TECHNICAL SPECIFICATIONS
FOR
REMEDIAL ACTION

TROY (LIBERTY STREET) NON-OWNED FORMER MANUFACTURED GAS PLANT SITE

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TECHNICAL SPECIFICATIONS
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SUMMARY OF WORK

PART 1 GENERAL

1.1. SCOPE OF WORK

A. The Contractor shall perform all activities and furnish all labor, materials, equipment, Subcontractor services, and incidentals to implement the Remedial Action (RA) in accordance with the Contract between National Grid and the Contractor. The Troy Liberty Street Non-Owned Former Manufactured Gas Plant (MGP) Site RA consists of the excavation, removal, and off-Site disposal of MGP-related material and adjacent fill material that may be encountered. This includes, but is not limited to, installation of an excavation support system, the excavation and disposal of MGP-impacted material, and the restoration of the Site.

B. National Grid has retained GEI Consultants, Inc. (GEI) to serve as the engineer of record for the Project and to provide construction management services during the performance of the Work. The GEI Construction Manager (CM) will serve as the single point of contact for the Contractor who is awarded the Work and will disseminate Contractor submittals for review to the appropriate parties and interface with other GEI technical staff, as needed.

C. All tasks, requirements, deliverables, etc. contained in the Contract Documents are the sole responsibility of the Contractor unless specifically assigned to Others. Project Work to be performed by the Contractor includes, but is not limited to, the following:

1. Prepare and implement a Contractor Health and Safety Plan.
2. Prepare and implement a Site Operations Plan.
3. Install, operate, and maintain temporary facilities and controls, including:
    a. Stormwater and erosion controls.
    b. Worker health and safety measures.
    c. Equipment and personnel decontamination facilities.
    d. Field office trailers
    e. Sanitary facilities.
    f. Dust, odor, and vapor control.
    g. Excavated material (soil and debris) management/loading areas.
    h. Water collection/management.
4. Establish additional survey control points as necessary.

5. Obtaining all necessary construction-related permits as required for completion of the Work.
6. Abide by the provisions of all permits and provide coordination and adequate notice as may be required of any construction activity which will require an inspection.
7. Perform the remediation.
    a. Perform utility location tasks as defined in 01 18 00 - Utility Protection.
    b. Identify, temporarily relocate, or protect existing utilities and Site features to remain after the Project is complete.
    c. Site preparation.
    d. Installing a temporary site security fence.
    e. Providing traffic controls (as necessary).
    f. Removing existing site structures within the excavation area.
    g. Excavate and remove MGP-related impacted material (non-hazardous and hazardous), tar wells, the overlying soil, and/or concrete and asphalt.
    h. Transport hazardous material to a National Grid approved off-Site disposal facility as a direct load operation, when practicable.
    i. Transport non-hazardous soil and debris to National Grid approved off-Site disposal facilities.
    j. Reinstall all site features and appurtenances that are damaged or relocated during the performance of the Work.
    k. Restore the Site as per the Contract Documents.
8. Clean up and restore right of ways and storage areas to preconstruction conditions, including grading and surface restoration, as directed by the Construction Manager (CM). Demobilize and promptly remove all contractor supplies, equipment, and tools from the Site. Restore, repair, or replace utilities, and other features removed, damaged, destroyed, or disrupted during construction.
9. Provide and perform any other equipment, Work, or submittals required to facilitate items 1 through 9 above and the Work shown on the Contract Drawings.

1.2. PROJECT CONDITIONS

A. The Site is owned by the City of Troy. Access agreements will be provided to the selected Contractor for reference and applicable stipulations upon award.

B. For available information concerning site conditions refer to the Contract Documents, the Remedial Investigation (RI) Report (GEI-2012), and the Pre-design Investigation (PDI) Report (GEI-2013).

C. Information regarding Site conditions is intended to assist the Contractor in preparing his Bid. National Grid and the Engineer guarantee neither the accuracy of this information nor that this information is necessarily indicative of all conditions that may be encountered, therefore the Contractor agrees that it shall neither have nor assert against National Grid or Engineer any claim for damages by reasons of inaccuracy, inadequacy, incompleteness, or other deficiency of the information provided. The Contractor shall satisfy/verify for himself all existing conditions, including understanding the site data presented in the RI and PDI, affecting his Work by personal investigation. Failure by the Contractor to understand and verify all existing site conditions shall not result in additional charges to National Grid. Also, neither the information provided the Engineer, National Grid, or their agents or employees, shall act to relieve Contractor of any responsibility hereunder from fulfilling all of the terms and requirements of the Contract Documents.

1.3. CONTRACTORS USE OF SITE

A. The Contractor's use of the Site shall be in accordance with the terms of the access agreement, and any additional areas negotiated for access by the Contractor.

B. The Contractor shall limit its activities to the Project limits shown in the Contract Drawings. Only stage equipment and materials in designated areas as approved by the CM.

1.4. CONTRACT DOCUMENTS

A. The Contract Documents include all Specifications, Contract Drawings, figures, and conditions included or referenced in the Request for Proposal package and any subsequent approved Change Orders.

B. It is not the intent of the Contract Documents to show every pipe, wire, conduit, utility connection, detail, and appurtenance necessary to complete the Work for this Project. However, such connections and details that may be necessary to complete the Work in accordance with Contract Documents, code requirements, and to the Engineer's satisfaction will be included in the Work.

C. The organization and division of Work contained within the Contract does not make the Engineer or National Grid an arbitrator to establish contract limits between the Contractor and any Subcontractor.

D. Perform Work in accordance with the concepts and intent of the Alternatives Analysis/Remedial Action Work Plan (AA/RAWP). A copy of the AA/RAWP is included as an appendix to the bid documents.

1.5. CONTRACTOR REQUIREMENTS

A. Perform the scope of Work contained in the Contract Documents.

B. The Work will be performed on a known contaminated Site. Comply with the requirements of the Contractor Health and Safety Plan. Take precautions as necessary to protect the public and work force personnel from potential hazards.

C. A list of National Grid-approved disposal facilities has been provided with the Contract Documents. The Contractor is responsible for providing any additional analytical testing required for acceptance of the material at the Contractor selected, National Grid-approved, disposal facilities.

D. Comply with the requirements of the Community Air Monitoring Plan (CAMP), taking precautions as necessary to protect the public and work force personnel from potential hazards. A copy of the CAMP is included as Appendix D of the AA/RAWP which is included as an appendix to the bid documents.

E. The Contractor is responsible for furnishing, installing, maintaining and removal of all soil erosion and stormwater control measures during the performance of the Work. Inspect and maintain temporary facilities and controls until the Work is complete. Installation, maintenance, and removal is to be in compliance with the Contract Documents. Maintain a representative on-Site that has successfully completed the New York State SWPP training program.

F. For any Work performed in close proximity to residential or commercial properties, utilities, or any other third party property, take appropriate precautions to protect the property, utility lines, trees, walls, and other structures and/or related appurtenances from damage.

G. Repair any damage caused directly or indirectly outside the Project limits, as directed by the CM, at no additional cost to the National Grid.

H. Comply with all applicable OSHA safety regulations during the performance of the Work.

1.6. CONTRACT DRAWINGS AND SPECIFICATIONS

A. Maintain at the Site, 2 copies of all Contract Drawings, Specifications, addenda, approved shop drawings, Change Orders, schedules, and instructions, in good order. Mark one set to record all changes made during construction, and keep one set clean of all markings. Make both sets readily available for review by National Grid and/or the Engineer.

B. The Contract Drawings include notes. Refer to the Contract Drawings in conjunction with the Specifications.

1.7. WORK BY OTHERS

A. Perimeter air monitoring will be performed by the Engineer. Work zone air monitoring is the responsibility of the Contractor.

B. Some permitting Work will be performed by Others, refer to Specification Section 01 41 00 – Regulatory Requirements – Permits.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 11 00

SECTION 01 14 00
WORK RESTRICTIONS

PART 1 GENERAL

1.1. SUMMARY

A. This section contains general restrictions to be followed during the performance of the Work. Other sections of the specification may contain additional requirements/restrictions for performance of their specific subject matter.

1.2. CONTRACT PERIOD

A. National Grid will coordinate with contractor to establish a mutually acceptable contract end date. Liquidated damages will be enforced for every day the Work is not at Substantial Completion past this mutually agreed upon contract end date.

B. Substantial Completion is defined as all remedial excavation work completed and backfilled with only asphalt repair/milling and replacement Work to be performed.

1.3. WORK HOURS

A. National Grid anticipates that Work activities can be conducted between the hours of 7:00 AM to 5:00 PM, on non-Holiday, Mondays through Fridays except in cases of emergency or unless advanced approval from the CM, National Grid and the City of Troy (if necessary) is granted. Additionally, Work may not be performed on the day after Thanksgiving.

1.4. COMMUNICATION WITH THIRD PARTIES

A. Representatives of regulatory agencies from the New York State Department of Environmental Conservation (NYSDEC), City of Troy, and other local civic organizations may be on-Site to observe and inspect the Work.

B. Direct communications with regulatory agency personnel to the CM or their designee.

C. Do not communicate with the media/press, Project stakeholders, elected officials, public, etc. regarding the Work. Refer all external questions and comments to the CM.

1.5. LAY DOWN AND STORAGE AREA

A. On-Site lay-down and storage area is available for use at the Site.

B. Off-Site staging and parking area is not anticipated to be needed, however Contractors may directly negotiate for additional off-Site space at no additional cost to the Owner, as needed.

1.6. VEHICLE ACCESS AND PARKING

A. The Contractor will access the Site from Hill Street.

B. Parking is available on-Site.

1.7. SANITARY FACILITIES

A. Provide sanitary facilities for use by the Contractor personnel, Subcontractors, CM and visiting agency representatives during the performance of the Work.

1.8. NOISE CONTROL

A. Comply with the City of Troy codes regarding acceptable noise levels at all times.

1. Applicable sections of the Troy City code are excerpted below:

Section 201-3 The creation of any unreasonably loud, disturbing and unnecessary noise is prohibited. Said noise shall be prohibited when it is of such character, intensity and duration or of a type or volume that a reasonable person would not tolerate under the circumstances and that is detrimental to the life, health or welfare of any individual or would cause or create a risk of public inconvenience, annoyance or alarm.

Section 201-4-A Horns, signaling devices. The sounding of any horn or other signal device on any automobile, motorcycle, bus or other vehicle while stationary, except as a danger signal when an approaching vehicle is apparently out of control, or if in motion, only as a danger signal after or as brakes are being applied and deceleration of the vehicle is intended; the creation by means of any such signal device of any unreasonably loud or harsh sound or the sounding of any such device for an unnecessary period of time.

Section 201-4-E Construction, demolition, excavation. The erection, including excavating, demolition, alteration or repair of any building other than between 6:00 a.m. and 9:00 p.m., except in case of an urgent necessity in the interest of public safety and then only with a permit from the Commissioner of Public Works, which permit may be renewed for a period of three days or less while the emergency continues.

Section 201-4-M Noise from tools, machinery and heavy equipment in the construction, repair or alteration of property. The use of domestic or industrial tools, machinery and equipment of any kind in construction, repair or alteration of property and resulting in loud grinding, hammering, sawing and similar noise shall be prohibited if said noise is unnecessary or unreasonable under the circumstances.

2. Excerpts of the City of Troy code provided within this Specification do not excuse the Contractor from complying with all other applicable portions of the code not contained herein.

B. Equip vehicles and motorized equipment with appropriate noise control devices to maintain noise levels that conform to current OSHA standards and State and local regulations. Take immediate steps to correct any deficiencies noticed, or as directed by the CM.

C. Properly maintain all mufflers and noise control devices, and replace when necessary. Operate all construction equipment in the manner that it was intended. Excessive amount of noise and vibration due to improper use of equipment is prohibited.

D. All equipment that is required to operate beyond standard work hours will, to the maximum extent possible be, electrically driven.

1.9. EQUIPMENT LEFT ON-SITE

A. Secure all equipment left on-Site outside of standard work hours.

B. Ensure that all equipment, where feasible, is de-energized when left on-Site and not in use to prevent electrical/fire/explosive hazards. The Contractor is responsible for the security, operation, and maintenance of any systems that require such services outside standard work hours. If systems are operational outside the standard work hours, provide oversight at all times when equipment is in operation, or provide an electronic monitoring system with a remote communication feature to alert the appropriate personnel of a system failure. Repair system failures in a timely manner such that the Project schedule is not affected.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

3.1. ENVIRONMENTAL PROTECTION

A. For the purposes of this specification, environmental protection is defined as the retention of the environment in its natural state to the greatest extent possible during construction, and to enhance its natural appearance at the conclusion of the Work. Comply with all applicable or relevant and appropriate, Federal, State, local laws, permit conditions, and the RAWP to provide for the abatement and control of any potential environmental impacts arising from the performance of the Work.

B. The CM will notify the Contractor of any instances of non-compliance with Federal, State, local laws, permit conditions, or the RAWP and identify corrective actions to be taken. State or local agencies may also provide notification of non-compliance with state or local requirements. After receipt of the notice, the Contractor shall immediately take corrective action and inform the CM of the proposed corrective action, and take such actions once they are approved by the

CM. Failure or refusal to promptly comply may result in the CM issuing an order suspending or halting all or parts of the Work until satisfactory corrective action has been taken. Claims for extensions of time or for excess costs or damages due to the stop Work order described above, will be denied.

C. Do not pollute any stream, river, waterway, roadway, or soil with fuel, oil, grease, lubricant, hydraulic fluid, bitumen, calcium chloride, acid, base, or other harmful materials. Comply with the appropriate Federal, State, and local regulations and guidelines for the handling and disposal of all materials.

D. Properly dispose of any debris resulting from the performance of the Work. Disposing of any debris, soil, water, effluent, by product, waste, trash, chemical, fuel, oil, grease, lubricant, bitumen, calcium chloride, acid, base, or other harmful material etc., in or adjacent to the Project area is not acceptable. Remove any unauthorized dumped materials and restore the area as directed by the CM. If necessary, areas contaminated as a result of unauthorized activity, failure of environmental controls, or dumping by the Contractor will be remediated at no additional cost to the Owner.

E. Dispose of all contaminated materials (debris, soil, water, effluent, by-product, waste, trash, chemical, fuel, oil, grease, lubricant, bitumen, calcium chloride, acid, base, used erosion controls, or other harmful material, etc.) resulting from the Work in accordance with all applicable, or relevant and appropriate, Federal and State laws prior to completion of the Work.

END OF SECTION 01 14 00

SECTION 01 18 00
UTILITY PROTECTION

PART 1 GENERAL

1.1. SUMMARY

A. This specification contains the requirements for the location and protection of utilities affected by the performance of the Work.

1.2. UTILITY COORDINATION

A. The Contractor is solely responsible for any and all required notifications to utility companies prior to commencing the Work, and for response to any emergencies that may arise during the Work. Certain active and inactive utilities may currently be present at the Site. The exact location and type of utility is to be determined by the Contractor without reliance on information provided by National Grid and the Engineer.

1.3. PROTECTION OF EXISTING UTILITIES

A. Comply with the requirements of all applicable utility protection laws or regulations.

B. Contact and cooperate with utility companies to locate all utilities (including pipelines, cables, power poles, guy wires, and other structures) on the Site prior to beginning the Work.

C. Protect all utilities from damage during construction, unless otherwise indicated to be removed or abandoned. If damaged, repair the utilities as required by the utility's owner at the Contractor's expense.

D. If a utility is encountered that is not shown on the Contract Drawings, or otherwise not made known to the Contractor prior to beginning the Work, promptly take the necessary steps to assure that the utility is not damaged, and notify the CM in writing of the presence of the utility. The CM will review the conditions and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence of the utility.

E. Immediately notify the CM of any incident involving a utility.

1.4. SUBMITTALS

A. Submit a utility survey as detailed in Specification Section 01 31 00 – Administrative Requirements.

B. Submit a utility incident report to National Grid and CM within 4 hours of any incident causing direct or indirect damage to a utility. At a minimum, document the following items in a utility incident report:

1. Description of the incident.
2. Damage assessment.
3. Corrective actions taken.
4. Initial estimate on the need for permanent repairs.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 18 00

SECTION 01 20 00
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1. SUMMARY

A. The items listed in Project Price Schedule constitute all of the pay items for completion of the Work.

1.2. SUBMITTALS

A. Submit a Project Price Schedule and Bid Form signed and sealed with a company seal by a company officer.

B. Submit monthly invoices in accordance with terms of the Contract Agreement.

1.3. QUANTITY ESTIMATES

A. Verify estimated quantities for unit prices in the field.

B. National Grid and the Engineer reserve the right to reject the Contractor's measurement of Work-in-place that involves the use of established unit prices and have Work measured, at National Grid's expense, by a second independent surveyor that is acceptable to National Grid and the Contractor.

C. For all unit price Work, the contract price will include an amount equal to the sum of the unit price for each pay item times the estimated quantity of each item as indicated in the Bid Form. The estimated quantities shown on the Project Price Schedule are not guaranteed and are solely for the purpose of comparison of bids and determining an initial contract price. Quantities and measurements supplied or placed in the Work in accordance with the Specifications and Contract Drawings, and verified by the CM, will determine payment.

D. The CM will verify the quantities and classifications of unit price Work invoiced by the Contractor. The CM will review their preliminary determination with the Contractor before rendering a written decision on an application for payment.

E. If the actual Work requires more or fewer units than the estimated units indicated on the Project Price Schedule, provide the required units at the contracted unit price. Under no circumstances may the Contractor exceed estimated quantities without prior written approval from the CM.

F. The CM reserves the right to increase or decrease any pay item quantity, or to eliminate any pay item, as a result of the actual conditions encountered during the performance of the Work.

1.4. MEASUREMENT OF QUANTITIES

A. Measurement by Weight:

1. Weigh Scales: Certified in accordance with applicable laws and regulations for the state in which the scales are located. Certification must be within a period of not more than one year prior to the date of use.
2. The term "ton" will mean the short ton consisting of 2,000 pounds.
3. For shipments to off-Site disposal facilities, trucks will be weighed at the receiving facility for the purpose of measuring the quantity of Work for payment.

B. Measurement by Volume:

1. Volumes measured as in-place volumes will be determined by survey. Retain the services of an independent surveyor, licensed in the State of New York, whose determination of in-place volumes will be authoritative and final for the purpose of measurement for payment. To compute in-place volumes, use the surface comparison function in the surveying software program, or other methods acceptable to the CM.

C. Measurement by Area:

1. Measured by square dimension using length and width, or radius, and verified by the CM.

D. Linear Measurement:

1. Measured by linear dimension, at the item centerline or mean chord, and verified by the CM.

E. Measurement by Time:

1. Measure by the actual time, rounded to the nearest time unit, and verified by the CM.

1.5. ASSESSMENT OF NON-CONFORMING WORK

A. Replace Work, or portions of the Work, that do not conform to the requirements of the Specifications and Contract Drawings, as assessed by the CM.

B. If, in the opinion of the CM, it is not practical to remove and replace the non-conforming Work, the CM will direct one of the following remedies:

1. The non-conforming Work may remain, but the unit price will be adjusted to a new price at the discretion of the CM.
2. Partially repair non-conforming Work to the instructions of the CM, and the unit price will be adjusted to a new price at the discretion of the CM.

C. The individual Specification sections, specific to the Work in question, may modify these options or may identify a specific formula or percentage price reduction.

D. The authority of the CM to assess non-conforming Work, and identify payment adjustment, is final.

1.6. ELIMINATED ITEMS

A. If any items contained in the Contract Drawings or Specifications are found unnecessary for the proper completion of the Work, the CM may, upon written order to the Contractor, eliminate such items from the Work, and such action will in no way invalidate the Agreement.

B. The Contractor will be paid for all Work performed and all documented costs incurred, including the mobilization of materials, prior to the elimination of such items.

1.7. MEASUREMENT AND PAYMENT OF BID ITEMS

A. The Project Price Schedule lists the pay items for the Work.

B. At the direction of the National Grid and/or the CM, the Contractor may be asked to perform change order Work on a time and materials basis. The unit rate schedule included in the Contractor's proposal will be the basis for measurement and payment of equipment and labor for time and materials Work. Include overhead and profit on the Contractor unit rate schedule for all time and materials Work.

C. The following paragraphs specify measurement and payment of the pay items listed on the Project Price Schedule:

Item 1 Mobilization

1. Work required to complete Mobilization includes, but is not limited to:

   a. Mobilizing personnel, equipment, and materials to the Site, if such movement is not included in any other bid item.

   b. Obtaining all the necessary construction/traffic permits and insurance necessary to complete the Project.

   c. Cleaning/decontaminating all construction-related equipment brought to the Site.

2. The price for this item will be the lump sum cost provided as part of the Contractors Bid.

3. Payment for Mobilization will be made on a percent complete basis of the lump sum price for the Bid item "Mobilization" listed on the Project Price Schedule. Payment of the lump sum price for "Mobilization" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Mobilization Work.

Item 2 Demobilization

1. Work required to complete Demobilization includes, but is not limited to:
   a. Removing temporary facilities and controls. Dispose of non-reusable temporary facilities and controls related materials at a National Grid-approved Subtitle D landfill facility as non-hazardous waste as part of Item 14.
   b. Removing temporary security fencing.
   c. Removing all project-related signage (e.g., project sign, site security signs, traffic control/warning signs, etc.).
   d. Restoring any remaining disturbed areas to pre-construction condition (or as directed by National Grid and/or the CM).
   e. Removing any remaining temporary erosion and sediment control measures (i.e., silt fences, staked straw bales) once instructed to do so by the CM.
   f. Cleaning/decontaminating all construction-related equipment at the Site (as necessary and/or as directed by the CM).
   g. Demobilizing all temporary site facilities (e.g., office equipment, portable toilets, hand wash stations, etc.).
   h. Demobilizing all remaining personnel, equipment, and materials.
2. The price for this item will be the lump sum cost provided as part of the Contractors Bid.
3. Payment for Demobilization will be made on a percent complete basis of the lump sum price for the Bid item "Demobilization" listed on the Project Price Schedule. Payment of the lump sum price for "Demobilization" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Demobilization Work.

Item 3 Project Support

1. Work required to complete Project Support includes, but is not limited to:
   a. Developing schedules, submittals, shop drawings, specifications, calculations, data, certifications, etc., related to the materials, products, and procedures necessary to carry out the Work. Revising/re-submitting such items as required until accepted by National Grid and the CM.
   b. Preparing and providing required field records and as-built documentation. Revising/re-submitting such items as required until accepted by National Grid and the CM.

c. Attending a pre-construction meeting, weekly on-Site construction progress meetings, and a project close-out meeting/walk through.

d. Providing temporary facilities and services for the duration of the project, including, but not limited to, field office trailers, office equipment, utilities (i.e., electrical, heating/cooling, telephone, and internet), potable water service, refrigerators/microwaves, portable toilets and hand wash stations, and regular sanitary disposal service.

e. Providing continuous Site security for the duration of the project. For bidding purposes, assume that an on-Site security guard will be required during all non-working hours.

f. Providing snow removal as detailed within the specifications.

2. The price for this item will be the lump sum cost provided as part of the Contractors Bid.

3. Payment for Project Support will be made on a percent complete basis of the lump sum price for the Bid item "Project Support" listed on the Project Price Schedule. Payment of the lump sum price for "Project Support" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Project Support Work.

Item 4 Survey Control and Documentation

1. Work required to complete Survey includes, but is not limited to:

a. Providing and using a Professional Land Surveyor licensed in the State of New York for all survey activities necessary for the proper construction and documentation of the Work.

b. Monitoring all survey points installed as part of the instrumentation program put in place for the excavation support system and reporting those values in a format that is acceptable to the CM.

c. Performing any other surveying work needed to control and document the Work.

2. The price for this item will be the lump sum cost provided as part of the Contractors Bid.

3. Payment for Survey will be made on a percent complete basis of the Project for the lump sum price for the Bid item "Survey" listed on the Project Price Schedule. Payment of the lump sum price for "Survey" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Survey Work, as specified in Specification Section 02 21 00 – Surveys.

Item 5 Site Preparation

1. Work required to complete Site Preparation includes, but is not limited to:
   a. Conduct demolition Work as specified in Specification Section 02 41 00 – Demolition.
   b. Performing any clearing or grubbing of the Site required to complete the Work, including the clearing of areas where air monitoring equipment is to be setup.
   c. Removal and/or relocation of existing pavement and light poles, as specified in the Contract Drawings.
   d. Removal, loading, and off-Site disposal of any existing debris on the Project Site.
   e. Repairing and/or replacing, where needed, the existing security fence to create a secure Site perimeter.
   f. Reinforcing and/or patching the existing security fence to create a secure Site perimeter.
   g. Protecting the mural, concrete, and brick walls.
   h. Removing, stockpiling, and replacing the ornamental fence identified in the Contract Drawings.
   i. Performing test pits via "soft dig" methodologies to uncover the gas main adjacent to the southern tar well excavation area, at the direction of National Grid Gas. For bidding purposes, assume two test pits will be opened for this purpose. Soil disposal, backfill, and repaving to be paid for under the applicable unit price Items.
2. The price for this item will be the lump sum cost provided as part of the Contractors Bid.
3. Payment for Site Preparation will be made on a percent complete basis of the lump sum price for the Bid item "Site Preparation" listed on the Project Price Schedule. Payment of the lump sum price for "Site Preparation" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Site Preparation Work, as specified in Specification Section 01 50 00 – Temporary Facilities and Controls, and 31 10 00 – Site Preparation.

Item 6 Temporary Facilities and Controls

1. Work required to complete Temporary Facilities and Controls includes, but is not limited to:

a. Provide an odor/vapor suppressant foam generator and labor. Foam expendables will be paid under Items 11 and 12.

b. Construction of the excavation stockpile pad(s).

c. Implement the health and safety requirements specified in the Contractor Health and Safety Plan detailed in Specification Section 01 31 00 – Administrative Requirements.

d. Install and maintain temporary facilities and controls as specified in Specifications Section 01 50 00 - Temporary Facilities and Controls, unless specifically identified as being provided by Others.

e. Maintain and repair all temporary facilities and controls, including those provided by Others, when Work is taking place at the Site.

f. All other recurring activities not included in another pay item, or specifically identified as being the responsibility of Others, required to complete the Work.

2. The price for this item will be the lump sum cost provided as part of the Contractors Bid.

3. Payment for Temporary Facilities and Controls will be made on a percent complete basis of the Project for the lump sum price for the Bid item "Temporary Facilities and Controls" listed on the Project Price Schedule. Payment of the lump sum price for "Temporary Facilities and Controls" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Temporary Facilities and Controls Work, as specified in Specification Section 01 50 00 – Temporary Facilities and Controls.

Item 7 Electrical Work

1. Work required to complete Electrical Work, but is not limited to:

   a. Disconnection of power to the on-Site light poles.

   b. Removal and storage of existing overhead wiring.

   c. Restoration of on-site wiring once the excavation Work is complete.

2. The price for this item will be the lump sum cost provided as part of the Contractors Bid.

3. Payment for Electrical Work will be made on 50% for removal and 50% for reinstallation basis in accordance with the lump sum price for the Bid item "Electrical Work" listed on the Project Price Schedule. Payment of the lump sum price for "Electrical Work" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs

necessary to complete the Electrical Work, as specified in the Contract Drawings.

Item 8 Installation/Removal of the Excavation Support Systems

1. Work required to complete the Installation/Removal of the Excavation Support Systems includes, but is not limited to:
   a. Movement of personnel, equipment, and materials to the Site, required for the installation and removal of the excavation support systems.
   b. Installation of the excavation support systems.
   c. Installation of the instrumentation required for monitoring the performance of the excavation support systems.
   d. Removal of the excavation support systems and associated instrumentation after completion of the RA.
2. The price for this item will be the lump sum cost provided as part of the Contractors Bid.
3. Payment for Installation/Removal of the Excavation Support Systems will be made in accordance with the lump sum price for the Bid item "Installation/Removal of the Excavation Support Systems" listed on the Project Price Schedule. Payment of the lump sum price for "Installation/Removal of the Excavation Support Systems" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Installation/Removal of the Excavation Support System Work, as specified in Specification Section 31 09 00 – Geotechnical Instrumentation and 31 41 00 - Shoring.

Item 9 Excavation

1. Work required to complete Excavation includes, but is not limited to:
   a. Excavation of impacted soils.
   b. Loading of the material for off-Site disposal.
   c. Performing localized dewatering of the excavations.
2. Unit price for this item will be on a per cubic yard in-situ basis as determined by survey.
3. Payment for Excavation Work will be made in accordance with the unit price for the Bid item "Excavation" listed on the Project Price Schedule. Payment of the unit price for "Excavation" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other

costs necessary to complete Excavation Work, as specified in Specification Section 31 23 00 – Excavation and Fill.

Item 10 Soil Amendment

1. Work required for Soil Amendment includes, but is not limited to:
   a. Furnishing Cement Kiln Dust (CKD) or other CM approved amendment to reduce the moisture content of soil to a level that meets the requirements of the disposal facility.
   b. All material handling required to blend the material as specified in the Contract Documents.
2. Unit price for this item will be on a per ton basis of CKD or other Engineer approved amendment used, as directed by the CM.
3. Payment for Soil Amendment will be made in accordance with the unit price for the Bid item "Soil Amendment" listed on the Project Price Schedule. Payment of the unit price for "Soil Amendment" will constitute full compensation for the amendment of soils for the purpose of moisture reduction, at the direction of the Engineer, including all labor, equipment, and incidentals required to complete Soil Amendment Work, as specified in Specification Section 31 23 00 – Excavation and Fill.

Item 11 Odor Control Foam System – Short Duration Foam Expendables

1. Work required to complete Odor Control Foam System – Short Duration Foam Expendables includes, but is not limited to:
   a. Providing 450-pound drums of vapor-suppressant foam (AC-645 Foam by Rusmar, Inc. or CM approved equivalent) for the control of dust, vapor, and odor emissions during intrusive and/or potential dust generating activities.
   b. Applying odor control foam as directed by the CM.
2. Unit price for this item will be on a per drum (450-pound basis). Furnished but unused drums will not be measured for payment.
3. Payment for Odor Control Foam System – Short Duration Foam Expendables Work will be made in accordance with the unit price for the Bid item "Odor Control Foam System – Short Duration Foam Expendables" listed on the Project Price Schedule. Payment of the unit price for "Odor Control Foam System – Short Duration Foam Expendables" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to provide Odor Control Foam System – Short Duration Foam Expendables Work, as directed by the CM.

Item 12 Odor Control Foam System – Long Duration Foam Expendables

1. Work required to complete Odor Control Foam System – Long Duration Foam Expendables includes, but is not limited to:

   a. Providing 450-pound drums of vapor-suppressant foam (AC-667SE Foam by Rusmar, Inc. or CM approved equivalent) for the control of dust, vapor, and odor emissions during intrusive and/or potential dust generating activities.

   b. Applying odor control foam as directed by the CM.

2. Unit price for this item will be on a per drum (450-pound basis). Furnished but unused drums will not be measured for payment.

3. Payment for Odor Control Foam System – Long Duration Foam Expendables Work will be made in accordance with the unit price for the Bid item "Odor Control Foam System – Long Duration Foam Expendables" listed on the Project Price Schedule. Payment of the unit price for "Odor Control Foam System – Long Duration Foam Expendables" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to provide Odor Control Foam System – Long Duration Foam Expendables Work, as directed by the CM.

Item 13 Transportation and Disposal: Soil

1. Work required to complete the Transportation and Disposal: Soil pay item includes, but is not limited to:

   a. Coordination, transportation, and disposal of excavated soil from the Project Site to the National Grid-approved disposal facility identified in the Contractor Site Operations Plan.

   b. Cleaning/decontaminating transport vehicles prior to leaving the Site (as necessary and/or as directed by the CM).

   c. Designing the Project sequencing so as not to exceed the capacity of the disposal facility to accept soil generated during the performance of the Work.

   d. Providing any additional analytical analysis required for the Contractor selected National Grid-approved disposal facility beyond what was provided with the Contract Documents.

2. Unit price for this item will be on a per ton basis. Quantity will be total tons of material disposed of at the facility as determined by weight tickets provided by the facility.

3. Payment for Transportation and Disposal: Soil Work will be made in accordance with the unit price for the Bid item "Transportation and Disposal: Soil" listed on the Project Price Schedule. Payment of the unit

price for "Transportation and Disposal: Soil" will constitute full compensation for all labor, supervision, materials, equipment, incidentals, disposal fees, and all other costs necessary to complete Transportation and Disposal: Soil, as specified in Specification Section 02 61 00 – Removal and Disposal of Contaminated Materials.

Item 14 Transportation and Disposal: Debris

1. Work required to complete the Transportation and Disposal: Debris pay item includes, but is not limited to:
   a. Loading of the debris for off-Site disposal.
   b. Cleaning/decontaminating transport vehicles prior to leaving the Site (as necessary and/or as directed by the CM).
   c. Transportation and disposal of any and all debris generated from the Project Site that is designated for off-Site disposal by the CM at the approved disposal facility identified in the Contractor Site Operations Plan.
   d. Designing the Project sequencing so as not to exceed the capacity of the disposal facility to accept debris generated during the performance of the Work.
2. Unit price for this item will be on a per ton basis. Quantity will be total tons of material disposed of at the facility and will be determined by weight tickets provided by the facility.
3. Payment for Transportation and Disposal: Debris Work will be made in accordance with the unit price for the Bid item "Transportation and Disposal: Debris" listed on the Project Price Schedule. Payment of the unit price for "Transportation and Disposal: Debris" will constitute full compensation for all labor, supervision, materials, equipment, incidentals, disposal fees, and all other costs necessary to complete Transportation and Disposal: Debris, as specified in Specification Section 02 61 00 – Removal and Disposal of Contaminated Materials.

Item 15 Transportation and Disposal: Soil for Thermal Desorption

1. The potential exists that some soils will require disposal at a thermal desorption facility because of the level of benzene present. If disposing of soil at a thermal desorption facility is identified by the Contractor to be the most practical and cost effective way of disposing of all soils, that is acceptable and may also be reflected as the unit cost under Item 13.
2. If there is a price differential between Item 13 and Item 15, the CM must provide approval before soils are disposed of under Item 15.

3. Work required to complete Transportation and Disposal: Soil for Thermal Desorption includes but is not limited to:

   a. Transportation and disposal of soil at a National Grid-approved thermal desorption disposal facility identified in the Contractor Site Operations Plan.

   b. Coordinating with a National Grid-approved off-Site LTTD treatment facility permitted to accept soil that exhibits a toxicity characteristic for benzene due to the presence of coal tar NAPL in the soil.

   c. Providing any additional analytical analysis required for the Contractor selected National Grid-approved disposal facility beyond what was provided with the Contract Documents.

   d. Cleaning/decontaminating transport vehicles prior to leaving the site (as necessary and/or as directed by the CM).

4. Unit price for this item will be on a per ton basis. Quantity will be total tons of material disposed of at the facility and will be determined by weight tickets provided by the facility.

5. Payment for Transportation and Disposal: Soil for Thermal Desorption Work will be made in accordance with the unit price for the Bid item "Transportation: Soil for Thermal Desorption" listed on the Project Price Schedule. Payment of the unit price for "Transportation and Disposal: Soil for Thermal Desorption" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Transportation: Soil for Thermal Desorption Work, as specified in Specifications Section 02 61 00 – Removal and Disposal of Contaminated Materials.

Item 16 Placement of Approved Off-Site Backfill Material – Imported Clean Fill

1. Work required to complete Placement of Approved Off-Site Backfill Material – Imported Clean Fill includes, but is not limited to:

   a. Procurement, transportation, placement, analytical testing, and compaction of approved Imported Clean Fill, as specified in Specification Section 31 23 00 – Excavation and Fill.

2. Unit price for this item will be on a per cubic yard in-situ basis as determined by survey.

3. Payment for Placement of Approved Off-Site Backfill Material - Imported Clean Fill Work will be made in accordance with the unit price for the Bid item "Placement of Approved Off-Site Backfill Material - Imported Clean Fill" listed on the Project Price Schedule. Payment of the unit price for "Placement of Approved Off-Site Backfill Material - Imported Clean Fill"

will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Placement of Approved Off-Site Backfill Material - Imported Clean Fill Work, as specified in Specification Section 31 23 00 – Excavation and Fill.

Item 17 Placement of Approved Off-Site Backfill Material – Road Base

1. Work required to complete Placement of Approved Off-Site Backfill Material – Road Base includes, but is not limited to:

   a. Procurement, transportation, placement, analytical testing, and compaction of approved Road Base, as specified in Specification Section 31 23 00 – Excavation and Fill.

2. Unit price for this item will be on a per cubic yard in-situ basis as determined by survey.

3. Payment for Placement of Approved Off-Site Backfill Material - Road Base Work will be made in accordance with the unit price for the Bid item "Placement of Approved Off-Site Backfill Material - Road Base" listed on the Project Price Schedule. Payment of the unit price for "Placement of Approved Off-Site Backfill Material - Road Base" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Placement of Approved Off-Site Backfill Material - Road Base Work, as specified in Specification Section 31 23 00 – Excavation and Fill.

Item 18 Transportation and Disposal: Wastewater

1. Work required to complete the Transportation and Disposal: Wastewater pay item includes, but is not limited to:

   a. Transportation of wastewater and decontamination fluids contained in one frac tank of water (18,000 gallons) from the Project Site to the approved disposal facility identified in the Contractor Site Operations Plan in accordance with Specification 02 61 00 – Removal and Disposal of Contaminated Materials.

   b. Performing any additional analysis required to dispose of the collected wastewater at the approved off-Site liquid waste disposal facility.

2. The price for this item will be the lump sum cost provided as part of the Contractors Bid.

3. Payment for Transportation and Disposal: Wastewater Work will be made in accordance with the lump sum price for the Bid item "Transportation and Disposal: Wastewater" listed on the Project Price Schedule. Payment of the lump sum price for "Transportation and Disposal: Wastewater" will constitute full compensation for all labor, supervision, fees, materials,

equipment, incidentals and all other costs necessary to complete Transportation and Disposal: Wastewater Work, as specified in Specification Section 02 61 00 – Removal and Disposal of Contaminated Materials.

Item 19 Asphalt Replacement

1. Work required to complete Asphalt Replacement includes, but is not limited to:
   a. Performing the Asphalt Replacement Work in the areas where the existing parking lot was completely removed to complete the excavation portion of the Work.
   b. Restoring and/or replacing any Asphalt pavement related Site features or appurtenances (e.g. parking bumpers, pavement striping) removed or demolished during the performance of the excavation.
2. Unit price for this item will be on a per installed square foot basis as determined by survey.
3. Payment for Asphalt Replacement will be made in accordance with the unit price for the Bid item "Asphalt Replacement" listed on the Project Price Schedule. Payment of the unit price for "Asphalt Replacement" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Asphalt Replacement Work as specified in Specification Section 32 12 00 – Pavement.

Item 20 Bocce Court Replacement

1. Work required to complete Bocce Court Replacement Work includes, but is not limited to:
   a. Replacing the Bocce Courts demolished during the performance of the Work.
   b. Restoring and/or replacing any Bocce Court features or appurtenances removed or demolished during the performance of the Work.
2. The price for this item will be the lump sum cost provided as part of the Contractors Bid.
3. Payment for Bocce Court Replacement will be made in accordance with the lump sum price for the Bid item "Bocce Court Replacement" listed on the Project Price Schedule. Payment of the lump sum price for "Bocce Court Replacement" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete

the Bocce Court Replacement, as specified in the Contract Drawings and Specification Section 11 68 00 – Play Field Equipment And Structures.

Item 21 Asphalt Milling/Restoration

1. Work required to complete Asphalt Milling/Restoration includes, but is not limited to:
   a. Milling the City of Troy parking lot that is not removed during the excavation Work as detailed on the Contract Documents.
   b. Resurfacing the milled portions of the City of Troy parking lot.
   c. Restoring and/or replacing any parking lot related Site features or appurtenances (e.g. parking bumpers, pavement striping) removed during the performance of the milling.
2. Unit price for this item will be on a per installed square foot basis as determined by survey.
3. Payment for Asphalt Milling/Restoration will be made in accordance with the unit price for the Bid item "Asphalt Milling/Restoration" listed on the Project Price Schedule. Payment of the unit price for "Asphalt Milling/Restoration" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Asphalt Milling/Restoration Work as specified in Specification Section 32 12 00 – Pavement.

Alt 1 Temporary Asphalt Patching

1. Work performed under Asphalt Patching is only to be exercised if the Project is not ready for paving before asphalt plants close for the winter for reasons not attributable to the Contractor.
2. Work required to complete Asphalt Patching includes, but is not limited to:
   a. Patching the asphalt areas disturbed during the execution of the Work.
3. The price for this item will be the lump sum cost provided as part of the Contractors Bid.
4. Payment for Asphalt Patching will be made in accordance with the lump sum price for the Bid item "Asphalt Patching" listed on the Project Price Schedule. Payment of the lump sum price for "Asphalt Patching" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete the Asphalt Patching Work as specified in Specification Section 32 12 00 – Pavement.

Alt 2 Remobilization to Complete Asphalt Work

1. Remobilization to Complete Asphalt Work is only to be exercised if the Project is not ready for paving before the asphalt plants shut down for the season.

2. Work required to complete Remobilization to Complete Asphalt includes, but is not limited to:

   a. Remobilizing to the Site all the labor, materials, and equipment required to complete the permanent asphalt replacement Work contained in Items 16 and 18.

   b. Demobilizing all labor, materials, and equipment from the Site at the completion of the asphalt Work.

3. The price for this item will be the lump sum cost provided as part of the Contractors Bid.

4. Payment for Remobilization to Complete Asphalt Work will be made in accordance with the lump sum price for the Bid item "Remobilization to Complete Asphalt Work" listed on the Project Price Schedule. Payment of the lump sum price for "Remobilization to Complete Asphalt Work" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to remobilize to the Site to complete Work for Items 16 and 18.

Alt 3 Transportation and Disposal: Hazardous Soil and Debris

1. Work required to complete Transportation and Disposal: Hazardous Soil and Debris includes but is not limited to:

   a. Transportation of hazardous soil and debris, if encountered, to the disposal facility identified in the Contract Documents in accordance with Specification 02 61 00 – Removal and Disposal of Contaminated Materials.

   b. Providing any additional analytical analysis required for the Contractor selected National Grid-approved disposal facility beyond what was provided with the Contract Documents.

   c. Cleaning/decontaminating transport vehicles prior to leaving the site (as necessary and/or as directed by the CM).

2. Unit price for this item will be on a per ton basis. Quantity will be total tons of material disposed of at the facility and will be determined by weight tickets provided by the facility.

3. Payment for Transportation and Disposal: Hazardous Soil and Debris Work will be made in accordance with the unit price for the Bid item "Transportation: Hazardous Soil and Debris" listed on the Project Price

Schedule. Payment of the unit price for "Transportation and Disposal: Hazardous Soil and Debris" will constitute full compensation for all labor, supervision, materials, equipment, incidentals and all other costs necessary to complete Transportation: Hazardous Soil and Debris Work, as specified in Specifications Section 02 61 00 – Removal and Disposal of Contaminated Materials.

Alt 4 Transportation and Disposal: Hazardous Liquids

1. The potential exists for liquid NAPL to be encountered during the Work. If liquid NAPL is encountered, immediately notify the CM who will make a determination if the liquid NAPL is able to be recovered in a liquid state.
2. Work required to complete the Transportation and Disposal: Hazardous Liquids pay item includes, but is not limited to:
   a. Recovery, transportation, and disposal of liquid NAPL from the Project Site to the approved disposal facility identified in the Contractor Site Operations Plan in accordance with Specification 02 61 00 – Removal and Disposal of Contaminated Materials.
   b. Performing any additional analysis required to dispose of the collected hazardous liquids at the approved off-Site liquid waste disposal facility.
3. Unit price for this item will be on a per gallon basis as determined by the approved liquid waste disposal facility.
4. Payment for Transportation: Hazardous Liquids Work will be made in accordance with the unit price for the Bid item "Transportation: Hazardous Liquids" listed on the Project Price Schedule. Payment of the unit price for "Transportation: Hazardous Liquids" will constitute full compensation for all labor, supervision, fees, materials, equipment, incidentals and all other costs necessary to complete Transportation: Hazardous Liquids Work, as specified in Specification Section 02 61 00 – Removal and Disposal of Contaminated Materials.

Alt 5 Transportation and Disposal: Additional Wastewater

1. Any wastewater requiring disposal beyond the quantity covered in Item 18 will be paid for under this Item.
2. Work required to complete the Transportation and Disposal: Additional Wastewater pay item includes, but is not limited to:
   a. Transportation of wastewater and decontamination fluids from the Project Site to the approved disposal facility identified in the Contractor Site Operations Plan in accordance with Specification 02 61 00 – Removal and Disposal of Contaminated Materials.

b. Designing the Project phasing so as not to exceed the capacity of the disposal facility to accept wastewater generated during the excavation Work.

c. Performing any additional analysis required to dispose of the collected wastewater at the approved off-Site liquid waste disposal facility.

3. Unit price for this item will be on a per gallon basis as determined by the approved liquid waste disposal facility.

4. Payment for Transportation and Disposal: Additional Wastewater Work will be made in accordance with the unit price for the Bid item "Transportation and Disposal: Additional Wastewater" listed on the Project Price Schedule. Payment of the unit price for "Transportation and Disposal: Additional Wastewater" will constitute full compensation for all labor, supervision, fees, materials, equipment, incidentals and all other costs necessary to complete Transportation and Disposal: Additional Wastewater Work, as specified in Specification Section 02 61 00 – Removal and Disposal of Contaminated Materials.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

3.1. POTENTIAL WINTER SHUT DOWN

A. Work required to complete Alt items 1 and 2 will be provided at no cost to National Grid if the reasons that paving cannot be completed before asphalt plants shut down for the season is because of delays that are chargeable to the Contractor.

B. If a seasonal shut down occurs because of the unavailability of asphalt materials, regardless of what party is responsible for the delay, provide all Work for Items 19 and 21 at the prices listed on the Project Price Schedule submitted with the Contractor's Bid.

END OF SECTION 01 20 00

SECTION 01 31 00
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1. SUMMARY

A. This Section describes Project administrative requirements, the minimum level of coordination and meetings required to execute the Work, and required pre-mobilization submittals.

1.2. ON-SITE CONSTRUCTION PERSONNEL

A. National Grid will maintain a dedicated and non-working full-time on-Site Construction Manager (CM) for the duration of the Work. The CM will be responsible for construction quality assurance and ensuring that the Contractor completes the Work in accordance with the Contract Documents. The CM will not direct the contractor on the specific means and methods of construction, however, the CM will advise the contractor of non-compliance with the contract documents and identify required corrective action.

B. Maintain a full-time on-site Superintendent, who will be responsible for quality assurance, Contractor health and safety, and competent person(s) for the duration of the Work. The Superintendent will be responsible for the supervision and/or coordination of all Contractor employees, Subcontractors, manufacturers, fabricators, suppliers, distributors, installers, and testing agencies whose services, materials or equipment are required to ensure the completion of the Work. The Superintendent will have sufficient qualifications, experience, and authority to act as a single point of contact for the on-Site staff, and to make adjustments to the means and methods as needed and as requested by the CM.

C. Maintain a dedicated full-time on-Site Health and Safety officer for the duration of the Project. The Health and Safety officer may have no other on-Site responsibilities or duties outside of health and safety.

D. Any material changes to the processes, Subcontractors, staffing, sequencing, equipment, or materials used in the Work will require review and approval by National Grid and the CM.

1.3. MEETINGS

A. Attend all Project meetings as deemed necessary by National Grid and/or the CM during the term of the Agreement.

B. A post-award meeting will be held at a date, time, and location to be determined to discuss Project submittals, schedule, etc. Attendance at the post-award meeting is required for the Contractor Superintendent and project manager.

C. A pre-construction meeting will be held at the Site prior to the start of the Work.

At a minimum, the Contractor's project manager and Superintendent for the Project will attend the meeting. It is recommended that the Contractor assemble input from primary Subcontractors prior to this meeting.

1. This meeting is intended to make certain that the Work is properly scheduled, responsibilities are coordinated among Subcontractors and suppliers, and that those responsibilities are reflected on the Contractor submittals. Questions concerning the administrative requirements outlined during the pre-construction conference or any other aspect of the Project may also be addressed.

D. Beginning with the mobilization to the Site, the CM will facilitate weekly construction meetings for the duration of the Work. The agenda for these meetings will be provided to the selected Contractor after award. Prior to mobilization, if necessary, bi-weekly meetings may be held via teleconference. After mobilization, weekly construction meetings will be held at the Site. Present a progress update at weekly construction meetings that includes tasks completed from the prior week, currently active tasks, and tasks/activities planned for the next two weeks along with an updated project schedule. The format of the two week look ahead must be approved by the CM.

E. The standard day and time for the weekly construction meeting will be established based on mutual agreement between the CM, National Grid, and other participants. Prepare an agenda prior to each weekly meeting.

F. Special construction meetings will be held at the Site or other designated location to discuss urgent construction issues. The Contractor, CM, or National Grid may call special construction meetings. Coordination (agenda, meeting minutes, location, time, and attendance) of special construction meetings is the responsibility of the organization calling the meeting. Special construction meetings will be called judiciously.

G. Minimum attendance at weekly construction meetings will include the Project Superintendent, members of the Contractor staff as may be needed to discuss certain agenda items, and the Contractor project manager (who may participate via teleconference). Attendance is required by a representative of any Subcontractors performing Work at the Site during the time of the weekly meeting.

H. Make physical arrangements for all meetings to be held on the Site.

I. All expenses associated with attending the meetings, except those that are incurred by the CM, their representatives, or consultants, are to be borne by the Contractor.

1.4. REQUESTS FOR INFORMATION, CLARIFICATIONS, AND CHANGES

A. All communications regarding discrepancies, claims, and change conditions will

be in accordance with the Terms and Conditions.

B. All requests for Project information, clarifications, or changes in the requirements of the Contract Documents must be made in writing to the CM.

C. Written requests must be provided regardless of any preceding conversations and preliminary decisions regarding the subject matter(s).

D. At the discretion of the CM, e-mail communications may qualify as "requests made in writing" for the purposes of this provision.

E. The CM will provide written responses to each request.

F. At their discretion, the CM may provide verbal approvals of requests to expedite the Work. In such cases, the Contractor is still required to provide written documentation of the request and approval from the CM.

G. The CM may also issue clarifications and/or amendments based on their own assessment of Project needs.

H. Any potential increases or decreases in Contractor compensation due to amendments will be in accordance with the provisions of the Agreement.

I. The CM will issue the Contractor supplemental instructions authorizing minor changes in the Work that may or may not involve adjustments to the Contract Price or the schedule.

J. If latent or unforeseen conditions require modifications to the Contract, the Contractor may propose changes in the Work by submitting a detailed request to include labor rates, equipment rates, material costs, etc. for a change to the CM.

K. Document Change Order requests in accordance with the requirements of the Terms and Conditions, Supplemental Conditions, and any additional procedures set forth during procurement.

L. The CM may issue an Authorization for Contract Change (ACC) which instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. An ACC must be authorized and signed by the CM prior to any change in the Work.

1.5. RECORDS

A. Maintain copies on-Site of all Project correspondence and Project documents generated during the Work.

1.6. PRE-MOBILIZATION SUBMITTALS

A. All submittals are subject to review and approval by the Engineer and/or National Grid. Provide all submittals to the CM who will then forward them onto the appropriate party for review. Submittals will not be approved until the CM has determined that they meet the minimum requirements of these specifications.

Claims for lost time or requests for extensions based on rejected pre-mobilization submittals will be denied.

B. Contractor Health and Safety Plan:

1. Prepare and submit a site specific Contractor Health and Safety Plan.

2. Refer to Specification Section 01 35 00 for details on what must be included in the Contractor Health and Safety Plan.

C. Critical Path Method Project Schedule:

1. Prepare a Critical Path Method (CPM) project schedule. Update and disseminate the schedule on a weekly basis prior to the weekly construction meetings.

D. Pre-Construction Condition Documentation:

1. Perform a pre-construction condition documentation of the Site to 50 feet beyond the Project limits under the supervision of the CM.

   a. Submit the findings of the pre-construction condition documentation to the CM for review and approval prior to mobilization.

   b. Include video/photographic documentation of the existing conditions of the Site and surrounding structures.

      i. Include video documentation and place particular emphasis on documenting the pre-construction conditions of the masonry walls located on and adjacent to the Site.

      ii. Include video documentation and place particular emphasis on documenting the pre-construction conditions of the mural that is attached to the masonry wall on the Site.

   c. Claims determined to be resulting from pre-existing structural and/or cosmetic damage, not identified during the pre-construction survey, will be the responsibility of the Contractor.

E. Schedule of Permits:

1. Submit a schedule of Contractor required permits with approximate lead time. Indicate any action items or information required from the Engineer.

2. Submit copies of all supplemental and/or recurring data required by the permits to the CM, as needed. Include documentation that the supplemental data was provided to the entity that issued the permit, according to the schedule required by the permit.

3. Submit copies of completed permit applications to the CM.

4. Submit copies of fully executed permit applications and final permits to the CM.

F. Remedial Action Contingency Plan:

1. Prepare a Remedial Action Contingency Plan (RACP). This plan will describe the provisions required for responding to Site-related emergencies that could potentially occur during the Work. The RACP will, at a minimum, contain the following components:

a. A spill response plan (SRP) for addressing spills that occur on Site during remedial construction activities. The SRP will describe the means, methods, and facilities required to prevent soil, water, structure, equipment, and material impacts caused by spills; provide information regarding spill containment and cleanup, and provide information related to decontamination measures.

b. Procedures that Contractor's personnel will take in response to an emergency.

c. Designation of an emergency coordinator.

d. Include a current list of all emergency equipment and evacuation plans.

e. Procedures for monitoring weather emergencies and discussion of how weather conditions and notifications will impact Site operations.

f. Procedures and routes for emergency vehicular access/egress.

g. Procedures for the evacuation of personnel from the Site.

h. A listing of contact personnel with phone numbers that, at a minimum, includes fire officials, ambulance service, local, county, and state police, local hospitals, and a spill response team.

i. Routes to local hospitals, including written directions and a map that depicts the location of the Site relative to the hospital(s).

G. Site Operations Plan:

1. Prepare a narrative discussion and drawings describing the means and methods that will be used to execute the Work. The final design will be based on the requirements, intent, and concepts contained in the Contract Documents. Scale drawings included in the Site Operations Plan at no less than 40 feet per inch. At a minimum, the Site Operations Plan will include final submittals with means and methods for the following project elements:

a. Shoring and excavation phasing plans for performance of the Work.

b. Site specific Contractor Quality Control Plan for ensuring the Work objectives are met. This will include a summary of equipment maintenance procedures and personnel training requirements.

c. Manufacturer cut sheets for all products requiring approval by the CM prior to being incorporated into the Work.

d. Shop drawings.

e. Security procedures, fencing, and equipment specifications.

f. Sanitary facility locations.

g. Off-Site parking locations, if used, including routes to and from the Site.

h. List of Subcontractors, including but not limited to, a proposed list of disposal facilities for all anticipated waste streams, shoring Subcontractor (if used), and the Project surveyor.

i. Procedures for gross level decontamination of vehicles.

j. Manufacturers' MSDS's and product information for all items used on-Site.

k. Staff roles and responsibility summary, including explicit identification of Contractor or Subcontractor staff and qualifications, and who will personally perform and be responsible for the following tasks:

   i. Site health and safety.

   ii. Quality control.

   iii. Construction documentation.

   iv. For each company performing one of the above roles, include company contact information (address, telephone number, facsimile number, website, etc.). For each person identified in the Site Operations Plan, include a resume with license numbers, if the individual is performing work requiring licensure.

l. Crew size and equipment list for major tasks.

2. The Site Operations Plan may be submitted in parts, so long as all parts are submitted by the submittal deadline. Organize the Site Operations Plan for use in the field and for review. The Site Operations Plan will be reviewed for both technical content and organization. Include a table of contents, sections and subsections, appendices, tables, drawings, data, etc.

3. All components of the Site Operations Plan are subject to review and approval by the CM. This includes, but is not limited to, manufacturer cut

sheets, shop drawings, Subcontractor lists, etc. A change to any constituent component of the Site Operations Plan (e.g., a change in a Subcontractor) must be approved by the CM.

H. Borrow Source Evaluation:

1. Submit a borrow source evaluation for each material type that will be incorporated into the Work.

2. Refer to Specification Section 31 23 00 – Excavation and Fill for details on the required components of the borrow source evaluation submittal.

I. Utility Survey:

1. Contact Dig Safely New York to perform a utility markout.

2. Conduct a utility survey of the excavation area using a private utility locating service and markout all suspected utility locations. Confirm all suspected utility locations with the utility provider prior to beginning intrusive activities.

3. Provide copies of Dig Safely numbers/tickets/utilities plates/private utility location information to CM prior to beginning intrusive activities. The CM will maintain copies on-Site in a clearance package.

1.7. DAILY REPORT

A. Prepare a daily report summarizing the staff and equipment used, Work performed, and anticipated Work for the next Day. The daily report should also list all daily quantities applicable to pay items listed on the Project Price Schedule. The Contractor's internal documentation used for this purpose may fulfill this requirement, subject to approval by the CM. At a minimum, the daily report will include the following additional items:

1. Summary of any safety related issues including a summary of the daily safety meeting.

2. Description of any QC testing performed and the results.

3. Excavation and backfill rate for each working Day. Submit certified weight tickets for material exported for off-Site disposal and for each load of imported backfill material.

4. Estimate of the excavation rate, number of trucks needed for transportation to the disposal facility, and the disposal facility production rate for the next Day.

B. Submit the daily report to the Construction Manager by 10 AM of the next Day worked.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 31 00

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1. SUMMARY

A. This section summarizes the protocol and procedures for the preparation and delivery of required submittals to the CM.

1.2. GENERAL REQUIREMENTS

A. Provide all submittals in electronic format directly to the CM in accordance with the submittal schedule attached at the end of this Specification. The CM reserves the right to request that any submittal be requested via paper copy.

B. Include calculations, shop drawings, plans, reports, records, photographs, diagrams, and details with submittals, as needed, to facilitate the review and/or approval process.

C. For all submittals requested via paper copy, provide five (5) copies to the CM unless otherwise directed.

D. If directed by the CM, provide submittals electronically in the format requested (i.e. document file, drawing file, image file, etc.). For electronic drawings, submit AutoCAD 2004 (or later) file using the e-transmit feature (i.e. include external references, image files, color table file, font file, line file, etc.). Convert all AutoCAD add on data to AutoCAD format. Use descriptive layer titles (i.e. not numbers or internal use acronyms). Use extensive layer control and use line color by layer and line type by layer management. AutoCAD files of the Contract Drawings will be made available to the Contractor selected to perform the Work, upon request.

E. Certifications must be signed by an officer or other individual authorized to sign on behalf of the entity. Submittals requiring preparation by an engineer or surveyor must be signed and sealed by a Professional Engineer/Surveyor licensed to practice engineering in the State of New York.

F. Schedule submittals to expedite Work. Provide the CM a minimum of 10 working Days, excluding transmittal time, for review.

1.3. SUBMITTAL SCHEDULE

A. Refer to Table 01 33 00-1 - Project Submittal Summary attached at the end of this Specification.

1.4. SUBMITTAL PROCEDURES

A. Use the submittal numbers assigned in Table 01 33 00-1. For submittals not included in Table 01 33 00-1, use the next sequential number as the submittal number. For revised submittals, use original number and a sequential alphabetic

suffix. For multiple submittals with the same submittal number, use the original number with a sequential numerical suffix.

B. Use a cover form for each submittal. Include the Project name, Project number, date, submittal number, submittal description/title, submittal exclusions, special issues, Subcontractor, etc. on each submittal. The submittal cover form must be signed by an individual authorized to sign documents on behalf of the Contractor.

C. Include drawings and details as appropriate.

D. Use the same units of weights and measures on submittals that are used in the Contract Documents.

E. Submit all supplier and Subcontractor submittals.

F. Identify variations from the Contract Documents and product or system limitations that may be detrimental to successful performance of the completed Work.

G. Prepare submittals that are complete and contain sufficient detail for review by the CM.

H. Resubmit submittals if requested by the CM. When performing a submittal revision, identify all changes made since previous submission. For each re-submittal allow the same number of workdays required for review as the original submittal.

I. Submittals not requested will not be recognized or processed.

1.5. SUBMITTAL REGISTER

A. Maintain a technical submittal register at the Site. Including the submittal number, description, date submitted, status, and date of approval/rejection.

1.6. SUBMITTAL REVIEW

A. Submittals will be reviewed solely for the purpose of determining whether the information contained in the submittal conforms to the design concept of the Contract Documents. Submittals will be returned with the following classifications:

1. No Exceptions Taken: Work may proceed, no exceptions taken.

2. Furnish as Corrected: Work may proceed subject to comments, resubmittal not required.

3. Revise and Resubmit: Work may not proceed, resubmittal required for indicated items. Proceed with Work on other items subject to comments.

4. Rejected: Work may not proceed, resubmittal required, submittal unresponsive and/or not in conformance with Contract Documents.

A. Engineer's review is for the limited purpose of checking for conformance with the

information given and the design concept expressed in the Contract Documents. Review is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions or quantities. Approval of a specific item does not constitute approval of an assembly of which the item is a component. The Engineer's review and approval of the Contractor's submittals does not relieve the Contractor from complying with the requirements of the Contract Documents. The Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; fabrication processes and construction means, methods, techniques, sequences or procedures; coordination of the Work of all trades; and performing all work in a safe and satisfactory manner.

1.7. CERTIFICATES OF COMPLIANCE

A. Submit any certificates required for demonstrating proof of compliance with the Contract Documents to the CM as part of the submittal package.

B. Certificates must be signed by an official authorized to sign on behalf of the manufacturing or testing company.

C. For each certification, include the name and address of the Subcontractor, name of the requestor, the Project name and location, relevant test data (if required), and the dates of shipment and delivery.

D. Certifications do not relieve the Contractor from furnishing satisfactory materials.

1.8. INVOICES

A. Submit monthly invoices in accordance with the provisions of the Terms and Conditions and Supplemental Conditions.

1. Submit invoices in an approved form with an updated schedule showing contract values, approved Change Orders, Work completed to date, current invoice and quantity amounts, and balance to complete for each bid item.

2. Invoices must be reviewed and approved by the CM prior to formal submission for payment.

3. No payment will be made unless all the proper supporting documentation has been submitted and approved by the CM.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

SUBMITTAL SUMMARY TABLE 01 33 00-1

Submittal Number	Description of Submittal	Submission Deadline	Referenced Specification Section
PRE-MOBILIZATION			
1	Critical Path Method Project Schedule	Submitted with Bid, updated weekly during construction	01 31 00
2	Pre-Construction Survey Results	1 week prior to mobilization	01 31 00
3	Site Operations Plan	2 weeks after award	01 31 00
4	Contractor Health and Safety Plan	2 weeks after award	01 31 00
5	Contractor Quality Control Plan	2 weeks after award	01 31 00
6	Remedial Action Contingency Plan	2 weeks after award	01 31 00
7	Schedule of Permits	1 week after award	01 31 00
8	Borrow Source Evaluation	2 weeks prior to importing fill to the Site	35 43 10
9	Utility Survey	1 week prior to mobilization	01 31 00
10	Permits and Data Submittals	Prior to submittal to controlling	01 31 00
11	Final Executed Permits	Upon receipt	01 31 00
REMEDIATION			
12	Daily Report	10:00 AM of the next work Day	01 31 00
13	Invoices	Monthly	01 33 00
PROJECT CLOSEOUT			
14	Substantial Completion	Work is at Substantial Completion	01 77 00
15	Record Documents	Prior to application for Final Acceptance	01 77 00
16	Utility Repair Confirmation	Prior to application for Final Acceptance	01 77 00
17	Permit Closeout	Prior to application for Final Acceptance	01 77 00
18	Final Acceptance	Work is complete	01 77 00
19	Final Invoice	After Final Acceptance	01 77 00

END OF SECTION 01 33 00

SECTION 01 35 00
SPECIAL PROCEDURES - HEALTH AND SAFETY REQUIREMENTS

PART 1 GENERAL

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, materials and equipment, and performing all operations required to conform to all health and safety requirements during the performance of the Work.

1.2. SUBMITTALS

A. Prior to mobilization, submit the Contractor's Health and Safety Plan, and documentation of OSHA training and enrollment in medical monitoring for Site personnel.

B. Contractor's Monthly Safety Report, which, at a minimum, will consist of the following components:

1. The names of all Contractor and Subcontractor personnel employed at the Site at any time during the month and the names and duties of key personnel including Contractor's project manager, Superintendent, safety officer, and competent person(s).

2. A summary of all Health and Safety incidents that describes any medical treatment that was provided during the month, the current status of any individuals affected, the names of individuals who may have observed the incident, and actions taken by Contractor to address the unsafe act or unsafe condition.

3. A summary of all Health and Safety near-misses or observations providing an opportunity for shared learning and future hazard avoidance. For any Health or Safety incident or near-miss, list the date, the nature of the incident or near-miss, and the names of individuals involved.

4. The total number of labor hours worked at the Site during that month.

5. Internal Health and Safety audits performed by the Contractor as part of the Contractor's HASP.

C. Submit a hot work permit for any welding, torch cutting, or activities that generate sparks. If the Contractor does not have a permit readily available, they may request a permit from the CM. In some instances, the CM's client may require the use of their specific permit and permitting process.

D. Contractor shall conduct a job safety analysis (JSA) for significant activities and submit the documentation to the Engineer for review prior to the start of the activities. Submit the JSA on a form acceptable to the CM.

E. Submit copies of all periodic equipment inspections completed.

1.3. REFERENCES

A. Applicable regulations and publications include, but are not limited to, the following:

1. ACGIH, Threshold Limit Values and Biological Exposure Indices (most recent version).
2. ANSI, Emergency Eyewash and Shower Equipment, Z358.1, 1981.
3. ANSI, Practice for Occupational and Educational Eye and Face Protection, Z87.1, 1979.
4. ANSI, Practices for Respiratory Protection, Z88.2, most recent version.
5. ANSI, Protective Footwear, Z41.1, 1983.
6. ANSI, Respirator Use Physical Qualification for Personnel, Z88.6, 1984.
7. DHHS, "Manual of Analytical Methods," 3rd edition Volumes I and II, DHHS (NIOSH) Publication 84-100.
8. DOT Standards and Regulations, 49 CFR 171, 49 CFR 172 and 49 CFR 214.
9. NESHAP (40 CFR 61 Subpart M), National Emission Standards for Hazardous Air Pollutants: Asbestos.
10. NFPA, Flammable and Combustible Liquids Code, NFPA 30, most recent revision.
11. NIOSH Pocket Guide to Chemical Hazards, DHHS/PHS/CDC/NIOSH, August, 2006 or most recent.
12. NIOSH/OSHA/USCG/USEPA, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, DHHS/PHS/CDC/NIOSH, October 1985.
13. OSHA, Title 29 CFR Part 1910, Occupational Safety and Health Standards, in particular 1910.134, Respiratory Protection; Title 29 CFR Part 1926, Safety and Health Regulations for Construction Sites, in particular 1926.1101, Asbestos, and 1926.62, Lead.
14. OSHA, Title 49 CFR Part 214, Roadway Workplace Safety.
15. USEPA, Health and Safety Requirements for Personnel Engaged in Field Activities, USEPA Order No. 14402.
16. USEPA, Standard Operating Safety Guidelines, November 1984.

B. Except to the extent that more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect and are made a part of the contract documents by reference

as if copied directly into the contract documents, or as if published copies are bound herewith.

C. Where two or more regulations/documents conflict, the one(s) offering the greatest degree of protection shall apply.

1.4. CONTRACTOR'S RESPONSIBILITY FOR HEALTH AND SAFETY

A. Comply with any and all applicable state, federal, and local ordinances, laws and regulations.

B. The Contractor is responsible for the Health and Safety their employees, its Subcontractors, suppliers, agents, inspectors, visitors, the general public, and any Others associated with, or interacting with Contractor who provides labor, goods, or other services on the Site.

C. The Contractor is responsible for emergency response planning and notification and for actual response to any and all emergencies that may occur during the course of the Work, including emergencies that may occur when Contractor is not present at the Site.

D. The Contractor is responsible for communicating daily with the CM regarding Health and Safety issues for the safe conduct of the CM's duties, but such communication shall not imply any duty or responsibility on the part of the CM with regard to Health and Safety of Contractor's employees, its Subcontractors, suppliers, the general public, or Others. The CM's responsibility and duty with regard to Health and Safety shall be limited to their employees. Communicate Health and Safety issues accurately and in a timely manner to allow the CM and take appropriate actions to protect the CM's employees and the Owner's employees.

E. Designate a Site Safety and Health Officer (SSHO) who, at a minimum, has at least 1 year of experience as an SSHO on an uncontrolled hazardous waste site, is 40-hour OSHA Hazardous Waste Operations trained, and 8-hour OSHA Supervisor trained.

F. The SSHO shall enforce the health and safety requirements for all Contractor personnel on-Site at all times. The SSHO shall ensure that all Contractor personnel, Subcontractor personnel, and Contractor visitors follow the Contractor's site Health and Safety Plan (HASP), including wearing the designated level of Personal Protective Equipment (PPE). If the SSHO elects to require a higher level of protection than that specified in the Engineer's HASP, the extra costs associated with such higher level shall be borne by Contractor, unless such extra costs are approved in advance in writing by the CM.

G. Prior to mobilization and continually through the duration of the Work, the SSHO shall inspect the Site and document area-specific and worker-specific protection requirements.

H. After mobilization, the SSHO shall monitor Work activities and document the need for additional worker protection, as required, based on the Work being performed and action levels specified in the Contractor HASP.

I. The SSHO shall verify that all activities are performed in accordance with the HASP and all federal, state, local, and Health and Safety standards, Laws and Regulations, and guidelines.

J. In the event of a health or safety risk, as determined by the SSHO, other Contractor personnel, or by the CM, stop Work until a method for handling the risk has been determined and implemented in consultation with the CM. Report any health or safety risk resulting in a Work stoppage to the CM.

K. The Contractor is responsible for implementing a behavior-based safety process and providing site training, observation, and feedback for Contractor personnel employed at the Site.

L. The Contractor is responsible for the stability of excavations and embankments created as part of the Contractor's Work. Designate one competent person as defined in 29 CFR Part 1926, Subpart P, Excavations, to inspect and document excavation safety conditions daily and to ensure excavation safety prior to any personnel entering an excavation.

M. The Engineer will provide the Contractor with a copy of the Engineer's HASP as a reference. The Contractor is responsible for preparing their own HASP under which their employees will perform the Work.

1.5. CONTRACTOR'S HEALTH AND SAFETY PLAN

A. Prepare and submit a Site-specific Health and Safety Plan (HASP) to the Engineer prior to the start of the Work. Follow all applicable local, state, and federal Health and Safety standards, Laws and Regulations, and guidelines implemented through, but not limited to, the OSHA, NIOSH, ACGIH, and USEPA. Where these references are in conflict, follow the more stringent requirement. At a minimum, address the following topics in the Contractor HASP:

1. Names of key personnel and alternates responsible for Health and Safety, including a Contractor Health and Safety Representative and SSHO.

2. A Health and Safety risk or JSA associated with each portion of the Work (i.e., list potential chemical and physical hazards), including JSAs for material handling, separation, sizing, stockpiling, loading, transportation, and disposal.

3. Documentation of employee and Subcontractor training and medical certifications required by 29 CFR 1910.120, as described in Part 3 of this Section.

4. A requirement that Contractor locate Underground Facilities by using "Safe

Dig" procedures prior to the start of the Work.

5. PPE to be used for each of the tasks and operations being conducted, as required by the PPE program in 29 CFR 1910.120, 29 CFR Subpart I, and 29 CFR 1926.
6. Medical surveillance requirements in accordance with the program in 29 CFR 1910.120.
7. Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used by the Contractor, including methods of maintenance and calibration of monitoring and sampling equipment.
8. Corrective actions and upgrading of PPE based on monitoring of air, personnel, and environmental sampling, with specific Action Levels identified.
9. Site control measures in accordance with the control program required in 29 CFR 1910.120 and 29 CFR 1926.
10. Decontamination procedures in accordance with 29 CFR 1910.120 and Specifications Section 025100.
11. If confined space entry is required, include confined space entry procedures in accordance with 29 CFR 1910.146, and a list of all anticipated confined space entries required by Contractor in the course of the Work.
12. A list of Health and Safety and emergency equipment available on the Site.
13. A description of engineering controls used to reduce the hazards of equipment operation and exposure to site hazardous chemicals.
14. An air monitoring plan describing the method, type, frequency, locations of air monitoring, laboratories, and type of analysis to be performed at the Work area for the purpose of employee safety.
15. Open trench excavation procedures in accordance with applicable OSHA Regulations, if required.
16. Documentation of training and experience for the designated excavation-competent person.
17. Procedures for earthwork near buried utilities, where hand digging should be performed within 24 inches of known utility lines unless more stringent requirements are specified by laws or regulations, or the affected utility.
18. Training for emergency response procedures HASP.
19. Heat stress program consistent with the references provided in the Engineer's HASP.

20. Cold stress program consistent with the references provided in the Engineer's HASP.

21. Lockout/Tagout procedures where the sudden start up or release of stored energy could cause injury to personnel.

1.6. NOTIFICATIONS

A. Immediately verbally report to the CM and National Grid the occurrence of any and all Health and Safety incidents. A Supervisor's accident/incident report (SAIR), which may be requested from the CM, must be submitted within 24 hours of occurrence of the incident or issue.

B. Immediately and fully investigate any such incident or near-miss and conduct a root cause analysis. Submit to the CM the Contractor's written corrective action plan within 1 day of the incident occurring.

C. Notify the CM in writing at least 5 days prior to bringing any hazardous material, equipment, or process to the Site. Provide the CM with an MSDS for all chemicals brought on to the Site.

D. Immediately notify the CM in writing of any hazard the Contractor discovers or observes on the Site, and the corrective measures planned or taken to eliminate or minimize the hazard. Hazard reporting will be completed as a near miss report.

PART 2 PRODUCTS

2.1. EQUIPMENT AND FACILITIES

A. Provide all equipment, temporary facilities, and personnel required to perform activities on Site safely in accordance with all applicable laws and regulations and the Contractor's HASP.

2.2. PERSONAL PROTECTIVE EQUIPMENT

A. The appropriate level of PPE is to be determined by the Contractor for the specific tasks as described in the Contractor's HASP. If hazards are identified that require a level of protection greater than Level C (defined in paragraph D below), Work shall be suspended and the CM notified. The Contractor's SSHO, in consultation with the CM, will determine what corrective actions are required prior to restarting Work. Determine and document the appropriateness of the suggested minimum PPE requirements for Contractor's personnel and Others at the Site.

B. Furnish and maintain materials and equipment for the Health and Safety of Contractor employees, its Subcontractors, Suppliers, and visitor personnel. Provide all required Health and Safety equipment, first aid equipment, tools, monitoring equipment, PPE, and ancillary equipment and methods required to ensure workers' Health and Safety and to comply with the Contractor's HASP.

C. Level D protection will be required at all times for all personnel and visitors on

the Site, except in Support Zone areas. Level D PPE consists of:

1. Hard hat.
2. Steel-toed boots.
3. Safety glasses with permanent side shields.
4. Work clothes (long pants, shirts with sleeves).
5. Work gloves.
6. High visibility reflective safety vests.
7. Hearing protection (as needed to prevent exposure exceeding 85 dB level).

D. If additional protection consisting of Level C PPE is required during the Work, Level C PPE shall include protection from dust particulates and entrained heavy metals and consist of Level D protection with the following additions:

1. Air purifying respirator, half-face or full-face (depending on required protection factor) with high efficiency particulate air cartridges meeting NIOSH Specifications. The presence of chemical vapors during certain activities (e.g. painting) could trigger the need for additional respiratory protection.
2. Disposable poly-coated chemically protective coveralls.
3. Disposable chemically resistant outer gloves (nitrile).
4. Disposable chemically resistant inner gloves (nitrile).
5. Chemically resistant, steel-toed, and steel-shanked boots (polyvinyl chloride, neoprene, or nitrile), or outer booties.

E. In most cases, Level C will be the maximum allowable level of PPE. Level B may be allowed provided that personnel are properly trained and certified, and exposure levels are below immediately dangerous to life and health (IDLH) conditions.

F. In cases where the CM's client requires additional PPE, the CM will notify the Contractor of these additional requirements in advance of mobilization so that Contractor may obtain the necessary equipment.

2.3. OTHER HEALTH AND SAFETY EQUIPMENT

A. Maintain the following equipment available on the Site for the health and safety of Contractor, Subcontractors, suppliers, and visitors:

1. First aid kits.
2. Fire suppression equipment (appropriate to location and type of flammable materials present). Equipment will be certified ready for use within the previous 12 months and will also have been inspected each month; maintain

documentation supporting certification and inspections available for review.

3. Emergency eyewash facilities meeting OSHA specifications.
4. Personnel decontamination facilities and equipment.
5. Flammable liquids storage cabinet(s), if necessary.
6. Personnel air monitoring equipment.
7. Confined space entry equipment, if necessary.
8. Fall protection equipment appropriate for the hazards on the project.
9. Heavy blankets.
10. Other equipment or supplies as determined to be necessary or prudent by Contractor or the Engineer.

PART 3 EXECUTION

3.1. WORKER QUALIFICATION

A. Provide the following training to workers, except those who will be restricted to the Support Zone.

1. Initial 40-hour OSHA hazardous waste Health and Safety training and current annual 8-hour refresher training.
2. Eight-hour OSHA hazardous waste supervisory training (required for the Contractor's Superintendent and SSHO).
3. Enrollment in a medical monitoring program, with clearance within the previous 12 months from a licensed physician allowing the worker to participate in field activities and use respiratory protective equipment.
4. Current respiratory fit testing certification for workers who may be required to work in Level C PPE.
5. Current cardiopulmonary resuscitation (CPR) and first aid certification for at least two workers assigned to Work on the site.
6. Confined Space Entry Training for workers entering confined spaces.
7. For any worker who is assigned the role of a "competent person," provide documentation of sufficient and relevant training and experience to perform the assigned duties and responsibilities of that role. As defined in 29 CFR 1926.31, the competent person shall be "one who is capable of identifying existing and predictable hazards, and who has authority to take prompt corrective measures to eliminate them." Relevant training and experience shall be in the same type of Project activities included in the Work under this Contract.

B. Designate one "competent person" as defined in 29 CFR Part 1926, Subpart P,

Excavations, to inspect and document excavation safety conditions daily and to ensure excavation safety prior to any personnel entering an excavation, if required.

3.2 WORK PLANNING AND MEETINGS

A. Conduct a daily health and safety meeting, prior to beginning Work for that day, to address health and safety issues, changing site conditions, activities, and personnel. All Contractor and Subcontractor employees working on the Site on that day must attend the meeting. Document all meetings and have attendees sign a form acknowledging their presence at the meeting. Include as part of the daily meeting, an evaluation of the Work to be conducted, the hazards associated with the work, and the control measures being used to reduce exposure.

B. Contractor personnel who are not in attendance for the daily Health and Safety must be briefed on the meeting notes prior to commencing any Work related activities.

C. Hold and document additional safety meetings at the start of each major task, and whenever site conditions change such that it could potentially affect worker safety. Any major task undertaken requires the completion of a JSA as described in this Section.

3.3 ENGINEERING CONTROLS

A. Provide the following engineering controls, as required, to complete the Work, to reduce the hazards of equipment operation and exposure to impacted materials.

1. Roll-over cages for bulldozers, back hoes, loaders, and tractors.
2. Back-up alarms for all trucks and moving equipment.
3. Water source with sufficient volume and pressure to reach all areas of the Work. Use the water source for wetting debris, soil and other media to control dust during the Work.
4. Decontamination of personnel and equipment in accordance with Specifications Section 01 50 00.
5. Barricades for open trenches and excavations.
6. Bars or cages for cabs of equipment as deemed necessary to resist damage and eliminate risk of injury during material and debris handling.
7. Sloping, benching, shoring, drainage systems, or other controls as necessary to ensure stability of excavations and embankments.
8. Others controls as determined to be necessary or prudent by Contractor or as directed by the CM.

B. Post ground-level warning signs every 50 feet below all overhead utilities on Site, as needed.

3.4 MONITORING

A. Perform heat exposure and cold exposure monitoring activities as required by weather conditions.

B. Perform all air monitoring activities described in the Contractor's HASP required to provide health and safety protection to the Contractor and Subcontractor personnel.

C. If working with asbestos-containing materials, the following monitoring may be required by the Engineer:

1. Perform exposure assessment air monitoring as required by OSHA 29 CFR Part 1926.1101 to determine the airborne concentrations of asbestos to which workers may be exposed. Use air samples that are representative of an 8-hour time-weighted average (TWA) and a 30-minute excursion limit (EL) to determine exposure levels.

2. Representative TWA worker exposures shall be determined on the basis of one or more samples representing full-shift exposure for workers in each regulated work area. Representative short-term worker exposures shall be determined on the basis of one or more samples representing 30-minute exposures associated with operations that are most likely to produce exposures above the EL for workers in each regulated work area.

3. Conduct daily air monitoring that is representative of the exposure of each worker who is assigned within a regulated work area, unless the Contractor has made a negative exposure assessment for the entire operation.

4. Institute exposure monitoring whenever there is a significant change in process, control equipment, personnel, or work practices that may result in new or additional exposures above the PELs, or when there is any reason to suspect that a change may result in new or additional exposure above the PELs.

5. Conduct, or otherwise provide for personnel air sampling of abatement personnel employed on the project, including daily 8-hour TWA and 30-minute Short Term Excursion Limit (STEL) air sampling, as required by OSHA 29 CFR Part 1926.1101. Personnel 8-hour TWA and 30-minute STEL samples shall be analyzed for asbestos fibers by Phase Contrast Microscopy (PCM) and the results shall be conspicuously posted at the project site within 72 hours of collection.

6. Perform all asbestos sampling for the Project Site and provide all necessary documentation to comply with state and federal asbestos regulations.

D. The perimeter air monitoring plan will be implemented by the Others, the Contractor is responsible for work zone air monitoring.

E. Pay all costs associated with sampling and analysis to comply with OSHA regulations, outside of those associated with the perimeter air monitoring plan being performed by Others.

3.5 EVALUATION OF PERFORMANCE

A. Conduct internal safety audits on Subcontract and sub-subcontract Work zones in accordance with the Contractor's HASP. The focus of these routine audits will focus on compliance with OSHA, and local, safety regulations.

B. Conduct routine behavioral observations and provide immediate feedback during Work activities to promote safe behavior of Contractor and Subcontractor employees.

END OF SECTION 01 35 00

SECTION 01 41 00
REGULATORY REQUIREMENTS - PERMITS

PART 1 GENERAL

1.1. SUMMARY

A. This Section establishes responsibility for obtaining Project permits between the Engineer and the Contractor.

1.2. ENGINEER PERMITS

A. The Engineer will obtain the following Project permits:

1. Approvals from the NYSDEC.

1.3. CONTRACTOR PERMITS

A. Obtain the following Project permits:

1. Local construction permits.
2. Permits required for any off-Site parking that is negotiated between the Contractor and the City of Troy, and/or private parking facilities, as needed.
3. Permits/notifications required by the City of Troy.
4. Temporary road closure permits.
5. Any other permits required to complete the Work.

B. This Section does not describe all permits required for performance of the Work. Any permits not identified in this Section, or elsewhere in the Contract Documents, are the responsibility of Contractor.

C. Regardless of who is responsible for obtaining a permit, the Contractor is responsible for performing in accordance with the terms and conditions of all permits.

D. Provide any technical and equipment related data required by the Engineer.

1.4. COORDINATION/ASSISTANCE

A. The CM will coordinate delivery of Contractor submittals to regulatory agencies, as may be required.

B. Provide all data requested by the CM to support permit applications. When necessary, the CM may provide data summaries or other Project information in support of Contractor permit submittals.

C. Any coordination and/or assistance between the Contractor and the CM are provided in the interest of expediting the Project. Provision of coordination and/or assistance does not relieve the Contractor of any obligations in obtaining the required permits.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 41 00

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, equipment, supplies, laboratory testing, materials, and performing all operations required for providing temporary facilities and controls during the performance of the Work.

1.2. WORK ZONES

A. Establish a Secured Zone, Support Zone, Exclusion Zone, and Decontamination Zone, as defined herein.

1. Lay out the Work Zones and establish boundaries, barriers, facilities, and controls to ensure that all personnel and equipment exiting the Exclusion Zone pass through the Contamination Reduction Zone before entering the Support Zone and before exiting the Site.

2. Furnish, install, and maintain in good condition, orange plastic mesh fencing secured to metal posts to delineate the boundaries between Work Zones, including the Exclusion Zone, Contamination Reduction Zone, and Support Zone. Install orange plastic mesh fencing at the entrance of the Exclusion Zone for a clear demarcation for Site workers.

B. Establish a general Secured Zone that excludes unauthorized personnel from entering the Site.

1. Control access to the secure zone by use of the existing steel chain-link fence shown on the Drawings.

2. The CM, Engineer, and Owner shall be allowed free access to the Secured Zone 24 hours per day, subject to appropriate safety precautions. Providing the CM, Engineer, and Owner with access to the Secured Zone does not in any way relieve that Contractor of the responsibility for maintaining Site security during the performance of the Work.

3. Maintain a log sheet on which all Contractor personnel and visitors must sign in and out upon entering or leaving the Secured Zone.

4. The Contractor is solely responsible for the security and safety of equipment, facilities, personnel, and materials within the Secured Zone.

C. Establish a Support Zone for field offices, storage, sanitary facilities, hand-washing facilities, and non-construction vehicle parking.

1. The Support Zone shall be an area that is free of physical and chemical hazards.

2. Maintain the Support Zone in a safe, clean, orderly, and sanitary manner at all times.

D. Establish the limits of the Exclusion Zone using the following criteria in addition to any other criteria that may be deemed necessary by the CM.

1. Open excavation areas.
2. All stockpile areas.
3. All areas where Impacted Materials are present at the ground surface.
4. OSHA Regulations and all other applicable Laws and Regulations.

E. Establish a Contamination Reduction Zone between the Support Zone and the Exclusion Zone.

1. Provide suitable facilities for personnel decontamination in the Contamination Reduction Zone, including portable toilets, emergency eyewash and a water hand washing station. Equip the personnel decontamination to provide seating and shelter from the elements.
2. Construct a vehicle and equipment decontamination pad that allows for the capture of solid residuals and evaporation/infiltration of liquid residuals generated during decontamination of construction vehicles and trucks bound for off-site disposal facilities.
3. The vehicle and equipment decontamination facility will be sufficiently sized to ensure the largest piece of equipment can be adequately decontaminated.
4. If requested by the CM, provide splash protection around the vehicle decontamination facility. Design splash protection to minimize potential contamination from splatter and mist during the vehicle and equipment decontamination process. If directed, furnish splash protection that is stable and capable of being dismantled in the event of high winds.
5. Provide a method for the transport of wastewater generated during decontamination procedures to be containerized.

PART 2 PRODUCTS

2.1. MATERIALS AND FACILITIES

A. All furnished materials must be suitable for their intended use and conform to all applicable codes and standards.

B. Provide appropriate first aid supplies in accordance with all applicable and relevant Federal, State, and local regulations.

C. Provide fully equipped hand wash stations outside of toilets and in the personnel decontamination area.

D. Provide separate, dedicated, temporary on-Site office space and work stations for CM and CAMP technician. At a minimum provide a space that includes electricity, internet service, 2 telephone lines, air conditioning, and heat. Equip each work station with a desk, chair, telephone, and facsimile.

E. Provide two way radios with spare batteries for the exclusive use of the CM and CAMP technician. The radios provided to the CM and CAMP technician must be able to receive and send on all frequencies to be used by the Contractor during the performance of the Work.

F. Provide and maintain a sufficient supply of materials/equipment required to implement decontamination procedures, including, but not limited to, the following items:

1. Plastic trash barrels.
2. Liners for trash barrels.
3. Wash basins.
4. Alconox™ or approved equivalent detergent concentrate.
5. Hand pump sprayers.
6. Long handled soft bristle brushes.
7. Large sponges.
8. Cleaning wipes for respirators.
9. Bench or stool(s).
10. Stepladder(s).
11. Steam generator.
12. Liquid detergent and paper towels.
13. Plastic trash bags.
14. Supplies and equipment to construct the decontamination pad.

G. Augment the existing perimeter fence to create a secure Site perimeter.

1. Install a temporary privacy screen around the existing perimeter fence.
2. Augment the existing site fence, as needed, to extend around all work areas including, but not limited to, the excavation area, waste handling equipment, and storage areas, as needed. Any temporary additional fencing must be at least the same height as the existing site fence.
3. If needed, provide additional reinforcement to prevent damage to the fence during periods of high wind from the addition of the privacy fabric. Promptly repair any damage to the fence and/or privacy fabric.

4. Existing fencing around the Site is shown on the Contract Drawings. Protect this security fencing from damage and repair and replace fencing damaged by Contractor's activities.

5. Furnish, install, and maintain all other proposed temporary fencing, gates, and barriers around impacted areas as required by the Contract Documents, and as may be needed to complete the Work.

6. Furnish and post signs at every entrance and gate, and at not less than every 50 feet along the fence warning the general public that the Site contains physical and chemical hazards, and that access is forbidden to unauthorized persons.

H. Furnish and post a professionally lettered sign, of a minimum size of 4 feet by 4 feet, at each entrance, or gate to the Site with the following text, or other similar text approved by the CM. "All Personnel and Visitors Beyond This Point Must Wear Hard Hat, Safety Glasses, High-Visibility Vest, and Steel Toe Boots." Additionally, furnish the DEC MGP remediation sign as detailed in the Contract Drawings.

I. Provide Rusmar AC 645 Long Duration foam or Engineer approved equivalent. Provide a foam application unit with a minimum capacity and flow rate equal to or in excess of the RUSMAR PFU 400/25.

PART 3 EXECUTION

3.1. GENERAL

A. Operate and maintain all equipment and systems to ensure that that the temporary facilities, controls, utilities, and other services are provided without disruption.

B. Design, furnish, install, and maintain all temporary Site facilities and controls required for the performance of the Work.

C. Provide and maintain all temporary environmental controls, as necessary for protection of the environment, throughout the performance of the Work.

D. Provide and maintain proper barricades and warning signs at all closures, holes, hazards, and equipment areas.

E. Ensure that all Subcontractors comply with the provisions of this Specification.

3.2. SANITARY FACILITIES

A. Empty the sanitary facilities before the capacity is exceeded, or on a weekly basis, whichever occurs first. Clean sanitation facilities concurrently with emptying.

B. Clean and restock hand wash stations as needed.

3.3. TEMPORARY UTILITIES

A. Provide suitable decontamination water for the duration of the Project.

B. Supply potable drinking water for on-Site personnel.

C. Provide all temporary utility services in accordance with this Specification for the duration of the Project. This includes, but is not limited to, installation, operation, maintenance, and removal of all equipment and/or systems required to ensure uninterrupted service and paying all fees associated with installation, connection, service, and shut-off.

D. There are no on-Site utility connections currently available for use.

3.4. PERSONNEL DECONTAMINATION

A. Comply with all requirements of the Contractor Health and Safety Plan.

B. Provide the means for the Engineer, CM, visiting regulatory agency representatives, and CAMP technician to comply with the Contractor Health and Safety Plan.

C. Provide a decontamination station where personnel can drop equipment and remove personal protective equipment (PPE).

1. Equip the decontamination station with basins for water and detergent, and trash bags or cans for containing disposable PPE and other discarded materials.

2. Supply a sink as a secondary means of personal hygiene for personnel.

3.5. EQUIPMENT DECONTAMINATION

A. Install decontamination equipment in accordance with the Contract Drawings.

1. Locate and operate a decontamination pad at any point that equipment leaves the Site.

2. Provide a decontamination pad of sufficient size to ensure that the largest piece of equipment can be adequately decontaminated.

B. Remove heavy contamination using a broom and/or brushes within the excavation area prior to movement to the decontamination pad.

C. Perform heavy equipment decontamination within the limits of the decontamination pad.

D. Pressure wash heavy equipment before it departs the Site, as needed.

E. Decontaminate any equipment utilized to excavate impacted materials prior to backfilling.

F. Collect and pump wastewater from equipment decontamination into the wastewater treatment system.

G. Collect and remove soils from the decontamination pad and bulk with excavated materials for disposal.

3.6. SITE SECURITY

A. The Work will be completed in the City of Troy. Take every security precaution necessary to prevent any unauthorized access to the work area, and to control construction traffic to and from the Site.

B. Provide manned overnight security services during all non-working hours to include weekends and holidays.

C. Security personnel employed during non-working hours must, at a minimum, meet the following requirements:

1. Be literate in the English language.
2. Briefed on Site hazards.
3. At no time have access to or the capacity to use firearms, restraint tools, or any weaponry associated with criminal investigation.
4. Have access to a telephone.

D. Personnel assigned to perform Site security are not required to adhere to the training, certification, and medical monitoring program defined in the site specific Health and Safety Plan, however, security personnel must be briefed on all hazards present and instructed not to enter any exclusion zones and to avoid any potential exposure to contaminated wastes.

E. Establish written Site security procedures as part of the Site Operations Plan. At a minimum the procedures will include:

1. Roles and responsibilities of personnel involved with Site Security.
2. Description of proposed daily security operations.
3. Method and frequency for conducting security checks.
4. Sign in/sign out procedures.
5. Location of security station.
6. Description of how a breach of security will be handled. A breach of security includes, but not be limited to, unauthorized personnel located on the Site working area, unauthorized personnel attempting to gain access to the Site working area, broken fences and unlocked gates, and unauthorized personnel in the hazardous work zones.
7. Communications.

F. List of personnel to be contacted in case of emergency.

3.7. DUST, ODOR, and VAPOR CONTROLS

A. Apply odor-suppressing foam to the excavated material when stockpiled, during excavation and loading operations, or at any other time and location as directed

by the CM.

B. Provide the labor, equipment, and materials required to apply odor and vapor suppressant foam to all exposed excavated material, including stockpiles, within 5 minutes of the start of intrusive activities, or when directed by the CM. No separate payment will be made for the supplying and operation of vapor/odor control equipment. Payment for vapor/odor suppression materials will be as per the unit bid price. Failure to apply vapor/odor suppression materials within the specified time will result in all Work being suspended until such time as the CM feels the request for controls has been fully satisfied. No additional payment for such downtime shall be due to the Contractor.

C. Maintain sufficient materials on hand to apply foam as directed during the entire period when intrusive work is being performed.

D. Cover all exposed stockpiles with a secured polyethylene tarp if left untouched for longer than 2 hours. Provide an equivalent covering for all excavated material stockpiles left overnight.

E. Provide dust control at the approved offload point using water trucks, hoses, or engineered dust suppression materials, as needed.

F. Notification will be provided when real time monitoring being performed at the Site perimeter indicates levels have reached 10% of the action levels specified in the CAMP for a 10 minute period. Upon notification, immediately begin to implement dust and odor/vapor controls.

END OF SECTION 01 50 00

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1. SUMMARY

A. Closeout procedures covers the administrative and technical requirements for final cleaning, inspection, Project as-built documents, system demonstrations and adjustments, warranties, bonds, final payment, and other procedures for Project closeout in accordance with the Contract Documents.

1.2. CLOSEOUT PROCEDURES AND REQUIRED SUBMITTALS

A. Substantial Completion:

1. When the Contractor considers the Work, or designated portion thereof, to be at Substantial Completion, provide written notice, with a list of items to be completed or corrected (punch list), the value of items on the list, and reasons why the Work is not complete.

2. The CM will inspect the Work to determine the status of completion.

3. If the CM determines that the Work is not at Substantial Completion, the Contractor will be notified of the deficiencies in writing.

4. The Contractor will, within two (2) days of the written notice, provide a schedule for when all defects will be corrected and/or the Work completed for the CM to review.

5. Upon approval from the CM, correct any deficient and/or incomplete Work and notify the CM upon completion. The CM will then re-inspect the Work for the purpose of Final Acceptance.

B. Project Closeout Report:

1. Submit a Project closeout report that includes the following information:

a. Description of activities, including total work quantities.

b. Variations from the Contract Documents.

c. Discussion of major issues encountered during the performance of the Work and the resolution.

d. A complete list of all Contractor personnel who performed Work on-Site.

e. Record drawings. The specific requirements for record drawings that are to be submitted as part of this report are contained in subparagraph 1.2, C of this section.

f. Supporting documentation. The specific requirements for the required

supporting documentation that is to be submitted as part of this report are contained in subparagraph 1.2, D, E, and F of this section.

C. Record Drawings:

1. Submit record surveys in electronic format, and provide five (5) hard copies to the CM that have been signed and sealed by a surveyor licensed to practice in the State of New York as part of the Project closeout report. At a minimum, record drawings are to include:

   a. Encountered structures left in place.

   b. Encountered pipes that were removed, not removed, and the terminal ends of cut/capped pipes.

   c. Utility locations, elevations, and inverts.

   d. Bottom of remedial excavation.

   e. Backfill grade.

   f. Final Grade/topography.

   g. Lateral extent and top and bottom contours of the in-situ stabilization Work. Include QC sampling locations and note any columns relocated during construction.

   h. Benchmark coordinates and elevation.

D. Provide copies of all Project records including, but not limited to, the following:

1. Manifests and bills of lading.

2. Weight tickets.

3. Testing results.

4. Health and Safety reports.

5. Copies of permits.

E. Utility Relocation:

1. Submit written confirmation from the utility providers that all temporary relocated utilities have been restored to pre-remediation condition, and that all temporary utility connection points have been restored to a suitable condition.

F. Permit Closeout:

1. Submit written confirmation that all permits have been closed with their governing authority and that any and all remaining fees have been paid in full.

G. Final Acceptance:

1. Submit written certification that confirms the following: Contract Documents have been reviewed, Work has been inspected, Work is complete in accordance with the Contract Documents (including satisfactory compliance with performance guarantees), any previously noted deficiencies have been corrected or remediated, equipment has been tested in the presence of the CM, and that the Work is complete and ready for final inspection.
2. The CM will inspect the Work to verify status of completion.
3. Should the CM find the Work to be satisfactory, the Contractor will be allowed to make application for final payment in accordance with the Agreement. Should the CM find deficiencies and incomplete Work, the Contractor will be notified in writing of deficient and/or incomplete Work and requests for final payment will not be approved until such time that the Contractor has satisfactorily completed the required Work.
4. Take immediate action to remedy incomplete/deficient Work and send written notice to the CM upon completion. The CM will then re-inspect Work to verify the status of completion.

H. Final Payment:

1. Submit an application for final payment after the final acceptance of the Work.
2. Submit evidence of final continuing insurance coverage, complying with insurance requirements, with the application for final payment.
3. Identify total Contract amount, previous payments and the amount due.
4. Submit an application for payment of retainage accompanied by signed affidavits verifying the release of liens and payment of all debts and claims.

PART 2 MATERIALS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01 77 0

SECTION 02 41 00
DEMOLITION

PART 1 GENERAL

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, materials and equipment and performing all operations required for the partial or complete removal, storage, and/or disposal or salvage of structures, at grade, above grade, and below grade during performance of the Work.

PART 2 MATERIALS

(Not Applicable)

PART 3 EXECUTION

3.1. GENERAL

A. Demolition of pavement and/or any related structures, as part of the RA, must be carried out in accordance with State of New York Department of Transportation-Standard Specifications, latest edition.

B. Remove existing pavement, concrete pads, and structures and appurtenances from the Site as detailed in the Contract Documents.

3.2. DEBRIS HANDLING

A. Store demolished materials on a debris pad, or in a container designed for the purpose.

B. Dispose of any debris in accordance with the Contract Drawings and Section 02 61 00 – Removal and Disposal of Contaminated Materials.

3.3. DEMOLITION OF REMNANT STRUCTURE AND ABANDONED PIPES

A. Where structures are partially demolished, employ means (saw cutting, pre-splitting, etc.) to maintain the integrity of the portion of the structure to remain in place.

B. On-Site crushing will not be allowed.

3.4. ASPHALT AND CONCRETE REMOVAL

A. Remove the asphalt surfaces in the locations shown on the Contract Drawings.

B. Utilize complete depth saw cuts when demolishing impervious surfaces.

C. Dispose of all removed asphalt at an approved recycling facility.

END OF SECTION 02 41 00

SECTION 02 61 00
REMOVAL AND DISPOSAL OF CONTAMINATED MATERIALS

PART 1 GENERAL

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, materials and equipment, and performing all operations required for the proper management, off-Site transportation, and disposal of waste materials and waste liquids generated during implementation of the RA.

1.2. GENERAL

A. Identify a National Grid-approved disposal facility from the list of approved facilities provided with the Contract Documents for each anticipated waste stream. Submit the names of the disposal facilities proposed for use on the list of Subcontractors furnished with Contractors Bid.

B. Furnish any additional analytical testing required by the disposal facilities to accept the material.

1.3. SUBMITTALS

A. Designate and submit primary and alternate disposal facilities for each anticipated waste stream. Upon final approval from National Grid, contract with all primary facilities prior to any excavation. Copies of contracts from each facility or letters from each facility-indicating acceptance of the total estimated volume of material from this Project will be submitted to the CM.

B. Submit copies of all waste manifests, bills of lading, and certified weight slips from a scale approved for use by the CM and/or National Grid for all materials removed from the Site for disposal.

C. Submit copies of Part 364 Permits for all waste transporters.

PART 2 MATERIALS

2.1. VEHICLE REQUIREMENTS

A. The license plates on the truck must be properly affixed and visible at all times.

B. Proper placards must be displayed and extraneous or incorrect placards must be covered and/or removed prior to the truck departing the Site.

C. All required permits must be properly displayed or readily available for verification by the CM.

D. Drivers must remain in the truck at all times unless they are wearing the correct personal protective equipment required for the Site.

E. Standing on the back of the truck is prohibited. Ladders or scaffolding must be used when securing tarps and/or covers.

F. Provide polyethylene impermeable liners for the interior of the excavated impacted material storage containers and vehicles to prevent the leakage of entrained liquid. The liner material must be strong enough to withstand the placement of excavated material into the container without tearing, chemically resistant to the contaminants within the material, and be of sufficient length and width to cover the interior bed of the haul truck with no seams while completely covering over the load with overlap.

G. Provide vehicles and containers used for the storage and/or transport of materials with SOLID sealable covers to minimize the release of odors from the containers during transport. The use of mesh covers is not permitted.

H. The CM reserves the right to reject vehicles that are not properly equipped and/or arrive to the Site in a dirty condition.

2.2. ODOR SUPPRESSANT

A. Provide odor and dust suppressing foam to supplement covers, as requested by the CM.

PART 3 EXECUTION

3.1. LOADING AND TRANSPORTATION OF MATERIAL

A. Use pre-characterization sample results to allow direct load, transport, and disposal of all MGP-related impacted material whenever possible.

B. Provide traffic control at the Site entry to ensure a smooth flow of traffic and to minimize congestion at the Site entrance. At a minimum, the traffic control must include the usage of flaggers and proper signage.

C. Appropriately cover trucks (see Section 2.1) filled with excavated material prior to exiting the Site to prevent vapor and fugitive dust emissions during transport. Supplement with odor suppressant foam or solvent as needed. Gross vehicle truck weights shall conform to the most current DOT regulations for the Federal, State, and local level.

D. All Work in and around trucks shall be performed in appropriate personal protective equipment. These activities must be specifically addressed in the Site Specific Contractor HASP.

E. Prior to leaving the Site, inspect all material transport vehicles and containers for evidence of contamination (including inside of wheels and undercarriage). All trucks leaving the Site shall proceed to a decontamination station for cleaning prior to exiting onto public roads.

1. Brush off equipment using a broom and/or brushes within the excavation area prior to movement to the decontamination pads to decrease the amount of respirable particulates leaving the remediation area.
2. If necessary, at the decontamination pad, all heavy equipment will be pressure washed before leaving the Site.
3. All equipment leaving the Site will be decontaminated per these guidelines. In addition, any equipment previously utilized to excavate impacted material will be decontaminated prior to use in backfilling (e.g. excavator bucket).
4. Size decontamination pads to ensure that the largest piece of Contractor equipment can be adequately decontaminated. Provisions will be made to control overspray at the decontamination pads.
5. Collect and pump wastewater from equipment decontamination into frac tank(s).
6. Wastewater will be transported from the Site by a properly licensed liquid waste hauler.
7. Soils collected from the decontamination pads will be bulked with the MGP-related impacted material and sent to the properly licensed National Grid-approved disposal facility, as necessary.

F. Trucks shall proceed directly to the designated disposal facility. Trucks may not be pre-loaded with material for overnight storage.

G. The Contractor is responsible for any and all actions necessary to remedy situations involving material spilled or leaked in transit, or mud or dirt tracked off-Site. This includes trucks carrying imported fill or other materials to the Site (i.e. dust generated from trucks entering the Site on adjacent roads). Clean up shall be performed in accordance with all applicable Federal, State, and local regulations at no additional costs to National Grid.

H. All transporters used shall be properly licensed, permitted, and certified for the service provided.

I. Material from the Site will not be combined with any other material, without the CM's approval.

J. National Grid or the CM will sign transport bills of lading or manifests. National Grid will provide a hazardous waste generator number, if required. Maintain copies of all documents involving transportation of materials from the Site. Copies of these records shall be submitted to the CM at a frequency agreed to by the Contractor and National Grid. All records shall be turned over to National Grid at the completion of the Work.

K. Ensure that transport vehicles are properly secured, labeled, and placarded prior to exiting the Site.

3.2. DISPOSAL OF MATERIALS

A. Dispose of soils that contain MGP-related impacted material at an off-Site licensed disposal facility approved by National Grid, unless otherwise specified.

B. Dispose of debris to an off-Site licensed landfill receiving Construction & Debris facility approved by National Grid, unless otherwise specified.

C. The Contractor is responsible for the acceptance of materials at the facilities. This includes furnishing any additional laboratory analysis required by the facilities for acceptance of the material. In the event that the identified and approved facilities cease to accept the materials, the Contractor will be responsible for identifying alternate facilities, and making arrangements with such facilities to accept material from the Site with no change in the unit price submitted in the Contractor's Bid for this Project. Alternate facilities are subject to review and approval by National Grid.

D. In the event that an alternate facility is needed to accept the material, the Contractor will supply a written submission to National Grid on the material type, amount, location, and reason the approved facility ceased to accept the material. Alternate facilities not previously audited by National Grid will require an audit prior to allowing transport of materials to the facility. Any charges or fees incurred by the Contractor associated with delays to the Project schedule during this audit process are the responsibility of the Contractor.

E. If any materials are encountered during excavation that appear to exhibit hazardous characteristics, where hazardous material was not expected to be encountered, these materials should be segregated, stored on Site, sampled, and disposed of appropriately.

F. Decontaminate construction debris and/or bulky material within the excavation, if encountered, if possible.

G. Segregate non-contaminated construction debris and bulky wastes for transport to a landfill facility.

H. Dispose of decontamination wastewater at an off-Site liquid waste treatment facility approved by National Grid. Provide any additional laboratory analysis required to dispose of the wastewater generated during the performance of the Work.

I. Solid material collected in the dewatering frac tank(s), as a result of settling in the tank, shall be bulked with the suspected MGP-related impacted material and sent to the disposal facility as necessary.

END OF SECTION 02 61 00

SECTION 11 68 00
PLAY FIELD EQUIPMENT AND STRUCTURES

PART 1 GENERAL

1.1. SUMMARY

A. Provide all labor, equipment, supplies, and materials required to fabricate replacement bocce courts demolished during the performance of the Work.

B. The demolished bocce courts are to be replaced in kind using the minimum materials standards specified within this section.

1.2. SUBMITTALS

A. Submit a shop drawing to the CM for review of approval showing the dimensions, materials, and connections that will be used to fabricate the replacement bocce courts.

PART 2 MATERIALS

2.1. TIMBERS

A. Furnish pressure treated exterior grade wood that has been certified for ground contact for the construction of the replacement bocce court.

PART 3 EXECUTION

3.1. INSPECTION

A. Inspect the construction of the bocce courts during the pre-bid site walk and become familiar with their construction so that a Bid price for the replacement of the courts can be formulated.

3.2. CONSTRUCTION

A. Construct the bocce courts after the completion of the pavement Work.

B. Remove and properly dispose of any excess materials remaining after the completion of the construction of the courts.

END OF SECTION 11 68 00

SECTION 31 09 00
GEOTECHNICAL INSTRUMENTATION

PART 1 GENERAL

1.1. SUMMARY

A. Provide all labor, equipment, supplies, and materials required to install and protect the geotechnical instrumentation shown on the Contract Drawings.

PART 2 MATERIALS

(Not Applicable)

PART 3 EXECUTION

3.1. INSTALLATION

A. Install the Settlement Monitoring Points (SMPs) as shown in the Contract Drawings.

B. Place Crack Monitoring Points (CMPs) on the brick retaining wall. Consult with the CM on the locations where the gauges will be placed prior to installation.

C. Coordinate schedules with the CM to allow for the instrumentation to be installed in a timely fashion.

3.2. PROTECTION

A. Protect all instruments from damage due to construction operations, weather, traffic, and vandalism.

B. The Contractor is liable for all costs associated with the replacement of geotechnical instruments that are damaged as a direct result of their actions or the actions of their Subcontractors.

C. Conduct no Work within 30 feet of damaged instrumentation until the instrument is repaired or replaced, as needed.

3.3. SETTLEMENT AND STABILITY MONITORING

A. Use a Professional Surveyor licensed in the State of New York to record the movement in three dimensions on settlement monitoring points.

B. Establish surveyor control points that are located at least 250 feet beyond the limits of the excavation.

C. Monitor both horizontal and vertical movement of the settlement monitoring points.

D. Tolerances:

1. Determine the initial location of each monitoring point with respect to a benchmark(s).

2. Determine the location of monitoring points to an accuracy of plus/minus 0.005 feet in the horizontal and vertical direction.

E. The maximum allowable cumulative vertical or horizontal movement measured at any Settlement Monitoring Point (SMP) or inclinometer is no more than 1 inch. Stop all related construction activities to prevent additional movement if the movement criterion is exceeded. These criteria may be adjusted by the CM based on actual conditions experienced on-Site.

3.4. VIBRATION MONITORING

A. Vibration monitoring will be performed by Others.

3.5. VIBRATION LIMITS

A. Conduct all Work in such a manner that vibrations caused by the Work do not damage nearby structures.

B. Do not allow vibration levels at nearby structures to exceed the criteria set forth by AASTHO (AASHTO R 8-96), excerpted in the table below.

AASHTO Maximum Vibration Levels for Preventing Damage

Type of Situation	**Limiting Velocity (in/sec)**
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5

C. In addition to the above listed guidelines, limit peak particle velocity to 1.5 inches/second as measured at the gas line adjacent to the southern tar well excavation.

D. The guidance provided in the AASHTO maximum vibration levels table does not relieve the Contractor from responsibility with regard to fulfillment of the terms of the Contract and the requirement to protect the existing structures and restore or replace damage caused either directly or indirectly during the performance of the Work.

E. The CM may instruct the Contractor to implement vibration reduction strategies in order to mitigate vibration levels which exceed the AASHTO criteria during the performance of the Work.

F. Requests for an increase in time or relevant pay items related to the implementation of any vibration reduction strategies needed to meet the requirements of this Section will be denied.

3.6. DATA ACQUISITION

A. Daily monitoring is required for all SMPs and CMPs during each active work day. Submit updated elevations and coordinates of the monitoring points to the CM immediately after the points have been surveyed.

B. Provide safe access all vibration monitoring equipment that is being provided by Others.

C. Data obtained by the CM will be made available, upon request, to the Contractor. The Contractor may observe the CM during data acquisition.

END OF SECTION 31 09 00

SECTION 31 10 00
SITE PREPARATION

PART 1 GENERAL

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, materials and equipment and performing all operations required for the Site preparation prior to performance of the RA.

1.2. SUBMITTALS

A. Provide the DIGSAFE ticket number and the findings of the utility mark out to National Grid and the CM prior to excavation.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTIONS

3.1. GENERAL SITE PREPARATION ACTIVITIES

A. Clear all debris, rubble, and vegetation from the Work areas and in any other areas which will be used for construction support as approved by the CM.

B. Clear all debris, rubble, and vegetation from the air monitoring station locations as directed by the CM.

C. Provide protection for existing monuments, structures, and appurtenances during the Work.

D. Protect the air monitoring station locations during the Work.

E. Provide temporary relocation of appurtenances that have the potential to become damaged during performance of the Work.

F. Place polypropylene sheeting over the mural to protect it during the performance of the Work.

3.2. TEST PITS

A. National Grid Gas operations may require that test pits be excavated via “soft dig” methodologies along the alignment of the gas main in the vicinity of the southern tar well. Provide test pits, at the direction of the National Grid, to facilitate the uncovering and inspection of the active gas pipe.

3.3. TEMPORARY CONSTRUCTION ENTRANCE

A. Obtain the appropriate permits required for temporary construction entrances, if necessary; refer to Section 01 41 00 – Regulatory Requirements – Permits.

B. Install the temporary construction entrance in accordance with any City of Troy requirements.

3.4. DEBRIS REMOVAL

A. Remove debris within the limits of Work area, and debris generated during the demolition of the asphaltic surfaces; handle, screen and characterize as necessary.

B. Remove all debris (i.e. trash, metal, concrete, asphalt, etc.) within the Site boundary. Conduct all handling, segregating and screening activities that are necessary to facilitate off-Site disposal.

C. Contaminated materials must be segregated from non-contaminated materials and prepared, as necessary, for disposal at the facilities approved for use during performance of the RA.

D. Dispose of all debris at an approved disposal or recycling facility.

3.5. WORKING RESTRICTIONS - OVERHEAD ELECTRICAL UTILITIES

A. There are overhead transmission lines near portions of the site. Use extreme care during the implementation of the RA so as not to damage or interfere with these utilities.

B. Maintain the minimum OSHA required setbacks for all booms and trucks operating in the vicinity of energized lines.

C. Coordinate with the electrical utility provider to de-energize or sheath overhead electrical lines, if required to complete the RA.

D. Do not load or empty trucks under the overhead electrical utilities. Do not open truck covers under the overhead electrical utilities. Provide warning signs of overhead lines and clearances for truck drivers at the site entrance.

E. Provide ground level warning signs every 50 ft under overhead power lines within the work area.

3.6. SNOW REMOVAL

A. Perform all snow removal activities on the Site during the duration of the Work.

B. Arrange for snow removal to be performed as soon as practicable after a snow event, and minimize the amount of time lost due to inclement weather.

C. Remove/relocate snow to maintain emergency vehicle access and egress points on the Site at all times while the Work is being performed.

D. Remove snow from the sidewalks abutting the Site as part of the snow removal after a snow storm.

END OF SECTION 31 10 00

SECTION 31 23 00
EXCAVATION AND FILL

PART 1 GENERAL

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, materials and equipment and performing all operations required for the excavation, handling, and backfilling of material during performance of the RA.

1.2. SUBMITTALS

A. Excavation and Backfilling Plan: Submit an Excavation and Backfilling Plan showing sequencing, staging, and phasing of the excavation, materials handling and backfilling activities. Incorporate into Site Operations Plan submittal described in Section 01 30 00 – Administrative Requirements.

B. Borrow Source Evaluation: Submit the results of the borrow source evaluation for each source to be used as imported clean backfill indicating the material is in compliance with the geotechnical and environmental criteria. Perform borrow source evaluation prior to the import of fill from the borrow source. Include the following:

1. Name, address, telephone number, facsimile number, and web site address of borrow source.

2. Certificate of clean fill from the borrow location stating that the soil is native in origin and free of contamination.

3. Analytical results from the borrow source, specific to the actual fill being imported to the Site, as confirmation that the material is free of contamination and in compliance with the clean fill environmental criteria.

C. Perform borrow source evaluation for environmental criteria to ensure that the imported material meets the Project criteria of Restricted Residential Soil Cleanup Objectives described in the requirements of 6NYCRR 375-6.7(d) and DER-10 5.4.

D. Geotechnical test results from the borrow source, specific to the actual fill being imported to the Site, as confirmation that the material is in compliance with the clean fill geotechnical criteria.

PART 2 PRODUCTS

2.1. GENERAL

A. Provide a stabilization agent, such as cement kiln dust (CKD), or equivalent to amend soils too wet to transport in trucks, as directed by the CM. The stabilization agent used must be acceptable to the disposal facility and in accordance with NYSDEC requirements for amendments. Submit the

manufacturer MSDS and product information for all amendments as part of the Contractor SOP prior to the material being imported to the Site.

2.2. BACKFILL

A. Imported Clean Fill

1. Furnish Imported Clean Fill that meets Restricted Residential SCOs and is free of organic or deleterious materials and meets the following gradation requirements, or equivalent, as approved by the CM.

U.S. Standard Sieve	Percent Finer by Dry Weight
1 inch	100
No. 4	70 to 100
No. 200	0 to 10

2. Complete a Modified Proctor maximum density test via ASTM D1557-latest edition, and grain size analysis via ASTM D6913-latest edition for each sample of Imported Clean Fill collected.

B. Road Base

1. Furnish Road Base that meets Restricted Residential SCOs and conforms to material designation 304-1 Type 4 in the January 7, 2010, Standard Specification prepared by the New York State Department of Transportation. Use Road Base that is free of organic matter, and meets the following requirements:

U.S. Standard Sieve	Percent Finer by Dry Weight
2 inch	100
0.25 inch	30 to 65
No. 40	5 to 40
No. 200	0 to 10

2. Complete a Modified Proctor maximum density test via ASTM D1557-latest edition, and grain size analysis via ASTM D6913-latest edition for each sample of sand fill collected.

2.3. DEMARCATION BARRIER

A. Furnish a high visibility, orange, polypropylene snow fence. Other high visibility or florescent colors may be used upon approval from the CM.

B. Use underground warning tape that is non-detectable, high visible polyethylene tape of a different color than the demarcation barrier. Print warning text in Spanish and English “Danger - Do Not Dig - Peligro no Excavar.” The warning may be printed directly on the demarcation barrier.

PART 3 EXECUTION

3.1. CAMP REQUIREMENTS

A. Implement airborne dust and vapor suppression measures required to comply with the CAMP and as directed by National Grid or the CM. These actions are indicated in the Contract Drawings and may include any of the following or other measures to minimize air emissions:

1. Applying water on exposed soil surfaces and/or roadways to suppress dust.
2. Covering working areas of exposed soils or stockpiles with tarpaulins, vapor suppressing foam, or other vapor controls.
3. Modifying the means and methods of the Work (i.e. using different or additional equipment, etc.).
4. Modifying the production rate (i.e. excavation rate, etc.).

B. Changing the sequence of activities.

3.2. EXCAVATION

A. Perform excavations in accordance with OSHA regulations.

B. Prior to the installation of the shoring system, pre-cut the excavation areas to a depth of 2 feet below existing grade. Extend the pre-cut 15 feet from each side of the sheet pile.

C. Perform the excavation to the lines and grades indicated on the Contract Drawings, and to depths as directed by the CM.

D. Dewater the excavation as necessary to remove excess water during the excavation Work.

E. Manage excavated materials in accordance with the Section 02 61 00 – Removal and Disposal of Contaminated Materials. Excavated material handling includes:

1. Excavate subsurface soil to contours, elevations, and dimensions indicated.
2. Whenever possible, perform the excavation of impacted material as a direct-load operation.
3. Transport and dispose of excavated material at a regulated, licensed, and National Grid-approved disposal facility or hazardous material facility, as directed by the CM.
4. Segregate bulk solid waste and construction debris encountered during excavation from excavated soil to allow for acceptable disposal of soil at the disposal facility or hazardous material facility.
5. Gravity dewater excavated soil such that the water is allowed to drain back into the excavation or is captured within lined stockpile areas.

F. Perform all excavations using proper shoring and bracing and/or excavation sloping/benching to ensure slope stability.

G. The excavation portion of the Work will be above and below the water table. Perform the excavation below the water table using techniques to minimize the water content of the excavated soil such that they can be transported in trucks without stabilization or other special measures. Measures will include the use of slotted or perforated buckets to allow water trapped in the bucket drain back to the excavation. If needed, use short term stockpiling within the excavation to allow excavated soil to drain as space and equipment allow. Use stabilization only for soils that are inherently too wet and cannot be dried sufficiently using other techniques. Stabilization may only be used with the approval of the CM.

3.3. BACKFILL

A. Place and compact the Imported Clean Fill up to the within 2 ft. of final finished grade, and then place Road Base material to raise the grade to the level of the first asphalt course.

B. For areas that will be restored with impervious surfaces (concrete, asphalt, etc.), backfill the excavation to the required subgrade elevations as shown on the Contract Drawings.

C. Do not place backfill without the approval of the CM. Placement of backfill prior to CM approval is at the Contractor's risk and may require removal at the Contractor's cost. Commence backfill placement and compaction upon confirmation of the horizontal and vertical limits of the excavation; whichever is applicable, and as directed by the CM.

D. Dewater the excavation as necessary to remove excess water during backfilling operations and to prevent a surface release of groundwater. Ensure that groundwater within the excavation does not overtop the excavation support system or excavation walls during backfill operations. Dewatering the excavation from localized sumps.

E. Backfill excavations in accordance with the Contract Drawings.

F. Place backfill using a method that does not cross contaminate backfill, or disturb/damage adjacent structures and property.

G. Place and compact backfill in maximum 12-inch lifts.

H. Maintain moisture content within +3 to –3 percent of the backfill optimum moisture content to attain required compaction density.

I. Perform laboratory and field geotechnical testing.

J. Place the demarcation barrier at the bottom of the excavation.

K. Place and compact the Imported Clean Soil backfill to the percent of the

maximum dry density (as determined by Modified Proctor during the borrow source evaluation) indicated in the table. Do not place overlying lifts of backfill until in place compaction tests indicate that the current grade layer has been compacted in accordance with this criterion.

Project Area	**Percent Compaction (%)**	**Test Frequency (per lift of material)**
Less than 2 feet below pavement and utility base course	95	50 ft by 50 ft
Greater than 2 feet below pavement and utility base course	92	50 ft by 50 ft

L. Utilize an appropriately licensed testing Subcontractor that is certified to test soil by ASTM D6938-latest edition, Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods-Shallow Depth.

3.4. FIELD CONTROL QUALITY

A. If compaction testing indicates that the Work does not meet the specified requirements, provide additional compaction or remove the soil and replace with acceptable backfill.

B. The CM reserves the right to reject backfill that differs visually from the identified source material and to randomly test backfill materials for conformance with the specifications. Remove backfill that fails to meet the specifications.

3.5. CONSTRUCTION METHODS

A. Establish excavation rates that will permit continuous Work while accommodating the receiving capacity of the selected treatment/disposal facilities.

B. Perform the excavation as a direct-load operation when practicable.

C. Divert or otherwise prevent surface water from entering excavations to the extent practicable without causing damage or flooding to adjacent properties.

END OF SECTION 31 23 00

SECTION 31 23 19
DEWATERING

PART 1 GENERAL

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, materials, equipment, and performing all operations required for the dewatering of the excavation area during performance of the Removal Action. Groundwater flows were modeled for the site and range from 5 to 25 gallons per minute.

B. Perform Dewatering Work using a network of localized sump pumps. A well point system is not required.

1.2. SEQUENCING AND SCHEDULING

A. Continuously dewater the excavation to minimize the water content of the excavated material and facilitate backfilling as per the requirements detailed in Specification 31 23 00 – Excavation and Fill.

B. Coordinate and schedule the dewatering Work in a manner that minimizes the quantity of water pumped while not affecting the excavation and backfill schedule.

PART 2 PRODUCTS

2.1. DEWATERING EQUIPMENT

A. Furnish, install, and operate pumping equipment of sufficient capacities to meet the requirements for the removal of groundwater, stormwater, and surface runoff water from the excavation area as necessary to complete the excavation and backfilling Work.

B. Keep on Site or have immediate access to, additional pumps of sufficient capacity to maintain dewatering activities during any pump breakdown, maintenance, or in case of flooding.

C. The excavation dewatering network should have redundant features such as adequate standby pumping capacity, valves, and piping so that damage to, or failure of, a principle component of the network will not result in the failure of the entire network.

D. Provide sufficient suction and discharge hose or piping for transferring pumped liquids without causing erosion, sedimentation, or other adverse consequences.

E. Provide freeze protection for all dewatering hoses, piping, and pumping equipment necessary to execute the Work throughout the winter months, including but not limited to: insulation, heat wraps, heaters, and/or enclosures. Freeze protection chemicals or solutions shall not be used on Site without prior approval of the CM.

F. Equipment for dewatering may be new or used, but shall be suitable for the Work and maintained in good condition.

G. All dewatering equipment shall remain the property of the Contractor or Subcontractor.

H. Decontaminate dewatering equipment in accordance with Specification 01 50 00 – Temporary Facilities and Controls, and remove the equipment from the Site at the completion of the Work.

PART 3 EXECUTION

3.1. DEWATERING - GENERAL

A. Design, furnish, install, operate, and remove a dewatering network to allow excavation to the depths shown on the Contract Drawings plus an additional 2 feet without requiring redesign. The network should be designed to keep groundwater levels at least 2 feet below active excavation activities while minimizing the amount of water discharged.

B. The water from the active excavation area or water in contact with exposed impacted soils may contain MGP residuals. Containerize and transport this water off-Site for disposal. Incorporate the design of the network into the Contractor Site Operations Plan after it has been reviewed and approved by the CM.

C. Review the available sub-surface and geotechnical information to determine the pumping rates and storage requirements that will be required to complete the Work.

D. Furnish, at a minimum, all labor, materials, and equipment, required to perform all operations required to design, install, test, pump, measure, and maintain the excavation dewatering equipment and water storage systems, including the storage tank, pumps, sumps, electric power supply and distribution equipment as required to dewater the excavations so that the Work can be conducted under controlled conditions. Decontaminate and demobilize all dewatering equipment and materials after completing the excavation and backfill Work.

E. Repair or replace damaged pumps, piping, hoses, tanks, and all other dewatering equipment and materials within four working hours, if damaged. Damage includes any pump and power failures, leaks, breaks, clogs, or other conditions that adversely affect the dewatering system or releases contaminated water.

F. Grade the excavation area using run-on/runoff controls including, but not limited to, slopes, berms, and sumps to channel surface water runoff away from the excavation areas.

G. Prevent any impacted water from contacting soils, or water outside of the active excavation area. If environmental contamination results from the Contractor's failure to control impacted water, remove the contamination to the satisfaction of

the CM, at no additional cost to the Owner.

H. After the excavation is completed and inspected by the CM, backfilling may proceed with the water levels maintained at least 2 feet below the backfill level until final grades are achieved.

I. Install, operate, and remove the dewatering systems in accordance with applicable Federal, State, and local Laws and Regulations, permits, and generally accepted industry practices.

3.2. SAMPLING AND ANALYSES

A. Water sampling and analysis will be performed by the Contractor in accordance with the requirements of the approved liquid waste disposal facility listed in the SOP.

END OF SECTION 31 23 19

SECTION 31 41 00
SHORING

PART 1 GENERAL

1.1. SUMMARY

A. Provide all labor, equipment, supplies, and materials to install, operate, maintain, and remove a temporary excavation support system in the locations indicated on the Contract Drawings.

B. Refer to Specification Section 31 09 00 – Geotechnical Instrumentation for information and details on instrumentation requirements.

1.2. CUSTOM DESIGNED EXCAVATION SUPPORT SYSTEM

A. The Contractor is responsible for the materials and methods of construction for the custom designed excavation support system, subject to the criteria provided in the Contract Documents.

B. Coordinate the installation of the custom designed excavation support system with the dewatering plan. Incorporate staging of the excavation support and dewatering equipment into the narrative of the Contractor means and methods included in the Site Operations Plan.

C. Documentation of the design of the excavation support system is provided with the Contract Documents.

1.3. SUBMITTALS

A. After installation of the custom designed excavation support system submit a detailed as built plan. Include steel member identification, size, location, length, top elevation, excavation level/stage, and any other pertinent data.

B. Submit an action plan for arresting any unforeseen movements which could damage nearby structures, utilities, roadways and other features. Include methods and time for implementation.

C. Provide a plan for the backfilling of the void space created by the removal of the custom designed excavation support system. Include details for the materials and methods that will be used during this process.

PART 2 PRODUCTS

2.1. CUSTOM DESIGNED EXCAVATION SUPPORT SYSTEM MATERIALS

A. Furnish hot rolled sheets suitable for their intended use and that conform to applicable codes and standards.

B. Use structural steel that conforms to AISC standards.

C. Use welding technique and welding electrodes that are in accordance with AWS

D1.1, Structural Welding Code, latest edition.

D. Use steel shims or wedges, wooden shims or wedges are not permitted.

2.2. INSTALLATION EQUIPMENT

A. Size installation equipment to provide sufficient energy to install the excavation support system to the required depths.

B. The use of impact hammers on the Project is not permitted.

C. Size removal equipment to provide sufficient energy to remove the excavation support system.

PART 3 EXECUTION

3.1. GENERAL

A. Install the temporary excavation support system in order to excavate and backfill the excavation area shown in the Contract Drawings.

B. Install, maintain, and remove the excavation support system in a manner that prevents the following:

1. Excessive movement and settlement.

2. Removal of soil fines from the adjacent ground.

3. Damage to, or excessive movement of, nearby structures, utilities, roadways, and other features.

3.2. CUSTOM DESIGNED EXCAVATION SUPPORT SYSTEM INSTALLATION

A. Install steel support members in a plumb position such that each pile installed is continuously interlocked with adjacent piles in the locations shown on the excavation support system design.

B. Drive sheeting such that the ball of the interlock is below the socket of the mating interlock to minimize plugging of interlocks.

C. If the excavation support system is unable to be installed as designed due to unforeseen field conditions, cease installation and notify the CM.

D. Phase the installation of the custom designed excavation support system as follows:

1. Pre-trench along the sheet pile alignment to a depth of 5 feet below existing grade.

2. Install the sheet piles to El. -14.0 feet.

3. Backfill between the sheets and the in-situ soil to remain with Clean Fill to limit soil movement.

4. Excavate inside the cell to El. 24.0 feet.

5. Install the internal bracing at El. 26.0 feet.
6. Lower the water level with the limits of the cell as detailed in Specification Section 31 23 19 – Dewatering.
7. Excavate inside the cell to El. 10.0 feet.
8. The CM will observe the soils removed from bottom of the excavation, and may direct an additional 2 feet of excavation, if required.
9. Backfill the excavation to El. 24.0 feet.
10. Remove the internal bracing.
11. Backfill the excavation to the grade where the Road Base installation will begin.
12. Remove the piles, with proper abandonment of void space, leaving only the common wall with next cell to be installed.
13. Repeat the above steps for the construction, excavation, and backfill of each subsequent cell.

E. Maintain accurate records of the excavation support system installation. Include type of steel member, detailed installation record, final elevation, deviations from design location and alignment, lateral deflection and settlement measurements, and all other data pertaining to the installation and performance.

3.3. SETBACKS

A. Do not allow construction machinery within 5 feet of the vertical face of wall for the custom designed excavation support system.

B. Do not stockpile soil within 40 feet of the custom designed excavation support system.

3.4. MOVEMENT

A. Monitor the performance of components of the excavation support system for vertical and horizontal movements and for the overstressing of structural members.

3.5. REMOVAL

A. Remove all components of the systems, after the excavation and backfill has been completed.

B. Remove the excavation support systems, and abandon the void space, using grout or other method acceptable to the CM, in accordance with all applicable state and local regulations.

END OF SECTION 31 41 00

SECTION 32 12 00
PAVEMENT

PART 1 GENERAL

1.1. SUMMARY

A. The Work required under this section includes furnishing all labor, materials and equipment, and performing all operations required for the installation of bases, sub-grades, and pavement surfaces during performance of the Work.

B. Installation of pavement and/or any related structures must be carried out in accordance with City of Troy requirements and the State of New York Department of Transportation- Standard Specifications, section 400.

1.2. GENERAL

A. Properly surface the full width of the parking lot.

1.3. SUBMITTALS

A. Submit manufacturer cut sheets for all pavement paints proposed for use to the CM.

PART 2 MATERIALS

2.1. SUB-BASE

A. A minimum 2 feet layer of Road Base as detailed in Specification Section 31 23 00 – Excavation and Fill, within excavated areas.

2.2. PAVEMENT

A. Furnish N.Y.S. Type 6F asphalt.

B. Furnish an asphalt surface that has a minimum compressive strength of 100 pounds per square inch.

C. Design Density:

1. A laboratory specimen made in the proportions of the job mix formula for each class mix compacted by 75 blows on each face of a 2.5 inch thick specimen by a standard Marshall hammer will be the standard for density comparison.

2.3. PAVEMENT PAINT

A. Furnish pavement paint that is in compliance with all NYSDOT requirements, if applicable.

PART 3 EXECUTION

3.1. RESTORATION OF PARKING FIELD

A. Surface the portions of the parking lot that were removed to accommodate the

excavation Work performed during the RA with 2.0 inches of N.Y.S. Type 6F asphalt.

B. Mill in place the top 1.5 inches of asphalt in the City of Troy municipal parking lot that was not demolished during the performance of the excavation, as detailed in the Contract Documents.

C. Use milling machines that are equipped with a means to control dust and other particulate matter created by the cutting action.

D. Use a vacuum truck or street sweeper to clean the milled surface. The usage of power brooms to clean the milled surfaces is prohibited.

E. Apply a tack coat to milled surface prior to placement of the Type 6F asphalt.

F. Re-surface the portions of the parking lot that were milled in place with 1.5 inches of N.Y.S. Type 6F asphalt.

G. Compact the asphalt to a minimum of 95% of the design density.

H. Complete all restorations in accordance with the City of Troy requirements, where applicable.

3.2. APPLICATION OF PAVEMENT MARKINGS

A. Replace in kind, all pavement markings in the City of Troy parking lot.

B. Restripe standard parking stalls with two coats acrylic traffic marking paint at the same locations and orientation unless otherwise directed by CM. Color to be approved by the CM prior to application. Paint surface preparation, mil thickness and application procedures are to be per the manufacturer's recommendations and in accordance with NYSDOT requirements, if applicable.

END OF SECTION 32 12 00

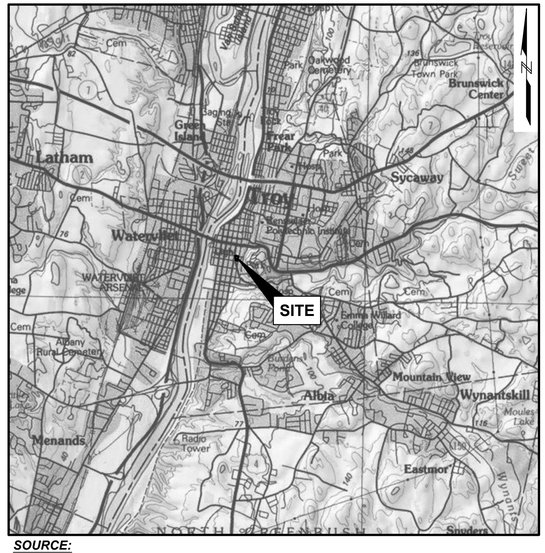
REMEDIAL ACTION DRAWINGS

TROY (LIBERTY STREET)
NON-OWNED FORMER MANUFACTURED GAS PLANT (MGP) SITE
CITY OF TROY, RENSSELAER COUNTY, NEW YORK

SCHEDULE OF DRAWINGS

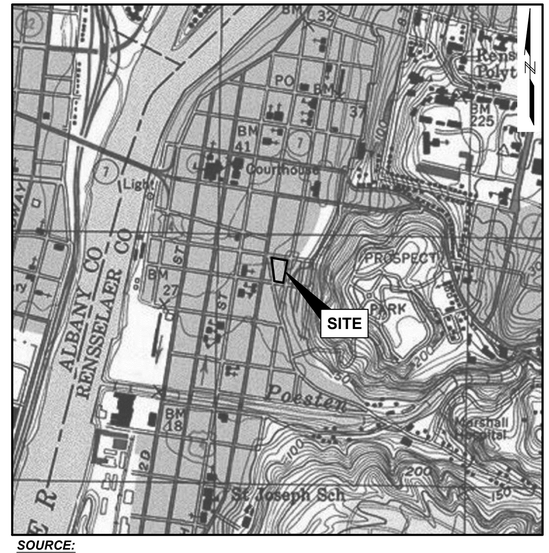
SOURCE:
MAP IMAGE PREPARED BY MAGELLAN GEOGRAPHIX, SANTA BARBARA, CA, 1994.

STATE MAP
APPROXIMATE SCALE: 1" = 100 MILES



SOURCE:
U.S.G.S. TOPOGRAPHIC MAPS, 1:24,000, TROY NORTH, NY, AND TROY SOUTH, NY.
MAP CREATED WITH TOPO! ® ©2001 NATIONAL GEOGRAPHIC (www.nationalgeographic.com/topo).

REGIONAL MAP
SCALE: 1" = 1 MILE



SOURCE:
U.S.G.S. TOPOGRAPHIC MAPS, 1:24,000, TROY NORTH, NY, AND TROY SOUTH, NY.
MAP CREATED WITH TOPO! ® ©2001 NATIONAL GEOGRAPHIC (www.nationalgeographic.com/topo).

SITE LOCATION
SCALE: 1" = 2000'

DigNet of NEW YORK CITY & LONG ISLAND
800-272-4480 | 811

811 Know what's below. Call before you dig.

811 Know what's below. Call before you dig.

PREPARED FOR:

NATIONAL GRID
300 ERIE BOULEVARD WEST
SYRACUSE, NY 13202

nationalgrid

GEI Consultants Inc., PC
1301 Trumansburg Road
Ithaca, New York
607-216-8955
WWW.GEICONSULTANTS.COM

PROJECT NUMBER: 093300

SEPTEMBER 2013

FOR BIDDING PURPOSES ONLY

PROFESSIONAL ENGINEER LIC. NO. 077276-1
Daniel R. Kopcow EXP. DATE: 09/30/2014

NO.	DATE	DESCRIPTION	DES	DR	CH	APP
1	09/16/13	ISSUED FOR BID	AMR	PHH	CRP	DRK
0	08/02/13	ISSUED FOR REVIEW	AMR	PHH	CRP	DRK

DRAFT

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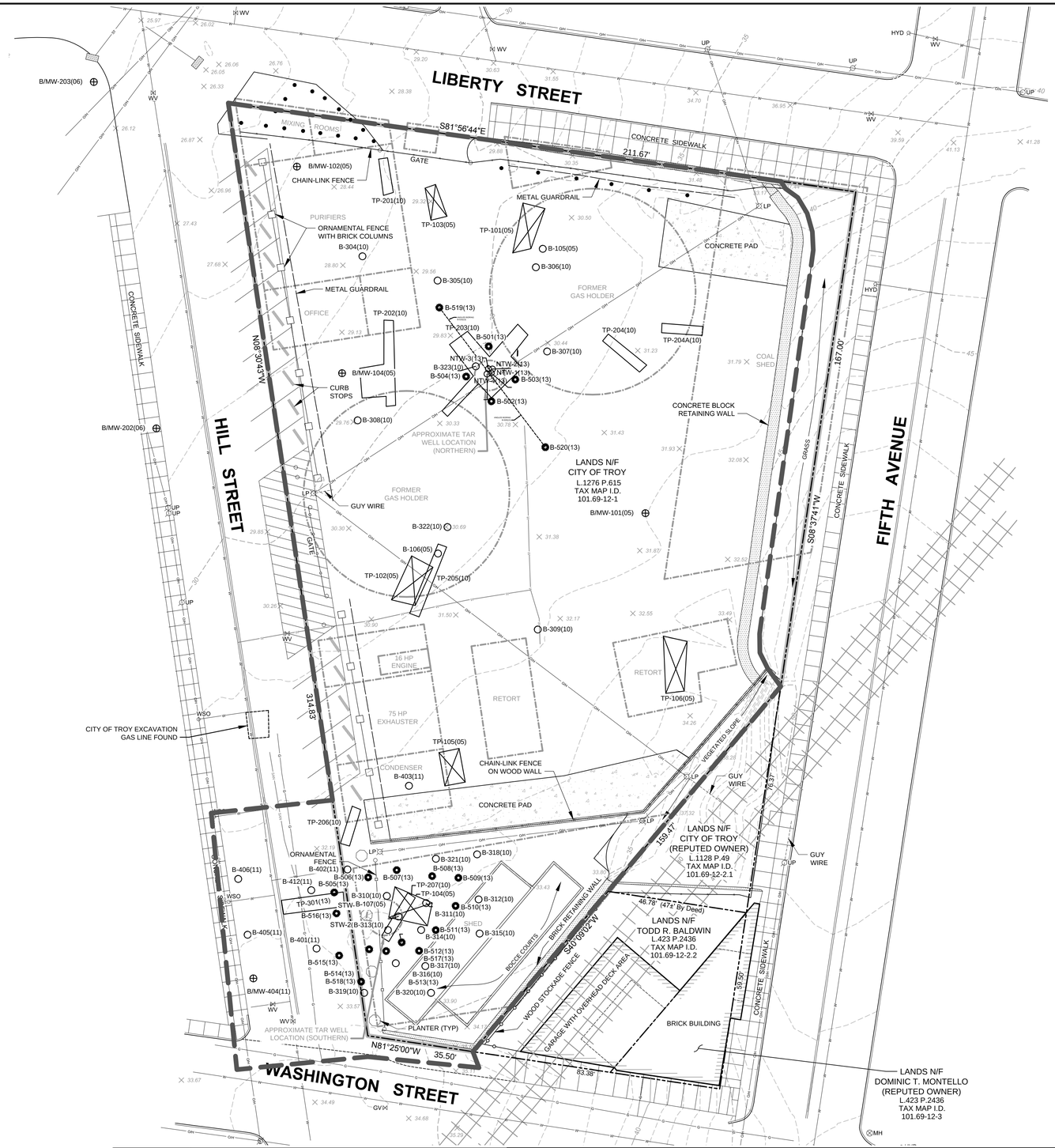

LEGEND:

- PROJECT LIMITS
- PROPERTY LINE
- SITE BOUNDARY
- GROUND SURFACE CONTOURS
- SPOT GRADE
- CONCRETE BLOCK RETAINING WALL
- CHAIN-LINK FENCE
- METAL FENCE WITH BRICK PILLARS
- GUIDE RAIL
- EDGE OF PAVEMENT
- HISTORICAL RAILROAD TRACKS (APPROXIMATE)
- HISTORICAL STRUCTURE BASED ON 1885 SANBORN FIRE INSURANCE MAP
- HISTORICAL GAS HOLDER/TAR WELL (SURVEYED UNLESS NOTED)
- CONCRETE PAD
- BOLLARD
- HYD HYDRANT
- UP WOOD UTILITY POLE
- LP STEEL LIGHT POLE
- CB CATCH BASIN
- MH MANHOLE
- GV GAS VALVE
- WSO WATER SHUT OFF
- WV WATER VALVE
- OH OVERHEAD UTILITY LINES
- W CITY OF TROY WATER MAIN
- W WATER LINE (SUSPECTED ABANDONED)
- G GAS LINE
- SAN SANITARY SEWER LINE (DEFUNCT)
- ST STORM SEWER LINE
- B/MW-101(05) SOIL BORING/MONITORING WELL (EA ENGINEERING PC, 2005)
- B/MW-203(06) SOIL BORING/MONITORING WELL (EA ENGINEERING PC, 2006)
- B-312(10) SOIL BORING/MONITORING WELL (GEI, 2010)
- B-412(11) SOIL BORING/MONITORING WELL (GEI, 2011)
- B/PZ-407(11) SOIL BORING/PIEZOMETER (GEI, 2011)
- TP-206(10) TEST PIT

NOTES:

1. ELEVATIONS REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29). HORIZONTAL LOCATIONS REFERENCED TO NORTH AMERICAN DATUM OF 1983 (NAD 83).
2. BOUNDARIES BASED ON SURVEY BY DELTA ENGINEERS, DATED JANUARY 2013.

SOURCES:

1. BASE MAP TAKEN FROM *TOPOGRAPHIC AND BOUNDARY SURVEY, PORTION OF THE LANDS OF THE CITY OF TROY, NEW YORK (FORMER MGP SITE), 34 HILL STREET,* CITY OF TROY, RENSSELAER COUNTY, STATE OF NEW YORK, SCALE: 1" = 20', DATE: JANUARY 22, 2013 AND APRIL 19, 2013 BY DELTA ENGINEERS, VERNON, NY.
2. *TOPOGRAPHIC SURVEY AND MAP OF NIAGARA MOHAWK MGP SITE SITUATED AT HILL STREET,* CITY OF TROY, COUNTY OF RENSSELAER, N.Y., SCALE: 1" = 50', SITE SURVEYED IN DECEMBER 2005, DECEMBER 2006, OCTOBER 2010, DECEMBER 2010 AND APRIL 2011 BY M.J. ENGINEERING AND LAND SURVEYING, P.C., CLIFTON PARK, NY.
3. SANBORN FIRE INSURANCE MAP, 1885.
4. TRANSPORTATION PLAN - STREETS FROM: NYS STREETS SHAPEFILE PROVIDED BY NYS GIS PROGRAM OFFICE, ACCESSED FROM NYSGIS CLEARINGHOUSE *(http://gis.ny.gov/index.cfm)*
5. TRANSPORTATION PLAN - HUDSON RIVER FROM: NYS HYDROGRAPHY (1:24,000) SHAPEFILE PROVIDED BY NYS GIS PROGRAM OFFICE, ACCESSED VIA NYSGIS CLEARINGHOUSE *(http://gis.ny.gov/inde*

0 20 40
SCALE, FEET

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

NO.	DATE	ISSUE/REVISION	APP
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0	08/02/13	ISSUED FOR REVIEW	DRK

DRAFT

Designed:	AMR
Checked:	CRP
Drawn:	PHH
Submitted By:	DRK
NY P.E. No.:	077276-1
Submittal Date:	08/02/2013

GEI Consultants Inc. PC
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Ithaca, New York
607-216-8955

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Troy (Liberty Street)
Non-Owned Former MGP Site
City of Troy, Rensselaer County, New York

DWG. NO. 1

EXISTING CONDITIONS

SHEET NO. 1 of 9

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LEGEND:

- SITE BOUNDARY
- TRAFFIC DIRECTION
- TRANSIT ROUTE TO SITE
- TRANSIT ROUTE FROM SITE

DIRECTIONS FROM SITE:

1.	HEAD NORTH ON HILL ST TOWARD 4TH ST	400 FT
2.	TURN LEFT ONTO DIVISION ST	0.3 MI
3.	ROAD NAME CHANGES TO FRONT ST	0.2 MI
4.	TURN RIGHT ONTO CONGRESS ST	0.2 MI
5.	TURN RIGHT ONTO RIVER ST	0.3 MI
6.	TURN RIGHT ONTO FERRY ST/19TH ST	0.2 MI
7.	TURN RIGHT ONTO 2ND AVE	0.2 MI
8.	TURN RIGHT ONTO 23RD ST	0.2 MI
9.	MERGE ONTO I-787	

DIRECTIONS TO SITE:

1.	FROM EXIT 8 OFF OF I-787, TURN ONTO 23RD ST HEADING WEST	0.1 MI
2.	TURN LEFT ONTO 2ND AVE	0.2 MI
3.	TAKE SECOND LEFT ONTO NY-2 EAST/19TH ST	0.6 MI
4.	TURN RIGHT ONTO 3RD ST	0.2 MI
5.	TURN LEFT ONTO LIBERTY ST	390 FT
6.	TURN RIGHT ONTO HILL ST, SITE IS 160 FT ON LEFT	

TRUCK ROUTE NOTES:

1. ROADWAY BASE MAP SOURCE: NYS STREETS SHAPEFILE PROVIDED BY NYS GIS PROGRAM OFFICE, ACCESSED FROM NYSGIS CLEARINGHOUSE *(http://gis.ny.gov/index.cfm)*
2. TRUCKS TRANSPORTING CONSTRUCTION EQUIPMENT OR MATERIALS (SOIL, WATER, PIPE, CEMENT, ETC.) TO OR FROM THE SITE MUST USE SPECIFIED ROUTES.
3. DO NOT QUEUE TRUCKS AND EQUIPMENT IN LOCAL STREETS.
4. TRUCK ROUTE TO INTERSTATE MUST BE INSPECTED DAILY FOR SPILLAGE, DUST, OR OTHER SITE RELATED IMPACTS. ANY IMPACTS LOCATED OR REPORTED ALONG THE TRUCK ROUTE MUST BE APPROPRIATELY REMEDIATED AS DIRECTED BY THE CONSTRUCTION MANAGER.
5. MAINTAIN CONTINUOUS TRAFFIC FLOW ON HILL STREET OUTSIDE THE PROJECT AREA.
6. NEGOTIATE TEMPORARY ROAD CLOSURES WITH THE CITY OF TROY.
7. PERFORM MAINTENANCE AND PROTECTION OF TRAFFIC IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITION, AND TO THE SATISFACTION OF THE CITY AND CONSTRUCTION MANAGER.

FOR BIDDING PURPOSES ONLY

0 250 500
SCALE, FEET

Attention:
0 1"
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Warning:
It is a violation of Section 7209.2 of the New York State Education Law for any person, unless acting under the direction of a licensed professional engineer, to alter in any way plans, specifications, plats or reports to which the seal of a professional engineer has been applied. If an item bearing the seal of a professional engineer is altered, the altering engineer shall affix to the item his seal and the notation "Altered By" followed by his signature, the date, and a specific description of the alteration.

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DWG. NO. 2

TRANSPORTATION PLAN

SHEET NO. 2 of 9

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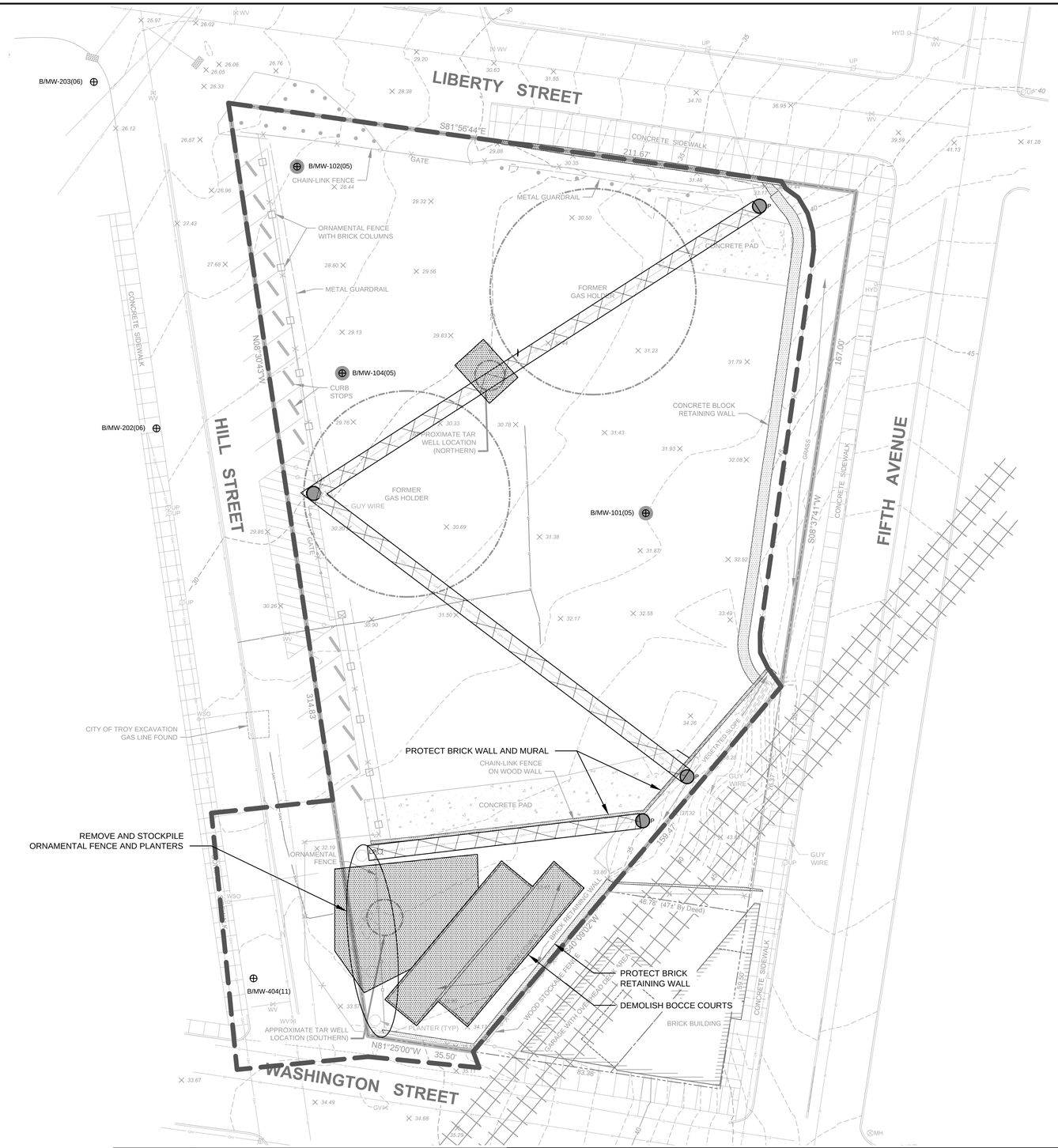

LEGEND:

- REMOVE WIRES
- DEMOLISH
- B/MW-102(05) — PROTECT MONITORING WELL
- LP — PROTECT LIGHT POLE
- PROJECT LIMITS
- OVERHEAD UTILITY LINES
- CITY OF TROY WATER MAIN
- WATER LINE (SUSPECTED ABANDONED)
- GAS LINE
- SANITARY SEWER LINE (DEFUNCT)
- STORM SEWER LINE
- GROUND SURFACE CONTOURS
- SPOT GRADE
- CONCRETE BLOCK RETAINING WALL
- CHAIN-LINK FENCE
- METAL FENCE WITH BRICK PILLARS
- GUIDE RAIL
- EDGE OF PAVEMENT

NOTES:

1. PROTECT ALL EXISTING INJECTION POINTS AND MONITORING WELLS.
2. PROTECT THE EXISTING SITE FENCE.
3. MINIMIZE DAMAGE TO PAVEMENT AS MUCH AS PRACTICABLE.
4. DE-ENERGIZE, REMOVE, AND STOCKPILE THE OVERHEAD WIRES AS INDICATED IN THE PLAN.

FOR BIDDING PURPOSES ONLY

0 20 40
SCALE, FEET

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0 1"
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DWG. NO. 3

DEMOLITION AND PROTECTION PLAN

SHEET NO. 3 of 9

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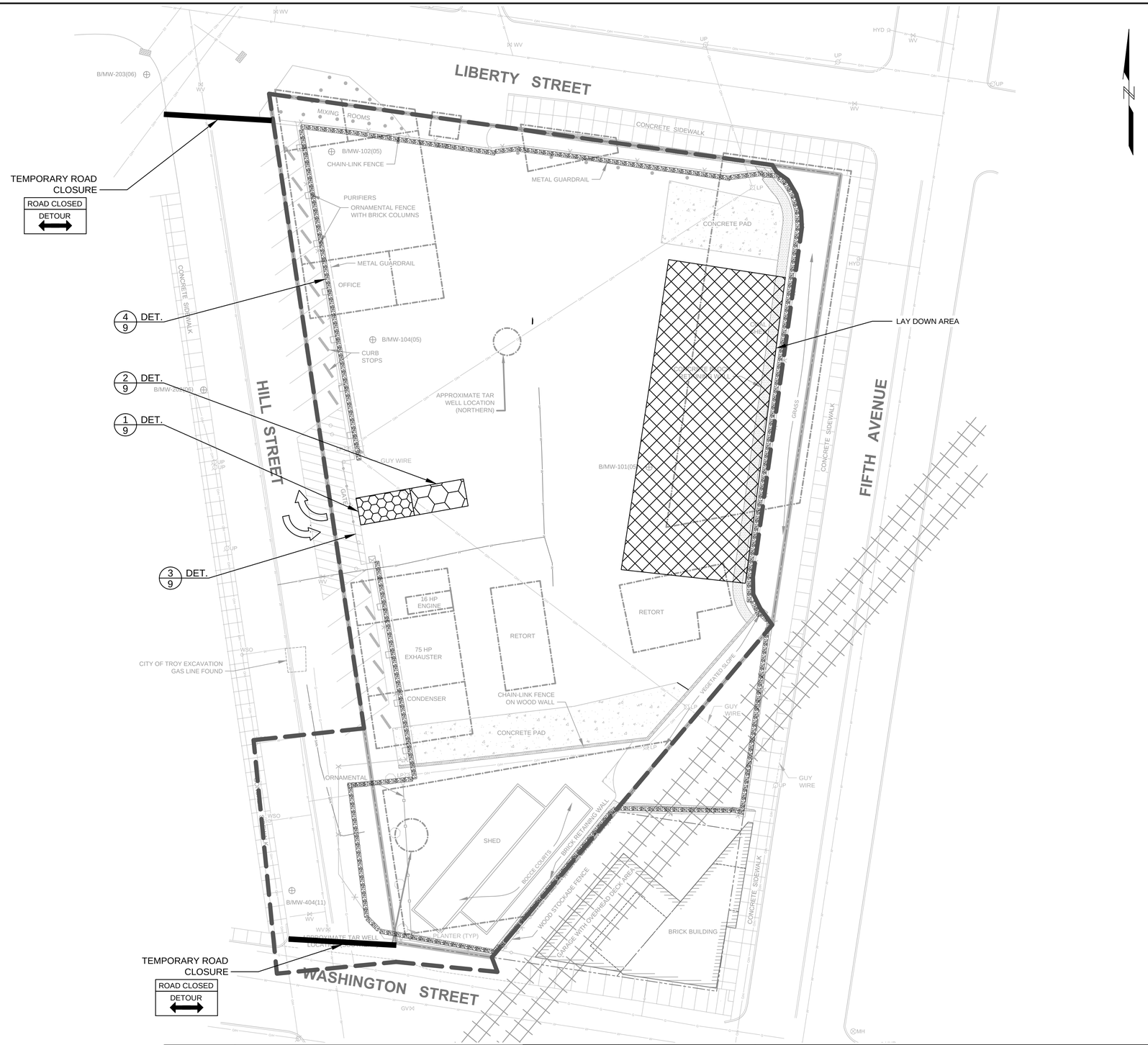

LEGEND:

- CONTRACTOR LAY DOWN AREA
- ANTI-TRACKING PAD (ACTUAL SIZE TO BE DETERMINED IN FIELD) 1/9
- DECONTAMINATION PAD (ACTUAL SIZE TO BE DETERMINED IN FIELD) 2/9
- PROJECT LIMITS
- INSTALL OR IMPROVE SECURITY FENCE

NOTES:

1. AUGMENT AND PROTECT THE EXISTING SITE FENCE TO CREATE A SECURE SITE PERIMETER.
2. CREATE STOCKPILES, AS NEEDED, AS SHOWN ON DETAIL 5/9
3. THE LAYOUT SHOWN IS CONCEPTUAL. ACTUAL LAYOUT IS TO BE DETERMINED BY THE CONTRACTOR BASED ON THEIR SELECTED MEANS AND METHODS, AS APPROVED BY THE CONSTRUCTION MANAGER.
4. MAINTAIN NORMAL TRAFFIC PATTERNS ON HILL ST. UNTIL STARTING EXCAVATION WORK ON THE SOUTHERN TAR WELL.
5. RELOCATE HAY BALES AS NEEDED PRIOR TO STARTING EXCAVATION WORK ON THE SOUTHERN TAR WELL.
6. DO NOT ROUTE SITE TRAFFIC ALONG THE SOUTHERN PORTION OF HILL ST. DURING THE EXCAVATION OF THE SOUTHERN TAR WELL.

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SCALE, FEET

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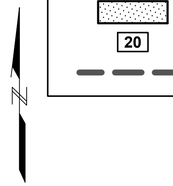
SITE MANAGEMENT PLAN

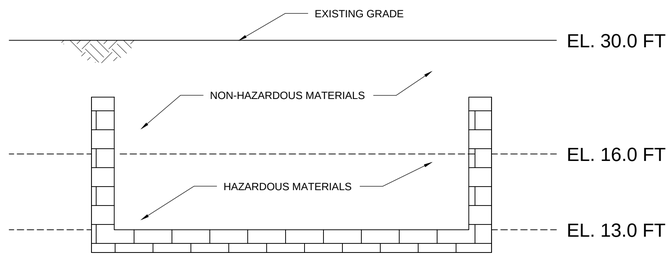
DWG. NO. 4

SHEET NO. 4 of 9



LEGEND:

- LIMITS OF EXCAVATION
- 20 — EXCAVATION AREA AND DEPTH
- PROJECT LIMITS



SECTION A/5
NOT TO SCALE

SECTION NOTES:

1. THE LOCATION OF THE HAZARDOUS MATERIAL SHOWN IN THE SECTION IS BASED ON THE INTERPRETATION OF BORINGS AND IS NOT GUARANTEED.
2. THE CONTRACTOR MUST BE PREPARED TO ENCOUNTER HAZARDOUS MATERIAL AT ANY POINT DURING THE EXCAVATION WORK.
3. NOTIFY THE CONSTRUCTION MANAGER IMMEDIATELY IF MATERIAL THAT IS SUSPECTED TO BE HAZARDOUS IS ENCOUNTERED.

FOR BIDDING PURPOSES ONLY

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DWG. NO. 5

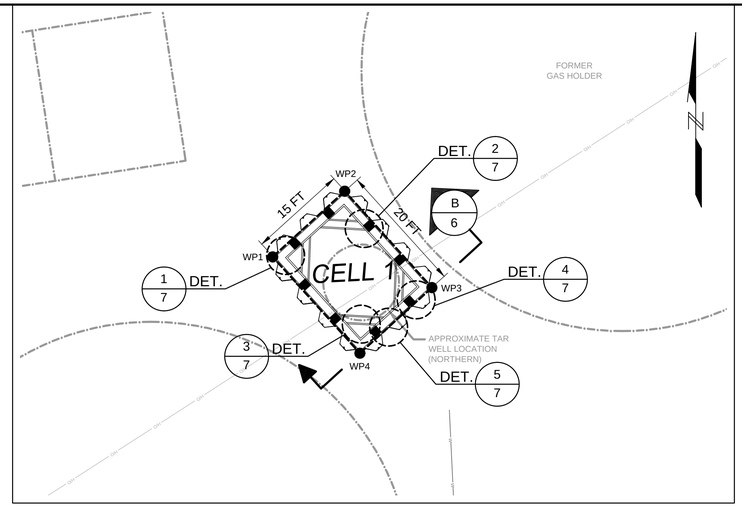
EXCAVATION PLAN

SHEET NO. 5 of 9

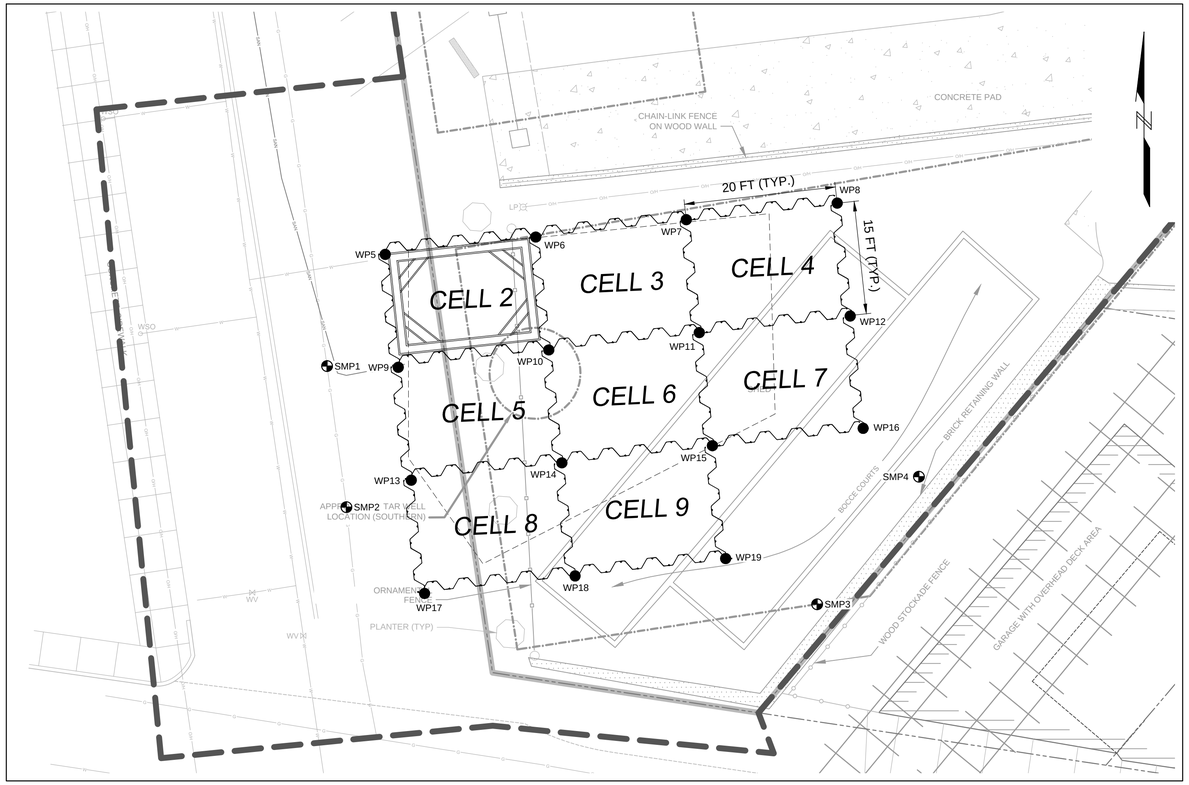
COORDINATE TABLE

POINT	NORTHING	EASTING
1	1418760.1120	709841.2709
2	1418768.7729	709850.7684
3	1418756.0612	709862.2810
4	1418747.4003	709852.7834
5	1418591.4832	709798.0932
6	1418593.7721	709817.9618
7	1418596.0609	709837.8304
8	1418598.2481	709857.7481
9	1418576.5818	709799.8098
10	1418578.8706	709819.6784
11	1418581.1595	709839.5470
12	1418583.3467	709859.4647
13	1418561.6803	709801.5265
14	1418563.9707	709821.4081
15	1418566.2359	709841.2794
16	1418568.5275	709861.1719
17	1418546.7348	709803.2856
18	1418549.0483	709823.1513
19	1418551.3372	709843.0199

COORDINATE SYSTEM (NAD 83)



DETAIL 1/6



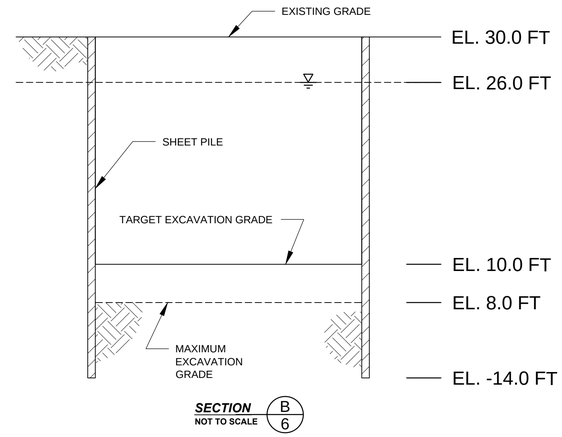
DETAIL 2/6

LEGEND:

- ESTIMATED LIMIT OF EXCAVATION
- PROJECT LIMITS
- WP3 — WORKING POINT
- SMP — SETTLEMENT MONITORING POINT

EXCAVATION NOTES:

1. REFER TO SPECIFICATIONS FOR NOTES ON CONSTRUCTION SEQUENCE.
2. DIMENSIONS SHOWN ON PLAN ARE FOR REFERENCE ONLY. VERIFY ALL CELL DIMENSIONS IN THE FIELD, AND ADJUST THE WALE LENGTHS BASED ON ACTUAL FIELD MEASUREMENTS.
3. INSTALL BRACKETS AT EQUAL SPACING EACH SIDE OF THE CELL, TWO BRACKETS ALONG THE LONGER DIMENSION AND TWO BRACKETS ALONG THE SHORTER DIMENSION OF EACH CELL.
4. BRACING OMITTED IN CELLS 3, 4, 5, 6, 7, 8, AND 9 FOR CLARITY.
5. MONITOR THE CORNERS OF EACH INSTALLED EXCAVATION CELL AND THE SETTLEMENT MONITORING POINTS AS DETAILED IN THE CONTRACT DOCUMENTS.



SECTION B/6
NOT TO SCALE

SECTION NOTES:

1. INTERVAL BRACING AND TAR WELL OMITTED FOR CLARITY.

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0 10 20
SCALE, FEET

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DRAFT

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Drawn:	PHH
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NY P.E. No.:	081628
Submittal Date:	08/02/2013

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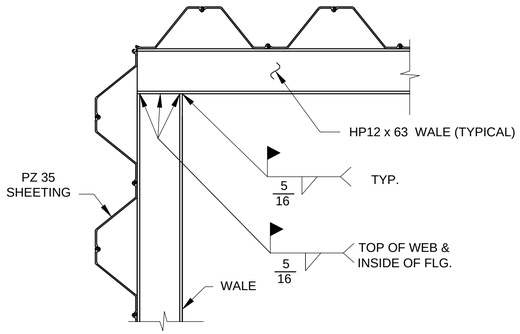
DWG. NO. 6

EXCAVATION
SUPPORT PLAN

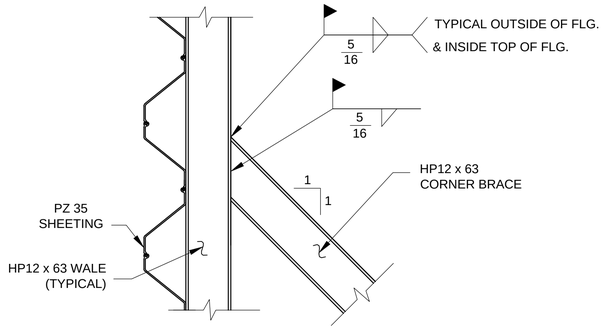
SHEET NO. 6 of 9



DETAIL
TYPICAL WALE CORNER 1/7

TYPICAL WALE CORNER NOTES:

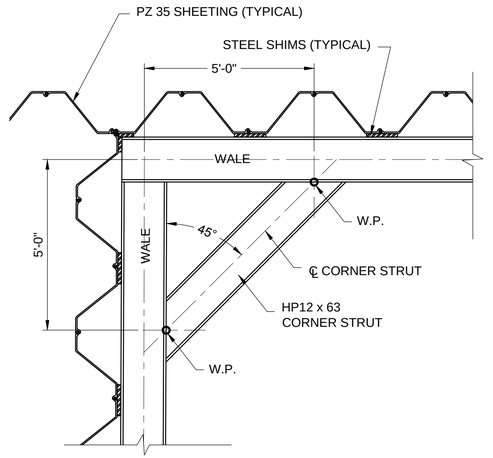
1. ALIGN WEB OF WALES.
2. CORNER BRACE OMITTED FOR CLARITY.
3. STEEL SHIMS OMITTED FOR CLARITY.



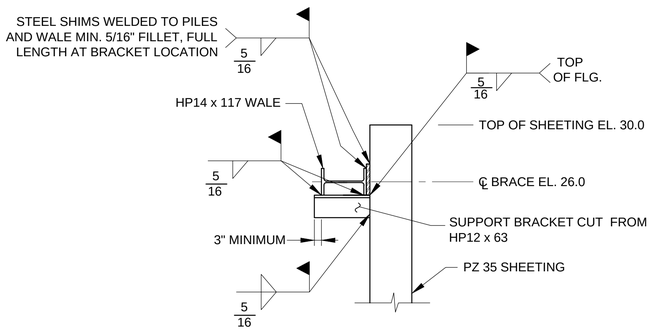
DETAIL
CORNER BRACE TO WALL 2/7

CORNER BRACE TO WALL NOTES:

1. ALIGN WEB OF CORNER BRACE WITH WEB OF WALE.
2. STEEL SHIMS OMITTED FOR CLARITY.



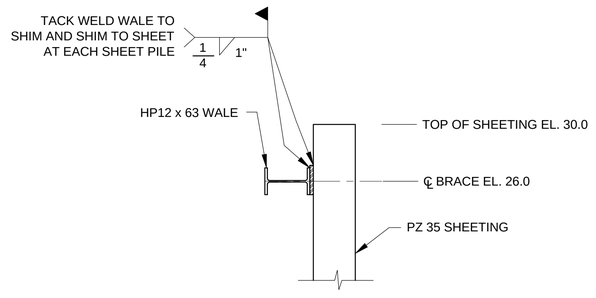
DETAIL
TYPICAL CORNER STRUT LAYOUT 3/7



DETAIL
TYPICAL WALE SUPPORT 4/7

TYPICAL WALE SUPPORT NOTES:

1. CENTER STRUT WILL CONNECT TO WALE AT THE CENTER BRACKET.
2. CENTER STRUT OMITTED FOR CLARITY.



DETAIL
TYPICAL WALE TO SHEET 5/7

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DWG. NO. 7

EXCAVATION SUPPORT DETAILS

SHEET NO. 7 of 9

LEGEND:

- RESTORE ASPHALT - SEE DETAIL 6/9
- RESTORE BOCCE COURTS
- RESTORE LIGHT POLE AND ASSOCIATED WIRES
- MILL AND REPLACE
- PROJECT LIMITS

NOTE:

1. RESTORE THE REMOVED AREAS OF PAVEMENT AS SHOWN IN DETAIL 6/9
2. MILL AND REPLACE THE TOP 1.5 INCHES OF PAVEMENT IN THE BALANCE OF THE PARKING LOT.

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0 20 40
SCALE, FEET

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DWG. NO. 8

RESTORATION PLAN

SHEET NO. 8 of 9

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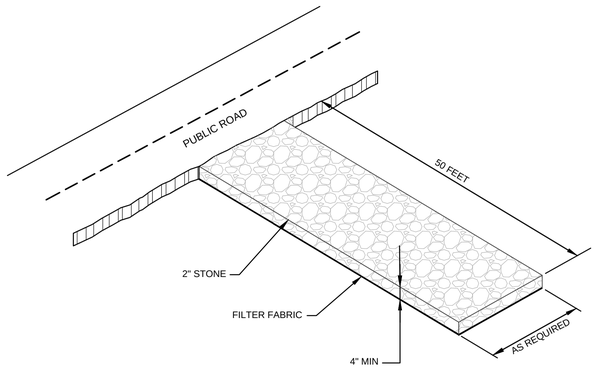
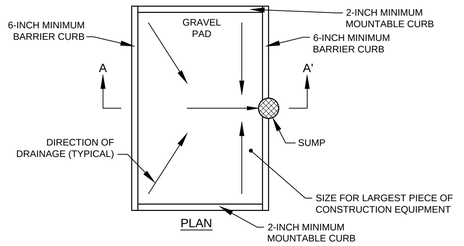
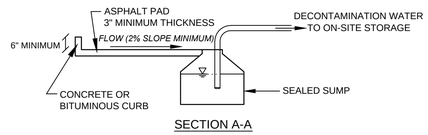


DETAIL 1/9
ANTI-TRACKING PAD

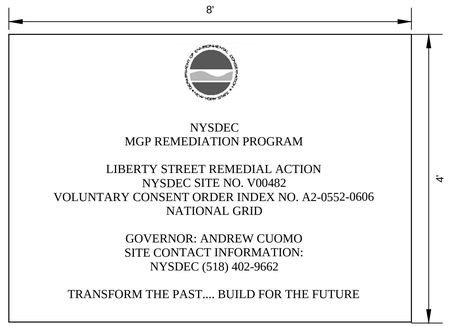




DETAIL 2/9
EQUIPMENT DECONTAMINATION PAD

DECONTAMINATION NOTES:

1. ALL VEHICLES EXITING EXCLUSION ZONE MUST PASS THROUGH THE CONTAMINANT REDUCTION ZONE. USE EQUIPMENT DECONTAMINATION PAD AS REQUIRED BY THE CONSTRUCTION MANAGER. CONTROL OVERSPRAY.



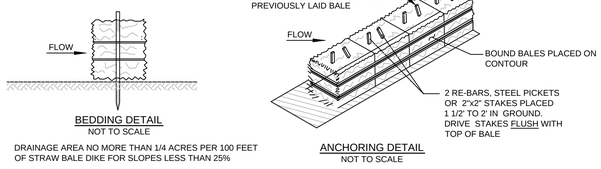
DETAIL 3/9
TYPICAL SIGN

SIGN NOTES:

1. SIZE: HORIZONTAL FORMAT 96" BY 48" HIGH
2. DEC LOGO
   TEXT: PMS 355
   LOGO: PMS 301 BLUE
   PMS 355 GREEN
3. TEXT: CASLON 540

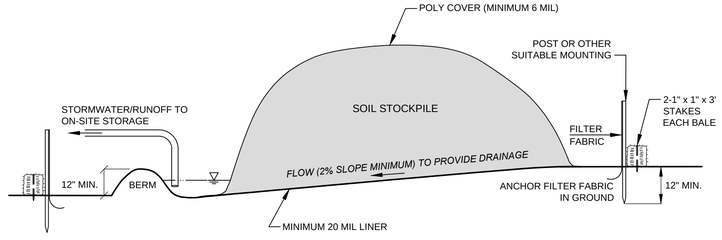
MGP REMEDIATION PROGRAM	PMS 301
SITE NAME, SITE NUMBER, PARTY PERFORMING	PMS 355
NAME OF GOVERNOR	PMS 301
TRANSFORM THE PAST.... BUILD FOR THE FUTURE	PMS 355

4. CENTER EACH LINE OF COPY WITH SMALL CAPS AND INITIAL CAPS
5. 96" WIDE BY 48" HIGH ALUMINUM BLANKS WILL BE COVERED WITH VINYL SHEETING TO ACHIEVE BACKGROUND COLOR. COPY LOGO WILL BE SILK SCREENED ON THIS SURFACE.



DRAINAGE AREA NO MORE THAN 1/4 ACRES PER 100 FEET OF STRAW BALE DIKE FOR SLOPES LESS THAN 25%

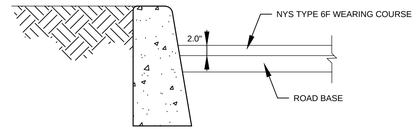
DETAIL 4/9
TYPICAL HAY BALE



DETAIL 5/9
SOIL STOCKPILE PAD
NOT TO SCALE

PAD NOTES:

1. SOIL STOCKPILE PAD DESIGN IS CONCEPTUAL. FINAL DESIGN WILL MEET THE INTENT OF THE CONCEPT AND BE APPROVED BY THE CONSTRUCTION MANAGER.



DETAIL 6/9
PARKING FIELD

PAVEMENT NOTES:

1. WEARING COURSE: N.Y.S. TYPE 6F.

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Submitted By:	DRK
NY P.E. No.:	077276-1
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Troy (Liberty Street)
Non-Owned Former MGP Site
City of Troy, Rensselaer County, New York

DWG. NO. 9

SITE MANAGEMENT PLAN AND RESTORATION PLAN DETAILS

SHEET NO. 9 of 9