UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

VIA ELECTRONIC MAIL

April 30, 2024

Bruce Thompson
de maximis, inc.

Re**:** EPA approval of the *Stormwater Pollution Prevention Plan Revision 1*, dated April 2024, for the Nuclear Metals, Inc. Superfund Site located in Concord, Massachusetts

Dear Mr. Thompson:

This letter contains the Environmental Protection Agency's (EPA) approval of the above-referenced *Stormwater Pollution Prevention Plan Revision 1* ("SWPPP"), dated April 2024. The SWPPP is subject to the terms and conditions specified in the Consent Decree (CD) for Remedial Design / Remedial Action (RD/RA) for the Nuclear Metals, Inc. Site, which has an effective Date of December 6, 2019.

The SWPPP was revised in response to EPA's comments dated February 14, 2024. EPA has reviewed the revisions and finds that they are acceptable; therefore, the SWPPP is approved.

If there is any conflict between the Performance Standards as stated in the Work Plan and the Performance Standards as stated in the CD and statement of work (SOW), the CD and SOW shall control.

Please do not hesitate to contact me at nierenberg.kara@epa.gov or (617) 918-1435 should you have any questions.

Sincerely,

Kara Nierenberg
Remedial Project Manager

cc:
Garry Waldeck, MassDEP
Andrew Schkuta, AECOM

Todd Majer, de maximis
Christine Taddonio, de maximis
Jessie McCusker, de maximis

de maximis, inc.
200 Day Hill Road
Suite 200
Windsor, CT 06095
(860) 298-0541

April 22, 2023

Ms. Kara Nierenberg, PE
Remedial Project Manager
EPA Region 1
5 Post Office Square, Suite 100
Mail Code OSRR 7-MI
Boston, MA 02109-3912

Subject: **Nuclear Metals, Inc. Superfund Site**
Concord, Massachusetts
Stormwater Pollution Prevention Plan Revision 1 and Response to Comments

Dear Ms. Nierenberg:

Enclosed for your review and comment is the Stormwater Pollution Prevention Plan Revision 1 dated April 2024 and Response to Comments.

If you have any further questions or concerns, please contact me.

Sincerely,

Bruce Thompson
Project Coordinator

Enclosure

cc: Garry Waldeck, MassDEP

Response to Comments on the Stormwater Pollution Prevention Plan Revision 1, dated December 2023

General Review Comments

1. **Comment:** Figures. The text references Figure 1-1 (Section 1.3, page 1), Figure 1-2 and Figure 1-3 (Section 2.1, page 3), Figure 1 (Section 2.6, page 5) and Figure 2 (Section 2.8, page 10). Only Figure 1-1 and Figure 1-2 were detailed in the List of Figures in the Table of Contents. Only Figure 1-1 was provided in the document. Please address.

   Response: Figure 1-2 has been included. Reference to Figure 1-3 has been removed from section 2.1. (Section 8 is now Section 9 due to Comment 8 below.)

2. **Comment:** The document has not been updated to reflect the work completed to date as part of the AOI 8/9 RA and Enabling Phase. For example, the text refers to the upcoming PDI and enabling phase work, the option to use fill from a local development, use of the "SSS-3 subslab geoprobe PDI" to characterize soils beneath the building slabs, etc. Please review and revise the document to reflect current site conditions and upcoming work.

   Response: Text has been revised to reflect the work completed to date.

Specific Comments

3. **Comment:** Cover Page. Please add the document date onto the cover page.

   Response: Date has been added.

4. **Comment:** Section 2.7, Page 6, Paragraph 2. Standard practice is to include a drainage basin map which shows flow directions and receiving water bodies. This could be included in Figure 1-2. Please address.

   Response: Figure 2-1 has been added to show flow directions.

5. **Comment:** Section 2.7.1, Page 7, Paragraph 3. For clarity, recommend revising "…has adequate capacity…" to "…is designed…".

   Response: Text will be revised accordingly.

6. **Comment:** Section 2.7.5, Page 9, Paragraph 2. For clarity, please revise "peak storage capacity" to "design storage capacity".

   Response: Text will be revised accordingly.

7. **Comment:** Section 2.8, Page 9, Paragraphs 1-2. The Curve Number Method appears to have been used to estimate runoff. Since the Rational Method was not used, to avoid confusion references to this method should be deleted from the text.

   Response: Former Section 2.8 is now Section 2.9 Runoff Coefficient since Comment 8 below proposed moving section former Section "2.9 Remedial Activities and Anticipated Earth Disturbances" to Section 2.8. Text will be revised accordingly.

8. **Comment:** Section 2.9, Pages 11-13. For clarity, this section, as part of the proposed construction, should be before Section 2.8 where proposed condition runoff is discussed.

   Response: Former Section "2.9 Remedial Activities and Anticipated Earth Disturbances" has been moved to Section 2.8. Former Section "2.8 Runoff Coefficient" is now Section 9.

9. **Comment:** Section 5.10.2, Page 26, Paragraph 1. For outdoor stockpiles, sheet covering alone may not be adequate. It is recommended sheeting be used in conjunction with silt fence/hay bales. Please address.

   Response: Text will be revised accordingly.

10. **Comment:** Table 1-1. The contact information for the following people are outdated and should be edited to the following:

Garry Waldeck	Andy Schkuta
MassDEP BWSC	AECOM
100 Cambridge Street	250 Apollo Drive
Boston, MA 02114	Chelmsford, MA 01824
(617) 694-2085	(978) 905-2100

    Response: Text will be revised accordingly.

STORMWATER POLLUTION PREVENTION PLAN
REVISION 1
APRIL 2024

NUCLEAR METALS, INC. SUPERFUND SITE
REMEDIAL ACTION
CONCORD, MASSACHUSETTS

DEVELOPED TO SUPPORT
REMEDIAL DESIGN / REMEDIAL ACTION

General Contractor:

de maximis, inc.

200 Day Hill Road, Suite 200
Windsor, CT 06095

STORMWATER POLLUTION PREVENTION PLAN
NUCLEAR METALS, INC. SUPERFUND SITE
REMEDIAL DESIGN/REMEDIAL ACTION (RD/RA)
TABLE OF CONTENTS

STORMWATER POLLUTION PREVENTION PLAN
NUCLEAR METALS, INC. SUPERFUND SITE
REMEDIAL DESIGN/REMEDIAL ACTION (RD/RA)
TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

This Stormwater Pollution Prevention Plan (SWPPP) and Soil Erosion and Sediment Control Plan (SESCP) have been prepared in advance of the planned remedial activities (the Work) that will be performed at the Nuclear Metals, Inc. (NMI) Superfund Site (Site) in Concord, MA. Site Work have commenced and the SWPPP will be revised as necessary as the Site is modified and Work progresses.

The following sections provide an overview of the project, the purpose of the Stormwater Pollution Prevention Plan, and identify the stormwater pollution prevention team. This SWPPP/SESCP may be updated as different components of the Work progress.

1.1 Background

The Consent Decree (CD) and the Statement of Work (SOW), provided as Appendix B to the CD describe the Remedial Design/Remedial Action (RD/RA) activities to be performed for the NMI Site in Concord, Massachusetts. This SWPPP and SESCP are intended as part of the Statement of Work noted above and are consistent with the objectives and contents of all other plans submitted as part of the RDWP.

1.2 Purpose

This SWPPP has been prepared to prevent potential stormwater pollution that may be caused by soil erosion and sedimentation during and after the Work is completed. The SWPPP will provide a description of how various project aspects such as erosion and sediment controls, construction sequence, stormwater management, and construction dewatering practices are to be implemented and managed during the Work. A copy of the SWPPP will be maintained at the Site.

> Remedial action activities do not require permits under the CERCLA Permit Exemption, as described in EPA's Directive, "Permits and Permit "Equivalency" Processes for CERCLA On-site Response Actions," OSWER Directive 9355.7-03, February 19, 1992.

1.3 Project Roles and Responsibilities

Key participants in the remedial activities and identification of their roles and contact information are presented in Table 1-1. Table 1-2 identifies emergency contact information. Figure 1-1 shows the project organization chart.

De maximis will function as the General Contractor and Bruce Thompson of *de maximis* as the Project Coordinator**.** For the purpose of Stormwater Pollution Prevention, *de maximis* will be considered the Operator at the site and will be responsible for overseeing all construction activities and stormwater pollution prevention measures. Ms. Jessie McCusker of *de maximis* is the Site Project Manager and will serve as the emergency 24-hour contact. Mr. Todd Majer is the Site Operations Manager and will serve as the alternate emergency contact.

Site Project Manager: Jessie McCusker	(860) 817-7544 (cell)
Site Operations Manager: Todd Majer	(978) 875-0635 (cell)

1.4 Stormwater Pollution Prevention Team

The Stormwater Pollution Prevention Team consist of the individuals who are responsible for overseeing the development of the SWPPP, any later modifications to it, and for conducting site inspections, and taking corrective action where required. The Site Project Manager and Operations Manager will oversee the development and implementation of the SWPPP.

2.0 SITE DESCRIPTION

This section presents a description of the Site's history, existing conditions, and work activities to be performed during the remedial activities.

2.1 Site History

The Site is approximately a 46-acre parcel located in the western portion of the Town of Concord, Massachusetts, as shown in Figure 1-2. A specialty metals manufacturing facility operated at the Site from 1958 to 2011. NMI was originally a specialty metal research and development facility that was licensed to possess low-level radioactive substances. From 1957 to 1972, the Site was owned and operated by a succession of companies that were engaged principally in specialty metals research and development work. Subsequent to 1972, NMI and related entities owned and operated the Site and developed a large-scale depleted uranium manufacturing operation. More recently, site activities included the production of beryllium-aluminum materials. The location of the site structures is shown in Figure 1-2 and Drawing C-100. The drainage features of the Site and the general direction of stormwater flow are shown on Figure 2-1.

Non-Time Critical Removal Action (NTCRA) activities were performed pursuant to the Administrative Settlement Agreement and Order on Consent for NTCRA, United States Environmental Protection Agency (USEPA) Region 1 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Docket No.: CERCLA -01-2011-004 and its appendices (together, the Settlement Agreement). The NTCRA's primary objective was the demolition of the buildings at the Site followed by the installation of a temporary cap over the building slabs. NTCRA work was completed in 2013. The building floor slabs and subsurface contamination will be addressed under the forthcoming remedial activities covered under this SWPPP/SESPC.

2.2 Site Location

The NMI Site is located at 2229 Main Street in Concord, Middlesex County, Massachusetts, with the following geographic coordinates: Latitude 42.441732, Longitude -71.420649.

2.3 Physical Setting

As currently configured, the Site includes several interconnected building slabs, paved parking areas, a former Cooling Water Recharge Pond (Cooling Pond), a former waste Holding Basin that has now been filled in in preparation of implementing the remedy, and areas of fill and/or waste materials. The Site property is a mix of industrial use property, fenced undeveloped property, and unfenced undeveloped property. In addition to the above features, there are two wetlands at the Site, the sphagnum bog and the northeast wetland located north of the

Cooling Pond. The sphagnum bog is a palustrine, broad-leafed evergreen, scrub-shrub, saturated, acidic wetland. The bog is located approximately 75 ft east of the Cooling Pond and the Holding Basin. The bog covers an area of approximately 3.5 acres. The bog is composed primarily of sphagnum peat. The substrate of the bog varies from growing sphagnum at the surface, to decomposed peat below the surface. The sphagnum bog has no inlets or outlets and receives the bulk of its moisture from precipitation and run-off.

The northeast wetland is located approximately 200 ft north of the Cooling Pond, and just south of Route 62. This wetland possibly was formed by the construction of Main Street to prevent further runoff to the north. It is a palustrine, forested, broad-leafed, deciduous wetland, subject to seasonal flooding. The low-lying area associated with this wetland covers approximately 0.8 acres**.**

2.4 Adjacent Properties

The Site is bordered by Main Street (Route 62) and several commercial and residential properties to the north, residential properties to the east, and woodland and commercial / industrial properties to the west. The Assabet River is situated approximately 300 ft north of the Site across Route 62.

2.5 Topography and Ground Cover

The topography of the Site is characterized by typical glacial kame (irregular steep-sided hills) and kettle features (closed depressions). Some of these depressions, such as the Sphagnum Bog, Cooling Pond, and Holding Basin may have been glacial kettles that were formed by Pleistocene glacial ice-contact sediments deposited around residual blocks of ice. Surficial deposits associated with kames and kettles typically consist of a mixture of permeable, unstratified gravels, sands, and silt. Site soils are described in Section 2.6.

The surface elevation of the Site varies from a high of approximately 215 ft above mean sea level (msl) in upland areas on the southwestern portion of the Site to approximately 120 ft msl near the Assabet River to the north. The areas encompassing the building slabs are generally flat compared to the rest of the property. The developed portions of the Site primarily consist of slopes of 0 to 8 percent. Slopes of 15 to 25 percent are present in the southern, vegetated portion, of the Site and steeper slopes of to 25 to 35 percent are located in the east and west portions of the site. The building slabs are capped with an impermeable liner so there are significant areas of impervious surfaces.

No natural streams are present on-Site. The only apparent surface water body that pre-dates development of the Site is a Sphagnum Bog located in the eastern-central portion of the Site.

Developed portions of the site are mostly covered by impervious surfaces including asphalt pavement and building slabs. Non-developed surfaces of the site are primarily covered with vegetation ranging from grasses and small shrubs to large mature trees.

2.6 Site Soils

Soil data was obtained from the National Resources Conservation Service (NRCS), Department of Agriculture, Web Soil Survey, available online at http://websoilsurvey.nrcs.usda.gov/ (Accessed June 20, 2012). Figure 1-2 shows the various NRCS Soil groups onsite. Soils consist primarily of Swansea muck; Freetown muck; Hinckley loamy sand; Windsor loamy sand; Merrimac-Urban land complex; and Udorthents. According to the NRCS, these soils generally exhibit erodibility factors in the low/moderate range and, therefore, tend to be moderately susceptible to detachment and produce moderate runoff. The soil erodibility (K factor) ranges from 0.20 to 0.32 as reported by the NRCS.

Hydrologic soil groups are based on estimates for runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms (NRCS). Swansea muck and Freetown muck soils are categorized as hydrologic group D and have a very slow infiltration rate (high runoff potential) when thoroughly wet. Swansea muck and Freetown muck soils are very poorly drained. Hinckley, Windsor, and Merrimac soils are categorized as hydrologic group A and have a high infiltration rate (low runoff potential) when thoroughly wet and are excessively to somewhat excessively drained. . The Site primarily consists of Hydrologic Soil Group (HSG) A with the Sphagnum Bog area categorized as HSG D. A hydrologic group was not reported for Udorthents, Sandy soils present on-site but for purposes of calculating the runoff coefficient for the site, has been assumed to be hydrologic group A based on examination of adjacent soil groups and the presence of sand.

Groundwater flow at the Site is predominantly through the overburden however groundwater flow also occurs in bedrock fractures. Overburden groundwater flows generally northward, towards the Assabet River. Depth to groundwater at the Site ranges from 5 ft below ground surface (bgs) near the Assabet River to the north, to 60 ft bgs in the upland portions of the Site to the south.

2.7 Site Drainage/Receiving Waters

The Site lies completely within the northeast-southwest trending Assabet River Basin, which encompasses an area of 177 square miles. The Assabet River Basin and the Sudbury-Concord River Basin collectively make up the Concord River Basin. The Assabet River flows northeasterly from Westborough, through lowlands near the eastern basin boundary about 31 miles to its

confluence with the Sudbury River, where it then becomes the Concord River. The Concord River flows to the larger Merrimack River. The Site lies in the northeast part of the Assabet River Basin between the Assabet River and the eastern edge of the Basin. The northern property boundary (Route 62) lies 400 ft upgradient of the River and approximately one mile from the northeastern Basin boundary.

A surface water divide is located in the upland to the south of the Site. Surface water runoff from areas north of this divide flow north to the Assabet River. Surface water runoff from areas south of this divide flow south to Second Division Brook, which flows in an easterly direction, and then north to join with the Assabet River.

Groundwater flow at the Site is predominantly through the overburden. Overburden groundwater flows generally northward, towards the Assabet River. The meandering Assabet River is the primary discharge location for site groundwater. Depth to groundwater at the Site ranges from 5 ft bgs near the Assabet River to the north, to 60 ft bgs in the upland portions of the Site to the south.

The section of the Assabet River, Segment ID MA82B-07 from the Powdermill Dam, Acton to the confluence with the Sudbury River, Concord which ultimately receives drainage from the Site, is considered a Category 5 Impaired Waters caused by fecal coliform and phosphorus (total) (USEPA Total Maximum Daily Load [TMDL] No. 35109).

2.7.1 Surface Drainage

The central portions of the Site where the buildings slabs are located are generally impervious. Building slabs are surrounded by asphalt parking areas with grass medians. Four separate networks of pavement stormwater drains are present at the Site each collecting stormwater from various parking areas or paved surfaces during rain events. Each pavement stormwater drain network discharges locally to surface soil drainage pathways via outfalls. A linear series of stormwater drains collect stormwater from pavement to the northeast of the Building D slab. This network is hereafter termed the North Pavement Drain Outfall. This outfall discharges approximately 25 ft to the northeast of the paved parking area above the northeast septic leach field. During the AOI 9 remedial activities, this series of drains was protected by placing straw bales around each of the catch basins. The drains and basins appear to be in fair condition and convey runoff to the AOI 9 restored depression area. Based on engineering drawings, this series of drains was constructed concurrently with leach field ST-2 (AOI-5) circa 1983. See Appendix A for existing condition drawings.

A second drain network consisted of two separate storm drain lines serving a portion of the paved access road located to the south of Buildings A and B-2 slabs. This network, will hereafter be termed the South Pavement Drain Outfalls, was removed during the AOI 8

remedial action and restoration work. The drain lines were flushed out, catch basins removed, and confirmatory sampling was completed in the footprint of the drainage system. A swale and series of drainage basins were constructed in the restored AOI 8 remediation area to manage runoff in place of the South Pavement Drain Outfalls as described in the AOI 8 Stormwater Memorandum dated 17 April 2023. The AOI 8 drainage system is shown on the Existing Conditions Drawing C-100 in Appendix A. The general direction of stormwater flow are shown on Figure 2-1.

The drainage system which replaced the South Pavement Drain Outfalls, involving an interconnected swale and two detention basins, is appropriately sized to manage runoff generated from a 2-year to 100-year storm event. The low-lying area around the removed catch basins was regraded toward a new drainage swale. The swale spans an approximately 131-foot length along the edge of the road south of the catch basins. It is lined with rip rap and sized at a depth of 1 foot, a bottom width of 2 feet, and 2:1 side slopes, making the swale top width of 6 feet. The swale conveys water two interconnected detention basins with capacities of approximately 720,000-gallons and 320,000-gallons. The basins are lined with geotextile and riprap on the bottom and lower edges The basins are connected by 2-foot-diameter, circular, culverts stacked side by side, with adequate cover to be overlain by a haul road leading to a stockpile area. Approximately 2-foot-high earthen berms will surround sections of the detention basins to protect the entrance road and stockpile area from potential basin overflow and to prevent eroded material or runoff from the stockpiles from entering the detention basins. This drainage system is designed to handle runoff from the impervious areas south of Buildings A and B and southwest of Building E. As the work progresses, runoff from other areas of the site can be routed to this area.

A third series of stormwater drains serves the parking lots that are located to the north of Buildings A and D slabs, as well as the access road entering the facility from Main Street. The NMI network joins the Town of Concord storm drain network at Main Street. The outfall from this drain network, hereafter termed the Off-site Pavement Drain Outfall, is a large culvert located beneath Main Street. This culvert discharges along the north edge of Main Street to a steep slope that extends northward to a wetland that is part of the Assabet River floodplain.

Drainage plans will be updated as the site moves through design phases and the updates will be amended to this plan as available. Each set of design plans will have some drainage improvements or water diversion measures identified to minimize the flow of stormwater into the active work areas during construction.

2.7.2 Upland Areas

Upland areas of the Site comprise undeveloped wooded areas which generate both runoff and groundwater infiltration after precipitation events. These upland areas generally include the regions south, southwest and west of the building and parking lot areas, and east of the Sphagnum Bog.

2.7.3 Sphagnum Bog

This area represents a low region south and upgradient of the Holding Basin and Cooling Pond. This area receives direct precipitation and some runoff from surrounding areas. Water levels in the Sphagnum Bog appear to be perched above the underlying aquifer due to a thick organic mat which limits infiltration to groundwater. The Sphagnum Bog has no inlet or outlet for surface water flow, and thus all excess runoff and precipitation leaves the bog as groundwater recharge. During remedial activities in the bog, the excavation area will be delineated by sand super sacks which contain the sphagnum bog standing water and prevent cross-contamination from coming in contact with impacted soil. A series of dewatering sumps and temporary piping to an onsite treatment system will be established to manage water within the excavations as shown in Drawing C-301 within Appendix A.

2.7.4 Cooling Water Recharge Pond

The Cooling Pond is located in a natural topographic depression in the center of the Site, approximately 75 ft north of the Holding Basin. The Pond was created by placing a sand dam across the swale. Water was historically pumped from on-site supply wells to the buildings where it was used as non-contact cooling water and then discharged to the Cooling Pond. The Pond receives water from storm water run-off. Additionally, as part of the groundwater Pre-Design Investigation (PDI) work being conducted by Geosyntec, water collected from the pumping tests and purge water from sampling events were treated on-site and discharged into the cooling water pond. The Pond is approximately 26,000 square ft (0.6 acres), but the actual size has varied over time, depending on facility operations (i.e., amount of cooling water discharged).

During remedial excavations in the Cooling Pond, a dewatering sump, pump intake and force main to a treatment system on the northwest side of the pond will be established to dewater the pond and facilitate removal of sediment. The dewatering system is shown in Drawing C-301 within Appendix A.

2.7.5 Holding Basin

The Holding Basin was constructed in 1958. A pre-existing glacial depression was enlarged by removing soil to flatten the floor and construct an earthen dike on its face (NMI, 1997). From 1958 to September 1985, the Holding Basin received waste sludges derived from pickling copper-clad depleted uranium rods in nitric acid. In 1985, discharge ceased due to a change in waste processing methods. In December 1986, an impermeable cover was installed over the Holding Basin by NMI. During the active period from 1958 to 1986, the Holding Basin received direct precipitation and likely some runoff from around the Basin. Although the Holding Basin was filled with sludge, a portion of this water likely infiltrated to groundwater especially during the earlier years when the sludge volumes were still small. In late 1997, NMI removed the cover to begin excavation of 8,000 cubic yards of soil and sludge under a temporary structure. In 1998, the temporary structure was removed to gain excavation access to additional sludge material. In 2002, USEPA installed a temporary impermeable cover on the Holding Basin. Between 1998 and 2002, the Holding Basin received direct precipitation and runoff that may have partially infiltrated to groundwater. The Holding Basin currently has the dimensions of approximately 180 ft in length by 100 ft in width and is still capped. However, the work done in 2002 to reinstall the cap included reshaping the basin wall and placing a stone blanket over the basin walls and sides prior to cover installation. The northern berm was breached and reconstructed to install an overflow pipe to drain storm water from the cover to the Cooling Pond. The pipe was extended during recent activities to fill the Holding Basin, completed as part of the Enabling Phase, and remains in use.

Before Holding Basin remedial activities began, the basin was being inundated with runoff from the impervious courtyard area, and sections of the Buildings C, D, and E slabs. Ponded water and vegetation had formed at the bottom of the Basin. As a part of the Enabling Phase remedial activities, an approximately 145-ft-long, 6-ft-wide, and 2-ft-deep temporary drainage swale was installed along the western side of the Holding Basin to divert runoff. The swale has a design storage capacity of approximately 33 cubic feet per second, and water from the swale is routed down a medium-riprap lined swale to the southern section of the Cooling Pond. The drainage swale is shown as Drawing C-300 in Appendix A.

2.8 Remedial Activities and Anticipated Earth Disturbances

Certain site improvements which are necessary to provide for safe, unfettered access to work areas and to provide for additional space for the staging of equipment and materials necessary for the proper handling and management of waste (site improvement work) will be performed as an initial component of work. The Work activities will be executed in multiple phases:

- **Enabling Phase:** Before remediation activities begin, subsurface utilities beneath building slabs and in the courtyard between Building C and the Holding Basin will need to be demolished and or capped. Stormwater controls will also be placed across the site where necessary. Potential stormwater controls include silt fence or straw wattle (hay bale) installation around stockpile and excavation areas, updated drainage, and the addition of new stormwater retention areas. Site regrading may be necessary in select areas to divert runoff.

- **Site-Wide Soils Remediation Work Phases:** The order of Site-Wide Soils remediation work has been split into Phases. Future phases of work are described below and updates to timing will be provided as available.

    - **AOI 8 and AOI 9 Remediation:** Contaminated soil within the limits of AOI 8 and AOI 9 was excavated and removed from the Site. Imported clean material was used to restore excavated areas.
    - **Buildings A & B Excavation:** The Buildings A and B slabs remaining after the NTCRA were removed from the site during the Enabling Phase Remedial Action. A completion report for this Phase has been submitted.
    - **Clean Borrow Import:** Uncontaminated soil, will be imported to the Site as needed, stockpiled, and used in the future as clean borrow material during restoration activities. Clean soil may be stockpiled at the northern former septic field area, a cleared area west of Building A, or former building slab areas.
    - **Onsite Borrow for inside of the Holding Basin:** Onsite material that has been tested and is found to be below the ROD cleanup levels has been used to fill in the former Holding Basin.
    - **Building E Excavation:** The Building E slab remaining after the NTCRA will be removed from the site. Contaminated soil beneath the building slabs, as identified in the SSS-3 sub-slab geoprobe PDI will be excavated. Excavated material will be removed from the site.
    - **Landfill:** Several feet of surficial soil from the landfill will be excavated and removed from the Site. Restoration will include placement of imported clean fill and seeding.
    - **Courtyard:** Contaminated soil will be excavated and removed from the courtyard area between Building C and the Holding Basin. Subsurface utilities encountered during excavation in the courtyard area, not removed during enabling activities, will be inspected for leaks and removed from the site. Clean fill will be used as backfill in excavated areas prior to seeding.
    - **Cooling Pond and Gabion Wall:** Contaminated soil and sediment at the Cooling Pond will be excavated and filled with borrow source material. The stability and integrity of the Gabion wall will be considered in methods of excavation for Cooling Pond soils.

- **Buildings C & D Excavation:** The Buildings A through D slabs remaining after the NTCRA will be removed from the site. Contaminated soil beneath the building slabs, as identified in the SSS-3 subslab geoprobe PDI will be excavated and removed from the site.

- **Holding Basin Remediation Work Phases:** The order of Holding Basin remediation work phases will be determined after the conclusion of the PDI. Future phases of work are described below and updates to timing will be provided as available.

  - **Intermediate Holding Basin Grading:** The holding basin has been filled to an intermediate grade, prior to final restoration, to facilitate other remediation work such as wall installation and in-situ remediation. The intermediate grading will be designed to include necessary drainage features.
  - **Injections:** Injections are planned to occur in two phases for In-Situ Stabilization (ISS), treatment using the mixing and fixating of reactive admixtures into the soil matrix, of depleted uranium in Holding Basin soils and of natural and depleted uranium in overburden and bedrock groundwater.
  - **Holding Basin Wall:** A low-permeability vertical wall will be installed for containment of Holding Basin stabilized soils and groundwater. Site regrading may be necessary for entrance roads for heavy construction vehicles, equipment decontamination areas, and staging for concrete mixing. Equipment staging and material processing areas related to wall construction will be designated separately from other remedial activity areas.

In total, it is anticipated that approximately 12.3 acres may be disturbed by work activities associated with tree clearing, building slab removal, and remediation activities at the Holding Basin, Cooling Pond, Landfill, and other areas. Approximately 4.41 acres will be cleared of woody vegetation to provide additional space for staging of material and proper handling and management of waste. Approximately 4.58 acres of temporary HDPE cap areas will be converted to grass following the removal of building slabs and the remediation activities at the Holding Basin.

Earth disturbances from Work at the Cooling Pond, Holding Basin and Landfill will occur within 50 ft of the Sphagnum Bog and therefore additional buffer documentation will be required as part of this SWPPP. The National Pollutant Discharge Elimination System (NPDES) General Permit for Construction activities (2017) states that if its infeasible to maintain an undisturbed buffer between construction activities and surface water bodies, erosion and sediment controls must be implemented to achieve the sediment load reduction equivalent to a 50-ft undisturbed natural buffer. The estimated Percent sediment removal for a 50-ft vegetated buffer in Massachusetts is between 60 and 90 percent. As a single silt fence typically meets an 80

percent sediment removal efficiency, a double silt fence established around the perimeter of the work area will likely be sufficient to meet the sediment removal requirement.

2.9 Runoff Coefficient

The curve number, rather than the runoff coefficient, was used to evaluate Site runoff because the parameters for determining the curve number are more defined and the curve number takes into account soil type as well as land use/cover type. Table 2-1 summarizes cover types under the existing and proposed conditions and associated curve numbers for the Site. Evaluation of existing and proposed Site conditions determined a weighted CN value of 51 (moderate runoff potential) for the existing conditions, and 47 (moderate runoff potential) for the proposed conditions. All existing asphalt and concrete paved areas are anticipated to remain and all areas which are currently occupied by building slabs are scheduled for removal and will be restored with grass upon demolition. Rooftop areas including the Pump House 1 and Pump House 2 and are scheduled for demolition. An HDPE cap will be placed over the Holding Basin after it is graded. Because approximately two ft of sandy soil and topsoil will be placed over the HDPE cap as part of the final Holding Basin restoration, the proposed condition there is categorized as grass in Table 2-1. Several wooded areas are scheduled to be cleared for remediation activities, including a stockpile area south of the holding basin and landfill, Areas of Interest (AOIs) 8 and 9, a truck turn around area, and areas around the Cooling Pond and Holding Basin as shown on Drawings C-201 and C-202. Wooded areas to be cleared are anticipated to be restored with grass upon completion of the project. The following is a summary of the Site's estimated area of proposed cover type change, pre and post impervious areas, and runoff coefficients as a result of the Work. For more detailed information refer to Table 2-1.

Total project area: 45.9 Acres
Estimated area of changed cover type (pre to post construction): 9.0 Acres
Percentage of impervious area before construction: 25%
Curve Number before construction: 51
Percentage of impervious area after construction: 15%
Curve Number after construction: 47

2.10 Potential Site Pollutants

The work activities on-site have the potential to generate pollution. Table 2-2 lists the potential pollutant generating activity and the associated pollutant or pollutant constituents.

2.11 Allowable Non-Stormwater Discharges

The following allowable non-stormwater discharges are anticipated to occur or have the potential to occur from the Site:

- Water used to control dust;
- Construction dewatering water that has been treated by appropriate control;
- Water used for decontamination of equipment and vehicles after treatment;
- Potable water including uncontaminated water line flushing;
- Uncontaminated air conditioning or compressor condensate;
- Foundation or footing drains;
- Fire hydrant flushing;

3.0 REMEDIAL ACTIVITY SCHEDULE

Building stabilization and other interim NTCRA activities commenced in November 2011. Remedial activities started in 2022. Information regarding the preliminary sequencing of major activities, which have the potential to cause erosion and sedimentation, is presented in the following sections. Additional scheduling and details will be submitted as addendums to this SWPPP as design phases are completed, prior construction.

3.1 Sequence of Major Construction Activities

The following sequence of major operations is anticipated for each remedial activity:

1. USEPA approved the Remedial Action Work Plan (RAWP).
2. Mobilize additional equipment and personnel to the site as necessary for the completion of the work.
3. On site personnel receive site specific training periodically as required per OSHA and are medically cleared to perform work on-site.
4. Perform survey layout as necessary.
5. Establish erosion and sediment control measures including but not limited to; siltation fence; hay bales and silt fence; storm drain inlet protection; erosion control silt sacks; and erosion control matting as necessary. Soil erosion and sediment controls will be maintained throughout the duration of the project.
6. Construct temporary facilities and controls, and staging areas.
    i. Perform clearing and grubbing as necessary.
    ii. Establish soil and stumpage stockpiles and stabilize.
    iii. Dispose of harvested timber.
    iv. Chip woody debris and vegetation.
    v. Cover areas to be paved with geogrid.
    vi. Place and compact aggregate as required.
    vii. Place bituminous concrete pavement.
    viii. Restore disturbed areas with suitable soil, seed and mulch.
7. Fill subsurface excavations
8. Remove temporary facilities and controls, and staging areas as required.

9. Complete final grading and restoration as necessary.
10. Stabilize and permanently restore all disturbed areas of the site.
11. Remove all temporary erosion and sediment control measures.
12. Decontaminate all equipment and materials. Radiation screening of all materials and equipment prior to leaving the site will be performed by the Health Physics Technicians.
13. Demobilize equipment and personnel.

4.0 CONTROLS

Appropriate controls and measures will be implemented at the Site to prevent erosion and sedimentation on-site and to prevent pollution of the waters of the Commonwealth of Massachusetts. A Site-specific Soil Erosion and Sediment Control Plan is included as Appendix A. the Drawings continue to be updated following EPA review, and the latest set will be included on-site with the SWPPP.

4.1 Erosion and Sediment Controls

Erosion and sediment controls may be temporary or permanent in nature, depending on the duration of the project and the specific project objectives. Temporary measures serve to meet the short-term goals of minimizing erosion and restricting the transport of sediment within and from the limits of the Site. Permanent measures serve to meet long term goals of sustainable stabilization of the Site with durable erosion control features to control the potential sediment discharge from the Site and protect nearby surface waters.

Appropriate controls will be provided in accordance with best management practices, regulatory guidance, manufacturer's specifications, and good engineering practices. Erosion and sediment control details and notes which describe all Best Management Practices to be used on this project are provided in the Site-specific Soil Erosion and Sediment Control Plan included as Appendix A. Erosion and sediment controls will be implemented to meet the intent of the specifications included in for each remedial activity. All erosion and sediment controls and measures will be conducted in accordance with the Massachusetts Erosion and Sediment Control Guidelines and the Town of Concord requirements.

The general criteria and requirements of the erosion and sediment control measures and practices include:

- Best management practices (BMPs) for conducting construction operations, including timing, sequencing, and phasing requirements;
- Temporary erosion control measures to be provided throughout the project;
- Adjustment/modification of existing measures as required to reflect actual work conditions (the dynamic nature of construction sites may require the addition of new control measures);
- Maintenance and inspection of erosion and sedimentation control measures throughout the project; and

- Permanent erosion control measures to remain upon completion of the project.

4.2 Stabilization Practices

Stabilization practices for this project will include the following measures:

- Minimizing disturbance areas;
- Controlling measures and procedures for dust minimization;
- Utilizing temporary seeding or mulching;
- Grading to generally maintain runoff flow patterns and discharge locations similar to existing conditions while maximizing overland flow through vegetated areas;
- Stabilizing areas after final grading has been completed; and
- Providing permanent and sustainable vegetative cover for all disturbed areas not intended for other cover.

4.3 Structural Practices

All construction activities will be performed in accordance with BMPs, which include temporary and permanent Site stabilization measures to reduce the potential for erosion through practical and sound work efforts. Temporary erosion control features include:

- BMPs incorporated to reduce erosion potential (including dust) during construction efforts;
- Sediment barriers (including siltation fence and hay bales) installed as necessary to isolate potential areas of erosion and minimize sediment transport in areas that will received stormwater from earth-disturbing activities;
- Storm drain inlet protection;
- Earth dikes, water bladders, or other diversions to divert runoff from undisturbed, up slope areas to stable areas;
- Erosion control blankets installed to minimize potential erosion due to concentrated flow prior to establishment of vegetation;

- On-site dewatering basins, filter bags, siltation fence, or hay bales to minimize potential and transport of sediments resulting for construction dewatering activities;
- Construction entrances stabilized to minimize the transport of sediment from unpaved areas of the Site to paved areas; and
- Sediment barriers placed around soil stockpiles and covering stock piles with temporary poly-sheeting or tarpaulins during non-working periods and during precipitation events to prevent stockpile erosion.

Permanent erosion and sedimentation control features have been incorporated into the project by providing for long-term stabilization of the Site and sediment transport prevention features. Permanent erosion control features include permanent vegetative cover for all disturbed areas not intended for other cover.

4.4 Maintenance

The Site Contractor(s) will implement and maintain the stabilization and structural erosion and sedimentation practices during work activities in accordance with BMPs, regulatory guidance, manufacturer's specifications, and good engineering practices. These practices include the following:

- Minimize the areas of disturbance;
- Implement dust minimization and control measures (e.g., wetting of soil);
- Stabilize areas after final grading has been completed;
- Establish permanent vegetative cover for all disturbed areas not intended for other cover prior to conclusion of the project;
- Incorporate best management practices to reduce erosion potential (including dust) during construction efforts;
- Install sediment barriers (including siltation fence and hay bales) as necessary to isolate potential areas of erosion and minimize sediment transport;
- Maintain stabilized construction entrances to minimize the transport of sediment from the work areas;
- Surround soil stockpiles by sediment barriers;
- Cover soil stockpiles and debris piles when not in use;

- Manage and dispose demolition debris, soil, and waste material in a careful manner; and
- Use self-contained sanitary systems serviced by a qualified contractor as needed.

The minimum erosion and sediment control measures to be utilized by the Contractor(s) and the installation locations are shown on the SESCP (Appendix A). Throughout the Site Work, project erosion controls will be inspected as outlined in the SWPPP and the SESCP. This SWPPP/SESCP will be updated as different components of the Work progress. Additional erosion and sediment control measures to meet the intent of the specifications will be provided as conditions warrant during the performance of the work.

4.5 Dewatering Wastewaters

The approved 100% RD for Site-wide Sediment and Soils addresses treatment of construction dewatering measures in Specification 02 70 00. Section 1.07.3 of this specification states that at a minimum, the treatment system (also referenced as the construction dewatering effluent treatment system (DETS)) must include particle filtration (fractionation tanks, multi-media granular filters, and bag filters), granular activated carbon, uranium treatment (ion exchange resin) and any other necessary treatment for specific treatment for all COCs listed in Table 02 70 00-1 of the Specifications (such as ion exchange or equivalent technology for treatment of other metals), pumps, conveyance piping, and equipment to measure flow rate and volume. Discharge criteria specific to the Site can be located in the Effluent Discharge Criteria memo, dated February 13, 2024.

4.6 Demolition Dust Suppression Water

See specification 01 57 19-8 in Appendix B for dust control requirements.

4.7 Post Construction Stormwater Management

The post-construction stormwater management strategy consists primarily of re-establishing a sustainable vegetative cover or impervious cover on all disturbed areas, including the areas where building slabs will be removed and over the Holding Basin cap. Following demolition and removal activities, all disturbed areas that are not intended for other cover will be graded, loamed, and seeded. Grading will be conducted to maintain runoff flow patterns and discharge locations similar to the previous conditions while

maximizing overland flow through vegetated areas. Final grading plans will be developed with the future stormwater management being considered. However, the future development of the site will be by others and the final site stormwater management strategy will be completed by others. Interim restoration plans are provided in Appendix A drawings C-600 thru C-602, however these will be updated and as-builts and updates to these plans will be retained on-site and provided as completed.

4.8 Other Controls

Construction activities will be conducted with several controls in place to prevent the potential occurrence of undesirable discharges from the Site. Other controls to be implemented at the Site include:

- Careful management and disposal of demolition debris, soil, and waste material;
- Use of self-contained sanitary systems serviced by a qualified contractor;
- Use of a construction vehicle decontamination station as necessary, collection of vehicle rinsate and equipment decontamination rinsate, to minimize off-Site vehicle tracking of sediments and dust generation;
- Careful management and control of vehicle maintenance and fueling efforts;
- Removal of silt fence and other temporary controls once stable vegetation is established;
- Evaluate and restrict work activities during periods of heavy or extended rainfall;
- Direct construction vehicle traffic away from unpaved areas when possible;
- Avoid operating equipment on sloped areas; and
- Redirect any clean water that may run on to the Site.

4.9 Earth-Disturbing and Stabilization Activities

For each phase of the work completed on the Site a remedial action work plan is submitted and approved by USEPA. Within these plans Earth-Disturbing and Stabilization Activities are documented and a completion report along with field documentation is recorded and will be documented.

5.0 POLLUTION PREVENTION

This section describes measures and controls that minimize the potential for exposure of pollutants to stormwater at the Site.

Appropriate controls will be provided in accordance with BMPs, regulatory guidance, manufacturer's specifications, and good engineering practices. Erosion and sediment control details and notes which describe all Best Management Practices to be used on this project are provided in the Site-specific Soil Erosion and Sediment Control Plan included as Appendix A. Erosion and sediment controls will be implemented to meet the intent of the specifications included in Appendix B. All erosion and sediment controls and measures will be conducted in accordance with the Massachusetts Erosion and Sediment Control Guidelines and the Town of Concord requirements.

Stormwater management controls appropriate for all areas include the following elements:

- Good Housekeeping;
- Preventive Maintenance;
- Spill Prevention and Effective Cleanup; and
- Other Measures.

Each of these items is addressed below.

5.1 Good Housekeeping

Good housekeeping practices consist of maintaining a clean, orderly facility to prevent stormwater from coming in contact with potential pollutants and causing stormwater contamination. Observations on good housekeeping practices will be recorded during all Site inspections. Records of all Site inspections and good housekeeping practices will be maintained on-site.

Good housekeeping practices to be utilized on-Site will include but are not limited to:

- Cleaning up spills immediately with an absorbent;
- Use of spigots or funnels to minimize drips or leaks when transferring fluids;
- Keeping oily waste separate from other wastes;
- Covering of filled drums during storage outside;
- Elevating filled drums on pallets to avoid direct contact with ground surface;
- Keeping hydraulic equipment in good repair;

- Confining liquid and dry material storage to specific areas on the Site;
- Stabilization of disturbed areas as soon as practical;
- Timely cleaning of trash and debris;
- Keeping equipment and materials stored in containers or indoors to the extent possible;
- Covering materials stored outside that may be subject to corrosion or deterioration from exposure to precipitation;
- Keeping waste containers closed;
- Covering roll-off containers where practical;
- Keeping fill/vent pipes free of obstructions;
- Keeping areas swept of sand and debris (i.e. leaves, twigs, litter) as well as oil and gasoline residue;
- Cleaning catch basins as necessary;
- Keeping disturbed areas to a minimum;
- Conducting routine inspections; and
- Maintaining Site security.

5.2 Minimize Exposure

Exposure of potential pollutants to stormwater is minimized by the use of control measures and appropriate methods of transport and storage that include:

- Managing all materials in accordance with regulatory requirements;
- Storing equipment and materials indoors to the extent possible;
- Covering materials outside that may be subject to corrosion or deterioration from exposure to precipitation;
- Covering waste storage and transport containers and utilizing drain plugs;
- Conducting routine inspections;
- Supervising fuel and maintenance operations of equipment or vehicles;
- Utilizing secondary containment or containment berms when applicable;
- Stabilizing disturbed areas;

- Implementing dust control measures;
- Utilizing erosion and sediment controls; and
- Performing general housekeeping of the Site.

5.3 Equipment Washing

Truck decontamination wash waters will be collected, sample and analyzed, and if necessary treated prior to discharge.

5.4 Erosion and Sediment Control

All areas within the developed portion of the Site, outside active areas of construction, will be paved, seeded with grass, or maintained with erosion-resistant materials. All permanent structural controls installed and temporary controls to prevent erosion are shown on the SESCP (Appendix A).

5.5 Preventative Maintenance

Preventive maintenance primarily includes the periodic inspection, cleaning and, if necessary, repairs of structures or equipment. Pumps, piping, and valves utilized for chemical handling, fuel transfer, or wastewater transfer will be maintained in good working order. All waste containers will be maintained and covered to the extent practicable.

5.6 Spill Prevention and Response Procedures

Spill prevention procedures include:

- Providing personnel training in the proper operation and maintenance of equipment to prevent discharges; discharge procedure protocols, applicable pollution control laws, rules, and regulations; and general facility operations;
- Maintaining Site security;

- Inspection of storage tanks or containers for signs of deterioration, leakage, or accumulation of fluids inside containments;
- Supervising fuel and maintenance operations of equipment or vehicles; and
- Utilizing secondary containment or containment berms when applicable.

Exterior storage areas that contain one or more tanks or containers utilized for the storage of liquid chemicals or hazardous wastes are to have secondary containment capable of containing either 100% of the largest container stored or 10% of the total volume of all containers in the area, whichever is larger or utilize double-walled aboveground tanks or containers. This requirement does not apply to vehicles. In instances where Frac tanks are utilized for temporary storage of wastewater associated with the Work, secondary containment and leak detection, in compliance with USEPA regulations, are provided by the use of spill berms. Stormwater that may accumulate in containment areas is to be discharged only after testing has been performed to confirm that it contains none of the relevant pollutants or potential pollutants stored within the area. Site waste containers are to be inspected and maintained with intact covers and drain plugs to the extent practicable.

Spill response procedures that will reduce the potential for contamination of stormwater will be conducted in accordance with the Emergency Response Plan (ERP) (Appendix D) and include notification of Site personnel, emergency response agencies, and regulatory agencies, if or when a spill or leak should occur.

5.9 Waste Management

Procedures for handling, managing, and disposing of wastes generated as part of the remedial activities are identified in the following three construction plans which will be addressed in the Construction Submittals, including applicable specifications and the Transportation and Disposal Plan

5.10 Runoff Management

5.10.1 Existing and Interim Procedures

For purposes of this Plan, runoff management is defined as those practices that divert, infiltrate, reuse or treat stormwater runoff, and are distinct from those practices that limit exposure of potential pollutants to direct rainfall or runoff. At this time, Site runoff management consists of stormwater conveyance piping, catch basins, vegetated drainage

swales. Areas that are prone to erosion are controlled by one of the following measures: maintaining grass cover on slopes, installing hay bales, or maintaining riprap in swales and slopes. Runoff will be diverted away from active excavation limits. Temporary swales or catch basins and pipes may be necessary to divert runoff away from areas requiring excavation for removal of PCB and uranium impacted soils.

5.10.2 Construction Activities

In construction areas where contaminated or potentially contaminated materials are to be staged, poly sheeting will be used in conjunction with silt fence and/or straw bales, as seen on Drawings C-700 through C-703 to prevent contact with precipitation and minimize the potential for erosion and migration of sediments. In cases where materials are not impacted and where covering with poly sheeting is not practical, silt fence will be placed around stockpiles and hay bales will be placed around catch basins. Catch basin filtration inserts may also be utilized in conjunction with hay bales for removal of solids from runoff.

6.0 INSPECTION, CORRECTIVE ACTION, AND DELEGATION OF AUTHORITY

This section describes the procedures for conducting inspections and for taking corrective action.

6.1 Inspection

Inspection and repair, if needed, of erosion controls will be completed at least once every seven (7) calendar days or at least once every fourteen (14) days and within 24 hours after any storm event of one-quarter (0.25) inches or greater. In the event of forecast of extreme weather (e.g., tropical storms, hurricanes), prior to and immediately following the extreme weather event, all erosion and sediment control measures will be inspected and implementation of additional controls will be evaluated. Inspections must be performed by qualified personnel. The inspector will be knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention and possess the skills to assess conditions at the Site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed.

Inspection will include preventative maintenance and visual inspection of controls at all the affected locations on the Site. Records of routine inspections will be documented and will be maintained at the Site. Each inspection report must be signed by the qualified inspector or delegated authority. An inspection report form is included as Appendix D. Completed inspection reports will be retained onsite through either hard copy record or digital storage.

Monitoring of weather forecasts to determine if a rain event of 0.25 inches or greater is expected can be performed by accessing the following website, however other websites may also be accessed for this information:

http://www.accuweather.com/.

6.2 Corrective Action

Records of inspections will be utilized as a written set of tracking or follow-up procedures, to document problems identified, and to ensure that appropriate actions are taken in response to inspections. The inspection reports will be updated to document when corrective actions were taken and to identify the effectiveness of those actions. The Site Project Manager and Site Operations Manager will be responsible for ensuring that corrective actions are completed in a timely and appropriate manner.

6.3 Delegation of Authority

The Site Project Manager and Site Operations Manager will be responsible for delegation of authority to sign inspection reports. The designated person(s) or specifically described position will be a duly authorized representative for the purpose of overseeing compliance with environmental requirements at the NMI Site.

7.0 TRAINING

Employees conducting inspections will complete the USEPA construction inspection training course https://www.epa.gov/npdes/construction-inspection-training-course. Training records will be retained on site.

8.0 MODIFICATIONS TO THE PLAN

Modifications to the SWPPP will be made in response to any of the following conditions:

1. There is a change in contractors or subcontractors at the Site or changes to construction plans, stormwater control measures, pollution prevention measures, or other activities at the Site that are no longer accurately reflected in the SWPPP;
2. If inspections or investigations by staff or regulatory agencies determine that the modifications to the SWPPP are necessary; and
3. To reflect any revisions to applicable federal, state, or local requirements that affect stormwater control measures implemented at the Site.

Modifications to the SWPPP will be documented on the SWPPP Amendment Log included as Appendix F.

9.0 CONTRACTOR/SUBCONTRACTOR RESPONSIBILITIES

All Contractors/Subcontractors performing work that may reasonably be expected to cause or have the potential to cause pollution of the waters of the Commonwealth of Massachusetts will receive copies this Plan.

ACRONYMS

ACM	asbestos containing materials
AMEC	AMEC Environment & Infrastructure, Inc.
ARAR	Applicable or Relevant and Appropriate Requirement
bgs	below ground surface
BMP	Best Management Practice
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CN	curve number
de maximis	de maximis, inc.
ERP	Emergency Response Plan
ft	feet
MassDEP	Massachusetts Department of Environmental Protection
msl	mean sea level
NMI	Nuclear Metals, Inc.
NRCS	Natural Resources Conservation Service
NTCRA	Non-Time Critical Removal Action
PCB	polychlorinated biphenyl
POP	Project Operations Plan
RAWP	Remedial Action Work Plan
SESCP	Soil Erosion and Sediment Control Plan
Site	Nuclear Metals Inc. Superfund Site
SOW	Statement of Work
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
T&D	Transportation and Disposal
USEPA	United States Environmental Protection Agency
WAC	Waste Acceptance Criteria

REFERENCES

Commonwealth of Massachusetts, *Massachusetts Year 2012 Integrated List of Waters Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.* Available online at http://www.mass.gov/dep/water/resources/12list2.pdf. Accessed July 23, 2012.

De maximis, inc., 2012. *Draft Phase 1 Construction Submittal*, Nuclear Metals, Inc. Superfund Site, Concord, Massachusetts, July 2012.

De maximis, inc., 2012. *Emergency Response Plan*, Nuclear Metals, Inc. Superfund Site, Concord, Massachusetts, June 2012.

Haley and Aldrich, Inc., 2012. *Baseline Ecological Risk Assessment, Nuclear Metal Inc. Superfund Site*, Concord, Massachusetts, October 2012 *(Final Draft).*

Haley and Aldrich, Inc., 2020. *Remedial Design Work Plan, Nuclear Metal Inc. Superfund Site, Concord, Massachusetts, September 2020 (Final Draft).*

MACTEC, 2010, *Draft Remedial Investigation Report,* Nuclear Metals Inc. (NMI) Superfund Site 10/20/10 Draft, 271 pages.

Massachusetts Department of Environmental Protection, Bureau of Resource Protection, *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas.* Boston, Massachusetts, May, 2003.

NMI, 1997. Nuclear Metals, Inc. Decontamination Plan for the Holding Basin. Revision 1. January, 1997.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed June 20, 2012.

U.S. Environmental Protection Agency, *National Pollutant Discharge Elimination System General Permit for Discharge from Construction Activities*, June 27, 2019. Available online at https://www.epa.gov/sites/default/files/2019-06/documents/final_2017_cgp_current_as_of_6-6-2019.pdf. Accessed November 19, 2021.

U.S. Environmental Protection Agency, *Developing Your Stormwater Pollution Prevention Plan – A Guide for Construction Sites*, EPA 833-R-06-004, May 2007. Available online at http://cfpub.epa.gov/npdes/stormwater/swppp.cfm. Accessed July 23, 2012.

U.S. Environmental Protection Agency, *National Pollutant Discharge Elimination System General Permit for Discharge from Construction Activities*, February 16, 2012. Available online at http://cfpub.epa.gov/npdes/stormwater/cgp.cfm. Accessed July 23, 2012.

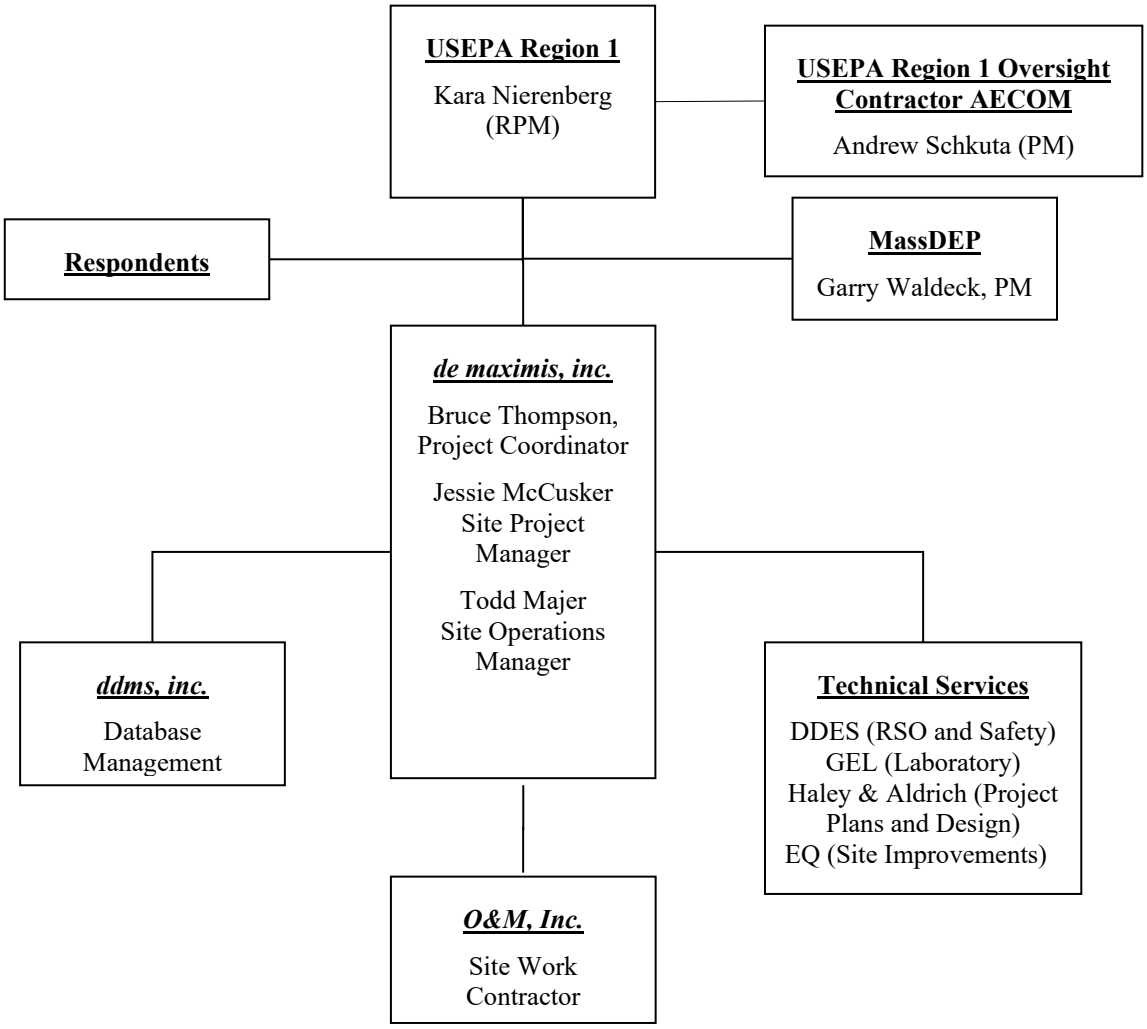
U.S. Environmental Protection Agency, Nuclear Metals, Inc. Superfund Site, Administrative Settlement Agreement and Order on Consent for Non-Time-Critical Removal Action, Docket No. CERCLA-01-2011-004, January 2011.

U.S. Environmental Protection Agency Region 1, June 20, 2011. Administrative Settlement Agreement and Order on Consent for Non-Time-Critical Removal Action Nuclear Metals, Inc. Superfund Site, Concord, Massachusetts, Appendix C Statement of Work.

FIGURES

Figure 1-1

PROJECT ORGANIZATION CHART



LEGEND

- BUILDING FOOTPRINT
- MAPPED WETLAND BOUNDARY
- SITE BOUNDARY

SOIL UNIT

- 1: WATER
- 253B: HINCKLEY LOAMY SAND, 3 TO 8 PERCENT SLOPES
- 253D: HINCKLEY LOAMY SAND, 15 TO 25 PERCENT SLOPES
- 253E: HINCKLEY LOAMY SAND, 25 TO 35 PERCENT SLOPES
- 254B: MERRIMAC FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
- 255B: WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES
- 260B: SUDBURY FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
- 4A: RIPPOWAM FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES, FREQUENTLY FLOODED
- 51A: SWANSEA MUCK, 0 TO 1 PERCENT SLOPES
- 53A: FREETOWN MUCK, PONDED, 0 TO 1 PERCENT SLOPES
- 626B: MERRIMAC-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES
- 653: UDORTHENTS, SANDY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. HSG = HYDROLOGIC SOIL GROUP
3. MAPPED WETLAND BOUNDARY AND BUILDING FOOTPRINT SOURCE: RECEIVED CAD FILE "17368-EC-C3D (Progress 2021-09-22).dwg", DATED 19 MAY 2019, REVISED 22 SEPTEMBER 2021 BY FELDMAN LAND SURVEYORS OF BOSTON, MASSACHUSETTS.
4. SOIL UNIT DATA SOURCE: UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) NATURAL RESOURCES CONSERVATION SERVICE (NRCS) SSURGO DATABASE
5. AERIAL IMAGERY SOURCE: NEARMAP, 28 JUNE 2021

HALEY ALDRICH

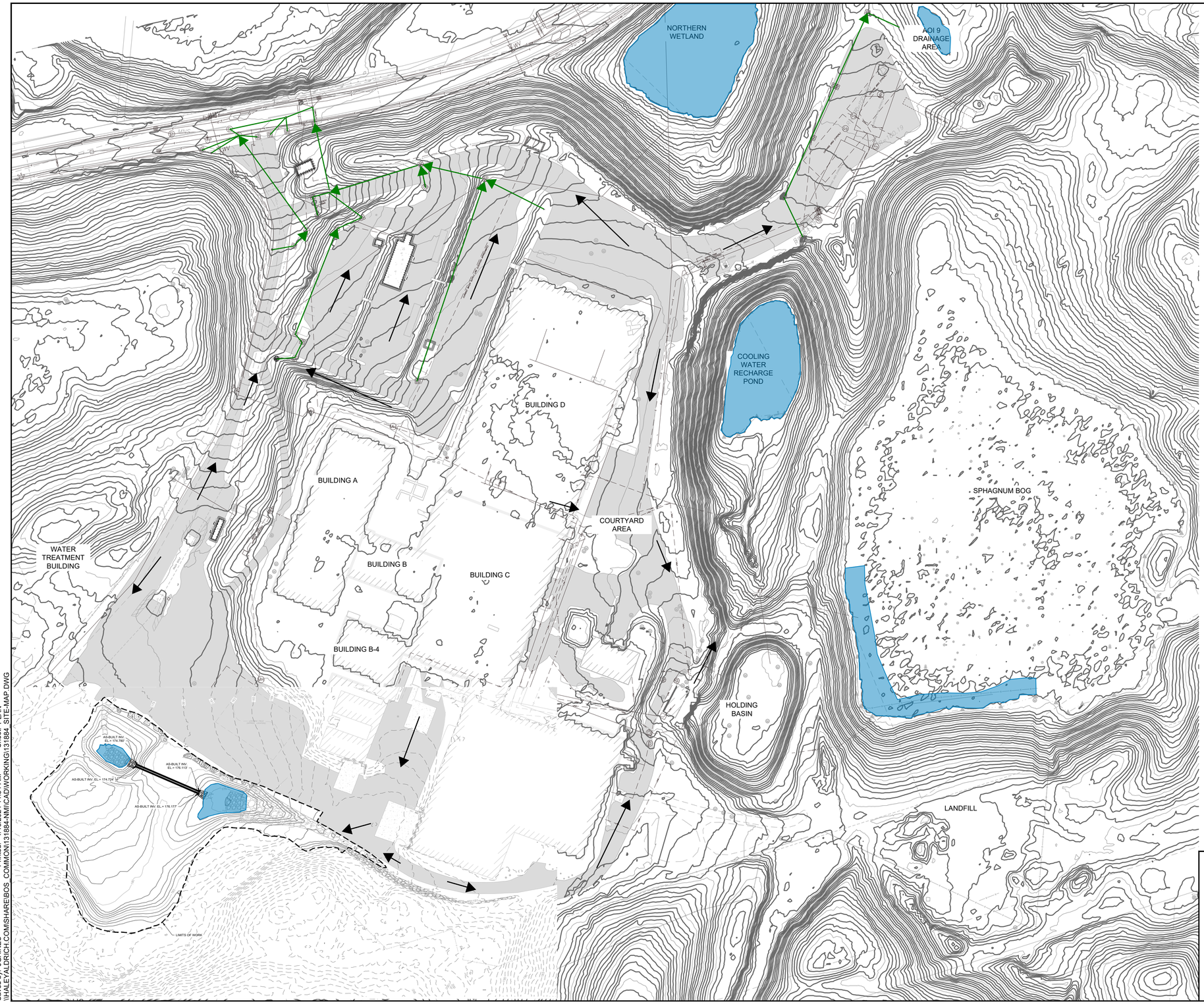
NUCLEAR METALS, INC.
2229 MAIN STREET
CONCORD, MASSACHUSETTS

SITE LOCATION AND NRCS SOIL GROUPS

NOVEMBER 2023

FIGURE 1-2

GIS FILE PATH: C:\Users\dverrier\OneDrive - haleyaldrich.com\Desktop\Local\nmi\GIS\Maps\2022_02\131884_003_0001_NRCS_SOILS_AND_TREE_CLEARING.mxd — USER: dverrier — LAST SAVED: 2/8/2022 9:45:17 AM



LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- TRAILER BUILDING
- CHAIN LINK FENCE
- GUARDRAIL
- 2 FT EXISTING GROUND CONTOUR
- 10 FT EXISTING GROUND CONTOUR
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL
- STORMWATER FLOW DIRECTION
- WATER BODY
- GENERAL DIRECTION OF SURFACE WATER FLOW

N

0 60 120 180 240

SCALE IN FEET

FIGURE 2.1

SITE STORMWATER DRAINAGE SYSTEM

NUCLEAR METALS, INC.
CONCORD, MASSACHUSETTS

Saved by: JGAINES
I:\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NMI\CAD\WORKING\131884_SITE-MAP.DWG
Printed: 1/16/2024 11:34 AM
Sheet: PLAN

TABLES

Table 1-1
PROJECT ROLES AND RESPONSIBILITIES

Organization/ Contact	Role	Contact Information
USEPA	• Lead regulatory agency overseeing the NTCRA	Kara Nierenberg Remedial Project Manager USEPA Region 1 5 Post Office Square MC OSRR07-4 Boston, MA 02109 (617) 918-1435 nierenberg.kara@epa.gov
MassDEP	• State regulatory agency involved in project review and providing support to USEPA	Garry Waldeck MassDEP-BWSC 100 Cambridge Street Boston, MA 02114 (617) 694-2085 garry.waldeck@state.ma.us
Respondents	• Signatories to the Settlement Agreement responsible for overall performance of NTCRA	c/o Bruce Thompson of ***de maximis, inc.*** (see below)
de maximis, inc. (*de maximis*)	• General Contractor • Project Coordinator (Mr. Bruce Thompson)	Bruce Thompson 200 Day Hill Road Suite 200 Windsor, CT 06095 (860) 298-0541 brucet@demaximis.com
de maximis Data Management Services, Inc. (ddms)	• Provide data management services, including data validation and database management, maintain www.nmisite.org	Polly Newbold ddms 186 Center Street, Suite 290 Clinton, NJ 08809 pnewbold@ddmsinc.com
General Engineering Laboratories (GEL)	• Laboratory analytical services	Zachary Worsham Project Manager 2040 Savage Road Charleston, SC 29407 (843) 769-7378 – Voice (843) 769-7397 – Fax
O&M, Inc	• Subcontractor for general work at Site • Respiratory Protection Program Administrator	David Fuerst Remediation Manager 450 Montbrook Lane Knoxville, Tennessee 37919-2705 (865) 691-6254 – Voice (865) 691-9595 – Fax

TABLES

Organization/ Contact	Role	Contact Information
DDES, LLC	• Subcontractor • Site Radiation Safety Officer • Site Certified Industrial Hygienist	Matt Norton 484 Lowell Street 1A Peabody, MA 01960 (978) 278-3399 – Voice (978) 278-3397 – Fax (978) 844-0565 – Cell mdnorton@ddesllc.com
Haley & Aldrich	• Subcontractor • Develop project plans • Engineering and design support	Mark D. Kelley, P.E.(MA)Project Manager 465 Medford Street |Suite 2200 Boston, MA 02129-1400 (857) 498.1276- Cell (617) 886.7338- Office Mkelley@haleyaldrich.com
AECOM	• USEPA oversight contractor	Andy Schkuta 250 Apollo Drive Clemsford, MA 01824 (978) 905-2100 andrew.schkuta@aecom.com

Table 1-2

STORMWATER POLLUTION PREVENTION PLAN EMERGENCY CONTACT LIST

Project Coordinator: Bruce Thompson	(860) 662-0526
Project Manager: Todd Majer	(978) 875-0635
Project Manager: Jessie McCusker	(860) 817-7544
Project Manager: Christine Taddonio	(860) 593-4226
Site Operations Manager: Todd Majer	(978) 875-0635
Radiation Safety Officer: Matt Norton, DDES	(978) 844-0565

OTHER EMERGENCY CONTACTS

Chemical Manufacturers Association Chemical Referral Center	(800) 262-8200
Emerson Hospital	911 or (978) 369-1400
Massachusetts Nuclear Incident Advisory Team (NIAT)	(617) 242-3453
MassDEP Emergency Response	(888) 304-1133
National Response Center	(800) 424-8802
Poison Control Center	911
Town of Concord Fire Department	911 or (978) 318-3488
Town of Concord Police Department	911 or (978) 318-3400

Table 2-1
EVALUATION OF RUNOFF POTENTIAL

Existing Conditions			Proposed Conditions		
Cover Type	Area (sf)	Curve Number	Cover Type	Area (sf)	Curve Number
Rooftop	635.1	98	Rooftop	0.0	98
Pavement	218503.3	98	Pavement	218503.3	98
Temporary Cap			Temporary Cap		
Exposed HDPE	199837.7	98	Exposed HDPE	0.0	98
Water	85388.1	98	Water	85388.1	98
Gravel			Gravel		
HSG A	8099.8	76	HSG A	8099.8	76
HSG D	1074.7	91	HSG D	1074.7	91
Urban	0.0	89	Urban	0.0	89
Grass, good			Grass, good, TOTAL		
HSG A	266189.4	39	HSG A	662615.0	39
HSG D	3853.2	80	HSG D	0.0	80
Urban	0.0	89	Urban	0.0	89
Woods, good			Woods, good, TOTAL		
HSG A	1103153.2	30	HSG A	870725.5	30
HSG D	112773.5	77	HSG D	153101.6	77
Urban	0.0	89	Urban	0.0	89
Total Area (sf):	1999508	-	Total Area (sf):	1999508	-
Weighted Curve Number:		51	Weighted Curve Number:		47

Notes:

1. Rooftop areas include Pump House 1 and Pump House 2 and are scheduled for demolition.

2. Existing Temporary Cap includes the approximate area of cap that exists over the Holding Basin and building slabs.

3. Proposed Temporary Cap includes the Holding Basin only. However, because the cap will be covered in 2 ft of soil and topsoil, it is categorized as grass.

4. Pavement includes current asphalt and concrete paved areas.

5. Wooded areas to be cleared for site improvements are assumed to be restored as grass upon completion of the work, including the areas cleared for stockpiles, areas cleared for excavation in AOI-8 and AOI-9, and areas cleared around the cooling pond and holding basin.

6. Area 653, Sandy Udorthents, in Figure 1, did not have a NRCS soil group. The group was interpreted to be HSG A.

Table 2-2

POTENTIAL POLLUTANT GENERATING ACTIVITY
AND THE ASSOCIATED POLLUTANT OR POLLUTANT CONSTITUENTS

Potential Pollutant Generating Activity	On-site Location of Activity/Material	Potential Pollutant(s)
Equipment, materials, and work activities associated remedial action.	Buildings scheduled for demolition, materials processing and staging areas, general areas	Total Suspended Solids (TSS) Fuels, Oil and Grease[1] Mercury (Hg)[2] Polychlorinated biphenyls (PCBs)[3] Lead (Pb)[4] Uranium (U)[5] Beryllium (Be)[6] Other hazardous and regulated materials[7]

1. Fuels, oil and grease are potential pollutants from construction vehicles and equipment and from paving operations.
2. Mercury is a potential pollutant source that is anticipated to be encountered and will be collected during the removal of equipment and above grade drain lines.
3. PCBs are a potential pollutant source associated with caulking, impacted building substrate, and PCB containing fluids.
4. Lead is a potential pollutant source associated with lead base paint, leaded pipe collars, and flashing.
5. Uranium is a potential pollutant source present on-site and is associated with historic site activities.
6. Beryllium is a potential pollutant source present on-site and is associated with historic site activities.
7. Other hazardous and regulated materials including but not limited to laboratory chemicals, asbestos containing materials, paints, and solvents may be present in/on the existing buildings/structures scheduled for removal. Additional materials such as Apatite II, cement, bentonite, and other structural mixtures may be used as part of remedial activities.

Appendix A

Soil Erosion and Sediment Control Plan

LIST OF DRAWINGS

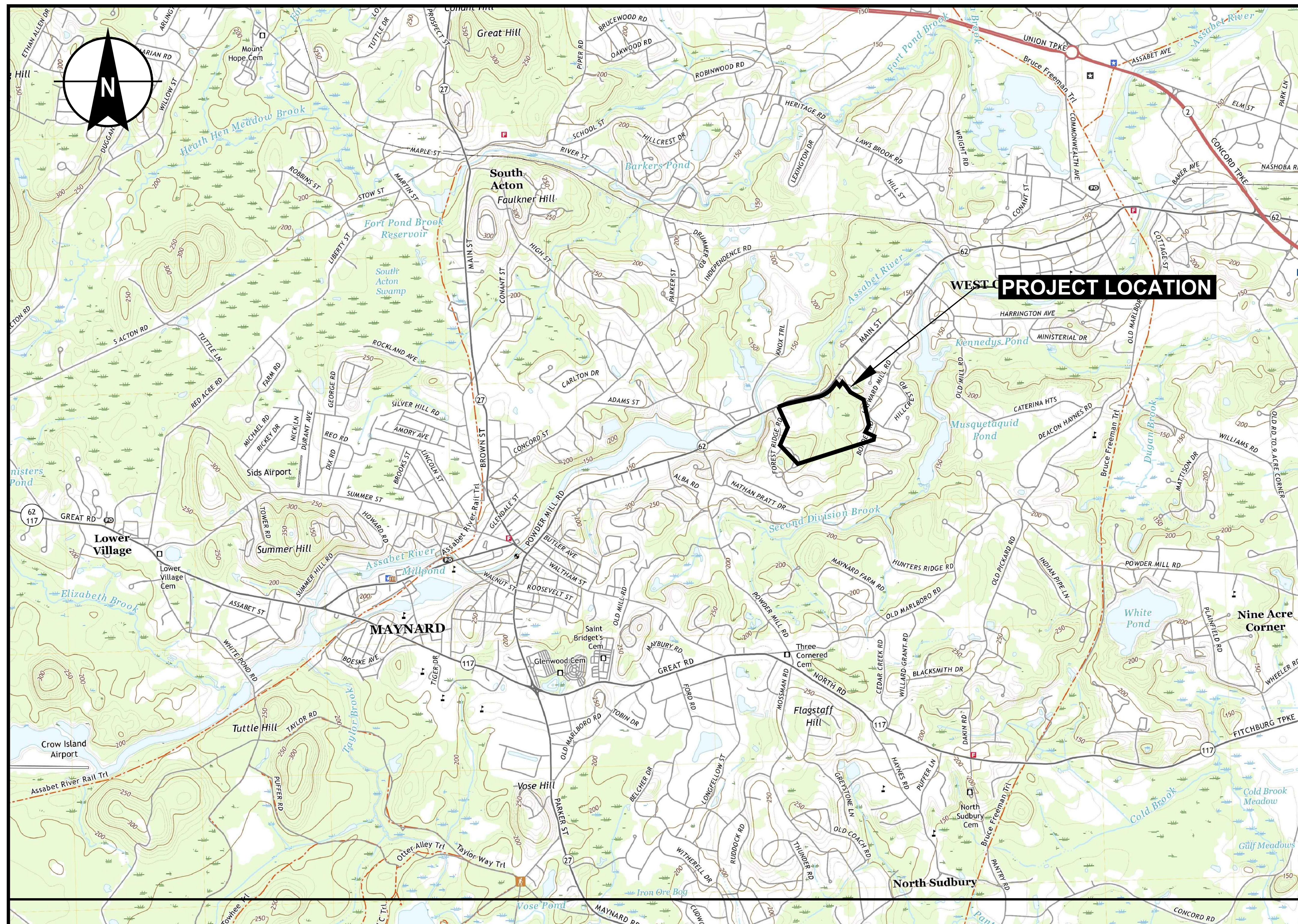
G-100 Title Sheet, and Drawing Index
G-101 Notes
G-102 Legend
C-100 Existing Conditions Site Overview
C-101 Existing Conditions Landfill
C-102 Existing Conditions Courtyard and Cooling Pond
C-200 Site Preparation and Erosion Control Overview
C-201 Site Preparation and Erosion Controls Landfill
C-202 Site Preparation and Erosion Controls Courtyard and Cooling Pond
C-300 Courtyard Pre-Excavation Drainage Improvements and Grading
C-301 Pre-Excavation Plan for Sphagnum Bog Sediment Excavation
C-302 Pre-Excavation Plan Cooling Pond
C-600 Site Restoration Plan Landfill and Bog Sediment
C-601 Wetland Restoration Plan
C-602 Site Restoration Plan Cooling Pond
C-700 Site Preparation Details (1 of 2)
C-701 Site Preparation Details (2 of 2)
C-702 Construction Details
C-703 TSCA Excavated Material Processing Area Detail

NUCLEAR METALS, INC.
COURTYARD, LANDFILL, SPHAGNUM BOG, AND COOLING POND
RAWP REMEDIAL DESIGN

100% SITEWIDE SEDIMENT AND SOILS REMEDIAL DESIGN
PHASE 1

CONCORD, MASSACHUSETTS

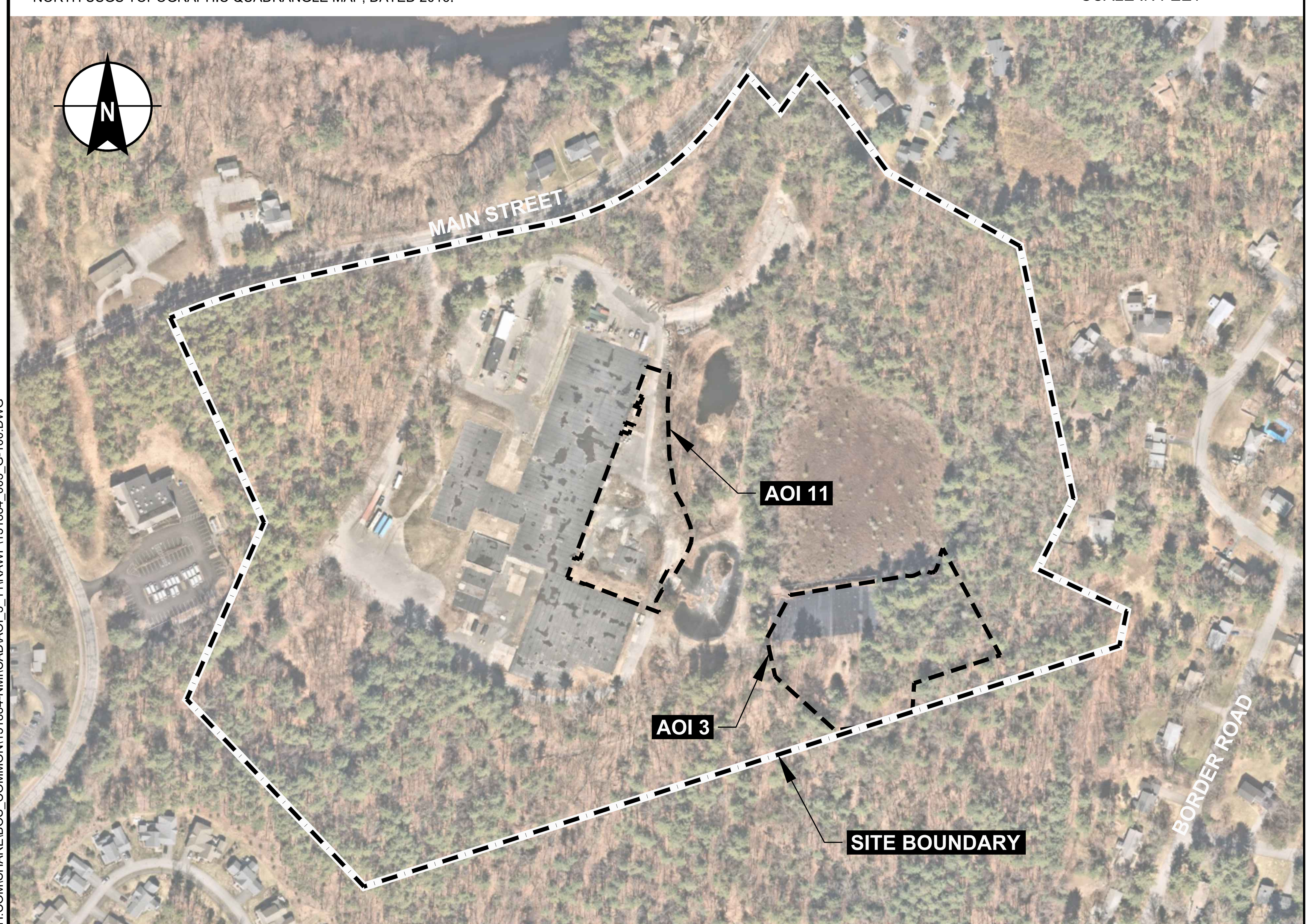
MARCH 2024



SITE LOCUS

TOPO SOURCE: BASE MAP DEVELOPED FROM THE CITY OF COLUMBUS, IN NORTH USGS TOPOGRAPHIC QUADRANGLE MAP, DATED 2016.

0 2500 5000
SCALE IN FEET



SITE AERIAL

MAP SOURCE: IMAGERY © 2022 NEARMAP, HERE

0 200 400
SCALE IN FEET

Saved by: JGAINES Printed: 3/17/2024 1:14 PM Sheet: G-100
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NMI\CAD\AOI_3_11\RAWP\131884_003_G-100.DWG

DRAWING INDEX

SHEET NO.	SHEET TITLE	DESCRIPTION
1	G-100	TITLE SHEET AND DRAWING INDEX
2	G-101	NOTES
3	G-102	LEGEND
4	C-100	EXISTING CONDITIONS SITE OVERVIEW
5	C-101	EXISTING CONDITIONS LANDFILL
6	C-102	EXISTING CONDITIONS COURTYARD AND COOLING POND
7	C-200	SITE PREPERATION AND EROSION CONTROL OVERVIEW
8	C-201	SITE PREPARATION AND EROSION CONTROLS LANDFILL
9	C-202	SITE PREPARATION AND EROSION CONTROLS COURTYARD AND COOLING POND
10	C-300	COURTYARD PRE-EXCAVATION DRAINAGE IMPROVEMENTS AND GRADING
11	C-301	PRE-EXCAVATION PLAN FOR SPHAGNUM BOG SEDIMENT EXCAVATION
12	C-302	PRE-EXCAVATION PLAN COOLING POND
13	C-400	EXCAVATION PLAN LANDFILL
14	C-401	COLOR DEPTH PLAN LANDFILL
15	C-401-A	LANDFILL EXCAVATION AND GEOPHYSICAL DATA
16	C-402	EXCAVATION PLAN COURTYARD AND BUILDING E - PHASE 1
17	C-403	EXCAVATION PLAN COURTYARD AND BUILDING E - PHASE 2
18	C-404	EXCAVATION PLAN COURTYARD AND BUILDING E - PHASE 3
19	C-405	EXCAVATION PLAN COURTYARD AND BUILDING E - PHASE 4
20	C-406	COLOR DEPTH PLAN COURTYARD
21	C-407	EXCAVATION CROSS-SECTIONS – COURTYARD AND BUILDING E
22	C-408	EXCAVATION PLAN FOR COOLING WATER POND SLOPES
23	C-409	EXCAVATION PLAN COOLING WATER POND
24	C-410	EXCAVATION SECTIONS COOLING POND
25	C-411	GROUNDWATER / SURFACE WATER INTERACTION SECTION
26	C-500	CONFIRMATORY SAMPLING LOCATIONS LANDFILL AND SPHAGNUM BOG
27	C-501	CONFIRMATORY SAMPLING LOCATIONS COURTYARD
28	C-502	CONFIRMATORY SAMPLING LOCATIONS COOLING WATER POND
29	C-503	CONFIRMATORY SAMPLING LOCATIONS BUILDING E
30	C-600	SITE RESTORATION PLAN LANDFILL AND BOG SEDIMENT
31	C-601	WETLAND RESTORATION PLAN
32	C-602	SITE RESTORATION PLAN COOLING POND
33	C-700	SITE PREPARATION DETAILS (1 OF 2)
34	C-701	SITE PREPARATION DETAILS (2 OF 2)
35	C-702	CONSTRUCTION DETAILS
36	C-703	TSCA EXCAVATED MATERIAL PROCESSING AREA DETAIL

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

TITLE SHEET AND DRAWING INDEX

G-100

Sheet: 1 of 36

GENERAL

1. THE TERM "OWNER" REFERS TO DE MAXIMIS, INC.
2. THE TERM "ENGINEER" REFERS TO HALEY & ALDRICH, INC.
3. THE TERM "CONSTRUCTION MANAGER" REFERS TO TBD.
4. THE TERM "CONTRACTOR" REFERS TO ENTITIES CONTRACTED BY THE CONSTRUCTION MANAGER TO COMPLETE THE WORK.
5. THE TERM "WORK" REFERS TO ALL CONSTRUCTION RELATED ACTIVITIES PERFORMED IN ACCORDANCE WITH CONTRACT DOCUMENTS.
6. THE TERM "CONTRACT DOCUMENTS" REFERS TO DRAWINGS, SPECIFICATIONS, CONTRACT TERMS, AND OTHER DOCUMENTS CREATED FOR THE EXPRESSED PURPOSE OF COMPLETING THE WORK.
7. MEANS AND METHODS OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE SUFFICIENT TO ACHIEVE THE PERFORMANCE OBJECTIVES OF THE PROJECT AS DESCRIBED IN THE SUBCONTRACTOR DOCUMENTS.
8. DETAILS TAKE PRECEDENCE OVER GENERAL DRAWINGS. WHERE NOTES CONFLICT WITH ANY DRAWING, THE MOST RESTRICTIVE SHALL APPLY. WHERE CONFLICTS EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING. NO CHANGES OR ADDITIONS TO THE SCOPE OF WORK DEPICTED HEREIN SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER.
9. HORIZONTAL SURVEY DATUM SHALL BE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1927 (NAD27). VERTICAL SURVEY DATUM SHALL BE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).
10. LIMITS OF THE WORK AREA ARE INDICATED ON THE DRAWINGS. CONFINE ALL SITE ACTIVITIES WITHIN THE WORK AREAS INDICATED. ADDITIONAL CONSTRUCTION AREAS REQUIRED TO COMPLETE THE WORK, BUT NOT WITHIN THE LIMITS INDICATED, SHALL NOT BE PERMITTED.
11. ALL DESIGN EXCAVATION LIMITS AND VOLUMES ARE BASED ON REMOVAL TO MEET RECORD OF DECISION (ROD) CLEANUP STANDARDS BUT ARE NOT CONSIDERED FINAL. LIMITS OF EXCAVATION AND TOTAL VOLUMES MAY BE ADJUSTED BASED ON FUTURE REMEDIAL ACTION LEVEL (RAL) CALCULATIONS IN FUTURE DESIGN DRAWING PACKAGES.

SURVEY NOTES

1. THE BASEMAP AND ELEVATION SURVEY WERE PROVIDED BY FELDMAN LAND SURVEYORS IN THE "EXISTING CONDITIONS PLAN" DATED MAY 15, 2020.
2. BENCH MARK INFORMATION:

   TEMPORARY BENCH MARKS SET:

   TGS-1: MAGNETIC NAIL SET UP 1'ON THE SOUTHERLY SIDE OF UTILITY POLE AT THE INTERSECTION OF MAIN STREET AND THE DRIVEWAY TO #2228 MAIN STREET. ELEVATION=151.79'

   TGS-2: MAGNETIC NAIL SET UP 1' IN UTILITY POLE. ELEVATION=167.98'

   TBM PS-1: CHISEL SQUARE SET IN NORTHWEST CORNER OF LIGHT POLE BASE ELEVATION=172.60'

   TBM PS-2: CHISEL SQUARE SET IN NORTHWEST CORNER OF LIGHT POLE BASE ELEVATION=193.53'
3. ELEVATIONS WERE ESTABLISHED BY GPS OBSERVATIONS ON APRIL 17, 2020 AND CONVERTED TO NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).
4. CONTOUR INTERVAL EQUALS ONE (1) FOOT.
5. BY GRAPHIC PLOTTING ONLY, THE PARCEL SHOWN HEREON LIES WITHIN A ZONE "X" (UNSHADED), AN AREA OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD, AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (F.E.M.A) FLOOD INSURANCE RATE MAP (F.I.R.M.) FOR MIDDLESEX COUNTY, MASSACHUSETTS, MAP NUMBER 25017C0358F, TOWN OF CONCORD COMMUNITY NUMBER 250189, PANEL NUMBER 0358F, HAVING AN EFFECTIVE DATE OF JULY 7, 2014.
6. PLANIMETRIC SITE FEATURES WERE OBTAINED BY AERIAL MAPPING AND CONTOURS FROM LIDAR PREPARED BY BLUE SKY GEOSPATIAL, LTD. RECEIVED ON JUNE 3, 2020. ADDITIONAL FEATURES WERE VERIFIED BY INSTRUMENT SURVEYS BY FELDMAN LAND SURVEYORS BETWEEN APRIL 14 TO JUNE 16, 2020.
7. WETLAND DELINEATION SKETCH PREPARED BY COMPREHENSIVE ENVIRONMENTAL, INC. (CEI) WAS PROVIDED ON APRIL 29, 2020.
8. THE SEPTIC SYSTEM, AS SHOWN HEREON, WAS SCALED FROM A PLAN ENTITLED "PARKING AND SEPTIC SYSTEM LAYOUT", BY C. E. MAGUIRE, INCORPORATED, DATED JANUARY, 1982 AND IS APPROXIMATE ONLY.
9. THE UTILITIES ON THE SITE, AS SHOWN HEREON, WERE SCALED FROM DRAWING PRSCP_POST_REMOVAL_SITE_CONDITIONS.DWG AND ARE APPROXIMATE ONLY.
10. UTILITY INFORMATION SHOWN IS BASED ON BOTH A FIELD SURVEY AND PLANS OF RECORD. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM THE AFOREMENTIONED RECORD PLANS AND ARE APPROXIMATE ONLY. THERE IS NO ASSUMED RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES THAT ARE OMITTED OR INACCURATELY SHOWN ON SAID RECORD PLANS, SINCE SUBSURFACE UTILITIES CANNOT BE VISIBLY VERIFIED. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED AND THE ACTUAL LOCATION OF SUBSURFACE STRUCTURES SHOULD BE DETERMINED IN THE FIELD. CALL, TOLL FREE, THE DIG SAFE CALL CENTER AT 1-888-344-7233 SEVENTY-TWO HOURS PRIOR TO EXCAVATION.
11. ELEVATIONS AND CONTOURS SHOWN IN THE HOLDING BASIN WITHIN THIS DRAWING SET ARE CONSIDERED APPROXIMATE AND BASED ON CONSTRUCTION THAT WILL BE COMPLETED PRIOR TO THE IMPLEMENTATION OF THE 100% SSS PHASE 1 REMEDIAL ACTION.

PROJECT SCOPE

1. THE PROJECT SCOPE IS AS FOLLOWS:
   - 1.1. ESTABLISH SITE CONTROLS AND CONSTRUCTION FACILITIES.
   - 1.2. DEMOLISH SURFACE FINISHES.
   - 1.3. INSTALL PRE-GRADING DRAINAGE FEATURES.
   - 1.4. PERFORM REMEDIAL GRADING.
   - 1.5. PERFORM FINAL GRADING.
   - 1.6. RESTORATION OF WORK AREA.

HEALTH AND SAFETY

1. CONTRACTOR SHALL PREPARE A CONTRACTOR'S HEALTH AND SAFETY PLAN (CHASP) TO BE APPROVED BY THE ENGINEER AND/OR CONSTRUCTION MANAGER.
2. THE CONTRACTOR SHALL PERFORM THE WORK IN SUCH A MANNER THAT THE SAFETY OF THE WORKERS IS ASSURED. THIS SHALL INCLUDE PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
3. CONTRACTOR SHALL COMPLY AT ALL TIMES WITH THE SITE-SPECIFIC HEALTH AND SAFETY REQUIREMENTS NOTED IN CONTRACTOR'S HASP, WITH ALL OSHA REQUIREMENTS, AND WITH THE OWNER'S SAFETY RULES.
4. CONSTRUCTION MANAGER SHALL CONDUCT DAILY SAFETY MEETINGS WHICH MUST BE ATTENDED BY ALL ONSITE CONTRACTOR PERSONNEL.
5. EXCAVATIONS SHALL BE PERFORMED IN ACCORDANCE WITH OSHA REGULATIONS AND STANDARDS. WHEN REMOVING UTILITIES OR EXCAVATING WITHIN 5 FT OF UTILITIES, AN AIR KNIFE EXCAVATION METHOD OR HAND DIGGING SHALL OCCUR. FOR MARKED UTILITIES THAT HAVE BEEN CONFIRMED TO BE INACTIVE, A HAND EXCAVATION WITHIN 1 TO 2 FT OF THE UTILITY LINE SHALL OCCUR. THE SUBCONTRACTOR IS RESPONSIBLE FOR CONTACTING DIG ALERT, AND ARE SOLELY RESPONSIBLE FOR CONFIRMING LOCATIONS OF UNDERGROUND UTILITIES.
6. WORK ON ELECTRICAL SYSTEMS MAY ONLY OCCUR AFTER THE ELECTRICAL HAZARD IS MITIGATED BY USE OF LOCK-OUT/TAG-OUT CONTROLS. SUBCONTRACTOR SHALL DE-ENERGIZE ELECTRICAL CHARGE PRIOR TO ANY MODIFICATION OR MOVEMENT OF ELECTRICAL SYSTEMS INCLUDING THOSE THAT DO NOT EXPOSE WIRING OR INTERIOR ELECTRICAL COMPONENTS.
7. THE CONTRACTOR TO MAINTAIN SAFE DISTANCE REQUIREMENTS FOR ALL THE ABOVE GROUND POWER DISTRIBUTION AND TRANSMISSION WIRES AND STRUCTURES.
8. PLACE ALL SAFETY DEVICES, CONSTRUCTION ROAD SIGNING, AND CONSTRUCTION SIGNING PRIOR TO ANY SITE MOBILIZATION, CONSTRUCTION, EXCAVATION AND DRILLING. THE SUBCONTRACTOR SHALL PROVIDE THE NECESSARY FLAG PERSONS FOR MOBILIZATION OF TRUCKS, EQUIPMENT AND PERSONNEL AS NEEDED. PROPERLY SECURE WORK AREAS AT THE END OF EACH WORKDAY.

COMPLIANCE AND STANDARDS

1. CONTRACTOR SHALL OBTAIN ANY/ALL NECESSARY CONSTRUCTION PERMITS AND SCHEDULE ANY REQUIRED INSPECTIONS. THE CONTRACTOR SHALL MAINTAIN COPIES OF ANY PERMITS AT THE JOB SITE FOR AGENCY INSPECTION AND PROVIDE A COPY TO THE ENGINEER AND/OR CONSTRUCTION MANAGER PRIOR TO BEGINNING WORK.
2. WORK SHALL COMPLY WITH ALL NATIONAL, STATE, AND LOCAL LAWS, REGULATIONS, CODES, REQUIREMENTS AND STANDARDS, INCLUDING REVISIONS TO DATE OF CONTRACT OR REVISIONS TO THE CONTRACT. UNLESS OTHERWISE SPECIFIED, THE LATEST EDITIONS OR REVISIONS OF THESE CODES AND STANDARDS SHALL BE ENFORCED:
   - 2.1. OSHA EXCAVATION REGULATIONS AND STANDARDS
   - 2.2. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
   - 2.3. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
   - 2.4. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
   - 2.5. NATIONAL ELECTRIC CODE (NEPA)

WORKING HOURS

1. CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED BETWEEN 7:00 AM AND 5:00 PM MONDAY THROUGH FRIDAY UNLESS OTHERWISE APPROVED BY THE ENGINEER AND/OR CONSTRUCTION MANAGER. NIGHT OR SATURDAY WORK MAY BE APPROVED BY CONSTRUCTION MANAGER UPON REQUEST.

ENVIRONMENTAL CONTROLS

1. CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS TO MINIMIZE DUST, NOISE, STORMWATER IMPACTS, AND OTHER NUISANCE ACTIVITIES.
2. CONTRACTOR SHALL ESTABLISH, MAINTAIN, INSPECT AND REPAIR ALL STORMWATER AND EROSION AND SEDIMENTATION CONTROLS (BMPS) AS NEEDED TO CONTROL SEDIMENT AND RUNOFF FROM DISTURBED PROJECT AREAS, AND/OR REQUIRED BY PROJECT ENVIRONMENTAL PERMITS.
3. CONTRACTOR SHALL MONITOR THE EFFECTIVENESS OF ENVIRONMENTAL CONTROLS AND SUPPLEMENT OR MODIFY THEM AS NEEDED BASED ON SITE OPERATIONS TO MAINTAIN COMPLIANCE WITH THE PERMIT CONDITIONS AND CONTRACT DOCUMENTS.
4. CONTRACTOR SHALL PROVIDE STORM WATER RUN-ON AND RUN-OFF CONTROLS FOR OPEN EXCAVATIONS AND STOCKPILES. STOCKPILES MUST BE APPROVED IN WRITING BY THE ENGINEER AND/OR CONSTRUCTION MANAGER AND IN ACCORDANCE WITH APPLICABLE PERMITS AND CONTRACT DOCUMENTS.
5. ANY SURFACE WATER OR STORM WATER WHICH COLLECTS IN EXCAVATED AREAS SHALL BE CONTAINED, TREATED, AND DISCHARGED OR DISPOSED OF APPROPRIATELY IN ACCORDANCE WITH APPLICABLE PERMITS AND CONTRACT DOCUMENTS. CONTRACTOR SHALL SAMPLE, ANALYZE, AND BASED ON ANALYTICAL RESULTS, APPROPRIATELY MANAGE OF AT THE CONTRACTOR'S EXPENSE.
6. CONTRACTOR SHALL PROVIDE STORM DRAIN INLET PROTECTION.
7. CONTRACTOR SHALL PROVIDE DUST CONTROL AND ENSURE VISIBLE DUST DOES NOT CROSS THE PROPERTY LINE.
8. THE CONTRACTOR SHALL LEGALLY DISPOSE OF ALL MATERIALS DESIGNATED FOR REMOVAL FROM THE PROJECT SITE, UNLESS DIRECTED OTHERWISE BY THE CONSTRUCTION MANAGER.

SITE PREPARATION AND MAINTENANCE

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND LOCATIONS SHOWN PRIOR TO COMMENCING WORK. ANY CONFLICTS WITH DETAILS AND NOTES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER AND/OR CONSTRUCTION MANAGER IN WRITING.
2. THE CONTRACTOR SHALL MAINTAIN AN ORDERLY AND CLEAN JOB SITE. THE CONTRACTOR SHALL REMOVE AND PROPERLY STORE OR DISPOSE OF ALL CONSTRUCTION RELATED TRASH, DEBRIS, AND EXCESS MATERIALS AT THE END OF EACH WORK SHIFT.
3. THE CONTRACTOR'S LAYDOWN AREA FOR MATERIALS SHALL BE COORDINATED WITH THE ENGINEER AND/OR CONSTRUCTION MANAGER, AND OTHER CONTRACTORS (IF APPLICABLE). SECURITY FOR CONTRACTOR'S EQUIPMENT AND MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. TEMPORARY CONSTRUCTION UTILITY CONNECTIONS SHALL BE APPROVED AND PERMITTED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
5. CONTRACTOR SHALL PREPARE THE WORK AREAS AND WORKING SURFACE IN ACCORDANCE WITH THE TEMPORARY CONTROLS AND SITE ACCESS DRAWINGS.
6. CONTRACTOR SHALL COORDINATE WITH DE MAXIMIS TO CLEAR VEGETATION WITHIN THE WORK AREA LIMITS AS REQUIRED.
7. VEHICLES AND EQUIPMENT SHALL ONLY ENTER/EXIT THE SITE BY LOCATIONS SPECIFIED ON THESE PLANS.

UTILITIES AND EXISTING INFRASTRUCTURE

1. CONTRACTOR SHALL LOCATE ALL UTILITIES AND PROTECT THEM FROM DAMAGE UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY UTILITIES DAMAGED BY THE CONTRACTOR AND PROVIDE FOR SERVICE CONTINUATIONS DURING REPAIRS AT NO EXPENSE TO THE ENGINEER, CONSTRUCTION MANAGER, OR OWNER.
2. UTILITY LOCATIONS DEPICTED WITHIN THE PROJECT BOUNDARIES ARE APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE UTILITY LOCATIONS AND DEPTHS, AND IDENTIFYING UNDOCUMENTED UTILITIES PRIOR TO CONSTRUCTION. EXCAVATIONS SHALL BE CONDUCTED BY HAND OR AIR-KNIFE IF WITHIN FIVE FEET OF SUSPECTED UTILITIES OR WITHIN 2 FEET OF A UTILITY SATISFACTORILY EXPOSED BY POTHOLING AS DETERMINED BY THE ENGINEER AND/OR CONSTRUCTION MANAGER. UTILITIES, IF ANY, THAT ARE NOT TO BE DEMOLISHED AND ARE EXPOSED DURING EXCAVATION SHALL BE SUPPORTED BY BRACES OR OTHERWISE PROTECTED DURING CONSTRUCTION ACTIVITIES.
3. BEFORE COMMENCING WORK, THE CONTRACTOR SHALL DOCUMENT THE QUANTITY, SIZE, DIMENSIONS AND LOCATION OF ALL PRE-EXISTING LANDSCAPING, HARDSCAPE, CONCRETE SIDEWALK CRACKS, CONCRETE CULVERT CRACKS, CONDITION OF ASPHALT DIMENSIONS, STRIPING, SIGN POST LOCATIONS, FENCING, PIPING, UTILITY LINES, CURBS AND PAINTING, UTILITY BOX LIDS AND OTHER EXISTING CONDITIONS WHICH THE CONTRACTOR SHALL BE REQUIRED TO RESTORE TO THEIR PRE-EXISTING CONDITION. DOCUMENTATION SHALL BE PROVIDED IN A MEMORANDUM FORMAT. USE OF TABLES AND PHOTOGRAPHS ARE ACCEPTABLE.
4. THE PROPOSED AND EXISTING UNDERGROUND AND ABOVE GROUND FACILITIES, STRUCTURES, UTILITIES, SURFACE FEATURES AND NATURAL FEATURES SHOWN HEREON ARE BASED ON FIELD SURVEYS AND RECORD DOCUMENTS. OTHER FACILITIES MAY EXIST NOT DISCOVERED THROUGH THE RECORD CHECK. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, BOTH VERTICAL AND HORIZONTAL, OF ALL UTILITIES FROM THE APPROPRIATE UTILITY COMPANIES AND ONE CALL 811 SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
5. TAKE ALL NECESSARY MEASURES TO PREVENT DAMAGE TO ADJACENT AND NEARBY STRUCTURES, PAVEMENT, FENCING AND LANDSCAPING. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF THE ROADS, TREES AND NEARBY PUBLIC AND PRIVATE PROPERTY AND PUBLIC RIGHT OF WAYS FROM ANY SITE CONSTRUCTION/ EQUIPMENT DAMAGE CAUSED BY THE CONTRACTOR'S EQUIPMENT. ALL DAMAGE SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE ENGINEER, CONSTRUCTION MANAGER, OR OWNER. REMOVE AND STORE ANY FENCING OR OTHER ITEMS NEEDED TO BE REMOVED TO PERFORM THE WORK AND RETURN TO THE ORIGINAL CONDITION AT THE COMPLETION OF ALL WORK. REMOVE AND STORE ANY CURB, FENCING OR OTHER ITEMS NEEDED TO BE REMOVED TO PERFORM THE WORK AND RETIRE TO THE ORIGINAL CONDITION AT THE COMPLETION OF ALL WORK. PERMANENT FENCING REMOVED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR TO THE ORIGINAL LOCATION AND CONDITION TO THE SATISFACTION OF THE OWNER AND CONSTRUCTION MANAGER.

EXCAVATION AND BACKFILLING

1. ALL OPEN EXCAVATIONS SHALL BE SUPPORTED IN ACCORDANCE WITH APPLICABLE OSHA REQUIREMENTS.
2. OPEN TRENCHES SHALL BE COMPLETELY SURROUNDED BY TEMPORARY SAFETY FENCING OR COVERED BY TRAFFIC RATED STEEL PLATES AT ALL TIMES WHEN WORK IS NOT BEING DONE IN THE IMMEDIATE AREA. THE SAFETY FENCING AND/OR STEEL PLATES SHALL BE MAINTAINED UNTIL THE TRENCH IS BACKFILLED AND COMPACTED TO MATCH EXISTING GRADE.
3. THE CONTRACTOR SHALL PROVIDE TRENCH PLATES AND TRAFFIC CONTROL, AS NECESSARY TO MAINTAIN NORMAL SITE ACCESS AND TRAFFIC FLOW. A 25 FOOT WIDE EMERGENCY FIRE VEHICLE LANE MUST BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE APPROVED BY ENGINEER AND/OR CONSTRUCTION MANAGER.
4. PRIOR TO BACKFILL, ANY DEVIATION FROM THE PLANNED WORK SHOULD BE CAPTURED AND NOTED ON REDLINES DRAWINGS. SURVEY DATA OR FIELD MEASUREMENTS ARE BOTH ACCEPTABLE METHODS FOR DOCUMENTING INSTALL LOCATIONS..
5. THE CONTRACTOR SHALL NOT BACKFILL THE EXCAVATIONS UNLESS WRITTEN APPROVAL IS PROVIDED BY THE ENGINEER AFTER SOIL TESTING. IF ENGINEER DETERMINES LOCAL CONDITIONS REQUIRE IMMEDIATE BACKFILL OF TRENCH, PRESSURE TESTING MAY OCCUR AFTER BACKFILLING IN THE PRESENCE OF THE ENGINEER.
6. CONTRACTOR SHALL DESIGN AND INSTALL TEMPORARY SUPPORT OF EXCAVATION (SOE) AS NEEDED FOR EXCAVATIONS DEEPER THAN 4 FEET TO PROTECT WORKERS AND/OR ADJACENT INFRASTRUCTURE. CONTRACTOR SHALL REMOVE ALL TEMPORARY SOE ELEMENTS UPON COMPLETION OF THE WORK TO THE SATISFACTION OF THE ENGINEER. A PRE-ENGINEERED TRENCH BOX MAY BE USED IN PLACE OF AN ENGINEER DESIGNED SOE SYSTEM.
7. SAFE INGRESS AND EGRESS MEASURES SHALL BE USED DURING EXCAVATION ACTIVITIES.
8. ASPHALT AND CONCRETE MATERIAL SHALL BE BROKEN DOWN INTO PIECES LESS THAN 1' ACROSS. METAL REBAR AND OTHER DEBRIS SHALL BE BROKEN DOWN INTO 1' PIECES, PER FACILITY RECEIVING REQUIREMENTS. REFER TO SPECIFICATION 02 41 00 DEMOLITION.

RESTORATION

1. SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR AS SHOWN ON THE DRAWINGS.
2. FEATURES INCLUDING BUT NOT LIMITED TO FENCING, IRRIGATION, CURBS, SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR AS SHOWN ON THE DRAWINGS AND INDICATED IN THE SPECIFICATIONS.
3. BACKFILL EXCAVATION AND RESTORE THE WORK AREA PER THE DRAWINGS.

AS-BUILT DRAWINGS

1. CONTRACTOR SHALL PROVIDE A SET OF AS-BUILT DRAWINGS WITH REDLINE MARKUPS DEPICTING THE PRECISE LOCATION OF ALL COMPONENTS INCLUDED IN THE CONSTRUCTION DOCUMENTS AND INDICATE CLEARLY ANY FIELD ADJUSTMENTS MADE THAT DEVIATE FROM THE DESIGN PLANS.
2. CONTRACTOR SHALL SURVEY SUBGRADE ELEVATIONS FOLLOWING FINAL EXCAVATION GRADES, AND SURVEY FINISHED GRADES AFTER BACKFILLING. DETAILS OF THE RESTORED FEATURES INCLUDING MATERIAL TYPES SHALL BE INCLUDED IN THE AS-BUILT SURVEY AND SHALL BE PROVIDED IN AUTOCAD 2018 OR NEWER FORMAT AS WELL AS IN A PDF.

SUGGESTED CONSTRUCTION SEQUENCE

1. MOBILIZE.
2. INSTALL EROSION AND SEDIMENTATION CONTROLS IN THE WORK AREA INCLUDING FIBER ROLLS, SILT FENCES, CHECK DAMS, STRAW WATTLES, AND STRAW BALES. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCES, EXISTING SITE ACCESS PATH IMPROVEMENT, AND WHEEL WASH. PROTECT-IN-PLACE FEATURES AS REQUIRED.
3. CONSTRUCT EXCAVATED SOIL STOCKPILE AND GRANULAR FILL MATERIAL STOCKPILE AREAS.
4. CLEAR AND GRUB THE EXCAVATION AREAS WITHIN THE AREA OF WORK INCLUDING PAVEMENT REMOVAL AS REQUIRED.
5. INSTALL POND DEWATERING TREATMENT SYSTEM PRIOR TO COOLING POND WORK
6. EXCAVATE AND PLACE SOIL AS REQUIRED AS PART OF THE PRE-GRADING DRAINAGE IMPROVEMENT.
7. EXCAVATE SOILS AS REQUIRED TO MEET THE GRADES INDICATED ON THE PLANS.
8. ALLOW FOR ENGINEER TO SAMPLE AND ANALYZE BOTTOM AND SIDEWALL OF EXCAVATION AT VARIOUS LOCATIONS AS SHOWN ON THE PLAN. ALLOW FOR UP TO 30 DAYS.
9. EXCAVATE ADDITIONAL SOIL AS REQUIRED BASED ON SAMPLE RESULTS.
10. COMPACT AND BACKFILL GRANULAR FILL AS REQUIRED TO MAKE FINAL GRADES.
11. RESTORE SITE AS INDICATED.
12. REMOVE TEMPORARY FEATURES AND FACILITIES.
13. DEMOBILIZE.

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA

Stamp:

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

NOTES

G-101

Sheet: 2 of 36

CIVIL FEATURES / SURVEY DATA

- SITE BOUNDARY
- FORMER BUILDING SLAB
- TRAILER BUILDING
- CHAIN LINK FENCE
- GUARDRAIL
- 99 EXISTING GROUND CONTOUR
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- VEGETATION BOUNDARY
- STONE WALL
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- ELB ELECTRICAL BOX
- TREE/SHRUB
- STAIRS
- S D E T MH SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- HYDRANT
- WATER/GAS SHUT OFF/GATE
- GUY WIRE
- UTILITY POLE
- BOLLARD
- POST
- GP GATE POST
- SIGN
- TRANSFORMER
- EM ELECTRIC METER
- ASPHALT
- CONCRETE
- GRAVEL

- HISTORICAL SAMPLE LOCATION
- PROPOSED SAMPLE LOCATION
- N: XXXXX.XX E: XXXXX.XX EXCAVATION CORNER COORDINATE
- LIMIT OF EXCAVATION
- 99 1 FT PROPOSED CONTOUR
- PROPOSED DRAIN PIPE
- PRE-CAST CONCRETE BLOCKS
- SW STRAW WATTLES
- SB STRAW BALES
- TRUCK ROUTE
- PROPOSED TRUCK PATH
- PROPOSED LAYDOWN / STOCKPILE AREA
- PROPOSED DEMOLITION AREA
- PRECAST CONCRETE BLOCKS
- MATERIAL PROCESSING AREA

DEFINITIONS

CI = CAST IRON

CS = COATED STEEL

PL = PLASTIC

RCP = REINFORCED CONCRETE PIPE

12" D (CL) = PIPE SIZE AND MATERIAL

BIT = BITUMINOUS

CB = CONCRETE BOUND

CC = CONCRETE CURB

CONC = CONCRETE

HP = HIGH PRESSURE

IP = IRON PIPE

IR = IRON ROD

R = RIM ELEVATION

RET = RETAINING

SB = STONE BOUND

SGC = SLOPED GRANITE CURB

VGC = VERTICAL GRANITE CURB

WF = WIRE FENCE

NMI = NUCLEAR METALS, INC.

SOE = SUPPORT OF EXCAVATION

TYP = TYPICAL

O.C. = ON CENTER

NAD83 = NORTH AMERICAN DATUM OF 1983

NGVD29 = NATIONAL GEODETIC VERTICAL DATUM OF 1929

PLAN SHEET DATA

- AOI-8-1 PROFILE REFERENCE (PROFILE AOI8-1)
- 1 / C-700 DETAIL REFERENCE (DETAIL 1 ON SHEET C-700)
- AREA OF CUT
- AREA OF FILL

SAMPLE LEGEND

GROUND SURFACE

- 0 TO 1.00
- 1.01 TO 2.00
- 2.01 TO 4.00
- 4.01 TO 6.00
- 6.01 TO 8.00
- 8.01 TO 10.00
- >10.00

10-11 SAMPLE INTERVAL IS PROVIDED AT DEPTHS > 10 FT. THE INTERVAL SHOWN IS THE NEXT SHALLOWEST INTERVAL BELOW 10 FT WITH A URANIUM CONCENTRATION ABOVE 2.7 MG/KG OR PCBS CONCENTRATION ABOVE 1.0 MG/KG

URANIUM (MG/KG)	TOTAL PCBs (MG/KG)
< 2.7	< 1
>= 2.7 AND < 13.5	>= 1 AND < 1.5
>= 13.5	>= 1.5
NO SAMPLE COLLECTED	NO SAMPLE COLLECTED

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

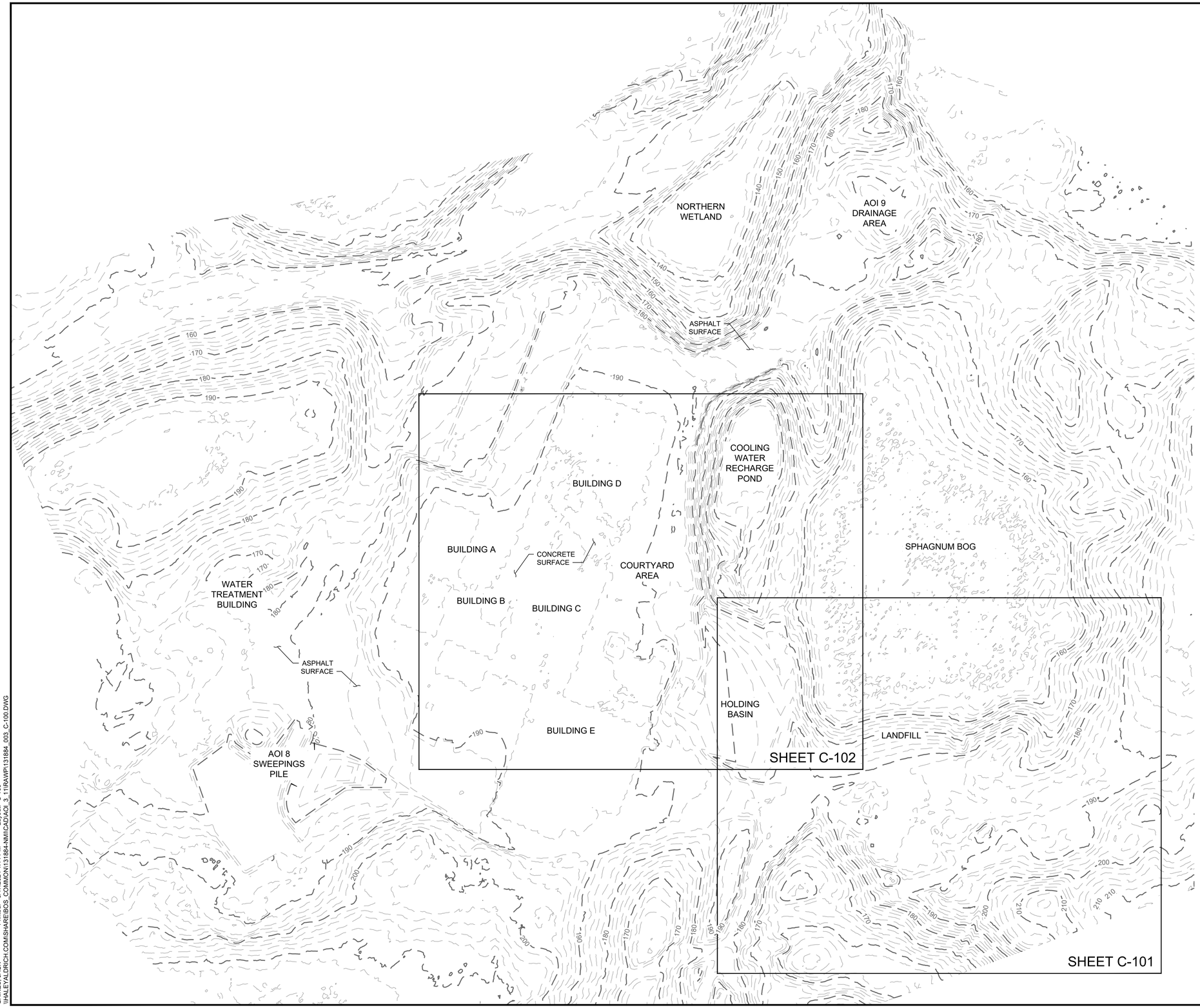
Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

LEGEND

G-102



LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- TRAILER BUILDING
- CHAIN LINK FENCE
- GUARDRAIL
- 2 FT EXISTING GROUND CONTOUR
- 10 FT EXISTING GROUND CONTOUR
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL

NOTES

1. FOR SURVEY AND GENERAL NOTES SEE G-101. FOR LEGEND SEE G-102.

0 80 160 240 320
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

EXISTING CONDITIONS SITE OVERVIEW

C-100

Sheet: 4 of 36

GAINES, JACK Printed: 3/17/2024 1:14 PM Layout: C-100
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NMI\CAD\AOI_3_11\RAWP\131884_003_C-100.DWG

LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- TRAILER BUILDING
- CHAIN LINK FENCE
- GUARDRAIL
- 1 FT EXISTING GROUND CONTOUR
- 5 FT EXISTING GROUND CONTOUR
- ACID DRAIN LINE
- ACID WASTE LINE
- COOLING DRAIN
- WATER WELL LINE
- FIRE LOOP WATER LINES
- HYDRANT LINE
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL

NOTES

1. FOR SURVEY AND GENERAL NOTES SEE G-101. FOR LEGEND SEE G-102.

0 40 80 120 160
SCALE IN FEET

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

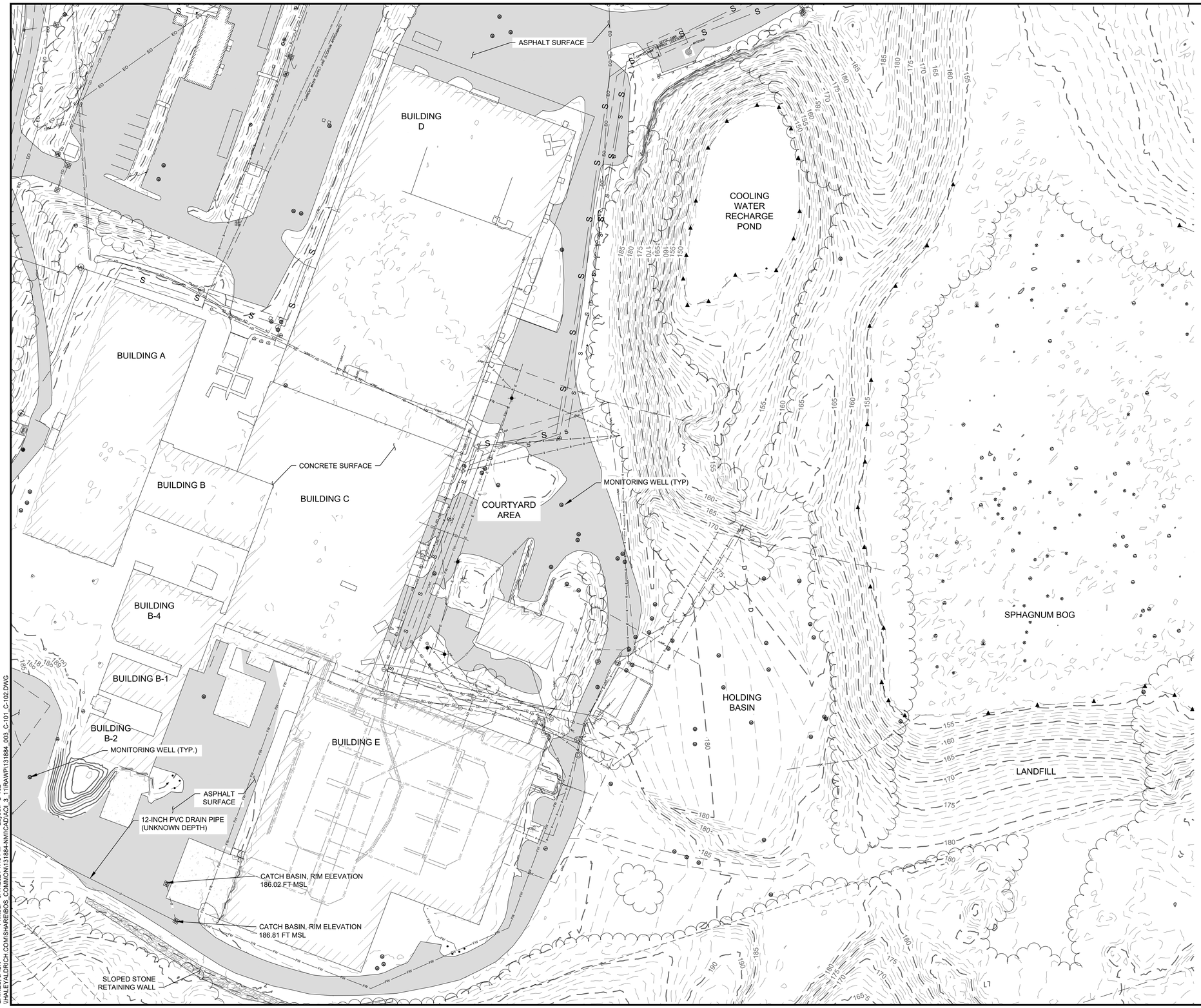
NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

EXISTING CONDITIONS LANDFILL

C-101

Sheet: 5 of 36

Printed: 3/17/2024 1:15 PM Layout: C-101
GAINES, JACK
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NM\CAD\AOI_3_11\RAWP\131884_003_C-101_C-102.DWG



LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- TRAILER BUILDING
- CHAIN LINK FENCE
- GUARDRAIL
- 1 FT EXISTING GROUND CONTOUR
- 5 FT EXISTING GROUND CONTOUR
- ACID DRAIN LINE
- ACID WASTE LINE
- COOLING DRAIN
- WATER WELL LINE
- FIRE LOOP WATER LINES
- HYDRANT LINE
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL

NOTES

1. FOR SURVEY AND GENERAL NOTES SEE G-101. FOR LEGEND SEE G-102.

0 40 80 120 160
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

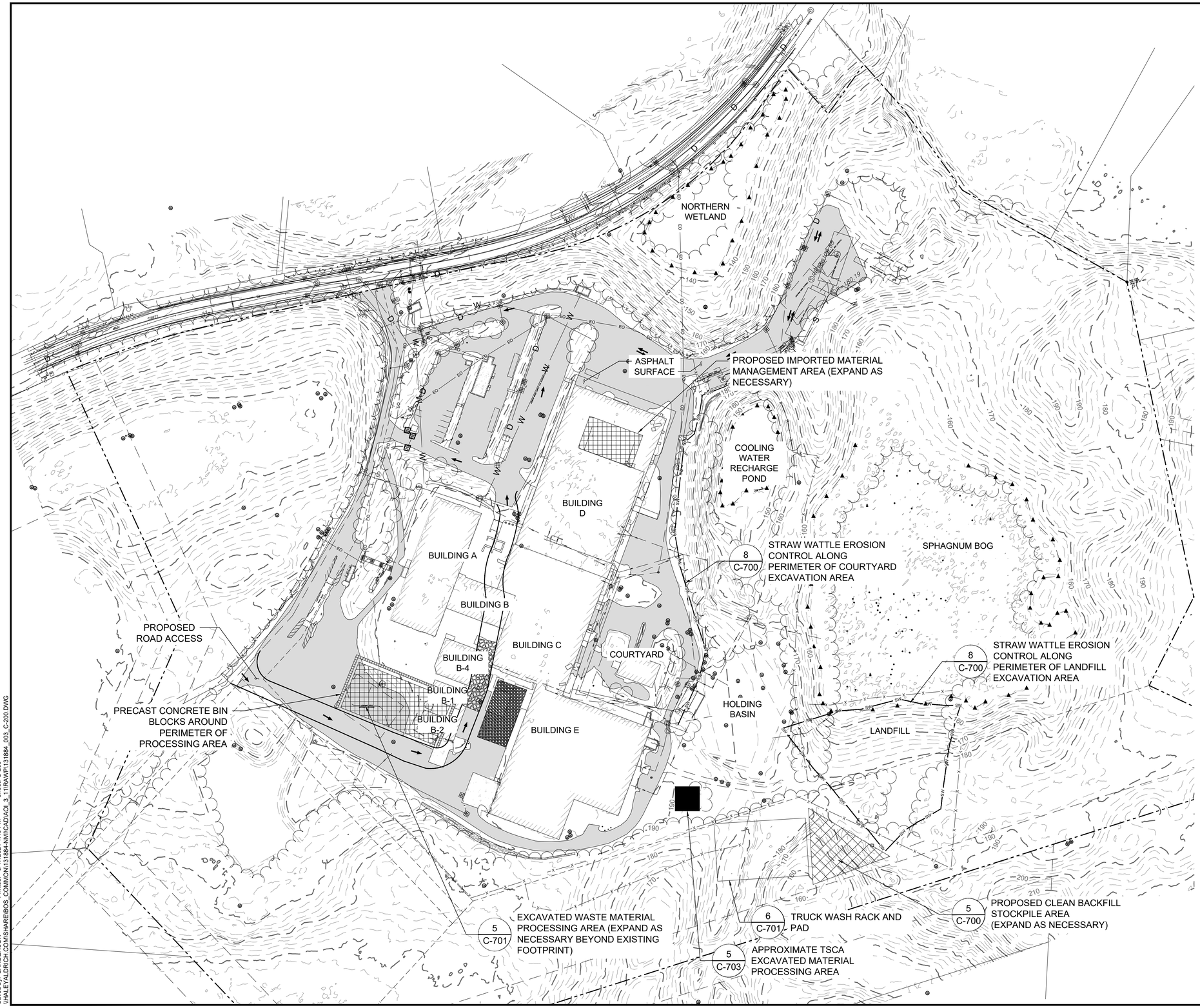
NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

EXISTING CONDITIONS COURTYARD AND COOLING POND

C-102

Sheet: 6 of 36

Printed: 3/7/2024 1:15 PM Layout: C-102
GAINES, JACK
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NM\CAD\AOI_3_11\RAWP\131884_003_C-101_C-102.DWG



LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- CHAIN LINK FENCE
- GUARDRAIL
- 2 FT EXISTING GROUND CONTOUR
- 10 FT EXISTING GROUND CONTOUR
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- STRAW WATTLE
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL
- PRE-CAST CONCRETE BLOCKS
- TRUCK ROUTE
- PROPOSED TRUCK PATH
- PROPOSED LAYDOWN / STOCKPILE AREA
- PROPOSED DEMOLITION AREA
- MATERIAL PROCESSING AREA

NOTES

1. FOR SURVEY AND GENERAL NOTES SEE G-102.
2. TREE CLEARING LIMITS ARE APPROXIMATE. ADDITIONAL CLEARING MAY BE NECESSARY AS THE WORK PROGRESSES.

0 80 160 240 320
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

SITE PREPERATION AND EROSION CONTROL OVERVIEW

C-200

Sheet: 7 of 36

Saved by: GANDERSON Printed: 3/17/2024 1:15 PM Sheet: C-200
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NM\CAD\AOI_3_11\RAWP\131884_003_C-200.DWG

LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- CHAIN LINK FENCE
- GUARDRAIL
- 2 FT EXISTING GROUND CONTOUR
- 10 FT EXISTING GROUND CONTOUR
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL
- PRE-CAST CONCRETE BLOCKS
- TRUCK ROUTE
- PROPOSED TRUCK PATH
- PROPOSED LAYDOWN / STOCKPILE AREA
- PROPOSED DEMOLITION AREA
- MATERIAL PROCESSING AREA
- STRAW WATTLE

NOTES

1. FOR SURVEY AND GENERAL NOTES SEE G-101. FOR LEGEND SEE G-102.
2. UNLESS NOTED FOR ABANDONMENT, MONITORING WELLS SHALL BE PROTECTED IN ACCORDANCE WITH SPECIFICATION 33 29 00, MONITORING WELL ABANDONMENT AND PROTECTION.

0 40 80 120 160
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

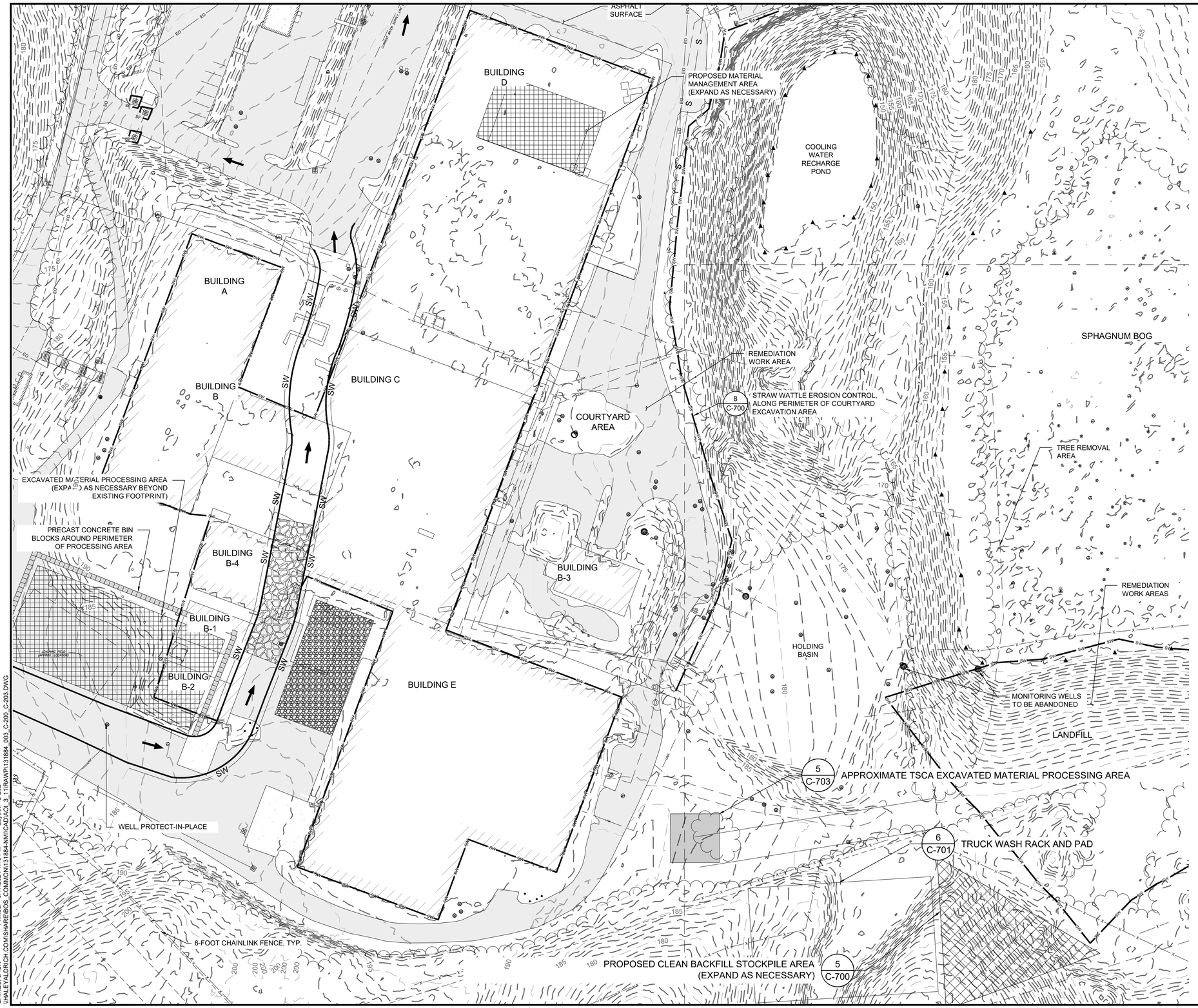
NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

SITE PREPARATION AND EROSION CONTROLS LANDFILL

C-201

Sheet: 8 of 36

GAINES, JACK Printed: 3/17/2024 1:15 PM Layout: C-201
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NM\CAD\AOI_3_11\RAWP\131884_003_C-200_C-203.DWG



LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- CHAIN LINK FENCE
- GUARDRAIL
- 2 FT EXISTING GROUND CONTOUR
- 10 FT EXISTING GROUND CONTOUR
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL
- PRE-CAST CONCRETE BLOCKS
- TRUCK ROUTE
- PROPOSED TRUCK PATH
- PROPOSED LAYDOWN / STOCKPILE AREA
- PROPOSED DEMOLITION AREA
- MATERIAL PROCESSING AREA
- STRAW WATTLES
- MONITORING WELLS TO BE ABANDONED

NOTES

1. FOR SURVEY AND GENERAL NOTES SEE G-101. FOR LEGEND SEE G-102.
2. UNLESS NOTED FOR ABANDONMENT, MONITORING WELLS SHALL BE PROTECTED IN ACCORDANCE WITH SPECIFICATION 33 29 00, MONITORING WELL ABANDONMENT AND PROTECTION.

N

0 40 80 120 160
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

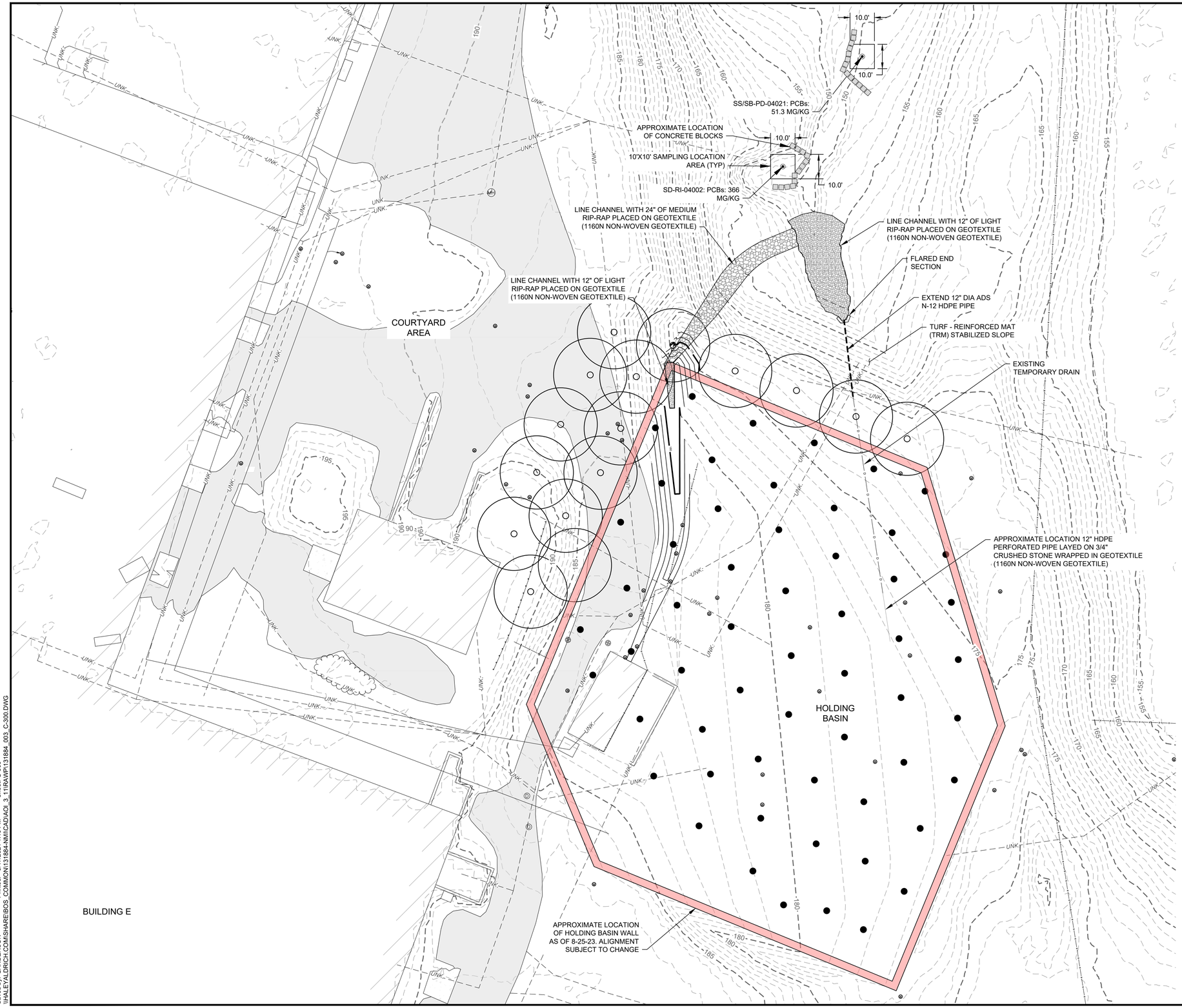
NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

SITE PREPARATION AND EROSION CONTROLS COURTYARD AND COOLING POND

C-202

Sheet: 9 of 36

Printed: 3/17/2024 1:16 PM Layout: C-202
GAINES, JACK
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NMI\CAD\AOI_3_11\RAWP\131884_003_C-200_C-203.DWG



LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- CHAIN LINK FENCE
- GUARDRAIL
- 1 FT EXISTING GROUND CONTOUR
- 5 FT EXISTING GROUND CONTOUR
- 1 FT PROPOSED GROUND CONTOUR
- 5 FT PROPOSED GROUND CONTOUR
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL
- PRE-CAST CONCRETE BLOCKS
- PROPOSED HOLDING BASIN WALL ALIGNMENT AS OF 8-25-23 (ALIGNMENT SUBJECT TO CHANGE)

0 20 40 60 80

SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

COURTYARD PRE-EXCAVATION DRAINAGE IMPROVEMENTS AND GRADING

C-300

Sheet: 10 of 36

Saved by: GANDERSON Printed: 3/17/2024 1:16 PM Sheet: C-300
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NM\CAD\AOI_3_11\RAWP\131884_003_C-300.DWG

TIMBER CRANE MATS (4'X20') (TYP)

CONSTRUCTION ENTRANCE/HAUL ROAD

ACCESS PAD

ACCESS ROAD

EXISTING DRAINAGE CHANNEL

PROPOSED HOLDING BASIN WALL ALIGNMENT AS OF 8-25-23 (ALIGNMENT SUBJECT TO CHANGE)

APPROXIMATE LOCATION OF TEMPORARY PIPING TO COOLING POND DEWATERING SYSTEM AS NESSASSARY SUBJECT TO CHANGE BY CONTRACTOR

HOLDING BASIN

SPHAGNUM BOG

ACCESS ROAD FOR SEDIMENT TRANSPORT FROM WETLANDS (USE OF TIMBER MATS AS NECESSARY)

3 COURSES OF REUSED GABION STONE BASKETS

ACCESS ROAD (USE TIMBER MATS AS NEEDED)

SANDBAG SUPER SACK (TYP)

APPROXIMATE LOCATIONS OF POTENTIAL DEWATERING SUMPS

BOG SEDIMENT EXCAVATION AREA

PUMP INTAKE

GRAVEL PLATFORMS FOR SEDIMENT EXCAVATION (TYP)

LANDFILL

SEDIMENT MANAGEMENT AREA

CONSTRUCTION ENTRANCE/HAUL ROAD

6 C-701 TRUCK WASH AND RACK PAD

TRUCK WASH AND RACK PAD

5 C-700 PROPOSED CLEAN BACKFILL STOCKPILE AREA (EXPAND AS NECESSARY)

LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- CHAIN LINK FENCE
- GUARDRAIL
- 1 FT EXISTING GROUND CONTOUR
- 5 FT EXISTING GROUND CONTOUR
- 1 FT PROPOSED GROUND CONTOUR
- 5 FT PROPOSED GROUND CONTOUR
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- TEMPORARY PIPING
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL
- PRE-CAST CONCRETE BLOCKS
- PROPOSED HOLDING BASIN WALL ALIGNMENT AS OF 8-25-23 (ALIGNMENT SUBJECT TO CHANGE)
- SANDBAG SUPER STACK (TYP)
- MATERIAL PROCESSING AREA

BOG SEDIMENT EXCAVATION VOLUME:
CUT: 1,127 CY.
FILL: 0 CY.
NET: 1,127 CY. <CUT>

N

0 30 60 90 120
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

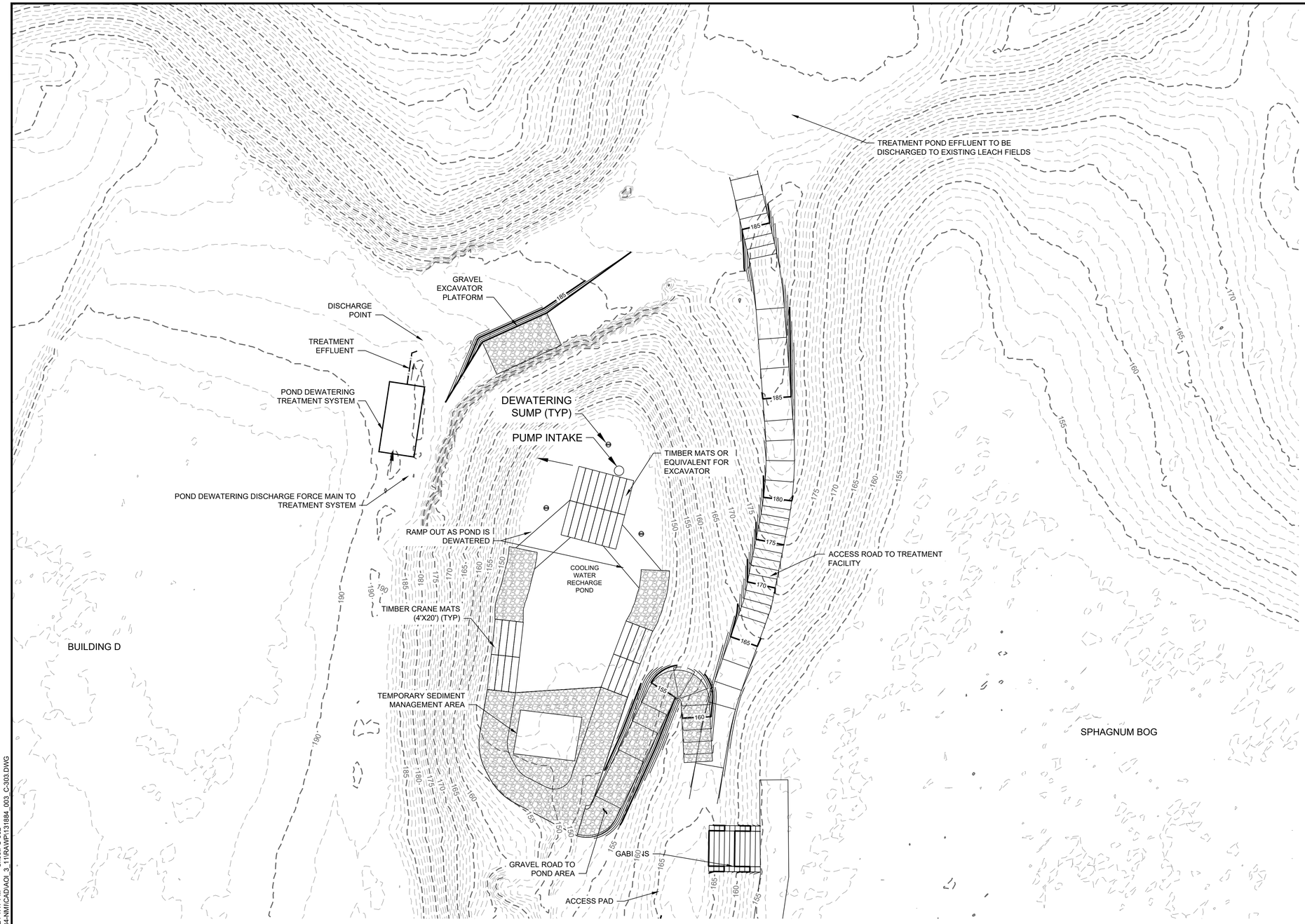
NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

PRE-EXCAVATION PLAN FOR SPHAGNUM BOG SEDIMENT EXCAVATION

C-301

Sheet: 11 of 36

Saved by: GANDERSON Printed: 3/17/2024 1:17 PM Sheet: C-301
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NM\CAD\AOI_3_11\RAWP\131884_003_C-301.DWG



LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- CHAIN LINK FENCE
- GUARDRAIL
- 1 FT EXISTING GROUND CONTOUR
- 5 FT EXISTING GROUND CONTOUR
- 1 FT PROPOSED GROUND CONTOUR
- 5 FT PROPOSED GROUND CONTOUR
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL

0 30 60 90 120
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

100% DESIGN

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

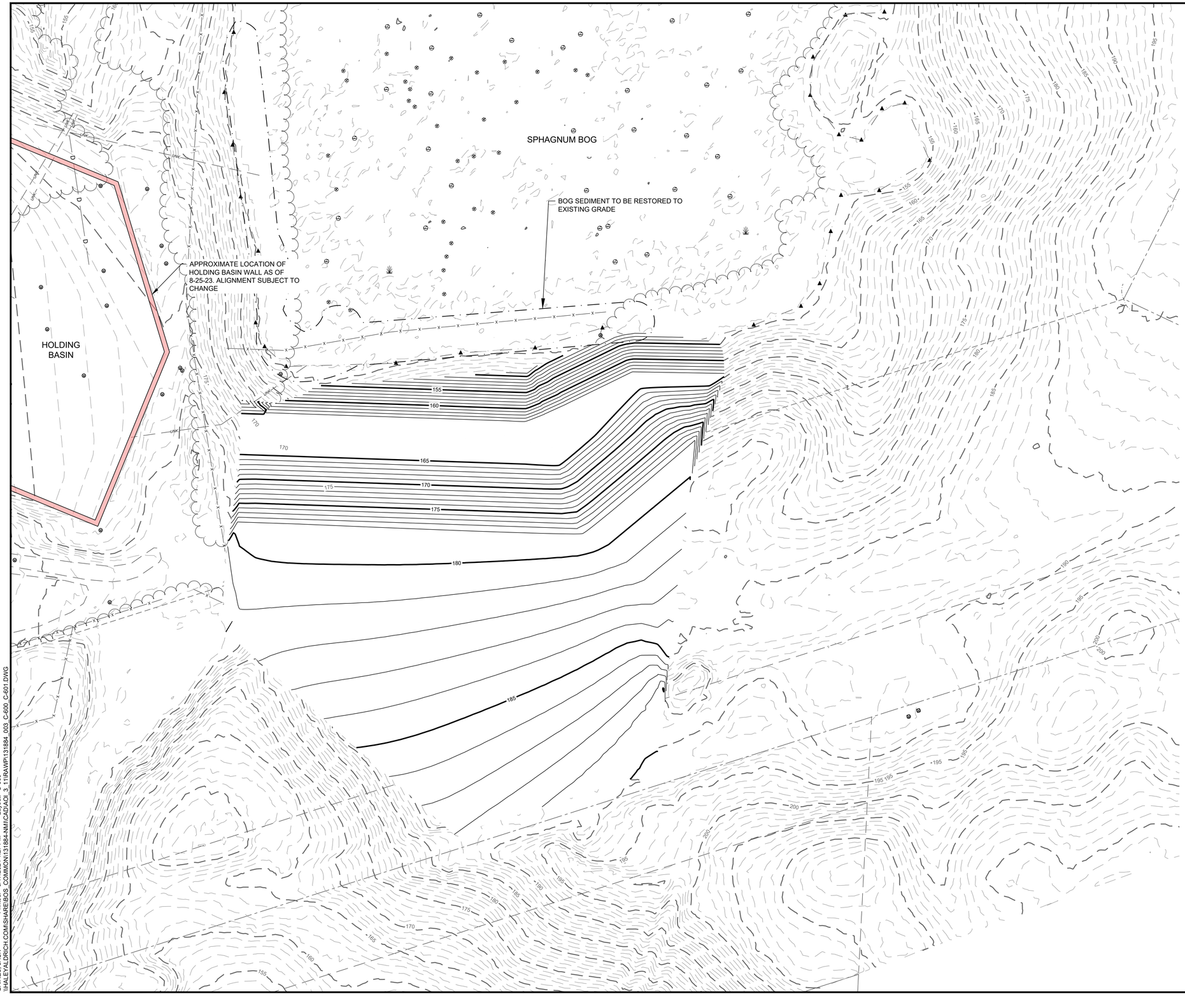
NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

PRE-EXCAVATION PLAN COOLING POND

C-302

Sheet: 12 of 36

Saved by: GANDERSON Printed: 3/17/2024 1:17 PM Sheet: C-302
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NMI\CAD\AOI_3_11\RAWP\131884_003_C-303.DWG



LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- CHAIN LINK FENCE
- GUARDRAIL
- 1 FT EXISTING GROUND CONTOUR
- 5 FT EXISTING GROUND CONTOUR
- 1 FT PROPOSED GROUND CONTOUR
- 5 FT PROPOSED GROUND CONTOUR
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL
- PROPOSED HOLDING BASIN WALL ALIGNMENT AS OF 8-25-23 (ALIGNMENT SUBJECT TO CHANGE)

NOTES

1. FOR SURVEY AND GENERAL NOTES SEE G-101. FOR LEGEND SEE G-102.
2. WETLAND SEDIMENT AND VEGETATIVE RESTORATION SHALL BE COMPLETED IN ACCORDANCE WITH SPECIFICATION 32 30 00, WETLAND AND UPLAND RESTORATION.

N

0 30 60 90 120
SCALE IN FEET

HALEY & ALDRICH, INC.
465 Medford Street, Suite 200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA

Stamp:

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

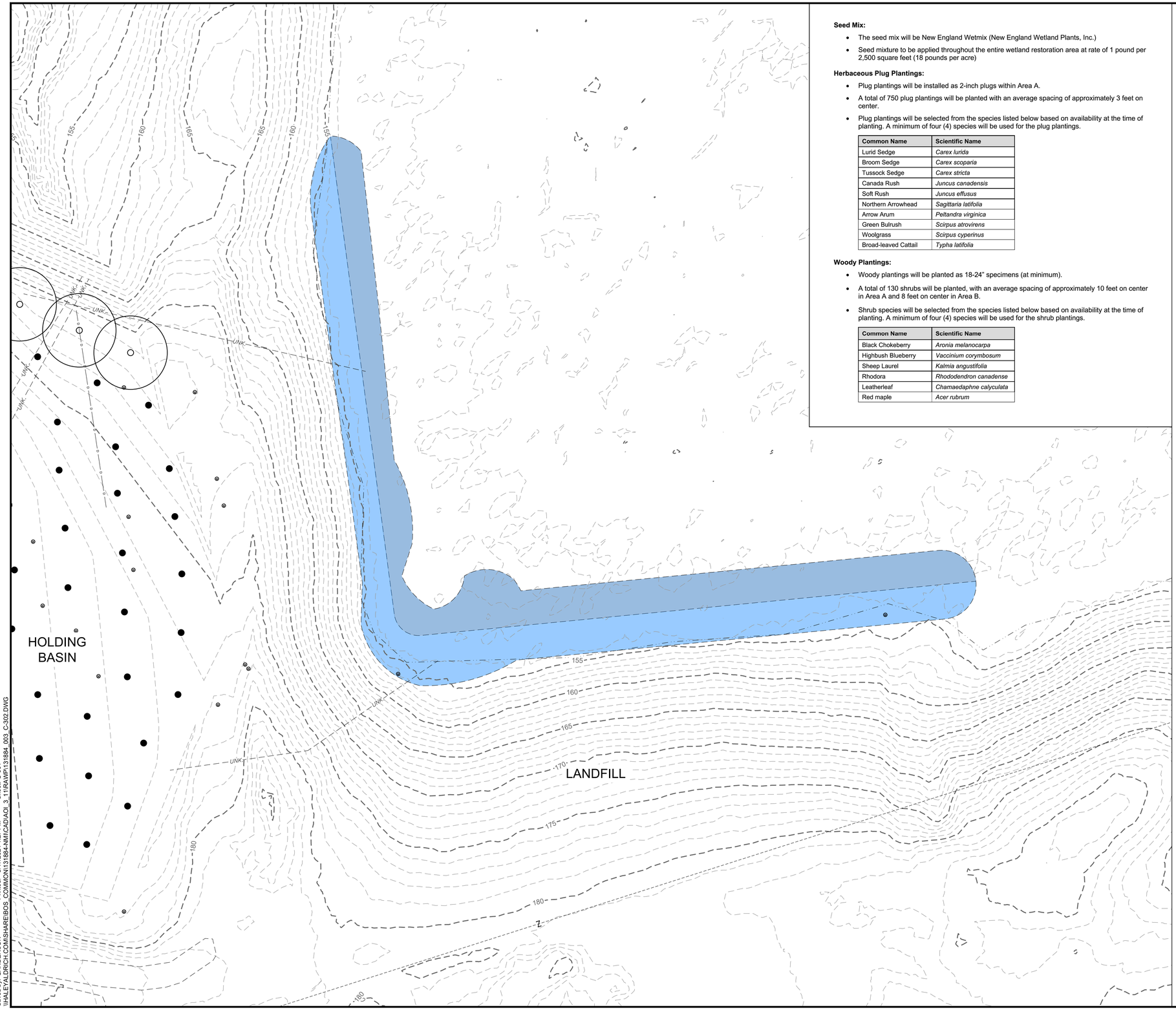
NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

SITE RESTORATION PLAN LANDFILL AND BOG SEDIMENT

C-600

Sheet: 30 of 36

Printed: 3/17/2024 1:27 PM Layout: C-600
GAINES, JACK
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NM\CADAOI_3_11\RAWP\131884_003_C-600_C-601.DWG



Seed Mix:

- The seed mix will be New England Wetmix (New England Wetland Plants, Inc.)
- Seed mixture to be applied throughout the entire wetland restoration area at rate of 1 pound per 2,500 square feet (18 pounds per acre)

Herbaceous Plug Plantings:

- Plug plantings will be installed as 2-inch plugs within Area A.
- A total of 750 plug plantings will be planted with an average spacing of approximately 3 feet on center.
- Plug plantings will be selected from the species listed below based on availability at the time of planting. A minimum of four (4) species will be used for the plug plantings.

Common Name	Scientific Name
Lurid Sedge	*Carex lurida*
Broom Sedge	*Carex scoparia*
Tussock Sedge	*Carex stricta*
Canada Rush	*Juncus canadensis*
Soft Rush	*Juncus effusus*
Northern Arrowhead	*Sagittaria latifolia*
Arrow Arum	*Peltandra virginica*
Green Bulrush	*Scirpus atrovirens*
Woolgrass	*Scirpus cyperinus*
Broad-leaved Cattail	*Typha latifolia*

Woody Plantings:

- Woody plantings will be planted as 18-24" specimens (at minimum).
- A total of 130 shrubs will be planted, with an average spacing of approximately 10 feet on center in Area A and 8 feet on center in Area B.
- Shrub species will be selected from the species listed below based on availability at the time of planting. A minimum of four (4) species will be used for the shrub plantings.

Common Name	Scientific Name
Black Chokeberry	*Aronia melanocarpa*
Highbush Blueberry	*Vaccinium corymbosum*
Sheep Laurel	*Kalmia angustifolia*
Rhodora	*Rhododendron canadense*
Leatherleaf	*Chamaedaphne calyculata*
Red maple	*Acer rubrum*

LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- CHAIN LINK FENCE
- GUARDRAIL
- 1 FT EXISTING GROUND CONTOUR
- 5 FT EXISTING GROUND CONTOUR
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL

WETLAND RESTORATION AREAS:

AREA A = 5,990.00 SF.

AREA B = 5,385.00 SF.

TOTAL = 11,375.00 SF.

0 20 40 60 80

SCALE IN FEET

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

NUCLEAR METALS, INC.
COURTYARD,
LANDFILL, SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

WETLAND RESTORATION PLAN

C-601

Sheet: 31 of 36

Saved by: GANDERSON Printed: 3/17/2024 1:27 PM Sheet: C-601
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NM\CAD\AOI_3_11\RAWP\131884_003_C-302.DWG

LEGEND

- SITE BOUNDARY
- BUILDING SLAB
- CHAIN LINK FENCE
- GUARDRAIL
- 1 FT EXISTING GROUND CONTOUR
- 5 FT EXISTING GROUND CONTOUR
- 1 FT PROPOSED GROUND CONTOUR
- 5 FT PROPOSED GROUND CONTOUR
- STORM DRAIN LINE
- SANITARY SEWER LINE
- WATER LINE
- ELECTRIC LINE
- OVERHEAD ELECTRICAL LINE
- CABLE LINE
- GAS LINE
- TELEPHONE LINE
- UNKNOWN UTILITY
- WETLAND BOUNDARY
- VEGETATION BOUNDARY
- TREE/SHRUB
- MONITORING OR PRODUCTION WELL
- CATCH BASIN
- SEWER/DRAIN/ELECTRIC/TELEPHONE/ GENERAL MANHOLE
- UTILITY POLE
- POST
- ASPHALT
- CONCRETE
- GRAVEL
- PROPOSED HOLDING BASIN WALL ALIGNMENT AS OF 8-25-23 (ALIGNMENT SUBJECT TO CHANGE)

RESTORATION VOLUME:
CUT: 1,228 CY.
FILL: 7,119 CY.
NET: 5892 CY. <FILL>

NOTES

1. FOR SURVEY AND GENERAL NOTES SEE G-101. FOR LEGEND SEE G-102.
2. WETLAND SEDIMENT AND VEGETATIVE RESTORATION SHALL BE COMPLETED IN ACCORDANCE WITH SPECIFICATION 32 30 00, WETLAND AND UPLAND RESTORATION.

0 30 60 90 120
SCALE IN FEET

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

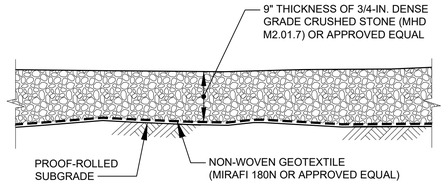
NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

SITE RESTORATION PLAN COOLING POND

C-602

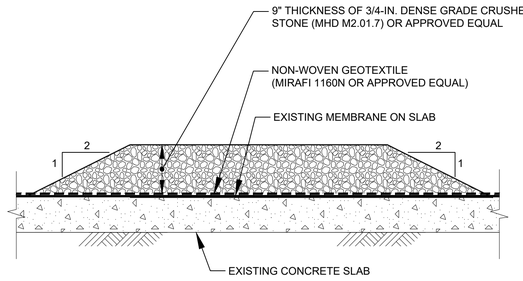
Sheet: 32 of 36

Saved by: JGAINES Printed: 3/17/2024 1:27 PM Sheet: C-602
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NMI\CADA\O_3_11\RAWP\131884_003_C-602.DWG



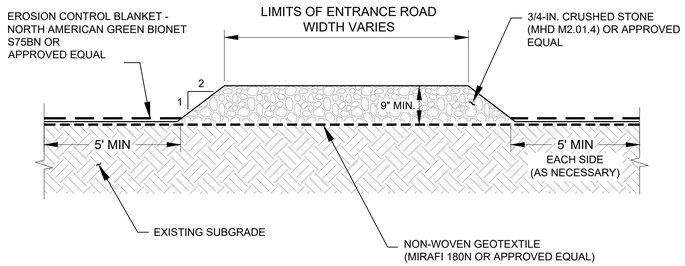
1 PROPOSED TRUCK ROAD DETAIL (ADJACENT TO BUILDING A)

SCALE: NOT TO SCALE



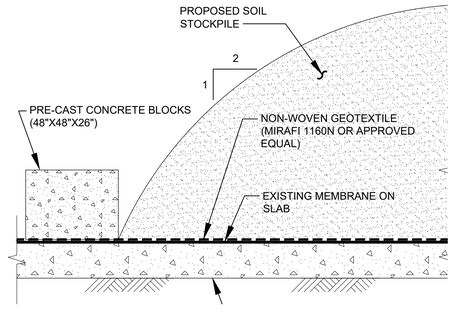
2 PROPOSED TRUCK ROADWAY OVER EXISTING BUILDING SLAB

SCALE: NOT TO SCALE



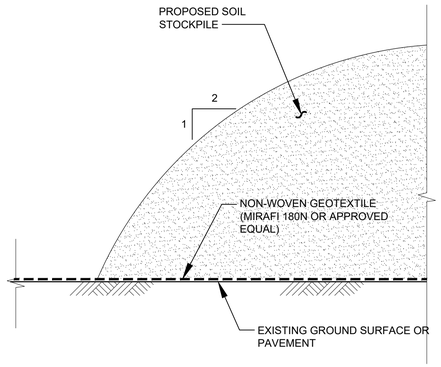
3 PROPOSED TRUCK ROADWAY IN WOODED AREAS

SCALE: NOT TO SCALE



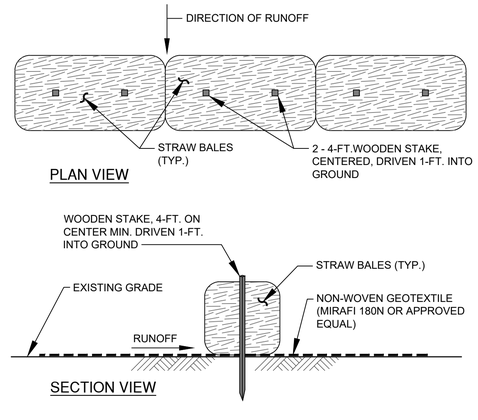
4 EXISTING CLEAN BACKFILL STOCKPILE AREA DEATIL

SCALE: NOT TO SCALE



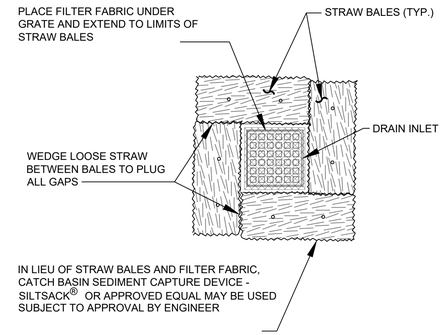
5 PROPOSED CLEAN FILL SOIL STOCKPILE AREA

SCALE: NOT TO SCALE



6 PROPOSED STRAW BALE INSTALLATION

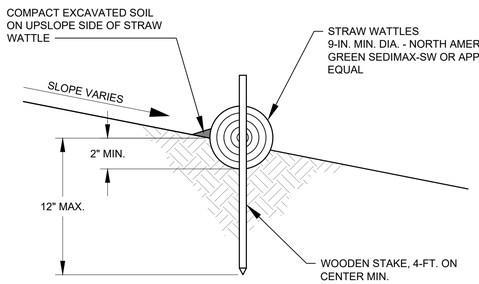
SCALE: NOT TO SCALE



NOTE
STRAW BALE LOCATION TO BE DETERMINED BY SITE FIELD ENGINEER

7 PROPOSED STRAW BALE EROSION CONTROL AROUND DRAIN INLET

SCALE: NOT TO SCALE

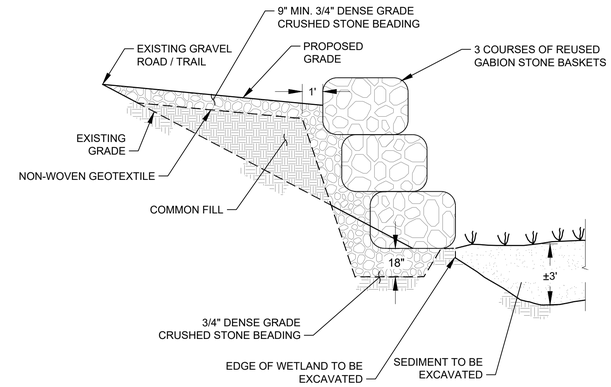


NOTES

1. STRAW BALE LOCATION TO BE DETERMINED BY SITE FIELD ENGINEER
2. NO DISTURBANCE TO THE DOWN SLOPE AREA.

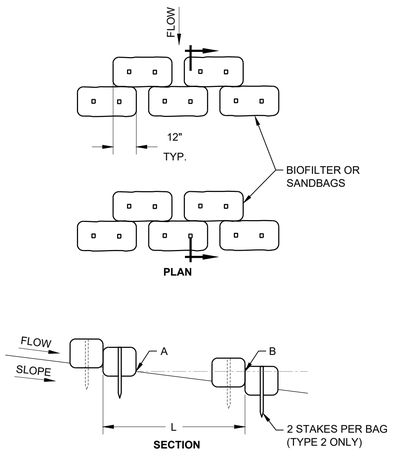
8 PROPOSED STRAW WATTLE EROSION CONTROL

SCALE: NOT TO SCALE



9 PROPOSED ACCESS ROAD FOR SEDIMENT TRANSPORT FROM WETLANDS

SCALE: NOT TO SCALE



BARRIER SPACING		
GRADE	SLOPE	MAX. SPACING
< 10%	1:10	300'
10% TO < 15%	1:10 TO > 1:7.5	150'
15% TO < 20%	1:7.5 TO > 1:5	100'
20% TO ≤ 30%	1:5 TO ≥ 1:3	50'
> 30%	< 1:3	25'

NOTES:

1. INSTALL BARRIERS PARALLEL WITH CONTOURS.
2. DRIVE STAKES FLUSH WITH TOP OF BAG AND INTO UNDISTURBED GROUND A MIN. OF 12". (TYPE 2 ONLY). STAKES MAY BE OMITTED IF BAGS ARE PLACED ON PAVED SURFACE.
3. SPACE BAGS (L) SO POINTS "A" AND "B" ARE OF EQUAL ELEVATION.
4. TYPE 2 USES BIOFILTER BAGS TYPE 4 USES SANDBAGS.

10 SANDBAG INSTALLATION DETAIL

SCALE: NOT TO SCALE

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

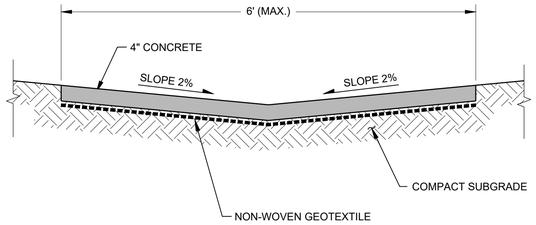
Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

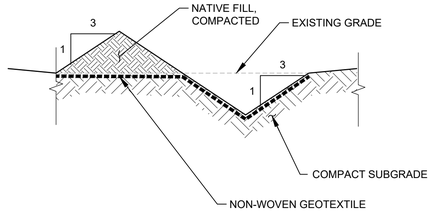
SITE PREPARATION DETAILS (1 OF 2)

C-700

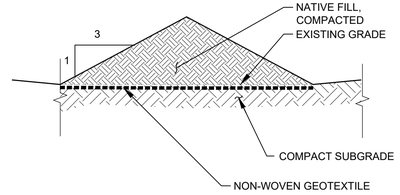
Sheet: 33 of 36



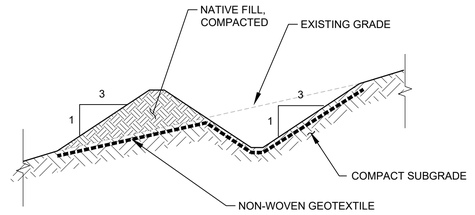
1 CONCRETE V-DITCH
SCALE: NOT TO SCALE



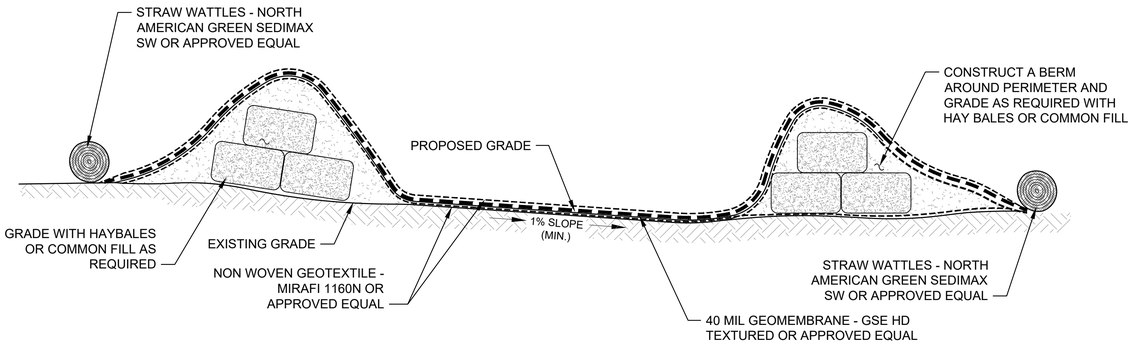
2 DRAINAGE SWALE
SCALE: NOT TO SCALE



3 DRAINAGE BERM
SCALE: NOT TO SCALE



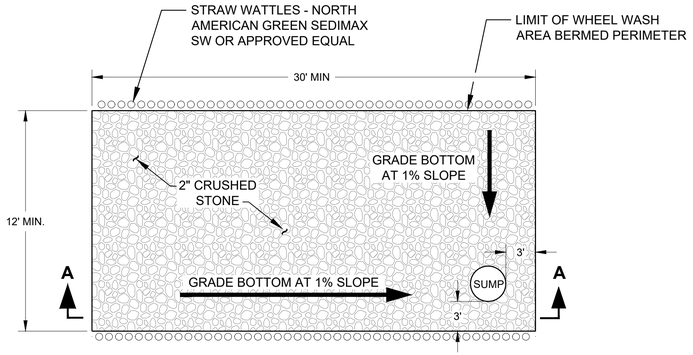
4 DETENTION POND
SCALE: NOT TO SCALE



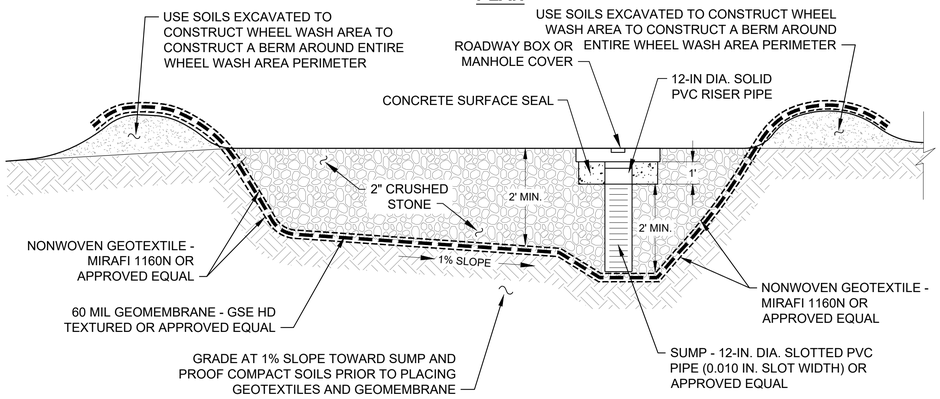
5 EXCAVATED MATERIAL PROCESSING AREA
SCALE: NOT TO SCALE

WHEEL WASH AREA NOTES:

1. WATER PUMPED FROM SUMP SHALL BE PUMPED TO THE DEWATERING EFFLUENT TREATMENT AREA AND TREATED IN ACCORDANCE WITH SECTION 312319 CONSTRUCTION DEWATERING AND WATER TREATMENT.
2. AT END OF CONSTRUCTION, ALL MATERIALS FROM THE WHEEL WASH AREA SHALL BE EXCAVATED AND DISPOSED OF IN A MANNER ACCEPTABLE TO THE ENGINEER. THE EXCAVATION SHALL BE BACKFILLED WITH DENSE GRADE TO MATCH THE SURROUNDING ACCESS ROAD.
3. BLEND THE WHEEL WASH AREA WITH THE ADJACENT ROADWAY.
4. CONSTRUCT A BERM AROUND ENTIRE WHEEL WASH AREA AS SHOWN.
5. SUBGRADE CONDITION TO BE INSPECTED BY THE ENGINEER PRIOR TO PLACEMENT OF GEOTEXTILES AND GEOMEMBRANE. IF SUBGRADE CONDITION IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE, A 4-IN. MIN. SAND LAYER MAY BE REQUIRED BETWEEN THE LOWER GEOTEXTILE AND THE GEOMEMBRANE.



PLAN



SECTION A - A

6 WHEEL WASH / DECONTAMINATION PAD (AS NECESSARY)
SCALE: NOT TO SCALE

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

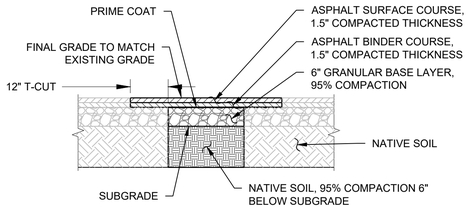
NUCLEAR METALS, INC.
COURTYARD,
LANDFILL, SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

SITE PREPARATION DETAILS (2 OF 2)

C-701

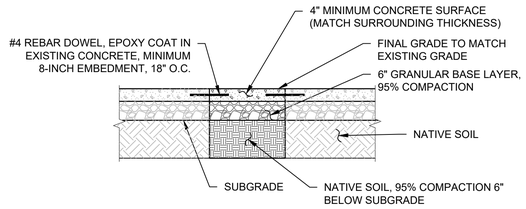
Sheet: 34 of 36

GAINES, JACK Printed: 3/17/2024 1:28 PM Layout: C-701
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\131884-NM\ICAD\AOI_3_11\RAWP\131884_003_C-700_C-703.DWG



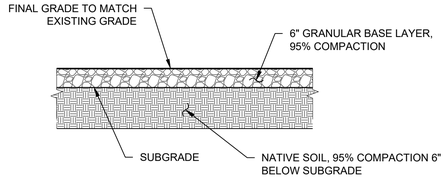
1 ASPHALT RESTORATION

SCALE: NOT TO SCALE



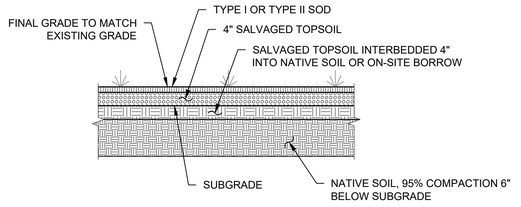
2 CONCRETE RESTORATION

SCALE: NOT TO SCALE



3 GRAVEL RESTORATION

SCALE: NOT TO SCALE



4 VEGETATIVE RESTORATION

SCALE: NOT TO SCALE

GENERAL NOTES FOR RESTORATION:

1. SOILS EXCAVATED ON-SITE SHALL NOT BE REUSED ON-SITE AS BACKFILL MATERIAL UNLESS PRIOR APPROVAL IS GRANTED FROM THE EPA AND MASSDEP.

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

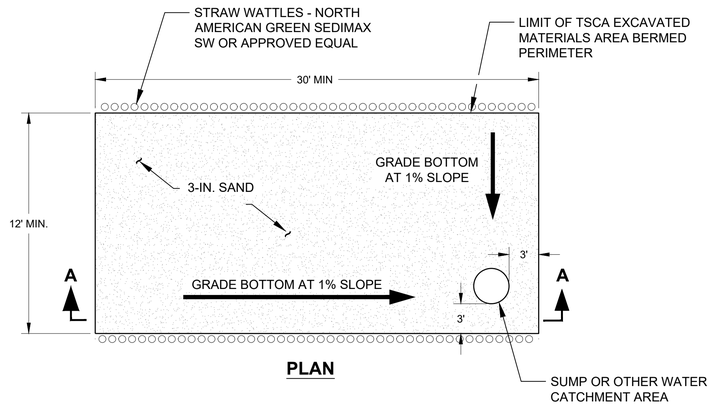
Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

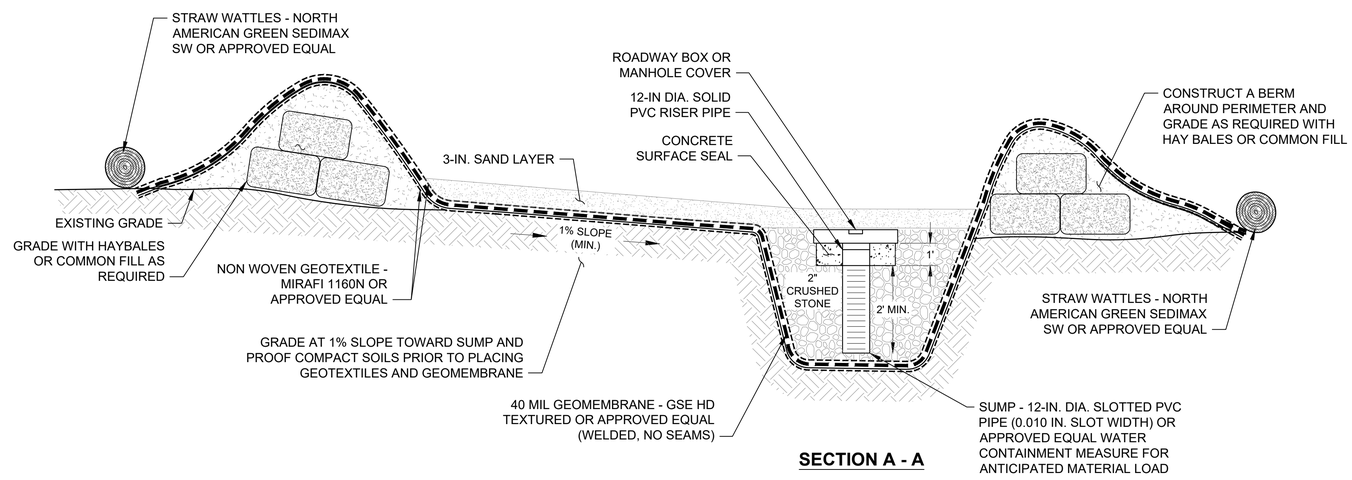
CONSTRUCTION DETAILS

C-702

Sheet: 35 of 36



PLAN



SECTION A - A

TSCA EXCAVATED MATERIAL PROCESSING AREA NOTES:

1. SUBGRADE CONDITION TO BE INSPECTED BY THE ENGINEER PRIOR TO PLACEMENT OF GEOTEXTILES AND GEOMEMBRANE. IF SUBGRADE CONDITION IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE, A 4-IN. MIN. SAND LAYER MAY BE REQUIRED BETWEEN THE LOWER GEOTEXTILE AND THE GEOMEMBRANE.
2. WATER PUMPED FROM SUMP SHALL BE COLLECTED AND DISPOSED OF OFF-SITE. ONCE THE DEWATERING EFFLUENT TREATMENT (DETS) AREA IS CONSTRUCTED, WATER WILL BE PUMPED TO THE DETS AND TREATED IN ACCORDANCE WITH SECTION 312319 CONSTRUCTION DEWATERING AND WATER TREATMENT.
3. AT END OF CONSTRUCTION, ALL MATERIALS FROM THE TSCA EXCAVATED MATERIAL PROCESSING AREA SHALL BE EXCAVATED AND DISPOSED OF IN A MANNER ACCEPTABLE TO THE ENGINEER. CONFIRMATORY SAMPLING WILL BE CONDUCTED ON UNDERLYING MATERIAL AFTER TSCA EXCAVATED MATERIALS PROCESSING AREA IS DISASSEMBLED.
4. 40 MIL GEOMEMBRANE MUST BE WELDED OR ONE CONTINUOUS PIECE.

5 TSCA EXCAVATED MATERIAL PROCESSING AREA
SCALE: NTS

HALEY ALDRICH

HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.haleyaldrich.com

Project No.:	131884
Scale:	SHOWN
Date:	MARCH 2024
Drawn By:	HA
Designed By:	HA
Checked By:	HA
Approved By:	HA
Stamp:	

Rev.	Description	By	Date
A	50% DESIGN	H&A	03/18/24

NUCLEAR METALS, INC.
COURTYARD,
LANDFILL,SPHAGNUM BOG,
AND COOLING POND
SSS PHASE 1
RAWP REMEDIAL DESIGN
2229 MAIN STREET
CONCORD, MASSACHUSETTS

TSCA EXCAVATED MATERIAL PROCESSING AREA DETAIL

C-703

Sheet: 36 of 36

Appendix B

Specifications

LIST OF SPECIFICATIONS

SECTION 01 57 00

TEMPORARY EROSION AND SEDIMENT CONTROLS

PART 1 – GENERAL

1.1 SUMMARY

A. Attention is directed to the GENERAL CONDITIONS OF THE CONTRACT and all sections of Division 1 – GENERAL REQUIREMENTS, which are hereby made a part of the Specifications.

B. This Section covers the requirements for temporary erosion and sediment controls related to Work at the Site. Temporary controls are defined as installations to support construction that are not part of the permanent installed Work.

C. Further information on erosion and sediment controls, dust and vapor controls, and decontamination procedures is described in Section 01 57 19– Environmental Controls.

D. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work on the Contract.

E. Provide all facilities, labor, materials, tools, equipment, appliances, transportation, supervision, and related work necessary to complete the Work specified in this Section, and as shown on the Drawings.

F. The Work described in these Contract Documents will be performed at a Superfund site. The Contractor is required to notify all workers of the history of the site and contaminants that may be present, and to be alert for evidence of contaminated soil, sediment, surface water, groundwater, and other media (contaminated media). The Engineer should be notified of the presence of potentially hazardous conditions, if encountered.

G. The Contractor shall at times be solely responsible for exercising reasonable precaution to protect the health, safety, public welfare, and all on-site personnel, and the environment during performance of the Work described in these Contract Documents. The Contractor shall comply with all applicable provisions of federal, state, and local health and safety and occupational health and safety statutes and codes.

1.2 REFERENCES

A. “Stormwater Quality Handbook, Construction Site Best Management Practices (BMPs) Manual,” Massachusetts Department of Environmental Protection (MassDEP), February 2008.

B. MassDEP Wetlands Protection Act, M.G.L. c. 131, § 40,

C. MassDEP Massachusetts Clean Waters Act, M.G.L.c. 21, §§ 26-53.

1.3 RELATED SECTIONS

A. SECTION 01 11 00 – Summary of Work

B. SECTION 02 22 00 – Existing Conditions Assessment

C. SECTION 01 57 19 – Environmental Controls

D. SECTION 31 00 00 – Earthwork

1.4 SUBMITTALS

A. Contractor shall prepare and transmit submittals to Owner for all products shown in the Drawings and any additional products required as a component of the installed temporary controls including, but not limited to, sediment/aggregate containment area, contaminated material stockpile containment areas, temporary access roads, and decontamination/wash pad.

B. Contractor shall submit drawing(s) to the Owner of Contractor staging/storage areas and the layout of other temporary controls for Owner review prior to start of construction if proposed locations and layout differ from depiction on Drawings.

1.5 DESCRIPTION OF WORK

A. Work will be completed as described in Section 01 11 00 Summary of Work. Straw wattles will be installed around work areas as needed and wattles or bales shall be installed around the temporary contaminated soil stockpile areas during the Work as described in Section 1.6. Protective erosion control features shall be installed around sensitive environmental areas such as the Sphagnum Bog and around catch basins during the Work.

B. The resources in the vicinity of the Work Areas cannot be further degraded by erosion resulting from the remedial excavation and construction activities. The erosion control measures involve a multi-tier approach. This approach includes, but is not limited to:

1. Construction of temporary access to the work area will require some initial rough grading, placement of crushed stone and timber matting.
2. Delaying grubbing and exposing erosion susceptible materials in small increments during the workday.
3. Placement of fills at the site in a controlled fashion and construction of final restoration covers on a piecemeal basis.
4. Management of the locations and protection systems for active and inactive stockpiles of materials, mitigating run-on and run-off.
5. Use of conventional straw bales, silt fences, straw wattles, coir rolls, and supplemental measures as needed strategically placed at locations shown on

the Drawings, chosen by the Engineer, or chosen by Contractor and approved by the Engineer based on work area location, work sequencing, and work to be performed.

6. Use of timber crane mats (or similar), gravel platforms, and gabion-lined access roads for stabilization and erosion control as needed to allow vehicle access in wet areas if necessary.

C. Contractor shall design and construct erosion control systems to prevent erosional movement of soil from the following:

1. Work Areas to resource areas outside Limit of Work.
2. Work Areas and drainage channels containing surface waters.

1.6 CONTAMINATED MATERIAL STOCKPILE CONTAINMENT

A. Contractor shall construct and maintain soil/material stockpile containment areas to store stockpiled contaminated materials isolated and protected from the environment. Containment shall be constructed in accordance with the Drawings, or as approved by the Owner, and shall include:

1. Polyethylene sheeting to cover and prevent precipitation from entering contaminated material stockpiles. Polyethylene cover shall have a minimum thickness of 10 mils. The cover shall be anchored to prevent it from being removed by the wind as per the Drawings.
2. Clean backfill stockpile areas will be lined with a single layer of non-woven geotextile fabric (Mirafi 180N or approved equivalent). Straw bales or straw wattles shall be placed around clean backfill temporary staging/stockpile areas underlain with geotextile.
3. Excavated material processing areas will be constructed using a layer of 40-millimeter (mil) geomembrane between two layers of geotextile (Mirafi 1160 N or equal) as the base. They shall be surrounded by berms constructed of pre-cast concrete barriers (e.g., Caltrans Type 60C Concrete Barrier), or similar pre-approved means, and a 40 MIL geomembrane liner (GSE H textured or approved equivalent) installed up and over the berms to establish a containment berm.
4. Straw bales shall be placed around drain inlets in order to protect drains from contaminated runoff during excavation activities. Filter fabric shall be placed under the grate of the drains and extend to the limit of the straw bales. In lieu of straw bales and filter fabric, a catch basin sediment device shall be used.
5. Berms a minimum of 12 inches high at points of vehicle access to the stockpile. Contractor shall have provisions in place to increase berm heights at the vehicle access point to account for potential flooding.

B. Contractor shall remove and store liquids which collect in contaminated stockpile containment areas. Liquids from stockpile areas shall be containerized onsite and will be treated once a site water treatment system is constructed.

C. Contractor shall inspect the stockpile containment areas on a weekly basis (at a minimum) or following a significant precipitation event, and as requested by the Owner.

D. Water-tight roll-off containers may be used to temporarily store contaminated materials. Roll-offs shall be provided by Contractor with secondary containment.

E. Contractor shall place an impermeable cover over stockpile areas to prevent precipitation from contacting stored material. Liquids which collect in stockpile units shall be managed by the Contractor.

1.7 TEMPORARY STORMWATER CONTROL

A. Contractor shall maintain work areas free of water to the extent possible. Contractor shall provide, operate, and maintain pumping equipment as required to remove accumulated/ponded water.

B. Contractor shall protect the Site from puddling or running water and provide stormwater controls to direct runoff away from disturbed areas, active work areas to the extent practical. Water that contacts stockpiled impacted materials must be managed by the Contractor. Liquids from stockpile areas shall be containerized onsite and will be treated once a site water treatment system is constructed.

C. Contractor shall construct stormwater controls in accordance with engineering drawings. They will consist of:

1. Temporary berms to divert clean storm water runoff from entering the active work area or to contain stormwater runoff captured within an active work area. Diversion berms include the following:
   a. Temporary stormwater diversion V-ditches constructed at an approximately 1:50 slope and underlain by compacted subgrade and non-woven geotextile.
   b. Temporary drainage berms constructed at a 1:3 slope from compacted subgrade and underlain with non-woven geotextile.
2. New detention ponds in accordance with engineering drawings to contain the estimated volume of runoff in the area. Berms shall be constructed with approximately 1:3 slopes and underlain by woven geotextile and compact subgrade.

1.8 REMOVAL OF TEMPORARY CONTROLS

A. Contractor shall remove temporary utilities, equipment, facilities, and materials prior to Substantial Construction Completion inspection as directed by Owner.

B. Contractor shall remove temporary underground installations completely.

C. Contractor shall clean and repair damage caused by installation or use of temporary work.

D. Contractor shall restore existing permanent facilities used during construction to original condition or as otherwise specified.

PART 2 – PRODUCTS

A. Straw Bales: Securely tied baled straw at least 14 inches (in) by 18 in by 30 in long. Secure with #2 re-bar steel pickets or 1-in by 1-in oak stakes, at least 4.0 feet (ft) in length, driven 1.0 ft into the ground. Clean straw bales shall be free of reproductive plant parts (e.g., seed heads, etc.) from the harvested plants that can contribute to invasive species development.

B. Erosion control materials used at the site shall not contain plant parts capable of reproducing (e.g., seed, rhizomes, etc.). Straw bales and other erosion control materials delivered to the site may be rejected by the Engineer for use if they contain reproductive plant parts.

C. Temporary Seed Mixture: Temporary seed is only to be required when or if it is impractical to establish permanent protective vegetation on disturbed earth by October 15. Use "Conservation Mix" or seed mixture approved by the Engineer and application rates acceptable to the Engineer.

D. Straw Wattles shall consist of North American Green Sedimax-SW (Straw Wattles) or similar.

E. Crushed Stone: ¾-in. Crushed Stone (MHD M2.01.4) as specified in Section 31 00 00 – Earthwork.

F. Erosion Control Blankets: Erosion control blankets shall consist of biodegradable natural fiber materials. The matting matrix shall consist of agricultural straw, coconut fibers, or a mixture of the two, depending on the matting type indicated on the Drawings. Erosion control blankets shall be as specified in Section 310000 – Earthwork.

G. Silt Fence: The filter fabric shall be a material suitable for erosion control applications and shall be one of those included on the Massachusetts Highway Department's List of Approved Materials and Supplies. Wood posts shall be oak and sections shall measure 2-in by 2-in, and at least 4.5 ft in length. Support netting shall be heavy-duty plastic mesh. For prefabricated silt fence, 1 in by 1-in wood posts will be permitted.

PART 3 – EXECUTION

A. Straw Wattles, Straw Bales, and Silt Fences shall be installed in accordance with the following specifications:

1. The straw wattles shall be placed and anchored as shown on the drawings.
2. Embed straw bales into soil and anchor in place with stakes. Where used, bales shall be placed in a single row, lengthwise on the contour, with ends of adjacent bales tightly abutting one another. All straw bales and silt fence shall be

entrenched 4 in below ground surface to prevent runoff from passing below the straw bales.

3. The erosion check bales shall be entrenched and backfilled. The trench shall be excavated the width of the bale and the length of the check to a minimum depth of 4 in. After the bales are staked and chinked, the excavated soil shall be backfilled against the check bales.
4. Each bale shall be securely anchored by at least two stakes driven through the bale. The first stake in each bale should be driven toward the previously laid bale to force the bales together.
5. Straw bales shall be replaced when they become clogged with soil particles or as directed by the Engineer
6. Erect silt fence as shown on the Drawings and maintain or replace as necessary or as directed by the Engineer.
7. A minimum 6-in deep by 6-in wide trench shall be dug where the silt fence is to be installed.
8. The silt fence shall be positioned in the trench with the fence posts set at 8 ft on center (maximum). The trench shall be backfilled and the soil compacted over the silt fence.
9. The silt fence shall be stapled to each post. When joints are necessary, silt fence shall be spliced together only at support posts. Splices shall consist of a 6-in overlap and shall be securely sealed.

B. Crushed stone shall be placed in accordance with engineering drawings and Section 31 00 00 – Earthwork specifications.

C. Erosion control blankets shall be installed in accordance with the manufacturer's recommendations. At a minimum, matting shall be secured to the soil surface by placing staples or stakes at 18 in by 24 in centers with smaller dimension oriented across slope. The edges of parallel matting shall be staked with a 4 in overlap.

D. Maintenance of Erosion and Sediment Control Measures shall be completed in accordance with the following specifications:

1. The Engineer has the authority to verify, enforce, and to specify maintenance activities and to require that erosion controls have been properly maintained. Erosion controls shall be maintained by the Contractor to the satisfaction of the Engineer or Owner.
2. Erosion and sedimentation controls shall be routinely inspected and maintained by the Contractor. At a minimum, erosion controls shall be visually inspected at the start of day, mid-day, at the end of the day, following a storm event, and as requested by Engineer. The Contractor shall conduct inspections of the erosion and sedimentation controls promptly after rain events or when directed by the Engineer. Impacted resource areas shall be restored to prior conditions.
3. At a minimum, erosion and sedimentation controls will be cleaned when sediment deposits reach 6 in height adjacent to the straw bales or silt fences. Any material removed from erosion controls will be screened by the on-site

radiation safety officer (RSO) and placed with other impacted material stockpiled for disposal.

E. Repair all damages caused by soil erosion or construction equipment at or before the end of each working day. Contractor shall maintain a supply of extra erosion control materials under cover on the Site in order to make emergency repairs to erosion controls, consisting of the following:

1. 50 straw bales (under cover)
2. 100 stakes
3. 200 linear ft of silt fencing
4. 200 linear ft of erosion control blanket
5. 20 cubic yards of ¾ -in crushed stone

END OF SECTION

SECTION 01 57 19

ENVIRONMENTAL CONTROLS

PART 1 – GENERAL

1.1 SUMMARY

A. Attention is directed to the GENERAL CONDITIONS OF THE CONTRACT and all sections of Division 1 – GENERAL REQUIREMENTS, which are hereby made a part of the Specifications.

B. This Section covers the requirements for dust and vapor controls, decontamination procedures, air pollution control, water pollution control, erosion and sedimentation control, hazardous materials storage and management, spill prevention, biological species protection during construction, and import soil/fill materials. Temporary controls are defined as installations to support construction that are not part of the permanent installed Work.

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

D. Provide all facilities, labor, materials, tools, equipment, appliances, transportation, supervision, and related work necessary to complete the Work specified in this Section, and as shown on the Drawings.

E. The Work described in these Contract Documents will be performed at a Superfund site. The Contractor is required to notify all workers of the history of the site and contaminants that may be present, and to be alert for evidence of contaminated soil, sediment, surface water, groundwater, and other media (contaminated media). The Engineer should be notified of the presence of potentially hazardous conditions, if encountered.

F. The Contractor shall at times be solely responsible for exercising reasonable precaution to protect the health, safety, public welfare, and all on-site personnel, and the environment during performance of the Work described in these Contract Documents. The Contractor shall comply with all applicable provisions of federal, state, and local health and safety and occupational health and safety statutes and codes.

1.2 REFERENCES

A. “Stormwater Quality Handbook, Construction Site Best Management Practices (BMPs) Manual,” Massachusetts Department of Environmental Protection (MassDEP), February 2008.

B. MassDEP Wetlands Protection Act, M.G.L. c. 131, § 40,

C. MassDEP Massachusetts Clean Waters Act, M.G.L.c. 21, §§ 26-53.

D. Massachusetts Surface Water Quality Standards, 314 CMR 4.00.

E. Massachusetts Ambient Air Pollution Control Regulations, 310 CMR 7.00.

F. Massachusetts Groundwater Discharge Permit Program (3.14 CMR 5.10 (Permit Conditions) and 5.11 (Groundwater Standards).

G. Draft Stormwater Pollution Prevention Plan (SWPPP), Nuclear Metals Inc. Superfund Site Remedial Action, prepared by Haley & Aldrich, Inc., prepared for de maximis, Inc., dated March 2022

1.3 RELATED SECTIONS

A. SECTION 01 11 00 – Summary of Work

B. SECTION 02 22 00 – Existing Conditions Assessment

C. SECTION 01 57 00 – Temporary Erosion and Sediment Controls

D. SECTION 31 00 00 – Earthwork Specification

E. SECTION 02 61 00 – Waste Management

F. SECTION 01 35 29 – Health and Safety Requirements

G. SECTION 02 70 00 – Construction Dewatering and Water Management

1.4 SUBMITTALS

A. Contractor shall submit all submittals to the Owner and Engineer in accordance with Section 01 33 00 – Submittal Procedures.

B. Contractor shall submit product information on Stormwater Pollution Prevention Plan (SWPPP) Best Management Practice (BMP) products including erosion and sedimentation controls to be used by the Contractor at the Site.

C. Contractor shall submit a Decontamination Plan describing the means, methods, and location of decontamination occurring at the Site. The Decontamination Plan should also describe how water used for decontamination will be managed.

1.5 DESCRIPTION OF WORK

A. Work will be completed as described in Section 01 11 00 Summary of Work and includes soil and sediment excavation across the Site. Excavated contaminated soil shall be stockpiled in contained areas and brought off-site in shipments in accordance with

Section 02 61 00 Waste Management Clean backfill soil shall be stockpiled onsite and used to fill in excavations and restore remediation areas.

B. Excavation of contaminated sediment shall occur along the edges of the Sphagnum Bog during SSS remediation. The wetland shall be restored in accordance with Section 32 30 00 Wetland and Upland Restoration.

C. Temporary erosion controls such as straw wattles shall be installed temporary contaminated soil stockpile areas, catch basins, and environmentally sensitive areas in accordance with Section 01 57 00 – Temporary Erosion and Sediment Controls.

D. Water that contacts stockpiled impacted materials must be managed by the Contractor in accordance with Sections 02 61 00 Waste Management and 02 70 00 – Construction Dewatering and Water Management. Liquids from stockpile areas shall be containerized onsite and will be treated once a site water treatment system is constructed.

E. Contractor shall place an impermeable cover over stockpile areas to prevent precipitation from contacting stored material.

PART 2 – PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Contractor shall furnish all materials, equipment, appurtenances, and facilities as required for installing, maintaining, and removing all environmental protection measures described in the Contract Documents.

PART 3 – EXECUTION

3.1 GENERAL

A. The Owner will notify the Contractor in writing of noncompliance with the provisions of this Section and the action required to become compliant. The Contractor shall respond in writing within 3 business days and take immediate corrective action. Contractor shall record the submittal of written response in daily reports. Such notice, delivered at the Site, shall be sufficient for the Contractor to take action. The Owner or Engineer may issue an order stopping all or part of the Work for failure to comply until corrective action has been taken. No time lost or other costs, or damages due to such stop orders, shall be the subject of a claim for extension of time or for costs or damages unless it is later determined that the Contractor was in compliance.

B. Construction activities and vehicle encroachment into areas outside the Work Limits or off access roads are prohibited, except as approved by the Owner in communication with the property Owner in writing prior to the activity or encroachment.

C. Contractor shall notify the Owner immediately upon observation of construction-related uncontrolled dust, other fugitive emission, or unsanctioned environmental condition.

D. Should any sudden, continuous, or intermittent release of oil or hazardous material occur during the Work, the Contractor shall notify the Owner immediately and shall immediately begin actions to contain or abate the release. The Contractor shall immediately arrange for clean-up activities either by themselves or through a pre-approved Contractor who is contracted with them to provide such services. The Owner shall make necessary notifications to the Massachusetts Department of Environmental Protection (MassDEP) 24-hour Spill Reporting Line at 888-304-1133, to report a release of oil or hazardous material (OHM) and other environmental emergencies. The 2-hour Reportable Quantity of OHM in Massachusetts is more than 10-gallons of oil, a spill of any amount which results in a sheen on surface water, and a detection of OHM which exceeds a Reportable Concentration. Contractor shall maintain a sufficiently stocked spill kit on-Site to immediately respond to an oil or hazardous material release.

E. All equipment and materials shall be used in a manner to minimize the potential for, and extent of, any unnecessary contamination. Methods to minimize unnecessary contamination could include, but are not limited to, using separate equipment for handling excavated/dredged material and clean imported material, tracking equipment across HDPE sheets to minimize tracking across contaminated material, and/or having multiple or mobile decontamination/wheel wash pads to minimize the travel distance to decontamination.

F. Any earthwork equipment that performs intrusive activities in any part of the Site within the Work Limits or is used to handle contaminated materials shall be decontaminated prior to leaving either the area of contamination or the Site, or prior to being repurposed for use with clean construction materials.

3.2 WATER QUALITY

A. The discharge of floating oil or other floating materials from any vicinity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface water, or otherwise adversely impact beneficial uses is prohibited.

B. No refuse, garbage, debris, soil, silt, sand, cement, concrete, or washings thereof, or other construction related materials or wastes including oil or petroleum products, or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by the rainfall or run-off into Waters. These materials shall not be placed within or where they may enter a surface water body or wetlands, and if so placed, shall be removed immediately. Catch basins shall be protected with straw wattles during earthwork activities.

C. All water associated with construction activities shall be handled in accordance with Section 02 61 00 – Waste Management and Section 02 70 00 – Construction Dewatering and Water Management.

D. Contractor shall implement the SWPPP, any updates to the SWPPP, to prevent Site runoff and/or accidental discharge. The discharge of materials other than non-impacted

stormwater to site water bodies is prohibited. Impacted stormwater, dewatering water, and other water generated by construction activities shall be monitored and managed by the contractor. Liquids in contact with impacted stockpile areas shall be containerized onsite and will be treated once a site water treatment system is constructed.

1. Contractor shall prevent or minimize the transfer of sediments with runoff from any portion of the Site (e.g., access road, parking area) to adjacent properties.

E. Contractor shall prevent stormwater and non-stormwater from contacting waste and hazardous materials to minimize the generation of Construction Water. Contractor shall utilize engineering controls, best management practices, stormwater controls, and other related means and methods including, but not limited to, the following:

1. Provide double containment for any electrical generator or other device containing fuel, lubricants, or other potential contaminants; The contractor shall use mobile diesel fueling trucks as necessary during the work for fueling of equipment;
1. Prior to completion of the Work, remove any contamination from within the containment and legally dispose, remove containment barriers, and restore the area;
2. Each construction crew shall have sufficient supplies of absorbent and barrier materials on-hand to allow the rapid containment and recovery of any spills;
3. Collect waste generated during spill cleanup or equipment maintenance and dispose of waste in accordance with Section 02 61 00 – Waste Management;
4. Remove spills by excavation and disposal of any soil or materials contaminated by a spill;
5. Inspect vehicles daily and provide routine and required maintenance to detect and repair leaks of fuels, lubricants, or other fluids. Repair immediately following detection of leaks. Perform maintenance of vehicles no less than 50 feet from Waters; and
6. Provide drip pans under stationary equipment such as motors, pumps, generators, compressors, and parked or idle vehicles that are within or immediately adjacent to a wetland or body of water to prevent impacts from oil or other fluids.

3.3 DECONTAMINATION

A. Contractor shall decontaminate vehicles, equipment, tools, and materials that come into contact with waste materials and manage the waste material as specified in Section 02 61 00 – Waste Management:

1. Contractor shall conduct thorough removal of materials from the exterior of all trucks and construction vehicles/equipment within the active work area prior to final rinsing/cleaning at the decontamination/wheel wash pad to minimize the amount of soil and sediment collected in the wash water. Remove soil and debris from undercarriage and wheels/tracks prior to departing the active work area.

2. Contractor shall clean all vehicles and equipment leaving the Work Limits and rendered free of any visible solids. Contractor shall accomplish this 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. All washing activities shall be conducted at a designated wash area selected by the Contractor and Owner.
3. For equipment used to load TSCA materials (materials with PCBs ≥ 50 ppm), equipment will be decontaminated in accordance with 40 CFR §761.79 - Decontamination Standards and Procedures as well as the provisions within this specification. In accordance with 40 CFR §761.79 (c)(2), a double wash/rinse will be used in lieu of swabbing surfaces. If a double wash cannot be completed, surfaces will be swabbed. A sump will be installed in the truck wash area to capture and contain solvents and cleaners in accordance with 40 CFR §761.366 - Cleanup Equipment.

B. Contractor shall handle and dispose of water and solids collected during decontamination procedures as specified in Section 02 61 00 – Waste Management.

C. Contractor shall provide all protective clothing and equipment necessary to comply with the decontamination procedures as specified in the Contractor's approved CHASP, specified in Section 01 35 29 – Health and Safety Requirements. Perform personnel decontamination as needed prior to leaving the Site.

3.4 DUST, VAPOR, AND ODOR CONTROL

A. The Contractor shall take measures to control dust, vapor, and odor within the Contractor's active work zone, in accordance dust monitoring requirements in the Dust Monitoring Amendment to the Field Sampling Plan (FSP) and Table 3.4-1 below. The Contractor shall discuss the dust, vapor, and odor conditions with the Owner and Engineer to select the most appropriate dust, vapor, and odor control measures to be implemented. Upon selection of the appropriate dust, vapor, or odor control measures, the Contractor shall initiate the control measures immediately.

B. The Contractor will be notified as soon as possible if exceedances of air-born particulates (dust) occur. Upon notification, Contractor shall cease excavation activities and apply dust control in accordance with the Contractor's approved Dust Monitoring Amendment to the Field Sampling Plan (FSP) and Table 3.4-1 Below. Contractor shall be ready to apply wet suppression or other approved dust control measures within a 5-minute period of notification from Owner.

Table 3.4-1
Perimeter Dust Thresholds by Work Area

Work Area	Dust*
Holding Basin Area (Earthwork and Containment Wall Construction)	130 µg/m^3
AOI-8 and 9, Courtyard, Landfill, Cooling Water Pond, and Sediment Building Slabs and Building Footprint (Building A-D) and Paved Areas and Islands Identified During Penetrator Hunt Survey and Sampling Building E and All other Areas	150 µg/m^{3**}
* Dust levels at the downwind location are "corrected" by subtracting the upwind dust levels, which represents background ambient air quality, with comparison to the noted criteria. The Contractor shall implement active dust control measures before the dust action level in this table is exceeded. The value in this table represents a stop work threshold that, once exceeded, dust generating activities must stop pending the Contractor's resolution of work practices and dust control measures. Work may continue when the work practices and dust control is corrected to the satisfaction of the Owner and Engineer. ** This value represents USEPA's National Ambient Air Quality Standard (NAAQS) for particulates (PM_{10}) and, consequently, dust levels cannot exceed this value during the remedial activities (i.e., the 150 µg/m^3 value is a ceiling dust concentration).	

C. The Contractor shall conduct operations and maintain controls to minimize the creation and dispersion of dust. If water suppression is insufficient to control dust to acceptable levels, Contractor shall employ additional measures to control dust, including but not limited to the following: calcium chloride, tackifier, mulch, tarps/covers, temporary seeding, and mulching.

D. Contractor shall pave, apply water as needed, or apply nontoxic soil stabilizers on all unpaved access roads, parking areas, and staging areas shown on the Drawings to suppress dust.

E. The Contractor shall be responsible for any damages caused by fugitive dust emissions. If the Work is stopped because of dust or odor emissions, the Contractor shall be responsible to implement additional mitigative measures at their own cost. Failure to meet these restrictions may result in cessation of construction activities.

F. Contractor shall immediately inform the Owner and Engineer of any dust, vapor, or odor conditions exceeding regulatory criteria within the work and breathing zones based on

Contractor's monitoring in accordance with the Contractor's CHASP, specified in Section 01 35 29 – Health and Safety Requirements.

G. Water for dust control shall be provided by the Contractor.

H. Contractor shall manage waste generated as a result of dust control measures in accordance with Section 02 61 00 – Waste Management. When the waste removal and handling activities on-Site are complete, the sweepings shall be properly disposed off-Site at an approved disposal facility.

I. General Requirements:

1. Contractor shall apply dust suppression at all active construction areas as needed to minimize and control dust. Dust control for stockpiles and the access roads shall be achieved through the application of water as necessary to prevent wind-blown dust. Water shall also be used to control dust associated with loading and hauling operations.

    a. Contractor shall utilize spraying equipment to provide complete coverage of surfaces with water prior to, during, and subsequent to soil moving activities. Apply water in a manner to prevent movement of spray beyond application area and Work Limits to minimize excess water use.
    b. Contractor shall apply water without interfering with earthmoving equipment or on-Site operations.
    c. Contractor shall keep surfaces damp without creating nuisance conditions such as ponding, runoff, erosion, or excessively wet and muddy conditions.
    d. Contractor shall provide periodic water misting/sprinkling on active stockpiles during active period when covering is not practicable. During inactive periods, cover stockpiles with weighted and anchored tarps/covers or with a soil stabilizer/tackifier approved by the Owner.
    e. Contractor shall cover or stabilize areas and stockpiles that are inactive (no disturbance for more than 10 days) with application of a soil stabilizing product.

2. Contractor shall cover all trucks hauling soil, sand, aggregates, and other loose material with the potential to create dust during transport, and require all trucks to maintain at least 2 feet of freeboard (the space between the top of the load and the top of the truck bed).
3. Track-out Controls: Contractor shall remove all visible mud or dirt track-out onto adjacent public roads using wet power vacuum street sweepers at least once per day, and as dictated by the Owner. Clean all paved access roads, parking areas, staging areas, and adjacent public streets if soil material is visible. The use of dry power sweeping is prohibited.

    a. Contractor shall maintain clean pavement surfaces within the designated work areas (within Work Limits) and Site egress routes.

b. Contractor shall clean pavement at the construction entrances to the Work Limits and along facility travelled ways, daily. Deposits of dirt/mud/stones on paved surfaces that may cause safety issues or damage to vehicles, property, or pedestrians shall be wet swept clean immediately.
c. Contractor shall wash the tires or treads of a vehicle at the decontamination/wash pad if the tires become soiled with soil or sediment.

4. Contractor shall provide dust controls for sediment/stockpile management areas, including providing enclosed structures and active collection systems as necessary.
5. During excavation or soil movement activities, drop heights shall be kept to a minimum.
6. Any pavement demolition debris (and concrete demolition debris) shall be directly loaded into trucks or roll-off bins or stockpiled to be sorted for recycling or disposal. If asphalt residue remains after saw cutting, the cuttings/grindings shall be swept or vacuumed up to prevent wind-blown dust generation.
7. Contractor shall evaluate sources of odors if excessive odors are noticed during construction and work may be stopped by the SDs Representative or Engineer. Contractor shall employ additional efforts to reduce odors to acceptable levels during construction. No additional compensation will be allowed for odor control measures outside of what was agreed to in the Contract Documents.

3.5 AIR POLUTION CONTROL

A. Products, equipment, and work practices shall conform to air pollution control requirements of applicable federal, state, and local laws and regulations, and with the requirements of this Sub-Part. The Contractor shall utilize such methods and devices as are reasonably available to prevent, control, and otherwise minimize atmospheric emissions and discharges of air contaminants in accordance with relevant permits and authorizations.

B. Contractor shall provide air quality and controls for enclosed spaces and for equipment or operations that generate emissions or dust in accordance with all local, state, and federal requirements as well as any additional permit requirements.

C. Contractor shall routinely maintain construction equipment and vehicles to ensure that engines remain tuned and emission control equipment is functioning properly as required by law. Equipment and vehicles that show excessive emissions of exhaust gases, as determined by the Owner, shall not be operated until corrective repairs or adjustments are made to reduce emissions to acceptable levels. The Contractor shall also limit excessive equipment idling time whenever possible.

3.6 NOISE CONTROL

A. Trucks and construction equipment shall be required to have adequate mufflers for noise suppression. Equipment without noise suppression or proper maintenance will

not be allowed on-Site.

B. It is the responsibility of the Contractor to verify sound levels. Noise levels shall be evaluated by the Owner or Engineer to determine potential disruptions to neighboring properties. Controls to minimize or contain noise shall be installed as necessary.

END OF SECTION

Appendix C

Remedial Design Work Plan – Appendix H
Emergency Response Plan (ERP)

NUCLEAR METALS, INC. SUPERFUND SITE

CONCORD, MASSACHUSETTS

Remedial Design Work Plan – Appendix H

Emergency Response Plan (ERP)

Prepared by:

de maximis, inc.
200 Day Hill Road, Suite 200
Windsor, CT 06095

Revision 3

September 2023

Contents

Abbreviations and Acronyms

ABC	Airway, Breathing, and Circulation
AFD	Acton Fire Department
ARAR	Applicable or Relevant and Appropriate Requirements
CCA	Chemically Controlled Area
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERT	Community Emergency Response Team
CFD	Concord Fire Department
CFR	Code of Federal Regulations
CM	Construction Manager
CPR	Cardiopulmonary Resuscitation
CRSP	Community Relations Support Plan
DU	Depleted uranium
EE/CA	Engineering Evaluation/Cost Analysis
EMS	Emergency Medical Services
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
FS	Field Supervisor
FSP	Field Sampling Plan
HASP	Health and Safety Plan
HAZMAT	Hazardous Materials
HB	Holding Basin
HMEP	Hazardous Materials Emergency Plan
HSM	Health and Safety Manager
HSO	Health and Safety Officer
ICC	Incident Control Center
ISS	In-Situ stabilization
LEPC	Local Emergency Planning Committee
MassDEP	Massachusetts Department of Environmental Protection

NFPA	National Fire Protection Association
NMI	Nuclear Metals, Inc.
NTCRA	Non-Time Critical Removal Action
OSHA	Occupational Safety and Health Agency
PC	Project Coordinator
POP	Project Operations Plan
PPE	Personnel Protective Equipment
QAPP	Quality Assurance Project Plan
RAWP	Remedial Action Work Plan
RCA	Radiation Controlled Area
RD/RA	Remedial Design/ Remedial Action
RQ	reportable quantity
RSO	Radiation Safety Officer
SDS	Safety Data Sheet
SOW	Statement of Work
SPM	Site Project Manager
SSO	Site Safety Officer
VOCs	volatile Organic Compounds

1. Introduction

On October 17, 2019, the United States Environmental Protection Agency (EPA) lodged a Consent Decree (CD) with the United States District Court for the District of Massachusetts Eastern Division in connection with Civil Action No. 19-12097-RGS. The CD was entered by the Court on December 6, 2019. The CD and the Statement of Work (SOW) provided as Appendix B to the CD describe the Remedial Design/Remedial Action (RD/RA) activities to be performed for the Nuclear Metals, Inc. (NMI) Superfund Site (Site) in Concord, Massachusetts. The RD/RA activities will be undertaken by the Settling Defendants (SDs) to the CD, with funding contributions from the Settling Federal Agencies (SFAs).

To efficiently implement the remedy, the work will be divided into five RA projects. RA Projects 1) – 4) below are outlined in Section 1.4 of the SOW. The need for RA Project 5) was identified during the Groundwater NTCRA (Non-Time Critical Removal Action). The five RA projects are:

1) excavation and off-site disposal of contaminated sediments, underground drain lines and debris, and non-Holding Basin (HB) soils, or "Site-wide Soils and Sediments";

2) In-situ stabilization (ISS) of DU in HB soils and of DU and natural uranium in overburden and bedrock groundwater or "ISS".

3) containment of HB stabilized soils with a low-permeability vertical wall and horizontal sub-grade cover or "HB Containment".

4) hydraulic containment and ex-situ treatment of volatile organic compounds (VOCs) and 1,4-dioxane in groundwater; and,

5) hydraulic containment and ex-situ treatment of 1,4-dioxane and VOCs in bedrock groundwater.

1.1 Remedial Design Work Plan Overview

Section 3.1 of the SOW requires submittal of a *Remedial Design Work Plan* (RDWP) to summarize pertinent Site information, identify and describe the scopes and procedures for various pre-design investigations, describe the anticipated RD process, and discuss the RD-related deliverables and schedule.

As required by Section 3.3(a) of the SOW, Pre-Design Investigation Work Plans (PDI WPs) have been prepared for the three remedial components (Site-wide Soils and Sediments, ISS, and HB Containment). Hydraulic containment and ex-situ treatment of VOCs and 1,4-dioxane in groundwater as required by the Groundwater NTCRA is operating and does not require further PDI work to complete. However, the extent of 1,4-dioxane and VOCs in bedrock groundwater in the area up gradient from the extraction well needs further delineation. Separate PDI WPs were prepared for each remedial component, and are attached to the RDWP as follows:

- Site-wide Soils and Sediment PDI WP (Appendix A)
- ISS PDI WP (Appendix B)
- HB Containment PDI WP (Appendix C)
- 1,4-dioxane and VOCs in Bedrock Groundwater (Appendix D)

Section 3.4(a) of the SOW requires performance of Treatability Studies (TS) to support the ISS component of the remedy. Separate studies are needed to evaluate and select treatment materials/reagents, for high concentration DU within the HB, low concentration DU outside the HB, and isotopically natural U in bedrock, respectively. In addition to reagent selection, each media will require evaluation to determine the best means to apply the selected reagent. The overall Treatability Study Work Plan (TSWP) is attached as Appendix E.

The RDWP will also include the following "Supporting Deliverables":

- To continue the Post-Removal Site Control (PRSC) requirements established pursuant to the Building NTCRA, a "Site Maintenance and Inspection Plan" (SMIP) is provided as Appendix F.
- Health and Safety Plan (HASP) – Appendix G
- Emergency Response Plan (ERP) – Appendix H
- Sampling and Analysis Plan: Field Sampling Plan (FSP) – Appendix I
- Sampling and Analysis Plan: Quality Assurance Project Plan (QAPP) – Appendix J
- Site Wide Monitoring Plan (SWMP) – Appendix K

1.2 Purpose

The ERP's purpose is to minimize hazards to human health or the environment from fires, releases of hazardous constituents or other emergency conditions. This plan describes the actions personnel will take in response to emergencies or unplanned releases at the Site. These actions include predetermined arrangements with local, state, and federal emergency responders to coordinate emergency services, identification of the roles and responsibilities of the emergency coordinator and alternates. As part of the ERP, necessary supplies and onsite emergency equipment is identified as are methods for stop work and emergency evacuation planning.

1.3 Format of Document

This document is organized in the following sections:

- **Section 1 – Introduction:** Describes the purpose, scope, and organization of this document.
- **Section 2 –Project Personnel:** Summarizes the responsibilities of key personnel and outlines the chain of command between each in the event of an emergency.
- **Section 3 – Types of Emergencies and Response Procedures:** Summarizes what types of emergencies are deemed possible at the site and outlines specific response actions to be

completed in the event of an emergency.

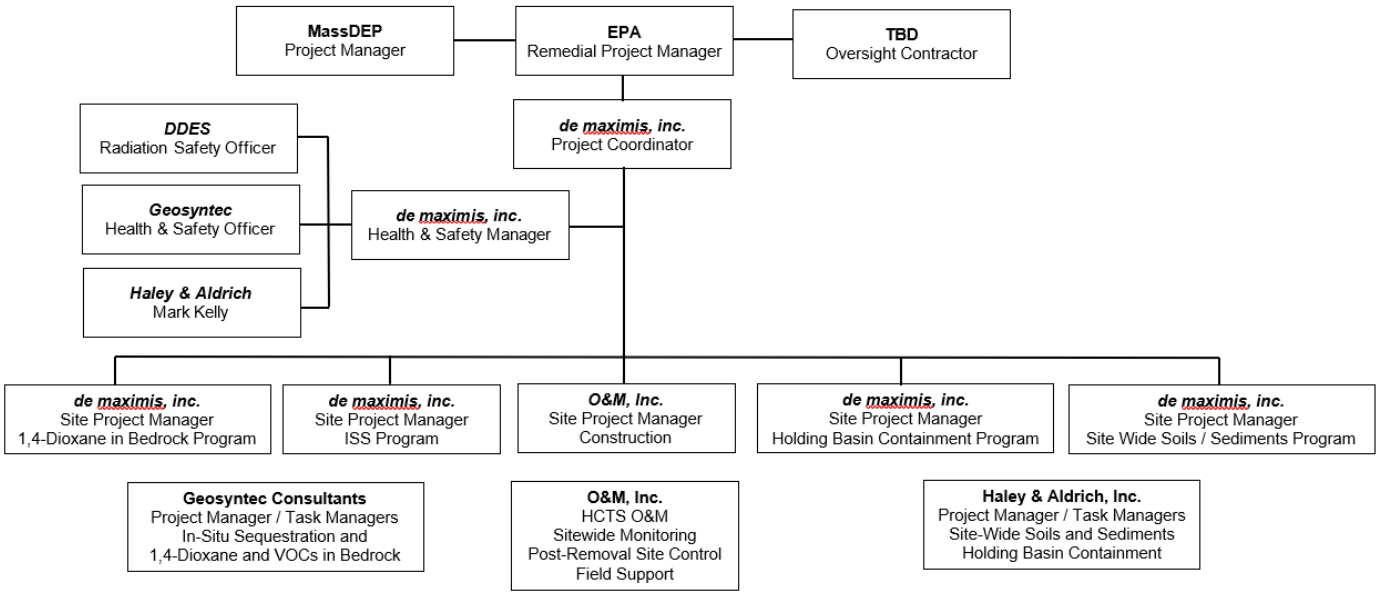
- **Section 4 – Emergency Decontamination Measures:** Outlines procedures to be followed in the event of an emergency within a Radiation Controlled Area (RCA) or Chemically Controlled Area (CCA);
- **Section 5 – Evacuation Procedures:** Summarizes steps to be initialized if an emergency results in the need for a total evacuation or need for a Public Evacuation.
- **Section 6 – Evacuation Routes**: Outlines the standards to be implemented in work areas to maintain proper Emergency Egresses.
- **Section 7- Emergency Response Information and Personnel:** Provides a summary of the public departments involved in the Emergency Response process and outlines the required information to be shared between the departments.
- **Sections 8-12-** Summarizes additional steps and procedures to be implemented included:
  - **Emergency Response Equipment**
  - **Hazard Identification, evaluation, and vulnerability analysis**
  - **Spill Potential Analysis**
  - **Storage and Disposal Plans**
  - **Facility Self-Inspection Checklists, Training Information and Meeting Logs;**
- **Section 13- Communication of ERP Contents:** Summarizes tasks that the Field Supervisor/Health and Safety Officer (FS/HSO) will perform prior to commencement of field operations.
- **Section 14- Reporting of Emergency Events: Outlines requirements for reporting to the Agencies in case of an emergency at the Site.**

2. Project Personnel

All site personnel will be familiarized with the location of the nearest emergency exit, location of rally/assembly points, and methods of communication at the site. A list of emergency telephone numbers (Table 2-1) and a copy of a map with the route to the nearest exit will be posted in each subcontractor's office.

Sections 2.1 through 2.5 describe the site communication chain of command and the responsibilities of key project personnel. Figure 2-1 is an organizational chart that illustrates the chain of command.

Figure 2-1 Organizational Chart



2.1 Site Communication Lines of Command

In accordance with the procedures set forth in the HASP, all members of each subcontractor will report to their company's Field Supervisor/Health and Safety Officer (FS/HSO). The Field Supervisors may also act as the Health and Safety Officer (HSO) for all work being performed under their company's scope. FS/HSOs will be responsible for reporting to the de maximis Site Safety Officer (SSO) or the Health and Safety Manager (HSM) for any matters involving health and safety. In addition to contractor specified FS/HSOs, a Radiation Safety Officer (RSO) will work with the contractor FS/HSO to monitor health and safety measures that pertain to radiological contaminants and their handling. As with the FS/HSO, the RSO will report directly to the SSO or SPM for health and safety concerns.

The responsibilities of specific project individuals and coordination with the Town of Concord Police and Fire Departments responding personnel are defined as follows.

2.2 Project Coordinator

The PC is responsible for administration of all actions by the Potentially Responsible Parties (U.S. Army, U.S. Dept. of Energy, Whittaker Corp., and Textron, Inc.) required by the RD/RA Consent Decree. The PC is responsible for supervising and directing the implementation of the Work. The PC coordinates activities with EPA's remedial project manager and is the interface between the community and the Respondents on matters related to the RD/RA.

2.3 Site Project Manager

The SPM reports to the PC and is responsible for overseeing all activities at the Site, including interacting with the regulatory agencies, preparing reports and work plans, and processing and evaluating data. The SPM will establish project needs. The SPM's responsibilities include

ensuring that all work incorporates the HASP requirements into work plans and ensures support is provided for personnel engaged in safety related tasks. The SPM will coordinate any addenda or modifications of this ERP.

The SPM or if not present the CM (Construction Manager), SSO or the Health and Safety Manager (HSM) for de maximis will be always present at the Site during the performance of on-site activities and is responsible for directing the daily physical work activities. The SPM is the on- site individual responsible for implementing emergency procedures and determining appropriate response actions. Depending upon the circumstances, and time permitting, the SPM will review proposed response actions with the SSO and/or HSM, CM, and if indicated, the RSO. Specific responsibilities for the SPM include:

- Evaluating and assessing emergency incidents or situations.
- Assigning personnel and coordinating emergency response activities.
- Communicating the specific hazards to field personnel.
- Notifying the PC of a Site emergency.
- Notifying appropriate emergency response agencies; and
- In coordination with SSO and/or HSM, evaluate the safety of personnel in an emergency and coordinate any necessary evacuation.

2.4 Field Supervisors/ Health and Safety Officer (FS/HSO)

Due to the nature of the work, subcontractor field supervisors will also be responsible for the role of Health and Safety Officers for their employees and firms working under them. FS/HSOs have the principal work area safety responsibility for their personnel. FS/HSOs ensure this responsibility is effectively carried out by integrating safety procedures into work plans and communicating safety requirements to workers each day. FS/HSOs monitor work to ensure work is being conducted as planned and safely.

The FS/HSO reports to the SPM and will work in coordination with the CM, SSO and RSO to facilitate implementation of the requirements of this ERP. The contractors' site safety officer's name and contact information is listed in Table 3-1. The FS/HSO is responsible for assessing work area safety procedures and is a technical consultant to the CM, SSO, SPM, and workers. The FS/HSO shall perform field observations to ensure workers are implementing work in accordance with this HASP and State and Federal Safety regulations, assist with the development and presentation of safety briefings, review JSAs (Job Safety Analysis) and work plans, and complete Loss and Near-Loss investigations as needed. The FS/HSO will confirm worker training requirements are satisfied prior to personnel entering the site.

The FS/HSO will focus on health and safety issues related to the non-radiological portions of the HASP. The FS/HSO shall review radiological work plans as prepared by the RSO to ensure both radiological and traditional health and safety requirements are achieved.

The FS/HSO can recommend to the SPM, SSO, or the CM that Site access of individual Site personnel or companies be restricted or eliminated for non-compliance with this HASP or other health and/or safety reasons.

The FS/HSO has direct responsibility for adherence to the designated safety procedures in an emergency response situation. The FS/HSO shall account for on-site personnel during an evacuation or serious emergency and report to the SSO, CM and/or SPM that all personnel are accounted for or if personnel are missing. In the event of evacuation, see Section 5 for evacuation procedures, Section 6 for evacuation routes and Section 12 for emergency contact communications.

Emergency communication by the FS/HSO may require the following actions:

- Coordination with outside emergency services and emergency response personnel (communicating with the CM, SSO or SPM as soon as practical following an emergency event).
- Establish and demonstrate viability of two-way radio communications and site alarms or other procedures capable of warning site personnel and summoning assistance, e.g., air horn, site radio notification, etc.
- If an accident occurs, the FS/HSO shall immediately investigate what occurred and provide a copy of the Incident Report to the SSO or SPM. The Incident Report shall include, at a minimum, a solution that shall be implemented to prevent or minimize similar incidents from re- occurring on-site. The FS/HSO may use all site incidents as "lessons learned" that may be reviewed during the morning tailgate safety briefings.

2.5 Site Radiation Safety Officer

The RSO reports to the SPM and serves as an independent assessor of work area radiological safety and acts as a technical consultant to the project PC, SPM, SSO, FS/HSOs and workers. The RSO assists each FS/HSO in integrating radiological safety requirements into their work plans and daily briefings. The RSO is responsible for working with the FS/HSO for the delivery of site-specific radiological safety training and approving personnel as ready for site work based on their medical surveillance and training documentation.

For non-radiological work issues, the RSO will work with the FS/HSO to incorporate safety requirements into radiological work plans such that both radiological and traditional safety requirements are achieved. The RSO can recommend to the SPM, SSO, and PC that access to the Site of individual personnel be restricted or eliminated for health and/or safety reasons.

2.6 Site Construction Manager

The Site Construction Manager (CM), under the direction of the SPM, will monitor work in progress to ensure that final deliverables adhere to requirements. The CM will conduct morning tailgate

meetings and in conjunction with the SSO, conduct a safety briefing during this meeting. In the event of an emergency, the CM and SSO will be the primary contact with the contractor's FS/HSO and additionally be the liaison between the FS/HSO and SPM.

3. Types of Emergencies and Response Procedures

3.1 Medical

Emergency medical services at the NMI Property are provided by the Concord Fire Department (CFD). Emergency medical services at the Groundwater Treatment Building (located off 2229 Main Street site) are provided by Acton Fire Department (AFD). The closest hospital is:

Emerson Hospital (approximately 3 miles away)

133 Old Road to Nine Acre

Concord, MA 01742

(978) 369-1400

Emerson Hospital provides 24-hour emergency medical care along with the services of a critical care center. A map of directions to Emerson Hospital is presented below:
This map is included in Figure 3-1, designed to be a printout posted in on-site buildings.

At least one person qualified to perform first aid will be present on the Site during work hours. Persons trained in first aid will have earned a certificate in first-aid training from the American Heart

Association. . Additional training for re-certification will be performed as needed to ensure trained worker's certifications do not expire. First aid will be rendered to any person injured while on the Site as appropriate.

All accidents will be reported initially to the de maximis SSO and then subsequently to the CM, SPM, the RSO and to the PC. Specific responses for minor and major injuries are presented in Sections 3.1.1 and 3.1.2.

3.1.1 Minor Injuries

Minor injuries will be treated at the Site by qualified First-Aid/CPR (cardiopulmonary resuscitation) providers and if additional treatment beyond first aid is required, the injured personnel will be transported to Emerson Hospital. Accidents involving first-aid only will require entry into a first aid log book.

3.1.2 Major Injuries

In the case of serious or life-threatening emergencies, Emergency Medical Services (EMS) personnel will be notified by dialing "9-1-1." The injured person will then be transported to a medical facility for further examination and/or treatment. The preferred transport method is by professional emergency transportation service. Under no circumstances will injured persons transport themselves to a medical facility for emergency treatment.

When an injury occurs in a work area, provisions for decontamination of the victim will be made. Life-threatening conditions may preclude normal decontamination procedures. An individual knowledgeable about the hazards of the Site will accompany the injured party to the medical facility to provide details to medical personnel.

Injuries involving hospitalization or treatment beyond first aid will be reported by the contractor's HSO to the de maximis SSO by radio or telephone then followed up with a written Incident Report to the de maximis SSO. The de maximis SSO will in turn inform the CM, SPM, and if warranted, RSO of this incident. All United States Occupational Safety and Health (OSHA) recordable accidents will be recorded by the FS/HSO on the appropriate OSHA 300 Form. If applicable, the OSHA 300A Forms will be posted in a conspicuous location by the FS/HSO as required by 29 Code of Federal Regulations (CFR) 1904.

3.2 Fire / Explosion

Each piece of mobile equipment on-site, as well as each temporary jobsite trailer, should have at least one appropriate size and type of fire extinguisher located on/in it for use in an emergency.

A need for Class D (metal powders) extinguishers on site is not expected. However, two 30lb

Class D extinguishers will be stored on site if any unoxidized DU materials or titanium powders are unearthed during excavation.

Monthly inspections of all fire extinguishers should be performed by the SSO or any other qualified personnel, and documentation retained for all inspections.

3.2.1 Response Procedures for Site Fires

In the event of a fire or explosion, or imminent danger of fire or explosion, the Town of Concord Police and Fire Departments and/or Acton Police and Fire Departments will be notified immediately. If it is safe to do so, site personnel, under the direction of the SSO or CM, will use available equipment to remove and/or isolate flammable or other hazardous materials which may contribute to the fire.

Upon arrival of the Police and Fire Department emergency responders, the CM, SSO, SPM and FS/HSOs and/or RSO will advise the fire chief or lead representative of the location, nature, and identification of applicable hazardous materials at the Site.

3.3 Chemical Spill

- The following equipment will be maintained at the Site and stored in waterproof containers at strategic locations around the site.
- Absorbent pads, booms
- Squeegees.
- Noncombustible granular absorbent material.
- Polyethylene sheeting.
- 55-gallon drums.
- Shovels and assorted hand tools
- Drum liners or 6mil 65-gallon trash bags.
- 2 complete sets of size 3x or greater coated Tyvek suits, booties, and gloves

The location of these "spill kits" will be noted on the site map that is in the SPM's trailer. Any change in location will be noted on this map and site workers notified of this change during the AM Meeting.

In case of major hazardous or radiological material release, the FS/HSO will immediately notify the SSO, SPM, RSO, and PC. The PC will in turn contact EPA and Massachusetts Department of Environmental Protection (MassDEP).

In the event of a spill or release, site workers that witness or discover a spill or leak will follow these initial steps:

1. **Identify:** The material involved and the where exactly on the site the incident occurred.
2. **Notify:** Make radio contact with FS/HSO, CM or SSO and advise them of the situation.
3. **Isolate / Evacuate:** For smaller spills or leaks, isolate the area from other workers until clean-up can occur. If the situation is ongoing or there is a risk of fire or explosion, then immediately evacuate the area.

The FS/HSO, CM and SSO will conduct a response to investigate the incident and determine what the appropriate level of response shall be. This will be determined based on available information

from witnesses or material identification documents (placards, Safety Data Sheets [SDSs], logs etc.). The potential hazards will be evaluated to determine the proper personal protection levels, methods, and equipment necessary for response. At a minimum the following shall be performed:

- Isolate the area with barrier tape or rope using available personnel to guard the spill area and control entries and exits.
- Minimize exposure. Entry to the release area will be made with the appropriate PPE, personnel, methods, and equipment necessary to perform the work. For radiological spills, utilize appropriate PPE, consult with, and notify RSO, and perform radiological surveys.
- Spill containment and collection will be performed in four steps as follows:
    - Contain the spill with absorbent socks, booms, granules, pads, or construction of temporary dikes.
    - Control the spill at the source by plugging leaks, up-righting containers, overpacking containers, or transferring contents of a leaking container.
    - Collect the spilled material with shovels or heavy equipment as necessary; and
    - Store the spilled material for further treatment or disposal. Treatment and/or disposal options of the material will depend on the amount and type of material.

If workers cannot safely and sufficiently respond to a release, evacuation of the area may be warranted. The decision to evacuate will depend upon the risk of exposure to personnel and the severity of the release. The responding Town of Concord or Town of Acton Police and Fire Departments will be notified of a significant spill. Upon arrival at the Site, the Incident Commander for the site (SPM, SSO, CM FS/HSO and/or RSO) will brief Fire Department responders on the current situation and any potential hazards to which the team may be exposed.

While present site conditions do not present a significant risk of spillage and it is not anticipated that site activities will increase this risk, these steps will be followed whenever a spill or leak occurs.

3.3.1 Personal Protective Equipment

In the event of a spill or leak, the work crew will suspend operations until adequate PPE can be donned. There are not any foreseeable circumstances that indicate greater than Level C PPE will be necessary. Likely scenarios will only necessitate modified Level D PPE; however, respirators will be stored on site if air monitoring indicates situations require respiratory protection. The SSO, HSM, or the FS/HSO will determine the required level of PPE based on the contaminant type, amount spilled, and the levels of hazardous substances that are monitored in the air.

3.3.2 Control Measures

After the work crew has donned adequate PPE, immediate measures will be taken to control and

contain the spill within site boundaries. The hazardous area will be isolated and all unnecessary personnel will be kept away and upwind of the spill. Flares, smoking, or open flames will not be allowed into the area. All efforts will be made to prevent combustible materials from coming into contact with the spill.

- Small Spills. If the spilled material is a solid, the contaminated material will be shoveled directly into a container, and then covered, labeled, and disposed of as appropriate. If the spilled material is a liquid, a non-combustible absorbent material will be used to absorb the spill. The used sorbent material will be shoveled into a container, then covered, labeled, and disposed of appropriately.
- Large Spills. A dike will be constructed in the event of a large liquid spill. Dikes will be constructed using sandbags, absorbent pillows, soil, or any other available, noncombustible material. The size of the dike will be large enough to contain the spill. If possible, standing liquid will be pumped off and containerized. The free liquid will be recycled, if possible, or solidified with an absorbent material. The contained spill and contaminated materials will then be covered, labeled, and properly disposed.

3.3.3 Spill Reporting

Spills that are not completely contained or recovered and result in the discharge of a hazardous substance to the environment will be reported immediately to the CM, SSO or FS/HSO, who will report directly to the SPM and PC. The PC will determine if a reportable quantity was released and will report to the regulatory authorities.

3.4 Electrical / Power

Site work will not be conducted in areas that have not gone through a thorough inspection for live utilities. However, due to the site's nature, the possible presence of unknown utility lines throughout the property exists. If an incident involves an unexpected utility, the crew will immediately cease work and report to the FS/HSO. The FS/HSO will notify de maximis CM, or SSO who will then coordinate with the SPM and contact the needed utility service.

Utility contacts for the NMI Property include:

- Electric, Concord Municipal Light: (978) 318-3101
- Water, Concord Public Works/Sewer: (978) 318-3250
- Natural Gas, National Grid: (800) 548-8000

Utility contacts for the Groundwater Treatment Building include:

- Electric, Eversource Energy: (800) 592-2000
- Water, Acton Water District (978) 263-9107
- Propane, Bursaw Oil (978) 263-8752

If an electrical emergency is encountered during Remedial activities, work will be suspended and 9-1-1 will be contacted. If applicable and possible, an appropriately designated person will turn off the power source at a main switch.

3.5 Severe Weather / Natural Disaster

Adverse weather can take many forms. Thunder and lightning storms, hail, high winds, and tornados are a few examples. Sudden changes in the weather, extreme weather conditions, and natural disasters can create several subsequent hazards. As poor working conditions arise slip, trip and fall hazards increase. Natural disasters can induce many secondary hazards such as release of hazardous materials to the environment, structure failure, and fires.

Routinely monitoring weather conditions and reports may help reduce severe weather and natural disasters. It may be necessary to halt certain hazardous operations or stop work altogether to allow the situation to pass. The CM, SSO or SPM with the assistance of the FS/HSO and/or the RSO will decide what operations, if any, are safe to perform based on existing and anticipated conditions.

The best protection against most severe weather episodes and natural disasters is to avoid them. This means seeking shelter before the storm hits. If lightning is a threat, personnel will avoid pipes and electrical equipment and be on alert for damage caused by lightning. The CM, SSO and FS/HSOs will monitor the local weather reports for indications of approaching severe weather and will direct operations appropriately to protect personnel from dangerous conditions.

A blizzard would be the most likely severe weather scenario for the Site. Snow will be cleared in a prioritized manner, with emergency access routes being the priority. Snow also will be cleared from fire hydrants and site access perimeter roads to allow access for the Concord Fire Department during an emergency. Snow accumulation on the roof of the temporary office buildings will also be monitored.

Snow will be removed from all emergency exits after each storm. The path of travel from the point of exit discharge to the public way will be well lit and maintained free of ice, snow, water, or accumulation of other debris so that the path of travel is passable year-round.

High winds during tropical storms or hurricanes are also possible at the Site. Should high winds be forecasted, equipment will be stored out of the wind, if possible, or secured to the best practicable extent. Windy conditions where the speed of the wind exceeds 25 MPH, either sustained or gusts, all aerial lift device use (boom lifts and scissor lifts) will be halted. All crane operations shall be halted when wind conditions reach 40 MPH sustained or gusts.

Lightning during thunderstorms occurs regularly during summer months. Lightning could present a hazard to on-site personnel, particularly during excavation activities. If a thunderstorm is approaching, work operations will be suspended until the storm passes. If possible, overhead booms will be lowered. Outdoor work will remain halted until 30 minutes after the last thunder is heard.

4. Emergency Decontamination Measures

Treatment of illnesses or injuries to personnel working within a Radiation Controlled Area (RCA) or Chemically Controlled Area (CCA) may be more difficult due to PPE requirements and the potential for exposure to radiological/ chemical contaminants. The emergency medical care provider must quickly assess the extent of the injury or illness of the victim. A determination will be made if lifesaving medical treatment is critical and if personal decontamination procedures will create additional injuries or aggravate the existing condition. Life-threatening injuries will receive immediate medical attention. Decontamination procedures may be modified or simplified under such circumstances.

The following guidelines are established for workers responding to emergencies where an individual may have been injured or overcome by exposure to a hazardous or radiological substance. (If a severe injury exists, only portions of these guidelines may be appropriate to ensure prompt medical treatment).

- Ensure scene safety and that emergency response personnel have donned the appropriate PPE to keep them from becoming injured.
- Upon arrival at the injured party, stabilize any life-threatening problems, such as spills or fires, and remove (i.e., brush or blot with absorbency pads) visible, gross contamination. If possible, prevent contact with any contamination present at the scene. However, be expedient, and be prepared to transport immediately to the decontamination area.
- If the individual is unconscious, evaluate presence of airway, breathing, and circulation (ABCs). If absent, and the scene is safe, then commence CPR without delay. If the scene is not safe or cannot be made safe, then rapidly remove the victim to an area that is safe for the personnel to perform First Aid / CPR.
- If the victim is conscious or is unconscious but with a pulse, quickly move the injured party away from the accident / spill scene. Relocate to a nearby "clean" area to expedite removal of PPE and/ or contaminated clothing.
- Notify FS/HSO, SSO, CM, SPM and RSO and evaluate the safety of remaining personnel in the area.
- If needed, select an emergency decontamination location upwind and/or uphill from any spills and determine the most effective pathway to emergency vehicles.
- After removal of PPE and any contaminated clothing, further external further decon of the victim will be performed in two stages: washing with soapy water, then rinsing with clear water.
- Following stabilization of any injuries, monitor and be on the alert for shock, wrap the injured in a warm blanket or other items to conserve body heat, and be prepared for vomiting.
- Be prepared to turn emergency care over to EMS personnel. Inform arriving emergency medical personnel of the nature and extent of injuries and any potential

radiological/chemical hazards present.

5. Evacuation Procedures

Due to the industrial characteristics of the Site, provisions will be made to protect the public if an evacuation is required. Evacuation of the Site will be required when:

1. Ambient air conditions contain explosive and persistent levels of combustible gas or dust, or excessive levels of toxic gases.
2. A fire or major accident occurs; or
3. Explosion is imminent or has occurred.

All emergency response at the Site will be coordinated according to site communication line of command defined in Section 3.1. Site evacuation procedures will be followed by all personnel if evacuation is required. No site operations will be required to continue in the case of an evacuation.

If public notifications or evacuations are necessary, those will be performed through the Community Emergency Response Team (CERT) and/or the Local Emergency Planning Committee (LEPC). These organizations and the Town of Concord have developed procedures in their Hazardous Materials Emergency Plan (HMEP) for responding to emergencies that involve the community.

Coordination with these agencies is related to the unknown conditions at the NMI Property. Though these emergency procedures are unlikely, there is a level of uncertainty tied to the excavations to be completed at the NMI Property. These unknown conditions are not applicable to work at the Groundwater Treatment Building as all conditions there are known. In an emergency at the Groundwater Treatment Building, coordination will be handled through the Acton Police and Fire Departments.

5.1 Emergency Signals

Radio communication will be the standard form of communication between workers and the FS/HSO, CM, SSO and/or SPM. Radios will be signed-out by each site worker each day after the end of the AM meeting. Each radio has a number assigned and workers will note their radio number in the appropriate space on the daily sign-in log. If for any reason radio communication is not available, three long blasts will be sounded using an air horn or a vehicle horn.

5.2 Work Area Evacuation

When conditions warrant work area evacuation, personnel will proceed out of the work area and notify the CM, SSO or SPM as soon as it is safe to do so. Subsequently all on-site personnel will be notified following the site communication line of command outlined in Section 3.1. The de maximis SSO will then continue to monitor the situation at a safe distance. If needed,

personnel will pass quickly through decontamination to remove contaminated outer suits. If the hazard is airborne, and workers are already donning respirators, they will be retained. Personnel will proceed to the Accountability/Assembly Area. . The advisability and type of further response action will be coordinated and carried out by the SSO and the FS/HSO.

5.3 Full Site Evacuation

When the SSO or FS/HSO determines that conditions warrant full site evacuation, he or she will notify the CM, SPM, RSO, and all site personnel. All personnel will proceed to the pre-assigned assembly area.

When an Evacuation Alarm is sounded, personnel in the work area will evacuate. Once evacuated from the work zone, all individuals will meet at the assembly area. If exiting other than through the designated exit/evacuation routes, individuals will notify the CM, SSO, FS/HSO, or the RSO of their evacuation route.

During an emergency, the following precautionary measures will be followed:

- Keep upwind of smoke, vapors, or spill location.
- Exit through the designated evacuation / exit routes if possible.
- If workers are working under an RPW that requires change out and evacuation is not via the Contamination Changeout Area, site personnel will remove contaminated clothing once they are in a location of safety and leave it near the exclusion zone or in a safe place. The SSO, RSO and the FS/HSO will predetermine safe places. These will be marked with signs and on the map in the field office. and will have appropriate containers for PPE.

All subcontractor FS/HSOs are responsible for the accounting of their personnel at the assigned assembly area and reporting to the SSO or CM. The CM or SSO will conduct a head count to ensure all personnel have been evacuated safely. The use of a daily attendance sheet, crew assignment sheet, and visitor sign in sheet will be used to verify evacuation of all who are working on, or visiting, the work site at the time the evacuation becomes necessary.

6. Evacuation Routes

All on-site workers possess stop-work authority for unsafe conditions or if emergency conditions are present. In turn, all workers maintain the authority to evacuate an area if they deem it necessary. Once initiating any form of evacuation, responsible employees are required to notify the CM and/or SSO and their FS/HSO. The SSO and/or CM will notify the SPM who will in turn notify the PC that an evacuation was necessary. If site evacuation is required, emergency alarms will be sounded as defined in Section 5.1. Radio communication may also be used to alert workers and provide special instructions. Evacuations will not be limited to specific areas.

6.1 Assembly

- Emergencies requiring evacuation may include unusually severe weather conditions, fires, or significant hazardous spills or releases. In the event of an emergency site evacuation, the Town of Concord or Acton Police and Fire Departments will be notified immediately if deemed

necessary by the SSO or SPM. An emergency map that delineates evacuation routes, traffic routes, spill kit and First Aid kit/AED locations, and assembly point; is posted on the wall in the field trailer and is updated as needed to reflect current site conditions. Life safety considerations for the Site include:

- Means of egress consisting of exit access, exits and exit discharges.
- Exit signage, where applicable; and
- Emergency lighting within office areas.

In accordance with National Fire Protection Association (NFPA) 801, facilities undertaking RD/RA activities will maintain egress features consistent with that of a facility under construction. However, locked, and abandoned facilities where there is no human occupancy need not maintain emergency egress features such as emergency lighting, exit signage, etc.

6.2 Travel Distance

Because of the nature of RD/RA work, most efforts will take place outside. This offers abundant evacuation routes. Though not anticipated, if a work area presents a limited amount of evacuation options, a minimum of two evacuation paths will be determined for the work area. These emergency egresses will be a maximum of a 400-foot travel distance.

6.3 Exit Signs and Emergency / Means of Egress Lighting

Access to exits will be provided and continually maintained throughout the RD/RA process (for temporary office trailers). Exit signs and emergency lights with battery packs will be posted to identify available exits and the path of travel to exits. Signs will be posted along exit access indicating the direction of travel to nearest exit and exit discharge if that direction is not immediately apparent. The line of sight to an exit sign will be maintained unobstructed and clearly visible.

6.4 Exit Discharge

All emergency exits will discharge to the exterior at grade level. The path of travel from that point of exit discharge to the public way will be well lit and maintained free of ice, snow, water, or accumulation of other debris so that the path of travel is passable year-round.

7. Emergency Response Information and Personnel

Before RD/RA Site activities begin, the CM, HSM and SSO, will meet with the CFD to inform them of the planned activities at the Site and discuss ambulance access points and entry procedures.

The SSO and SPM will maintain a current inventory of chemicals at the Site, including location and estimated volume. Copies of the associated Safety Data Sheets (SDSs) will be maintained in case of an emergency. In the case of an emergency in which the CFD is called, a copy of the inventory will be provided for reference in dealing with the emergency.

7.1 Site Access During Emergencies

The main field trailer will serve as the Incident Control Center (ICC) for all emergency response actions. The following information will be posted within the ICC:

- Emergency Contact Numbers
- Site maps indicating work areas.
- Radiologically Restricted Areas
- Locations of chemical hazards
- Locations of physical hazards
- Security System layout and zones

A site representative will be present during working hours to brief responders and to escort responders around the Site.

First responders to after-hours site emergencies have a Town of Concord lock attached to the secured main gate providing them with the ability to access the Site. A key box attached to the main field office trailer shall contain keys to enter the field trailers.

7.2 Local Fire Department for work on NMI Property– Concord Fire Department

Fire detection and emergency response will be on a manual basis, whereby on-site personnel will notify and direct the CFD to the emergency. The CFD is a full-time, paid department. The CFD will respond to all fire alarms that are generated from the facility. The CFD response time to the Site is approximately 5 minutes. Hazardous Materials Response up to Operations Level will be provided by an internal team consisting of trained de maximis and O&M employees. Support for any response will be from the on-site contractor and under the direction of their FS.HSO. If response of a higher level or for a spill larger than the internal response team can safely handle, external response may be requested from the EPA and from District 3 Hazardous Materials (HAZMAT) Response. MassDEP and EPA will provide support.

7.3 Local Fire Department Groundwater Building- Acton Fire Department

Fire and emergency response will be on a manual basis, whereby on-site personnel will notify and direct the AFD to the emergency. The AFD is a full-time, paid department. The AFD will respond to all fire alarms that are generated from the facility. The AFD response time to the Site is approximately 12 minutes. Hazardous Materials Response / EPA response is provided by District 3 Hazardous Materials (HAZMAT) Response. MassDEP and EPA will provide support.

7.4 Telephone Contact Information

The contact numbers for the local fire departments, MassDEP Emergency Response, and EPA Emergency Response are:

Town of Concord Fire Department	911 or (978) 318-3488

Town of Acton Fire Department	(978) 264-9645
MassDEP Emergency Response	(888) 304-1133
EPA Regional Duty Officer of the Emergency Planning and Response Branch	617) 918-1236
EPA Regional 24-hour Emergency Response line	617) 723-8928

7.5 Town of Concord Emergency Planning

The Town of Concord has a HMEP for the sole purpose of responding to a hazardous materials incident. In the plan, the Site is listed as a potential location for a hazardous materials incident.

The HMEP is authorized and regulated under the Emergency Planning and Community Right to Know Act of 1986 and the Massachusetts Comprehensive Emergency Management Plan.

Additionally, the Concord LEPC meets every two months and is chaired by the Chief of the CFD. The mission of the LEPC is:

> *To provide a comprehensive resource management committee to include the areas of operations, planning, logistics and finance to the Town of Concord in the event of a hazardous materials incident as dictated by the Superfund Amendment and Reauthorization Act.*

Members of the LEPC include representatives from the CFD, Concord Public Health Department, Emerson Hospital, local businesses, and citizens.

If public notifications or evacuations are necessary, those will be performed through the CERT and/or the LEPC. These organizations and the Town of Concord have developed procedures in their HMEP for responding to emergencies that involve the community.

8. Emergency Response Equipment

Emergency supplies available at the Site include the following:

1. Fire extinguishers in accordance with OSHA 29 CFR 1910.157.
2. First aid kits.
3. Emergency eye wash stations.
4. Emergency showers.
5. Scoop Stretcher
6. Blankets and towels.
7. Portable Defibrillator

9. Hazard Identification, Evaluation and Vulnerability Analysis

Before starting a specific task, the SSO, FS/HSO (and RSO if applicable) will develop a Job Hazard Analysis and review safety considerations and potential vulnerabilities with the field crew. The Job Hazard Analysis procedure is defined in detail in the HASP.

10. Spill Potential Analysis

Before starting a specific task, the SSO, FS/HSO (and RSO if applicable) will develop a Job Hazard Analysis and review safety with the field crew. This will include an analysis of spill potential.

11. Facility Self-Inspection Checklists, Training Information and Meeting Logs

All site documentation for inspections, training information, and meeting logs will be maintained at the *de maximis* on-site office.

12. Communications of ERP Contents

The FS/HSO will perform the following tasks before starting field operations:

- Review the facility emergency assembly locations for each major operational area with the SSO, CM or HSM and on-site workers.
- Determine what on-site communication equipment will be used, e.g., two-way radios.
- Determine when cell phone equipment may be used.
- Confirm and post emergency telephone numbers, evacuation routes, assembly areas, and the route to hospital. Confirm evacuation routes from work areas before each task, as these are subject to change. Communicate the information to site personnel.
- Post appropriate “exit” signs and “Fire Extinguisher” signs. Keep areas near exits and extinguishers clear.
- Establish a clear and simple protocol to communicate when there is an emergency using either a horn or radios.
- Check that site emergency equipment, supplies, are present and functional.
- Maintain an adequate supply of potable water.
- Communicate emergency procedures to personnel relative to personal injury, exposures, fires, explosions, and releases.
- Field Supervisors are to rehearse the emergency response plan procedures before

activities begin, including a "practice run" driving the mapped route to the hospital.

- Stay informed of road construction on route to hospital and post changes to map and inform employees of the change if necessary.
- Brief new workers on the Emergency Response Plan.

13. Reporting of Emergency Events

13.1 Emergencies that Involve Hazardous Substances

EPA and MassDEP will be orally notified immediately and receive a written notification within 24 hours of accidents or incidents that include uncontrolled releases outside of the Restricted Area of more than one reportable quantity (RQ) of hazardous chemical or radioactive material, or fires, or explosions. (Note: Hazardous substances and reportable quantities are designated under Section 101(14) of CERCLA. They may also be found in 49 CFR 172.101, List of Hazardous Substances and Reportable Quantities).

The following information will be provided to EPA/MassDEP for an uncontrolled release:

- Name, organization, telephone number, and location of the caller.
- Name and title of the person(s) reporting.
- Date and time of accident/incident.
- Location of accident/incident (NMI Site, 2229 Main Street (Route 62) Concord, Massachusetts);
- Summary of accident/incident including pertinent details such as type of operation ongoing at the time of accident.
- Cause of accident/incident, if known.
- Casualties (fatalities, disabling injuries);
- Details of any existing radiological/chemical hazard or contamination.
- Nature of damage.
- Action taken to ensure safety and security.
- Other damage or injuries sustained (public or private).

The CM, SSO, FS/HSO and/or RSO will investigate the cause of any incidents to assess the causes and prevent recurrence. The investigation will begin as soon as practical after the incident is under control, but not later than the first workday after the incident. Investigations will follow the procedures described below:

- Interview witnesses and participants as soon as possible or practical.

- Determine the chronological sequence of events (opinions as to cause will not be solicited now).
- Note the location, movement, displacement, liquid levels, sounds, noises, or other sensory perceptions experienced by the participants or witnesses.
- Obtain weather data.
- Ascertain the location and position of switches, controls, etc.
- Verify the condition of safeguards.

After the facts have been collected, causal factors should be identified. Two causal factors typically exist, apparent and contributing; there may be several of each. Apparent factors are those which are self-evident or readily deduced. Contributing factors usually become apparent by questioning why the apparent causal factor existed. An Incident Report will be completed by the SSO or FS/HSO and or RSO and be provided to the PC and SPM.

13.2 Other Emergencies

Project personnel must report accidents, injuries, illnesses, and near misses to the immediate supervisor who will immediately notify the CM, SSO or FS/HSO and/or RSO. The SSO or FS/HSO and/or RSO will immediately arrange appropriate medical care as required. Once immediate medical care for the injured personnel has been accomplished, the SSO or FS/HSO and/or RSO will notify the SPM. The SPM will complete a written report within 24 hours and submit it to the PC.

Figures

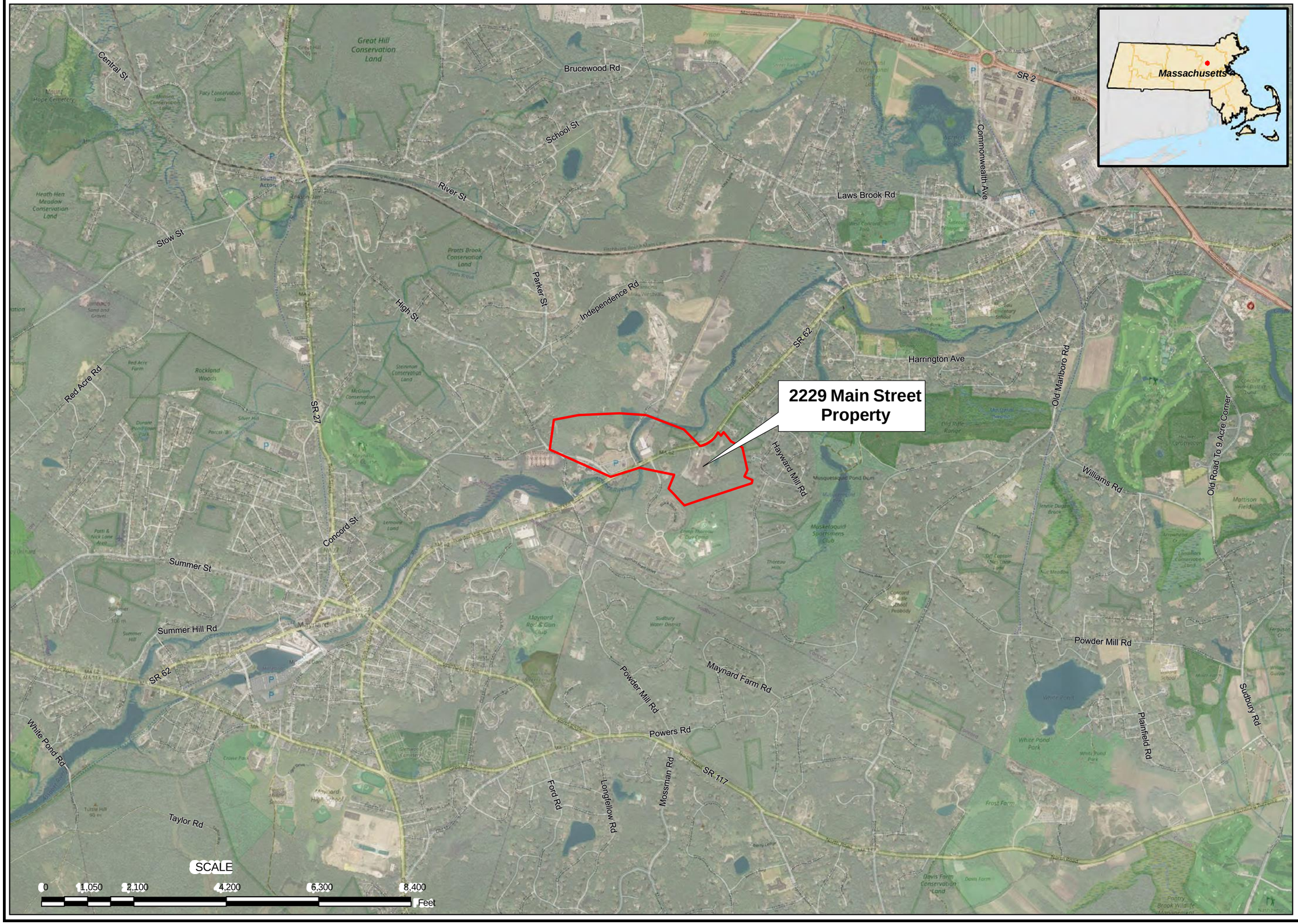


Figure 1

Site Location Map

Nuclear Metals, Inc. Site
Remedial Design Work Plan

Concord, Massachusetts

Description:

2229 Main Street Property

Map Legend:

Site Boundary

Spatial Projection:

Coordinate System:
MA State Plane Mainland
FIPS Zone: 2001
Units: US Survey Feet
Datum: NAD83

Plot Info:

File: Fig01_SiteLoc.mxd
Project No.: 3252
Plot Date: 11/19/2019
Arc Operator: LS
Reviewed by: HG

ddms
www.ddmsinc.com

de maximis, inc.

R:\Projects\DEF\demax-1547\3252-NMI RD & RA\Data\Analysis\GIS\Data\Projects\RDWP_Figures\Fig01_SiteLoc.mxd

ROUTE TO EMERGENCY MEDICAL FACILITIES

Emerson Hospital

(Approximately 3 Miles Away)

(978) 369-1400

133 Old Road to Nine Acre
Concord, MA

RT-62
Main Street
(2.7 Miles)

RT-2
Concord Turnpike
(0.2 Miles)

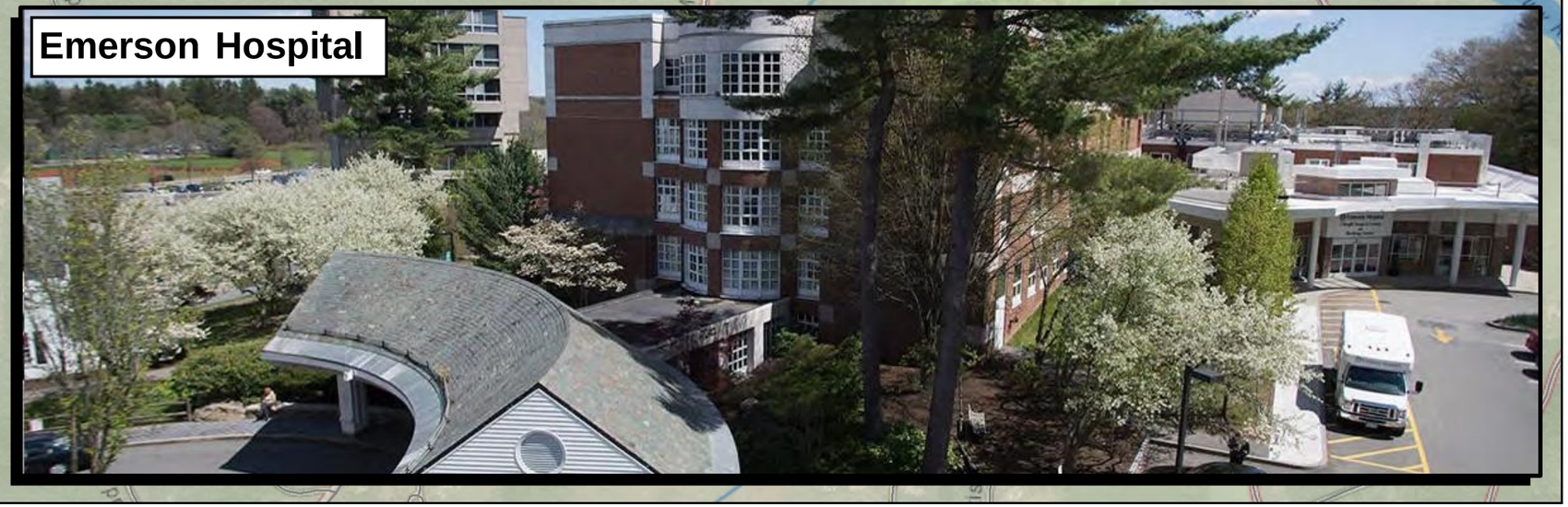
Old Road to Nine Acre
(0.1 Miles)

Field Office
2229 Main St.
Concord, MA

Emerson Hospital
133 Old Road to Nine Acre
Concord, MA

0 0.25 0.5 1 Miles

POST IN FIELD OFFICE



R:\Projects\DEP Identrax 154713232-NW\ RD & RA\Data\Analysis\GIS\Data\Projects\Emergency_Response_Route\Emergency_Response_Route_Map.mxd

Tables

Table 3-1

LOCAL EMERGENCY TELEPHONE NUMBERS

Fire: Town of Concord Fire Department	911 or (978) 318-3488
Fire: Town of Acton Fire Department	911 or (978) 929-7722
Police: Town of Concord Police Department	911 or (978) 318-3400
Police: Town of Acton Police Department	911 or (978) 264-9638
Emerson Hospital	911 or (978) 369-1400
Ambulance	911
Chemical Manufacturers Association Chemical Referral Center	(800) 262-8200
Massachusetts Nuclear Incident Advisory Team (NIAT)	(617) 242-3453
MassDEP Emergency Response	(888) 304-1133
National Response Center	(800) 424-8802
Poison Control Center	(800) 222-1222

Project Management (*de maximis, inc.*):

Project Coordinator: Bruce Thompson	(860) 662-0526 (cell)
Site Project Manager: Todd Majer	(978) 875-0636 (cell)
Construction Manager: Adrian Bilger	(518) 596-8380 (cell)
ISS component: Christine Taddonio	(978) 793-7163 (cell)
Remedial Action & 1,4-Dioxane in Bedrock: Todd Majer	(978) 875-0635 (cell)
Site Wide Soils/Sediments: Jessie McCusker	(860) 817-7544 (cell)
Holding Basin Containment: Jessie McCusker	(860) 817-7544 (cell)

Health & Safety:

Health & Safety Manager: Alan Briand, de maximis, inc.	(978)360-6348 (cell)
Site Safety Officer: James Cooney, de maximis, inc.	(845) 594-4670 (cell)
Radiation Safety Officer: Matt Norton, DDES	(978) 844-0565 (cell)

Field Supervisor/Health and Safety Officers

(Geosyntec): Dariusz Chlebica	(508) 864-0482 (cell)
(H&A): Mark Kelly	(857) 798-1276 (cell)
(US Ecology): Kurt Oosterman	(508) 245-1328 (cell)

Appendix D

Inspection Report Form

Site Inspection Report

General Information		
Project Name	NMI NTCRA, Nuclear Metals, Inc. Superfund Site	
Location	2229 Main St. Concord, MA 06095	
Date of Inspection		**Start/End Time**
Inspector's Name(s)		
Inspector's Title(s)		
Inspector's Contact Information		
Inspector's Company		
Describe present phase of construction		

Type of Inspection:
❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event

Weather Information

Has there been a storm event since the last inspection? ❑Yes ❑No
If yes, provide:
Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):

Weather at time of this inspection?
❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds
❑ Other: Temperature:

Have any discharges occurred since the last inspection? ❑Yes ❑No
If yes, describe:

Are there any discharges at the time of inspection? ❑Yes ❑No
If yes, describe:

Site-specific BMPs

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1		❑Yes ❑No	❑Yes ❑No	
2		❑Yes ❑No	❑Yes ❑No	
3		❑Yes ❑No	❑Yes ❑No	
4		❑Yes ❑No	❑Yes ❑No	
5		❑Yes ❑No	❑Yes ❑No	
6		❑Yes ❑No	❑Yes ❑No	
7		❑Yes ❑No	❑Yes ❑No	
8		❑Yes ❑No	❑Yes ❑No	
9		❑Yes ❑No	❑Yes ❑No	
10		❑Yes ❑No	❑Yes ❑No	
11		❑Yes ❑No	❑Yes ❑No	
12		❑Yes ❑No	❑Yes ❑No	
13		❑Yes ❑No	❑Yes ❑No	
14		❑Yes ❑No	❑Yes ❑No	
15		❑Yes ❑No	❑Yes ❑No	
16		❑Yes ❑No	❑Yes ❑No	
17		❑Yes ❑No	❑Yes ❑No	
18		❑Yes ❑No	❑Yes ❑No	
19		❑Yes ❑No	❑Yes ❑No	
20		❑Yes ❑No	❑Yes ❑No	

Inspection

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	❑Yes ❑No	❑Yes ❑No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	❑Yes ❑No	❑Yes ❑No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	❑Yes ❑No	❑Yes ❑No	
4	Are discharge points and receiving waters free of any sediment deposits?	❑Yes ❑No	❑Yes ❑No	
5	Are storm drain inlets properly protected?	❑Yes ❑No	❑Yes ❑No	
6	Is the construction exit preventing sediment from being tracked into the street?	❑Yes ❑No	❑Yes ❑No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑No	❑Yes ❑No	
8	Are washout facilities available, clearly marked, and maintained?	❑Yes ❑No	❑Yes ❑No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No	❑Yes ❑No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No	❑Yes ❑No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	❑Yes ❑No	❑Yes ❑No	

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
12	(Other)	❑Yes ❑No	❑Yes ❑No	

Non-Compliance

Describe any incidents of non-compliance not described above:

QUALIFIED INSPECTOR OR DELEGATED AUTHORITY

Print name and title: _____

Signature:_____ Date:_____

Appendix E

Completed Inspection Report Forms (*Retained Onsite*)

Appendix F

SWPPP Amendment Log

Revision #	Month/Year
Revision 1	April/2024