REVISED LOT 5E, 5D, RAILROAD PARCEL INTERIM REMEDIAL MEASURES WORK PLAN

Former Federal Creosote Site
City of Rome, Oneida County, New York

Prepared for

Greenfield Environmental Multistate Trust LLC
Trustee of the Multistate Environmental Response Trust

Prepared by:

Haley & Aldrich of New York

For Submittal to:

New York State Department of Environmental Conservation

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This *Revised* Lot 5E, 5D, Railroad Parcel Interim Remedial Measures Work Plan was prepared by Haley & Aldrich of New York (Haley & Aldrich) for Greenfield Environmental Multistate Trust LLC, not individually but solely in its representative capacity as Trustee of the Multistate Environmental Response Trust (the Multistate Trust).

Austin Hofmeister
Project Manager
Greenfield Multistate Environmental Trust LLC
Trustee of the Multistate Environmental Response Trust
By: Greenfield Environmental Trust Group, Inc., Member

Claire L. Mondello, CHMM
Senior Associate | Program Manager
Haley & Aldrich of New York

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1. Introduction

This *Revised* Interim Remedial Measures Work Plan for Lot 5E, 5D, and Railroad Parcel (Lot 5E/5D/RR IRM WP) of the Former Kerr-McGee/Tronox Federal Creosote Site in the City of Rome, Oneida County, New York (the "Site"; see Figure 1) is being submitted by Greenfield Environmental Multistate Trust LLC, not individually but solely in its representative capacity as Trustee for the Multistate Environmental Response Trust (the Multistate Trust), in accordance with the New York State Department of Environmental Conservation's (NYSDEC) DER-10/Technical Guidance for Site Investigation and Remediation (DER-10) and a letter providing comments to the original May 2021 Lot 5E/5D/RR IRM WP dated July 22, 2021. The Multistate Trust has implemented Environmental Actions pursuant to NYSDEC-approved work plans at and around the Site since assuming responsibility for the Site on February 14, 2011, in connection with the global resolution of the Tronox Inc. bankruptcy. This IRM anticipates excavation and disposal of approximately 24,000 tons of impacted material plus discharge of contaminated groundwater to facilitate excavation activities.

1.1 BACKGROUND

The Site is a portion of a 189+/- acre complex formerly owned and operated by the Federal Creosote Company from the early 1900s until 1959. Historical operations included the production and preservation treatment of wooden railroad ties with creosote. The property was later developed into an industrial park in the 1970s. The Multistate Trust, which was established pursuant to the global settlement of the Tronox bankruptcy, took title to certain portions of the Site in 2011 and is responsible for managing and funding environmental actions at the Site pursuant to NYSDEC-approved work plans and budgets. The Site consists of multiple lots, including the "Railroad Parcel" (see Figure 2). Five of the lots are associated with NYSDEC remedial programs. Lot 3A is designated as Site #633088 Lots designated as 3B, 5E, and a portion of the Railroad Parcel are subject to NYSDEC Order on Consent Site #633091. Lots 5D and 6 are designated as an offsite property to Site #633091. Lot 4 is associated with a separate NYSDEC Site #633087. To date, investigations have identified the presence of contaminants associated with former wood-treating operations across several of the Site's lots. Interim Remedial Measure (IRM) evaluations and significant source removal actions on Lots 3A and 3B (parcels not owned by the Multistate Trust) have been previously conducted in accordance with NYSDEC-approved IRM work plans. Creosote impacts were documented during investigations conducted in 2014 and 2015 on Lots 5D and 6 (South Wetland) beyond the limits of this IRM. The Conceptual Site Model suggests that the creosote impacts migrated into the South Wetland overland and via drainage ways, sinking into the subsurface once reaching a topographic low and migrating in the subsurface via preferential pathways until reaching an equilibrium along the surface of more impermeable clay (Haley & Aldrich, 2016). The delineated limits of the Lot 5D and Lot 6 impacts are shown on Figure 3.

Lot 5E, Lot 5D and the Railroad Parcel (IRM Site) are shown on Figure 2, portions of which are the subject of this IRM Work Plan. Lots 5E and 5D are owned by the Multistate Trust, while the Railroad Parcel is owned by the Genesee & Mohawk Valley Railroad. Additionally, National Grid has an electrical utility easement (National Grid Easement) on a portion of the IRM Site (Lot 5E) associated with 115 kilovolt (kV) overhead power lines. The IRM Site was previously investigated by Plumley Associates (Plumley) between 2002 and 2009 under the 2002 Voluntary Cleanup Agreement (VCA) entered into by, among others, Kerr-McGee Chemical, LLC (Kerr-McGee) and the NYSDEC. Additional investigations were conducted by Haley & Aldrich on behalf of the Multistate Trust in 2017, 2018 and 2020. The current conceptual site model (CSM) for this IRM Site suggests that creosote from former

wood-treating operations on Lots 3A, 3B and 5E migrated over the ground surface and through the subsurface, through the IRM Site and to the wetlands located on Lot 5D to the south.

The IRM Site currently consists of gravel roadways, an abandoned railroad bed/tracks, wetlands, and wooded areas. Utility towers and overhead electrical lines traverse the southern portions of Lot 5E, while former/abandoned railroad beds traverse the Railroad Parcel. IRM activities will focus on areas of Lot 5E, 5D and the Railroad Parcel located immediately south of Lot 3B.

Portions of the IRM site are wetlands and mature trees, which will require NYSDEC and US Army Corps of Engineers (USACE) permissions to disturb. The mature trees may provide habitat for the Northern Long-eared bat and Indiana bat and therefore, land clearing needs to take place between November 1st and April 1st when bats have moved into their hibernaculum, or sooner subsequent to appropriate consultations with the NYSDEC and US Fish & Wildlife Service.

1.2 SITE CONDITIONS AND PREVIOUS ENVIRONMENTAL ACTIONS

Subsurface geologic conditions beneath the IRM Site were determined based on previous work conducted at the Site between 2002 and June 2020. Sand and/or gravel fill materials and alluvial sands and silts typically overlie a complex and spatially heterogeneous sequence of glaciolacustrine clays and sands. Generally, an initial glaciolacustrine clay deposit is present beneath the IRM site between approximately 7 and 16.5 feet below ground surface (bgs). This glaciolacustrine clay deposit varies in thickness from approximately 1.5 to 10 feet and is typically underlain by a 5 to 10 feet thick glaciolacustrine sand deposit, beneath which are additional glaciolacustrine clays of unknown thickness. Based on previous investigations described below, subsurface creosote contamination appears to be generally limited to the alluvial sand and fill and does not generally appear to extend into or below the shallow glaciolacustrine clay deposit, herein referred to as the "confining clay layer".

Starting around 2002, investigations and remedial actions at the IRM Site were conducted on behalf of Kerr-McGee by Plumley. These investigations identified two primary sources of contamination impacting IRM Site soil and/or groundwater: liquid creosote releases and cinder fill. During 2003 remedial investigations, a dense non-aqueous phase liquid (DNAPL) plume was reportedly identified beneath Lot 5E and the Railroad Parcel, generally within the sand deposit above an observed confining clay layer. Groundwater in this area was also identified as impacted by Polycyclic Aromatic Hydrocarbons (PAHs) and benzene, toluene, ethylbenzene, and xylenes (collectively referred to as "BTEX"). Elevated concentrations of PAHs and metals attributable to cinder fill were also identified in shallow (0.5 to 3 feet below ground surface) subsurface soils throughout the IRM Site.

Haley & Aldrich performed subsequent investigations at the IRM Site in 2017 as part of supplemental investigation activities (2017 Supplemental Investigation) related to multiple Site parcels (Lot 3A, Lot 4, Lot 5E, and the Railroad Parcel) (Haley & Aldrich, 2018a). Findings of the 2017 Supplemental Investigation pertaining to the IRM Site included visual observations of creosote-saturated soil up to 7.5 feet thick generally found above the confining clay layer between 7 and 16.5 feet below the ground surface (Figures 4 through 7).

In 2018, Haley & Aldrich performed a Cinder Ash Investigation (Haley & Aldrich, 2018b) across Lot 3B, Lot 5E, the Railroad Parcel, the northern portion of Lot 5D, and the western portion of Lot 4 to assess the nature and extent of historic cinder ash fill material typically present in layers of various thicknesses between ground surface and two feet below ground surface. The objective of the

investigation was to test cinder ash fill found in the top two feet across the investigation area for toxicity hazardous waste characteristic. The cinder ash fill sampled and tested during the investigation did not exhibit hazardous waste characteristics, toxicity (from metals) or corrosivity, indicating minimum removal of only one foot of fill containing cinder ash is expected to be required for wetland restoration at the IRM site.

Based on the findings of the 2017 Supplemental Investigation, the NYSDEC requested on July 1, 2019, that the Multistate Trust prepare a Limited Interim Remedial Measure Alternatives Analysis (IRMAA) (Haley & Aldrich, 2019) to identify remedial actions for the IRM Site to address creosote-saturated soils (source material) visually identified and documented during previous environmental investigations. Following review of the Limited IRMAA, the NYSDEC identified excavation of creosote-saturated soils as the preferred IRM alternative and requested that the Multistate Trust prepare an IRM work plan for the purpose of removing visible creosote-saturated soils identified beneath the IRM site.

In June 2020, Haley & Aldrich conducted a supplementary subsurface investigation to obtain geotechnical data to support the engineering soil properties used to design the temporary support of excavation system for the proposed IRM excavation area. The supplementary subsurface explorations identified sandy glaciolacustrine deposits between the shallow and generally confining glaciolacustrine clay layer observed during previous investigations, and a deeper glaciolacustrine clay deposit.

1.3 POST IRM SITE CONDITIONS ON ADJACENT LOT 3B

An IRM was conducted on Lot 3B adjacent to the IRM Site to the north (Figure 2) in 2016 and 2017. The work was conducted under a separate Lot 3B IRM WP dated 2015 and approved by the NYSDEC in January 2016. The work was also completed under a USACE Nationwide Permit (NWP) No. 38 received on February 5, 2016, and NYSDEC activity-specific Water Quality Certification (WQC) received on May 12, 2016. The NWP and WQC included Lot 3B and portions of Lot 5E within the current IRM Site.

At the conclusion of the Lot 3B IRM, a consistent one foot of cover was not placed as typical for site restoration. In June 2018, Lot 3B was temporarily stabilized with crushed stone for stormwater management purposes. The requirements of the NWP were that Lot 3B would be restored as wetland and it was intended that following remediation of the IRM site, Lot 3B would be restored contemporaneously with the IRM Site.

Following discussions with the USACE and NYSDEC, the USACE agreed that the original NWP #38 could be satisfied with an In Lieu Fee (ILF) payment. While the NYSDEC requires restoration of the Lot 3B wetlands, it concurred that subsequent mitigation of wetlands on Lot 5E and Lot 4 at a 1:1 ratio to make up for the loss of wetland on Lot 3B following conclusion of the Lot 5E/5D/RR IRM would meet that requirement. This would allow for Lot 3B to remain as an improved lot for future use by nearby property owners and future remedial activities. The USACE provided communication in July 2020 that they were closing the NWP No. 38 permit associated with Lot 3B.

Due to this change, evaluation of the current Lot 3B cover is included as part of this IRM WP and further discussed in Section 2.5.2 below.

1.4 REGULATORY CONSIDERATIONS

1.4.1 Hazardous Waste Determination

The NYSDEC has previously determined in a letter dated August 11, 2015, that waste generated from remediation of the Site is considered a listed hazardous waste (F034). This determination was made pursuant to 6NYCRR Part 371.4 and on the basis that process wastes from facilities that use creosote formulations are considered F034 listed hazardous waste. A contained-in determination may be granted by the NYSDEC if the remediation waste meets applicable criteria, allowing for off-Site disposal as non-hazardous waste at a permitted Part 360 facility. For purposes of this Lot 5E/5D/RR IRM WP, all creosote-impacted remediation waste will be managed and disposed of as F034 hazardous waste unless granted a contained-in determination. Specific IRM work procedures follow in Section 2 below.

1.4.2 US Army Corps of Engineers Permitting

As defined by the USACE, Waters of the United States include lakes, ponds, streams, (intermittent and perennial), and wetlands which are regulated under Sections 401 and 404 of the Clean Water Act. Jurisdictional wetlands are defined as *"Those that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."*

Through design and planning, significant siting efforts have been made to avoid and/or minimize potential impacts to delineated wetland and streams to the maximum extent practicable. However, unavoidable temporary disturbance to Waters of the U.S. will result from IRM activities. As such, the Multistate Trust will submit a Pre-Construction Notification to the USACE in association with this Lot 5E/5D/RR IRM WP. Based on current IRM planning, the extent of construction disturbance, construction/excavation activities will result in the temporary disturbance of approximately 1.12 acres of wetlands. There will be no temporary or permanent impacts to any streams. There will not be any permanent loss of wetlands, nor will permanent forested wetland conversion impacts occur as a result of IRM activities.

1.5 PURPOSE

The purpose of this IRM is to conduct source removal of visible creosote-saturated soils beneath the IRM Site, as identified during previous subsurface investigations. Groundwater impacts and isolated/discontinuous creosote-saturated soils identified outside of the "remediation area" presented in the IRMAA are excluded from this Lot 5E/5D/RR IRM WP.

The overall objectives of this Lot 5E/5D/RR IRM WP include:

1. To remove, and dispose of, to the extent practical visible creosote-saturated soil, fill, and debris from the IRM Site;
2. to achieve Site conditions that will allow for no further remedial action requirements related to visible creosote non-aqueous phase liquid (NAPL) contamination beneath the IRM Site; and,
3. to document remaining Site conditions to inform future Site management.

2. Interim Remedial Measures Work Plan

This Lot 5E/5D/RR IRM WP provides a description of the activities necessary to complete the IRM.

2.1 REMEDIAL APPROACH

2017 Supplemental Investigation activities on Lots 5E, 5D and the Railroad Parcel (boring locations on an approximately 20-foot grid, with localized areas unsampled due to drill rig inaccessibility) delineated the extent of visible creosote impacts on Lots 5E, 5D and the Railroad Parcel to the extent practical for remediation. The proposed IRM excavation area (see Figures 2 through 7) is believed to contain the largest volume of likely contiguous creosote-saturated soils. Some creosote-saturated soils were identified in areas outside of the proposed excavation, and excavation of these soils are not included in this IRM WP.

The IRM will consist of excavation and removal of visible creosote-contaminated soils and concrete debris from within the IRM excavation area. The extent of the excavation area is shown on Figures 4 through 7. The excavation will be generally conducted between the ground surface and the confining clay layer between approximately 7 and 16.5 ft bgs. Depths to the confining clay layer vary throughout the IRM Site and are generally deepest in northern portions of the IRM excavation area. Excavated soil, concrete, and other debris will be disposed of off-Site.

2.2 GENERAL

The IRM work area will generally consist of an excavation area extending across parts of Lots 5D, 5E and the Railroad Parcel, the surrounding work area to support equipment traffic and materials handling, and stockpile and staging areas on the adjacent Lot 3B (see Figure 8). Based on current site conditions, approximately 1/3 of the planned IRM excavation will be conducted within the 60-foot-wide National Grid utility easement and beneath 115 kilovolt (kV) overhead electric transmission lines. The excavation is located generally in the center of two towers (see Figure 8). The closest tower to the excavation is approximately 180 feet away. IRM excavations will be conducted in phases to minimize activities within the National Grid Easement area. Excavation cells (see Figure 9) will be constructed with the use of sheet pile walls to minimize groundwater intrusion and for sidewall structural support (see Drawing S-101; Appendix B). The work areas will be surrounded with temporary construction fence for safety and Site security as shown on Figure 2. A design drawing set was prepared in July 2020 for submittal to National Grid to support working within their easement on Lot 5E based on the 2020 configuration and height of the powerlines. Those drawings are included for reference in Appendix B and referenced as appropriate in this document.

As of the date of this IRM WP, National Grid is tentatively planning to upgrade the high-voltage overhead electric transmission lines within the easement on Lot 5E. The extent of the upgrades is unknown, however if upgrades occur prior to the start of IRM work that alter the remedial design or approach (e.g., taller poles), an addendum to this Lot 5E/5D/RR IRM WP will be provided for NYSDEC review and approval.

Work will be conducted in accordance with a Site-specific Health and Safety Plan (HASP). Community air monitoring will be conducted during excavation activities in accordance with the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP). A copy of the generic

CAMP is included in Appendix A. Other activities to be performed during excavation include odor and dust suppression (as required) further discussed in Section 2.4.5 below.

As noted in Section 1.3.1 above, the NYSDEC has previously determined in a letter dated August 11, 2015, that waste generated from remediation of the Site is considered a listed hazardous waste (F034). This determination was made pursuant to 6NYCRR Part 371.4 and on the basis that process wastes from facilities that use creosote formulations are considered F034 listed hazardous waste. A contained-in determination may be granted by the NYSDEC if the remediation waste meets applicable criteria, allowing for off-Site disposal as non-hazardous waste at a permitted Part 360 facility. For purposes of this Lot 5E/5D/RR IRM WP, all creosote-impacted remediation waste will be managed and disposed of as F034 hazardous waste unless granted a contained-in determination. Specific IRM work procedures follow in the Sections below.

2.3 PRE-EXCAVATION ACTIVITIES

2.3.1 Site Survey

A surveyor will be engaged to perform a topographic survey of the excavation area to document existing Site feature elevations and surface grade. In addition, the surveyor will mark out the planned excavation limits as shown on Figures 2, 9 and 10. Those limits will be used to collect in-situ pre-excavation sidewall documentation samples and layout where sheet pile walls will be installed.

2.3.2 Pre-Excavation Tree-Clearing

To facilitate access to the IRM excavation and enlarge material staging areas, a contractor will be engaged to fell trees in selected portions of the IRM work area, as shown on Figure 2. Tree felling is proposed to take place between November 1 and March 31 to avoid incidental "Take", of the northern long-eared bat (*Myotis septentrionalis*), a federal and state protected species listed as Threatened.

As part of its review of the project for impacts to Waters of the U.S., the USACE and the USFWS will conduct a coordinated review to assess any significant adverse impacts to threatened and endangered species per the Endangered Species Act. This coordinated review will include all areas of the project including non-regulated Waters of the U.S. such as uplands. Manual felling of trees will take place on the project, but no mechanized clearing of the trees or other vegetation will take place until the coordinated review is complete and the USACE has granted its approval.

Prior to tree felling, a survey will be performed of the trees to be cleared that are greater than three inches in diameter. The survey will include identification and location of the trees. Data collected will include location of the tree (identified by survey or GPS), species name, and diameter at breast height (DBH). The data will be compiled and included within the IRM Construction Completion Report (CCR).

2.3.3 Pre-Excavation Test Pit Explorations

Dried creosote piles were observed along the southern boundary of the proposed IRM excavation (see Figure 2). Following tree felling activities, a contractor will be engaged to excavate test pits in the vicinity of the dried creosote piles to approximate the extents of each pile, and to appropriately plan removal, if deemed appropriate.

Site reconnaissance activities and previous subsurface investigations (Haley & Aldrich 2018a, 2020) identified several at-grade and below grade concrete structures south of the gravel access road and along the western side of the proposed IRM excavation. Test pits will be excavated in this area to assess the vertical and lateral extent of these potential obstructions to sheet pile driving required during proposed remedial excavation activities.

2.3.4 Pre-Excavation Sidewall Documentation Sampling

Using surveyed excavation limits as a guide, documentation sidewall samples will be collected prior to driving sheet pile. Approximately 31 soil borings will be advanced along each excavation cell sidewall (Figure 10). In accordance with DER-10, soil samples will be collected from 26 of the boring locations, achieving an approximate sampling interval of 1 sample for every 30 feet of the proposed 774 ft long IRM excavation perimeter. The remaining 5 documentation sampling locations will provide visual evidence of soil conditions that will remain along the perimeter of the proposed IRM excavation.

Soil borings will be advanced using a Geoprobe drill rig to the confining clay layer, variably observed between approximately 7 to 16.5 feet bgs. The recovered soils will be screened for visual evidence of creosote and logged using the procedure outlined in the 2017 Supplemental Investigation. If evidence of creosote-saturation is observed (to be determined in consultation with the NYSDEC), step-out borings will be installed until creosote-saturation is no longer observed. If the locations of the sidewall samples deviate from the original surveyed line based on field observations, the new locations of the sidewall documentation samples will be surveyed and marked to allow for installation of the sheet pile in the proper locations.

A discrete soil sample will be collected from each boring where creosote-saturation was not observed from the most visually contaminated interval (or at one half the depth of excavation, if no visual contamination is observed). Documentation samples will be analyzed for target compounds list (TCL) volatile organic compounds (VOCs), and TCL semi-volatile organic compounds (SVOCs), per the sampling and analysis plan set forth in Table I and shown on Figure 10.

2.3.5 Site-Preparation

Immediately prior to the commencement of excavation activities, a temporary construction fence and silt fence will be installed around the work areas for the initial phase of IRM activities. Additional IRM Site preparation activities will include gravel roadway improvements, construction signage and truck height goal post placement, dewatering pad construction, field office/trailer placement, frac tank mobilization, and connection of the excavation dewatering system to a designated sewer inlet. A generalized construction site layout is shown on Figure 8.

2.3.6 Well Decommissioning

Groundwater monitoring and/or extractions wells are located within or adjacent to the proposed IRM excavation (see Figure 2). These wells were installed by Plumley or Haley & Aldrich during previous site investigation or remedial activities.

Monitoring or extraction wells that are currently within the limits of the excavation will be removed as part of the excavation. Monitoring wells on the periphery of the excavation that will be damaged or otherwise preclude planned construction activities, will be decommissioned per NYSDEC Policy (CP) 43 –

Groundwater Monitoring Well Decommissioning Policy issued November 3, 2009. Monitoring wells not impacted by the excavation or site restoration will remain onsite.

The primary removal method will be the Casing Pulling method described in Section 2.3 of NYSDEC CP-43. A drilling or construction subcontractor will be engaged to pull the casing by lifting. Grout will be added during the pulling with the grout filling the space once occupied by the well casing. If the Casing Pulling method is not successful, the well will be decommissioned using the Grouting In-Place method in Section 2.1 of NYSDEC CP-43. The general procedure includes grouting the seals and borehole up to approximately 5 feet bgs and cutting and removing the top 5 feet of casing.

2.3.7 Installation of Sheet Pile

The excavation area will be sectioned into 25 excavation cells (Figure 9; see Drawing C-400 in Appendix B). The cells will be constructed using interlocking steel sheet piles to stabilize the excavation area, limit groundwater intrusion, and facilitate excavation dewatering. Sheet pile installation and removal within the National Grid easement will require a minimum approach distance to the transmission lines within dangerous proximity. Necessary precautions and actions will be taken to protect against the danger of contact with high-voltage lines (see drawing C-202A in Appendix B). The precautions and actions are described below.

Transmission line heights surveyed to date are included on Drawing C-202 in Appendix B. The line height at maximum sag over the excavation measured in July 2019 was 32.4 feet. Sheet piles will not exceed 22 feet in length and will be vibrated in place by a side gripping, vibratory hammer. Each sheet must be lifted approximately 5 feet above grade to safely maneuver and align before installation. The grade for the cells utilizing the 22-foot sheets will be lowered from one to four feet to accommodate the deeper sheet depth to confirm termination within the deeper confining clay layer. During construction, the line height will be verified daily. According to the Approach Distances for Qualified Employees – Alternating Current, Revised January 2016, provided by O'Connell Electric Company, the minimum approach distance allowable would be 56 inches (4.6 feet) utilizing an electrically qualified operator and spotter. During sheet pile installation within the easement, O'Connell Electric, or other qualified contractor will be engaged as the spotter. The excavation contractor will provide the electrically qualified operators.

Electrical grounding of construction equipment will be achieved through the attachment of secure lugs and tether cables between installed sheet walls and operating equipment (see drawing C-202A in Appendix B). Equipment operators shall have required training per CFR 1910.269, and all excavators operating within the easement shall be equipped with height limiters (governors) to set the operating height of the arm to stay below the safe distance determined by the electrically qualified employees. The limiters will be adjusted and tested every day prior to start of work. In addition, electrically qualified operators and spotter will be onsite. The removal and re-use of sheet piles will continue until the excavation is complete.

2.4 EXCAVATION & DISPOSAL

2.4.1 Limits of Excavation

All material from within the sheet pile cells (predefined excavation extents) generally as shown on Figures 2 and 9 will be removed and disposed. It is noted that the limits may be modified in the field if pre-excavation documentation sampling (Section 2.3.4 above) warrants redefinition of the limits. Excavation of cells will be sequential.

Excavation will continue to the extents of the sheet pile walls. Excavation will continue vertically to the predetermined depth of the clay layer above which visible creosote saturation was observed during the 2017 Supplemental Investigation. During the 2017 Supplemental Investigation, creosote-impacted soil was generally observed at and immediately above the shallow alluvial sand-glaciolacustrine clay interface. Final excavation extents will be surveyed and reported as described in Section 3.

Excavation and grading of soil outside the limits of the sheeted IRM excavation area will be required to create the proposed wetland areas located on portions of Lots 5E and 4 (see Figure 11). The approximate vertical and horizontal limits of the proposed wetland area are shown on Drawing C-500 in Appendix B. Due to the shallow excavation depths in the proposed wetland areas, creosote-impacted soils are not anticipated to be encountered, though excess soils will be removed and disposed offsite. Creosote-saturated soil will not be reused onsite. If creosote-saturated soils are encountered they will be excavated, staged, sampled, and disposed per section 2.4 of this IRM WP. Further delineation or excavation of creosote-impacted soils beyond the limits of defined excavation areas will not be conducted. Final wetland excavation extents will be surveyed and reported as described in Section 3.

2.4.2 Soil and Materials Handling

Concrete and other miscellaneous debris will be segregated and processed if necessary to meet landfill or disposal facility requirements. Concrete and debris may be mixed with soil and fill or handled as a separate waste stream, based on disposal facility requirements.

Excavated material will be stockpiled for segregation, testing, and disposal, as outlined below in Section 2.4.3. Stockpiles will be lined and covered with polyethylene sheeting. Wet stockpiles with moisture content above that which may be transported off-Site will be allowed to dry in dewatering cells and/or stabilized with quicklime (calcium oxide) or other bulking materials, as needed. A detail of a typical dewatering cell is included as Drawing C-600 in Appendix B.

2.4.3 Contained-In and Disposal Characterization Sampling

As described in Section 2.2 above, creosote-impacted remediation waste at the Site is classified by the NYSDEC as a F034 listed hazardous waste. Handling and disposal of the remediation waste as a non-hazardous waste requires a contained-in determination by the NYSDEC, based on representative sampling and analysis.

Disposal samples will be collected from stockpiles every 300 cubic yards (cy) (approximately every 500 tons) of stockpiled soil. Samples are intended to be inclusive of the requirements needed for disposition of the material as non-hazardous waste (with or without a contained-in determination) or as non-hazardous waste with thermal treatment (with a contained-in determination). Proposed disposal

facilities include the Oneida Herkimer Solid Waste Authority (non-hazardous waste) and Clean Earth, Inc. (thermal treatment and disposal). Samples will be analyzed per the Sampling and Analysis Plan shown on Table I.

A contained-in determination request letter will be sent to the NYSDEC for each 500-ton quantity of creosote-impacted waste material, including the analytical results required for contained-in determination. Upon response to the request by the NYSDEC, the waste will be transported to and disposed of at the accepting facility. Should the contained-in determination be denied, requiring handling and disposal as F034 hazardous waste, additional sampling may be required by the hazardous waste disposal facility.

Shallow soils excavated in proposed wetland areas outside the limits of the sheeted IRM excavation area are not anticipated to have creosote impacts. If visual observations during excavation activities confirm the absence of creosote-impact soils in the wetland excavation areas, a contained-in determination will not be required for disposal of this soil. Disposal samples will be collected from wetland excavation area soils to meet the proposed disposal facility sampling requirements.

2.4.4 Water Management and Disposal

Based on the shallow depth to groundwater encountered during previous excavations performed at the Site, dewatering of open excavations will be required. Groundwater intrusion into the excavation will be either pumped directly from the open excavation or from temporary sumps installed to facilitate dewatering. Recovered groundwater will be contained in frac tanks. The recovered groundwater will be pumped through bag filters then flocculated in the frac tanks as needed to reduce total suspended solids (TSS) for acceptance by the City of Rome Water Pollution Control Facility (WPCF). The recovered groundwater will be sampled and analyzed at a frequency required by the WPCF and the issued permit at the time of the project.

As described in Section 2.2 above, creosote-impacted remediation waste at the Site, including recovered groundwater, is classified as a F034 listed hazardous waste. A Generic Contained-In Determination for the excavation dewatering groundwater will be requested from the NYSDEC, allowing preapproved contained-in determination of the recovered groundwater, for disposal at the WPCF commensurate with previous IRMs at the site. Upon acceptance of the recovered groundwater by the WPCF, and in accordance with the Contained-In Determination the water will be either directly discharged to the sanitary sewer system, as approved by permit, or will be trucked directly to the WPCF.

2.4.5 Odor and Dust Suppression

The CAMP (see Appendix A) specifies continuous monitoring of VOCs and particulates during soil excavation work. This Section specifies the procedures and actions to be employed to minimize nuisance odors or if VOCs and/or particulates are detected above action levels specified in the CAMP during excavation. Upon detection of nuisance odors at the work zone perimeter, site controls, starting in the work area, will be implemented. The site controls described below will be used to assist with odor mitigation in order to minimize, and to prevent where practicable, the migration of nuisance odors generated during work activities.

Site odor controls are intended to limit nuisance odors from work zone activities and to minimize their migration beyond the limits of the work zone.

2.4.5.1 Primary Odor Controls

Efforts will be made to minimize the amount of time that ambient air is exposed to odiferous material at the Site. During excavation activities, polyethylene sheeting/tarps may be used to cover those soils to prevent or minimize fugitive odors.

Soil stockpiles and excavations will be covered to the extent practical when they are not being actively generated or managed.

2.4.5.2 Secondary Odor Controls

If moderate or strong odors remain at the downwind Site perimeter of the work zone after primary odor controls have been implemented, secondary control measures will be employed. Secondary controls may include agents that can be sprayed over impacted soil that have been determined to be effective in controlling emissions. These agents may be used where tarps cannot be effectively deployed over the source material, such as during active excavation and stockpiling, or where tarps are ineffective in controlling odors, and in addition to tarps.

Based on the characteristics of the materials to be excavated, it is likely that the most effective method to controlling odors will be the use of odor suppressant foam. Odor suppressant foam can provide immediate, localized control of odor emissions. Accordingly, odor suppression agents will be kept on-Site during IRM implementation activities to optimize response time.

2.5 POST-EXCAVATION ACTIVITIES

2.5.1 Bottom Documentation Samples

Soil samples will be collected from the bottom of the completed excavation cells as shown on Figure 9. Samples will be collected at a frequency of approximately one sample per 700 square feet in the IRM excavation.

The bottom documentation samples will be analyzed for RCRA 8 metals, TCL VOCs, and TCL SVOCs, per the sampling and analysis plan set forth in Table I.

2.5.2 Site Restoration

Once the limits of the sheeted IRM excavation have been reached, and documentation sampling has been completed, the excavation will be backfilled, and the Site restored to either the pre-IRM elevation and grade, or elevations/grade necessary for IRM site wetland restoration and compensatory wetland mitigation (see Figure 11).

The site restoration will include a combination of in-kind restoration of upland and wetland areas within the Limits of Disturbance (LOD) and some on-site compensatory wetland mitigation resulting from the permanent impacts to state protected wetlands on Lot 3B.

2.5.2.1 Backfill

Backfill will consist of imported gravel, rock, stone, and/or soil sourced from a New York State-permitted mine or quarry, and/or will meet the testing requirements from DER-10 section 5.4(e) as required. Per correspondence from NYSDEC dated March 25, 2019, soil imported to the Site for use as cover, backfill, or restoration will include sampling and analysis for per- and polyfluoroalkyl substances (PFAS) and 1,4-Dioxane. Sampling protocols for assessment of PFAS and 1,4-Dioxane in imported soil will follow existing soil sampling protocols presented in Appendix B of NYSDEC Guidelines for Sampling and Analysis of PFAS (NYSDEC, 2021). Sampling frequency will follow guidance referenced above and outlined in NYSDEC DER-10 for SVOCs (NYSDEC, 2010).

Supplemental backfill may be placed on the adjacent Lot 3B in disturbed areas not previously covered with stone to allow Lot 3B to remain as an improved stone lot for future use by nearby property owners and future remedial activities. Additional backfill will not be placed on portions of Lot 3B that are designated wetland or have mature tree growth.

2.5.2.2 Wetland Mitigation

LOD areas are shown on Figures 8 and 11. Note that the LOD shown on those figures supersede those presented on design drawings included in Appendix B, which were prepared to facilitate discussions with National Grid for working within the powerline easement. It is anticipated that a total of 1.19 acres will be restored back to upland grassland, and 0.37 acre will be restored back to emergent wetland for the temporary impacts on Lots 5E, 5D and the railroad parcel. To compensate for the permanent NYSDEC jurisdictional wetland impacts incurred on Lot 3B during the 2016-17 IRM activities, 0.71 acre of emergent wetland will be constructed on Lots 5E and 4 at a ratio of 1:1. A stone pad will be left in place on Lot 3B. Dewatering pads constructed on Lot 3B as part of the Lot 3A, and Lot 5E/5D/RR IRMs will be removed following completion of Lot 5E/5D/RR IRM activities to allow for use of Lot 3B as a stone pad. The acreage described above is based on wetland delineations completed in 2015 and 2017. Because more than five years will have elapsed since completion of those delineations by the time a new Joint Permit Application (JPA) is submitted to the agencies, an updated wetland and stream delineation will be completed within the LOD as part of the new JPA submittal.

A currently proposed wetland restoration/mitigation specification is included as part of the design plans and specifications included in Appendix B. A complete Wetland Mitigation, Restoration and Monitoring Plan will be included as part of the Joint Permit Application that will be submitted and approved prior to commencement of IRM construction. Restoration and mitigation are planned to be completed in the areas shown on Figure 11 and generally consist of the following:

A. Perform site grading.
B. Install tailings in the excavated areas only up to 2-feet below finished grade elevation. Non-excavated areas will be graded to 2-feet below proposed finished grade.
C. Install 1-foot of sandy clay loam material.
D. Install 1-foot of organic topsoil to proposed finish grade.
E. Seed (by hand, broadcast, hydroseed or drill) with wetland seed mix.
F. After seeding, install straw mulch over the restoration/mitigation area.
G. Wetland monitoring is anticipated to occur annually per an approved Wetland Mitigation, Restoration and Monitoring Plan.

Imported backfill will be tested and approved per Section 2.5.2.1 above. The wetland seed mix will be specified in the Wetland Mitigation, Restoration and Monitoring Plan and will likely consist of the Ernst OBL Wetland Mix, Ernst FACW Wetland Meadow Mix or similar. The listing of vegetation species for each of the Ernst mixes is included in Appendix C.

2.6 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

2.6.1 Field Quality Control Procedures

Field QA/QC for the documentation samples will include the collection and analysis of one (1) field duplicate (FD) sample and one (1) matrix spike/matrix spike duplicate (MS/MSD) sample per 20 documentation samples. The FD and MS/MSD samples will be collected immediately following the collection of the original documentation sample from a given location.

Trip blanks will be prepared by the laboratory and accompany the sample containers to the field and the samples back to the laboratory. Trip blanks will be used in each cooler that is used to transport more than one sample for VOC analysis. The trip blank analysis results will be used to assess potential cross-contamination of the samples during transit of the sample containers to the laboratory. The trip blanks, FD, and MS/MSD samples will be analyzed for the documentation sample analytes and compounds shown on Table 1 in the Sampling and Analysis Plan.

Field QA/QC samples will not be collected as part of soil and water disposal analysis.

Sampling protocols for assessment of PFAS and 1,4-Dioxane in imported soil will follow existing NYSDEC Guidelines for Sampling and Analysis of PFAS (NYSDEC, 2021).

2.6.2 Laboratory Quality Control Procedures

The soil and recovered groundwater samples will be submitted to a New York State Department of Health (NYSDOH)-accredited laboratory on a standard turnaround basis for reporting of analytical data. Sample analyses for documentation soil, disposal soil, and recovered groundwater will be performed in accordance with the Test Methods for Evaluating Solid Waste, SW-846, (EPA 1986 with updates) and will include QA/QC samples as described in Section 2.6.1 above. Sample analyses for imported soil/fill will be performed in accordance with NYSDEC's laboratory guidelines for PFAS in non-potable water and solids (Appendix H -Laboratory Guidelines for Analysis of PFAS in Non-Potable Water and Solids) (NYSDEC, 2021). Results for the analysis of the documentation samples and imported soil/fill samples will be reported using NYSDEC ASP Category B equivalent data deliverables. Samples collected for the disposal of soil and water will be reported using standard data deliverable packages.

Surrogate compounds will be added to each sample as part of the analysis procedure for organic parameters by EPA Methods 8260 and 8270 to confirm the integrity of the analytical system. The calculated recovery of the surrogate compounds will be evaluated to determine if a false negative bias exists in the sample analysis.

Method blank sample analyses will be performed concurrent with each batch of project samples to determine if laboratory contamination could create a false positive bias of the reported results for the target analytes and compounds.

Laboratory control samples (LCS) will be prepared by the laboratory by adding a known amount of the target analytes from a standard reference material (SRM) that is independent of the calibration standard source to a clean sample matrix (i.e., deionized water) and prepared and analyzed in the same manner as the project samples. The LCS analyses will provide an indication of the accuracy and precision of the analytical process.

Matrix spike and Matrix spike duplicate (MS/MSD) samples will be prepared by the laboratory by adding a known amount of the target analytes from a standard reference material (SRM) that is independent of the calibration standard source to the sample matrix and prepared and analyzed in the same manner as the project samples. The MS/MSD analyses will provide information on the sample matrix effects on the accuracy and precision of the analytical process.

2.6.3 Data Validation

The completeness of each laboratory data package associated with the documentation soil samples will be evaluated by a NYSDEC-approved Data Validator. Note that imported soil, soil disposal, and recovered groundwater disposal sample analysis data will not be subject to this data validation procedure. The laboratory data report will include the sample chain of custody (COC) forms, analytical results, QC sample analysis summaries, and the supporting analytical instrument raw data.

Documentation sample data generated through field activities and the laboratory analyses will be reduced and validated with guidance from:

- "National Functional Guidelines for Organic Superfund Methods Data Review (SOM02.4)", EPA-540/R-2017/001, dated January 2017.
- "National Functional Guidelines for Inorganic Superfund Methods Data Review (OLEM 9355.01-135)," EPA-540/R-2017/001, dated January 2017.

The data qualifiers (if any) applied to the reported results will be assigned as prescribed by the procedures in the National Functional Guidelines (EPA 2017).

3. Reporting

Upon completion of the IRM activities, the IRM activities will be documented in a Construction Completion Report (CCR). The CCR report will include the results from the sampling activities described herein, nature and quantities of waste materials excavated and disposed, surveyed limits of actual excavation extents, and a topographic survey of the final site contours.

4. Professional Engineer's Certification

I, Jeffrey A. Klaiber, P.E., certify that I am currently a New York State-registered professional engineer as defined in 6 NYCRR Part 375 and that this Interim Remedial Measure Work Plan was prepared in accordance with all applicable statues and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Jeffrey A. Klaiber, P.E.	August 20, 2021 Date

References

1. Haley & Aldrich of New York, (2015) Report on Wetland Delineation, Former Federal Creosote Site – Lot 3B, Oneida County, New York, October 2015.

2. Haley & Aldrich of New York, (2016) Continued Remedial Investigation Report & Conceptual Site Model, Former Kerr-McGee/Tronox Federal Creosote Site, Rome, Oneida County, New York, VCP Site #s: V00610 and V00612, 20 July 2016.

3. Haley & Aldrich of New York, (2017a) Interim Remedial Measures Construction Completion Report, Lot 3B, Former Federal Creosote Site, Rome, New York VCA #V00612, 7 August 2017.

4. Haley & Aldrich of New York (2017b) Wetland and Stream Delineation Report, Former Federal Creosote Site, City of Rome, Oneida County, New York, October 2017.

5. Haley & Aldrich of New York, (2018a) Supplemental Investigation Summary Report, Former Federal Creosote Site, Rome, New York, January 2018.

6. Haley & Aldrich of New York, (2018b) Cinder Ash Investigation Report, Lots 3B, 5E, 5D, 4, and the Railroad Parcel, Former Federal Creosote Site, Rome, Oneida County, New York, P-Site #633088 and #633087, June 2018.

7. New York State Department of Environmental Conservation, (1992), "Contained-In" Criteria, November 30. Technical Administrative Guidance Memorandum Number 3028.

8. New York State Department of Environmental Conservation, (2006). 6 NYCRR Part 375 Environmental Remediation Programs. Division of Environmental Remediation, December 2006.

9. New York State Department of Environmental Conservation, (2010) Commissioners Policy – CP-51/Soil Cleanup Guidance, 21 October 2010.

10. New York State Department of Environmental Conservation, (2010). DER-10 Technical Guidance for Site Investigation and Remediation. Division of Environmental Remediation, May 2010.

11. New York State Department of Environmental Conservation, 2018. V00610 and V00612, Former Kerr-McGee/Tronox Federal Creosote Site, Rome, Oneida County, New York, May 18. Letter, to the Greenfield Environmental Multistate Trust LLC.

12. New York State Department of Environmental Conservation, 2018. V00610 and V00612, Success Drive Parcels and MGS, Rome, Oneida County, New York, May 18. Letter, to the Greenfield Environmental Multistate Trust LLC.

13. New York State Department of Environmental Conservation, 2021, Sampling, Analysis and Assessment of Per and Polyfluorinated Alkyl Substances (PFAS) under NYSDEC's Part 375 Remedial Programs, January 2021.

14. Plumley Engineering, (2002) Voluntary Cleanup Program Final Work Plan for the Success Drive Parcels/MGP Site, City of Rome, Oneida County, New York, December 2002.

15. Plumley Engineering, (2004) Investigation Report for the 5856 and 5900 Success Drive Parcels, City of Rome, Oneida County, NY, June 2004.

16. Plumley Engineering, (2007) Summary Report for the Soil Removal Project, 5900 Success Drive Parcel Parking Lot Area (Operable Unit #2), 5856 and 5900 Success Drive Parcels, City of Rome, Oneida County, New York, DEC VCA Nos. V00610-6 and V00612-6, March 2007.

17. Plumley Engineering, (2008) Summary Report for the Fall 2007 Soil Removal Project, 5900 Success Drive Parcel, Parking Lot Area (Operable Unit #2), City of Rome, Oneida County, New York, DEC VCA No. V00612-6, March 2008

18. Plumley Engineering (2008) Soil Management Plan for the 5900 Success Drive Site, City of Rome, Oneida County, New York, DEC VCA No. V00612-6. July 2008.

TABLE

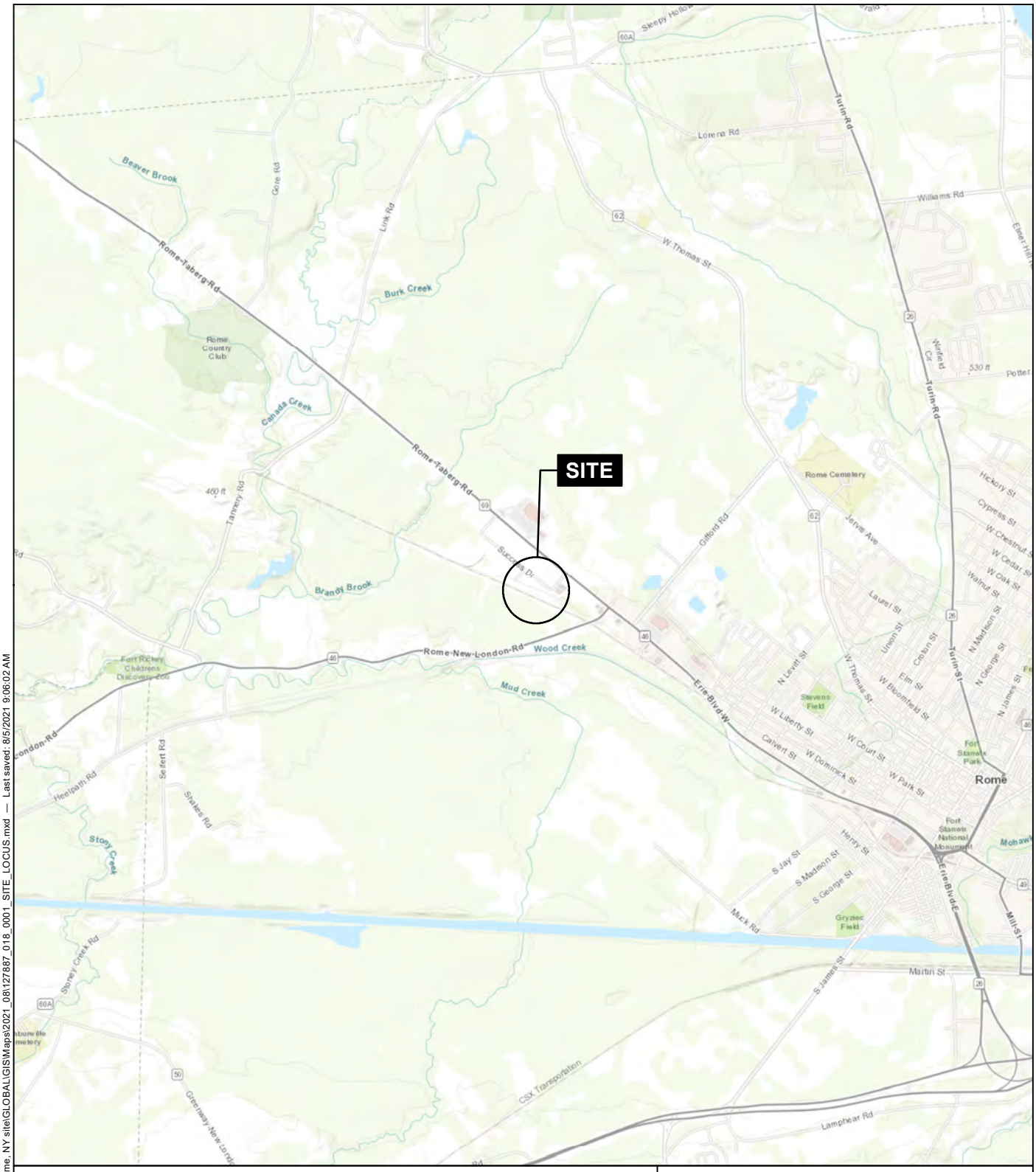
TABLE I: SAMPLING AND ANALYSIS PLAN
FORMER FEDERAL CREOSOTE SITE
LOT 5E INTERIM REMEDIAL MEASURE
ROME, NEW YORK

Sample Type	Collection Sequence	# of Samples Anticipated	Location	Purpose	Analyses to be Performed																										
					TCL VOCs 8260	TCL SVOCs 8270	RCRA 8 Metals [4] 6010	PPL Metals PLUS Ba and V 6010	NYSDEC SCO Metals/Inorganics [5] 6010	Mercury 1631	PCBs 8082	Pesticides 8081	PFAS[6] and 1,4-Dioxane 537.1, 8270 SIM	TPH (DRO/GRO) 8015	Total Cyanide 9010/9012	% Sulfur D129-64 (D4239)	TCLP VOCs (8260/1311)	TCLP SVOCS 8270/1311	TCLP Metals 6010/1311	TCLP Herbicides 8151	BTU D240-87 (D5865)	TCLP Pesticides 8081	Reactivity EPA 7.3	pH/ Corrosivity 9040	Paint Filter	Flashpoomt	Ignitability	Total Solids SM 2540	TTO 624, 625	Total Susp. Solids SM2540D
Sidewall Documentation Samples [1]	Pre-Excavation	~32 including QA/QC samples	Selected borings every 30 linear feet around the sidewall of the excavation outside the sheetpile walls.	Confirm limits of the excavation and document remaining Site soil conditions.	X	X																								
Soil Disposal Characterization Samples	During and Post-Excavation (from stockpiles)	Based on amount of material excavated	Sample set collected from every 300 cy of excavated and stockpiled materials.	To obtain contained-in determination from the NYSDEC and/or determine and receive approval from appropriate disposal facility	X	X		X			X			X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Water Disposal Characterization Samples	During and Post-Excavation	Based on amount generated/ period of time discharge occurs	Water samples to be collected per frequency required by the Rome WPCF.	To obtain approval from the the Rome WPCF for discharge to the sanitary sewer system and contained-in determination from the NYSDEC.				X		X														X					X	X
Imported Soil[2]	Prior to importing to IRM Site	Based on amount of material imported	From proposed imported material stockpile	To obtain approval from NYSDEC to import soil used in proposed wetland restoration.	X	X			X		X	X	X																	
Bottom Documentation Samples [3]	Post-Excavation	~31 including QA/QC samples	One sample per excavation cell (~ one sample per 700 square feet of excavation bottom).	Document remaining soil conditions post-excavation.	X	X	X																							

Abbreviations:
TCL: Target Compound List
TAL: Target Analyte List
VOCs: Volatile Organic Compounds
SVOCs: Semi-Volatile Organic Compounds
PCBs: Polychlorinated Biphenyls
PFAS: Per- and Polyfluoroalkyl Substances
TPH: Total Petroleum Hydrocarbons
DRO: Diesel Range Organics
GRO: Gasoline Range Organics
TCLP: Toxic Characteristic Leaching Procedure
BTU: British Thermal Units
RCRA : Resource Conservation and Recovery Act
SCO: Soil Cleanup Objective
TTO: Total Toxic Organics

Notes:
1. Samples will be grab samples from soil borings installed via GeoProbe. Samples will be collected from the area of highest visual, olfactory, or PID impact or if no impact observed, from the top of the water table.
2. Gravel, rock or stone from a permiitted mine or quarry that contains less than 10% by weight waterial which would pass through a size 80 sieve does not require analytical testing per NYSDEC DER-10 5.4(e)5.
3. Samples will be grab samples collected via an excavator from the base of the excavation. Samples will be biased to areas with visual impact, if observed.
4. RCRA Metals include As, Ba, Cd, Pb, Cr, Hg, Se, Ag
5. NYSDEC SCO Metals/Inorganics include As, Ba, Be, Cd, Cr, Cu, Pb, CN¯, Mn, Hg, Ni, Se, Ag, Zn
6. PFAS analyte list specifed in Appendix G of NYSDEC Guidelines for Sampling and Analysis of PFAS, January 2021
7. Anaylsis for disposal characterizations subject to change based on specific landfill requirements.

FIGURES



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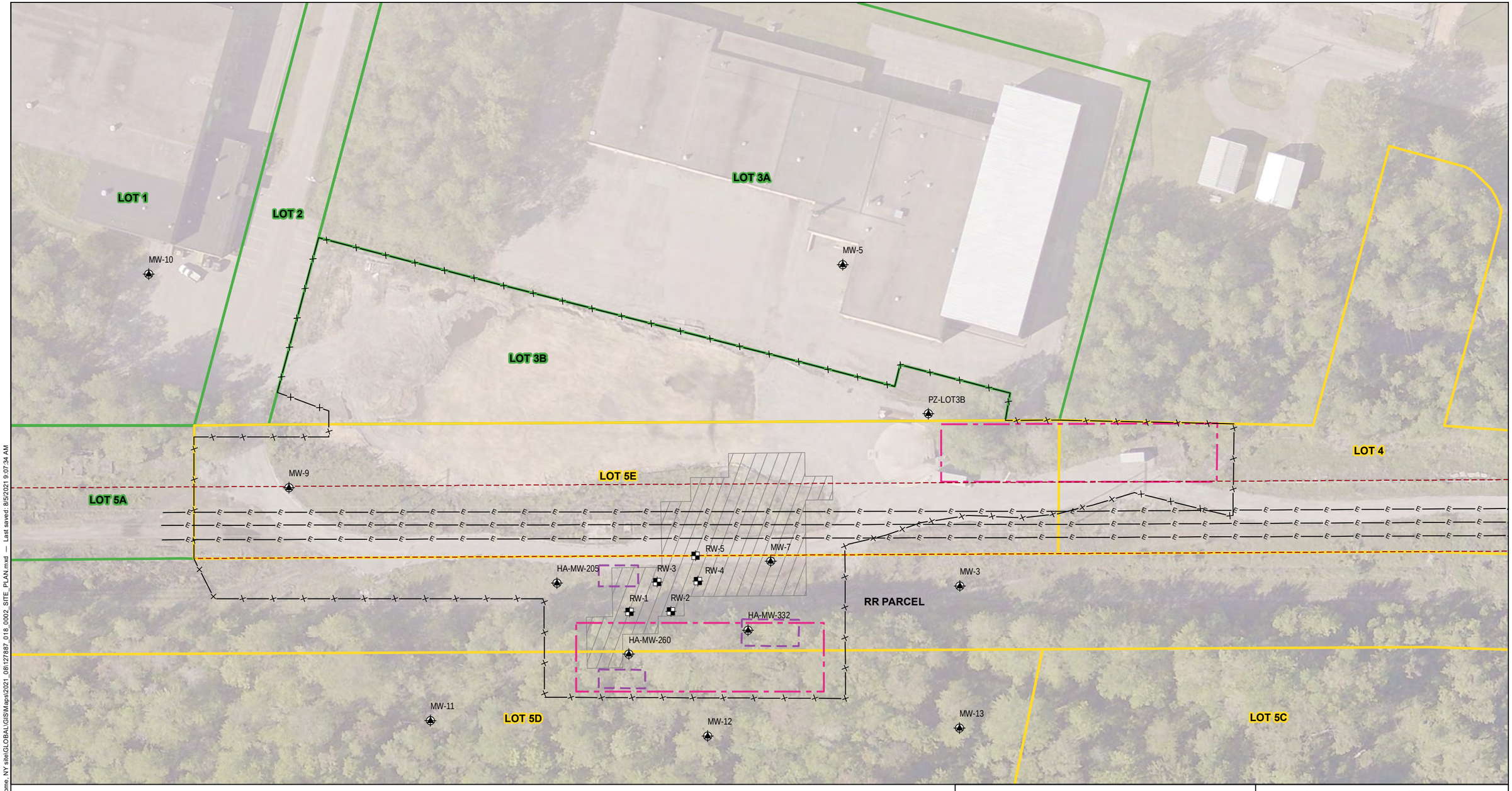
FORMER FEDERAL CREOSOTE SITE
ROME, NEW YORK

Figure 1

SITE LOCUS

PROJECT: 127887	BY: ANICHOLS	REVISIONS:
DATE: AUG 2021	CHECKED: GW	

HALEY & ALDRICH OF NEW YORK



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EXPLANATION

- Monitoring well
- Recovery well
- National Grid easement boundary
- Overhead electrical wire
- Proposed IRM excavation
- Limits of construction
- Proposed test pit area
- Proposed tree-clearing area
- Multistate Trust-owned parcel
- Parcel owned by others

NOTES

1. All locations and dimensions are approximate.
2. Assessor parcel data source: Oneida County and Hoffman Land Surveying and Geomatics survey.
3. National Grid easment and overhead wire data source: Hoffman Land Surveying and Geomatics survey.
4. Aerial imagery source: EagleView 2017

PROJECT LOCATION

SCALE IN FEET
0 30 60

Prepared for:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental
Response Trust

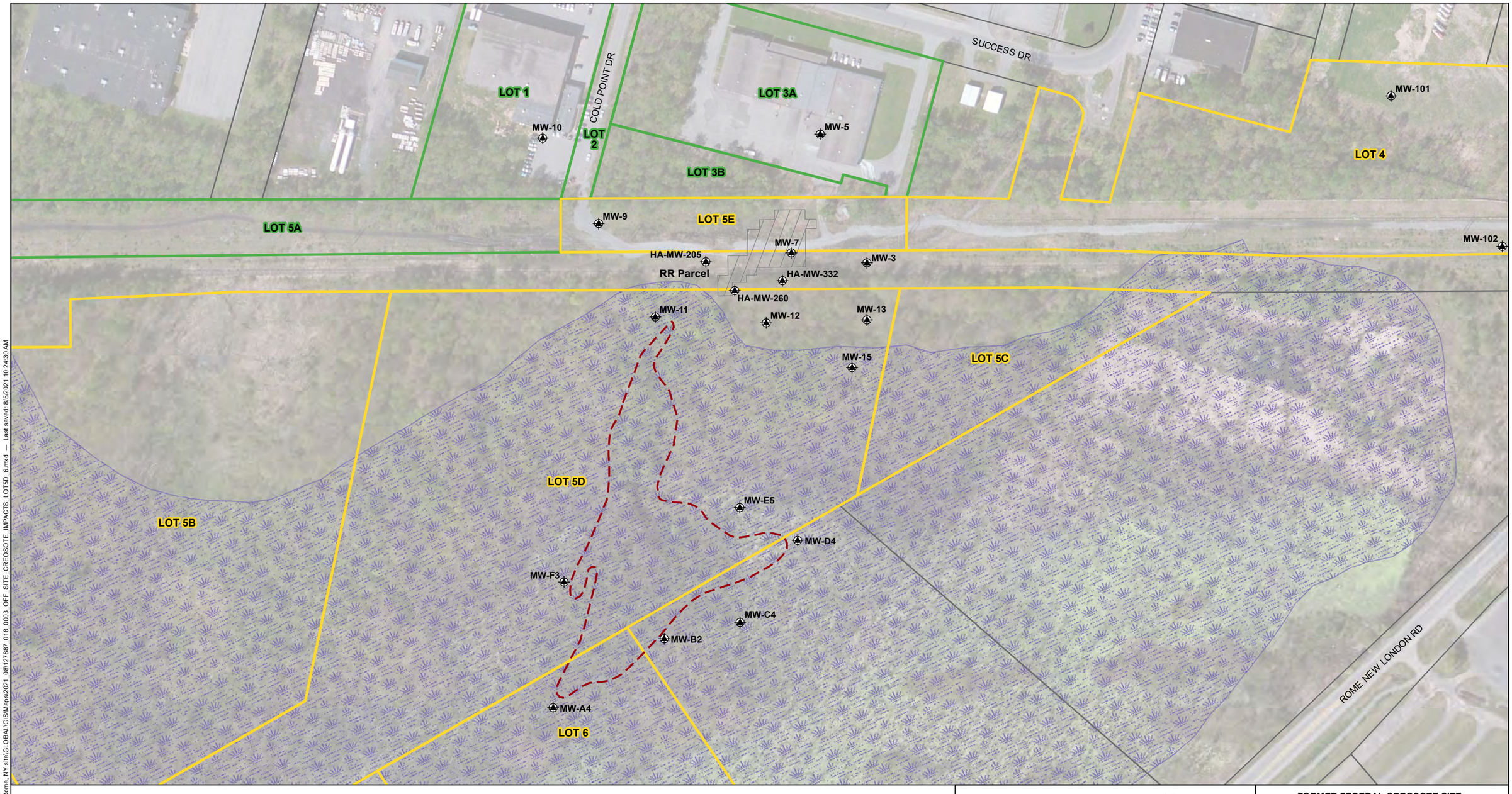
FORMER FEDERAL CREOSOTE SITE
ROME, NEW YORK

Figure 2

SITE PLAN

PROJECT: 127887	BY: ANICHOLS	REVISIONS:
DATE: AUG 2021	CHECKED: GW	

HALEY & ALDRICH OF NEW YORK



EXPLANATION

- Monitoring well
- Approximate limit of off-site creosote impact
- Proposed IRM excavation
- Multistate Trust-owned parcel
- Parcel owned by others
- Parcel boundary
- NYSDEC Wetland (VE-3)

NOTES

1. All locations and dimensions are approximate.
2. Assessor parcel data source: Oneida County and Hoffman Land Surveying and Geomatics survey
3. Wetland data source: New York State Department of Environmental Conservation (NYSDEC)
4. Aerial imagery source: ESRI

PROJECT LOCATION

SCALE IN FEET
0 90 180

Prepared for:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

FORMER FEDERAL CREOSOTE SITE
ROME, NEW YORK

Figure 3

OFF-SITE CREOSOTE IMPACTS LOT 5D AND LOT 6

PROJECT: 127887	BY: ANICHOLS	REVISIONS:
DATE: AUG 2021	CHECKED: GW	

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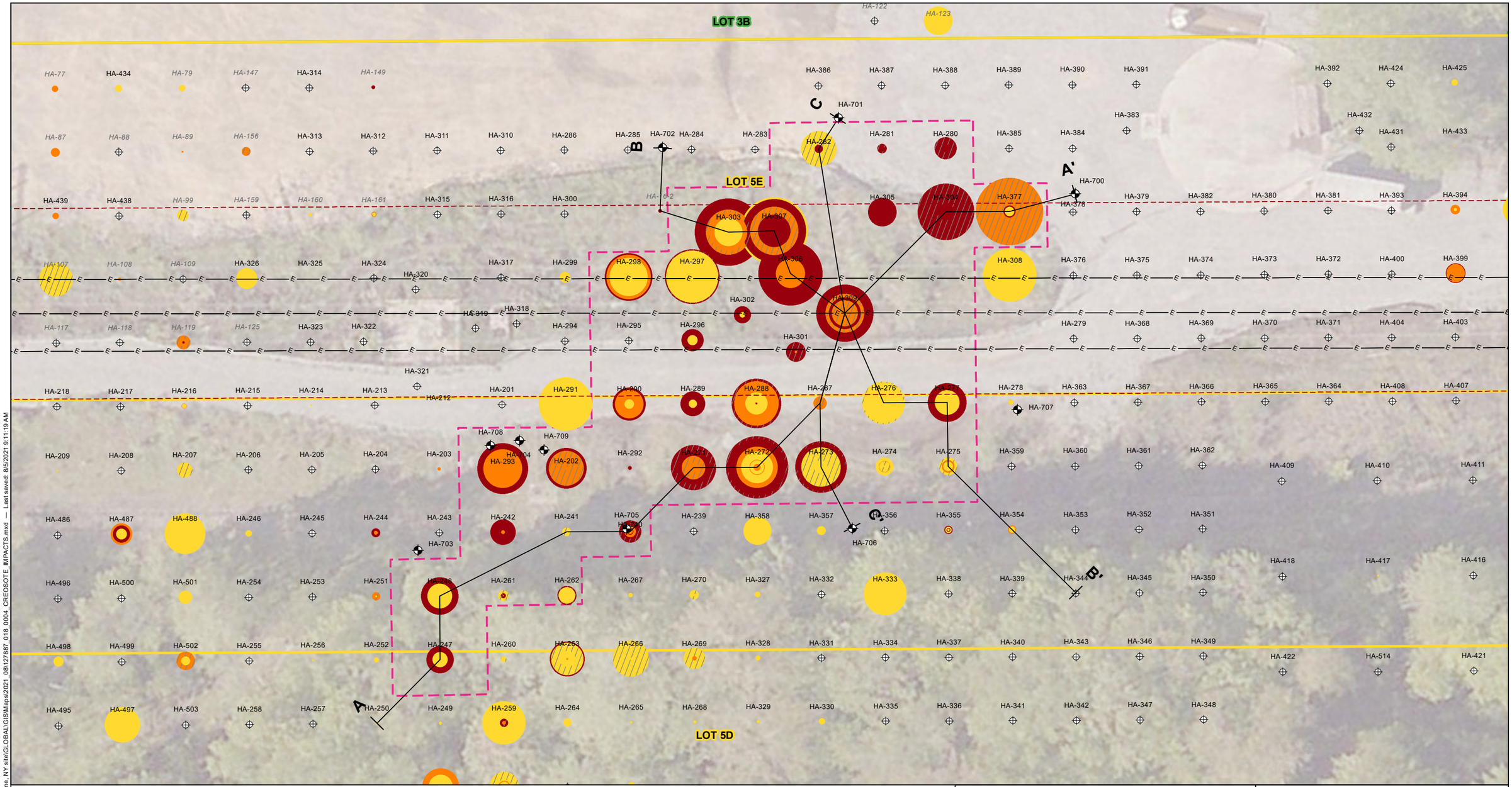

EXPLANATION

- Geotechnical soil boring, 2020
- No impact
- Low impact
- Low-to-moderate impact
- Presence of creosote saturated soil
- Cross-section transect
- 1 foot of low-to-moderate impact
- 5 feet of total impact (1 foot of low impact is vertically discontinuous with underlying 4 feet of creosote saturation)
- Proposed IRM excavation
- Multistate Trust-owned parcel
- Parcel owned by others

NOTES

1. All locations and dimensions are approximate.
2. Assessor parcel data source: Oneida County and Hoffman Land Surveying and Geomatics survey.
3. National Grid easment and overhead wire data source: Hoffman Land Surveying and Geomatics survey.
4. Aerial imagery source: Eagleview 2017

PROJECT LOCATION

SCALE IN FEET
0 30

Prepared for:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

FORMER FEDERAL CREOSOTE SITE
ROME, NEW YORK

Figure 4

CREOSOTE IMPACTS

PROJECT: 127887	BY: ANICHOLS	REVISIONS:
DATE: AUG 2021	CHECKED: GW	

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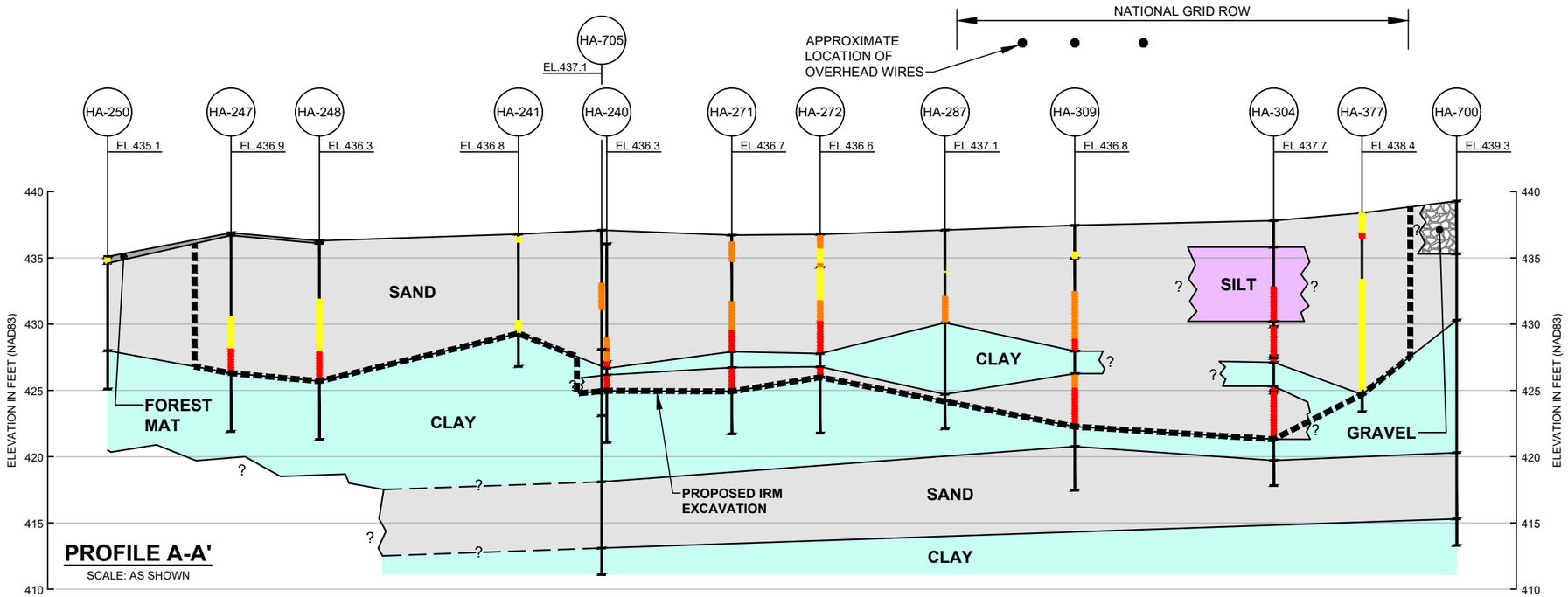

LEGEND

- HA-250 — EXPLORATION DESIGNATION
- EL.435.1 — APPROXIMATE GROUND SURFACE ELEVATION
- GROUND SURFACE MATERIAL
- INTERPRETED GEOLOGIC STRATUM INTERFACE (DASHED WHERE INFERRED)
- LOW IMPACT
- LOW TO MODERATE IMPACT
- PRESENCE OF CREOSOTE SATURATED SOIL
- BOTTOM OF EXPLORATION

SYMBOLOGY KEY

- FOREST MAT
- SAND
- SILT
- CLAY
- CINDERS
- GRAVEL

NOTES

1. SEE FIGURE 3 FOR PLAN LOCATION AND ORIENTATION OF PROFILE AND EXPLORATION LOCATIONS.
2. SUBSURFACE PROFILES DEPICT THE GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE PROFILE ARE BASED UPON INTERPOLATION BETWEEN ADJACENT EXPLORATIONS. THIS FIGURE SHOWS THE ACTUAL SEQUENCE OF STRATA ENCOUNTERED AT EACH EXPLORATION LOCATION. ACTUAL SOIL CONDITIONS AND INTERFACES BETWEEN SUBSURFACE EXPLORATIONS MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE PROFILES.
3. ELEVATIONS ARE IN FEET AND REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). TOPOGRAPHIC DATA ARE APPROXIMATE AND INTERPOLATED FROM GROUND SURVEY POINTS PROVIDED BY HOFFMAN LAND SURVEYING AND GEOMATICS, 27 NOVEMBER 2017 AND 9 JUNE 2020.

HORIZ. 0 30 60
VERT. 0 10 20
SCALE IN FEET

PROJECT LOCATION

Prepared for:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

FORMER FEDERAL CREOSOTE SITE
ROME, NEW YORK

Figure 5

SUBSURFACE GEOLOGIC PROFILE A-A' AND EXCAVATION AREA

PROJECT: 127887	BY: ERVIN	REVISIONS:
DATE: AUG 2021	CHECKED: GW	

HALEY & ALDRICH

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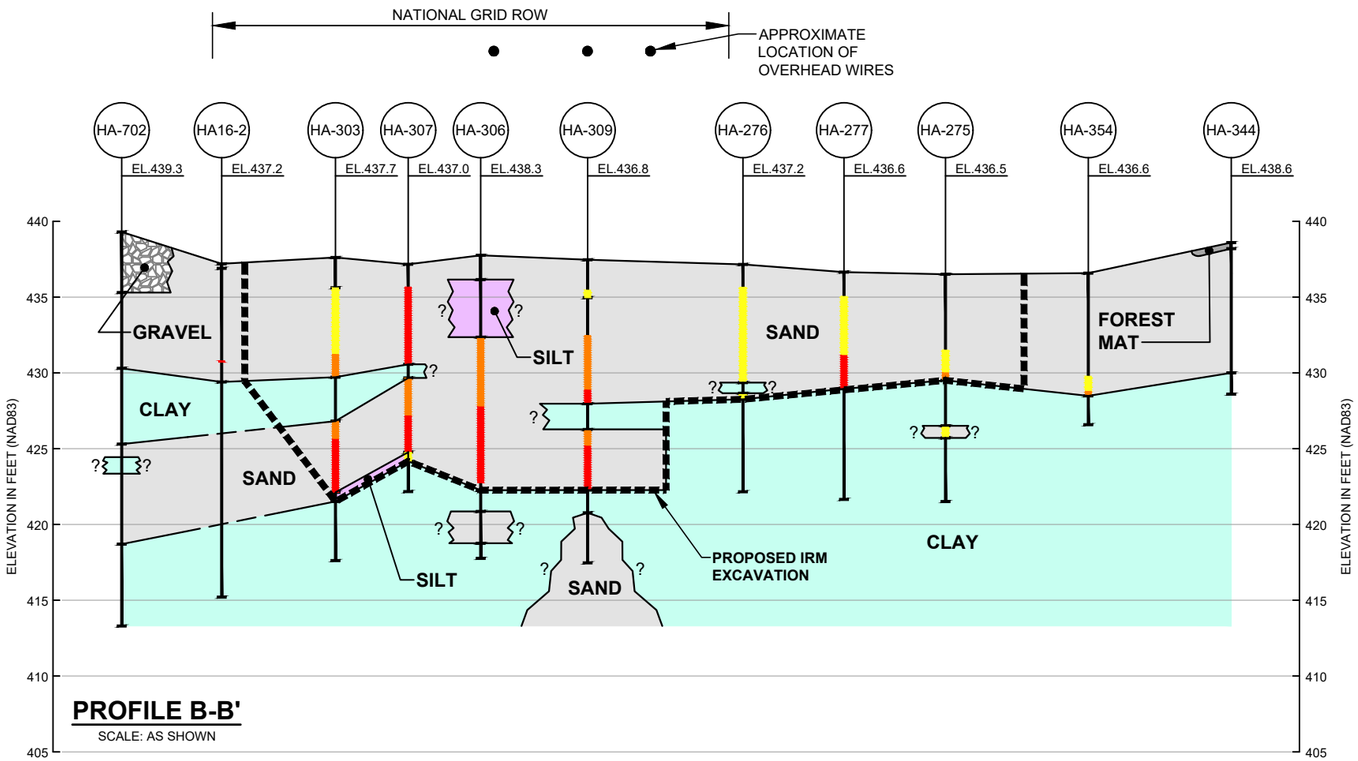

PROFILE B-B'

SCALE: AS SHOWN

LEGEND

- HA-702 — EXPLORATION DESIGNATION
- EL.439.3 — APPROXIMATE GROUND SURFACE ELEVATION
- GROUND SURFACE MATERIAL
- INTERPRETED GEOLOGIC STRATUM INTERFACE (DASHED WHERE INFERRED)
- LOW IMPACT
- LOW TO MODERATE IMPACT
- PRESENCE OF CREOSOTE SATURATED SOIL
- BOTTOM OF EXPLORATION

SYMBOLOGY KEY

- FOREST MAT
- SAND
- SILT
- CLAY
- CINDERS
- GRAVEL

NOTES

1. SEE FIGURE 3 FOR PLAN LOCATION AND ORIENTATION OF PROFILE AND EXPLORATION LOCATIONS.
2. SUBSURFACE PROFILES DEPICT THE GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE PROFILE ARE BASED UPON INTERPOLATION BETWEEN ADJACENT EXPLORATIONS. THIS FIGURE SHOWS THE ACTUAL SEQUENCE OF STRATA ENCOUNTERED AT EACH EXPLORATION LOCATION. ACTUAL SOIL CONDITIONS AND INTERFACES BETWEEN SUBSURFACE EXPLORATIONS MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE PROFILES.
3. ELEVATIONS ARE IN FEET AND REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). TOPOGRAPHIC DATA ARE APPROXIMATE AND INTERPOLATED FROM GROUND SURVEY POINTS PROVIDED BY HOFFMAN LAND SURVEYING AND GEOMATICS, 27 NOVEMBER 2017 AND 9 JUNE 2020.

HORIZ. 0 30 60
VERT. 0 10 20
SCALE IN FEET

PROJECT LOCATION

Prepared for:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

FORMER FEDERAL CREOSOTE SITE
ROME, NEW YORK

Figure 6

SUBSURFACE GEOLOGIC PROFILE B-B' AND EXCAVATION AREA

PROJECT: 127887	BY: ERVIN	REVISIONS:
DATE: AUG 2021	CHECKED: GW	

HALEY & ALDRICH

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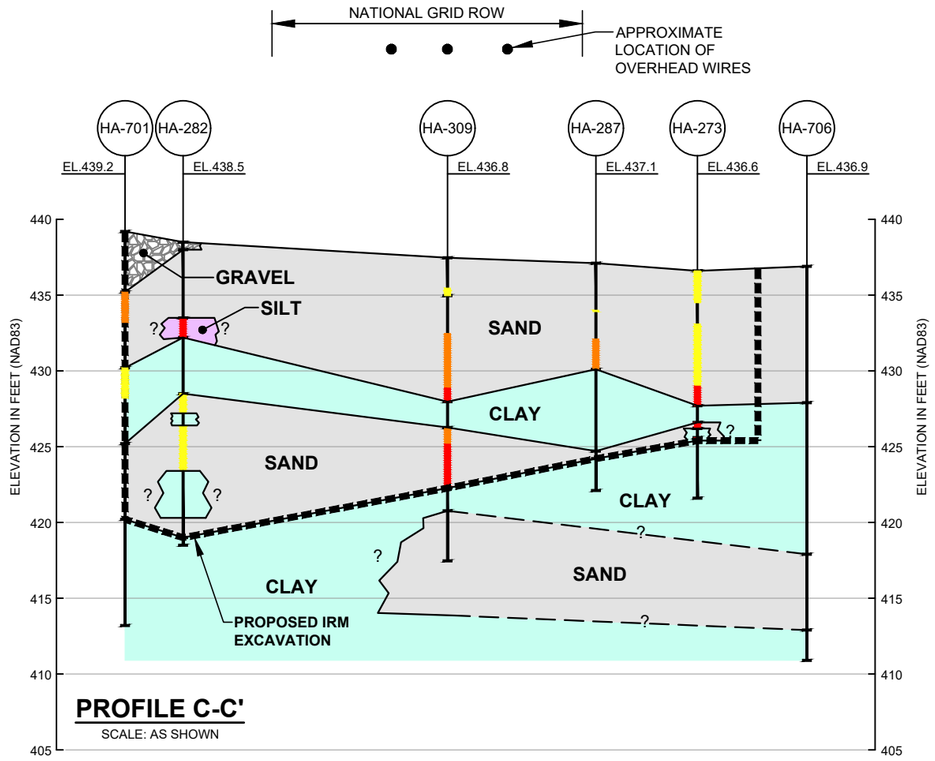

PROFILE C-C'

SCALE: AS SHOWN

LEGEND

- HA-701 — EXPLORATION DESIGNATION
- EL.439.2 — APPROXIMATE GROUND SURFACE ELEVATION
- GROUND SURFACE MATERIAL
- INTERPRETED GEOLOGIC STRATUM INTERFACE (DASHED WHERE INFERRED)
- LOW IMPACT
- LOW TO MODERATE IMPACT
- PRESENCE OF CREOSOTE SATURATED SOIL
- BOTTOM OF EXPLORATION

SYMBOLOGY KEY

- FOREST MAT
- SAND
- SILT
- CLAY
- CINDERS
- GRAVEL

NOTES

1. SEE FIGURE 3 FOR PLAN LOCATION AND ORIENTATION OF PROFILE AND EXPLORATION LOCATIONS.
2. SUBSURFACE PROFILES DEPICT THE GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE PROFILE ARE BASED UPON INTERPOLATION BETWEEN ADJACENT EXPLORATIONS. THIS FIGURE SHOWS THE ACTUAL SEQUENCE OF STRATA ENCOUNTERED AT EACH EXPLORATION LOCATION. ACTUAL SOIL CONDITIONS AND INTERFACES BETWEEN SUBSURFACE EXPLORATIONS MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE PROFILES.
3. ELEVATIONS ARE IN FEET AND REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). TOPOGRAPHIC DATA ARE APPROXIMATE AND INTERPOLATED FROM GROUND SURVEY POINTS PROVIDED BY HOFFMAN LAND SURVEYING AND GEOMATICS, 27 NOVEMBER 2017 AND 9 JUNE 2020.

HORIZ. 0 30 60
VERT. 0 10 20
SCALE IN FEET

PROJECT LOCATION

Prepared for:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

FORMER FEDERAL CREOSOTE SITE
ROME, NEW YORK

Figure 7

SUBSURFACE GEOLOGIC PROFILE C-C' AND EXCAVATION AREA

PROJECT: 127887	BY: ERVIN	REVISIONS:
DATE: AUG 2021	CHECKED: GW	

HALEY & ALDRICH

ERVIN, DAYNA Printed: 8/6/2021 12:30 PM Layout: B013
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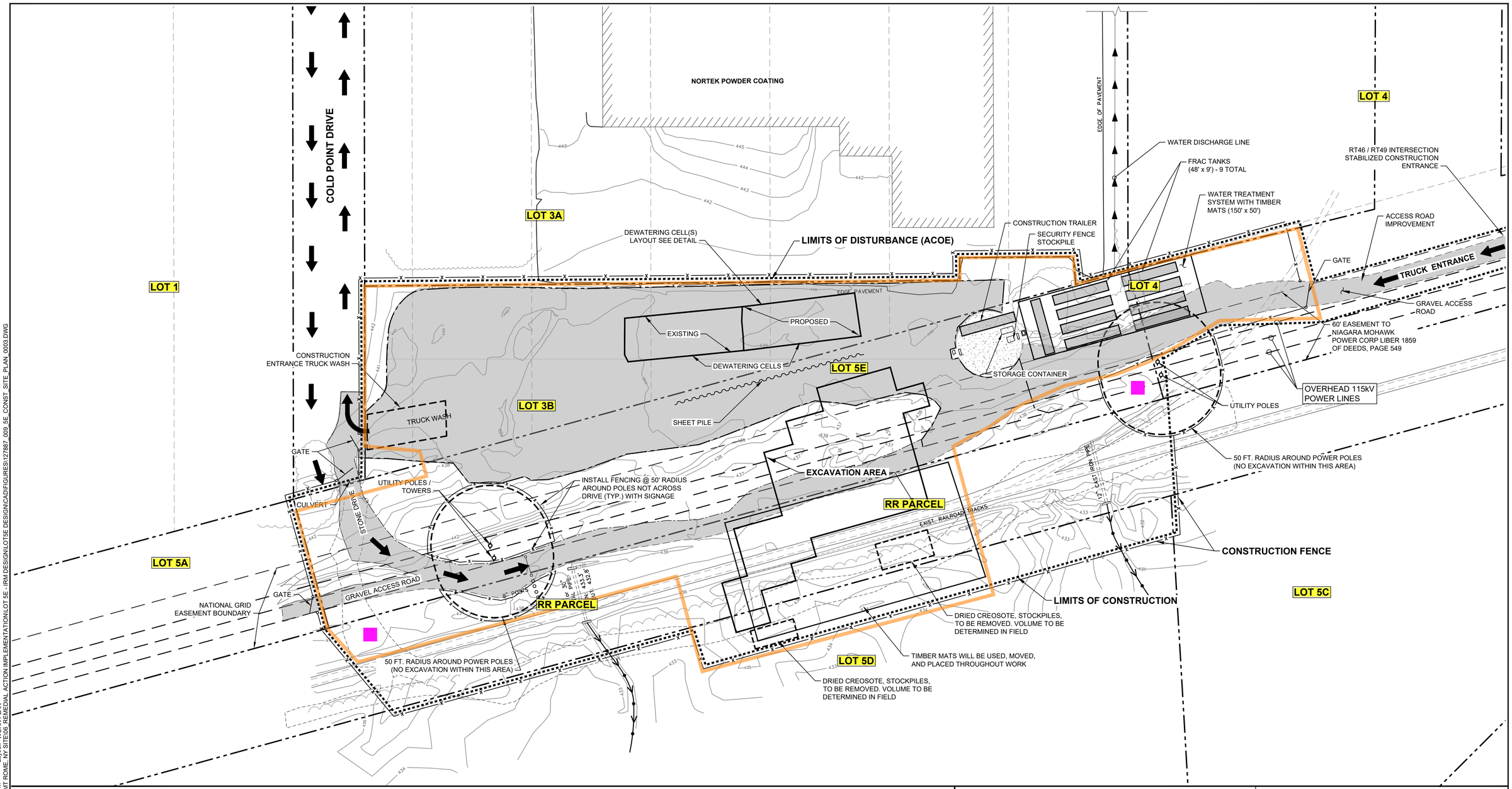


LEGEND

- PROPERTY LINE
- OVERHEAD POWER LINE
- GRAVEL ACCESS ROAD
- GRAVEL STAGING AREA
- GRAVEL / STONE AREA
- LIMITS OF DISTURBANCE (ACOE)
- LIMITS OF CONSTRUCTION
- 440 EXISTING CONTOUR
- EXISTING BUILDING
- MONITORING WELL
- TRUCK ROUTE
- WATER DISCHARGE
- TIMBER MATS
- CONSTRUCTION FENCE
- TENTATIVE CAMP MONITORING STATION

0 40 80 120 160

SCALE IN FEET

PROJECT LOCATION

Prepared for:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

FORMER FEDERAL CREOSOTE SITE
ROME, NEW YORK

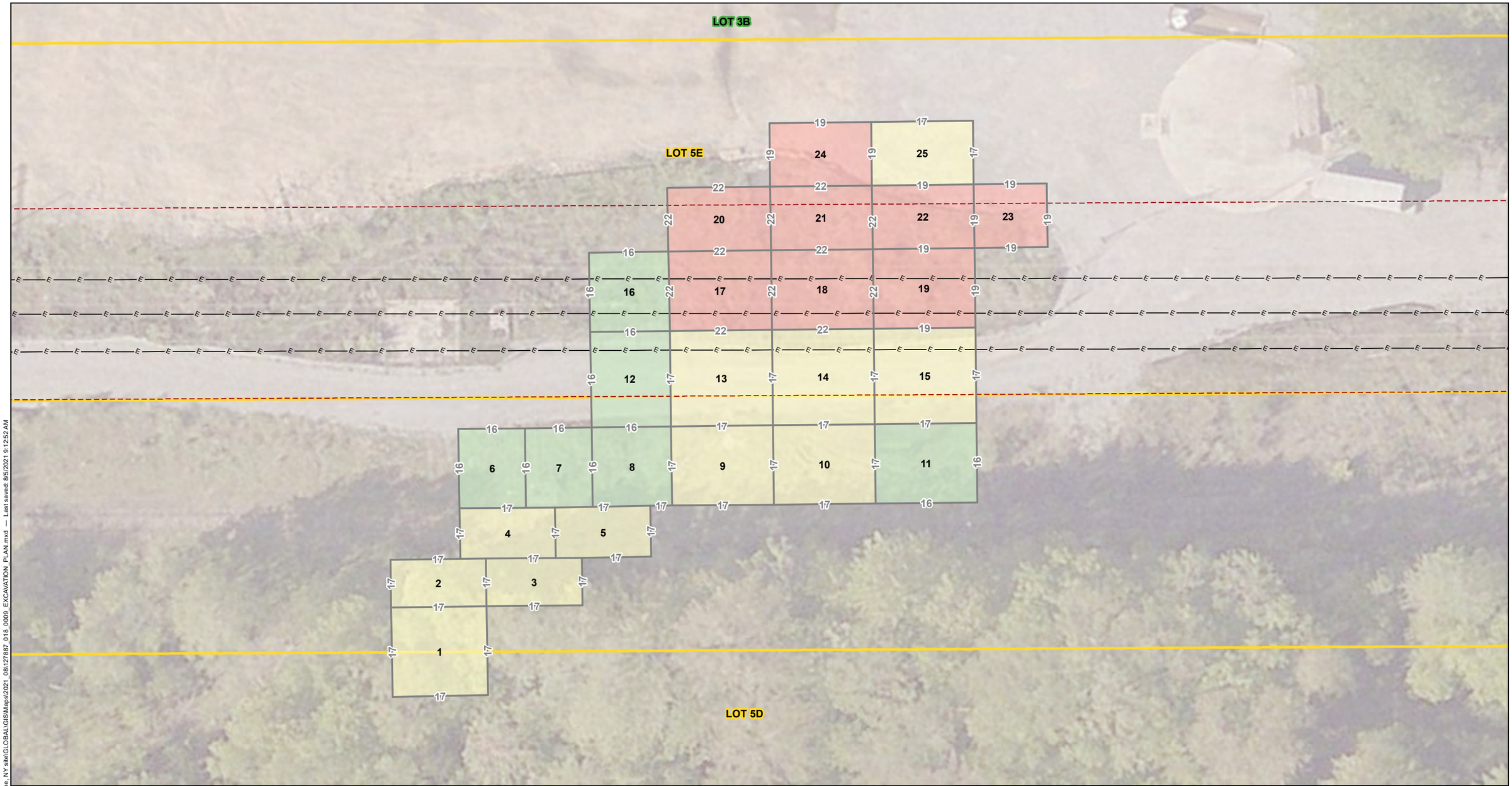
Figure 8

CONSTRUCTION SITE PLAN

PROJECT: 127887	BY: SJL	REVISIONS:
DATE: AUG 2021	CHECKED: HA	

HALEY & ALDRICH

Saved by: DTE Printed: 8/6/2021 12:18 PM Layout: WORK PLAN
\\HALEYALDRICH.COM\SHARE\ROC_COMMON\127887_GEMT ROME, NY SITE\06_REMEDIAL ACTION IMPLEMENTATION\LOT 5E - IRM DESIGN\LOT5E DESIGN\CAD\FIGURES\127887_009_5E_CONST_SITE_PLAN_0003.DWG



EXPLANATION

- Excavation cell boundary with proposed sheet pile length, in feet
- Excavation depth, in feet
  - <10
  - 10 - 13
  - 13 - 16.5
- National Grid easement boundary
- E Overhead electrical wire
- Multistate Trust-owned parcel
- Parcel owned by others

NOTES

1. All locations and dimensions are approximate.
2. Assessor parcel data source: Oneida County and Hoffman Land Surveying and Geomatics survey.
3. National Grid easment and overhead wire data source: Hoffman Land Surveying and Geomatics survey.
4. Aerial imagery source: EagleView 2017

PROJECT LOCATION

SCALE IN FEET
0 30

Prepared for:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

FORMER FEDERAL CREOSOTE SITE
ROME, NEW YORK

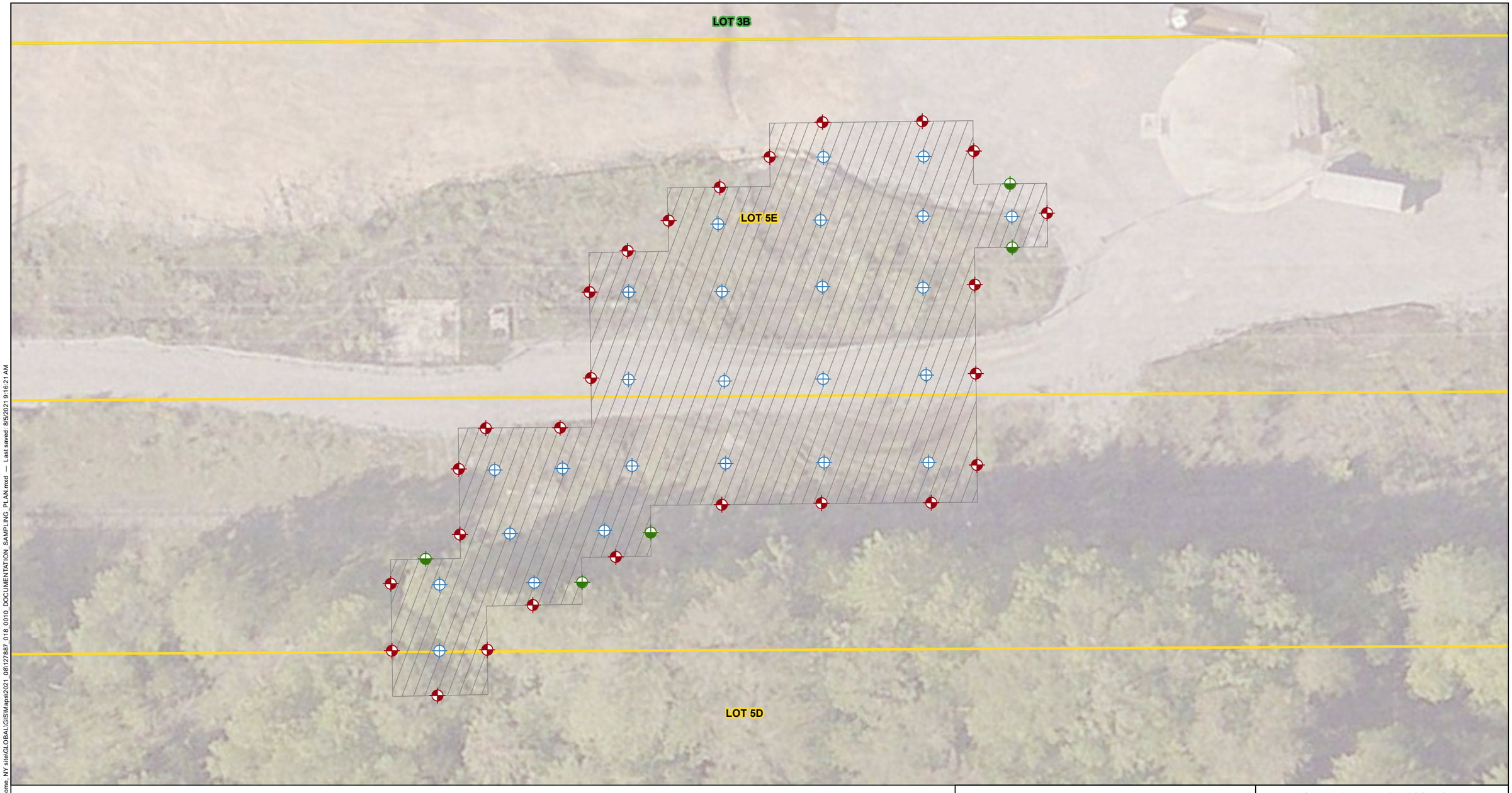
Figure 9

EXCAVATION PLAN

PROJECT: 127887	BY: ANICHOLS	REVISIONS:
DATE: AUG 2021	CHECKED: GW	

HALEY & ALDRICH OF NEW YORK

\\haleyaldrich.com\sharelroc_common\41233 - GEMF Rome, NY site\GLOBAL\GIS\Maps\2021_08\127887_018_0009_EXCAVATION_PLAN.mxd — Last saved: 8/5/2021 9:12:52 AM



EXPLANATION

- Documentation sample, sidewall (analytical)
- Documentation sample, sidewall (visual)
- Documentation sample, bottom
- Proposed IRM excavation
- Multistate Trust-owned parcel
- Parcel owned by others

NOTES

1. All locations and dimensions are approximate.
2. Assessor parcel data source: Oneida County and Hoffman Land Surveying and Geomatics survey.
3. Aerial imagery source: EagleView 2017

PROJECT LOCATION

SCALE IN FEET
0 30

Prepared for:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental
Response Trust

FORMER FEDERAL CREOSOTE SITE
ROME, NEW YORK

Figure 10

DOCUMENTATION SAMPLING PLAN

PROJECT: 127887	BY: ANICHOLS	REVISIONS:
DATE: AUG 2021	CHECKED: GW	

HALEY & ALDRICH OF NEW YORK

LOT 1

LOT 2

LOT 3A

LOT 3B

STONE PAD TO BE GRADED TO FACILITATE DRAINAGE TOWARDS WETLAND AREAS

LOT 5E

LOT 4

LOT 5A

WETLAND AREA TO BE RESTORED

WETLAND AREA TO BE RESTORED

LOT 5D

LOT 5C

EXPLANATION

- National Grid easement boundary
- Overhead electrical wire
- Proposed IRM excavation
- Multistate Trust-owned parcel
- Parcel owned by others
- Proposed wetland area

Delineated wetland to remain

- Emergent
- Forested
- NYSDEC Wetland (VE-3)
- Proposed limits of disturbance

NOTES

1. All locations and dimensions are approximate.
2. Assessor parcel data source: Oneida County and Hoffman Land Surveying and Geomatics survey.
3. National Grid easment and overhead wire data source: Hoffman Land Surveying and Geomatics survey.
4. Aerial imagery source: EagleView 2017

PROJECT LOCATION

N

SCALE IN FEET
0 30 60

Prepared for:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

FORMER FEDERAL CREOSOTE SITE
ROME, NEW YORK

Figure 11

PROPOSED RESTORATION PLAN

PROJECT: 127887	BY: ANICHOLS	REVISIONS:
DATE: AUG 2021	CHECKED: GW	

HALEY & ALDRICH OF NEW YORK

\\haleyaldrich.com\share\roc_common\41233 - GEMT Rome, NY site\GLOBAL\GIS\Maps\2021_08\127887_018_0011_PROPOSED_RESTORATION_PLAN.mxd — Last saved: 8/5/2021 9:16:32 AM

APPENDIX A

Community Air Monitoring Plan

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all <u>ground intrusive</u> activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a **continuous** basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored **continuously** at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

June 20, 2000

P:\Bureau\Common\CommunityAirMonitoringPlan (CAMP)\GCAMPR1.DOC

APPENDIX B

Design Drawings

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive
Suite 2
Rochester, NY 14623
585.359.9000

23 July 2020
File No. 127887-017

Greenfield Environmental Multistate Trust LLC
Trustee of the Multistate Environmental Response Trust
1400 Village Sq. Boulevard
Suite 3-144
Tallahassee, Florida 32312

Attention: Austin Hofmeister
Project Manager

Subject: Lot 5E, 5D, Railroad Parcel Interim Remedial Measure Design
Former Federal Creosote Site
Rome, New York
NYSDEC Site No. 633088

Dear Mr. Hofmeister:

Haley & Aldrich of New York (Haley & Aldrich) is pleased to provide the attached Final Lot 5E, 5D, Railroad Parcel Interim Remedial Measure (IRM) Design Plans and Specifications for the Former Federal Creosote Site in Rome, New York for National Grid review. The Design Plans and specifications includes some pertinent detail on the means and methods for excavating creosote-impacted materials primarily present beneath powerlines and within a National Grid utility easement. This design package is intended to be used to satisfy National Grid's requirements to work within their easement and safely below the powerlines as well as provide necessary information to be incorporated into the future IRM Work Plan for submittal to the New York State Department of Environmental Conservation.

The following attachments are included:

Attachment A:	Design Narrative *(with emphasis on working proximate to the powerlines)*
Attachment B:	Former Federal Creosote Site Lot 5E, 5D, and Railroad Parcel IRM Design Drawings
Attachment C:	Former Federal Creosote Site Lot 5E, 5D, and Railroad Parcel IRM Technical Specifications
Attachment D:	Supporting Reference Documentation (National Grid Conditions for Proposed Activities within Transmission Line Rights-of-Way; O'Connell Electric Company, Inc. Approach Distances for Qualified Employees – Alternating Current)

This final design package incorporates the Multistate Trust's verbal and written comments to the May 28, 2020 draft submittal.

We look forward to our continued work on this project. We would be happy to answer any questions you may have.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Claire L. Mondello
Project Manager

Jeffrey A. Klaiber, P.E. (NY)
Principal | Professional Engineer of Record

Attachments

G:\127887_GEMT Rome, NY Site\06_Remedial Action Implementation\Lot 5E - IRM Design\Lot5E Design_2020_0722_Final Design Submittal\2020_0723_HANY Final Design Package Transmittal.F.docx

Attachment A

Design Narrative

Attachment A – Design Narrative
Former Federal Creosote Site
Interim Remedial Measure

Project Overview

The Greenfield Environmental Multistate Trust LLC, Trustee of the Multistate Environmental Response Trust (Multistate Trust) is planning to conduct an Interim Remedial Measure (IRM) on a portion of the Former Federal Creosote Site in Rome, New York (Site). The Site is shown on Drawing G-100; Drawings are included in Attachment B. The IRM is required by the New York State Department of Environmental Conservation (NYSDEC) and will be conducted in accordance with the NYSDEC Order On Consent issued to the Multistate Trust. The nature of the IRM is excavation and off-site disposal of creosote-saturated soil. Construction of the IRM is currently planned to begin in April 2021 and would continue through November 2021. Previous Site investigations identified the presence of contaminants, primarily creosote, associated with historical wood-treating operations on several of the lots that comprise the Site. Two IRMs have been completed to date to the north of the subject IRM.

Approximately 1/3 of the planned IRM excavation will be conducted within the 60-foot wide National Grid utility easement (the easement) and beneath 115 kilovolt (kV) overhead electric transmission lines. The excavation is located generally in the center of two towers (see drawing C-200). The anticipated duration of excavation work inside of the easement may be up to 20 weeks. The closest tower to the excavation is approximately 180 feet away. Excavation in the easement will be limited to property owned by the Multistate Trust (Lot 5E). The focus of this document is specific to the planned IRM activities that will take place in the easement and it is intended to facilitate National Grid's review of the accompanying design drawings and specifications related to the IRM.

Post excavation Site stabilization will be completed in 2021. Site restoration including wetland restoration and mitigation is currently planned to be completed during the 2022 construction season and includes restoration of the existing wetland within the easement (see drawing C-500). New wetland will also be created in the easement as compensatory mitigation for the loss of wetland on other previously remediated portions of the Site and as required by the NYSDEC (see drawing C-500). The existing access road that crosses the easement will be removed and replaced immediately upon backfill. During the IRM, National Grid will be provided access to the easement at all times to address any emergency circumstances. The Site must be secured with fencing and National Grid has been provided with a key to the gates on each end of the access road if access is necessary while contractors are not on site.

Timeline to Begin the IRM

After addressing any questions or concerns resulting from National Grid's review of the IRM plans and specifications, the Multistate Trust must submit an IRM Work Plan to the NYSDEC for approval. Upon NYSDEC approval of the IRM Work Plan, a Joint Application for Permit will be submitted to the NYSDEC and the U.S. Army Corps of Engineers (USACE) for approval to restore wetland and create new wetland as compensatory mitigation. The NYSDEC and the USACE have both agreed with the preliminary scope of the IRM and timeframes to complete it.

Notifications and Communication with National Grid

The Multistate Trust will notify National Grid one week in advance of mobilization to start the IRM construction. Prior to mobilization National Grid will be provided a list of electrically qualified employees working in the easement. It is understood that National Grid will be sending its staff to oversee the project periodically and while work is being done in the easement. This staff must have the 40-hour OSHA HAZWOPER Training as required by the NYSDEC.

The following sections of this document provide a brief overview of the excavation activities and describe the planned approach to safely conduct excavation and other activities that must be conducted in the easement to complete the IRM.

Excavation

The proposed excavation extent encompasses the apparent contiguous mass of creosote-saturated soil on top of the confining clay layer that varies in depth from approximately 10 to 18 ft below ground surface across the portion of the Site subject to this IRM (see Drawing C-200). All material between the ground surface and the confining clay layer will be excavated from the pre-determined limit of excavation shown on the drawings and disposed at a NYSDEC-permitted landfill. Is anticipated that the amount of material to be excavated will be approximately 10,000 tons.

The extent of creosote-saturated soil was defined during 2017 investigation activities (see drawing C-101). Other instances of creosote-saturated soil were observed during the investigation within the easement, appear to be minor and not in connection with the contiguous mass of creosote-saturated soil to be addressed by this IRM. The other instances of creosote-saturated soil should be addressed with a future NYSDEC-approved Site Management Plan that will provide instructions on how to properly handle and manage creosote-impacted soils should they be encountered in the future.

The excavation area (see Drawing C-400) will be sectioned into 25 excavation cells (see Drawing C-400). The cells will be constructed using interlocking steel sheet piles and installed incrementally to stabilize the excavation area, limit groundwater intrusion, and facilitate excavation dewatering. Sheet pile installation and removal will require a minimum approach distance to the transmission lines within dangerous proximity. Necessary precautions and actions will be taken to protect against the danger of contact with high-voltage lines (see drawings C-202A). The precautions and actions are described below.

Sheet Pile Installation, Removal, and Equipment Requirements

Transmission line heights surveyed to date are included on Drawing C-202. The line height at maximum sag over the excavation measured in July 2019 was 32.4 feet. Sheet piles will not exceed 20 feet in length and will be vibrated in place by a side gripping, vibratory hammer. Each sheet must be lifted 5 feet above grade to safely maneuver and align before installation. Therefore, the maximum height that sheet pile will reach is 25 feet which is a minimum approach distance of 7.4 feet from the overhead powerlines based on the July 2019 measurement. During construction, the line height will be verified daily. According to the Approach Distances for Qualified Employees – Alternating Current, Revised January 2016, provided by O'Connell Electric Company, the minimum approach distance allowable would be 56 inches (4.6 feet) utilizing an electrically qualified operator and spotter. During sheet pile installation and excavation activities within the easement, O'Connell Electric, or other qualified

contractor will be engaged as the spotter. Paragon Environmental Construction, Inc. will provide the electrically qualified operators.

Electrical grounding of construction equipment will be achieved through the attachment of secure lugs and tether cables between installed sheet walls and operating equipment (see drawing C-202A). Equipment operators shall have required training per CFR 1910.269, and all excavators operating within the easement shall be equipped with height limiters (governors) to set the operating height of the arm to stay below the safe distance determined by the electrically qualified employees. The limiters will be adjusted and tested every day prior to start of work. In addition, electrically qualified operators and spotter will be onsite. Dump trucks will be needed to dump imported backfill material proximate to excavation cells outside of the easement. The staged backfill will be moved into the excavations with the excavator or a wheeled loader.

Upon completion of excavation and backfilling, sheet piles that do not comprise a common side with the adjacent unexcavated cell will be removed and re-used to construct subsequent excavation cells. The removal and re-use of sheet piles will continue until the excavation is complete. Sheet pile installation and excavation sequencing is as follows:

- Excavate Cells 1 through 11, located to the south and outside of the easement. Following the excavation of Cells 8 through 11, sheets piles installed along the northern edge of Cells 8 through 11 will remain in place. Excavators will be grounded to the sheets left in place to complete the next cells within the easement to the north.

- Excavate Cells 12 through 23 using the northern sheet pile walls of the previously excavated row of cells for electrical grounding. Sheet pile installation and excavation of Cells 12 through 23 will require an electrical spotter.

- Excavate Cells 24 and 25.

Excavated Material Management

Excavated materials will not be managed, treated, or stored within the easement. Dump trucks will not be lifted within the easement. Excavated materials will be loaded into off-road trucks and transported to staging areas on Lot 3B, Lot 4 or on the 5D/5E area outside of the easement. The maximum height of the excavator will be limited using the installed height limiters during off-road truck loading as described above. There will also be a spotter onsite to observe loading.

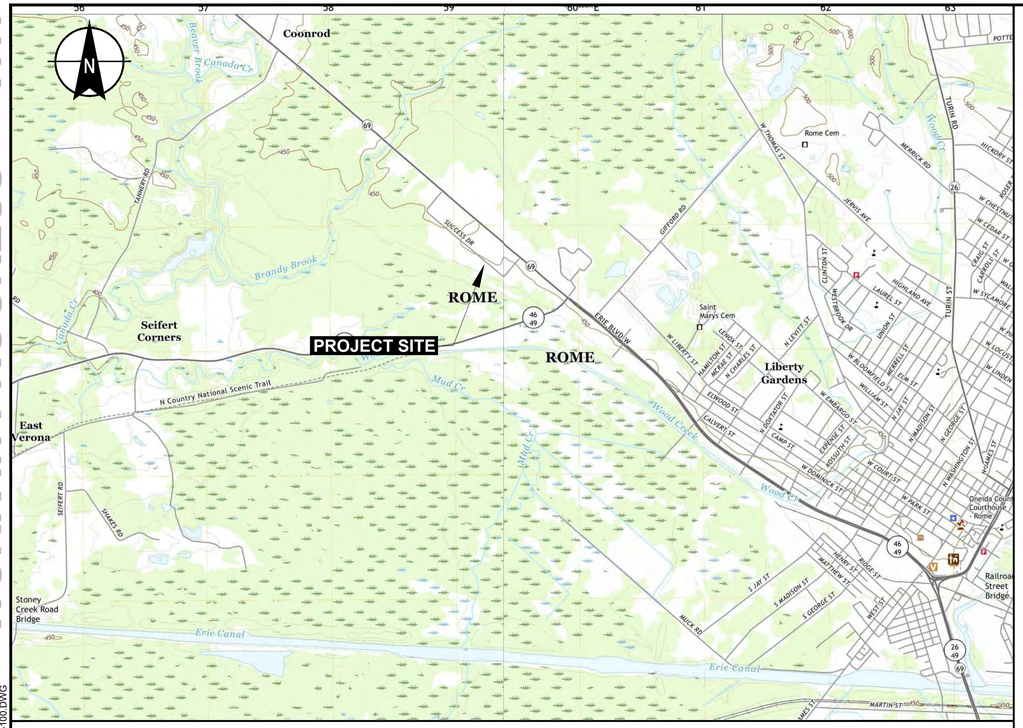
Staged materials will be sampled in accordance with NYSDEC-permitted landfill requirements. Once the landfill has accepted the material, stockpiles will be loaded onto dump trucks and transported to a NYSDEC-permitted landfill for disposal. Truck loading for off-site transportation and disposal will not occur within the easement. There will be constant truck traffic through the easement and underneath overhead power lines (see Drawing C-200). Four power poles are located within or immediately adjacent to the Limits of Construction (see Drawing C-200). A 50-ft radius around each pole will be fenced (outside of access road) to prevent any activity proximate to the poles.

The following Attachments B through D comprise the IRM Design package provided for National Grid's review and comment.

Attachment B

Former Federal Creosote Site Lot 5E, 5D, and Railroad Parcel Design Drawings

WORK IN PROGRESS - V.17



SITE LOCUS
TOPO SOURCE: USGS TOPOGRAPHIC MAP, VERONA AND ROME, NEW YORK QUADRANGLES, DATED 2018.

SITE AERIAL
MAP SOURCE: GOOGLE EARTH PRO, APRIL 2019 AERIAL IMAGE.

FORMER FEDERAL CREOSOTE SITE

LOT 5D, 5E, AND RAILROAD PARCEL INTERIM REMEDIAL MEASURE DESIGN

ROME, NEW YORK

DRAWING INDEX		
SHEET NO.	SHEET TITLE	DESCRIPTION
1	G-100	TITLE SHEET AND DRAWING INDEX
2	G-101	GENERAL NOTES
3	G-102	GENERAL LEGEND AND ABBREVIATIONS
4	C-100	EXISTING CONDITIONS
5	C-101	LIMITS OF IMPACTED SOIL AND GEOLOGIC AND EXCAVATION CROSS SECTIONS
6	C-200	CONSTRUCTION SITE PLAN
7	C-201	DEMOLITION PLAN
8	C-202	OVERHEAD 115KV POWER LINE - SECTION AND PROFILE
9	C-202A	OVERHEAD 115KV POWER LINE - PROFILE, DETAILS, & NOTES
10	C-300	EROSION AND SEDIMENT CONTROL PLAN
11	C-400	EXCAVATION AREA AND VOLUMES
12	C-500	RESTORATION PLAN
13	C-600	CONSTRUCTION AND RESTORATION DETAILS
14	C-601	EROSION AND SEDIMENT CONTROL DETAILS
15	C-602	WATER TREATMENT SYSTEM
16	S-100	SUPPORT OF EXCAVATION GENERAL NOTES
17	S-101	SUPPORT OF EXCAVATION SECTIONS

HALEY ALDRICH

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
www.haleyaldrich.com

PREPARED FOR:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

THIS IS A COLOR DRAWING. INFORMATION WILL BE LOST IF REPRODUCED IN BLACK AND WHITE.

FOR NATIONAL GRID REVIEW

Project No.:	127887-009
Scale:	SHOWN
Date:	JUNE 2020
Drawn By:	SJL
Designed By:	HA
Checked By:	HA
Approved By:	
Stamp:	

NOT FOR CONSTRUCTON

Rev.	Description	By	Date

FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

IRM
ROME, NEW YORK

TITLE SHEET AND DRAWING INDEX

G-100

Sheet: 1 of 17

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\\HALEYALDRICH.COM\SHARE\ROC_COMMON\127887_GEMT ROME, NY SITE\06_REMEDIAL ACTION IMPLEMENTATION\LOT 5E - IRM DESIGN\LOT5E DESIGN\CAD\127887_009_5E_G-100.DWG

GENERAL NOTES

1. THE CONSTRUCTION DOCUMENTS FOR THIS PROJECT INCLUDE THESE DESIGN DRAWINGS *"FORMER FEDERAL CREOSOTE SITE, INTERIM REMEDIAL MEASURES, LOT 5E, LOT 5D AND RAILROAD PARCEL, DESIGN, MAY, 2020"*.

2. CONSTRUCTION IMPLEMENTATION WILL BE BY THE FOLLOWING PARTIES:
   - OWNER: GREENFIELD ENVIRONMENTAL MULTISTATE TRUST, LLC
   - ENGINEER: HALEY & ALDRICH CONSTRUCTION SERVICES
   - CONTRACTOR: PARAGON ENVIRONMENTAL CONSULTANTS, INC.
   - SUBCONTRACTORS: TBD

3. THESE DESIGN PLANS REPRESENT REQUIRED CONSTRUCTION ELEMENTS TO IMPLEMENT IMPROVEMENTS AT THE SITE. THE CONTRACTOR / SUBCONTRACTORS SHALL PROVIDE PERSONNEL, SUPERVISION, MATERIALS, EQUIPMENT, AND TESTING TO COMPLETE THE REMEDIATION FOR ACCEPTANCE BY THE OWNER.

4. MEANS AND METHODS OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR/SUBCONTRACTORS AND MUST BE SUFFICIENT TO ACHIEVE THE PERFORMANCE OBJECTIVES OF THE PROJECT, AS DESCRIBED. THE CONTRACTOR/SUBCONTRACTORS SHALL PROVIDE A DESCRIPTION OF THE MEANS AND METHODS OF CONSTRUCTION AND CONSTRUCTION SEQUENCING TO THE OWNER/ENGINEER PRIOR TO COMMENCING WORK AND MUST DEMONSTRATE TO THE SATISFACTION OF THE OWNER THAT THE SELECTED MEANS AND METHODS OF CONSTRUCTION WILL ALLOW SAFE AND SATISFACTORY COMPLETION OF THE WORK WITHIN THE ALLOWABLE SCHEDULE.

5. CONTRACTOR/SUBCONTRACTORS SHALL PROVIDE ALL TEMPORARY UTILITIES AND TEMPORARY FACILITIES NECESSARY TO COMPLETE THEIR PORTION OF THE WORK, EXCEPT WHERE OTHERWISE INDICATED.

6. CONTRACTOR/SUBCONTRACTORS SHALL COORDINATE WITH ENGINEER OR OWNER REPRESENTATIVE TO MARK EXISTING UTILITIES ON SITE BEFORE CONSTRUCTION BEGINS.

7. THE CONTRACTOR/SUBCONTRACTOR SHALL NOT DISTURB ANY AREAS OUTSIDE OF THE LIMITS OF WORK.

8. THE CONTRACTOR/SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLYING WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS, WHILE EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTORS TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.

9. ALL WORK COMPLETED UNDER THIS CONTRACT SHALL COMPLY WITH THE U.S. DEPARTMENT OF LABOR OCCUPATIONAL HEALTH AND SAFETY ACT AND THE REGULATIONS OF NEW YORK STATE, DEPARTMENT OF LABOR.

10. CONTRACTOR/SUBCONTRACTOR SHALL REFER TO ALL PLAN SHEETS WITHIN THIS DESIGN SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEERS INTENT THAT ANY SINGLE SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.

11. CONTRACTOR/SUBCONTRACTOR SHALL MAINTAIN ONE SET OF AS-BUILT / RECORD DRAWINGS ON THE JOB SITE DURING CONSTRUCTION FOR DISTRIBUTION TO THE ENGINEER AND/OR OWNER'S REPRESENTATIVE UPON COMPLETION. FINAL RECORD DRAWING TO BE IN ELECTRONIC FORMAT (ACAD) AND PDF.

SURVEY

1. SITE SURVEY, PERFORMED BY HOFFMAN LAND SURVEYING AND GEOMATICS, 2417 PUTNAM ROAD, ONTARIO, NY, 14519, VARIOUS SURVEY DATES.

2. SURVEY BENCHMARKS:

BM/CHECK POINT	ELEVATION	NORTHING	EASTING	DESCRIPTION
TBM PNT 9	441.5700			MN_DSK IN ASPHALT
TBM PNT 8	440.2000			MN_DSKN IN ASPALT
CHK PNT 11	441.5700	1179229.90	1108295.60	CHISLED X IN OVERHEAD DOOR LEDGE
CHK PNT 12	445.8600	1179432.40	1108178.40	DRILL HOLE IN OVERHEAD DOOR LEDGE
CHK PNT 13	445.8300	1179405.10	1108211.80	DRILL HOLE IN OVERHEAD DOOR LEDGE
CHK PNT 14	445.9300	1179369.60	1108255.30	DRILL HOLE IN OVERHEAD DOOR LEDGE
CHK PNT 15	445.9300	1179326.70	1108307.30	DRILL HOLE IN OVERHEAD DOOR LOADING DOCK LEDGE

HORIZONTAL DATUM: NAD83/96 (CORS 2011), NYS PLANE, EASTERN ZONE.

VERTICAL DATUM: NAVD 1988 (GEOGRID12B)

3. THE CONTRACTOR SHALL CAREFULLY PRESERVE ALL BENCH MARKS, PROPERTY LINE REFERENCES (E.G., PINS, PIPES, MONUMENTS), REFERENCE POINTS, STAKES AND ANY OTHER SURVEY REFERENCE.

4. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY SURVEY MONUMENTS NOTED OR ENCOUNTERED IN THE FIELD. ANY DISTURBANCE SHALL BE REPAIRED BY CONTRACTOR AT NO EXPENSE TO THE OWNER.

PRE AND POST CONSTRUCTION SURVEY

1. RETAIN A PROFESSIONAL LAND SURVEYOR, LICENSED AND REGISTERED IN NEW YORK, WHO SHALL PERFORM ENGINEERING SURVEYING NECESSARY FOR SPECIFIED SURVEYS. SURVEYOR SHALL PRODUCE ELECTRONIC SUBMITTALS IN AUTOCAD SOFTWARE PLATFORM. ALL DATA POINTS SHALL BE SUBMITTED IN AN EXCEL SPREADSHEET.

2. PROVIDE SURVEYS INCLUDING COORDINATES AND ELEVATIONS FOR:
   a. PRIOR TO CONSTRUCTION
   i. STAKING OF WETLANDS SHOWN
   ii. LIMITS OF IMPACTED SOILS
   b. FOLLOWING CONSTRUCTION
   i. LIMITS OF EXCAVATION
   ii. DEPTH OF EXCAVATIONS
   iii. SIZE, MATERIAL AND INVERT OF CULVERTS
   ij. WETLAND INSTALLED
   vi. FENCING AND GATE
   vii. AS-BUILT SURVEY AT COMPLETION OF CONSTRUCTION

CONSTRUCTION AND MATERIAL SPECIFICATIONS

1. UNLESS OTHERWISE SPECIFIED, THE NEW YORK DOT - CONSTRUCTION AND MATERIAL, STANDARD SPECIFICATIONS, CURRENT EDITION ARE INCORPORATED BY REFERENCE.

2. UNLESS OTHERWISE SPECIFIED, ALL MATERIALS SHALL BE MATERIALS PROPER AND SUFFICIENT FOR THE PURPOSE CONTEMPLATED. THE CONTRACTOR SHALL FURNISH, IF SO REQUIRED, SATISFACTORY EVIDENCE AS TO TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP.

3. ALL ITEMS OF EQUIPMENT AND/OR MATERIAL PROPOSED BY THE CONTRACTOR FOR SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER IN WRITING AND SHALL BE EQUAL OR SUPERIOR TO THE ITEMS SPECIFIED IN THE CONTRACT DOCUMENTS. IF SAID SUBSTITUTION PROPOSED BY THE CONTRACTOR FOR A SPECIFIED ITEM REQUIRES ENGINEERING REVISIONS, THE TOTAL EXPENSE OF SAID REVISIONS SHALL BE PAID BY THE CONTRACTOR.

ENVIRONMENTAL CONTROLS

1. NO EARTHWORK OR OTHER ACTIVITIES WHICH COULD RESULT IN THE GENERATION OF STORM WATER RUNOFF POLLUTANTS SHALL BEGIN BEFORE ALL EROSION AND SEDIMENTATION CONTROLS IN ACCORDANCE WITH THE EROSION CONTROL AND STORM WATER MANAGEMENT PLANS HAVE BEEN INSTALLED AND ARE FUNCTIONING PROPERLY.

2. THE CONTRACTOR/SUBCONTRACTOR SHALL ESTABLISH, MAINTAIN, INSPECT, AND REPAIR ALL STORMWATER AND EROSION CONTROLS SHOWN ON THESE DRAWINGS, AND REQUIRED BY PROJECT ENVIRONMENTAL PERMITS THROUGHOUT THE PROJECT.

3. CONTRACTOR/SUBCONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING THE EFFECTIVENESS OF ENVIRONMENTAL CONTROLS AND SUPPLEMENTING OR MODIFYING THEM AS NEEDED BASED ON SITE OPERATIONS TO MAINTAIN COMPLIANCE WITH THE PERMIT CONDITIONS.

4. CONTRACTOR/SUBCONTRACTORS SHALL IMPLEMENT AND PERFORM DUST AND ODOR CONTROL MEASURES AS REQUIRED TO PREVENT TRACKING OFF-SITE, AND WIND-BLOWN DUST/ODOR EMISSIONS OFF-SITE.

LIMITS OF WORK

1. THE CONTRACTOR'S CONSTRUCTION OPERATIONS ARE CONFINED TO THE LIMITS OF WORK AREA AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL USE THE APPROPRIATE CONSTRUCTION METHODS TO PREVENT FROM DISTURBING ANY AREA OUTSIDE THESE AREAS.

WORKING HOURS

1. ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED BETWEEN 6: 00 A.M. TO 7:00 P.M. MONDAY THROUGH FRIDAY UNLESS OTHERWISE APPROVED BY THE ENGINEER.

MAINTENANCE OF TRAFFIC I LOCAL ACCESS

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN SAFE AND SATISFACTORY LOCAL ACCESS, VEHICULAR AND PEDESTRIAN, TO ALL ABUTTING PROPERTIES WITHIN THE PROJECT. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE "NEW YORK MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" FOR ALL OPERATIONS.

EXISTING UTILITIES

1. THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. BEFORE ANY WORK IS STARTED THAT WILL INTERFERE WITH THE EXISTING UTILITIES, THE CONTRACTOR SHALL CALL THE NEW YORK ONE-CALL CENTER, AT 1-800-272-4480, or 811 TWO-TEN (2-10) DAYS IN ADVANCE OF THE WORK. NON-MEMBER UTILITIES MUST BE CONTACTED DIRECTLY.

2. NOTIFY NATIONAL GRID IN WRITING AT LEAST 1-WEEK BEFORE START OF WORK. NOTIFY NATIONAL GRID'S MANAGER OF TRANSMISSION LINE SERVICES WHEN A BURIED WIRE IS DAMAGED.

3. NATIONAL GRID: CONDITIONS FOR PROPOSED ACTIVITIES WITHIN TRANSMISSION LINE RIGHTS-OF-WAY ARE INCLUDED IN SPECIFICATIONS.

CONSTRUCTION SEQUENCE

THE CONSTRUCTION SEQUENCE WILL CONSIST OF THE FOLLOWING ACTIVITIES AND MAY OCCUR IN THE FOLLOWING GENERAL ORDER (NOT ALL TASKS ARE SHOWN):

- OBTAIN ALL PERMITS REQUIRED.
- NOTIFY NATIONAL GRID IN WRITING AT LEAST 24 HOURS BEFORE START OF WORK. NOTIFY NATIONAL GRID'S MANAGER OF TRANSMISSION LINE.
- SERVICES WHEN A BURIED WIRE IS DAMAGED.
- IDENTIFY ALL ABOVE/BELOW GROUND UTILITIES, AS REQUIRED.
- MOBILIZE TO SITE.
- INSTALL EROSION CONTROL ITEMS AS SHOWN ON THE DRAWINGS AND AS REQUIRED.
- INSTALL CONSTRUCTION SITE ITEMS, I.E., ACCESS ROAD, TRUCK WASH, ETC., AS REQUIRED.
- INSTALL WATER TREATMENT SYSTEM: WATER FROM EXCAVATIONS AND WATER IN CONTACT WITH IMPACTED SOIL TO BE CAPTURED, CONVEYED, TREATED, TESTED AND DISPOSED TO POTW THROUGHOUT CONSTRUCTION ACTIVITIES.
- INSTALL DEWATERING CELLS
- PERFORM DEMOLITION, I.E., REMOVE RR TIES; CONCRETE SLABS; DEBRIS; AS SHOWN.
- INSTALL SHEET PILING FOR CELL 1, PERFORM EXCAVATION OF IMPACTED MATERIALS, BACKFILL EXCAVATION, REMOVE SHEET PILING AND PROCEED WITH CELL 2, AND REPEAT.
- EXCAVATED MATERIAL TO BE STOCKPILED IN DEWATERING CELL FOR BULKING, TESTING, ETC., AS REQUIRED.
- MATERIAL LOADED FOR TRANSPORT AND OFF-SITE DISPOSAL, AS REQUIRED.
- PERFORM SITE RESTORATION ACTIVITIES.
- MAINTAIN AND/OR INSTALL ALL EROSION CONTROL STRUCTURES AT COMPLETION OF CONSTRUCTION.
- FURNISH SET OF DRAWINGS SHOWING ALL AS-BUILT CONDITIONS; ALL SURVEYING DOCUMENTS; ALL APPROVED SHOP DRAWINGS; ALL PERMIT APPLICATIONS AND PERMITS OBTAINED AND OTHER ITEMS AS DIRECTED BY OWNER/ENGINEER AND STATED IN SPECIFICATIONS.
- DEMOBILIZE FROM SITE.

HALEY ALDRICH

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
www.haleyaldrich.com

PREPARED FOR:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

FOR NATIONAL GRID REVIEW

Project No.:	127887-009
Scale:	SHOWN
Date:	JUNE 2020
Drawn By:	SJL
Designed By:	HA
Checked By:	HA
Approved By:	

Stamp:

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Rev.	Description	By	Date

FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

IRM
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GENERAL NOTES

G-101

Sheet: 2 of 17

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WORK IN PROGRESS - V.17

ABBREVIATIONS

ACOE	ARMY CORPS OF ENGINEERS
APPROX	APPROXIMATE
BGS	BELOW GROUND SURFACE
CU YD	CUBIC YARD
CPT	CONE PENETROMETER TEST
CMP	CORRUGATED METAL PIPE
DB	DEED BOOK
FS/CA	FEASIBILITY STUDY AND COST ANALYSIS
FFE	FINISHED FLOOR ELEVATION
HANY	HALEY & ALDRICH OF NEW YORK, INC.
HCS	HALEY & ALDRICH CONSTRUCTION SERVICES
HASP	HEALTH AND SAFETY PLAN
HI	HAZARD INDEX
ID	IDENTIFICATION
IDW	INVESTIGATION-DERIVED WASTE
IRM	INTERIM REMEDIAL MEASURES
IRM WORKPLAN	INTERIM REMEDIAL MEASURES WORKPLAN
LOD	LIMIT OF DISTURBANCE
MCL	USEPA MAXIMUM CONTAMINANT LEVEL
MULTISTATE TRUST	GREENFIELD ENVIRONMENTAL MULTISTATE TRUST LLC
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NYSDEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
PB	PLAT BOOK
PCI/G	PICOCURIES PER GRAM
PCF	POUNDS PER CUBIC FEET
PG	PAGE
PPE	PERSONAL PROTECTIVE EQUIPMENT
PSF	POUNDS PER SQUARE FOOT
PSIG	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE
P.O.B.	POINT OF BEGINNING
QA/QC	QUALITY ASSURANCE/QUALITY CONTROL
RCP	REINFORCED CONCRETE PIPE
RSL	REGIONAL SCREENING LEVELS
R/W	RIGHT-OF-WAY
SAP	SUPER ABSORBENT POLYMER
T.B.M.	TEMPORARY BENCHMARK
TDS	TOTAL DISSOLVED SOLIDS
TOC	TOTAL ORGANIC CARBON
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
USEPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WWTP	WASTEWATER TREATMENT PLANT

CIVIL FEATURES

- CONSTRUCTION LIMITS
- DITCH FLOW
- DITCH FLOW (ALTERNATE)
- FENCE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EDGE OF WATER / WATER FEATURE
- CULVERT
- AGGREGATE ACCESS ROAD
- PAVED ROAD
- RAILROAD
- CENTERLINE
- PROPERTY LINE
- RIGHT OF WAY
- TOP OF DITCH
- TREE / BRUSH LINE
- POWER POLE
- TELEPHONE POLE
- GUY WIRE
- LP — LIGHT POLE
- TP — TELEPHONE PEDESTAL
- E — ELECTRIC TRANSFORMER
- D — DRAIN MANHOLE
- SV — STORM SEWER VALVE
- USM — UNDERGROUND STORM SEWER MARKER
- R/R — RAILROAD CROSSING SIGN
- S — STOP SIGN
- HVPL — HIGH VOLTAGE POWER LINE SIGN
- UGM — UNDERGROUND GAS LINE MARKER
- GRATE INLET
- BOX INLET W/ MANHOLE
- FH — FIRE HYDRANT
- 182.6 — SPOT ELEVATION
- S — SAN. SEWER MANHOLE
- V — WATER VALVE
- M — WATER METER
- GM — GAS METER

SITE UTILITIES

- EO — ELECTRIC (OVERHEAD)
- EU — ELECTRIC (UNDERGROUND)
- TU — TELEPHONE (UNDERGROUND)
- TO — TELEPHONE (OVERHEAD)
- U — UNDERGROUND CABLE
- FM — FORCE MAIN
- GAS — GAS
- SAN — SANITARY SEWER
- STM — SANITARY SEWER
- R/W — RIGHT-OF-WAY
- W — WATER

BENCHMARKS

BM — SET ROD & CAP (ROWE), ELEV. 21.81' (NAVD 88)

GENERAL LEGEND

- MOST GRAPHIC ENTITIES/OBJECTS. THESE ENTITIES WOULD INCLUDE BUILDING, BEDROCK, STRATA, CONTOURS, TOPO, HATCH PATTERNS, AND SITE DEVELOPMENT LINES.
- CENTERLINES, GRIDS, SITE GRID LINES, SITE LIMITS, COLUMN LINES, FUTURE WORKS, AND MATCH LINES.
- MOST GRAPHIC ENTITIES/OBJECTS. USE THIS LINETYPE TO DIFFERENTIATE FROM THE CONTINUOUS LINETYPE FOR SITE FEATURES AND LINEWORK.
- THE DASHED LINE WILL BE USED FOR DEMOLISHED/RELOCATED ITEMS, ABANDONED FEATURES, EASEMENTS, RIGHT-OF-WAYS, FOOTINGS, AND INTERPRETIVE CONTOURS.
- THE DASHED LINE WILL BE USED FOR DEMOLISHED/RELOCATED ITEMS, ABANDONED FEATURES, EASEMENTS, RIGHT-OF-WAYS, FOOTINGS, AND INTERPRETIVE CONTOURS.
- UNDERGROUND STRUCTURES, TANKS, PROPOSED EXISTING COLUMNS, FOOTINGS, STRUCTURES BEYOND, HIDDEN OR EXISTING STRUCTURES.
- E 176940 — GRID

PLAN SHEET DATA

- A / C-103 — PROFILE REFERENCE (PROFILE A ON PLAN SHEET C-103)
- 1 / C-601 — DETAIL REFERENCE (DETAIL 1 ON PLAN SHEET C-601)
- 1 — DETAIL NUMBER

SECTIONS AND FILL MATERIAL

- AREAS COVERED BY WATER
- NATIVE SOIL
- CONCRETE
- TOPSOIL
- RIP RAP
- GENERAL FILL
- AGGREGATE
- FOREST MAT
- SAND
- SILT
- CLAY
- CINDERS

DELINEATED WETLAND TYPE

- EMERGENT WETLAND
- SCRUB / SHRUB
- FORESTED WETLAND
- NYSDEC WETLAND (VE-3)

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HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
www.haleyaldrich.com

PREPARED FOR:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

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FOR NATIONAL GRID REVIEW

Project No.:	127887-009
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Drawn By:	SJL
Designed By:	HA
Checked By:	HA
Approved By:	

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FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

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ROME, NEW YORK

GENERAL LEGEND AND ABBREVIATIONS

G-102

Sheet: 3 of 17

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WORK IN PROGRESS - V.17

1108100 1108200 1108300 1108400 1108500 1108600 1108700 1108800

1179800 1179700 1179600 1179500 1179400

1179100 1179000 1178900 1178800 1178700 1178600

SUCCESS DRIVE

SAN. MH
RIM 445.4
CL INV. 435.1

SAN. MH
RIM 445.7
CL INV. 435.2

NORTEK POWDER COATING

LOT 1

LOT 3A

LOT 3B

LOT 4

LOT 5A

LOT 5C

LOT 5D

LOT 5E

COLD POINT DRIVE

STONE DRIVE

EDGE OF PAVEMENT

WOODED AREA

ASPHALT

LIMITS OF STONE STAGING AREA

STORAGE CONTAINER

GRAVEL ACCESS ROAD

60' EASEMENT TO NIAGARA MOHAWK POWER CORP LIBER 1859 OF DEEDS, PAGE 549

MW-16

ASPHALT PAD

SHEET PILE

EXPOSED CONC. SLAB

SECURITY FENCE STOCKPILE

OVERHEAD 115kV POWER LINES

UTILITY POLES / TOWERS

CULVERT

MW-7

RR PARCEL

EXPOSED CONC. STRUCTURE

MW-9

MW-3

MW-4

MW-1

MW-2

EXIST. RAILROAD TRACKS

GATE

8" POSTS

BUILDING REMAINS

NATIONAL GRID EASEMENT BOUNDARY

DRIED CREOSOTE TO BE REMOVED

STONE

LEGEND

- PROPERTY LINE
- OVERHEAD POWER LINE
- GRAVEL ACCESS ROAD
- GRAVEL STAGING AREA
- 440 EXISTING CONTOUR
- GRAVEL / STONE AREA
- EXISTING BUILDING
- MONITORING WELL

DELINEATED WETLAND TYPE

- EMERGENT WETLAND
- SCRU / SHRUB WETLAND
- FORESTED WETLAND
- NYSDEC WETLAND (VE-3)

NOTES

1. WETLAND DELINEATIONS PERFORMED BY HALEY & ALDRICH OF NEW YORK ON 22 SEPTEMBER 2015 AND 20 SEPTEMBER 2017.
2. WETLAND DATA SOURCE: NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC).

0 40 80 120 160
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
www.haleyaldrich.com

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FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

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ROME, NEW YORK

EXISTING CONDITIONS

C-100

Sheet: 4 of 17

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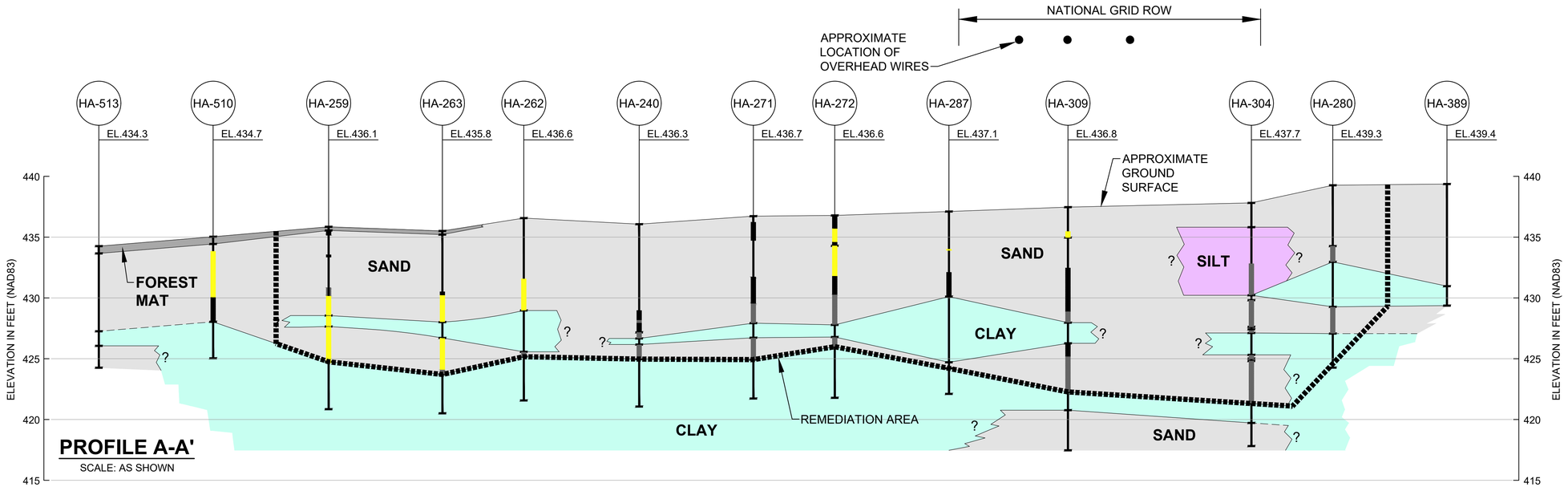
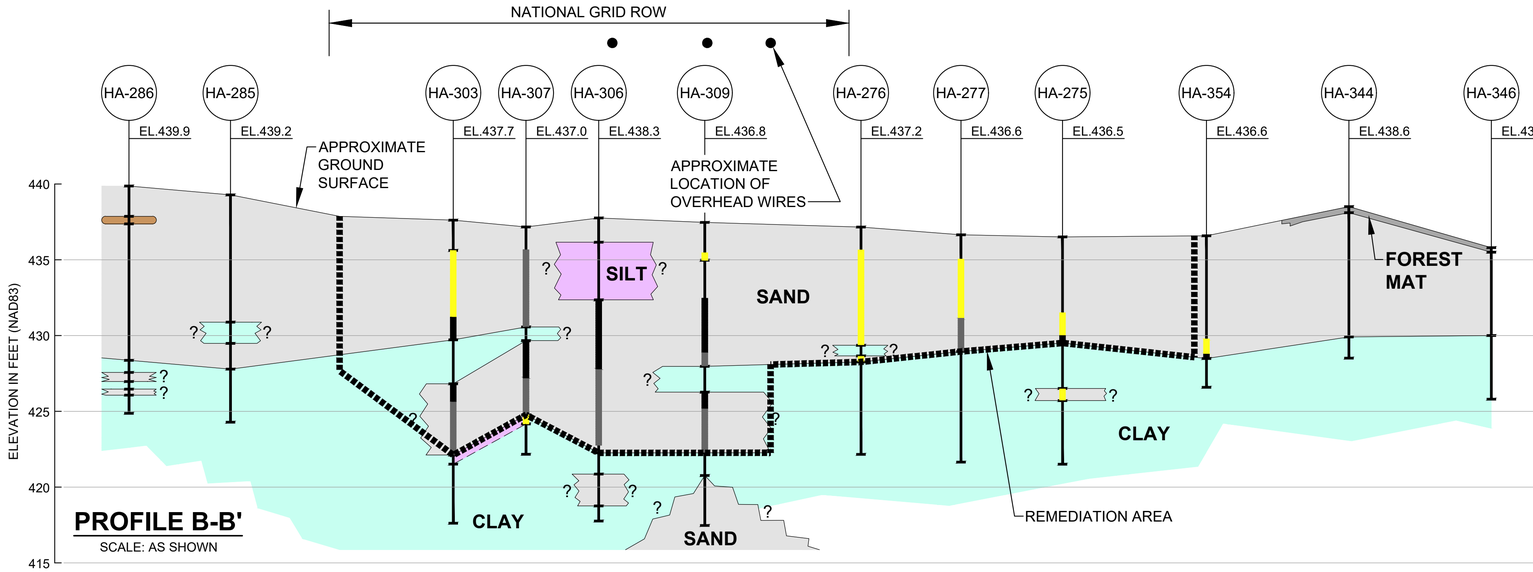


PROFILE A-A'

SCALE: AS SHOWN



PROFILE B-B'

SCALE: AS SHOWN

HORIZ. 0 30 60

VERT. 0 10 20

SCALE IN FEET

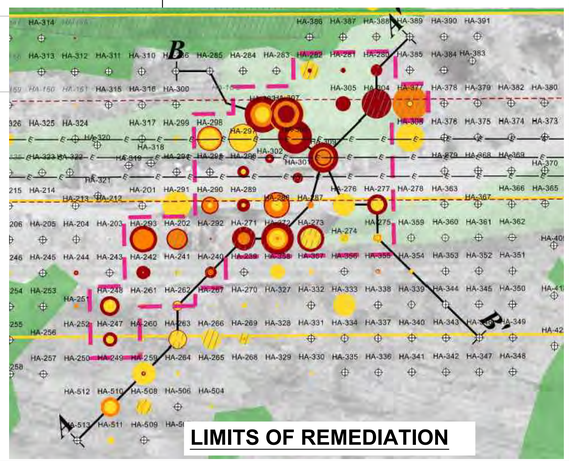
LEGEND

- HA-513 — EXPLORATION DESIGNATION
- EL.434.3 — APPROXIMATE GROUND SURFACE ELEVATION
- GROUND SURFACE MATERIAL
- INTERPRETED GEOLOGIC STRATUM INTERFACE (DASHED WHERE INFERRED)
- LOW IMPACT
- LOW TO MODERATE IMPACT
- PRESENCE OF CREOSOTE SATURATED SOIL
- BOTTOM OF EXPLORATION

- FOREST MAT
- SAND
- SILT
- CLAY
- CINDERS

NOTES

1. INFORMATION SHOWN ON THIS SHEET FROM "SUPPLEMENTAL INVESTIGATION SUMMARY REPORT" PREPARED BY HALEY AND ALDRICH OF NY, DATED JANUARY 2018. REFER TO THE REPORT FOR MORE DETAILED SOIL STRATUM DESCRIPTIONS AND THE TEST BORING LOGS FOR DETAILED MATERIAL AND IMPACT DESCRIPTIONS.
2. SUBSURFACE PROFILES DEPICT THE GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE PROFILE ARE BASED UPON INTERPOLATION BETWEEN ADJACENT EXPLORATIONS. THIS FIGURE SHOWS THE ACTUAL SEQUENCE OF STRATA ENCOUNTERED AT EACH EXPLORATION LOCATION. ACTUAL SOIL CONDITIONS AND INTERFACES BETWEEN SUBSURFACE EXPLORATIONS MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE PROFILES.
3. ELEVATIONS ARE IN FEET AND REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). TOPOGRAPHIC DATA ARE APPROXIMATE AND INTERPOLATED FROM GROUND SURVEY POINTS PROVIDED BY HOFFMAN LAND SURVEYING AND GEOMATICS, 27 NOVEMBER 2017.
4. LOCATIONS OF OVERHEAD WIRES SHOWN ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR VERIFYING MEASUREMENTS AND ELEVATIONS PRIOR TO COMMENCING WORK AND THROUGHOUT THE DURATION OF WORK.



LIMITS OF REMEDIATION

HALEY ALDRICH

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
www.haleyaldrich.com

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FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

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ROME, NEW YORK

LIMITS OF IMPACTED SOIL AND GEOLOGIC AND EXCAVATION CROSS SECTIONS

C-101

Sheet: 5 of 17

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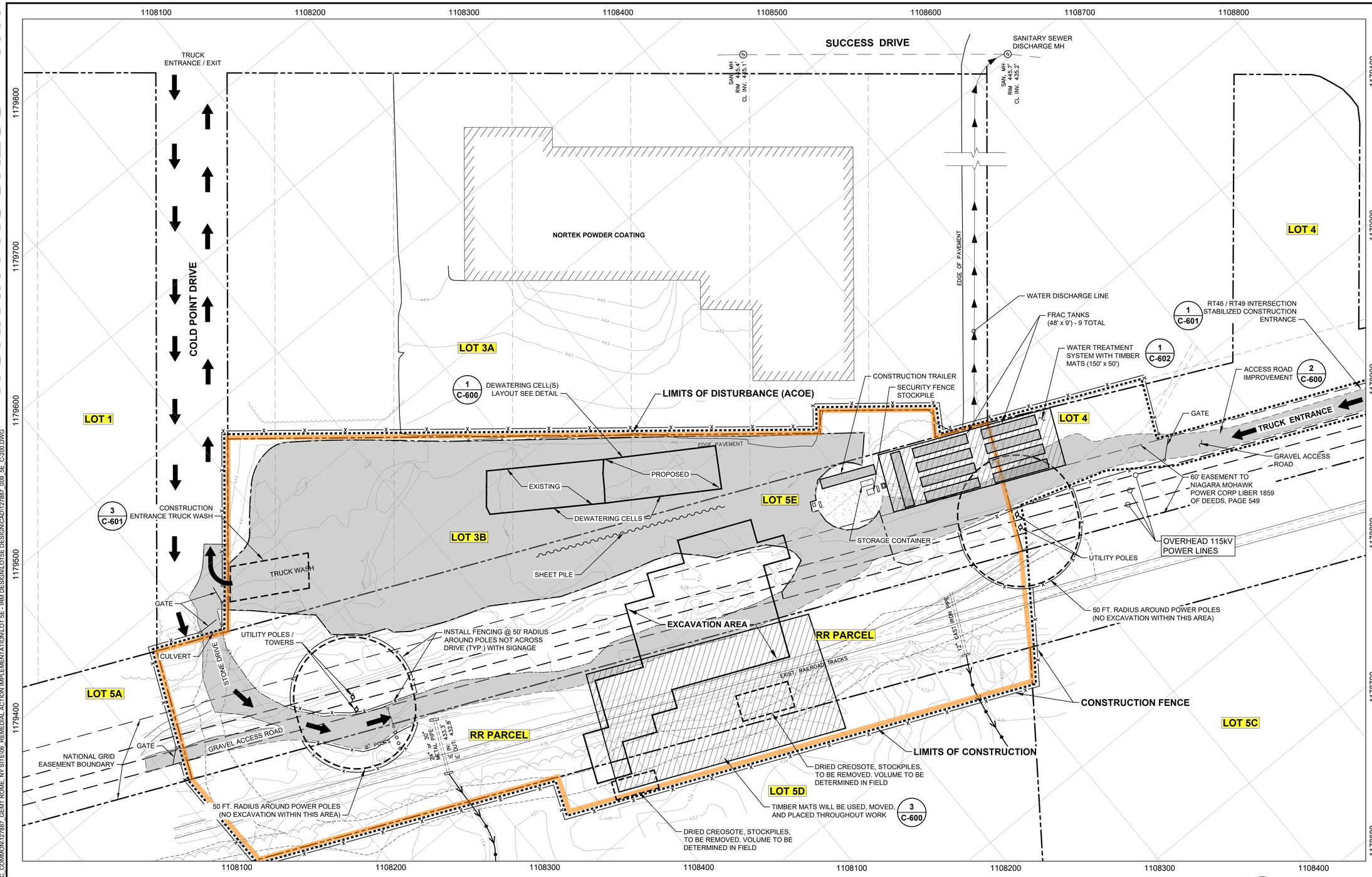

LEGEND

- PROPERTY LINE
- OVERHEAD POWER LINE
- GRAVEL ACCESS ROAD
- GRAVEL STAGING AREA
- GRAVEL / STONE AREA
- LIMITS OF DISTURBANCE (ACOE)
- LIMITS OF CONSTRUCTION
- 440 EXISTING CONTOUR
- EXISTING BUILDING
- MONITORING WELL
- TRUCK ROUTE
- WATER DISCHARGE
- TIMBER MATS
- x CONSTRUCTION FENCE

0 40 80 120 160
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
www.haleyaldrich.com

PREPARED FOR:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

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FOR NATIONAL GRID REVIEW

Project No.:	127887-009
Scale:	SHOWN
Date:	JUNE 2020
Drawn By:	SL
Designed By:	JS
Checked By:	HA
Approved By:	
Stamp:	

NOT FOR CONSTRUCTON

Rev.	Description	By	Date

FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

IRM
ROME, NEW YORK

CONSTRUCTION SITE PLAN

C-200

Sheet: 6 of 17

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\\HALEYALDRICH.COM\SHARE\ROC_COMMON\127887_GEMT ROME, NY SITE\06_REMEDIAL ACTION IMPLEMENTATION\LOT 5E - IRM DESIGN\LOT5E DESIGN\CAD\127887_009_5E_C-200.DWG

WORK IN PROGRESS - V.17

1108100 1108200 1108300 1108400 1108500 1108600 1108700 1108800

1179800 1179700 1179600 1179500 1179400

1179100 1179000 1178900 1178800 1178700 1178600

SUCCESS DRIVE

SAN. MH
RIM 445.4
CL INV. 435.1

SAN. MH
RIM 445.7
CL INV. 435.2

NORTEK POWDER COATING

LOT 1

LOT 3A

LOT 3B

LOT 4

LOT 5C

LOT 5E

COLD POINT DRIVE

STONE DRIVE

LIMITS OF DISTURBANCE (ACOE)

REMOVE STORAGE TANK FOUNDATION

STORAGE CONTAINER

SECURITY FENCE

STOCKPILE

CLEAR AND GRUB

60' EASEMENT TO NIAGARA MOHAWK POWER CORP LIBER 1859 OF DEEDS, PAGE 549

OVERHEAD 115kV POWER LINES

UTILITY POLES / TOWERS

50 FT. RADIUS AROUND POWER POLES (NO EXCAVATION WITHIN THIS AREA)

MW-16

ASPHALT PAD

REMOVE SHEET PILE

REMOVE CONCRETE STRUCTURES

MW-7

MW-4

MW-3

MW-2

MW-1

MW-9

UTILITY POLES / TOWERS

REMOVE STEEL LIDS

RR PARCEL

BUILDING REMAINS

GRAVEL ACCESS ROAD

NATIONAL GRID EASEMENT BOUNDARY

REMOVE MONITORING WELLS (DECOMMISSIONED)

LIMITS OF CONSTRUCTION

DRIED CREOSOTE, SURFACE PILES TO BE REMOVED. VOLUME WILL BE DETERMINED IN FIELD

REMOVE RAILROAD TIES AND OTHER DEBRIS

REMOVE RAILROAD TIES, DRUMS, AND OTHER DEBRIS

LEGEND

- PROPERTY LINE
- OVERHEAD POWER LINE
- GRAVEL ACCESS ROAD
- GRAVEL STAGING AREA
- GRAVEL / STONE AREA
- LIMITS OF DISTURBANCE (ACOE)
- LIMITS OF CONSTRUCTION
- 440 EXISTING CONTOUR
- EXISTING BUILDING
- MONITORING WELL
- TO BE REMOVED

0 40 80 120 160
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
www.haleyaldrich.com

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FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

IRM
ROME, NEW YORK

DEMOLITION PLAN

C-201

Sheet: 7 of 17

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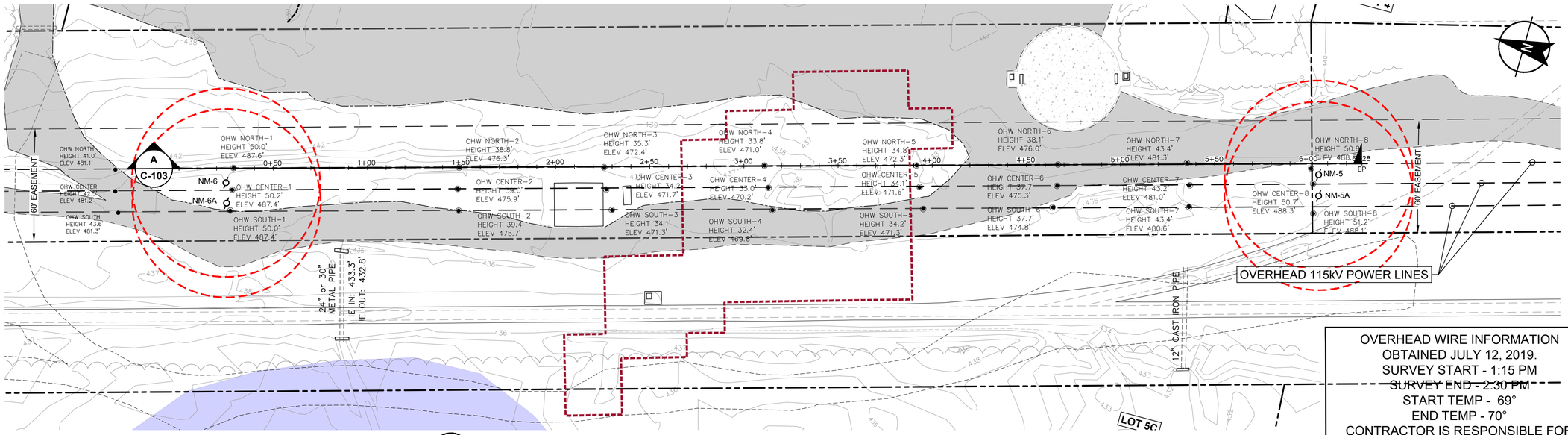
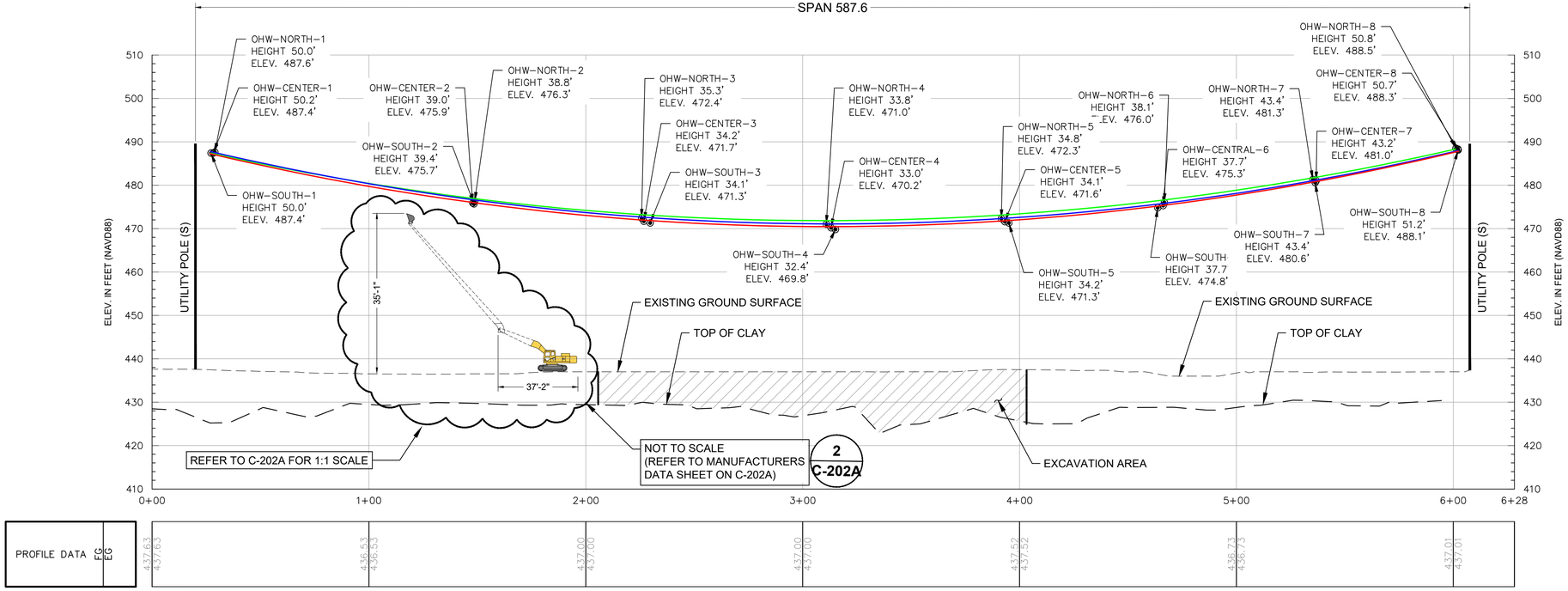
WORK IN PROGRESS - V.17



1 PLAN VIEW
SCALE: AS SHOWN

0 30 60 90 120
SCALE IN FEET

OVERHEAD WIRE INFORMATION OBTAINED JULY 12, 2019.
SURVEY START - 1:15 PM
~~SURVEY END - 2:30 PM~~
START TEMP - 69°
END TEMP - 70°
CONTRACTOR IS RESPONSIBLE FOR VERIFYING MEASUREMENTS AND ELEVATIONS PRIOR TO COMMENCING AND THROUGHOUT THE DURATION OF WORK.



POWER LINES
- EAST POWER LINE
- CENTER POWER LINE
- SOUTH POWER LINE

A PROFILE
SCALE: AS SHOWN

HORIZ. 0 30 60 90 120
VERT. 0 10 20 30 40
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
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FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

IRM
ROME, NEW YORK

OVERHEAD 115KV POWER LINE - SECTION AND PROFILE

C-202

Sheet: 8 of 17

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WORK IN PROGRESS - V.17

ELECTRICAL REQUIREMENTS

1. FOR SHEET PILE INSTALLATION AND EXCAVATING WITHIN THE NATIONAL GRID EASEMENT.
2. EXCAVATORS TO BE GROUNDED WITH A CABLE TETHER SECURELY FASTENED TO EXISTING SHEET PILES INSTALLED ALONG THE EASEMENT AND SECURELY ATTACHED TO THE EQUIPMENT.
3. ALL OPERATORS WORKING WITHIN THE EASEMENT SHALL HAVE ADDITIONAL TRAINING IN ACCORDANCE WITH OSHA 1910.269.
4. AN ELECTRICALLY QUALIFIED SPOTTER SHALL BE EMPLOYED DURING THE WORK WITHIN THE EASEMENT.
5. ALL EXCAVATORS SHALL BE EQUIPPED WITH HEIGHT LIMITERS, TO SET ALARMS AND WARNINGS TO LIMIT BOOM OPERATING HEIGHTS.
6. MAXIMUM SHEET PILE LENGTH IS 20-FEET LONG AND RELOCATING OPERATING HEIGHT OF 5-FEET OFF EXISTING GRADE EQUATES TO A MAXIMUM APPROACH HEIGHT OF 25-FEET.
7. THE OVERHEAD LINE HEIGHT SHALL BE VERIFIED DAILY, THE SAG RECORDED IN JULY 2019 OF 33-FEET, EQUATES TO A MINIMUM APPROACH DISTANCE FROM SHEET PILE TO POWER LINE OF 7.4 FEET.
8. MINIMUM APPROACH DISTANCES DETERMINED BY O'CONNELL ELECTRIC IS SHOWN ON THE TABLE BELOW.
9. EXCAVATOR WILL BE GROUNDED DURING WORK. SEE DETAIL 1, SHEET C-202A.

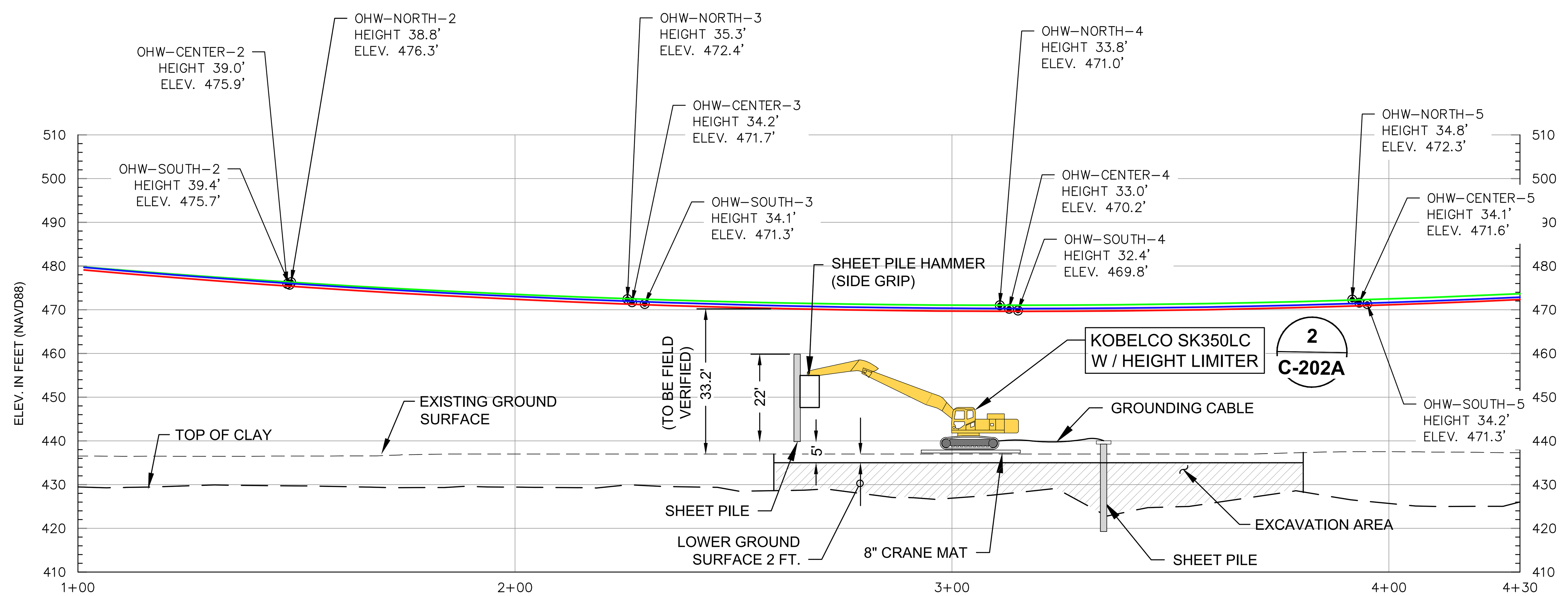
O'Connell Electric Company, Inc.
Industrial & Commercial Construction - Power Line & Substation - Communications
Transportation - Renewable Energy - Service & Maintenance - Technical Services
Since 1911

RECOGNIZE AND RESPECT APPROACH DISTANCES FOR HIGH VOLTAGE
Approach Distances For Qualified Employees
Alternating Current

Voltage Range	Fault Condition	
50V to 150V	Avoid Contact	
151V to 750V	12" P-G	12" P-P
751V to 1kV	24" P-G	24" P-P
1kV to 15kV	26" P-G	27" P-P
15.1kV to 36kV	30.5" P-G	35" P-P
36.1kV to 46kV	33" P-G	38.5" P-P
46.1kV to 72.5kV	39.5" P-G	47" P-P
72.6kV to 121kV	45" P-G	56" P-P
230kV to 242kV	63" P-G	90" P-P
345kV to 362kV	102" P-G	150" P-P

O'CONNELL ELECTRIC COMPANY   REVISED JAN 2016

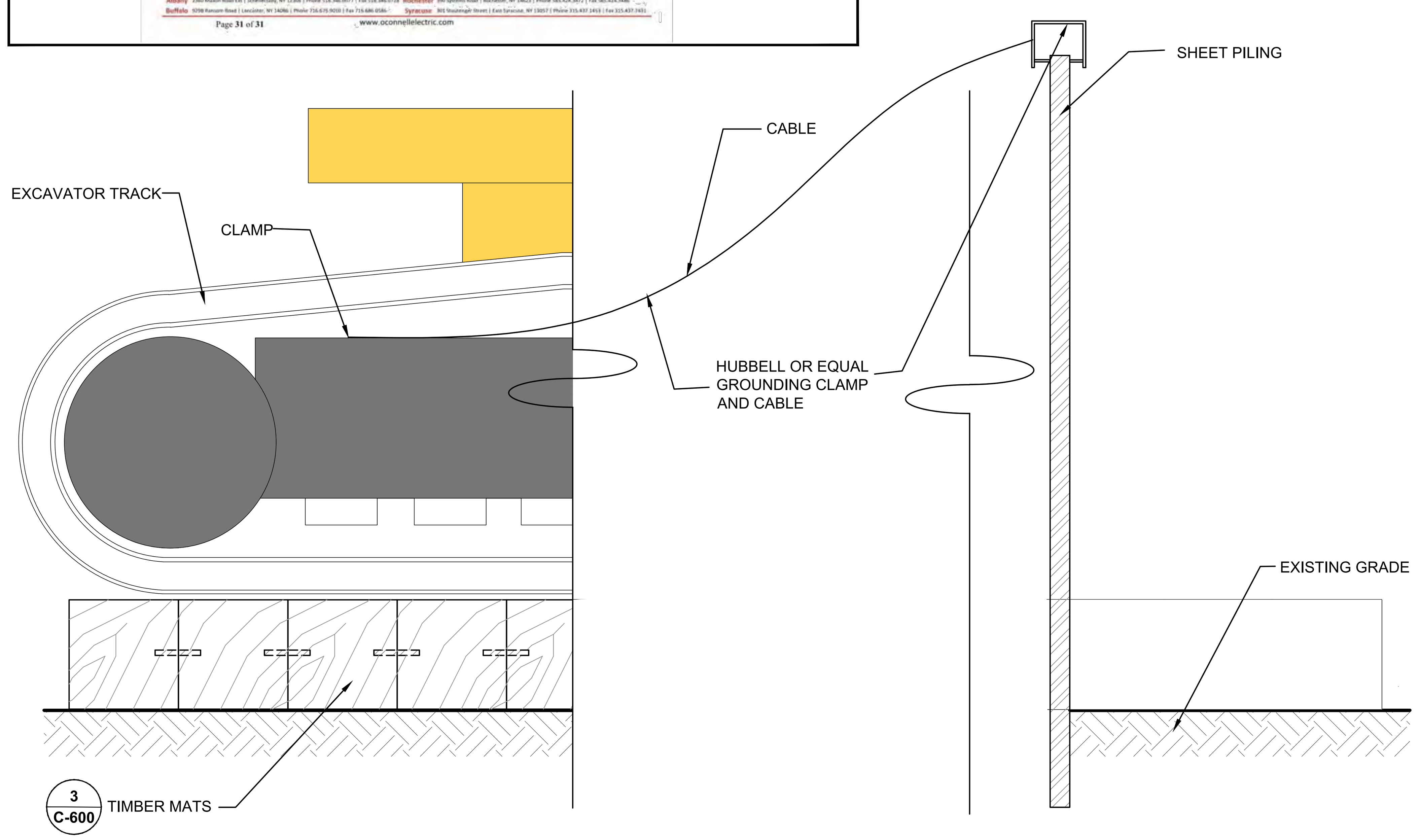
Corporate Headquarters 830 Phillips Road | Victor, NY 14564 | Phone 585.924.2176 | Fax 585.924.4973
Page 31 of 31   www.oconnellelectric.com



POWER LINES
- EAST POWER LINE
- CENTER POWER LINE
- SOUTH POWER LINE

A PROFILE
SCALE: AS SHOWN

HORIZ. 0 20 40 60 80
VERT. 0 20 40 60 80
SCALE IN FEET



1 EXCAVATOR GROUNDING SCHEMATIC
NOT TO SCALE

Working Ranges

Unit: ft-in(m)

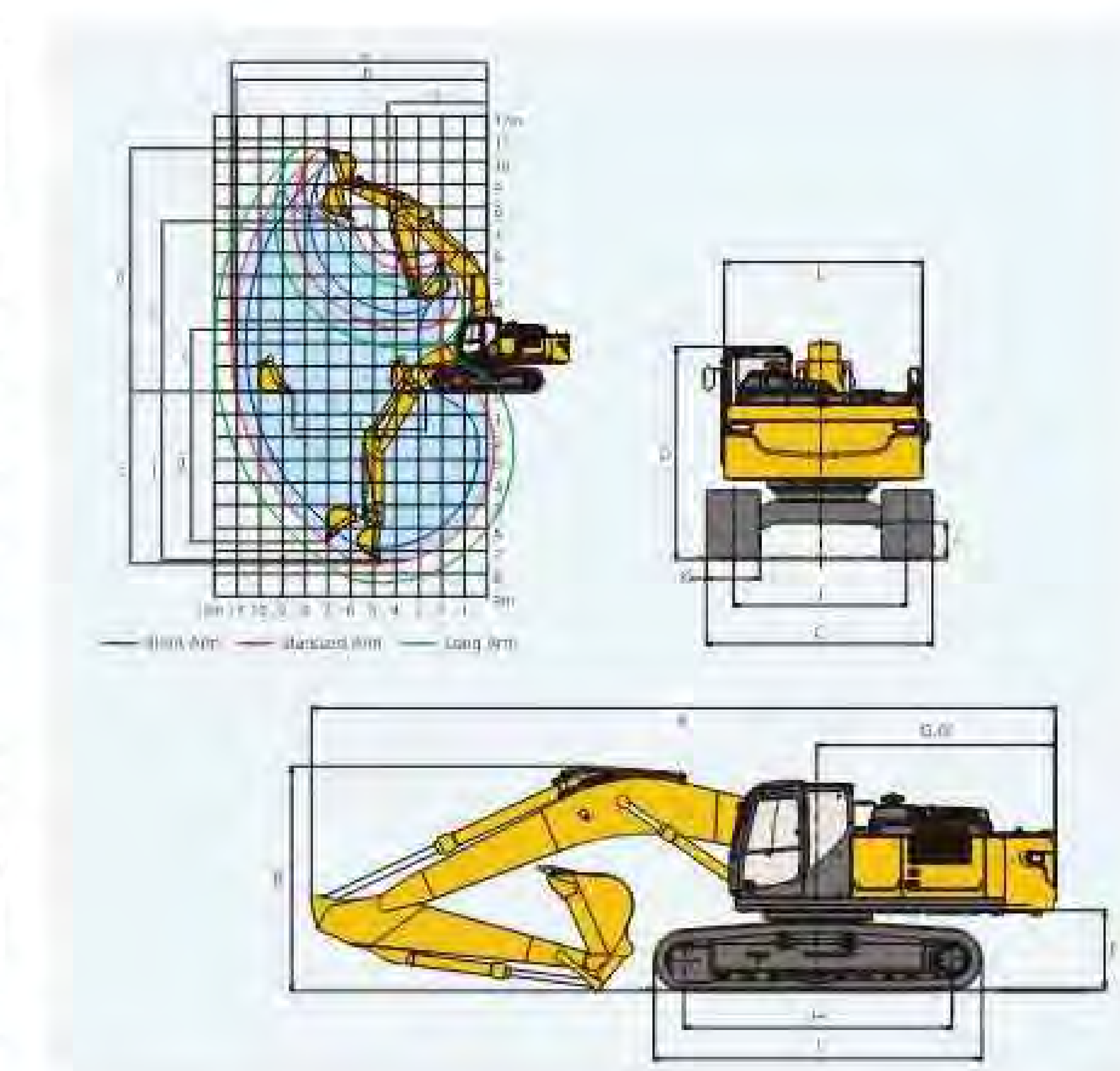
Boom / Range \ Arm	21'4" (6.50 m) Short 8'6" (2.60 m)	Standard 10'10" (3.30 m)	Long 13'7" (4.15 m)
a- Max. digging reach	34'10" {10.61}	36'11" {11.26}	39'3" {11.97}
b- Max. digging reach at ground level	34'1" {10.4}	36'3" {11.06}	38'8" {11.79}
c- Max. digging depth	22'6" {6.86}	24'10" {7.56}	27'7" {8.41}
d- Max. digging height	33'8" {10.26}	34'9" {10.58}	35'1" {10.7}
e- Max. dumping clearance	23'2" {7.06}	24'2" {7.37}	24'8" {7.53}
f - Min. dumping clearance	10'11" {3.32}	8'7" {2.62}	5'10" {1.77}
g- Max. vertical wall digging depth	19'2" {5.84}	21'8" {6.61}	23'5" {7.15}
h- Min. swing radius	14'8" {4.46}	14'2" {4.31}	14'6" {4.43}
i - Horizontal digging stroke at ground level	13'10" {4.21}	19'1" {5.82}	23'8" {7.21}
j - Digging depth for 8 feet flat bottom	21'11" {6.67}	24'3" {7.4}	27'2" {8.27}
Bucket capacity SAE heaped cu.yd.{m³}	2.09 {1.60}	1.83 {1.4}	1.57 {1.20}

Dimensions

Unit: ft-in {mm}

Arm length	Short 8'6" {2.60 m}	Standard 10'10" {3.30 m}	Long 13'7" {4.15 m}
A Overall length	37'4" {11,380}	37'1" {11,300}	37'2" {11,300}
B Overall heigth (to top of boom)	12'2" {3,700}	11'3" {3,420}	11'10" {3,600}
C Overall width	11'1" {3,390}**		
D Overall height (to top of cab)	10'6" {3,200}		
E Ground clearance of rear end*	3'11" {1,200}		
F Ground clearance*	1'8" {500}		
G Tail swing radius	11'10" {3,600}		
G' Distance from center of swing to rear end	11'10" {3,600}		
H Tumbler distance	13'3" {4,050}		
I Overall length of crawler	16'3" {4,960}		
J Track gauge	8'6" {2,590}		
K Shoe Width, In {mm}	2'7" {800}		
L Overall width of upperstructure	10'3" {3,120}		

* Without including height of shoe lug ** Shoe width : 2'7" {800 mm}



Digging Force

Unit: lbs {kN}

Arm length		Short 8'6" {2.60 m}	Standard 10'10" {3.30 m}	Long 13'7" {4.15 m}
Bucket digging force (Power boost)	SAE	45,900 {204} (50,600 {225})	45,900 {204} (50,600 {225})	45,900 {204} (50,600 {225})
	ISO	51,000 {227} (56,200 {250})	51,000 {227} (56,200 {250})	51,000 {227} (56,200 {250})
Arm crowding force (Power boost)	SAE	44,100 {196} (48,600 {216})	37,100 {160} (39,600 {176})	30,800 {137} (33,700 {150})
	ISO	45,900 {204} (50,600 {225})	37,100 {165} (40,700 {181})	31,500 {140} (34,600 {154})

2 KOBELCO K350LC EXCAVATION MANUFACTURER SPECIFICATION
NOT TO SCALE

HALEY ALDRICH
HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
www.haleyaldrich.com

PREPARED FOR:
Greenfield Environmental Multistate Trust, LLC Trustee of the Multistate Environmental Response Trust

New York 811

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FOR NATIONAL GRID REVIEW

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Rev.	Description	By	Date

FORMER FEDERAL CREOSOTE SITE INTERIM REMEDIAL MEASURE DESIGN

IRM
ROME, NEW YORK

OVERHEAD 115KV POWER LINE - PROFILE, DETAILS, & NOTES

C-202A

WORK IN PROGRESS - V.17

1108100 1108200 1108300 1108400 1108500 1108600 1108700 1108800

1179800 1179700 1179600 1179500 1179400

1179100 1179000 1178900 1178800 1178700 1178600

TRUCK ENTRANCE / EXIT

SUCCESS DRIVE

SANITARY SEWER DISCHARGE MH

SAN. MH
RIM 445.4'
CL INV. 425.1'

SAN. MH
RIM 445.7'
CL INV. 435.2'

COLD POINT DRIVE

NORTEK POWDER COATING

ALL DISTURBED SOILS, INCLUDING TOPSOIL PILES WITHIN THE PROJECT LIMITS ARE TO BE COVERED WITH POLYETHYLENE SHEETS DURING DAYS OF INACTIVITY.

LOT 1

LOT 3A

LIMITS OF DISTURBANCE (ACOE)

DEWATERING CELLS

STORAGE CONTAINER

SECURITY FENCE

STOCKPILE

EDGE OF PAVEMENT

EXISTING

PROPOSED

LOT 4

GRAVEL ACCESS ROAD

PROPOSED 16' +/- WIDE ACCESS ROAD BUILT OVER EXISTING ROAD FROM NEW LONDON ROAD TO SITE. MAINTAIN ROAD AND REPAIR SIGNS OF RUTTING, EROSION OR SEDIMENT. SEE DETAIL 2 / C-600

EXISTING GRAVEL ENTRANCE TO BE UTILIZED AS A STABILIZED CONSTRUCTION ENTRANCE. PROVIDE ADDITIONAL STONE AS NEEDED. CLEAN AND MAINTAIN DAILY TO MINIMIZE TRACKING OF MUD AND SEDIMENT ONTO ROAD. SEE DETAIL 1 / C-601

LOT 5E

LIMITS OF EXCAVATION

LOT 3B

TRUCK WASH

SHEET PILE

OVERHEAD 115kV POWER LINES

UTILITY POLES

PLACE CHECK DAMS IN CHANNEL TO MINIMIZE SEDIMENT TRANSPORT (TYP) 5 / C-601

STONE PAD

UTILITY POLES

PROVIDE INLET PROTECTION OR CHECK DAM AT PIPE INLET

EXIST. RAILROAD TRACKS

RR PARCEL

TEMPORARY BMPs ARE TO BE MAINTAINED FOR THE DURATION OF CONSTRUCTION UNTIL DISTURBED UPGRADE AREAS HAVE BECOME PERMANENTLY STABILIZED (TYP)

LOT 5A

GATE

8' POSTS

GRAVEL ACCESS ROAD

RR PARCEL

LOT 5C

ADDITIONAL EROSION CONTROLS/BMPs MAY BE REQUIRED IN AREAS OF POTENTIAL VIOLATION, FAILING PRACTICE, EROSION, AND SEDIMENTATION AS DIRECTED BY THE ENVIRONMENTAL (SWPPP) INSPECTOR.

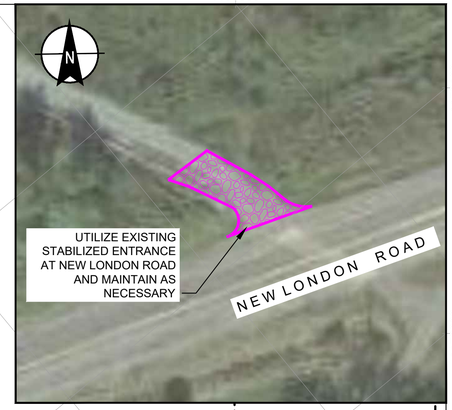
NATIONAL GRID EASEMENT BOUNDARY

LIMITS OF CONSTRUCTION

LOT 5D

SILT FENCE (TYP) 2 / C-601

INSTALL SILT FENCE WITH BALES ALONG WETLANDS AT LIMITS OF DISTURBANCE (TYP) 4 / C-601



EASTERN SITE ACCESS
SCALE: 1" = 40'

LEGEND

- PROPERTY LINE
- OVERHEAD POWER LINE
- GRAVEL ACCESS ROAD
- GRAVEL / STONE AREA
- LIMITS OF DISTURBANCE (ACOE)
- LIMITS OF CONSTRUCTION
- 440 EXISTING CONTOUR
- EXISTING BUILDING

EROSION & SEDIMENT CONTROL LEGEND

- SILT FENCE W/ STRAW BALE BACKING
- SILT FENCE
- CHECK DAM
- STABILIZED CONSTRUCTION ENTRANCE

0 40 80 120 160
SCALE IN FEET

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HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
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FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

IRM
ROME, NEW YORK

EROSION AND SEDIMENT CONTROL PLAN

C-300

Sheet: 10 of 17

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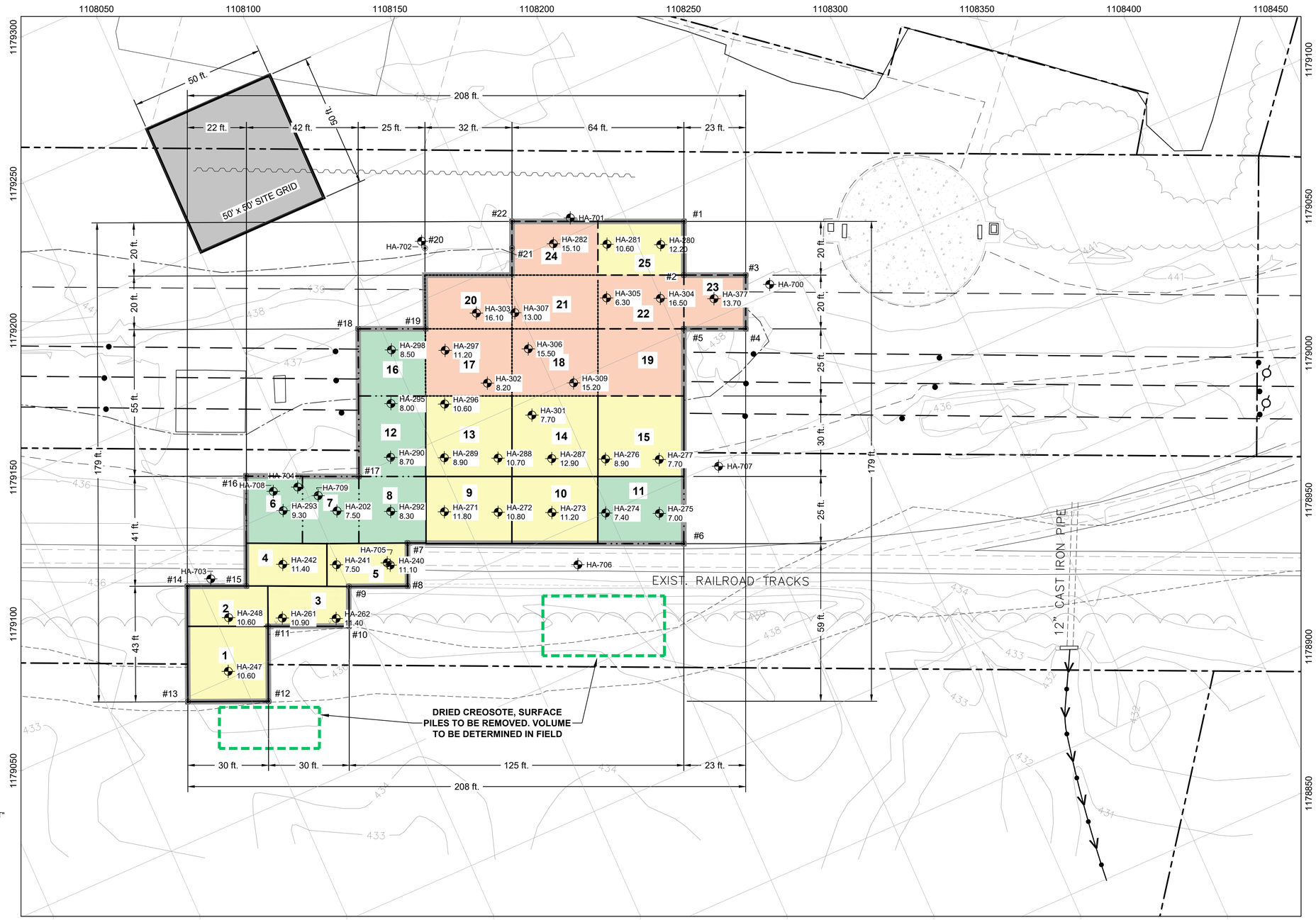
Sheet: C-200

WORK IN PROGRESS - V.17

LIMITS OF EXCAVATION POINTS		
Point #	Northing	Easting
1	1179138.32	1108217.53
2	1179120.02	1108209.46
3	1179110.74	1108230.51
4	1179092.44	1108222.44
5	1179101.72	1108201.39
6	1179028.54	1108169.08
7	1179070.27	1108075.05
8	1179055.54	1108068.62
9	1179064.24	1108048.60
10	1179050.64	1108042.69
11	1179062.82	1108015.06
12	1179037.22	1108003.94
13	1179049.19	1107976.42
14	1179088.59	1107993.56
15	1179079.78	1108013.74
16	1179117.38	1108030.15
17	1179100.22	1108068.49
18	1179150.65	1108090.45
19	1179140.51	1108113.44
20	1179168.07	1108125.29
21	1179154.99	1108154.94
22	1179164.14	1108158.97



NOTES

1. ASSESSOR PARCEL DATA SOURCE: ONEIDA COUNTY AND HOFFMAN LAND SURVEYING GEOMATICS SURVEY.
2. TOPOGRAPHIC FEATURES BASED ON FIELD SURVEY COMPLETED IN JULY 2018 BY HOFFMAN LAND SURVEYING AND GEOMATICS.
3. TOP OF CLAY BASED OFF GEOPROBE BORINGS. REFER TO "SUPPLEMENTAL INVESTIGATION SUMMARY REPORT" BY HALEY & ALDRICH OF NEW YORK FOR BORING LOGS AND ADDITIONAL INFORMATION.

LEGEND

- HA-306 15.50' — BORING LOCATION INCLUDING EXCAVATION DEPTH
- PROPERTY LINE
- OVERHEAD POWER LINE
- GRAVEL ACCESS ROAD
- GRAVEL / STONE AREA
- EXISTING BUILDING
- 440 — EXISTING CONTOUR
- LIMITS OF DISTURBANCE (ACOE)
- LIMITS OF CONSTRUCTION
- EXCAVATION DEPTH 0FT TO 10FT
- EXCAVATION DEPTH 10FT TO 13FT
- EXCAVATION DEPTH 13FT TO 16.5FT
- 5 — EXCAVATION CELL NUMBER
- MIN. 16FT SHEETPILE LENGTH. REFER TO SECTION A ON S-101.
- MIN. 17FT SHEETPILE LENGTH. REFER TO SECTION B ON S-101.
- MIN. 19FT SHEETPILE LENGTH. LOCALLY EXCAVATE TO INSTALL SHEETS 1FT BELOW GROUND SURFACE. REFER TO SECTION C ON S-101.
- MIN. 22FT SHEETPILE LENGTH. LOCALLY EXCAVATE TO INSTALL SHEETS 4FT BELOW GROUND SURFACE. REFER TO SECTION D ON S-101.

CONTRACTOR TO VERIFY ALL QUANTITIES. QUANTITIES MAY VARY.

Cut/Fill Summary

Name	2d Area	Cut	Fill	Net
EG vs Top of Clay	17078.42 Sq. Ft.	6674.89 Cu. Yd.	0.00 Cu. Yd.	6674.89 Cu. Yd.<Cut>

0 20 40 60 80
SCALE IN FEET

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FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

IRM
ROME, NEW YORK

EXCAVATION AREA AND VOLUMES

C-400

Sheet: 11 of 17

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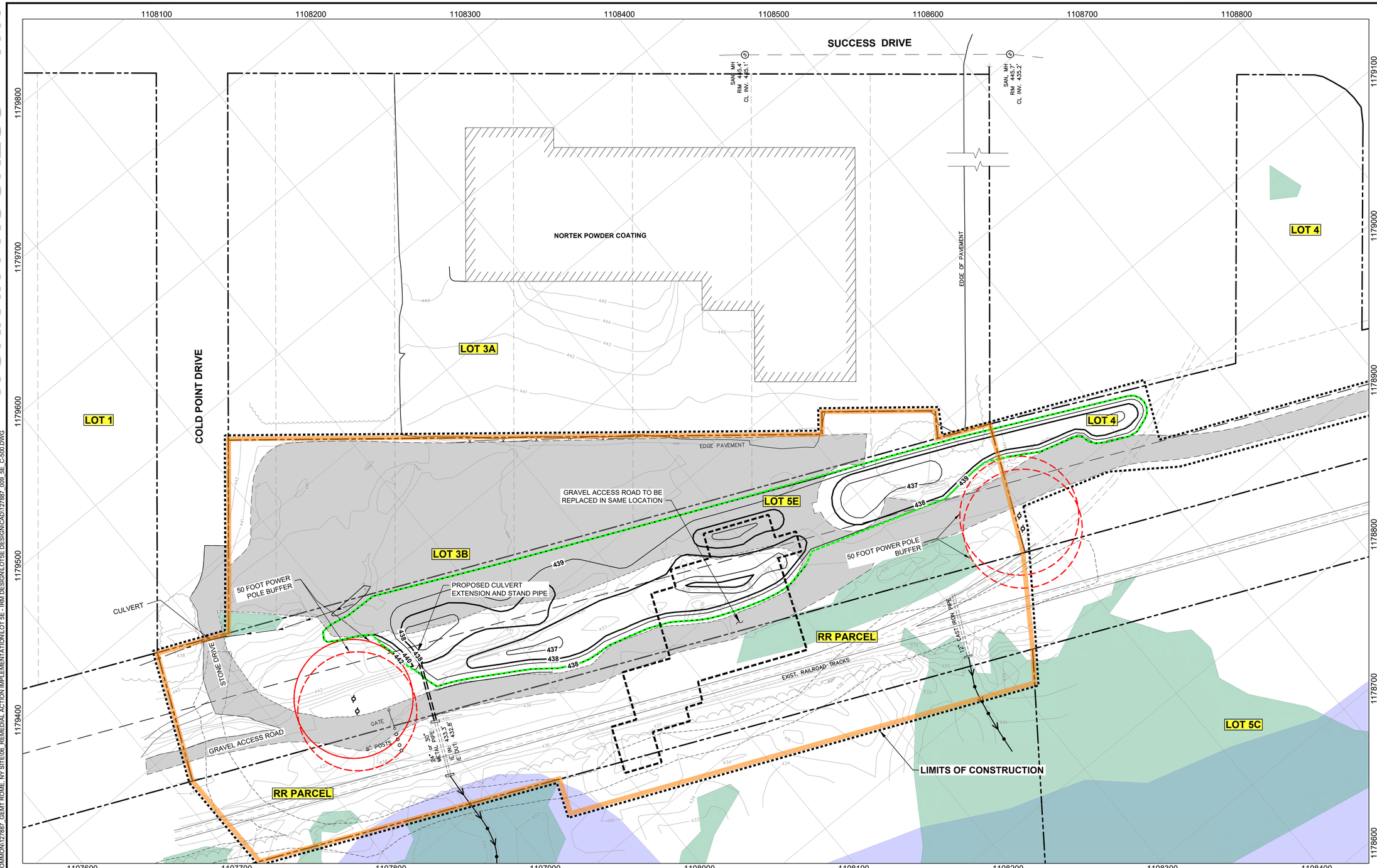

LEGEND

- PROPERTY LINE
- OVERHEAD POWER LINE
- GRAVEL ACCESS ROAD
- LIMITS OF DISTURBANCE (ACOE)
- LIMITS OF CONSTRUCTION
- 440 EXISTING CONTOUR
- EXISTING BUILDING
- 440 PROPOSED MAJOR CONTOUR
- 439 PROPOSED MINOR CONTOUR
- PROPOSED WETLAND AREA
- 50 FOOT POWER POLE BUFFER

NOTES

1. CONTRACTOR TO VERIFY ALL AREAS AND QUANTITIES. AREAS AND QUANTITIES MAY VARY.
2. REFER TO G-101 FOR LEGEND & ABBREVIATIONS AND DELINEATED WETLAND TYPES.
3. PROPOSED WETLAND IS PRELIMINARY AND MAY CHANGE DUE TO PERMITTING.

AREA OF PROPOSED WETLAND: 1.02 ACRE

EARTHWORK:
EXISTING GRADE TO PROPOSED WETLAND - 1,430 CY (CUT)
PROPOSED WETLAND GRADE TO 2 FT BELOW - 44,343 SF X 2FT = 3,285 CY (CUT)
SLAG REMOVAL AREA IN WETLAND - 16,880 SF x 1 FT THICK = 625 CY (CUT)

HALEY ALDRICH

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
www.haleyaldrich.com

PREPARED FOR:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

THIS IS A COLOR DRAWING. INFORMATION WILL BE LOST IF REPRODUCED IN BLACK AND WHITE.

FOR NATIONAL GRID REVIEW

Project No.:	127887-009
Scale:	SHOWN
Date:	JUNE 2020
Drawn By:	SL
Designed By:	JS
Checked By:	HA
Approved By:	
Stamp:	

NOT FOR CONSTRUCTON

Rev.	Description	By	Date

FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

IRM
ROME, NEW YORK

RESTORATION PLAN

C-500

Sheet: 12 of 17

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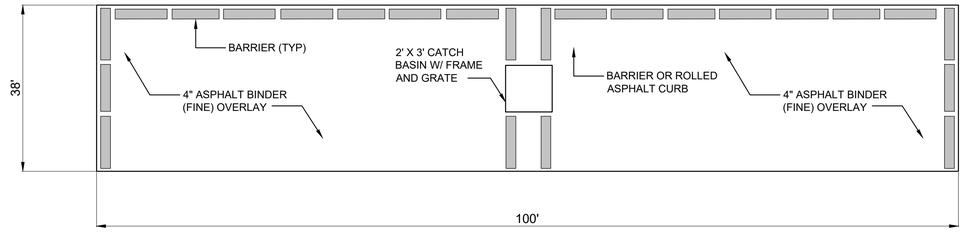
\\HALEYALDRICH.COM\SHARE\ROC_COMMON\127887_GEMT ROME, NY SITE\06_REMEDIAL ACTION IMPLEMENTATION\LOT 5E - IRM DESIGN\LOT5E DESIGN\CAD\127887_009_5E_C-500.DWG

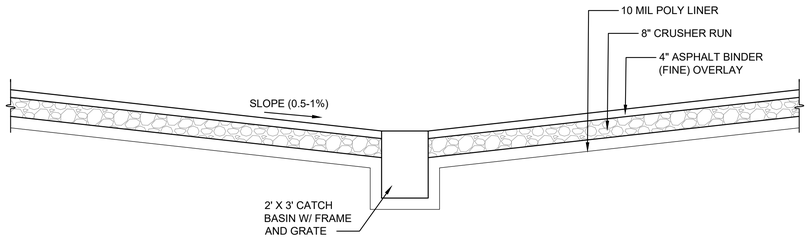
WORK IN PROGRESS - V.17



PLAN

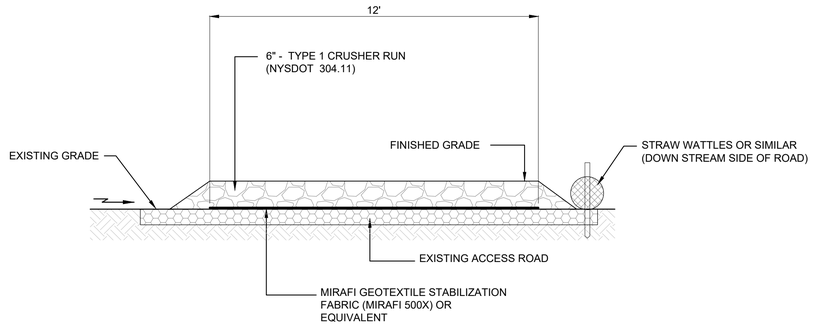
CONSTRUCTION NOTES FOR DEWATERING CELLS

1. DETAIL IS COMPRISED OF 2 DEWATERING CELLS (24' x 72').
2. BARRIERS TO LINE SIDES.
3. 4" ASPHALT CURBS OR 10' LONG BARRIERS TO BE USED TO DIRECT WATER TO CATCH BASIN.
4. WATER TO BE PUMPED OUT OF CATCH BASIN TO FRAC TANK.
5. ALL EFFORTS SHALL BE MADE TO AVOIDING RIPPING OF THE LINER.
6. PROTECT ASPHALT WITH USE OF RUBBER TRACK EXCAVATOR WITH FLAT BUCKET.
7. UPON COMPLETION OF WORK PHASE, ASPHALT TO BE POWER WASHED AND REMOVED / RECYCLED.
8. DEWATERING CELLS DIMENSIONS TO MATCH EXISTING DEWATERING CELLS.

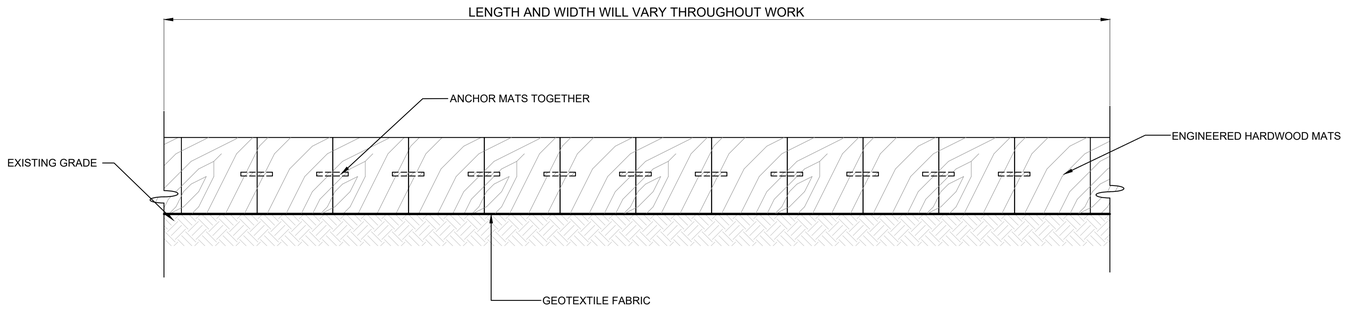


SECTION

1 DEWATERING CELL(S) LAYOUT
NOT TO SCALE



2 ACCESS ROAD IMPROVEMENT
NOT TO SCALE



3 TIMBER MAT DETAIL
NOT TO SCALE

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INTERIM REMEDIAL MEASURE DESIGN

IRM
ROME, NEW YORK

CONSTRUCTION AND RESTORATION DETAILS

C-600

Sheet: 13 of 17

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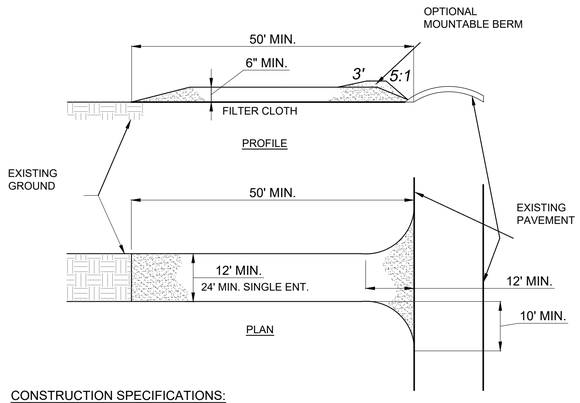
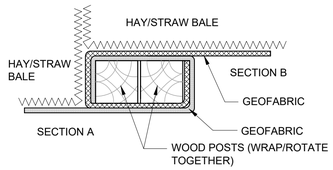
WORK IN PROGRESS - V.17

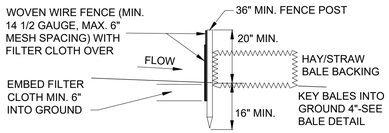


CONSTRUCTION SPECIFICATIONS:

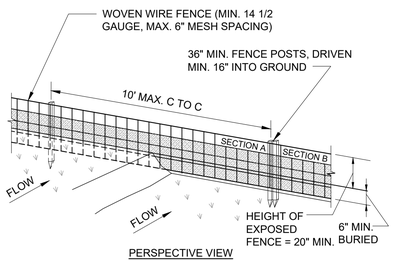
1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6") INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM. BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL. A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

1 STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE





SECTION



PERSPECTIVE VIEW

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

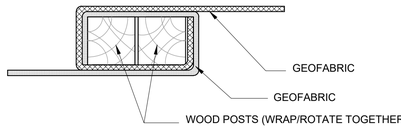
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. BALES TO BE PLACED BEHIND THE SILT FENCE FOR ADDITIONAL SUPPORT AND FILTRATION IN LOCATIONS INDICATED ON THE DESIGN PLANS

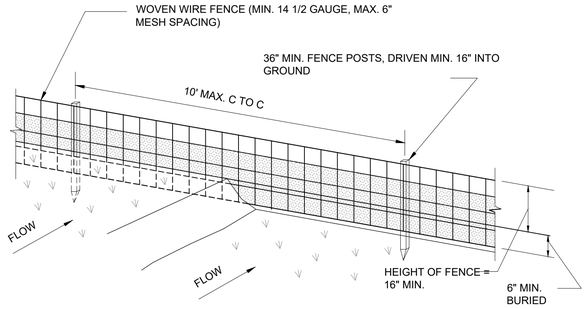
POSTS: STEEL EITHER "T" OR "U" TYPE OR 2" HARDWOOD

FENCE: WOVEN WIRE, 14 1/2 GA. 6" MAX. MESH OPENING FILTER X, MIRAFI FILTER CLOTH: 100X, STABILINKA T140N OR APPROVED EQUAL

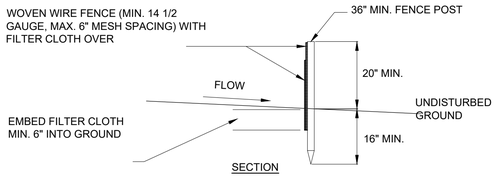
PREFABRICATED UNIT: GEOFAB. ENVIROFENCE, OR APPROVED EQUAL

4 SILT FENCE WITH BALE BACKING
NOT TO SCALE





PERSPECTIVE VIEW



SECTION

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

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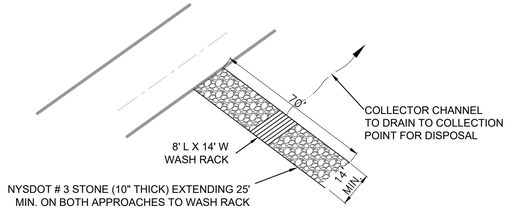
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED WHEN: SEDIMENT CREATES "BULGES" (REMOVE SEDIMENT AND TIGHTEN FENCE); SILT FENCE STAPLES POP (RESTAPLE); STAKES BREAK (REPLACE STAKES); OR TEARS DEVELOP IN THE FABRIC (REPLACE SECTION OF FENCE OR FABRIC).

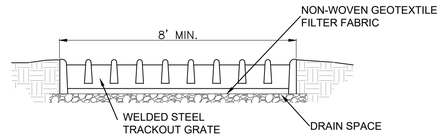
POSTS: STEEL EITHER "T" OR "U" TYPE OR 2" HARDWOOD

FENCE: WOVEN WIRE, 14 1/2 GA. 6" MAX. MESH OPENING FILTER X, MIRAFI FILTER CLOTH: 100X, STABILINKA T140N OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB. ENVIROFENCE, OR APPROVED EQUAL

2 STANDARD SILT FENCE INSTALLATION
NOT TO SCALE





NOTES:

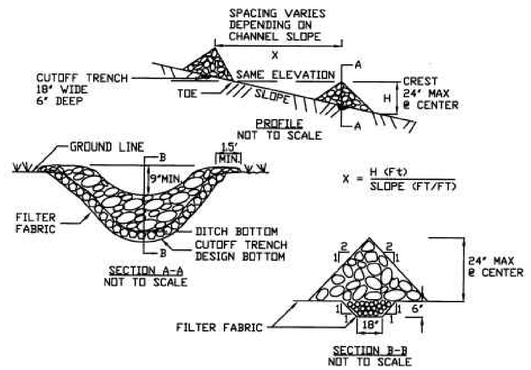
WASH RACK SHALL BE 14 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.

WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICULAR TRAFFIC.

A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

3 CONSTRUCTION ENTRANCE TRUCK WASH
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES.

5 ROCK CHECK DAM
NOT TO SCALE

HALEY ALDRICH

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
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FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

IRM
ROME, NEW YORK

EROSION AND SEDIMENT CONTROL DETAILS

C-601

Sheet: 14 of 17

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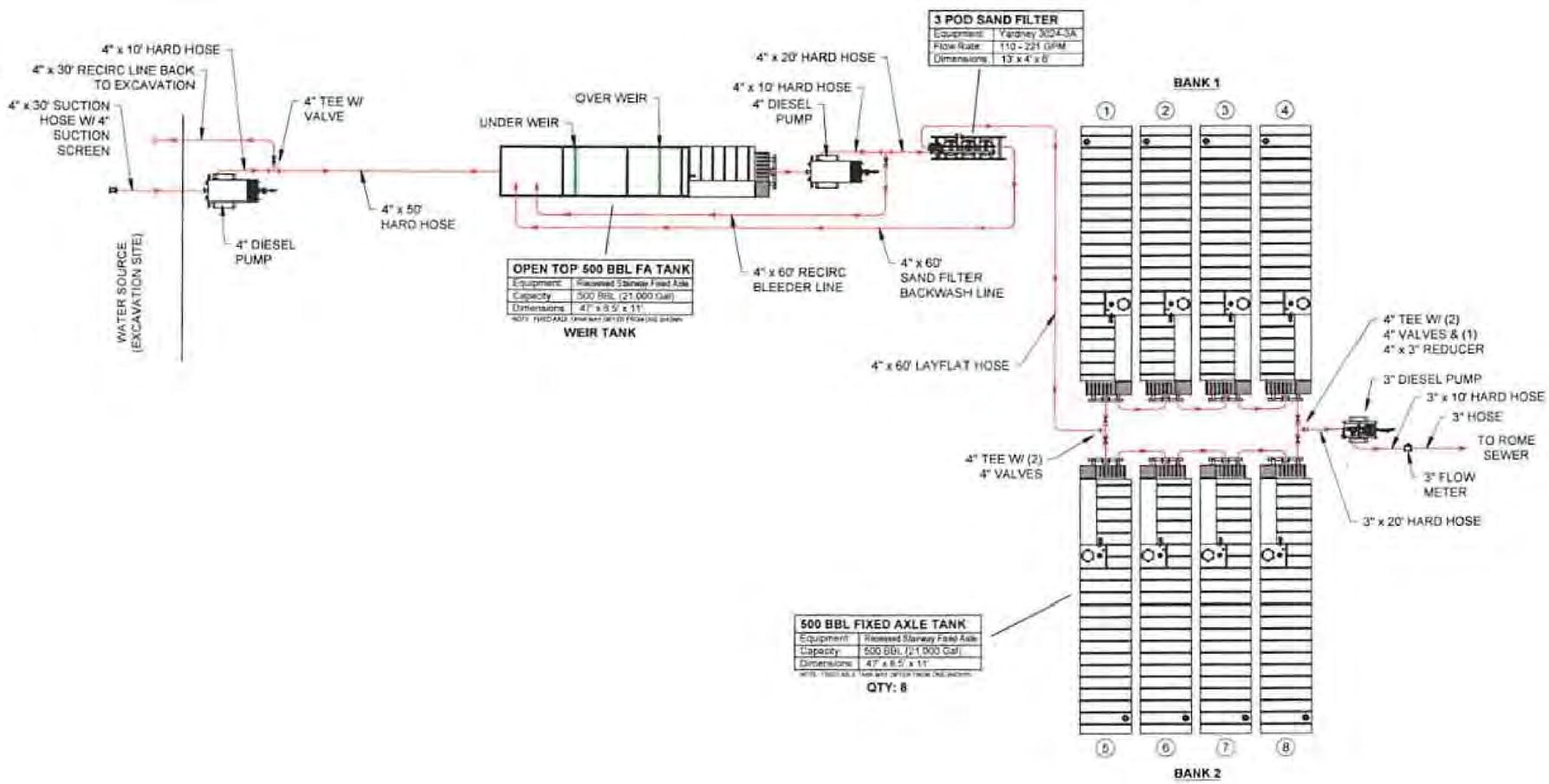

1 WATER TREATMENT SYSTEM
NOT TO SCALE

HALEY ALDRICH

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200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
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FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

IRM
ROME, NEW YORK

WATER TREATMENT SYSTEM

C-602

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WORK IN PROGRESS - V.17

GENERAL NOTES

1. THESE DRAWINGS ARE FOR THE TEMPORARY SUPPORT OF EXCAVATION WORK TO REMEDIATE THE SOILS IN THE AREAS INDICATED AT THE FORMER FEDERAL CREOSOTE SITE. ALL DEMOLITION, EXCAVATION, BACKFILLING, COMPACTION, AND GRADING SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. THE CONTRACTOR SHALL REVIEW THESE DRAWINGS AND ALL THE SUBSURFACE CONDITIONS TO UNDERSTAND THE EXISTING SUBSURFACE CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED. IF SUBSURFACE CONDITIONS ENCOUNTERED VARY, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY HALEY & ALDRICH OF NEW YORK.
3. ALL EXCAVATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE FEDERAL REGISTER BY THE DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, 29 CFR PART 1926. ALL ANCILLARY ITEMS SUCH AS GUARDRAILS, BARRIERS, AND FENCING WHICH ARE REQUIRED BY OSHA BUT NOT SHOWN ON THE DRAWINGS SHALL BE INSTALLED BY THE CONTRACTOR.
4. GUARDRAILS, BARRIERS, AND FENCING SHALL BE INSTALLED AS A SEPARATE STRUCTURAL SYSTEM FROM THE SUPPORT OF EXCAVATION SYSTEM. THE SHEETPILE AND MEGA BRACE SYSTEM HAS NOT BEEN DESIGNED TO ACT AS FENCING AROUND THE SITE.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND VERIFY THE LOCATION, SIZE AND TYPE OF UTILITIES AND BELOW-GRADE STRUCTURES PRIOR TO START OF EXCAVATION. REPORT FIELD-VERIFIED LOCATIONS IN PLAN AND ELEVATION WHICH VARY FROM SHOWN IN CIVIL DRAWINGS OR MAY CONFLICT WITH OR OBSTRUCT THE TEMPORARY SUPPORT OF EXCAVATION SYSTEM SO THAT THE DESIGN CAN BE MODIFIED ACCORDINGLY. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING UTILITIES.
6. HALEY & ALDRICH OF NEW YORK SHALL BE NOTIFIED FOR CHANGES OR DEVIATIONS FROM WHAT IS SHOWN ON THE PLANS.
7. CONTRACTOR SHALL DETERMINE QUANTITY OF SHEETPILE REQUIRED TO PERFORM EXCAVATION IN CELLS AS SHOWN IN THESE DRAWINGS. IF TOP OF CLAY DEVIATES FROM WHAT IS SHOWN IN THE DRAWINGS, HALEY & ALDRICH OF NEW YORK SHALL BE NOTIFIED AND EXCAVATION SHALL NOT PROCEED UNTIL THE EXCAVATION SUPPORT SYSTEM HAS BEEN REVIEWED AND UPDATED AS NECESSARY.
8. THE TEMPORARY SUPPORT OF EXCAVATION SYSTEM IS DESIGNED FOR A MAXIMUM SURCHARGE EQUIVALENT TO A KOBELCO SK350LC EXCAVATOR (OPERATING WEIGHT 83,300 LBS). THE TRACKS OR WHEELS OF ANY EQUIPMENT OPERATING WITHIN 15FT OF THE SHEETPILE WALL SHALL BE PLACED ON TIMBER MATS WITH MINIMUM DIMENSIONS OF 4FT X 16FT. ALL EQUIPMENT MUST BE SET BACK A MINIMUM 6 INCHES FROM THE SHEETPILE WALL. THE CONTRACTOR SHALL NOT OPERATE ANY EQUIPMENT WITH A GREATER OPERATING WEIGHT THAN THE KOBELCO SK350LC EXCAVATOR WITHIN 15FT OF THE SHEETPILE WALL WITHOUT APPROVAL BY HALEY & ALDRICH OF NEW YORK.
9. ALL WELDING SHALL CONFORM TO THE LATEST EDITION OF AWS D1.1 STRUCTURAL WELDING CODE. ELECTRODES SHALL BE E70XX.
10. ELEVATIONS ARE IN FEET AND REFERENCE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
11. SHEETPILING AND INTERLOCKS SHALL BE UNDAMAGED PRIOR TO INSTALLATION. SHEETPILING OR INTERLOCKS WITH WARPING, DISTORTION, BUCKLING, OR OTHER DEFECTS MAY NOT BE USED FOR EXCAVATION SUPPORT.
12. SHEETPILES MAY BE RE-USED ON SITE. SHEETPILES WHICH HAVE BEEN DAMAGED DURING INSTALLATION OR REMOVAL OR WHICH OTHERWISE ARE DAMAGED MAY NOT BE USED AS EXCAVATION SUPPORT.
13. SHEETPILING SHALL BE INSTALLED WITH FULL INTERLOCK AT ALL JOINTS TO REDUCE WATER INFILTRATION.
14. PROVIDE DEWATERING AS REQUIRED TO MAINTAIN THE GROUNDWATER LEVEL AT OR BELOW THE SUBGRADE ELEVATION.
15. EXCAVATION SHALL NOT PROCEED MORE THAN 1 FT BELOW ANY BRACING PRIOR TO THE BRACING BEING INSTALLED.
16. ENTIRE BRACING LEVEL MUST BE INSTALLED BEFORE ANY EXCAVATION CAN PROCEED BELOW THAT BRACING LEVEL.
17. SHEETPILED EXCAVATION CELLS WITH BRACING SHALL BE RECTANGULAR WITH MAXIMUM HORIZONTAL SIDE LENGTH OF 32 FT.
18. OBSERVATIONS OF THE SHEETPILE PERFORMANCE/LATERAL
19. MOVEMENT SHALL BE VISUALLY PERFORMED AS THE EXCAVATION PROCEEDS. INDICATIONS OF MOVEMENTS GREATER THAN 2 INCHES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF HALEY & ALDRICH OF NEW YORK AND FURTHER EXCAVATION SHALL BE STOPPED.
20. MINIMUM APPROACH DISTANCES OF MECHANICAL EQUIPMENT SHALL BE DETERMINED BY THE CONTRACTOR PER OSHA 1926.959 MECHANICAL EQUIPMENT.
21. MINIMUM APPROACH DISTANCES OF WORKERS SHALL BE DETERMINED BY THE CONTRACTOR PER OSHA 1910.269 ELECTRIC POWER GENERATION, TRANSMISSION, AND DISTRIBUTION.
22. EXCAVATION DEPTH SHOWN IN THE DRAWINGS IS INFORMED BY GEOPROBE INVESTIGATION FOR CONTAMINATED SOILS. DEPTH OF CONTAMINATED SOILS MUST BE VERIFIED IN FIELD; EXCAVATION DEPTH MAY VARY.

MATERIAL NOTES

1. SHEETPILES SHALL BE ESZ 18 GRADE 60.
2. ALL TEMPORARY PLATE STEEL SHALL CONFORM TO ASTM A36 (GRADE 36).
3. BRACING SHALL CONSIST OF MEGA BRACE (GROUNDFORCE SHORCO) WITH 40 TONNE (40 TONS) OR 50 TONNE (50 TONS) RAM. BRACING MUST HAVE A MINIMUM WORKING BENDING CAPACITY OF 888 kNm IN INWARD BENDING (655 KIP-FT).
4. ANY SUBSTITUTION OF SHEETPILE, BRACING, OR CONNECTION DETAILS SHALL BE APPROVED BY HALEY & ALDRICH OF NEW YORK PRIOR TO USE.

CONSTRUCTION SEQUENCE

1. PRE-EXCAVATE ALONG SHEETPILE ALIGNMENTS TO REMOVE OBSTRUCTIONS PRIOR TO SHEETPILE INSTALLATION. LOCALLY EXCAVATE ALONG SHEETPILE ALIGNMENTS AS NECESSARY. CUT EXISTING GROUND SURFACE 2FT AS NECESSARY. REFER TO SECTIONS C AND D ON S-101.
2. INSTALL SHEETPILES PILES WITH FULL INTERLOCK IN RECTANGULAR CELL AS SHOWN ON THE DRAWINGS. SHEETPILES SHALL BE INSTALLED WITHIN 1 PERCENT OF VERTICAL. PRIOR TO EXCAVATION, GPS COORDINATES SHALL BE TAKEN AT CORNERS AND MID-POINTS OF SHEETPILED CELLS AND SUBMITTED FOR RECORD.
3. EXCAVATE TO A MAXIMUM DEPTH OF 1 FT BELOW CENTERLINE OF THE FIRST LEVEL OF BRACING AND INSTALL BRACING PER MANUFACTURER'S SPECIFICATIONS. ALL BRACING SHALL BE HUNG FROM THE SHEETING BY CHAINS.
4. REPEAT (3) FOR SECOND LEVEL OF BRACING, IF REQUIRED.
5. EXCAVATE TO BOTTOM OF EXCAVATION. GPS COORDINATES SHALL BE TAKEN AT BOTTOM OF EXCAVATION TO CONFIRM EXCAVATION DEPTH AND MID-POINTS OF SHEETPILED CELLS. GPS COORDINATES SHALL BE SUBMITTED FOR RECORD.
6. BACKFILL SOILS TO A MINIMUM OF 1 FT FROM THE CENTERLINE OF SECOND LEVEL OF BRACING (IF INSTALLED) AND REMOVE BRACING PER MANUFACTURER'S SPECIFICATIONS. REFER TO EARTHWORK SPECIFICATION 31 20 00.
7. REPEAT (6) FOR FIRST LEVEL OF BRACING (IF INSTALLED).
8. BACKFILL SOILS UP TO GROUND SURFACE.
9. VIBRATE OUT SHEETPILES. SHEETPILING FOR ADJACENT CELL EXCAVATION MAY REMAIN IN PLACE PROVIDED THE LENGTH OF THE SHEETPILE INSTALLED MEETS THE CRITERIA FOR THE ADJACENT CELL EXCAVATION.
10. REPEAT (1) TO (9) FOR CELLED EXCAVATIONS AS SHOWN IN THE DRAWINGS. AT END OF CONSTRUCTION, ALL SHEETPILING LEFT IN PLACE MUST BE CUT OFF 5 FT BELOW GROUND SURFACE.

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Date:	JUNE 2020
Drawn By:	SJL
Designed By:	HA
Checked By:	HA
Approved By:	
Stamp:	

NOT FOR CONSTRUCTON

Rev.	Description	By	Date

FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN

IRM
ROME, NEW YORK

SUPPORT OF EXCAVATION GENERAL NOTES

S-100

Sheet: 16 of 17

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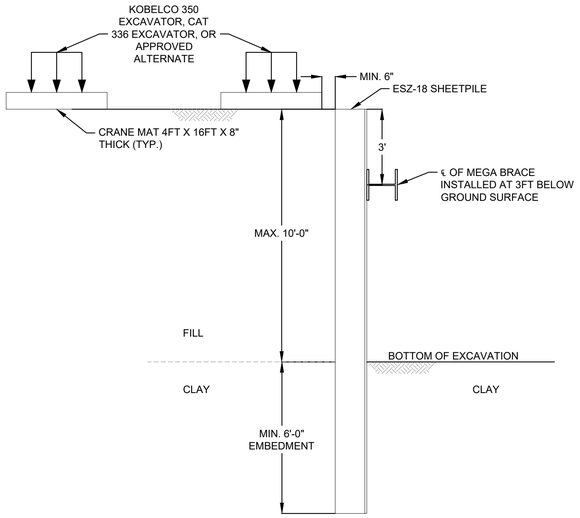
\\HALEYALDRICH.COM\SHARE\ROC_COMMON\127887_GEMT ROME, NY SITE\06_REMEDIAL ACTION IMPLEMENTATION\LOT 5E - IRM DESIGN\LOT5E DESIGN\CAD\127887_009_5E_S-100.DWG



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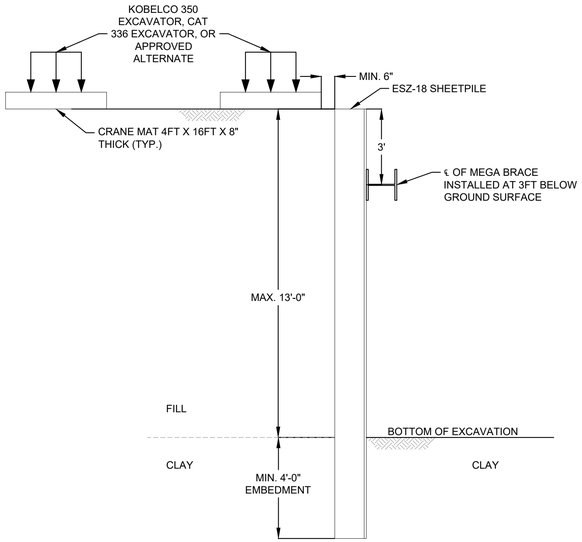
SCALE: 1" = 3'



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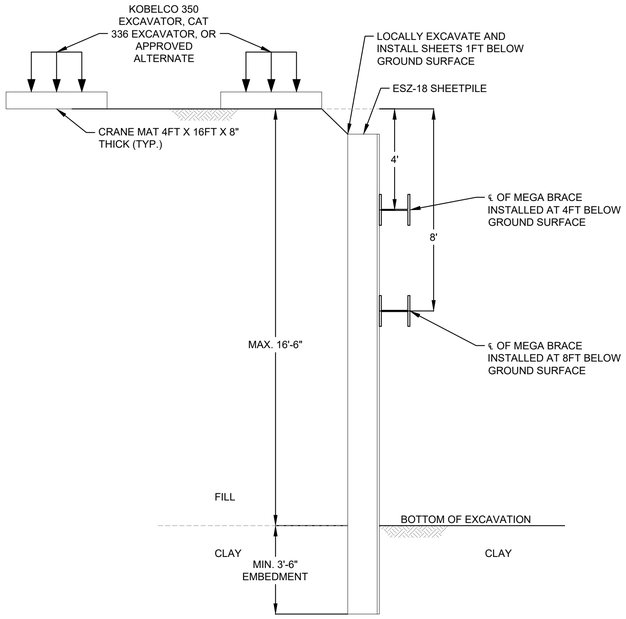

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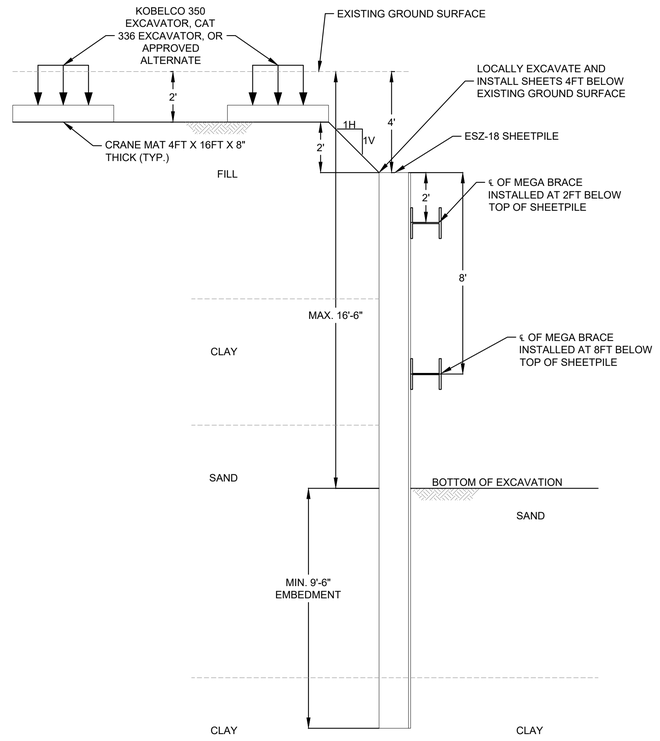
CELLS: 19, 22, 23, 24



D **EXCAVATION DEPTH 16.5 FT OR LESS IN SAND**
CELLS: 17, 18, 20, 21

0 3 6 9 12
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264
Tel: 585.359.9000
Fax: 585.359.4650
www.haleyaldrich.com

PREPARED FOR:

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental
Response Trust

THIS IS A COLOR DRAWING. INFORMATION WILL BE LOST IF REPRODUCED IN BLACK AND WHITE.

FOR NATIONAL GRID REVIEW

Project No.:	127887-009
Scale:	SHOWN
Date:	JUNE 2020
Drawn By:	SJL
Designed By:	HA
Checked By:	HA
Approved By:	
Stamp:	

NOT FOR CONSTRUCTON

Rev.	Description	By	Date

FORMER FEDERAL
CREOSOTE SITE
INTERIM REMEDIAL
MEASURE DESIGN

IRM
ROME, NEW YORK

SUPPORT OF
EXCAVATION
SECTIONS

S-101

Sheet: 17 of 17

Saved by: PTABINOWSKI Printed: 6/29/2020 11:41 AM Sheet: S-101
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Attachment C

Technical Specifications for Former Federal Creosote Site, Interim Remedial Measure Design, Rome, New York

HALEY ALDRICH

www.haleyaldrich.com

TECHNICAL SPECIFICATIONS FOR

FORMER FEDERAL CREOSOTE SITE
INTERIM REMEDIAL MEASURE DESIGN
ROME, NEW YORK

by Haley & Aldrich of New York
Rochester, New York

for Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

File No. 127887-017
July 2020

SECTION 00 01 10

TABLE OF CONTENTS

END OF SECTION

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SECTION 01 10 00

SUMMARY OF WORK

PART 1 – GENERAL

1.1 SUMMARY

A. The section includes a summary of all components of the Work which are further defined and detailed in additional specification sections. It also describes the various parties involved with the project and identifies additional documents that contain project requirements.

1.2 PROJECT DESCRIPTION

A. Owner is Greenfield Environmental Multistate Trust LLC, Trustee of the Multistate Environmental Response Trust (Multistate Trust).

11 Flagg St. Unit No. 1
Cambridge, MA 02138
Email: ah@g-etg.com

B. Engineer is Haley & Aldrich of New York (HANY).

200 Town Centre Dr., Suite 2
Rochester, New York 14623

C. Contractor is Haley & Aldrich Construction Services, Inc. (HCS)

200 Town Centre Dr., Suite 2
Rochester, New York 14623

D. Properties subject to the remedial construction activities described herein include Lots 4, 5E and 5D, owned by the Multistate Trust, Lot 3Band the RR parcel, are owned by others. There is a 60-foot utility easement running through Lot 5E and Lot 4 given to National Grid PLC (National Grid). Engineer and Owner will coordinate all construction activities with National Grid.

E. A brief description of the Interim Remedial Measures (IRM):

The IRM is required by the New York State Department of Environmental Conservation (NYSDEC) and will be conducted in accordance with the NYSDEC Order On Consent issued to the Multistate Trust. The nature of the IRM is excavation and off-site disposal of creosote-saturated soil, which covers approximately 16,500 square feet and is anticipated to be an estimated 16,100 tons of material. Construction of the IRM is currently planned to begin in April 2021 and would continue through November 2021. Site investigations identified the presence of contaminants, primarily creosote,

associated with historical wood-treating operations on several of the lots that comprise the Site. Two IRMs have been completed to date to the north of the subject IRM.

A portion of the planned IRM excavation will be conducted within the 60-foot wide National Grid utility easement (the easement) and beneath 115 kilovolt (kV) overhead electric transmission lines. The excavation is located generally in the center of two poles. The anticipated duration of excavation work inside of the easement may be up to 20 weeks. The closest pole to the excavation is approximately 180 feet away. Excavation in the easement will be limited to property owned by the Multistate Trust (Lot 5E).

Post-excavation Site restoration is currently planned to be initiated during the 2021 construction season and continue with restoration of an existing wetland within the easement planned for 2022. New wetland will also be created in the easement as compensatory mitigation for the loss of wetland on other previously remediated portions of the Site and as required by the NYSDEC.

1.1 WORK SCOPE

A. The IRM project Work scope is summarized as follows:

1. Pre-Excavation and Additional Documentation Sampling.
2. Site preparation including removal/disposal of concrete, installation of site security (fencing), erosion and sedimentation controls, access roads and controls, temporary facilities, and other environmental controls.
3. Install required National Grid signage and controls along easement as needed
4. Site Grubbing
5. Installation of sheet piling, excavation, staging and offsite disposal of visibly creosote impacted soil within specified areas and depths.
6. Removal of creosote material on ground surface located on Lot 5D
7. Backfill and restoration of excavation areas using pre-approved materials as specified.
8. Re-establish wetland areas per the wetland permit to be approved at a later date.

B. Project Compliance Plans shall be developed that contain supplemental project requirements and are considered part of the Technical Specifications. Specific Subcontractor responsibilities related to the implementation of the Compliance Plans are identified in these Specifications. The Compliance Plans include the following:

1. NYSDEC-approved IRM work plan (IRMWP), includes Community Air Monitoring Plan (CAMP).
2. Approved Wetland Permit(s).
3. City of Rome Water Pollution Control Facility (WPCF) – Industrial Discharge Permit.
4. Project Health and Safety Plan.
5. Stormwater Pollution Prevention Plan (SWPPP).

C. The following items are intended to summarize the major components of the IRM Work:

1. Develop and implement a site-specific Health and Safety Plan in accordance with Section 01 35 29 – "Health and Safety Requirements" to manage project-related risks to workers, visitors and the public.
2. Complete all required Submittals.
3. Obtain all permits required for work not previously obtained by Engineer.
4. Protect existing utilities, monitoring wells, and other site features designated to remain.
5. Perform monitoring, sampling and testing as required in these Technical Specifications.
6. Provide project documentation including daily reports, quantities summary for material as needed for Site and road maintenance, backfill and disposal, etc.
7. Utility location and protection including, at a minimum:

    a. Contact Dig Safely New York (Call 811) and comply with New York Statutes and all applicable codes, rules, regulations. Do not begin any excavation or other intrusive work without complying with the law. Ensure that all utilities have been located and marked prior to beginning any excavation or intrusive work.
    b. Protect existing utilities and other site features designated to remain and coordinate with National Grid during excavation near transmission lines.
    c. All work within the National Grid Easement shall be completed with Electrically-Qualified operators, grounded equipment, an Electrically-Qualified spotter, and specific approach distances to the overhead power lines.

8. Locate survey control points. Perform pre-construction survey, as necessary, of topography, structures, and utilities, in areas of planned remedial activities that may be impacted by excavation or any other aspect of Work.
9. Mobilize construction equipment and personnel to the Site.
10. Notify Engineer when waste is available for analytical sampling and testing. The Contractor shall utilize analytical testing stated and generate waste profiles with the disposal facilities for each waste classification. Waste profiles shall be submitted for review and approval by Owner.
11. Perform site preparation by constructing perimeter erosion and sedimentation control measures as described in the Storm Water Pollution Prevention Plan (SWPPP); constructing temporary facilities including field offices, material and equipment staging and storage areas, soil stockpile areas, and construction water storage facilities (frac tanks); constructing temporary controls for site access and security; and clearing trees and brush.
12. Manage on-site stormwater and groundwater throughout the Work.

    a. Install and maintain dewatering systems to remove liquids from the excavations and maintain workable excavation and backfill conditions.

b. Install on-site construction water treatment system; permit an on-site discharge location; and operate, maintain and monitor the system throughout the Work.

13. Implement dust, odor, vapor emissions controls in accordance with Section 01 35 43 – "Control of Emissions" and the Community Air Monitoring Plan.
14. Site clearing and grubbing activities, to include less than ½ an acre.
15. Demolish existing surface features including but not limited to concrete structures and railroad ties, rails, and ballast.
16. Excavate visually impacted materials within the excavation limits.
17. Prepare and transport impacted material to approved off-site disposal facilities.
18. Install and remove sheet piles as necessary to complete excavation.
19. Backfill excavation with pre-approved imported materials.
20. Restore site with proper grading to meet the requirements of the Wetland Permit and to maintain the access road as shown on the Drawings.
21. Remove temporary facilities and controls not designated to remain.
22. Decontaminate equipment and personnel throughout Work and prior to removing equipment from the Site.
23. Segregate and process all excavated materials destined for off-site disposal, as necessary to conform to disposal facility requirements.
24. Demobilize equipment, and materials.

1.2 DRAWING AND SPECIFICATION ORGANIZATION

A. This IRM project includes Drawings and Specifications describing the totality of the Work including reference to various Compliance Plans that must be adhered to.

B. To clarify which documents, describe work associated with the Technical Specifications, the following organization has been adopted:

1. Drawing G-100, "Title Sheet and Drawing Index" identifies Drawings that apply to the Bid Package.
2. Specification Section 00 01 10 – "Table of Contents" identifies Specification Sections.

1.3 INTENT OF DOCUMENTS

A. Contractor shall furnish the following:

1. All labor, tools, materials, equipment, transportation, taxes and related items essential for completion of the Work.
2. Apparatus, appliance, material or Work not shown on Drawings but mentioned in Specifications, or vice versa.
3. Accessories, reasonably inferable from Drawings and Specifications, necessary to make Work complete and ready for operation.

B. Notes or instructions shown on any one Drawing apply, where applicable, to all other Drawings.

C. References to codes, specifications and standards called for in the Specification Sections and on the Drawings, mean the latest edition, amendment and revision of such referenced standard in effect on the date of these Contract Documents.

D. Code Compliance: Provide Work in compliance with the following:

1. New York Fire Code.
2. New York Department of Labor and the New York Labor Code Rules and Regulations.
3. Occupational Safety and Health Administration (OSHA) Regulations.
4. National Electric Code.
5. National Grid Conditions for proposed Activities within Transmission Line Right-of-Way, Doc. #GL.06.01.307, current version
6. All other Codes applicable to Work.
7. Drawings, Specifications, and Compliance Plan requirements in excess of code/regulations requirements and not contrary to the same.

1.4 GLOSSARY

ACI	American Concrete Institute
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
API	American Petroleum Institute
ASTM	American Society for Testing Materials
AWSC	American Welding Society
IEE	Institute of Electrical and Electronics Engineers
IRI	Industrial Risk Institute
NEC	National Electrical Code
NEMA	National Electrical Manufacturers' Association
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NYSDEC	New York State Department of Environmental Conservation
UFPO	Underground Facilities Protective Organization
UL	Underwriters' Laboratories, Inc.
OSHA	Occupational Safety and Health Administration
As Called For	Material, equipment including the execution specified/shown in the Contract Documents.
Code Requirements	Minimum requirements.
Contractor	Haley & Aldrich Construction Services, Inc.
Engineer	Haley & Aldrich of New York.
Equal or Equivalent	Equally acceptable as determined by Engineer.

Final Acceptance	Owner acceptance of the project from Contractor upon certification by Engineer.
Furnish	Supply and deliver to installed location.
Inspection	Visual observations by Owner's Site Representative.
Install	Mount and connect equipment and associated materials ready for use.
Lot 3B Owner	Property owned by 5900 Success Drive Realty, LLC (beneficial owner); Oneida County Industrial Development Agency (fee owner)
Or Approved Equal	Approved equal or equivalent as determined by Engineer.
Owner	Greenfield Environmental Multistate Trust, LLC
Owners Agent	Approved person responsible for signing waste manifest.
Provide	Furnish, install and connect ready for use.
RR Parcel	RR property owned by Mohawk, Adirondack and Northern Railroad, a subsidiary of Genesee Valley Transportation Company
Relocate	Disassemble, disconnect and transport equipment to new location, then clean, test and install ready for use.
Replace	Remove and provide new item.
Satisfactory	As specified in Contract Documents.
Subcontractor	Paragon Environmental Contracting, Inc.
Substantial Completion	Contractor's completion of specified work ready for final inspection by Owner and Engineer.
USACE	United States Army Corps of Engineers

1.5 WORKMANSHIP

A. All workers employed on this project shall be persons skilled in that work which they are to perform. Work will not be approved if it does not meet the quality of workmanship called for in these Specifications. If this quality of workmanship is not exactly defined herein, it shall be assumed to be the best standards of workmanship for that trade.

B. All Work within the National Grid Easement shall be completed by Electrically-Qualified operators and spotters.

1.6 SITE SAFETY AND WORK RULES

A. Contractor shall be responsible for strict adherence to their prepared site-specific Health and Safety Plan (HASP), which must be reviewed by Engineer prior to the start of Work. See Section 01 35 29 – "Health & Safety Requirements" for HASP requirements.

B. Contractor shall take all necessary precautions to provide safety provisions to adequately protect the public, the personnel and property of Owner and Engineer, and all other persons, property and equipment, involving his work at the job site.

C. Contractor to include provisions, precautions and guidance to cover any COVID-19 related health & safety concerns, include references to any State and Local orders.

D. Contractor's equipment shall be managed in such a way as not to inhibit activity at adjacent properties or other onsite activities.

E. Contractor's personnel shall sign in and out daily on the daily safety tailgate meeting form.

F. Contractors are responsible for the security of their tools, materials, and equipment and temporary facilities.

1.7 PERMITS AND FEES

A. Contractor shall give all required notices relative to the Work when inspections are required, obtain and pay for all permits and necessary approvals, and make all deposits necessary for the completion of the Work as herein specified.

B. Owner and/or Engineer will obtain the following permits/approvals for the Work:

1. NYSDEC approved IRM work plan.
2. City of Rome Water Pollution Control Facility (WPCF) – Industrial Discharge Permit.
3. Approved Wetland permit.

C. Contractor shall obtain any other necessary permits to perform the Work including but not limited to the following:

1. Local permits for temporary facilities and utilities as needed.
2. Waste transportation haul permits as required.

1.8 TAXES

Contractor shall include such local, state and federal taxes as may be applicable to the Work of this project.

PART 2 – PRODUCTS

Not Applicable

PART 3 – EXECUTION

Not Applicable

END OF SECTION

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SECTION 01 31 00

PROJECT MANAGEMENT & COORDINATION

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Coordination and Project Conditions.

B. Examination.

C. Pre-construction Meeting.

D. Daily Site Safety Meetings.

E. Progress Meetings.

1.2 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work to ensure efficient and orderly sequence of installation of interdependent construction elements.

B. Coordinate space requirements, delineation of Exclusion Zone, other Work areas and materials storage areas.

C. Coordinate Work related to loading and off-site transportation of impacted soils for off-site disposal.

D. Coordinate completion and clean-up Work of separate sections in preparation for Substantial Completion.

1.3 EXAMINATION

A. Verify that existing Site conditions and surfaces are acceptable for subsequent Work. Beginning Work means acceptance of existing conditions.

B. Examine and verify specific conditions described or referred to in individual Specification sections.

C. Maintain complete and accurate log of Work progress.

1.4 PRECONSTRUCTION MEETING

A. Engineer will schedule meeting after the Notice of Award.

B. Attendance Required: Owner, Engineer and Contractor Site Superintendent and representatives from major Subcontractors.

C. Agenda:

1. Submission of list of submittals and progress schedule.
2. Designation of project personnel.
3. Procedures and processing of field decisions.
4. Scheduling.
5. A discussion of health and safety issues outlined in Contractor's Health & Safety Plan (HASP) including COVID-19 safety considerations as well as site access control and restricted areas.
6. Topics for weekly progress meetings.

D. Contractor and subcontractors shall attend an initial site safety meeting, conducted by Engineer, prior to commencing work on-site.

1.5 DAILY SITE SAFETY MEETINGS

A. Contractor will hold daily tailgate safety meetings, covering site safety topics, at the start of each workday.

B. Attendance Required: Contractor and Subcontractor personnel, and any other personnel working on Site.

C. Agenda:

1. Review safety issues and lessons learned from the previous workday.
2. Summarize the Work planned for the day and observe work areas planned for the day with attention to potential job hazards.
3. Ensure that job hazard analyses have been prepared by Contractor for planned work tasks.
4. Review worker health and safety requirements established for the Work.
5. Review monitoring procedures for protection of public health and safety and avoidance of nuisance conditions.
6. Review relevant contingency plans and emergency procedures.

1.6 PROGRESS MEETINGS

A. Contractor will schedule and administer weekly meetings, or more frequently if warranted, prior to mobilization and throughout progress of the Work. Contractor will prepare agenda with copies for participants and preside at the meetings.

B. Contractor shall prepare the following in advance of each weekly meeting, to be included as attachments to the meeting minutes:

1. A summary of outstanding submittals and anticipated completion date.
2. A bullet list summary of work completed the previous week.
3. A bullet list summary of work anticipated to be completed during the next week.
4. An updated project schedule.
5. Weekly schedule of values and quantities of disposal and import materials

C. Attendance Required: Owner, Engineer, Contractor, Contractor's Superintendent, and major Subcontractors, if approved by Engineer.

D. Agenda:

1. Review of Work progress.
2. Field observations, testing results, problems, and decisions, including results of vibration monitoring and soil testing by Engineer.
3. Health & Safety reporting and concerns,
4. Identification of problems impeding planned progress.
5. Maintenance of progress schedule.
6. Planned progress during succeeding work period.

E. Contractor will record minutes and distribute copies within two days after meeting to participants and those affected by decisions made.

PART 2 – PRODUCTS

Not Applicable

PART 3 – EXECUTION

Not Applicable

END OF SECTION

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SECTION 01 32 00

CONSTRUCTION SURVEYING

PART 1 – GENERAL

1.1 SUMMARY

A. Contractor shall retain a Surveyor, Licensed and Registered in the State of New York, to perform construction surveys as needed and is herein referred to as 'Surveyor'.

B. Contractor shall provide all drawings, coordinates, and information as needed to Surveyor for construction surveys requested.

C. The Surveyor will provide all labor, materials, equipment and incidentals necessary to perform survey work necessary for construction surveying.

1.2 SECTION INCLUDES

A. Record documents.

B. Examination.

C. Survey reference points.

1.3 RECORD DOCUMENTS

A. Contractor shall maintain a complete and accurate log of control and survey work as it progresses which shall be obtained from Surveyor.

1.4 SURVEY REFERENCE POINTS

A. Contractor to locate and protect survey control and reference points.

B. Control datum for survey is that established by the benchmark table provided on Drawing G-101 using the following datum:

1. Vertical Datum: National Geodetic Vertical Datum of 1988 (NAVD 88) (Geogrid 12B).
2. Horizontal Datum: North American Datum of 1983 (NAD83) New York State Plane, Eastern Zone.

C. Contractor shall protect survey control points prior to starting site work and preserve permanent reference points during construction, as necessary to complete the Work.

PART 2 – PRODUCTS

Not Applicable

PART 3 – EXECUTION

3.1 SURVEY REQUIREMENTS - GENERAL

A. Surveyor will provide construction surveying services utilizing recognized engineering survey practices.

B. Surveyor will establish elevations, lines and levels as necessary to locate proposed locations of structures, excavations and site features to conduct the Work or to verify locations of features shown on the Drawings.

C. Surveyor will periodically verify layouts by similar means.

D. The elevation data shall be obtained by a method that is accurate to within ± 0.01 foot.

3.2 PROJECT-SPECIFIC SURVEY REQUIREMENTS

A. Contractor anticipates providing the survey tasks identified below. Contractor shall coordinate all survey work with Surveyor. Contractor shall identify any other required survey work not described below and coordinate execution with Surveyor.

B. Pre-Construction Survey

1. Locate and flag all survey controls.
2. Locate and flag construction limits.
3. Locate and flag all active and abandoned utilities within the limits of construction identified on the Drawings.
4. Layout excavation limits and excavation support alignments.
5. Survey over-head transmission lines for distance from ground.
6. Survey existing conditions within the limits of construction.

C. Excavation Survey

1. Establish elevation benchmarks on excavation support systems or adjacent undisturbed surface/structure for use during excavation.
2. Survey over-head transmission lines for distance from ground to line beneath areas being excavated, as necessary, to ensure adequate separation.
3. Survey horizontal location of all excavation support systems following installation and establish numbering in coordination with Engineer.
4. Survey excavation bottom and limits at completion of excavation of each individual excavation area.

5. Provide construction layout for backfill and grading.
6. Prepare excavation bottom contour plan and calculate volume of material excavated.

D. Final Conditions

1. Survey completed grades and locations of erosion control measures for record drawing.
2. Survey limits of completed work.

END OF SECTION

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SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

A. The section outlines the requirements and expectations of the submittal process by the Contractor.

1.2 SUBMITTAL PROCEDURES

A. Unless otherwise noted, submit one electronic copy of each submittal to Contractor. Transmit each submittal with a completed Submittal Cover Sheet.

B. Identify variations from Technical Specifications, product substitutions, and product or system limitations which may be detrimental to successful performance of completed Work.

C. Contractor will review the submittal to ensure the submittal meets contract requirements. Once approved by Contractor, Engineer will review the submittal only for conformance with the design concept of the project.

D. Engineer will complete a Submittal Review Transmittal. The Submittal Review Transmittal will be returned to the Contractor marked as follows:

1. "Reviewed": Contractor is advised that this means that fabrication, manufacture and/or construction may proceed providing the Work is in compliance with the Contract Documents.
2. "Reviewed as Noted": Contractor is advised that this means that fabrication, manufacture and/or construction may proceed providing the Work is in compliance with the marked notations and the Contract Documents.
3. "Reviewed as Noted, Additional Information Required": Contractor is advised that this means that fabrication, manufacture and/or construction may proceed providing the Work is in compliance with the marked notations and the Contract Documents. The submittal should be corrected and resubmitted for final distribution.
4. "Revise and Resubmit": Contractor is advised that this means no Work shall be fabricated, manufactured and/or constructed and that Contractor shall make a new submittal for the project. Product submissions marked with this action or notation will not be permitted on the Site.
5. In the case of Shop Drawings, returned in the form of manufacturer's descriptive literature, catalog cuts and brochures stamped "reviewed" or "reviewed as noted", Contractor shall be responsible for distributing them in the field and to Subcontractors. If the returned Shop Drawings are stamped "reviewed as noted additional information required" or "revise and resubmit",

Contractor shall submit new copies of the Shop Drawings revised to show compliance with the Contract Documents.

E. When revised for resubmission, identify changes made since previous submission. All resubmissions shall be by Contractor.

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

1.3 LIST OF REQUIRED SUBMITTALS

A. Site Specific Health and Safety Plan and personnel certificates of training, including but not limited to, HAZWOPER, Electrically-Qualified Operator, etc.

B. Detailed construction schedule.

C. Material Certifications and Sieve Analysis for all Import Fill Materials.

D. Safety Data Sheets for Quick Lime Dewatering Agent and other bulking agents.

E. Specifications for Dewatering Equipment.

F. Electrically-Qualified spotter credentials.

G. Construction Work Plan specifically for work within the electrical easement, to include work sequence, equipment to be used, survey stating power line sag elevations, sheet pile installation procedure, equipment grounding materials/locations, governor setting on excavator with maximum height restriction, and movement of excavated material to dewatering cells.

H. Construction Work Sequence Plan to include excavation phasing, material stockpiling, and truck routing (may be combined document).

Submittals will be approved by Engineer prior to work being performed.

1.4 CONTRACTOR DATA AND DOCUMENTATION

A. Data and documentation to be submitted shall include the following:

1. Manifests/Bills of Lading with corrected weights and certificates of disposal (or certified weight slips from landfill).
2. Weights or other slips for all materials hauled off-site or on-site.

1.5 PROJECT RECORD DOCUMENTS

A. Maintain one set of the following record documents, record daily actual deviations, modifications or revisions to the Work:

1. Limits (vertical and horizontal) of excavations shown on a Site Plan.
2. Permits obtained.

3. Borrow source soil analytical data.
4. Results of Health & Safety monitoring conducted during the Work.
5. Waste manifests, bills of lading and other transportation documentation.
6. Running list and total of quantities of materials removed from the site.

B. Record documents and Shop Drawings: Legibly mark each item to record the actual construction of the Work, including:

1. Measured horizontal and vertical locations of existing encountered underground utilities and other constructed features, referenced to permanent surface improvements.
2. Field changes of dimension and detail.
3. Details not on original Contract Drawings.
4. Field summary documents.

1.6 RECORD DRAWINGS

A. Contractor shall coordinate with Surveyor to provide a complete set of Record Drawings for all constructed systems. The Record Drawings shall provide measured coordinates (X, Y and Z) of the systems constructed as part of this Work.

PART 2 – PRODUCTS

Not Applicable.

PART 3 – EXECUTION

Not Applicable.

END OF SECTION

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SECTION 01 35 29

HEALTH AND SAFETY REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

A. Contractor is solely responsible for the health, safety, and protections of all their on-Site workers including its employees. Contractor shall provide a Health and Safety Plan (HASP) meeting all applicable Federal, State, and Local requirements, scope of their work, and implement the HASP.

1.2 REFERENCES

A. NIOSH/OSHA/USCG/EPA: "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities," October 1985.

B. OSHA: 29 CFR Parts 1910 and 1926.

C. EPA: Executive Order 3100.1.

D. NYS: COVID-19 Executive Orders

1.3 RELATED DOCUMENTS

A. "Site Specific Safety Plan – Former Federal Creosote Site – Lot 5E, RR Parcel and Lot 5D," prepared by HANY.

B. "Community Air Monitoring Plan" prepared by HANY.

1.4 GENERAL REQUIREMENTS

A. Examine all other Sections of the Specifications for requirements that affect Work of this Section, whether or not such Work is specifically mentioned in this Section.

B. Contractor to include provisions, precautions and guidance to cover any COVID-19 related health & safety concerns, include references to any State and Local orders.

C. Coordinate Work with that of all other trades affecting or affected by Work of this Section. Coordinate with such trades to assure the steady progress of all Work under the Contract.

1.5 DESCRIPTION OF WORK

A. Work included: Work under this Section includes, but is not limited to, the following items including all labor, materials, equipment and services necessary and incidental to adhere to the requirements of the Site-specific HASP prior to the execution of the Work.

B. Preparation of a Site-specific HASP for all workers engaged in Work at the Site. The HASP shall be prepared by an environmental health professional that is qualified by training and experience to perform this Work.

C. Contractor shall use the appropriate job hazard analysis (JHA) methods for identifying and communicating known or potential hazards to their employees, their potentially impacted trades, and the public prior to commencing work. All changes to work plan or hazard control methods shall be reviewed and approved by Contractor prior to implementation.

D. All employees who will be working in or near potentially contaminated soil, sediment, water or air shall have successfully completed an Occupational Safety & Health Administration (OSHA) 40-hour Health and Safety training course and be current in OSHA training certifications through annual 8-hour refresher training and have been evaluated in a medical monitoring program in compliance with the OSHA hazardous waste operations and emergency response codified at 29 CFR 1910.120, and other specific training for Site activities that may be required such as but not limited to Fall Protection, Confined Space, Excavation and Trenching, etc. Submit documentation of training for all on-Site personnel and enrollment in medical monitoring. Documentation must be maintained on-Site for the duration of the project.

E. Contractor to include provisions, precautions and guidance to cover any COVID-19 related health & safety concerns, include references to any State and Local orders.

F. Providing health and safety equipment including protective clothing, hard hats, boots, eyewear, hearing protection, long-sleeve shirts, gloves, respiratory protection equipment and monitoring instruments.

G. Contractor shall perform decontamination of construction equipment, tools and other non-disposable items that may have been in contact with Site pollutants prior to removal of such equipment from the Site.

1.6 SPECIAL SITE CONDITIONS

A. Levels of personal protection are established in reference standards. It is anticipated that most of the Work at this Site may be conducted using typical construction health and safety practices as described in OSHA safety and health regulations for construction codified at 29 CFR 1910 and 1926. The Work to be conducted at the Site is not anticipated to require personal protection above that provided by Level D.

B. The Work will involve handling of soil and water impacted by creosote. Handling of the impacted material is anticipated to result in the emission of vapors, dust, and odors. Contractor is required to mitigate such emissions within the Work area and to prevent the emission of vapors, dust and odors that may cause risk to the public or cause nuisance conditions. The HASP prepared for the Site must include a description of Subcontractor's proposed methods and materials, such as chemical vapor/odor

suppression agents, for mitigation of such emissions, and shall be in accordance with the following additional plans:

1. Community Air Monitoring Plan (CAMP) has been prepared for the project which Contractor shall adhere to. Contractor shall implement emissions controls sufficient to maintain conditions below air monitoring action levels.

C. The project includes working within National Grid's easement and installing/removing sheet piles under the overhead power lines. This work is being done with approval from National Grid. All operators working in the easement shall have additional training in accordance with OSHA 1910.269, all equipment shall be grounded to installed sheet piles via tether, and an Electrically Qualified spotter will be onsite at all times work is being conducted.

1.7 REGULATORY AND PROJECT REQUIREMENTS

A. Contractor shall comply with applicable Federal, state, and local safety and occupational health laws and regulations (OSHA and NYPESH), and any other requirements that are appropriate in New York where the project is conducted. OSHA regulations are the primary source governing rules.

B. Any equipment working with the National Grid easement shall be equipped with height limiters as determined on a daily basis during morning tailgate safety briefing with operators and Electrically-qualified spotter.

1.8 NEW MATERIALS AND PRODUCTS

A. Contractor, prior to bringing or use of chemicals on Site, will submit their SDS to Engineer for approval. All chemicals brought on to the Site will have SDS and all containers will be labeled. Follow safety data sheets and the manufacture's recommendations for worker protection, use, storage and disposal of products used on Site. A designated chemical storage area will be designated on the Site to store the chemicals. Storing incompatible chemicals is prohibited.

1.9 HEALTH & SAFETY OVERSIGHT

A. Contractor shall have sole responsibility for implementation of the HASP. Contractor shall also be responsible for implementation of the HASP by all subcontractors.

1.10 SUBMITTALS

A. Submit the names, qualifications and experience of the following individuals identified by Contractor for approval by Engineer:

1. Environmental health professional responsible for the preparation of the HASP.
2. Site Safety Officer (SSO).

B. Submit the following information to Engineer for review:

1. Contractor HASP.
2. A list of all personnel who will enter the Site, copies of certification of training and certification of compliance with medical monitoring requirements. This documentation must be submitted and reviewed by Engineer prior to personnel performing on-Site Work.

C. The HASP shall be submitted at least 7 days in advance of Site mobilization, prior to the commencement of Work for review by Engineer.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 HEALTH AND SAFETY PLANNING AND IMPLEMENTATION

A. Prepare a HASP which will ensure the health and safety of all workers at the Site at all times. Implement the plan throughout the execution of the Work. The plan shall include, but not limited to, the following information:

1. Key personnel and assignment of responsibility, including Identification and qualifications of Contractor's SSO.
2. Site description and background.
3. Scope of Work and objective including schedule of tasks.
4. COVID-19 related health & safety concerns and procedures.
5. Chemicals of concern and signs/symptoms of overexposure.
6. Potential for worker exposure to the chemicals of concern for each Work task.
7. Physical safety issues related to but not limited to under and aboveground utilities, underground structures, operation of heavy equipment, excavation safety, fall protection, hot work, confined space, and factors that can cause bodily harm.
8. Environmental safety issues related to weather such as heat, cold, noise, and work near water bodies.
9. Provisions for work zone security and protection of the public who access the Site or the perimeter of the Work area.
10. Requirements for OSHA and/or other required training associated with each Work task and a record, or schedule for training, of Subcontractor's workers in the use of personal protective equipment. Please note that training will not be provided by Owner or Construction Manager.
11. Work task specific levels of personal protection and a description of health and safety equipment including protective clothing, respiratory protection equipment and monitoring instruments.
12. Procedure for medical surveillance program.

13. Procedures for general safe work including, working next and/or near occupants of Site, neighboring businesses and public; sanitation, fire safety, communications, signs and labels, engineering control, electrical safety, contact with contaminants, preventing dispersion of contaminants and handling of contaminants.
14. Procedures for performing work including for the calibration of monitoring instruments and monitoring of hazardous dust, gases or vapors for each Work task, and action levels for donning personal protective equipment; and description of monitoring instruments, action levels, and stop work procedures.
15. Procedures for decontamination of heavy equipment, tools, and personnel if necessary.
16. Emergency Response Plan, including the names and phone numbers of individuals or agencies who shall be contacted in the event of on-Site injury or release of oil or hazardous material.
17. Management of lower tiered subcontractors.

B. Require all workers who will engage in work at the Site which might result in exposure to contaminated materials attend a pre-work health and safety briefing and daily tailgate safety briefings.

C. Contractor Safety personnel will conduct periodic health and safety audits. If audits discover discrepancies or issues, Contractor shall promptly address all issues to Engineer's satisfaction at no additional cost to Owner the for labor, equipment, materials or lost time rectifying issues identified.

D. Provide adequate health and safety training for all personnel who will be engaged in Work at the Site that might result in exposure to contaminated air, soil, sediment or water, and for visitors to the Site.

E. Conduct tailgate health and safety meetings at the beginning of each workday to review specific hazards associated with the Work planned for that day, PPE and operational controls to mitigate those hazards, and contingency plans and emergency procedures to respond to potential problems. Contractor and all its employees are required to attend the daily health and safety meetings. Subcontractors and all its employees are required to conduct their own daily health and safety meeting or attend Contractors.

F. Personnel who have not received training or who are not equipped with the required protective clothing and equipment shall not be permitted access to the Site during execution of Work which may result in exposure to contaminated soil, water, or other materials.

G. A Job Hazard Analysis (JHA) must be prepared for each major work task. JHA's must be reviewed prior to the start of each task and updated whenever a change in Site conditions or Work procedures occurs, or upon discovery of additional hazards.

H. All unsafe conditions or acts must be corrected immediately and reported to Construction Manager. All accidents or “near misses” must be reported to Engineer immediately. Contractor(s) shall assist with incident investigation, Root Cause Analysis, and Reporting as required by Engineer.

I. All on-Site personal and public have the right to Stop Work. Report a Stop Work to Construction Manager immediately. Reasons for issuing a stop work order include, but are not limited to:

1. The belief/perception that injury to personnel or accident causing significant damage to property or equipment is imminent.
2. Contractor is in breach of site safety requirements and/or their own Site-specific HASP.
3. Identifying a sub-standard condition (e.g., severe weather) or activity that creates an unacceptable safety risk as determined by a qualified person.
4. Implement "SAFE":

a. "S"- stop the unsafe act during the task,
b. "A" - analyze the safety issue that warranted the stop,
c. "F" - fix the safety issue and resume work, and
d. "E"- evaluate the fix in relation to the issue as the task is continued to be performed.

Work will not resume until the unsafe act has been stopped OR sufficient safety precautions have been taken to remove or mitigate the risk to an acceptable degree. Stop work orders will be documented as part of an on-Site stop work log. Once work has been stopped, only Contractor, Engineer or his/her designee can give the order to resume work.

3.2 DECONTAMINATION

A. Proper PPE must be worn while performing decontamination, including the wearing of chemical safety goggles and gloves as necessary.

B. Storage or transport of decontamination solvents in squirt bottles is not permitted as they may discharge their contents upon ambient temperature change or leak if overturned.

C. Decontaminate all equipment and tools which have come in contact with contaminated soil, groundwater and other materials to prevent the spread of contamination within the Site and outside the Site limits.

D. Dispose of all decontamination by-products in accordance with Local, State and Federal regulations.

E. At a minimum, decontamination of construction equipment shall include the steam-cleaning of all equipment which comes in contact with contaminated soil or water, prior to leaving the job Site. Soap and water decontamination of non-disposable worker protective equipment shall be performed. Water and soap used for cleaning, and debris coming off the equipment shall be collected, samples, and disposed appropriately according to laboratory analytical results.

F. Run off from decontamination areas is prohibited.

G. Air monitoring instrumentation and delicate instruments that are difficult to decontaminate or sensitive to water should be protected from contamination during use through the use of plastic sheeting. To the extent possible, efforts should be taken to limit the degree of contamination to hand tools and sampling equipment during use.

H. Provide on-Site restrooms and other facilities for Site personnel to decontaminate their protective clothing or other equipment.

3.3 DISPOSAL OF CONTAMINATED MATERIAL

A. Materials must be segregated into liquids or solids and containerized separately for off-Site disposal. Contaminated material generated and containerized as a result of decontamination procedures will be segregated according to their contaminants, profiled, and labeled for disposal in accordance with Section 02 53 00 – “Waste Management, Transportation, and Disposal”.

3.4 ACCIDENT REPORTING REQUIREMENTS

A. Contractor shall comply with the following accident and/or incident reporting requirements.

1. Should any unforeseen safety-related factor, hazard, or condition become evident during the performance of the Work, Contractor shall immediately take prudent action to establish, maintain, and secure the Site and working conditions. This shall be followed by immediate notice to Engineer.
2. If a serious injury (requiring medical attention) or injury requiring first aid to a person or damage to property, environment, or natural resources result from an incident, Contractor shall immediately report the incident to Engineer. The report shall be followed by a written document describing the incident, what hazards were created by it, and a detailed statement of what actions were taken to correct the incident. Contractor will also include a description of why the actions taken were prudent and will be useful in preventing the incident from happening again.

END OF SECTION

SECTION 01 35 43

CONTROL OF EMISSIONS

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Description.

B. Performance Requirements.

C. Submittals.

D. Foam Machine.

E. Foam.

F. Water.

G. General.

H. Foam Application.

1.2 DESCRIPTION

A. Emissions from the site remedial construction activities may include dust, odors, vapors, and sediment transport due to stormwater and/or floodwater runoff. Contractor shall implement adequate controls to eliminate these emissions.

B. Contractor shall conduct operations and maintain the project Site so as to prevent the creation and dispersion of dust and nuisance odors), including application of foam suppression or an environmentally safe odor masking agent. Odor control shall be used (available) throughout the course of the Work.

C. Implement work zone air monitoring in accordance with the Community Air Monitoring Plan included as part of the HASP.

D. At the discretion of Engineer, work may be suspended if visual dust or off-site odors are detected. These work stoppages are the responsibility of Contractor and will not be a basis for an extension of time or additional monies for down time.

1.3 SUBMITTALS

A. Submit manufacturer's data and safety data sheets for dust, odor and vapor control products. Contractor shall maintain an adequate supply of these products on-site for daily use. Product submittals to Engineer are required prior to use and shall include manufacturers recommended use/installation practices.

1.4 PERFORMANCE REQUIREMENTS

A. Perimeter air monitoring, as described in the Community Air Monitoring Plan, will be conducted by Engineer to assess potential off-site exposures. Engineer will notify Contractor when there are excursions above acceptable levels. Contractor shall make necessary adjustments or corrective actions as required to mitigate off-site exposures.

PART 2 – PRODUCTS

2.1 FOAM MACHINE

A. A foam machine shall be provided by Contractor and maintained in operable condition in the work area. The foam machine will consist of a Pneumatic Foam Unit for small to medium applications. One example of an acceptable system is the Rusmar PFU400/25 self-contained unit, or equivalent. The unit should include the following general components: an air compressor, pump, hoses, nozzles, and a 400-gallon solution storage tank placed on protective plastic sheeting.

2.2 FOAM

A. The foam shall consist of non-hardening water-based foam that can be applied during excavation and for overnight or weekend coverage to prevent emissions. One example of an acceptable material is the Rusmar AC-645 Long Duration Foam, or equivalent. The Rusmar foam is shipped in concentrated form in 450-lb drums and is diluted with water at the site. Each drum will cover approximately 4,000 square feet at the recommended 3-inch coverage.

2.3 WATER

A. Water will be provided by Contractor (see Section 01 50 00 - Temporary Facilities & Controls).

PART 3 – EXECUTION

3.1 GENERAL

A. The control of air emissions during all phases of work shall be the sole responsibility of Contractor. Odor and dust emissions shall not be allowed to leave the site. Contractor shall implement emission control measures to prevent odors and emissions from leaving the site at all times and perform additional measures as requested by Engineer.

B. Maintain the site in a condition that will not generate dust and airborne particulates during periods of non-work (i.e., evenings, weekends, and holidays).

C. Contractor shall utilize water, plastic sheeting, odor control foam, or other similar means to control air emissions during the performance of this work.

1. Emission control supplies shall be ready for use during all material handling operations.

D. Air emission control products used shall be compatible with the requirements of the disposal facilities or segregated prior to off-site disposal.

E. Supply the required foam suppression machine on site at the current work location in operating condition with an adequate supply of foam for the duration of any intrusive activities. If Contractor does not have an operational foam machine on site any intrusive work will be suspended.

F. Implement strict odor control measures during active construction periods. These control measures will generally consist of foam suppression and/or environmentally safe odor masking agent applications, and will be applied, as directed by Engineer.

G. Perimeter air monitoring will be conducted by the Engineer. Contractor will be notified if exceedances of air-born particulates (dust) or total volatile compounds occur. Contractor will be notified as soon as possible, and activities will stop until appropriate control measures have been applied.

3.2 FOAM APPLICATION

A. For foam suppressant application to soil surfaces, Subcontractor shall:

1. Apply foam in a uniform layer coating all exposed surfaces.
2. Apply foam as needed to exposed excavation faces to limit exposure of impacted material to the air.

3.3 WATER APPLICATION

A. For water application to soil surfaces:

1. Utilize spraying equipment to provide complete coverage of surfaces with water.
2. Apply water without interfering with earthmoving equipment or on-site operations.
3. Keep surfaces damp without creating nuisance conditions such as ponding, runoff, erosion, or excessively wet and muddy conditions.
4. Apply water spray in a manner to prevent movement of spray beyond site boundaries.

3.4 PAVEMENT SWEEPING

A. Maintain clean pavement surfaces within the designated work area and site egress route. Do not permit construction equipment to track soil outside of the active exclusion zone or the limit of work onto public roads.

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

C. Pavement at the construction entrances and along facility travelled ways are to be

swept daily. Deposits of dirt/mud/stones on paved surfaces that may cause safety issues or damage to vehicles, property or pedestrians shall be swept clean immediately.

3.5 STOCKPILE MANAGEMENT

A. Maintain on-site stockpiles in a manner that prevents wind-blown dust generation.

B. During active periods, provide periodic water misting/sprinkling.

C. During inactive periods, cover stockpiles with weighted and anchored tarps/covers. Clean stockpiles may be covered/stabilized with seed and mulch.

END OF SECTION

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SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 SUMMARY

A. This section covers the requirements for temporary facilities and controls related to Work at the Site. Temporary facilities and controls are defined as installations to support construction that are not part of the permanent installed Work.

1.2 REFERENCES

A. "New York State Stormwater Management Design Manual", NYSDEC, January 2015.

1.3 RELATED DOCUMENTS

A. "Stormwater Pollution Prevention Plan (SWPPP) –" prepared by HANY, September 2016.

1.4 SUBMITTALS

A. Submit plan of Contractor staging/storage areas and the layout of other temporary facilities and controls for Engineer review, prior to start of construction if proposed locations and layout differ from the depiction on Drawing C-200.

1.5 TEMPORARY ELECTRICITY

A. Temporary electrical needs required to perform the project shall be arranged by the Contractor.

1.6 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. Provide and maintain lighting as required for safe construction operations, including mounted lighting at the construction trailer areas.

B. Provide and maintain lighting to exterior work areas if Work is approved to occur beyond daylight hours.

C. Maintain lighting and provide routine repairs throughout the duration of the project.

1.7 Equipment Grounding within National Grid Easement

A. All excavation and sheet piling equipment needs to be continuously grounding while working in the easement.

B. Grounding shall be a cable tether from a secured lug on excavator(s) and a secure lug connected to the installed sheet pile wall.

1.8 TEMPORARY WATER

A. Provide bottled water for drinking to Contractor and Engineer and Subcontractor's field office trailers.

B. Provide all necessary water for construction activities including dust control.

1.9 TEMPORARY SANITARY FACILITIES

A. Provide and maintain temporary sanitary facilities for construction work crews, subcontractors, Contractor, Engineer, and all other on-site personnel at the time of project mobilization.

B. Provide adequate and readily accessible hand washing facilities.

C. Supply the appropriate minimum toilets in accordance with OSHA regulations (Standard-29 CFR) 1915.88.

D. Establish and implement a schedule for servicing, cleaning, and supplying each facility to ensure it is maintained in a clean, sanitary, and serviceable condition.

1.10 FIELD OFFICES AND TRAILERS

A. Provide power for the temporary field offices.

B. Contractor's Field Office: Provide a field office throughout the project that is adequate for Subcontractor's use and for hosting on-site weekly meetings with Contractor, Owner, and Engineer present. Location of field office facilities shall meet the requirements of the Drawings.

C. Contractor and Engineer's Field Office: Provide a fully furnished field office throughout the project that is adequate for Contractor and Engineer's use and shall contain at least two private offices and separate meeting/workspaces. Location of field office facilities shall meet the requirements of the Drawings.

D. Storage Areas and Trailers: Size to meet storage requirements for quality control samples, products, and/or small tools and equipment. Allow for access and orderly provision for maintenance and inspection of products. Security shall be the responsibility of Contractor.

E. Preparation: Fill and grade sites for temporary structures sloped for drainage away from buildings and Work.

F. Maintenance and Cleaning:

1. Cleaning guidance shall be included in consideration of COVID-19 per the site-specific HASP.

2. Provide for weekly janitorial services for offices; periodic cleaning and maintenance for office and storage areas.
3. Maintain approach walks and stairs free of mud, water, and debris.

G. Removal: At completion of Work, remove temporary utilities and restore disturbed areas.

1.11 DEWATERING PADS

A. Materials removed from excavations identified for off-site treatment/disposal to be staged on poly sheeting or on the dewatering pad.

B. Loading of waste identified for off-site disposal shall be conducted within the exclusion zones of the active work area and only after Engineer's approval.

C. Dewatering pads shall be constructed as shown on the drawings. Inspect of the waste load out pads on a daily basis (at a minimum), and/or as requested by Engineer.

1.12 TRUCK WASH - DECONTAMINATION/WHEEL WASH PAD

A. Construct a Truck wash for wheel washing with an ingress at a location closest to the active work area to the extent practical and the egress to the stabilized area outside of the active Work. The location of the truck wash may require removal and re-installation or replacement as the Work progresses. Truck wash shall be constructed in accordance with the Drawings.

B. Inspect the Truck wash on a weekly basis (at a minimum), following a significant precipitation event, and/or as requested by Engineer.

1.13 TRACKING CONTROL DEVICES

A. Tracking control devices shall be installed at transitions from active construction areas to dedicated vehicle access routes. Their purpose is to minimize the tracking of loose soil/debris deposited on the exterior body and wheels of the trucks/equipment outside of the active soil disturbance area where work is occurring. The tracking devices shall promote removal of soil and debris and will vary in design depending on the type and location of active work.

1.14 TEMPORARY STORMWATER CONTROL

A. Install silt fence, bales, check dams, silt logs, and other storm water BMPs as shown on the project drawings.

B. Grade site to drain. Maintain excavations free of water to the extent possible. Provide, operate, and maintain pumping equipment as required to remove accumulated/ponded water.

C. Protect site from puddling or running water. Provide stormwater controls to direct

runoff away from disturbed areas, active work areas, or completed areas to the extent practical to prevent the accumulation of water that contacts contaminated soil and must be managed as construction water, or the migration of sediment.

1.15 CONSTRUCTION WATER STORAGE

A. Construction water shall be containerized in water-tight 18,000 to 21,000-gallon frac tanks, or other sizes as appropriate for the anticipated volume of water or other fluids. Frac tank staging areas shall be approved by Engineer prior to tank placement.

B. Inspection of the frac tanks shall be conducted on a weekly basis (at a minimum) or following a significant precipitation event and/or as requested by Engineer.

1.16 VEHICULAR ACCESS

A. Access to the Former Federal Creosote Site shall be through the National Grid transmission line easement or through the construction access location at Cold Point Drive.

B. Delivery, construction, and supply vehicles that enter within the subsurface remediation limits of the site as noted on the Drawings where contact with contaminated soil and/or water is not controlled are required to be cleaned at the Truck Wash (decontamination/wheel wash) pad prior to exiting the site.

C. Conduct or arrange for street cleaning at Cold Point Drive, Success Drive, and Rome-New London Road. Street cleaning shall be conducted as needed, as determined by Contractor or at the direction of Engineer. During active hauling operations and materials delivery when trucks or equipment are regularly leaving the Site, street cleaning may be required at more frequent intervals. Engineer shall make the final determination as to whether street cleaning is required.

D. Use designated construction access points and on-site construction accesses for construction traffic. All construction vehicles shall, at a minimum, pass over a tracking control device and stabilized construction entrance/exit before exiting the Site. Vehicles having had contact with contaminated soil/water shall also pass through the Truck Wash.

E. Follow all site rules and regulations regarding vehicular access, security and health and safety.

1.17 PARKING

A. Use of streets and driveways for Contractor construction parking is NOT permitted.

B. Use of existing off-site private parking facilities by construction personnel is not permitted, unless otherwise approved by Engineer.

C. Tracked vehicles are not allowed on paved areas (outside the construction limit of work), except as approved by Engineer.

D. Do not allow heavy vehicles or construction equipment in designated parking areas.

E. Contractor personnel and site visitor parking shall be in the locations designed by Engineer.

F. Contractor and Engineer field office and visitor parking shall be in Engineer designated location.

G. Maintenance:

1. Maintain traffic and parking areas, as well as roadways, in sound condition free of loose contaminated material, construction equipment, products, mud, and debris.
2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

H. Removal, Repair:

1. Remove temporary materials and construction equipment at Substantial Completion.
2. Repair existing facilities damaged by use, to original condition.
3. Promptly remove mud, loose soil, and debris from on-site paved parking and access roads and off-site public and private roads.

1.18 PROGRESS CLEANING AND WASTE REMOVAL

A. Provide dumpster of adequate size to contain on-site solid waste and trash materials generated by Subcontractor during execution of the Work.

B. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.

C. Collect and remove waste materials, debris, and rubbish from site periodically or as directed by Contractor and dispose off-site.

1.19 SIGNAGE

A. National Grid Easement shall be flagged with signage, including the 50-ft. radius around utility poles.

B. Traffic Control Signage

1. Provide signs, as necessary, to direct and control construction traffic. Signs shall be approved by Engineer.

1.20 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, and to protect existing facilities and adjacent properties from damage from construction operations.

B. Provide barriers to segregate areas within the limit of Work requiring additional health and safety considerations including open excavations, exclusion zones, and National Grid Easement.

C. Provide barriers to protect parked vehicles, vehicular traffic through the site, stored materials, and structures to remain from damage.

1.21 TEMPORARY CONSTRUCTION FENCING

A. Temporary construction fencing to be installed as indicated on the Drawings.

B. Fencing shall be provided around all active work areas and other areas where portability is required due to changes in location.

C. As indicated, fence shall be:

1. Commercial grade temporary chain link fence to restrict public access and provide site security during the entirety of the Work.

1.22 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, and materials prior to Substantial Completion inspection.

B. Remove temporary underground installations completely.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

A. This section describes Contractor responsibilities and obligations that must be completed to closeout the contract at the project conclusion. Closeout requirements include cleaning, as-built survey, and other requirements outlined in this Section.

1.2 GENERAL REQUIREMENTS

A. Examine all Drawings and all other Sections of the Specifications for requirements therein affecting the Work of this Section. Provide all facilities, labor, materials, tools, equipment, appliances, transportation, supervision, and related Work necessary to complete the Work specified in this Section and other Sections, and as shown on the Drawings. Coordinate Work with that of all other trades affecting or affected by the Work of this Section.

1.3 EXAMINATION AND PREPARATION PROCEDURES

A. Assemble and compile all relevant project documents.

1.4 AS-BUILT SURVEY

A. At the completion of Work, Contractor shall prepare an as-built survey of the Site.

B. Contractor shall submit survey drawing in hard copy and electronic form (Autodesk AutoCAD and pdf) to Engineer for review.

1.5 CLOSEOUT PROCEDURES

A. Submit written certification that contract documents have been reviewed, work has been inspected, and that work is complete in accordance with technical Specifications and ready for final review by Engineer.

B. Contractor shall survey in-process and completed Work as described in these Specifications and provide submittal with all as-built Drawings and documentation.

C. Submit final application for payment identifying total adjusted contract sum, previous payments, and sum remaining due.

1.6 FINAL CLEANING

A. Contractor will provide final cleaning after final acceptance.

1. Contractor shall be responsible for providing roll-off bins with lids for containerizing excess materials generated during construction and placing the containers in staging area approved by Engineer.
2. Contractor shall clean site; including sweeping paved areas and raking landscaped areas, as needed.

1.7 PROJECT RECORD DOCUMENTS

A. Maintain on Site one set of the following record documents; record actual revisions to the Work:

1. Drawings.
2. Specifications.

B. Record information concurrent with construction progress, on a weekly basis.

C. Contractor shall submit documents to Engineer with claim for final application for payment.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

3.1 GENERAL

A. Contractor to provide all necessary equipment and personnel to complete all items included in the scope of Work.

END OF SECTION

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SECTION 02 40 00

SITE DEMOLITION AND MANAGEMENT

PART 1 – GENERAL

1.1 SUMMARY

A. This Section covers the requirements related to the demolition of existing site features and the management of waste from demolition activities. Demolition includes but is not limited to; concrete structures, steel lids, monitoring wells, railroad ties, drums, debris, and miscellaneous other elements shown in the Drawings.

1.2 REFERENCES

A. Applicable Federal, State or Local requirements or codes for noise, dust, and demolition methods.

B. 29 CFR 1926 – U.S. Occupational Safety and Health Standards; current edition.

C. HAZWOPER: OSHA Regulation 29 CFR 1910.120.

1.3 GENERAL REQUIREMENTS

A. Furnish all labor, equipment, supervision, materials, and quality control necessary for the demolition and removal of:

1. Concrete Structures.
2. Monitoring Wells.
3. Railroad Ties.
4. Sheet Piling.
5. Drums.
6. Miscellaneous debris and other items as shown on the Drawings.

B. Work includes, but is not limited to, the following:

1. Furnish all labor, materials, equipment, incidentals, and services required to perform the work of this section, as shown on the Construction Drawings and as specified herein.
2. Prior to demolition work, excavation or earthwork, CONTACT NEW YORK 811 BEFORE YOU DIG [contact 811] for utility line marking. Ground disturbance shall not start for at least 2 business days from the submission of the stake out request ticket.
3. Furnish all labor, materials, equipment, incidentals, and services required to perform the work of this section, as shown on the Construction Drawings and as specified herein, including:

a. Pre-demolition inspection.
b. Protection of items designated to remain.
c. Installation / maintenance of erosion and sediment controls in the area of work as shown on the Drawings.
d. Contractor removal of all features and related appurtenances noted for removal or demolition on the Drawings.
e. All material, equipment and Site appurtenance noted to be removed and salvaged are to be stockpiled in separate piles. All stockpiled materials shall be stored in a manner to avoid the potential for impacts to storm water runoff. Items that are to be reinstalled are to be stored on-site and protected from damage or theft for the duration of the project, until reinstalled.
f. Impacted Construction and Demolition Debris shall be stockpiled on Site prior to removal. Construction and Demolition Debris shall be disposed of in accordance will all federal, state, and local requirements.
g. Items that are designated as Recyclable Metal) shall be removed from the site and recycled at a permitted recycling facility.

1.4 DEFINITIONS

A. Impacted Construction and Demolition Debris: All materials, including demolition debris and removed utility pipes, that are found to be in direct contact with creosote-impacted soil will be handled as potentially Impacted Construction and Demolition Debris.

B. Construction and Demolition Wastes: Construction and Demolition Waste that is non-impacted and can be segregated for recycling or disposal as non-hazardous waste. This could include but is not limited to untreated wood scrap; tree parts, tree stumps and brush; concrete, asphalt, bricks, and other masonry; non-recyclable ferrous and nonferrous metal; and other miscellaneous materials.

C. Potentially Hazardous Material: Any waste identified that may be potentially harmful to health or the environment that would not be accurately represented by the profile for Impacted Soil or Impacted Construction and Demolition Debris.

D. Impacted Soil: Refer to Section 02 53 00 – “Waste Transportation, Treatment, and Disposal”.

E. Recyclable Metal: Bulk metal and clean construction and demolition metal debris that has not come into contact with site soil, is without contamination due to contact with site soils, has been decontaminated and does not have visual impacts.

1.5 MATERIALS OWNERSHIP

A. Unless otherwise indicated, clean or recyclable material becomes property of Contractor.

1.6 PROJECT CONDITIONS

A. The Site shall be accessed by the National Grid transmission line easement on Rome-New London Road or the construction entrance located at Cold Point Drive as shown on Drawings.

B. Potentially Hazardous Materials: If potentially hazardous materials are encountered during the Work, consult with Engineer for approval of methods and means of removal and disposal.

PART 2 – PRODUCTS

Not applicable.

PART 3 – EXECUTION

3.1 PROTECTION

A. General:

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

3.2 DEMOLITION

A. General:

1. Perform pre-demolition inspection prior to commencing demolition work.
2. Remove concrete structures from the Site and dispose of at an approved disposal facility.
3. Remove steel lids, railroad ties, railroad rails, railroad ballast, drums, sheet piling and other debris and dispose of accordingly.
4. Unmapped structures/foundations are not expected but may be encountered within the excavation limits. Notify Engineer of any unknown structures encountered prior to demolition
5. Completely remove all subsurface structures to their full depths. Debris from subsurface structures is considered Impacted Construction and Demolition Debris and shall be handled and disposed of accordingly. Maximum particle size of demolished concrete shall be determined by Contractor, in coordination with waste haulers and disposal facilities. Contractor is solely responsible for attaining and complying with maximum particle size requirements imposed by waste haulers and disposal facilities.

6. The use of explosives will not be permitted.

B. Handling:

1. Construction and Demolition Debris generated:

a. Direct load visually clean debris for off-site disposal to the extent practicable unless analytical characterization test results are required by the disposal facility.
b. Minimize the amount of demolition debris stockpiled onsite at any given time.
c. In the event that visually impacted (e.g., product or other hazardous materials) demolition debris is encountered, it shall be staged in a separate stockpile containment area from clean debris and considered to be Impacted Construction and Demolition Debris.

C. Pollution Controls:

1. Use water sprinkling, temporary enclosures, vapor suppressant foam and other suitable methods to limit dust and emissions rising and scattering in air to lowest practical level.
2. Do not use water when it may create hazardous or objectionable conditions such as runoff beyond site erosion controls, ice, flooding, and pollution.

3.3 DECONTAMINATION

A. Decontaminate equipment used for excavating and demolition of impacted structures at the end of the Work or project prior to demobilization.

END OF SECTION

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SECTION 02 51 29

DECONTAMINATION PROCEDURES

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Establish Decontamination Area.

B. Establish Dewatering Pad.

C. Performance of Equipment Decontamination.

D. Disposal of Decontamination Residuals.

1.2 RELATED SECTIONS

A. Section 01 33 00 – Submittal Procedures.

B. Section 02 53 00 – Waste Transportation, Treatment, and Disposal.

C. Section 02 70 00 - Construction Water Management.

1.3 PERFORMANCE REQUIREMENTS

A. Furnish all labor, equipment, material, and supervision to decontaminate equipment and vehicles prior to leaving areas of contamination or the site.

PART 2 – PRODUCTS

2.1 TRUCK WASH

A. Refer to drawings for the Truck Wash.

B. Truck Wash shall be used as a wheel wash and decontamination pad.

PART 3 – EXECUTION

3.1 GENERAL

A. All equipment and materials shall be used in a manner to minimize the potential for, and extent of, any unnecessary contamination.

B. Any earthwork equipment that performs intrusive activities in any part of the site within the limit of work or is used to handle materials shall be decontaminated prior to leaving the area of contamination or the site.

C. All site traffic shall be routed in accordance to the Truck Routes as shown on the drawings so as to avoid cross-contamination, with clean trucks remaining outside of the impacted areas, and kept separate from the potentially contaminated truck traffic.

D. Careful attention to avoid cross-contamination is warranted. Delivery vehicles should not enter contaminated areas, to avoid tracking contaminated soils.

E. Dry "gross" removal of soils on earthmoving or delivery vehicles within or over the area to be excavated is preferred over a washing approach.

3.2 TRUCK WASH

A. Construct a temporary Truck Wash in accordance with the Drawings. The Truck Wash shall provide a watertight surface for draining and collecting contaminated water and shall be capable of supporting all material requiring dewatering.

B. The Truck Wash shall meet the following criteria:

1. The truck wash shall be sized to meet Contractor's production requirements. The location is provided in the Drawings.

3.3 EQUIPMENT DECONTAMINATION

A. Thorough brushing down of equipment shall be conducted within the active work area prior to final rinsing above the decontamination pad so as to minimize the amount of soils and sediments collected in the wash waters.

B. All vehicles and equipment leaving the site shall be cleaned and rendered free of any visible solids. This will be accomplished by washing with water until visible solids are no longer present on the piece of equipment. Steam cleaners, water jets, scrub brushes and non-phosphate detergent may be used in an approved manner to aid in the removal of solids and the decontamination of equipment. Other cleaning agents such as Simple Green, CitriSolve, or other non-petroleum non-solvent based cleaners may be required to aid in the removal of creosote adhered to tools and equipment. All washing activities shall take place on the decontamination pad unless otherwise approved by Engineer.

C. Equipment moving from an area identified as contaminated to an area identified as clean shall be decontaminated.

D. Equipment washing shall be conducted in a manner to minimize the generation of decontamination fluids.

3.4 DISPOSAL OF DECONTAMINATION RESIDUALS

A. The truck wash shall be decontaminated and removed off-site, along with any collected residuals from the decontamination process, in a manner consistent with all applicable local, state, and federal regulations, and as approved by the Engineer.

B. Prior to the removal of decontamination materials from the site for off-site treatment/disposal, sample the material as necessary to meet the requirements of the selected treatment/disposal facility.

C. Contractor shall be responsible for the storage, transportation, and handling of all contaminated materials in accordance with all applicable local, state, and federal regulations, site requirements.

D. Contaminated or potentially contaminated materials shall not be removed from the site by the Contractor without prior notification to, and the approval of, the Engineer.

END OF SECTION

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SECTION 02 53 00

WASTE MANAGEMENT, TRANSPORTATION AND DISPOSAL

PART 1 – GENERAL

1.1 SUMMARY

A. Properly transport and dispose of all items from the Site to appropriate disposal facilities.

B. Assure that all transportation and disposal requirements of the Treatment, Storage and/or Disposal Facility (TSDF), Solid Waste Management Facility (SWMF), Publicly Owned Treatment Works (POTW), or reclamation/recycling/salvage facility, Federal, State, and local governments are complied with and properly documented.

C. All waste management, transportation and disposal shall be in compliance with this Specification and the references and related documents.

D. Engineer will be responsible for waste characterization sampling and analytical testing. Engineer will provide analytical testing results to Contractor to generate waste profiles in coordination with the disposal facility. All waste characterization, profiling, and waste classification decisions are subject to the review and approval of Owner. This includes existing wastes, as well as, the waste generated by Contractor during construction.

E. Contractor shall obtain an agency agreement from Owner for signature authority for waste manifests. Referred to as Owner's Agent.

1.2 REFERENCES

A. 40 CFR 262: Standards Applicable to Generators of Hazardous Waste.

B. 49 CFR 172: Tables, Hazardous Materials Communication Requirements, and Emergency Response Information Requirements.

C. HAZWOPER: OSHA Regulation 29 CFR 1910.120.

D. EPA Regulation 40 CFR 262.34.

E. NYCRR Title 6 Chapter 4 Subchapter B. Solid Wastes.

F. NYCRR Title 6 Chapter 4 Subchapter B Part 374 – Management of Specific Hazardous Waste.

G. NYCRR Title 6 Chapter 4 Subchapter B Part 361-5 - Construction & Demolition Debris Handling and Recovery Facilities.

H. NYCRR Title 6 Chapter 4 Subpart B Part 364 – Waste Transporters.

1.3 RELATED SECTIONS

A. Section 01 35 29 – Health & Safety Requirements.

B. Section 02 60 00 – Contaminated Material Management.

C. Section 31 11 00 – Site Grubbing.

D. Section 31 20 00 – Earthwork.

1.4 DEFINITIONS

A. Creosote-Impacted Material: All excavated soil and waste material generated as a result of the Work that has come into contact with Site soils.

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

C. Recyclable Metal: Bulk metal of suitable size from above grade structures and without contamination due to contact with Site soils, or decontaminated bulk metal.

D. Impacted Construction and Demolition Debris: Construction and Demolition Waste that is impacted, either visually or based on debris testing, and includes materials that are found to be ***in direct contact*** with creosote impacted soil. Impacted Construction and Demolition Debris includes debris with visual signs of creosote impacts.

E. Construction and Demolition Wastes: Construction and Demolition Waste that is non-impacted and can be segregated for recycling or disposal as non-hazardous waste. This could include, but is not limited to untreated wood scrap, tree parts, tree stumps and brush, concrete, asphalt, bricks, and other masonry, non-recyclable ferrous and nonferrous metal, and other miscellaneous materials.

F. Hazardous Waste: Creosote-Impacted Material not granted a “Contained-In Determination”.

G. Construction Water: Liquid waste produced from construction activities including but not limited to dewatering activities, stormwater management, contaminated material stockpile containment, and decontamination fluids.

H. Decontamination fluids: Wash and rinse water generated during the decontamination of vehicles, equipment, and hand tools that potentially includes cleaning solvents.

1.5 SUBMITTALS

A. Waste Profiles: Engineer will be responsible for sampling and analysis of waste classifications and Contractor shall draft the waste profiles in coordination with the

disposal facility, using the data provided by Engineer. For waste classifications that cannot be pre-characterized, Contractor shall notify Engineer when the material is ready to be sampled, and Engineer will obtain samples as early as practicable, submit them to an approved laboratory for analysis, and provide Contractor with the final lab report. Upon receipt of any final lab report, Contractor shall have up to (5) business days to complete a draft waste profile and submit it to Engineer for review. Once accepted, Engineer will submit the draft profile for Owner's review, approval, and signature, which may take up to five (5) business days. Contractor shall verify that the profile is approved prior to any shipment of materials off-site.

B. Delivered Manifests: Provide Engineer a copy of all signed received delivery manifests within 5 days of receipt by Contractor.

C. Waste Delivery Summary: Provide a daily summary of the waste delivered the previous day. This summary shall include at minimum the following:

1. Delivery date.
2. Unique manifest number.
3. Net weight delivered per truck.
4. Total tonnage delivered for the day.

D. Certified weight slips from the TSDF, SWMF, POTW, or other disposal facility for each load received at the facility.

E. Certificates of Treatment, Disposal or Destruction: Provide Engineer a copy of signed received delivery manifests within 5 days of receipt by Contractor and Certificates of Treatment/Disposal/Destruction prior to the Final Application for Payment.

PART 2 – PRODUCTS

Not Applicable.

PART 3 – EXECUTION

3.1 WASTE TYPES

A. Waste materials, classified by type, shall be properly disposed of at the approved disposal facilities.

B. It is anticipated that the following materials will be generated during the implementation of the remedial actions on Site:

1. Creosote Impacted material.
2. Construction water.
3. Impacted construction and demolition debris.
4. Construction and demolition debris.
5. Recyclable metal.

6. Non-hazardous solid waste.

3.2 MATERIAL TRANSPORT AND DISPOSAL

A. Handle, store, transport, and dispose all materials, both contaminated and non-contaminated, in accordance with all applicable local, state, and federal regulations.

B. No materials, contaminated materials, or potentially contaminated materials shall be removed from the Site without prior notification and approval of Engineer.

C. Construction Water generated shall be stored and pretreated on-Site and discharged to the City of Rome POTW. Contractor shall be responsible for meeting all POTW requirements for discharge.

D. Provide a solid waste collection and disposal service to ensure site remains free of workers' litter and trash.

E. Contractor is responsible for obtaining any truck permits required for trucking and hauling companies working within New York.

F. Contractor is responsible for any and all trucking violations including but not limited to speeding, overweight, remediation of overturned truck and any other violations.

G. Haul truck drivers must remain in their cabs with windows closed whenever truck is being loaded with waste or is otherwise located in an exclusion zone or contamination reduction zone. Outside of these zones, if drivers leave their cabs, they must wear site-required PPE and be escorted by a Contractor's representative.

H. Trucks shall not queue or park on any public or private streets. Haul trucks shall not arrive before Site operations begin.

I. Trucks and roll-offs not acceptably lined as determined by Contractor shall be decontaminated prior to putting the equipment into service for hauling other on-Site materials of lesser contamination or prior to removing the equipment from the Site.

J. Develop a contingency plan for trucking-related incidents and for response to material spills once material leaves the Site.

3.3 TRUCK MAINTENANCE AND INSPECTION

A. All trucks shall be in good condition with no holes or perforations in the body. Contractor reserves the right to reject haul trucks deemed to be in poor condition, or otherwise unsuitable for hauling contaminated soil/ materials.

3.4 WASTE MANIFESTING

A. No material can be hauled off-Site until a draft manifest for each waste category has been submitted to and approved by Engineer.

B. Properly document all waste materials that leave the Site.

C. Supply all applicable paperwork, completely filled out (neatly typed), ready for signature by Owner's Agent at least 3 days prior to the treatment/disposal event.

D. Owner's Agent shall sign all of the documents and return the signed copies to Engineer.

E. Ensure that all disposal documentation is fully completed and signed by Owner's Agent prior to the off-Site shipment of any waste materials.

3.5 WASTE SEGREGATION

A. Contractor is responsible for segregating waste streams during construction such that material is not cross-contaminated and is placed in designated waste storage locations.

3.6 WASTE CHARACTERIZATION

A. Contractor shall utilize waste characterization sampling and analytical testing data provided by Engineer to work with each of their approved recycling/disposal facilities to prepare waste profiles for each waste classification.

B. Contractor will characterize impacted materials, impacted construction and demolition debris, solidified soil spoils and any other waste streams generated prior to Contractor off-site transport

C. Construction water discharged on-site to the POTW will require sampling and analytical testing conducted by Engineer to monitor compliance with the requirements of the POTW Industrial Discharge Permit.

3.7 WASTE RECYCLING

A. Contractor is responsible to meet the requirements to recycle and/or reuse recyclable materials.

B. Recycled and reused materials shall be documented by type and quantity including weight tickets and all other documentation for material from the accepting facility.

END OF SECTION

SECTION 02 60 00

CONTAMINATED MATERIAL MANAGEMENT

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. The work includes handling and disposal of materials (listed in Section 02 53 00 – Waste Transportation, Treatment, and Disposal) generated during the Site Work, including:

1. Classification of materials.
2. Preparation of materials for off-site disposal.
3. Transportation and off-site disposal requirements.

1.2 RELATED SECTIONS

A. Section 01 35 29 – Health & Safety Requirements.

B. Section 02 53 00 – Waste Management, Transportation, and Disposal.

C. Section 31 11 00 – Site Grubbing.

D. Section 31 20 00 – Earthwork.

1.3 REFERENCE STANDARDS

A. HAZWOPER: OSHA Regulation 29 CFR 1910.120.

B. EPA Regulation 40 CFR 262.34.

C. NYCRR Title 6 Chapter 4 Subchapter B. Solid Wastes.

D. NYCRR Title 6 Chapter 4 Subchapter B Part 374 – Management of Specific Hazardous Waste.

E. NYCRR Title 6 Chapter 4 Subchapter B Part 361-5 - Construction & Demolition Debris Handling and Recovery Facilities.

F. NYCRR Title 6 Chapter 4 Subpart B Part 364 – Waste Transporters.

1.4 DESCRIPTION OF WORK

A. The purpose of this Section is to describe procedures and requirements for excavation and management of materials (listed in Section 02 53 00 – Waste Management, Transportation, and Disposal). These procedures include, but are not limited to methods of excavation, handling, stockpiling, off-site transportation and

disposal/treatment materials. Work to be performed under this Section includes, but is not limited to, the following items including all labor, materials, equipment and services necessary and incidental to the proper execution of Work.

1. Collection and loading of stumps and residuals from grubbing and miscellaneous surface debris, if present, for off-site disposal. Segregate and containerize similar debris encountered in the excavations.
2. Stockpile and manage material encountered in the excavations in a manner that ensures the protection of health, safety, public welfare and the environment. Handle, store, load and transport materials in compliance with the provisions of all applicable federal, state and local laws, regulations and bylaws.
3. Transportation of wastes from the Site to the approved treatment or disposal facility.
4. Store groundwater and surface water runoff that is collected at the Site, as necessary, as part of construction or a response action in compliance with all applicable provisions of the federal, state and local laws, regulations or bylaws.
5. Collect water samples as necessary and testing to meet City of Rome POTW Industrial Discharge Permit requirement.

B. Only approved facilities shall be used for materials requiring off-site disposal.

C. Submit a waste generator profile for signature by Owner and provide landfill acceptance documents of soil for disposal.

1.5 SUBMITTALS

A. Submit all documentation and permits relative to the handling, transport and management of soil, groundwater and other solid and liquids handled during the work. These shall include at least the following:

1. All permits and required permit compliance data and reports.
2. If permits are obtained, provide Engineer with copies of all applications submitted and permits obtained.

PART 2 – PRODUCTS

Not Applicable.

PART 3 – EXECUTION

3.1 ON-SITE CONTAMINATED MATERIALS MANAGEMENT

A. General

1. Excavated soils shall be removed from the excavation and placed directly into loaders or trucks for transport to the staging areas.

2. Dewatering of saturated soils. Groundwater is expected to be encountered within the limits of excavation. Saturated soils shall be placed on designated dewatering pads to dry out . Water collected from dewatering pads will be collected and treated prior to discharge to City of Rome POTW.

B. Sampling and Testing:

1. The Engineer shall perform field sampling of the impacted materials in accordance with the approved IRM Work Plan by NYSDEC. The data shall be used for a "Contained-In Determination" by the NYSDEC as coordinated by the Engineer.

C. Material Classification and Management:

1. Solid materials requiring recycling or off-site disposal shall be segregated by degree of contamination and analyzed as necessary to determine disposal requirements and appropriately disposed off-site. Material classification is defined in Section 02 53 00 – Waste Transportation, Treatment and Disposal. All materials are to be disposed of in accordance with applicable laws at licensed facilities.

D. Excavation of Debris:

1. Underground piping/metal encountered within the limits of excavation that is not associated with an active utility service shall be removed and disposed off-site. Piping that extends beyond the limits of excavation will be cut, drained, and plugged or capped at the excavation limit. Locations of piping encountered at the excavation limits shall be marked and Contractor and Surveyor notified for inclusion in the site record drawings.
2. Demolition of subsurface brick, concrete, wood, or other types of structures or foundations is not expected but may be necessary. Contaminated structures and debris shall be demolished and size reduced as necessary for off-site landfill disposal acceptance. Uncontaminated brick or concrete debris shall be demolished and size reduced as necessary for off-site landfill disposal acceptance.
3. Metal debris and piping suitable for recycling shall be segregated and stockpiled.

3.2 MATERIALS STORAGE

A. Store excavated material on-site in designed storage areas approved by Engineer. Do not remove regulated material from the site for disposal or treatment without approval of Engineer and appropriate Manifests and/or Bills of Lading for off-site disposal.

B. Stockpiled soils shall be completely covered daily.

C. Materials and debris will be stockpiled separately.

D. Maintain project documentation with accurate records of off-site borrow testing, material tracking and disposal transportation manifests. Documentation shall include daily field reports and estimates of volumes of materials in each stockpile.

E. Suspend work in the area and notify Engineer if the presence of potentially hazardous conditions is evident. These conditions include, but are not limited to, buried containers, drums or tanks, or explosive conditions due to contaminated vapors. Secure the area to protect against worker or public health risk or release into the environment.

3.3 STOCKPILE DETAILS

A. The creation of soil stockpiles must be approved by Engineer.

B. Materials shall be stockpiled on dewatering pads as shown on the drawings or approved by Engineer.

C. Materials shall be securely covered with 6-mil polyethylene or other approved materials at the end of each working day and when not in active use. Not in active use is defined as no soil being added to or removed from the stockpile for greater than 30 minutes. Stockpiles shall be located at areas designated on the project drawings.

D. Plastic sheeting and/or odor control foam (such as Rusmar®) will be used to mitigate odors and fugitive emissions from creosote-impacted soils.

E. Shape and grade stockpiles to facilitate surface water drainage to the nearest collection point. Prevent dust and water from leaching from stockpiles. Stockpiles shall be covered and bermed to prevent impacts to storm water.

F. Prevent intermixing of different materials.

3.4 MATERIAL DEWATERING

A. Materials shall be dewatered/stabilized sufficiently to permit transportation (without the generation of free water during transport) and meet disposal facility requirements.

B. The addition of stabilization materials shall not be permitted without prior written authorization of Engineer. If the use of stabilization material is proposed by Contractor and acceptable to Engineer and disposal facility, the weight of stabilization material delivered to the site and used shall be accurately tracked by Contractor with weight slips for each load delivered

C. Materials destined for off-site disposal may be used to stabilize wet soils provided that all materials were initially destined for the same disposal facility and approved by Engineer.

3.5 MATERIAL TRANSPORT

A. Load material within the site limits and sweep off-site streets that contain project debris daily. Contractor shall provide additional tracking control and/or loadout area as needed to preclude on-site spillage and off-site tracking of wastes, including truck wash.

B. Trucks shall not queue or park on any public or private streets. Haul trucks shall not arrive before site operations begin.

C. Cover all trucks leaving the site and prevent debris from spilling from trucks or being tracked off-site.

D. Transport contaminated material in accordance with requirements for remediation waste or State Solid Waste, State and Federal Hazardous Waste Regulations and all applicable State and US Department of Transportation requirements.

E. Contractor is responsible for any and all trucking violations including but not limited to speeding, overweight, remediation of overturned truck and any other violations. Drivers or transportation firms incurring transport violations or complaints from neighbors may be removed from the project at the discretion of Engineer.

F. Haul truck drivers must remain in their cabs with windows closed whenever truck is being loaded with contaminated soil. When truck is not being loaded, if drivers leave their cabs, they must wear appropriate PPE and be escorted by the SSO.

G. All trucks shall be in good condition with no holes or perforations in the body.

H. A truck decontamination area shall be constructed and maintained at the site entrance from Cold Point Drive. Decontamination shall include broom brushing and water spray (as needed) to remove all contaminated soil from the exterior of the truck body and wheels, as well as to prevent soil tracking onto public or private roadways.

I. All haul trucks leaving the site with contaminated soil or debris for landfill disposal shall have appropriate manifests or bills of lading and shall be inspected for soil, contamination, and proper cover prior to exiting the site. Weigh scales at the disposal facility will be used to document the quantity shipped.

J. Owner's agent shall sign bills of lading, unless otherwise directed by Engineer. Bill of lading forms will be provided by Contractor. Completed bills of lading will be provided to Engineer on a daily basis.

3.6 CONTAMINATION RELEASES

A. In the event of a release of oil or hazardous materials on the property (due to Contractor's construction equipment operation or failure, such as gasoline, motor oil, transmission fluid, hydraulic fluid (or other material which may be considered an oil or hazardous material under New York regulations), Contractor is responsible for complete

reporting and remediation of the release under this Agreement including the payment of any fines.

B. At a minimum, Contractor shall immediately cease Work and begin actions to contain or abate the release. Contractor shall inform Engineer of the release; assess the condition of the release in coordination with an experienced environmental professional for measures to mitigate the release; inform Engineer of Contractor's intended action, and proceed expeditiously to limit and contain the release, and the clean the area affected by the release. Contractor will be responsible for any and all documentation, approvals, and submittals for addressing and remediating the release.

C. Contractor shall maintain a sufficiently stocked spill kit on-site to immediately respond to an oil or hazardous material release.

END OF SECTION

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SECTION 02 70 00

CONSTRUCTION WATER MANAGEMENT

PART 1 – GENERAL

1.1 SUMMARY

A. The Section describes the handling, storage, treatment, and on-site discharge of construction water generated during the remedial construction activities.

B. Off-site transportation and disposal of construction water that cannot be successfully treated through the on-site treatment system.

1.2 REFERENCES

A. City of Rome Water Pollution Control Facility (WPCF) – Industrial Discharge Permit.

1.3 DEFINITIONS

A. Construction Water: Liquid waste produced from construction activities including but not limited to:

1. Stormwater that comes in contact with soil disturbance areas;
2. Rinse water (equipment decontamination);
3. Dust mitigation water;
4. Excavation dewatering; and,
5. Backfill placement that requires decanting of groundwater.

1.4 DESCRIPTION

A. Water that during the course of construction has come in contact with impacted materials shall be handled and managed as construction water. All construction water shall be collected for treatment or off-site disposal. Exceptions to this include rainfall or stormwater runoff that collects within excavation areas and infiltrates. No construction water that has previously been collected and/or containerized shall be allowed to be discharged to excavations for infiltration. Construction water shall be managed through on-site treatment and discharge to the sanitary sewer. Exceptions to this approach are liquid waste streams that may not be compatible with on-site treatment due to excessively high or low pH, separate phase product, or other concentrated liquid wastes. Liquid waste streams generated that are incompatible with the on-site

construction water treatment system shall be separately containerized, characterized, and disposed off-site.

B. Summary of Performance Requirements

1. Furnish all labor, equipment, material, and supervision to handle, store, pre-treat, and discharge and/or haul off-site collected water from dewatering open excavations (collected groundwater and stormwater), contaminated material stockpile containment areas, abandoned structures, and decontamination/ wheel wash pads.
2. Pre-treatment of collected construction water shall occur as required to meet the POTW discharge requirements.
3. Provide as many storage tanks as required to handle the volume difference between the quantity of water to be collected to the capacity of the pre-treatment system and allowable permitted on-site discharge rate to the POTW.

1.5 PERMITS

A. Contractor to obtain/renew Industrial Discharge Permit from City of Rome WPCF.

B. Comply with all discharge limits, quality requirements, sampling and analysis requirements, and other conditions contained in the final Industrial Discharge Permit or included in applicable local, state, or federal regulations.

1.6 SUBMITTALS

A. Submit compliance monitoring reports required by the Industrial Discharge Permit.

PART 2 – PRODUCTS

2.1 GENERAL

A. Furnish, operate, and maintain a construction water management system. The system must be sized appropriately to collect, convey, store, and/or treat the quantity of water generated so that water management does not impact the progression of Work. In general, the system will include the following components:

1. Conveyance system to transfer water from the point of generation (i.e., open excavation, decontamination/wheel wash pads, stockpiles) to a storage/treatment area.
2. Construction water storage facilities to temporarily store untreated water, treated water, and/or water designated for disposal.
3. A frac tank system designed to treat construction water to the requirements of the POTW with sufficient capacity to manage the water generation rate necessary to maintain the progression of work. The frac tank system must maintain compliance with all discharge requirements.

PART 3 – EXECUTION

3.1 CONSTRUCTION WATER MANAGEMENT REQUIREMENTS

A. A total of 1,500,000 gallons of construction water is estimated to be generated as a result of construction activities at the site. This estimated volume is highly dependent upon the amount of rainfall and the amount and duration of excavation dewatering. Minimize generation of construction related water using engineering controls, best management practices, stormwater run-on controls, and other related means and methods. Contributing factors include:

1. Total open excavation at any given time.
2. Uncontrolled stormwater runoff entering contaminated areas.
3. Capacity and function of the stormwater bypass system.
4. Quantity of stockpiled contaminated materials staged on-site at any given time.

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

C. Discharge of construction water to the POTW shall be allowed provided Contractor satisfies any requirements of the accepting facility and maintains the system to continue meet the requirements. Provide copies of approvals and compliance monitoring to Engineer.

D. Discharge of treated construction water shall be to designated on-site sewer manhole, subject to the approval of the POTW. The location for sanitary sewer discharge of treated construction water is shown on the Drawings.

3.2 PRE-TREATMENT SYSTEM PERFORMANCE

A. Furnish a pre-treatment system and assemble on-site.

B. The treatment systems' capacity shall be determined by Contractor based on available site information and Subcontractor's own assessment of site conditions in coordination with the limits and requirements of the Industrial Discharge Permit. At a minimum, the treatment system shall be capable of treating at a sustained rate of 100 gallons/minute and 48,000 gallons per day (based on 100 gpm, 8-hour day).

C. Perform start-up and prove out operations to confirm the system is capable of meeting the discharge standards required by the permit.

D. Engineer will perform compliance testing to meet the requirements of the Industrial Discharge Permit.

E. City of Rome Water Pollution Control Facility.

Previous Permit: HAL-1920 (expiration date April 30, 2020)

Discharge Parameter	Limit
Benzene	0.13 mg/l
Ethyl Benzene	1.59 mg/l
Toluene	1.35 mg/l
Xylene	1.35 mg/l
Total BTEX	2.87 mg/l
Total Suspended Solids	250 mg/l
Arsenic	0.22 mg/l
Cadmium	0.11 mg/l
Chromium	2.77 mg/l
Copper	1.30 mg/l
Mercury	0.20 mg/l
Nickel	1.90 mg/l
Silver	0.43 mg/l
Zinc	2.60 mg/l
Lead	1.10 mg/l
pH	5.5-11.5 su

F. Operate and maintain the treatment system to meet the required treatment capacity. Change out filters, carbon units and other media and expendables as needed to meet the discharge criteria.

3.3 DOCUMENTATION AND REPORTING

A. Maintain records to meet the requirements of the discharge permit. At a minimum document the following:

1. Start up and prove out dates, volumes treated, volumes discharged, samples collected, and analytical test results.
2. Volume of construction water treated and discharged each day, samples collected, and analytical test results.
3. Dates and descriptions of adjustment and maintenance of the treatment train including filter change outs.
4. Shutdown dates with explanations.
5. Other reporting requirements.

3.4 WATER MANAGEMENT

A. If the contaminated untreated water contacts clean backfilled areas of the site, and in the opinion of Engineer the backfill quality has been negatively impacted, the backfill or

restored cover shall be excavated until visually clean and potentially sampled to confirm the contaminants are not present. Subcontractor shall bear the cost for these activities.

B. Engineer retains the right to request compensation from Subcontractor for the cost of retesting/re-characterizing material which is contaminated by the mismanagement of construction water. This includes the cost of resampling, analysis, and ultimately disposing of the impacted material.

END OF SECTION

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SECTION 31 11 00

SITE GRUBBING

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Clearing includes cutting trees and general woody growth including shrubs, bushes, vines, landscape plantings at the ground surface.

B. Grubbing includes removal of vegetative cover (grass) with root systems, stumps with root systems, and other organic matter surficial or buried within the top one foot of soil (topsoil).

1.2 RELATED SECTIONS

A. Section 02 53 00 - Waste Transportation, Treatment, and Disposal.

B. Section 31 25 00 – Erosion and Sediment Control.

1.3 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies

1. Disposal of combustible material by burning is not permitted on the site.
2. Remove and dispose of all non-salvageable material off-site in accordance with all applicable locals and state laws, ordinances and code requirements.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Herbicides: Used only for the treatment of poison ivy, oak, and sumac with the approval of Engineer.

PART 3 – EXECUTION

3.1 PERFORMANCE

A. Perform clearing and grubbing within the limits shown on Drawings.

B. Clearing and grubbing shall not occur outside the delineated limits without approval of Engineer.

C. Tree clearing can only be done from November 1 through March 31 due to endangered species.

PART 4 – EXAMINATION

A. Verify existing plant specimens or other landscaping features designated to remain are tagged or identified and protected from damage.

B. Identify on-site locations for temporary stockpiling of clearing and grubbing debris prior to off-site disposal.

C. Before clearing takes place, verify that overhead utilities have been identified and appropriate protections are in place for work occurring in proximity to them.

D. Before ground-intrusive activities associated with grubbing takes place, verify that:

1. Buried utility mark outs and clearances have been completed and are understood.
2. Erosion and sediment control measures are in place and functional.

4.2 PROTECTION

A. Protect from damage utilities, buildings, poles and other fixed improvements/features to remain.

B. Protect existing vegetation to remain. Install construction safety fencing at drip lines of trees to protect root systems.

C. Protect benchmarks, survey control points and groundwater monitoring wells, from damage or displacement.

4.3 CLEARING

A. Remove trees, shrubs and brush to a maximum of 3 inches above the ground surface within the limit of work.

B. Clearing debris may be stockpiled within the limit of work for short durations.

4.4 GRUBBING

A. Remove all stumps, roots and vegetative matter including grasses and weeds in a manner that does not comingle with clearing debris.

B. Segregate from clearing debris and temporarily stockpile in a contaminated material stockpile containment area with similar type/level of impact.

4.5 DISPOSAL

A. Clearing debris (i.e., vegetation) shall be legally disposed on-site or transported off-site.

B. Clearing debris may not be burned but may be chipped prior to off-site disposal at Contractor's discretion.

C. Refer to Section 02 53 00 - Waste Transportation, Treatment, and Disposal for disposal requirements.

END OF SECTION

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SECTION 31 20 00

EARTHWORK

PART 1 – GENERAL

1.1 SUMMARY

A. Work to be performed under this Section includes, but is not limited to, the following items including all labor, materials, equipment, and services necessary and incidentals to the proper execution of the Work as shown on the Drawings and as specified in this Section.

1. Layout excavation areas by survey methods.
2. Install sheet piles in cells according to the Drawings.
3. Excavate creosote-impacted soil to the vertical and horizontal limits shown on the Drawings. Work within National Grid easement shall be by Electrically Qualified Operators per OSHA 1910.269, equipment securely grounded to installed sheet pile wall and an Electrically Qualified Spotter to be onsite during the easement Work.
4. Handle Creosote impacted material as required to segregate, stage, characterize, and load for off-Site disposal.
5. Import and stockpile soil from an approved off-site borrow source for use as backfill material on the Site.
6. Wetland shown on Restoration Plan on the drawings is preliminary and may change due to permit approval.
7. Sequence Work to minimize excavation time, minimize areas of disturbed soils minimize stockpile size and schedule timely arrival and placement of backfill materials.

1.2 REFERENCES

A. Occupational Safety and Health Administration (OSHA).

B. New York State Department of Transportation Standard Specifications (NYSDOT Specifications) with all current supplements.

C. National Grid Safety Procedure, N-1402, Contractor Safety Requirements, current version.

D. National Grid Conditions for proposed Activities within Transmission Line Right-of-Way, Doc. #GL.06.01.307, current version.

1.3 SUBMITTALS

A. Submit to Engineer for approval of the following:

1. Backfill materials source and sieve analysis data.

1.4 JOB CONDITIONS

A. Existing Utilities

1. Locate existing underground utilities in the areas of the Work. If utilities are to remain in place, provide adequate means of protection during excavation.
2. Unmapped or incorrectly mapped piping or other utilities encountered during excavation shall be reported to Engineer.
3. Do not interrupt utility services without prior notification and approval of Engineer.
4. Survey over-head transmission lines for distance from ground to line beneath areas being excavated, as necessary, to ensure adequate separation.
5. Repair any damage caused to utilities to the satisfaction of the Engineer.

B. Protection of Persons and Property

1. Maintain exclusion zones around Work areas to control access to areas where active excavation and handling of impacted soil is occurring.
2. Barricade and mark open excavations occurring as part of the Work in accordance with applicable standards.
3. Protect buildings, structures, utilities, pavements and other infrastructure not designated to be removed or demolished from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations and associated truck traffic.
4. Contractor is responsible for the proper sequence of activities to minimize open excavations. Contractor shall be aware of weather forecasts and take the necessary precautions to protect the Work and structures from weather.

1.5 DEFINITIONS

A. Refer to Section 02 53 00 – “Waste Transportation, Treatment, and Disposal” for waste class definitions.

B. Excavation Limit: The horizontal and vertical extent of excavation delineated from compiled analytical data completed during investigation work at the site. Excavation shall be completed to these limits or as otherwise directed by Engineer.

1.6 QUALITY ASSURANCE

A. Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction including the Occupational Safety and Health Administration (OSHA) and National Grid’s Engineering Document “Conditions for Proposed Activities within Transmission Line Right-of-Way”.

PART 2 – PRODUCTS

2.1 GENERAL

A. All soil to be used as backfill shall be analyzed and evaluated, based on information submitted by Contractor to Engineer. The evaluation shall be based on site characterization data and chemical test results collected by Engineer. Materials may be rejected for use based on the results of this evaluation. If brought to the site, the off-site materials which are rejected for use shall be removed by Contractor at their own expense.

2.2 BORROW SOURCE QUALITY CONTROL

A. Borrow source testing and analysis shall be performed by Engineer on all soil proposed for construction.

2.3 BACKFILL FILL

A. Grey Tailings from Hanson Aggregates – Jamesville Quarry or approved equal.

2.4 AGGREGATE FILL

A. Type1 Crusher Run NYDOT 304.11 or approved equal.

2.5 SANDY-CLAY FILL

A. Sandy clay load soil, class C or D hydrologic soil group or approved equal.

2.6 GENERAL FILL

A. Bank Run Gravel or approved equal.

2.7 TOPSOIL

A. Loam topsoil, amended with 20-30% organic material (compost).

PART 3 – EXECUTION

3.1 GENERAL

A. Verify structural stability of unsupported excavation walls to support loads imposed by stockpiled excavated soil and fill.

B. All excavated material shall be classified, managed, stockpiled and disposed of off-site.

C. Authorized excavation includes excavation of soil, to the vertical and horizontal limits shown on the Drawings, and as defined by Engineer and other materials part of these

Contract Documents. Contractor shall supply sufficient excavation equipment to perform the Work.

D. Contractor shall segregate impacted materials from clean imported soil and aggregate.

E. Continue dewatering activities, as required, during the backfilling process until completion.

F. Stockpile fill material to the extent practicable to allow for backfilling of the current excavation effort. All stockpiled materials are to be staged outside the easement limits.

G. Unauthorized excavation consists of excavation of on-site materials beyond the proposed limits of excavation, as defined by the Drawings, without specific direction of Engineer. Unauthorized excavation also consists of excavation of other on-site soils and materials not specifically addressed in these technical specifications, or any removal/disturbance/damage of soils on adjacent, off-site properties. Unauthorized excavation and resultant remedial Work shall be at Subcontractor's expense. Unauthorized excavations shall be backfilled and compacted using the same procedures as specified for authorized excavations of same classification.

H. Stability of Excavations: Contractor shall be solely responsible for excavation safety including stability of excavations and competent person requirements. Side slopes of excavations if required, shall also comply with local codes and/or ordinances having jurisdiction, such as OSHA. Shore and brace in accordance with the Drawings. Shoring or bracing is to be in accordance with safe and acceptable engineering practice and local building codes. Maintain sides and slopes of excavations if required, in safe condition until completion of backfilling.

I. Engineer shall approve all excavated surfaces prior to placing any fill. Excavations shall not contain any organics, roots over 1 inch in diameter, standing water, or debris.

J. All Work shall be performed to minimize the generation of air emissions.

K. The quantity of exposed soil shall be minimized by the coordination of Work and construction sequencing.

L. Excavation shall be in accordance with all applicable OSHA regulations and Contractor's Health and Safety Plan.

M. Execute the Work to minimize the exposure of the excavated subgrade to stormwater intrusion, standing water inundation, and erosion. Install diversion controls around the perimeter of the excavation and maintain dewatering operations as necessary.

N. Protect the bottom of excavations and soil adjacent to and beneath foundations from freeze-thaw frost action.

O. Protect structures, utilities and other facilities from damage caused by settlement, lateral movement, undermining, wash-out, and other hazards created by earth operations.

P. Do not excavate within, or otherwise disturb the 45-degree bearing splay of foundations.

Q. Notify Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume Work.

3.2 EXCAVATING CREOSOTE IMPACTED MATERIAL

A. The horizontal and vertical excavation limit delineation for each excavation area is based on sampling and analytical data prepared by HANY and in accordance with the Drawings.

B. All subsurface materials including structure demolition debris in direct contact with creosote impacted material shall be handled as impacted material. This does not include recyclable metal.

3.3 EXCAVATION COMPLETION

A. Determination that the excavation is complete shall be made for each excavation cell by Engineer based on surveyed measurements that indicate the horizontal and vertical limits shown on the Drawings have been achieved and that the clay layer has been reached.

B. The vertical and horizontal excavation limits are noted on the Drawings and may require adjustments based on field conditions, as determined by the Engineer.

3.4 CREOSOTE IMPACTED MATERIAL HANDLING AND MANAGEMENT

A. Handle material in a manner to prevent comingling or cross contamination of creosote impacted materials with imported clean materials or completed/restored areas of the site.

B. All materials excavated are to be staged either on polyethylene sheeting or in the dewatering cell depending on soil conditions.

C. All contaminated soil stockpiles shall be covered with anchored polyethylene or an equivalent cover in anticipation of significant storm events or when stockpile is inactive.

D. Dewater the excavation as required to remove soil, remnant structure/debris, and collect samples. Groundwater in open excavations awaiting post-excavation sampling or backfill may be allowed to accumulate provided the stability of the excavation or adjacent structures is not at risk.

3.5 CREOSOTE IMPACTED MATERIAL EXCAVATION SEQUENCING

A. Perform creosote impacted material excavation, removal, staging and handling as shown on the Drawings.

B. Minimize open excavation area to the extent practical to limit dewatering effort associated with groundwater intrusion and stormwater runoff into the excavation cells.

3.6 MAINTENANCE OF EXCAVATIONS

A. Excavations shall be maintained until restoration is complete. Sloughed soil due to stormwater or groundwater intrusion shall be removed and disposed as contaminated material of the same classification as the open excavation.

B. Dewatering shall occur for open excavations to provide for sample collection or backfill.

3.9 BACKFILL

A. General

1. All fill and backfill materials brought to the Site shall be obtained from a source approved by Engineer.
2. Specified uniform layer thickness of fills shall be measured in all cases subsequent to compaction. Place fill in uniform, horizontal lifts.
3. Control surface water runoff by sloping surfaces to permit collection and removal efficiently and with minimal disturbance to materials being placed.
4. Compaction by means of puddling, jetting or flooding water is prohibited.
5. Backfill Fill: Sheet pile cell excavations shall be backfilled with Grey Tailings from Hanson Aggregates – Jamesville Quarry or approved equal. Backfill placed in cell excavations shall be 12-inch loose lifts and tamped with excavator bucket or other approved equipment until firm.
6. Aggregate Fill: Access road improvement and railroad track backfill to be Type1 Crusher Run NYDOT 304.11 or approved equal. Place and compact material in uniform continuous layers, not exceeding 6 inches compacted depth.
7. General Fill: For general backfill, Bank Run Gravel or approved equal. Backfill placed shall be 12-inch loose lifts and tamped with excavator bucket till firm.
8. Topsoil: Areas disturbed from construction activities. Place material in uniform continuous layers, not exceeding 6 inches compacted depth.
9. Wetland Fill: Materials will be determined based on permit approval at a future date.

3.10 SUBGRADE GRADING

A. Contractor shall perform all rough grading to attain the elevations shown on Drawings following the completion of excavation backfill.

3.11 COMPACTION

A. Compaction shall be performed with use of excavator bucket or other equipment to create a firm and unyielding surface, as approved by Engineer.

B. Proof compact exposed subgrade surfaces (bottom of excavation) when above groundwater.

3.12 STOCKPILING

A. Stockpile materials on-site at locations outside of the easement.

B. Stockpile sufficient quantities to meet Project schedule and requirements.

C. Stockpile in sufficient quantities to allow for the concurrent excavation and backfilling of Work for areas outside the remediation areas.

D. Separate differing materials with dividers or stockpile apart to prevent mixing.

E. Prevent intermixing of soil types or contamination.

F. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

G. Stockpile fill materials on impervious material and cover, as appropriate, to minimize increases in moisture content (due to rain events) and to prevent erosion and dust generation.

3.13 STOCKPILE CLEANUP

A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

3.14 FIELD QUALITY CONTROL

A. Qualitative evaluation of excavation subgrade shall be complete to ensure suitable compaction has been applied to provide a firm and unyielding surface as determined by Engineer.

B. Contractor shall request and inspection of any exposed fill by Engineer at the beginning of each workday before further backfilling.

3.15 FINAL GRADING

A. Contractor shall grade backfilled areas to meet elevations shown on Drawings.

B. Contractor shall uniformly grade area within limits of grading under this Section, including adjacent transition areas; smooth finished surfaces within specified tolerances.

C. Contractor shall finish surfaces so that they are free from irregular surface changes, and grade areas to prevent ponding.

3.16 PROTECTION OF FINISHED WORK

A. Re-shape and re-compact fills subject to vehicular traffic.

B. Re-shape and re-compact fills subject to erosion.

END OF SECTION

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SECTION 31 23 19

DEWATERING

PART 1 – GENERAL

1.1 SUMMARY

A. This section includes the requirements for dewatering of Site excavations. Dewatering may include groundwater, stormwater, or other construction water.

1.2 DESCRIPTION

A. Water from dewatering activities (including stormwater) shall be treated and discharged to POTW.

B. Summary of Performance Requirements:

1. Furnish, operate, and maintain dewatering measures and/or equipment for the control, collection, and disposal of ground and surface water entering excavations as required to complete the Work.

1.3 SUBMITTALS

A. Include a description of planned dewatering methods, systems, and system capacity.

1.4 QUALITY ASSURANCE

A. The dewatering system shall conform to all applicable runoff control and discharge regulations.

B. Contractor shall obtain permit from Rome POTW and comply with all discharge limits, quality requirements, and other conditions required by the receiving facility. If the POTW discharge approval is not obtained, construction water will be stored on-site for off-site transportation and disposal.

PART 2 – PRODUCTS

2.1 GENERAL

A. Provide, operate, and maintain a dewatering system to remove water from excavations using pumps, piping, and any other facilities necessary to keep the excavations free of water to the extent practical, as required by these Specifications or by Engineer. Have spare units for immediate use in the event of equipment breakdown.

B. Provide, operate, and maintain a storage system to store and/or treat the maximum anticipated volume of stored water collected from excavations.

PART 3 – EXECUTION

3.1 PERFORMANCE

A. Minimize dewatering rates, durations, and water volumes by minimizing the open excavation area below the water table to that area which can be backfilled within the same day, as possible.

B. Keep excavations free of water during excavating and backfilling.

C. Backfill compaction requirements will not be reduced to accommodate inadequate or incomplete dewatering efforts.

D. Water from dewatering efforts generated during the Work shall be handled and managed as contaminated water classified as construction water. Discharge to surface waters, municipal storm drain, or groundwater shall not occur without approved permits.

E. Dewatering activities shall be conducted by construction of temporary localized sumps within the bottom of the excavation or other similar controls, to effectively manage the groundwater and runoff accumulating in a localized area.

3.2 DEWATERING SYSTEMS

A. Provide and maintain all required pumps, suction hoses, and discharge pipes as needed to keep all excavations free from accumulation of water during excavation and backfilling.

B. Conduct dewatering to minimize interference with adjacent structures, occupancies, and other operations.

C. Cease operations immediately if any unplanned movement or settlement of adjacent structures or equipment occurs due to changes in soil loading capacity as a result of the dewatering activities.

D. Conduct operations with minimum interference to public or private access. Maintain egress and access routes to and from work areas at all times.

3.3 CONSTRUCTION WATER DISPOSAL

A. Construction water generated from dewatering activities shall be managed and disposed in accordance with Section 02 70 00 – “Construction Water Management”.

END OF SECTION

SECTION 31 25 00

EROSION AND SEDIMENT CONTROL

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

A. The work to be performed under this Section includes, but is not limited to, including all labor, materials, equipment and services incidental to mobilizing equipment, and performing erosion and sedimentation control activities as shown on the Drawings.

1.2 SITE PREPARATION

A. Elements of the Work to be performed under this Section includes:

1. Install erosion and sedimentation control measures at locations described on the Drawings.
2. Install construction entrance/exits and wheel wash areas at the locations shown on Drawings or otherwise approved by Engineer.
3. Erect all erosion control equipment prior to the start of other ground disturbing on-site Work.

B. Minimize fugitive dust and noise generation while conducting mobilization and erosion control activities.

1.3 QUALITY ASSURANCE

A. Contractor is responsible for the timely installation and maintenance/repair of all erosion control measures throughout construction until final stabilization.

B. Inspections: Immediately following receipt of materials to the job site, Contractor shall inspect the materials and store them in a clean, dry area where they will not be subject to mechanical damage, exposure to moisture or direct sunlight.

C. Contractor shall conduct and document periodic inspections following installation of erosion and sedimentation control measures.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Materials and products used to complete the work are to be as approved by Engineer.

PART 3 – EXECUTION

3.1 TEMPORARY EROSION CONTROL MEASURES

A. All erosion and sediment control measures shall be in place prior to the start of any soil disturbance and shall be installed per manufacture recommendations.

B. Contractor shall provide for on-Site supervision of installation, inspection, maintenance and removal of the equipment.

3.2 MAINTENANCE AND INSPECTIONS

A. Maintain the perimeter erosion and sediment control measures in a functional condition at all times during construction.

B. Inspect all erosion and sediment control measures at regular frequencies and following storm events. Contractor shall immediately correct all deficiencies. Inspection reports are to be kept on file at the Site and submitted to Engineer.

C. Remove retained material when “bulges” develop in the silt fence.

D. Remove all accumulated deposits periodically from silt fence and rolls and any other area controlled by erosion or sediment controls.

E. Replace fabric that has become decomposed, has broken stakes, has become defective, or does not retain silt or suspended solids.

F. Remove the perimeter erosion and sediment control measures after all work has been completed and it is no longer needed, or as directed.

G. Sediment deposits that are removed shall be disposed of onsite to an area designated by Engineer.

END OF SECTION

SECTION 32 30 00

SITE RESTORATION

PART 1 – GENERAL

1.1 SUMMARY

A. Work to be performed under this Section includes, but is not limited to, the following items, including all labor, materials, equipment, and services necessary and incidental to the proper execution of the Work as shown on the Drawings and as specified in this Section, and related sections:

1. Restore all temporarily disturbed areas and site appurtenances.
2. Stabilize all disturbed areas.
3. Install surface cover such as stone or gravel, as shown on the drawings.
4. Install wetland area.
5. Remove all temporary erosion and sediment controls that are installed down gradient of stabilized surfaces. Surfaces covered with pavement, concrete, stone, or gravel shall be considered stabilized.
6. Reinstall or replace-in-kind all permanent erosion controls including but not limited to; waddles, sand/gravel bags, and catch basin filters.
7. Remove all materials, supplies, waste, equipment, trash, debris, and temporary facilities at the completion of Work prior to demobilization from the site.
8. Inspect the condition of durable covers not designated to be replaced in trafficked areas, areas used for stockpiling or staging materials, or any other areas that may have been affected by the Work. Replace or repair any damaged durable covers to return the cover condition to that of the pre-construction condition of better.

1.2 REFERENCES

A. New York State Department of Transportation Standard Specifications (NYSDOT Specifications).

B. Wetland Permit.

1. Approvals from NYSDEC for IRM workplan and impacts to Article 24 pending submittal.
2. Approval from USACE for authorization to perform activities under Nationwide 38 pending submittal of application.

1.3 GENERAL REQUIREMENTS

A. Complete the restoration as shown on the Drawings and described herein.

B. Other areas disturbed, damaged, or occupied by the Contractor shall be restored to conditions equivalent to or better than pre-construction conditions.

PART 2 – PRODUCTS

2.1 WETLAND RESTORATION

A. Perform site grading to the lines and grades as shown on the drawings.

B. Install tailings in the excavated area only up to 2-feet below finish grade elevation. All nonexcavated areas to be graded to 2-feet below proposed finish grade. As shown on the drawings.

C. Install 1-foot of sandy clay loam material.

D. Install 1-foot of organic topsoil to proposed finish grade as shown on the drawings.

E. Seed (by hand, broadcast, hydroseed or drill) with specified seed and rate of application as shown on drawing.

F. After seeding install straw mulch over entire restoration area at rate/amount shown on drawing.

G. Wetland monitoring to comply with approved wetland mitigation plan.

H. All materials and substitutes to be approved by Engineer prior to installation.

2.2 CULVERT EXTENSION

A. Extend X-inch diameter existing culvert by X-feet and install standpipe as shown on drawings.

PART 3 – EXECUTION

3.1 GENERAL SITE CLEAN UP AND DEMOBILIZATION

A. After completion of the non-weather dependent work, the Contractor may remove the temporary construction facilities provided that the Site has been temporarily or permanently stabilized and no potential hazards exist.

B. After site restoration, the Contractor shall completely demobilize from the site. The Contractor shall remove from the site, clean and restore disturbed areas to contract specified or existing cover, as applicable. Areas and materials to be restored, cleaned and removed from site include, but are not limited to:

1. Erosion and Sediment Controls (not required to remain until upgradient stabilization is achieved).
2. Dewatering Pad and Truck Wash.

3. Contaminated Material Containment.
4. Staging/Storage Area.
5. Temporary Water Treatment System.
6. Construction/Office Trailers.
7. Frac Tanks.
8. Contractor Equipment and Unused Materials.

C. Erosion and sediment controls designated to remain, in accordance with the drawings and SWPPP, are to be inspected and maintained by the Contractor until they demobilize from the Site.

D. After site restoration, the Contractor shall completely demobilize from the site and shall ensure that no equipment, facilities, or solid waste has been left behind.

E. The site pavement and other surface shall be returned to like or better conditions prior to work.

END OF SECTION

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Attachment D

Supporting Reference Documentation

National Grid Conditions for Proposed Activities within Transmission Line Rights-of-Way
O'Connell Electric Company, Inc. Approach Distances for Qualified Employees – Alternating Current

Conditions for Proposed Activities within Transmission Line Rights-of-Way

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1. Scope

1.1. This document presents minimum conditions for work within National Grid electric transmission line rights-of-way, whether owned in fee or by easement. Activities that are not fully in conformance with this document may sometimes be allowed provided they are specifically shown on plans or described in specifications or other documents that have been reviewed and accepted by National Grid.

1.2. "Requestor" as used in this document refers to any person, organization, corporation or other entity requesting permission to conduct activities within a transmission line right-of-way or anyone acting on the Requestor's behalf.

2. Compliance/Safety

2.1. All activities conducted by the Requestor shall comply with all applicable Federal, state, and local laws, statutes, rules, regulations, and codes. In particular, the requirements of the following statutes, regulations, and safety codes and guidelines, appropriate for the voltage(s) of the transmission line(s) within the right-of-way, must be met:

2.1.1. National Electrical Safety Code

2.1.2. In Massachusetts:

2.1.2.1. 220 CMR 125.00, "Installation and Maintenance of Electric Transmission Lines,"

2.1.2.2. MGL Chapter 166 Section 21A "Coming into Close Proximity to High Voltage Lines" except that the required clearance of six feet is insufficient. The minimum clearance allowed by OSHA shall be maintained.

2.1.3. In New York, Part 57 of the New York State Industrial Codes Rules (also known as the "High-Voltage Proximity Act") (http://www.labor.ny.gov/workerprotection/safetyhealth/sh57.shtm)

2.1.4. All OSHA regulations governing working clearances to electric distribution and transmission lines shall be followed. Although regulations 29 CFR 1926 Subpart CC and 29 CFR 1926.1501 may be specific to equipment that can hoist, lower, and horizontally move a suspended load, all equipment operating within a right-of-way shall maintain the clearances specified in these regulations, including but not limited to cranes, backhoes, excavators, forklifts, pile drivers, and drill-rigs.

2.1.4.1. In accordance with 1926.1408, if the Requestor asks to encroach upon the 20 foot clearance requirement and requests voltages of electric lines near the proposed work or activity, the Requestor shall provide an aerial photograph or detailed survey plan delineating the area of work or activity in proximity to electric lines and structures. Requests may be emailed to TransmissionEngineering@NationalGrid.com or mailed to National Grid c/o Transmission Engineering, 40 Sylvan Road, Waltham, MA 02451.

2.2. The Requestor shall not place or store any items within the right-of-way including, but not limited to vehicles, construction materials, equipment, or debris, excavated soil, trailers, or storage containers.

2.3. The Requestor shall not unload or load vehicles or equipment within the right-of-way.

2.4. The Requestor shall adequately ground vehicles, equipment, fences and gates, at all times and in accordance with applicable Federal, state, and local laws, statutes, rules, regulations, and design codes, including, but not limited to, those listed in paragraph A above and IEEE Standard 80.

3. Protection of Transmission Line Facilities

3.1. The Requestor shall, at all times, protect transmission line facilities from damage. In addition to compliance with safety codes as described in Section 2, protection of transmission facilities shall, as a minimum, include the following:

3.1.1. The Requestor shall operate equipment and vehicles at least 50 feet horizontally away from any transmission line pole, tower, guy wire, or guy anchor.

3.1.2. When making a rough cut during excavation, the Requestor shall disturb no earth within an area bounded by a line drawn 25 feet plus 2.5 times the depth of the cut from the nearest transmission line pole, tower leg, guy wire, or guy anchor, but not less than 50 feet. Upon completion of the rough cut, the slopes of the bank shall be graded on a slope no steeper than one vertical to five horizontal and stabilized with vegetation or rip-rap. The top of the slope shall be at least 50 feet from the nearest pole, tower leg, guy wire, or guy anchor. In cases where these criteria cannot be met, the Requestor may, at the discretion of Transmission Engineering, need to engage a qualified Professional Engineer familiar with Transmission work and perform a stability analysis proving stability of both the proposed excavation and the transmission structure and/or guy anchor.

3.1.3. The Requestor shall not store or use explosives within the right-of-way.

3.1.4. The Requestor shall locate all ground wires buried in areas to be excavated and shall protect them against damage. If a buried ground wire is broken, the Requestor shall prevent anyone from touching it and shall notify National Grid.

4. Access to Right-of-way

4.1. The Requestor shall not at any time block or impede access to or along the right-of-way.

4.2. The Requestor shall not damage roads or trails used to gain access to or along the right-of-way.

4.3. All underground utilities, pipes, conduits, and all proposed bituminous and/or concrete drive surfaces and underground utilities shall be designed to minimally withstand AASHTO *Standard Specifications for Bridges and Highways* HS-25 highway class design criteria for vehicular loading when located within the utility corridor unless otherwise accepted by Transmission Engineering. Certain crossing locations at the

discretion of National Grid shall be designed to withstand 100,000 lbs (loaded concrete truck). Details and designs shall be certified by a qualified Professional Engineer.

5. Preservation of Rights and Future Use

5.1. National Grid retains all rights granted in the original right-of-way deed. Specifically, National Grid reserves the right to place future structures or relocate existing structures anywhere within the right-of-way, and reserve the right to control any vegetation within the right-of-way.

5.2. The Requestor shall place no above or below ground structures within the right-of-way, including streetlights, signs, sheds, fences, septic systems, retention or detention ponds or basins, and swimming pools.

5.3. Improvements shall not continuously occupy more than 100 feet along any line drawn longitudinally along the right-of-way.

5.4. Improvements shall not occupy future locations of transmission structures. This includes the bisector of angles in the right-of-way and generally includes areas adjacent to existing structures.

6. Protection of Interests

6.1. National Grid shall not be held liable for any damage to the Requestor's activities within the right-of-way when such damage is the result of construction, maintenance, or operation or other use of existing or future transmission line facilities.

6.1.1. For any proposed underground pipe or conduit the Requestor shall provide warning tape in the trench for all and tracer cable for non-metallic pipes or conduits when located within a transmission corridor. Plans provided for review shall identify such warning tape and tracer cable.

6.1.2. All new utilities, pipes, and conduits shall have field markers installed above the asset and shall be located not to impede access or in the way of future development.

6.1.3. Requestor may submit their company standard cut-sheet detailing their marker's dimensions and composition, otherwise use Rhino Tri-View Post Markers with appropriate labelling suitable to the project.

6.2. The Requestor shall pay all costs associated with modifications or repairs made necessary to National Grid's facilities as a result of activities by the Requestor, including the cost of repairs or modifications to buried ground wires. Repairs and/or modifications shall be performed by National Grid. The Requestor shall notify National Grid's Manager of Transmission Line Services when a buried wire is damaged.

6.3. The Requestor shall notify National Grid in writing at least 24 hours before the start of the work. In New York the notification shall also be made in accordance with the requirements of the High Voltage Proximity Act (Section 57.7).

6.4. Electrostatic currents may occur in proximity to electric transmission lines under certain circumstances. Although people may experience annoying shocks due to these

currents when touching conductive objects, National Grid is not able to eliminate the currents. The steady-state current due to these electrostatic effects is within the limits established by the National Electrical Safety Code.

7. Deliverables

7.1. Full-sized paper copies of plans prepared to an appropriate scale shall be provided by the Requestor. Plans shall be certified by an appropriate professional licensed in the state in which the project is located. Digital signatures of a licensed professional will not be accepted. If plans are acceptable and an agreement can be achieved, the Requestor shall provide final plans in both paper and pdf versions.

7.2. Upon completion of any development located within a transmission corridor, Requestor shall provide upon request by Transmission Engineering, a certified As-Built Plan. Plan shall be certified by a qualified licensed professional.

8. Appendices

8.1. Appendix A is shown as a guideline describing a method of determining elevations of energized conductors.

8.2. Appendix B is shown as a template displaying elements needed to review conductor clearances. In most cases, this data will be required to be certified by a licensed Land Surveyor.

Appendix A

Procedure for Determining Wire Heights

- Elevations of conductors (wires) should be taken* at the point of attachments at bottom insulator on transmission structure.
- Elevations should be taken* at mid-span and quarter-span.
- Elevations should be taken* at any obvious low points (other than mid-point) which may occur due to grade changes below.
- Elevations should be taken directly above any proposed improvements or areas of proposed activity(s) as applicable.
- Existing grade elevations corresponding to aerial shots cited above should also be recorded. Any proposed finish grades different from existing grades, should also be recorded.
- As measurements are recorded, the following information must be recorded: date, time, ambient air temperature, wind direction and velocity, and weather conditions (e.g.: sunny, rain, snow, etc).

* WARNING: Conductors are electrically energized and are to be considered dangerous to approach. All measurements to conductors shall be made by remote measurement techniques which shall in no case cause measuring devices or personnel to come within safety parameters established by OSHA 1926.550 or New York State's High Voltage Proximity Act.

c = clearance from grade

H = measured horizontal offset distance (perpendicular to conductor at point of crossing)

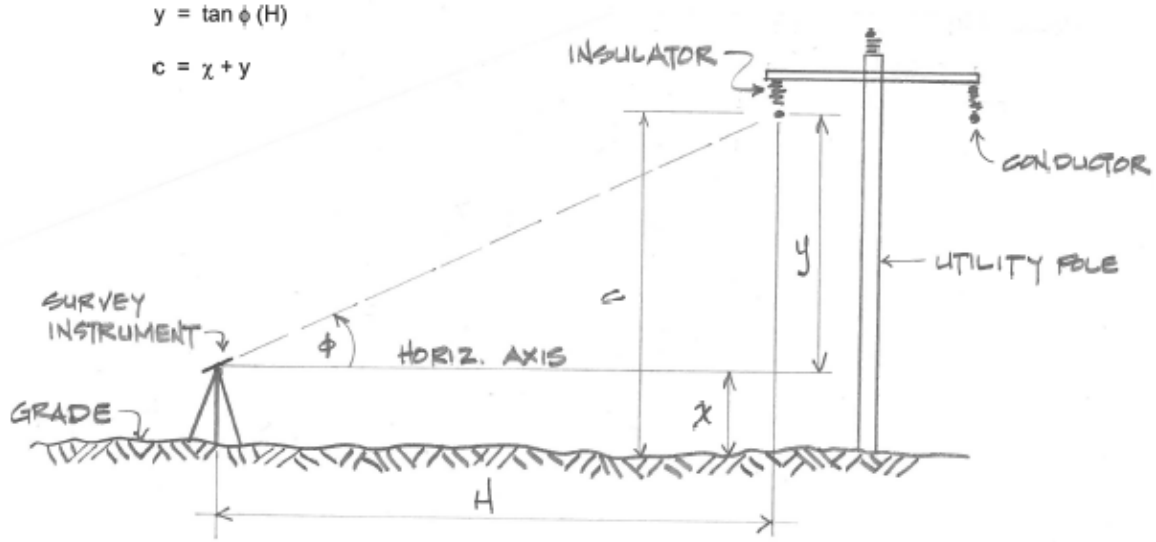
χ = measured vertical distance from horizontal axis of instrument eye piece to grade at a point

ϕ = measured vertical angle from horizontal axis of instrument eye piece to conductor

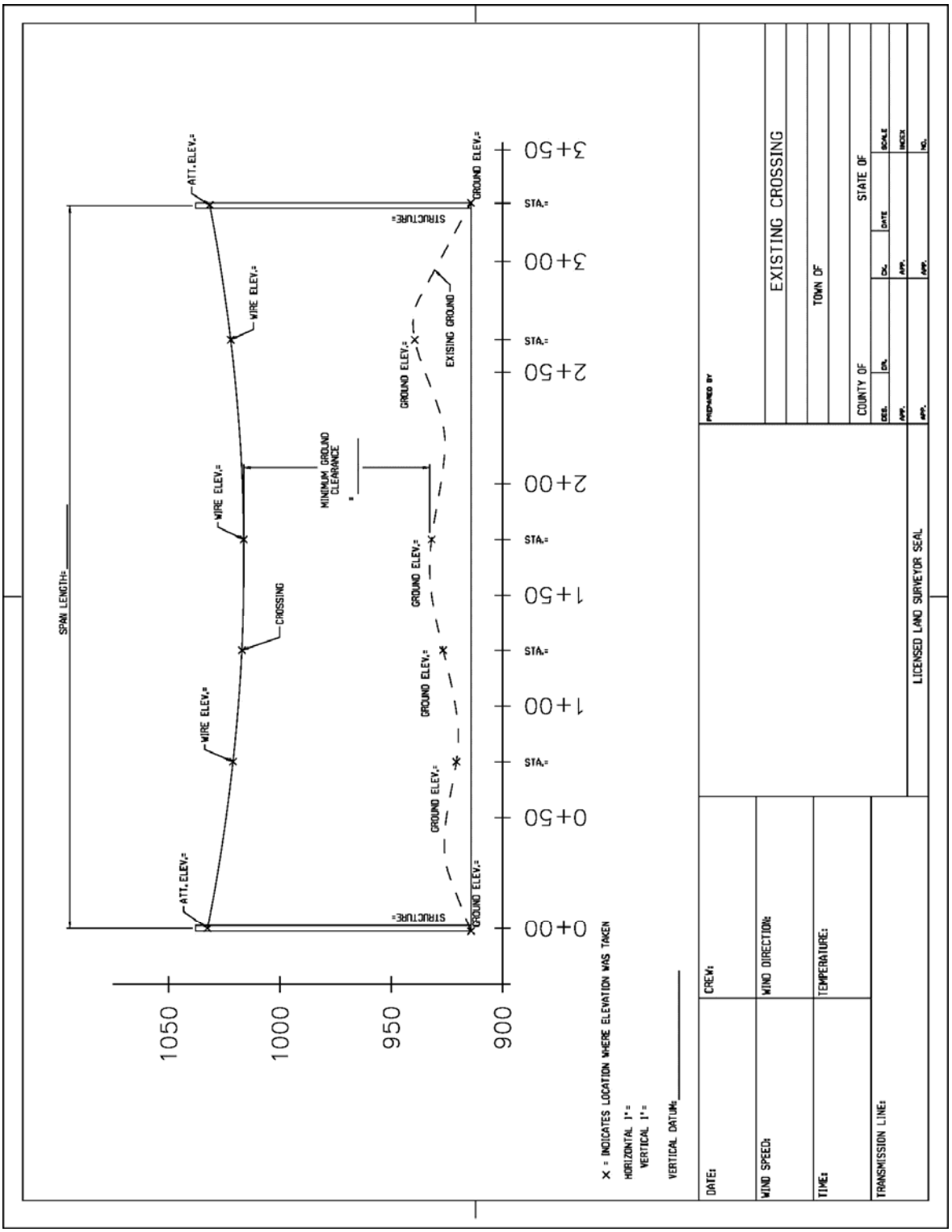
y = calculated vertical distance from horizontal axis to conductor

$y = \tan \phi \, (H)$

$c = \chi + y$



Appendix B


EXISTING CROSSING
TOWN OF
COUNTY OF
STATE OF
PREPARED BY
LICENSED LAND SURVEYOR SEAL
DATE:
WIND SPEED:
TIME:
CREW:
WIND DIRECTION:
TEMPERATURE:
TRANSMISSION LINE:
X = INDICATES LOCATION WHERE ELEVATION WAS TAKEN
HORIZONTAL 1" =
VERTICAL 1" =
VERTICAL DATUM:
SPAN LENGTH=
ATT. ELEV.=
WIRE ELEV.=
CROSSING
MINIMUM GROUND CLEARANCE
STRUCTURE=
GROUND ELEV.=
EXISING GROUND
STA.=
3+50
3+00
2+50
2+00
1+50
1+00
0+50
0+00
1050
1000
950
900

Revision History

Version	Date	Revision	Author	Reviewer	Approver
1.2	07/12/2007	Revised wording relative to electrostatic currents in paragraph 6.D.to clarify the issue. Previous wording: "Mild shocks due to electrostatic currents may be felt when touching conductive objects, such as vehicles, located within the right-of-way. Although these shocks may be annoying, National Grid will not be able to eliminate them."	Mark Browne		Mark Browne
1.3	11/29/2010	Clarify that guideline applies to electric transmission rights of way Clarify that activities must comply with requirements for the voltages of lines within the right of way Add requirement to comply with MGL Chapter 166 Section 21A	Mark Browne		Mark Browne
1.4	07/11/2012	Added AASHTO H-20 load criteria requirement for proposed drive surfaces and u/g utilities.	Keith Tornifoglio		Mark Browne
1.5	03/17/2014	Added Appendix A, full-sized hardcopies to-scale, and warning tape and tracer cable for buried utilities	Keith Tornifoglio		Mark Browne
1.6	07/18/2014	OSHA clearances	Keith Tornifoglio		Mark Browne
1.7	06/03/2015	Stability Analysis, Heavy Load Crossing Designs, Field Marker update	Keith Tornifoglio		Mark Browne
1.8	07/28/2017	Increased minimum AASHTO load criteria from H-20 to HS-25, clarify no storage in ROW, added image of wire profile in Appendix A	Keith Tornifoglio	Ed Donegan	Lisa Sasur

RECOGNIZE AND RESPECT APPROACH DISTANCES FOR HIGH VOLTAGE

Approach Distances For Qualified Employees
Alternating Current

Voltage Range	Fault Condition	
50V to 150V	Avoid Contact	
151V to 750V	12" P-G	12" P-P
751V to 1kV	24" P-G	24" P-P
1kV to 15kV	26" P-G	27" P-P
15.1kV to 36kV	30.5" P-G	35" P-P
36.1kV to 46kV	33" P-G	38.5" P-P
46.1kV to 72.5kV	39.5" P-G	47" P-P
72.6kV to 121kV	45" P-G	56" P-P
230kV to 242kV	63" P-G	90" P-P
345kV to 362kV	102" P-G	150" P-P

Since 1911 **O'CONNELL ELECTRIC COMPANY**

REVISED JAN 2016

APPENDIX C

Wetland Vegetation Seed Mix - Species Lists

Ernst Conservation Seeds
8884 Mercer Pike
Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: August 01, 2021

FACW Wetland Meadow Mix - ERNMX-122

	Botanical Name	Common Name	Price/lb
29.80 %	*Carex vulpinoidea, PA Ecotype*	Fox Sedge, PA Ecotype	28.80
16.00 %	*Elymus virginicus, Madison-NY Ecotype*	Virginia Wildrye, Madison-NY Ecotype	6.68
11.00 %	*Carex lupulina, PA Ecotype*	Hop Sedge, PA Ecotype	86.40
11.00 %	*Carex scoparia, PA Ecotype*	Blunt Broom Sedge, PA Ecotype	86.40
8.50 %	*Carex lurida, PA Ecotype*	Lurid Sedge, PA Ecotype	76.80
5.20 %	*Cinna arundinacea, PA Ecotype*	Wood Reedgrass, PA Ecotype	144.00
4.00 %	*Verbena hastata, PA Ecotype*	Blue Vervain, PA Ecotype	38.40
3.00 %	*Juncus effusus*	Soft Rush	48.00
2.00 %	*Asclepias incarnata, PA Ecotype*	Swamp Milkweed, PA Ecotype	192.00
2.00 %	*Heliopsis helianthoides, PA Ecotype*	Oxeye Sunflower, PA Ecotype	33.60
1.00 %	*Bidens cernua, PA Ecotype*	Nodding Bur Marigold, PA Ecotype	240.00
1.00 %	*Onoclea sensibilis*	Sensitive Fern	144.00
0.80 %	*Eupatorium perfoliatum, PA Ecotype*	Boneset, PA Ecotype	192.00
0.80 %	*Helenium autumnale, PA Ecotype*	Common Sneezeweed, PA Ecotype	216.00
0.80 %	*Iris versicolor*	Blueflag	240.00
0.70 %	*Zizia aurea*	Golden Alexanders	288.00
0.30 %	*Aster novae-angliae, PA Ecotype*	New England Aster, PA Ecotype	336.00
0.30 %	*Aster prenanthoides, PA Ecotype*	Zigzag Aster, PA Ecotype	432.00
0.30 %	*Eupatorium fistulosum, PA Ecotype*	Joe Pye Weed, PA Ecotype	273.60
0.30 %	*Lobelia siphilitica, PA Ecotype*	Great Blue Lobelia, PA Ecotype	480.00
0.30 %	*Scirpus cyperinus, PA Ecotype*	Woolgrass, PA Ecotype	115.20
0.20 %	*Aster puniceus, PA Ecotype*	Purplestem Aster, PA Ecotype	432.00
0.20 %	*Aster umbellatus, PA Ecotype*	Flat Topped White Aster, PA Ecotype	432.00
0.20 %	*Penthorum sedoides, PA Ecotype*	Ditch Stonecrop, PA Ecotype	288.00
0.20 %	*Solidago rugosa, PA Ecotype*	Wrinkleleaf Goldenrod, PA Ecotype	336.00
0.10 %	*Mimulus ringens, PA Ecotype*	Square Stemmed Monkeyflower, PA Ecotype	312.00

100.00 % **Mix Price/lb Bulk: $69.40**

Seeding Rate: 20 lb per acre, or 1/2 lb per 1,000 sq ft with a cover crop. For a cover crop use one of the following: grain rye (1 Sep to 30 Apr; 30 lbs/acre), Japanese millet (1 May to 31 Aug; 10 lbs/acre), or barnyard grass (1 May to 31 Aug; 10 lbs/acre).

Wet Meadows & Wetlands

The diverse species provide pollinator habitat and erosion control in wet meadows. Excellent for facultative wetland mitigation sites. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

Price quotes guaranteed for 30 days.
All prices are FOB Meadville, PA.
Please check our web site at www.ernstseed.com
for current pricing when placing orders.

Ernst Conservation Seeds
8884 Mercer Pike
Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: August 01, 2021

OBL Wetland Mix - ERNMX-131

	Botanical Name	Common Name	Price/lb
27.00 %	*Carex vulpinoidea, PA Ecotype*	Fox Sedge, PA Ecotype	28.80
15.00 %	*Carex lurida, PA Ecotype*	Lurid Sedge, PA Ecotype	76.80
14.00 %	*Carex lupulina, PA Ecotype*	Hop Sedge, PA Ecotype	86.40
12.00 %	*Carex scoparia, PA Ecotype*	Blunt Broom Sedge, PA Ecotype	86.40
5.00 %	*Elymus virginicus, Madison-NY Ecotype*	Virginia Wildrye, Madison-NY Ecotype	6.68
4.00 %	*Verbena hastata, PA Ecotype*	Blue Vervain, PA Ecotype	38.40
3.70 %	*Sparganium eurycarpum, PA Ecotype*	Giant Bur Reed, PA Ecotype	115.20
3.00 %	*Carex stipata, PA Ecotype*	Awl Sedge, PA Ecotype	235.20
3.00 %	*Juncus effusus*	Soft Rush	48.00
2.80 %	*Asclepias incarnata, PA Ecotype*	Swamp Milkweed, PA Ecotype	192.00
2.00 %	*Iris versicolor*	Blueflag	240.00
1.50 %	*Sparganium americanum*	Eastern Bur Reed	168.00
1.40 %	*Bidens cernua, PA Ecotype*	Nodding Bur Marigold, PA Ecotype	240.00
1.00 %	*Eupatorium perfoliatum, PA Ecotype*	Boneset, PA Ecotype	192.00
1.00 %	*Helenium autumnale, PA Ecotype*	Common Sneezeweed, PA Ecotype	216.00
1.00 %	*Vernonia noveboracensis, PA Ecotype*	New York Ironweed, PA Ecotype	264.00
0.50 %	*Lobelia siphilitica, PA Ecotype*	Great Blue Lobelia, PA Ecotype	480.00
0.50 %	*Scirpus cyperinus, PA Ecotype*	Woolgrass, PA Ecotype	115.20
0.40 %	*Aster novae-angliae, PA Ecotype*	New England Aster, PA Ecotype	336.00
0.30 %	*Aster puniceus, PA Ecotype*	Purplestem Aster, PA Ecotype	432.00
0.30 %	*Aster umbellatus, PA Ecotype*	Flat Topped White Aster, PA Ecotype	432.00
0.30 %	*Eupatorium fistulosum, PA Ecotype*	Joe Pye Weed, PA Ecotype	273.60
0.30 %	*Penthorum sedoides, PA Ecotype*	Ditch Stonecrop, PA Ecotype	288.00

100.00 % **Mix Price/lb Bulk: $87.76**

Seeding Rate: 20 lb per acre, or 1/2 lb per 1,000 sq ft with a cover crop. For a cover crop use one of the following: grain rye (1 Sep to 30 Apr; 30 lbs/acre), Japanese millet (1 May to 31 Aug; 10 lbs/acre), or barnyard grass (1 May to 31 Aug; 10 lbs/acre).

Wet Meadows & Wetlands

Adapts to standing water during part or all of the year. Excellent for obligate wetland mitigation sites; provides nectar for pollinators. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

Price quotes guaranteed for 30 days.
All prices are FOB Meadville, PA.
Please check our web site at www.ernstseed.com
for current pricing when placing orders.