May 4, 2026

Mr. Christopher Allan
Professional Environmental Engineer
New York State Department of Environmental Conservation
Division of Environmental Remediation
47-40 21st Street
Long Island City, New York 11101-5407

Re: Letter Notification and Scope of Work for Remedial Zone PCB 10 and
Watermain Excavation - Operable Unit 4
Sunnyside Yard, Queens, New York
OOC Index #W2-0081-08-10

Dear Mr. Allan:

Roux Environmental Engineering and Geology, D.P.C. (Roux) has prepared this letter on behalf of National Railroad Passenger Corporation (Amtrak), to notify the New York State Department of Environmental Conservation (NYSDEC) of the upcoming excavation activity at Sunnyside Yard, Queens, New York (Yard), located at 39-29 Honeywell Street, Queens, New York (Site). In conjunction with the work associated with the Sunnyside Yard Airo/Crew Base Facility Project, Remedial Zone PCB-10 in Operable Unit 4 (OU-4) is anticipated to be remediated in May 2026.

The Site is listed as a Class II Site in the NYSDEC's Registry of Inactive Hazardous Waste Disposal Sites. As a result of the listing for the entire Yard, Amtrak, New Jersey Transit Corporation (NJTC), and the NYSDEC entered into an Order on Consent (OOC) Index #W2-0081-87-06, effective October 1989. Further, effective May 2010, Amtrak, NJTC, and NYSDEC entered into OOC Index #W2-0081-08-10 for the development and implementation of a remedial program at the Yard. Operable Unit 4 is defined as soil above the water table (unsaturated) throughout the Yard, excluding OU-1, OU-2, and OU-3. To remove polychlorinated biphenyl (PCB) impacted soils in Remedial Zone PCB-10, approximately 330 cubic yards of soil, to a depth of 2 feet and 3 feet below land surface (ft bls), will be excavated and transported to an offsite facility for disposal as TSCA hazardous waste. Additionally, excavation work for watermain upgrade installations around the proposed Crew Base Facility (CFB) will be conducted at the Site.

All work described in this letter will be completed in accordance with the NYSDEC-approved OU-4 Remedial Action Work Plan (RAWP) dated September 24, 2009 and Excavation Work Plan for Infrastructure and Yard Upgrade Project (Airo and Crewbase Facility), dated October 17, 2024. The EWP is included as Attachment 1.

Once the final design plans are completed, an additional notification letter will be provided to the NYSDEC that will describe other construction/excavation activities related to the SSY Airo project including excavations for building foundation, and detail the anticipated volume of material to be excavated for offsite disposal and/or reuse, the excavation means and methods, and disposal facility information.

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Scope of Work

Based on information provided to Roux by Amtrak, the following intrusive work is planned in conjunction with Remedial Zone PCB-10 and CBF watermain upgrades:

- **Remedial Zone PCB-10 Excavation –** Remedial Zone PCB-10 is located near Spur 68 in the middle of the Yard, between Honeywell Street and 39th Street bridges, see Attachment 2. Over multiple sampling and delineation events, most of the elevated PCB concentrations were identified in the 0 to 1 ft bls sampling interval, with two locations exhibiting exceedances of the total PCB soil cleanup level within the 1 to 2 ft bls sampling interval. No exceedances were observed in the 2 to 3 ft bls sampling interval and PCB-10 is fully delineated; vertically and horizontally.

  As detailed in the RAWP, and shown on Attachment 3, the required excavation depths within Remedial Zone PCB-10 range between 2 ft to 3 ft bls, with a total excavation volume of approximately 330 cubic yards of soil that will be transported to Republic Belleville Facility (Wayne Disposal, Inc.), located at 49350 North I-94 Services Drive in Belleville, Michigan for disposal as TSCA hazardous waste. All excavated soil, ballast, railroad ties and other impacted material within the footprint of PCB-10 will be handled and disposed of as TSCA hazardous waste.

- **Watermain Installation –** In support of the CBF construction, new water mains will be installed in the vicinity of the proposed building. Trenching and excavation work to approximately five feet below grade will be necessary for approximately 3,000 linear feet. See Attachment 4 for location of watermain installation in the vicinity of CBF.

  Soil excavated during the watermain installation was previously characterized and has been approved for disposal at Clean Earth Carteret. Based on the sampling results, material slated for disposal at Clean Earth Carteret will be disposed of as non-hazardous waste using facility designations Standard, Category 1 or Category 4, based on contamination levels. Backfill activities will be completed using material that was approved by the NYSDEC on April 13, 2026, for import and onsite use. This approval includes material from Tilcon Haverstraw Quarry and Vulcan Materials Company Quinton Sand Facility.

Amtrak has already engaged the Scalamandre - Citnalta Joint Venture (SCJV) to perform Site work related to the Airo and CBF work. SCJV or their subcontractor will excavate and coordinate proper dispose of material generated from Remedial Zone PCB-10 and CBF watermain installation excavation work.

All activities related to the remediation of Remedial Zone PCB-10 will be completed under the oversight of Roux, including all ground intrusive activities. A surveyor will lay out the Remedial Zone PCB-10 excavation area prior to the work and will return to document the extents of the completed excavation prior to backfilling. Furthermore, Roux will implement community air monitoring during all intrusive activities, in accordance with the Community Air Monitoring Plan (CAMP) provided in the EWP. Daily activity reports, including daily CAMP data, will be provided to the NYSDEC and New York State Department of Health (NYSDOH). All deviations from the EWP will be promptly reported to NYSDEC. Activities completed as part of this SSY Airo work will be included in the Construction Completion Report (CCR) for the SSY Airo project.

Schedule

Amtrak plans to start the above-mentioned activities in mid-May (based on Amtrak's schedule), but no earlier than 15-days from this date of this letter. This letter serves as the NYSDEC-required notification prior to the start of remedial activities. Roux will promptly notify the NYSDEC if there are any changes to the schedule.

If you have any questions regarding this scope of work, please do not hesitate to contact the undersigned.

Sincerely,

ROUX ENVIRONMENTAL ENGINEERING AND GEOLOGY, D.P.C.

Jack Rusk
Project Geologist

Matthew Smith
Senior Scientist

Jeff Wills, P.G.
Principal Geologist / Operations Manager

Attachments:

1. Excavation Work Plan
2. OU-4 Remedial Zones
3. Remedial Zone PCB-10
4. CBF Watermain Installation Location

cc: Jane O'Connell, NYSDEC
Cris-Sandra Maycock, NYSDEC
Josephine McCarthy, NYSDOH
Jordyn Perdon, Amtrak
Jeffrey DeOre, Amtrak
Michael Panhuise, Amtrak
Charlie McGuckin, Roux

ATTACHMENTS

1. Excavation Work Plan
2. OU-4 Remedial Zones
3. Remedial Zone PCB-10
4. CBF Watermain Installation Location

ATTACHMENT 1

Excavation Work Plan

Excavation Work Plan

Infrastructure and Yard Upgrade Project
(Airo and Crewbase Facility)
Sunnyside Yard
Long Island City, New York

October 17, 2024

Prepared for:

National Railroad Passenger Corporation
30th Street Station
Philadelphia, Pennsylvania 19104

Prepared by:

Roux Environmental Engineering and Geology, D.P.C.
209 Shafter Street
Islandia, New York 11749

0055.0149Y100/CV

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Certification

I, Charles J. McGuckin, certify that I am currently a NYS registered professional engineer and that this Excavation Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).



Charles J. McGuckin, P.E.	October 17, 2024	
NYS Professional Engineer #069509	Date	Signature

1. Notification

This Excavation Work Plan (EWP) is being submitted related to future Infrastructure and Yard Upgrade Projects proposed at the National Railroad Passenger Corporation's (Amtrak's) Sunnyside Yard, located in Queens, New York (Yard or Site). Extensive previous soil remediation activities have occurred throughout the Yard, and multiple Records of Decision (RODs) have been issued by the New York State Department of Environmental Conservation (NYSDEC) related to soil. Remediation was completed to Site-specific soil cleanup levels (not unrestricted levels), therefore residual soil impacts remain throughout the Yard. Residual soil impacts warrant proper engineering and institutional controls, and when disturbed, must be managed in accordance with the provisions of this EWP. At least 15 days prior to the start of any earth disturbance activity at the Yard, Amtrak's construction management (CM) team and/or environmental representative on behalf of Amtrak will notify the NYSDEC contacts listed in the table below. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix A.

Notifications*

Hasan Ahmed	(718) 482-6405	/	hasan.ahmed@dec.ny.gov
Cris-Sandra Maycock	(718) 482-4679	/	cris-sandra.maycock@dec.ny.gov

* Note: Notifications are subject to change and will be updated, as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work, and submittals (e.g., reports) to the NYSDEC documenting the completion of intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP, 29 CFR 1910.120 and 29 CFR 1926 Subpart P;
- A copy of the contractor's health and safety plan (HASP) if it differs from the HASP provided in Appendix D of this EWP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with the required request to import form (see Appendix E) and all supporting documentation including, but not limited to, chemical testing results.

The NYSDEC project manager will review the notification and may impose additional requirements for the excavation that are not listed in this EWP. The alteration, restoration and modification of engineering controls must conform with Article 145 Section 7209 of the Education Law regarding the application of professional seals and alterations.

2. Site Background

Sunnyside Yard is located in an urban area in northwestern Queens County (Figure 1). The East River is located approximately one mile to the west while Newtown Creek, which defines the border between Queens and Kings Counties, is located less than 0.5 mile south of the western portion of the Yard. The Yard consists of a railroad maintenance and storage facility that currently encompasses approximately 133 acres. The Yard functions as a maintenance facility for electric locomotives and railroad cars for Amtrak and a train layover storage yard for New Jersey Transit Corporation (NJTC). The Yard is currently in the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program, Site No. 241006, which is administered by NYSDEC. The Yard was subdivided into six operable units (OUs), OU-1 through OU-6, to streamline remedial efforts. The land use surrounding the Yard is a combination of commercial, light industrial and residential areas. The Long Island Rail Road (LIRR) currently owns a portion of the original Yard along the northern boundary (including a portion of OU-3) and maintains rights of way through the Yard. This EWP pertains to Infrastructure and Yard Upgrade Projects at the Yard, including, but not limited to, the proposed Amtrak Airo and Crewbase Facility (CBF) construction areas (limits of construction), which intersect OU-3 and OU-4 of the Yard (Site). Other proposed construction projects are anticipated to include potential earthwork at the trainwash and platform upgrades at the day storage tracks.

OU-3 encompasses approximately eight acres in the north central portion of the Yard, and as mentioned above, includes property owned by the LIRR. OU-4 comprises 120 of the total 133 acres of the Site and is located to the west of OU-3. Several former structures/features were present in OU-3 and OU-4, but have since been demolished to land surface, removed, closed, or rendered inoperable, as described in subsequent sections. Since remaining contamination exists within OU-3 and OU-4, any future intrusive work that will encounter or disturb the remaining contamination will be performed in compliance with this EWP and compliance with this EWP, 29 CFR 1910.120 and 29 CFR 1926 Subpart P. The locations of OU-3 and OU-4, as well as the approximate footprint of the proposed limits of construction are shown in Figure 2.

2.1 Proposed Amtrak Airo and CBF Construction

As part of the proposed Amtrak Airo and CBF construction projects, Amtrak will be upgrading/installing subsurface utilities (i.e., water lines, electrical duct banks, traction power duct banks, etc.), new rail track, multiple structures, and access roads within portions of OU-3 and OU-4. The proposed Amtrak AIRO and CBF details are provided in Appendix B. Note, additional detail will be submitted to NYSDEC once available in a notification letter, submitted under this EWP. The approximate areas of construction disturbances are shown in Figure 2. According to Amtrak, this work will include the excavation of approximately 70,000 cubic yards (CY) of soil. All soil will be transported off-site for disposal at a permitted waste disposal facility, or reused on Site, in accordance with this EWP and as permitted by NYSDEC. Prior to soil reuse, a NYSDEC Request to Import/Reuse Fill or Soil Form (see Appendix E) will be prepared and submitted to NYSDEC for review and approval.

In accordance with Section 3 of this EWP, during soil waste characterization activities, grab/composite soil samples will be collected for laboratory analyses. All soil samples will be submitted to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program Contract and Laboratory Protocol laboratory and analyzed for full toxicity characterization leaching procedure (TCLP) and other typical waste disposal required analyses (i.e., total cyanide, Resource Conservation and Recovery Act (RCRA) characteristics, etc.).

Additionally, the Amtrak AIRO and CBF construction projects work may include dewatering during excavation activities, which will be completed in accordance with a Long Island Well Permit (LIWP), if required, and New York City Department of Environmental Protection (NYCDEP) discharge requirements, as described in Section 3.8 of this EWP.

Following completion of the work, the cover system within the limits of construction will be completed with a combination of buildings and structures, asphalt paths, new rail tracks, ballast stone, and finished structure footprints.

A kickoff meeting will be conducted with the NYSDEC, Amtrak, Roux, and all applicable construction personnel prior to commencement of field activities. The kickoff meeting will be coordinated with the NYSDEC.

2.2 Summary of Previous Investigations and Remediation

This section provides a detailed description of the previous investigation and remediation activities in areas of the Yard affected by this EWP. To facilitate construction of Amtrak's initial High Speed Trainset Facility (HSTF) program, in 1997 the Yard was divided into 6 OUs. The OUs are described as follows:

- OU-1: Soil above the water table within the footprint of the proposed HSTF Service and Inspection (S&I) Building.
- OU-2: Soil above the water table within the footprint of the HSTF S&I Building ancillary structures (i.e., the access road and utilities route, the parking area, the construction easement area which surrounds the building and the construction lay down area).
- OU-3: Originally the soil and separate-phase petroleum hydrocarbon (SPH) accumulation (herein referred to as SPH plume) above the water table in the area previously referred to as Area 1 of the Yard; however, it has expanded to include Areas 6 and 7 of the Yard, and saturated soil within these Areas.
- OU-4: Soil above the water table in the remainder of the Yard.
- OU-5: Sewer system (water and sediment) beneath the Yard.
- OU-6: Saturated soil, groundwater and soil vapor beneath the Yard.

The locations of the OUs are presented in Figure 2. The anticipated construction activities described in this EWP are anticipated to encounter portions of OU-3, OU-4, and OU-6. Relevant previous investigation and remediation activities conducted in these OUs, included the historic separate phase hydrocarbon (SPH) plume, the soil (unsaturated and saturated), PCB Remedial Zones, groundwater, and subsurface structures, and are described below.

2.2.1 SPH

The SPH plume (located in OU-3) has been fully delineated both horizontally and vertically. At its largest extent, the historic outer boundary of the plume (historic zero-foot SPH contour), which was very conservatively defined by the absence of a visible sheen on the water table, occupied an area of approximately three acres in the central part of OU-3 (Figure 3). Physical evidence of sheen and/or petroleum odor was noted up to 10 feet below land surface (ft bls) in several borings and deeper in some borings. Residual SPH impacts are still present within the historic zero-foot SPH contour.

With respect to SPH in OU-3, 65 samples of SPH were collected from OU-3 monitoring wells and analyzed for polychlorinated biphenyls (PCBs). The results of the PCB testing showed detections in 22 locations, ranging from 460 micrograms per kilogram (µg/kg) to 360,000 µg/kg. Analytical results of SPH samples collected in 1994 indicate that the SPH in the plume consists of a slightly degraded No. 2 fuel oil.

Significant SPH (in OU-3) recovery activities have been completed both as Interim Remedial Measures (IRMs) before the October 2007 OU-3 RAWP, and as part of the final OU-3 remedy following the October 2007 OU-3 RAWP. These SPH remedial activities included SPH recovery using a dual phase vacuum extraction system (DPVE), soil/SPH excavation, surfactant enhanced SPH recovery, bioremediation, and manual SPH bailing/recovery. As a result of this work, an estimated total of 14,920 gallons of SPH has been recovered, and therefore, the extent of the SPH plume has been reduced significantly. Currently, the SPH plume consists of only one small, isolated occurrence of SPH (less than 0.1 feet thickness) which intersects the Amtrak Airo and CBF limits of construction, as shown in Figure 3, which presents the current SPH plume configuration (as measured on December 15, 2020).

Separate from the historic SPH in OU-3, On February 23, 2023 and March 8, 2023, petroleum contamination (stained/odorous soil and SPH) was encountered at approximately 10 ft bls during excavation activities associated with the Acela Ready Track (ART) construction at a location in the vicinity of the former boiler house and approximately 90 ft to the east of this location (within OU-4, as shown in Figure 4). Roux field staff noted stained/odorous soil and minor SPH on the surface of groundwater within two excavations. As a result, on Amtrak's behalf, Roux called in a spill to NYSDEC, and Spill #2209440 was assigned.

In accordance with NYSDEC requirements, Roux oversaw initial delineation test pits conducted by Amtrak's contractor on April 6, 2023, and May 25, 2023. Roux then submitted a Spill Investigation Work Plan dated July 3, 2024, outlining proposed SPH investigation activities, including the completion of soil borings and installation of monitoring wells. This work plan is currently under NYSDEC review.

2.2.2 Soil

Extensive previous soil remediation activities have occurred in both OU-3 and OU-4 at the Yard to achieve Site-specific soil cleanup levels, therefore residual soil impacts remain throughout the Yard. Residual soil impacts, when disturbed, must be managed in accordance with the provisions of this EWP. The Site-specific action soil cleanup objectives for the Site are lead: 3,900 ppm; PCBs: 25 ppm; and total SVOCs: 500 ppm. In 2008, a 0.2-acre area of hydrocarbon-impacted surface soil was visually delineated to the north, west and east of the former Engine House, partly within the bounds of the historic SPH plume and partly within the limits of the mobile SPH plume. Based on observations from soil borings completed during multiple investigations, the average depth of hydrocarbon impacts was one ft bls, within the unsaturated zone. Surficial hydrocarbon-impacted soil was excavated to a depth of two ft bls, transported off-site and properly disposed of as part of the approved remedy for OU-3. The excavation was then backfilled with clean fill and brought to grade. The extent of the surface soil excavation is presented in Figure 3.

In 2010, a PCB soil hot spot (measuring 24-feet long by 21.5-feet wide by approximately 1-foot deep) was excavated in OU-3 in accordance with the OU-3 RAWP. Also, in 2010, a lead soil hot spot (measuring 24-feet long by 21-feet wide by 2-feet deep) was excavated in accordance with the OU-3 RAWP. The extents of these former OU-3 hot spot excavations are presented in Figure 3.

A 0.5-acre area of hydrocarbon-impacted soil was visually delineated to the north, west, and east, within the bounds of the historic SPH plume. In 2016 this soil, visually observed to be hydrocarbon-impacted and a

potential source for SPH, was excavated to a depth of five ft bls, transported off-site and properly disposed of as part of the approved remedy for OU-3. The excavation was then backfilled with clean fill and brought to grade. The extent of the excavation and remaining residual SPH occurrence is outside of the construction limits of the Amtrak Airo and CBF construction projects and is presented in Figure 4.

2.2.3 PCB and Lead Remedial Zones

The OU-4 RAWP provided the scope of work for the excavation and off-site disposal of PCB impacted soil at twelve locations (Remedial Zones PCB-1 through PCB-12) and lead impacted soil at one location (Remedial Zone Lead-20). As of September 2020, seven Remedial Zones (PCB-1 through PCB-3 and PCB-5 through PCB-9) have been completed, which has been documented in previous Construction Completion Reports (CCRs). Due to access limitations, impacted soil at Remedial Zones PCB-4, PCB-10, PCB-11, PCB-12, and Lead-20 remain at the Site. As shown in Figure 5, remedial Zone PCB-10 is within the proposed limits of construction for the Amtrak Airo and CBF projects. Soils within the remaining remedial zones (PCB-4, PCB-11, PCB-12, and Lead-20) may be remediated by an Amtrak remediation contractor should track outages for track improvements occur that enable this work.

Remedial Zone PCB-10 (68-Spur)

PCB-10 is located within the center of OU-4 (see Figure 5). One sample (SB-45 (0-1) collected during the March 1994 follow up to the Phase I and Phase II Remedial Investigations indicated a PCB concentration of 790 milligrams per kilogram (mg/kg) exceeding the Yard-specific soil cleanup level of 25 mg/kg. Sampling locations and results are documented in Figure 15 of the OU-4 RAWP. Based on delineation samples collected in May and September 2007 and April 2009, the remedial zone is defined by approximately 330 CY of PCB impacted soil. PCB impacts were limited to the soil from 0 to 3 ft bls. Details regarding the horizontal and vertical delineation of remedial zone PCB-10 are further discussed in the OU-4 RAWP. Remediation of PCB-10 at 68-Spur will be performed during AIRO and CBF construction.

Remedial Zone PCB-4 (Track 26)

PCB-4 is located at Track 26 under the Honeywell Street Bridge (see Figure 5). Samples S-104 (0-2) and S-105 (0-2), and S-106 (0-2) were collected during the Phase I RI and exceeded the total PCB soil cleanup level with concentrations of 860 mg/kg, 15,000 mg/kg, and 20,000 mg/kg, respectively. Additionally, during the October 1999 soil investigation for the Honeywell Street Bridge Rehabilitation Program, four samples contained total PCB concentrations exceeding the soil cleanup level: HB-22 (0-1) at 77.66 mg/kg; HB-23 (0-1) at 525.6 mg/kg; HB-23 (1-2) 866.94 mg/kg; and HB-23 (2-3) at 806.91 mg/kg. Under the Honeywell Street Bridge, exceedance of the PCB soil cleanup level was identified in the 6 to 7 ft bls sampling interval at SB-16, indicating PCB contamination may extend to an estimated 8 ft bls. It is estimated that soil excavation to 8 ft bls will be required for the extent of this track that is under the Honeywell Street Bridge. The total excavation volume is estimated to be approximately 520 CY, however, delineation sampling to determine the horizontal and vertical boundaries of this excavation will be completed prior to implementing PCB-4 remediation. In the event Track 26 outages for track improvements occur during AIRO/CBF construction, Amtrak will complete delineation and mobilize a remediation contractor to excavate the PCB-4 area.

Remedial Zone PCB-11 (Loop Track 2)

PCB-11 is located within Loop Track 2, approximately 80 feet east of Lead-20 (see Figure 5). One sample (LLS-11A (1-2) collected during the August 2001 Limited Phase II Environmental Site Assessment for the Leveraged Lease Area indicated a PCB concentration of 92.2 mg/kg exceeding the Yard-specific soil cleanup level of 25 mg/kg. Sampling locations and results are documented in Figure 16 of the OU-4 RAWP. Based

on delineation samples collected in May 2007, the remedial zone is defined by an approximately 20 ft by 10 ft rectangular area and approximately 15 CY of PCB impacted soil. PCB impacts were limited to the soil from 1 to 2 ft bls. Details regarding the horizontal and vertical delineation of remedial zone PCB-11 are further discussed in the OU-4 RAWP. In the event Loop Track 2 outages for track improvements occur during AIRO/CBF construction, Amtrak will mobilize a remediation contractor to excavate the PCB-11 area.

Remedial Zone PCB-12 (Loop Track 2)

PCB-12 is located with Loop Track 2, in the southeast portion of the Yard (see Figure 5). Two samples (LP2-3 (0-1) and LLS-21 (0-1) collected during the July 1997 Soil Investigation of the Loop Track 2 and the August 2001 Limited Phase II Environmental Site Assessment for the Leveraged Lease Area, respectively, indicated PCB concentrations of 68 mg/kg (LP2-3 (0-1)) and 38.9 mg/kg (LLS-21 (0-1)) exceeding the Yard-specific soil cleanup level of 25 mg/kg. Based on delineation samples collected in July 1997 and May 2007, the remedial zone is defined by an approximately 36 ft by 10 ft rectangular area and approximately 13 CY of PCB impacted soil. PCB impacts were limited to the surface soil from 0 to 1 ft bls. Details regarding the horizontal and vertical delineation of remedial zone PCB-12 are further discussed in the OU-4 RAWP. In the event Loop Track 2 outages for track improvements occur during AIRO/CBF construction, Amtrak will mobilize a remediation contractor to excavate the PCB-12 area.

Remedial Zone LEAD-20 (Loop Track 1)

Lead-20 is located within Loop Track 1 (see Figure 5). One soil sample (LLS-15 (0-1) collected during the August 2001 Limited Phase II Environmental Site Assessment for the Leveraged Lease Area indicated a lead concentration of 7,020 milligrams per kilogram (mg/kg) exceeding the Yard-specific soil cleanup level of 3,900 mg/kg. Sampling locations and results are documented in Figure 16 of the OU-4 RAWP. Based on delineation samples collected in April 2009, the remedial zone is defined by an approximately 40 feet (ft) by 10 ft rectangular area and approximately 15 CY of lead impacted soil. Lead impacts were limited to the surface soil from 0 to 1 ft bls. Details regarding the horizontal and vertical delineation of remedial zone LEAD-20 are further discussed in the OU-4 RAWP. In the event Loop Track 1 outages for track improvements occur during AIRO/CBF construction, Amtrak will mobilize a remediation contractor to excavate the Lead-20 area.

2.2.4 Groundwater

Groundwater beneath the entire Yard is defined as OU-6. Groundwater in OU-6 at the Yard (including OU-3 and OU-4) is slightly impacted at concentrations above the NYSDEC GA standards and is impacted by several upgradient sources, including Standard Motor Products (Site No. 241016, Class 2 Site on NYSDEC Registry of Inactive Hazardous Waste Disposal Sites) by contamination (primarily chlorinated volatile organic compounds [CVOCs], benzene, toluene, ethylbenzene, and xylenes [BTEX], and metals). The extent of the off-site plume impacting the Yard is presented in Figure 3. As per the OU-6 ROD issued by NYSDEC dated March 2010, a no action remedy with monitoring was selected for OU-6 (including groundwater in the area of OU-3). Roux is currently implementing this groundwater monitoring program at the Yard.

2.2.5 Subsurface Structures

Former subsurface structures located in OU-3 were investigated and some were removed. The following is a listing of structures formerly located in OU-3:

- Interior and exterior Engine House service pits (removed in 2008 and 2010);
- Oil House basement (removed in 2008);
- Metro Shed inspection pit (cleaned and backfilled in 1997, partially removed in 2010); and

- Fuel transfer pump vaults (removed in 2010).

Locations of all former subsurface structures are provided in Figure 3. Additionally, this figure shows the approximate locations of known remaining subsurface structures in OU-3.

2.2.5.1 Underground Storage Tanks

Nine underground storage tanks (USTs) with capacities ranging from 7,800 to 11,000 gallons were in the two former UST areas, west (three USTs, Nos. 1, 2, and 3) and east (six USTs, Nos. 4 through 9) in OU-3. Locations of all nine USTs are shown in Figure 3. It was reported that UST Nos. 1 through 5 formerly contained No. 2 fuel oil, while Tank Nos. 6 through 9 formerly contained No. 4 fuel oil. In addition, the former Boiler House UST (20,000-gallon No. 2 fuel oil tank) located within OU-4, which was previously abandoned in place, was removed as part of the Mass Transit Authority (MTA) East Side Access (ESA) Project.

On September 3, 2008, removal of the USTs began with UST No. 9. The steel plates covering the manways to the USTs were removed. Any soil overlying the UST and surrounding concrete was removed to access the UST. Once accessed, the surrounding soil was removed to allow removal of the tank. All soil that was removed was stockpiled and visually inspected for impacts (i.e., staining and odors). UST No. 9 was removed and staged on level ground to allow inspection for evidence of cracks or holes. Immediately after inspection, UST No. 9 was rendered unusable by puncturing and cutting the tank into sections. UST No. 9 was cut into manageable pieces and stockpiled for offsite disposal.

Upon opening the top of UST No. 8, it was determined that it had been previously filled with sand and the contractor began removing and stockpiling the sand for offsite disposal. At this time, the Remedial Action was temporarily suspended by the NYSDEC following unsubstantiated nuisance odor complaints from some of the occupants of the 33-00 Northern Boulevard Building. Prior to discontinuing work, however, UST No. 8 was abandoned in place (removal was not permitted due to the unsubstantiated nuisance odor complaints). The entire excavated area was backfilled with ¾-inch stone to grade.

On December 15, 2010, excavation activities were conducted to abandon the remaining seven USTs that had not been addressed during the 2008 remedial activities described above (i.e., UST Nos. 1 through 7). Due to the shallow water table at OU-3, de-watering of the excavation was necessary which was accomplished using centrifugal pumps connected to an oil/water separator (OWS) that allowed for the separation of SPH and water. Water was then transferred from the OWS to temporary storage tanks (Frac tanks) to await proper disposal. SPH was removed from the OWS using a vacuum truck and was disposed of as PCB hazardous waste.

Each of the seven remaining USTs were unearthed and access to the tanks was created by cutting a lateral opening. Each UST was backfilled with ¾-inch stone to grade. Each of the seven abandoned USTs was constructed of single-walled steel with rivets at the seams. Additional details regarding the USTs and their current status are provided in Table 2 below. UST locations are shown in Figure 3 and are located outside of the Amtrak Airo and CBF limits of construction.

UST ID	Dimensions	Estimated Capacity	Depth to Top of UST	Current Status
UST No. 1	24-ft. long by 8-ft. in diameter	9,000 gallons	8 ft. bls.	Abandoned with ¾-inch stone to grade

UST ID	Dimensions	Estimated Capacity	Depth to Top of UST	Current Status
UST No. 2	21-ft. long by 8-ft. in diameter	7,800 gallons	7 ft. bls.	Abandoned with ¾-inch stone to grade
UST No. 3	24-ft. long by 8-ft. in diameter	9,000 gallons	8 ft. bls.	Abandoned with ¾-inch stone to grade
UST Nos. 4 through 7	30-ft. long by 8-ft. in diameter	11,000 gallons	8 ft. bls.	Abandoned with ¾-inch stone to grade
UST No. 8	30-ft. long by 8-ft. in diameter	11,000 gallons	8 ft. bls.	Abandoned with ¾-inch stone to grade
UST No. 9	30-ft. long by 8-ft. in diameter	11,000 gallons	8 ft. bls.	Removed. Excavation backfilled with ¾-inch stone to grade

2.2.6 Contamination Remaining at the Yard

Upon completion of the remedial activities described above, only a small portion of the OU-3 SPH plume remains (one small, isolated area of SPH remains, as shown in Figure 4). Physical evidence of residual petroleum and/or petroleum odor was noted in soil at depths of up to 10 ft bls or greater in some isolated areas, within the historical boundary of the SPH plume. All previously identified soil exceedances of the Yard constituents of concern (COCs) in OU-3 have been remediated and are no longer present in OU-3 area of Yard.

As discussed above in Section 2.2.1, there is a small area where petroleum impacts and SPH were identified in OU-4, as part of the ART construction project. A work plan to further investigate these petroleum impacts was prepared and is currently under NYSDEC review.

As discussed above, there are a total of five remaining areas where soil is present in excess of the Yard soil cleanup levels (i.e., Remedial Zones) in OU-4; one area (PCB-10) is within the Amtrak Airo and CBF proposed limits of construction (i.e., area of disturbance).

As part of OU-6, low-level residual impacts remain in groundwater, however, they have been delineated and are subject only to a monitoring only remedy, as per the OU-6 ROD (Roux is currently implementing this groundwater monitoring program as part of OU-6).

After completion of all Yard Remedial Actions, Engineering, and Institutional Controls (ECs/ICs) will be required to address contamination remaining at the Yard. Long-term management of these EC/ICs and residual contamination will be performed in accordance with a NYSDEC-approved site management plan (SMP).

3. Soil/Materials Management Methods

Due to remaining contamination that exists at the Site, any future intrusive work will be performed in compliance with this EWP. Since soil remediation has and will continue to be conducted to achieve Site-specific cleanup levels (and not unrestricted cleanup levels), residual soil impacts are present throughout the Yard, in addition to the known remaining soil hot spots where impacts are present in excess of the Site-specific cleanup levels. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a project specific Health and Safety Plan (HASP) contained in Appendix D or a site-specific HASP prepared by the contractor, and the Community Air Monitoring Plan (CAMP – see Appendix C) prepared for the Site.

Amtrak and associated parties preparing the remedial documents submitted to the NYSDEC, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation waste (water and soil), control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The following sections provide the Soil Management Plan to be implemented during all intrusive work.

3.1 Soil Screening Methods

Visual, olfactory and instrument-based (e.g., photoionization detector) soil screening will be performed during all excavations. A qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State will perform the screening.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-site as soil beneath a cover or if the material can be used as cover soil. Further discussion of off-site disposal of materials and on-site reuse is provided in Section 3.6 and 3.7 of this EWP.

All excavated material not suitable for reuse will be sampled for waste disposal purposes. Soil will be stockpiled, sampled, and characterized prior to off-site disposal. If in-situ soil sampling for waste disposal sampling is performed, at least 15 days' notice will be provided to NYSDEC prior to commencement of work, as outlined in Section 1. It is estimated that one soil characterization sample will be collected for every approximate 800 CY of soil for disposal. At a minimum, waste characterization samples will be submitted for analysis for the typical disposal facility requirements, which will include target compound list (TCL) volatile organic compounds (VOCs), SVOCs, pesticides/herbicides, PCBs, target analyte list (TAL) metals, TCLP RCRA 8 metals, and RCRA characteristics (e.g., reactivity, corrosivity and ignitability); however, additional analytical parameters will be added if required to allow for material acceptance into a specific proposed treatment, storage, and disposal facility (TSDF). Dedicated sampling equipment will be used for the collection of each soil characterization sample.

Further discussion of off-site disposal of materials and on-site reuse is provided in Section 3.6.

3.2 Soil Staging Methods

Soil stockpiles generated from onsite excavations and found to be grossly contaminated will be placed on poly or directly into lined roll-off containers with tight fitting covers. If placed on poly prior to being loaded

into lined roll-off containers, the area will be continuously encircled with a berm and/or silt fence. Silt fencing will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles generated from onsite excavations will be kept covered at all times with appropriately anchored tarps. All stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by the NYSDEC.

Soils that are found to be grossly contaminated by SPH will be labeled as “Hazardous Pending Analysis”, until the Remedial Engineer can demonstrate that the waste is non-hazardous, either by testing or by generator knowledge.

3.3 Materials Excavation and Load-Out

Any proposed soil excavation on the Site will be conducted in accordance with this EWP.

A qualified environmental professional as defined in 6 NYCRR Part 375), a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for the safe execution of all invasive and other work performed under this EWP.

The presence of utilities and easements on the Site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this EWP is posed by utilities or easements on the Site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements). Trucks transporting contaminated soil must have either tight-fitting opaque covers that are secured on the sides and/or back, or opaque covers that are locked on all sides.

A truck wash will be operated on-site, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the activities performed under this section are complete. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the Site are clean of dirt and other materials derived from the Site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials. Material accumulated from the street cleaning and egress cleaning activities will be disposed off-site at a permitted facility in accordance with all applicable local, State, and Federal regulations.

3.4 UST Removal

Eight previously abandoned-in-place USTs with capacities ranging from 8,200 to 17,600 gallons remain located within OU-3, within the historic plume (see Figure 3). If any USTs are encountered during the construction activities, sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Odor suppressant foam (or other methods with equivalent effectiveness) will be utilized as necessary to suppress odors during UST removal activities. Following any UST removal activities, endpoint samples will be collected from the excavation in accordance with DER-10. Chemical analysis will be performed on all endpoint samples for a full list of analytes (TCL VOC, TCL SVOCs, TAL metals, PCBs, TCL pesticides, and PFAS). TCL SVOCs, lead, and PCBs will be compared to Yard-specific criteria, all other compounds will be compared to NYSDEC Part 375 soil cleanup objectives, NYSDEC CP-51 guidance criteria, and NYSDEC PFAS guidance values. Identification of unknown or unexpected contaminated media identified by screening during UST removal activities will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. Petroleum Bulk Storage (PBS) records will be updated for all UST removals.

3.5 Materials Transport Off-Site

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the Site will be secured with either tight-fitting opaque covers that are secured on the sides and/or back, or opaque covers that are locked on all sides. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and New York State Department of Transportation (NYSDOT) requirements (and all other applicable transportation requirements).

Truck transport routes must be established before transporting any materials off-site. This route should be the most appropriate route and take into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport. The specific truck route will be provided to NYSDEC in the notification letter submitted as part of this EWP. The notification letter will be submitted ahead of the start of construction.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

3.6 Materials Disposal Off-Site

All material excavated and removed from the Site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State and Federal regulations. If disposal of material from this Site is proposed for unregulated off-site disposal (i.e., clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this Site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified based on characterization data and will be included in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e., hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C&D debris recovery facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the CCR (see Section 9). This documentation will include, but may not be limited to waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

The following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the Yard conforms with all applicable laws: (1) a letter from the Remedial Engineer or Amtrak to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation site in New York State. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported (including site characterization data); and (2) a letter from all receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Parts 360, 361, 362, 363, 364 and 365. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State C&D debris recovery facility (6NYCRR Part 360-15 registered or permitted facility).

3.7 Materials Reuse On-Site

Based on preliminary design concepts, no excavated material is proposed to be reused on-site during the completion of the Amtrak Airo and CBF construction projects. However, in the event the construction team deems certain soils suitable based on geotechnical and physical requirements, and would like to reuse small volumes of soil, the Remedial Engineer will ensure that procedures defined for materials reuse in this EWP are followed, and that unacceptable material does not remain on-site.

In the event the reuse of soil is proposed, contaminated on-site material, including historic fill and contaminated soil, which is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, and within landscaping berms. Further, reused soil will be placed in the same general area from which it was initially excavated. Soils contemplated for reuse will undergo visual, olfactory and instrument-based (e.g., photoionization detector) soil screening, performed by a qualified environmental professional as defined in 6 NYCRR Part 375), a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State, as described in Section 3.1. Soils will not be considered suitable for reuse if

any evidence of gross contamination is observed. In this case, soil will be staged, characterized and disposed off site.

Proposed materials for reuse on-site must be sampled for full suite analytical parameters including per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane. The sampling frequency will be in accordance with DER-10 Table 5.4(e)10 unless prior approval is obtained from the NYSDEC project manager for modification of the sampling frequency. The analytical results of soil/fill material testing must meet the site use criteria presented in NYSDEC DER-10 Appendix 5 – Allowable Constituent Levels for Imported Fill or Soil for all constituents listed, and the NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances [April 2023 or date of current version, whichever is later] guidance values. Approvals for modifications to the analytical parameters must be obtained from the NYSDEC project manager prior to the sampling event.

In addition, any area disturbed at the Yard will require a one-foot layer (top cover) of documented clean soil, defined as soil that does not exceed the NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives (SCOs),suitable for railroad operations, from a documented source. A one-foot layer of clean soil, suitable for railroad operations, was imported on-site and placed on the compacted backfill material during previous excavation activities (see Figure 4 for the extent of the clean fill). This one-foot layer of clean soil may be excavated, stockpiled on-site, and used as backfill, provided there was a visual demarcation layer in place, or sampling is performed to confirm reuse is acceptable.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the Site will not be reused on-site.

3.8 Fluids Management

Dewatering is anticipated to be required during excavation activities to facilitate work below the groundwater table. Dewatered fluids (including groundwater and any stormwater that may enter an open excavation) will not be recharged back to the land surface or subsurface of the Site and must be either discharged to sewer (in accordance with NYCDEP permitting) or disposed offsite. Prior to dewatering activities, representative groundwater samples will be collected within the proposed construction area at the Yard and submitted for laboratory analysis to evaluate if the groundwater meets NYCDEP sewer discharge requirements. Additionally, this groundwater data may be used to support Long Island Well Permit Application, if required. Extracted groundwater will be treated on-site as necessary to meet NYCDEP requirements and discharged to the NYCDEP sewer system. Prior to discharge to the sewer system, Amtrak's contractor will secure all required permits from the NYCDEP.

Construction wastewater will also be generated from personnel/equipment decontamination. Construction wastewater will be collected and stored on-site in leak-tight drums or temporary storage tanks. The wastewater will be sampled and submitted for analysis for disposal/discharge characterization. Based on the laboratory analytical results, the construction wastewater will be disposed off-site at a permitted disposal/recycling facility or discharged to the on-site sewer system upon approval from NYCDEP.

SPH, where encountered, will be collected and stored separately during dewatering activities. The SPH has the potential to be classified as a NYS B003 hazardous waste and TSCA waste. The SPH will be extracted and containerized to preclude commingling of the SPH with other liquid waste. Waste characterization

samples will be collected to confirm waste classifications and determine appropriate means of disposal. SPH will be labeled “Hazardous Pending Analysis”, until the Remedial Engineer can demonstrate that the waste is non-hazardous, either by testing or by generator knowledge.

All liquids not suitable for discharge, which are not directly removed and disposed off-site in vacuum trucks, will be stored in temporary on-site tanks to await disposal. Containers used for storing construction wastewater will conform to both federal and state requirements. All storage tanks or containers will be decontaminated following disposal/discharge of wastewater.

All liquids to be removed from the Site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported, and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the Site unless prior approval is obtained from NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (i.e., a local pond, stream, or river) will be performed under a SPDES permit.

3.9 Cover System Restoration

Per the required engineering controls, the entire Yard has an existing cover system in place to prevent exposure to remaining contamination. After the completion of soil removal and any other invasive activities, the cover system will be restored in a manner that complies with the Site’s Record of Decision. The existing cover system is comprised of a minimum of 12 inches of clean soil meeting the NYSDEC Part 375 Unrestricted Use SCOs, ballast stone, asphalt pavement, concrete covered sidewalks, and/or concrete building slabs. The demarcation layer, consisting of orange snow fencing material, white geotextile or equivalent material, etc. will be replaced to provide a visual reference to the top of the remaining contamination zone, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this EWP. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. An as-built figure showing the modified surface will be included in the CCR and in an updated Interim SMP for OU-3 and OU-4. The alteration, restoration and modification of engineering controls must conform with Article 145 Section 7209 of the Education Law regarding the application of professional seals and alterations.

3.10 Backfill from Off-Site Sources

All materials proposed for import onto the Site will be approved by the qualified environmental professional and will be in compliance with provisions in this EWP prior to receipt at the Site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review. A copy of the form is presented in Appendix E.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the Site.

Imported soils will be stockpiled. All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d) and DER-10 Appendix 5 for industrial use. Based on an evaluation of the

land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Table 375-6.8(b) of 6 NYCRR Part 375. Non-compliant soils will not be imported onto the Site without prior approval by NYSDEC. In accordance with NYSDEC DER-10, gravel, rock, or stone, consisting of virgin material from a permitted mine or quarry may be imported upon approval by NYSDEC, without chemical testing, to be used as backfill beneath pavement, buildings or as part of the final Site cover, provided it contains less than 10% fines. Soils that meet "exempt" fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Soil material will be sampled for the full suite of analytical parameters, including PFAS and 1, 4-dioxane. Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting separately from excavated materials and covered to prevent dust releases.

3.11 Stormwater Pollution Prevention

Amtrak and its contractors will employ best management practices (soil erosion and sediment control measures) for management of storm water in accordance with the Standards and Specifications for Erosion and Sediment Control, dated November 2016, the New York State Stormwater Design Manual, dated January 2015. Hay bales and/or silt fence will be placed and maintained by the contractor at locations upgradient of excavation areas to control storm water runoff and surface water from entering or exiting the excavation. These control measures shall be installed prior to initiating the soil excavation. Any collected surface water will be managed as discussed in Section 3.8. Accumulated sediments will be removed as required, and all undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

The manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the construction plans shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Amtrak monitors sediment accumulation in downstream sewers as part of the OU-5 remedy, therefore, it is imperative that all best management practices are followed to prevent sediments from reaching the Yard sewer system.

4. Excavation Contingency Plan

If previously unidentified contaminant sources are found during subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment, and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals, TCL VOC and SVOCs, TCL pesticides and PCBs, and PFAS), unless the Site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will also be included in the CCR.

5. Community Air Monitoring Plan

An air monitoring program will be implemented during all intrusive activities at the Site to measure the concentration of particulates and organic vapors in ambient air in and around the work zone(s).

The Community Air Monitoring Plan (CAMP) is included as Appendix C of this EWP. The Site-specific CAMP was prepared in accordance with the NYSDOH Generic Community Air Monitoring Plan included as Appendix 1A of the NYSDEC DER-10. In accordance with NYSDOH Generic Community Air Monitoring Plan and as indicated in the Site-specific CAMP, a dedicated air monitoring technician (i.e., qualified environmental professional) will implement real time air monitoring at the Site's upwind and downwind perimeter. The CAMP will include VOCs, particulates, and meteorological data to be recorded on a daily basis while intrusive work is being conducted. Action levels for VOCs and particulates are specified in the Site-specific CAMP (Appendix C). Meteorological data consisting of wind speed, wind direction, temperatures, barometric pressures, and relative humidity shall be collected as part of the CAMP. During all phases of work, the contractor will be responsible for mitigating any vapor and particulate issues, via suppression techniques as defined in the Site-specific CAMP. CAMP locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 part-per-million, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be pre-determined). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.
- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 micrograms per cubic meter, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 micrograms per cubic meter or less at the monitoring point.
- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

6. Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site. Specific odor control methods to be used on a routine basis will include assigning a dedicated air monitoring technician (i.e., qualified environmental professional) to monitor odors, active removal of SPH within excavations when encountered, and maintaining covers over stockpiled SPH impacted soils. If nuisance odors are identified at the Site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the Remedial Engineer, and any measures that are implemented will be discussed in the daily and monthly reports, and will be documented in the CCR.

If nuisance odors develop during intrusive work, or if odor complaints are received, all necessary means will be employed to control on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to lined trucks/containers with tight fitting covers for off-site disposal; (e) use of chemical odorants in spray or misting systems; and (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

7. Dust Control Plan

Particulate monitoring must be conducted according to the Site-specific CAMP. If particulate levels at the site exceed the thresholds listed in the CAMP or if airborne dust is observed on the site or leaving the site, the dust suppression techniques listed below will be employed. Dust will be controlled by spraying a water mist over the work area. The water mist will be generated by connecting a misting device to a hose, which will be connected to any potable water source.

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road/work area wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

8. Other Nuisances

A plan for rodent control will be developed and utilized by the contractor prior to and during Site clearing and Site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

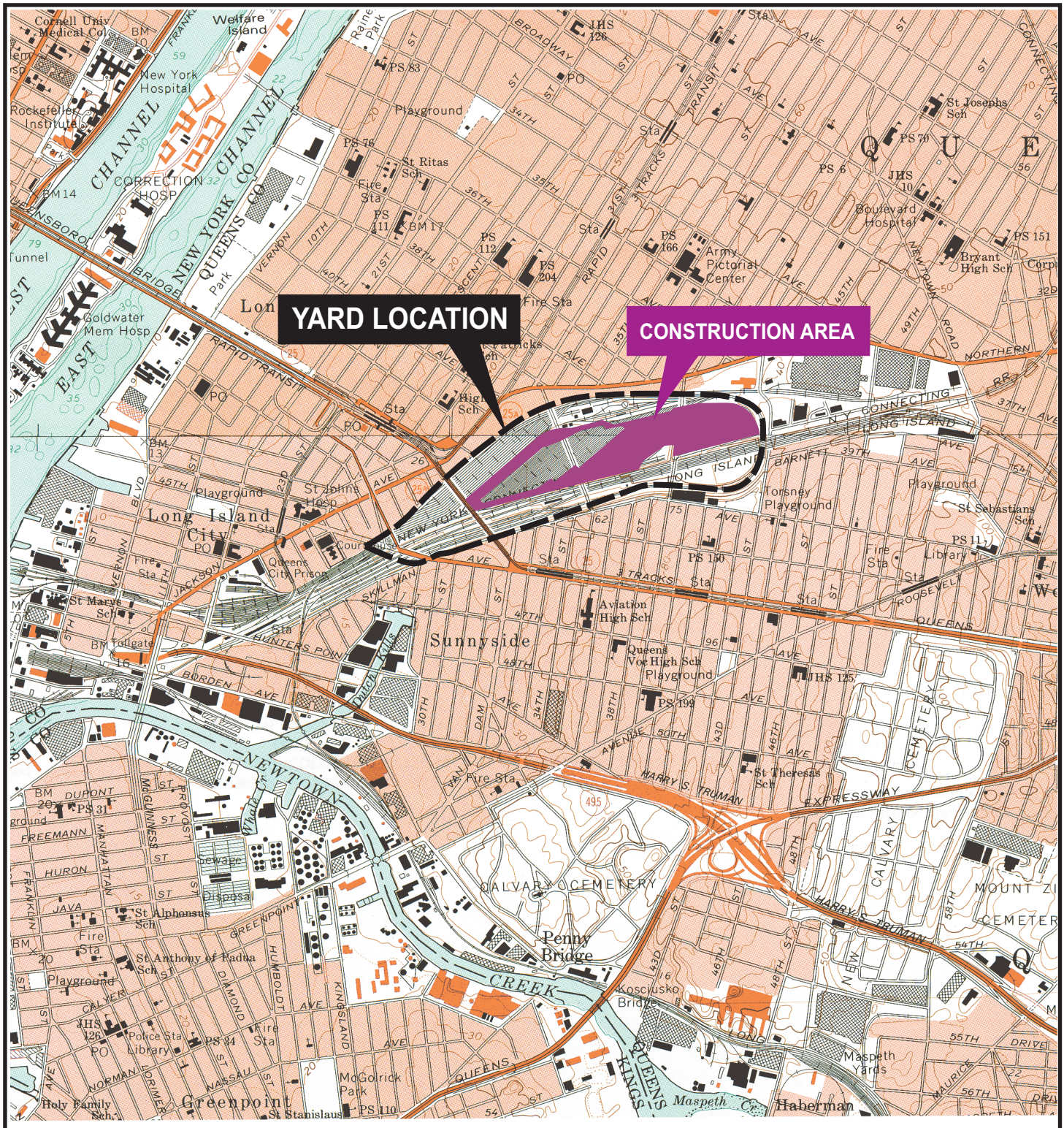
9. Reporting

During excavation activities, daily reports will be submitted to the NYSDEC, which will include a summary of each day's material removal from or imported to the Site as well as CAMP results (including figure showing placement of CAMP and weather stations). Daily reports will also include a 2-week look ahead for anticipated future work, as well as an anticipated project schedule. Daily reports will be submitted to the NYSDEC by 12:00pm the following day excavation/soil handling work is completed at the Site.

Following completion of all excavation and backfilling activities, all excavation and disposal activities completed for the Amtrak AIRO and CBF work will be documented in a CCR, which will be submitted to the NYSDEC.

FIGURES

1. Location of Site and Construction Area
2. Approximate Overall Construction Area for Airo/Crewbase Facility (CBF)
3. Configuration of Historic Plume and Subsurface Structures
4. Current SPH Plume Occurrence and Extent of SPH Source Zone Excavation
5. Remaining OU-4 Remedial Zones



QUADRANGLE LOCATION



SOURCE:
USGS; Brooklyn, NY
USGS; Central Park, NY
7.5 Minute Topographic Quadrangle

N

0 2000’

Title:

LOCATION OF SITE AND CONSTRUCTION AREA

EXCAVATION WORK PLAN
FOR AMTRAK AIRO AND CBP PROJECTS

Prepared for:

AMTRAK

ROUX

Compiled by: J.R.	Date: 29JAN24	FIGURE
Prepared by: B.H.C.	Scale: AS SHOWN	1
Project Mgr.: J.R.	Project No.: 0055.0149Y000	
File: 0055.0149Y100.01.CDR		

V:\CAD\PROJECTS\0055\Y\0149Y\100\0055.0149Y100.01.CDR



LEGEND

- EXTENT OF AMTRAK AIRO AND CBF PROJECTS
- OU–1
- OU–2
- OU–3
- OU–4
- OU–5 (YARD SEWER SYSTEM)

OU–6, GROUNDWATER BENEATH THE YARD (UNDERLIES ALL OTHER OU's)

N

250' 0 250'

Title:

APPROXIMATE CONSTRUCTION AREA

EXCAVATION WORK PLAN
FOR AMTRAK AIRO AND CREWBASE FACILITY PROJECTS

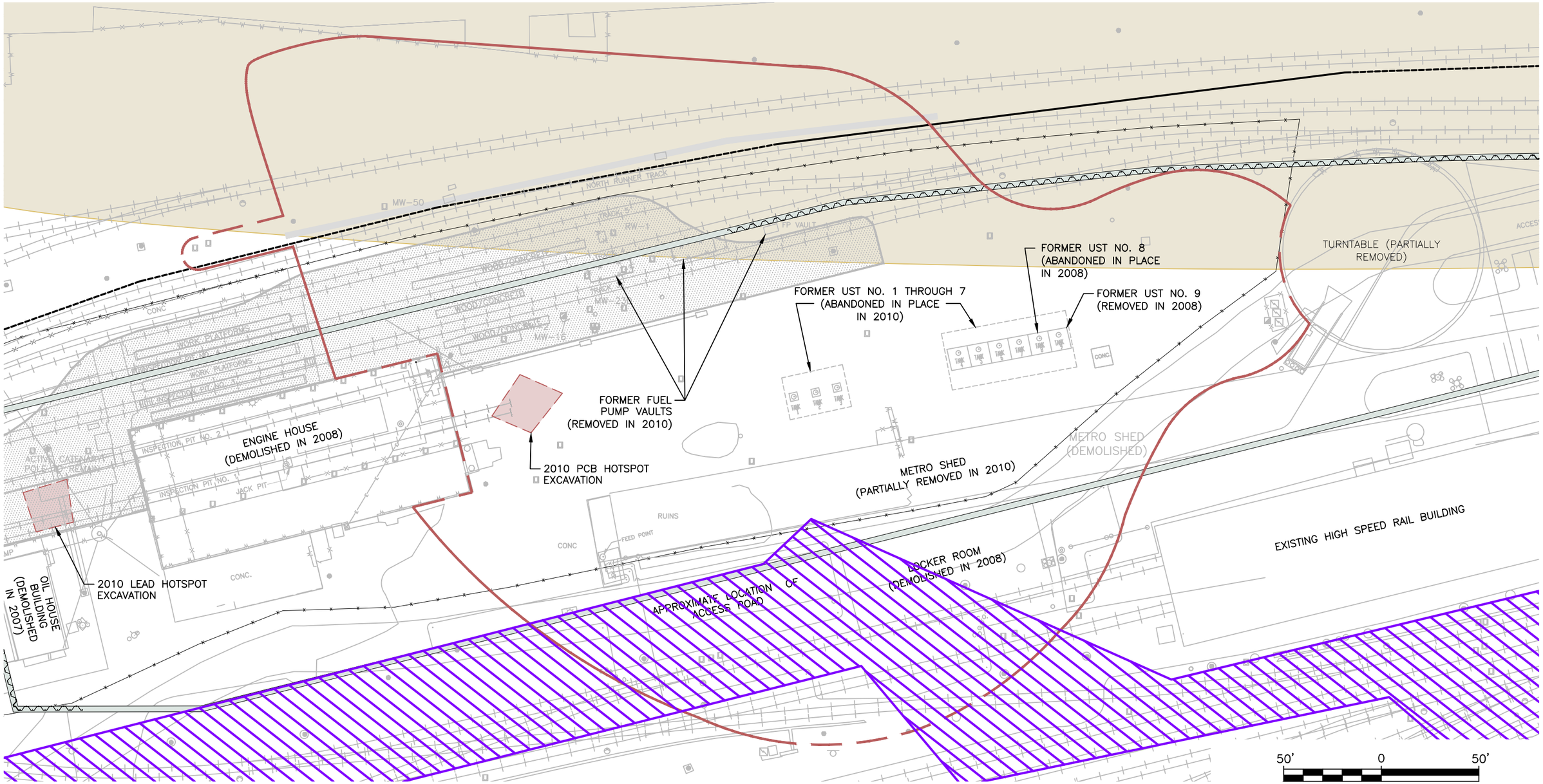
Prepared for:

AMTRAK

ROUX

Compiled by: J.R.	Date: 9/16/2024	FIGURE
Prepared by: B.H.C.	Scale: AS SHOWN	2
Project Mgr: J.R.	Project: 0055.0149Y000	
File: 0055.0149Y100.02.DWG		

V:\CAD\PROJECTS\0055Y\0149Y\100\0055.0149Y100.02.DWG BCICIO



LEGEND

- PROPOSED LIMITS OF CONSTRUCTION
- APPROXIMATE BOUNDARY OF HISTORIC SPH PLUME (ZERO CONTOUR)
- APPROXIMATE EXTENT OF VISUAL HYDROCARBON-IMPACTED SURFACE SOIL EXCAVATED 2FT BLS 2009
- HISTORIC EXTENT OF TOTAL CHLORINATED VOCs IN GROUNDWATER AT THE WATER TABLE

NOTES

SPH	–	SEPARATE-PHASE HYDROCARBON
OU-3	–	OPERABLE UNIT 3
OU-4	–	OPERABLE UNIT 4

N

Title:

CONFIGURATION OF HISTORIC PLUME AND SUBSURFACE STRUCTURES

EXCAVATION WORK PLAN
FOR AMTRAK AIRO AND CREWBASE FACILITY PROJECTS

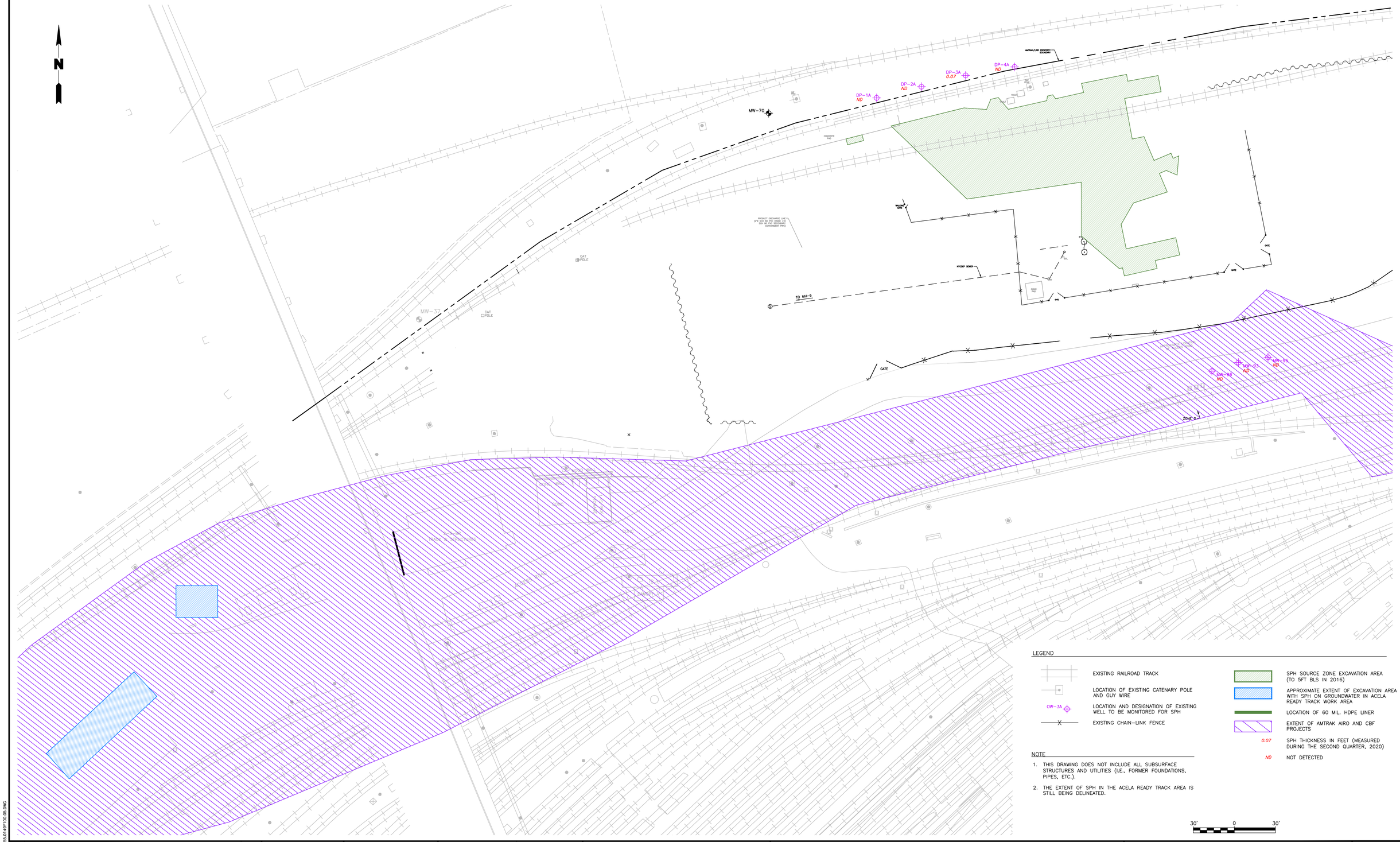
Prepared for:

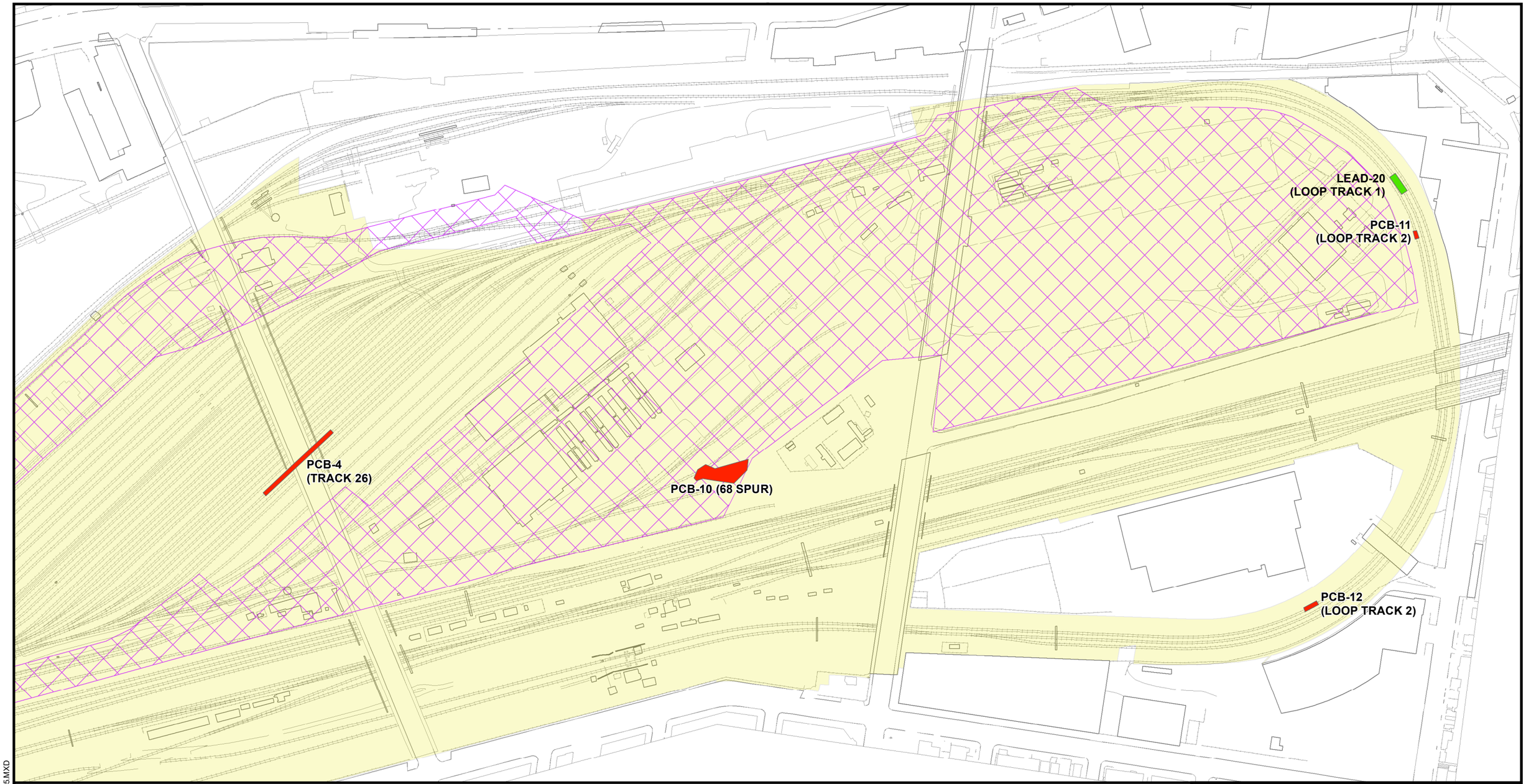
AMTRAK

ROUX

Compiled by: J.R.	Date: 2/8/2024	FIGURE
Prepared by: B.H.C.	Scale: AS SHOWN	3
Project Mgr: J.R.	Project: 0055.0149Y000	
File: 0055.0149Y100.03.DWG		

V:\CAD\PROJECTS\0055Y\0149Y\100\0055.0149Y100.03.DWG BCICIO


N
MW-70
DP-1A
ND
DP-2A
ND
DP-3A
0.07
DP-4A
ND
AMTRAK/LIRR PROPERTY BOUNDARY
CONCRETE PAD
PRODUCT DISCHARGE LINE (TYP. 3)(4 SCH 80 PVC INSIDE 6 SCH 80 PVC SECONDARY CONTAINMENT PIPE)
CAT POLE
MW-37
WILDER GATE
WOODEN SENCER
TO MH-6
GATE
MW-34
ND
MW-35
ND
MW-36
ND
ZONE D
ROW
TRACK 1
TRACK 2
TRACK 3
TRACK 4
TRACK 5
TRACK 6
TRACK 7
TRACK 8
TRACK 9
TRACK 10
TRACK 11
TRACK 12
TRACK 13
TRACK 14
TRACK 15
TRACK 16
TRACK 17
TRACK 18
TRACK 19
TRACK 20
TRACK



LEGEND

- APPROXIMATE EXTENT OF REMEDIAL EXCAVATION TO ADDRESS PCB EXCEEDANCE OF 25 MG/KG - PENDING
- APPROXIMATE EXTENT OF REMEDIAL EXCAVATION TO ADDRESS LEAD EXCEEDANCE OF 3,900 MG/KG - PENDING
- EXTENT OF AMTRAK AIRO AND CBF PROJECTS
- EXTENT OF OU-4 AREA

NOTES

MG/KG - MILLIGRAMS PER KILOGRAM
PCBS - POLYCHLORINATED BIPHENYLS

N

225 0 225'

Title:

REMAINING OU-4 REMEDIAL ZONES

EXCAVATION WORKPLAN FOR AMTRAK AIRO AND CREWBASE FACILITY PROJECTS
SUNNYSIDE, QUEENS, NEW YORK

Prepared for:
AMTRAK

ROUX

Compiled by: J.R.	Date: 02/08/24	FIGURE
Prepared by: M.S.R.	Scale: AS SHOWN	5
Project Mgr: J.R.	Project: 0055.0149Y000	
File: 0055.0149Y100.5.mxd		

V:\GIS\PROJECTS\0055\0149Y\100\0055.0149Y100.5.MXD

APPENDICES

A. Site-Related Contact Information

B. Amtrak Airo/Crewbase Facility (CBF)/CBF Garage Select 30% Design Drawings

C. Site-Specific Community Air Monitoring Plan

D. Site-Specific Health and Safety Plan

E. New York State Department of Environmental Conservation Request to Import/Reuse Fill or Soil Form (Revised April 2023)

APPENDIX A

Site-Related Contact Information

Table 1. Site Contact List - Sunnyside Yard, Long Island City, New York

Contact Name	Affiliation	Contact Number	Email
Jeffrey A. DeOre	Amtrak	215-349-1240	Jeffrey.DeOre@amtrak.com
Charles McGuckin	Roux Environmental	631-630-2346	cmcguckin@rouxinc.om
Robert Kovacs	Roux Environmental	631-630-2320	rkovacs@rouxinc.com
Jeff Wills	Roux Environmental	631-630-2366	jwills@rouxinc.com
Jane O'Connell	NYSDEC	718-482-4599	jane.oconnell@dec.ny.gov
Hasan Ahmed	NYSDEC	718-482-6405	hasan.ahmed@dec.ny.gov
Arunesh Ghosh	NYSDOH	518-486-1443	Arunesh.Ghosh@health.ny.gov

Notes

NYSDEC - New York State Department of Environmental Conservation

NYSDOH - New York State Depatement of Health

APPENDIX B

Amtrak Airo/Crewbase Facility (CBF)/CBF Garage
Select 30% Design Drawings

SUNNYSIDE YARD AMTRAK AIRO FACILITIES

Design/Build RFP Submission REV.2

12/21/2023



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NO.	DESCRIPTION	DATE	BY
1	Concept Design Submission	5/19/23	AP
2	Design/Build RFP Submission	9/15/23	DL
3	Design/Build RFP Submission REV.1	10/23/23	DL
4	Design/Build RFP Submission REV.2	12/21/23	DL

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Office of Chief Engineer

National Railroad Passenger Corporation
30th Street Station, Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
125 BROAD STREET, 16TH FLOOR
NEW YORK, NY 10004
TEL: 212-377-8400

SUNNYSIDE YARD AMTRAK AIRO FACILITIES

COVER

Designed: AP	Drawn: AP	Checked: DK	Date: 05/19/2023

Project Code:	60654795
WBS:	
Sheet No.	OF
Dwg. No.	**G001**

DL
12/21/2023 1:52:00 PM
BIM 360://CI-AMER (USA) 60654795US-Amtrak TO3 Sunnyside Yard/60654795 - AMTRAK SSY_ARCH.rvt



SUNNYSIDE YARD, QUEENS NY

NTS

NORTH

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12/21/2023 1:50:40 PM

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3	Design/Build RFP Submission REV.1	10/23/23	DL
4	Design/Build RFP Submission REV.2	12/21/23	DL

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NEW YORK, NY 10004
TEL: 212-377-8400

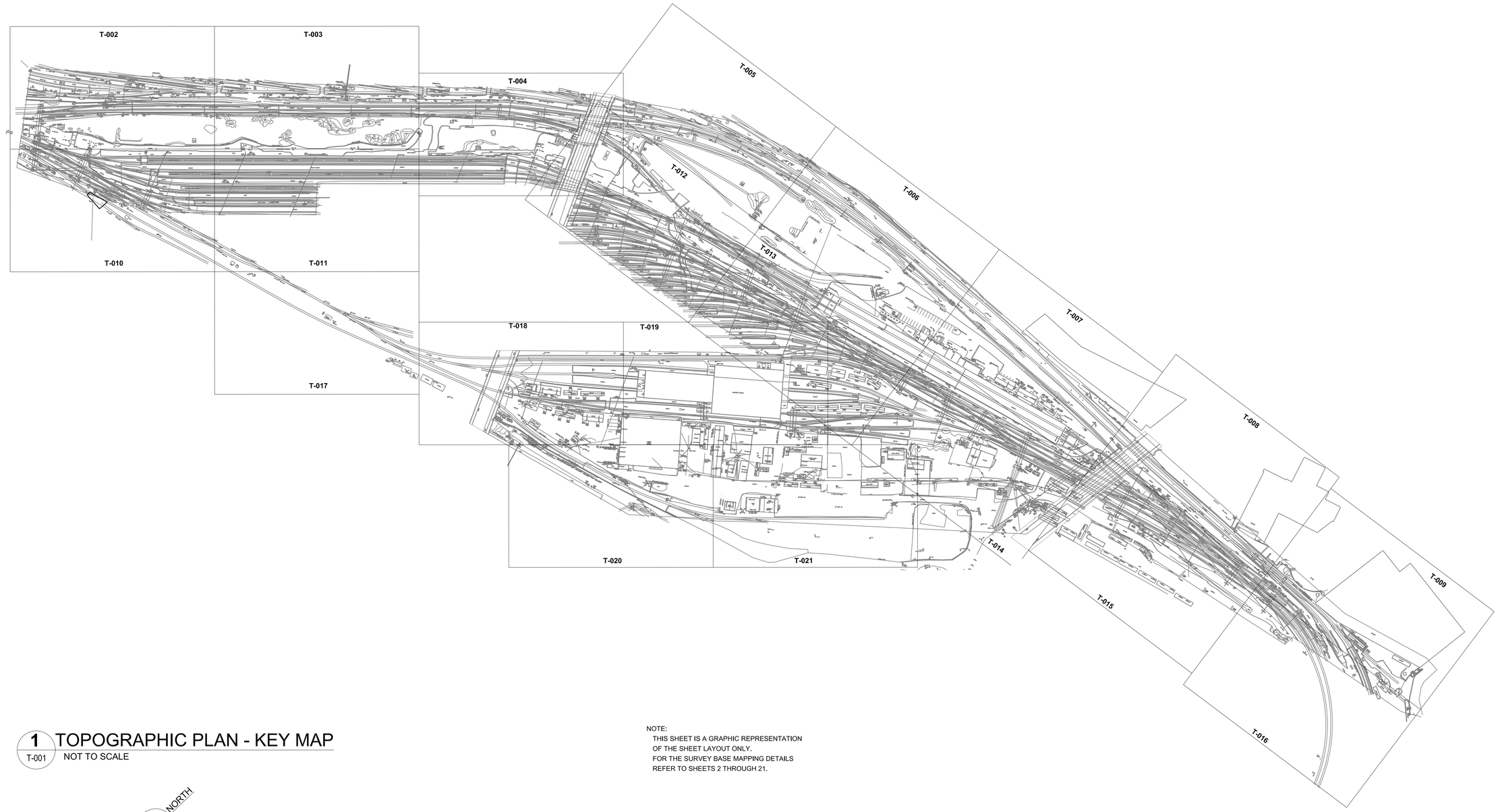
SUNNYSIDE YARD AMTRAK AIRO FACILITIES

KEY MAP

Designer:	AP	Drawn:	AP	Checked:	DK	Date:	10/23/2023

File No.:	
Ref No.:	
Sheet No.:	XXX OF XXX

Dwg. No. **G002**



1 TOPOGRAPHIC PLAN - KEY MAP

T-001

NOT TO SCALE

NORTH

NOTE:
THIS SHEET IS A GRAPHIC REPRESENTATION
OF THE SHEET LAYOUT ONLY.
FOR THE SURVEY BASE MAPPING DETAILS
REFER TO SHEETS 2 THROUGH 21.

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
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125 BROAD STREET, 16TH FLOOR
NEW YORK, NY 10004
TEL: 212-377-8400

M&S Malick&Scherer, PC
53 FRONTAGE ROAD, SUITE 170
HAMPTON, NJ 08827
TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW | Drawn: CMW | Checked: PLK | Date: 10/23/2023

File No.:
Ref No.:
Sheet No.: 1 OF 21

Dwg. No. **T-001**



2 TOPOGRAPHIC PLAN

T-002 1" = 20'-0" 0 20' 40'

NORTH

MATCHLINE SEE SHEET T003

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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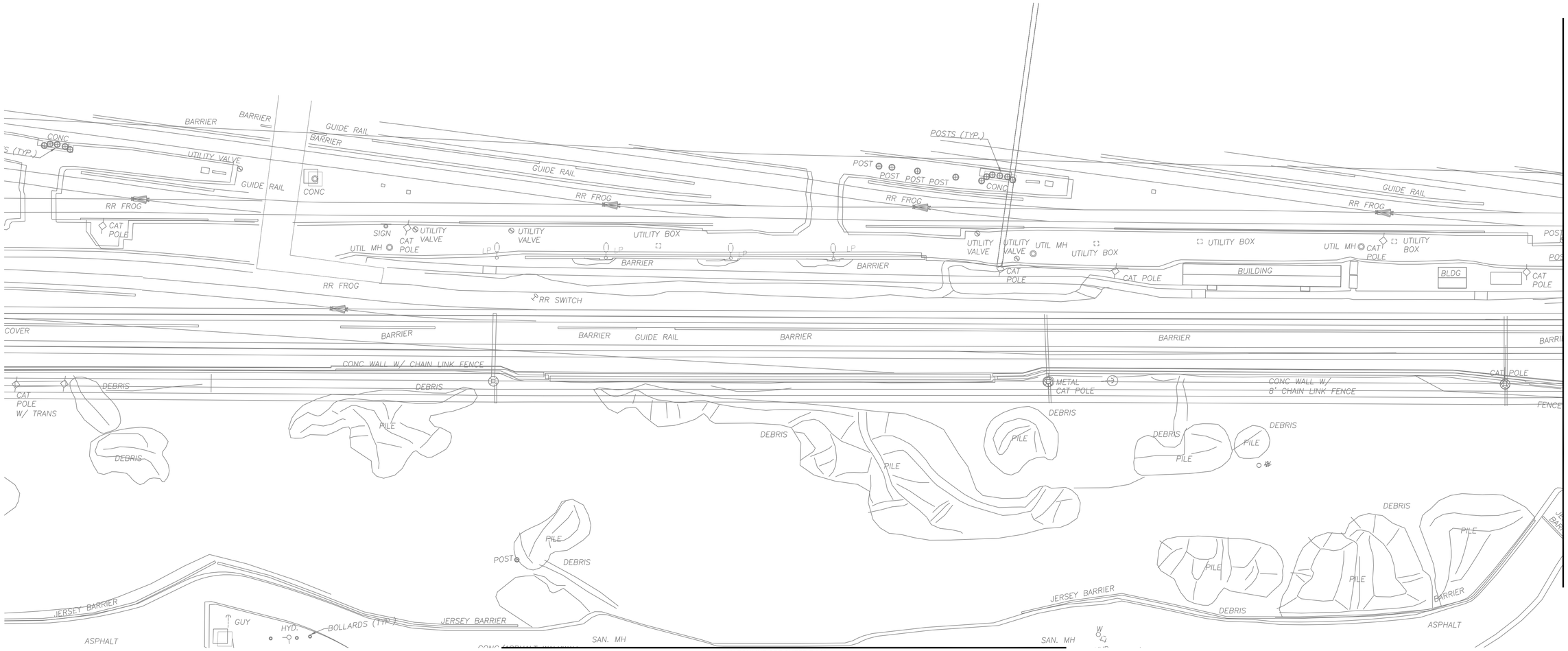
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SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW	Drawn: CMW	Checked: PLK	Date: 10/23/2023

File No.:	
Ref No.:	
Sheet No.:	2 OF 21
Dwg. No.	T-002



MATCHLINE SEE SHEET T004

MATCHLINE SEE SHEET T-011

3 TOPOGRAPHIC PLAN

T-003 1" = 20'-0"

0 20' 40'

NORTH

No.	Issuance	Date	By
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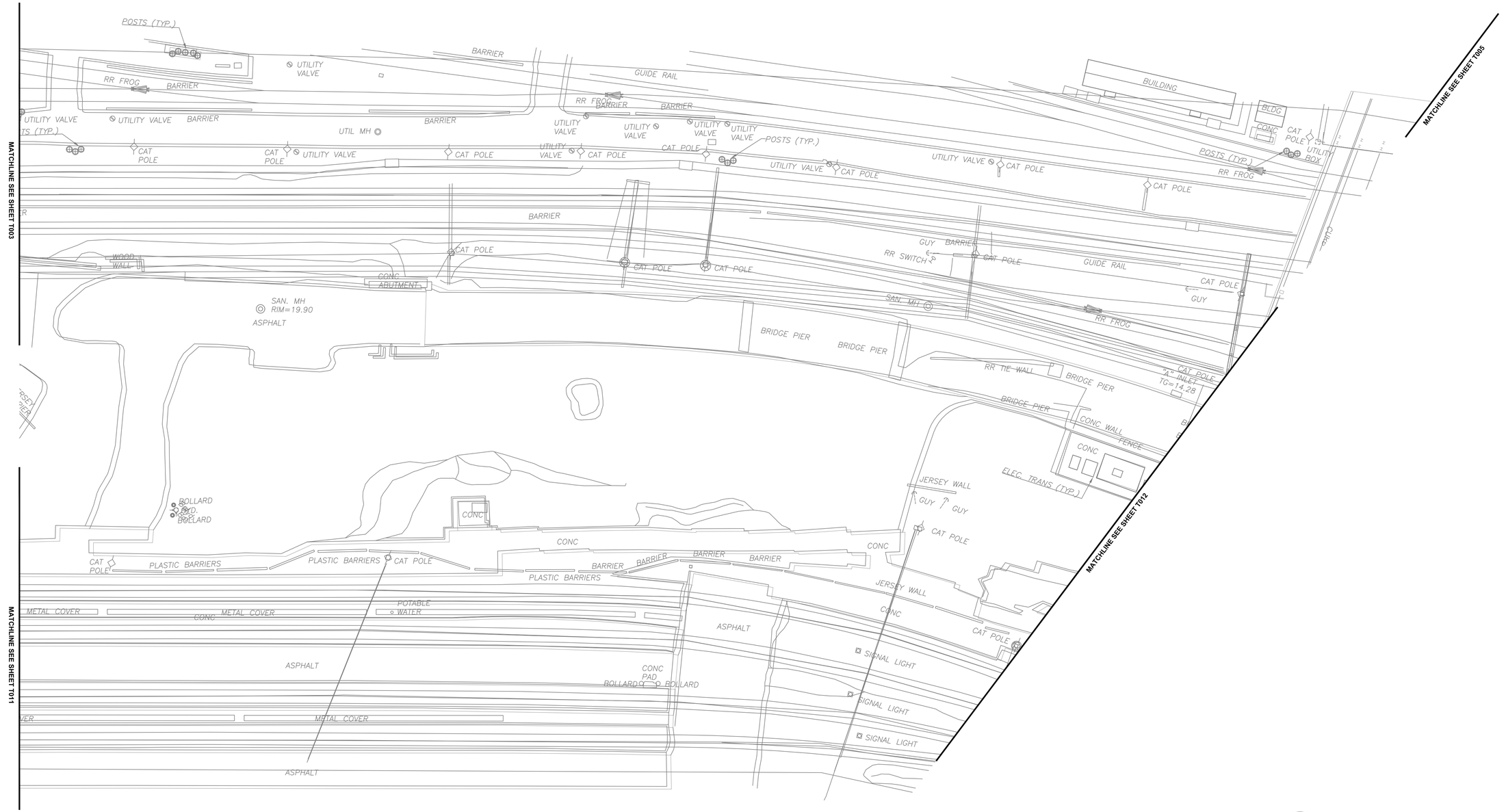
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HAMPTON, NJ 08827
TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW	Drawn: CMW	Checked: PLK	Date: 10/23/2023

File No.:	
Ref No.:	
Sheet No.:	3 OF 21
Dwg. No.	T-003



4 TOPOGRAPHIC PLAN

T-004

1" = 20'-0"

0 20' 40'

NORTH

No.	Issuance	Date	By
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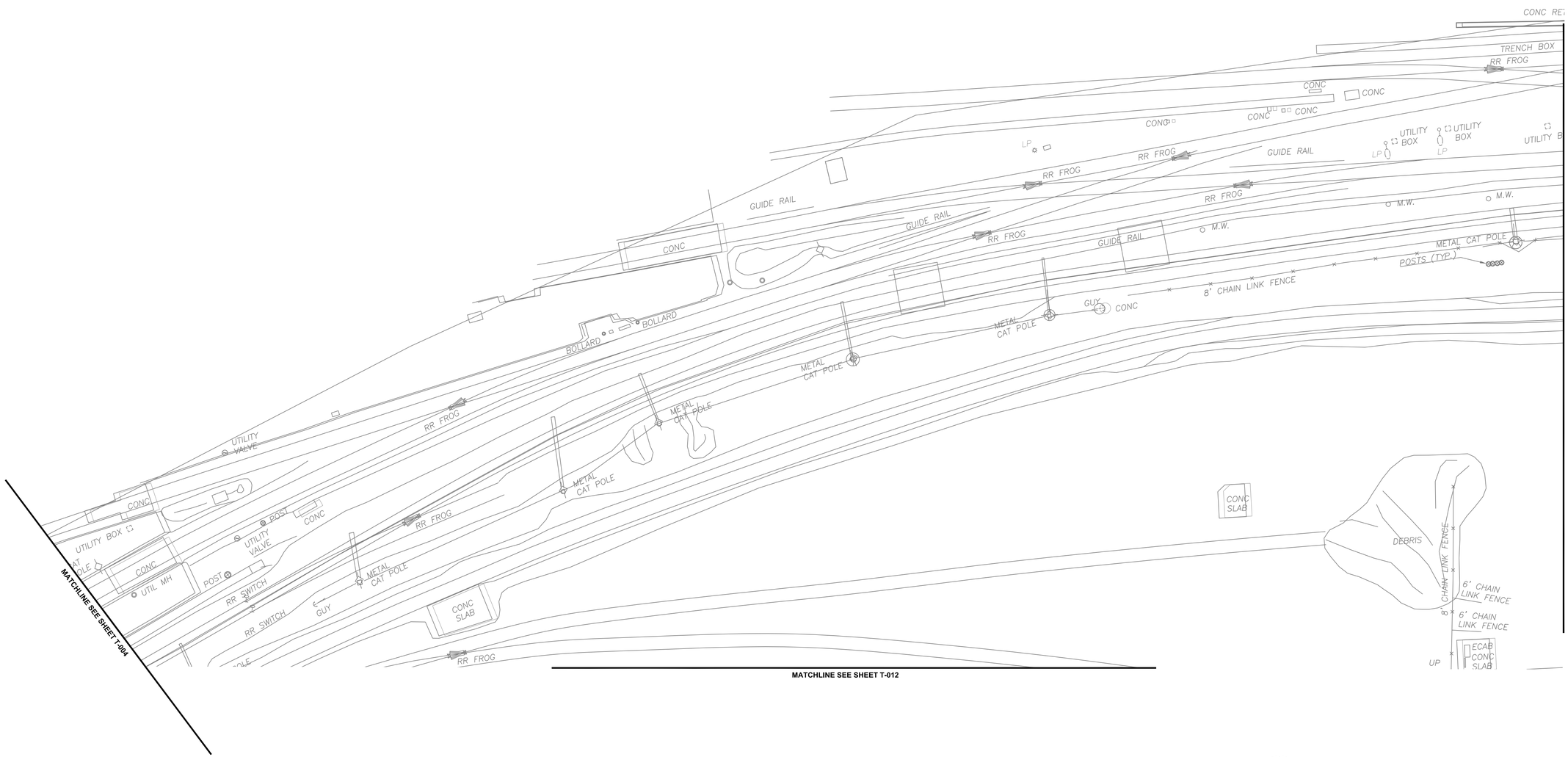
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SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

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File No.:	
Ref No.:	
Sheet No.:	4 OF 21
Dwg. No.	T-004



5 TOPOGRAPHIC PLAN
T-005 1" = 20'-0"

0 20' 40'

NORTH

No.	Issuance	Date	By
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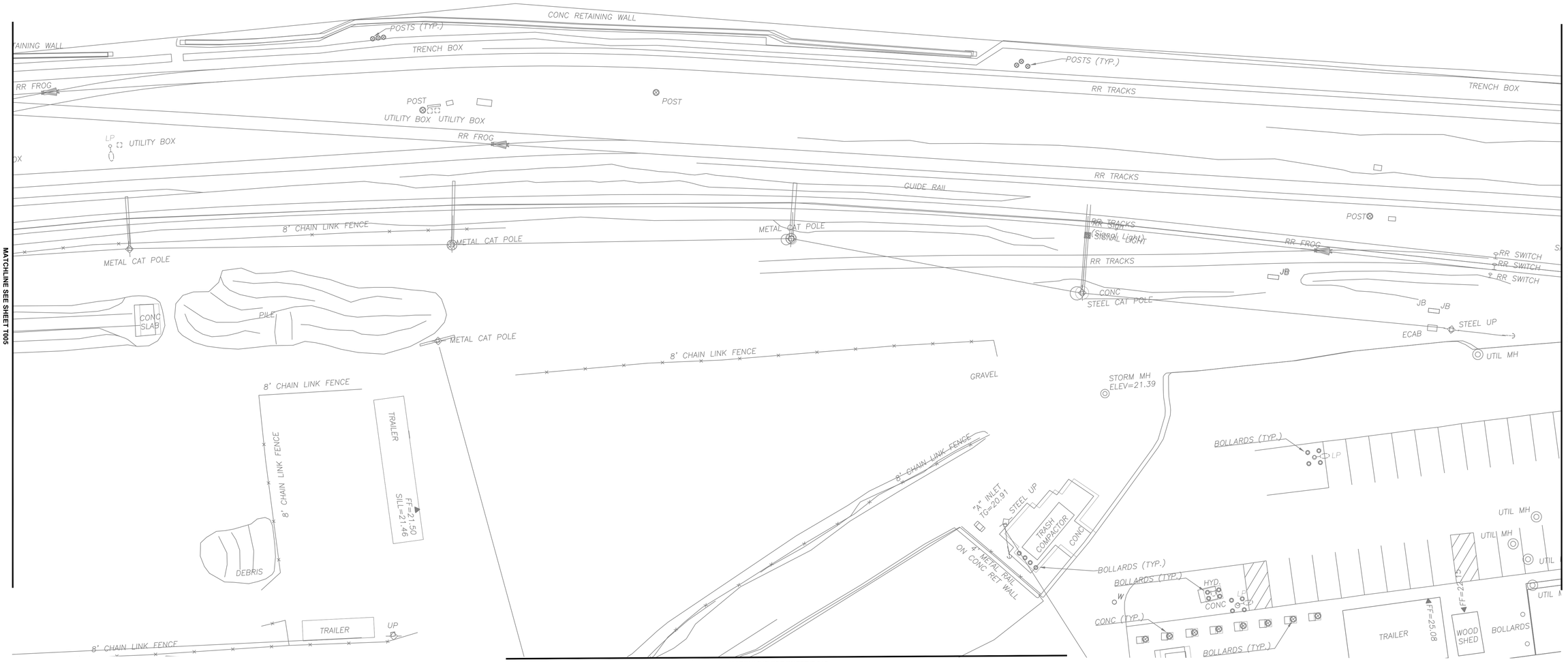
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SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW	Drawn: CMW	Checked: PLK	Date: 10/23/2023

File No.:	
Ref No.:	
Sheet No.:	5 OF 21
Dwg. No.	T-005



6 T-006 TOPOGRAPHIC PLAN

1" = 20'-0"

0 20' 40'

NORTH

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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NEW YORK, NY 10004
TEL: 212-377-8400

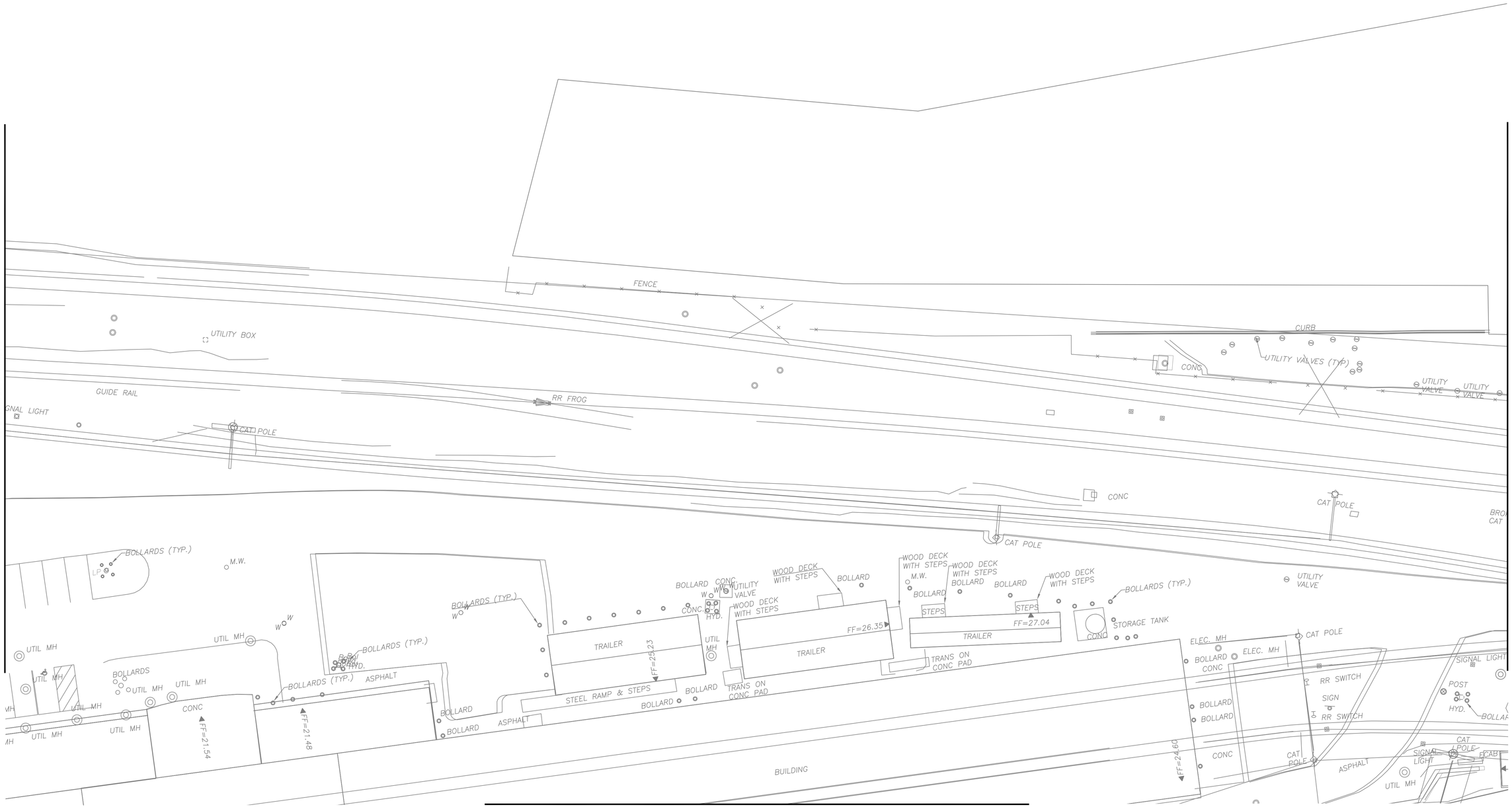
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HAMPTON, NJ 08827
TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW | Drawn: CMW | Checked: PLK | Date: 10/23/2023

File No.:
Ref No.:
Sheet No.: 6 OF 21
Dwg. No. T-006



7 TOPOGRAPHIC PLAN

T-007

1" = 20'-0"

0 20' 40'

NORTH

No.	Issuance	Date	By
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30th Street Station, Philadelphia, Pennsylvania 19104

Approved	Date

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NEW YORK, NY 10004
TEL: 212-377-8400

M&S Mallick1Scherer, P.C.
53 FRONTAGE ROAD, SUITE 170
HAMPTON, NJ 08827
TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW	Drawn: CMW	Checked: PLK	Date: 10/23/2023

File No.:	
Ref No.:	
Sheet No.:	7 OF 21
Dwg. No.	T-007

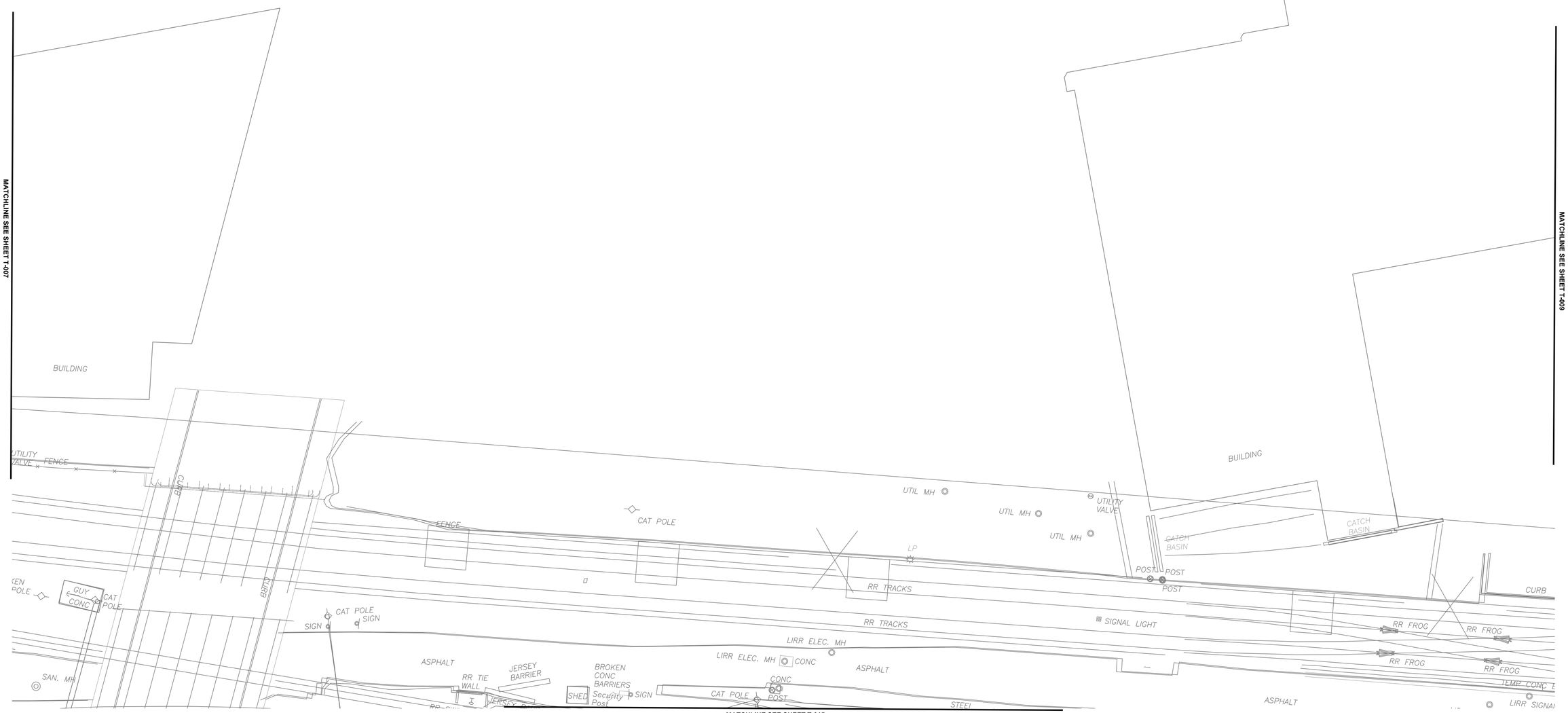
8 TOPOGRAPHIC PLAN

T-008

1" = 20'-0"

0 20' 40'

NORTH



No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
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30th Street Station, Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
125 BROAD STREET, 16TH FLOOR
NEW YORK, NY 10004
TEL: 212-377-8400

M&S Malick&Scherer, P.C.
53 FRONTAGE ROAD, SUITE 170
HAMPTON, NJ 08827
TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW	Drawn: CMW	Checked: PLK	Date: 10/23/2023

File No.:	
Ref No.:	
Sheet No.:	8 OF 21
Dwg. No.	T-008

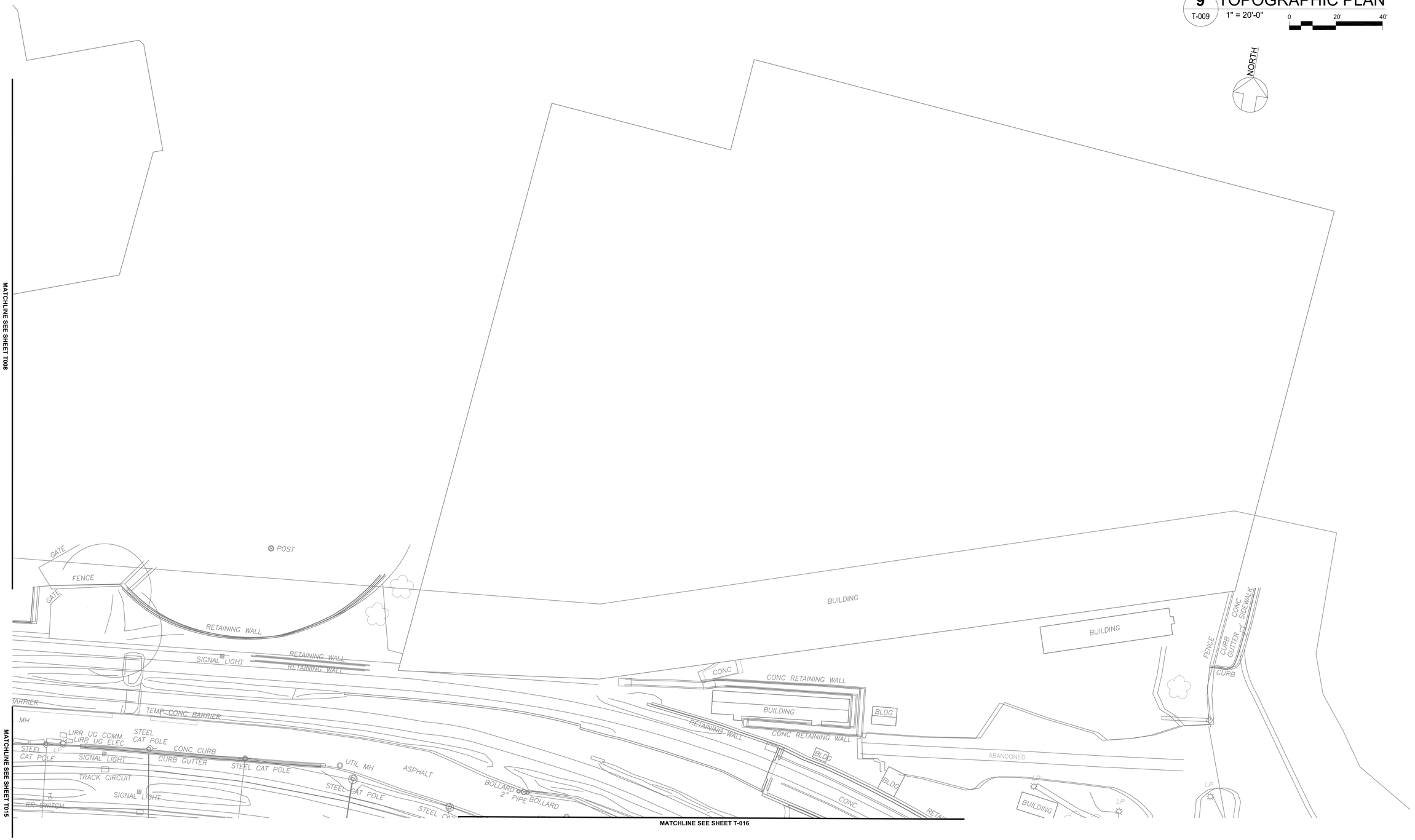
9 TOPOGRAPHIC PLAN

T-009

1" = 20'-0"

0 20' 40'

NORTH



No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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Office of Chief Engineer

National Railroad Passenger Corporation
30th Street Station, Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
125 BROAD STREET, 16TH FLOOR
NEW YORK, NY 10004
TEL: 212-377-8400

Malick Scherer, P.C.
53 FRONTAGE ROAD, SUITE 170
HAMPTON, NJ 08827
TEL: 908-537-1300

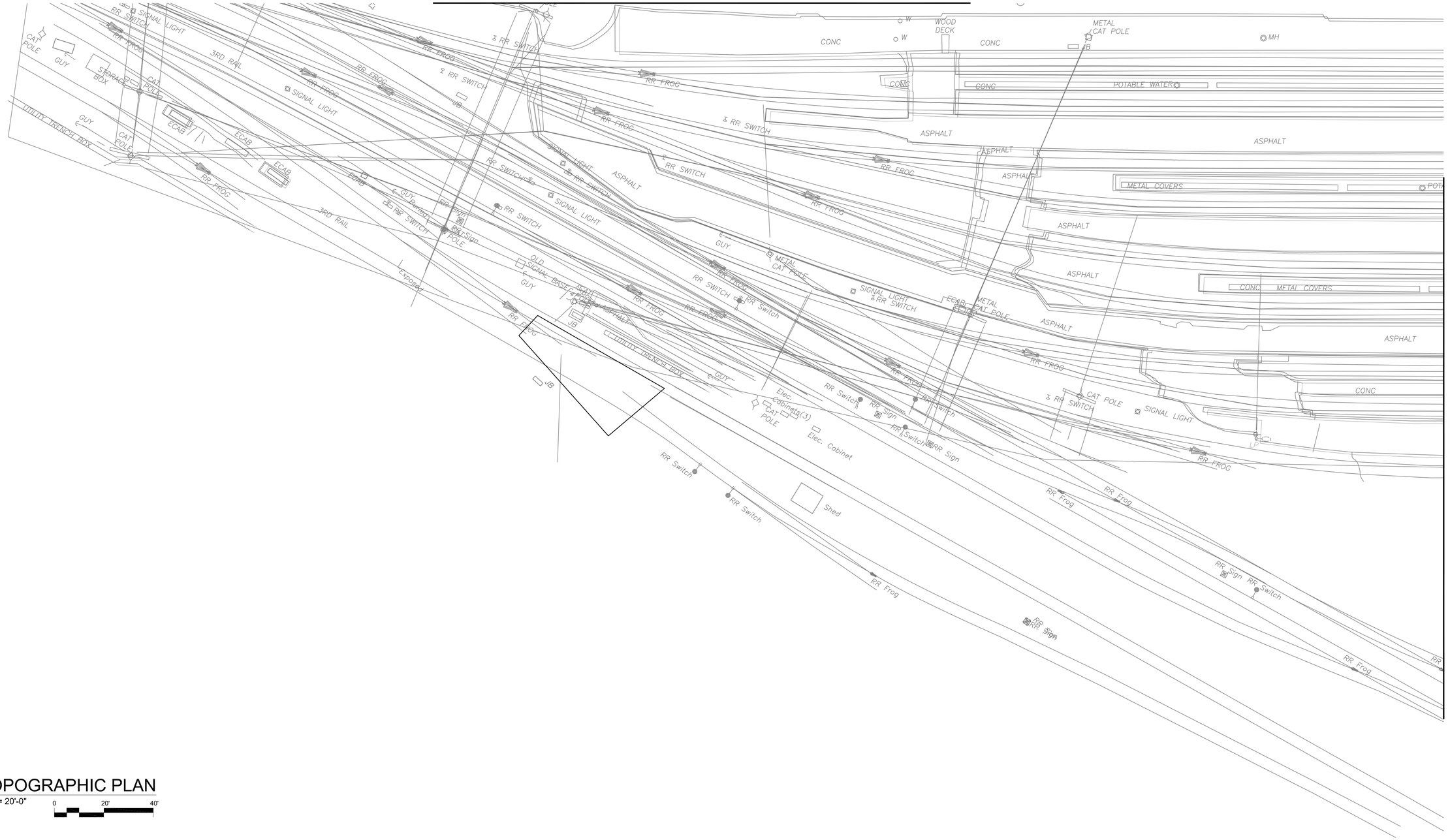
SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW	Drawn: CMW	Checked: PLK	Date: 10/23/2023

File No.:	
Ref No.:	
Sheet No.:	9 OF 21
Dwg. No.	T-009

MATCHLINE SEE SHEET T002



MATCHLINE SEE SHEET T011

10 T-010 TOPOGRAPHIC PLAN

1" = 20'-0"

0 20' 40'

NORTH

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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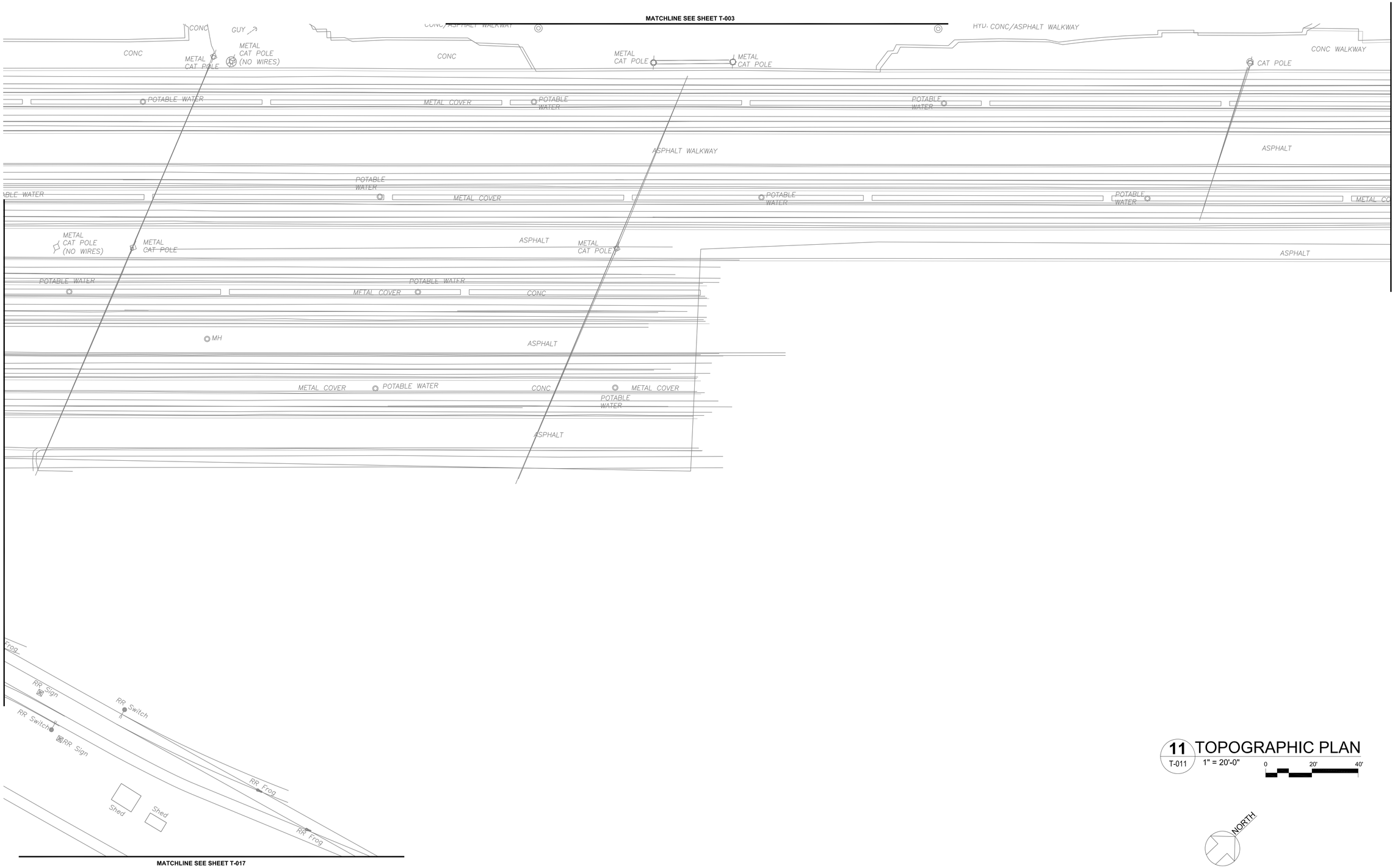
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53 FRONTAGE ROAD, SUITE 170
HAMPTON, NJ 08827
TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW | Drawn: CMW | Checked: PLK | Date: 10/23/2023

File No.:
Ref No.:
Sheet No.: 10 OF 21
Dwg. No. T-010



11 T-011 TOPOGRAPHIC PLAN

1" = 20'-0"

0 20' 40'

NORTH

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW | Drawn: CMW | Checked: PLK | Date: 10/23/2023

File No.:
Ref No.:
Sheet No.: 11 OF 21

Dwg. No. T-011

MATCHLINE SEE SHEET T-005

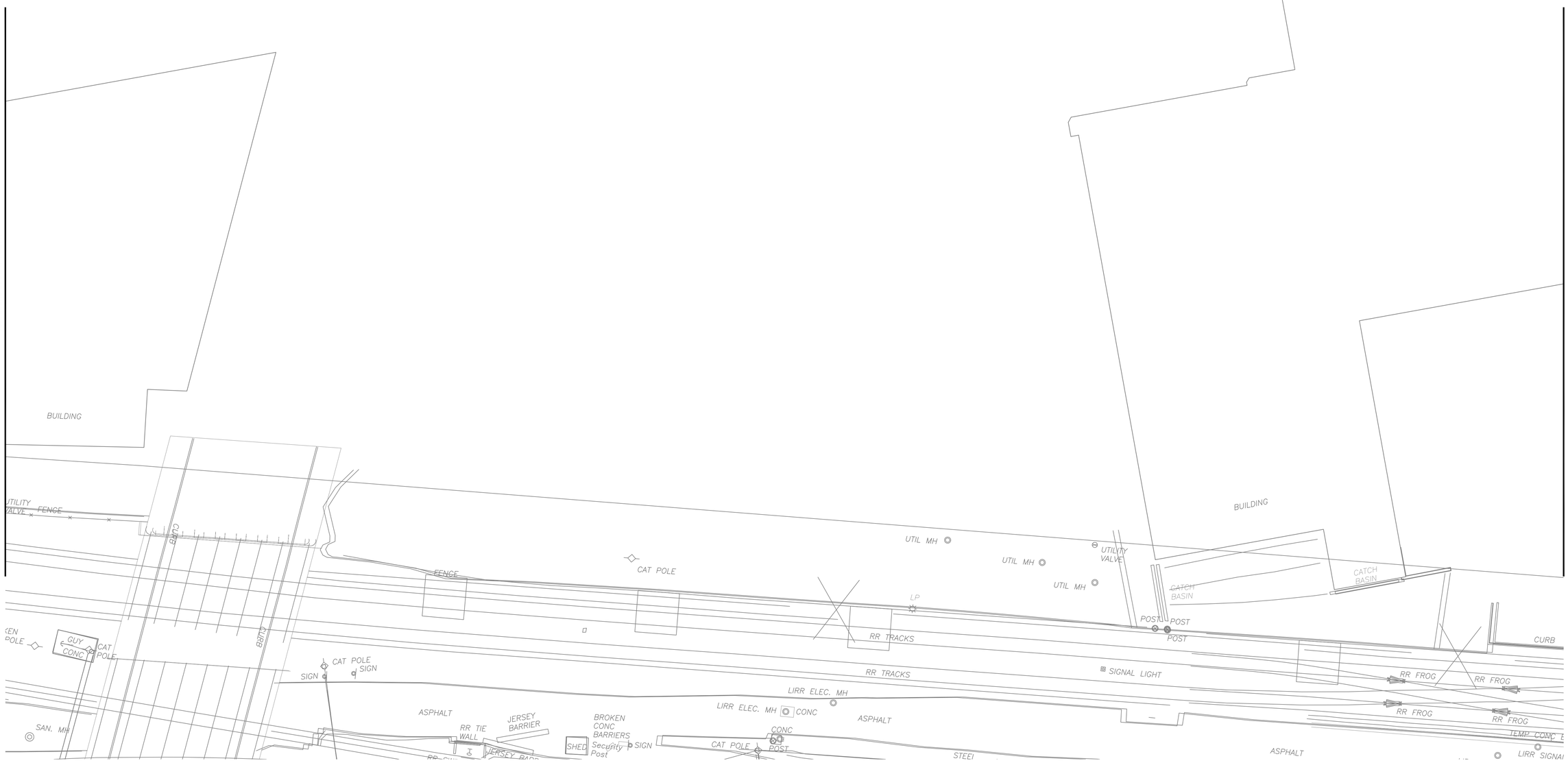
12 TOPOGRAPHIC PLAN

T-012

1" = 20'-0"

0 20' 40'

NORTH



No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW	Drawn: CMW	Checked: PLK	Date: 10/23/2023

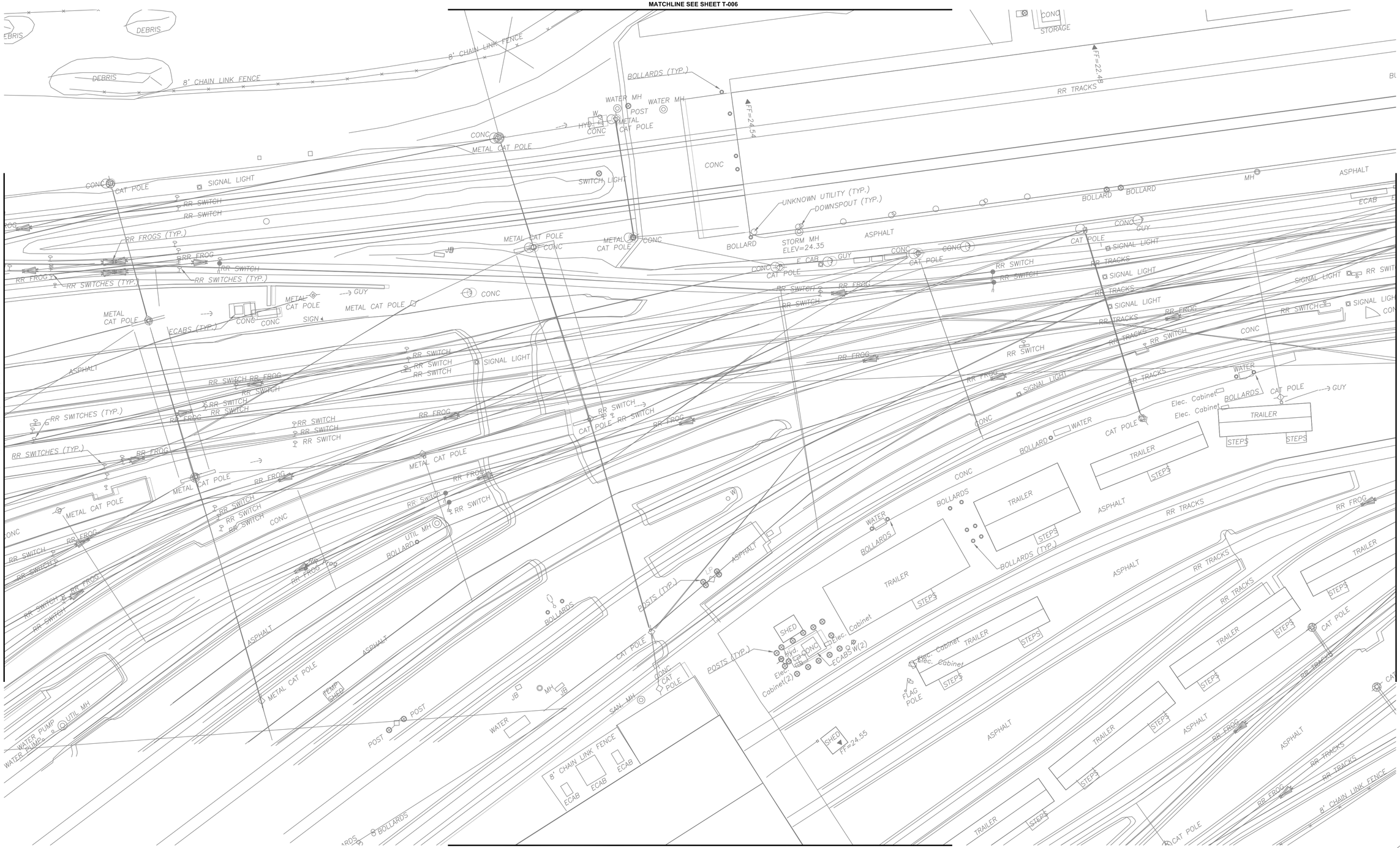
File No.:	
Ref No.:	
Sheet No.:	12 OF 21
Dwg. No.	T-012

MATCHLINE SEE SHEET T-006

MATCHLINE SEE SHEET T012

MATCHLINE SEE SHEET T014

MATCHLINE SEE SHEET T-019



NORTH

13 T-013 TOPOGRAPHIC PLAN

1" = 20'-0"

0 20' 40'

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW | Drawn: CMW | Checked: PLK | Date: 10/23/2023

File No.:
Ref No.:
Sheet No.: 13 OF 21

Dwg. No. T-013

MATCHLINE SEE SHEET T-007



MATCHLINE SEE SHEET T013

MATCHLINE SEE SHEET T015

MATCHLINE SEE SHEET T021

14 T-014 — TOPOGRAPHIC PLAN

1" = 20'-0"

0 20' 40'

NORTH

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW	Drawn: CMW	Checked: PLK	Date: 10/23/2023

File No.:	
Ref No.:	
Sheet No.:	14 OF 21
Dwg. No.	T-014

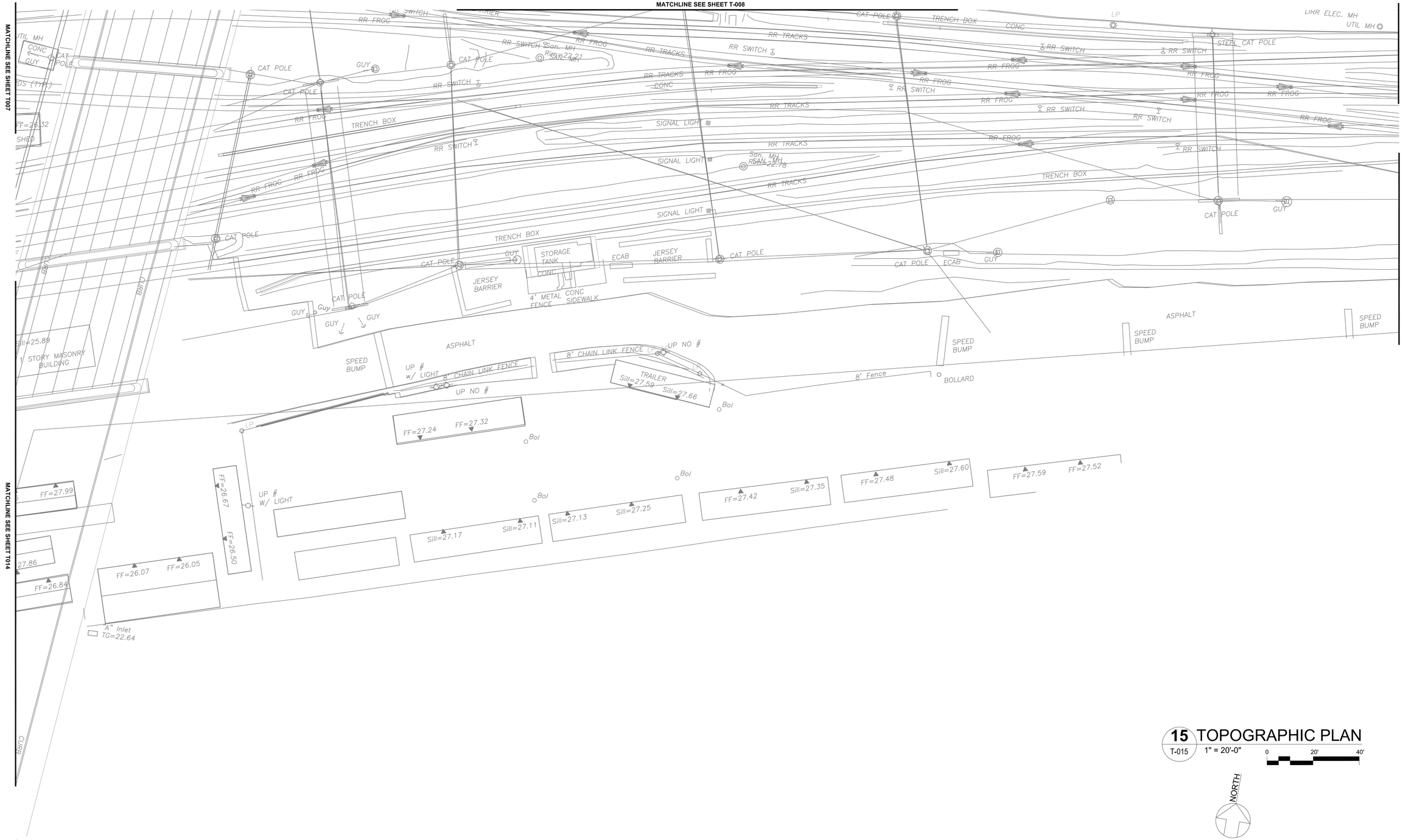
MATCHLINE SEE SHEET T-008

MATCHLINE SEE SHEET T007

MATCHLINE SEE SHEET T009

MATCHLINE SEE SHEET T016

MATCHLINE SEE SHEET T014



15 TOPOGRAPHIC PLAN
T-015
1" = 20'-0"
0 20' 40'

NORTH

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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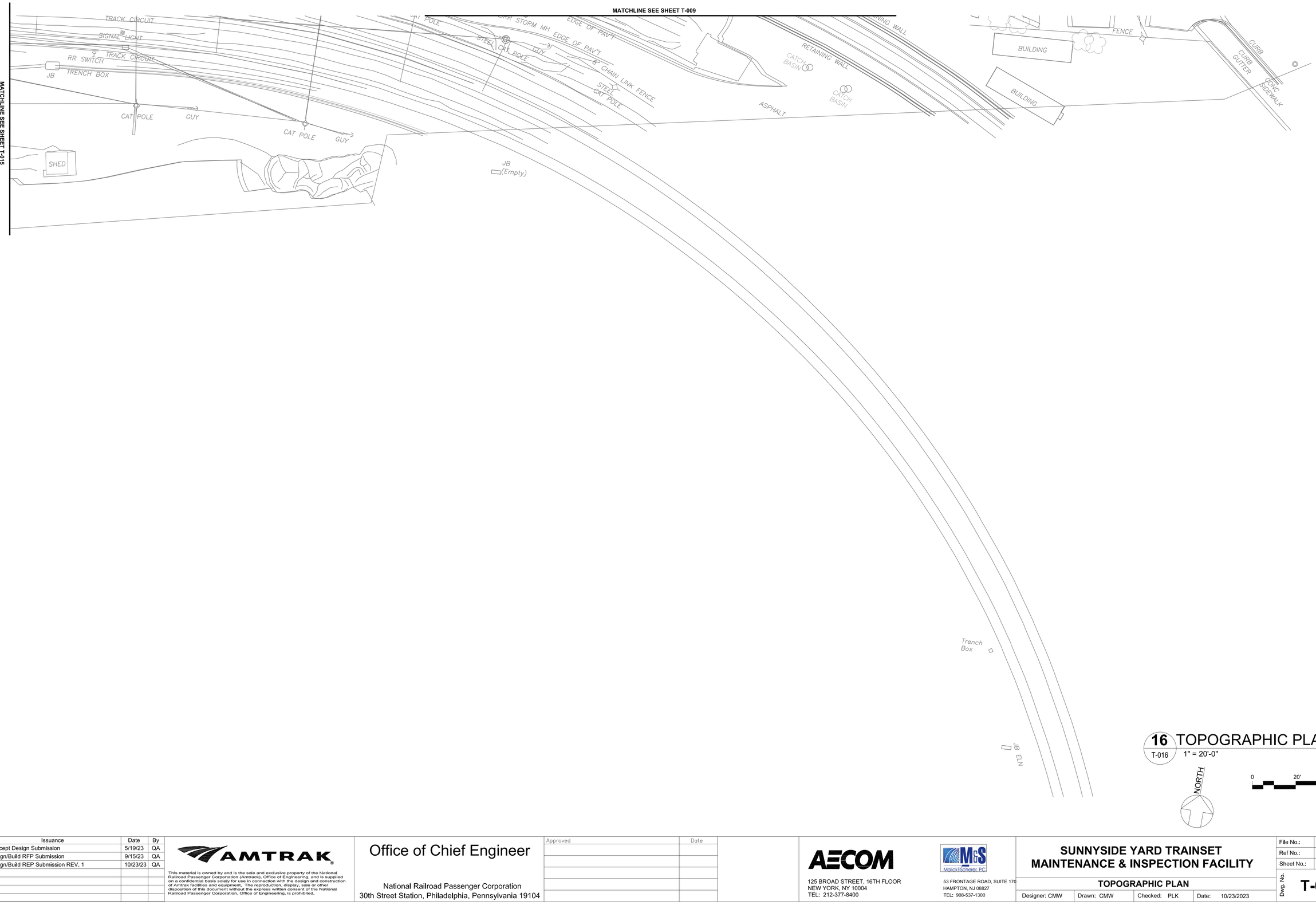
TOPOGRAPHIC PLAN

Designer: CMW	Drawn: CMW	Checked: PLK	Date: 10/23/2023

File No.:	
Ref No.:	
Sheet No.:	15 OF 21
Dwg. No.	T-015

MATCHLINE SEE SHEET T-009

MATCHLINE SEE SHEET T-015



16 T-016 TOPOGRAPHIC PLAN

1" = 20'-0"

NORTH

0 20' 40'

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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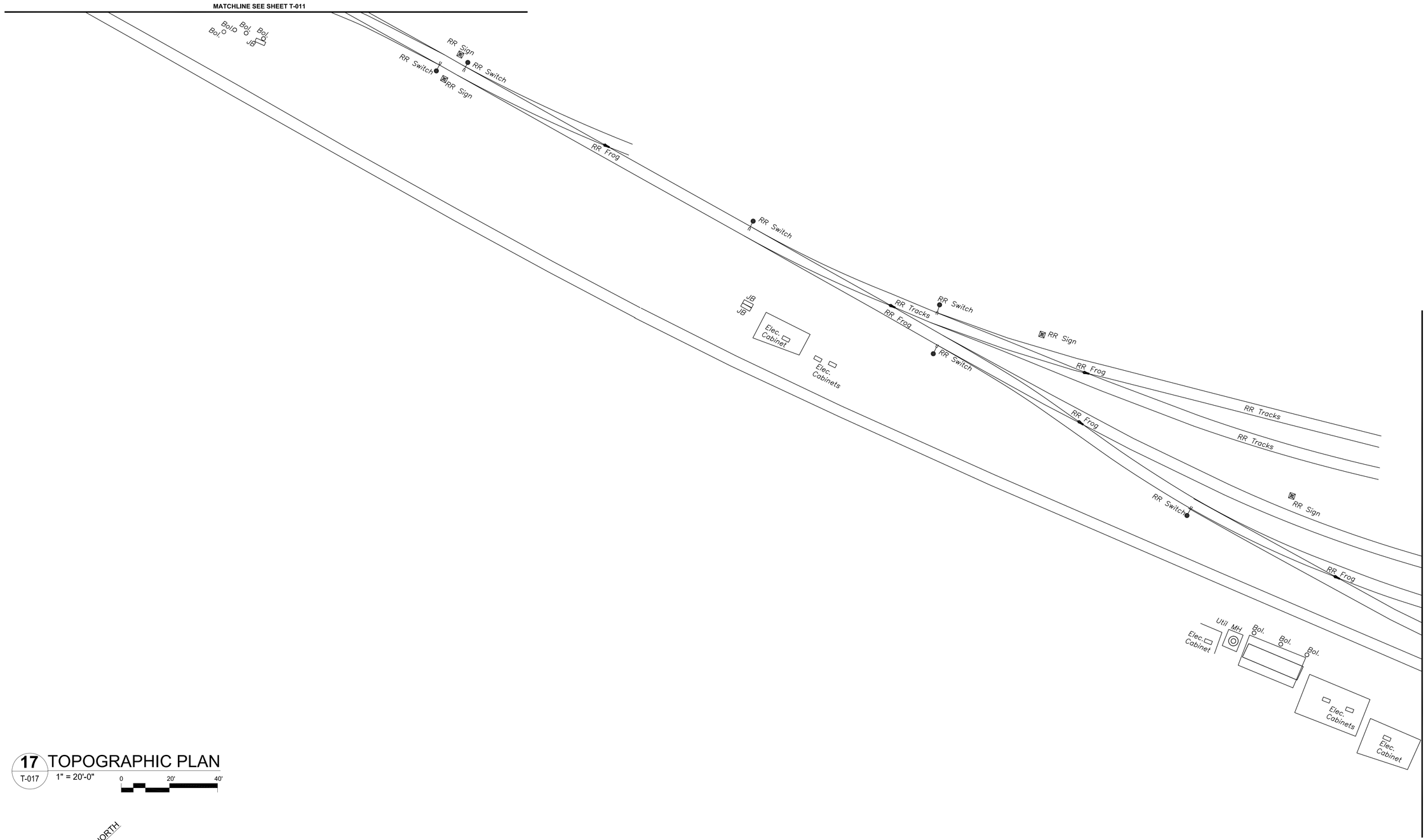
SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW | Drawn: CMW | Checked: PLK | Date: 10/23/2023

File No.:
Ref No.:
Sheet No.: 16 OF 21
Dwg. No. **T-016**

MATCHLINE SEE SHEET T-011



MATCHLINE SEE SHEET T018

17 T-017 TOPOGRAPHIC PLAN

1" = 20'-0"

0 20' 40'

NORTH

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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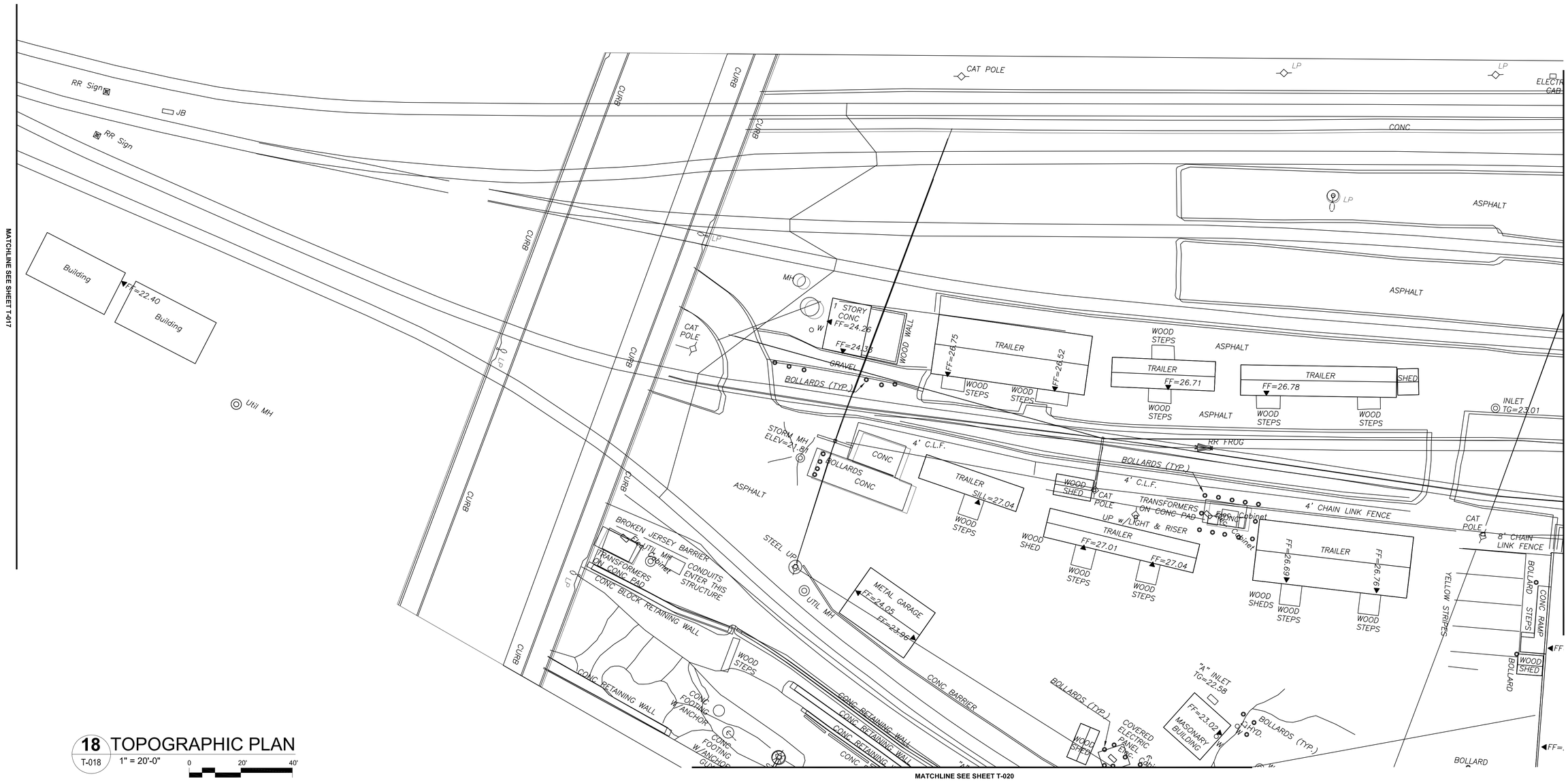
M&S Mollick Scherer, PC
53 FRONTAGE ROAD, SUITE 170
HAMPTON, NJ 08827
TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW | Drawn: CMW | Checked: PLK | Date: 10/23/2023

File No.:
Ref No.:
Sheet No.: 17 OF 21
Dwg. No. T-017



18 TOPOGRAPHIC PLAN

T-018 1" = 20'-0" 0 20' 40'

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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NEW YORK, NY 10004
TEL: 212-377-8400

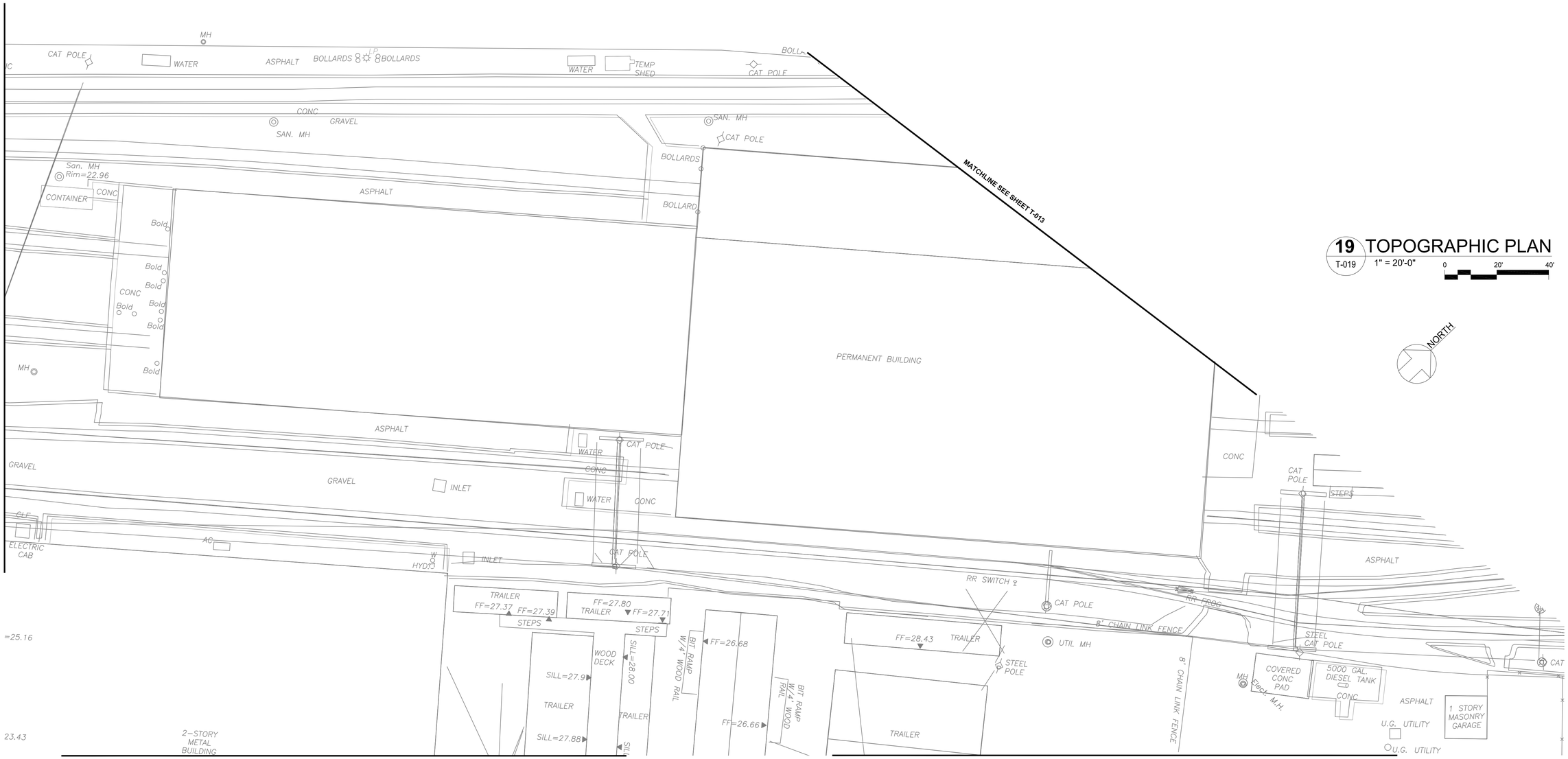
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TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW | Drawn: CMW | Checked: PLK | Date: 10/23/2023

File No.:
Ref No.:
Sheet No.: 18 OF 21
Dwg. No. **T-018**



19 TOPOGRAPHIC PLAN
T-019 1" = 20'-0"
0 20' 40'

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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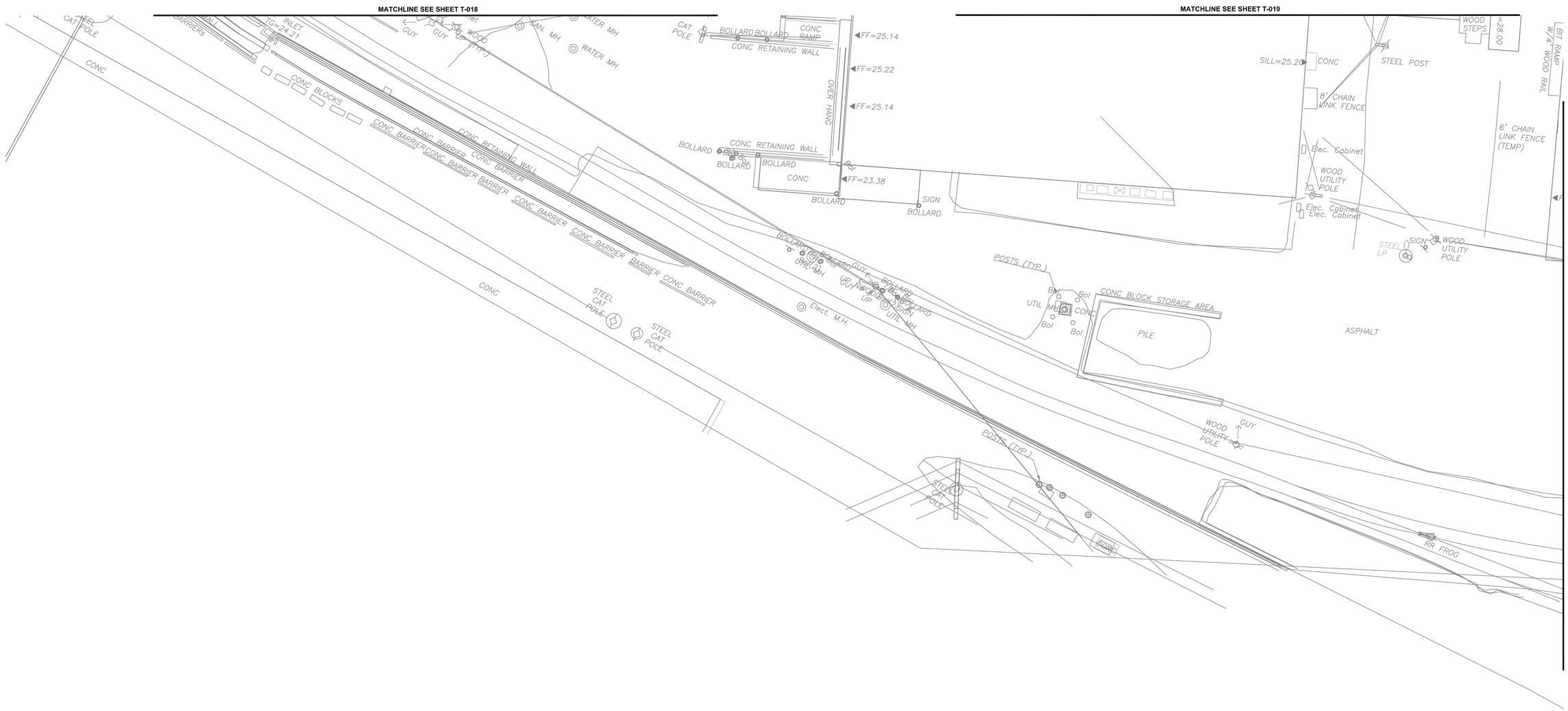
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SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW | Drawn: CMW | Checked: PLK | Date: 10/23/2023

File No.:
Ref No.:
Sheet No.: 19 OF 21
Dwg. No. **T-019**



20 T-020 TOPOGRAPHIC PLAN

1" = 20'-0"

0 20' 40'

NORTH

No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW	Drawn: CMW	Checked: PLK	Date: 10/23/2023

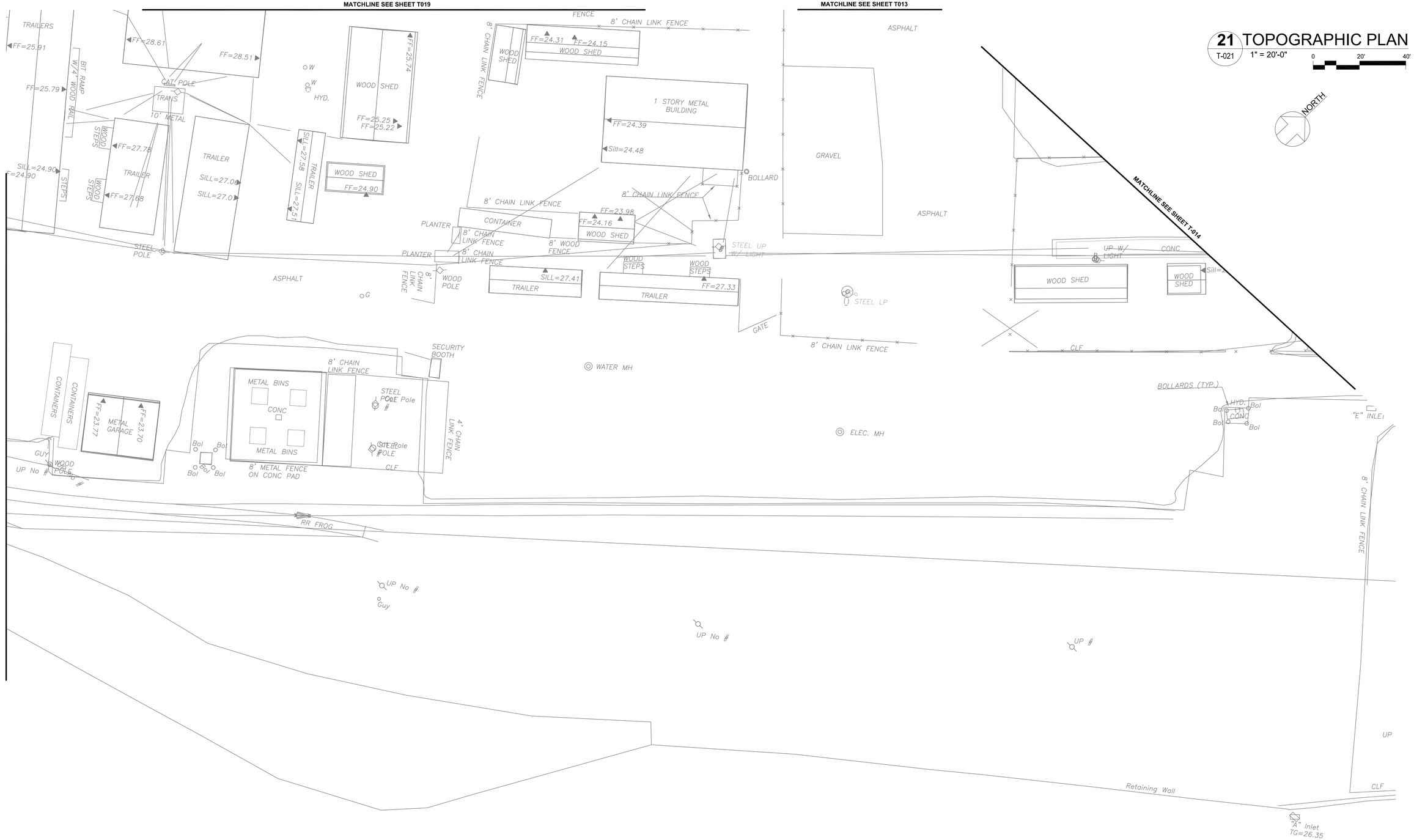
File No.:	
Ref No.:	
Sheet No.:	20 OF 21
Dwg. No.	**T-020**

21 TOPOGRAPHIC PLAN

T-021

1" = 20'-0"

0 20' 40'



No.	Issuance	Date	By
1	Concept Design Submission	5/19/23	QA
2	Design/Build RFP Submission	9/15/23	QA
3	Design/Build REP Submission REV. 1	10/23/23	QA

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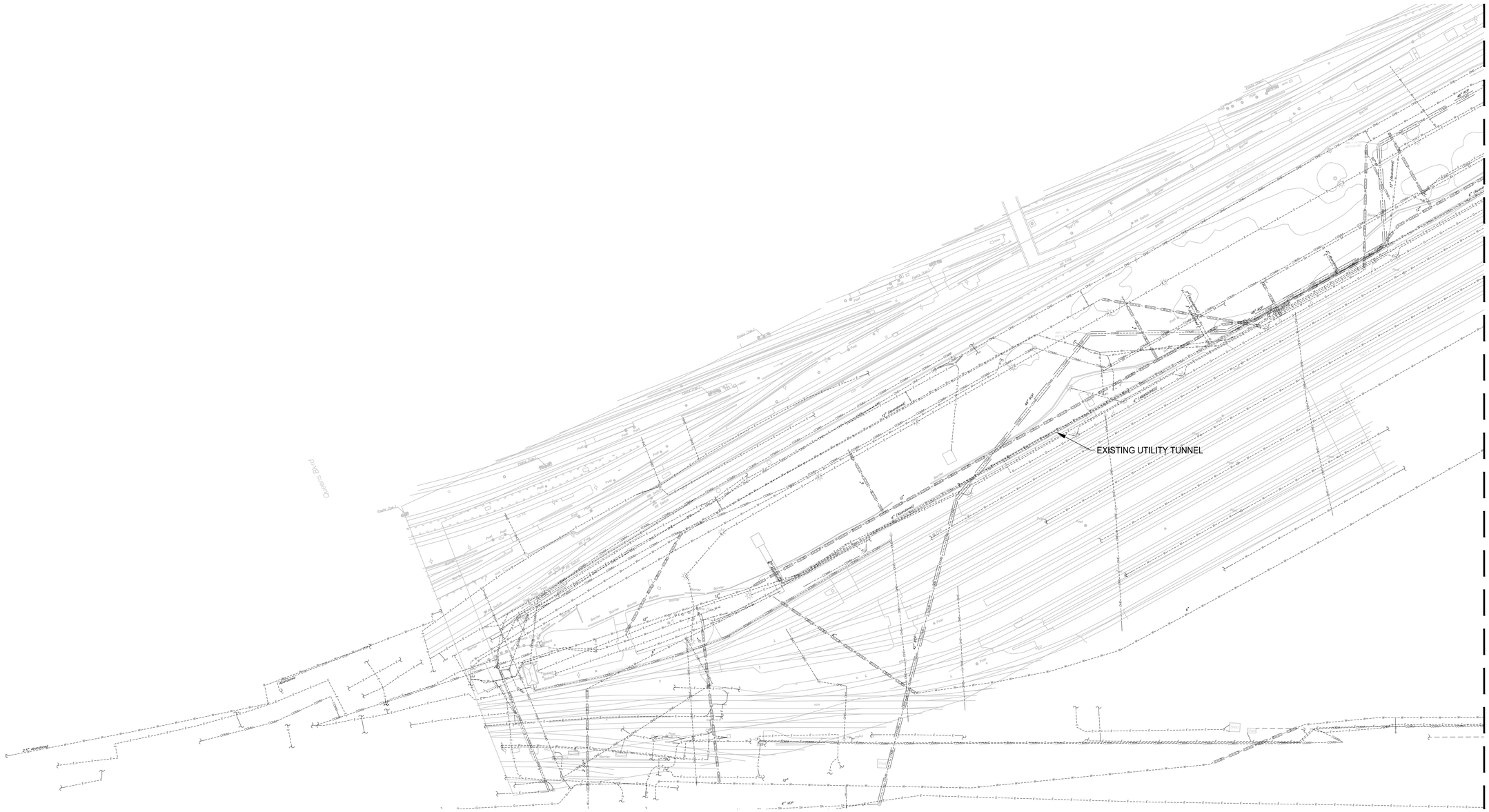
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TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

TOPOGRAPHIC PLAN

Designer: CMW	Drawn: CMW	Checked: PLK	Date: 10/23/2023

File No.:	
Ref No.:	
Sheet No.:	21 OF 21
Dwg. No.	T-021



LEGEND

—— – – – – OHE– – – – – OHE ——	ELECTRIC (AERIAL)
—— – – – – E – – – – – E ——	ELECTRIC (UNDERGROUND)
—— – – – – T – – – – – T ——	TELEPHONE (UNDERGROUND)
– – – – – COMM– – – – – COMM– –	COMMUNICATIONS (UNDERGROUND)
—— – – – – G– – – – – G ——	GAS
—— – – – – W– – – – – W ——	WATER
—— – – – – SA – – – – – SA ——	SANITARY SEWER
– – – – – COMB – – – – – COMB – –	COMBINED SEWER
—— – – – – STM– – – – – STM ——	STEAM
— — — — — — — — — — — —	UNKNOWN
———— — — ————	ROW

1 / U001 EXISTING CONDITIONS PLAN - UTILITIES

1" = 50'-0"

0 25' 50' 100'

NOTES:

1. ALL UTILITY LOCATIONS BASED ON AVAILABLE AS-BUILT, UTILITY VERIFICATION PLANS, AND SUBSURFACE UTILITY ENGINEERING INFORMATION. DESIGN-BUILDER TO PERFORM ADDITIONAL SUBSURFACE UTILITY ENGINEERING TO CONFIRM LOCATIONS PRIOR TO ANY EXCAVATION BEING PERFORMED.
2. DESIGN-BUILDER TO COORDINATE WATERMAIN ROUTING WITH AS-BUILT LOCATIONS PROVIDED BY AMTRAK.
3. DESIGN-BUILDER TO REVIEW ALL SUNNYSIDE YARD EXPANSION PHASE 1 AS-BUILTS AND UPDATE EXISTING CONDITIONS BASED ON THE AS-BUILTS PROVIDED BY AMTRAK.
4. SOME UTILITIES MARKED OUT DURING SUE ARE UNKNOWN. DESIGN-BUILD CONTRACTOR TO INVESTIGATE AND CONFIRM UTILITY TYPE, PIPE MATERIAL, SIZE, AND OWNERSHIP OF FACILITY IN CONFLICT.

10/2/2023 11:04:35 AM

No.	Issuance	Date	By
1	CONCEPT DESIGN SUBMISSION	5/19/2023	DP
2	DESIGN/BUILD RFP SUBMISSION	9/15/2023	DP
3	DESIGN/BUILD RFP SUBMISSION REV.1	10/23/2023	DP
4	DESIGN/BUILD RFP SUBMISSION REV.2	12/21/2023	DP

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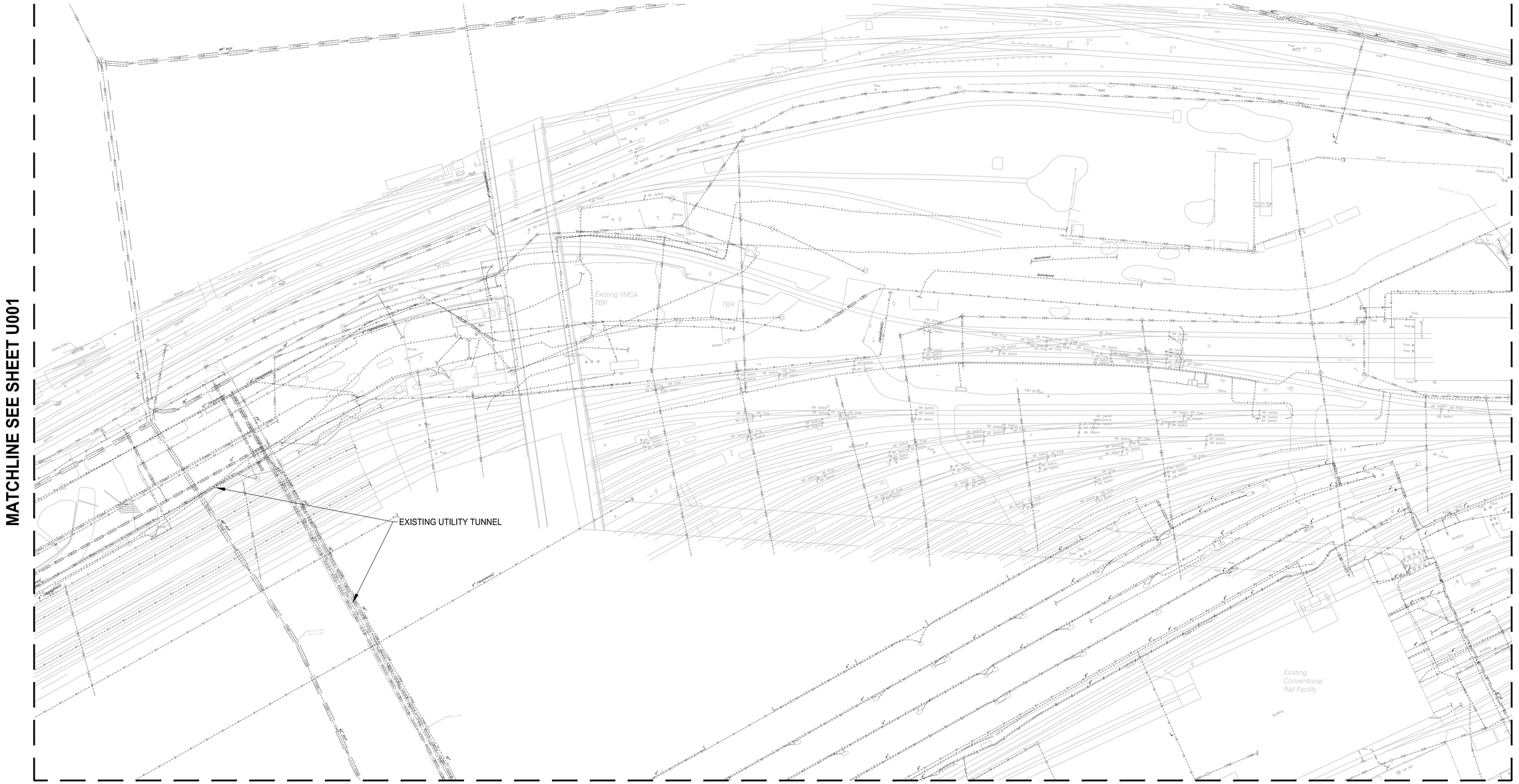
SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

EXISTING CONDITIONS PLAN

Designer: **JW** | Drawn: **GSw** | Checked: **JW** | Date: **12/21/2023**

File No.:
Ref No.:
Sheet No.: 1 OF 5
Dwg. No. **U001**

K:\+Projects\20AMT01B - Amtrak Sunnyside Yards\CAD\M&S CAD\Utility\Plan Sheets\E-Util\Amtrak SSY - E-Util sheets.dwg



MATCHLINE SEE SHEET U003

LEGEND

——— OHE——— OHE———	ELECTRIC (AERIAL)
——— E ——— E ———	ELECTRIC (UNDERGROUND)
——— T ——— T ———	TELEPHONE (UNDERGROUND)
——— COMM——— COMM———	COMMUNICATIONS (UNDERGROUND)
——— G ——— G ———	GAS
——— W ——— W ———	WATER
——— SA ——— SA ———	SANITARY SEWER
——— COMB——— COMB———	COMBINED SEWER
——— STM——— STM———	STEAM
— — — — — —	UNKNOWN
——— — — ———	ROW

2 / U002 EXISTING CONDITIONS PLAN - UTILITIES

1" = 50'-0"

0 25' 50' 100'

NORTH

NOTES:

1. ALL UTILITY LOCATIONS BASED ON AVAILABLE AS-BUILT, UTILITY VERIFICATION PLANS, AND SUBSURFACE UTILITY ENGINEERING INFORMATION. DESIGN-BUILDER TO PERFORM ADDITIONAL SUBSURFACE UTILITY ENGINEERING TO CONFIRM LOCATIONS PRIOR TO ANY EXCAVATION BEING PERFORMED.
2. DESIGN-BUILDER TO COORDINATE WATERMAIN ROUTING WITH AS-BUILT LOCATIONS PROVIDED BY AMTRAK.
3. DESIGN-BUILDER TO REVIEW ALL SUNNYSIDE YARD EXPANSION PHASE 1 AS-BUILTS AND UPDATE EXISTING CONDITIONS BASED ON THE AS-BUILTS PROVIDED BY AMTRAK.
4. SOME UTILITIES MARKED OUT DURING SUE ARE UNKNOWN. DESIGN-BUILD CONTRACTOR TO INVESTIGATE AND CONFIRM UTILITY TYPE, PIPE MATERIAL, SIZE, AND OWNERSHIP OF FACILITY IN CONFLICT.

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3	DESIGN/BUILD RFP SUBMISSION REV.1	10/23/2023	DP
4	DESIGN/BUILD RFP SUBMISSION REV.2	12/21/2023	DP

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Office of Chief Engineer

National Railroad Passenger Corporation
30th Street Station, Philadelphia, Pennsylvania 19104

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125 BROAD STREET, 16TH FLOOR
NEW YORK, NY 10004
TEL: 212-377-8400

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

EXISTING CONDITIONS PLAN

Designer: JW	Drawn: GSw	Checked: JW	Date: 12/21/2023

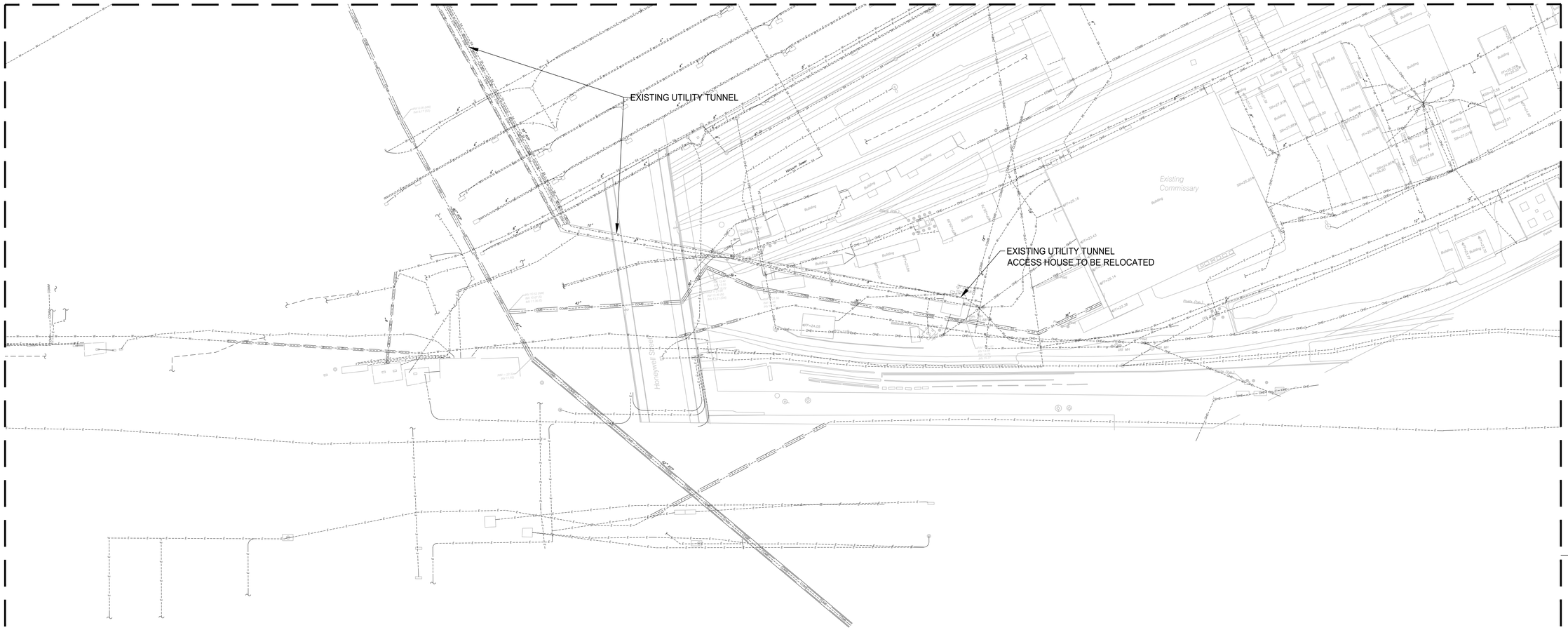
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Ref No.:	
Sheet No.:	2 OF 5
Dwg. No.	U002

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MATCHLINE SEE SHEET U002

MATCHLINE SEE SHEET U001

MATCHLINE SEE SHEET U005



LEGEND

——— OHE——— ——— OHE———	ELECTRIC (AERIAL)
——— E ——— E ———	ELECTRIC (UNDERGROUND)
——— T ——— T ———	TELEPHONE (UNDERGROUND)
——— COMM——— ——— COMM———	COMMUNICATIONS (UNDERGROUND)
——— G ——— G ———	GAS
——— W ——— W ———	WATER
——— SA ——— SA ———	SANITARY SEWER
——— COMB ——— COMB ———	COMBINED SEWER
——— STM——— ——— STM———	STEAM
— — — — — — —	UNKNOWN
——— — — ———	ROW

3 / U003 EXISTING CONDITIONS PLAN - UTILITIES

1" = 50'-0"

0 25' 50' 100'

NORTH

NOTES:

1. ALL UTILITY LOCATIONS BASED ON AVAILABLE AS-BUILT, UTILITY VERIFICATION PLANS, AND SUBSURFACE UTILITY ENGINEERING INFORMATION. DESIGN-BUILDER TO PERFORM ADDITIONAL SUBSURFACE UTILITY ENGINEERING TO CONFIRM LOCATIONS PRIOR TO ANY EXCAVATION BEING PERFORMED.
2. DESIGN-BUILDER TO COORDINATE WATERMAIN ROUTING WITH AS-BUILT LOCATIONS PROVIDED BY AMTRAK.
3. DESIGN-BUILDER TO REVIEW ALL SUNNYSIDE YARD EXPANSION PHASE 1 AS-BUILTS AND UPDATE EXISTING CONDITIONS BASED ON THE AS-BUILTS PROVIDED BY AMTRAK.
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SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

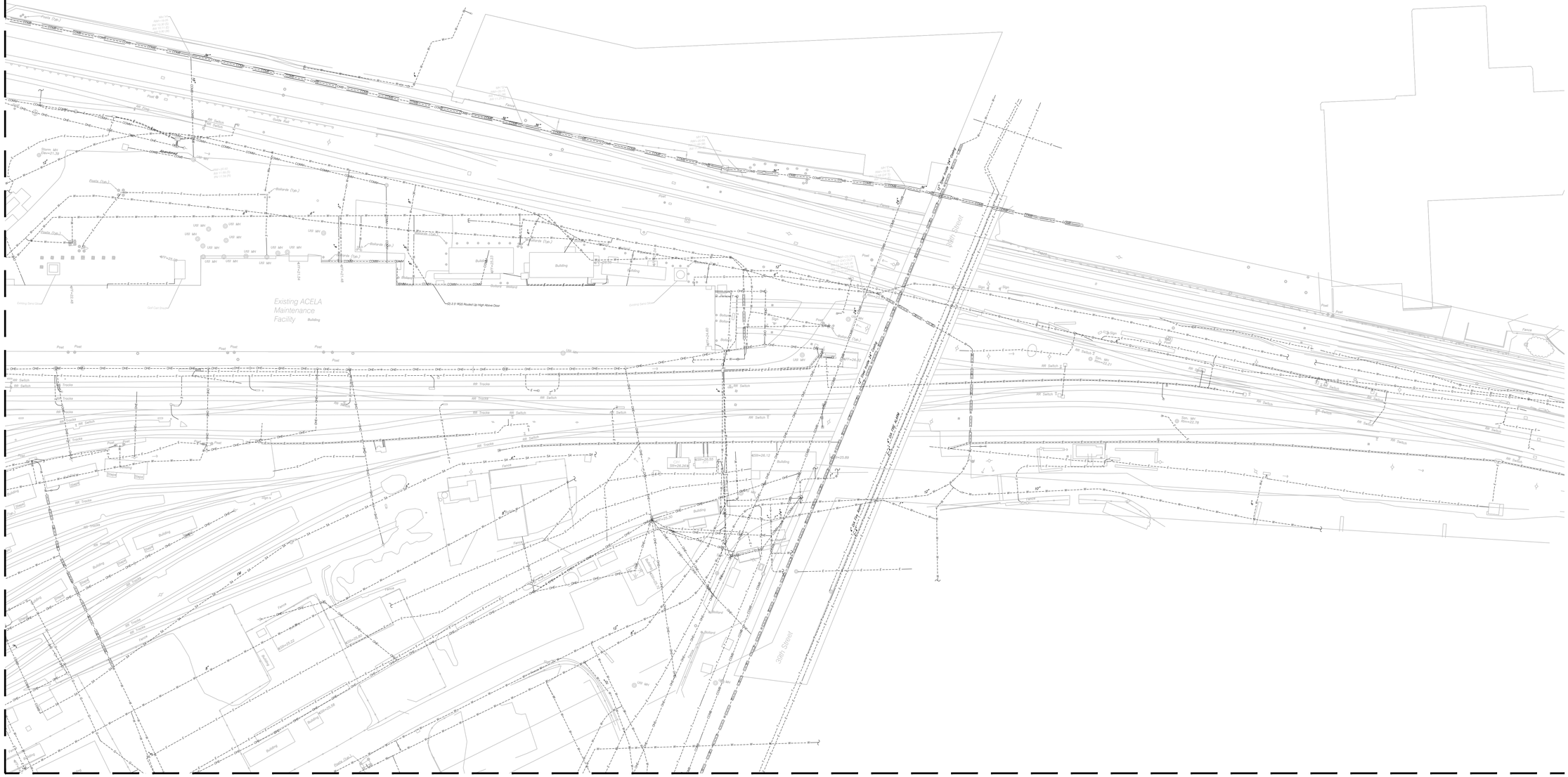
EXISTING CONDITIONS PLAN

Designer: JW | Drawn: GSw | Checked: JW | Date: 12/21/2023

File No.:	
Ref No.:	
Sheet No.:	3 OF 5
Dwg. No.	U003

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MATCHLINE SEE SHEET U002



MATCHLINE SEE SHEET U005

LEGEND

— — — — OHE— — — — OHE—	ELECTRIC (AERIAL)
—— — — — E — — — — ——	ELECTRIC (UNDERGROUND)
—— — — — T — — — — ——	TELEPHONE (UNDERGROUND)
— — — — COMM— — — — COMM—	COMMUNICATIONS (UNDERGROUND)
—— — — — G — — — — ——	GAS
—— — — — W — — — — ——	WATER
—— — — — SA — — — — ——	SANITARY SEWER
— — — — COMB — — — — COMB —	COMBINED SEWER
—— — — — STM — — — — ——	STEAM
— — — — — — — — — — — —	UNKNOWN
——— — — ———	ROW

4 EXISTING CONDITIONS PLAN - UTILITIES

U004 1" = 50'-0"

0 25' 50' 100'

NORTH

NOTES:

1. ALL UTILITY LOCATIONS BASED ON AVAILABLE AS-BUILT, UTILITY VERIFICATION PLANS, AND SUBSURFACE UTILITY ENGINEERING INFORMATION. DESIGN-BUILDER TO PERFORM ADDITIONAL SUBSURFACE UTILITY ENGINEERING TO CONFIRM LOCATIONS PRIOR TO ANY EXCAVATION BEING PERFORMED.
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SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

EXISTING CONDITIONS PLAN

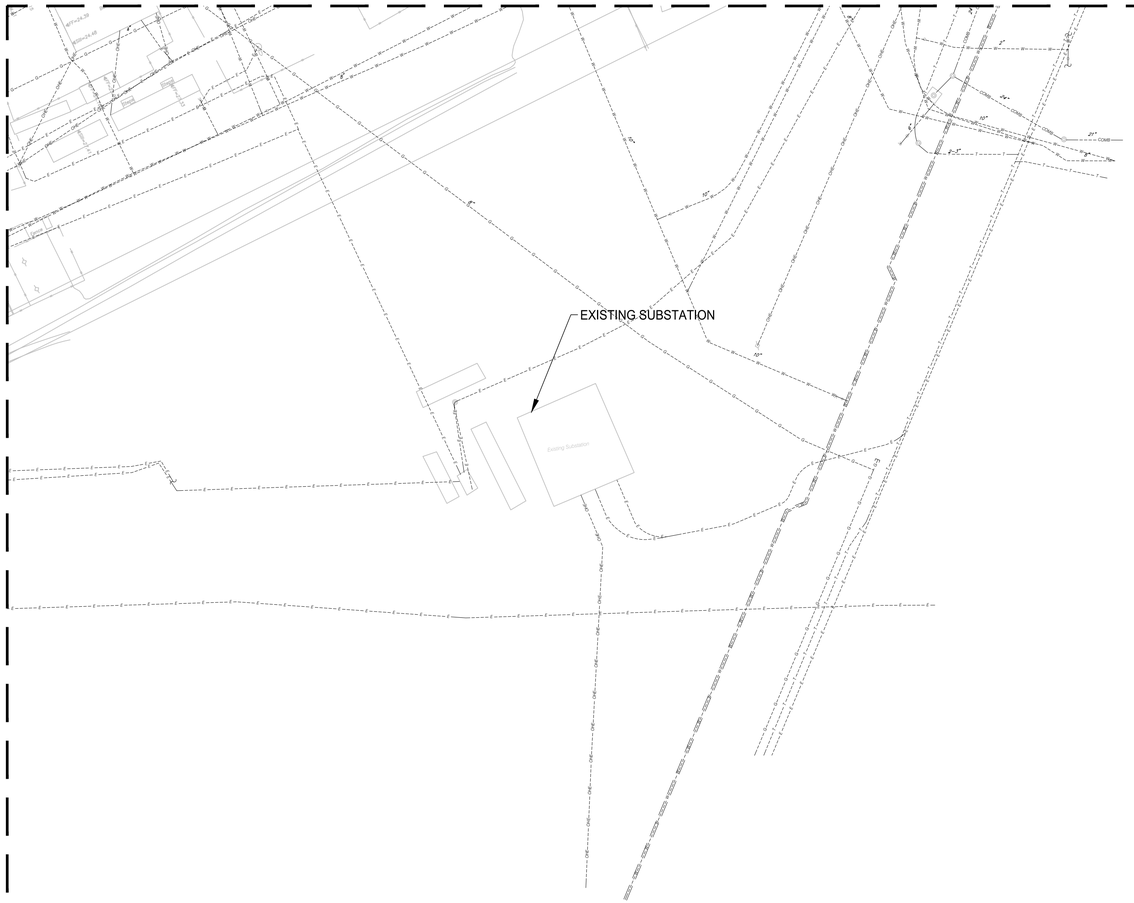
Designer: JW | Drawn: GSw | Checked: JW | Date: 12/21/2023

File No.:
Ref No.:
Sheet No.: 4 OF 5
Dwg. No. U004

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MATCHLINE SEE SHEET U004

MATCHLINE SEE SHEET U003



LEGEND

——— OHE——— ——— OHE———	ELECTRIC (AERIAL)
——— E ——— E ———	ELECTRIC (UNDERGROUND)
——— T ——— T ———	TELEPHONE (UNDERGROUND)
——— COMM——— ——— COMM———	COMMUNICATIONS (UNDERGROUND)
——— G ——— G ———	GAS
——— W ——— W ———	WATER
——— SA ——— SA ———	SANITARY SEWER
——— COMB ——— COMB ———	COMBINED SEWER
——— STM——— ——— STM———	STEAM
——— ——— ———	UNKNOWN
——— ——— ———	ROW

5 / U005 EXISTING CONDITIONS PLAN - UTILITIES

1" = 50'-0"

0 25' 50' 100'

NORTH

NOTES:

1. ALL UTILITY LOCATIONS BASED ON AVAILABLE AS-BUILT, UTILITY VERIFICATION PLANS, AND SUBSURFACE UTILITY ENGINEERING INFORMATION. DESIGN-BUILDER TO PERFORM ADDITIONAL SUBSURFACE UTILITY ENGINEERING TO CONFIRM LOCATIONS PRIOR TO ANY EXCAVATION BEING PERFORMED.
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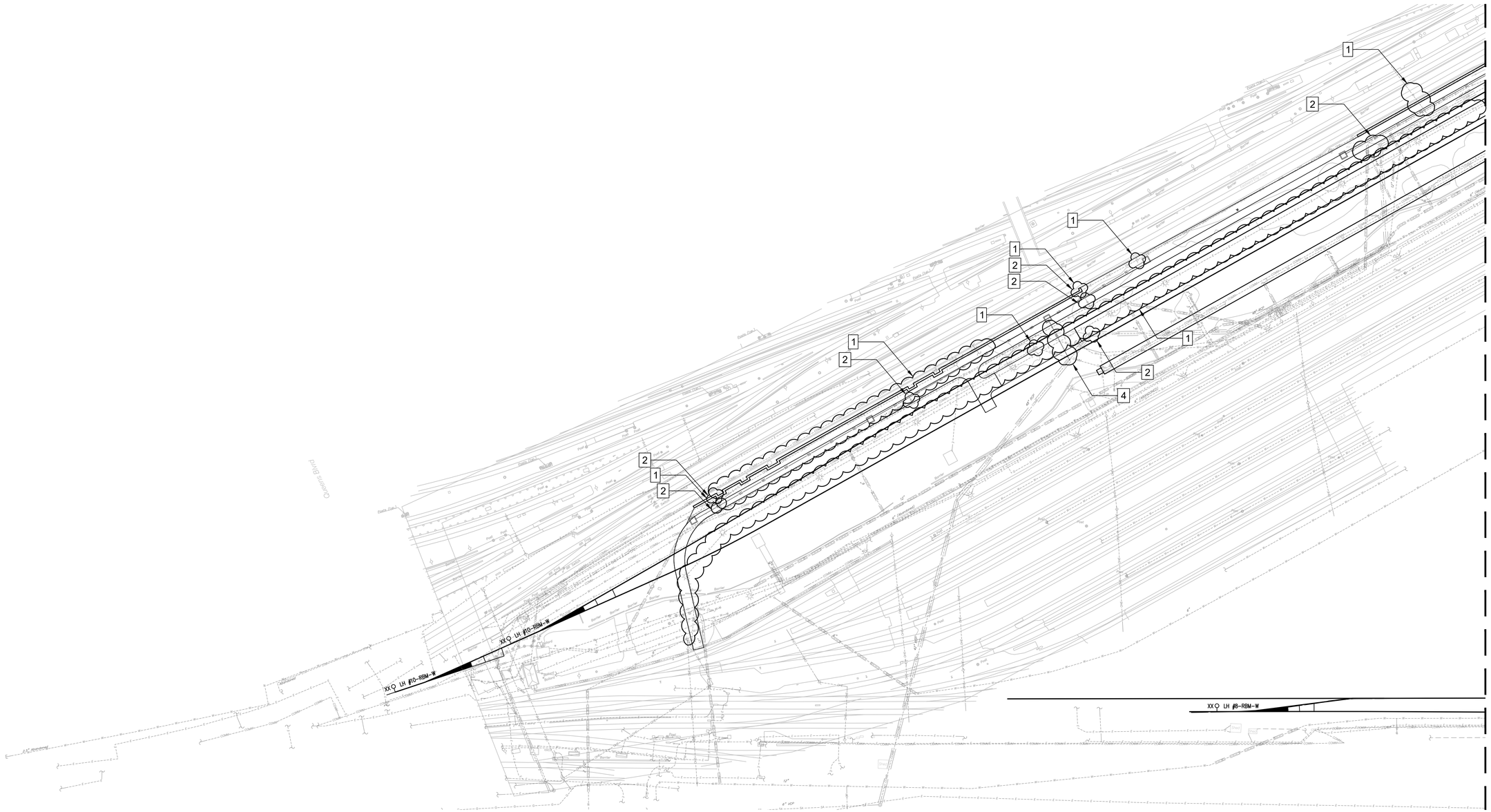
SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

EXISTING CONDITIONS PLAN

Designer: JW | Drawn: GSw | Checked: JW | Date: 12/21/2023

File No.:
Ref No.:
Sheet No.: 5 OF 5
Dwg. No. U005

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LEGEND

OHE	ELECTRIC (AERIAL)
E	ELECTRIC (UNDERGROUND)
T	TELEPHONE (UNDERGROUND)
COMM	COMMUNICATIONS (UNDERGROUND)
G	GAS
W	WATER
SA	SANITARY SEWER
COMB	COMBINED SEWER
STM	STEAM
	UNKNOWN
	ROW
	PROPOSED WORK

		TOTAL LOCATIONS ON SHEET:	TOTAL LOCATIONS IN PROJECT:
1	PROPOSED ROADWAY, PLATFORM, DRAINAGE, TRACK ALIGNMENT, FUELING PAD, AND RETAINING WALL IS IN POTENTIAL CONFLICT WITH EXISTING UTILITY FEATURES AND FACILITIES. DESIGN-BUILD CONTRACTOR TO CONFIRM ALL CONFLICTS AND INCLUDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	1 07	1 46
2	PROPOSED FULL DEPTH RECONSTRUCTION IS IN POTENTIAL CONFLICT EXISTING UNDERGROUND FACILITIES. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	2 07	2 25
3	PROPOSED BUILDING CONSTRUCTION IS IN DIRECT CONFLICT WITH EXISTING UTILITY FEATURES AND ATTACHED OVERHEAD AND/OR UNDERGROUND FACILITIES. UTILITY FEATURES AND FACILITIES TO BE SUPPORTED DURING CONSTRUCTION OR RELOCATED AS REQUIRED. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	3 00	3 05
4	PROPOSED DRAINAGE IS IN POTENTIAL CONFLICT WITH EXISTING UNDERGROUND FACILITIES. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS, INCLUDING BUT NOT LIMITED TO, DOING TEST HOLES AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	4 01	4 12

1 / U006 EXISTING CONDITIONS PLAN - UTILITY CONFLICTS

1" = 50'-0"

0 25' 50' 100'

NORTH

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53 FRONTAGE ROAD, SUITE 170
HAMPTON, NJ 08827
TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

EXISTING CONDITIONS PLAN - UTILITY CONFLICTS

Designer: JW | Drawn: GSw | Checked: JW | Date: 12/21/2023

File No.:	
Ref No.:	
Sheet No.:	1 OF 5
Dwg. No.	U006

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MATCHLINE SEE SHEET U006

MATCHLINE SEE SHEET U009

MATCHLINE SEE SHEET U008

LEGEND

OHE	ELECTRIC (AERIAL)
E	ELECTRIC (UNDERGROUND)
T	TELEPHONE (UNDERGROUND)
COMM	COMMUNICATIONS (UNDERGROUND)
G	GAS
W	WATER
SA	SANITARY SEWER
COMB	COMBINED SEWER
STM	STEAM
	UNKNOWN
	ROW
	PROPOSED WORK

		TOTAL LOCATIONS ON SHEET:	
1	PROPOSED ROADWAY, PLATFORM, DRAINAGE, TRACK ALIGNMENT, FUELING PAD, AND RETAINING WALL IS IN POTENTIAL CONFLICT WITH EXISTING UTILITY FEATURES AND FACILITIES. DESIGN-BUILD CONTRACTOR TO CONFIRM ALL CONFLICTS AND INCLUDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	1	15
2	PROPOSED FULL DEPTH RECONSTRUCTION IS IN POTENTIAL CONFLICT EXISTING UNDERGROUND FACILITIES. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	2	06
3	PROPOSED BUILDING CONSTRUCTION IS IN DIRECT CONFLICT WITH EXISTING UTILITY FEATURES AND ATTACHED OVERHEAD AND/OR UNDERGROUND FACILITIES. UTILITY FEATURES AND FACILITIES TO BE SUPPORTED DURING CONSTRUCTION OR RELOCATED AS REQUIRED. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	3	01
4	PROPOSED DRAINAGE IS IN POTENTIAL CONFLICT WITH EXISTING UNDERGROUND FACILITIES. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS, INCLUDING BUT NOT LIMITED TO, DOING TEST HOLES AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	4	01

NORTH

2 / U007 EXISTING CONDITIONS PLAN - UTILITY CONFLICTS

1" = 50'-0"

0 25' 50' 100'

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1	DESIGN/BUILD RFP SUBMISSION	9/15/2023	DP
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TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

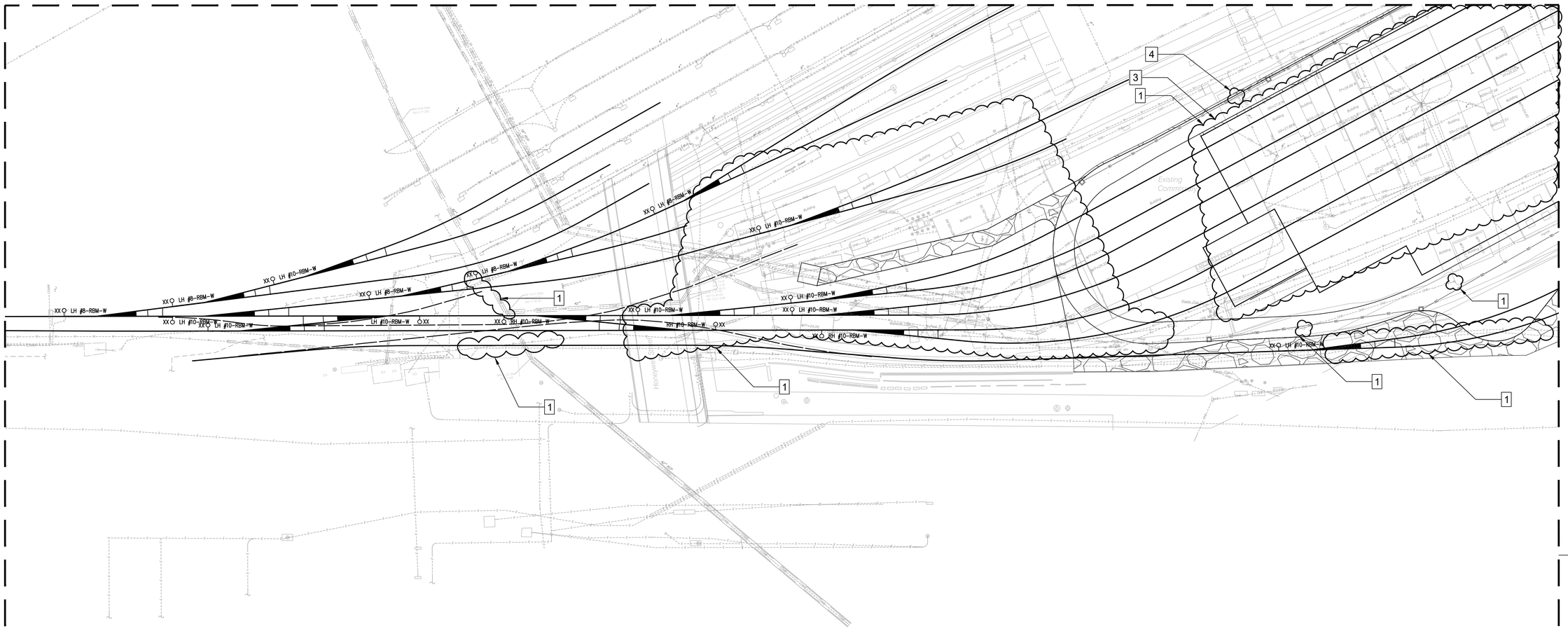
EXISTING CONDITIONS PLAN - UTILITY CONFLICTS

Designer: JW	Drawn: GSw	Checked: JW	Date: 12/21/2023

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Ref No.:	
Sheet No.:	2 OF 5
Dwg. No.	U007

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MATCHLINE SEE SHEET U007



MATCHLINE SEE SHEET U006

MATCHLINE SEE SHEET U010

LEGEND

OHE	ELECTRIC (AERIAL)
E	ELECTRIC (UNDERGROUND)
T	TELEPHONE (UNDERGROUND)
COMM	COMMUNICATIONS (UNDERGROUND)
G	GAS
W	WATER
SA	SANITARY SEWER
COMB	COMBINED SEWER
STM	STEAM
	UNKNOWN
	ROW
	PROPOSED WORK

		TOTAL LOCATIONS ON SHEET:	
1	PROPOSED ROADWAY, PLATFORM, DRAINAGE, TRACK ALIGNMENT, FUELING PAD, AND RETAINING WALL IS IN POTENTIAL CONFLICT WITH EXISTING UTILITY FEATURES AND FACILITIES. DESIGN-BUILD CONTRACTOR TO CONFIRM ALL CONFLICTS AND INCLUDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	1	07
2	PROPOSED FULL DEPTH RECONSTRUCTION IS IN POTENTIAL CONFLICT EXISTING UNDERGROUND FACILITIES. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	2	00
3	PROPOSED BUILDING CONSTRUCTION IS IN DIRECT CONFLICT WITH EXISTING UTILITY FEATURES AND ATTACHED OVERHEAD AND/OR UNDERGROUND FACILITIES. UTILITY FEATURES AND FACILITIES TO BE SUPPORTED DURING CONSTRUCTION OR RELOCATED AS REQUIRED. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	3	01
4	PROPOSED DRAINAGE IS IN POTENTIAL CONFLICT WITH EXISTING UNDERGROUND FACILITIES. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS, INCLUDING BUT NOT LIMITED TO, DOING TEST HOLES AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	4	01

3 / U008 — EXISTING CONDITIONS PLAN - UTILITY CONFLICTS

1" = 50'-0"

0 25' 50' 100'

NORTH

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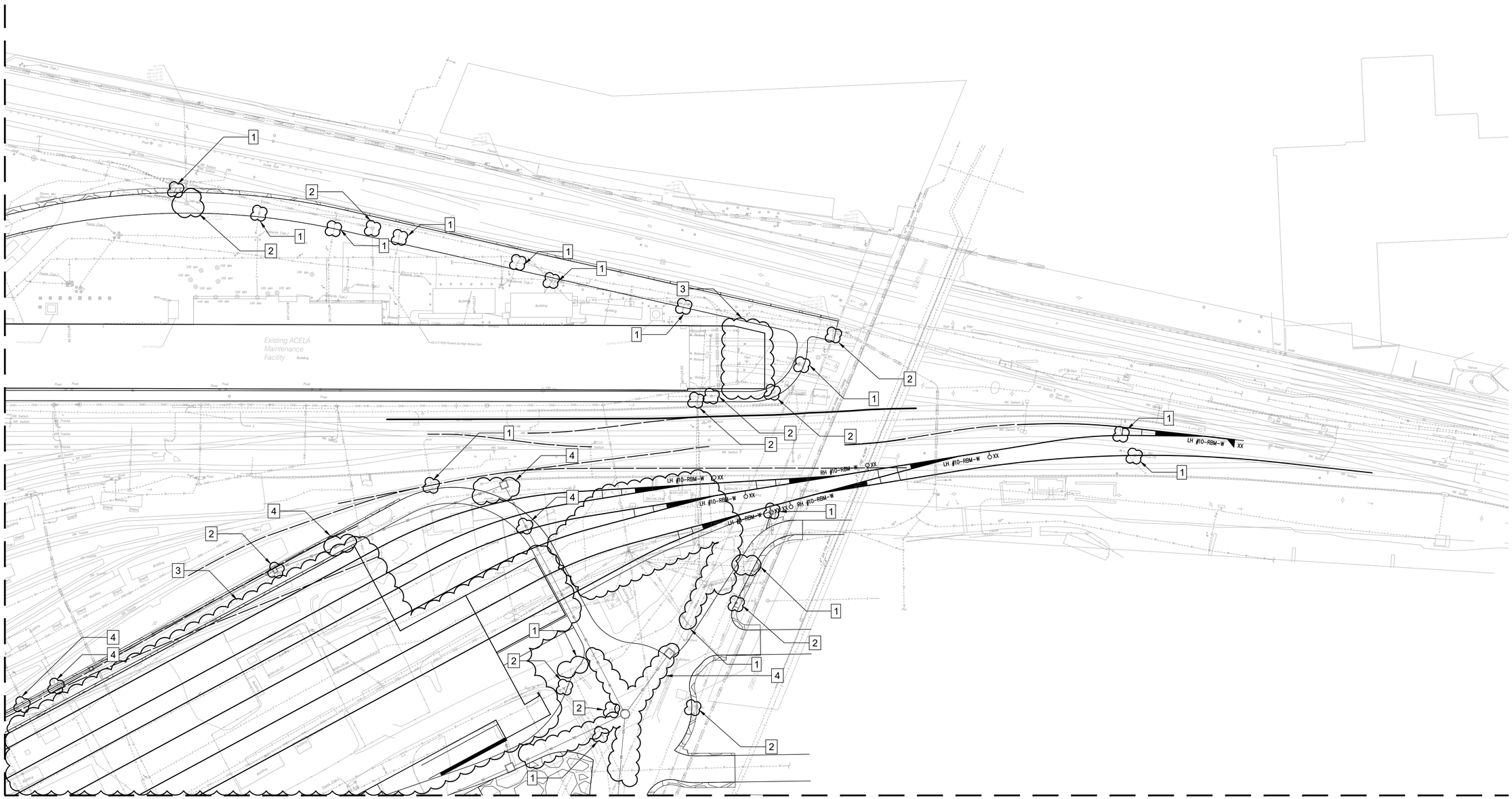
SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

EXISTING CONDITIONS PLAN - UTILITY CONFLICTS

Designer: JW | Drawn: GSw | Checked: JW | Date: 12/21/2023

File No.:	
Ref No.:	
Sheet No.:	3 OF 5
Dwg. No.	U008

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LEGEND

OHE	ELECTRIC (AERIAL)
E	ELECTRIC (UNDERGROUND)
T	TELEPHONE (UNDERGROUND)
COMM	COMMUNICATIONS (UNDERGROUND)
G	GAS
W	WATER
SA	SANITARY SEWER
COMB	COMBINED SEWER
STM	STEAM
	UNKNOWN
	ROW
	PROPOSED WORK

		TOTAL LOCATIONS ON SHEET:
1	PROPOSED ROADWAY, PLATFORM, DRAINAGE, TRACK ALIGNMENT, FUELING PAD, AND RETAINING WALL IS IN POTENTIAL CONFLICT WITH EXISTING UTILITY FEATURES AND FACILITIES. DESIGN-BUILD CONTRACTOR TO CONFIRM ALL CONFLICTS AND INCLUDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	1 16
2	PROPOSED FULL DEPTH RECONSTRUCTION IS IN POTENTIAL CONFLICT EXISTING UNDERGROUND FACILITIES. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	2 11
3	PROPOSED BUILDING CONSTRUCTION IS IN DIRECT CONFLICT WITH EXISTING UTILITY FEATURES AND ATTACHED OVERHEAD AND/OR UNDERGROUND FACILITIES. UTILITY FEATURES AND FACILITIES TO BE SUPPORTED DURING CONSTRUCTION OR RELOCATED AS REQUIRED. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	3 02
4	PROPOSED DRAINAGE IS IN POTENTIAL CONFLICT WITH EXISTING UNDERGROUND FACILITIES. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS, INCLUDING BUT NOT LIMITED TO, DOING TEST HOLES AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	4 06

MATCHLINE SEE SHEET U010

4 / U009 — EXISTING CONDITIONS PLAN - UTILITY CONFLICTS

1" = 50'-0"

0 25' 50' 100'

NORTH

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3	DESIGN/BUILD RFP SUBMISSION REV.2	12/21/2023	DP

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Office of Chief Engineer

National Railroad Passenger Corporation
30th Street Station, Philadelphia, Pennsylvania 19104

Approved	Date

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M&S Mallick & Scherer, P.C.
53 FRONTAGE ROAD, SUITE 170
HAMPTON, NJ 08827
TEL: 908-537-1300

SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

EXISTING CONDITIONS PLAN - UTILITY CONFLICTS

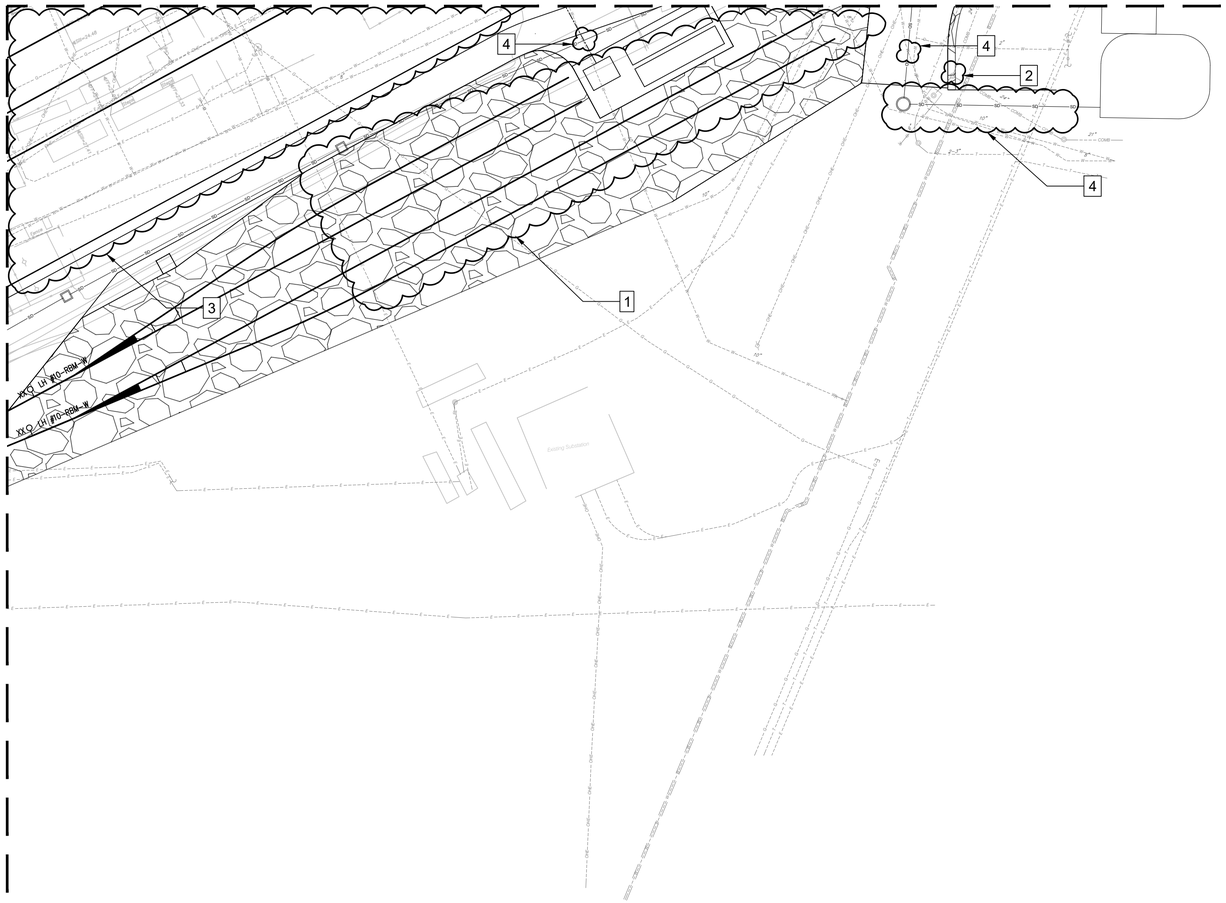
Designer: JW	Drawn: GSw	Checked: JW	Date: 12/21/2023

File No.:	
Ref No.:	
Sheet No.:	4 OF 5
Dwg. No.	U009

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MATCHLINE SEE SHEET U009

MATCHLINE SEE SHEET U008



LEGEND

—— – – – – OHE – – – – – OHE ——	ELECTRIC (AERIAL)
—— – – – – E – – – – – E ——	ELECTRIC (UNDERGROUND)
—— – – – – T – – – – – T ——	TELEPHONE (UNDERGROUND)
– – – – COMM – – – – – COMM –	COMMUNICATIONS (UNDERGROUND)
—— – – – – G – – – – – G ——	GAS
—— – – – – W – – – – – W ——	WATER
—— – – – – SA – – – – – SA ——	SANITARY SEWER
– – – – COMB – – – – – COMB –	COMBINED SEWER
—— – – – – STM – – – – – STM ——	STEAM
— — — — — — — — — — — —	UNKNOWN
——— — — ———	ROW
▬▬▬▬▬▬	PROPOSED WORK

TOTAL LOCATIONS ON SHEET:

1	PROPOSED ROADWAY, PLATFORM, DRAINAGE, TRACK ALIGNMENT, FUELING PAD, AND RETAINING WALL IS IN POTENTIAL CONFLICT WITH EXISTING UTILITY FEATURES AND FACILITIES. DESIGN-BUILD CONTRACTOR TO CONFIRM ALL CONFLICTS AND INCLUDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	1	01
2	PROPOSED FULL DEPTH RECONSTRUCTION IS IN POTENTIAL CONFLICT EXISTING UNDERGROUND FACILITIES. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	2	01
3	PROPOSED BUILDING CONSTRUCTION IS IN DIRECT CONFLICT WITH EXISTING UTILITY FEATURES AND ATTACHED OVERHEAD AND/OR UNDERGROUND FACILITIES. UTILITY FEATURES AND FACILITIES TO BE SUPPORTED DURING CONSTRUCTION OR RELOCATED AS REQUIRED. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	3	01
4	PROPOSED DRAINAGE IS IN POTENTIAL CONFLICT WITH EXISTING UNDERGROUND FACILITIES. DESIGN-BUILD CONTRACTOR TO EVALUATE ALL CONFLICTS, INCLUDING BUT NOT LIMITED TO, DOING TEST HOLES AND PROVIDE SOLUTION IN ITS FIRST DESIGN SUBMISSION.	4	03

5 / U010 EXISTING CONDITIONS PLAN - UTILITY CONFLICTS

1" = 50'-0"

0 25' 50' 100'

NORTH

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SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

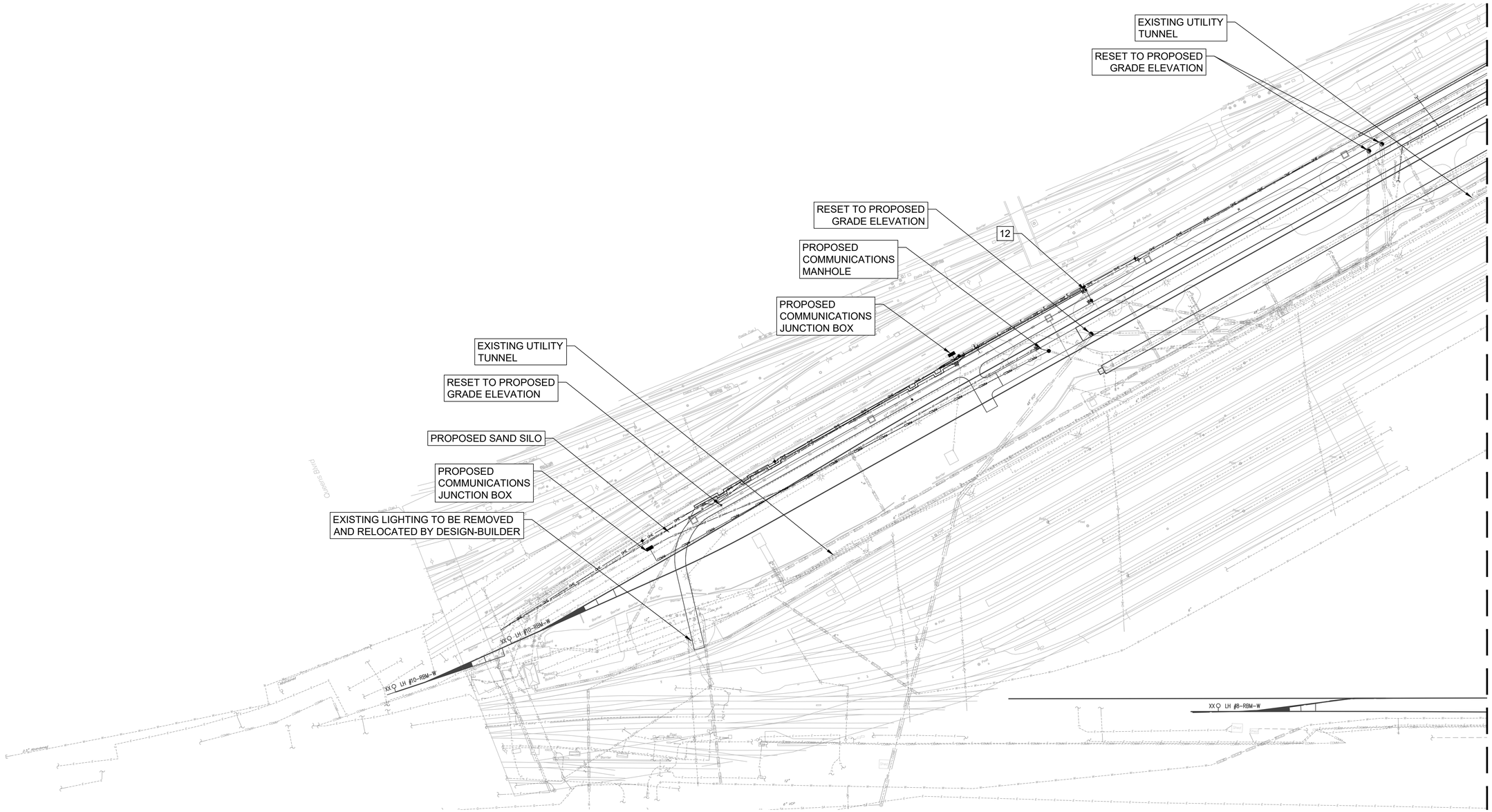
EXISTING CONDITIONS PLAN - UTILITY CONFLICTS

Designer: JW	Drawn: GSw	Checked: JW	Date: 12/21/2023

File No.:	
Ref No.:	
Sheet No.:	5 OF 5
Dwg. No.	U010

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LEGEND

- EXISTING UTILITY
- PROPOSED WORK/UTILITY REMOVAL
- UTILITY REMOVAL/ABANDONMENT
- OHE — ELECTRIC (AERIAL) RELOCATION
- E — ELECTRIC (UNDERGROUND) RELOCATION
- T — TELEPHONE (UNDERGROUND) RELOCATION
- COMM — COMMUNICATIONS (UNDERGROUND) RELOCATION
- G — GAS RELOCATION
- W — WATER RELOCATION
- S — SANITARY SEWER RELOCATION
- ROW
- PROPOSED MANHOLE
- MANHOLE RESET
- MANHOLE REMOVAL
- PROPOSED HYDRANT
- HYDRANT RESET
- HYDRANT REMOVAL
- PROPOSED VALVE
- VALVE RESET
- VALVE REMOVAL
- PROPOSED PIPE CAP
- PROPOSED JUNCTION BOX
- JUNCTION BOX REMOVAL
- PROPOSED UTILITY POLE
- UTILITY POLE REMOVAL

DESCRIPTION OF UTILITY WORK

1. ELECTRIC SERVICE TIE-IN
2. COMMUNICATIONS SERVICE TIE-IN
3. WATER SERVICE TIE-IN
4. SANITARY SEWER SERVICE TIE-IN
5. GAS SERVICE TIE-IN
6. ELECTRIC SERVICE CONNECTION LOCATION
7. COMMUNICATIONS SERVICE CONNECTION LOCATION
8. EXTEND DOMESTIC WATER TO NEW METER
9. EXTEND FIRE PROTECTION WATER TO NEW METER
10. SANITARY SEWER SERVICE CONNECTION LOCATION
11. EXTEND GAS TO NEW METER
12. PROPOSED FIRE HYDRANT

1 / U011 PROPOSED RELOCATIONS PLAN - UTILITIES

1" = 50'-0"

0 25' 50' 100'

NOTES:

1. ALL UTILITY LOCATIONS BASED ON AVAILABLE AS-BUILT, UTILITY VERIFICATION PLANS, AND SUBSURFACE UTILITY ENGINEERING INFORMATION. DESIGN-BUILDER TO PERFORM ADDITIONAL SUBSURFACE UTILITY ENGINEERING TO CONFIRM LOCATIONS PRIOR TO ANY EXCAVATION BEING PERFORMED.
2. DESIGN-BUILDER TO COORDINATE WATERMAIN ROUTING WITH AS-BUILT LOCATIONS PROVIDED BY AMTRAK.
3. DESIGN-BUILDER TO REVIEW ALL SUNNYSIDE YARD EXPANSION PHASE 1 AS-BUILTS AND UPDATE EXISTING CONDITIONS BASED ON THE AS-BUILTS PROVIDED BY AMTRAK.
4. DESIGN-BUILDER TO COORDINATE THE NEED FOR ADDITIONAL SERVICE CAPACITIES OR AVAILABILITY WITH EACH UTILITY OWNER.

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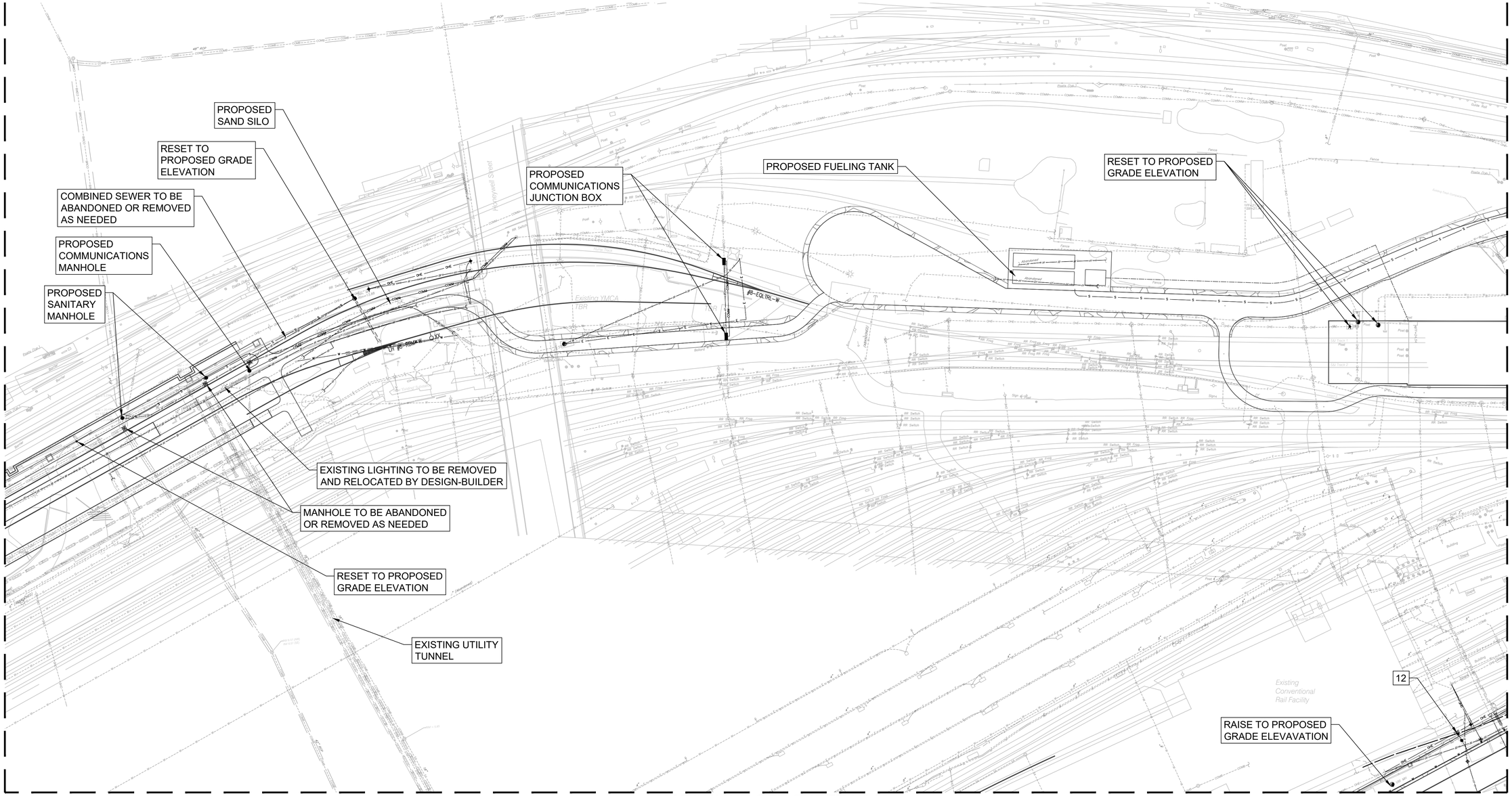
SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

PROPOSED RELOCATIONS PLAN - UTILITIES

Designer: JW	Drawn: GSw	Checked: JW	Date: 12/21/2023

File No.:	
Ref No.:	
Sheet No.:	1 OF 5
Dwg. No.	U011

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- ROW
- PROPOSED MANHOLE
- MANHOLE RESET
- MANHOLE REMOVAL
- PROPOSED HYDRANT
- HYDRANT RESET
- HYDRANT REMOVAL
- PROPOSED VALVE
- VALVE RESET
- VALVE REMOVAL
- PROPOSED PIPE CAP
- PROPOSED JUNCTION BOX
- JUNCTION BOX REMOVAL
- PROPOSED UTILITY POLE
- UTILITY POLE REMOVAL

DESCRIPTION OF UTILITY WORK

1. ELECTRIC SERVICE TIE-IN
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9. EXTEND FIRE PROTECTION WATER TO NEW METER
10. SANITARY SEWER SERVICE CONNECTION LOCATION
11. EXTEND GAS TO NEW METER
12. PROPOSED FIRE HYDRANT

2 U012 PROPOSED RELOCATIONS PLAN - UTILITIES

1" = 50'-0"

0 25' 50' 100'

NOTES:

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SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

PROPOSED RELOCATIONS PLAN - UTILITIES

Designer: JW	Drawn: GSw	Checked: JW	Date: 12/21/2023

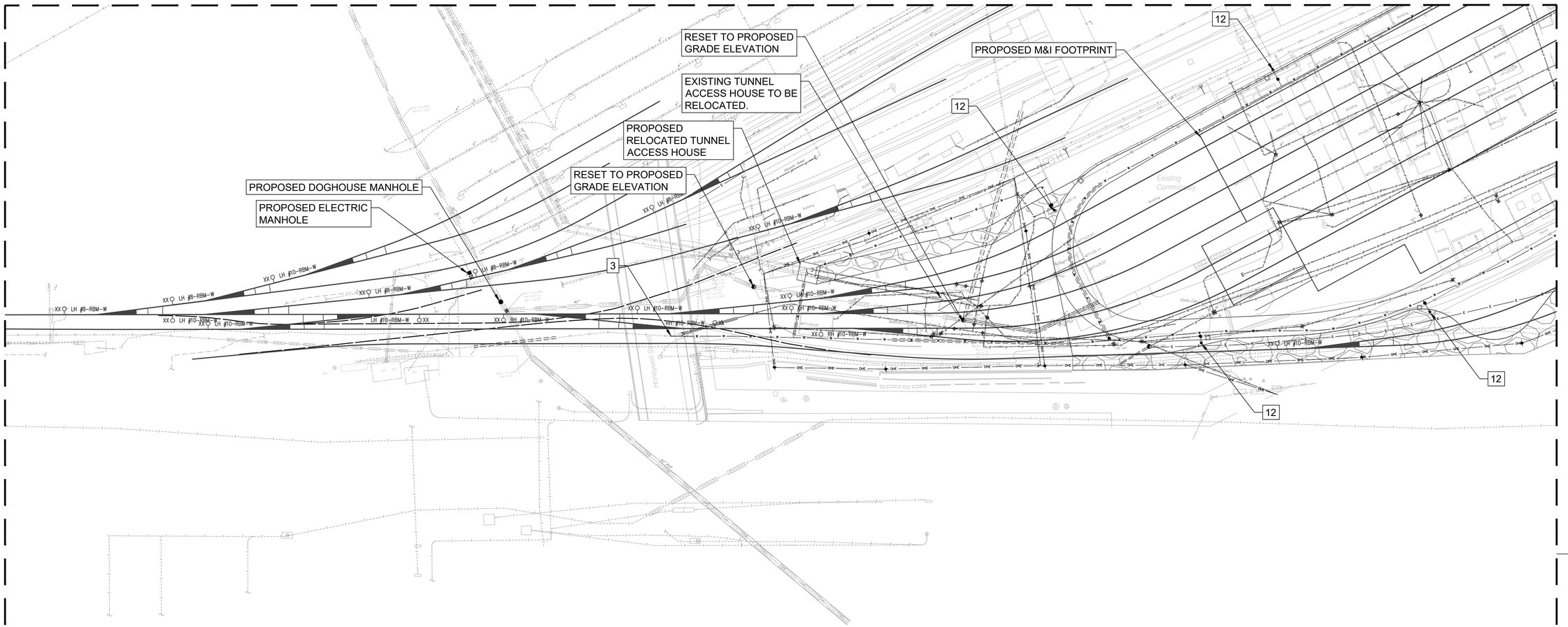
File No.:	
Ref No.:	
Sheet No.:	2 OF 5
Dwg. No.	U012

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MATCHLINE SEE SHEET U012

MATCHLINE SEE SHEET U011

MATCHLINE SEE SHEET U015



LEGEND

- EXISTING UTILITY
- PROPOSED WORK/UTILITY REMOVAL
- UTILITY REMOVAL/ABANDONMENT
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- JUNCTION BOX REMOVAL
- PROPOSED UTILITY POLE
- UTILITY POLE REMOVAL

DESCRIPTION OF UTILITY WORK

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5	GAS SERVICE TIE-IN
6	ELECTRIC SERVICE CONNECTION LOCATION
7	COMMUNICATIONS SERVICE CONNECTION LOCATION
8	EXTEND DOMESTIC WATER TO NEW METER
9	EXTEND FIRE PROTECTION WATER TO NEW METER
10	SANITARY SEWER SERVICE CONNECTION LOCATION
11	EXTEND GAS TO NEW METER
12	PROPOSED FIRE HYDRANT

3 / U013 PROPOSED RELOCATIONS PLAN - UTILITIES

1" = 50'-0"

0 25' 50' 100'

NORTH

NOTES:

1. ALL UTILITY LOCATIONS BASED ON AVAILABLE AS-BUILT, UTILITY VERIFICATION PLANS, AND SUBSURFACE UTILITY ENGINEERING INFORMATION. DESIGN-BUILDER TO PERFORM ADDITIONAL SUBSURFACE UTILITY ENGINEERING TO CONFIRM LOCATIONS PRIOR TO ANY EXCAVATION BEING PERFORMED.
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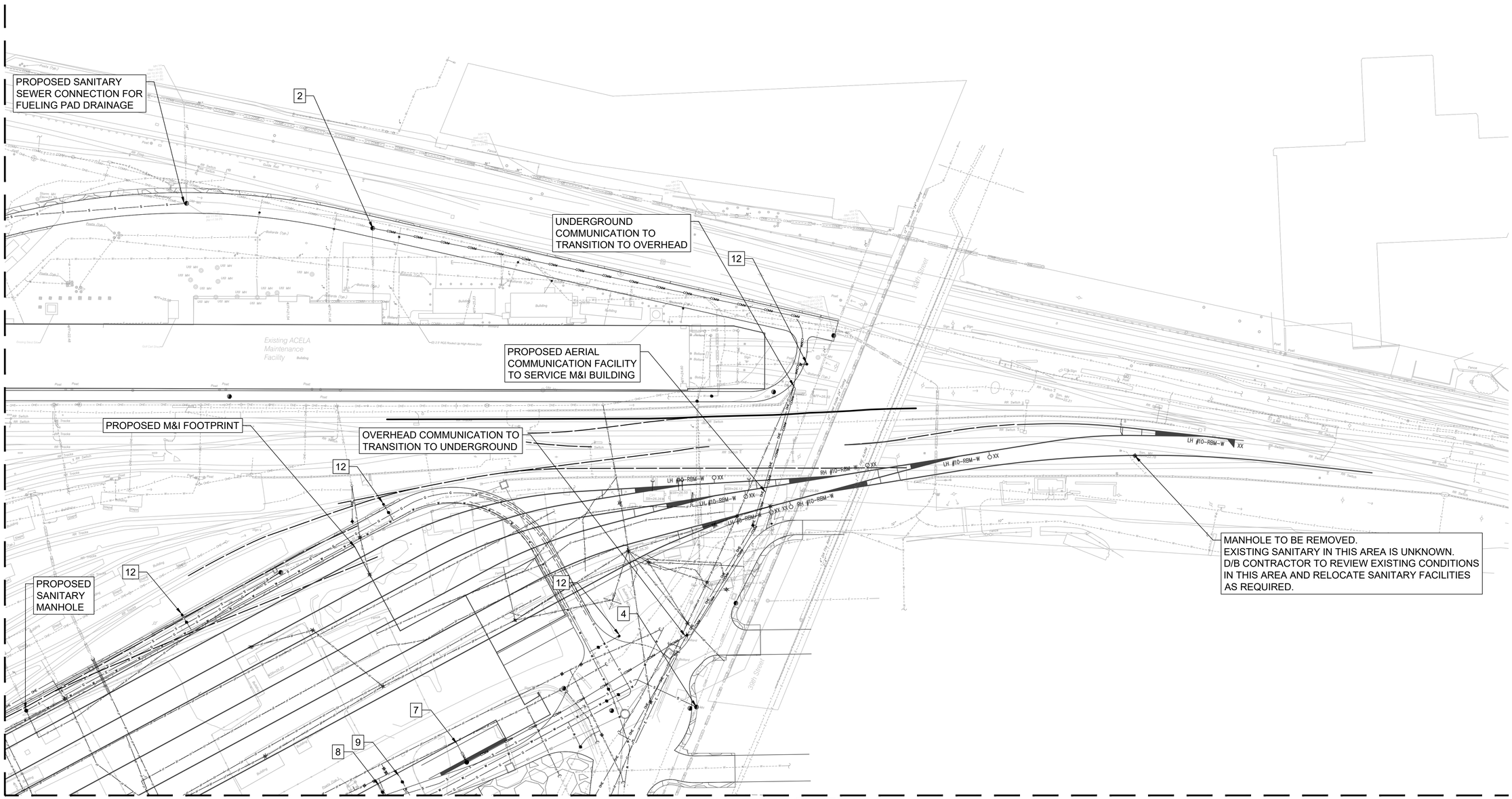
SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

PROPOSED RELOCATIONS PLAN - UTILITIES

Designer: JW | Drawn: GSw | Checked: JW | Date: 12/21/2023

File No.:	
Ref No.:	
Sheet No.:	3 OF 5
Dwg. No.	U013

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- JUNCTION BOX REMOVAL
- PROPOSED UTILITY POLE
- UTILITY POLE REMOVAL

DESCRIPTION OF UTILITY WORK

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10	SANITARY SEWER SERVICE CONNECTION LOCATION
11	EXTEND GAS TO NEW METER
12	PROPOSED FIRE HYDRANT

NORTH

4 U014 PROPOSED RELOCATIONS PLAN - UTILITIES

1" = 50'-0"

0 25' 50' 100'

NOTES:

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SUNNYSIDE YARD TRAINSET MAINTENANCE & INSPECTION FACILITY

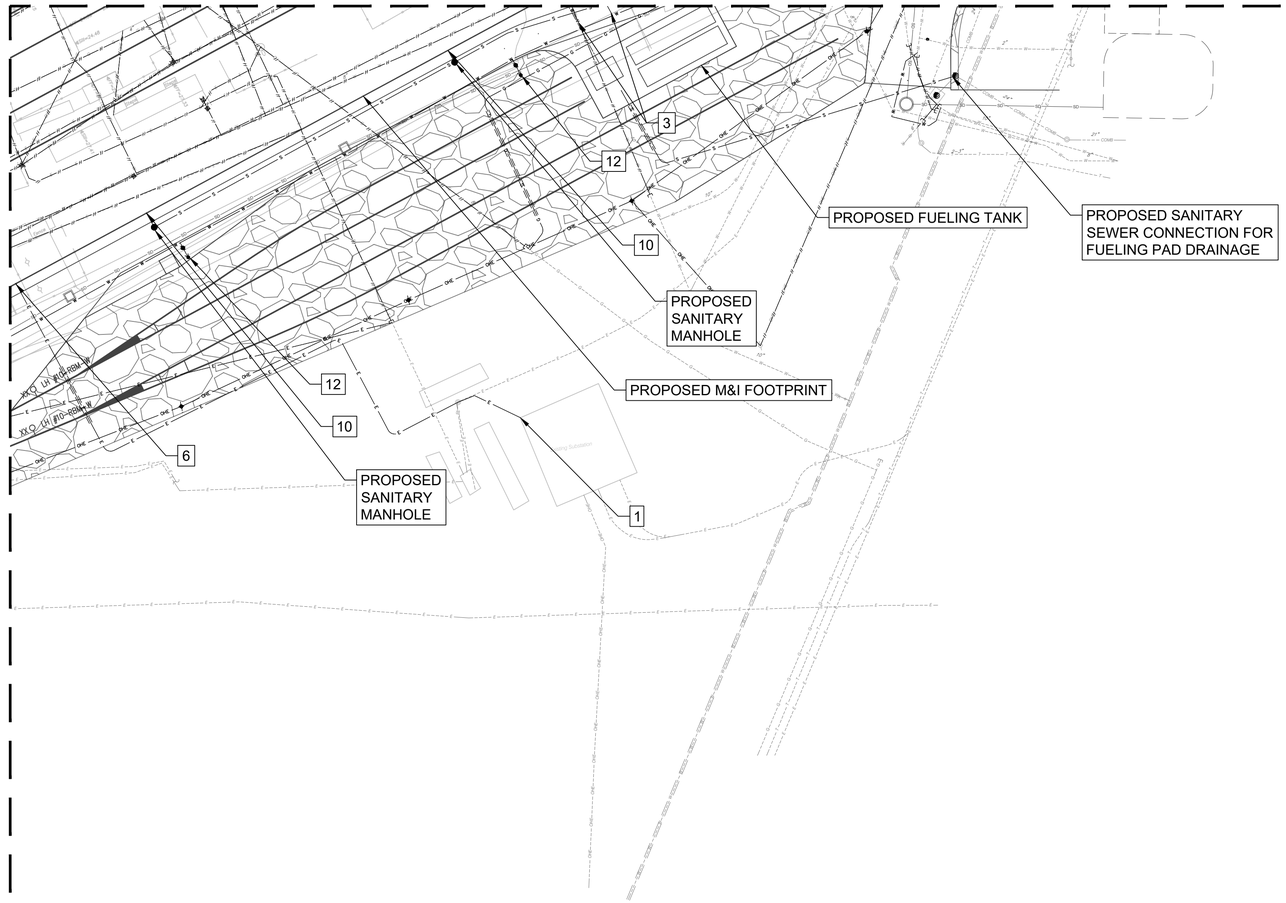
PROPOSED RELOCATIONS PLAN - UTILITIES

Designer: **JW** | Drawn: **GSw** | Checked: **JW** | Date: **12/21/2023**

File No.:	
Ref No.:	
Sheet No.:	4 OF 5
Dwg. No.	**U014**

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MATCHLINE SEE SHEET U014



MATCHLINE SEE SHEET U013

LEGEND

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- UTILITY REMOVAL/ABANDONMENT
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DESCRIPTION OF UTILITY WORK

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11. EXTEND GAS TO NEW METER
12. PROPOSED FIRE HYDRANT

NORTH

5 / U015 PROPOSED RELOCATIONS PLAN - UTILITIES

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0 25' 50' 100'

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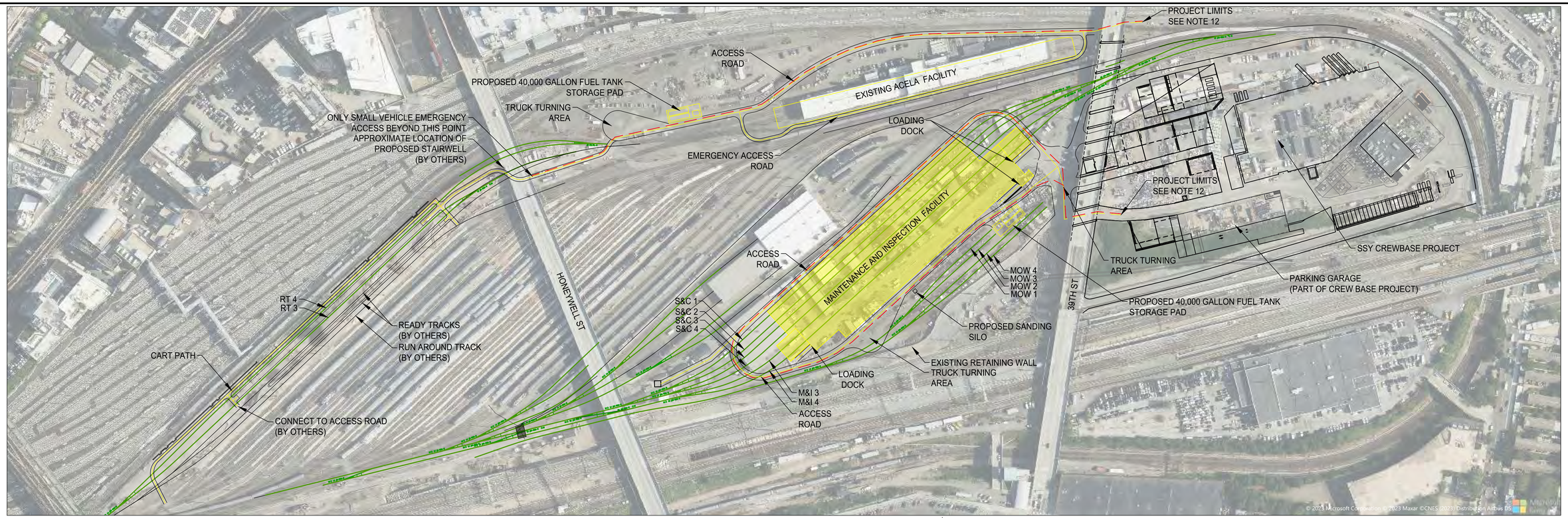
PROPOSED RELOCATIONS PLAN - UTILITIES

Designer: JW | Drawn: GSw | Checked: JW | Date: 12/21/2023

File No.:
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1 C001 CIVIL KEY PLAN
1" = 150'-0"
0 75' 150' 300'

NORTH

LEGEND

- PROPOSED ROADWAY ALIGNMENT
- PROPOSED STRUCTURES
- PROPOSED TRACK
- READY TRACK (BY OTHERS)
- EXISTING SITE ACCESS
- EMERGENCY VEHICLE PATH
- READY TRACK PLATFORMS

GENERAL NOTES:

1. ALL EXISTING TOPOGRAPHY, UNDERGROUND UTILITIES, STRUCTURES AND ASSOCIATED FACILITIES SHOW ON THESE DRAWINGS HAVE BEEN PLOTTED FROM MALICK & SCHERER SURVEY, THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHER FACILITIES, THE EXISTENCE OF WHICH ARE NOT PRESENTLY KNOWN. BIDDERS ARE INSTRUCTED TO INVESTIGATE THE SITE PRIOR TO SUBMITTING BIDS FOR THIS PROJECT. THIS WILL ENABLE A GENERALIZED UNDERSTANDING OF THE FEATURES, UTILITIES, ITEMS, AND/OR CONSTRAINTS THAT WILL IMPACT THE DESIGN AND CONSTRUCTION.
2. CONTRACTOR IS TO VERIFY ALL EXISTING STRUCTURES AND FACILITIES PRIOR TO CONSTRUCTION COMMENCEMENT AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL AND STARTING WORK.
3. ALL APPLICABLE PROVISIONS OF THE CURRENT OCCUPATIONAL SAFETY AND HEALTH ACT ARE HEREIN INCORPORATED BY REFERENCE. ALL EXISTING CONDITIONS SHOULD BE TESTED FOR POTENTIAL OF HAZARDOUS MATERIAL, INCLUDED BUT NOT LIMITED TO: SOILS, INSULATION, AND PAINT.
4. EXCEPT WHERE MODIFIED BY THE CONTRACT DOCUMENTS, ALL WORK PROPOSED HEREON SHALL BE IN ACCORDANCE WITH AMTRAK SPECIFICATIONS.
5. THE CONTRACTOR SHALL PROVIDE FOR THE SAFE, CLEAN AND ORDERLY PASSAGE OF WORK TRAFFIC AND PERSONAL WHERE CONSTRUCTION OPERATIONS ABUT ADJACENT WORK AREAS.
6. BEFORE EXCAVATING OVER OR ADJACENT TO ANY EXISTING UTILITIES, CONTRACTOR SHALL NOTIFY THE OWNER OF SUCH UTILITIES, A MINIMUM OF 48 HOURS IN ADVANCE, TO ENSURE THAT PROTECTIVE WORK WILL BE COORDINATED AND PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER. IF ANY EXISTING SERVICE LINES, UTILITIES AND UTILITY STRUCTURES WHICH ARE TO REMAIN IN SERVICE ARE UNCOVERED OR ENCOUNTERED DURING THIS OPERATION, THEY SHALL BE SAFEGUARDED, PROTECTED FROM DAMAGE AND SUPPORTED AS NECESSARY.
7. FACILITIES OUTSIDE THE CONSTRUCTION LIMIT LINE IMPACTED BY OPERATIONS OF THE CONTRACTOR SHALL BE RETURNED TO AMTRAK PRIOR TO NEW CONSTRUCTION, EXCEPT WHERE NEW WORK IS SHOWN.
8. THE CONTRACTOR IS RESPONSIBLE FOR HAVING A SET OF APPROVED ENGINEERING PLANS WITH THE LATEST REVISION DATE ON THE JOB SITE PRIOR TO THE START OF CONSTRUCTION AND AT ALL TIMES DURING CONSTRUCTION.
9. NO HOLES ARE TO BE LEFT OPEN IN THE PAVEMENT OR FLOOR OVER A HOLIDAY, WEEKEND OR AFTER 3:00 PM ON THE DAY PRECEDING A HOLIDAY OR A WEEKEND.
10. THE ENGINEER AND OWNER ARE NOT RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES, TIME OF PERFORMANCE, PROGRAMS OR FOR ANY SAFETY PRECAUTIONS USED BY THE CONTRACTOR. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXECUTION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS.
11. ALL UTILITY RISERS, FIRE HYDRANTS, VAULT COVERS, MANHOLE STRUCTURES, ETC. TO BE ADJUSTED TO MATCH FINAL PAVEMENT GRADES WITHIN THE CONSTRUCTION LIMITS.
12. FOR INFORMATION IN REGARDS TO SITE ACCESS FROM PUBLIC ROADWAYS, COORDINATE WITH CREW BASE PROJECT.
13. DB CONTRACTOR TO EVALUATE ALL ROADWAYS AND PATHWAYS PROPOSED FOR KEEPING ALL PEDESTRIANS SAFE FROM VEHICLE TRAFFIC.
14. COMMISSARY BUILDING TO REMAIN UNTIL NEW CREW BASE FACILITY IS FULLY OPERATIONAL AND READY FOR COMMISSARY OPERATIONS RELOCATION.

SITE LAYOUT NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD DIMENSIONS AND ELEVATIONS DURING THE CONSTRUCTION. IF ANY DISCREPANCIES ARE FOUND IN THESE PLANS FROM ACTUAL FIELD DIMENSIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
2. PROVIDE SMOOTH AND FLUSH TRANSITION FROM NEWLY PAVED AREAS TO EXISTING AREAS AS NECESSARY.
3. RESURFACE OR RECONSTRUCT AT LEAST TO ORIGINAL CONDITIONS ALL AREAS WHERE TRAFFIC BY CONTRACTORS, SUBCONTRACTORS OR SUPPLIERS HAVE DAMAGED EXISTING PAVEMENT, LAWNS OR OTHER IMPROVEMENTS DURING CONSTRUCTION, AFTER CONSTRUCTION WORK IS COMPLETE.

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1	CONCEPT DESIGN SUBMISSION	5/19/2023	JML
2	DESIGN/BUILD RFP SUBMISSION	9/15/2023	JML
3	DESIGN/BUILD RFP SUBMISSION REV. 1	10/23/2023	JML
4	DESIGN/BUILD RFP SUBMISSION REV. 2	12/21/2023	JML

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Office of Chief Engineer
National Railroad Passenger Corporation
30th Street Station, Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
1635 MARKET STREET, SUITE 1000
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

SUNNYSIDE YARD TRAINSET MAINTENANCE AND INSPECTION FACILITY

CIVIL KEY PLAN AND GENERAL NOTES

Designed: AAW | Drawn: GWS | Checked: JML | Date: 12/21/2023

File No.:
Ref No.:
Sheet No.: OF

Dwg No. C001

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LEGEND

- FULL DEPTH RECONSTRUCTION
- COMPACTED GRAVEL
- READY TRACK PLATFORMS
- READY TRACKS (BY OTHERS)
- PROPOSED TRACK
- PROPOSED ROADWAY ALIGNMENT

NORTH

1 / C111 PROPOSED SITE ACCESS ROAD LAYOUT - READY TRACK AREA

1" = 50'-0"

0 25' 50' 100'

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National Railroad Passenger Corporation
30th Street Station, Philadelphia, Pennsylvania 19104

Approved	Date

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TEL: 215-735-0832

SUNNYSIDE YARD TRAINSET MAINTENANCE AND INSPECTION FACILITY

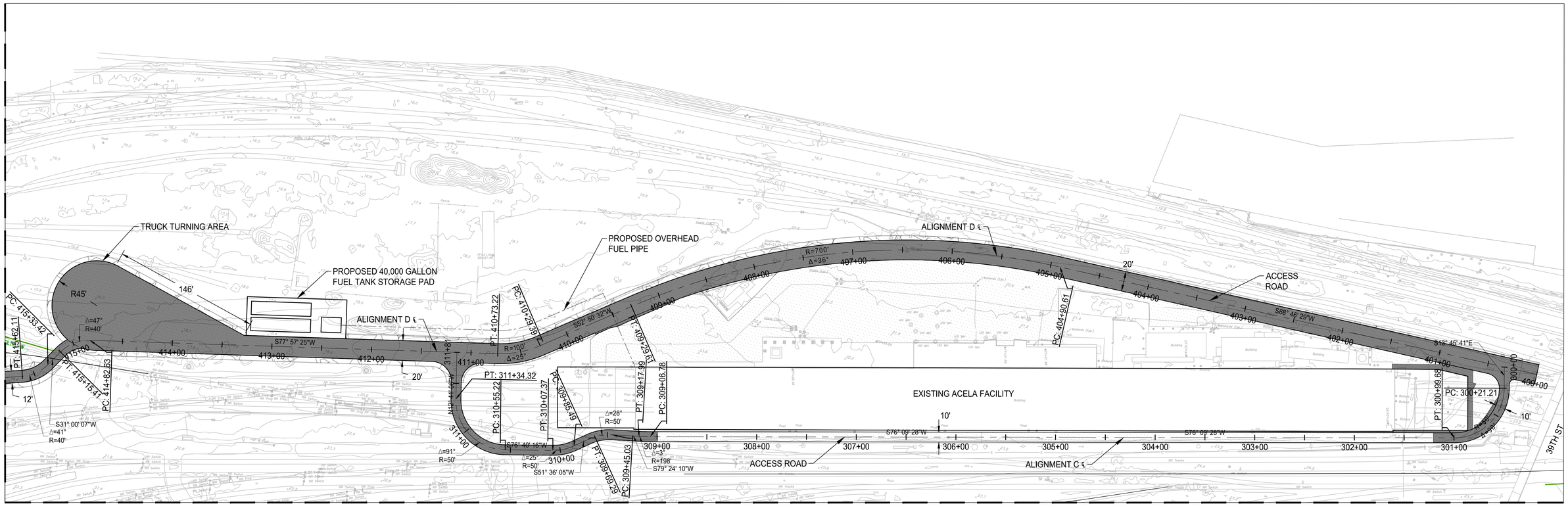
PROPOSED SITE ACCESS ROAD LAYOUT

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File No.:
Ref No.:
Sheet No.: OF
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MATCHLINE SEE SHEET C111



MATCHLINE
SEE SHEET C113

2 / C112 PROPOSED SITE ACCESS ROAD LAYOUT - EXISTING ACELA FACILITY AREA

1" = 50'-0"

0 25' 50' 100'

NORTH

LEGEND

- FULL DEPTH RECONSTRUCTION
- MILL & OVERLAY
- COMPACTED GRAVEL
- PROPOSED TRACK
- PROPOSED ROADWAY ALIGNMENT

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SUNNYSIDE YARD TRAINSET MAINTENANCE AND INSPECTION FACILITY

PROPOSED SITE ACCESS ROAD LAYOUT

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MATCHLINE SEE SHEET C111

MATCHLINE SEE SHEET C112

ALIGNMENT B ℄

ACCESS ROAD

BUILDING TO BE DEMOLISHED (SEE SHEET A-D111 FOR DETAIL)

GRAVEL ACCESS TO TUNNEL ENTRANCE

S&C 1
S&C 2
S&C 3
S&C 4

MAINTENANCE AND INSPECTION FACILITY

TRUCK TURNING AREA

LOADING DOCK
PROPOSED WALL
WITH RAILING (3' WIDE)

ACCESS ROAD

ALIGNMENT A ℄

39TH ST

PROPOSED 40,000 GALLON FUEL TANK STORAGE PAD

PROPOSED OVERHEAD FUEL PIPE

MOW 4
MOW 3
MOW 2
MOW 1

PROPOSED SANDING SILO

EXISTING RETAINING WALL

M&I 3
M&I 4

LEGEND

- FULL DEPTH RECONSTRUCTION
- COMPACTED GRAVEL
- PROPOSED STRUCTURES
- PROPOSED TRACK
- PROPOSED ROADWAY ALIGNMENT

3 / C113 PROPOSED SITE ACCESS ROAD LAYOUT - M&I FACILITY AREA

1" = 50'-0"

0 25' 50' 100'

NORTH

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TEL: 215-735-0832

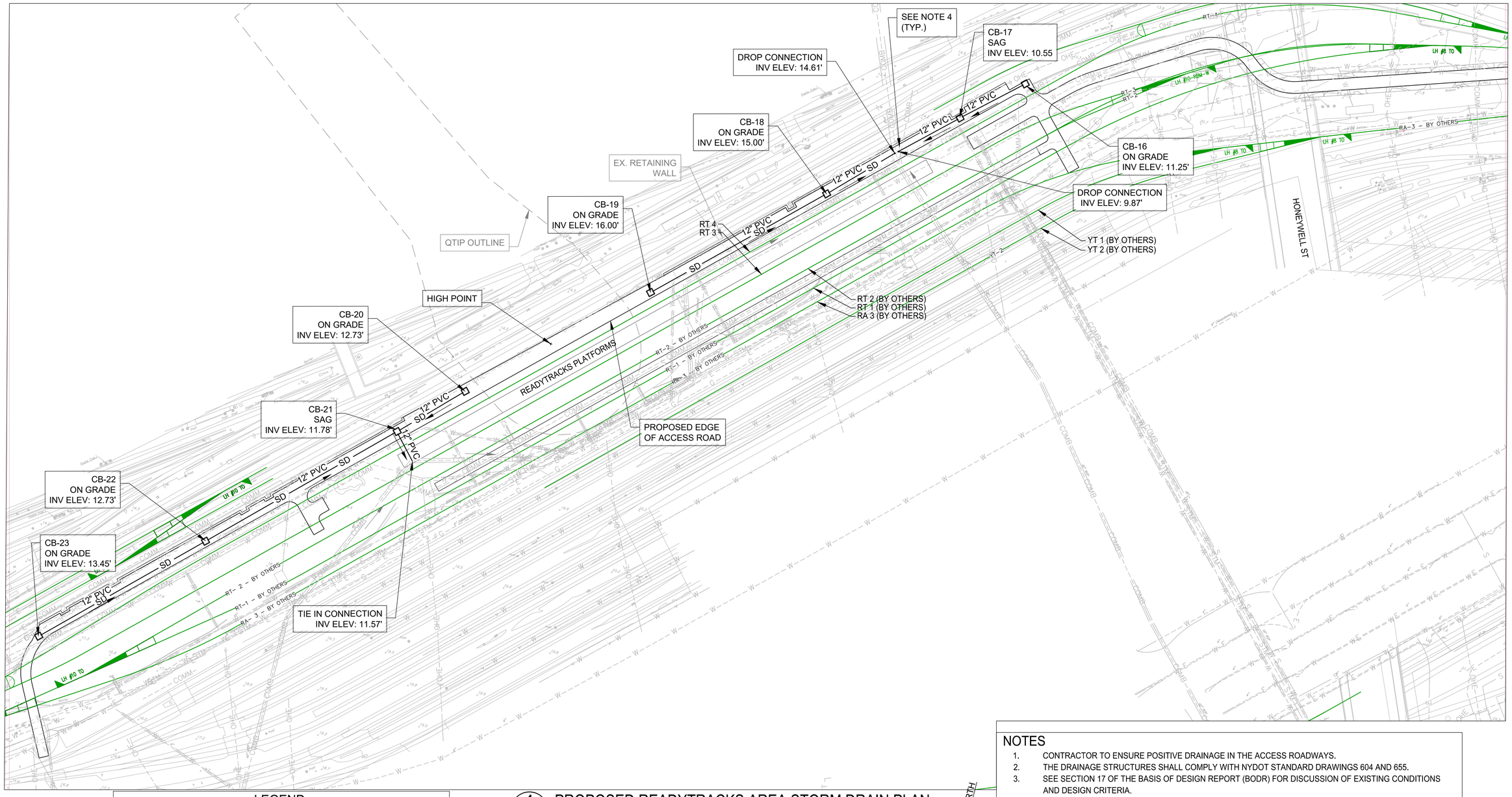
SUNNYSIDE YARD TRAINSET MAINTENANCE AND INSPECTION FACILITY

PROPOSED SITE ACCESS ROAD LAYOUT

Designed: AAW	Drawn: GWS	Checked: JML	Date: 12/21/2023

File No.:	
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Dwg No.	C113

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LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED ROADWAY EDGE
- PROPOSED TRACK
- SD — PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER GRATE INLET

1 / C114 PROPOSED READYTRACKS AREA STORM DRAIN PLAN

1" = 50'-0"

0 25' 50' 100'

NORTH

NOTES

1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE IN THE ACCESS ROADWAYS.
2. THE DRAINAGE STRUCTURES SHALL COMPLY WITH NYDOT STANDARD DRAWINGS 604 AND 655.
3. SEE SECTION 17 OF THE BASIS OF DESIGN REPORT (BODR) FOR DISCUSSION OF EXISTING CONDITIONS AND DESIGN CRITERIA.
4. CONTRACTOR TO VERIFY THAT 8'x4' BOX CULVERT IS THE OUTLET CONDUIT FOR THE COMBINED SEWER IN THIS AREA.
5. ROOF DRAINS SHALL CONNECT TO PROPOSED STORM SEWER STRUCTURES.
6. PROVIDE ACCESSIBLE CHECK VALVE AND SEWER GAS ISOLATION SYSTEMS MEETING NYC DEP STANDARDS.
7. SEWER MAINS HAVE NOT BEEN REVIEWED TO IDENTIFY UNUSED WYES. LOCATE AND CONNECT TO UNUSED WYES IF DIRECTED BY NYC DEP OR AMTRAK.
8. RUNOFF FROM FUELING PADS MUST DRAIN TO AN OIL/WATER SEPARATOR BEFORE DISCHARGING TO THE SANITARY SEWER AND SHALL NOT CONNECT TO STORM SEWER.

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TEL: 215-735-0832

SUNNYSIDE YARD TRAINSET MAINTENANCE AND INSPECTION FACILITY

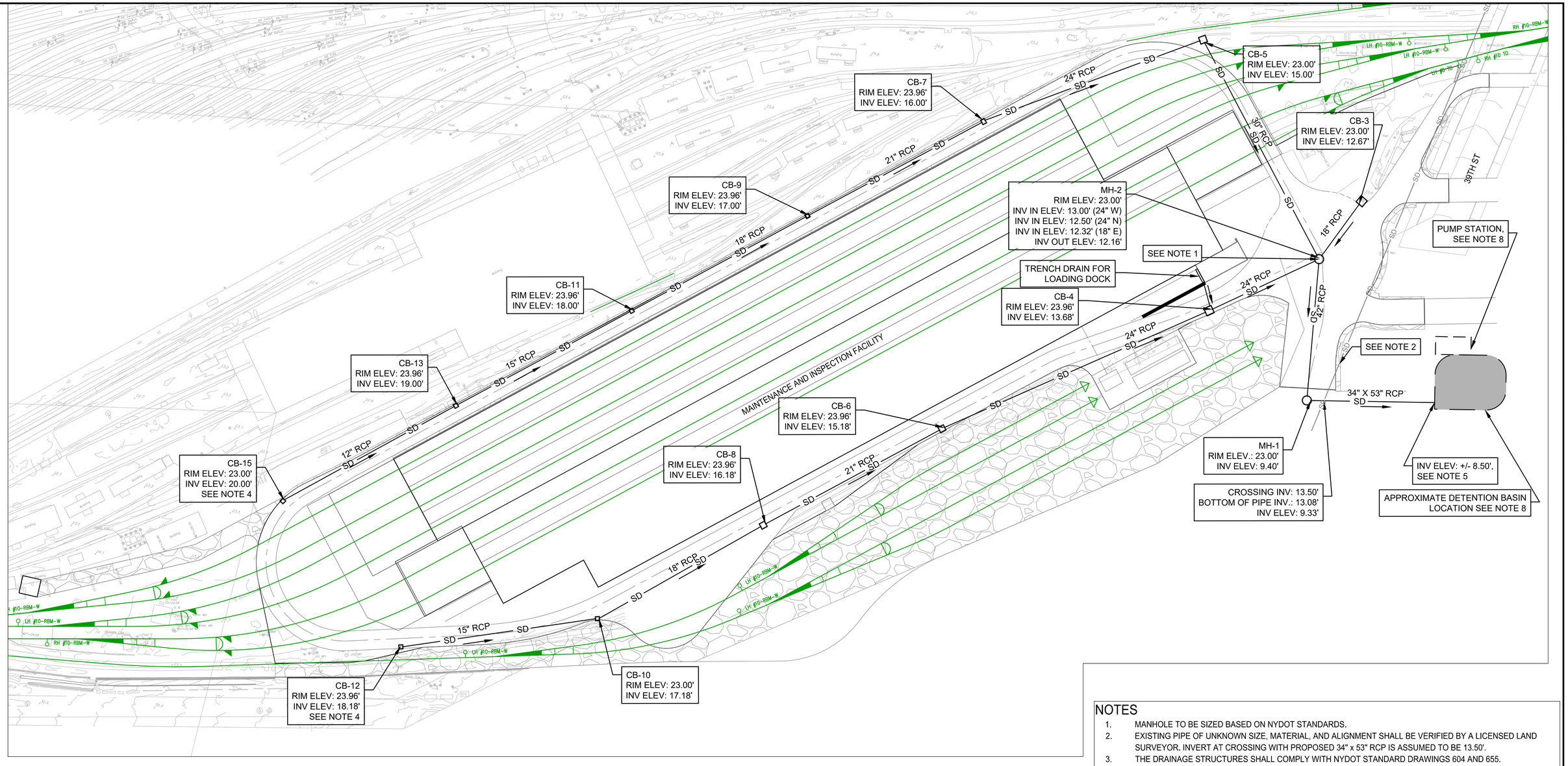
PROPOSED READYTRACKS AREA STORM DRAIN PLAN

Designed: DJW | Drawn: DJW | Checked: DJC/JML | Date: 12/21/2023

File No.:
Ref No.:
Sheet No.: OF

Dwg. No. **C114**

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LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED ROADWAY EDGE
- PROPOSED TRACK
- SD — PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER GRATE INLET
- PROPOSED STORM SEWER MANHOLE
- APPROXIMATE DETENTION STRUCTURE (BY OTHERS)
- PUMP STATION (BY OTHERS)

1 / C115 PROPOSED M&I FACILITY AREA STORM DRAIN PLAN

1" = 50'-0"

0 25' 50' 100'

NORTH

NOTES

1. MANHOLE TO BE SIZED BASED ON NYDOT STANDARDS.
2. EXISTING PIPE OF UNKNOWN SIZE, MATERIAL, AND ALIGNMENT SHALL BE VERIFIED BY A LICENSED LAND SURVEYOR. INVERT AT CROSSING WITH PROPOSED 34" x 53" RCP IS ASSUMED TO BE 13.50'.
3. THE DRAINAGE STRUCTURES SHALL COMPLY WITH NYDOT STANDARD DRAWINGS 604 AND 655.
4. THE PROPOSED ACCESS ROAD SURROUNDING THE BUILDING SHALL HAVE A LONGITUDINAL GRADE OF 0.5% MINIMUM AND LOW POINTS OF THE ROADWAY WILL BE AT THE INLET STRUCTURES. THE CROSS SLOPE OF THE ROADWAY SHALL BE 2% AWAY FROM THE BUILDING.
5. INVERT ELEVATIONS ARE BASED ON THE ASSUMPTION THAT NO UTILITY CONFLICTS WILL AFFECT THE DEPTH OF THE PIPES.
6. SEE SECTION 17 OF THE BASIS OF DESIGN REPORT (BODR) FOR DISCUSSION OF EXISTING CONDITIONS AND DESIGN CRITERIA.
7. ROOF DRAINS SHALL CONNECT TO PROPOSED STORM SEWER STRUCTURES.
8. THE DETENTION FACILITY AND ASSOCIATED PUMP STATION WILL BE DESIGNED AND CONSTRUCTED BY THE DESIGN-BUILD CONTRACTOR FOR THE CREW BASE FACILITY PROJECT.
8. RUNOFF FROM FUELING PADS MUST DRAIN TO AN OIL/WATER SEPARATOR BEFORE DISCHARGING TO THE SANITARY SEWER AND SHALL NOT CONNECT TO STORM SEWER.

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Office of Chief Engineer

National Railroad Passenger Corporation
30th Street Station, Philadelphia, Pennsylvania 19104

Approved	Date

AECOM

1635 MARKET STREET, SUITE 1000
PHILADELPHIA, PENNSYLVANIA 19103
TEL: 215-735-0832

SUNNYSIDE YARD TRAINSET MAINTENANCE AND INSPECTION FACILITY

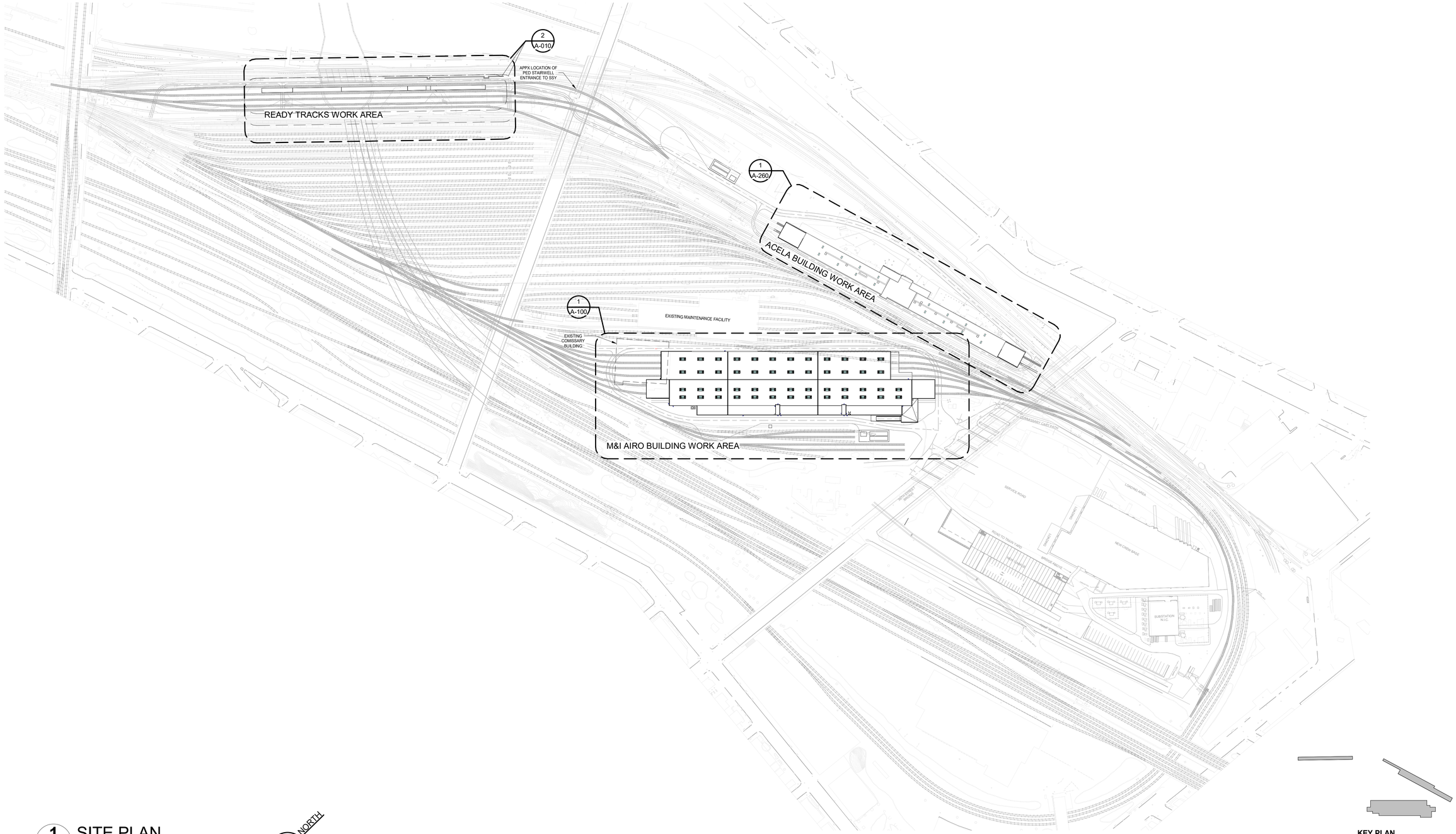
PROPOSED M&I FACILITY AREA STORM DRAIN PLAN

Designed: DJW | Drawn: DJW | Checked: DJC/JML | Date: 12/21/2023

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1 A-003 SITE PLAN

1" = 160'-0"

0 80' 160' 320'

KEY PLAN

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1	Concept Design Submission	5/19/23	AP
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3	Design/Build RFP Submission REV.1	10/23/23	DL
4	Design/Build RFP Submission REV.2	12/21/23	DL

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30th Street Station, Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
125 BROAD STREET, 16TH FLOOR
NEW YORK, NY 10004
TEL: 212-377-8400

SUNNYSIDE YARD AMTRAK AIRO FACILITIES

ARCHITECTURAL SITE PLAN

Project Code:	60654795
WBS:	
Sheet No.	OF
Dwg. No.	A-003

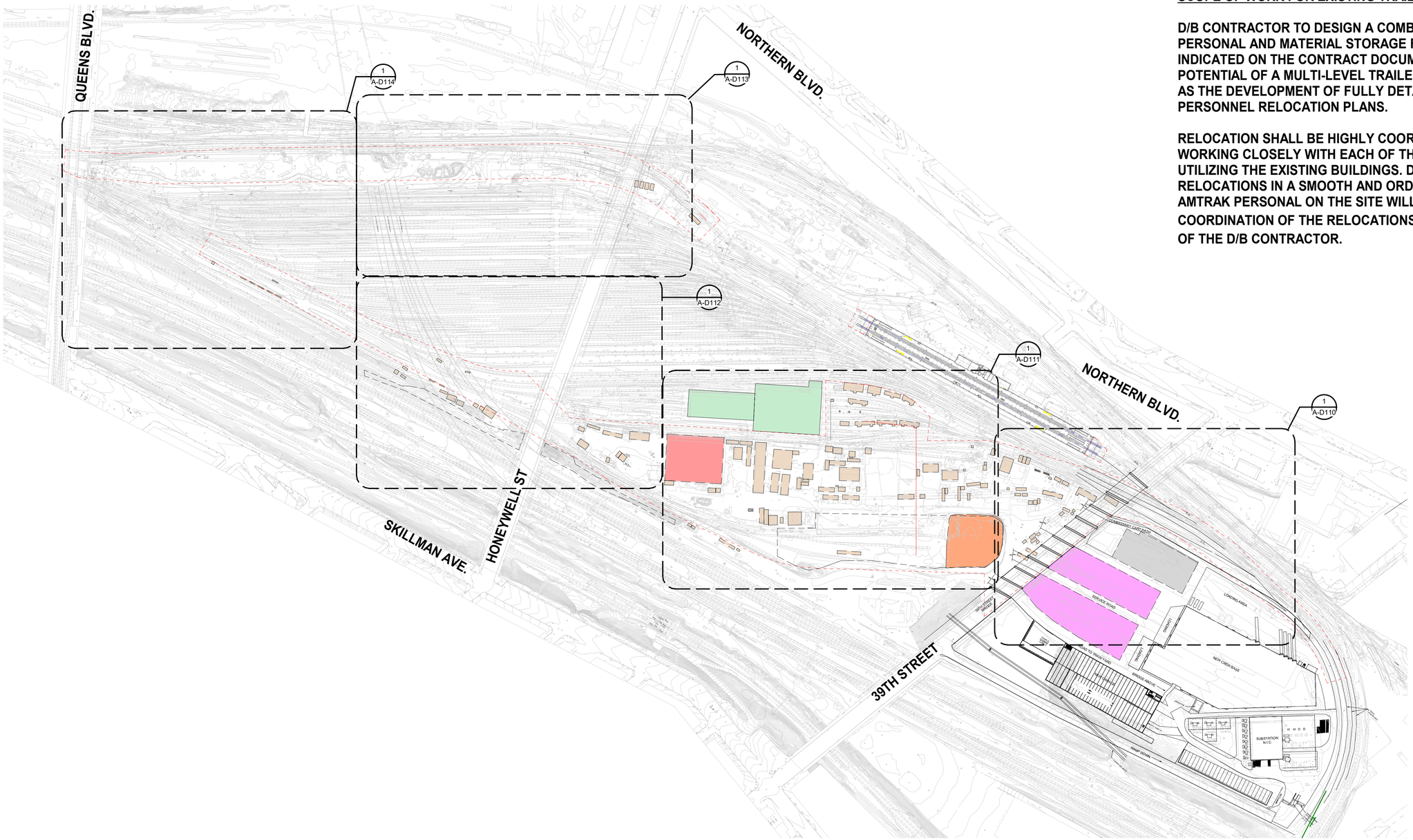
Designed: BH/AP | Drawn: AP | Checked: DK | Date: 12/05/22

DL
12/20/2023 5:51:57 PM
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SCOPE OF WORK FOR EXISTING TRAILERS DEMOLITION AND RELOCATION:

D/B CONTRACTOR TO DESIGN A COMBINATION OF NEW AND RELOCATED PERSONAL AND MATERIAL STORAGE FACILITIES WITHIN THE FOOTPRINT INDICATED ON THE CONTRACT DOCUMENTS. THIS WILL INCLUDE THE POTENTIAL OF A MULTI-LEVEL TRAILER COMPLEX FOR PERSONNEL AS WELL AS THE DEVELOPMENT OF FULLY DETAILED AND PHASED MATERIAL AND PERSONNEL RELOCATION PLANS.

RELOCATION SHALL BE HIGHLY COORDINATED BY THE D/B CONTRACTOR BY WORKING CLOSELY WITH EACH OF THE AMTRAK USER GROUPS CURRENTLY UTILIZING THE EXISTING BUILDINGS. D/B CONTRACTOR SHALL COORDINATE RELOCATIONS IN A SMOOTH AND ORDERLY FASHION FOR ALL OCCUPANTS. AMTRAK PERSONAL ON THE SITE WILL HELP FACILITATES THE PROCESS. COORDINATION OF THE RELOCATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE D/B CONTRACTOR.



Note:
Refer to Sheet D-110, D-111, D-112, D-113, D-114 for additional information.

DEMOLITION & RELOCATION LEGEND

- DEMOLITION LINE
- NEW TRACKS
- EXISTING TO REMAIN
- RELOCATION
- DEMOLITION
- NEW BUILDING
- PERSONAL/SHOP RELOCATION AREA
- EQUIPMENT STORAGE RELOCATION AREA
- EQUIPMENT RELOCATION AREA

33,33A,33B,33C,34.. NAMING

P PERSONAL/OFFICE

ES EQUIPMENT STORAGE

E EQUIPMENT

S SHOP/REPAIR BLG.

1 OVERALL - SITE DEMOLITON

A-D100 1" = 160'-0"

0 80' 160' 320'

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Office of Chief Engineer

National Railroad Passenger Corporation
30th Street Station, Philadelphia, Pennsylvania 19104

Approved	Date

AECOM
125 BROAD STREET, 16TH FLOOR
NEW YORK, NY 10004
TEL: 212-377-8400

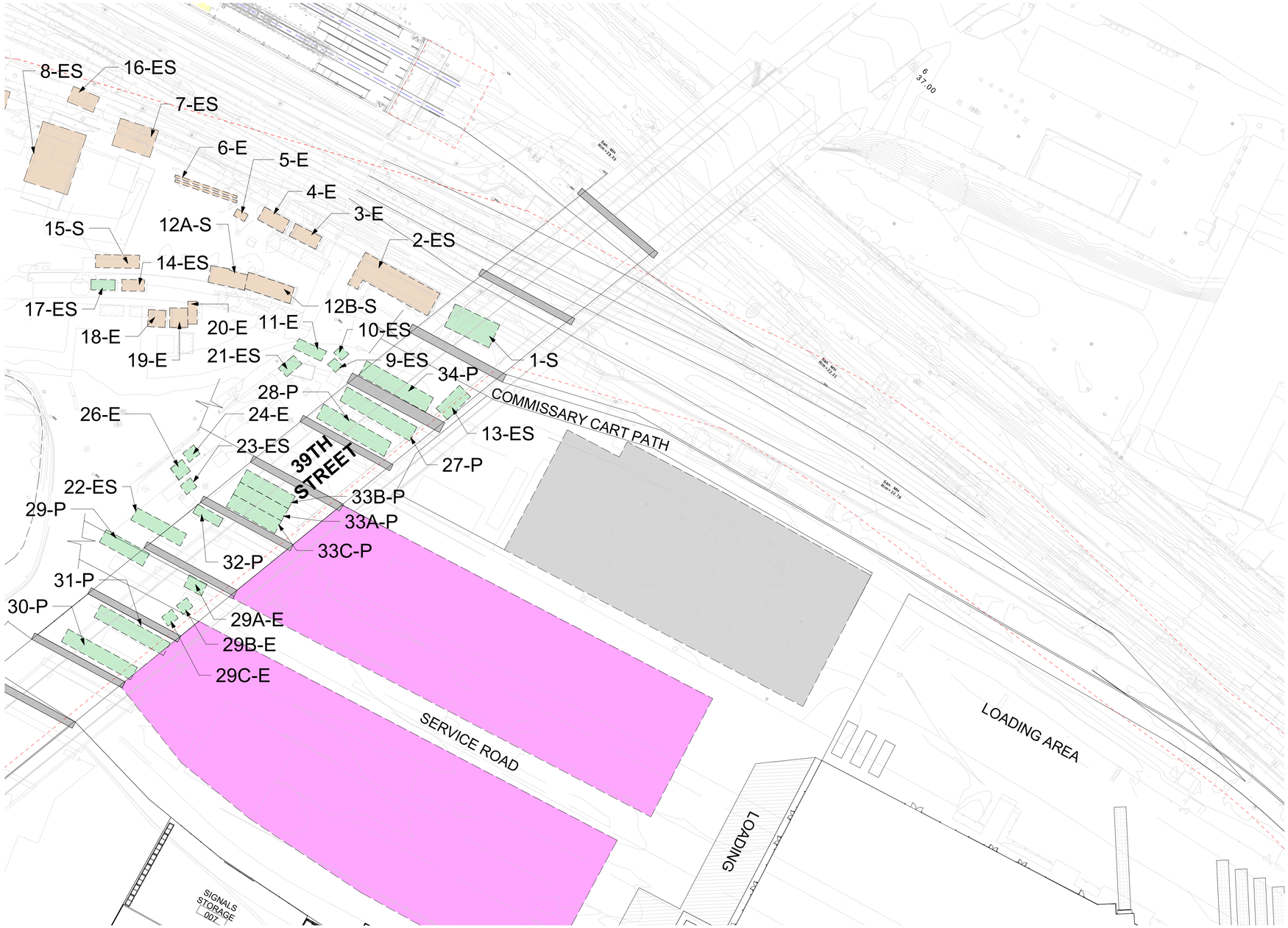
SUNNYSIDE YARD AMTRAK AIRO FACILITIES

DEMOLITION OVERALL SITE PLAN

Designed: Designer | Drawn: Author | Checked: Checker | Date: 12/05/22

Project Code:	60654795
WBS:	
Sheet No.	OF
Dwg. No.	A-D100

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RELOCATION SHALL INCLUDE BUT NOT LIMITED THE FOLLOWING:

CONTENTS EACH BUILDING INCLUDING RACKS, MATERIALS, LOCKERS, ETC.
INTERNET/WIFI CONNECTIONS AT ALL PERSONNEL FACILITIES IN CORDINATION WITH AMTRAK DT DEPARTMENT
PROVIDE ADEQUATE HVAC IN RELOCATION BUILDINGS WHEREVER EXISITNG
RELOCATE/RE-ESTABLISH EXISTING BUILDING SUPPORT SYSTEMS SUCH AS TIMECLOCKS, SECURITY CAMERAS AND INTERNET
PROVIDE ELECTRICAL SERVICE INCLUDING THE NECESSARY RELOCATION OF EXISTING SERVICE DROPS, TRANSFORMERS SUBSTATION FEEDERS LOCATED ADJACENT TO BUILDING #77 AS WELL AS POWER AT RELOCATED BUILDINGS AS TO ESTABLISH PRESENT CONFIGURATIONS OF OUTLETS, CHARGING STATIONS, POWERS DROPS, ETC. NECESSARY TO ACCOMODATE USER GROUPS NEEDS.
PROVIDE PLUMBING. SANITARY SERVICE WHEREVER EXISTING FOR NEWLY ESTABLISHED/ RELOCATED SPACE CENTRALIZED BAHTROOMS ARE ACCEPTABLE, HOWEVER, SEPATE FOREMAN AND UNION LOCKER FACILITIES ARE REQUIRED MALE AND FEMALE USE. RELCOATED LOCKER AREAS ARE RQUIRED TO MEET THE CURRENT CAPACITY AND CONFIGURATION.

DEMOLITION & RELOCATION LEGEND

- DEMOLITION LINE
- NEW TRACKS
- EXISTING TO REMAIN
- RELOCATION
- DEMOLITION
- NEW BUILDING
- PERSONAL/SHOP RELOCATION AREA
- EQUIPMENT STORAGE RELOCATION AREA
- EQUIPMENT RELOCATION AREA

33,33A,33B,33C,34..	NAMING
P	PERSONAL/OFFICE
ES	EQUIPMENT STORAGE
E	EQUIPMENT
S	SHOP/REPAIR BLG.

1 A-D110 M&I AIRO BUILDING SITE PLAN - SITE DEMOLITION - PLAN - 1

1" = 40'-0" 0 20' 40' 80'

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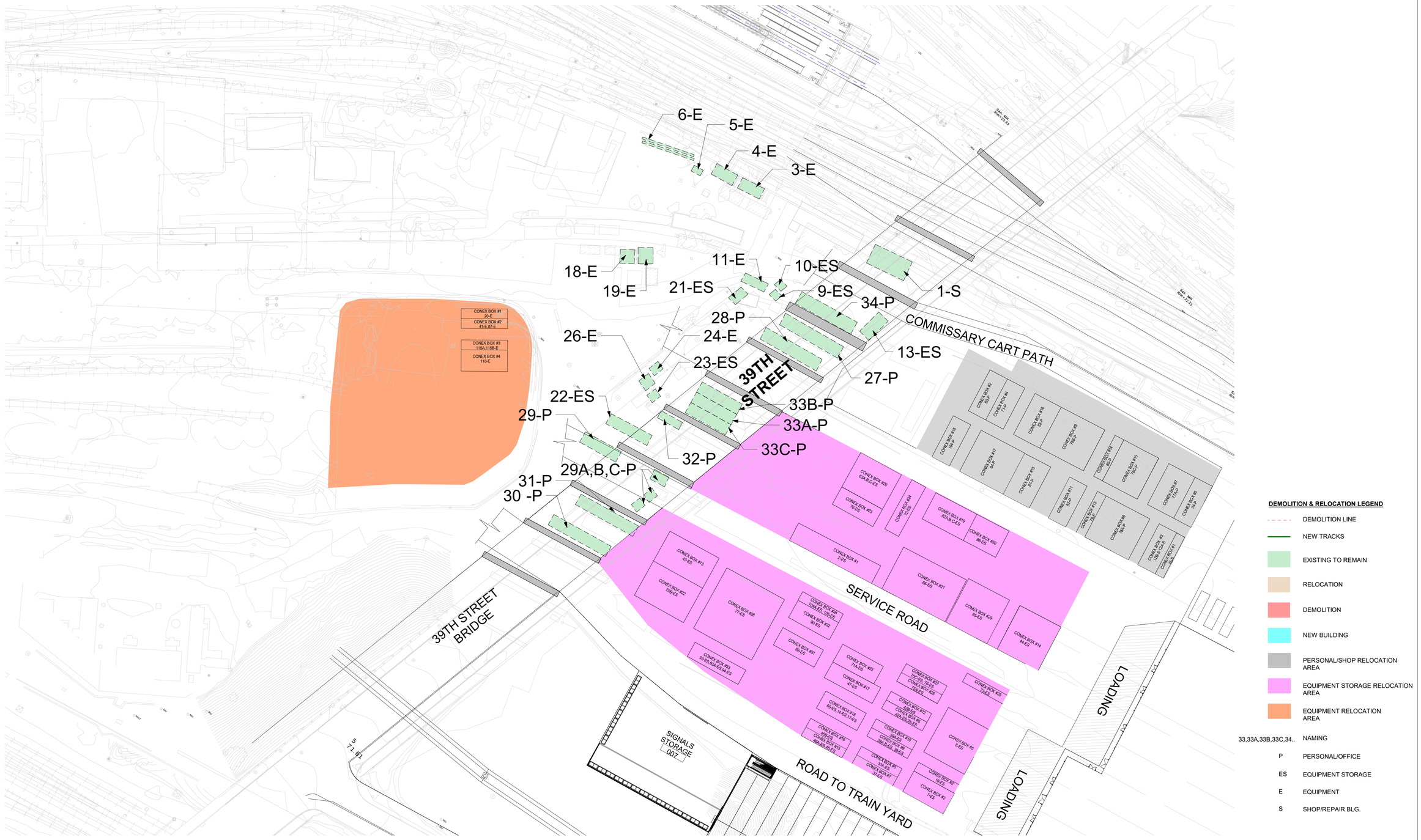
SUNNYSIDE YARD AMTRAK AIRO FACILITIES

ENLARGED DEMOLITION PLAN - 1

Designer: **Designer** Drawn: **Author** Checked: **Checker** Date: **10/23/2023**

File No.:
Ref No.:
Sheet No.: **XXX** OF **XXX**

Dwg. No. **A-D110**



1 M&I AIRO BUILDING SITE PLAN - SITE RELOCATION - PLAN

A-R110 1" = 40'-0" 0 20' 40' 80'

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SUNNYSIDE YARD AMTRAK AIRO FACILITIES

RELOCATION PLAN 1

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Dwg. No. **A-R110**



1 3D - VIEW - NW

A-SK-1

NTS

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SUNNYSIDE YARD AMTRAK AIRO FACILITIES

3D - VIEW - NW

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Project Code:	60654795
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Sheet No.	OF
Dwg. No.	**A-SK-1**

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1 3D - VIEW - SE

A-SK-2 NTS

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SUNNYSIDE YARD AMTRAK AIRO FACILITIES

3D - VIEW - SW

Designed: AP	Drawn: AP	Checked: DP	Date: 05/19/23

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1 PERSPECTIVE VIEW - A

A-SK-3

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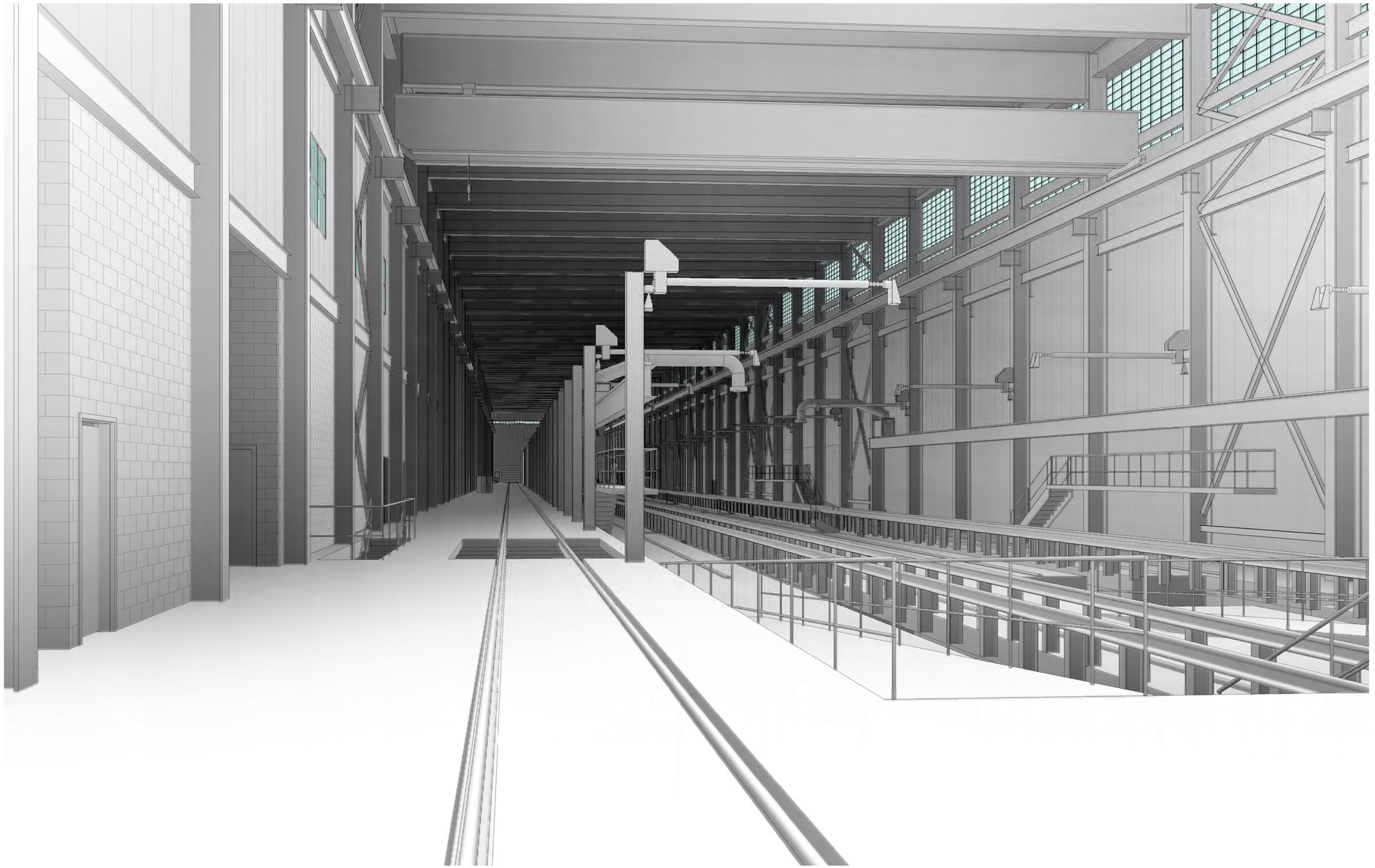
SUNNYSIDE YARD AMTRAK AIRO FACILITIES

PERSPECTIVE VIEW - 1A

Designed: AP	Drawn: AP	Checked: DP	Date: 05/19/23

Project Code:	60654795
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Sheet No.	OF
Dwg. No.	A-SK-3

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1 A-SK-4 3D View - (Camera view -1)
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SUNNYSIDE YARD AMTRAK AIRO FACILITIES

Project Code:	60654795
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PERSPECTIVE VIEW - 1B

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Dwg. No. **A-SK-4**

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1 A-SK-5 3D View - (Camera view - 2)
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SUNNYSIDE YARD AMTRAK AIRO FACILITIES

PERSPECTIVE VIEW - 1C

Designed: AP | Drawn: AP | Checked: DK | Date: 05/19/23

Project Code:	60654795
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Sheet No.	OF
Dwg. No.	A-SK-5

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JACOBSWYPER ARCHITECTS
1232 Chancellor Street
Philadelphia, PA 19107
tel: 215.985.0400
jacobswyper.com

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MECHANICAL, ELECTRICAL & PLUMBING ENGINEER:
Urban Engineers, Inc.
530 Walnut Street
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PARKING GARAGE CONSULTANT:
T.H.A. Architecture & Engineering, PC
550 Township Line Rd, Ste 100
Blue Bell, PA 19422
tel: 484.342.0200

SSY CREW BASE

30% SUBMISSION

12/1/2023

DRAWING LIST	
NUMBER	SHEET NAME
CS001	COVER SHEET
CS002	PARTITION TYPES & DETAILS
CS101	CODE REVIEW
CS102	CODE REVIEW
CS103	CODE REVIEW
CS104	CODE REVIEW
C-100	CIVIL NOTES & LEGEND
C-110	EXISTING CONDITIONS PLAN
C-200	DEMOLITION PLAN
C-300	SITE PLAN
C-400	UTILITY PLAN
C-500	GRADING PLAN
A-110	OVERALL 1ST FLOOR
A-110A	PARTIAL FIRST FLOOR PLAN - WEST
A-110B	PARTIAL FIRST FLOOR PLAN - EAST
A-111	OVERALL 2ND FLOOR
A-111A	PARTIAL SECOND FLOOR PLAN - WEST
A-111B	PARTIAL SECOND FLOOR PLAN - EAST
A-112	OVERALL 3RD FLOOR
A-112A	PARTIAL THIRD FLOOR PLAN
A-113	PLAN ROOF
A-120	1ST FLOOR REFLECTED CEILING PLAN
A-121	2ND FLOOR REFLECTED CEILING PLAN
A-122	3RD FLOOR REFLECTED CEILING PLAN
A-140	FINISH SCHEDULE
A-150A	PARTIAL FIRST FLOOR FF&E PLAN - WEST
A-150B	PARTIAL FIRST FLOOR FF&E PLAN - EAST
A-151	PARTIAL SECOND FLOOR FF&E PLAN
A-152	PARTIAL THIRD FLOOR FF&E PLAN
A-201	BUILDING ELEVATIONS
A-301	BUILDING SECTIONS
A-350	WALL SECTIONS
A-401	DETAILS
A-402	DETAILS
A-420	TOILET ROOMS
A-421	TOILET ROOMS
A-431	STAIR PLANS
A-611	DOOR SCHEDULE
A-612	DOOR & WINDOW DETAILS
A-613	DOOR & WINDOW DETAILS
A-730	CASEWORK & INTERIOR DETAILS
A-731	CASEWORK DETAILS
A-801	PEDESTRIAN BRIDGE DETAILS
A-802	PEDESTRIAN BRIDGE DETAILS
A-803	SITE STRUCTURES PLAN
S-001	GENERAL NOTES & STANDARD ABBREVIATIONS
S-101	PARTIAL FOUNDATION PLAN
S-102	PARTIAL FOUNDATION PLAN
S-103	PARTIAL SECOND FLOOR FRAMING PLAN
S-104	PARTIAL SECOND FLOOR FRAMING PLAN
S-105	THIRD FLOOR FRAMING PLAN
S-106	PARTIAL ROOF FRAMING PLAN
S-107	PARTIAL ROOF FRAMING PLAN
S-108	PEDESTRIAN BRIDGE PLANS, SECTIONS & ELEVATIONS
S-201	LATERAL FRAME ELEVATIONS
S-301	TRANSVERSE BUILDING SECTIONS
S-302	LONGITUDINAL BUILDING SECTIONS
S-901	3D ISOMETRICS
S-902	3D ISOMETRICS
M-001	MECHANICAL COVER SHEET
M-110A	PARTIAL 1ST FLOOR PLAN - MECHANICAL
M-110B	PARTIAL 1ST FLOOR PLAN - MECHANICAL
M-111A	PARTIAL 1ST FLOOR PLAN - MECHANICAL
M-111B	PARTIAL 2ND FLOOR PLAN - MECHANICAL
M-112A	PARTIAL 3RD FLOOR PLAN - MECHANICAL
M-113A	PARTIAL ROOF PLAN - MECHANICAL
M-113B	PARTIAL ROOF PLAN - MECHANICAL
M-301	MECHANICAL SECTIONS
M-601	MECHANICAL SCHEDULES
M-602	MECHANICAL SCHEDULES
E-001	ELECTRICAL COVER SHEET
E-100	SITE PLAN
E-110A	PARTIAL 1ST FLOOR PLAN - POWER
E-110B	PARTIAL 1ST FLOOR PLAN - POWER
E-111A	PARTIAL 2ND FLOOR PLAN - POWER
E-112A	PARTIAL 3RD FLOOR PLAN - POWER
E-113	ROOF PLAN - POWER
E-120	1ST FLOOR REFLECTED CEILNG PLAN - LIGHTING
E-121	2ND FLOOR REFLECTED CEILING PLAN - LIGHTING
E-122	3RD FLOOR REFLECTED CEILING PLAN - LIGHTING
E-130A	PARTIAL 1ST FLOOR PLAN - COMM
E-130B	PARTIAL 2ND FLOOR PLAN - COMM
E-131	PARTIAL 2ND FLOOR PLAN - COMM
E-132	PARTIAL 3RD FLOOR PALN - COMM
E-301	SINGLE LINE DIAGRAM

DRAWING LIST	
NUMBER	SHEET NAME
E-302	LIGHTING CONTROL AND FIRE ALARM RISER
P-001	PLUMBING COVER SHEET
P-010	OVERALL FOUNDATION PLAN - PLUMBING
P-110A	PARTIAL 1ST FLOOR PLAN - PLUMBING
P-110B	PARTIAL 1ST FLOOR PLAN - PLUMBING
P-111A	PARTIAL 2ND FLOOR PLAN - PLUMBING
P-111B	PARTIAL 2ND FLOOR PLAN PLUMBING
P-112A	PARTIAL 3RD FLOOR PLAN - PLUMBING
P-113A	PARTIAL ROOF PLAN - PLUMBING
P-113B	PARTIAL ROOF PLAN - PLUMBING
P-601	PLUMBIGN SCHEDULES
FP-001	FIRE PROTECTION COVER SHEET
FP-110A	PARTIAL 1ST FLOOR PLAN - FIRE PROTECTION
FP-110B	PARTIAL 1ST FLOOR PALN - FIRE PROTECTION
FP-111A	PARTIAL 2ND FLOOR PLAN - FIRE PROTECTION
FP-111B	PARTIAL 2ND FLOOR PLAN - FIRE PROTECTION
FP-112A	PARTIAL 3RD FLOOR PLAN -FIRE PROTECTION
FP-501	FIRE PROTECTION DETAILS AND SCHEDULES

SEE PARKING GARAGE DRAWINGS UNDER SEPARATE COVER

ARCHITECTURAL GENERAL NOTES

1. THE TERM 'FURNISH' SHALL MEAN TO PURCHASE AND SUPPLY TO THE JOB-SITE. THE TERM 'INSTALL' SHALL MEAN TO FIX IN POSITION AND CONNECT FOR USE. THE TERM 'PROVIDE' SHALL MEAN TO FURNISH AND INSTALL.

2. THE CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH ALL OTHER TRADES AND EXISTING CONDITIONS, INCLUDING PRODUCTIONS SCHEDULES PRIOR TO FABRICATION, PURCHASE, AND/OR INSTALLATION OF WORK. THE CONTRACTOR SHALL EXAMINE THE SITE AND VERIFY EXISTING CONDITIONS WITH RESPECT TO THE DRAWINGS AND SPECIFICATIONS PRIOR TO PROCEEDING WITH ANY WORK. ANY QUESTIONS AND/OR DISCREPANCIES THAT MAY ARISE SHALL BE REPORTED TO THE OWNER OR REPRESENTATIVE FOR RESOLUTION.

3. EXAMINE THE AREA OF WORK PRIOR TO AND DURING CONSTRUCTION TO INSURE THAT ITEMS, SYSTEMS, AND UTILITIES TO BE REMOVED OR MODIFIED HAVE BEEN IDENTIFIED AND SCHEDULED, EXISTING CONDITIONS HAVE BEEN ACCURATELY NOTED, AND THAT ANY HAZARDS OR IMPACT TO OWNER'S OPERATIONS THAT MAY RESULT HAVE BEEN ADDRESSED WITH THE OWNER'S REPRESENTATIVE. IF THE CONTRACTOR ENCOUNTERS WHAT APPEARS TO BE A HAZARDOUS CONDITION OR QUESTIONABLE MATERIALS, HE/SHE SHALL DISCONTINUE WORK IMMEDIATELY AND CONTACT THE OWNER'S REPRESENTATIVE.

4. ALL WORK SHALL BE PERFORMED BY QUALIFIED PERSONNEL OR SPECIALTY CONTRACTORS IN A CLEAN AND WORKMANLIKE MANNER AND COMPLY WITH ALL APPLICABLE REGULATORY REQUIREMENTS DURING THE WORK AND FOR DISPOSAL OF DISCARDED MATERIALS. CARE SHALL BE EXERCISED TO MINIMIZE ANY INCONVENIENCE OR DISTURBANCE TO OTHER AREAS OF THE BUILDING WHICH ARE TO REMAIN IN OPERATION. NOTIFY OWNER'S REPRESENTATIVE IN ADVANCE OF ALL ANTICIPATED DISRUPTIONS TO OPERATIONS. ISOLATE WORK AREAS BY MEANS OF TEMPORARY PARTITIONS AND/OR TARPS TO KEEP DUST AND DIRT WITHIN THE CONSTRUCTION AREA.

5. DEMOLISH, CUT AND REMOVE CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS INDICATED. USE METHODS AND TOOLS REQUIRED TO COMPLETE WORK IN A NEAT, EFFICIENT AND SAFE MANNER WITH MINIMAL IMPACT TO OWNER'S OPERATION AND WITHIN LIMITATIONS OF GOVERNING REGULATIONS. EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN THE OWNER'S PROPERTY.

6. RESTORE FINISHES OF PATCHED AREAS AND EXTEND FINISH RESTORATION INTO ADJOINING CONSTRUCTION AS REQUIRED TO ELIMINATE EVIDENCE OF PATCHING AND REFINISHING. RESTORE ALL PATCHED AREAS BACK TO ORIGINAL CONDITION INCLUDING MAINTAINING ANY RATINGS THAT MAY APPLY.

7. CLEAN THE JOB SITE DAILY AND REMOVE FROM THE WORK AREA ANY DIRT AND DEBRIS CAUSED BY THE PERFORMANCE OF WORK INCLUDED IN THIS CONTRACT.

8. UPON THE COMPLETION OF ALL WORK OR ANY SEPARATE PARTS OF THE WORK, THE CONTRACTOR SHALL REMOVE FROM THE WORK AREA ALL EVIDENCE OF DIRT, REFUSE, STAINS OR OTHER FOREIGN MATTER. ALL SURFACES SHALL BE FREE FROM DUST AND THE BUILDING SHALL BE LEFT HABITABLE AND READY FOR OCCUPANCY.

GENERAL NOTES:

GN-1 DRAWINGS INDICATE GENERAL LAYOUT OF THE BUILDING DEVELOPED TO A 30% PRELIMINARY DESIGN LEVEL AS DEFINED BY AMTRAK. DESIGN/BUILD CONTRACTOR SHALL COMPLETE DOCUMENTS FOR CONSTRUCTION IN CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS OF THIS ISSUE, AMTRAK DIRECTION, AND APPLICABLE CODES AND STATUTES.

GN-2 DIMENSIONS INDICATED ON DRAWINGS SHALL BE MAINTAINED IN FUTURE PHASES OF DESIGN AND DOCUMENTATION. DIMENSIONS ARE TO FINISH FACE OF CONSTRUCTION OR CENTER LINE AS INDICATED, UNLESS SHOWN OTHERWISE. THE CONTRACTOR IS TO COORDINATE AND FIELD VERIFY ALL DIMENSIONS.

GN-3 FOR MECHANICAL, ELECTRICAL, OR PLUMBING INFORMATION SEE RESPECTIVE DRAWINGS.

GN-4 COORDINATE SCHEDULE OF CONSTRUCTION WITH OWNER. COORDINATE LOCATION OF CONSTRUCTION FENCING & TEMPORARY PROTECTION WITH OWNER.

GN-5 ALL EXISTING CONSTRUCTION, EQUIPMENT, & SITE IMPROVEMENTS IN AND ADJACENT TO THE PROJECT AREA AND NOT IDENTIFIED TO BE REMOVED, SHALL REMAIN UNLESS OTHERWISE NOTED OR DIRECTED BY AMTRAK. PROTECT ELEMENTS TO REMAIN FROM DAMAGE DURING CONSTRUCTION AND RESTORE OR REPLACE DAMAGED ELEMENTS TO PRE-CONSTRUCTION CONDITION.

GN-6 CASEWORK CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD AS REQUIRED. NOTE THAT ALL CASEWORK WILL REQUIRE BASE/UPPER CABINETS, COUNTERTOPS AND HARDWARE COMPONENTS AS INDICATED IN THE SPECIFICATIONS AND AS TYPICAL FOR THIS APPLICATION IN ADDITION TO ITEMS NOTED IN DRAWINGS.

GN-9 IN AREAS INDICATED TO BE PAINTED, ALL PAINTED SURFACES INCLUDING DOORS, FRAMES, HANDRAILS, AND STAIRS ARE TO BE PAINTED. PROTECT FINISHED METALS AND OTHER ITEMS NOT TO BE PAINTED.

GN-10 THE CONCURRENT STATIC FREQUENCY CONVERTER PROJECT IS PROJECTED TO BE IN CONSTRUCTION ALONG SIDE THIS SCOPE. COORDINATE PHASING, LAYDOWN AREAS, SCHEDULE AND LOCATIONS BETWEEN BOTH PROJECTS.





ABBREVIATIONS:

@	AT
ABV	ABOVE
APC	ACOUSTICAL PANEL CEILING
ACT	ACOUSTICAL CEILING TILE
BLW	BELOW
B.O.	BOTTOM OF
BOD	BASIS OF DESIGN
BSC	BIOLOGICAL SAFETY CABINET
BTWN	BETWEEN
C.C.	CENTER TO CENTER
CH	CEILING HEIGHT
℄	CENTERLINE
CSK	COUNTER SUNK
CMU	CONCRETE MASONRY UNIT
CAB	CABINET
CLR	CLEAR
CS	CUP SINK
CW	COLD WATER
DI	DEIONIZED WATER
DET.	DETAIL
DN	DOWN
DIA.	DIAMETER
DWG.	DRAWING(S)
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV.	ELEVATOR
EM	EMERGENCY POWER
EP	ELECTRICAL PANEL
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EMERGENCY SHOWER
EW	EYE WASH
EXIST.	EXISTING
F.D.	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FE	FIRE EXTINGUISHER
F.F.	FINISHED FLOOR
FEC	FIRE EXTINGUISHER CABINET
FH	FUME HOOD
FHC	FIRE HOSE CABINET
FL	FLOOR(ING)
F.O.	FACE OF
FRZ	FREEZER
FT	FOOT/FEET
GWB	GYPSUM WALL BOARD
GALV.	GALVANIZED
HB	HOSE BIBB
HCW	HOT AND COLD WATER
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HIGH POINT
HT.	HEIGHT
HVAC	HEATING/ VENTILATING/ AIR CONDITIONING
HW	HOT WATER
INC	INCUBATOR
INCL	INCLUDING, INCLUDED
INSUL	INSULATION
IT	INFORMATION TECHNOLOGY
KH	KNEE HOLE
LAB	LABORATORY
LP	LOW POINT
LT	LIGHT
MAT.	MATERIAL(S)
MAX	MAXIMUM
MECH.	MECHANICAL
MEP	MECHANICAL/ ELECTRICAL/ PLUMBING
MEZZ.	MEZZANINE
M.H.	MANHOLE
MFR	MANUFACTURER
MTL	METAL
MIN	MINIMUM
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MTD.	MOUNTED
N/A	NOT APPLICABLE
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NOM.	NOMINAL
OH	OPPOSITE HAND
OPG.	OPENING
OPP	OPPOSITE
PLUM.	PLUMBING
PL.	PLATE
P.S.I.	POUNDS PER SQUARE INCH
PT.	POINT
PTD	PAINT(ED)
RAD.	RADIUS
RD	ROOF DRAIN
REF.	REFRIGERATOR
REV.	REVISION(S), REVISED
RM	ROOM
R.R.	RAILROAD
ROD	ROOF OVERFLOW DRAIN
RWC	RAINWATER CONDUCTOR
SCHED	SCHEDULE
SIM.	SIMILAR
SP	STANDPIPE
SQ.	SQUARE
SQ.FT. / SF	SQUARE FEET
S.S.	STAINLESS STEEL
STD.	STANDARD
STL.	STEEL
STRUCT	STRUCTURAL
SV	SHEET VINYL
S/W	SUMMER / WINTER
TBD	TO BE DETERMINED
TEL	TELEPHONE
T.O.	TOP OF
T.O.C.	TOP OF CONCRETE
T.O.S.	TOP OF STEEL
TYP.	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VERT.	VERTICAL
W/	WITH
WD	WOOD
WT.	WEIGHT

Name / Elevation — ELEVATION (BENCH MARK)

X / XXXX — BUILDING SECTION; DETAIL REFERENCE NUMBER; SHEET NUMBER

X / XXXX — EXTERIOR ELEVATION; DETAIL REFERENCE NUMBER; SHEET NUMBER

X / XXXX — EXTERIOR ELEVATION; DETAIL REFERENCE NUMBER; SHEET NUMBER

3' - 0" — DIMENSION STRING TO CENTER LINE OF COLUMN

3' - 0" — DIMENSION STRING RUNNING

XX — PARTITION TYPE

ITEMS TO BE DEMOLISHED

0 — WINDOW NUMBER

000 — DOOR NUMBER

NEW DOOR

EXISTING DOOR

FD — FLOOR DRAIN

CR — CARD READER

SC — SECURITY CAMERA

FE — WALL MOUNTED FIRE EXTINGUISHER

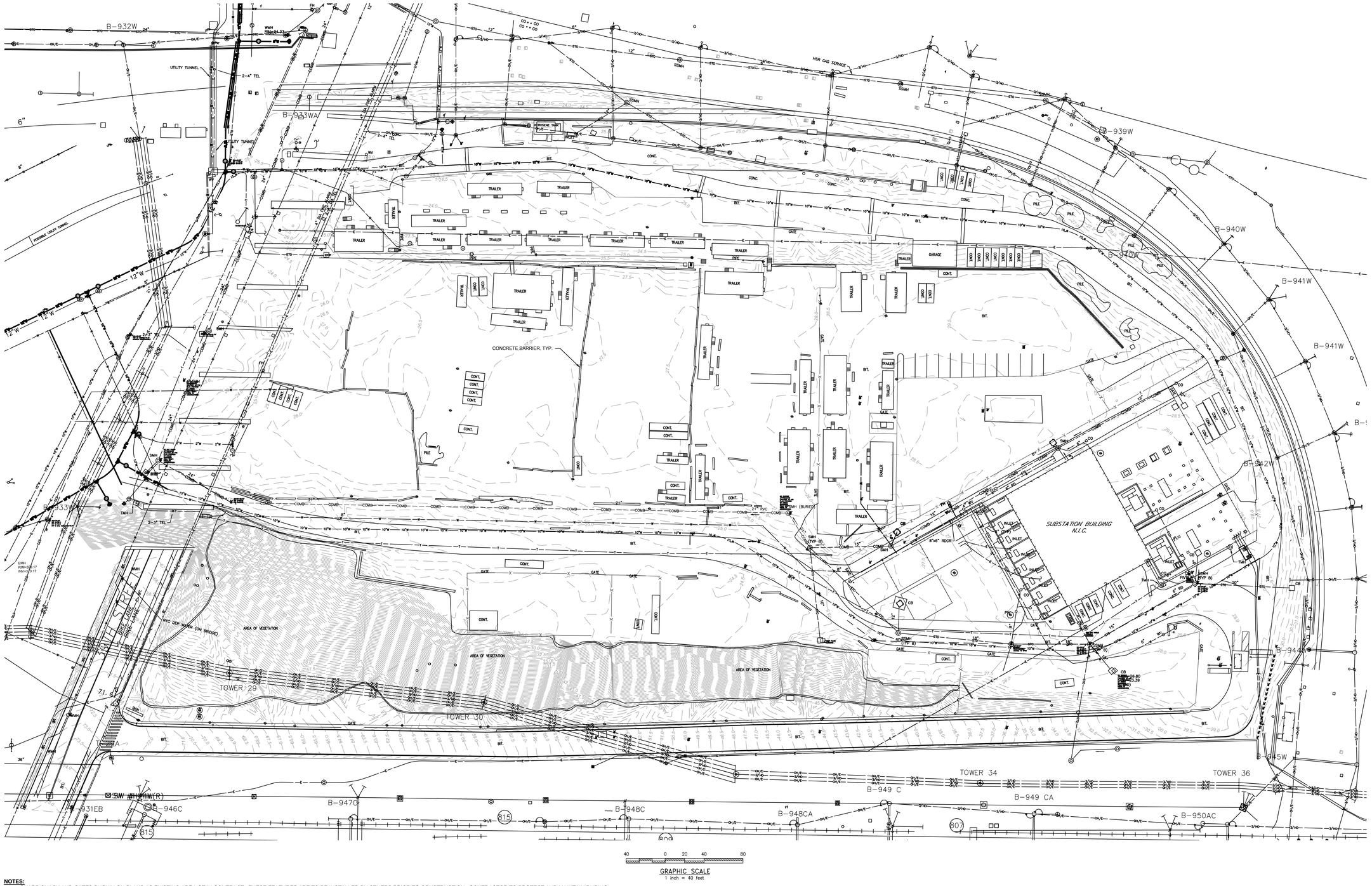
FEC — RECESSED CABINET FIRE EXTINGUISHER

AREA OF LIMITED WORK - SEE NOTES ON DRAWINGS

AREA OF NO WORK - SEE NOTES ON DRAWINGS

SCOPE OF WORK

1 — REVISION (NUMBER)



NOTES:

1. GUARD SHACK AND GATES SHOWN ON PLANS AS EXISTING ARE NOT IN CONTRACT. THESE FEATURES ARE TO BE INSTALLED BY OTHERS PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT AND MAINTAIN DURING CONSTRUCTION.
2. 10" AND 12" FIRE LOOP AND HYDRANTS SHOWN ON PLANS AS EXISTING ARE NOT IN CONTRACT. THESE FEATURES ARE TO BE INSTALLED BY OTHERS PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT, MAINTAIN, OR RELOCATE ACCORDINGLY DURING CONSTRUCTION.

NOT FOR CONSTRUCTION

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AMTRAK

SSY CREW BASE

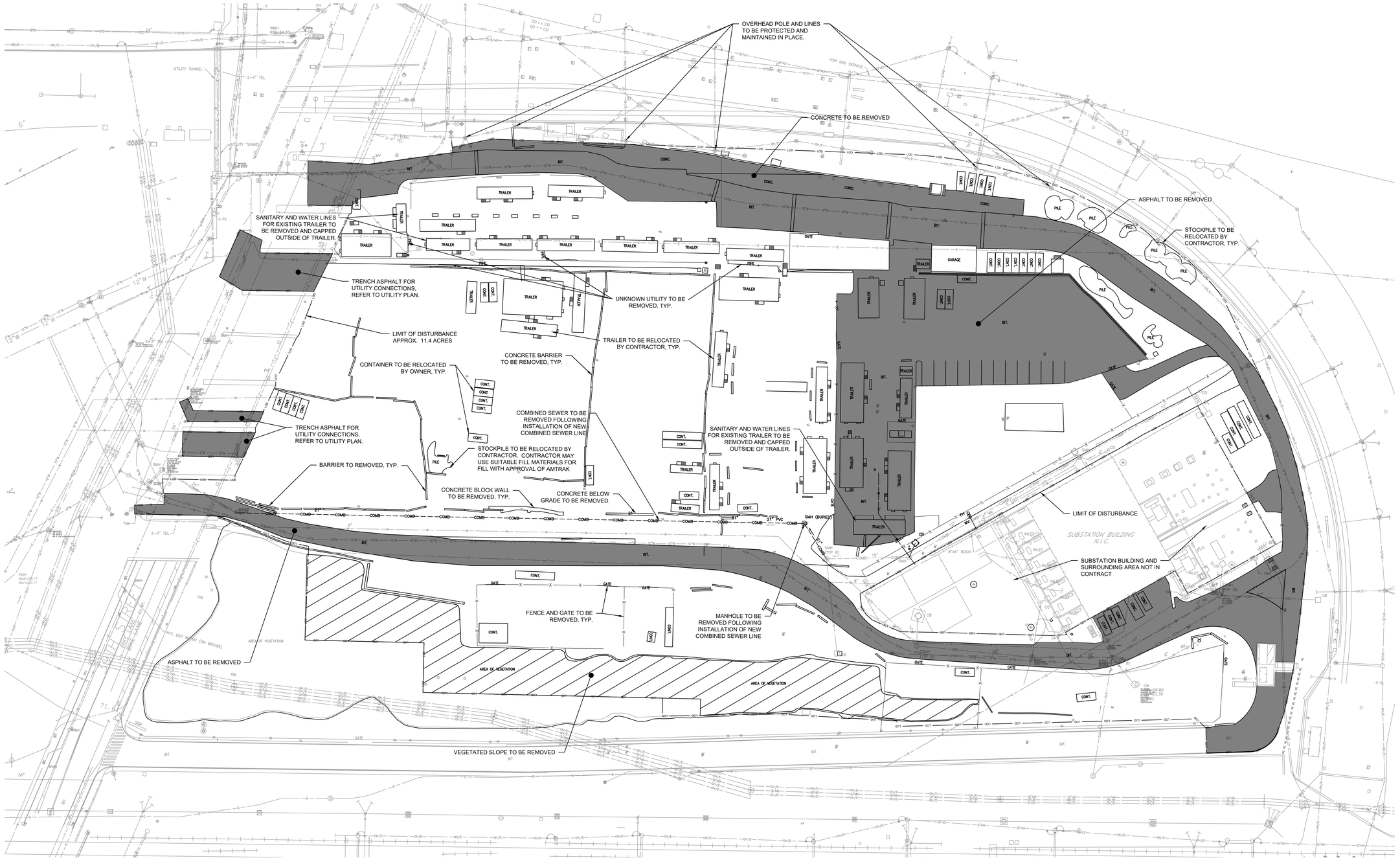
Seal:

Revision Schedule		
B	12/1/2023	30% SUBMISSION
A	5/1/2023	30% AMTRAK REVIEW

EXISTING CONDITIONS PLAN

C-110

DATE: 04/28/2023 | PROJ. #: 21074



NOTES:

1. CONTRACTOR TO ENSURE NO DAMAGE IS SUSTAINED ON EXISTING SITE FEATURES NOT TO BE DEMOLISHED.
2. CONTRACTOR TO ENSURE TRAFFIC AND MAINTENANCE FLOW THROUGH THE PROJECT SITE DURING THE FULL DURATION OF CONSTRUCTION. CONTRACTOR TO COORDINATE ANY CLOSURES AND DETOURS WITH AMTRAK.
3. TRAILERS, MATERIALS, AND EQUIPMENT ON SITE WITHIN THE WORK AREA ARE TO BE TEMPORARILY RELOCATED BY THE CONTRACTOR, WITH ALL UTILITY SERVICES CONNECTED.
   - 3.1. CONTRACTOR TO RELOCATE SITE TRAILERS AND OFFICES TO INTERIM LOCATIONS WITHIN SUNNYSIDE YARD AS DIRECTED BY AMTRAK, WITHIN 2,500 FT OF CURRENT LOCATION. CONTRACTOR TO MAINTAIN INTERIM SITE DURING CONSTRUCTION UNTIL COMPLETION OF THE CREW BASE BUILDING.
   - 3.2. CONTRACTOR TO CONSTRUCT STAIRS AND RAMPS FOR RELOCATED TRAILERS AS REQUIRED FOR ADA ACCESSIBLE ACCESS OR AS DIRECTED BY AMTRAK.
   - 3.3. AFTER COMPLETION OF CONSTRUCTION AND ONCE PERSONNEL ARE MOVED INTO THEIR PERMANENT LOCATIONS, ALL TRAILERS AND UTILITIES TO THESE TRAILERS ARE TO BE DEMOLISHED.
4. SITE STORAGE, INCLUDING STORAGE CONTAINERS, TO BE RELOCATED BY AMTRAK BEFORE THE START OF CONSTRUCTION.
5. CONTRACTOR TO RELOCATE STOCKPILES TO A LOCATION WITHIN SUNNYSIDE YARD AS DIRECTED BY AMTRAK.
6. CONTRACTOR TO POT HOLE TO LOCATE EXISTING UTILITIES ON SITE PRIOR TO ALL EARTH MOVING ACTIVITY. LOCATION OF EXISTING UTILITIES IS UNKNOWN.
7. DESIGN BUILDER TO PROVIDE A SUGGESTED PHASING PLAN TO ACCOMPLISH THIS WORK. LABEL ALL TRAILERS AND EQUIPMENT ON THE PHASING PLAN WITH THE CURRENT OCCUPANT/USE.

NOT FOR CONSTRUCTION

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AMTRAK

SSY CREW BASE

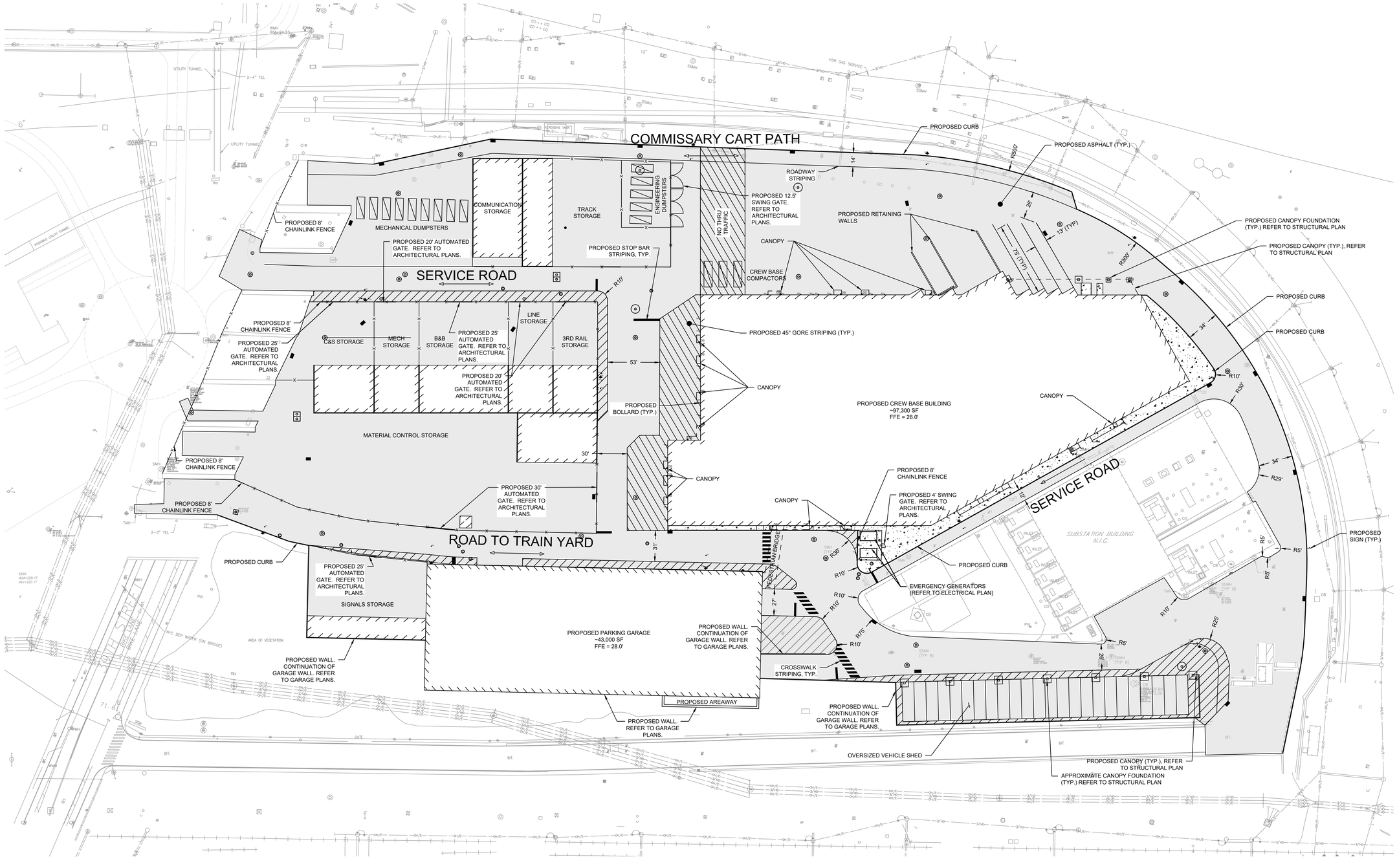
Seal:

Revision Schedule		
B	12/1/2023	30% SUBMISSION
A	5/1/2023	30% AMTRAK REVIEW

DEMOLITION PLAN

C-200

DATE: 04/28/2023 | PROJ. #: 21074



40 0 20 40 80

GRAPHIC SCALE
1 inch = 40 feet

NOTES:

1. CONTRACTOR TO PROVIDE MAINTENANCE AND PROTECTION OF TRAFFIC THROUGH THE PROJECT SITE DURING THE FULL DURATION OF CONSTRUCTION. CONTRACTOR TO COORDINATE ANY CLOSURES AND DETOURS WITH AMTRAK
2. SURFACE MARKINGS FOR LANES, STOPS, TEXT, ETC. TO BE COORDINATED WITH AMTRAK.
3. SIGNS ARE SHOWN ON PLANS AT APPROXIMATE LOCATIONS. CONTRACTOR TO COORDINATE WITH AMTRAK ON FINAL SIGN REQUIREMENTS AND LOCATIONS. SIGNS SHOULD FOLLOW MUTCD REQUIREMENTS UNLESS DIRECTED OTHERWISE BY AMTRAK.
4. SITE WORK WEST OF 39TH STREET BRIDGE IS NOT IN CONTRACT.
5. GUARD SHACK AND GATES SHOWN ON PLANS AS EXISTING ARE NOT IN CONTRACT. THESE FEATURES ARE TO BE INSTALLED BY OTHERS PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT AND MAINTAIN DURING CONSTRUCTION.
6. CONTRACTOR TO INDICATE MUSTER POINTS ON STAGING PLAN.
7. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND DETAILS OF BUILDING FEATURES, INCLUDING CANOPIES.

NOT FOR CONSTRUCTION

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AMTRAK

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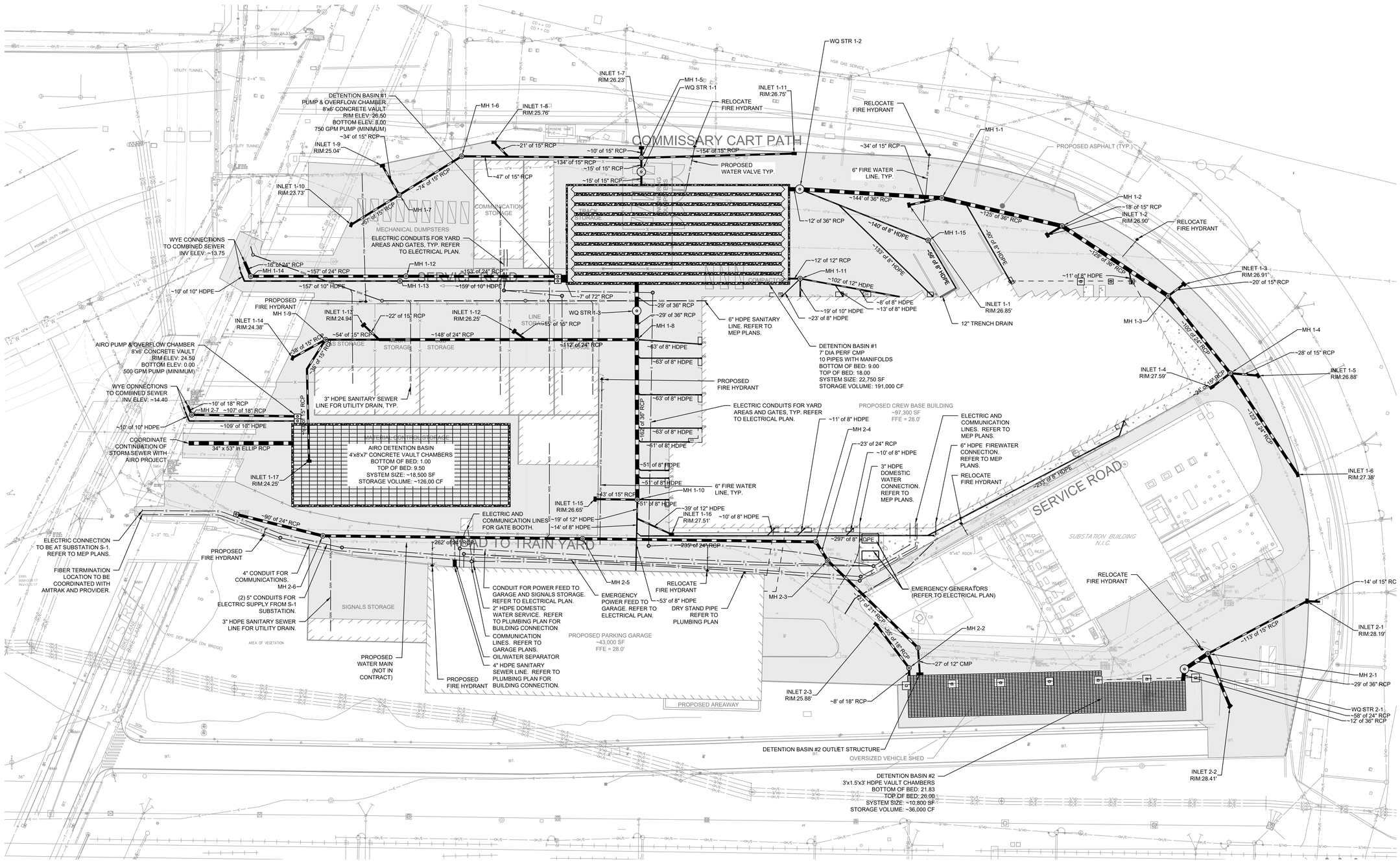
Seal:

Revision Schedule		
B	12/1/2023	30% SUBMISSION
A	5/1/2023	30% AMTRAK REVIEW

SITE PLAN

C-300

DATE: 04/28/2023 | PROJ. #: 21074



NOTES:

1. FOR SITE LIGHTING, STORAGE AREA ELECTRIC AND GATE ELECTRIC, REFER TO ELECTRICAL PLANS.
2. CONTRACTOR TO CONFIRM EXISTING UTILITY LOCATIONS PRIOR TO ANY SUBSURFACE WORK. LOCATIONS ARE APPROXIMATE AND LOCATED PER RECORD DRAWING AND FIELD OBSERVATIONS.
2. 10" AND 12" FIRE LOOP AND HYDRANTS SHOWN ON PLANS AS EXISTING ARE NOT IN CONTRACT. THESE FEATURES ARE TO BE INSTALLED BY OTHERS PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT, MAINTAIN, OR RELOCATE ACCORDINGLY DURING CONSTRUCTION.
3. CONTRACTOR TO RESET EXISTING UTILITY STRUCTURES TO PROPOSED SURFACE.
3. WATER QUALITY UNITS SHALL BE SIZED FOR APPROX. 4 ACRES OF STORMWATER RUNOFF PER UNIT.

NOT FOR CONSTRUCTION

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AMTRAK

SSY CREW BASE

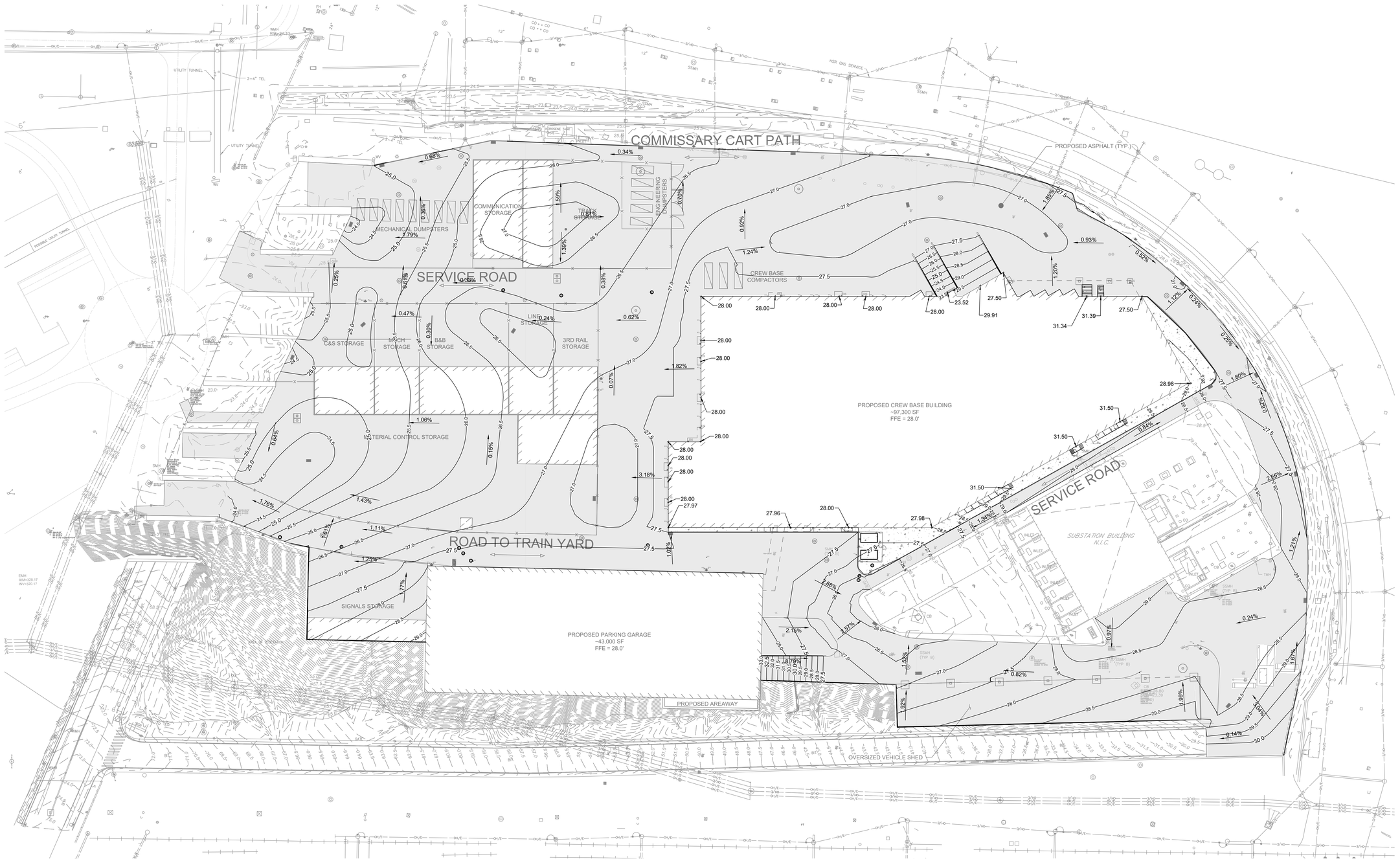
Seal:

Revision Schedule		
B	12/1/2023	30% SUBMISSION
A	5/1/2023	30% AMTRAK REVIEW

UTILITY PLAN

C-400

DATE: 04/28/2023 | PROJ. #: 21074



40 0 20 40 80

GRAPHIC SCALE
1 inch = 40 feet

NOTES:

1. CONTRACTOR TO PROVIDE EROSION AND SEDIMENTATION CONTROL STRUCTURES AND FEATURES REQUIRED BY LOCAL CODE. INCLUDING BUT NOT LIMITED TO INLET PROTECTION, ROCK CONSTRUCTION ENTRANCE/TIRE WASH STATION, SOIL STOCK PILE, SEDIMENT SOCK/SILT FENCE.
2. CONTRACTOR SHALL ASSUME ALL SOIL ON SITE IS CONSIDERED CONTAMINATED UNLESS TESTING DETERMINES THAT THE SOILS ARE CLEAN.

NOT FOR CONSTRUCTION

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AMTRAK

SSY CREW BASE

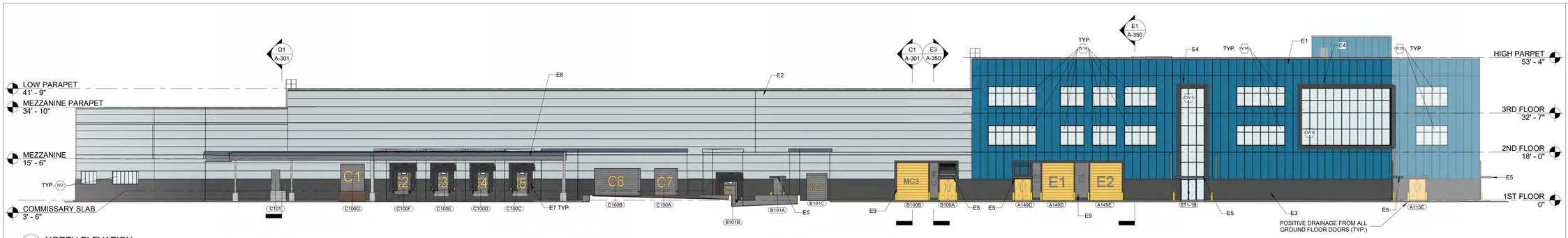
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Revision Schedule		
B	12/1/2023	30% SUBMISSION
A	5/1/2023	30% AMTRAK REVIEW

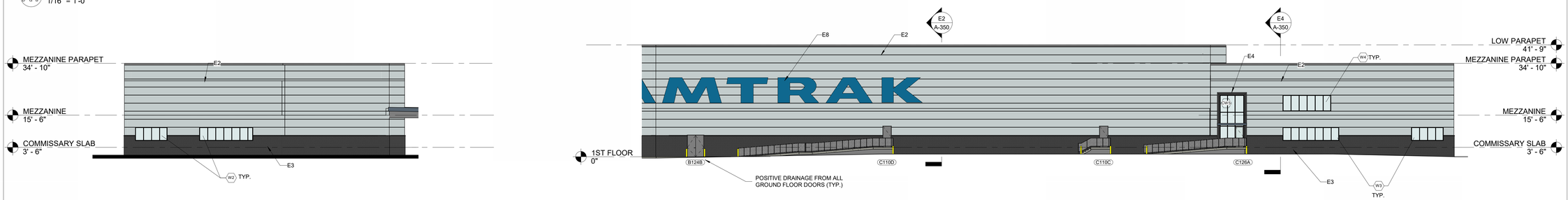
GRADING PLAN

C-500

DATE: 04/28/2023 | PROJ. #: 21074

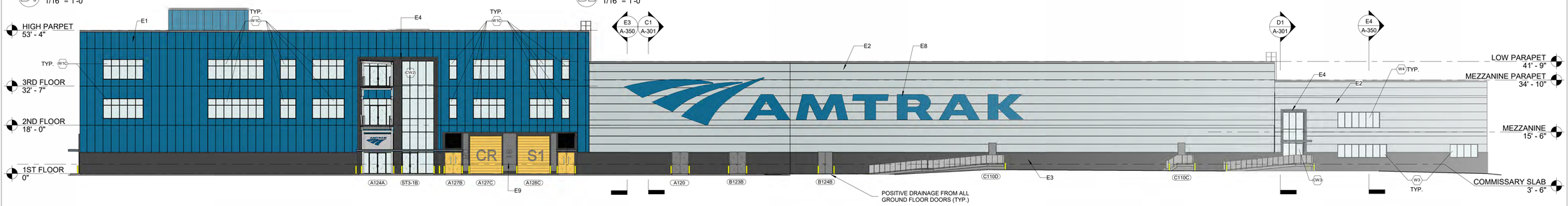


A1 NORTH ELEVATION
1/16" = 1'-0"

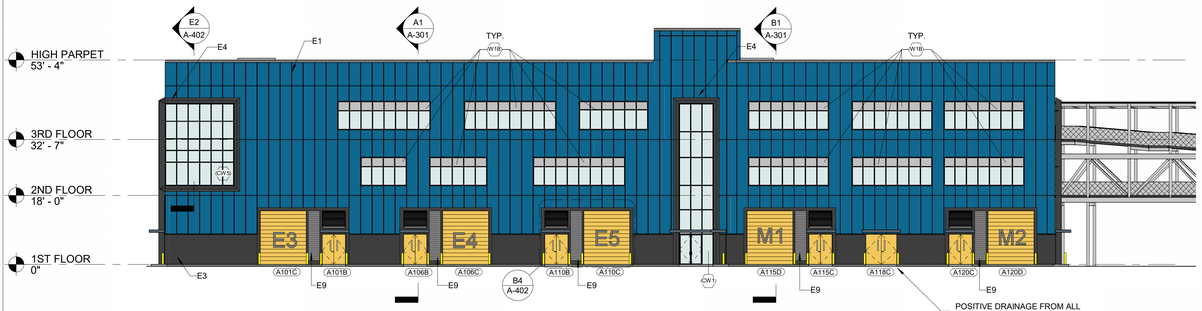


B1 NORTH EAST ELEVATION
1/16" = 1'-0"

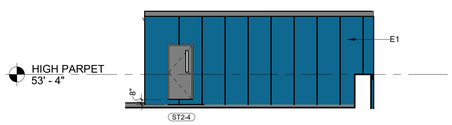
B2 SOUTH EAST ELEVATION
1/16" = 1'-0"



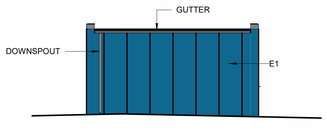
C1 SOUTH ELEVATION
1/16" = 1'-0"



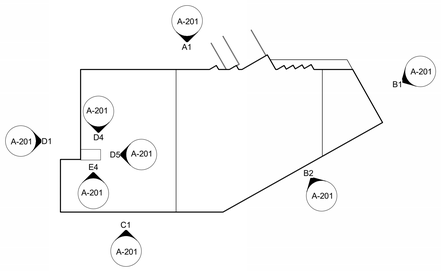
D1 WEST ELEVATION
1/16" = 1'-0"



D4 ROOF STAIR NORTH ELEVATION
1/8" = 1'-0"

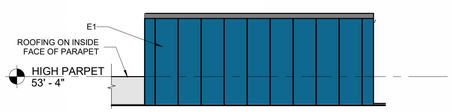


D5 ROOF STAIR EAST ELEVATION
1/8" = 1'-0"



ELEVATION KEY PLAN

ELEVATION KEYNOTES	
Key Value	Keynote Text
E1	36" WIDE VERTICAL INSULATED METAL PANEL FINISH: AMTRAK BLUE
E2	36" WIDE HORIZONTAL INSULATED METAL PANEL FINISH: LIGHT GRAY
E3	RUNNING BOND BLACK FACE TITANIC BRICK VENEER
E4	METAL PANEL CLAD SURROUND AT CURTAIN WALLS. TYP. 18"W & 18"D PROJECTING FROM FACE OF BUILDING. SEE STRUCTURAL FOR FRAMING. FINISH: DARK GRAY
E5	METAL CANOPY WITH GUTTER AND DOWNSPOUT
E6	METAL CANOPY WITH ROOF DRAINS AND RISERS
E7 TYP.	LOADING DOCK SHELTERS AND DOCK LEVELER
E8	AMTRAK LOGO BUILDING SUPERGRAPHIC
E9	BENT METAL SHOP ENTRANCE SURROUND, FINISH: DARK GRAY



E4 ROOF STAIR SOUTH ELEVATION
1/8" = 1'-0"

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550 Township Line Rd, Ste 100
Blue Bell, PA 19422
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AMTRAK

SSY CREW BASE

Seal:

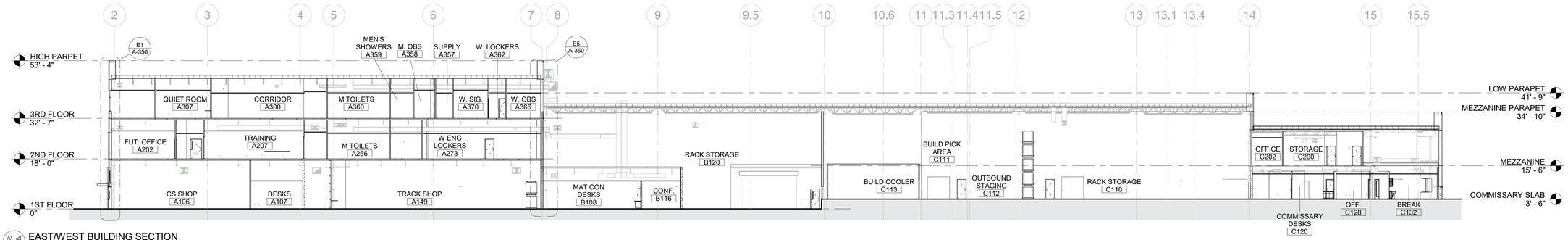
NOT FOR CONSTRUCTION

Revision Schedule		
B	12/1/2023	30% SUBMISSION
A	5/1/2023	30% AMTRAK REVIEW

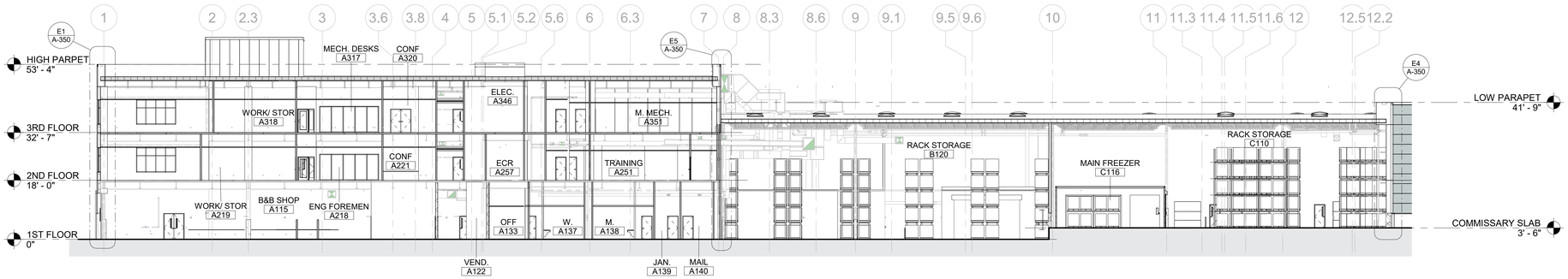
BUILDING ELEVATIONS

A-201

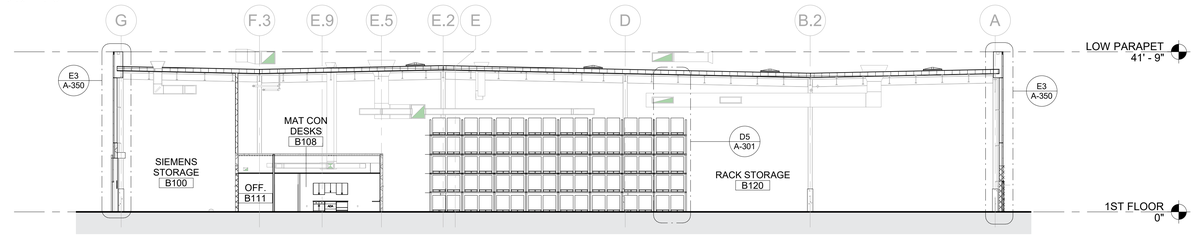
DATE: 5/1/2023 | PROJ. #: 21074



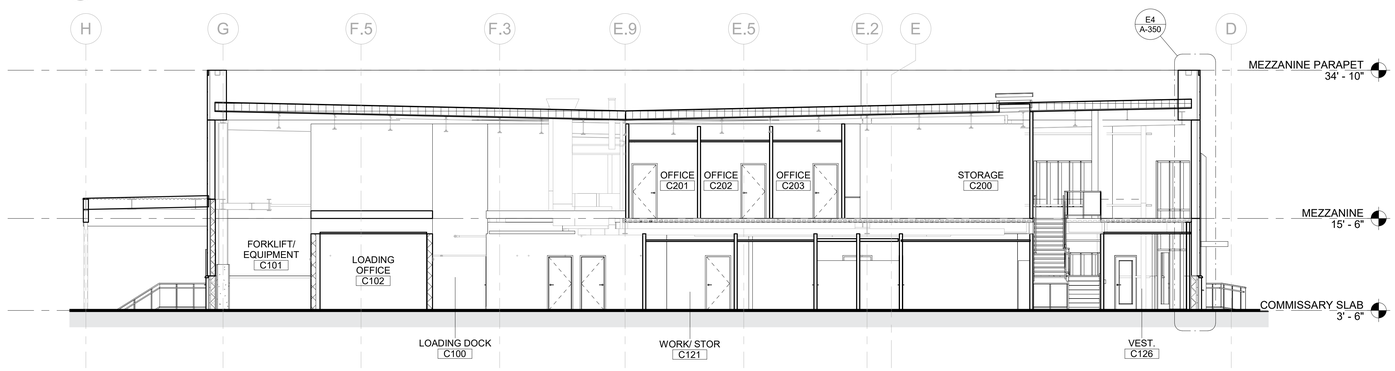
A1 EAST/WEST BUILDING SECTION
1/16" = 1'-0"



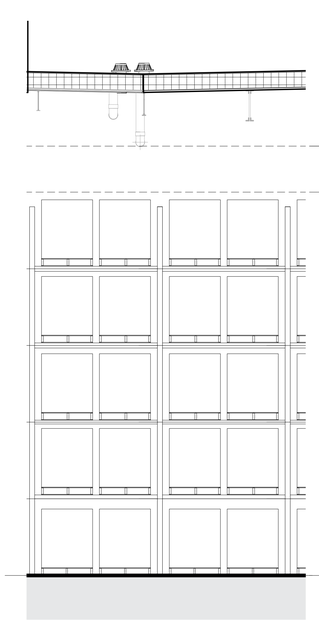
B1 NORTH/SOUTH BUILDING SECTION - OFFICES
1/16" = 1'-0"



C1 NORTH/SOUTH BUILDING SECTION - WAREHOUSE
1/16" = 1'-0"

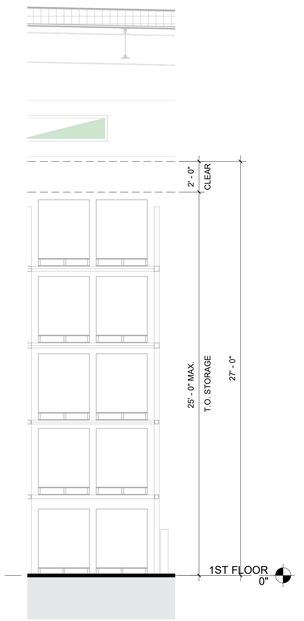


D1 N-S BUILDING SECTION
1/8" = 1'-0"



D4 COMMISSARY RACK ELEVATION
1/4" = 1'-0"

NOTE: FINAL RACK HEIGHT TO BE COORDINATED WITH FINAL DUCT AND PIPE LAYOUTS



D5 MATERIAL CONTROL RACK ELEVATION
1/4" = 1'-0"

NOTE: FINAL RACK HEIGHT TO BE COORDINATED WITH FINAL DUCT AND PIPE LAYOUTS

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AMTRAK

SSY CREW BASE

Seal:

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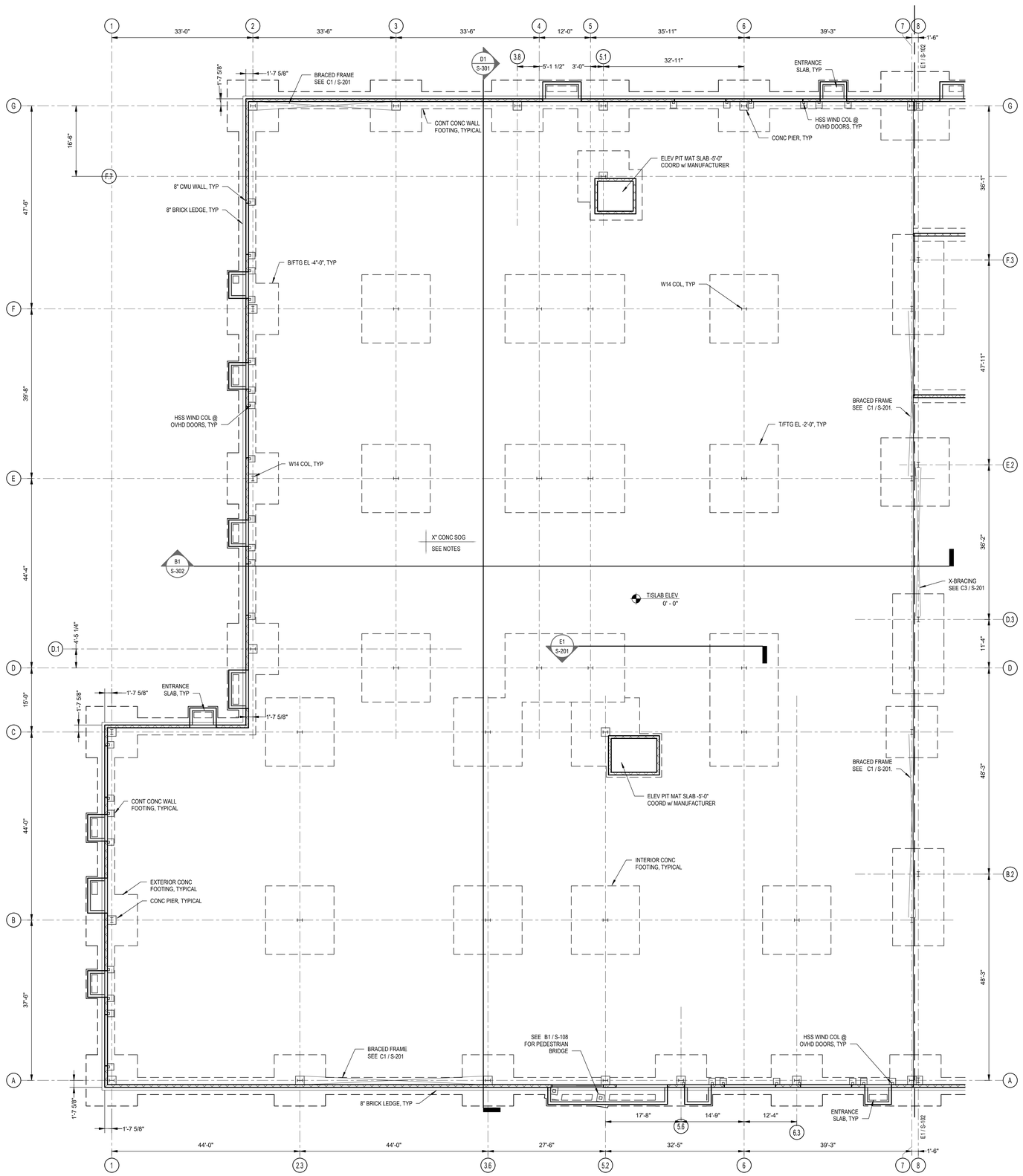
Revision Schedule

B	12/1/2023	30% SUBMISSION
A	5/1/2023	30% AMTRAK REVIEW

BUILDING SECTIONS

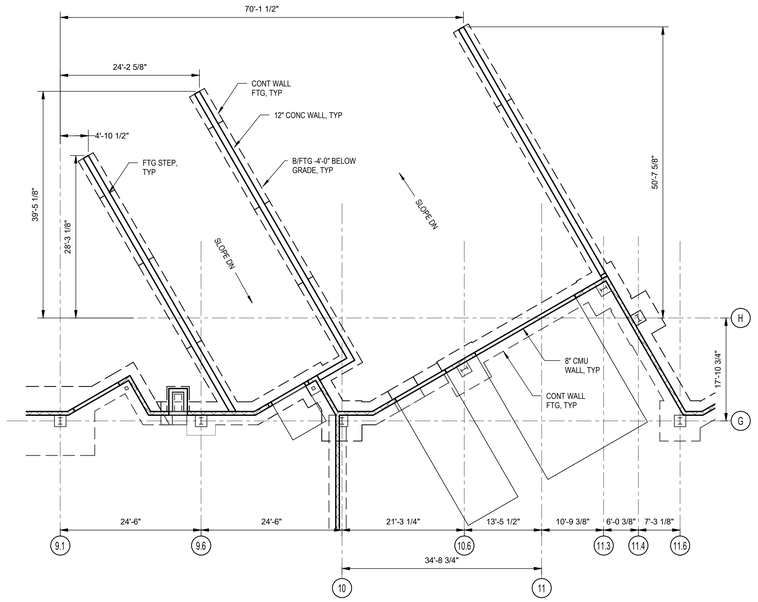
A-301

DATE: 5/1/2023 | PROJ. #: 21074



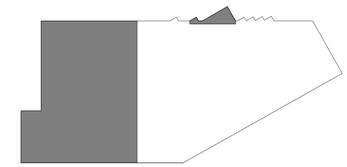
2 PARTIAL FOUNDATION PLAN

3/32" = 1'-0"



E1 PARTIAL FOUNDATION PLAN

3/32" = 1'-0"



Key Plan West w/ Docks

1" = 100'-0"

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Seal:

Revision Schedule		
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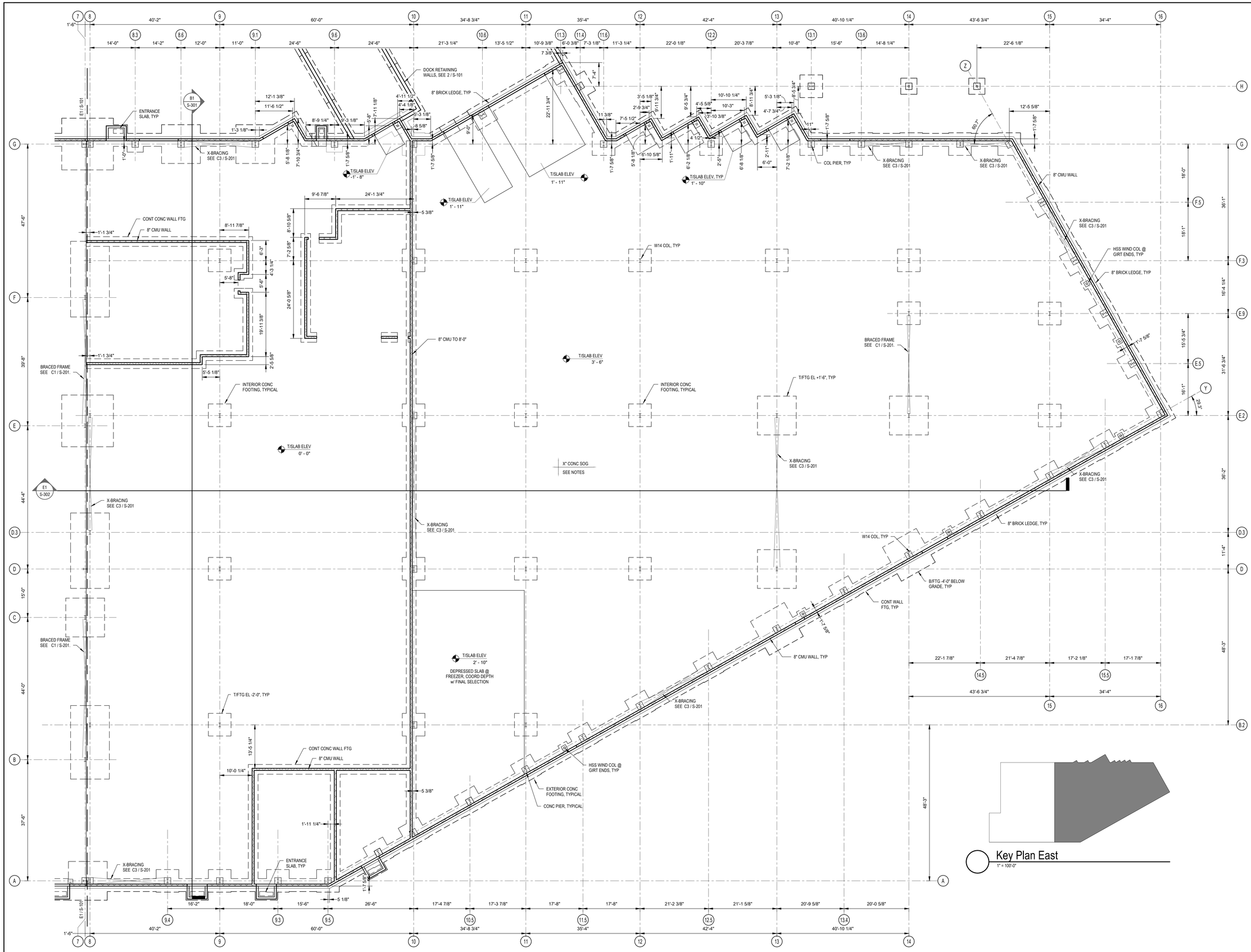
PARTIAL FOUNDATION PLAN

S-101

DATE: Issue Date | PROJ. #: 21074

UEI DWG NO: 2022200008000.302

11/29/2023 9:59:59 AM BIM 360://21074 - Amtrak Sunnyside Yard Crew Base/2022200008.000 Sunnyside Yards - Structural_R21.rvt



Key Plan East
1" = 100'-0"

E1 PARTIAL FOUNDATION PLAN
3/32" = 1'-0"

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URBAN ENGINEERS

AMTRAK

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Seal:

Revision Schedule		
B	12/1/2023	30% SUBMISSION
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PARTIAL FOUNDATION PLAN

S-102

DATE: Issue Date | PROJ. #: 21074

UEI DWG NO: 2022200008000.303

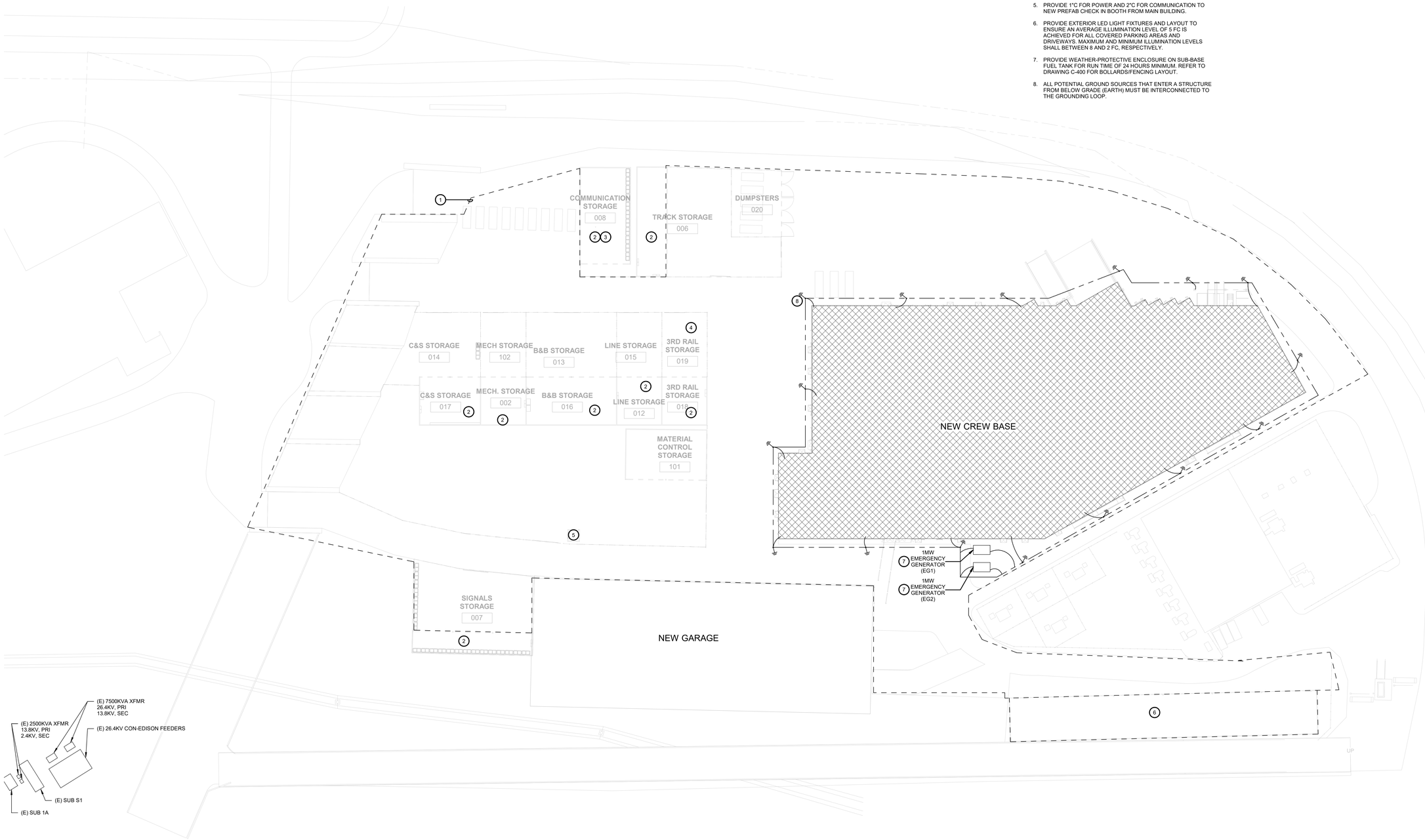
BIM 360://10744 - Amtrak Sunnyside Yard Crew Base/2022200008.000 Sunnyside Yards - Structural_R21.rvt
11/29/2023 9:10:00 AM

KEY NOTE(S):

1. PROVIDE LED LIGHT FIXTURES TO ACHIEVE AVERAGE ILLUMINATION VALUES OF 2 FC IN THE DESIGNATED AREA. MAXIMUM AND MINIMUM ILLUMINATION LEVELS SHALL BE 4 AND 1 FC RESPECTIVELY.
2. PROVIDE 2'X2' CEILING MOUNTED LED LIGHT FIXTURE. PROVIDE QUANTITY AND LAYOUT, AS REQUIRED, TO ACHIEVE AVERAGE ILLUMINATION VALUES OF 25 FC IN THE DESIGNATED AREA. MAXIMUM AND MINIMUM ILLUMINATION LEVELS SHALL BE 30 AND 20 FC RESPECTIVELY. (STORAGE)
3. PROVIDE (1) 200A, 208/120V PANEL COMM., (1) 125A CIRCUIT BREAKER CB-S1 AND (1) 75KVA TRANSFORMER T-S1 WITH NEMA 4X RATED ENCLOSURE FOR COMMUNICATION AND TRACK STORAGE LOADS AT COMMUNICATION STORAGE SPACE.
4. PROVIDE (1) 100A, 208/120V PANEL 3RD WITH NEMA 4X RATED ENCLOSURE FOR C&S, MECH, B&B, LINE, 3RD RAIL AND MATERIAL CONTROL STORAGE AT WEST EXTERIOR SIDE OF 3RD RAIL STORAGE.
5. PROVIDE 1"C FOR POWER AND 2"C FOR COMMUNICATION TO NEW PREFAB CHECK IN BOOTH FROM MAIN BUILDING.
6. PROVIDE EXTERIOR LED LIGHT FIXTURES AND LAYOUT TO ENSURE AN AVERAGE ILLUMINATION LEVEL OF 5 FC IS ACHIEVED FOR ALL COVERED PARKING AREAS AND DRIVEWAYS. MAXIMUM AND MINIMUM ILLUMINATION LEVELS SHALL BETWEEN 8 AND 2 FC, RESPECTIVELY.
7. PROVIDE WEATHER-PROTECTIVE ENCLOSURE ON SUB-BASE FUEL TANK FOR RUN TIME OF 24 HOURS MINIMUM. REFER TO DRAWING C-400 FOR BOLLARDS/FENCING LAYOUT.
8. ALL POTENTIAL GROUND SOURCES THAT ENTER A STRUCTURE FROM BELOW GRADE (EARTH) MUST BE INTERCONNECTED TO THE GROUNDING LOOP.

GENERAL NOTE(S):

1. REFER TO E-001 FOR ELECTRICAL COVER SHEET.
2. REFER TO DRAWING C-400 FOR ELECTRICAL/TELECOMMUNICATION DUCTBANK ROUNTING FOR MAIN/SUB FEED.



1 / E-100 SITE PLAN

1" = 40'-0"

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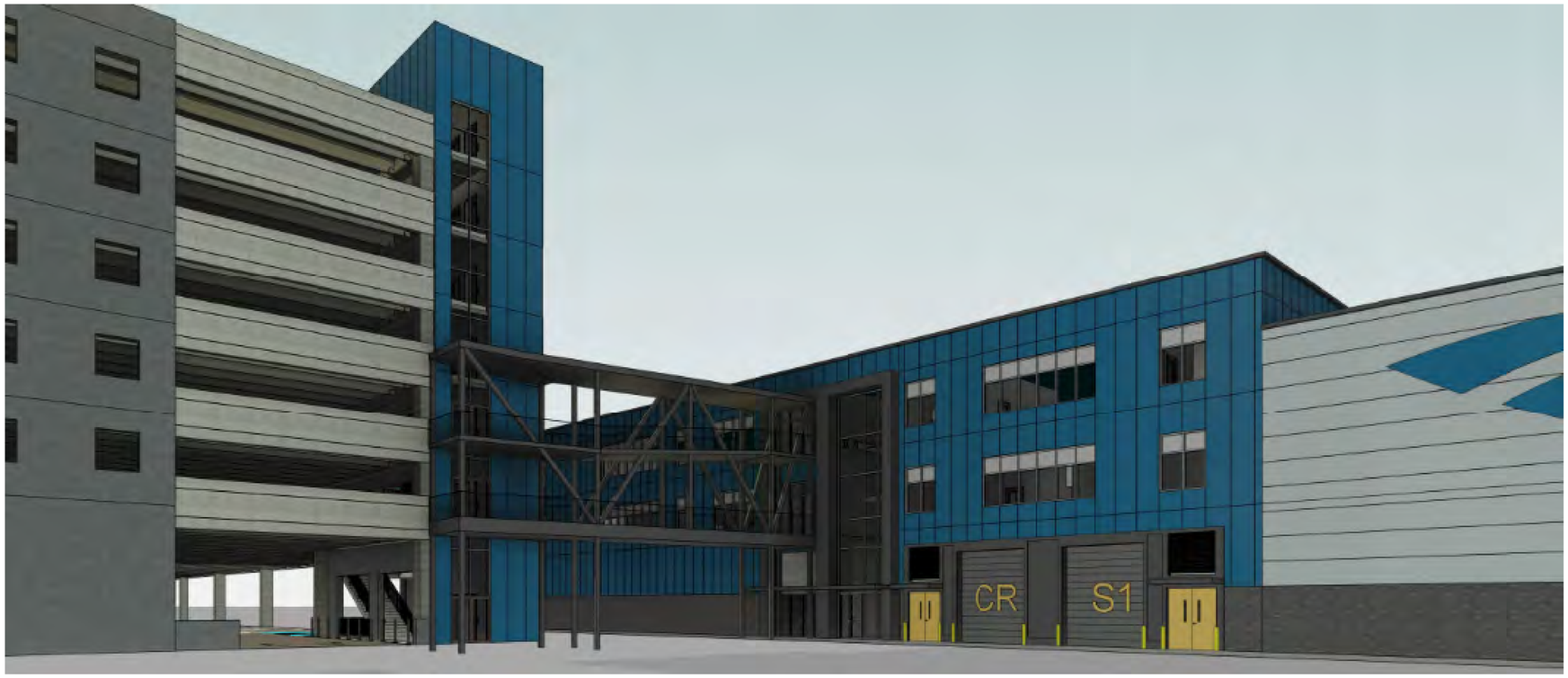
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SITE PLAN

E-100

DATE: 5/1/2023 | PROJ. #: 21074

AMTRAK SSY Crew Base Garage



DRAWING LIST

SHEET NO.		05/01/2023 30% AMTRAK REVIEW	12/01/2023 30% SUBMISSION
ARCHITECTURAL			
A0.0	COVER	•	•
A0.1	CODE ANALYSIS AND LIFE SAFETY DIAGRAMS	•	•
A0.2	OPENNESS ANALYSIS	•	•
A1.1	GROUND & 2ND TIER ARCHITECTURAL PLANS	•	•
A1.2	3RD AND 4TH-5TH TIER ARCHITECTURAL PLANS	•	•
A1.3	ROOF TIER ARCHITECTURAL PLAN	•	•
A1.4	ARCHITECTURAL PLAN DETAILS	•	•
A2.1	ARCHITECTURAL BUILDING ELEVATIONS	•	•
A3.1	WALL SECTIONS AND DETAILS	•	•
A4.1	ENLARGED ARCHITECTURAL PLANS	•	•
A5.1	DOOR & ROOM FINISH SCHEDULES	•	•
AS1.1	ENLARGED STAIR/ELEVATOR A PLANS	•	•
AS1.2	STAIR/ELEVATOR A ELEVATIONS & SECTION	•	•
AS1.3	STAIR/ELEVATOR A ELEVATIONS	•	•
AS2.1	ENLARGED STAIR B PLANS	•	•
AS2.2	STAIR B ELEVATIONS, SECTIONS AND DETAILS	•	•
AS2.3	STAIR B ELEVATION	•	•
AS3.1	ENLARGED STAIR C PLANS & SECTION	•	•
AS3.2	PUNCH THROUGH STAIR DETAILS	•	•
AS4.1	STAIR AND ELEVATOR DETAILS	•	•
G1.1	SIGNAGE SCHEDULE, NOTES AND DETAILS	•	•
G1.2	SIGNAGE AND GRAPHICS DETAILS	•	•
STRUCTURAL			
S0.1	GENERAL STRUCTURAL NOTES	•	•
S0.2	GENERAL DETAILS	•	•
S0.3	WATERPROOFING DETAILS	•	•
S1.0	FOUNDATION PLAN	•	•
S1.1	GROUND TIER STRUCTURAL PLAN	•	•
S1.2	SECOND TIER STRUCTURAL PLAN	•	•
S1.3	TYPICAL TIER STRUCTURAL PLAN	•	•
S1.4	TOP TIER STRUCTURAL PLAN	•	•
S2.1	FOUNDATION DETAILS	•	•
S2.2	FOUNDATION SECTIONS	•	•
S2.3	FOUNDATION SECTIONS	•	•

DRAWING LIST

SHEET NO.		05/01/2023 30% AMTRAK REVIEW	12/01/2023 30% SUBMISSION
S3.1	PRECAST TEE DETAILS	•	•
S3.2	COLUMN PLANS	•	•
S3.3	PRECAST SECTIONS	•	•
S4.1	PRECAST DETAILS	•	•
MECHANICAL			
M0.1	MECHANICAL COVER SHEET	•	•
M1.1	GROUND & ROOF MECHANICAL PLANS	•	•
M6.1	MECHANICAL SCHEDULES	•	•
ELECTRICAL			
E0.1	ELECTRICAL COVER SHEET	•	•
E1.1	ELECTRICAL - GROUND & 2ND TIER POWER PLAN	•	•
E1.2	ELECTRICAL - 3RD AND 4TH - 6TH TIER POWER PLAN	•	•
E1.3	ELECTRICAL - TOP TIER POWER PLAN		•
E2.1	ELECTRICAL - GROUND & 2ND TIER LIGHTING PLAN	•	•
E2.2	ELECTRICAL - 3RD AND 4TH - 6TH TIER POWER PLAN	•	•
E2.3	ELECTRICAL - TOP TIER LIGHTING PLAN		•
E3.1	SINGLE LINE DIAGRAM	•	•
E4.0	PANEL SCHEDULES		•
EC1.1	ELECTRICAL - GROUND & 2ND TIER COMM PLAN		•
EC1.2	ELECTRICAL - 3RD AND 4TH - 6TH TIER COMM PLAN		•
EC1.3	ELECTRICAL - TOP TIER COMM PLAN		•
PLUMBING			
P0.1	PLUMBING COVER SHEET	•	•
P1.1	GROUND & 2ND TIER PLUMBING PLANS	•	•
P1.2	3RD - TOP TIER PLUMBING PLANS	•	•
P5.1	PLUMBING DETAILS		•
P6.1	PLUMBING SCHEDULES	•	•
P6.2	PLUMBING RISER DIAGRAMS	•	•
P6.3	PLUMBING RISER DIAGRAM		•

DRAWING LIST

SHEET NO.		05/01/2023 30% AMTRAK REVIEW	12/01/2023 30% SUBMISSION
FIRE PROTECTION			
FP0.1	FIRE PROTECTION COVER SHEET	•	•
FP1.1	GROUND & 2ND TIER PLANS - FIRE PROTECTION	•	•
FP1.2	3RD & 4TH TIER FIRE PROTECTION PLANS	•	•
FP1.3	5TH & 6TH TIER FIRE PROTECTION PLANS	•	•
FP1.4	TOP TIER FIRE PROTECTION PLAN	•	•
FP4.1	ENLARGED STAIR/ELEVATOR A PLANS	•	•
FP4.2	ENLARGED STAIR B PLANS	•	•
FP7.1	FIRE PROTECTION STAIR RISER DIAGRAMS	•	•
FP7.2	FIRE PROTECTION RISER DIAGRAM	•	•

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THA

ARCHITECT/ENGINEER

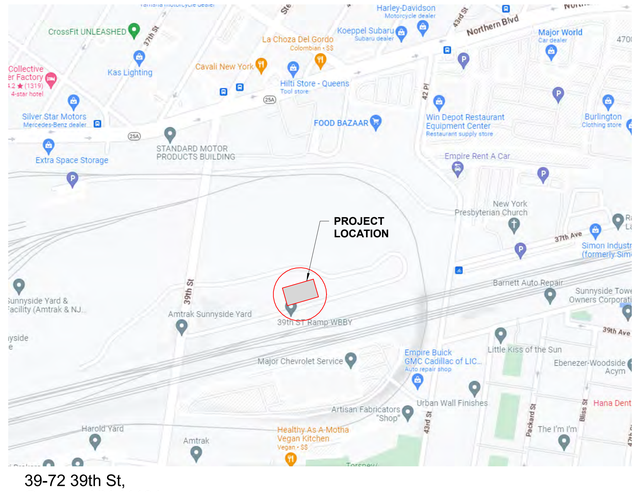
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URBAN ENGINEERS

MEP ENGINEERS

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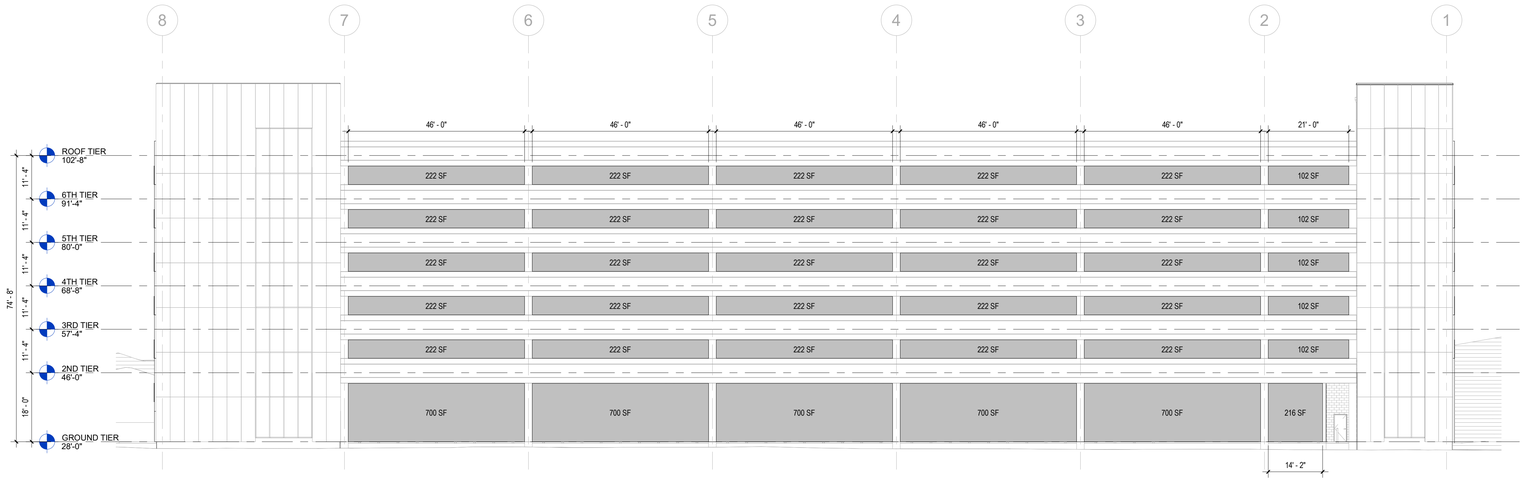
STREET MAP



39-72 39th St,
Queens, NY 11104

12/01/2023
30% SUBMISSION

A0.0



1 A0.2 NORTH ELEVATION - OPENNESS ANALYSIS
1/16" = 1'-0"

OPENNESS CALCULATIONS								
	OPEN AREA CALCULATIONS				DISTRIBUTION OF OPENINGS CALCULATIONS			
	TOTAL WALL AREA (SF)	REQ'D SF OPEN (20% OF TOTAL)	PROVIDED SF OPEN	PROVIDED REQ'D	TOTAL LEVEL PERIMETER	REQ'D LN FT OPEN (40% OF TOTAL)	TOTAL LEVEL PERIMETER	PROVIDED REQ'D
6TH TIER	10,545 SF	2,109 SF	3,419 SF	COMPLIES	930'-6"	372'-2"	712'-1"	COMPLIES
5TH TIER	10,545 SF	2,109 SF	3,641 SF	COMPLIES	930'-6"	372'-2"	758'-1"	COMPLIES
4TH TIER	10,545 SF	2,109 SF	3,641 SF	COMPLIES	930'-6"	372'-2"	758'-1"	COMPLIES
3RD TIER	10,545 SF	2,109 SF	3,641 SF	COMPLIES	930'-6"	372'-2"	758'-1"	COMPLIES
2ND TIER	10,545 SF	2,109 SF	3,424 SF	COMPLIES	930'-6"	372'-2"	713'-1"	COMPLIES
GROUND TIER	16,748 SF	3,350 SF	5,476 SF	COMPLIES	930'-6"	372'-2"	426'-0"	COMPLIES

WITHOUT FACADE:

6TH TIER OPEN AREA (SF) - 32.4% (DELTA TO 20% = 12.4%)
5TH TIER OPEN AREA (SF) - 34.5% (DELTA TO 20% = 14.5%)
4TH TIER OPEN AREA (SF) - 34.5% (DELTA TO 20% = 14.5%)
3RD TIER OPEN AREA (SF) - 34.5% (DELTA TO 20% = 14.5%)
2ND TIER OPEN AREA (SF) - 32.4% (DELTA TO 20% = 12.4%)
GROUND TIER OPEN AREA (SF) - 30.5% (DELTA TO 20% = 10.5%)

DISTRIBUTION OF OPENINGS (LF) - 76.5% (DELTA TO 40% = 36.5%)
DISTRIBUTION OF OPENINGS (LF) - 81.5% (DELTA TO 40% = 41.5%)
DISTRIBUTION OF OPENINGS (LF) - 81.5% (DELTA TO 40% = 41.5%)
DISTRIBUTION OF OPENINGS (LF) - 81.5% (DELTA TO 40% = 41.5%)
DISTRIBUTION OF OPENINGS (LF) - 76.5% (DELTA TO 40% = 36.5%)
DISTRIBUTION OF OPENINGS (LF) - 44.8% (DELTA TO 40% = 4.8%)

2 A0.2 SOUTH ELEVATION - OPENNESS ANALYSIS
1/16" = 1'-0"

3 A0.2 EAST ELEVATION - OPENNESS ANALYSIS
1/16" = 1'-0"

4 A0.2 WEST ELEVATION - OPENNESS ANALYSIS
1/16" = 1'-0"

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AMTRAK SSY Crew Base Garage

Seal:

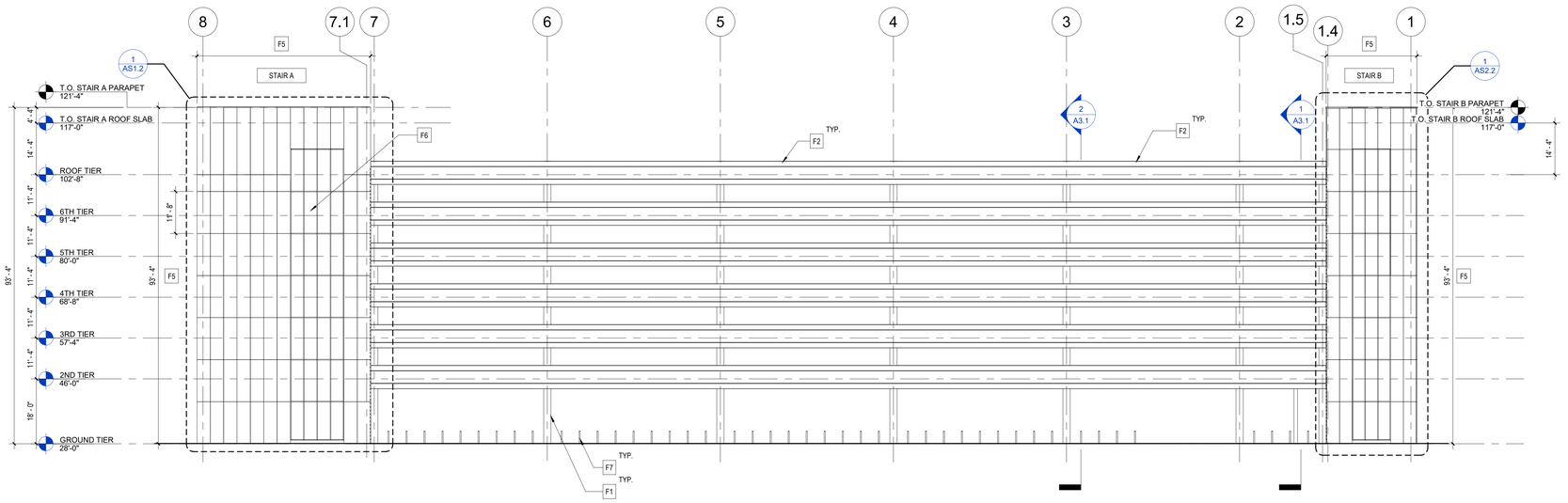
Revision Schedule

B	12/1/2023	30% SUBMISSION
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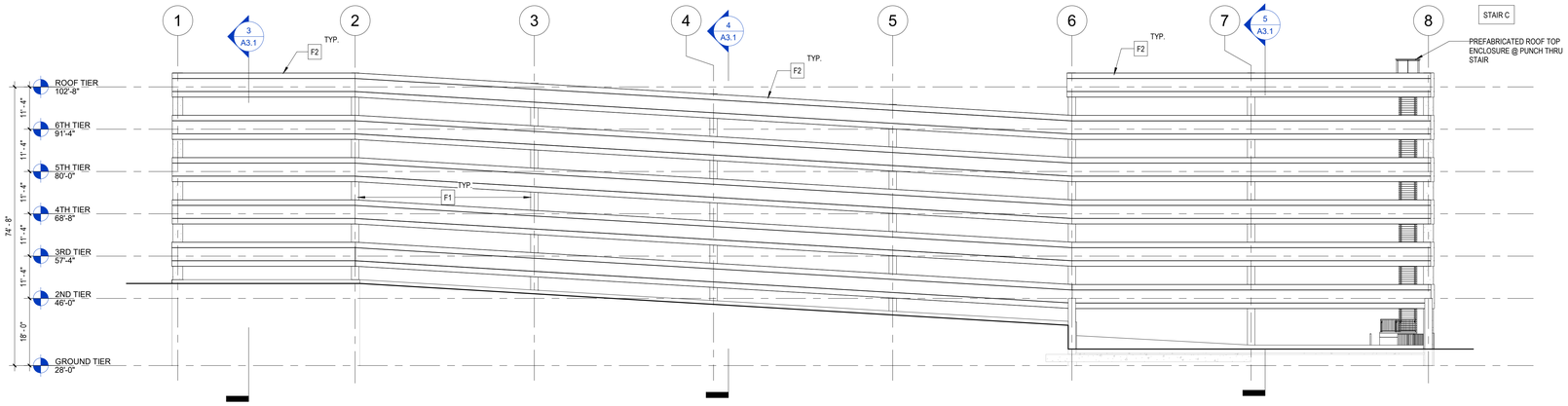
OPENNESS ANALYSIS

A0.2

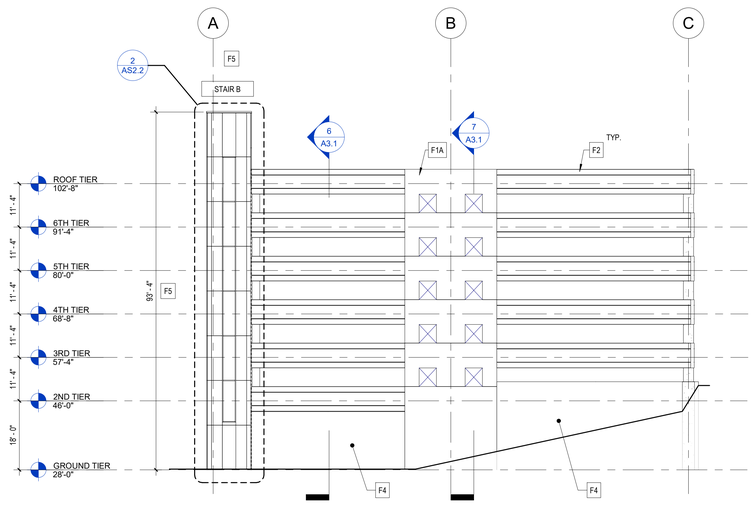
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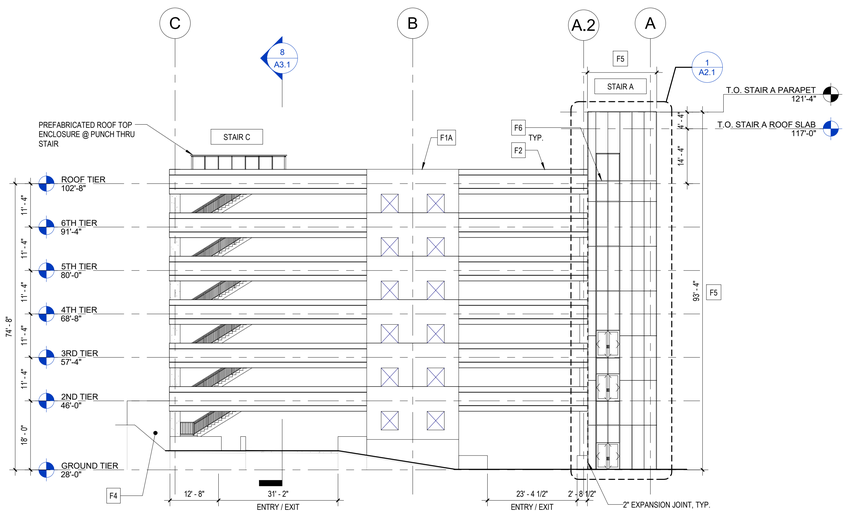
1 A2.1 NORTH ELEVATION - ARCHITECTURAL
1/16" = 1'-0"



2 A2.1 SOUTH ELEVATION - ARCHITECTURAL
1/16" = 1'-0"



3 A2.1 WEST ELEVATION - ARCHITECTURAL
1/16" = 1'-0"

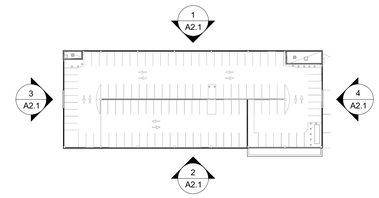


4 A2.1 EAST ELEVATION - ARCHITECTURAL
1/16" = 1'-0"

ELEVATION FINISH LEGEND			
MARK	DESCRIPTION	COLOR	FINISH
F1	PRECAST CONCRETE COLUMN	PC1 COLOR # 434	LIGHT SANDBLAST
F1A	PRECAST SHARE WALL		
F2	PRECAST CONCRETE SPANDREL	PC1 COLOR # 232	MEDIUM SANDBLAST
F3	PAINTED, PRECAST CONCRETE WALL	CONFIDENT YELLOW (SW 6911)	EXTERIOR LATEX, EGGSHELL
F4	CAST IN PLACE CONCRETE	SEE SPECS	SEE SPECS
F5	CENTRIA ENTYRE RAINSCREEN METAL PANEL SYSTEM	200 DEEP BLUE SEA	FLUOROFINISH
F6	KAWNEER 1600 WALL SYSTEM 1 - CURTAIN WALL	#29 BLACK	ANODIZED
F7	PIPE BOLLARD	YELLOW	METAL

FINISH NOTES FOR STAIR / ELEVATOR TOWERS (TYPICAL EVERY LEVEL):

- PAINT ELEVATOR SHAFT WALLS REFERENCE NUMBER F3 (SEE LEGEND ABOVE).
- PAINT REMAINING WALLS IN STAIR & ELEVATOR TOWERS IN COLOR TO BE SELECTED BY ARCHITECT.
- PAINT THE UNDERSIDE & SIDES OF STAIR RUNS, LANDINGS AND ROOF OF STAIRS (INCLUDING EXPOSED CONDUIT, PLASTICS & MISC. STEEL) IN COLOR TO BE SELECTED BY ARCHITECT.
- PAINT ALL EXPOSED STEEL IN COLOR TO BE SELECTED BY ARCHITECT.



KEYPLAN

NOT FOR CONSTRUCTION

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AMTRAK SSY
Crew Base Garage

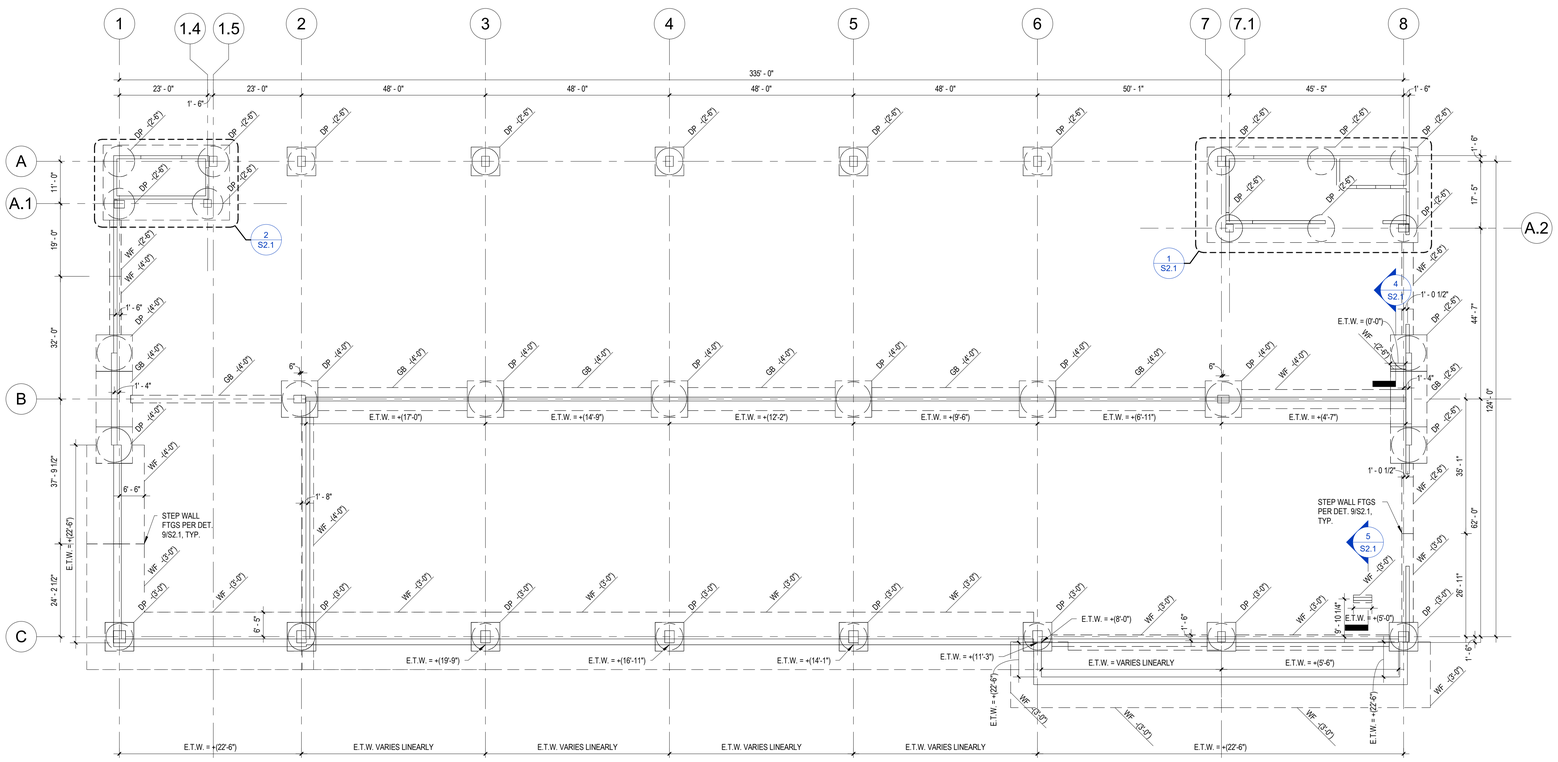
Seal:

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ARCHITECTURAL BUILDING ELEVATIONS

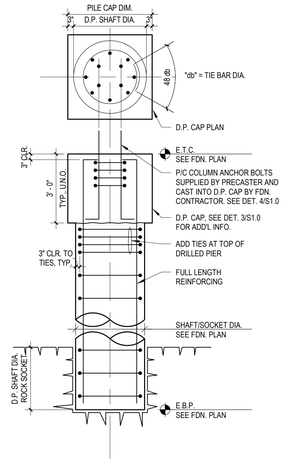
A2.1

DATE: 12/01/2023 PROJ. #:PCNY2202.00

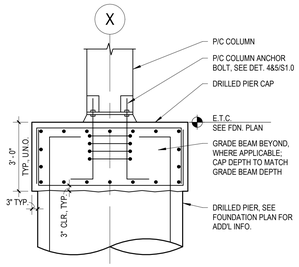


1 S1.0 FOUNDATION PLAN
1/16" = 1'-0"

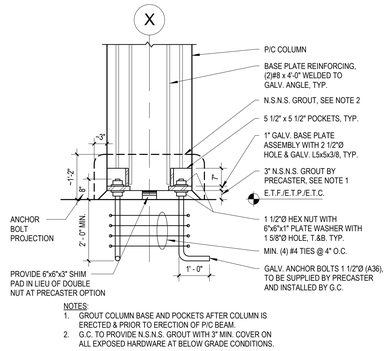
BASE ELEVATION = +(28'-0")



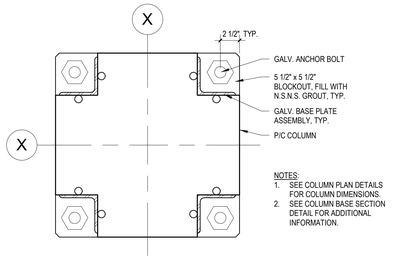
2 S2.1 DRILLED PIER SECTION
3/8" = 1'-0"



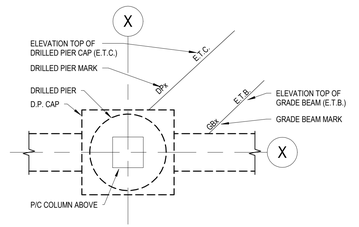
3 S1.0 DRILLED PIER CAP SECTION
3/8" = 1'-0"



4 S1.0 P/C COLUMN SECTION AT C.I.P. BASE
1/2" = 1'-0"



5 S1.0 P/C COLUMN PLAN AT C.I.P. BASE
N.T.S.



SHEET NOTES (DRILLED PIERS):

1. REFER TO SHEET S0.1 FOR GENERAL NOTES.
2. REFER TO SHEET S0.2 FOR GENERAL DETAILS.
3. REFER TO SHEETS S2.1 THROUGH S2.3 FOR FOUNDATION DETAILS.
4. REFER TO SHEET S1.1 FOR GROUND TIER WITH FOUNDATION DETAIL REFERENCES.
5. REFER TO S2.2 & S2.3 FOR E.T.W. (C.I.P. WALLS) NOT SHOWN ON PLAN.
6. ALL DRILLED PIERS AND COLUMNS ARE CENTERED ON GRID LINES, U.N.O.
7. ALL DRILLED PIER BOTTOMS SHALL BEAR ON SOLID, HARD ROCK. SEE GEOTECHNICAL ENGINEER'S REPORT AND SPECIFICATIONS FOR REQUIREMENTS AND RECOMMENDATIONS.
8. TOP OF GRADE BEAM OR CONTINUOUS FOOTING TO MATCH E.T.P. OR E.T.C. OF ADJACENT D.P. OR D.P. CAP. STEP GRADE BEAM AS REQUIRED. PROVIDE DOWELS INTO D.P. CAPS / D.P.'S TO MATCH GRADE BEAM LONGITUDINAL REINFORCING, OR ANCHOR DOWELS INTO D.P.'S OR D.P. CAPS USING PROPER EPOXY ADHESIVE ANCHORING SYSTEMS.
9. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL PERMANENT AND TEMPORARY EXCAVATIONS, BRACING, SHEETING, AND SHORING.
10. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING ANY GROUNDWATER ENCOUNTERED DURING EXCAVATION.
11. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATING EXISTING UTILITIES WITHIN THE NEW FOUNDATION LOCATIONS.
12. BASE EL. REPRESENTS THE BENCHMARK BY WHICH ACTUAL ELEVATIONS ARE CALCULATED BY ADDING/SUBTRACTING ELEV.'S SHOWN ON THE SPECIFIC LOCATION OF FOUNDATIONS.

C.I.P. FOUNDATION/WALL CONSTRUCTION TOLERANCE NOTE:

1. ALL C.I.P. CONSTRUCTION SHALL MEET REQUIRED TOLERANCES PER ACI 117, U.N.
2. ALL C.I.P. WALLS/FOUNDATIONS, WHICH WILL SUPPORT PRECAST MEMBERS ABOVE, SHALL BE CONSTRUCTED TO MEET PRECAST CONCRETE TOLERANCE REQUIREMENTS PER ACI 117 & PCI MANUAL 116, 120, 127.

NOT FOR CONSTRUCTION

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urbanengineers.com

JACOBS WYPER ARCHITECTS

AMTRAK SSY
Crew Base Garage

QUEENS, NEW YORK

Seal:

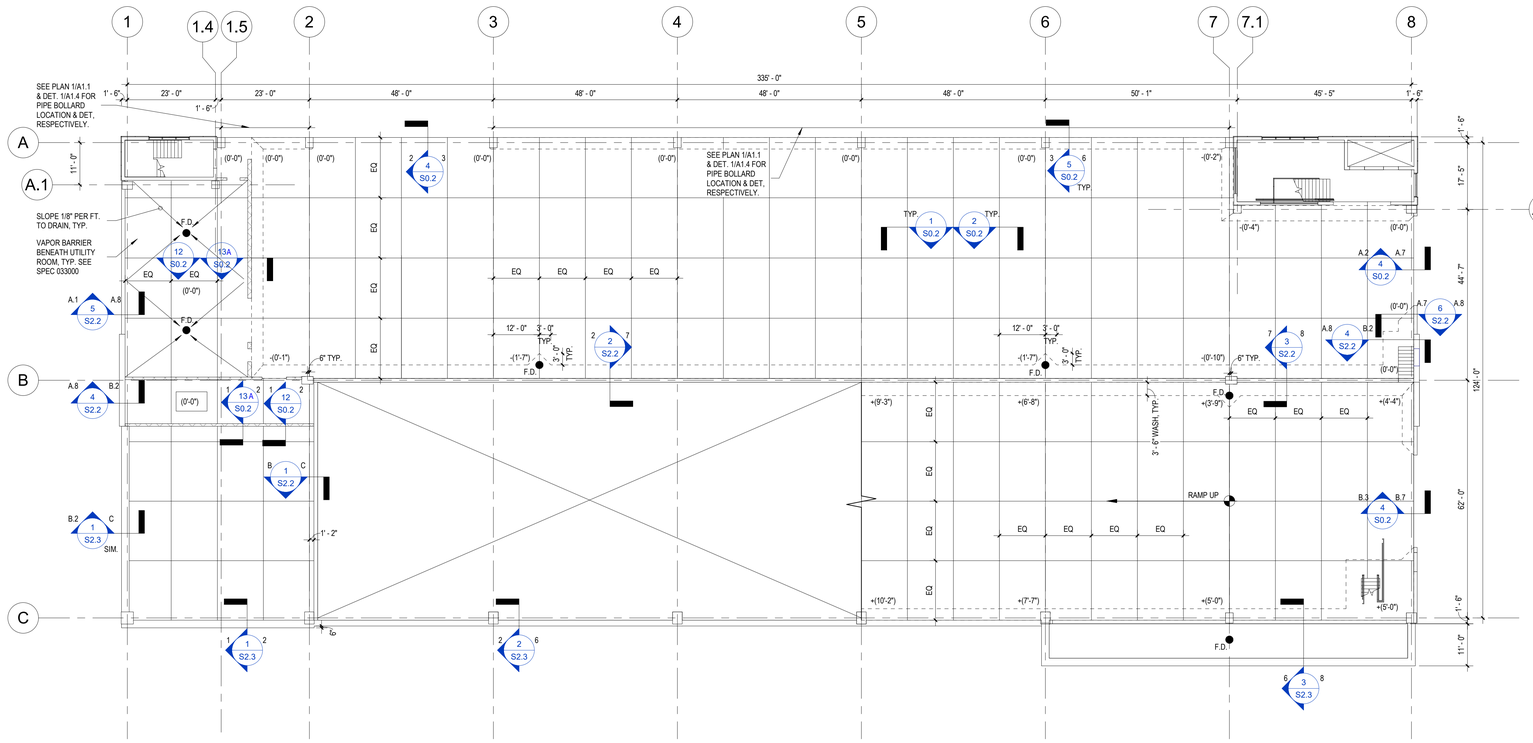
Revision Schedule

B	12/1/2023	30% SUBMISSION
A	5/1/2023	30% AMTRAK REVIEW

FOUNDATION PLAN

S1.0

DATE: 12/01/2023 PROJ. #:PCNY2202.00



1 S1.1 GROUND TIER PLAN
1/16" = 1'-0"

BASE ELEVATION = +(28'-0")

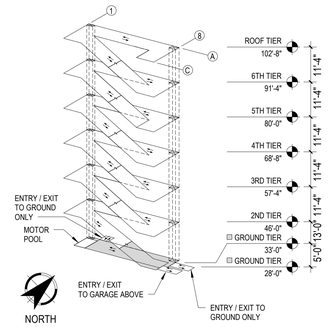
GROUND TIER SHEET NOTES:

1. REFER TO SHEET S0.1 FOR GENERAL NOTES.
2. REFER TO SHEET S3.1 FOR TEE AND BEAM DETAILS.
3. REFER TO SHEET S3.2 FOR COLUMN DETAILS.
4. REFER TO SHEETS S1.0 AND S2.1 THROUGH S2.3 FOR FOUNDATION DETAILS.
5. REFER TO STRUCTURAL PLANS FOR FLOOR DRAIN LOCATIONS. COORDINATE WITH MECHANICAL DRAWINGS.
6. REFER TO CIVIL DRAWINGS FOR EXTERIOR GRADE ELEVATIONS.
7. REFER TO MECHANICAL AND CIVIL DRAWINGS FOR UNDERGROUND UTILITIES.
8. REFER TO AS SHEETS FOR STAIRTOWER PLANS, SECTIONS, AND DETAILS.
9. 5" SLAB-ON-GRADE SHALL BE REINFORCED WITH 6x6-W4.5xW4.5 WWR AT 1/3 DEPTH FROM TOP BUT NOT LESS THAN 1-1/2" CLEAR COVER. PROVIDE A 6" GRANULAR SUB-BASE COURSE OF SAND AND GRAVEL OR SCREENED CRUSHED STONE OVER COMPACTED SUBGRADE. COMPACT SUBGRADE TO MEET AT LEAST 95% OF MAXIMUM DRY DENSITY DETERMINED BY ASTM D-698.
10. PROVIDE 1/2" JOINT FILLER & SEALANT AT INTERSECTION OF P/C COLUMNS AND SLAB ON GRADE AND WHERE SHOWN.
11. THE EXTENT OF SURFACES TO RECEIVE BITUMINOUS (LIQUID) DAMPROOFING IS AS FOLLOWS:
    A. INTERIOR C.I.P. (AND P/C) WALLS BETWEEN EARTH AND AIR.
    B. EXTERIOR WALL SURFACES WHERE EXTERIOR GRADE ELEVATIONS ARE ABOVE INTERIOR GRADE ELEVATIONS.
12. FOR FLOOR ELEVATIONS BETWEEN POINTS, USE STRAIGHT LINE INTERPOLATION.
13. IF C.I.P. WALLS ARE BACKFILLED BEFORE THE ERECTION OF P/C COLUMNS AND WALLS, CONTRACTOR TO PROVIDE ACCESS TO COLUMN ANCHOR BOLTS AND P/C WALL / FOUNDATION (OR C.I.P. WALL) CONNECTION.
14. PROVIDE SLABS SLOPED TO FLOOR DRAINS (MIN. 1/8" PER FOOT) IN ROOMS AND AS SHOWN ON PLANS. COORDINATE WITH MECHANICAL DRAWINGS.
15. ELEVATIONS SHOWN ON THESE PLANS REPRESENT ELEVATIONS AT TOP OF SLAB-ON-GRADE AT THE COLUMN CENTERLINE, U.N.O. WITH AN ELEVATION TARGET SYMBOL. (THIS DOES NOT INCLUDE THE HEIGHT OF WASH/CURB.)
16. BASE ELEVATIONS REPRESENT THE BENCHMARK BY WHICH ACTUAL SPOT ELEVATIONS ARE CALCULATED BY ADDING/SUBTRACTING THE ELEVATIONS SHOWN AT SPECIFIC LOCATIONS.
17. PRIOR TO CONCRETE S.O.G. POURS, CONCRETE CONTRACTOR TO VERIFY THE FOLLOWING REQUIREMENTS ARE SATISFIED. ALL DISCREPENCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A RFI IN A TIMELY MANNER FOR RESOLUTION PRIOR TO THE POUR. CONCRETE POURS RESULTING IN UNRESOLVED, NON-CONFORMING CONDITIONS SHALL BE CORRECTED BY THE CONCRETE CONTRACTOR AT NO ADDITIONAL COST.
    A. FLOOR SLOPES WITHIN ACCESSIBLE SPACES AND UNLOADING ZONES MUST NOT BE GREATER THAN 2%.
    B. CROSS SLOPES OF ACCESSIBLE ROUTES MUST NOT BE GREATER THAN 2%.
    C. FLOORS MUST BE LEVEL ACROSS ELEVATOR DOOR AND MAN DOOR OPENINGS AND FLOORS MUST BE SLOPED AWAY FROM DOOR OPENING AT 1% MIN. AND 2% MAX. SLOPE, UNLESS WITHIN A CONDITIONED ROOM THAT CALLS FOR A FLAT FLOOR.
    D. FLOOR SLOPES AT ELEVATOR DOOR AND MAN-DOORS MUST NOT BE GREATER THAN 2% WITHIN AN AREA DEFINED AS THE FOLLOWING:
        a. 5'-0" PERPENDICULAR TO DOOR AND EXTENDED PARALLEL TO DOOR 2'-0" PAST THE DOOR JAMB.
        b. THE HEADROOM CLEARANCE MUST NOT BE LESS THAN THE SPECIFIED HEADROOM CLEARANCE.

THE CONTRACTOR SHALL BE RESPONSIBLE TO ASSURE A MINIMUM OF 8'-4" HEADROOM CLEARANCE BETWEEN ALL DRIVING SURFACES AND OVERHEAD STRUCTURE FOR ACCESSIBLE VANS ALONG ITS PATH OF TRAVEL FROM POINT OF ENTRY TO POINT OF EXIT.



PLAN ELEVATION LEGEND



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JACOBS WYPER ARCHITECTS

AMTRAK SSY
Crew Base Garage

QUEENS, NEW YORK

Seal:

Revision Schedule		
B	12/1/2023	30% SUBMISSION
A	5/1/2023	30% AMTRAK REVIEW

GROUND TIER STRUCTURAL PLAN

S1.1

DATE: 12/01/2023 PROJ. #:PCNY2202.00

NOT FOR CONSTRUCTION

APPENDIX C

Site-Specific Community Air Monitoring Plan

Community Air Monitoring Plan

Infrastructure and Yard Upgrade Project
(Airo and Crewbase Facility)
Sunnyside Yard
Long Island City, New York

October 17, 2024

Prepared for:

National Railroad Passenger Corporation
30th Street Station
Philadelphia, Pennsylvania 19104

Prepared by:

Roux Environmental Engineering and Geology, D.P.C.
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    1.2 Particulate Monitoring, Response Levels and Actions 2
    1.3 Meteorological Monitoring 3
    1.4 Available Suppression Techniques 3
    1.5 Reporting 3

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A. Action Limit Report

1. Introduction

This Community Air Monitoring Plan (CAMP) was prepared by Roux Environmental Engineering and Geology D.P.C. (Roux) for Infrastructure and Yard Upgrade Projects, including the Amtrak Airo and Crewbase Facility (CBF) construction projects in Sunnyside Yard located in Long Island City, New York (Site). A Site Location Map is provided on Figure 1. Sunnyside Yard is located in an urban area in northwestern Queens County (Figure 1). The East River is located approximately one mile to the west while Newtown Creek, which defines the border between Queens and Kings Counties, is located less than 0.5 mile south of the western portion of the Yard. The Yard consists of a railroad maintenance and storage facility that currently encompasses approximately 133 acres. The Yard functions as a maintenance facility for electric locomotives and railroad cars for Amtrak and a train layover storage yard for New Jersey Transit Corporation (NJTC). The Yard is currently in the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program, Site No. 241006, which is administered by New York State Department of Environmental Conservation (NYSDEC). The Yard was subdivided into six operable units (OUs), OU-1 through OU-6, to streamline remedial efforts. The land use surrounding the Yard is a combination of commercial, light industrial and residential areas. The Long Island Rail Road (LIRR) currently owns a portion of the original Yard along the northern boundary (including a portion of OU 3) and maintains rights of way through the Yard.

The monitoring program will be implemented at all times during which earth disturbance activities are occurring. This CAMP is designed to provide a measure of protection for the downwind community (i.e., offsite receptors, including residents and workers nit directly involved with the subject work activities) from potential airborne contaminant releases that may be as a direct result of remedial and construction activities. This monitoring plan is consistent with the New York State Department of Health's (NYSDOH) Generic Community Air Monitoring Plan guidance document included as Appendix 1A of the NYSDEC DER-10.

Test results of previous sampling activities, conducted by Roux since 2007 at the Site indicate that some areas of the Site contain varying levels of metals and / or semivolatile organic compounds (SVOCs), particularly polynuclear aromatic hydrocarbons (PAHs), which exceed the applicable New York State Department of Environmental Conservation (NYSDEC) criteria. The metals and SVOCs were primarily observed in historic fill/soil at varying depths beneath the Site.

The specifics of the CAMP are presented in the following four (4) sections:

- 1.1 VOC Monitoring Approach
- 1.2 Particulate Monitoring Approach
- 1.3 Meteorological Monitoring Approach
- 1.4 Available Suppression Techniques

1.1 VOC Monitoring

Total VOC concentrations in air will be monitored continuously at a location downwind of the excavation activities during all ground intrusive activities. An upwind monitoring station will be set up adjacent to where the excavation is occurring. The VOC monitoring equipment will be located at temporary monitoring stations that will be established daily based on Site logistics and weather conditions. The monitoring work will be conducted using MiniRAE 3000 (or equivalent) portable VOC monitors, or similar type monitors, for all VOC monitoring. The equipment will be calibrated at least once daily using isobutylene as the calibration

gas. One (1) upwind and one (1) downwind monitor will be deployed each day. Each monitoring unit is equipped with an audible alarm to indicate exceedance of the action levels (as defined below and summarized in Table 1).

The equipment is capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total VOCs at the downwind perimeter of the Site exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If the ambient air concentration of total VOCs at the downwind perimeter of the Site persists at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of VOCs identified, suppression techniques employed to abate emissions, and monitoring continued. After these steps, work activities can resume if the total organic vapor level at the Site perimeter is below 5 ppm over the background concentration for the 15-minute average. If levels are in excess of 25 ppm above background, identified contributing ground-intrusive activities will be halted and vapor suppression techniques will be evaluated and modified until monitoring indicates VOC levels at the Site perimeter are below 5 ppm over background. Once VOC levels are below 5 ppm at the Site perimeter, work will resume with continued monitoring.

All 15-minute readings will be recorded and be available for State Regulator (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will be recorded. If an exceedance of the action level occurs, an Action Limit Report (ALR) will be completed, identifying the monitoring device location, the measured VOC level, the activity causing the exceedance, meteorological conditions, and the corrective actions taken, as provided in Appendix A. Additionally, the NYSDEC and NYSDOH will be notified within 24 hours of the VOC ALR generation. Daily monitoring equipment locations and meteorological conditions will also be documented on the daily CAMP Monitoring Location Plan. All documentation will be kept on file at the Site.

1.2 Particulate Monitoring, Response Levels and Actions

Particulate concentrations will be monitored continuously at temporary particulate monitoring stations set up at the sidewalk at upwind and downwind locations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action levels (as defined below and summarized in Table 1). Monitoring equipment will be MIE Data Ram monitors or equivalent. A minimum of one (1) upwind and one (1) downwind monitor will be deployed each day, equipped with an omni-directional sampling inlet and a PM-10 sample head. The data logging averaging period will be set to 15-minutes with time and date stamp recording. Alarm averaging will be set at 90 micrograms per cubic meter (µg/m3) per 15-minute period. This setting will allow proactive evaluation of Site conditions prior to reaching Action Levels of 100 µg/m3 above background. The equipment will be outfitted with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. The monitoring will be used to compare values to the following:

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

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

All 15-minute readings will be recorded and be available for State Regulator (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will be recorded. If an exceedance of the action level occurs, an ALR will be completed, identifying the monitoring device location, the measured particulate concentration, the activity causing the exceedance, meteorological conditions, and the corrective actions taken, as provided in Appendix A. Daily monitoring equipment locations will also be documented on the daily CAMP Monitoring Location Plan. All documentation will be kept on file at the Site.

1.3 Meteorological Monitoring

Wind speed (estimated) and wind direction, will be approximated based on field observations of onsite personnel. Meteorological data consisting of temperature, barometric pressure, and relative humidity will be recorded in the field book based upon publicly available information from local weather stations.

1.4 Available Suppression Techniques

Odor Control

Due to the nature of the project, with excavation occurring, the potential for generation of nuisance odors and the need for odor control may be necessary. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project.

All necessary means will be employed to prevent on- and off-Site nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) use of chemical odorants in spray or misting systems; and, (e) use of staff to monitor odors in surrounding neighborhoods.

Dust Control

Due to the nature of the project, the potential for generation of nuisance dust and the need for dust control may be necessary. Dust suppression will be achieved through the use of water for wetting excavation areas, if required. Water will be available on-site at suitable supply and pressure for use in dust control.

1.5 Reporting

All recorded monitoring data will be downloaded and field logged periodically, including action limit reports (if any) and daily CAMP monitoring location plans. All records will be maintained onsite and available for NYSDEC/NYSDOH review. A summary of CAMP findings, including excursions, will be provided in the Daily and Monthly Reports. All CAMP monitoring records will be included in the overall Final Engineering Report that will be submitted to the NYSDEC and NYSDOH and will include all of the CAMP data collected, daily monitoring station location maps, and copies of the ALRs (if any). If an ALR is generated due to VOC exceedances, the NYSDEC and NYSDOH will be notified within 24 hours of the exceedance.

TABLES

1. Action Limit Summary for VOCs and Particulates

Table 1. Action Limit Summary for VOCs and Particulates, Sunnyside Yard, Long Island City, NY

Contaminant	Downwind Action Levels*	Action/Response
Volatile Organic Compounds (VOCs) (Monitoring Via Photoionization Detector and Odor Observation)	< 5 ppm	1. Resume work with continuing monitoring.
	5 ppm < level < 25 ppm	1. Work activities must be temporarily halted, source vapors must be identified, suppression techniques employed to abate emissions and monitoring continued. 2. After these steps, if VOC levels (200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or structure, whichever is less) is below 5 ppm over background, resume work.
	> 25 ppm	1. Identified contributing ground intrusive activities must be halted and vapor suppression techniques must be evaluated and modified until monitoring indicates VOC levels below the action level. 2. After these steps, if VOC levels (half the distance to the nearest potential receptor or structure) are below 5 ppm over background, resume work.
Particulates (Monitoring Via Particulate Meter and Observation)	< 100 ug/m^3	1. If dust is observed leaving the work area, then dust control techniques must be implemented or additional controls used.
	100 ug/m3 < level < 150 ug/m^3	1. Employ dust suppression techniques. 2. Work may continue with dust suppression techniques provided that downwind PM-10 particulate concentration do not exceed 150 ug/m^3 above the upwind level and provided that no visible dust is migrating from the work area.
	> 150 ug/m^3	1. STOP work 2. Re-evaluate activities, modify dust suppression techniques. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

* Instantaneous readings above background. Particulate readings are based on the respirable (PM-10) fraction. Background readings are taken at upwind locations relative to Work Areas or Exclusion Zones.

APPENDIX A

Action Limit Report

ACTION LIMIT REPORT

Project Location: Sunnyside Yard, Long Island City, NY

Date: _____ Time: _____

Name: _____

Contaminant: PM-10: _____ VOC: _____

Wind Speed: _____ Wind Direction: _____

Temperature: _____ Barometric Pressure: _____

DOWNWIND DATA

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

UPWIND DATA

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

BACKGROUND CORRECTED LEVELS

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

ACTIVITY DESCRIPTION

CORRECTIVE ACTION TAKEN

APPENDIX D

Site-Specific Health and Safety Plan

Site-Specific Health and Safety Plan

Infrastructure and Yard Upgrade Project
(Airo and Crewbase Facility)
Sunnyside Yard
Long Island City, New York

October 17, 2024

Prepared for:

National Railroad Passenger Corporation
30th Street Station
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Prepared by:

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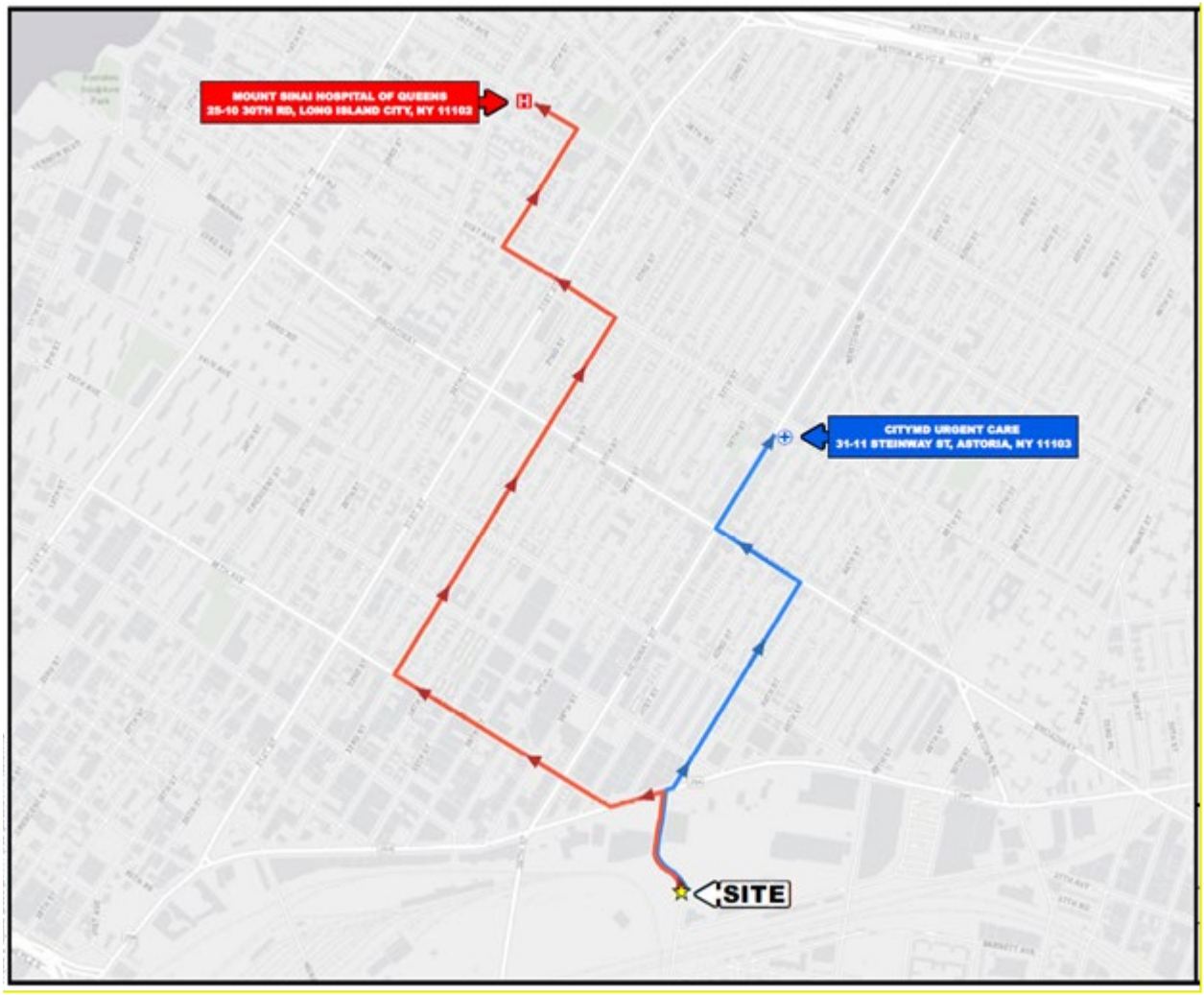
Site-Specific Emergency Information

Emergency Phone Numbers

Most emergency services can be obtained by calling **911**. Where 911 service is not available, use the telephone numbers provided in the below table. The following is a master emergency phone list for use by the project management personnel. A more condensed version of the emergency numbers listed below will be posted throughout project work areas. Emergencies encountered on the site will be responded to by a combination of off-site emergency services and on-site personnel.

Emergency Contact Information			
Site Personnel			
Title	**Contact**		**Telephone**
Office Manager (OM)	Jeff Wills		(631) 232-2600
Project Principal (PP)	Robert Kovacs		(631) 630-2320
Project Manager (PM)	Emily Butler		(719) 494-6722
Site Supervisor (SS)	Roux Field Manager - TBD		TBD
Site Health and Site Safety Officer (SHSO)	Christian Hoelzli		(631) 232-2600
Office Health and Safety Manager (OHSM)	Nevin Pahlad		(631) 630-2416
Corporate Health and Safety Manager (CHSM)	Brain Hobbs		(631) 630-2419
AllOne Health	Occupational Health Care Management Provider		800-350-4511
Client Emergency Contact	Jeffrey DeOre		(215) 349-1240
Outside Assistance			
Agency	**Contact**	**Telephone**	**Address/Location**
Ambulance/emergency medical services (EMS)	Mount Sinai Hospital of Queens	(718) 932-1000 or 911	25-10 30th Avenue, Queens, NY 11102
Police	Amtrak Police	(212) 630-7113	39-29 Honeywell Street, Queens, NY 11101
Fire	FDNY	911	
Site Address	39-29 Honeywell Street, Queens, New York 11101		

Route to Hospital and Urgent Care Facility



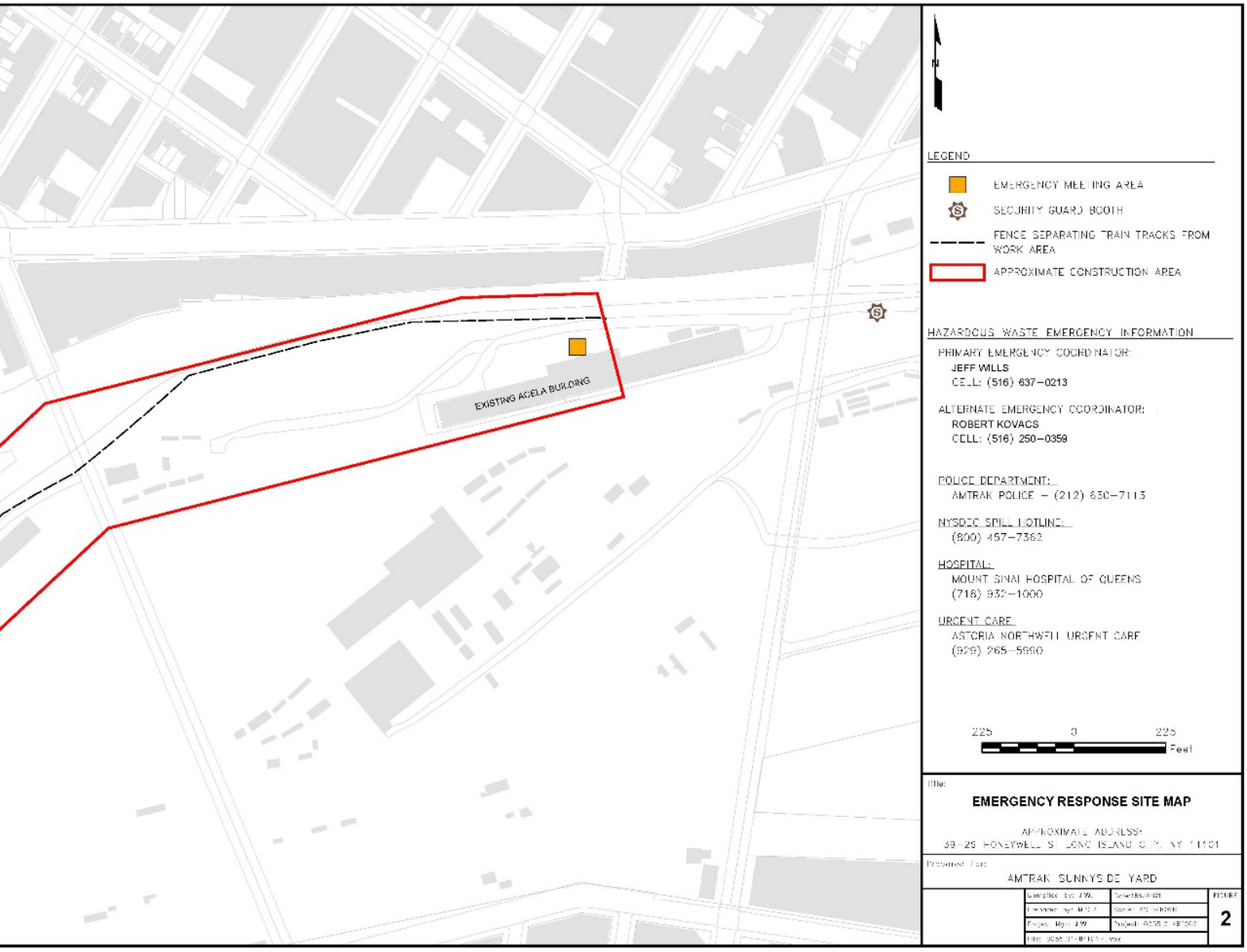
DIRECTIONS TO HOSPITAL – (718) 932–1000

1. TAKE 42 PL TO NORTHERN BLVD
2. TAKE 36TH AVE TO 33RD ST
3. TURN RIGHT ONTO 33RD ST
4. TURN LEFT ONTO 31ST AVE
5. CONTINUE ON 29TH ST. DRIVE TO 30TH RD

DIRECTIONS TO URGENT CARE – (929) 265–5990

1. HEAD NORTH ON 36TH CRES/43RD ST
2. CONTINUE ONTO 42 PL
3. CONTINUE ONTO 43RD ST
4. TURN LEFT ONTO BROADWAY

Emergency Response Site Map



1. Introduction

This Site-specific Health and Safety Plan (HASP) has been prepared by Roux Environmental Engineering and Geology, D.P.C. (Roux) for use during future Infrastructure and Yard Upgrade Projects proposed at the National Railroad Passenger Corporation's (Amtrak's) Sunnyside Yard, located at 39-29 Honeywell Street, Queens, New York (Site; Figure 1). These activities fall within the scope of operations covered by the Occupational Safety and Health Administration (OSHA) standards promulgated at 29 CFR 1910.120 and 29 CFR 1926.65, both commonly referred to as the Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard. In accordance with the HAZWOPER Standard, this Site-specific HASP was prepared to address the safety and health hazards associated with the sampling and excavation oversight activities being performed at the Site by Roux and to provide requirements and procedures for the protection of Roux employees, subcontractor personnel, government oversight personnel, Site personnel, and the general public. It also addresses client- and Site-specific requirements for health and safety. Additionally, subcontractors may be required to submit their own HASP as it relates to their specific work activities and will be kept onsite during such work.

Implementation of this HASP is the joint responsibility of the Project Manager (PM), the Site Health and Safety Officer (SHSO), and all field staff, with assistance from the Project Principal (PP), Office Health and Safety Manager (OHSM), and Corporate Health and Safety Manager (CHSM). The PM for this project is Jeff Wills. The Site Supervisor (SS) is to be determined (TBD) and Site Health and Safety Officer (SHSO) is Christian Hoelzli.

This HASP will be introduced to, reviewed, and signed off on by all Roux personnel through a formal training session prior to commencing work. A copy of the HASP will be kept at the Site at all times. The Roux SHSO or PM will be responsible for posting any changes, amendments, memos, etc. to the HASP. Any revisions to this HASP will be signed by appropriate personnel, which can include Roux's PP, CHSM, and SS. Any changes will be announced to all workers at the next safety meeting.

1.1 Roles and Responsibilities

Overall Roles and Responsibilities (R&Rs) of Roux personnel are provided in Roux's Policies and Procedures Manual. Only those R&Rs specific to HASP requirements are listed below.

Project Manager (PM)

The PM has the responsibility and authority to direct all work operations. The PM coordinates safety and health functions with the Site Health and Safety Officer (SHSO), has the authority to oversee and monitor the performance of the SHSO, and bears ultimate responsibility for the proper implementation of this HASP. The specific duties of the PM are:

- Preparing and coordinating the Site work plan;
- Providing Site supervisor(s) with work assignments and overseeing their performance; Coordinating safety and health efforts with the SSHO;
- Ensuring effective emergency response through coordination with the Emergency Response Coordinator (ERC); and
- Serving as primary Site liaison with public agencies and officials and Site contractors.

Site Health and Safety Officer (SHSO)

The SHSO has the full responsibility and authority to develop and implement this HASP and to verify compliance. The SHSO reports to the Project Manager. The SHSO is on Site or readily accessible to the Site during all work operations and has the authority to halt Site work if unsafe conditions are detected. The specific responsibilities of the SHSO include:

- Managing the safety and health functions on this Site;
- Serving as the Site's point of contact for safety and health matters;
- Ensuring Site monitoring, worker training, and effective selection and use of PPE;
- Assessing Site conditions for unsafe acts and conditions and providing corrective action;
- Assisting the preparation and review of this HASP;
- Maintaining effective safety and health records as described in this HASP; and
- Coordinating with the Site Supervisor(s) and others as necessary for safety and health efforts.

Site Supervisor

The Site Supervisor is responsible for field operations and reports to the Project Manager (PM). The Site Supervisor ensures the implementation of the HASP requirements and procedures in the field. The specific responsibilities of the Site Supervisor include:

- Executing the work plan and schedule as detailed by the PM;
- Coordination with the SHSO on safety and health; and
- Ensuring Site work compliance with the requirements of this HASP.

Employees

All Roux employees are responsible for reading and following all provisions of the Corporate Health and Safety Manual, including this HASP. Employees report to the SS at the project Site. Each employee is also responsible for the following:

- Wearing all appropriate PPE as outlined within this HASP;
- Attending all safety meetings;
- Inspecting tools and equipment prior to use, and taking any defective tools or equipment out of service;
- Appropriately documenting field events as they occur within a logbook or equivalent;
- Properly operating machinery and/or equipment only if trained to do so;
- Stopping work operations if unsafe conditions exist;
- Identifying and mitigating hazards when observed;
- Reporting all incidents and near misses to the Roux SHSO and SS immediately; and
- Knowing where emergency equipment is located (e.g., first aid kit, fire extinguisher).

Subcontractors and Visitors

Subcontractors and visitors are responsible for complying with the same health and safety requirements. It is the responsibility of all to make sure subcontractors and visitors comply and uphold the HASP. Subcontractors and visitors have the following additional responsibilities:

- Designating a qualified safety representative for the project that can make the necessary changes in work practices, as necessary;

- Attending all safety meetings while participating in Roux Site work activities;
- Reporting all incidents and near misses to Roux SHSO and SS immediately;
- Conducting initial and periodic equipment inspections in accordance with manufacturer and regulatory guidelines; and
- Providing copies of all Safety Data Sheets (SDS) to Roux SHSO for materials brought to the Site.

2. Background

Relevant background information is provided below, including a general description of the Site; a brief review of the Site's history with respect to hazardous material use, handling, and/or storage; and a review of known and potential releases of hazardous substances at the Site.

2.1 Site Description

The National Railroad Passenger Corporation (Amtrak) Sunnyside Yard is located in an urban area at 39 29 Honeywell Street in northeastern Queens County, New York. The East River is located approximately one mile to the west. Land use immediately adjacent to the Yard is almost exclusively mixed commercial and light industrial, with surrounding residential areas located primarily to the south and east. Sunnyside Yard is a Class 2 Site, No. DEC 241006, listed in the NYSDEC's Registry of Inactive Hazardous Waste Disposal Sites. As a result of the listing for the entire Yard, Amtrak, New Jersey Transit Corporation (NJTC), and the NYSDEC entered into an Order on Consent (OOC) Index #W2 0081 87 6 effective October 1989.

2.2 Site History

The Pennsylvania Tunnel and Terminal Company, a subsidiary of the Pennsylvania Railroad (later known as the Penn Central Transportation Company), constructed the terminal in the early 1900s. On April 1, 1976, the Consolidated Rail Corporation (Conrail) acquired the Yard and, on the same day, conveyed it to Amtrak. The Yard consists of an active railroad maintenance and storage facility for railroad rolling stock, encompassing approximately 133 acres. It functions primarily as a maintenance facility for electric locomotives and railroad cars for both Amtrak and NJTC.

2.3 Known and Potential Releases of Hazardous Substances at the Site

The site-specific compounds of concern (COCs) are polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and lead.

3. Scope of Work

As stated above, this HASP is designed to identify all potential hazards associated with the work activities being performed at the Site for future Infrastructure and Yard Upgrade Projects proposed at Amtrak's Sunnyside Yard. The proposed scope of work will vary depending on the planned work activities and includes, but is not limited to the following tasks:

1. Construction oversight of future Infrastructure and Yard Upgrade Projects.
2. Collection of soil samples for waste characterization and disposal.
3. Implementation of a Community Air Monitoring Plan (CAMP) during all subsurface work associated with future Infrastructure and Yard Upgrade Projects in Sunnyside Yard

A work plan detailing the proposed scope of work to be implemented will accompany the HASP during the proposed work activities being performed at the Yard.

If there are any changes with the scope a revision of the HASP will be required to address any new hazards.

4. Site Control

This Site control program is designed to reduce the spread of hazardous substances from contaminated areas to clean areas, to identify and isolate contaminated areas of the Site, to facilitate emergency evacuation and medical care, to prevent unauthorized entry to the Site, and to deter vandalism and theft.

4.1 Site Map

A map of this Site, showing Site boundaries, designated work zones, and points of entry and exit is provided in **Figure 2**.

4.2 Site Access

Access to the work areas at the Site is restricted to reduce the potential for exposure to its safety and health hazards. During hours of Site operation, Site entry and exit is authorized only at the points identified in **Figure 2**. Entry and exit at these points are controlled by the following: booth with security guard, Amtrak contractor ID card required. When the Site is not operating, access to the Site is controlled by the following: booth with security guard, Amtrak contractor ID card required.

4.3 Buddy System

While working in the Exclusion Zone, Site workers use the buddy system. The buddy system means that personnel work in pairs and stay in close visual contact to be able to observe one another and summon rapid assistance in case of an emergency. The responsibilities of workers using the buddy system include:

- Remaining in close visual contact with partner;
- Providing partner with assistance as needed or requested;
- Observing partner for signs of heat stress or other difficulties;
- Periodically checking the integrity of partner's PPE; and
- Notifying the Site manager or other Site personnel if emergency assistance is needed.

4.4 Site Communications

The following communication equipment is used to support on-site communication: cell phones, visual hand signals. Note, cell phone use is strictly prohibited when working within 25 feet of the tracks.

As applicable, hand signals will be used according to the following:

Hand Signals

SIGNAL	MEANING
Hand gripping throat	Out of air, can't breathe
Grip partner's wrist	Leave area immediately
Hands on top of head	Need assistance
Thumbs up	I'm all right, okay
Thumbs down	No, negative

A current list of emergency contact numbers is included in the Site-Specific Emergency Information at the beginning of this HASP.

4.5 Site Work Zones

This Site is divided into three (3) major zones, described below. These zones are characterized by the likely presence or absence of biological, chemical, or physical hazards and the activities performed within them. Zone boundaries are clearly marked at all times and the flow of personnel among the zones is controlled. The Site is monitored for changing conditions that may warrant adjustment of zone boundaries. Zone boundaries are adjusted as necessary to protect personnel and clean areas. Whenever boundaries are adjusted, zone markings are also changed and workers are immediately notified of the change.

Exclusion Zone

The area where contamination exists is the Exclusion Zone (EZ). All areas where excavation and handling of contaminated materials take place are considered part of the EZ. This zone will be clearly delineated by chain link fencing, caution tape, cones or other effective barriers, as necessary. Safety tape may be used as a secondary delineation within the EZ. The zone delineation markings may be opened in areas for varying lengths of time to accommodate equipment operation or specific construction activities. The SHSO may establish more than one EZ where different levels of protection may be employed or where different hazards exist. Personnel are not allowed in the EZ without:

- A buddy (co-worker);
- Required minimum level PPE;
- Medical authorization;
- Training certification; and
- Requirement to be in the zone.

Contamination Reduction Zone

A Contamination Reduction Zone (CRZ) is established between the exclusion zone and the support zone. The CRZ contains the Contamination Reduction Corridor (CRC) and provides an area for decontamination of personnel and equipment. The CRZ will be used for general Site entry and egress in addition to access for heavy equipment and emergency support services. Personnel are not allowed in the CRZ without:

- A buddy (co-worker)
- Appropriate PPE
- Medical authorization
- Training certification
- Requirement to be in the zone

Support Zone

The Support Zone (SZ) is an uncontaminated area that will be the field support area for the Site operations. The SZ will contain the temporary project trailers and provides for field team communications and staging for emergency response. Appropriate sanitary facilities and safety equipment will be located in this zone. Potentially contaminated personnel or materials are not allowed in this zone. The only exception will be appropriately packaged/decontaminated and labeled samples.

5. Job Hazard Evaluation

Roux's work at the Site is expected to entail a variety of physical, chemical, and biological hazards, all of which must be sufficiently managed to allow the work to be performed safely. Some of the hazards are Site-specific (i.e., they are associated with the nature, physical characteristics, and/or routine operation of the Site itself), while others are activity-specific (i.e., they are associated with [or arise from] the particular activity being performed). The various hazards can be grouped into the following categories:

- **Caught/Crushed** – the potential to become caught in, under, between, or by an object or parts of an object, such as equipment with parts that open and close or move up and down ("pinch points") or equipment that rotates, and the accompanying potential to have body parts cut, mangled, or crushed thereby.
- **Contact** – the potential to be struck by or against moving or stationary objects that can cause physical injury, such as heavy machinery, overhead piping, moving vehicles, falling objects, and equipment (including tools and hand-held equipment) or infrastructure with the ability to cut or impale.
- **Energy Sources** – the potential for bodily harm associated with energy sources, most notably electricity, but also including latent energy sources such as compressed air and equipment under tension (which when released could cause injurious contact or a fall).
- **Ergonomics** – the potential for musculoskeletal injury associated with lifting/carrying, pushing/pulling, bending, reaching, and other physical activity attributable to poor body position/mechanics, repetitive motion, and/or vibration.
- **Exposure** – the potential for injury/illness due to physical, chemical, or biological exposures in the work environment, including but not limited to temperature extremes, solar radiation, and noise (physical), chemical splashes and hazardous atmospheres (chemical), and animal/insect bites and poisonous plants (biological).
- **Falls** – the potential to slip or trip and thus fall or drop a load, resulting in bodily injury to oneself or others.

The foregoing is intended to provide Roux employees with a general awareness of the hazards involved with Site work. A more detailed review of the potential hazards associated with each specific activity planned for the Site (or on-going activity, as the case may be) is provided in the activity-specific Job Safety Analysis (JSA) forms in **Appendix A**. As can be seen in the JSA forms, the hazards are identified by category per the above, and specific measures designed to mitigate/manage those hazards are also identified. In preparing the JSA forms, all categories of hazards were considered, and all anticipated potential hazards were identified to the extent possible based on the experience of the personnel preparing and reviewing the JSA forms. However, there is always the possibility for an unanticipated hazard to arise, potentially as condition change over the course of the workday. Roux personnel must maintain a continual awareness of potential hazards in the work zone, regardless of whether the hazard is identified in the JSA form. Particular attention should be paid to hazards associated with exposure to hazardous substances (see **Table 1** for a listing of the hazardous substances most likely to be encountered in environmental media at the Site) and to Site personnel being located "in the line of fire" with respect to moving equipment, pinch points, and latent energy (e.g., being located or having body parts located within the swing radius of an excavator, between two sections of pipe being connected, below a piece of suspended equipment, or adjacent to a compressed air line).

5.1 Hazard Communication and Overall Site Information Program

The information in the JSAs and safety data sheets is made available to all employees and subcontractors who could be affected by it prior to the time they begin their work activities. Modifications to JSAs are communicated during routine pre-work briefings.

The information in the JSAs and Safety Data Sheets (SDSs) is made available to all employees and subcontractors who could be affected by an exposure to the hazards covered in them prior to the time they begin their work activities. Modifications to JSAs are communicated during routine pre-work briefings, and periodically updated as needed in the HASP. SDSs will be maintained by the SHSO/SS for new chemicals brought on-site as needed. Copies of SDSs can be found in **Appendix B**.

5.2 Noise

Noise is associated with the operation of heavy equipment, power tools, pumps, and generators. Noise is also a potential hazard when working near operating equipment such as excavators, drill rigs or pole drivers. High noise (i.e., < 85 dBA) operations may be evaluated by the SHSO utilizing a type 2 handheld sound level meter (SLM) operating on the "A"-weighted scale with slow response because this scale most closely resembles human response to noise and complies with OSHA 29 CFR 1910.95. Hearing protection is required in areas with noise exposure greater than 85 dBA. Double hearing protection (ear plugs and earmuffs) are required in areas where the noise exposure is more than 95 dBA. Noise exposure will be controlled by hearing protection as described above or by maintaining set-backs from high-noise equipment, as warranted. Personnel handling heavy equipment and using power tools that produce noise levels exceeding those described levels above are required by OSHA 29 CFR 1910.95 to wear the appropriate Noise Reduction Rating (NRR) level of hearing protection. Appropriate hearing protection will be evaluated by the SHSO as necessary in consultation with the OHSM and CHSM.

5.3 Biological Hazards

Biological hazards that may potentially be present at a Site, include poisonous plants, insects (ticks, spiders, bees), animals (snakes, dogs), etc. Information on biological hazards can be found within Roux's Biological Hazard Awareness Management Program located within Roux's Corporate Health and Safety Manual. There is also potential for transmission and/or exposure to SARS-CoV-2, the virus that causes COVID-19. Prior to beginning work, on-Site protocols shall be established by the project team, including subcontractors, in accordance with federal, state, county, city, and/or other guidance, as applicable and consistent with **Appendix C**. Government guidance/orders generally consist of implementation of the following protocols/procedures (or some variation thereof):

- Self-monitoring for symptoms;
- Fitness check for work each day;
- Limiting businesses to "essential" operations;
- Social distancing (generally 6 feet);
- Cloth face masks/ coverings;
- Hand washing/ disinfectant use; and
- Care/ awareness of surroundings (public spaces, equipment, hotel rooms, rental cars).

Additional guidance on minimizing potential exposure to SARS-CoV-2, including a JSA, are included in **Appendix C**.

6. Emergency Response Plan

This emergency response plan details actions to be taken in the event of Site emergencies. The PM and SHSO is responsible for the implementation of emergency response procedures onsite. The SHSO/PM provides specific direction for emergency action based upon information available regarding the incident and response capabilities and initiates emergency procedures and notification of appropriate authorities. In the event of an emergency, Site personnel are evacuated and do not participate in emergency response activities, response is facilitated through external emergency services.

6.1 Emergency Response

The SHSO, after investigating the incident and relevant information, shall determine the level of response required for containment, rescue and medical care. Limited on-site emergency response activities could occur therefore the SHSO is responsible for notifying external emergency response agencies. The SHSO provides relevant information to the responding organizations, including but not limited to the hazards associated with the emergency incident, potential containment problems, and missing Site personnel.

6.2 Emergency Alerting and Evacuation

If evacuation notice is given, Site workers leave the worksite, if possible, by way of the nearest exit. Appropriate primary and alternate evacuation routes and assembly areas have been identified and are shown on the Site Plan with Emergency Muster Area (**Figure 2**). The routes and assembly area will be determined by conditions at the time of the evacuation based on wind direction, the location of the hazard source, and other factors as determined by SHSO/PM.

Personnel exiting the Site gather at a designated assembly point. To determine that everyone has successfully exited the Site, personnel will be accounted for at the assembly point. If any worker cannot be accounted for, notification is given to the SHSO, PM, and any arriving response authorities so that appropriate action can be initiated. Subcontractors on this Site have coordinated their emergency response plans to ensure that these plans are compatible and potential emergencies are recognized, alarm systems are clearly understood, and evacuation routes are accessible to all personnel relying upon them.

6.3 Emergency Medical Treatment and First Aid

In the event of a work-related injury or illness, employees are required to follow the procedures outlined below. All work-place injury and illness situations require Roux's Project and Corporate Management Team to be notified when an injury/illness incident occurs, and communication with the contracted Occupational Health Care Management Provider, AllOne Health (AOH), is initiated. The Injury/Illness Notification Flowchart is provided below and within Roux's Incident Investigation and Reporting program included within Roux's Corporate Health and Safety Manual.

If on-Site personnel require any medical treatment, the following steps will be taken:

a. Notify Roux's Project and Corporate Management Team for any work-related injury and/or illness occurrence, and communicate with the contracted Occupational Health Care Management Provider, AOH, immediately following the notifications provided above.

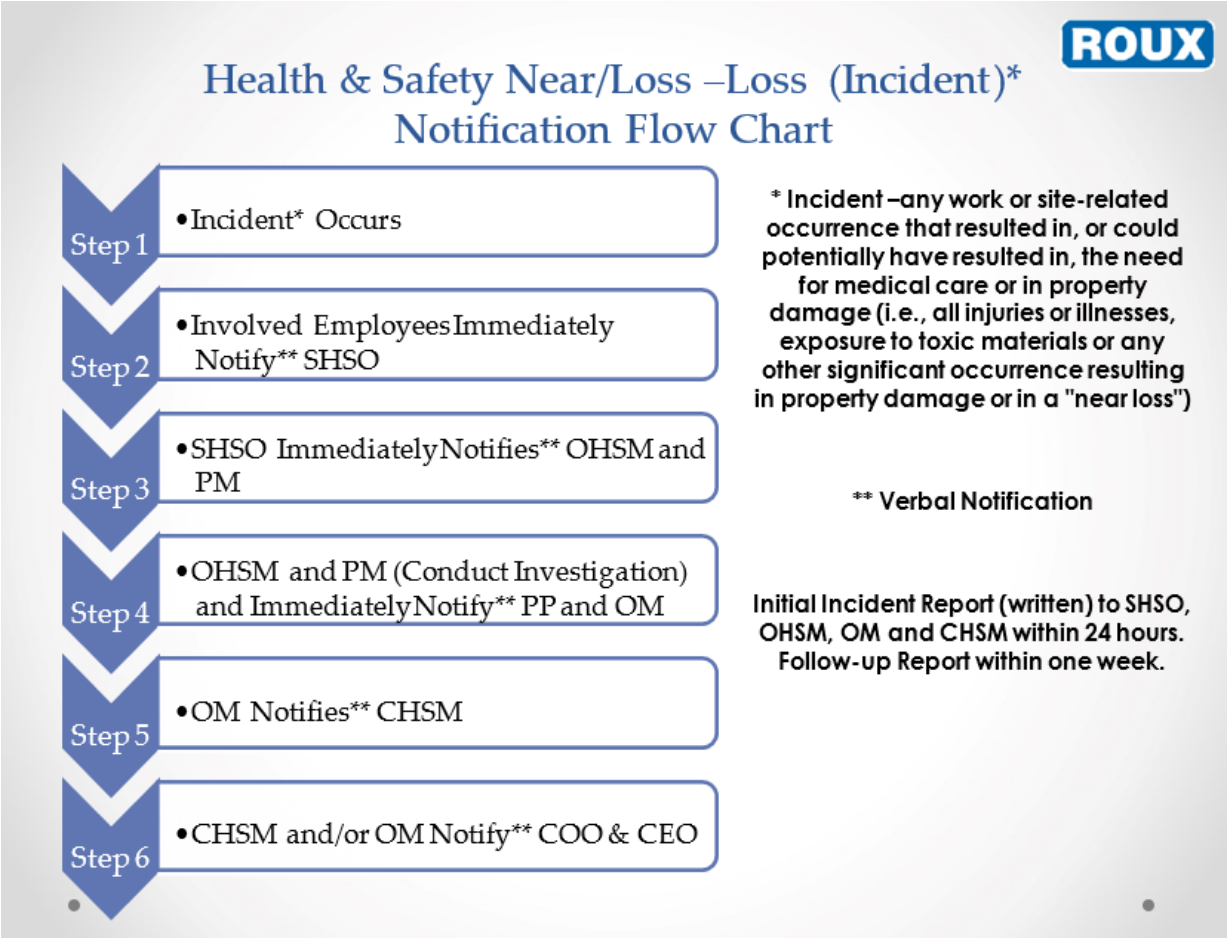
b. Based on discussions with the Project Team, Corporate Management and the AOH evaluation, if medical attention beyond onsite First Aid is warranted, transport the injured / ill person (IP) to the

Urgent Care Center, or notify the Fire Department or Ambulance Emergency service and request an ambulance or transport the victim to the hospital, and continue communications with Corporate Management Team. An Urgent Care/Hospital Route map with location to Northwell GoHealth Urgent Care and Mount Sinai Hospital of Queens in Astoria is included as **Figure 3**.

c. Decontaminate to the extent possible prior to administration of first aid or movement to medical or emergency facilities.

d. First aid medical support will be provided by onsite personnel trained and certified in First Aid, Cardio Pulmonary Resuscitation (CPR), Automatic External Defibrillation (AED), and Blood-Borne Pathogens (BBP) Awareness, until relieved by emergency medical services (EMS).

e. The SHSO and Project Manager will perform a Loss Investigation (LI) and the Project Team will complete the final Loss Report. If a Roux employee is involved in a vehicular incident, the employee must also complete the Acord Automobile Loss Notice.



6.4 Adverse Weather Conditions

In the event of adverse weather conditions, the SHSO or project principal will determine if work can continue without sacrificing the health and safety of all field workers. Some of the items to be considered prior to determining if work should continue are:

- Potential for heat stress and heat-related injuries;
- Potential for cold stress and cold-related injuries;

- Treacherous weather-related conditions;
- Limited visibility; and
- Electrical storm potential.

Site activities will be limited to daylight hours and acceptable weather conditions. Inclement working conditions include heavy rain, fog, high winds, and lightning. Observe daily weather reports and evacuate if necessary in case of inclement weather conditions.

6.5 Electrical Storm Guidelines

In the event that lightning and/or thunder are observed while working onsite, all onsite activities shall stop and personnel shall seek proper shelter (e.g., substantial building, enclosed vehicle, etc.). Work shall not resume until the threat of lighting has subsided and no lightning or thunder has been observed for 30 minutes. If the possibility of lightning is forecast for the day, advise the onsite personnel on the risks and proper procedure at the pre-work safety briefing. Continuously monitor for changing weather conditions and allow enough time to properly stop work if lightning is forecast.

7. Safety Procedures

This section of the HASP presents the specific safety procedures to be implemented during Roux's activities at the Site in order to protect the health and safety of various on-site personnel. Minimum OSHA-mandated procedures are presented first, followed by client- and Site-specific procedures. Lastly, activity-specific procedures are discussed. These Site and activity-specific procedures supplement the general safety procedures included in Roux's Corporate Health and Safety Manual, which also must be followed in their entirely.

7.1 Training

At a minimum, Site personnel who will perform work in areas where there exists the potential for toxic exposure will be health and safety-trained prior to performing work onsite per OSHA 29 CFR 1910.120(e) and 29 CFR 1926.65(e). More specifically, all Roux, subcontractor, and other personnel engaged in sampling and remedial activities at the Site and who are exposed or potentially exposed to hazardous substances, health hazards, or safety hazards must have received at a minimum the 40 hour initial HAZWOPER training consistent with the requirements of 29CFR 1910.120(e)(3)(i) training and a minimum of 3 days' actual field experience under the direct supervision of a trained experienced supervisor, plus 8 hours of refresher training on an annual basis. Depending on tasks performed, less training may be permitted. Evidence of such training must be maintained at the Site at all times. Furthermore, all on-Site management and supervisory personnel directly responsible for or who supervise the employees engaged in Site remedial operations, must have received an additional 8 hours of specialized training at the time of job assignment on topics including, but not limited to, the employer's safety and health program and the associated employee training program, personal protective equipment program, spill containment program, and health hazard monitoring procedure and techniques, plus 8 hours of refresher training on an annual basis.

Roux personnel training records are maintained in a corporate database with records available upon request from either the OHSM/SHSO/CHSM or Human Resources Department.

7.2 Site-Specific Safety Briefings for Visitors

A site-specific briefing is provided to all site visitors who enter this site beyond the site entry point. For visitors, the site-specific briefing provides information about site hazards, the site lay-out including work zones and places of refuge, the emergency alarm system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

7.3 HASP Information and Site-Specific Briefings for Workers

Site personnel review this HASP and are provided a Site-specific tailgate briefing prior to the commencement of work to ensure employees are familiar with this HASP and the information and requirements it contains, as well as the relevant JSAs included in **Appendix A**. Additional briefings are provided as necessary to notify employees of any changes to this HASP as a result of information gathered during on-going Site characterization and analysis of changing conditions. Conditions for which we schedule additional briefings include, but are not limited to: changes in site conditions, changes in the work schedule/plan, newly discovered hazards, and incidents occurring during Site work.

7.4 Medical Surveillance

The medical surveillance section of the Health and Safety Plan describes how worker health status is monitored at this site. Medical surveillance is used when there is the potential for worker exposure to hazardous substance at levels above OSHA permissible exposure limits or other published limits. The purpose of a medical surveillance program is to medically monitor worker health to ensure that personnel are not adversely affected by site hazards. The provisions for medical surveillance at this site are based on the site characterization and job hazard analysis found in Section 4 of this HASP and are consistent with OSHA requirements in 29 CFR 1910.120(f) as applicable.

7.4.1 Site Medical Surveillance Program

Medical surveillance requirements are based on a worker's potential for exposure as determined by the site characterization and job hazard analysis documented in Section 4 and JSAs within **Appendix A** of this HASP and in compliance with the requirements of 29 CFR 1910.120(f)(2). Based on site information and use of direct reading instruments, limited use of respirators (less than 30 days per year), and the absence of an employee-staffed HAZMAT team, a limited medical surveillance program is required and implemented at this site. The medical surveillance program provides that:

1. Workers assigned to tasks requiring the use of respirators receive medical examinations in accordance with 29 CFR 1910.134(e) to ensure they are physically capable to perform the work and use the equipment, and
2. If a worker is injured, becomes ill, or develops signs or symptoms of possible over-exposure to hazardous substance or health hazards, medical examinations are provided to that worker as soon as possible after the occurrence and as required by the attending physician.
3. These medical examinations and procedures are performed by or under the supervision of a licensed physician and are provided to workers free of cost, without loss of pay, and at a reasonable time and place. In addition, the need to implement a more comprehensive medical surveillance program will be re-evaluated after any apparent over-exposure.

7.4.2 Medical Recordkeeping Procedures

Medical recordkeeping procedures are consistent with the requirements of 29 CFR 1910.1020 and are described in the company's overall safety and health program. A copy of that program is available at our Islandia, New York office.

The following items are maintained in worker medical records:

- Respirator fit test and selection;
- Physician's medical opinion of fitness for duty (pre-placement, periodic, termination);
- Physician's medical opinion of fitness for respirator protection (pre-placement, periodic); and
- Exposure monitoring results.

7.4.3 Program Review

The medical program is reviewed to ensure its effectiveness. The Corporate Health and Safety Manager in coordination with the Human Resources Director is responsible for this review. At minimum, this review consists of:

- Review of accident and injury records and medical records to determine whether the causes of accidents and illness were promptly investigated and whether corrective measures were taken wherever possible;
- Evaluation of the appropriateness of required medical tests based on site exposures; and
- Review of emergency treatment procedures and emergency contacts list to ensure they were site-specific, effective, and current.

7.5 Personnel Protection

Site safety and health hazards are eliminated or reduced to the greatest extent possible through engineering controls and work practices. Where hazards are still present, a combination of engineering controls, work practices and PPE are used to protect employees. Appropriate personal protective equipment (PPE) shall be worn by Site personnel when there is a potential exposure to chemical hazards or physical hazards (e.g., falling objects, flying particles, sharp edges, electricity, and noise), as determined by the SHSO. The level of personal protection, type and kind of equipment selected will depend on the hazardous conditions and in some cases cost, availability, compatibility with other equipment, and performance. An accurate assessment of all these factors will be made before work can be safely executed.

Roux maintains a comprehensive written PPE program that addresses proper PPE selection, use, maintenance, storage, fit and inspection. Roux's PPE program can be found within **Appendix D**. PPE to be used at the Site will meet the appropriate American National Standards Institute (ANSI) standards and the following OSHA (General/Construction Industry) standards for minimum PPE requirements.

The minimum level of PPE for entry onto the Site is Level D. The following equipment shall be worn:

- Work uniform (long pants, sleeved shirt);
- Hard hat;
- Steel or composite toe work boots;
- Safety Glasses (must comply with one of the following ANSI/ISEA Z87.1-2010, ANSI Z87.1-2003, ANSI Z87.1-2003);
- Boot Covers (as needed);
- Hearing protection (as needed);
- High visibility clothing (shirt/vest); and
- Hand protection (e.g., minimum cut resistance meeting ANSI 105-2000 Level 2).

Note that jewelry shall be removed or appropriately secured to prevent it from becoming caught in rotating equipment or unexpectedly snagged on a fixed object (e.g., wrist watches, bracelets, rings, chains and necklaces, open earrings). Do not wear loose clothing and all shoulder-length hair should be tied back.

Site specific PPE ensembles and materials are identified within task specific JSAs located within **Appendix A**, and any upgrades or downgrades of the level of protection (i.e., not specified in the JSA) must be approved by the PP and immediately communicated to all Roux personnel and subcontractors as applicable. PPE is used in accordance with manufacturer's recommendations.

7.5.1 Hearing Conservation

Hearing protection is made available when noise exposures equal or exceed an 8-hour time-weighted average sound level of 85 dBA. Hearing protection is required when the 8-hour time weighted average sound level $\geq$ 90 dBA. Where noise exposure meets or exceeds this level, noise is listed as a physical hazard in the JSA for the tasks/operation, and hearing protection is included as one of the control measures (PPE).

7.6 Monitoring

An air monitoring program is important to the safety of on- and off-Site personnel, and the surrounding area. A preliminary survey, to establish background conditions in the immediate sampling area, may be made prior to the initiation of Site work including, but not limited to, monitoring wind direction (e.g., wind socks) and approximate temperature during all invasive Site activities. This survey will be conducted with the appropriate pre-calibrated air monitoring instrument(s), as warranted by the field activity. Once this survey has been complete, any changes in the type of PPE will be determined and relayed to those working on-Site.

Work zone air monitoring will be performed to verify that the proper level of PPE is used, and to determine if increased protection or work stoppage is required. The following equipment shall be used to monitor conditions:

- A Photoionization Detector (PID) with a lamp energy of 10.6 eV will be used to provide direct readings of organic vapor concentrations during intrusive activities to determine that personnel protection is adequate. Concentrations shall be recorded during intrusive activities with the potential to encounter contaminant vapors.
- If required, a pre-calibrated multi-gas meter with combustible Lower Explosive Limit (LEL), oxygen (O_2), carbon monoxide (CO), and hydrogen sulfide (H_2S) sensors shall be used to monitor the potential for oxygen-deficient atmospheres, explosive concentrations of organic vapors, and toxic gases during intrusive operations. Monitoring will be performed according to the action levels for oxygen and combustible gases provided in this section. The calibration for this device will be performed using a known gas composition calibration mixture.

Personal exposure monitoring utilizing activated charcoal tubes may be considered based on whether or not the area sample results are at or above half of the PEL. The decision to perform the monitoring will be made by, and under the control of, the CHSM.

Below are monitoring action levels for Site-specific chemicals of concern. In the event PID readings above the thresholds identified below are sustained for 5 minutes in the breathing zone, worker protection will require upgrading following notification to the OHSM and applicable parties (e.g., client, board of health, regulators, etc.).

7.6.1 Action Levels for Air Monitoring

PPE can remain at Level D if breathing zone VOC concentrations are less than 5 ppm and benzene is non-detect. Personnel are required to evacuate the Site when breathing zone VOC readings exceed 25 ppm.

The following tables include summaries of the air monitoring, work practices, and action levels for the expected contaminants. The action levels to initiate testing with colorimetric tubes for airborne volatiles is 1 ppm (PID reading) and is based on the Permissible Exposure Limit (PEL) for benzene (1 ppm). The colorimetric tubes are used to confirm the presence or absence of specific constituents, and they do not provide a measured concentration.

Air Monitoring Summary and Action Levels Organic Vapors	
PID Reading in Breathing Zone (ppm)[1]	**Action**
0-1 ppm above background[2]	Continue monitoring
1-5 ppm sustained 60 seconds	Continue monitoring, if applicable initiate additional collection of benzene using colorimetric tubes.
<5 ppm and no presence of benzene	Continue Monitoring, ventilate space
≥ 5 ppm - ≤ 25 ppm and no presence of benzene	Ventilate space until PID reads < 5 ppm. If < 5 ppm cannot be achieved, upgrade to Level C[3].
≥ 25 ppm	Ventilate space and evacuate area.

1 Based on relative response/sensitivity of PID to benzene.
2 Background concentrations should be established at the beginning of each work day. It may be necessary to re-establish background concentrations and ambient conditions vary through the day.
3 Measured air concentrations of known organic vapors will be reduced by the respirator to one half of the PEL or lower, and the individual and combined compound concentrations shall be within the service limit of the respirator cartridge.

Air Monitoring Summary and Action Levels Oxygen	
O_2 Reading in Breathing Zone (%)[1]	**Action**
20.9% O_2	Oxygen level normal
< 19.5% O_2	Oxygen deficient Interrupt task/Evacuate area
>23.5% O_2	Oxygen enriched Interrupt task/Evacuate area

1. Action levels based on USEPA Standard Operating Safety Guides; Table 5-1, Atmospheric Hazard Action Guidelines may be further restricted based on the CHSM's professional judgment and experience.

Air Monitoring Summary and Action Levels Carbon Monoxide	
CO Reading in Breathing Zone (ppm)[1]	**Action**
<25 ppm	Inspect exhaust system for leaks or other sources of CO. Monitor initially and every 15 minutes during use of CO-generating equipment.
25-50 ppm	Ventilate area. Monitor continuously and record measurements. Contact PM.
>50 ppm	Cease Field Operations. Ventilate area.

1. Based upon the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) of 25 ppm as an 8-hour time weighted average (TWA) and OSHA's Permissible Exposure Limit (PEL) of 50 ppm as an 8-hour TWA concentration.

Air Monitoring Summary and Action Levels Combustible Gases	
Lower Explosive Limit (LEL) Reading	**Action**
< 4% LEL (<2,000 ppm)	Site activities will continue with normal monitoring
4% – 20% LEL (2,000 – 10,000 ppm)	Stop work until levels dissipate to <4% LEL
> 20% LEL (>10,000 ppm)	Potential explosion hazard. Halt all site activities, research source of release, aerate work area, suppress source.

Air Monitoring Summary and Action Levels Hydrogen Sulfide	
Hydrogen Sulfide (H_2S) Reading	**Action**
<10 ppm	Site activities will continue with normal monitoring
>10 ppm	Stop work until levels dissipate to <10 ppm; use mechanical ventilation if possible
Cannot use air purifying respirators for H_2S because of olfactory fatigue	

7.6.2 Air Monitoring Equipment and Calibration

A PID calibrated to an appropriate calibration mixture will be used to detect organic vapors in and around the work areas. Monitoring will be conducted in and around all work areas and at the workers breathing zone before activities commence to establish a background level, then at 15-minute intervals throughout the day. All equipment will be calibrated according to the manufacturer's recommendation. A calibration log will be

maintained and will include the name of the person who performed the calibration, the date and time calibrated, and the instrument reading at the time of calibration. A manual bellows pump or equivalent with colorimetric tubes for formaldehyde will be utilized to determine the course of action related to upgrading or downgrading the level of respiratory protection, as applicable.

If air monitoring data indicate safe levels of potentially harmful constituents at consistent intervals (5-minute intervals), then monitoring can be conducted less frequently (every 30 minutes). This determination will be made by the onsite SHSO. Monitoring data, including background readings and calibration records, will be documented. Work to be performed on-Site will conform to Roux's Standard Operating Procedures (SOPs). Conformance with these guidelines as well as the guidelines described in this HASP will aid in mitigating the physical and chemical hazards mentioned throughout this HASP.

7.7 Tailgate Safety Meetings

A designated Site worker will provide daily safety briefings (e.g., tailgate meetings) including, but not limited to, the following scenarios:

- When new operations are to be conducted;
- Whenever changes in work practices must be implemented; and
- When new conditions are identified and/or information becomes available.

Daily safety briefings shall be recorded on the Roux Daily Tailgate Health and Safety Meeting Log/Daily Site Safety Checklist, and all completed forms will become a part of the project file.

7.8 Spill Containment

Spill containment equipment and procedures should, at a minimum, meet the requirements of the facility's Spill Prevention, Control and Countermeasure Plan, if applicable. Otherwise, spill containment equipment and procedures must be considered depending on the task including, but no limited to, chemical/product transfer points and handling.

7.8.1 Initial Spill Notification and Response

Any worker who discovers a hazardous substance spill will immediately notify Jeff Wills (PM). The worker will, to his/her best ability, report the hazardous substance involved, the location of the spill, the estimated quantity of material spilled, the direction/flow of the spill material, related fire/explosion incidents, and any associated injuries without compromising their own safety.

7.8.2 Spill Evaluation and Response

Jeff Wills (PM) is responsible for evaluating spills and determining the appropriate response. When this evaluation is being made, the spill area will be isolated and demarcated to the extent possible. If necessary to protect nearby community members, notification of the appropriate authorities is made by the PM as appropriate. On-Site response is limited to small spills (e.g., <10 gallons); large spills require external emergency responders who will be contacted by the SHSO.

7.9 Decontamination

The decontamination section of the HASP describes how personnel and equipment are decontaminated when they leave the Exclusion Zone. This section also describes how residual waste from decontamination processes is disposed. The site decontamination procedures are designed to achieve an orderly, controlled removal or neutralization of contaminants that may accumulate on personnel or equipment. These procedures minimize worker contact with contaminants and protect against the transfer of contaminants to clean areas of the site and off-site. They also extend the useful life of PPE by reducing the amount of time that contaminants contact and can permeate PPE surfaces. Decontamination is facilitated within the CRZ at this site, if applicable.

7.9.1 Decontamination Procedures for Personnel and PPE

The following are general decontamination procedures established and implemented at this site.

1. Decontamination is required for all workers exiting a contaminated area. Personnel may re-enter the SZ only after undergoing the decontamination procedures described below in the next section.
2. Protective clothing is decontaminated, cleaned, laundered, maintained and/or replaced as needed to ensure its effectiveness.
3. PPE used at this site that requires maintenance or parts replacement is decontaminated prior to repairs, or
4. PPE used at this site is decontaminated or prepared for disposal on the premises. Personnel who handle contaminated equipment have been trained in the proper means to do so to avoid hazardous exposure.
5. This site uses an off-site laundry for decontamination of PPE. The site has informed that facility of the hazards associated with contaminated PPE from this site.
6. The site requires and trains workers that if their permeable clothing is splashed or becomes wetted with a hazardous substance, they will immediately exit the work zone, perform applicable decontamination procedures, shower, and change into uncontaminated clothing.
7. Procedures for disposal of decontamination waste meet applicable local, State, and Federal regulations.

7.9.2 Decontamination Procedures for Equipment

All tools, equipment, and machinery from the EZ or CRZ are decontaminated in the CRZ prior to removal to the SZ. Equipment decontamination procedures are designed to minimize the potential for hazardous skin or inhalation exposure and to avoid cross-contamination and chemical incompatibilities.

General Equipment Decontamination Procedures:

1. Decontamination is required for all equipment exiting a contaminated area. Equipment may re-enter the SZ only after undergoing the equipment decontamination procedures.
2. Vehicles that travel regularly between the contaminated and clean areas of the site are carefully decontaminated each time they exit the EZ and the effectiveness of that decontamination is monitored to reduce the likelihood that contamination will be spread to other parts of the site.
3. Particular attention is given to decontaminating tires, scoops, and other parts of heavy equipment that are directly exposed to contaminants and contaminated soil.

The following items may be used to decontaminate equipment:

- Fresh water rinse;
- Non-phosphorus detergent wash;
- Distilled water rinse;
- Acetone rinse;
- Distilled water rinse; and
- A steam cleaner or pressure washer (heavy equipment only).

7.9.3 Monitoring the Effectiveness of Decontamination Procedures

Visual examination and sampling are used to evaluate the effectiveness of decontamination procedures. Visual examination is used to ensure that procedures are implemented as described and that they appear to control the spread of contaminants under changing site conditions. Visual examination is also used to inspect for signs of residual contamination or for contaminant permeation of PPE.

Personnel who work in contaminated areas of the site, either the Contamination Reduction Zone (CRZ) or the Exclusion Zone, are trained in the principles and practices of decontamination described in this section of the HASP and in related SOPs. If site procedures are changed as a result of inspection and monitoring, all affected employees are notified of these changes.

7.10 Confined Space Entry

Confined space entry is not anticipated to be performed.

The following is a list of the safety requirements for confined space entry at the Site:

- **ROUX PERSONNEL ARE NOT AUTHORIZED TO ENTER AN OSHA PERMIT REQUIRED CONFINED SPACE;**
- Currently the scope of work **DOES NOT** require personnel to enter permitted confined space for this project; and
- Any changes to the field activities that may necessitate confined space entry will be reported to the Project Principal and OHSM.

Confined space is defined as any space, depression, or enclosure that:

- Has limited opening for entry and egress;
- Is large enough for and employee to enter and perform assigned work; and
- Is not intended for continuous occupancy.

A permit required confined space is one that meets the definition of a confined space and has one or more of the following characteristics:

- May contain or produce life-threatening atmospheres due to oxygen deficiency the presence of toxic, flammable, or corrosive contaminants;
- Contains a material that has the potential for engulfment;
- Has an internal configuration that may cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section; and
- Contains any other serious safety or health hazards.

Although Roux personnel will not perform confined space entry, it is expected that subcontractors performing cleaning and mitigation and/or remedial measures activities may be required to enter structures that are considered to be a permit required confined space. Permitting of the confined space as well as hazard mitigation for entry will be completed by the subcontractor in accordance with 1910.146.

7.11 Client and Site-Specific

In addition to the OSHA-specific procedures discussed above, there may be client and site-specific safety procedures that must be adhered to during the performance of remedial activities at the Site.

All employees assigned to work at the Yard must attend the Amtrak Contractor Employee Safety Program Course (CSG 101), which includes Roadway Worker Protection for compliance with 49 CFR Part 214 (Training Booklet included as Appendix F). In addition, all employees must display the Amtrak Contractor Employee Safety Trained Badge when working in the Yard.

As part of Amtrak's compliance efforts, each employee must understand the following:

- A job briefing with an Amtrak representative is required prior to commencing work;
- Never foul any track without protection provided by Amtrak;
- Immediately clear tracks upon signal from watchman;
- Never return to tracks until clear signal is given by watchman; and follow all Amtrak on track safety rules and instructions.

The two most common dangers involved with working on or about railroad tracks are moving trains and electrical power lines. The following procedures must be followed.

- Clear the tracks when a train approaches from either direction. A gang watchman will signal that a train is approaching by blowing a whistle or air horn and by raising a black and white signal disc overhead.
- To avoid the dangers from electrical hazards, stay at least 15 feet away from any energized line. Do not approach closer than 15 feet to an electrical wire unless a Class A employee tells you it is de energized and properly grounded.

A copy of the Contractor Safety Course booklet and New York Division Supplement is included as Appendix F. Amtrak provides Contractor Responsibilities for conducting work and handling equipment and materials to prevent any part of the equipment from fouling an operating track or wire line without written permission. The Contractor Responsibilities are also included as Appendix F.

7.12 Unusual or Significant Risks

Field activities that appear to have unusual or significant risks that cannot be adequately managed with existing risk tools such as LPS, HASPs, traffic safety plans, work permits, design and O&M practices, equipment HAZOPS or other safety tools must be referred to the CHSM to help with the assessment and management of the associated potential safety risks. Examples include the use of explosives for demolition, use of firearms to control wildlife, rappelling, demolition over water, diving, etc.

7.13 Activity-Specific Hazards

In addition to the general hazards discussed above, there are activity-specific hazards associated with each work activity planned for the Site. An activity-specific JSA has been completed for each of the activities planned for the Site. JSAs are provided in **Appendix A**. In the event that new work activities or tasks are planned, JSAs will be developed and implemented prior to performing the new activities. In the absence of a JSA, the personnel performing work must prepare a field JSA and receive clearance from a designated competent safety official prior to performing any task with significant risk. In emergency situations where time is critical SPSAs will be utilized to identify the task, associated hazards and mitigative actions to take. For lower risk activities (as deemed by the discretion of a Competent Person) where a JSA is determined to not be needed, the individual(s) conducting the activities must perform SPSAs prior to and during the work.

7.13.1 Electrical and Other Utility Assessment and Accommodations

Roux shall perform a site walk to identify any potential overhead electrical or utility lines. All applicable guidelines will be followed in the vicinity of overhead power and utility lines (see Section 7.13.3 below).

Roux has also reviewed all available Site maps showing buried utility lines to identify potential hazards, which revealed that no underground hazards are known to exist in the vicinity of the areas of the Site pertinent to this HASP.

7.13.2 Subsurface Work

Subsurface work activities will require adherence to Roux's Corporate Subsurface Utility Clearance Management program found within **Appendix E**.

7.13.2.1 Excavations and Trenching

All trenching and excavation work activities contracted by Roux shall comply with 29 CFR 1926.651-652 Subpart P. Additionally, for trenches greater than 4 feet deep, where employees will enter, the trench needs to have a stairway or ladder or other safe means of egress. Where employees will enter trenches greater than 5 feet deep, the trench must have some type of protective system or sloped appropriately to prevent cave-ins.

The SHSO will be present on-Site during all Roux contracted excavation and backfill operations and will supplement health and safety monitoring conducted by Subcontractor air quality screening to ensure that appropriate levels of protection and safety procedures are utilized. The proximity of chemical, water, sewer, and electrical lines will be identified by Roux and/or their subcontractor before any subsurface activity or sampling is attempted.

The following safe work practices will be implemented during this task.

- The proximity of chemical, water, sewer, and electrical lines will be identified by a facility representative prior to beginning any subsurface activity.
- While earthmoving, stay out of the excavator's delineated heavy equipment exclusion zone and away from the excavation sides, where there is potential for cave in (within excavations that are 6 feet or more in depth, a delineated perimeter 6 feet away from the excavated edge is required).

Maximum Allowable Slopes

Soil or Rock Type	Maximum Allowable Slopes (H:V)[1] for Excavations Less Than 20 Feet Deep[3]
Stable Rock	Vertical (90°)
Type A[2]	3/4 : 1 (53°)
Type B	1 : 1 (45°)
Type C	1 1/2 : 1 (34°)

OSHA (29 CFR 1926.652, Subpart P, Appendices A and B)

Notes:

1 Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.

2 A short-term maximum allowable slope of 1/2H : 1V (63°) is allowed in excavations in Type A soil that are 12 feet (3.67 meters) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 meters) in depth shall be 3/4H : 1V (53°).

3 Sloping or benching for excavations greater than 20 feet deep shall be designed and stamped by a registered professional engineer.

Proper stockpiling (i.e., 2 feet minimum distance from the excavation edge), containment, transport, storage, and disposal practices will be utilized and is dependent upon the potential type and amount of waste generated during operations. The location of safety equipment and evacuation procedures will be established prior to initiation of operations according to this HASP.

7.13.3 Heavy Equipment

Use of heavy equipment at the Site will require adherence to Roux's Corporate Heavy Equipment Exclusion Zone Management Program found within **Appendix G**. Additionally, operation of the drill rig/other heavy equipment will maintain clearances from overhead power lines in accordance with OSHA 29 CFR1926.1408 Table A Minimum Clearance Distances provided below.

Minimum Required Clearances for Energized Overhead Power Lines

Nominal System Voltage of Power Line (K V)	Minimum Required Clearance (feet)
0-50	10
51-100	12
101-200	15
201-300	20
301-500	25
501-750	35
751-1000	45

1 kilovolt (KV) = 1,000 volts

7.14 Heat Stress

The National Oceanic and Atmospheric Administration records average minimum/maximum temperatures of 82/25 degrees Fahrenheit during the year in Queens, New York.

7.14.1 Heat Stress

Heat stress is a significant potential hazard and can be associated with heavy physical activity and/or the use of personal protective equipment in hot weather environments. Heat cramps are brought on by prolonged exposure to heat. As an individual sweats, water and salts are lost by the body resulting in painful muscle cramps. The signs and symptoms of heat stress are as follows:

- Severe muscle cramps, usually in the legs and abdomen;
- Exhaustion, often to the point of collapse; and
- Dizziness or periods of faintness.

First aid treatment includes, but is not limited to, shade, rest, and fluid replacement. Typically, the individual should recover within one-half hour while being monitored constantly. If the individual has not improved substantially within 30 minutes and the body temperature has not decreased, the individual should be transported to a hospital for medical attention.

7.14.2 Heat Exhaustion

Heat exhaustion may occur in a healthy individual who has been exposed to excessive heat while working or exercising. The circulatory system of the individual fails as blood collects near the skin to rid the body of excess heat through transference. The signs and symptoms of heat exhaustion are as follows:

- Rapid and shallow breathing;
- Weak pulse;
- Cold and clammy skin with heavy perspiration;
- Skin appears pale;
- Fatigue and weakness;
- Dizziness; and
- Elevated body temperature.

First aid treatment includes, but is not limited to, cooling the victim, elevating the feet, and replacing fluids.

If the individual is not substantially improved within 30 minutes and the body temperature has not decreased, the individual should be transported to the hospital for medical attention.

7.14.3 Heat Stroke

Heat stroke occurs when an individual is exposed to excessive heat and stops sweating. This condition is classified as a MEDICAL EMERGENCY requiring immediate cooling of the victim and transport to a medical facility. The signs and symptoms of heat stroke are as follows:

- Dry, hot red skin;
- Body temperature approaching or above 105 degrees F;
- Confusion, altered mental state, slurred speech;
- Seizures;
- Large (dilated) pupils; and
- Loss of consciousness – the individual may go into a coma.

First aid treatment requires immediate cooling and transportation to a medical facility. Heat stress is a significant hazard if any type of protective equipment (semi-permeable or impermeable) that prevents evaporative cooling when worn in hot weather environments.

7.15 Cold Stress

Cold stress is a danger at low temperatures and when the wind-chill factor is low. Prevention of cold-related illnesses is a function of whole-body protection. Adequate insulating clothing must be used when the air temperature is below 60°F. A work/rest regimen will be initiated when ambient temperatures and protective clothing cause a stressful situation. In addition, reduced work periods followed by rest in a warm area may be necessary in extreme conditions. The signs and symptoms of cold stress include the following:

- Severe shivering;
- Abnormal behavior;
- Slowing;
- Weakness;
- Stumbling or repeated falling;
- Inability to walk;
- Collapse; and/or
- Unconsciousness.

First aid requires removing the victim from the cold environment and seeking medical attention immediately. Also, prevent further body heat loss by covering the victim lightly with blankets. Do not cover the victim's face. If the victim is still conscious, administer hot drinks and encourage activity such as walking, wrapped in a blanket.

8. Field Team Review

Each person performing work at or visiting this site shall sign this section after site-specific training is completed and before being permitted to access the CRZ or Exclusion Zone.

I have read and understand this Site-Specific Health and Safety Plan. I will comply with the provision contained therein.

Site/Project: Amtrak Infrastructure and Yard Upgrade Projects

Name & Company	Signature	Date

9. Approvals

By their signature, the undersigned certify that this HASP is approved and will be utilized at the Amtrak SSY Site.

Christian Hoelzli – Site Health and Safety Officer	Date
Nevin Pahlad - Office Health and Safety Manager	Date
Emily Butler – Project Manager	Date
Robert Kovacs – Project Principal	Date

TABLES

1. Toxicological Properties of Hazardous Substances Present at the Site

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at Operable Units 3&4, Sunnyside Yard, Queens, New York

Compound	CAS#	TLV (mg/m^3)	IDLH (ppm)	PEL (mg/m^3)	Routes of Exposure	Toxic Properties	Target Organs	Physical/ Chemical Properties
Trichloroethene	79-01-6	270 50 ppm	None	270 50 ppm	Dermal; inhalation; ingestion	CNS depression Sensory irritant Kidney damage Liver damage Heart damage	CNS skin eyes kidney liver CVS	Liquid BP = 189°F flammable LEL = 12.5% UEL = 90%
Toluene	108-88-3	375 100 ppm	2,000	375 100 ppm	Dermal; inhalation; ingestion	CNS depression Liver damage Kidney damage Defatting of skin	CNS liver kidney skin	Liquid benzene odor BP = 232°F flammable LEL = 1.2% UEL = 7.1%
1,2-Dichloroethene	540-59-0	790 200 ppm	4,000	790 200 ppm	Dermal; ingestion; inhalation	CNS depressant Epigastric cramps Sensory irritant Dermatitis	CNS stomach skin	Colorless liquid BP = 118-140□F LEL = 9.7% UEL = 12.8%
Petroleum hydrocarbons (Petroleum distilled)	8002-05-9	1,600 400 ppm	10,000	1,600 400 ppm	Dermal; inhalation; ingestion	CNS depressant Respiratory irritant Dried/cracked skin	CNS respiratory tract skin	Colorless liquid BP = 86-460°F UEL = 5.9% LEL = 1.1% Flammable
Chromium	7440-47-3	0.5	None	1	Dermal; inhalation; ingestion	Decreased pulmonary function Sensory irritant	lung skin eyes	Steel gray metal
Arsenic	7440-38-2	0.2	None	0.5 organic 0.01 - inorganic	Dermal; inhalation; ingestion	Sensory irritant Lung & skin cancer Aplastic anemia Numbness	skin eyes lungs blood peripheral nervous system	Silver gray - tin white BP = sublimes

TLV - Threshold Limit Value
mg/m^3 - milligrams per cubic meter
IDLH - Immediately dangerous to life or health
ppm - parts per million
PEL - Permissible Exposure Limit
CVS - Cardiovascular System
GI - Gastrointestinal
BP - Boiling Point
LEL - Lower Explosive Limit
UEL - Upper Explosive Limit
°C - degrees Celcius
°F - degrees FahrenheitCNS - Central Nervous System

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at Operable Units 3&4, Sunnyside Yard, Queens, New York

Compound	CAS#	TLV (mg/m^3)	IDLH (ppm)	PEL (mg/m^3)	Routes of Exposure	Toxic Properties	Target Organs	Physical/ Chemical Properties
Lead	7439-92-1	0.15	700	0.2	Dermal; inhalation; ingestion	Abdominal pain CNS depressant Anemia Nephropathy Reproductive effects	GI tract CNS blood kidneys	Metal - soft gray BP = 3,164°F
Zinc	7440-66-6	10	None	10	Dermal; inhalation; ingestion	Skin irritant Cough	skin lungs	Bluish-white metallic element BP = 908°F
Copper (dusts and mists)	7440-50-8	1	None	1	Dermal; inhalation; ingestion	Sensory irritant GI irritation CNS depressant	skin eyes GI tract CNS	Reddish metal BP = 4,730°F Powdered form may ignite
Aroclor 1254	11097-69-1	0.5 (Skin)	None	0.5 (Skin)	Dermal; inhalation; ingestion	Eye, skin irritation Acne form dermatitis Potential carcinogen	skin eyes liver	Colorless to pale yellow mild hydrocarbon odor nonflammable
Aroclor 1260	11096-82-5	0.001	None	None	Dermal; inhalation; ingestion	Liver damage Nausea Abdominal pain	liver skin	Colorless Mild hydrocarbon odor
Benzo(a)pyrene	50-32-8	None	None	None	Dermal; inhalation; ingestion	Teratogen carcinogen	Reproductive lung skin	Yellowish needles; BP = 312°F
Chrysene	218-01-9	0.1	None	0.2	Dermal	Mutagen Carcinogen	NA	White crystals

TLV - Threshold Limit Value
mg/m^3 - milligrams per cubic meter
IDLH - Immediately dangerous to life or health
ppm - parts per million
PEL - Permissible Exposure Limit
CNS - Central Nervous System
GI - Gastrointestinal
BP - Boiling Point
LEL - Lower Explosive Limit
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°C - degrees Celcius
°F - degrees Fahrenheit
CVS - Cardiovascular System

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at Operable Units 3&4, Sunnyside Yard, Queens, New York

Compound	CAS#	TLV (mg/m^3)	IDLH (ppm)	PEL (mg/m^3)	Routes of Exposure	Toxic Properties	Target Organs	Physical/ Chemical Properties
Manganese	7439-96-5	1.0 fume	10,000	5.0	Inhalation; ingestion	Metal fume fever Apathy Anorexia Insomnia Headaches	Resp. system CNS blood kidneys	Lustrous, brittle, silvery solid BP = 3,564°F

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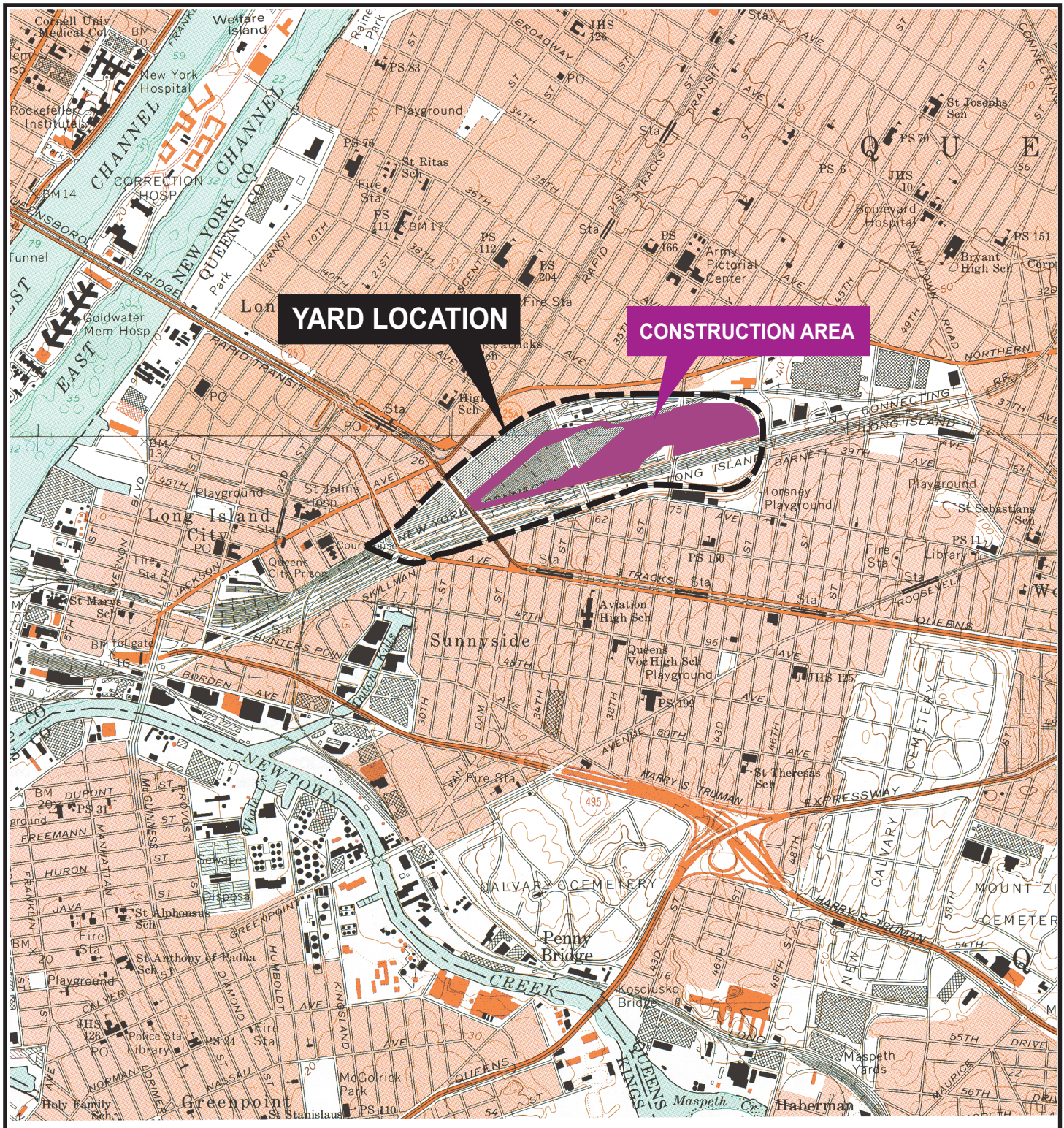
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TLV - Threshold Limit Value
mg/m^3 - milligrams per cubic meter
IDLH - Immediately dangerous to life or health
ppm - parts per million
PEL - Permissible Exposure Limit
CNS - Central Nervous System
GI - Gastrointestinal
BP - Boiling Point
LEL - Lower Explosive Limit
UEL - Upper Explosive Limit
°C - degrees Celcius
°F - degrees Fahrenheit
CVS - Cardiovascular System

FIGURES

1. Site Location Map
2. Site Plan with Emergency Muster Area
3. Routes to Urgent Care and Hospital



QUADRANGLE LOCATION



SOURCE:
USGS; Brooklyn, NY
USGS; Central Park, NY
7.5 Minute Topographic Quadrangle

N

0 2000’

Title:

LOCATION OF SITE AND CONSTRUCTION AREA

EXCAVATION WORK PLAN
FOR AMTRAK AIRO AND CBP PROJECTS

Prepared for:

AMTRAK

ROUX

Compiled by: J.R.	Date: 29JAN24	FIGURE
Prepared by: B.H.C.	Scale: AS SHOWN	1
Project Mgr.: J.R.	Project No.: 0055.0149Y000	
File: 0055.0149Y100.01.CDR		

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APPENDICES

A. Job Safety Analysis (JSA) Forms
B. Safety Data Sheets (SDSs) for Chemicals Used
C. COVID-19 Interim Health and Safety Guidance
D. Personal Protective Equipment (PPE) Management Program
E. Subsurface Utility Clearance Management Program
F. Amtrak Contractor Safety Course Booklet and New York Division Supplement
G. Heavy Equipment Exclusion Zone Policy

APPENDIX A

Job Safety Analysis (JSA) Forms

JOB SAFETY ANALYSIS	Ctrl. No. CVD-19	DATE: 04/16/2020	☒ NEW ☐ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
Generic	**Fieldwork**	**Working in Areas Affected by Coronavirus**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Kristina DeLuca	Health and Safety Specialist	Brian Hobbs	CHSM

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES – Leather/cut-resistant in field and nitrile as needed
☒ HARD HAT – In field	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	
☐ LIFELINE / BODY HARNESS	☐ HEARING PROTECTION	☒ PPE CLOTHING – High visibility vest in field	☐ OTHER
☒ SAFETY GLASSES – In field	☒ SAFETY SHOES – Steel/composite toe in fie		

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Cloth face covering, nitrile gloves, hand soap, water source, hand sanitizer, disinfectant spray and disinfectant wipes.

Commitment to Safety – All personnel onsite will actively participate in SPSA performance by verbalizing SPSAs throughout the day.

SOCIAL DISTANCING: Maintain 6' of distance between yourself and all other people at all times. If you do not believe the scope of work can be conducted while maintaining this distance, contact your Project Manager immediately.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Project Preplanning	N/A	• Review and follow COVID-19 CDC, Roux, Client and local orders/protocols. • Ensure all workers are fit for duty - anyone feeling sick should remain at home even if symptoms do not align with COVID-19. If a worker has been in contact with someone potentially positive or positive for COVID-19, contact your Office Manager. • Determine PPE needs and ensure adequate supply of disinfectant wipes/spray, soap and water or hand sanitizer at Site. Due to high demands and limited supply, plan ahead. • Use the minimum number of employees necessary to safely complete the work.
2. Mobilization	**Exposure:** Becoming infected or infecting co-workers	**Personal/Rental/Roux Owned Vehicle** • Do not carpool. • Use the same vehicle every day and do not share with co-workers. • Verify workers/other people are not approaching vehicle prior to exiting the vehicle. Maintain 6' of distance from others. • DO not valet your car or allow others to use your car. If necessary, don nitrile gloves and safety glasses and clean/disinfect all high touch surfaces (steering wheel, knobs, door handles, turn signals, radio, etc.) by wiping thoroughly with approved disinfectants (follow manufacturer's instructions). This cleaning and disinfection shall occur before and after each use of the vehicle. Aseptically remove gloves and dispose of them along with rags/wipes, appropriately. Wash hands or use hand sanitizer immediately after each episode of cleaning. **Public Transportation** • Public transit should not be used unless absolutely necessary. Consider renting a car rather than taking public transit. If public transit is required, wear appropriate PPE and apply social distancing (6 ft). Use proper donning and doffing procedures for nitrile gloves. Wash hands or use hand sanitizer immediately after. **Hotel Stay (Refer to COVID-19 H&S Guidance for more info)** • If a hotel stay is deemed necessary for the given field work, ensure that you disinfect your room upon initial arrival and returning each day. Disinfect all surfaces of your room with an appropriate disinfectant using nitrile gloves. Use proper donning and doffing procedures for nitrile gloves. • Place the "Do Not Disturb" placard on the room while away and limit housekeeping services to the extent feasible during your stay to minimize the reintroduction and spread of the virus from others. Minimize, or avoid entirely, time spent in hotel common areas (i.e., the lobby, dining areas, gyms, etc.). Wash hands or use hand sanitizer often.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards, energy source; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

3. Tailgate Meeting	**Exposure:** Becoming infected or infecting co-workers	• Must occur outside or remotely (i.e. video or conference call). • Maintain at least a 6+ ft distance between you and others. • Discuss primary infection prevention measures listed below. • Do not require employees or subcontractors to sign in, the Site Supervisor shall record names on the attendance form. • If the Site has more than 10 workers, separate tailgate meetings should be performed. • Discuss COVID-19 symptoms with coworkers and subcontractors to ensure fitness for duty. Anyone exhibiting signs or symptoms should be instructed to leave the Site, contact your Project Manager.
4. Site Activities	**Exposure:** Becoming infected or infecting co-workers	• Coordinate field activities at the beginning of the day (i.e. Tailgate meeting) to minimize time spent in crowded spaces or overlap while completing job tasks. • Don cloth face coverings as appropriate. • Apply social distancing (6+ ft) when interacting with others. If anyone comes within 6 ft of you while conducting work and your work prevents you from moving away, politely ask them to move back. If others are unable to move from your space, stop work and leave area. • Do not shake hands or touch others. • Do not share equipment or other items with co-workers and subcontractors unless wearing appropriate PPE (e.g. nitrile gloves). Assume equipment and other surfaces are potentially contaminated and remove gloves aseptically (See Appendix A of Roux Interim H&S Guidance for proper glove removal). • If anyone is coughing or sneezing in your vicinity, stop work and leave the area. • Do not work in areas with limited ventilation with others. • Cover your mouth and nose with tissue or paper towel or with your elbow when coughing or sneezing and wash hands or use hand sanitizer immediately after. If sick contact SHSO/PM and leave Site immediately. • Disinfect work surfaces/areas with approved disinfectant you're responsible for (ex: desk, office doorknob, computer, etc.) at least once at the beginning of your shift and at least once at the end of your shift with either sanitizing wipes or disinfectant spray. • Phones should be operated hands free to extent feasible. Sanitize your phone on a regular basis. Disinfection should also take place whenever suspected contaminated material comes in contact with any work surfaces/areas. Wash hands or use hand sanitizer immediately after. • Avoid public spaces and going out to eat by bringing your own lunch to the Site. If performing work in high density urban areas, it is recommended all food must be consumed at or in your vehicle. Wash hands or use hand sanitizer before eating and immediately after.

Primary Infection Prevention Measures

- Wash your hands often with soap and water for at least 20 seconds.
  - If soap and water are not available, use an alcohol-based sanitizer that contains at least 60% ethanol or 70% isopropanol. Key times to wash hands include after blowing your nose, coughing or sneezing, after using the restroom, and before eating or preparing food.
- Do not touch your eyes, face, nose and mouth with unwashed hands.
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow. Throw potentially contaminated items (e.g. used tissues) in the trash.
- Avoid close contact/secondary contact with people and potentially contaminated surfaces.
  - Apply appropriate social distance (6+ feet).
  - Stop handshaking/touching others and use caution when accessing public spaces.
- Clean and disinfect frequently touched surfaces daily. Commonly touched items can include but are not limited to tables, doorknobs, light switches, countertops, handles, desks, phones, keyboard, toilets, sinks and field equipment. If surfaces are dirty, they should be cleaned with soap and water prior to disinfection. If surface cannot be cleaned/disinfected, then wash hands or use sanitizer as soon as possible.

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[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-007	DATE 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
GENERIC	**General Site Activity**	**Driving**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Valerie Sabatasso	Staff Scientist	Brian Hobbs	Corporate Health & Safety Manager

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES: Leather/ cut-resistant level 2
☒ HARD HAT: when outside vehicle	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☐ OTHER _____
☐ LIFELINE / BODY HARNESS	☒ HEARING PROTECTION	☒ PPE CLOTHING: high visibility vest, when outside vehicle	
☒ SAFETY GLASSES:when outside vehicle	☒ SAFETY TOE BOOTS: when outside vehicle		

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Motor Vehicle (i.e. car, truck, SUV)

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Driving to/leaving Site	**1a. CONTACT:** Severe injury/disability, property damage, monetary loss (insurance premiums, deductibles, loss of license/job) caused by collision with or struck by other vehicles, obstructions, pedestrians, animals, etc. *Common factors that may lead to CONTACT incident, but not limited to: • distracted driving (cell phone, GPS, radio, billboards, "rubber necking") • lack of situational awareness • unfamiliarity with traffic patterns/road layout • weather conditions (wet/icy roads, hydroplaning, black ice) • weariness • high speeds • obstructed vision (solar glare, debris on windshield, blind spots) • changes in travel pathway (construction, snow banks, non-operational signals, potholes, detours, special events) • improper vehicle maintenance (non-operational signal light, worn tires, cracked windshield, ineffective wipers) • loose or unsecure objects	1a. PLAN AHEAD – review/make yourself familiar with maps and driving directions before beginning the drive to the Site. Do not attempt to drive and review maps/directions at the same time. Pull over and stop your vehicle before looking at maps/directions. 1a. Complete a basic vehicle inspection before driving. Verify Inspection and Registration are current, tires and wipers are in good condition, all lights are functional, all glass/mirrors are undamaged, the horn is functional, roof/hood/trunk are free from accumulated snow and visibility is not impaired due to snow/ice/frost/fog on windows. 1a. Do not hang items in car that can obstruct your view or become projectiles in a collision. 1a. Do not get distracted using touch screen radios or GPS units built into newer models. Keep your eyes on the road and stay alert. 1a. Follow posted speed limits and obey traffic signals and roadway signs. 1a. Always wear your seat belt and shoulder harness when driving. 1a. When driving around large vehicles and trucks, maintain extra space as these vehicles may not be able to see a smaller car too close. 1a. Follow the "Rules of the Road" including: using your turn signals, coming to a complete stop, and allowing vehicles the right of way (yield) when they are when traffic laws require. 1a. Apply the Smith Five Keys® of safe driving • Aim High in Steering® - Expand eye lead time to a minimum of 15 seconds • Get the Big Picture® - Maintain proper a 4 second minimum following distance at all times - Scan mirrors every 5-8 seconds to achieve a circle of awareness - Position your vehicle so you can see relevant/non-relevant objects • Keep Your Eyes Moving® - Try to maintain about 180 degrees of visibility - Avoid blank and fixed stares. Avoid focusing on one object for more than 2 seconds • Leave Yourself an Out® - Avoid traveling in traffic clusters - Surround yourself with space - Anticipate the actions of others

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[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Driving to/leaving Site (cont'd)	**1a. CONTACT:** Severe injury/disability, property damage, monetary loss (insurance premiums, deductibles, loss of license/job) caused by collision with or struck by other vehicles, obstructions, pedestrians, animals, etc.	• Make Sure They See You® - Maintain eye contact with on-coming vehicles/pedestrians - Use warning devices (e.g., hand signals, high-lights, horns etc.) - Proper timing is essential 1a. Do not perform reconnaissance or inspections while driving. Your vehicle should be parked in a safe location when viewing or surveying the Site and vicinity 1a. Avoid sudden turns and stops. Don't drive recklessly – be in control of vehicle at all times. 1a. In inclement weather, first determine if work can be POSTPONED. Otherwise, plan according to weather conditions including checking forecast along entirety of travel route (especially, for long distances). Reduce speed as road conditions warrant. Travelling with winter car equipment, in the winter, is strongly recommended (i.e., shovel, scraper, brush, blanket, extra clothing, flashlight, bag of sand). If your vehicle has 4-wheel drive, review to operators manual and understand operating procedure prior to engaging 4-wheel drive. If at any point on your drive weather becomes too severe to proceed safely pull over if safe to do so or seek nearest cover (e.g., overpass) 1a. If feeling drowsy or sleepy, do not drive. Pull over in a safe place to rest if you experience any signs of drowsiness. Make sure to get adequate sleep the night before an early drive. 1a. Never operate a vehicle under the influence of alcohol or illegal substances or medications affecting your performance. 1a. Keep your eyes on the road. Do not call or talk on cellular phones. Pull over to a safe location if you must answer or make a call. 1a. When parking, pull-through when possible. If backing is required visually inspect area to ensure it is free from obstructions prior to backing in and relying solely on mirrors; use spotters when available.
2. Entering/Exiting Vehicle.	**2a. CAUGHT:** Personal injury (broken fingers/hand) while entering or exiting vehicles **2b. FALL:** Personal injury (twisted ankle, deep contusion, concussion, broken wrist/arm, etc.) from slip/fall on uneven or unstable or slippery surface while exiting/entering vehicle **2c. CONTACT:** Severe injury/disability, property damage, monetary loss (insurance premiums, deductibles, loss of license/job) caused by collision with or struck by other vehicles, obstructions, pedestrians, animals, etc.	2a. Open and close doors slowly. Never put hands or feet in between door and vehicle to avoid pinch points. 2b. When exiting the vehicle make sure your feet are on firm footing and weight is evenly distributed before exiting/standing. In inclement weather use hands to support yourself, by holding the car door and/or steering wheel, when exiting the vehicle. 2c. Check both directions for traffic before opening door. Do not exit vehicle if traffic does not permit you to exit safely 2c. Check anticipated path of door prior to opening, do not open door into any obstructions (e.g., bollards, high curbing)

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JOB SAFETY ANALYSIS	Ctrl. No. GEN-015	DATE: 7/10/2020	☐NEW ☒REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)	
GENERIC	**Site Recon**	**Mobilization/Demobilization**	
DEVELOPMENT TEAM	**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**
Rebecca Lowy	Staff Assistant Geologist	Brian Hobbs	Corporate Health & Safety Manager
Tally Sodre	OHSM		

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES: Leather, nitrile, and cut resistant (as needed)
☒ HARD HAT	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☐ OTHER
☐ LIFELINE / BODY HARNESS	☒ HEARING PROTECTION (as needed)	☒ PPE CLOTHING: Fluorescent reflective vest of high-visibility clothing; long sleeve shirt; long pants	
☒ SAFETY GLASSES	☒ SAFETY SHOES: Steel Toe or composite toe		

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Required Equipment: Varies

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Mobilize/demobilize and establish work area	**1a. FALL:** Slip/trips/falls from obstructions, uneven terrain, weather conditions, heavy loads, and/or poor housekeeping.	1a. Use 3 points-of-contact/ensure secure footing when entering and exiting vehicle. 1a. Inspect walking path for uneven terrain, steep hills, obstructions, and/or weather-related hazards (i.e., ice, snow, and puddles) prior to mobilizing equipment. Use established pathways. Walk on stable/secure ground. 1a. Do not climb over stored materials/equipment; walk around. Practice good housekeeping; organize and store equipment neatly in one area at its lowest potential energy. 1a. Wear boots with adequate treads. 1a. Delineate unsafe areas with 42” cones, caution tape and/or flagging.
	1b. CONTACT: Personal injury and/or property damage caused by being struck by Site traffic or equipment used in Site activities.	1b. Observe and maintain the posted speed limits. 1b. When first arriving onsite, park vehicles in designated parking space and/or out of the way locations. Use parking brake on all vehicles and tire chocks on work trucks and trailers. 1b. Check in with Site Manager/Supervisor to ensure coordination with other Site activities and to discuss any special hazards. Ensure that short-service employees (SSE) are identified. 1b. Identify potential traffic sources. 1b. Wear PPE including high visibility clothing or reflective vest. 1b. Use a spotter while moving work vehicles; plan ahead to avoid backing whenever possible. 1b. Maintain a minimum exclusion zone when vehicles are in motion (i.e. greater than swing/tip radius of equipment). When backing up truck rig with an attached trailer use a second spotter if there is tight clearance simultaneously on multiple sides of the equipment or if turning angles limit driver-to-spotter visibility. 1b. Delineate work area with 42” cones, flags, caution tape, and/or other barriers. 1b. Position “Work Area” signs at Site entrances, if possible, or at either side of work area.

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Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
		1b. Position largest vehicle to protect against oncoming traffic. 1b. Face traffic, maintain eye contact with oncoming vehicles, use a spotter, and establish a safe exit route. 1b. Observe potential overhead and ground surface features that may interfere with moving equipment. Clear the path of physical hazards prior to initiating mobilization.
	1c. CAUGHT: Personal injury from pinch points and being in line-of-fire of vehicle and/or equipment.	1c. Make sure driver has engaged parking brake and placed wheel chocks in a position to prevent movement. Be sure that vehicle is parked in front/down gradient (positioned to best block oncoming traffic) of work area. 1c. Wear leather gloves when handling any tools or equipment. Wear cut-resistant gloves (Kevlar or similar) when handling sharp objects/cutting tools/glass. 1c. Keep body parts away from line-of-fire of equipment. 1c. Always carry tools by the handles and/or designated carrier. Ensure sharp-edged tools are sheathed/secure. 1c. Remove any loose jewelry. Avoid wearing loose clothing and/or ensure loose clothing is secure. 1c. Secure all items on the equipment, tighten up any items or features that have potential to shift or break during mobilization.
	1d. OVEREXERTION: Muscle strains while lifting/carrying equipment.	1d. Use body positioning and lifting techniques that avoid muscle strain; keep back straight, lift with legs, turn with whole body, keep load close to body, and never reach with a load. 1d. Ensure that loads are balanced. Use assistance (mechanical or additional person) to carry equipment that is either unwieldy or over 50 lbs.
	1e. EXPOSURE: Personal injury from exposure to biological and environmental hazards.	1e. Inspect area to avoid contact with biological hazards (i.e. poisonous plants, stinging insects, ticks, etc.). 1e. Wear long sleeved clothes treated with Permethrin, apply insect repellant containing DEET to exposed skin, and inspect clothes and skin for ticks during and after work. 1e. Apply sunscreen (SPF 15+) if exposure to sun for 30 minutes or more is expected.
	1f. EXPOSURE: Weather related injuries.	1f. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, nausea, rapid and shallow breathing). Take breaks in cool places and hydrate as needed. 1f. Watch for cold stress symptoms (severe shivering, slowing of body movement, weakness, stumbling or inability to walk, collapse). Take breaks in warm areas as needed. 1f. Wear clothing appropriate for weather and temperature conditions (e.g., rain jackets, snow pants, multiple layers). 1f. If lightning is observed, wait 30 minutes in a sheltered location (car is acceptable) before resuming work.
	1g. EXPOSURE: Personal injury from noise hazards.	1g. Wear hearing protection if sound levels exceed 85 dBA (if you must raise your voice for normal conversation).

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[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Cntrl. No. GEN-027	DATE: 11/3/2020	☒ NEW ☐ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
GENERIC	**Drilling**	**Pre-Drilling Clearance, Vactron and Air Knife**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Courtney Rempfer	Staff Scientist	Joseph Midwig	Office Health & Safety Manager
Sara Redding	Senior Hydrogeologist	Brian Hobbs	Corporate Health & Safety Manager

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☒ FACE SHIELD (While Air Knifing) ☒ HEARING PROTECTION (As needed) ☒ SAFETY SHOES: Composite toe or steel toe boots	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing; long-sleeve shirt	☒ GLOVES: Leather, Nitrile, cut-resistant ☒ OTHER: Dusk mask, insect repellant, sunscreen (as needed)

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Vac-Truck or Vac Drum, Compressor, Jack Hammer, Air Knife. Circular Saw, Hand Tools, Dust Mask, Photoionization Detector, Multi Gas Meter, 42 inch safety cones and flags, Retractable Cone Bars, Caution Tape, 20 lb. Fire Extinguisher, "Work Area" Signs, Pressurized Water Sprayer

Commitment to Safety – All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE: All non-essential personnel will maintain a distance of 10 feet from drilling equipment while equipment is moving/engaged

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Verify pre-clearance protocol	**1a. CONTACT:** Underground utility damage; property damage; personal injury	1a. Confirm that (if applicable) "Call Before You Dig" and local utility companies were contacted prior to starting work in order to confirm utility mark outs. Must have a case # before digging. 1a Walk the Site to evaluate utility markings and review maps (see Site Walk Inspection JSA). Utilities are not always properly marked out ensure use of observational skills through the pre-clearing checklist. 1a. Review pre-clearing checklist fromm and sub-surface clearance form. Pre-clearing protocol indicates that clearance must be conducted to a minimum of 5 vertical feet below ground surface or 10 vertical feet below ground surface in the critical zone using hand tools.
	1b. ENERGY SOURCE/CONTACT: Property damage; Pressurized water mains may cause lacerations or broken bones. Pressurized gas mains may explode causing serious injury, or death. Underground electric may cause severe burns, shock, or death.	1b. Pre-clearing of each soil boring/monitoring well location must be conducted to a minimum of 5 vertical feet below the ground surface (10 feet minimum for Critical Zone) using hand tools (shovel and non-metallic dig bar and hand auger) prior to drilling. Supervisor should be contacted to discuss appropriate pre-clearing depth. 1b. MUST Complete subsurface clearance checklist prior to pre-clearance.
	1c. FALL: Slip, Trip or Fall may cause muscle strains or tears, abrasions, lacerations, or broken bones.	1c. Be aware of the conditions when walking or loading equipment and working. Walk within established pathway avoiding uneven surfaces. Remove potential slip/trip/fall hazards.
2. Mobilize/demobilize and establish work area	**2a. SEE MOBILIZATION / DEMOBILIZATION JSA**	2a. See Mobilization / Demobilization JSA
3. Concrete saw cutting, jack hammer and hand clearance with hand tools, air knife	**3a. CONTACT:** Flying debris striking face or body	3a Maintain 10' minimum exclusion zone. Use the required PPE (i.e., leather/cut proof gloves, safety glasses/face shield). 3a. Use anti-whip devices on compressor hoses. 3a Wear a face shield to protect face from flying debris when using air knife. 3a. Utilize a traffic cone or physical barriers over the hole during air knife activities to keep flying debris close to ground.
	3b. EXPOSURE: Inhalation/exposure to hazardous vapors and/or concrete dust, noise exposure	3b. Monitor breathing zone with a calibrated PID and/or multi-gas meter. If meters sustain readings greater than recommeneded in the HASP for the specific contaminant of concerns (COCs) the Roux field personnel must temporarily cease work, instruct all Site personnel to step away from the area of elevated readings. Contact PM. 3b. Wet concrete while using saw to minimize dust and wear dust mask to prevent inhalation. 3b. Stand upwind and keep body behind saw. Observers and helpers should avoid line of fire for saw blade. Always cut away from body. 3b. No open flames/heat sources. 3b. Wear hearing protection when saw, jackhammer or air compressor are in operation. Otherwise, if sound levels exceed 85 dbA, put on hearing protection.
	3c. ENERGY SOURCE/CONTACT: Property damage; Pressurized water	

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	mains may cause lacerations or broken bones. Pressurized gas mains may explode causing serious injury, or death. Underground electric may cause severe burns, shock, or death.	3c. For air knifing, ensure extention/lance tip reaches the full 5 feet bgs. Air knife should be advanced **AT A MINIMUM** in all four corners of the expected boring location to find any possible arrangement of utilities. 3c. Ensure diameter of soil preclearance hole is at a **MINIMUM 2x** the diameter of any drilling or hard dig equipment that will be entering the hole. 3c. See Complete subsurface clearance protocol for information provided above.
	3d.ERGONOMICS/EXERTION: Muscle strain due to poor body positioning when handling equipment and materials	3d. Use body positioning and lifting techniques that minimizes muscle strain; keep back straight, lift with legs, keep load close to body, and never reach with a load. 3d. Ensure that loads are balanced to reduce the potential for muscle strain. 3d. Two people or a mechanical lifting aid are required when lifting objects over 50 lbs. or when the shape makes the object difficult to lift.
	3e. FALL: Tripping/falling due to uneven terrain, weather conditions, and materials/equipment stored at the Site	3e. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. Mob/Demob JSA. 3e. Do not climb over stored materials/equipment; walk around. Practice good housekeeping. 3e. Use established pathways and walk on stable, secure ground. 3e. Equipment and tools will be stored at the lowest point of potential energy and out of the walkway and immediate work area (i.e. tools should not be propped against walls or nearby equipment or vehicles). 3e. Equipment and tools that are not anticipated to be used will be returned to a storage area that is out of the immediate work area. 3e. Ensure power cords and compressed air lines are grouped when used within the work area. 3e. Pre-cleared location will be finished flush to grade as to prevent a slip/trip hazard or coned and taped off.
	3f. CAUGHT: Amputation points associated with the equipment and vacuum hose	3f. Always wear leather gloves when making connections and using hand tools; wear cut-resistant (i.e., Kevlar) gloves when handling cutting tools. 3f. Inspect the equipment prior to use for potential pinch points. 3f. Test all emergency shutdown devices prior to using equipment. 3f. Inspect saw blade for worn surface or missing teeth; switch blade if damaged or blunt. 3f. Ensure all jewelry is removed, loose clothing is secured, and PPE is secured close to the body. 3f. All non-essential personnel shall maintain a 10 foot exclusion zone; position body out of the line-of-fire of equipment. 3f. Drillers and helpers will understand and use the “Show Me Your Hands Policy”.
4. Move drum to staging area using drum cart	**4a. EXPOSURE/CONTACT:** Contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated groundwater, soil)	4a. Wear Nitrile chemical-resistant gloves under leather or cut proof gloves. 4a. Do not overfill drums. Ensure that the drum lids are attached securely. 4a. All drums will be staged in the designated storage area.
	4b. EXERTION: Muscle strain while maneuvering drums with drum cart/lift gate	4b. See 3d. Do not overfill drums. Use lift gate on back of truck to load and unload drums. Use drum dolly to move drum.
	4c. CAUGHT: Pinch points associated with handling drum lid	4c. Ensure that fingers are not placed under the lid of the drum. Wear leather gloves or cut proof gloves. Use appropriate ratchet while sealing drum lid.
5. Decontaminate equipment.	**5a. EXPOSURE/CONTACT**: To contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated groundwater, vapors).	5a. Wear chemical-resistant disposable gloves and safety glasses. 5a. Contain decontamination water so that it does not spill. 5a. Use an absorbent pad to clean spills, if necessary. 5a. Spray equipment from side angle, not straight on, to avoid backsplash. 5a. See 3b.
	5b. EXPOSURE: To chemicals in cleaning solution.	5b. See 4a. Review SDS to ensure appropriate precautions are taken and understood.

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JOB SAFETY ANALYSIS	Ctrl. No. GEN-006	DATE 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY:	WORK TYPE:	WORK ACTIVITY (Description):	
Generic	**Drilling**	**Direct Push Soil Borings / Well Installation**	
DEVELOPMENT TEAM	**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**
Timothy Zei	Project Hydrogeologist	Raymond Olson	Office Health & Safety Manager
		Brian Hobbs	Corporate Health & Safety Manager

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☐ FACE SHIELD ☒ HEARING PROTECTION: (as needed) ☒ SAFETY SHOES: Composite-toe or steel toe boots	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing, Long Sleeve Shirt	☒ GLOVES: Leather, Nitrile and cut resistant ☒ OTHER: Insect Repellant, sunscreen (as needed)

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Geoprobe or Truck-Mounted Direct Push Drill Rig, Hand Tools, Photoionization Detector, Multi-Gas Meter (or equivalent), Macrocore liners, Liner Opening Tool, 20 lb. Type ABC Fire Extinguisher, 42" Cones & Flags, "Work Area" Signs, Water

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

"SHOW ME YOUR HANDS"
Driller and helper should show that hands are clear from controls and moving parts

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Mobilization of drilling rig (ensure the Subsurface Clearance Protocol and Drill Rig Checklist are completed)	**1a. CONTACT:** Equipment/property damage.	1a. The drill rig's tower/derrick will be lowered and secured prior to mobilization. 1a. A spotter should be utilized while moving the drill rig. If personnel move into the path of the drill rig, the drill rig will be stopped until the path is again clear. Use a spotter for all required backing operations. 1a. Set-up the work area and position equipment in a manner that eliminates or reduces the need for backing of support trucks and trailers. 1a. When backing up truck rig with an attached trailer use a second spotter if there is tight clearance simultaneously on multiple sides of the equipment or if turning angles limit driver visibility. 1a. Inspect the driving path for uneven terrain. Level or avoid if needed. 1a. Drill rig should have a minimum **exclusion zone which encompasses its tip radius** for non-essential personnel (i.e., driller helper, geologist) when the rig is moving/ in operation.
	1b. FALL: Slip/trip/fall hazards.	1b. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 1b. Do not climb over stored materials/equipment; walk around. Practice good housekeeping. 1b. Use established pathways and walk on stable, secure ground.
	1c. CONTACT: Crushing from roll-over.	1c Geoprobe should cross all hills/obstructions head on with the mast down to reduce risk of roll-over.
2. Raising tower/derrick of drill rig	**2a. CONTACT:** Overhead hazards.	2a. Prior to raising the tower/derrick, the area above the drilling rig will be inspected for wires, tree limbs, piping, or other structures, that could come in contact with the rig's tower and/or drilling rods or tools. 2a. Maintain a safe distance of 10' from overhead structures.
	2b. CONTACT: Pinch Points/Amputation Points when raising the rig and instability of rig	2b. Inspect the equipment prior to use and avoid pinch/amputation points. 2b. Lower outriggers to ensure stability prior to raising rig tower/derrick. 2b. If the rig needs to be mounted, be sure to use three points of contact.
3. Advancement of drilling equipment and well installation	**3a. CONTACT:** Flying debris	3a. Be aware of and avoid potential lines of fire and wear required PPE such as eye, ear, and hand protection.
	3b. EXPOSURE: Noise and dust.	3b. Wet borehole area with sprayer to minimize dust. 3b. Stand upwind and keep body away from rig. 3b. Dust mask should be worn if conditions warrant. 3b. Wear hearing protection when the drill rig is in operation.

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Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
3. Advancement of drilling equipment and well installation (Continued)	**3a. CONTACT:** Flying debris **3b. EXPOSURE:** Noise and dust. **3c. FALL:** Slip/trip/fall hazards. **3d. CAUGHT:** Limb/extremity pinching; abrasion/crushing. **3e. CONTACT:** Equipment imbalance during advancement of drill equipment. **3f. EXPOSURE:** Inhalation of contamination/vapors. **3g. EXERTION:** Potential for muscle strain/injury while lifting and installing well casings, lifting sand bags, and/or lifting rods.	3c. Contain drill cuttings and drilling water to prevent fall hazards from developing in work area. 3c. See 1b. 3d. Ensure all Emergency Safety Stop buttons function properly. 3d. Always wear leather gloves when making connections and using hand tools; wear cut-resistant (i.e., Kevlar) gloves when handling cutting tools. 3d. Inspect the equipment prior to use for potential pinch/amputation points. Keep hands away from pinch/amputation points and use of tools is preferable compared to fingers and hands. 3d. Inspect drill head for worn surface or missing teeth; replace if damaged or blunt. 3d. Ensure all jewelry is removed, loose clothing is secured, and PPE is secured close to the body. 3d. All non-essential personnel should stay away from the immediate work area; position body out of the line-of-fire of equipment. 3d. Drillers and helpers will understand and use the "Show Me Your Hands" Policy. 3d. Spinning rods/casing have an **exclusion zone of tip radius** while in operation. 3e. Drillers will advance the borehole with caution to avoid causing the rig to become imbalanced and/or tip. 3e. The blocking and leveling devices used to secure the rig will be inspected by drillers and Roux personnel regularly to see if shifting has occurred. 3e. In addition, personnel and equipment that are non-essential to the advancement of the borehole will be positioned away from the rig at a distance that is at least as far as the boom is high (**minimum exclusion zone**). 3f. Monitor ambient air for dangerous conditions using a calibrated photoionization detector (PID) to periodically monitor the breathing zone of the work area. 3f. If a reading of >5ppm is recorded, the Roux field personnel must temporarily cease work, instruct all Site personnel to step away from the area of elevated readings and inform the Roux PM of the condition. The Roux PM will then recommend additional precautions in accordance with the site specific health and safety plan. 3f. Use a multi-gas meter to monitor ambient air for dangerous conditions (i.e. unsafe levels of carbon monoxide when drilling indoors or the presence of explosive vapors). 3g. Keep back straight and bend at the knees. 3g. Utilize team lifting for objects over 50lbs. 3g. Use mechanical lifting device for odd shaped objects.
4. Remove sample liner.	**4a. EXERTION:** Potential for muscle strain/injury while removing liner from probe rod. **4b. CONTACT:** Pinch points and cuts **4c. EXPOSURE:** Inhalation and/or dermal contact with contaminants.	4a Utilize team lifting for objects over 50lbs. 4a. Use hydraulic liner extruder if available. 4b. Place liner on sturdy surface when opening. 4b. Don cut-resistant gloves and use appropriate liner cutter when opening liners. 4b. Always cut away from the body. 4c. Wear chemical-resistant disposable gloves when handling liners. 4c. See 3e.
5. Decontaminate equipment.	**5a. EXPOSURE/CONTACT**: To contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated groundwater, vapors). **5b. EXPOSURE:** To chemicals in cleaning solution including ammonia.	5a. Wear chemical-resistant disposable gloves and safety glasses. 5a. Contain decontamination water so that it does not spill. 5a. Use an absorbent pad to clean spills, if necessary. 5a. Spray equipment from side angle, not straight on, to avoid backsplash. 5a. See 3b. 5b. See 4a. Review SDS to ensure appropriate precautions are taken and understood.

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JOB SAFETYANALYSIS Ctrl. No. GEN-020	DATE: 7/10/2020	☐NEW ☒REVISED	PAGE 1 of 2

JSA TYPE CATEGORY: **GENERIC**	WORK TYPE: **Gauging & Sampling**	WORK ACTIVITY (Description): **Soil Sampling**	
DEVELOPMENT TEAM	**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**
MaryBeth Lyons	Project Scientist	Brian Hobbs	Corporate Health and Safety Manager

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES ☒ FLAME RESISTANT CLOTHING (as needed)	☐ GOGGLES ☐ FACE SHIELD: ☒ HEARING PROTECTION: (as needed) ☒ SAFETY SHOES: Composite-toe or steel toe boots	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing	☒ GLOVES: Leather, Nitrile and cut resistant ☒ OTHER: Insect repellant, sunscreen (as needed)

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Recommended Equipment: 42" traffic cones, caution tape, trowel

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs.

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Secure location	**1a. CONTACT:** Personnel and vehicular traffic may enter the work area.	1a. If in an area with foot or vehicle traffic, delineate the work area with 42" traffic cones and/or caution tape to prevent exposure to traffic and inform others of work activity. 1a. Wear reflective vest and/or high visibility clothing. 1a. Face the direction of any vehicular traffic. Position vehicle to protect worker from traffic. 1a. Communicate work activity with adjacent work areas.
	1b. FALL: Tripping/falling due to uneven terrain or entry/exit from excavations.	1b. Inspect pathways and work area for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions. 1b. Use established pathways and walk on stable, secure ground. 1b. Stage equipment and tools in a convenient, stable, and orderly manner. Store equipment at lowest potential energy. 1b. Roux employees should stay 5 feet from in-progress excavations and trenches. Should entry to an excavation be required (when stabilization is complete), ladders must be employed for steep embankments, excavations, pits, and trenches.
	1c. EXPOSURE: Exposure to sun and excessive heat, possibly causing sunburn, heat exhaustion or heat stroke. Exposure to cold temperatures possibly causing cold stress. Skin burn as a result of fire, if applicable. Exposure to explosive vapors due to tank farm operations. Exposure to airborne dust due to high wind speeds. Biological hazards - ticks, bees/wasps, poison ivy, thorns, insects, etc.	1c. Wear sunscreen with an SPF 15 or greater whenever 30 minutes or more of exposure is expected. 1c. Use a tent to shade the work area from direct sunlight particularly when warm temperatures are expected. 1c. Be aware of the location of all Site personnel. 1c. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, rapid and shallow breathing). 1c. Watch for cold stress symptoms (severe shivering, slowing of body movement, weakness, stumbling or inability to walk, collapse). 1c. Take breaks for rest and water as necessary. Move to an area that is well shaded or a climate controlled area (i.e., car, site trailer, etc.). 1c. No open flames/heat sources. 1c. Flame retardant clothing must be worn when specified by Site policy. 1c. Cell phones should be disabled when specified by Site policy. 1c. Pre-treat field clothing with Permethrin prior to site visit to kill ticks and insects. 1c. Wear long sleeved shirts and tuck in (or tape) pant legs into socks or boots to prevent ticks from reaching skin. 1c. Spray insect repellant containing DEET on exposed skin when working in overgrown areas of the Site. 1c. Inspect area to avoid contact with biological hazards. 1c. Wear cut-resistant gloves when handling branches, shrubs, etc. that may lie within the walking path. 1c. Wear spoggles if the average wind speeds are above 15 mph. 1c. Personnel shall examine themselves and co-worker's outer clothing for ticks periodically when onsite. 1c. If skin comes in contact with poison ivy, wash skin thoroughly with soap and water. If rash persists after washing, immediately notify your supervisor, the OM and OHSM for possible consultation with a physician at an approved Occupational Health Clinic.

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Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
2. Collect Soil Sample	**2a. CONTACT:** Personal injury from pinch points, cuts, and abrasions from sampling equipment tools, and material within soil sample. Personal injury from contact with moving equipment while sampling. Personal injury from contact with glass sample jars.	2a. Wear cut-resistant (i.e., Kevlar) gloves under chemical-resistant (nitrile) disposable gloves when handling soil samples and sampling jars. 2a. Where possible, use trowel or equivalent tool to avoid contact with soil. 2a. If sampling from bucket of heavy equipment, ensure all equipment is off and operator utilizes the “show me your hands” policy. 2a. See 1a.
	2b. EXPOSURE: Exposure to contamination (impacted soil) and/or lab preservatives.	2b. Wear chemical-resistant (nitrile) disposable gloves over cut resistant gloves to protect hands when handling samples; use containment material or plastic sheeting to protect surrounding areas. 2b. Wear safety glasses to protect eyes from dust or air-borne contaminants that may results from disturbing the soil. 2b. Where possible, remain upgradient from sample location if collecting soil sample from stockpile, drill rig, etc. to avoid breathing contaminant vapors, if they are present. 2b. When collecting soil sample from hand auger, put large zip lock bag over entire auger to prevent spillage of soil on to the ground. 2b. Open sample jars slowly and fill carefully to avoid contact with preservatives.
	2c. EXERTION: Exertion due to repetitive motion and ergonomics.	2c. Utilize a table or raised surface for soil sampling if multiple soil samples are going to be taken to minimize repetitive bending motion.
3. Decontaminate equipment	**3a. EXPOSURE/CONTACT:** Contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated vapors and/or soil).	3a. Wear chemical-resistant (nitrile) disposable gloves and safety glasses. 3a. Use an absorbent pad to clean spills. 3a. Properly dispose of used materials/PPE in provided drums in designated drum storage area. 3a. Remain upwind of sample and avoid breathing contaminant vapors, if they are present.
	3b. EXPOSURE: Chemicals in cleaning solution including ammonia.	3b. Wear chemical-resistant (nitrile) disposable gloves and safety glasses. 3b. Work on the upwind side of decontamination area. 3b. Use an absorbent pad to clean spills. 3b. Properly dispose of used materials/PPE in provided drums in designated drum storage area. Ensure that all drums are properly labeled and secured.

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JOB SAFETY ANALYSIS Ctrl. No. GEN-013	DATE 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE:	WORK ACTIVITY (Description):	
Generic	**Gauging and Sampling**	**Gauging and Sampling**	
DEVELOPMENT TEAM	**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**
Brandon Tufano	Staff Geologist	Brian Hobbs	Corporate Health & Safety Manager

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☒ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☐ FACE SHIELD ☐ HEARING PROTECTION ☒ SAFETY SHOES: Composite-toe or steel toe boots	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing	☒ GLOVES: Leather, Nitrile and cut resistant ☒ OTHER: Knee pads, Insect Repellant, sunscreen (as needed)

REQUIRED AND / OR RECOMMENDED EQUIPMENT

42-inch Safety Cones, Caution Tape, Interface Probe and/or Water Level Meter, 20-lb., Type ABC Fire Extinguisher, Buckets. Tools as needed: Socket Wrench, Screw Driver, Crow Bar, Mallet, and Wire Brush.

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Mobilization to monitoring well(s).	**1a. FALL:** Personal injury from slip/trip/fall due to uneven terrain and/or obstructions.	1a. Inspect pathway and plan for most suitable designated pathway prior to mobilization. 1a. Use established pathways, walk and/or drive on stable, secure ground and avoid steep hills or uneven terrain. 1a. If working near open water with an unguarded edge, wear life vest.
	1b. CONTACT: With traffic/third parties.	1b. Identify potential traffic sources and delineate work area with 42-inch traffic safety cones. Position vehicle to protect against oncoming traffic. Use caution tape to provide a more visible delineation of the work area if necessary. 1b. Wear appropriate PPE including high visibility clothing or reflective vest. 1b. Face traffic, maintain eye contact with oncoming vehicles, and establish a safe exit route.
	1c. EXERTION: Muscle strain from lifting equipment	1c. Use proper lifting techniques when handling/moving equipment; bend knees and keep back straight. 4c. Use mechanical assistance or team lifting techniques when equipment is 50 lbs. or heavier. 4c. Make multiple trips to carry equipment.
	1d. EXPOSURE: To biological hazards.	1d. Inspect work area for bees and insects. 1d. Use insect/tick repellent as necessary.
2. Open/close well.	**2a. EXERTION:** Muscle strain.	2a. Use proper lifting techniques; keep back straight, lift with legs and bend knees when reaching to open/close well.
	2b. CAUGHT: Pinch/crush points associated with removing/replacing manholes and working with hand tools.	2b. Wear leather gloves or cut resistant gloves when working with well cover and hand tools. 2b. Use proper tools (ratchet and pry bar for well cover) and inspect before use. 2b. Do not put fingers under well cover.
	2c. CAUGHT: Pinch points associated with placing J-plug back onto PVC pipe.	2c. See 2b. 2c. Keep fingers out of line-of-fire when securing cap.
	2d. EXPOSURE: To potential hazardous vapors.	2d. No open flames/heat sources. 2d. To minimize exposure to vapors, allow well to vent after opening it and before sampling activities begin. 2d. Stand up-wind, if possible, to avoid inhaling vapors.
3. Gauge well.	**3a. CONTACT:** With contamination (e.g. contaminated groundwater).	3a. Wear chemical-resistant disposable gloves (over cut-resistant gloves) and safety glasses when gauging well. 3a. Insert and remove probe slowly to avoid splashing. 3a. Use an absorbent pad to clean probe.
	3b. CONTACT: With traffic.	3b. See 1b.

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[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
4. Purge and sample well	**4a. EXPOSURE/CONTACT:** To contamination (e.g., SPH, contaminated groundwater, vapors) and/or sample preservatives.	4a. Open and fill sample jars slowly to avoid splashing and contact with preservatives. 4a. Wear cut-resistant gloves and chemical-resistant disposable gloves when sampling. 4a. Fill sample containers over purge container to avoid spilling water onto the ground. 4a. Use an absorbent pad to clean spills. 4a. When using a bailer to purge a well, pull the bailer slowly from the well to avoid splash hazards. 4a. When sampling or purging the water using a bailer, pour out water slowly to reduce the potential for splash hazards with groundwater. 4a. When using a tubing valve always remove the valve slowly after sample collection to release any pressure and avoid pressurized splash hazards. 4a. When collecting a groundwater sample always point sampling apparatus (tubing, bailer, etc.) away from face and body.
	4b. CONTACT: Personal injury from cuts, abrasions, or punctures by glassware or sharp objects.	4b. To avoid spills or breakage, place sample ware on even surface. 4b. Do not over tighten caps on glass sample ware. 4b. Wear chemical-resistant nitrile disposable gloves over cut-resistant (i.e., Kevlar) gloves when sampling and handling glassware (i.e., VOA vials) or when using cutting tools.
	4c. EXERTION: Muscle strain while carrying equipment.	4c. Use proper lifting techniques when handling/moving equipment, bend knees and keep back straight. 4c. Use mechanical assistance or team lifting techniques when equipment is 50 lbs. or heavier. 4c. Make multiple trips to carry equipment.
	4d. CONTACT: With traffic.	4d. See 1b.
	4e. CONTACT: Pinch points with groundwater pump components (i.e., wheel, line, clamps).	4e. Wear leather gloves when working with groundwater pumps. 4e. Never place hands on or near pinch points such as the wheel, clamps or other moving parts during pump operations. 4e. Use the correct mechanisms, such as a pump reel, to lower pump into well. 4e. Never attempt to manually stop any moving part of equipment including hose reels and/or tubing.
	4f. EXERTION: Muscle strain from repetitive motion of bailing and sampling a well.	4f. See 4c. 4f. Include a stretch break when repetitive motions are part of the task.
5. Management of purge water.	**5a. EXPOSURE/CONTACT:** To contamination (e.g., SPH, contaminated groundwater, vapors).	5a. Do not overfill container and pour liquids slowly so that they do not splash. 5a. Properly dispose of used materials/PPE in appropriate container in designated storage area.
	5b. EXERTION: Muscle strain from lifting/carrying and moving containers.	5b. Use proper lifting techniques when lifting / carrying or moving container(s) (see 4c.). 5b. Do not overfill container(s).
6. Decontaminate equipment.	**6a. EXPOSURE/CONTACT:** To contamination (e.g., SPH, contaminated groundwater, vapors).	6a. Work on the upwind side, where possible, of decon area. 6a. Wear chemical-resistant disposable gloves and safety glasses. 6a. Use an absorbent pad to clean spills.
	6b. CAUGHT: Pinch points associated with handling hand tools	6b. See 2b. 6b. Inspect hand tools for sharp edges before decontaminating.

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[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-011	DATE: 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)	
Generic	**Construction - Excavation**	**Excavation / Trenching**	
DEVELOPMENT TEAM	**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**
David Kaiser	Senior Engineer	Brian Hobbs	Corporate Health & Safety Manager
Ian Holst	Senior Engineer		

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES: Leather or cut resistant
☒ HARD HAT	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☐ OTHER
☒ LONG SLEEVED SHIRT	☒ HEARING PROTECTION	☒ PPE CLOTHING: Fluorescent reflective vest or high visibility long sleeved clothing	
☐ LIFELINE / BODY HARNESS	☒ SAFETY SHOES: Steel-toe boots		
☒ SAFETY GLASSES			

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Jackhammer, Excavator, Backhoe, Hand Tools, Photoionization Detector, barrels, 42" traffic cones, snow fencing, telescoping poles, temporary chain link fence, ladders, shovels, digging bars, power tools (cut-off saw), Two-way radios, Sheeting, Trench box, Retractable lanyard, Harness

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or footprint of a structure to be demolished.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Pre-Clearance Protocol.	**1a. CONTACT:** Damage to underground utility.	1a. Confirm that (if applicable) "Call Before You Dig" and local utility companies were contacted prior to trenching in order to confirm utility mark outs. Must have a case # before digging.
	1b. ENERGY SOURCE/CONTACT: Property damage; Pressurized water mains may cause lacerations or broken bones. Pressurized gas mains may explode causing serious injury, or death. Underground electric may cause severe burns, shock, or death.	1b. Pre-clearing of the trenching location must be conducted to a minimum of 5 vertical feet below the ground surface (10 feet minimum for Critical Zone) using hand tools (shovel and non-metallic dig bar) prior to trenching. Supervisor should be contacted to discuss appropriate pre-clearing depth. **1b. Complete subsurface clearance checklist**.
	1c. FALL: Slip, Trip or Fall may cause muscle strains or tears, abrasions, lacerations, or broken bones.	1c. Be aware of the conditions when walking or loading equipment and working. Walk within established pathway avoiding uneven surfaces. Remove potential slip/trip/fall hazards.
2. Set up work zone.	**2a. CONTACT/CAUGHT:** Cuts/lacerations from equipment. Broken bones from contact by vehicle.	2a. Isolate work area from hazards with cones, barricades, and snow fencing, telescoping poles or temporary chain link fence. Utilize a flag person when necessary (i.e., third party traffic in area). Install traffic signs in roadways and for detours. Spotters will maintain and enforce exclusion zone.
	2b. FALL: Slip, Trip or Fall may cause muscle strains or tears, abrasions, lacerations, or broken bones.	2b. See 1c.

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[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
3. Trenching Activity.	**3a. CONTACT:** Serious injury including broken bones, muscle strains or tears, and possibly death due to contact with machine.	3a. Spotter(s) required for all heavy equipment operation. No worker shall be allowed inside the exclusion zone or along the trench/excavation area while any equipment is in operation. A minimum exclusion zone greater than the length of the equipment boom must be established. Workers only allowed in exclusion zone if the operator is in "Hands Off "mode. Operator will not operate equipment until worker is out of exclusion zone. Spotters and operators will have radios for communication, when either loses sight of one another, and/or in case of emergency.
	3b. FALL: Slip, Trip or Fall may cause muscle strains or tears, abrasions, lacerations, or broken bones	3b. Any trench/excavation deeper than 3' must have a ladder within 25' of any worker in the excavation. At least 3'(rungs) of the ladder shall be above the top of the excavation. All spoil piles shall be maintained 2' minimum from edge of excavation. 3b. Any trench/excavation deeper than 6' must have fall protection, retractable lanyard for ladder use, and 42" high guardrails along the edge of the trench/excavation.
	3c. EXPOSURE: Noise, Dust, Concrete- Asphalt, petroleum hydrocarbon vapors may cause damage to ears and lungs	3c. Air monitoring using a calibrated photoionization detector (PID) will be used to monitor the breathing zone of the work area. If a reading of >5ppm is recorded, the oversight personnel must temporarily cease work and instruct all Site personnel to step away from the area of elevated readings.
4. Setting Trench protections if necessary.	**4a. CAUGHT:** Injury due to contact with failed trench, may include muscle strains or tears, abrasions or lacerations, broken bones and possibly death.	4a. To prevent cave-ins and avoid caught by/between, excavations over 4' in depth, unless working in stable rock, shall have engineer approved shoring, sheeting or trench box. Top of protection shall be at least 2' above top of excavation.
	4b. CONTACT/CAUGHT: Injury due to rigging activities and entering exclusion zone during lifting and/or transport of shoring/trench box/material may include muscle strains or tears, abrasions or lacerations, broken bones and possibly death.	4b. Use only inspected rigging with 2, 3 or 4 lift points; wear cut-resistant gloves. Rigging to be hooked up to factory installed hook up points on equipment. Control load with non-conductive tag lines with workers out of exclusion zone. Don't stand underneath suspended load; wear steel toed boots and hard hat.
	4c. FALL: Possible injury due to fall into excavation may include muscle strains or tears, abrasions or lacerations, or broken bones.	4c. Shoring to be set and sides will be backfilled to avoid fall hazards before workers are allowed to enter area. Operator will be in "HANDS OFF" mode before workers enter work area to unhook rigging. An inspected ladder extending 3' above top of the shoring will be used to enter and exit the shoring. Workers will use three points of contact when using the ladder.
5. Secure/Leave Site. If backfilling, see excavation backfilling and compaction JSA for potential hazards and critical actions.	**5a. FALL:** Potential Slip, Trip or Fall - may cause muscle strains or tears, abrasions or lacerations, or broken bones.	5a. See 1c. 5a. All open excavations must be backfilled or secured prior to departure with steel plates, orange construction fence or temporary chain link fencing.

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[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-003	DATE 7/10/2020	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
GENERIC	**Construction - Excavation**	**Backfilling Excavation & Compaction**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
David Kaiser	Project Engineer	Brian Hobbs	Corporate Health & Safety Manager
Edward Lacina	Senior Construction Manager		

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES: Leather/ cut-resistant level 2
☒ HARD HAT	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☐ OTHER _____
☐ LIFELINE / BODY HARNESS	☒ HEARING PROTECTION	☒ PPE CLOTHING: reflective DOT approved safety	
☒ SAFETY GLASSES	☒ SAFETY TOE BOOTS		

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Payloader, Backhoe, Dump Trucks, Mechanical gas powered tampers, Excavator with hydraulic tamper. APR when tamping if dust present. Two-way radios.

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing SPSAs.

EXCLUSION ZONE (EZ): Maintain Minimum Heavy Equipment Exclusion Zone (HEEZ) around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities and/or foot print of a structure to be demolished.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Pre-construction meeting: Review proposed excavation locations	**1a. CONTACT:** Potential for contact with subsurface utilities and above ground utilities	1a. Call state 811 for mark out service and one call ticket. 1a. Obtain private utility mark out service as necessary. 1a. Review and mark proposed excavations w/white paint. 1a. Identify all "Critical" zones. A Critical zone is any area within 10 feet of any operating utility. 1a. **Complete subsurface clearance checklist.** 1a. Soft dig must be conducted within 2 lateral feet of any suspected underground utility. 1a. Protection of aboveground utilities identified as being located within the work zone must be coordinated w/ client and utility owner.
2. Secure Work Area	**2a. CONTACT:** Potential for personnel to enter the work area. Potential for equipment to contact, or crush personnel. **2b. EXERTION:** Potential for muscle strain or tear while installing traffic cones and barrel	2a. Ensure work area is secure and inform others of work activity. Establish a HEEZ using 42" traffic cones, barrels & snow fencing or telescoping poles. Use of flag persons to maintain clear traffic and to minimize motorist confusion during set-up of new traffic pattern. HEEZ to include tip/swing radius of equipment. 2a. Dump Truck/Excavator/Payloader/Backhoe equipment to be set-up by personnel who are familiar with machinery. Spotters shall be in place for all equipment. and to control access to the HEEZ 2a. Truck wheels are chocked when driver is not in truck and engine shut off. 2a. Personnel shall stay out of the exclusion zone (10' minimum or greater than the equipment boom) while equipment is maneuvering. 2b. Keep back straight, keep load close to the body and bend knees while lifting and working. If over 50 lbs., use 2 or more laborers for lifting or use of equipment.

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[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

3. Backfilling excavation, and compaction	**3a. CONTACT:** Traffic and live equipment. .	3a. Equipment and trucks shall be isolated from other workers, subcontractors and third party traffic with 42" traffic cones, barricades, snow fencing or telescoping poles, and/or Jersey barriers. Spotters shall direct dump truck for placement of fill near excavation. Pay loader/ Excavator, as directed by spotter, shall move fill into trench where it shall be placed in layers and compacted by mechanical means. 3a. Spotters will wear florescent vests at all times. 3a. Spotters will remain out of the exclusion zone, line of fire from equipment and third-party vehicles. 3a. Spotters and operators will have radios for communication, when other visual and/or hand signals are insufficient. 3a. Locate all overhead utilities. All personnel and machinery should maintain a 10' distance from overhead electric lines. Refer to OSHA chart for distances and voltage. 3a. For excavations engineered (shored, sloped, benched} all personnel, equipment, and materials must remain a minimum of 2 feet from edge of excavation.
	3b. EXPOSURE: Fumes from gas powered tamper	3b. Fueling of all equipment will be done outside of work area in a well-ventilated area. Refueling will be done only after a 2-5-minute cool down.
	3c. FALL: Slips, trips, fall hazards.	3c. Work area will be clean and free of any debris to remove slip, trip and fall hazards. All tools will be kept in designated areas. Insure work area is well illuminated. 3c. Workers should only be working in areas that have been leveled with a machine. 3c. All persons working at elevations over 6' shall use a guardrail system or personal fall arrest system while around excavation.
	3d. OVEREXERTION: Muscle strain, or tear.	3d. Keep knees bent and back straight while transferring/ lifting/lowering tamper from elevated areas. Utilize a co-worker to avoid staining muscles. 3d. Keep knees bent and back straight while maneuvering tamper. Utilize a co-worker to avoid staining muscles.
	3e. EXPOSURE: Noise from tamper. Dust inhalation.	3e. Workers will wear hearing protection during compaction tamper activities. 3e. Wear NIOSH approved dust mask for personal comfort. If dust is visible for extended time, limit by wetting down area. 3e. If dust continues stop work and evaluate if APR is needed with approval and clearance.
4. Secure/leave site.	**4a. FALL:** Slip, trip, fall	4a. Clear work area of all debris and store all equipment in designated areas/containers before opening to traffic. 4a. Replace fencing and barricades as needed to secure path before opening roadway or area up to traffic(vehicle, pedestrian and/or bicycle).

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[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

APPENDIX B

Safety Data Sheets (SDSs) for Chemicals Used

Ivey International Inc.

MSDS NUMBER: 120829

MATERIAL SAFETY DATA SHEET
Ivey-sol® Surfactant Technology

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Ivey-sol
Chemical Name:	Not Applicable (mixture)
Chemical Family:	Non-ionic Surfactants
Formula:	Not Applicable (mixture)
Synonym(s):	Ivey-sol 103, Ivey-sol 106, and Ivey-sol 108

CONTACT BY COUNTRY:

Canada:
Canada Colors & Chemical — 6605 Hurontario Street, Suite 400, Mississauga,ON L5T 0A3
Tel: + 1-416-848-7692 www.canadacolors.com

United States:
EnviroSupply & Service, Inc. — 1791 Kaiser Ave., Irvine, California, USA 92614
Tel: + 1-949-757-0353 www.EnviroSupply.net

Australia:
Quantum Chemicals Pty Ltd. — 70 Quantum Close, Quantum Industrial Park,
Dandenong South Victoria, 3175
Tel: +61-3-8795 8067 www.quantumchemicals.com.au

Prepared By:	Technical Products Department (Ivey International Inc.)
Telephone Number:	+ 1-604-538-1168 or Toll Free + 1-800-246-2744
Prepared (Last Updated):	August 29,2012

Ivey International Inc. (IVEY) urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the proper use and handling of the subject product. The reader should consider consulting reference materials, and/or IVEY technical support personnel, and/or other recognized experts, as necessary or appropriate to the use and understanding of the data contained in this MSDS. To promote the safe handling, storage and use of this product, each customer or recipient should (1) notify his employees, agents, contractors, and others whom he knows or believes will use this product, of the information in this MSDS and any other information regarding product use, storage and handling, (2) furnish this same information to each of his customers for the product, and (3) request his customers to notify their employees, customers, and other users of the product, and of this information.

SECTION 2: COMPOSITION INFORMATION

Components:	Ivey-sol (biodegradable) non-ionic surfactants (Blend)
Generic Description:	Water based biodegradable wetting agents and surfactants.

Ivey-sol®/SPT® Technology - Stock Mixtures. Patented and or proprietary blends. Information in this MSDS is applicable for all component products listed.

SECTION 3: HAZARDS IDENTIFICATION

Effects of a Single Exposure.

Swallowing:	Non to slightly toxic. May cause abdominal discomfort and nausea for some individuals.
Skin Absorption:	No evidence of harmful effects.
Inhalation:	No evidence of harmful effects.

Skin Contact:	Brief contact should not result in any significant effects. Prolong exposure may cause mild irritation with local itching and redness for individuals with sensitive skin.
Eye Contact:	May cause mild to moderate irritation.
Effects of Repeated Exposure:	Repeated skin contact may cause mild dermatitis (dryness of skin).
Medical Conditions:	Existing dermatitis may be aggravated through repeated skin contact.
Other Effects:	None currently known.

Section 4: FIRST AID MEASURES

Swallowing:	If patient if fully conscious, give two glasses of water
Skin Absorption:	Wash exposed skin with soap and water. Obtain medical attention if irritation or dermatitis persists. Wash exposed clothing before reuse.
Inhalation:	Not applicable.
Eye Contact:	Immediately flush eyes with water and continue to flush as required. Remove any contact lenses, if worn. Obtain medical attention if deemed necessary.
Note to Physician:	There is no required antidote. Treatment should be directed at the control of symptoms and the clinical condition of the patient.

Section 5: FIRE FIGHTER MEASURES

Flammability:	Not Flammable
Auto Ignition Temperature	Not Available
Upper Flammable Limit	Not Established
Lower Flammable Limit	Not Established
Explosive Date:	Explosive Power - Not Available Rate of Burning - Not Available
Hazardous Combustion Products:	Not applicable
Special Protective Equipment:	Not Applicable
Extinguishing Media:	Not Applicable
Extinguishing Media to be avoided:	Not Applicable
Special Fire Fighting Procedures:	Not Applicable

Section 6: ACCIDENTAL RELEASE MEASURES

Step to be taken if Material is Released or Spilled:	Eliminate and/or contain source with inert material (sand, earth, absorbent pads, etc.). Wear basic eye and skin protection. Floor may be slightly slippery; so use care to avoid falling. Avoid discharge to natural waters, and/or dilute with water. Transfer liquids to suitable containers for recovery, re-use or disposal. Contact III for technical assistance if required.

Section 7: HANDLING AND STORAGE

Handling Procedures:	Avoid contact with eyes, skin, and clothing. Do not swallow. Keep containers closed or sealed when not in use. Wash thoroughly after handling.
Storage:	Keep closed or sealed when not in use. Do not allow to freeze.
Ventilation:	General mechanical room ventilation should be satisfactory.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Gloves / Type Gloves / Type:	Latex, or similar would be sufficient.
Respiratory / Type:	None expected to be required. However, if an engineered/industrial application where vapors and/or misting may occur, wear MSHA/NIOSH approved half mask air purifying respirator.
Eye / Type:	Mono Goggles or similar.

Footwear / Type:	No special requirements.
Clothing / Type:	Wear an apron and /or coveralls.
Other / Type:	Eye bath.
Engineering Controls:	General mechanical room ventilation should be satisfactory.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Water Based Liquid
Appearance:	Clear to slightly Cloudy White Color
Odor:	Mild
Molecular Weight:	Mixture (Not Applicable)
Boiling Point:	Not Applicable
Freezing Point:	Approx. $0^{o}C$ ($32^{o}F$)
Pour Point:	Not Applicable
Melting Point:	Not Applicable
Specific Gravity:	0.99-1.04 (Water = 1.0)
Vapor Pressure:	<0.01 mm Hg
Vapor Density:	> 1 (Air = 1.00)
pH:	Not Available (Typically 6.5-7.5 Range)
Solubility in Water:	100%
Evaporation Rate:	<0.01
Coefficient of Oil/Water Distribution	Not Determined

Section 10: STABILITY AND REACTIVITY

Stability:	Stable
Conditions to Avoid:	Prolonged excessive heat may cause product decomposition. Freezing should also be avoided as it may cause product decomposition. In some cases, it may cause irreversible changes.
Incompatible Materials:	Normally un-reactive; however avoid strong bases at high temperatures, strong acids, strong oxidizing agents, and materials with reactive hydroxyl compounds. These compounds would damage the mixture and reduce its effectiveness during application.
Hazardous Decomposition Products:	Not applicable.
Hazardous Polymerization:	Will not occur.

Section 11: TOXICOLOGICAL INFORMATION

Exposure Limit of Material:	Not Established
LD/50:	Not Available
LC/50:	Not Available
EL:	Not Established
Carcinogenicity of Material:	None Known
Reproductive Effects:	Not Available
Irritancy of Material:	See Section 3
Sensitizing Capability:	Not Available
Synergistic Materials:	Not Available

LD: Lethal Dose LC: Lethal Concentration EL: Exposure Limit

Section 12: ECOLOGICAL CONSIDERATIONS

Environmental Toxicity:	Low Potential to affect aquatic organisms*
Biodegradability:	>90% in 28 days**
LC/50:	48 Hour: 0.11 %, Species: Daphnia magna
LC/50:	96 Hour: 0.07695%, Species: Rainbow Trout

* When used in accordance with Ivey International Inc. In-situ and Ex-situ Remediation Applicable Guidelines.

** Based on actual testing or on data for similar material(s). Degradation Biodegradation reached in Modified OECD Screening Test (OECD Test No.301 E) after 28 days: 90 %. Biodegradation reached in CO2 Evolution Test (Modified Sturm Test, OECD Test No. 301 B) after 28 days: 70 %.

All available ecological data have been taken into account for the development of the hazard and precautionary information contained in this Material Safety Data Sheet.

Section 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method:	For aqueous Ivey-sol mixture solutions; aerobic biological wastewater treatment systems are effective in treating said mixtures. Ivey-sol does not have any known negative affect on coagulant or flocculent water treatment processes.

Section 14: TRANSPORTATION INFORMATION

UN Number:	Not Applicable
TDG Classification:	Not Required
Shipping Name:	Ivey-sol
Packing Group:	Not Applicable
Special Shipping Instructions:	Do not allow to freeze

Section 15: REGULATORY INFORMATION

WHMIS Classification:	Not Controlled as per WHMIS Regulation.
CPR Compliance:	This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
CEPA Compliance:	All ingredients of this product are listed on the DSL.

Section 16: OTHER INFORMATION

Available Literature and Brochures:	Additional information on this product may be obtained by calling our customer service representatives at -800-246-2744 or -604-538-1168.
Recommended Uses and restrictions:	For the application of air, soil, groundwater, shoreline, and off-shore spill petroleum reclamations purposes. Secondary recoveries of petroleum products form crude-oil, oil-shale, and oil-sands. Additional information on uses can be made available by contacting out technical sales director in your area by visiting www.iveyinternational.com, or by calling toll free 1-800-246-2744 or +1-604-538-1168.
Legend:	TS - Trade Secret D2B - Toxic Material causing Other Effects. mm - Millimeters LD - Lethal Dose LC - Lethal Concentration EL - Exposure Limit Hg - Mercury (760 mm Hg = 1 Atmosphere, Sea Level)

Ref: Ivey-sol/MSDS/ (Revised August 29,2012)

APPENDIX C

COVID-19 Interim Health and Safety Guidance

COVID-19 INTERIM HEALTH AND SAFETY GUIDANCE

CORPORATE HEALTH AND SAFETY MANAGER	**:**	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	**:**	**03/2020**
REVISION DATE	**:**	**10/08/2020**
REVISION NUMBER	**:**	**5**

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1. PURPOSE

This guidance has been implemented to establish work practices, administrative procedures, and engineering controls to minimize potential exposure to SARS-CoV-2, the virus that causes COVID-19. The following guidance has been developed based on local, state and federal recommendations/requirements regarding COVID-19. The purpose of this document is to supplement existing site-specific Health and Safety Plans (HASPs) and provide interim health and safety guidance to minimize potential exposure to SARS-CoV-2. Should additional scientific information or regulatory information change, this document shall be updated accordingly.

2. SCOPE AND APPLICABILITY

This guidance covers all Roux employees and the subcontractors that Roux oversees. Site specific HASPs shall be developed to incorporate elements of mitigative measures against COVID-19 exposure. If work cannot be carried out in compliance with this guidance, the project shall be further evaluated by the Project Principal (PP), Office Manager (OM), and Corporate Health and Safety Manager (CHSM) prior to work authorization.

Roux subcontractors are required to review, comply with, and implement Roux's COVID-19 Interim Health and Safety Guidance while on site. Subcontractors may implement additional preventative measures as they see fit. All work shall be conducted in a manner consistent with the federal, state, and local guidance as it relates to COVID-19.

3. BACKGROUND

What is COVID-19?

COVID-19 is a respiratory illness that can spread from person to person. The virus that causes COVID-19 is a novel coronavirus that was first identified during an investigation into an outbreak in Wuhan, China. This virus continues to spread internationally and within the United States. There is currently no vaccine to prevent COVID-19.

What are the symptoms of COVID-19?

Reported illnesses have ranged from mild symptoms to severe illness and death for confirmed COVID-19 cases. Symptoms may appear 2 to 14 days following exposure to the virus. People with these symptoms or combinations of symptoms may have COVID-19:

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhea

This list is not all possible symptoms. The CDC will continue to update this list as they learn more about the virus. For an updated symptom list please reference the following link for CDC Symptoms of Coronavirus.

If someone develops emergency warning signs for COVID-19, they should be instructed to get medical attention immediately. Emergency warning signs can include those listed below; however, this list is not all inclusive. Please consult your medical provider for any other symptoms that are severe or concerning.

- Trouble breathing
- Persistent pain or pressure in the chest
- New confusion
- Inability to wake or stay awake
- Bluish lips or face

How does COVID-19 spread?[1]

SARS-COV-2 spreads very easily from person to person during close contact.

Individuals who are within close contact (within 6 feet) of a person with COVID-19 or have direct contact with that person are at greatest risk of infection.

- When people with COVID-19 cough, sneeze, sing, talk, or breathe they produce respiratory droplets. These droplets can range in size from larger droplets (some of which are visible) to smaller droplets. Small droplets can also form particles when they dry very quickly in the airstream.
- Infections occur mainly through exposure to respiratory droplets when a person is in close contact with someone who has COVID-19.
- Respiratory droplets cause infection when they are inhaled or deposited on mucous membranes, such as those that line the inside of the nose and mouth.
- As the respiratory droplets travel further from the person with COVID-19, the concentration of these droplets decreases. Larger droplets fall out of the air due to gravity. Smaller droplets and particles spread apart in the air.
- With passing time, the amount of infectious virus in respiratory droplets also decreases.

SARS-CoV-2 can sometimes spread by airborne transmission under certain circumstances.

Some infections can be spread by exposure to virus in small droplets and particles that can linger in the air for minutes to hours. These viruses may be able to infect people who are further than 6 feet away from the person who is infected or after that person has left the space. This kind of spread is referred to as **airborne transmission** and is an important way that infections like tuberculosis, measles, and chicken pox are spread.

- There is evidence that under certain conditions, people with COVID-19 seem to have infected others who were more than 6 feet away. These transmissions occurred within enclosed spaces that had inadequate ventilation. Sometimes the infected person was breathing heavily, for example while singing or exercising.
    - Under these circumstances, scientists believe the amount of infectious smaller droplet and particles produced by the people with COVID-19 became concentrated enough to spread the virus to other people. The people who were infected were in the same space during the same time or shortly after the person with COVID-19 had left.
- Available data indicate it is much more common for the virus that causes COVID-19 to spread through close contact with a person who has COVID-19 than through airborne transmission.[2]

Spread from contact with contaminated surfaces or objects is less common.

Respiratory droplets can also land on surfaces and objects. It is possible that a person could get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or eyes. Spread from touching surfaces is not thought to be a common way that COVID-19 spreads.

4. TRAINING REQUIREMENTS

All employees with potential exposure to COVID-19 shall be provided training that incorporates COVID-19 exposure mitigation strategies, such as implementation of proper social distancing, personal hygiene (e.g., handwashing), as well as disinfection procedures, as outlined by CDC guidelines.

5. EXPOSURE RISK POTENTIAL

Worker risk of occupational exposure to COVID-19 can vary from very high, high, medium, or lower (caution) risk. This level of exposure is dependent on several factors, which can include industry type; need for contact within

1 How COVID-19 Spreads https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html#edn1

2 Scientific Brief: SARS-CoV-2 and Potential Airborne Transmission | CDC https://www.cdc.gov/coronavirus/2019-ncov/more/scientific-brief-sars-cov-2.html

6 feet of people known to be or suspected of being infected with COVID-19; density of work environment; and industrial setting (i.e., healthcare building, occupied interior work area, minimal ventilation).

Provided below is background risk level information taken from the U.S. Department of Labor Occupational Safety and Health Administration Guidance on preparing workplaces for COVID-19. Risk evaluations for each project shall be conducted by the PP and OM in consultation with the CHSM to ensure Roux employees and subcontractors remain within the lower exposure (caution) category. If it is identified there is a medium exposure risk or higher, further evaluation and mitigative measures shall be evaluated to reduce overall exposure risk prior to work authorization.



Very High Exposure Risk (Activities not conducted by Roux)

Very high exposure risk includes occupations/work activities with high potential for exposure to known or suspected sources of COVID-19 during specific medical, postmortem, or laboratory procedures. This can include but is not limited to:

- Healthcare workers (e.g., doctors, nurses, dentists, paramedics, emergency medical technicians) performing aerosol-generating procedures (e.g., intubation, cough induction procedures, bronchoscopies, some dental procedures and exams, or invasive specimen collection) on known or suspected COVID-19 patients.
- Healthcare or laboratory personnel collecting or handling specimens from known or suspected COVID-19 patients (e.g., manipulating cultures from known or suspected COVID-19 patients).
- Morgue workers performing autopsies, which generally involve aerosol-generating procedures on the bodies of people who are known to have, or suspected of having, COVID-19 at the time of their death.

High Exposure Risk (Activities not conducted by Roux)

High exposure risk occupations/work activities include exposure to known or suspected COVID-19 positive individuals. This can include but not limited to:

- Healthcare delivery and support staff (e.g., doctors, nurses, and other hospital staff who must enter patients' rooms) exposed to known or suspected COVID-19 patients. (Note: when such workers perform aerosol-generating procedures, their exposure risk level becomes very high.)
- Medical transport workers (e.g., ambulance vehicle operators) moving known or suspected COVID-19 patients in enclosed vehicles.
- Mortuary workers involved in preparing (e.g., for burial or cremation) the bodies of people who are known to have, or suspected of having, COVID-19 at the time of their death.

Medium Exposure Risk

Medium exposure risk occupations/work activities include those that require frequent and/or close contact with (i.e., within 6 feet of) people who may be infected with COVID-19, but who are not known or suspected to be COVID-19 positive. For most of our worksites, it is assumed there is on-going community transmission for COVID-19. Therefore, workers who work at sites and may have contact with the general public, other contractors, high-population-density work environments (i.e., greater than 10 people) fall within medium exposure risk group category. This can include, but is not limited to, sampling events that require two or more workers to collect and log samples in close contact or work occurring in an interior space with limited ventilation and several workers present.

Lower Exposure Risk (Caution)

Lower exposure risk (caution) occupations/work activities are those that do not require contact with people known to be or suspected of being COVID-19 positive. During these activities, there is limited contact (i.e., within 6 feet of) the general public or other workers. Workers in this category have minimal occupational contact with the public and other coworkers. This can include construction oversight that does not require close contact as well as sampling or gauging events performed by one worker.

6. COVID-19 HEALTH SCREENING

6.1. Roux Employees

All Roux employees are required to self-attest to a COVID-19 Daily Health Questionnaire which is to be completed at home through a mobile application on scheduled workdays. The purpose of this program is to ensure business continuity as well as mitigate any potential exposure to our employees and others if it is determined employees are at-risk for contracting COVID-19. As part of this self-attestation, all employees are required to take their temperatures daily at home to confirm they do not have a fever (≥ 100.4). Employees who answer yes to any of these questions are instructed to contact their Office Manager and/or Department Head immediately and should not enter the office or go to a field site. Information shall be used to determine appropriate internal response in consultation with the Human Resources Director and Corporate Health and Safety Manager.

Below, you will find our COVID-19 Daily Health Questionnaire that all Roux employees are required to self-attest to **every scheduled workday by 9:30 am.** If employees do not promptly fill out the questionnaire by the time listed above, there will be additional follow up by HR, H&S, and/or OMs.

According to the U.S. Centers for Disease Control and Prevention & the World Health Organization, COVID-19 Symptoms include:

- *Fever (≥100. 4°F) or chills*
- *Cough*
- *Shortness of breath or difficulty breathing*
- *Fatigue*
- *Muscle or body aches*
- *Headache*
- *New loss of taste or smell*
- *Sore throat*
- *Congestion or runny nose*
- *Nausea or vomiting*
- *Diarrhea*

Have you experienced any of the COVID-19 related symptoms noted above in the last 14 days? Please Note: We do not expect employees to answer "yes" to the symptoms question if these are symptoms you normally experience due to another condition or medication.

- *Yes*
- *No*

Have you been in close contact with someone who is suspected or confirmed to have COVID-19 or who is under investigation for COVID-19 within the last 14 days? *Close contact is defined as someone who was within 6 feet of an infected person for at least 15 minutes or coming into direct contact with secretions (e.g., sharing utensils, being coughed on) from an infected person.*

- *Yes*
- *No*

Have you traveled outside of the country, been on a cruise ship and/or traveled to areas within the United States which have state mandated travel restrictions in the last 14 days?

- *Yes*
- *No*

Have you tested positive for COVID-19 within the last 14 days?

- *Yes*
- *No*

6.2. Subcontractors

In an effort to mitigate the risk of transmission of COVID-19, Subcontractors who shall perform work on-site are required to attest to the fitness of their work crew on a daily basis. This requires each worker to self-assess by asking themselves the four questions listed in the section above and also contained within the Roux Subcontractor Work Crew COVID-19 Daily Health Attestation. If any crew member answers "yes" to any of the questions, that worker is not to report to the field site and should seek proper medical advice, in accordance with local, state and federal guidelines.

On a daily basis, the subcontractor supervisor must provide the Subcontractor Work Crew COVID-19 Daily Health Attestation complete with the names of all work crew fit to be on the site for that day (i.e., who have answered "no" to all questions on the self-assessment) to Roux's Project Manager. The Subcontractor must notify Roux if there have been any "yes" responses daily. Subcontractors shall not be required to provide the name or any other personal information of any employee who has answered "yes" to any of the self-assessment questions, however, the subcontractor should provide the date and times that employee has been onsite in the prior 14 days. Records shall be maintained within the project files indicating health screening has been performed, records shall be retained for not less than 14 days following the date of submission. The Roux Subcontractor Work Crew COVID-19 Daily Health Check Attestation can be found within Appendix A.

7. SELF-ISOLATION & QUARANTINE

7.1. Self-Isolation

What if I am asked to self-isolate at home and when can I return from home isolation?

Depending on the situation, if you are COVID-19 positive or suspected to have COVID-19, employees may be required to self-isolate in their homes, as per CDC or local health department guidelines. As per CDC guidance, return from isolation has been broken out into two categories. The first includes confirmed or suspected COVID-19 individuals exhibiting symptoms, and the second includes those who have not had COVID-19 symptoms (i.e., asymptomatic), but tested positive and are under self-isolation. Both categories, along with strategies to return from home isolation, are outlined below.

People with COVID-19 under home isolation:

Accumulating evidence supports ending isolation and precautions for persons with COVID-19 using a symptom-based strategy. Specifically, researchers have reported that people with mild to moderate COVID-19 remain infectious no longer than 10 days after their symptoms began, and those with more severe illness or those who are severely immunocompromised remain infectious no longer than 20 days after their symptoms began. Therefore, CDC has updated the recommendations for discontinuing home isolation as follows:

1. **Persons with COVID-19 who have symptoms** and were directed to care for themselves at home may discontinue isolation under the following conditions:
    a. At least 10 days* have passed since symptom onset;
    b. At least 24 hours have passed since resolution of fever without the use of fever-reducing medications; and
    c. Other symptoms have improved.

* *A limited number of persons with severe illness may produce replication-competent virus beyond 10 days, which may warrant extending the duration of isolation for up to 20 days after symptom onset. Consultation with your healthcare provider will be warranted in such cases of severe illness.*

2. **Persons infected with SARS-CoV-2 who never develop COVID-19 symptoms** may discontinue isolation and other precautions 10 days after the date of their first positive RT-PCR test for SARS-CoV-2 RNA.

7.2. Quarantine

Employees may be required to self-quarantine due to potential exposure with a suspected and/or confirmed COVID-19 positive individual as well as recent travel as per local/state guidelines. People in quarantine should stay home, separate themselves from others, monitor their health, and follow directions from their state or local health department. If Roux employees meet the criteria to self-quarantine based on potential exposure/travel, they are required to self-quarantine for 14 days regardless of local/state exemptions. Even if you test negative for COVID-19 or feel healthy, symptoms may still appear 2 to 14 days after exposure to the virus.

7.2.1. Close Contact Quarantine

Employees who have come into close contact with someone who has COVID-19 are required to self-quarantine for 14 days following their last contact with the COVID-19 positive person. Close contact can be defined as being within 6 feet of someone who has COVID-19 for a total of 15 minutes or more, providing care at home to someone who is sick with COVID-19, having direct physical contact with COVID-19 individual, sharing utensils with COVID-19 individual, and being sneezed/coughed on by someone with COVID-19.

7.2.2. Travel Related Quarantine

All travel out of state must be communicated with the OM and/or Department Head prior to departure. Please note, some state/local entities require submissions of traveler health forms. It is expected all Roux employees will comply with such state/local travel requirements. All employees returning from international and/or cruise ship travel must quarantine for 14 days from the time they have returned home.

Personal Travel

Employees who will be traveling out of state are responsible for checking the local/state quarantine guidance for the regions they are traveling from and to in advance of travel and notifying their OM prior to traveling in order to evaluate the impact on the business. Based on state/local guidelines you may be required to quarantine for 14 days from the time you have returned home.

Work-Related Travel

The Project Team (i.e., PM & PP) and field staff who will be traveling are responsible for checking the local/state quarantine guidance for the regions they are traveling from and to in advance of travel and notifying their OM prior to traveling in order to evaluate the impact to the business. Additionally, health and safety considerations shall be reviewed by the OM in consultation with the CHSM regarding logistics and overnight accommodations. Based on state/local guidelines, you may be required to quarantine for 14 days from the time you have returned home.

8. WORKPLACE CONTROLS

During the project planning phase, worksite evaluations shall be carried out by the PP and OM in consultation with the CHSM to determine risk exposure levels for work activities. If it is determined there is a medium exposure risk level or higher, additional workplace controls shall be evaluated and implemented as required in addition to the basic infection prevention measures outlined below in Section 8. Additional workplace controls can include engineering controls (i.e., ventilation, physical barriers), administrative controls (i.e., minimizing contact between workers, rotating shifts, site specific training), and additional personal protective equipment (i.e., respiratory protection). If exposure risk cannot be mitigated, potential project postponement may be necessary at the discretion of the OM in consultation with the CHSM.

A Job Safety Analysis (JSA) has been developed and is provided in Appendix B, which summarizes and applies concepts within this guidance including the infection prevention measures listed below. This JSA shall be required for all field work in areas where there is community-based transmission of COVID-19.

9. INFECTION PREVENTION MEASURES

The following is basic infection prevention and personal hygiene practices which shall be implemented for all Roux field activities as well as in the office setting.

- ***Personal Hygiene***
  - Wash your hands often with soap and water for at least 20 seconds.
    - If soap and water are not available, use an alcohol-based sanitizer that contains at least 60% ethanol or 70% isopropanol.
    - Key times to wash your hands include after blowing your nose, coughing or sneezing, after using the restroom, and before eating or preparing food.
  - Do not touch your eyes, face, nose and mouth with unwashed hands.
  - Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow.
  - Throw potentially contaminated items (e.g., used tissues) in the trash.
- ***Avoid Close Contact/Secondary Contact with People and Potentially Contaminated Surfaces***
  - Apply appropriate social distance (6+ feet).
  - Stop handshaking—use and utilize other noncontact methods for greeting.
  - Do not work in areas with limited ventilation with other Site workers (e.g., small work trailer which lacks HVAC system). If working in a trailer, the following conditions must be met: limited to 4 workers, large enough to have the ability to apply social distance and has open windows and/or operational HVAC to ensure proper ventilation of the workspace.
  - Morning tailgate/safety meetings shall occur outside and not within work trailers.
    - Do not require employees or subcontractors to sign in using the same tailgate form. The Site Supervisor/SHSO should record names of those in attendance on the form.
    - If the Site has more than 10 workers, separate tailgate meetings should be performed in smaller groups.
  - Do not share equipment or other items with co-workers and subcontractors unless wearing appropriate PPE (e.g., nitrile gloves). Assume equipment and other surfaces are potentially contaminated and remove gloves aseptically.
  - If receiving labware or other equipment disinfect to the extent feasible. If there are concerns for contaminating labware please wear appropriate PPE (e.g., gloves) to minimize contact.
  - Contact your lab/equipment vendor to confirm equipment is properly disinfected prior to being shipped.
  - Do not carpool with others (e.g., clients, coworkers).
  - For company owned vehicles limit sharing of vehicles with coworkers. If unable to limit sharing of company owned vehicles, properly disinfect vehicle before driving with a focus on commonly touched surfaces (e.g., steering wheels, shifters, buttons, etc.).
  - Use caution when using public restrooms, portable toilets. Use paper towel as a barrier when touching door handles and faucets.
- ***Cleaning and Disinfecting***
  - Clean and disinfect frequently touched surfaces daily. Commonly touched items can include but are not limited to tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, sinks, and field equipment (i.e., photo-ionization detector, field equipment).
  - **Hard (Non-porous) Surfaces**
    - If surfaces are dirty, they should be cleaned with a detergent/soap and water prior to disinfection.

- Refer to the manufacturer's instructions to ensure safe and effective use of the product and wear appropriate personal protective equipment (e.g., gloves, safety glasses, face shield).
- Many products require:
  - Keeping surface wet for a period of time (i.e., contact time)
    - Refer to manufacturer's instructions outlining adequate contact time.
  - Precautions such as wearing gloves and making sure you have good ventilation during use of the product.
- Disposable gloves should be removed aseptically and discarded after cleaning. Wash hands immediately following removal of gloves. Refer to Appendix C for how to remove gloves aseptically.
- For disinfection, diluted household bleach solutions, alcohol solutions with at least 70% alcohol, and most common EPA-registered household disinfectants should be effective.
  - Diluted household bleach solutions can be used if appropriate for the surface. Follow manufacturer's instructions for application and proper ventilation. Check to ensure the product is not past its expiration date. Never mix household bleach with ammonia or any other cleanser. Unexpired household bleach will be effective against coronaviruses when properly diluted. Leave the solution on the surface for at least 1 minute.
    - Prepare a bleach solution by mixing:
      - 5 tablespoons (1/3 cup) bleach per gallon of water or
      - 4 teaspoons bleach per quart of water
- Products with EPA-approved emerging viral pathogen claims are expected to be effective against COVID-19. Follow the manufacturer's instructions for all cleaning and disinfecting products (e.g., concentration, application method and contact time, etc.).

- **Soft (Porous) Surfaces**
  - For soft (porous) surfaces, remove visible contamination if present and clean with appropriate cleaners indicated for use on the surfaces. After cleaning:
    - Launder items as appropriate in accordance with the manufacturer's instructions. If possible, launder using the warmest appropriate water setting for the item and dry items completely; or
    - Use products with the EPA-approved emerging viral pathogens that claim they are suitable for porous surfaces.
- **Electronics**
  - For electronics such as tablets, touch screens, keyboards, remote controls, etc. remove visible contamination if present.
    - Follow the manufacturer's instructions for all cleaning and disinfection products.
    - Consider use of wipeable covers for electronics.
    - If no manufacturer guidance is available, consider the use of alcohol-based wipes or sprays containing at least 70% alcohol to disinfect touch screens. Dry surfaces thoroughly to avoid pooling of liquids.
- ***Linens, Clothing, and Other Items that Go in the Laundry***
  - Although it is unlikely field clothing would become potentially contaminated with COVID-19, it is recommended that field staff regularly launder field clothing following any field event upon returning home.
  - In order to minimize the possibility of dispersing the virus from potentially contaminated clothing, do not shake dirty laundry.
  - Wash items as appropriate in accordance with the manufacturer's instructions. If possible, launder items using the warmest appropriate water setting for the items and dry items completely.
  - Clean and disinfect hampers or other containers used for transporting laundry according to guidance listed above.

10. CLOTH FACE COVERINGS

The CDC recommends the use of cloth face coverings in public settings where other social distancing measures are difficult to maintain, such as grocery stores and pharmacies, and especially in areas of significant community-based transmission. This recommendation is based on recent studies and an understanding that a significant portion of asymptomatic, as well as pre-symptomatic, individuals can shed the virus to others before showing symptoms. Studies indicate that COVID-19 can spread among people interacting in close proximity through speaking, coughing, or sneezing. The purpose of the cloth covering is NOT to provide protection to the wearer, but to protect the wearer from unknowingly infecting others if they are asymptomatic/pre-symptomatic. The use of cloth face coverings is to supplement and NOT replace the existing practices outlined above.

Based on existing studies and on-going recommendations and/or requirements from federal, state, and local entities, Roux is recommending the use of cloth face coverings, when appropriate. Appropriate use is defined when local authorities or clients require the use of cloth face coverings in conjunction with established social distancing, or if an employee elects to use a cloth covering on their own accord. Roux will provide cloth face coverings that shall meet the basic requirements outlined by the CDC guidance.

Cloth Face Coverings should:

- Fit snugly but comfortably against the side of the face;
- Covers your nose and mouth and secure it under your chin;
- Include multiple layers of fabric;
- Allow for breathing without restriction; and
- Be able to be laundered and machine dried with no damage or change to shape.

When donning and doffing the cloth face covering, individuals should avoid touching their eyes, nose, and mouth. Following removal of the cloth face covering, employees should wash their hands immediately using the guidelines described in Section 8 above. Cloth face coverings should be routinely washed depending on the frequency of use.

The CDC does not recommend the use of gaiters or face shields. Evaluation of these face covers is on-going but effectiveness is unknown at this time. Masks with exhalation valves or vents should NOT be worn to help prevent the person wearing the mask from spreading COVID-19 to others (source control).

Note, the cloth face coverings recommended are not surgical masks or N-95 respirators. Those are critical supplies that must continue to be reserved for healthcare workers and other medical first responders, as recommended by current CDC guidance. Should there be a requirement for workers to be in respiratory protection (e.g., full-face respirator w/cartridges, P100, N95 respirators), it shall be addressed during the project pre-planning phase, which includes discussions with the PP and OM in consultation with CHSM.

11. HOTEL SELECTION PROCESS AND OVERNIGHT/REMOTE WORK

Hotel Selection

Due to the current COVID-19 situation, Roux is recommending overnight travel be limited to the extent possible. If there is a project requiring the overnight stay at a hotel, accommodations shall be made only after the hotel and hotel's location have been vetted in accordance with Roux's established guidance as defined below. The Project Team, which includes the Project Manager (PM) and PP along with the OM, in consultation with the CHSM, shall verify the hotel has appropriate protocols in place to limit the potential exposure and spread of COVID- 19 through proper cleaning and disinfection practices. Discussions with the hotel shall include, but are not limited to, measures taken to keep guests safe during their stay, guest room sanitization schedule, training of staff regarding disinfecting protocols using EPA-approved disinfectants, hotel staff fitness for duty requirements, etc. Some example questions are listed below. Following the initial hotel assessment by the Project Team, the OM and the CHSM shall review the hotel assessment findings prior to the CHSM's authorization that the hotel may be used by any Roux employees.

Sample Questions for Evaluating Hotels

1. Is there an established COVID-19 guidance/policy your location is following?
2. What additional measures are being implemented to keep workers and customers safe?; (e.g. signs/placards, social-distancing/mask reminders)
3. Is there a guest room sanitization schedule?
4. Have staff been trained on properly cleaning/disinfecting areas?
5. What types of disinfectants are in use at your location?
6. How are you evaluating staff fitness for duty? (e.g., temperature checks, not reporting to work when sick, etc.)

Employees staying overnight should abide by the following guidance:

- Ensure you properly disinfect your room upon arrival. This should include a wipe down of all commonly touched surfaces with an approved disinfectant. Use appropriate PPE (e.g., nitrile gloves) when disinfecting surfaces.
- Place the "Do Not Disturb" placard on the room while away and consider limiting hotel housekeeping service to the extent feasible (e.g., not having the room cleaned each day) to minimize potential secondary contact with others.
- Do not spend any more time in hotel common areas (i.e., lobby, hallways, etc.) than is necessary.
- Follow proper Infection Prevention Measures found within Section 8 above.
- Have meals in your hotel room after disinfecting outer package surfaces, as outlined in Section 8 above. Do not eat in public spaces or restaurants.
- If the hotel has a restaurant or café, do not have your meal in a common area; instead order food to be picked up or delivered to your room. If delivered, opt for contactless delivery (left outside the door, delivery person knocks and leaves). Always use your own pen if you need to sign something.
- Employees may also pick up food from takeout locations, order groceries or food for delivery to the hotel. Call local restaurants to order food for delivery (call the hotel lobby for recommendations) or use food ordering apps. Some apps have options for contactless delivery.

12. TRANSPORTATION-RENTAL CARS AND ROUX-OWNED VEHICLES

Rental Cars

Due to the current COVID-19 situation, Roux recommends rental car usage be limited to the extent possible. If there is a project requiring the use of a rental car (e.g. truck/van), accommodations shall be made only after the rental car company and their store's location have been vetted in accordance with Roux's established guidance, as defined below. The Project Team (PM and PP) and OM in consultation with the CHSM shall verify the rental company where you are picking up your vehicle has appropriate protocols in place to limit the potential exposure and spread of COVID- 19 through proper cleaning and disinfection practices. Discussions with the rental car company shall include, but are not limited to, measures to be taken to keep customers safe during pickup/drop-off, rental car disinfection protocols, training of staff regarding disinfecting protocols using EPA-approved disinfectants, rental car company staff fitness for duty requirements, etc. Some example questions are listed below. Following the initial rental car company store assessment by the Project Team, the OM and the CHSM shall review the rental car company assessment findings prior to the CHSM's authorization that the rental car company store may be used by any Roux employees.

Sample Questions for Evaluating Rental Car Companies

1. Is there an established COVID-19 guidance your location is following?
2. What additional measures are being implemented to keep workers and customers safe?
3. Is there a car sanitization schedule?

4. Have staff been trained on properly cleaning/disinfecting vehicles?
5. What types of disinfections are in use at your location?
6. How are you evaluating staff fitness for duty? (e.g., temperature checks, not reporting to work when sick, etc.)

Upon vehicle pickup, employees shall don nitrile gloves and safety glasses and clean/disinfect all high-touch surfaces (steering wheel, knobs, door handles, turn signals, radio, etc.) by wiping thoroughly with approved disinfectants (following manufacturer's instructions). Aseptically remove gloves and dispose of them along with rags/wipes, appropriately. Wash hands or use hand sanitizer immediately after each episode of cleaning. Due to social distancing requirements, personnel shall not carpool to destinations.

Roux-Owned Vehicles

Due to the current COVID-19 situation, Roux-owned vehicles should be dedicated to individual employees to the extent feasible, and if authorized by the OM. In the case this cannot be accommodated, employees shall don nitrile gloves and safety glasses, and clean/disinfect all high-touch surfaces (steering wheel, knobs, door handles, turn signals, radio, etc.) by wiping thoroughly with approved disinfectants (following manufacturer's instructions). This cleaning and disinfection shall occur before and after each use of the vehicle. Aseptically remove gloves and dispose of them along with rags/wipes, appropriately. Wash hands or use hand sanitizer immediately after each episode of cleaning. Due to social distancing requirements, personnel shall not carpool to destinations.

APPENDIX A

Roux Subcontractor Work Crew

COVID-19 Daily Health Screening Questionnaire

Subcontractor Work Crew
COVID-19 Daily Health Attestation

Date:
Company Name:
Supervisor Name: Signature:
Project Name:
Site Address:
Number of Workers on site:

Prior to entry onto a field site, the following questions shall be asked by the Subcontractor Supervisor to their work crew.

It is preferred this questionnaire is completed for each individual prior to their arrival at the field site. If the answer to any of these questions is YES, the worker is not to report to the field site and seek proper medical advice, in accordance with CDC Guidelines.

The Subcontractor Supervisor must provide this form on a daily basis to the Roux primary contact for the project and notify Roux of any YES responses.

1. Have you experienced any signs/symptoms of COVID-19 such as fever (≥100.4°F), cough, shortness of breath, chills, fatigue, muscle/body aches, headache, new loss of taste or smell, sore throat, congestion or runny nose, nausea/vomiting or diarrhea in the last 14 days?

2. Have you been in close contact* with someone who is suspected or confirmed to have COVID-19 or who is under investigation for COVID-19 within the last 14 days?

*Close contact is defined as someone who was within 6 feet of an infected person for at least 15 minutes or coming into direct contact with secretions (e.g. sharing utensils, being coughed on) from an infected person.

3. Have you traveled outside of the country, been on a cruise ship and/or traveled to areas within the United States which have state mandated travel restrictions in the last 14 days?

4. Have you tested positive for COVID-19 within the last 14 days?

Please list the crew member's names on site for the day.

1.	9.
2.	10.
3.	11.
4.	12.
5.	13.
6.	14.
7.	15.
8.	16.

APPENDIX B

Job Safety Analysis-Working in Areas Affected by COVID-19

JOB SAFETY ANALYSIS	Ctrl. No. CVD-19	DATE: 04/16/2020	☒ NEW ☐ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
Generic	**Fieldwork**	**Working in Areas Affected by Coronavirus**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Kristina DeLuca	Health and Safety Specialist	Brian Hobbs	CHSM

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES – Leather/cut-resistant in field and nitrile as needed
☒ HARD HAT – In field	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	
☐ LIFELINE / BODY HARNESS	☐ HEARING PROTECTION	☒ PPE CLOTHING – High visibility vest in field	☐ OTHER
☒ SAFETY GLASSES – In field	☒ SAFETY SHOES – Steel/composite toe in fie		

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Cloth face covering, nitrile gloves, hand soap, water source, hand sanitizer, disinfectant spray and disinfectant wipes.

Commitment to Safety – All personnel onsite will actively participate in SPSA performance by verbalizing SPSAs throughout the day.

SOCIAL DISTANCING: Maintain 6' of distance between yourself and all other people at all times. If you do not believe the scope of work can be conducted while maintaining this distance, contact your Project Manager immediately.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Project Preplanning	N/A	• Review and follow COVID-19 CDC, Roux, Client and local orders/protocols. • Ensure all workers are fit for duty - anyone feeling sick should remain at home even if symptoms do not align with COVID-19. If a worker has been in contact with someone potentially positive or positive for COVID-19, contact your Office Manager. • Determine PPE needs and ensure adequate supply of disinfectant wipes/spray, soap and water or hand sanitizer at Site. Due to high demands and limited supply, plan ahead. • Use the minimum number of employees necessary to safely complete the work.
2. Mobilization	**Exposure:** Becoming infected or infecting co-workers	**Personal/Rental/Roux Owned Vehicle** • Do not carpool. • Use the same vehicle every day and do not share with co-workers. • Verify workers/other people are not approaching vehicle prior to exiting the vehicle. Maintain 6' of distance from others. • DO not valet your car or allow others to use your car. If necessary, don nitrile gloves and safety glasses and clean/disinfect all high touch surfaces (steering wheel, knobs, door handles, turn signals, radio, etc.) by wiping thoroughly with approved disinfectants (follow manufacturer's instructions). This cleaning and disinfection shall occur before and after each use of the vehicle. Aseptically remove gloves and dispose of them along with rags/wipes, appropriately. Wash hands or use hand sanitizer immediately after each episode of cleaning. **Public Transportation** • Public transit should not be used unless absolutely necessary. Consider renting a car rather than taking public transit. If public transit is required, wear appropriate PPE and apply social distancing (6 ft). Use proper donning and doffing procedures for nitrile gloves. Wash hands or use hand sanitizer immediately after. **Hotel Stay (Refer to COVID-19 H&S Guidance for more info)** • If a hotel stay is deemed necessary for the given field work, ensure that you disinfect your room upon initial arrival and returning each day. Disinfect all surfaces of your room with an appropriate disinfectant using nitrile gloves. Use proper donning and doffing procedures for nitrile gloves. • Place the "Do Not Disturb" placard on the room while away and limit housekeeping services to the extent feasible during your stay to minimize the reintroduction and spread of the virus from others. Minimize, or avoid entirely, time spent in hotel common areas (i.e., the lobby, dining areas, gyms, etc.). Wash hands or use hand sanitizer often.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards, energy source; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

3. Tailgate Meeting	**Exposure:** Becoming infected or infecting co-workers	• Must occur outside or remotely (i.e. video or conference call). • Maintain at least a 6+ ft distance between you and others. • Discuss primary infection prevention measures listed below. • Do not require employees or subcontractors to sign in, the Site Supervisor shall record names on the attendance form. • If the Site has more than 10 workers, separate tailgate meetings should be performed. • Discuss COVID-19 symptoms with coworkers and subcontractors to ensure fitness for duty. Anyone exhibiting signs or symptoms should be instructed to leave the Site, contact your Project Manager.
4. Site Activities	**Exposure:** Becoming infected or infecting co-workers	• Coordinate field activities at the beginning of the day (i.e. Tailgate meeting) to minimize time spent in crowded spaces or overlap while completing job tasks. • Don cloth face coverings as appropriate. • Apply social distancing (6+ ft) when interacting with others. If anyone comes within 6 ft of you while conducting work and your work prevents you from moving away, politely ask them to move back. If others are unable to move from your space, stop work and leave area. • Do not shake hands or touch others. • Do not share equipment or other items with co-workers and subcontractors unless wearing appropriate PPE (e.g. nitrile gloves). Assume equipment and other surfaces are potentially contaminated and remove gloves aseptically (See Appendix B of Roux Interim H&S Guidance for proper glove removal). • If anyone is coughing or sneezing in your vicinity, stop work and leave the area. • Do not work in areas with limited ventilation with others. • Cover your mouth and nose with tissue or paper towel or with your elbow when coughing or sneezing and wash hands or use hand sanitizer immediately after. If sick contact SHSO/PM and leave Site immediately. • Disinfect work surfaces/areas with approved disinfectant you're responsible for (ex: desk, office doorknob, computer, etc.) at least once at the beginning of your shift and at least once at the end of your shift with either sanitizing wipes or disinfectant spray. • Phones should be operated hands free to extent feasible. Sanitize your phone on a regular basis. Disinfection should also take place whenever suspected contaminated material comes in contact with any work surfaces/areas. Wash hands or use hand sanitizer immediately after. • Avoid public spaces and going out to eat by bringing your own lunch to the Site. If performing work in high density urban areas, it is recommended all food must be consumed at or in your vehicle. Wash hands or use hand sanitizer before eating and immediately after.

Primary Infection Prevention Measures

- Wash your hands often with soap and water for at least 20 seconds.
  - If soap and water are not available, use an alcohol-based sanitizer that contains at least 60% ethanol or 70% isopropanol. Key times to wash hands include after blowing your nose, coughing or sneezing, after using the restroom, and before eating or preparing food.
- Do not touch your eyes, face, nose and mouth with unwashed hands.
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow. Throw potentially contaminated items (e.g. used tissues) in the trash.
- Avoid close contact/secondary contact with people and potentially contaminated surfaces.
  - Apply appropriate social distance (6+ feet).
  - Stop handshaking/touching others and use caution when accessing public spaces.
- Clean and disinfect frequently touched surfaces daily. Commonly touched items can include but are not limited to tables, doorknobs, light switches, countertops, handles, desks, phones, keyboard, toilets, sinks and field equipment. If surfaces are dirty, they should be cleaned with soap and water prior to disinfection. If surface cannot be cleaned/disinfected, then wash hands or use sanitizer as soon as possible.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.

[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy source – electricity, pressure, compression/tension.

[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

APPENDIX C

How to Remove Gloves

How to Remove Gloves

To protect yourself, use the following steps to take off gloves

1



Grasp the outside of one glove at the wrist. Do not touch your bare skin.

2



Peel the glove away from your body, pulling it inside out.

3



Hold the glove you just removed in your gloved hand.

4



Peel off the second glove by putting your fingers inside the glove at the top of your wrist.

5



Turn the second glove inside out while pulling it away from your body, leaving the first glove inside the second.

6



Dispose of the gloves safely. Do not reuse the gloves.

7



Clean your hands immediately after removing gloves.

APPENDIX D

Personal Protective Equipment (PPE) Management Program

PERSONAL PROTECTIVE EQUIPMENT MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY MANAGER	:	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	:	**01/19**
REVISION NUMBER	:	**4**

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1. PURPOSE

Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C, and Remedial Engineering (collectively, "Roux") has instituted the following program to establish guidelines for the selection of personal protective equipment (PPE) for use by Roux personnel performing field activities in hazardous environments. PPE is not meant to be a substitute for engineering, work practice, and/or administrative controls, but PPE should be used in conjunction with these controls to protect the employees in the work place. Clothing, body coverings, and other accessories designed to prevent worker exposure to workplace hazards are all types of PPE. To ensure adequate PPE employee-owned PPE is evaluated on a case-by-case basis to insure its adequacy, maintenance and sanitation.

2. SCOPE AND APPLICABILITY

These guidelines apply to all PPE selection decisions to be made in implementing the Roux program. The foundations for this program are the numerous Occupational Health and Safety Administration (OSHA) standards related to PPE cited in 29 CFR 1910 Subpart I, 29 CFR 1926 Subpart E, and the hazardous environment work employee protection requirements under the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standard at 29 CFR 1910.120 and 1926.65. To ensure hazard assessments are documented the levels of protection, types of protection and tasks requiring protection are covered in site-specific Health and Safety Plans (HASPs) and Job Safety Analyses (JSAs).

3. PROCEDURES

Due to the varied nature of site activities and the different potential hazards associated with different sites, several aspects must be considered when selecting PPE. The following text describes PPE selection logic and provides guidelines and requirements for the appropriate selection and use of PPE.

3.1 Introduction

To harm the body, chemicals must first gain entrance. The intact skin and the respiratory tract are usually the first body tissues attacked by chemical contaminants. These tissues provide barriers to some chemicals but in many cases, are damaged themselves or are highly permeable by certain chemical compounds. Personal protective equipment therefore is used to minimize or eliminate chemical compounds coming into contact with these first barrier tissues.

The proper selection of equipment is important in preventing exposures. The PM making the selection will have to take several factors into consideration. The level of protection, type and kind of equipment selected depends on the hazardous conditions and in some cases cost, availability, compatibility with other equipment, and performance. An accurate assessment of all these factors must be made before work can be safely carried out.

3.2 Types of PPE

The type and selection of PPE must meet certain general criteria and requirements as required under OSHA 29 CFR 1910.132 and 1926.95. In addition to these general requirements, specific requirements and specifications exist for some types of PPE that form the basis of the protective clothing scheme. Following is a list of the common types of specific PPE and the specific requirements for the PPE type, where applicable:

1. Hard Hats - Regulated by 29 CFR 1910.135 and 1926.100; and, specified in ANSI Z89.1.

2. Face Shields and Safety Glasses - Regulated by 29 CFR 1910.133 and 1926.102; and, specified in ANSI Z87.1.
3. Respiratory Protection - Regulated by 29 CFR 1910.134 and 1926.103.
4. Hand Protection - Not specifically regulated.
5. Foot Protection - Regulated by 29 CFR 1910.136 and 1926.96; and, specified in ANSI Z41.1.
6. Protective Clothing (e.g., fully encapsulated suits, aprons) - Not specifically regulated.

3.3 Protective Clothing Selection Criteria

3.3.1 Chemicals Present

The most important factor in selecting PPE is the determination of what chemicals the employee may be exposed to. On field investigations, the number of chemicals may range from a few to several hundred. The exact chemicals or group of chemicals present at the site (certain groups tend to require similar protection) can be determined by collecting and analyzing samples of the air, soil, water, or other site media. When data are lacking, research into the materials used or stored at the site can be used to infer chemicals possibly on the site.

Once the known or suspected chemicals have been identified, and taking into consideration the type of work to be performed, the most appropriate clothing shall be selected.

Protective garments are made of several different substances for protection against specific chemicals. There is no universal protective material. All will decompose, be permeated by, or otherwise fail to protect under given circumstances. Fortunately, most manufacturers make guides to the use of their products (i.e., Dupont's Tyvek™ Permeation Guide). These guides are usually for gloves and coveralls and typically provide information regarding chemical degradation rates (failure of the material to maintain structural integrity when in contact with the chemical), and may provide information on the permeation rate (whether or not the material allows the chemical to pass through). When permeation tables are available, they shall be used in conjunction with degradation tables to determine the most appropriate protective material.

During most site work, chemicals are usually in mixed combinations and the protective materials are not in continuous contact with pure chemicals for long periods of time; therefore, the selected material may be adequate for the particular chemical and type of work being performed, yet not the "best" protecting material for all site chemicals and activities. Selection shall depend upon the most hazardous chemicals based on their hazards and concentrations. Sometimes layering, using several different layers of protective materials, affords the best protection.

3.3.2 Concentration of the Chemical(s)

One of the major criteria for selecting protective material is the concentration of the chemical(s) in air, liquid, and/or solid state. Airborne and liquid chemical concentrations should be compared to the OSHA standards and/or American Conference of Governmental Industrial Hygienists (ACGIH) and National Institute for Occupational Safety and Health (NIOSH) guidelines to determine the level of skin or other absorptive surface (e.g., eyes) protection needed. While these standards are not designed specifically for skin exposed directly to the liquid, they may provide skin designations indicative of chemicals known to have significant skin or dermal absorption effects. For example, airborne levels of PCB on-site may be

low because it is not very volatile, so the inhalation hazard may be minimal; however, PCB-containing liquid coming in direct contact with the skin may cause overexposure. Thus, PCB has been assigned a skin designation in both the OSHA and ACGIH exposure limit tables.

3.3.3 Physical State

The characteristics of a chemical may range from nontoxic to extremely toxic depending on its physical state. Inorganic lead in soil would not be considered toxic to site personnel, unless it became airborne, since it is generally not absorbed through the intact skin. Organic lead in a liquid could be readily absorbed. Soil is frequently contaminated with hazardous materials. Concentrations will vary from a few parts per million to nearly one hundred percent. The degree of hazard is dependent on the type of soil and concentration of the chemical. Generally speaking, "dry" soils do not cause a hazard to site personnel if they take minimal precautions such as wearing some type of lightweight gloves.

3.3.4 Length of Exposure

The length of time a material is exposed to a chemical increases the probability of breakthrough. Determinations of actual breakthrough times for short-term exposures indicate that several different materials can be used which would be considered inadequate under long-term exposures. It should be kept in mind that during testing, a pure (100% composition) liquid is usually placed in direct contact with the material producing a worst-case situation.

3.3.5 Abrasion

When selecting protective clothing, the job the employee is engaged in must be taken into consideration. Persons moving drums or performing other manual tasks may require added protection for their hands, lower chest and thighs. The use of leather gloves and a heavy apron over the other normal protective clothing will help prevent damage to the normal PPE and thus reduce worker exposures.

3.3.6 Dexterity

Although protection from skin and inhalation hazards is the primary concern when selecting PPE, the ability to perform the assigned task must be maintained. For example, personnel cannot be expected to perform work that requires fine dexterity if they must wear a thick glove. Therefore, the PPE selection process must consider the task being performed and provide PPE alternatives or techniques that allow dexterity to be maintained while still protecting the worker (e.g., wearing tight latex gloves over more bulky hand protection to increase dexterity).

3.3.7 Ability to Decontaminate

If disposable clothing cannot be used, the ability to decontaminate the materials selected must be taken into consideration. Once a chemical contacts the material, it must be cleaned before it can be reused. If the chemical has completely permeated the material, it is unlikely that the clothing can be adequately decontaminated and the material should be discarded.

3.3.8 Climactic Conditions

The human body works best with few restraints from clothing. Protective clothing adds a burden by adding weight and restricting movement as well as preventing the natural cooling process. In severe situations, a modified work program must be used.

Some materials act differently when they are very hot and very cold. For example, PVC becomes almost brittle in very cold temperatures. If there are any questions about the stability of the protective materials under different conditions, the manufacturer should be contacted.

3.3.9 Work Load

Like climactic conditions, the type of work activity may affect work duration and the ability or personnel to perform certain tasks. Similarly, the amount of protective materials a person wears will affect their ability to perform certain tasks. For example, a person in a total encapsulating suit, even at 72 ^{o}F, cannot work for more than a short period of time without requiring a break.

The work schedule should be adjusted to maintain the health of the employees. Special consideration should be given to the selection of clothing that both protects and adds the least burden when personnel are required to perform strenuous tasks. Excessive bodily stress frequently represents the most significant hazard encountered during field work.

3.4 Types of Protective Materials

1. Cellulose or Paper
2. Natural and Synthetic Fibers
    a. Tyvek™
    b. Nomex™
3. Elastomers
    a. Polyethylene
    b. Saran
    c. Polyvinyl Chloride (PVC)
    d. Neoprene
    e. Butyl Rubber
    f. Viton

3.5 Protection Levels

3.5.1 Level A Protection

Level A protection (a fully encapsulated suit) is used when skin hazards exist or when there is no known data that positively rule out skin and other absorption hazards. Since Level A protection is extremely physiologically and psychologically stressful, the decision to use this protection must be carefully considered. At no time will Level A work be performed without the consent of the OM. The following conditions suggest a need for Level A protection:

- confined facilities where probability of skin contact is high;
- sites containing known skin hazards;
- sites with no established history to rule out skin and other absorption hazards;
- atmosphere immediately dangerous to life and health (IDLH) through the skin absorption route;
- site exhibiting signs of acute mammalian toxicity (e.g., dead animals, illnesses associated with past entry into site by humans);

- sites at which sealed drums of unknown materials must be opened;
- total atmospheric readings on the Photoionization Detector (PID), Flame Ionization Detector (FID), and similar instruments indicate 500 to 1,000 ppm of unidentified substances; and
- extremely hazardous substances (e.g., cyanide compounds, concentrated pesticides, Department of Transportation Poison "A" materials, suspected carcinogens and infectious substances) are known or suspected to be present and skin contact is possible.

The following items constitute Level A protection:

- open circuit, pressure-demand self-contained breathing apparatus (SCBA);
- totally encapsulated suit;
- gloves, inner (surgical type);
- gloves, outer;
- chemical protective;
- boots, chemical protective, steel toe and shank;
- radiation detector (if applicable); and
- communications.

3.5.2 Level B Protection

Level B protection is utilized when the highest level of respiratory protection is needed but hazardous material exposure to the few unprotected areas of the body is unlikely.

The following conditions suggest a need for Level B protection:

- the type and atmospheric concentration of toxic substances have been identified and they require the highest level of respiratory protection;
- IDLH atmospheres where the substance or concentration in the air does not present a severe skin hazard;
- the type and concentrations of toxic substances do not meet the selection criteria permitting the use of air purifying respirators; and
- it is highly unlikely that the work being done will generate high concentrations of vapors, gases or particulates, or splashes of materials that will affect the skin of personnel.

Personal protective equipment for Level B includes:

- open circuit, pressure-demand SCBA;
- chemical protective clothing:
- overalls and long-sleeve jacket; or
- coveralls;
- gloves, inner (surgical type); gloves, outer, chemical protective;
- boots, chemical protective, steel toe and shank; and
- communications optional.

3.5.3 Level C Protection

Level C protection is utilized when both skin and respiratory hazards are well defined and the criteria for the use of negative pressure respirators have been fulfilled (i.e., known contaminants and contaminant concentrations, acceptable oxygen levels, approved filter/cartridge available, known cartridge service life, etc.). Level C protection may require carrying an emergency escape respirator during certain initial entry and site reconnaissance situations, or when applicable thereafter.

Personal protective equipment for Level C typically includes:

- full facepiece air-purifying respirator;
- emergency escape respirator (optional);
- chemical protective clothing:
  - overalls and long-sleeved jacket; or
  - coveralls;
- gloves, inner (surgical type);
- gloves, outer, chemical protective; and
- boots, chemical protective, steel toe and shank.

3.5.4 Level D Protection

Level D is the basic work uniform. Personal protective equipment for Level D includes:

- coveralls;
- safety boots/shoes;
- eye protection;
- hand protection;
- reflective traffic safety vest (mandatory for traffic areas or railyard);
- hard hat (with face shield is optional); and
- emergency escape respirator is optional.

3.5.5 Level E Protection

Level E protection is used when radioactivity above 10 mr/hr is detected at the site. Personal protective equipment for Level E includes:

- coveralls;
- air purifying respirator;
- time limits on exposure;
- appropriate dermal protection for the type of radiation present; and
- radiation dosage monitoring.

3.5.6 Additional Considerations

Field work will contain a variety of situations due to chemicals in various concentrations and combinations. These situations may be partially ameliorated by following the work practices listed below:

1. Some sort of foot protection is needed on a site. If the ground to be worked on is contaminated with liquid and it is necessary to walk in the chemicals, some sort of protective "booties" can be worn over the boots. This cuts down on decontamination requirements. They are designed with soles to help prevent them from slipping around. If non-liquids are to be encountered, a Tyvek™ bootie could be used. If the ground contains any sharp objects, the advantage of booties is questionable. Boots should be worn with either cotton or wool socks to help absorb the perspiration.

2. If the site situation requires the use of hard hats, chin straps should be used if a person will be stooping over where his/her hat may fall off. Respirator straps should not be placed over the hard hats. This will affect the fit of the respirator.

   Some types of protective materials conduct heat and cold readily. In cold conditions, natural material clothing should be worn under the protective clothing. Protective clothing should be removed prior to allowing a person "to get warm". Applying heat, such as a space heater, to the outside of the protective clothing may drive the contaminants through. In hot weather, under clothing will absorb sweat. It is recommended that workers use all cotton undergarments.

3. Body protection should be worn and taped to prevent anything from running into the top of the boot. Gloves should be worn and taped to prevent substances from entering the top of the glove. Duct tape is preferred, but masking tape can be used. When aprons are used, they should be taped across the back for added protection. However, this should be done in such a way that the person has mobility.

4. Atmospheric conditions such as precipitation, temperature, wind direction, wind velocity, and pressure determine the behavior of contaminants in air or the potential for volatile material getting into the air. These parameters should be considered in determining the need for and the level of protection.

5. A program must be established for periodic monitoring of the air during site operations. Without an air monitoring program, any changes would go undetected and might jeopardize response personnel. Monitoring can be done with various types of air pumps and filtering devices followed by analysis of the filtration media; personnel dosimeters; and periodic walk-throughs by personnel carrying real-time survey instruments.

6. For operations in the exclusion zone, different levels of protection may be selected, and various types of chemical-resistant clothing may be worn. This selection should be based on the job function, reason for being in the area, and the potential for skin contact with, or inhalation of, the chemicals present.

7. Escape masks must be readily available when levels of respiratory protection do not include a SCBA and the possibility of an IDLH atmosphere exists. Their use can be made on a case-by-case basis. Escape masks could be strategically located at the site in areas that have higher possibilities of vapors, gases or particulates.

APPENDIX E

Subsurface Utility Clearance Management Program

SUBSURFACE UTILITY CLEARANCE MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY MANAGER	**:**	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	**:**	**01/19**
REVISION NUMBER	**:**	**2**

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APPENDICES

Appendix A – Definitions

Appendix B – Example of Completed One Call

Appendix C – Roux Subsurface Utility Clearance Checklist

Appendix D – Utility Verification/Site Walkthrough Record

1. PURPOSE

Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C, and Remedial Engineering (collectively, "Roux") has instituted the following program for completing proper utility mark-outs and for conducting subsurface clearance activities. This establishes a method to ensure, to the greatest extent possible, that utilities have been identified and contact and/or damage to underground utilities and other subsurface structures will be avoided.

2. SCOPE AND APPLICABILITY

The Subsurface Utility Clearance Management Program applies to all Roux employees, its contractors and subcontractors. Employees are expected to follow this program for all intrusive work involving Roux or other personnel (e.g., contractors/subcontractors) working for Roux unless the client's requirements are more stringent. Deviation from the program regardless of the specific work activity or work location must be pre-approved based on client's site knowledge, site experience and client's willingness for the use of this program. Any and all exceptions shall be documented and pre-approved by the Project Principal and the Office Manager.

3. PROCEDURES

3.1 Before Intrusive Activities

During the project kick-off meeting for intrusive activities the PM will review the Roux Subsurface Utility Clearance Checklist and Utility Verification (Appendix C) / Site Walkthrough Record (Appendix D) and the below bullet points with the project field team:

(Please note that these are intended as general reminders only and should not be solely relied upon.)

- Ensure the Mark-out / Stake-out Request Information Sheet (or one-call report) is complete and accurate for the site including address and cross streets and review for missing utilities. (Note: utility mark-out organizations do not have contracts with all utilities and it is often necessary to contact certain utilities separately such as the local water and sewer authorities).
- Have written confirmation prior to mobilizing to the site that the firm or Roux personnel performing the intrusive activity has correctly completed the mark-out notification process including requesting mark-outs, waiting for mark-outs to be applied to ground surfaces at the site, and receiving written confirmation of findings (via fax or email) from utility operators for all known or suspected utilities in the proposed area of intrusive activity, and provided utility owner written confirmation to Roux personnel for review and project files documentation.
- Do not begin any intrusive activity until all utilities mark-out has been completed (i.e., did all utilities mark-out the site?) and any unresolved mark-out issues are finalized. Perform a site walk to review the existing utilities and determine if said utilities have been located by the utility locators.

  (Note: The Tolerance Zone is defined as two feet plus half of the diameter or half of the greatest dimension (for elliptical sewers, duct banks and other non-cylindrical utilities) of a utility and two feet from the outside edge of any subsurface structure.)
- Install Pre-Clearance exploratory test holes (e.g., hand-dug test holes or other soft digging techniques) for the first 5-ft below land surface (BLS) at each location prior to conducting mechanized intrusive activities. The size of the pre-clearance exploratory test hole should be at a minimum twice the diameter of any downhole tool or boring device. (Note: Pre-Clearance exploratory test holes should be defined in the SOW/proposal provided to the client to prevent project delays and to allow adequate time for PM and PP to evaluate alternative approaches for the project. Alternative approaches will need to be pre-approved by the OM.

- For excavations, all utilities need to be marked and then exposed by hand following the protocols in this program. Pre-clearing for excavations may be performed by the "moat" technique (i.e., soft digging around the perimeter). In these cases, dig in small lifts (<12" for first 5 feet) using a dedicated spotter.) For Tolerance Zone work, unless otherwise agreed upon with the Utility Operator, work within the tolerance zone requires verification by means of hand-dug test holes performed to expose the utility. Once structures have been verified a minimum clearance of two feet must be maintained between the utility and any powered equipment.
- In addition, the following activities should be conducted:
  - Review the work scope to be performed with the site owner/tenant to determine if it may impact any utilities;
  - Attempt to procure any utility maps or historic drawings of subsurface conditions of the site;
  - **Determine the need for utility owner companies to be contacted or to have their representatives on site**;
  - Where mark-outs terminate at the property boundary, consider the use of private utility locating / GPR / geophysical-type services which may be helpful in locating utilities. Use of private utility locating firms, however, does not eliminate the legal requirement for the Excavator firm to submit a request for Public Utility Mark-outs. Also, the information provided by the service may be inaccurate and unable to locate subsurface utilities and structures in urban areas, landfills, urban fill areas and below reinforced slabs, etc. They should not be relied upon as the only means of performing utility clearance;
  - Documented description of the dig site which is included in the projects Health and Safety Plan (HASP) and one call report will be maintained in the field and distributed amongst Roux personnel its contractors and subcontractors; and
  - Documentation of the actual placement of mark outs in the field shall be collected using dated pictures, videos and/or sketches with distance from markings to fixed objects. All documentation shall be maintained within the project file.

3.2 During Intrusive Activities

The PM, field team lead or personnel performing oversight is to:

- Ensure the mark-out remains valid. (In certain states there are limits regarding the duration of time after the mark-out was applied to the ground surface work can be started or interrupted.) Additionally, the mark-outs must be maintained, documented, and in many cases refreshed periodically to be considered valid, this will be accomplished through calls to the one call center.
- Ensure intrusive activities are only performed within the safe boundaries of the mark-out as detailed in the One-Call Report.
- Halt all work if intrusive activities have resulted in discovery of an unmarked utility. Roux personnel shall notify the facility owner/operator and the one call center. All incidents such as this will be reported as per Roux Incident Investigation and Reporting Management Program.
- Halt all work if intrusive activities must take place outside of the safe boundaries of a mark-out and only proceed after new mark-outs are performed.
- Halt the intrusive activities and immediately consult with the PP if an unmarked utility is encountered.
- Completing any subsurface utility clearance incident reports that are necessary.

- If a utility cannot be found as marked Roux personnel shall notify the facility owner/operator directly or through the one call center. Following notification, the excavation may continue, unless otherwise specified in state law.
- Contractors/subcontractors must contact the one-call center to refresh the ticket when the excavation continues past the life of the ticket. Ticket life shall be dictated by state law however at a maximum ticket life shall not exceed 20 working days.

3.3 Stop Work Authority

Each Roux employee has Stop Work Authority which he or she will execute upon determination of any imminent safety hazard, emergency situation, or other potentially dangerous situation, such as hazardous weather conditions. This Stop Work Authority includes subsurface clearance issues such as the adequacy of a mark-out or identification during intrusive operations of an unexpected underground utility. Authorization to proceed with work will be issued by the PM/PP after such action is reviewed and resolved. The PM will initiate and execute all management notifications and contact with emergency facilities and personnel when this action is appropriate.

Appendix A - Definitions

Intrusive Work Activities	All activities such as digging or scraping the surface, including but not limited to, excavation, test pitting or trenching, soil vapor sampling or the installation of soil borings, soil vapor monitoring points and wells, or monitoring wells, and drilling within the basement slab of a recently demolished building.
Mark-out / Stake Out	The process of contracting with a competent and qualified company to confirm the presence or absence of underground utilities and structures. This process will clearly mark-out and delineate utilities that are identified so that intrusive work activities can be performed without causing disturbance or damage to the subsurface utilities and structures. After utility mark-outs are completed the soft digging will be completed prior to intrusive work.
Tolerance Zone	Defined as two feet on either side of the designated centerline of an identified utility, plus half of the diameter or half of the greatest dimension (for elliptical sewers, duct backs and other non-cylindrical utilities) of that utility and two feet from the outside edge of any subsurface structure.
Structure	For the purpose of this program a structure is defined as any underground feature that may a present potential source(s) of energy such as, but not limited to, utility vaults, bunkers, piping, electrical boxes, wires, conduits, culverts, utility lines, underground tanks and ducts.
Soft Digging	The safest way to remove material from unknown obstructions or services is by using tools such as a vactor or air knife, non-mechanical tools, or hand tools. The methods are clean and non-evasive and used for uncovering and exposing buried services, excavating and for providing a quick method of soil removal from sensitive areas.
Verification	Exploratory test-hole dug with hand tools within the Tolerance Zone to expose and verify the location, type, size, direction-of-run and depth of a utility or subsurface structure. Vacuum excavation (soft dig) methods can further facilitate exposure of a subsurface utility and accurately provide its location and identification prior to intrusive work approaching the Tolerance Zone.

Appendix B - Example of Completed One Call Report

Example Completed One-Call Report

New York 811

Send To: C_EMAIL Seq No: 744

Ticket No: 133451007 ROUTINE

Start Date: 12/16/13 Time: 7:00 AM Lead Time: 20

State: NY County: QUEENS Place: QUEENS
Dig Street: 46TH AVE Address:
Nearest Intersecting Street: VERNON BLVD
Second Intersecting Street: 11TH ST

Type of Work: SOIL BORINGS
Type of Equipment: GEOPROBE
Work Being Done For: ROUX

In Street: X On Sidewalk: X Private Property: Other:
On Property Location if Private: Front: Rear: Side:

Location of Work: MARK THE ENTIRE NORTH SIDE OF THE STREET AND SIDEWALK OF: 46TH AVE BETWEEN VERNON BLVD AND 11TH STREET

Remarks:

Nad: Lat: Lon: Zone:
ExCoord NW Lat: 40.7475399 Lon: -73.9534811 SE Lat: 40.7457406 Lon: -73.9493680

Company : ZEBRA ENVIROMENTAL Best Time: 6AM-5PM
Contact Name: DAVID VINES Phone: (516)596-6300
Field Contact: DAVID VINES Phone: (516)596-6300
Caller Address: 30 N PROSPECT AVE Fax Phone: (516)596-4422
LYNBROOK, NY 11563
Email Address: david@zebraenv.com

Additional Operators Notified:
ATTNY01 AT&T CORPORATION (903)753-3145
CEQ CONSOLIDATED EDISON CO. OF N.Y (800)778-9140
MCINY01 MCI (800)289-3427
PANYNJ01 PORT AUTHORITY OF NY & NJ (201)595-4841
VZQ VERIZON COMMUNICATIONS (516)297-1602

Link to Map for C_EMAIL: http://ny.itic.occinc.com/XGMZ-DF2-L23-YAY

Original Call Date: 12/11/13 Time: 1:15 PM Op: webusr
IMPORTANT NOTE: YOU MUST CONTACT ANY OTHER UTILITIES DIRECTLY

Appendix C - Roux Subsurface Utility Clearance Checklist

Roux Subsurface Utility Clearance Checklist ***Date of Revision – 12/3/14***

Work site set-up and work execution

ACTIVITY	Yes	No	N/A	COMMENTS INCLUDING JUSTIFICATION IF RESPONSE IS NO OR NOT APPLICABLE
Daily site safety meeting conducted, SPSAs performed, JSAs reviewed, appropriate work permits obtained.				
HASP is available and reviewed by site workers / visitors.				
Subsurface Utility Clearance Procedure has been reviewed with all site workers.				
Work area secured; traffic control established as needed. Emergency shut-off switch located. Fire extinguishers / other safety equipment available as needed.				
Utility mark-outs (public / private) clear and visible. Provide Excavator's Stake-Out Reference Number / Request Date / Time.				
Tolerance zone work identified.				
Work execution plan reviewed and adhered to (ground disturbance methods, clearance depths, any special utility protection requirements, or any other execution requirements; especially for Tolerance Zone work).				
Verbal endorsement received from Roux PM for any required field deviations to work execution plan.				

Key reminders for execution:

The Subsurface Utility Clearance Protocol should be referenced to determine all requirements while executing subsurface work. The bullet points below are intended as general reminders only and should not be solely relied upon.

- Tolerance zone is defined as two feet plus half of the diameter or half of the greatest dimension (for elliptical sewers, duct banks and other non-cylindrical utilities) of a utility and two feet from the outside of any subsurface structure.
- Install Pre-Clearance exploratory test holes (e.g., hand-dug test holes or vacuum excavation) must be performed for the first five feet below land surface (BLS) at each location prior to conducting mechanized intrusive activities. The size of the pre-clearance exploratory test hole should be at a minimum twice the diameter of any downhole tool or boring device. (Note: Pre-clearance exploratory test holes should be defined in the SOW/proposal provided to the client to prevent project delays and to allow adequate time for PM and PP to evaluate alternative approaches for the project. Alternate approaches will need to be pre-approved by the OM.
- For excavations, all utilities need to be marked and then exposed by hand following the protocols in this program. Pre-clearing for excavations may be performed by the "moat" technique (i.e., soft

digging around the perimeter). In these cases, dig in small lifts (<12" for first five feet) using a dedicated spotter.) For Tolerance Zone work, unless otherwise agreed upon with the Utility Operator, work within the tolerance zone requires verification by means of hand-dug test holes to expose the utility. Once structures have been verified a minimum clearance of two feet must be maintained between the utility and any powered equipment.

Appendix D - Utility Verification/Site Walkthrough Record

Employee Name: _____

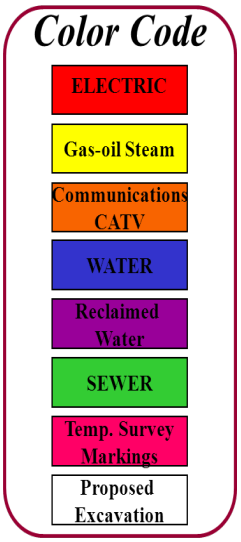
Date: _____

Instructions: For each utility suspected at the job site, indicate location on the job site, approximate burial depth, and means of detecting the utility. Leave blank if that utility is not believed to be present.

Utility	Description of Utility Location Identified Onsite	Approx. Depth (bls)	Method / Instrumentation used to determine Utility Location	Utility Owner Response (Date/Time)	Mark Out Indicates (Clear / Conflict)
Electrical Lines					
Gas Lines					
Pipelines					
Steam Lines					
Water Lines					
Sanitary and Stormwater Sewer lines					
Pressured Air-Lines					
Tank Vent Lines					
Fiber Optic Lines					
Underground Storage Tanks					
Phone Lines/ Other					

* bls - below land surface

Site Sketch Showing Utilities:



Other Comments / Findings:

Completed by: _____

Signature: _____ Date: _____

APPENDIX F

Amtrak Contractor Safety Course Booklet and
New York Division Supplement

The Two Most Serious Dangers Involved With Working On or About Railroad Tracks Are:

MOVING TRAINS and ELECTRICAL POWER



Amtrak ®January 2009

Remember: Safety is the Number One Requirement!

COURSE GOALS

The purpose and goal of this course is your safety, the safety of your co-workers, and the safety of everyone on AMTRAK property, especially passengers riding on our trains.

To reach this goal, your company must have submitted, and have had approved, a **Site Specific Safety Work Plan**. This Plan will describe the work you will be doing, the hazards that are present in the work, and how you, your co-workers, and everyone else on AMTRAK property will be protected from these hazards. The Senior Project Manager or Project Engineer, and the local Safety Department Representative will approve this

plan. If your job meets the Federal Railroad Administration (FRA) criteria (49CFR214) for **Roadway Worker**, you **must complete** an approved Roadway Worker Protection **course** prior to starting work.

The training you receive will:

1. Emphasize the importance of the Site Specific Work Plan and the rules and work practices that you must follow while working on AMTRAK property.

2. Stress the importance of using **P**ersonal **P**rotective **E**quipment (PPE) that is required while working on Amtrak property.

3. Familiarize you with the hazards involved in working on or near tracks on which trains move.

4. Stress the importance of maintaining a safe environment that protects AMTRAK

passengers and individuals working on the property.

BASIC RULES AND GUIDELINES

1. To access AMTRAK property, the AMTRAK Senior Project Manager/or Deputy Chief Engineer or their Duly Authorized Representative must approve the contractor/lessee/agency.

2. All activities must be coordinated with the Senior Project Manager/Deputy Chief Engineers' Duly Authorized Representative.

3. The Senior Project Manager must arrange for appropriate track outages and protection.

4. You must report any unsafe or hazardous conditions to your supervisor and to the AMTRAK representative so that corrective actions can be taken.

5. While on AMTRAK property, you will have in your possession an AMTRAK PHOTO ID badge, indicating you have received this training. This badge must be displayed on the outside of your clothes (above the waist) at all times.

6. The color orange will be used only to designate the presence of workers. It will not be used on barriers or fencing materials on or along the right-of-way.

7. Before starting any work, you must participate in a documented job briefing with the employee in charge, at your location.

8. You may not possess, consume, or be under

the influence of intoxicants, narcotics or other mood altering substances, including medication while performing work on AMTRAK property.

9. Horseplay, fighting, practical jokes, scuffling, or wrestling will not be tolerated.

10. You must be able to understand and communicate all information provided within the Contractor Safety and Security Training course.

FAILURE TO COMPLY WITH THESE RULES WILL RESULT IN YOUR IMMEDIATE EXPULSION FROM AMTRAK PROPERTY.

CLOTHING AND PERSONAL PROTECTIVE EQUIPMENT

AMTRAK complies with all OSHA Personal Protective Equipment (PPE) Regulations.

Your clothing must fit well and not be so loose that it would be easily snagged or become a hazard.

Normal PPE for working on AMTRAK property will be a hard hat, safety glasses, reflective orange vests, hearing protection and proper footwear and must be used as appropriate to the work being done.

Other PPE requirements, such as goggles, face shields, safety belts, safety harnesses, respirators, and hearing protection will be

determined by your Site Specific Safety Work Plan and provided by your employer.

Your shoes must be at least six inches high, preferably leather, and completely laced, buckled, zipped, or otherwise fastened. The shoe must have a defined heel and steel or composite toe.

Do not wear shoes with loose, thin, cracked, rippled, or wedged-type soles.

Do not wear shoes with a metal plate or cleat on the sole or heel.

Do not allow shoelaces to dangle far enough to become a hazard.

Do not wear sandals, open toe, canvas, athletic type, or shoes that cannot be fastened.

Do not use metallic ladders, tape measures or any other conductive material around track or energized wires.

Specific footwear requirements may be addressed in your Site Specific Safety Work Plan.

NOTE: You or your co-workers will not be permitted on AMTRAK property if you are not utilizing the proper Personal Protective Equipment.

CONTRACTOR/ LESSEE/AGENCY RESPONSIBILITIES

Contractors/Lessees are responsible for providing the AMTRAK Senior Project Manager/Chief Engineers Duly Authorized Representative and the local Safety Representative with a **Site Specific Safety Work Plan** that, as a minimum - **1.** Defines the job, **2.** Lists the hazards present in the job, **3.** Lists the controls that will be used to mitigate the hazards. The list of controls will include the specific PPE and employee training requirements.

The contractor's, lessee's or agency's workers will attend the Contractor/ Lessee / Agency Safety Training prior to commencing work and

upon successful completion they will receive their AMTRAK PHOTO ID which must be on their person at all times when on AMTRAK property. The ID will be issued at the end of the safety training. The photo ID is valid for one year from date of issue. **Employee will be required to return Photo ID Badge to employer at end of project, termination or when he no longer has reason to be on Amtrak property.**

The contractor's, lessee's or agency's equipment operators will be qualified on their equipment and will provide the Senior Project Manager/Chief Engineers Duly Authorized Representative a copy of their qualification certificate, and the current/updated inspection record for the equipment.

NOTE: Cranes and other heavy equipment must be inspected prior to arriving on AMTRAK property. A photocopy of the crane

inspection will be kept on the crane at all times. **Contractor must supply and maintain approved ground cable(s) and will be responsible for their application.**

The contractor, lessee or agency will conduct a documented Job Briefing at the start of each work shift. The Job Briefing will be conducted by the contractor supervisor / foreman or with a qualified AMTRAK employee when appropriate.
Those contractors, lessees and agencies who meet the requirements of a Roadway Worker, will not foul any track unless they have permission from the qualified AMTRAK employee in charge at the job site who will ensure it is safe to work on or near the tracks.

Unsecured construction material **will not** be placed or stored within **25 feet** of the centerline of the track.

If needed, the contractor, lessee or agency will

provide and install an approved barrier when the work requires debris or equipment within **25 feet** of the **centerline of the track** or **15 feet** from **the overhead catenary system** only after approval of Chief Engineer/Senior Project Engineer or designated representative.

The only permissible exception to this practice shall be that when work is being performed on a station platform, workers shall remain behind the warning stripe or tactile strips. No part of the worker's body nor any part, attachment, boom, or any other appurtenance of any piece of equipment, tools or any other material shall extend beyond such warning strip or stripe or come within 4 feet of the inside of the rail closest to the platform.

It is the contractor's, lessee's or agency's responsibility to monitor and enforce the applicable OSHA, EPA, FRA and all other federally required regulations and safe work practices.

Subcontractors/sub-lessees will adhere to the same AMTRAK Safety requirements as the primary Contractor/Lessee.

Contractor/lessee/agency employees will become familiar with placement of Watchmen to understand the importance of safety around the tracks. This can be accomplished through the job safety briefings.

PRIOR TO COMMENCING WORK, YOU MUST HAVE A JOB BRIEFING WHICH IS DOCUMENTED AND PLACED ON FILE.

REMEMBER

A Site Specific Safety Work Plan is required for all work.

The Senior Project Manager / Chief Engineers' Duly Authorized Representative and the Local Safety Department MUST approve the plan.

If your job meets the requirements of a Roadway Worker (49CFR.214), you must complete an approved Roadway Worker Protection Course **PRIOR** to starting work.
All Contract Employees must have on their person, their assigned AMTRAK photo ID at all times. This photo ID is valid for one (1) year from the date of issue.

A documented Job Briefing will be conducted by the AMTRAK employee in charge prior to starting work.

BASIC TERMINOLOGY

CLEARANCE POINT - A point **15 feet from the centerline of outside track** for employees and standing equipment or **15 feet from overhead catenary systems** unless working on station platforms where the warning stripe or tiles shall serve as the clearance point.

CLASS "A" EMPLOYEE - An AMTRAK Electrical Traction (ET) Department Employee qualified to provide protection from electrical hazards.

CONTRACTOR - A person, persons, or company that have entered into a contract with AMTRAK to perform work on AMTRAK property or AMTRAK equipment, including any sub-contractors, lessees or agencies.

EMPLOYEE IN-CHARGE OF ON-TRACK PROTECTION (EROTP) – Any employee qualified RWP, Operating Rules and Physical Characteristics designated on the Job Briefing Form to provide on-track safety for a particular workgroup.

FLAGMAN - An AMTRAK Train Service employee qualified to protect contractor employees against the movement of trains and to obtain the use of track. The flagman is qualified on the "Rules for Conducting Transportation" and qualified on the physical characteristics of the portion of the railroad involved.

FOUL TIME - A method of establishing working limits through exclusive track occupancy. No trains will operate within a specific segment of track during a specific time period.

GANG/ADVANCE WATCHMAN - A person assigned to signal others of the approach of trains or on-track equipment. Only a Qualified AMTRAK Employee may perform this function.

HOT RAIL - Expression used to indicate train movement.

JOB BRIEFING - A formal, documented discussion, conducted by the AMTRAK representative on site, with each work group or gang, on all safety aspects of the job to be performed. A Job Briefing will be conducted at the beginning of each shift, prior to the start of any task and whenever the conditions of a job may change.

LESSEE - A person, persons, or company that has leased AMTRAK property for their use, to include any sub-contractors or lessees.

ON-TRACK SAFETY BRIEFING - Conducted by the AMTRAK employee responsible for On-Track protection PRIOR to any employee OR equipment fouling track. The briefing should focus on the types of protection being provided so everyone fully understands the role they play and contributions they must make to ensure the job is done safely.

OPERATING or LIVE TRACK - Track over which trains may move.

QUALIFIED AMTRAK EMPLOYEE - An employee who has successfully completed any required training for, has demonstrated proficiency in, and has been authorized by the employer to perform the duties of a particular position or function.

RAILROAD BRIDGE WORKER - Any employee of a railroad (or a contractor) responsible for the construction, inspection,

testing or maintenance of a bridge whose assigned duties to be performed on the bridge include inspection, testing, maintenance, repair, construction, or re-construction of the structural member, operating mechanisms and water traffic control systems, or train control systems integral to that bridge (Ref. FRA Bridgeworker Safety Guide).

RIGHT-OF-WAY - The limits of railroad property ownership on either side of tracks.

ROADWAY WORKER - Any employee of a railroad, or of a **contractor** to a railroad, whose duties include inspection, construction, maintenance, or repair of railroad track, bridges, roadway, signal and communication systems, electric traction systems, roadway facilities or roadway maintenance machinery on or near track with the potential of fouling a track, and flagman and Gang/Advance watchman.

TRACK OUT-OF-SERVICE – Track will be taken out-of-service, by a qualified Amtrak employee, if the work to be performed involves equipment to be used on the track(s) or will disturb the track or catenary structure so that it would be unsafe for normal speed.

THIRD PARTY CONTRACTOR WORKER – A contractor whose employees are performing work for utility companies, i.e., overhead power lines, underground pipe jacking, etc. or for public works projects such as overhead highway bridge reconstruction.

USE OF TRACK – Obtaining permission from proper authority for track occupancy (Track Out-of-Service / foul time).

WORKING LIMITS – A segment of track with definite boundaries established in accordance with this rule, upon which trains and engines may move only as authorized by the roadway

worker having control over that defined segment of track. Working limits may be established through "exclusive track occupancy", "inaccessible track", or "foul time."

KEY ELEMENTS:

YOU MUST...

BE alert at all times for trains in any direction at any time on any track.

NOTIFY Amtrak before entering within 25' of Amtrak's Right of Way.

BE in the clear **15 seconds** prior to the arrival of train(s) at the work site.

ATTEND Job Briefing prior to commencing work.

ATTEND On-Track Safety Briefing prior to going within 15' of track.

BE protected by a Watchman or a Flagman when working within 15' of track or 15 ' of overhead wires or catenary.

WAIT for signal from designated Watchman or Flagman providing protection prior to returning to work.

UNDERSTAND what protection is being provided

QUESTION any point of protection explained in the on-track briefing that you do not **completely** understand or agree with

Key Definitions:

EROTP – An **Amtrak e**mployee qualified in

physical characteristics and Amtrak Operating Rules who responsible for providing on-track protection

Watchman – An Amtrak employee who is trained and qualified to provide warning of approaching trains to on-track workers.

Flagman – An Amtrak employee designated to direct or restrict the movement of trains past a point on the track to provide on track safety for roadway workers.

Class A ET Lineman – An Amtrak employee trained and qualified to de-energize and re-energize catenary power to provide protection for other workers.

APPENDIX G

Heavy Equipment Exclusion Zone Policy

HEAVY EQUIPMENT EXCLUSION ZONE MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY MANAGER	:	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	:	**01/2019**
REVISION NUMBER	:	**1**

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1. PURPOSE

The purpose of the Exclusion Zone Management Program is to establish the minimum clearance distance that must be maintained between workers and heavy equipment while equipment is in operation (i.e., engaged or moving). The intent is to have no personnel or equipment entering the Exclusion Zone while the equipment is in operation or moving to ensure that Roux and Subcontractor employees are not unnecessarily exposed to the hazards of the equipment.

2. SCOPE AND APPLICABILITY

This Management Program applies to all Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C, and Remedial Engineering (collectively, "Roux") employees and their subcontractors who are performing field work and are potentially exposed to heavy equipment. For the purpose of this program, heavy equipment includes, but is not necessarily limited to: excavation equipment, drill rigs, vacuum trucks, forklifts, lull telehandlers, man lifts, bobcats, delivery trucks, etc.

3. PROCEDURES

As specified in the following sections of this Program, an Exclusion Zones must be established and maintained during activities involving the movement/operation of heavy equipment. The Exclusion Zone requirements apply to all personnel on the site but are primarily focused on those personnel who are required to be working in the vicinity of the equipment. The exclusion zone is in effect when heavy equipment is moving or engaged (ex. movement of an arm or bucket of an excavator, rotation of an auger, lifting of a load with a forklift, raising/lowering of a man lift, etc.).

1. The Exclusion Zone must meet the following minimum requirements:
   - A minimum distance of 10 feet from all heavy equipment and loads being moved by the equipment;
   - Greater than the swing/reach radius of any moving part on the heavy equipment (i.e., for large equipment this may mean an exclusion zone distance larger than 20 feet);
   - Greater than the tip-over distance of the heavy equipment; and
   - Greater than the radius of blind spots.

   The size of the Exclusion Zone will need to be determined on a task-specific basis considering the size of the heavy equipment in use and the task being performed. Prior to all heavy equipment operations, the Exclusion Zone(s) distance must be specifically identified in the Job Safety Analysis (JSA).
2. The spotter (or another individual) should be assigned responsibility for enforcing the Exclusion Zone. The spotter should be positioned immediately outside of the Exclusion Zone within a clear line of sight of the equipment operator. The spotter must signal the operator to stop work if anyone or anything has the potential to enter or compromise the Exclusion Zone. The operator should stop work if the spotter is not within his/her line of sight. If multiple pieces of equipment are being used, each piece of equipment must have its own Exclusion Zone and spotter. For large excavation and demolition projects the spotter should be in constant radio contact (not cell phone) with the machine driver.
3. If an individual must enter the Exclusion Zone, the designated Spotter must signal the Equipment Operator to stop the equipment. Once the equipment is no longer moving (ex. movement of an arm of an excavator is STOPPED, lifting of a load with a forklift STOPPED, raising/lowering of a man lift is

STOPPED, etc.), the operator must DISENGAGE THE CONTROLS and STOP and SIGNAL BY "SHOWING HIS HANDS". This signal will indicate that it is safe for the personnel to enter the limits of the Exclusion Zone to perform the required activity. The equipment must remain completely stopped/disengaged until all personnel have exited the limits of the Exclusion Zone and the designated Spotter has signaled by "SHOWING HIS HANDS" to the Equipment Operator that it is safe to resume operations.

4. When entering the limits of the Exclusion Zone, personnel must at a minimum:
   - Establish eye contact with the operator and approach the heavy equipment in a manner that is in direct line of sight to the Equipment Operator;
   - Never walk under any suspended loads or raised booms/arms of the heavy equipment; and
   - Identify a travel path that is free of Slip/Trip/Fall hazards.
5. The Exclusion Zone should be delineated using cones with orange snow fence or solid poles between the cones, barrels, tape or other measures. For work in rights-of-way rigid barriers, such as Jersey barriers or temporary chain link fence should be used. For certain types of wide-spread or moving/mobile equipment operations, such delineation may not be practicable around pieces of equipment or individual work areas. In such instances, it is expected that the entire operation will be within a larger secure work area or that additional means will be utilized to ensure security of the work zone.

All subcontractors who provide heavy equipment operations to field projects must implement a program that meets or exceeds the expectations described above as well as any additional requirements that may be required on a client or site-specific basis.

3.1 Exceptions

It is recognized that certain heavy equipment activities may require personnel to work within the limits of the Exclusion Zone as specified in this program. Such activities may include certain excavation clearance tasks, drill crew activities or construction tasks. However, any such activity must be pre-planned with emphasis on limiting the amount and potential exposure of any activity required within the zone. The critical safety steps to mitigate the hazards associated with working within the Exclusion Zone must be defined in the JSA and potentially other project-specific plans (i.e., critical lift plans, etc.), and approved by the Roux Project Principal and client representative, if required, prior to implementation.

4. TRAINING

Many Roux projects have different requirements that are client-specific or site-specific in nature. It is the responsibility of the Project Principal (or Project Manager if delegated this responsibility by the Project Principal) to ensure that the workers assigned to his/her projects are provided orientation and training with respect to these client and/or site-specific requirements.

APPENDIX E

New York State Department of Environmental Conservation
Request to Import/Reuse Fill or Soil Form (Revised April 2023)

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Request to Import/Reuse Fill or Soil

This form is based on the information required by DER-10, Section 5.4(e) and 6NYCRR Part 360.13. Use of this form is not a substitute for reading the applicable regulations and Technical Guidance document.

SECTION 1 – SITE BACKGROUND

The allowable site use is: Choose an item

Have Ecological Resources been identified? Choose an item

Is this soil originating from the site? Choose an item

How many cubic yards of soil will be imported/reused? Choose an item

If greater than 1000 cubic yards will be imported, enter volume to be imported:

SECTION 2 – MATERIAL OTHER THAN SOIL

Is the material to be imported gravel, rock or stone? Choose an item

Does it contain less than 10%, by weight, material that passes a size 100 sieve? Choose an item

Is this virgin material from a permitted mine or quarry? Choose an item

Is this material recycled concrete or brick from a DEC registered processing facility? Choose an item

SECTION 3 - SAMPLING

Provide a brief description of the number and type of samples collected in the space below:

Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.

If the material meets requirements of DER-10 section 5.4(e)5 (other material), no chemical testing needed.

SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.

If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.

SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

The information provided on this form is accurate and complete.

_____ _____

Signature Date

_____

Print Name

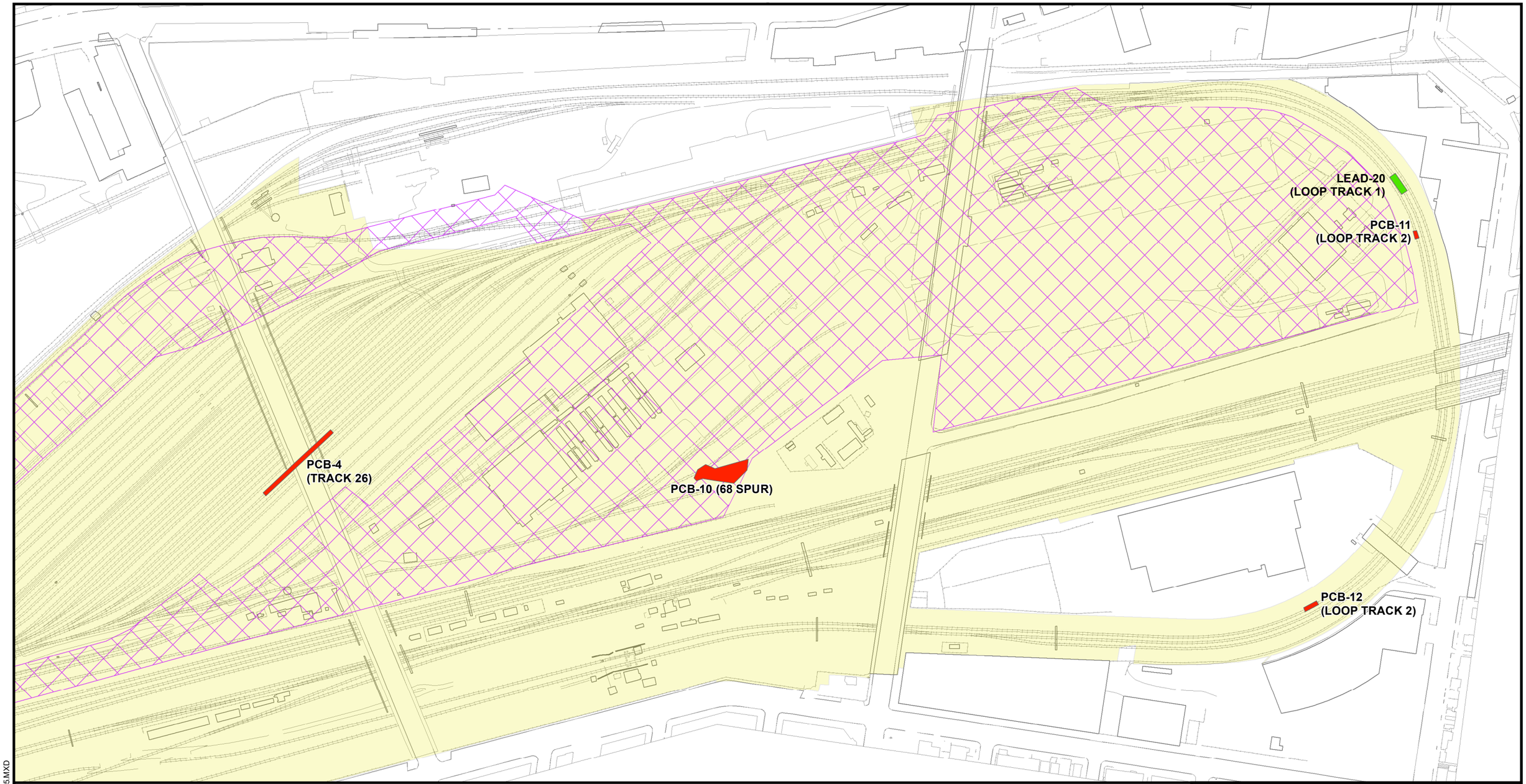
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Firm

Revised April 2023

ATTACHMENT 2

OU-4 Remedial Zones



LEGEND

- APPROXIMATE EXTENT OF REMEDIAL EXCAVATION TO ADDRESS PCB EXCEEDANCE OF 25 MG/KG - PENDING
- APPROXIMATE EXTENT OF REMEDIAL EXCAVATION TO ADDRESS LEAD EXCEEDANCE OF 3,900 MG/KG - PENDING
- EXTENT OF AMTRAK AIRO AND CBF PROJECTS
- EXTENT OF OU-4 AREA

NOTES

MG/KG - MILLIGRAMS PER KILOGRAM
PCBS - POLYCHLORINATED BIPHENYLS

N

225 0 225'

Title:

REMAINING OU-4 REMEDIAL ZONES

EXCAVATION WORKPLAN FOR AMTRAK AIRO AND CREWBASE FACILITY PROJECTS
SUNNYSIDE, QUEENS, NEW YORK

Prepared for:
AMTRAK

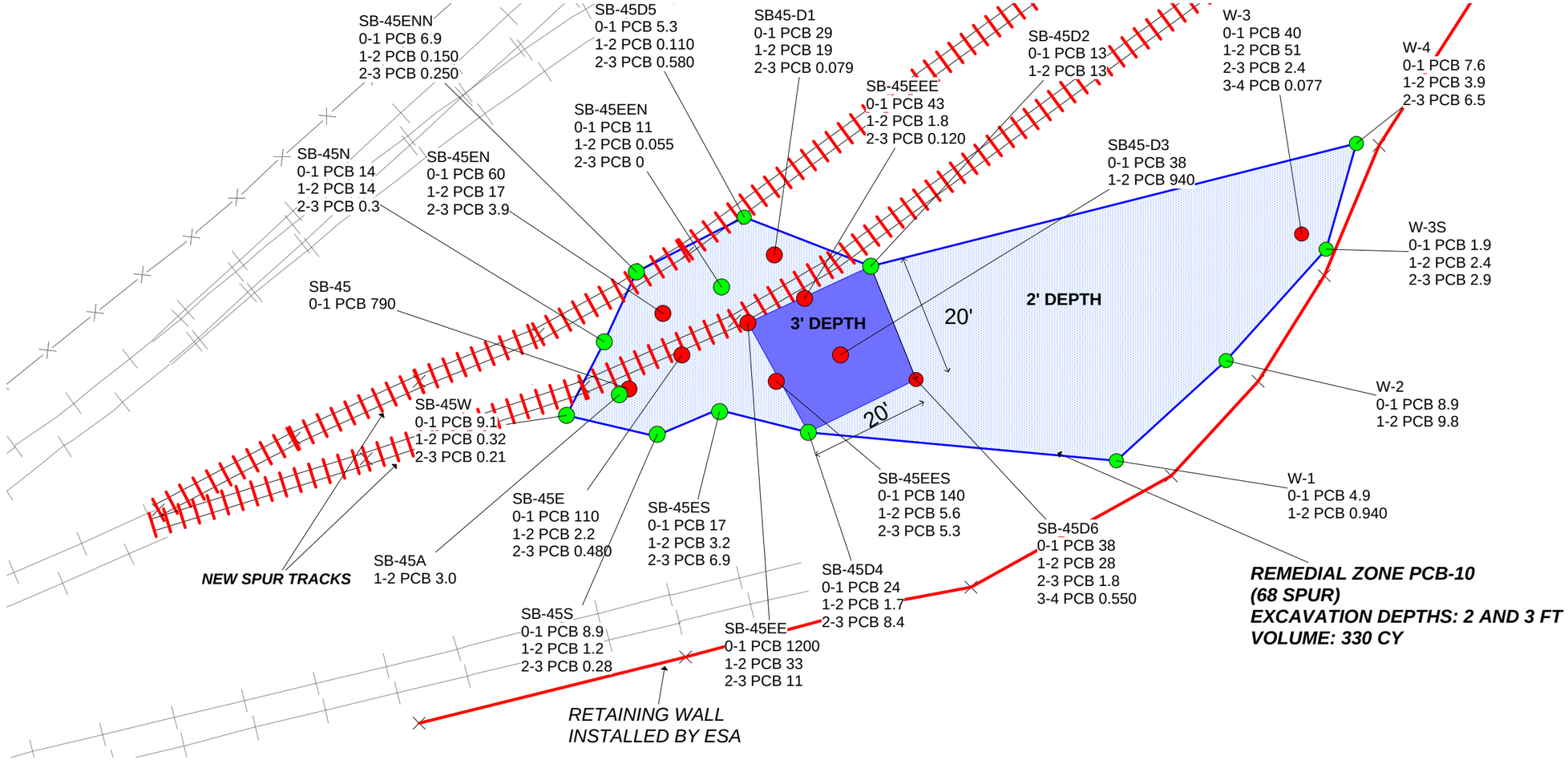
ROUX

Compiled by: J.R.	Date: 02/08/24	FIGURE
Prepared by: M.S.R.	Scale: AS SHOWN	5
Project Mgr: J.R.	Project: 0055.0149Y000	
File: 0055.0149Y100.5.mxd		

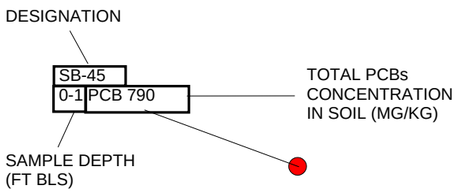
V:\GIS\PROJECTS\0055\0149Y\100\0055.0149Y100.5.MXD

ATTACHMENT 3

Remedial Zone PCB-10



SOIL SAMPLE EXPLANATION





LEGEND:

- LIMIT OF SOIL EXCAVATION TO 2 FT BELOW LAND SURFACE TO ADDRESS PCBs EXCEEDANCE OF 25 MG/KG
- LIMIT OF SOIL EXCAVATION TO 3 FT BELOW LAND SURFACE TO ADDRESS PCBs EXCEEDANCE OF 25 MG/KG
- SB-45 — LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR PCBs GREATER THAN 25 MG/KG
- SB-45W — LOCATION AND DESIGNATION OF DELINEATION BORING

NOTES:

1. THE POSITION OF THE RETAINING WALL INSTALLED BY ESA (SHOWN IN RED) AND THE TWO NEW SPUR TRACKS (SHOWN IN RED) WERE DETERMINED USING A TRIMBLE HAND HELD GPS ON MAY 20, 2009.

OU-4 - OPERABLE UNIT 4
FT - FEET
BLS - BELOW LAND SURFACE
CY - CUBIC YARDS
MG/KG - MILLIGRAMS PER KILOGRAM
ESA - EAST SIDE ACCESS
PCBs - POLYCHLORINATED BIPHENYLS

N

Title:

REMEDIAL ZONE PCB-10 SOIL EXCAVATION PLAN

OPERABLE UNIT 4
REMEDIAL ACTION WORK PLAN

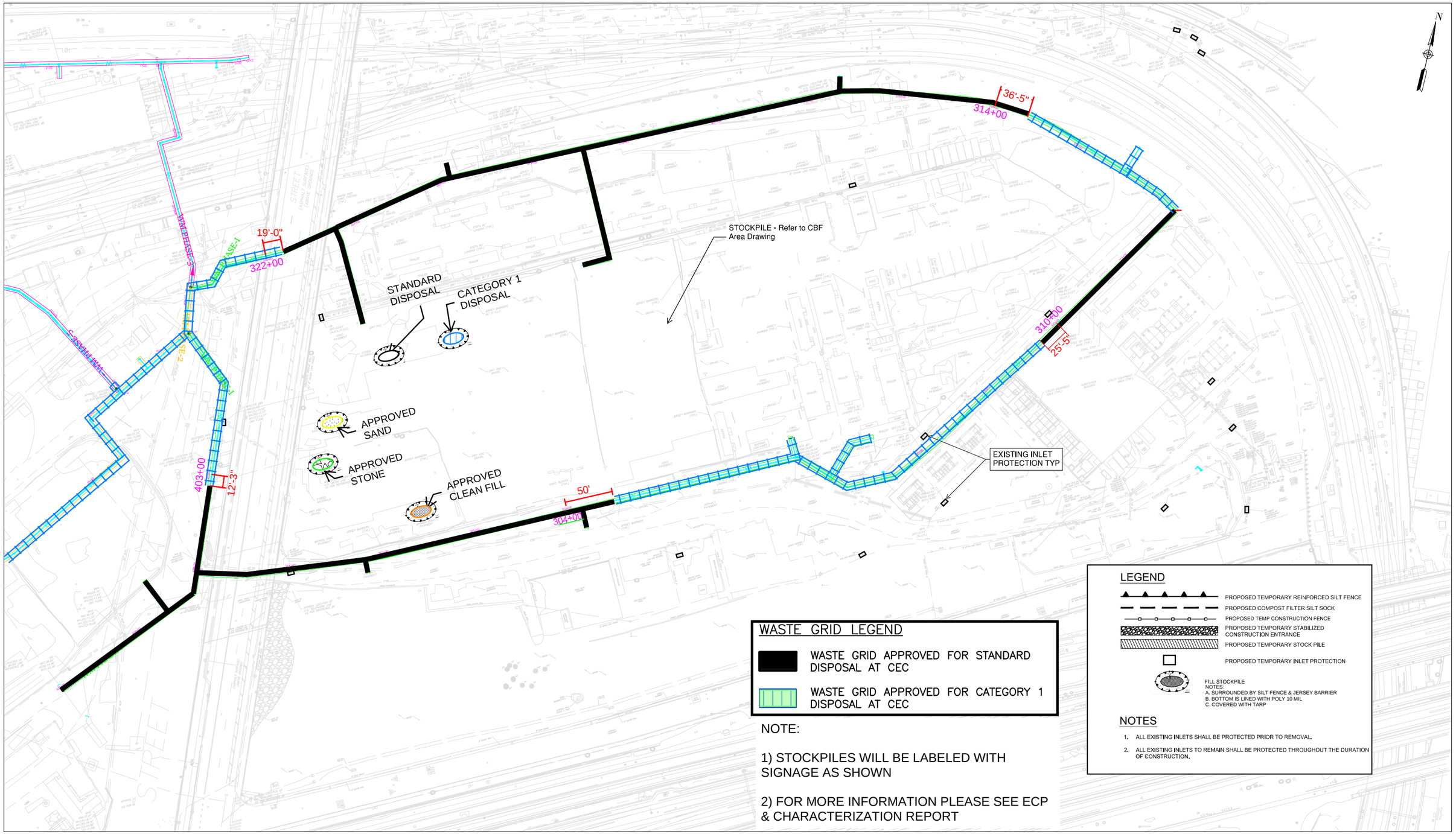
Prepared For: AMTRAK

Remedial
REMEDIAL ENGINEERING, P.C.
ENVIRONMENTAL ENGINEERS

Compiled by: JEP	Date: 6/29/2009	FIGURE 1
Prepared by: JEP	Scale: AS SHOWN	
Project Mgr: JEP	Project: 0055.0071Y010	
File No: AM7114816.WOR		

ATTACHMENT 4

Watermain Installation Location



EROSION CONTROL PLAN

SEE NOTE IV. WATERMAIN ON COVER SHEET FOR PHASING PLAN

No.	Revisions	Date	By

AMTRAK

Office of Chief Engineer
National Railroad Passenger Corporation
30th Street Station, Philadelphia, Pennsylvania 19104

Approved	Date

SCALAMANDRE CITNALTA

WATERMAIN - CBF/WEST AREA
EROSION CONTROL PLAN
REV:04-15-26

CREW BASE FACILITY AREA

Designed:	Drawn:	Checked:	Date: 03-16-26

File No.:	
Ref No.:	
Sheet No.:	
Dwg. No.	4 OF 6