.04 LOCKABLE TRAILER/STORAGE CONTAINER

A. The Contractor shall provide a lockable trailer/storage container to safely secure all new equipment and

materials as required.

B. The Engineer/Owner will designate the storage location.

2.05 TEMPORARY JOB SITE TRAILER

A. The Contractor shall provide a job site trailer (min. 8'x10') with electric power, internet access, heat, desk and chair for owners use for the duration of the project.

B. The Engineer/Owner will designate the trailer location.

2.06 REMOVALS

A. The Contractor shall remove and properly dispose of all temporary facilities at the satisfactory completion of the Contract.

B. All sites utilized for temporary facilities shall be restored to a condition satisfactory to the Owner.

END OF SECTION

SECTION 01176
CHAIN LINK FENCE AND GATES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes the following perimeter fencing:

1. Chain-link fabric.
2. Framework.

1.03 REFERENCES

A. The publications listed below form a part of this Specification to the extent referenced. The current version/edition of the publication is referenced, unless otherwise noted. The publications are referred to in the text by basic designation only.

1. Chain Link Fence Manufacturer's Institute (CLFMI):
   a. CLMFI - Galvanized Steel Chain Link Fence Fabric.

2. American Society for Testing and Materials (ASTM):

   a. ASTM A 53/A 53M - Standard Specification for Pipe, Steel, Black and Hot- Dipped, Zinc-Coated, Welded and Seamless;
   b. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products;
   c. ASTM A 153/ A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware;
   d. ASTM A 392 - Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric;
   e. ASTM A 491 - Standard Specification for Aluminum-Coated Steel Chain- Link Fence Fabric;
   f. ASTM C 33 - Standard Specification for Concrete Aggregates; and
   g. ASTM C 150 - Standard Specification for Portland Cement.

1.04 DEFINITIONS

A. CLFMI: Chain Link Fence Manufacturers Institute.

1.05 SUBMITTALS

A. Product Certificates: Signed by manufacturers of chain-link fences and gates certifying that products furnished comply with requirements.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed chain-link fences and gates similar in material, design, and extent to those indicated for this Project and whose Work has resulted in construction with a record of successful in-service performance.

B. Source Limitations for all products of this section: Obtain each color, grade, finish, type, and variety of component for all products of this section from one source with resources to provide all products of this section with consistent quality in appearance and physical properties.

1.07 **PROJECT COORDINATION**

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements. It is the responsibility of the CONTRACTOR to ensure completion of the proposed removal and replacement of the fence.

PART 2 – PRODUCTS

2.01 **MANUFACTURERS**

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work shall be submitted for approval.

2.02 **CHAIN-LINK FENCE FABRIC**

A. Steel Chain-Link Fence Fabric: Provide fabric fabricated in one-piece widths for fencing in height of 5 feet. Comply with CLFMI's "Product Manual" and with requirements indicated below:

1. Mesh and Wire Size: No 9 gauge, 2-inch mesh, 0.148-inch diameter.
2. Zinc-Coated Fabric: ASTM A 392, Type II, with zinc coating applied to steel wire with the following minimum coating weight: Class 1: Not less than 1.2 oz./sq. ft. of uncoated wire surface.
3. Coat selvage ends of fabric that is metallic coated during the weaving process with manufacturer's standard clear protective coating.
4. Extend fabric to within 2” of firm ground.

B. Selvage: Twisted at top selvage and knuckled at bottom.

2.03 FENCE FRAMING

A. Posts and Rails: Round steel pipe, Standard weight, Schedule 40, galvanized steel pipe complying with ASTM F 1083. Comply with ASTM F 1043, Material Design Group IA, external and internal coating Type A, consisting of not less than 1.8-oz./sq. ft. zinc, and the following strength and stiffness requirements:

1. End, Corner, and Pull Posts 2.875 inches in diameter.
2. Line Posts 2.375 inches in diameter.

B. Post Brace Rails: Comply with ASTM F 1043. Provide brace rail with truss rod assembly for each gate, end, and pull post. Provide two brace rails extending in opposing directions, each with truss rod assembly, for each corner post and for pull posts. Provide rail ends and

clamps for attaching rails to posts.

2.04 **TENSION WIRE**

A. General: Provide horizontal tension wire at the top and bottom of fence fabric.

2.05 **FITTINGS**

A. General: Provide fittings for a complete fence installation, including special fittings for corners. Comply with ASTM F 626.

B. Rail and Brace Ends: Hot-dip galvanized pressed steel or hot-dip galvanized cast iron. Provide rail ends or other means for attaching rails securely to each gate, corner, pull, and end post.

C. Tension and Brace Bands: Hot-dip galvanized pressed steel.

D. Tension Bars: Hot-dip galvanized steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.

E. Truss Rod Assemblies: Hot-dip galvanized steel rod and turnbuckle or other means of adjustment.

F. Tie Wires, Clips, and Fasteners: Provide the following types according to ASTM F 626:

G. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:

1. Hot-Dip Galvanized Steel: 0.148-inch diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.
2. Power-driven fasteners.
3. Round Wire Hog Rings: Hot-dip galvanized steel or aluminum for attaching chain- link fabric to horizontal tension wires.

2.06 **CAST-IN-PLACE CONCRETE**

A. General: Comply with ACI 301 for cast-in-place concrete.

B. Materials: Portland cement complying with ASTM C 150, aggregates complying with ASTM C 33, and potable water for ready-mixed concrete complying with ASTM C 94.

1. Concrete Mixes: Normal-weight concrete with not less than 3000-psi compressive strength (28 days), 3-inch slump, and 1-inch maximum size aggregate.

PART 3 – EXECUTION

3.01 **EXAMINATION**

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 **PREPARATION**

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, underground structures, benchmarks, and property monuments.

3.03 **INSTALLATION, GENERAL**

A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements specified.

3.04 **CHAIN-LINK FENCE INSTALLATION**

A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed or compacted soil.

B. Post Setting: Set terminal line gate posts in concrete footing. Protect portion of posts aboveground from concrete splatter. Place concrete around posts and vibrate or tamp for consolidation. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during placement and finishing operations until concrete is sufficiently cured.

1. Exposed Concrete Footings: Extend concrete 2 inches above grade, smooth, and shape to shed water.

2. Concealed Concrete Footings: Stop footings 3 inches below grade to allow covering with surface material.

3. Posts Set into Concrete in Voids: Form or core drill holes not less than 5 inches deep and 3/4 inch larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with non-shrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions, and finished sloped to drain water away from post.

C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 30 degrees or more.

D. Line Posts: Space line posts uniformly at 10 feet on center (o.c.).

E. Post Bracing Assemblies: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Install braces at end and gate posts and at both sides of corner and pull posts. Locate horizontal braces at mid-height of fabric on fences with top rail and at two-thirds fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

1. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with 0120.inch diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric.

2. Top Tension Wire: Install tension wire through post cap loops.

3. Bottom Tension Wire: Install tension wire within 6 inches of bottom of fabric and tie to each post with not less than same gage and type of wire.

F. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 2 inches between finish grade or surface and bottom selvage, unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

G. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.

H. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.

1. Maximum Spacing: Tie fabric to line posts 12 inches o.c. and to braces 24 inches o.c.

I. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

END OF SECTION

SECTION 01180
STORAGE CONTAINERS

PART 1.00 - GENERAL

1.01 WORK INCLUDED

A. The Contractor shall furnish and install three (3) new 40’ x 8’ storage containers in the temporary storage container area with internal and external lighting.

B. The Contractor shall furnish and install two (2) new 40’ x 8’ climate-controlled storage containers in the temporary storage container area with internal and external lighting.

PART 2.00 – STORAGE CONTAINERS

2.01 NON-CLIMATE CONTROLLED STORAGE CONTAINERS

A. Non-climate-controlled storage containers shall be constructed of 100% corrugated steel and shall be weather resistant.

   a. External dimensions shall measure at least 40’ length by 8’ width by 8’-6” height for a minimum gross volume of 2,720 cubic feet.

   b. Internal dimensions shall measure at a minimum of 39’-10.5” length by 7’-8.5” width by 7’-10.25” height for a minimum internal storage volume of 2,414 cubic feet.

   c. The storage container shall feature a minimum of one (1) double steel doors with locking bars for entry on the width of the container.

B. Two (2) storage containers shall feature internal shelving along both lengths of the storage container. One (1) storage container shall feature internal shelving along only one (1) length of the storage container. All shelves shall be 3-tier, wood, and provide heavy duty capacity. Sufficient space shall be provided beneath the shelving for large items.

C. The Contractor shall furnish and install wired internal and external lighting such that illumination is provided to the satisfaction of the Owner.

2.02 CLIMATE CONTROLLED STORAGE CONTAINERS

A. Climate-controlled storage containers shall be ground level and have a minimum external dimension of 40’ length by 8’ width.

B. The refrigeration system shall have onboard controls and be capable of maintaining internal temperature ranges between -31°F and 80°F.

   a. The system shall be powered by three-phase electric.

C. The interior shall feature:

a. Flat, slip-resistant floors;

b. Interior panic button with emergency siren;

c. Interior emergency exit button and latch.

d. Motion activated lighting.

D. Entry doors shall include at a minimum one (1) double entry door and one (1) quick-access butcher door.

E. One (1) storage container shall feature internal shelving along both lengths of the storage container. One (1) storage container shall feature internal shelving along only one (1) length of the storage container. All shelves shall be 3-tier, wood, and provide heavy duty capacity. Sufficient space shall be provided beneath the shelving for large items.

D. The Contractor shall furnish and install wired internal and external lighting such that illumination is provided to the satisfaction of the Owner. Internal lighting shall be motion activated.

END OF SECTION

SECTION 01200
AS-BUILT DRAWINGS

PART 1.00 - GENERAL

1.01 WORK INCLUDED

A. The work under this Section shall include the transmittal to the Engineer of all applicable data relative to as-built conditions as may be required by the Engineer.

PART 2.00 - PRODUCTS

2.01 As-built information as specified.

PART 3.00 - EXECUTION

3.01 MARKED-UP PRINTS

A. The Engineer shall provide the Contractor with an extra set of prints of the Drawings to be used for indicating the locations, elevations and other as-built conditions.

C. The marked-up prints shall be kept up to date on a daily basis and shall be available for the Owner's inspection at all times. Any inaccuracies or incomplete information shall be correct immediately.

D. They shall be kept in a safe location by the Contractor, or at the Contractor`s option, in the offices of the Owner.

E. All markings on the prints shall be done neatly with a red pencil.

F. After review of As-Builts by the Engineer and an approval is given, the Engineer shall transmit the revised plans to the Owner via AutoCAD.

END OF SECTION

SECTION 01300
SUBMITTALS

PART 1 – GENERAL

1.00 REQUIREMENTS INCLUDED

A. Submit Product Data, Samples and Certifications concurrently as required by Contract Documents and as reasonably requested by the Engineer.

B. Prepare and submit to the Engineer no later than ten (10) calendar days after receipt of Notice to Proceed (NTP), a list of submittals required by each Specification Section in the Contract Agreement. Submit in accordance with this Section.

C. Designate in schedule data dates for submission and review of shop drawings, product data and samples, and the date of return.

1.01 PRODUCT DATA

A. Preparation
   1. Annotate each sheet to clearly identify specific product or part installed and specific data applicable to installation.
   2. Show performance characteristics and capacities.
   3. Show dimensions and clearances required.
   4. Indicate specified finish.
   5. Indicate only those sheets, which are pertinent to specific product(s) with product clearly identified.

B. Manufacturer's standard schematic drawings and documents.
   1. Modify drawings and diagrams to delete information, which is not applicable to the Work.
   2. Supplement standard information to provide information, which is applicable to the Work.

1.02 SAMPLES

A. Provide a minimum of three (3) office samples, or as otherwise indicated in the Technical Specifications, of sufficient size to clearly illustrate:
   1. Functional characteristics of the product, with integrally related parts and attachment devices.
   2. Full range of color, texture, and pattern.
   3. Samples shall be referenced to applicable section of the specifications.
   4. Sample of selected color, texture or finish is to be provided on 4" x 4" (or as appropriate) sample chip. Record sample to match actual material installed.

1.03 MANUFACTURER'S CERTIFICATION OF MATERIALS AND EQUIPMENT

A. Certification is required for the following systems:
   1. Systems requiring certification will be specified in each of the Divisions of the Technical Specifications.

1.04 CONTRACTOR REVIEW

A. Contractor shall review all submittals prior to transmittal to the Engineer.
   1. The Contractor shall consecutively number all shop drawings and product data transmittals. Re-submittals would have the same number of the previous submittal followed by the suffix "A, B, C etc."
   2. The transmittal is to contain the project number and the applicable specification section for each product represented on the transmittal.

B. Apply Contractor's stamp to submittals, initialed or signed by authorized person and dated, certifying: review of submittal, verification of products, field measurements and field construction criteria, and coordination of information within submittal with requirements of Work and the Contract Documents.

C. Submittals without Contractor's stamp or submittals that, in the Engineer's opinion are incomplete, contain numerous errors, or have not been checked or have only been checked superficially, will be returned without comments. Delays resulting there from shall be solely the Contractor's responsibility.

D. Clearly note proposed deviations from the Contract Documents on submittals. Submit listing identifying deviations in a format acceptable to the Engineer.

E. Contractor shall be responsible to ensure quantities and dimensions shown on submittals comply with the requirements of the Contract Documents.

1.05 SUBMISSION REQUIREMENTS

A. Make submittals promptly in accordance with approved schedule and in such sequence as to cause no delay in the Work. Submittals by Contractor shall be made only through the Engineer.
B. Number of submittals required:

   1. Shop Drawings: Submit one (1) reproducible transparency (sepia) and three (3) opaque reproductions (prints) in addition to what the Contractor will require back.
   2. Product Data: Submit copies Contractor requires, plus three (3) originals that will be retained by the Engineer.
   3. Samples: Submit two (2) samples of each material or the number required in each specification section.

C. Submittals shall contain:

   1. Date of submission and dates of any previous submissions.
   2. Project title and number.
   3. Contract identification number.
      a. The names of:
      b. Contractor.
      c. Subcontractor.
      d. Supplier.
      e. Manufacturer.
   4. Identification of the product, with the specification section number.
   5. Field dimensions, clearly identified as such.

6. Relation to adjacent or critical features of the Work or Materials.
7. Applicable standards, such as ASTM or Federal Specification numbers.
8. Identification of deviations from Contract Documents and justification.
9. Identifications of revisions on re-submittals.
10. Additional information as required by Contract Documents.
11. An 8-in.x 3-in. blank space for Contractor and Engineer stamps.

D. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Engineer and/or Engineer's review of submittals

E. Numbering system established by the Contractor shall be agreeable to Engineer.

1.06 RESUBMISSION REQUIREMENTS

A. Make any corrections or changes in the submittals required by the Engineer, mark number of submission, and resubmit as required until approved.

B. Product Data:
1. Revise initial data, and resubmit as specified for the initial submittal.
2. Indicate any changes which have been made other than those requested by the Engineer.
3. Mark number of submission and resubmit until accepted.

C. Samples: Submit new samples as required for initial submittal. Remove samples, which are "rejected" or designated "resubmit."

1.07 ENGINEER REVIEW RESPONSIBILITIES

A. The Engineer shall review submittals with responsible promptness in accordance with the requirements of the Project Manual.

B. Affix stamp and initials or signature, and indicate requirements for revisions and re-submittal, if any.

C. Return submittals to Contractor and Owner for distribution, or for resubmission within fourteen (14) days of original receipt.

1.08 SUBMITTAL LIST

A. Health and Safety Plan (HASP)
B. RIPDES CGP, SWPPP
C. Rodent Plan
D. Shop Drawings
E. Permits

END OF SECTION 01300

SECTION 01400
QUALITY CONTROL

PART 1 – GENERAL

1.00 RELATED DOCUMENTS

A. Documents related to this section include, but are not limited to, General Conditions, Special Conditions, Bidding Documents, Technical Specifications and Drawings

1.01 QUALITY CONTROL

A. The contractor shall be:
   1. acceptable to the owner
   2. acceptable and approved by the material manufacturers / suppliers

B. Any deficiencies noted during construction inspection must be corrected by the contractor and approved by the owner at no additional expense to the owner

1.02 FIELD QUALITY CONTROL

A. The existing dimensions shown on the plans are approximated and used to describe the scope of work. The contractor shall verify all existing dimensions.

B. Any discrepancies found must be submitted to the Engineer in writing.

1.03 RANDOM SAMPLING

A. During the course of work, the owner / engineer may at their discretion secure samples of materials being used from containers at the job site and submit them to an independent laboratory for testing and comparison to specified materials.

B. If test results prove that a material is not functionally equal to specified material:
   1. The Contractor shall pay for all testing
   2. All materials having failed testing that have been installed will be removed and replaced with specified materials at no additional expense to the owner
   3. All materials having failed testing not installed will be removed from the job site and replaced with specified materials at no additional expense to the owner

PART 2 – PRODUCTS

2.00 GENERAL

A. Comply with quality control, references, specifications and manufacturer's data. Where a conflict exists, the more stringent requirements govern.

PART 3 – EXECUTION

3.00 SUBMITTALS

A. Provide property owner/engineer a letter from the material manufacturer indicating that the applicator is approved to install their products and will provide warranty for this installation

END OF SECTION 01400

SECTION 01600
DELIVERY, STORAGE AND HANDLING

PART 1 – GENERAL

1.00 RELATED DOCUMENTS

A. Documents related to this section include, but are not limited to, General Conditions, Special Conditions, Bidding Documents, Technical Specifications and Drawings

PART 2 - DELIVERY, STORAGE AND HANDLING

2.00 DELIVERY OF MATERIALS

A. Deliver materials to the job-site in new, dry, unopened and well marked containers showing product and manufacturer's name

B. Deliver materials in sufficient quantity to allow continuity of work

2.01 STORAGE OF MATERIALS

A. Remove plastic packing shrouds. Cover all stored materials with canvas tarp top to bottom. Secure tarps

B. Ground Storage: store materials in a secure location as directed by owner/engineer to avoid interference with normal operations of the site

2.02 MATERIAL HANDLING

A. Handle all materials on site to avoid bending, tearing, or other damage during transportation and installation

B. Material handling equipment shall be selected and operated so as not to damage existing construction. Do not operate or situate material handling equipment in locations that will hinder smooth flow of vehicular or pedestrian traffic.

C. Handle all materials in accordance with manufacturer's guidelines

2.03 ENVIRONMENTAL REQUIREMENTS

A. Do not work when environmental conditions exceed the material manufacturer's guidelines

B. Protect all unfinished work from rain, water or other harsh environmental conditions

C. Any damage to materials or existing construction caused by the contractors failure to protect such shall be repaired or replaced at no additional expense to the owner

END OF SECTION 01600

DIVISION 02 – SITE PREPERATION INDEX

SECTION 02202

EARTH WORK AND CONSTRUCTION SOIL MANAGEMENT PLAN

PART 1.00 - GENERAL

1.01 DESCRIPTION

A. The work covered under this section includes all activities required to manage soil handled at the site, including:

1. Performing all operations of excavating, back-filling, compacting, grading, hauling, and other work necessary for the construction of earth work site capping, structures and pavements, and appurtenant work in accordance with the Drawings and Specifications.

2. Excavation of pavements, unsuitable materials, and their disposal in approved locations. Any surplus excavated materials shall be disposal off site in approved locations is included as a work item under this section.

3. All dust and erosion control requirements.

4. Protection of existing pipelines, utilities, structures and new work.

B. DEFINITIONS

1. Earth excavation shall mean the excavation, removal, stockpiling and/or satisfactory disposal of all materials, within the limits set forth or as directed.

2. Materials to be excavated shall include organic and inorganic silts, peat, clays, sand, gravel; pavement, cobbles and boulders; soft or disintegrated rock; brick and concrete masonry; debris and all other obstructions not included in other sections.

a. Unsuitable materials for use as backfill are defined as organic matter, silt, peat, and solid waste or any combination thereof having unsuitable in-situ bearing properties; and all materials that are too loose or saturated to provide satisfactory bearing when used for backfill.

b. If unsuitable material is encountered the Contractor shall immediately notify the Engineer and shall not proceed further until instructions are given. No material of any kind may be removed from the site without prior approval by the Engineer.

1.02 PROTECTION

A. TREES AND SHRUBBERY

1. Existing trees and shrubbery to remain shall be protected from injury.

2. Except as otherwise directed, cutting and trimming of existing trees will not be permitted.

3. All existing trees to remain and which may be damaged by construction operations shall be boxed and placed and protected and all such protection shall be maintained until completion of the work.

B. EXISTING UTILITIES

1. Excavation and backfill operations shall be done in such a manner as to prevent cave-ins of excavations or the undermining, damage, or disturbing of existing utilities and structures or of new work.

2. Backfill shall be placed and compacted so as to prevent future settlement or damage to existing utilities, structures, new work and in accordance with the requirements of the particular utility company.

3. Any excavation improperly backfilled or where settlement occurs shall be reopened to the depth required, then refilled with new materials and compacted, and the surface restored to the required grade and condition, at no additional cost to the Owner.

C. PROPERTY

1. Any damage done due to excavation, backfilling or settlement of the backfill or injury to persons or damage to property occurring as a result of such damage, shall be the responsibility of the Contractor. All costs to repair such damage, in a manner satisfactory to the property Owner, shall be borne by the Contractor, at no additional cost to the Owner.

1.03 DELIVERY, STORAGE AND HANDLING

A. Prior to bringing off-site fill material onto the subject site the contractor shall submit documents for review and approval by the engineer, certifying that the all fill material brought onto the site from another location as clean fill by analysis for priority pollutant 13 metals, polycyclic aromatic hydrocarbons, total petroleum hydrocarbons and volatile organic compounds. All analytical results must meet the Rhode Island Department of Environmental Management (RIDEM) Residential Direct Exposure Criteria for Soil.

B. Soil materials to be used at the site shall be stockpiled on site in a manner to prevent erosion or runoff of material and release of dust. The material shall be protected from cross contamination from other materials. All stockpiled contaminated on-site material shall be covered with 6 mil. polyethylene sheeting and the surrounding silt sock.

C. The contractor shall be required to use covered trucks during the hauling and transportation of soil, remove all loose or adhered soils from the transport vehicle before it leaves the site or crosses any road and shall sweep and clean pavement of any soil that is deposited onto any roadway continually during the work.

PART 2.00 - PRODUCTS

A. COMMON BORROW

Clean fill to be used as backfill material as needed to meet the grades shown on the plans shall be gravelly in nature and shall conform to the minimum data as specified below and shall consist of clean, hard and durable particles or fragments, and shall be free from clay, organic matter, or other objectionable material. Gradation shall conform to the requirements below:

U.S. STANDARD SIEVE SIZE	% PASSING BY WEIGHT
3"	60-100
1/2"	50-85
3/8"	45-80
#4	40-75
#40	0-45
#200	0-15

B. LOAM

The material to be furnished shall consist of screened loose, friable, fine sandy loam or sandy loam, as defined by the USDA's Soil Conservation Service in the Soil Survey Manual issued in 1993, free of subsoil, refuse, stumps, roots, rocks, cobbles, stones, brush, noxious weeds, litter and other materials which are larger than ½-inch in any dimension and which will prevent the formation of a suitable seed bed. Organic matter shall constitute not less than 5 percent nor more than 20 percent of the loam as determined by loss-on-ignition of oven dried samples that have been drawn by the Engineer, unless otherwise specified or directed. The loam shall have an acidity range of 5.5 pH to 7.6 pH. The Contractor shall notify the Department of the intended source of loam to be employed at least two weeks prior to the intended time of use to allow time for sampling. Loam shall conform to all applicable specification requirements prior to its final placement on the project. The practice of culling deleterious or out of specification material after placement and/or grading in-place will not be allowed.

C. SEED MIXTURE

Seed mixture shall be, in percent by volume by weight (pure live seed), Chewing Fescue 30-85, improved varieties Kentucky Bluegrass 30-90, improved varieties Perennial Rye 40-90 and applied at a minimum rate of 150 lbs/acre.

PART 3.00 - EXECUTION

3.01 EXCAVATION

A. EXCAVATION GENERAL

1. The Contractor shall remove all soil, rock, and other material and utilize existing excavated material as backfill under the proposed barrier or dispose of these materials as required by the contract documents. Excavation operations shall be conducted so that material outside the limits of work will not be disturbed. All erosion controls shall be installed prior to any excavation activities. All materials removed from site shall be approved in writing and in advance by the engineer.

2. The Contractor shall protect existing pavements and base courses to remain, and repair damage caused by excavations, at no expense to the Owner.

3. Protect existing pipelines, utilities and structure so that no damage occurs during exaction operations.

4. Keep all material a safe distance back from the edge of excavation to avoid overloading of the sides of excavation and prevent slides or cave-ins.

B. CONTROL OF WATER

1. All excavations shall be kept dry at all times, and all construction work shall be performed in the dry, unless otherwise authorized or directed by the Engineer. See section entitled "02290 Dewatering" for the specific requirements governing dewatering of excavations.

2. Grading shall be accomplished to prevent surface water from flowing into excavations.

3. Accumulated water shall be removed by pumping or other approved methods

4. The pipeline shall not be used for trench draining and shall be protected from flooding at all times.

5. Any material which becomes unsuitable to as a result of the Contractor's lack of dewatering or improper dewatering shall be removed by the Contractor and replaced with earth borrow, as directed and approved by the Engineer, at no additional expense to the Owner.

C. EXECUTION

The Contractor shall:

1. Excavate to the lines and grades required. Also resulting below grade excavations shall be refilled with compacted selected materials from excavations or earth borrow.

2. Immediately after excavation to the indicated bottom, compact exposed bottom surface with two (2) passes of an approved plate type vibrating compactor to ninety-five (95) percent compaction.

3. Perform manual excavation adjacent to and below existing structures and utilities to prevent disturbance of or damage to the existing structures and utilities.

4. Provide temporary support to existing subsurface utilities as approved by the respective utility companies or to other facilities adjacent to or crossing through excavation at no additional expense to the Owner.

5. Take all necessary measures to prevent lateral movement or settlement of the existing structures or work in progress.

6. Provide temporary sheeting and shoring in all locations where excavation trenches 5 feet deep or greater to maintain the trench in a safe condition and to meet all OSHA trenching and excavation requirements of 29 CFR 1926.652 and 1926.652 safety regulations. An approved type of trenching box may be substituted for sheeting and shoring in locations approved by the Engineer.

i. The Engineer may order additional sheeting and shoring where in his opinion safety regulations are being violated or the trench is not in a safe condition.

ii. No excessive trench widths will be allowed to avoid the use of sheeting or trenching box. The trench width at and below a level on (1) foot above the top of the pipe shall not exceed the pay limit indicated on the drawings for the size of pipe being installed.

iii. Shoring and bracing shall be left in place as directed by the Engineer to maintain stability as backfilling progresses.

7. If an excavation is made deeper or wider than that shown on the drawings, unless directed in writing by the Engineer, there will be no extra payment for such unauthorized excavation. Backfill of all unauthorized excavations shall be made by the Contractor with either selected materials from excavations or from earth borrow, as directed by the Engineer, and at no expense to the Owner. If excessive excavation width requires a higher pipe class, the higher class pipe shall be provided by the Contractor at no additional expense to the Owner.

3.02 BACKFILLING

A. GENERAL

1. Place acceptable soil material in layers to return excavation to pre-construction elevations, or to grades shown on contract plans.

2. Control soil compaction during construction providing minimum percentage of density and moisture specified by the design.

3. The work area shall be graded, shaped and otherwise drained in such a manner as to minimize soil erosion, siltation of drainage channels, and damage to property outside the limits of the work area. Provide smooth surfaces that readily shed water that are graded to prevent ponding of surface runoff.

4. In freezing weather, a layer of fill shall not be left in an uncompact state at the close of a day's work. Prior to terminating operations for the day, the final layer of fill, after compaction, shall be rolled with a smooth-wheeled roller to eliminate ridges of soil left by tractors, trucks and compaction equipment.

5. The Contractor shall not place a layer of fill on snow, ice or soil that was permitted to freeze prior to compaction.

B. EXECUTION

1. All backfill material; re-used soil from site / common borrow / gravel borrow shall be placed in one (1) foot lifts. Each layer shall be compacted until a density of not less than 95% of the maximum density as determined in accordance with AASHTO T180 has been achieved, one test per 500 cubic yards of material placed (2 per lift min.). The surface shall be maintained during compaction operations in such manner that a reasonable uniformity is produced. The compacted surface shall have a tolerance of ½ inch to the grades shown on the plans. All laboratory and field

density tests shall be conducted by an approved laboratory, and the costs borne by the Contractor. If initial field density tests fail, the cost of additional testing shall be borne by the Contractor.

3.03 MANAGEMENT OF IMPACTED/CONTAMINATED SOIL

A. If impacted soil is encountered during excavation activities, the Contractor shall notify the Engineer presenting unusual or different visual characteristics is encountered, including but not necessarily limited to, solid waste, the Contractor shall stop work on that material, move construction activities to another location and notify the Engineer and the Owner immediately. No material shall be excavated or moved off site without prior written approval from the Engineer.

B. No trucks used for the transport of impacted soil may be left onsite loaded overnight unless fully covered and secured within the construction fence.

C. Upon receipt of approval by the engineer to ship impacted material, the Contractor shall promptly load, manifest and transport the impacted soil to a disposal facility permitted to accept it. The Contractor shall be responsible for providing certified weight slips to the Engineer of actual quantities of material for off-site disposal/recycling.

D. An equipment decontamination area shall be constructed in such a manner to protect existing site surfaces, materials and structures from contamination. The area shall be sized adequately to provide for the decontamination of the largest piece of equipment to be decontaminated, as appropriate. The Contractor shall provide for the proper collection, handling and disposal of decontamination debris and liquids in conformance with federal, state and local regulations. No vehicle shall be allowed to leave the Site prior to complete decontamination.

E. See section entitled “02280 Management of Contaminated Soils” for the specific requirements governing contaminated soils after excavations.

END OF SECTION 02202

SECTION 02280

MANAGEMENT OF CONTAMINATED SOILS

PART 1.00 - GENERAL

1.01 DESCRIPTION

A. The work covered under this section includes all activities required to for the handling if any excavated soil that may have been or is known to have been impacted by Oil or Hazardous Material and includes the following:

1. Temporary handling, stockpiling and storage of soil;

2. Material chemical characterization profiling and Bill-of-Lading preparation;

3. Loading, transportation and off-site disposal of impacted soil.

B. Definitions:

1. Earth excavation shall mean the excavation, removal, stockpiling and/or satisfactory disposal of all materials, within the limits set forth or as directed.

2. Materials to be excavated shall include organic and inorganic silts, peat, clays, sand, gravel; pavement, cobbles and boulders; soft or disintegrated rock; brick and concrete masonry; debris and all other obstructions not included in other sections.

a. Unsuitable materials for use as backfill are defined as organic matter, silt, peat, and solid waste or any combination thereof having unsuitable in-situ bearing properties; and all materials that are too loose or saturated to provide satisfactory bearing when used for backfill.

b. If unsuitable material is encountered the Contractor shall immediately notify the Engineer and shall not proceed further until instructions are given. No material of any kind may be removed from the site without prior approval by the Engineer.

1.02 SUBMITTALS

A. The Contractor shall submit to the Engineer all required permits, and all other information related to the work to be performed under this section. Submittals shall include, but not be limited to the following items:

1. The Contractor or Subcontractor, whichever shall be transportation the impacted soil from the site, shall have currently valid transportation licenses for the State of Rhode Island and any other state for which the transporter shall pass through on its way to a license receiving facility. The Contractor shall provide copies of the license(s) to the Engineer prior to commencement of the work;

2. The Contractor shall provide the Engineer with the name and address of all licensed receiving facilities to be used for this project, at project award. The Contractor shall provide copies of the

receiving facility's license(s) and license conditions. The Contractor shall provide the Engineer with receipts or other documentation of disposal from the receiving facilities within 7 business days of receipt by the facility;

3. The Contractor shall provide the Engineer with the results of any samples taken for disposal requirement; copies of all profile forms and a written confirmation of acceptance of the soil by the receiving facility at least 5 days prior to off-site shipment;

4. Prior to the start of work, the Contractor shall provide the Engineer with an Excavation Containment Plan for review and approval;

5. The Contractor shall provide the Engineer with a soil management pre-transport decontamination plan for all equipment leaving the Site, prior to the start of work.

1.03 QUALITY ASSURANCE

A. Before any portion of the work can be confirmed as complete, the Engineer shall inspect it. The Engineer shall have final authority to determine if a portion of the work is complete or requires additional work to meet the requirements of this contract. The inspection shall include visual observations and laboratory soil tests.

PART 2.00 - PRODUCTS

2.01 CONTAMINATED SOIL CHARACTERISTICS

A. Prior to reuse or off site shipment of impacted soils, the Contractor shall collect all samples, ship the samples to the appropriate point of analysis and analyze all samples in accordance to the off-site disposal facility's parameters.

B. Samples to be collected and analyzed shall be of sufficient number and methods required by the disposal facility to satisfy profiling and waste characterization requirements as stipulated by the receiving facility permit.

C. Upon excavation, the Engineer shall assist the Contractor with segregating material for off-site disposal based on field analysis of the material

PART 3.00 - EXECUTION

3.01 REMOVAL REQUIREMENTS

A. The Contractor is responsible for obtaining all approvals prior to commencing excavation and any related contaminated soils management activities.

B. Any solid wastes, including tires, wood, stumps, piping and assorted debris, shall be managed and shipped off-site for disposal along the surrounding impacted soil in accordance with applicable regulations.

C. The location of any temporary soil stockpiles shall be as agreed to in the field by the Contractor and the Engineer. The soil may be temporarily stockpiled, if appropriate and space available. Each temporary stockpiled soil must be separated from other soil composition with a minimum of 6-mil polyethylene

sheeting or other approved barrier. All soil stockpiles shall be managed in accordance with State regulations and shall be covered with 6-mil poly.

D. Backfill with clean reusable over burden soil. If soils are hauled in from off-site for backfill, the contractor shall provide clean fill certification.

E. The Contractor shall be responsible for providing barriers to surround open excavation pits, to prevent accidental entry and injuries at all times.

F. The Engineer will coordinate with the Contractor as to the limits of excavation of impacted materials. However, the Contractor shall be solely responsible for his/her construction means and methods, as well as separation of soils for the purpose of any and all off-site disposal requirements.

G. All material being live loaded or moved to a stockpile and all stockpiled material shall be handled so as to minimize the unnecessary dispersion of any impacted soil and in such a manner so as to prevent off-site migration and vapors, odor and on-site surfaces, materials and structures from contamination, runoff and erosion. At the end of each work day, any stockpiled soil shall be covered with 6-mil polyethylene sheeting. The sheeting shall be secured in place using hay bales around the perimeter of the temporary stockpiled(s) and all other material necessary to hold the covering in place.

H. The Contractor shall repair or replace all inadequate or failed portions of the containment facility(ies).

3.02 MANAGEMENT OF IMPACTED SOIL

A. No trucks used for the transport of impacted soil may be left onsite loaded overnight unless fully covered and secured within the construction fence.

B. Upon receipt of approval by the Engineer to ship impacted material, the Contractor shall promptly load, manifest and transport the impacted soil to a disposal facility permitted to accept it. The Contractor shall be responsible for providing certified weight slips to the Engineer of actual quantities of material for off-site disposal/recycling.

C. Any equipment decontamination area shall be constructed in such a manner to protect existing site surfaces, materials and structures from contamination. The area shall be sized adequately to provide for the decontamination of the largest piece of equipment to be decontaminated, as appropriate. The Contractor shall provide for the proper collection, handling and disposal of decontamination debris and liquids in conformance with federal, state and local regulations. No vehicle shall be allowed to leave the Site prior to complete decontamination.

END OF SECTION 02280

SECTION 02700
EROSION AND SEDIMENT CONTROL

PART 1.00 - GENERAL

1.01 DESCRIPTION

A. Work Included: The work covered under this Section shall include all work required by the Owner or the State of Rhode Island for erosion and sediment control.

B. Where the "Erosion and Sediment Control Handbook" is referred to, it shall mean THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK.

C. Soil Erosion and Sedimentation Controls shall be provided in accordance with the “Rhode Island Soil Erosion and Sediment Control Handbook” The RIPDES General Permit for Storm Water Discharge from Construction Activity, and the Project Storm Water Pollution Prevention Plan.

PART 2.00 - PRODUCTS

2.01 SILT-SOCK

A. Standard durable mesh fabric casing containing a filter media consisting of either recycled construction wood waste, locally produced compost or, if requested, raw wood chips. Also referred to as wattles, filter sock, biorolls or compost filter sock.

PART 3.00 - EXECUTION

3.01 GENERAL

A. Siltsock protection must be provided on the downhill side of the slope, offset six (6) feet from the edge of the excavation in all critical areas, as indicated on the Drawings or as directed.

B. Excavated materials are to be placed only on the uphill side of the slope.

C. All discharges from pumping of groundwater if required must pass through hay bale sediment traps. The number of sediment traps necessary to filter all pumped water shall be determined by the Contractor.

D. Erosion controls shall be placed in all streams crossed by the trench.

E. The details for providing the erosion and sediment control structures shall be as indicated on the Drawings and as specified.

3.02 INSPECTION AND MAINTENANCE

A. Site Inspections must be conducted in accordance with “The RIPDES General Permit for Storm Water Discharge from Construction Activity”. Site inspections must be conducted by or under the supervision of the owner and operator at least once every seven (7) calendar days and within twenty four (24) hours of each storm event of 0.25 inch or greater in a 24-hour period of time during construction to insure that the erosion controls are intact. Identified deficiencies shall be corrected immediately at no additional expense to the Owner.

B. The Contractor will be required to maintain erosion controls in good condition, rotating them periodically to maximize their effectiveness as sediment traps. The Contractor will also be required to remove

accumulated sediment traps. The Contractor will also be required to remove accumulated sediment from the sediment traps periodically as directed.

END OF SECTION

DIVISION 13 – HAZARDOUS MATERIALS INDEX

SECTION 13281

ASBESTOS ABATEMENT

PART 1.00 - GENERAL

1.01 DESCRIPTION OF WORK

A. Work Included:

1. Abatement of asbestos-containing materials (ACM) including furnishing all labor, materials and equipment to perform all work required to safely remove and legally dispose of all asbestos-containing materials. Contractor shall provide all insurance, certifications and licenses necessary for the work.

2. Removal and legal disposal of asbestos containing materials in accordance with these Specifications and all applicable Federal, State, and local government laws, statutes, regulations, ordinances, standards and guidelines. Whenever there is a conflict between applicable requirements and these Specifications, the more stringent provisions apply to the work to be performed hereunder as determined by Engineer.

3. The asbestos removal is being performed to support the demolition of the buildings and tunnels. Asbestos removal will be performed in accordance with RIDOH approved abatement plan. The Contractor is required to carry the cost to prepare an Asbestos Abatement Plan in accordance with RIDOH requirements, application fee and Provide Abatement monitoring and clearance samples during abatement activities.

4. Contractor shall file all necessary notices, obtain all permits and licenses, and pay all governmental taxes, fees, and other costs in connection with the work. Obtain all necessary approvals of all governmental departments having jurisdiction.

B. Related Work

1. Section 02220 – Demolition

2. Section 13283 – Oil and Hazardous Waste and Material Abatement

1.02 LOCATION OF WORK AND SITE CONSTRAINTS

A. Location of work areas, descriptions, estimated types and quantities of ACM are described in the Engineer's Hazardous Building Materials Inspection (HBMI) report. The Contractor shall be required to procure an abatement plan. If additional ACMs are encountered, Contractor shall notify Engineer immediately and have an asbestos removal team prepared to abate the material.

B. Temporary Utilities: Electricity sources are available at the site. Water is available near the site via a fire hydrant but requires coordination with others prior to use.

C. The buildings have been vacant and subject to adverse weather conditions and

pests for an extended period of time. For the purposes of bidding, the Contractor shall assume that access to all areas of the building is necessary in order to perform all specified abatement.

D. "Pre-cleaning" must be performed under containment unless Contractor can demonstrate that the work can be completed without risk of fiber release or worker exposure.

1.03 REFERENCES

A. Contractor is responsible for determining and adhering to the most recent asbestos removal and disposal requirements established by all applicable federal, state, and applicable local government laws, statues, regulations, ordinances, standards, and guidelines.

B. USEPA Regulations for Asbestos, 40 CFR 61, Subpart M, National Emissions Standards for Hazardous Air Pollutants (NESHAPS).

C. USEPA AHERA Regulations for Asbestos, Asbestos Abatement Projects, 40 CFR 763, Subpart G.

D. US Department of Labor, Occupational Safety and Health Administration (OSHA) Asbestos Regulations, 29 CFR 1926.1101.

E. All NIOSH air sampling and evaluation standards.

F. All applicable local ordinances, regulations, or rules pertaining to asbestos, including its storage, transportation, and disposal.

G. Rhode Island Fire Safety Code.

H. National codes and standards including ASTM, ANSI and Underwriters Laboratories, local health and safety codes, ordinances or regulations pertaining to asbestos remediation and all local ordinances.

1.04 SUBMITTALS

A. Prior to the start of the removal work, Contractor shall prepare and submit to Engineer, all items listed below. No work activities shall commence until these items are reviewed and approved in writing. Submittal data shall be sufficient in detail to allow identification of the particular product or equipment, and to form an opinion as to its conformity to the specification and/or regulations.

B. The Contractor or the Asbestos Abatement Subcontractor selected must appear on the approved list of Asbestos and Lead Abatement contractors on file at the state of Rhode Island Department of Health (RIDOH).

C. Award of this Contract may not necessarily be based solely on the submitted lowest Base Bid amount. The Owner, reserves the right to award this Contract to the Bidder who best meets all contractor qualifications.

1. Detailed work plan showing the proposed methods and materials for sealing each work area airtight (as required by regulatory standard); protecting floors, walls, and other fixed equipment; exact locations and manners of construction of the Decontamination Facility; and number, capacity, and installation and operation details for the portable HEPA-filtered exhaust units.

2. Detailed work plan for the abatement of intact and damaged friable pipe and fitting cement/insulation.

3. Detailed work plan for the removal of glazing compounds and caulking materials associated with all window and door systems. This effort requires the removal of heavy metal security type window frames to their rough masonry openings.

4. Detailed work plan for the abatement of intact and damaged floor tile and mastic.

5. Detailed work plan for the abatement of intact valve gaskets on sprinkler main.

6. Detailed work plan for the abatement of intact built up roofing and parapet wall felts.

7. Documentation of certification of all workers pursuant to applicable state regulations and OSHA-specified medical examinations (with examiner approval).

8. Proposed waste hauler with copies of all applicable licenses, registrations, and approvals.

9. A detailed work schedule for each building/area listing the proposed number, dates, and hours of each work shift. Schedule shall encompass the entire project, including notifications, pre- abatement inspections, post abatement inspections, clearance air sampling and final completion.

10. Copies of all permits, licenses, and/or waste shipment records generated or intended for this project.

11. A copy of the OSHA-required written Respiratory Protection Program, including a fit testing methodology for respirators, worker medical approvals, and maintenance and decontamination details.

12. Documentation of Contractor's license issued pursuant to applicable state regulations.

D. At the completion of the abatement work, Contractor shall submit a final report that includes all disposal records, containment entry logs, notifications and all air sampling results.

1.05 MONITORING AND FINAL CLEARANCE

A. Responsibilities – The Engineer, retained by the Owner, shall conduct appropriate air monitoring for the purpose of determining the effectiveness of containment systems and work procedures, and for certifying work areas as clean following removal and cleanup tasks.

B. Contractor shall conduct appropriate personnel exposure monitoring to determine compliance with OSHA requirements. A laboratory accredited by the American Industrial Hygiene Association shall analyze all air samples collected by Contractor. Sampling equipment shall be calibrated before and after each use.

C. Air Quality Standard - All air tests made in proximity to any removal area, and to document "clean air," shall be compared to an air quality standard of 0.01 Fibers per cubic centimeter (f/cc) as required by applicable regulations. If any air sample exceeds the air quality standard, Contractor shall immediately stop all work until the cause is identified and corrected.

D. Air Monitoring Methods - NIOSH Method 7400 shall be used for measuring levels of airborne asbestos fibers for all air sampling events or as directed by Engineer. All monitoring methods shall comply with the requirements of 29 CFR 1926.1101 and applicable state regulations.

E. Results - Contractor shall provide Engineer copies of all personnel exposure monitoring results, and shall post results at the work site after obtaining the results, but not later than 48 hours.

F. Upon completion of all work in any defined work area, Contractor and Engineer shall conduct a final inspection for the purpose of compliance with these specifications and state / federal regulations. Unsatisfactory conditions shall be immediately corrected in a manner specified by regulatory standard, Contractor and Engineer. Final payments shall be approved by Engineer only after Contractor provides a certificate of completion, specified closeout documentation, and all properly completed Waste Disposal Documentation Forms as required by law.

G. Engineer, retained by the Owner, shall perform clearance air sampling prior to removal of any containment areas. If clearance air sample results fail to meet applicable standards, Contractor shall perform additional cleaning and shall pay for additional clearance monitoring, air sample collection and analysis.

1.06 NOTIFICATION OF HAZARD

A. Contractor shall immediately notify Engineer by telephone, followed by written notice, of any risks of adverse health and safety impacts on the environment, exposure of workers or the general public, or failure to comply with the specifications. Contractor shall promptly notify Engineer of the reason and required resolution of all observed deficiencies, and record them in ink in a hardbound notebook.

1.07 WORKER PROTECTION AND SAFETY

A. General - Contractor shall comply in all respects with regulatory requirements pertaining to worker health and safety protection, asbestos fiber containment, and exposure control. The requirements shall be closely monitored and strictly enforced throughout all work. Any deficiencies shall be promptly corrected or Contractor shall stop work.

B. Respiratory Protection - Provide respirators to all workers in accordance with applicable regulations and in accordance with Contractor's Respiratory Protection Program. Respirators must be worn initially and continuously until an assessment can be made and worker exposure is below the PEL. A negative exposure assessment can be made initially if historical air monitoring data during similar projects shows no exposure above the PEL.

C. Medical Examinations and Recordkeeping - Pursuant to OSHA requirements, Contractor shall provide a replacement and annual medical examination for each worker who enters a removal work area. At a minimum, the medical examination shall comply with 29 CFR 1926.58 (m).

1.08 WORKER QUALIFICATIONS, TRAINING, AND EDUCATION

A. Contractor is required to have a Rhode Island accredited asbestos Supervisor in each work area at all times work is in progress. Supervisor shall be fluent in English.

B. Supervisors shall be thoroughly familiar and experienced with asbestos abatement and related work and shall enforce the use of all safety procedures and equipment. He/She shall be knowledgeable of EPA, OSHA, and NIOSH requirements and guidelines. The Supervisor shall be licensed in accordance with applicable state regulations.

C. Contractor shall at all times enforce strict discipline and good order among its employees, and shall not employ any person not skilled in the work assigned, nor anyone who has not received documented notice of the hazards of asbestos abatement, formal training in the use of respirators, safety procedures, equipment, clothing, and work procedures. All workers shall be licensed in Connecticut and in accordance with applicable state regulations.

PART 2.00 – PRODUCTS

2.01 GENERAL

A. All materials or equipment delivered to the site shall be unloaded, temporarily stored, and transferred to the work area in a manner which shall not interfere with operation of others at the site, or employee's access and safety.

B. Damaged or deteriorated materials shall not be used and shall be promptly removed from the premises. Materials that become contaminated with asbestos-containing material shall be thoroughly cleaned, or sealed in plastic bags or sheeting, labeled, and legally disposed of in an approved, secure landfill.

C. All materials and equipment shall comply, at a minimum, with all sections of this specification, relevant federal, state, and applicable local codes, and industry standards.

2.02 ABATEMENT EQUIPMENT & SUPPLIES

A. HEPA-Filtered Exhausts - Air inside each work area shall be exhausted through a High Efficiency Particulate Air (HEPA) filter. Commercially manufactured HEPA-filtered exhaust units, with specification plates intact, must be provided for each work area to attain, at a minimum, four air volume changes per hour and an inward flow of clean air into each work area at the Decontamination Facility of at least 100 feet per minute. The HEPA filter shall be preceded by replaceable prefilters and the unit must be designed so that it cannot be operated unless all filters are in place. The units must also be designed with a gauge to indicate the pressure drop across filters, and lights or audible alarms to indicate that the filters are properly installed, functional, and when they must be changed. Flexible ducting shall be required to allow exhausting to the exterior of the building. No exhaust with any other type of particulate cleaning system (such as electrostatic precipitators) shall be allowed without prior written approval.

1. Plastic Sheeting ("Poly") and Bags - shall be polyethylene or equivalent with a thickness of at least 6 mil for all applications unless regulations dictate otherwise.

2. Wetting Agent or Surfactant - shall be 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether, or equivalent, mixed in the proportion of one ounce surfactant per five gallons of water. The material shall be odorless, non-toxic, non-irritating, and non-carcinogenic. It shall be applied as a mist using a low pressure sprayer recommended by the surfactant manufacturer.

3. Tape and Glue - shall be capable of sealing plastic joints and attaching plastic to finished surfaces. The bonding strength and resulting seal integrity shall not be affected by mist or water, wetting or encapsulating agent, or any other materials to be used in the work area.

4. Warning Signs and Labels - shall comply with all federal, state, or local codes and regulations.

5. Waste Containers and Transportation - shall be suitable for loading, temporary storage, transport, and unloading of contaminated waste without risk of ripping, rupture, or exposure to persons, or emissions to the atmosphere. Transportation methods shall comply with the provisions of 40 CFR 61, Subpart M, and with any state or local hazardous or special waste regulations for temporary storage, transport, and disposal if such codes are enforced in states in which the waste will be stored, transported, or disposed of.

2.03 SAFETY SUPPLIES AND EQUIPMENT

A. Respirator Types - Provide all workers with appropriate respirator which is approved by NIOSH/MSHA for protection against airborne asbestos, and meets the requirements of the OSHA Asbestos Standard.

B. Protective Clothing - Provide all workers and approved visitors with disposable coveralls, head and foot coverings, gloves, eye protection (i.e., safety glasses) and half-face respiratory protection including HEPA cartridges.

PART 3.00 - EXECUTION

3.01 GENERAL PREPARATION PROCEDURES

A. Upon receipt of a Notice to Proceed, Contractor shall meet at the site with Engineer to reach agreement on:

1. Scope and manner of work performance and all schedules.
2. Contractor and supporting vendor vehicle access and parking.
3. Contractor access to the work areas, including approved doors, stairways, and corridors.
4. Location of electrical, water supply and wastewater drain connection points, if available.
5. Determination of all equipment and other items to be removed from the work areas, and the location of temporary storage space, if applicable.
6. Any other logistical factors to minimize interference with public safety and health, and other Contractors' activities.

B. To comply with applicable regulations, notify appropriate regulatory agencies of abatement activities.

1. Provide the required written notification at least 10 days before the start of the asbestos abatement activity to the United States Environmental Protection Agency and all required state agencies.
2. Provide the required written notification by registered mail to local authorities as required.
3. Obtain and process all applicable forms and permits required.

C. Prepare the work areas according to the following general sequence of procedures to ensure that proper fiber containment and protection systems are installed before the start any work which could generate airborne asbestos fibers.

1. Erect barricades, post access restriction signs, seal all openings into the work area airtight (including doors, chases, shafts, and other vertical

penetrations), and erect or install Decontamination Facilities and HEPA exhaust systems.

2. Obtain formal approval from Engineer of all preparation work and containment areas before commencing asbestos removal. Engineer shall be given at least 48 hours notification of the intent to start removal work in any work area.

D. Isolation of Electrical Systems

1. Contractor shall confirm that electricity has been terminated inside all buildings. Contractor shall comply with isolation of electrical systems in order to maintain compliance with abatement regulations.

2. The scope of the electrical isolation work covers the protection of electrical equipment that is in areas where asbestos removal work is performed and where the water used for wetting the material before or during removal could possibly contact the equipment and create a hazard.

3. Provide portable electrical panels with ground fault protection for all non-battery power requirements. These panels shall have sufficient capacity for all HEPA exhaust and vacuums, power tools, portable lighting, and all other electrical needs.

4. Provide a licensed electrician to wire the electrical panels in each work area, and to be on call to handle any electrical problem which may arise during the course of the work.

5. All materials and workmanship shall comply with the latest editions of applicable codes, standards, and specifications.

6. Once a work area becomes isolated by containment, only weatherproof lighting and washable tools will be allowed in the area.

3.02 DECONTAMINATION FACILITY

A. Description - Any person or thing exiting from the work areas must pass through a Decontamination Facility consisting of three separate, adjacent rooms separated by curtained entrances, constructed in accordance with applicable regulations. Packaged nonfriable asbestos which was packaged in a clean environment does not require decontamination in a shower.

B. Construction - Decontamination Facilities shall be constructed and maintained as specified in applicable regulations and shall be located in areas approved by Engineer.

C. Manner of Operation - All personnel shall enter the Clean Room, remove and store street clothes, and put on clean protective clothing and respirators; then enter the Equipment Room, put on any additional equipment, and enter the work areas. All personnel exiting the work areas shall enter the Equipment Room, remove and store or dispose of all contaminated clothing and shoes, shower, and then put on

street clothing in the Clean Room. Respirators shall be worn into and cleaned in the shower, and dried and stored in the Clean Room.

D. Wastewater Disposal - All water from the shower and cleaning hose shall be collected, pumped through a 5.0 micron filter, and then legally drained a sanitary sewer connection or to points approved by Engineer.

E. Cleaning - Decontamination Facility shall be cleaned using a HEPA-filtered vacuum at least once every shift, or more frequently, if needed, to prevent dust accumulation.

F. Prohibitions - Smoking, drinking, or eating shall not be permitted in the work area or Decontamination Facility.

3.03 WORK AREA ISOLATION

A. Preclean any fixed objects or equipment within the work areas by using HEPA vacuum equipment and wet washing except where air samples indicate concentrations of airborne fibers less than 0.01 fibers per cubic centimeter and there is no contamination of any surfaces; then enclose with minimum 6-mil plastic sheeting sealed airtight.

B. Large areas, doorways, and stairwells, shall be sealed with two layers of 6- mil poly over plywood on 2" x 4" framing.

C. Protect and isolate the work area for the duration of work by completely sealing off all openings and fixtures (including, but not limited to, floors, walls, heating and ventilation ducts, doorways, corridors, windows, and lighting) using plastic sheeting sealed securely in place. The work area shall be sealed airtight to the extent possible.

D. Seal airtight all holes or other openings in the ceiling or the floor below in each work area with poly sheeting.

3.04 WORK AREA EXHAUST

A. Install one or more portable HEPA-filtered exhausts to maintain each work area, including the Decontamination Facility, under negative pressure, and to reduce airborne asbestos fiber concentrations.

0.02 The exhaust(s) must be capable of providing at least an inward velocity through any unsealed openings, including the Decontamination Facility, of at least 100 fpm, and four full air changes per hour throughout the work area and be capable of sufficient air exhaust to create negative pressure of 0.02 inches of water within the enclosure with respect to the outside area. All exhaust air shall pass through a HEPA filter before being discharged to the exterior of the building.

B. Deficient air flows shall be immediately reported and work ceased until the situation is corrected.

C. Exhaust system shall be operated constantly from the time that preparation is

completed, until "clean air" certification is obtained.

3.05 APPROVAL OF CONTAINMENT AREAS

A. After the work area has been prepared as specified, Contractor shall request an inspection by Engineer. No removal or disturbance of asbestos- contaminated materials or systems is to occur until Engineer, has inspected and approved each separate prepared work area.

B. Any deficiencies in the preparation work shall be promptly corrected in a manner satisfactory to Engineer.

3.06 ASBESTOS REMOVAL PROCEDURES

A. FRIABLE ASBESTOS: PIPE INSULATION AND DEBRIS, THERMAL SYSTEM INSULATION (TSI):

1. Establish temporary electrical service, including receptacles and lighting to provide power and lighting throughout the work areas. Provide GFCI devices, temporary power, and temporary lighting installed in compliance with the applicable electrical codes. All installations to be made by a licensed electrician.

2. Regulate sections of the building where abatement will be performed by establishing warning tape and warning signs to demarcate areas of the building were negative pressure enclosures will be constructed.

3. Establish worker/equipment decontamination chamber contiguous to the work area. Post asbestos abatement signs in accordance with OSHA 29 CFR 1926.1101.

4. Establish negative pressure differential between work areas and other areas by the use of acceptable negative pressure equipment.

5. Establish a temporary source of water to each work area to allow for wetting and dust control during asbestos removal operations. Surfactant shall be added to the water to aid in wetting operations.

6. Pre-clean areas containing friable ACM were critical barriers will be installed using HEPA vacuum equipment. Seal off openings to the effected work area. This shall include but not limited to windows, tunnel openings, corridors, doorways, ducts, grills, or any other penetration of the work area with two (2) layers of six (6) mil polyethylene sheeting sealed with duct tape.

7. All porous materials shall be disposed of as ACM. The contractor may elect to dispose of non-porous items as ACM. All non-porous items shall be subject to inspection by the Engineer before removal from containment.

8. Install a manometer to measure the pressure differential between the work area and non-work area. Maintain continuous pressure differential of -0.02 inches of water between the work area and non-work area.

9. All asbestos-containing or asbestos contaminated materials shall be contained within a constant flow negative pressure enclosure system, wetted with amended water and carefully removed to prevent droppage and creation of airborne dust.

10. Once the removal of all asbestos-containing and contaminated material is complete, all surfaces and walls within the area shall be thoroughly cleaned by wet mopping, followed by thorough drying, and then HEPA vacuumed. A satisfactory encapsulant (lockdown material) shall be applied to all surfaces from which friable asbestos has been removed.

11. Upon completion of abatement from within a contained area, visual inspection and clearance air sampling shall be performed as specified herein.

B. NON-FRIABLE ASBESTOS: FLOOR TILES/MASTICS AND INTERIOR WINDOW FRAME CAULK:

1. Establish temporary electrical service, including receptacles and lighting to provide power and lighting throughout the work areas. Provide GFCI devices, temporary power, and temporary lighting installed in compliance with the applicable electrical codes. All installations to be made by a licensed electrician.

2. Regulate sections of the building where abatement will be performed by establishing warning tape and warning signs to demarcate areas of the building were negative pressure enclosures will be constructed.

3. Establish worker/equipment decontamination chamber contiguous to the work area. Post asbestos abatement signs in accordance with OSHA 29 CFR 1926.1101.

4. Seal off openings to the effected work area. This shall include but not limited to windows, tunnel openings, corridors, doorways, ducts, grills, or any other penetration of the work area with two (2) layers of six (6) mil polyethylene sheeting sealed with duct tape.

5. Establish negative pressure differential between work areas and other areas by the use of acceptable negative pressure equipment.

6. Establish a temporary source of water to each work area to allow for wetting and dust control during asbestos removal operations. Surfactant shall be added to the water to aid in wetting operations.

7. Floor tile, mastic and tar paper shall be removed down to the concrete substrate.

8. Window frame caulk shall be removed down to the brick substrate.

C. NON-FRIABLE ASBESTOS: ASPHALT-BASED ASBESTOS ROOFING FELTS AND PARAPET WALL FELTS REMOVAL:

1. Operations involving the cutting or abrading of asphalt-based asbestos roofing material is considered to release sufficient friable material to constitute an asbestos abatement activity. All work using such equipment must be performed by licensed asbestos workers in a negative pressure enclosure. These restrictions may be lifted if Contractor uses approved slicing equipment or manual means to remove the asbestos materials.

2. Work Procedures

D. Perform whatever procedures are necessary including the application of wet methods and covering materials to ensure that release of asbestos materials is reduced to no visible emissions. Work using any cutting or abrading equipment must be performed in a negative pressure enclosure.

E. Remove asbestos roofing materials using tools and equipment specified in regulatory guidance documents.

F. Continuously mist the work area as asbestos roofing materials are being removed from the structure.

G. All asbestos roofing materials must be removed intact.

H. All loose debris shall be immediately collected via HEPA vacuum or wet wipe. The vacuum debris and wipe materials shall be segregated and disposed as asbestos contaminated waste.

I. Wet methods shall be used whenever operations call for the scraping of resilient roofing materials or cements.

J. Treat contaminated substrates (metal flashing components, bases of roof penetrating equipment, brick, masonry, parapet walls, etc.) as ACM or remove the ACM from these substrates or surfaces.

K. Waste must be lowered by a crane, hoist or dust-tight chute, in accordance with applicable regulations. ACM shall not be dropped from the roof top

L. FRIABLE ASBESTOS: WINDOW GLAZING COMPOUND DEBRIS

1. Establish temporary electrical service, including receptacles and lighting to provide power and lighting throughout the work areas. Provide GFCI devices, temporary power, and temporary lighting installed in compliance with the applicable electrical codes. All installations to be made by a licensed electrician.

2. Regulate sections of the building where abatement will be performed by establishing warning tape and warning signs to demarcate areas of the building were negative pressure enclosures will be constructed.

3. Establish worker/equipment decontamination chamber contiguous to the work area. Post asbestos abatement signs in accordance with OSHA 29 CFR 1926.1101.

4. Provide work area preparation in accordance with the approved AWP, allowing for the use of critical barriers only as described in this section.

5. Establish negative pressure differential between work areas and other areas by the use of acceptable negative pressure equipment.

6. Establish a temporary source of water to each work area to allow for wetting and dust control during asbestos removal operations. Surfactant shall be added to the water to aid in wetting operations.

7. Pre-clean areas containing friable ACM were critical barriers will be installed

using HEPA vacuum equipment. Seal off openings to the effected work area. This shall include but not limited to windows, tunnel openings, corridors, doorways, ducts, grills, or any other penetration of the work area with two (2) layers of six (6) mil polyethylene sheeting sealed with duct tape.

8. All porous materials shall be disposed of as ACM. The contractor may elect to dispose of non-porous items as ACM. All non-porous items shall be subject to inspection by the Engineer before removal from containment.

9. Install a manometer to measure the pressure differential between the work area and non-work area. Maintain continuous pressure differential of -0.02 inches of water between the work area and non-work area.

10. All asbestos-containing or asbestos contaminated materials shall be contained within a constant flow negative pressure enclosure system, wetted with amended water and carefully removed to prevent droppage and creation of airborne dust.

11. Once the removal of all asbestos-containing and contaminated material is complete, all surfaces and walls within the area shall be thoroughly cleaned by wet mopping, followed by thorough drying, and then HEPA vacuumed. A satisfactory encapsulant (lockdown material) shall be applied to all surfaces from which friable asbestos has been removed.

12. Upon completion of abatement from within a contained area, visual inspection and clearance air sampling shall be performed as specified herein.

M. FRIABLE ASBESTOS: MUDDED PIPE FITTINGS:

1. Establish temporary electrical service, including receptacles and lighting to provide power and lighting throughout the work areas. Provide GFCI devices, temporary power, and temporary lighting installed in compliance with the applicable electrical codes. All installations to be made by a licensed electrician.

2. Regulate sections of the building where abatement will be performed by establishing warning tape and warning signs to demarcate areas of the building were negative pressure enclosures will be constructed.

3. Establish worker/equipment decontamination chamber contiguous to the work area. Post asbestos abatement signs in accordance with OSHA 29 CFR 1926.1101.

4. Provide work area preparation in accordance with the approved AWP, allowing for the use of critical barriers and a single layer of four mil polyethylene on the walls.

5. Establish negative pressure differential between work areas and other areas by the use of acceptable negative pressure equipment.

6. Establish a temporary source of water to each work area to allow for wetting and dust control during asbestos removal operations. Surfactant shall be added to the water to aid in wetting operations.

7. Pre-clean areas containing friable ACM were critical barriers will be installed

using HEPA vacuum equipment. Seal off openings to the effected work area. This shall include but not limited to windows, tunnel openings, corridors, doorways, ducts, grills, or any other penetration of the work area with two (2) layers of six (6) mil polyethylene sheeting sealed with duct tape.

8. Install a manometer to measure the pressure differential between the work area and non-work area. Maintain continuous pressure differential of -0.02 inches of water between the work area and non-work area.

9. All asbestos-containing or asbestos contaminated materials shall be contained within a constant flow negative pressure enclosure system, wetted with amended water and carefully removed to prevent droppage and creation of airborne dust.

10. Once the removal of all asbestos-containing and contaminated material is complete, all surfaces and walls within the area shall be thoroughly cleaned by wet mopping, followed by thorough drying, and then HEPA vacuumed. A satisfactory encapsulant (lockdown material) shall be applied to all surfaces from which friable asbestos has been removed.

11. Upon completion of abatement from within a contained area, visual inspection and clearance air sampling shall be performed as specified herein.

N. NON-FRIABLE ASBESTOS: VALVE GASKETS AT SPRINKLER MAIN, NON DISTURBANCE REMOVAL

1. Non-friable asbestos containing gaskets have been identified in the valve flanges associated with the sprinkler main. Remove valves as a non- disturbance activity by cutting the piping below the flanges. Cutting into the flange or gaskets will not be permitted unless work is done under a full containment.

O. ENCAPSULATION

1. After all asbestos-containing material is removed from a full containment or the building interior and after the area passes post abatement visual inspection, contractor shall seal all surfaces with a penetrating encapsulation material.

2. The encapsulant shall be prepared according to the manufacturer's specifications, and then applied to the surfaces. All workers shall be provided a Materials Safety Data Sheet (MSDS) on the encapsulant. Workers shall wear appropriate personal protective equipment as designated on the MSDS during encapsulant application.

3.07 WORK AREA CLEANUP, DECONTAMINATION AND WASTE DISPOSAL

A. General Requirements

1. After all asbestos-containing or contaminated materials have been removed, remove all wastes and perform a final cleanup and decontamination of each work area. Final cleaning shall be performed only after all waste is packaged and removed, but before reinstalling, demolishing any equipment, or dismantling any barrier, Decontamination Facility, or protective covering.

Cleaning shall be subject to the approval of Engineer based on a visual inspection, and air testing.

B. Cleaning Methods and Approval

1. All waste containers and removal equipment shall be thoroughly cleaned with a HEPA-filtered vacuum, decontaminated with the use of amended water, and then removed from the work area.

2. All surfaces in the work area shall be thoroughly wiped clean and, after drying, thoroughly decontaminated with a HEPA-filtered vacuuming device and encapsulated.

3. After cleaning, Engineer shall inspect the site. Contractor shall notify the Engineer / project monitor of the anticipated completion of the site cleaning at least 48 hours in advance.

4. If any waste or fibers are observed within the work area during the inspection, Contractor shall perform additional cleanup and decontamination.

5. If the air sample results are above the Air Quality Standard of 0.01 f/cc, Contractor shall perform additional cleaning and decontamination, and the inspection and air tests shall be repeated at the Contractor's expense.

6. If the air sample results are below the Air Quality Standard of 0.01 f/cc, Engineer / project monitor shall give approval for Contractor to remove all protective coverings which do not comprise part of the work area seal, containment barrier, or decontamination facility.

7. Once these items have been properly packaged and removed from the work area as contaminated waste, package and properly dispose of all remaining plastic sheeting, disassemble and remove the Decontamination Facility and HEPA exhausts, and perform a final HEPA vacuuming of all surfaces.

C. Waste Disposal

1. Definition - Asbestos wastes are defined as all building materials and debris, insulation, disposable clothing and protective equipment, plastic sheeting and tape, exhaust systems or vacuum filters, or any abatement equipment that has been contaminated with asbestos and cannot be completely cleaned by vacuuming and by washing in the Decontamination Facility.

2. General Requirements - All asbestos wastes (e.g., pipe lagging, floor tile, transite, etc.) must be handled, packaged, stored, transported, and disposed of as specified in this subsection, and in compliance with all federal, state, and local regulations and codes.

3. Waste Labeling - If waste containers are not already so preprinted, warning labels having waterproof print and permanent adhesive shall be affixed to the lid and/or sides of the containers, whether or not these containers are further packaged. Warning labels shall be conspicuous and legible, and conform to

the latest OSHA, EPA and DOT labeling requirements.

4. Waste Packaging - All waste shall be thoroughly wetted when packaged and Contractor shall inspect each bag to observe that water condensation is visible. Insufficiently wetted bags shall be opened, rewetted, and resealed. When a waste bag is full, it shall be securely sealed with tape, and then placed in the designated temporary storage area inside of the work area.

D. Waste Container Removal and Disposal Documentation

1. To comply with the requirement of waste disposal at an approved landfill be documented, Contractor shall remove waste containers from work areas and shall complete appropriate documentation for each load of waste removed from the site.

2. Accurately measure the volume of each container or load of waste removed from the site.

3. Provide legal transportation of the waste to the disposal landfill, and complete or obtain all required licenses, manifests, dump slips, or other forms. Copies of all forms or licenses, and the signed original of the Waste Disposal Form for each waste load, shall be given to Engineer.

4. Waste may be transported to and temporarily stored at a pre-approved off-site storage area owned by Contractor, but it must ultimately be disposed of at the specified landfill before final payments are approved.

END OF SECTION

SECTION 13283

HAZARDOUS MATERIALS ABATEMENT

PART 1.00 – GENERAL

1.01 DESCRIPTION

A. Work Included: Provide labor, materials and equipment to complete the work specified of this Section including, removal and lawful disposal of hazardous materials, hazardous waste and special wastes.

1. All work including the removal, characterization (any testing that may be required by disposal facility) and disposal of hazardous materials.

2. Removal, characterization (any testing that may be required by disposal facility) and disposal of fluorescent light ballasts and capacitors throughout all site structures.

3. Removal, characterization (any testing that may be required by disposal facility) and disposal of all containers, drums, and unknown materials.

4. Removal, characterization (any testing that may be required by disposal facility) and disposal of contained gear oils, hydraulic oils and refrigeration liquids, etc. from various pieces of equipment.

5. File all necessary notices, obtain all permits and licenses, and pay all governmental taxes, fees, and other costs in connection with the work. Obtain all necessary approvals of all governmental departments having jurisdiction.

6. Comply with Health and Safety Plan.

1.02 LOCATION OF WORK

A. Location of work areas, descriptions, estimated types and quantities of hazardous materials are described in Engineer's Hazardous Building Materials Inspection (HBMI) report. If additional hazardous materials are encountered, Contractor shall notify Engineer immediately and be prepared to remediate the material.

B. The HBMI Report identifies hazardous materials encountered and enumerated during the survey. The quantities are provided for general guidance and may not correspond exactly to the quantity to be removed. The Contractor is responsible to investigate all structures for the presence of all hazardous materials. Contractor shall determine quantities of hazardous materials for bidding purposes.

C. Handling and disposal of all items identified in the HBMI Report are to be included in the lump sum bid item of the contract. Any hazardous materials encountered that are not identified will be paid for as a Change in Work.

1.03 REFERNCES

A. The Contractor is advised to thoroughly review the documents referenced in this Section. Strict adherence to the hazardous materials, noise, air and water pollution regulations and requirements is required.

1. Code of Federal Regulations
    a. CFR 1910, “Occupational Safety and Health Standards” (General Industry Standards)

    b. 29 CFR 1910.20, “Access to Employee Exposure and Medical Records”

    c. 29 CFR 1910.134, “Respiratory Protection”

    d. 29 CFR 1910.146, “Permit Required Confined Space”

    e. 29 CFR 1910.1200, “Hazard Communication”

    f. 29 CFR 1926, "Safety and Health Regulations for Construction" (Construction Industry Standards)

    g. 29 CFR 1926.62 "Lead-Construction"

    h. 40 CFR 50, "National Primary and Secondary Ambient Air Quality Standards

    i. 40 CFR 60, "Standards of Performance for New Stationary Sources," Appendix B, "Test Methods"

    j. 40 CFR 117, "Determination of Reportable Quantities for Hazardous Substances"

    k. 40 CFR 122, "EPA Administered Permit Program: The National Pollutant Discharge Elimination System"

    l. 40 CFR 172, "Hazardous Waste Transportation"40 CFR 261, "Identification and Listing of Hazardous Waste"

    m. 40 CFR 262, "Standards Applicable to Generators of Hazardous Waste"

    n. 40 CFR 263, "Standards Applicable to Transporters of Hazardous Waste"

    o. 40 CFR 268, "Land Disposal Restrictions"

    p. 40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan"

    q. 40 CFR 302, "Designation, Reportable Quantities, and Notification"

2. Occupational Safety and Health Administration OSHA Booklet 3126 “Working with Lead in the Construction Industry".

3. National Institute for Occupational Health and Safety

    a. NIOSH Method 7082, "Lead"

4. American Society for Testing and Materials

    a. ASTM D3335, "Test Method for Low Concentration for Lead, Cadmium, and Cobalt in Paint by Atomic Absorption Spectroscopy"

5. EPA (Environmental Protection Agency) Publications

    a. SW-846, Test Methods for Evaluating Solid Waste - Physical/Chemical Methods

    b. EPA Method 3050, "Acid Digestion of Sediments, Sludges, and Soils"

6. Steel Structures Painting Council

    a. SSPC Guide 61 (CON) Guide for Containing Debris Generated During Paint Removal Operations

7. Connecticut Department of Energy and Environmental Protection

    a. 310 CMR 40 Connecticut Contingency Plan

    b. 310 CMR 30 Hazardous Waste Regulations

    c. 310 CMR 1-7 Clean Water Act

    d. 310 CMR 16, 19 Solid Waste Regulations

    e. 314 CMR 7-8 Clean Air Act

B. Local Town, City or County bylaws, rules and regulations

1.04 SUBMITTALS

A. Prior to removal of hazardous materials, submit a Hazardous Waste Handling Plan, including identification of the proposed waste hauler and disposal facility with copies of all applicable licenses, registrations and approvals.

B. Provide copies of all worker certifications associated with OSHA 40 Hour Hazardous Waste Site Health and Safety Training in accordance with 29 CFR 1910.120.

C. After completion of hazardous materials removal, provide a final report documenting removal, transportation and disposal activities. This shall include copies of manifests, shipping slips, permits and licenses for this project.

PART 2.00 – PRODUCTS

2.01 PROTECTIVE EQUIPMENT

A. Provide health and safety equipment required to protect workers and to comply with the Health and Safety Plan.

2.02 DRUMS

A. Provide DOT approved drums or containers for the disposal of specified materials.

PART 3.00 - EXECUTION

3.01 MERCURY

A. Under current federal regulations, items containing mercury may be classified as hazardous waste. These include, but are not limited to fluorescent lamps, high- intensity discharge lamps, capacitors, thermometers, manometers thermostats and relay switches. The following shall be followed for disposal of all mercury items:

1. Collection, characterization and proper disposal of all fluorescent tubes and mercury items found throughout the facility.

2. Care must be taken to not break these items, as that may cause mercury exposure to individuals handling them and may require additional clean-up and decontamination.

3. Provide all waste shipment records or recycling records and incorporate in the final report.

3.02 HAZARDOUS MATERIALS/WASTE

A. All hazardous materials shall be characterized and disposed of in accordance with applicable regulations. Disposal manifests shall be provided for all waste disposal.

B. Workers who handle hazardous materials shall be licensed and trained in safe and proper hazardous materials handling procedures. At a minimum, this shall include OSHA 40 Hour Hazardous Waste Site Health and Safety Training in accordance with 29 CFR 1910.120.

C. Any hazardous materials containers in poor condition shall be secured and removed as soon as possible.

D. Handling Hazardous Waste

1. Place waste in DOT approved containers and label the containers for transport to a licensed disposal site.

2. Use an authorized hazardous waste transporter to haul waste to a hazardous waste facility.

3. Follow all record keeping, chain-of-custody and reporting requirements including a copy of the hazardous waste manifest.

4. Accurately measure and weigh the volume of each container or load of waste removed from the site. Submit records of waste volumes to Owner and Engineer.

5. Special attention shall be given to the time of storage, amount of material stored at any one time, use of proper containers and personnel training.

6. Paint debris shall not be placed on the unprotected ground and shall be shielded to prevent dispersion of the debris by wind or rain water.

7. Provide appropriate notifications to regulatory agencies if there is a release to the environment exceeding the CERCLA reporting requirements (e.g. lead -– 1 pound).

8. Any evidence of improper storage shall be cause for immediate shutdown of the project until corrective action is taken.

9. Provide legal transportation of the waste to the disposal landfill, and complete or obtain all required licenses, manifests, landfill slips, or other forms. Copies of all forms or licenses, and the signed original of the Waste Manifest for each waste load, shall be given to the Engineer or Owner.

END OF SECTION

SECTION 13284

PCB CONTAMINATED BUILDING MATERIALS ABATEMENT

PART 1.00 - GENERAL

1.01 DECRIPTION

A. This Section establishes requirements for the removal, segregation, management, and disposal of confirmed Polychlorinated Biphenyls (PCB) contaminated building materials including window glazing on interior doors in Danford House and Barnes House, and vent pipes on the roof of the Laundry Building.

B. The removal and disposal of building materials with PCBs is regulated by the Toxic Substance Control Act (TSCA) pursuant to Federal regulation 40 CFR 761. Demolition debris with PCBs are regulated as PCB Bulk Product Waste, if PCB concentrations are greater than or equal to 50 parts per million (ppm) as (ref: 40 CFR 761.50(b)(4)). Concentrations detected at the site are less than 50 ppm.

C. Estimated quantities of PCB containing materials are given in this Section. Contractor is responsible for estimation of actual quantities to form the basis of their bid.

D. This Section specifies requirements for the abatement and management of PCB contaminated building materials.

1.02 WORK INCLUDED

A. Contractor is informed that the demolition of the buildings will involve the disturbance of building components that contain PCBs. The intent of this section is to identify for the Contractor where PCBs have been confirmed to exist and the applicable regulatory responsibilities the Contractor shall comply with in order to perform the demolition work and remediation of contaminated building materials. Health and safety concerns, disposal requirements, worker training and demolition procedures are described in this Section.

B. The HMIR found the communication panel may contain PCBs. The Contractor shall sample the communication panel for the presence of PCBs as well as any other suspect debris. The Contractor shall adhere to specific removal and management requirements as specified herein.

C. In general, the following activities are minimum requirements of this Section and affect the demolition performed on building components identified with PCBs:

1. No torch cutting of PCB impacted materials shall be performed.

2. No demolition activities shall occur that can reasonably be expected to increase the worker's exposure above the Permissible Exposure Limits (PEL) for PCBs unless certain worker protection is implemented.

3. Workers shall be informed of the PCB building components to be removed.

4. At a minimum, worker protection shall comply with applicable OSHA standards. Worker Right to Know and Health and Safety Standards of 1926 shall also apply to the work of this Section.

5. Unprotected, untrained workers or trades shall not perform any related work within or adjacent to work areas involving PCB containing building components.

1.03 SUBMITTALS

A. Prior to the start of the work, prepare and submit the following items. Do not commence work activities until submittals are approved.

1. Written demolition and remediation work plan that summarizes the Contactor's means and methods related to the demolition, containment, and management of PCB contaminated building materials.

2. Certification signed by the Contractor stating that the Contractor will comply with all TSCA and State of Connecticut requirements for PCBs.

3. The names and operating permits of all proposed receiving facilities that may receive PCB wastes.

B. Contract Closeout Submittals (throughout project and prior to authorization of final payment):

1. Records of the amounts of waste generated, by waste type.

2. Evidence of lawful disposal of all PCB wastes generated.

1.04 REGULATORY REQUIREMENTS

A. Contractor is solely responsible for obtaining permits or approvals which may be required to perform the work of this Section, including all costs, fees and taxes required or levied.

B. Comply with all applicable federal, state, and local environmental, safety and health requirements regarding the demolition of structures and other site features and recycling or disposal of demolition debris, as applicable.

PART 2.00 - PRODUCTS

A. Warning Signs and Labels - Work areas shall be properly demarcated in accordance with OSHA and TSCA requirements. The contactors specific containment approaches may also include the following products:

1. Plastic Sheeting ("Poly") - shall polyethylene or equivalent with a thickness of at least 6 mil for all applications.

2. Tape and Glue – Shall be capable of sealing plastic joints and attaching plastic to finished surfaces. The bonding strength and resulting seal integrity shall not be affected by mist or water, wetting or encapsulating agent, or any other materials to be used in the work area.

PART 3.00 - EXECUTION

3.01 DEMOLITION AND REMOVAL METHODS

A. Demolition activities shall be conducted in a manner that prevents the potential release of dusts to areas outside the immediate work zone.

B. Non-PCB contaminated demolition debris shall be segregated from PCB contaminated demolition debris.

C. Feasible engineering controls (i.e., misters, ventilation with HEPA filtration) shall be implemented by the Contractor to minimize the possibility of contamination of areas adjacent to the work area.

D. Workers shall be informed of the building components to be removed that have been identified as containing PCBs.

3.02 WORKER PROTECTION

A. Contractor personnel involved in the removal or disturbance of PCB building materials shall be advised of contaminants including PCBs.

B. Marking of PCB work areas and PCB storage areas shall be in accordance with 40 CFR 761.40.

C. The Contractor shall be responsible for ensuring OSHA compliance for all personnel working with PCB items, including providing appropriate personal protective equipment and training to use such protective equipment.

D. During selective demolition activities, Contractor shall ensure that workers are not exposed to any listed contaminant in excess of the permissible exposure limits (PEL). If exposure cannot be reduced to or below the PEL using engineering controls or revised work practices, the Contractor shall provide personal protective equipment including, but not limited to, respiratory and dermal protection.

3.03 BARRIERS AND ISOLATION AREAS

A. The Contractor shall construct and maintain suitable polyethylene barriers to isolate the work areas and to eliminate contamination of other spaces. Polyethylene barriers shall be of sufficient size and strength to prevent the migration of dust/debris from the work areas.

B. Other alternative barriers (other than polyethylene) may be proposed by the Contractor in their abatement plan.

C. A centralized clean area adjacent to the work area(s) shall be constructed. This clean area shall be of sufficient size for workers to decontaminate.

D. Barriers shall not be removed until the work areas are thoroughly cleaned and approved by Owner's representative/Engineer.

3.04 VERIFICATION SAMPLING

A. Verification sampling of remediated materials that remain in place will be performed by the Owner's consultant. Consultant will collect wipe samples of non-porous horizontal and vertical surfaces to verify contractor cleanup of dust/debris. Consultant will collect substrate samples of porous materials surrounding the abated area to verify removal of substrates containing PCB concentrations > 1ppm.

B. Following the completion of abatement work within an individual work area and the completion of initial pre-cleaning of the work zone, Owner's consultant shall collect verification samples from any underlying materials that will be disposed of as uncontaminated demolition debris.

C. Once confirmation is received that an individual work area has been remediated to a concentration of less than 1 ppm, Contractor may then compete final cleanup and breakdown of containment area.

D. Contractor shall anticipate a ten-day turnaround time from the laboratory for any verification samples collected by the Owner's Engineer.

E. If sample results indicate additional removal is necessary, Contractor shall perform additional remediation under the appropriate pay item.

F. If wipe samples of final cleaned areas reveal residual PCB dusts greater than the cleanup standard, additional cleaning by the contractor will be necessary at no additional cost to the owner.

3.05 CLEANING PROCEDURES

A. Upon completion of the removal of PCB contaminated building material in any given work area, cleaning will be performed by the Contractor. In general, cleaning shall be performed at the end of each work day to prevent the migration of dusts or debris to areas beyond the work limits.

B. A thorough final cleaning shall be performed on all surfaces using wet methods and HEPA filter-equipped vacuums or other approved vacuum equipment. Any water used for final cleaning shall be containerized and managed as contaminated by the contractor.

C. Final cleaning includes removal of any contaminated material, equipment or debris (including polyethylene sheeting) from the work area and removal of all visible dusts located on surfaces. All collected polyethylene sheeting shall be packaged for disposal as a PCB waste.

D. Special attention shall be given to personal hygiene and cleaning of supplies and/or equipment.

3.06 MANAGEMENT OF PCB WASTES

A. Abated PCB containing materials (potentially communications panel or other items) generated throughout the project shall be commingled for disposal. Segregation of PCB materials will not be necessary. Universal wastes containing PCBs must be managed as a separate waste stream as detailed in Section 13283.

B. The Contactor is responsible for any additional analytical testing to support disposal of any PCB waste removed from the property. Engineer may also collect representative samples from certain waste streams throughout the project.

C. The following materials contain or are suspected PCB concentrations and shall be collected, packaged and labeled by the Contractor according to this Section for off- site disposal.

1. Identified PCB contaminated window glazing on interior doors in Barnes House and Danford House and from vent pipes on the roof of the Laundry Building.

2. Debris and dusts generated and collected throughout selective demolition

3. Respirator cartridges, scrapers, tarpaulins, suits, plastic and other materials used for PCB abatement.

   These above items can be co-mingled for disposal under the applicable unit price pay item.

4. Washwater (no separate pay item will exist for wash water management). Collected wash water shall be filtered (as necessary). Filtered washwater shall be sampled by the Contractor and managed off-site appropriately in accordance with TSCA and RCSA 22a-463 through 22a-469.

D. Provide evidence that the PCB waste has been received at a legal disposal, recycle, reuse or salvage location. The means for such proof shall be truck weight slips from an approved disposal facility. Transport of all materials off site shall be in accordance with applicable Department of Transportation Regulations. All materials leaving the site shall become the property of the Contractor.

END OF SECTION