DZUS FASTENER COMPANY, INC.
REMEDIAL ACTION

Town of Islip, Suffolk County, New York
Inactive Hazardous Waste Site Number 152033

January 2019
ADDENDUM NUMBER 3
TO CONTRACT D011107

Prepared by:

EA Engineering, P.C. and its affiliate EA Science and Technology
ADDENDUM NUMBER 3
TO THE DECEMBER 2018 CONTRACT DOCUMENTS
DZUS FASTENER COMPANY, INC. SITE
REMEDIAL ACTION
TOWN OF ISLIP, SUFFOLK COUNTY, NEW YORK
CONTRACT NO. D011107
JANUARY 3, 2019

TO ALL HOLDERS OF THE CONTRACT DOCUMENTS:

Your attention is directed to the following changes and additions to the December 2018 Contract Documents for the Dzus Fastener Company, Inc. Site. This Addendum has been prepared in accordance with the provisions of the Contract Documents.

Item 1:

SECTION XI, Supplementary Specifications, **ADD** the following technical specification to the Contract, **SECTION 01 76 50 – NUISANCE CONTROLS, MANAGEMENT AND CORRECTIVE MEASURES**, Attachment A.

Item 2:

SECTION XI, Supplementary Specifications, **ADD** the following technical specification to the Contract, **SECTION 02 73 01 – GEOTEXTILE TUBE DEWATERING**, Attachment B.

Item 3:

SECTION V, Bid Forms and Attachments, **REPLACE** the bid form with the revised Bid Form that includes a new Bid Item **UC-7 Transportation & Disposal of Non-Hazardous Debris, estimated quantity 8,500 tons**. Bidders should note that the estimated quantity associated with bid item UC-8, Transportation & Disposal of Non-Hazardous Material, is now 51,700 tons (= 60,200 – 8,500), Attachment C.

Item 4:

SECTION XII, Measurement for Payment, **REPLACE** SECTION XII, Measurement for Payment with Attachment D. The revised M&P includes a bid item description for new **UC-7 Transportation & Disposal of Non-Hazardous Debris**, as well as modifications to some of the other bid items.
Item 5:

SECTION 01 45 25 – TESTING, PART 3 – EXECUTION, REPLACE paragraph 3.2 D with the following:

D. Soil Confirmation Testing – Excavated Materials in Residential Backyards

1. Contractor shall collect confirmation samples in maintained areas of residential backyards at locations specified by Engineer after the required soil is removed. All confirmation sampling will be done in Engineer’s presence, and in accordance with the Contract Drawings or as directed by the Engineer.

2. All sampling shall be completed and approved by the ENGINEER before creek diversion and any turbidity barrier is relocated.

3. Sample locations in the residential backyards shall be at a rate of one sample from the midpoint or above the groundwater table of each sidewall for every 30 linear feet of sidewall (maintaining a minimum of one sample per each sidewall along the perimeter of excavation) and one sample from the excavation bottom for every 900 square feet of bottom area (maintaining a minimum of one sample per excavation bottom) as shown in Contract Drawings or as directed by the Engineer.

4. Collect bottom grab samples with a small hand auger from the top six inches of the exposed bottom surface of the contaminated soil excavations. Samples will be placed at the midpoint between the wetland boundary and the limits of excavation as shown in the attached Drawings.

5. Collect one 6-inch deep side wall grab sample from the mid-point or above the groundwater table of each sidewall (assuming per 30 linear feet) a. For Residential backyards: The sampling location will be per 30 linear feet along the perimeter of the excavation.

6. The sample location shall be staked for future reference until analytical results are reviewed by Engineer. Properly labeled and dated splits of the grab samples shall be given to Engineer upon request.

7. Contractor shall collect and analyze duplicate samples as defined in Sampling Table 01 45 25-1.

8. Contractor shall analyze each sample for Total Cadmium and Total Chromium, and report results on dry weight basis. Analysis shall be standard EPA Method 200 series, or DEC methods, as approved by the DEPARTMENT. The detection limit for cadmium shall be a maximum of 0.05 ppm and 0.1 ppm for chromium.

9. NYSDEC/ENGINEER will evaluate the data generated from conformation sampling and direct any additional removal or testing. The Contractor’s means
and methods cannot impede additional removal that may be required/directed by the ENGINEER. The following steps will be taken:

a. Failed Bottom Sample: Excavate 1-ft of soil from a 900-sf area (33 CY) of 15ft x 60ft (WxL) surrounding the failed sample location. Excavation reaching groundwater table will be used as the criteria to stop further excavation.

b. Failed Sidewall Sample: Excavate an additional 3 ft horizontally from top of the bank along the 30 LF sidewall of the limits of excavation to the final cutline elevation of the nearest clean bottom sample prior to re-confirmation sampling. At locations where the excavation limit cannot be expanded due to site access issue or due to structure an orange non-woven geotextile demarcation layer shall be placed prior to placement of backfill materials.

10. Analytical report shall include Category B deliverables per NYSDEC ASP.

11. All soil confirmation samples shall be labeled in accordance with the following naming convention:

a. Residential Backyards
   1) The bottom Samples along residential backyards shall follow “Type(BS)-Location(RXXX)-Number(YY)” scheme, where
      a) Type: ‘BS’ = bottom soil
      b) Location: ‘RXXX’ = Residential tax parcel ID identified during the RI/FS (for example, RDDD, RUUU, etc.)
      c) Number: ‘YY’ = Number of sample associated with the property

      For example,
      BS-RUUU-01

   2) Sidewall Samples in residential backyards shall follow “Type(SWS)-Location(RXXX)-Cardinal Direction(Z)-Number(YY)” scheme, where
      a) Type: ‘SWS’ = sidewall soil
      b) Location: ‘RXXX’ = Residential tax parcel ID identified during the RI/FS (for example, RDDD, RUUU, etc.)
      c) Cardinal direction: “Z” = north, south, east, or west of the excavation
      d) Number: ‘YY’ = Number of sample associated with the location

      For example,
      SWS-RUUU-W-01

12. All re-confirmation samples collected following further excavation due to a failed confirmation sample shall use similar convention as above for bottom and sidewall but will include the re-confirmation number at the end of the sample ID as follows: “Type(BS)-Location(RXXX)-Cardinal Direction(Z)-Number(YY)-Re-Confirmation sampling number (YY)” scheme, where
Confirmation sampling number: ‘YY’ = consecutive numbers for additional sampling (for example, 01 for initial, and 02 for second confirmation sampling)

For example,

SWS-RUUU-S-02

**Item 6:**

SECTION 01 45 25 – TESTING, PART 3 – EXECUTION, REPLACE paragraph 3.2 F. h with the following:

h. Analyses shall be completed, and final results reported within 24 hours of sampling. NYSDEC/ENGINEER will evaluate analytical data results generated from the confirmation sampling and direct any additional removal or sampling:

The CONTRACTOR shall excavate 1-ft of sediment from a 900-sf area (33 CY) surrounding the failed sample location. The CONTRACTOR’s means and methods shall in no way impede additional removal which may be required/directed by the ENGINEER.

**Item 7:**
Contract Drawings, SHEET NO. 11, add the following Note No. 4:

“4. ELEVATED CONCENTRATIONS OF CADMIUM AT STATION 7+50 (20 FEET WEST OF THE CREEK CENTERLINE) HAVE BEEN DESIGNATED AS A “HOT-SPOT” LOCATION. IT IS THE ONLY LOCATION IN WILLETS CREEK WHERE CONFIRMATION SAMPLING IS TO BE PERFORMED.”
Item 8:

Contract Drawings, SHEET NO. 30, **add** the following Note No. 1:

“1. ADDENDUM NO. 3 TO THE CONTRACT REVISED THE CONFIRMATION SAMPLING PLAN. THE REVISED CONFIRMATION SAMPLING PLAN IS SUMMARIZED IN THE FOLLOWING TABLE:

<table>
<thead>
<tr>
<th>Sample Location</th>
<th>Containerized Samples</th>
<th>Analyzed Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willetts Creek Hot Spot (STA. 7+50):</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Residential Backyard Excavation Sidewall Samples – 1,250 Linear feet of excavation sidewall away from the creek, one sample per 30 linear feet</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Residential Excavation Bottom Samples – 13 separate residential yards, 2 samples for the two largest yards (4 total), plus one sample for the other eleven.</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Contingency samples for failed samples that are re-excavated and re-sampled</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Lake Capri grab sample analyses (5 samples per 41 grids), assumes eight of the grid composite samples fail (8 grids X 5 samples per grid)</td>
<td>205</td>
<td>40</td>
</tr>
<tr>
<td>Lake Capri 5-point composite sample analyses – one per 41 grids</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>325</strong></td>
<td><strong>160</strong></td>
</tr>
<tr>
<td>QA/QC – 3 samples (MS, MSD, Duplicate) per 20 based on total samples (160)</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>349</strong></td>
<td><strong>184</strong></td>
</tr>
</tbody>
</table>

Item 9:

SECTION 02 73 00 – SOLIDS PROCESSING PART 3 – EXECUTION, **ADD** item H to paragraph 3.3 which states:

H. Contractor is responsible for completing the Work within the Contract duration, schedule delays and associated costs resulting from system down time shall be borne by the Contractor.
Item 10:

SECTION 35 20 23 – DREDGING – TESTING, PART 3 – EXECUTION, **REPLACE**
paragraph 3.2 REMOVAL LIMITS paragraph C. with the following:

C. Overdredge allowance is 0.1 feet below (i.e., deeper than) the required dredge design
elevations shown on the Drawings for Willetts Creek (Sediment, soil & debris) and Lake
Capri soil. Overdredge allowance is 0.5 feet below the required dredge design elevations
shown for Lake Capri sediment. The Contractor shall minimize overdredge. Overdredge
performed by the Contractor outside of the overdredge tolerances shall be at the
Contractor’s expense.

Item 11:

The following questions and associated answers are made a part of this Contract:

- **Q**: Regarding Specification 13 33 33 Tensioned Fabric Structures, the qualified
  fabricator/installers listed in Part 2.1A have indicated they do not manufacture or rent the
  type of temporary fabric structures required to perform the dust, odor and noise control
  intended for this project and will not be able to provide quotations for this scope of work.
  Additionally, the companies that do provide temporary TFS have stated that the fabric
  material requirements listed in the specifications are not typical for the intended use of
  the TFS for this project and may not be compatible with the TFS systems they provide.
  Please provide suitable alternative specifications.

  **A**: See Addendum No. 1, Item 17 and Attachment E. The qualified fabricator/installer
  listed in the original specification are not required to be used. The chosen
  fabricator/installer must meet the requirements listed in the updated specification.
  Potential suppliers may include, but are not limited to, Allsite Structure Rentals,
  ClearSpan Fabric Structures, BigTop Fabric Structures, Shelter Structures, and
  Mahaffey.

- **Q**: If excavation and removal of root-balls results in a void space beyond the designed
  vertical extent of excavation, please clarify that Contractor shall not be penalized for over-
  excavation, and that Contractor shall be reimbursed for the material removed and properly
  disposed.

  **A**: **Volumes excavated beyond the limits of excavation will not be paid, with the
  exception of volumes removed as part of stump removal which were unavoidable as
determined by the Engineer. The Contractor must take reasonable care to limit the
removal and/or disturbance of contaminated sediments in proximity to larger stumps in
order to ensure the limits of excavation are maintained to the extent practical. Stumps
will be required to be separated from soil and sediment and “shaken” of all loose soil
and sediment at the time and location of removal from below the surrounding existing
grade.**
• Q: As defined in Section 35 20 23 – 9 DREDGING 3.2 Removal Limits Part C, please clarify that the excavation tolerance for Willets Creek is 3-inches and excavation tolerance for Lake Capri is 6-inches. Please also clarify the excavation tolerance of excavation of soils falling under UC-7.

A: Refer to Item 10 of this Addendum.

• Q: Please clarify if Contractor is to collect endpoint samples in Dredged Areas of Lake Capri and Willets Creek.

A: The Contractor is to collect confirmation (endpoint) sediment samples in Lake Capri and from the Willets Creek hotspot (near Station 7+50). The Contractor is to collect confirmation (endpoint) soil samples in residential backyards (maintained areas) requiring excavation adjacent to Willetts Creek and Lake Capri.

• Q: For the purposes of the Fish Management Plan, what species of fish are present in Lake Capri? Have residents been notified of a potential fish kill?

A: See Addendum No.2 Item 6. American eel, carp, sunfish, and largemouth bass are present in Lake Capri. A fish kill in Lake Capri will not be permitted by the Department. The Contractor is expected to subdivide Lake Capri into manageable subparts, and place turbidity controls around the working area to minimize impacts to fish and wildlife in Lake Capri.

• Q: Please clarify if the TFS structure is required for any method of sediment processing in either processing area.

A: Provided that the Contractor can provide adequate engineering controls to minimize fugitive emissions of dust, odor, noise, and light; a Temporary Fabric Structure will not be required if the Contractor elects to use geotextile tubes for dewatering dredged material.

• Q: Please clarify what line item furnishing and installing the Dewatering, and Water Treatment Pad should be included under.

A: Section XII, Part 3 A. (BID ITEM LS-1 MOBILIZATION/DEMOBILIZATION & SITE PREPARATION), subitem 1.(t) now includes furnishing and installing the Dewatering and Water Treatment Pads; subitem 1.(y) now explicitly includes deconstruction and removal of the Dewatering and Water Treatment Pads.

• Q: Work Area Length Not to Exceed that Which Can Be Completed in One Day is noted in the Pump-Around Practice Detail on page 10 of the drawings. Who determines this length and is there an allowable buffer length that can be added to this length to allow the Contractor room for increased production?

A: Please see Addendum 2, page 3, bullet 2.
• Q: Is the impervious sheeting on the Sandbag/Stone Diversion Detail on page 10 meant to be on the working side of the sandbags/stones or both?

**A: Please see Addendum 2, page 3, bullet 3.**

**Item 12:** The following questions were received regarding the Bid Form and M&P and are addressed with the following clarification:

• Q: Please clarify Section XII F. Bid Item UC-3 Dredging Willets Creek 1. 2nd Sentence – “The estimated quantity of UC-3 includes soil outside the wetland boundary that is adjacent to the creek up to the limits of dredging.” Is dredging limits meant to be outside or inside the wetland boundary?

• Q: Regarding the dredging limits UC-3 vs. excavation limits UC-7 for payment purposes, separated by a “wetland boundary”; is the “wetland boundary” defined on the Project Plans? Does it need to be surveyed and staked in the field? If so, what should surveyor use as defining limits?

**A: No, contractor will not need to stake out wetland boundary**

• Q: Per Section XII Measurement and Payment Part F. Bid Item UC—3 Dredging Willets Creek 1. “…Any additional removal associated with failed confirmations samples will be paid under Bid Item UC-7 Soil Excavation.” Seems additional dredging work should be paid under UC-3 vs UC-7.

**CLARIFICATION: The Contract does not distinguish between soil, debris and sediment along the Willets Creek corridor, with respect to material REMOVAL (i.e. excavation and dredging). Once a “work zone” is established along the creek, and the base creek flow is diverted around the work zone, it is assumed that the same means and methods would be utilized to remove soil, debris and sediment. The selected CONTRACTOR will be compensated for REMOVAL of this material (soil, debris and sediment) under payment item UC-3. The selected CONTRACTOR will be compensated for DISPOSAL of this material (soil, debris and sediment) under payment items UC-7, 8 and 9 depending on material characteristics.**

The original Contract has provisions to handle residential backyard excavations separately under the OLD UC-7 Soil Excavation. REMOVAL of material associated with all residential backyard excavations (surrounding Lake Capri and along the Creek) will now be compensated under UC-3.

• Q: Are there additional requirements related to waste characterization?

**A: The minimum requirements for waste characterization are the frequency and analyses required by the disposal facility. The contractor shall include in the work plan the timing, procedures for collecting waste characterization samples for review and**
approval by the Engineer.

Previous waste characterization data has been provided in the Pre-Design Investigation Report.

Item 13: SECTION IV, Supplemental Bidding Information and Requirements, Article 5 – Other Available Documents, **ADD** the following: Notwithstanding any other provision of this contract, no personal information related to private property owners shall be disclosed to any third party without the express written approval of the Department.

This ADDENDUM No. 3, including Attachments becomes part of the December 2018 Dzus Fastener Company, Inc. Site Contract Documents D011107.

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Donald F. Conan, P.E., P.G.

EA Engineering, P.C. and its affiliate EA Science and Technology

*Dated: January 3, 2019*
ATTACHMENTS TO ADDENDUM NO. 3

DZUS FASTENER COMPANY, INC. SITE
CONTRACT No.D011107

1. Attachment A  Supplementary Specification 01 76 50 – NUISANCE CONTROLS,
   MANAGEMENT AND CORRECTIVE MEASURES
2. Attachment B  Supplementary Specification 02 73 01 – GEOTEXTILE TUBE
   DEWATERING
3. Attachment C  Revised Bid Form
4. Attachment D  Revised SECTION XII, Measurement for Payment
ATTACHMENT A
ADDENDUM No. 3 DZUS FASTENERS COMPANY, INC SITE
CONTRACT No. D011107

Supplementary Specification 01 76 50 – NUISANCE CONTROLS, MANAGEMENT AND CORRECTIVE MEASURES
SECTION 01 76 50 – NUISANCE CONTROLS, MANAGEMENT AND CORRECTIVE MEASURES

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes requirements for managing, controlling nuisance issues and associated corrective measures during construction. Consideration of equipment noise, vibration levels shall be part of each stage of project planning.

B. The work zones for this project are on, adjacent to or in close proximity to the West Islip High and Middle Schools, as well as numerous residential properties. The Department has zero tolerance for nuisance emissions, including fugitive dust, noise, vibration, turbidity, disruptive lighting or other situations which may give rise to complaints from the community.

C. The requirements presented in this specification supplement other nuisance monitoring requirements in the contract, e.g. air monitoring. This specification does not relieve the Contractor from other contract requirements and where there is a conflict in monitoring requirements, the more stringent action level shall be applied.

D. The Contractor is responsible for developing means and methods as well as accounting for these requirements or proposing alternate best management practices which meet the intent of these provisions (i.e., minimizing nuisance conditions which may adversely impact the public or the environment through appropriate engineering controls).

1.2 PERFORMANCE REQUIREMENTS

A. The intent of this Section is to document and formalize the Contractor’s plan for managing, controlling nuisance issues and associated corrective measures during construction per the Contract Documents.

B. The Contractor shall provide advance notification to the community of any work activities that will generate nuisances in accordance with this specification. The minimum notification period is 48 hours before noisy work is scheduled. Longer notification periods of a week or more may apply to work likely to exceed the Local regulation noise or other levels or at the start of a project.

C. The point of compliance for fugitive dust, turbidity, vibration, noise, lighting or other nuisance management issues will be at the limit of the work zone. At the point of compliance no visible dust (or visible contrast in water clarity) is allowed. Complaints from the community will result in work stoppage until corrective measures are implemented to the satisfaction of the Engineer.

D. The Contractor shall provide a competent and reliable community relations liaison, who shall not be replaced without written approval of Department. The community relations liaison will be the Contractor’s representative and shall interface with the Engineer’s communications representative and the Department’s Public Participation Specialist. The intent is to increase public awareness and understanding of remedial activities taking
place in their community, as well as understand environmental data developed during the project.

1.3 REFERENCES

A. 42 US Code, Chapter 65 Noise Control

B. Town of Islip General Provisions Chapter 35 Noise Ordinance

C. Turbidity - 6NYCRR 703.2 - No increase that will cause a substantial visible contrast to natural conditions.

D. Light Trespass - Town of Islip, Chapter 68 Zoning, Article LII Exterior Lighting Standards.

E. Odor - TITLE 6. DEPARTMENT OF ENVIRONMENTAL CONSERVATION CHAPTER III. AIR RESOURCES SUBCHAPTER A. PREVENTION AND CONTROL OF AIR CONTAMINATION AND AIR POLLUTION - Air pollution is the presence of an air contaminant, including odor, "which unreasonably interferes with the comfortable enjoyment of life and property."

F. Fugitive Dust - Clean Air Act - Particulate Matter (PM) Air Quality Standards.

G. Vibration – New York State Department of Transportation Engineering Instruction 05-045.

1.4 SUBMITTALS

A. Nuisance Controls and Management Plan
   1. Plan to provide advance notification
   2. Nuisance monitoring plan
   3. Complaint resolution approach (and Summary Form)
   4. Issues of concern with existing and anticipated nuisances must be defined within the Nuisance Control and Management Plan, including the Contractor’s resolution to complete the work of the Contract Documents

B. The CONTRACTOR shall develop a one-page summary of general practices for nuisance management and clearly display on site. Operating hours, delivery times, truck routes, and extra considerations for works during sensitive times could also be included in the summary.

C. Monitoring Reports

D. Community Relations Liaison Qualifications
   1. The Contractor will submit resume/qualifications of their Community Relations Liaison person.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION
3.1 COMMUNITY CONSULTATION

A. Community consultation is an essential part of managing nuisances associated with the construction project. All communications shall be coordinated with the Engineer and the Department.

B. Contractor shall:
   1. establish good working relationships with community stakeholders such as nearby residents, the school district, and businesses
   2. give and receive feedback on construction activity and performance during a project
   3. discuss the community’s concerns and be proactive in complaint resolution.

C. As part of a community consultation strategy, neighboring premises shall be given written notification of upcoming work activities in their vicinity. The information should outline the type and duration of works, likely nuisance impacts, and provide contact details (mobile phone number of Community Liaison Person) for feedback and/or complaints resolution.

The minimum notification period shall be 48 hours before noisy work is scheduled. Longer notification periods of a week or more may apply to work likely to exceed the Local regulation noise or other levels or at the start of a project.

Methods of notification for work and ongoing communication about project progress can include:

- letterbox drops
- meetings
- individual contact
- direct emails to all stakeholders.

3.2 COMPLAINT RESOLUTION

A. The contractor shall immediately notify NYSDEC and the ENGINEER and respond respectfully to a complaint and implement all feasible and reasonable measures to address the issue.

B. It is particularly important to respond when the complaint refers to disturbed sleep and/or noise that is tonal (beeping, metal-on-metal), impulsive (hammering, pile driving) or low frequency (truck engine, heavy machinery).

C. The contractor shall have a readily accessible contact point (mobile phone number of Community Liaison Person) for managing complaints. The contractor shall call back as soon as possible, and then maintain communication about how the issue is to be resolved.

D. The complaint management process shall be well documented, with details about the following:
• the nuisance in question

• the time of the complaint and the person making it.

• the person dealing with the complaint and planned corrective action.

• how resolution of the complaint is to be communicated to the person who made the complaint, the community and the Engineer

• who shall be contacted if the complaint cannot be resolved, and

• the time taken for responses.

3.3 SCHEDULING WORK AND RESPITE PERIODS

A. In general, the instance and duration of work expected to adversely disturb the community should be minimized. This is particularly important for night and other out-of-hours work.

B. Scheduling work to provide respite and avoid sensitive times is a vital part of responsible nuisance management.

C. The following are examples of sensitive times that may require special consideration:

• resident sleep periods

• shopping plaza deliveries

• school activities (e.g. outdoor classes, sporting events, exams, etc.)

D. The contractor shall consult with affected parties, such as the examples given above, and then arrange appropriate periods of respite from work likely to disturb them. The scheduled respite times shall then be communicated to the relevant parties.

E. On a typical weekday, more frequent respite periods shall be provided where possible, especially during very disturbing work. For example, a break of 15-20 minutes for every hour of jack-hammering may be a suitable way to manage noise impacts, if there has been appropriate communication

F. The Contractor shall consider the option of relocating people for short periods of time, such as when high noise levels from construction occur at night and there is no other feasible or reasonable way to reduce noise levels.

G. The contractor shall weigh the benefits of avoiding sensitive periods against the increased costs and additional time taken on the job. Explaining the various options to affected parties will help develop a fair and balanced approach.
3.4 WORK PRACTICES

A. General

1. CONTRACTOR shall communicate nuisance reduction commitments to staff. Workers and sub-contractors shall be trained to follow nuisance management practices. Nuisance management issues shall be integrated into H&S “tail-gate” meetings.

2. The CONTRACTOR shall develop a one-page summary of general practices for nuisance management and clearly display on site. Operating hours, delivery times, truck routes, and extra considerations for works during sensitive times could also be included in the summary. Workers shall be reminded about these commitments during daily “tail-gate” meetings.

3. Monitoring - The contractor shall periodically check the site and local area for nuisance problems and actively manage nuisance issues before and as they arise.

B. Noise and Vibration

1. The Contractor shall implement work practices to reduce noise complaints, particularly important at night or during sensitive times.

2. General construction activities shall be carried out in the following ways:
   - Minimize metal-on-metal contact.
   - Avoid dropping items from a height.
   - Use equipment sensibly: Turn off equipment when not in use. Throttle settings shall be reduced if possible.
   - Require appropriate staff conduct: Staff shall not use loud radios and/or stereos outdoors during sensitive times, such as early in the morning in a residential area. Shouting or swearing, loud talking and slamming vehicle doors should be avoided.
   - Public Announcement (PA) systems are not allowed.
   - Use noise shields/acoustic curtains around higher noise operations.
   - Manage truck noise: Noise from trucks is a common issue, especially near residences. Scheduling and management of truck movements is important to reduce issues associated with reverse beepers, engine noise and general off-site activity.

3. Plant and equipment – CONTRACTOR shall endeavor to use low-noise, low-vibration well-maintained equipment where feasible and reasonable.

4. Equipment Selection - Consideration of equipment noise and vibration levels shall be part of each stage of project planning and contract specification.
The CONTRACTOR shall evaluate different types of equipment that do the same job and compare the noise and vibration level data. Noise and vibration emission labels are often provided on equipment and can be used to assist in this process. The following items shall be considered in the evaluation; high-quality mufflers, acoustic enclosures, low-noise tool bits/blades and inquire from suppliers about lower-noise equipment.

Alternative equipment - Compressors for pneumatic equipment shall be silenced, enclosed and located appropriately. Hydraulic or electrical equipment shall be considered as viable alternatives. Care must be taken with the location of any generators and supply lines when electrical equipment is proposed to be used to replace diesel or petrol engines. Impacts from noisy excavation and demolition works shall be reduced by alternative work methods.

5. Maintenance - A key commitment for any project is to ensure that:

‘equipment is not operated if maintenance or repairs would eliminate or significantly reduce a characteristic of noise, vibration or other disturbance resulting from its operation’.

Equipment shall be in good working order, and where there is a fault or maintenance issue creating the disturbance, it must be dealt with before it is used.

CONTRACTOR shall regularly check the condition of mufflers, enclosures and air lines, for example, to make sure they are in good working order and that there are no gaps or leaks. An ongoing inspection and maintenance process shall be established and included in the Work Plan.

Equipment that is causing excessive nuisance impacts in a manner that is not typical for the equipment shall be removed from the site.

6. Alternatives to traditional ‘beeper’ alarms

The traditional ‘beeper’ alarms for mobile equipment can create a nuisance during projects where there is a lot of movement (such as prolonged use of scissor lifts) or if works are being conducted at night.

Some examples of alternatives that are less disturbing include:

• ‘Smart alarms’ that adjust their volume depending on the ambient level of noise. These are particularly useful during operations in quieter suburban areas, where other noise on the site is less, or when works take place during quieter periods such as early morning.

• ‘Broadband’ or ‘quacker’ alarms. These emit a less annoying sound and are more directional. This means the sound is focused to the area of concern and is less likely to travel to noise-sensitive areas.

The use of these alternative technologies must be:
• determined by a competent person based on an assessment of the site, its conditions and on the machines involved

• compatible with the machines so it does not adversely affect their operation

• accompanied by specific procedures for installation and maintenance to ensure correct operation

• communicated to all site staff to ensure they are aware of the new alarm and how it works.

The requirements of relevant occupational health and safety must be complied with in all cases.

7. Site planning, barriers and layout

Disturbances shall be managed by appropriately arranging site orientation and operations. These principles need to be addressed during early project stages, when there is greater flexibility to plan for nuisance management.

8. Managing disturbances from trucks/mobile equipment

The site layout shall be arranged to avoid the need for truck reversing. Drive-through parking and deliveries with a one-way thoroughfare is one method that shall be investigated.

An area away from residential dwellings shall be selected for off-site truck parking when vehicles arrive before site opening hours. Engineer may require that trucks wait away from the site in a less sensitive area or other areas/options may be suggested depending on the nature of the site. For larger projects, traffic controllers can be used to direct trucks that arrive out of approved times or to instruct drivers to turn off their engines when stationary.

The contractor shall designate a truck route that minimizes noise impacts and clearly communicate to drivers the requirements for arrival times, vehicle movements, idling reduction and general conduct, and/or include these requirements as a condition of the sub-contract.

Deliveries to construction sites shall be scheduled to occur only within the allowed times. Fewer vehicles with larger loads, rather than a number of smaller vehicles, can help reduce noise impacts. Options may be limited by site access and scale, with larger sites usually providing a greater level of flexibility.

Other considerations, such as safety and traffic impacts, will apply when looking at truck access and routes.

9. Location of plant and equipment

The Contractor shall aim to locate plant and equipment away from sensitive sites, thereby maximizing the distance from affected parties. When plant and
equipment needs to be located close to noise sensitive areas, restricting the hours of operation should be considered.

When possible, noisy fabrication work shall be done off site and transported to the site at a later date.

10. Use the site to shield sources of noise

Temporary barriers shall be constructed and existing site materials may be useful in this regard.

11. General principles for barriers – breaking ‘line of sight’

Barriers shall be used to break the ‘line of sight’ between the noisy works and the noise-sensitive areas (when looking towards the noise source from the location receiving the noise).

Barriers shall be located as close as possible to the noise source or sensitive receiver. There shall be no gaps or openings at joints in the barrier material and barriers need to be sufficiently dense. In general, material weighing at least 10 kg/m² should be used.

Barriers shall be sufficiently high and wide, as sound can carry around the structure. In cases where the affected location is in a high-rise development, barriers may not be useful, as the height will not be enough to break ‘line of sight’ to the noise received.

Barriers around a noise source shall be constructed with a length at least 10 times greater than its height. For shorter barriers, it may help to bend or wrap the barrier around the equipment.

Acoustic sheds shall be considered for very noisy operations where it is possible to contain the plant and equipment. As with barriers, the shed shall be of sufficient density and suitable construction, with seals on doors and internal treatments to reduce noise reverberation. Ventilation and general occupational health and safety requirements also need to be considered.

It is important to recognize that large reflecting surfaces, such as concrete or glass walls, may increase noise levels, as the sound can ‘bounce’ off and be magnified. The builder/contractor shall avoid placing equipment in locations where reflected noise will increase noise exposure.

12. In most cases, vibration induced by typical construction equipment may not result in adverse effects on people or structures. Noise from the equipment typically overshadows any meaningful ground vibration effects on people. Some equipment, however, including vibratory rollers, can create high vibration levels.

Because of the nature of these types of devices, the options for reducing vibration may be limited. Maximizing the distance between the source and receiver should be considered to the extent practical. Conducting work when most people are not
in the area (e.g., at work) or when sensitive equipment is not operating can avoid or minimize adverse impacts.

In some circumstances, temporary relocation of residents during these operations may be appropriate. In the absence of measures that can physically reduce induced ground vibration, informing the public about the project and potential vibratory impacts should be performed to avoid adverse reactions from the public. The Contractor must be sensitive to the needs of the community, including testing timeframes at the schools and other nearby activities which may result in adverse reactions from the public.

13. Requiring trucks delivering and picking up at the site to reduce unnecessary engine idling.

C. Fugitive Dust

1. Control of dust will be a high priority during remediation activities. The primary mechanism for dust control will be the use of water trucks for example with a spray bar and hose(s) or other appropriate methods for the work being performed. Only potable water will be used for dust control purposes. Proactive controls will be instituted to reduce the amount of dust generation during Site activities, including enforcement of low speed limits for vehicular traffic, decontamination of trucks leaving the remediation work areas and height limits for stockpiles, if applicable.

2. The Contractor will implement a dust control training program for all Site personnel. This training program will review the potential sources of dust, individual responsibilities, and actions for controlling dust as described in this plan. The training will emphasize the importance of dust control to the overall success of the remedial activities and familiarize Site personnel with the air monitoring requirements and appropriate dust control procedures that must be adhered to in accordance with this plan to minimize dust generation.

3. Bulk material piles will not be created other than while gathering material to load into trucks (e.g., pulling soil into a pile for the excavator to load into trucks). If any bulk material piles are left on the site overnight (e.g., due to equipment failure, transportation delays, etc.), they will be tarped as necessary to limit wind-blown dust. All trucks being utilized for transport and disposal of excavated material at the Site are required to be fitted with solid, sliding or slot-top type covers with no gaps when fully deployed. Trucks shall be covered immediately after loading and are to remain covered throughout the transportation and disposal of excavated material. The cover must not contact the excavated material and must be installed in such a way to prevent wind from entering over the leading edge of the trailer rim.

4. Following the soil excavation, a geotextile marker barrier will be installed prior to backfilling the excavated area with clean fill material. The geotextile barrier will minimize any visible dust generation from this soil layer during backfilling activities.
5. The Contractor shall conduct operations and maintain the Site as to minimize the creation and dispersion of visible dust. Clean water, provided by the Contractor, shall be applied to the Site as necessary to prevent dust during excavation, loading/unloading, and backfilling activities. Excavation areas and on-site roadways will be kept damp, as necessary, without creating ponding or mists that travel beyond the defined boundaries of the work. The watering operations shall be sufficient to control fugitive dust. Tanker trucks will be utilized to provide and apply clean water as needed.

6. Water shall be applied in a manner to prevent runoff. As a contingency measure, the Contractor will have erosion and sedimentation controls, such as silt fencing, sediment logs, or manhole silt screens, installed as necessary to manage runoff.

7. Transfer points refer to any time material is loaded or unloaded during removal activities. For the purposes of this project, the primary transfer points of concern will be the transfer of soil material from the excavator or processing area to a waiting truck. The secondary transfer points of concern will be the unloading of the clean soil for use in backfilling of excavated areas. At all transfer points, the following guidelines will be maintained:

   • During loading of impacted soil, the material must be moist during the transfer, and the transfer shall be into an overhead truck trailer only. The material drop into the trailer must not exceed 4 feet.

   • All trucks entering and leaving the Site will adhere to the posted speed limit, which shall be no more than 8 miles per hour (mph).

   • All trucks shall adhere to the established tarping policy.

   • All trucks leaving unpaved areas to paved areas of the public ROW (i.e., sidewalk or street), whether full or empty, will be visually inspected for loose material. Stabilized construction exits (e.g., 3- to 6-inch cobblestone or rip rap placed on top of a geotextile) will be used to assist with cleaning of truck tires as the vehicles leave unpaved areas. Any loose material is to be removed and placed into the truck trailer.

8. In order to keep roadways clean and free of accumulation, the Contractor will coordinate with the Town of Islip and the local waste disposal facility for routine street sweeping during removal activities. The street sweeper must be equipped with a water spray and vacuum system to prevent fugitive dust. Street sweeping must be completed at the end of every day or as needed, but at a minimum of once a day.

9. Sidewalks and rights of way and public, where trucks will need to cross the sidewalk to enter/exit the Site, will be maintained in a “broom clean” condition at all times by using a skid steer loader (e.g., BobCat) equipped with a power broom or manual tools (e.g., push broom, shovels, etc.).

10. All trucks are to take the most efficient and direct route to the disposal facility as possible.
11. Spraying dusty wastes with water as they are unloaded.

12. Ensuring that street sweeping operations use enough water to avoid kicking up dust.

D. Turbidity

1. Best Management Practices (BMP) are the actual practices—including the forms, procedures, charts, software references, etc.—actually used by dredgers to minimize consequences of dredging and disposal on water quality. Common BMPs include Silt Curtains, Gunderbooms, and Operational Controls.

2. Silt curtains are intended to allow suspended sediment at a dredging site to settle out of the water column in a controlled area, minimizing the area that is affected by the increased suspended sediment usually present at a dredging site. A silt curtain is an impermeable barrier. They are constructed of a flexible reinforced thermoplastic material. The upper hem has floatation material and the lower hem has ballast material. Silt curtains are most effective when used on a project where they are not opened and closed to allow equipment access to the dredging or disposal area. Silt curtains are also limited to project locations with less than 1-2 knot currents.

3. There are three fundamental controls possible with mechanical dredges.

   - Increase cycle time. Longer cycle time reduces the velocity of the ascending loaded bucket through the water column, which reduces potential to wash sediment form the bucket. However, limiting the velocity of the descending bucket reduces the volume of sediment that is picked up and requires more total bites to remove the project material. The majority of the sediment resuspension, for a clamshell dredge, occurs when the bucket hits the bottom.

   - Eliminate multiple bites. When the clamshell bucket hits the bottom, an impact wave of suspended sediment travels along the bottom away from the dredge bucket. When the clamshell bucket takes multiple bites, the bucket loses sediment as it is reopened for subsequent bites. Sediment is also released higher in the water column, as the bucket is raised, opened, and lowered.

   - Eliminate bottom stockpiling. Bottom stockpiling of the dredged sediment in silty sediment has a similar effect as multiple bite dredging; an increased volume of sediment is released into the water column from the operation.

4. There are three fundamental controls possible with hydraulic dredges.

   - Reduce cutterhead rotation speed. Reducing cutterhead rotation speed reduces the potential for side casting the excavated sediment away from the suction entrance and resuspending sediment. This measure is typically effective only on maintenance or relatively loose, fine grain sediment.
• Reduce swing speed. Reducing the swing speed ensures that the dredge head does not move through the cut faster than it can hydraulically pump the sediment. Reducing swing speed reduces the volume of resuspended sediment. The goal is to swing the dredge head at a speed that allows as much of the disturbed sediment as possible to be removed with the hydraulic flow. Typical swing speeds are 5-30 feet/minute.

• Eliminate bank undercutting. Dredgers should remove the sediment in maximum lifts equal to 80% or less of the cutterhead diameter.

5. There are three controls possible with dredges and barges.

• Eliminate or reduce hopper overflow. Eliminating or reducing hopper overflow reduces the volume of fine material which flows from the hopper in the overflow. One caution is that this control may significantly reduce project production for hopper dredges or when hydraulic dredging into a barge.

• Lower hopper fill level. Lowering the hopper fill level in rough sea conditions can prevent material loss during transport.

• Recirculation system. Water from the hopper overflow can be recirculated to the draghead and is used to transport more material into the hopper.

6. Pneuma Pump. The Pneuma pump is used primarily for removal of fine-grained sediment. The Pneuma pump offers high solids concentration (up to 90%) in the dredge slurry, with minimal turbidity.

7. Closed or environmental bucket. Specially constructed dredging buckets designed to reduce or eliminate increased turbidity of suspended solids from entering a waterway.

8. Large capacity dredges. Larger than normal dredges designed to carry larger loads. This allows less traffic and fewer dumps, thereby providing less disturbance at a disposal site.

9. Precision Dredging. Dredging utilizing special tools and techniques to restrict the material dredged to that specifically identified. This may mean thin layers, either surficial or imbedded, or specific boundaries.

E. Disruptive Lighting

1. Light Trespass. The lighting system shall be designed to effectively light the work area without spilling over to adjoining property. When, in the opinion of the Engineer, the lighting is disturbing adjoining property, the Contractor shall modify the lighting arrangement or add hardware to shield the light trespass.

2. Every effort should be made to control artificial light escaping from a site for example the fitting of diffusers/guards, ensuring there is no light overspill into neighboring properties.
3. All lighting shall be designed, installed, and operated to avoid glare that affects traffic on the roadway or that causes annoyance or discomfort for residences. The Contractor shall locate and aim lighting fixtures to provide the required level of illumination and uniformity in the work zone without the creation of objectionable light trespass.

F. Odor

1. Proper Drainage: Standing water is a potential source of odors. The operations area will be on a surface that is sloped to facilitate drainage and prevent standing water. The grade will be maintained to prevent ponding. General spill control programs and curbing will be in place as appropriate. The material handling areas are covered by a canopy and protected from storm water if needed to control ponding of water which has been in contact with contaminated sediments.

2. Personnel training: Personnel will be trained in the proper use of equipment. Potential hazards and safety features will be stressed as well as handling procedures to minimize the potential production of odors, such as leaving stockpiled sediments uncovered unnecessarily.

3. Some of the operating procedures that can help reduce odors include:
   - “First-in, first-out” waste handling practices that keep waste on site only for short periods of time.
   - Removing all waste from loading areas by the end of each operating day so that these surfaces can be swept clean and washed down as needed.
   - “Good housekeeping” measures, including regular cleaning and disinfecting of surfaces if appropriate and equipment that come into contact with waste.
   - Water misting and/or deodorizing systems.

4. Below are the activities that can cause odor nuisances on-site along with Reasonable Available Control Measures & Methods to help reduce potential odors:
   - Movement of Transport Trucks Entering/ Exiting Site - Hauling materials in properly tarped or watertight containers to prevent odor; Limit haul trucks to 3 minutes idle time; and Applying foam suppressant such as BioSolve.
   - Equipment Operating On-Site - Turning off equipment that is not in active use; Limiting the amount of equipment used at one time while on-site; and Applying foam suppressant such as BioSolve.
   - Excavated Materials - Limiting amount of exposed areas or amount of time materials are exposed to the open atmosphere; and Applying foam suppressant such as BioSolve.
• Soil/Debris moved by equipment to Stockpile Areas - Limiting amount of exposed areas or amount of time materials is exposed to the open atmosphere; Turning off equipment that is not in active use; Limiting the amount of equipment used at one time while on-site; and Applying foam suppressant such as BioSolve.

• Stockpiles - Covering stockpiles and material after activity ceases with Poly Sheeting & securing with sandbags (or equivalent); and Applying foam suppressant such as BioSolve.

• Removed water prior to treatment or disposal - Setting up site drainage & preventing standing water.

• Work Zones (Exclusion Zone) -Performing Housekeeping; Daily cleaning up (Free of trash, garbage, & debris); Properly disposing of any odorous material; and Applying foam suppressant such as BioSolve.

3.5 CORRECTIVE MEASURES

A. Nuisance conditions which represent a potential health and safety concern and/or migration of contaminated materials (e.g., visible dust or visible contrast from turbidity) will result in an immediate stoppage of the work.

B. Following a work stoppage, appropriate corrective measures as determined by Engineer will be implemented prior to work resuming.

C. Chronic or repeated incidents of nuisance issues will result in the disallowance of a day of compensation for site services and health and safety.

D. A written corrective measures plan will be submitted for any work stoppage, or chronic or repeated incidents of nuisance issues, if requested by the Engineer.

END OF SECTION
SECTION 02 73 01 – GEOTEXTILE TUBE DEWATERING

PART 1 – GENERAL

1.1 SUMMARY

A. This section includes Contractor requirements for use of geotextile tubes for dewatering dredged material. Contractor shall furnish all labor, materials, equipment, polymer, polymer feed system, geotextile tube containment, deployment, engineering controls, and filling required to perform the work.

B. Contractor shall prepare the subgrade to remove roots and projecting stones, excavate and/or provide fill to create the slopes specified by the manufacturer, construct Dewatering Pad with containment berms, and install an impermeable membrane liner in accordance with the Contractor’s approved work plan.

C. The use of geotextile tubes for dewatering dredged material can be performed without the use of a temporary fabric structure provided that the Contractor can perform the work without fugitive emissions of dust, odor, noise, and light.

D. Contractor shall be responsible for determining and implementing a geotextile tube layout, stacking arrangement, safe maximum fill height, to complete the work within the contract duration.

1.2 PERFORMANCE REQUIREMENTS

A. Contractor shall be responsible for the selection, design, furnishing, construction, installation, commissioning, testing, operation, maintenance, and performance of the geotextile tube dewatering system.

B. Contractor shall screen debris from the dredge slurry prior to conveyance to the Polymer Dosing System, geotextile tubes, and Dewatering Pad. Debris shall be separated, characterized, and disposed of in accordance with Section 00015 OFFSITE TRANSPORTATION AND DISPOSAL.

C. Geotextile tubes shall be filled as evenly as possible, filling ports are to be spaced no more than 50 ft. apart, and multiple filling dewatering cycles are to be used until the design height has been achieved. The Contractor must evaluate the available geotechnical data and site conditions and may screen gravel and sand from the dredge slurry prior to conveyance to the geotextile tubes.

D. The use of geotextile tubes for dewatering dredged material must not impede the Contractor’s ability to perform additional dredging for reasons including but not limited to a field order issued by the Engineer and/or failed confirmation samples. Geotextile Tubes must not be filled to a height in excess of the manufacturer’s specification to accommodate additional material volume.

E. The Contractor shall consider space constraints and provide sufficient space to treat filtrate from the geotextile tubes to meet discharge requirements specified in Section 01 45 25 TESTING.
F. Dewatering Pad where geotextile tubes will be placed shall include containment berms with a minimum height of 2 ft., water elevation within the dewatering pad must provide sufficient storage volume (freeboard) to detain a 25-year 24-hour storm event (6.25" rainfall). Sumps, pumps, and water treatment capabilities must be able to accommodate design flowrate from the hydraulic dredging operation plus the additional flowrate required to fully evacuate a 25-year 24-hour storm event (6.25" rainfall) from the Dewatering Pad within three (3) days from the start of the storm event. Contractor to furnish and install drainage material such as washed crush stone, hay bales, and/or geosynthetic drainage composites on top of the impervious membrane liner of the Dewatering Pad as well as between layers of stacked geotextile tubes per manufacture specifications and the Contractors approved work plan.

G. During the performance of hydraulic dredging, the Contractor must continuously monitor and record flowrate, density of slurry from the dredge to the Dewatering Pad, polymer addition, and the use of amendments shall also be tracked. Contractor must provide all labor, equipment, and materials necessary to operating the Dewatering Pad including operation and adjustments to the Polymer Dosing System to modify chemical feed rates, as needed, and facilitate proper flocculation.

H. Other means of dewatering solids may be proposed in the Contractor’s Dredge Work Plan, but not executed until work plan approval.

I. Contractor is responsible for providing solids processing activities that dewater the solids to a state of passing EPA’s paint filter method and meet acceptance requirements of Contractor-provided and Engineer-approved disposal facility requirements. The dewatering process shall eliminate all free liquids from solids prior to loading for transportation and disposal and shall provide additional solids processing as needed (e.g., additional dewatering and mixing with amendments such as Portland cement) to meet the receiving facility’s disposal requirements. Failure to meet Engineer-approved disposal facility acceptance criteria shall result in a modification to the Contractor’s means and methods to achieve acceptable conditions at no additional cost to Department.

J. Contractor shall perform the Work without creating fugitive emissions of dust, odor, noise, and light in accordance with Section 01 76 50 NUISANCE CONTROLS, MANAGEMENT, AND CORRECTIVE MEASURES.

K. Geotechnical information for the existing soils and sediment, and results of treatability testing is provided separate from these Contract Documents. Contractor may rely upon the accuracy of the technical data contained in such reports, as to the location where and at the point in time when data was obtained, but not upon non-technical data, interpretations or opinions contained therein or for the completeness thereof for Contractor’s purposes.

L. Processed solids shall be characterized and disposed of at an Engineer-approved offsite disposal facility in accordance with approved disposal facilities requirements and Section 00015 OFFSITE TRANSPORTATION AND DISPOSAL.

M. Debris shall bypass solids processing and be stockpiled and disposed in accordance with Section 35 20 23 DREDGING.
1.3 DEFINITIONS

A. Solids
   1. Excavated material, including soil excavated in accordance with Section 00200 EXCAVATION, and dredged material including sediment (not including debris) removed in accordance with Section 35 20 23 DREDGING.

B. Solids and Water Processing Area
   1. Shall include both the Middle School processing area and the High School processing area as shown on the Drawings. All stockpiling, solids dewatering, and water treatment shall be completed in the solids and water processing area.

C. Geotextile Tube
   1. A large tube fabricated from high strength textiles in length greater than 20 feet used for the containment and dewatering of high moisture content fine grained material.

D. Polymers
   1. Polyacrylamide polymers can be non-ionic, anionic, or cationic. Polymers are used to promote the separation of fine grained material and water (sediment dewatering).

E. Polymer Dosing System
   1. The combination of measurement devises, storage tanks, and metering pumps that are used to quantify and record dredge production and add dry or emulsified polymer to dredge slurry to enhance/optimize sediment dewatering and water treatment. The Polymer Dosing System must continuously measure and record dredge slurry flowrate (ultrasonic) and slurry density (nuclear), automatically proportion polymer dosing to dry mass of solids, and monitor pressures of dredge line and dosing pumps.

1.4 SUBMITTALS

A. Contractor shall prepare a Geotextile Tube Dewatering and Solids Processing Plan including a written description of the major elements of work including but not limited to sequence of construction, Dewatering Pad construction details, operation, water management, and supporting calculations; Polymer Dosing System design, amending procedures, process flow, quality controls, operation, and data management; Geotextile Tube fill progression, stacking arrangement, stacking height, amending dewatered dredge material, load out of dredge material, and safety controls to minimize the emission of fugitive dust, odor, noise, and light in accordance with Section 01 76 50 NUISANCE CONTROLS, MANAGEMENT, AND CORRECTIVE MEASURES. The Geotextile Tube Dewatering and Solids Processing Plan shall include:
   1. A written description of the major work elements and safety measures taken to use geotextile tubes to dewater dredged material on this project.
   2. Design drawings and supporting calculations of the Contractors proposed Dewatering Pad, Polymer Dosing System, and Wastewater Treatment. Drawings must include, planimetric and details of the Dewatering Pad clearly identify, grades (elevations), materials of construction (impermeable membrane, aggregates, geotextiles, etc.), dimensions, arrangement of geotextile tubes, provisions for office space, truck routes, decontamination pads, and engineering controls to minimize
fugitive emissions. Cross sectional design drawings of the Dewatering Pad with elevation view of stacked geotextile tubes with maximum fill height of individual geotextile tubes and stacked geotextile tubes clearly identified. The plan is to include a process flow diagram along with a detailed piping and instrumentation diagram (P&ID) depicting all essential electrical and mechanical components, including but not limited to electrical power, sensors, pumps, communication wiring, pipe dimensions, pipe material, pipe layout valves, tanks, screens, filters, etc. Calculations must clearly demonstrate that the Dewatering Pad has sufficient capacity to detain the 25-yr, 24-hr storm event in addition to the volume occupied by the dewatered dredge material and that the Contractor’s proposed dewatering system has sufficient capacity to perform the work within the Contract duration.

3. Details regarding the types, sizes, and quantities of equipment Contractor proposes to use for solids processing and preparation for disposal. Include detailed specifications on amending agents, dose rates, proposed equipment, and emission controls. Include processing capacities, performance ratings, and guarantees.

4. A flow chart depicting the processing steps and illustrating the various process streams, including all inputs and outputs and an overall material balance.

5. Equipment arrangement, scaled diagrams and elevations as applicable, which illustrate component location, connections, and utilities.

6. Power system location and capacity. Mechanical and electrical design drawings stamped by a Professional Engineer, licensed in New York.

7. Product data, mixing methodology, dosage rate, weight receipts and safety data sheets for all proposed dewatering polymer and amendments, including approaches to track, verify, or adjust dosage as needed.

8. Include a Winterization Plan to cover Contractor operations when temperatures will be below freezing (0° Celsius). The solids processing system and all supporting areas shall be winterized to protect from freezing to allow for continuous operation. Winterization shall include protecting the solids processing pipelines, pumps, valves, tanks, generators, geotextile tubes, and all other necessary equipment from freezing and ice accumulation with enclosures, insulation, conductive heating, or other approved equivalent.

9. Provide qualifications for a NYSDOH Certified Grade A Treatment Plant Operator with a minimum of 5 years of experience operating the chosen process for sediment remediation or similar projects.

10. Work plan shall clearly identify engineering controls to minimize nuisances. This should include proposed products and application for odor suppression (e.g. foam), dust suppression (e.g. mister), visual barriers, light trespass and noise/vibration mitigation.

B. The Contractor shall submit an Operation and Maintenance Plan for the system and submit the following operation and maintenance information to verify continuing efficient operation and limit break-downs and other work stoppages:

1. List of parameters that will be monitored and location of monitoring points, proposed monitoring devices, and frequency of measurement to ensure safe and efficient dredge operation and Geotextile tube filling.

2. Daily operation and maintenance records and reports.

3. Monthly operation and maintenance records and reports.

4. Spare parts lists for major pieces of equipment.

5. Preventative maintenance schedule for major pieces of equipment.
6. Repair of tubes?

C. Winterization Plan for protection from freezing to allow for continuous operation. Contractor to provide a detailed description of the means, methods, and measures that will be taken to maintain dredging and dewatering operation when temperatures will be below freezing (0° Celsius) for extended durations.

1.5 QUALITY ASSURANCE

A. Contractor shall provide real-time monitoring of geotextile tube filtrate and modify filling sequence and or perform “jar tests” in the field to assess the need for changes in polymer type of polymer dose to maintain compliance with discharge requirements.

B. The Contractor shall provide the Engineer with a weekly mass balance summary report showing mass of water, dry mass of solids dredged, mass of polymer used, and dry mass of solidification and amending agent (Portland Cement) added to dredged material contained in geotextile tubes: the Contractor will only be reimbursed for a maximum allowable amendment mass that is 10% of dry mass of dredged material contained in geotextile. The Contractor may use a higher percentage of amendment at their own expense.

C. Contractor shall maintain a geotechnical lab at or near the Site, equipment and personnel for performing bulk density (ASTM D7263) and moisture content analysis (ASTM D2216) of dredged material contained in geotextile tubes on a daily basis as required to assess performance of geotextile tube dewatering system and as directed by the Engineer.

D. Contractor shall complete paint filter tests on all dewatered soils and sediment prior to offsite transportation and disposal. Paint filter tests shall be performed at 3 sample locations per 100 cubic yards. The sample locations shall be jointly selected with the Engineer. The frequency of sampling may be revised by the Engineer.

PART 2 – PRODUCTS

2.1 GENERAL MATERIALS

A. Contractor shall be responsible for the selection of all types, sizes, and quantities of equipment and vessels to perform the Work. Equipment shall meet the minimum specified requirements and meet the production requirements of the Work.

B. Materials and equipment chosen for this work shall be adequate in capacity for required usage, shall not create unsafe conditions, and shall meet requirements of applicable codes and standards and approval of the Engineer.

C. Materials shall be new and unused unless otherwise approved by the Engineer. Approval for such items may be withheld due to excess wear, inappropriate size, or other factors which may compromise efficient use of the item.

D. Transfer equipment shall be of a design to resist clogging, prevent equipment damage in the event of clogging, and allow orderly and prompt removal of obstructions.
2.2 GEOTEXTILE TUBE DEWATERING PAD

A. The Geotextile Tube Dewatering Pad shall be constructed to isolate stored and processed contaminated material from the environment. Contractor shall construct the pad in accordance with the Contractor’s approved work plan.

B. The Geotextile Tube Dewatering Pad shall include containment berms with a minimum height of 2 ft., water elevation within the dewatering pad must provide sufficient storage volume (freeboard) to detain a 25-year 24-hour storm event (6.25" rainfall). Sumps, pumps, and water treatment capabilities must be able to accommodate design flowrate from the hydraulic dredging operation plus the additional flowrate required to fully evacuate a 25-year 24-hour storm event (6.25" rainfall) from the Dewatering Pad within three (3) days from the start of the storm event.

C. The Decontamination, Dewatering, and Wastewater Treatment Pad as shown in the Drawings shall include:
   a. A high-density polyethylene liner in accordance with Section 02 56 13 WASTE CONTAINMENT GEOMEMBRANE.
   b. Nonwoven geotextile (US Fabrics 205NW or equivalent) and NYSDOT No. 2 stone (Table 703-4) aggregate materials to provide a well-drained pad as shown on the Drawings.
   c. The liner system shall be sloped at 0% across the width of the geotextile tube and no more than 0.5% in the direction of the tube length, using a sand base to protect the liner, and a sump to allow collection of leachate and stormwater.

2.3 STABILIZATION AMENDMENTS

A. Stabilization and solidification amendments (such as Portland cement Type 1 or approved equal)

2.4 GEOTEXTILE TUBE

A. Geotextile tubes shall be constructed with a Tencate Geotube® GT500 fabric, or approved equivalent. The geotextile tube shall be fabricated from a high tenacity permeable fabric to allow water passage through the filter tube. The Geotube material shall be inert to biological degradation and resistant to naturally encountered chemicals, alkalis, acids, and meet the properties provided in the tables below.

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PART 3 – EXECUTION

3.1 GENERAL

A. These execution specifications shall apply to all solids processing methods specified herein.

B. The Contractor shall provide all supervision, labor, tools, materials, utilities, equipment, services, and appurtenances necessary for, or incidental to, solids processing and related Work shown on the Drawings and described herein.

C. Contractor shall make all arrangements and pay all service, connection, and other fees associated with obtaining utilities for the work.

D. Contractor shall protect light poles in the high school parking lot treatment area at their expense.

E. Contractor shall conduct dewatering and/or stabilization as required to meet disposal requirements. Contractor shall coordinate with the approved disposal facility regarding requirements for disposal, i.e. paint filter test and/or any other requirements. Amendments may be added up to the maximum percentage listed, and thoroughly mixed with dredged material within the geotextile tubes as needed to meet landfill requirements. Higher rates may be approved by Engineer upon written request by Contractor. The Department shall bear no costs associated with the additional processing or management of solids to meet landfill geotechnical requirements, including application of amendment above the maximum allowed rate, unless approved by Engineer.
F. Contractor shall at all times maintain sufficient personnel, materials, and equipment to maintain effective operation of the solids processing systems.

G. Contractor shall perform all preventative maintenance, repairs, and replacement of system components as required.

H. At all times, the Contractor shall maintain the process systems and working area in a clean and orderly condition, free of debris, unused materials, and hazards of any kind.

I. Safety guards and placards shall not at any time be removed from equipment unless equipment is locked and tagged out of operation.

J. Contractor shall furnish all labor, materials, equipment, polymer, polymer dosing system, and incidentals, specified, and required in connection with deployment, testing, and filling of the geotextile tube, in accordance with the lines, grades, design, and dimensions shown on the Contractors Geotextile Tube Dewatering and Solids Processing Plan.

K. Contractor shall furnish the geotextile tube by positioning it on a prepared surface that is level across the width of the geotextile tube with a maximum slope of 0.5% in the overall length direction of the geotextile tube. The geotextile tube shall be filled with material to a height not to exceed the manufacturer’s specifications.

L. Contractor shall provide sediment processing products and dosage rates, including approaches to track, verify, or adjust polymer feed rate and other amendments for optimal dosage.

M. Contractor shall provide all sediment processing products such as Portland cement and dosage rates up to the maximum allowed, including approaches to track, verify, or adjust dosage as needed.

N. Contractor shall allow additional dewatering and amendment cure time on the pad, minimum overnight, following the application and mixing of amendments for off-site disposal.

O. Contractor shall provide supplemental reagent addition dosing and mixing methods, if required at no additional cost to Department.

P. Contractor shall provide a site plan, geotextile tube container layout, mass balance system showing density, percent solids, and flow measurements, filling method, and methods for collecting all filtered water shall be described in the Contractor’s Solids Processing Plan.

Q. Contractor shall provide means and methods for reducing nuisance odor, light trespass, dust, chemical emissions, and noise/vibration.

R. Fugitive dust, odors, chemical emissions, and noise shall be controlled according to Section 00003 HEALTH AND SAFETY and Section 00010 TEMPORARY FACILITIES AND CONTROLS.
   1. Contractor shall locate equipment to minimize noise and odor impacts due to prevailing wind direction.
   2. Odor suppression foam shall be used to minimize odor from dewatering operations.
3. Contractor is responsible for planning, implementing, and maintaining effective control measures as may be required. Control measures shall include installation of a tensioned fabric structure over the processing area if this method is selected by the Contractor. If Contractor fails to control their methods of operation or the noise levels of his equipment, then Contractor shall, at their expense, construct other noise minimizing structures and/or take other measures to prevent noise disturbances. This may include re-locating equipment.

4. Contractor shall be advised that killed fish commonly sink; and therefore, may become debris during dredging. Dredged/mangled fish flesh should be specifically pulled off screens and immediately placed in airtight receptacles with odor absorbent material (e.g. kitty litter) so that it doesn’t mix with granular materials and cause odor.

3.2 SYSTEM TESTING AND START-UP

A. Prior to start of full-scale processing, Contractor shall demonstrate for the Engineer’s approval the operation of all system components.

B. Contractor shall correct any problems as directed by the Engineer.

C. Processing shall not commence until all components are approved.

3.3 SYSTEM OPERATION AND MAINTENANCE

A. At all times, Contractor shall comply with the approved Operations and Maintenance Plan for the Work.

B. Contractor is responsible for the containment and cleanup of all spills and contamination resulting from their operations.

C. Contractor shall maintain a qualified NYSDOH Certified Grade A Treatment Plant Operator, approved by the Engineer, at the Site in charge of all aspects of system performance and compliance. Operators shall have at least 5 years of experience in the operation and maintenance for the chosen dewatering method, chemical precipitation system including coagulation, flocculation and clarification units, and hazardous waste site remediation or similar work.

D. Conduct daily observation of solids processing system and monitoring system. Make required repairs and perform scheduled maintenance.

E. Contractor shall submit Daily Logs each morning, which cover the prior 24-hours’ work and Monthly Logs on the first Monday of each month for the preceding month’s work. Daily and Monthly Logs shall note any significant performance or compliance problems during the preceding period, the measures undertaken to correct those problems, and a running summary or such prior problems until their resolution.

F. Operate solid processing system continuously until work within dewatered areas is complete in accordance with Contract Documents.
G. The Contractor shall maintain management, operation, and maintenance records; and prepare management, operation, and maintenance reports. All final records and copies of reports shall be turned over to the Engineer within 5 days after contract completion.

3.4 CONTRACTOR ADJUSTMENTS

A. Operational adjustments:
   1. Daily operational adjustments shall be noted on the Daily Log sheets.
   2. Operational adjustments shall be reported to the Engineer as required by the Engineer.

B. Process adjustments:
   1. Significant adjustments include removal or addition of unit process components or significant elements governing unit process performance, and any adjustment that reduces the sustained operation of equipment below the rate proposed in the initial Solids Processing Plan.
   2. If the Contractor decides that an adjustment is required to improve performance or reduce costs of processing, the Contractor may present a proposal describing the changes requested for review by the Engineer. This proposal shall be accompanied by data, calculations, and manufacturer guarantees as needed to support the application.
   3. The Engineer may request additional information prior to approval.
   4. Adjustments shall not be made without the prior approval of the Engineer.

3.5 WINTERIZATION

A. If Contractor selects to work when temperatures will be below freezing (0° Celsius) for extended durations, the solids processing system and all supporting areas shall be winterized to protect from freezing to allow for continuous operation. Submit a Winterization Plan for Engineer approval prior to winterization. Winterization shall include protecting the solids processing pipelines, pumps, valves, tanks, generators, geotextile tubes, and all other necessary equipment from freezing and ice accumulation with enclosures, insulation, conductive heating, or other approved equivalent.

3.6 ENGINEERING CONTROLS

A. Odor Suppression: Contractor to have approved odor suppression product and dispensing equipment onsite and operational prior to commencement of dredging. The contractor shall have sufficient quantity of odor suppression product onsite to provide coverage of the Dewatering Pad for a minimum of three weeks of operations.

B. Dust Suppression: Contractor to have approved dust suppression system onsite and operational prior to commencement of work activities that may create dust emissions such as Dewatering Pad construction.

C. Noise Mitigation: Contractor shall comply with both the Town of Islip and School District noise requirements. Contractor shall utilize low noise equipment and construction methods during the course of the work, if needed to comply with noise requirements. Contractor shall be prepared to mobilize and erect sound barriers to resolve complaints from the school or residences.
D. Visual Barrier: The Contract requires an 8 ft. tall chain-link with privacy screen between the limits of work and the school district property. The Contractor shall be cognizant of their proximity to school and residential properties. The construction activities may become a distraction to classroom activities, the Contractor shall propose a safe method to obscure the view of work activities perceived by the school/students.

3.7 EQUIPMENT REMOVAL AND SITE RESTORATION

A. Remove solids processing system after operations are discontinued and Work within the processing area is completed. Do not remove solids processing systems until Engineer has approved.

B. At the conclusion of work, Contractor shall decontaminate and remove all equipment, restore the site to original conditions, and conduct confirmatory sampling as required by the Drawings and Section 01 45 25 TESTING.

C. All disturbed areas shall be restored according to the Drawings and Section 01 74 24 SITE RESTORATION.

D. Confirmation sampling shall be collected beneath unpaved processing areas prior to and after remedial work in accordance with Section 01 45 25 TESTING.

E. Repair damage caused by solids processing or resulting from failure of systems to protect property. Repair school parking lot in accordance with Section 32 12 16 ASPHALT PAVING.

END OF SECTION
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ATTACHMENT C
ADDENDUM No. 3 DZUS FASTENERS COMPANY, INC SITE
CONTRACT No. D011107

Revised Bid Form
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Grand Total Bid $ (Price in figures)

Contractor Authorized Representative

Contractor Name

Date
ATTACHMENT D
ADDENDUM No. 3 DZUS FASTENERS COMPANY, INC SITE
CONTRACT No. D011107

Revised SECTION XII, Measurement for Payment
PART 1 – GENERAL

1.1 DESCRIPTION

A. This section covers the methods and procedures that the Department will use to measure the Contractor’s work and provide payment. This general outline of the measurement and payment features will not, in any way, limit the responsibility of the Contractor for making a thorough investigation of the Contract Documents to determine the scope of the work included in each bid task.

B. Payment will be made to the Contractor in accordance with the specified methods of measurement and the unit or lump sum prices stipulated in the accepted bid. Payment will constitute complete compensation for all work required by the Contract Documents including all costs of accepting the general risks, liabilities and obligations, expressed, or implied. Payment under all tasks will include, but necessarily be limited to, compensation for furnishing all supervision, labor, equipment, overhead, profit, material, services, applicable taxes, and for performing all other related work required. No other payment will be made.

C. No payment will be made for work performed by the Contractor to replace defective work, work which is not required by the Contract Documents, work outside the limits of the Contract, and additional work necessary due to actions of the Contractor, unless ordered by the Engineer in writing.

D. For unit price items, the Contractor shall be paid for the actual amount of work accepted and for the actual amount of materials in place during the period of construction. After the work is completed and before final payment is made, the Engineer or Contractor as specified in the pay items will make final measurements to determine the quantities of the various items of work accepted as the basis for final payment. The Contractor shall accept compensation, as herein provided, in full payment for furnishing all materials, labor, tools, equipment, and incidentals necessary to the completed work and for performing all work contemplated and embraced by the Contract.

E. For lump sum items, the Contractor will be paid on the basis of actual work accepted until the work item is completed. Upon completion of the item, 100% of the lump sum price may be paid, subject to the Terms of the Agreement. The pay items listed below describe the measurement of and payment for the work to be done under the respective items listed in the Bid as outlined in the approved schedule of values.

F. All units of measurement shall be standard United States convention, as applied to the specific items of work by tradition and as interpreted by the Engineer. Each unit or lump sum price stated in the Bid shall constitute full compensation, as herein specified, for each item of the work completed.
1.2 ENGINEER'S ESTIMATE OF QUANTITIES

A. The Estimated quantities for unit price items, as listed in the bid schedule, are only approximate and are included solely for the purposes of the comparison of bids. The Engineer does not expressly, or by implication, agree that the nature of the materials encountered or required shall correspond therewith and reserves the right to increase or decrease any such quantity or to eliminate any quantity as the Engineer may deem necessary.

1.3 INCIDENTAL ITEMS

A. Except for the items designated hereunder for Measurement and Payment, the costs of items necessary to complete the work as specified are considered incidental to the items specified for Measurement and Payment. The costs of incidental items shall be included in the prices of items specified for Measurement and Payment.

1.4 QUANTITIES

A. The Estimated quantities indicated in the Bid Schedule are the quantities for the evaluation of bids. The actual quantities of items to be paid for on a unit price basis may vary from the quantities indicated in the Bid Schedule.

1.5 RELATED PROVISIONS SPECIFIED ELSEWHERE

A. Payment to Contractor – refer to General Conditions and Contract Agreement Section 6.


1.6 SUBMITTALS

A. Bid Breakdowns/Schedule of Values – submit in accordance with Section III, Article 12, Section VIII, Articles 1.4, 1.6, and 13, and SPEC 00025.

PART 2 – MEASUREMENT

A. Under this Contract, the Contractor shall provide all labor, equipment, and materials, and shall complete all work as shown and described in the Contract Documents and as directed by the Engineer, in accordance with the expressed intent of the contract to secure a complete construction of a functionally complete project. The bid items described in Part 3 – Bid Items shall together include all work set forth in the Contract Documents or required to properly complete the work. Any necessary work that is not described shall be considered included in the item to which it properly belongs. Where used in the Contract Documents, the word “including” (“includes”, “include”) shall mean “including (includes, include) but not restricted to”. Each item includes:

1. All labor, material, equipment, plant services, bonds and insurance, tests, adjustments, warranties, overhead, and other expenses required to perform the work.

2. All accessories, manuals, and services pertinent to the proper installation of materials and equipment.
3. All accessories, manuals, and services pertinent to the proper start-up, operation, and maintenance of materials and equipment.

B. **Lump Sum Items** – measurement of all Lump Sum Items will be on a total job basis.

1. The quantities of work performed under Lump Sum Items will not be measured except for the purpose of determining reasonable interim payments. Interim payments will be made in accordance with the estimated value of work performed and found acceptable as determined by the Engineer or as specified in this section.

2. Where indicated for a Lump Sum Item, the Contractor shall provide a schedule of values per Subpart 1.06 of this section. The schedule of values shall include a breakdown of major cost items included within the lump sum in sufficient detail to document specific costs of all items included in the Lump Sum Item. The schedule of values shall be provided to the Engineer prior to initiation of work.

3. Measurement for Progress Payments of all Lump Sum Items will be on a percent complete basis as established in Section VI, Article 9.

C. **Unit Price Items** – where items are specified to be measured on a unit basis, measurement will be of each particular unit as specified:

1. **Volume Basis** – Where items are specified to be measured on a volume basis, the volume will be determined on an in-place basis (prior to excavation/dredging for excavation/dredging or after placement and compaction for imported fill) between the existing and final ground surfaces or grade lines shown on the drawings. If no tolerance is specified, the tolerance shall be interpreted to be 0.00 foot.

2. **Area Basis** – Where items are specified to be measured on an area basis, the area will be measured as the actual surface area within the specified limits based on a plan view. If a specified width of an item is indicated, the area will be determined by the actual length along the centerline multiplied by the specified width. No adjustments will be made for the required overlap of materials nor waste or scrap materials.

3. **Length Basis** – Where items are specified to be measured on a length basis, the length will be measured as the actual length along the centerline within specified limits based on a plan view. No adjustments will be made for the required overlap of materials nor waste or scrap materials.

4. **Weight Basis** – Where items are specified to be measured on a weight basis, the weight will be measured based on certified weigh scale tickets obtained from a weigh scale certified by the County Office of Weights and Measures and approved by the Engineer. The weights shall be taken in the presence of a Department representative. When the weight is per ton, trucks shall be weighed entering the site and exiting the site, using either an onsite or offsite scale. The measured tonnage will be difference between to entering and exiting measured truck weight.
5. **Time Basis** – Where items are specified to be measured on a time basis, the time will be measured by onsite time, of work conducted in accordance with Contract Documents, documented in daily reports and verified by the Engineer.

D. Measurement and payment will be made only for work that has been acceptably performed within the limits shown on the Construction Drawings and in conformance with the Contract Specifications, as specified, or ordered by the Engineer.

**PART 3 – BID ITEMS**

A. **BID ITEM LS-1 – MOBILIZATION/DEMOBILIZATION & SITE PREPARATION**

1. Bid Item I shall be bid lump sum price for site mobilization, demobilization, and site preparation as specified and directed herein. The **CONTRACTOR** shall submit a separate bid breakdown (see Section III, Article 12 and SPEC 000025) for this Bid Item that shows the individual cost of providing items in the scope of work for this Bid Item as described below plus mobilization, demobilization, and miscellaneous items not specified elsewhere:

   a. Mobilization and Demobilization of personnel, equipment and project facilities.
   b. Establish all temporary utilities and services including electric, phone, internet, sanitary facilities, and potable water.
   c. Contractor to provide three field offices, separate offices for the Engineer and Contractor at one of the processing areas and a shared field office at the.
   d. Plan and execution of the project in accordance with DER-10 Section 1.14 Sustainability and Green Remediation.
   e. Furnish and install staging areas.
   f. Project Plans, including but not limited to, Work Plan, Transportation and Disposal Plan, Dredging Plan, Excavation Plan, Health and Safety Plan (HASP), Quality Assurance Project Plan, Sampling Analysis Plan, Community Air Monitoring Plan (CAMP), Water Management Plan, etc.
   g. Obtain all required work and environmental permits not obtained by the Department.
   h. Schedules, submittals, shop drawings, and record drawings.
   i. Bonds and insurance.
   j. Clearing and grubbing of vegetation within the project work area.
   k. Perform initial survey; work progress survey included under Bid Item (UC-1).
   l. Site Control, Layout and As-Built Surveys.
   m. Furnish and install temporary fencing and barricades.
   n. Provide and post project signs.
   o. Provide and install meteorological station.
   p. Furnish and install erosion and sediment controls including, but not limited to, stabilized construction access, silt fence, hay bales, etc.
   q. Furnish and install turbidity controls as necessary along Willetts Creek and within Lake Capri.
   r. Performing an existing conditions assessment of buildings and infrastructure adjacent to the work area.
s. Furnish and install hydraulic controls to necessary to manage flow in Willets Creek and Lake Capri.
t. Furnish labor, equipment, and materials to provide Dewatering Pad, Water Treatment Pad, and Decontamination facilities.
u. Provide onsite truck scale at both sediment processing areas.
v. At each sediment processing area, lease, provide, and construct a temporary fabric structure to house water treatment and sediment processing operations.
w. Design, installation and startup of treatment system(s) necessary for water management associated with dredging.
x. Contractor to furnish all materials and equipment required to construct necessary access roads.
y. Deconstruction and removal of all installed temporary facilities including but not limited to stockpile areas, Dewatering Pad, Water Treatment Pad, Decontamination facilities, and temporary access roads; this item includes compensation for characterization, transportation, and disposal of all materials that become waste during the performance of work.
z. Other work not specifically included in other items including compliance with applicable regulatory requirements; preconstruction and construction period planning; scheduling, submittals, reporting, administration and documentation; quality control; environmental protection and spill control.

2. The Contractor shall submit a separate bid breakdown (Paragraph 1.6 of this section) that shows the individual cost of mobilization, demobilization, and miscellaneous items not elsewhere specified but necessary for a complete and proper remediation (provide detail).

3. Measurement for payment for Bid Item LS-1 MOBILIZATION/DEMOBILIZATION & SITE PREPARATION shall be paid the lump sum price for the above items completed, installed, and properly functioning as documented and approved by the Engineer. The Contractor may invoice for up to 60% of this item and pollution liability insurance upon commencement of dredging activities and 40% upon demobilization. Payment shall be Lump Sum Bid for each individual item described above, including mobilization, demobilization, and miscellaneous as submitted in the Contractor’s bid breakdown.

B. BID ITEM LS-2 – SITE RESTORATION –WILLETTS CREEK STATIONS 0+00 TO 21+00

1. Bid Item LS-2 SITE RESTORATION –WILLETTS CREEK STATIONS 0+00 TO 21+00 shall be bid lump sum price for restoration of all areas disturbed during the performance of remediation activities per the Contract Documents.

2. Provide all labor, materials, equipment, subcontractors, and incidentals necessary to completely and properly restore the stream, wetlands, shoreline, middle school, and residential properties. Site restoration includes the milling and resurfacing of a portion of the Stop and Shop Plaza parking lot, repair and/or replacement of the access corridors, staging, stockpiling, and processing areas,
lawns, plantings, fences, curbs, paved areas, sheds, pools, and decks that were disturbed on commercial, school, and residential properties during remediation. All work is to be performed in accordance with Construction Drawings and Specification **SECTION 01 74 24 SITE RESTORATION**.

3. The Engineer estimates that 6,000 CY of clean sand backfill will be required to restore Willetts Creek, Middle School, and residential properties from Station 0+00 to 21+00. Contractor responsible for documenting fill volumes which are to be determined by comparing the post-dredge/excavation and final restored bathymetric and topographic surfaces as measured, calculated, and certified by a New York State licensed surveyor and approved by the Engineer.

4. The Engineer estimates that 25,000 SF of milling, asphalt paving, and striping will be required to restore the travel path through the Stop and Shop plaza. New asphalt will be placed over this area as described in **Section 32 12 16 Asphalt Paving** and as approved by Engineer.

5. Contractor to remove and dispose of culverted footbridge at Burling Lane (STA 15+00); furnish and install replacement box culvert, handrails, fencing, and gates as shown on the contract drawings. Contractor shall replace sidewalk to connect new footbridge to existing sidewalks. Contractor shall perform geotechnical evaluation to determine bearing capacity, design foundation for new footbridge, and obtain any permits necessary to perform this work including but not limited to demolition and construction permits.

6. Contractor shall furnish all labor, equipment, and material necessary to install approximately 250 linear feet of 6 feet tall chain link fence (**Section 00020 FENCES**) at the northern end of the Middle School athletic field as a barrier between the Middle School property and the shopping plaza.

7. As part of site restoration Contractor shall furnish all labor, equipment, and material required to modify existing storm sewer culverts so the discharge point 2 feet beyond new stream bank. This work requires the installation of new flared-end sections and rip rap outlet protection sized in accordance with Figure 3.18 of the New York State Standards and Specifications for Erosion and Sediment Control.

8. Contractor responsible for furnishing labor, equipment, materials, including but not limited to, seed, plants, trees, topsoil, mulch, and fertilizer that is required to restore the site in accordance with Contract Drawings and Specification (**SECTIONS 01 74 24 – Site Restoration** and **32 93 00 – Wetland Planting**) 

9. The Contractor shall submit a separate bid breakdown (Paragraph 1.6 of this section) that shows the individual costs required to complete this Bid Item.

10. Measurement for Payment for bid item LS-2 SITE RESTORATION – WILLETTS CREEK STATIONS 0+00 TO 21+00 shall be the bid lump sum price for site restoration as documented and approved by the Engineer. Costs associated with surveying are to be fully compensated under bid item UC-1.
C. **BID ITEM LS-3 – SITE RESTORATION – WILLETTS CREEK STATIONS 21+00 TO 42+50 AND LAKE CAPRI**

1. Bid Item LS-3 shall be bid lump sum price for SITE RESTORATION - WILLETTS CREEK STATIONS 21+00 TO 42+50 AND LAKE CAPRI per the Contract Documents.

2. Provide all labor, materials, equipment, subcontractors, and incidentals necessary to completely and properly restore the lake, stream, wetlands, shoreline, high school, and residential properties including the repair and/or replacement of the access corridors, staging, stockpiling, and processing areas, lawns, plantings, fences, curbs, paved areas, sheds, pools, decks, docks, bulkheads that were disturbed on commercial, school, and residential properties during remediation of Willetts Creek, Lake Capri, and residential properties. Restoration work also includes milling and resurfacing the high school parking lot, Barberry Rd., and Ivy Ct. All work is to be performed in accordance with Construction Drawings and Specification **SECTION 01 74 24 SITE RESTORATION**.

3. The Engineer estimates that 3,000 CY of clean backfill will be required to restore Willetts Creek, School, and residential properties from Station 21+00 to 42+50.

4. The Engineer estimates that 5,000 CY of clean backfill will be required to be placed in Lake Capri along Montauk Highway and in areas where clean confirmation samples were not achieved.

5. The Engineer estimates that milling and resurfacing will be required for 85,000 SF of High School parking lot, 39,000 SF of Barberry Rd., and 7,500 SF of Ivy Ct. New asphalt will be placed over these locations as described in **Section 32 12 16 Asphalt Paving** and as approved by Engineer.

6. Contractor responsible for documenting fill volumes which are to be determined by comparing the post-dredge/excavation and final restored bathymetric and topographic surfaces as measured, calculated, and certified by a New York State licensed surveyor and approved by the Engineer.

7. As part of site restoration Contractor shall furnish all labor, equipment, and material required to modify existing storm sewer culverts so the discharge point 2 feet beyond new stream bank. This work requires the installation of new flared-end sections and rip rap outlet protection sized in accordance with Figure 3.18 of the New York State Standards and Specifications for Erosion and Sediment Control.

8. Contractor responsible for furnishing labor, equipment, materials, including but not limited to, seed, plants, trees, topsoil, mulch, and fertilizer that is required to restore the site in accordance with Contract Drawings and Specification (SECTIONS 01 74 24 – Site Restoration and 32 93 00 – Wetland Planting)

9. The Contractor shall submit a separate bid breakdown (Paragraph 1.6 of this section) that shows the individual costs required to complete this Bid Item.
10. Measurement for Payment for bid item LS-3 SITE RESTORATION - WILLETTS CREEK STATIONS 21+00 TO 42+50 AND LAKE CAPRI shall be the bid lump sum price for restoration of Willetts Creek, Lake Capri, School and residential properties as documented by a New York State licensed surveyor and approved by the Engineer. Costs associated with surveying are to be fully compensated under bid item UC-1.

D. BID ITEM UC-1 – SITE SERVICES

1. Bid Item UC-1 shall be bid unit cost price per calendar day for SITE SERVICES as specified and directed herein.

2. Provide all labor, materials, equipment and incidentals necessary for each calendar day of site services in accordance with the Technical Specifications and as described below:

   a. Site Security (24 hours per day, 7 days per week).
   b. Controlling onsite access including vehicle and pedestrian traffic.
   c. Traffic management and control (off-site)
   d. Fencing.
   e. Maintain Field Offices and Support Areas.
   f. Erosion and Surface Water Controls.
   g. Disposal of Contractor-Generated Solid Waste.
   h. Meteorological Station.
   i. Site access roadway maintenance.
   j. Maintaining soil/sediment stockpile containment areas and contractor equipment and materials staging areas.
   k. Maintaining all constructed temporary facilities and controls.
   l. Daily cleaning of the project site and disposing of Contractor generated solid waste.
   m. Coordinating with the Town of Islip, School District, and residential property owners/tenants.
   n. Maintain compliance with permits.
   o. Attending project meetings, including weekly meetings with school administration.
   p. Providing full time site superintendence.
   q. Providing quality control management.
   r. Maintaining vehicle decontamination pads including collection and analysis of decontamination verification samples.
   s. Maintenance of temporary utilities and services.
   t. Sanitary facilities and maintenance.
   u. Perform an existing conditions assessment along with monitoring and protection of structures and utilities adjacent to the work area as required during remediation.
   v. Perform noise control and monitoring as required during the execution of the work.
   w. Real-time turbidity monitoring during dredging activities.
   x. Surveying of work progress required for initial field verification, establishing and maintaining horizontal and vertical control, providing construction layout, providing quality control field measurements, and supporting the calculation of measurement for payment.
y. Furnish labor and equipment necessary to operate and maintain hydraulic controls to manage flow in Willetts Creek and Lake Capri.
z. Continued operation of water treatment facilities.

aa. Some restoration activities may be completed the following spring, during the winter period the Contractor shall conduct and document weekly inspections to ensure that erosion and sediment control practices are in good condition and the site is stable.

bb. Maintain Temporary Fabric Structures.

3. The Contractor shall submit a separate bid breakdown (Paragraph 1.6 of this section) showing the individual cost per day for providing items in the scope of work for this Bid Item.

4. Measurement for payment for Bid Item UC-1 - SITE SERVICES shall be by calendar day beginning upon commencement of dredging activities and shall end at substantial completion or at the end of the Contract Time specified in Section VI Article 6.1, whichever is sooner. Payment shall be unit price bid for each individual item described above as submitted in the Contractor’s bid breakdown. For each calendar day where a sub-item identified in the bid item breakdown is deficient or unsatisfactory as determined by the Engineer that sub-items value will be reduced by one hundred (100) percent.

E. BID ITEM UC-2 – HEALTH AND SAFETY

1. Bid Item UC-2 shall be bid unit cost price per calendar day for HEALTH AND SAFETY per the Contract Documents.

2. Provide all labor, materials, equipment and incidentals necessary for each day for health and safety for execution of the work in accordance with a federal, state, and local safety codes. Section X, the Technical Specifications, and as directed below:
   a. Health and Safety Officer
   b. Decontamination stations (1 per sediment processing area)
   c. Health and Safety equipment
   d. Emergency response
   e. Decontamination trailer and personal hygiene facility
   f. Air monitoring as required by the CAMP. Collection samples up and downwind of the site, testing for the required parameters, and reporting laboratory results
   g. Dust control
   h. Sampling, analyses, handling and disposal of personal protective equipment and decontamination. Wastes not specifically included in other bid items.

3. The Contractor shall submit a bid breakdown showing the capital and daily Operation and Maintenance costs for items included in this Bid Item (Items not included in Bid Item UC-1, Site Services).

4. Measurement for payment for Bid Item UC-2 - HEALTH AND SAFETY shall be paid the bid unit price for each day the HASP has been adhered to in the opinion of the Engineer. Work included in this item shall be by calendar day
beginning after the satisfactory establishment of an exclusion zone and shall be considered completed when there is no longer an exclusion zone in the project area or at the end of the Contract Time specified in Section VI, Article 6.1, whichever is sooner. All daily maintenance costs for health and safety are part of this Bid Item including everything required in the HASP. A reduction in the payment for this item will occur for each day the Contractor fails to adhere (in the opinion of the Engineer) to the HASP. There will be one hundred (100) percent reduction in this Bid Item for days where no remediation work occurs in the exclusion zone. No payment will be made for Saturdays, Sundays, and holidays specified in Section XIII.

5. Exclusion zone(s) will be established upon the initiation of intrusive activities involving contaminated areas. Exclusion zone(s) will be removed at the completion of intrusive activities involving contamination.

F. **BID ITEM UC-3 – WILLETTS CREEK REMOVAL AND REMOVALS FROM RESIDENTIAL BACKYARDS ALONG THE CREEK AND SURROUNDING LAKE CAPRI**

1. Bid Item UC-3 shall be bid unit cost price per in-situ cubic yard (CY) for removal of Willetts Creek sediment, soil, and debris, and soil and debris from residential backyards along the creek and surrounding Lake Capri per the Contract Documents. The estimated quantity for UC-3 includes soil and debris in residential backyards along the creek and surrounding Lake Capri, and sediment, soil and debris from Willetts Creek and debris from Lake Capri. The Contractor will be compensated for achieving the removal elevations and depths associated with Willetts Creek and in residential backyards along the creek and surrounding Lake Capri under Bid Item UC-3. This item includes additional removal resulting from failed confirmations samples collected from the sediment hot spot area and residential backyards.

2. Provide all labor, materials, equipment and incidentals necessary to completely remove contaminated material from Willetts Creek and contaminated soil and debris from residential backyards along the creek and surrounding Lake Capri to the target dredge elevations and excavation depths presented on the Construction Drawings and to transport removed materials to the processing area.

3. The Contractor **shall** be reimbursed at the UC-3 unit cost price per in-situ cubic yard (CY) as measured and certified by a New York State licensed surveyor and approved by the Engineer.

4. The Contractor **shall not** be reimbursed for removal of materials resulting from unapproved dredging or excavation. Materials from unapproved removal outside the vertical and lateral limits presented on the Construction Drawings shall be properly handled, characterized, and disposed offsite at the Contractor's expense.

5. The Contractor shall submit a separate bid breakdown (Paragraph 1. 6 of this section) that shows the individual costs required to complete this Bid Item.

6. Measurement for Payment for bid item UC-3 shall be paid the bid unit price for EACH in-situ cubic yard of contaminated Willetts Creek sediment, soil and
debris that has been completed to within +0.00 to -0.1 foot of the dredge elevations provided in the Construction Drawings. Volume will be determined by comparing the pre-removal and post-removal topographic surfaces as measured, calculated, and certified by a New York State licensed surveyor and approved by the Engineer. Costs associated with surveying are to be fully compensated under bid item UC-1.

G. **BID ITEM UC-4 – PROCESSING WILLETTS CREEK SOIL AND SEDIMENT AND SOIL FROM RESIDENTIAL BACKYARDS ALONG THE CREEK AND SURROUNDING LAKE CAPRI**

1. Bid Item UC-4 shall be bid unit cost price per in-situ cubic yard (CY) of contaminated soil and sediment removed from Willetts Creek and soil removed from residential backyards along the creek and surrounding Lake Capri that is handled, processed, dewatered, amended, and stabilized to conform to all Federal, State, and Local transportation and disposal requirements and the Contract Documents.

2. Provide all labor, materials, equipment and incidentals necessary to prepare removed Willetts Creek sediment and soil and soil from residential backyards along the creek and surrounding Lake Capri for transportation and disposal in accordance with Specification **SECTION 02 73 00 SOLIDS PROCESSING**.

3. The Contractor **shall not** be reimbursed for processing of materials resulting from unapproved dredging or excavation. Materials from unapproved removal outside the vertical and lateral limits presented on the Construction Drawings shall be properly handled, processed, characterized, and disposed offsite at the Contractor’s expense.

4. The Contractor **shall not** be reimbursed for additional volume resulting from application of amendments.

5. The Contractor shall submit a separate bid breakdown (Paragraph 1.6 of this section) that shows the individual costs required to complete this Bid Item.

6. Measurement for Payment for bid item UC-4 shall be paid the bid unit price for EACH in-situ cubic yard (CY) of contaminated soil and sediment removed from Willetts Creek and soil removed from residential backyards along the creek and surrounding Lake Capri that is processed using methods proposed by the Contractor and approved by the Engineer. Volume will be determined by comparing the pre-removal and post-removal topographic surfaces as measured, calculated, and certified by a New York State licensed surveyor and approved by the Engineer. Costs associated with surveying are to be fully compensated under bid item UC-1; costs associated with removal are to be fully compensated under bid item UC-3.

H. **BID ITEM UC-5 – DREDGING LAKE CAPRI SEDIMENT AND DEBRIS**
1. Bid Item UC-5 shall be bid unit cost price per in-situ cubic yard (CY) for DREDGING LAKE CAPRI SEDIMENT AND DEBRIS per the Contract Documents.

2. Provide all labor, materials, equipment and incidentals necessary to completely dredge contaminated sediment and debris in Lake Capri by hydraulic or mechanical methods to the target dredge elevations presented on the Construction Drawings or as required due to failed confirmation sampling and in accordance with Specification SECTION 35 20 23 DREDGING.

3. The Contractor shall not be reimbursed for dredging of materials resulting from unapproved dredging and for additional dredging required to achieve the design dredged surface elevation. Materials from unapproved dredging outside the vertical and lateral limits presented on the Construction Drawings shall be properly handled, characterized, and disposed offsite at the Contractor’s expense.

4. The Contractor shall submit a separate bid breakdown (Paragraph 1.6 of this Section) that shows the individual costs required to complete this Bid Item.

5. Measurement for Payment for bid item UC-5 shall be paid the bid unit price for EACH in-situ cubic yard of Lake Capri sediment and debris dredged to within +0.0 feet to -0.50 feet of the dredge elevations provided in the Construction Drawings or as required due to failed confirmation sampling. Volume will be determined by comparing the pre-dredge and post-dredge bathymetric and topographic surfaces as measured, calculated, and certified by a New York State licensed surveyor and approved by the Engineer.

I. BID ITEM UC-6 – PROCESSING LAKE CAPRI SEDIMENT

1. Bid Item UC-6 shall be bid unit cost price per in-situ cubic yard (CY) of contaminated sediment dredged from Lake Capri that is handled, processed, dewatered, amended, and stabilized to conform to all Federal, State, and Local transportation and disposal requirements and the Contract Documents.

2. Provide all labor, materials, equipment and incidentals necessary to prepare dredged Lake Capri sediment for transportation and disposal in accordance with Specification SECTION 02 73 00 SOLIDS PROCESSING.

3. The Contractor shall not be reimbursed for processing of materials resulting from unapproved dredging. Materials from unapproved dredging outside the vertical and lateral limits presented on the Construction Drawings shall be properly handled, characterized, and disposed offsite at the Contractor’s expense.

4. The Contractor shall not be reimbursed for additional volume resulting from application of amendments.

5. The Contractor shall submit a separate bid breakdown (Paragraph 1.6 of this section) that shows the individual costs required to complete this Bid Item.

6. Measurement for Payment for bid item UC-6 shall be paid the bid unit price for EACH cubic yard (CY) of sediment dredged from Lake Capri that is processed using methods proposed by the Contractor and approved by the Engineer.
Volume will be determined by comparing the pre-dredge and post-dredge bathymetric and topographic as measured, calculated, and certified by a New York State licensed surveyor and approved by the Engineer. Costs associated with surveying are to be fully compensated under bid item UC-1; costs associated with dredging are to be fully compensated under bid item UC-5.

J. BID ITEM UC-7 – TRANSPORTATION AND DISPOSAL OF NON-HAZARDOUS DEBRIS

1. Bid Item UC-7 shall be bid unit cost price per TON of debris properly removed and processed from within excavation limits shown on Contract Drawing per the Contract Documents. Materials for this bid item include trash and rubbish within Willetts Creek, cleared trees and shrubs (note that larger trees from Willetts Creek Stations 2+80 to 42+50 – i.e. greater than 3 inches at breast height, will be removed prior to this Project), whole sections or pieces of stormwater culverts, pavement, miscellaneous construction and demolition debris, and other debris waste items.

2. Provide all labor, materials, equipment and incidentals necessary to separate, process, characterize, load, transport, and dispose of non-hazardous debris in a permitted facility in accordance with all applicable laws, rules and regulations for proper execution of the Contract and in accordance with SECTION 00015 OFFSITE TRANSPORTATION AND DISPOSAL.

3. Measurement for payment for Bid Item UC-7 shall be paid the bid unit price for each ton of non-hazardous debris that is properly separated, processed, sampled, transported and disposed as measured by certified weight tickets, documented by fully executed manifests returned from the disposal facility, and approved by the Engineer.

K. BID ITEM UC-8 – TRANSPORTATION & DISPOSAL OF NON-HAZARDOUS MATERIAL

1. Bid Item UC-8 shall be bid unit cost price per TON of soil and sediment properly characterized, loaded, transported, and disposed offsite as non-hazardous waste per the Contract Documents.

2. Provide all labor, materials, equipment and incidentals necessary to characterize, load, transport, and dispose of non-hazardous materials in a permitted facility in accordance with all applicable laws, rules and regulations for proper execution of the Contract and in accordance with SECTION 00015 OFFSITE TRANSPORTATION AND DISPOSAL. The bid price shall include the sampling, characterization, transportation and disposal of contaminated material generated during the excavation activities and classified as non-hazardous waste.

3. The Contractor shall not be reimbursed for the supply or disposal of sediment/soil amendment products beyond 10% of the wet weight of sediment as calculated by the Engineer unless approved in writing by the Engineer.

4. Measurement for payment for Bid Item UC-8 shall be paid the bid unit price for each ton of non-hazardous soil and sediment that is properly sampled, transported
and disposed as measured by certified weight tickets, documented by fully executed manifests returned from the disposal facility, and approved by the Engineer.

L. **BID ITEM UC-9 – TRANSPORTATION & DISPOSAL OF HAZARDOUS MATERIAL**

1. Bid Item UC-9 shall be bid unit cost price per TON of soil and sediment properly characterized, loaded, transported, and disposed offsite as hazardous waste per the Contract Documents.

2. Provide all labor, materials, equipment and incidentals necessary to properly transport and dispose of materials determined to be hazardous waste in a permitted facility in accordance with all applicable laws, rules and regulations for proper execution of the Contract and in accordance with Specification **SECTION 00015 OFFSITE TRANSPORTATION AND DISPOSAL**. The bid price shall include the sampling, characterization, transportation and disposal of contaminated material generated during the excavation activities and classified as hazardous waste.

3. The Contractor **shall not** be reimbursed for the supply or disposal of additive sediment/soil amendment products beyond 10% of the wet weight of sediment as calculated by the Engineer unless approved in writing by the Engineer.

4. Measurement for payment of Bid Item UC-6 shall be paid the bid unit price for each ton of hazardous material that is properly sampled, transported and disposed as measured by certified weight tickets, documented by fully executed manifests returned from the disposal facility, and approved by the Engineer.

M. **BID ITEM UC-10 – POST REMEDIATION CONFIRMATION SAMPLING AND ANALYSIS**

1. Bid Item UC-10 shall be bid unit cost price per Each (EA) CONFIRMATION SAMPLE collected and analyzed as directed by the Engineer per the Contract Documents.

2. Provide all labor, materials, equipment and incidentals necessary to completely and properly collect, analyze and validate soil confirmation samples as directed by the Engineer for proper execution of the Contract and in accordance with Specification **SECTION 01 45 25 TESTING**.

3. Costs in this pay item include sample collection, labeling, preservatives, shipping and analysis. Costs in this payment also include quality assurance/quality control samples such as field blanks, matrix spikes, matrix spike duplicates, and data reduction, validation and reporting.

4. Contractor shall submit a Data Usability Study Report for all confirmation sample data.
5. Measurement for Payment for bid item(s) UC-10 shall be paid the bid unit price for EACH (EA) CONFIRMATION SAMPLE collected, surveyed (paid under Site Services UC-1), analyzed as documented and approved by the Engineer.

END OF SECTION