SECTION XI

Supplemental Specifications

TABLE OF CONTENTS

SECTION XI – SUPPLEMENTARY SPECIFICATIONS

VOLUME 1 OF 1

Document or Section Number	Name or Description	Initial Page
DIVISION 00 – BIDDING AND CONTRACTING REQUIREMENTS		
INTRODUCTORY INFORMATION		
00 01 10XI	Table of Contents	00 01 10XI-1
00 01 15	List of Construction Contract Drawings	00 01 15-1
00 33 00	Existing Conditions	00 33 00-1
SPECIFICATIONS		
DIVISION 01 – GENERAL REQUIREMENTS		
01 11 13	Summary of Work	01 11 13-1
01 14 19	Use of Site	01 14 19-1
01 45 00	Contractor Quality Control	01 45 00-1
01 45 28	Chemical Sampling and Analysis	01 45 28-1
01 50 00	Temporary Facilities and Controls	01 50 26-1
01 55 26	Traffic Control	01 50 26-1
01 55 29	Storage of Material	01 55 29-1
01 57 25	Temporary Tributary Bypass System	01 57 25-1
01 57 26	Dust and Odor Control	01 57 26-1
01 71 33	Protection of the Work and Property	01 71 33-1
01 74 19	Waste Removal, Handling, and Storage	01 74 19-1
DIVISION 02 – EXISTING CONDITIONS		
02 41 13	Selective Demolition	02 41 13-1
02 51 00	Decontamination Procedures	02 51 00-1
02 51 40	Excavation, Removal and Handling of Contaminated Material	02 51 40-1
02 72 00	Construction Water Management	02 72 00-1
02 81 00	Off-Site Transportation and Disposal	02 81 00-1
02 82 33	Removal and Disposal of Asbestos Containing Material	02 82 33-1
DIVISION 03 – CONCRETE – (NOT USED)		

DIVISION 04 – MASONRY – (NOT USED)

DIVISION 05 – METALS – (NOT USED)

DIVISION 06 – WOOD, PLASTICS AND COMPOSITES – (NOT USED)

DIVISION 07 – THERMAL AND MOISTURE PROTECTION – (NOT USED)

DIVISION 08 – OPENINGS – (NOT USED)

DIVISION 09 – FINISHES – (NOT USED)

DIVISION 10 – SPECIALTIES – (NOT USED)

DIVISION 11 – EQUIPMENT – (NOT USED)

DIVISION 12 – FURNISHINGS – (NOT USED)

DIVISION 13 – SPECIAL CONSTRUCTION – (NOT USED)

DIVISION 14 – CONVEYING EQUIPMENT – (NOT USED)

DIVISION 21 – FIRE SUPPRESSION – (NOT USED)

DIVISION 22 – PLUMBING – (NOT USED)

22 05 33 Heat Tracing for Piping 22 05 33-1
22 07 19 Pipe Insulation 22 17 19-1

DIVISION 23 – HEATING, VENTILATING AND AIR CONDITIONING – (NOT USED)

DIVISION 25 – INTEGRATED AUTOMATION - (NOT USED)

DIVISION 26 – ELECTRICAL – (NOT USED)

DIVISION 27 – COMMUNICATIONS – (NOT USED)

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY – (NOT USED)

DIVISION 31 – EARTHWORKS

31 00 00 Earthwork 31 00 00-1
31 01 50 Shoring (Sheeting and Bracing) 31 01 50-1
31 05 19 Geotextiles 31 05 19-1
31 11 00 Clearing and Grubbing 31 11 00-1
31 23 19 Dewatering 31 23 19-1

31 25 00 Erosion and Sediment Control 31 25 00-1
31 32 13 Solidification 31 32 13-1

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 31 00 Fences 32 31 00-1
32 92 26 Seeding and Soil Supplements 32 92 26-1
32 93 00 Exterior Plants 32 93 00-1

DIVISION 33 – UTILITIES

33 05 05 Gravity Sewer Pressure Testing 33 05 05-1
33 05 61 Concrete Manholes 33 05 61-1
33 11 53 Well Abandonment/Modification 33 11 53-1
33 31 20 Sanitary Sewer Piping and Fittings 33 31 20-1
33 42 13 Pipe Culverts 33 42 13-1

DIVISION 34 – TRANSPORTATION - (NOT USED)

DIVISION 35 – WATERWAY AND MARINE - (NOT USED)

DIVISION 40 – PROCESS INTEGRATION – (NOT USED)

DIVISION 41 – MATERIAL PROCESSING AND HANDLING EQUIPMENT – (NOT USED)

DIVISION 42 – PROCESS HEATING, COOLING, AND DRYING EQUIPMENT - (NOT USED)

DIVISION 43 – PROCESS GAS AND LIQUID HANDLING, PURIFICATION, AND STORAGE EQUIPMENT – (NOT USED)

DIVISION 44 – POLLUTION CONTROL EQUIPMENT – (NOT USED)

DIVISION 45 – INDUSTRY-SPECIFIC MANUFACTURING EQUIPMENT - (NOT USED)

DIVISION 46 – WATER AND WASTEWATER EQUIPMENT – (NOT USED)

DIVISION 48 – ELECTRICAL POWER GENERATION - (NOT USED)

+ + END OF TABLE OF CONTENTS + +

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SECTION 00 01 15

LIST OF CONSTRUCTION CONTRACT DRAWINGS

G-001	Cover Sheet
G-002	Notes, Legend, and Abbreviations
C-101	Existing Conditions Plan
C-102	Conceptual Site Layout, Staging and Traffic Plan
C-103	Erosion and Sediment Control Plan
C-104	Demolition Plan
C-105	Excavation Plan
C-106	Solidification Plan
C-107	Cover System Subgrade Grading Plan
C-108	Final Grading Plan
C-109	Restoration/Landscaping Plan
C-201	Profile – Construction Baseline
C-301	Erosion and Sediment Control Notes
C-302	Erosion and Sediment Control Details
C-303	Civil Details – 1
C-304	Civil Details – 2
C-305	Restoration Details
C-306	Sanitary Sewer Line Bypass Details
C-307	Railroad Details
C-501	Cross Sections – Sta 0+50 to Sta 1+00
C-502	Cross Sections – Sta 1+50 to Sta 2+00
C-503	Cross Sections – Sta 2+50 to Sta 3+00
C-504	Cross Sections – Sta 3+50 to Sta 4+00
C-505	Cross Sections – Sta 4+50

SECTION 00 33 00

EXISTING CONDITIONS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The former Saranac Lake Gas Company manufactured lighting gas through the coal gasification process for the Village of Saranac Lake. The gas company likely operated until the 1930s or 1940s and included two above-ground gas holders, a building housing the purifier and retort (heating) operations, as well as additional areas for coal storage and offices.

B. Remedial investigations have been conducted to assist the DEPARTMENT and the ENGINEER in the evaluation of the extent of site contamination, depth to groundwater, and estimates of initial groundwater inflow rates.

C. A Remedial Investigation (RI) Report (MACTEC, 2015) documents the investigation activities completed from August 2013 through October 2014 at the three OUs including:
   1. OU01 – Site property (within the former MGP property and beyond the former MGP property)
   2. OU02 – Brandy Brook (the section of brook from OU01 to Pontiac Bay in Lake Flower)
   3. OU03 – Pontiac Bay of Lake Flower

D. A Pre-Design Investigation Field Activities Report (PDI) (MACTEC, 2020) documents the investigation activities completed in 2019 at the site. This PDI Report is provided in the Additional Site Data document, to assist the CONTRACTOR with Project understanding related to known contaminants, additional available information may be available upon request through the ENGINEER or the DEPARTMENT.

E. Site – OU01: The former MGP property is approximately 4.5 acres in size and is located east of, and adjacent to the Adirondack Scenic Railroad and consists of two Parcels as shown on the Construction Contract Drawings. Areas beyond the former MGP property are included in the Site and contain MGP-Impacted Materials to be remediated as part of this remedial action and an access road extends from Payeville Road west to the former gas plant setting. The site and surrounding area are serviced by public water; therefore, groundwater is not believed to be used as a source of drinking water. Currently, OU01 is a vacant lot with an open, unoccupied one-story brick building

F. Analytical testing of soil and water samples collected relative to the site have been performed to assist the DEPARTMENT and the ENGINEER in the evaluation of the type, concentrations, and extent of contamination present in the vicinity of the site. Summary data for the laboratory testing is included in the Pre-Design Investigation Report (PDI) (Wood, 2020).

G. Prudent Engineering completed a boundary and topographic survey of the OU01 site in 2017 and revised May 27, 2017. Additional survey data from NMB Land Surveying (November 6, 2019) and publicly available GIS data dated 2013 have been used as the basis for the existing conditions found the Construction Contract Drawing C. The surveys included OU01 and nearby features (buildings, utility poles, utilities including electric and water fences, monitoring wells, MGP facility remnants, two concrete debris piles, property lines and available owner information), topographic elevations, soil sampling locations, and groundwater monitoring wells.

H. Existing known utility locations shown on the Construction Contract Drawings shall be considered approximate. Utilities include, but are not limited to, sewer (sanitary gravity and sanitary sewer line), water, and other existing subsurface work. Underground structures known to ENGINEER are shown. This information is shown for the assistance of CONTRACTOR in accordance with the best information available but is not guaranteed to be correct or complete. It is the responsibility of the CONTRACTOR to accurately locate and identity utilities encountered or impacted by the Work.

1.2 LIMITATIONS OF SUBSURFACE EXPLORATIONS

A. Explorations are not intended to indicate subsurface conditions except at the locations of the explorations and are based on the information available and the ENGINEER's interpretations at the time explorations were made.

B. Explorations were not made for the purposes of determining or facilitating the constructability of the project or the cost thereof. Therefore, they may not be suitable or adequate for any purpose other than for the ENGINEER's use in designing the project.

C. Any reuse of the exploration logs or other subsurface information, including, without limitation, any subsurface investigation prepared by the ENGINEER on behalf of the DEPARTMENT, by the CONTRACTOR or its subcontractors, regardless of tiers, shall be at its own risk and without legal liability on the ENGINEER or DEPARTMENT. Therefore, the CONTRACTOR shall indemnify and hold the ENGINEER and DEPARTMENT harmless from all claims, damages, expenses, or costs resulting from the CONTRACTOR's interpretation of this information.

1.3 LIMITATIONS OF EXISTING KNOWN UTILITIES

A. It should not be inferred that utility locations shown on the Construction Contract Drawings are precise, or that all existing utilities or structures are depicted. It is the responsibility of the CONTRACTOR to identify the location of the utilities required to complete the Work.

B. Geophysical survey has identified areas where buried utilities of unknown origin may be located. Summary reports documenting the location of buried utilities are included in the Limited Site Data document. The type, size, or precise locations of these shall be field verified by the CONTRACTOR, as required to perform the Work.

PART 2 – PRODUCTS (NOT USED)

PART 3- EXECUTION

3.1 SUPPLEMENTAL SUBSURFACE INVESTIGATION

A. The CONTRACTOR shall review the available subsurface information and conduct additional explorations and investigations as deemed necessary to develop independent soil parameters for the purposes of shoring design, excavation slope stability, and constructability.

B. Additional test borings and testing and other exploratory operations shall be made by the CONTRACTOR at no cost to the DEPARTMENT.

3.2 SUPPLEMENTAL UTILITY LOCATION AND RESPONSIBILITY

A. The CONTRACTOR shall locate or have located all existing utilities or underground structures in the vicinity of the Work Areas.

B. All utilities shall be identified and marked in the field in accordance with required New York regulations. The CONTRACTOR shall contact DIG SAFELY NEW YORK at 811 or 1-800-962-7962 prior to commencing on-site excavations.

C. The CONTRACTOR shall be responsible for any and all work-related damage to any existing utilities, which are to remain in service or restored to service.

D. The CONTRACTOR shall contact the affected utility or property owner as soon as any damage is discovered.

E. The cost for performing the Work described in Sub-Part 3.02 is considered incidental to the Work.

F. The CONTRACTOR shall ensure that decontamination and truck traffic does not negatively impact the integrity of the existing force main, as approved by the ENGINEER, through protection and/or testing.

+ + END OF SECTION + +

SECTION 01 11 13

SUMMARY OF WORK

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. This Section includes the following Articles:

Article	Title
1.1	Section Includes
1.2	Location and Description of Work
1.3	Other Construction Contracts
1.4	Work by Others
1.5	Work by DEPARTMENT
1.6	Sequence and Progress of Work
1.7	CONTRACTOR's Use of Site
1.8	Access Agreements and Rights-of-Way
1.9	Notices to Owners and Authorities of Properties Adjacent to the Work
1.10	Salvage of Materials and Equipment
1.11	Partial Utilization by DEPARTMENT

1.2 LOCATION AND DESCRIPTION OF WORK

A. The Work is located at the former Saranac Lake Gas Co., Inc., site in Saranac Lake, Essex County, New York, Site Number 516008. The site consists of two parcels that constitute the Former MGP property (Parcel 1, Adirondack Bottled Gas Corporation of New York, L 1116 P-32 (3.188± acres) and Parcel 2, National Propane, L.P. L 1116 P-32 (1.160± acres)); and two Parcels outside the Former MGP property, a portion of the Railroad Property (People of the State of New York (under the jurisdiction of dormitory authority of the State of New York), L 638 P-102 T.M. 32.321 P-19) west of the former MGP facility, and a small portion of the City Property where the current access road and laydown area exists (Essex County, L 1413 P-194 T.M. 32.232-1-15).

B. The Work to be performed under this Contract includes, but is not limited to, constructing the Work described below and all related appurtenances. The Work generally includes but is not limited to, the following: site preparation; site services; contractor health and safety; activities in support of excavation on Railroad Property and adjacent to Brandy Brook; excavation of materials above the ISS treatment zone (i.e., within the former MGP property); soil excavation of materials outside the ISS treatment zone (i.e., beyond the former MGP property); in-situ solidification;

solidification; construction water management; soil sampling and analysis; excavation confirmation sampling and analysis; off-site transportation and treatment or disposal of materials; backfilling and grading with reusable fill; backfilling and grading with imported clean soil; backfilling and grading with topsoil or stone; and restoration of the area along Brandy Brook. Additional information is in the Contract Documents and below:

1. Site Preparation includes: tree clearing (to be conducted between November 1, 2020 and March 31, 2021 for trees larger than 3 inches), mobilization, temporary utilities, field offices, permitting, Plans, schedules, submittals, record drawings, bonds and insurance, tree clearing, grubbing outside the MGP limits, select demolition, vehicle decontamination pads, erosion and sediment control, access roads, signage, temporary fencing and barricades, stockpile areas, design mix program and pilot test for solidification, demobilization, project closeout and final site cleanup.
2. Site Services includes: Site security, on-site access and traffic control, access maintenance; railroad related training, temporary facility maintenance, site cleaning and solid waste disposal, coordination with the community and utility owners, permit compliance, meetings, superintendence, quality control management, vehicle decontamination pad maintenance, temporary utility maintenance, existing condition assessments, vibration monitoring, noise control and monitoring, community air monitoring, surveying, and railroad safety training, inspection requirements related to work on railroad property.
3. Contractor Health and Safety includes health and safety officer, personnel decontamination, PPE, emergency response and wastes not included elsewhere.
4. Activities in Support of Excavation on Railroad Property includes sheeting/bracing and bypass of existing sanitary sewer line.
5. Activities in Support of Excavation Adjacent to Brandy Brook includes sheeting/bracing, bypassing flow around a portion of Brandy Brook, and temporary relocation of existing Restoration Area to a temporary on-site nursery and replacement of the Restoration Area.
6. Excavation of Materials: dewatering, sheeting/bracing, excavation, segregation of excavated materials to maximize reuse in secure stockpiles or for solidification while minimizing disposal, and stabilization, as necessary of excavated unsuitable materials for disposal.
7. Solidification includes: Implement full-scale in-situ solidification mixing with augers and ex-situ solidification of relocated materials based on approved mix design and successful pilot scale test. Full scale implementation shall include all controls necessary for vapor/dust mitigation and all quality control measures and testing as described in the specifications.
8. Construction Water Management, Treatment, Sampling and Discharge or Transportation and Disposal includes: storage, treatment, testing and discharge in accordance with all permits to surface water or off-site disposal with testing, trucking, and discharge at an approved facility; including but not limited to excavation dewatering, stormwater and decontamination liquids, such that no liquids are discharged without acceptable treatment.

9. Soil Chemical Sampling and Analysis includes confirmation sampling, analysis and reporting to determine excavation effectiveness, including re-sampling and analysis as required.
10. Non-Hazardous MGP Remediation Waste Off-Site Transportation and Disposal includes waste characterization, documentation, loading, transportation, off-loading and disposal fees.
11. Hazardous MGP Remediation Waste Off-Site Transportation and Disposal includes waste characterization, documentation, loading, transportation, off-loading and disposal fees.
12. Clearing and Demolition Debris Materials Off-Site Transportation and Disposal includes loading all cleared vegetation, processing and loading of concrete and miscellaneous debris, documentation and disposal fees.
13. Backfill and Grade with Reusable Fill includes geotechnical testing of stockpiled soils, processing, relocation of stockpiled soils, placement, and field testing within the former MGP Property.
14. Backfill and Grade with Imported Soil includes geotechnical and chemical testing of imported soils meeting required use criteria, processing, delivery, staging, placement, and field testing within the former MGP Property.
15. Site Restoration including restoration of disturbed areas, geotechnical and chemical testing of imported topsoil meeting unrestricted use criteria, delivery of topsoil, seeding, erosion control mat, and providing new or acceptable salvaged fencing and gates.
16. Brandy Brook Restoration including: restoration of disturbed Restoration Areas, geotechnical and chemical testing of imported topsoil meeting unrestricted use criteria, relocate wetland topsoil and vegetation from nursery to Restoration Area, place and compact topsoil, plant vegetation, supplements, repair damaged stream bed bank and features, seeding, erosion control mat, and planting reusable and supplemental trees and shrubs.

C. CONTRACTOR will be required to submit a Construction Work Plan. This plan will include but is not limited to the following:
1. Traffic and Access Control Plan
2. Proposed sequence, equipment, and methods for temporary tributary bypass system
3. Means and methods for management of waste materials
4. Proposed methods of decontamination
5. Construction Water Management Plan
6. Contractor Quality Control Plan
7. Updated Submittal Register
8. Mix Study Plan
9. Pilot Scale Test Plan
10. Community Air Monitoring Plan
11. Disposal and backup disposal facilities
12. Erosion and Sediment Control Plan
13. Health and Safety Plan

14. Permits
15. Excavation support calculations
16. Spill prevention plan
17. Qualifications of third-party or independent CQC testing service (geotechnical) and the analytical laboratory
18. Insurance certificates as indicated in Section VIII and IX of the contracts
19. Proposed parking areas
20. Vapor and Dust Control Plan
21. Proposed stockpile storage areas
22. Excavation limits

D. Contracting Method: The Project shall be constructed under one prime Contract.

E. Hazardous Environmental Conditions:
   1. Air monitoring and field screening must be conducted to identify and eliminate Hazardous Environmental Conditions during the Work.

1.3 OTHER CONSTRUCTION CONTRACTS

A. None.

1.4 WORK BY OTHERS

A. Final investigations, by the DEPARTMENT, in the two excavation areas outside the ISS area will take place in Summer or Fall 2020 and may result in a minor contract addendum issued by the ENGINEER/DEPARTENT.

B. Railroad training will be provided to CONTRACTOR by others.

1.5 WORK BY DEPARTMENT

A. The DEPARTMENT shall provide prepare and provide discharge permits and access agreements as necessary to conduct work.

1.6 SEQUENCE AND PROGRESS OF WORK

A. Sequencing:
   1. Incorporate sequencing of the Work into the Progress Schedule.
   2. Sequencing Requirements:
      a. Site will be secured with temporary fencing prior to any demolition or intrusive activities.
      b. After demolition, new permanent fencing shall be installed to tie into existing fencing as directed by ENGINEER to secure the site.

1.7 CONTRACTOR'S USE OF SITE

A. CONTRACTOR's use of the Site shall be confined to the limit of work shown unless otherwise shown or specified.

B. Move stored materials and equipment that interfere with operations of DEPARTMENT, other contractors, and others performing work for DEPARTMENT.

C. Limits on CONTRACTOR's use of the Site are:
   1. As indicated in Section 01 14 19, Use of Site.
   2. Do not use the Site for operations other than those required for the Project.

1.8 ACCESS AGREEMENTS AND RIGHTS-OF-WAY

A. General:
   1. Access agreements and rights-of-way required for the permanent improvements included in the Work will be provided by DEPARTMENT in accordance with the General Conditions and Supplementary Conditions.
   2. Confine construction operations within DEPARTMENT's property, public rights-of-way, access agreements obtained by DEPARTMENT, and limits shown, and property for which CONTRACTOR has made arrangements directly with property owner(s) as approved by the DEPARTMENT.
   3. Use care in placing construction tools, equipment, excavated materials, and materials and equipment to be incorporated into the Work to avoid damaging property and interfering with traffic.
   4. Do not enter private property outside the construction limits without permission from the owner of the property.

B. On Private Property:
   1. General limits of DEPARTMENT-furnished access agreements are shown on the Construction Contract Drawings.
   2. There are known squatters on the southern end of the Site, which are to be minimally disturbed by the Project to the extent practical. Materials and facilities owned by the squatters shall be protected from damage. All interactions with those persons shall be documented and when possible include the DEPARTMENT and or the ENGINEER.

1.9 NOTICES TO OWNERS AND AUTHORITIES OF PROPERTIES ADJACENT TO THE WORK

A. Notify ENGINEER 5 calendar days in advance of Work when the prosecution of the Work may affect their property, facilities, or use of property. ENGINEER in turn will notify adjacent owners, squatters and utility owners.

B. When it is necessary to temporarily obstruct access to property, or when utility service connection will be interrupted, provide notices a minimum of 48-hours in advance unless otherwise required to enable affected persons to provide for their needs. Such notifications shall comply with Laws and Regulations and, whether delivered orally or in writing, shall include appropriate information concerning the interruption and instructions on how to limit inconvenience caused thereby.

C. Notify utility owners and other concerned entities not less than 48-hours prior to cutting or closing streets or other traffic areas or excavating near Underground Facilities or exposed utilities.

1.10 SALVAGE OF MATERIALS AND EQUIPMENT

A. Existing materials and equipment removed and not shown or specified to be reused in the Work will become CONTRACTOR's property, except the following items that shall remain DEPARTMENT's property:
   1. None.

B. Existing materials and equipment removed by CONTRACTOR shall not be reused in the Work, except for the following:
   1. Trees and Wetland Topsoil currently in the restoration area adjacent to Brandy Brook will be stored on Site in a temporary nursery to be constructed, maintained and removed for reuse.
   2. Existing fencing and gates in good condition shall be stored on the former MGP property and reinstalled during site restoration, as approved by the ENGINEER/DEPARTMENT.

C. Removal, Storage, Handling, Reinstallation:
   1. Carefully remove in manner to prevent damage all materials and equipment shown or indicated to be salvaged and reused or to remain property of DEPARTMENT.
   2. Store and protect salvaged items shown or indicated to be used in the Work.
   3. Replace in-kind or with new items those items of materials and equipment damaged during removal, storage, or handling through CONTRACTOR's actions, negligence, or improper procedures.
   4. Trees and Wetland Sediment will be relocated back to restoration area. Material losses is expected, and CONTRACTOR shall replace at no additional cost to OWNER to meet requirements.

D. CONTRACTOR may furnish and install new items, with ENGINEER's approval, instead of those specified or indicated to be salvaged and reused, in which case such removed items will become CONTRACTOR's property.

1.11 PARTIAL UTILIZATION BY DEPARTMENT

A. Prior to Substantial Completion of the entire Work under the Contract, substantially complete the Work as follows:
   1. None.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

+ + END OF SECTION + +

SECTION 01 14 19

USE OF SITE

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope:
   1. This Section includes requirements for use of the Site during the Project, and includes requirements for use of existing facilities, as applicable.
   2. CONTRACTOR shall provide all labor, materials, equipment, tools, and incidentals shown, specified, and required to comply with restrictions on CONTRACTOR's use of the Site and other areas.
   3. Comply with requirements of the General Conditions, as may be modified by the Supplementary Conditions, regarding the CONTRACTOR's use of the Site and other areas.

1.2 USE OF PREMISES

A. Limit use of premises at the Site to work areas shown or indicated on the Construction Contract Drawings. Do not disturb portions of the Site beyond areas of the Work.
   1. Access to Site, Access Roads, and Parking Areas: Refer to Section 01 55 13 - Access Roads and Parking Areas.

B. Use of Existing Buildings and Structures: Obtain DEPARTMENT's written permission for each proposed use of existing buildings and structures.

C. Promptly repair damage to premises caused by construction operations. Upon completion of the Work, restore premises to specified condition; if condition is not specified, restore to pre-construction condition.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

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SECTION 01 45 00

CONTRACTOR QUALITY CONTROL

PART 1 – GENERAL

1.1 DESCRIPTION

A. This section covers quality control procedures and testing to be completed by the CONTRACTOR during the Work. Prior to commencement of the Work, the CONTRACTOR shall prepare a CONTRACTOR Quality Control (CQC) Plan detailing the procedures to be followed and testing to be completed. Quality control testing shall be executed as required in the Contract Documents.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 33 00 - Submittal Procedures

B. Section 01 45 28 - Chemical Sampling and Analysis

C. Section 01 78 00 - Project Closeout Procedures

1.3 REFERENCES AND STANDARDS

A. Conform to referenced standards with date of issue current on the date of the bid, except where stated otherwise or referenced differently by code.

1.4 SUBMITTALS

A. Pre-Construction Submittals
   1. CONTRACTOR Quality Control (CQC) Plan shall identify personnel, procedures, instructions, records, and forms to be used in carrying out the requirements of the Work. The CQC Plan shall provide the CONTRACTOR with a means to provide and maintain effective Quality Control for construction, sampling, and testing activities. No work on-site shall be permitted until comments received are adequately addressed by the CONTRACTOR and the CQC Plan is approved by the ENGINEER and the DEPARTMENT.

B. Quality Assurance Project Plan (may be included as a component of the CQC Plan):
   1. Submit the following two weeks prior to start of the work:
      a. Site-specific Quality Assurance Project Plan (QAPP) prepared in accordance with NYSDEC DER-10
      b. Proposed Project Analytical Laboratory and certifications. Documentation shall be provided that the analytical laboratory is certified for solid and hazardous waste analyses by the New York State Department of Health Environmental Lab Approval Program (ELAP).

C. Construction Submittals include: Weekly CQC Reports, Test Reports, Deficiency Reports, and Project Summaries.

1.5 DEFINITIONS

A. Quality Control: Activities undertaken by the CONTRACTOR including observing, measuring, sampling, and testing undertaken by the CONTRACTOR to determine that work performed and/or products/materials provided and installed meet the requirements of the Contract Documents and the quality specified therein.

1.6 QUALITY CONTROL SAMPLING AND TESTING

A. The CONTRACTOR shall notify the ENGINEER and the DEPARTMENT a minimum of 72 hours prior to any quality control sampling and testing activities. The ENGINEER and DEPARTMENT reserve the right to collect duplicate quality control samples.

B. All third-party quality control test reports shall be reported/sent directly to the ENGINEER and the DEPARTMENT and shall not be routed through the CONTRACTOR. The CONTRACTOR shall give their subcontracted laboratory permission to send reports directly to the ENGINEER and the DEPARTMENT.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 GENERAL REQUIREMENTS

A. The quality of all Work shall be the responsibility of the CONTRACTOR.

B. Perform enough inspections and tests of all items of work, on a continuing basis, including that of subcontractors, to ensure conformance to applicable specifications and Construction Contract Drawings with respect to the quality of materials, workmanship, construction, and functional performance.

C. Provide qualified personnel, appropriate facilities, instruments, and testing devices necessary for the performance of the quality control function.

D. Controls shall be adequate to cover all construction operations, shall be keyed to the proposed construction sequence, and shall be coordinated by the CONTRACTOR's quality control personnel.

3.2 CONTRACTOR QUALITY CONTROL (CQC) PLAN

A. Prepare and submit a CONTRACTOR Quality Control Plan to the ENGINEER and the DEPARTMENT for approval.

B. Comments or approval from the ENGINEER and DEPARTMENT will be submitted to the CONTRACTOR within 14 calendar days following receipt of the plan. The CONTRACTOR shall adequately respond to comments to the satisfaction of the ENGINEER and the DEPARTMENT within 14 calendar days following receipt of any comments from the ENGINEER and/or the DEPARTMENT.

C. No work on-site shall be permitted until the comments received are adequately addressed by the CONTRACTOR and the CQC Plan is approved by the ENGINEER and the DEPARTMENT.

D. The CQC Plan, at a minimum, shall include the following:

1. A description of the Quality Control Organization, including charts showing lines of internal CONTRACTOR authority, and external CONTRACTOR, subcontractor, and ENGINEER relationships. The Quality Control Organization shall include the names, qualifications, duties, and responsibilities of each person assigned to a quality control function. The Quality Control Organization chart shall identify a CONTRACTOR's Quality Control Manager whose responsibilities and qualifications are described in Sub-Part 3.04 - Contractor Quality Control Organization.
2. Method of performing, documenting, and enforcing quality control operations of both CONTRACTOR and subcontract work including inspection and testing.
3. Inspections as described in the Sub-Part 3.05 – Inspections.
4. Provide a list of analytical or testing laboratories to be used by the CONTRACTOR for testing required by the Specifications with listed test methods to be performed by each laboratory indicated. The analytical or testing laboratories to be used by the CONTRACTOR must be New York State Department of Health Environmental Laboratory Approval Program (NYDOH ELAP) certified.
5. Protocol describing corrective actions to be taken by the CONTRACTOR with specifically defined feedback systems. The ENGINEER will then decide what further corrective action, if any, shall be taken by the CONTRACTOR. Personnel responsible for initiating and carrying out corrective action shall be indicated in the protocol.

E. Submit Weekly CQC Reports, Test Reports, Deficiency Reports and Project Summaries as required by this Specification.

3.3 NOTIFICATION OF CHANGE

A. After submittal and approval of the CQC Plan, the ENGINEER and DEPARTMENT shall be notified in writing of any proposed changes to the CQC Plan and implement the changes only after the DEPARTMENT's approval.

3.4 CONTRACTOR QUALITY CONTROL ORGANIZATION

A. CQC Manager:
   1. Identify an individual, within the CONTRACTOR's organization at the Site who shall be responsible for overall management of the CQC Plan and have the authority to act in all CQC matters for the CONTRACTOR.
   2. The CQC Manager for this Contract shall be a qualified construction manager/Engineer or comparable individual with a minimum of 2 years of applicable experience, at the Project Manager, Project Engineer, Superintendent, or CQC Manager level, whose responsibility is to ensure compliance with the Construction Documents. The CQC Manager shall be independent of the Project Superintendent.
   3. The CQC Manager shall be on-site whenever work is in progress so that he/she may be in charge of the CQC Plan for the project.
   4. All submittals for approval shall be reviewed and modified or corrected as needed by the CQC Manager or authorized assigns prior to forwarding to the ENGINEER.

3.5 INSPECTIONS

A. The CQC Plan shall include the following inspections and tests:
   1. The CONTRACTOR shall perform preparatory inspections prior to beginning each feature of work on any on-site construction conducted by the CONTRACTOR or a subcontractor. Preparatory inspections for the applicable feature of work shall include:
      a. review of submittal requirements and all other Contract requirements with the performance of the work.
      b. checks to assure that provisions have been made to provide required field quality control testing.
      c. examines the work area to ascertain that all preliminary work has been completed.
      d. verifies all field dimensions and advise the ENGINEER of any discrepancies.
      e. performs a physical examination of materials and equipment to assure that they conform to approved shop drawings or submittal data and that all required materials and/or equipment are on hand and comply with the Contract requirements.
   2. Perform initial inspection as soon as work begins on a representative portion of the particular feature of work and include examination of the quality of workmanship as well as review of quality control testing for compliance with the Construction Document requirements.

3. Perform follow-up inspections continuously as any particular feature of work progresses to ensure compliance with Contract requirements, including quality control testing, until completion of that feature of work.

3.6 QUALITY CONTOL TESTING

A. The CONTRACTOR shall be responsible for all required testing, documentation, and corrective measures. The CONTRACTOR shall perform tests specified or required to verify that control measures are adequate to provide a product which conforms to Contract requirements.

B. Specific quality control testing requirements including types of tests, frequency of tests, and performance outcomes measured by the tests are indicated in each specification section associated with that component of the work.

3.7 CONSTRUCTION MONITORING

A. Existing conditions assessment - Prior to commencing invasive construction activities that include but are not limited to temporary relocation of the Force Main, excavation and backfilling within 25 feet of the Force Main and truck traffic within 10 feet of the force main , complete inspections and testing as specified in Section 01 71 33 Protection of Work and Property.

B. Existing conditions assessment - Prior to commencing use of heavy equipment, including dump trucks on the railroad property and Paved Interior Campus Road. Complete an assessment to record conditions of existing conditions and surrounding infrastructure within 50 feet of the limit of work and vehicle/equipment egress or as directed by the ENGINEER due to Site conditions. Record condition with video or photographs noting existing deficiencies or damage as observed prior to construction. The assessment shall, at a minimum, include the following components:
   1. Pavement and concrete surface treatments of properties within and adjacent to the Work; and
   2. Prominent exterior site features within 50 feet of the limit of work or vehicle/equipment egress including retaining walls, stairs, bollards, signs, utility poles, railroad tracks, railroad ties, catch basins, manholes, walking paths, etc.

C. Perform Community Air Monitoring as specified in Section 01 35 29 – Contractor's Health and Safety Plan.

3.8 NONCONFORMING WORK

A. If inspections or testing by the CQC Manager or other member of the CQC Organization identify Work as not meeting the required quality standard of the Contract Documents, the work shall be considered nonconforming.

B. If quality assurance inspections or testing performed by the ENGINEER or the DEPARTMENT identify Work as not meeting the required quality standard of the Contract Documents, the work shall be considered nonconforming.

C. Nonconforming work shall be remedied by the CONTRACTOR through corrective action.

D. Nonconforming work shall be reported in the CQC Weekly Report.

3.9 CORRECTIVE ACTION

A. Corrective action of nonconforming work shall take place as soon as possible after identification of the nonconformance.

B. Corrective action plans shall be communicated with the ENGINEER and shall include rework, as necessary along with all associated CQC Plan requirements including inspection and testing.

C. At least 72 hours advance notification shall be provided to the ENGINEER for any additional testing to be performed. The ENGINEER/DEPARTMENT reserves the right to collect duplicate samples for quality assurance testing.

D. The corrective action performed to remedy the nonconforming work shall be reported in the CQC Weekly Report. Descriptions of differences in work means, methods, or testing protocols shall be included.

3.10 ACCEPTANCE OF THE WORK

A. The ENGINEER/DEPARTMENT will accept the Work completed by the CONTRACTOR as meeting the quality requirements for the project as set forth in the Contract Documents.

B. The basis of acceptance shall be inspections and observations by the ENGINEER/DEPARTMENT; reported test results submitted to, reviewed by, and accepted by the ENGINEER; and the reported results of any ENGINEER/DEPARTMENT performed quality assurance testing.

+ + END OF SECTION + +

SECTION 01 45 28

CHEMICAL SAMPLING AND ANALYSIS

PART 1 – GENERAL

1.1 DESCRIPTION

A. Provide all necessary personnel, equipment, materials, and subcontracting required to perform chemical sampling and analysis associated with the remedial action at the Saranac Lake Gas Co., Inc. Site in Saranac Lake, New York. The sampling and analyses shall be conducted for:
   1. Off-Site Disposal
      a. Waste characterization of contaminated soil from the Site.
      b. Sampling and analysis of construction water to be disposed off-site.
   2. On-Site Remediation and Use
      a. Confirmation testing at the limit of excavation (horizontal and vertical) of soil to confirm that remaining soil satisfies Soil Cleanup Objectives after excavation and before backfilling.
      b. Confirmation testing at the limit of excavation (horizontal and vertical) of soil to confirm that remaining soil satisfies Soil Cleanup Objectives after excavation and before backfilling. Pre-Excavation confirmation sampling is planned to be completed by the DEPARTMENT on railroad property and adjacent to Brandy Brook to pre-determine horizontal extent.
      c. Documentation testing at the limit of excavation (horizontal and vertical) where Site constraints limit further excavation regardless of whether the soil cleanup objectives have been met.
      d. Borrow Source testing of imported materials for use in remedial action construction.

B. The sampling and analysis shall be conducted in accordance with United States Environmental Protection Agency (USEPA) and New York State Department of Environmental Conservation (the DEPARTMENT) standards and requirements for environmental sampling and analysis.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 33 00 – Submittal Procedures

B. Section 01 45 00 – Contractor Quality Control

C. Section 01 71 23 – Field Engineering and Surveying

D. Section 01 74 19 – Waste Removal, Handling, and Storage

E. Section 02 72 00 – Construction Water Management

F. Section 02 81 00 – Off-Site Transportation and Disposal

G. Section 31 00 00 – Earthwork

1.3 REFERENCES

A. The publications listed below, latest edition unless otherwise noted, form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

B. New York State:
   1. New York State Department of Environmental Conservation "Analytical Services Protocol." (NYSDEC ASP) June 2000 - revised July 2005.
   2. New York State Department of Environmental Conservation "Technical Guidance for Site Investigation and Remediation"; DER-10 (NYSDEC DER-10); May 3, 2010.
   3. Guidance for the Development of Data Usability Reports; NYSDEC Division of Environmental Remediation; Appendix 2B; DER-10; May 3, 2010.

C. Other:
   1. State Pollutant Discharge Elimination System (SPDES) Permit Equivalent for discharge to surface water.

1.4 SUBMITTALS

A. Preliminary Laboratory Analysis Results:
   1. Provide preliminary (verbal) laboratory analysis results for the following:
      a. Confirmatory sample testing results.

B. Sampling and Analysis Reports:
   1. Submit the following reports:
      a. Field sampling data records including copies of completed field sheets, chain-of-custodies, and field logbook entries
      b. Laboratory Data Deliverable, including electronic and hard-copy data deliverables
      c. Data Usability Summary Report (DUSR).

C Sample Locations:
   1. Submit an excel spreadsheet containing the compiled surveyed locations and elevations of each confirmation and documentation sample. Provide northings, eastings, and elevations as described in Section 01 71 23 – Field Engineering and Surveying.

D. Additional submittal requirements are described in Section 01 33 00 – Submittal Procedures.

1.5 DEFINITIONS

A. Composite Sample: a combination of three (3) to five (5) discrete samples collected at random locations and homogenized (mixed) into a single sample for the purpose of analytical testing.

B. Discrete Sample: a grab sample taken at a single location for the purpose of analytical testing.

C. Confirmation Sample: a sample taken during a remedial action to determine whether cleanup objectives have been achieved or whether further remediation is required. For a final delineation sample, the analysis must be by an ELAP-accredited laboratory (as defined by NYSDEC DER-10).

D. Documentation Sample: a sample taken after remedial action is complete to document the level of contamination remaining. For a final delineation sample, the analysis must be by an ELAP-accredited laboratory (as defined by NYSDEC DER-10).

E. Electronic Data Deliverable (EDD): a standardized format required for confirmation sample analytical data submitted. Data must be formatted to meet the guidelines specified by the DEPARTMENT. Requirements are provided at the link provided - http://www.dec.ny.gov/chemical/62440.html and in Section VI, Article 15 (Agreement).

F. Data Usability Summary Report (DUSR): a document that provides a thorough evaluation of the analytical data to determine whether or not the data, as presented, meets the Site/project specific criteria for data quality and use (as defined by NYSDEC DER-10).

G. Refer to Section 01 74 19 – Waste Removal, Handling, and Storage for additional definitions of waste materials.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 HEALTH AND SAFETY

A. Field personnel will be required to utilize the personnel protection as defined in 01 35 29 – Contractor's Health and Safety Plan.

B. CONTRACTOR personnel will be required to review the Site or task-specific Health and Safety Plan (HASP) prepared for this project and acknowledge that they have done so before initiating work.

3.2 REMEDIATION WASTE CHARACTERIZATION SAMPLE COLLECTION

A. Remediation Waste, Hazardous and Non-Hazardous, as defined in 01 74 19 – Waste Removal, Handling, and Storage generated during execution of the Work shall be stored/stockpiled within designated separate storage/stockpile areas as delineated on the Construction Contract Drawings or as agreed upon with the ENGINEER.

B. Waste characterization samples may be collected from stockpiled excavated material or from test pits/borings completed prior to excavation.

C. Composite samples shall be collected at frequencies consistent with the Chemical Sampling and Analysis Summary Table included as Attachment 01 45 28-1, as applicable.

D. Discrete samples shall be collected using manual methods, such a hand auger, trowel, or spoon to obtain the necessary volume of material for each composite sample.

E. The required volume, containerization methods, and sample preservation methods shall be as directed by the Project Analytical Laboratory.

F. Turn-around time for laboratory analytical results shall be coordinated with allowable on-site storage and staging space but is generally requested to be within 48 hours.

3.3 CONSTRUCTION WATER SAMPLE COLLECTION

A. Construction water as defined in Section 01 74 19 – Waste Removal, Handling, and Storage generated during execution of the Work that cannot be treated and discharged to surface water shall be containerized on-site in approved portable storage facilities not exceeding 25,000 gallons each (i.e. Frac Tanks).

B. Discrete samples shall be collected using manual methods from each tank at frequencies consistent with the Chemical Sampling and Analysis Summary Table included as Attachment 01 45 28-1.

C. The required volume, containerization methods, and sample preservation methods shall be as directed by the Project Analytical Laboratory.

D. Turn-around time for laboratory analytical results shall be 24-hours.

3.4 CONFIRMATION SOIL SAMPLE COLLECTION AT OU01

A. Confirmation soil samples shall be collected from the bottom six (6) inches of the exposed sidewall and bottom surface of the contaminated soil excavations depicted on Construction Contract Drawing C-105.

B. Discrete samples shall be collected at frequencies consistent with the Chemical Sampling and Analysis Summary Table included as Attachment 01 45 28-1. Other sampling frequencies can be proposed and implemented upon DEPARTMENT approval.

C. Samples shall be collected by using manual methods, such as a hand auger, trowel, or spoon to obtain the necessary volume of soil for each discrete sample.

D. The required volume, containerization methods, and sample preservation methods shall be as directed by the Project Analytical Laboratory.

E. Turn-around time for laboratory analytical results shall be a maximum 24-hours to limit the length of time excavations remain open.

3.5 IMPORTED BORROW SOURCE SOIL SAMPLE COLLECTION

A. Imported borrow source soil samples shall be collected from the borrow source (off-site borrow pit bank or stockpile) prior to delivery of the material to the Site for incorporation into the Work as part of the remedial action construction.

B. Imported materials with a gradation of 10 percent or less by weight passing the number 80 sieve as determined by ASTM D 422 can be imported without chemical sampling and analysis consistent with NYSDEC DER-10 Paragraph 5.4(e)(5).

C. Discrete samples shall be collected at frequencies consistent with the Chemical Sampling and Analysis Summary Table included as Attachment 01 45 28-1, as applicable, based on estimated volume of material to be imported. At a minimum, one sample shall be collected per each borrow source.

D. Discrete samples shall be collected using manual methods, such as a hand auger, trowel, or spoon to obtain the necessary volume of soil for each sample.

E. The required volume, containerization methods, and sample preservation methods shall be as directed by the Project Analytical Laboratory.

F. Turn-around time for laboratory analytical results shall be coordinated with the material use requirements for the project.

G. The ENGINEER/DEPARTMENT may request access to, and observation of, off-site borrow source sample collection. The ENGINEER/DEPARTMENT reserves the right to sample and test material delivered to Site for quality assurance purposes.

3.6 CONSTRUCTION MONITORING

A. During discharge to the Brook, perform all required monitoring.

3.7 LABORATORY ANALYSIS

A. The United States Environmental Protection Agency (USEPA), Office of Solid Waste (OSW) publication SW-846, entitled Test Methods for Evaluating Solid Waste, Physical/Chemical Methods specifies the analytical test methods in compliance with the Resource Conservation and Recovery Act (RCRA) regulations.

B. Contaminated soil/sediment samples for waste characterization shall be analyzed by the Project Analytical Laboratory in accordance with NYSDEC ASP for the following:
   1. TAL VOCs using Method 5035A/8260C.
   2. TAL metals using USEPA Method 6010B.
   3. TAL SVOCs using USEPA Method 8270C.
   4. Additional contaminant(s) required by the selected licensed treatment, storage, and/or disposal facility.

C. Construction water samples for off-site disposal shall be analyzed by the Project Analytical Laboratory in accordance with NYSDEC ASP for the constituents required by the designated disposal facility. Otherwise, testing shall be consistent with the SPDES discharge permit equivalent, Section 02 72 00 - 01.

D. Soil confirmation samples at OU01 following excavation and removal of contaminated soil shall be analyzed by the Project Analytical Laboratory in accordance with NYDEC ASP for the following, based on applicable soil cleanup criteria, as approved by the ENGINEER:
   1. TAL VOCs using Method 5035A/8260C.
   2. TAL SVOCs using USEPA Method 8270C.
   3. TAL metals using USEPA Method 6010B.
   4. TAL Pesticides using USEPA Method 8081

E. Imported soil borrow source samples shall be analyzed by the Project Analytical Laboratory in accordance with NYSDEC ASP for the following, based on material use, in accordance with this section, as approved by the ENGINEER:
   1. TAL metals using USEPA Method 6010B.
   2. Mercury using USEPA Method 7471B.
   3. Total Cyanide using USEPA Method 9010C.
   4. Chromium (hexavalent) using USEPA Method 7199.
   5. TAL Pesticides using USEPA Method 8081
   6. 2,4,5-TP Acid (Silvex) using USEPA Method 8151A.
   7. TAL SVOCs using USEPA Method 8270C.
   8. TAL VOCs using USEPA Method 5035A/8260C.
   9. 1,4-dioxane using USEPA Method 8270D – Selected Ion Monitoring (SIM).
   10. Per- and polyfluoroalkyl substances (PFAS) using USEPA Modified Method 537.

3.8 REPORTING

A. The CONTRACTOR shall prepare a DUSR in accordance with the "Guidance for Data Deliverables and the Development of Data Usability Reports" provided in Appendix 2B of the NYSDEC DER-10 and included as Attachment 01 45 28-2. The DUSR shall be prepared for confirmation soil and sediment samples specified in Sub-Parts 3.04 of this Specification.

B. The CONTRACTOR shall deliver to the DEPARTMENT confirmation soil sample analytical reports in an electronic data deliverable (EDD) format that complies with the DEPARTMENT's Electronic Document Standards (EDS), or as otherwise directed by the DEPARTMENT, following Section 1.15, Electronic Submissions, of the NYSDEC DER-10 as summarized below:
   1. All data generated shall be submitted in an electronic data deliverable (EDD) that complies with the DEPARTMENT's Electronic Data Warehouse Standards (EDWS) or as otherwise directed by the DEPARTMENT.
   2. Additional information relative to the EDS, EDD and EDWS is available on the NYSDEC website.

C. Laboratory analyses for confirmation soil samples shall include Category B deliverables as defined in the NYSDEC ASP.

3.9 ANALYTICAL TEST RESULT EVALUATION

A. Waste Characterization soil/sediment sample analytical results shall be compared to the allowable limits for waste acceptance specific to the permitted treatment, storage, and/or disposal facility designated to receive the waste.

B. Borrow source soil sample analytical results shall be compared to the Unrestricted Use Soil Cleanup Objectives provided in 6 NYCRR Part 375 Table 375-6.8(a), Commercial Restricted Use Soil Cleanup Objectives provided in 6 NYCRR Part 375 Table 375-6.8(d), or Class A Sediment Criteria provided in NYSDEC Division of Fish, Wildlife and Marine Resources Bureau of Habitat, Table 5, June 24, 2014 and included as Attachment 01 45 28-3, 4 and 5, respectively.

C. Confirmation OU01 soil sample analytical results shall be compared to the applicable Soil Cleanup Objectives (SCOs) for the lower of the "Protection of Human Health – Residential" or "Protection of Ecological Resources" criteria for the identified primary contaminants of concern for the Site. Attachment 01 45 28-4 contains a table of the SCOs as adapted from 6 NYCRR Part 375 Table 375-6.8(b).

D. Construction water analytical results shall be compared to one of the following criteria:
   1. The SPDES Permit Equivalent for treatment and discharge of water to Brandy Brook effluent limitations and monitoring requirements as listed in Section 02 72 00 – Construction Water Management, Attachment 02 72 00 -1, or
   2. The disposal facility's requirements if water is deemed unsuitable for onsite treatment and discharge.

3.10 ACCEPTANCE OF ANALYTICAL RESULTS AND CORRESPONDING ACTION

A. The ENGINEER/DEPARTMENT will review the analytical results and the associated DUSR submitted and based on the information, indicate approval and/or provide direction to the CONTRACTOR.

B. Waste characterization analytical results require the review and approval of the DEPARTMENT/ENGINEER and the designated off-site treatment, storage, and/or disposal facility. Once approval has been granted and acceptance of the waste has been confirmed, the soil/sediment may be transported off-site for disposal in accordance with Section 02 81 00 – Off-Site Transportation and Disposal.

C. Confirmation sample analytical results reporting contaminant concentration values less than each of the SCOs verifies that the cleanup is complete, and the excavation limit has been achieved. If any one of the results is greater than or equal to a SCO or Sediment Cleanup Objectives, the excavation limit has not been achieved and additional excavation of soil/sediment surrounding the failed sample location shall be conducted at the direction of the DEPARTMENT/ENGINEER. Additional confirmation testing shall be required once the additional impacted material has been removed.

D. Borrow source sample analytical results meeting the required SCOs is accepted for remedial construction use and may be imported and incorporated into the Work. Imported materials requiring suitable for unrestricted use shall be segregated from MGP-impacted materials and imported materials not meeting unrestricted use criteria, as approved by the ENGINEER/DEPARTMENT. No materials shall be delivered to the Site until analytical results are accepted by ENGINEER/DEPARTMENT.

E. Construction water sample analytical results reporting contaminant concentrations less than the discharge limits of the Discharge Permit may be discharged at designated locations in the Permit.

F. Construction water not meeting these criteria may be treated on-site to meet these project requirements or disposed off-site at a licensed treatment, storage, or disposal facility.

3.11 DISPOSAL OF WORK DERIVED WASTES

A. Disposable sampling equipment and personnel protective equipment (PPE) associated with sample collection shall be classified as VOC remediation waste and handled as described in Section 01 74 19 – Waste Removal, Handling, and Storage and Section 02 81 00 – Off-Site Transportation and Disposal.

3.12 DECONTAMINATION

A. Contaminated sampling equipment can be washed with a Liquinox ®, or equivalent soap and water solution, rinsed with clean potable water, and finally rinsed with deionized water. Decontamination wastewater shall be treated in the on-site water treatment facility and sampled accordingly prior to discharge. If discharge criteria cannot be met, the water shall be handled as described in Section 01 74 19 – Waste Removal, Handling, and Storage and Section 02 81 00 – Off-Site Transportation and Disposal.

+ + END OF SECTION + +

ATTACHMENTS:

Chemical Sampling and Analysis Summary Table - Attachment 01 45 28-1

Guidance for Data Deliverables and the Development of Data Usability Reports" provided in Appendix 2B of the NYSDEC DER-10 and included as Attachment 01 45 28-2

Unrestricted Use Soil Cleanup Objectives provided in 6 NYCRR Part 375 Table 375-6.8(a) or Commercial Restricted Use Soil Cleanup Objectives provided in 6 NYCRR Part 375 Table 375-6.8(b) are included as Attachments 01 45 28-3 and 4, respectively

Attachment 01 45 28-5 contains a table of the Class A Sediment Criteria as adapted from NYSDEC Technical Guidance for Screening Contaminated Sediments Table 5.

Attachment 01 45 28-1

Chemical Sampling and Analysis Summary Table

Matrix	Sample Frequency	QA/QC Frequency	Sample Type	Turn Around Time[2,3]	Analytical Method
WASTE CHARACTERIZATION SAMPLE COLLECTION[1]					
Remediation Waste (Hazardous and Non-Hazardous)	Per TSDF	Per TSDF	Composite	48 hours[4]	Lab analysis for constituents required by the designated TSDF.
Construction Water[5]	Per TSDF for off-site disposal, one per 7,000 gal for on-site surface water discharge, or one per 25,000 gal per on-site OCSD discharge	Dup/MS/MSD One per 20 samples	Discrete	24 hours	Lab analysis for constituents required by the designated TSDF for off-site disposal or permitted discharge limits for on-site disposal.
CONFIRMATION SOIL SAMPLE COLLECTION					
OU01 Soil	One (1) sample from the bottom of each sidewall per 30 linear feet of sidewall; one (1) sample per 900 square feet of bottom area.	Dup/MS/MSD One per 20 samples	Discrete	24 hours	TAL VOCs-5035A/8260C, TAL SVOCs-8270C, Chromium (hexavalent)-7199, TAL Pesticides-8081
OU01 Sediment	One (1) sample from the bottom of each sidewall per 30 linear feet of sidewall; one (1) sample per 900 square feet of bottom area.	Dup/MS/MSD One per 20 samples	Discrete	24 hours	TCL VOCs-5035A/8260B, TCL SVOCs-8270C, TCL Pesticides-8081
IMPORTED BORROW SOURCE SOIL SAMPLE COLLECTION					
Soil	One per 2,000 cy	Dup/MS/MSD One per 20 samples	Composite	Shall be coordinated with the material use requirements for the project.	TAL Metals-6010B, Mercury-7471B, Total Cyanide-9010C, Chromium (+6)-7199, TAL Pesticides-8081, 2,4,5-TP Acid (Silvex)-8151A, TAL PCBs-8082, TAL SVOCs-8270C, TAL VOCs-5035A/8260B, 1,4-dioxane- 8270D SIM, and PFAS-M537. Imported materials with a gradation of 10 percent or less by weight passing the number 80 sieve as determined by ASTM D 422 can be imported without chemical sampling and analysis consistent with NYSDEC DER-10 Paragraph 5.4(e)(5).

Notes:

1. Discrete and composite samples shall be collected for analytical testing defined by the receiving treatment, storage and/or disposal facility (TSDF) to establish a waste profile that satisfies the permit/license
2. Standard level of reporting shall consist of a summary of laboratory results, laboratory QA/QC results, and a copy of the chain-of custody submitted to the laboratory with the samples.
3. Turn-Around-Time is the amount of time between submittal of samples to the analytical laboratory and receipt of analytical results.
4. TAT shall be coordinated with on-site waste handling and storage limitations.
5. Construction Water samples should be identified as waste characterization samples for any quantities disposed off-site at a TSDF. For Construction Water treated and disposed on-site, the sample should be identified as discharge limit/confirmation samples.

Abbreviations: cm, centimeter; cy, cubic yard; DER, Division of Environmental Remediation; Dup, duplicates; gal, gallon; MS, matrix spike; MSD, matrix spike duplicate; NYSDEC, New York State Department of

Appendix 2B
New York State Department of Environmental Conservation "Technical Guidance for Site Investigation and Remediation"; DER-10; May 3, 2010

Attachment 01 45 28- 2
Appendix 2B
Guidance for Data Deliverables and the Development of Data Usability Summary Reports

1.0 Data Deliverables

(a) DEC Analytical Services Protocol Category A Data Deliverables:

1. A Category A Data Deliverable as described in the most current DEC Analytical Services Protocol (ASP) includes:

i. a Sample Delivery Group Narrative;

ii. contract Lab Sample Information sheets;

iii. DEC Data Package Summary Forms;

iv. chain-of-custody forms; and,

v. test analyses results (including tentatively identified compounds for analysis of volatile and semi-volatile organic compounds)

2. For a DEC Category A Data Deliverable, a data applicability report may be requested, in which case it will be prepared, to the extent possible, in accordance with the DUSR guidance detailed below.

(b) DEC Analytical Services Protocol Category B Data Deliverables

1. A Category B Data Deliverable is includes the information provided for the Category A Data Deliverable, identified in subdivision (a) above, plus related QA/QC information and documentation consisting of:

i. calibration standards;

ii. surrogate recoveries;

iii. blank results;

iv. spike recoveries;

v. duplicate results;

vi. confirmation (lab check/QC) samples;

vii. internal standard area and retention time summary;

viii. chromatograms;

ix. raw data files; and

x. other specific information as described in the most current DEC ASP.

2. A DEC Category B Data Deliverable is required for the development of a Data Usability Summary Report (DUSR).

2.0 Data Usability Summary Reports (DUSRs)

(a) Background. The Data Usability Summary Report (DUSR) provides a thorough evaluation of analytical data with the primary objective to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and data use.

1. The development of the DUSR must be carried out by an experienced environmental scientist, such as the project Quality Assurance Officer, who is fully capable of conducting a full data validation. The DUSR is developed from:

i. a DEC ASP Category B Data Deliverable; or

ii. the *USEPA Contract Laboratory Program National Functional Data Validation Standard Operating Procedures for Data Evaluation and Validation.*

2. The DUSR and the data deliverables package will be reviewed by DER staff. If full third party data validation is found to be necessary (e.g. pending litigation) this can be carried out at a later date on the same data package used for the development of the DUSR.

(b) Personnel Requirements. The person preparing the DUSR must be pre-approved by DER. The person must submit their qualifications to DER documenting experience in analysis and data validation. Data validator qualifications are available on DEC's website identified in the table of contents.

(c) Preparation of a DUSR. The DUSR is developed by reviewing and evaluating the analytical data package. In order for the DUSR to be acceptable, during the course of this review the following questions applicable to the analysis being reviewed must be answered in the affirmative.

1. Is the data package complete as defined under the requirements for the most current DEC ASP Category B or USEPA CLP data deliverables?

2. Have all holding times been met?

3. Do all the QC data; blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used and are they consistent with the most current DEC ASP?

7. Have any quality control (QC) exceedances been specifically noted in the DUSR and have the corresponding QC summary sheets from the data package been attached to the DUSR?

(d) Documenting the validation process in the DUSR. Once the data package has been reviewed and the above questions asked and answered the DUSR proceeds to describe the samples and the analytical parameters, including data deficiencies, analytical protocol deviations and quality control problems are identified and their effect on the data is discussed.

Attachment 01 45 28 - 3

Unrestricted Use Soil Cleanup Objectives [Adapted from 6 NYCRR Part 375 Table 375-6.8(a)]

Attachment 01 45 28- 3 OU01 Soil Cleanup Objectives

Contaminant	Unrestricted Use SCO[a,c](ppm[b])
Volatile Organic Compounds	
1,2,4-Trimethylbenzene	3.6
1,3,5-Trimethylbenzene	8.4
Acetone	0.05
Benzene	0.06
Ethyl benzene	1
Methylene chloride	0.05
Napthylene	12
Toluene	0.7
Xylene (mixed)	0.26
Semivolatile Organic Compounds	
Acenaphthene	20
Acenaphthylene	100
Anthracene	100
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(ghi)perylene	100
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Fluoranthene	100
Fluorene	30
Indeno(1,2,3-cd)pyrene	0.5
Naphthalene	12
Phenanthrene	100
Pyrene	100
Inorganics	
Arsenic	13
Chromium	1
Copper	50
Lead	63
Mercury	0.18
Selenium	3.9
Silver	2
zinc	109
Cyanide, Total	27
Pesticides	
4,4'-DDD	0.0033
4,4'-DDE	0.0033
4,4'-DDT	0.0033
Alpha-BHC	0.02
Beta-BHC	0.036
Dieldrin	0.005
Endrin	0.014

a - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives;
b - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
c - Applies to confirmation and borrow source sampling

Attachment 01 45 28 - 4

Commercial Restricted Use Soil Cleanup Objectives [Adapted from 6 NYCRR Part 375 Table 375-6.8(b)]

Attachment 01 45 28- 4 OU01 Soil Cleanup Objectives

Contaminant	Commercial Use SCO[a,c](ppm[b])
Volatile Organic Compounds	
1,2,4-Trimethylbenzene	190
1,3,5-Trimethylbenzene	190
Acetone	500
Benzene	44
Ethyl benzene	390
Methylene chloride	500
Napthylene	500
Toluene	500
Xylene (mixed)	500
Semivolatile Organic Compounds	
Acenaphthene	500
Acenaphthylene	500.0
Anthracene	500.0
Benzo(a)anthracene	5.6
Benzo(a)pyrene	1.0
Benzo(b)fluoranthene	5.6
Benzo(ghi)perylene	500.0
Benzo(k)fluoranthene	56.0
Chrysene	56.0
Dibenz(a,h)anthracene	0.6
Fluoranthene	500.0
Fluorene	500.0
Indeno(1,2,3-cd)pyrene	5.6
Naphthalene	500.0
Phenanthrene	500.0
Pyrene	500.0
Inorganics	
Arsenic	16.0
Chromium	400.0
Copper	270.0
Lead	1000.0
Mercury	2.8
Selenium	1500.0
Silver	1500.0
zinc	10000.0
Cyanide, Total	27.0
Pesticides	
4,4'-DDD	92.0
4,4'-DDE	62.0
4,4'-DDT	47.0
Alpha-BHC	3.4
Beta-BHC	3.0
Dieldrin	1.4
Endrin	89.0

a - SCG: Part 375-6.8(b) Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use

b - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

c - Applies to confirmation and borrow source sampling

Attachment 01 45 28 - 5

Class A Sediment Criteria [Adapted from NYSDEC Technical Guidance for Screening Contaminated Sediments

Attachment 01 45 28- 5 OU01 Sediment Cleanup Objectives

Contaminant	Class A Sediment Criteria[b,c] (mg/kg[a])
Volatile Organic Compounds	
Benzene	0.53
Ethyl benzene	0.43
Isopropylbenzene	0.21
1,2,4-Trimethylbenzene	3.4
Toluene	0.93
Xylenes, m&p	0.59
Xylene (mixed)	0.82
Semivolatile Organic Compounds	
Total PAHs	4
Pesticides	
4,4'-DDE	0.044
4,4'-DDT	0.044
Endosulfan I	0.001
Endosulfan II	0.001

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

b - Adapted from NYSDEC Screening and Assessment of Contaminated Sediment Table 5

c- Applies to confirmation and borrow source sampling adjacent to Brandy Brook

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included:
   1. Provide such temporary facilities and controls as the Work may warrant or as deemed necessary by the ENGINEER/DEPARTMENT. General locations as depicted on the Construction Contract Drawings may be modified as required by the CONTRACTOR upon approval of the ENGINEER and Owner.
   2. Required temporary facilities and controls include:
      a. Shelter for crews including separate sanitary facilities for men and women conforming to local codes and OSHA requirements.
      b. Fire protection.
      c. CONTRACTOR utility services including water, electric, internet connection, and mobile wireless phone (via wi-fi) for use by the ENGINEER.
      d. Safety equipment.
      e. Site security fence and/or barricades, and warning signs.
      f. Solidification facilities, including materials storage, mixing and sample storage (see Section 31 32 13 - Solidification.
      g. Soil/debris processing facilities for dewatering and stabilization to meet disposal requirements.
      h. Soil stockpile areas (see Section 01 74 19 - Waste Removal, Handling, and Storage).
      i. Decontamination pad (see Section 02 51 00 - Decontamination Procedures).
      j. Pumping systems for dewatering (see Section 31 23 19 - Dewatering)
      k. Construction water management (See Section 02 72 00 - Construction Water Management).
      l. Temporary tributary bypass system (see Section 01 57 25 - Temporary Tributary Bypass System).
      m. Dust and odor control during earthwork activities (see Section 01 57 26 - Dust and Odor Control).
      o. Shoring (see Section 31 01 50 - Shoring (Sheeting and Bracing).
      p. Field offices for CONTRACTOR and ENGINEER (see Sections 01 52 13 - Contractor's Field Office and Sheds and 01 52 11 - Engineer's Field Office).
      q. Temporary portable truck scale (see Section 34 78 13 - Portable Truck Scale)
      r. Snow/ice removal, as required.

B. CONTRACTOR Site Access Locations:

1. Tentative property locations for CONTRACTOR use are included on Construction Contract Drawing C-102 and shows the proposed limit of the work and general layout of CONTRACTOR facilities and controls.
2. There is limited space available at the Site for the required support activities expected to be conducted by the CONTRACTOR, including:
   a. Soil/sediment stockpiling and dewatering
   b. Dewatering and construction water treatment
   c. Construction material, vehicle, and equipment storage
   d. Solidification
   e. Haul truck queuing
   f. Office trailer use
   g. Employee parking
   h. Equipment decontamination
   i. Temporary Nursery
3. The CONTRACTOR will be allowed to use the following areas for ancillary RA operations during the work:
   a. The former MGP property (OU01, approximately 4.3 acres).
   b. Portions of the Adirondack Scenic Railroad ROW located adjacent to and south of the former OU01 MGP property.
   c. A portion of the parcel owned by Essex County, where the Site is accessed from Payeville Road.
   d. Refer to Construction Contract Drawing C-102.
4. Other facilities that may be necessary or provided, depending on the CONTRACTOR’s approach to the work and the preference of the CONTRACTOR, include, but are not limited to:
   a. CONTRACTOR's storage facilities.
   b. Yard lighting (if necessary).
   c. Construction warning, protection, and control devices for maintenance and safety of vehicular and pedestrian traffic (if necessary).
   d. Temporary enclosure(s) for odor, vapor, and dust control.
6. Completely remove all temporary equipment and materials upon completion of the Work and repair all damage caused by the installation of temporary measures.
7. Make all necessary applications and arrangements for electric power, light, water and other utilities with the property owner and/or tenants. Notify the local electric power company if unusually heavy loads, such as welders, pumps, heat-trace, will be connected.

C. Other Requirements:

1. Obtain permits as required by local governmental authorities.
2. Obtain easements, when required, across private property other than that of the Owner for temporary power service.
3. Comply with the latest National Electrical Code.

4. Comply with all local, State, and Federal codes, laws, and regulations.
5. Allow access to and use of facilities provided by the CONTRACTOR to the ENGINEER and DEPARTMENT.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 35 53 - Site Security

B. Section 01 52 13 - Field Trailer

C. Section 01 54 28 – Truck Scale

D. Section 01 55 26 - Traffic Control

E. Section 01 57 25 - Temporary Tributary Bypass System

F. Section 01 57 26 - Dust and Odor Control

G. Section 01 58 00 - Project Identification and Signs

H. Section 01 66 00 - Product Storage and Handling

I. Section 01 74 19 - Waste Removal, Handling, and Storage

J. Section 02 72 00 - Construction Water Management

K. Section 02 51 00 - Decontamination Procedures

L. Section 31 25 00 - Erosion and Sediment Control

M. Section 31 32 13 - Solidification

PART 2 - PRODUCTS

2.1 MATERIALS

A. CONTRACTOR's facilities shall be of size and content for adequate administration of the Contract, storage of materials required, and provision for personnel shelter.

B. Equipment required for personal safety of workmen shall be furnished in full compliance with specific safety requirements of local, state, and Federal agencies, including OSHA.

C. Traffic signs, barricades, floating booms, buoys, warning lights and signage, and all necessary equipment for the protection of the traveling public shall be furnished and maintained as specified in "Part 6, Temporary Traffic Control" of the *Manual on Uniform Traffic Control Devices, 2003 Edition* by the Federal Highway Administration.

D. Temporary Perimeter Fencing and Gates: Provide temporary fence panels and gates to separate vehicles and pedestrians from the work area as defined by the limit of work and active exclusion zone. Comply with ASTM A392-96, Standard Specifications for Zinc-Coated Chain Link Fence.
   1. Fence shall be 8-foot high galvanized steel chain link fencing with galvanized steel frame and woven wire mesh fabric.
   2. Post stands and ballast for each fence panel shall be of adequate size and weight to adequately support the fence on the ground surface in a stable/secure location throughout the construction period.
   3. Polypropylene wind/privacy screening with a minimum 85% closed mesh shall be installed on woven wire mesh fabric on exterior fence sections adjacent to the off-site residential property.
   4. Provide temporary gates with a minimum 20-foot wide opening installed as required to facilitate access. Gates shall be locked or secured during non-working hours.
   5. Existing temporary chain link fencing installed along the Site property boundary shall be left in place to serve this purpose to the extent that the sequence of work and access restrictions allow.

E. Temporary Barrier: Provide temporary barrier within the Exclusion Zone to prevent vehicles, equipment, and workers from passing indiscriminately between clean and impacted areas.
   1. Fence shall be polyethylene/polypropylene mesh, colored for high visibility (e.g. orange),
   2. Fence posts shall be galvanized metal T-posts of adequate length and ballast to provide full support of the installed fence fabric.

F. Concrete Barrier: Shall meet the requirements of Temporary Concrete Barrier as defined by the New York State Department of Transportation (NYDOT) Standard Sheet No. M519-3R1.

G. Soil/Debris Processing Facilities: Excavated soil or debris will be required dewatering and may require stabilization to meet disposal requirements if unsuitable for solidification. Due to the nature of the MGP impacted soil or debris, processing activities shall be conducted using adequate odor control including include applying hydrocarbon vapor suppressing agents, detergents, or odor-suppressing foams, as well conducting dewatering and processing operations under a temporary enclosed structure with appropriate air handlings systems.

H. Construction Water Storage Facilities: Provide Frac or Baker Tank of adequate size and number to store construction water generated from excavation pump outs; decontamination facilities; dewatering facilities; and treatment facilities.

I. Clean Water Storage Facilities: If connection to on-site water utility is not permitted, provide clean tank to store non-contaminated water supply to be used for decontamination facilities and solidification.

J. Soil/Sediment Stockpile Containment: Provide stockpile containment areas for all remediation wastes stored on-site as specified in Section 01 74 19 – Waste Removal, Handling, and Storage. Any time there was a break during the day and at the end of the day soil stockpiles shall be covered in odor suppressing foam and/or poly-sheeting.

K. Portable Truck Scale: Provide a single or multiple axle truck scale suitable for weighing imported and exported loaded trucks from the Site, as required in Section 34 78 13 – Portable Truck Scale.

PART 3 - EXECUTION

3.1 PERFORMANCE

A. Field Offices, Storage Trailers, or Buildings: Sited in approved locations and properly set up for all anticipated weather conditions, as required in Sections 01 52 13 - Contractor's Field Office and Sheds and 01 52 11 – Engineer's Field Office.

B. Sanitary Conveniences for Project Personnel:
   1. Provide and maintain in sufficient numbers, for the use of all persons employed on the work. Place at suitable locations, screened from public observation, in accordance with State and local ordinances.
   2. Rigorously enforce the use of the approved sanitary facilities provided.
   3. When no longer required, remove from the Site and properly dispose of the contents.

C. Provide sufficient drinking water for all employees, ENGINEER and DEPARTMENT from approved potable sources.

D. Obey and enforce other local sanitary regulations and orders, taking such precautions against infectious diseases as may be deemed necessary.

E. Conduct operations in a manner which, with the use of proper equipment provides maximum safety for workmen and the traveling public.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROLS

A. Temporary erosion and sedimentation controls shall be located, installed, and maintained as shown on the Construction Contract Drawings and described in Section 31 25 00 - Erosion and Sediment Control.

+ + END OF SECTION + +

SECTION 01 55 26

TRAFFIC CONTROL

PART 1 – GENERAL

1.1 DESCRIPTION

A. This section covers minimum requirements for temporary traffic regulation and control during the course of the project.

B. Construction vehicle access to the work area will be primarily from Payeville Lane, the Paved Interior Campus Road and the Adirondack Scenic Railroad right of way. Control of vehicle and pedestrian access to the work area will be maintained primarily by temporary barricades (e.g., chain link fencing, barrels, cones, concrete barriers) and signage installed by the CONTRACTOR. The general public including pedestrian and vehicular traffic will not be allowed in active work zones and construction support areas. When working on private land the CONTRACTOR shall work with the DEPARTMENT to facilitate access to their property (railroad, Municipality and College) during construction and in accordance with DEPARTMENT provided access agreements.

C. Construction access includes using a portion of the Paved Interior Campus Road. The CONTRACTOR responsibilities shall include traffic control for construction vehicle access as well as maintaining safe public vehicular and pedestrian traffic to the campus and fields.

1.2 REFERENCES

A. The publications listed below forms a part of this specification to the extent referenced. The publication is referred to in the text by basic designation only.
   1. MUTCD: Manual of Uniform Traffic Control Devises
   2. NYDOT: New York State Department of Transportation Standard Specifications (17 NY CRR, Chapter V)

1.3 SUBMITTALS

A. Submit the following in accordance with Section VIII, Articles 5.23-5.29, “Shop Drawings and Samples.”
   1. Traffic and Access Control Plan as a component of the Construction Work Plan described in Section 01 11 13 – Summary of Work. The Plan shall include, but not be limited to:
      a. Anticipated impacts to on-site and off-site traffic.
      b. Access routes for project traffic.

c. Estimated daily project traffic flows for each phase of the work, at a minimum weekly.
d. Procedures for cleaning debris and spillage from public roads, in accordance with Section 01 57 26 – Dust and Odor Control.
e. This plan shall identify equipment and describe procedures to minimize the creation and dispersion of dust and the removal of earthen materials tracked onto site and off-site roadways by construction vehicles. The plan shall address major construction activities that will contribute to these situations and the CONTRACTOR's approach to control them.

1.4 INTENT

A. Maintain safe conditions for the CONTRACTOR's workers, the general public and all vehicles.

B. Minimize the inconvenience to the general public and adjacent property owners affected.

C. Give the right of way to emergency vehicles in all situations.

PART 2 – PRODUCTS

2.1 OWNERSHIP

A. The products specified herein shall be leased or owned by the CONTRACTOR and will not become the property of the DEPARTMENT. All products specified herein shall be removed from the worksite when no longer needed.

2.2 TRAFFIC CONTROL DEVICES

A. All the following items shall conform to NYSDOT Section 619-2 and MUTCD requirements:
   1. Flashing barricade lights
   2. Construction and warning signs
   3. Channelizing devices
   4. Arrow boards
   5. Barricades
   6. Traffic cones

2.3 MISCELLANEOUS EQUIPMENT

A. Other items, which include orange safety vests, flags or signs for flagmen, and communication devices, shall be standard and adequate for their intended function. They shall be in accordance with the NYSDOT-MUTCD where applicable or as required by NYSDOT Work Permit.

PART 3 – EXECUTION

3.1 GENERAL

A. All work under this section shall be performed in accordance with NYDOT Standard Specifications, the MUTCD, and as stated herein.

B. Protect workers and provide for safe and convenient public travel by furnishing, erecting, and maintaining all warning signs, signals, markings, traffic cones, fencing, barricades, warning lights, flaggers, floating booms, buoys, and other traffic and warning control devices required for the type of operation being performed.

C. Provide control devices and/or flaggers as specified by the railroad during work within the railroad right of way.

D. Keep all roads free of debris and spillage from hauling equipment at all times. Haul routes shall be cleaned at least once per day to limit dust generation as required in the Contract Documents. Dry brooming is prohibited.

E. Provide access at all times to private property.

F. All work-related vehicles shall be parked at the Site, unless other arrangements are made in advance by CONTRACTOR and approved by the DEPARTMENT.

G. Furnish the name of the individual in direct employ of the CONTRACTOR who is to be responsible for the installation and maintenance of the traffic control for the project. If the installation and maintenance are to be accomplished by a subcontractor, consent shall be requested of the ENGINEER at the time of the pre-construction conference. This shall not relieve the CONTRACTOR of the foregoing requirement for a responsible individual in his direct employ.

H. The CONTRACTOR shall take necessary measures, in addition to those required by Federal, State and local laws and regulations, to minimize the migration of dust and earthen material from construction areas including the utilization of wind indicators and air monitoring.

I. Dust generating surfaces and odor generating material within the active work limits shall maintained as directed in Section 01 57 26 - Dust and Odor Control, or as otherwise directed by the ENGINEER.

J. The CONTRACTOR shall be responsible for the removal and disposal of earthen material that is tracked onto site and off-site roadways by construction vehicles. The CONTRACTOR shall continually inspect roadways and remove the materials immediately to maintain a clean and hazard free driving surface.

3.2 COORDINATION AND SCHEDULE

A. No traffic shall be disrupted over holiday weekends.

B. Permits for work in all rights of way, including the railroad shall be approved prior to conducting any work in the areas affected.

C. The CONTRACTOR responsibilities shall include traffic control for construction vehicle access as well as maintaining safe public vehicular and pedestrian traffic to the boat launch in a manner that prevents congestion and causes Work delays.

+ + END OF SECTION + +

SECTION 01 55 29

STORAGE OF MATERIAL

PART 1 – GENERAL

1.1 DESCRIPTION

A. Store and protect materials in accordance with manufacturer's recommendations and requirements of Specifications.

B. CONTRACTOR shall make all arrangements and provisions necessary for the storage of materials and equipment. All excavated materials, construction equipment, and materials and equipment to be incorporated into the Work shall be placed so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the Work. Materials and equipment shall be kept neatly and compactly stored in locations that will cause a minimum of inconvenience to other contractors, public travel, adjoining owners, tenants and occupants. Arrange storage in a manner to provide easy access for inspection.

C. Areas available to the CONTRACTOR for storage of material and equipment are shown on Construction Contract Drawing C-102 as staging and storage areas or temporary nursery. Additional areas may be approved by the ENGINEER. Areas that are off-site or outside the limit of work shall be available provided negotiated access agreements between the DEPARTMENT and the Owner can be achieved.

D. CONTRACTOR Storage Locations:
   1. Tentative property locations for CONTRACTOR use are included on Construction Contract Drawing C-102 and shows the proposed limit of the work and general layout of CONTRACTOR facilities and controls.
   2. There is limited space available at the Site for the required support activities expected to be conducted by the CONTRACTOR, including:
      a. Soil stockpiling and processing/dewatering
      b. Dewatering and construction water treatment
      c. Construction material, vehicle, and equipment storage
      d. Temporary nursery for tree storage
      e. Office trailer use
      f. Employee parking
   3. The CONTRACTOR will be allowed to use the following areas for ancillary RA operations during the work:
      a. The former MGP property (OU1, approximately 4.3 acres), less the area occupied by the squatters.
      b. Refer to Construction Contract Drawing C-102.

4. In addition, the DEPARTMENT will be responsible for obtaining permission from private owners, the Village of Saranac Lake, or other landowners for other potential properties for construction access and/or for use by the CONTRACTOR.

E. Lawns, grass plots or other public/private property shall not be used for storage purposes without written permission of the DEPARTMENT or other person in possession or control of such premises.

F. CONTRACTOR shall be fully responsible for loss or damage to stored materials and equipment.

G. Do not open manufacturer's containers until time of installation unless recommended by the manufacturer or otherwise specified.

H. Storage requirements for wastes and waste materials are specified in Section 01 74 19 - Waste Removal, Handling, and Storage.

1.2 UNCOVERED STORAGE

A. The following types of materials may be stored outdoors without cover:
   1. Structural steel.
   2. Piping.
   3. Precast concrete items.
   4. Castings.

B. Store the above materials on wood blocking or tarps so there is no contact with the ground.

1.3 PROTECTED STORAGE

A. The following types of materials or activities shall be stored under protective covers or enclosures:
   1. Impacted soil stockpiles.
   2. Soil dewatering/processing.
   3. Soil materials for backfill and restoration activities.
   4. Upland restoration area trees.

B. Provide watertight roll-off for transporting impacted soil.

C. Provide lined and covered stockpile areas for excavated impacted soil.

D. Provide temporary nursery for upland restoration area trees.

E. Conducting dewatering/processing of excavated soils and debris under temporary enclosures with appropriate air management systems for control of dust and odors.

F. Provide heated storage space for materials that would be damaged by freezing.

G. Protect mechanical and electrical equipment from being contaminated by dust, dirt and moisture.

H. Maintain humidity at levels recommended by manufacturers for electrical and electronic equipment.

1.4 MAINTENANCE OF STORAGE

A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:
   1. State of storage facilities is adequate to provide required conditions.
   2. Required environmental conditions are maintained on continuing basis.
   3. Products exposed to elements are not adversely affected.

B. Mechanical and electrical equipment which requires long term storage shall have complete manufacturer's instructions for servicing accompanying each item, with notice of enclosed instructions shown on exterior of package.
   1. Comply with manufacturer's instructions on scheduled basis.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

+ + END OF SECTION + +

SECTION 01 57 25

TEMPORARY TRIBUTARY BYPASS SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

A. Furnish and install temporary cofferdams; pumped or gravity conveyance systems including pump(s) piping and/or as required to collect and divert base and stormwater flows associated with Brandy Brook to facilitate remedial action construction.

B. The Brandy Brook remedial action shall be conducted in one segment starting at the upstream remediation limits and working downstream. The length of active work segments will be proposed by the CONTRACTOR and approved by the ENGINEER and DEPARTMENT. Up gradient flows shall be bypassed around the active work area to mitigate the amount of water to be encountered. The CONTRACTOR will furnish and install temporary cofferdams (berms, sheeting, bladder dams), pumped or gravity conveyance systems including pumps(s), piping and/or channels as required to divert up gradient base and stormwater flows from the Brook around the work to facilitate the remedial action.

C. The diversion system will be designed to handle the estimated peak flow rate and peak flow volume associated with a ten year, 24-hour duration storm event for the local project area, which is equal to 3.4 inches as indicated in the New York State Stormwater Design Manual Figure 4.3. The resulting estimated peak discharge to be diverted is approximately 10 cfs (4,500 gpm).

D. Contingency measures shall be provided to handle the peak flow rate and peak flow volume associated with a 5.0 inch 24-hour duration storm event.

E. The extent of the work is generally shown on the Construction Contract Drawings and shall be extended to accommodate changes which become necessary as a result of encountering unforeseen or changed conditions in the field.

F. The work described herein is applicable to the temporary bypass of Brandy Brook base flow and stormwater flow as necessary to complete remedial action excavation, solidification, confirmation testing, and restoration.

G. Provide temporary tributary bypass system as required throughout the duration of the remedial construction activity, unless approved otherwise by the ENGINEER.

H. The CONTRACTOR shall monitor local weather reports for the local area on a daily basis and modify or prepare the bypass system accordingly to handle stormwater flows.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 11 13 - Summary of Work

B. Section 31 00 00 - Earthwork

C. Section 31 25 00 - Erosion and Sediment Control

1.3 SUBMITTALS

A. Proposed sequence, equipment, and methods for the temporary tributary bypass system as a component of the Construction Work Plan described in Section 01 11 13 - Summary of Work.

B. If proposed, submit an engineered cofferdam design sealed by a licensed New York Professional ENGINEER for informational purposes at least 14 business days prior to proposed installation.

C. Furnish the name of the manufacturer of all products selected for use in the bypass system including pipe material and pump(s) to be used. Use pipe of the same manufacturer for all bypass work.

1.4 QUALITY ASSURANCE

A. All materials shall conform to the standards designated in Part 2 for the appropriate material and equipment.

1.5 SYSTEM DESIGN

A. Provide temporary cofferdam(s), pumping and conveyance system, and system protection for tributary bypass as detailed below:

B. The capacity of the bypass system shall meet the requirements of Sub-Part 1.1B and Sub-Part 1.1C. The system shall not cause flooding of hydraulically connected upstream areas or downstream areas.

C. Cofferdams (sheeting, bladder dams, berms) shall be installed, as required, to hydraulically isolate work areas from off-site upstream and downstream flows. At upstream locations, install a cofferdam to contain flows in a sump area sized to accommodate the selected pumping system or connect to a gravity pipe or an open channel designed to convey bypass flows.

D. Pump(s) used for bypass shall have a total capacity of at least 100 percent of the required flow rate. Individual pump capacity is to be no less than 5,000 gpm. Pump size and type shall be coordinated with the sump size constructed on the upstream end of the tributary.

E. Gravity pipes and/or channels used for bypass shall have a total capacity to convey at least 100 percent of the required flow rate.

F. Minimum of 4-inch diameter flexible polyethylene piping shall be installed as above ground force main to convey pumped bypass flows to the selected outfall location.

G. Protect above ground piping and appurtenances from construction traffic/weather with stone berms, road plates, or other system to prevent impact from traffic/weather within the work area.

H. The outfall locations shall be selected by the CONTRACTOR and approved by the ENGINEER. Options include that shown on the Construction Contract Drawings.

I. Discharge concentrated flows to a stabilized plunge pool or scour pad installed above the water line of the brook.

J. Monitor and maintain the bypass outfall in accordance with Contract Construction Drawings and Section 31 25 00 – Erosion and Sediment Control.

PART 2 - PRODUCTS

A. See Sub-Part 1.5, System Design.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install temporary cofferdam as instructed by manufacturer and/or CONTRACTOR's design engineer.

B. Install pumped or gravity conveyance system for bypass flows and associated protections.

C. Provide temporary power supply, as required, to operate the pump(s) during the work.

3.2 OPERATION

A. Operate the bypass system during work and non-work hours, as required, to bypass Brandy Brook base flows in a manner that does not contribute to the generation or release of Construction Water and prevents negative impacts to the upstream or downstream components of the natural drainage system.

B. Monitor weather forecast to assess predicted rainfall and required bypass system capacity. Events predicted to exceed 3.5 inches of rain in 24-hours will exceed the minimum required capacity of the bypass system, therefore contingency measures shall be implemented.

C. Provide contingency measures to meet excess capacity requirements (5.0 inch 24-hour duration storm event). These measures may include:
   1. Additional pumps and/or piping.
   2. Temporary storage.
   3. Secondary overflow bypass.
   4. Secondary stabilized discharge.

3.3 MAINTENANCE

A. Provide system maintenance throughout the construction period until work areas draining to the diverted portion of Brandy Brook are complete, backfilled, restored, and accepted by the ENGINEER as complete.

B. During construction, inspect the bypass system(s) several times a day to insure it is in good working order and continues to meet the capacity requirements as designed. Inspections shall include verification of the following:
   1. Cofferdam(s) are in good condition with no leaks or failures.
   2. Outfall protection is adequate to protect the outfall area from scour due to bypass discharge.
   3. Pump(s) and/or piping are not clogged and are in good general working order.
   4. Pump controls are properly set to maintain safe on, off, and high alarm conditions.
   5. Pump controls maintain an on/off cycle time that is within the range recommended by the pump manufacturer.
   6. Above ground piping is protected from truck and heavy equipment traffic. Pipe at traffic crossings is not crushed.
   7. Power supply is functional and capable of maintaining continuous system operation during the required period of operation.

3.4 REMOVAL OF TEMPORARY WORKS

A. Remove all temporary measures associated with the temporary bypass system(s) once restoration activities are complete and approval is granted by the ENGINEER.

+ + END OF SECTION + +

SECTION 01 57 26

DUST AND ODOR CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION

A. The CONTRACTOR shall execute the Work by methods that minimize the generation of dust and nuisance odors. The CONTRACTOR shall employ dust control measures to minimize the creation of airborne dust during execution of the Work. At a minimum, standard dust control techniques shall be employed in areas of heavy equipment traffic such as watering down the Site. The dust control measures will be such that, at a minimum, air quality is in compliance with applicable OSHA regulations.

B. The CONTRACTOR shall provide an odor control system to control odors as necessary to address complaints from property tenants and the local community during excavation, backfilling, compaction, solidification, and soil/debris handling and processing activities. Odor control agents such as an odor-control foam, misting system, hydrocarbon vapor suppressing agents, detergents, or other method selected by the CONTRACTOR and approved by the ENGINEER or the DEPARTMENT shall be available on-site and shall be applied as needed to control nuisance odors. At a minimum, an odor control foam system shall be available on-site. Other systems may be required as necessary to meet the project performance objectives, including temporary enclosures for conducting soil/debris processing for excavation and/or solidification.

C. The performance objective for odor control will be to control, eliminate, or mask any odors that generate complaints from neighboring residents, the public, state or local officials, the ENGINEER, or the DEPARTMENT.

D. No additional payments will be made due to shutdowns as a result of emissions whether exceeding standards or posing a nuisance. If the initial emission controls are found to be inadequate, the CONTRACTOR shall provide additional measures at no additional cost.

E. Dust and odor control systems shall be implemented as necessary to meet local, state, and/or federal regulations for air emissions and dust and to control nuisance odors.

F. Sufficient volumes of water and/or odor control foam shall be readily available or stored on-site to address continuous application, as necessary.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 35 29 - Contractor's Health and Safety Plan

B. Section 01 11 13 - Summary of Work

C. Section 01 76 50 – Nuisance Controls, Management and Corrective Measures

D. Section 31 25 00 - Erosion and Sedimentation Control

E. Section 31 00 33 - Earthworks

PART 2 - PRODUCTS

2.1 MATERIALS

A. Water shall be free from oil, acid, and injurious alkali or vegetable matter, and other deleterious materials or contaminants. Water shall not be brackish.

B. Odor control foam. Odor control foam shall be a biodegradable, non-flammable, and non-toxic water-based material designed for the control of VOCs, dust, and odor. It shall be capable of being spray applied to form a uniform encapsulating layer between contaminated materials and the environment, suppressing VOCs, dust, odors, and gas.
   1. Provide the following or approved equal:
      a. BioSolve Pinkwater, by The BioSolve Company.
      b. AC-645 Long-Duration Foam, by Rusmar, Inc.

2.2 EQUIPMENT

A. Equipment for dust and odor control shall include appropriate measures (e.g., heat tape, tank heaters) to prevent freezing or impair operation due to temperatures below freezing.

B. Spray nozzles for water shall be capable of delivering a light spray to coat ground surfaces evenly without generating excessive runoff.

C. Spray nozzles for odor control dispersants or misting systems shall be capable of delivering a fine airborne vapor spray to minimize immediate settling to the ground.

D. Temporary buildings or enclosures such as fabric structures with negative air pressure and air treatment (carbon) systems. A temporary enclosure for excavation or solidification is not required at OU01; however, appropriate odor control (foam, tarp covers) is required and a temporary enclosure may become necessary, as directed by the DEPARTMENT.

PART 3 - EXECUTION

3.1 SPRINKLING WATER

A. Apply to haul roads or disturbed areas of the Site by approved methods and with equipment including a tank with gauge-equipped pressure pump and a nozzle-equipped spray bar.

B. Disperse through the nozzle under a minimum pressure of 20 pounds per square inch, gauge pressure.

C. Apply water until the surface is wet, but avoid ponding, run off, or muddy conditions.

3.2 PAVEMENT SWEEPING

A. Maintain clean pavement surfaces within the designated work areas and Site egress routes. Do not permit construction equipment to track soil outside of the active Exclusion Zone or the limit of work onto public or private roads.

B. Sweep pavement surfaces as required during construction to prevent migration of soil outside of the limit of work and to prevent the generation of dust.

C. Sweep all paved surfaces within the limit of work and truck ingress/egress routes at the end of construction each day, at a minimum, as a final cleanup task to remove any residual construction debris and soils.

3.3 ODOR, VAPOR, AND DUST CONTROL

A. General:
   1. Provide means, methods, and facilities required to control MGP-related odors, vapors, and dust generated during the Work.
   2. Proactively employ odor, vapor, and dust controls during the Work, and evaluate and modify construction techniques and site management practices, as necessary and appropriate, to:
      a. Mitigate MGP-related odor emissions to the extent practicable, and to the satisfaction of the ENGINEER and DEPARTMENT.
      b. Prevent exceedances of requirements for the Community Air Monitoring Plan (CAMP) provided in Section 01 35 29 – Contractor's Health and Safety Plan.
   3. If CONTRACTOR's means, methods, and facilities are unsuccessful in controlling MGP-related odors, vapors, and dust as specified in this Section, based on visual observations or the results of community air monitoring, Work shall be suspended until appropriate corrective actions are taken by

CONTRACTOR to remedy the situation to ENGINEER's satisfaction. The DEPARTMENT will not be liable for any expense or delay resulting from CONTRACTOR's failure to control MGP-related odors, vapors, and dust in accordance with this Section.

B. Odor Mitigation Agents:
   1. Mobilize odor and vapor mitigation agents and means of storage and dispersion at the Site before initiating any ground-intrusive Work or dust-generating Work.
   2. Application of odor mitigation agents shall be as follows:
      a. BioSolve Pinkwater:
         1) Prepare three-percent solution of BioSolve Pinkwater concentrate and water. Apply to exposed soils and debris and excavation faces using backpack sprayers, power washers, or misters.
         2) Apply when actively excavating, when actively handling excavated materials, and as required by the ENGINEER and DEPARTMENT.
      b. AC-645 Long-Duration Foam:
         1) Prepare 13-percent solution of AC-645 Long-Duration Foam concentrate and water. Apply to excavation faces and uncovered stockpiles of excavated materials using pneumatic foam unit. Completely and uniformly cover exposed soil surfaces with minimum three inches of foam.
         2) Apply before each work break, at the end of each workday, and as required by the ENGINEER and DEPARTMENT.

C. Construction Techniques and Site Management Practices:
   1. Excavate and backfill, and load, handle, and unload excavated materials and clean fill materials, in manner that minimizes the generation of airborne dust and odors.
   2. Haul excavated materials and clean fill materials in properly covered vehicles. All vehicles and containers transporting contaminated material shall be fully lined with minimum 6-mil polyethylene sheeting, an equivalent material, or otherwise water-tight, and shall be equipped with functioning tailgate locks and non-mesh (solid), waterproof tarpaulins. As an additional measure if the soil is really odorous, the CONTRACTOR shall spray odor control foam on the soil before placing the tarp.
   3. Restrict vehicle speeds on temporary access roads and active haul routes.
   4. Cover open excavations, stockpiles, containers with odor mitigation foam and polyethylene liners before extended work breaks and at the end of each workday. Anchor liners to resist wind forces; slope to prevent accumulation of water.
   5. Minimize the areas of bare soil exposed at one time to extent practical.

6. Minimize exposure of mixing equipment coated with MGP-impacted materials, use active controls, wash off, or foam as required without compromising the cured materials ability to achieve Performance Requirements.

3.4 STOCKPILE MANAGEMENT

A. Maintain on-site stockpiles containers in a manner that prevents wind-blown dust and odor generation. During active use, provide periodic application or odor mitigation agents and water sprinkling and during inactive periods, cover stockpiles and containers with weighted tarps.

3.5 TESTING

A. All equipment, if not in regular use, shall be tested as requested by the ENGINEER or the DEPARTMENT.

B. The DEPARTMENT or ENGINEER, at their discretion, may request the CONTRACTOR to test the water being used for dust control and provide analytical results for review.

3.6 DISPOSAL

A. Sweepings collected during pavement sweeping activities shall be managed on-site as waste material to be characterized for off-site disposal during active work.

B. When the waste removal and handling activities on Site are complete, the sweepings shall be properly disposed off-site at a licensed disposal facility.

++END OF SECTION++

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SECTION 01 71 33

PROTECTION OF THE WORK AND PROPERTY

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope:

1. This Section includes general requirements for safety and protection that augment the requirements of the General Conditions, as may be modified by the Supplementary Conditions. This Section also includes requirements for barricades and warning signals, and protection of trees and plants, existing structures, floors, roofs, installed items, and landscaping.
2. CONTRACTOR shall be responsible for taking all precautions, providing all programs, and taking all actions necessary to protect personnel health and safety, and to protect the Work and all public and private property and facilities from damage, as specified in the General Conditions, Supplementary Conditions, and the Specifications.
3. To prevent damage, injury, or loss, CONTRACTOR's actions shall include the following:
   a. Provide measures for safety of personnel at the Site, including workers engaged in the Work, delivery personnel, testing and inspection personnel, personnel of authorities having jurisdiction, other visitors to the Site, the public, DEPARTMENT's personnel, facility manager's personnel (if different from DEPARTMENT), ENGINEER, and Resident Project Representative (if any).
   b. Storing apparatus, materials, supplies, and equipment in an orderly, safe manner that does not unduly interfere with progress of the Work or work of other contractors, utility owners, and owners of transportation rights-of-way.
   c. Providing suitable storage facilities for materials and equipment subject to damage or degradation by exposure to climate, temperature, theft, breakage, or other cause.
   d. Placing upon the Work or any part thereof only loads consistent with the safety and integrity of that portion of the Work and existing construction.
   e. Frequently removing and disposing of refuse, rubbish, scrap materials, and debris caused by CONTRACTOR's operations so that, at all times, the Site is safe, orderly, and workmanlike in appearance.
   f. Providing temporary barricades, fencing, and guard rails around the following: openings, scaffolding, temporary stairs and ramps, around excavations, for elevated walkways, and other areas that may present a fall-hazard or hazard to vehicles.

4. Do not, except after written consent from proper parties, enter or occupy privately-owned property or premises with personnel, tools, materials or equipment, except on lands and easements provided by DEPARTMENT.
5. CONTRACTOR has full responsibility for preserving public and private property and facilities on and adjacent to the Site. Direct or indirect damage done by, or on account of, any act, omission, neglect, or misconduct by CONTRACTOR in executing the Work, shall be remedied by CONTRACTOR, at his expense, to condition equal to that existing before damage was done.
6. DEPARTMENT May Remedy:
   a. Should CONTRACTOR fail to protect and safeguard property and the Work after requests from ENGINEER or DEPARTMENT, DEPARTMENT may implement measures to protect property and the Work.
   b. Cost of such DEPARTMENT-implemented measures shall be paid by CONTRACTOR. DEPARTMENT may deduct from payments due CONTRACTOR such amounts as setoffs in accordance with the Contract Documents.
   c. Such right, however, shall not result in any obligation by DEPARTMENT or ENGINEER to continuously monitor or have responsibility for protection of property and the Work, which responsibility is exclusively CONTRACTOR's.
7. Work on Railroad property:
   a. The Work will be conducted along and in close proximity to an existing railroad alignment. This rail segment is regulated by the New York Department of Transportation (NYSDOT), the CONTRACTOR shall assume that the trains will not be operating during calendar years 2020 and 2021. Access to the railbed will not be allowed during that time if it has not yet been removed; however, the CONTRACTOR will have the option to submit to NYSDOT for approval a system of bridging or matting that protects the rails and ties, so that access to the railbed can then be allowed, if required. All work must be coordinated and scheduled with NYSDOT. b. CONTRACTOR personnel working within the railroad right-of-way (ROW) will need to complete appropriate railroad safety training meeting NYSDOT requirements.
   c. Any Work activities within the railroad ROW and/or operations during this Project will require two-week notification to the NYSDOT Representative prior to the start of the Work. In addition, the CONTRACTOR shall also need to provide periodic updates on Work progress and schedules to the NYSDOT.
   d. CONTRACTOR shall provide an NYSDOT Certified Inspector for Work that could impact the rail bed.
   e. Access for CONTRACTOR equipment shall be conducted within the PROJECT limits unless the CONTRACTOR submits to NYSDOT for

approval of a plan for a system of bridging or matting that protects the rails and ties, so that access to the rail bed can be allowed.

f. The NYSDOT will be required to approve any track outage required to accommodate the Project Work and issue a safety bulletin to railroad personnel of the restricted operation limits and other potential hazards during the project. The CONTRACTOR shall provide an estimated schedule providing dates and duration to conduct the Project Work along the railroad alignment.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 BARRICADES AND WARNING SIGNALS

A. Barricades and Warning Signals – General:

1. Where the Work is performed on or adjacent to roadway, access road or driveway, right-of-way, or public place:
   a. Provide temporary barricades, fences, lights, warning signs, danger signals, watchmen, and take other precautionary measures for protecting persons, property, and the Work.
   b. Use appropriately colored and reflective barricades, or paint barricades accordingly, to be visible at night.
   c. From sunset to sunrise, provide and maintain not less than one temporary light at each barricade.
   d. Erect sufficient barricades to keep vehicles from being driven on or into Work under construction.
   e. Furnish watchmen in sufficient numbers to protect the Work.

2. Provide temporary barricades to protect personnel and property for Work not in or adjacent to transportation routes and vehicular travel areas, including indoor work, in accordance with Laws and Regulations.
3. CONTRACTOR's responsibility for maintaining temporary barricades, signs, lights, and for providing watchmen shall continue until the Work is substantially complete in accordance with the Contract Documents, unless other provision for security and protection is agreed to by the parties. After Substantial Completion, protect Work and property during periods when final Work or corrective Work is underway.

B. Temporary Fencing: Refer to Section 01 35 53, Site Security and the Construction Contract Drawings.

3.2 TREE AND PLANT PROTECTION

A. Tree and Plant Protection – General:
   1. Protect existing trees, shrubs, and plants on or adjacent to the Site, shown or designated to remain in place, against unnecessary cutting, breaking, damage, or skinning of trunk, branches, bark, and roots.
   2. Do not store materials or equipment or park construction equipment and vehicles within foliage drip lines.
   3. In areas subject to traffic, provide temporary fencing or temporary barricades to protect trees and plants.
   4. Open fires are not allowed onsite.
   5. Within the limits of the Work, water trees and plants that are to remain to maintain their health during construction operations.
   6. Cover exposed roots with burlap and keep such burlap continuously wet. Cover exposed roots with earth as soon as possible. Protect root systems from mechanical damage and damage by erosion, flooding, runoff, and noxious materials in solution.
   7. If branches or trunks are damaged, prune branches immediately and protect cut or damaged areas with emulsified asphalt compounded specifically for horticultural use, in manner acceptable to ENGINEER.
   8. When directed by ENGINEER, remove and dispose of at location away from the Site damaged trees and plants that die or suffer permanent injury, and replace each damaged tree or plant with specimen of equal or better species and quality.
   9. Coordinate Work in this Article with the following Specifications:
      a. Section 31 11 00, Clearing and Grubbing.

3.3 PROTECTION OF EXISTING STRUCTURES

A. Underground Facilities:
   1. Underground Facilities known to DEPARTMENT and ENGINEER, except water, gas, sewer, electric, and communications services to individual buildings and properties, are shown. Information shown for Underground Facilities is the best available to DEPARTMENT and ENGINEER but, in accordance with the General Conditions, as may be modified by the Supplementary Conditions, is not guaranteed to be correct or complete.
   2. CONTRACTOR shall explore ahead of trenching and excavating Work and shall sufficiently uncover Underground Facilities that will or may interfere with the Work to determine their location, to prevent damage to Underground Facilities, and to prevent service interruption to structures and properties served by Underground Facilities. If CONTRACTOR damages an Underground Facility, CONTRACTOR shall restore it to its pre-construction condition, in accordance with requirements of the owner of the damaged facility and the Contract Documents.

3. Necessary changes in the location of the Work may be directed by ENGINEER to avoid Underground Facilities not shown or indicated on the Contract Documents.
4. If permanent relocation of an existing Underground Facilities is required and is not otherwise shown or indicated in the Contract Documents, CONTRACTOR may be directed in writing to perform the required work. When such relocation Work results in a change in the Contract Price, Contract Times, the associated Contract modification procedures and payment for such Work shall be in accordance with the Contract Documents.
5. Temporary relocation of a section of sanitary sewer line will be required as shown on the Construction Contract Drawings. Excavation and backfilling shall not occur within 25 feet of the relocated sanitary sewer line, until the line is pressure tested as approved by the ENGINEER/DEPARTMENT.

B. Surface Structures:
1. Surface structures are existing buildings, structures, and other facilities at or above ground surface, including their foundations and any extension below ground surface. Surface structures include, but are not limited to, buildings, tanks, walls, bridges, roads, dams, channels, open drainage routes, exposed piping and utilities, poles, exposed wires, posts, signs, markers, curbs, walks, fencing, and other facilities visible at or above ground surface.
2. Existing surface facilities, including but not limited to guard rails, posts, guard cables, signs, poles, markers, curbs, and fencing, that are temporarily removed to facilitate the Work shall be replaced and restored to their pre-construction condition at CONTRACTOR's expense.

C. Protection of Underground Facilities and Surface Structures:
1. CONTRACTOR shall sustain in their places and protect from direct or indirect injury all Underground Facilities and surface structures located within or adjacent to the limits of the Work. Such sustaining and supporting shall be done carefully and as required by the party owning or controlling such structure or facility.
2. Before proceeding with the Work of sustaining and supporting such structure or facility, CONTRACTOR shall satisfy ENGINEER that methods and procedures to be used have been approved by party owning same.
3. CONTRACTOR shall bear all risks attending the presence or proximity of all Underground Facilities and surface structures within or adjacent to limits of the Work, in accordance with the Contract Documents.
4. CONTRACTOR shall be responsible for damage and expense for direct or indirect injury, caused by CONTRACTOR's activities, to structures and facilities. CONTRACTOR shall promptly repair damage caused by CONTRACTOR's activities, to the satisfaction of owner of damaged structure or facility.
5. Protection of Underground Facilities Under Roads and Parking Areas: Provide temporary, heavy-duty steel roadway plates to protect existing manholes,

handholes, valve boxes, vaults, and other Underground Facilities near to or visible at the ground surface.

3.4 PROTECTION OF FLOORS AND ROOFS

A. Protection of Floors and Roofs – General:
   1. Use proper protective covering when moving equipment, handling materials or other loads, when painting, handling mortar or grout, and when cleaning walls, ceilings, or structure contents.
   2. Use metal pans to collect oil and cuttings from piping, conduits, and rod threading machines, and under metal cutting machines.
   3. Do not load concrete floors less than 28 days old without written permission of ENGINEER. Do not load floors, roofs, or slabs in excess of design loading.
   4. Do not load roofs without written permission of ENGINEER.
   5. Restrict access to roofs, and keep CONTRACTOR personnel off existing roofs, except as required for the Work.
   6. If access to roofs is required, roofing, parapets, openings, and all other construction on or adjacent to roof shall be protected with suitable plywood or other acceptable means.

3.5 PROTECTION OF INSTALLED MATERIALS, EQUIPMENT, AND LANDSCAPING

A. Protect installed Work to prevent damage from subsequent operations. Remove protective items when no longer needed, prior to Substantial Completion of the Work.

B. Control traffic to prevent damage to equipment, materials, and surfaces.

C. Coverings:
   1. Provide temporary coverings to protect materials and equipment from damage.
   2. Cover projections, wall corners and jambs, sills, and soffits of openings, in areas used for traffic and for passage of materials and equipment in subsequent work.

+ + END OF SECTION + +

SECTION 01 74 19

WASTE REMOVAL, HANDLING, AND STORAGE

PART 1 – GENERAL

1.1 SUMMARY

A. This section includes a description of responsibilities and project requirements for on-site management of wastes including removal, handling, and storage. Materials and wastes are identified as the following:
   1. Land Clearing Debris (See Section 31 11 00 - Clearing and Grubbing)
   2. Construction and Demolition (C&D) Debris
   3. Nonhazardous and Hazardous Manufactured Gas Plant (MGP) Remediation Waste.
   4. Construction Water (See Section 02 72 00 - Construction Water Management)
   5. Impacted Soils (See Section 02 51 40 - Excavation, Removal and Handling of Contaminated Materials)
   6. Metal Waste
   7. Sanitary Waste
   8. Site Refuse

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 35 29 – Contractor's Health and Safety Plan

B. Section 01 11 13 – Summary of Work

C. Section 01 35 43.13 – Environmental Procedures for Hazardous Materials

D. Section 01 45 28 – Chemical Sampling and Analysis

E. Section 01 45 29.13 – Testing Laboratory Services Furnished by Contractor

F. Section 01 51 05 – Temporary Utilities and Controls

G. Section 02 41 00 – Demolition

H. Section 02 72 00 – Construction Water Management

I. Section 02 81 00 – Off-Site Transportation and Disposal

J. Section 02 82 33 – Removal and Disposal of Asbestos-Containing Material

K. Section 02 51 40 – Excavation, Removal and Handling of Contaminated Materials

L. Section 31 00 00 – Earthwork

M. Section 31 01 50 – Shoring (Sheeting and Bracing)

N. Section 31 11 00 – Clearing and Grubbing

O. Section 31 23 19 – Dewatering

1.3 SUBMITTALS

A. A description of planned means and methods for management of all waste materials removed or generated as a component of the Work as a component of the Construction Work Plan (described in Section 01 11 13 - Summary of Work). Include at a minimum the following information:
   1. Proposed sequence of work including demolition, solidification, excavation, and on-site handling of contaminated materials.
   2. Outline bypass procedures for Brandy Brook and sanitary sewer line.
   3. Description of proposed on-site processing including soil dewatering, bulking, drying or other means and methods; and debris size reduction and cleaning of bulky MGP wastes.

B. Manufacturer's data for all products including geomembrane liner and cover for material stockpile containment areas.

1.4 DEFINITIONS

A. Land Clearing Debris: refer to Section 31 11 00 - Clearing and Grubbing for definition.

B. Solid Waste: typical municipal household and/or commercial/ industrial waste in solid form and not classified as hazardous waste, including rubbish/trash, garbage, and other miscellaneous discarded material/debris.

C. C&D Debris: Uncontaminated solid waste resulting from the construction, repair and demolition of utilities, drainage structures, buildings, foundations, concrete structures, oversized materials unsuitable for re-use and driveways; and uncontaminated solid waste resulting from land clearing. Such waste includes, but is not limited to construction materials, soil, rock, land clearing debris (except grubbings), asphaltic pavement, and other incidental to any of the above.

D. Non-hazardous MGP Remediation Waste: Soil, sediment, sludge, treatment system byproducts, material unsuitable for solidification, and associated debris that have contacted MGP contamination at concentrations below those considered hazardous by the Resource Conservation and Recovery Act (RCRA). Includes materials

generated during remediation work as a result of environmental protections, best management practice (BMP) materials, worker protections, and/or sampling procedures including disposable personal protective equipment (PPE), plastic sheeting, and sampling equipment.

E. Hazardous MGP Remediation Waste: Hazardous soil, sediment, sludge, treatment system byproducts, material unsuitable for solidification, and associated debris that have been determined hazardous due as part of waste characterization for transportation and disposal.

F. Construction Water: Wastes in liquid form collected during construction that may be generated from dewatering activities, decontamination activities, and/or stormwater runoff that has contacted contaminated soil and/or other materials.

G. Sanitary Wastes: Wastes characterized as sanitary sewage. Refer to Section 01 51 05 - Temporary Utilities and Controls and related to work associated with the sanitary sewer line.

H. Site Refuse: Typical municipal residential and/or commercial/ industrial waste in solid form and not classified as Remediation Waste, including rubbish/trash, garbage, and other miscellaneous discarded material/debris. Includes waste generated during the course of remedial action construction from Site workers, equipment, temporary facilities and controls, and/or imported materials.

I. Metal Waste: Surficial and buried metal wastes that are large in size and easily segregated from soil or other C&D debris. May include non-salvageable fence, and other miscellaneous scrap metal.

J. Contaminated Materials: Waste types requiring special handling including land clearing debris – grubbings; remediation waste; non-hazardous waste; construction water; and impacted soil. Other materials in direct contact with these waste types are also classified as contaminated.

K. Clean: Work or areas where direct contact with contaminated material does not occur. Clean areas include areas where remediation is not required as determined by remedial investigation testing; areas where remediation has been completed as verified by confirmation testing, and areas where separation between clean and impacted has been maintained with an engineered control.

L. Impacted: Work or areas where direct contact with contaminated materials does occur.

M. Engineered Control: A physical barrier or method employed by the CONTRACTOR to actively or passively contain, stabilize, or monitor contamination, restrict the movement of contamination or eliminate potential

exposure pathways to contamination. Examples may include clean temporary access roads, stockpile containment areas, and tarps.

1.5 WASTE CONTAINERS

A. The CONTRACTOR shall provide:
   1. Equipment and materials as required in Section 02 51 40 - Excavation, Removal and Handling of Contaminated Materials for on-site handling and processing of impacted excavated soil.
   2. Trucks or other equipment as required for on-site management and handling of all waste types in a manner that minimizes comingling and cross contamination.
   3. Appropriate containers and/or trucks for the off-site transportation disposal/recycling of all wastes.
   4. Portable, temporary storage tanks (e.g. Frac tanks) for the storage/treatment of collected construction water.
   5. Containers (e.g., roll-off containers) for site refuse collected during the course of the project and during final site cleanup activities.
   6. Plastic bags for disposable personnel protection equipment. Plastic bags shall have a minimum thickness of six (6) mils.
   7. Lined and covered stockpile areas for excavated soil, including concrete blocks or other supports to facilitate increased storage capacity.

1.6 HEALTH AND SAFETY

A. Waste shall be removed, handled, and stored in consideration of worker and environment health and safety.

B. The CONTRACTOR shall follow its approved site-specific Health and Safety Plan prepared as described in Section 01 35 29 – Contractor's Health and Safety Plan. Monitor site conditions for changes and modify personnel protective equipment (PPE) when action levels have been reached.

C. The CONTRACTOR shall conduct work including removing, handling, and storing wastes in a manner that is protective of the environment in accordance with Section 01 35 43.13 - Environmental Procedures for Hazardous Materials.

1.7 WASTE REMOVAL

A. Locate and retain excavated soil away from top edges of the excavation. All temporary/daily stockpiles shall be maintained a sufficient distance from the excavation to prevent loading of the slope and to provide stability as required by applicable regulations.

B. Provide excavation shoring and bracing where required as described in Section 31 01 50 Shoring (Sheeting and Bracing).

C. Dewater excavations to maintain stability as described in Section 31 23 19 - Dewatering.

D. Divert stormwater runoff from entering active waste removal areas.

1.8 WASTE HANDLING

A. Direct load waste removed from excavations to roll-off containers or trucks to the extent practical.

B. Segregate waste types as defined in the Contract Documents. Establish means and methods to prevent the comingling of waste types.

C. Minimize the generation of additional waste by comingling or contacting waste materials with other uncontaminated Site media (soil, debris and water).

D. Provide temporary on-site access roads, as required, within the Exclusion Zone to maintain separation between clean waste handling activities and contaminated materials.

E. Equipment and personnel in direct contact with waste during waste handling activities shall be decontaminated prior to exiting the Exclusion Zone.

F. Waste handling activities are classified as clean if contaminated materials are confined in secure containers where spillage, leakage, or direct contact with equipment and personnel is not required.
   1. Waste transported in a truck, roll-off container, or frac tank over clean temporary access roads within the Exclusion Zone meets this criterion.

G. Waste handling activities are classified as impacted if the contaminated materials are transported in an unsecured manner where direct contact with equipment and personnel occurs.
   1. Contaminated materials transported by front end loader, excavator, or bulldozer within the Exclusion Zone meets this criterion.
   2. Waste confined in a secure container but transported within the Exclusion Zone outside of designated clean areas meets this criterion.

H. Vehicles, equipment, and personnel involved in impacted waste handling activities shall be decontaminated prior to exiting the Exclusion Zone.

1.9 ON-SITE WASTE MANAGEMENT

A. The CONTRACTOR shall be responsible for proper on-site management of wastes generated in compliance with all Federal, State and local regulations. Management

shall include removal, handling, segregating, testing, and storing, as required, for the wastes listed in Sub-Part 1.01A of this Section.

1. Land Clearing Debris: manage and store as described in Section 31 11 00 Clearing and Grubbing.
2. C&D Waste: manage and store as described in this section.
3. Remediation Waste: manage and store as described in the section.
4. Construction Water: manage and store as described in Section 02 72 00 Construction Water Management.
5. Impacted Soils: manage and store as described in Section 02 51 40 Excavation, Removal and Handling of Contaminated Materials.
6. Sanitary Wastes: manage as described in Section 01 51 05 - Temporary Utilities and Controls.
8. Site Refuse: store in an on-site container that is removed or emptied periodically to provide available secure storage capacity throughout construction.

B. The CONTRACTOR shall be responsible for movement of the containers, trucks, etc. into positions required for proper loading and management of wastes.

C. Load all waste containers, trucks, etc. with all removed or collected wastes.

D. Manage wastes to limit on-site stockpiling of waste materials.

E. The CONTRACTOR shall not load waste containers, trucks, etc. with non-contaminated materials prior to inspection and determination by the ENGINEER that decontamination of the waste containers has been achieved.

F. The CONTRACTOR shall not load hazardous waste containers, trucks, etc. with other waste materials prior to inspection and determination by the ENGINEER that decontamination of the waste containers has been achieved.

G. Coordinate the schedule for delivery and pick-up of supplied waste containers. Manage the movement and storage of containers within the Site to allow the progress of the Work.

H. Disposal of waste shall occur in accordance with Section 02 81 00 - Off-Site Transportation and Disposal.

1.10 ON-SITE WASTE STORAGE

A. The CONTRACTOR shall store/stockpile excavated material within the Exclusion Zone limit as delineated on the Construction Contract Drawings or as agreed upon with the ENGINEER. Designated separate storage/stockpile areas shall be established, at a minimum for the following:

1. Nonhazardous remediation waste.
2. Hazardous remediation waste.

3. Remediation waste (soil/debris) that requires dewatering and stabilization.
4. C&D debris.
5. Construction water.

B. Contaminated soil/debris removed from the excavation areas shall be transported directly to a process and handling facility for dewatering and stabilization if required, or a designated storage/stockpile area, for characterization sampling.

C. The CONTRACTOR shall place, grade, and shape stockpiles to provide for proper drainage. Furthermore, stockpiles shall incorporate appropriate erosion and sedimentation controls in accordance with Section 31 25 00 - Erosion and Sedimentation Control, to prevent the off-site migration of sediments.

D. Storage of Contaminated Soil/Debris:
   1. Stockpiles of Contaminated Soil/Material shall be constructed to isolate contaminated material from the environment. The maximum stockpile size shall be 2,500 cubic yards. Stockpiles shall be constructed to include:
      a. A chemically resistant geomembrane liner. Non-reinforced geomembrane liners shall have a minimum thickness of 20 mils. Scrim reinforced geomembrane liners shall have a minimum weight of 40 lbs. per 1000 square feet. The ground surface on which the geomembrane is to be placed shall be free of rocks greater than 0.5 inches in diameter and any other object which could damage the membrane.
      b. Geomembrane cover to prevent precipitation from entering the stockpile. Non-reinforced geomembrane covers shall have a minimum thickness of 10 mils. Scrim reinforced geomembrane covers shall have a minimum weight of 26 lbs. per 1,000 square feet. The cover material shall be anchored to prevent it from being removed by wind.
      c. Berms surrounding the stockpile, a minimum of 12 inches in height. Vehicle access points shall also be bermed.
      d. Storage and removal of liquid which collects in the stockpile shall be in accordance with Section 02 72 00 - Construction Water Management.
      e. Inspection of the stockpile areas will be conducted on a weekly basis (at a minimum) or following a significant precipitation event and/or as requested by the ENGINEER.
   2. Roll-Off Units:
      a. Water-tight roll-off units may be used to temporarily store separately C&D Debris; remediation waste; Waste Tires; and Site Refuse.
      b. An impermeable cover shall be placed over the units to prevent precipitation from contacting the stored material.
      c. The units shall be located within Exclusion Zone as delineated on the Construction Contract Drawings or as directed by the ENGINEER.
      d. Liquid which collects inside the units shall be removed and stored in accordance with Section 02 72 00 - Construction Water Management.

3. Liquid Storage
    a. Liquid collected from excavations, and stockpiles classified as construction water shall be conveyed to the on-site construction water treatment facility for pre-treatment prior to disposal.
    b. Liquid storage containers including in the treatment system, shall be watertight.

E. Cover waste stockpiles with plastic sheeting and anchoring system to prevent storm water runoff from contacting the waste.

1.11 WASTE CHARACTERIZATION SAMPLING AND TESTING

A. Testing shall not be required for the following types of wastes:
    1. Land Clearing Debris - Clearing Debris
    2. C&D Debris – Debris other than soil
    3. Sanitary Waste
    4. Refuse

B. The CONTRACTOR shall be responsible for the sample collection and laboratory testing of the following types of wastes, including but not limited to:
    1. C&D Debris – Soil
    2. Nonhazardous remediation waste
    3. Hazardous remediation waste
    4. Construction Water

C. Collect samples and perform testing in accordance with Section 01 45 29.13 Testing Laboratory Services Furnished by CONTRACTOR, the designated off-site Treatment, Storage and Disposal Facility (TSDF), and the ENGINEER.

D. Laboratory testing of wastes shall be performed by a certified laboratory as required by the selected TSDF:
    1. Laboratory reports shall be prepared by the subcontracted laboratory to include all requirements of the DEPARTMENT.
    2. All laboratory test methods and frequencies shall be in accordance with the DEPARTMENT requirements.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Geomembrane Liner as described in Subpart 1.10D.1.

B. Geomembrane Cover as described in Subpart 1.10D.1.

PART 3 – EXECUTION (NOT USED)

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SECTION 02 41 13

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 DESCRIPTION

A. The CONTRACTOR shall furnish all labor, equipment, and materials necessary for the selective demolition, removal, and/or abandonment of some existing structures, as shown on the Construction Contract Drawings and as approved by the ENGINEER. Work includes, but is not limited to, the following:
   1. Protection of pavement, facilities, structures, utilities, etc. designated to remain.
   2. Demolition and removal of one building, concrete pads, several concrete foundations, fencing, historic MGP facility infrastructure, utility piping, fencing, shoring, and other minor structures as required to facilitate the Work and as approved by the ENGINEER.
   3. Demolition work performed for the convenience of the CONTRACTOR will not be considered for payment.

B. Sampling, analysis, characterization, transportation, and disposal of demolished materials is included in and shall be in accordance with Section 01 74 19 – Waste Removal, Handling, and Storage and Section 02 81 00 – Off-Site Transportation and Disposal.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 11 13 – Summary of Work.

B. Section 01 33 00 – Submittal Procedures.

C. Section 01 74 19 – Waste Removal, Handling, and Storage.

D. Section 02 81 00 – Off-Site Transportation and Disposal.

E. Section 02 82 33 – Removal and Disposal of Asbestos-Containing Material

E. Section 31 00 00 – Earthwork.

F. Section 31 25 00 – Erosion and Sedimentation Control.

1.3 SUBMITTALS

A. Laboratory Reports: Provide laboratory reports of analytical testing performed as required by the waste characterization program.

PART 2 – PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PROTECTION

A. General:
   1. Conduct operations to prevent injury to persons.
   2. Ensure safe passage of workers/persons around area of demolition.

B. Streets, Roads, Adjacent Property, Existing Facilities/Structures, and Other Works to Remain:
   1. Protect throughout the work by temporary fences/barricades and exercise special care to avoid unnecessary damage.
   2. Demolition operations shall be conducted such that existing facilities or structures indicated to remain are not damaged. Existing features or structures that are indicated or made known prior to the start of demolition operations shall be repaired in the event of any damage during such operations.
   3. Keep public streets and private driveways or roadways accessible to emergency vehicles, patrols, and construction vehicles at all times. Provide street/road cleaning as necessary to prevent hazards.
   4. The OU01 remediation will be conducted along and in close proximity to an existing railroad alignment. This rail segment is managed by the New York State Department of Transportation (NYSDOT) and is used by the Adirondack scenic railroad and is considered an active track and therefore a potentially hazardous work area. All work must be coordinated and scheduled with the Adirondack scenic railroad for train movements. Refer to Construction Contract Documents for additional requirements.

C. Utility Lines:
   1. Protect existing utility lines that are indicated to remain from damage.
   2. When utility lines to be removed, or relocated are encountered, the CONTRACTOR shall notify the associated utility company in ample time to minimize impact to schedule and interruption of the service.
   3. The CONTRACTOR shall notify the ENGINEER and/or Owner immediately of damage to or an encounter with an unknown existing utility line.

4. The CONTRACTOR shall be responsible for the repairs of damage to existing utility lines that are indicated or made known to the CONTRACTOR prior to start of demolition.

3.2 DEMOLITION

A. General:
   1. Structures to be demolished or removed shall be discontinued in use prior to start of work.
   2. The use of explosives will not be permitted.
   3. Concrete demolition debris shall be reduced to manageable sections by hydraulic shear or other means. Debris pieces shall be crushed to reduce the pieces to a maximum of 2 feet in size in any dimension prior to removal from Site, or as approved by the TDF.
   4. Dispose of other types of demolition debris that may be encountered during the work, including utility piping and shoring, shall be disposed of in accordance with the requirements for the adjacent soils.

B. Pollution Controls:
   1. Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level.
   2. Comply with governing regulations and environmental protection.
   3. Do not use water when it may create hazardous or objectionable conditions such as runoff, ice, flooding, and pollution.

C. Utility Piping:
   1. Where indicated on the Construction Contract Drawings or approved by the ENGINEER, the CONTRACTOR shall remove existing piping and/or utilities as required to perform the remediation Work.
      a. Do not interrupt existing utilities serving occupied or used facilities without at least 5 days prior notification to the ENGINEER/DEPARTMENT and property owner. Include a schedule for removal and replacement of affected utilities including the time frame required to complete the Work. Provide alternate utilities during periods of existing utility service interruption.
      b. Pipe shall be completely removed and cut and/or broken/crushed to an appropriate size for handling, temporary on-site storage, transportation, and disposal.

3.3 SAMPLING, ANALYSIS, AND CHARACTERIZATION

A. Demolition debris (e.g., Portland cement concrete, piping), shall be handled as construction and demolition solid waste or contaminated solid waste based on visual observations and approved or directed by the ENGINEER.

B. Sampling, analysis, and disposal shall be in accordance with 01 74 19 – Waste Removal, Handling, and Storage.

3.4 TRANSPORTATION AND DISPOSAL

A. Transportation disposal shall be in accordance with Section 02 81 00 – Off-Site Transportation and Disposal.

+ + END OF SECTION + +

SECTION 02 51 00

DECONTAMINATION PROCEDURES

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. The CONTRACTOR shall perform decontamination procedures for vehicles and equipment in contact with the remediation waste as defined by this Specification.

B. Perform decontamination of personnel, hand tools, small equipment, large equipment, and vehicles (trucks) as required to prevent off-site migration of remediation waste and cross contamination of remediation waste with clean materials as defined in Sub-Part 1.04 of Section 01 74 19 – Waste Removal, Handling, and Storage.

C. Transporting contaminated materials beyond the work area will require the use of lined and covered trucks to limit the possibility of dust migration and spillage and control odor. Trucks exiting work areas will be required to travel over a decontamination pad to remove residual soil from the vehicle wheels and/or undercarriage. To the extent possible, equipment and trucks are to be staged and loaded on clean areas outside the limits of excavation. The CONTRACTOR shall employ methods to limit soil spillage and tracking/migration. The identified truck loading areas may be lined with temporary polyethylene sheeting or direct clean loading methods may be employed (using plastic sheeting over trucks). Either practice should limit the need to provide routine decontamination of every vehicle associated with the work.

D. Multiple operational decontamination pads may be required depending on the CONTRACTOR's selected sequence of work and implemented means and methods. Coordination with the DEPARTMENT/ENGINEER shall occur to ensure proper decontamination procedures are being followed at all times.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 35 29 - Contractor's Health and Safety Plan.

B. Section 01 45 28 - Chemical Sampling and Analysis.

C. Section 01 50 00 - Temporary Facilities and Controls.

D. Section 01 74 19 - Waste Removal, Handling, and Storage.

E. Section 02 72 00 - Construction Water Management

F. Section 02 81 00 - Off-Site Transportation and Disposal

G. Section 31 00 00 - Earthwork

1.3 SUBMITTALS

A. Proposed method(s) of decontamination procedures for small equipment and hand tools; and large equipment and vehicles included as a component of the Construction Work Plan as described in Section 01 11 00 – Summary of Work.

B. Shop drawings of the decontamination pad shall be submitted to the ENGINEER for approval in accordance with Specification Section 01 33 00 – Submittal Procedures.

PART 2 - PRODUCTS

A. For vehicles and equipment, a Vehicle Decontamination Pad shall be constructed as shown on the Construction Contract Drawings.
   1. Sand and 2-inch crushed stone materials as described in Section 31 00 00 – Earthwork.
   2. Geomembrane shall be minimum 40-mil scrim-reinforced high-density polyethylene. Panels shall be sized so that no seams are required.
   3. Geotextile shall be a minimum 16 ounce per square yard nonwoven geotextile.

B. Hydraulic high-pressure wash equipment with ability to provide hot water and/or steam.

D. Clean water and construction water storage facilities as described in Section 01 50 00 – Temporary Facilities and Controls.

E. Construction water treatment facility as described in Section 02 72 00 – Construction Water Management.

F. Truck loading staging areas: Areas lined with 40-mil scrim reinforced high density polyethylene geomembrane.

G. Cleaning appurtenances including brushes, brooms, and industrial detergent and/or solvent such as Capsur by Integrated Chemistries, Inc. or an approved equal.

PART 3 – EXECUTION

3.1 DECONTAMINATION PAD

A. The CONTRACTOR shall be responsible for the provision of an adequately equipped decontamination area(s) which shall meet the following requirements:

B. For equipment and vehicles, decontamination pads shall be constructed as shown on Construction Contract Drawing C-303.
   1. Construct to facilitate the cleaning of equipment and trucks prior to leaving the Site. Provide adequate dimensions to contain wash water and debris from the largest sized vehicles to be used for the Work. All impacted vehicles and construction equipment leaving the exclusion zone shall be decontaminated.
   2. Decontamination pads are to be located at the exit of each active work area or the Exclusion Zone such that previously non-contaminated areas are not contaminated during remedial activities. This may require the construction and use of multiple decontamination pads.
   3. Locate as close to the active work as possible to prevent tracking of contaminated material beyond the contaminated areas of the Site.
   4. Decontamination Pads shall consist of an aggregate (sand and crushed stone) working base, impervious geomembrane liner, nonwoven geotextile, and a collection sump and pumping system as shown on the Construction Contract Drawings.
      a. The subgrade surface beneath the liner shall be free of stones, debris, or other objects greater than one half inch in size.

C. Collect and store decontamination fluids from the sump in a construction water storage facility adjacent to the Decontamination Pad.

D. Sumps, pumping facilities, and temporary storage facilities to be adequate for anticipated use.

E. Construction water management shall occur as described in Section 02 72 00 - Construction Water Management.

3.2 VEHICLES AND EQUIPMENT HANDLING REMEDIATION WASTE

A. Trucks loaded on truck loading staging areas and traveling exclusively on clean temporary on-site access roads may follow the following decontamination procedure:
   1. Remove loose dry soil from the exterior truck body using brooms and/or other hand implements.
   2. Sweep the staging area liner clean of loose soil that has fallen outside of the truck/excavator bucket during loading.
   3. Proceed to the stabilized construction entrance using a defined route over clean on-site access roads.
   4. Sweep the staging area liner clean, as required, in preparation of the next truck to be loaded.

B. Trucks shall be required to pass through the on-site decontamination pad for rinsing with high pressure water if additional decontamination measures are warranted based on the following conditions:
   1. Wet soil creates a film on the vehicle due to work during wet weather conditions.
   2. A vehicle drives outside the defined clean access route.

C. All trucks/equipment being removed from the Site that has handled remediation waste shall be rinsed with high pressure water in the decontamination pad prior to removal.

3.3 SMALL EQUIPMENT AND HAND TOOLS

A. Small equipment and hand tools that have handled remediation waste shall be decontaminated using the procedures defined in Sub-Part 3.2.

3.4 CLEAN DETERMINATION

A. All trucks and equipment that have been used to handle remediation waste shall be decontaminated as described in Sub-Part 3.2. The equipment/trucks shall be inspected by the CONTRACTOR and visually confirmed clean prior to leaving the Site. Additional decontamination methods shall be employed if cleaning is determined inadequate by the ENGINEER.

3.5 MAINTENANCE OF THE DECONTAMINATION PAD

A. The CONTRACTOR shall clean the decontamination pad periodically, as required, including:
   1. Before each transition of handling remediation waste and clean material.
   2. When accumulated sediment reduces the storage capacity of the sump.
   3. When accumulated sediment begins clogging and reducing the permeability of the crushed stone layer.

3.6 TEMPORARY WORKS REMOVAL

A. The CONTRACTOR shall regularly containerize, characterize, stage, and transport all generated construction water and sediments in accordance with Section 01 74 19 – Waste Removal, Handling, and Storage, Section 02 81 00 – Off-Site Transportation and Disposal, and Section 02 72 00 – Construction Water Management.

B. The subgrade surface beneath the area where the decontamination pad was located shall be sampled and tested to ensure no cross contamination of wastes contained within the decontamination pad has occurred. Sampling and analysis shall be performed in accordance with Section 01 45 28 – Chemical Sampling and Analysis.

C. If subgrade beneath the decontamination pad is determined to be contaminated, excavation, removal, and confirmation testing will be undertaken as described in Section 31 00 00 – Earthwork.

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SECTION 02 51 40

EXCAVATION, REMOVAL AND HANDLING OF CONTAMINATED MATERIAL

PART 1 – GENERAL

1.1 SCOPE OF WORK

A. The contaminants of concern in soil and groundwater are coal tar, BTEX, and PAHs, and are expected to result in Contaminated Materials, including: Non-Hazardous MGP Remediation Waste, Hazardous MGP Remediation Waste and Construction Water. C&D Debris, Metal Debris and Land Clearing Debris may be impacted locally with Contaminated materials, including but not limited to: MGP-impacted wood, stained concrete, piping, etc., Asbestos is present in small amounts in the one-story building.

B. CONTRACTOR shall excavate, handle and dispose of Contaminated Materials as shown, specified and required to complete the work. The work shall consist of disposal of debris and contaminated soil in a variety of forms. In addition, Contaminated Material shall be separated from non-Contaminated Materials by CONTRACTOR such items as pipes, concrete, site debris, fence posts, wood to maximize on-site solidification and minimize off-site disposal of Contaminated Materials. The Contaminated Materials shall be considered nonhazardous waste and is to be removed and disposed of off-site in accordance with all applicable federal, state and local codes. Contaminated Materials may be considered hazardous for transportation and disposal purposes, based on waste classification testing and receiving facility requirements.

C. Excavation limits are depicted on the Construction Contract Drawings.

D. Related Work Specified Elsewhere:
   1. Division 01 – General Requirements.
   2. 01 33 00 – Submittal Procedures
   3. 01 71 23 – Field Engineering
   4. 01 74 19 – Waste Removal, Handling, and Storage
   5. 02 82 33 – Removal and Disposal of Asbestos Containing Materials
   6. 31 00 00 – Earthworks.

E. All sheeting and shoring, and other work necessary to complete the required excavation work shall be conducted by the CONTRACTOR in accordance with Section 31 01 50 - Shoring (Sheeting and Bracing).

F. Work shall follow the sequence of construction presented in the CONTRACTOR'S approved Work Plan.

1.2 SUBMITTALS

A. Submit the following in accordance with Section 01 71 23 - Field Engineering and 01 33 00 – Submittal Procedures:
   1. Initial Site Survey
   2. Intermediate Site Survey
   3. Record Drawings

B. Shop Drawings:
   1. Submit plans of open cut excavations showing side slopes and limits of the excavation at grade, as applicable, where not shown on the Drawings.

1.3 QUALITY ASSURANCE

A. Permits and Regulations: CONTRACTOR shall perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

B. Design Criteria:
   1. Temporary sheeting and shoring systems provided by the CONTRACTOR shall be certified by a NYS Professional Engineer and submitted to the ENGINEER for review prior to use.
   2. CONTRACTOR shall be wholly responsible for installing and operating the sheeting and shoring system in accordance with the certified design.

1.4 JOB CONDITIONS

A. Existing Structures:
   1. Shown on the Drawings are certain utilities and surface and underground structures located on or adjacent to the Work. This information has been obtained from existing records. It is not guaranteed to be correct or complete and is shown for the convenience of the CONTRACTOR. CONTRACTOR shall explore ahead of the required excavation to determine the exact location of all structures and utilities. They shall be supported and protected from injury by the CONTRACTOR. If they are broken or injured, they shall be restored immediately by the CONTRACTOR at no additional cost to the DEPARTMENT.
   2. Prior to execution of the Work, the CONTRACTOR shall check and verify governing dimensions and elevations. The CONTRACTOR and ENGINEER shall jointly inspect the condition of adjoining structures. Photographs and records shall be made of any prior settlement or cracking of structures, pavements, railroad tracks and the like, that may become the subject of possible damage claims.

B. Existing Utilities:

1. The CONTRACTOR's attention is directed to the existing utilities running throughout the work. The CONTRACTOR is required to take any and all precautions necessary to locate, support and protect these utilities during construction. All costs associated with protecting, supporting, locating, digging test pits, etc., of all utilities or force mains shall be included in the prices bid for all work.
2. The locations of all utilities shown on the contract drawings are based on available information in the vicinity of the proposed work areas and are not guaranteed to be complete or accurate. The CONTRACTOR shall obtain utility mark-outs on all public and private properties in accordance with all local and state requirements where work under this contract is to be performed. Prior to any excavation or construction, the CONTRACTOR shall notify the DEPARTMENT, all utility companies and applicable agencies and request a mark-out of their lines and properties in the field in the area of the proposed work. In addition, on the project site (outside of public right-of-way), the CONTRACTOR shall provide the services of an independent utility markout service subcontractor qualified to locate and mark out all utilities in the vicinity of the work using the appropriate equipment and methods available prior to construction. The subcontractor shall survey (location/elevation) and prepare a utilities location as-built drawing for use by the CONTRACTOR in performance of the work under this contract.
3. Prior to any demolition and/or excavation, in addition to utility location and markouts performed by the CONTRACTOR, local and state required services and the independent markout service subcontractor, the CONTRACTOR shall accurately locate existing utilities by probing test holes and excavating test pits where existing underground utilities are known to exist in the vicinity of the new work and at maximum intervals of 25 feet along the route or within the area of the proposed work. The CONTRACTOR shall survey (location/elevation) and prepare an as-built drawing of all underground utilities encountered while constructing test pits and/or test hole probes for use in performance of the work under this contract. The CONTRACTOR shall backfill/restore the holes and pits and mark out the existing utilities and take extreme caution against damaging the utilities during excavation or sheeting installation.
4. Work shall include, in addition to constructing test probes/pits, solidification, excavating and backfill, temporary sheeting, compacting and site restoration.
5. Schedules for maintenance of utility markouts on public and private property shall be consistent with New York State law throughout the duration of the Contract.
6. During demolition/excavation, the CONTRACTOR shall locate each utility by hand digging methods prior to the use of mechanical excavation equipment. During demolition/excavation, if the CONTRACTOR encounters evidence of suspected unmarked utilities, such as magnetic tape or other underground markers, the CONTRACTOR shall promptly determine the

location of the suspected utility, if any, before proceeding with the work. The CONTRACTOR shall cooperate with the ENGINEER and the utility companies involved to avoid delay or interference of service normally performed by their lines and properties.

7. The CONTRACTOR shall take extreme caution against damaging utilities during demolition, excavation, sheeting and backfilling, during construction of test probes and test pits and while performing the work required under this Contract.
8. The CONTRACTOR shall be responsible for all costs associated with pre-project construction utility survey(s)/markout(s), the construction of the test holes and test pit work, and utility as builts for this project, as well as protection and hand digging operations to verify location of all utilities during construction.
9. Should uncharted or incorrectly charted piping or utilities be encountered during excavation, consult the ENGINEER in keeping respective services and facilities in operation. Repair damaged utilities to the satisfaction of the DEPARTMENT.
10. Do not interrupt existing utilities, except when permitted in writing by DEPARTMENT.

C. Protection of Persons and Property:
1. Barricade open excavations greater than 2 feet in depth occurring as part of this Work and post with warning lights. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
2. Protect structures, utilities, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by CONTRACTOR'S operations.
3. Consult ENGINEER and obtain his/her approval before removing or disturbing pipes, structures, or other facilities that are encountered on the line of the excavation.
4. Structures, utilities, sidewalks, pavements and other facilities removed or disturbed shall be replaced to their original condition, unless otherwise shown, specified or directed.

D. Dust Control: CONTRACTOR shall conduct all of his/her operations and maintain the area of his/her activities, including sweeping and sprinkling of roadways, so as to minimize creation and dispersion of dust. In addition, CONTRACTOR shall be responsible for controlling dust caused by his/her operation of vehicles and equipment, clearing or for any reason whatever.

E. Odor Control: As an odor abatement measure, cover, at the end of each workday all areas of organic or odorous material which were exposed during excavation with a minimum 6-in and a maximum 24-inch deep layer of clean fill. Excavated organic or odorous material shall be immediately removed off-site and shall not

be stockpiled on-site. Such material shall be properly characterized and disposed of off-site in accordance with all applicable federal, state and local regulations.

F. Roadways and Walks: Unless otherwise approved by the DEPARTMENT, excavated material and materials of construction shall be so deposited, and the Work shall be so conducted, as to leave open and free for vehicular traffic a roadway not less than 10 feet in width. All hydrants, valves, and other facilities which may require access during construction shall be kept accessible for use. During the progress of the Work, CONTRACTOR shall maintain such roadways in satisfactory condition and the Work shall at all times be so conducted as to cause a minimum of inconvenience to the occupants of the facility and pedestrians.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 INSPECTION

A. CONTRACTOR shall provide ENGINEER with sufficient time and means to examine the areas and conditions under which excavating, filling and grading are to be performed. Work shall not proceed until all unsatisfactory conditions have been corrected in a manner acceptable to the ENGINEER.

3.2 DEMOLITION AND EXCAVATION

A. General:
   1. CONTRACTOR shall perform all demolition and excavation required to complete the Work as shown and specified. All material shall be non-classified. It shall include all materials such as building debris, earth, sand, clay, gravel, hardpan, boulders, organic materials, rock, rubbish and all other materials within the excavation limits.
   2. Excavations shall be open type, shored and braced where necessary to prevent injury to workmen and to new and existing structures or pipelines.
   3. All excavations shall be made in the dry.
   4. Temporary barricades shall be installed for all excavations greater than 2 feet in depth.
   5. All equipment shall be decontaminated and free from debris, caked soil, contamination, and any other foreign materials prior to mobilization to the site. Equipment utilized during the remediation shall be decontaminated in accordance with the CONTRACTOR’S Health and Safety Plan.

B. Contaminated Materials:

1. Demolition/excavation shall be made to the grades and extents shown on the Drawings. Demolition/excavation shall be performed in a manner that will limit spills and the potential for contaminated material to be mixed with uncontaminated material. A log describing visible signs of contamination encountered shall be maintained for each area of demolition and/or excavation.
2. Excavation logs shall be prepared in accordance with ASTM D5434.
3. Excavation shall be accomplished by methods which preserve the undisturbed state of subgrade soils.
4. Equipment shall be satisfactory for carrying out the work in accordance with the Specifications. Earth shall not be plowed, scraped, or dug with machines so near to the finished subgrade as to result in excavation of, or disturbance of material below grade.
5. When excavation has reached final depths, the ENGINEER shall be notified and will inspect conditions. If materials and conditions are not satisfactory to the ENGINEER, the ENGINEER will issue instructions as to the procedures for correction of the unsatisfactory condition.
6. Documentation sampling shall be required as outlined the Section 01 45 29.13, Testing Laboratory Services Furnished by Contractor. Backfill and compaction shall not be conducted in any excavation until the limits of the excavation and the locations of the documentation samples are surveyed and are approved by the ENGINEER.
7. Groundwater or standing water in excavations or open basement areas must be removed, treated and properly disposed prior to the collection of documentation samples. Standing water from precipitation events in the excavation must be removed and disposed of appropriately at the CONTRACTOR’S own expense.
8. During final excavation to subgrade level, take precautions required to prevent disturbance of material.

C. Unsuitable Excavation:

1. If any over excavation occurs through error of the CONTRACTOR or for the CONTRACTOR 'S convenience, the over-excavated material shall be tested against commercial use standards and stockpiled onsite or disposed of off-site, in accordance with all applicable federal, state and local laws and regulations, as well as the requirements of these Contract Documents. The over-excavation shall be refilled at the CONTRACTOR’S expense with concrete, select fill or other material satisfactory to the ENGINEER.
2. If CONTRACTOR fails to properly dewater the excavation or trench or disturbs the subgrade or otherwise fails or neglects to conduct the excavation work in a manner that provides surface of subgrade in proper condition for construction, the CONTRACTOR shall remove all disturbed material and replace it with concrete, select fill, or other approved material at his own

expense. The condition of the subgrade shall meet with the approval of the ENGINEER before any work is placed thereon.

3.3 SHEETING, SHORING AND BRACING

A. Refer to Section 31 01 50 Shoring (Sheeting and Bracing).

3.4 CONTAMINATED MATERIALS STORAGE

A. Demolition debris and excavated material shall be placed in temporary storage or taken off-site for disposal immediately after excavation. Temporary storage areas shall be located within the property line of the Site and shall be delineated by the CONTRACTOR in the approved Work Plan. Storage units shall be in good condition and constructed of materials that are compatible with the material or liquid to be stored. Each storage unit shall be clearly labeled with an identification number and a written log shall be kept to track the source of contaminated material in each unit.

B Storage of material outside the designated soil staging areas is prohibited without prior written approval by the DEPARTMENT.

C. The following methods of storage are acceptable:
   1. Stockpiles
      a. Demolition debris and/or excavated materials shall be stockpiled in the areas noted in the CONTRACTOR'S Work Plan. Stockpiles shall be located 10 feet or greater from property lines.
      b. Stockpiles shall be constructed to isolate stored contaminated material from the environment. The maximum stockpile height shall be 10 feet. Each stockpile shall be labeled with an identification number identifying the material stored within the stockpile.
      c. Diversion measures shall be employed, as depicted on the Drawings, to prevent storm water run-on and run-off.
      d. A geomembrane liner and cover shall be used to prevent cross-contamination of existing ground surface, precipitation from entering the stockpile and emissions and dust from escaping, as described in 01 74 19 – Waste Storage, Handling, and Storage. Control measures such as wetting the stockpile surfaces shall be employed to suppress dust. Only potable water shall be used for this purpose.
   2. Roll-off Units
      a. Roll-off units may be used for temporary storage in lieu of stockpiling the material.
      b. Roll-off units used to temporarily store contaminated material shall be watertight. A cover shall be placed over the units to prevent precipitation from contacting the stored material. Liquid which collects

inside the units shall be removed and disposed of in accordance with all applicable federal, state and local laws and regulations.

D. Storage and handling of hazardous waste contaminated soil must comply with all applicable NYSDEC hazardous waste regulations (6 NYCRR Part 371-376).

E. Spillage shall be minimized and contained for later disposal in accordance with all federal, state and local regulations.

+ + END OF SECTION + +

SECTION 02 72 00

CONSTRUCTION WATER MANAGEMENT

PART 1 – GENERAL

1.1 DESCRIPTION

A. Furnish, operate, and maintain construction water management measures and equipment to control, convey, collect, treat, and/or dispose of all construction related water including the following:
   1. groundwater from excavation dewatering operations
   2. water generated from dewatering saturated soil/sediment stockpiles
   3. decontamination water from vehicle and equipment decontamination facilities
   4. water collected from stockpile containment areas
   5. storm water runoff from contaminated areas of the Site
   6. other incidental water that contacts contaminated material or equipment.

B. The DEPARTMENT has secured a State Pollutant Discharge Elimination System (SPDES) Permit Equivalent (see Attachment 02 72 00-1) for treatment and discharge of water to Brandy Brook. The effluent limitations and monitoring requirements for Discharge to Surface Water requirements of the State of New York must be met as described in Attachment 02 72 00-1.

C. Should the CONTRACTOR generate water on-site that is not treatable through the CONTRACTOR's on-site water treatment system, the CONTRACTOR may elect to dispose of construction water by any combination of the following means, as approved by the ENGINEER/ DEPARTMENT, at the CONTRACTOR's costs:
   1. Off-site discharge to Village of Saranac Lake Sanitary Sewer: The permit requirements of the Saranac Lake Wastewater Treatment Plant (WWTP) Discharge Permit must be met.
   2. Off-site disposal to a properly permitted off-site Treatment, Storage and/or Disposal Facility (TSDF) as described in Section 02 81 00 – Off-Site Transportation and Disposal.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 33 00 – Submittal Procedures

B. Section 01 35 43 – Environmental Protection Procedures

C. Section 01 41 00 – Regulatory Requirements

D. Section 01 45 28 – Chemical Sampling and Analysis

E. Section 01 74 19 – Waste Removal, Handling, and Storage

F. Section 02 81 00 – Off-Site Transportation and Disposal

G. Section 31 23 19 – Dewatering

1.3 SUBMITTALS

A. CONTRACTOR must submit a Construction Water Management Plan (CWMP) for the Site as part of the Construction Work Plan described in Section 01 11 13 – Summary of Work. The CWMP must describe the measures to minimize construction water generation; the manner for collection and handling of construction water generated; treatment of construction water; the disposal of construction water; system for controlling and metering discharge to the Brook as required by the permit; and a contingency plan for storage and disposal.

B. Analytical test reports in accordance with Section 01 45 28 – Chemical Sampling and Analysis and in accordance with the SPDES equivalent permit including the following:
   1. Start-up analytical test reports proving the on-site treatment system installed by the CONTRACTOR is capable of generating effluent meeting the allowable discharge limits for discharge to surface water.
   2. Analytical test reports for construction water samples collected and tested prior to discharge.
   3. Analytical testing once per week (if treatment/discharge occurred) for twelve weeks, and monthly thereafter, or as indicated in the permit if exceedances occur.
   4. All analytical test reports shall be submitted to the ENGINEER and the Department.

C. Daily water treatment and discharge logs including but not limited to: total daily flow, average discharge rate, field parameters such as pH, and maintenance items conducted to the on-site treatment facility.

D. Bill of ladings or manifests for off-site disposal of construction water as described in Section 02 81 00 – Off-Site Transportation and Disposal.

1.4 FEES

A. Any and all fees associated with permitting on-site discharge or disposal of construction water or violations associated with secured permits shall be paid by the CONTRACTOR.

PART 2 - PRODUCTS

2.1 GENERAL

A. Provide, operate, and maintain a construction water management system. The system must be sized appropriately to collect, convey, store, and/or treat the quantity of water generated so that water management does not impact construction work. In general, the system may include some combination of the following components:
   1. Pumping systems from excavations, dewatering facilities, and/or decontamination facilities.
   2. Piping to convey water from the point of generation to storage/treatment.
   3. Construction water storage facilities to temporarily store untreated water, treated water, and/or water designated for off-site disposal.
   4. Systems for controlling and metering discharge to Brandy Brook. The discharge rate shall not exceed limits contained in the SPDES permit.
   5. A treatment system designed to treat construction water to the required disposal standard of the State of New York standards for surface water discharges.

PART 3 – EXECUTION

3.1 PERFORMANCE

A. Minimize generation of construction related water using engineering controls, best management practices, stormwater controls, and other related means and methods. Contributing factors include:
   1. Total area being excavated at any given time.
   2. Total open area at any given time.
   3. Total area being backfilled at any given time.
   4. Uncontrolled stormwater runoff entering contaminated areas.
   5. Stormwater run-on from contaminated areas onto uncontaminated areas.
   6. Quantity of stockpiled soil being dewatered at any given time.
   7. Number and frequency of construction vehicles being decontaminated.

B. If the ENGINEER believes that construction water is being mishandled or there is insufficient management of the construction water, the ENGINEER may stop work until the CONTRACTOR corrects the problem.

C. Off-site disposal of construction water shall be to a properly permitted Treatment, Storage, and/or Disposal Facility (TSDF) allowed to accept the water based on the characterization testing performed by the CONTRACTOR in accordance with Section 01 45 28 – Chemical Sampling and Analysis and in coordination with the designated TSDF requirements.

D. Discharge of construction water to Brandy Brook shall be allowed provided the tested water satisfactorily demonstrates compliance with the applicable permit as described in Attachment 02 72 00-1. Analytical reports documenting compliance shall follow the requirements of Section 01 45 28 – Chemical Sampling and Analysis.

3.2 ON-SITE DISCHARGE

A. On-site discharge of construction water to Brandy Brook requires that the conditions of the associated permit be met.

B. Collect all construction water for temporary on-site storage in the construction water storage facilities prior to discharge.

C. Treat construction water on-site, as necessary, to meet the requirements of the Permit.

D. Confirm by testing that all construction water meets the discharge permit requirements prior to discharge to Brandy Brook. Testing shall be conducted at frequencies identified in the permit.

E. Discharge construction water confirmed to meet the requirements of the discharge permit.

F. Record quantities of water discharged to Brandy Brook.

G. Provide back-up on-site storage and/or alternate disposal options as a contingency plan due to any of the following occurrences:
   1. Significant storm events generating higher than normal construction water quantities.
   2. Village of Saranac Lake Public Works or Wastewater Treatment Plant discharge restrictions which could be initiated during wet weather or other emergency conditions.
   3. Backup due to treatment system down time associated with maintenance or operation failure.
   4. Treatment system ineffectiveness in meeting the discharge requirements.

3.3 OFF-SITE DISPOSAL

A. Refer to Section 02 81 00 – Off-Site Transportation and Disposal. Construction water may be disposed off-site at an approved TSDF. No additional payment will be made to the CONTRACTOR for transportation or off-site disposal fees.

B. The construction water shall be characterized in accordance with the designated TSDF requirements.

C. All treatment systems wastes including spent media such as activated carbon or removed sediment shall be classified as MGP remediation waste.

+ + END OF SECTION + +

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Water, Region 5
232 Golf Course Road, Warrensburg, New York, 12885-1172 Phone: (518) 623-1200
www.dec.ny.gov

M E M O R A N D U M
SPDES Permit Equivalent

TO: Brianna Scharf, DER

FROM: **Brian Baker**, Bureau of Water Permits, DOW

SUBJECT: SPDES Permit Equivalent: Saranac Lake Gas Company, DER Site ID# 516008

DRAINAGE BASIN: 10 / 02

DATE: May 15, 2020

In response to your request dated May 12, 2020, attached please find the effluent limitations and monitoring requirements for the above noted remediation discharge.

The discharge consists of treated water from groundwater remediation. The treatment system consists of gravity settling, oil/water separation, bag filters and granular activated carbon (GAC). The influent tank will have a capacity of 20,000 gallons and have baffles for oil/water separation. The effluent holding tank will have a capacity of 20,000 gallons for treated wastewater and an upstream sample port. Discharge is to Brandy Brook, a Class A stream.

The DOW does not have any regulatory authority over a discharge from a State, PRP, or Federal Superfund Site. DER will be responsible for ensuring compliance with the attached effluent limitations and monitoring requirements, and approval of all engineering submissions. Footnote 1 identifies the appropriate DER contact person who will receive all effluent results, engineering submissions, and modification requests. The Regional Water Engineer should be kept appraised of the status of this discharge and, in accordance with the attached criteria, receive a copy of the effluent results for informational purposes.

If you have any questions, please call **Brian Baker** at 518-402- 8124.

Attachment (Effluent Limitations and Monitoring Requirements)

cc: Region 5 Regional Water Engineer (via email, w/attach)
BWP Section Chief, DOW (via email, w/attach)

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL	DISCHARGE TYPE	RECEIVING WATER and CLASS	EFFECTIVE	EXPIRING
001	Treated Remediation Wastewater	Brandy Brook, Class A	June 1, 2020	May 31, 2025

The discharges from the treatment facility shall be limited and monitored by the operator as specified below:

Outfall and Parameters	CAS No.	Daily Max limits	Units	Minimum Monitoring Requirements		FN
Outfall 001				**Measurement Frequency**	**Sample Type**	
Flow	NA	200	GPM	Continuous	Recorder	
pH	NA	6.5 - 8.5	SU	1	Grab	
Oil and Grease	NA	15	mg/l	1	Grab	
Solids, Total Suspended	NA	10	mg/l	1	Grab	
Solids, Total Dissolved	NA	200	mg/l	1	Grab	
Benzene	71-43-2	1	µg/l	1	Grab	
Heptachlor epoxide	1024-57-3	0.20	µg/l	1	Grab	
Naphthalene	91-20-3	10	µg/l	1	Grab	
Phenanthrene	85-01-8	2	µg/l	1	Grab	
Pyrene	129-00-0	1	µg/l	1	Grab	
Toluene	108-88-3	5	µg/l	1	Grab	
1,2-Xylene	95-47-6	5	µg/l	1	Grab	
1,3-Xylene	108-38-3	5	µg/l	1	Grab	
1,4-Xylene	106-42-3	5	µg/l	1	Grab	
Iron	NA	Monitor	µg/l	1	Grab	
Lead	NA	4	µg/l	1	Grab	
Zinc	NA	40	µg/l	1	Grab	

Additional Conditions:

1. Discharge is not authorized until such time as an engineering submission showing the method of treatment is approved by the Department. The discharge rate may not exceed the effective or design treatment system capacity. All monitoring data, engineering submissions and modification requests must be submitted to:

   Brianna Scharf
   Division of Environmental Remediation
   NYSDEC, 625 Broadway, Albany, New York 12233- 7015,
   Tel: 518-402- 5987

With a copy sent to:

Regional Water Engineer, Region 5
232 Golf Course Road, Warrensburg, New York, 12885-1172 Phone: (518) 623-1200

2. Samples and measurements, to comply with the monitoring requirements specified above, must be taken from the effluent side of the final treatment unit prior to discharge to the receiving water body unless otherwise noted above.

3. The measurement frequency of parameters listed on this page shall be Monthly following a period of 12 (twelve) consecutive weekly sampling events showing no exceedances of the stated discharge limitations. If discharge limitation of any parameter listed on this page exceeds the stated limit, the measurement frequency for all parameters listed on this page shall again be weekly, until a period of four consecutive sampling events showing no exceedances at which point monthly monitoring may resume.

4. Only site generated wastewater is authorized for treatment and discharge.

5. Authorization to discharge is valid only for the period noted above but may be renewed if appropriate. A request for renewal must be received 6 months prior to the expiration date to allow for a review of monitoring data and reassessment of monitoring requirements.

6. Both concentration (mg/l or µg/l) and mass loadings (lbs/day) must be reported to the Department for all parameters except flow and pH.

7. Any use of corrosion/scale inhibitors, biocidal-type compounds, or other water treatment chemicals used in the treatment process must be approved by the department prior to use.

8. This discharge and administration of this discharge must comply with the substantive requirements of 6NYCRR Part 750.

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SECTION 02 81 00

OFF-SITE TRANSPORTATION AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes a description of requirements and responsibilities for proper transportation and disposal of waste materials removed and identified for off-site disposal including but not limited to the following materials:
   1. Land Clearing Debris
   2. Solid Waste
   3. Construction and Demolition Debris (C&D Debris)
   4. Non-Hazardous Manufactured Gas Plant (MGP) Remediation Waste (soil and debris)
   5. Hazardous MGP Remediation Waste (soil and debris)
   6. Construction Water
   7. Site Refuse
   8. Metal Waste

B. Construction and demolition debris, including demolished asphalt/concrete pavement, site piping, fencing, and tree clearing will be segregated from contaminated soil for off-site disposal. The debris is anticipated to be classified as non-hazardous.

C. Each of these waste materials is further described in Section 01 74 19 - Waste Removal, Handling, and Storage.

D. The CONTRACTOR shall properly transport and dispose of all items, which can be generally classified as hazardous and non-hazardous solid wastes removed from the Site, to appropriate disposal facilities. This includes existing wastes as well as the wastes generated by the CONTRACTOR during construction.

E. The CONTRACTOR shall be responsible and will be held accountable for assuring that all sampling, analysis, transportation, and disposal requirements of the Treatment, Storage and/or Disposal Facility (TSDF), Solid Waste Management Facility (SWMF), surface water discharge permits, or reclamation/recycling/salvage facility, Federal, State, and local governments are complied with and properly documented.

F. The CONTRACTOR shall video the local roads proposed for use as haul routes to transport waste to off-site disposal prior to the initiation of the work and after completion of the work. The video shall be recorded to document the existing

condition of all local roads prior to being exposed to project traffic. Local Roads anticipated to be used for construction vehicle access to work areas will be primarily from River Street, Lake Flower Avenue, Brandy Brook Road, Pine Street, Payeville Lane, and the right of way for the Adirondack Scenic Railroad.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 11 13 - Summary of Work

B. Section 01 33 00 - Submittal Procedures

C. Section 01 35 43 - Environmental Protection Procedures

D. Section 01 45 28 - Chemical Sampling and Analysis

E. Section 01 74 19 - Waste Removal, Handling, and Storage

F. Section 02 72 00 - Construction Water Management

G. Section 02 51 40 00 – Handling Contaminated Materials

1.3 REFERENCES

A. The publications listed below are pertinent in whole or part to the Work. The publications are referred to within the text by basic designation only.
   1. Code of Federal Regulations (CFR)
      a. 40 CFR 262: Standards Applicable to Generators of Hazardous Waste
      b. 49 CFR 172: Tables, Hazardous Material Communication Requirements, and Emergency Response Information Requirements
   2. New York Codes, Rules, and Regulations (NYCRR)
      a. 6 NYCRR 364: Waste Transportation Permits
      b. 6 NYCRR 372: Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities
      c. 6 NYCRR 248: Use of Ultra Low Sulfur Diesel Fuel and Best Available Retrofit Technology for Heavy Duty Vehicles

B. The CONTRACTOR shall comply with all applicable Federal, State, and local requirements regarding transportation and disposal of hazardous and nonhazardous material.

C. Comply with all municipal, county, state, and federal regulations regarding transportation of hazardous and non-hazardous materials. These include:
   1. Trucks used for transportation of material for disposal off site shall be permitted pursuant to 6 NYCRR Part 364**.**
   2. Vehicle operator possession of a commercial driver's license with hazardous

materials endorsement (if applicable).

3. Registration of vehicle as a hazardous waste carrier (if applicable).
4. Utilization of shipping papers or hazardous waste manifest (40 CFR 262 and 6 NYCRR Part 372).
5. Proper marking and placarding of vehicles in accordance with 49 CFR.
6. Placement of emergency response procedures and emergency telephone numbers in vehicle, and operator familiarity with emergency response procedures.
7. Compliance with load, height, and weight regulations.

1.4 SUBMITTALS

A. Description of planned means and methods for transporting and disposing of all waste materials removed from the Site or generated as a component of the Work. The description shall be a component of the Construction Work Plan (described in Section 01 11 00 - Summary of Work) and include the following:
   1. Locations of all identified TSDFs, SWMFs, and/or reclamation / recycling / salvage facilities.
   2. Permit profile of each identified disposal facility.
   3. The proposed haul route over local roads to each of the identified facilities.
   4. At least two disposal facilities shall be identified that can accept MGP remediation waste.

B. Video records of the existing condition and final condition of the local roads proposed for haul route shall be submitted prior to final payment.

C. Sample Bill of Lading and Uniform Hazardous Waste Manifest to be used for the project shall be submitted prior to start of Work.

D. Completed and signed Bill of Ladings and Manifests for all transported waste loads shall be submitted within 48 hours of being received by CONTRACTOR.

E. Certified weight slips from the TSDF or reclamation/recycling/salvage facility for each load transported to the disposal facility shall be submitted within 48 hours of being received by CONTRACTOR.

F. Weekly transportation report that includes the type of waste material, weight, volume, disposal/recycle location, date of shipment, date of receipt, and responsible transporter.

G. Records:
   1. Written acceptance of waste profile from TSDF.
   2. Hazardous Waste Manifests.
   3. Decontamination Certificates.

4. Submit written confirmation from TSDF of acceptance of waste.
5. Profile sampling results.
6. Manifests after permanent disposal.
7. Certificates of disposal for non-hazardous waste.
8. Signed bills of lading for salvaged or recycled materials.
9. An updated waste tracking summary shall be provided monthly with the CONTRACTOR's application of payment.

1.5 DEFINITIONS

A. Refer to the definitions for classifications of wastes in Section 01 74 19 - Waste Removal, Handling, and Storage.

B. Local Road: for the purpose of this specification, it shall mean those roads within the Village of Saranac Lake, Essex County, New York.

C. Generator: The Site is an abandoned hazardous waste Site and the actual generator of the waste is not participating in the remedial action. For the purpose of the project, the DEPARTMENT or the ENGINEER on behalf of the DEPARTMENT will assume the role of generator and, as such, shall sign all required documentation and recordkeeping.

D. Transporter: means a person or firm engaged in the off-site transportation of solid waste by air, rail, highway or water.

1.6 WASTE CONTAINERS

A. Provide waste containers specific to the individual waste as described in Section 01 74 19 - Waste Removal, Handling, and Storage.

1.7 TRANSPORTATION OF WASTES

A. Transport all wastes specified or generated as a result of the Work. This includes materials generated by final Site cleanup activities including the dismantling of the temporary facilities and controls.

B. Comply with the New York State Diesel Emissions Reduction Act (DERA), Environmental Conservation Law 19-0323, and 6 NYCRR 248 when using heavy duty vehicles, as described in Section 01 35 43 - Environmental Protection Procedures.

C. Coordinate the number and schedule of vehicles required for off-site transportation of waste materials generated during the execution of the specified work.

D. Inspect the transportation vehicles before and after loading to ensure compliance with all local, State, and Federal regulations for the safe transport of wastes from the Site to the receiving facility. The CONTRACTOR shall provide the necessary labor and materials to ensure all trucks, containers, etc. are lined with plastic prior to filling. All vehicles transporting contaminated material shall be fully lined with minimum 6-mil polyethylene sheeting, an equivalent material, or otherwise water-tight, and shall be equipped with functioning tailgate locks and non-mesh (solid), waterproof tarpaulins. As an additional measure if the soil is really odorous, the CONTRACTOR shall spray odor control foam on the soil before placing the tarp and prior to departure.

E. Ensure that the transporters arriving at the Site for loading do not cause undue congestion to local roads. Stage trucks either within the perimeter of the Site or at an off-site staging area approved by the ENGINEER. Transporters shall not be accepted at the Site before 7:00 AM and after 5:00 PM.

F. Decontaminate loaded trucks as specified in Section 01 74 19 - Waste Removal, Handling, and Storage prior to transporting off-site.

G. Weigh each load with the on-site truck scale, and modify the load as required to meet the weight limitations for the local roads along the designated route. The net weight of the waste load measured in tons shall be calculated by subtracting the vehicle tare weight from the total gross weight (vehicle and load). Record weight of the total waste quantity on a bill of lading or a Uniform Hazardous Waste Manifest, as appropriate and compare to certified weight slips reported by the disposal facility as a quality control check.

H. Proceed directly from the Site to the designated receiving facility identified by the CONTRACTOR in the Construction Work Plan. Temporary staging or storage of material at intermediate locations between the Site and the receiving facility is prohibited.

I. Travel from the Site along traffic routes established by the CONTRACTOR and documented in the Construction Work Plan and videos.

J. Originate, maintain, and provide the ENGINEER with a copy of each executed bill of lading and/or manifest for each load shipped off-site. In addition, provide the ENGINEER documentation and records verifying receipt of each truck load by the receiving facility. Such documentation shall indicate the actual certified weight of each load shipped.

1.8 DISPOSAL FACILITIES

A. Facilities must have valid Federal/State permits appropriate for each type of waste and/or waste disposal facility. Permits shall remain valid during the entire project

period.

B. Facilities must be in good legal standing with no significant violations, corrective actions, or other environmental conditions that could affect satisfactory operation.

C. The disposal facility must comply with policies adopted by the DEPARTMENT with respect to off-site disposal of waste.

D. Prior to shipment of hazardous wastes off the site, the CONTRACTOR shall confirm by written communication from the designated TSDF that it is authorized, has the capacity, and will provide or assure that the ultimate disposal method is followed for the particular hazardous waste on the manifest.

E. RCRA Wastes:
   1. The facility must have an RCRA Permit or RCRA Interim Status for RCRA wastes. The EPA ID number for the site is: NYD002233138.
   2. The facility must not have any significant RCRA violations or other environmental conditions that could affect its satisfactory operation:
      a. Significant violations include Class 1 RCRA violations as defined in EPA"s RCRA Enforcement Response Policy dated December 1984, including but not limited to groundwater, closure, post closure, and financial violations.
      b. Other environmental conditions include those conditions affecting the satisfactory operation of the facility and violations of state and/or federal laws other than RCRA.
      c. Under limited circumstances, EPA Administrator may allow disposal of hazardous substances at a RCRA facility having significant RCRA violations or other environmental conditions affecting satisfactory operation, providing that the facility owner or operator has entered into a consent order or decree to correct the problems, and disposal only occurs within the facility at a new or existing unit that is in compliance with RCRA requirements.
   3. Landfill disposal must be in a unit meeting applicable RCRA minimum technical requirements:
      a. Current RCRA minimum technical requirements for land disposal include the use of a double liner system.
      b. Under limited circumstances (low waste toxicity, mobility, and persistence), EPA may approve the use of a single-lined land disposal unit for RCRA wastes where use of such a unit adequately protects public health and the environment.

F. TSCA Wastes:
   1. The facility must have a current TSCA permit.
   2. The facility must not have any significant violations, corrective actions, or other environmental conditions that could affect its satisfactory operation.

1.9 RECORDKEEPING

A. This section applies to all wastes identified in Sub-Part 1.01A except Hazardous Remediation Waste.

B. Document each waste load shipped off-site.
   1. Complete a bill of lading provided by the transporter or TSDF for non-hazardous wastes. Other forms as approved by the ENGINEER may be used. The form shall generally include the following information:
      a. Unique identifying tracking number.
      b. Generator/generator representative contract information.
      c. Transporter contract information.
      d. TSDF contact information.
      e. Date of shipment.
      f. Quantity of shipment.
      g. Signatures of generator/generator representative, transporter, and TSDF.
   2. Complete a Uniform Hazardous Waste Manifest for hazardous waste in accordance with Sub-Part 1.10.

1.10 RECORDKEEPING FOR HAZARDOUS REMEDIATION WASTE

A. Document each load of Hazardous Remediation Waste shipped off-site in accordance with all local, state, and federal regulations and requirements.

B. Complete a Uniform Hazardous Waste Manifest (United States Environmental Protection Agency, USEPA Form 8700-22) for each shipped load of Hazardous Remediation Waste.

C. Provide signed manifests to the noted recipient on each copy of the form including the generator, transporter, and designated TSDF.

1.11 DISPOSAL OF REMEDIATION WASTES

A. Dispose of all wastes that are specified as a component of the Work or that are generated during the execution of the Work in conformance with all Federal, State, and local regulations and requirements.

B. The ENGINEER/DEPARTMENT shall approve of all designated TSDFs prior to off-site transportation and disposal. The CONTRACTOR shall not change facilities without prior consent of the ENGINEER/DEPARTMENT.

C. Complete waste characterization testing and prepare waste profiles in accordance with the requirements of the TSDF as described in Section 01 74 19 - Waste Removal, Handling, and Storage.

D. Approved TSDFs, and reclamation/recycling/salvage facilities shall be licensed to accept the wastes profiled/characterized by the CONTRACTOR.

E. Maintain waste on-site until approval of the waste profile has been granted by the TSDF.

F. Dispose remediation wastes at approved TSDFs in accordance with all local, state, and federal regulations and requirements.

G. Document certified weights of each waste load measured by the TSDF or reclamation/recycling/salvage facility at the time of disposal. The certified weight slips shall include at a minimum, the name and location of the TSDF, the date and time of measure, and the net weight of the load measured in tons calculated by subtracting the vehicle tare weight from the total gross weight (vehicle and load). For, the unit of measure shall be gallons.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

++END OF SECTION++

SECTION 02 82 33

REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING MATERIAL

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope:
   1. CONTRACTOR shall provide all labor, equipment, tools, materials, notifications, and permits required to remove and dispose of asbestos-containing material (ACM) specified, or required to complete the Work, in accordance with Laws and Regulations. ACM identified at the Site is indicated in the reports on a hazardous environmental condition at the Site as indicated in the Limited Site Data. ENGINEER to prepare petition for variance at the Type III buildings. CONTRACTOR to provide information as necessary to support this effort.
   2. CONTRACTOR shall remove all ACM in materials and equipment to be demolished or removed in Type II and Type III structures as part of the Work, in accordance with this Specification Section, related work specified under other Sections, and Laws and Regulations.
   3. Perform removal and disposal of ACM, including preparation, removal, cleaning, storage, transport, and disposal of ACM without damaging or contaminating adjacent work areas. Where such work areas are damaged or contaminated, CONTRACTOR shall restore the work areas to their original condition.
   4. CONTRACTOR shall be responsible for the safe and proper handling of friable and non-friable materials containing or contaminated with Asbestos, and take all necessary precautions to protect workers, work areas, and others at the Site from contact with Asbestos fibers, whether airborne or otherwise.

B. Coordination:
   1. ENGINEER to prepare and provide CONTRACTOR with the variance to complete the work.
   2. Coordinate and review subsequent demolition work specified under other Sections and coordinate such work with the Work under this Section.
   3. Notify other contractors in advance of removing and disposing of ACM, to provide other contractors with sufficient time for coordination of interrelated items that are included in their Contracts and are to be performed before or in conjunction with removal and disposal of ACM.

C. Measurement and Payment:
   1. Payment for removal and disposal of ACM as shown or indicated in the Contract Documents shall be made as part of the lump sum Contract Price.

1.2 REFERENCES

A. Comply with applicable provisions and recommendations of the following, except where otherwise shown or specified:
   1. New York State 12 NYCRR Part 56, Part 56 of Title 12 of the Official Complication of Codes, Rules and Regulations of the State of New York.
   2. ANSI/AIHA Z9.2, Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems.
   3. ANSI/ISEA Z87.1, Occupational and Educational Eye and Protection Devices.
   4. ANSI Z88.2, Respiratory Protection.
   5. ASTM D4397, Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications.
   6. ASTM E84, Test Method for Surface Burning Characteristics of Building Materials.
   7. ASTM E119, Test Methods for Fire Tests of Building Construction and Materials.
   8. ASTM E1368, Practice for Visual Inspection of Asbestos Abatement Projects.
   9. NFPA 10, Portable Fire Extinguishers.
   10. NFPA 90A, Installation of Air Conditioning and Ventilating Systems.
   11. NFPA 101, Life Safety Code.
   12. NFPA 701, Methods of Fire Tests for Flame Propagation of Textiles and Films.
   13. NIOSH NMAM, NIOSH Manual of Analytical Methods.
   14. UL 586, High-Efficiency, Particulate, Air Filter Units.
   15. USEPA 340/1-90-018, Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance.
   16. USEPA 340/1-90-019, Asbestos/NESHAP Adequately Wet Guidance.
   17. USEPA 560/5-85-024, Guidance for Controlling Asbestos Containing Materials in Building.

1.3 TERMINOLOGY

A. The following words or terms are not defined but, when used in this Section, have the following meaning:
   1. "Adequately wet": A term as defined in 40 CFR Part 61, Subpart M and USEPA 340/1-90-019 that means to sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from ACM, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted.
   2. "Amended water": Water containing a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter when tested in accordance with ASTM D1331.
   3. "Area air monitoring": Sampling of Asbestos fiber concentrations within the Asbestos control area and outside of the Asbestos control area, which is representative of the airborne concentrations of Asbestos fibers that may reach

the breathing zone.

4. “Asbestos”: any naturally occurring hydrated mineral silicate separable into commercially usable fibers, including chrysotile, amosite, crocidolite, tremolite, anthophyllite and actinolite.
5. “Asbestos-containing material” or “ACM”: Material composed of Asbestos of any type in an amount greater than one percent by weight, either alone or mixed with other fibrous or non-fibrous materials, as determined using the method specified in 40 CFR Part 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy.
6. “Asbestos control area”: An area where Asbestos removal operations are performed which is isolated by physical boundaries to prevent the spread of Asbestos dust, fibers, and debris.
7. “Class I Asbestos Work”: Activities involving the removal of thermal systems insulation, surfacing ACM and PACM.
8. “Class II Asbestos Work”: Means activities involving the removal of ACM, that is not thermal system insulation or surfacing material. Class II includes, but is not limited to, removal of Asbestos-containing wallboard, floor tile, and sheeting, roofing and siding shingles, and construction mastics.
9. “Class III Asbestos Work”: Means repair and maintenance operations, where ACM, including TSI and surfacing ACM and PACM, may be disturbed.
10. “Class IV Asbestos Work”: Means maintenance and custodial activities during which employees contact but do not disturb ACM and PACM and activities to clean up dust, waste, and debris resulting from Class I, II, and III Asbestos Work.
11. “Competent person”: In addition to the definition in 29 CFR 1926.32(f), one who is capable of identifying existing Asbestos hazards in the workplace and selecting the appropriate control strategy for Asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f). In addition, for Class I and Class II Asbestos Work, one who is specially trained in a training course that complies with the criteria of USEPA's Model Accreditation Plan (40 CFR 763) for supervisor, or its equivalent; for Class II Asbestos roofing Work who is specially trained in a comprehensive course for the roofing trade that has been conducted by a USEPA or state-approved trainer, certified by the USEPA or MDCIS; and for Class II and IV Asbestos Work, who is trained in an operations and maintenance (O&M) course developed by USEPA under 40 CFR 763.92 (a)(2).
12. “Controlled demolition”: CONTRACTOR operations or activities abiding by the Asbestos control protocols of the Contract Documents. Such operations or activities include those that have the potential to disturb Asbestos-containing materials.
13. “Encapsulant”: An agent that seals the surface (bridging encapsulant) or penetrates the bulk (penetrating encapsulant) of ACM.
14. “Excursion limit”: No person at any time, shall be exposed to airborne concentrations of Asbestos fibers that are equal to or greater than 1.0 fibers per cubic centimeter of air (cm^3), averaged over a 30-minute time weighted

average.

15. “Friable Asbestos”: As defined in 40 CFR Part 61, Subpart M and USEPA 340/1-90-018, meaning any and all ACM that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure, including previously non-friable material that becomes damaged to the extent that when dry, may be easily crumbled, pulverized, or reduced to powder by hand pressure.
16. “HEPA filter”: A high-efficiency particulate air filter capable of removing particles 0.3 microns or larger in diameter with 99.97 percent efficiency.
17. “Negative pressure enclosure” or “NPE”: An Asbestos abatement regulated area in which critical barriers, polyethylene sheeting walls and floor are installed and sealed airtight. A minimum pressure differential of minus 0.02 inches of water column relative to adjacent unsealed areas and four air charges per hour shall be maintained within the NPE continuously 24 hours per day.
18. “Non-friable Asbestos”: As defined in CFR 40 Part 61, Subpart M and USEPA 340/1-90-018 that means Asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products.
19. “Non-Friable ACM Category I”: As defined in CFR 40 Part 61, Subpart M and USEPA 340/1-90-018 that means ACM material, excluding Category 1 non-friable ACM that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
20. “Personal air monitoring”: Sampling of Asbestos fiber concentrations within the breathing zone of a person to establish OSHA PEL values.
21. “Permissible exposure limit” or “PEL”: No person shall be exposed to airborne concentrations of Asbestos fibers that are equal to or greater than 0.1 fibers per cubic centimeter of air (cm^3), averaged over an eight-hour time weighted average.
22. “Presumed ACM” or “PACM”: Presumed ACM that is thermal system insulation and surfacing material found in buildings constructed no later than 1980. The designation of a material as “PACM” may be rebutted pursuant to paragraph (k)(4) of 29 CFR 1926.1101.
23. “Regulated area”: Area established by the employer to demarcate areas where Class I, II, and III Asbestos Work is conducted, and adjoining area(s) where debris and waste from such Asbestos Work accumulate; and a work area within which airborne concentrations of Asbestos, exceed or there is a reasonable possibility they may exceed the permissible exposure limit. Requirements for regulated areas are in paragraph (e)(6) of 29 CFR 1926.1101.
24. “Time weighted average” or “TWA”: The average concentration of a contaminant in the air during a specific time period.
25. “Thermal system insulation” or “TSI”: ACM applied to piping, valves, boilers, breaching, tanks, ducts or other equipment or structural components to prevent heat loss or gain. TSI ACM is thermal system insulation which contains more than one percent Asbestos.
26. “Type II Structure”: Building structure or foundation that contains PACM. PACM confirmed as ACM in this structure or foundation must be abated in place as Class I or Class II asbestos work in accordance with 12 NYCRR 56.
27. “Type III Structure”: Formerly condemned building structure or foundation

that contains PACM. PACM confirmed ACM in this structure or foundation must be treated as controlled demolition in accordance with 12 NYCRR 56.

1.4 QUALITY ASSURANCE

A. Qualifications:
   1. Testing Laboratory:
      a. Testing laboratory shall be experienced with inspection of and testing and evaluation for ACM and shall be licensed for Asbestos work in the jurisdiction where the Project is located.
      b. Testing laboratory shall be AIHA- and NVLAP-accredited, and shall use ELAP 198.4, and NIOSH 7400 and PAT methodologies.
      c. Submit name, address, phone number, and website address for testing laboratory, including copies of associated certifications of laboratory by accrediting agencies.
   2. ACM Removal and Disposal Subcontractor:
      a. ACM removal and disposal Subcontractor engaging in asbestos removal and disposal shall be certified in accordance with New York State 12 NYCRR Part 56.
      b. Subcontractor shall have successfully completed at least three projects of comparable size and scope as the ACM removal and disposal Work on this Project within the past three years.
      c. Submit Subcontractor qualifications including listing of completed past Asbestos removal and disposal projects, and current, ongoing projects, with the following submitted for each such project: name, address, and phone number for responsible individual of owner of facility, type of facility, name, address, and phone number of prime contractor that hired Subcontractor (as applicable) with name of the competent person in responsible charge of the work for that CONTRACTOR, volume of ACM removed, and approximate value of the ACM removal and disposal work for which Subcontractor was responsible.
      d. Competent Person:
         i. Subcontractor shall have on staff as a full-time employee and shall assign to the Project a competent person with not less than three years' experience in removing and disposing of ACM, and who has at least five years' experience in construction trades, and who has served as the competent person in responsible charge of not less than three ACM removal and disposal projects of comparable scope (or larger) and methodology to this Project. Submit the name of the proposed person and proof of training as a supervisor for Asbestos-related work.
         ii. The competent person, having qualifications and authority to ensure worker health and safety required by Subpart C, General Safety and Health Provisions for Construction (29 CFR 1926.20 through 1926.32). Competent person shall conduct frequent and regular inspections of the Site relative to Asbestos removal and disposal,

materials, and equipment as required by 29 CFR Part 1926, Section 1926.20 and as described below.

iii. The Competent Person shall perform or supervise the following duties, as applicable:

a) Set up the regulated area, enclosure, or other containment.
b) Supervise all employee exposure monitoring.
c) Ensure that employees working within the regulated area wear protective clothing and respiratory protection.
d) Ensure through Site supervision, that employees use work practices and personal protective equipment in compliance with all requirements.
e) Ensure that employees use the hygiene facilities and observe the decontamination procedures.

iv. The competent person shall be trained in all aspects of Asbestos removal and handling, including: abatement, installation, removal and handling; the contents of Laws and Regulations and the Contract Documents; identification of Asbestos; removal procedures, where appropriate; and other practices for reducing the hazard. Such training shall be obtained in a comprehensive course for supervisors, such as a course conducted by a USEPA or state-approved training provider, certified by the USEPA or the jurisdiction where the Project is located, or a course equivalent in stringency, content, and length.

e. ACM Subcontractor Employees:

i. Each employee working on Asbestos removal and disposal in the State of New York shall possess valid Asbestos handling certification.

ii. Within one year prior to commencement of ACM removal and disposal Work on the Project, each worker directly involved in handling ACM and ACM generated wastes, including packaging and transporting such wastes for disposal, shall have successfully completed a course of Asbestos training as required by USEPA revised Asbestos Model Accreditation Plan (MAP), as mandated by the Asbestos School Hazard Abatement Reauthorization Act (ASHARA).

iii. Prior to the commencement of ACM removal and disposal Work, each worker shall be instructed by CONTRACTOR’s CIH and CONTRACTOR’s "competent person" supervisor in the following Project-specific training: Hazards and health effects of the specific types of ACM to be removed; content and requirements of the AHAP accepted by ENGINEER; work practices; the use requirements and limitations of the personal protective clothing, equipment, and respirators to be used; hands-on training for each Asbestos removal and disposal technique to be employed; heat and cold stress monitoring specific to this Project; personal hygiene and housekeeping requirements; air monitoring procedures; and additional requirements of 29 CFR Part 1926.1101.

iv. Maintain all employee training records for one year beyond the last date of employee's employment by that employer. Use of competent organizations such as industry trade associations and employee associations to maintain the records required by this Section is acceptable. Copy of the required training records and fit test certificates for each employee shall be maintained on file at the Site for review as requested by DEPARTMENT.

v. ACM removal and disposal Subcontractor shall furnish for the Project a sufficient number of properly-trained and experienced Asbestos removal and disposal workers each of whom shall: have completed training as an Asbestos removal worker; have at least one year experience in asbestos removal; and have worked on at least three projects of comparable scope to (or larger than) this Project.

vi. Submit employee qualifications and certifications.

vii. Prior assigning personnel to Asbestos Work, instruct each employee in the hazards of Asbestos, safety, and health precautions, as well as the use and requirements for personal protective equipment, including clothing and respirators. Training shall cover engineering and other hazard control techniques and procedures. Establish a respirator program as required by Laws and Regulations.

3. Certified Industrial Hygienist (CIH):

a. ACM removal and disposal operations shall be under the oversight of a CIH. CIH shall have at least five years of experience with ACM removal and disposal on projects similar in size to, or larger than, this Project.

b. CIH shall be accredited by the American Board of Industrial Hygiene (ABIH).

c. CIH Responsibilities:

i. Assist Subcontractor with preparing the Asbestos removal and disposal plan submittal. CIH shall sign and date the submittal.

ii. Prepare protocols and procedures for, and review with Subcontractor and testing laboratory, the field quality control measures required for the Project.

iii. Review field quality control results and advise CONTRACTOR and Subcontractor on measures to be taken.

iv. CIH shall visit the Site not less than weekly during ACM removal and disposal Work and shall inspect the Asbestos control areas and related ACM facilities prior to the start of ACM removal operations and shall also inspect the ACM control areas and adjacent areas upon completion of all ACM removal and disposal Work. Prepare and submit to ENGINEER a written report of each visit to the Site by CIH detailing actives observed, problems encountered, and recommended procedures to resolve problems.

d. Submit proposed CIH's name, address, and telephone number, and record of CIH's experience relative to ACM removal and disposal and copy of accreditation from ABIH.

B. Regulatory Requirements:
   1. Comply with Laws and Regulations regarding Asbestos removal and disposal, including but not limited to the USEPA, New York State Department of Labor (NYSDOL), and OSHA. Maintain at the Site copies of applicable Laws and Regulations and guidelines, make such documents immediately available to ENGINEER.
   2. Federal Regulations:
      a. 29 CFR 1910.1001, Asbestos Standard for General Industry
      b. 29 CFR 1910.134/ 29 CFR 1926.103 Respiratory Protection Standard
      c. 29 CFR 1910.1200/ 29 CFR 1926.59, Hazard Communication Standard
      d. 29 CFR 1926.1101, Asbestos Standard for the Construction Industry
      e. 40 CFR 61, National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart M - National Emission Standards for Asbestos
      f. 40 CFR 763, Asbestos Hazard Emergency Response Act (AHERA), Subpart E - Asbestos-Containing Materials in Schools, and Subpart G - Worker Protection Rule.
      g. 49 CFR Parts 106 - Transportation Standards 107, 171 to 180.
   3. New York State Regulations:
      a. Part 56, Asbestos.

C. Medical Requirements
   1. Examinations: Before anticipated exposure to airborne Asbestos fibers, provide workers with a comprehensive medical examination as required by 29 CFR 1926.1101, 29 CFR 1910.120, and other Laws and Regulations. Examination is not required if adequate records demonstrate that employee was examined in accordance with 29 CFR 1926.1101, 29 CFR 1910.120, and other Laws and Regulations within the past year. The same medical examination shall be given on an annual basis to employees engaged in an occupation that has the potential to expose the employee to Asbestos in any amount, within 30 calendar days before and after the termination of employment in such an occupation.
   2. Medical Records: Maintain complete and accurate records of each employee's medical examinations for a period of 30 years after termination of employment.

1.5 SUBMITTALS

A. Informational Submittals: Submit the following:
   1. Certificates.
      a. Certifications from authorities having jurisdiction, including state and local authorities as applicable, for each supervisor and worker employed on ACM removal and disposal.
      b. Submit certificate for each employee working on ACM removal and disposal Work, said certificate to be signed by the associated employee, that the employee has received training in the proper handling of materials that contain Asbestos; understands the health implications and risks involved, including the possible illnesses that may develop from exposure to Asbestos fibers; understands the use and limitations of the respiratory

equipment to be used; and understands the results of any air monitoring activities that will occur, in relation to his or her health and use of respiratory equipment.

2. Test and Evaluation Reports:
   a. Asbestos survey thoroughly inspecting for and identifying all presumed asbestos containing material, suspect ACM, or asbestos material throughout the buildings to be demolished in accordance with 12 NYCRR 56 Subpart 56-5.
3. Procedural Submittals:
   a. Asbestos Removal and Disposal Plan (Asbestos Hazard Abatement Plan (AHAP)):
   i. Submit a detailed Project-specific plan of the work procedures to be used in the removal and disposal of ACM. Submittal shall be prepared by, signed, and sealed including certification number, and dated by CONTRACTOR's certified industrial hygienist (CIH).
   ii. Submittal shall include: a floor plan diagram showing the boundaries of Asbestos control areas, locations of decontamination facilities and HEPA filtration unit exhausts; locations of temporary electrical panels and hookups; the sequencing of Asbestos-related Work; ACM disposal plan; the type of wetting agent and Asbestos encapsulant proposed for use; air monitoring (both area and personal); and detailed description of the ACM containment and removal procedures to be used, type of wetting agent and Asbestos encapsulant to be used, planned air monitoring strategies, and detailed description of the method to be employed to control spread of ACM wastes and airborne fiber concentrations.
   iii. Any specific asbestos variances that have been obtained for the completion of the work and the conditions of said variances shall be incorporated into the AHAP.
   iv. Current and valid medical examinations and respirator fit tests for each person employed in ACM removal and disposal operations.
   v. Copy of each Project permit relative to ACM, and variances (if any).
   vi. Asbestos removal and disposal plan shall clearly indicate the starting and completion dates for each activity and each Asbestos control area, and shall allow adequate time for clean-up, observation, and monitoring activities.
   vii. Transporter: Submit documentation that the transporter to be used for conveying ACM to the landfill is permitted for such services in the jurisdiction where the Project is located.
   viii. Landfill: Submit documentation that the landfill to be used for ACM disposal is approved and permitted for Asbestos disposal by the USEPA and other authorities having jurisdiction, including the state environmental authority.
   ix. Notarized Statement: Submit signed notarized statements from CONTRACTOR and ACM Subcontractor disclosing all OSHA and USEPA citations on Asbestos removal projects during the previous three years.

x. Obtain ENGINEER's acceptance of the plan prior to starting of Asbestos-related work activities, other than performing testing and evaluation report.

4 Field Quality Control Submittals:

a. Reports of visits to Site by CIH.

b. Report of initial air monitoring results prior to start of ACM removal Work, and daily air monitoring results and calibration data.

5. Qualifications Statements: Obtain ENGINEER's acceptance of qualifications prior to utilizing the following on the Project:

a. Testing laboratory.

b. ACM removal and disposal Subcontractor, including name and qualifications of competent person to be assigned to the Project.

c. Certified industrial hygienist.

B. Closeout Submittals: Submit the following:

1. Log:

a. Maintain a permanently bound logbook that contains the Project name, as well as the names, addresses, and phone numbers of the air testing entity, and the ACM Subcontractor. Logbook shall contain emergency contact information required in the General Requirements. Logbook shall contain a list of personnel approved for entry into the Asbestos control area. Upon completion of ACM removal and disposal Work, submit the logbook containing a day-to-day record of personnel entering the Asbestos control area, and description of significant events occurring during the ACM removal and disposal operations.

2. Record Information:

a. Certification of completion of ACM removal and disposal Work, signed by CONTRACTOR and ACM Subcontractor, indicating the date that all ACM removal and disposal Work was completed, and stating that all ACM removal and disposal Work was performed in accordance with the Contract Documents, Laws and Regulations, applicable permits (if any), and requirements of authorities having jurisdiction.

b. Quantities of ACM removed and disposed.

c. Copy of completed waste manifest sheet for disposal of Asbestos, indicating name of disposal location and date of disposal.

d. Asbestos Waste Shipment: Final completed copies of the Waste Shipment Record for all shipments of ACM waste material as specified in 40 CFR Part 61, Subpart M and other required state waste manifest shipment records. Detailed information of Asbestos waste disposal on the "MANDATORY WASTE SHIPMENT RECORD" form in accordance with revised 40 CFR Part 61, Subpart M.

e. Copy of notifications of USEPA and other authorities having jurisdiction.

PART 2 – PRODUCTS

2.1 PERSONAL PROTECTIVE EQUIPMENT

A. General:
   1. Provide workers with personal protective clothing and equipment as specified in this Section and as required by Laws and Regulations.
   2. Ensure that protective clothing and equipment is worn properly.
   3. CIH and competent person shall select and approve the required personal protective clothing and equipment to be used.
   4. In addition to protective work clothing for ACM removal workers, make available at the Site four additional sets of protective work clothing and required respiratory equipment, each day for authorized personnel to enter and observe the Asbestos control area.

B. Respirators:
   1. Respirators shall be selected and used in accordance with manufacturer's recommendations, 29 CFR Part 1926.1101, and shall be approved by NIOSH for use in environments containing airborne Asbestos fibers.
   2. Personnel who handle ACM, enter Asbestos regulated work areas that require wearing of a respirator, or who are otherwise carrying out Asbestos abatement activities that require wearing a respirator, shall be provided with respirators that are fully protective of the worker at measured or anticipated airborne Asbestos concentration level to be encountered.
   3. For air-purifying respirators, the particulate filter portion of the cartridges or canister suitable for use in airborne Asbestos environments shall be Type H, high-efficiency particulate air (HEPA). As a minimum a powered-air purifying respirator (PAPR) equipped with HEPA cartridges shall be worn during startup of Asbestos removal activities, unless otherwise approved in writing by the CIH.
   4. Upgrading or downgrading of respirator type, from the minimum requirements specified for start-up, shall be made by the CIH based on the measured or airborne Asbestos fiber concentrations to be encountered.
   5. Respiratory protection shall comply with 29 CFR Part 1926, CFR 11 Part 30, and 29 CFR Part 1910.
   6. Fit Test:
      a. Competent person shall perform qualitative or quantitative fit test complying with 29 CFR Part 1926, Appendix B, for each worker required to wear a respirator, and for DEPARTMENT and authorized visitors who enter an Asbestos regulated work area where respirators are required to be worn.
      b. Perform respirator fit test for each worker prior to initially wearing a respirator on the Project and annually thereafter. If physical changes in a worker develops that will affect the fit, or a new size, make, or model of respirator is used, perform a new fit test.

c. Perform functional fit checks by employees each time a respirator is put on and in accordance with the respirator manufacturer's recommendation.

C. Whole Body Protection:

1. Provide personnel exposed to Asbestos with whole body protection as specified in this Section; such protection shall be worn properly.
2. CIH and competent person shall select and approve the whole-body protection to be used.
3. Dispose of disposable whole-body protection as Asbestos-contaminated waste upon exiting from the Asbestos regulated work area. Reusable whole-body protection worn shall be either disposed of as Asbestos-contaminated waste upon exiting the Asbestos regulated work area or be properly laundered in accordance with 29 CFR Part 1926 and the AHAP accepted by ENGINEER.
4. Do not remove Asbestos abatement whole body protection from the Site.
5. Comply with the following:
   a. Coveralls: Use disposable, zippered front coveralls with attached head and foot coverings. Sleeves shall be secured at the wrists.
   b. Gloves: Use disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort but shall not be used alone. Where there is potential for hand injuries (such as scrapes, punctures, cuts) use suitable outer gloves.
   c. Under Clothing: Use disposable underwear, worn next to the skin or cloth under clothing.
   d. Work Clothing: Use an additional coverall when Asbestos abatement and control method employed does not provide for the exit from the Asbestos regulated work area directly into an attached decontamination unit. Cloth work clothes shall be provided for wear under the protective coverall and foot coverings when work is being conducted in low-temperature conditions. Cloth work clothes shall be either disposed of as Asbestos-contaminated material or properly laundered in accordance with 29 CFR Part 1926 and AHAP accepted by ENGINEER.
   e. Foot Coverings: Provide cloth socks, worn next to the skin. If rubber boots are not used, provide footwear and disposable foot coverings. Use rubber boots in moist or wet areas. Only rubber boots shall be removed from the Asbestos regulated work area after being thoroughly decontaminated. Dispose of other protective foot coverings as ACM.
   f. Head Covering: Use hood type disposable head covering. Provide and use protective head gear (hard hats) as required. Remove hard hats from the Asbestos regulated work area only after thorough decontamination.
   g. Protective Eye Wear: Do not wear contact lenses in Asbestos regulated work areas. When vision correction is necessary to perform the Work, use prescription safety eye wear. Safety glasses shall be worn by personnel engaged in Asbestos abatement activities in the Asbestos regulated work area when use of full face-piece respirator is not required. Eye protection provided shall be in accordance with ANSI Z87.1.

Remove eyewear from Asbestos regulated work area only after thorough decontamination.

h. Other Items: Provide other items of whole-body protection as required and approved by the CIH.

2.2 DECONTAMINATION

A. Decontamination Units – General:
   1. Provide temporary decontamination unit for all Class I Asbestos Work abatement activities in which greater than 25 linear feet or 10 square feet of ACM are removed from a regulated area.
   2. Decontamination units shall be adjacent to and contiguous with the Asbestos regulated area. Remote decontamination units may be used if adjacent decontamination units are not feasible. Use of prefabricated units or remote units shall be reviewed and approved by the CIH. Remote decontamination systems shall be in accordance with Laws and Regulations.
   3. Decontamination unit shall be attached in a leak-tight manner to each Asbestos regulated work area.
   4. Decontamination unit shall have a separate equipment locker room and a clean locker room with a shower in between (complying with 29 CFR Part 1910.141 and other Laws and Regulations).
   5. Upon exiting from the Asbestos regulated work area to the equipment room, respirators shall be worn while Asbestos-contaminated protective clothing is HEPA-vacuumed, removed, and placed in approved labeled containers for disposal.

B. Use of Decontamination Units and Wastewater Discharge:
   1. Workers shall shower before changing into street clothes.
   2. Collect and filter used shower water to remove Asbestos contamination. Dispose of filters and residue as Asbestos-contaminated material. Discharge filtered water to the sanitary sewer system or haul filtered water off-Site for proper disposal.
   3. Provide separate hot and cold-water services for decontamination unit. Provide not less than 40-gallon electric hot water heater with minimum recovery rate of 20 gallons per hour and temperature controller for each showerhead. Instantaneous type in-line water heater may be incorporated at each shower head in lieu of hot water heaters. Locate functional flow and temperature controls within the shower, to be easily adjusted by user.
   4. Size shower wastewater pump for 1.25 times the showerhead flow rate at a pressure head sufficient to satisfy the filter head loss and discharge line head losses.
   5. Provide wastewater filters in series with first stage pore size of 50 micrometer (microns) and second stage pore size of five microns.

C. Decontamination Unit – Miscellaneous:
   1. Keep floor of decontamination unit's clean room dry and clean at all times. Water from the shower shall not wet the floor in the clean room.
   2. Surfaces of the clean room and shower shall be wet-wiped two times after each shift change with a disinfectant solution.
   3. Maintain proper housekeeping and hygiene.
   4. Provide soap, shampoo, and clean towels for showering, washing, and drying in sufficient quantities to accommodate the number of Asbestos abatement workers.
   5. Dispose of cloth towels as ACM waste or launder in accordance with 29 CFR Part 1926 and AHAP accepted by ENGINEER.
   6. Surfaces of the equipment room shall be wet-wiped two times after each shift change. Dispose of materials used for wet wiping as Asbestos-contaminated waste.

2.3 WARNING SIGNS AND TAPE

A. Warning Signs and Tape:
   1. Provide temporary warning signs for Asbestos-related Work.
   2. Ensure that workers and others at the Site understand the warning signs.
   3. Provide warning signs and tape at the regulated boundaries and entrances to Asbestos regulated work areas. Provide signs at a distance that personnel may read the sign and take necessary protective steps before entering the area.
   4. Warning signs shall comply with 29 CFR Part 1926.58(k)(l)(ii).
   5. Warning signs shall be written in English, and in the predominant language spoken by the workers if other than English.

2. 4 WARNING LABELS

A. Signs and Markings:
   1. Provide temporary caution signs at all approaches to Asbestos control areas as required in 29 CFR 1926.1101 and 29 CFR 1910.1200. Locate signs at such a distance that personnel may read the signs and avoid the areas, or if allowed to enter the areas, take the necessary precautions before entering.
   2. At minimum provide the following temporary signage:
      a. Caution Sign: Vertical format complying with 29 CFR 1910.145 (d) (4), minimum 20 inches by 14 inches displaying the following legend in the lower panel:

Legend	Characters/Type
ASBESTOS	1-inch high Sans Serif Gothic or block
DANGER	1-inch high Sans Serif Gothic or block
CANCER & LUNG DISEASE HAZARD	3/4-inch high Gothic

Legend	Characters/Type
AUTHORIZED PERSONNEL ONLY	3/4-inch high Gothic
RESPIRATORS & PROTECTIVE CLOTHING REQUIRED IN THIS AREA	3/4-inch high Gothic

3. Warning Labels:
   a. Provide labels affixed to all disposal bags and storage containers, as used for storage and transporting Asbestos materials, scrap, waste debris, and other materials contaminated with Asbestos, in accordance with OSHA 29 CFR 1926.1101(k)(8) and other Laws and Regulations.
   b. Containers with preprinted warning labels complying with requirements specified in this Section are acceptable.
   c. Labels shall include the name, address, and telephone number of the waste generator (DEPARTMENT) and the location at which the waste was generated in accordance with 40 CFR 61.150(a)(1).
   d. Labels shall comply with 29 CFR 1910.1200(f), and shall include:

"DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE ASBESTOS FIBERS
S HAZARDOUS TO YOUR HEALTH"

4. No other signage related to ACM removal is allowed at the Site without approval of the DEPARTMENT.
5. Upon completion of the ACM removal Work, remove temporary signage associated with ACM removal.

2.5 TOOLS AND LOCAL EXHAUST SYSTEM

A. Vacuum Capability for Asbestos Removal Equipment and Tools:
   1. Vacuums shall be leak-proof to the filter, equipped with HEPA filters, of sufficient capacity, and provide necessary capture velocity at the nozzle or nozzle attachment to efficiently collect, transport and retain ACM waste material.
   2. Do not use power tools to remove ACM unless the power tool is equipped with effective, integral HEPA filtered exhaust ventilation capture and collection system.
   3. Remove residual Asbestos from reusable tools prior to storage and reuse. Decontaminate reusable tools prior to removal from Asbestos regulated work area in accordance with Laws and Regulations.

B. Local Exhaust System:
   1. Provide local exhaust system in NPEs. Local exhaust systems, including filters, shall comply with ANSI/AIHA Z9.2.

2. Air filtration devices shall have HEPA filters.
3. Quantity of air filtration devices shall be sufficient to maintain a minimum pressure differential of minus 0.02 inch of water column relative to adjacent, unsealed areas, at an air flow rate not less than four air changes per hour.
4. Provide continuous, 24-hour per day monitoring of the pressure differential.
5. At start of Asbestos removal operations, open the units to verify filter integrity.
6. Use new flex duct for local exhaust system and one flex duct per HEPA unit.
7. Replace filters for air filtration devices in accordance with manufacturer's recommendations and Laws and Regulations.
8. Obtain required licenses and pay all fees that are associated with existing patent(s) on Asbestos exhaust systems.

2.6 RENTAL EQUIPMENT

A. If rental equipment is used, give written notification to rental entity concerning the intended use of the equipment, the possibility of Asbestos contamination of equipment, and steps that will be taken to decontaminate such equipment. Obtain written acceptance of the terms of CONTRACTOR's notification from rental entity and submit a copy to DEPARTMENT.

2.7 EXPENDABLE SUPPLIES

A. Glove Bag: Provide glove bags as described in 29 CFR Part 1926. Glove bag assembly shall be prefabricated of six-mil thick transparent polyethylene or PVC sheeting with preprinted OSHA warning label and shall typically be constructed of at least two inward projecting long sleeves and an internal pouch. Glove bag shall be constructed and installed in such a manner that it surrounds the object or material to be removed and contains all Asbestos fibers released during glove removal. Glove bag shall have sufficient capacity to hold removed materials and allow leak-tight sealing.

B. Duct Tape: Provide industrial-grade duct tape in two-inch and three-inch widths, suitable for bonding sheet plastic and disposal containers required for the Asbestos Work.

C. Disposal Containers: Provide leak-tight disposal containers for ACM generated wastes. Leak-tight means that solids, liquids, and dust cannot escape or spill out. Disposal containers shall be either pre-labeled or affixed with OSHA warning label in accordance with 29 CFR Part 1926.

D. Disposal Bags: Shall be six-mil thick or thicker, leak-tight, pre-labeled with OSHA warning label, for placement of Asbestos generated waste.

E. Leak-tight Wrapping: Use two layers of polyethylene sheet stock not less than six mils thick for containment of removed ACM such as reactor vessels, large tanks, boilers, insulated pipe segments, and other materials too large to be placed in disposal containers. Upon placement of ACM in wrapping, each layer shall be individually sealed leak-tight using duct tape.

F. Fiberboard Drums: Provide fiberboard drums when required by Laws or Regulations, or authorities having jurisdiction.

G. Sheet Plastic:
   1. Provide sheet plastic in the largest sheet size necessary to minimize seams.
   2. Not less than six-mil thick polyethylene film, clear or frosted, complying with ASTM D4397.

H. Wetting Agents:
   1. Amended Water: Comply with ASTM D1331.
   2. Removal Encapsulant: Provide removal encapsulant (penetrating encapsulant) when conducting Asbestos removal activities that require a longer removal time or are subject to rapid evaporation of amended water. Removal encapsulant shall be capable of wetting ACM and retarding fiber release during disturbance of ACM equal to or greater than provided by amended water.

2.8 OTHER ITEMS

A. Provide sufficient quantity of other items that may include, but not be limited to, the following: scrapers, brushes, brooms, staple guns, tarpaulins, shovels, rubber squeegees, dust pans, other tools, scaffolding, staging, enclosed chutes, non-conductive ladders, lumber necessary for constructing Asbestos regulated containment work areas, UL-approved temporary electrical equipment, material and cords, ground fault circuit interrupters (GFCI), water hoses of sufficient length, fire extinguishers, first aid kits, logbooks, log forms, markers with indelible ink, spray paint in bright color to mark areas and temporary fencing where required.

B. Scaffolding: Provide scaffolding of the type necessary to perform the Work, subject to requirements of Laws and Regulations.

C. Air Monitoring Test Equipment: Furnish the following test equipment to be delivered to the Resident Project Representative:
   1. Two portable high-volume area air sampling pumps, which shall be Gilian Model AirCon-2DC with appropriate power module, or equal. Each unit shall

be in kit form containing a monitoring pump, hose, and clip assembly, three-part filter holder, 50-mm extension cowl, spare hose fitting, and 100 25-mm filter membranes. Test equipment shall remain property of Subcontractor and shall be maintained by Subcontractor.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Testing and Evaluation:
   1. Perform testing and evaluation of suspected potential ACM as indicated in Paragraph 1.1.A of this Section.
   2. Testing and evaluation, including obtaining of samples, shall be by the qualified testing agency.
   3. Procedure:
      a. Prior to demolition of potential ACM listed in Paragraph 1.1.A of this Section, the potential ACM shall be inspected by an Asbestos inspector, who is an employee of the testing laboratory, in accordance with ASTM E1368 and procedures and guidelines commonly used and accepted in the jurisdiction where the Project is located for identifying approximate locations and quantities of ACM.
      b. Testing laboratory's Asbestos inspector shall obtain samples of suspected ACM and transport samples to the testing laboratory for evaluation.
      c. All samples shall be tested using polarized light microscopy (PLM).
      d. Samples for which results are, or are suspected to be, inconclusive shall be tested using quantitative transmission electron microscopy (TEM).
      e. Testing laboratory shall, within ten days of obtaining samples, prepare and submit to CONTRACTOR, who shall review and submit to ENGINEER, the testing laboratory's report on the sampling and evaluation results.
   4. Identification of Removal and Disposal Costs: Following completion of the testing laboratory's evaluation report, prepare and submit to ENGINEER change order proposal for removing and disposing of the ACM, if any, found to exist by the testing laboratory.

B. Examine conditions under which removal and disposal of ACM will be performed and advise ENGINEER in writing of conditions detrimental to proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions are corrected.

3.2 PREPARATION

A. Location of temporary facilities for removal and disposal of ACM shall be subject to acceptance of the DEPARTMENT. Prior to starting the Work obtain DEPARTMENT's acceptance of proposed location of temporary facilities required

for the Work.

B. Prepare the Asbestos control areas and post temporary signage required in Part 2 of this Section.

3.3 REMOVAL OF ASBESTOS-CONTAINING MATERIAL

A. Exposure Control:
   1. Design, erect, install, and maintain temporary airtight enclosures and partitions suitable for Asbestos removal activities, to eliminate exposures to operations and maintenance employees, others, and the environment where applicable.
   2. Personnel working on removal and disposal of ACM shall wear and utilize protective clothing and protective equipment as required.
   3. Eating, smoking, drinking, applying cosmetics, and similar activities are not allowed in Asbestos regulated work areas.
   4. Perform hot work in Asbestos regulated work area, such as burning, cutting, and welding, under controlled conditions in accordance with 29 CFR Part 1926 and other Laws and Regulations.
   5. Personnel of other trades not engaged in Asbestos removal and disposal activities shall not be exposed to airborne Asbestos unless required training, administrative, and personal protective requirements are complied with.
   6. If an Asbestos spill or release occurs outside of Asbestos regulated work area, work shall be halted and immediately notify DEPARTMENT. Correct the spill or release to satisfaction of DEPARTMENT prior to resuming the Work.
   7. Perform personal air sampling. An independent third-party industrial hygiene consultant hired by DEPARTMENT shall complete perimeter, work area, and final clearance air sampling.
   8. Immediately halt ACM removal and disposal Work in Asbestos regulated work area when measured airborne total fiber concentration exceeds 0.01 fibers per cubic centimeter or the pre-removal concentration, whichever is greater, outside the Asbestos regulated work area. Correct the condition to the satisfaction of CONTRACTOR'S CIH at no cost to DEPARTMENT. CONTRACTOR shall document corrective actions taken.
   9. Protection of Adjacent Areas:
      a. Removal and disposal of ACM shall be performed without contaminating adjacent work and areas. Where such work or area is damaged or contaminated as verified by ENGINEER by visual inspection or sample analysis, decontaminate and restore the affected area to its original condition at no expense to DEPARTMENT, as deemed appropriate by DEPARTMENT and ENGINEER.
   10. Critical Barriers: Isolate all openings to Asbestos regulated work areas with airtight seals that prevent contaminant spread in accordance with Laws and Regulations. Provide such critical barriers of six-mil thick polyethylene, sealed air-tight. Cover and seal wall, ceiling, and floor surfaces in accordance with Laws and Regulations.
   11. Asbestos Control Area Requirements:

a. General: Establish and maintain NPEs for Class I Asbestos Work other than glove bag removal or wrap and cut removal. Provide a viewing window in the wall of the NPE at a location from which the ACM removal Work may be observed. Perform the following sequentially, completing each activity before proceeding to the next activity:
   i. Place tools, scaffolding, staging, and similar activities necessary for the ACM removal Work in the area to be isolated prior to erecting critical barriers.
   ii. Pre-clean surface.
   iii. Install decontamination units.
   iv. Install critical barriers.
   v. Install local exhaust system and appurtenances.
   vi. Remove ACM and perform monitoring.
   vii. Perform required cleaning.
   viii. After inspection and cleaning, remove barriers and containment materials.

B. Removal – General:
   1. Perform ACM removal and disposal, including handling, storing, and transporting Asbestos waste materials, in accordance with the Asbestos removal and disposal plan (Asbestos hazard abatement plan (AHAP)) submittal accepted by ENGINEER; the Contract Documents; Laws and Regulations; applicable permits; and requirements of authorities having jurisdiction. Among the applicable requirements, comply with applicable requirements of 12 NYCRR 56, 29 CFR Part 1910, 29 CFR Part 1926, 40 CFR Part 61, Subpart A and Subpart M, NFPA 10, NFPA 70, NFPA 90A, and NFPA 101. Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting Work. Where the requirements of the Contract Documents and Laws and Regulations differ, the most-stringent requirement as defined by ENGINEER shall apply.
   2. Wastewater from Asbestos removal operations, including amended water, shall be collected and filtered through a system in the same manner specified in Part 2 of this Section for personnel decontamination shower discharge water. Discharge filtered wastewater in accordance with Laws and Regulations and requirements of the DEPARTMENT. Properly dispose of contaminated filters as Asbestos waste.
   3. Prior to moving ACM from the Asbestos control area, double bag all ACM in polyethylene bags or wrapping, as appropriate, in accordance with Part 2 of this Section.
   4. Use corrugated cartons or drums for disposal of ACM having sharp-edged components such as nails, screws, tin sheeting, and other pointed or sharp surfaces, that may tear polyethylene bags. ACM within the drums or cartons shall be double-bagged.
   5. Transport bagged ACM to an appropriate disposal site in either thirty-gallon capacity metal/fiber drums with tight lids, or in locked steel dumpsters.
   6. Do not dump ACM, whether or not bagged, down chutes. Do not drop or toss

ACM, whether or not bagged.

C. Compatibility:
   1. Use only removal and cleaning materials and equipment that are compatible with the surface from which ACM is being removed and cleaned, as recommended by the manufacturer of the materials.
   2. All vacuums used shall be equipped with HEPA filtration system, such as Model #GA-73 by "NILFISK" and Model #75ASA by Pullman/Holt, or equal.

D. Storage and Removal from the Site:
   1. Retain all stored items in an orderly arrangement allowing maximum access, without impeding traffic, and providing the required protection of materials.
   2. When ACM is kept in the Asbestos control area or adjacent work areas overnight or longer, ACM shall be double-bagged and stored in metal, fully enclosed waste containers (dumpsters) that are securely locked. Do not store ACM at the Site outside of the Asbestos control area.
   3. At least twice a week, and more often if necessary, completely remove all ACM scrap, debris, and waste material from the Site.
   4. Work Areas: Daily, and more often if necessary, inspect the work areas and adjoining spaces, and remove and dispose of all ACM scrap, debris, and waste materials.

E. Cleaning Immediately Following Removal: Following the careful double-bagging of ACM, label each bag appropriately.
   1. Wipe each exposed bag surface with clean, damp cloths prior to transportation to disposal site. Wipe-cloths shall be disposed of as ACM.
   2. Plastic sheeting used for containment or shielding of Asbestos control area shall be carefully removed, folded inward, and double bagged for disposal. Critical barriers are not to be removed until the Asbestos control area has passed a visual inspection by ENGINEER at conclusion of ACM removal operations, and acceptable final clearance air sample results are obtained and accepted by ENGINEER.
   3. After all Asbestos waste is removed from the Asbestos regulated work area, and final clean-up is completed, CONTRACTOR and CONTRACTOR’s CIH will visually inspect all surfaces within the Asbestos regulated work area for residual material or accumulated debris. Re-clean all areas showing dust or residual materials. CONTRACTOR’s CIH shall certify in writing that the area is safe before the warning signs and boundary warning tape are removed and prior to unrestricted entry is allowed.
   4. Encapsulant: Prior to removal of plastic barriers and after clean-up of gross Asbestos contamination and final visual inspection, spray-apply a post-removal (lockdown) encapsulant to ceilings, walls, floors, and other surfaces in the Asbestos removal area in accordance with Laws and Regulations.
   5. Refer to cleaning requirements in Article 3.5 of this Section.

F. Results of air sampling, testing, and monitoring during ACM removal and disposal Work shall not exceed the limits indicated in Article 3.4 of this Section.

3.4 FIELD QUALITY CONTROL

A. Site Tests and Monitoring:
   1. When performing ACM removal and disposal, and when airborne Asbestos dust or fibers are emitted, retain the services of a certified industrial hygienist (CIH), and testing laboratory for monitoring Asbestos exposure levels.
   2. Responsibilities of the Testing Laboratory and CIH Relative to Site Tests and Monitoring:
      a. Equipment: Collect samples of Airborne asbestos concentrations using appropriate air monitoring pumps and Asbestos sampling filters. Pumps shall be calibrated before each sampling cycle.
      b. Perform Asbestos work area air monitoring and personal air monitoring for personnel.
      c. Obtain personal air monitoring samples for the greater of the following: 25 percent of the ACM removal and disposal workers in each shift, or two workers per shift.
      d. Work Area Sampling Procedures:
         i. Initial background air samples shall be taken prior to beginning preparation of the Asbestos control area or containment construction activities. Where proper sealing is not feasible, obtain initial air samples of the ambient conditions prior to installing barriers. Initial air monitoring described in this paragraph will establish the "reference" TWA.
         ii. From start to completion of ACM removal operations, continuously monitor air quality in the Asbestos control area. Frequency of filter changes in sampling devices as required by final permit issued.
         iii. Final clearance air sample results shall not exceed the limited indicated in this Article.
         iv. Location of Sampling Devices: Locate sampling devices within each Work areas, immediately outside all major openings, in both the clean room and decontamination room, downwind of equipment producing a negative pressure (if any), and in the vicinity of temporary Asbestos storage areas. Samples shall represent, with reasonable accuracy, the airborne concentrations of Asbestos fibers that may reach the breathing zones of personnel.
      e. Personal Monitoring: Perform personal sampling and monitoring in accordance with 29 CFR Part 1926.1101 and other Laws and Regulations, and CONTRACTOR’s AHAP accepted by ENGINEER.
      f. Methods of Measurement: Determination of airborne concentrations of Asbestos fibers shall be made using phase contrast microscopy (PCM) and transmission electron microscopy (TEM). PCM is the OSHA Reference Method specified in Appendix A of 29 CFR 1926.1101, and include NIOSH Pub No. 84-100 Method 7400. TEM is the USEPA

(AHERA) method specified in 40 CFR 763, Subpart E, Appendix A.

g. Reporting:
   i. Calculate air monitoring results at the 95 percent confidence level.
   ii. Submit to ENGINEER documentation of fiber counts not more than 24 hours after completing each sampling cycle. Submit with monitoring results data from sampling equipment calibrations. Submit each sample's TWA average count, and the time, date, and exact location where each sample was obtained. Locations of air monitors shall be described by referencing major building locations and features near the monitoring equipment.
   iii. Post at a conspicuous location at the Site results of personal samples within 24 hours of sampling.
   iv. Personal sampling results shall be made available to DEPARTMENT upon request.

h. Local Exhaust System: Pressure differential recordings for each workday shall be reviewed by the CIH on a daily basis and submitted to ENGINEER within 24 hours from the end of each workday. CIH shall notify CONTRACTOR, Subcontractor, and ENGINEER immediately when a variance in the pressure differential could allow migration of Asbestos fibers outside of the Asbestos control area.

i. Acceptable Limits:
   i. Maintain Asbestos fiber concentrations outside NPEs equal to or less than the greater of the following: 0.01 fibers per cubic centimeter or background levels, during Asbestos removal and disposal Work.
   ii. When fiber concentrations rise above the required limit, immediately halt the Work and immediately investigate work procedures to determine the cause. Restart the Work when air quality is within specified limits.
   iii. Personnel shall not be exposed to airborne fiber concentrations in excess of 0.1 fiber per cubic centimeter in an eight-hour TWA (OSHA PEL) and 1.0 fiber per cubic centimeter averaged over a sampling period of 30 minutes (OSHA excursion limit).
   iv. If the PEL or excursion limit is exceeded inside the Asbestos regulated work area, immediately halt the Work and notify DEPARTMENT and ENGINEER. Implement additional engineering controls and work practice controls to reduce airborne Asbestos fiber levels below prescribed limits in the work areas. Do not restart the Work until air monitoring indicates fiber counts within required limits.
   v. When air testing and monitoring following final cleaning indicate a fiber count greater than the limit indicated in this Article in the Work areas, re-clean the areas with unacceptable monitoring results. Retest re-cleaned areas at CONTRACTOR's expenses; ENGINEER reserves the right to require use of a third-party testing laboratory for such re-testing, at CONTRACTOR's

expense. Perform repeated cycles of cleaning and clearance testing until fiber count is within limit indicated in this Article within the Work areas. All costs of re-cleaning and retesting will be at no additional cost to DEPARTMENT.

j. Sampling After Final Clean-up (Clearance Sampling):
   i. Prior to conducting final air clearance monitoring, conduct final visual inspection of final clean-up of each Asbestos regulated work area, accompanied by ENGINEER.
   ii. Final clearance air monitoring shall not begin until final cleaning is acceptable to the CIH. CIH and CONTRACTOR's testing laboratory shall perform area sampling for airborne fibers using aggressive air sampling techniques as defined in Appendix A of 40 CFR Part 763, Subpart E, or as otherwise required by Laws and Regulations.
   iii. Use PCM method as indicated in this Article.
   iv. Submit results to ENGINEER. Results shall be within the limit indicated in this Article.

3.5 CLEANING

A. Throughout the removal and disposal of ACM, maintain the Asbestos control area and adjacent work areas in a standard of cleanliness in accordance with the Contract Documents.
   1. Prevent areas other than the Asbestos control area from becoming contaminated with Asbestos-containing dust and debris. Should areas outside the Asbestos control area become contaminated with Asbestos-containing dust or debris as a consequence of CONTRACTOR's actions, CONTRACTOR shall be responsible for all cleaning required to comply with Laws and Regulations.
   2. All costs incurred in the cleaning or otherwise decontaminating of non-work areas and the contents thereof, shall be paid by CONTRACTOR at no additional cost to DEPARTMENT.
   3. Work areas shall not be blown clean with compressed air. Dry sweeping of Asbestos work areas is prohibited.

B. Progress Cleaning:
   1. Keep Asbestos control area and adjacent work areas clean on a daily, ongoing basis, to the extent practicable.
   2. Prepare loose ACM for disposal by packaging the waste and removing it from the work area to the ACM load-out area.
   3. Inspect and repair polyethylene sheeting and other critical barriers.

C. Final Cleaning:
   1. Except as specified otherwise, "clean" (for the purpose of this Section) means the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.
   2. After final cleaning, air monitoring results shall indicate fiber concentration in

the work areas within the limit specified in Article 3.4 of this Section.

3. Prior to completing the ACM removal and disposal Work, remove all tools, surplus materials, equipment, scrap, debris, and waste from the Site.
4. Cleaning shall progress from the point most remote from the intakes of the negative pressure exhaust units towards the units, as well as from the highest point of the surface being cleaned towards the lowest point.

3.6 DISPOSAL

A. ACM removed by CONTRACTOR is CONTRACTOR's property and shall be disposed of as specified and in accordance with Laws and Regulations. Dispose of ACM at an Asbestos approved and Asbestos-permitted landfill.

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SECTION 22 05 33

HEAT TRACING FOR PIPING

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. Section 33 31 20 – HDPE Sanitary Sewer Pipe

B. Section 22 07 19 – Pipe Insulation

C. Section 33 31 20 – Sanitary Sewer Pipe and Fittings

D. Contract Drawings and general provisions of the Contract Division 1 Specification Sections, and other applicable Specification Sections apply to this Section

1.2 SCOPE OF WORK

A. Furnish and install a complete UL listed system of heaters, components, and controls to prevent sanitary sewer pipe bypass lines from freezing in the event of cold evenings. Refer to drawings for additional scope clarification.

1.3 COORDINATION

A. The heat tracing and all the necessary accessories shall be furnished and installed by the Mechanical Contractor. Electrical Contractor shall provide power supply and related wiring.

1.4 MANUFACTURERS

A. Raychem. B. Thermon.

B. Delta Therm Inc.

PART 2 - PRODUCTS

2.1 MATERIAL

A. Electric heat tracing shall be self-limiting type suitable for temperature maintenance up to 40 degrees F.

B. The heater shall have a self-regulating factor of at least 90 percent. (the percentage reduction, without thermostatic control, of the heater output going from 40 degrees F pipe temperature operation to 150 degrees F pipe temperature operation).

C. The heater shall operate online voltages of 120 volts without the use of transformers.

D. The heater shall be sized according to this table. The required heater output rating is in watts per foot at 50 degrees F. (Heater selection based on 1" fiberglass insulation on HDPE piping).

Pipe Size	Min. Ambient - 10 deg. F	Temp. - 20 deg. F
3" or less	5 watt	5 watt
4"	5 watt	8 watt
6"	8 watt	8 watt
8	2 strips – 5 watt	2 strips – 8 watt
12" - 14"	2 strips - 8 watt	2 strips – 8 watt

E. Connectors and fittings, and indicator lights, and other required installation accessories shall be manufacturers standard recommended for the freeze protection application. The heater shall include a tinnedcopper braided shield, electrically bonded at splice locations, and bonded to the branch circuit ground conductor at the power connection point.

F. All the components and system shall be U. L. listed.

2.2 ELECTRICAL PROTECTION

A. Provide ground fault circuit breakers or other ground fault protection with a 30-mA ground fault trip level.

2.3 CONTROLS

A. Provide heater system controls indicated below:
   1. Outdoor air thermostat control to prevent operation when outside air temperature is above 40F (adjustable).

PART 3 - EXECUTION

3.1 INSTALLATION

A. The entire installation shall comply with the manufacturer's instructions and all the applicable sections of NEC, latest edition.

B. The electrical and mechanical installation details shall strictly adhere to manufacturer's recommended practices.

3.2 TESTS

A. After heater installation and before and after installing the thermal insulation, subject heater to testing using a 1000 VDC megger. Minimum insulation resistance shall be 20 megohms regardless of length. Test both heating cable bus wires to verify the connection of any splices or tees.

B. After all megger testing and insulation is complete, manufacturer shall conduct functional performance test to ensure system is fully operational and submit report.

+ + END OF SECTION + +

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SECTION 22 07 19

PIPE INSULATION

PART 1 - GENERAL

1.1 DESCRIPTION

A. Furnish and install weather resistant pipe insulation for the sewer bypass line, including all incidental work, complete, in strict accordance with the specifications, Construction Contract Drawings and standard details.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 22 05 33 – Heat Tracing

B. Section 33 31 20 – HDPE Sanitary Sewer Pipe

C. Section 33 31 20 – Sanitary Sewer Pipe and Fittings

D. Contract Drawings and general provisions of the Contract Division 1 Specification Sections, and other applicable Specification Sections apply to this Section

1.3 SUBMITTALS

A. Product Data: Submit data indicating insulation and insulation accessories.

B. Project Record Documents: Accurately record actual locations of installation.

1.4 REFERENCES

A. American Society for Testing and Materials (ASTM)
   1. ASTM C534 - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form.
   2. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation.
   3. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation.
   4. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications.
   5. ASTM C1136 - Standard Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation

PART 2 - PRODUCTS

2.1 INSULATION

A. Provide noncombustible thermal-insulation system materials.

B. Fiber glass pipe insulation having an insulating efficiency not less than that of the specified thickness of mineral fiber pipe insulation may be provided in lieu of mineral fiber pipe insulation for aboveground piping.

C. Insulation shall be 1.5” thick and include a smooth reinforced wrinkle resistant vapor retarder jacket.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install pipe insulation and accessories in accordance with manufacturer’s recommendations shown on the Construction Contract Drawings.

B. Insultation shall be provided for all pipe installed less than 4’ below grade.

C. Apply insulation only to the system or component surfaces that have previously been tested and approved by the Engineer.

3.2 FIELD QUALITY CONTROL

A. Request inspection prior to and immediately after placing backfill materials around, inside, and over the pipe.

+ + END OF SECTION + +

SECTION 31 00 00

EARTHWORK

PART 1 - GENERAL

1.1 DESCRIPTION

A. This Section covers excavation, filling/backfilling, compaction, and grading. The Work includes:
   1. Excavating contaminated soil required to implement the Site cleanup associated with the remedial action.
   2. Segregating and stockpiling excavated soils for reuse.
   3. Furnishing or reusing and placing the following materials:
      a. Subgrade Fill
      b. Crushed Stone
      c. Sand
      d. Gravel Subbase
      e. Stream Bed Material
      f. Topsoil
      g. Riprap
      h. Select Borrow
      i. Select Fill
   4. Grading all excavated and disturbed areas.
   5. Geotechnical laboratory testing reused and borrow source materials.
   6. Other miscellaneous earthwork activities.

B. Control of surface water run-off during construction shall be in accordance with Section 31 25 00 – Erosion and Sediment Control and Section 02 72 00 – Construction Water Management.

C. Dewatering to allow for safe excavation below a level of one-foot above groundwater surface shall be in accordance with Section 31 23 19 – Dewatering and Section 02 72 00 – Construction Water Management.

D. Restoration work along the railroad property in the event the CONTRACTOR causes damage requiring repairs to the rail bed subgrade.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 00 33 00 – Existing Conditions

B. Section 01 11 13 – Summary of Work

C. Section 01 33 00 – Submittal Procedures

D. Section 01 45 28 – Chemical Sampling and Analysis

E. Section 01 66 00 – Product Storage and Handling

F. Section 01 57 26 – Dust and Odor Control

G. Section 01 74 19 – Waste Removal, Handling, and Storage

H. Section 02 81 00 – Off-Site Transportation and Disposal

I. Section 02 51 40 – Handling Contaminated Materials

J. Section 02 72 00 - Construction Water Management

K. Section 31 01 50 – Shoring (Sheeting and Bracing)

L. Section 31 23 19 – Dewatering

M. Section 31 25 00 – Erosion and Sediment Control

N. Section 32 92 26 – Seeding and Soil Supplements

O. Section 32 93 00 – Exterior Plants

1.3 REFERENCES

A. The publications listed below, latest edition unless otherwise noted, form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

B. ASTM International (ASTM):
   1. ASTM C 33 Standard Specification for Concrete Aggregates.
   2. ASTM C 88 Standard Test for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
   3. ASTM C 127 Test Method for Specific Gravity and Absorption of Coarse Aggregate.
   4. ASTM C 131 Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
   5. ASTM C 136 Sieve Analysis of Fine and Coarse Aggregates.
   6. ASTM D 422 Standard Test Method for Particle-Size Analysis of Soils.
   7. ASTM D 535 Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
   8. ASTM D 854 Test Method for Specific Gravity of Soils.

9. ASTM D 1140 Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve.
10. ASTM D 1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lb f/ft^3).
11. ASTM D 2216 Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soils and Rock by Mass.
12. ASTM D 2487 Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).
13. ASTM D 2922 Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
14. ASTM D 2974 Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils.
15. ASTM D 3017 Standard Test Method for Water Content of Soil and Rock by Nuclear Methods (Shallow Depth).
16. ASTM D 3740 Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
17. ASTM D 4972 Standard Test Method for pH of Soils.
18. ASTM D 5101 Standard Test Method for Measuring the Soil-Geotextile System Clogging Potential by the Gradient Ratio.
19. ASTM D 5519 Standard Test Methods for Particle Size Analysis of Natural and Man-made Riprap Materials.
20. ASTM D 6938 Standard Test Methods for In-Place density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

C. New York State Department of Transportation (NYSDOT):
   1. NYSDOT SS - Standard Specifications
   2. NYSDOT GCP-14 Procedure for Control of Stone Filling & Rip Rap Items, Geotechnical Control Procedure, Geotechnical Engineering Bureau

D. American Railway Engineering and Maintenance-of-way Association (AREMA) Standard Specifications.

1.4 SUBMITTALS

A. Submit to the ENGINEER for approval the following in accordance with Section 01 33 00 – Submittal Procedures:

B. Borrow Source(s): The CONTRACTOR shall provide the proposed source(s) for borrow material prior to initiation of Work. The name, location, and relevant available/previous laboratory testing data shall be provided.

C. CONTRACTOR's Quality Control Testing Laboratory (QCTL): The name and qualifications of an independent third-party commercial testing laboratory to be used

for borrow source and in-place soil/construction materials testing shall be submitted as soon as possible, but no later than 7 days following Notice to Proceed.

D. Test Reports: The CONTRACTOR shall submit an electronic (pdf format) testing laboratory report to the ENGINEER that has been quality control certified by the QCTL within 48 hours of being received by the CONTRACTOR:
   1. All test reports for borrow source materials.
   2. All applicable imported materials shall meet the New York State soil cleanup objectives (SCOs) for unrestricted use (UU-SCO) or commercial restricted use (CRU-SCO) as determined by chemical analysis described in Section 01 74 19 – Chemical Sampling and Analysis and identified in Part 2 of this Section.
   3. At least one moisture density curve for each type of borrow source material and soil to be reused.
   4. Field in-place density (compaction) test reports.

1.5 JOB CONDITIONS

A. Site Information:
   1. Subsurface soil exploration information is included in the Limited Site Data document. However, variations may exist in the subsurface conditions between exploration locations.
   2. Data provided on subsurface conditions are not intended as representations or warranties of accuracy or continuity between explorations. It is expressly understood that neither the New York State Department of Environmental Conservation (DEPARTMENT) nor the ENGINEER will be responsible for interpretations or conclusions drawn therefrom by CONTRACTOR. Data are made available for the convenience and information of the CONTRACTOR. Additional test borings and other exploratory operations may be made by CONTRACTOR at no cost to DEPARTMENT.
   3. The Site has limited space for operations, especially for stockpiles and materials management. The CONTRACTOR shall sequence the work in such a way as to meet project requirements.

B. Existing Utilities:
   1. Below ground water, sanitary sewer and sanitary sewer line and above ground electric utilities have been identified within the OU01 remediation area. At many of the locations, depths of cover are unknown.
   2. The railroad tracks and sanitary sewer line may be removed/relocated prior to or during work. The CONTRACTOR shall adjust work approach to minimize impacts to those activities.
   3. The CONTRACTOR shall locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during work.
   4. Should unmapped, or incorrectly mapped, piping or other utilities be encountered during excavation, consult the Utility Owner immediately for direction.

Cooperate with the DEPARTMENT and utility companies in keeping respective services and facilities in operation. The CONTRACTOR shall repair damaged utilities to satisfaction of the Utility Owner. Unknown utilities associated with former MGP activities are expected to exist within the Site, manage any contents as described in Section 02 51 40 – Handling Contaminated Materials.

5. Do not interrupt existing utilities serving facilities occupied and used by the DEPARTMENT or others, except when permitted in writing by ENGINEER and then only after acceptable temporary utility services have been provided.
6. See Section 00 33 00 – Existing Conditions for additional information.

C. Use of Explosives: Use of explosives shall not be allowed.

D. Protection of Persons and Property:
   1. Barricade and mark open excavations occurring as part of this work in accordance with applicable standards.
   2. Protect buildings, structures, utilities, railroad tracks, railroad subgrade, sidewalks, pavements, and other facilities designated to remain from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations and truck traffic.

1.6 DEFINITIONS

A. Unsatisfactory Soil/Material:
Unsatisfactory soil/material includes but is not limited to peat and/or highly organic soils (classified as OL, OH, or PT by ASTM D 2487), grubbings, stumps/brush, trash, refuse, debris, frozen soils, soils containing materials greater than the allowable size (see below), saturated soils, fine-grained soils above their liquid limit at the time of compaction, soils which when left in place are either too wet or too dry to compact, and materials deleterious to the solidification process including but not limited to large debris, organic materials and excessively wet conditions, as determined by the ENGINEER.

B. Satisfactory Soil/Material:
Satisfactory soil/material shall meet the requirements specified in Part 2 of this Section and shall be used in areas as shown on the Construction Contract Drawings or as directed by the ENGINEER. In addition, satisfactory soils/materials shall satisfy the following conditions:
   1. Satisfactory soil/materials shall be free of all Unsatisfactory Soil/Material conditions listed above.
   2. Satisfactory soil from on-site sources shall be free of material greater than 4 inches any direction, unless otherwise specified or approved by the ENGINEER. Furthermore, the maximum particle size shall not exceed one half of the specified maximum lift thickness, unless otherwise specified.
   3. Satisfactory soil from off-site borrow sources shall be free of materials greater than 4 inches in any direction, unless otherwise specified or approved by the

ENGINEER. Furthermore, the maximum particle size shall not exceed one half of the specified maximum lift thickness, unless otherwise specified.

4. Satisfactory soils for reuse in the work as backfill shall not exceed the visual screening criteria identified in Section 01 41 00 – Regulatory Requirements (no MGP waste, etc.), as approved by the ENGINEER; and
5. Satisfactory soils excavated and relocated within the former MGP property limits, exceeding the screening criteria in Section 01 41 00 – Regulatory Requirements (MGP waste, etc.) shall be free of materials deleterious to the solidification process including but not limited to large debris, organic materials and excessively wet conditions. Maximize the quantity of materials suitable for solidification and minimizing off-site disposal quantities, as approved by the ENGINEER.

C. Cohesionless and Cohesive Soils:
Cohesionless soils include gravels, sand-gravel mixtures, sands, and gravelly-sands, classified as GW, GP, SW, or SP by the Unified Soil Classification System (ASTM D 2487). Cohesive soils include clayey gravels, sand-clay mixtures, clayey sands, clays, and silts, classified as GC, SC, CL, CH, ML, or MH by the Unified Soil Classification System (ASTM D 2487). Soils classified as GM and SM will be identified as cohesionless only when the "fines" are determined to be non-plastic. Testing required for the classification of soil shall be in accordance with ASTM D 4318, ASTM C 136, ASTM D 422, and ASTM D 1140.

D. Degree of Compaction: Degree of compaction (percent compaction) required is expressed as a percentage of the maximum dry density, at the optimum moisture content. The maximum dry density and optimum moisture content shall be obtained by the test procedure presented in ASTM D 1557.

E. Excavation Limit: The horizontal limit is defined by the outside perimeter of the perimeter excavation identified on the Construction Contract Drawings. The vertical limit is the estimated excavation elevation for excavation as shown on Construction Contract Drawings. An electronic version of the three-dimensional excavation surface is available upon request through the ENGINEER.

F. Remediation Waste and MGP impacted soil: Refer to Section 01 74 19 – Waste Removal, Handling, and Storage.

1.7 QUALITY ASSURANCE

A. Codes and Standards:
Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

B. Work associated with the remedial action construction shall conform to the "DER-10 / Technical Guidance for Site investigation and Remediation" by the New York State

Department of Environmental Conservation, date issued May 3, 2010, including updates.

1.8 RE-USE OF ON-SITE MATERIALS

A. Construction and demolition debris, land clearing debris, drums, waste tires, metal waste, wood waste, remediation wastes, other solid wastes, sanitary wastes, and/or site refuse shall not be used as or incorporated into backfill for any excavation. These materials shall be handled as wastes for proper off-site disposal as specified in Section 01 74 19 – Waste Removal, Handling, and Storage and Section 02 81 00 – Off-Site Transportation and Disposal.

B. Suitable site soil outside the confirmed horizontal and vertical excavation limits of removed Remediation Waste may be used in upland areas of the Site as Subgrade Fill to achieve subgrade elevations or within the Cover system.

C. Within the Restoration Area, suitable topsoil outside the confirmed horizontal and vertical excavation limits of removed Remediation Waste shall be considered satisfactory material and shall be relocated to and used in the temporary nursery and then reused to restore the Restoration Area. Unsuitable sediments shall be properly disposed of off-site.

PART 2 - PRODUCTS

2.1 SUBGRADE FILL

A. Subgrade Fill shall be reused suitable excavated soil or imported, as necessary, to achieve the subgrade elevations indicated on the Construction Contract Drawings. Subgrade Fill shall consist of well graded soil suitable for embankment construction (cohesionless soil). It shall be free from frozen materials, perishable rubbish, peat, and other Unsatisfactory Soil/Material. Subgrade Fill shall not contain material more than 35 percent passing the No. 200 sieve and a maximum stone size of six inches. It shall be of such a nature and character that it can be compacted to the specified density (Sub-Part 3.12). Imported Subgrade fill shall be limited with preference given to reusable materials from excavations.

B. The moisture content shall be sufficient to provide the required compaction and a stable embankment. In no case shall the moisture content exceed 4 percent above optimum, which shall be determined in accordance with ASTM D 1557.

C. Imported Subgrade Fill shall meet the Commercial Reuse Soil Cleanup Objectives (CRU-SCO) as described in 6 NYCRR 375, Table 375-6.8(a) and confirmed in accordance to Section 01 45 28 – Chemical Sampling and Analysis.

D. Reused Subgrade fill shall meet the Screening Criteria identified in Section 01 41 00 – Regulatory Requirements (no MGP waste, etc.), as approved by the ENGINEER.

2.2 CRUSHED STONE

A. Crushed Stone shall be used in the construction of temporary stone check dams, the stabilized construction entrance and decontamination pad. Crushed stone shall consist of material meeting the requirements of NYSDOT SS Crushed Stone shall consist of size designation 2 for Gravel Surface and Pipe Bedding, 3A for 2-inch Crushed Stone or size designation 4A for 3-inch Crushed Stone identified in NYSDOT SS Table 703-4 and described in Section 703.

2.3 SAND

A. Sand shall be used in the construction of decontamination pad. Sand shall consist of material meeting the requirements of NYSDOT SS 703-03, Mortar Sand.

2.4 GRAVEL SUBBASE

A. Gravel Subbase shall be provided to construct the gravel buildup for gravel areas, asphalt paved areas (as required), railroad bed subgrade (as required), and access roads for temporary accesses used during construction and as depicted on the Construction Contract Drawings.

B. Gravel Subbase shall meet the requirements for NYSDOT SS Crushed Gravel Type 2 or Type 4 identified in NYSDOT SS Table 733-04A and described in Section 733-04.

2.5 STREAM BED MATERIAL

A. Stream Bed Material shall be provided to construct the bottom of the restored Brandy Brook channel as depicted in the Construction Contract Drawings.

B. Stream Bed Material shall be prepared on-or off site from a mix of three (3) materials identified below in the following proportions by volume:
   1. 35 percent of NYSDOT SS Section 703.02 Screened Gravel Type 4A.
   2. 35 percent of NYSDOT SS Section 703.02 Screened Gravel Type 1A.
   3. 30 percent of rounded to sub-rounded rock between 3 inches and 10 inches in size.

2.6 TOPSOIL

A. Topsoil shall be used for the following purposes:
   1. Final restoration layer for vegetated Upland Areas of the Site.
   2. Final restoration layer for Restoration Areas of the Site.
   3. As a component of brush mattress, brush layer, and rock with soil and vegetation

restoration methods.

4. A proportion of the Planting Soil described in Section 32 93 00 — Exterior Plants.

B. Topsoil shall be obtained from natural sources with the following properties:
   1. Loose, friable topsoil, free of refuse, brush, stumps, roots, rocks, cobbles, stones, noxious weeds, litter and any other materials that are longer than 1 inch in any dimension and which will prevent the formation of a suitable seed bed.
   2. Classified as Loamy Sand in accordance with the United States Department of Agriculture (USDA) soil textural classification system.

C. Organic matter shall not constitute less than 4 percent or more than 20 percent as determined by loss-on-ignition testing of oven dried samples.

D. pH shall measure between 5.5 and 7.5.

E. Topsoil shall meet the Unrestricted Use Soil Cleanup Objectives (UU-SCO) as described in 6 NYCRR 375, Table 375-6.8(a) and confirmed in accordance to Section 01 45 28 – Chemical Sampling and Analysis.

F. Soil Nutrient Analysis: Samples of the Topsoil shall be submitted to the Cornell University Nutrient Testing Laboratory or other similarly qualified testing facility. Nutrient analysis shall include testing for concentrations of Extractable Nutrients (P, K, Ca, Mg, Fe, Mn, Zn, Cu, B), Extractable Heavy Metals (Pb, Cd, Ni, Cr), and Extractable Aluminum; Cation Exchange Capacity; and Percent Base Saturation. In conjunction with other analytical testing noted in Sub-Part 2.10 (pH, Organic Content, and Soluble Salts), the laboratory shall recommended augmentation to the Topsoil to adjust the nutrients and pH levels for optimization as a growing medium for the given permanent seed mixtures (specified in Section 32 92 26 – Seeding and Soil Supplements). Recommendations shall include lime and fertilizer applications rates.

G. Topsoil includes Wetland Topsoil, which shall meet all of the requirements of Topsoil with the following exceptions:
   1. All imported Wetland Topsoil used in the Restoration Area shall meet the requirements for Class A Sediment Criteria as determined by chemical analysis described in Section 01 45 28 – Chemical Sampling and Analysis.
   2. Reused Wetland Topsoil that has become impacted by MGP-impacted materials shall not be used as Wetland Topsoil and shall be removed from the Site.

H. Railroad materials, including but not limited to: Rail Bed Subgrade Backfill, Ballast Stone, Sub-Ballast Stone, Ties and Rail Materials shall match existing materials and meet the requirements of applicable AREMA Standard Specifications and shall be installed in accordance with Part 3.17.

2.7 SELECT BORROW

A. Select Borrow shall consist of excavated soils from beyond the former MGP property and outside the ISS limits, or imported material and shall be reused as part of subgrade fill or cover systems (Type I or Type II), as depicted in the Construction Contract Drawings.

B. The Select Borrow shall consist of materials meeting the requirements of NYSDOT SS 733-09 Select Borrow, with the following exceptions: no particle greater than 6 inches in maximum dimension; for sampling, the material shall be considered stockpiled; and for gradation it shall be a blend of excavated materials such that variations in gradation are limited, as approved by the ENGINEER.

C. Reused Select Borrow shall meet the Visual Screening Criteria in Section 01 41 00 Regulatory Requirements, as approved by the ENGINEER.

D. Imported Select Borrow shall meet the Commercial Reuse Soil Cleanup Objectives (CRU-SCO) as described in 6 NYCRR 375, Table 375-6.8(d) and confirmed in accordance to Section 01 45 28 – Chemical Sampling and Analysis.

2.8 SELECT FILL

A. Select Fill shall consist of excavated soils from outside the ISS area and shall be reused as part of subgrade fill or cover systems (Type I or Type II), as depicted in the Construction Contract Drawings.

B. The Select Fill shall consist of materials meeting the requirements of NYSDOT SS 733-09 Select Fill, with the following exceptions: no particle greater than 3 inches in maximum dimension; and for gradation it shall be a blend of excavated materials such that variations in gradation are limited, as approved by the ENGINEER. Reused Select Fill shall meet the Visual Screening Criteria in Section 01 41 00 Regulatory Requirements, as approved by the ENGINEER.

C. Imported Select Fill shall meet the Commercial Reuse Soil Cleanup Objectives (CRU-SCO) as described in 6 NYCRR 375, Table 375-6.8(d) and confirmed in accordance to Section 01 45 28 – Chemical Sampling and Analysis.

2.9 BORROW SOURCE TESTING

A. Borrow source testing, including geotechnical characterization requirements, shall be conducted on all soil and aggregates proposed for construction, including imported and reused. Individual stockpiles of materials to be reused shall be a blend of excavated materials such that variations in gradation are limited and considered separate sources, as approved by the ENGINEER. The QCTL requirements and

frequency shall be as listed below.

1. Subgrade Fill[5]:

Test	Methodology[1]	Frequency[2]
Sieve Analysis	ASTM C 136	1 test/500 cy
Modified Proctor	ASTM D 1557	1 test/500 cy

2. Crushed Stone[5]:

Test	Methodology[1]	Frequency[2]
Sieve Analysis	ASTM C 136	1 test/500 cy

3. Sand[5]:

Test	Methodology[1]	Frequancy[2]
Sieve Analysis	ASTM C 136	1 test/500 cy

4. Gravel Subbase[5]:

Test	Methodology[1]	Frequency[2]
Particle-Size Analysis (to #200 Sieve)	ASTM D 422	1 test/500 cy
Modified Proctor	ASTM D 1557	1 test/500 cy

5. Stream Bed (Screened Gravel Type 1A and 4A components)[5]:

Test	Methodology[1]	Frequency[6]
Particle-Size Analysis (to #200 Sieve)	ASTM D 422	1 test/1000 cy
Modified Proctor	ASTM D 1557	1 test/1000 cy

6. Topsoil[5, 7]:

Test	Methodology[1]	Frequency[2]
Particle-Size Analysis [3] (with hydrometer analysis)	ASTM D 422	1 test/2,000 cy (Note 3)
Organic Content	ASTM D 2974	1 test/2,000 cy
pH	ASTM D 4972	1 test/2,000 cy
Soluble Salt Content	ASTM D 4542	1 test/2,000 cy
Soil Nutrient Analysis [4]	(multiple)	1 test/2,000 cy

7. Riprap:

Test	Methodology[1]	Frequency[2]
Particle-Size Analysis	ASTM D 5519 Method A	1 test/source/material

8. Select Borrow[5]:

Test	Methodology[1]	Frequency[2]
Particle-Size Analysis (to #200 Sieve)	ASTM D 422	1 test/500 cy
Modified Proctor	ASTM D 1557	1 test/500 cy

9. Select Fill[5]:

Test	Methodology[1]	Frequency[2]
Particle-Size Analysis (to #200 Sieve)	ASTM D 422	1 test/500 cy
Modified Proctor	ASTM D 1557	1 test/500 cy

Notes:

1. Other testing methods may be considered acceptable, based on prior approval of the ENGINEER.
2. Testing frequency shall be as listed, at any change in borrow source, or at any discernable change in material delivered to the Site (as determined by the ENGINEER).
3. The percentages of sand, silt, and clay in the soil shall be calculated and reported based on the results of the particle size analysis. These components shall be used to perform a Soil Textural Class Analysis in accordance with the USDA Soil Textural Classification System. The USDA textural class for the soil shall be included in the report.
4. See Sub-Part 2.06F.
5. All materials used in areas beyond the former MGP property shall meet the New York State soil cleanup objectives (SCOs) for unrestricted use (UU-SCO) as determined by chemical analysis described in Section 01 45 28 – Chemical Sampling and Analysis. All imported materials used within the former MGP property (except as identified in Note 7) shall meet the New York State soil cleanup objectives (SCOs) for commercial restricted use (CRU-SCO) as determined by chemical analysis described in Section 01 45 28 – Chemical Sampling and Analysis. The former MGP property is within the two Parcels identified on Construction Contract Drawing C-101.
6. Testing frequency shall include at least 2 tests per borrow source, or at any discernable change in material delivered to the Site (as determined by the ENGINEER).
7. All imported Wetland Topsoil used in the Restoration Area shall meet the requirements for Class A Sediment Criteria as determined by chemical analysis described in Section 01 45 28 – Chemical Sampling and Analysis.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions under which excavating, filling, and grading are to be performed and notify the ENGINEER, in writing of conditions detrimental to the

proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

3.2 EXCAVATION

A. General:
Excavation consists of removal and disposal of material encountered when establishing required subgrade elevations. During construction, excavation shall be performed in a manner and sequence that will provide proper drainage at all times.

B. Most material to be excavated for the project is soil classified as manufactured gas plant remediation waste which is impacted with volatile organic compounds (VOC) and polycyclic aromatic hydrocarbons (PAHs) at concentrations exceeding the soil cleanup objectives (SCOs) for unrestricted use (beyond the former MGP property) or commercial restricted use (withing the former MGP property).

C. Site Excavation:
   1. Conform to elevations and dimensions shown on the Construction Contract Drawings within a vertical tolerance of one tenth of a foot (0.1 foot).
   2. Final horizontal and vertical excavation limits shall be determined by confirmation testing results as described in Section 01 45 28 – Chemical Sampling and Analysis and approved by the ENGINEER.

3.3 DEWATERING

A. Dewatering of excavations will be required to handle shallow groundwater at some locations within the limit of work. Refer to Section 31 23 19 – Dewatering.

B. Water levels shall be maintained low enough to facilitate stable excavating; allow for confirmation testing at the bottom of excavation; and backfilling and compacting in the dry.

3.4 STABILITY OF EXCAVATIONS

A. Slope sides of excavations to comply with applicable codes and ordinances. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.

B. Maintain sides and slopes of excavations in a safe condition until completion of backfilling, or longer if specified or directed by the ENGINEER.

C. Where excavation sidewalls cannot be sloped properly to meet safety requirements, trench excavations must be supported by an engineered shoring and bracing system.

D. The proposed OU01 soil remediation will be conducted along an existing railroad bed via open excavation procedures. Excavations adjacent to the railroad less than 7 feet from the rail ties shall be conducted in a manner to maintain the existing rail bed subgrade stability using a maximum of 1 vertical to 1 horizontal (1:1) cut slope or flatter if determined or directed by the contractor's designated competent excavation person and the NYSDOT inspector based on observed soil conditions.

E. Excavations may be adjacent to or undercut the existing sanitary sewer line. These excavations may not start until the temporary bypass has been installed, is fully operational and the sanitary sewer line has been purged as described in Section 01 11 13 Summary of Work.

F. Excavations outside the limits of solidification shall be engineered by the CONTRACTOR and may be completed either using sloped/benched excavations, engineered support system, or sufficiently solidified material to safely achieve the excavation limits shown on the Construction Contract Drawings, as described in Section 31 01 50 Shoring (Sheeting and Bracing) and the work plan.

3.5 SHORING AND BRACING

A. Provide materials for shoring and bracing, such as sheet piling, uprights, stringers, slide-rail systems and cross-braces, in good serviceable condition.

B. Establish requirements for excavation shoring and bracing to comply with codes and ordinances of authorities having jurisdiction. Refer to Section 31 01 50 – Shoring (Sheeting and Bracing).

3.6 SOIL/MATERIAL HANDLING AND STORAGE

A. During daily excavation activities, locate and retain soil and in constructed soil stockpile containment areas for reuse or disposal as specified in Section 01 74 19 – Waste Removal, Handling, and Storage.

B. Maintain all stockpiles a sufficient distance from the excavation to prevent loading of the slope and to provide for stability of the slope.

C. Take care not to comingle clean imported materials with Remediation Waste.

3.7 COLD WEATHER PROTECTION

A. Protect excavation bottoms and sidewalls against freezing when atmospheric temperature is less than 35°F.

3.8 CLOSING ABANDONED UNDERGROUND UTILITIES

A. Close open ends of abandoned underground utilities indicated to remain permanently with closures sufficiently strong to withstand pressures which may result after closing.

B. Close open ends of metallic conduit and pipe with threaded galvanized metal caps or plastic plugs, or other suitable method for the type of material and size of pipe. Do not use wood plugs.

C. Close open ends of concrete and masonry utilities with not less than 8" thick brick masonry bulkheads, constructed to completely fill the opening.
   1. Wet brick before laying. Lay brick in mortar so as to form a full bed with ends and side joints in one operation. Joints shall not be more than three-eighths (3/8) of an inch wide. Protect fresh masonry from freezing or from rapid drying, as necessary, and maintain protection until mortar has set.

3.9 GRADING

A. General:
   The CONTRACTOR shall uniformly grade areas within the limit of work. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

B. Finish surfaces to be free from irregular surface changes with the exception of the restoration area where irregular mounding is required as indicated on Construction Contract Drawings C-112 through C-114.

3.10 SUBGRADE PREPARATION

A. Remove vegetation, deleterious materials, debris, unsatisfactory soil materials, and obstructions, to establish subgrade prior to placement of fills. Bench, plow, strip, scarify, or break-up sloped surfaces steeper than 1 vertical to 4 horizontals so that fill material will bond with existing surface.

B. Subgrade Compaction:
   1. Subgrade surfaces shall be examined by the ENGINEER. The examination may include visual observations, hand-rod probing, and compaction testing.
   2. Any loose, soft, wet, frozen, or otherwise unsuitable soils observed should either be re-compacted or undercut to a suitable subgrade, as determined by the ENGINEER.
   3. Any undercut/excavated material should be replaced/backfilled with granular subgrade fill, as approved by the ENGINEER. Fill materials should be placed and compacted as specified herein.

4. If excavation activities impact the existing rail bed subgrade or sanitary sewer line bedding, backfill activities for subgrade restoration must be performed in conformance with applicable American Railway Engineering and Maintenance-of-Way (AREMA) standards specifications or utility owner requirements and as indicated on the Construction Contract Drawings.

3.11 BACKFILL AND FILL

A. General:
Place acceptable soil/aggregate of the type indicated on the Construction Contract Drawings in successive layers as required to fill from subgrade to final grade. Do not place backfill or fill material below water or on surfaces that are excessively muddy, frozen, or contain frost or ice which reduces the ability to achieve compaction.

B. Backfill excavations as promptly as work permits, but not until completion of the following:
   1. Acceptance by ENGINEER of confirmation testing in areas within the excavation limit, as identified in Section 01 45 28.
   2. Surveyed record of confirmation test locations and final excavation elevations and limits.
   3. Removal of trash, debris and any accumulated water.
   4. Acceptance of the subgrade preparation by ENGINEER.

C. Fill/Backfill Placement:
   1. Place backfill and fill materials to be compacted by heavy compaction equipment in loose depth layers not more than as indicated for each type of material. The loose lift depth shall be reduced to not more than 6 inches for material compacted by hand-operated tampers or hydraulic equipment:
      a. Subgrade Fill – 12 inches
      b. Gravel Subbase – 12 inches
      c. Gravel Subbase for railroad bed subgrade (if required) – 8 inches
      d. Gravel Base – 6 inches
      e. Stream Bed – 12 inches
      f. Select Borrow – 12 inches
      g. Select Fill – 6 inches
      h. Gravel Surface – single lift
   2. Place topsoil in layers not more than 6 inches in loose depth.
   3. Place riprap and Crushed Stone in a single loose layer depth, as required to establish a final installed 12-inch depth.
   4. Place rock in layers not more than 6 inches in loose depth.
   5. Place Sand in lifts sufficient for compaction and loads to be applied at the Vehicle Decontamination Pad.

D. Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content. Compact each layer to required percentage of maximum dry density (Sub-Part 3.12).

E. Place backfill and fill materials evenly adjacent to structures/utilities, to required elevations. Take care to prevent wedging action of backfill against structures/utilities by carrying the material uniformly around structure/utility to approximately same elevation in each lift.

3.12 COMPACTION

A. General:
   1. Control soil/aggregate compaction during construction providing minimum percentage of density specified for each material in each area classification.

B. Percentage of Maximum Density Requirements:
   Compact soil/aggregates to not less than the following percentages of maximum dry density (determined in accordance with ASTM D 1557).
   1. Vegetated Area, Restoration Area, and Brandy Brook:
      a. Compact Subgrade Fill, Select Borrow, Gravel Surface and Select Fill to at least 93 percent of maximum dry density.
      b. Compact Stream Bed to at least 90 percent of maximum dry density.
      c. Compact Topsoil minimally with dozer tracking or tract similar.
      d. Compact Rock with an excavator bucket to establish a firm surface as determined through visual observation.
      e. Compact Riprap and Crushed Stone with an excavator bucket to establish a firm surface as determined through visual observation.
   2. Gravel Areas:
      a. Compact Subgrade Fill and Gravel Subbase to at least 95 percent of maximum dry density.
      b. Compact Subgrade Fill to at least 93 percent of maximum dry density.
      c. Compact Riprap with an excavator bucket to establish a firm surface as determined through visual observation.
   3. Areas beyond the former MGP property, non-Restoration Areas (railroad property):
      a. Compact Gravel Subbase and Select Fill to Subgrade Fill to at least 95 percent of maximum dry density.
      b. Compact Select Borrow to at least 93 percent of maximum dry density to depths shallower than 4 feet below final grade and to at least 90 percent of maximum dry density at depths deeper than 4 feet below final grade.

C. Moisture Control:
   1. Where subgrade or a layer of soil must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil

material, in proper quantities to prevent free water appearing on surface during or subsequent to compaction operations.

2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
3. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory level.

D Method:

1. Installation of granular materials including Subgrade Fill, Gravel Subbase, Select Fill, and Stream Bed shall be completed by vibratory methods of compaction using a steel drum roller (heavy compaction equipment) or plate compacter (hand operated tamper).

3.13 RIPRAP INSTALLATION

A. General: Install riprap on prepared subgrade lined with nonwoven geotextile.

B. Protection of Nonwoven Geotextile: Mechanical means of stone installation shall not displace or damage the underlying nonwoven geotextile. The height of stone drop, and size of material load shall be managed as required to protect the geotextile. Damaged geotextile shall be uncovered and repaired/replaced.

C. Dumped Riprap: Stones for riprap shall be placed on the prepared subgrade in a manner which will produce an evenly graded mass of stone with the minimum practical percentage of voids. The entire mass of stone shall be placed so as to conform with the lines, grades, and thicknesses shown on the Construction Contract Drawings.

D. Riprap shall be placed to its full layer thickness in one operation. Placing of riprap in layers, or by dumping into chutes, or by other methods likely to cause segregation will not be permitted.

E. The final riprap surface will require manipulation by hand or small mechanical equipment to adjust the projections of the stones, to fill in void spaces, and establish a uniform surface.

3.14 FIELD QUALITY CONTROL TESTING

A. Quality Control Testing During Construction:

1. QCTL shall examine and test subgrade surfaces and fill/backfill layers. Before further construction work is performed, test results meeting the requirements of Sub-Part 3.12B of this Section shall be obtained.
2. Perform field density tests in accordance with ASTM D 6938 (nuclear method), or other ENGINEER approved methods, as applicable.

a. Gravel Areas, Access Road and areas beyond the former MGP property (i.e., railroad and city properties): For each layer of fill placed, conduct one compaction test for every 1,250 square feet, but in no case less than 2 tests per active lift.
b. Vegetated Area, Restoration Areas, and Brandy Brook: For each layer of fill placed, conduct one compaction test for every 2,500 square feet, but in no case less than 2 tests per active lift.

3. If in opinion of ENGINEER, based on QCTL reports and inspection, subgrade or fills which have been placed below specified density, provide additional compaction and testing at no additional expense to the DEPARTMENT.

3.15 MAINTENANCE

A. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

B. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

C. Reconditioning Compacted Areas:
Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

3.16 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Removal from the Site:
1. Remove waste materials, including excess, unsuitable and unacceptable excavated material, trash, and debris, and properly dispose of it off-site in accordance with Section 02 81 00 – Off-Site Transportation and Disposal.

3.17 RAILROAD EXCAVATION AND RESTORATION

A. The excavation adjacent to the railroad bed shall be completed using supported excavations designed by the CONTRACTOR. Excavations adjacent to the rail road that may impact the approximate railroad live loading influence line shall be conducted in a manner to maintain the existing rail bed subgrade stability using a maximum of 2 horizontal to 1 vertical (2H:1V) cut slope or flatter if determined of directed by the CONTRACTOR's designated Competent Person and the NYSDOT.

B. If excavation activities impact the existing rail bed subgrade, backfill activities for subgrade restoration must be performed in conformance with applicable AREMA Standard Specifications and outlined herein:
1. Historic groundwater levels (i.e., September 2019) indicate that the two excavations on railroad property are expected to occur several feet below groundwater surface. Contractor shall provide adequate dewatering facilities to maintain excavated areas sufficiently dry from groundwater and/or surface water

runoff to allow proper backfill and compaction and that will not adversely affect construction procedures nor cause excessive disturbance of underlying ground, in accordance with Section 31 23 19 - Dewatering.

2. The Rail Bed Subgrade Backfill shall consist of gravel meeting the requirements of the NYSDOT Standard Specification (SS) Crushed Gravel Type 2 or Type 4 identified in NYSDOT SS Table 733-04A and described in Section 733-04. It shall be of such a gradation and material that it can be compacted to the minimum specified dry density indicated below
3. Rail Bed Subgrade Backfill shall be compacted to minimum of 95% of Modified Proctor (ASTM D-1557). The rail Bed Subgrade Backfill shall be placed in a maximum 8-inch loose lift. In-place density and moisture testing per ASTM D-6938 at a minimum rate of 1 test per 50 linear feet shall be taken and documented during the WORK.

+ + END OF SECTION + +

SECTION 31 01 50

SHORING (SHEETING AND BRACING)

PART 1 - GENERAL

1.1 DESCRIPTION

A. Furnish and install an engineered shoring system where called for or where necessary to safely achieve the excavation limits shown on the Construction Contract Drawings, or where required by the CONTRACTOR as recommended/directed by their structural/geotechnical design engineer for protection of structures, and/or where required to meet safety requirements of the U.S. Department of Labor's Construction Safety Act designated as Title 29-LABOR-Part 1926 Safety and Health Regulations for Construction, Sub-Part P, Sections 926.650 through 653.

B. Support trench excavations with an engineered shoring system (sheeting, shoring, bracing, or other ENGINEER approved methods) in areas where excavation sidewalls cannot be sloped properly to meet safety requirements and maintain stable excavation bottom conditions for sampling, backfilling and compaction.

C. The planning, design, and monitoring of engineered shoring systems shall be submitted by CONTRACTOR and stamped by a structural/geotechnical design engineer registered in the State of New York.

D. Drive sheets as shown on Construction Contract Drawings, such that sheeting is beyond the limits of MGP-Impacted materials, allowing for complete removal of identified MGP-Impacted materials.

E. Location shown on Construction Contract Drawings is subject to change based on additional pre-excavation explorations and sampling by the DEPARTMENT.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 11 13 – Summary of Work

B. Section 01 33 00 – Submittal Procedures

C. Section 31 00 00 – Earthwork

D. Section 31 25 00 – Erosion and Sediment Control

1.3 QUALITY ASSURANCE

A. The consequences of an excavation failure, the location/configuration/depth of the

excavation, and/or the desire to limit the disturbance associated with the excavation may necessitate the use of an engineered shoring system to safely support excavations during excavation and backfilling.

B. Where an engineered shoring system is required to meet safety requirements, is called for on the Construction Contract Drawings, and/or is required by the CONTRACTOR's design engineer due to changed or unforeseen conditions, the CONTRACTOR shall have a registered professional engineer design an engineered shoring system that will safely support the excavation and all adjacent structures/buildings/railroad infrastructure/utilities during installation, excavating, backfilling, and removal activities. In addition to the design of lateral support, the following minimum design criteria must be considered:
   1. Stability of the excavation against blow-in or bottom heave.
   2. Protection of adjacent structures/buildings/railroad infrastructure/utilities from movement; and/or
   3. Desire to minimize internal bracing to the extent practical in order to facilitate access to perform the work required within the excavation.

1.4 SUBMITTALS

A. Submit an engineered shoring system design plan, sealed by a licensed New York Professional engineer, to the ENGINEER for informational purposes at least 14 business days prior to proposed installation.

B. Submit manufacturer installation guidelines, for information.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Trench Box, as necessary, best adapted to CONTRACTOR design requirements.

B. Steel Sheeting: Interlocking type with section best adapted to CONTRACTOR design requirements.

C. Bracing/Walers, as necessary, best adapted to CONTRACTOR design requirements.

D. Anchors, as necessary, best adapted to CONTRACTOR design requirements.

PART 3 - EXECUTION

3.1 INVESTIGATION/DATA COLLECTION

A. Test pitting: Test pit at locations, as deemed necessary by the CONTRACTOR's

design engineer, to gather information/data required to perform the shoring system design.

B. Soil Sample and Testing:
   1. Perform in situ testing to identify soil properties, as required to perform the shoring system design.
   2. Collect soil samples and perform laboratory analysis to evaluate the soil properties, as required, to perform shoring system design.

3.2 INSTALLATION

A. Driving of Sheeting:
   1. Install sheeting and bracing in accordance with accepted practices and in compliance with State and Federal safety requirements.
   2. Furnish skilled and experienced workmen with adequate equipment to produce a safe structure.
   3. Drive sheeting prior to excavation.
   4. Fill voids outside the driven sheeting and compact, as necessary, to hold trench sides in place.

B. Withdrawal of Sheeting:
   1. Remove as the work progresses in a manner to prevent loosening and caving of the sides of the excavation and to prevent damage to finished work or adjacent structures and property.
   2. Fill all voids as soon as sheeting is withdrawn.

C. Sheeting Left in Place:
   1. Sheeting shall only be left in place where approved by the ENGINEER.
   2. Sheeting shall not be left within 3 feet of finished grade.

+ + END OF SECTION + +

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SECTION 31 05 19

GEOTEXTILES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Furnish and install nonwoven geotextile and demarcation layer as shown on the Construction Contract Drawings and as specified in this Section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 33 00 - Submittal Procedures

B. Section 31 00 00 - Earthwork

1.3 REFERENCES

A. The publications listed below (latest edition unless otherwise noted) form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

B. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

1. ASTM D 4354 Standard Practice for Sampling of Geosynthetics for Testing
2. ASTM D 4355 Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
3. ASTM D 4491 Standard Test Methods for Water Permeability of Geotextiles by Permittivity
4. ASTM D 4533 Standard Test Method for Trapezoid Tearing Strength of Geotextiles
5. ASTM D 4595 Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method
6. ASTM D 4632 Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
7. ASTM D 4751 Standard Test Method for Determining Apparent Open Size of a Geotextile
8. ASTM D 4833 Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
9. ASTM D 4873 Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls
10. ASTM D 4884 Standard Test Method for Strength of Sewn or Thermally Bonded Seams of Geotextiles

1.4 SUBMITTALS

A. Product Data: Submit geotextile and demarcation layer manufacturer's specifications, for approval by ENGINEER.

B. Submit 16-oz single layer geotextile product information similar to Table 31 05 19-1, as alternate for approval by ENGINEER.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Geotextile:
   1. Geotextile shall be composed of synthetic fibers formed into nonwoven fabric. Fibers used in manufacture of the geotextiles shall consist of polypropylene, polyvinyl chloride, nylon, polyolefins, polyamides, or polyester. The fibers shall be formed into network such that the filaments or yarns retain dimensional stability relative to each other, including selvages. The geotextile shall contain stabilizers and/or inhibitors to make the fibers resistant to deterioration resulting from exposure to sunlight, water, or heat. The geotextile shall be free of defects or flaws which will affect the physical properties. Use a Mirafi S800 geotextile, as manufactured by TenCate Mirafi, or as approved by ENGINEER. Provide a geotextile meeting the properties of Table 31 05 19-1:

Table 31 05 19-1: Required Physical Properties of Nonwoven Geotextile

Property	Units	Test Method	Value
Sewn Seam Strength	lbs	ASTM D4632	180
Grab Tensile Strength	lbs	ASTM D4632	220
Grab Tensile Elongation	%	ASTM D4632	50
Puncture Strength	lbs	ASTM D4833	80
Water Flow Rate	gpm/sf	ASTM D4491	95
Apparent Opening Size	Sieve	ASTM D4751	80
Trapezoidal Tear	lbs	ASTM D4533	90
Unit Weight	oz/yd^2	ASTM D5261	8
UV Resistance	%	ASTM D4355	70[a]

Table Notes:

1. All numerical values except AOS and ultraviolet stability represent minimum average roll values (MARV), in the weaker principal direction.
2. AOS value is a maximum average roll value or MaxARV.
3. Ultraviolet stability is measured as a minimum average percentage.

B. Demarcation Layer:

1. Demarcation layer shall be composed of synthetic fibers formed into nonwoven fabric. Fibers used in manufacture of the geotextiles shall consist of polypropylene, polyvinyl chloride, nylon, polyolefins, polyamides, or polyester. The fibers shall be formed into network such that the filaments or yarns retain dimensional stability relative to each other, including selvages. The demarcation layer shall be orange, have a minimum weight of 3.5 ounces per square yard and be marked with "DANGER DO NOT DIG" or similar approved wording. Use a Hi-Vis orange nonwoven geotextile, as manufactured by IWT Cargo-Guard, or as approved by ENGINEER.

PART 3 - EXECUTION

3.1 APPLICATION

A. Geotextile shall be installed below stockpile areas and in vehicle decontamination pad(s), as shown on the Construction Contract Drawings. Use two layers of 8-oz as equivalent to one layer of a 16-oz geotextile, when installed with crossed seams.

B. Demarcation Layer shall be installed within the former MGP property wherever a 1-foot or 4-foot-thick cover system is installed, as shown on the Construction Contract Drawings.

3.2 SURFACE PREPARATION

A. Surfaces on which the geotextile will be placed shall be prepared to a relatively smooth surface conditions. Surfaces shall be free from obstruction, debris, depressions, erosion feature, or vegetation. Any irregularities shall be removed so as to ensure continuous, intimate contact of the geotextile with the surface. Any loose material, soft or low-density pockets of material, will be removed, filled with suitable subgrade fill, and compacted. Erosion features such as rills and gullies must be graded out of the surface before geotextile placement.

3.3 INSTALLATION

A. Geotextile Fabrics:
   1. Place in the manner and at the locations shown on the Construction Contract Drawings.
   2. Prior to installation, fabric delivered to the site not meeting the requirements outlined in Sub-Part 2.1 of this Specification shall be rejected.
   3. At the time of installation, fabric shall be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transportation or storage.
   4. Place with the long dimension parallel to the long axis of the stockpile area or vehicle decontamination pad and lay smooth and free of tension, stress, folds, wrinkles, or creases.
   5. Provide a minimum width of 12 inch of overlap for bedding fabric applications.
   6. In the presence of wind, weight the materials with sandbags until final covers are installed.
   7. Care shall be taken to assure that any underlying materials are not damaged during placement of geotextiles.
   8. Care shall be taken to assure that stones, mud, and dirt are not entrapped in the geotextile during placement and seaming operations.
   9. Overlap joints and seams shall be measured as a single layer of cloth.
   10. The fabric shall be turned down and buried a minimum of 2 feet at all exterior limits or as indicated on the Construction Contract Drawings.
   11. Place so that the upstream strip of fabric will overlap the downstream strip.
   12. Protection of Fabrics:
      a. Exercise necessary care while transporting, storing and installing the fabric to prevent damaging it.
      b. Protect from prolonged direct exposure to sunlight.
      c. Repair all damaged areas of the fabric by placing another piece of fabric of sufficient size to extend a minimum of 1.0 foot beyond the limits of the damage in all directions over the damaged area. Sew repairs as described below.
      d. Do not leave exposed more than 45 days without being covered by backfill.
      e. When required, sew overlaps and repairs to damaged fabric using a portable machine to provide a seam strength of at least 90 percent of the filter fabric strength.
      f. Geotextile shall not be exposed to precipitation prior to being installed. Wrappings protecting geotextile rolls shall be removed less than one hour prior to unrolling the geotextile.
      g. In no case shall any type of equipment be allowed on an unprotected geotextile.
   13. Bridging of fabric is not allowed.

B. Demarcation Layer:

1. Place in the manner and at the locations shown on the Construction Contract Drawings.

+ + END OF SECTION + +

SECTION 31 11 00

CLEARING AND GRUBBING

PART 1 – GENERAL

1.1 DESCRIPTION

A. Work Included:
   1. Clearing generally includes cutting trees and woody growth including shrubs, bushes, vines, and general brush at the ground surface.
   2. Grubbing includes removal of vegetative cover (grass) with root systems, stumps with root systems, and other organic matter surficial or buried within the top 1 foot of soil (topsoil).
   3. The clearing and grubbing debris generated during remedial action construction is collectively classified as land clearing debris.

B. Limit of Work:
   1. Perform clearing within the limit of clearing as shown on the Construction Contract Drawings.
   2. Perform grubbing within excavation limits and in additional areas as required to install construction temporary facilities and controls, or areas to be restored.
   3. In no case shall clearing or grubbing take place outside the delineated limit of work.

C. Clearing performed outside the defined limit of clearing shall not be permitted without permission of the ENGINEER

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 74 19 – Waste Removal, Handling, and Storage

B. Section 02 51 41 – Off-Site Transportation and Disposal

C. Section 31 00 00 – Earthwork

D. Section 31 25 00 – Erosion and Sediment Control

1.3 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies:
   1. Dispose of combustible material by burning only when permitted by and in accordance with all applicable local and state laws, ordinances, and code requirements.

2. Any trees 3 inches in diameter or larger that need to be removed must be cut down between November 1 and March 31 to prevent potential impacts to native long-eared bats. Removal of stumps of said trees can be conducted outside of this timeframe.

B. Remove and dispose of non-salvageable material in accordance with all applicable local and state laws, ordinances, and code requirements.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Herbicides: Used only for treating poison ivy.

PART 3 – EXECUTION

3.1 PROTECTION

A. Streets, Roads, Adjacent Property, Existing Facilities, and Other Works to Remain:
   1. Protect throughout the Work and exercise care to avoid unnecessary damage.
   2. Clearing and grubbing operations shall be conducted such that existing facilities or structures indicated to remain are not damaged. Existing features or structures that are indicated or made known prior to the start of clearing and grubbing operations shall be repaired in the event of any damage during such operations.
   3. Keep streets and roads accessible to emergency vehicles, patrols, and construction vehicles at all times.

B. Utility Lines:
   1. Protect existing utility lines that are indicated to remain from damage.
   2. When utility lines to be removed or relocated are encountered within the area of clearing and grubbing operations, the CONTRACTOR shall notify the associated utility company in ample time to minimize interruption of the service.
   3. The CONTRACTOR shall notify the ENGINEER immediately of damage to or an encounter with an unknown existing utility line.
   4. The CONTRACTOR shall be responsible for the repairs of damage to existing utility lines that are indicated or made known to the CONTRACTOR prior to start of clearing and grubbing operations.

3.2 PERFORMANCE

A. Layout and Marking:

1. The CONTRACTOR shall generally clear as shown on the Construction Contract Drawings.
2. Care shall be taken to limit clearing and grubbing along the banks of Brandy Brook as delineated on the Construction Contract Drawings and as approved by the ENGINEER.

B. Clearing:
1. Remove trees, shrubs, and brush above the ground surface within the clearing limit.
2. Relocate trees and Wetland Sediment in upland restoration area to temporary nursery for storage and care until replanting.
3. Segregate clearing debris from grubbings. If clearing debris is comingled with grubbings or surficial site soil, as determined by the ENGINEER, the debris shall be considered contaminated.
4. Cleared material may be stockpiled within the limit of work in limited quantities and for short durations.

C. Grubbing:
1. Remove all stumps, roots, and vegetative matter including grasses and weeds in a manner that does not comingle material with clearing debris.
2. Grubbings may be temporarily stockpiled, if required within the Exclusion Zone prior to off-site disposal.
3. Grub beneath temporary nursery before constructing.

D. Disposal:
1. Land clearing debris – clearing debris shall be considered non-impacted waste and shall be legally disposed off-site. Logs suitable for Brook restoration shall be stockpiled for possible re-use in restoration of the Brook. Dispose of unused logs.
2. Land clearing debris – grubbings, including roots and stumps, and any other component having direct contact with soil, shall be considered contaminated material and shall be disposed off-site as Nonhazardous or Hazardous Remediation Waste depending on the classification of surficial soil as indicated on the Construction Contract Drawings.
3. Burning of Materials: Burning is not permitted.
4. Minimize on-site stockpiling of waste to be disposed off-site.

3.3 RESTORATION

A. Restore any items damaged by this work to their original condition.

+ + END OF SECTION + +

SECTION 31 23 19

DEWATERING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Furnish, operate, and maintain dewatering measures and/or equipment for the control, collection, and disposal of ground and surface water entering trenches, excavations, proposed fill/backfill areas solidification areas, restoration areas, and the Brandy Brook bypass areas.

B. Water from dewatering activities shall be classified as construction water and be managed in accordance with Section 02 72 00 – Construction Water Management. Water may not be indiscriminately discharged to any surface draining ways/water bodies. Discharge may also not occur to any storm drain system.

C. A dewatering and construction water treatment system will be constructed at OU01, the former gasification plant property. Work will include:
   1. Temporary diversion of Brandy Brook surface water in active work zones within the remediation area.
   2. Groundwater inflow into excavations will likely occur.
   3. Excavation of approximately 10,000 cubic yards of MGP-impacted and non-MGP-impacted soil.
   4. Dewatering of excavated soil.
   5. Storage, treatment, approval, discharge

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 11 13 – Summary of Work

B. Section 01 33 00 – Submittal Procedures

C. Section 01 45 29.13 – Testing and Laboratory Services Provided by the Contractor

D. Section 02 72 00 – Construction Water Management

E. Section 31 00 00 – Earthwork

F. Section 31 25 00 – Erosion and Sediment Control

G. Submit a description of the proposed dewatering method(s) which are to be utilized in a Construction Water Management Plan (CWMP) as part of the Construction Work Plan specified in Section 01 11 13 Summary of Work, to the ENGINEER for review.

PART 2 - PRODUCTS

2.1 GENERAL

A. Provide, operate, and maintain a dewatering system to remove all water from excavations, trenches, and sumps using pumps, drains, well points, piping, and any other facilities necessary to keep the excavations and trenches free of water to a sufficient depth to facilitate a safe excavation, testing, backfill, and compaction, as required by these Specifications or by the ENGINEER. Have spare units available for immediate use in the event of equipment breakdowns.

PART 3 - EXECUTION

3.1 PERFORMANCE

A. Excavations shall be kept free of water during excavating, testing, backfilling, and compaction.

B. Open inactive excavations may be allowed to temporarily collect water if given the type of soils and groundwater condition, the excavation sidewalls and bottom remain stable.

C. Open and inactive excavations that are deemed unstable due to groundwater or runoff inflow shall be dewatered and backfilled or maintained in a dewatered state. Additional dewatering effort or re-work associated with temporary backfill shall be considered incidental costs.

D. Disposal of Water:
   1. Sampling, Analysis, and Containment. All collected water shall be sampled and analyzed both prior to and after treatment. Analysis for contaminated water to be discharged to Brandy Brook shall conform to the requirements set forth in the State Pollutant Discharge Elimination System (SPDES) permit equivalent (02 72 00 -01) and Section 01 45 29.13. Testing laboratory services shall be furnished by CONTRACTOR with documentation of all analyses performed furnished to the ENGINEER.
   2. Contaminated water shall be contained, stored on-site (i.e., within the former MGP property), and analyzed prior to being discharged in accordance with the permit or transported to the approved treatment, storage, and disposal facility. The CONTRACTOR shall dispose of all water (non-contaminated or

contaminated) in accordance with applicable Federal and state disposal regulations. The CONTRACTOR shall provide approved containers, vehicles, equipment, labor, signs, labels, placards, manifests and associated land disposal notices and notifications, necessary for accomplishment of the Work.

3. Treatment. On-site (i.e., within the former MGP property) treatment of water from dewatering activities shall be in accordance with Specification Section 02 72 00 Construction Water Management and the approved site-specific CWMP. CONTRACTOR shall be responsible for complying with the discharge permit.

E. Damage:
   1. All damage resulting from the dewatering operations or the failure of the CONTRACTOR to maintain the Work in a suitable dry condition shall be repaired by the CONTRACTOR, at no additional cost to the DEPARTMENT.
   2. Take all necessary precautions to protect new work from flooding during storms or from other causes.
   3. Thoroughly brace or otherwise protect all pipelines and structures which are not stable, against floatation, when necessary.

F. Diversion Berms:
   1. Design, construct, maintain, and remove diversion berms where necessary for diverting runoff away from open excavations and trenches to minimize the generation of liquid wastes
   2. Design and construct diversion berms to withstand all imposed loads to prevent injury to adjacent structures or property.

G. Temporary Under Drains:
   1. When necessary, lay temporary under drains in the excavation.
   2. Excavate trenches to suitable dimensions to provide space for the under drains and surrounding gravel.
   3. Install under drains a distance of at least 3 inches below the bottom of the pipe or structure and the top of the bells of the under drainpipes.
   4. Under drainpipe shall be concrete, HDPE, or PVC pipe of standard thickness with open joints wrapped in geotextile fabric to prevent the admission of sand and other soil. Sewer pipe of the quality known as "seconds" will be acceptable.
   5. Entirely surround the under drain and fill the space between the under drain and the pipe or structure with crushed stone.
   6. Compact the crushed stone, if necessary, and leave the surface suitable for laying the pipe or building the structure.

3.2 DEWATERING THE CONSTRUCTION SITE

A. Dewater trenches and other parts of the construction Site and keep free of standing water or excessively muddy conditions as needed for proper execution of the construction Work.

B. Furnish, install, operate, and maintain all drains, sumps, pumps, and other equipment needed to perform the dewatering as specified.

C. Discharge of water pumped from excavations shall be limited to appropriate on-site storage containers. Discharge to other storm drain systems, sewer systems, or over land is not allowed unless as approved in the permit and CWMP.

3.3 REMOVAL OF TEMPORARY WORKS

A. After the temporary works have served their purposes, remove them or level and grade them to the extent required to present a sightly appearance and to prevent any obstruction of the flow of water or any other interference with the operation of or access to the permanent works.

B. Except as otherwise specified, remove any temporary under drainpipes.

+ + END OF SECTION + +

SECTION 31 25 00

EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide and install all materials, equipment, and labor necessary for the removal of stormwater runoff/surface water and to place erosion and sedimentation control measures in accordance with the applicable erosion and sediment control regulatory requirements and standards, as shown on the Construction Contract Drawings and specified herein. At the completion of the construction, provide all materials, equipment, and labor necessary for the removal, transport and disposal of temporary erosion and sediment control measures not specified to remain. Downgradient from disturbed areas, remove, transport, and dispose of accumulated sediment resulting from control measures in a manner consistent with overall intent of this specification and which does not result in additional erosion.

B. Provide and install all erosion and sediment control measures in accordance with the applicable erosion and sediment control regulatory requirements, standards and specifications and as required by field conditions during the execution of the Work. Conducting the Work in accordance with the control measures shown on the Construction Contract Drawings does not relieve the CONTRACTOR of responsibility for completing the Work in a manner that minimizes erosion when field conditions occur that require additional or different measures.

C. Temporary erosion and sediment control measures shall be installed as the first step in construction, shall be continuously maintained, and shall not be removed until permanent surface stabilization of all disturbed areas is to the ENGINEER's satisfaction.

D. Permanent controls or surface stabilization shall commence within 14 days of completion of filling and grading activities.

E. Not all erosion and sedimentation control measures described in this specification are shown or referenced on the Construction Contract Drawings. Other measures as described and specified herein may be used to augment the proposed measures referenced on the Construction Contract Drawings based on actual field conditions encountered.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 11 00 – Summary of Work.

B. Section 01 33 00 – Submittal Procedures.

C. Section 01 57 30 – Marine Resuspension Control

D. Section 31 00 00 – Earthwork.

1.3 REFERENCES AND GUIDELINES

A. New York Guidelines for Urban Erosion and Sediment Control, April 1997 by the Urban Soil Erosion and Sediment Control Committee which includes the following contributors: New York State Soil & Water Conservation Committee; Agronomy Department, Cornell University; Agricultural Engineering Department, Cornell University; New York State Department of Environmental Conservation (DEPARTMENT); New York State Department of Transportation; New York Chapter of Land Improvement Contractors of America; O'Brien and Gere Engineers, Inc.; and USDA-Natural Resources Conservation Service (formerly the Soil Conservation Service).

B. New York Standards and Specifications for Erosion and Sediment Control, August 2005 by the NYS Soil and Water Conservation Committee.

C. Standards Specifications, State of New York Department of Transportation, May 4, 2006 by the New York State Department of Transportation (NYSDOT).

1.4 REVIEW AND/OR INSPECTION OF SEDIMENTATION CONTROL MEASURES

A. All construction under this project shall be subject to review and/or inspection by the appropriate local, State, and Federal agencies responsible for ensuring the adequacy of sedimentation control measures.

1.5 SUBMITTALS

A. The CONTRACTOR shall submit to the ENGINEER a Stormwater Pollution Prevention Plan (SWPPP). There will not be a state-mandated approval process, so no State fees associated with the SWPPP will be assessed.
   1. The CONTRACTOR shall include in the SWPPP a description of their proposed means and methods to control erosion and sedimentation.

B. The CONTRACTOR shall submit to the ENGINEER the following information:
   1. Manufacturer's data for all erosion and sediment control products.
   2. Data for materials incorporated into the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Silt Fence:
   1. Fabric – Silt fence geotextile shall meet the following properties:

Fabric Properties	Minimum Value	Test Method
Grab Tensile Strength (lbs)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682
Mullen Burst Strength (psi)	190	ASTM D3786
Puncture Strength (lbs)	40	ASTM D751
Slurry Flow Rate (gal/min/sf)	0.3	---
Equivalent Opening Size	40-80	US Standard Sieve
Ultraviolet Stability (%)	90	ASTM G26

   2. Fence Posts – The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a cross sectional area of 3.0 square inches. Steel posts will be standard "T" or "U" section weighing not less than 1.0 pounds per linear foot.
   3. Wire fence for reinforced silt fence (fabricated units) – Wire fencing shall be a minimum 14-1/2 gauge with a maximum 6-inch mesh opening.
   4. Prefabricated reinforced silt fence – Envirofence or approved equal may be used for reinforced silt fence in lieu of reinforced fence fabricated with wire fence.

B. Mulch: For protection of newly seeded areas where erosion control blanket is not used.
   1. Straw or hay free from primary noxious weed seeds and rough or woody materials and having not more than 15% moisture content. Provide hay or straw meeting the requirements of subsection 713-18 and/or 713-19 in the NYDOT Standard Specifications.
   2. Wood chips used for mulch or erosion control shall not exceed 3 inches in the greatest dimension and shall meet the requirements of subsection 713-05 in the NYDOT Standard Specifications.
   3. Wood fiber for use as mulch in conjunction with establishment of vegetation, shall meet the requirements of subsection 713-11 in the NYSDOT Standard Specifications.

C. Hay Bales: Hay bales shall consist of rectangular-shaped bales of hay or straw weighing approximately 40 pounds per bale and shall be free from primary noxious weed seeds and rough or woody materials.

D. Temporary Protective Sheeting: Temporary sheeting material shall consist of minimum 6-mil polyethylene sheeting or a suitable approved alternative and of sufficient size to minimize seams.

E. Seed for Erosion Control:
   1. Temporary Control: Annual or perennial ryegrass or winter rye (cereal rye). Use winter rye if seeding in October or later.

F. Filter Berm:
   1. Shall consist of shredded bark, stump grindings, composted bark, or acceptable manufactured products. Wood and bark chips, ground construction debris or reprocessed wood products will not be acceptable as the organic component of the mix.
   2. Erosion control mix shall contain a well-graded mixture of particle sizes and may contain rocks less than 4” in diameter. Erosion control mix must be free of refuse, physical contaminants, and material toxic to plant growth.

G. Erosion Control Matting: For protection of slopes greater than 10H:1V. Rolled erosion control product (RECP) shall be 100 percent biodegradable manufactured from long lasting natural fibers mechanically attached to or woven into two (2) continuous biodegradable netting structures. The RECP shall meet the following performance criteria:
   1. Under the installed conditions of an unvegetated, maximum 80-foot-long 3:1 slope consisting of sandy loam, soil loss shall be restricted to under 0.25 inches at the bottom 10 percent of the slope.
   2. Functional longevity shall be a minimum of 24 months.
   3. North American Green C125BN or approved equal may be used.

H. Erosion Control Matting Staples: Provide manufacturer recommended number and size to accommodate the application. In general, provide “U” shaped 11-gauge wire staples with a minimum top width of 1 inch and minimum length of 6 inches.

I. Filter Sock:
   1. The filter sock shall consist of a mesh tube (or sock) filled with a filter media consisting of wood waste compost/bark.
   2. The filter sock (inclusive of the mesh and filter media) shall be specifically designed for soil erosion and sedimentation control purposes.

PART 3 - EXECUTION

3.1 PERFORMANCE

A. It is the CONTRACTOR's responsibility to implement and maintain erosion and sedimentation control measures which effectively prevent accelerated erosion and sedimentation.

B. Earth moving activities shall be conducted in such a manner as to prevent accelerated erosion and sedimentation.

C. Land disturbance shall be kept to a minimum. Stabilization activities shall be scheduled immediately after any disturbance.

D. During temporary storage of trees from upland restoration area, erosion control measures shall be implemented and maintained until replanting to prevent erosion of the banks and surface.

E. Diverting Surface Water:
   1. Build, maintain, and operate any temporary berms, swales, channels, flumes, sumps, and other temporary diversion and protection works needed to divert surface water through or around the work area and away from Work until surface stabilization has occurred.
   2. Storm runoff from disturbed areas must discharge through temporary erosion control measures shown on the Construction Contract Drawings prior to discharge from the Site.

F. Erosion Control Provisions (as necessary):
   1. Protect areas where existing banks are to be disturbed by constructing straw/hay bale or earth dikes at the top of slope to divert storm runoff from the disturbed area or at the toe of the slope to retain sediments, as conditions permit.
   2. All discharge from any necessary pumping operations during dewatering operations shall be conveyed to an on-site storage tank. No pumped water shall be released as surface water or to the on-site storm drain system. Refer to additional requirements in Section 02 72 00 – Construction Water Management.
   3. Prior to removal of sediment barriers, remove retained silt or other materials at no additional cost to the Contract.

G. Silt Fence: Install silt fence if required as a supplementary measure. The silt fence shall be installed on a level line (parallel to contours) to avoid concentrated flow areas along the fence. The area below the fence must be undisturbed or stabilized.

H. Temporary Protective Sheeting: Soil stockpiles shall be protected with sheeting prior to forecasted significant rain events (0.5 inches or more) or as conditions require based on observed slope conditions. Overlap adjacent sheets by a minimum of 12 inches and securely anchor sheeting with sandbags and/or soil pegs, staples or stakes.

I. Filter Berms: Sediment barriers constructed from berms of erosion control mix, compost/bark, or compost-filled filter socks maybe used at locations suitable for their use and as approved by the ENGINEER.

J. Mulch: Conduct mulching immediately following seeding. For the mulching type used, apply mulch materials at the rate specified in Table 3.7 and anchor as specified in Table 3.8 in the New York Standards and Specifications for Erosion and Sediment Control.

K. Seed for Erosion Control:
   1. Temporary Seeding: Minimum application rate of ryegrass (annual or perennial) shall be 30 pounds per acre and minimum application rate for winter rye shall be 100 pounds per acre.

L. Sediment Barriers: Sediment barriers constructed from berms of erosion control mix, compost/bark, or compost-filled filter socks maybe used at locations suitable for their use and as approved by the ENGINEER

3.2 MAINTENANCE

A. The CONTRACTOR shall be held responsible for the implementation and maintenance of all erosion control measures on the Site.

B. Throughout construction and until the Site has been stabilized upon completion of the Work, all erosion and sediment control measures will require periodic inspection and maintenance to ensure that such measures are providing effective service. At a minimum, the following inspection and maintenance shall be required during execution of this project:
   1. All erosion and sediment control will be inspected at least once a week and after all rain events. Conduct required repairs to installed measures immediately to ensure continued effective operation.
   2. Remove sediment that has accumulated in the filter bag of the catchbasin inlet filters when it has reached the capacity limit recommended by the manufacturer.
   3. Remove sediment that has accumulated behind the sedimentation fencing when it has reached a depth of approximately 0.5 feet deep or removed as needed when bulges develop in the fence. The sedimentation fence shall be repaired as necessary to maintain the barrier as intended.

4. Sediment removed from control measures shall be collected and segregated as waste to be characterized, and properly disposed of off-site. No sediment shall be disposed of on-site.
5. All seeded areas will be protected from traffic and shall receive appropriate watering during germination and growth establishment. Areas that do not establish a vigorous, dense vegetative cover (at least 80% surface coverage) shall be reseeded and mulched.

C. Maintain the integrity of all erosion control measures throughout construction period.

3.3 SPECIAL CONDITIONS

A. Prohibited Construction Practices - Prohibited construction practices include but shall not be limited to the following:
   1. Dumping of spoil material into any stream corridor, any wetlands, any surface waters, stormdrain system, or at any other unspecified locations.
   2. Indiscriminate, arbitrary or capricious operation of equipment in any stream corridors, any wetlands or any surface waters.
   3. Pumping of silt-laden water from trenches or other excavations into any surface waters, any stream corridors, any wetlands, or any stormdrain system.
   4. Disposal of trees, brush and other debris in any stream corridors, any wetlands, any surface water or at unspecified locations.
   5. Permanent or unspecified alteration of the flow line of any stream.
   6. Open burning of construction debris.

3.4 ADJUSTMENT OF PRACTICES

A. If the planned measures do not result in effective control of erosion and sediment runoff to the satisfaction of the ENGINEER or regulatory agencies having jurisdiction over the project, the CONTRACTOR shall immediately adjust their program and/or institute additional measures so as to eliminate excessive erosion and sediment runoff.

B. If the CONTRACTOR fails or refuses to comply promptly, the DEPARTMENT may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the CONTRACTOR.

3.5 REMOVAL OF TEMPORARY WORKS

A. Remove or level and grade to the extent required to present a sightly appearance and to prevent any obstruction of the flow of water or any other interference with the operation of or access to the permanent works.

+ + END OF SECTION + +

SECTION 31 32 13

SOLIDIFICATION

PART 1– GENERAL

1.1 SCOPE OF WORK

A. This section includes the minimum requirements for the solidification treatment of impacted materials as shown on Construction Contract Drawings, using two mixing methods to achieve solidification. Solidification includes in-situ solidification (ISS) within the Former MGP Property and solidification of excavated and subsequently relocated materials from outside the ISS limits by ex-situ solidification followed by incorporation into a solidified mass to be covered.

B. The solidification work consists of furnishing all plant, labor, equipment, and materials and performing all operations including a design mix program, pilot scale test and quality control testing as required to solidify the subsurface and relocated soils as specified herein. The lateral and vertical extent of in-situ solidification/treatment and areas to be relocated to the treatment area are shown on the Construction Contract Drawings. Debris greater than 12 inches in diameter must be either reduced in size or removed prior to conducting solidification, or as required by the selected equipment's limitations and capability. The completed solidification project shall be a cured homogeneous mixture of amendment and the ISS and Ex-Situ Solidified soils meeting performance requirements. The solidification work may be accomplished by mixing amendments and soil/debris (soil) dry or by wet mixing.

C. Equipment used to complete the solidification work may include, but is not limited to, excavators with mixing head attachments and auger mixing equipment, grout mixing plants, Frac tanks or liquid holding tanks and transport equipment. ISS shall be performed with auger mixing and Ex-Situ Mixing shall be performed using a mixing head on an excavator or other ENGINEER/DEPARTMENT approved approach. The use of excavator mounted equipment is not allowed for the ISS which requires auger mixing method involving the use of a crane-mounted rotary table (turntable) or a track-mounted earth drill rig to rotate a minimum 6-foot diameter cutting head, or equivalent, capable of achieving the depths shown on the Contract Drawings. The auger head shall have the capability to discharge grout that is pumped through the center stem of the auger. The cutting blades and mixing blades shall be configured to blend soils and grout into a homogenous mixture. CONTRACTOR shall demonstrate the efficacy and compliance with all performance requirements of all mixing approaches to be used, through completion of an acceptable Site-specific pilot test program.

1.2 REFERENCE STANDARDS

A. The following is a list of Standards which will be referenced in this Specification, the most current applies. Such referenced Standards shall be considered part of these Specifications as if fully repeated herein.

REFERENCE	TITLE OF DESCRIPTION
ACI 211	Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete.
ASTM D1633	Unconfined Compressive Strength (UCS).
ASTM C 150	Portland Cement.
ASTM C-94	Standard Specification for Ready-Mixed Concrete.
ASTM C-1602	Standard Specification for Mixing Water Used in the Production of Hydraulic Cement.
ASTM D-5084	Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter (permeability)

B. The following document provides general guidance related to solidification and may be used to provide supplemental guidance/information on items not included in this Section, as determined by ENGINEER/DEPARTMENT.
   1. "Development of Performance Specifications for Solidification/Stabilization", Interstate Technology & Regulatory Council (ITRC) Solidification/Stabilization Team, July 2011.

1.3 SUBMITTALS

A. Qualifications – The Solidification CONTRACTOR shall demonstrate through submission at a minimum at least five ISS projects of similar scope, size, and depth where successful solidification of the contaminated material was achieved, at least one of the projects shall be where manufactured coal gas residuals including free-phase product were successfully solidified, and at least three with similar performance requirements as apply to this Project, demonstrating successful soil treatment using in-situ and ex-situ solidification techniques with equipment similar to that to be used for this Project. The experience shall be held by at least the CONTRACTOR's Project Manager or Superintendent and/or mixing equipment operators that will perform the Work described in this Section. This experience shall include, but not necessarily be limited to:
   1. The design, execution and use of a design mix program to identify the most appropriate proposed mix design to be used in a pilot scale test to solidify soils and meet performance requirements for ISS and Ex-Situ solidification of all

site materials within the limits shown on the Construction Contract Drawings.

2. The design, execution and implementation of a pilot test on site to refine the proposed mix design, equipment and operational parameters to successfully solidify soil requiring solidification, producing the CONTRACTOR's Mix Design(s).
3. The preparation uses and control of the injection of grout in a controlled documentable way.
4. Methods required to properly mix (in-situ and ex-situ) the amendments (and additives, as required) to produce the CONTRACTOR's Mix Design(s).
5. Laying out the progression of treatment and materials management to achieve cover subgrades while maintaining performance requirements.
6. Knowledge of construction equipment and material to be used in the Work.
7. Required field quality assurance/quality control testing, documentation and reporting.
8. The careful controlled metering and mixing of the amendments, rate of treatment and the grout addition rate, supervision and ensuring that the solidification treatment has been properly mixed and interconnected to form a homogeneous mass.
9. The use of odor, vapor and dust control measures for site contaminants and reagents.
10. The CONTRACTOR shall submit the name, qualifications and contact information for the third-party geotechnical testing laboratory.

B. Work Plan – The CONTRACTOR shall submit a preconstruction work plan for review and approval by the ENGINEER at least 14 business days prior to the start of work under this section. The work plan shall include the following items:

1. Schedule: A schedule in sufficient detail to identify the major segments of the work. Starting and ending dates for all major work items shall be clearly identified.
2. Solidification/treatment Method: A detailed description of the methods of construction which shall include the method of advancing treatment, method of measuring, mixing and application of amendment (wet mixing) grout mixing and monitoring, rate of advancement, and the minimum gallons [based on proposed cement to water ratio] of grout per treatment area or volume. Include description of the required electronic mix metering and control systems as well as equipment monitoring to thoroughly document the location and elevation of all solidification operations. Provide a solidification Plan, showing excavation extents for material to be stabilized ex-situ and auger layout, including vertical and horizontal extent beyond the limits required on the Contract Drawings to ensure complete stabilization of the materials identified on the Contract Drawings as requiring solidification.
3. Equipment: A list of major equipment by type and capacity. This may include excavator, grout mixer, batch plant, mixer heads, demo heads, augers, grout injectors, storage silos, electronic mix metering and control system, electronic location and elevation documentation system and transport equipment.

4. Drawings: The following drawings shall be provided by the CONTRACTOR:
    a. Equipment Arrangement - the locations of all equipment including that required to mix raw materials in.
    b. Process and Instrumentation Diagram - a process and instrumentation diagram showing the flow of all raw materials and the size of all pumps and associated equipment required to conduct operations.
    c. Material Treatment Plan - the approximate location of treatment units and their dimensions (and/or coordinates) should be provided along with the estimated rate of treatment.
    d. Sequencing/Phasing Plan – the approximate location of stockpiled soils (to be re-used as part of the cover system), mixing operations, solidification operations, solidified materials, and water treatment, considering limited space for these operations and limits on relocation of materials/operations. Solidified material shall not be relocated, to achieve cover system subgrade, after 48-hours of grout addition, unless approved by the ENGINEER.
    e. Solidification Plan, showing excavation extents for material to be stabilized ex-situ and auger layout for ISS, including vertical and horizontal extent beyond the limits required on the Contract Drawings to ensure complete stabilization of the materials identified on the Contract Drawings as requiring solidification. Include the proposed sequencing plan, describing when excavation and Ex-Situ solidification of materials will occur and when the ISS work will occur, such that all requirements will be achieved.
5. Material Certificates – The following material certificates shall be provided by the CONTRACTOR:
    a. Cement: The CONTRACTOR shall submit the manufacturer's catalog certificate and specification prior to shipment of any cement, and certificate of compliance for each lot or shipment of cement upon arrival on site regarding compliance with ASTM C150 (Type I/II).
    b. Bentonite: The CONTRACTOR shall submit the manufacturer's catalog certificate and specification prior to shipment of any bentonite, and certificate of compliance for each lot or shipment of bentonite upon arrival on site regarding conformance with ACI Specification 13A, Section 10.
    c. Grout: (if applicable) The CONTRACTOR shall supply testing results in accordance with ACI 211 verifying the proper water to cement ratio and unit weight.
    d. Slag: (if applicable) The CONTRACTOR shall submit for certificates each lot or shipment of slag upon arrival at the Site showing conformance with NYSDOT Specification 711-12. Slag material that are considered Technically Enhanced Naturally Occurring Radioactive Material (TENORM) are prohibited from the Site.
    e. Water: The CONTRACTOR shall submit a certificate that water used in ready mix grout supplied to the Site meets the requirements of ASTM C-

1602. Indicate the source of the water.

f. Additives: Submit a manufacturer's catalog certificate and specification prior to shipment of any additives, and a certificate of conformance for each lot or shipment of additive upon arrival on site.

C. Quality Control Plan – The QC Plan shall be submitted along with the work plan for review and approval.

1. The plan shall include a list of test methods and minimum standards the CONTRACTOR plans to implement to gauge the quality of the work during construction, including grout density (if applicable), depth/elevation measurements, densities of mixed materials, pocket penetrometer testing of mixed materials, coring, permeability testing and UCS testing.
2. The plan shall address the physical properties and manufacturer's stated properties for all permanent materials including manufacturer's certifications of quality, mill certificates, gradation test data, etc.
3. The plan shall state when all quality control data will be submitted to the ENGINEER and the correction procedures to be employed in the case of substandard results.
4. The plan shall include the electronic mixing, metering location and elevation control/documentation systems to be implemented throughout the solidification process. The simple addition of dry reagents and water followed by mixing will not be permitted, unless approved in-advance in writing by the DEPARTMENT.

D. Daily Reports – The CONTRACTOR's daily reports shall include:

1. For in-place ISS:
   a. Identification of column(s) solidified
   b. Top and bottom elevations of column(s)
   c. Volume and mass of column(s)
   d. Volume of grout used
   e. Mass of solidify reagent
   f. Number and identification of samples collected
   g. Grout QC data
   h. Reporting of any testing results from laboratory
   i. Progress drawing indicating columns stabilized to date
2. For ex-situ solidification:
   a. Volume and mass of material treated
   b. Volume of grout
   c. Mass of solidify reagent
   d. Number and identification of samples collected
   e. Grout QC data
   f. Reporting of any testing results from laboratory
   g. location of placement of ex-situ material

PART 2 – PRODUCTS

2.1 MATERIALS REQUIREMENTS

A. Provided below are general guidelines for evaluating the quality of raw materials to be used in the process. The CONTRACTOR may propose alternative materials, material quality standards, and test methods for the raw materials.

B. Cement – If used in preparing grout, cement shall conform to ASTM Designation C150, "Requirements for Portland Type I/II", or as identified in the CONTRACTOR's Mix Design. The cement shall be adequately protected from moisture and contamination while in transit. Cement shall be stored in supersacks or silos or other appropriate bulk storage container. Reclaimed cement or cement containing lumps or deleterious matter shall not be used and shall be removed from the Site.

C. Grout – The pumpable mixture of pozzolanic material and other approved additives added to the subsurface will be referred to as grout. The purpose of the grout is to solidify subsurface and/or ex-situ soils to produce a low permeability mass with minimum UCS in areas shown on Construction Contract Drawings. In addition, when cured, the subsurface solidified matrix shall be capable of supporting construction equipment, backfill and the four-foot-thick earthen final cover.

D. Water – Fresh water, free of deleterious substances that adversely affect the properties of the grout, shall be used for ready mixed grout. Potential water sources shall be tested by the CONTRACTOR prior to beginning the construction, as part of design mix program and pilot testing to assure that the water is of suitable characteristics for grout preparation. Water shall meet ASTM C -1602 standards. Water may be available from a hydrant along Payeville Road, in accordance with utility Owner requirements.

E. Slag – If used, Ground Granulated Blast-Furnace Slag shall conform with New York State Department of Transportation (NYSDOT) Specification 711-12. Slag materials that are considered Technically Enhanced Naturally Occurring Radioactive Material (TENORM) are prohibited from the Site.

F. Additives (Optional) – Admixtures (other than Cement), including proprietary chemicals such as softening agents, dispersants, reagents, retarders or plugging or bridging agents may be added to the water or the grout to permit efficient use of materials and proper workability of the grout. Additives shall not result in additional site contaminants or concentrations and shall be clearly and scientifically demonstrated as such by the CONTRACTOR and approved by the ENGINEER/DEPARTMENT. Provide documentation related to use precautions, handling, health and safety requirements, notifications for use, storage/handling, known/suspected effects to the environment/humans, use limitations, prior State or

Federal approvals and CONTRACTOR use experience and possible concerns. No additives shall be used prior to informing, and gaining approval from, the ENGINEER.

2.2 EQUIPMENT

A. General – The CONTRACTOR shall furnish the equipment for construction of the facilities necessary to complete the solidification work. The CONTRACTOR'S equipment shall be of the type and capacity to complete the work in an efficient manner and shall be maintained in operable condition at all times.

B. Equipment used to complete the solidification work may include, but is not limited to, excavators with mixing head attachments and/or auger mixing equipment, grout mixing plants, Frac tanks or liquid holding tanks and transport equipment. ISS shall be performed with auger mixing and Ex-Situ Mixing shall be performed using a mixing head on an excavator or other approved and demonstrated solidification approach, through completion of an acceptable Site-specific pilot test program as approved by the ENGINEER/DEPARTMENT.

C. Grout Mixing Plant (Optional) – The CONTRACTOR shall provide a grout mixing plant containing the necessary equipment for preparing the grout including a high-shear/high speed colloidal mixer capable of producing a stable grout mixture. If no grout mixing plant is to be provided, provide mix information on pre-mixed grout from facility, meeting the requirements of ASTM C-94.

D. Quality Control Data – Submit all quality control data in accordance with approved Quality Control Plan.

E. The work plan shall include a plan for corrective measures to be taken in the event performance requirements are not met in a specific area.

F. Dry materials used in the grout mixing, if stored on site, shall be stored in silos and fed via a calibrated rotary valve [screw feeder] to the colloidal mixer(s) for agitation and circulation. If dry materials are delivered to the Site in supersacks, the material shall be adequately protected from weather.

G. If applicable, calibration of mixing components shall be done at the start of the project and weekly thereafter. The screw feeders or rotary valve shall be calibrated against time to deliver a predetermined weight. Water shall be controlled by flow meter, weight and/or by the volume level indicators in the colloidal mixer. The specific gravity of the grout shall be determined during the design mix program and pilot test for double checking grout proportions. Grout volumes from the mixing plant shall be monitored by a flow meter capable of measuring liquids containing high solids or other acceptable method.

H. Solidification Equipment – Solidification equipment must be capable of delivering and mixing solidification reagents such that uniform dispersion of reagents occurs, producing a uniform product meeting performance requirement.

I. Environmental Control Equipment – Environmental control equipment shall be on site and ready for use as required (prior to the pilot and full-scale solidification) and consist of the following: odor and emissions control foam, water sprays (misting), a dust hood on the bucket of the loader, and the perimeter odor masking system to regulate and reduce the amount of potentially toxic emissions while exposed MGP impacted soils are present, treating with solidification agents and curing.

PART 3 – EXECUTION

3.1 EXECUTION OF WORK

A. General – The solidification area shall be constructed within the boundary shown on Construction Contract Drawings and in accordance with these specifications unless otherwise approved. No solidification shall occur outside the limits shown on the Construction Contract Drawings.

B. Horizontal Alignment – The solidification treatment areas shall be carefully staked out prior to beginning construction. The advancement of solidification treatment shall be set according to surveyed reference points in accordance with the approved work plan. A three-dimensional surface will be provided by the ENGINEER that represents the MGP-impacted material limits as shown on the Construction Contract Drawings. CONTRACTOR shall use this to establish the minimum horizontal extents of solidification, as shown on the Construction Contract Drawings.

C. Vertical Alignment – The CONTRACTOR shall establish vertical survey control prior to beginning construction for use throughout mixing operations. The use of GPS guided and electronically documented mixing, shall be completed in accordance with the approved work plan.

D. Mixing Speed – (if applicable) The mixing speed of reagents shall be adjusted to accommodate a constant rate of mixing based on the degree of mixing difficulty.

E. Grout Take – (if applicable) The grout take per measured unit of solidified soil will be adjusted to the requirements of the design mix. Positive displacement pumps will be used to transfer the grout from the mix plant to the active treatment area.

F. Performance Requirements:
   1. Permeability (k) of no greater than 1×10^{-5} centimeters per second (cm/sec)

for any single test and a geometric mean value of all final test results of no greater than 1 x 10^{-6} cm/sec (see Table in Subsection 3.3F for additional details).

2. Unconfined Compressive Strength (UCS) of not less than 30 psi at 28 days (see Table in Subsection 3.4F for additional details).
3. Cores, using a Geoprobe or HQ coring with a wireline in no longer than 5-foot samples shall be collected at the minimum frequency listed in the Table in Subsection 3.4F and tested as described in Subsection 3.4D. Close communication with the ENGINEER and the DEPARTMENT is required during coring and core inspection by the ENGINEER to assure adequate core samples are available for QC purposes. Abandon core holes by backfilling with grout using the tremie method.

G. Remixing – In the event the soil mix has not: 1. adequately incorporated site contaminants into a homogeneous mix as evidenced through testing conducted by the ENGINEER; or 2. through additional field testing by the ENGINEER indicating likely failure to meet k or UCS requirements; or 3. achieved the specified k or UCS requirements at 28 days, the CONTRACTOR shall retreat this material per the direction of the ENGINEER at no additional cost to the project to meet this minimum performance requirements.

H. Obstructions - In the event that refusal is encountered prior to achieving the target anticipated depths, the ENGINEER shall be notified immediately. The CONTRACTOR shall be prepared to remove obstructions encountered if deemed necessary by the ENGINEER during ISS activities.

3.2 DESIGN MIX PROGRAM

A. Prior to the pilot test, a design mix program shall be designed, executed and recommendations made for the pilot test and full-scale operations.

B. The design mix program shall be conducted using materials from the Site and materials similar to those to be used in the pilot test and full-scale operations. The ENGINEER/DEPARTMENT will provide direction on where samples (soil, groundwater, and mix water) shall be taken for testing purposes. Sample collection shall be completed by the CONTRACTOR, as described in the work plan. Sample collection may require an excavator and/or drill rig to generate the required volume of material, which shall be determined by the CONTRACTOR.

C. The design mix program shall consider mixing equipment, soils to be solidified (ISS and Ex-Situ mixed), and all factors that may impact the full-scale operations.

D. Document the program in a report which provides all information needed for the CONTRACTOR to select an efficient and effective mix that meets project requirements. Include the following in the report, at a minimum: sample locations and descriptions, mixed proportions (using the same units to be used in full scale operations), reagents, additives, and water information, field QC testing descriptions and results (slump, viscosity, flow cone, etc.), permeability and USC after a 28-day of curing period, and an estimate of the swell expected (report final volume/in-situ volume). The use of early set time strengths may be used as indicators of 28-day strengths; however, 28-day UCS and permeability requirements will still apply. Submit the report for information.

E. Use the results of the design mix program to inform the pilot and full-scale operations.

3.3 PILOT TEST

A. Prior to full scale operation, a pilot test shall be conducted. The pilot test shall be conducted using the same equipment, method mix design to be used during full scale operations (i.e., ISS and Ex-Situ Mixing). The location for the pilot test shall be and agreed upon between the ENGINEER and CONTRACTOR. The pilot test may assess a range of grout mixes; however, one of the pilot tests mixes meeting project requirements shall be used in full scale operations for each type of mixing equipment.

B. For Ex-Situ Mixing, the pilot test shall be conducted in one or more test units not smaller than 10 cy each within and using materials from within the area shown on Construction Contract Drawings at the test location (within MGP Impacted soils). Pilot If only limited bucket mixing is proposed for the excavated soils. Ex-Situ mixing shall separately include materials from above and below the groundwater table such that the variety of conditions expected during full-scale mixing are simulated. After completion of soil mixing, a core from the center of the test plot shall be conducted as described in Subsection 3.4E. The core shall not be conducted within the first 48 hours of completion of soil/grout mixing and shall be conducted at a similar cure time as full-scale operations cores.

C. For ISS, the pilot test shall consist of at-least three ISS columns, and at-least one solidification of excavated soils (i.e., Ex-Situ) if a different mixing method is to be employed. After completion of soil mixing, a core from the center of each column shall be conducted in accordance with Subsection 3.4E. The core shall not be conducted within the first 48 hours of completion of soil/grout mixing and shall be conducted at a similar cure time as full-scale operations cores.

D. If the 28-day laboratory results from the pilot test indicate that the soil mixtures do not meet the performance requirements specified in Section 3.1 F, the contractor shall revise the mix design and repeat the pilot test at no additional cost to DEPARTMENT. Soils solidified during the initial Pilot Test will need to be re-

mixed during full scale mixing to meet project requirements.

3.4 QUALITY CONTROL AND RECORDS

A. General – The CONTRACTOR shall be responsible to ensure that all work is performed to the standards established, herein, subject to review and inspection by the ENGINEER. All quality control records, routine tests, observations, and measurements shall be available for inspection by the ENGINEER. All quality control testing shall be at the expense of the CONTRACTOR. CONTRACTOR is obligated to provide ENGINEER with required test cylinders for independent laboratory testing. Cylinder specimens will be collected under the inspection of the ENGINEER and will as close as possible represent the sample on which the CONTRACTOR performs its performance testing.

B. Submittals – The CONTRACTOR shall make timely submittals of all information required by Section 2.0 to the ENGINEER.

C. Materials – The CONTRACTOR shall submit data, tests, manufacturers' certificates, etc., to document the compliance of all materials to specifications determined by the CONTRACTOR in the Quality Control Plan

D. Mixed Soil – Samples of the solidified/treated soil for permeability and UCS testing will be taken each day; but not less than 1 sample for every 500 cubic yards of material treated by each method used. The CONTRACTOR shall devise and implement procedures to correlate specific samples to specific treatment areas. Sufficient samples shall be collected to make up at-least three molds for quality control testing and additional two molds to serve as backup samples. The soil mix shall be placed in suitable molds, rodded to remove trapped air pockets, placed in a plastic bag that contains sufficient moisture to keep the mixture damp, and stored within a heated enclosure.

E. Core samples for visual inspection by the ENGINEER or the DEPARTMENT shall be conducted at a rate of one sample per 5,000 square feet of solidified/treated area but no less than one per day for Ex-Situ Mixing and one per day of ISS mixing. The coring shall be conducted prior to complete curing of a treated area by either Geoprobe, HQ coring with a wireline and extracting a sample. Coring shall be performed at a minimum of when 25%, 50%, 75% and 100% of solidification is complete. The samples will be visually inspected for the following five criteria by the ENGINEER:
   1. Visible nonaqueous-phase liquid (NAPL)
   2. Non-mechanical induced cracking within the core
   3. Percent of core sample recovered. If less than 60% of the core material is recovered from any of the coring runs, one (1) new core hole shall be drilled adjacent to the previous location. If the recovery from the adjacent core hole continues to be less than 60%, the CONTRACTOR shall consult with the

ENGINEER and provide acceptable samples for QC purposes.

4. NAPL coating on drilling/sampling tools
5. NAPL in drill wash tub.
6. Observation of any of the above five criteria may require additional coring and/or corrective action, as directed by the ENGINEER/DEPARTMENT, at no additional cost to the DEPARTMENT. The first step to determining whether corrective action is required will be to complete additional coring around the area of concern and determine if identified NAPL within the solidified mass is encapsulated, thus eliminating NAPL mobility and impact to the surrounding environment. If NAPL is detected in the additional borings, particularly on the edges of the solidified monolith, or at the bottom of the solidified monolith, corrective actions may be necessary in order to fully encapsulate the source area. Corrective actions shall be performed by the CONTRACTOR at no additional cost to the DEPARTMENT.

F. Laboratory Testing – Samples shall be transported to an independent geotechnical laboratory for testing once the samples have sufficient strength so as to not adversely affect the properties. One sample from each core sample location described in Subsection 3.4 E shall be tested for the following:

Requirements for Solidified Material

Test Name	Method	Sample Frequency	Required Result
Hydraulic Conductivity (permeability)	ASTM D5084	Pilot Test (PT): One per auger column and one per Ex-Situ Mixing method Full-Scale (FS): 1 per 500 CY (minimum of 1 test per treatment unit/day/mixing method)	PT: less than (<)1 x 10^{-6} cm/sec FS: Maximum of 1 x 10^{-5} cm/sec; and geometric mean of all final tests < 1 x 10^{-6} cm/sec.
Unconfined Compressive Strength (UCS)	ASTM D1633	PT: One per column and one per Ex-Situ Mixing Method FS: 1 per 500 CY; (minimum of 1 test per treatment unit/day/mixing method)	PT: greater than (>) 30 psi FS: greater than (>) 30 psi
Coring	Geoprobe or HQ Core with wireline	PT: One per column and one per Ex-Situ Mixing Method FS: 1 per 5,000 sf, each, ISS and Ex-Situ Mixing method	Visual criteria described in Subsection 3.4. E and laboratory testing described in this subsection.

Notes:

1. Failure to achieve the above criteria may require additional coring and/or corrective action, as directed by the ENGINEER/DEPARTMENT, at no additional cost to the DEPARTMENT. Corrective actions may be necessary in

order to fully solidify the source area. Corrective actions shall be performed by the CONTRACTOR at no additional cost to the DEPARTMENT.

2. Treatment Unit = the solidified material produced in one day using the same equipment, grout mix, grout addition rate or soil characteristics (above/below groundwater), such that different results would be expected, for in-situ or ex-situ solidification. Multiple units may be produced in a single day of work, for example if consistent in-situ solidification occurs (one unit); plus ex-situ solidification occurs for two different materials requiring different grout addition rates (two units, minimum) (i.e., one above the water table and one from below the water table) on the same day; then there would be a total of at-least three units that require testing due to the different expected results based on mixing methods and material characteristics.
3. CY =cubic yards
4. cm/sec =centimeters per second
5. psi = pounds per square inch

G. All test results shall be reported to the ENGINEER as soon as they become available from the laboratory. If initial sample test results do not meet criteria, a backup sample shall be tested. Final determination of which sample result is considered representative shall be made by the ENGINEER.

H. Records: CONTRACTOR shall maintain records for all testing, measurements, observations, and inspections. Quality Control Reports shall be submitted to the ENGINEER each day on a form acceptable to the ENGINEER. These reports shall list all test results, measurements, and observations made and/or received by the CONTRACTOR for that day. Records shall also include as-constructed drawings of ISS column locations and solidified unit locations in three-dimensions and identification numbers

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SECTION 32 31 00

FENCING

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope:
   1. CONTRACTOR shall provide all labor, materials, tools, equipment and incidentals as shown, specified, and required to furnish and install fencing.
   2. Extent of fencing is shown or indicated.
   3. Types of materials required under this Section include:
      a. Aluminum-coated, steel chain link fabric.
      b. Galvanized steel framework.
      c. Grounding and bonding.
      d. Auxiliary system components, gates, accessories, fasteners, and fittings.
   4. Substitutions: Structural shapes of satisfactory sections and equal strengths may be substituted upon DEPARTMENT/ENGINEER's approval of CONTRACTOR's substitution request.
   5. Reuse acceptable existing fence and gates from Site and provide adaptors to new fencing, as directed and approved by ENGINEER and provide.

1.2 REFERENCES

A. Standards referenced in this Section are:
   1. ASTM A53, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
   2. ASTM A90/A90M, Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings.
   3. ASTM A123, Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
   4. ASTM A153/A153M, Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   5. ASTM A428/A428M, Test Method for Weight [Mass] of Coating on Aluminum-Coated Iron or Steel Articles.
   6. ASTM A491, Specification for Aluminum-Coated Steel Chain-Link Fence Fabric.
   7. ASTM A780, Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
   8. ASTM A817, Specification for Metallic-Coated Steel Wire for Chain-Link Fence Fabric.
   9. ASTM A1011/A1011M, Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.

10. ASTM B6, Specification for Zinc.
11. ASTM F552, Terminology Relating to Chain Link Fencing.
12. ASTM F567, Practice for Installation of Chain-Link Fence.
13. ASTM F626, Specification for Fence Fittings.
14. ASTM A653, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
15. ASTM F668, Specification for Polyvinyl Chloride (PVC) and Other Organic Polymer-Coated Steel Chain-Link Fence Fabric.
16. ASTM F900, Specification for Industrial and Commercial Swing Gates.
17. ASTM F1043, Specification for Strength and Protective Coatings on Metal Industrial Chain Link Fence Framework.
18. ASTM F1083, Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.
19. CLFMI CLF 2445, Product Manual.
20. CLFMI, Step-by-Step Installation Guide.
21. IEEE C2, National Electrical Safety Code.
22. IEEE 81, Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System Part 1: Normal Measurements.
23. UL 467, Grounding and Bonding Equipment.

1.3 TERMINOLOGY

A. The following words or terms are not defined but, when used in this Section, have the following meaning.
   1. "Knuckling" describes the type of selvage obtained by interlocking adjacent pairs of wire ends and then bending the wire ends back into a closed loop.
   2. "Fencing" describes an assembly of metal components, including wire chain-link fabric fastened to top, bottom and intermediate horizontal rails and to vertical line posts, corner posts and terminal posts. This assembly includes all auxiliary components, gates, fittings, fasteners, and other accessories, all with specified protective coatings.

B. Terminology used in this Section and not defined in this Article will be construed in accordance with the terminology used in CLF 2445 and ASTM F552.

1.4 QUALITY ASSURANCE

A. Qualifications:
   1. Erector/Installer:
      a. Engage a single erector that is skilled and trained, and possesses successful and documented experience installing fencing, and employs only workers with specific skill and successful experience in the type of Work required.
      b. Erector shall be acceptable to fencing manufacturer,
      c. Submit name and qualifications of erector with the following information for a minimum of three successful projects:

d. Names and telephone numbers of owner and architect or engineer responsible for project.
e. Approximate fencing contract amount.
f. Quantity of fencing installed.

B. Component Supply and Compatibility:
1. Provide fencing as complete system with all gates, hardware, appurtenances and other components produced by a single manufacturer, including custom erection accessories, fittings, clamps, and fastenings as required for complete system.

C. Regulatory Requirements:
1. Comply with Laws and Regulations, including:
a. Americans with Disabilities Act of 1990 (Public Law 101-336), Appendix A of 28 CFR 36, Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG).

1.5 SUBMITTALS

A. Action Submittals: Submit the following prior to installation:
1. Shop Drawings:
a. Drawings at scale of 1/4-inch equal to one foot of typical fence assembly, identifying all materials, dimensions, sizes, weights, and finishes of rails, posts, braces, supports and other fencing components. Show fence heights, and locations of gates. Show gate swing, or other operation, hardware, and accessories. Include plans, elevations, and sections, with required installation and operating clearances, and details of post anchorage, attachments, and bracing.
2. Product Data:
a. Copies of manufacturer's technical product information, and specifications for all fencing components, including auxiliary system components.
b. Data substantiating that materials proposed comply with the following:
1) Weight of aluminum coating on wire fabrications, in compliance with ASTM A428.
2). Weight of zinc coating on pipe fabrications, in compliance with ASTM A90.
3. Samples: ENGINEER's review will be for color and texture only. Compliance with other requirements is CONTRACTOR's responsibility. Submit the following:
a. Each fencing component, fastener, post, rail, support, chain-link fabric type, and other auxiliary and miscellaneous items labeled with identification of proposed use and location.
b. Sample of each chain-link fabric material, six inches square; and framework members, and typical accessories, each approximately six inches long.

c. Full range of manufacturer's standard and custom color Samples.

B. Informational Submittals: Submit the following:
1. Certifications:
a. Submit shipping list for materials used prior to installation, endorsed with manufacturer's voucher, signed by authorized employee of manufacturer, certifying that material used in fencing complies with the Contract Documents and with the approved submittals.
2. Design Data: Submit with the Shop Drawings:
a. All structural calculations verifying that all system components comply with requirements of authorities having jurisdiction at the Site.
b. When proposing fencing framework or other structural components that varies from the Contract Documents, submit fabricator's structural calculations for design of proposed fencing. Structural analysis shall verify that all system components including supports, gates, fasteners, fittings, and connections comply with the Contract Documents and requirements of authorities having jurisdiction at the Site.
3. Manufacturer's Instructions:
a. Manufacturer's installation instructions.
4. Field Quality Control Submittals:
a. Indicate and interpret test results for compliance of chain link fence and gate grounding and bonding with performance requirements specified in the Contract Documents.
5. Qualifications Statements:
a. Erector.

C. Closeout Submittals: Submit the following:
1. Warranty documentation.
2. Keys: Submit specified number of keys for locksets and padlocks.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery of Materials:
1. Packaging and Marking: Comply with CLFMI CLF 2445.
2. Deliver materials in manufacturer's original, unopened packaging with all factory-applied tags, labels and other identifying information intact, legible and accurately representing material on approved submittals.

B. Storage of Materials:
1. Store all materials under weatherproof cover, off the ground and away from other construction activities.
2. Do not store material in a manner that would create a humidity chamber. Provide for free movement of air under protective cover and between components of the fencing.

C. Handling of Materials:
   1. Handle material in manner that is in compliance with manufacturer's recommendations and that avoids damaging coatings.

1.7 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities unless allowed:
   1. Under the following conditions, only after providing temporary utility services according to requirements indicated.
      a. Notify ENGINEER and DEPARTMENT not less than five days in advance of proposed utility interruptions.
      b. Do not proceed with utility interruptions without ENGINEER's written permission.

B. Obtain measurements at the Site to verify layout information and dimensions for fencing and gates in relation to reference points provided by DEPARTMENT or indicated in the Contract Documents.

1.8 WARRANTY

A. General Warranty: The special warranties specified in this Article shall not deprive DEPARTMENT of other rights or remedies DEPARTMENT may otherwise have under the Contract Documents and shall be in addition to and run concurrent with other warranties made by CONTRACTOR under the Contract Documents.

PART 2 – PRODUCTS

2.1 SYSTEM PERFORMANCE

A. Design Considerations:
   1. Verify size of framing members shown or indicated in the Contract Documents. Where structural analysis indicates the need, provide additional members, or increased member size, thickness or weight.
   2. Modifications may be made only as necessary to meet Site conditions to ensure proper fitting and support of the Work and only upon submittal of Shop Drawings and receipt of approval by ENGINEER.

2.2 MATERIALS

A. General:
   1. Tube sizes specified are nominal outside dimension.
   2. Roll-formed section sizes are nominal outside dimensions.
   3. Wire gages shall conform to American Steel and Wire Company gage.
   4. Heat-form arcs and chords before applying protective coatings to metal.

5. Sizes specified are given for uncoated metal. Protective coatings are in addition to specified metal dimensions, gages, and sizes.
6. Provide weights of zinc and aluminum coatings on wire and pipe fabrications in accordance with CLFMI CLF 2445.

B. Chain-Link Fence Fabric:
1. One-piece fabric widths, for fencing 12 feet and less in height, complying with CLFMI CLF 2445.
2. Wire mesh shall be woven throughout in form of approximately-uniform square mesh with parallel sides and horizontal and vertical diagonals of approximately-uniform dimensions, of size and gage specified and in compliance with ASTM A817, Type 1, cold-drawn carbon steel wire with minimum breaking strength of 2,170 pounds and coated with aluminized finish, as specified. Fabric shall be as recommended by CLFMI for heavy industrial usage.
3. Provide fence fabric imprinted with manufacturer's trade name, country of origin, core wire gage, and finished outside diameter gage.
4. Provide fabric knuckled to eliminate exposure of sharp edges.
5. Fabric Gage: Provide the following:
   a. No. 9-gage wires.
6. Mesh Size: Provide the following:
   a. Two-inch mesh.

2.3 FRAMEWORK

A. General: The following table presents actual OD and equivalent nominal NPS size and trade size of round members:

Actual OD (inches)	NPS Size (inches)	Trade Size (inches)
1.315	1.0	1-3/8
1.660	1.25	1-5/8
1.900	1.5	2
2.375	2.0	2.5
2.875	2.5	3
3.500	3.0	3.5
4.000	3.5	4
6.625	6.0	6-5/8
8.625	8.0	8-5/8

B. Pipe shall be commercial grade, plain-end steel pipe with standard-weight walls. Steel strip used for manufacture of pipe shall comply with ASTM F1083, Schedule 40 pipe with minimum yield strength of 25,000 psi and protected with zinc, as specified.

C. Fittings: Comply with ASTM F626.

D. End, Corner, and Pull Posts: Provide end, corner, and pull posts of following minimum sizes:
   1. Up to six feet fabric height:
      a. 2.375 inches OD pipe weighing 3.65 pounds per linear foot.
   2. Over six feet fabric height and less than eight feet fabric height:
      a. 2.875 inches OD pipe weighing 5.79 pounds per linear foot.
   3. Over eight feet fabric height:
      a. 3.50 inches OD pipe weighing 7.58 pounds per linear foot.

E. Line Posts: Provide line posts of following minimum sizes and weights:
   1. Up to six feet fabric height:
      a. 1.90 inches OD pipe weighing 2.72 pounds per linear foot.
   2. Over six feet fabric height and less than eight feet fabric height:
      a. 2.375 inches OD pipe weighing 3.65 pounds per linear foot.
   3. Over eight feet fabric height:
      a. 3.50 inches OD pipe; weight of 7.58 pounds per linear foot.

F. Top Rail: Provide top rails, unless otherwise shown or indicated, conforming to the following:
   1. 1.900 inch OD pipe weighing 2.72 pounds per linear foot.
   2. Provide in manufacturer's longest lengths, with expansion-type coupling 0.051-inch thick rail sleeves, approximately seven inches long, for each joint.
   3. Provide means for attaching top rail securely to each gate, corner, pull, and end post.

G. Center Rails Between Line Posts: Provide center rails between line posts, where shown, consisting of 1.660-inch OD pipe weighing 2.27 pounds per linear foot.

H. Roll-Formed Steel: Provide rolled steel shapes produced from structural-quality steel conforming to ASTM A1011, Grade 45, with minimum yield strength of 45,000 pounds psi. Protective coating system shall conform to ASTM F1043, as specified.

I. Post Brace Assembly: Provide bracing assemblies at end and gate posts, and at both sides of corner and pull posts, with horizontal brace located at mid-height of fabric.
   1. Use 1.900-inch OD pipe weighing 2.72 pounds per linear foot for horizontal brace and 3/8-inch diameter rod with turnbuckle for diagonal truss.

2.4 AUXILIARY FENCING MATERIALS AND ACCESSORIES

A. Wire Ties:
   1. For tying fabric to line posts, use nine-gage, aluminum alloy 1100-H4, PVC-coated wire ties to match fence fabric, spaced 12 inches on centers.
   2. For tying fabric to rails and braces, use nine-gage, aluminum alloy 1100-H4, PVC-coated wire ties to match fence fabric, spaced two feet on centers.

3. For tying fabric to tension wire, use 11-gage, aluminum alloy 1100-H4, PVC-coated wire hog ring ties to match fence fabric, spaced two feet on centers.

B. Tension Wire: Provide tension wire consisting of aluminized, seven-gage, coiled spring steel wire coated with 0.40-ounces of aluminum per square foot of wire surface, minimum, in compliance with ASTM F1664.
   1. Locate at bottom of fabric only.

C. Post Caps: Pressed steel, wrought iron, or cast aluminum alloy, designed as weather-tight closure cap, for tubular posts. Provide one cap for each post unless equal protection is afforded by combination post-top cap and barbed wire supporting arm, where barbed wire is required.
   1. Provide caps with openings to allow through-passage of top rail.
   2. Provide cone-type caps for terminal posts and loop-type caps for line posts.

D. Stretcher Bars: One-piece lengths equal to full height of fabric, with minimum cross-section of 3/16-inch by 3/4-inch. Provide one stretcher bar for each gate and end-post, and two for each corner- and pull-post, except where fabric is integrally woven into the post.

E. Stretcher Bar Bands: Pressed steel, galvanized, 0.078-inch to 0.108-inch thick depending on post diameter, spaced not greater than 15 inches on centers to secure stretcher bars to end-, corner-, pull-, and gate-posts.
   1. Bands may also be used with special fittings for securing rails to end-, corner-, pull-, and gate-posts.

F. Truss Rods: Steel rods, 3/8-inch diameter, merchant quality with turnbuckle.

G. Concrete: 4,000 psi concrete.

2.5 FENCE GROUNDING

A. Conductors: Bare, solid wire for No. 6-gage and smaller, stranded wire for No. 4-gage and larger.
   1. Material Above Finished Grade: Copper.
   2. Material On or Below Finished Grade: Copper.
   3. Bonding Jumpers: Braided copper tape, one inch wide, woven of No. 30-gage bare copper wire, terminated with copper ferrules.

B. Connectors and Ground Rods: As listed in UL 467.
   1. Connectors for Below-Grade Use: Exothermic welded type.
   2. Ground Rods: Copper-clad steel.
      a. Size: 5/8-inch by eight feet.

2.6 FINISHING

A. Chain-Link Fence Fabric:
   1. Aluminized finish with not less than 0.40 ounces aluminum per square foot, complying with ASTM A491, Class II.

B. Framework and Appurtenances: Provide the following finishes for steel framework, auxiliary system components, and miscellaneous accessories:
   1. Galvanizing: Zinc for galvanizing shall be of High Grade or Special High Grade conforming to ASTM B6 with maximum aluminum content of 0.01 percent. Galvanize metal using hot-dip process in accordance with the following:
      a. Structural Iron and Steel Shapes: ASTM A123
      b. Rolled-Form Sheet Steel: ASTM A653
      c. Hardware and Accessories: ASTM A153
      d. Fittings: ASTM F626
      e. Pipe: ASTM A53
   2. Provide minimum weights of zinc as follows:
      a. Pipe: 1.8-ounces of zinc per square foot. Apply Type A coating both inside and outside according to ASTM F1043, as determined by ASTM A90.
      b. Rolled-Form Sheet Steel: 4.0-ounces of zinc per square foot of surface area.
      c. Hardware and Accessories: Zinc weights in compliance with Table 1 of ASTM A153.

D. Welded Joints:
   1. Repair zinc coatings at welded joints by applying zinc-rich paint.
   2. Repair polymer-coated steel by applying an epoxy primer, intermediate coat and urethane topcoat, per manufacturer's requirements.

2.7 SOURCE QUALITY CONTROL

A. Fabrication Tolerances:
   1. Fabric, posts, rails, and other supports shall be straight or uniformly curved to provide the profiles shown, to dimensional tolerance of 1/16-inch in 10 feet without warp or rack in the finished Work.

PART 3 – EXECUTION

3.1 INSPECTION

A. Examine conditions under which the Work will be erected and notify ENGINEER in writing of conditions detrimental to proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions are corrected.

3.2 ERECTION

A. Comply with CLFMI Step-by-Step Installation Guide and ASTM F567. Do not begin installation and erection of fencing until final grading is completed.

B. Excavation: Drill holes of diameters specified, for post footings in firm, undisturbed or compacted soil.
   1. For posts set in cast-in-place concrete, provide hole diameters dug or drilled a minimum of four times the largest cross section of post.
   2. Spread soil from excavations uniformly adjacent to fence line, or on adjacent areas of the Site, as directed by ENGINEER.
   3. When solid rock is encountered at ground surface, drill into rock at least 12 inches for line-posts and at least 1.5 feet for end-, pull-, corner-, and gate-posts. Drill hole at least one inch greater diameter than largest dimension of post to be placed.
      a. If solid rock is below soil overburden, drill to full depth required, except penetration into rock need not exceed the minimum depths specified above for rock encountered at ground surface.

C. Setting Posts: Remove loose and foreign materials from sides and bottoms of holes and moisten soil prior to placing concrete.
   1. Center and align posts in holes 3-inches above bottom of excavation.
   2. Posts shall be set in concrete footings, except as otherwise shown or specified. Place concrete around posts in continuous pour and vibrate or tamp for consolidation. Check each post for vertical and top alignment and hold in position during placement and finishing operations.
   3. Extend concrete to two inches above ground surface, or to two inches below ground surface if cover of sod, bituminous asphalt paving, or other material is shown or indicated to conceal concrete. Crown to shed water away from posts.
   4. Extend footings for gate posts to underside of bottom hinge. Set keeps, stops, sleeves, and other accessories into concrete as required.
   5. Keep exposed concrete surfaces moist for at least seven days after placement, or cure with membrane curing materials, or other acceptable curing method.

D. Concrete Strength: Allow concrete to attain at least 75 percent of its minimum 28-day compressive strength, but in no case sooner than seven days after placement, before installing rails, tension wires, barbed wire, or chain-link fabric.
   1. Do not stretch and tension fabric and wires, and do not hang gates, until concrete has attained its full design strength.

E. Posts and Rails:
   1. Line Posts: Set posts in cast-in-place concrete footings as specified, spaced not more than ten feet on centers. Provide caps on top of each post to exclude moisture and to receive top rail, unless equal protection is afforded by

combination post-top cap and barbed wire supporting arm, where barbed wire is required.

2. Top Rails: Run rail continuously through post caps or extension arms, bending to radius for curved runs. Provide expansion couplings as recommended by fencing manufacturer to form continuous rail between terminal posts.
3. Brace Assemblies: Install braces so posts are plumb when diagonal rod are under proper tension. Install brace assemblies at end-posts and at both sides of corner- and pull-post panels. Panels adjacent to gates shall have intermediate horizontal rails and diagonal bracing. Diagonal bracing shall run from center of first line-post to bottom of terminal-post.

F. Chain-Link Fabric:
1. Install fabric on security side of fence, and anchor to framework so that fabric remains in tension after pulling force is released. Fasten to terminal posts and gate posts with tension bars threaded through mesh and secured with tension bands at maximum intervals of 14 inches.
2. Tie to line-posts, gate frames and top and bottom rails with tie wires spaced at maximum 12 inches on posts and two feet on rails.
3. Connect tension bars to posts and frames by means of adjustable bolts and bands spaced not more than 14 inches apart.
4. Leave approximately two inches between finish ground surface and bottom selvage, except where bottom of fabric extends into concrete.
5. Join roll of chain-link fabric by weaving a single picket into the ends of roll to form continuous mesh.

G. Tension Wire:
1. Stretch tension wire taut and free of sag, from end to end of each stretch of fence and position at a height that will enable the wire to be fastened to chain-link fabric by securing within the top 12 inches of chain-link fabric.
2. Fasten bottom tension wire within bottom six inches of chain-link fabric.
3. Tie tension wire to each post with not less than six-gage galvanized wire.

H. Stretcher Bars: Thread through or clamp to fabric four inches on centers, and secure to posts with metal bands spaced 15 inches on centers.

I. Tie Wires: Use U-shaped wires conforming to diameter of pipe. Clasp pipe and fabric firmly with ends twisted at least two full turns. Bend ends of wire to minimize hazard to persons and clothing.

J. Fasteners: Install nuts for tension band and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.3 GROUNDING AND BONDING

A. Fence Grounding: Provide at maximum intervals of 1,500 feet, except as follows:

1. Ground fencing within 100 feet of buildings, structures, walkways, and roadways at maximum intervals of 750 feet.
    a. Gates and Other Fence Openings: Ground fence on each side of opening.
        1) Bond metal gates to gate-posts.
        2) Bond across openings, with and without gates, except openings indicated as intentional fence discontinuities. Use No. 2-gage wire and bury wire at least 1.5 feet below finished ground surface.

B. Protection at Crossings of Overhead Electrical Power Lines: Ground fencing at location of crossing and at maximum distance of 150 feet on each side of crossing.

C. Fences Enclosing Electrical Power Distribution Equipment: Ground as required by IEEE C2, unless otherwise shown or indicated.

D. Grounding Method: At each grounding location, drive ground rod vertically until the top is six inches below finished ground surface. Connect rod to fence with No. 6-gage conductor. Connect conductor to each fence component at grounding location, including the following:
    1. Each Barbed Wire Strand: Make grounding connections to barbed wire with wire-to-wire connectors designed for this purpose.

E. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.

F. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Provide connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
    1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
    2. Make connections with clean, bare metal at points of contact.
    3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
    4. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
    5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

G. Bonding to Lightning Protection System: If fence terminates at lightning- protected building or structure, ground the fence and bond the fence grounding conductor to lightning protection down conductor or lightning protection grounding conductor.

3.4 FIELD QUALITY CONTROL

A. Site Tests:

1. Ground-Resistance Testing Agency: Engage a qualified independent testing agency to perform field quality-control testing.
2. Ground-Resistance Tests: Subject completed grounding system to a megger test at each grounding location. Measure ground resistance not less than two full days after last trace of precipitation, without soil having been moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance. Perform tests by two-point method in accordance with IEEE 81.
3. Desired Maximum Grounding Resistance Value: 25 ohms.
4. Excessive Ground Resistance: If resistance to ground exceeds desired value, notify ENGINEER promptly. Include recommendations to reduce ground resistance and proposal to accomplish the recommendations.
5. Report: Prepare and submit test reports, certified by testing agency, of ground resistance at each test location. Include observations of weather and other phenomena that may affect test results.

3.5 ADJUSTMENT AND CLEANING

A. Repair coatings damaged in the shop or at the Site by recoating with manufacturer's recommended repair compound, applied in accordance with manufacturer's directions. Repair hot-dip galvanized coatings in accordance with ASTM A780.

B. Lubricate operating equipment and clean exposed surfaces.

C. Repair and replace broken or bent components.

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SECTION 32 92 26

SEEDING AND SOIL SUPPLEMENTS

PART 1 – GENERAL

1.1 DESCRIPTION

A. For restored areas to be vegetated as indicated on the Construction Contract Drawings, provide seed as specified herein.

B. Furnish and place topsoil, lime, fertilizer, seed, and mulch or erosion control matting in the areas indicated within the limit of work.

C. Maintain new seeding through the contract maintenance period.

D. Disturbed areas outside the limit of work shall be seeded and mulched without the addition of Topsoil as approved by the ENGINEER.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 33 00 - Submittal Procedures

B. Section 31 00 00 - Earthwork

C. Section 31 25 00 - Erosion and Sediment Control

1.3 REFERENCES AND GUIDELINES

A. New York Standards and Specifications for Erosion and Sediment Control (NY SESC), August 2005 by the NYS Soil and Water Conservation Committee.

B. Standards Specifications, State of New York Department of Transportation (NYDOT SS), May 4, 2006 by the New York State Department of Transportation (NYDOT).

1.4 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00 - Submittal Procedures.

B. Grass Seed Vendor's Certificate:
CONTRACTOR shall submit the seed vendor's certified statement for the grass seed mixture required, showing common name, percentage of seed mix by weight, percentages of purity and germination, year of production, date of packaging, and location of packaging.

C. Fertilizer: CONTRACTOR shall submit the fertilizer manufacturer's product data showing chemical analysis and percent composition.

D. Hydraulic Seeding Method:
If the Hydraulic Seeding Method is used, submit a certified statement as to the number of pounds of materials to be used per 100 gallons of water, and specify the number of square feet of seeding that can be covered with the quantity of solution in the hydroseeder.

1.5 DEFINITIONS

A. Limit of Work: Restoration with seed and mulch shall be performed on all disturbed areas within the limit of work as delineated on the Construction Contract Drawings.

B. The exception to these requirements is a for those areas that require alternate stabilization with erosion control matting, or riprap as shown on the Construction Contract Drawings or described in Section 31 25 00 - Erosion and Sediment Control.

PART 2 – PRODUCTS

2.1 MATERIALS

A. General: Obtain and retain as part of the project records, certifications, and/or labels of materials supplied.

B. Topsoil: Refer to Section 31 00 00 - Earthwork.

C. Fertilizer: Supply fertilizer meeting the recommendation of the testing laboratory nutrient analysis for the Topsoil. At a minimum provide a standard commercial 5-10-10 grade containing at least 10 percent available nitrogen, 10 percent readily available phosphoric acid and 10 percent total available potash in conformity with the Standards of the Association of Official Agricultural Chemists. Supply in unopened bags with the weight, contents and guaranteed analysis shown thereon or on a securely attached tag.

D. Lime:
1. Apply ground limestone (equivalent to 50% calcium plus magnesium oxide) at a rate recommended by the testing laboratory based on the results of their nutrient analysis of the Topsoil. At a minimum apply 3 tons per acre (135 pounds. per 1,000 square feet).
2. Provide ground agricultural limestone (fine ground dolomite) conforming to the requirements of NYDOT SS M.18.05.1. The gradation shall consist of 40 but not more than 60 percent finer than the No. 60 sieve and 50 percent finer than the No. 100 sieve.

E. Seed for Permanent Vegetation:
Shall meet the following minimum requirements:

1. The grass seed mixture shall include no "primary noxious weed seeds."
2. Furnish in fully labeled, standard sealed containers.
3. Percentage and germination of each seed type in the mixture, purity, and weed seed content of the mixture shall be clearly stated on the label.
4. The weight of pure live seed (PLS) is computed by the labeled purity percent times the labeled germination percent times the weight. To illustrate the method of computing to PLS from the tag basis, the following example is given: Required: 20 pounds PLS of a particular variety—stock available is 99.41% pure and 92% germination—20 divided by the product of 0.9941 and 0.92 equals 21.8 pounds on the tag basis to furnish 20 pounds of PLS.
5. Subject to the testing provisions of the Association of Official Seed Analysis, with the month and year of test clearly stated on the label.
6. Seed which has become wet, moldy, or otherwise damaged will not be acceptable.
7. All seed shall be certified as to mixture, germination, purity, and live seed as follows:
   Percent germination > 80%
   Pure Live Seed (PLS) > 85%
   Percent Purity > 85%
   Weed Seed < 1%
   All seed shall be from the current year's crop unless recent tests by an approved testing agency demonstrate that older seed meets the above requirements.
8. Use the seed mix specified in Attachment 32 92 26-1 for general upland areas; Attachment 32 92 26-2 for riparian/wetland areas; and Attachment 32 92 26-3 for select portions of the riparian area. The limits for each type or seeding area are delineated on the Construction Contract Drawings.
9. Seed mixes by New England Wetland Plants, Inc. or other suitable equals may be used if approved by the ENGINEER.
10. For temporary seeding requirements see Section 31 25 00 - Erosion and Sediment Control.

F. Mulch: Refer to Section 31 25 00 - Erosion and Sediment Control for mulching requirements.

G. Erosion Control Matting: Refer to Section 31 25 00 - Erosion and Sediment Control for erosion control matting requirements.

PART 3 – EXECUTION

3.1 PREPARATION

A. All Areas to be Seeded:
   1. Shall be worked as necessary to provide a reasonably firm but friable seedbed.
   2. Shall meet the specified grades and are free of growth and debris.
   3. Take care to prevent the formation of low places and pockets where water will stand.

B. Depth of Tillage:
   1. Two (2) inches or as directed by the ENGINEER.
   2. On slopes steeper than 3: l, reduce depth of tillage as directed.
   3. Where ryegrass has been planted for temporary erosion control and has not been eliminated prior to the completion of the Work, disk at least 4 inches deep and seed to permanent grasses.

3.2 APPLICATION

A. Topsoil: Topsoil shall be placed using earth moving equipment. The soil shall be spread and tracked to a uniform depth as indicated on the Construction Contract Drawings. The soil surface shall be left free of ruts or channels. Remove all large stiff clods, lumps, brush, roots, stumps, litter, and other foreign material and stones over 3-inch in size. See Section 31 00 00 - Earthwork for additional requirements.

B. Fertilizer and Lime:
   1. Apply by means of a mechanical spreader or other acceptable method which is capable of maintaining a uniform rate of application.
   2. Conduct when the soil is in a moist condition and at least 24 hours before sowing the seed.
   3. Fertilizer shall be applied at the rate based on the results of the nutrient analysis specified in Section 31 00 00 - Earthwork. If the default 5-10-10 fertilizer is utilized, apply at a rate of 600 pounds per 1 acre.

C. Seeding:
   1. Perform erosion control items of work such as seeding and mulching as soon as practical for areas of suspended work or areas of completed work.
   2. When seeding is required on areas of the project where work is not complete but will be suspended for an extended period, use the appropriate temporary seed mix specified in Section 31 25 00 - Erosion and Sediment Control.
   3. When seeding is required on areas of the Project where grading is complete, use the specified permanent seed mixture.
   4. Apply permanent seed mix between April 1 to May 31 (Spring Seeding) or August 15 to October 15 (Fall Seeding) at the rates noted in Table 32 92 26-1:

Table 32 92 26-1

Seed Mix Type	Rate in lbs per acre
Upland	35
Riparian/Wetland	18
Wildflower	23

5. Planting between October 15 and April 1 shall be considered Winter Seeding and shall be subject to the additional requirements described in Sub-Part 3.04.
6. Special care must be taken if seeding must occur during the generally hot, dry period from June to August.
7. Seeding Restrictions:
   Do not seed during windy weather or when the ground is excessively wet, or otherwise untillable.

D. Mulch:
   1. Undertake immediately after each area has been properly prepared and seeded.
   2. Apply the selected mulch type at the rates noted in Table 3.7 of the NY SESC on all seeded areas not otherwise protected with erosion control matting.
   3. Blowing chopped mulch shall be permitted provided mulch anchoring is performed.
   4. Hay or straw mulch should cover the ground enough to shade it, but the mulch should not be so thick that a person standing cannot see ground through the mulch.
   5. Remove matted mulch or bunches.
   6. Collect and dispose of all baling wire or rope off-site.

3.3 SEEDING METHODS

A. General: Fertilizer (upland areas only), limestone, mulch material if required, and seed of the type specified may be placed at the locations shown or ordered by one of the following methods, provided an even distribution is obtained. The maximum seeding depth shall be 1/4-inch when using methods other than hydroseeding.

B. Dry Method:
   1. Power Equipment: Use mechanical seeders, seed drills, landscape seeders, cultipacker seeders, fertilizer spreaders, or other approved mechanical seeding equipment or attachments when seed, limestone, and fertilizer are to be applied in dry form.
   2. Manual Equipment: On areas which are inaccessible to power equipment, permission may be given to use hand-operated mechanical equipment when the materials are to be applied in dry form. The use of hand shovels to spread the materials will not be allowed.

3. Do not mix limestone and fertilizer together prior to their application, but work into the soil together to the specified depth.
4. After seeding, compact the entire area by a suitable roller weighing 60 to 90 lbs. per linear foot.
5. Allow at least 24 hours between fertilizing and seeding.
6. Unless otherwise ordered, mulch areas covered with seed.

C. Hydraulic Method:
1. The application of grass, seed, fertilizer, limestone, and suitable mulch, if approved, may be accomplished in one operation by the use of an approved spraying machine.
2. Mix materials with water in the machine and keep in an agitated state in order that the materials may be uniformly suspended in the water.
3. The spraying equipment shall be so designed that when the solution is sprayed over an area, the resulting deposits of limestone, fertilizer, and grass seed are equal in quantity to the required rates.
4. Flush and clean hydraulic seeding and fertilizing machine each day before seeding is to be started, and thoroughly flush of all residue after the completion of application on every 10 acres.
5. If the results of the spray operations are unsatisfactory, abandon this method and apply the materials by the dry method.
6. When inoculum is required, mix with the seed and spray.
7. Compaction or rolling not required.
8. If mulch material is not applied during the seeding operation apply mulch within 1/2 hour following the seeding operation.

3.4 WINTER (DORMANT) SEEDING

A. Applies to seeding that occurs between October 15 and April 1 when ground temperatures are generally unfavorable for seed germination.

B. Seed Application Rate: The permanent seed mix shall be applied at rate of 70 pounds per acre which is an approximate 25 percent increase in the rate specified in Sub-Part 3.02C4.

C. Mix Modification: A companion crop of winter or annual rye shall be added to the mix at a rate of 52 pounds per acre (1.2 pounds per 1,000 square feet).

D. Method Modification: On areas with slopes less than 10 percent, hydraulic methods of seeding shall not include a seed/mulch mix. Instead, provide two separate applications, first seed, and then mulch.

E. Mulch Type Modification: Wood fiber (cellulose) mulch is not permitted for winter applications. Wood chips or hay/straw mulch shall be utilized on areas where erosion control matting is not required.

3.5 CARE AFTER SEEDING

A. Acceptance: To be acceptable, grass shall show a reasonably thick, uniform stand, free from sizable areas of thin or bare spots, with a minimum coverage of approximately 80 percent as agreed by the CONTRACTOR and ENGINEER.

B. Repair: Reseed any seeded areas which fail to show a uniform stand until all areas are covered with acceptable grass growth.

C. Maintenance Period: Per Contract Document Section VIII, Article 12.1.

+ + END OF SECTION + +

Attachment 32 92 26-1, Upland Seed Mix

BOTANICAL NAME	COMMON NAME
Festuca Rubra	Creeping Red Fescue
Elymus Canadensis	Canada Wild Rye
Lolium Multiflorum	Annual Ryegrass
Lolium Perenne	Perennial Ryegrass
Bouteloua Gracilis	Blue Grama
Schizachyrium Scoparium	Little Bluestem
Sorghastrum Nutans	Indian Grass
Agrostis Scabra	Rough Bentgrass/Ticklegrass
Agrostis Perennans	Upland Bentgrass

Attachment 32 92 26-2, Riparian/Wetland Seed Mix

BOTANICAL NAME	COMMON NAME
Carex vulpinoidea	Fox Sedge
Carex scoparia	Blunt Broom Sedge
Verbena hastata	Blue Vervain
Curex lurida	Lurid Sedge
Poa palustris	Fowl Bluegrass
Bidens aristosa	Tickseed Sunflower/Bur Marigold
Curex lupulina	Hop Sedge
Scirpus atrovirens	Green Bulrush
Eleocharis palustris	Creeping Spike Rush
Juncus effusus	Soft Rush
Carex crinita	Fringed Sedge
Asclepias incarnata	Swamp Milkweed
Aster puniceus (Symphyotrichum puniceum)	Swamp Aster
Glyceria canadensis	Rattlesnake Grass
Mimulus ringenus	Square Stemmed Monkey Flower
Eupatorium maculatum (Eutrochium maculatum)	Spotted Joe Spy Weed
Iris vesicolor	Blue Flag

Attachment 32 92 26-3, Wildflower Seed Mix – Along Lower Section of Brandy Brook

BOTANICAL NAME	COMMON NAME
Schizachyrium Scoparium	Little Bluestem, NY Ecotypes
Festuca Rubra	Creeping Red Fescue
Sorghastrum Nutans	Indian Grass
Elymus Canadensis	Canada Wild Rye
Elymus Virginicus	Virginia Wild Rye
Chamaecrista Fasciculata	Partridge Pea
Lupinus Perennis	Wild Blue Lupine
Ascelepias Syriaca	Common Milkweed
Zizia Aurea	Golden Alexanders
Rudbeckia Hirta	Black Eyed Susan
Monarda Fistulosa	Wild Bergamot
Aster Lateriflorus	Calico Aster
Aster Novae-Angliae	New England Aster
Oenothera Biennis	Evening Primrose
Penstemon Digitalis	Beard Tongue
Verbena Hastata	Blue Vervain
Vernonia Noveboracensis	New York Ironweed
Aster Laevis	Smooth Blue Aster
Euthamia Graminifolia	Grass Leaved Goldenrod
Solidago Juncea	Early Goldenrod

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SECTION 32 93 00

EXTERIOR PLANTS

PART 1 – GENERAL

1.1 DESCRIPTION

A. This Section includes the following:
   1. Trees.
   2. Shrubs.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 33 00 – Submittal Procedures

B. Section 31 00 00 – Earthwork

C. Section 32 92 26 – Seeding and Soil Supplements

1.3 DEFINITIONS

A. Balled and Burlapped Stock: Exterior plants dug with firm, natural balls of earth in which they are grown, with ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of tree or shrub required; wrapped, tied, rigidly supported, and drum-laced as recommended by ANSI Z60.1.

B. Balled and Potted Stock: Exterior plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than diameter and depth recommended by ANSI Z60.1 for type and size of exterior plant required.

C. Container-Grown Stock: Healthy, vigorous, well-rooted exterior plants grown in a container with well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for kind, type, and size of exterior plant required.

D. Fabric Bag-Grown Stock: Healthy, vigorous, well-rooted exterior plants established and grown in-ground in a porous fabric bag with well-established root system reaching sides of fabric bag. Fabric bag size is not less than diameter, depth, and volume required by ANSI Z60.1 for type and size of exterior plant.

E. Final Grade: Elevation of final or finish surface of topsoil or planting soil.

F. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

G. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.

H. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.

1.4 SUBMITTALS

A. Product Certificates: For each type of product, signed by vendor, nursery, or product manufacturer, and complying with the following:
   1. Manufacturer's certified analysis for standard products.
   2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
   3. Provide quality, size, genus, species, and variety of exterior plants complying with applicable requirements in ANSI Z60.1, "American Standard for Nursery Stock

B. Qualification Data: For landscape Installer.

C. Material Test Reports: For imported topsoil. See section 31 00 00 – Earthwork

D. Inspection Logs of temporary nursery plants shall be submitted weekly.

E. Planting Schedule: Indicating anticipated planting dates for exterior plants.

F. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of exterior plants during a calendar year. Submit before expiration of required maintenance periods.

1.5 QUALITY CONTROL

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of exterior plants.
   1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project Site when exterior planting is in progress.

B. Topsoil Analysis: Furnish soil analysis as described in Section 31 00 00 – Earthwork.

C. Provide quality, size, genus, species, and variety of exterior plants indicated, complying with applicable requirements in ANSI Z60.1, "American Standard for Nursery Stock."
   1. Selection of CONTRACTOR purchased exterior plant specimens may be made by ENGINEER at their location of purchase.

D. Tree and Shrub Measurements: Measure according to ANSI Z60.1 with branches and trunks or canes in their normal position. Do not prune to obtain required sizes. Take caliper measurements 6 inches above ground for trees up to 4-inch caliper size, and 12 inches above ground for larger sizes. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip-to-tip.

E. Observation: ENGINEER may observe trees and shrubs either at place of growth or at Site before planting for compliance with requirements for genus, species, variety, size, and quality. ENGINEER retains right to observe trees and shrubs further for size and condition of balls and root systems, insects, injuries, and latent defects and to reject unsatisfactory or defective material at any time during progress of Work. Trees and shrubs that do not survive relocation to temporary nursery through re-planting in the Restoration Area shall be replaced by new trees and shrubs upon restoration. Remove rejected trees or shrubs immediately from Project Site.
   1. Notify ENGINEER of sources of planting materials 30 days in advance of delivery to Site.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Healthy trees and shrubs from restoration area shall be maintained in a temporary nursery and reused to minimize delivery of additional trees and shrubs. Temporary nursery will include a piping and distribution system from the brook to provide ample water. Piezometers shall be installed to ensure that water levels are maintained at 0.5 ft below ground surface. Trees and shrubs shall be handled with care upon replanting to prevent damage.

B. Deliver exterior plants freshly dug.

C. Do not prune trees and shrubs before delivery, except as approved by ENGINEER. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of exterior plants during delivery. Do not drop exterior plants during delivery.

D. Handle planting stock by root ball.

E. Deliver exterior plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set exterior

plants trees in shade, protect from weather and mechanical damage, and keep roots moist.

1. Heel-in bare-root stock. Soak roots in water for two hours if dried out.
2. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
3. Do not remove container-grown stock from containers before time of planting.
4. Water root systems of exterior plants stored on-site with a fine-mist spray. Water as often as necessary to maintain root systems in a moist condition.

1.7 COORDINATION

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
   1. Spring Planting: April 1– July 1.
   2. Fall Planting: September 1 – October 21.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

C. Coordination with Site Restoration: Plant trees and shrubs after final grades are established and before seeding, unless otherwise acceptable to ENGINEER.
   1. When planting trees and shrubs after seeding, protect seeded areas and promptly repair damage caused by planting operations.

1.8 WARRANTY

A. Special Warranty: Warrant the following exterior plants, for the warranty period indicated, against defects including death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, or abuse by Owner, or incidents that are beyond CONTRACTOR's control.
   1. Warranty Period for Trees and Shrubs: One year from date of Final Completion.
   2. Remove dead exterior plants immediately. Replace immediately unless required to plant in the succeeding planting season.
   3. Replace exterior plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
   4. A limit of one replacement of each exterior plant will be required, except for losses or replacements due to failure to comply with requirements.

1.9 MAINTENANCE

A. Trees and Shrubs: Maintain for the following maintenance period by pruning, cultivating, watering, weeding, fertilizing, restoring planting saucers, tightening and repairing stakes and guy supports, and resetting to proper grades or vertical position,

as required to establish healthy, viable plantings. Spray as required to keep trees and shrubs free of insects and disease. Restore or replace damaged tree wrappings.

1. Maintenance Period: Six months from date of Final Completion.

PART 2 – PRODUCTS

2.1 TREE AND SHRUB MATERIAL

A. General: Furnish nursery-grown trees and shrubs complying with ANSI Z60.1, with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

B. Grade: Provide trees and shrubs of sizes and grades complying with ANSI Z60.1 for type of trees and shrubs required. Trees and shrubs of a larger size may be used if acceptable to ENGINEER, with a proportionate increase in size of roots or balls.

C. Label each tree and shrub with securely attached, waterproof tag bearing legible designation of botanical and common name.

D. If formal arrangements or consecutive order of trees or shrubs is shown, select stock for uniform height and spread, and number label to assure symmetry in planting.

E. Reused trees and shrubs placed in and subsequently removed from the temporary nursey for use in the Work shall meet all requirements of this section, unless otherwise approved by the ENGINEER. Trees and shrubs that do not survive relocation to temporary nursery through re-planting in the Restoration Area shall be replaced by new trees and shrubs upon restoration at no added cost to the DEPARTMENT. CONTRACTOR shall assume some reasonable percentage of loss.

2.2 DECIDUOUS SHRUBS

A. Form and Size: Deciduous shrubs with not less than the minimum number of canes required by and measured according to ANSI Z60.1 for type, shape, and height of shrub.

1. Provide balled and burlapped balled and potted container-grown trees.

2.3 HERBACEOUS PLANTS AND GRASSES

A. Herbaceous plants and grasses shall be provided in seed form as described in Section 32 92 26 – Seeding and Soil Supplements.

2.4 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:
   1. Class: Class T, with a minimum 99 percent passing through No. 8 sieve and a minimum 75 percent passing through No. 60 sieve.

2.5 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
   1. Organic Matter Content: 60 percent of dry weight.

B. Bone meal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 10 percent phosphoric acid.

2.6 MULCHES

A. Pine Bark Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
   1. Type: Ground or shredded pine bark.

B. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
   1. Organic Matter Content: 50 to 60 percent of dry weight.

2.7 STAKES AND GUYS

A. Upright and Guy Stakes: Rough-sawn, sound, new hardwood, redwood, or pressure-preservative-treated softwood, free of knots, holes, cross grain, and other defects, 2 by 2 inches by length indicated, pointed at one end.

B. Guy and Tie Wire: ASTM A 641/A 641M, Class 1, galvanized-steel wire, 2-strand, twisted, 0.106 inch in diameter.

C. Guy Cable: 5-strand, 3/16-inch- diameter, galvanized-steel cable, with zinc-coated turnbuckles, a minimum of 3 inches long, with two 3/8-inch galvanized eyebolts.

D. Hose Chafing Guard: Reinforced rubber or plastic hose at least 1/2 inch in diameter, black, cut to lengths required to protect tree trunks from damage.

E. Flags: Standard surveyor's plastic flagging tape, white, 6 inches long.

2.8 MISCELLANEOUS PRODUCTS

A. Trunk-Wrap Tape: Two layers of crinkled paper cemented together with bituminous material, 4-inch- wide minimum, with stretch factor of 33 percent.

2.9 PLANTING SOIL MIX

A. Planting Soil Mix: Mix topsoil with the following soil amendments and fertilizers in the following quantities:
   1. Ratio of Loose Compost to Topsoil by Volume: 1:4.
   2. Ratio of Loose Peat to Topsoil by Volume: 1:4.
   3. Weight of Bone meal per 1000 Sq. Ft.: 50 lbs.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine areas to receive exterior plants for compliance with requirements and conditions affecting installation and performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, and lawns and existing exterior plants from damage caused by planting operations.

B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Lay out individual tree and shrub locations and areas for multiple exterior plantings. Stake locations, outline areas, adjust locations when requested, and obtain ENGINEER's acceptance of layout before planting. Make minor adjustments as required.

3.3 TREE AND SHRUB EXCAVATION

A. Pits and Trenches: Excavate circular pits with sides sloped inward. Trim base leaving center area raised slightly to support root ball and assist in drainage. Do not further disturb base. Scarify sides of plant pit smeared or smoothed during excavation.
   1. Excavate approximately three times as wide as ball diameter for balled and burlapped stock.
   2. Excavate at least 12 inches wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
   3. If drain tile is shown or required under planted areas, excavate to top of porous backfill over tile.

B. Subsoil removed from excavations may not be used as backfill.

C. Obstructions: Notify ENGINEER if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.

D. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

3.4 TREE AND SHRUB PLANTING

A. Set balled and burlapped stock plumb and in center of pit or trench with top of root ball flush with adjacent finish grades.
   1. Remove burlap and wire baskets from tops of root balls and partially from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
   2. Place planting soil mix around root ball in layers, tamping to settle mix and eliminate voids and air pockets. When pit is approximately one-half backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed. Water again after placing and tamping final layer of planting soil mix.

B. Set balled and potted container-grown stock plumb and in center of pit or trench with top of root ball flush with adjacent finish grades.
   1. Carefully remove root ball from container without damaging root ball or plant.
   2. Place planting soil mix around root ball in layers, tamping to settle mix and eliminate voids and air pockets. When pit is approximately one-half backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed. Water again after placing and tamping final layer of planting soil mix.

C. Organic Mulching: Apply 3-inch average thickness of organic mulch extending 12 inches beyond edge of planting pit or trench. Do not place mulch within 3 inches of trunks or stems.

D. Wrap trees of 2-inch caliper and larger with trunk-wrap tape. Start at base of trunk and spiral cover trunk to height of first branches. Overlap wrap, exposing half the width, and securely attach without causing girdling. Inspect tree trunks for injury, improper pruning, and insect infestation; take corrective measures required before wrapping.

3.5 TREE AND SHRUB PRUNING

A. Prune, thin, and shape trees and shrubs as directed by ENGINEER.

B. Prune, thin, and shape trees and shrubs according to standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise indicated by ENGINEER, do not cut tree leaders; remove only injured or dead branches from flowering trees. Prune shrubs to retain natural character. Shrub sizes indicated are sizes after pruning.

3.6 GUYING AND STAKING

A. Upright Staking and Tying: Stake trees of 2- through 5-inch caliper. Stake trees of less than 2-inch caliper only as required to prevent wind tip-out. Use a minimum of 2 stakes of length required to penetrate at least 18 inches below bottom of backfilled excavation and to extend at least 72 inches above grade. Set vertical stakes and space to avoid penetrating root balls or root masses. Support trees with two strands of tie wire encased in those sections at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree. Use the number of stakes as follows:
   1. Use 2 stakes for trees up to 12 feet high and 2-1/2 inches or less in caliper: 3 stakes for trees less than 14 feet high and up to 4 inches in caliper. Space stakes equally around trees.

B. Guying and Staking: Guy and stake trees exceeding 14 feet in height and more than 3 inches in caliper, unless otherwise indicated. Securely attach no fewer than 3 guys to stakes 30 inches long, driven to grade.

3.7 CLEANUP AND PROTECTION

A. During exterior planting, keep adjacent paving’s and construction clean and work area in an orderly condition.

B. Protect exterior plants from damage due to landscape operations, operations by other CONTRACTORs and trades, and others. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged exterior planting.

3.8 DISPOSAL

A. Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

+ + END OF SECTION + +

SECTION 33 05 05

GRAVITY SEWER PIPE PRESSURE TESTING

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes: Low-pressure air testing of gravity sewer piping.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 22 05 33 – Heat Tracing

C. Section 33 31 20 – Sanitary Sewer Pipe and Fittings

D. Construction Contract Drawings and general provisions of the Contract Division 1 Specification Sections

1.3 SUBMITTALS

A. Submit following items prior to start of testing:
   1. Testing procedures.
   2. List of test equipment.
   3. Testing sequence schedule.
   4. Provisions for disposal of flushing and test water.
   5. Certification of test gage calibration.

B. Test and Evaluation Reports: Indicate results of piping tests.

1.4 QUALIFICATIONS

A. Applicator: Company specializing in performing Work of this Section with minimum three years' documented experience.

PART 2 – PRODUCTS

2.1 AIR TESTING

A. Equipment:
   1. Air compressor.
   2. Air supply line.
   3. Shutoff valves.

4. Pressure regulator.
5. Pressure relief valve.
6. Stopwatch.
7. Plugs.
8. Pressure Gage: Calibrated to 0.1 psi.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Section 01 77 23 - Inspections.

B. Verify that piping is ready for testing.

C. Verify that trenches are backfilled (as required).

3.2 PREPARATION

A. Plug outlets, wye branches, and laterals.

B. Brace plugs to resist test pressures.

3.3 FIELD QUALITY CONTROL

A. Section 01 77 19 - Execution and Closeout Requirements: Requirements for testing, adjusting, and balancing.

B. Low-Pressure Air Testing:
   1. Test each reach of gravity sewer piping between manholes.
   2. Introduce air pressure slowly to approximately 4 psig.
   3. Do not increase pressure above 10 psig (69 kPa).
   4. Allow pressure to stabilize for at least five minutes.
   5. Adjust pressure to 3.5 psig.
   6. Minimum Testing Duration in Minutes Per 100 Feet (30 m):
   a. Pipe Size 10 Inches: 1.5.
   7. Record drop in pressure during testing period.
   8. If air pressure drops more than 1.0 psi during testing period, piping has failed.
   9. If 1.0-psi air pressure drop has not occurred during testing period, piping is acceptable; discontinue testing.
   10. If piping fails, test reach of piping in incremental stages until leaks are isolated, repair leaks, and retest entire reach between manholes.
   11. If unsatisfactory testing results are achieved, make necessary repairs and retest until result meets criteria.
   12. Repair visible leaks regardless of quantity of leakage.

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SECTION 33 05 61

CONCRETE MANHOLES

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Modular precast concrete manholes and structures with tongue-and-groove joints and transition to cover frame, covers, anchorage, and accessories.

B. Related Requirements:
   1. Section 00 33 00 – Existing Conditions
   2. Section 01 11 13 – Summary of Work
   3. Section 01 33 00 – Submittal Procedures
   4. Section 03 00 00 - Earthwork

1.2 REFERENCE STANDARDS

A. The publications listed below, latest edition unless otherwise noted, form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only
   1. AASHTO M306 - Standard Specification for Drainage, Sewer, Utility, and Related Castings.

B. American Concrete Institute:
   1. ACI 530/530.1 - Building Code Requirements and Specification for Masonry Structures.

C. ASTM International:
   1. ASTM C478 - Standard Specification for Circular Precast Reinforced Concrete Manhole Sections.

1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer information for manhole covers, component construction, features, configuration, and dimensions.

C. Shop Drawings:
   1. Indicate structure locations and elevations.
   2. Indicate sizes and elevations of penetrations.

PART 2 – PRODUCTS

2.1 CONCRETE AND MASONRY MANHOLES

A. Manhole Sections:
   1. Materials:
      a. Reinforced Precast Concrete: Comply with ASTM C478.
      b. Gaskets: Comply with ASTM C923.
      c. H-20 rated
      d. Include ladder rungs

B. Shaft and Concentric Cone Top Sections:
   1. Pipe Sections: Reinforced concrete.
   2. Joints:
      a. Lipped male/female.

C. Shape: Cylindrical

D. Clear Inside Dimensions:
   1. As indicated on Construction Contract Drawings.

E. Design Depth:
   1. To be determined by the contractor based on actual depth of existing sewer line.

F. Clear Cover Opening:
   1. Diameter: 26 inches minimum

2.2 FRAMES AND COVERS

A. Description:
   1. Material:
      a. Cast iron.
      b. Comply with ASTM A48, Class 30B.
   2. Lid:
      a. Bearing Surface: Machined flat.
      b. Configuration: Removable.
      c. H-20 load rated

2.3 RISER RINGS

A. Riser Rings:
   1. Thickness of 4 to 6 Inches:
      a. Precast concrete.
      b. Comply with ASTM C478.
      c. H-20 rated
   2. Thickness Less Than 4 Inches:
      a. Cast iron.
      b. Comply with AASHTO M306.
   3. Rubber Seal Wraps:
      a. Wraps and Band Widths: Comply with ASTM C877, Type III.
      b. Cone/Riser Ring Joint: Minimum 3-inch overlap.
      c. Frame/Riser Ring Joint: 2-inch overlap.
      d. Additional Bands: Overlap upper band by 2 inches.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that items provided by other Sections of Work are properly sized and located.

C. Verify that built-in items are in proper location and are ready for roughing into Work.

D. Verify that excavation base is ready to receive Work and excavations and that dimensions and elevations are as indicated on Construction Contract Drawings.

3.2 PREPARATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Mark each precast structure by indentation or waterproof paint showing date of manufacture, manufacturer, and identifying symbols and numbers as indicated on Construction Contract Drawings to indicate its intended use.

C. Coordinate placement of inlet and outlet pipe or duct sleeves per Construction Contract Drawings. Pipe penetration shall be sealed with non-shrink grout or use press-in-seal flexible pipe boot.

D. Do not install manholes and structures where Site conditions induce loads exceeding structural capacity of manholes or structures.

E. Inspect precast concrete manholes and structures immediately prior to placement in excavation to verify that they are internally clean and free from damage; remove and replace damaged units.

3.3 INSTALLATION

A. Conduct operations not to interfere with, interrupt, damage, destroy, or endanger integrity of surface structures or utilities in immediate or adjacent areas.

B. Remove large stones or other hard matter impeding consistent backfilling or compaction.

C. Protect manhole from damage or displacement while backfilling operation is in progress.

D. Base and Alignment:
   1. Place manhole sections plumb and level over existing pipe, trim to correct elevations.

E. Base and Alignment:
   1. Install manholes supported at proper grade and alignment on compacted crushed-stone bedding.

F. Precast Concrete Manholes:
   1. Lift precast components at lifting points designated by manufacturer.
   2. When lowering manholes into excavations and joining pipe to units, take precautions to ensure that interior of pipeline and structure remains clean.
   3. Assembly:
      a. Assemble multi section manholes and structures by lowering each section into excavation.
      b. Install rubber gasket joints between precast sections according to manufacturer recommendations.
      c. Lower, set level, and firmly position base section before placing additional sections.
   4. Remove foreign materials from joint surfaces and verify that sealing materials are placed properly.
   5. Maintain alignment between sections by using guide devices affixed to lower section.

6. Verify that installed manholes meet required alignment and grade.
7. Remove knockouts or cut structure to receive piping without creating openings larger than required to receive pipe; fill annular spaces with mortar.

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SECTION 33 11 53

WELL ABANDONMENT/MODIFICATION

PART 1 – GENERAL

1.1 DESCRIPTION

A. This specification establishes the requirements for groundwater monitoring well abandonment. Wells to be abandoned must be fully sealed in a manner appropriate for the geologic conditions to prevent contaminant migration through the borehole.

B. Existing wells within the Limits of Work to be abandoned are approximately as follows:
   1. MW-108, installed by direct push, 1-inch diameter schedule 40 PVC, with protective casing, bottom of well at 19 feet below ground surface (ft bgs), bottom of boring 19 ft bgs.
   2. MW-109, installed by direct push, 1-inch diameter schedule 40 PVC, with protective casing, bottom of well at 15.5 ft bgs, bottom of boring 20 ft bgs.
   3. GW-2, installed by direct push, 1-inch diameter schedule 40 PVC, with protective casing, bottom of well at 9 feet ft bgs, bottom of boring 10 ft bgs.
   4. TW-702, installed by direct push, 1-inch diameter schedule 40 PVC, with protective casing, bottom of well at 18 ft bgs, bottom of boring 20 ft bgs.

C. Additional borehole and well information may be found in the Limited Site Data document.

D. Wells remaining on Site, within the Limits of Work, are to be protected and replaced in-kind if damaged during the Work, unless otherwise directed by the ENGINEER.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 33 00 – Submittal Procedures

B. Section 01 74 19 – Waste Removal, Handling, and Storage

C. Section 02 51 41 – Off-Site Transportation and Disposal

D. Section 31 00 00 – Earthwork

1.3 REFERENCES AND GUIDELINES

A. New York State Register and Official Compilation of Codes, Rules and Regulations (NYCRR), Chapter IV – Quality Services, Sub-Part 360-2 .11, Hydrologic Report (4 NYCRR Sub-Part 360-2.11).

B. New York State Department of Environmental Conservation Commissioner Policy (CP)–43: Groundwater Monitoring Well Decommissioning Policy, dated November 3, 2009.

1.4 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00 – Submittal Procedures.
   1. Well Abandonment Completion Form:
      a. Upon completion of abandonment of each well a Well Abandonment Completion Form must be completed and submitted. The Abandonment Form shall detail the material types, quantities, and methods used and any components of the well removed.

PART 2 – PRODUCTS

2.1 WELL PLUGGING MATERIALS

A. Type 1 cement/bentonite grout:
   1. Type 1 cement/bentonite grout with 4% (by weight) powdered bentonite may be used in the riser pipe interval of screen and riser pipe wells.

B. Microfine cement grout:
   1. Microfine cement grout will be used for screened sections of wells and may be used for riser sections. The microfine cement should be similar or equal to MC-500 microfine cement distributed by Geochemical Corporation, Ridgewood, New Jersey.

PART 3 – EXECUTION

3.1 WELL PLUGGING AND ABANDONMENT REQUIREMENTS

A. Monitoring wells shall be abandoned according to the requirements of the New York State Department of Environmental Conservation (the DEPARTMENT) and these Specifications.

B. The Subcontractor shall maintain a well abandonment record. Groundwater levels shall be measured in all wells prior to abandonment. These water levels shall be included in the well abandonment records.

C. Overbore or remove the casing to the greatest extent possible. All casing and well installations within five feet of the proposed final grade must be removed. Perforate casing left in place.

D. Seal by pressure injection with Type 1 cement/bentonite grout (riser sections only) or microfine cement grout (screened or riser sections) using a tremie pipe or other method acceptable to the DEPARTMENT. Grout must extend the entire length of the boring, from the bottom of the well to five feet below the proposed final grade. The screened interval of the borehole must be sealed separately and tested to ensure its adequacy before sealing the remainder of the borehole. Where the surrounding geologic deposits are highly permeable, alternate methods of sealing may be required to prevent the migration of the grout into the surrounding geologic formation. Grout shall continue to be added to fill gaps created by settlement until the plugging material sets.

E. Backfill and compact the upper five feet with Subgrade Fill as specified in Section 31 00 00 – Earthwork.
   1. Use Subgrade Fill Meeting Commercial Use Criteria in wells within the former MGP Property, according to Section 01 74 19 – Waste Removal, Handling, and Disposal.
   2. Use Subgrade Fill Meeting Unrestricted Use Criteria in wells beyond the former MGP Property, according to Section 01 74 19 – Waste Removal, Handling, and Disposal.

F Restore the site to a safe condition. The site must be inspected periodically after sealing for settlement or other conditions which require remediation.

G. Locations of abandoned wells shall be surveyed as a requirement of the Record Drawing submission.

3.2 WASTE DISPOSAL

A. Waste materials derived from well abandonment may include removed casing, removed riser pipe and excess grout.

B. The CONTRACTOR shall dispose of well abandonment derived waste materials off-site in accordance with Section 02 51 41 – Off-Site Transportation and Disposal.

+ + END OF SECTION + +

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SECTION 33 31 20

SANITARY SEWER PIPING AND FITTINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes gravity sewer pipe and fittings from 4-inch through 12-inch for sanitary sewer applications. This section only applies to operating pressures below 200 pounds per square inch (psi).

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 22 05 33 – Heat Tracing

C. Section 33 05 05 – Gravity Sewer Pressure Testing

D. Construction Contract Drawings and general provisions of the Contract Division 1 Specification Sections

1.3 REFERENCE STANDARDS

A. Reference Standards
   1. Reference standards cited in this Specification refer to the current reference standard published at the time of the latest revision.
   2. In the event of a conflict, the most stringent requirements prevail. Submit conflicts to the Engineer in writing prior to purchase of materials.

B. ANSI/AWWA www.awwa.org
   1. AWWA M55 Manual of Water Supply Practices, PE Pipe–Design and Installation
   2. ANSI/AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
   3. AWWA C110 - Ductile-Iron and Gray-Iron Fittings for Water
   4. AWWA C115 - Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges
   5. AWWA C207 - Standard for Steel Pipe Flanges for Waterworks Service, Sizes 4 in. through 144 in.
   6. AWWA C500 - Metal-Seated Gate Valves for Water Supply Service

C. ASTM www.astm.org
   1. ASTM D 2239 Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR- PR) Based on Controlled Inside Diameter
   2. ASTM D 3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
   3. ASTM D 3350 Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.
   4. ASTM F 714 Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
   5. ASTM F 905 Standard Practice for Qualification of Polyethylene Saddle-Fused Joints
   6. ASTM F 2620 Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings.

1.3 DEFINITIONS

A. SDR: Standard Dimension Ratio.

B. IPS: Iron Pipe Size.

C. CTS: Copper Tube Size.

1.4 SUBMITTALS

A. Requirements
   1. Submittals shall be in accordance with requirements in Submittals Section.
   2. All submittals shall be approved by the Engineer prior to delivery.
   3. The Contractor shall submit to the Engineer, within ten days after receipt of Notice to Proceed, a list of materials to be furnished, the names of the suppliers, and the appropriate shop drawings for all polyethylene pipe and fittings.
   4. The Contractor shall submit shop drawings showing installation method and the proposed method and specialized equipment to be used.

B. Provide Product Data
   1. Manufacturer
   2. Dimension Ratio
   3. Joint Types

C. Installer Qualifications
   1. Provide certifications for each installer. Keep certifications on project site available to the Engineer.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery, Storage, and Handling Requirements
   1. Handle the pipe in accordance with the PPI Handbook of Polyethylene Pipe (2nd Edition), Chapter 2 using approved strapping and equipment rated for the loads encountered. Do not use chains, wire rope, forklifts or other methods or equipment that may gouge or damage the pipe or endanger persons or property.
   2. Follow manufacturer's recommendations for delivery, storage, and handling.
   3. No stacking of pipe is allowed, unless within a fenced contained workspace. Pipe stacking is to be in compliance with AWWA Manual of Practice M55 Table 7-1.
   4. If any gouges, scrapes, or other damage to the pipe results in loss of 10% of the pipe wall thickness, cut out that section or do not use. Damages resulting from improper delivery, storage, or handling are the responsibility of the Contractor, and no additional payment shall be allowed by the Owner.

PART 2 - PRODUCTS

2.1 HDPE PIPE

A. High Density Polyethylene (HDPE) pipe and fittings shall meet the requirements of AWWA C906.

B. HDPE must meet the following minimum Dimension Ratio:

Diameter (inch)	Min Dimension Ratio
4 through 12	DR 11

C. The outside diameter of the pipe shall be based upon the Iron Pipe Size (IPS) sizing system.

D. Polyethylene pipe shall be made from HDPE material having a material designation code of PE4710 or higher.

E. Pipe Markings
   1. Meet the minimum requirements of AWWA C906. Minimum pipe markings shall be as follows:
      a. Manufacturer's Name or Trademark and production record
      b. Nominal pipe size
      c. IPS
      d. Dimension Ratio
   2. Color identification to identify pipe service is required.
      a. Stripes or colored exterior pipe product shall be green for wastewater/sewage,

b. The striping material shall be the same material as the pipe material except for the color.

F. Only smooth wall HDPE will be permitted.

2.2 HDPE BUTT FUSION FITTINGS

A. Butt Fusion Fittings shall meet the requirements of ASTM D3261. Molded and fabricated fittings shall have a pressure rating equal to or greater than the pipe unless otherwise specified on the plans.
   1. Fabricated Fittings shall be Equivalent Dimension Ratio to DR11.
   2. Pipe stock used to manufacture fabricated fittings shall meet requirements of AWWA C906 and meet the material designation code of PE4710.
   3. Field fabricated fittings are not allowed.

B. All fittings shall meet the requirements of AWWA C906.

C. Markings for molded fittings shall comply with the requirements of ASTM D 3261.
   1. Standard Designation (ASTM D 3261)
   2. Manufacturer's name or trademark
   3. Material designation (PE4710)
   4. Date of manufacture or manufacturing code
   5. Size
   6. Dimension Ratio (example: DR11)

2.3 HDPE ELECTROFUSION FITTINGS

A. Electrofusion Fittings shall be made of HDPE material with a minimum material designation code of PE 4710 and with a minimum Cell Classification as noted for HDPE pipe.
B. Electrofusion Fittings shall have a manufacturing standard of ASTM F1055. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans.
C. All electrofusion fittings shall be suitable for use as pressure conduits and have nominal burst values of four times the Working Pressure Rating (WPR) of the fitting.
D. Markings shall be according to ASTM F 1055.
   1. Standard Designation (ASTM F 2206)
   2. Manufacturer's name or trademark
   3. Date of manufacture or manufacturing code
   4. Size
   5. Equivalent Dimension Ratio

2.4 FLANGES AND MECHANICAL JOINT ADAPTERS (MJ ADAPTERS)

A. Flanges and Mechanical Joint Adapters shall have a material designation code of PE4710 or higher and a minimum Cell Classification as noted for HDPE pipe.

B. Flanged and Mechanical Joint Adapters can be made to ASTM D 3261 or if machined, must meet the requirements of ASTM F 2206.

C. The outside diameter of Flanges shall be based on Iron Pipe Size (IPS).

D. The MJ Adapters shall be based on Iron Pipe Size by Ductile Iron Pipe Size (IPS x DIPS).

E. Flanges and MJ Adapters shall have a pressure rating equal to the pipe unless otherwise specified on the plans.

F. Markings for molded or machined flange adapters or MJ Adapters shall be per ASTM D 3261.
   1. Manufacturer's name or trademark
   2. Date of manufacture or manufacturing code
   3. Size

G. Metal gland for MJ Adapter may be either AWWWA C110 (heavyweight) or AWWWA C153 (lightweight).

H. Low alloy steel bolts shall comply with AWWA C 111.4. Bolts, rods, and hex nuts shall be manufactured from 304 stainless steel as per ANSI/ AWWA C111/A21.11.

I. Van-Stone style, metallic (including stainless steel), convoluted, or flat-plate back-up rings and bolt materials shall follow the guidelines of Plastic Pipe Institute Technical Note # 38, and shall have the bolt-holes and bolt-circles conforming to one of these standards: ASME B-16.5 Class 150, ASME B-16.47 Series A Class 150, ASME B-16.1 Class 125, or AWWA C 207 Class 150 Series B, D, or E.

J. The back-up ring shall provide a long-term pressure rating equal to or greater than the pressure-class of the pipe with which the flange adapter assembly will be used, and such pressure rating shall be marked on the back-up ring. The back-up ring, bolts, and nuts shall be protected from corrosion by a system such as coal-tar epoxy, galvanization, polyether, or polyester fusion bonded epoxy coatings, anodes, or cathodic protection, as specified by the Engineer.

2.5 GATE VALVES

A. Provide gate valves in compliance with AWWA C500. Provide outside screw and yoke (OS&Y), handwheel operated with flange ends for gate valves that are

exposed or installed inside unless otherwise indicated. Cast an arrow and the word "OPEN" on all gate valve operating nuts and handwheels in raised letters to indicate the direction of opening.

2.6 STIFFENING INSERT (STIFFENER)

A. Provide Stiffeners at each MJ adapter and coupling.

B. Stiffening inserts shall be specially designed for use on the inside of HDPE pipe in conjunction with AWWA C111 mechanical joints.

C. Provide stainless steel per ASTM 240, type 304 or 316.

D. Stiffener shall be manufactured within the pipe or MJ adapter by the factory.

E. Stiffener length must be sufficient to fully encompass the area of the pipe being restrained.

F. Stiffener design shall prevent movement causing fitting to slide or rotate on the pipe.

PART 3 - EXECUTION

3.1 INSTALLERS

A. Only formally trained and certified fusion technicians may conduct fusions. Qualification of the fusion technician shall be demonstrated by certification in fusion training within the past year for the type of fusion, and size of the pipe, and on the specific equipment to be used on this project. Provide documentation showing current and up-to-date qualification of training obtained to fuse PE pipe in the appropriate sizes and equipment types for the job.

B. Training in accordance with ASTM F 6220 for butt fusion.

C. Training in accordance with ASTM F 1055 for electrofusion.

D. Qualified technician has documented prior experience in performing HDPE pipe installations, head fusion procedures, and testing methods.

3.2 INSTALLATION

A. General:
   1. Install buried pipe as indicated on Drawings.

2. Insure that kinking or excessive bend diameters of the pipe do not occur during the installation process.
3. Ensure that the pipe installed in the trench is firmly supported.
4. Cap all open pipe ends at the end of the workday.
5. All installed valves shall be tested in the presence of the Engineer.
   a. All repairs deemed necessary by the Engineer shall be made by the Contractor.
6. Remove any cave-in portions of the trench prior to placing sand bagging around the pipe.
7. HDPE pipe and fittings shall be by the same manufacturer.
   a. The minimum strength of the fittings shall not be less than that of the pipe.
8. Changes in direction of PE Pipe:
   a. Pipe may be cold bent to minimum radius of 20 times the pipe diameter as it is installed.
   b. If fittings or fusions are present in the bend, the minimum recommended cold bending radius is 125 times the outside diameter of the pipe.
9. Remove cutting and threading burrs.

B. Joining Procedures:
1. HDPE pipe joints shall be fused on the surface prior to installation into the trench.
   a. Alternative methods of fusing shall be approved by the Engineer.
2. Fusion joiner must be qualified by type of fusion (i.e., butt fusion, socket fusion or sidewall fusion) and fuse pipe only as qualified.
3. Each joint must be visually inspected inside and outside for damage, dirt, moisture, or any other abnormalities prior to fusing.
4. All joint fusion shall be performed in strict accordance with the manufacturer's specifications.
5. All fusion equipment must be approved by the manufacturer and operated by qualified and certified operators.
   a. Cost for testing and certifying personnel shall be borne by the Contractor.

C. Anchorage and Blocking:
1. Block, anchor, or harness exposed piping subjected to forces in which joints are installed to prevent separation of joints and transmission of stress into equipment or structural components not designed to resist those stresses.

D. Mechanical:
1. Mechanical connection of HDPE to auxiliary equipment such as valves, pumps, and fittings shall use mechanical joint adapters and other devices in conformance with the PPI Handbook of Polyethylene Pipe, Chapter 9 and AWWA Manual of Practice M55, Chapter 6.

3.3 SITE QUALITY CONTROL

A. Sanitary Sewer Pipe

B. Prior to final acceptance and final inspection of the pipe by the Engineer, the Contractor shall flush and clean all parts of the system by removing all accumulated construction debris, rocks, gravel, sand, silt, and other foreign material from the pipe.

+ + END OF SECTION + +

SECTION 33 42 13

PIPE CULVERTS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Furnish and install stormwater pipe culvert(s) for access road crossings over eastern swale discharging to Brandy Brook, including all incidental work, complete, in strict accordance with the specifications, Construction Contract Drawings and standard details.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 31 00 00 – Earthwork

1.3 SUBMITTALS

A. Product Data: Submit data indicating pipe and pipe accessories.

B. Fabrication drawings for the CONTRACTOR'S manufacturer provided designs shall be stamped by a Professional Engineer licensed, and registered, to practice in New York State and shall be submitted prior to installation.

C. Project Record Documents: Accurately record actual locations of installed culverts and invert elevations.

1.4 REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO):
   1. AASHTO M304 - Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Wall Drainpipe and Fittings Based on Controlled Inside Diameter.

B. American Society for Testing and Materials (ASTM)
   1. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
   2. ASTM F949 - Standard Specification for PVC Corrugated Sewer Pipe with a Smooth Interior and Fittings.
   3. ASTM D1784 - Standard Classification System and Basis for Specification for Rigid PVC Compounds and Chlorinated Poly Vinyl Chloride (CPVC) Compounds.
   4. ASTM D3212 - Standard Specification for Joints for Drain and Sewer Plastic Pipes using Flexible Elastomeric Seals.

C. New York State Department of Transportation (NYSDOT):
   1. NYSDOT SS - Standard Specifications

PART 2 - PRODUCTS

2.1 CULVERT PIPE

A. Install PVC pipe meeting the requirements of ASTM F949 or AASHTO M305, minimum material stiffness of 46 psi.

B. Manufacture pipe in accordance with ASTM D1785.

C. Culvert pipe shall have a nominal 12-inch O.D. and have a smooth interior finish.

D. Joints: Positive O-ring gasketed bell-spigot joints meeting the requirements of ASTM D3212.

2.2 BEDDING AND COVER MATERIALS

A Subgrade Fill: Subgrade Fill as specified in Section 31 00 00 – Earthwork

B. Stone Bedding: Where shown on the Construction Contract Drawings or as directed by the ENGINEER, use Crushed Stone as specified in Section 31 00 00 – Earthwork.

C. Cover: Driveway replacement with Gravel Subbase as specified in Section 31 00 00 – Earthwork and as shown on the Construction Contract Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on construction drawings.

3.2 PREPARATION

A. Following excavation of non MGP-impacted, MGP-impacted soil and/or solidified material, as needed hand trim excavations to required elevations.

B. Remove large stones or other hard matter capable of damaging piping or impeding consistent backfilling or compaction.

3.3 BEDDING

A. Place culvert on prepared trench subgrade of solidified material, compacted native material, or where excavations for removal of impacted soil extend below the footing, backfill with Crushed Stone in accordance with Section 31 00 00 – Earthwork. As required, hand trim excavation for accurate placement of pipe to elevations indicated.

3.4 INSTALLATION

A. Install pipe and accessories in accordance with ASTM D2321 and to specified inverts and lengths shown on the Construction Contract Drawings.

B. Place culvert pipe bedding envelope of Crushed Stone material on the outside of the culvert as specified in Section 31 00 00 – Earthwork and as shown on the Construction Contract Drawings.

C. Lay pipe to slope gradients if noted on construction drawings or install pipe with a minimum slope of 0.0050 ft/ft.

D. Reconstruct gravel access road over installed culvert as shown on the Construction Contract Drawings.

E. Do not displace or damage pipe when compacting backfill materials.

F. Provide pipe Inlet and Outlet protection as shown on the Construction Contract Drawings.

3.5 FIELD QUALITY CONTROL

A. Request inspection prior to and immediately after placing backfill materials around, inside, and over the pipe.

B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.
   1. Take care not to damage or displace installed pipe and joints during backfilling of pipe and other operations.
   2. Correct damaged or displaced pipe.

+ + END OF SECTION + +

SECTION XII

Measurement for Payment

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SECTION XII

MEASUREMENT FOR PAYMENT

PART 1 – GENERAL

1.1 DESCRIPTION

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

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

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

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

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

schedule of values.

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

1.2 ENGINEER'S ESTIMATE OF QUANTITIES

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

1.3 INCIDENTAL ITEMS

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

1.4 QUANTITIES

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

1.5 RELATED PROVISIONS SPECIFIED ELSEWHERE

A. Payment to CONTRACTOR: Refer to General Conditions and Contract Agreement Section 6.

B. Changes in the Contract Price: Refer to General Conditions and Contract Agreement Section 6.

1.6 SUBMITTALS

A. Bid Breakdowns/Schedule of Values: Submit in accordance with Section VIII, Article 1.4, 1.6 and Article 13.

1.7 MEASUREMENT

A. Under this Contract, the CONTRACTOR shall provide all labor, equipment, and materials and shall complete all work as shown and described in the Contract Documents and as directed by the ENGINEER, in accordance with the expressed intent of the contract to secure a complete construction of a functionally complete project. The bid items described in Part 3 BID ITEMS shall together include all work set forth in the Contract Documents or required to properly complete the work. Any necessary work that is not described shall be considered included in the item to which it properly belongs. Where used in the Contract Documents, the word "including" ("includes", "include") shall mean "including (includes, include) but not restricted to". Each item includes:
   1. All labor, material, equipment, plant services, bonds and insurance, tests, adjustments, warranties, overhead, and other expenses required to perform the work.
   2. All accessories, manuals, and services pertinent to the proper installation of materials and equipment.
   3. All accessories, manuals, and services pertinent to the proper start-up, operation, and maintenance of materials and equipment.

B. Lump Sum Items: Measurement of all Lump Sum Items will be on a total job basis.
   1. The quantities of work performed under lump sum items will not be measured except for the purpose of determining reasonable interim payments. Interim payments will be made in accordance with the estimated value of work performed and found acceptable as determined by the ENGINEER, or as specified in this section.
   2. Where indicated for a lump sum item, the CONTRACTOR shall provide a schedule of values per Subpart 1.06 of this Section. The schedule of values shall include a breakdown of major cost items included within the lump sum in sufficient detail to document specific costs of all items included in the lump sum item. The schedule of values shall be provided to the ENGINEER prior to initiation of work.
   3. Measurement for Progress Payments of all lump sum items will be on a percent complete basis as established in the General Conditions and Section VI, Article 9.

C. Unit Price Items: Where items are specified to be measured on a unit basis, measurement will be of each particular unit as specified.
   1. Volume Basis - Where items are specified to be measured on a volume basis, the volume will be determined on an in-place basis (prior to construction for excavation / solidification purposes or after placement and compaction for imported fill) between the existing and final ground surfaces or grade lines shown on the drawings. If no tolerance is specified, the tolerance shall be interpreted to be 0.00 foot.

2. Area Basis - Where items are specified to be measured on an area basis, the area will be measured as the actual surface area within the specified limits based on a plan view. If a specified width of an item is indicated, the area will be determined by the actual length along the centerline multiplied by the specified width. No adjustments will be made for the required overlap of materials.
3. Length Basis - Where items are specified to be measured on a length basis, the length will be measured as the actual length along the centerline within specified limits based on a plan view. No adjustments will be made for the required overlap of materials
4. Weight Basis - Where items are specified to be measured on a weight basis, the weight will be measured based on certified weigh scale tickets obtained from a weigh scale certified by the County Office of Weights and Measures and approved by the ENGINEER. The weights shall be taken in the presence of a DEPARTMENT representative. When the weight is per ton, trucks shall be weighed entering the site and exiting the site, using either an on-site or off-site scale. The measured tonnage will be the difference between the measured truck weight upon entering and exiting the certified weight scale.

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

1.8 DESCRIPTION OF BID ITEMS

A. Bid Item LS-1: Site Preparation
1. Bid Item LS-1 shall be the bid lump sum price for the completion of performance of Site Preparation in accordance with the Contract Documents.
2. Provide all labor, materials, equipment, and incidentals necessary for the work described below, in accordance with Specification Section 01 11 13 – Summary of Work, Section 01 14 19 – Use of Site, Section 01 35 53 – Site Security, Section 01 45 28 – Chemical Sampling and Analysis, Section 01 51 05 – Temporary Facilities and Controls, Section 01 52 11 – Engineer's Field Office, Section 01 52 13 – Field Trailer, Section 01 71 23 – Field Engineering, Section 34 78 13 – Portable Truck Scale, Section 01 55 26 – Traffic Control, Section 01 55 29 – Storage of Material, Section 01 57 26 – Dust and Odor Control, Section 01 71 33 – Protection of the Work and Property, Section 02 51 00 – Decontamination Procedures, Section 02 72 00 – Construction Water Management, and Section 31 25 00 – Erosion and Sediment Control, and described below but not limited to:
   a. Mobilization of personnel, equipment, and project facilities.
   b. Establish all temporary utilities and services including electric service, mobile phone, internet access, sanitary facilities, and potable water.

c. Provide ENGINEER and CONTRACTOR field offices and support areas.
d. Permitting.
e. Project work plans (Construction Work Plan, Health and Safety Plan and Contractor Quality Control Plan).
f. Schedules, submittals (shop drawings), and record drawings.
g. Bonds and insurance.
h. Surveying required for initial field verification, establishing horizontal and vertical control and providing construction layout.
i. Clearing trees and brush within the limit of clearing delineation on the Construction Contract Drawings. Note that most tree clearing of trees larger than 3-inches at breast height (DBH) has been completed prior to the start of this Project. Stumps and roots were not grubbed and will require removal under this Item unless contained within the MGP Waste limits. Additional trees larger than 3-inches in diameter" may require clearing by CONTRACTOR, which can only be completed between November 11 and March 31st, prior to full mobilization, as approved by the ENGINEER.
j. Grubbing vegetation within the MGP Waste limits is not included under this Item. Refer to Bid Item 6.
k. Select demolition of building, foundations, concrete pads, asbestos containing materials, and other miscellaneous construction of demolition debris items encountered within the excavation limits.
l. Other preparation work not specifically included in other items including compliance with applicable regulatory requirements; preconstruction and construction period planning; scheduling, submittals, reporting, administration, and documentation; quality control; environmental protection; and spill control.
m. Providing vehicle decontamination pads.
n. Installing required erosion and sedimentation controls including but not limited to stabilized construction accesses, silt fence, augmented silt fence, hay bales, and stone check dams.
o. Installing and maintaining temporary access roads.
p. Installing temporary project signage.
q. Installing temporary fencing and barricades.
r. Installing soil stockpile containment areas and contractor equipment and materials staging areas.
s. Providing an on-site truck scale.
t. Collect necessary samples and conduct a solidification mix study and conduct a solidification pilot scale test in accordance with Specification Section 01 11 00 – Summary or Work and Section 31 32 13 – Solidification.
u. Augmenting temporary facilities and controls as required for supporting the sequence of project work.

v. Repair of damage to local roads, railroads as required.
w. Removing temporary facilities and controls when the work associated with them is complete, and properly disposing the materials off-site.
x. Demobilization of project personnel, equipment, and project facilities.
y. Project closeout.
z. Final site cleanup.

3. The CONTRACTOR shall submit a separate bid breakdown (See Paragraph 1.06 of this Section) that shows the individual costs required to complete this Bid Item.
4. Measurement for payment for Bid Item LS-1 shall be the bid lump sum price for the above Site Preparation items completed as documented and approved by the ENGINEER.

B. Bid Item LS-2: Activities in Support of Excavation on Railroad Property

1. Bid Item LS-2 shall be the bid lump sum price for the completion of Sheeting and Shoring activities; and installation, testing, maintaining, inspecting and removing temporary sanitary sewer line bypass in accordance with the Contract Documents.
2. Provide all labor, materials, equipment, and incidentals necessary for the work described below in accordance with Specification Section 31 00 00 – Earthwork, Section 31 01 50 – Shoring (Sheeting and Bracing), and Section 31 25 00 – Erosion and Sediment Control, and described below but not limited to:
   a. Installing sheeting and bracing indicated on the Construction Contract Drawings designed by the ENGINEER to support excavations at designated locations along Brandy Brook.
   b. Installing CONTRACTOR designed sheeting and shoring for locations proposed by the CONTRACTOR to conduct the Work, including cofferdams for brook diversion, bulkheads for barge unloading, or supporting excavations at locations other than the designated locations. CONTRACTOR designed sheeting and shoring will include but not limited to:
      i. Completing geotechnical investigations including testing, as required by the CONTRACTOR's Engineer in supporting the design of the sheeting and shoring systems.
      ii. Designing a sheeting and shoring systems by a New York State licensed professional engineer for cofferdams, bulkheads, and/or sheeting to conduct excavations or at the perimeter of the excavation limits, and/or to support other infrastructure deemed at risk due to adjacent excavation.
   c. Installing system(s).
   d. Removing system(s) where required.
   e. Cutting sheeting to leave sheets a minimum of 3 feet below grade and leaving systems in place where allowed or directed.

f. Installing, testing and removing the temporary bypass system for the existing sanitary sewer line, and repairs due to CONTRACTOR caused damage.
g. Refer to Item 1 for additional railroad related items.

3. The CONTRACTOR shall submit a separate bid breakdown (See Paragraph 1.06 of this Section) that lists the individual costs required to complete this bid item as well as miscellaneous items not specified elsewhere that are necessary for proper completion of the work (provide detail).
4. Measurement for payment for Bid Item LS-2 shall be the bid lump sum price for the above Sheeting and Shoring System items completed as documented and approved by the ENGINEER.

C. Bid Item LS-3: Activities in Support of Excavation Adjacent to Brandy Brook

1. Bid Item LS-3 shall be the bid lump sum price for the completion of Sheeting and Shoring activities; bypass pumping flow around a portion of Brandy Brook; and temporary relocation of Restoration Area to a Temporary on-site Nursery in accordance with the Contract Documents.
2. Provide all labor, materials, equipment, and incidentals necessary for the work described below in accordance with Specification Section 31 00 00 – Earthwork, Section 31 01 50 – Shoring (Sheeting and Bracing), and Section 31 25 00 – Erosion and Sediment Control, and described below but not limited to:
   a. Installing sheeting and bracing indicated on the Construction Contract Drawings designed by the ENGINEER to support excavations at designated locations along Brandy Brook.
   b. Installing CONTRACTOR designed sheeting and shoring for locations proposed by the CONTRACTOR to conduct the Work, including cofferdams for brook diversion, bulkheads for barge unloading, or supporting excavations at locations other than the designated locations. CONTRACTOR designed sheeting and shoring will include but not limited to:
   c. Completing geotechnical investigations including testing, as required by the CONTRACTOR's Engineer in supporting the design of the sheeting and shoring systems.
   d. Designing a sheeting and shoring systems by a New York State licensed professional engineer for cofferdams, bulkheads, and/or sheeting to conduct excavations or at the perimeter of the excavation limits, and/or to support other infrastructure deemed at risk due to adjacent excavation.
   e. Installing system(s).
   f. Removing system(s) where required.
   g. Cutting sheeting to leave sheets a minimum of 3 feet below grade and leaving systems in place where allowed or directed.
   h. Passive diversion or active pumping systems to convey the base flow of Brandy Brook around the active limit of work.

i. Installing and maintaining erosion controls associated with the diverted flow.
j. Providing contingency measures to handle surges associated with stormwater discharges.
k. Providing means and methods to limit stormwater run-on during work to minimize the generation of construction water.
l. Temporary relocation of Restoration Area to be disturbed to a temporary on-site Nursery, maintenance, and re-planting in the Restoration Area, including replacement of damaged/lost trees and plants at no additional cost to the DEPARTMENT.

3. The CONTRACTOR shall submit a separate bid breakdown (See Paragraph 1.06 of this Section) that lists the individual costs required to complete this bid item as well as miscellaneous items not specified elsewhere that are necessary for proper completion of the work (provide detail).
4. Measurement for payment for Bid Item LS-3 shall be the bid lump sum price for the above Sheeting and Shoring System; bypass pumping flow around a portion of Brandy Brook; and temporary relocation of Restoration Area to a Temporary on-site Nursery, as documented and approved by the ENGINEER.

D. Bid Item LS-4: Site Restoration

1. Bid Item LS-4 shall be the bid lump sum price for completion of Upland Area Restoration activities in accordance with the Contract Documents.
2. Provide all labor, materials, equipment, and incidentals necessary for the work described below, in accordance with Specification Section 31 00 00 – Earthwork, Section 31 25 00 – Erosion and Sediment Control, Section 32 92 26 – Seeding and Soil Supplements, Section 32 93 00 – Exterior Plants, and described below but not limited to:
   a. Restoration of disturbed upland areas with topsoil and seeding.
   b. Borrow source testing of topsoil – geotechnical, soil nutrient, and chemical testing of material meeting unrestricted use criteria
   c. Nutrient analysis testing for topsoil.
   d. Providing and installing topsoil.
   e. Seeding and installing erosion control matting along all drainage ways and slopes, as required.
   f. Seeding and mulching all vegetated areas.
   g. Staging and storing topsoil on-site as required to coordinate with construction sequence.
   h. Provide and install new (or salvaged, if possible, as approved by the DEPARTMENT) chain link fence and gates on the OU01 property.
3. The CONTRACTOR shall submit a separate bid breakdown (See Paragraph 1.06 of this Section) that shows the individual costs required to complete this Bid Item.
4. Measurement for payment for Bid Item LS-4 shall be the bid lump sum price for Upland Area Restoration as documented and approved by the ENGINEER.

E. Bid Item LS-5: Brandy Brook Restoration

1. Bid Item LS-5 shall be the bid lump sum price for completion of Brandy Brook Restoration activities in accordance with the Contract Documents.
2. Provide all labor, materials, equipment, and incidentals necessary for the work described below, in accordance with the restoration details on the Construction Contract Drawings and Specification Section 01 57 00 – Temporary tributary Bypass System, Section 31 00 00 – Earthwork, Section 31 25 00 – Erosion and Sediment Control, Section 32 92 26 – Seeding and Soil Supplements, Section 32 93 00 – Exterior Plants, and described below but not limited to:
   a. Geotechnical and chemical borrow source testing of stream bed material and topsoil, as required.
   b. Nutrient analysis testing for topsoil.
   c. Relocate Wetland Topsoil and vegetation from temporary Nursery, and supplement with imported Wetland Topsoil meeting unrestricted use criteria and supplemental vegetation.
   c. Providing and installing stream bed material, as required.
   d. Providing and installing rock with soil and vegetation, as required.
   f. Providing and installing fiber rolls, as required.
   g. Providing and installing brush mattresses, as required.
   h. Installing log cribbing and log diverter using on-site clearing debris to the extent practical, as required.
   i. Providing and installing boulders in the stream bed, as required.
   j. Live staking, as required.
   k. Seeding and mulching banks, as required.
   l. Planting banks with shrubs, as required.
3. The Contractor shall submit a separate bid breakdown (See Paragraph 1.06 of this Section) that shows the individual costs required to complete this Bid Item.
4. Measurement for payment for Bid Item LS-5 shall be the bid lump sum price for Brandy Brook Restoration as documented and approved by the ENGINEER.

F. Bid Item UP-1: Site Services

1. Bid Item UP-1 shall be the bid unit price per calendar day for Site Services performed in accordance with the Contract Documents.
2. Provide all labor, materials, equipment, and incidentals necessary for each calendar day of site services in accordance with Standard Specification Section 01 35 29 – Contractor's Health and Safety Plan, Specification Section 00 33 00 – Existing Conditions, Section 01 11 00 – Summary of Work, Section 01 35 43 – Environmental Protection Procedures, Section 01 35 53 – Site Security, Section 01 45 00 – Contractor Quality Control, Section 01 45 28 – Chemical Sampling and Analysis, Section 01 50 00 – Temporary Facilities and Controls, Section 34 78 13 – Portable Truck Scale, and Section 01 55 26 –

Traffic Control, Section 01 57 26 – Dust and Odor Control, Section 01 71 23 - Field Engineering and Surveying, Section 01 71 33 – Protection of the Work and Property, Section 31 01 50 – Shoring (Sheeting and Bracing), and described below but not limited to:

a. Site Security.
b. Controlling on-site access and traffic, including equipment and material delivery.
c. Site access roadway maintenance.
d. Maintaining soil stockpile containment areas and contractor equipment and materials staging areas.
e. Completing training and providing flaggers and/or other requirements of the railroad for working within its right of way.
f. Maintaining all constructed temporary facilities and controls.
g. Cleaning the project site and disposing CONTRACTOR generated solid waste.
h. Coordinating with the Village of Saranac Lake and residential property owners/tenants.
i. Compliance with permits.
j. Attending project meetings.
k. Providing Site Superintendence.
l. Providing quality control management.
m. Maintaining vehicle decontamination pads including collection and analysis of decontamination verification samples.
n. Maintenance of temporary utilities and services.
o. Sanitary facilities maintenance.
p. Performing an existing conditions assessment of buildings and infrastructure adjacent to the work.
q. Perform vibration monitoring during sheeting installation work, as required.
r. Perform nuisance control and monitoring as required during the execution of the work
s. Surveying required for ongoing work to provide quality control field measurements and supporting the calculation of measurement for payment.
t. CONTRACTOR personnel working within the railroad row work will need to complete appropriate railroad safety training meeting Adirondack Scenic Railroad and/or NYSDOT requirements. The railroad is regulated by NYSDOT.

u. Conduct pre- and post-construction inspections and documentation (video and pictures) of the rail alignment condition with the CONTRACTOR, ENGINEER, and NYSDOT Representative. Restoration of the alignment and repair of any rail faculties damaged or impacted by the work. For additional requirements for working in the

railroad ROW, refer to drawing C-306 of the Construction Contract Drawings.

v. Completing survey of the final remediated site in accordance with Part 1.04.E of Specification 01 71 23 and related work specified elsewhere in the Contract.

w. Providing completed as-built survey to the ENGINEER for review and approval.

3. Measurement for payment for Bid Item UP-1: Site Services shall be paid the bid unit price for each calendar day beginning with initiation of site services, and ending with substantial completion or at the end of the Contract Time specified in Contract Documents Section VI Article 6.1, whichever is sooner. Payment shall be unit price bid for each individual item described above as submitted in the Contractor's bid breakdown. A fifty percent reduction in payment would occur for each calendar day that operation and/or maintenance of any item included in this Bid Item was unsatisfactory or unused as determined by the ENGINEER.

G. Bid Item UP-2: Health and Safety

1. Bid Item UP-2 shall be the bid unit price per working day for Health and Safety activities performed in accordance with the Contract Documents.

2. Provide all labor, materials, equipment and incidentals necessary for each calendar day for health and safety during proper execution of the Contract and in accordance with Standard Specification Section 01 35 29 – Contractor's Health and Safety Plan, Supplemental Specification Section 01 11 13 – Summary of Work, Section 01 50 00 – Temporary Facilities and Controls, Section 01 57 26 – Dust and Odor Control, and Section 02 51 00 – Decontamination Procedures, and as described below but not limited to:

a. Providing a Health and Safety Officer.

b. Providing and maintaining personnel decontamination facilities.

c. Providing and maintaining personnel health and safety equipment.

d. Providing emergency response.

e. Sampling, analyzing, and handling/disposing personal protective equipment (PPE) and remediation wastes not specifically included in other bid items.

f. Air monitoring as required by the Community Air Monitoring Program (CAMP). Collecting samples up and downwind of the Site, testing for the required parameters, and reporting laboratory results.

3. Measurement for payment for Bid Item UP-2: Health and Safety shall be paid the bid unit price for each working day the HASP has been adhered to in the opinion of the ENGINEER. Work included in this item shall be by calendar day ending at substantial completion or at the end of the Contract Time specified in Contract Documents Section VI Article 6.1, whichever is sooner. All daily maintenance costs for health and safety are part of this Bid Item

including everything required for the HASP. A reduction in the payment for this item will occur for each day the CONTRACTOR fails to adhere (in the opinion of the Engineer) to the HASP. There would be a one hundred (100) percent reduction in this Bid Item for days where no remediation work occurs in the exclusion zone. No payment will be made for Sundays and holidays specified in Contract Documents Section XIII.

F. Bid Item UP-3: Excavation of Materials

1. Bid Item UP-3 shall be the bid unit price per cubic yard for excavation activities associated with MGP Impacted and non-MGP Impacted Soil and Debris Excavation within and beyond the Former MGP Property including grubbings, debris and soil excavation; and segregation, processing, management and control of stockpiles of suitable soil for reuse in the covers within the former MGP Property in accordance with the Contract Documents.
2. Provide all labor, materials, equipment, and incidentals necessary for the work described below in accordance with Specification Section 01 45 28 – Chemical Sampling and Analysis, Section 01 50 00 – Temporary Facilities and Controls, Section 01 57 26 – Dust and Odor Control, Section 01 71 23 – Field Engineering and Surveying, Section 01 74 19 – Waste Removal, Handling, and Storage, Section 02 72 00 – Construction Water Management, Section 31 00 00 – Earthwork, 31 23 19 – Dewatering, and Section 31 25 00 – Erosion and Sediment Control , and described below but not limited to:
   a. Providing, managing, and maintaining construction dewatering facilities including collection sumps, pump systems, conveyance (piping) systems, and storage systems as required to conduct excavation activities in relatively dry conditions.
   a. Sheet piling systems for cofferdam purposes shall be included in Bid Items 4 and 5.
   b. Excavating soil within the horizontal and vertical limits identified on the Construction Contract Drawings.
   c. Segregation of Wetland Topsoil from the Restoration Area for use in the Temporary Nursery, as part of Bid Item 5.
   d. Handling and segregation of excavated suitable soil for stockpiling and reuse from unsuitable soil/debris for waste characterization and stockpiling, to minimize disposal quantities and hazardous waste.
   e. Dust and odor control during excavation and handling.
   f. Segregating unsuitable non-hazardous soil/debris from unsuitable hazardous soil/debris based on waste characterization testing results.
   g. Excavation and removal of obstructions identified during in-situ solidification activities.
   h. Segregation and management of the waste types defined in Section 01 74 19 – Waste Removal, Handling, and Storage, to minimize overall disposal cost.

i. Dewatering and/or stabilization to meet off-site disposal requirements, as necessary.

3. Measurement for payment of Bid Item UP-3 shall be the bid unit price for each cubic yard of material excavated in accordance with the Contract Documents. Volume measurement shall be determined on an in-place basis survey prior to (for existing grade) and after the excavation (for excavation extents) of material including grubbing, as documented and approved by the ENGINEER.

G. Bid Item UP-4: Solidification (including design mix program and pilot scale test)

1. Bid Item UP-4 shall be the bid unit price per cubic yard for Solidification activities in accordance with the Contract Documents and based on the proven pilot scale test.
2. Provide all labor, materials, equipment, and incidentals necessary for the work described in accordance with Specification Section 01 11 00 – Summary or Work and Section 31 32 13 –Solidification, shown on the Construction Contract Drawings
3. The CONTRACTOR shall submit a separate bid breakdown (See Paragraph 1.06 of this Section) that lists the individual costs required to complete this bid item as well as miscellaneous items not specified elsewhere that are necessary for proper completion of the work (provide detail).
4. Measurement for payment for Bid Item UP-4 shall be the bid unit price for each cubic yard of Solidification (including design mix program and pilot scale test) completed as documented and approved by the ENGINEER. Volume measurement shall be determined on an in-place basis by survey prior to (for existing grades), during solidification (for bottom grades) and after solidification to include relocated materials that have been solidified and tested in accordance with the Contract Documents, as documented and approved by the ENGINEER.

H. Bid Item UP-5: Construction Water Treatment, Sampling and Discharge or Transportation and Disposal

1. Bid Item UP-5 shall be the bid unit price per gallon for Construction Water Treatment and Disposal or Transportation and Disposal activities in accordance with the Contract Documents.
2. Provide all labor, materials, equipment, and incidentals necessary for the work described below in accordance with Specification Section 01 45 28 – Chemical Sampling and Analysis, Section 01 74 19 – Waste Removal, Handling, and Storage, Section 02 72 00 – Construction Water Management, Section 02 81 00 – Off-Site Transportation and Disposal, Section 31 00 00 – Earthwork, and Section 31 23 19 – Dewatering, and described below but not limited to the activities associated with the available construction water disposal options, including on-site storage as necessary:
   a. Storage, treatment, testing and discharge to surface water under a State Pollutant Discharge Elimination System (SPDES) permit equivalent:

i. Coordinating with the DEPARTMENT and the ENGINEER, as required.
ii. Furnishing an on-site treatment system capable of treating construction water to concentrations meeting the DEPARTMENT requirements for surface water discharge.
iii Treating construction water generated throughout the duration of the work to the standards required for surface water discharge.
iv. Providing a safe and secure means to discharge treated construction water to surface water.
v. Performing treatment system start-up.
vi. Completing prove-out of the treatment system to demonstrate its capability to meet the performance requirements of the Contract Documents.
vii. Performing all testing requirements at the prescribed frequencies.
viii. Maintaining the system throughout the contract duration.
ix. Decommissioning, decontaminating, and deconstructing the treatment system at the end of the contract duration.
x. Demobilizing all components of the treatment system from the site.

b. Offsite Disposal:
i. Waste characterization testing.
ii. Pumping construction water into trucks.
iii. Transporting material to an approved off-site disposal facility.
iv. Off-loading construction water at the disposal facility.

3. The CONTRACTOR shall submit a separate bid breakdown (See Paragraph 1.06 of this Section) that lists the individual costs required to complete this bid item as well as miscellaneous items not specified elsewhere that are necessary for proper completion of the work (provide detail).
4. Measurement for payment for Bid Item UP-5 shall be the bid <u>unit price per gallon</u> for Construction Water Treatment as measured by an on-site flow meter, or for Transportation and Disposal as indicated by the receiving facility or calculated based on weights and as documented and approved by the ENGINEER.

I. <u>Bid Item UP-6: Soil Chemical Sampling and Analysis</u>

1. Bid Item UP-6 shall be the bid <u>unit price</u> per each sample taken for Soil & Sediment Chemical Sampling and Analysis in accordance with the Contract Documents.
2. Provide all labor, materials, equipment and incidentals necessary for conducting chemical sampling and analysis of soil samples in accordance with Specification Section 01 45 28 – Chemical Sampling and Analysis and described below but not limited to:
   a. Collecting confirmation samples at the specified frequency within completed excavation areas, expedited turn-around-time testing results for the required parameters, and reporting laboratory results as required.

b. Additional confirmation sampling, testing, and reporting for over-excavation areas due to exceedances of the cleanup objectives.

3. Measurement for payment of Bid Item UP-6: Soil & Sediment Chemical Sampling and Analysis shall be the bid unit price for each sample collected, analyzed, and laboratory results submitted to the ENGINEER for approval.

J. Bid Item UP-7: Non-Hazardous MGP Remediation Waste Off-Site Transportation and Disposal

1. Bid Item UP-7 shall be the bid unit price per ton for Non-Hazardous MGP Remediation Waste Off-Site Transportation and Disposal in accordance with the Contract Documents.
2. Provide all labor, materials, equipment, and incidentals necessary for the work described below in accordance with Specification Section 01 35 43 – Environmental Protection Procedures, Specification Section 01 74 19 – Waste Removal, Handling, and Storage and Section 02 81 00 – Off-Site Transportation and Disposal and described below but not limited to:
   a. Waste characterization testing and documentation.
   b. Loading non-hazardous material into trucks for transport.
   c. Transporting non-hazardous material to an approved licensed off-site disposal facility.
   d. Off-loading non-hazardous material at disposal facility.
3. Measurement for payment for Bid Item UP-7 shall be the bid unit price for each ton of Non-Hazardous MGP Remediation Waste, disposed at the approved disposal facility. Weight measurement shall be by certified scale and documented by certified weight ticket issued by the disposal facility. Certified weight tickets shall be submitted to the ENGINEER for comparison to on-site weight measurement prior to payment approval.

K. Bid Item UP-8: Hazardous MGP Remediation Waste Off-Site Transportation and Disposal

1. Bid Item UP-8 shall be the bid unit price per ton for Hazardous MGP Remediation Waste Off-Site Transportation and Disposal in accordance with the Contract Documents.
2. Provide all labor, materials, equipment, and incidentals necessary for the work described below in accordance with Specification Section 01 35 43 – Environmental Protection Procedures, Specification Section 01 74 19 – Waste Removal, Handling, and Storage and Section 02 81 00 – Off-Site Transportation and Disposal and described below but not limited to:
   a. Waste characterization testing and documentation.
   b. Loading hazardous material into trucks for transport.
   c. Transporting hazardous material to an approved licensed off-site disposal facility.
   d. Off-loading hazardous soil/sediment and associated grubbings at disposal facility.

3. Measurement for payment for Bid Item UP-8 shall be the bid unit cost price for each ton of Hazardous MGP Remediation Waste, disposed at the approved disposal facility. Weight measurement shall be by certified scale and documented by certified weight ticket issued by the disposal facility. Certified weight tickets shall be submitted to the ENGINEER for comparison to on-site weight measurement prior to payment approval.

L. Bid Item UP-9: Cleared and Demolition Debris Materials Off-Site Transportation and Disposal

1. Bid Item UP-9 shall be the bid unit price per ton for Cleared and Demolition Debris Materials Off-Site Transportation and Disposal in accordance with the Contract Documents. Cleared and demolition debris materials for this bid item include cleared trees and shrubs (note that larger trees – i.e. greater than 3 inches at breast height will be removed prior to this Project); whole sections or pieces of stormwater culverts, pavement, miscellaneous construction and demolition debris, and other debris waste items. This item excludes the minor clearing and select demolition activities covered in Bid Item 2.
2. Provide all labor, materials, equipment, and incidentals necessary for each ton of Cleared and Demolition Debris Materials transported and disposed off-site in accordance with Specification Section 01 74 19 – Waste Removal, Handling, and Storage and Section 02 81 00 – Off-Site Transportation and Disposal and described below.
   a. Loading cleared vegetation from cleared areas into waste containers/trucks.
   b. Processing (breaking down) and loading demolished concrete and debris into waste containers/trucks.
   c. Processing (breaking down) and loading other miscellaneous construction and demolition debris encountered or generating during the work into waste containers/trucks.
   d. Transporting and disposing debris off-site at an approved licensed disposal facility.
   e. Documentation and disposal fees.
3. Measurement for payment of Bid Item UP-9: Cleared and Demolition Debris Materials Off-Site Transportation and Disposal shall the bid unit price for each ton of material disposed at the approved disposal facility, including Land Clearing Debris, C&D Debris, and Metal Waste. Weight measurement shall be by certified scale and documented by certified weight ticket issued by the disposal facility. Certified weight tickets shall be submitted to the ENGINEER for comparison to on-site weight measurement prior to payment approval.

M. Bid Item UP-10: Backfill and Grade with Reusable Fill

1. Bid Item UP-10 shall be the bid unit price per cubic yard for Reusable Fill in accordance with the Contract Documents.

2. Provide all labor, materials, equipment, and incidentals necessary for each cubic yard of Reusable Fill from segregated stockpiles, and backfilled in completed excavations, subgrade and in the cover system within the former MGP Property in accordance with Specification Section 01 45 28 – Chemical Sampling and Analysis, Section 01 71 23 – Field Engineering and Surveying, Section 31 00 00 – Earthwork, Section 31 25 00 – Erosion and Sediment Control, and described below.
   a. Geotechnical testing of stockpiled soil.
   b. Processing the soil, if required.
   c. Relocating soil within the site.
   d. Staging and storing soil on-site as required to coordinate with construction sequence.
   e. Placing soil in lifts, grading, and compacting soil to the limits shown on the Construction Contract Drawings.
   f. Field testing for compaction.
3. Measurement for payment of Bid Item UP-10 shall be the bid unit price for each cubic yard of each type of suitable Reused material, placed and compacted in accordance with the Contract Documents. Volume measurement shall be determined on an in-place basis by survey prior to and after placement and compaction, as documented and approved by the ENGINEER.

N. Bid Item UP-11: Backfill and Grade with Imported Soil
1. Bid Item UP-11 shall be the bid unit price per cubic yard for OU01 Backfill Material in accordance with the Contract Documents.
2. Provide all labor, materials, equipment, and incidentals necessary for each cubic yard of OU3 Backfill Material purchased, transported, and backfilled in completed dredged areas in accordance with Specification Section 01 71 23 – Field Engineering and Surveying, and Section 31 00 00 Earthwork, Section 31 25 00 – Erosion and Sediment Control and described below.
   a. Geotechnical and chemical testing of borrow sources meeting commercial use criteria.
   b. Processing the backfill material, if required.
   c. Delivering backfill material to the site.
   d. Staging and storing backfill material on-site as required to coordinate with construction sequence.
   e. Placing soil in lifts, grading, and compacting soil to the limits shown on the Construction Contract Drawings.
   f. Field testing for compaction.
   g. Loading backfill material into scows and placing backfill into completed dredge limits shown on the Construction Contract Drawings.
   h. This Item includes placement of a barrier/demarcation layer as shown on the Construction Contract Drawings or as directed by the ENGINEER. Limits of installed barrier/demarcation layer shall be surveyed prior to placement of cover soils.

3. Measurement for payment of Bid Item UP-11 shall be the bid unit price for each cubic yard of each type of Backfill Material delivered and placed in accordance with the Contract Documents. Volume measurement shall be determined on an in-place basis by survey prior to and after placement and compaction, as documented and approved by the ENGINEER.

PART 2 – (NOT USED)

PART 3 – (NOT USED)

++END OF SECTION++

SECTION XIII

Wages Rates and Associated Contract Requirement

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Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

NYSDEC

Jamie Welch, Senior Project Manager
511 Congress Street Ste. 200
Portland ME 04101

Schedule Year	2019 through 2020
Date Requested	04/14/2020
PRC#	2020004315

Location	Saranac Lake
Project ID#	D011909
Project Type	This hazardous waste remediation job involves excavation, disposal and in-situ stabilization of contaminated soil and restoration of the site.

PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Wage Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2019 through June 2020. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website www.labor.ny.gov. Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: _____ Date Cancelled: _____

Name & Title of Representative: _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

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General Provisions of Laws Covering Workers on Article 8 Public Work Contracts

Introduction

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

Responsibilities of the Department of Jurisdiction

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission: a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a "Request for wage and Supplement Information" form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Both the PW 16 and PW 200 forms are available for completion online.

Hours

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project.

There are very few exceptions to this rule. Complete information regarding these exceptions is available on the "Request for a dispensation to work overtime" form (PW30) and "4 Day / 10 Hour Work Schedule" form (PW 30.1).

Wages and Supplements

The wages and supplements to be paid and/or provided to laborers, workers, and mechanics employed on a public work project shall be not less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. If a prime contractor on a public work project has not been provided with a Prevailing Rate Schedule, the contractor must notify the Department of Jurisdiction (Contracting Agency) who in turn must request an original Prevailing Rate Schedule form the Bureau of Public Work. Requests may be submitted by: mail to NYSDOL, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12240; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website www.labor.ny.gov.

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOL website www.labor.ny.gov.

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOL website www.labor.ny.gov.

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. As per Article 6 of the Labor law, contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemperaneous, true, and accurate payroll records. At a minimum, payrolls must show the following information for each person employed on a public work project: Name, Address, Last 4 Digits of Social Security Number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid

or provided, and Daily and weekly number of hours worked in each classification.

The filing of payrolls to the Department of Jurisdiction is a condition of payment.Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury. The Department of Jurisdiction (Contracting Agency) shall collect, review for facial validity, and maintain such payrolls.

In addition, the Commissioner of Labor may require contractors to furnish, with ten (10) days of a request, payroll records sworn to as their validity and accuracy for public work and private work. Payroll records include, by are not limited to time cards, work description sheets, proof that supplements were provided, cancelled payroll checks and payrolls. Failure to provide the requested information within the allotted ten (10) days will result in the withholding of up to 25% of the contract, not to exceed $100,000.00. If the contractor or subcontractor does not maintain a place of business in New York State and the amount of the contract exceeds $25,000.00, payroll records and certifications must be kept on the project worksite.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by any subcontractor.

All contractors or their subcontractors shall provide to their subcontractors a copy of the Prevailing Rate Schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8, Section 220-a of the Labor Law.

All subcontractors engaged by a public work project contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor a verified statement attesting that the subcontractor has received the Prevailing Rate Schedule and will pay or provide the applicable rates of wages and supplements specified therein. (See NYS Labor Laws, Article 8 . Section 220-a).

Determination of Prevailing Wage and Supplement Rate Updates Applicable to All Counties

The wages and supplements contained in the annual determination become effective July 1st whether or not the new determination has been received by a given contractor. Care should be taken to review the rates for obvious errors. Any corrections should be brought to the Department's attention immediately. It is the responsibility of the public work contractor to use the proper rates. If there is a question on the proper classification to be used, please call the district office located nearest the project. Any errors in the annual determination will be corrected and posted to the NYSDOL website on the first business day of each month. Contractors are responsible for paying these updated rates as well, retroactive to July 1st.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. To the extent possible, the Department posts rates in its possession that cover periods of time beyond the July 1st to June 30th time frame covered by a particular annual determination. Rates that extend beyond that instant time period are informational ONLY and may be updated in future annual determinations that actually cover the then appropriate July 1st to June 30th time period.

Withholding of Payments

When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract shall be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

When the Bureau of Public Work finds that a contractor or subcontractor on a public work project failed to pay or provide the requisite prevailing wages or supplements, the Bureau is authorized by Sections 220-b and 235.2 of the Labor Law to so notify the financial officer of the Department of Jurisdiction (Contracting Agency) that awarded the public work contract. Such officer MUST then withhold or cause to be withheld from any payment due the prime contractor on account of such contract the amount indicated by the Bureau as sufficient to satisfy the unpaid wages and supplements, including interest and any civil penalty that may be assessed by the Commissioner of Labor. The withholding continues until there is a final determination of the underpayment by the Commissioner of Labor or by the court in the event a legal proceeding is instituted for review of the determination of the Commissioner of Labor.

The Department of Jurisdiction (Contracting Agency) shall comply with this order of the Commissioner of Labor or of the court with respect to the release of the funds so withheld.

Summary of Notice Posting Requirements

The current Prevailing Rate Schedule must be posted in a prominent and accessible place on the site of the public work project. The prevailing wage schedule must be encased in, or constructed of, materials capable of withstanding adverse weather conditions and be titled "PREVAILING RATE OF WAGES" in letters no smaller than two (2) inches by two (2) inches.

The "Public Work Project" notice must be posted at the beginning of the performance of every public work contract, on each job site.

Every employer providing workers. compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers. Compensation Board in a conspicuous place on the jobsite.

Every employer subject to the NYS Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers, notices furnished by the State Division of Human Rights.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the NYS Department of Labor.

Apprentices

Employees cannot be paid apprentice rates unless they are individually registered in a program registered with the NYS Commissioner of Labor. The allowable ratio of apprentices to journeyworkers in any craft classification can be no greater than the statewide building trade ratios promulgated by the Department of Labor and included with the Prevailing Rate Schedule. An employee listed on a payroll as an apprentice who is not registered as above or is performing work outside the classification of work for which the apprentice is indentured, must be paid the prevailing journeyworker's wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg. Campus, Bldg. 12, Albany, NY 12240 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any person is registered in that program. Furthermore, the existence or possession of wallet cards, identification cards, or copies of state forms is not conclusive proof of the registration of any person as an apprentice.

Interest and Penalties

In the event that an underpayment of wages and/or supplements is found:

- Interest shall be assessed at the rate then in effect as prescribed by the Superintendent of Banks pursuant to section 14-a of the Banking Law, per annum from the date of underpayment to the date restitution is made.
- A Civil Penalty may also be assessed, not to exceed 25% of the total of wages, supplements, and interest due.

Debarment

Any contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with any state, municipal corporation or public body for a period of five (5) years when:

- Two (2) willful determinations have been rendered against that contractor or subcontractor and/or its successor within any consecutive six (6) year period.
- There is any willful determination that involves the falsification of payroll records or the kickback of wages or supplements.

Criminal Sanctions

Willful violations of the Prevailing Wage Law (Article 8 of the Labor Law) may be a felony punishable by fine or imprisonment of up to 15 years, or both.

Discrimination

No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status.

No contractor, subcontractor nor any person acting on its behalf, shall by reason of race, creed, color, disability, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates (NYS Labor Law, Article 8, Section 220-e(a)).

No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex, or national origin (NYS Labor Law, Article 8, Section 220-e(b)).

The Human Rights Law also prohibits discrimination in employment because of age, marital status, or religion.

There may be deducted from the amount payable to the contractor under the contract a penalty of $50.00 for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract (NYS Labor Law, Article 8, Section 220-e(c)).

The contract may be cancelled or terminated by the State or municipality. All monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract (NYS Labor Law, Article 8, Section 220-e(d)).

Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers notices furnished by the State Division of Human Rights.

Workers' Compensation

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage during the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers' Compensation Law.

A contractor who is awarded a public work contract must provide proof of workers' compensation coverage prior to being allowed to begin work.

The insurance policy must be issued by a company authorized to provide workers' compensation coverage in New York State. Proof of coverage must be on form C-105.2 (Certificate of Workers' Compensation Insurance) and must name this agency as a certificate holder.

If New York State coverage is added to an existing out-of-state policy, it can only be added to a policy from a company authorized to write workers' compensation coverage in this state. The coverage must be listed under item 3A of the information page.

The contractor must maintain proof that subcontractors doing work covered under this contract secured and maintained a workers' compensation policy for all employees working in New York State.

Every employer providing worker's compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Unemployment Insurance

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the New York State Department of Labor.

Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

NYSDEC

Jamie Welch, Senior Project Manager
511 Congress Street Ste. 200
Portland ME 04101

Schedule Year	2019 through 2020
Date Requested	04/14/2020
PRC#	2020004315

Location	Saranac Lake
Project ID#	D011909
Project Type	This hazardous waste remediation job involves excavation, disposal and in-situ stabilization of contaminated soil and restoration of the site.

Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

Contractor Information

All information must be supplied

Federal Employer Identification Number: _____

Name: _____

Address: _____

_____

City: _____ State: _____ Zip: _____

Amount of Contract: $_____

Approximate Starting Date: ____/____/____

Approximate Completion Date: ____/____/____

Contract Type:

[ ] (01) General Construction
[ ] (02) Heating/Ventilation
[ ] (03) Electrical
[ ] (04) Plumbing
[ ] (05) Other : _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

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Social Security Numbers on Certified Payrolls:

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors' concern regarding inclusion of this information on payrolls if another identifier will suffice.

For these reasons, the substitution of the use of the last four digits of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor. This change does not affect the Department's ability to request and receive the entire social security number from employers during its public work/ prevailing wage investigations.

Construction Industry Fair Play Act: Required Posting for Labor Law Article 25-B § 861-d

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site. Failure to post the notice can result in penalties of up to $1,500 for a first offense and up to $5,000 for a second offense. The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, www.labor.ny.gov. https://labor.ny.gov/formsdocs/ui/IA999.pdf
If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: dol.misclassified@labor.ny.gov .

Worker Notification: (Labor Law §220, paragraph a of subdivision 3-a)

This provision is an addition to the existing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the *prevailing wage rate* for their particular job classification *on each pay stub**. It also requires contractors and subcontractors to *post a notice* at the beginning of the performance of every public work contract *on each job site* that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her job classification. The required notification will be provided with each wage schedule, may be downloaded from our website *www.labor.ny.gov* or be made available upon request by contacting the Bureau of Public Work at 518-457-5589. *In the event the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.

(05.19)

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

Budget Policy & Reporting Manual

B-610

Public Work Enforcement Fund

effective date December 7, 2005

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1. Purpose and Scope:

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, maintenance and repair, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

2. Background and Statutory References:

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.

Chapter 511 of the Laws of 1995 (as amended by Chapter 513 of the Laws of 1997, Chapter 655 of the Laws of 1999, Chapter 376 of the Laws of 2003 and Chapter 407 of the Laws of 2005) established the Fund.

3. Procedures and Agency Responsibilities:

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to .10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor
Administrative Finance Bureau-PWEF Unit
Building 12, Room 464
State Office Campus
Albany, NY 12240

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.

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Required Notice under Article 25-B of the Labor Law

Attention All Employees, Contractors and Subcontractors: You are Covered by the Construction Industry Fair Play Act

The law says that you are an employee unless:

- You are free from direction and control in performing your job, **and**
- You perform work that is not part of the usual work done by the business that hired you, **and**
- You have an independently established business.

Your employer cannot consider you to be an independent contractor unless all three of these facts apply to your work.

It is against the law for an employer to misclassify employees as independent contractors or pay employees off the books.

Employee Rights: If you are an employee, you are entitled to state and federal worker protections. These include:

- Unemployment Insurance benefits, if you are unemployed through no fault of your own, able to work, and otherwise qualified,
- Workers' compensation benefits for on-the-job injuries,
- Payment for wages earned, minimum wage, and overtime (under certain conditions),
- Prevailing wages on public work projects,
- The provisions of the National Labor Relations Act, and
- A safe work environment.

It is a violation of this law for employers to retaliate against anyone who asserts their rights under the law. Retaliation subjects an employer to civil penalties, a private lawsuit or both.

Independent Contractors: If you are an independent contractor**, you must pay all taxes and Unemployment Insurance contributions required by New York State and Federal Law.**

Penalties for paying workers off the books or improperly treating employees as independent contractors:

- **Civil Penalty** — First offense: Up to $2,500 per employee

  Subsequent offense(s): Up to $5,000 per employee

- **Criminal Penalty** — First offense: Misdemeanor - up to 30 days in jail, up to a $25,000 fine and debarment from performing public work for up to one year.

  Subsequent offense(s): Misdemeanor - up to 60 days in jail or up to a $50,000 fine and debarment from performing public work for up to 5 years.

If you have questions about your employment status or believe that your employer may have violated your rights and you want to file a complaint, call the Department of Labor at (866) 435-1499 or send an email to dol.misclassified@labor.ny.gov. All complaints of fraud and violations are taken seriously. You can remain anonymous.

Employer Name:

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New York State Department of Labor
Bureau of Public Work

Attention Employees

THIS IS A:

PUBLIC WORK PROJECT

If you are employed on this project as a **worker, laborer, or mechanic** you are entitled to receive the **prevailing wage and supplements rate** for the classification at which you are working.

Chapter 629 of the Labor Laws of 2007:

These wages are set by law and must be posted at the work site. They can also be found at: www.labor.ny.gov

If you feel that you have not received proper wages or benefits, please call our nearest office.*

Albany	(518) 457-2744	Patchogue	(631) 687-4882
Binghamton	(607) 721-8005	Rochester	(585) 258-4505
Buffalo	(716) 847-7159	Syracuse	(315) 428-4056
Garden City	(516) 228-3915	Utica	(315) 793-2314
New York City	(212) 932-2419	White Plains	(914) 997-9507
Newburgh	(845) 568-5156		

* For New York City government agency construction projects, please contact the Office of the NYC Comptroller at (212) 669-4443, or www.comptroller.nyc.gov – click on Bureau of Labor Law.

Contractor Name: _____

Project Location: _____

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Requirements for OSHA 10 Compliance

Article 8 §220-h requires that when the advertised specifications, for every contract for public work, is $250,000.00 or more the contract must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training "prior to the performing any work on the project."

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date.)*
- Training roster, attendance record of other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

**A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-457-5589.

WICKS

Public work projects are subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work, when the total project's threshold is $3 million in Bronx, Kings, New York, Queens and, Richmond counties; $1.5 million in Nassau, Suffolk and Westchester counties; and $500,000 in all other counties.

For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or the use of a Project Labor Agreement (PLA), and must be open to public inspection.

Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.

The Commissioner of Labor shall have the power to enforce separate specification requirement s on projects, and may issue stop-bid orders against public owners for non-compliance.

Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.

Contractors must pay subcontractors within a 7 days period.

(07.19)

Introduction to the Prevailing Rate Schedule

Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.

Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a county-by-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.

Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.

Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

Payrolls and Payroll Records

Contractors and subcontractors are required to establish, maintain, and preserve for not less that six (6) years, contemporaneous, true, and accurate payroll records.

Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury.

Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

Overtime

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. However, the specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is straight time for all hours worked, some classifications require the payment or provision of supplements, or a portion of the supplements, to be paid or provided at a premium rate for premium hours worked. Supplements may also be required to be paid or provided on paid holidays, regardless of whether the day is worked. The Overtime Codes and Notes listed on the particular wage classification will indicate these conditions as required.

Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website (www.labor.ny.gov) for current wage rate information.

Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.

Title (Trade)	Ratio
Boilermaker (Construction)	1:1,1:4
Boilermaker (Shop)	1:1,1:3
Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder)	1:1,1:4
Carpenter (Residential)	1:1,1:3
Electrical (Outside) Lineman	1:1,1:2
Electrician (Inside)	1:1,1:3
Elevator/Escalator Construction & Modernizer	1:1,1:2
Glazier	1:1,1:3
Insulation & Asbestos Worker	1:1,1:3
Iron Worker	1:1,1:4
Laborer	1:1,1:3
Mason	1:1,1:4
Millwright	1:1,1:4
Op Engineer	1:1,1:5
Painter	1:1,1:3
Plumber & Steamfitter	1:1,1:3
Roofer	1:1,1:2
Sheet Metal Worker	1:1,1:3
Sprinkler Fitter	1:1,1:2

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12240

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Essex County General Construction

Boilermaker 04/01/2020

JOB DESCRIPTION Boilermaker **DISTRICT** 1

ENTIRE COUNTIES
Albany, Broome, Chenango, Columbia, Delaware, Essex, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Tioga, Warren, Washington

WAGES
Per hour

	07/01/2019	01/01/2020
Boilermaker	$ 37.29	$ 38.59

SUPPLEMENTAL BENEFITS
Per hour

	07/01/2019	01/01/2020
Journeymen	$ 24.53 + 1.24*	$ 24.81 + 1.24*

* This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 25) on HOLIDAY PAGE
Note: When a holiday falls on Sunday, the day observed by the State or Nation shall be observed, and when Christmas Day and New Year's fall on Saturday, Friday will be observed as the holiday.

REGISTERED APPRENTICES
Wages per hour
(1/2) year terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th	5th	6th	7th	8th
65%	65%	70%	75%	80%	85%	90%	95%

Supplemental Benefits per hour

07/01/2019

1st	2nd	3rd	4th	5th	6th	7th	8th
18.42	18.42	19.30	20.16	21.03	21.91	22.79	23.65
+1.24*	+1.24*	+1.24*	+1.24*	+1.24*	+1.24*	+1.24*	+1.24*

01/01/2020

1st	2nd	3rd	4th	5th	6th	7th	8th
18.60	18.60	19.50	20.37	21.26	22.15	23.04	23.92
+1.24*	+1.24*	+1.24*	+1.24*	+1.24*	+1.24*	+1.24*	+1.24*

* This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

1-197

Carpenter - Building 04/01/2020

JOB DESCRIPTION Carpenter - Building **DISTRICT** 2

ENTIRE COUNTIES
Clinton, Essex, Franklin

WAGES

Per hour:	07/01/2019	07/01/2020 Additional
Carpenter	$ 27.17	$ 1.00
Floor Coverer	27.17	1.00
Carpet Layer	27.17	1.00
Dry-Wall	27.17	1.00
Lather	27.17	1.00

Diver-Wet Day	61.25	0.00
Diver-Dry Day	28.17	1.00
Diver Tender	28.17	1.00

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (not subject to overtime premiums):
- Pile Drivers shall receive $0.25 per hour over the journeyman's rate of pay when performing piledriving work.
- Certified welders shall receive $1.00 per hour over the journeyman's rate of pay when the employee is required to be certified and performs DOT or ABS specified welding work
- When an employee performs work within a contaminated area on a State and/or Federally designated hazardous waste site, and where relevant State and/or Federal regulations require employees to be furnished and use or wear required forms of personal protection, then the employee shall receive his regular hourly rate plus $1.50 per hour.
- Depth pay for Divers based upon deepest depth on the day of the dive:
  0' to 80' no additional fee
  81' to 100' additional $.50 per foot
  101' to 150' additional $0.75 per foot
  151' and deeper additional $1.25 per foot
- Penetration pay for Divers based upon deepest penetration on the day of the dive:
  0' to 50' no additional fee
  51' to 100' additional $.75 per foot
  101' and deeper additional $1.00 per foot
- Diver rates applies to all hours worked on dive day.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman	$ 20.89

OVERTIME PAY

See (B, E, *E2, Q) on OVERTIME PAGE
* Note - Saturday is payable at straight time if the employee misses work, except where a doctor's or hospital verification of illness is produced Monday through Friday when work was available to the employee.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

Note: Any holiday which occurs on Sunday shall be observed the following Monday. If Christmas falls on a Saturday, it shall be observed on the prior Friday.

REGISTERED APPRENTICES

Wages per hour

FOR APPRENTICES INDENTURED PRIOR TO JANUARY 1, 2016
One year terms at the following percentage of Journeyman's base wage.

1st	2nd	3rd	4th
50%	60%	70%	80%

Supplemental Benefits per hour:

1st year term	$ 11.46
2nd year term	11.46
3rd year term	14.06
4th year term	14.06

FOR APPRENTICES INDENTURED AFTER JANUARY 1, 2016
1,300 hour terms at the following percentage of Journeyman's base wage.

1st	2nd	3rd	4th	5th
50%	60%	65%	70%	80%

Supplemental Benefits per hour:

1st term	$ 11.46
2nd term	11.46
3rd term	14.06
4th term	14.06

5th term	14.06

ADDITIONAL AMOUNTS PAID TO APPRENTICES FOR SPECIFIC TYPES OF WORK PERFORMED (not subject to overtime premiums):
- Pile Driving apprentices shall receive $0.25 per hour when performing piledriving work.
- Certified welders shall receive $1.00 per hour over the apprentices rate of pay when the apprentice is required to be certified and performs DOT or ABS specified welding work
- When an apprentice performs work within a contaminated area on a State and/or Federally designated hazardous waste site, and where relevant State and/or Federal regulations require the apprentice to be furnished and use or wear required forms of personal protection, then the apprentice shall receive his regular hourly rate plus $1.50 per hour.

2-291B-Cli

Carpenter - Building / Heavy&Highway 04/01/2020

JOB DESCRIPTION Carpenter - Building / Heavy&Highway **DISTRICT** 2

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

PARTIAL COUNTIES
Orange: The area lying on Northern side of Orange County demarcated by a line drawn from the Bear Mountain Bridge continuing east to the Bear Mountain Circle, continue North on 9W to the town of Cornwall where County Road 107 (also known as Quaker Rd) crosses under 9W, then east on County Road 107 to Route 32, then north on Route 32 to Orrs Mills Rd, then west on Orrs Mills Rd to Route 94, continue west and south on Route 94 to the Town of Chester, to the intersection of Kings Highway, continue south on Kings Highway to Bellvale Rd, west on Bellvale Rd to Bellvale Lakes Rd, then south on Bellvale Lakes Rd to Kain Rd, southeast on Kain Rd to Route 17A, then north and southeast along Route 17A to Route 210, then follow Route 210 to NJ Border.

WAGES

Wages per hour:	07/01/2019	07/01/2020 Additional	07/01/2021 Additional
Carpenter - ONLY for Artificial Turf/Synthetic Sport Surface	$ 30.88	$ 1.15	$ 1.15

Note - Does not include the operation of equipment. Please see Operating Engineers rates.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyman	$ 23.10

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE

HOLIDAY
Paid: See (5) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE
Notes:
When a holiday falls upon a Saturday, it shall be observed on the preceding Friday. Whan a holiday falls upon a Sunday, it shall be observed on the following Monday.
An employee taking an unexcused day off the regularly scheduled day before or after a paid Holiday shall not receive Holiday pay.

REGISTERED APPRENTICES
Wages per hour:

One year terms at the following percentage of Journeyman's wage:

1st	2nd	3rd	4th
55%	60%	70%	80%

Supplemental Benefits per hour:

1st year term	$ 11.55
2nd year term	11.55
3rd year term	14.15
4th year term	14.15

2-42AtSS

Carpenter - Heavy&Highway 04/01/2020

JOB DESCRIPTION Carpenter - Heavy&Highway **DISTRICT** 2

ENTIRE COUNTIES
Albany, Clinton, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES

Per hour	07/01/2019	07/01/2020 Additional	07/01/2021 Additional
Carpenter	$ 33.02	$ 1.40	$ 1.40
Piledriver	33.02	1.40	1.40
Diver-Wet Day	58.02	1.40	1.40
Diver-Dry Day	34.02	1.40	1.40
Diver-Tender	34.02	1.40	1.40

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (not subject to overtime premiums):
- When project owner mandates a single irregular work shift, the employee will receive an additional $2.00 per hour. A single irregular work shift can start any time from 5:00 p.m. to 1:00 a.m.
- State or Federal designated hazardous site, requiring protective gear shall be an additional $2.00 per hour.
- Certified welders when required to perform welding work will receive an additional $1.50 per hour.

ADDITIONAL NOTES PERTAINING TO DIVERS/TENDERS:
- Divers and Tenders shall receive one and one half (1 1/2) times their regular diver and tender rate of pay for Effluent and Slurry diving.
- Divers and tenders being paid at the specified rate for Effluent and Slurry diving shall have all overtime rates based on the specified rate plus the appropriate overtime rates (one and one half or two times the specified rate for Slurry and Effluent divers and tenders).
- The pilot of an ADS or submersible will receive one and one-half (1 1/2) times the Diver-Wet Day Rate for time submerged.
- All crew members aboard a submersible shall receive the Diver-Wet Day rate.
- Depth pay for Divers based upon deepest depth on the day of the dive (per diem payment):
  - 0' to 50' no additional fee
  - 51'to 100' additional $.50 per foot
  - 101'to 150' additional $0.75 per foot
  - 151'and deeper additional $1.25 per foot
- Penetration pay for Divers based upon deepest penetration on the day of the dive (per diem payment):
  - 0' to 50' no additional fee
  - 51' to 100' additional $.75 per foot
  - 101' and deeper additional $1.00 per foot
- Diver rates applies to all hours worked on dive day.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Friday, provided the project duration is more than forty (40) hours.
NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman	$ 22.50

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (5, 6) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

In the event a Holiday falls on a Saturday, the Friday before will be observed as a Holiday. If a Holiday falls on a Sunday, then Monday will be observed as a Holiday. Employee must work scheduled work day before and after the Holiday.

REGISTERED APPRENTICES

Wages per hour

FOR APPRENTICES INDENTURED PRIOR TO JANUARY 1, 2016
One year terms at the following percentage of Journeyman's base wage

1st	2nd	3rd	4th
55%	60%	70%	80%

Supplemental Benefits per hour:

1st year term	$ 11.42
2nd year term	11.42
3rd year term	14.02
4th year term	14.02

FOR APPRENTICES INDENTURED AFTER JANUARY 1, 2016
1,300 hour terms at the following percentage of Journeyman's base wage

1st	2nd	3rd	4th	5th

55%	60%	65%	70%	80%

Supplemental Benefits per hour:

1st term	$ 11.42
2nd term	11.42
3rd term	14.02
4th term	14.02
5th term	14.02

NOTE ADDITIONAL AMOUNTS PAID TO APPRENTICES FOR THE FOLLOWING WORK LISTED BELOW (not subject to overtime premiums):
- When project owner mandates a single irregular work shift, the employee will receive an additional $2.00 per hour. A single irregular work shift can start any time from 5:00 p.m. to 1:00 a.m.
- State or Federal designated hazardous site, requiring protective gear shall be an additional $2.00 per hour.
- Certified welders when required to perform welding work will receive an additional $1.50 per hour.

2-291HH-Alb

Electrician 04/01/2020

JOB DESCRIPTION Electrician **DISTRICT** 6

ENTIRE COUNTIES
Clinton, Essex, Franklin, Jefferson, Lewis, St. Lawrence

WAGES

Per hour:	07/01/2019	04/01/2020	04/01/2021 Additional	04/01/2022 Additional
Electrician	$ 35.00	$ 36.00	$ 1.60	$ 1.65
Teledata	35.00	36.00		
Welder	37.00	38.00		

NOTE: Additional premiums for the following work listed:
-Additional $1.50 per hour for work performed underground such as tunnels and mine shafts. Excludes manholes and walkway tunnels between buildings.
-Additional $1.50 per hour for working 35 feet or more on scaffolds, ladders, towers, steeples, structural steel, or mechanical lifts over 65 feet.

Shift Work: The following rates will apply on all Contracting Agency mandated shifts worked between the hours listed below. The employer may be permitted to adjust the starting hours of the shift by up to two (2) hours if required by the agency. If a shift begins outside of the stated shift hours, the rate paid would be determined by what shift the majority of the hours were worked.

1st shift:	8:00 AM to 4:30 PM regular wage rate
2nd shift:	4:30 PM to 1:00 AM regular wage rate plus 17.3%
3rd shift:	12:30 AM to 9:00 AM regular wage rate plus 31.4%

** IMPORTANT NOTICE - EFFECTIVE 07/01/2012 **
Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.
NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour:

$ 20.68	$ 21.23
*plus 5.75% of gross wage.	*plus 5.75% of gross wage.

* NOTE: THE 5.75% IS BASED ON THE HOURLY WAGE PAID, STRAIGHT TIME RATE OR PREMIUM TIME RATE.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE
NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES: Hourly terms at the following percentage of Journeyman's wage.

	1-1000	to 2000	to 3500	to 5000	to 6500	to 8000
	45%	50%	55%	60%	70%	80%
07/01/2019						
Electrician	$15.75	$17.50	$19.25	$21.00	$24.50	$28.00

Tunnel	$17.25	$19.00	$20.75	$22.50	$26.00	$29.50
04/01/2020						
Electrician	$16.20	$18.00	$19.80	$21.60	$25.20	$28.80
Tunnel	$17.70	$19.50	$21.30	$23.10	$26.70	$30.30

SUPPLEMENTAL BENEFITS per hour:

	07/01/2019	04/01/2020
Appr 1st & 2nd term	$ 10.02 * plus 5.75% of gross wage	$10.27 *plus 5.75% of gross wage
Appr All other terms	$ 20.68 * plus 5.75% of gross wage	$21.23 *plus 5.75% of gross wage

* NOTE: THE 5.75% IS BASED ON THE HOURLY WAGE PAID, STRAIGHT TIME RATE OR PREMIUM TIME RATE.

6-910

Elevator Constructor 04/01/2020

JOB DESCRIPTION Elevator Constructor **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Essex, Fulton, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES
Madison: Madison Only the towns of: Brookfield, Hamilton, Lincoln, Madison, Smithfield, Stockbridge and the City of Oneida
Oneida: Entire county except the towns of: Camden, Florence, and Vienna.

WAGES
Per hour

	07/01/2019	01/01/2020
Mechanic	$ 46.00	$ 47.51
Helper	70% of Mechanic Wage Rate	70% of Mechanic Wage Rate

Four (4), ten (10) hour days may be worked for New Construction and Modernization Work at straight time during a week, Monday thru Thursday or Tuesday thru Friday.

***Four (4), ten (10) hour days are not permitted for Contract Work/Repair Work

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour

	07/01/2019	01/01/2020
Journeyman/Helper	$ 33.705*	$ 34.765*

(*)Plus 6% of hourly rate, if less than 5 years of service. Plus 8% of hourly rate, if more than 5 years of service.

OVERTIME PAY
See (D, O) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 15, 16) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE
Note: When a paid holiday falls on Saturday, it shall be observed on Friday. When a paid holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES
Wages per hour:

0-6 mo*	6-12 mo	2nd yr	3rd yr	4th yr
50%	55 %	65 %	70 %	80 %

(*)Plus 6% of the hourly rate, no additional supplemental benefits.

Supplemental Benefits - per hour worked:

Same as Journeyman/Helper

1-35

Glazier 04/01/2020

JOB DESCRIPTION Glazier **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES
Per hour

	07/01/2019	5/01/2020 Additional	5/01/2021 Additional
Glazier Base Wage	$ 29.15	$ 1.75	$ 1.75
+ additional $2.20 per hour for all hours worked			
High Work Base Wage*	31.55		
+ additional $3.55 per hour for all hours worked			

(*)When working on Swing Stage or Lift 100 feet or more in height, measured from the ground level up.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. NOTE - In order to use the 4 Day/10 Hour Work schedule, as your normal schedule, you must submit an Employer Registration for Use of 4 Day/10 Hour Work Schedule, form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour

Journeyman	$ 20.06
Journeyman High Work	25.36

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE
Premium is applied to the respective base wage only.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: If any of the holidays are designated by federal law to be celebrated on a day other than that on which they regularly fall, then the holiday shall be celebrated on the day set by said federal law as if the day on which the holiday is celebrated was actually the holiday date.

REGISTERED APPRENTICES
Wages per hour

Apprentice Glazier One Year and 1500 hr. terms at the following percentage of Journeymans base wage.

1st	2nd	3rd	4th
50%	65%	75%	90%

+ additional $2.20 per hour for all hours worked for all terms

Apprentice Glazier Hi-Work One Year and 1500 hr. terms at the following percentage of Journeymans Hi-Work base wage.

1st	2nd	3rd	4th
50%	65%	75%	90%

+ additional $3.52 per hour for all hours worked for all terms

Supplemental Benefits per hour worked

Apprentice	
1st term	$ 16.39
2nd-4th term	20.06
Apprentice High Work	
1st term	19.34
2nd-4th term	25.36

1-201

Insulator - Heat & Frost 04/01/2020

JOB DESCRIPTION Insulator - Heat & Frost **DISTRICT** 1

ENTIRE COUNTIES
Albany, Columbia, Delaware, Essex, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Sullivan, Ulster, Warren, Washington

WAGES

Wages per hour	07/01/2019	8/4/2019
Asbestos Worker*	$ 36.04	$ 35.62
Insulator*	36.04	35.62
Firestopping Worker*	30.64	30.28

(*)On Mechanical Systems only.

On government mandated shift work additional 12% of wage for all shifts starting after 3:30 P.M.

SUPPLEMENTAL BENEFITS
Per hour

Journeyman	$ 21.94	$ 22.36

OVERTIME PAY
See (*B1, **Q) on OVERTIME PAGE
*B1=Double time begins after 10 hours on Saturday
**Q=Triple time on Labor Day if worked.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
When a holiday falls on Sunday the following Monday shall be observed as the holiday.

REGISTERED APPRENTICES
Wages per hour

one year terms at the following percentage of Journeyman"s wage.

1st	2nd	3rd	4th
60 %	70 %	80 %	90 %

Supplemental Benefits per hour worked:

Apprentices	$ 21.94	$ 22.36

1-40

Ironworker 04/01/2020

JOB DESCRIPTION Ironworker **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Columbia, Delaware, Essex, Greene, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES
Fulton: Only the Townships of Broadalbin, Mayfield, Northampton, Perth, Bleecker and Johnstown.
Hamilton: Only the Townships of Hope, Benson and Wells.
Montgomery: Only the Townships of Florida, Amsterdam, Charleston, Glen, Mohawk and Root.
Otsego: Only the Towns of Unadilla, Butternuts, Morris, Otego, Oneonta, Laurens, Millford, Maryland and Worchester.

WAGES

Wages Per hour	07/01/2019
Ornamental	$ 31.55
Reinforcing	31.55
Rodman	31.55
Structural & Precast	31.55
Mover/Rigger	31.55
Fence Erector	31.55
Stone Derrickman	31.55
Sheeter	31.80
Curtain Wall Installer	31.55

Metal Window Installer	31.55

SUPPLEMENTAL BENEFITS
Per hour

JOURNEYMAN	$ 28.81

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: Any holiday which occurs on Sunday shall be observed the following Monday.

REGISTERED APPRENTICES
Wages per hour
ONE YEAR TERMS AT THE FOLLOWING WAGE RATES:

	07/01/2019
1st year	$ 16.50
2nd year	18.50
3rd year	20.50
4th year	22.50

Supplemental Benefits per hour worked

1st year	$ 11.25
2nd year	22.39
3rd year	23.97
4th year	25.57

1-12

Laborer - Building 04/01/2020

JOB DESCRIPTION Laborer - Building **DISTRICT** 7

ENTIRE COUNTIES
Clinton, Essex, Warren

WAGES
GROUP A: All Laborers (except as noted)

GROUP B: Asbestos & Hazardous Waste Work.

WAGES per hour

	07/01/2019
Group A	$ 24.33
Group B	25.83

SUPPLEMENTAL BENEFITS
Per hour:

Journeymen	$ 22.45

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour

Terms are at the following percentage of Group Rate A.

0-1,000 Hrs	1,001-2,000 Hrs	2,001-3,000 Hrs	3,001-4,000 Hrs
60%	70%	80%	90%

SUPPLEMENTAL BENEFITS per hour worked:

All Terms: Same as Journeyman

7-1822ew

Laborer - Heavy&Highway 04/01/2020

JOB DESCRIPTION Laborer - Heavy&Highway **DISTRICT** 7

ENTIRE COUNTIES
Clinton, Essex, Warren

WAGES
Per hour:

GROUP A: Drill Helper, Flagmen, Outboard and Hand Boats.

GROUP B: BASIC RATE: Bull Float (where used for strike off only), Chain Saw, Concrete Aggregate Bin, Concrete Bootman, Gin Buggy, Hand or Machine Vibrator, Jack Hammer, Mason Tender, Mortar Mixer, Pavement Breaker, Handlers of All Steel Mesh, Small Generators for Laborers' Tools, Installation of Bridge Drainage Pipe, Pipe Layers, Vibrator Type Rollers, Tamper, Drill Doctor, Water Pump Operator (1-1/2" and Single Diaphragm) Nozzle (Asphalt, Gunite, Seeding, and Sand Blasting), Laborers on Chain Link Fence Erection, Rock Splitter & Power Unit, Pusher Type Concrete Saw and All Other Gas, Electric, Oil, and Air Tool Operators, Wrecking Laborer.

GROUP C: Drilling Equipment - only where a separate air compressor unit supplies power, Acetylene Torch Operators, Asphalt Raker, Powder Man, Tail or Screw Operator on Asphalt Paver.

GROUP D: Blasters, Form Setters, Stone or Granite Curb Setters.

GROUP E: Hazardous Waste Removal Work when designated by State/Federal as hazardous waste site and regulations require employees wear required personal protection.

WAGES per hour	07/01/2019	07/01/2020 Additional	07/01/2021 Additional
Group # A	$ 25.97	$ 1.60	$ 1.60
Group # B	26.17	1.60	1.60
Group # C	26.37	1.60	1.60
Group # D	26.57	1.60	1.60
Group # E	28.67	1.60	1.60

NOTE: A single irregular work shift starting any time between 5:00 PM and 1:00 AM on governmental mandated night work shall be paid an additional $2.50 per hour.

IMPORTANT NOTE: Wage and supplement rates for the operation of forklift and skid steer may be found under the classification "Operating Engineer".

SUPPLEMENTAL BENEFITS
Per hour:

Journeymen $ 24.95

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
NOTE: If a holiday falls on Sunday, it will be celebrated on Monday. In the event that men work on this Sunday holiday, they shall be paid double time. In the event that men work on Monday, they shall be compensated at double time plus the holiday pay. Accordingly, the Monday following the Sunday is treated as the holiday.

REGISTERED APPRENTICES
WAGES: 1000 hour terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th
60%	70%	80%	90%

SUPPLEMENTAL BENEFITS per hour worked:

All Terms: Same as Journeyman

7-1822/2h

Laborer - Tunnel 04/01/2020

JOB DESCRIPTION Laborer - Tunnel **DISTRICT** 7

ENTIRE COUNTIES
Clinton, Essex, Warren

WAGES
GROUP A: General Laborer

GROUP B: Change Houseman, Miners and all Machine Men, Safety Miner, all Shaft-work, Caisson work, Drilling, Blow Pipe, all Air Tools, Tugger, Scaling, Nipper, Guniting pot to nozzle, Bit Grinder, Signal Man (top and bottom), Concrete Men, Shield driven tunnels, mixed face and soft ground, liner plate tunnels in free air.

GROUP C: Hazardous/Waste Work

WAGES (per hour)

	07/01/2019	07/01/2020	07/01/2021
Tunnel Laborer:		Additional	Additional
Group A	$ 29.15	$ 1.60	$ 1.60
Group B	29.35	1.60	1.60
Group C*	31.65	1.60	1.60

(*)Work site required to be designated by State/Federal as hazardous waste site and relevant regulations require employees to use personal protection.

Note - A single irregular work shift shall be paid an additional $2.50 per hour.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyman $ 24.95

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
NOTE: If a holiday falls on Saturday, it will be celebrated on Friday. If a holiday falls on Sunday, it will be celebrated on Monday. In the event that men work on this Sunday holiday, they shall be paid double time. In the event that men work on Monday, they shall be compensated at double time plus the holiday pay. Accordingly, the Monday following the Sunday is treated as the holiday.

REGISTERED APPRENTICES
Wages per hour

Terms are at the following percentage of Group B rate.

0-1000 Hrs	1001-2000 Hrs	2001-3000 Hrs	3001-4000 Hrs
60%	70%	80%	90%

SUPPLEMENTAL BENEFITS

All Terms: Same as Journeyman

7-1822T

Lineman Electrician 04/01/2020

JOB DESCRIPTION Lineman Electrician **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES
Per hour:

NOTE: Includes Teledata Work within ten (10) feet of High Voltage Transmission Lines

Below rates applicable on all overhead and underground distribution and maintenance work, and all overhead and underground transmission line work and the installation of fiber optic cable where no other construction trades are or have been involved. (Ref #14.01.01)

	07/01/2019	05/04/2020
Lineman, Technician	$ 52.05	$ 53.50

Crane, Crawler Backhoe	52.05	53.50
Welder, Cable Splicer	52.05	53.50
Digging Mach. Operator	46.85	48.15
Tractor Trailer Driver	44.24	45.48
Groundman, Truck Driver	41.64	42.80
Equipment Mechanic	41.64	42.80
Flagman	31.23	32.10

Additional $1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all electrical sub-stations, switching structures, fiber optic cable and all other work not defined as "Utility outside electrical work". (Ref #14.02.01-A)

Lineman, Technician	$ 52.05	$ 53.50
Crane, Crawler Backhoe	52.05	53.50
Cable Splicer	57.26	58.85
Certified Welder -		
Pipe Type Cable	54.65	56.18
Digging Mach. Operator	46.85	48.15
Tractor Trailer Driver	44.24	45.48
Groundman, Truck Driver	41.64	42.80
Equipment Mechanic	41.64	42.80
Flagman	31.23	32.10

Additional $1.00 per hour for entire crew when a helicopter is used.

Below rates apply on switching structures, maintenance projects, railroad catenary install/maintenance third rail installation, bonding of rails and pipe type cable and installation of fiber optic cable. (Ref #14.02.01-B)

Lineman, Tech, Welder	$ 53.37	$ 54.82
Crane, Crawler Backhoe	53.37	54.82
Cable Splicer	58.71	60.30
Certified Welder -		
Pipe Type Cable	56.04	57.56
Digging Mach. Operator	48.03	49.34
Tractor Trailer Driver	45.36	46.60
Groundman, Truck Driver	42.70	43.86
Equipment Mechanic	42.70	43.86
Flagman	32.02	32.89

Additional $1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all overhead and underground transmission line work & fiber optic cable where other construction trades are or have been involved. This applies to transmission line work only, not other construction. (Ref #14.03.01)

Lineman, Tech, Welder	$ 54.56	$ 56.01
Crane, Crawler Backhoe	54.56	56.01
Cable Splicer	54.56	56.01
Digging Mach. Operator	49.10	50.41
Tractor Trailer Driver	46.38	47.61
Groundman, Truck Driver	43.65	44.81
Equipment Mechanic	43.65	44.81
Flagman	32.74	33.61

Additional $1.00 per hour for entire crew when a helicopter is used.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM to 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM to 1:00 AM REGULAR RATE PLUS 17.3 %
3RD SHIFT	12:30 AM to 9:00 AM REGULAR RATE PLUS 31.4 %

** IMPORTANT NOTICE **
Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.
*Effective 05/06/2013, Tuesday thru Friday may be worked with no make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour worked (also required on non-worked holidays):

The following SUPPLEMENTAL BENEFITS apply to all classification categories of CONSTRUCTION, TRANSMISSION and DISTRIBUTION.

Journeyman	$ 24.15 *plus 6.75% of hourly wage	$ 24.90 *plus 6.75% of hourly wage

*The 6.75% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY
See (B, E, Q,) on OVERTIME PAGE. *Note* Double time for all emergency work designated by the Dept. of Jurisdiction.
NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.
Overtime	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES
WAGES: 1000 hour terms at the following percentage of the applicable Journeyman Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS: Same as Journeyman

6-1249a

Lineman Electrician - Teledata 04/01/2020

JOB DESCRIPTION Lineman Electrician - Teledata **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES
Per hour:

For outside work, stopping at first point of attachment (demarcation).

	07/01/2019	01/01/2020	01/01/2021
Cable Splicer	$ 32.78	$ 33.77	$ 34.78
Installer, Repairman	$ 31.12	$ 32.05	$ 33.01
Teledata Lineman	$ 31.12	$ 32.05	$ 33.01
Tech., Equip. Operator	$ 31.12	$ 32.05	$ 33.01
Groundman	$ 16.49	$ 16.99	$ 17.50

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work please see LINEMAN.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED:

1ST SHIFT	REGULAR RATE
2ND SHIFT	REGULAR RATE PLUS 10%
3RD SHIFT	REGULAR RATE PLUS 15%

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman	$ 4.73 *plus 3% of wage paid	$ 4.73 *plus 3% of wage paid	$ 4.73 *plus 3% of wage paid

*The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE

6-1249LT - Teledata

Lineman Electrician - Traffic Signal, Lighting 04/01/2020

JOB DESCRIPTION Lineman Electrician - Traffic Signal, Lighting **DISTRICT** 6

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Warren, Washington, Wayne, Wyoming, Yates

WAGES

Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors which includes, but is not limited to road loop wires; conduit and plastic or other type pipes that carry conductors, flex cables and connectors, and to oversee the encasement or burial of such conduits or pipes.

A Groundman/Groundman Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/groundman truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.
(Ref #14.01.01)

Per hour:

	07/01/2019	05/04/2020
Lineman, Technician	$ 45.00	$ 46.20
Crane, Crawler Backhoe	45.00	46.20
Certified Welder	47.25	48.51
Digging Machine	40.50	41.58
Tractor Trailer Driver	38.25	39.27
Groundman, Truck Driver	36.00	36.96
Equipment Mechanic	36.00	36.96
Flagman	27.00	27.72

Above rates are applicable for installation, testing, operation, maintenance and repair on all Traffic Control (Signal) and Illumination (Lighting) projects, Traffic Monitoring Systems, and Road Weather Information Systems. Includes digging of holes for poles, anchors, footer foundations for electrical equipment; assembly of all electrical materials or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM TO 4:30 PM	REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM	REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM	REGULAR RATE PLUS 31.4%

** IMPORTANT NOTICE **

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

*Effective 05/06/2013, Tuesday thru Friday may be worked with no make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour worked (but also required on non-worked holidays):

Journeyman	$ 24.15 *plus 6.75% of hourly wage	$ 24.90 *plus 6.75% of hourly wage

*The 6.75% is based on the hourly wage paid, straight time rate or premium rate.
Supplements paid at STRAIGHT TIME rate for holidays.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE. *Note* Double time for all emergency work designated by the Dept. of Jurisdiction.
NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY
Paid: See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.
Overtime: See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES
WAGES: Per hour. 1000 hour terms.

	07/01/2019	05/04/2020
1st term	$ 27.00	$ 27.72
2nd term	29.25	30.03
3rd term	31.50	32.34
4th term	33.75	34.65
5th term	36.00	36.96
6th term	38.25	39.27
7th term	40.50	41.58

SUPPLEMENTAL BENEFITS: Same as Journeyman

6-1249a-LT

Lineman Electrician - Tree Trimmer 04/01/2020

JOB DESCRIPTION Lineman Electrician - Tree Trimmer **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES
Per hour:

Applies to line clearance, tree work and right-of-way preparation on all new or existing energized overhead or underground electrical, telephone and CATV lines. This also would include stump removal near underground energized electrical lines, including telephone and CATV lines.

	07/01/2019
Tree Trimmer	$ 25.79
Equipment Operator	22.81
Equipment Mechanic	22.81
Truck Driver	18.99
Groundman	15.64
Flag person	11.27

SUPPLEMENTAL BENEFITS
Per hour worked (but also required on non-worked holidays):

Journeyman	$ 9.98 *plus 3% of hourly wage

* The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE
NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid:	See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE
Overtime:	See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE

NOTE: All paid holidays falling on a Saturday shall be observed on the preceding Friday.
All paid holidays falling on a Sunday shall be observed on the following Monday.

6-1249TT

Mason - Building 04/01/2020

JOB DESCRIPTION Mason - Building **DISTRICT** 12

ENTIRE COUNTIES
Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES

Per hour	07/01/2019
Tile/Marble/Terrazzo	
Setter	$ 35.46
Finisher	27.71

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour worked

Journeyman Setter	$ 19.98
Journeyman Finisher	17.24

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour

Hour Terms at the following percentage of Journeyman's wage

Setter:	
1st term 0-500 hrs	60%
2nd term 501-1500 hrs	70%
3rd term 1501-2500 hrs	80%
4th term 2501-3500 hrs	85%
5th term 3501-4500 hrs	90%
6th term 4501-6000 hrs	95%
Finisher:	
1st term 0-500 hrs	70%
2nd term 501-1500 hrs	80%
3rd term 1501-2500 hrs	90%
4th term 2501-3700 hrs	95%

Supplemental Benefits per hour worked

	07/01/2019
Setter:	
1st term 0-500 hrs	$ 11.63
2nd term 501-1500 hrs	11.63
3rd term 1501-2500 hrs	15.85
4th term 2501-3500 hrs	15.85
5th term 3501-4500 hrs	17.97
6th term 4501-6000 hrs	19.98
Finisher:	
1st term 0-500 hrs	$ 11.09
2nd term 501-1500 hrs	11.09
3rd term 1501-2500 hrs	14.21
4th term 2501-3700 hrs	14.21

12-2TS.1

Mason - Building 04/01/2020

JOB DESCRIPTION Mason - Building **DISTRICT** 12

ENTIRE COUNTIES
Clinton, Essex, Franklin

PARTIAL COUNTIES
Warren: Only the Townships of Chester, Hague, Horicon and Johnsburg.

WAGES

Per hour	07/01/2019
Bricklayer	$ 32.84
Cement Finisher	32.84
Plasterer/Fireproofer*	32.84
Pointer/Caulker/Cleaner	32.84
Stone Mason	32.84
Acid Brick	33.84

(*)Fireproofer on Structural only.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour worked

Journeyman	$ 19.62

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

Note: Any holiday which occurs on Sunday shall be observed the following Monday.

REGISTERED APPRENTICES
Wages per hour

750 hr terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
55%	60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked

0-500 Hours	$ 11.77
All others	$ 19.62

12-2b.8

Mason - Heavy&Highway 04/01/2020

JOB DESCRIPTION Mason - Heavy&Highway **DISTRICT** 12

ENTIRE COUNTIES
Albany, Cayuga, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Madison, Montgomery, Oneida, Oswego, Rensselaer, Saratoga, Schenectady, Schoharie, St. Lawrence, Warren, Washington

PARTIAL COUNTIES
Onondaga: For Heavy & Highway Cement Mason or Plaster Work in Onondaga County, refer to Mason-Heavy&Highway tag 1-2h/h on.

WAGES
Per hour

	07/01/2019
Mason & Bricklayer	$38.24

Additional $1.00 per hour for work on any swing scaffold or staging suspended by means of ropes or cables.

SUPPLEMENTAL BENEFITS
Per hour worked

Journeyman
$ 19.90

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: If a holiday falls on Sunday, the Monday following shall constitute the day of the legal holiday.

REGISTERED APPRENTICES
Wages per hour

750 HR TERMS at the following percent of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
55%	60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked

$ 19.90

12-2hh.1

Millwright 04/01/2020

JOB DESCRIPTION Millwright **DISTRICT** 2

ENTIRE COUNTIES
Clinton, Essex, Franklin, Hamilton, Jefferson, Lewis, Oneida, Onondaga, Oswego, St. Lawrence, Warren, Washington

WAGES

Per hour:	07/01/2019	07/01/2020 Additional
Building	$ 28.59	$ 1.25
Heavy & Highway	30.59	1.25

NOTE ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums):
- Certified Welders shall receive $1.75 per hour in addition to the current Millwrights rate provided he/she is directed to perform certified welding.
- For Building work if a work site has been declared a hazardous site by the Owner and the use of protective gear (including, as a minimum, air purifying canister-type chemical respirators) are required, then that employee shall receive a $1.50 premium per hour for Building work.
- For Heavy & Highway work if the work is performed at a State or Federally designated hazardous waste site where employees are required to wear protective gear, the employees performing the work shall receive an additional $2.00 per hour over the millwright heavy and highway wage rate for all hours worked on the day protective gear was worn.
- An employee performing the work of a machinist shall receive $2.00 per hour in addition to the current Millwrights rate. For the purposes of this premium to apply, a "machinist" is a person who uses a lathe, Bridgeport, milling machine or similar type of tool to make or modify parts.
- When performing work underground at 500 feet and below, the employee shall receive an additional $0.50. This amount will increase to $1.00 on 7/1/2020.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman	$ 23.30

OVERTIME PAY
See (B, E, *E2, Q) on OVERTIME PAGE
*Note - Saturday may be used as a make-up day and worked at the straight time rate of pay during a work week when conditions such as weather, power failure, fire, or natural disaster prevent the performance of work on a regular scheduled work day.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

Note: Any holiday that falls on Sunday shall be observed the following Monday. Any holiday that falls on Saturday shall be observed the preceding Friday.

REGISTERED APPRENTICES
Wages per hour:

(1)year terms at the following percentage of journeymans rate.

1st	2nd	3rd	4th
60%	70%	80%	90%

Supplemental Benefits per hour:

Apprentices:

1st term	$ 10.60
2nd term	19.49
3rd term	20.76
4th term	22.03

2-1163.2

Operating Engineer - Building 04/01/2020

JOB DESCRIPTION Operating Engineer - Building **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES
Dutchess: Defined as north of the northern boundary line of City of Poughkeepsie then due east to Route 115 to Bedelt Road then east along Bedelt Road to VanWagner Road then north along VanWagner Road to Bower Road then east along Bower Road to Rte. 44 east to Route 343 then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to Connecticut.

WAGES
CLASS A1:
Crane, hydraulic cranes, tower crane, locomotive crane, piledriver, cableway, derricks,whirlies, dragline, boom trucks over 5 tons.

CLASS A:
Shovel, all Excavators (including rubber tire full swing), Gradalls, power road grader, all CMI equipment, front-end rubber tire loader, tractor-mounted drill (quarry master), mucking machine, concrete central mix plant, concrete pump, belcrete system, automated asphalt concrete plant, and tractor road paver, boom trucks 5 tons and under, maintenance engineer, self-contained crawler drill-hydraulic rock drill.

CLASS B:
Backhoes (rubber tired backhoe/loader combination), bulldozer, pushcat, tractor, traxcavator, scraper, LeTourneau grader, form fine grader, self-propelled soil compactor (fill roller), asphalt roller, blacktop spreader, power brooms, sweepers, trenching machine, Barber Green loader, side booms, hydro hammer, concrete spreader, concrete finishing machine, one drum hoist, power hoisting (single drum), hoist two drum or more, three drum engine, power hoisting (two drum and over), two drum and swinging engine, three drum swinging engine, hod hoist, A-L frame winches, core and well drillers (one drum), post hole digger, model CHB Vibro-Tamp or similar machine, batch bin and plant operator, dinky locomotive, skid steer loader, track excavator 5/8 cubic yard or smaller, front end rubber tired loader under four cubic yards, vacum machine (mounted or towed).

CLASS C:
Fork lift, high lift, all terrain fork lift: or similar, oiler, fireman and heavy-duty greaser, boilers and steam generators, pump, vibrator, motor mixer, air compressor, dust collector, welding machine, well point, mechanical heater, generators, temporary light plants, electric submersible pumps 4" and over, murphy type diesel generator, conveyor, elevators, concrete mixer, beltcrete power pack (belcrete system), seeding, and mulching machines, pumps.

* In the event that equipment listed above is operated by robotic control, the classification covering the operation will be the same as if manually operated.

WAGES per hour

	07/01/2019	07/01/2020	07/01/2021
Class # A1	$ 44.68	45.67	46.71
Class # A	44.19	45.18	46.22
Class # B	43.17	44.16	45.20
Class # C	40.27	41.26	42.30

Additional $0.50 per hr for Tower Cranes.
Additional $1.25 per hr for Cranes with Boom length & jib 150ft. and over.
Additional $2.25 per hr for Cranes with Boom length & jib 200ft. and over.
Additional $2.50 per hr over B rate for Nuclear Leader work.
Additional $0.40 per hr for tunnel or excavation of shaft 40" or more deep.
Additional $2.50 per hour if work requires Personal Protective Equipment for hazardous waste site activities with a level C or over rating.

SUPPLEMENTAL BENEFITS
Per hour

	07/01/2019	07/01/2020	07/01/2021
Journeyman	$ 27.10	28.25	29.40

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: If a holiday falls on Sunday, it will be celebrated on Monday. If the holiday falls on Saturday, it will be celebrated on Friday. Employees who work a Saturday holiday shall be paid double time plus 8 hours of straight time.

REGISTERED APPRENTICES
Wages per hour

1000 hours terms at the following percentage of Journeyman''s wage Class B

1st	2nd	3rd	4th
60%	70%	80%	90%

Supplemental Benefits per hour worked

	07/01/2019	07/01/2020	07/01/2021
All terms	$ 22.40	23.55	24.70

1-158 Alb

Operating Engineer - Heavy&Highway 04/01/2020

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 1

ENTIRE COUNTIES
Albany, Broome, Chenango, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Tioga, Warren, Washington

PARTIAL COUNTIES
Dutchess: Defined as north of the northern boundary line of City of Poughkeepsie then due east to Route 115 to Bedelt Road then east along Bedelt Road to VanWagner Road then north along VanWagner Road to Bower Road then east along Bower Road to Rte. 44 east to Route 343 then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to Connecticut.

WAGES
CLASSIFICATION A:
Asphalt Curb Machine (Self Propelled, Slipform), Asphalt Paver, Automated Concrete Spreader (CMI Type), Automatic Fine Grader, Backhoe (Except Tractor Mounted, Rubber Tired), Backhoe Excavator Full Swing (CAT 212 or similar type), Back Filling Machine, Belt Placer (CMI Type), Blacktop Plant (Automated), Boom truck, GPS operated Bull Dozer, Cableway, Caisson Auger, Central Mix Concrete Plant (Automated), Concrete Curb Machine (Self Propelled, Slipform), Concrete Pump, Crane, Cherry Picker, Derricks (steel erection), Dragline, Overhead Crane (Gantry or Straddle type), Pile Driver, Truck Crane, Directional Drilling Machine, Dredge, Dual Drum Paver, Excavator (All PurposeHydraulically Operated) (Gradall or Similar), Front End Loader (4 cu. yd. and Over), Head Tower (Sauerman or Equal), Hoist (Two or Three Drum), Holland Loader, Maintenance Engineer, Mine Hoist, Mucking Machine or Mole, Pavement Breaker(SP) Wertgen; PB-4 and similar type, Power Grader, Profiler (over 105 H.P.), Quad 9, Quarry Master (or equivalent), Scraper, Shovel, Side Boom, Slip Form Paver (If a second man is needed, he shall be an Oiler), Tractor Drawn BeltType Loader, Truck or Trailer Mounted Log Chipper (Self Feeder), Tug Operator (Manned Rented Equipment Excluded), Tunnel Shovel

CLASSIFICATION B:

Backhoe (Tractor Mounted, Rubber Tired), Bituminous Recycler Machine, Bituminous Spreader and Mixer, Blacktop Plant (NonAutomated), Blast or Rotary Drill (Truck or Tractor Mounted), Brokk, Boring Machine, Cage Hoist, Central Mix Plant [(NonAutomated) and All Concrete Batching Plants], Concrete Paver (Over 16S), Crawler Drill (Self-contained), Crusher, Diesel Power Unit, Drill Rigs, Tractor Mounted, Front End Loader (Under 4 cu. yd.), Greaseman/Lubrication Engineer, HiPressure Boiler (15 lbs. and over), Hoist (One Drum), Hydro-Axe, Kolman Plant Loader and Similar Type Loaders (If Employer requires another man to clean the screen or to maintain the equipment, he shall be an Oiler), L.C.M. Work Boat Operator, Locomotive, Material handling knuckle boom, Mini Excavator (under 18,000 lbs.), Mixer (for stabilized base selfpropelled), Monorail Machine, Plant Engineer, Prentice Loader, Profiler (105 H.P. and under), Pug Mill, Pump Crete, Ready Mix Concrete Plant, Refrigeration Equipment (for soil stabilization), Road Widener, Roller (all above subgrade), Sea Mule, Self-contained Ride-on Rock Drill(Excluding Air-Track Type Drill), Skidder, Tractor with Dozer and/or Pusher, Trencher, Tugger Hoist, Vacum machine (mounted or towed), Vermeer saw (ride on, any size or type), Welder

CLASSIFICATION C:
A Frame Winch Hoist on Truck, Articulated Heavy Hauler, Aggregate Plant, Asphalt or Concrete Grooving Machine (ride on), Ballast Regulator(Ride-on), Boiler (used in conjunction with production), Bituminous Heater (self-propelled), Boat (powered), Cement and Bin Operator, Concrete Pavement Spreader and Finisher Concrete Paver or Mixer (16' and under), Concrete Saw (self-propelled), Conveyor, Deck Hand, Directional Drill Machine Locator, Drill (Core and Well), Farm Tractor with accessories, Fine Grade Machine, Fireman, Fork Lift, Form Tamper, Grout Pump, Gunite Machine, Hammers (Hydraulic self-propelled), Hydra-Spiker (ride-on), Hydraulic Pump (jacking system), Hydro-Blaster (Water), Mulching Machine, Oiler, Parapet Concrete or Pavement Grinder, Post Hole Digger and Post Driver, Power Broom (towed), Power Heaterman, Power Sweeper, Revinius Widener, Roller (Grade and Fill), Scarifier (ride-on), Shell Winder, Skid steer loader (Bobcat or similar), Span-Saw (ride-on), Steam Cleaner, Tamper (ride-on), Tie Extractor (ride-on), Tie Handler (ride-on), Tie Inserter (ride-on), Tie Spacer (ride-on), Tire Repair, Track Liner (ride-on), Tractor, Tractor (with towed accessories), Vibratory Compactor, Vibro Tamp, Well Point, and the following hands-off equipment: Compressors, Dust Collectors, Generators, Pumps, Welding Machines, Light Plants and Heaters

- Note for all above classifications of Operating Engineer - In the event that equipment listed above is operated by robotic control, the classification covering the operation will be the same as if manually operated.

WAGES per hour

	07/01/2019	07/01/2020 Additional	07/01/2021 Additional
Master Mechanic	$ 46.43	$ 2.60	$ 2.70
Class A*	44.82		
Class B	43.91		
Class C	41.34		

Additional $2.50 per hour for All Employees who work a single irregular work shift starting from 5:00 PM to 1:00 AM that is mandated by the Contracting Agency.
Additional $2.50 per hr. for hazardous waste removal work on State and/or Federally designated waste site which require employees to wear Level C or above forms of personal protection.

(*) Premiums for CRANES is based upon Class A rates with the following premiums:
- Additional $4.00 per hr for Tower Cranes, including self erecting.
- Additional $3.00 per hr for Lattice Boom Cranes and all other cranes with a manufacturers rating of fifty (50) tons and over.
- Additional $2.00 per hr for all Hydraulic Cranes and Derricks with a manufacturer's rating of 49 ton and below, including boom trucks.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour

Journeyman $ 27.30

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: If the holiday falls on Sunday, it will be celebrated on Monday. If the holiday falls on a Saturday, it will be celebrated on Saturday.

REGISTERED APPRENTICES
Wages per hour

1000 hours terms at the following percentage of Journeyman's wage Class B

1st	2nd	3rd	4th

60% 70% 80% 90%

Supplemental Benefits per hour worked

	07/01/2019
All Terms	$ 22.70

1-158H/H Alb

Operating Engineer - Marine Dredging 04/01/2020

JOB DESCRIPTION Operating Engineer - Marine Dredging **DISTRICT** 4

ENTIRE COUNTIES
Albany, Bronx, Cayuga, Chautauqua, Clinton, Columbia, Dutchess, Erie, Essex, Franklin, Greene, Jefferson, Kings, Monroe, Nassau, New York, Niagara, Orange, Orleans, Oswego, Putnam, Queens, Rensselaer, Richmond, Rockland, St. Lawrence, Suffolk, Ulster, Washington, Wayne, Westchester

WAGES
These wages do not apply to Operating Engineers on land based construction projects. For those projects, please see the Operating Engineer Heavy/Highway Rates. The wage rates below for all equipment and operators are only for marine dredging work in navigable waters found in the counties listed above.

Per Hour:	07/01/2019	10/01/2019
CLASS A1 Deck Captain, Leverman Mechanical Dredge Operator Licensed Tug Operator 1000HP or more.	$ 39.23	$ 40.31
CLASS A2 Crane Operator (360 swing)	34.96	35.92
CLASS B Dozer,Front Loader Operator on Land	To conform to Operating Engineer Prevailing Wage in locality where work is being performed including benefits.	
CLASS B1 Derrick Operator (180 swing) Spider/Spill Barge Operator Operator II, Fill Placer, Engineer, Chief Mate, Electrician, Chief Welder, Maintenance Engineer Licensed Boat, Crew Boat Operator	33.93	34.86
CLASS B2 Certified Welder	31.94	32.82
CLASS C1 Drag Barge Operator, Steward, Mate, Assistant Fill Placer	31.07	31.92
CLASS C2 Boat Operator	30.06	30.89
CLASS D Shoreman, Deckhand, Oiler, Rodman, Scowman, Cook, Messman, Porter/Janitor	24.97	25.66

SUPPLEMENTAL BENEFITS
Per Hour:
THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

	07/01/2019	10/01/2019
All Classes A & B	$11.23 plus 7.5% of straight time wage, Overtime hours add $ 0.63	$11.88 plus 7.5% of straight time wage, Overtime hours add $ 0.63

All Class C	$10.93 plus 7.5% of straight time wage, Overtime hours add $ 0.48	11.58 plus 7.5% of straight time wage, Overtime hours add $ 0.48
All Class D	$10.63 plus 7.5% of straight time wage, Overtime hours add $ 0.33	11.28 plus 7.5% of straight time wage, Overtime hours add $ 0.33

OVERTIME PAY
See (B2, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 26) on HOLIDAY PAGE

4-25a-MarDredge

Operating Engineer - Survey Crew 04/01/2020

JOB DESCRIPTION Operating Engineer - Survey Crew **DISTRICT** 12

ENTIRE COUNTIES
Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES
Dutchess: The northern portion of the county from the northern boundary line of the City of Poughkeepsie, north.
Genesee: Only the portion of the county that lies east of a line down the center of Route 98 to include all area that lies within the City of Batavia.

WAGES
These rates apply to Building, Tunnel and Heavy Highway.

Per hour:
SURVEY CLASSIFICATIONS:

Party Chief - One who directs a survey party.
Instrument Person - One who operates the surveying instruments.
Rod Person - One who holds the rods and assists the Instrument Person.

	07/01/2019
Party Chief	$ 41.51
Instrument Person	39.15
Rod Person	27.10

Additional $3.00/hr. for Tunnel Work
Additional $2.50/hr. for Hazardous Work Site

SUPPLEMENTAL BENEFITS
Per hour worked:

Journeyman	$ 26.80

OVERTIME PAY
See (B, E, P, T) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES: 1000 hour terms based on the Percentage of Rod Persons Wage:

	07/01/2019
0-1000	60%
1001-2000	70%
2001-3000	80%

SUPPLEMENTAL BENIFIT per hour worked:

0-1000	$ 16.21
1001-2000	18.92
2001-3000	21.63

12-158-545 D.H.H.

Operating Engineer - Survey Crew - Consulting Engineer 04/01/2020

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer **DISTRICT** 12

ENTIRE COUNTIES
Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES
Dutchess: The northern portion of the county from the northern boundary line of the City of Poughkeepsie, north.
Genesee: Only the portion of the county that lies east of a line down the center of Route 98 to include all area that lies within the City of Batavia.

WAGES
These rates apply to feasibility and preliminary design surveying, line and grade surveying for inspection or supervision of construction when performed under a Consulting Engineer Agreement.

Per hour:
SURVEY CLASSIFICATIONS:

Party Chief - One who directs a survey party.
Instrument Person - One who operates the surveying instruments.
Rod Person - One who holds the rods and assists the Instrument Person.

	07/01/2019
Party Chief	$ 42.86
Instrument Person	39.37
Rod Person	29.14

Additional $3.00/hr. for Tunnel Work.
Additional $2.50/hr. for EPA or DEC certified toxic or hazardous waste work.

SUPPLEMENTAL BENEFITS
Per hour worked:

Journeyman	$ 25.60

OVERTIME PAY
See (B, E, P, T) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES: 1000 hour terms based on percentage of Rod Persons Wage:

	07/01/2019
0-1000	60%
1001-2000	70%
2001-3000	80%

SUPPLEMENTAL BENIFIT per hour worked:

0-1000	$ 17.43
1001-2000	$ 20.35
2001-3000	$ 23.26

12-158-545 DCE

Operating Engineer - Tunnel 04/01/2020

JOB DESCRIPTION Operating Engineer - Tunnel **DISTRICT** 7

ENTIRE COUNTIES

Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES

Dutchess: Northern part of Dutchess to the northern boundary line of the City of Poughkeepie then due east to Route 115 to Bedelt Road then east along Bedelt Road to VanWagner Road then north along VanWagner Road to Bower Road then east along Bower Road to Rte. 44 east to Rte. 343 then along Rte. 343 east to the northern boundary of the Town of Dover Plains and east along the northern boundary of the Town of Dover Plains to Connecticut.
Genesee: Only that portion of the county that lies east of a line drawn down the center of Route 98 and the entirety of the City of Batavia.

WAGES

CLASS A: Automatic Concrete Spreader (CMI Type); Automatic Fine Grader; Backhoe (except tractor mounted,rubber tired); Belt Placer (CMI Type); Blacktop Plant (automated); Cableway; Caisson Auger; Central Mix Concrete Plant (automated); Concrete Curb Machine (self-propelled slipform); Concrete Pump (8" or over); Dredge; Dual Drum Paver; Excavator; Front End Loader (4 cu. yd & over); Gradall; Head Tower (Sauerman or Equal); Hoist (shaft); Hoist (two or three Drum); Log Chipper/Loader (self-feeder); Maintenance Engineer (shaft and tunnel); any Mechanical Shaft Drill; Mine Hoist; Mining Machine(Mole and similar types); Mucking Machine or Mole; Overhead Crane (Gantry or Straddle Type); Pile Driver; Power Grader; Remote Controlled Mole or Tunnel Machine; Scraper; Shovel; Side Boom; Slip Form Paver (If a second man is needed, they shall be an Oiler); Tripper/Maintenance Engineer (shaft & tunnel); Tractor Drawn Belt-Type Loader; Tug Operator (manned rented equipment excluded); Tunnel Shovel

CLASS B: Automated Central Mix Concrete Plant; Backhoe (topside); Backhoe (track mounted, rubber tired); Backhoe (topside); Bituminous Spreader and Mixer, Blacktop Plant (non-automated); Blast or Rotary Drill (truck or tractor mounted); Boring Machine; Cage Hoist; Central Mix Plant(non-automated); all Concrete Batching Plants; Compressors (4 or less exceeding 2,000 c.f.m. combined capacity); Concrete Pump; Crusher; Diesel Power Unit; Drill Rigs (tractor mounted); Front End Loader (under 4 cu. yd.); Grayco Epoxy Machine; Hoist (One Drum); Hoist (2 or 3 drum topside); Knuckle Boom material handler; Kolman Plant Loader & similar type Loaders (if employer requires another person to clean the screen or to maintain the equipment, they shall be an Oiler); L.C.M. Work Boat Operator; Locomotive; Maintenance Engineer (topside); Maintenance Grease Man; Mixer (for stabilized base-self propelled); Monorail Machine; Plant Engineer; Personnel Hoist; Pump Crete; Ready Mix Concrete Plant; Refrigeration Equipment (for soil stabilization); Road Widener; Roller (all above sub-grade); Sea Mule; Shotcrete Machine; Shovel (topside); Tractor with Dozer and/or Pusher; Trencher; Tugger Hoist; Tunnel Locomotive; Welder; Winch; Winch Cat

CLASS C: A Frame Truck; All Terrain Telescoping Material Handler; Ballast Regulator (ride-on); Compressors (4 not to exceed 2,000 c.f.m. combined capacity; or 3 or less with more than 1200 c.f.m. but not to exceed 2,000 c.f.m.); Compressors ((any size, but subject to other provisions for compressors), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (4 or any type combination)); Concrete Pavement Spreaders and Finishers; Conveyor; Drill (core); Drill (well); Electric Pump used in conjunction with Well Point System; Farm Tractor with Accessories; Fine Grade Machine; Fork Lift; Grout Pump (over 5 cu. ft.); Gunite Machine; Hammers (hydraulic-self-propelled); Hydra-Spiker (ride-on); Hydra-Blaster (water); Hydro-Blaster; Motorized Form Carrier; Post Hole Digger and Post Driver; Power Sweeper; Roller grade & fill); Scarifer (ride-on); Span-Saw (ride-on); Submersible Electric Pump (when used in lieu of well points); Tamper (ride-on); Tie-Extractor (ride-on), Tie Handler (ride-on), Tie Inserter (ride-on), Tie Spacer (ride-on); Track Liner (ride-on); Tractor with towed accessories; Vibratory Compactor; Vibro Tamp, Well Point

CLASS D: Aggregate Plant; Cement & Bin Operator; Compressors (3 or less not to exceed 1,200 c.f.m. combined capacity); Compressors ((any size, but subject to other provisions for compressors), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (3 or less or any type or combination)); Concrete Saw (self-propelled); Form Tamper; Greaseman; Hydraulic Pump (jacking system); Junior Engineer; Light Plants; Mulching Machine; Oiler; Parapet Concrete or Pavement Grinder; Power Broom (towed); Power Heaterman (when used for production); Revinius Widener; Shell Winder; Steam Cleaner; Tractor

WAGES per hour:

	07/01/2019	07/01/2020	07/01/2021	07/01/2022
Master Mechanic	$ 48.00	$ 49.45	$ 51.00	$ 52.60
CLASS A	45.59	47.04	48.59	50.19
CLASS B	44.37	45.82	47.37	48.97
CLASS C	41.58	43.03	44.58	46.18
CLASS D	38.57	40.02	41.57	43.17

Additional $5.00 per hour for Hazardous Waste Work on a state or federally designated hazardous waste site where the Operating Engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin and eye protection. Fringe benefits will be paid at the hourly wage premium.

CRANES:
Crane 1: All cranes, including self-erecting to be paid $4.00 per hour over the Class A rate.
Crane 2: All Lattice Boom Cranes and all cranes with a manufacturer"s rating of fifty (50) ton and over to be paid $3.00 per hour over Class A rate.
Crane 3: All hydraulic cranes and derricks with a manufacturer"s rating of forty nine (49) ton and below, including boom trucks, to be paid $2.00 per hour over Class A rate.

Crane 1	$ 49.59	$ 51.04	$ 52.59	$ 54.19
Crane 2	48.59	50.04	51.59	53.19

Crane 3	47.59	49.04	50.59	52.19

SUPPLEMENTAL BENEFITS
Per hour:

$ 29.60	$ 30.75	$ 31.90	$ 33.05

OVERTIME PAY
See (B, B2, E, Q, X) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
If a holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES
WAGES:(1000) hours terms at the following percentage of Journeyman''s wage.

1st term	60% of Class B
2nd term	65% of Class B
3rd term	70% of Class B
4th term	75% of Class B

SUPPLEMENTAL BENEFITS per hour paid: Same as Journeyman

7-158-832TL.

Painter 04/01/2020

JOB DESCRIPTION Painter **DISTRICT** 1

ENTIRE COUNTIES
Albany, Essex, Fulton, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES
Per hour

	07/01/2019	05/01/2020 Additional
Painter\Wallcover	$ 29.09	$1.50
Drywall Finishers	29.09	1.50
Spray Rate	29.09	1.50
Structrual Steel*	30.09	1.50
Lead Abatement	30.09	1.50
Lead Abatement on Structural Steel	31.09	1.50

(*)Employees working on objects with the use of swing stage, boatswain chair, pick and cables only will be paid at Structural Steel rate.

Bridge Painter
See Bridge Painter rates for the following work:
All Bridges and Tanks

SUPPLEMENTAL BENEFITS
Per hour

Journeyman $ 16.85

OVERTIME PAY
See (B, E2, H) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: If the holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES
Wages per hour

1000 hour terms at the following percentage of Journeyman's base wage

1st	2nd	3rd	4th	5th	6th
45%	50%	60%	70%	80%	90%

Supplemental Benefits per hour worked

All Terms $ 16.85

1-201-P

Painter - Bridge & Structural Steel 04/01/2020

JOB DESCRIPTION Painter - Bridge & Structural Steel **DISTRICT** 8

ENTIRE COUNTIES
Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES
Per Hour:
STEEL:

	07/01/2019
Bridge Painting:	$ 49.50
	+ 6.38*

ADDITIONAL $6.00 per hour for POWER TOOL/SPRAY, whether straight time or overtime.

NOTE: All premium wages are to be calculated on base rate per hour only.

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (no cap).

NOTE: Generally, for Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter's Rate; the contract must be ONLY for Bridge Painting.

SUPPLEMENTAL BENEFITS
Per Hour:

	07/01/2019
Journeyworker:	$ 9.50
	+26.05*

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (no cap).

OVERTIME PAY
See (A, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (4, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wage - Per hour:

Apprentices: (1) year terms

	07/01/2019
1st year	$ 23.13
2nd year	34.73
3rd year	46.30

Supplemental Benefits - Per hour:

1st year	$ 13.44
2nd year	20.16
3rd year	26.88

8-DC-9/806/155-BrSS

Painter - Line Striping 04/01/2020

JOB DESCRIPTION Painter - Line Striping **DISTRICT** 8

ENTIRE COUNTIES

Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES
Per hour:

Painter (Striping-Highway):	07/01/2019
Striping-Machine Operator*	$ 29.93
Linerman Thermoplastic	$ 36.06

Note: * Includes but is not limited to: Positioning of cones and directing of traffic using hand held devices. Excludes the Driver/Operator of equipment used in the maintenance and protection of traffic safety.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour paid: 07/01/2019
Journeyworker:

Striping-Machine operator	$ 7.44
Linerman Thermoplastic	$ 7.44

OVERTIME PAY
See (B, B2, E2, F, S) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 20) on HOLIDAY PAGE
Overtime: See (5, 20) on HOLIDAY PAGE

REGISTERED APPRENTICES
One (1) year terms at the following wage rates:

	07/01/2019
1st term	$ 11.97
2nd term	17.96
3rd term	23.94

Supplemental Benefits per hour:

1st term	$ 7.44
2nd term	7.44
3rd term	7.44

8-1456-LS

Painter - Metal Polisher 04/01/2020

JOB DESCRIPTION Painter - Metal Polisher **DISTRICT** 8

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

	07/01/2019
Metal Polisher	$ 30.58
Metal Polisher*	31.53
Metal Polisher**	34.08

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS
Per Hour: 07/01/2019

Journeyworker:

All classification $ 7.72

OVERTIME PAY
See (B, E, P, T) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 9, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
One (1) year term at the following wage rates:

	07/01/2019
1st year	$ 15.00
2nd year	15.00
3rd year	15.75
1st year*	$ 17.39
2nd year*	17.44
3rd year*	18.29
1st year**	$ 19.50
2nd year**	19.50
3rd year**	20.25

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:
Per hour:

1st year	$ 5.52
2nd year	5.52
3rd year	5.52

8-8A/28A-MP

Plumber 04/01/2020

JOB DESCRIPTION Plumber **DISTRICT** 1

ENTIRE COUNTIES
Essex

PARTIAL COUNTIES
Franklin: Entire County except for the Village of Hogansburg and the St. Regis Indian Reservation.
Hamilton: The Townships of Long Lake and Indian Lake

WAGES
Per hour

	07/01/2019
Plumber & Steamfitter	$ 38.50

SUPPLEMENTAL BENEFITS
Per hour

Journeyman	$ 20.55
	+10.43*

* This portion of the benefit is subject to the SAME PREMIUM as shown for overtime and applicable to paid Holidays.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (22) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 23) on HOLIDAY PAGE
Note: Whenever a Holiday falls on a Saturday, the preceding day, Friday, shall be observed as the Holiday. If a Holiday falls on a Sunday, the following day, Monday shall be observed as the Holiday.

REGISTERED APPRENTICES
Wages per hour

One year terms at the following percentage of Journeyman's wage

1st yr	50%
2nd yr	60%
3rd yr	70%
4th yr	80%
5th yr	90%

Supplemental Benefits per hour worked

1st yr	$ 17.63 + 5.22*
2nd yr	18.21 + 6.26*
3rd yr	18.80 + 7.30*
4th yr	19.38 + 8.34*
5th yr	19.97 + 9.39*

* This portion of the benefit is subject to the SAME PREMIUM as shown for overtime.
* This portion per hour paid.

1-773EF-SF

Roofer 04/01/2020

JOB DESCRIPTION Roofer **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Columbia, Essex, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Warren, Washington

WAGES
Per hour

	07/01/2019	07/01/2020 Additional	07/01/2021 Additional
Roofer/Waterproofer	$ 31.55	$1.50	$1.50
Asphalt Cold Process	32.05		
Fluid Applied Roof	32.05		
Pitch & Asbestos	33.55		

Shift Work:
On government mandated shift work starting after 12:00pm and before 4:00am workers shall be paid $4.00 additional per hour

SUPPLEMENTAL BENEFITS
Per hour

Journeyman $ 19.27

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: When any Holiday falls on Saturday, the Friday before such Holiday shall be recognized as the legal Holiday. When a Holiday falls on Sunday, it shall be observed the following Monday.

REGISTERED APPRENTICES
Wages per hour

Apprentice terms at the following per cent of the Roofer/Waterproofer rate. For Pitch & Asbestos work, an additional $2.00 must be paid in wages. For Asphalt Cold Process work and Fluid Applied Roof coating, an additional $0.50 must be paid in the wages.

1st Term 58%
1500 hrs.

2nd Term 74%
1 yr. and 1500 hrs.

3rd Term 90%
1 yr. and 1050 hrs.

Supplemental Benefits per hour worked

1st Term	$ 17.69
2nd Term	18.12

3rd Term	18.60

1-241

Sheetmetal Worker 04/01/2020

JOB DESCRIPTION Sheetmetal Worker **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES
Per hour

	07/01/2019	06/01/2020 Additional	06/01/2021 Additional
Sheetmetal Worker	$33.16	$ 1.75	$ 1.75

All work requiring HAZWOPER Training additional $1.00 per hour

SUPPLEMENTAL BENEFITS
Per hour

Journeyman	$33.09

OVERTIME PAY
See (B,E,E5,Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
When any holiday falls on Saturday, the Friday before such holiday shall be recognized as the legal holiday. Any holiday falling on Sunday, the following Monday shall be recognized as the legal holiday.

REGISTERED APPRENTICES
Wages per hour

6 Month Terms at the following rate:

1st term	$18.44
2nd term	$19.99
3rd term	$20.77
4th term	$21.55
5th term	$20.34
6th term	$21.35
7th term	$23.04
8th term	$24.73
9th term	$26.41
10th term	$28.10

Supplemental Benefits per hour worked

1st term	$20.30
2nd term	20.88
3rd term	21.18
4th term	21.60
5th term	27.62
6th term	28.05
7th term	28.77
8th term	29.49
9th term	30.21
10th term	30.93

1-83

Sprinkler Fitter 04/01/2020

JOB DESCRIPTION Sprinkler Fitter **DISTRICT** 1

ENTIRE COUNTIES
Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Washington, Wayne, Wyoming, Yates

WAGES

Per hour	07/01/2019
Sprinkler Fitter	$ 34.91

SUPPLEMENTAL BENEFITS
Per hour

Journeyman	$ 24.93

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: When a holiday falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double time rate. When a holiday falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double time rate.

REGISTERED APPRENTICES
Wages per hour

For Apprentices HIRED ON OR AFTER 04/01/2010:

One Half Year terms at the following percentage of journeyman's wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
45%	50%	55%	60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
$ 9.18	$ 9.22	$ 17.89	$ 17.93	$ 18.48	$ 18.52	$ 18.57	$ 18.61	$ 18.66	$ 18.70

For Apprentices HIRED ON OR AFTER 04/01/2013:

One Half Year terms at the following percentage of journeyman's wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
45%	50%	55%	60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
$ 8.27	$ 8.27	$ 18.04	$ 18.04	$ 18.29	$ 18.29	$ 18.29	$ 18.29	$ 18.29	$ 18.29

1-669

Teamster - Building 04/01/2020

JOB DESCRIPTION Teamster - Building **DISTRICT** 7

ENTIRE COUNTIES
Clinton, Essex, Franklin, Jefferson, St. Lawrence

PARTIAL COUNTIES
Lewis: Only the Townships of Croghan, Denmark, Diana, New Bremen,Harrisburg, Montague, Osceola and Pinckney.
Oswego: Only the Towns of Boylston, Redfield, and Sandy Creek.
Warren: Only the Townships of Hague, Horicon, Chester and Johnsburg.

WAGES
GROUP # 1: Fuel Trucks, Fork Lift (Warehouse & Storage Area Only), Bus, Warehouse, Yardman, Truck Helper, Pickups, Panel Truck, Flatbody Material Trucks (straight Jobs), Single axle Dump Trucks, Dumpsters, Material Checkers & Receivers, Greasers, Tiremen, Mechanic Helpers and Parts Chasers.
GROUP # 2: Tandems, Mechanics & Batch Trucks.
GROUP # 3: Semi Trailers, Low Boys, Asphalt Distributor Trucks, and Agitator Mixer Truck, Dump Crete Type Vehicles and 3 axle Dump trucks.
GROUP # 4: Asbestos Removal, Special earth moving Euclid type or similar off highway equip.(non self load.) Articulated and all-track dump trucks.

Wages per hour

	07/01/2019

Building:

Group #1	$ 23.58
Group #2	24.58
Group #3	24.68
Group #4	23.84

SUPPLEMENTAL BENEFITS
Per hour:

All groups	$ 21.51

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

7-687B

Teamster - Heavy&Highway 04/01/2020

JOB DESCRIPTION Teamster - Heavy&Highway **DISTRICT** 7

ENTIRE COUNTIES
Clinton, Essex, Franklin, Jefferson, St. Lawrence

PARTIAL COUNTIES
Lewis: Only the Townships of Croghan, Denmark, Diana, New Bremen,Harrisburg, Montague, Osceola and Pinckney.
Oswego: Only the Towns of Boylston, Redfield, and Sandy Creek.
Warren: Only the Townships of Hague, Horicon, Chester and Johnsburg.

WAGES
GROUP 1: Warehousemen, Yardmen, Truck Helpers, Pickups, Panel Trucks, Flatboy Material Trucks(straight jobs), Single Axle Dump Trucks, Dumpsters, Material Checkers and Receivers, Greasers, Truck Tiremen, Mechanics Helpers and Parts Chasers. Fork Lift (storage & warehouse areas only) Tandems and Batch Trucks, Mechanics, Dispatcher. Semi-Trailers, Low-boy Trucks, Asphalt Distributor Trucks, and Agitator, Mixer Trucks and dumpcrete type vehicles, Truck Mechanic,Fuel Truck.

GROUP 2: Specialized Earth Moving Equipment, Euclid type, or similar off-highway where not self-loading, Straddle (Ross) Carrier, and self-contained concrete mobile truck. Off-highway Tandem Back-Dump, Twin Engine Equipment and Double-Hitched Equipment where not self-loading.

Per hour:

	07/01/2019
Heavy/Highway:	
Group #1	$ 25.82
Group #2	26.04

Additional $1.50 per hour for hazardous waste removal work on a City, County, and/or Federal Designated waste site and regulations require employee to use or wear respiratory protection.
For work bid on or after April 1, 1982 there shall be a 12 month carryover of the negotiated rate in effect at the time of the bid.

SUPPLEMENTAL BENEFITS
Per hour:

All classes	$ 23.52

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (5, 6) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

NOTE: If a holiday falls on a Sunday, it will be celebrated on Monday.

7-687

Welder 04/01/2020

JOB DESCRIPTION Welder **DISTRICT** 1

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

Per hour 07/01/2019

Welder: To be paid the same rate of the mechanic performing the work.*

*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

OVERTIME PAY

HOLIDAY

1-As Per Trade

Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

(AA)	Time and one half of the hourly rate after 7 and one half hours per day
(A)	Time and one half of the hourly rate after 7 hours per day
(B)	Time and one half of the hourly rate after 8 hours per day
(B1)	Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday. Double the hourly rate for all additional hours
(B2)	Time and one half of the hourly rate after 40 hours per week
(C)	Double the hourly rate after 7 hours per day
(C1)	Double the hourly rate after 7 and one half hours per day
(D)	Double the hourly rate after 8 hours per day
(D1)	Double the hourly rate after 9 hours per day
(E)	Time and one half of the hourly rate on Saturday
(E1)	Time and one half 1st 4 hours on Saturday; Double the hourly rate all additional Saturday hours
(E2)	Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E3)	Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
(E4)	Saturday and Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E5)	Double time after 8 hours on Saturdays
(F)	Time and one half of the hourly rate on Saturday and Sunday
(G)	Time and one half of the hourly rate on Saturday and Holidays
(H)	Time and one half of the hourly rate on Saturday, Sunday, and Holidays
(I)	Time and one half of the hourly rate on Sunday
(J)	Time and one half of the hourly rate on Sunday and Holidays
(K)	Time and one half of the hourly rate on Holidays
(L)	Double the hourly rate on Saturday
(M)	Double the hourly rate on Saturday and Sunday
(N)	Double the hourly rate on Saturday and Holidays
(O)	Double the hourly rate on Saturday, Sunday, and Holidays
(P)	Double the hourly rate on Sunday
(Q)	Double the hourly rate on Sunday and Holidays
(R)	Double the hourly rate on Holidays
(S)	Two and one half times the hourly rate for Holidays

(S1) Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.

(T) Triple the hourly rate for Holidays

(U) Four times the hourly rate for Holidays

(V) Including benefits at SAME PREMIUM as shown for overtime

(W) Time and one half for benefits on all overtime hours.

(X) Benefits payable on Paid Holiday at straight time. If worked, additional benefit amount will be required for worked hours. (Refer to other codes listed.)

Holiday Codes

PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

(1)	None
(2)	Labor Day
(3)	Memorial Day and Labor Day
(4)	Memorial Day and July 4th
(5)	Memorial Day, July 4th, and Labor Day
(6)	New Year's, Thanksgiving, and Christmas
(7)	Lincoln's Birthday, Washington's Birthday, and Veterans Day
(8)	Good Friday
(9)	Lincoln's Birthday
(10)	Washington's Birthday
(11)	Columbus Day
(12)	Election Day
(13)	Presidential Election Day
(14)	1/2 Day on Presidential Election Day
(15)	Veterans Day
(16)	Day after Thanksgiving
(17)	July 4th
(18)	1/2 Day before Christmas
(19)	1/2 Day before New Years
(20)	Thanksgiving
(21)	New Year's Day
(22)	Christmas
(23)	Day before Christmas
(24)	Day before New Year's
(25)	Presidents' Day
(26)	Martin Luther King, Jr. Day
(27)	Memorial Day
(28)	Easter Sunday

New York State Department of Labor - Bureau of Public Work
State Office Building Campus
Building 12 - Room 130
Albany, New York 12240

REQUEST FOR WAGE AND SUPPLEMENT INFORMATION

As Required by Articles 8 and 9 of the NYS Labor Law

Fax (518) 485-1870 or mail this form for new schedules or for determination for additional occupations.

This Form Must Be Typed

Submitted By: (Check Only One) ☐ Contracting Agency ☐ Architect or Engineering Firm ☐ Public Work District Office Date:

A. Public Work Contract to be let by: (Enter Data Pertaining to Contracting/Public Agency)

1. Name and complete address ☐ (Check if new or change)

Telephone: ( ) Fax: ( )
E-Mail:

2. NY State Units (see Item 5)

- ☐ 01 DOT
- ☐ 02 OGS
- ☐ 03 Dormitory Authority
- ☐ 04 State University Construction Fund
- ☐ 05 Mental Hygiene Facilities Corp.
- ☐ 06 OTHER N.Y. STATE UNIT
- ☐ 07 City
- ☐ 08 Local School District
- ☐ 09 Special Local District, i.e., Fire, Sewer, Water District
- ☐ 1O Village
- ☐ 11 Town
- ☐ 12 County
- ☐ 13 Other Non-N.Y. State (Describe)

3. SEND REPLY TO ☐ check if new or change)
Name and complete address:

Telephone:( ) Fax: ( )
E-Mail:

4. SERVICE REQUIRED. Check appropriate box and provide project information.

- ☐ New Schedule of Wages and Supplements.

APPROXIMATE BID DATE :

- ☐ Additional Occupation and/or Redetermination

PRC NUMBER ISSUED PREVIOUSLY FOR THIS PROJECT :

OFFICE USE ONLY

B. PROJECT PARTICULARS

5. Project Title

Description of Work

Contract Identification Number

Note: For NYS units, the OSC Contract No.

6. Location of Project:
Location on Site

Route No/Street Address

Village or City

Town

County

7. Nature of Project - Check One:

- ☐ 1. New Building
- ☐ 2. Addition to Existing Structure
- ☐ 3. Heavy and Highway Construction (New and Repair)
- ☐ 4. New Sewer or Waterline
- ☐ 5. Other New Construction (Explain)
- ☐ 6. Other Reconstruction, Maintenance, Repair or Alteration
- ☐ 7. Demolition
- ☐ 8. Building Service Contract

8. OCCUPATION FOR PROJECT :

- ☐ Construction (Building, Heavy Highway/Sewer/Water)
- ☐ Tunnel
- ☐ Residential
- ☐ Landscape Maintenance
- ☐ Elevator maintenance
- ☐ Exterminators, Fumigators
- ☐ Fire Safety Director, NYC Only
- ☐ Guards, Watchmen
- ☐ Janitors, Porters, Cleaners, Elevator Operators
- ☐ Moving furniture and equipment
- ☐ Trash and refuse removal
- ☐ Window cleaners
- ☐ Other (Describe)

9. Has this project been reviewed for compliance with the Wicks Law involving separate bidding? YES ☐ NO ☐

10. Name and Title of Requester

Signature

SEE PAGE TWO FOR LAWS RELATING TO PUBLIC WORK CONTRACTS

NEW YORK STATE DEPARTMENT OF LABOR
Bureau of Public Work - Debarment List

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year (6) period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements;
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements.

The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = New York State Department of Labor; NYC = New York City Comptroller's Office; AG = New York State Attorney General's Office; DA = County District Attorney's Office.

Debarment Database: To search for contractors, sub-contractors and/or their successors debarred from bidding or being awarded any public work contract or subcontract under NYS Labor Law Articles 8 and 9, or under NYS Workers' Compensation Law Section 141-b, access the database at this link: https://applications.labor.ny.gov/EDList/searchPage.do

For inquiries where WCB is listed as the "Agency", please call 1-866-546-9322

NYSDOL Bureau of Public Work Debarment List 04/10/2020

Article 8

AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	NYC	*****9839	A.J.S. PROJECT MANAGEMENT, INC.		149 FIFTH AVENUE NEW YORK NY 10010	12/29/2016	12/29/2021
DOL	NYC		ABDUL KARIM		C/O NORTH AMERICAN IRON W 1560 DECATUR STREETRIDGEWOOD NY 11385	05/15/2015	05/15/2020
DOL	DOL	*****3344	ACT INC		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	DOL	*****4018	ADIRONDACK BUILDING RESTORATION INC.		4156 WILSON ROAD EAST TABERG NY 13471	03/26/2019	03/26/2024
DOL	AG	*****1812	ADVANCED BUILDERS & LAND DEVELOPMENT, INC.		400 OSER AVE #2300HAUPPAUGE NY 11788	09/11/2019	09/11/2024
DOL	DOL	*****1687	ADVANCED SAFETY SPRINKLER INC		261 MILL ROAD P.O BOX 296EAST AURORA NY 14052	07/29/2015	07/29/2020
DOL	DOL	*****1687	ADVANCED SAFETY SPRINKLER INC		261 MILL ROAD P.O BOX 296EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	NYC	*****6775	ADVENTURE MASONRY CORP.		1535 RICHMOND AVENUE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	NYC		AGOSTINHO TOME		405 BARRETTO ST BRONX NY 10474	05/31/2018	05/31/2023
DOL	DOL		AJ TORCHIA		10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL	*****3344	ALL CATASTROPHE CONSTRUCTION TEAM INC	ACT INC	6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	DOL		AMADEO J TORCHIA	TORCHIA'S HOME IMPROVEMEN T	10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	NYC		AMJAD NAZIR		2366 61ST ST BROOKLYN NY 11204	12/15/2016	12/15/2021
DOL	DOL		ANGELO F COKER			12/04/2018	12/04/2023
DOL	NYC		ANISUL ISLAM		C/O RELIANCE GENERAL CONS 644 OCEAN PARKWAYBROOKLYN NY 11230	09/02/2015	09/02/2020
DOL	DOL		ANITA SALERNO		158 SOLAR ST SYRACUSE NY 13204	01/07/2019	01/07/2024
DOL	DA		ANTHONY CARDINALE		58-48 59TH STREET MASPETH NY 11378	05/16/2012	05/08/2020
DOL	DOL		ANTHONY J MINGARELLI JR		C/O T & T CONCRETE INC 2560 HAMBURG TURNPIKELACKAWANNA NY 14218	07/08/2015	07/08/2020
DOL	NYC		ANTHONY J SCLAFANI		149 FIFTH AVE NEW YORK NY 10010	12/29/2016	12/29/2021
DOL	DOL		ANTHONY PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10323	01/23/2017	01/23/2022
DOL	DOL		ANTONIO ESTIVEZ		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3020	APCO CONTRACTING CORP		24 SOUTH MARYLAND AVENUE PORT WASHINGTON NY 11050	09/24/2012	09/02/2020
DOL	NYC	*****9232	ARKAY CONSTRUCTION INC		102-104 GREYLOCK AVENUE BELLEVILLE NJ 07109	07/15/2015	07/15/2020
DOL	DOL		ARNOLD A. PAOLINI		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	NYC		ARSHAD MEHMOOD		168-42 88TH AVENUE JAMAICA NY 11432	11/20/2019	11/20/2024
DOL	DOL		ARVINDER ATWAL		65 KENNETH PLACE NEW HYDE PARK NY 11040	07/19/2017	07/19/2022
DOL	NYC	*****4779	ASTORIA GENERAL CONTRACTING CORP		35-34 31ST STREET LONG ISLAND CITY NY 11106	09/02/2015	09/02/2020
DOL	NYC	*****7217	ASTRO COMMUNICATIONS OF NY CORP		79 ALEXANDER AVE- STE 36A BRONX NY 10454	10/30/2015	10/30/2020
DOL	NYC	*****6046	ATLANTIC SUN CONTRUCTION CORP		58-46 59TH AVENUE MASPETH NY 11378	05/08/2015	05/08/2020
DOL	NYC	*****6683	ATLAS RESTORATION CORP.		35-12 19TH AVENUE ASTORIA NY 11105	08/02/2017	08/02/2022
DOL	NYC	*****5532	ATWAL MECHANICALS, INC		65 KENNETH PLACE NEW HYDE PARK NY 11040	07/19/2017	07/19/2022

DOL	NYC	*****2591	AVI 212 INC.		260 CROPSEY AVENUE APT 11GBROOKLYN NY 11214	10/30/2018	10/30/2023
DOL	AG		AVTAR SINGH		116-24 127TH STREET SOUTH OZONE PARK NY 11420	12/22/2015	12/22/2020
DOL	AG		BALDEV SINGH		116-24 127TH STREET SOUTH OZONE PARK NY 11420	12/22/2015	12/22/2020
DOL	NYC		BALWINDER SINGH		421 HUDSON ST SUITE C5NEW YORK NY 10014	02/20/2019	02/20/2024
DOL	DOL		BARRY KINNEY		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	NYC	*****3915	BEACON RESTORATION INC		SUITE B-8 782 PELHAM PARKWAY SOUTHBRONX NY 10462	04/21/2016	04/21/2021
DOL	NYC	*****8416	BEAM CONSTRUCTION, INC.		50 MAIN ST WHITE PLAINS NY 10606	01/04/2019	01/04/2024
DOL	DOL		BIAGIO CANTISANI			06/12/2018	06/12/2023
DOL	DOL	*****4512	BOB BRUNO EXCAVATING, INC		5 MORNINGSIDE DR AUBURN NY 13021	05/28/2019	05/28/2024
DOL	DOL		BOGDAN MARKOVSKI		370 W. PLEASANTVIEW AVE SUITE 2.329HACKENSACK NJ 07601	02/11/2019	02/11/2024
DOL	DOL	*****8551	BRANDY'S MASONRY		216 WESTBROOK STREET P O BOX 304SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL	*****1449	BRRESTORATION NY INC		140 ARCADIA AVENUE OSWEGO NY 13126	09/12/2016	09/12/2021
DOL	DOL		BRUCE MORSEY		C/O KENT HOLLOW SIDING LL 29A BRIDGE STREETNEW MILFORD CT 06776	01/15/2016	01/15/2021
DOL	DOL		BRUCE P. NASH JR.		5841 BUTTERNUT ROAD EAST SYRACUSE NY 13057	09/12/2018	09/12/2023
DOL	DOL	*****0225	C&D LAFACE CONSTRUCTION, INC.		8531 OSWEGO RD BALDWINSVILLE NY 13027	02/03/2020	02/03/2025
DOL	DOL	*****8809	C.B.E. CONTRACTING CORPORATION		310 MCGUINESS BLVD GREENPOINT NY 11222	03/07/2017	03/07/2022
DOL	DOL	*****9383	C.C. PAVING AND EXCAVATING, INC.		2610 SOUTH SALINA ST SUITE 12SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	NYC		CALVIN WALTERS		465 EAST THIRD ST MT. VERNON NY 10550	09/09/2019	09/09/2024
DOL	DOL		CANTISANI & ASSOCIATES LTD		442 ARMONK RD MOUNT KISCSO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CANTISANI HOLDING LLC			06/12/2018	06/12/2023
DOL	DOL		CARIBBEAN POOLS		C/O DOUGLAS L MALARKEY 64 VICTORIA DRIVEBINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL		CARMEN RACHETTA		8531 OSWEGO RD BALDWINSVILLE NY 13027	02/03/2020	02/03/2025
DOL	DOL		CARMENA RACHETTA		8531 OSWEGO ROAD BALDWINSVILLE NY 13027	02/03/2020	02/03/2025
DOL	DOL	*****3812	CARMODY "2" INC			06/12/2018	06/12/2023
DOL	DOL	*****1143	CARMODY BUILDING CORP	CARMODY CONTRACTIN G AND CARMODY CONTRACTIN G CORP.	442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY CONCRETE CORPORATION			06/12/2018	06/12/2023
DOL	DOL		CARMODY ENTERPRISES, LTD.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY INC		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3812	CARMODY INDUSTRIES INC			06/12/2018	06/12/2023
DOL	DOL		CARMODY MAINTENANCE CORPORATION		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY MASONRY CORP		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****8809	CBE CONTRACTING CORP		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	AG		CESAR J. AGUDELO		81-06 34TH AVENUE APT. 6EJACKSON HEIGHTS NY 11372	02/07/2018	02/07/2023

DOL	DOL	*****7655	CHAMPION CONSTRUCTION SERVICES CORP		2131 SCHENECTADY AVENUE BROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	DOL		CHARLES ZIMMER JR		216 WESTBROOK STREET P O BOX 304SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL		CHRISTINE J HEARNE		C/O CJ-HEARNE CONSTRUCTIO 131 PONCE DE LEON AVE NEATLANTA GA 30308	12/01/2015	12/01/2020
DOL	DOL		CHRISTOPHER J MAINI		19 CAITLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		CHRISTOPHER PAPASTEFANOU A/K/A CHRIS PAPASTEFANOU		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL	*****0671	CJ-HEARNE CONSTRUCTION CO		SUITE 204 131 PONCE DE LEON AVENUEATLANTA GA 30308	12/01/2015	12/01/2020
DOL	DOL	*****1927	CONSTRUCTION PARTS WAREHOUSE, INC.	CPW	5841 BUTTERNUT ROAD EAST SYRACUSE NY 13057	09/12/2018	09/12/2023
DOL	NYC	*****2164	CREATIVE TRUCKING INC		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	DOL	*****2524	CSI ELECTRICAL & MECHANICAL INC		42-32 235TH ST DOUGLASTON NY 11363	01/14/2019	01/14/2024
DOL	DOL	*****7761	D L MALARKEY CONSTRUCTION		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****7888	D L MALARKEY CONSTRUCTION INC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****5629	DAKA PLUMBING AND HEATING LLC		2561 ROUTE 55 POUGHQUAG NY 12570	02/19/2016	02/19/2021
DOL	NYC		DALJIT KAUR BOPARAI		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	DOL		DANICA IVANOSKI		61 WILLETT ST. PASSAIC NJ 07503	10/26/2016	10/26/2021
DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2CSYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL		DARYL T RIEKS		C/O RIEKS CONTRACTING LLC 4804 GAHWILER ROADAUBURN NY 13021	05/01/2015	05/01/2020
DOL	NYC	*****7707	DASSLE CONTRACTING INC		213-37 39TH AVE/SUITE 120 BAYSIDE NY 11360	05/08/2015	05/08/2020
DOL	DOL		DAVID MARTINEZ		C/O EMPIRE TILE INC 6 TREMONT COURTHUNTINGTON STATION NY 11746	03/08/2016	03/08/2021
DOL	NYC		DAVID WEINER		14 NEW DROP LANE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024
DOL	DOL		DEBBIE STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	AG		DEBRA MARTINEZ		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		DEDA GAZIVODAN		C/O DAKA PLUMBING AND H 2561 ROUTE 55POUGHQUAG NY 12570	02/19/2016	02/19/2021
DOL	DOL		DELPHI PAINTING & DECORATING CO INC		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL		DENNIS SCHWANDTNER		C/O YES SERVICE AND REPAI 145 LODGE AVEHUNTINGTON STATION NY 11476	08/09/2016	08/09/2021
DOL	DOL		DF CONTRACTORS OF ROCHESTER, INC.		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DF CONTRACTORS, INC.		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	NYC		DIMITRIOS KOUTSOUKOS		C/O ASTORIA GENERAL CONTR 35-34 31ST STREETLONG ISLAND CITY NY 11106	09/02/2015	09/02/2020
DOL	NYC		DIMITRIOS TSOUMAS		35-12 19TH AVENUE ASTORIA NY 11105	08/02/2017	08/02/2022
DOL	DOL		DOMENICO LAFACE		8531 OSWEGO RD BALDWINSVILLE NY 13027	02/03/2020	02/03/2025
DOL	DOL	*****3242	DONALD R. FORSAY	DF LAWN SERVICE	1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DONALD R. FORSAY		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DORIS SKODA		C/O APCO CONTRACTING CORP 24 SOUTH MARYLAND AVENUEPORT WASHINGTON NY 11050	09/24/2012	09/02/2020

DOL	NYC	*****7404	DOSANJH CONSTRUCTION CORP		9439 212TH STREET QUEENS VILLAGE NY 11428	02/25/2016	02/25/2021
DOL	DOL		DOUGLAS L MALARKEY	MALARKEY CONSTRUCTI ON	64 VICTORIA DRIVE B INGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	NYC		DUARTE LOPES		66-05 WOODHAVEN BLVD. STE 2REGO PARK NY 11374	04/20/2017	04/20/2022
DOL	DOL		E C WEBB		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	DOL	*****5175	EAGLE MECHANICAL AND GENERAL CONSTRUCTION LLC		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	DOL		EARL L WILSON	WILSON BROTHER DRYWALL CONTRACTOR S	36 ABERSOLD STREET ROCHESTER NY 14621	08/31/2015	08/31/2020
DOL	DOL		EAST COAST PAVING		2238 BAKER RD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	NYC	*****4269	EAST PORT EXCAVATION & UTILITIES		601 PORTION RD RONKONKOMA NY 11779	11/18/2016	11/18/2021
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	DOL	*****3270	EMPIRE TILE INC		6 TREMONT COURT HUNTINGTON STATION NY 11746	03/08/2016	03/08/2021
DOL	NYC	*****5917	EPOCH ELECTRICAL, INC		97-18 50TH AVE CORONA NY 11368	04/19/2019	04/19/2024
DOL	DOL	*****7403	F & B PAINTING CONTRACTING INC		2 PARKVIEW AVENUE HARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL		FAIGY LOWINGER		11 MOUNTAIN RD 28 VAN BUREN DRMONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL		FAY MATTHEW		C/O CHAMPION CONSTRUCTION 2131 SCHENECTADY AVENUEBROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	DOL		FAZIA GINA ALI-MOHAMMED	C/O CHAMPION CONSTRUCTI ON	2131 SCHENECTADY AVENUE BROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	DOL		FRANK BENEDETTO		19 CATLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		FRANK BENEDETTO		C/O F & B PAINTING CONTRA 2 PARKVIEW AVENUEHARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL	*****4722	FRANK BENEDETTO AND CHRISTOPHER J MAINI	B & M CONCRETE	19 CAITLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	NYC		FRANK MAINI		1766 FRONT ST YORKTOWN HEIGHTS NY 10598	01/09/2018	01/09/2023
DOL	NYC	*****6616	G & G MECHANICAL ENTERPRISES, LLC.		1936 HEMPSTEAD TURNPIKE EAST MEDOW NY 11554	11/29/2019	11/29/2024
DOL	DOL		GABRIEL FRASSETTI			04/10/2019	04/10/2024
DOL	DOL		GALINDA ROTENBERG		C/O GMDV TRANS INC 67-48 182ND STREETFRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	DOL		GEOFF CORLETT		415 FLAGGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	DOL		GIGI SCHNECKENBURGER		261 MILL RD EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	DOL		GIOVANNI LAFACE		8531 OSWEGO RD BALDWINSVILLE NY 13027	02/03/2020	02/03/2025
DOL	NYC	*****3164	GLOBE GATES INC	GLOBAL OVERHEAD DOORS	405 BARRETTO ST BRONX NY 10474	05/31/2018	05/31/2023
DOL	DOL	*****5674	GMDV TRANS INC		67-48 182ND STREET FRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	NYC		GREAT ESTATE CONSTRUCTION, INC.		327 STAGG ST BROOKLYN NY 11206	10/10/2017	10/10/2022
DOL	DOL		GREGORY S. OLSON		P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		HANS RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	NYC		HARMEL SINGH		15 CLINTON LANE HICKSVILLE NY 11801	02/25/2016	02/25/2021

DOL	NYC		HAROLD KUEMMEL		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	NYC	*****3228	HEIGHTS ELEVATOR CORP.		1766 FRONT ST YORKTOWN HEIGHTS NY 10598	01/09/2018	01/09/2023
DOL	DOL		HENRY VAN DALRYMPLE		2663 LANTERN LANE ATLANTA GA 30349	12/01/2015	12/01/2020
DOL	DOL	*****8282	IDEMA DEVELOPMENT INC		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL	*****8282	IDEMA GENERAL CONTRACTORS INC		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL	*****7001	INTEGRATED CONSTRUCTION & POWER SYSTEMS INC		SUITE 100 2105 W GENESEE STREETSYRACUSE NY 13219	01/06/2016	01/06/2021
DOL	DOL	*****5131	INTEGRITY MASONRY, INC.	M&R CONCRETE	722 8TH AVE WATERVLIET NY 12189	06/05/2018	06/05/2023
DOL	DOL		IRENE KASELIS		32 PENNINGTON AVE WALDWICK NJ 07463	05/30/2019	05/30/2024
DOL	AG		J A M CONSTRUCTION CORP		SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
DOL	DOL		J.A. HIRES CADWALLADER		P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		JAMES B RHYNDERS		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL		JAMES C. DELGIACCO		722 8TH AVE WATERVLIET NY 12189	06/05/2018	06/05/2023
DOL	DOL		JAMES E RHYNDERS		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	AG		JAMES FALCONE		SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
DOL	DOL		JAMES LIACONE		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		JAMES RACHEL		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		JAMES RHYNDERS SR		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL		JAMES SICKAU		3090 SHIRLEY ROAD NORTH COLLINS NY 14111	04/19/2011	07/08/2020
DOL	DOL		JASON W MILLIMAN		C/O ROCHESTER ACOUSTICAL P O BOX 799HILTON NY 14468	02/19/2016	02/19/2021
DOL	DOL	*****5368	JCH MASONRY & LANDSCAPING INC.		35 CLINTON AVE OSSINING NY 10562	09/12/2018	09/12/2023
DOL	NYC		JENNIFER GUERRERO		1936 HEMPSTEAD TURNPIKE EAST MEADOW NY 11554	11/29/2019	11/29/2024
DOL	DOL		JESSICA WHITESIDE		C/O BRRESTORATION NY INC 140 ARCADIA AVENUEOSWEGO NY 13126	09/12/2016	09/12/2021
DOL	AG		JOHN ANTHONY MASSINO		36-49 204TH STREET BAYSIDE NY 11372	02/07/2018	02/07/2023
DOL	DOL		JOHN F. CADWALLADER		200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL	*****4612	JOHN F. CADWALLADER, INC.	THE GLASS COMPANY	P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		JOHN GOCEK		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	AG	*****0600	JOHNCO CONTRACTING, INC.		36-49 204TH STREET BAYSIDE NY 11372	02/07/2018	02/07/2023
DOL	DOL		JON E DEYOUNG		261 MILL RD P.O BOX 296EAST AURORA NY 14052	07/29/2015	07/29/2020
DOL	DOL		JON E DEYOUNG		261 MILL RD P.O BOX 296EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	DOL		JORI PEDERSEN		415 FLAGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DOL		JOSE CHUCHUCA		35 CLINTON AVE OSSINING NY 10562	09/12/2018	09/12/2023
DOL	AG		JOSEPH FALCONE		SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021

DOL	NYC		JOSEPH FOLEY		66-05 WOODHAVEN BLVD. STE 2REGO PARK NY 11374	04/20/2017	04/20/2022
DOL	DOL	*****9273	JOSEPH M LOVETRO		P O BOX 812 BUFFALO NY 14220	08/09/2016	08/09/2021
DOL	NYC		JOSEPH MARTINO		1535 RICHMOND AVENUE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	DOL		JOY MARTIN		2404 DELAWARE AVE NIGARA FALLS NY 14305	09/12/2018	09/12/2023
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002
DOL	DOL	*****5062	K R F SITE DEVELOPMENT INC		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	NYC		K.S. CONTRACTING CORP.		29 PHILLIP DRIVE PARSIPPANY NJ 07054	02/13/2017	02/13/2022
DOL	DOL		KATIE BURDICK		2238 BAKER RD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL		KENNETH FIORENTINO		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	DOL	*****9732	KENT HOLLOW SIDING LLC		29A BRIDGE STREET NEW MILFORD CT 06776	01/15/2016	01/15/2021
DOL	DOL		KIM SOROCENSKI		C/O SOLUTION MATTERS INC 198 NORWOOD ROADPORT JEFFERSON NY 11776	11/19/2015	11/19/2020
DOL	DOL	*****3490	L & M CONSTRUCTION/DRYWALL INC.		1079 YONKERS AVE YONKERS NY 10704	08/07/2018	08/07/2023
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL	*****6224	LAKESIDE FIRE SPRINKLERS LLC		125 CHAUTAUQUA AVENUE LAKEWOOD NY 14750	06/24/2015	06/24/2020
DOL	AG	*****4643	LALO DRYWALL, INC.		221 OLD FORD ROAD NEW PLATZ NY 12561	05/20/2016	05/20/2021
DOL	DOL	*****4505	LARAPINTA ASSOCIATES INC		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		LAVERN GLAVE		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	06/24/2016	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	06/24/2016	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	01/17/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	08/14/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	08/14/2017	08/14/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	01/17/2017	09/19/2022
DOL	DA	*****4460	LONG ISLAND GLASS & STOREFRONTS, LLC		4 MANHASSET TRL RIDGE NY 11961	09/06/2018	09/06/2023
DOL	AG	*****4216	LOTUS-C CORP.		81-06 34TH AVENUE APT. 6EJACKSON HEIGHTS NY 11372	02/07/2018	02/07/2023
DOL	NYC		LUBOMIR PETER SVOBODA		27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	AG		LUIS MARTINEZ	LALO DRYWALL	211 MAIN ST. NEW PALTZ NY 12561	05/20/2016	05/20/2021
DOL	NYC		M & L STEEL & ORNAMENTAL IRON CORP.		27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024

DOL	DOL		M ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	AG	*****6957	M B DIN CONSTRUCTION INC		8831 20TH AVENUE/SUITE 6E BROOKLYN NY 11214	11/17/2015	11/17/2020
DOL	DOL		M. ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	NYC	*****9590	MACK GLASSNAUTH IRON WORKS INC		137 LIBERTY AVENUE BROOKLYN NY 11212	12/21/2015	12/21/2020
DOL	DOL	*****1784	MADISON AVE CONSTRUCTION CORP		39 PENNY STREET WEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL		MALARKEY'S BAR & GRILL LLC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****0705	MALARKEY'S PUB & GRUB LLC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DA		MANUEL P TOBIO		150 KINGS STREET BROOKLYN NY 14444	08/19/1998	08/19/2998
DOL	DA		MANUEL TOBIO		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	NYC		MAREK FABIJANOWSKI		50 MAIN ST WHITE PLAINS NY 10606	01/04/2019	01/04/2024
DOL	DOL		MARIACHI'S PIZZERIA		C/O DOUGLAS L MALARKEY 64 VICTORIA DRIVEBINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL		MARK MIONIS		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	NYC		MARTINE ALTER		1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	DOL		MARVIN A STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		MASONRY CONSTRUCTION, INC.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3333	MASONRY INDUSTRIES, INC.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	NYC		MATINA KARAGIANNIS		97-18 50TH AVE CORONA NY 11368	04/19/2018	04/19/2023
DOL	DOL		MATTHEW IDEMA GENERAL CONTRACTORS INC		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL		MATTHEW P. KILGORE		4156 WILSON ROAD EAST TABERG NY 13471	03/26/2019	03/26/2024
DOL	DOL		MAURICE GAWENO		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****6416	MCCALL MASONRY		P O BOX 304 SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL		MCLEAN "MIKKI BEANE"		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MCLEAN "MIKKI" DRAKE		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MCLEAN M DRAKE-BEANE		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL	*****9445	MCLEAN M WALSH	ELITE PROFESSION AL PAINTING OF CNY	1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL	*****9445	MCLEAN M WALSH	ELITE PROFESSION AL PAINTING OF CNY	1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	NYC	*****5330	METRO DUCT SYSTEMS INC		1219 ASTORIA BOULEVARD LONG ISLAND CITY NY 11102	04/16/2014	11/19/2020
DOL	DOL		MICHAEL A PASCARELLA		SUITE 100 2105 WEST GENESEE STREET SYRACUSE NY 13219	01/06/2016	01/06/2021
DOL	NYC		MICHAEL HIRSCH		C/O MZM CORP 163 S MAIN STREETNEW CITY NY 10956	01/28/2016	01/28/2021
DOL	DOL		MICHAEL LENIHAN		1079 YONKERS AVE UNIT 4YONKERS NY 10704	08/07/2018	08/07/2023
DOL	AG		MICHAEL RIGLIETTI		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		MICHAEL WILSON	WILSON BROTHER DRYWALL CONTRACTOR S	36 ABERSOLD STREET ROCHESTER NY 14621	08/31/2015	08/31/2020
DOL	DOL	*****4829	MILESTONE ENVIRONMENTAL CORPORATION		704 GINESI DRIVE SUITE 29MORGANVILLE NJ 07751	04/10/2019	04/10/2024

DOL	NYC	*****9926	MILLENNIUM FIRE PROTECTION, LLC		325 W. 38TH STREET SUITE 204NEW YORK NY 10018	11/14/2019	11/14/2024
DOL	NYC	*****0627	MILLENNIUM FIRE SERVICES, LLC		14 NEW DROP LNE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024
DOL	AG		MOHAMMED N CHATHA		8831 20TH AVENUE/SUITE 6E BROOKLYN NY 11214	11/17/2015	11/17/2020
DOL	DOL	*****2737	MOUNTAIN'S AIR INC		2471 OCEAN AVENUE- STE 7A BROOKLYN NY 11229	09/24/2012	09/18/2020
DOL	NYC	*****3826	MOVING MAVEN OF NY, INC.		1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	NYC	*****3550	MOVING MAVEN, INC		1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	AG		MSR ELECTRICAL CONSTRUCTION CORP.		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		MUHAMMAD PERVAIZ		C/O CHAMPION CONSTRUCTION 2131 SCHENECTADY AVENUEBROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	NYC	*****3613	MZM CORP		163 S MAIN STREET NEW CITY NY 10956	01/28/2016	01/28/2021
DOL	DA	*****9786	NATIONAL INSULATION & GC CORP		180 MILLER PLACE HICKSVILLE NY 11801	12/12/2018	12/12/2023
DOL	DA	*****6988	NEW YORK INSULATION INC		58-48 59TH STREET MASPETH NY 11378	05/16/2012	05/08/2020
DOL	NYC	*****4839	NEW YORK RIGGING CORP		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	NYC	*****1968	NORTH AMERICAN IRON WORKS INC		1560 DECATUR STREET RIDGEWOOD NY 11385	05/15/2015	05/15/2020
DOL	DOL	*****6966	NORTH COUNTRY DRYWALL AND PAINT		23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL	*****0065	NORTHEAST LANDSCAPE AND MASONRY ASSOC		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	DOL	*****1845	OC ERECTERS, LLC A/K/A OC ERECTERS OF NY INC.		1207 SW 48TH TERRACE DEERFIELD BEACH FL 33442	01/16/2018	01/16/2023
DOL	NYC	*****0818	ONE TEN RESTORATION, INC.		2366 61ST ST BROOKLYN NY 11204	12/15/2016	12/15/2021
DOL	NYC		ORSON ARROYO		C/O METRO DUCT SYSTEMS 12-19 ASTORIA BOULEVARDLONG ISLAND CITY NY 11102	04/16/2014	11/19/2020
DOL	NYC		PARESH SHAH		29 PHILLIP DRIVE PARSIPPANY NJ 07054	02/13/2017	02/13/2022
DOL	NYC	*****9422	PELIUM CONSTRUCTION, INC.		22-33 35TH ST. ASTORIA NY 11105	12/30/2016	12/30/2021
DOL	DOL		PETER M PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	DOL		PIERRE LAPORT		224 COUNTY HIGHWAY 138 BROADALBIN NY 12025	03/07/2017	03/07/2022
DOL	DOL	*****1543	PJ LAPORT FLOORING INC		224 COUNTY HIGHWAY 138 BROADALBIN NY 12025	03/07/2017	03/07/2022
DOL	DOL	*****0466	PRECISION BUILT FENCES, INC.		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	NYC	*****4532	PROFESSIONAL PAVERS CORP.		66-05 WOODHAVEN BLVD. REGO PARK NY 11374	04/20/2017	04/20/2022
DOL	DOL	*****6895	PROLINE CONCRETE OF WNY INC		3090 SHIRLEY ROAD NORTH COLLINS NY 14111	04/19/2011	07/08/2020
DOL	DA	*****6817	QUADRANT METAL BUILDINGS LLC		2740 SW MARTIN DOWNS BLVD PALM CITY FL 34990	08/25/2016	08/25/2021
DOL	NYC		RAMESHWAR ASU		137 LIBERTY AVENUE BROOKLYN NY 11212	12/21/2015	12/21/2020
DOL	NYC		RANTIK PARIKH		13 LORIANN ROAD WARREN NJ 07059	07/15/2015	07/15/2020
DOL	DOL	*****1068	RATH MECHANICAL CONTRACTORS, INC.		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL	*****2633	RAW POWER ELECTRIC CORP		3 PARK CIRCLE MIDDLETOWN NY 10940	01/30/2018	01/30/2023
DOL	AG	*****7015	RCM PAINTING INC.		69-06 GRAND AVENUE 2ND FLOORMASPETH NY 11378	02/07/2018	02/07/2023
DOL	DOL		REGINALD WARREN		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023

DOL	NYC	*****3461	RELIANCE GENERAL CONSTRUCTION INC		644 OCEAN PARKWAY BROOKLYN NY 11230	09/02/2015	09/02/2020
DOL	DA		RIANN MULLER		2740 SW MARTIN DOWNS BLVD PALM CITY FL 34990	08/25/2016	08/25/2021
DOL	DOL	*****9148	RICH T CONSTRUCTION		107 WILLOW WOOD LANE CAMILLUS NY 13031	11/13/2018	11/13/2023
DOL	DOL		RICHARD MACONE		8617 THIRD AVE BROOKLYN NY 11209	09/17/2018	09/17/2023
DOL	DOL		RICHARD REGGIO		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	DOL	*****9148	RICHARD TIMIAN	RICH T CONSTRUCTI ON	108 LAMONT AVE SYRACUSE NY 13209	10/16/2018	10/16/2023
DOL	DOL		RICHARD TIMIAN JR.		108 LAMONT AVE SYRACUSE NY 13209	10/16/2018	10/16/2023
DOL	DOL		RICHARD TIMIAN JR.		108 LAMONT AVE SYRACUSE NY 13209	11/13/2018	11/13/2023
DOL	DOL	*****8618	RIEKS CONTRACTING LLC		4804 GAHWILER ROAD AUBURN NY 13021	05/01/2015	05/01/2020
DOL	DOL		ROBBYE BISSESAR		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL		ROBERT A. VALERINO		3841 LANYARD COURT NEW PORT RICHEY FL 34652	07/09/2019	07/09/2024
DOL	DOL		ROBERT BRUNO		3 GAYLORD ST AUBURN NY 13021	11/15/2016	11/15/2021
DOL	DOL		ROBERT BRUNO		5 MORNINGSIDE DRIVE AUBURN NY 13021	05/28/2019	05/28/2024
DOL	NYC		ROBERT HOHMAN		149 FIFTH AVE NEW YORK NY 10010	12/29/2016	12/29/2021
DOL	DOL		ROBERT TORDELLA		125 CHAUTAUQUA AVENUE LAKEWOOD NY 14750	06/24/2015	06/24/2020
DOL	DOL	*****3859	ROCHESTER ACOUSTICAL CORP		P O BOX 799 HILTON NY 14468	02/19/2016	02/19/2021
DOL	DOL		RODERICK PUGH		404 OAK ST SUITE 101SYRACUSE NY 13203	07/23/2018	07/23/2023
DOL	DOL	*****4880	RODERICK PUGH CONSTRUCTION INC.		404 OAK ST SUITE 101SYRACUSE NY 13203	07/23/2018	07/23/2023
DOL	NYC		RODNEY SCOTT		201 HEMPSTEAD AVE WEST HEMPSTEAD NY 11552	10/30/2015	10/30/2020
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL		RONALD MESSEN		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL		ROSEANNE CANTISANI			06/12/2018	06/12/2023
DOL	DOL		RYAN ALBIE		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL	*****3347	RYAN ALBIE CONTRACTING INC		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL	*****1365	S & L PAINTING, INC.		11 MOUNTAIN ROAD P.O BOX 408MONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL	*****7730	S C MARTIN GROUP INC.		2404 DELAWARE AVE NIAGARA FALLS NY 14305	09/12/2018	09/12/2023
DOL	NYC		SABIR MUHAMMED		SUITE B-8 782 PELHAM PARKWAY SOUTHBRONX NY 10462	04/21/2016	04/21/2021
DOL	DOL		SALVATORE A FRESINA			08/26/2016	08/26/2021
DOL	DOL		SAM FRESINA			08/26/2016	08/26/2021
DOL	NYC	*****0349	SAM WATERPROOFING INC		168-42 88TH AVENUE APT.1 AJAMAICA NY 11432	11/20/2019	11/20/2024
DOL	NYC		SANDEEP BOPARAI		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	NYC	*****2117	SCOTT ELECTRICAL SERVICE, LLC.		201 HEMPSTEAD AVE WEST HEMPSTEAD NY 11552	10/30/2015	10/30/2020
DOL	DOL	*****9751	SCW CONSTRUCTION		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	AG		SERGIO RAYMUNDO		109 DUBOIS RD. NEW PALTZ NY 12561	05/20/2016	05/20/2021
DOL	NYC	*****6597	SHAIRA CONSTRUCTION CORP.		421 HUDSON STREET SUITE C5NEW YORK NY 10014	02/20/2019	02/20/2024

DOL	DOL	*****1961	SHANE BURDICK	CENTRAL TRAFFIC CONTROL, LLC.	2238 BAKER ROAD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE BURDICK		2238 BAKER ROAD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE NOLAN		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		SHULEM LOWINGER		11 MOUNTAIN ROAD 28 VAN BUREN DRMONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL	*****0816	SOLAR ARRAY SOLUTIONS, LLC		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL	*****4025	SOLUTION MATTERS INC		198 NORWOOD ROAD PORT JEFFERSON NY 11776	11/19/2015	11/19/2020
DOL	DOL	*****2221	SOUTH BUFFALO ELECTRIC, INC.		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	DOL	*****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003
DOL	DOL	*****6844	STEAM PLANT AND CHX SYSTEMS INC.		14B COMMERCIAL AVENUE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL	*****9933	STEED GENERAL CONTRACTORS, INC.		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL		STEFANOS PAPASTEFANOU, JR. A/K/A STEVE PAPASTEFANOU, JR.		256 WEST SADDLE RIVER RD UPPER SADDLE RIVER NJ 07458	05/30/2019	05/30/2024
DOL	DOL	*****9751	STEPHEN C WAGAR		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	DOL		STEVE TATE		415 FLAGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	NYC		STEVEN GOVERNALE		601 PORTION RD RONKONKOMA NY 11779	11/18/2016	11/18/2021
DOL	DOL		STEVEN MARTIN		2404 DELWARE AVE NIAGARA FALLS NY 14305	09/12/2018	09/12/2023
DOL	DOL		STEVEN P SUCATO		15-68 208TH STREET BAYSIDE NY 11360	06/23/2016	06/23/2021
DOL	DOL		STEVEN TESTA		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	NYC	*****9432	SUBLINK LTD		346 THIRD AVENUE PELHAM NY 10803	11/19/2015	11/19/2020
DOL	NYC	*****5863	SUKHMANY CONSTRUCTION, INC.		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	DOL	*****1060	SUNN ENTERPRISES GROUP, LLC		370 W. PLEASANTVIEW AVE SUITE 2.329HACKENSACK NJ 07601	02/11/2019	02/11/2024
DOL	DOL	*****8209	SYRACUSE SCALES, INC.		158 SOLAR ST SYRACUSE NY 13204	01/07/2019	01/07/2024
DOL	DOL	*****7441	T & T CONCRETE INC		2560 HAMBURG TURNPIKE P O BOX 367LACKAWANNA NY 14218	07/08/2015	07/08/2020
DOL	DOL		TALAILA OCAMPA		1207 SW 48TH TERRACE DEERFIELD BEACH FL 33442	01/16/2018	01/16/2023
DOL	DOL	*****9852	TAP STEEL INC		ROUTE 26 3101 P O BOX 457CONSTABLEVILLE NY 13325	01/28/2016	01/28/2021
DOL	DOL		TERRY THOMPSON		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	DOL	*****5570	TESTA CORP		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	DOL	*****0887	THE BRINSON PAINTING CORPORATION		72 TAUNTON PLACE BUFFALO NY 14216	04/14/2015	04/14/2020
DOL	DOL	*****5766	THE COKER CORPORATION	COKER CORPORATIO N	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL	*****8174	THE DALRYMPLE CORPORATION		UNIT 278 541 10TH STREET NWATLANTA GA 30318	12/01/2015	12/01/2020
DOL	DOL	*****8174	THE DALRYMPLE GROUP LLC		289 JONESBORO RD/ STE 216 MCDONOUGH GA 30253	12/01/2015	12/01/2020
DOL	DOL		TIMOTHY A PALUCK		C/O TAP STEEL INC RTE 26 3101/ P O BOX 457CONSTABLEVILLE NY 13325	01/28/2016	01/28/2021
DOL	DOL	*****3453	TORCHIA'S HOME IMPROVEMENT		10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL	*****8311	TRIPLE B FABRICATING, INC.		61 WILLETT ST. PASSAIC NJ 07503	10/26/2016	10/26/2021

DOL	DOL	*****9407	TURBO GROUP INC		15-68 208TH STREET BAYSIDE NY 11360	06/23/2016	06/23/2021
DOL	DOL	*****6392	V.M.K CORP.		8617 THIRD AVE BROOKLYN NY 11209	09/17/2018	09/17/2023
DOL	NYC		VALERIE VISCONTI		346 THIRD AVENUE PELHAM NY 10803	11/19/2015	11/19/2020
DOL	NYC	*****7361	VIABLE HOLDINGS, INC.	MOVING MAVEN	1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	DOL		VICTOR ALICANTI		42-32 235TH ST DOUGLASTON NY 11363	01/14/2019	01/14/2024
DOL	DOL		VICTOR ROTENBERG		C/O GMDV TRANS INC 67048 182ND STREETFRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	NYC		VIKTAR PATONICH		2630 CROPSEY AVE BROOKLYN NY 11214	10/30/2018	10/30/2023
DOL	DOL		VIKTORIA RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	NYC		VITO GARGANO		1535 RICHMOND AVE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	NYC	*****3673	WALTERS AND WALTERS, INC.		465 EAST AND THIRD ST MT. VERNON NY 10550	09/09/2019	09/09/2024
DOL	DOL		WAYNE LIVINGSTON JR	NORTH COUNTRY DRYWALL AND PAINT	23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL	*****3296	WESTERN NEW YORK CONTRACTORS, INC.		3841 LAYNARD COURT NEW PORT RICHEY FL 34652	07/09/2019	07/09/2024
DOL	DOL		WHITE PLAINS CARPENTRY CORP		442 ARMONK RD	06/12/2018	06/12/2023
DOL	DOL		WILLIAM C WATKINS		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		WILLIAM DEAK		C/O MADISON AVE CONSTR CO 39 PENNY STREETWEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL		WILLIE BRINSON		72 TAUNTON PLACE BUFFALO NY 14216	04/14/2015	04/14/2020
DOL	DOL	*****6195	WILSON BROTHER DRYWALL CONTRACTORS		36 ABERSOLD STREET ROCHESTER NY 14621	08/31/2015	08/31/2020
DOL	DOL	*****4043	WINDSHIELD INSTALLATION NETWORK, INC.		200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL	*****4730	XGD SYSTEMS, LLC	TDI GOLF	415 GLAGE AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DOL	*****7345	YES SERVICE AND REPAIRS CORPORATION		145 LODGE AVE HUNTINGTON STATION NY 11476	08/09/2016	08/09/2021
DOL	DOL		YURIY IVANIN		C/O MOUNTAIN'S AIR INC 2471 OCEAN AVENUE-STE 7ABROOKLYN NY 11229	09/24/2012	09/18/2020
DOL	NYC		ZAKIR NASEEM		30 MEADOW ST BROOKLYN NY 11206	10/10/2017	10/10/2022
DOL	NYC	*****8277	ZHN CONTRACTING CORP		30 MEADOW ST BROOKLYN NY 11206	10/10/2017	10/10/2022