TECHNICAL SCOPE OF WORK

OPERABLE UNIT 1 – FORMER PLATING POND/LAGOON PRE-DESIGN INVESTIGATION

Former Air Force Plant No. 51
Greece, New York

Site No. 828156

February 2024

Prepared For:

New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Prepared By:

TRC Engineers, Inc.

TECHNICAL SCOPE OF WORK

OPERABLE UNIT 1 – FORMER PLATING POND/LAGOON
PRE-DESIGN INVESTIGATION
FORMER AIR FORCE PLANT NO. 51
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PART 1 – GENERAL

1.01 BACKGROUND

A. This Technical Scope of Work (TSOW) includes **Drawings** and **Appendices** as follows:

Drawings

- Drawing 1 - Site Location Map
- Drawing 2 - Site Layout Map and Operable Units
- Drawing 3 - Operable Unit 1: Existing Conditions
- Drawing 4 - Operable Unit 1: Investigation Area Proposed Soil Boring Locations
- Drawing 5 - Operable Unit 1: Proposed Bedrock Monitoring Well, Overburden Piezometer, and Pump Test Well Locations
- Drawing 6 - Operable Unit 1: Proposed Test Pit Locations
- Drawing 7 - Proposed Bedrock Monitoring Well, Overburden Piezometer, and Pump Test Well Details

Appendices (*for Informational Purposes Only – Actual Conditions May Vary*)

- Appendix A – Remedial Investigation Report, Former Plating Pond (Operable Unit 1)

B. The term "DEPARTMENT" shall mean the New York State Department of Environmental Conservation (NYSDEC or DEPARTMENT) or its authorized Representative (Representative). No work shall be performed without the authorization of the ENGINEER and the DEPARTMENT.

C. The term "ENGINEER" shall mean TRC Engineers, Inc. (ENGINEER). Unless notified otherwise, no Site work shall be performed unless a representative of the ENGINEER or the DEPARTMENT is on-Site.

D. The CONTRACTOR shall comply with all applicable rules, codes, laws and regulations.

E. The CONTRACTOR shall not perform extra or additional work without written DEPARTMENT authorization.

F. At all times while work is being performed, the CONTRACTOR shall have on-Site a designated, qualified and competent Project Supervisor empowered to act on behalf of the CONTRACTOR in all matters pertaining to work progress and safety.

G. The CONTRACTOR shall conduct regular and frequent safety inspections and take corrective measures as warranted and directed by the DEPARTMENT or the ENGINEER.

H. The CONTRACTOR shall be solely responsible for any loss of or damage to property caused by the CONTRACTOR.

I. The United States Army Corps of Engineers conducted a Site reconnaissance in 1991 and a Site Investigation (SI) was conducted in 1999. An interim remedial measure (IRM) was conducted at the Former Plating Pond/Lagoon located in Operable Unit 1 (OU1) between 2000 and 2001. In 2001, the owner of the property entered into the NYSDEC Voluntary Cleanup Program (VCP) and over the period from 2001 to 2008 completed a number of investigations and remediation activities. However, the property owner left the VCP before any remedial plans for the Former Plating

Pond/Lagoon could be fully implemented. An in situ chemical oxidation pilot test study was conducted in the 2013 to 2014 period. Results of the most recent Remedial Investigation (RI) activities (2014 through 2018) are presented in **Appendix A**. The CONTRACTOR shall review the Remedial Investigation Report and become familiar with the investigations performed, the findings and the nature and extent of contamination, and the conclusions.

J. The ENGINEER will provide full-time inspection services during performance of the work. The ENGINEER will also collect soil samples and bedrock cores from the CONTRACTOR during field operations.

K. All work activities shall be performed at the Former Air Force Plant No. 51 Site located in Greece, New York (the "Site") as indicated below in subsequent Articles. Refer to **Drawing 1 - Site Location Map, Drawing 2 – Site Layout Map and Operable Units,** and **Drawing 3 – Operable Unit 1: Existing Conditions.**

1.02 SCOPE OF WORK

A. A Pre-Design Investigation (PDI) is being undertaken to close data gaps within OU1, with a focus on the two Investigation Areas illustrated in **Drawing 3**. The purpose of this TSOW is to identify the technical requirements for the PDI activities to be undertaken by the CONTRACTOR. The major elements of Work to be performed by the CONTRACTOR include, but are not limited to:

1. Markout buried utilities and related infrastructure;
2. Advance soil borings around the perimeter of each Investigation Area;
3. Advance soil borings within each Investigation Area;
4. Install groundwater pump test well(s), groundwater piezometer(s), and bedrock groundwater monitoring well(s) for the purposes of pumping test implementation;
5. Setup and perform overburden aquifer groundwater pumping tests, including containerization, characterization, and off-Site disposal of groundwater;
6. Determine floor slab and foundation construction, including excavation of test pits at and around former Building No. 1;
7. Sampling, analysis, characterization, management, and disposal of investigation derived waste (IDW); and
8. Site restoration, cleanup, and demobilization.

B. Related work to be performed by others and in parallel with the work of CONTRACTOR includes, but is not limited to:

1. Land surveying;
2. Groundwater monitoring well sampling and analysis; and,
3. Preparation and submittal of select soil samples for analysis (chemical and geotechnical parameters).

C. The Site is a 33.6-acre property located north of the Lake Ontario State Parkway, at 4777 Dewey Avenue within the Town of Greece, Monroe County, New York. The Site is listed on the New York State Registry of Inactive Hazardous Waste Disposal Sites as a Class 2 Site. Refer to **Drawing 1, Drawing 2,** and **Drawing 3.**

D. OU1 is located in the northwest portion of the Site. There are two Investigation Areas within OU1. Investigation Area 1 is in the area of the Former Plating Pond/Lagoon where wastewater associated with past Site operations was formerly discharged. Investigation Area 2 is in the northwest portion of the former Building No. 1. Refer to **Drawing 3** and Part 3 for additional details. The PDI will

obtain data and other information necessary to complete the remedial design to address residual contamination in the Investigation Areas (design is likely to involve excavation of each area).

E. Overburden piezometers, overburden pump test wells, and bedrock monitoring wells shall be installed in association with the overburden aquifer pumping tests to provide information on groundwater quality and for estimating dewatering volumes for the purposes of designing a remedy for OU1. Refer to Articles 3.05 and 3.06 for additional details.

F. Test pits shall be excavated near the perimeter of and within the former Building No. 1 area. Test pits will provide information regarding concrete floor slab thickness(es), construction of former building floor drains, and foundation construction for design purposes. The excavation of TP-103 shall also serve to investigate the presence of a possible underground soil dam in the area of the northern portion of the Former Building No. 1 floor slab. Test pits shall be located outside of the investigation areas to avoid contact with contaminated soils. Refer to Article 3.07 for additional details.

G. The CONTRACTOR shall furnish all labor, materials, equipment, and incidentals required to complete the following scope of work (below is not a comprehensive list of all work required):

1. Pre-construction reconnaissance, planning and construction submittals, and permitting. DEPARTMENT approval of submittals is required prior to initiating the related work. The CONTRACTOR shall secure all required permits prior to mobilizing to the Site.

2. All proposed Site workers and subcontractors of the CONTRACTOR: Personnel shall have completed basic Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) training, in accordance with 29 CFR 1910.120(e) and 29 CFR 1926.65(e), as well as all other required training and medical monitoring prior to performing work at the Site.

3. Mobilization, Site preparation, identifying and locating utility lines (aboveground and underground) and other underground infrastructure, and required clearing.

4. Advancement of perimeter and interior Investigation Area soil borings using a hollow-stem auger drill rig with continuous split-spoon sample collection to the top of bedrock at each location. Approximate boring locations are illustrated on **Drawing 4**. Final locations will be determined in the field by the ENGINEER. All borings shall be excavated by hand or air-knife to a depth of at least five (5) feet below grade prior to advancing borings using a drill rig. Contractor is advised that non-aqueous phase liquid (NAPL) may be encountered in the subsurface.

5. Performance of one (1) overburden aquifer groundwater pumping test in each of the two (2) Investigation Area footprints to determine required dewatering efforts in support of the remedial design/future remedial activities. A pump test is required for each investigation area due to the anticipated differing hydrologic characteristics in close proximity to the man-made channel as opposed to locations not directly within the influence of the channel. Other characteristics driving the need for pump tests include the proximity to Lake Ontario, the shallow water table, and the extent of the planned excavation down to bedrock. The pumping tests shall include installation of overburden pump test wells, overburden piezometers, and bedrock monitoring wells by the CONTRACTOR at locations specified on **Drawing 5**. Final locations will be determined in the field by the ENGINEER. Locations shall be advanced using an appropriate drill rig with continuous split-spoon sample collection to depths to be determined by the ENGINEER. All borings associated with well/piezometer installations must be excavated by hand or air-knife by the CONTRACTOR to a depth of at least five (5) feet below grade prior to advancing borings. The CONTRACTOR shall be responsible for furnishing pumping equipment and holding tanks, oil/water separator equipment that may be needed to separate NAPL (if encountered),

pretreatment and filtration equipment that may be needed to meet waste acceptance criteria, characterization of pumping test water (and other IDW), arranging for and completion of off-Site disposal, and all related work.

6. Bedrock cores shall be collected by CONTRACTOR from each of the bedrock monitoring well locations as directed by ENGINEER. Continuous rock cores shall be collected by the CONTRACTOR at each boring, including placement of the cores in CONTRACTOR-supplied wooden core boxes.

7. Core drilling through the floor slab of former Building No. 1 (at multiple boring locations) to provide data on slab thickness and construction. It is anticipated that this work shall be performed by the CONTRACTOR in conjunction with the installation of soil borings through the slab of former Building No. 1. Based on previous cores, the slab appears to be reinforced with a single layer of rebar near the bottom, and the slab is estimated to be between 6 and 10 inches thick. Thickness and reinforcing in the vicinity of the former floor drains are expected to vary.

8. Excavation of test pits through the slab of former Building No. 1 as illustrated on **Drawing 6** to evaluate slab thickness, presence of and type of reinforcement, depth and frequency of grade beams and footings and construction of former building floor drains. Excavated material shall be returned to the excavation using a "last out – first in" sequence unless grossly contaminated. The CONTRACTOR shall segregate soil exhibiting evidence of gross contamination as directed by the ENGINEER and containerize separately in 55-gallon drums. Characterization and off-Site disposal of such soils shall be performed by CONTRACTOR. The CONTRACTOR shall restore the concrete slab in kind at each test pit location using cast-in-place concrete, and furnish and install coarse aggregate to bring excavation outside of the building slab to match existing grade.

9. Implementation of a Site-specific Health and Safety Plan (HASP) and Community Air Monitoring Program (CAMP).

10. Characterization and off-Site disposal of all IDW.

11. Project closeout, Site restoration, and demobilization.

1.03 REFERENCE STANDARDS

A. The CONTRACTOR shall comply with all applicable federal, State, and local laws, regulations, standards, and codes, including, but not limited to, those listed below. The following are potentially applicable references and regulations, incorporated herein by reference:

1. 29 CFR Parts 1910 and 1926.

2. ASTM D854-14, Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer.

3. ASTM D1140-17, Standard Test Method for Determining Amount of Material Finer Than 75-um (No. 200) Sieve in Soils by Washing.

4. ASTM D1586/D1586-18e1, Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils.

5. ASTM D2216-19, Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.

6. ASTM D2974-20e1, Standard Test Method for Determining the Water (Moisture) Content, Ash Content, and Organic Material of Peat and Other Organic Soils.

7. ASTM D4318-17e1, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

8. ASTM D4767-11, 2020 Standard Test Method for Consolidated Undrained Triaxial Compression Test for Cohesive Soils.
9. ASTM D6282/D6282M-14, Standard Guide for Direst Push Soil Sampling for Environmental Site Characterizations.
10. ASTM D6913, Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis.
11. ASTM D7928, Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis.
12. 6 NYCRR Part 364, Waste Transporters.
13. 6 NYCRR Parts 370-376, Hazardous Waste Regulations.
14. 16 NYCRR Part 753, Protection of Underground Facilities.
15. New York State Building Code.
16. NYSDEC CP-43, Groundwater Monitoring Well Decommissioning Policy.
17. NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation (DER-10) – NYSDOH Generic Community Air Monitoring Plan.
18. New York State Department of Labor Industrial Code Rules, Part 23 - Protection in Construction, Demolition and Excavation Operations.
19. New York State Department of Transportation, Standard Specifications, Section 703-02 Coarse Aggregate.
20. New York State Fire Code.
21. All applicable federal, State and local statutes, regulations, rules, and ordinances.
22. All applicable health and safety standards and requirements.
23. All applicable OSHA requirements and other federal, State, and local codes, laws, ordinances, and regulations.

1.04 APPLICATIONS FOR PERMITS AND APPROVALS

A. The CONTRACTOR shall identify all required permits and approvals and shall pay all fees, maintain all required insurance and obtain all permits and approvals required by local, State, and federal authorities to complete the work. A list of permits and approvals that may be required to complete the work is included below. The list does not include all required permits and approvals. Applications for permits and approvals shall be submitted to the ENGINEER prior to submission to the appropriate authority. The ENGINEER's and/or the DEPARTMENT's approval of applications is required prior to submittal to Authorities.

1. Department of Environmental Services, Monroe County, New York - Specialty Short Term Discharge Permit. https://www.monroecounty.gov/files/DES/Industrial%20Waste/Short%20Term%20Permit%202020.pdf

B. Apply for local permits in accordance with the Town of Greece, Monroe County, New York Zoning Law - Chapter 1 - General Provisions.

1.05 SUBMITTALS

A. The CONTRACTOR shall prepare and provide all submittals listed in this TSOW and otherwise identified in these specifications. The CONTRACTOR shall ensure that the timing and scheduling of such submittals is appropriate to allow a minimum of 14 calendar days for review by the

ENGINEER and the DEPARTMENT.

B. Pre-Mobilization Submittals (all pre-mobilization submittals must be approved by the ENGINEER and/or the DEPARTMENT prior to CONTRACTOR mobilization to the Site).

1. A Site-specific HASP that includes installation of soil borings and monitoring wells, performance of pumping tests, concrete cutting and breaking, and handling of excavated material prepared in accordance with applicable State and Federal regulations including 29 CFR Part 1910, 29 CFR 1926, Department of Labor Safety and Health Regulations for Construction [promulgated under the Occupational Safety and Health Act (OSHA) of 1970 (PS-19-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PS-91-54)], and Standard Operating Safety Guides (United States Environmental Protection Agency (USEPA), Office of Emergency and Remedial Response).

2. Documentation of OSHA training and medical monitoring for all personnel working on Site.

3. Work Plan: Obtain the DEPARTMENT's approval a minimum of 10 business days prior to start of Site work. Work Plan shall indicate locations of soil borings, concrete cores, wells, piezometers, test pits, stockpile areas, and waste storage areas. Work Plan shall include proposed protections and controls, details with descriptions of the various equipment types and construction aids to be used for work, and methods for soil boring and well installation, exploratory test pits , and waste storage. No claims of delay shall be permitted due to the CONTRACTOR's failure to obtain approval of the Work Plan by the DEPARTMENT. The Work Plan must specifically include at a minimum the following:

i. Written description of proposed means and methods for advancement of soil borings, collection of bedrock cores, and installation of pump test wells, monitoring wells, and piezometers.

ii. Project Schedule indicating proposed sequence and time frames for submittals (identify each submittal on the schedule), including: securing permits and regulatory approvals; mobilization; Site preparation; set-up/implementation of CAMP and HASP; markout of utilities and infrastructure; advancement of soil borings; installation of wells; excavation of test pits for the former Building No. 1 floor slab and foundation investigation; performance of pumping tests; disposal of wastes; submittal of close out documentation; Site restoration (including repair of concrete floor slab); and demobilization.

iii. Written description of proposed means and methods for test pit investigation, including removal of concrete slab, excavation materials stockpiling, backfilling and repair of concrete floor slab.

iv. Written description and proposed means and methods for performance of pumping tests, including information for power supply and manufacturers' information (i.e., cut sheets) for pumps, piping, gauges, flow meters, water treatment and filtration equipment, oil/water separator equipment, and other equipment to be used in the pumping tests.

v. Written description of the measures proposed for protecting individuals, property, and the environment, from dust and any other nuisances. Include, at a minimum:

a. Descriptions of proposed dust suppression methods for each individual work activity.

b. Description of proposed community air monitoring plan for particulates/dust and volatiles at the downwind perimeter of each designated work area when intrusive activities are in progress in accordance

with DER-10 Appendix 1A: New York State Department of Health Generic Community Air Monitoring Plan.

c. Control plan. Indicate proposed locations and construction of barriers, staging areas, etc.

vi. Written description of the measures proposed for protecting existing monitoring wells, subsurface utilities, and other existing features not planned for removal.

vii. List of all equipment proposed for use on-Site, including manufacturer and model number.

viii. Details of IDW characterization and disposal, including:

a. Identification of the number of samples to be collected of each type of waste (e.g., groundwater sample(s) from frac tank(s), soil and debris from IDW drums) and CONTRACTOR's proposed analytical laboratory (laboratory shall be New York State Department of Health [NYSDOH] Environmental Laboratory Approval Program [ELAP] certified).

b. Identification of each proposed waste transporter, including name; federal and state identification/permit numbers; address; name and contact information (phone number) of responsible contact for the transporter; list of types and sizes of all transport vehicles and equipment to be used; the proposed transportation route (map and description); and copies of all necessary permits and authorizations (including 6 NYCRR Part 364 Waste Transporter Permit) for each type of waste to be transported.

c. Information on each off-Site disposal facility that is proposed to receive waste. For each proposed facility, the information listed below shall be submitted and approval must be issued by the Department prior to waste shipment.

1) Name, address, and location of the facility, including the owner's name, address, telephone number, and email address and the name address, telephone number and email address of a contact person at the facility.

2) USEPA Identification Number.

3) Facility testing requirements and acceptance criteria.

4) The names of the regulatory agencies which have jurisdiction over the facility.

5) Copies of valid, existing operating permits for the facility from the applicable regulatory agencies.

6) Correspondence from the proposed disposal facility with their acknowledgement that the Site is listed on the New York State Registry of Inactive Hazardous Waste Disposal Sites.

4. Safety Data Sheets (SDS) for any products proposed for use on-Site. Approval from the DEPARTMENT is required prior to delivering any products to the Site.

C. Quality Assurance Submittals

1. Qualifications

i. The driller performing soil boring advancement and well installation shall possess a New York well driller license. The driller shall be capable of identifying geologic

formations, and preparing complete and current well and boring logs.

D. Quality Control Submittals

1. Reports

i. Existing Conditions Inspection Report: Submit existing conditions inspection report consisting of a photographic log and written descriptions of all notable existing conditions.

2. Certifications

i. UDig New York: Documentation and ticket for mark out of public utilities at least two (2) to 10 days prior to any mechanized work. CONTRACTOR shall confirm all utilities mark outs are complete prior to initiating intrusive work.

3. Product Submittals

i. Submit manufacturer's information; gradation and testing results; quarry or mine names, locations, and permits; and all other information required, as evidence that the following materials proposed for the Work meet or exceed the intended requirements and specifications in **Part 2 - Products**:

a. Polyethylene tarps;
b. Coarse aggregate;
c. Well casing and screen;
d. Sand pack;
e. Gravel pack;
f. Cement;
g. Bentonite;
h. Well plugs; and
i. Protective well casings.

ii. Obtain ENGINEER's approval, prior to delivery to the Site, of all materials proposed for use.

4. Potable Water Source

i. Submit name and location of potable water source proposed for use in the Work.

E. Construction Submittals

1. Daily Field Activity Reports: prepare and submit Daily Field Activity Reports, including descriptions of all work performed (borings, cores, test pits, etc.), and air monitoring conducted and results, a listing of all personnel and equipment in use and staged at the Site, a listing of all subcontractors employed each day and Site visitors, and a thorough description of the daily activities conducted with timeline. The Daily Field Activity Report shall be dated and signed by CONTRACTOR's on-Site superintendent. Submit the Daily Field Activity Report to the ENGINEER by noon of the following workday.
2. Upon completion of each pump test well, monitoring well, and boring, the CONTRACTOR shall submit a written report which includes the following for each:

i. The total depth of each completed pump test well, monitoring well and boring;

ii. The nominal hole diameter of each borehole;

iii. The amount of cement (number of pounds or cubic feet) used for the seals;

iv. The amount of bentonite (number of pounds or cubic feet) used for the seals;

v. The amount of sand or gravel pack (number of pounds or cubic feet and grain size);

vi. The length, diameter, material and description of the casing (riser pipes);

vii. The complete description (including length, diameter, slot sizes, material, etc.) of each well screen; and

viii. Detailed as-built sketches of each well installed, showing surface completion details, well screen, well riser, filter pack and borehole seal diameters, depths, lengths, quantities and materials.

ix. Quantities of IDW generated by type (e.g., development water, drill cuttings, decontamination waste water, etc.) and description of how each type of waste was containerized and number of containers and location of where each container was staged.

3. Upon completion of each pumping test, CONTRACTOR shall provide measurement of water volume contained in each frac tank.

F. Post-Construction Submittals

1. Completion Report

i. Daily Field Activity Reports including, but not limited to, the date of each workday, name of on-Site foreman, listing of any subcontractors on-Site, description of construction activity, equipment in use at the Site, truck and trailer license plate number for each vehicle used for waste disposal.

ii. Photographs of all phases of the work.

iii. Copies of bills of lading/shipping documents for each shipment of non-hazardous waste and manifests for each shipment of hazardous wastes.

iv. Laboratory data reports for all samples collected by CONTRACTOR and analyzed by CONTRACTOR's laboratory, including waste characterization samples and pumping test groundwater samples.

v. Weigh scale tickets from disposal facilities. Tickets must be provided for each load removed from the Site and shall indicate net weight of each load of material accepted. Weight shall be measured by a certified scale which is operated in accordance with the requirements of the authority having jurisdiction, as applicable to weigh scales used for commerce.

vi. Compilation of all CAMP data collected by CONTRACTOR.

vii. Volume of grossly contaminated material removed for each test pit.

viii. Quantities of waste generated by type (e.g., development water, drill cuttings, decontamination waste water, etc.) and description of how each type of waste was containerized and number of containers and location of where each container was staged on site and disposed.

ix. Disposal facility receipts/invoices.

x. Copies of any submittals to regulatory agencies.

1.06 CONDITION OF PREMISES

A. The CONTRACTOR shall accept the existing conditions of the premises. The DEPARTMENT assumes no responsibility for the condition or the contents of the buildings, structures and facilities on the premises covered by this TSOW, nor the continuance of the conditions existing at the time of CONTRACTOR procurement or thereafter. All damage or loss, whether by reason of fire, theft, or by

other casualty or happening, to the Site, buildings, structures, and facilities covered by this TSOW shall be at the risk of the CONTRACTOR.

B. The DEPARTMENT accepts no responsibility for existing conditions at variance with information on the Drawings or specified.

C. No materials, waste, products or other items that exist at the Site at the start of the Work shall be removed from the Site, unless directed by the ENGINEER.

1.07 HEALTH AND SAFETY

A. It is the responsibility of the CONTRACTOR to provide all facilities, equipment, materials, and personnel necessary to protect the CONTRACTOR's personnel from physical injury and potential adverse health effects due to exposure to biological, physical, chemical and other hazards. The CONTRACTOR shall implement health and safety practices sufficient to protect on-Site personnel, the public, and the environment from hazards particular to this project. The CONTRACTOR shall be responsible for the safety of its operation and for any damage that may result from the CONTRACTOR's work to improvements or utilities.

B. Erect and properly maintain, at all times, as required by the conditions and progress of the Work, proper safeguards (e.g., barricades, fencing, physical security, etc.) for the protection of workers and the public, and post danger warnings as required by law or otherwise required against hazards created by the CONTRACTOR's operation. Furnish, install, and remove, after completion of the work, all signs, lights, barricades, fencing and other equipment employed for the safe execution of the Work.

C. All CONTRACTOR personnel shall wear personal protective equipment and protective clothing consistent with the levels of protection required for this work as specified by OSHA and the Site-specific HASP (refer to **Article 1.05.B.1**). Contractor shall have on-Site at all times for individuals at the Site current certifications documenting OSHA 40-hour and 8-hour refresher HAZWOPER training and medical monitoring.

D. The CONTRACTOR, in coordination with the ENGINEER, shall conduct daily Safety "Tailgate Meetings" with all on-Site employees of the CONTRACTOR (and Subcontractors). Attendance shall be documented by sign-in sheets. The meetings shall focus on overall project activities, with emphasis on those activities anticipated to be performed each day.

E. The CONTRACTOR shall implement the Site-specific HASP and CAMP.

1.08 PROJECT SCHEDULE

A. The CONTRACTOR shall submit a schedule and a description of means and methods proposed for each phase of the work for ENGINEER approval prior to start of the work (refer to **Article 1.05.B.3(ii)**). The work shall be completed within the approved schedule.

B. The CONTRACTOR shall perform the work during normal business hours, typically between 8:00 a.m. and 5:00 p.m., Monday through Friday unless otherwise stipulated by the local authorities/municipality. There shall be no work on State and federal holidays and weekends, without prior authorization of the DEPARTMENT and/or the ENGINEER. No payment shall be made for equipment left on-Site by the CONTRACTOR during holidays and weekends and any other non-working days.

C. The CONTRACTOR shall perform each phase of the work continuously from start to finish without delay unless directed otherwise by the ENGINEER.

D. If, at any time, the ENGINEER notifies the CONTRACTOR that operations must cease in a specific area or altogether, the CONTRACTOR shall cease work until corrective actions acceptable to the ENGINEER are implemented.

E. The CONTRACTOR shall provide a minimum of two business days' notice to the ENGINEER prior to start of each phase of work.

F. The CONTRACTOR shall provide the ENGINEER at least two business days' notice if the CONTRACTOR will not be at the project Site on a day when work is scheduled to be performed.

1.09 PUBLIC OUTREACH

A. The DEPARTMENT will be responsible for all public outreach, resident notifications and communications with residents, neighboring businesses and visitors to the Site during the work. Questions from residents, visitors and government agency representatives shall be directed to the following individuals:

1. DEPARTMENT: Gail Dieter, (518) 402-9645, gail.dieter@dec.ny.gov; or
2. ENGINEER (TRC): Kevin Sullivan, (716) 713-8688, ksullivan@trccompanies.com.

1.10 UTILITIES

A. The CONTRACTOR shall be responsible for permitting and procurement of temporary utilities for use during the work including temporary power, temporary water source, and communications.

B. The CONTRACTOR shall perform all work in accordance with 16 NYCRR Part 753 "Protection of Underground Facilities." The CONTRACTOR shall be responsible for complying with all applicable "call before you dig" laws and regulations. The CONTRACTOR shall contact the appropriate call centers the required number of business days prior to the start of construction to mark out utility locations.

C. It is the responsibility of the CONTRACTOR to identify and locate all existing utilities and structures and protect same from damage, unless explicitly specified otherwise. The CONTRACTOR shall verify that all appropriate utilities are disconnected, locked out, and tagged prior to starting work on or near that utility.

D. Known utilities and underground infrastructure include but are not limited to: the storm sewer and floor drain system running beneath and along the western edge of the Former Building No. 1 slab (including catchbasins and interconnecting pipes), and the sanitary sewer system running between the former Building No. 1 slab and the septic system/leach field area. Markings shall be performed using flags or non-toxic paint on concrete/paved surfaces, at a spacing of no greater than 25 feet and at every change in direction. Underground piping runs shall be traced as specific in Article 3.02A.

E. The CONTRACTOR shall confirm the locations of all utilities have been marked prior to intrusive work. The CONTRACTOR shall preserve the utility markings (e.g., paint and flags) until no longer needed for safe excavation.

F. If overhead electrical lines must be removed for the work the CONTRACTOR shall temporarily remove the electrical lines and replace the lines as part of restoration work. The CONTRACTOR shall obtain all required permits and approvals from the appropriate authorities and utilities to perform such tasks.

G. If work is performed during periods of cold weather, the CONTRACTOR shall be responsible for heating of temporary facilities.

H. The CONTRACTOR shall stop work immediately and notify the ENGINEER immediately if any underground utility or structure is encountered and/or damaged.

1.11 MAINTENANCE OF TRAFFIC

A. The CONTRACTOR shall conduct operations in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities. Do not close, block, or otherwise obstruct streets, roadways, grass areas, walkways, and other occupied and used facilities

without written permission from the authority having jurisdiction and the ENGINEER.

1.12 REGULATORY REQUIREMENTS

A. Work shall conform to all requirements of the Town of Greece Building Code and all applicable regulations and guidelines of authorities having jurisdiction, including, but not limited to, safety, health, and anti-pollution regulations. Where more stringent requirements than those contained in the Building Code or other applicable regulations are given in this TSOW, the requirements of this TSOW shall govern.

B. Work within the street right-of-way lines, including loading and unloading of equipment and material transport, shall conform to the requirements of the governmental authorities or utilities having jurisdiction (i.e., DOT, DEC, etc.). Where more stringent requirements than of the applicable governmental authority are specified, the requirements specified shall govern.

PART 2 – PRODUCTS

(*Note: not all products required to complete the work are identified in the Technical Scope of Work.*)

2.01 MATERIALS

A. Polyethylene Tarps

1. Polyethylene tarps shall be placed under all temporary stockpiles, and over any temporary stockpiles left over night.

2. Polyethylene Tarps shall be Permalon® Ply X-210, manufactured by Reef Industries, Inc., or Approved Equivalent.

3. Polyethylene Tarps shall be UV stabilized for long-term exposure to sunlight.

4. Polyethylene Tarps shall meet or exceed the following specifications:

Property	Test Method	English Units
Weight	ASTM D751	81 pounds/1,000 ft
Thickness	ASTM D5199	20 mil
Load @ Yield	ASTM D882	37 pound-force (lbf)
Load @ Break	ASTM D882	75 lbf/3,900 psi
Elongation @ Break	ASTM D882	550%
Tongue Tear	ASTM D2261	28 lbf
Trapezoidal Tear	ASTM D4533	44 lbf
PPT Resistance	ASTM D2582	50 lbf
Dart Impact Strength	ASTM D1709	3.5 pounds
Puncture Strength	ASTM D4833	45 pounds

B. Coarse Aggregate

1. Material to be used for fill on-Site shall be pit run, locally available crushed stone (NYSDOT 703-0201) or crushed gravel (NYSDOT 703-0202) in compliance with the requirements of NYSDOT Coarse Aggregate Specification 703-02. Provide naturally occurring materials only.

2. Coarse aggregate shall contain less than 10% by weight material which would pass through a size 80 sieve, consists of gravel, rock or stone, comprised of virgin material from a Department-permitted mine or quarry.

3. Unsuitable Material: Material unsuitable for use are clay, boulders, peat, contaminated material, construction debris, non-naturally occurring material, organics and any other material so designated by the DEPARTMENT. Unsuitable Material shall not be stockpiled and shall be promptly removed from the Site and disposed of by CONTRACTOR, at their own expense.

4. Excess Material: Any excess material not required for use in the project shall become the property of the CONTRACTOR and shall be removed by CONTRACTOR from the Site.

5. Coarse Aggregate consisting of crushed stone, crushed gravel or screened gravel, meeting NYSDOT specification 703-02, size designation 2, and the following gradation:

Screen Size (inches)	% Passing By Weight
1½	100
1	90 - 100
½	0 - 15

6. Each truckload of Coarse Aggregate delivered to the Site shall be accompanied by a ticket prepared by the CONTRACTOR certifying the source of the material and the location from where the material was supplied. The load ticket shall specifically identify the type of material, the quantity of material (weight), vehicle identification number and driver name, date, source (stockpile) identifier, time of departure from the source and time of arrival at the Site. The load tickets shall be consecutively numbered, multipart forms and shall be clearly and legibly completed and signed in ink. An original copy of each load ticket shall be submitted to the ENGINEER prior to the material being off-loaded at the Site.

7. The Coarse Aggregate shall be from a source approved by ENGINEER and the CONTRACTOR shall pre-qualify the source of supply prior to delivery to the Site.

C. Well Casing and Screen

1. Pump test well casing shall be welded, six (6)-inch diameter Schedule 10, type 304 stainless steel, as manufactured by Johnson Screens, Inc., or approved equal.

2. Pump test well screen shall be welded, six (6)-inch diameter Schedule 10, type 304 stainless steel, continuously wire wrapped screen with no mid-weld, slot size 50 (0.050-inch), as manufactured by Johnson Screens, Inc., or approved equal. The bottom of the screen shall be fitted with a welded plug or cap.

3. Piezometer well casing shall be threaded one (1)-inch diameter Schedule 40 PVC conforming to ASTM D1784 and ASTM D1785, as manufactured by Atlantic Screen and Manufacturing, Inc., or approved equal.

4. Piezometer well screen shall be threaded one (1)-inch diameter Schedule 40 PVC with slot size 10 (0.010-inch) as manufactured by Atlantic Screen and Manufacturing, Inc., or approved equal. The bottom of the screen shall be fitted with an internally threaded plug or socket cap.

5. All riser pipe shall be adjoined to screen using internally threaded flush joints. Solvent weld pipe shall not be permitted.

6. Bedrock monitoring well overburden casing shall be welded, six (6)-inch diameter, Schedule 40 low carbon steel casing, conforming to ASTM A589/A589M-06, as manufactured by Johnson Screens, Inc., or approved equal.

7. The CONTRACTOR shall supply all casing, well screen, and required couplings, plugs, caps, fittings and other parts for completion of well installation to the satisfaction of the ENGINEER.

8. All well construction materials shall be clean and free of all oil, grease, and any other organic contamination. All casing and screens shall be delivered to the Site in factory sealed, individually wrapped packaging. All persons handling casings and screens shall wear clean, disposable gloves to prevent possible contamination.

D. Sand Pack

1. Screen sand pack (for slot size 10 screen) shall be No. 1 Silica Sand, one hundred percent (100%) passing the No. 8 sieve, and less than two percent (2%) passing the No. 25 sieve, as supplied by the U.S. Silica Company, or approved equal.

2. The sand pack shall consist of clean, round to well-rounded, hard, insoluble particles of siliceous composition.

3. All sand pack materials shall be delivered to the Site in factory sealed, supplier's packaging, labeled with name and location of source, and product description.

E. Gravel Pack

1. Screen gravel pack (for slot size 50 screen) shall be No. 2 well gravel, with one hundred percent (100%) passing a No. 6 sieve, and less than two percent (2%) passing a No. 18 sieve, as supplied by the U.S. Silica Company, or approved equal.

2. The screen gravel pack shall be produced from sub-round monocrystalline industrial quartz.

3. All gravel pack materials shall be delivered to the Site in factory sealed, supplier's packaging, labeled with name and location of source, and product description.

F. Cement Bentonite Grout Slurry

1. The bentonite shall be Extra High Yield Gel as manufactured by Wyo-Ben, Inc., or approved equal.

2. The cement shall be Type 1 Portland Cement as manufactured by Lehigh Portland Cement Company, or approved equal.

3. The cement/bentonite grout slurry shall be prepared in the following proportions and in accordance with the manufacturer's specifications:

   i. 8.3 gallons of potable water;

   ii. 5.0 pounds of bentonite; and

   iii. One 94-pound bag of Type 1 cement.

4. All grout shall be allowed to cure for a minimum of 12 hours or as necessary to provide adequate time to cure prior to starting the next phase of work.

G. Bentonite Seal

1. The bentonite pellets shall be one-half inch (½-inch) diameter with a dry bulk density of 82 pounds per cubic foot and containing a minimum of ninety percent (90%) sodium montmorillonite.

2. The pellets shall be capable of swelling to a minimum of 10 times their dry volume when hydrated with potable water. The bentonite pellets shall be Enviroplug as manufactured by Wyo-Ben, Inc., or approved equal.

3. The bentonite seal shall be allowed to hydrate for a minimum of one (1) hour prior to grouting of the well annulus.

H. Well Cap and Protective Covers

1. A well plug with a lock shall be installed in the top of each well. The plug shall be the appropriate diameter to fit the well, and shall be a Gripper plug as manufactured by Cherne Industries, or approved equal.

2. For wells smaller than six (6)-inch diameter that are located within the former building floor slab or in other traffic areas as determined by ENGINEER: an 8-inch diameter watertight three (3)-bolt protective manhole shall be installed over each well. Protective manholes shall be cast into a two (2)-foot by two (2)-foot concrete pad, all flush with existing top of slab or ground surface covering. The protective casing/cover shall be as manufactured by Morris Industries (8-inch diameter watertight, 3-bolt manhole, Model 308301200), or

approved equivalent.

3. For wells six (6)-inch diameter and greater that are located within the former building floor slab or in other traffic areas as determined by ENGINEER: a 12-inch diameter watertight three (3)-bolt protective manhole shall be installed over each well. Protective manholes shall be cast into a two (2)-foot by two (2)-foot concrete pad, all flush with existing top of slab or ground surface covering. The protective casing/cover shall be as manufactured by Morris Industries (12-inch diameter watertight, 3-bolt manhole, Model 312301200), or approved equivalent.

4. For two (2)-inch diameter and smaller wells, that are located outside of the former building floor slab or in other non-traffic areas as determined by ENGINEER: Stickup protective casings shall be installed over each well and piezometer. Protective casings shall be four (4)-inch diameter by five (5)-foot long above ground hinged pro-casings manufactured by Morris Industries (Model 300004105, complete with cap and lock tabs), or approved equivalent.

5. For wells larger than two (2)-inch diameter, that are located outside of the former building floor slab or in other non-traffic areas as determined by ENGINEER: Stickup protective casings shall be installed over each well and piezometer. Protective casings shall be 10-inch diameter by five (5)-foot long above ground hinged pro-casings manufactured by Morris Industries (Model 300010105, complete with cap and lock tabs), or approved equivalent.

I. Padlocks

1. Padlocks shall be manufactured by MasterLock, lockout padlock, steel body, Model No. 3KABLU, key: 0354; Grainger Item No. 9MAE7. All locks shall be keyed-alike. Provide three keys per lock.

J. Neat Cement Grout

1. Neat cement grout shall be placed between the well hole wall and the manhole, and for the surface pad.

2. Neat cement shall be a mixture of Portland cement and potable water. The water to cement ratio shall be five (5) to six (6) gallons of water per 94-pound bag of cement.

2.02 EQUIPMENT

The CONTRACTOR shall provide appropriate equipment for effective and efficient completion of all elements of work, including but not limited to drilling, dewatering, coring, slab removal, and excavation as specified.

PART 3 – EXECUTION

3.01 GENERAL

A. Prior to commencing Work on-Site, the CONTRACTOR shall complete the following:

1. Visually inspect and photograph the adjacent areas, and structures and appurtenances of the surrounding properties. Record the existing conditions in Existing Conditions Inspection Report; submit all information to the ENGINEER in accordance with **Article 1.05**;

2. The CONTRACTOR shall ensure that all electrical power supply to structures has been deactivated prior to any drilling or digging activities;

3. Verify that utilities have been marked-out before starting drilling or digging operations; and

4. Review the locations and conditions of all groundwater monitoring wells and storm sewer features shown on **Drawing 3**. The CONTRACTOR shall become familiar with locations of these existing features and shall protect each and all from damage throughout the Work.

B. The CONTRACTOR shall only perform work in the presence and at the direction of the ENGINEER.

C. Unless directed otherwise, if, during slab and foundation investigation (or at any other time) piping, utilities, etc., leading into or out of the structures is discovered, liquids shall be removed and containerized, and the piping, conduit, etc. shall be filled and sealed by the CONTRACTOR using a method acceptable to the ENGINEER. Notify the ENGINEER immediately upon discovery of such piping, utilities, etc. prior to proceeding.

D. The CONTRACTOR shall provide all labor, equipment, materials, power, and incidentals to perform the work including, but not limited to: markout of buried utilities and infrastructure; construction of temporary facilities; clearing and grubbing; Perimeter soil boring programs; Investigation Area soil boring programs; overburden groundwater pumping tests; floor slab and foundation investigation at former Building No. 1; management and disposal of IDW; and related work. The CONTRACTOR shall comply with all applicable local, State, and federal rules and regulations pertaining to the Work specified, the movement of waste, and all other work.

E. The CONTRACTOR shall identify and obtain all permits and approvals required in accordance with local, State and federal regulations. Submit copies of permits and approvals to the ENGINEER.

F. The CONTRACTOR shall contact the Monroe County Department of Environmental Services, Industrial Waste Control, for coordination of sewer use and discharge of collected pumping test groundwater and other wastewater generated by the work.

G. Mobilization includes all work necessary for access to and from work areas, including, but not limited to: submittals and training; identifying and locating buried utilities and infrastructure; protecting existing groundwater monitoring wells; clearing and grubbing; and establishment of a Waste Staging Area and Decontamination Zone.

H. Allow and coordinate for inspection by the ENGINEER during all field activities.

I. The CONTRACTOR shall establish and maintain designated on-Site Work Areas, including materials stockpile/staging areas, entrance/exit zones and on-Site traffic lane areas at the locations approved by the ENGINEER. These areas shall be established and maintained so as to minimize any associated impacts to the neighborhood and local traffic. There shall be no staging or queuing of vehicles or equipment outside of the boundaries of the Site.

J. The CONTRACTOR shall protect the work area with warning tape and install visible barricades around the work area to assure unauthorized personnel do not enter the work zone. Protection shall be maintained throughout the work duration. Prior to the start of work on-Site the CONTRACTOR shall erect and properly maintain at all times, as required by the conditions and progress of the Work,

proper safeguards for the protection of workers and the public and post danger warnings as required by law against hazards created by the CONTRACTOR's operation. The CONTRACTOR shall be responsible for furnishing and installing protection at locations where the work creates the need for such as dictated by and in accordance with OSHA regulations and/or other local, state and federal regulations as applicable. At the end of each day, place temporary barricades around the perimeter of all areas deemed hazardous by the ENGINEER.

K. Decontamination shall be performed in an area specifically set up by the CONTRACTOR (i.e., Decontamination Zone) for that purpose, curbed, and lined with an impermeable membrane, to contain the used cleaning solution, including any overspray and any contaminated debris removed during the cleaning process.

L. All waste and wastewater resulting from decontamination shall be collected and containerized by the CONTRACTOR in 55-gallon drums that meet USDOT requirements for transportation of hazardous materials. Deliver only new, unused drums to the Site. Drums shall be labeled and stored with properly secured lids as specified and directed. Drums stored at the Site, unless empty, shall be stored in portable secondary containment structures manufactured specifically for the intended purpose. Wastewater may alternately be containerized in the water storage tanks used for pump test discharge water containment.

M. All waste shall be transported by properly permitted and DEPARTMENT-approved waste transporters, and to DEPARTMENT-approved facilities.

N. The CONTRACTOR shall take every possible action to ensure the work will not cause contamination of the environment and will comply with all applicable laws regarding spills, releases or discharges of hazardous substances, including but not limited to gasoline, diesel fuel, hydraulic oil, transmission fluid, and lubricating oil. The CONTRACTOR shall have appropriate equipment on-Site to promptly manage any spills that may occur during performance of the work.

O. The CONTRACTOR shall assume all responsibility for the security of materials, supplies and equipment owned or used by the CONTRACTOR.

P. The CONTRACTOR shall not close or obstruct streets, sidewalks, or other adjacent occupied or utilized facilities without permission from authorities having jurisdiction. Operations shall be conducted so as to prevent interference with and damage to roads, streets, sidewalks and other adjacent occupied and utilized facilities. The CONTRACTOR shall repair, to pre-existing condition, any public or private roads, driveways, parking areas, sidewalks, curbs or other areas damaged. Remove all materials and residues tracked onto public roadways on a daily basis, at a minimum.

Q. The CONTRACTOR shall protect monitoring wells, benchmarks, survey control points, existing structures, fences, sidewalks, paving, curbs and all other improvements from heavy equipment, tracked equipment, and vehicular construction traffic. Any wells damaged or destroyed during the work by the CONTRACTOR and not designated for abandonment or removal shall be replaced as directed by the ENGINEER

R. During the work, CONTRACTOR shall assist ENGINEER as requested. Assistance may be requested for screening and collection of samples of recovered soil (from split spoons), monitoring of water quality during development, installation of pressure transducers, etc.

3.02 PREPARATION AND PROTECTION

A. Locate and identify existing utilities and infrastructure in the area of work. Survey the proposed soil borings, piezometers, well, and test pit locations, and subsurface utilities (including, but not limited to, utilities depicted on **Drawings 3 through 6**) using, at a minimum, both Ground Penetrating Radar (GPR) and Electro-Magnetic/Radio Frequency (EM/RF) Pipe, Cable and Box locators. The survey shall encompass all of OU1. Any structure/utility identified visually or detected in the subsurface shall be traced to its completion or to the site boundary, and identified on the ground with non-toxic

spray paint or flagging. Markouts on the ground shall be spaced at no greater than 25 feet apart and at each change in direction of the item being marked. Additionally, any structure/utility detected in the subsurface within 10 feet of a proposed boring or test pit location shall be identified on the ground surface with spray paint. Results of the utility survey shall be reviewed in the field between TRC and the utility surveyor each day the service is provided. Results shall also be summarized in a brief utility survey report which shall be prepared by the utility surveyor and submitted to TRC. The utility survey report shall include a map showing the locations and types of subsurface features identified.

B. The CONTRACTOR shall locate and inspect all manholes located within OU1. This shall include opening the manholes, and measuring and recording: depth to bottom (feet below ground surface), diameter of manhole opening at ground surface, number of connections, depth (feet below ground surface) of invert and crown of each connection, direction of flow for each connection, and diameter of each connection. Mark on the ground surface adjacent to each manhole the location of each connection and direction of flow. Submit a sketch to the ENGINEER for each manhole showing the required measurement/information. Sketch shall also show materials of construction of manhole frame and cover, manhole structure and each connection. Note: "manhole" includes catch basins, dry wells and all similar structures.

C. Protect structures, underground and aboveground utilities, groundwater monitoring wells and any other construction to remain from damage caused by the Work. If unmarked or unknown utilities are encountered during work, notify the ENGINEER to receive further instructions prior to proceeding further. Should damage to adjacent construction or utilities occur due to the Work and by the CONTRACTOR, all costs in connection with the repair of such damage and the restoration of damaged construction to its original condition shall be borne by the CONTRACTOR.

D. Protect materials, surfaces, and structures on Site from damage; if damage occurs, repair or replacement shall be made by the CONTRACTOR, to the satisfaction of the DEPARTMENT, and at the expense of the CONTRACTOR.

E. Protection of Adjoining Property

1. The Work shall be carried out in a manner that shall protect adjacent property against any damage that might occur and so as not to interfere with the use of adjacent facilities or the free and safe passage to and from the adjacent properties, facilities and structures.

F. Precautions

1. The work shall be carried out in every respect in a thorough and workmanlike manner. The CONTRACTOR shall provide all materials, labor and machinery necessary and shall place proper and sufficient lighting, guards, barricades, fences and warning signals by day and by night for the prevention of accidents.

2. The CONTRACTOR shall secure the Site to prevent trespassing and potential accidents.

3. All necessary and reasonable precautions shall be taken against fire throughout all the CONTRACTOR's operations. The amount of flammable material shall be reduced to a minimum consistent with the proper handling and storing of materials. Provisions shall be made for the extinguishing of fires, as required by the Fire Department, Fire Marshall and all authorities having jurisdiction. The CONTRACTOR shall not permit any fires.

G. Perform the removal and reinstallation of relocated items, or repair of items damaged by CONTRACTOR's work, with workmen skilled in the trades involved. Repair items to be relocated which are damaged or replace damaged items with new undamaged items.

3.03 PERIMETER SOIL BORING PROGRAM

A. The CONTRACTOR shall advance soil borings using an appropriate drill rig around the perimeter of each Investigation Area at the locations shown on **Drawing 4**. A total of 11 soil borings are proposed to be advanced around the perimeter of Investigation Area 1. A total of eight (8) soil borings are proposed to be advanced around the perimeter of Investigation Area 2. Several of the Investigation Area 2 borings shall include coring through the Building No. 1 concrete slab.

B. The CONTRACTOR shall use a hollow-stem auger drill rig, with continuous split-spoon sampling, from ground surface to top of bedrock (approximately 30 feet below ground surface (bgs) in Investigation Area 1, 20 feet bgs in Investigation Area 2) at each soil boring location.

C. Screening and sampling of recovered soil will be performed by the ENGINEER. The ENGINEER will coordinate handling and delivery of samples to the DEPARTMENT call-out laboratory. CONTRACTOR shall assist ENGINEER as directed with sampling of recovered soil.

D. ENGINEER will also collect up to two (2) samples of recovered soil from each boring location for analysis by the ENGINEER's Geotechnical Testing laboratory for geotechnical parameters.

E. The CONTRACTOR shall collect continuous split-spoon samples and geotechnical information from all soil borings following ASTM D1586-11: Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils.

F. The CONTRACTOR shall collect four (4) Shelby Tubes to be analyzed by the ENGINEER's geotechnical laboratory for ASTM D4767: Standard Test Method for Consolidated Undrained Triaxial Compression Test for Cohesive Soils. Shelby tube sample depths and locations will be selected by ENGINEER during performance of the drilling.

G. Approximately three (3) of the perimeter soil borings in Investigation Area 2 are located within the slab of former Building No. 1. Coring through the slab to access the subsurface soils at these locations shall be performed. CONTRACTOR shall determine slab thickness at each location and identify the measurements on the Daily Field Activity Reports.

H. All down-hole drilling equipment shall be decontaminated by the CONTRACTOR prior to use at the Site and before use at each borehole location. Sampling equipment shall at a minimum, be cleaned of all foreign matter, washed with potable water and Alconox™, and rinsed with potable water between locations. Containerization of the decontamination waste shall be required.

I. Immediately upon notification by ENGINEER, the CONTRACTOR shall complete each boring using cement bentonite grout, finished to match existing grade. Locations shall be clearly marked by the CONTRACTOR for subsequent survey activity by ENGINEER. The CONTRACTOR shall containerize all cuttings in 55-gallon drums for characterization and off-Site disposal by CONTRACTOR.

J. All work shall be completed in accordance with the HASP, CAMP, and ENGINEER-approved submittals.

K. All investigation-derived waste, including, but not limited to, used plastic sheeting, PPE, drill cuttings, and decontamination waste shall be containerized by the CONTRACTOR in 55-gallon drums and staged on pallets (stacking of drums is not permitted) at a location to be determined at the direction of the ENGINEER. Refer to Section 3.08 for CONTRACTOR-required waste characterization, and Section 3.09 for CONTRACTOR-required waste transportation and disposal.

3.04 INVESTIGATION AREA SOIL BORING PROGRAM

A. The CONTRACTOR shall advance soil borings using an appropriate drill rig in the area of each Investigation Area at the locations shown on **Drawing 4**. A total of four (4) soil borings are proposed to be advanced within Investigation Area No. 1. A total of two (2) soil borings are proposed to be advanced within Investigation Area No. 2.

B. The CONTRACTOR shall use a hollow-stem auger drill rig, with continuous split-spoon sampling, from ground surface to top of bedrock (approximately 30 feet below ground surface (bgs) in Investigation Area 1, 20 feet bgs in Investigation Area 2) at each soil boring location.

C. The CONTRACTOR shall collect continuous split-spoon samples and geotechnical information from all soil borings following ASTM D1586-11: Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils.

D. Screening and sampling of recovered soil will be performed by the ENGINEER.

E. Samples of recovered soil will be submitted by the ENGINEER to the DEPARTMENT's call-out Laboratory for analysis. The ENGINEER will coordinate handling and delivery of samples to the DEPARTMENT call-out laboratory.

F. All down-hole drilling equipment shall be decontaminated by the CONTRACTOR prior to use at the Site and before use at each borehole location. Sampling equipment shall at a minimum, be cleaned of all foreign matter, washed with potable water and Alconox™, and rinsed with potable water between locations. Containerization of the decontamination waste shall be required.

G. Immediately upon notification by ENGINEER, the CONTRACTOR shall complete each boring using cement bentonite grout, finished to match existing grade. Locations shall be clearly marked by the CONTRACTOR for subsequent survey activity by ENGINEER. The CONTRACTOR shall containerize all cuttings in 55-gallon drums for characterization and off-Site disposal by CONTRACTOR.

H. All work shall be completed in accordance with the Site-specific HASP, CAMP and ENGINEER-approved submittals.

I. All IDW, including, but not limited to, used plastic sheeting, PPE, drill cuttings, and decontamination waste shall be containerized by the CONTRACTOR in 55-gallon drums and staged on pallets (stacking of drums is not permitted) at a location to be determined at the direction of the ENGINEER. Refer to Section 3.08 for CONTRACTOR-required waste characterization, and Section 3.09 for CONTRACTOR-required waste transportation and disposal.

3.05 INSTALLATION OF PIEZOMETERS, PUMP TEST WELLS, AND BEDROCK MONITORING WELLS

A. The CONTRACTOR shall use a hollow-stem auger drill rig, with continuous split-spoon sampling, to install one (1) pump test well to bedrock in or adjacent to each of the Investigation Areas at the locations shown on **Drawing 5** to be used in the groundwater pumping tests.

B. The pump test wells shall be installed within 10-inch diameter boreholes. Each pump test well shall be constructed of six (6)-inch diameter, Schedule 10, type 304 stainless steel casing from ground surface to four and a half (4.5) feet bgs, and six (6)-inch diameter, Schedule 10 type 304 stainless steel, 0.050-inch slot screen from four and a half (4.5) feet bgs to approximately six (6) inches above bottom of borehole as shown on **Drawing 7**. No. 2 well gravel shall be installed as gravel pack from two and a half (2.5) feet bgs to bottom of borehole.

C. The CONTRACTOR shall use a hollow-stem auger drill rig, with continuous split-spoon sampling, to install a total of four (4) piezometers in to bedrock. Two (2) piezometers shall be installed in or adjacent to each of the Investigation Areas at the locations shown on **Drawing 5** to be used for monitoring the

overburden aquifer groundwater pumping tests. Soil borings specified above shall be completed as piezometers when specified on the Drawings.

D. Screening and sampling of recovered soil will be performed by the ENGINEER.

E. The piezometers shall be constructed with one (1)-inch diameter Schedule 40 PVC riser from ground surface to four and a half (4.5) feet bgs, and one (1)-inch diameter PVC screen (10-slot) from four and a half (4.5) feet bgs to approximately six (6)-inches above bottom of borehole as shown on **Drawing 7.** No. 1 silica sand shall be installed as sand pack from two and a half (2.5) feet bgs to bottom of borehole. Bottom of borehole shall be top of bedrock.

F. The CONTRACTOR shall use an air rotary drill rig to install two (2) bedrock monitoring wells at the locations shown on **Drawing 5** to be used for monitoring during the pumping tests. Perimeter soil boring locations shall be completed as bedrock monitoring wells when specified on the Drawings.

G. The bedrock monitoring wells shall be installed within 10-inch diameter boreholes. Each bedrock monitoring well shall be constructed of six (6)-inch diameter, Schedule 40 steel casing from ground surface to five (5) feet into competent rock, and five (5) feet of six (6)-inch diameter open hole as shown on **Drawing 7**.

H. The CONTRACTOR shall collect a bedrock core from each of the bedrock monitoring wells for inspection by the ENGINEER. Bedrock cores shall be minimum two (2)-inch diameter, collected in five (5)-foot lengths to a total depth of ten 10 feet into competent bedrock.

I. During drilling of each well, detailed Daily Field Activities Reports shall be maintained and submitted to the ENGINEER. The reports shall provide a complete description of all formations encountered, number of feet drilled, number of hours on the job, down time/stand by time hours, materials used, diameter and feet of casing and screen set, and other pertinent data as required to prepare monitoring well installation logs.

J. All persons handling casings and screens shall wear clean, disposable nitrile gloves, or equivalent, to prevent possible contamination of products.

K. If drilling fluid is required, the CONTRACTOR shall only use potable water approved by the DEPARTMENT. No other fluids or additives shall be used unless approved by the DEPARTMENT. The CONTRACTOR shall be responsible for providing all water necessary for borehole and well construction.

L. Each well shall have a vented cap, and shall be complete with a manhole or protective casing as shown on the Drawings. Each well and manhole or protective casing shall be protected from entry of foreign materials at all times and upon well completion, locked with keyed alike locks, as specified. A minimum of three keys shall be furnished for each well.

M. All down-hole drilling equipment shall be decontaminated by the CONTRACTOR prior to use at the Site and before use at each borehole location. Sampling equipment shall at a minimum, be cleaned of all foreign matter, washed with potable water and Alconox^{TM}, and rinsed with potable water between locations. Containerization of the decontamination waste shall be required.

N. All IDW, including, but not limited to, used plastic sheeting, PPE, drill cuttings, and decontamination waste shall be containerized by the CONTRACTOR in 55-gallon drums and staged on pallets (stacking of drums is not permitted) at a location to be determined at the direction of the ENGINEER. Refer to Section 3.08 for CONTRACTOR-required waste characterization, and Section 3.09 for CONTRACTOR-required waste transportation and disposal.

O. At least 24 hours after installation, the CONTRACTOR shall develop the wells using pumping and surging methods until water turbidity measures less than 50 NTU. The discharge shall be containerized in either 55-gallon drums or the frac tank to be used for the pumping test extraction water.

P. All drilling work shall be performed by a licensed New York well driller.

3.06 OVERBURDEN AQUIFER GROUNDWATER PUMPING TESTS

A. The CONTRACTOR shall perform an eight (8)-hour step pumping test on each of the two (2) pump test wells. Testing of each of the two pump test wells shall be performed separately, at least two (2) days apart. Each step of the test shall run for approximately 90 minutes at the following flow rates: four (4) gallons per minute (gpm); eight (8) gpm; 12 gpm; 16 gpm; with the final flow rate increased to determine the maximum flow rate for the well (full drawdown). These flow rates are estimates based on currently available information.

B. The CONTRACTOR shall supply a pump, valves, and associated plumbing, with capability of achieving the flow rates specified, with a maximum pump flow rate of 40 gpm at a pressure head of 50 feet, along with power supply, associated hoses/piping, flow meter with totalizer and pressure gauge.

C. The CONTRACTOR shall supply frac tanks to containerize water from the pumping tests. Each pumping test shall have a separate frac tank of suitable capacity to store all pumping test discharge water, at least 20,000 gallons each. Extracted water from separate pump tests shall not be combined.

D. The CONTRACTOR shall supply water treatment equipment, as needed to meet wastewater acceptance criteria. Water treatment equipment may include but not be limited to: oil/water separation equipment to separate NAPL, particulate filtration equipment, carbon filtration equipment, and other equipment that may be needed.

E. Solar-powered equipment shall be provided when available.

F. Frac tanks shall be provided in clean, uncontaminated condition, with no evidence of residues or sediment on the walls or bottom of the tank. Frac tanks that appear to have not been cleaned, that appear dented or damaged, or that have been delivered with loose fittings or missing parts, will be rejected by ENGINEER.

G. The CONTRACTOR shall maintain a near-constant flow rate during each step of the test. The CONTRACTOR shall measure and document the rate of water being discharged as well as totalizer readings in 15 minute intervals.

H. The ENGINEER will provide transducers with data logging capability, for gauging water levels throughout the test. The transducers shall be deployed in locations determined by ENGINEER. CONTRACTOR shall assist the ENGINEER with initial installation and removal of transducers following tests, and decontaminate as directed prior to deployment in the second pumping test area and prior to shipment off-Site. ENGINEER will be responsible for data collection during and upon conclusion of the test(s) and for data review and analysis. ENGINEER will also be responsible for confirmation measurements using a water level tape during performance of the test(s).

I. The CONTRACTOR shall not start a pumping test until a rain event has not occurred for 24 hours and until there is an adequate period (minimum 24 hours) where no precipitation is expected to occur during the scheduled test.

J. The CONTRACTOR shall provide access to the pump test wells and other monitoring points, allowing ENGINEER to measure water levels during the test.

K. The CONTRACTOR shall perform sampling of discharge water for waste characterization, and coordinate handling and delivery of samples to CONTRACTOR's DEPARTMENT-approved laboratory.

L. The CONTRACTOR shall dispose of the pumping test discharge water pending results of the waste characterization testing. If permitted by the Monroe County Water Authority, the CONTRACTOR shall discharge to a nearby sewer manhole for disposal.

M. The CONTRACTOR shall decontaminate the frac tanks and dispose of decontamination fluids along with the pumping test discharge water.

3.07 TEST PIT EXCAVATION

A. The CONTRACTOR shall complete three (3) test pits as described below at the approximate locations indicated on **Drawing 6.**

B. Test pits shall be excavated using a backhoe or excavator with an appropriate reach such that an excavation depth of four (4) feet and an excavation length of up to sixteen (16) feet can be achieved.

C. The CONTRACTOR shall sawcut the existing slab, where indicated on the drawing and necessary to complete test pits within the former Building No. 1 limits. CONTRACTOR shall supply equipment capable of completing a clean, straight, full-thickness saw cut, including removing the cut slab sections for access to subsurface.

D. The CONTRACTOR shall properly reduce in size the removed portions of the concrete slab to be containerized in 55-gallon drums and staged on pallets (stacking of drums is not permitted) at a location to be determined at the direction of the ENGINEER. Refer to Section 3.08 for CONTRACTOR-required waste characterization, and Section 3.09 for CONTRACTOR-required waste transportation and disposal.

E. The CONTRACTOR shall recognize the hazards associated with saw cutting cast-in-place concrete, including the potential for in-slab electrical conduit, gas lines, and water lines, and shall take all necessary precautions to protect employees of CONTRACTOR, ENGINEER, and DEPARTMENT.

F. If subsurface utility line locations were identified at or nearby the location prior to test pit excavation, the CONTRACTOR shall advise the ENGINEER.

G. Test pit excavation activities, limits of waste observations, slab and foundation as-built conditions, any grossly contaminated soil encountered, and other observations will be recorded by the ENGINEER. ENGINEER will prepare a test pit log documenting observations at each location.

H. The CONTRACTOR shall designate a representative to accompany the ENGINEER at each test pit location. All intended hand signals to be used during the excavation should be reviewed and understood between the representative of the CONTRACTOR directing the operation and the equipment operator(s). Directions given from the ENGINEER to the CONTRACTOR's representative shall be verbal.

I. Prior to penetrating the ground surface, the CONTRACTOR shall ensure that proper utility clearances have been performed. No work shall commence if the proper utility clearance has not been completed.

J. Maximum depth of test pits shall be four (4) feet, unless directed otherwise by the ENGINEER or the DEPARTMENT representatives.

K. Initiate the excavation in lifts of four (4) to six (6) inches as directed by the ENGINEER. The ENGINEER will record observations as the test pit is advanced. Test pits AFP-TP-101 and AFP-TP-102 shall be up to eight (8) feet in length, and AFP-TP-103 shall be up to sixteen (16) feet in length. All test pits shall be no more than two (2) feet in width.

L. Excavated soil/material shall be placed no closer than two (2) feet from the edge of the test pit.

M. Excavated material shall be placed on polyethylene tarps (minimum 20 mils thick). Excavated materials from separate test pits shall not be combined.

N. The CONTRACTOR shall maintain test pits open until directed by the ENGINEER to close the test pit.

O. At each location material excavated shall be returned to the excavation by the CONTRACTOR using a "last out – first in" sequence.

P. The CONTRACTOR shall compact the backfilled soil in maximum 12-inch thick lifts and not leave surface depressions, voids, surface debris or trip hazards at completion.

Q. The CONTRACTOR shall place and compact coarse aggregate to fill voids below the bottom of the concrete slab.

R. The CONTRACTOR shall restore the concrete slab in kind at each test pit location using cast-in-place concrete. Replacement of reinforcing is not necessary. Seeding of excavated areas outside of the concrete slab is not necessary.

3.08 WASTE CHARACTERIZATION SAMPLING AND ANALYSIS

A. Sampling and analysis for waste characterization (pumping test groundwater, drill cutting, development water, demolished building materials, and all other waste) shall be performed by the CONTRACTOR.

B. Samples shall be collected and analyzed at a frequency and for all required parameters in accordance with disposal facility permits and requirements.

C. ENGINEER approval of all sampling protocols and sampling frequencies (e.g., samples per cubic yard or per thousand gallons) is required prior to start of sampling. The ENGINEER may conduct sampling and analysis to verify the CONTRACTOR's waste characterization sampling results.

D. All samples for analyses for disposal characterization shall be analyzed by a NYSDOH ELAP-approved laboratory. ENGINEER approval of the laboratory is required prior to sample collection.

E. Additional sample volume shall be collected by the CONTRACTOR for any additional testing required by the proposed waste disposal facility and applicable permits and regulations and/or based on observations of gross soil contamination (e.g., petroleum staining, odors) in the field at a particular location as directed by the ENGINEER.

F. Results of all laboratory analyses and complete copies of all chain of custody forms shall be submitted directly to the ENGINEER. The CONTRACTOR shall provide a laboratory sample data report with standard laboratory quality control data deliverables and Microsoft Excel electronic data deliverables with comparison to disposal facility acceptance requirements.

3.09 TRANSPORTATION AND DISPOSAL

A. CONTRACTOR shall be responsible for collection, containerizing, labeling, characterization and profiling, handling, transportation and disposal of all waste. Waste collection, containerizing, labeling, characterization, transportation and disposal shall include all waste generated during the work.

B. Materials removed from the Site shall be directly transported to approved disposal facilities. No materials shall be added or removed from transport vehicles between their time of departure from the Site and their time of arrival at the approved disposal facility.

C. Vehicles transporting waste must have a valid 6 NYCRR Part 364 Waste Transporter Permit and be approved to transport the specific wastes to the intended disposal facilities. Transport and deliver waste only with approved vehicles and only to disposal facilities approved by the ENGINEER.

D. CONTRACTOR shall provide for appropriate measurement of quantities of material removed from the Site. Coordinate vehicle inspection and recording of quantities leaving the Site with the ENGINEER. Quantities removed shall be compared to recorded quantities received at the disposal facilities. Immediately resolve any discrepancies that occur and determine the probable cause for the discrepancy.

E. CONTRACTOR shall be solely responsible for any and all actions necessary to remedy material spilled during loading, unloading and in transit.

F. All truck routes from the Site to the disposal facility shall be subject to approval by the ENGINEER. To the maximum extent possible, no vehicles shall travel on any local streets or through any residential areas.

G. The Contractor is responsible for transportation safety. All vehicles shall be properly maintained, licensed and operated, and follow all rules and regulations, observe all speed limits, etc. The

ENGINEER may refuse any waste transport vehicle that does not satisfy the specifications.

H. The Contractor shall submit completed manifest and/or shipping papers for each container to document proper disposal. The following shall be provided for each load:

1. Truck and trailer license plate numbers,
2. Transporter's permit number, name, address, contact person and phone number,
3. Printed name and signature of the CONTRACTOR and date and time that the load was shipped (time of departure from the Site),
4. Printed name and signature of the disposal facility representative and date that the load was received at the facility, and
5. Disposal facility scale ticket indicating facility location, permit number and that the load was received from the transporter, as well as gross, net and tare weight of the load.

3.10 EQUIPMENT DECONTAMINATION

A. The CONTRACTOR shall furnish, operate, and maintain a decontamination pad, appropriately sized and designed for the equipment to be decontaminated, at the Site during work at a location approved by the ENGINEER. All equipment and supplies that contact potentially contaminated subsurface soil and groundwater, or other potentially contaminated materials, shall be decontaminated. Full decontamination shall be required at completion of the Work, prior to removal of material and equipment from the Site. Partial shall also be required by the ENGINEER as the CONTRACTOR moves affected equipment between different areas of the Site. All decontamination materials shall be collected, containerized, labeled, and placed for storage at a dedicated staging area approved by the ENGINEER.

B. All equipment shall be provided to the work Site free of contamination. The ENGINEER may prohibit from the Site any equipment that in its opinion has not been thoroughly decontaminated prior to arrival.

C. All sampling equipment and downhole equipment shall be decontaminated after each and every use. Contaminated sampling equipment can be washed with Liquinox ®, or equivalent soap and water solution, rinsed with clean potable water, and finally rinsed with deionized water. Decontamination wastewater shall be containerized, treated as needed, and sampled accordingly prior to discharge.

D. The CONTRACTOR is prohibited from decontaminating equipment on the project Site that is not thoroughly decontaminated prior to arrival.

E. Contact with potentially contaminated materials shall be kept to a minimum. Personal protective equipment shall be properly disposed of or decontaminated.

F. The CONTRACTOR shall furnish, operate and maintain at the Site during work a truck and equipment decontamination pad to remove material on the tires, tracks, undercarriage and other parts of vehicle exteriors and equipment. Vehicles and equipment coming in contact with potentially contaminated materials shall be washed with potable water and a detergent and rinsed with potable water. All wastewater and sediment shall be collected, containerized, labeled, and stored on pallets in USDOT-approved 55-gallon drums in a staging area designated by ENGINEER. All drums placed in storage shall be covered completely with polyethylene tarps.

G. The CONTRACTOR shall clean and remove all decontamination materials and equipment from the Site after completion of Work and dispose of all waste generated in accordance with applicable federal, State and local laws and regulations. The decontamination pad and all related materials and equipment shall be removed from the Site after approval by the Engineer. Use only ENGINEER-approved waste transporters and disposal facilities.

PART 4 – SITE RESTORATION

A. Upon completion of the Work under this Contract, the CONTRACTOR shall remove all tools and materials, plant, apparatus, CONTRACTOR-generated waste, rubbish and debris, and shall leave the premises clean, neat and orderly.

B. The CONTRACTOR shall ensure that locking caps are installed on all pump test wells, monitoring wells, and piezometers to remain in place. CONTRACTOR shall otherwise restore to pre-construction or specified conditions, as directed by the ENGINEER, all areas disturbed during the work. Any damage outside of the limits of the scope caused by the CONTRACTOR's operations shall be restored at the CONTRACTOR's expense.

C. The Site shall be thoroughly cleaned by the CONTRACTOR and the work must be approved by the ENGINEER prior to demobilization.

PART 5 – CLOSE-OUT

5.01 GENERAL

A. The ENGINEER will inspect Site conditions prior to CONTRACTOR demobilization. The CONTRACTOR shall obtain DEPARTMENT approval prior to demobilizing.

B. Upon completion of all work, the CONTRACTOR shall provide to the ENGINEER all documentation collected and generated during the project. The documentation, provided by the CONTRACTOR, shall include, but not be limited to:

1. Copies of imported materials scale tickets;

2. Daily Field Activity Report including photographs;

3. Copies of any submittals to regulatory agencies;

4. Relevant receipts/invoices;

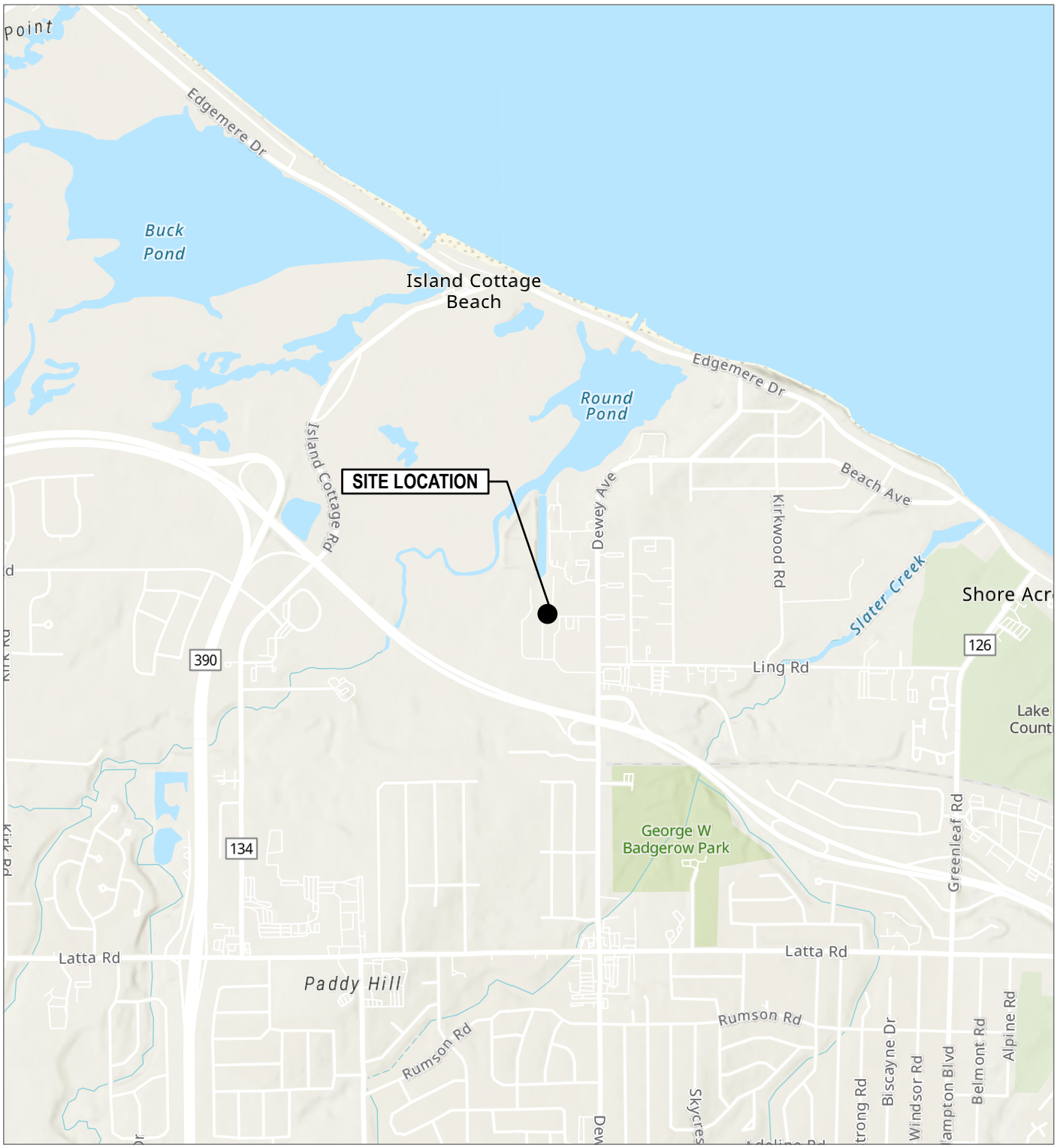
5. Marked up drawings and sketches produced as record drawings;

6. Waste disposal documentation; and

7. Other specified submittals.

C. The close-out documentation shall be submitted to the ENGINEER no later than 14 calendar days after completion of demobilization.

DRAWINGS



LEGEND

- SITE LOCATION

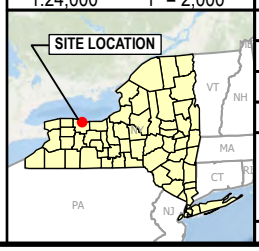
BASE MAP: USGS TOPOGRAPHIC IMAGERY

N

0 1,000 2,000

FEET

1:24,000 1" = 2,000'



PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORMER AIR FORCE PLANT NO. 51 - SITE NO. 828156
4777 DEWEY AVENUE
GREECE, NEW YORK 14612

TITLE:

SITE LOCATION MAP

DRAWN BY:	L. LILL	PROJ. NO.:	481220.0000.0000
CHECKED BY:	C. LUTHER		
APPROVED BY:	K. SULLIVAN		DRAWING 1
DATE:	JUNE 2022		

TRC
10 Maxwell Drive
Clifton Park, NY 12065
Phone: 518-348-1190

FILE: OU1

LEGEND

- SITE BOUNDARY
- LOT BOUNDARY
- OU1
- OU2
- OU3

NOTES:

1. PHYSICAL FEATURES AND BOUNDARIES ARE FROM FEASIBILITY STUDY REPORT, FORMER PLATING POND (OPERABLE UNIT 1), JULY 2021, PREPARED BY HDR.

2. LOCATIONS AND DIMENSIONS OF EXISTING FEATURES ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY CONTRACTOR.

1:3,600
1" = 300'

BASE MAP: GOOGLE EARTH IMAGERY
SHEET SIZE: 11X17L

0 150 300
FEET

PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORMER AIR FORCE PLANT NO. 51 - SITE NO. 828156
4777 DEWEY AVENUE
GREECE, NEW YORK 14612

TITLE:
SITE LAYOUT MAP AND OPERABLE UNITS

DRAWN BY:	L. LILL	PROJ. NO.:	481220.0000.0000
CHECKED BY:	C. LUTHER		DRAWING 2
APPROVED BY:	K. SULLIVAN		
DATE:	JUNE 2022		

TRC
10 Maxwell Drive
Clifton Park, NY 12065
Phone: 518-348-1190

FILE: OU1.aprx

Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet Map Rotation: 90
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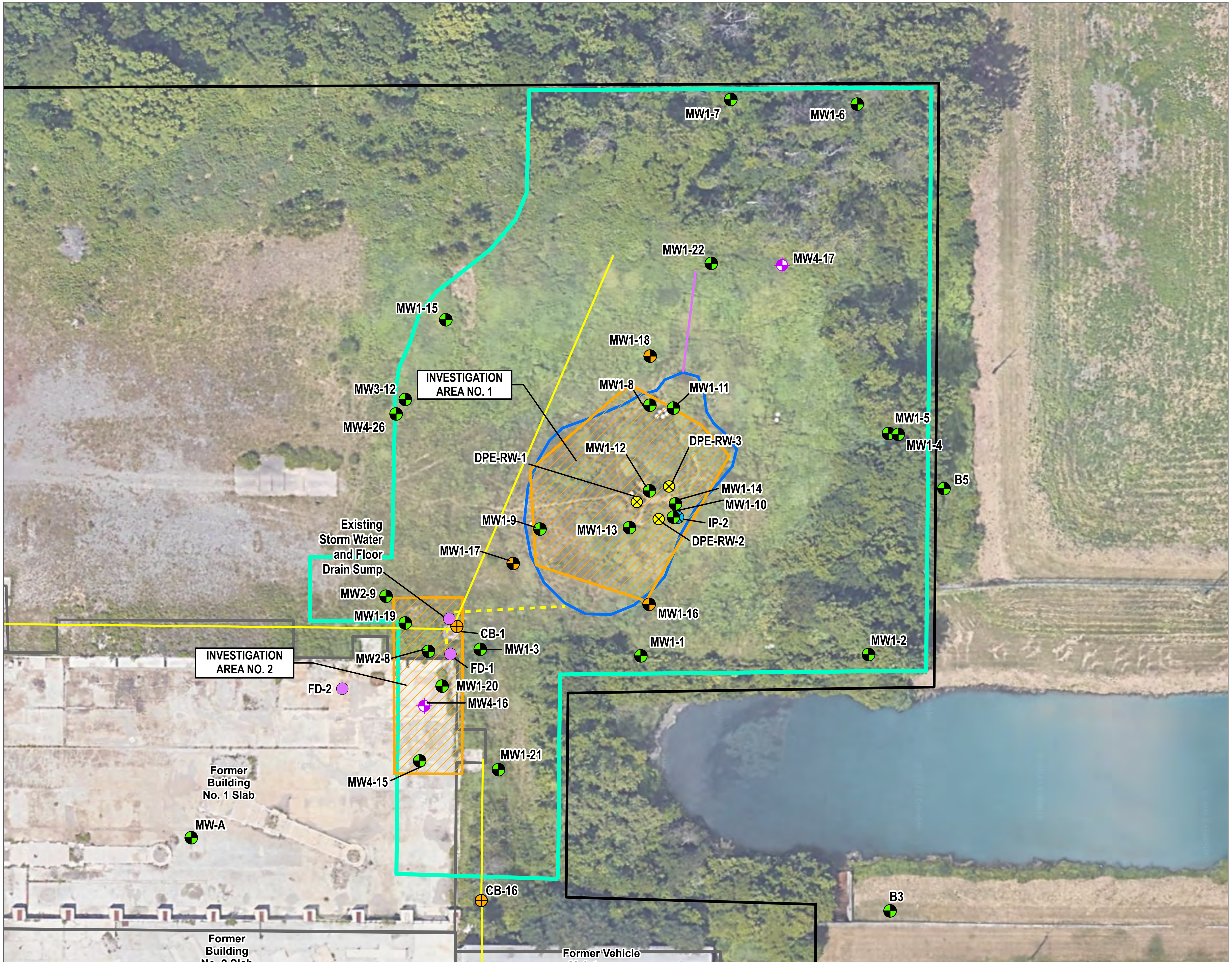

LEGEND

- APPROXIMATE SITE BOUNDARY
- FORMER BUILDINGS
- APPROXIMATE FORMER POND OUTLINE
- INVESTIGATION AREA
- APPROXIMATE LIMITS OF OU1
- EXISTING SEWER
- HISTORIC SEWER
- EXISTING STORM SEWER
- EXISTING CATCH BASIN
- EXISTING FLOOR DRAIN
- EXISTING DPE RECOVERY WELL
- EXISTING INJECTION POINT
- EXISTING BEDROCK INTERFACE MONITORING WELL
- EXISTING OVERBURDEN MONITORING WELL
- EXISTING BEDROCK WELL

NOTES:

1. PHYSICAL FEATURES AND BOUNDARIES ARE FROM FEASIBILITY STUDY REPORT, FORMER PLATING POND (OPERABLE UNIT 1), JULY 2021, PREPARED BY HDR.
2. LOCATIONS AND DIMENSIONS OF EXISTING FEATURES ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY CONTRACTOR.

N

1:600
1" = 50'

BASE MAP: GOOGLE EARTH IMAGERY
SHEET SIZE: 11X17L

0 25 50 FEET

PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORMER AIR FORCE PLANT NO. 51 - SITE NO. 828156
4777 DEWEY AVENUE
GREECE, NEW YORK 14612

TITLE:
OPERABLE UNIT 1: EXISTING CONDITIONS

DRAWN BY:	L. LILL	PROJ. NO.:	481220.0000.0000
CHECKED BY:	C. LUTHER	DRAWING 3	
APPROVED BY:	K. SULLIVAN		
DATE:	JUNE 2022		

TRC
10 Maxwell Drive
Clifton Park, NY 12065
Phone: 518-348-1190

FILE: OU1.aprx

Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet; Map Rotation: 90
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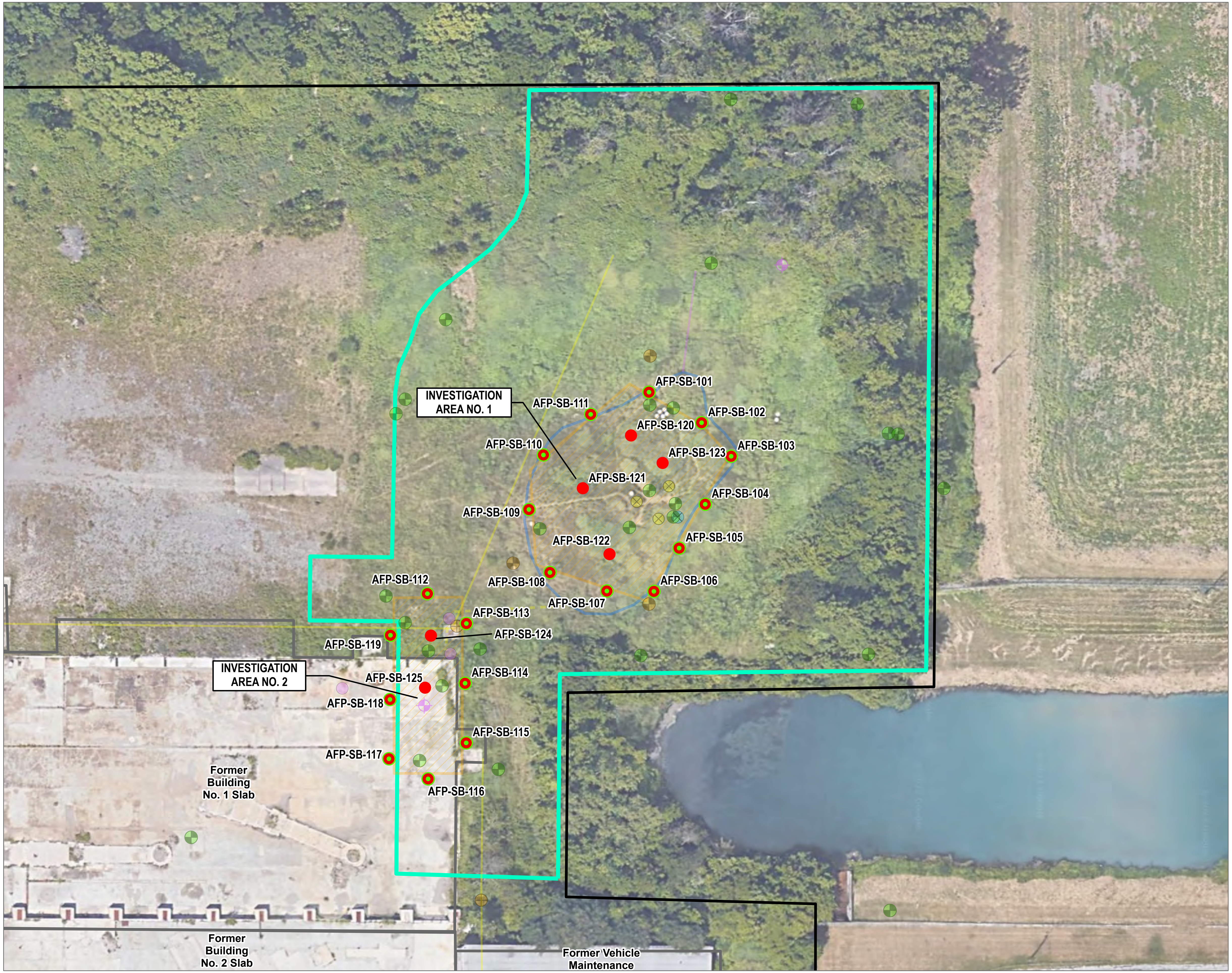

LEGEND

- APPROXIMATE SITE BOUNDARY
- FORMER BUILDINGS
- APPROXIMATE FORMER POND OUTLINE
- INVESTIGATION AREA
- APPROXIMATE LIMITS OF OU1
- EXISTING SEWER
- HISTORIC SEWER
- EXISTING STORM SEWER
- EXISTING CATCH BASIN
- EXISTING FLOOR DRAIN
- EXISTING DPE RECOVERY WELL
- EXISTING INJECTION POINT
- EXISTING BEDROCK INTERFACE MONITORING WELL
- EXISTING OVERBURDEN MONITORING WELL
- EXISTING BEDROCK WELL
- PROPOSED INVESTIGATION AREA SOIL BORING - WASTE CHARACTERIZATION SAMPLES, DEPTH TO TOP OF BEDROCK
- PROPOSED PERIMETER SOIL BORING - CONFIRMATORY EXCAVATION FOOTPRINT AND GEOTECH SAMPLES, DEPTH TO TOP OF BEDROCK

NOTES:

1. PHYSICAL FEATURES AND BOUNDARIES ARE FROM FEASIBILITY STUDY REPORT, FORMER PLATING POND (OPERABLE UNIT 1), JULY 2021, PREPARED BY HDR.

2. LOCATIONS AND DIMENSIONS OF EXISTING FEATURES ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY CONTRACTOR.

N

1:600
1" = 50'

BASE MAP: GOOGLE EARTH IMAGERY
SHEET SIZE: 11X17L

0 25 50 FEET

PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORMER AIR FORCE PLANT NO. 51 - SITE NO. 828156
4777 DEWEY AVENUE
GREECE, NEW YORK 14612

TITLE:
OPERABLE UNIT 1: INVESTIGATION AREA PROPOSED SOIL BORING LOCATIONS

DRAWN BY:	L. LILL	PROJ. NO.:	481220.0000.0000
CHECKED BY:	C. LUTHER	DRAWING 4	
APPROVED BY:	K. SULLIVAN		
DATE:	JUNE 2022		

TRC
10 Maxwell Drive
Clifton Park, NY 12065
Phone: 518-348-1190

FILE: OU1.aprx

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LEGEND

- APPROXIMATE SITE BOUNDARY
- FORMER BUILDINGS
- APPROXIMATE FORMER POND OUTLINE
- INVESTIGATION AREA
- APPROXIMATE LIMITS OF OU1
- EXISTING SEWER
- HISTORIC SEWER
- EXISTING STORM SEWER
- EXISTING CATCH BASIN
- EXISTING FLOOR DRAIN
- EXISTING DPE RECOVERY WELL
- EXISTING INJECTION POINT
- EXISTING BEDROCK INTERFACE MONITORING WELL
- EXISTING OVERBURDEN MONITORING WELL
- EXISTING BEDROCK WELL
- PROPOSED PUMPING TEST EQUIPMENT STAGING AREA
- PROPOSED BEDROCK MONITORING WELL
- PROPOSED PIEZOMETER
- PROPOSED PUMP TEST WELL

NOTES:

1. PHYSICAL FEATURES AND BOUNDARIES ARE FROM FEASIBILITY STUDY REPORT, FORMER PLATING POND (OPERABLE UNIT 1), JULY 2021, PREPARED BY HDR.
2. LOCATIONS AND DIMENSIONS OF EXISTING FEATURES ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY CONTRACTOR.
3. PROPOSED PUMP TEST WELL, PIEZOMETER, AND BEDROCK MONITORING WELL LOCATIONS ARE APPROXIMATE AND WILL BE DETERMINED IN THE FIELD BY ENGINEER.
4. REFER TO DRAWING 7 FOR PUMP TEST WELL, PIEZOMETER, AND BEDROCK MONITORING WELL CONSTRUCTION DETAILS.
5. UPON SOIL BORING COMPLETION, PIEZOMETERS WILL BE INSTALLED IN AFP-SB-110, AFP-SB-112, AFP-SB-121, AND AFP-SB-125.
6. AFTER SOIL BORING COMPLETION, DIAMETERS OF BOREHOLES AFP-SB-111 AND AFP-SB-115 SHALL BE ENLARGED FOR BEDROCK MONITORING WELL INSTALLATION AT THESE LOCATIONS.

1:600
1" = 50'

BASE MAP: GOOGLE EARTH IMAGERY
SHEET SIZE: 11X17L

0 25 50 FEET

PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORMER AIR FORCE PLANT NO. 51 - SITE NO. 828156
4777 DEWEY AVENUE
GREECE, NEW YORK 14612

TITLE: **OPERABLE UNIT 1: PROPOSED BEDROCK MONITORING WELL, OVERBURDEN PIEZOMETER, AND PUMP TEST WELL LOCATIONS**

DRAWN BY:	L. LILL	PROJ. NO.:	481220.0000.0000
CHECKED BY:	C. LUTHER		**DRAWING 5**
APPROVED BY:	K. SULLIVAN		
DATE:	JUNE 2022		

TRC
10 Maxwell Drive
Clifton Park, NY 12065
Phone: 518-348-1190

FILE: OU1.aprx

Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet Map Rotation: 90
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LEGEND

- APPROXIMATE SITE BOUNDARY
- FORMER BUILDINGS
- APPROXIMATE FORMER POND OUTLINE
- INVESTIGATION AREA
- APPROXIMATE LIMITS OF OU1
- EXISTING SEWER
- HISTORIC SEWER
- EXISTING STORM SEWER
- EXISTING CATCH BASIN
- EXISTING FLOOR DRAIN
- EXISTING DPE RECOVERY WELL
- EXISTING INJECTION POINT
- EXISTING BEDROCK INTERFACE MONITORING WELL
- EXISTING OVERBURDEN MONITORING WELL
- EXISTING BEDROCK WELL
- PROPOSED TEST PIT

NOTES:

1. PHYSICAL FEATURES AND BOUNDARIES ARE FROM FEASIBILITY STUDY REPORT, FORMER PLATING POND (OPERABLE UNIT 1), JULY 2021, PREPARED BY HDR.

2. LOCATIONS AND DIMENSIONS OF EXISTING FEATURES ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY CONTRACTOR.

3. PROPOSED TEST PIT LOCATIONS ARE APPROXIMATE AND WILL BE DETERMINED IN THE FIELD BY ENGINEER.

N

1:600
1" = 50'

BASE MAP: GOOGLE EARTH IMAGERY
SHEET SIZE: 11X17L

0 25 50 FEET

PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORMER AIR FORCE PLANT NO. 51 - SITE NO. 828156
4777 DEWEY AVENUE
GREECE, NEW YORK 14612

TITLE:
OPERABLE UNIT 1: PROPOSED TEST PIT LOCATIONS

DRAWN BY:	L. LILL	PROJ. NO.:	481220.0000.0000
CHECKED BY:	C. LUTHER	DRAWING 6	
APPROVED BY:	K. SULLIVAN		
DATE:	JULY 2022		

TRC
10 Maxwell Drive
Clifton Park, NY 12065
Phone: 518-348-1190

FILE: OU1.aprx

Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet; Map Rotation: 90
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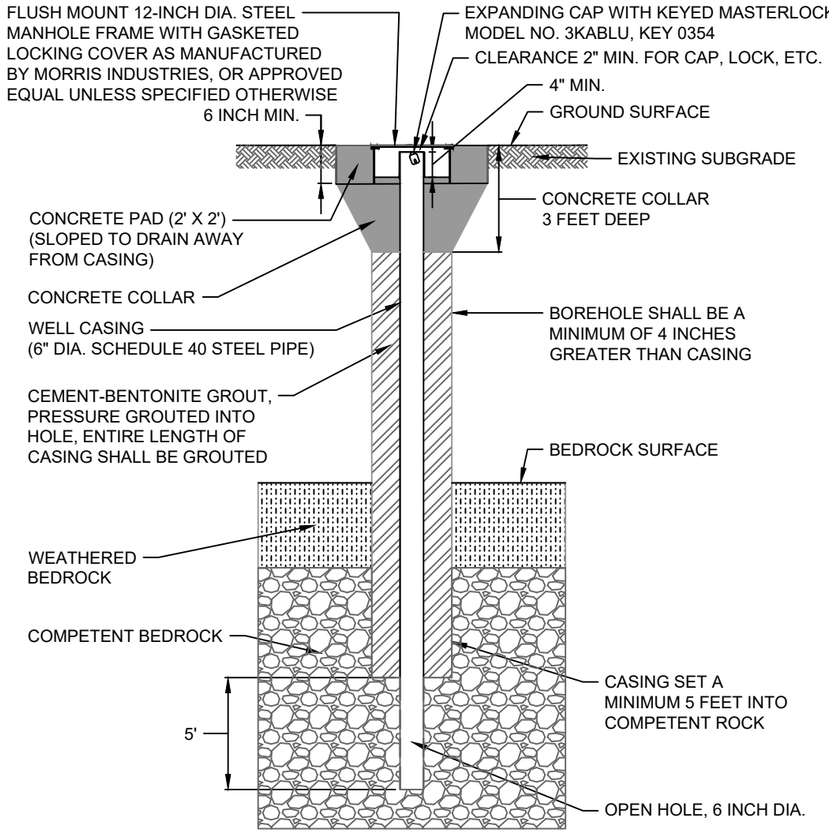
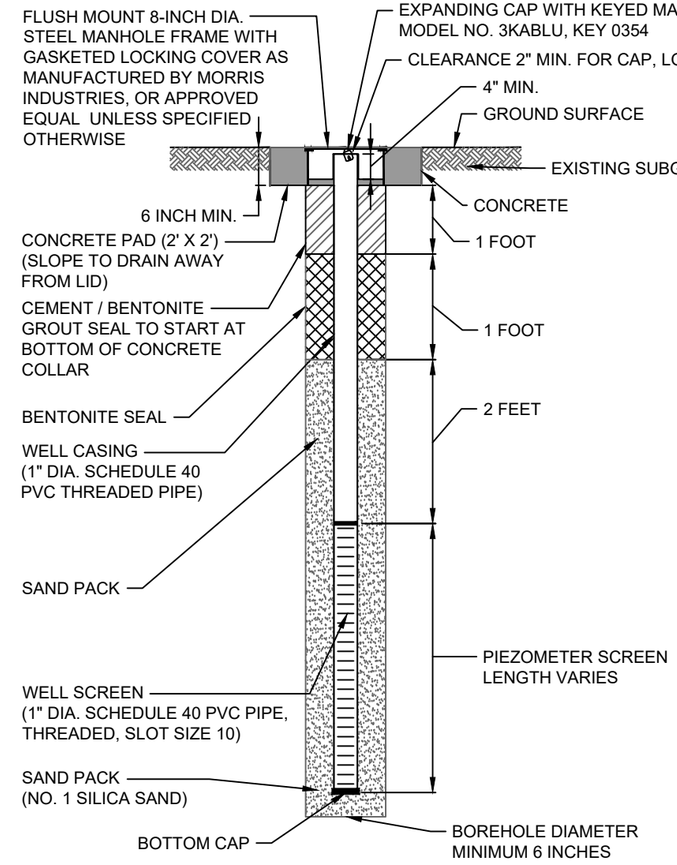


TYPICAL BEDROCK MONITORING WELL CONSTRUCTION DETAIL

1 DWG. 7

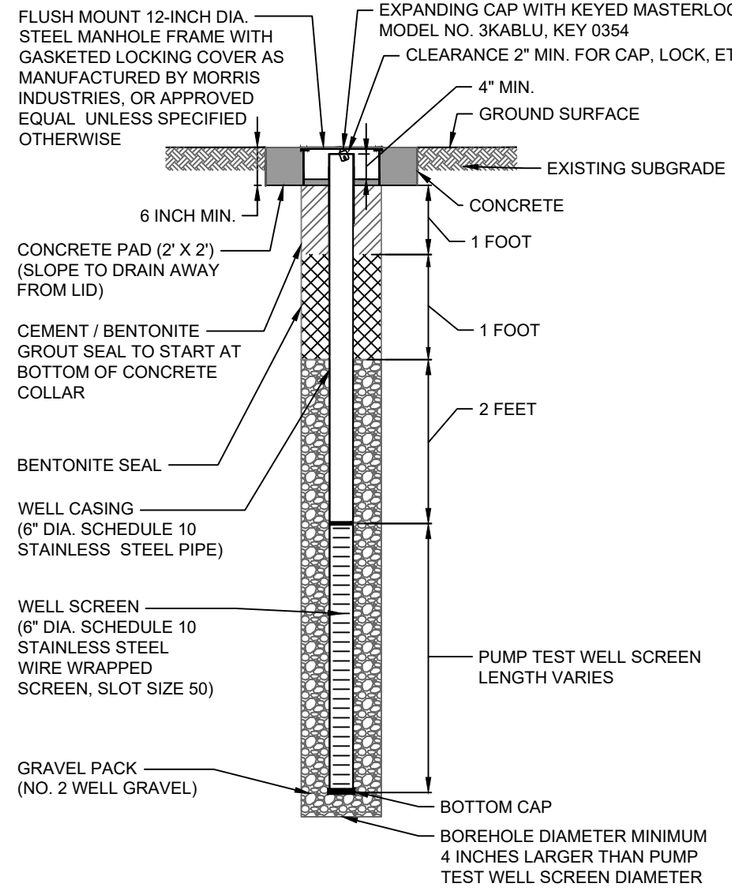
NOT TO SCALE



TYPICAL OVERBURDEN PIEZOMETER CONSTRUCTION DETAIL

2 DWG. 7

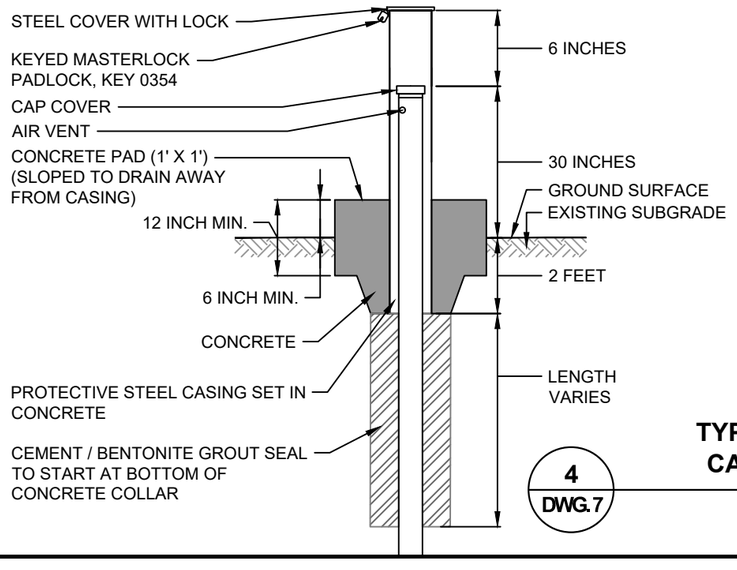
NOT TO SCALE



TYPICAL PUMP TEST WELL CONSTRUCTION DETAIL

3 DWG. 7

NOT TO SCALE



TYPICAL STICKUP PROTECTIVE CASING COMPLETION DETAIL

4 DWG. 7

NOT TO SCALE

NOTES:

1. WELLS SHALL BE COMPLETED WITH STICK-UP PROTECTIVE CASINGS WHEN INSTALLED IN UNPAVED AREAS AND LOCATIONS OUTSIDE OF ACCESS ROADS IN INVESTIGATION AREA 1. DIAMETER OF PROTECTIVE CASING SHALL BE 4 INCHES LARGER THAN WELL DIAMETER.
2. ALL PADLOCKS SHALL BE KEYED-ALIKE. FURNISH 3 KEYS FOR EACH LOCK.
3. IN LOCATIONS OF EXISTING PAVEMENT AND FORMER BUILDING FOUNDATION/FLOOR SLAB, NEATLY SAWCUT FOR PAD INSTALLATION TO CREATE OPENING IN CONCRETE OR PAVEMENT PRIOR TO WELL INSTALLATION.

NOT TO SCALE
PAPER SIZE: 11" BY 17"

PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORMER AIR FORCE PLANT NO. 51- SITE NO. 828156
4777 DEWEY AVENUE
GREECE, NEW YORK 14612

TITLE: **PROPOSED BEDROCK MONITORING WELL, OVERBURDEN PIEZOMETER, AND PUMP TEST WELL DETAILS**

DRAWN BY:	H. DELGADO	PROJ NO.:	481220.0000.0000
CHECKED BY:	C. LUTHER		**DRAWING 7**
APPROVED BY:	K. SULLIVAN		
DATE:	JUNE 2022		

TRC
1430 Broadway, 10th Floor
New York, NY 10018
Phone: 212.221.7822
www.TRCcompanies.com

FILE NO.: Dwg. 7 - Prop. BR MW, OB Piez., & PTW Det. (FAFP51).dwg

APPENDIX A
REMEDIAL INVESTIGATION REPORT
(will be provided upon request)