



<Addendum 4>

NJSDA
1 West State Street
Trenton, NJ 08625
Phone: 973-648-3223
Fax: 609-656-2651

Date: March 11, 2010

PROJECT #: NT-0050-N01

DESCRIPTION: Leonard Place Demolition

This addendum shall be considered part of the Bid Documents issued in connection with the referenced project. Should information conflict with the Bid Documents, this Addendum shall supercede the relevant information in the Bid Documents.

Section 01010: Section 5: Replaced as follows

5. Salvage of Materials:

a. Prior to the demolition of on site buildings the contractor shall salvage all materials (with the exception of the "Five-Panel Stained Glass Window and Wood Trim" as indicated in section 5d, below) identified in the report, Montauk Theater Salvage Catalog and Recommendations, dated 18 August 2009 ("the Salvage Report"), prepared by Langan Engineering and Environmental Services, Inc. The contractor is advised that the salvage of the theatre chairs shall be limited to 100 chairs.

b. Contractor shall provide a list of salvagers for approval by the Owner 15 days prior to start of salvage operations.

c. The contractor shall provide a detailed list of all materials salvaged, including bills of lading, photographs, and inventories.

d. With respect to the "Five Panel Stained Glass Window and Wood Trim" identified in the Salvage Report, that item has been designated for retention and reuse by the SDA, in accordance with the Salvage Plan. Accordingly, the Contractor shall carefully preserve, remove and protect the stained-glass window in accordance with the following procedures for removal and storage, consistent with the Salvage Plan. Specifically:

1. The five-panel window should be treated as a unit, and should be carefully removed, taking care to keep the window intact and to keep all moldings and hardware attached.
2. Exposed nails should be removed prior to crating.

3. The window and its component parts should be photographed prior to crating.
4. The window should first be wrapped with unbleached cotton.
5. The cotton-wrapped window should be placed in a crate constructed of 2" x 4" timbers and half-inch plywood. The crate should be lined with insulation Styrofoam and conform as closely to the shape of the window as possible. The window should be covered with polyethylene sheeting. Insulation or non-expanding foam should be used to cushion and support the pieces of the window. The crate should be built with a stable base to allow the crate to be stored upright without falling over.
6. The crate must be carefully labeled with the contents of the crate, the date packaged, and the designation of the top for storage (i.e. "This End Up"), as well as a notation that the contents are fragile (i.e. marked "FRAGILE").
7. The crates should be stored with the units upright to prevent warping.
8. Crates should be stored in a dry location.
9. The crate containing the window shall be delivered to an address to be supplied by the Owner.
10. The Contractor shall confirm with the Owner the delivery address for the window prior to preparation for delivery of the crated window.

Question 1: "Project Manual 1 of 1 ECC Leonard Place specifications Table of Contents I am looking for Division 2 – Expedited Demolition: 02115, 02150, 02221, 02230, 02270, 02300, 02821, 0999A. It is not in my set of specs. Can you help?"

Answer 1: These specifications are in the original Demolition Pool Contract (GP-0125) and are attached for your reference.

Question 2:
"Can contractor do the salvaging material with its own forces or do we have to sub it out to the listed contractors?"

Answer 2:
The contractor may perform the salvage scope of work if they are capable and competent

Question 3:
"For list of salvageable items on CD, are those the final quantities of the items to be salvage? Please clarify."

Answer 3:
No. While the majority of the items listed on the cd-rom show final quantities, some items such as posters are unknown in quantity, as safe access to the entire building was not available at the time of the inspection.

Question 4:
"The line items for certified clean backfill, is that material to be used for all backfill or contractor can figure all backfill in his bid?"

Answer 4:
All backfill brought onsite shall be certified clean backfill and paid for under this line item.

Question 5:
"Please give us the quantities of the hazardous waste items."

Answer 5:

The Price Proposal Unit Pricing (PPUP) form has been updated to include these items. See attached revised PPUP form, dated 3/9/2011. The 3/9/2011 PPUP must be used for your bid submission.

Question 6:

Line item#55- is that for the contents of the known UST's or do we include oil disposal in our bid with UST's?"

Answer 6:

Line item 55 is for the disposal of the contents of the UST. Separate line items address the disposal and excavation of the UST's themselves.

Question 7:

"Please quantify the number of active water mains and sewer lines."

Answer 7:

Water mains and service lines servicing the buildings at the site will be cut and capped by the Owner's agent. Sheet CD101 item 11 is herein updated to "Owner shall coordinate utility disconnections with Bluegrass."

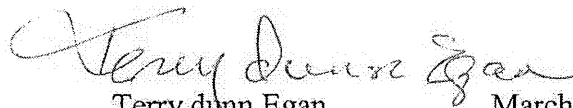
Question 8:

"Note #28 on demo drawings state that we can use onsite concrete brick masonry for backfill. Is this correct."

Answer 8:

Please refer to Addenda 3 Item 1 which states "...concrete, brick and masonry may not be reused or used on site."

End of Addendum No. 4



Terry Dunn Egan
NJSDA

March 11, 2010
Date

<Addendum 4>

NJSDA
1 West State Street
Trenton, NJ 08625
Phone: 973-648-3223
Fax: 609-656-2651

Date: March 11, 2010

PROJECT #: NT-0050-A01

DESCRIPTION: Leonard Place Demolition: Modifications to Plans and Specifications

Addendum No. 4

Acknowledgement of Receipt of Addendum

Contractor must acknowledge the receipt of the Addendum by signing in the space provided below and returning via fax to (609-656-2651). Signed acknowledgement must be received prior to the Bid Due Date. Acknowledgement of the Addendum must be made in Section E.6 of the Price Proposal Submission.

Signature

Print Name

Company Name

Date

PRICE PROPOSAL

PRICE PROPOSAL SUBMISSION

**for
BID
to**

NEW JERSEY SCHOOLS DEVELOPMENT AUTHORITY

For the following Package:

Contract Number: NT-0050-J01
Contract Name/Description: Site Demolition and Remediation
District: Passaic
County: Passaic

THIS PACKAGE IS COMPRISED OF THE FOLLOWING SCHOOL PROJECTS:

SCHOOL	CONSTRUCTION COST ESTIMATE
<u>ECC Leonard Place</u>	<u>\$ 4.3M</u>

Bid of _____
(Bidder's Name) (Bidder's Federal I.D. #)

a corporation organized and existing under the laws of the State of _____

or a partnership or joint venture consisting of _____

or an individual, trading as _____

Important Notes:

- 1) An Included Bidder may not submit a Price Proposal that exceeds its Project Rating Limit for a project.
- 2) An Included Bidder's Project Rating Limit cannot exceed the firm's Aggregate Limit.

A. Price Proposal Submission:

The Included Bidder shall complete and execute this Price Proposal and enclose it in an envelope that is **sealed** and **clearly marked** with the Included Bidder's Name, Contract Number, Contract Name, School District, County and the date of Price Proposal submission. The Included Bidder must submit its sealed Price Proposal to the Corporation in accordance with Section 9 of the Instruction to Bidders.

B. Included Bidder:

All Included Bidders must be classified by the Department of the Treasury, Division of Property Management and Construction in all applicable trades; pre-qualified by the Corporation in all applicable trades; registered with the Department of Labor; and registered with the Department of Treasury, Division of Revenue; and provide a valid contractor or trade licenses where applicable at the time of submission of this bid. **Time is of the essence for completion of all projects in this package.**

C. Subcontractors:

1. The Included Bidder shall name all subcontractors that will be performing work in any of the trades listed in the Bid Advertisement or required by statute.
2. All listed subcontractors identified in accordance with C1 above must be classified by the Department of the Treasury, Division of Property Management and Construction in all applicable trades; pre-qualified by the Corporation in all applicable trades; registered with the Department of Labor; and registered with the Department of Treasury, Division of Revenue; and provide a valid contractor or trade licenses where applicable at the time of submission of this bid.
3. All Included Bidders shall submit a copy of the Uncompleted Contracts Form for any subcontractor identified in the bid advertisement.
4. If the Included Bidder is properly classified and pre-qualified, and will be performing work in these trades with its "own forces," so state. Failure to indicate what firms will be performing the work in the trades identified in the Bid Advertisement may cause the bid to be rejected.
5. The Included Bidder shall list the SBE status of each subcontractor, where applicable.

=====

GENERAL CONSTRUCTION WORK:

Firm	Address
SBE	DOL Contractor Registration #
	Federal I.D. #

=====

OTHER TRADE CLASSIFICATIONS NAMED IN BID ADVERTISEMENT (Name Trade Classification): _____

Firm	Address
SBE	DOL Contractor Registration #
	Federal I.D. #

E. Price:

1. The undersigned, as Included Bidder, declares:
 - That this Price Proposal is made, without collusion with any other person, firm or corporation;

- That the Included Bidder has carefully examined the form of the Project Manual, Contract, Instructions to Bidders, Addenda, Specifications, Plans and all other Contract Documents;
 - That the Included Bidder has carefully examined the locations, conditions and classes of material for the proposed work;
 - That the Included Bidder agrees that it will provide all necessary machinery, tools, apparatus and other means of construction and will do all work and furnish all the materials called for in the Contract Documents in the manner therein prescribed.
2. In submitting this Price Proposal, the Included Bidder agrees:
- That the Corporation has the right to reject this Price Proposal in accordance with the Instructions to Bidders.
 - To hold this Price Proposal open for a period of ninety (90) calendar days from the date of the public opening and reading of the Price Proposals, unless this time period is extended by mutual agreement of the Included Bidder and the Corporation.
 - To accomplish the work at the price bid, in accordance with the Contract Documents.
3. Base Price:
- Total amount for the furnishing of all labor, materials, services, equipment and appliances required in conjunction with and properly incidental to all work, in conformance with all Contract Documents. **The price of allowances listed in the Specifications and/or by Addenda (um) must be included in the Base Bid Price.**
 - In case of a discrepancy between the amount shown in words and the amount shown in figures, **the amount shown in words shall govern.**
 - **The Public Opening and Reading of the Price is for informational purposes only and is not to be construed as an acceptance or rejection of any bid submitted.**

Bid Item	Description	Quantity	Units	Unit Price	Bid Amount
1	Mobilization & Permits	1	LS		
2	Insurance & Bonding	1	LS		
3	Temporary site protection, traffic control, privacy fabric, temporary sidewalk shed & other general requirements	1	LS		
4	Soil erosion & sediment control measures installation	1	LS		
5	Salvage of materials as identified in Montauk Theater Salvage Catalog and Recommendations (excluding "five panel stained glass window and wood trim" (p. 19, Appendix A). Only 100 chairs shall be salvaged.	1	LS		
5a	Remove, crate and deliver the "five panel stained glass window and wood trim" as identified in Montauk Theater Salvage Catalog and Recommendation (p. 19, Appendix A)	1	LS		
6	ACM - Transite Shingles	4200	SF		
7	ACM – Roll Roofing	950	SF		
8	ACM – Chimney Tar/Flashing	325	SF		
9	ACM – Pipe insulation with or without pipe joint / fitting insulation	5620	LF		
10	ACM – Window Caulking/Glazing (window size varies)	144	Window Opening		
11	ACM – 3 Tab Shingles	80	SF		
12	ACM – Sheet Flooring	200	SF		
13	ACM – Multi Layer Linoleum / Floor Tile	350	SF		
14	ACM – Roof Shingle	1900	SF		
15	ACM – Built-up Roofing/Flashing/Mastic	18250	SF		
16	ACM – Mastic on Chimney	15	SF		
17	ACM – Textured Wall Material (Exposed and/or Concealed)	17100	SF		
18	ACM – Floor tiles and mastic /felt sandwiched between ceramic tiles, plywood, and other tiles	1400	SF		
19	ACM – Floor tiles and mastic under ceramic tiles	1000	SF		
20	ACM – Floor tiles no mastic	800	SF		

21	ACM – Floor tiles and mastic	5250	SF		
22	ACM – Mastic cover by floor tile	100	SF		
23	ACM – Baseboard and mastic	30	SF		
24	ACM – Pipe and mudpack joint insulation	1500	LF		
25	ACM – Perimeter/Penetration Flashing, Residual tar/mastic, Built-up roofing and flashing, Parapet Wall mastic, Masonry wall mastic, mastic on skylight, mastic on ducts	28000	SF		
26	ACM – Ceiling popcorn plaster	2400	SF		
27	ACM – Boiler Insulation	200	SF		
28	ACM – Ceiling Board	400	SF		
29	ACM – Pipe Insulation Debris	1	CY		
30	ACM – Mastic on Fiberglass duct	4600	SF		
31	ACM – Insulation felt material over pipe insulation	500	SF		
32	ACM – Wire insulation wrap associated with projectors	80	LF		
33	ACM – Stage Curtain	2200	SF		
34	ACM – Transite panels w/electrical switches	200	SF		
35	ACM – Duct insulation	600	SF		
36	ACM – Tank insulation	250	SF		
37	ACM – Debris inside chimney	6	SF		
38	ACM – Multi layered floor tile	1300	SF		
39	ACM – Glue daub on ceiling or ceiling glue daub	900	SF		
40	ACM – Exterior Wall mastic under stone	300	SF		
41	ACM – Exterior wall mastic glue under wall panel	300	SF		
42	ACM – Black mirror mastic	50	SF		
43	ACM – Mastic on parapet walls and bulkhead	650	SF		
44	ACM – Roof flashing and mastic	1500	SF		
45	ACM – Exterior transite pipe riser	45	LF		

46	Deleted				
47	Theater/Hotel - Site demolition/removal, bituminous pavement, buildings, AST's, mechanical systems, building contents, fixtures, concrete slabs, foundation systems, walls, walks, drainage utilities, clearing, etc	1	LS		
48	Other Buildings - Site demolition/removal, bituminous pavement, buildings, AST's, mechanical systems, building contents, fixtures, concrete slabs, foundation systems, walls, walks, drainage utilities, clearing, etc	1	LS		
49	Removal and disposal of non-hazardous soil, remediation area soils, petroleum impacted soils, if and where directed.	500	TON		
50	Removal and Disposal of construction debris, rubble, foundation residue, derived waste from previously existing buildings and or structures per historic map, if and where directed	3,600	TON		
51	Removal and disposal of ID 27 concrete, if and where directed.	100	TON		
52	Disposal of 55 gal drums as described in the RAWP	8	EA		
52	Clean out and wash sumps for inspection by engineer, containerize and dispose of waste, protect and monitor during demolition of the building. After demolition of the building sump areas shall be tested by engineer as required.	3	EA		
53	Excavation and Disposal of UST(s) 0-1,999 gal	7	EA		
54	Excavation and Disposal of UST(s) 2,000+ gal	2	EA		
55	Disposal of petroleum, if and where directed.	11,000	GAL		
56	Dewatering including treatment if required.	100,000	GAL		
57	Supply, fill and compact to 95% Certified Clean fill as defined by NJDEP, if and where directed	28,000	TON		
58	Site plan improvements, including but not limited to finish grading, permanent fencing and gates, crushed stone, etc.	1	LS		
59	Demobilization	1	LS		
60	Removal and disposal of Fluorescent Lamps (tubes)	650	EA		
61	Removal and disposal of Lamp-fixture ballast	325	EA		

62	Removal and disposal of High-density discharge (HID) lamps	10	EA		
63	Removal and disposal of smoke detectors	100	EA		
64	Removal and disposal of bulbs containing mercury	90	EA		
65	Removal and disposal of HVAC units	40	EA		
66	Removal and disposal of thermostat containing mercury	30	EA		
67	Removal and disposal of exit signs	25	EA		
68	Removal and disposal of batteries	35	EA		
	Allowance	1	LS	\$350,000	\$350,000
TOTAL PRICE					

TOTAL BID PRICE: _____
(In Words)

\$: _____
(In Figures)

Interpretation of Quantities in Bid Schedule

The quantities appearing in the bid schedule on the Price Proposal Form are approximate only and are provided to facilitate the comparison of bids. Payment will be made only for the quantities of Work completed in accordance with the terms of the Contract. Such payment will be made at the unit prices bid for the quantities of Work accepted by the Engineer for the Project. The scheduled quantities of Work may be increased, decreased or eliminated in their entirety, as determined by the Engineer for the Project.

“If and Where Directed” Items

The Price Proposal Form may request unit price bids on one or more scheduled bid items to be incorporated into the Work of the Project only “if and when directed” by the Engineer for the Project. References to such items may not appear on the plans. The estimated quantities set out in the Price Proposal Form for such items are included for the purpose of obtaining unit price bids only and not to convey the actual quantities of such items which might be incorporated into the Work of the Project. Depending on field conditions, such “if and where directed” items may or may not be incorporated into the Work of the Project and, if incorporated, may be many times the estimated quantities or only a fraction thereof.

Incorporation of such “if and where directed” items into the Work of the Project shall be made only on written direction of the Engineer for the Project. No payment shall be made for “if and

when directed" items not directed in writing by the Engineer for the Project. The Engineer may order incorporation of such items into the Work of the Project at any time during the Contract Time. If such items are directed by the Engineer in writing, payment shall be made at the unit prices bid for the actual quantities of Work performed and accepted by the Engineer.

Consideration of Unit Pricing

In the event of a discrepancy between the unit price bid for any scheduled bid Item and the extension shown for that item under the column of the Price Proposal Form designated "Bid Amount", the unit price is to govern. Where a unit price is bid, but no extension is provided, the Authority will prove the extension based on the unit price bid and the estimated quantity for the Bid Item.

Where an extension is provided in the "Bid Amount" column, but no unit price appears in the "Unit Price" column of the Price Proposal form, the Authority will provide the unit price by dividing their "Bid Amount" figure provided by the Bidder by the estimated quantity.

4. Alternates:

Refer to the Specifications and/or Addenda (um) for the list of Alternates, if any.

For each listed Alternate, the Included Bidder shall:

1. Identify specifically the alternate to be addressed under the column entitled "Alternates". Said identification shall be the name or number of the alternate;
2. Fill in the amount bid for the Alternate in the column entitled "Price" in the appropriate space opposite the "Alternate" column and indicate if this price is a decrease alternate by using the symbol "-" or an increase alternate using the symbol "+". If the alternate is chosen, increase alternates will increase the base bid by the amount indicated, decrease alternates will result in a reduction of the base bid by the amount indicated;
3. If no change in the bid amount is required, the Bidder must indicate "No Change" or "\$0 dollars" in the price column.

<u>Alternate</u>	<u>Price</u>

5. Addenda:

The Included Bidder acknowledges receipt and incorporation into this bid of the following Addenda:

Number: _____

Dated: _____

F. CERTIFICATION

The Included Bidder hereby certifies to the best of its knowledge and belief and under penalty of perjury under the laws of the United States and the State of New Jersey:

1. That all information provided herein is accurate and truthful.
2. That an affirmative action program of equal employment opportunity, pursuant to P.L. 1945, c. 169, the "New Jersey Law Against Discrimination," as supplemented and amended has been adopted by this organization to ensure that applicants are employed and employees are treated without regard to their race, creed, color, national origin, ancestry, marital status, sex, or affectional or sexual orientation, and that the selection and utilization of contractors, subcontractors, consultants, materials suppliers and equipment lessors shall be done without regard to their race, creed, color, national origin, ancestry, marital status, sex, or affectional or sexual orientation. Such action shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeships. The Included Bidder agrees to post in conspicuous places, available to employees and applicants for employment, Notices to be provided by the Corporation's Compliance Officer setting forth provisions of this nondiscrimination clause. Said affirmative action program addresses both the internal recruitment, employment and utilization of minorities and the external recruitment policy regarding minority contractors, subcontractors, consultants, materials suppliers and equipment lessors.
3. That the bid has been executed with full authority to do so; that the Included Bidder has not directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with these projects; and that all statements contained in this bid and in this certification are true and correct and made with full knowledge that the Corporation's relies upon the truth of the statements contained in this bid and in the statements contained in this certification in awarding the contract for the projects.
4. That neither the Included Bidder nor its principals:
 - A. are currently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from bidding or contracting by any agency of government including but not limited to federal, state, regional, county or local government agency, in this or any other state including any department, division, commission, authority, office, branch, section and political subdivision or other governmental or quasi-governmental entity;
 - B. have, within a three-year period preceding this bid, been convicted or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public federal, state or local contract; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - C. are currently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any of the offenses enumerated in paragraph (B) of this certification; and
 - D. have, within a three-year period preceding this bid, had one or more public contracts (federal, state or local) terminated for cause or default.
5. The Included Bidder has a current, valid registration issued pursuant to the "Public Works Contractor Registration Act, "P.L. 1999, c. 238 (c. 34:11-56.48 et. seq)".

6. The Included Bidder has a current, valid Business Registration Certificate for State Agency and Casino Service Contractors issued by the NJ Department of Treasury to perform work in New Jersey.
7. The Included Bidder has current, valid contractor or trade licenses and permits required under applicable New Jersey law for any trade or specialty area in which the firm seeks to perform work.
8. During the term of construction of the project(s) that comprise this package, the Bidder will have in place a suitable quality control and quality assurance program and an appropriate safety and health plan.
9. The amount of the Price Proposal and the value of the Included Bidder's outstanding incomplete contracts do not exceed the Included Bidder's Aggregate Rating.
10. There has been no change to the information included in the Contract with the firm dated _____, including, but not limited to, the payment and performance bond, P.L. 2005, c.51 and that all pre-qualifications and registrations are current and in full force and effect.
11. **Where the Included Bidder is unable to certify to any of the statements in this certification, the Included Bidder shall explain below.**

IN WITNESS WHEREOF, the Included Bidder has caused this instrument to be signed, attested to and sealed.

Included Bidder: _____
(Legal Firm Name)

By: _____
(Signature) (Printed or Typed Name)

Title: _____

Address: _____

Telephone No.: _____

Fax No.: _____



Date: _____

Witness: _____

Printed or Typed Name: _____

Date: _____

END OF PRICE PROPOSAL

SECTION 02115 – UNDERGROUND STORAGE TANK (UST) REMOVAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:

- 1. Removal of underground storage tanks (USTs) and appurtenances which have been used to store petroleum related products, and the excavation/off-site disposal of petroleum contents and petroleum impacted soil.

- B. Related Sections include the following:

- 1. Division 2 Section "Building Demolition" for hazardous material removal in locations within existing buildings.
- 2. Division 2 Section "Excavation, Removal & Handling of Hazardous Material" for hazardous material disposal and removal in connection with remediation of hazardous material excavation.
- 3. Division 2 Section "Offsite Transportation and Disposal" for UST removal and in connection with remediation of hazardous material excavation.
- 4. Division 2 Section "Earthwork" for backfilling operations with clean NJSDA certified fill material.

1.3 SUBMITTALS

- A. Qualification Data: For professional engineer and testing agency.
 - 1. Contractor shall be certified to perform UST closure operations by NJDEP.
- B. Material Test Reports: For all hazardous material identified.
- C. Source quality-control test reports.
- D. Field quality-control test reports.
- E. Disposal documentation for USTs, and any contents removed, shall be provided in accordance with N.J.A.C. 7:14B and 7:26E.

PART 2 - EXECUTION

1.4 GENERAL

- A. Remove underground storage tanks (USTs), piping, and all appurtenances in accordance with API recommended practice 1604 and N.J.A.C. 7:14B and 7:26E.
- B. Materials and equipment as necessary to remove USTs in accordance with American Petroleum Institute (API) recommended practice 1604 and N.J.A.C. 7:14B and 7:26E.
- C. The Engineer shall prepare reports documenting the removal of the USTs.
- D. Engineer is responsible to obtain UST Closure Approval Permit including the associated NJDEP closure permit fee for USTs regulated by the NJDEP.
- E. Contractor to remove existing landscaping including any concrete, asphalt, sub-base, and underlying soil.
- F. Contractor to remove and legally dispose of the contents of the USTs including any petroleum products such as gasoline, diesel fuel, water, water/oil mixture and or sludge
- G. Contractor shall excavate and stockpile soil in an area designated by Engineer.
- H. Contractor shall clean the UST in ground, remove and dispose of all USTs, remove and dispose of any concrete aprons, and or tie downs, remove and dispose of appurtenances, including all fuel piping, vent piping and electrical conduits.
- I. In the event any subsurface concrete UST anchor slab is encountered, the Contractor shall remove and dispose of the concrete and anchor slab.
- J. The Contractor shall supply all equipment, materials and labor necessary to provide shoring and sheeting during excavation activities.
- K. The Contractor shall be prepared to excavate, provide on-site stabilization, remove, and legally dispose of petroleum impacted soil at a unit price per UST. The unit price should include the cost to remove, stockpile, and properly dispose of impacted soil, and to furnish and install certified, clean backfill.
- L. Upon removal of the USTs and underground piping, soil, and concrete anchor slab (if encountered) the contractor shall assist Engineer with collection of post-excavation samples. The Engineer shall oversee and investigate soils (including post-excavation soil screening and sampling.) after the USTs have been removed, to determine if additional soil excavation is necessary. Backfilling activities should proceed immediately upon receipt of acceptable post-excavation sample analytical results, as determined by the Engineer before the Contractor proceeds with backfilling operations with NJSDA certified clean fill material.
- M. In the event that water enters the excavation prior to backfilling, dewatering activities will immediately precede backfilling activities. Upon successfully dewatering the excavation, the excavation will be backfilled with unimpacted excavated material, as designated by the Engineer, and supplemented with certified clean fill or backfill with ¾ - inch clean stone

material up to one foot above the water table and furnish and install geotextile material above the clean stone. The remainder of the excavation, above the geotextile material, is to be backfilled with certified clean fill material

- N. The Contractor shall provide disposal documents for the sludge, residual fluids, concrete, asphalt, soil, USTs, and piping.
- O. The Contractor shall notify the Construction Manager a minimum of one week prior to initiating removal activities.
- P. The Contractor shall call and abide by the New Jersey One-Call (1-800-272-1000) requirements for obtaining utility mark-outs prior to excavation. The Contractor shall be responsible for locating and protecting all utilities and restoration of any disrupted utilities if necessary.
- Q. The Contractor shall be responsible for obtaining road opening/sidewalk opening permits including all associated fees if necessary.
- R. Sample collection (to be performed by the Engineer) shall proceed immediately upon removal of the USTs and underground fuel piping.
- S. The Contractor will need to continuously coordinate its actions with those of the Engineer to facilitate a smooth and orderly progression of the remediation activities.

1.5 EXAMINATION

- A. Examine areas and conditions for compliance with requirements for, removal of hazardous material and conditions affecting performance of work.

1.6 FIELD QUALITY CONTROL AND SCHEDULING

- A. The contractor shall notify the Construction Manager a minimum of one week prior to initiating removal activities.
- B. Contractor shall call the New Jersey One-Call (1-800-272-1000) to obtain utility mark-outs prior to excavation.
- C. Sample collection (to be performed by the Engineer) shall proceed immediately upon removal of the USTs and underground fuel piping.
- D. Testing Agency: Owner will engage a NJ certified laboratory to perform tests and analyses and prepare test reports.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- F. The Contractor shall be solely responsible for means, methods, techniques, sequences and safety precautions associated with the actual excavating operations and extraction of the subject USTS. This includes, but is not limited to, maintaining the appropriate slopes on the sides of the excavation and safety protection around the open excavation in accordance with OSHA

requirements. Provide all necessary protection to insure that daily vehicle operation and pedestrian traffic will be protected from open trenches and work being performed

- G. Contractor shall employ a site-specific health and safety program for use by its personnel and Subcontractors while on site.
- H. The Engineer shall provide for laboratory analyses (i.e., waste classification analysis) for all known contaminated material and any suspected contaminated material generated during the UST closure and activities to be conducted by an NJDEP-certified laboratory. All analyses shall be in accordance with NJDEP regulations. Following receipt of analytical results, Contractor shall provide for the excavation, loading, transportation and disposal of all contaminated materials.

END OF SECTION 02115

SECTION 02150 - WASTE DISPOSAL REQUIREMENTS

PART 1 GENERAL

1.01 Description

- A. This section specifies the requirements for disposal of uncontaminated wastes and hazardous and non-hazardous contaminated wastes generated during asbestos abatement, demolition, closure and removal of the underground storage tanks (USTs) and any remedial activity. This includes disposal of friable and non-friable asbestos, sludge, tank bottoms, unused product, contaminated water, contaminated soil, historic fill and all demolition rubble, construction wastes, etc.

1.02 Applicable Codes and Standards

- A. USEPA, 40 CFR, Part 261, Identification and Listing of Hazardous Waste, latest edition.
- B. N.J.A.C. 7:26-1, 2,3,4,7-13A, 16, 16A, 17 Hazardous Waste Regulations, latest edition.

PART 2 PRODUCTS

2.01 Materials/Equipment

- A. The Contractor shall use watertight waste containers, dump and tank trucks conforming to applicable New Jersey Department of Transportation (DOT) Regulations.
- B. The Contractor shall be responsible for labeling hazardous and non-hazardous materials containers with labels conforming to Federal, State and local regulations.

PART 3 EXECUTION

3.01 General Requirements

- A. The Contractor shall be responsible for locating appropriate disposal facilities for all wastes generated during the entire course of the Contract. Such wastes may include, but are not limited to, uncontaminated debris and site demolition materials, non-hazardous solid and/or liquid wastes, and hazardous solid and/or liquid wastes.
 - 1. The Contractor shall provide the Owner with the names and locations of all proposed disposal facilities prior to transportation of any waste materials from the site. All proposed disposal facilities must be approved by the Owner.
- B. The Contractor shall be responsible for coordinating the safe legal transportation and off-site disposal of all waste material generated during the entire course of the Contract. Transportation and disposal of waste materials shall be in accordance with all applicable Federal, State and local codes and regulations.
 - 1. The Contractor shall provide the Owner with the names and DEP license of all proposed transporters prior to the removal of any waste materials from the site. All proposed transporters must be approved by the Owner.

- C. The Contractor shall ensure that off-site tracking of mud and soil is minimized in accordance with the requirements of the soil erosion plan.

If, in the Owner's opinion, the paved surfaces of the site and/or adjacent streets are affected by the transportation of materials from the loading area, the Contractor shall employ mechanized road cleaning equipment to clean the paved surfaces at no additional cost. The wash water will be disposed of in accordance with the Owner's instructions at no additional cost.

3.02 Waste Characterization

- A. The Contractor shall coordinate and pay for all necessary sampling and analyses of soils to be disposed of off-site in order to properly characterize them as either non-hazardous or hazardous, thereby ensuring the application of appropriate handling, transportation and disposal methods.
 - 1. The Contractor shall provide the Owner with copies of the waste characterization analytical results a minimum of 5 working days prior to transportation of any waste materials from the site.
- B. The Contractor shall coordinate and pay for all necessary sampling and analyses of wastewater generated during the entire Contract to properly characterize it and ensure appropriate handling, transportation and disposal methods. Such wastewater includes, but is not limited to, water generated during excavation dewatering, cleaning of the USTs, and decontamination operations.
- C. The Contractor shall coordinate and pay for all necessary sampling and analyses of wastes generated during cleaning of the USTs including, but not limited to, free product, sludge, sediment and debris.

3.03 Disposal of Non-Hazardous Site Demolition Materials

- A. All debris, rubbish and other materials resulting from demolition and/or construction operations shall be safely and legally removed from the site and disposed of in accordance with applicable Federal, State and local codes and regulations. Burning of any demolition debris or rubbish on-site shall not be permitted.
- B. All tractors and all trailers proposed to haul must be properly licensed by the NJDEP and display the appropriate sticker. No vehicle lacking registration will be loaded.
- C. The Contractor shall provide daily disposal receipts showing the location and amount disposed, name and signature of truck driver and authorized recipient at disposal site.
- D. No vehicle transporting waste materials will be permitted to leave the site until it is logged out by the Owner's Representative.

3.04 Disposal of Friable and Non-friable Asbestos

- A. The Contractor shall be responsible for the proper handling and transportation of all friable and non-friable asbestos. Transport of friable and non-friable asbestos shall be in accordance with all applicable Federal, State (including NJDEP and NJDOT) and local codes and regulations.

1. The Contractor shall prepare all necessary manifests for transportation and disposal of the asbestos materials.
 2. All vehicles and containers used to transport asbestos materials must be appropriately labeled.
- B. All tractors and all trailers proposed to haul must be properly licensed by the NJDEP and display the appropriate sticker. No vehicle lacking registration will be loaded.
 - C. The Contractor shall provide daily disposal receipts showing the location and amount disposed, name and signature of truck driver and authorized recipient at disposal site.
 - D. No vehicle transporting asbestos waste materials will be permitted to leave the site until it is logged out by the Owner's Representative.
 - E. All trucks used to transport asbestos waste materials must be of watertight body construction and be lined with plastic. The trucks must be securely covered with plastic and tarps prior to exiting the site.
 - F. In the event of an accident or spill during transportation, the Contractor shall immediately notify the Owner. All spilled material shall be removed by the Contractor and property damage restored, all at the Contractor's expense.

3.04 Disposal of Contaminated Wastes

- A. The Contractor shall be responsible for the proper handling and transportation of all non-hazardous and hazardous contaminated wastes. Transport of contaminated solid and/or liquid wastes shall be in accordance with all applicable Federal, State (including NJDEP and NJDOT) and local codes and regulations.
 1. The Contractor shall prepare all necessary manifests for transportation and disposal of the waste materials.
 2. All vehicles and containers used to transport contaminated waste materials must be appropriately labeled.
- B. No vehicle transporting contaminated waste materials will be permitted to leave the site until it is logged out by the Owner's Representative.
- C. All trucks used to transport contaminated waste materials must be of watertight body construction and be lined with plastic. The trucks must be securely covered with plastic and tarps prior to exiting the site.
- D. In the event of an accident or spill during transportation, the Contractor shall immediately notify the Owner. All spilled material shall be removed by the Contractor and property damage restored, all at the Contractor's expense.
- E. Bills of Lading and Waste Manifests.

1. Upon the removal of non-hazardous and hazardous wastes from the work site, the Contractor shall submit bills of lading to the Owner's Representative on a form, a copy of which is to be included as part of the "Close Out" documentation. The bills of lading shall contain:

- Contractor's Name
- Contractor's Address
- Permit Number
- Quantity of Waste Removed
- Location, Name, and EPA ID Number of Waste Generator Facility
- Name of Disposal Facility and its EPA ID Number
- Disposal Facility Address
- Date Removed from Work Site
- Signature of Driver
- Signature Receipt by Disposal Facility

2. The Contractor shall be responsible for the completion of all required hazardous waste manifest forms for hazardous materials regardless of material classification. Once completed and verified, the forms will be signed by the Owner. A copy of the forms shall be submitted to the Owner after they are signed by the disposal site. All truck weights must be indicated on the forms. Upon disposal at the approved facility, a certificate of disposal shall be issued to the Owner. The certificate of disposal shall include: A reference to the manifest number for each shipment; the name address and EPA ID Number of each facility at which the hazardous wastes were ultimately treated or destroyed; and the address and EPA ID Number of the generator facility.

3.05 Disposal of Removed Tanks

- A. Prior to disposal, all tanks shall be properly cleaned, labeled, and rendered non-usable by industry standards in accordance with Section 02210, Excavation and Removal of Underground Storage Tank Systems.
- B. Following removal, the tanks and associated piping shall be disposed of as non-RCRA scrap metal in accordance with all Federal, State and local regulations. Under no circumstances are the tanks to be reused.
- C. Tanks shall be properly rigged in accordance with NJDOT requirements and shall be safely transported to an appropriate disposal facility. The Contractor shall provide to the Owner in writing, prior to tank and lift transport, the name, address, and phone number of the tank and lift disposal site to be utilized.
- D. The Contractor shall furnish a certificate of destruction which certifies that the tanks, and piping were disposed of in a legal and safe manner, and shall include a description of the disposal method and location. The certificate shall be in writing and shall be signed by the Contractor, by any Subcontractors involved in disposal of the tanks, and by the tank transporter. This certificate shall be submitted to the Owner as part of the "Close Out" documentation.

END OF SECTION 02150

SECTION 02221 - BUILDING DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:

1. Demolition and removal of buildings and structures.
2. Demolition and removal of site improvements adjacent to a building or structure to be demolished.
3. Removing below-grade construction.
4. Disconnecting, capping or sealing, and abandoning in place and or removing site utilities.

- B. Related Sections include the following:

1. Division 1 Section "Summary of the Work" for use of the premises and phasing requirements, and for restrictions on use of the premises due to occupancy of adjacent structures.
2. Division 1 Section "Photographic Documentation" for preconstruction photographs taken before building demolition.
3. Division 1 Section "Temporary Facilities and Controls" for temporary construction, protection facilities, and environmental-protection measures for building demolition operations.
4. Division 2 Section "Site Clearing" for site clearing and removal of above – and below – grade improvements not part of building demolition.
5. Division 2 Section "Earthwork" for site clearing and grading and the removal of above-and below-grade improvements not part of building demolition.
6. Division 2 Section "Underground Storage Tank (UST) Removal" for removal of underground tanks.
7. Division 2 Section "Excavation, Removal & Handling of Hazardous Materials" for demolition of building material.
8. Division 2 Section "Offsite Transportation and Disposal" for transportation of demolition materials from buildings.
9. Division 2 Section "Asbestos Removal and Disposal" for handling of asbestos material found in buildings.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or recycled.

- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.
- C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or recycled.
- D. PMF: Program Management Firm or Consultant.

1.4 SUBMITTALS

- A. Qualification Data: For demolition firm, professional engineer, and refrigerant recovery technician.
- B. Proposed Environmental-Protection, Dust-Control and Noise-Control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.
- C. Schedule of Building Demolition Activities: Indicate the following:
 - 1. Detailed sequence of demolition and removal work, with starting and ending dates for each activity.
 - 2. Interruption of utility services.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Locations of temporary protection and means of egress, including for other tenants affected by building demolition operations.
- D. Inventory: After building demolition is complete, submit a list of items that have been removed and salvaged.
- E. Predemolition Photographs and Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, to the Engineer's satisfaction, to ascertain any possible damage that might be misconstrued as damage caused by building demolition operations. Submit before Work begins.
- F. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.5 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project. Proof of performance of similar projects for the last five calendar years, including the listing of past projects with company and contact names and telephone numbers.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

- C. Standards: Comply with ANSI A10.6 – “Demolition Operation Standard” and NFPA 241 – “Standard for Safeguarding Construction, Alterations, and Demolition Operations”.
- D. Predemolition Conference: Conduct conference at Project site to comply with requirements in Division 1 Sections "Project Management and Coordination", "Coordination", "Pre-Construction Conference" and "Project Meeting". Review methods and procedures related to building demolition including, but not limited to, the following:
 - 1. Inspect and discuss condition of construction to be demolished.
 - 2. Review structural load limitations of existing structures.
 - 3. Review and finalize building demolition schedule and verify availability of demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review and finalize protection requirements.

1.6 PROJECT CONDITIONS

- A. Buildings to be demolished will be vacated and their use discontinued before start of Work.
- B. Owner will certify in writing that work in designated structures may proceed.
 - 1. Provide not less than 72 hours notice to PMF before commencement of demolition activities.
 - 2. Maintain access to existing walkways, exits, and other adjacent occupied or used facilities.
 - a. Do not close or obstruct walkways, exits, or other occupied or used facilities without written permission from PMF and authorities having jurisdiction.
- C. Owner assumes no responsibility for buildings and structures to be demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- D. Hazardous Materials: Hazardous materials are present in buildings and structures to be demolished. A preliminary assessment and site investigation reports on the presence of hazardous materials and is on file for review and use.
 - 1. Hazardous material remediation is specified elsewhere in the Contract Documents.
 - 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
 - 3. Contractor to report any and all suspected hazardous materials to PMF that are present in buildings and structures to be demolished because of building operations or processes performed there.
- E. Storage or sale of removed items or materials on-site is not permitted.

1.7 COORDINATION

- A. Arrange demolition schedule so as not to interfere with Owner's on-site operations.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. Satisfactory Soils: Comply with requirements in Division 2 Section "Earthwork."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Survey existing conditions and correlate with requirements indicated to determine extent of building demolition required and advise undocumented features to PMF.
- B. Review Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are the same as those indicated in Project Record Documents.
- C. Inventory and record the condition of items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements are encountered, investigate and measure the nature and extent of the element. Promptly submit a written report to PMF.
- E. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

3.2 PREPARATION

- A. Existing Utilities: To buildings to be demolished have been capped and disconnected by owner. In the event utilities are found identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.
 - 1. Arrange to shut off indicated utilities with utility companies.
 - 2. If utility services are required to be removed, relocated, or abandoned, before proceeding with building demolition provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
 - 3. Cut off pipe or conduit a minimum of 24 inches below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
- B. Existing Utilities: Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing and permit has been issued by the DCA. It is the contractor's responsibility to compile all documentation required to obtain building permit which includes but not limited to preparing notice to adjoining owners,

1. Remove refrigerant from air-conditioning equipment before starting demolition.
- C. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of demolition.
 2. Temporary shoring if required are to be designed by a Professional Engineer licensed in the state of New Jersey. Signed and sealed calculations shall be submitted to the owner and shall be kept on file.

3.3 PROTECTION

- A. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities and utilities during demolition operations.
- B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during demolition. When permitted by Owner, items may be removed to a suitable, protected storage location during demolition and reinstalled in their original locations after demolition operations are complete.
- C. Existing Utilities: Maintain utility services indicated to remain and protect them against damage during demolition operations.
1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.
 2. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.
 - a. Provide at least 72 hours notice to PMF if shutdown of service is required during changeover.
- D. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated. Comply with requirements in Division 1 Section "Temporary Facilities and Controls."
1. Protect existing site improvements, appurtenances, and landscaping to remain.
 2. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
 3. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 4. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
 5. Protect walls, windows, roofs, and other adjacent exterior construction that are to remain and that are exposed to building demolition operations.
 6. Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise from occupied portions of adjacent buildings.

3.4 DEMOLITION, GENERAL

- A. General: Demolish indicated existing buildings and structures and site improvements, including all footings, foundation walls, and floor slabs, except as shown on the plan for the preservation. Use methods required to complete the Work within limitations of governing regulations as follows:
1. Do not use cutting torches until work area is cleared of flammable materials. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
 2. Maintain adequate ventilation when using cutting torches.
 3. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- B. Engineering Surveys: Perform surveys as the Work progresses to detect hazards that may result from building demolition activities.
- C. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner or building manager and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
 2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

3.5 MECHANICAL DEMOLITION

- A. Remove buildings and structures and site improvements intact when permitted by authorities having jurisdiction.
- B. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.
- C. Remove debris from elevated portions by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
1. Remove structural framing members and lower to ground by method suitable to minimize ground impact or dust generation.
- D. Concrete: Cut concrete full depth at junctures with construction indicated to remain, using power-driven saw, then remove concrete between saw cuts.
- E. Masonry: Cut masonry at junctures with construction indicated to remain, using power-driven saw, then remove masonry between saw cuts.

- F. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished at junctures with construction indicated to remain, then break up and remove.
- G. Structural Steel: Dismantle field connections without bending or damaging steel members. Do not use flame-cutting torches unless otherwise authorized by authorities having jurisdiction.
 - 1. Transport steel trusses and joists as whole units without dismantling them further.
- H. Carpet and Pad: Remove in large pieces and roll tightly after removing demolition debris, trash, adhesive, and tack strips.
- I. Equipment: Disconnect equipment at nearest fitting connection to services, complete with service valves. Remove as whole units, complete with controls.
- J. Below-Grade Construction: Demolish foundation walls and other below-grade construction.
 - 1. Remove below-grade construction, including basements, foundation walls, and footings, completely unless noted otherwise.
- K. Existing Utilities: Demolish and remove existing utilities and below-grade utility structures.
 - 1. Piping: Disconnect piping at unions, flanges, valves, or fittings.
 - 2. Wiring Ducts: Disassemble into unit lengths and remove plug-in and disconnecting devices.

3.6 SITE RESTORATION

- A. Below-Grade Areas: Rough grade below-grade areas ready for further excavation or new construction.
- B. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory soil materials according to backfill requirements in Division 2 Section "Earthwork" and contract drawings.
- C. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

3.7 REPAIRS

- A. General: Submit repair schedule for Engineer's approval. Promptly repair damage to adjacent construction caused by building demolition operations.
- B. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
- C. Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

3.8 RECYCLING DEMOLISHED MATERIALS

- A. General: Separate recyclable demolished materials from other demolished materials to the maximum extent possible. Separate recyclable materials by type.
 - 1. Provide containers or other storage method approved by Engineer for controlling recyclable materials until they are removed from Project site.
 - 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 3. Stockpile materials away from demolition area. Do not store within drip line of remaining trees.
 - 4. Store components off the ground and protect from the weather.
 - 5. Transport recyclable materials off Owner's property and legally dispose of them.
- B. Asphalt: Break up and transport asphalt to asphalt recycling facility.

3.9 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials and dispose of legally.

3.10 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began per documenting photography.

END OF SECTION 02221

SECTION 02230 - SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:

1. Protecting existing trees shrubs groundcovers plants and grass if indicated or directed to remain.
2. Removing existing trees shrubs groundcovers plants and grass unless otherwise indicated to remain.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnect to service utilities to the buildings shall be done by Owner
7. All utilities are to be removed in the project site and disposed of according to applicable State, County and Local regulation..
8. Erosion and sedimentation control measures.

- B. Related Sections include the following:

1. Division 1 Section "Temporary Facilities and Controls" for temporary utilities, temporary construction and support facilities, temporary security and protection facilities, and temporary erosion and sedimentation control procedures.
2. Division 1 Section "Summary of Work" for verifying utility locations and for recording field measurements.
3. Division 2 Section "Building Demolition" for demolition of buildings, structures, and site improvements.
4. Division 2 Section "Earthwork" for soil materials, excavating, backfilling, and site grading.

1.3 DEFINITIONS

- A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.

- B. Tree Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and defined by the drip line of individual trees or the perimeter of individual groups of trees, unless otherwise indicated.

1.4 MATERIAL OWNERSHIP

- A. Except for stripped topsoil or other materials indicated to remain Owner's property, all materials shall become Contractor's property and shall be removed from Project site.

1.5 SUBMITTALS

- A. Photographs or videotape, sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.
- B. Record drawings, according to Division 1 Section "Project Record Documents," or as directed by owner shall identify and accurately locating capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 QUALITY ASSURANCE

- A. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.7 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- B. Improvements on Adjoining Property: Authority for performing site clearing indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
 - 1. Do not proceed with work on adjoining property until directed by the NJSDA.
- C. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- D. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- E. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified in Division 2 Section "Earthwork."
 - 1. Obtain approved borrow soil materials off-site when satisfactory soil materials are not available on-site.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Locate and clearly flag trees and vegetation to remain or to be relocated.
- C. Protect existing site improvements to remain from damage during construction.
 - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction sediment and erosion control Drawings a sediment and erosion control plan, specific to the site, that complies with EPA 832/R-92-005 or requirements of authorities having jurisdiction, whichever is more stringent.
- B. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 UTILITIES

- A. Contractor will be provided with utility company disconnect letters. Contractor will be responsible for sealing indicated utilities that serve existing structures before site clearing.
 - 1. Verify that utilities have been disconnected and capped before proceeding with site clearing.
- B. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.

1. Arrange with utility companies to shut off indicated utilities.
 2. Owner will arrange to shut off indicated utilities when requested by Contractor.
- C. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or other unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify Construction Manager not less than two days in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without Construction Manager's written permission.
- D. Excavate for and remove underground utilities after confirming it has been disconnected unless indicated to remain.
- E. Removal of underground utilities shall be according to applicable State, County and Local regulations.

3.4 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction.
1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
 2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
 3. Grind stumps and remove roots, obstructions, and debris extending to a depth of 18 inches below exposed subgrade.
 4. Use only hand methods for grubbing within tree protection zone.
 5. Chip removed tree branches and dispose of off-site.
- B. Fill depressions caused by clearing and grubbing operations with approved fill material unless further excavation or earthwork is indicated.
1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
1. Remove subsoil and nonsoil materials from topsoil, including trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Limit height of topsoil stockpiles to 72 inches.
2. Do not stockpile topsoil within tree protection zones.
3. Dispose of excess topsoil as specified for waste material disposal.
4. Stockpile surplus topsoil to allow for respreading deeper topsoil.

3.6 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements unless otherwise noted.
- B. Remove slabs, paving, pavers, curbs, gutters, footings, fences, fence footings, wall and wall footings, shrubs, trees, roots, stumps, foundations, and aggregate base and items as indicated or as directed.
 1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut length of existing pavement to remain before removing existing pavement. Saw-cut faces vertically.
 2. Paint cut ends of steel reinforcement in concrete to remain to prevent corrosion.

3.7 DISPOSAL

- A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
 1. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities.

END OF SECTION 02230

SECTION 02270 - SOIL EROSION & SEDIMENT CONTROL MEASURES

1.01 GENERAL

- A. This work shall consist of temporary control measures as indicated on the plans and as ordered by the Engineer during the life of the contract and as shown on drawings, to control erosion and sediment through use of berms, dikes, dams, sediment basins, fiber mats, netting, gravel, mulches, grasses and other erosion control devices or methods.
- B. The primary objective of this specification is to control soil erosion to the maximum extent practicable commensurate with reasonable and economical construction practices.
- C. The temporary control provisions contained herein shall be coordinated with the permanent erosion control features (grass, pavement or other restorations) specified elsewhere in the contract to the extent practical to assure economical, effective and continuous erosion control throughout the construction and post-construction period.
- D. The erosion control measures described herein shall be continued until the construction is complete and final restorations installed.
- E. Wherever construction exposes work which is subject to erosion, the extent of such exposure in advance of the subsequent construction shall be subject to the approval of the Engineer. Erosion control features or other work to be completed within such areas shall follow as soon after exposure as practicable.
- F. All materials and methods of construction shall be in accordance with the New Jersey State Standards for Soil Erosion and Sediment Control.

2.01 MATERIALS

- A. Mulches may be hay, straw, fiber mats, netting, wood cellulose, corn or tobacco stalks, bark, corn cobs, wood chips, or other suitable material acceptable to the Engineer and shall be reasonably clean and free of noxious weeds and deleterious materials.
- B. Temporary grass shall be a quick growing species (such as rye grass, Italian rye grass, or cereal grasses) suitable to the area providing a temporary cover as detailed on the "Construction and Soil Erosion/Sediment Control Details" Sheet of the contract drawings.
- C. Fertilizer and soil conditioners shall be a standard commercial grade acceptable to the Engineer.
- D. Requirements for silt fence:

1. Fence posts shall be spaced in accordance with the plans.
 2. A filter fabric, recommended for such use by the manufacturer, shall be at least 6 inches deep in the ground and then shall extend 6" parallel to grade. The filter fabric shall extend at least 2 feet above the ground. Filter fabric may be fastened in place by stake or other accepted means as specified by the district office.
 3. The barrier shall be constructed so water cannot bypass the barrier around the ends.
 4. Inspection shall be frequent and repair or replacement shall be made promptly as needed.
 5. The barrier shall be removed when it has served its usefulness so as not to block or impede storm flow or drainage.
- E. Stabilized Construction Entrance:
1. Contractor shall construct one (1) construction entrances. The entrances shall be stabilized and maintained throughout the life of the project.
 2. The stabilized construction entrances shall be as specified on the Construction and Soil Erosion & Sedimentation Control Details sheet C-5.
- F. Inlet Protection
1. Contractor shall install inlet protection to all existing inlets prior to beginning construction.
 2. Inlet protection shall be installed as detailed on the Construction and Soil Erosion/Sediment Control Details Detail Sheet C-5.
- G. Other as specified by the Engineer.

3.01 METHODS OF CONSTRUCTION

A. Preconstruction Conference:

At the preconstruction conference or prior to the start of the applicable construction, the Contractor shall submit for acceptance his schedules for accomplishment of temporary and permanent erosion control work, as are applicable for excavation work, and any other elements of the project which may contribute to ground erosion or siltation. No work shall be started until the erosion control schedules and methods of operations have been accepted by the Engineer.

B. Construction Requirements:

1. The Engineer has the authority to limit the surface area of erodible earth material exposed by excavation and grading operations, and to direct the Contractor to provide immediate permanent or temporary pollution control measures to prevent contamination of adjacent streams, water courses, or bodies of water. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, slope drains, and use of temporary mulches, mats, seeding or other control devices or methods as necessary to control erosion. Cut slopes shall be temporarily seeded and mulched as the excavation proceeds to the extent considered desirable and practicable.
2. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable times as outlined in his accepted schedule. Temporary control measures will be used to correct conditions that develop during construction that were not foreseen during the design stages that are needed prior to installation or permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.
3. Where erosion is likely to be a problem, excavation and grading operations shall be so scheduled and performed that permanent erosion control features can follow immediately; otherwise temporary erosion control measures may be required between successive construction stages.
4. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal or state or location agencies, the more restrictive laws, rules or regulations shall apply.
5. The Contractor will be responsible for maintaining all soil erosion and sediment control measures in an acceptable manner. All temporary measures shall be removed by the Contractor as directed by the Engineer.

4.01 QUANTITY AND PAYMENT

- A. In case of repeated failures on the part of the Contractor to control erosion, pollution, and/or siltation, the Owner reserves the right to employ outside assistance or to use his own forces to provide the necessary corrective measures. Such incurred costs will be charged to the Contractor.

END OF SECTION 02270

SECTION 02300 – EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:

1. Interim grading.
2. Backfilling of hazardous and non-hazardous excavations.
3. Excavation of building footings, foundations, slabs, basements and crawl spaces.
4. Excavation support and protection, and removal when no longer needed.
5. Provide dewatering as required to protect subgrades and foundation soils.

- B. Related Sections include the following:

1. Division 1 Section "Photographic Documentation" for recording preexcavation and earthwork progress.
2. Division 1 Section "Temporary Facilities and Controls" for temporary controls, utilities, and support facilities.
3. Division 2 Section "Site Clearing" for temporary erosion and sedimentation control measures, site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
4. Division 0-Bidding & Contract Forms, General Conditions, and Division 1, General Requirements

1.3 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

- B. Base Course: Course placed between the subbase course and hot-mix asphalt paving.

- C. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.

- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

- E. Drainage Course: Course supporting the slab-on-grade that also minimizes upward flow of pore water.
- F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
 - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions. Unit price changes in the Work.
 - 2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
 - 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
- G. Fill: Soil materials used to raise existing grades.
- H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or 3/4 cu. yd. for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:
 - 1. Excavation of Footings, Trenches, and Pits: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch-wide, maximum, short-tip-radius rock bucket; rated at not less than 138-hp flywheel power with bucket-curling force of not less than 28,090 lbf and stick-crowd force of not less than 18,650 lbf; measured according to SAE J-1179.
 - 2. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 210-hp flywheel power and developing a minimum of 48,510-lbf breakout force with a general-purpose bare bucket; measured according to SAE J-732.
- I. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 3/4 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by an independent geotechnical testing agency, according to ASTM D 1586.
- J. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- K. Subbase Course: Course placed between the subgrade and base course for hot-mix asphalt pavement, or course placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- L. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- M. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

- N. **NJSDA Certified Clean Fill:** Certified clean fill for the purposes of remediation shall represent, uncontaminated, non-water soluble, non-decomposable, inert solids, such as quarry process rock, soil, sand or gravel from a certified virgin source. Based on visual inspection, imported certified clean fill shall not contain free liquids, extraneous debris, or solid waste. Documentation of certified clean fill shall be in the form of a written certification provided by the supplier of the fill material that to the best of the affiant's knowledge and belief the fill material being imported does not contain constituents of concern in excess of a New Jersey soil cleanup criteria, and that the recycled material originates from a natural environment without degradation caused by human influences. Upon approval by Design Consultant, certified clean fill originating from an NJDEP-regulated Class B Recycler may be considered acceptable for use upon receipt of appropriate analytical testing that demonstrates the imported fill does not contain constituents of concern in excess of the current NJDEP Residential Direct Contact Soil Cleanup Criteria.
- O. **Impact to Groundwater Soil Cleanup Criteria:** Is the New Jersey numerical criteria applicable to soil and fill quality, that when exceeded may require a groundwater quality investigation, and depending on the results of the groundwater quality investigation may require an engineering or institutional control to meet the established health risk or environmental exposure standards for groundwater.
- P. **Imported Fill:** Represents clean fill or certified clean fill materials brought onto a site from an off-site location to be used in the performance of work associated with backfilling of utility trenches, backfilling of basements, landscaping, playfields construction, engineered soil caps, raising the site topographic elevation, or backfilling of excavations required as part of an approved remedial action.
- Q. **Residential Direct Contact Soil Cleanup Criteria:** Is the New Jersey numerical criteria applicable to soil and fill quality that when met is considered protective of an unrestricted residential site use, and does not require either an engineering or institutional control to meet the established health risk or environmental exposure standards.
- R. **Restricted Use:** Applies to New Jersey real property that does require an engineering or institution control to meet the established health risk or environmental standards.
- S. **Non-Residential Direct Contact Soil Cleanup Criteria:** Is the New Jersey numerical criteria applicable to soil and fill quality that when met is protective of a restricted non-residential site use, and will require either an engineering or institutional control to meet the established health risk or environmental exposure standards.
- T. **Unrestricted Use:** Applies to New Jersey real property that does not require either an engineering or institutional control to meet the established health risk or environmental standards.
- U. **Virgin Source:** A source of material from a commercial or noncommercial source, supported by written certification from a supplier of material, that the material originates from a natural environment without degradation caused by human influences.

1.4 SUBMITTALS

- A. Product Data: For the following:
 - 1. Geotextile.
- B. Samples: 12-by-12-inch Sample of separation geotextile.
- C. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:
 - 1. Classification according to ASTM D 2487 of each on-site and borrow soil material proposed for fill and backfill.
 - 2. Laboratory compaction curve according to ASTM D 698 for each on-site soil material proposed for fill and backfill.
 - 3. Analyses shall include one optimum moisture-maximum density curve and one gradation analysis for each material.
- D. Submit name of imported materials suppliers. Provide materials from same source throughout the work. Change of source requires approval. Source materials suppliers shall be certified by the Hudson-Essex-Passaic Soil Conservation District.
- E. All soil proposed for utilization as part of site remediation activities shall be NJSDA certified clean fill from a virgin source, as defined in section 1.5, or from an NJDEP-regulated Class B Recycler. A written certification shall be provided to the Architect/Engineer by the supplier of the fill material. The certification shall include the name of the affiant, the source of the fill, the location where the fill was obtained, including the street, town, lot and block, county, and state, and a brief history of the site which is the source of the clean fill. The certification shall also state that to the best of the affiant's knowledge and belief the fill material being imported does not contain constituents of concern in excess of a New Jersey soil cleanup criteria.
- F. The certification for clean fill originating from an NJDEP-regulated Class B Recycler must be free of any constituents of concern in excess of New Jersey Residential Direct Contact Soil Cleanup Criteria. In addition to the required written certification, recycled materials proposed for use as certified clean fill shall also be analyzed for Total Petroleum Hydrocarbons ("TPH"), TAL Metals, TCL VOCs, TCL SVOCs, Pesticides/Herbicides, and PCBs. at a minimum frequency of one composite sample per 1,000 CY of material per each different source for the first 5,000 CY and one composite sample for each additional 5,000 CY. All environmental analyses shall be conducted by an NJDEP-certified laboratory. All costs are to be borne by the Contractor.
- G. Geotechnical and environmental analytical testing shall be completed before fill materials are brought to the site. No sampling of imported soil or fill material shall be performed on the project site. Copies of all laboratory test results shall be supplied to the Architect/Engineer and/or Owner prior to emplacement of imported fill or topsoil.
- H. Bills of lading shall be provided to the Architect/Engineer to document the source(s) of all imported fill and topsoil.

- I. A 50-pound sample of each imported fill material to be used shall be submitted to the Architect/Engineer for appropriate testing and approval ten (10) days prior to the start of the earthwork.
- J. Seismic Survey Report: For record purposes; from seismic survey agency.
- K. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by earthwork operations. Submit before earthwork begins.

1.5 QUALITY ASSURANCE

- A. Blasting: is not permitted.
- B. Seismic Survey Agency: An independent testing agency, acceptable to authorities having jurisdiction, experienced in seismic surveys and blasting procedures to perform the following services:
 - 1. Report types of explosive and sizes of charge to be used in each area of rock removal, types of blasting mats, sequence of blasting operations, and procedures that will prevent damage to site improvements and structures on Project site and adjacent properties.
 - 2. Seismographic monitoring during blasting operations.
- C. Owner shall engage a qualified Geotechnical Engineer and/or Geotechnical Testing Agency Qualifications: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock-definition testing, as documented according to ASTM D 3740 and ASTM E 548.
- D. Allow Geotechnical Engineer to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work complies with requirements. All test results shall be submitted to the Architect/Engineer for review.
- E. Preexcavation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
- F. Excavation Support and Protection: Contractor shall retain a licensed Engineer to evaluate the project conditions and design all required shoring and bracing, dewatering and other excavation support and protection measures. Contractor shall be solely responsible to review available existing data, perform his own investigations and/or studies as he deems appropriate. Contractor shall be solely responsible to provide a competent entity pursuant to the requirements of 29 CFR 1926, Sub-part P.
- G. Dewatering: Contractor shall be solely responsible to review available existing data, perform his own testing and/or other studies required to estimate dewatering quantities and develop his appropriate means and methods. Dewatering quantities which may be indicated in any consultant's reports or permit application submissions are provided for convenience only, are not part of the Contract Documents, and shall not form the basis of the Contractor's bid.

1.6 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or adjacent property unless permitted in writing by Owner and then only after arranging to provide temporary utility services according to requirements indicated.
 - 1. Notify Construction Manager not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Construction Manager's written permission.
 - 3. Contact utility-locator service for area where Project is located before excavating.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PI according to ASTM D 2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.
- F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve. Or shall satisfy all requirements for dense graded aggregate, as per Section 901.08 of the New Jersey Division of Transportation Standard Specifications for road and bridge construction.
- G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.

- H. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.
- I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and 0 to 5 percent passing a No. 4 sieve.
- J. Sand: ASTM C 33; fine aggregate, natural, or manufactured sand.
- K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.
- L. All soil shall conform to the NJSDA Standard for Certified Clean Fill.
- M. Topsoil material shall conform as specified in 5.2 Imported Topsoil below

2.2 GEOTEXTILES

- A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
 - 1. Survivability: Class 2; AASHTO M 288.
 - 2. Grab Tensile Strength: 157 lbf; ASTM D 4632.
 - 3. Sewn Seam Strength: 142 lbf; ASTM D 4632.
 - 4. Tear Strength: 56 lbf; ASTM D 4533.
 - 5. Puncture Strength: 56 lbf; ASTM D 4833.
 - 6. Apparent Opening Size: No. 40 sieve, maximum; ASTM D 4751.
 - 7. Permittivity: 0.5 per second, minimum; ASTM D 4491.
 - 8. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.
- B. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
 - 1. Survivability: Class 2; AASHTO M 288.
 - 2. Grab Tensile Strength: 247 lbf; ASTM D 4632.
 - 3. Sewn Seam Strength: 222 lbf; ASTM D 4632.
 - 4. Tear Strength: 90 lbf; ASTM D 4533.
 - 5. Puncture Strength: 90 lbf; ASTM D 4833.
 - 6. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
 - 7. Permittivity: 0.02 per second, minimum; ASTM D 4491.
 - 8. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

2.3 CONTROLLED LOW-STRENGTH MATERIAL

- A. Controlled Low-Strength Material: Low-density, self-compacting, flowable concrete material as follows:

1. Portland Cement: ASTM C 150, Type II.
 2. Fly Ash: ASTM C 618, Class C or F.
 3. Normal-Weight Aggregate: ASTM C 33, 3/4-inch nominal maximum aggregate size.
 4. Foaming Agent: ASTM C 869.
 5. Water: ASTM C 94/C 94M.
 6. Air-Entraining Admixture: ASTM C 260.
- B. Produce low-density, controlled low-strength material with the following physical properties:
1. As-Cast Unit Weight: 30 to 36 lb/cu. ft. at point of placement, when tested according to ASTM C 138/C 138M.
 2. Compressive Strength: 80 psi, when tested according to ASTM C 495.
- C. Produce conventional-weight, controlled low-strength material with 80-psi compressive strength when tested according to ASTM C 495.

2.4 ACCESSORIES

- A. Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:
- B. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:
1. Red: Electric.
 2. Yellow: Gas, oil, steam, and dangerous materials.
 3. Orange: Telephone and other communications.
 4. Blue: Water systems.
 5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Division 2 Section "Site Clearing."
- C. Protect and maintain erosion and sedimentation controls, which are specified in Division 2 Section "Site Clearing," during earthwork operations.

- D. Provide protective insulating materials to protect subgrades and foundation soils against freezing temperatures or frost.

3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
 - 1. Redirect surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
 - 2. Install a dewatering system, specified in Division 2 Section "Dewatering," to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.
- C. Contractor is solely responsible to estimate ground water depths and inflow for the purposes of designing his dewatering system. Information provided herein is for convenience only. Contractor shall conduct his own studies and investigations to confirm ground water levels and inflow volumes.
- D. Contractor shall (at all times) take such precautions as are necessary to keep the work free from ground and/or surface water. The Contractor shall be responsible for any and all dewatering as may be required to satisfactorily construct all work detailed on the Drawings or specified herein.
 - 1. Provide pump(s) of adequate capacity to remove water from excavations which may it enter.
 - 2. Remove water in such manner that it will not interfere with progress of the work.
- E. Contractor shall provide an adequate system to lower and control groundwater to permit excavation, and placement of fill materials on dry subgrades. Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations. Maintain piezometric water level a minimum of 24 inches (600 mm) below surface of excavation.
- F. Dispose of water removed from excavations in a manner to avoid endangering public health, property, and portions of work under construction or completed. Dispose of water in a manner to avoid inconvenience to others. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.

3.3 EXCAVATION, GENERAL

- A. **Unclassified Excavation:** Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
- B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated shall be classified as earth and rock. Do not excavate rock until it has been classified and cross-sectioned by Engineer. The Contract Sum will be adjusted for rock excavation according to the prices included in the Contract Documents. Changes in the Contract time may be authorized for rock excavation.
1. Earth excavation includes excavating pavements and obstructions visible on surface, underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.
 - a. Intermittent drilling; blasting, if permitted; ram hammering; or ripping of material not classified as rock excavation is earth excavation.
 - b. Rock excavation includes removal and disposal of rock.

3.4 DEMOLITION EXCAVATION

- A. All excavations resulting from the removal and demolition of on-site improvements, including but not limited to, existing structure, footings, foundations, slabs, basements, crawl spaces, loading docks, asphalt pavement, concrete walkways, retaining walls, and landscaping to be backfilled with clean fill or certified clean fill meeting the requirements of structural fill.
- B. Contaminated or hazardous excavations are to be separated from other excavation types and material disposed at acceptable facilities in accordance with Federal, State and Local laws, regulations, and ordinances.
- C. Contractor is solely responsible for excavation, sheeting/shoring and safety.

3.5 SUBGRADE INSPECTION

- A. Notify Construction Manager when excavations have reached required subgrade.
- B. If Construction Manager determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Proof-roll subgrade below the building slabs and pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
 1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
 2. Proof-roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
 3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Construction Manager, and replace with compacted backfill or fill as directed.

- D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
- E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

3.6 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Construction Manager.
 - 1. Fill unauthorized excavations under other construction or utility pipe as directed by the Owner or their authorized representative.

3.7 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.
- B. Contaminated or hazardous excavations are to be separated from other excavation types and material disposed at acceptable facilities in accordance with Federal, State and Local laws, regulations, and ordinances.

3.8 BACKFILL

- A. All backfilling operations shall be closely coordinated with requirements of the Geotechnical Engineer.
- B. Place and compact backfill in excavations promptly, but not before completing the following:
 - 1. Surveying locations of underground utilities for Record Documents.
 - 2. Testing and inspecting underground utilities.
 - 3. Removing concrete formwork.
 - 4. Removing trash and debris.
 - 5. Removing temporary shoring and bracing, and sheeting.
 - 6. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- C. Place backfill on subgrades free of mud, frost, snow, or ice.

3.9 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under steps and ramps, use engineered fill.
4. Under building slabs, use engineered fill.
5. Under footings and foundations, use engineered fill.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.10 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or covered with frost or ice.
2. Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight. The optimum moisture content shall be per ASTM D1557 or as specified by the Geotechnical Engineer.

3.11 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:

1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
3. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.12 INTERIM GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
 3. Back blade and seal roll exposed surface to reduce infiltration.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
1. Lawn or Unpaved Areas: Plus or minus 1 inch.
 2. Walks: Plus or minus 1 inch.
 3. Pavements: Plus or minus 1/2 inch.
- C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.13 SUBBASE AND BASE COURSES

- A. Place subbase and base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase and base course under pavements and walks as follows:
1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
 2. Place base course material over subbase course under hot-mix asphalt pavement.
 3. Shape subbase and base course to required crown elevations and cross-slope grades.
 4. Place subbase and base course 6 inches or less in compacted thickness in a single layer.
 5. Place subbase and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
 6. Compact subbase and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.
- C. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of satisfactory soil materials and compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.14 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- C. subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Engineer.

- D. Testing agency will test compaction of soils in place according to ASTM D 1557, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
 - 1. Trench Backfill: At each compacted initial and final backfill layer, at least 1 test per 1000 150 feet or less of trench length, but no fewer than 2 tests.
- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.
- F. Excavation Support and Protection: Contractor shall retain a licensed Engineer to evaluate the project conditions and design all required shoring and bracing, dewatering and other excavation support and protection measures. Contractor shall be solely responsible to review available existing data, perform his own investigations and/or studies as he deems appropriate. Contractor shall be solely responsible to provide a competent entity pursuant to the requirements of 29 CFR 1926, Sub-part P.
- G. Dewatering: Contractor shall be solely responsible to review available existing data, perform his own testing and/or other studies required to estimate dewatering quantities and develop his appropriate means and methods. Dewatering quantities which may be indicated in any consultant's reports or permit application submissions are provided for convenience only and are not part of the Contract Documents, and shall not form the basis of the Contractor's bid.

3.15 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.
- D. Graded topsoiled, fertilized and seeded areas per the Interim Grading & Soil Erosion and Sediment Control Plan Sheet C-4 shall be protected and be free from ruts and construction other debris at the time of final acceptance of the contract. Any settlement and damage shall be repaired prior to acceptance of the contract.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.
- B. Disposal: Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Engineer.
 - 1. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it in accordance with NJDEP regulations off Owner's property.
- C. Bills of lading and disposal manifests shall be provided to the Architect/Engineer to document the off-site disposal of all material.
- D. The Contractor shall provide laboratory analyses (i.e. waste classification analysis) for any known and suspected contaminated material generated from excavation and UST closure activities. These analyses are to be conducted by a NJDEP-certified laboratory and all analyses shall be in accordance with NJDEP regulations. Following receipt of analytical results, the Contractor shall provide for the excavation, loading, transportation and disposal of all contaminated materials.

IMPORTED CERTIFIED CLEAN FILL AND TOPSOIL SPECIFICATION

4.1 DESCRIPTION OF CERTIFIED CLEAN FILL AND TOPSOIL

- 4.1.1 This section refers to all imported fill material and topsoil, and applies to all related sections throughout the project specification.
- 4.1.2 Certifications and other submittals required for review and approval shall be provided to the Design Consultant.
- 4.1.3 When required to meet an unrestricted use of the property, the Contractor shall utilize clean imported fill material to raise a topographic elevation to the final grade elevation as indicated on the Approved Construction Drawings for a proposed school facility project. This includes structural clean fill necessary to support foundation construction, backfill utility trench excavations, backfill basements, landscaping, playfields and athletic field construction, engineered caps, or backfill associated with environmental remediation activities.

4.2 REFERENCED STANDARDS

- 4.2.1 NJDEP Technical Requirements for Site Remediation (7:26E-1 et. seq.)
- 4.2.2 New Jersey Soil Cleanup Criteria (1999, as amended)
- 4.2.3 NJDEP Guidance Document for the Remediation of Contaminated Soil

4.3 SUBMITTALS

- 4.3.1 Total Petroleum Hydrocarbons ("TPH"), TAL Metals, TCL VOCs, TCL SVOCs, Pesticides/Herbicides, and PCBs. at a minimum frequency of one composite sample per 5,000 CY of material per each different source for the first 5,000 CY. One composite sample for each additional 5,000 CY.
- 4.3.2 Testing shall be completed before fill materials are brought to the site. No sampling of imported soil or fill material shall be performed on NJSDA project sites.
- 4.3.3 Copies of all laboratory test results shall be supplied to the Design Consultant and Owner prior to emplacement of imported fill or topsoil on a property that will require unrestricted use.

4.4 MEASUREMENT

- 4.4.1 Measurement of quantities shall be based on number of tons, based on certified scale receipts for material that is actually transported and imported to the project site. Certified scale receipts shall be provided to the Design.
- 4.4.2 Weight scales shall be certified by the State of New Jersey, Department of Community Affairs, Office of Weights and Measures.

4.5 DELIVERY, STORAGE AND HANDLING

- 4.5.1 Perform in a manner to prevent cross contamination or commingling of materials.
- 4.5.2 The Contractor shall propose the source of all backfill and topsoil material. The Design Consultant shall approve the source of backfill. At the option of the Design Consultant and/or Owner, he/she may request and arrange to inspect the proposed source of backfill material and obtain samples for physical and chemical testing.
- 4.5.3 No imported fill or topsoil shall be delivered to the site until all required certifications have been approved by the Design Consultant.
- 4.5.4 Clean fill material and topsoil shall not be delivered to a site that will require an unrestricted use, unless a certification is provided by the supplier of the material that to the best of the affiant's knowledge and belief the fill material does not contain constituents of concern in excess of a New Jersey soil cleanup criteria, and fill material originates from a natural environment without degradation by human influences.
- 4.5.5 Clean fill material and topsoil shall not be delivered to a site that will require an unrestricted use until analytical test results are approved by the Design Consultant.

MATERIALS - IMPORTED CERTIFIED CLEAN FILL AND TOPSOIL

5.1 IMPORTED FILL

- 5.1.1 Fill material shall consist of inorganic, readily compactable, predominantly well-graded granular soils with not more than 12% fines (material passing the No. 200 sieve), and a maximum particle size of 3 inches, conforming to NJDOT I-5 gradation and having a classification of SW or SW-SM in accordance with ASTM D 2487. The moisture content of the backfill materials shall be controlled within 2% of the optimum moisture content, as determined by the Modified Proctor Test (ASTM D 1557), by wetting, aeration or blending, as necessary.
- 5.1.2 Contractor shall provide written certification from the generator, documenting that the imported clean fill represents a virgin material from a commercial or non-commercial source, and that the fill originates from a natural environment without degradation caused by human influences.
- 5.1.3 When a school district or property owner will not accept an engineering or institutional control for the site, the Contractor shall provide certification through accepted analytical methods, subject to inspection and verification by the Design Consultant and/or Owner, that the fill material to be emplaced is suitable for an unrestricted use.
- 5.1.4 Bills of lading shall be provided to the Design Consultant and/or Owner to document the source(s) of fill. The name of the affiant and relationship to the source of the clean fill; the location where the clean fill was obtained, including the street, town, lot and block, county, and state, and a brief history of the site which is the source of the clean fill.
- 5.1.5 The use of Class B recycled concrete aggregate (RCA) from an off-site source, unless it has been given prior approval by NJDEP as part of a remedial action work plan (RAWP) or as part of an approved soil recycling beneficial use determination for the specific project site, shall not be permitted. The Contractor shall provide certification of such approval to the Design Consultant for review in advance of scheduling this work. All testing required for this determination shall be in compliance with NJDEP's guidance for the sampling and analysis of concrete designated for recycling.
- 5.1.6 All construction shall be in accordance with all applicable codes and regulations.
- 5.1.7 The Contractor is solely responsible for compliance with specified criteria and for provision of certifications.
- 5.1.8 All environmental testing costs necessary to certify that the material is suitable for unrestricted use are to be borne by the Contractor. Prior to importation of recycled materials testing shall be completed according to NJDEP Beneficial Use Determination (BUD) requirements, the cost of which shall be borne by the Contractor. Use of such material shall be subject to approval by NJDEP for beneficial reuse, the Design Consultant for compliance based on a review of required certifications, and shall be subject to approval by the Geotechnical Engineer for bearing, drainage, and compaction characteristics.

5.2 IMPORTED TOPSOIL

- 5.2.1 When a property-owner subject to remediation oversight by a regulatory agency will not accept a continued use of either an engineering or institutional control for the site, and as directed by the Design Consultant and/or Owner, the Contractor shall provide certification through accepted analytical methods, subject to inspection and verification that the topsoil material is suitable for unrestricted use prior to emplacement.
- 5.2.2 Unless an alternative sampling program is approved by the Design Consultant and/or Owner and is acceptable to NJDEP, the Contractor shall submit laboratory data for the proposed topsoil at a frequency of one (1) composite sample per 500 CY per each different source. Total Petroleum Hydrocarbons ("TPH"), TAL Metals, TCL SVOCs, Pesticides/Herbicides, and PCBs, at a minimum frequency of one composite sample per 500 CY of material per each different source for the first 5,000 CY. One composite sample for each additional 5,000 CY.
- 5.2.3 Bills of lading shall be provided to the Owner and/or authorized representative to document the source(s) of clean topsoil. The name of the affiant and relationship to the source of the topsoil; the location where the topsoil was obtained, including the street, town, lot and block, county, and state, and a brief history of the site which is the source of the clean topsoil.
- 5.2.4 Natural, friable soil representative of productive, well-drained soils in the area, free of subsoil, stumps, rocks larger than one inch diameter, brush, weeds, toxic substances, and other material detrimental to plant growth.
- 5.2.5 Free of viable Bermuda grass, quack grass, Johnson grass, nutsedge, poison ivy, Canada thistle, and other objectionable grassy or broadleaf weeds.
- 5.2.6 Acid-Alkaline Range pH 5.8 to 6.5.
- 5.2.7 Free of pests, pest larvae, and matter toxic to plants.
- 5.2.8 Maximum soluble salts: 500 mg/kg.
- 5.2.9 Minimum 2.75% organic matter content.
- 5.2.10 Gradation Range: Sand (2.00 mm to 0.05 mm) - 40% to 80% percent; Silt (0.05 mm to 0.005 mm) - 10% to 30%; Clay (<0.005 mm) - 10% to 30%. When one-half of the sand content is larger than 0.50 mm, the maximum sand content shall be 75%, and maximum clay content shall be 15%.

END OF SECTION 02300

SECTION 02821 - CHAIN-LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Galvanized steel chain-link fabric.
 - 2. Aluminum chain-link fabric.
 - 3. Galvanized steel framework.
 - 4. Temporary Chain Link Fence
- B. Related Sections include the following:
 - 1. Division 2 Section "Earthwork" for filling and for grading work.

1.3 DEFINITIONS

- A. CLFMI: Chain Link Fence Manufacturers Institute.

1.4 SUBMITTALS

- A. Product Data: Material descriptions, construction details, dimensions of individual components and profiles, and finishes for the following:
 - 1. Fence and gateposts, rails, and fittings.
 - 2. Chain-link fabric, reinforcements, and attachments.
 - 3. Gates and hardware.
- B. Shop Drawings: Show locations of fence, each gate, posts, rails, and tension wires and details of extended posts, extension arms, gate swing, or other operation, hardware, and accessories. Indicate materials, dimensions, sizes, weights, and finishes of components. Include plans, elevations, sections, gate swing and other required installation and operational clearances, and details of post anchorage and attachment and bracing.
- C. Product Certificates: Signed by manufacturers of chain-link fences and gates certifying that products furnished comply with requirements.

- D. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of engineers and owners, and other information specified.
- E. Field Test Reports: Indicate and interpret test results for compliance of chain-link fence and gate grounding and bonding with performance requirements.

1.5 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 Chain-Link Fences and Gates: Obtain each color, grade, finish, type, and variety of component for chain-link fences and gates from one source with resources to provide chain-link fences and gates of consistent quality in appearance and physical properties.

1.6 PROJECT CONDITIONS

- 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.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

- A. Steel Chain-Link Fence Fabric: Fence to be eight foot high surrounding the property. Provide fabric fabricated in one-piece widths for fencing in height of 12 feet (3.6 m) and less. Comply with CLFMI's "Product Manual" and with requirements indicated below:
 - 1. Mesh and Wire Size: 1/2-inch (13-mm) mesh, 0.120-inch (3.05-mm) diameter]
 - 2. Aluminum-Coated (Aluminized) Fabric: ASTM A 491, with metallic coating Type I, aluminum coated (aluminized), applied to steel wire according to ASTM A 817.
- B. Aluminum-Alloy Chain-Link Fence Fabric: ASTM F 1183, with mill finish.
 - 1. Mesh and Wire Size: [2-inch (50-mm) mesh, 0.192-inch (4.88-mm) diameter] [2-inch (50-mm) mesh, 0.148-inch (3.76-mm) diameter] [1-3/4-inch (44-mm) mesh, 0.148-inch (3.76-mm) diameter] [1-inch (25-mm) mesh, 0.148-inch (3.76-mm) diameter].
- C. Selvage: Knuckled at both selvages.

2.2 INDUSTRIAL FENCE FRAMING

- A. Round Aluminum Pipe: Standard weight, Schedule 40, extruded structural aluminum pipe, alloy 6063-T6, mill finish, complying with ASTM B 429. Comply with ASTM F 1043, Material Design Group IB, and the following strength and stiffness requirements:
 - 1. Line, End, Corner, and Pull Posts and Top Rail: Per requirements for Heavy Industrial Fence.
- B. ASTM F 1043, and complying with CLFMI's "Product Manual," Type I for the following components and fence fabric height:
 - 1. End, Corner, and Pull Posts: For fence fabric height more than 6 feet (1.83 m).

2.3 TENSION WIRE

- A. General: Provide horizontal tension wire at the following locations:
 - 1. Location: Extended along bottom of fence fabric.

2.4 INDUSTRIAL SWING GATES

- A. General: Comply with ASTM F 900 for the following swing-gate types:
 - 1. Double gate.
- B. Metal Pipe and Tubing: Galvanized steel. Comply with ASTM F 1083 and ASTM F 1043 for materials and protective coatings.
- C. Metal Pipe and Tubing: Aluminum. Comply with ASTM B 429 and ASTM F 1043 for materials and protective coatings.
- D. Frames and Bracing: Fabricate members from round, galvanized steel tubing with outside dimension and weight according to ASTM F 900 for the following gate fabric height:
 - 1. Gate Fabric Height: More than 6 feet.
- E. Frame Corner Construction: As follows:
 - 1. Welded.
 - 2. Assembled with corner fittings [and 5/16-inch- (7.9-mm-) diameter, adjustable truss rods for panels 5 feet (1.52 m) wide or wider].
 - 3. Welded or assembled with corner fittings [and 5/16-inch- (7.9-mm-) diameter, adjustable truss rods for panels 5 feet (1.52 m) wide or wider].
- F. Gate Posts: Fabricate members from round galvanized steel pipe with outside dimension and weight according to ASTM F 900 for the following gate fabric heights and leaf widths:
- G. Gate Posts: Fabricate members from round aluminum pipe with outside dimension and weight according to ASTM F 900 for the following gate fabric heights and leaf widths:

1. Gate Fabric Height by Leaf Width: Over 6 feet (1.83 m) by 6 feet (1.83 m) or less.
2. Gate Fabric Height by Leaf Width: Over 6 feet (1.83 m) by over 6 feet (1.83 m) but not over 12 feet (3.66 m).
3. Gate Fabric Height by Leaf Width: Over 6 feet (1.83 m) by over 12 feet (3.66 m) but not over 18 feet (5.49 m).
4. Gate Fabric Height by Leaf Width: Over 6 feet (1.83 m) by over 18 feet (5.49 m) but not over 24 feet (7.32 m).

- H. Extended Gate Posts and Frame Members: Extend gate posts and frame end members to the top of chain-link fabric at both ends of gate frame [12 inches (300 mm)].
- I. Hardware: Latches permitting operation from both sides of gate, hinges, [center gate hinge] and, for each gate leaf more than 5 feet (1.5 m) wide, keepers. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate.

2.5 FITTINGS

- A. General: Provide fittings for a complete fence installation, including special fittings for corners. Comply with ASTM F 626.
- B. Post and Line Caps: Hot-dip galvanized pressed steel. Provide weather-tight closure cap for each post.
1. Provide line post caps with loop to receive tension wire or top rail.
- C. Rail and Brace Ends: Hot-dip galvanized pressed steel. Provide rail ends or other means for attaching rails securely to each gate, corner, pull, and end post.
- D. Rail Fittings: Provide the following:
1. Top Rail Sleeves: Hot-dip galvanized pressed steel. Not less than 6 inches (153 mm) long.
 2. Rail Clamps: Hot-dip galvanized pressed steel. Provide line and corner boulevard clamps for connecting top and intermediate rails in the fence line to line posts.
- E. Tension and Brace Bands: Hot-dip galvanized pressed steel.
- F. Tension Bars: Hot-dip galvanized steel, length not less than 2 inches (50 mm) 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.
- G. Truss Rod Assemblies: Hot-dip galvanized steel rod and turnbuckle or other means of adjustment.
- H. Tie Wires, Clips, and Fasteners: Provide the following types according to ASTM F 626:
1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:
 - a. Hot-Dip Galvanized Steel: 0.148-inch- (3.76-mm-) 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.

2.6 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. Measure, batch, and mix Project-site-mixed concrete according to ASTM C 94.
 1. Concrete Mixes: Normal-weight concrete air entrained with not less than 3000-psi (20.7-MPa) compressive strength (28 days), 3-inch (75-mm) slump, and 1-inch (25-mm) maximum size aggregate.
- C. Materials: Dry-packaged concrete mix complying with ASTM C 387 for normal-weight concrete mixed with potable water according to manufacturer's written instructions.

2.7 GROUT AND ANCHORING CEMENT

- A. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.
- B. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended in writing by manufacturer for exterior applications.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance. Permanent fencing will be placed behind right-of-way line, based upon current tax map street widths.
 1. Do not begin installation before final grading is completed, unless otherwise permitted by NJSDA.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 150 feet (45.7 m) or line of sight between stakes. Indicate locations of utilities, lawn sprinklers, and underground structures, benchmarks, and property monuments.

3.3 INSTALLATION, GENERAL

- A. General: Install chain-link fencing to comply with ASTM F 567 and more stringent requirements specified.
 - 1. Install fencing on established boundary lines inside property line.
- B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated in Drawings in firm, undisturbed or compacted soil.
- C. Post Setting: Hand-excavate holes for post foundations in firm, undisturbed or compacted soil. Set all posts in concrete footings. Protect portion of posts aboveground from concrete splash. Place concrete around posts and vibrate or tamp for consolidation. Using mechanical devices to set line posts per ASTM F 567 is permitted. 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. Dimensions and Profile: As indicated on Drawings.
 - 2. Exposed Concrete Footings: Extend concrete 2 inches (50 mm) above grade, smooth, and shape to shed water. Concrete footings to extend thirty inches (30") below final grade.
 - 3. Posts Set into Concrete in Voids: Form or core drill holes not less than 5 inches (127 mm) deep and 3/4 inch (20 mm) larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout, anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, and finished sloped to drain water away from post.

3.4 CHAIN-LINK FENCE INSTALLATION

- A. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment as indicated on Drawings.
- B. Line Posts: Space line posts uniformly at 10 feet on center (O.C.).
- C. 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 midheight 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.
- D. 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 0.120-inch- (3.05-mm-) diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches (609 mm) o.c. Install tension wire in locations indicated before stretching fabric.

1. Top Tension Wire: Install tension wire through post cap loops.
 2. Bottom Tension Wire: Install tension wire within 6 inches (150 mm) of bottom of fabric and tie to each post with not less than same gage and type of wire.
- E. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended by fencing manufacturer.
- F. Bottom Rails: Install, spanning between posts, using fittings and accessories.
- G. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 1 inch 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.
- H. 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 (380 mm) o.c.
- I. 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 (304 mm) o.c. and to braces 24 inches (609 mm) o.c.
- J. 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.

3.5 GATE INSTALLATION

- A. General: Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.6 ADJUSTING

- A. Gate: Adjust gate to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate hardware and other moving parts.

END OF SECTION 02821

SECTION 09999A - ASBESTOS REMOVAL & DISPOSAL

1.01 DESCRIPTION

- A. Contractor shall provide all equipment, labor and material necessary to properly remove, handle and dispose of all Regulated Asbestos-Containing Materials (RACM) as designated on the contract plans and/or Bid Form, and as determined by the Engineer during the removal project. All work, including disposal, shall be conducted in accordance with all applicable local, State, and Federal regulations, including the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations (40 CFR Part 61, Subparts A and M), and N.J.A.C. 7:26 et seq. and N.J.S.A. 34:5A-32 et seq. prior to the demolition of any structures onsite.
- B. The enclosed Price Proposal lists the location and *estimated* quantities of known RACM. The contractor shall be responsible for verification sampling and removing all RACM present on the various sites, including any suspect RACM encountered during the removal project, which is not listed on the Price Proposal.

1.02 METHOD OF CONDUCTING WORK

- A. Contractor shall develop an Asbestos Hazard Abatement Plan. Within ten (10) days of "Notice To Proceed," the Contractor shall submit the Asbestos Hazard Abatement Plan to the New Jersey Schools Construction Corporation (NJSCC). It is the responsibility of the contractor to insure that all work proposed as part of the Abatement Plan is in accordance with all applicable regulations, including N.J.A.C. 7:26 et seq. and N.J.S.A. 34:5A-32 et seq. Contractor also shall provide the Engineer with one (1) copy of the proposed Asbestos Hazard Abatement Plan no less than five (5) days prior to beginning the asbestos removal project.
- B. Prior to the removal of any RACM not listed on the Price Proposal, the contractor shall notify the Engineer of the presence of additional materials and their intended removal. Quantities of *all* removed asbestos must be recorded by all parties onsite. Failure of the contractor to receive approval for the removal of additional asbestos materials may relieve the owner of responsibility for paying for the removal and disposal of additional materials.
- D. Contractor shall provide the onsite Engineer a copy of the Asbestos Hazard Abatement Plan to use as a guideline during the removal project.
- E. All proposed work and associated costs should reflect the requirements of the NJSCC having jurisdiction over the proposed work.
- F. Contractor shall be responsible for obtaining and paying for all necessary local, State, and Federal permits including a construction permit for asbestos abatement, a demolition permit upon completion of asbestos abatement, and any required 10-day notifications to the City, County Department of Health, New Jersey Department of Environmental Protection (NJDEP), New Jersey Department of Community Affairs (NJCA), United States Environmental Protection Agency Region II, and New Jersey Department of Labor (NJDL).

- G. Contractor shall notify all surrounding property owners within 200 feet of the project area of all proposed work within and no less than ten (10) days prior to commencing work.
- H. Contractor shall be responsible for isolating the work areas from remaining areas through the use of separation barriers and, whenever possible, restricting entry only to those persons necessary to perform the tasks.
- I. Contractor shall submit the name of the NJDEP-certified waste hauler and ACM disposal facility and licensee number prior to beginning work. The NJDEP-certified disposal facility must be approved by the project Engineer.

1.03 ACCESS TO WORK SITE AND HOURS OF WORK

- A. All arrangements for access to the work site shall be made through the Owner's Representative. Unless otherwise specified, the Contractor will perform all work between the hours of 7:30 AM to 4:30 PM, Monday through Friday, during normal business hours. Access at times other than those given in Contractor's schedule will be at the Contractor's expense. The Contractor will be responsible for Owner's incurred costs for security, testing, air monitoring, supervision and all other related Owner incurred costs at such periods as he/she undertakes or proposes to undertake such work other than at times described in the approved schedule.

1.04 NOTIFICATIONS

- A. The Contractor shall notify the following agencies in writing ten (10) days prior to the start of the asbestos removal project. The Contractor must submit two (2) copies of each notice to Remington & Vernick Engineers, Inc. prior to the application for the asbestos abatement permit from the NJDCA.
 1. United States Environmental Protection Agency (USEPA)
Asbestos NESHAP Contracts
Air & Hazardous Material Division
26 Federal Plaza, Room 1033
New York, NY 10278
 2. New Jersey Department of Community Affairs (NJDCA)
Bureau of Construction Code Enforcement
Asbestos Safety Unit
CN 816
Trenton, NJ 08625-0816
 3. New Jersey Department of Health (NJDOH)
Asbestos Control Project
CN 360
Trenton, NJ 08625
 4. New Jersey Department of Labor (NJDOL)
Asbestos Control & Licensing

CN 054
Trenton, NJ 08625

5. New Jersey Department of
Environmental Protection (NJDEP)
Division of Waste Management
Bureau of Field Operations
120 Route 156
Yardville, NJ 08260

Notification to the agencies in Section A above shall be on the required forms (where applicable) and include the following information:

1. Name & address of Owner of Building
 2. Name & address of Operator of the Building
 3. Name & address of Contractor
 4. Address and description of the building, including size, age and prior use of the building or area, and amount of friable asbestos material present in square feet and/or linear feet, as applies. Designate room numbers and other location information unless entire building is involved.
 5. Scheduled starting and completion dates for removal.
 6. Procedures and equipment (including ventilating system) that will be employed to comply with 40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAP).
 7. The name and address of the approved New Jersey Department of Environmental Protection (NJDEP)-registered waste hauler, and of the NJDEP-registered landfill where the asbestos waste will be disposed. This landfill should also comply with 40 CFR Part 61.
 8. Contractor shall obtain all permits.
- B. The Contractor shall notify the Owner's Asbestos Project Inspector Firm, if applicable, in writing at least forty-eight (48) hours prior to commencement of any preparation work.

1.05 DOCUMENTATION OF WORKER'S QUALIFICATIONS

- A. The Contractor shall post the names, signatures, and photocopies of State-issued licenses for all workers to be doing asbestos removal work on the job site. In addition, Contractor must display a sign with letters larger than 4 inches (4") tall indicating, "*Licensed by the State of New Jersey for Asbestos Work*", N.J.S.A. 34:5A-32 et seq.
- B. The Contractor shall comply with all applicable requirements of 40 CFR Part 61, "Accepted Engineering Practices", and National Emission Standards for Hazardous Air Pollutants (NESHAP).

1.06 AIR MONITORING & INSPECTIONS

- A. The Contractor is responsible for all OSHA required air monitoring for his/her employees.
- B. Visual inspection in the adjacent work area will be conducted throughout the abatement project by the Owner's Asbestos Project Inspector Firm and/or the Owners representative in accordance with these specifications.
- C. The Contractor shall provide the required respirators and protective clothing to all workers, and to all official representatives of the State, Federal government or other designated party who may inspect the job site.
- D. The Contractor shall cooperate fully with all aspects of the OSHA air monitoring programs, which are conducted, by the Asbestos Project Inspector Firm.

1.07 DEFINITIONS

- A. The following words, terms and abbreviations when used in this document shall have the following meanings unless the context clearly indicates otherwise.
 - 1. Abatement - procedures to decrease or eliminate fiber release from precast, spray or trowel applied asbestos-containing building materials. Includes encapsulation, enclosure and removal.
 - 2. Airlock - system for permitting ingress or egress without permitting air movement between a contaminated and an uncontaminated area, typically consisting of two curtained doorways at least four feet apart.
 - 3. Air Monitoring - the process of measuring the fiber content (fibers of a specified size range) of a specific volume of air in a stated period of time.
 - 4. Amended water - water to which a wetting agent is added. The wetting agent is a combination of chemicals, which aids in the penetration of the material and increases the probability of individual fiber wetting.
 - 5. Asbestos - means a general term used to describe a group of naturally occurring hydrated mineral silicates, including, but not limited to the asbestiform varieties chrysotile (serpentine); crocidolite (riebeckite); amosite (cummingtonite-grunerite); anthophyllite; tremolite; and actinolite.
 - 6. Asbestos-containing material - means any material that contains more than 1-percent asbestos by weight.
 - 7. Asbestos Project Inspector - means a person certified by the NJDCA, hired by the Owner who continuously monitors and inspects the asbestos abatement work pursuant to NESHAP Regulations.

8. Barrier - means six (6) mil polyethylene sheeting that completely seals off the work area to prevent asbestos contamination of the surrounding area.
9. Clean room - an uncontaminated area or room that is part of the worker decontamination enclosure system, with provisions for storage of workers' street clothes and personal protective equipment. Also referred to as "Change Room."
10. Construction permit for asbestos abatement - means required official approval to commence any Asbestos Hazard Abatement project.
11. Contractor - means the Asbestos Removal Contractor.
12. Critical Barrier - means two (2) layers of six mil polyethylene sheeting that completely seals off the work area to prevent the distribution of asbestos fibers to the surrounding area, such as the opening between the top of non-removable lights, HVAC systems, windows, doorways, entrance ways, ducts, grilles, grates, diffusers, wall clocks, speaker grilles, floor drains sink drains, etc.
13. Curtained doorway - a device to allow ingress or egress from one room to another while minimizing air movement between the rooms. Typically constructed by placing three (3) overlapping sheets of plastic over an existing or temporarily framed doorway and securing each along the top of the doorway, with the vertical edge of one along one vertical side of the doorway and the vertical edge of the other along the opposite vertical sides. Two (2) curtained doorways spaced a minimum of four feet apart from an airlock.
14. Decontamination Enclosure System - a series of connected rooms, with curtained doorway between any two adjacent rooms, for the decontamination of workers or of materials and equipment. A decontamination enclosure system always contains an airlock.
15. Employee - means an asbestos abatement worker having proper training, instruction & licensing. Licensing must be current.
16. Encapsulation - means treatment of asbestos containing materials, generally ceilings, using a liquid to seal the surface to minimize the potential for asbestos fiber release.
17. Enclosure - means the construction of an airtight, impermeable, permanent barrier placed around asbestos containing material to control the release of asbestos fibers into the air.
18. Equipment Decontamination Enclosure System - a decontamination enclosure system for materials and equipment, typically consisting of a designated area of the work area, a washroom and an uncontaminated area.
19. Equipment Room - an area or room that is part of the worker decontamination enclosure system, with provisions for storage of contaminated clothing and equipment.
20. Friable - means any material which when dry may be crumbled, pulverized, or reduced to a powder by hand pressure.

21. Fixed Object - a unit of equipment or furniture which cannot be removed from the work area(s).
22. Glove Bag - means a polyethylene bag specially designed to enclose section of pipe or equipment for the purpose of removing short lengths of damaged asbestos material without releasing fibers into the air.
23. HEPA Filter - a High Efficiency Particulate Air filter capable of filter efficiency of 99.97 percent of fibers greater than 0.3 microns (um).
24. HEPA Vacuum - vacuum cleaner equipped with HEPA filter(s).
25. Holding Area - a chamber between the washroom and uncontaminated area in the equipment decontamination enclosure system. The holding area is comprised of an airlock.
26. Moveable Object - a unit of equipment or furniture in the work area(s), which can be removed from the work area(s).
27. Negative Pressure - means air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).
28. NIOSH - National Institute for Occupational Safety & Health.
29. Plastic Sheeting - polyethylene sheet material, of the thickness indicated.
30. Repair - means corrective action using recommended work practices to minimize the likelihood of fiber release from small damaged areas of ACM.
31. Removal - the act of properly eliminating and disposing asbestos containing or contaminated materials from a building or structure.
32. Sealant - means of a liquid or solution to be used as a binding agent, such as a diluted encapsulant or a water based paint, on dried exposed surfaces from which asbestos-containing materials has been removed. The color of the coat shall be separate and distinct from the underlying substrate.
33. Separation barrier - means a constructed wall with no door that separates the clean area from the work area having a fire rating, if applicable and does not interfere with the means of egress. Polyethylene sheeting (minimum 2 layers of 6 mil) shall be placed on the work site of the barrier so that it completely seals off the work area to prevent the distribution of fibers to the surrounding area.
34. Shower Room - a room constituting an airlock, between the clean room and the equipment room in the work decontamination enclosure system, with hot and cold or warm running water suitable arranged for complete showering during decontamination. The shower room always comprises an airlock.
35. Surfactant - a chemical wetting agent added to water to improve penetration of the ACM. Surfactants are used to ensure that all Asbestos Containing Materials are thoroughly wet before removal.

36. Wet Cleaning - the process of reducing asbestos contamination in a building by using cloths, mops or other cleaning tools, which have been dampened with amended water to decontaminate the area and by disposing these cleaning tools as asbestos, contaminated waste.
37. Washroom - a room between Work area and the Holding area in the Equipment Decontamination Enclosure System. The washroom comprises an airlock.
38. Work Area - the place in a building which asbestos abatement occurs.
39. Worker Decontamination Enclosure System - a decontamination enclosure system for workers, typically consisting of a clean room, a shower room and an equipment room.

1.08 PERSONNEL REQUIREMENTS AND TRAINING

- A. All of the Contractor's workers must have valid training, a minimum of one-year experience in asbestos abatement and a current asbestos workers permit. The asbestos workers permits shall be issued by the State of New Jersey, and shall comply with all applicable requirements of 29 CFR 1926.58(k) (3), as well as other non-training requirements of 29 CFR 1926.
- B. The Contractor shall furnish proof that all of the contractor's personnel on the job (supervisors and workers) have been given medical examinations as required by OSHA regulations, 29 CFR 1910 and 29 CFR 1926. As a minimum, the examination should include a chest roentgenogram, a medical history with specific reference to respiratory disease and pulmonary function tests. This information should be provided to the owner during the pre-construction meeting.
- C. The Contractor shall provide a minimum of one (1) job foremen, with a minimum of two (2) years of successful experience in asbestos removal operations similar in scope and magnitude to this project. One (1) foreman shall be required to remain inside each of the work areas at all times that work is in progress. The Contractor shall submit the qualifications of this person to the Owner.

1.09 ASBESTOS PROJECT INSPECTOR (IF & WHERE DIRECTED)

- A. The Owner shall pay for the certified Asbestos Project Inspector (API)/Engineer who shall perform project oversight and any air sampling, if necessary. The API/Engineer shall have access to all areas of the asbestos removal project at all times and shall continuously inspect and monitor the performance of the Contractor and his/her employees to verify that their performance complies with this specification. The API/Engineer is present to protect the Owner's interest. The air sampling, monitoring and inspections made by the API shall not relieve the Contractor of his/her monitoring obligations.
- B. The API/Engineer shall have the authority to require that all asbestos abatement workers present a valid work card before entering the work site. He/she shall also have the authority to direct verbally and in writing the actions of the Contractor to assure

compliance. In matters of gross negligence or flagrant disregard for the safety of workers, including the possibility of contaminating the building environment and the appearance of an urgent unsafe condition at the work site, the API/Engineer shall direct such corrective action as may be necessary.

- C. The API/Engineer will keep a daily log of on-site observations concerning Contractor compliance with activities required under this specification listing all deficiencies encountered. In addition, this log shall list the names of all persons entering the work area.
- D. During the removal phase, the duties of the API shall be in accordance with the (NESHAP) regulations (40 CFR Part 61, Subparts A and M), and N.J.A.C. 7:26 et seq. and N.J.S.A. 34:5A-32 et seq.

2.00 SCOPE OF WORK

- A. This section covers the furnishing of all labor, materials, facilities, equipment, services, employee training and testing, permits and agreements necessary to perform the work required for asbestos abatement in accordance with these specifications, USEPA, OSHA Regulations, NIOSH recommendations, NJDEP and NJDCA regulations, and any other applicable Federal, State and local government regulations. Whenever there is a conflict or overlap of the above references, the most stringent provisions shall apply. It shall be the Contractor's responsibility to verify exact quantities and locations of all asbestos containing materials to be removed. The prospective bidders should bid this project according to what is detailed on the enclosed drawings and the information in these specifications.
- B. Description of Work: Perform the work and provide the services as follows:
 - 1. Provide complete services necessary for removal and disposal of asbestos materials as noted in these specifications.

The Contractor shall perform the following only as required per removal regulations if & where directed.

- a. Prior to any work, disable the ventilating systems or any other system bringing air into or out of the work area by lockable switch, or other positive means that shall prevent accidental premature restarting of equipment.
- b. As part of the abatement work, remove and dispose of all asbestos-containing materials.
- c. HEPA vacuum and wet wipe clean any penetrations from each work area and seal with two (2) layers of six (6) mil. Polyethylene.
- d. HEPA vacuum and wet wipe clean all light fixtures in the work area and seal with two (2) layers of six (6) mil. fire-rated polyethylene.
- e. Seal all cracks and openings in the work area with two (2) layers of six (6) mil Polyethylene sheeting and secure with duct tape and spray adhesive. This shall include, but not be limited to: ceilings, walls, flooring, etc.

- f. Critically seal all openings to the exterior of the work area with two (2) layers of six (6) mil. Polyethylene. This shall include, but not be limited to, doorways, windows, louvers, vents, skylights, etc.
 - g. Encapsulate all surfaces from which asbestos has been removed to include, but not be limited to walls, floors, ceilings, boiler units, and pipes.
- C. Furnish all labor, supervision, materials, services, insurance, equipment, and tools necessary for the complete and proper execution of all work of this section.

2.01 STANDARD OPERATING PROCEDURE

- A. The Contractor shall develop and implement a written standard procedure for abatement work to ensure maximum protection and safeguard from asbestos exposure of the workers, visitors, general public, and the environment.

The standard operating procedure shall ensure:

1. Remove asbestos in ways that minimize release of fibers.
2. Safe work practices in the work place, including provisions for inter-room communications, exclusions of eating, drinking, smoking, or in any way breaking respiratory protection.
3. Proper protective clothing and respiratory protection prior to entering the work space from the outside.
4. Packing, labeling, loading, transporting and disposing of contaminated material in a way that minimizes exposure and contamination.
5. Proper exit practices from the work space to the outside through the showering and decontamination facilities.
6. Emergency evacuation for medical or safety (fire and smoke) so that exposure will be minimized.
7. Safety from accidents in the work space, especially from electrical shocks, slippery surfaces, and entanglements in loose hoses, power cords and equipment.
8. Provision for effective supervision, air monitoring and personnel monitoring for exposure during the asbestos removal work.
9. Engineering systems that minimize exposure to asbestos fibers in the workspace.

2.02 NOTIFICATIONS, PERMITS, WARNING SIGNS, LABELS AND POSTERS

- A. Erect English, Spanish and the language familiar to the majority of asbestos abatement workers warning signs around the work space and at every point of potential entry from the outside, with the words "DANGER ASBESTOS HAZARD, DO NOT ENTER." The

warning signs shall be a bright color so that they will be easily noticed. The sign shall be in a contrasting color to the background. The sign and the size of the lettering shall be large and easily noticed. The warning signs shall be posted at the entrance to the work area and around the work area perimeter at intervals of no more than twenty-five (25) linear feet.

- B. Provide the OSHA required labels for all plastic bags and all drums utilized to transport contaminated material to a designated licensed disposal facility.
- C. Provide any other signs, labels, warnings, and posted instructions that are necessary to protect, inform and warn people of the hazard from asbestos exposure. Post in a prominent and convenient place for the workers a copy of the latest applicable regulations from OSHA, USEPA, and NIOSH.

2.03 EMERGENCY PRECAUTIONS

- A. Establish emergency and fire exits from the work area. Post these in the administrative area on the work site.
- B. The Contractor shall be prepared to administer any necessary first aid to the injured personnel after decontamination. Seriously injured personnel shall be treated immediately or evacuate without delay for decontamination. When an injury occurs, precautions shall be taken to reduce airborne fiber concentrations (i.e. misting of the air with water) until the injured person has been removed from the work area.
- C. Before the Contractor starts the removal of asbestos materials, the local police and fire departments shall be notified as to the danger of entering the work area. The Contractor shall make every effort to help these departments form plans of action should their personnel need to enter the contamination area.

2.04 SUBMITTALS DURING THE WORK

- A. Submit copies of the following items to the API/Engineer:
 - 1. Security and safety logs showing names of persons entering work space, date and time of entry and exit, record of any accident, emergency evacuation, and any other safety and/or health incident.
 - 2. Disposal Certificates.
 - 3. Required Permits, Clearances and Licenses.
 - 4. All Contractor's Air Monitoring and inspection results (if & where directed).
 - 5. Plan of action in the event of an emergency (Asbestos Spill Plan, fire routes, etc.)
 - 6. Affidavits of insurance in force to include complete operative and products liability for asbestos removal (\$500,000.00). Insurance shall be of an occurrence type.

2.05 RESPIRATORY SYSTEMS

- A. Provide all workers, foreman, superintendents, authorized visitors and inspectors personally issued and marked respiratory equipment approved by NIOSH and OSHA. When respirators with disposable filters are employed, provide sufficient filters for replacement as necessary by the worker.
- B. The Contractor shall require that each person entering the work area wear an approved respirator and protective clothing. There shall be no exceptions to this rule.
- C. Respiratory protection shall be in accordance with OSHA Regulation 1910.1001 (d), OSHA regulation 1910.134 and ANSI z88.2-1980. Respirators chosen shall also be approved by NIOSH under the provisions of 20 CFR Part 11.
- D. Respiratory protection shall be determined by airborne fiber concentration (fibers per cubic centimeter of air).

At a minimum, respiratory protection shall be:

0.01 - 1.0 f/cc - Dual Cartridge, Air Purifying respirator with HEPA cartridge

1.0 - 10.0 f/cc - Powered Air Purifying respirator with HEPA cartridge

10.0 and above - Type C supplied air pressure demand respirator

- E. No one is to be permitted into the work area without proper protection. No disposable dust masks shall be used at any time.
- F. All personnel engaged in asbestos abatement procedures requiring an air-purifying respirator shall have an unobstructed face/mask seal (i.e., no facial hair).

2.06 PROTECTIVE CLOTHING

- A. Contractor shall provide to all workers, foremen, superintendents and authorized visitors and inspectors protective disposable clothing (TYVEK) consisting of full-body coveralls, head covers, gloves and 18-inch high boot type covers or reusable footwear.
- B. Provide eye protection and hard hats as required by job conditions and OSHA safety regulations.
- C. Reusable footwear, hard hats and eye protection devices shall be left in the "Contaminated Equipment Room" until the end of the asbestos abatement work.
- D. Disposable protective clothing shall be discarded and disposed of as asbestos waste every time the wearer exists from the workspace to the outside through the decontamination facility.
- E. The Contractor shall also maintain sufficient supply of all other related items such as towels, soap, etc.

2.07 PERSONAL AIR MONITORING - CONTRACTOR

- A. The Contractor shall employ a certified laboratory and NIOSH certified air test technician to conduct air sampling and analysis in accordance with OSHA Regulation 29 CFR, 1910.1001 (Asbestos Standard for General Industry), 1926.58 (Asbestos Standards for Construction), and 1910.134 (Respirator Standard).
- B. The Testing Laboratory shall be current proficient participant in the NIOSH PAT Program. The laboratory identification number shall be submitted and approved by the Consultant.
- C. The Contractor shall require a competent person from his/her firm to perform the following functions:
 - 1. Monitor the set up of the work area enclosure and ensure its integrity.
 - 2. Insure that employees are adequately trained in the use of proper work practices, proper personal protective equipment and proper decontamination procedures.
 - 3. Insure that employees use proper work practices, proper personal protective equipment and proper decontamination procedures.
 - 4. Supervise all employee exposure monitoring. Such monitoring shall comply in all respects with OSHA Regulation 1926.58 Appendix "A".
 - 5. Conduct air sampling as per OSHA 1926.58 and as described herein.
- D. Air monitoring and inspection of the Contractor's employees shall be conducted under the supervision of the Contractor's competent person.
- E. Continuous air monitoring and inspection will include personal samples from the breathing zone of a laborer to establish 8-hour TWA's.
- F. Sampling and analyses shall be performed in accordance with the NIOSH #7400 method.
- G. Air sample results shall be relayed verbally to the consultant within 24 hours followed by written results posted on the job site within 48-hours after the samples have been taken. Results shall be inscribed on official letterhead.
- H. All costs for required air monitoring by the Contractor's competent person shall be borne by the Contractor.

3.00 DISPOSAL OF ASBESTOS WASTE

This subsection shall apply to the removal of asbestos from the job site and the disposal of asbestos waste.

The Contractor is required to give a notice, ten (10) days prior to the disposal, to the New Jersey Department of Environmental Protection, Division of Waste Management, Bureau of Field

Operations. In addition, all disposal procedures must comply with CAA112, 42 U.S.C. 7412 and 40 CFR 61.156.

- A. Disposal of asbestos waste shall be conducted as follows:
 - 1. All asbestos waste materials destined for disposal shall be wetted and packaged in permanently sealed, leak tight containers (such as 6 mil plastic bags, double bagged with visible warning labels) before it can be transported and disposed. No hauling of loose asbestos or asbestos contaminated debris is permitted.
 - 2. A locked, secure container shall be provided if asbestos waste is to be stored outside unattended.
- B. Notify the Engineer in writing not less than 48 hours prior to the proposed time of removing and delivery of contaminated waste to the landfill. The Engineer may elect to observe this operation.
- C. The specific disposal facility chosen must be one designated by the United States Department of Environmental Protection and New Jersey Department of Environmental Protection as the recipient facility for asbestos.
- D. The waste hauler must possess a valid solid waste transporter registration. A licensed solid waste transporter shall be a commercial collector/hauler or shall be the removal company if they are so registered.
- E. Asbestos waste can be hauled in trucks or in dumpster containers provided the load is comprised only of asbestos in double bags and does not contain any other wastes which could compromise the integrity of the permanent containers.
- F. If rough surfaces or other materials are present in the load that could potentially puncture the permanent containers, and then those containers shall be enclosed in temporary fiber or steel drums during loading, transport and unloading operations. In addition, asbestos waste shall not be loaded into or hauled with vehicles containing collection devices.
- G. Use only enclosed or impermeable containers to prevent loss or damage to containers en route to sanitary landfill.
- H. Allow only sealed plastic bags or impermeable containers to be deposited in landfill. Leave damaged, broken or leaking plastic bags in the impermeable container and deposit entire container in landfill. Obtain prior approval from appropriate regulatory officials before disposing contaminated materials from high-pressure vacuum collection system in the approved landfill.
- I. The proposed hauler and disposal facility must be approved by the Engineer prior to beginning work.

4.01 QUALITY

- A. Buy American Clause

1. All materials used in the performance of this specification must be manufactured in the United States of America.
- B. Brand Names and Approved Equals
1. The Contractor shall use Brand Name materials specified or an approved equal.
 2. The Contractor shall provide to the Owner and the Consultant, materials to be used in the plans to use during abatement activities. Changes in the submission of these materials shall be provided prior to abatement commencing. The Owner shall approve/disapprove these submissions.
 3. No abatement activities shall occur prior to the Owner's consent and the Consultant's recommendations of the use of these products.
 4. BRAND NAMES AND/OR DESCRIPTIONS USED IN THIS SPECIFICATION FOR BID PROPOSAL ARE TO ACQUAINT PROSPECTIVE BIDDERS WITH THE TYPE OF EQUIPMENT DESCRIBED (OR COMMODITY) AND WILL BE USED AS A STANDARD BY WHICH ALTERNATE OR COMPETITIVE MATERIALS OFFERED WILL BE JUDGED. COMPETITIVE ITEMS MUST BE EQUAL TO THE STANDARD DESCRIBED AND BE OF THE SAME REPUTATION FOR QUALITY AND WORKMANSHIP. VARIATIONS BETWEEN EQUIPMENT DESCRIBED AND MATERIAL OFFERED ARE TO BE FULLY EXPLAINED IN AN ACCOMPANYING LETTER. IN THE ABSENCE OF ANY CHANGES BY THE BIDDER, IT WILL BE PRESUMED AND REQUIRED THAT MATERIAL AS DESCRIBED IN THESE SPECIFICATIONS BE DELIVERED.

4.02 MATERIALS

If the Contractor's Asbestos Abatement Design requires, the following shall be used:

- A. The wetting agent shall be BWE 5000 as manufactured by Better Working Environments, Ind. or an approved equal.
- B. Encapsulating material shall be bridging and/or penetrating in nature and must be applied in two (2) coats. Acceptable encapsulates shall be TRI-COTE AE as manufactured by the United Products Corporation or A-B-C Asbestos Binding Compound as manufactured by California Products Corporation or an approved equal.
- C. Cement to be used to seal ends, tears and penetrations shall be fire-rated and asbestos-free as manufactured by Childers or an approved equal, if applicable.
- D. Framing material shall consist of 2" x 4" studs and sections of 3/4" plywood from first quality lumber.
- E. The Contractor shall use only polyethylene sheeting with a minimum thickness of 6 mil.

- F. The use of drums is permissible as long as said drums contain lining that is leak-proof. The exterior of drums must have clear and permanent labeling and labeling specified by OSHA and USEPA regulations.
- G. All waste shall be discarded in properly labeled and 6 mil thick polyethylene.
- H. Asbestos warning signs shall be in English script and placed in areas as required by OSHA, NJDCA and the USEPA.
- I. All tape shall be of high quality polyethylene film tape #827 as manufactured by the Kendall Company or an approved equal.
- J. Spray adhesive may be used as manufactured by the 3-M Company or an approved equal..
- K. Disposable clothing to be used shall be of the same composition as Dupont's Tyvek or Kimberly Clark's Duraguard or an approved equal.

4.03 TOOLS AND EQUIPMENT

- A. Asbestos filtration devices shall be equipped with High Efficiency Particulate Absolute (HEPA) filter systems such as the Microtrap as manufactured by Asbestos Control Technology Corporation or the HOG 2000 as manufactured by the Control Resource System or an approved equal.
- B. Scaffolding is to be used when and where needed as long as its use is monitored and is safety tested and approved for such work conditions by OSHA and any other safety regulatory agency.
- C. Transportation and storage equipment shall be used so that no accumulations of ACM shall occur on a daily basis. This equipment shall be constructed and registered as such to store and/or transport waste material without any threat to persons or the environment of possible contamination.
- D. All vacuum equipment to be used shall use HEPA filtering systems. Such vacuums shall be the system manufactured by NILFISK of AMERICA or an approved equal.

5.00 PERMITS, NOTIFICATIONS, LICENSES

- A. The Contractor shall present a duplicate copy of his Asbestos Contractors license with his bid. Only licensed contractors may perform work described and required by this specification. As required by law, the Contractor shall maintain on the project site, a valid Contractor's license.
- B. The Contractor shall apply for all necessary permits and submit all required notifications.
- C. The Contractor shall maintain at all times a staff at the work site including:
 - 1. An English speaking supervisor
 - 2. An English speaking foreman

3. Trained laborers

ALL CONTRACTOR EMPLOYEES MUST POSSESS A VALID NEW JERSEY ASBESTOS REMOVER/LABORER'S PERMIT AND MAKE AVAILABLE TO THE OWNER, THE OWNER'S CONSULTANT, NJDCA, NJDOL, NJDOH, AND API THESE PERMITS UPON REQUEST AT THE PROJECT SITE. ALL EMPLOYEES MUST HAVE A MINIMUM OF AT LEAST SIX (6) MONTHS EXPERIENCE IN ASBESTOS ABATEMENT IN THE STATE OF NEW JERSEY.

- D. The Contractor shall also present to the API, Owner, and Consultant prior to the commencement of abatement, proof that a NJDEP Registered Waste Hauler Permit exists. NO PRECOMMENCEMENT INSPECTION SHALL TAKE PLACE UNTIL SUCH PROOF EXISTS AND IS SATISFACTORY TO THE NJDCA, THE API/ENGINEER, THE OWNER AND THE CONSULTANT.

GUARANTEE

The Engineer/API shall guarantee, in writing, that all asbestos has been removed, the work area is free of asbestos and asbestos dust, and disposal was performed to the complete satisfaction of the Owner, the Owner's Consultant, USEPA, OSHA, NJDCA, NJDOH, and any other government agency having jurisdiction.

END OF SECTION 09999-A