FORMER ROBLIN STEEL SITE (DUNKIRK)

CHAUTAUQUA COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: B-00173-9

Prepared for:

Chautauqua County Department of Public Facilities

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Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date
1	4/27/2021	Cover system, groundwater monitoring and DEC contacts updates	
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NOVEMBER 2010 (REVISED JUNE 2021)

FORMER ROBLIN STEEL SITE (Dunkirk)
320 SOUTH ROBERTS ROAD
DUNKIRK, CHAUTAUQUA COUNTY, NEW YORK

SITE MANAGEMENT PLAN

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1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 Introduction

This document is required as an element of the remedial program at the Former Roblin Steel Site (Dunkirk) (hereinafter referred to as the "Site") under the New York State (NYS) Environmental Restoration Program (ERP) administered by New York State Department of Environmental Conservation (NYSDEC). The Site was remediated in accordance with the State Assistance Contract (SAC) No. C302808, Site No. B00173-9, which was executed on December 12, 2005.

1.1.1 General

Chautauqua County Department of Public Facilities (Chautauqua County) entered into a SAC with the NYSDEC to remediate an approximately 12-acre property located in the City of Dunkirk, in Chautauqua County, New York. This SAC requires Chautauqua County to investigate and remediate contaminated media at the Site. A map showing the location of the Site is provided in Figure 1 and the Site boundaries are provided in Figure 2. The boundaries of the Site are more fully described in the metes and bounds site description and is included as Appendix B. The Draft Environmental Easement for the Site is included as Appendix C.

A Remedial Action Work Plan (RAWP) was prepared in February 2006 to describe the specific remedial activities that would be implemented at the Site to complete the remediation in accordance with the March 2005 Record of Decision (ROD). The remediation program included two distinct types of activities: those that are related to the removal or treatment of contaminated material (Phase I) and those that are directly related to the redevelopment and reuse of the Site (Phase II).

After completion of the remedial work described in the RAWP, some contamination was left in the subsurface at this Site, which is hereafter referred to as 'remaining contamination'. This Site Management Plan (SMP) was prepared to manage remaining contamination at the Site in perpetuity or until extinguishment of the Environmental Easement in accordance with ECL Article 71, Title 36. All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by TVGA Consultants (TVGA) and revised by LaBella, on behalf of Chautauqua County, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated December 2002, and the guidelines provided by NYSDEC. This SMP addresses

the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the Site.

1.1.2 Purpose

The Site contains remaining contamination after completion of the remedial action. Engineering Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Chautauqua County Clerk, requires compliance with this SMP and all ECs and ICs placed on the Site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the Site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the Site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; (3) operation and maintenance of the cover system and, if necessary, the sub-slab vapor venting system (SSVVS); (4) performance of periodic inspections, certification of results and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP currently includes two plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs, which includes a reporting plan for the submittal of data, information, recommendations, and certifications to NYSDEC; and (2) a Monitoring Plan for implementation of Site Monitoring. As discussed in subsequent sections, if an SSVVS is installed at the Site, this SMP will be updated to include an Operation and Maintenance Plan pertaining to the SSVVS.

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of Environmental Conservation Law and the

Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC);

- Failure to comply with this SMP is also a violation of 6NYCRR Part 375 and the SAC No. C302808 (Site No. B00173-9) for the Site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 Site Background

1.2.1 Site Location and Description

The Site consists of two parcels located in the City of Dunkirk of Chautauqua County, New York. The parcels comprising the Site are identified by section block numbers (SBL) 79.12-4-29 and 79.12-4-30 assigned by the City of Dunkirk Assessor. The Site occupies approximately 12 acres of an inactive industrial park. The Site formerly contained the shell of a former 88,500-square-foot facility building, which was demolished as part of the 2010 remedial activities.

The Site is located in an area that is zoned for industrial use. Land use in the Site vicinity is characterized by a mixture of commercial, industrial and residential uses. The Site is bounded to the north by an active CSX rail yard; to the east by active Norfolk Southern railroad tracks; to the south by the former Alumax Extrusions site; and to the west by the former Edgewood Warehouse site. Residential properties are situated to the northwest and south of the Site beyond the adjoining properties. Additionally, mixed commercial and light industrial properties are located to the north and west of the Site, while an undeveloped wooded area and Hyde Creek are located to the east. Lake Erie is located approximately 4,000 feet to the northwest of the Site. A map showing the location of the Site is provided in Figure 1. The boundaries of the Site are more fully described in the metes and bounds site description which is included as Appendix B.

1.2.2 Site History

1.2.2.1 Operational/Disposal History

The following represents a brief history of the former ownership and operations of the Site:

- 1860s – Site was part of a complex that included the original Brooks Locomotive Works constructed on the west side of South Roberts Road.
- 1910 – The Site was first developed as part of a larger locomotive manufacturing complex operated by the American Locomotive Company (ALCO). The complex also included the industrial properties that abut the Site to the west and south, which currently contain the Edgewood Warehouse and the former Alumax Extrusions property, respectively.
- 1930 – Facilities operation converted to manufacture process equipment primarily consisting of heat exchangers, deed water heaters, tunnel shields, pressure vessels and steel pipe, fittings and conduits.
- 1936 – The portion of the complex situated west of South Roberts Road was largely demolished and ALCO's operations were concentrated on the Site and abutting properties. The 1930s plans indicated that three 157,000-gallon aboveground fuel oil storage and three pickling tanks were once located on the western corner of the Site.
- 1940s – During and after World War II, manufacturing operations at the plant were expanded to include military equipment. This equipment included gun carriages, fragmentation bombs, thrust shafts and king posts for navel vessels, missile housing, nozzles, boosters, and other components.
- Late 1940s – Following the war, ALCO was contracted by the Atomic Energy Commission to manufacture nuclear reactor components and packaged reactor units. It is not clear whether nuclear fuel was ever stored or utilized at the Dunkirk plant. ALCO also manufactured components for the crawler for the Apollo/Saturn V space rocket. In connection with these operations, ALCO maintained radiological sources at the Dunkirk plant that were used to inspect the integrity of welds on nuclear reactor and missile components. An undated article by the Chief Inspector of the Dunkirk plant indicated that the radiographic inspection equipment consisted of five machines. The article also indicated that Cobalt 60 was used in an outdoor area of the Site on rare occasions.
- 1950s and 1960s – Site plans indicate that the property contained a plate shop where pressure vessels and heavy fabricated plate equipment were manufactured, as well as facilities for the manufacturing and hydrostatic testing of large diameter municipal water pipes. These plans indicate that the existing building was

utilized for the application of corrosion preventative coatings to municipal water pipes, and, following its expansion, missile fabrication and heat treating.

- 1962 – ALCO's plant operations close.
- 1963 – The ALCO complex was purchased by Progress Park, whose mission was to facilitate the re-occupation of the complex by new industrial companies.
- 1969 – The Roblin Steel Company acquired the Site with the exception of the South Bay area that was briefly owned by Allegheny Ludlum.
- 1984 – Roblin Steel Company purchased the remainder of the plant site from Progress Park.
- 1969 through 1987 – Roblin Steel occupied the Site and operated a steel reclamation business on the property. High quality scrap steel was reclaimed using electric arc furnaces and then forged into steel rods. The plant contained three electric arc furnaces, several dust collection system baghouses, an outdoor electrical substation, numerous transformer rooms, rolling and hammer mills, a compressor house, and a variety of other process equipment (e.g., casting and cooling towers). The operation of the arc furnaces generated air pollution emissions control dust (KO61). The company operated a landfill on a separate property located approximately 0.5 miles to the south of the Site, which was utilized for the disposal of waste materials from the plant which is not part of this project.
- 1987 – Champion Inc. was contracted to salvage the equipment from the plant.
- 1990 – MRDI (Material Recover of Dunkirk Inc.) acquired the property through the bankruptcy of Roblin Industries. MRDI undertook the demolition of the portion of the plant located to the north of the existing building, and continued salvage operations until the early to mid-1990s.
- 1994 – A removal action was conducted by the USEPA (U.S. Environmental Protection Agency) to address over 700 drums of hazardous waste and piles of emission control dust abandoned on the Site.
- 2001 – Chautauqua County took ownership of the Site through foreclosure and entered into the NYS Environmental Restoration Program to assess and remediate the Site for future development.

1.2.2.2 Investigation History

The Site has been the subject of multiple environmental assessments and investigations prior to the activities that are subject of the ROD.

- *Environmental Site Review of Roblin Steel Plant Site*, Dunkirk, New York, Acres International Corp., January, 1989.
- *Phase II Environmental Site Assessment, Roblin Steel Plant*, Dunn Geoscience Corp., October 1990.
- *Groundwater Assessment, Roblin Steel Plant*, Dunkirk, New York, Harrison Hydrosciences, May, 1991.
- *Analysis of Soil and Slag Piles for Lead, Roblin Steel Site*, Roy F. Weston, Inc., January, 1994.
- *Groundwater Investigation Report, Common Boundary of the Former Roblin Steel (Dunkirk) and Alumax Extrusions Sites*, Clough Harbour and Associates, May, 1999.

The results of these investigations confirmed the presence of contaminated fill, soil, groundwater, storm water and sewer sediments on the Site. Contaminants detected on the Site included chlorinated solvents, polyaromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and heavy metals.

1.2.3 Geologic Conditions

The results of the subsurface investigation activities conducted at the Site indicate that fill material consisting of slag, foundry sand, soil, gravel, brick and concrete is present across the Site and extends from the ground surface to depths ranging from approximately two to seven feet. Native soil underlies the fill and consists of a heterogeneous mixture of fine-grained glacial deposits ranging from clayey silts to silty clay units with varying percentages of sand and gravel. The glacial deposits are generally comprised of an upper, laminated lacustrine unit underlain by a thin till unit that unconformably overlies shale bedrock, which occurs at approximate depths ranging from two to fifteen feet below the ground surface. The bedrock surface slopes generally to the north over the majority of the Site, with a dip to the southwest on the western side of the Site. Bedrock core samples taken during the site investigation indicated that the uppermost three to five feet of bedrock is slightly to severely weathered and consists mainly of dark gray to gray shale.

No surface water bodies occur on the Site, which is located within the Lake Erie-St. Lawrence River system, and locally within the drainage area of Hyde Creek. Hyde Creek is located approximately 100 feet from the northeast corner of the Site, and flows in a northwesterly direction towards Middle Road where it enters a City storm sewer that eventually discharges to Lake Erie at the foot of Serval Street. Hyde Creek is a Class C stream according to 6 NYCRR Part 839. The best usage of Class C waters is fishing, and the water quality is considered to be suitable for primary and secondary contact recreation.

Storm water runoff occurring on the Site that does not percolate into the subsurface generally flows to the northwest. A review of the Flood Insurance Rate Map developed for the project vicinity by the Federal Emergency Management Agency, indicated that the Site is not located within a 100-year flood plain.

Although perched water was encountered in the permeable fill at several locations across the site, saturated conditions were not consistently observed in the fill layer. As such, the upper-most water-bearing zone at the project site occurs within the glacial till and weathered shale bedrock. The direction of groundwater flow varies across the Site. Groundwater flow north of the former building (removed in 2010) is generally to the north and northwest towards the discharge area represented by Lake Erie. East of the former building, groundwater flow is to the northeast towards Hyde Creek. However, localized variations in groundwater flow direction likely occur in the vicinity of utility lines, building foundations and other undefined subsurface features, and Hyde Creek, based on field data. Static water level measurements taken from the interface wells during the 2003 Remedial Investigation (RI) are shown in the table presented on Figure 3, as are the corresponding groundwater elevations. The depth to groundwater measured in the wells ranged from 0.73 to 12.99 feet below the ground surface.

1.3 Summary of Site Investigation Findings

A Remedial Investigation (RI) was performed to characterize the nature and extent of contamination at the Site. The results of the RI are described in detail in the *Site Investigation Report, Former Roblin Steel Site (Dunkirk)*, TVGA Consultants, May 2003.

The RI consisted of a multi-phased investigation process performed in 2002 and 2003. The RI identified the presence of numerous types of contaminated media on the Site that require remediation (refer to Section 1.4 for details). The nature of past operations at the Site resulted in the majority of the collected soil samples containing concentrations of organic and/or inorganic compounds exceeding the concentrations defined in NYSDEC's Technical Administrative Guidance Memorandum (TAGM) 4046 (regulatory guidance levels). As such, a qualitative risk assessment was completed to assess potential human health and environmental risks associated with the identified contaminants at the Site. Furthermore, the risk assessment was completed to ultimately develop a listing of contaminants of concern and their associated Site-Specific Cleanup Levels (SSCLs). Table 1 included below summarizes the SSCLs developed during the RI, which were ultimately accepted by the NYSDEC in their March 2005 Record of

Decision (ROD). A statement from the ROD in which the NYSDEC accepts the SSCLs is listed below:

> *Based on the projected future use scenario for industrial or commercial use, a set of site-specific cleanup levels (SSCLs) were developed that reflect the industrial nature of the project location and the projected future use. The SSCLs have been determined to be protective of human health and the environment as long as institutional and engineering controls (IC/EC) are maintained and in place. The IC/ECs will be included in the site management plan which requires routine monitoring and reporting.*

It should be noted at the time that this RI was performed the Soil Cleanup Objectives (SCOs) identified in 6 NYCRR Part 375 had not yet been developed and the NYSDEC was using the recommended SCOs listed in TAGM 4046 for remedial investigations and cleanups. Therefore, as described above, the following SSCLs developed for this Site were used as the SCOs for remedial activities summarized in the following sections.

TABLE 1
SITE-SPECIFIC CONTAMINANT LEVELS (SSCLS)

PARAMETER	MAXIMUM CONCENTRATION IN SOIL/FILL (mg/kg) [1]
Individual VOC[2]	1
Total VOCs	10
Individual SVOCs	50
Total SVOCs [2]	500
Total cPAHs [3]	10
Arsenic	50
Barium	1000
Cadmium	20
Chromium	1000
Lead	1000
Zinc	85,000
Selenium	50
Silver	10
Beryllium	5
Copper	250
PCBs	10 [4]

(1) Analyses performed per NYSDEC Analytical Services Protocol (ASP), June 2000 methodology or other methods acceptable to NYSDEC.
(2) Target Compound List (TCL) VOCs and SVOCs.
(3) Carcinogenic polycyclic aromatic hydrocarbons (i.e., benzo(a)anthracene, benzo(a)pyrene, dibenzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene).
(4) Subsurface soil limit set in TAGM 4046

The RI confirmed the presence of contaminated fill; soil; sediments within site drainage features; concrete surfaces; and groundwater on the Site. Contaminants detected in the soil/fill and sediment within site drainage features above SSCLs included volatile organic compounds (VOCs); polycyclic aromatic hydrocarbons (PAHs); polychlorinated biphenyls (PCBs); and heavy metals. Elevated levels of PCBs were detected in the concrete floor slabs of former facility buildings. Contaminants of concern detected in the groundwater consisted primarily of VOCs, including chlorinated and aromatic hydrocarbons.

Below is a summary of site conditions when the RI was conducted. Table 2 summarizes the degree of contamination for the contaminants of concern and compares the data with the Standards Criteria and Guidance values (SCGs) applicable to each medium sampled. The approximate location and the estimated areal extent of excavation, when applicable, for the seven MGs identified during the RI that required remediation are shown on Figure 4. Additionally, Figure 5 shows the distribution of the primary contaminants of

concern in the groundwater. Each of these figures depict pre-remedial conditions at the Site.

1.3.1 Soil

1.3.1.1 Surface Soil/Fill

Contaminants detected in the surface soil/fill above the SSCLs included metals (e.g., cadmium, copper, lead, silver and zinc), PAHs, and, to a lesser degree, PCBs.

1.3.1.2 Subsurface Soil/Fill

Contaminants detected in the subsurface soil/fill at levels exceeding the SSCLs included metals (barium and copper), PAHs and VOCs (chlorinated hydrocarbons). The presence of these contaminants in the subsurface soil was localized in several areas of the Site.

1.3.2 Site Related Groundwater

Contaminants of concern detected in the groundwater beneath the Site consist primarily of VOCs, including chlorinated and aromatic hydrocarbons. These contaminants were detected in both the upper most water-bearing unit, which occurs at the interface between the overburden and weathered bedrock, and in the shallow bedrock water-bearing unit. Relatively low concentrations of PAHs were also detected in a handful of the wells screened in the upper most water-bearing unit. Although metals were detected in all of the groundwater samples at concentrations above the Water Quality Standards (WQS), these metals are commonly noted to occur naturally in the groundwater of the region and are not interpreted to be site-derived.

1.3.3 Site Related Soil Vapor

Soil vapor samples were not collected as part of the RI conducted at the Site.

1.3.4 Underground Structures

Sediment with contaminant concentrations above the SSCLs was documented in eight interior sumps (i.e. Sump Nos. 1 through 8), the Hyde Creek outfall, and at the catch basin and end of the sewer pipe along the southern portion of the building. Various sumps and other drainage structures on the Site also contained elevated levels of VOCs and PAHs that exceed SSCLs.

1.3.5 Contaminated Building Components

1.3.5.1 PCBs

Elevated levels of PCBs were detected in concrete in the area of a former transformer room and were most likely due to a spill or release in this area. PCB containing electrical equipment (e.g. fluorescent and high intensity discharge (HID) light fixtures with ballasts) was also identified within the former on-site building.

1.3.5.2 Asbestos

Asbestos was the primary contaminant of concern detected in the building components. Friable and non-friable asbestos containing materials (ACMs) were identified in the former on-site building.

1.4 Summary of Remedial Actions

The Site was remediated in accordance with the NYSDEC-approved RAWP that was prepared in February 2006 to describe the specific remedial activities that would be implemented at the Site to complete the remediation in accordance with the ROD.

The RAWP identified each MG and discussed the remedial tasks to be completed prior to the redevelopment of the Site. The seven impacted MGs and the corresponding remedial activities include the following:

- MG #1 - Surface Soil/Fill and Debris Piles: Disposal of surface debris, excavation and off-site disposal of surface soil/fill that exceeds the SSCLs, and containment through the installation of a 12-inch soil cover for remaining soil/fill that exceeds TAGM values.

- MG #2 - Subsurface Soil/Fill Impacted with Chlorinated VOCs: Excavation and off-site disposal of subsurface soils that exceed SSCLs, and containment through the installation of a 12-inch soil cover for remaining soil/fill that exceeds TAGM values.

- MG #3 - Subsurface Soil/Fill with PAH and Metals Impacts and/or Petroleum Nuisance Characteristics: Containment through the installation of a 12-inch soil cover.

- MG #4 - Drainage Features and Contents: Removal and off-site disposal of sediments from interior Sump Nos. 1 through 8 and closure in place. Removal and off-site disposal of the accessible sediment from the Hyde

Creek outfall and closure of the pipe in-place. Removal and off-site disposal of accessible sediment from the catch basin and end of sewer pipe located near the southwestern corner of the building, and closure of the pipe in place.

- MG #5 - Building Components: Removal and off-site disposal of building materials that contain friable and non-friable asbestos and electrical components that contain PCBs.

- MG #6 - Concrete and Surface Soils Impacted with Polychlorinated Biphenyls (PCBs): Excavation and off-site disposal of concrete and soil/fill above guidance levels (TAGM 4046/TSCA).

- MG #7 - Groundwater Impacted with VOCs: Engineering controls consisting of a sub-slab vapor venting system for the existing building, air monitoring, enhanced natural attenuation, and long-term groundwater monitoring.

The United States Environmental Protection Agency (USEPA) mobilized to the Site in 2004 to assist the County in the remediation of the above listed MGs. Specifically, the USEPA conducted portions of the remedial activities associated MG #1 and MG #5 and completed all remedial activities associated with MG #6. The remedial activities completed by the USEPA for these MGs included the following:

- MG #1: The USEPA completed the delineation, excavation and off-site disposal of surface soil contaminated with metals located in the western portion of the Site north of the building, and in the eastern portion of the Site in the area of the former baghouses. Figure 6 depicts the areal extent of these remedial activities.
- MG #5: The USEPA examined the HID light fixtures associated with this MG, which were located throughout the existing building to determine if the light ballasts contained PCBs. The USEPA concluded that the ballasts do not contain PCBs, but that the potential presence of mercury in the light bulbs necessitated their removal. Therefore, the USEPA removed all of the HID light bulbs with the exception of the lights located in the high bay area. In addition, a number of fluorescent lights remained on-site, with ballasts that potentially contained PCBs.
- MG #6: The USEPA completed the delineation, excavation and off-site disposal of the concrete and surface soils within this MG. Figure 6 depicts the areal extent of these remedial activities.

Following the USEPA's work, the County completed extensive remedial activities under a New York State Environmental Restoration Program Grant. This remediation program included two distinct types of activities: those that are related to the removal or treatment of contaminated material (Phase I) and those that are directly related to the redevelopment and reuse of the Site (Phase II). The remedial activities for the Site were completed between November 2006 and September 2010. The Phase I activities were conducted between November 2006 and January 2007, while the Phase II activities were conducted between March 2010 and September 2010.

The Phase I components included:

- Excavation and off-site disposal of surface soil/fill that exceeds the SSCLs
- Excavation and off-site disposal of subsurface soils that exceed SSCLs
- Cleaning and filling of site drainage features
- Removal and disposal of PCB containing electrical equipment
- Removal and disposal of miscellaneous site debris
- Decommissioning of monitoring wells that are not part of the long-term monitoring program
- Enhanced natural attenuation of site groundwater

The Phase II activities included the following:

- Removal of asbestos-containing materials (ACMs)
- Demolition of the building
- Removal, crushing of the top 12 inches of concrete slabs and foundations followed by the placement of the crushed concrete
- Installation of a site-wide soil cover system
- Establishment of vegetative cover

1.4.1 Removal of Contaminated Materials from the Site

The Soil Cleanup Objectives utilized for the soil, fill and sediments remediated at this Site were the SSCLs identified in Table 1.

1.4.1.1 Media Group #1 – Surface Soil/Fill and Debris Piles

The ROD identified four areas of the Site where surface soil would require remediation. Additionally, six individual piles of debris/fill and three areas of wood block flooring were identified on the Site. The areas of this impacted surface soil/fill, debris/fill piles and wood block flooring are shown on Figure 4. However, as discussed in Section 1.4, two of the surface soil/fill areas depicted on Figure 6 were addressed by the USEPA in 2004. The remaining areas included the following:

- 12,300-square-foot area to the northeast of the building
- 102,000-square-foot area to the north of the building
- 175 cubic yards of wood block flooring north of the building
- 1,100 cubic yards of soil/debris piles north of the building

The remedial action consisted of the removal of contaminated surface soil/fill and debris for proper off-site disposal. A total of 5,772.76 tons of impacted surface soil/fill, debris/fill piles and wood block flooring was excavated from the four areas. The excavated material was temporarily staged on-site and then loaded into trucks for off-site disposal.

In order to improve site drainage, provide a more level surface for the soil cover and facilitate potential redevelopment on the Site, the upper twelve inches of concrete floor slabs and foundations across the site were removed, crushed and spread across the surface of the Site. The remaining contaminated surface soil/fill as well as the contaminated subsurface soil/fill, discussed below, that exceeded the TAGM 4046 guidance values was addressed through the installation of a 12-inch thick soil cover with a demarcation layer across the surface of the Site.

1.4.1.2 Media Group #2 – Subsurface Soil/Fill Impacted with Chlorinated VOCs

The contaminated subsurface soil/fill included in this MG encompassed two separate areas which are identified on Figures 7 and 8. The first area, located on the south side of the building in the vicinity of MW-09, included a surface area of approximately 1,810 square feet with an average depth of four feet. A large portion of this area was located within the existing building beneath the concrete floor slab. The other area was centrally located in the northern portion of the site in the vicinity of MW-07 and included an approximately 575-square-foot surface area with the impacted soil from the surface to depths of eight feet below grade.

The remedial action consisted of the excavation of the contaminated soils in these two areas followed by off-site disposal. A total of 167.56 tons of non-hazardous soil/fill was excavated near MW-07 and 415.7 tons of non-hazardous soil/fill was excavated near MW-09.

Following off-site disposal of this material and prior to backfilling the excavations, granular iron was mixed into the saturated zone. A summary of the granular iron mixing activities is contained in Section 1.4.1.7.2. Following the mixing of granular iron, the excavated concrete

floors/foundations were broken into smaller pieces (approximately six inches in diameter or less) and placed in the bottom of the excavations. The remaining void space in each of these excavations was then backfilled with clean soil including approximately 155 cubic yards in the MW-07 excavation area and 275 yards in the MW-09 excavation area.

As discussed in Section 1.4.1.1, a 12-inch thick soil cover was installed across the surface of the Site to address the remaining contamination in the subsurface soil/fill that exceeded the TAGM 4046 guidance values.

1.4.1.3 Media Group #3 – Subsurface Soil/Fill with PAH and Metals Impacts and/or Petroleum Nuisance Characteristics

This MG encompasses subsurface soil across the entire Site. The contaminants of concern identified in this MG consist of PAHs, metals, and petroleum nuisance characteristics (i.e., odor and visual staining) in the subsurface soils. The analytical results for the subsurface soil/fill samples collected from the areas in this MG did not exceed the SSCLs but did exceed the recommended soil clean-up objectives listed in TAGM 4046. Additionally, visual and olfactory observations revealed petroleum odors and stained soils (nuisance characteristics) in the northeast corner of the project site (former location of three 157,000-gallon fuel oil aboveground storage tanks (ASTs)).

As discussed in Section 1.4.1.1, a 12-inch thick soil cover was installed across the surface of the Site to address the remaining contamination in the subsurface soil/fill that exceeded the TAGM 4046 guidance values.

1.4.1.4 Media Group #4 – Drainage Features

Sediment with contaminant concentrations above the SSCLs was documented during the RI in interior Sumps Nos. 1 through 8, the Hyde Creek outfall pipe, and within the catch basin and end of the sewer pipe along the southern portion of the building (south sewer catch basin). The originally planned remedial actions were to consist of the removal and off-site disposal of contaminated sediments from within the sumps, the Hyde Creek outfall, and south sewer catch basin followed by the in-place closure of these structures.

The remedial action associated with Sump Nos. 2 through 8 and the south sewer catch basin was performed in accordance with this plan. However, deviations to the planned remedial actions were required to address Sump No. 1 and the Hyde Creek outfall, as described in the

subsequent sections. In addition, eight additional sumps requiring remedial action were identified during remedial activities, including two inside of the building and six outside of the building. These sumps were identified as Sumps A through G. The locations of site drainage features are depicted on Figures 7 and 8.

1.4.1.4.1 Remedial Action – Sump No. 1/Underground Storage Tank

The remedial actions for Sump No. 1 were initiated by removing the water within this sump via a vacuum truck. Significantly more water was present in the sump than originally anticipated, and more than 20,000 gallons of water was removed before an evaluation of the open space below the sump could be made. Visual inspection indicated that what had previously been identified as a sump was actually a manhole-type access point for an underground storage tank.

To evaluate the condition of the tank, the overlying concrete and soil/fill was removed using an excavator. The top of the tank was encountered at a depth approximately five feet below grade. The overlying soil and concrete was stockpiled near the excavation for later use as backfill. The top of the steel tank was opened and the standing water in this UST was pumped to the ground surface north of the building, where it was allowed to infiltrate back into the porous soil/fill. None of this water was allowed to run off-site.

Following removal of water from the tank, laborers entered the tank using appropriate safety equipment and visually inspected the tank. This inspection revealed that the tank was likely a railroad tank car that had buried in this location for the storage of fluids. The size of the tank was estimated to be approximately 23,550 gallons. The sediments in the tank were removed using a vacuum truck and transported off-site for disposal. A total of 42 tons of solidified sump sediments were disposed off-site.

The visual inspection indicated that a portion of the tank was under one of the building footers, and therefore, the tank had apparently been installed prior to the construction of the building wall columns. As a result, the UST was not removed but closed in-place so as to not compromise the structural integrity of the building. Following the removal of all sediment from this UST, the excavated concrete was broken into smaller pieces (approximately six inches in diameter) and placed in the bottom of the tank. The remaining void space within the UST was then backfilled with clean No. 1A stone. The stockpiled soil was

re-used as backfill over the stone and compacted in approximately 12-inch lifts to bring the excavation up to the surrounding grade.

1.4.1.4.2 Remedial Action – Sump Nos. 2 through 8

The remedial actions associated with Sump Nos. 2 through 8 involved four steps, including: removal of the standing water; removal of sediments and/or sludge; plugging of inlet and outlet pipes; and backfilling each sump with controlled low-strength material (CLSM). Water in the sumps was pumped to the ground surface at on-site locations downgradient of the sumps, where it was allowed to infiltrate back into the porous soil/fill. No water was allowed to run off-site. Once all of the standing water was removed, a vacuum truck was used remove any sediment or sludge within the sumps. Following the removal of the materials from the sumps, the inlet and outfall pipes were plugged with grout. Each of these drainage features was then backfilled with CLSM to within 12 inches of the surrounding ground surface and the remaining 12 inches was backfilled with clean No. 2 stone. Because all materials were removed from these sumps, verification sampling was not performed.

1.4.1.4.3 Remedial Action – Sumps A through G

Eight additional sumps, identified as Sumps A through G, were discovered during the remedial activities. The remedial actions to address these additional sumps were similar to those utilized for Sump Nos. 2 through 8. However, based on field conditions, modifications were required in order to abandon Sump D.

Standing water was present on the ground surface surrounding Sump D and the surrounding soil/fill was saturated. This water continuously entered the sump during pumping, so the removal of the sediment from the bottom of this structure was not practicable. The NYSDEC was informed of this situation and agreed that, based on the continued inflow of water and the fact that no inlet or outlet pipes were identified in connection with this sump, the entire sump would be filled with clean No. 2 stone.

1.4.1.4.4 Remedial Action – Hyde Creek Outfall

The planned remedial action for the Hyde Creek outfall included the removal of the flap gate from the headwall followed by the removal of sediment in the end of the pipe. Because the pipe and headwall were located on property owned by CSX Transportation (CSX), an access

agreement with CSX was required. As a condition of granting the right-of-entry on their property, CSX required the removal of all portions of this piping on the CSX property (approximately 60 linear feet) and the sediment within that pipe, rather than simply cleaning the pipe sediment out.

Prior to the start of any remedial activities, a silt fence was installed downgradient of the anticipated work area to prevent the erosion of disturbed soil into Hyde Creek. Following the installation of the silt fence, the flap gate was removed from the headwall. Starting at the headwall and proceeding south to the property line, the soil overlying the piping was excavated and stockpiled adjacent to the work area. The exposed pipe as well as the sediments within the piping was then excavated and disposed off-site. Once all piping was removed, a steel plate was installed on the south side of the headwall to prevent soil from entering the creek. This action was followed by backfilling the excavation with a combination of previously excavated soil, which was supplemented with certified clean fill to bring the excavation back to the previously existing grade.

1.4.1.4.5 Remedial Action – South Sewer Catch Basin

The South Sewer Catch Basin contained contaminated sediments and one 18-inch inactive pipe entered the catch basin from the northeast. Additionally, an active 12-inch pipe from the adjacent Alumax site entered the catch basin from the east, with a third pipe conveying flow from this pipe to the west.

The remedial action associated with the south sewer catch basin included the removal of all sediments from the catch basin using a vacuum truck. The end of the 18-inch pipe was then plugged with hydraulic cement while storm water flow from the Alumax site via the 12-inch pipes was maintained.

1.4.1.5 Media Group #5 – Building Components

During the RI, numerous fluorescent and high intensity discharge (HID) light fixtures with ballasts that potentially contained PCBs were identified at the Site. In addition, limited quantities of friable and substantial quantities of non-friable asbestos-containing materials (ACMs) were identified throughout the former facility building.

In addition to the HID fixtures removed by the USEPA, fluorescent and HID light fixtures were removed from the following areas:

- A total of 23 light fixtures in the former Roll and Hammer Room located north of the main bay area between Piers 22 and 31. These fixtures consisted of a combination of HID, incandescent and mercury light fixtures.
- Eight fluorescent light fixtures in the former locker room north of the main bay between Piers 35 and 37.
- Three fluorescent light fixtures located inside the main bay area along the south wall in between Piers 22 and 23; 26 and 27; and 28 and 29.
- Four twin light fixtures (i.e. two lights with one ballast each) were removed from the high bay area.
- One fluorescent light fixture located inside the main bay area along the north wall in between Piers 40 and 41.

This task resulted in the generation of 18 light ballasts that potentially contained PCBs, which were placed into a 55-gallon and disposed of off-site at a facility permitted to handle PCB waste. The remaining light fixtures that either did not have ballasts associated with them and/or had labels which indicated that the ballast was non-PCB containing were disposed of at a solid waste landfill.

Following the removal of the friable ACMs, the former on-site building was demolished and the remaining non-friable ACMs were abated in accordance with the provisions of ICR 56-11.5 "Controlled Demolition with Asbestos in Place". With the exception of structural members, steel components, and similar non-ACM components, the remaining construction and demolition material was directly loaded into roll-off containers or dump trucks for off-site disposal as ACM.

1.4.1.6 Media Group #6 – Concrete and Surface Soils Impacted with PCBs

The USEPA completed remedial activities at the project site in 2004 that included the delineation, excavation and off-site disposal of the PCB-impacted concrete and surface soils within this MG. Therefore, no further action for this MG was conducted. Figure 6 shows the approximate extent of these excavations.

1.4.1.7 Media Group #7 – Groundwater Impacted with VOCs

During the RI, volatile organic compounds were detected within the groundwater at the Site at concentrations in excess of the New York State Water Quality Standards (WQS). Substantially elevated levels of VOCs were detected in the groundwater along the southern site boundary in the

vicinity of monitoring wells EX-MW-11 and MW-09 and along the northern site boundary in the vicinity of MW-07.

Groundwater monitoring wells MW-03; MW-05; MW-06; MW-08; MW-09; MW-11; and EX-MW-10 were decommissioned in accordance with the overdrilling procedures listed in NYSDEC's *Groundwater Monitoring Well Decommissioning Procedure*, *October 1996*. Additionally, seven additional monitoring wells that had been installed prior to the 2003 RI were discovered during remedial activities. The NYSDEC agreed that the decommissioning of these wells would be accomplished via grouting in-place. The locations of the decommissioned monitoring wells are depicted on Figures 7 and 8. Because MW-09 is included as a monitoring location for the long-term groundwater monitoring program, this well was reinstalled following the backfilling of the excavation completed in the area of this well. A new interface monitoring well (MW-09R) was installed directly adjacent to the previous MW-09 location using the same procedures utilized during the RI.

1.4.1.7.1 Remedial Action in the Vicinity of EX-MW-11

Substantially elevated concentrations of VOCs were detected in the groundwater along the southern site boundary in the vicinity of well EX-MW-11. The remedial action for this area of the Site consisted of enhanced natural attenuation to reduce the concentrations of VOCs in the groundwater. The enhanced natural attenuation remedial activities involved the injection of granular iron into the groundwater plume previously identified in the vicinity of EX-MW-11. A total of 78,000 pounds of granular iron was injected into the subsurface through 104 injection points. Figure 9 depicts the locations of the injection points.

1.4.1.7.2 Remedial Actions in the Vicinity of MW-07 and MW-09

Elevated concentrations of VOCs, primarily chlorinated hydrocarbons, were detected in the groundwater samples collected from MW-07 and MW-09 as well as in the subsurface soil in these areas. As described previously, the contaminated subsurface soil/fill in these areas was excavated and disposed of off-site to eliminate the sources of groundwater contamination.

The remedial action related to groundwater contamination in these areas consisted of enhanced natural attenuation through the introduction of granular iron. The granular iron was placed in the excavations where contaminated subsurface soil/fill had been removed. A total of 7,200 pounds and 40,800 pounds of granular iron was deposited in the

bottoms of the MW-07 and MW-09 excavation areas, respectively, and mixed into the saturated zone of soil/fill with an excavator. Following the mixing of the granular iron, the excavations were backfilled with clean material.

1.4.2 Site Related Treatment Systems

No long-term treatment systems were installed as part of the site remedy. However, any potentially new structures constructed on the Site as part of site redevelopment may be equipped with SSVVS, if warranted. The design and sampling of the SSVVS will be performed in accordance NYSDEC and New York State Department of Health (NYSDOH) guidance at the time the system is installed. The ultimate deign of the SSVVS will be dependent upon the size and configuration of any newly constructed buildings. Therefore, the specific components of the SSVVS have not been determined. Upon determination of the Site's future use a description of this system will be added and the SMP will be updated.

1.4.3 Remaining Contamination

The remaining contamination left on the Site encompasses surface and subsurface soil/fill across the entire Site. The contaminants of concern consist of metals and PAHs in the surface soil and PAHs, metals, and petroleum nuisance characteristics (i.e. odor and visual staining) in the subsurface soils. The highest concentrations of impacts appear to be present within the fill-type soils, which varied in depth across the Site from zero to six feet below the ground surface. Additionally, fill-type soils were encountered at depths up to 18 feet below the ground surface within former furnace and process pits within the existing building as well as north of the existing building.

The analytical results for the surface and subsurface soil/fill samples collected from the areas not addressed by the remedial efforts summarized above did not exceed the SSCLs but did exceed the SCOs listed in TAGM 4046. Additionally, visual and olfactory observations revealed petroleum odors and stained soils (nuisance characteristics) in the northeast corner of the Site (former location of three 157,000-gallon fuel oil aboveground storage tanks (ASTs)). This area encompasses approximately 12,800 square feet of surface area (Figure 4). The impacted soil/fill occurs from approximately four to eight feet below the existing ground surface, resulting in approximately 1,900 cubic yards of soils with petroleum-related nuisance characteristics.

The remaining contaminated surface soil/fill as well as the contaminated subsurface soil/fill that exceeded the TAGM 4046 guidance values was addressed through the installation of a 12-inch thick soil cover with a

demarcation layer across the surface of the Site. The soil cover was installed following the demolition of the former facility building, the removal, crushing and placement of the concrete floors slabs and foundations and placement of the demarcation material. The demarcation material consists of an orange plastic mesh material that was placed over the entire surface of the Site. Figure 12 depicts the sub-grade elevations (i.e. the elevation of the demarcation layer) and the post-installation soil cover thicknesses.

Tables 3A and 3B and Figure 13 summarize the results of all soil samples remaining at the site after completion of Remedial Action that exceed the Track 1 (Part 375-6.8(a) Unrestricted) SCOs.

Figure 13 summarizes the results of all soil samples remaining at the site after completion of Remedial Action that meet the SCOs for unrestricted use of the site.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 Introduction

2.1.1 General

Since remaining contaminated soil/fill, groundwater and soil vapor exists beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

The purpose of this Plan is to provide:

- A description of all EC/ICs on the site;
- The implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- All other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 Engineering Controls

2.2.1 Engineering Control Systems

2.2.1.1 Soil Cover System

Exposure to remaining contamination in soil/fill at the Site is prevented by an engineered cover system placed over the entire surface area of the Site. This cover system encompasses two different types of cover: (1) a minimum of 12 inches of clean soil overlying a demarcation layer (orange plastic mesh material); and (2) a minimum of 6-inches of asphalt pavement overlying 12 inches of clean stone subbase material installed over a geotextile separation layer. The configuration of these cover system components is depicted on Figure 14, which shows that the

asphalt pavement cover occurs exclusively within the Progress Drive corridor. Record drawings for this public roadway constructed in 2014 are included in Appendix H, and include typical sections documenting compliance with the asphalt thickness requirement specified in the Record of Decision for this Site. Soil cover occurs on the remaining areas of the Site, including the roadside drainage features constructed along Progress Drive.

The Excavation Work Plan that appears in Appendix A outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection and maintenance of this cover are provided in the Monitoring Plan included in Section 3 of this SMP.

2.2.1.2 Sub-Slab Vapor Venting System

No SSVVS has been installed as part of the site remedy. However, any potentially new structures constructed on the Site as part of site redevelopment may be equipped with a SSVVS, if warranted. The design and sampling of the SSVVS will be performed in accordance NYSDEC and NYSDOH guidance at the time the system is installed. The ultimate deign of the SSVVS will be dependent upon the size and configuration of any newly constructed buildings. Therefore, the specific components of the SSVVS have not been determined.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, the remedial processes will be considered to be completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The specific determination of when the following remedial processes are complete will be made in compliance with Section 6.6 of NYSDEC DER-10.

2.2.2.1 Cover System

The cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.

2.2.2.2 Sub-Slab Vapor Venting System

The operation of the SSVVS will not be discontinued unless prior written approval is granted by the NYSDEC and NYSDOH. In the event that monitoring data indicates that the SSVVS is no longer required, a proposal to discontinue the system will be submitted by the property

owner. Conditions that warrant discontinuing the SSVVS include contaminant concentrations in groundwater that: (1) reach levels that are consistently below ambient water quality standards, (2) have become asymptotic to a low level over an extended period of time as accepted by the NYSDEC and NYSDOH, or (3) the NYSDEC and NYSDOH has determined that the SSVVS has reached the limit of its effectiveness. This assessment will be based in part on post-remediation contaminant levels in groundwater collected from monitoring wells located throughout the site. Systems will remain in place and operational until permission to discontinue their use is granted in writing by the NYSDEC and NYSDOH.

2.2.2.3 Monitored Enhanced Natural Attenuation

Groundwater monitoring activities to assess the enhanced natural attenuation will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC.

2.3 Institutional Controls

A series of Institutional Controls is required by the ROD to: (1) require compliance with the approved SMP; (2) limit the use and development of the property to commercial or industrial uses only; (3) restrict use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Chautauqua County Department of Health; and, (4) require the property owner to complete and submit to the NYSDEC an Institutional Controls/Engineering Control certification on a periodic basis determined by the Department. Adherence to these Institutional Controls on the Site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement by the Grantor and the Grantor's successors and assigns with all elements of this SMP;
- All Engineering Controls will be operated and maintained as specified in this SMP;
- All Engineering Controls on the Site will be inspected and certified at a frequency and in a manner defined in this SMP;
- Groundwater monitoring and air monitoring associated with the SSVVS will be performed as defined in this SMP;
- Data and information pertinent to Site Management for the Site will be reported at the frequency and in a manner defined in this SMP; and

- On-site environmental monitoring of groundwater monitoring wells as well as any air monitoring points associated with the SSVVS will be protected and replaced as necessary to ensure continued functioning in the manner specified in this SMP.

Institutional Controls may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The Site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- The property may only be used for commercial or industrial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed;
- The property may not be used for a higher level of use, such as unrestricted, residential or restricted residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of the groundwater underlying the property is restricted as a source of potable or process water, without necessary water quality treatment, as determined by the Chautauqua County Department of Health;
- The potential for vapor intrusion must be evaluated for any buildings developed on the Site, and any potential impacts that are identified must be monitored and mitigated;
- The SMP will provide for the operation and maintenance of the components of the remedy;
- Vegetable gardens and farming on the property are prohibited; and
- The property owner is required to provide an Institutional Control/Engineering Control (IC/EC) certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC annually or for a period to be approved by the NYSDEC, which will certify that the institutional controls and engineering controls put in place are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP.

2.3.1 Excavation Plan

The Site has been remediated for commercial or industrial use. Any future intrusive work that will penetrate the soil cover or cap, or encounter or disturb the remaining contamination, including any modifications or repairs to the existing cover system will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix A to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the site. A sample HASP is attached as Appendix D to this SMP that is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section A-1 of the EWP. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

The site owner and associated parties preparing the remedial documents submitted to the State, 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 de-water, 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 site owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.3.2 Soil Vapor Intrusion Evaluation

Prior to the construction of any enclosed structures, a soil vapor intrusion (SVI) evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. Alternatively, SSVVS may be installed as an element of the building foundation without first conducting an investigation. This mitigation system will include a vapor barrier and passive sub-slab depressurization system.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH "Guidance for Evaluating Vapor Intrusion in the State of New York". Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary (unvalidated) SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation.

SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

2.4 Inspection and Notifications

2.4.1 Inspections

Inspections of all remedial components installed at the Site will be conducted at the frequency specified in SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system.

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan in Section 3 of this SMP, using the appropriate inspection forms included in Appendix E. The reporting requirements are outlined in the Periodic Review Reporting section of this SMP included as Section 5.

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the SAC, 6NYCRR Part 375, and/or Environmental Conservation Law.
- 15-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.
- Notice within 48 hours of any damage or defect to the foundations structures that reduces or has the potential to reduce the effectiveness of other Engineering Controls and likewise any action to be taken to mitigate the damage or defect.
- Notice within 48 hours of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, including a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the SAC, and all approved work plans and reports, including this SMP.
- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing.

The table below includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information

Name	**Contact Information**
Ms. Megan Kuczka, NYSDEC Project Manager	716-851-7220 megan.kuczka@dec.ny.gov
Ms. Andrea Caprio, NYSDEC Regional Engineer	716-851-7220 andrea.caprio@dec.ny.gov
Kelly Lewandowski, Chief, Site Control Section	(518)402-9553 kelly.lewandowski@dec.ny.gov

2.5 Contingency Plan

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions. This Site is currently vacant and undeveloped; therefore, following any change in the current use of the Site the Contingency Plan will need to be updated to reflect these usage changes and the types of emergences that could occur at the Site.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to a qualified environmental professional, (to be decided). These emergency contact lists must be maintained in an easily accessible location at the site.

Table 4A: Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Table 4B: Contact Numbers

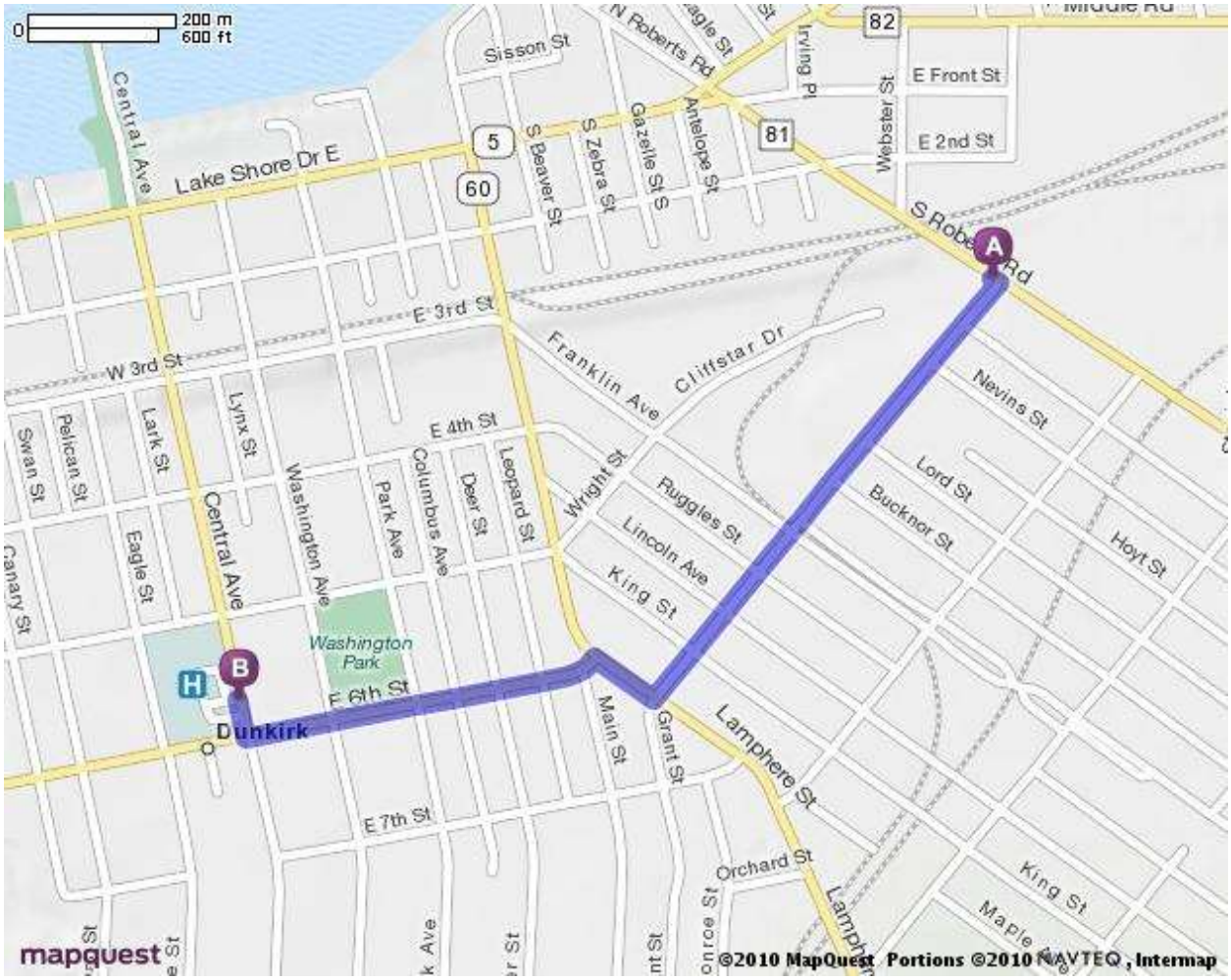
Qualified Environmental Professional	LaBella Associates, D.P.C. (716) 551-6281

* Note: Contact numbers subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location (A): 320 South Roberts Road, Dunkirk NY, 14048
Nearest Hospital Name: Brooks Memorial Hospital
Hospital Location (B): 529 Central Avenue, Dunkirk NY, 14048
Hospital Telephone: Emergency Room (716) 366-3060
Directions to the Hospital: Head north on South Roberts Road approximately 400 feet to Talcott Road. Proceed south (left) on Talcott to Maple Road (NYS Route 60). Proceed north on Maple Road and make a left onto West Sixth Street. Proceed west on West Sixth Street to turn right on Central Avenue.
Total Distance: 1 mile
Total Estimated Time: 3 minutes

Map Showing Route from the site to the Hospital:



Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 4A). The list will also be posted prominently at the site and made readily available to all personnel at all times. This Site is currently vacant and undeveloped; therefore, following any change in the current use of the Site response procedures will need to be developed. These procedures may include but not be limited to procedures for spill response, evacuation plans, emergency response plans and procedures for amending the contingency plan.

3.0 MONITORING PLAN

3.1 Introduction

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, the soil cover system, and all affected site media identified below. Monitoring of other Engineering Controls is described in Chapter 4, Operation, Monitoring and Maintenance Plan. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards;
- Monitoring of the Cover System;
- Assessing achievement of the remedial performance criteria;
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

The groundwater monitoring program will be conducted on an annual basis for 30 years. Groundwater samples will be analyzed for volatile organic compounds (VOCs) appearing on the USEPA Target Compound List (TCL). Trends in contaminant levels in groundwater will be evaluated to determine if the remedy

continues to be effective in achieving remedial goals. Monitoring programs for environmental media are outlined in detail in Sections 3.2 through 3.3 below.

The cover system is a permanent control and the quality and integrity of this system will be monitored annually in perpetuity. The monitoring program for the cover system is detailed in Section 3.2.

3.2 Soil Cover System Monitoring

The soil cover system is described in Section 2.2.1.1 and a description of the cover system monitoring is presented in the following sections.

3.2.1 Inspection Schedule

The cover system is a permanent control and the quality and integrity of this system will be monitored annually in perpetuity.

Inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the cover system has been reported or an emergency occurs that is deemed likely to affect the operation of the system. Monitoring deliverables for the cover system are specified later in this SMP.

3.2.2 General Inspection

The final cover system shall be observed by traversing the cover on foot and making appropriate observations, notes and photographic records as necessary, for inclusion with the report. Indoors, specifically in office spaces with floor coverings, the inspection should at minimum make note of areas with settled or uneven surfaces, seepage or flooding. The following characteristics shall be looked for during the observation of the cover system, fencing and signs, and erosion control features:

- Sloughing
- Cracks
- Settlement
- Erosion features
- Distressed vegetation/turf
- Damaged fencing, gates and signs

The following sections describe actions that should be taken to address the conditions described above. Maintenance and repairs that are typically necessary during the closure period are also described. These activities will be conducted in accordance with the requirements of the RAWP and the SMP.

3.2.2.1 Sloughing

Sloughing of the soil cover may occur. Maintenance activities to repair areas where sloughing has occurred will include the replacement of the cover as well as the placement of any additional erosion controls to limit the potential for future sloughing.

3.2.2.2 Cracks

The locations of any cracks in the soil, asphalt or concrete cover should be noted on the inspection log and site map, including width, length and depth of the crack. The inspector will determine the appropriate maintenance procedure. Small, shallow cracks in the soil cover can be repaired by minor re-grading of the cracked area and re-seeding the area. Larger cracks that appear to extend into the fill material shall be filled with soil similar to that used for construction of the cover soil layer prior to re-seeding. Repairs to the asphalt and/or concrete will be completed when and in the fashion deemed necessary by the inspector.

3.2.2.3 Settlement

Settlement features such as depressions or areas of ponding water shall be re-graded by placing additional soil cover so that surface water drains in the appropriate direction.

3.2.2.4 Erosion Features

Erosion features shall be repaired by backfilling to the original grade with soil and re-seeding. Torn or displaced synthetic erosion control fabric in storm water channels shall be repaired or replaced as directed by the inspector. Additional erosion controls may be installed to limit potential future erosion features.

3.2.2.5 Distressed Vegetation/Turf

Areas of distressed turf shall be re-seeded and a starter fertilizer applied. Large-root growth may also compromise the integrity of the soil cover and shall be discouraged with regular mowing. Reasonable efforts shall be taken to avoid damage to the turf from site maintenance activities and other unintended uses.

3.2.2.6 Damage to Access Controls

If interim fencing and access controls are required, physical discontinuities in fence material shall be repaired; fence posts and foundations that show evidence of structural weakness shall be repaired or replaced as necessary; gates and locks shall be maintained to deter unauthorized entry; and warning signs shall be kept secured in place and trees shall be trimmed to ensure the signs are visible.

A complete list of components to be checked is provided in the Cover Inspection Checklist, presented in Appendix E.

3.3 Media Monitoring Program

The long term media monitoring at the Site is limited to groundwater monitoring. A description of the monitoring well network, scheduling, sampling protocol and the procedures for monitoring well repair, replacement and decommissioning are summarized in the following sections.

3.3.1 Groundwater Monitoring

Groundwater monitoring will be performed on a periodic basis to assess the performance of the remedy. Long-term groundwater monitoring will be performed to evaluate the progress of the enhanced natural attenuation, and will include the collection of groundwater samples from three downgradient monitoring wells (MW-02R, MW-04 and EX-MW-12) and three monitoring wells located in areas of groundwater with elevated chlorinated VOCs (MW-09R, MW-07R and EX-MW-11R). The location of these monitoring wells is shown on Figure 15. Samples collected from these wells will be analyzed for volatile organic compounds (VOCs) appearing on the USEPA Target Compound List (TCL).

As authorized by NYSDEC in a letter dated February 2, 2021, two monitoring wells that had previously been part of the groundwater monitoring program for this Site were eliminated from the program following the 2020 annual monitoring event. These wells include MW-01, which was approved for decommissioning due to the damaged condition of this well, and MW-12. Monitoring of MW-12 was discontinued due to the absence of contaminants of concern at this location during the five year monitoring period from 2016 through 2020. Table 6 presents the analytical results from the groundwater monitoring program at the Site dating back to the 2013 Periodic Review Report, inclusive of MW-01 and MW-12. Figure 11 depicts the locations of the original monitoring wells, as well as the analytical results from the baseline post-remedial groundwater monitoring event conducted on these wells in 2009.

Copies of the test boring logs and monitoring well construction logs for the six wells listed above are included in Appendix F.

The groundwater monitoring program will be conducted on an annual basis for 30 years. The sampling frequency may be modified with the approval NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC. Deliverables for the groundwater monitoring program are specified below.

3.3.1.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log presented in Appendix E. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log. The well sampling logs will serve as the inspection forms for the groundwater monitoring well network.

3.3.1.1.1 Monitoring Well Purging

To collect representative groundwater samples, groundwater wells must be adequately purged prior to sampling. Purging requires the removal of at least one well volume of water from wells with slow recharge rates or the removal of three to five volumes of standing water in rapidly recharging wells.

Procedure

- Remove and unlock the well cover and J-Plug carefully to avoid foreign material from entering the well.
- The interior of the riser pipe should be monitored for organic vapors with a PID. If a measurement greater than 5 ppm is recorded, allow the well to vent until levels drop below 5 ppm before proceeding with purging.
- Using an electronic water level indicator, determine the static water level below the top of the riser according to the procedure detailed in Section 3.3.1.1.2.
- Determine the depth of the monitoring well and subtract the depth to the water level to determine the length of the water column.
- Determine the volume of water in the monitoring well by multiplying the length of the water column by the appropriate conversions found on the Well Sampling Log.
- Calibrate the field water quality meter in accordance with the manufacturer's procedures.

- Chose a purging technique (e.g. dedicated bailer, peristaltic pump, submersible pump, etc.) appropriate for the depth of the monitoring well and for the parameters to be sampled.
- Pour the initial purge volume of water into a container, and place the field water quality meter in the container to measure the pH, temperature, conductivity, salinity and turbidity.
- Record the field parameter measurements on the Well Sampling Log.
- Continue purging, and pour purge water into graduated five-gallon buckets to assist in measuring volumes removed.
- Measure pH, temperature, conductivity, salinity, and turbidity periodically during purging using the field water quality meter.
- Record the volume removed and associated field parameter measurements on the Well Sampling Log form.
- Purging shall continue until three to five well volumes of water have been removed, or, in the case of wells with slow recharge rates, until the well is evacuated to dryness.
- In the event a monitoring well is purged to dryness, then purging should be stopped and the well allowed to recharge to static water levels to the extent practicable before sampling.
- All well purging data shall be recorded on a Well Sampling Log.

3.3.1.1.2 Water Level Monitoring

The groundwater levels measured in the monitoring wells will be used to determine the volume of standing water in the wells and to characterize the groundwater flow direction. Water levels in all monitoring wells will be measured using an electronic water level indicator. The following procedures apply to each of the monitoring wells.

Procedure

- Pre-clean water level probe and lower portion of cable using deionized water and alconox or liquinox followed by a rinsing the cable and probe with deionized water.
- Test water level meter to check batteries and adjust sensitivity.
- Lower probe slowly into monitoring well until the audible alarm sounds, indicating that the probe is in contact with water.
- Read depth to the nearest 0.01 foot from the graduated cable using a surveyed mark on the monitoring well riser as a reference point.
- Repeat the measurement for confirmation and record the water level.

- Remove the cable and probe from the monitoring well, drying the cable and probe with a clean paper towel or disposable wipe.
- Replace J-Plug, protective casing cap or casing lid and lock.

3.3.1.1.3 Groundwater Sampling

Groundwater sampling should be performed as soon as practicable after purging has been completed and the well has recovered sufficiently to sample, or within 24 hours after evacuation if the well recharges slowly. If a well does not contain or yield sufficient volume for all required laboratory analytical testing, a decision will be made to prioritize analyses.

Procedure

- Using an electronic water level indicator, determine the static water level below the top of the riser according to the procedure detailed in Section 3.3.1.1.2.
- Commence with purging using NYSDEC-approved low-flow purging techniques via a peristaltic pump.
- Collect a purge sample and pour into a container. Place the field water quality meter in the container to measure the pH, temperature, conductivity, salinity and turbidity.
- Compare the resulting measurements with those taken at the conclusion of purging to ensure that representative groundwater samples are being collected.
- Continue the careful collection of groundwater and pour the sample directly into the appropriate sample containers in a manner that minimizes agitation and aeration of the sample to the greatest extent possible.
- Carefully pour the groundwater into verifiably clean sample bottles (containing preservatives when required) provided by the laboratory.
- The analytical laboratory contracted to perform the analysis of the samples should provide the required sample containers, as well as specify the appropriate sample volumes.
- All sample bottles will be labeled in the field using a waterproof permanent marker following the procedures outlined in Section 3.3.1.1.4.
- Sample handling, labeling, custody and shipping shall be in accordance with the procedures outlined in Section 3.3.1.1.4.
- After all sample containers have been filled at the well location, measure and record the field parameters within the well using the

field water quality meter to ensure that representative groundwater samples have been collected.
- Record all sampling data on the Well Sampling Log.

3.3.1.1.4 Sampling Handling

Proper sample labeling, handling, packing and shipping will help ensure collected samples are accurate, secure and intact when they arrive at the laboratory for analysis. The following techniques should be implemented.

Sample Labeling

Proper labeling is required to prevent sample misidentification of samples collected in the field and will be performed using the procedures detailed below.

Procedure

- Affix a non-removable (when wet) label to each sample container.
- Cover the label with two-inch cellophane or mylar tape.
- Write the following information on the label with a permanent waterproof marker:

    - Project Site Name
    - Sample Identification Code
    - Project Number
    - Date/Time
    - Sampler's Initials
    - Sample Preservative
    - Analysis Required

Chain-of-Custody

The documentation of sample collection and the method used to standardize the action is referred to as a chain-of-custody (COC). The COC is a legally defensible document that may be utilized as evidence in litigation or administrative hearings by regulatory agencies. The COC procedure is based on the American Standards and Testing Materials (ASTM) Standard Guide for Sampling Chain-of-Custody Procedures (ASTM D 4840-95).

Procedure

COC procedures are essential for the presentation of sample analytical chemistry in the form of an analytical report. Proper COC procedures will minimize the loss or misidentification of samples and may ensure unauthorized persons do not tamper with collected samples.

- The COC should be filled out with all relevant information in the appropriate space on the form.
- Information required at a minimum:
    1. Project site name;
    2. Sample identification;
    3. Project number;
    4. Date and time;
    5. Sampler's signature,
    6. Sample preservation; and,
    7. Required analysis.

- COCs should be completed in indelible ink.
- The COC is typically a carbon copy, which requires the preparer to apply sufficient pressure to mark all other pages.
- The top copy, usually a white original, should be sent to the laboratory with the samples.
- The preparer should retain the bottom copy, and any other carbon copies should be sent to the laboratory with the samples.
- The top copy of the COC should be placed in a zip-type plastic bag and placed in the cooler along with the samples and sealed according to the procedure outlined in next section.

Sample Shipping

The proper shipping of samples will help ensure sample security, by limiting access, integrity, by avoiding breakage, and validity, by maintaining temperature conditions.

Procedure

- Mark the volume level on groundwater sample bottles with a grease pencil.
- Place approximately three inches of cushioning material in the bottom of the cooler.
- Separate bottles with cardboard or bubble-wrap plastic.
- Pack top of bottles with ice in plastic zip-type bags. Ice should originate from a potable water source.

- Place additional cushioning material in cooler as needed.
- Place COC in zip-type plastic bag inside cooler on to the top of packing material and sample bottles.
- Wrap cooler with strapping tape at two locations and secure lid, complete with two custody labels on the cooler.
- Be sure any drain plugs on cooler are closed and sealed with tape.
- Place "this side up" and "fragile" labels on cooler
- Samples should be shipped on the same day as they are collected to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory for analysis.

3.3.1.2 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance. Monitoring wells will be repaired or replaced utilizing the same materials used in the original contraction. The depths and screened intervals will be identical to those used in the original contraction. The monitoring well construction logs for the groundwater monitoring network are included in Appendix F.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.4 Site-Wide Inspection

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During

these inspections, an inspection form will be completed (Appendix E). The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and
- Confirm that site records are up to date.

3.5 Monitoring Quality Assurance/Quality Control

All sampling and analyses will be performed in accordance with the requirements of the Quality Assurance / Quality Control (QA/QC) Plan prepared for the site (Appendix G). Main Components of the QA/QC Plan include:

- QA/QC Objectives for Data Measurement;
- Sampling Program:
  - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
  - Sample holding times will be in accordance with the NYSDEC requirements.
  - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample Tracking and Custody;
- Calibration Procedures:
  - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
  - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures;
- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy,

representativeness, comparability, and completeness for each analytical method;
- Internal QC and Checks;
- QA Performance and System Audits;
- Preventative Maintenance Procedures and Schedules; and
- Corrective Action Measures.

3.6 Monitoring Report Requirements

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-site. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. A letter report will also be prepared [if required by NYSDEC], subsequent to each sampling event. The letter report will include, at a minimum:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (o be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether groundwater conditions have changed since the last reporting event.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table 5 below.

Table 5: Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Soil Cover System Monitoring to occur annually in perpetuity	Annually
Groundwater Monitoring to occur annually for 30 years	Annually

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC

4.0 OPERATION AND MAINTENANCE PLAN

4.1 Introduction

The site remedy does not currently rely on any mechanical systems, such as sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment. However, any potentially new structures constructed on the Site as part of site redevelopment may be equipped with a SSVVS, if warranted. The design of a SSVVS will be dependent upon the size and configuration of any newly constructed buildings on the Site and, as a result, specific mechanical components of this system have not yet been determined. Therefore, the operation and maintenance of such components is not included in this SMP. Upon determination of the size and type of building to be constructed and if warranted based upon the evaluation conducted to determine the potential for vapor intrusion an Operation and Maintenance Plan will be required to be developed and incorporated into this SMP.

5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 Site Inspections

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms for their respective system which are contained in Appendix E. Additionally, a general site-wide inspection form will be completed during the site-wide inspection (see Appendix E). These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The site remedy continues to be protective of public health and the environment and is performing as designed in the RAWP and FER.

5.2 Certification of Engineering and Institutional Controls

After the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York State will prepare the following certification:

For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- Use of the site is compliant with the environmental easement;
- The engineering control systems are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices; and
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner or Owner's Designated Site Representative] for the site.

The signed certification will be included in the Periodic Review Report described below.

5.3 Periodic Review Report

A Periodic Review Report will be submitted to the Department every year, beginning eighteen months after the Certificate of Completion is issued. In the event that the Site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the Site described in Appendix B (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each

certification period. Media sampling results will also incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;
- A site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
    - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
    - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
    - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted in electronic format to the NYSDEC Region 9 Office.

5.4 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts,

shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given site and associated remedial systems. Vulnerability assessments provide information so that the site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

A vulnerability assessment will be conducted subsequent to placement of engineering controls and post-development at the Site. This section provides a summary of vulnerability assessments, and briefly summarizes the vulnerability of the site and/or engineering controls to severe storms/weather events and associated flooding.

The vulnerability assessment should include, but not be limited to, a discussion of potential vulnerabilities to be assessed during periodic reviews, subsequent to placement of engineering controls and post-development at the Site such as the following:

- Flood Plain: Identify whether the site is located in a flood plain, low-lying or low-groundwater recharge area.
- Site Drainage and Storm Water Management: Identify areas of the Site which may flood during severe rain events due to insufficient groundwater recharge capabilities or inadequate storm water management systems.
- Erosion: Identify any evidence of erosion at the Site or areas of the Site which may be susceptible to erosion during periods of severe rain events.
- High Wind: Identify areas of the Site and/or remedial system which may be susceptible to damage from the wind itself or falling objects, such as trees or utility structures during periods of high wind.
- Electricity: Identify the susceptibility of the Site/remedial system to power loss and/or dips/surges in voltage during severe weather events, including lightning strikes, and the associated impact on site equipment and operations.
- Spill/Contaminant Release: Identify areas of the Site and/or remedial system which may be susceptible to a spill or other contaminant release due to storm-related damage caused by flooding, erosion, high winds, loss of power etc.

5.5 Corrective Measures Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

TABLES

TABLE 1, 4A, 4B AND 5 ARE INCLUDED WITHIN THE SMP

TABLE 2

Nature and Extent of Contamination
October 2002 to January 2003

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	2-Methylnaphthalene	33 - 0.45	36.4	0 of 10
	Acenaphthene	34 - 0.032	50	0 of 10
	Acenaphthylene	33 - 0.16	41	0 of 10
	Anthracene	59 - 0.087	50	1 of 10
	Benzo(a)anthracene	140 - 0.24	0.224	10 of 10
	Benzo(a)pyrene	98 - 0.38	0.061	10 of 10
	Benzo(b)fluoranthene	92 - 0.56	1.1	8 of 10
	Benzo(ghi)perylene	24 - 0.098	50	0 of 10
	Benzo(k)fluoranthene	40 - 0.39	1.1	9 of 10
	Bis(2-ethylhexyl)phthalate	33 - 0.32	50	0 of 10
	Butyl benzyl phthalate	33 - 0.16	50	0 of 10
	Carbazole	37 - 0.60	-	0 of 10
	Chrysene	130 - 0.43	0.4	9 of 10
	Dibenzo(a,h)anthracene	20 - 0.83	0.014	10 of 10
	Dibenzofuran	27 - 0.16	6.2	1 of 10
	Fluoranthene	340 - 0.61	50	2 of 10
	Fluorene	40 - 0.25	50	0 of 10
	Indeno(1,2,3-cd)pyrene	34 - 0.15	3.2	4 of 10
	Naphthalene	20 - 0.012	13	1 of 10
	Phenanthrene	280 - 0.28	50	2 of 10
	Pyrene	250 - 0.45	50	1 of 10
PCB/Pesticides	Aroclor 1260	0.32 - ND	10	0 of 9
Metals	Aluminum	24,400J - 6,360J	10,800 [1]	9 of 20
	Antimony	12.8J - 0.81J	0.94 [1]	of 20
	Arsenic	23.8 - 3.4J	12.70 [1]	13 of 20
	Barium	798J - 66.9J	300	8 of 20
	Beryllium	4.9 - 0.61J	0.56 [1]	18 of 20
	Cadmium	118 - 1.2J	10	20 of 20
	Calcium	153,000J - 6,690J	3,000 [1]	19 of 20
	Chromium	966J - 52.4J	29.4 [1]	20 of 20

TABLE 2

Nature and Extent of Contamination

October 2002 to January 2003

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
	Cobalt	25.6J - 5.7J	30	0 of 20
	Copper	717J - 47.3J	25	20 of 20
	Cyanide	5.2 - ND	-	0 of 20
	Iron	272,000J - 25,000J	26,300 (1)	19 of 20
	Lead	5,940J - 91.6J	400	11 of 20
	Magnesium	33,000J - 2,540J	2,890 (1)	18 of 20
	Manganese	14,100J - 935J	430 (1)	20 of 20
	Mercury	2.4 - 0.06	0.10	16 of 20
	Nickel	482J - 38.7J	27.3 (1)	20 of 20
	Potassium	2,180J - 333J	1,100 (1)	10 of 20
	Selenium	6.9 - 1.7	2	16 of 20
	Silver	15.5 - 0.20B	0.14 (1)	20 of 20
	Sodium	5,620 - 109B	111 (1)	19 of 20
	Thallium	0.46J - ND	1 (1)	0 of 20
	Vanadium	45.1J - 9.2J	150 (1)	0 of 20
	Zinc	154,000J - 1,430J	274 (1)	20 of 20

TABLE 2

Nature and Extent of Contamination
October 2002 to January 2003

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	2-Methylnaphthalene	33 - 0.45	36.4	0 of 10
	Acenaphthene	34 - 0.032	50	0 of 10
	Acenaphthylene	33 - 0.16	41	0 of 10
	Anthracene	59 - 0.087	50	1 of 10
	Benzo(a)anthracene	140 - 0.24	0.224	10 of 10
	Benzo(a)pyrene	98 - 0.38	0.061	10 of 10
	Benzo(b)fluoranthene	92 - 0.56	1.1	8 of 10
	Benzo(ghi)perylene	24 - 0.098	50	0 of 10
	Benzo(k)fluoranthene	40 - 0.39	1.1	9 of 10
	Bis(2-ethylhexyl)phthalate	33 - 0.32	50	0 of 10
	Butyl benzyl phthalate	33 - 0.16	50	0 of 10
	Carbazole	37 - 0.60	-	0 of 10
	Chrysene	130 - 0.43	0.4	9 of 10
	Dibenzo(a,h)anthracene	20 - 0.83	0.014	10 of 10
	Dibenzofuran	27 - 0.16	6.2	1 of 10
	Fluoranthene	340 - 0.61	50	2 of 10
	Fluorene	40 - 0.25	50	0 of 10
	Indeno(1,2,3-cd)pyrene	34 - 0.15	3.2	4 of 10
	Naphthalene	20 - 0.012	13	1 of 10
	Phenanthrene	280 - 0.28	50	2 of 10
	Pyrene	250 - 0.45	50	1 of 10
PCB/Pesticides	Aroclor 1260	0.32 - ND	10	0 of 9
Metals	Aluminum	24,400J - 6,360J	10,800 [1]	9 of 20
	Antimony	12.8J - 0.81J	0.94 [1]	of 20
	Arsenic	23.8 - 3.4J	12.70 [1]	13 of 20
	Barium	798J - 66.9J	300	8 of 20
	Beryllium	4.9 - 0.61J	0.56 [1]	18 of 20
	Cadmium	118 - 1.2J	10	20 of 20
	Calcium	153,000J - 6,690J	3,000 [1]	19 of 20

TABLE 2

Nature and Extent of Contamination

October 2002 to January 2003

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
	Chromium	966J - 52.4J	29.4 [(1)]	20 of 20
	Cobalt	25.6J - 5.7J	30	0 of 20
	Copper	717J - 47.3J	25	20 of 20
	Cyanide	5.2 - ND	-	0 of 20
	Iron	272,000J - 25,000J	26,300 [(1)]	19 of 20
	Lead	5,940J - 91.6J	400	11 of 20
	Magnesium	33,000J - 2,540J	2,890 [(1)]	18 of 20
	Manganese	14,100J - 935J	430 [(1)]	20 of 20
	Mercury	2.4 - 0.06	0.10	16 of 20
	Nickel	482J - 38.7J	27.3 [(1)]	20 of 20
	Potassium	2,180J - 333J	1,100 [(1)]	10 of 20
	Selenium	6.9 - 1.7	2	16 of 20
	Silver	15.5 - 0.20B	0.14 [(1)]	20 of 20
	Sodium	5,620 - 109B	111 [(1)]	19 of 20
	Thallium	0.46J - ND	1 [(1)]	0 of 20
	Vanadium	45.1J - 9.2J	150 [(1)]	0 of 20
	Zinc	154,000J - 1,430J	274 [(1)]	20 of 20

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	1,1- Dichloroethene	0.001 - ND	0.4	0 of 28
	1,2 - Dichloroethene (T)	280 - ND	0.3	4 of 28
	2-Butanone	0.010 - ND	0.3	0 of 28
	Benzene	0.031 - ND	0.06	0 of 28
	Ethylbenzene	0.019 - ND	5.5	0 of 28
	Toluene	0.001 - ND	1.5	0 of 28
	Xylenes(T)	0.068 - ND	1.2	0 of 28
	Trichloroethene	200 - ND	0.7	1 of 28
	Vinyl Chloride	0.28 - ND	0.2	0 of 28
Semi-volatile Organic Compounds (SVOCs)	2-Methylnaphthalene	9.9 - ND	36.4	0 of 28
	4-Nitroaniline	0.063 - ND	-	0 of 28

TABLE 2

Nature and Extent of Contamination

October 2002 to January 2003

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
	Acenaphthene	0.630 - ND	50	0 of 28
	Acenaphthylene	0.630 - ND	41	0 of 28
	Anthracene	1.3 - ND	50	0 of 28
	Benzo(a)anthracene	4.5 - ND	0.224	9 of 28
	Benzo(a)pyrene	2.4 - ND	0.061	14 of 28
	Benzo(b)fluoranthene	3.6 - ND	1.1	3 of 28
	Benzo(ghi)perylene	2.7 - ND	50	0 of 28
	Benzo(k)fluoranthene	4.1 - ND	1.1	3 of 28
	Bis(2-ethylhexyl)phthalate	1.1 - ND	50	0 of 28
	Carbazole	0.45 - ND	-	0 of 28
	Chrysene	4.8 - 0.034	0.4	7 of 28
	Dibenzo(a,h)anthracene	1.3 - ND	0.014	13 of 28
	Dibenzofuran	0.51 - ND	6.2	0 of 28
	Fluoranthene	10 - 0.013	50	0 of 28
	Fluorene	1.0 - ND	50	0 of 28
	Indeno(1,2,3-cd)pyrene	2.9 - ND	3.2	0 of 28
	Naphthalene	3.4 - ND	13	0 of 28
	Phenanthrene	4.9 - ND	50	0 of 28
	Pyrene	8.7 - ND	50	0 of 28
PCB/Pesticides	4,4'-DDE	0.030	2.1	0 of 28
	4,4'-DDT	0.038	2.1	0 of 28
	Aroclor 1254	0.66	10	0 of 28
Metals	Aluminum	13,500J - 5,390J	10,800 (1)	13 of 28
	Antimony	13J - 0.31J	0.94 (1)	7 of 28
	Arsenic	23.4 - 5.4J	12.70 (1)	12 of 28
	Barium	5,860 - 51.4J	300	1 of 28
	Beryllium	2.60 - 0.24J	0.56 (1)	11 of 28
	Cadmium	2.8 - 0.18J	10	0 of 28
	Calcium	141,000J - 1,470J	3,000 (1)	22 of 28
	Chromium	630J - 13.3J	29.4 (1)	4 of 28
	Cobalt	18.3J - 5.3J	30	0 of 28
	Copper	291J - 18.1J	25	21 of 28

TABLE 2

Nature and Extent of Contamination

October 2002 to January 2003

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
	Cyanide	0.88J - ND	-	0 of 28
	Iron	150,000J - 18,200J	26,300 (1)	15 of 28
	Lead	192J - 13J	400	0 of 28
	Magnesium	38,900J - 813J	2,890 (1)	20 of 28
	Manganese	10,300J - 155J	430 (1)	12 of 28
	Mercury	0.30 - ND	0.10	7 of 28
	Nickel	505J - 14J	27.3 (1)	23 of 28
	Potassium	2,400J - 645J	1,100 (1)	16 of 28
	Selenium	5.3 - 0.75J	2	7 of 28
	Silver	0.43 - ND	0.14 (1)	6 of 28
	Sodium	437 J- 59.7J	111 (1)	19 of 28
	Thallium	1.2J - ND	1 (1)	3 of 28
	Vanadium	48.1J - 8.5J	150 (1)	0 of 28
	Zinc	1090J - 62.8J	274 (1)	4 of 28

SEDIMENTS (Hyde Creek)	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[c] (ppm)[a]	Frequency of Exceeding SCG
Semi-volatile Organic Compounds (SVOCs)	2-Methylnaphthalene	ND - 0.026J	NA	0 of 2
	Acenaphthene	ND - 0.17J	140	0 of 2
	Acenaphthylene	ND - 0.011J	NA	0 of 2
	Anthracene	0.016J - 0.760	NA	0 of 2
	Benzo(a)anthracene	0.072J - 1.2	1.3	0 of 2
	Benzo(a)pyrene	0.065J - 0.82	1.3	0 of 2
	Benzo(b)fluoranthene	0.081J - 1.7	1.3	0 of 2
	Benzo(ghi)perylene	0.040J - 0.22J	1.3	0 of 2
	Benzo(k)fluoranthene	ND - 0.045J	1.3	0 of 2
	Carbazole	ND - 0.43	NA	0 of 2
	Chrysene	0.081J - 0.14	NA	0 of 2
	Dibenzo(a,h)anthracene	0.015J - 0.2J	NA	0 of 2
	Dibenzofuran	ND - 0.12	NA	0 of 2
	Fluoranthene	0.16J - 2.7	1020	0 of 2
	Fluorene	ND - 0.28J	NA	0 of 2

TABLE 2

Nature and Extent of Contamination

October 2002 to January 2003

SEDIMENTS (Hyde Creek)	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[c] (ppm)[a]	Frequency of Exceeding SCG
	Indeno(1,2,3-cd)pyrene	0.036J - 0.37J	1.3	0 of 2
	Naphthalene	ND - 0.012J	NA	0 of 2
	Phenanthrene	0.072J - 3.2	120	0 of 2
	Pyrene	0.130J - 2.4	NA	0 of 2
Pesticides	4,4'-DDT	ND - 0.0021J	1.0	0 of 2
Metals	Aluminum	14,800J - 23,700J	LEL -NA	0 of 2
			SEL -NA	0 of 2
	Arsenic	7.7J - 13.60 J	LEL - 6	2 of 2
			SEL - 33	0 of 2
	Barium	94.8J - 106J	LEL -NA	0 of 2
			SEL -NA	0 of 2
	Chromium	15J - 34J	LEL -26	1 of 2
			SEL -110	0 of 2
	Cobalt	10.4J - 11.9J	LEL - NA	0 of 2
			SEL - NA	0 of 2
	Copper	124J - 172J	LEL - 16	2 of 2
			SEL - 110	2 of 2
	Iron	28,200 - 57,500	LEL - 2%	0 of 2
			SEL - 4%	0 of 2
	Lead	40.8J - 47.9J	LEL -31	2 of 2
			SEL - 110	0 of 2
	Magnesium	3,240J - 3,680J	LEL - NA	0 of 2
			SEL - NA	0 of 2
	Manganese	305J - 816J	LEL - 460	1 of 2
			SEL - 1100	0 of 2
	Nickel	27.10J - 45.1J	LEL -16	2 of 2
			SEL - 50	0 of 2
	Potassium	947J - 1330J	LEL -NA	0 of 2
			SEL - NA	0 of 2
	Selenium	2.7 - 2.8	LEL - NA	0 of 2
			SEL - NA	0 of 2
	Vanadium	14.30J - 18.9J	LEL- NA	0 of 2

TABLE 2

Nature and Extent of Contamination

October 2002 to January 2003

SEDIMENTS (Hyde Creek)	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[c] (ppm)[a]	Frequency of Exceeding SCG
			SEL - NA	0 of 2
	Zinc	233J - 341J	LEL - 120	2 of 2
			SEL -270	1 of 2

UPPER (Interface) GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	1,1- Dichloroethene	ND - 15	5	1 of 13
	1,2 - Dichloroethene (T)	ND - 41,000	5	6 of 13
	Benzene	ND - 72	5	5 of 13
	Ethylbenzene	ND - 15	5	3 of 13
	Toluene	ND - 99	5	5 of 13
	Xylenes(T)	ND - 75	5	6 of 13
	Trichloroethene	ND - 150,000	5	4 of 13
	Vinyl Chloride	ND - 9,800	5	6 of 13
Semi-volatile Organic Compounds (SVOCs)	Acenaphthene	ND - 1J	20	0 of 13
	Anthracene	ND - 1J	50	0 of 13
	Benzo(a) anthracene	ND - 1J	0.002	2 of 13
	Benzo(a)pyrene	ND - 1J	NA	0 of 13
	Benzo(b)fluoranthene	ND - 0.8J	0.002	2 of 13
	Benzo(ghi)perylene	ND - 0.6J	NA	0 of 13
	Benzo(k)fluoranthene	ND - 0.8J	0.002	2 of 13
	Carbazole	ND - 0.6J	NA	0 of 13
	Chrysene	ND - 1J	0.002	2 of 13
	Dibenzofuran	ND - 2J	NA	0 of 13
	Fluoranthene	ND - 3J	50	0 of 13
	Fluorene	ND - 2J	50	0 of 13
	Indeno(1,2,3-cd)pyrene	ND - 0.6J	0.002	1 of 13
	Naphthalene	ND - 3J	10	0 of 13
	Phenanthrene	ND - 5	50	0 of 13
	Pyrene	ND - 3J	50	0 of 13

TABLE 2

Nature and Extent of Contamination

October 2002 to January 2003

UPPER (Interface) GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Metals	Aluminum	ND - 751	100	3 of 13
	Arsenic	ND - 23.2	25	0 of 13
	Barium	ND - 350	1,000	0 of 13
	Iron	ND - 2,110	300	4 of 13
	Lead	ND - 4.20	25	0 of 13
	Magnesium	ND - 68,500	35,000	6 of 13
	Manganese	ND - 737	300	6 of 13
	Selenium	ND - 17.9	10	5 of 13

LOWER (Bedrock) GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	1 J - 73	5	1 of 2
	Chloroform	ND - 2 J	5	0 of 2
	Ethylbenzene	ND - 8 J	5	1 of 2
	Toluene	ND - 68	5	1 of 2
	Xylenes (T)	ND - 49	5	1 of 2
	Trichloroethene	ND - 8 J	5	0 of 2
Metals	Arsenic	13.0 J - 18.10	25	0 of 2
	Barium	308 - 318	1,000	0 of 2
	Iron	250 - 473	300	1 of 2
	Magnesium	8,970 - 9,630 J	35,000	0 of 2
	Manganese	64.6 - 80.6	300	0 of 2
	Selenium	ND - 16.6	10	1 of 2

SURFACE WATER (Hyde Creek)	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Semi-volatile Organic Compounds (SVOCs)	Di-n-butyl-phthalate	0.50 J - 0.40 J	50	0 of 2
	Di-n-octyl-phthalate	ND - 0.60 J	50	0 of 2
Metals	Iron	355 - 395	300	2 of 2
	Magnesium	15,500 - 15,700	35,000	0 of 2

TABLE 2

Nature and Extent of Contamination

October 2002 to January 2003

SURFACE WATER (Hyde Creek)	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
	Manganese	81.10 - 81.90	300	0 of 2
	Potassium	8,530 - 8,620	NA	0 of 2
	Sodium	59,400 - 59,400	20,000	2 of 2

CONCRETE /SURFACE SOIL (Transformer Room Area)	Contaminants of Concern	Concentration Range Detected (ppm)	SCG[b] (ppm)	Frequency of Exceeding SCG
PCBs	Aroclor 1260	ND - 100J	1.0	1 of 13
	Aroclor 1254	ND - 3.8	1.0	1 of 13
	Aroclor 1221	ND - 36	1.0	2 of 13
	Aroclor 1232	ND - 31	1.0	1 of 13
	Aroclor 1248	ND - 4.8	1.0	3 of 13
	Aroclor 1016	ND - 58	1.0	1 of 13
	Aroclor 1242	ND - 1,000	1.0	1 of 13

SEDIMENTS/SOIL (Building Sumps/Drains)	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	1,1-Dichloroethane	ND - 0.88J	0.2	1 of 6
	1,1-Dichloroethene	ND - 0.012J	0.4	0 of 6
	1,2-Dichloroethene(T)	ND - 15	0.3	2 0f 6
	Carbon Disulfide	ND - 0.011J	2.7	0 of 6
	Trichloroethene	ND - 1.1J	0.7	1 of 6
	Vinyl Chloride	ND - 0.2	0.2	1 of 6
Semi-volatile Organic Compounds (SVOCs)	2-Methylnaphthalene	ND - 0.15J	36.4	0 of 6
	4-Chloroaniline	ND - 0.21J	0.22	0 of 6
	Acenaphthene	0.031J - 8.6J	50	0 of 6
	Acenaphthylene	ND - 0.45J	41	0 of 6
	Anthracene	0.079J - 10.0J	50	0 of 6

TABLE 2

Nature and Extent of Contamination
October 2002 to January 2003

SEDIMENTS/SOIL (Building Sumps/Drains)	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
	Benzo(a)anthracene	0.31J - 46.0	0.224	6 of 6
	Benzo(a)pyrene	0.35J - 43.0	0.061	6 of 6
	Benzo(b)fluoranthene	0.92 - 52.0	1.1	5 of 6
	Benzo(ghi)perylene	0.13 J - 19.0J	50	0 of 6
	Benzo(k)fluoranthene	ND - 41.0	1.1	4 of 6
	Carbazole	0.07J - 69.0J	NA	0 of 6
	Chrysene	0.43- 60.0	0.4	6 of 6
	Dibenzo(a,h)anthracene	0.056J - 9.9J	0.014	6 of 6
	Dibenzofuran	0.023J - 3.6J	6.2	0 of 6
	Fluoranthene	0.079 - 100	50	2 of 6
	Fluorene	0.034J - 7.3J	50	0 of 6
	Indeno(1,2,3-cd)pyrene	0.14J - 20.0J	3.2	3 of 6
	Naphthalene	0.024J - 5.9J	13	0 of 6
	Phenanthrene	0.41J - 39.0	50	0 of 6
	Pyrene	0.82 - 65.0	60	1 of 6
PCB/Pesticides	4,4'-DDE	ND - 0.50	2.1	0 of 6
	4,4'-DDT	ND - 1.5J	2.1	0 of 6
	Endrin ketone	ND - 0.10	NA	0 of 6
	Arochlor 1242	ND - 0.03J	1	0 of 6
	Arochlor 1242	ND - 13	1	1 of 6
Metals	Aluminum	6,910J - 16,000J	10,800	3 of 6
	Antimony	6.7J - 48.7J	0.94	6 of 6
	Arsenic	18.10J - 44.2J	12.70	6 of 6
	Barium	162J - 1,880J	300	5 of 6
	Beryllium	0.64J - 2.4	0.56	6 of 6
	Cadmium	3.0 - 44.3	10	2 of 6
	Chromium	75.5J - 2,440J	29.4	6 of 6
	Cobalt	14J - 1,160J	30	2 of 6
	Copper	294J - 1,190J	25	6 of 6
	Cyanide	0.53J - 7.3J	NA	0 of 6
	Iron	60,700J - 273,000J	26,300	6 of 6
	Lead	91.2J - 18,300	188	5 of 6

TABLE 2

Nature and Extent of Contamination

October 2002 to January 2003

SEDIMENTS/SOIL (Building Sumps/Drains)	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
	Magnesium	4,380J - 28,900	2,890	6 of 6
	Manganese	3,210J - 34,300J	430	6 of 6
	Mercury	0.01J - 2.5J	0.10	5 of 6
	Nickel	174J - 6,290J	27.30	5 of 6
	Potassium	876J - 2,170J	1,100	4 of 6
	Selenium	3.50 - 17.6	2	6 of 6
	Silver	ND - 19.7	0.14	2 of 6
	Thallium	ND	1	0 of 6
	Vanadium	21.4J - 47.2J	150	0 of 6
	Zinc	3,250J - 87,100J	274	6 of 6

Off-site Background (Surface Soil, 0-2") (Detected Parameters Only)	Contaminants of Concern	Sample #1	Sample# 2	SCG[b] (ppm)[a]
Semi-volatile Organic Compounds (SVOCs)	2-Methylnaphthalene	0.088 J	0.024 J	36.4
	Acenaphthene	ND	0.010 J	50
	Acenaphthylene	0.05 J	0.025 J	41
	Anthracene	0.048 J	0.05 J	50
	Benzo(a)anthracene	0.25 J	0.28 J	0.224
	Benzo(a)pyrene	0.32 J	0.33 J	0.061
	Benzo(b)fluoranthene	0.46	0.43	1.1
	Benzo(ghi)perylene	0.18 J	0.16 J	50
	Benzo(k)fluoranthene	0.28 J	0.26 J	1.1
	Bis(2-ethylhexyl)phthalate	0.078 J	0.068 J	50
	Butyl benzyl phthalate	ND	0.012 J	50
	Carbazole	0.037 J	0.042 J	-
	Chrysene	0.34 J	0.38	0.4
	Dibenzo(a,h)anthracene	0.8 J	0.073 J	0.014
	Dibenzofuran	0.038 J	0.014 J	6.2
	Fluoranthene	0.63	0.8	50
	Fluorene	0.015 J	0.021 J	50
	Indeno(1,2,3-cd)pyrene	0.18 J	0.16 J	3.2

TABLE 2

Nature and Extent of Contamination
October 2002 to January 2003

Off-site Background (Surface Soil, 0-2") (Detected Parameters Only)	Contaminants of Concern	Sample #1	Sample# 2	SCG[b] (ppm)[a]
	Naphthalene	0.054 J	0.015 J	13
	Phenanthrene	0.35 J	0.41	50
	Pyrene	0.45	0.56	50
Metals	Aluminum	10,800 J	9,470 J	SB
	Antimony	ND	ND	SB
	Arsenic	12.7 J	11.2 J	7.5 or SB
	Barium	66.9 J	126 J	300 or SB
	Beryllium	ND	0.56 J	0.16 or SB
	Cadmium	ND	0.67	10 or SB
	Calcium	3,000 J	2,690 J	SB
	Chromium	14.6 J	29.4 J	10 or SB
	Cobalt	ND	9.2 J	30 or SB
	Copper	24.4 J	56 J	25 or SB
	Iron	19,700 J	26,300 J	2,000 or SB
	Lead	127 J	188 J	SB
	Magnesium	1,330 J	2,890 J	SB
	Manganese	176 J	443 J	SB
	Mercury	0.12	0.96	0.1
	Nickel	16.5 J	27.3 J	13 or SB
	Potassium	479 J	1,100 J	SB
	Selenium	1.4	1.3	2 or SB
	Sodium	111 J	88.7 J	SB
	Vanadium	22.3 J	18.1 J	150 or SB
	Zinc	183 J	274 J	20 or SB

TABLE 2

Nature and Extent of Contamination

October 2002 to January 2003

Notes:

J - designation on analytical results signifies that result was detected at a level at or below the sample detection limit.
SB - Site Background
(T) - includes all analytes
(1) - Site Background value used as basis for guidance value

[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
ug/m^3 = micrograms per cubic meter

[b] SCG = standards, criteria, and guidance values;
Sediments: NYSDEC Div. Fish & Wildlife, *Technical Guidance for Screening Contaminated Sediments* dated Jan. 1999.
Soil: NYSDEC - Div. Env. Remediation TAGM 4046 based on Site Background values
Water: NYSDEC - Div. Of Water TOGS 1.1.1

[c] LEL = Lowest Effects Level and SEL = Severe Effects Level. A sediment is considered to be contaminated if either of these criteria is exceeded. If both criteria are exceeded, the sediment is severely impacted. If only the LEL is exceeded, the impact is considered to be moderate.

TABLE 3A
FORMER ROBLIN STEEL SITE
Remaining Surface Soil Contamination

PARAMETER	UNRESTRICTED SCOs	UNITS	RSS-SS01-S-O	RSS-SS08-S-O	RSS-SS09-S-O	RSS-SS10-S-O	RSS-SS14-S-O	RSS-SS18-S-O	RSS-SS19-S-O	RSS-SS20-S-O	RSS-SS23-S-O	RSS-SS25-S-O	RSS-SS25-D12-S-O
TAL - Metals (ppm)													
Aluminum	-	MG/KG	15,600	3,020	9,400	24,400	6,360	10,300	19,700	11,900	6,730	8,840	10,200
Antimony	-	MG/KG	8	12.8	3.4	5.6	0.81	6.4	5.9	4.8		4.20	0.72
Arsenic	13	MG/KG	11.7	3.4	16.7	10.9	9.5	16.2	7.3	13.9	6.2	11.7	12.5
Barium	350	MG/KG	159	112	192	245	75.2	798	214	303	109	145	85.2
Beryllium	7.2	MG/KG	3.10	0.23	0.67	4.8	0.34	0.79	3.50	1.60	0.36	1.10	0.64
Cadmium	2.5	MG/KG	3.7	3.4	7.4	2.5	1.2	3.4	1.8	2.2	2.3	31	1.7
Calcium	-	MG/KG	97,000	6,690	41,400	157,000	2,460	30,800	131,000	65,800	4,000	46,400	3,190
Chromium	30	MG/KG	327	116	135	212	52.4	439	431	265	51.6	223	27.2
Cobalt	-	MG/KG	12.3	3.2	14.5	9.0	7.1	16.0	6.0	11.3	7.1	7.6	12.5
Copper	50	MG/KG	214	50.90	133	79.2	47.3	264	91.3	121	63.4	205	49.9
Cyanide	27	MG/KG			0.82			1.20					
Iron	-	MG/KG	177,000	25,000.00	65,600	41,400	40,300	149,000	34,200	91,000	33,200	72,500	30,800
Lead	63	MG/KG	115	723	299	214	91.6	549	112	168	166	1,460	89.2
Magnesium	-	MG/KG	21,500	2,560	12,700	30,600	2,540	11,700	24,800	12,500	3,050	11,400	3,860
Manganese	1,600	MG/KG	3,760	1,480	2,040	2,950	935	6,770	5,260	3,540	1,080	7,590	664
Mercury	0.18	MG/KG	0.06	0.20	0.06	0.25	0.09	0.33	0.10	0.43	0.07	0.68	0.04
Nickel	30	MG/KG	177	66.6	123	116	38.7	298	162	134	33.6	68.6	37.2
Potassium	-	MG/KG	1,210	333	2,180	1,940	798	768	1,730	1,290	696	769	1,110
Selenium	3.9	MG/KG	2.30	1.80	4.10	2.80	1.7	4.3	2.9	3.3	1.2	3.4	0.75
Silver	2	MG/KG	1	1	1	0	0.20	2.80	0.41	0.53		3.10	0.33
Sodium	-	MG/KG	660	348	1,280	778	109	300	638	345	159	1,800	109
Vanadium	-	MG/KG	14.8	9.2	17.9	20.8	12.9	30.6	28.3	41.2	11.6	34.3	16.3
Zinc	109	MG/KG	1,650	1,690	8,880	1,640	1,090	2,490	1,430	1,630	2,300	30,400	1,480
Volatiles (ppb)													
Acetone	50	UG/KG											
Chloromethane	-	UG/KG											
Methylene chloride	50	UG/KG											
Total VOCs (ppb)	**10,000**	UG/KG	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TABLE 3A
FORMER ROBLIN STEEL SITE
Remaining Surface Soil Contamination

PARAMETER	UNRESTRICTED SCOs	UNITS	RSS-SS01-S-O	RSS-SS08-S-O	RSS-SS09-S-O	RSS-SS10-S-O	RSS-SS14-S-O	RSS-SS18-S-O	RSS-SS19-S-O	RSS-SS20-S-O	RSS-SS23-S-O	RSS-SS25-S-O	RSS-SS25-D12-S-O
Semi-Volatiles (ppb)													
2-Methylnaphthalene	-	UG/KG						45		57			
Acenaphthene	20,000	UG/KG						49	180	97			
Acenaphthylene	100,000	UG/KG						250	74	260			
Anthracene	100,000	UG/KG						260	550	380			
Benzo(a)anthracene	1,000	UG/KG					240	1,400	2,600	1,900			
Benzo(a)pyrene	1,000	UG/KG					230	1,300	2,500	2,300			
Benzo(b)fluoranthene	1,000	UG/KG					640	3,400	2,400	2,500			
Benzo(ghi)perylene	100,000	UG/KG					140	690	1,800	1,600			
Benzo(k)fluoranthene	800	UG/KG							2,500	1,800			
Bis(2-ethylhexyl) phthalate	-	UG/KG											
Butyl benzyl phthalate	-	UG/KG						49					
Carbazole	-	UG/KG						93	310	160			
Chrysene	1,000	UG/KG					390	1,700	3,000	2,100			
Dibenzo(a,h)anthracene	330	UG/KG					49	420	890	720			
Dibenzofuran	-	UG/KG							81	62			
Di-n-butyl phthalate	-	UG/KG											
Fluoranthene	100,000	UG/KG					610	2,900	6,500	4,100			
Fluorene	30,000	UG/KG						58	160	96			
Indeno(1,2,3-cd)pyrene	500	UG/KG					150	700	1,900	1,600			
Naphthalene	12,000	UG/KG						84	56	56			
Phenanthrene	100,000	UG/KG					280	1,200	3,200	1,900			
Pyrene	100,000	UG/KG					450	1,900	5,100	3,300			
Total SVOCs (ppb)	**500,000**	UG/KG	**0**	**0**	**0**	**0**	**3,179**	**16,498**	**33,801**	**24,988**	**0**	**0**	**0**
Pesticides / PCBs (ppb)													
4,4'-DDE	3	UG/KG					2.0	6.5		9.7			
4,4'-DDT	3	UG/KG					5.4	34		33			
alpha-Chlordane	94	UG/KG								2			
Aroclor 1248	100	UG/KG											
Aroclor 1260	100	UG/KG						140					
Endosulfan II	2,400	UG/KG						2					
Endrin ketone	-	UG/KG							23				
Heptachlor epoxide	-	UG/KG								3.20			
Leachable pH	-	S.U.					7.14	8.42	8.10	8.08	7.62	7.95	7.44

TABLE 3A
FORMER ROBLIN STEEL SITE
Remaining Surface Soil Contamination

PARAMETER	UNRESTRICTED SCOs	UNITS	RSS-SS26-D12-S-O	RSS-SS28-D12-S-O	RSS-SS29-S-O	RSS-SS30-S-O	RSS-SS32-S-O	RSS-SS38-D12-S-O	RSS-SS39-S-O	RSS-SS40-S-O	RSS-SS41-D12-S-O	RSS-SS42-D12-S-O	RSS-SS43-D12-S-O
TAL - Metals (ppm)													
Aluminum	-	MG/KG	13,300	8,480	22,200	18,400			16,200	19,100	7,110	25,200	8,660
Antimony	-	MG/KG	0.71	1.60	2.40				8.30	6.80	2.00	1.7	8
Arsenic	13	MG/KG	7.7	9.4	6.6	10.2			5.6	8.6	7.8	4.6	36
Barium	350	MG/KG	137	108	288	226			313	189	86.2	244	180
Beryllium	7.2	MG/KG	1.90	0.43	4.50	3.60			1.80	3.90	0.39	5	1.3
Cadmium	2.5	MG/KG	3	8.3	9.7	3.2			5.5	16	6.8	4	33
Calcium	-	MG/KG	73,100	8,260	156,000	123,000			45,500	137,000	8,080	163,000	97,100
Chromium	30	MG/KG	26.4	90.4	130	145			66.1	194	63.5	101	343
Cobalt	-	MG/KG	6.4	6.7	5	7.7			3.6	5.7	6.1	3.1	8.4
Copper	50	MG/KG	37.1	70.7	89.7	144			73.7	162	67.8	55.5	271
Cyanide	27	MG/KG											
Iron	-	MG/KG	19,800	36,200	53,700	148,000			25,700	88,700	27,900	31,600	128,000
Lead	63	MG/KG	131	377	435	169			566	679	598	176	1,200
Magnesium	-	MG/KG	14,000	4,840	34,600	27,000			20,800	26,800	5,210	41,700	13,000
Manganese	1,600	MG/KG	1,960	2,130	5,030	3,700			7,670	5,860	2,750	3,570	8,510
Mercury	0.18	MG/KG	0.11	0.10	0.14	0.06			0.19	0.63	0.06	0.1	0.4
Nickel	30	MG/KG	24	29.6	48.4	80.1			26.8	84.9	24.8	39.4	137
Potassium	-	MG/KG	1,640	652	1,670	1,380			1,320	1,600	644	2,050.0	580.0
Selenium	3.9	MG/KG	1.3		2.3	1.7			3.2	2.9	1.6	2.6	2.2
Silver	2	MG/KG	0.24	0.97	0.66				0.29	1.80	0.81	0.56	4.70
Sodium	-	MG/KG	436	300	1,230	768			938	1,930	664	1,260	4,160
Vanadium	-	MG/KG	12.9	15	13.4	18.4			14.9	12.4	13.3	8.5	14.9
Zinc	109	MG/KG	1,930	5,000	11,200	3,800			6,630	27,000	11,700	7,270.0	76,200.0
Volatiles (ppb)													
Acetone	50	UG/KG											
Chloromethane	-	UG/KG											
Methylene chloride	50	UG/KG											
Total VOCs (ppb)	**10,000**	UG/KG	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TABLE 3A
FORMER ROBLIN STEEL SITE
Remaining Surface Soil Contamination

PARAMETER	UNRESTRICTED SCOs	UNITS	RSS-SS26-D12-S-O	RSS-SS28-D12-S-O	RSS-SS29-S-O	RSS-SS30-S-O	RSS-SS32-S-O	RSS-SS38-D12-S-O	RSS-SS39-S-O	RSS-SS40-S-O	RSS-SS41-D12-S-O	RSS-SS42-D12-S-O	RSS-SS43-D12-S-O
Semi-Volatiles (ppb)													
2-Methylnaphthalene	-	UG/KG											
Acenaphthene	20,000	UG/KG											
Acenaphthylene	100,000	UG/KG											
Anthracene	100,000	UG/KG						1,500					
Benzo(a)anthracene	1,000	UG/KG						3,100					
Benzo(a)pyrene	1,000	UG/KG					1,400	2,500	1,800				
Benzo(b)fluoranthene	1,000	UG/KG						2,700					
Benzo(ghi)perylene	100,000	UG/KG											
Benzo(k)fluoranthene	800	UG/KG						2,000					
Bis(2-ethylhexyl) phthalate	-	UG/KG											
Butyl benzyl phthalate	-	UG/KG											
Carbazole	-	UG/KG											
Chrysene	1,000	UG/KG					1,600	2,700	1,900				
Dibenzo(a,h)anthracene	330	UG/KG											
Dibenzofuran	-	UG/KG											
Di-n-butyl phthalate	-	UG/KG											
Fluoranthene	100,000	UG/KG					3,200	5,900	4,600				
Fluorene	30,000	UG/KG											
Indeno(1,2,3-cd)pyrene	500	UG/KG											
Naphthalene	12,000	UG/KG											
Phenanthrene	100,000	UG/KG					2,300	4,500	3,100				
Pyrene	100,000	UG/KG					2,700	4,100	2,900				
Total SVOCs (ppb)	**500,000**	UG/KG	**0**	**0**	**0**	**0**	**11,200**	**29,000**	**14,300**	**0**	**0**	**0**	**0**
Pesticides / PCBs (ppb)													
4,4'-DDE	3	UG/KG											
4,4'-DDT	3	UG/KG											
alpha-Chlordane	94	UG/KG											
Aroclor 1248	100	UG/KG											
Aroclor 1260	100	UG/KG											
Endosulfan II	2,400	UG/KG											
Endrin ketone	-	UG/KG											
Heptachlor epoxide	-	UG/KG											
Leachable pH	-	S.U.	7.73	7.74	8.66	8.98			7.86	8.60	7.65	8.38	8.89

TABLE 3B
FORMER ROBLIN STEEL SITE
Remaining Subsurface Contamination

PARAMETER	UNRESTRICTED SCOs	UNITS	RSS-SP05-D24-S-O	RSS-SP20-D23-S-O	RSS-SP23-D34-S-O	RSS-SP32-D35-S-O	RSS-SP36-D24-S-O	RSS-SP37-D24-S-O	RSS-SP39-D1416-S-O	RSS-SP57-D04-S-O	RSS-SP60-D48-S-O	RSS-TB02-D48-S-0	RSS-TB03-D48-S-O	RSS-TB04-D610-S-O	RSS-TB05-D410-S-O
TAL - Metals (ppm)															
Aluminum	-	MG/KG	10,800	5,390	12,600	12,700	15,100	9,080	7,360			8,360	16,600	8,850	13,400
Antimony	-	MG/KG	4.9	1.2	0.78	0.88	8.9		0.57			0.31		0.8	0.55
Arsenic	13	MG/KG	22.5	13.9	9.2	11.7	16	12.2	11.1			13.6	9.3	18.6	8.4
Barium	350	MG/KG	117	109	89	118	5,860	110	74.8			35.7	183	51.4	66.5
Beryllium	7.2	MG/KG	1.2	0.84	0.5	0.77	0.59	0.45	0.37			0.5	0.99	0.54	0.51
Cadmium	2.5	MG/KG	0.25	0.28	0.17	0.24	2.80	0.21	0.17			0.21	0.18	0.18	0.33
Calcium	-	MG/KG	19,200	6,080	1,530	4,810	141,000	7,280	14,300			9,890	31,100	17,000	4,820
Chromium	30	MG/KG	16.4	16.7	15.8	22.7	573.00	12.5	26.8			13.3	23.8	13.6	16.5
Cobalt	-	MG/KG	7.1	8.1	6.2	13.1	10.80	10.6	7.6			13.2	13.3	12.4	9.40
Copper	50	MG/KG	65.1	50.5	27	33.7	140.00	37.9	28.9			42	27.8	63.1	18.10
Cyanide	27	MG/KG					0.60	0.88							
Iron	-	MG/KG	30,500	23,400	34,400	30,700	150,000	27,200	24,400			37,000	33,600	42,300	27,200
Lead	63	MG/KG	152	77.1	28.9	16.80	102.00	16.2	13			19	18.3	33.3	14.20
Magnesium	-	MG/KG	3,740	1,690	2,770	4,050	38,900	4,210	3,470			5,280	10,300	6,880	4,010
Manganese	1,600	MG/KG	872	173	253	272	10,300	668	426			235	487	369	210
Mercury	0.18	MG/KG	0.13	0.29	0.04		0.02					0.02	0.02	0.02	
Nickel	30	MG/KG	19.2	40.9	14	40.4	126	28.2	26.6			34.9	38.9	39.2	23.8
Potassium	-	MG/KG	954	677	1,280	1,510	645	1,190	1,010			1,370	2,400	1,550	1,200
Selenium	3.9	MG/KG	2.8	1.3	1.9	0.75	3.2	1.1				0.94	0.82	0.88	1.5
Silver	2	MG/KG	0.11				2								
Sodium	-	MG/KG	319	116	96.1	117	198	90.1	124			110	205	150	87.30
Thallium	-	MG/KG										1.1			
Vanadium	-	MG/KG	19.3	21	25	48.1	72.5	13.8	11.9			12.2	25.4	17	22.2
Zinc	109	MG/KG	85.3	180	142	75.7	1,090	204	158			95.8	97.7	184	145
Volatiles (ppb)															
1,1-Dichloroethene	330	UG/KG									77				
1,2-Dichloroethene (Total)	250	UG/KG									21,000		270		2
2-Butanone	-	UG/KG			6					11					
Acetone	50	UG/KG								53	16				
Benzene	60	UG/KG	31												
Carbon Disulfide	-	UG/KG		2									2		2
Chloromethane	-	UG/KG													
Ethylbenzene	1,000	UG/KG	19												
Toluene	700	UG/KG													
Total Xylenes	260	UG/KG	68												
Trichloroethene	470	UG/KG									13		210		1
Vinyl chloride	20	UG/KG									2,200		28		
Total VOCs (ppb)	**10,000**	UG/KG	**118**	**2**	**6**	**0**	**0**	**0**	**0**	**64**	**23,306**	**0**	**510**	**0**	**5**

TABLE 3B
FORMER ROBLIN STEEL SITE
Remaining Subsurface Contamination

PARAMETER	UNRESTRICTED SCOs	UNITS	RSS-SP05-D24-S-O	RSS-SP20-D23-S-O	RSS-SP23-D34-S-O	RSS-SP32-D35-S-O	RSS-SP36-D24-S-O	RSS-SP37-D24-S-O	RSS-SP39-D1416-S-O	RSS-SP57-D04-S-O	RSS-SP60-D48-S-O	RSS-TB02-D48-S-0	RSS-TB03-D48-S-O	RSS-TB04-D610-S-O	RSS-TB05-D410-S-O
Semi-Volatiles (ppb)															
2-Methylnaphthalene	-	UG/KG	9,900	180		12	130							21	1,000
4-Nitroaniline	-	UG/KG													63
Acenaphthene	20,000	UG/KG	630	52		13							23	81	320
Acenaphthylene	100,000	UG/KG	150	180			790								82
Anthracene	100,000	UG/KG	250	110		27	860	190					38	170	220
Benzo(a)anthracene	1,000	UG/KG	210	380	19	71	4,500					54	63	350	90
Benzo(a)pyrene	1,000	UG/KG	200	550	15	67	3,800					15	51	320	70
Benzo(b)fluoranthene	1,000	UG/KG	410	690	36	80	3,600						100	260	58
Benzo(ghi)perylene	100,000	UG/KG	180	290		58	2,700							240	28
Benzo(k)fluoranthene	800	UG/KG		500		57	4,100							350	69
Bis(2-ethylhexyl) phthalate	-	UG/KG													
Butyl benzyl phthalate	-	UG/KG													
Carbazole	-	UG/KG		71		13	130	220					16	61	
Chrysene	1,000	UG/KG	310	520	23	94	4,800	32				57	68	350	84
Dibenzo(a,h)anthracene	330	UG/KG		180		20	1,300							110	12
Dibenzofuran	-	UG/KG	430	64		13	190						14	54	310
Diethyl phthalate	-	UG/KG													
Di-n-butyl phthalate	-	UG/KG			20	37		69				27	21	48	
Di-n-octyl phthalate	-	UG/KG										14			
Fluoranthene	100,000	UG/KG	460	620	36	180	10,000	11				13	140	800	180
Fluorene	30,000	UG/KG	880	89		21	350						29	75	330
Indeno(1,2,3-cd)pyrene	500	UG/KG	160	390		52	2,900						19	230	33
Naphthalene	12,000	UG/KG	3,400	77										36	98
Phenanthrene	100,000	UG/KG	1,800	330	31	87	4,900	13				35	100	640	1,100
Phenol	330	UG/KG													
Pyrene	100,000	UG/KG	500	580	26	150	8,700					14	110	650	290
Total SVOCs (ppb)	**500,000**	UG/KG	**19,870**	**5,853**	**206**	**1,052**	**53,750**	**535**	**0**	**0**	**0**	**229**	**792**	**4,846**	**4,437**
Pesticides / PCBs (ppb)															
4,4'-DDE	3	UG/KG											2.3		
4,4'-DDT	3	UG/KG		25									8.8		
Aroclor 1254	100	UG/KG											51		
Endosulfan Sulfate	2,400	UG/KG													
Endrin ketone	-	UG/KG													
Leachable pH	-	S.U.	7.10	6.79	6.20	7.48	12.30	8.54	8.23			8.06	7.81	7.60	7.38

TABLE 3B
FORMER ROBLIN STEEL SITE
Remaining Subsurface Contamination

PARAMETER	UNRESTRICTED SCOs	UNITS	RSS-TB06-D1018-S-O	RSS-TB07-D04-S-O	RSS-TB08-D610-S-O	RSS-TB09-D1016-S-O	RSS-TB10-D810-S-O	RSS-TB11-D26-S-O	RSS-TP01-D24-S-O	RSS-TP02-D36-S-O	RSS-TP11-D24-S-O	RSS-TP26-D24-S-O	RSS-TP32-D46-S-O	RSS-TP37-D23-S-O
TAL - Metals (ppm)														
Aluminum	-	MG/KG	6,200	6,320	14,400	9,240	8,270	12,700	9,490	10,400	1,090	11,300	7,170	
Antimony	-	MG/KG	0.52	3.9	0.39	1.9	0.79	0.91	1.2		13	2.1		
Arsenic	13	MG/KG	6.4	5.8	11.6	21.5	13.7	5.6	17.2	7.9	19.5	17.9	11	
Barium	350	MG/KG	86.3	218	157	102	109	99.7	92	64.9	11.4	140	86.9	
Beryllium	7.2	MG/KG	0.27	0.37	0.76	0.51	0.42	0.47	0.63	0.42	0.24	2.1	0.38	
Cadmium	2.5	MG/KG	0.35	0.77	0.27	0.95	0.24	0.20	0.49	0.2	1.7	0.49	0.39	
Calcium	-	MG/KG	13,800	3,210	18,500	37,500	18,700	5,930	12,600	2,710	3,080	39,600	18,300	
Chromium	30	MG/KG	19.1	153	20.8	51	11.6	18.1	22.2	13.4	630	27	16.6	
Cobalt	-	MG/KG	5.3	9.5	14.6	11.4	11.1	12.20	6.8	6.5	18.3	7.7	8.2	
Copper	50	MG/KG	26.1	76.6	30.1	53.1	53.1	25.00	54.2	21.9	291	152.0	33.1	
Cyanide	27	MG/KG					0.61						0.54	
Iron	-	MG/KG	18,200	82,700	28,900	44,200	26,300	23,100	24,100	19,600	279,000	43,000	22,700.0	
Lead	63	MG/KG	16.4	147	16.40	51.6	21.6	111.00	62.3	24.5	16.4	192	21.9	
Magnesium	-	MG/KG	4,730	2,820	8,770	6,170	5,620	3,810	3,950	2,310	813	9,940	5,490	
Manganese	1,600	MG/KG	740	1,340	302	776	284	398	692	214	2,510	970	563	
Mercury	0.18	MG/KG		0.29			0.13		0.3			0.31		
Nickel	30	MG/KG	16.5	79.4	39	48.4	33.6	29.7	26.1	19	505	20.7	23.5	
Potassium	-	MG/KG	865	1,040	2,280	1,830	1,410	1,250	989	1,140	150	986	927	
Selenium	3.9	MG/KG	1	2.6	2.50	2	0.92	0.6	1.8	1.3	5.3	3.9	1.2	
Silver	2	MG/KG		0.3			0.15		0.07		0.43	0.26		
Sodium	-	MG/KG	110	197	131	332	116	79.50	191	437	59.7	362	148	
Thallium	-	MG/KG	0.58				1.2	1.10						
Vanadium	-	MG/KG	11.9	12.8	24.2	17.3	12.4	19.4	16.5	18.7	8.5	33.9	11.4	
Zinc	109	MG/KG	154	176	77.6	909	79.3	95.1	193	65.9	63.2	139	342	
Volatiles (ppb)														
1,1-Dichloroethene	330	UG/KG			1									
1,2-Dichloroethene (Total)	250	UG/KG			180									
2-Butanone	-	UG/KG						2				8		6
Acetone	50	UG/KG												32
Benzene	60	UG/KG												
Carbon Disulfide	-	UG/KG	2											
Chloromethane	-	UG/KG				2								
Ethylbenzene	1,000	UG/KG												
Toluene	700	UG/KG				1								
Total Xylenes	260	UG/KG						5						
Trichloroethene	470	UG/KG			440							2		8
Vinyl chloride	20	UG/KG												
Total VOCs (ppb)	**10,000**	UG/KG	**2**	**0**	**621**	**3**	**0**	**7**	**0**	**0**	**0**	**10**	**0**	**46**

TABLE 3B
FORMER ROBLIN STEEL SITE
Remaining Subsurface Contamination

PARAMETER	UNRESTRICTED SCOs	UNITS	RSS-TB06-D1018-S-O	RSS-TB07-D04-S-O	RSS-TB08-D610-S-O	RSS-TB09-D1016-S-O	RSS-TB10-D810-S-O	RSS-TB11-D26-S-O	RSS-TP01-D24-S-O	RSS-TP02-D36-S-O	RSS-TP11-D24-S-O	RSS-TP26-D24-S-O	RSS-TP32-D46-S-O	RSS-TP37-D23-S-O
Semi-Volatiles (ppb)														
2-Methylnaphthalene	-	UG/KG					29	4,000		400	15	530		
4-Nitroaniline	-	UG/KG												
Acenaphthene	20,000	UG/KG					19	400		350	56	210		
Acenaphthylene	100,000	UG/KG			12		13		120	630		190		
Anthracene	100,000	UG/KG			11		49	180	130	1,300	120	730	120	
Benzo(a)anthracene	1,000	UG/KG	24	47	66		70	96	860	2,400	300	2,700	770	
Benzo(a)pyrene	1,000	UG/KG	24	50	82		53	83	770	2,100	240	2,400	590	
Benzo(b)fluoranthene	1,000	UG/KG	26	110	76		51	160	840	1,800	230	2,000	740	
Benzo(ghi)perylene	100,000	UG/KG	12	26	40		20	73	620	950	100	1,200	390	
Benzo(k)fluoranthene	800	UG/KG	22		76		48		760	1,800	220	2,100	540	
Bis(2-ethylhexyl) phthalate	-	UG/KG												
Butyl benzyl phthalate	-	UG/KG									12			
Carbazole	-	UG/KG					14		56	450	58	370	46	
Chrysene	1,000	UG/KG	28	63	71	41	140	150	990	2,600	270	2,900	940	2,200
Dibenzo(a,h)anthracene	330	UG/KG		10	18		16	25	270	460	57	660	170	
Dibenzofuran	-	UG/KG					25	330	53	510	35	380	13	
Diethyl phthalate	-	UG/KG					16							
Di-n-butyl phthalate	-	UG/KG	29			25	20		55	240	110	58	49	
Di-n-octyl phthalate	-	UG/KG						11					25	
Fluoranthene	100,000	UG/KG	46	110	130	45	170	230	1,800	5,800	670	5,400	1,300	4,400
Fluorene	30,000	UG/KG					38	500		1,000	62	550		
Indeno(1,2,3-cd)pyrene	500	UG/KG	13	27	46		31	54	590	930	110	1,300	380	
Naphthalene	12,000	UG/KG					16	700	220	290	35	960		
Phenanthrene	100,000	UG/KG	31	57	58	37	180	1,400	570	4,700	460	4,000	650	3,500
Phenol	330	UG/KG					22							
Pyrene	100,000	UG/KG	38	78	110	35	140	240	1,400	4,000	420	3,900	940	3,900
Total SVOCs (ppb)	**500,000**	UG/KG	**293**	**578**	**796**	**183**	**1,180**	**8,632**	**10,104**	**32,710**	**3,580**	**32,538**	**7,663**	**14,000**
Pesticides / PCBs (ppb)														
4,4'-DDE	3	UG/KG							30					
4,4'-DDT	3	UG/KG							27					
Aroclor 1254	100	UG/KG							660					
Endosulfan Sulfate	2,400	UG/KG								28				
Endrin ketone	-	UG/KG									1.7			
Leachable pH	-	S.U.	11.00	7.67	7.83	10.20	8.14	7.79	7.59	7.62	8.06	7.79	10.30	

NOTES for
SMP
TABLES 3A and 3B
FORMER ROBLIN STEEL SITE

1. Source for Unrestricted Use Soil Cleanup Objectives is 6NYCRR Part 375 Environmental Remediation Programs December 14, 2006 Edition
2. mg/Kg = milligrams per Kilogram (equivalent to parts per million or ppm)
3. ug/Kg = micrograms per Kilogram (equivalent to parts per billion or ppb)
4. Only parameters with detected concentrations in one or more locations are shown
5. Blank spaces indicate non detect for the parameter
6. Soil Cleanup Objective parameters concentrations listed as (-) were not defined in the 6NYCRR Part 375 Environmental Remediation Programs December 14, 2006 Edition
7. Shaded represents exceedance of the Part 375 Unrestricted Use Soil Cleanup Objectives

Table 6
Former Roblin Steel Site
Summary of Analytical Results
Groundwater Samples

PARAMETER	REGULATORY VALUE	MW-01										
Collection Date		10/11/02	2/10/09	8/10/10	8/15/13	7/15/14	12/15/15	12/14/16	2/2/18	12/12/18	12/5/19	12/3/20
Volatile Organic Compounds (µg/L)												
1,1-Dichloroethene	5		NOT SAMPLED								NOT SAMPLED	NOT SAMPLED
1,1-Dichloroethane	5						0.26					
cis-1,2-Dichloroethene	5						0.46					
trans-1,2-Dichloroethene	5											
1,2-Dichloroethene (Total)	5											
1,2,4-Trimethylbenzene	5											
2-Butanone	50											
Acetone	50											
Benzene	1	1										
Carbon Disulfide	60						5.6	0.19				
Chloroethane	5											
Cyclohexane	NL											
cis-1,3-Dichloropropene	0.4											
Ethylbenzene	5											
Isopropylbenzene	5											
Methyl Cyclohexane	NL						1					
Methylene Chloride	5											
n-Propylbenzene	5											
Tetrachloroethene	5											
Toluene	5											
m,p-Xylene	5	NA										
o-Xylene	5	NA										
Total Xylenes	5	4										
Trichloroethene	5							0.53				
Vinyl chloride	2											
Total VOCs	-	**5**	**0**	**0**	**0**	**0**	**7**	**0.72**	**0**	**0**	**0**	**0**

PARAMETER	REGULATORY VALUE	MW-02R										
Collection Date		10/11/02	2/10/09	8/10/10	8/15/13	7/15/14	12/15/15	12/14/16	2/2/18	12/12/18	12/5/19	12/3/20
Volatile Organic Compounds (µg/L)												
1,1-Dichloroethene	5											
1,1-Dichloroethane	5											
cis-1,2-Dichloroethene	5	NA		21.3	10.1	6.27	18	11	13	20	21	10
trans-1,2-Dichloroethene	5	NA										
1,2-Dichloroethene (Total)	5	88		21.3								
1,2,4-Trimethylbenzene	5		10									
2-Butanone	50		33.5	129								
Acetone	50			21.7	12.3							
Benzene	1	18	7.92	37.3	18.2	22.7	3.5	3.5	5.6	3.2	1.2	1.6
Carbon Disulfide	60											
Chloroethane	5				6.2							
Cyclohexane	NL				32.8	43.3	6.3	5	7.9	3.6	3.4	4.2
cis-1,3-Dichloropropene	0.4											
Ethylbenzene	5		9.81	18.9	16.9	22.6	1.9					
Isopropylbenzene	5				2.53	3.12	0.61					
Methyl Cyclohexane	NL				13.8	22.4	2.3	1.3	2	0.7	0.99	1.2
Methylene Chloride	5											
n-Propylbenzene	5		2.57									
Tetrachloroethene	5											
Toluene	5	24	7.19	101								
m,p-Xylene	5	NA	7.62	73.2	2.45	9.81						
o-Xylene	5	NA	2.61	37.2		2.10						
Total Xylenes	5	11	10.23	110.4								
Trichloroethene	5	32		3.31			0.25					
Vinyl chloride	2	31		5.34	12.5	9.13	26	42	27	49	37	27
Total VOCs	-	**204**	**91**	**580**	**128**	**141**	**59**	**63**	**56**	**77**	**64**	**44**

PARAMETER	REGULATORY VALUE	MW-04										
Collection Date		10/11/02	2/10/09	8/10/10	8/21/13	7/15/14	12/15/15	12/14/16	2/2/18	12/12/18	12/5/19	12/3/20
Volatile Organic Compounds (µg/L)												
1,1-Dichloroethene	5											
1,1-Dichloroethane	5											
cis-1,2-Dichloroethene	5	NA					2.6	1.2				
trans-1,2-Dichloroethene	5	NA										
1,2-Dichloroethene (Total)	5											
1,2,4-Trimethylbenzene	5											
2-Butanone	50											
Acetone	50				43.8							
Benzene	1	6										
Carbon Disulfide	60											
Chloroethane	5											
Cyclohexane	NL											
cis-1,3-Dichloropropene	0.4											
Ethylbenzene	5	2										
Isopropylbenzene	5											
Methyl Cyclohexane	NL											
Methylene Chloride	5											
n-Propylbenzene	5											
Tetrachloroethene	5											
Toluene	5											
m,p-Xylene	5	NA										
o-Xylene	5	NA										
Total Xylenes	5	10										
Trichloroethene	5							1.91				
Vinyl chloride	2						0.49					
Total VOCs	-	**18**	**0**	**0**	**44**	**0**	**3**	**3**	**0**	**0**	**0**	**0**

PARAMETER	REGULATORY VALUE	MW-07R										
Collection Date		10/11/02	5/4/09	8/10/10	8/15/13	7/15/14	12/15/15	12/14/16	2/2/18	12/12/18	12/5/19	12/3/20
Volatile Organic Compounds (µg/L)												
1,1-Dichloroethene	5	15										
1,1-Dichloroethane	5											
cis-1,2-Dichloroethene	5	NA		904	128	584	17	5.9	190	3.2	16	23
trans-1,2-Dichloroethene	5	NA										
1,2-Dichloroethene (Total)	5	1,500		904								
1,2,4-Trimethylbenzene	5											
2-Butanone	50											
Acetone	50											
Benzene	1	10	65	14			0.34					
Carbon Disulfide	60											
Chloroethane	5											
Cyclohexane	NL						0.72					
cis-1,3-Dichloropropene	0.4		1,500									
Ethylbenzene	5	4										
Isopropylbenzene	5											
Methyl Cyclohexane	NL		99				0.76					
Methylene Chloride	5											
n-Propylbenzene	5											
Tetrachloroethene	5		160				0.25					
Toluene	5	12	69	29.7								
m,p-Xylene	5	NA	67	33.3								
o-Xylene	5	NA										
Total Xylenes	5	23	67	33.3								
Trichloroethene	5	56		49.2		55.9		2	3.7			
Vinyl chloride	2	330	770	402	56.1	205	6.2	3.7	75	3.6	19	12
Total VOCs	-	**1,950**	**2,797**	**2,370**	**184**	**845**	**25**	**12**	**194**	**6.8**	**35**	**35**

PARAMETER	REGULATORY VALUE	MW-09R										
Collection Date		10/11/02	2/10/09	8/10/10	8/15/13	7/15/14	12/15/15	12/14/16	2/2/18	12/12/18	12/5/19	12/3/20
Volatile Organic Compounds (µg/L)												
1,1-Dichloroethene	5	3	2.02				2.3		1.2			
1,1-Dichloroethane	5											
cis-1,2-Dichloroethene	5	NA	210	277	217	55.7	1,200	500	410	290	180	180
trans-1,2-Dichloroethene	5	NA	4.48	17.3			2.9		4.2			
1,2-Dichloroethene (Total)	5	380	214	294								
1,2,4-Trimethylbenzene	5		12.9									
2-Butanone	50			305								
Acetone	50			569								
Benzene	1	35	11.5	445	87.7	46.3	0.97		2.2		3.5	5.5
Carbon Disulfide	60											
Chloroethane	5											
Cyclohexane	NL				208	155	15		9.4		9.3	8.5
cis-1,3-Dichloropropene	0.4											
Ethylbenzene	5	12	5.66	69.6	33.7	17.3	0.23					
Isopropylbenzene	5						0.28					
Methyl Cyclohexane	NL				121	101	13		7.5		7.3	7
Methylene Chloride	5							4.8				
n-Propylbenzene	5											
Tetrachloroethene	5						4.5					
Toluene	5	74	23.3	581								
m,p-Xylene	5	NA	20.5	239								
o-Xylene	5	NA	11.5	128			0.23					
Total Xylenes	5	75	32	367								
Trichloroethene	5	450	135	585				230	39			3.3
Vinyl chloride	2	34	33		991	287	310		93	23	110	99
Total VOCs	-	**1,063**	**716**	**3,877**	**1,658**	**662**	**1,549**	**735**	**567**	**313**	**310**	**303**

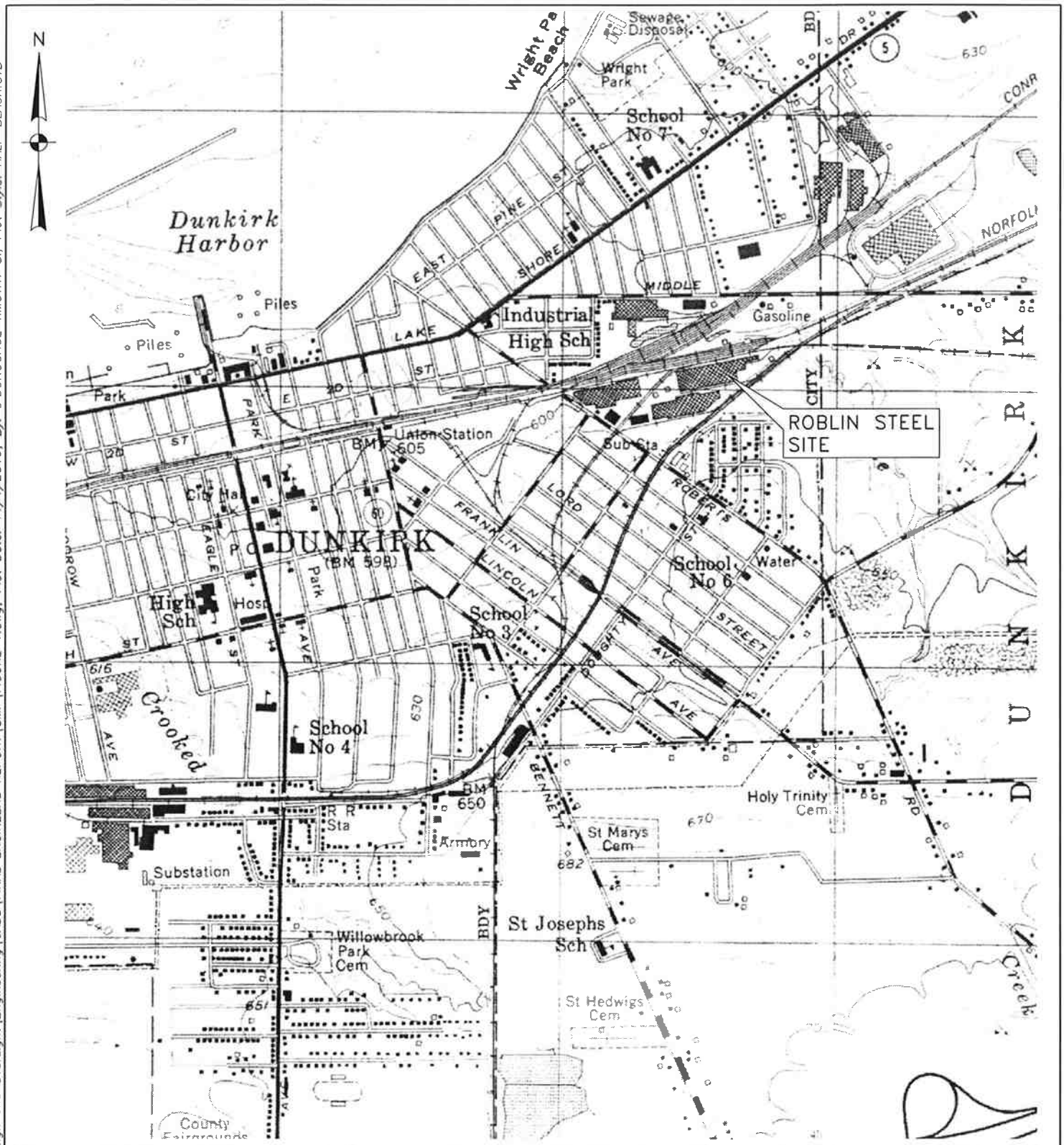
PARAMETER	REGULATORY VALUE	EX-MW-11R										
Collection Date		10/11/02	2/10/09	8/10/10	8/15/13	7/15/14	12/15/15	12/14/16	2/2/18	12/12/18	12/5/19	12/3/20
Volatile Organic Compounds (µg/L)												
1,1-Dichloroethene	5						4.6	11	5.8			
1,1-Dichloroethane	5											
cis-1,2-Dichloroethene	5	NA	354	5,320	1,950	5,400	990	1,000	1,500	960	950	1,400
trans-1,2-Dichloroethene	5	NA					3.3		4.4			
1,2-Dichloroethene (Total)	5	41,000	354	5,320								
1,2,4-Trimethylbenzene	5											
2-Butanone	50											
Acetone	50											
Benzene	1						2.5		3.7			
Carbon Disulfide	60											
Chloroethane	5											
Cyclohexane	NL						16	24	22	19	22	9.6
cis-1,3-Dichloropropene	0.4											
Ethylbenzene	5						2.4		1.6			
Isopropylbenzene	5						0.68					
Methyl Cyclohexane	NL						15	20	23	7.3	11	8
Methylene Chloride	5							12				
n-Propylbenzene	5											
Tetrachloroethene	5											
Toluene	5						1.7		0.81			
m,p-Xylene	5	NA					0.73					
o-Xylene	5	NA					4.9					
Total Xylenes	5								2.6			
Trichloroethene	5	150,000	168	4,630		4,510	36	91		10		
Vinyl chloride	2	9,800	27	638	881	1,110	520	360	950	510	330	430
Total VOCs	-	**200,800**	**903**	**15,908**	**2,831**	**11,020**	**1,598**	**1,518**	**2,514**	**1,506**	**1,313**	**1,848**

PARAMETER	REGULATORY VALUE	MW-12										
Collection Date		10/11/02	2/10/09	8/10/10	8/15/13	7/15/14	12/15/15	12/14/16	2/2/18	12/12/18	12/5/19	12/3/20
Volatile Organic Compounds (µg/L)												
cis-1,2-Dichloroethene	5	NA	NOT SAMPLED				0.53					
trans-1,2-Dichloroethene	5	NA										
1,2-Dichloroethene (Total)	5	150										
2-Butanone	50											
2-Hexanone	50											
Acetone	50											
Benzene	1	1										
Ethylbenzene	5	1										
Toluene	5											
m,p-Xylene	5											
o-Xylene	5											
Total Xylenes	5											
Trichloroethene	5											
Vinyl chloride	2	200										
Total VOCs	-	**352**	**0**	**0**	**0**	**0**	**0.53**	**0**	**0**	**0**	**0**	**0**

PARAMETER	REGULATORY VALUE	EX-MW-12										
Collection Date		10/11/02	2/10/09	8/10/10	8/15/13	7/15/14	12/15/15	12/14/16	2/2/18	12/12/18	12/5/19	12/3/20
Volatile Organic Compounds (µg/L)												
cis-1,2-Dichloroethene	5	NA		7.6			0.73					
trans-1,2-Dichloroethene	5	NA										
1,2-Dichloroethene (Total)	5	150		7.6								
2-Butanone	50			31.3								
2-Hexanone	50			5.23								
Acetone	50			73.8								
Benzene	1	1		24.0	1.9	2.14	0.47					
Ethylbenzene	5	1		18.5								
Toluene	5			48.7								
m,p-Xylene	5	NA		74.7								
o-Xylene	5	NA		40.4								
Total Xylenes	5			115.1								
Trichloroethene	5			8.96								
Vinyl chloride	2	200		27.2								
Total VOCs	-	**352**	**0**	**483**	**1.9**	**2.14**	**1**	**0**	**0**	**0**	**0**	**0**

Notes:
Regulatory values are derived from NYS Ambient Water Quality Standards TOGS 1.1.1 (Source of Drinking Water, groundwater).
(-) = No regulatory value is associated with this compound.
Shaded values represent exceedances of the regulatory value.
µg/L = micrograms per Liter (equivalent to parts per billion (ppb)).
Only compounds with one or more detections are shown.
Blank spaces indicate that the analyte was not detected.
"NL" = Regulatory value not listed for parameter
"NA" = parameter was not analyzed

FIGURES



SITE LOCATION MAP

TVGA CONSULTANTS
1000 MAPLE ROAD
ELMA, NEW YORK 14059-9530
P. 716.655.8842
F. 716.655.0937
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FORMER ROBLIN STEEL SITE
DUNKIRK, CHAUTAUQUA CO., N.Y.

PROJ. NO. 2005.0308.00	SCALE: 1" = 2000'	DATE: NOVEMBER 2010	FIGURE NO. 1

SCHEDULE "A" DESCRIPTION

ALL BEARINGS IN THIS DESCRIPTION ARE REFERENCED TO A LOCAL SYSTEM AND DEEDED BEARINGS FROM A PRIOR SURVEY MADE BY MICHAEL J. RODGERS LAND SURVEYOR, PC, DATED NOVEMBER 28, 2001.

ALL THAT TRACT OR PARCEL OF LAND SITUATE IN THE CITY OF DUNKIRK, COUNTY OF CHAUTAUQUA AND STATE OF NEW YORK AND FURTHER BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A SET REBAR WITH CAP AT THE INTERSECTION OF THE NORTHWESTERLY RIGHT OF WAY LINE OF NORFOLK SOUTHERN RAILROAD, FORMERLY N & W RAILROAD, FORMERLY NEW YORK, CHICAGO AND ST. LOUIS RAILROAD WITH THE SOUTHERLY RIGHT OF WAY LINE OF CSXT, FORMERLY CONRAIL, FORMERLY NEW YORK CENTRAL RAILROAD, FORMERLY ERIE RAILROAD, SAID LANDS REFERRED TO AS CSXT BEING LANDS CONVEYED BY CONSOLIDATED RAIL CORPORATION TO NEW YORK CENTRAL LINES, LLC BY QUIT CLAIM DEED DATED JUNE 1, 1999 AND RECORDED IN THE CHAUTAUQUA COUNTY CLERK'S OFFICE IN LIBER 2418 OF DEEDS AT PAGE 623; THENCE WESTERLY ALONG THE SOUTHERLY LINE OF SAID LINE ON A CURVE TO THE LEFT 642.74 FEET TO A POINT, SAID CURVE HAVING A RADIUS 5687.65 FEET AND A CHORD S86°-15'-29"W, 642.40 FEET; THENCE N08°-30'-04"W ALONG SAID SOUTHERLY LINE, 2.41 FEET TO A POINT; THENCE S81°-30'-00"W AND ALONG SAID SOUTHERLY LINE, 378.93 FEET TO A POINT; THENCE S85°-22'-00"W AND ALONG SAID SOUTHERLY LINE 121.88 FEET TO A POINT; THENCE S81°-30'-00"W ALONG SAID SOUTHERLY LINE 53.00' TO A POINT AT THE NORTHEASTERLY CORNER OF LANDS CONVEYED BY STANLEY A. STAR TO EDGEWOOD INVESTMENTS, INC. BY DEED DATED AUGUST 23, 1985 AND RECORDED IN THE CHAUTAUQUA COUNTY CLERK'S OFFICE AUGUST 26, 1985 IN LIBER 2063 OF DEEDS AT PAGE 488; THENCE S08°-30'-00"E ALONG THE SOUTHERLY LINE OF SAID EDGEWOOD INVESTMENTS, INC., 10.97 FEET TO A POINT; THENCE S81°-30'-00"W AND ALONG SAID SOUTHERLY LINE 77.46 FEET TO A POINT; THENCE CONTINUING WESTERLY AND ALONG THE SAID SOUTHERLY LINE ON A CURVE TO THE LEFT 76.07 FEET TO A POINT AT THE NORTHEASTERLY CORNER OF AFOREMENTIONED NEW YORK CENTRAL LINES, LLC, SAID CURVE HAVING A RADIUS OF 260.49 FEET AND A CHORD BEARING OF S73°-08'-00"W, 75.80 FEET; THENCE SOUTHWESTERLY AND ALONG THE SOUTHEASTERLY SAID LINE ON A CURVE TO THE LEFT, 419.75 FEET TO A POINT, SAID CURVE HAVING A RADIUS OF 1364.49 FEET AND A CHORD BEARING OF S56-09'-30"W, 418.10 FEET; THENCE CONTINUING SOUTHWESTERLY ALONG THE SOUTHEASTERLY SAID LINE ON A CURVE TO THE TO THE LEFT 98.22 FEET TO A POINT, SAID CURVE HAVING A RADIUS OF 757.76 FEET AND A CHORD BEARING OF S43°-23'-00"W, 98.15 FEET; THENCE S08°-25'-00"E, ALONG THE SAID EASTERLY LINE 62.51 FEET TO A POINT; THENCE S79°-11'-00"W, ALONG THE SAID SOUTHERLY LINE 8.91 FEET TO A POINT AT THE NORTHEASTERLY CORNER OF AFOREMENTIONED EDGEWOOD INVESTMENTS, INC.; THENCE S08°-39'-00"E, ALONG THE EASTERLY SAID LINE, 19.90 FEET TO A POINT AT THE NORTHWESTERLY CORNER OF LANDS CONVEYED BY COUNTY OF CHAUTAUQUA INDUSTRIAL DEVELOPMENT AGENCY TO ALUMAX EXTRUSIONS, INC. BY DEED DATED AUGUST 25, 1995 AND RECORDED IN THE CHAUTAUQUA COUNTY CLERK'S OFFICE IN LIBER 2351 OF DEEDS AT PAGE 874; THENCE N81°-31'-00"E, ALONG THE SAID NORTHERLY LINE 822.00 FEET TO A POINT; THENCE S 08°-29'-00"E, ALONG THE SAID EASTERLY LINE 251.95 FEET TO A POINT ON THE NORTHWESTERLY RIGHT OF WAY LINE OF NORFOLK SOUTHERN RAILROAD; THENCE N53°-33'-00"E, ALONG THE NORTHWESTERLY SAID LINE 172.65 FEET TO A POINT; THENCE N03°-05'-00"E, ALONG THE NORTHWESTERLY SAID LINE 20.37 FEET TO A POINT; THENCE N53°-33'-00"E ALONG THE NORTHWESTERLY SAID LINE 183.89 FEET TO A POINT; THENCE N53°-35'-00"E, ALONG THE NORTHWESTERLY SAID LINE 524.58 FEET TO A POINT; THENCE ALONG THE NORTHWESTERLY SAID LINE ON A CURVE TO THE RIGHT 228.79 FEET, SAID CURVE HAVING A RADIUS OF 2915.00 FEET AND A CHORD BEARING OF N55°-38'-00"E, 228.73 FEET TO THE POINT OF BEGINNING CONTAINING 11.83± ACRES.

TOGETHER WITH THE BENEFITS AND SUBJECT TO ANY BURDENS OF AN AGREEMENT MADE BETWEEN ALLEGHENY LUDLUM INDUSTRIES, INC. AND PROGRESS PARK, INC. DATED MAY 1, 1963 AND RECORDED IN THE CHAUTAUQUA COUNTY CLERK'S OFFICE ON MAY 2, 1963 IN LIBER 1215 OF DEEDS AT PAGE 477, AND THE PARTY OF THE SECOND PART HEREBY ASSUMES ALL OF THE OBLIGATIONS OF THE PARTY OF THE FIRST PART RELATING TO THE RIGHTS UNDER SAID AGREEMENT WHICH ARE TRANSFERRED AND CONVEYED BY THIS DEED AND PARTY OF THE SECOND PARATHIONS IN THE EXECUTION OF THIS DEED AS EVIDENCE OF SUCH ASSUMPTION.

ALSO TOGETHER WITH THE BENEFITS AND SUBJECT TO ANY BURDENS OF A PARTY WALL AGREEMENT MADE BETWEEN ALLEGHENY LUDLUM INDUSTRIES, INC. AND PROGRESS PARK, INC., DATED MAY 1, 1963 AND RECORDED IN THE CHAUTAUQUA COUNTY CLERK'S OFFICE ON MAY 2 1963 IN LIBER 1215 OF DEEDS AT PAGE 462.

ALSO TOGETHER WITH THE BENEFITS AND SUBJECT TO ANY BURDENS OF AN EASEMENT AGREEMENT MADE BETWEEN PROGRESS PARK, INC. AND ALLEGHENY LUDLUM INDUSTRIES, INC. WITH NIAGARA MOHAWK POWER CORPORATION, DATED MAY 1, 1963 AND RECORDED IN THE CHAUTAUQUA COUNTY CLERK'S OFFICE IN LIBER 1215 OF DEEDS AT PAGE 453.

ALSO TOGETHER WITH THE BENEFITS AND SUBJECT TO ANY BURDENS OF ANY OTHER EASEMENTS, COVENANTS, AGREEMENTS, OR RIGHT OF WAY OF RECORD, AFFECTING THE SAID PREMISES, OR ANY PART THEREOF, AS WELL AS ANY OTHER MATTERS OF RECORD AFFECTING THE SAID PREMISES, OR ANY PART THEREOF.

ALSO TOGETHER WITH THE BENEFITS AND SUBJECT TO ANY BURDENS OF THE FOLLOWING UNRECORDED AGREEMENTS, TO THE EXTENT OPERATIVE:

1–EASEMENT FOR SIDETRACK PURPOSES GIVEN BY ERIE RAILROAD COMPANY TO AMERICAN LOCOMOTIVE COMPANY, DATED DECEMBER 23, 1952.

2–LICENSE AGREEMENT DATED MARCH 29, 1938 GIVEN BY ERIE RAILROAD COMPANY TO AMERICAN LOCOMOTIVE COMPANY TO INSTALL TILE DRAIN UNDER TRACKS AND LANDS OF RAILROAD AS AMENDED BY INSTRUMENT DATED DECEMBER 27, 1957.

3–AGREEMENT DATED SEPTEMBER 4, 1951 BY ERIE RAILROAD TO AMERICAN LOCOMOTIVE COMPANY TO OPERATE OVER AND USE OF SIDE TRACK FACILITIES.

4–AGREEMENT DATED DECEMBER 12, 1951 BETWEEN ERIE RAILROAD TO ALCO PRODUCTS, INC. FOR SIDE TRACK FACILITIES.

ALSO TOGETHER WITH AND SUBJECT TO AN EASEMENT FOR INGRESS AND EGRESS THE CENTER OF WHICH IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE CITY OF DUNKIRK, COUNTY OF CHAUTAUQUA AND STATE OF NEW YORK AT A POINT IN THE CENTERLINE OF THE EXISTING 30.3 FOOT PAVEMENT IN ROBERTS ROAD AND DISTANT 144.53 FEET N51°-44'-00"W, ALONG THE SAID CENTERLINE FROM THE INTERSECTION THEREOF WITH THE NORTHWESTERLY LINE OF LANDS OF THE NEW YORK, CHICAGO & ST. LOUIS RAILROAD COMPANY (NORFOLK SOUTHERN); THENCE N38°-16'-00"E, A DISTANCE OF 114.28 FEET TO AN IRON PIN, PASSING THROUGH AN IRON PIN LOCATED 33 FEET NORTHEASTERLY ALONG THE LAST DESCRIBED COURSE FROM SAID CENTERLINE IN ROBERTS ROAD; THENCE N08°-39'-00"W, A DISTANCE OF 514.37 FEET TO AN IRON PIN WHICH IS THE BEGINNING POINT OF THE CENTERLINE OF THE EASEMENT TO BE DESCRIBED; THENCE ALONG SUCH CENTERLINE N81°-31'-00"E, A DISTANCE OF 822.00 FEET TO AN IRON PIN.

ALSO TOGETHER WITH AND SUBJECT TO ANY RIGHT OF WAY FOR INGRESS AND EGRESS FROM ROBERTS ROAD TO THE ABOVE DESCRIBED PREMISES.

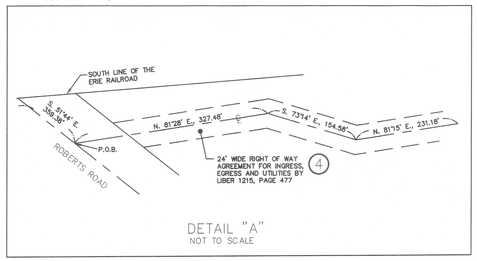
ALSO TOGETHER WITH AND SUBJECT TO ANY RIGHT OF WAY FOR INGRESS AND EGRESS FROM MIDDLE ROAD TO THE ABOVE DESCRIBED PREMISES.

ENVIRONMENTAL EASEMENT AREA DESCRIPTION

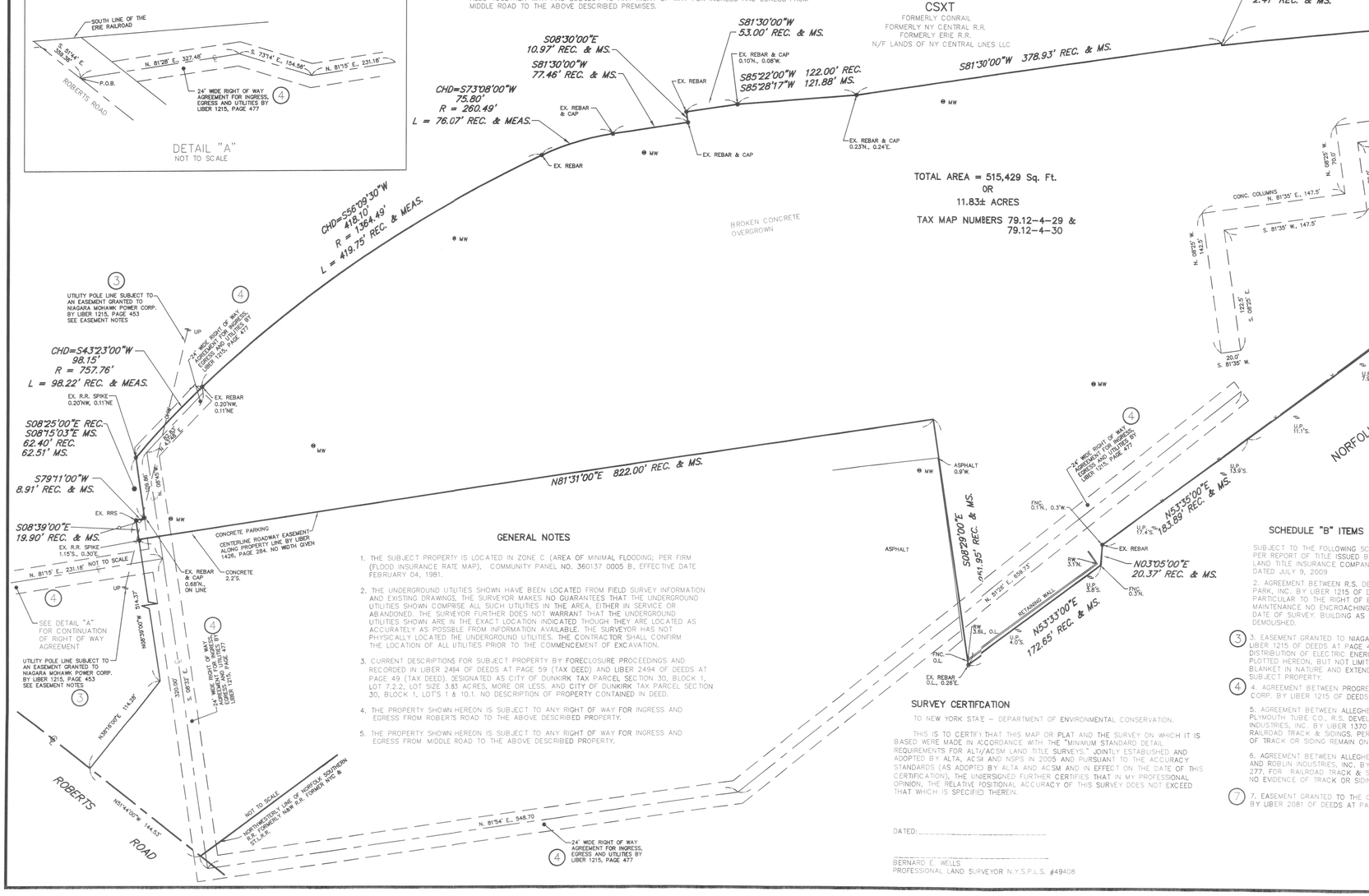
ALL BEARINGS IN THIS DESCRIPTION ARE REFERENCED TO A LOCAL SYSTEM AND DEEDED BEARINGS FROM A PRIOR SURVEY MADE BY MICHAEL J. RODGERS LAND SURVEYOR, PC, DATED NOVEMBER 28, 2001.

ALL THAT TRACT OR PARCEL OF LAND SITUATE IN THE CITY OF DUNKIRK, COUNTY OF CHAUTAUQUA AND STATE OF NEW YORK AND FURTHER BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A SET REBAR WITH CAP AT THE INTERSECTION OF THE NORTHWESTERLY RIGHT OF WAY LINE OF NORFOLK SOUTHERN RAILROAD, FORMERLY N & W RAILROAD, FORMERLY NEW YORK, CHICAGO AND ST. LOUIS RAILROAD WITH THE SOUTHERLY RIGHT OF WAY LINE OF CSXT, FORMERLY CONRAIL, FORMERLY NEW YORK CENTRAL RAILROAD, FORMERLY ERIE RAILROAD, SAID LANDS REFERRED TO AS CSXT BEING LANDS CONVEYED BY CONSOLIDATED RAIL CORPORATION TO NEW YORK CENTRAL LINES, LLC BY QUIT CLAIM DEED DATED JUNE 1, 1999 AND RECORDED IN THE CHAUTAUQUA COUNTY CLERK'S OFFICE IN LIBER 2418 OF DEEDS AT PAGE 623; THENCE WESTERLY ALONG THE SOUTHERLY LINE OF SAID LINE ON A CURVE TO THE LEFT 642.74 FEET TO A POINT, SAID CURVE HAVING A RADIUS 5687.65 FEET AND A CHORD S86°-15'-29"W, 642.40 FEET; THENCE N08°-30'-04"W ALONG SAID SOUTHERLY LINE, 2.41 FEET TO A POINT; THENCE S81°-30'-00"W AND ALONG SAID SOUTHERLY LINE, 378.93 FEET TO A POINT; THENCE S85°-22'-00"W AND ALONG SAID SOUTHERLY LINE 121.88 FEET TO A POINT; THENCE S81°-30'-00"W ALONG SAID SOUTHERLY LINE 53.00' TO A POINT AT THE NORTHEASTERLY CORNER OF LANDS CONVEYED BY STANLEY A. STAR TO EDGEWOOD INVESTMENTS, INC. BY DEED DATED AUGUST 23, 1985 AND RECORDED IN THE CHAUTAUQUA COUNTY CLERK'S OFFICE AUGUST 26, 1985 IN LIBER 2063 OF DEEDS AT PAGE 488; THENCE S08°-30'-00"E ALONG THE SOUTHERLY LINE OF SAID EDGEWOOD INVESTMENTS, INC., 10.97 FEET TO A POINT; THENCE S81°-30'-00"W AND ALONG SAID SOUTHERLY LINE 77.46 FEET TO A POINT; THENCE CONTINUING WESTERLY AND ALONG THE SAID SOUTHERLY LINE ON A CURVE TO THE LEFT 76.07 FEET TO A POINT AT THE NORTHEASTERLY CORNER OF AFOREMENTIONED NEW YORK CENTRAL LINES, LLC, SAID CURVE HAVING A RADIUS OF 260.49 FEET AND A CHORD BEARING OF S73°-08'-00"W, 75.80 FEET; THENCE SOUTHWESTERLY AND ALONG THE SOUTHEASTERLY SAID LINE ON A CURVE TO THE LEFT, 419.75 FEET TO A POINT, SAID CURVE HAVING A RADIUS OF 1364.49 FEET AND A CHORD BEARING OF S56-09'-30"W, 418.10 FEET; THENCE CONTINUING SOUTHWESTERLY ALONG THE SOUTHEASTERLY SAID LINE ON A CURVE TO THE TO THE LEFT 98.22 FEET TO A POINT, SAID CURVE HAVING A RADIUS OF 757.76 FEET AND A CHORD BEARING OF S43°-23'-00"W, 98.15 FEET; THENCE S08°-25'-00"E, ALONG THE SAID EASTERLY LINE 62.51 FEET TO A POINT; THENCE S79°-11'-00"W, ALONG THE SAID SOUTHERLY LINE 8.91 FEET TO A POINT AT THE NORTHEASTERLY CORNER OF AFOREMENTIONED EDGEWOOD INVESTMENTS, INC.; THENCE S08°-39'-00"E, ALONG THE EASTERLY SAID LINE, 19.90 FEET TO A POINT AT THE NORTHWESTERLY CORNER OF LANDS CONVEYED BY COUNTY OF CHAUTAUQUA INDUSTRIAL DEVELOPMENT AGENCY TO ALUMAX EXTRUSIONS, INC. BY DEED DATED AUGUST 25, 1995 AND RECORDED IN THE CHAUTAUQUA COUNTY CLERK'S OFFICE IN LIBER 2351 OF DEEDS AT PAGE 874; THENCE N81°-31'-00"E, ALONG THE SAID NORTHERLY LINE 822.00 FEET TO A POINT; THENCE S 08°-29'-00"E, ALONG THE SAID EASTERLY LINE 251.95 FEET TO A POINT ON THE NORTHWESTERLY RIGHT OF WAY LINE OF NORFOLK SOUTHERN RAILROAD; THENCE N53°-33'-00"E, ALONG THE NORTHWESTERLY SAID LINE 172.65 FEET TO A POINT; THENCE N03°-05'-00"E, ALONG THE NORTHWESTERLY SAID LINE 20.37 FEET TO A POINT; THENCE N53°-33'-00"E ALONG THE NORTHWESTERLY SAID LINE 183.89 FEET TO A POINT; THENCE N53°-35'-00"E, ALONG THE NORTHWESTERLY SAID LINE 524.58 FEET TO A POINT; THENCE ALONG THE NORTHWESTERLY SAID LINE ON A CURVE TO THE RIGHT 228.79 FEET, SAID CURVE HAVING A RADIUS OF 2915.00 FEET AND A CHORD BEARING OF N55°-38'-00"E, 228.73 FEET TO THE POINT OF BEGINNING CONTAINING 11.83± ACRES.

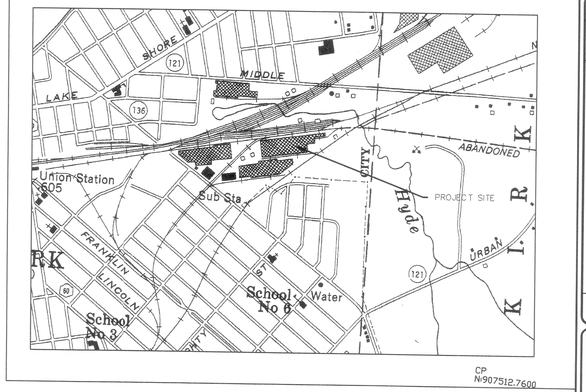


DETAIL "A"
NOT TO SCALE



TOTAL AREA = 515,429 Sq. Ft.
OR
11.83± ACRES

TAX MAP NUMBERS 79.12-4-29 & 79.12-4-30



VICINITY MAP
NOT TO SCALE

GENERAL NOTES

1. THE SUBJECT PROPERTY IS LOCATED IN ZONE C (AREA OF MINIMAL FLOODING; PER FIRM (FLOOD INSURANCE RATE MAP), COMMUNITY PANEL NO. 360137 0005 B, EFFECTIVE DATE FEBRUARY 04, 1981.
2. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS, THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED THOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF EXCAVATION.
3. CURRENT DESCRIPTIONS FOR SUBJECT PROPERTY BY FORECLOSURE PROCEEDINGS AND RECORDED IN LIBER 2494 OF DEEDS AT PAGE 59 (TAX DEED) AND LIBER 2494 OF DEEDS AT PAGE 49 (TAX DEED), DESIGNATED AS CITY OF DUNKIRK TAX PARCEL SECTION 30, BLOCK 1, LOT 7.2.2, LOT SIZE 3.83 ACRES, MORE OR LESS, AND CITY OF DUNKIRK TAX PARCEL SECTION 30, BLOCK 1, LOTS 1 & 10.1. NO DESCRIPTION OF PROPERTY CONTAINED IN DEED.
4. THE PROPERTY SHOWN HEREON IS SUBJECT TO ANY RIGHT OF WAY FOR INGRESS AND EGRESS FROM ROBERTS ROAD TO THE ABOVE DESCRIBED PROPERTY.
5. THE PROPERTY SHOWN HEREON IS SUBJECT TO ANY RIGHT OF WAY FOR INGRESS AND EGRESS FROM MIDDLE ROAD TO THE ABOVE DESCRIBED PROPERTY.

SURVEY CERTIFICATION

TO NEW YORK STATE – DEPARTMENT OF ENVIRONMENTAL CONSERVATION.

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS," JOINTLY ESTABLISHED AND ADOPTED BY ALTA, ACSM AND NSPS IN 2005 AND PURSUANT TO THE ACCURACY STANDARDS (AS ADOPTED BY ALTA AND ACSM AND IN EFFECT ON THE DATE OF THIS CERTIFICATION). THE UNDERSIGNED FURTHER CERTIFIES THAT IN MY PROFESSIONAL OPINION, THE RELATIVE POSITIONAL ACCURACY OF THIS SURVEY DOES NOT EXCEED THAT WHICH IS SPECIFIED THEREIN.

DATED:_____

_____
BERNARD E. WELLS
PROFESSIONAL LAND SURVEYOR N.Y.S.P.L.S. #49408

SCHEDULE "B" ITEMS

SUBJECT TO THE FOLLOWING SCHEDULE "B" ITEMS PER REPORT OF TITLE ISSUED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY TITLE NO. 292765 DATED JULY 9, 2009

2. AGREEMENT BETWEEN R.S. DEVELOPMENT CORP. & PROGRESS PARK, INC. BY LIBER 1215 OF DEEDS AT PAGE 462 BEING PARTICULAR TO THE RIGHT OF BUILDING ENCROACHMENT AND MAINTENANCE NO ENCROACHING BUILDINGS ON SITE AS OF DATE OF SURVEY. BUILDING AS REFERRED IN DEED POSSIBLY DEMOLISHED.

(3) 3. EASEMENT GRANTED TO NIAGARA MOHAWK POWER CORP. BY LIBER 1215 OF DEEDS AT PAGE 453 FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRIC ENERGY. EASEMENT INFORMATION AS PLOTTED HEREON, BUT NOT LIMITED TO AREA AS SHOWN. EASEMENT BLANKET IN NATURE AND EXTENDS RIGHTS THROUGHOUT ENTIRE SUBJECT PROPERTY.

(4) 4. AGREEMENT BETWEEN PROGRESS PARK, INC. & R.S. DEVELOPMENT CORP. BY LIBER 1215 OF DEEDS AT PAGE 477 AS PLOTTED HEREON.

5. AGREEMENT BETWEEN ALLEGHENY LUDLUM STEEL CORPORATION, PLYMOUTH TUBE CO., R.S. DEVELOPMENT CORP. & ROBLIN-SEAWAY INDUSTRIES, INC., BY LIBER 1370 OF DEEDS AT PAGE 456. FOR RAILROAD TRACK & SIDINGS. PER DATE OF FIELD WORK NO EVIDENCE OF TRACK OR SIDING REMAIN ON SUBJECT PROPERTY.

6. AGREEMENT BETWEEN ALLEGHENY LUDLUM INDUSTRIES, INC. AND ROBLIN INDUSTRIES, INC., BY LIBER 1426 OF DEEDS AT PAGE 277, FOR RAILROAD TRACK & SIDINGS. PER DATE OF FIELD WORK NO EVIDENCE OF TRACK OR SIDING REMAIN ON SUBJECT PROPERTY.

(7) 7. EASEMENT GRANTED TO THE CITY OF DUNKIRK FOR STORM SEWER BY LIBER 2081 OF DEEDS AT PAGE 438 AS PLOTTED HEREON.

ENGINEERING CONTROL NOTES:

Cover System: A cover system consisting of a minimum of 12 inches of clean soil with a demarcation layer will be constructed in all non-paved areas to prevent exposure to contaminated soils. Non-vegetated areas (i.e. buildings, roadways parking lots, etc.) will be covered by a paving system or concrete of at least 6 inches in thickness.

Sub-Slab Vapor Venting System: A sub-slab vapor venting system (SSVVS) will be required to be installed in the existing building if the building will be used in the future. Additionally, any new structures constructed on the Site as part of site redevelopment may be equipped with a SSVVS, if warranted. The need for a SSVVS in new buildings will be based upon an evaluation to determine the potential for vapor intrusion into any new buildings. The design and sampling of the SSVVS will be performed in accordance NYSDEC and NYSDOH guidance at the time the system is installed. The ultimate deign of the SSVVS will be dependent upon the reuse plans for the existing building as well as the size and configuration of any newly constructed buildings.

ABBREVIATIONS

EX. – EXISTING
RW. – RETAINING WALL
FNC. – FENCE
O.L. – ON LINE
U.P. – UTILITY POLE
REC. – RECORD
MS. – MEASURED
MW – MONITORING WELL
HYD. – HYDRANT
P.O.B. – POINT OF BEGINNING
OHW – OVERHEAD WIRES
CONC. – CONCRETE
GLM – GAS LINE MARKER

LEGEND

CONC MON	CONCRETE MONUMENT	MH	UNKNOWN MANHOLE
REBAR	REBAR	CBR	ROUND CATCH BASIN
IP	IRON PIPE	CB	CATCH BASIN
UP	UTILITY POLE	STORM MH	STORM MANHOLE
UP/L	UP/L	SAN MH	SANITARY MANHOLE
GUY	GUY WIRE	CO	CLEANOUT
HYD	HYDRANT	TBOX	TELEPHONE BOX
WM	WATER METER	ELEC BOX	ELECTRIC BOX
WV	WATER VALVE	POST	POST
GLM	GASLINE MARKER	SIGN	ONE POST SIGN
GM	GAS METER	LP	ONE HEAD LIGHT POLE
GV	GASLINE VALVE	LP	TWO HEAD LIGHT POLE

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

NO.	REVISED TO CURRENT SITE CONDITIONS	DATE	BY
1		1/27/10	TSC

Field Date: 1/27/09
Office Date: 2/04/09
Job No.: 2005.0308.00
Book: 192
Page: 64
Map: 53884
File Name: ROBLIN-ALTA.dwg
Designed by: DMD
Drawn by: RJW
Checked by: WMW
Dwg Scale: Horiz: 1" = 60'
Vert:

TVGA CONSULTANTS
1000 MAPLE ROAD
ELMA, NEW YORK 14059-9530
P. 716.655.8842
F. 716.655.8837
www.tvga.com

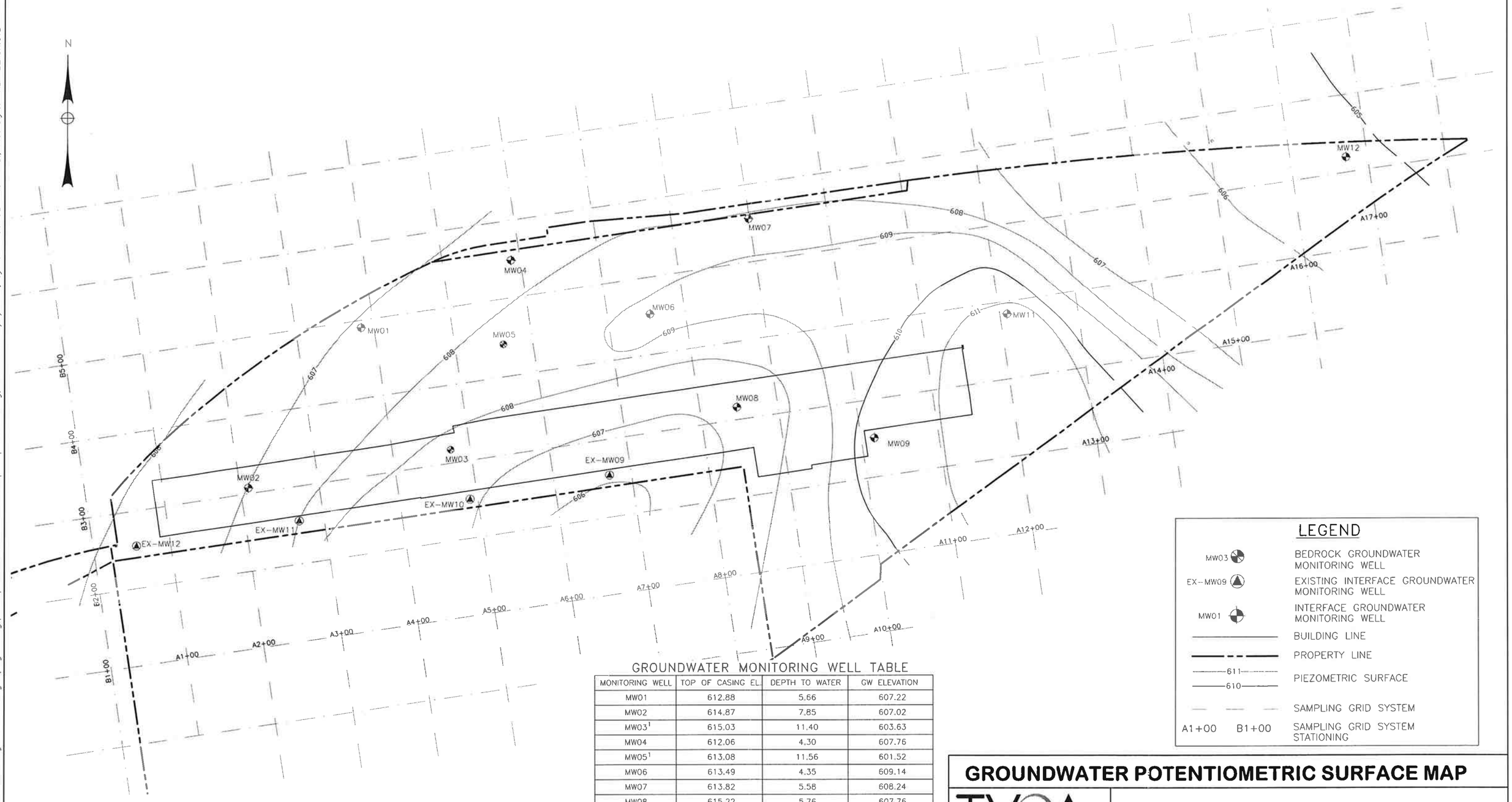
NEW YORK

BOUNDARY SURVEY (ALTA)
FORMER ROBLIN STEEL SITE

CHAUTAUQUA COUNTY

CITY OF DUNKIRK

MAP NUMBER:
FIGURE 2



GROUNDWATER MONITORING WELL TABLE

MONITORING WELL	TOP OF CASING EL.	DEPTH TO WATER	GW ELEVATION
MW01	612.88	5.66	607.22
MW02	614.87	7.85	607.02
MW03[1]	615.03	11.40	603.63
MW04	612.06	4.30	607.76
MW05[1]	613.08	11.56	601.52
MW06	613.49	4.35	609.14
MW07	613.82	5.58	608.24
MW08	615.22	5.76	607.76
MW09	616.65	5.95	610.70
MW11	614.33	2.54	611.79
MW12	618.72	13.02	605.70
EX-MW09	614.33	7.26	606.79
EX-MW10	614.78	7.72	607.06
EX-MW11	615.30	7.12	608.18
EX-MW12	615.86	9.35	606.51

1 BEDROCK MONITORING WELL – NOT INCLUDED IN CONTOUR MAPPING
2 THE LISTED ELEVATIONS AND GENERATED CONTOURS WERE RECORDED DURING THE 2003 SITE INVESTIGATION

LEGEND

- MW03 — BEDROCK GROUNDWATER MONITORING WELL
- EX-MW09 — EXISTING INTERFACE GROUNDWATER MONITORING WELL
- MW01 — INTERFACE GROUNDWATER MONITORING WELL
- BUILDING LINE
- PROPERTY LINE
- 611 / 610 — PIEZOMETRIC SURFACE
- SAMPLING GRID SYSTEM
- A1+00 B1+00 — SAMPLING GRID SYSTEM STATIONING

GROUNDWATER POTENTIOMETRIC SURFACE MAP

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ELMA, NEW YORK 14059-0264
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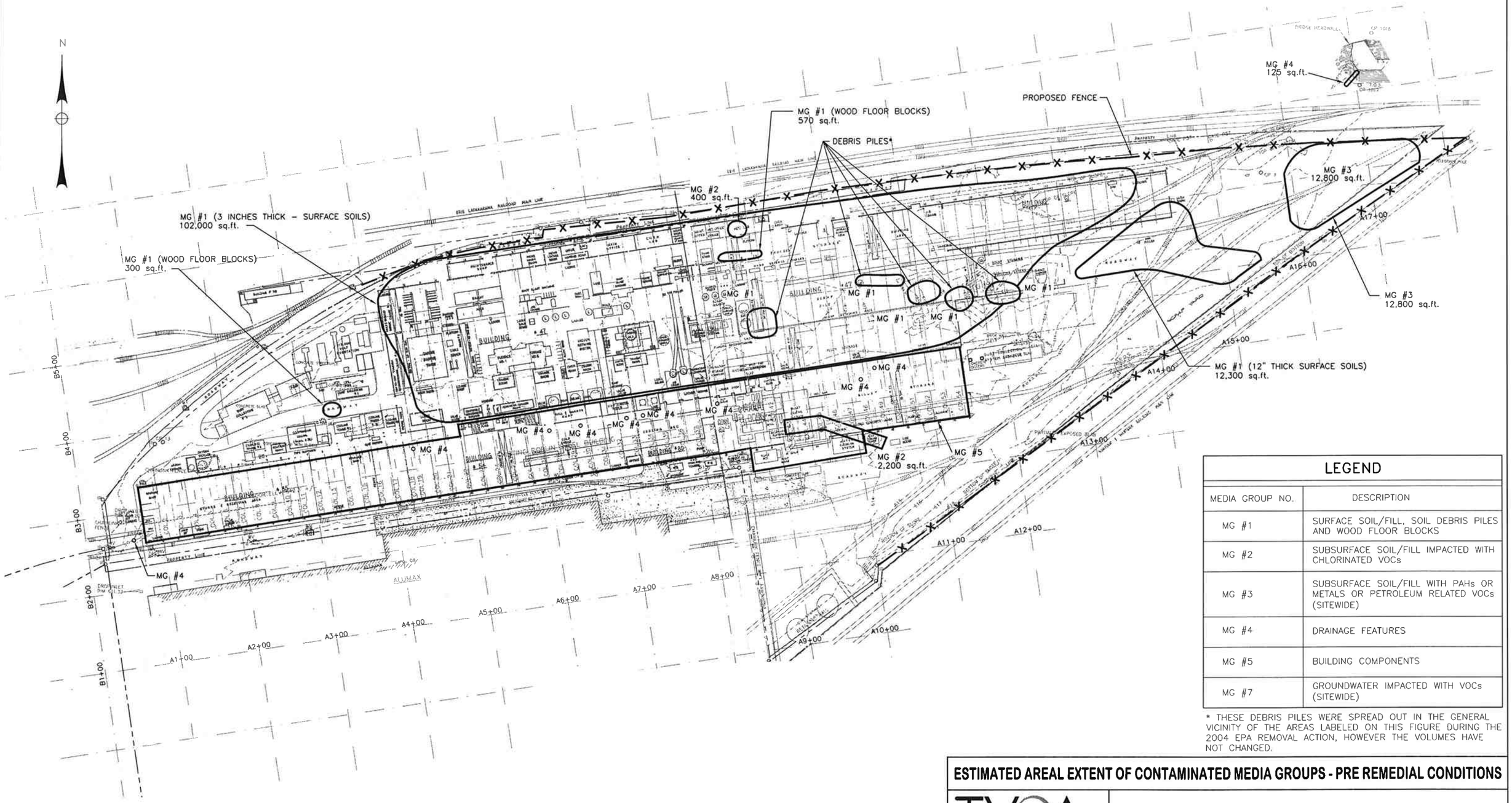
www.tvga.com

FORMER ROBLIN STEEL SITE
DUNKIRK, CHAUTAUQUA CO., N.Y.

PROJ. NO. 2005.0308.00 | SCALE: 1" = 120' | DATE: NOVEMBER 2010 | **FIGURE NO. 3**

File: N:\2005.0308.00-Roblin Remedial Design and Oversight\Engineering\CADD\FINAL ENGINEERS REPORT\SMP\FIGURE 3.dwg, Plot Date: 11/1/2010, By: O'DONOGHUE TIMOTHY S., Plot Style: HALF-BLACK.CTB



LEGEND

MEDIA GROUP NO.	DESCRIPTION
MG #1	SURFACE SOIL/FILL, SOIL DEBRIS PILES AND WOOD FLOOR BLOCKS
MG #2	SUBSURFACE SOIL/FILL IMPACTED WITH CHLORINATED VOCs
MG #3	SUBSURFACE SOIL/FILL WITH PAHs OR METALS OR PETROLEUM RELATED VOCs (SITEWIDE)
MG #4	DRAINAGE FEATURES
MG #5	BUILDING COMPONENTS
MG #7	GROUNDWATER IMPACTED WITH VOCs (SITEWIDE)

* THESE DEBRIS PILES WERE SPREAD OUT IN THE GENERAL VICINITY OF THE AREAS LABELED ON THIS FIGURE DURING THE 2004 EPA REMOVAL ACTION, HOWEVER THE VOLUMES HAVE NOT CHANGED.

ESTIMATED AREAL EXTENT OF CONTAMINATED MEDIA GROUPS - PRE REMEDIAL CONDITIONS

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FORMER ROBLIN STEEL SITE
DUNKIRK, CHAUTAUQUA CO., N.Y.

PROJ. NO. 2005.0308.00 | SCALE: 1" = 120' | DATE: NOVEMBER 2010 | FIGURE NO. 4

N

MW05	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 10
1,2-DICHLOROETHENE (TOTAL)	1 J
BENZENE	**73**
ETHYLBENZENE	**8 J**
TOLUENE	**68**
TOTAL XYLENES	**49**
TRICHLOROETHENE	**8 J**
VINYL CHLORIDE	< 10

MW04	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 10
1,2-DICHLOROETHENE (TOTAL)	< 10
BENZENE	**6 J**
ETHYLBENZENE	2 J
TOLUENE	< 10
TOTAL XYLENES	**10**
TRICHLOROETHENE	< 10
VINYL CHLORIDE	< 10

MW06	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 10
1,2-DICHLOROETHENE (TOTAL)	1 J
BENZENE	**72**
ETHYLBENZENE	**15**
TOLUENE	**99**
TOTAL XYLENES	**61**
TRICHLOROETHENE	< 10
VINYL CHLORIDE	2 J

MW07	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	**15**
1,2-DICHLOROETHENE (TOTAL)	**1,500 D**
BENZENE	**10**
ETHYLBENZENE	4 J
TOLUENE	**12**
TOTAL XYLENES	**23**
TRICHLOROETHENE	**56**
VINYL CHLORIDE	**330 D**

MW01	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 10
1,2-DICHLOROETHENE (TOTAL)	< 10
BENZENE	1 J
ETHYLBENZENE	< 10
TOLUENE	< 10
TOTAL XYLENES	4 J
TRICHLOROETHENE	< 10
VINYL CHLORIDE	< 10

MW12	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 10
1,2-DICHLOROETHENE (TOTAL)	< 10
BENZENE	**11**
ETHYLBENZENE	**7 J**
TOLUENE	**27**
TOTAL XYLENES	**31**
TRICHLOROETHENE	3 J
VINYL CHLORIDE	< 10

MW11	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 10
1,2-DICHLOROETHENE (TOTAL)	< 10
BENZENE	< 10
ETHYLBENZENE	< 10
TOLUENE	< 10
TOTAL XYLENES	< 10
TRICHLOROETHENE	< 10
VINYL CHLORIDE	< 10

MW09	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	3 J
1,2-DICHLOROETHENE (TOTAL)	**380 D**
BENZENE	**35**
ETHYLBENZENE	**12**
TOLUENE	**74**
TOTAL XYLENES	**75**
TRICHLOROETHENE	**450 D**
VINYL CHLORIDE	**34**

MW08	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 10
1,2-DICHLOROETHENE (TOTAL)	1 J
BENZENE	< 10
ETHYLBENZENE	< 10
TOLUENE	< 10
TOTAL XYLENES	< 10
TRICHLOROETHENE	< 10
VINYL CHLORIDE	< 10

EX-MW11	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 10,000
1,2-DICHLOROETHENE (TOTAL)	**41,000**
BENZENE	< 10,000
ETHYLBENZENE	< 10,000
TOLUENE	< 10,000
TOTAL XYLENES	< 10,000
TRICHLOROETHENE	**150,000 B**
VINYL CHLORIDE	**9,800 J**

MW03	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 10
1,2-DICHLOROETHENE (TOTAL)	< 10
BENZENE	1 J
ETHYLBENZENE	< 10
TOLUENE	< 10
TOTAL XYLENES	< 10
TRICHLOROETHENE	< 10
VINYL CHLORIDE	< 10

EX-MW09	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 50
1,2-DICHLOROETHENE (TOTAL)	**550**
BENZENE	< 50
ETHYLBENZENE	< 50
TOLUENE	< 50
TOTAL XYLENES	< 50
TRICHLOROETHENE	< 50
VINYL CHLORIDE	**320**

EX-MW12	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 10
1,2-DICHLOROETHENE (TOTAL)	**150 D**
BENZENE	1 J
ETHYLBENZENE	1 J
TOLUENE	< 10
TOTAL XYLENES	< 10
TRICHLOROETHENE	< 10
VINYL CHLORIDE	**200**

MW02	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 10
1,2-DICHLOROETHENE (TOTAL)	**88**
BENZENE	**18**
ETHYLBENZENE	3 J
TOLUENE	**24**
TOTAL XYLENES	**11**
TRICHLOROETHENE	**32 B**
VINYL CHLORIDE	**31**

EX-MW10	
PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 10
1,2-DICHLOROETHENE (TOTAL)	< 10
BENZENE	< 10
ETHYLBENZENE	< 10
TOLUENE	< 10
TOTAL XYLENES	< 10
TRICHLOROETHENE	< 10
VINYL CHLORIDE	< 10

LEGEND

- EX-MW10 — PRE-EXISTING GROUNDWATER MONITORING WELL
- MW03 — BEDROCK GROUNDWATER MONITORING WELL
- MW01 — INTERFACE GROUNDWATER MONITORING WELL

BOLD CONCENTRATIONS EXCEED THE WATER QUALITY STANDARDS

GROUNDWATER SAMPLING WAS PERFORMED ON OCTOBER 10, 2002

GROUNDWATER ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS OF CONCERN - PRE REMEDIAL CONDITIONS

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FORMER ROBLIN STEEL SITE
DUNKIRK, CHAUTAUQUA CO., N.Y.

PROJ. NO. 2005.0308.00 | SCALE: 1" = 120' | DATE: NOVEMBER 2010 | FIGURE NO. 5

N

PROPOSED FENCE

MG #1
(SURFACE SOIL/FILL)
11,600 sq.ft.

MG #6
(CONCRETE AND SURFACE SOIL)
740 sq.ft.

MG #1
(SURFACE SOIL/FILL)
17,370 sq.ft.

LEGEND	
MEDIA GROUP NO.	DESCRIPTION
MG #1	SURFACE SOIL/FILL
MG #6	CONCRETE AND SUFRACE SOIL IMPACTED WITH PCB'S

MEDIA GROUPS ADDRESSED BY 2004 EPA REMOVAL ACTION

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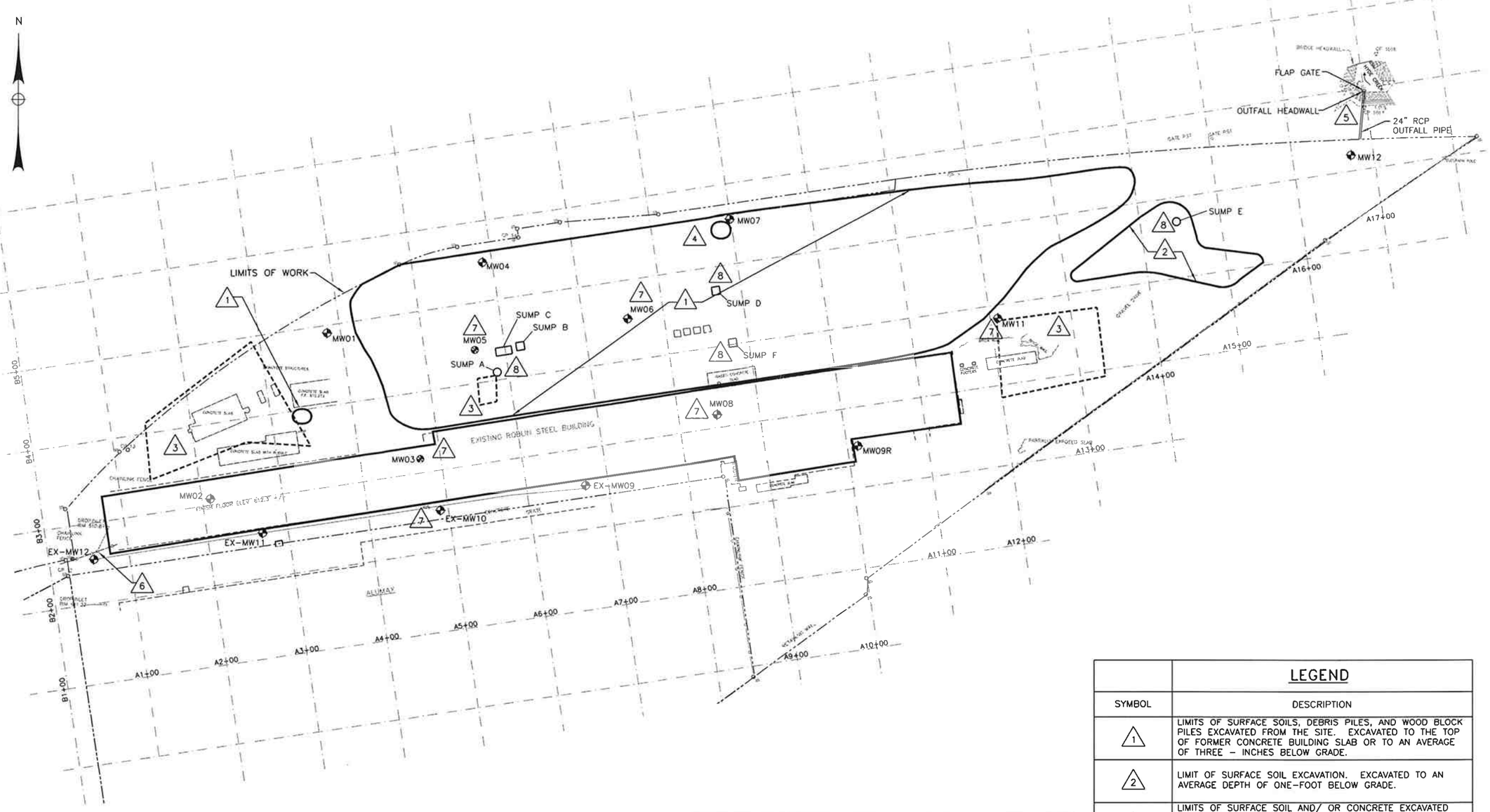
FORMER ROBLIN STEEL SITE
DUNKIRK, CHAUTAUQUA CO., N.Y.

PROJ. NO. 2005.0308.00	SCALE: 1" = 120'	DATE: NOVEMBER 2010	FIGURE NO. 6



MONITORING WELL SYMBOL LEGEND

SYMBOL	DESCRIPTION
MW03	BEDROCK GROUNDWATER MONITORING WELL
MW01	INTERFACE GROUNDWATER MONITORING WELL
MW09R	REPLACEMENT INTERFACE GROUNDWATER MONITORING WELL
-------	LIMITS OF SURFACE SOIL AND/ OR CONCRETE EXCAVATED DURING THE 2004 REMEDIAL ACTIVITIES

NOTES:

1. MONITORING WELL DETAILS ARE DEPICTED ON FIGURE 8.

LEGEND

SYMBOL	DESCRIPTION
1	LIMITS OF SURFACE SOILS, DEBRIS PILES, AND WOOD BLOCK PILES EXCAVATED FROM THE SITE. EXCAVATED TO THE TOP OF FORMER CONCRETE BUILDING SLAB OR TO AN AVERAGE OF THREE – INCHES BELOW GRADE.
2	LIMIT OF SURFACE SOIL EXCAVATION. EXCAVATED TO AN AVERAGE DEPTH OF ONE-FOOT BELOW GRADE.
3	LIMITS OF SURFACE SOIL AND/ OR CONCRETE EXCAVATED DURING THE 2004 REMEDIAL ACTIVITIES PERFORMED BY THE USEPA. EXCAVATED TO AN AVERAGE OF ONE-FOOT BELOW THE EXISTING GRADE.
4	MW07 EXCAVATION AREA – SUBSURFACE SOILS WERE EXCAVATED 8 FEET BELOW EXISTING GRADE AND GRANULAR IRON WAS PLACED IN BOTTOM OF EXCAVATION BEFORE BACKFILLING.
5	HYDE CREEK OUTFALL LOCATION. 60' OF RCP OUTFALL PIPE WAS REMOVED FROM THE HEADWALL SOUTH TO THE SITE PROPERTY LINE.
6	SOUTH SEWER CATCH BASIN LOCATION. SEE FIGURE 4 FOR DETAIL.
7	DECOMMISSIONED GROUNDWATER MONITORING WELL.
8	DECOMMISSIONED SUMP

NO.	DESCRIPTION	DATE	BY

NOTE:
UNAUTHORIZED ALTERATION OR ADDITION TO ANY SURVEY, DRAWING, DESIGN, SPECIFICATION, REPORT OR PLAN IS A VIOLATION OF SECTION 7209 PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

Designed by:	J. MANZELLA
Drawn by:	D. SHAFFER
Checked by:	T. REID
Date:	NOVEMBER 2010
Job No.	2005.0108.00
Drawing File No.	
Dwg Scale:	1" = 60'
Horiz:	1" = 60'
Vert:	NA
File Name:	SITE.DWG

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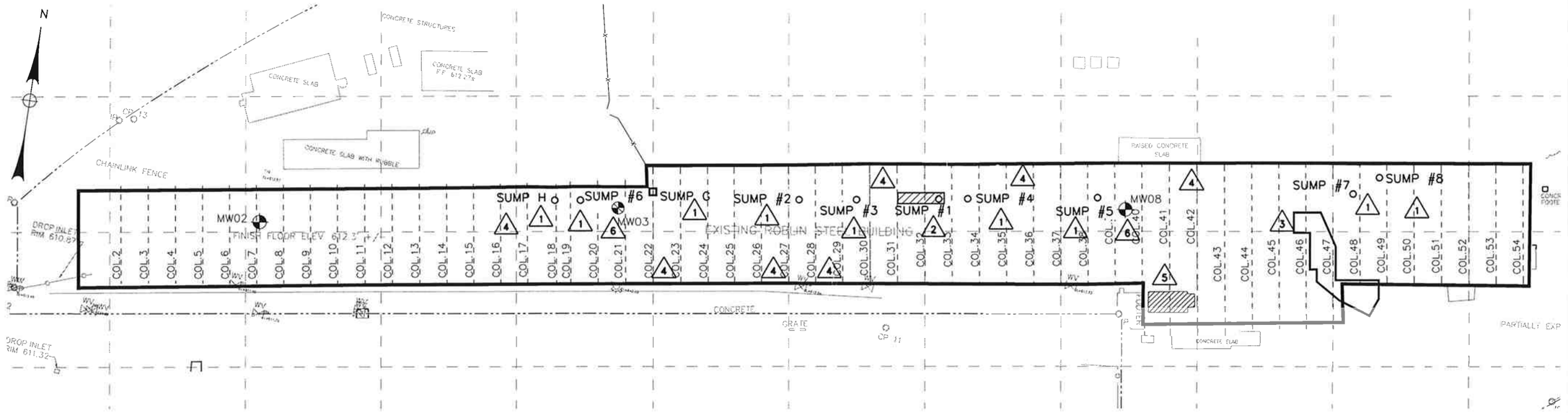
EXTERIOR REMEDIAL ACTIONS
FORMER ROBLIN STEEL SITE

CITY OF DUNKIRK
CHAUTAUQUA COUNTY, NEW YORK

FIGURE 7

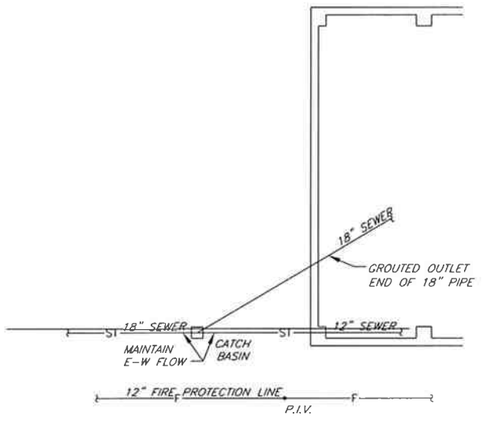


INTERIOR BUILDING REMEDIATION PLAN

SCALE: 1" = 80'

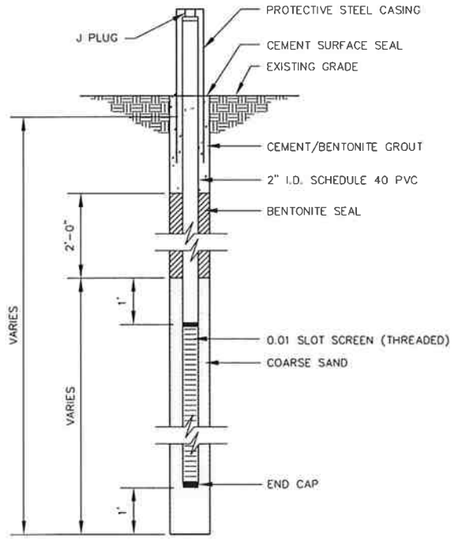
LEGEND

SYMBOL	DESCRIPTION
1	DECOMMISSIONED SUMP
2	DECOMMISSIONED SUMP NO. 1 AND ASSOCIATED UST.
3	MW09 EXCAVATION AREA – SUBSURFACE SOILS WERE EXCAVATED TO THE TOP OF BEDROCK (APPROXIMATELY FOUR FEET BELOW EXISTING GRADE). GRANULAR IRON WAS PLACED IN BOTTOM OF EXCAVATION BEFORE BACKFILLING.
4	POTENTIALLY PCB CONTAMINATED ELECTRICAL COMPONENTS REMOVED.
5	POTENTIAL UST AREA INVESTIGATED.
6	DECOMMISSIONED GROUNDWATER MONITORING WELL



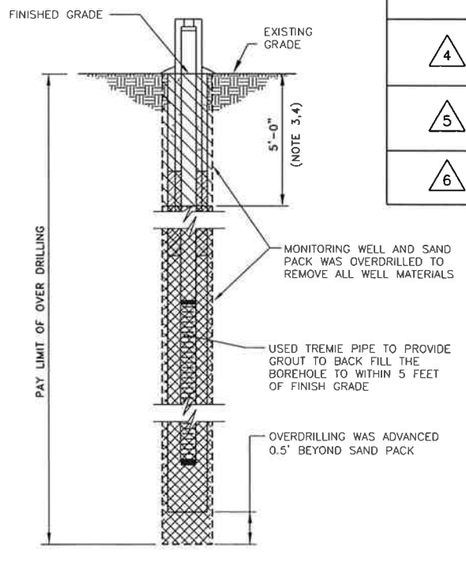
SOUTH SEWER CATCH BASIN ABANDONMENT

SCALE: N.T.S.



TYPICAL MONITORING WELL

SCALE: N.T.S.



OVERDRILLING MONITORING WELL

SCALE: N.T.S.

DATE	DESCRIPTION	BY

Designed by: J. MANZELLA
Drawn by: D. SHAFFER
Checked by: F. REID
Date: NOVEMBER 2010
Job No. 2005.0358.00
Drawing File No.
Dwg Scale: Horiz: AS NOTED Vert: NA
File Name: SITE.DWG

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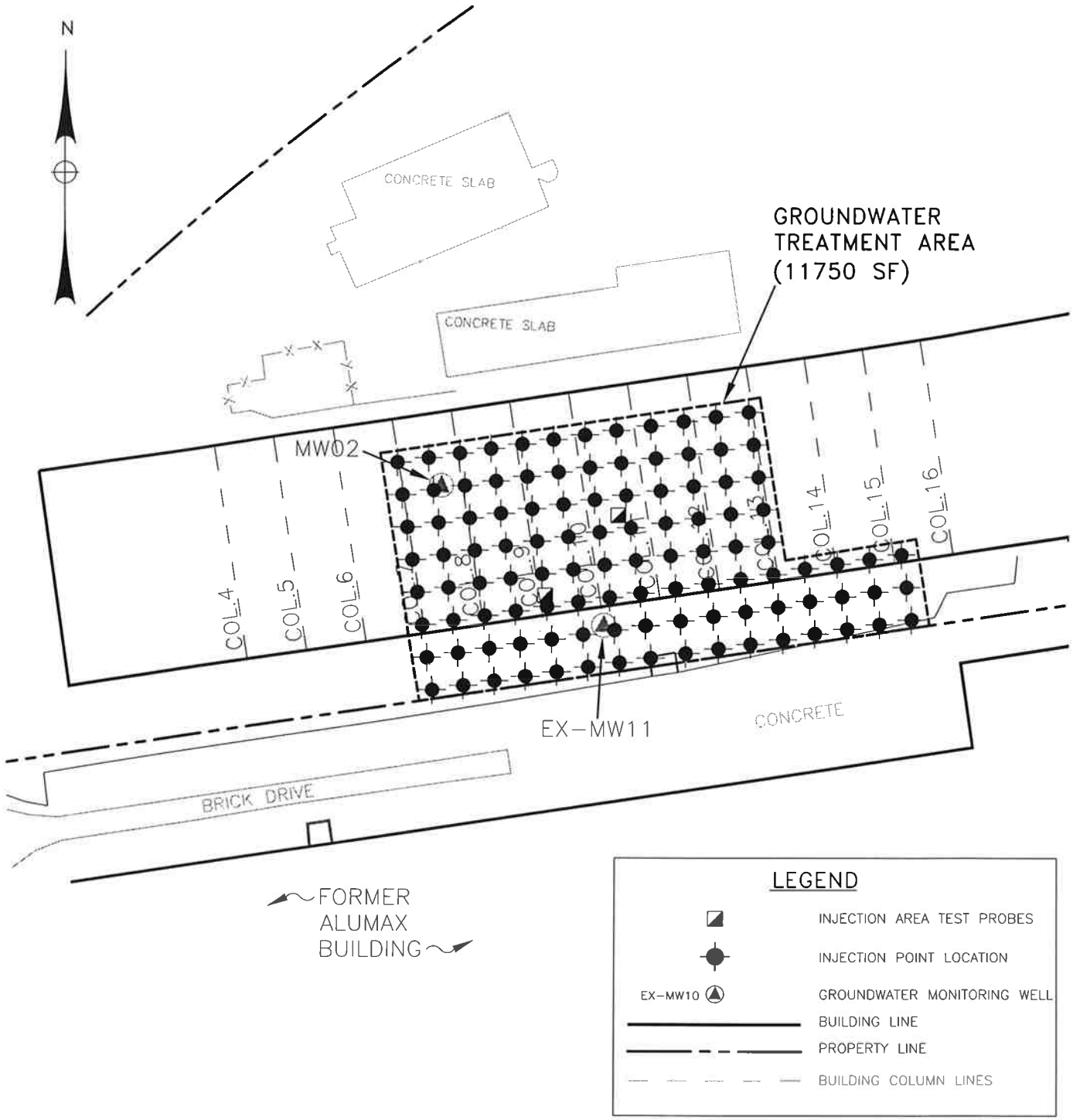
INTERIOR REMEDIAL ACTIONS
FORMER ROBLIN STEEL SITE

CITY OF DUNKIRK
CHAUTAUQUA COUNTY, NEW YORK

FIGURE 8



GRANULAR IRON INJECTION LOCATIONS

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FORMER ROBLIN STEEL SITE
DUNKIRK, CHAUTAUQUO CO., N.Y.

PROJECT NO. 2005.0308.00	SCALE: 1" = 50'	DATE: NOVEMBER 2010	FIGURE 9

N

EXISTING ROBLIN STEEL BUILDING

FINISH FLOOR ELEV 613.1'

FINISH FLOOR ELEV 612.3'

ALUMAX

CONCRETE SLAB

CONCRETE SLAB WITH RUBBLE

GRAVEL DRIVE

CHAINLINK FENCE

DROP INLET RIM 610.92

DROP INLET RIM 611.53

CP 10

CP 11

CP 12

CP 13

CP 14

CP 15

CP 16

CP 17

CP 18

CP 19

CP 20

GATE POST

TOP OF SLOPE

BOTTOM OF SLOPE

BRIDGE HEADWALL

TELEGRAPH POLE

PARTIALLY EXPOSED SLAB

B5+00

B4+00

B3+00

B2+00

B1+00

A1+00

A2+00

A3+00

A4+00

A5+00

A6+00

A7+00

A8+00

A9+00

A10+00

A11+00

A12+00

A13+00

A14+00

A15+00

A16+00

A17+00

LEGEND

- AIR SAMPLING STATION LOCATION
- PREVAILING WIND DIRECTION

NOTE: THE SPECIFIC LOCATIONS OF THE AIR SAMPLING STATIONS WILL BE BASED ON THE LOCATION OF INVASIVE ACTIVITIES AND PREVAILING WINDS AT THE TIME THE WORK IS PREFORMED.

AIR MONITORING LOCATIONS

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FORMER ROBLIN STEEL SITE
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PROJ. NO. 2005.0308.00	SCALE: 1" = 120'	DATE: NOVEMBER 2010	FIGURE NO. 10

N

MW01
NOT SAMPLED

MW04
NO VOC's WERE DETECTED ABOVE DETECTION LEVELS

MW07R

PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 50
cis-1,2-DICHLOROETHENE	**1,500**
BENZENE	**65**
ETHYLBENZENE	< 50
TOLUENE	**69**
m,p-XYLENES	**67**
o-XYLENES	< 50
TRICHLOROETHENE	**160**
VINYL CHLORIDE	**770**
METHYL CYCLOHEXANE	99 (NO GUIDANCE VALUE)

MW12
NOT SAMPLED

MW09R

PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	2.02
cis-1,2-DICHLOROETHENE	**210**
BENZENE	**11.5**
ETHYLBENZENE	**5.66**
TOLUENE	**23.3**
m,p-XYLENES	**20.5**
o-XYLENES	**11.5**
TRICHLOROETHENE	**135**
VINYL CHLORIDE	**33**
trans-1,2-DICHLOROETHENE	4.48
1,2,4-TRIMETHYLBENZENE	**12.9**

EX-MW11

PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 4
cis-1,2-DICHLOROETHENE	**354**
BENZENE	< 1.4
ETHYLBENZENE	< 4
TOLUENE	< 4
m,p-XYLENES	< 4
o-XYLENES	< 4
TRICHLOROETHENE	**168**
VINYL CHLORIDE	**27**

EX-MW12

PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 2
cis-1,2-DICHLOROETHENE	< 2
BENZENE	< 0.7
ETHYLBENZENE	< 2
TOLUENE	< 2
m,p-XYLENES	< 2
o-XYLENES	< 2
TRICHLOROETHENE	< 2
VINYL CHLORIDE	< 2

MW02

PARAMETER	CONCENTRATION ug/L
1,1-DICHLOROETHENE	< 2
cis-1,2-DICHLOROETHENE	< 2
BENZENE	**7.92**
ETHYLBENZENE	**9.81**
TOLUENE	**7.19**
m,p-XYLENES	**7.62**
o-XYLENES	2.61
TRICHLOROETHENE	< 2
VINYL CHLORIDE	< 2
2-BUTANONE	33.5
1,2,4-TRIMETHYLBENZENE	**10**
n-PROPYLBENZENE	2.57

LEGEND

- EX-MW10 ▲ — EXISTING GROUNDWATER MONITORING WELL
- MW03 — BEDROCK GROUNDWATER MONITORING WELL
- MW01 — INTERFACE GROUNDWATER MONITORING WELL

BOLD CONCENTRATIONS EXCEED THE WATER QUALITY STANDARDS LISTED IN TOGS 1.1.1(JUNE 1998)
GROUNDWATER SAMPLING WAS PERFORMED FEBRUARY AND MAY, 2009

POST REMEDIAL BASELINE GROUNDWATER ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS OF CONCERN

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FORMER ROBLIN STEEL SITE
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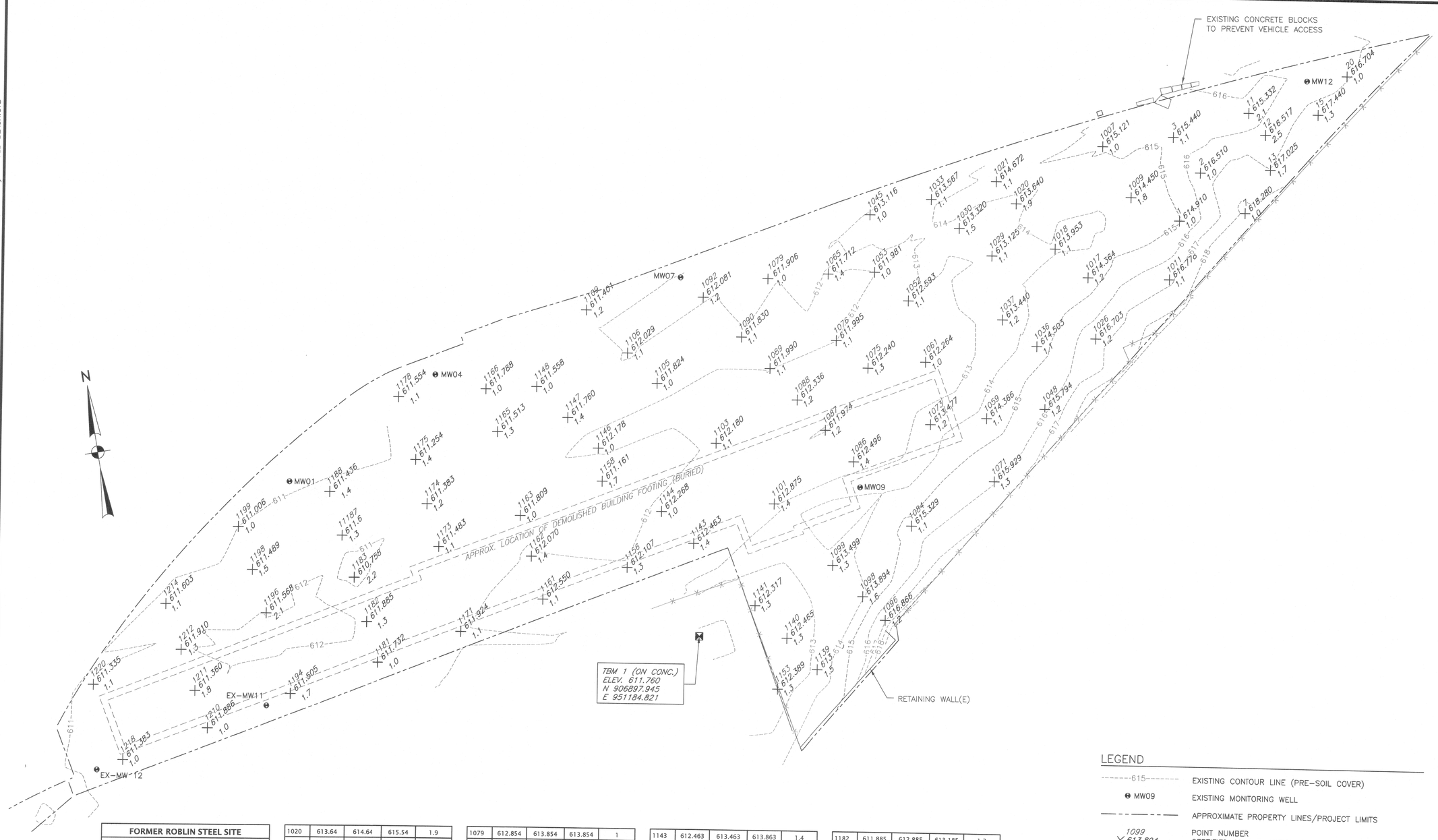
PROJ. NO. 2005.0308.00 | SCALE: 1" = 120' | DATE: NOVEMBER 2010 | FIGURE NO. 11



FORMER ROBLIN STEEL SITE				
SOIL COVER SYSTEM				
Shot ID	Existing Elevation	Designed Grade	Actual Finished Grade	As-Built Thickness
1	614.91	615.91	615.91	1
2	616.51	617.51	617.51	1
3	615.44	616.44	616.54	1.1
7	618.28	619.28	619.28	1
11	615.332	616.332	617.432	2.1
12	616.517	617.517	619.017	2.5
13	617.025	618.025	618.725	1.7
15	617.44	618.44	618.74	1.3
20	616.704	617.704	617.704	1
1007	615.121	616.121	616.121	1
1009	614.45	615.45	616.25	1.8
1011	616.778	617.778	617.878	1.1
1017	614.364	615.364	615.564	1.2
1018	613.953	614.953	615.053	1.1

1020	613.64	614.64	615.54	1.9
1021	614.672	615.672	615.772	1.1
1026	616.703	617.703	617.903	1.2
1029	613.125	614.125	614.225	1.1
1030	613.32	614.32	614.82	1.5
1033	613.567	614.567	614.667	1.1
1036	614.503	615.503	615.603	1.1
1037	613.44	614.44	614.64	1.2
1045	613.116	614.116	614.116	1
1048	615.794	616.794	616.994	1.2
1052	612.593	613.593	613.693	1.1
1053	611.981	612.981	612.981	1
1059	614.366	615.366	615.466	1.1
1061	612.264	613.264	613.264	1
1065	611.712	612.712	613.112	1.4
1071	615.929	616.929	617.229	1.3
1073	613.477	614.477	614.677	1.2
1075	612.24	613.24	613.54	1.3
1076	611.995	612.995	613.095	1.1

1079	612.854	613.854	613.854	1
1084	615.329	616.329	616.429	1.1
1086	612.496	613.496	613.896	1.4
1087	611.974	612.974	613.174	1.2
1088	612.336	613.336	613.536	1.2
1089	611.99	612.99	613.09	1.1
1090	611.83	612.83	612.93	1.1
1092	612.081	613.081	613.281	1.2
1096	616.866	617.866	618.066	1.2
1098	613.894	614.894	615.494	1.6
1099	613.499	614.499	614.799	1.3
1101	612.875	613.875	614.275	1.4
1103	612.18	613.18	613.28	1.1
1105	611.824	612.824	612.824	1
1106	612.029	613.029	613.129	1.1
1109	611.401	612.401	612.601	1.2
1139	613.155	614.155	614.655	1.5
1140	612.465	613.465	613.765	1.3
1141	612.317	613.317	613.617	1.3

1143	612.463	613.463	613.863	1.4
1144	612.268	613.268	613.268	1
1146	612.178	613.178	613.178	1
1147	611.76	612.76	613.16	1.4
1148	611.558	612.558	612.558	1
1153	612.389	613.389	613.689	1.3
1156	612.107	613.107	613.407	1.3
1158	611.161	612.161	612.861	1.7
1161	612.55	613.55	613.65	1.1
1162	612.07	613.07	613.47	1.4
1163	611.809	612.809	612.809	1
1165	611.513	612.513	612.813	1.3
1166	611.788	612.788	612.788	1
1171	611.924	612.924	613.024	1.1
1173	611.483	612.483	612.583	1.1
1174	611.383	612.383	612.583	1.2
1175	611.254	612.254	612.654	1.4
1178	611.554	612.554	612.654	1.1
1181	611.732	612.732	612.732	1

1182	611.885	612.885	613.185	1.3
1183	610.758	611.758	612.958	2.2
1187	611.6	612.6	612.9	1.3
1188	611.436	612.436	612.836	1.4
1194	611.505	612.505	613.205	1.7
1196	611.568	612.568	613.668	2.1
1198	611.489	612.489	612.989	1.5
1199	611.006	612.006	612.006	1
1210	611.886	612.886	612.886	1
1211	611.36	612.36	613.16	1.8
1212	611.91	612.91	613.21	1.3
1214	611.603	612.603	612.703	1.1
1216	611.304	612.304	612.304	1
1220	611.335	612.335	612.435	1.1
1224	610.286	611.286	611.786	1.5

LEGEND

615	EXISTING CONTOUR LINE (PRE-SOIL COVER)
MW09	EXISTING MONITORING WELL
	APPROXIMATE PROPERTY LINES/PROJECT LIMITS
1099 X 613.894 X.X	POINT NUMBER CERTIFIED SPOT ELEVATION (PRE-SOIL COVER) SOIL COVER THICKNESS (RECORDED WHEN RESURVEYED)

NOTES:

1. SPOT ELEVATIONS ON PLAN ARE SHOWN AT EXISTING GRADE PROCESSED/COLLECTED ON JUNE 28, 2010.
2. CONTRACTOR TO ADD 1 FOOT (MINIMUM) OF SOIL COVER ACROSS THE ENTIRE SITE. FOLLOWING COMPLETION OF INSTALLATION, SPOT ELEVATIONS SHOWN ON PLAN WERE RESURVEYED ON JULY 21 AND AUGUST 16, 2010 AND CHECKED FOR COVERAGE REQUIREMENT.

60 0 60 120 FT.
1"=60'

REV	DESCRIPTION	DATE	BY

Designed by: T. BOYLE
Drawn by: T. BOYLE
Checked by: D. RIKER
Date: NOVEMBER 2010
Job No. 2005.0308.00
Drawing File No.
File Name: CS-200-CERT
Dwg Scale: Horiz: 1" = 60' Vert: 1" = 60'

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ELMA, NEW YORK 14059-9530
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www.tvga.com

CITY OF DUNKIRK
NEW YORK

SOIL COVER THICKNESS MEASUREMENTS FORMER ROBLIN STEEL SITE

CITY OF DUNKIRK
CHAUTAUQUA COUNTY

SHEET REFERENCE NUMBER:

FIGURE 12

LEGEND

- PROPERTY LINE
- SAMPLING GRID SYSTEM
- AREA OF SUBSURFACE PAHs, METALS AND PETROLEUM NUISANCE CHARACTERISTICS (i.e. ODOR AND VISUAL STAINING)
- A1+00 B1+00 SAMPLING GRID SYSTEM STATIONING
- TB01 TEST BORING COMPLETED WITH INTERFACE GROUNDWATER MONITORING WELL
- SS01-S COMPOSITE SURFACE SOIL SAMPLE
- SP16 SUBSURFACE SOIL PROBE SAMPLED FOR CHEMICAL ANALYSIS
- TP05 TEST PIT SAMPLE LOCATION
- SS42-S GRAB SURFACE SOIL SAMPLE LOCATION

* NOTE:
SAMPLE LOCATIONS IN **BOLD TEXT** INDICATE EXCEEDANCES OF PART 375 UNRESTRICTED USE SOIL CLEANUP OBJECTIVES.

** NOTE:
SAMPLE LOCATIONS NOT IN BOLD TEXT ARE BELOW PART 375 UNRESTRICTED USE SOIL CLEANUP OBJECTIVES.

*** NOTE:
SITE WIDE EXCEEDANCES OF PART 375 UNRESTRICTED USE SOIL CLEANUP OBJECTIVES HAVE BEEN ADDRESSED THROUGH THE INSTALLATION OF A SITE WIDE SOIL COVER.

REMAINING CONTAMINATION

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FORMER ROBLIN STEEL SITE
DUNKIRK, CHAUTAUQUA CO., N.Y.

PROJECT NO. 2005.0308.00 | SCALE: 1" = 120' | DATE: NOVEMBER 2010 | **FIGURE NO. 13**

LaBella
Powered by partnership.

N
W E
S

0 100 200
Feet

1 inch = 142 feet

INTENDED TO PRINT AS: 11" X 17"

PROJECT:

FORMER ROBLIN STEEL SITE

DRAWING NAME:

SITE COVER PLAN

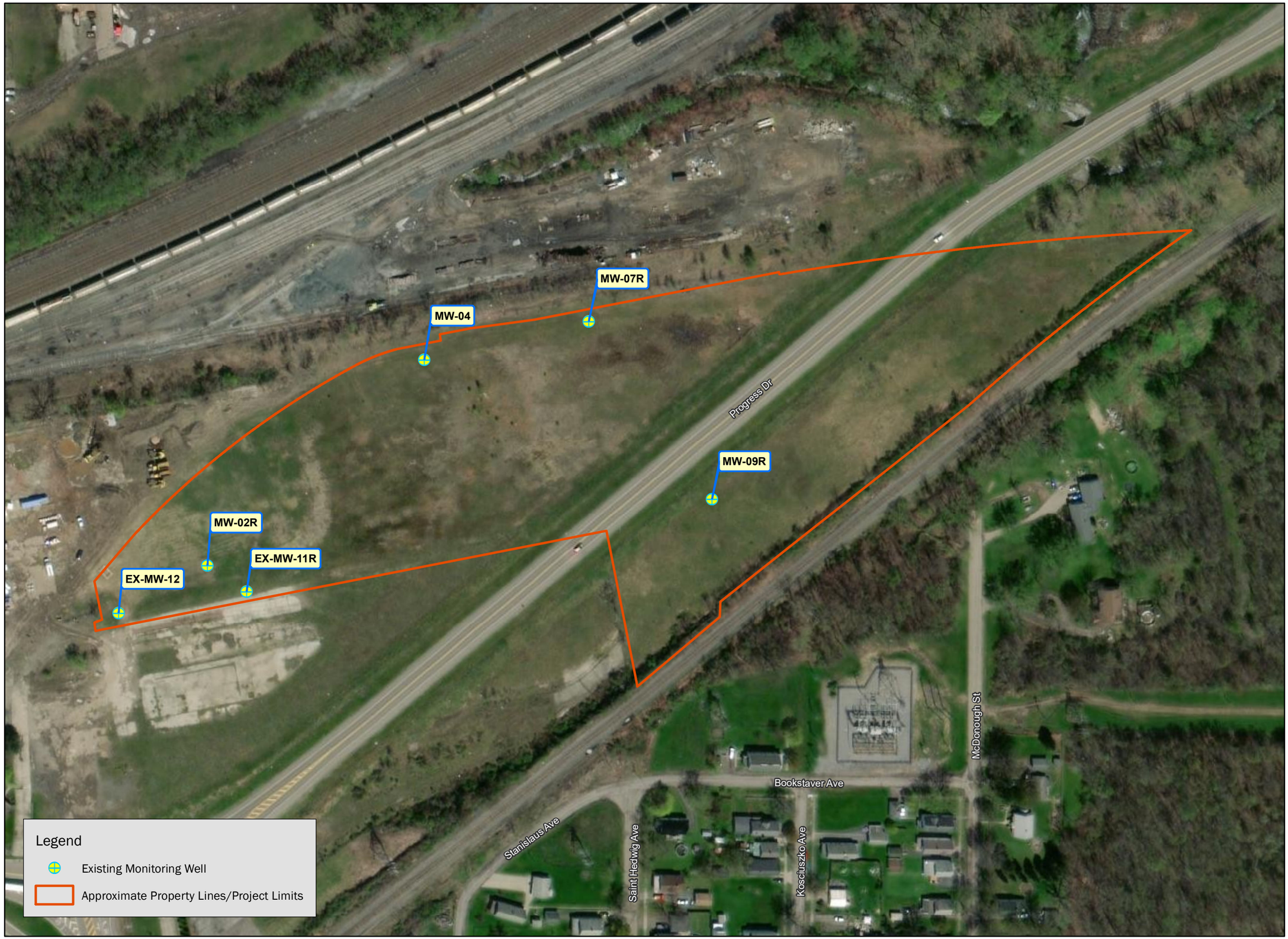
PROJECT #/DRAWING #/ DATE

2210039.01

FIGURE 14

March 2021

\\projects1\projectsAM\Chautauqua County\2210039.01 - Site Mgmt Plan Updates\DIG\Maps\MXD\Roblin\2021_03\Fig14 Site Cover Plan.mxd



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N
W E
S

0 100 200
Feet

1 inch = 142 feet

INTENDED TO PRINT AS: 11" X 17"

PROJECT:

FORMER ROBLIN STEEL SITE

DRAWING NAME:

GROUNDWATER MONITORING PROGRAM WELL LOCATIONS

PROJECT #/DRAWING #/ DATE

2210039.01

FIGURE 15

March 2021

\\projects1\projectsAM\Chautauqua County\2210039.01 - Site Mgmt Plan Updates\DIG\Maps\MXD\Roblin\2021_03\Fig15 GW Program Well Locations.mxd

APPENDIX A

EXCAVATION WORK PLAN

FORMER ROBLIN STEEL SITE
320 South Roberts Road
CITY OF DUNKIRK, CHAUTAUQUA COUNTY, NEW YORK

EXCAVATION WORK PLAN

NYSDEC SITE NO. B-00173-9

Note: NYSDEC DER-10 and January 2021 Sampling, Analysis and Assessment of Per- and Polyflouroaklyl Substances (PFAS) Guidelines will be followed.

Prepared for:

Chautauqua County Department of Public Facilities
454 North Work Street
Falconer, New York

Prepared by:

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November 2010

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FORMER ROBLIN STEEL SITE
320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, CHAUTAUQUA COUNTY, NEW YORK

EXCAVATION WORK PLAN

TABLE OF CONTENTS

APPENDIX A - EXCAVATION WORK PLAN

A-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the Department. Currently, this notification will be made to:

NYSDEC Division of Environmental Remediation Regional Engineer (refer: NYSDEC Site No. B00173-9)

270 Michigan Avenue
Buffalo, NY 14203-2999
(716)851-7220

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans 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 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;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR Part 1910.120;
- A copy of the contractor's health and safety plan, in electronic format;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

A-2 SOIL SCREENING METHODS

A scientist or engineer with experience in environmental site investigation and remediation will inspect soil/fill all excavations or disturbances on behalf of the Site owner. The excavated soil/fill will be inspected for staining or discoloration, and will be field screened for the presence of VOCs with a photoionization detector (PID) that is calibrated as per the manufacturer's requirements. Excavated soil/fill that is visibly stained, discolored, or produces elevated PID readings (i.e., sustained readings of 5 parts per million (ppm) above background or greater) will be stockpiled in accordance with the methods identified in Section A-3 below in an area away from the primary work

activities. Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

The stockpiled material will be sampled in accordance with the protocols delineated in Section A-7 for reuse or off-site disposal. The length of time that potentially impacted soil can be temporarily stockpiled while awaiting analytical results shall be limited to 90 days. Analyzed soil/fill that is determined to contain one or more constituents in excess of the Part 375-6.8(b) Commercial Use Soil Cleanup Objectives (SCOs) shall be treated on-site according to an NYSDEC-approved treatment plan or transported off-site to a permitted waste management facility for disposal. Soil/fill that exhibits no staining, discoloration, or elevated PID readings, or soil/fill that has been analyzed and found to be within the SCOs may be reused on-site as subgrade backfill. No excavated soil/fill may be removed from the Site except for the purpose of off-site disposal as defined in Section A-6.

A-3 STOCKPILE METHODS

An important element of soil and fill management on the Site is the mitigation and control of surface erosion from storm water runoff. For this reason, a Master Erosion Control Plan (MECP) to be used by all contractors and developers has been prepared and incorporated as Attachment A-1. The MECP describes the erosion and sedimentation controls for handling material stockpiles on the Site. A summary of key elements of stockpile handling include:

- Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

- Stockpiles will be kept covered at all times with appropriately anchored tarps. 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 NYSDEC.

A-4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material. The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

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 SMP is posed by utilities or easements on the Site.

A truck wash will be operated on-site. 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. 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). 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.

A-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 tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used. All trucks will be washed prior to leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Truck transport routes will be dependent upon the destination of material to be transported off-site. In general truck transport routes will be identified that will: (a) limit transport through residential areas and past sensitive sites; (b) use city-mapped truck routes; (c) minimize off-site queuing of trucks entering the facility; (d) limit total distance to major highways; (e) promote safety in access to highways; and (f) overall safety in transport.

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

A-6 MATERIALS DISPOSAL OFF-SITE

Except as provided in Section A-7 below, all soil/fill/solid waste 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 (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill 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 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, construction and demolition debris recycling facility, etc.). Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

A-7 MATERIALS REUSE ON-SITE

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for re-use on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Excavated soil/fill that is visibly stained, discolored, or produces elevated PID readings will be sampled and classified for reuse, treatment, or off-site disposal. A tiered approach based upon the volume of soil/fill being excavated will be used to determine the frequency of sampling. A minimum of one composite sample will be collected for each 500 cubic yards up to 1,000 cubic yards of material excavated. If more than 1,000 cubic yards of soils are excavated from the same general vicinity and all samples of the first 1,000 cubic yards meet the Commercial/Industrial Use Allowable Constituent Levels for Imported Fill or Soil (ACL) in Table A-1, the sample collection frequency may be reduced to one composite for each additional 2,500 cubic yards of soil from the same general vicinity, up to 5,000 cubic yards. For excavations that generate greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, providing all earlier samples met the SCOs. Soil located above the demarcation

layer can reused without sampling. However, a minimum of 12-inches of soil cover must be maintained across the site.

A minimum of five grab samples will be collected for each composite sample. Approximately equal fractions of the grab samples will be composited in the field using a stainless steel trowel and bowl. The trowel and bowl shall be decontaminated with alconox or liquinox and potable water mixture, then triple-rinsed with deionized water between sampling locations. The composite sample will be analyzed by a NYSDOH ELAP certified laboratory for Target Compound List (TCL) VOCs, SVOCs, and PCB/pesticides, as well as the metals listed on Table A-1. In addition, one sample jar will be filled and sent to the laboratory for possible characterization analysis, as described below. All analyses shall be performed using methods acceptable to NYSDEC at the time of analysis.

VOCs may be excluded from the analysis provided that the soil/fill does not exhibit elevated PID readings. Any excavated soil that produces elevated PID readings will be separately stockpiled in 1,000 cubic yard or smaller piles. A single grab sample will be collected from the stockpile from the zone displaying the most elevated field PID reading. The grab sample will be analyzed by a NYSDOH ELAP-certified laboratory for TCL VOCs using a method acceptable to NYSDEC at the time of analysis. If the analysis of the soil/fill samples reveals concentrations greater than one or more of the SCOs, then a duplicate sample will be extracted using the Toxicity Characteristic Leaching Procedure (TCLP) method for analysis of the particular contaminant in question to determine the appropriate off-site disposal method. If the TCLP hazardous waste characteristic values are exceeded, the soil/fill will be disposed of in a permitted hazardous waste disposal facility. If the TCLP analytical results are below the hazardous waste characteristic values, the soil/fill will be disposed of off-site in accordance with Section A-6.

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.

A-8 FLUIDS MANAGEMENT

Depending on the time of the year that site redevelopment activities are performed, the management of water may be a necessary component of any invasive work conducted. Water management may be required for dewatering during the excavation activities, utility installations and subsurface remedial areas that may be identified during site redevelopment.

Contractors performing subsurface work at the Site will be required to provide temporary dewatering to handle groundwater and storm water run-in to excavations during invasive activities. Dewatering methods may include the use of sumps, pumps, or the installation of well points. The water will be pumped or hauled from the collection points to the ground surface at on-site locations downgradient of the excavation, where it will be allowed to infiltrate back into the porous soil/fill. No water that is collected will be allowed to run off or be discharged off-site (i.e. no water will be discharged to the storm sewers or surface water bodies located on or adjacent to the Site). Additionally, it should be noted that there are currently no active sanitary systems on the Site.

If the groundwater or storm water that collects in the excavations exhibits evidence of contamination (i.e., sheen, odor, etc.), it may be necessary to treat the water prior to surface discharge or discharge the water into the sanitary sewer system. This would likely involve pumping the water into clean holding tanks and analyzing the water for contamination. Based on the analytical results, the water may be discharged directly to the surface or into sanitary sewer system. Alternately, the water may require some type of treatment (i.e., activated carbon) prior to discharge. Any treatment plans and/or discharges to the sanitary sewer system will not be performed without prior NYSDEC approval. Additionally, all liquids to be removed from the site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations.

Discharge of water generated during large-scale construction activities to surface waters will be performed under a SPDES permit.

A-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive remedial activities the cover system will be restored in a manner that complies with the ROD as well as the requirements of this SMP. The demarcation layer, consisting of orange plastic mesh material or equivalent (such as snow fencing) 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 SMP. 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. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to SMP.

A-10 BACKFILL FROM OFF-SITE SOURCES

Subgrade material from off-site sources used to backfill excavations or placed to increase site grades or elevation shall meet the following criteria:

- 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 SMP, applicable regulations (6NYCRR 375-6.7(d)) and guidance (DER-10) prior to receipt at the site.
- Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the Site
- All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards for imported backfill are listed in Table A-1.
- Off-site borrow soils will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products.
- Off-site soils intended for use as site backfill cannot otherwise be defined as a solid waste in accordance with 6NYCRR Part 360-1.2(a).
- If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use.
- Virgin soils should be subject to collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, SVOCs, pesticides, and PCBs, plus the metals listed in Table A-1. The soil will be acceptable for use as backfill provided that all parameters meet the maximum concentration limits listed in this table.
- Non-virgin soils will be tested via collection of one composite sample per 500 cubic yards of material from each source area. If more than 1,000 cubic yards of soil are borrowed from a given off-site non-virgin soil source area and both samples of the first 1,000 cubic yards meet the maximum contaminant concentrations listed in Table A-1, the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the maximum contaminant concentrations listed in Table A-1.
- Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

A-11 STORMWATER POLLUTION PREVENTION

Stormwater management is an important component of the remedial construction at the project site. Therefore, the following Stormwater Pollution Prevention Plan (SWPPP) to control runoff and pollutants from the Site during construction activities was developed as part of this SMP. The following subsections comprise the SWPPP, which was developed in accordance with the requirements listed the NYSDEC's *Instruction Manual for Stormwater Construction Permit*, July 2004. All work will comply with applicable local, state, and federal regulations including, but not limited to, the provisions set forth in the NYSDEC, SPDES General Permit for Stormwater Discharge GP-0-05-001.

A-11.1 Stormwater Management Objectives

The principal objective of this SWPPP is to comply with the NYSDEC SPDES Stormwater Permit for construction activities by planning and implementing the following practices:

- Reduction and/or elimination of erosion and sediment loading to waterbodies during remedial construction; and
- Maintenance of stormwater controls during remedial construction.

Based on the fact that the ultimate design for site redevelopment has not yet been established, the design of permanent stormwater management facilities has not been incorporated into this plan.

A-11.2 Post-Remediation Conditions

The remedial activities performed at the Site have resulted in improved conditions for stowmwater pollution prevention. The installation of the 12-inch soil cover has eliminated the exposure of remaining contamination on the surface of the Site. The installation of the grass turf across the Site will significantly minimize the potential for erosion of the soil cover. Additionally, the removal of the building and the crushing concrete floors and foundations and installation of French drains on the Site will reduce ponding and allow for an increase in infiltration of any precipitation that falls on the Site. Based on the fact that the ultimate design for site redevelopment has not yet been established, stormwater drainage issues relating to site redevelopment will be addressed during the design of the redevelopment in accordance with all applicable regulations.

A-11.3 Erosion and Sediment Controls

Every effort will be made to minimize erosion and sediment runoff during construction. Measures described in the MECP, included as Attachment A-1 will be implemented to control the migration of both contaminated and non-

contaminated sediment off of the Site. Key elements of the MECP include the following:

- Barriers and hay bale checks will be installed and inspected once a 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 NYSDEC. All necessary repairs shall be made immediately.
- Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.
- All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.
- Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.
- Erosion and sediment control measures identified in the SMP 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
- Silt fencing or hay bales will be installed around the entire perimeter of the remedial construction area.

A-12 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition. Soil/fill contamination may be encountered during intrusive activities associated with site maintenance or reconstruction including infrastructure construction (i.e. roads, waterlines, sewers, electric cables, etc.) or foundation excavation and site grading. Therefore, the excavation, handling, analytical and backfilling requirements as well as the notification/reporting requirements and the appropriate control measures will be conducted in accordance with Sections A-1 through A-10 of this Excavation Work Plan.

Any water encountered on the Site will be handled in accordance with procedures identified in Section A-8. The removal of other fluids from any tanks or other containers that may be identified during intrusive would be dependent upon the type, quantity and location of the encountered fluid. However, removal methods could employ the use of vacuum trucks or drum vacuums.

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 full a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), 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 be also included in daily and periodic electronic media reports.

A-13 COMMUNITY AIR MONITORING PLAN

Real time air monitoring will be performed at downwind locations during site redevelopment activities. A Community Air Monitoring Plan (CAMP) is included as Attachment A-2. This plan is consistent with the requirements for community air monitoring at remediation sites as outlined in NYSDOH's generic Community Air Monitoring Plan (June 20, 2000) and NYSDEC TAGM 4031: Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites presented in Attachment A-3.

A map showing the location of air sampling stations based generally on prevailing wind conditions in Dunkirk, NY is shown in Figure 10 of the SMP. The actual locations of air sampling stations will be based on the locations of invasive activities as well as generally prevailing wind conditions at the time the work is performed. 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.

A-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site. While there will be no specific odor control methods used on a routine basis, monitoring for VOCs and particulates will be performed during all intrusive activities (i.e., excavations, utility installations, etc.). 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 property owner's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent 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 trucks 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.

Based upon the RI performed at the Site, VOCs and petroleum odors are the primary contaminants that would generate nuisance odors. Procedures for controlling VOC emissions from the Site are detailed in the CAMP.

A-15 DUST CONTROL PLAN

Particulate monitoring will be performed along the downwind perimeter of the site during subgrade excavation, grading, and handling activities in accordance with the Community Air Monitoring Plan (Attachment A-2) as well as in accordance with NYSDEC TAGM 4031 (Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites) presented in Attachment A-3.

Dust suppression techniques will be employed as necessary to mitigate fugitive dust from unvegetated or disturbed soil/fill to the extent practicable during post-remediation construction and redevelopment. Such techniques shall be employed even if the community air monitoring results indicate particulate levels are below action levels Fugitive dust suppression techniques will include the following minimum measures:

- Dust suppression will be achieved though the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations, equipment 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.
- Excavated stockpiles from intrusive activities that generate unacceptable dust levels will be seeded, covered with synthetic materials (e.g., tarps,

membranes, etc.), or watered to reduce dust generation to acceptable levels.

- Stockpiles of soil/fill from intrusive activities that are potentially contaminated (i.e. are visually stained, discolored or produce elevated PID readings) and awaiting analytical results should be covered with tarps or polyethylene membranes at the end of each day's work activities.
- All fill materials leaving the site will be hauled in properly covered containers or trucks.

Additional dust suppression efforts may be required as discussed in the CAMP included in Attachment A-2.

N:\2005.0308.00-Roblin Remedial Design and Oversight\Engineering\10Deliverables\Final Engineering Report\Site Management Plan\Attachments for 2010 SMP\Appendix A Excavation Work Plan.docx

TABLE A - 1

ALLOWABLE CONSTITUENT LEVELS FOR IMPORTED FILL OR SOIL

TABLE A-1

Allowable Constituent Levels for Imported Fill or Soil
Subdivision 5.4(e)

Source: This table is derived from soil cleanup objective (SCO) tables in 6 NYCRR 375. Table 375-6.8(a) is the source for unrestricted use and Table 375-6.8(b) is the source for restricted use.

Note: For constituents not included in this table, refer to the contaminant for supplemental soil cleanup objectives (SSCOs) in the Commissioner Policy on *Soil Cleanup Guidance*. If an SSCO is not provided for a constituent, contact the DER PM to determine a site-specific level.

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Metals					
Arsenic	13	16	16	16	13
Barium	350	350	400	400	433
Beryllium	7.2	14	47	47	10
Cadmium	2.5	2.5	4.3	7.5	4
Chromium, Hexavalent[1]	1 [3]	19	19	19	1 [3]
Chromium, Trivalent[1]	30	36	180	1500	41
Copper	50	270	270	270	50
Cyanide	27	27	27	27	NS
Lead	63	400	400	450	63
Manganese	1600	2000	2000	2000	1600
Mercury (total)	0.18	0.73	0.73	0.73	0.18
Nickel	30	130	130	130	30
Selenium	3.9	4	4	4	3.9
Silver	2	8.3	8.3	8.3	2
Zinc	109	2200	2480	2480	109
PCBs/Pesticides					
2,4,5-TP Acid (Silvex)	3.8	3.8	3.8	3.8	NS
4,4'-DDE	0.0033 [3]	1.8	8.9	17	0.0033 [3]
4,4'-DDT	0.0033 [3]	1.7	7.9	47	0.0033 [3]
4,4'-DDD	0.0033 [3]	2.6	13	14	0.0033 [3]
Aldrin	0.005	0.019	0.097	0.19	0.14
Alpha-BHC	0.02	0.02	0.02	0.02	0.04 [4]
Beta-BHC	0.036	0.072	0.09	0.09	0.6
Chlordane (alpha)	0.094	0.91	2.9	2.9	1.3
Delta-BHC	0.04	0.25	0.25	0.25	0.04 [4]
Dibenzofuran	7	14	59	210	NS
Dieldrin	0.005	0.039	0.1	0.1	0.006
Endosulfan I	2.4 [2]	4.8	24	102	NS
Endosulfan II	2.4 [2]	4.8	24	102	NS
Endosulfan sulfate	2.4 [2]	4.8	24	200	NS
Endrin	0.014	0.06	0.06	0.06	0.014
Heptachlor	0.042	0.38	0.38	0.38	0.14
Lindane	0.1	0.1	0.1	0.1	6
Polychlorinated biphenyls	0.1	1	1	1	1

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Semi-volatile Organic Compounds					
Acenaphthene	20	98	98	98	20
Acenaphthylene	100	100	100	107	NS
Anthracene	100	100	100	500	NS
Benzo(a)anthracene	1	1	1	1	NS
Benzo(a)pyrene	1	1	1	1	2.6
Benzo(b)fluoranthene	1	1	1	1.7	NS
Benzo(g,h,i)perylene	100	100	100	500	NS
Benzo(k)fluoranthene	0.8	1	1.7	1.7	NS
Chrysene	1	1	1	1	NS
Dibenz(a,h)anthracene	0.33 [3]	0.33 [3]	0.33 [3]	0.56	NS
Fluoranthene	100	100	100	500	NS
Fluorene	30	100	100	386	30
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5	5.6	NS
m-Cresol(s)	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	NS
Naphthalene	12	12	12	12	NS
o-Cresol(s)	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	NS
p-Cresol(s)	0.33	0.33	0.33	0.33	NS
Pentachlorophenol	0.8 [3]	0.8 [3]	0.8 [3]	0.8 [3]	0.8 [3]
Phenanthrene	100	100	100	500	NS
Phenol	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	30
Pyrene	100	100	100	500	NS
Volatile Organic Compounds					
1,1,1-Trichloroethane	0.68	0.68	0.68	0.68	NS
1,1-Dichloroethane	0.27	0.27	0.27	0.27	NS
1,1-Dichloroethene	0.33	0.33	0.33	0.33	NS
1,2-Dichlorobenzene	1.1	1.1	1.1	1.1	NS
1,2-Dichloroethane	0.02	0.02	0.02	0.02	10
1,2-Dichloroethene(cis)	0.25	0.25	0.25	0.25	NS
1,2-Dichloroethene(trans)	0.19	0.19	0.19	0.19	NS
1,3-Dichlorobenzene	2.4	2.4	2.4	2.4	NS
1,4-Dichlorobenzene	1.8	1.8	1.8	1.8	20
1,4-Dioxane	0.1 [3]	0.1 [3]	0.1 [3]	0.1 [3]	0.1
Acetone	0.05	0.05	0.05	0.05	2.2
Benzene	0.06	0.06	0.06	0.06	70
Butylbenzene	12	12	12	12	NS
Carbon tetrachloride	0.76	0.76	0.76	0.76	NS
Chlorobenzene	1.1	1.1	1.1	1.1	40
Chloroform	0.37	0.37	0.37	0.37	12
Ethylbenzene	1	1	1	1	NS
Hexachlorobenzene	0.33 [3]	0.33 [3]	1.2	3.2	NS
Methyl ethyl ketone	0.12	0.12	0.12	0.12	100
Methyl tert-butyl ether	0.93	0.93	0.93	0.93	NS
Methylene chloride	0.05	0.05	0.05	0.05	12

Volatile Organic Compounds (continued)					
Propylbenzene-n	3.9	3.9	3.9	3.9	NS
Sec-Butylbenzene	11	11	11	11	NS
Tert-Butylbenzene	5.9	5.9	5.9	5.9	NS
Tetrachloroethene	1.3	1.3	1.3	1.3	2
Toluene	0.7	0.7	0.7	0.7	36
Trichloroethene	0.47	0.47	0.47	0.47	2
Trimethylbenzene-1,2,4	3.6	3.6	3.6	3.6	NS
Trimethylbenzene-1,3,5	8.4	8.4	8.4	8.4	NS
Vinyl chloride	0.02	0.02	0.02	0.02	NS
Xylene (mixed)	0.26	1.6	1.6	1.6	0.26

All concentrations are in parts per million (ppm)
NS = Not Specified

Footnotes:
[1] The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.
[2] The SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.
[3] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.
[4] This SCO is derived from data on mixed isomers of BHC.

ATTACHMENT A-1

MASTER EROSION CONTROL PLAN

MASTER EROSION CONTROL PLAN

FORMER ROBLIN STEEL SITE
(NYSDEC SITE NO. B-00173-9)
DUNKIRK, NEW YORK

Prepared for:

Chautauqua County Department of Public Facilities
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Falconer, New York

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2005.0308.00

NOVEMEBR 2010

MASTER EROSION CONTROL PLAN

FORMER ROBLIN STEEL SITE
(NYSDEC SITE NO. B-00173-9)
DUNKIRK, NY

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LIST OF ATTACHMENT

1.0 INTRODUCTION

1.1 Background

The Former Roblin Steel Site is located along the eastern side of South Roberts Road in the City of Dunkirk, New York and occupies approximately 12 acres of an inactive industrial park.

1.2 Purpose and Scope

A Site Management Plan (SMP) was prepared that describes protocols for the proper handling of project site soil/fill during intrusive activities. The property owner at the time of development will be responsible for all monitoring, implementation, and reporting requirements of the SMP. Since erosion control will be a critical component of preventing the potential migration of contaminants onto developed property or off-site during intrusive activities at the project site, this Master Erosion Control Plan (MECP) was prepared to provide guidance to owners and developers during build-out activities on the project site. This MECP is a critical component of the SMP. This document is generic in nature and provides minimum erosion control practices to be utilized by the site owner and/or developer. More specific plans may be developed by the property owner(s) after the long-term development approach for the property has been finalized.

2.0 GENERAL PERMIT REQUIREMENTS

The State Assistance Contract that Chautauqua County entered into for the former Roblin Steel site precludes the need for State required permits that would typically be applicable to remedial and/or activities, such as the State Pollution Discharge Elimination System (SPDES) Permit. However, the conditions of this program must be adhered to during the remedial construction activities and site redevelopment, and therefore Section A-11 of the Excavation Work Plan addresses the management of stormwater during remedial activities and site redevelopment. Following the completion of remedial activities the owner/developer of the project site must comply with the applicable local, state and federal stormwater management and erosion control guidelines and regulations. Additionally, redevelopment efforts at the project site may require other applicable state and local permits. These activities also be completed in accordance with the SMP.

3.0 POTENTIAL EROSION AND SEDIMENT CONTROL CONCERNS

Following remedial activities, redevelopment activities will proceed for commercial and light industrial uses of the project site. Site-specific design measures for erosion and sediment control may need to be determined at that time after the development approach for the project site has been determined.

Potential areas and items of concern during project site intrusive activities include the following:

- All portions of the project site not covered by buildings, sidewalks, roadways, parking areas, or other structures will be required to be covered with 12 inches of "clean" soils to limit exposure to remaining subsurface soil/fill materials. The transportation and placement activities associated with this work will require erosion and sediment controls to prevent the surface soil from being washed off the area subject to intrusive activities;
- Remediated areas or off-site properties adjacent to unremediated areas of the project site need protection so that they do not become impacted by site operations;
- Storm water inlets will require protective measures to limit sediment transfer to storm sewers;
- Runoff from soil stockpiles will require erosion controls;
- Surface slopes need to be minimized as much as practical to control sediment transfer; and
- Soil/fill excavated during development will require proper handling and disposal.

4.0 EROSION AND SEDIMENT CONTROL MEASURES

4.1 Background

Standard soil conservation practices must be incorporated into the construction and development plans to mitigate soil erosion damage, off-site sediment migration, and water pollution from erosion. These practices combine vegetative and structural measures, many of which will be permanent in nature and become part of the complete project (i.e., drainage channels and grading). Other measures will be temporary and serve only during the construction stage. Selected erosion and sediment control measures will meet the following criteria:

- Minimize erosion through project design (minimum slopes, phased construction, etc.);
- Incorporate temporary and permanent erosion control measures; and

- Remove sediment from sediment-laden storm water before it leaves the site.

4.2 Temporary Measures

Temporary erosion and sedimentation control measures and facilities will be utilized during intrusive activities. They will be installed by the contractor or site developer and will be maintained until they are either no longer needed or until such time as permanent measures are installed and become effective. At a minimum, the following temporary measures will be used:

- Silt fencing;
- Straw/hay bales;
- Temporary vegetation/mulching;
- Temporary sedimentation basins; and
- Cautious placement, compaction, and grading of stockpiles.

4.2.1 Silt Fencing

Intrusive activities could potentially result in surface water flow to drainage ditches and swales, storm sewers, Hyde Creek, and adjacent properties. Silt fencing will be the primary sediment control measure used in these areas. Prior to extensive soil excavation or grading activities, silt fences will be installed along the perimeter of all construction areas. The orientation of the fencing will be adjusted as necessary as the work proceeds to accommodate changing site conditions.

Intermediate silt fencing will be utilized as necessary, upgradient of the perimeter fencing to help lower surface water runoff velocities and reduce the volume of sediment to perimeter fencing. Stockpiles will also be surrounded with silt fencing.

As sediment collects, the silt fences will be cleaned as necessary to maintain their integrity. Removed sediment will be utilized elsewhere on-site as general fill. All perimeter silt fences will remain in place until intrusive activities in an area are completed and vegetative cover has been established. Silt fences will be installed in accordance with the details presented in Attachment A1-1.

4.2.2 Straw and/or Hay Bales

Straw and/or hay bales will be used to intercept sediment laden storm water runoff in drainage channels during construction. The use of either hay or straw will be based on the availability of materials at the time of intrusive activities.

Bales will be placed in swales and ditches where the anticipated flow velocity is not expected to be greater than 5 feet/second (fps). Intermediate bales will be placed upgradient of the final barrier to reduce flow velocities and sediment loadings where higher velocities are anticipated.

As with silt fencing, sediment will be removed as necessary from behind the bales and disposed of on-site. Bales that have become laden with sediment or that have lost their structural integrity or effectiveness will be replaced. Bales should be installed in accordance with the details presented in Attachment A1-1.

4.2.3 Temporary Vegetation and Mulching

Intermediate areas where remedial and/or development activities will not occur or resume for an extended period of time (greater than 90 days) will be seeded with a quick germinating variety of grass or covered with a layer of mulch to control fugitive dust and erosion. Soil/fill stockpiles that will not be utilized for an extended period of time will also be either vegetated or covered.

4.2.4 Temporary Sedimentation Basins

Temporary sedimentation basins will be constructed as necessary upgradient of storm water inlets to reduce the volume of sediment laden runoff from the project site. The basins can be as simple as a small excavated area along the alignment of a storm water ditch or as elaborate as a full-scale sedimentation basin with outlet structures designed for certain storm events from a given area of the project site. The basins will be cleaned as necessary and the removed sediment utilized elsewhere on-site as subgrade fill material.

4.2.5 Cautious Placement of Stockpiles

As remediation and/or development occurs, intrusive activities will produce stockpiles of soil and subgrade fill materials. Careful placement and construction of stockpiles will be required to control erosion. Stockpiles will be placed no closer than fifty feet from Hyde Creek, storm water inlets, and parcel boundaries. Additionally, stockpiles will be graded and compacted as necessary for positive surface water runoff and dust control. Also, the stockpiles will be kept covered at all times with appropriately anchored tarps, which will be routinely inspected and replaced if found to be damaged.

4.3 Permanent Control Measures During Site Redevelopment

Permanent erosion and sedimentation control measures will be installed as soon as practical during construction for long-term erosion protection. Since the detailed development approach for the site has not been determined, specific

design features are yet to be selected. Examples of permanent erosion control measures could include:

- Utilizing minimum slopes in erosion prone areas to limit erosion;
- Minimizing the potential contact with, and migration of, subsurface soil/fill through the placement of a "clean" soil cover system in all areas not covered with structures, roads, parking areas, sidewalks, etc;
- Construction of permanent storm water detention ponds where appropriate;
- Planting and maintaining vegetation;
- Limiting runoff flow velocities to the extent practical; and
- Lining collection channels with riprap, erosion control fabric, vegetation, or similar materials.

5.0 CONSTRUCTION MANAGEMENT PRACTICES

5.1 General

The following general construction practices should be evaluated for erosion and sedimentation control purposes during remedial and/or site development activities:

- Clearing and grading only as much area as is necessary to accommodate the construction needs in order to minimize disturbance of areas subject to erosion (i.e., phasing the work);
- Covering exposed or disturbed areas of the site as quickly as practical;
- All erosion and sediment control measures should be installed prior to disturbing the site subgrade; and
- Both on-site and off-site tracking of soil by vehicles should be minimized by utilizing routine entry/exit routes.

6.0 EROSION CONTROL MONITORING, INSPECTION, AND MAINTENANCE

All erosion and sedimentation controls described in this Plan will be inspected by a qualified representative of the remedial contractor and/or site developer within 24 hours of a heavy rainfall event and repaired or modified as necessary to effectively control erosion of turbidity problems. Inspections should include areas under construction, areas subjected to intrusive activities, stockpile areas, erosion control devices, (i.e. silt fences, hay bales, etc.) and locations where vehicles enter and leave the site. Routine inspections of the entire site should also be made on a monthly basis during remedial and/or development activities.

If inspections indicate problems, corrective measures should be implemented within 24 hours. A report summarizing the scope of the inspection, name of the inspector, date, observations made, and a description of the corrective actions take should be completed. Examples of inspection forms to be completed are included in Attachment A1-2.

6.1 Implementation

The remedial contractor and/or site developer at this site shall at all times properly construct, operate and maintain all erosion controls and features, as part of intrusive activities, in accordance with regulatory requirements, and with good engineering and construction practices. Erosion control measures and activities will be in accordance with currently accepted Best Management Practices (BMPs). These erosion control monitoring, inspection, and maintenance activities have been developed to achieve compliance with the requirements of the master erosion control plan. The key elements of the monitoring effort include the following:

- Site Inspections and Maintenance;
- BMPs Monitoring;
- Recordkeeping;
- Review and Modifications; and
- Certification of Compliance.

6.2 Site Inspections and Maintenance Practices

The temporary erosion control features installed by the remedial contractor and/or site developer will be maintained until no longer needed or permanent erosion control methods are installed.

Site inspections are required every seven days or within 24 hours of a rainfall of 0.5 inches or greater. All disturbed areas, areas for material storage, locations where vehicles enter or exit the site, and all of the erosion and sediment controls that are identified as part of this site's construction storm water and erosion control plan must be inspected. Controls must be in good operating condition until the affected area they protect has been completely stabilized and the construction activity is complete. If a repair is necessary, it must be completed within seven calendar days of receipt of a report or notice, if practical. Inspection for specific erosion and sediment controls will include the following:

- Silt fence will be inspected to determine the following:
  - depth;
  - condition of fabric;
  - that the fabric is attached to the posts; and

- that the fence posts are firmly in the ground;

- Diversion berms, if used, will be inspected and any breaches promptly repaired;
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and other potential erosion control problems;
- The remedial contractor and/or site developer shall designate individual(s) that will be responsible for erosion control, maintenance, and repair activities. The designated individual will also be responsible for inspecting the project site and filling out the inspection and maintenance report; and
- Personnel selected for inspection and maintenance responsibilities will receive appropriate training in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used on-site in good working order.

The individual inspecting the project site must record any damages or deficiencies on an inspection form, and an example Inspection and Maintenance Report Form is attached (Attachment A1-2) to record the inspection and assessment. These forms can be used to request maintenance and/or repair and to document inspection of maintenance activities. Damages or deficiencies must be corrected as soon as possible after the inspection. Any changes that may be required to correct deficiencies in the MECP should also be made as soon as possible, but in no case later than seven days after the inspection.

6.3 Recordkeeping

A copy of the MECP and inspection and maintenance records must be kept at the project site from the time intrusive activities begin until the project site is stabilized. The MECP and related records will be made available upon request to any regulatory agency representatives.

6.4 Modifications to the Master Erosion Control Plan

During the course of remedial and/or redevelopment activities, unanticipated changes may occur which affect the MECP such as schedule changes, phasing change, staging area modifications, offsite drainage impacts, and repeated failures of designed controls. Any changes to the activities and controls identified in this plan must be documented and the MECP revised accordingly. Certification of revisions to the MECP shall be included at the end of the document.

ATTACHMENT A1-1

EROSION CONTROL DETAILS

EROSION CONTROL DETAILS

1. Silt Fence
2. Straw Bale Dike
3. Perimeter Dike/Swale
4. Temporary Swale
5. Filter Fabric Drop Inlet Protection

STANDARD AND SPECIFICATIONS FOR SILT FENCE

Definition

A temporary barrier of geotextile fabric (filter cloth) used to intercept sediment laden runoff from small drainage areas of disturbed soil.

Purpose

The purpose of a silt fence is to reduce runoff velocity and effect deposition of transported sediment load. Limits imposed by ultraviolet stability of the fabric will dictate the maximum period the silt fence may be used.

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

1. Maximum allowable slope lengths contributing runoff to a silt fence are:

Slope Steepness	Maximum Slope Length (Ft)
2:1	50
3:1	75
4:1	125
5:1	175
Flatter than 5:1	200

2. Maximum drainage area for overland flow to a silt fence shall not exceed 1/2 acre per 100 feet of fence; and
3. Erosion would occur in the form of sheet erosion; and
4. There is no concentration of water flowing to the barrier.

Design Criteria

Design computations are not required. All silt fences shall be placed as close to the area as possible, and the area below the fence must be undisturbed or stabilized.

A detail of the silt fence shall be shown on the plan, and contain the following minimum requirements:

1. The type, size, and spacing of fence posts.
2. The size of woven wire support fences.
3. The type of filter cloth used.
4. The method of anchoring the filter cloth.
5. The method of fastening the filter cloth to the fencing support.

Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. See Figure 5A.9 on page 5A.20 for details.

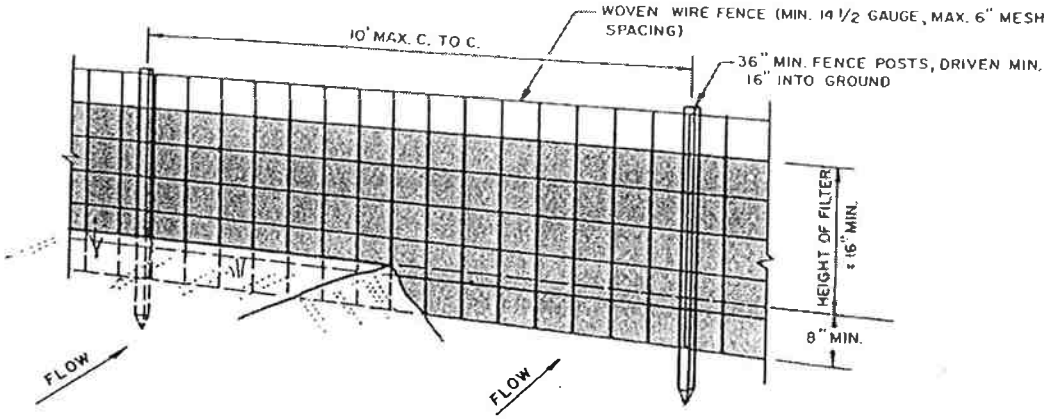
Criteria for Silt Fence Materials

1. Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance. Statewide acceptability shall depend on in field and/or laboratory observations and evaluations.

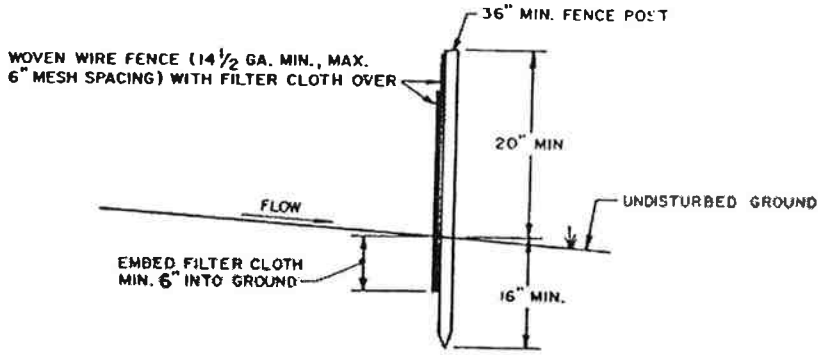
Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs)	40	ASTM D751 (modified)
Slurry Flow Rate (gal/min/sf)	0.3	
Equivalent Opening Size	40-80	US Std Sieve CW-02215
Ultraviolet Radiation Stability (%)	90	ASTM G-26

2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.0 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot.
3. Wire Fence (for fabricated units): Wire fencing shall be a minimum 14-1/2 gage with a maximum 6 in. mesh opening, or as approved.
4. Prefabricated Units: Envirofence or approved equal may be used in lieu of the above method providing the unit is installed per details shown in Figure 5A.9.

Figure 5A.9
Silt Fence Details



PERSPECTIVE VIEW



SECTION

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

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

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

FENCE: WOVEN WIRE, 14 1/2 GA. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	SILT FENCE	STANDARD SYMBOL

STANDARD AND SPECIFICATIONS FOR STRAW BALE DIKE

Definition

A temporary barrier of straw or similar material used to intercept sediment laden runoff from small drainage areas of disturbed soil.

Purpose

The purpose of a bale dike is to reduce runoff velocity and effect deposition of the transported sediment load. Straw bale dikes have an estimated design life of three (3) months.

Conditions Where Practice Applies

The straw bale dike is used where:

1. No other practice is feasible.
2. There is no concentration of water in a channel or other drainage way above the barrier.
3. Erosion would occur in the form of sheet erosion.
4. Length of slope above the straw bale dike does not exceed these limits.

Constructed Slope	Percent Slope	Slope Length (ft.)
2:1	50	25
2 -1/2:1	40	50
3:1	33	75
3-1/2:1	30	100
4:1	25	125

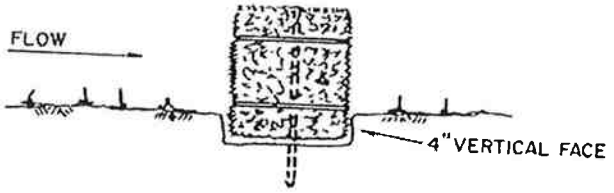
Where slope gradient changes through the drainage area, steepness refers to the steepest slope section contributing to the straw bale dike.

The practice may also be used for a single family lot if the slope is less than 15 percent. The contributing drainage area in this instance shall be less than one acre and the length of slope above the dike shall be less than 200 feet.

Design Criteria

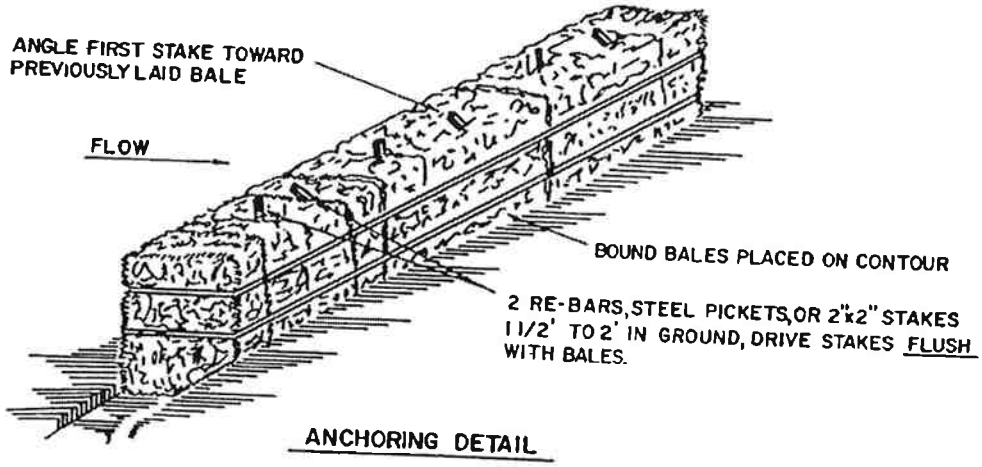
A design is not required. All bales shall be placed on the contour with cut edge of bale adhering to the ground. See Figure 5A.8 on page 5A.18 or details.

Figure 5A.8
Straw Bale Dike Details



BEDDING DETAIL

DRAINAGE AREA NO MORE THAN 1/4 ac. PER 100 FEET OF STRAW BALE DIKE FOR SLOPES LESS THAN 25%



ANCHORING DETAIL

CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	STRAW BALE DIKE	STANDARD SYMBOL SBD

STANDARD AND SPECIFICATIONS FOR PERIMETER DIKE/SWALE

Definition

A temporary ridge of soil excavated from an adjoining swale located along the perimeter of the site or disturbed area.

Purpose

The purpose of a perimeter dike/swale is to prevent off site storm runoff from entering a disturbed area and to prevent sediment laden storm runoff from leaving the construction site or disturbed area.

Conditions Where Practice Applies

Perimeter dike/swale is constructed to divert flows from entering a disturbed area, or along tops of slopes to prevent flows from eroding the slope, or along base of slopes to direct sediment laden flows to a trapping device.

The perimeter dike/swale shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 5A.3 on page 5A.6 for details.

The perimeter dike/swale shall not be constructed outside the property lines without obtaining legal easements from effected adjacent property owners. A design is not required for perimeter dike/swale. The following criteria shall be used:

Drainage area - Less than 2 acres (for drainage areas larger than 2 acres but less than 10 acres see earth dike; for drainage areas larger than 10 acres, see standard and specifications for diversion).

Height - 18 inches minimum from bottom of swale to top of dike evenly divided between dike height and swale depth.

Bottom width of dike - 2 feet minimum.

Width of swale - 2 feet minimum.

Grade - Dependent upon topography, but shall have positive drainage (sufficient grade to drain) to an adequate outlet. Maximum allowable grade not to exceed 20 percent.

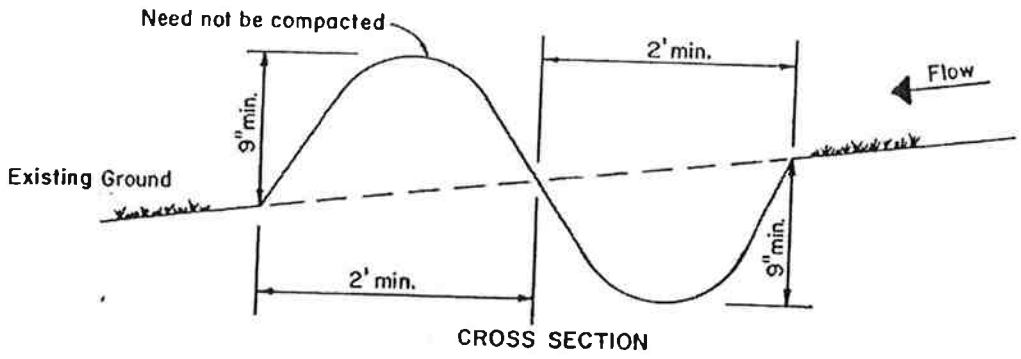
Stabilization - The disturbed area of the dike and swale shall be stabilized within 10 days of installation, in accordance with the standard and specifications for seed and straw mulch or straw mulch only if not in the seeding season.

Outlet

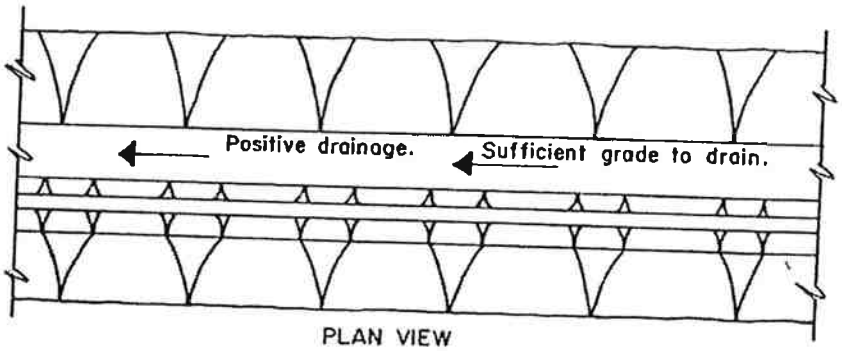
1. Perimeter dike/swale shall have an outlet that functions with a minimum of erosion.
2. Diverted runoff from a protected or stabilized upland area shall outlet directly onto an undisturbed stabilized area.
3. Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device such as a sediment trap, sediment basin, or to an area protected by any of these practices.
4. The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet.

Figure 5A.3
Perimeter Dike/Swale Details

not to scale



CROSS SECTION



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. ALL PERIMETER DIKE/SWALE SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTRUBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSION VELOCITY.
4. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED IN THE STANDARD.
5. STABILIZATION OF THE AREA DISTURBED BY THE DIKE AND SWALE SHALL BE DONE IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SEED AND STRAW MULCH, AND SHALL BE DONE WITHIN 10 DAYS.
6. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

Max. Drainage Area Limit: 2 Acres

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	PERIMETER DIKE/SWALE	STANDARD SYMBOL —→PD←—

STANDARD AND SPECIFICATION FOR TEMPORARY SWALE

Definition

A temporary excavated drainage way.

Purpose

The purpose of a temporary swale is to prevent runoff from entering disturbed areas by intercepting and diverting it to a stabilized outlet or to intercept sediment laden water and divert it to a sediment trapping device.

Conditions Where Practice Applies

Temporary Swales are constructed:

1. To divert flows from a disturbed area.
2. Intermittently across disturbed areas to shorten overland flow distances.
3. To direct sediment laden water along the base of slopes to a trapping device.
4. To transport offsite flows across disturbed areas such as rights-of-way.

Swales collecting runoff from disturbed areas shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 5A.2 on page 5A.4 for details.

	Swale A	Swale B
Drainage Area	<5 Ac	5-10 Ac
Bottom Width of Flow Channel	4 ft	6 ft
Depth of Flow Channel	1 ft	1 ft
Side Slopes	2:1 or Flatter	2:1 or Flatter
Grade	0.5% Min. 20% Max.	0.5% Min. 20% Max.

For drainage areas larger than 10 acres, refer to the Standard and Specifications for Waterways on page 5B.11.

Stabilization

Stabilization of the swale shall be completed within 10 days of installation in accordance with the appropriate standard and specifications for vegetative stabilization or stabilization with mulch as determined by the time of year. The flow channel shall be stabilized as per the following criteria:

Type of Treatment	Channel Grade[1]	Flow Channel A(<5 Ac)	Flow Channel B(5-10 Ac)
1	0.5-3.0%	Seed & Straw Mulch	Seed & Straw Mulch
2	3.1-5.0%	Seed & Straw Mulch	Seed and cover with Jute or Excelsior; Sod, or lined with 2 in. stone
3	5.1-8.0%	Seed and cover with Jute or Excelsior, Sod line with 2 in. stone	Line with 4-8 in. stone or Recycled Concrete Equivalent[2]
4	8.1-20%	Line with 4-8 in. stone or Recycled Concrete Equivalent[2]	Engineering Design

[1] In highly erodible soils, as defined by the local approving agency, refer to the next higher slope grade for type of stabilization.

[2] Recycled Concrete Equivalent shall be concrete broken into the required size, and shall contain no steel reinforcement.

Outlet

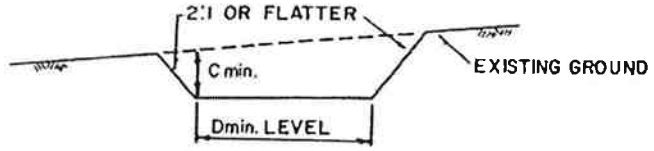
Swale shall have an outlet that functions with a minimum of erosion, and dissipates runoff velocity prior to discharge off the site.

Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin until the drainage area above the swale is adequately stabilized.

The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet condition.

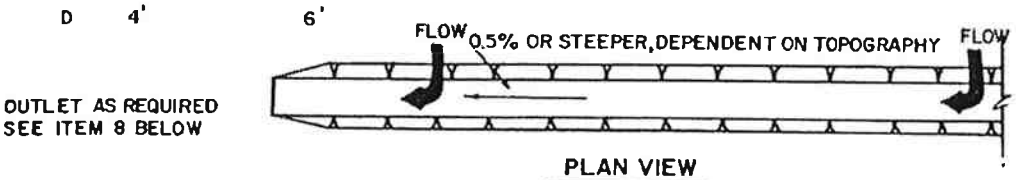
If swale is used to divert flows from entering a disturbed area, a sediment trapping device may not be needed.

Figure 5A.2
Temporary Swale Details



CROSS SECTION

	SWALE A	SWALE B
C	1'	1'
D	4'	6'



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED ON CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE AS PER THE CHART BELOW:

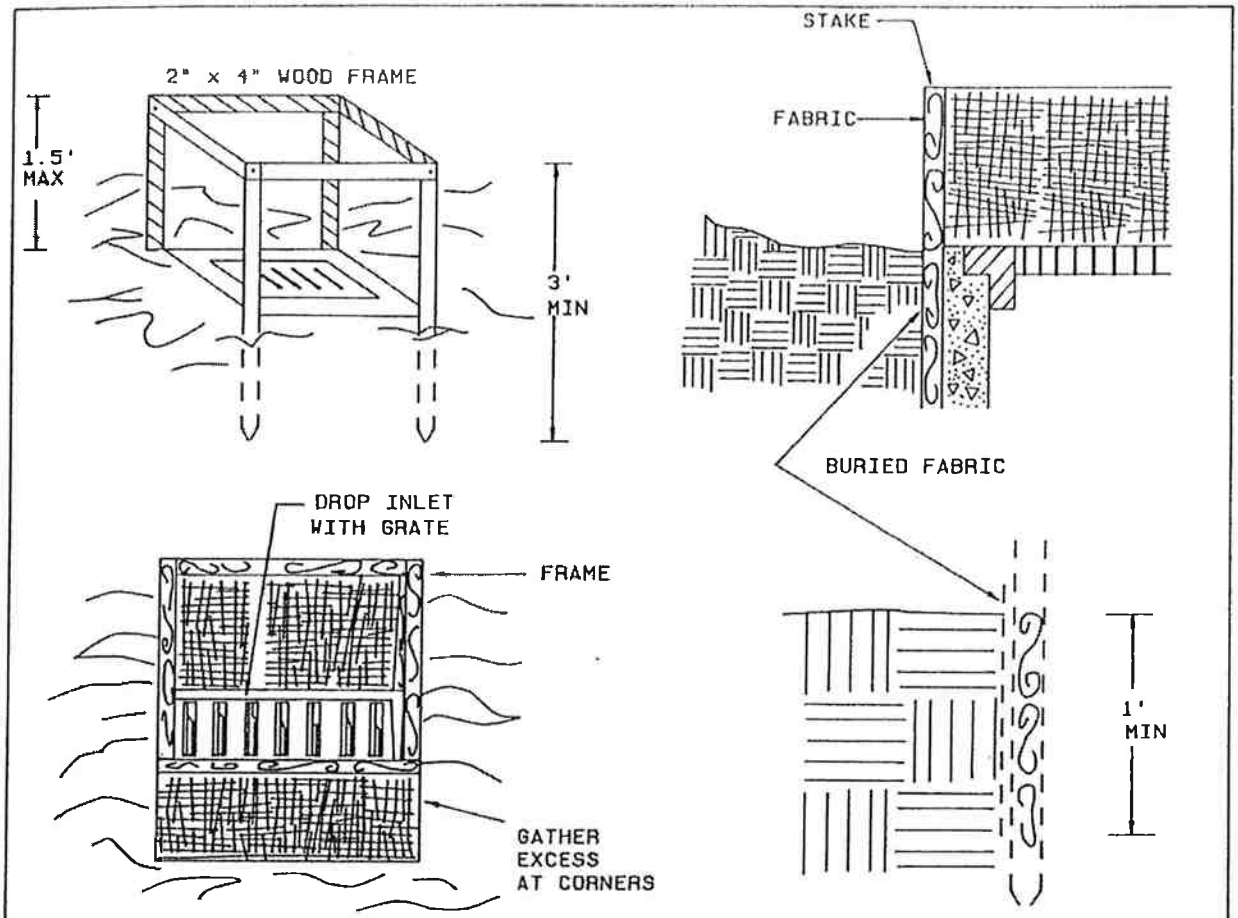
FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (5 AC OR LESS)	B (5 AC - 10 AC)
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE OR EXCELSIOR
3	5.1-8.0%	SEED WITH JUTE OR EXCELSIOR; SOD	LINED RIP-RAP 4-8" RECYCLED CONCRETE EQUIVALENT
4	8.1-20%	LINED 4-8" RIP-RAP	ENGINEERED DESIGN

9. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	TEMPORARY SWALE	STANDARD SYMBOL A-2 / B-3

Figure 5A.13
Filter Fabric Drop Inlet Protection Details



CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	FILTER FABRIC DROP INLET PROTECTION	STANDARD SYMBOL

ATTACHMENT A1-2

EROSION CONTROL MONITORING INSPECTION AND MAINTENANCE REPORT FORM

EROSION CONTROL MONITORING, INSPECTION, AND MAINTENANCE REPORT FORM

To be completed every 7 days and within 24 hours of a rainfall event of 0.5 inches or more

Inspector:_____

STABILIZATION MEASURES					
Area	Date Since Last Distributed	Date of Next Disturbance	Stabilized? Yes/No	Stabilized with	Condition

Stabilization Required: _____

_____

_____

_____

_____

_____

To be performed by: _____ On or before: _____

ATTACHMENT A-2

COMMUNITY AIR MONITORING PLAN

COMMUNITY AIR MONITORING PLAN
FOR THE
FORMER ROBLIN STEEL SITE
DUNKIRK, NEW YORK

(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NEW YORK

May 2010 NYSDEC DER-10-Attachment 1: NYSDOH Generic CAMP and Attachment 2: NYSDEC Fugitive Dust and Particulate Monitoring guidance, supersedes the protocols identified in the November 2010 CAMP included as Attachment A-2. Copies of the May 2010 guidance have been appended to Attachment A-2.

Prepared for:

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2005.0308.00

NOVEMEBER 2010

COMMUNITY AIR MONITORING PLAN

FORMER ROBLIN STEEL SITE
DUNKIRK, NY

TABLE OF CONTENTS

LIST OF ATTACHMENTS

1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) presents requirements for real-time community air monitoring and responses during invasive activities at the Former Roblin Steel Site located in Dunkirk, New York. This plan is generally consistent with the requirements for community air monitoring at remediation sites as established by the New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation (NYSDEC). It follows procedures and practices outlined under the NYSDOH's generic Community Air Monitoring Plan dated June 20, 2000 and NYSDEC Technical Assistance and Guidance Memorandum (TAGM) 4031: Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites.

This CAMP requires real-time monitoring for particulates (i.e., dust) and volatile organic compounds (VOCs) at the downwind perimeter of each designated work area when certain activities are in progress at the project site. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community from potential airborne contaminant releases as a direct result of remedial, redevelopment or post-remediation monitoring and maintenance activities. The community, as referenced in this document, includes off-site residences, public buildings and grounds, and commercial or industrial establishments on or adjacent to the project site. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the implementation of this CAMP will help to document that on-site work activities have not introduced contamination into the surrounding community.

2.0 MONITORING AND MITIGATION REQUIREMENTS

Real-time air monitoring for particulate levels and organic vapors at the perimeter of the work area will be necessary. Periodic monitoring will be required for all ground intrusive activities. Ground intrusive activities include, but are not limited to, subgrade soil/fill excavation, grading and transporting soil/fill, and trench excavation and backfill.

"Periodic" monitoring will reasonably consist of taking at least one reading immediately following the initiation of the above-referenced activities and taking at least one reading during intrusive activities. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during invasive activities. Examples of such situations include any subgrade excavation and backfilling within 100 feet of occupied structures or publicly accessible locations.

2.1 Organic Vapors

Real-time air monitoring for VOCs at the perimeter of the work area will be performed for all ground intrusive activities with a hand-held photoionization

detector (PID). If a sustained reading of 5 ppm above background or greater is registered by the PID at the perimeter of the work area or adjacent to a soil/fill stockpile area, the provisions in the following subsections will be implemented. Additionally, while it is anticipated that known sources of organic vapors will have been removed during remedial activities, monitoring for organic vapors will continue to be required during post-remedial redevelopment activities.

2.1.1 Vapor Emission Response Plan

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

If total organic vapor levels at the downwind perimeter of the work area persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the sources and vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level at the "downwind hot zone" below 5 ppm over background.

The "downwind hot zone" is defined as 200 feet downwind of the work area or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less, (but in no case less than 20 feet).

If the organic vapor level is above 25 ppm at the perimeter of the project site, the Site Safety and Health Officer will determine when re-entry of the work area is possible and will implement downwind air monitoring to ensure vapor emissions do not impact the nearest off-site residential or commercial structure at levels exceeding those specified under the Major Vapor Emission Monitoring program described below. All readings will be recorded over 15-minute time periods and be made available for State (NYSDEC and NYSDOH) personnel to review.

2.1.2 Major Vapor Emission Monitoring

If the organic vapor level is greater than 5 ppm over background at the "downwind hot zone," all work activities must be halted. If, following the cessation of the work activities or as the result of an emergency, organic levels persist above 5 ppm above background at the "downwind hot

zone", then the air quality must be monitored within 20 feet of the perimeter of the nearest off-site receptor (20-foot zone).

If efforts to abate the emission source are unsuccessful and if organic vapor levels approach or exceed 5 ppm above background within the 20-foot zone for more than 30 minutes, or are sustained at levels greater than 10 ppm above background for longer than one minute, than the Major Vapor Emission Response Plan will automatically be placed into effect.

2.1.3 Major Vapor Emission Response Plan

Upon activation of Major Vapor Emission Response Plan, the following activities will be undertaken:

1. All Emergency Response Contacts as listed below and in the Site-Specific Health and Safety Plan will be contacted.
2. The local police authorities will be immediately contacted by the Site Safety and Health Officer and advised of the situation.
3. Frequent air monitoring will be conducted at 30-minute intervals within the 20-foot zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Site Safety and Health Officer.
4. The Site Safety and Health Officer will determine if project site workers can safely undertake source abatement measures. Abatement measures may include covering the source area with clean fill or plastic sheeting, or consolidating contaminated materials to minimize surface area. The Site Safety and Health Officer will adjust worker personal protective equipment as necessary to protect workers from over-exposure to organic vapors.

The following organizations are to be notified by the Site Safety and Health Officer in the listed sequence if the Major Vapor Emission Response Plan is activated:

Contact	**Phone**
Police/Fire Department	911
New York State Dept. of Health	(716) 847-4502
New York State Dept. of Environmental Conservation	(716) 851-7220
State Emergency Response Hotline	(800) 457-7362

In addition, the Site Safety and Health Officer will provide these authorities with a description of the apparent source of the contamination and abatement measures being taken by the contractor, if any.

2.2 Airborne Particulates

Fugitive dust suppression and airborne particulate monitoring shall be performed during any remedial, redevelopment or post-remediation activities involving the disturbance or handling of site soil/fill. Fugitive dust suppression techniques will include the following minimum measures:

- Dust suppression will be achieved though the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations, equipment 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.
- Excavated stockpiles from intrusive activities that generate unacceptable dust levels will be seeded, covered with synthetic materials (e.g., tarps, membranes, etc.), or watered to reduce dust generation to acceptable levels;
- Stockpiles of soil/fill from intrusive activities that are potentially contaminated (i.e. are visually stained, discolored or produce elevated PID readings) and awaiting analytical results should be covered with tarps or polyethylene membranes at the end of each day's work activities; and
- All fill materials leaving the site will be hauled in properly covered containers or trucks.

Additional dust suppression efforts may be required as discussed below.

2.2.1 Particulate Monitoring

Particulate concentrations should be monitored by temporary particulate monitoring stations periodically (i.e., not less than two times per day) at the upwind and downwind perimeters of the work zone during all work activities. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to

indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

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

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 ug/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures, such as those described in Section 2.2.3, 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.

2.2.2 Visual Assessment

In conjunction with the real-time monitoring program, the remedial contractor, site developer, property owner(s) or their agents will be responsible for visually assessing fugitive dust migration from the project site. If airborne dust is observed leaving undeveloped portions of the project site (i.e., migrating onto off-site properties or redeveloped areas of the project site), the work will be stopped and supplemental dust suppression techniques will be employed.

2.2.3 Supplemental Dust Suppression

Supplemental dust suppression techniques may include but are not necessarily limited to the following measures:

- Reducing the excavation size, number of excavations or volume of material handled;
- Restricting vehicle speeds;
- Applying water on buckets during excavation and dumping;
- Wetting haul roads;
- Restricting work during extreme wind conditions; and
- Using a street sweeper on paved haul roads, where feasible.

Work can resume using supplemental dust suppression techniques provided that the measures are successful in reducing the downwind

particulate concentration to below 150 ug/m^3 above background, and in preventing visible dust migration off-site.

3.0 MONITORING EQUIPMENT

3.1 Organic Vapor Monitoring Equipment

Organic vapor monitoring will be performed using a photoionization detector (PID). The device will be calibrated on a daily basis or as necessary. Minimum equipment specifications are:

Minimum Operating Range:	0.5 ppm
Accuracy:	± 10%, or ± 2 ppm
Precision:	1% of calibration to 100 ppm
Response Time:	Less than 3 seconds to 90%
UV Lamp (PID):	10.6 eV
Battery Rating:	8-hour continuous operation
Operating Conditions:	
Temperature:	0-40°C
Humidity:	0-99% relative humidity

An adjustable audible alarm will be provided to indicate exceedance of the action levels prescribed in Section 2.1.

3.2 Particulate Monitoring Equipment

Particulate monitoring will be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM-10) with the following minimum performance standards:

Size Range:	<0.1 to 10 microns
Sensitivity:	1 ug/m^3
Range:	0.001 to 10 mg/m^3
Overall Accuracy:	± 10% as compared to gravimetric analysis of stearic acid or reference dust
Battery Ratings:	8-hour continuous operation
Operating Conditions:	
Temperature:	0-40°C
Humidity:	0-99% relative humidity

The device will be fitted with a microprocessor capable of calculating 15-minute moving average concentrations. An adjustable audible alarm will be provided to indicate exceedance of the action levels prescribed in Section 2.2.1.

4.0 QA/QC REQUIREMENTS

Quality Assurance/Quality Control (QA/QC) requirements for the particulate meter and organic vapor monitoring equipment include instrument calibration, training, and documentation/record keeping.

4.1 Instrument Calibration

Instrument calibration shall be performed in accordance with the manufacturer's instructions at the beginning of each workday. Following calibration and initial (upwind) measurement of background conditions, audio alarms shall be set to activate at the appropriate action levels based on a 15-minute moving average (i.e., short term exposure limit) concentration.

4.2 Training

All persons responsible for calibrating, handling and/or interpreting the meters or meter output data should be experienced with such work. As a minimum, the following training and experience will be required:

- 24-hour OSHA Hazwoper Training per 29 CFR 1910.120(e)(3) and 1910.120.(e)(8);
- Site-specific training, as required by the Site Health and Safety Plan; and
- Prior field experience in the operation of same or similar equipment.

The Site Safety and Health Officer will designate the person(s) responsible for performing air-monitoring work. Construction activities involving disruption or handling of site fill soils will not be performed unless a qualified individual is available on site to perform the community air monitoring specified in this document.

4.3 Documentation and Reporting

Documentation of community air monitoring information will be required to provide written record of the air monitoring results and response actions taken, and to allow for verification that the program was followed in accordance with this Community Air Monitoring Plan. Monitoring information will be recorded on form presented in Attachment A4-1 or on similar loose-leaf forms to facilitate photocopying. The following documentation schedule will be followed during

typical site conditions (i.e., organic vapor and particulate concentrations below action levels).

Item	Documentation Schedule
Instrument Calibration Results	Whenever calibration is performed (minimum once daily).
Background Monitoring Results	At beginning of work day and once every 4 hours thereafter.
Downwind Monitoring Results (15-minute moving average)	Hourly

All documentation records will be maintained in the project file for inspection by the NYSDEC and/or the NYSDOH upon request. The NYSDEC will be provided copies of the monitoring results recorded during intrusive activities upon substantial completion of said activities.

During intrusive activities, NYSDEC and NYSDOH will be contacted if major vapor emissions occur as stipulated under the Major Vapor Emission Response Plan. In addition, the NYSDEC Division of Air Resources will be contacted in writing within five days of exceeding the 150 ug/m^3 respirable dust action level. These notifications will include a description of the control measures implemented to prevent further exceedances.

N:\2005.0308.00-Roblin Remedial Design and Oversight\Engineering\10Deliverables\Final Engineering Report\Site Management Plan\Attachments for 2010 SMP\Attachment A-2 - CAMP.doc

Attachment 1
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

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

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

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

Community Air Monitoring Plan

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

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

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

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

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

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

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

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

Particulate Monitoring, Response Levels, and Actions

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

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

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

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Attachment 2
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50^{o} C (14 to 122^{o} F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

ATTACHMENT A2-1

COMMUNITY AIR MONITORING DOCUMENTATION FORM

TVGA CONSULTANTS

DIRECT READING AIR MONITORING FORM

DATE: _____ USER: _____

PROJECT: _____ CALIBRATION TIME: _____

PROJECT #: _____ CALIBRATED BY: _____

WEATHER CONDITIONS: _____ COMMENTS: _____

WIND DIRECT/SPEED: _____

ACTIVITY	INSTRUMENT	WORKING RANGE	TIME	READING	COMMENTS

ATTACHMENT A-3

NYSDEC TAGM 4031 - FUGITIVE DUST SUPPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

Fugitive Dust Suppression and Particulate Monitoring Program (TAGM - 4031)

Issuing Authority: Michael J. O'Toole, Jr.
Title: Director, Division of Environmental Remediation
Date Issued: Oct 27, 1989

1. Introduction

Fugitive dust suppression, particulate monitoring, and subsequent action levels for such must be used and applied consistently during remedial activities at hazardous waste sites. This guidance provides a basis for developing and implementing a fugitive dust suppression and particulate monitoring program as an element of a hazardous waste site's health and safety program.

2. Background

Fugitive dust is particulate matter--a generic term for a broad class of chemically and physically diverse substances that exist as discrete particles, liquid droplets or solids, over a wide range of sizes--which becomes airborne and contributes to air quality as a nuisance and threat to human health and the environment.

On July 1, 1987, the United States Environmental Protection Agency (USEPA) revised the ambient air quality standard for particulates so as to reflect direct impact on human health by setting the standard for particulate matter less than ten microns in diameter (PM_{10}); this involves fugitive dust whether contaminated or not. Based upon an examination of air quality composition, respiratory tract deposition, and health effects, PM_{10} is considered conservative for the primary standard--that requisite to protect public health with an adequate margin of safety. The primary standards are 150 ug/m^3 over a 24-hour averaging time and 50 ug/m^3 over an annual averaging time. Both of these standards are to be averaged arithmetically.

There exists real-time monitoring equipment available to measure PM_{10} and capable of integrating over a period of six seconds to ten hours. Combined with an adequate fugitive dust suppression program, such equipment will aid in preventing the off-site migration of contaminated soil. It will also protect both on-site personnel from exposure to high levels of dust and the public around the site from any exposure to any dust. While specifically intended for the protection of on-site personnel as well as the public, this program is not meant to replace long-term monitoring which may be required given the contaminants inherent to the site and its air quality.

3. Guidance

A program for suppressing fugitive dust and monitoring particulate matter at hazardous waste sites can be developed without placing an undue burden on remedial activities while still being protective of health and environment. Since the responsibility for implementing this program ultimately will fall on the party performing the work, these procedures must be incorporated into appropriate work plans. The following fugitive dust suppression and particulate monitoring program will be employed at hazardous waste sites during construction and other activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.
2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Such activities shall also include the excavation, grading, or placement of clean fill, and control measures therefore should be considered.
3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM_{10}) with the following minimum performance standards:

   Object to be measured: Dust, Mists, Aerosols
   Size range: <0.1 to 10 microns
   Sensitivity: 0.001 mg/m^3
   Range: 0.001 to 10 mg/m^3
   Overall Accuracy: ±10% as compared to gravimetric analysis of stearic acid or reference dust

   Operating Conditions:
   Temperature: 0 to 40°C
   Humidity: 10 to 99% Relative Humidity

   Power: Battery operated with a minimum capacity of eight hours continuous operation

   Automatic alarms are suggested.

   Particulate levels will be monitored immediately downwind at the working site and integrated over a period not to exceed 15 minutes. Consequently, instrumentation shall require necessary averaging hardware to accomplish this task; the P-5 Digital Dust Indicator as manufactured by MDA Scientific, Inc. or similar is appropriate.
4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the entity operating the equipment to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a

record keeping plan.

5. The action level will be established at 150 ug/m^3 over the integrated period not to exceed 15 minutes. While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m^3, the upwind background level must be measured immediately using the same portable monitor. If the working site particulate measurement is greater than 100 ug/m^3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Paragraph 7). Should the action level of 150 ug/m^3 be exceeded, the Division of Air Resources must be notified in writing within five working days; the notification shall include a description of the control measures implemented to prevent further exceedences.
6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM_{10} at or above the action level. Since this situation has the potential to migrate contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential–such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.
7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:
    1. Applying water on haul roads.
    2. Wetting equipment and excavation faces.
    3. Spraying water on buckets during excavation and dumping.
    4. Hauling materials in properly tarped or watertight containers.
    5. Restricting vehicle speeds to 10 mph.
    6. Covering excavated areas and material after excavation activity ceases.
    7. Reducing the excavation size and/or number of excavations.

Experience has shown that utilizing the above-mentioned dust suppression techniques, within reason as not to create excess water which would result in unacceptable wet conditions, the chance of exceeding the 150 ug/m^3 action level at hazardous waste site remediations is remote. Using

atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. If the dust suppression techniques being utilized at the site do not lower particulates to an acceptable level (that is, below 150 ug/m^3 and no visible dust), work must be suspended until appropriate corrective measures are approved to remedy the situation. Also, the evaluation of weather conditions will be necessary for proper fugitive dust control--when extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended.

There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require appropriate toxics monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

APPENDIX B

METES AND BOUNDS DESCRIPTION

ALL BEARINGS IN THIS DESCRIPTION ARE REFERENCED TO A LOCAL SYSTEM AND DEEDED BEARINGS FROM A PRIOR SURVEY MADE BY MICHAEL J. RODGERS LAND SURVEYOR, PC, DATED NOVEMBER 28, 2001.

ALL THAT TRACT OR PARCEL OF LAND SITUATE IN THE CITY OF DUNKIRK, COUNTY OF CHAUTAUQUA AND STATE OF NEW YORK AND FURTHER BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A SET REBAR WITH CAP AT THE INTERSECTION OF THE NORTHWESTERLY RIGHT OF WAY LINE OF NORFOLK SOUTHERN RAILROAD, FORMERLY N & W RAILROAD, FORMERLY NEW YORK, CHICAGO AND ST. LOUIS RAILROAD WITH THE SOUTHERLY RIGHT OF WAY LINE OF CSXT, FORMERLY CONRAIL, FORMERLY NEW YORK CENTRAL RAILROAD, FORMERLY ERIE RAILROAD, SAID LANDS REFERRED TO AS CSXT BEING LANDS CONVEYED BY CONSOLIDATED RAIL CORPORATION TO NEW YORK CENTRAL LINES, LLC BY QUIT CLAIM DEED DATED JUNE 1, 1999 AND RECORDED IN THE CHAUTAUQUA COUNTY CLERK'S OFFICE IN LIBER 2418 OF DEEDS AT PAGE 623; THENCE WESTERLY ALONG THE SOUTHERLY LINE OF SAID LINE ON A CURVE TO THE LEFT 642.74 FEET TO A POINT, SAID CURVE HAVING A RADIUS 5687.65 FEET AND A CHORD S86°-15'-29"W, 642.40 FEET; THENCE N08°-30'-04"W ALONG SAID SOUTHERLY LINE, 2.41 FEET TO A POINT; THENCE S81°-30'-00"W AND ALONG SAID SOUTHERLY LINE, 378.93 FEET TO A POINT; THENCE S85°-22'-00"W AND ALONG SAID SOUTHERLY LINE 121.88 FEET TO A POINT; THENCE S81°-30'-00"W ALONG SAID SOUTHERLY LINE 53.00' TO A POINT AT THE NORTHEASTERLY CORNER OF LANDS CONVEYED BY STANLEY A. STAR TO EDGEWOOD INVESTMENTS, INC. BY DEED DATED AUGUST 23, 1985 AND RECORDED IN THE CHAUTAUQUA COUNTY CLERK'S OFFICE AUGUST 26, 1985 IN LIBER 2063 OF DEEDS AT PAGE 488; THENCE S08°-30'-00"E ALONG THE SOUTHERLY LINE OF SAID EDGEWOOD INVESTMENTS, INC., 10.97 FEET TO A POINT; THENCE S81°-30'-00"W AND ALONG SAID SOUTHERLY LINE 77.46 FEET TO A POINT; THENCE CONTINUING WESTERLY AND ALONG THE SAID SOUTHERLY LINE ON A CURVE TO THE LEFT 76.07 FEET TO A POINT AT THE NORTHEASTERLY CORNER OF AFOREMENTIONED NEW YORK CENTRAL LINES, LLC, SAID CURVE HAVING A RADIUS OF 260.49 FEET AND A CHORD BEARING OF S73°-08'-00"W, 75.80 FEET; THENCE SOUTHWESTERLY AND ALONG THE SOUTHEASTERLY SAID LINE ON A CURVE TO THE LEFT, 419.75 FEET TO A POINT, SAID CURVE HAVING A RADIUS OF 1364.49 FEET AND A CHORD BEARING OF S56-09'-30"W, 418.10 FEET; THENCE CONTINUING SOUTHWESTERLY ALONG THE SOUTHEASTERLY SAID LINE ON A CURVE TO THE TO THE LEFT 98.22 FEET TO A POINT, SAID CURVE HAVING A RADIUS OF 757.76 FEET AND A CHORD BEARING OF S43°-23'-00"W, 98.15 FEET; THENCE S08°-25'-00"E, ALONG THE SAID EASTERLY LINE 62.51 FEET TO A POINT; THENCE S79°-11'-00"W, ALONG THE SAID SOUTHERLY LINE 8.91 FEET TO A POINT AT THE NORTHEASTERLY CORNER OF AFOREMENTIONED EDGEWOOD INVESTMENTS, INC.; THENCE S08°-39'-00"E, ALONG THE EASTERLY SAID LINE, 19.90 FEET TO A POINT AT THE NORTHWESTERLY CORNER OF LANDS CONVEYED BY COUNTY OF CHAUTAUQUA INDUSTRIAL DEVELOPMENT AGENCY TO ALUMAX EXTRUSIONS, INC. BY DEED DATED AUGUST 25, 1995 AND RECORDED IN THE CHAUTAUQUA COUNTY CLERK'S OFFICE IN LIBER 2351 OF DEEDS AT PAGE 874; THENCE N81°-31'-00"E, ALONG THE SAID NORTHERLY LINE 822.00 FEET TO A POINT; THENCE S 08°-29'-00"E, ALONG THE SAID EASTERLY LINE 251.95 FEET TO A POINT ON THE NORTHWESTERLY RIGHT OF WAY LINE OF NORFOLK SOUTHERN RAILROAD; THENCE N53°-33'-00"E, ALONG THE NORTHWESTERLY SAID LINE 172.65 FEET TO A POINT; THENCE N03°-05'-00"E, ALONG THE NORTHWESTERLY SAID LINE 20.37 FEET TO A POINT; THENCE N53°-33'-00"E ALONG THE NORTHWESTERLY SAID LINE 183.89 FEET TO A POINT; THENCE N53°-35'-00"E, ALONG THE NORTHWESTERLY SAID LINE 524.58 FEET TO A POINT; THENCE ALONG THE NORTHWESTERLY SAID LINE ON A CURVE TO THE RIGHT 228.79 FEET, SAID CURVE HAVING A RADIUS OF

WITH THE NORTHWESTERLY LINE OF LANDS OF THE NEW YORK, CHICAGO & ST. LOUIS RAILROAD COMPANY (NORFOLK SOUTHERN); THENCE N38°-16'-00"E, A DISTANCE OF 114.28 FEET TO AN IRON PIN, PASSING THROUGH AN IRON PIN LOCATED 33 FEET NORTHEASTERLY ALONG THE LAST DESCRIBED COURSE FROM SAID CENTERLINE IN ROBERTS ROAD; THENCE N08°-39'-00"W, A DISTANCE OF 514.37 FEET TO AN IRON PIN WHICH IS THE BEGINNING POINT OF THE CENTERLINE OF THE EASEMENT TO BE DESCRIBED; THENCE ALONG SUCH CENTERLINE N81°-31'-00"E, A DISTANCE OF 822.00 FEET TO AN IRON PIN.

ALSO TOGETHER WITH AND SUBJECT TO ANY RIGHT OF WAY FOR INGRESS AND EGRESS FROM ROBERTS ROAD TO THE ABOVE DESCRIBED PREMISES.

ALSO TOGETHER WITH AND SUBJECT TO ANY RIGHT OF WAY FOR INGRESS AND EGRESS FROM MIDDLE ROAD TO THE ABOVE DESCRIBED PREMISES.

APPENDIX C

ENVIRONMENTAL EASEMENT

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 3rd day of January, 2012 between Owner(s) County of Chautauqua, having an office at Gerace Office Building, 3 North Erie Street, Mayville, New York 14757 (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233.

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 320 South Roberts Road in the City of Dunkirk, County of Chautauqua and State of New York, known and designated on the tax map of the County Clerk of Chautauqua as tax map parcel numbers: Section 79.12 Block 4 Lot(s) 29 and 30, being the same as that property conveyed to Grantor by deed dated December 1, 2001 and recorded on May 23, 2002 in the Chautauqua County Clerk's Office in Book 2494 at Page 59 and by deed dated December 1, 2001 and recorded on May 23, 2002 in the Chautauqua County Clerk's Office in Book 2494 at Page 49. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 11.83 +/- acres, and is hereinafter more fully described in the ALTA/ACSM Land Title Survey dated August 18, 2009 prepared by TVGA Consultants, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of State Assistance Contract Number: C302808, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP.

(4) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(5) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(6) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(7) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP.

(8) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP.

(9) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5 the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

[6/11]

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:
Site Number: B00173
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:
Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Grantor: County of Chautauqua

By: _____

Print Name: Gregory J. Edwards

Title: County Executive Date: 12/29/11

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF)

On the 29th day of December in the year 20 11, before me, the undersigned, personally appeared Gregory J Edwards, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Carmella R Catanese
Notary Public - State of New York

CARMELLA R. CATANESE
Notary Public - State of New York
No. 01CA5026583
Qualified in Chautauqua County
My Commission Expires 4/25/20 14

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner.

By: _____
Robert W. Schick, Acting Director
Division of Environmental Remediation

Grantee's Acknowledgment

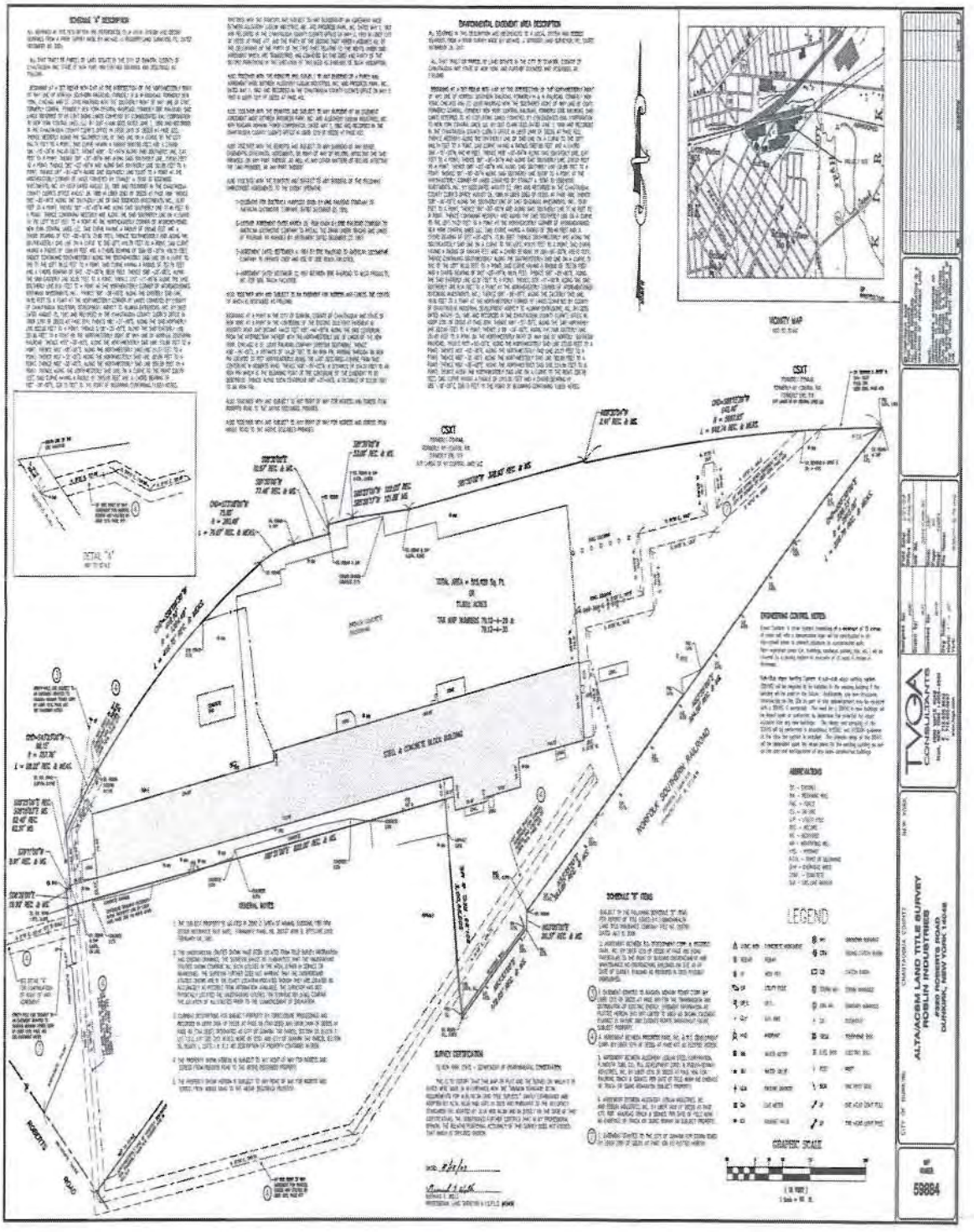
STATE OF NEW YORK)
) ss:
COUNTY OF)

On the 3rd day of January, in the year 2012, before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2014

SURVEY


ALTA/ACSM LAND TITLE SURVEY
ROBLIN INDUSTRIES
LEGEND
59864

SCHEDULE "A" PROPERTY DESCRIPTION

Property Address: 320 South Roberts Road, Dunkirk, Chautauqua County, NY
Tax Map: 79.12 – 4 - 29 & 79.12 – 4 – 30

COMMONWEALTH LAND TITLE INSURANCE COMPANY

Policy No. Pro Forma policy **Draft No. 4** Title No. 292765

Schedule "A" Description

All that tract or parcel of land situate in the city of Dunkirk, county of Chautauqua and state of New York and further bounded and described as follows:

Beginning at a set rebar with cap at the intersection of the northwesterly right of way line of Norfolk Southern Railroad, formerly N & W Railroad, formerly New York, Chicago and St. Louis Railroad with the southerly right of way line of CSXT, formerly Conrail, formerly New York Central Railroad, formerly Erie Railroad, said lands referred to as CSXT being lands conveyed by Consolidated Rail Corporation to New York Central Lines, LLC by quit claim deed dated June 1, 1999 and recorded in the Chautauqua County Clerk's Office in Liber 2418 of deeds at page 623; thence westerly along the southerly line of said line on a curve to the left 642.74 feet to a point, said curve having a radius 5687.65 feet and a chord S86°-15'-29"W, 642.40 feet; thence N08°-30'-04"W along said southerly line, 2.41 feet to a point; thence S81°-30'-00"W and along said southerly line, 378.93 feet to a point; thence S85°-22'-00"W and along said southerly line 121.88 feet to a point; thence S81°-30'-00"W along said southerly line 53.00' to a point at the northeasterly corner of lands conveyed by Stanley A. Star to Edgewood Investments, Inc. by deed dated August 23, 1985 and recorded in the Chautauqua County Clerk's Office August 26, 1985 in Liber 2063 of deeds at page 488; thence S08°-30'-00"E along the southerly line of said Edgewood Investments, Inc., 10.97 feet to a point; thence S81°-30'-00"W and along said southerly line 77.46 feet to a point; thence continuing westerly and along the said southerly line on a curve to the left 76.07 feet to a point at the northeasterly corner of aforementioned New York Central Lines, LLC, said curve having a radius of 260.49 feet and a chord S73°-08'-00"W, 75.80 feet; thence southwesterly and along the southeasterly said line on a curve to the left, 419.75 feet to a point, said curve having a radius of 1364.49 feet and a chord S56-09'-30"W, 418.10 feet; thence continuing southwesterly along the southeasterly said line on a curve to the to the left 98.22 feet to a point said curve having a radius of 757.76 feet and a chord S43°-23'-00"W, 98.15 feet; thence S08°-25'-00"E along the said easterly line 62.51 feet to a point; thence S79°-11'-00"W along the said southerly line 8.91 feet to a point at the northeasterly corner of aforementioned Edgewood Investments, Inc.; thence S08°-39'-00"E along the easterly said line, 19.90 feet to a point at the northwesterly corner of lands conveyed by County of Chautauqua Industrial Development Agency to Alumax Extrusions, Inc. by deed dated August 25, 1995 and recorded in the Chautauqua County Clerk's Office in Liber 2351 of deeds at page 874; thence N81°-

Schedule A

31'-00"E along the said northerly line 822.00 feet to a point; thence S08°-29'-00"E along the said easterly line 251.95 feet to a point on the northwesterly right of way line of Norfolk Southern Railroad; thence N53°-33'-00"E along the northwesterly said line 172.65 feet to a point; thence N03°-05'-00"E along the northwesterly said line 20.37 feet to a point; thence N53°-33'-00"E along the northwesterly said line 183.89 feet to a point; thence N53°-35'-00"E along the northwesterly said line 524.58 feet to a point; thence along the northwesterly said line on a curve to the right 228.79 feet, said curve having a radius of 2915.00 feet and a chord N55°-38'-00"E, 228.73 feet to the point of beginning.

Environmental Easement Area Description

All that tract or parcel of land situate in the city of Dunkirk, county of Chautauqua and state of New York and further bounded and described as follows:

Beginning at a set rebar with cap at the intersection of the northwesterly right of way line of Norfolk Southern Railroad, formerly N & W Railroad, formerly New York, Chicago and St. Louis Railroad with the southerly right of way line of CSXT, formerly Conrail, formerly New York Central Railroad, formerly Erie Railroad, said lands referred to as CSXT being lands conveyed by Consolidated Rail Corporation to New York Central Lines, LLC by quit claim deed dated June 1, 1999 and recorded in the Chautauqua County Clerk's Office in Liber 2418 of deeds at page 623; thence westerly along the southerly line of said line on a curve to the left 642.74 feet to a point, said curve having a radius 5687.65 feet and a chord S86°-15'-29"W, 642.40 feet; thence N08°-30'-04"W along said southerly line, 2.41 feet to a point; thence S81°-30'-00"W and along said southerly line, 378.93 feet to a point; thence S85°-22'-00"W and along said southerly line 121.88 feet to a point; thence S81°-30'-00"W along said southerly line 53.00' to a point at the northeasterly corner of lands conveyed by Stanley A. Star to Edgewood Investments, Inc. by deed dated August 23, 1985 and recorded in the Chautauqua County Clerk's Office August 26, 1985 in Liber 2063 of deeds at page 488; thence S08°-30'-00"E along the southerly line of said Edgewood Investments, Inc., 10.97 feet to a point; thence S81°-30'-00"W and along said southerly line 77.46 feet to a point; thence continuing westerly and along the said southerly line on a curve to the left 76.07 feet to a point at the northeasterly corner of aforementioned New York Central Lines, LLC, said curve having a radius of 260.49 feet and a chord bearing S73°-08'-00"W, 75.80 feet; thence southwesterly

Schedule A

and along the southeasterly said line on a curve to the left, 419.75 feet to a point, said curve having a radius of 1364.49 feet and a chord bearing S56-09'-30"W, 418.10 feet; thence continuing southwesterly along the southeasterly said line on a curve to the to the left 98.22 feet to a point said curve having a radius of 757.76 feet and a chord bearing S43°-23'-00"W, 98.15 feet; thence S08°-25'-00"E along the said easterly line 62.51 feet to a point; thence S79°-11'-00"W along the said southerly line 8.91 feet to a point at the northeasterly corner of aforementioned Edgewood Investments, Inc.; thence S08°-39'-00"E along the easterly said line, 19.90 feet to a point at the northwesterly corner of lands conveyed by County of Chautauqua Industrial Development Agency to Alumax Extrusions, Inc. by deed dated August 25, 1995 and recorded in the Chautauqua County Clerk's Office in Liber 2351 of deeds at page 874; thence N81°-31'-00"E along the said northerly line 822.00 feet to a point; thence S08°-29'-00"E along the said easterly line 251.95 feet to a point on the northwesterly right of way line of Norfolk Southern Railroad; thence N53°-33'-00"E along the northwesterly said line 172.65 feet to a point; thence N03°-05'-00"E along the northwesterly said line 20.37 feet to a point; thence N53°-33'-00"E along the northwesterly said line 183.89 feet to a point; thence N53°-35'-00"E along the northwesterly said line 524.58 feet to a point; thence along the northwesterly said line on a curve to the right 228.79 feet, said curve having a radius of 2915.00 feet and a chord bearing N55°-38'-00"E, 228.73 feet to the point of beginning.

APPENDIX D

SAMPLE HEALTH AND SAFETY PLAN

SAMPLE
HEALTH AND SAFETY PLAN
FOR THE
FORMER ROBLIN STEEL SITE

(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NEW YORK

Prepared for:

Chautauqua County Department of Public Facilities
454 North Work Street
Falconer, New York

Prepared by:

TVGA CONSULTANTS

One Thousand Maple Road (716) 655-8842
Elma, NY 14059-0264 (fax) (716) 655-0937

2005.0308.00 November 2009

DISCLAIMER

This Health and Safety Plan has been written for the use of TVGA Consultants (TVGA) and its employees. Properly trained and experienced TVGA subcontractors may also use it as a guideline document. However, TVGA does not guarantee the health and safety of any person entering the site.

Due to the potentially hazardous nature of the site and the activity occurring thereon, it is not possible to discover, evaluate, and provide protection for all possible hazards that may be encountered. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury at the site. The health and safety guidelines in this plan were prepared specifically for this site and should not be used on any other site without prior research by trained health and safety specialists.

TVGA claims no responsibility for the use of this Plan by others. The Plan is written for the specific project site conditions, purpose, dates, and personnel specified and must be amended if these conditions change.

SAMPLE HEALTH AND SAFETY PLAN
FOR THE
FORMER ROBLIN STEEL SITE
(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NEW YORK

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1.0 INTRODUCTION

The former Roblin Steel Site is located at 320 South Roberts Road in the City of Dunkirk, Chautauqua County, New York. The sources of environmental concern at this site include the documented presence of soil and groundwater contamination resulting from the historical use of the property and surrounding properties for industrial purposes for almost 100 years. Additionally, asbestos containing materials (ACMs) and potentially polychlorinated biphenyl (PCB) containing florescent light ballasts have also been identified within the former facility building.

This Health and Safety Plan (HASP) has been developed to govern all field work conducted during remedial activities at the former Roblin Steel Site. This plan is intended to ensure that the procedures used during planned remedial activities meet reasonable professional standards to protect human health and safety of workers and the surrounding community. This Plan incorporates, by reference, the applicable requirements of the Occupational Safety and Health Administration in 29 CFR Parts 1910 and 1926.

The requirements and guidelines in the HASP are based on a review of available site specific information and an evaluation of potential hazards. These requirements can and will be modified by Senior Level Management (SLM), the Project Team Leader (PTL), the Site Safety Officer (SSO), or the Work Party Personnel (WPP), if necessary.

All field personnel working on this project must familiarize themselves with this HASP and abide by its requirements. Since every potential health and safety hazard encountered at a site cannot be anticipated, it is imperative that personnel are equipped and trained to respond promptly to a variety of possible hazards. Adherence to this HASP will minimize the possibility that personnel at the project site as well as the public will be injured or exposed to significant health hazards. Information on potential health, safety and environmental hazards is discussed in conjunction with appropriate protective measures including assignment of responsibility, personal protective equipment (PPE) requirements, work practices, and emergency response procedures.

In general, contractors and subcontractors are responsible for complying with the HASP, as well as all Federal, State, and local regulations pertaining to their work. With TVGA's permission, a contractor may adopt this HASP for activities within the scope-of-work this Plan addresses. Any changes to the HASP by the contractor must be approved by TVGA. TVGA personnel can and must stop work by a TVGA contractor who is not following the health and safety procedures required by this HASP. However, the contractor/subcontractor expressly retains all responsibility for the safety of their personnel while working on this site.

This HASP is specifically intended for those personnel who will be conducting activities within the defined scope of work in specified areas of the project site. Specific tasks covered by this HASP may include, but are not limited to:

- Monitoring the removal of PCB-containing light fixtures;
- Monitoring the activities of the asbestos removal contractor;
- Inspecting the decommissioning of sumps and drains;
- Observing the excavation of earthen materials, sediment fill, debris, concrete, wooden floor blocks, etc.;
- Collecting environmental soil/fill samples;
- Observing loading and backfilling operations;
- Sampling groundwater monitoring wells;
- Decontaminating personnel and equipment; and
- Performing air monitoring.

2.0 KEY PERSONNEL

~~2.1 Off-Site Personnel~~

~~Title: Principal~~
~~Description: Responsible for defining project objectives, allocating resources, determining the chain of command, and evaluating program outcome.~~
~~Contact: Robert R. Napieralski, C.P.G., TVGA, (716) 655-8842~~

~~Title: Project Team Leader~~
~~Description: Reports to upper level management, has authority to direct response operations, assumes total control over site activities.~~
~~Contact: Daniel E. Riker, P.G., TVGA, (716) 655-8842~~

~~2.2 On-Site Personnel~~

~~Title: Site Health & Safety Officer~~
~~Description: Advises the field team on all aspects of health and safety issues, recommends stopping work if any operation threatens worker or public health and safety.~~
~~Contact: James C. Manzella, TVGA (716) 655-8842~~

~~Title: Field Team Leader~~
~~Description: Responsible for field team operations.~~
~~Contact: David L. McCoy, TVGA, (716) 487-3133~~

~~Title: Work Party~~
~~Description: Performs field operations~~
~~Contact: TVGA personnel and subcontractor personnel.~~

Refer to updated contacts on the subsequent page (June 2021-LaBella Associates, D.P.C.)

2.1 Off-Site Personnel

Title: Principal
Description: Responsible for defining project objectives, allocating resources, determining the chain of command, and evaluating program outcome.
Contact: Robert R. Napieralski, C.P.G., LaBella Associates, D.P.C., (716) 551-6283

Title: Project Team Leader
Description: Reports to upper level management, has authority to direct response operations, assumes total control over site activities.
Contact: Chris Kibler, LaBella Associates, D.P.C., (716) 768-4906

Title: Health & Safety Director
Description: Advises the field team on all aspects of health and safety issues, recommends stopping work if any operation threatens worker or public health and safety.
Contact: Steven Szymanski, LaBella Associates, D.P.C. (585) 295-6633

2.2 On-Site Personnel

Title: Site Health & Safety Officer / Field Team Leader
Description: Responsible for field team operations.
Contact: Heather Geoghegan, LaBella Associates, D.P.C. (585) 409-1468

Title: Work Party
Description: Performs field operations
Contact: LaBella personnel and subcontractor personnel.

2.3 Personnel Responsibilities

The primary safety personnel include the Project Team Leader (PTL), the Site Safety Officer (SSO), and the Work Party Personnel (WPP). Additionally, Senior Level Management (SLM) has the responsibility to ensure all project personnel are aware of the requirements of the HASP. The SLM may also recommend policy changes on safety matters including work practices, training, and response actions and will provide the necessary resources to conduct the project safely. The PTL is responsible for the implementation of the HASP. The PTL is also responsible for conducting the initial on-site training.

The SSO is responsible for the day-to-day implementation of the HASP. The SSO will assist the PTL in providing initial training for all project personnel and for providing additional training in the form of safety meeting to discuss changed site conditions or to upgrade training on an as needed basis. The SSO is also responsible for daily calibration of real-time air monitoring equipment and will

ensure that all personnel assigned to operate the instrumentation are properly trained in its use and maintenance.

The SSO has the following specific responsibilities:

- Assuring that a complete copy of this HASP is at the site prior the start of field activities and that all workers are familiar with the document;
- Conducting training and briefing sessions if appropriate, prior to the start of field activities at the site and repeat sessions as necessary;
- Ensuring the availability, use, and proper maintenance of specified personal protective, decontamination, and other health and safety equipment;
- Maintaining a high level of safety awareness among team members and communicating pertinent matters to them promptly;
- Assuring that all field activities are performed in a manner consistent with Company policy and the HASP;
- Monitoring for dangerous conditions during field activities;
- Assuring proper decontamination of personnel and equipment;
- Preparing all health and safety documentation;
- Coordinating with emergency response personnel and medical support facilities, and representatives of the NYSDEC;
- Initiating immediate corrective actions in the event of an emergency or unsafe condition;
- Notifying the SLM and PTL promptly of an emergency, unsafe condition, problem encountered, or significant exceptions to the requirements in this HASP; and
- Recommending improved health and safety measures to the SLM or the PTL.

The SSO has the authority to:

- Suspend field activities or otherwise limit exposures if the health and safety of any persons appears to be endangered;
- Direct Company or contractor personnel to alter work practices that are deemed not properly protective of human health or the environment; and
- Suspend an individual from field activities for significant infraction of the requirements in this HASP.

The WPP is responsible for providing air monitoring during intrusive activities at the project site. The WPP is directly responsible to the SSO and will assist the SSO in the day-to-day implementation of the HASP.

Site personnel are responsible for following the requirements of the HASP. They should become thoroughly familiar with the requirements of exposures that may

adversely affect the health and safety of on-site personnel, off-site population, or the environment.

3.0 SITE ENTRY

3.1 Objectives

The remedial program outlined herein consists of the excavation of contaminated surface and subsurface soils, removal of PCB-containing materials, removal of asbestos-containing building materials (ACM), cleaning and closure of on-site sumps/drains, the abandonment of components of on-site sewer piping, and groundwater treatment and monitoring. This HASP has been developed for submittal to and review by the NYSDEC in order to ensure that the remedial program will satisfy applicable regulatory requirements.

3.2 Safety Meetings

To ensure that the HASP is being followed, the PTL shall conduct a safety meeting prior to initiating any site activities.

3.3 Safety Training

The SSO will confirm that every person assigned to a task has had adequate training for that task and that the training is up-to-date by checking with the TVGA Human Resources Office. TVGA and subcontractor personnel working on the site shall have a minimum of at least 24 hours of classroom-style health and safety training and 3 days of on-site training, as required by OSHA 29 CFR 1910.120. All training will have been conducted and certified in accordance with OSHA regulations outlined in 29 CFR 1910.120.

An Environmental Protection Agency (EPA) and New York State Department of Labor (NYSDOL) certified asbestos removal contractor will complete asbestos abatement at the project site. Asbestos technicians in New York State will be trained to comply with applicable provisions of 40 CFR Part 61 (NESHAPS) and Occupational Safety and Health Administration (OSHA) 29 CFR 1910.

3.4 Medical Surveillance

All TVGA and subcontractor personnel working on this remedial program will have had a medical surveillance physical consistent with OSHA regulations in 29 CFR 1910.120, and performed by a qualified occupational health physician. The SSO shall confirm prior to initiation of work on the project site that every person assigned to a task has had an annual physical, has passed the medical

examination, and has been determined medically fit by the occupational health physician for this type of work.

3.5 Site Mapping

Maps of the site and areas to be remediated are included in the Remedial Action Work Plan (RAWP). A map showing the route from the site to the nearest hospital has been included as Figure 1.

4.0 SITE CHARACTERIZATION

4.1 Site Description

The project site is located along the eastern side of South Roberts Road in the City of Dunkirk, New York and occupies approximately 12 acres of an inactive industrial park. The project site contains a former facility building that encompasses approximately 88,500 square feet (SF). The former process equipment has been removed from the project site; however, a number of steel storage bins, wooden pallets, a dilapidated dump truck, and various wood and metal scraps remain inside the building. The external areas of the project site consist of a mixture of fill; soil, concrete, wood, brick, metal and construction and demolition debris piles; and concrete foundations.

4.2 Neighboring Properties

The project site is located in an area that is zoned for industrial use. Land use in the project site vicinity is characterized by a mixture of commercial, industrial, and residential uses. The project site is bounded to the north by an active CSX rail line; to the east by abandoned railroad tracks, to the south by the former Alumax Extrusions site, and to the west by the Edgewood Warehouse site. Located further from the project site, beyond the adjoining properties, are residential properties situated to the northwest and south of the project site. Mixed commercial, industrial properties are located to the north and west of the project site and to the east is a wooded area and Hyde Creek.

4.3 Site Topography

The topography of the majority of the site is flat with a gentle slope to the north. The site has an elevation that ranges between 600 and 605 feet above mean sea level (AMSL), based upon the USGS topographic mapping of the area.

4.4 Site Geology and Hydrology

The physical characteristics of the project site (e.g. subsurface stratigraphy, groundwater, surface water, building and infrastructure) are discussed in detail in Section 3.0 of the Draft Site Investigation Report.

4.5 Meteorological Data

Field work is expected to be completed during Spring 2006. Average temperatures for these months are expected to reach highs of approximately 70°F and lows of 30°F. Prior to each day's activities, the daily forecast should be monitored for indications of adverse work conditions.

5.0 HAZARD EVALUATION

5.1 Physical Hazards

Physical hazards such as the following may be encountered on site:

- Slippery surfaces - trip/fall;
- Electrical - shock, fire;
- Mechanical/Large Equipment - cuts, amputation, trauma;
- Uneven Terrain/Excavations/Soil piles - trip/fall; and
- Unstable overhead structures - cuts, trauma.

The planned soil boring, excavation, loading, and backfilling activities also present hazards specific to working with heavy equipment. Personnel working on or around the drill rig or earthmoving equipment should be aware of the precautions listed below. The practices are meant to be guidelines, and are not all-inclusive of the safety measures necessary while performing intrusive activities.

5.1.1 Utility Clearance

Personnel involved in intrusive work shall determine the minimum distance from marked utilities which work can be conducted with the assistance of the locator line service.

- Elevated superstructures (e.g., drill rig, backhoe, dump trucks, scaffolding, ladders, cranes) shall remain a distance of 10 feet away from utility lines and 20 feet away from power lines. The distance from utility lines may be adjusted by the SSO depending on actual voltage of the lines.

- During all intrusive activities (e.g., direct push soil borings, excavating, backfilling, etc.), Dig Safely New York should be contacted (1-800-962-7962) to mark underground lines before any work is started.

5.1.2 Drilling Safety

Personnel working in the vicinity of drilling shall adhere to the following practices:

- Equipment should be inspected daily by the operator to ensure that there are no operational problems;
- Before leaving the controls, shift the transmission controlling the rotary drive into neutral and place the feed level in neutral. Before leaving the vicinity of the drill, shut down the drill engine;
- Do not drive the drill rig with the mast in the raised position;
- Before raising the mast, check for overhead obstructions;
- Before the mast of a drill rig is raised, the drill rig must first be leveled and stabilized with leveling jacks and/or cribbing. Re-level the drill rig if it settles after initial set up. Lower the mast only when the leveling jacks are down, and do not raise the leveling jack pads until the mast is lowered completely;
- Employees involved in the operation shall not wear any loose-fitting clothing that has the potential to be caught in moving machinery;
- During freezing weather, do not touch any metal parts of the drill rig with exposed flesh. Freezing of moist skin to metal can occur almost instantaneously;
- Adequately cover or protect all unattended boreholes to prevent drill rig personnel or site visitors from stepping or falling into the borehole;
- Personnel shall wear steel-toed shoes, safety glasses, hearing protection and hard hats during drilling operations;
- The area shall be roped off, marked or posted, to keep the area clear of pedestrian traffic and/or spectators; and
- All personnel should be instructed in the use of the emergency kill switch on the drill rig.

5.1.3 Heavy Equipment Operations

Working around heavy equipment can be dangerous because of the size and power of the equipment, the limited field of vision of the operator and the noise levels that can be produced by the equipment. Heavy equipment to be utilized at the site will include drill rigs, excavators, and trucks.

Operators shall follow the following practices when using heavy equipment:

- Equipment should be inspected daily by the operator to ensure that the equipment is in safe operating condition;
- When not in use, hydraulic components should be left in down or "dead" position;
- Roll-over protection shall be provided on hilly sites;
- No riding on vehicles or equipment except in fixed seats;
- Seat belts should be worn at all times;
- Backup alarms, automatically activated and loud enough to be heard above background noise are required on all heavy equipment;
- Parking brakes should always be applied on parked equipment;
- Equipment should never be operated closer than 10 feet from utility lines; and
- Windshields must be maintained clean and free of visual obstructions.

To ensure the safety of personnel in the work area, the following safety procedures regarding heavy equipment must be reviewed prior to and followed during work activities:

- Ensure that equipment operators are trained and/or experienced in the operation of the specific equipment;
- Personnel should never approach a piece of heavy equipment without the operators' acknowledgment and stoppage of work or yielding to the employee;
- Never walk under the load of a bucket or stand beside an opening truck bed;
- Maintain visual contact with the operator when in close proximity to the heavy equipment;
- Wear hearing protection while on or around heavy equipment, when normal conversation cannot be heard above work operations; and
- Steel-toed shoes, safety glasses, and a hard hat shall be worn for all work conducted near heavy equipment.

5.2 Chemical Hazards

Known and suspected sources of contamination include:

- Past spills and releases of chemicals and wastes used, generated and/or stored on-site; past discharges and spills of untreated process wastewater;
- Leaking underground piping;
- Past discharges and spills of fuel oil; industrial fill;
- PCB-containing electrical equipment; and
- Asbestos-containing building materials.

Potential chemical hazards, which could be encountered during the site investigation include, but are not limited to:

- Chlorinated and aromatic hydrocarbons (i.e., trichloroethene (TCE), and benzene toluene, ethylbenzene, and xylenes (BTEX);
- Polycyclic aromatic hydrocarbons (PAHs);
- PCBs;
- Metals;
- Friable Asbestos;
- Lead-Based Paint;

5.3 Exposure Limits

Recommended Exposure Limits (RELs), and OSHA Permissible Exposure Limits (PELs) for several of the above chemical hazards are listed below. The RELs and PELs for the compounds listed below can be found in the NIOSH Guide to Chemical Hazards.

CHEMICAL	REL [1]	PEL [2]
Benzene	0.1 ppm	1 ppm
Toluene	100 ppm	200 ppm
Ethylbenzene	100 ppm	100 ppm
Mixed xylenes	100 ppm	100 ppm
Vinyl Chloride	CA	1 ppm
Trichloroethlene	25 ppm	100 ppm
Tetrachloroethlene	CA	100 ppm
Stoddard solvent	350 mg/m^3	500 ppm
Polycyclic Aromatic Hydrocarbons (used oil and fuel oil)	0.2 mg/m^3	0.2 mg/m^3
Cadmium (emission control dust)	CA	0.005 mg/m^3
Hexavalent Chromium (emission control dust)	0.001 mg/m^3	0.1 mg/m^3
Lead (emission control dust)	0.1 mg/m^3	0.05 mg/m^3
PCB (Multiple Aroclors) [3]	0.001 mg/m^3	0.5 mg/m^3
Asbestos	0.1 fiber/cm^2	0.1 fiber/cm^2

1 REL = NIOSH recommended exposure limits, up to 10 hour work day exposure limit, 40 hours/week. REL in mg/m^3 = (REL in ppm x molecular weight) / 24.45.

2 PEL = OSHA permissible exposure limit, 8 hour exposure limit, 40 hours/week, OSHA 29 CFR 1910.1000. REL in mg/m^3 = (REL in ppm x molecular weight) / 24.45.

3 The NIOSH REL for Aroclor 1254 also applies to other PCBs, including the other Aroclors which were identified on-site.

TWA = time weighted average

OSHA = Occupational Safety and Health Agency

ACGIH = American Conference of Governmental Industrial Hygienists

NIOSH = National Institute for Occupational Safety and Health

N.A. = no applicable value available

CA = NIOSH recommends the substance be treated as a potential human carcinogen

5.4 Dispersion Pathways

Potential exposure mechanisms that can transport particulate and organic compounds from the areas of investigation to other areas of the project site as well as beyond the boundaries of the project site are:

- Dust and asbestos fibers projected by wind;
- Contaminated dust blown by wind;
- Volatilization and wind transport of organic compounds;
- Surface water runoff from contaminated areas;
- Storm water flowing within the storm sewer system;
- Groundwater flowing beneath the site; and
- Surface water flowing in Hyde Creek.

5.5 Potential IDLH and Other Dangerous Conditions

The Immediately Dangerous to Life and Health (IDLH) levels for chemicals potentially on-site and their IDLH level are listed below.

CHEMICAL	IDLH Level
Benzene	500 ppm
Toluene	500 ppm
Ethylbenzene	800 ppm
Mixed xylenes	900 ppm
Vinyl Chloride	ND
Trichloroethlene	1000 ppm (CA)
Tetrachloroethlene	150 ppm
Stoddard solvent	20,000 mg/m^3
Polycyclic Aromatic Hydrocarbons (used oil and fuel oil)	N.A.
Cadmium (emission control dust)	9 mg/m^3
Hexavalent Chromium (emission control dust)	15 mg/m^3
Lead (emission control dust)	100 mg/m^3
PCB (Multiple Aroclors) [3]	5 mg/m^3
Asbestos	CA

N.A. = No IDLH assigned
CA = NIOSH recommends the substance be treated as a potential human carcinogen
ND = indicated IDLH has not yet been determined

The IDLH level is defined only for the purpose of respirator selection. The IDLH level represents a maximum concentration from which, in the event of respirator failure, one could escape within 30 minutes without experiencing any escape-impairing or irreversible health effects.

Visible indicators of potential IDLH conditions as well as other dangerous conditions are listed below.

- Confined spaces;
- Unstable overhead structures;
- Unusually colored solid or liquid wastes;
- Containers or accumulation structures (e.g., drums, pits, sumps, etc.), the contents of which are unknown;
- Potentially explosive or flammable situations indicated by bulging drums, gas generation, effervescence, or instrument readings;
- Extremely hazardous materials such as cyanide, phosgene, radiation;
- Visible vapor clouds; and
- Biological indicators such as dead animals or stressed vegetation.

6.0 MONITORING AND ACTION LEVELS

6.1 Air Monitoring

The following environmental monitoring instruments and methods shall be used on site at the specified intervals.

6.1.1 Photoionization Detector (PID)

A PID shall be used continuously at the downwind perimeter of the work area during any remedial activity that involves the disturbance or handling of project site soil/fill to monitor for volatile organic compounds. The PID shall be calibrated daily following manufacturers' recommendations. Readings and calibration data shall be recorded in daily logs by the SSO.

6.1.2 Temperature

Ambient temperature should be monitored throughout the work day for potential heat or cold stress conditions.

6.1.3 Dust

A real-time particulate monitor shall be used continuously in the vicinity of the work area, during the installation of the test borings, and during excavation,

backfilling, loading and trucking operations to monitor for particulate matter less than ten microns (PM-10). The particulate monitor will be able to continuously monitor particulate concentrations. An audible alarm will be provided to indicate exceedances of the action levels. The particulate meter shall be calibrated daily following manufacturers' recommendations. Readings and calibration data shall be recorded in daily logs by the SSO.

6.1.4 Asbestos Particulates

An asbestos monitoring plan that complies with applicable state and federal regulations will be developed and implemented by the asbestos abatement contractor.

6.2 Action Levels

Should action levels be encountered, work operations shall cease until further evaluation is performed and safe levels are prevalent. If through engineering controls and monitoring, safe levels (below action levels) cannot be achieved, an upgrade in personal protection equipment shall be mandated by the SSO, or operations shall cease in that portion of the project site. The action levels for this project are as follows:

- Volatile organic compounds (PID monitor) = consistent readings greater than 5 ppm above background levels in the breathing zone;
- Temperature = ambient air temperature of less than 36°F for cold stress, and greater than 90°F for heat stress;
- Dust = consistent downwind readings that are 150 ug/m^3 greater than background (i.e. upwind); and
- Asbestos = per applicable state and federal regulations.

Additional responses are described below. It should be noted that the following responses are in accordance with the Community Air Monitoring Plan.

6.2.1 Vapor Emission Response Plan

If the organic vapor level decreases below 5 ppm above background, after engineering controls are instituted, work activities can resume. If the organic vapor levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the work area, activities can resume (while using the appropriate PPE) provided the organic vapor level at the "downwind hot zone" is below 5 ppm over background. The "downwind hot zone" is defined as 200 feet downwind of the work area or half the distance to the nearest potential receptor

or residential/commercial structure, whichever is less, (but in no case less than 20 feet).

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When a work shutdown occurs, downwind air monitoring as directed by the SSO will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

6.2.2 Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified within the "downwind hot zone", all work activities must be halted.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20-Foot Zone).

If efforts to abate the emission source are unsuccessful and if levels greater than 5 ppm above background persist for more than 30 minutes in the 20-Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect. The Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 ppm above background.

6.2.3 Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

- All Emergency Response Contacts as listed in section 13.0 of the HASP will be contacted;
- The local police authorities will be immediately contacted by the SSO and advised of the situation; and
- Frequent air monitoring will be conducted at 30 minute intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the SSO.
- The Site Safety and Health Officer will determine if project site workers can safely undertake source abatement measures. Abatement measures may include covering the source area with clean fill or plastic sheeting, or consolidating contaminated materials to minimize surface area. The Site Safety and Health Officer will adjust worker personal protective equipment as necessary to protect workers from over-exposure to organic vapors.

6.2.4 Particulate Emission Response Plan

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

If after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 ug/m^3 above the upwind level, work must be stopped and a re-evaluation of activities should be examined. Work may continue with dust suppression techniques provided they 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.

6.2.5 Dust Suppression Techniques

Dust suppression techniques may include but are not necessarily limited to the following measures:

- Reducing the number of areas subject to intrusive investigation, and limiting the number of exposed soil areas;
- Restricting vehicle speeds;
- Applying water on buckets during excavation and on exposed soil surfaces;
- Wetting equipment used in intrusive activities;
- Restricting work during extreme wind conditions; and
- Using a street sweeper on paved roads, where feasible.

7.0 SITE CONTROL MEASURES

Maintaining specific work zones both on-site and off-site, along with other precautionary measures outlined throughout this HASP, will help control site access.

7.1 On-Site Control Measures

Temporary fencing will be installed as appropriate around work areas to control access to the project site and to prevent unauthorized access to on-site work zones. During asbestos abatement by authorized personnel, no other persons are to be present in the vicinity of abatement area.

The SSO will establish and clearly mark the following areas with consultation of the PTL:

7.1.1 Exclusion Zone (EZ)

This will be the actual work area where remedial activities will take place. An outer boundary will be established and clearly marked. The area of the EZ will be established based on site work conditions, exposure monitoring, etc. In general, the EZ will incorporate the area being excavated or drilled and a 50-foot radius around the area.

- Access to the EZ will be limited to employees and visitors who have a minimum 24-Hour Hazardous Site Worker training, protective equipment and responsibilities for work in the EZ. The entry of unauthorized personnel into the EZ will be prohibited.
- The Exclusion Zone will be in areas of intrusive activities such as soil borings, excavating and sampling. The limits of the zone will change, as necessary, depending on the SSO's judgment regarding work conditions, air sampling, etc.
- Drilling or excavation activities inside the EZ will commence at Level D. Air monitoring will be performed while advancing soil borings or excavating using a photoionization detector (PID) and a particulate monitor.

7.1.2 Contamination Reduction Zone (CRZ)

An area between the EZ and Support Zone (SZ) will be established to facilitate employee and equipment decontamination, protective equipment storage and supply, and employee rest areas. The location of the CRZ will be established in an area offering minimal contamination and will be subject to change based on the SSO's judgments considering work conditions, air monitoring, etc. The CRZ will contain a boot wash with brushes and soap, a source of wash water for washing equipment and hands, and plastic garbage bags to contain disposable protective equipment.

7.1.3 Support Zone (SZ)

An area free from contamination will be identified and clearly marked where administrative or other support functions (not requiring entrance to the EZ or CRZ) can be performed. The actual siting of the SZ will be established by the PTL and SSO by considering distance from the EZ, visibility, accessibility, air monitoring data, etc.

All personnel working in the project site will enter their names in a site log, which will be maintained in the SZ. Personnel will only enter an EZ after proceeding

through a designated entry / checkpoint at the CRZ. Before engaging in any site work, all personnel involved in such work will be briefed on the following:

- Identity of PTL/SSO;
- Boundaries, exit and entry point locations of the Exclusion Zone;
- Decontamination procedures when required;
- Chemical, radiological and physical hazards suspected of being in the EZ and their signs and symptoms of exposure;
- Location of first aid equipment and qualified personnel;
- Procedures to be used in contacting emergency personnel, including potential site evacuation procedures in case of emergencies;
- Location of emergency equipment;
- Location of emergency meeting point;
- Contractor staff person in charge;
- Activities taking place that day;
- Location of emergency eyewash station;
- Heat or cold stress symptoms. All personnel will be advised to watch for signs of stress in staff working in the EZ; and
- Personnel protective equipment requirements and limitations.

7.2 Off-Site Control Measures

Although the majority of the remedail activities will be conducted within the interior fenced area of the site, the abandonment of the storm sewer pipe to Hyde Creek will occur outside the boundaries of the project site. No residential properties or public roads exist adjacent to this location, therefore only minimal control measures to protect the public from physical and chemical hazards associated with these off-site activities will be necessary including the following:

- A localized contaminant reduction zone (CRZ) shall be established at the periphery of the EZ toward the site interior, if possible, to regulate flow of personnel and equipment into and out of the zone;
- Only properly trained and certified project personnel will be permitted to enter the CRZ and EZ; and
- The SSO or other member of the WPP will be present throughout the duration of remedial activities to monitor the work zone and prevent unauthorized parties from entry.

8.0 HAZARD COMMUNICATION

In compliance with 29 CFR 1910.1200, any hazardous materials brought on site by any personnel (TVGA or contractors) shall be accompanied with the material's Material Safety Data Sheet (MSDS). The SSO shall be responsible for maintaining the MSDSs on site,

reviewing them for hazards that working personnel may be exposed to, and evaluating their use on site with respect to compatibility with other materials including personal protective equipment, and their hazards. Should the SSO deem the material too hazardous for use on site, the party responsible for bringing the material on site shall remove it from the site. Hazardous materials are not expected to be used during remedial activities at the project site.

9.0 CONFINED SPACE ENTRY

Confined space entry by TVGA personnel is not expected during the completion of remedial activities. Should a potential confined space hazard exist, all proper confined space entry procedures, techniques, and equipment shall be consistent with OSHA regulations in 29 CFR 1910.146.

10.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Based on evaluation of the potential hazards for the site, the initial levels of PPE have been designated as modified Level D for all site activities with the exception of asbestos abatement which is addressed below. No changes to the specified levels of PPE shall be made without the approval of the SSO and the PTL. If action levels are reached, work shall cease and further evaluations shall be performed by the SSO and advisors.

10.1 Modified Level D Protection

- Safety glasses with side shields;
- Chemical resistant gloves (during sampling activities);
- Steel-toe and shank boots; and
- Hard hat.

For the protection of site personnel, organic gas/vapor emissions, and particulate levels will be continuously monitored during soil boring and excavation operations, and the required level of protection upgraded if action levels warrant. If an upgrade in PPE is warranted, Level C Protection including full face air-purifying respirators with appropriate cartridges will be implemented. All asbestos abatement activities conducted by EPA and NYSDOL Certified Persons will be conducted under Level C Protection.

10.2 Level C Protection

Level C Protection, the maximum level likely to be needed at this site, includes the following;

- Full-face air purifying respirators with NIOSH/MSHA - approved high efficiency (HEPA) canisters for acid mists/organic vapors (half-face

respirators may be substituted for certain tasks, by approval of the SSO);

- Chemical-resistant (Poly-Tyvek) clothing, one piece, long sleeved;
- Outer and inner gloves. Inner gloves to be tight-fitting latex or vinyl. Outer gloves of neoprene or nitrile;
- Steel-toe and shank boots (chemical resistant);
- Disposable Tyvek "booties";
- Neoprene or butyl rubber outer boots;
- Gloves and boots taped; and
- Hard hats.

For all personnel that may be required to wear full-face respirators (all persons working near an excavation, for example, or conducting asbestos abatement), only NIOSH/MSHA approved respirators will be used. These will contain cartridges approved for removal of organic vapors/acid mists and particulates. All team members will be fit-tested for respirators. Due to possible difficulties in achieving a proper seal between face and mask, persons with facial hair will not be fitted for respirators, nor will they be allowed to work in areas requiring respiratory protection. Unless the SSO directs otherwise, when respirators are used, the cartridges should be replaced after eight hours of use, or at the end of each shift, or when any indication of breakthrough or excess resistance to breathing is detected.

10.3 Donning PPE

The following procedures should be followed when donning protective equipment:

- Inspect all equipment to ensure it is in good condition;
- Don protective suit and gather suit around waist;
- Put on outer boots over feet of the suit and tape at boot/suit junction;
- Don inner gloves;
- Don top half of protective suit and seal (as necessary);
- Don respirator protection (if necessary);
- Don outer gloves and tape at glove/suit junction (as necessary); and
- Have assistant check all closures and observe wearer to ensure fit and durability of protective gear.

11.0 DECONTAMINATION

Level C or higher PPE utilized during site operations warrants the institution of decontamination procedures. All asbestos abatement activities will be conducted in Level C protection.

Contaminated material must be either decontaminated or isolated immediately. All materials brought into the Exclusion Zone are presumed contaminated. Alconox and water shall be used as the decontamination solution. Decontamination equipment consisting of large wash tubs, scrub brushes, plastic sheeting, distilled water, plastic garbage bags, trash barrel, and respirator wipes will be used.

Protective clothing, especially reusable boots and gloves, will be decontaminated before leaving the Exclusion Zone by a thorough soap-and-water wash on the decontamination pad. Washing and rinsing solutions will be disposed on site in areas where excavations occur unless elevated VOC levels are detected with a PID. If elevated levels are detected, it may be necessary to dispose of decon solutions in a drum or an approved containment tank. Solid waste materials (disposable gloves and garments, tape, plastic drop cloths, etc.) will be containerized for proper disposal. Personnel will be advised that all clothing worn under protective clothing (underwear, shirts, socks, trousers) on-site should be laundered separately from street clothing before redressing. If protective clothing is breached and personal clothing becomes contaminated, the personal clothing will be disposed.

Use of disposable sampling equipment will limit decontamination requirements. The need for widespread vehicle and heavy equipment decontamination will be limited by keeping to a minimum the number of vehicles entering the Exclusion Zone.

11.1 Personal Decontamination

The following steps must be taken to decontaminate personnel leaving a Level B or C work area:

- Place equipment and sample containers that must be decontaminated on a plastic drop cloth;
- Place disposable supplies and equipment in a labeled drum;
- Scrub non-disposable gloves and outer boots (if used) with a brush in a detergent water, then rinse in clean water;
- Remove outer gloves and boot covers;
- Remove protective garments, safety boots and hard hat;
- Wash inner gloves;
- Remove and wash respiratory protection (if worn);
- Remove inner clothing (as necessary for final decontamination at end of shift);
- Thoroughly wash face, hands and body; and
- Redress.

11.2 Equipment Decontamination

TVGA personnel must take the following steps to decontaminate equipment and sample containers leaving Level A, B, or C work areas:

- Don protective equipment at Modified Level D;
- Wash reusable equipment in detergent solution and/or an appropriate solvent, or steam clean;
- Dry sample containers, etc., with paper towels (if necessary) and place on a clean drop cloth;
- Remove and discard used respirator cartridges. Wash respirators in fresh detergent water, rinse in clean water, and disinfectant. Store in a closed plastic bag, away from sources of contamination; and
- Launder clothing before reuse (or place in appropriate labeled impervious containers for transport to laundry).

Organic vapor/HEPA cartridges are the appropriate canisters for use with the contaminates of concern. All respirators used shall be NIOSH and/or MSHA approved and their use shall be consistent with OSHA regulations in 29 CFR 1910.134. All on-site personnel wearing a respirator shall have respirator clearance from a qualified occupational health physician. In addition, the respirator wearers on site shall perform qualitative fit tests to ensure proper fit of the face seal of the respirator. Filter cartridges used shall be of the same manufacturer as the respirator and shall be changed on a daily basis at a minimum and/or if breathing becomes difficult.

Equipment and vehicles leaving potentially contaminated areas will pass over one or more anti-tracking pads. These areas are comprised of NYSDOT #3 gravel to a depth of at least 4 inches, overlaying a filter fabric sheet to retain contaminated soil. The anti-tracking pads are at least 50 feet in length and 15 feet wide. These pads are intended to remove potentially contaminated soil from tires and wheels. Vehicles will not be permitted to enter or exit without traveling across one of the pads.

The locations of the anti-tracking pads will be determined prior to initiating, field activities. The locations will be adjusted as necessary to ensure that adjacent property and public roads are kept free from cross-contamination.

Construction equipment will be thoroughly decontaminated by the Contractor using a power washer prior to being removed from the project site. In addition, all construction equipment will undergo gross decontamination with a power washer as necessary to prevent dust generation.

12.0 EMERGENCY PROCEDURES

Prior to entering the project site, all personnel will complete the attached emergency data sheet. On-site personnel will abide by the following emergency procedures:

- The SSO shall be notified of any on-site emergencies and be responsible for ensuring that the appropriate measures are followed;
- Non-emergencies will be treated on site, documented and the injured party will be directed to seek further medical attention; and
- All occupational injuries and illnesses will be reported, recorded, and investigated.

12.1 Communication

The SSO will have a cellular-type telephone on-site at all times for direct outside communications with emergency response organizations. The SSO will also maintain communication with each WPP performing work on the project site through the use of two-way radios.

12.2 Personnel Injury

Upon notification of personnel injury the SSO will assess the nature of the injury. The appropriate first aid shall be initiated and if necessary, contact shall be made for an ambulance and with the designated medical facility. If the injury increases the risk to others, activities on-site will stop until the added risk is removed or minimized.

12.3 Fire/Explosion

Upon notification of fire or explosion, the designated emergency signal shall be sounded and all site personnel shall assemble at a safe distance upwind of the involved area. The SSO shall alert the appropriate fire department through the 911 emergency reporting system.

12.4 PPE Failure

If any site worker experiences a failure or alteration of PPE that affects the protection factor, that person and his or her buddy shall immediately exit the work area. Reentry and resuming work activities shall not be permitted until the equipment has been repaired or replaced.

12.5 Other Equipment Failure

If any equipment on-site fails to operate properly, the Field Team Leader and the SSO shall be notified and will determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the remediation tasks, all personnel shall leave the work zone until the situation is evaluated and appropriate actions taken.

12.6 Spill Containment

Should a release of a chemical material occur on-site, the SSO shall contain the spill to the extent immediately possible by the use of absorbent booms, pigs, pads, etc. The SSO shall contact appropriate spill response public departments (local or state) and a hazardous materials response contractor for further containment (refer to Section 13.0).

13.0 EMERGENCY MEDICAL CARE

13.1 Hospitals

Name: Brooks Memorial Hospital
Address: 529 Central Avenue, Dunkirk
Emergency Room #: (716) 366-1111 Ext. 4414
Directions from site: Head north on South Roberts Road approximately 400 feet to Talcott Road. Proceed south (left) on Talcott to Maple Road. Proceed north on Maple Road and make a left onto West Sixth Street. Proceed west (right) on West Sixth Street to Central Avenue. Estimated drive time is 10 minutes. A map showing the route from the site to the nearest hospital has been included as Figure 1.

13.2 Emergency Notification Numbers

Fire Department: 911
Police Department: 911
Department of Emergency Services: 911
Chautauqua County Health Department, Environmental Division: (716) 366-8831
Chautauqua County Hazardous Material Team: (716) 753-4233 (24-Hour Emergency Number)
NYSDEC Spill Response Unit: (716) 851-7220
NYSDEC Spill Hotline: 800-457-7362
NYSDOH Division of Environmental Health Assessment: (716) 847-4502

14.0 STANDARD OPERATING PROCEDURES

- Restricted areas are not to be accessed.
- Avoid unrestricted areas that seem questionable or unsafe.
- Minimize contact with hazardous substances.
- Use remote sampling, handling, and/or container-opening techniques whenever possible.
- Protect monitoring and sampling instruments by bagging, if necessary.

- Wear disposable outer garments and use disposable equipment where appropriate.
- All PPE and skin surfaces should be checked for cuts and/or punctures.
- Do not eat, smoke, or drink within the exclusion or contamination reduction zones.
- Prescription drugs should not be taken by personnel where potential for absorption, inhalation, or ingestion of toxic substance exists unless specifically approved by a qualified physician. Alcoholic beverage intake is prohibited.
- All personnel must be familiar with Client's operating safety procedures.
- The buddy system must always be used and enforced.
- No workers with beards or heavy sideburns are allowed to wear respirators.
- Use of contact lenses is prohibited on site.
- All heavy equipment involved should be equipped with available back-up signals.
- Eating, drinking, chewing gum or tobacco, smoking, or any similar practice is prohibited.
- Hands and face must be thoroughly washed upon leaving the Exclusion Zone.
- Whenever decontamination procedures for outer garments are in effect, it is recommended that the entire body should be thoroughly washed, as soon as possible, after the protective garment is removed.
- No excessive facial hair, which interferes with a satisfactory fit of the mask-to-face seal, is allowed for personnel required to wear respiratory protective equipment.
- Medicine and alcohol can exaggerate the effects from exposure to toxic chemicals.
- Fluids will be provided to staff to replace perspiration and will be sealed in containers. All fluids for ingestion will be kept in the Support Zone.
- Due to the effects of protective outer wear decreasing body ventilation, there exists an increase in the potential for heat casualties.
- All field personnel should check for any personal habit, which may allow contaminated soil or water onto or into the body. Jewelry, including watches, shall not be worn within the Exclusion Zone.
- All first aid treatments will be reported to the SSO, who will record each incident.

15.0 COMMUNITY HEALTH AND SAFETY PLAN

15.1 Potential Impacts

A Community Air Monitoring Plan that will require real-time monitoring for volatile organic compounds and particulates at the downwind perimeter of each designated work area will be implemented when remedial activities are in progress at the project site. Potential hazards to the general public and surrounding community posed by this site investigation plan relate primarily to fugitive dust (particulate) emissions, asbestos fiber release, and/or organic contaminants in on-site soil and sediment, and physical hazards associated with the operation of heavy equipment and open

excavations. Potential exposure mechanisms that can transport particulates, both contaminated and non-contaminated, asbestos fibers, and volatile organic compounds beyond the project site boundary include:

- Dust projected by wind erosion;
- Asbestos projected by wind;
- Contaminated dust projected by wind erosion; and
- Volatile organic compounds transmitted by wind currents.

The project site is located in an area that consists mainly of industrial/manufacturing properties. Residential properties are primarily located northwest and south of the project site, and are of a sufficient separation distance that it is unlikely that they will be adversely impacted by the project site remediation activities.

Limiting potential exposure mechanisms that can transport contaminants beyond the project site boundary will be completed by implementation of an air monitoring plan, maintaining site control, the use of engineering controls, and following emergency procedures.

15.2 Monitoring Plan

The excavation activities are not expected to produce measurable fugitive dust. The excavations will occur with a backhoe and/or excavator. The excavations will vary in size depending on the remediation at the media groups that will be subject to excavation activities.

Should action levels be encountered, work operations shall cease until further evaluation is performed and safe levels are prevalent. If through engineering controls and monitoring, safe levels (below action levels) cannot be achieved, an upgrade in personal protection equipment shall be mandated by the SSO, or operations shall cease in that portion of the project site. The action levels for this project and the response measures to be implemented to protect the community in the event that these action levels are exceeded are presented in Section 6.2.

15.3 Project Site Control

Portions of the project site are currently enclosed by a six-foot tall chain link fence. Access to other portions of the project site, however, are not controlled. Vehicular access to the project site is monitored by a security guard posted at the Roberts Road entrance, and no unauthorized vehicles will be permitted to enter. During work hours, the main entrance gate will be opened to allow authorized personnel access. The gate will then be closed to deter unauthorized vehicles from entering the project site.

15.4 Engineering Controls

In the event measurable dust levels are detected during the remedial activities, then standard dust suppression techniques may be utilized, including the following:

- Wetting excavation faces, boring spoils and equipment during excavation or soil borings;
- Restricting vehicle speeds to 10 mph;
- Postponing excavation activities during severe winds;
- Covering excavated areas and material after excavation activity ceases; and
- Decreasing the number and size of excavations.

If the dust suppression techniques being utilized do not reduce airborne particulates, then remedial activities will be suspended, until a review of the engineering controls can be completed.

In the event visible dust levels are identified during the abatement of ACMs, then the asbestos removal contractor will be required to amend his procedures per applicable state and federal regulations to limit dust levels. Abatement techniques that minimize the potential for fiber releases will be employed. This may include, but is not limited to the following:

- Remove ACMs in a manner to cause the least amount of dust;
- Do not make unnecessary cuts while removing ACMs;
- Use sufficient water to wet areas designated for asbestos abatement;
- Make sure disposal containers are tightly sealed; and
- Use sufficient material to encapsulate areas where ACMs are being removed.

15.5 Emergency Notification

This HASP has been developed to include details on emergency coordination and notification procedures to be implemented during an incident. The procedures for specific emergencies are outlined in Section 12.0 and the contact information for local emergency personnel is included in Section 13.0. In the event community health and safety is in question, dialing 911 will summon Fire and Police personnel that can take appropriate actions as necessary.

N:\2005.0308.00-Roblin Remedial Design and Oversight\Engineering\10Deliverables\Final Engineering Report\Site Management Plan\Appendix D -HASP.doc

ATTACHMENT D-1

FORMER ROBLIN STEEL SITE

CERTIFICATION

PROJECT LOCATION: 320 SOUTH ROBERTS ROAD, DUNKIRK,NY
PROJECT NO. 2005.0308.00

Senior Level Management shall sign this form after she/he has conducted a pre-entry briefing.

Each employee conducting field work shall sign this form after the pre-entry briefing is completed and prior to commencing work on site. A copy of this signed form shall be kept at the site, and the original sent to the PTL, for inclusion into the project file.

Site Personnel Sign-off

☐ I have received a copy of the Site-Specific Health and Safety Plan.

☐ I have read the Plan and will comply with the provisions contained therein.

☐ I have attended a pre-entry briefing outlining the specific health and safety provisions on this site.

Name: _____ Date: _____
_____ Date: _____
_____ Date: _____
_____ Date: _____
_____ Date: _____
_____ Date: _____

TVGA Project Team Leader

☐ A pre-entry briefing has been conducted by myself on _____.

☐ I deferred the pre-entry briefing responsibility to the Site Health and Site Safety Officer (SSO).

Name: _____ Date: _____.

ATTACHMENT D-2

MEDICAL DATA SHEET

This brief Medical Data Sheet will be completed by all personnel potentially working on-site and will be kept in the Support Zone during the performance of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to the hospital facilities is required:

Site: _____

Name: _____Home Telephone: _____

Address: _____

_____

Age: _____ Height: _____ Weight: _____

Person to Contact in Case of Emergency:

_____ Phone No. _____

Drug or other Allergies: _____

_____

Particular Sensitivities: _____

Do You Wear Contacts? YES NO

Provide a Checklist of Previous Illnesses or Exposures to Hazardous Chemicals:

_____

_____

_____

What Medications are you presently using? _____

_____

Do you have any Medical Restriction? _____

_____

_____

Name, Address, and Phone Number of Personal Physician:

_____

_____

_____

ATTACHMENT D-3

DIRECT READING AIR MONITORING FORM

DATE: _____
PROJECT: _____
PROJECT #: _____
WEATHER CONDITIONS: _____
WIND DIRECT/SPEED: _____

USER: _____
CALIBRATION: _____
CALIBRATED BY: _____
COMMENTS: _____

ACTIVITY	INSTRUMENT	WORKING RANGE	TIME	READING	COMMENTS

APPENDIX E

FORMS

ATTACHMENT E-1

COVER INSPECTION FORM

COVER INSPECTION FORM
Former Roblin Steel Site

Property Name: Former Roblin Steel Site Inspection Date:

Property Address: 320 South Roberts Road

City: Dunkirk State: NY Zip Code: 14048

Property ID: (Tax Assessment Map)

Section: 79.12 Block: 4 Lot(s): 29 and 30

Total Acreage: 12 acres

Weather (during inspection): Temperature: _____ Conditions:

SIGNATURE:

The findings of this inspection were discussed with appropriate personnel, corrective actions were identified and implementation was mutually agreed upon:

Inspector: _____ Date: _____

Next Scheduled Inspection Date: _____

SECURITY AND ACCESS

	Yes	No
1. Access controlled by perimeter fencing?	_____	_____
Are there sections of the fence material damaged or missing?	_____	_____
Are the fence or gate post foundations structurally sound?	_____	_____
2. "No Trespass" signs posted in appropriate languages?	_____	_____
Are the signs securely attached to the fencing or posts?	_____	_____
Are there sufficient signs; are the signs adequately spaced around the perimeter of the property?	_____	_____
3. Is there evidence of trespassing?	_____	_____
Is there evidence of illegal dumping?	_____	_____

COVER & VEGETATION

4. Final cover in acceptable condition?	_____	_____
Is there evidence of sloughing, erosion, ponding or settlement?	_____	_____
Is there evidence of unintended traffic; rutting?	_____	_____
Is there evidence of distressed vegetation/turf?	_____	_____

	Yes	No
5. Final cover sufficiently covers soil/fill material?	_____	_____
Are there cracks visible in the soil or pavement?	_____	_____
Is there evidence of erosion in the stormwater channels or swales?	_____	_____
Is there damage to the synthetic erosion control fabric in the channels or swales?	_____	_____

ACTIVITY ON SITE

6. Any activity on site that mechanically disturbed soil cover?	_____	_____

ADDITIONAL FACILITY INFORMATION

Development on or near the site? (Specify size and type: e.g., residential, 40 acres, well and septic)

COMMENTS

Item #

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

ATTACHMENTS

1. Site Sketch
2. Photographs
3. Laboratory Report (s)

ATTACHMENT E-2

MONITORING WELL SAMPLING LOG

TVGA CONSULTANTS

MONITORING WELL SAMPLING LOG

MW NO:

Project Name: _____
Project Location: _____

Project No: _____
Date: _____
Screen Length: _____

Purge Information:

(1) Depth to Bottom of Well: _____ (from TOC)

(2) Depth to Water: _____ ft (from TOC)

(3) Column of Water: _____ (#1 - #2)

(4) Casing Diameter: _____ in

(5) Volume Conversion: _____gal/ft

(6) 1 Vol. of Well: _____ gal

Method of Purging: WaTerra/Bailer/Submersible/Other: _____

Volume Conversion:

2" = 0.163 4" = 0.653 6" = 1.469 8" = 2.611 10" = 4.08

Field Analysis:

Vol Purged (gal)								
Time								
ORP/EH (MV)								
pH								
Cond. (MS/CM)								
Turb. (NTU)								
Salinity (%)								
D.O. (mg/l)								
Temp. (°C)								

Total Volume Purged: _____ gal Total Purge Time: _____

Sampling Info:

Sample Method: _____

No. of Bottles: _____

Sample Time: _____

Sample Analyses: _____

Comments: _____

_____

_____

Logged By:

ATTACHMENT E-3

INSTITUTIONAL AND ENGINEERING CONTROLS CERTIFICATION FORM

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
INSTITUTIONAL AND ENGINEERING CONTROLS CERTIFICATION FORM

SITE DETAILS

SITE NO. **B-00173-9**

SITE NAME **FORMER ROBLIN STEEL SITE**

SITE ADDRESS: 320 SOUTH ROBERTS ROAD ZIP CODE: 14048

CITY/TOWN: CITY OF DUNKIRK, NEW YORK

COUNTY: CHAUTAUQUA

CURRENT USE:

CURRENT CERTIFICATION FREQUENCY: EVERY __1__ YEAR(S)

VERIFICATION OF SITE DETAILS

		YES	NO
1.	Are the SITE DETAILS above, correct?	☐	☐
	If NO, are changes handwritten above or included on a separate sheet?	☐	☐
2.	Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment since the initial/last certification?	☐	☐
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	☐
3.	Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property since the initial/last certification?	☐	☐
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	☐
4.	Has a change-of-use occurred since the initial/last certification?	☐	☐
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	☐
5.	Has any new information come to your attention to indicate that assumptions made in the qualitative exposure assessment for offsite contamination are no longer valid (applies to non-significant threat sites subject to ECL 27-1415.7(c))?	☐	☐
	If YES, is the new information or evidence that new information has been previously submitted included with this certification?	☐	☐
6.	Are the assumptions in the qualitative exposure assessment still valid (must be certified every five years for non-significant threat sites subject to ECL 27-1415.7(c))?	☐	☐
	If NO, are changes in the assessment included with this certification?	☐	☐

Description of Institutional/Engineering Control Certification	Control
ENVIRONMENTAL EASEMENT	Check boxes will appear
DEED RESTRICTIONS	here for each specific Control associated with the general categories on the left.
OTHER CONTROLS	

CONTROL CERTIFICATION STATEMENT

For each institutional or engineering control listed above, I certify by checking "Yes" that all of the following statements are true:

(a) the institutional control and/or engineering control employed at this site is unchanged from the date the control was put in-place, or last approved by the Department;

(b) nothing has occurred that would impair the ability of such control to protect public health and the environment;

(c) nothing has occurred that would constitute a violation or failure to comply with any Site Management Plan for this control; and

(d) access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control.

(e) if a financial assurance mechanism is required under the remedial work plan for the site, the mechanismremains valid and sufficient for their intended purpose under the work plan.

CONTROL CERTIFICATIONS
SITE NO. B-00173-9

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____(print name), _____

(print business address), am certifying as _____ (Owner or

Owner's Designated Site Representative (if the site consists of multiple properties, I have been authorized anddesignated by all site owners to sign this certification) for the Site named in the Site Details section of this form.

_____ _____
Signature of Site Owner or Representative Rendering Certification Date

QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE

I certify that all information and statements in this Certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____(print name), _____

(print business address), am certifying as a Qualified Environmental Professional for the_____

_____ (Owner or Owner's Representative) for the Site named in the Site Details section of this form.

_____ _____ _____
Signature of Qualified Environmental Professional, for the Owner or the Owner's Representative, Rendering Certification Stamp (if Required) Date

Enclosure 2

Certification of Institutional Controls/ Engineering Controls (ICs/ECs)
Step-by-Step Instructions, Certification Requirements and Definitions

The Site owner, or site owner's representative, and when necessary, a Professional Engineer (P.E.), or the Qualified Environmental Professional (QEP), must review and complete the IC/EC Certification Form, sign it, and return it, along with the Periodic Site Management Report, within 45 days of the date of this notice.

Institutional Controls (defined below) are organized into 4 categories: Governmental Controls (e.g., groundwater-use restrictions), Proprietary Controls (e.g., Environmental Easements), Enforcement and Permit Tools (e.g., Consent Orders), and Informational Devices (e.g., State Registries of Inactive Hazardous Waste Sites). The Certification Form shows the Control information the Department has for this Site. Please use the following instructions to complete the IC/EC Certification.

I. Verification of Site Details (First and Second Boxes):

1. Verify the accuracy of information in the **Site Details** section by answering the 6 questions. If necessary, you and/or your P.E. or QEP may handwrite changes and submit supporting documentation.

II. Verification of Institutional / Engineering Controls (Third and Fourth Boxes)

1. Review the listed Institutional / Engineering Controls and select "YES" or "NO" for **Control Certification** for each IC/EC, based on Sections (a)-(d) of the **Control Certification Statement.**

2. If you cannot certify "Yes" for each Control, please continue to complete the remainder of this **Control Certification** form. Attach supporting documentation that explains why the **Control Certification** cannot be rendered, as well as a statement of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Control Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is conducted.

   If the Department concurs with the explanation, the corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued. If the Department has any

questions or concerns regarding the completion of the certification, the Project Manager will contact you.

III. Certification by Signature (Fifth and Sixth Boxes)**:**

1. WHY IC/EC Certification is required:
   The Section of the New York Environmental Conservation Law that includes the requirement of a periodic certification of IC(s) and EC(s) is as follows:

   For Environmental Restoration Projects: N.Y. Envtl Conserv.Law Section 56-0503
   (Environmental restoration projects; state assistance)

   For State Superfund Projects: Envtl Conserv.Law Section 27-1318.
   (Institutional and engineering controls)

   For Brownfields Cleanup Program Projects: Envtl Conserv.Law Section 27-1415. (Remedial program requirements)

   Voluntary Cleanup Program: Applicable program guidance.

2. To determine WHO signs the **Control Certification,** please use the following table:

Signature Requirements for IC/EC Certification Form		
Type of Control	**Example of IC/EC**	**Required Signatures**
IC	Environmental Easement Deed Restriction.	Site Owner or their designated representative, e.g., a Property Manager.
EC with no treatment system, or engineered caps.	Fence, Clean Soil Cover.	Site Owner or their designated representative, and QEP. (P.E. license not required)
EC that includes treatment systems, or engineered caps.	Pump & Treat System providing hydraulic control of a plume, Part 360 Cap.	Site Owner or his designated representative, and QEP with P.E. License.

3. WHERE to mail the signed Certification Form within 45 days of the date of the notice:

[generated from UIS]
New York State Department of Environmental Conservation
Division of Environmental Remediation
Central Office or Regional Address
City Name, NY Zipcode
Attn: _____, Project Manager

Please note that extra postage may be required.

IV. Definitions:

"Engineering Control" (EC), means any physical barrier or method employed to actively or passively contain, stabilize, or monitor any hazardous waste or petroleum waste to ensure the long-term effectiveness of an inactive site remedial program or brownfield site remedial program or environmental restoration project, or to eliminate potential exposure pathways to any such hazardous waste or petroleum waste. Engineering Controls include, but are not limited to: pavement, caps, covers, subsurface barriers and slurry walls; building ventilation systems; fences, other barriers and access controls; and provision of alternative water supplies via connection to an existing public water supply, addition of treatment technologies to an existing public water supply, and installation of filtration devices on an existing private water supply.

"Institutional Control" (IC), means any non-physical means of enforcing a restriction on the use of real property, that limits human or environmental exposure to any hazardous waste or petroleum waste, restricts the use of groundwater; provides notice to potential owners, operators, or members of the public; or prevents actions that would interfere with the effectiveness of an inactive site remedial program or brownfield site remedial program or environmental restoration project, or with the effectiveness and/or integrity of Site Management activities at or pertaining to any site.

"Professional Engineer" means a person, including a firm headed by such a person, who holds a current New York State Professional Engineering license or registration, and has the equivalent of three (3) years of full-time relevant experience in site investigation and remediation of the type detailed in this Control Certification.

"Property Owner" means, for purposes of an IC/EC certification, the actual owner of a property. If the site has multiple properties with different owners, the Department requires that the owners be represented by a single representative to sign the certification.

"Oversight Document" means any document the Department issues pursuant to each Remedial Program (see below) to define the role of a person participating in the investigation and/or remediation of a site or area(s) of concern. Examples for the various programs are as follows:

BCP (after approval of the BCP application by DEC) - Brownfield Site Cleanup Agreement.
ERP (after approval of the ERP application by DEC) - State Assistance Contract.
Federal Superfund Sites - Federal Consent Decrees, Administrative Orders on Consent or Unilateral Orders issued pursuant to CERCLA.

Oil Spill Program - Order on Consent, or Stipulation pursuant to Article 12 of the Navigation Law (and the New York Environmental Conservation Law).
State Superfund Program - Administrative Consent Order.
VCP (after approval of the VCP application by DEC) - Voluntary Cleanup Agreement.
RCRA Corrective Action Sites- Federal Consent Decrees, Administrative Orders on Consent or permit conditions issued pursuant to RCRA.

"Qualified Environmental Professional" (QEP), means a person, including a firm headed by such a person, who possesses sufficient specific education, training, and experience necessary to exercise professional judgment, to develop opinions and conclusions regarding the presence of releases or threatened releases to the surface or subsurface of a property or off-site areas, sufficient to meet the objectives and performance factors for the areas of practice identified by this guidance (DER10 Technical Guide).

1. Such a person must:
   i. Hold a current Professional Engineering or a Professional Geologist license or registration, and have the equivalent of three (3) years of full-time relevant experience in site investigation and remediation of the type detailed in this guidance; or
   ii. Be a site remediation professional licensed or certified by the federal government, a state; or a recognized, accrediting agency, to perform investigation or remediation tasks identified by this guidance, and have the equivalent of three (3) years of full-time relevant experience. Examples of such license or certification include, but are not limited to, the following titles:
      - Licensed Site Professional, by the State of Massachusetts
      - Licensed Environmental Professional, by the State of Connecticut
      - Qualified Environmental Professional, by the Institute of Professional Environmental Practice
      - Certified Hazardous Materials Manager, by the Institute of Hazardous Materials Management

2. The definition of QEP provided above does not preempt State Professional licensing or registration requirements such as those for a Professional Geologist, Engineer, or Site Remediation Professional. Before commencing work, a person should determine the applicability of State professional licensing or registration laws to the activities to be undertaken pursuant to section 1.5 (DER10 Technical Guide).

3. A person who does not meet the above definition of a QEP under the foregoing definition may assist in the conduct of all appropriate investigation or remediation activities in accordance with this document if such person is under the supervision or responsible charge of a person meeting the definition provided above.

"Remedial Party" means any person or persons, as defined in 6NYCRR 375, who executes, or is otherwise subject to, an oversight document (State Superfund, BCP, ERP or VCP Program). For purposes of this guidance, remedial party also includes:

1. Any person or persons who is performing the investigation and/or remediation, or has control over the person (for example, contractor or consultant) who is performing the investigation and/or remediation, including, without limitation, an owner, operator or volunteer; and

2. The DER for State-funded investigation and/or remediation activities.

"Site Management" (SM) means the activities included in the last phase of the remediation of a site, in accordance with a Site Management Plan, which continue until the remedial action objectives for the project are met and the site can be closed-out. Site Management includes the management of the institutional and engineering controls required for a site, as well as the implementation of any necessary long-term monitoring and/or operation and maintenance of the remedy. (Formerly referred to as Operation and Maintenance (O&M)).

"Site Management Plan" (SMP) means a document which details the steps necessary to assure that the institutional and engineering controls required for a site are in-place, and any physical components of the remedy are operated, maintained and monitored to assure their continued effectiveness, developed pursuant to Section 6 (DER10 Technical Guide).

"Site Owner" means the actual owner of a site. If the site has multiple owners of multiple properties with ICs and/or ECs, the Department requires that the owners designate a single representative for IC/EC Certification activities.

"Site Owner's Designated Representative" means a person, including a firm headed by such a person, who has been designated in writing by the Site Owner(s) to complete and sign the Institutional and Engineering Controls Certification Form.

ATTACHMENT E-4

CORRECTIVE ACTION FORM

CORRECTIVE ACTION FORM
FORMER ROBLIN STEEL SITE

Property Name: _____

Property Address:

City: _____ State: _____ Zip Code: _____

Property ID: (Tax Assessment Map)

Section:_____ Block:_____ Lot(s):_____

Total Acreage: _____

Weather (during inspection): Temperature: _____ Conditions:

An inspection of the subject property on (date) identified the need for corrective action.

CORRECTIVE ACTION TAKEN

Description: (attach site sketch and photographs)

Date Completed:

SIGNATURE:

The corrective action described above was completed in accordance with all relevant requirements of the Remedial Action Work Plan.

Inspector: _____Date: _____

ATTACHMENTS

1. Site Sketch
2. Photographs
3. Laboratory Report (s)

APPENDIX F

TEST BORING / MONITORING WELL CONSTRUCTION LOGS

TVGA CONSULTANTS

TEST BORING LOG

HOLE NO. 1 (MW-12IF)

Project: Former Roblin Steel SI/RAR
Client: Chautauqua County Department of Public Facilities
Contractor: SJB Inc.

Project No. 0020006
GS Elev
WS Ref Elev
N-S Coord B5 + 17
E-W Coord A17 - 33
Start Date 9/13/2002
Finish Date 9/13/2002
Driller S. Wolkiewicz
Geologist J. Manzella

Groundwater Data (feet)			
Date	Time	Depth	Elev
9/13/2002	12:30	~16	
10/4/2002	12:14	12.99	
10/7/2002	10:00	13.02	

Equipment Data			
	Casing	Sampler	Core
Type	HSA	SS	
Diameter	4.25"	2.0"	
Weight		140 #	
Fall		30"	

Well Construction	Depth (feet)	Sample No.	Blows per 6"	Recovery (in.)	Log	Unified	Field Description Radiation - Not Detected	Remarks PID Reading (ppm) Direct Screen	Head Space
		S1	7 10 12 12	12		FILL	Brown sand (f,m), and gravel (f, ang.), dry, loose.	0.0	0.0
		S2 *	27 17 9 7	14			Black sand (f,m), dry, compact. Brown-black sand (m), dry, compact.	9.0	46.0
	5	S3	5 7 9 12	6		ML	Brown sandy-silt, trace clay, and gravel, dry, stiff.	0.0	0.0
		S4	14 15 11 13	12			As above.	0.0	0.0
		S5	4 6 8 12	20			As above, moist, some shale pieces.	0.0	0.0
	10	S6	7 8 14 15	14			As above. Gray sand-silt (weathered shale), trace clay, shale pieces, moist, very stiff.	0.0	0.0
		S7	12 43 18 18	18			As above, and shale pieces.	0.0	0.0
	15	S8	50/4 - - -	2			As above.	0.0	0.0
						Sh	Spoon refusal at 14.3' on top of competent gray shale, augering continued to 24' bgs, auger cuttings consisted of gray silt, cuttings were wet at 16'. ▼ * - Took Sample RSS-TB01-D24-S-O from 2'-4' from this Test Boring location		
	20								
	25						Completed augering to 24' bgs. Monitoring well consists of 15.0' of 2.0" No. 10 slotted screen from 8.0'-23.0' bgs. Sand pack is from 7.0'-24.0' and bentonite seal is from 2.0'-7.0' bgs. Ground surface to 2.0' bgs is cement grout. Well was finished with a steel constructed protective riser.		
	30								

TVGA CONSULTANTS

TEST BORING LOG

HOLE NO. 3 (MW-07IF)

Project: Former Roblin Steel SI/RAR
Client: Chautauqua County Department of Public Facilities
Contractor: SJB Inc.

Project No. 0020006
GS Elev
WS Ref Elev
N-S Coord B5 + 59
E-W Coord A9 + 7
Start Date 9/16/2002
Finish Date 9/17/2002
Driller S. Wolkiewicz
Geologist J. Manzella

Groundwater Data (feet)			
Date	Time	Depth	Elev
9/16/2002	12:30	~ 6	
10/4/2002	8:40	5.47	
10/7/2002	16:10	5.33	

Equipment Data			
	Casing	Sampler	Core
Type	HSA	SS	
Diameter	4.25"	2.0"	
Weight		140 #	
Fall		30"	

Well Construction	Depth (feet)	Sample No.	Blows per 6"	Recovery (in.)	Log	Unified	Field Description Radiation - Not Detected	Remarks PID Reading (ppm) Direct Screen	Head Space
		S1	5 50/3 - -	8		FILL	Brown sand (f,m), and gravel (f, ang.), dry, loose.	0.4	0.5
		S2	- - - -	0			No Recovery, as above.	-	-
	5	S3 *	7 7 6 6	6		CL	Brown clay w/ orange and gray mottles, trace silt, dry, firm, w/ faint diesel odor.	1.4	29.2
		S4 *	7 17 18 10	10			As above, wet. ▼	0.4	23.2
		S5	3 6 14 17	14			As above, trace gray silt, trace shale fragments.	0.4	4.2
	10	S6	15 28 50/4 -	14		ML	Gray clayey-silt, trace shale fragments, wet, very stiff.	0.0	0.0
						Sh			
	15								
							Spoon refusal at 11.5' on top of competent gray shale, augering continued to 15' bgs, auger cuttings consisted of gray silt, cuttings were wet at 13' bgs.		
							* - Took Sample RSS-TB03-D48-S-O from 4'-8' from this Test Boring location		
	20								
	25						Monitoring well consists of 10.0' of 2.0" No. 10 slotted screen from 4.0'-14.0' bgs. Sand pack is from 3.0'-15.0' and bentonite seal is from 0.5'-3.0' bgs. Ground surface to 0.5' bgs is cement grout. Well was finished with a steel constructed protective riser.		
	30								

TVGA CONSULTANTS

TEST BORING LOG

HOLE NO. 4 (MW-04IF)

Project: Former Roblin Steel SI/RAR
Client: Chautauqua County Department of Public Facilities
Contractor: SJB Inc.

Project No. 0020006
GS Elev
WS Ref Elev
N-S Coord B5 + 53
E-W Coord A6 - 10
Start Date 9/17/2002
Finish Date 9/17/2002
Driller S. Wolkiewicz
Geologist J. Manzella

Groundwater Data (feet)			
Date	Time	Depth	Elev
9/23/2002	15:10	~8	
10/3/2002	8:05	1.98	
10/8/2002	16:25	2.47	

Equipment Data			
	Casing	Sampler	Core
Type	HSA	SS	HQ
Diameter	4.25"	2.0"	3.5"
Weight		140 #	
Fall		30"	

Well Construction	Depth (feet)	Sample No.	Blows per 6"	Recovery (in.)	Log	Unified	Field Description Radiation - Not Detected	Remarks PID Reading (ppm) Direct Screen	Head Space
	0	S1	33 50/3 - -	3		FILL	Brown sand (f,m), and gravel (f, ang.), dry, loose.	-	-
						Conc.	Concrete.		
		S2	- - - -	0			No recovery, As above.	-	-
	5	S3	6 5 6 7	4		CL	Brown silty-clay w/ orange mottles, moist, firm, w/ faint diesel odor.	3.2	6.4
		S4 *	11 11 17 17	12			As above, stiff, no odor.	0.1	0.2
		S5 *	6 7 35 50/2	15			As above, trace shale pieces, wet. ▼	0.2	0.3
	10					Sh			
	15								
	20						Spoon refusal at 9.6' on top of competent gray shale, augering continued to 15' bgs, auger cuttings consisted of gray silt. * - Took Sample RSS-TB04-D610-S-O from 6'-10' from this Test Boring location		
	25						Monitoring well consists of 10.0' of 2.0" No. 10 slotted screen from 4.0'-14.0' bgs. Sand pack is from 3.0'-15.0' and bentonite seal is from 0.5'-3.0' bgs. Ground surface to 0.5' bgs is cement grout. Well was finished with a steel constructed protective riser.		
	30								

TVGA CONSULTANTS

TEST BORING LOG

HOLE NO. 5 (MW-01IF)

Project: Former Roblin Steel SI/RAR
Client: Chautauqua County Department of Public Facilities
Contractor: SJB Inc.

Project No. 0020006
GS Elev
WS Ref Elev
N-S Coord B5 - 11
E-W Coord A4 - 20
Start Date 9/18/2002
Finish Date 9/18/2002
Driller S. Wolkiewicz
Geologist J. Manzella

Groundwater Data (feet)			
Date	Time	Depth	Elev
9/18/2002	8:30	~ 8	
10/4/2002	9:30	3.05	
10/8/2002	16:45	3.33	

Equipment Data			
	Casing	Sampler	Core
Type	HSA	SS	
Diameter	4.25"	2.0"	
Weight		140 #	
Fall		30"	

Well Construction	Depth (feet)	Sample No.	Blows per 6"	Recovery (in.)	Log	Unified	Field Description Radiation - Not Detected	Remarks PID Reading (ppm) Direct Screen	Head Space
		S1	7 8 / 13 14	12		FILL	Black-brown sand (f,m), some gravel (f, ang.), trace concrete/brick pieces, dry, loose.	1.0	1.2
		S2	7 5 / 4 3	6		CL	Brown silty-clay w/ orange and gray mottles, moist, firm, w/ mild diesel odor.	19.3	5.0
	5	S3 *	3 4 / 4 6	20			Black-gray (stained) silty-clay, moist, firm, w/ strong diesel smell.	35.2	43.2
		S4 *	10 10 / 11 12	9			As above, stiff.	14.1	23.2
		S5 *	5 6 / 14 18	15			As above, wet. ▼	39.1	27.1
	10	S6	21 30 / 34 35	9		ML	Brown sandy-silt trace gravel, saturated, very stiff, w/ mild diesel odor.	4.8	72.1
		S7	33 50/2 / - -	10		Sh	Brn sl, (weathered Shale) trace sh pieces, sat., very stiff, strong diesel odor.	7.5	31.2
	15								
	20						Spoon refusal at 12.6' on top of competent gray shale, augering continued to 16.0' bgs, auger cuttings consisted of gray silt. * - Took Sample RSS-TB05-D410-S-O from 4'-10' from this Test Boring location		
	25						Monitoring well consists of 12.0' of 2.0" No. 10 slotted screen from 4.0'-16.0' bgs. Sand pack is from 3.0'-17.0' and bentonite seal is from 1.0'-3.0' bgs. Ground surface to 1.0' bgs is cement grout. Well was finished with a steel constructed protective riser.		
	30								

TVGA CONSULTANTS

TEST BORING LOG

HOLE NO. 8 (MW-02IF)

Project: Former Roblin Steel SI/RAR
Client: Chautauqua County Department of Public Facilities
Contractor: SJB Inc.

Project No. 0020006
GS Elev
WS Ref Elev
N-S Coord B3 + 8
E-W Coord A2 + 10
Start Date 9/19/2002
Finish Date 9/19/2002
Driller S. Wolkiewicz
Geologist J. Manzella

Groundwater Data (feet)			
Date	Time	Depth	Elev
9/19/2002	16:35	~ 9	
10/4/2002	10:00	5.4	
10/7/2002	17:30	5.33	

Equipment Data			
	Casing	Sampler	Core
Type	HSA	SS	
Diameter	4.25"	2.0"	
Weight		140 #	
Fall		30"	

Well Construction	Depth (feet)	Sample No.	Blows per 6"	Recovery (in.)	Log	Unified	Field Description Radiation - Not Detected	Remarks PID Reading (ppm) Direct Screen	Head Space
		S1	- 20 10 10	6		Con.	Concrete.		
						FILL	Black sand (f), trace gravel, dry, compact	0.1	0.2
						CL	Brown clay, dry, stiff.		
		S2	9 9 5 7	6			Gray clay, moist, stiff.	0.1	4.2
	5	S3	3 3 6 9	15			As above.	0.1	7.1
		S4 *	7 9 13 17	16			Brown clay, w/ orange and gray mottles, trace gray shale, moist, stiff.	0.4	30.2
		S5 *	6 5 8 11	18			As above, only gray mottles. Gray silty-clay, wet, stiff. ▼	0.4	20.3
	10	S6	13 16 26 35	21			As above, trace shale pieces.	0.2	24.2
						ML	Dark brown silt, trace shale pieces, wet, very stiff.		
		S7	30 38 50/4 -	5			Gr sn-sl (weathered shale), trace sh pieces, wet, hard.	0.0	0.0
	15						Spoon refusal at 13.3' on top of competent gray shale, augering continued to 18.4' bgs, auger cuttings consisted gray silt. * - Took Sample RSS-TB08-D610-S-O from 6'-10' from this Test Boring location		
	20						Completed augering to 18.4' bgs.		
	25						Monitoring well consists of 13.0' of 2.0" No. 10 slotted screen from 4.0'-17.0' bgs. Sand pack is from 3.0'-18.4' and bentonite seal is from 0.6'-3.0' bgs. Ground surface to 0.6' bgs is cement grout. Well was finished with a steel constructed protective riser.		
	30								

TVGA CONSULTANTS

TEST BORING LOG

HOLE NO. 12 (MW-09IF)

Project: Former Roblin Steel SI/RAR
Client: Chautauqua County Department of Public Facilities
Contractor: SJB Inc.

Project No. 0020006
GS Elev
WS Ref Elev
N-S Coord B2 + 50
E-W Coord A10 + 12
Start Date 9/27/2002
Finish Date 9/27/2002
Driller S. Wolkiewicz
Geologist J. Manzella

Groundwater Data (feet)			
Date	Time	Depth	Elev
9/27/2002	9:40	~ 6	
10/2/2002	10:55	4	
10/7/2002	12:05	3.45	

Equipment Data			
	Casing	Sampler	Core
Type	HSA	SS	
Diameter	4.25"	2.0"	
Weight		140 #	
Fall		30"	

Well Construction	Depth (feet)	Sample No.	Blows per 6"	Recovery (in.)	Log	Unified	Field Description Radiation - Not Detected	Remarks PID Reading (ppm) Direct Screen	Head Space
		S1 *	4 27 35 38	16		FILL	Dark brown-black sand (f,m), some gravel (sub-ang.), dry, compact.	25.0	418.0
		S2 *	15 10 10 11	8			As above, some black gravel, faint fuel oil smell.	26.0	378.0
	5	S3	4 3 2 4	14			Dark brown-black sand (f,m), some gravel (sub-ang.), trace shale pieces, wet, loose.	22.0	113.0
		S4	8 50/4 - -			ML	Gray silt (weathered shale), and shale pieces, saturated, stiff, faint fuel oil smell.	18.4	215.0
	10						Spoon refusal at 6.8' on top of competent gray shale, augering continued to 13.5' bgs, auger cuttings consisted of gray silt.		
	15						Completed augering to 13.5' bgs. * - Took Sample RSS-TB12-D04-S-O from 0'-4' from this Test Boring location		
	20								
	25						Monitoring well consists of 10.0' of 2.0" No. 10 slotted screen from 3.5'-13.5' bgs. Sand pack is from 2.5'-13.5' and bentonite seal is from 0.5'-2.5' bgs. Ground surface to 0.5' bgs is cement grout. Well was finished with a steel constructed protective riser.		
	30								

CLOUGH, HARBOUR & ASSOCIATES LLP

TEST BORING LOG

BORING NO. EX-MW-11

PROJECT & LOCATION: ROBLIN, PHASE II
CLIENT: CLEESTAK
CONTRACTOR: NATURE'S WAY ENVIRONMENTAL SERVICES

PROJECT NO.: 8259.07.02
SHEET NO.: 1 OF 1

ELEVATION:

START DATE: 3/22/99
FINISH DATE: 3/22/99

RIG TYPE: DEMRICH D-50
DRILLER: B. Reed
INSPECTOR: L. Smeltzer

GROUNDWATER MEASUREMENT						CASING	SAMPLER	CORE BARREL
DATE	TIME	DEPTH TO (FT.): WATER	BOTTOM OF CASING	BOTTOM OF BORING	TYPE:	HSA	SSP	HQ
					SIZE I.D.:			
					HAMMER WT.:			
					HAMMER FALL:			

DRILL FLUID: _____ DEPTH INTRODUCED: _____

CHECKED BY: _____

DATE: _____

IF BORING IS DRY, CHECK HERE

DEPTH IN FEET	SAMPLE NO.	RECOVERY LENGTH	SPT BLOWS PER 6"	PPM	NOTES	FIELD CLASSIFICATION
						.5' RAIL ROAD TIE TO .5'
	S1	14"	19-24 26-28	1.7		SILT SOME CMF Sand/GRVL,
	S2	17"	2-4 6-7	1.9		2.0' D. Brown to Black, Moist, V. Compact, (ML) (FILL)
5	S3	15"	5-6 9-10	2.0		SILT, Some Clay, Little to Trace MF Sand, Brown (Mottled), Vertical dessication cracks; Moist, stiff (ML)
	S4	2.0'	5-6 14-12	2.0		7.2'
	S5	18"	5-9 16-38	2.1		SILT Some clay, Trace CMF Sand, Gray, Moist, V. Stiff (ML)
10	S6	4"	50/3"			10.8' Refusal @ 10.8' BGS.
15						
20						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY
0–4	– VERY LOOSE	0–2	– VERY SOFT
4–10	– LOOSE	2–4	– SOFT
10–30	– MEDIUM COMPACT	4–8	– MEDIUM STIFF
30–50	– COMPACT	8–15	– STIFF
50+	– VERY COMPACT	15–30	– VERY STIFF
		>30	– HARD

SAMPLE IDENTIFICATION: S – SPLIT SPOON; T – THIN WALL TUBE; A – AUGER CUTTINGS; W – WASH SAMPLE

MW-11
BORING NO.

BORING 11/18/96

CHA CLOUGH, HARBOUR & ASSOCIATES ENGINEERS & PLANNERS	TEST CORING REPORT	HOLE NO. EX-MW-11

PROJECT: ROBLIN / EDGEWOOD PHASE II
CLIENT: CLIFFSTAR
CONTRACTOR: NWES

FILE NO.: 8289.07.02
SHEET NO. 1 OF 1
LOCATION:
ELEVATION:
INCLINATION:
START DATE: 3/23/99
FINISH DATE: 3/23/99
DRILLER: B. BARTZ
INSPECTOR: P. SMEALLER
GEOLOGIST:

GROUNDWATER		DEPTH TO:		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE

	CASING	SAMPLER	CORE BARREL
TYPE:	HSA		HQ
SIZE I.D.:	4 1/4"		
HAMMER WT.:			
HAMMER FALL:			

ELEV. IN FEET	TESTS	CORE NO. / DEPTH RANGE	RECOVERY RQD IN	RECOVERY RQD %	GRAPHIC LOG / WEATH.	STRATA CHANGE / TESTS	FIELD CLASSIFICATION AND REMARKS
10.8		C-1 10.8-16'	21"/60"	35%	MOD - SLIGHT		SILTSTONE/SHALE M. HARD, SLIGHT TO MODERATE WEATHERING, V. THIN BEDDING, RQD 0% (V. POOR)
12.0							
13.0						13.0	SLIGHT TO V. SLIGHT WEATHERING, V. THIN BEDDING RQD ~64% (FAIR)
14.0					VERY SLIGHT		
15.0							
16.0							CORE COMPLETE @ 16.0' BGS OVERALL RQD 21"/60" = 35% RECOVERY 60"

FIELD HARDNESS		WEATHERING		BEDDING/JOINT SPACING			RQD	
V. HARD	- KNIFE CANT SRATCH	FRESH	MOD. SEVERE	V. THIN	V. CLOSE	< 2"	>90%	EXCELLENT
HARD	- SCATCHES DIFF.	V. SLIGHT	SEVERE	THIN	CLOSE	2"-12"	90-75	GOOD
MED. HARD	- SCATCHES EASILY	SLIGHT	V. SEVERE	MEDIUM	MOD. CLOSE	12"-36"	75-50	FAIR
SOFT	- GROOVES	MODERATE	COMPLETE	THICK	WIDE	36"-120"	50-25	POOR
V. SOFT	- CARVES			V. THICK	V. WIDE	> 120"	<25%	V. POOR

CLOUGH, HARBOUR & ASSOCIATES
ENGINEERS & PLANNERS

GROUND WATER OBSERVATION WELL REPORT

PROJECT: ROBLIN/ALLMAX BOUNDARY
CLIENT: HODGSON, RUSS ET AL.
CONTRACTOR: NATURES WAY
DRILLER: B. BARIE INSPECTOR: P. SMEADER
GROUND WATER: AT COMPLETION
BELOW TOP OF RISER ELEV.

FILE NO.: 8289
WELL NO.: 11 BORING NO.:
LOCATION: EX-MW-11
DATE: 3/23/99

SURVEY DATUM

GROUND ELEVATION

2' FILL

SILT AND CLAY @ 2'BGS (GLACIOLACUSTRINE)

7.2' TILL @ 7'2" BGS

10'10" BEDROCK @ 10'10" BGS

SUMMARIZE SOIL CONDITIONS (NOT TO SCALE)

ELEVATION OR STICKUP ABOVE/BELOW GROUND SURFACE OF CASING OR ROADWAY BOX	
ELEVATION OR STICKUP ABOVE/BELOW GROUND SURFACE OF RISER PIPE.	
THICKNESS OF SURFACE SEAL	N/A
TYPE OF SURFACE SEAL	N/A
INDICATE ALL SEALS SHOWING DEPTH, THICKNESS AND TYPE	
BENTONITE SEAL FROM 4' BGS TO GROUND SURFACE	
TYPE OF CASING	N/A
INSIDE DIAMETER OF CASING	N/A
ELEVATION/DEPTH OF BOTTOM OF CASING	N/A
INSIDE DIAMETER OF RISER PIPE	2"
TYPE OF BACKFILL AROUND RISER	SAND
DIAMETER OF BOREHOLE/COREHOLE	6.25" / 3.78"
ELEVATION DEPTH OF BOTTOM OF RISER	6'BGS
TYPE OF POINT OR MANUFACTURER	PVC
SCREEN GAUGE OR SIZE OF OPENINGS	10-SLOT
DIAMETER OF WELLPOINT	2"
TYPE OF BACKFILL AROUND POINT	SAND
ELEVATION DEPTH OF BOTTOM OF POINT	16' BGS
ELEVATION DEPTH OF BOTTOM OF BOREHOLE	16' BGS

[FIGURES REFER TO: EL. DEPTH]

[LENGTH OF CASING] [LENGTH OF RISER PIPE (L1)] + [LENGTH OF POINT (L2)] = [PAY LENGTH]

CLOUGH, HARBOUR & ASSOCIATES LLP

TEST BORING LOG

BORING NO. EX-MW-12

PROJECT & LOCATION: ROBLIN PHASE II
CLIENT: CLIFFSTAR
CONTRACTOR: NATURES WAY ENVIRONMENTAL SERVICES

PROJECT NO.: 8259.07.02
SHEET NO.: 1 OF 1

ELEVATION:

START DATE: 3/22/99
FINISH DATE: 3/22/99

RIG TYPE: DEITRICH D-50

DRILLER: B. Bartz
INSPECTOR: L. Snowden

GROUNDWATER MEASUREMENT						CASING	SAMPLER	CORE BARREL
DATE	TIME	DEPTH TO (FT.): WATER	BOTTOM OF CASING	BOTTOM OF BORING	TYPE:	HSA	SSP	HQ
					SIZE I.D.:	4.25	2.0	
					HAMMER WT.:	140#		
					HAMMER FALL:	30"		

DRILL FLUID: H_2O DEPTH INTRODUCED: 17.2

CHECKED BY:

DATE:

IF BORING IS DRY, CHECK HERE

DEPTH IN FEET	SAMPLE NO.	RECOVERY LENGTH	SPT BLOWS PER 6"	PPM	NOTES	FIELD CLASSIFICATION
	S1	7"	27-50/1"	1.9		SILT Some to Little CMF Sand, Little MF GR-SM Gravel, Brown, Moist, Hard (ML) (FILL)
	S2	15"	3-11 5-5	2.3		2.0
	S3	15"	2-3 5-7	2.1		2.5 SILT Some Clay, Little to Trace MF Sand, Brown, Mottled, V. Stiff (ML) 3.7
5	S4	2.0'	2-3 8-10	2.0	PETROLEUM ODOR	SILT Some CMF Sand, Little Shale/Siltstone fragments, Brown, Moist (ML) 8.0
	S5	17"	4-9 9-11	1.9		SILT Some Clay, Little to Trace MF Sand, Gray-olive (mottled), Silty dessication cracks, Moist Stiff. (ML)
10	S6	19"	6-22 32-49	1.9		9.8
	S7	13"	20-41 50/1"	2.3		Similar, Brown, Trace MF Gravel Moist, V. Stiff (ML)
15	S8	1"	50/1"	2.0		SILT Little Clay, Some to Little CMF Sand, Trace MF Gravel, Gray, Moist, Hard (ML) (TILL) 17.2
	S9	2"	50/2"	1.9		Refusal @ 17.2' BGS
20						

BLG 1.9

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLE IDENTIFICATION
0–4	– VERY LOOSE	0–2	– VERY SOFT	S – SPLIT SPOON
4–10	– LOOSE	2–4	– SOFT	T – THIN WALL TUBE
10–30	– MEDIUM COMPACT	4–8	– MEDIUM STIFF	A – AUGER CUTTINGS
30–50	– COMPACT	8–15	– STIFF	W – WASH SAMPLE
50+	– VERY COMPACT	15–30	– VERY STIFF	
		>30	– HARD	

MW-12

BORING NO.

BORING 11/18/96

CHA CLOUGH, HARBOUR & ASSOCIATES ENGINEERS & PLANNERS

TEST CORING REPORT

HOLE NO. EX-MW-1B

PROJECT: [illegible] - [illegible] [illegible]
CLIENT: [illegible]
CONTRACTOR: NWES.

FILE NO.: 8559.07.02
SHEET NO. 1 OF 1
LOCATION: [illegible]
ELEVATION:
INCLINATION:
START DATE: 3/22/93
FINISH DATE: 3/22/93
DRILLER: R. R.
INSPECTOR: [illegible]
GEOLOGIST:

GROUNDWATER		DEPTH TO:		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE

	CASING	SAMPLER	CORE BARREL
TYPE:			HQ
SIZE I.D.:			
HAMMER WT.:			
HAMMER FALL:			

ELEV. IN FEET	TESTS	CORE NO. / DEPTH RANGE	RECOVERY IN	RQD %	GRAPHIC LOG / WEATH.	STRATA CHANGE / TESTS	FIELD CLASSIFICATION AND REMARKS
17.2	R-1	17.2 -19.3	0"	0%	MOD. to SLIGHT		SILTSTONE ; GRAY, M. HARD , MOD. TO SLIGHT WEATHERING, CLOSE JOINT/ BED SPACING 2"-12" V. POOR RQD
18.0							
19.0							
							19.3 [illegible]
							2.1' of coring 2.0' Recovery 0% RQD % Recovery 95.5%

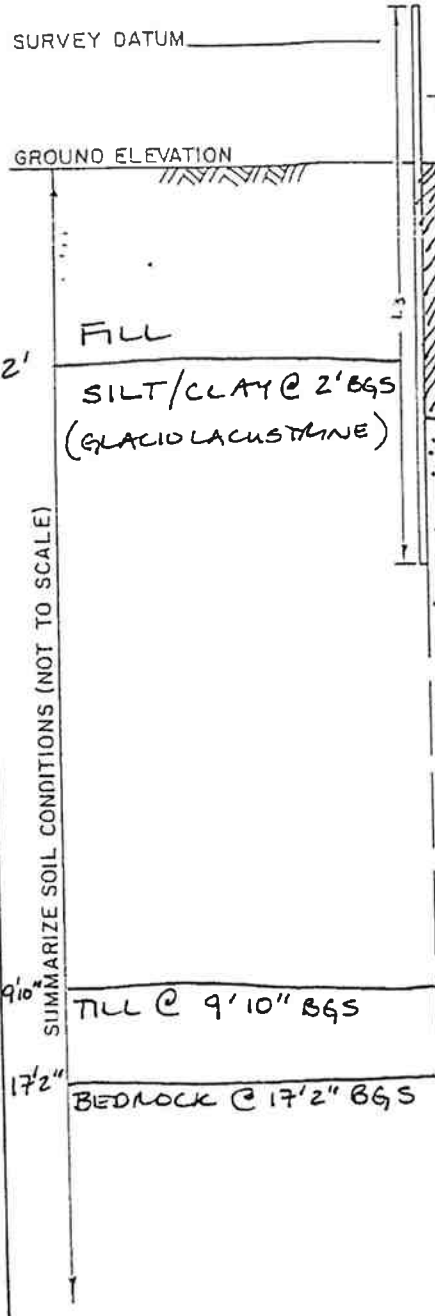
FIELD HARDNESS		WEATHERING		BEDDING/JOINT SPACING			RQD	
V. HARD	- KNIFE CANT SRATCH	FRESH	MOD. SEVERE	V. THIN	V. CLOSE	< 2"	>90%	EXCELLENT
HARD	- SCATCHES DIFF.	V. SLIGHT	SEVERE	THIN	CLOSE	2"-12"	90-75	GOOD
MED. HARD	- SCATCHES EASILY	SLIGHT	V. SEVERE	MEDIUM	MOD. CLOSE	12"-36"	75-50	FAIR
SOFT	- GROOVES	MODERATE	COMPLETE	THICK	WIDE	36"-120"	50-25	POOR
V. SOFT	- CARVES			V. THICK	V. WIDE	> 120"	<25%	V. POOR

CLOUGH, HARBOUR & ASSOCIATES
ENGINEERS & PLANNERS

GROUND WATER OBSERVATION WELL REPORT

PROJECT: ROBLIN/ALLMAX BOUNDARY
CLIENT: HODGSON, RUSS ET AL.
CONTRACTOR: NATURES WAY
DRILLER: B. BARTZ INSPECTOR: P. SMEADER
GROUND WATER: AT COMPLETION
BELOW TOP OF RISER ELEV.

FILE NO.: 8289
WELL NO.: 12 BORING NO.:
LOCATION: EX-MW-12
DATE: 3/23/99



ELEVATION OR STICKUP ABOVE/BELOW GROUND SURFACE OF CASING OR ROADWAY BOX: ____

ELEVATION OR STICKUP ABOVE/BELOW GROUND SURFACE OF RISER PIPE: ____

THICKNESS OF SURFACE SEAL: N/A

TYPE OF SURFACE SEAL: N/A

INDICATE ALL SEALS SHOWING DEPTH, THICKNESS AND TYPE: BENTONITE SEAL FROM 3' BGS TO GROUND SURFACE

TYPE OF CASING: N/A

INSIDE DIAMETER OF CASING: N/A

ELEVATION/DEPTH OF BOTTOM OF CASING: N/A

INSIDE DIAMETER OF RISER PIPE: 2"

TYPE OF BACKFILL AROUND RISER: SAND

DIAMETER OF BOREHOLE/COREHOLE: 6.25"/3.78"

ELEVATION DEPTH OF BOTTOM OF RISER: 4'4" BGS

TYPE OF POINT OR MANUFACTURER: PVC

SCREEN GAUGE OR SIZE OF OPENINGS: 10-SLOT

DIAMETER OF WELLPOINT: 2"

TYPE OF BACKFILL AROUND POINT: SAND

ELEVATION DEPTH OF BOTTOM OF POINT: 19'4" BGS

ELEVATION DEPTH OF BOTTOM OF BOREHOLE: 19'4" BGS

[FIGURES REFER TO: EL. DEPTH]

[LENGTH OF CASING (L3)] [LENGTH OF RISER PIPE (L1)] + [LENGTH OF POINT (L2)] = [PAY LENGTH]

APPENDIX G

QUALITY ASSURANCE / QUALITY CONTROL (QA/QC) PLAN

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN

FOR THE
FORMER ROBLIN STEEL SITE

(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NEW YORK

Prepared for:

Chautauqua County Department of Public Facilities
454 North Work Street
Falconer, New York

Prepared by:

TVGA CONSULTANTS

One Thousand Maple Road
Elma, NY 14059-0264

(716) 655-8842
(fax) (716) 655-0937

2005.0308.00

NOVEMBER 2010

FORMER ROBLIN STEEL SITE
(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NY

QUALITY ASSURANCE/QUALITY CONTROL PLAN

TABLE OF CONTENTS

1.0 INTRODUCTION

This Quality Assurance/Quality Control (QA/QC) Plan addresses the major QA/QC programs and procedures to be implemented for all sampling and analysis programs identified within the Site Management Plan (SMP) to ensure the quality and ultimate validity of the data generated as a result of these sampling programs. The SMP contains a description of the Site, its history of use and occupancy, a preliminary evaluation of potential areas of environmental concern, as well as a detailed description of the methods and equipment to be employed to collect and analyze environmental samples. The purpose of this QA/QC Plan is to establish the policies, organization, objectives, functional activities, and specific QA/QC activities required to ensure the quality of the field and laboratory data generated in association with the sampling and analysis programs listed in the SMP.

It should be noted that this QA/QC Plan does not address the QA/QC requirements that may be associated with the sampling of the Sub-Slab Vapor Venting System (SSVVS), which is identified in the SMP. The design and sampling of the SSVVS will be performed in accordance NYSDEC and New York State Department of Health (NYSDOH) guidance at the time the system is installed. The ultimate deign and sampling of the SSVVS will be dependant upon the reuse plans for the existing building as well as the size and configuration of any newly constructed buildings. Therefore, the specific sampling requirements associated with the SSVVS have not been determined. Upon determination of the Site's future use this QA/QC Plan will be revised to incorporate QA/QC requirements that may be associated with the sampling of the SSVVS.

2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

The following section provides a generic organization of the project team for sampling activities at the Site and details the specific responsibilities relative to quality assurance of key members of the project team.

Project Manager

Responsible for project implementation and the commitment of the resources necessary to meet project objectives and requirements. The Project Manager's primary function is to ensure that technical, financial and scheduling objectives are achieved. The Project Manager will serve as the primary point of contact and control for matters concerning the project. Specific duties and functions of the Project Manger include, but are not limited to, the following:

- Define project objectives, including Data Quality Objectives (DQOs), and develop and implement a detailed work plan and schedule;

- Establish project policy and procedures to address the specific needs of the project as a whole, as well as the objectives of each task;
- Acquire and apply technical and corporate resources as needed to ensure performance within budget and schedule constraints;
- Inform all staff concerning the project's special considerations;
- Develop and meet ongoing project and/or task staffing requirements, including mechanisms to review and evaluate each task product;
- Review the work performed on each task to ensure its quality, responsiveness and timeliness;
- Review and analyze overall task performance with respect to planned requirements and authorizations;
- Oversee field and laboratory QA/QC programs to ensure compliance with the QA/QC Plan;
- Review results of performance and system audits and initiate, implement and document corrective actions;
- Approve all external reports (deliverables) before their submission to the client and/or regulatory agencies;
- Ultimately responsible for the preparation and quality of interim and final reports; and
- Represent the project team at meetings.

QA Officer

The QA Officer will remain independent of direct job involvement and routine, daily operations and will have direct access to corporate management as necessary to resolve any QA disputes. The QA Officer will be responsible for implementing the QA program in conformance with the demands of specific sampling activities, NYSDEC policies, and Site owner requirements. Specific functions and duties include:

- Review and approval of QA policies and procedures;
- Conducting QA program training sessions for technical staff;
- Verification of compliance with corporate and project specific QA procedures and requirements;
- Conducting or supervising field and office audits and documenting results;
- Notifying the Project Manager of QA problems;
- Assist in corrective action selection and implementation;
- Documentation of corrective actions; and
- Review of external reports (project deliverables).

Sampling Team Leader

The Sampling Team Leader will be responsible for the implementation of the site characterization program, including the coordination and direct supervision of field personnel and subcontractors. Specific responsibilities include:

- Oversight of field operations;
- Provide on-site technical support to field personnel;
- Supervise proper implementation of procedures specified in the SMP;
- Ensure adherence to all field QA/QC protocols (e.g., sample collection, labeling, handling, packaging, and shipment; calibration of field instruments, field documentation, etc.);
- Recognize the need for, and implement necessary corrective actions during field operations;
- Ensure health and safety guidelines are followed to avoid compromising sample integrity;
- Validate field data on an ongoing basis;
- Serve as technical liaison with analytical laboratory; and
- Communicate QA problems to Project Manager and QA Officer and implement corrective actions as directed.

Laboratory Quality Assurance Manager

The selected analytical laboratory will provide a Laboratory QA Officer, whom is responsible for ensuring that all of the specific requirements of the quality assurance program are followed on a daily basis. Additional responsibilities are as follows:

- Develop and implement QA plan;
- Update the QA Plan on a regular basis (annually), or as often as necessary to ensure the generation of data which meets client requirements;
- Oversee the daily functions of the QA program to verify that all elements of the program are followed;
- Perform regular audits, both scheduled and unscheduled;
- Document variations from the QA program and notify the Laboratory Director and laboratory administration of variations and corrective actions taken;
- Develop, implement and oversee in-house QC program for alternate source reference standards;
- Evaluate data from in-house QC program and make recommendations to laboratory management for corrective actions;
- Prepare QC reports for specialty projects;
- Be knowledgeable of developments in industry standards and apply new procedures in QA/QC to the laboratory program;

- Audit subcontract laboratories and prepare reports to document compliance with equivalent QA/QC programs and standards; and
- Prepare and submit reports to the laboratory administration on the ongoing status of the laboratory QA/QC programs.

Data Validator

A qualified data validator may be required to review and assess of the analytical data generated by the laboratory to determine the acceptability or validity of the data relative to stated goals and requirements for usability. The data validator will be responsible for reviewing the data package with respect to completeness and compliance, and will complete a detailed evaluation of the validity of the data, the results of which are to be reported to the Project Manager and QA Officer.

3.0 QA OBJECTIVES FOR MEASUREMENT DATA

3.1 Data Quality Objectives

Data Quality Objectives (DQOs) are qualitative or quantitative statements that specify the quality of the data required from a data collection program to support the intended use of the data and associated decisions. Pursuant to the United States Environmental Protection Agency (USEPA) publication, *Data Quality Objectives Process for Hazardous Waste Site Investigations* (2000), the project DQOs will be achieved utilizing the definitive data category. The analyses of samples will provide definitive data generated using rigorous analytical methods, such as reference methods approved by the NYSDEC and USEPA. A summary of the analytical methods to be utilized is presented in the SMP.

The site-specific DQOs for data collected during post-remedial sampling are as follows:

- Collect groundwater samples to monitor the enhanced natural attenuation of Site groundwater;
- To maintain the highest possible scientific/professional standards for each procedure; and,
- To assure the ultimate defensibility of the data generated.

3.2 Standard Criteria and Guidance Values

Data generated during post-remedial will be compared with the applicable Standard Criteria and Guidance Values (SCGs) that are protective of human health and the environment under current and future use scenarios. A preliminary listing of potentially relevant SCGs is provided below:

- Soil: 6NYCRR Part 375-6.8 Soil Cleanup Objectives.
- Groundwater: NYSDEC *Technical and Operational Guidance Series* (TOGS) 1.1.1

3.3 Data Quality Assessment

The USEPA specifies five major characteristics of data quality that must be addressed in environmental sampling and analytical projects. These include precision, accuracy, representativeness, comparability, and completeness. Specific QA objectives established for each of these parameters are identified and discussed below for chemical analytical data to be generated.

Precision

A measurement of agreement among individual measurements of the same property under similar conditions. It is expressed in terms of relative percent difference (RPD) between replicates or in terms of the standard deviation. Precision may be affected by the natural variation of the matrix or contamination within that matrix, as well as by errors made in the field and/or laboratory handling procedures. Precision is evaluated using analyses of laboratory matrix spike/matrix spike duplicates and matrix duplicates, which not only exhibit sampling and analytical precision, but indicate precision through the reproducibility of the analytical results. The QA objective for precision is to comply with the RPD criteria specified for the New York State Department of Environmental Conservation (NYSDEC) or USEPA methods to be employed during post-remedial sampling events.

Accuracy

The degree of agreement of a measurement (or measurement average) with an accepted reference or true value. It is a measure of system bias, and is usually expressed as the difference of measured verses true values or as a percentage of the difference. Sources of error include the sampling process, field contamination, preservation, handling, sample matrix, sample preparation, and analytical techniques. Accuracy will be determined on the basis of blank sample analysis (e.g., equipment blanks, trip blanks, etc.) and surrogate recoveries from spiked samples. The QA objective for accuracy is to achieve the acceptable percent recovery criteria specified for the methods identified in the SMP.

Representativeness

Expresses the degree of accuracy and precision of data that represents a characteristic of a data population, process condition, a sampling point, or an environmental condition. It is a qualitative parameter that is most dependant on

the proper design of the sampling program. Objectives for representativeness are defined for sampling and analysis tasks and are a function of the investigative objectives. The sampling procedures described in the SMP have been selected with the goal of obtaining representative samples for the media of concern.

Completeness

A measure of the amount of valid data obtained compared to the amount expected to be collected under normal conditions. It is usually expressed as a percentage. The QA objective for completeness is to collect and analyze all environmental samples in a manner such that valid data is obtained from 95 percent of the samples. Achievement of this objective will rely on the use of strict sample identification and custody procedures, use of standard reference materials, proper instrument calibration and maintenance, analysis of quality control samples, performance audits, and corrective action anytime QC acceptance criteria are exceeded.

Comparability

Expresses the confidence with which one data set can be compared to another. The objective for comparability is the generation of site characterization data that can be used to make valid comparisons with other data that may be generated in the future at this or other sites. This objective also involves the analysis of the environmental samples collected during sampling in a manner that produces results comparable to the results that would be obtained by another laboratory using the same analytical procedure. This goal will be achieved through the application of standard techniques for sample collection and analysis, and the reporting of data in appropriate units. Complete field documentation using standardized data collection forms will support the assessment of comparability.

4.0 SAMPLING PROCEDURES

A detailed discussion of sampling activities for the Site is found in the SMP. The following considerations form the basis for the sampling program developed for the Site:

- Site background and history;
- Sampling objectives;
- Sample location and frequency;
- Sample designation;
- Sampling equipment and procedures; and

- Sample handling and analysis.

The sampling objectives, locations and frequency are based upon an evaluation of the data quality objectives discussed in Section 3.1. Sampling procedures are derived from standard protocols that are consistent with USEPA and NYSDEC methods of sample collection. A summary of the analytical parameters, number of samples, sample preservation, and holding times for the sampling programs identified in the SMP is included as Table 1 to this QA/QC Plan.

5.0 SAMPLE CUSTODY

Sample custody is a vital aspect of any sampling program. The samples must be traceable by chain-of-custody procedures from the time of sample collection until the time the data are utilized for any major decision. Evidence of sample collection, shipment, and laboratory receipt must be documented to accomplish this. Specific procedures regarding sample custody are described in Section 3.2.4.4.2 of the SMP.

6.0 CALIBRATION PROCEDURES

6.1 Field Instruments

Field instruments will be utilized for the real-time measurement of the chemical and/or physical characteristics of ambient air, groundwater, soil and fill. The instruments will also be utilized for health and safety monitoring during the field sampling program. The field instruments to be used will include the following:

- A photoionization detector (PID) - for measuring total organic vapors (TOVs), and to measure samples for tracer gas used before and after soil vapor collection
- A water level meter - for measuring depths in monitoring wells
- An oil/water interface probe - to determine levels of oil product in monitoring wells
- A water quality meter - capable of measuring pH, temperature, conductivity, turbidity and salinity

The procedures to be utilized to calibrate and maintain these instruments will be dependant on the make and model of the equipment used and therefore shall be in accordance with the manufacturer's recommendations.

6.2 Laboratory Instruments

Calibration procedures, frequencies and standards for laboratory measurement variables and systems shall be in accordance with the applicable NYSDEC methodologies. These procedures are part of the system audits that should be outlined in the selected analytical laboratory's Quality Assurance Plan.

7.0 ANALYTICAL PROCEDURES

The SMP summarizes the laboratory methods to be employed for the chemical analysis of groundwater samples generated during post-remedial sampling. These analyses will be performed by a NYSDEC ELAP accredited laboratory utilizing the applicable protocols and QA procedures required for the respective NYSDEC and/or USEPA methods.

8.0 DATA REDUCTION, VALIDATION AND REPORTING

The following procedures summarize the practices to be utilized for the reduction, validation, and reporting of both field and laboratory data.

8.1 Field and Technical Data

Both objective (measurement) and subjective (description) data are subject to data validation. All data collection in the field shall be documented following the procedures detailed in Section 3.0 of the SMP. Objective data shall be validated at the time of collection (for example, triplicate measurements) as well as by the Sampling Team Leader to ensure that the correct codes and units have been included.

After data reduction into tabular or figure form, the objective data shall be reviewed for anomalous or inconsistent values by the Sampling Team Leader. Any anomalous or inconsistent data shall be resolved or clarified by evaluating the raw field data, equipment calibration logs, etc., and consultation with field personnel.

Subjective field and technical data shall be evaluated by the Sampling Team Leader for reasonableness and completeness. Whenever possible, peer review shall also be utilized in the data validation process in order to maximize consistency in data evaluation. Periodic field reviews of subjective data collection shall be conducted.

All validated field and technical data shall be reported in the Periodic Inspection Reports for review and comment.

8.2 Laboratory Data

Groundwater samples collected during the post-remedial sampling events will be analyzed for volatile organic compounds (VOCs) Target Compound List (TCL) using methods acceptable to the NYSDEC. Specific laboratory data reduction, review and reporting procedures should be detailed in the selected laboratory's Quality Assurance Plan.

The validation of the laboratory data will be performed by a qualified data validator. Validation of 100 percent of the data will be performed in accordance with the NYSDEC Guidance for the Development of Data Usability Summary Reports. The data package will be reviewed for completeness and compliance relative to the criteria specified in the aforementioned NYSDEC document. The validation report will include a narrative summary discussing all quality issues and their impact on the reported results, and copies of laboratory case narratives.

9.0 INTERNAL QUALITY CONTROL

Internal QC checks are used to determine if analytical operations at the laboratory are in control, as well as the effect the sample matrix may have on the data being generated. Two types of internal checks are performed and are described as batch QC and matrix-specific QC procedures. The type and frequency of specific QC samples performed by the laboratory will be according to the specified analytical method and NYSDEC requirements. Acceptable criteria and/or target ranges for these QC samples are presented within the procedures for the specific analytical methods used for the project samples.

QC results that vary from acceptable ranges shall result in the implementation of appropriate corrective measures, potential application of qualifiers, and/or an assessment of the impact these corrective measures have on the established data quality objectives. QC samples including any project-specific QC to be analyzed are discussed below.

9.1 Batch QC

Method Blanks

A method blank is defined as laboratory-distilled or deionized water that is carried through the entire analytical procedure. The method blank is used to determine the level of background contamination. Method blanks are analyzed at a frequency of one per analytical batch.

Matrix Spike Blank Samples

A matrix spike blank (MSB) sample is an aliquot of water that is spiked with all elements being analyzed for calculation of precision and accuracy to verify that the analysis that is being performed is in control. A MSB will be performed for each matrix parameter.

9.2 Matrix-Specific QC

Matrix Spike Samples

An aliquot of a matrix is spiked with known concentrations of specific compounds as stipulated by the methodology. The matrix spike (MS) and matrix spike duplicate (MSD) are subjected to the entire analytical procedure in order to assess both accuracy and precision of the method for the matrix by measuring the percent recovery and relative percent difference of the two spiked samples. The samples are used to assess matrix interference effects on the method, as well as to evaluate instrument performance. MS/MSDs are analyzed at a frequency of one each per 20 samples per matrix. MS/MSDs (and MS/MD for metals only) will be performed.

Matrix Duplicates

The matrix duplicate (MD) is two representative aliquots of the same sample which are prepared and analyzed identically. Collection of duplicate samples provides for the evaluation of precision both in the field and at the laboratory by comparing the analytical results of two samples taken from the same location. Obtaining duplicate samples from a soil matrix requires homogenization (except for volatile organic compounds) of the sample aliquot prior to filling sample containers in order to best achieve representative samples; however, due to interferences, lack of homogeneity, and the nature of the soil samples, the analytical results are not always reproducible. Duplicate samples are to be included at a frequency of one per 20 samples per matrix for metals only.

9.3 Additional QC

Rinseate (Equipment) Blanks

A rinseate or equipment blank is a sample of laboratory-demonstrated analyte-free water passed through and over the cleaned sampling equipment. An equipment blank is used to indicate potential contamination from ambient air and from sample instruments used to collect and transfer samples. This water must originate from one common source within the laboratory and must be the same water used by the laboratory performing the analysis. The equipment

blank should be collected, transported, and analyzed in the same manner as the samples acquired that day. Equipment blanks for non-aqueous matrices should be performed at a rate of one per set of sampling equipment.

Trip Blanks

Trip blanks are not required for non-aqueous matrices, but are necessary for aqueous sampling events. They consist of a set of sample bottles filled at the laboratory with laboratory demonstrated analyte-free water. These samples then accompany the bottles that are prepared at the lab into the field and back to the laboratory, along with collected samples for analysis. These bottles are never opened in the field, and must be returned to the lab with the same set of bottles they accompanies into the field. Trip blanks will be analyzed for volatile organic compounds (VOCs) only at a frequency of one per VOC sample shipment.

Blind Field Duplicates

A blind field duplicate (BFD) is a duplicate sample collected from a given sampling location, the identity of which is documented by the sampling team but is not revealed to the laboratory. The BFD is subjected to the same analytical methods as the field sample of the same matrix collected from the same location. The data resulting from the analysis of the BFD are compared with those associated with the field sample from the same location to assess the data precision and to verify the reproducibility of the laboratory results. BFD samples are to be collected at a frequency of one per 20 samples per matrix.

10.0 PERFORMANCE AND SYSTEM AUDITS

Audits shall be performed to ascertain whether the QA/QC Plan is being correctly implemented, and to review and evaluate the adequacy of field and laboratory performance, where applicable. Performance audits are a quantitative evaluation of the laboratory's measurement systems, and are conducted by introducing control samples into the data production process. System audits are on-site qualitative inspections and reviews of the components and implementation of the quality assurance program, including field, laboratory and office aspects of the program, to verify compliance with the QA/QC Plan.

10.1 Field Audits

At least one unannounced field audit will be conducted during the field investigation program. Follow-up audits shall be conducted should inconsistencies or problems be identified. The audit, to be performed by the QA Officer or designated sampling personnel, will assess the effectiveness of the QA

program, identify non-conformances, and verify that identified deficiencies are corrected. At a minimum, the field audit shall evaluate:

- Project responsibilities and staffing;
- Health and safety provisions (e.g., personal protective equipment, air monitoring, etc.);
- Sample collection, handling and custody procedures;
- Sample identification;
- QC samples;
- Sample packaging and shipping procedures;
- Equipment calibration and decontamination procedures; and
- Field documentation; and
- Corrective action procedures.

The results of the field audit will be the basis for any corrective actions deemed appropriate.

10.2 Laboratory Audits

Internal and external laboratory performance and system audits will be conducted by the laboratory. The selected laboratory's QA Plan should describe the laboratory's program for internal performance audits. In addition to conducting internal reviews and audits, as part of its established quality assurance program, the laboratory is required to participate in regularly scheduled evaluations and audits administered by state and federal agencies. These external audits are performed as part of the certification process and to monitor the laboratory performance. The audits also provide an external quality assurance check of the laboratory and provide reviews and information on the management systems, personnel, standard operating procedures, and analytical measurement systems. Acceptable performance on evaluation samples and audits is required for certification and accreditation. The laboratory shall use the information provided from these audits to monitor and assess the quality of its performance.

10.3 Office Audits

Office audits may also be performed on files containing relevant project documentation. Project files are evaluated against internal document control procedures. Office audits are performed by the QA Officer on a random percentage of projects. Field logbooks and project files will be audited by the QA Officer and the results will be presented in the monthly progress report.

11.0 PREVENTATIVE MAINTENANCE

Preventative maintenance of equipment is essential if project resources are to be used cost-effectively. Preventative maintenance will consist of two forms: (1) a schedule of routine preventative maintenance activities to minimize down-time and ensure accuracy of the measurement systems; and (2) availability of critical spare parts and backup systems and equipment. The preventative maintenance approach for specific pieces of equipment used in sampling, monitoring, and documentation will follow manufacturer specifications and good field and laboratory practices. Performance of these maintenance procedures will be documented in the field notebooks.

Field instruments, in general, will be maintained in accordance with manufacturer's recommendations. Support equipment, including safety devices, vehicles, etc., are also periodically inspected to maintain performance standards necessary for all site activities. Responsibilities for instrument maintenance activities of laboratory equipment, and appropriate schedules, are discussed in the selected laboratory's QA Plan.

12.0 DATA ASSESSMENT PROCEDURES

12.1 Precision

Precision is evaluated using analyses of a field duplicate and/or laboratory MS/MSD which not only exhibits sampling and analytical precision, but also indicates analytical precision through the reproducibility of the analytical results. Relative Percent Difference (RPD) is used to evaluate precision, and is calculated as follows:

$$RPD = \frac{|x_1 - x_2|}{\left[\left(x_1 + x_2\right)/2\right]} \times 100$$

Where:

X_1 = Measured value of sample or matrix spike

X_2 = Measured value of duplicate or matrix spike duplicate

Precision will be determined through the use of MS/MSD (for organics) and MS/MD (for inorganics) analyses. RPD criteria must meet the method requirements.

12.2 Accuracy

Accuracy is defined as the degree of difference between the measured or calculated value and the true value. The closer the numerical value of the measurement comes to the true value or actual concentration, the more accurate the measurement is. Analytical accuracy is expressed as the percent recovery of a compound or element that has been added to the environmental sample at known concentrations before analysis. Analytical accuracy may be assessed through the use of known and unknown QC samples and spiked samples. It is presented as percent recovery. Accuracy will be determined from matrix spike, matrix spike duplicate, and matrix spike blank samples, as well as from surrogate compounds added to the organic fractions (e.g., volatiles, semi-volatiles, PCBs), and is calculated as follows:

$$Accuracy(\%R) = \frac{(x_s - x_u)}{K} \times 100$$

Where: x_s = Measured value of the spiked sample;
x_u = Measured value of the unspiked sample; and
K = Known amount of spike in the sample.

Accuracies between 70 to 130 percent will be required for analytical results generated during sampling events.

12.3 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the total amount expected to be obtained, and is calculated as follows:

$$Completeness(\%) = \frac{(x_v - x_n)}{N} \times 100$$

Where: x_v = Number of valid measurements;
x_n = Number of invalid measurements; and
N = Number of valid measurements expected to be obtained

The completeness goal for analytical results generated during sampling is 95 percent.

13.0 CORRECTIVE ACTIONS

The Project Manager has the primary responsibility for initiating and implementing corrective action relative to field activities, while the analytical Laboratory Director is responsible for taking corrective action in the laboratory. It is their combined responsibility to see that all sampling and analytical procedures are followed as specified in applicable documents and that the data generated meet the prescribed acceptance criteria. Other project team members shall also be responsible for problem recognition and corrective actions within the context of their assigned tasks. Some potential incidents that would elicit corrective action, and the corresponding responses are outlined in the following subsections.

13.1 Field Incidents

During the field program, corrective action may be initiated by the Project Manager, Sampling Team Leader, Field Auditor, or the NYSDEC on-site representative. The need for corrective action may arise due to field audits or in the normal course of field operations. Typical corrective actions may include:

- Replacement of equipment, either in part or totally, due to malfunction;
- Recalibration of field instruments;
- Additional instruction of personnel in the proper procedures, whenever necessary;
- Discussion of any unique on-site problems in order to arrive at an appropriate solution;
- Correction of custody forms and field logs and notebooks when errors occur.

13.2 Laboratory Incidents

Laboratory corrective actions shall be implemented to resolve problems and restore proper function to the analytical system when errors, deficiencies, or out-of-control situations exist at the laboratory. Full documentation of the corrective action procedure needed to resolve the problem shall be filed in the project records, and the information summarized in the case narrative. The following subsections discuss potential laboratory corrective actions.

13.2.1 Incoming Samples

Problems noted during sample receipt shall be documented by the laboratory. The Project Manager shall be contacted immediately for problem resolution.

13.2.2 Sample Holding Times

If any sample extraction and/or analyses exceed method holding time requirements, the Project Manager shall be notified immediately for problem resolution.

13.2.3 Instrument Calibration

Sample analysis shall not be allowed until all initial calibrations meet the appropriate requirements. All laboratory instrumentation must be calibrated in accordance with the method requirements. If any initial/continuing calibration standards exceed QC limits, recalibration must be performed and, if necessary, reanalysis of all affected samples back to the previous acceptable calibration check.

13.2.4 Reporting Limits

The laboratory must meet the required detection limits for each analytical method. If difficulties arise in achieving these limits due to a particular sample matrix, the laboratory must notify the Project Manager for problem resolution. In order to achieve those detection limits, the laboratory must utilize all appropriate cleanup procedures in an attempt to retain the required detection limits. When any sample requires a secondary dilution due to high levels of target analytes, the laboratory must document all initial analyses and secondary dilution results. Secondary dilution will be permitted only to bring target analytes within the linear range of calibration. If samples are analyzed at a secondary dilution with no target analytes detected, the Project Manager will be immediately notified so that appropriate corrective actions can be initiated.

13.2.5 Method QC

All QC, including blanks, matrix duplicates, matrix spikes, matrix spike duplicates, surrogate recoveries, matrix spike blank samples, and other method-specified QC samples, shall meet the method requirements. Failure of method-required QC will result in the review and possible qualification of all affected data. If the laboratory cannot find any errors, the affected samples shall be reanalyzed and/or re-extracted/re-digested, then reanalyzed within method-required holding times to verify the presence or absence of matrix effects. If matrix effect is confirmed, the corresponding data shall be flagged accordingly using the flagging symbols and criteria. If matrix effect is not confirmed, then the entire batch of samples may have to be reanalyzed and/or re-extracted/re-digested, then reanalyzed. The Sampling Team Leader shall be notified as soon as possible to discuss possible corrective actions should unusually difficult sample matrices be encountered.

13.2.6 Calculation of Errors

All analytical results must be reviewed systematically for accuracy prior to submittal. If upon data review, calculation and/or reporting errors exist, the laboratory will be required to reissue the analytical data report with the corrective actions appropriately documented in the case narrative.

13.3 Documentation

Immediate corrective actions taken in the field will be documented in the field logbook and approved by the Sampling Team Leader or Project Manager. Corrective actions that result in deviations from the work plan or QA/QC Plan should be documented in a memo to the Project Manager or QA Officer, who will ensure that the appropriate changes are incorporated in the final report. Corrective actions initiated as a result of the field audit must be thoroughly documented by the Sampling Team Leader and submitted to the QA Officer and Project Manager. All documentation shall be maintained in a project file.

The laboratory maintains a rigorous corrective action documentation system that includes corrective action memos and database change forms that are permanently filed in the sample delivery group file for future reference. The Laboratory Director and Lab QA Officer are notified in writing of all corrective actions taken. Furthermore, the laboratory will notify the Project Manager of all corrective actions that may have an impact on the quality of the data. A more detailed discussion of laboratory corrective action documentation procedures is presented in the laboratory QA Plan.

14.0 QUALITY ASSURANCE REPORTS

Periodically during the performance of this investigation, field and laboratory personnel will be required to report the performance of all measurement systems to management. Field personnel will report to the Project Manager or QA Officer. Laboratory personnel reporting requirements should be discussed in the laboratory QA Plan.

The frequency of reporting will be daily or weekly as appropriate during the period of time that measurements are being made in the field and/or laboratory. Reporting of measurement system performance will generally be verbal. However, if a problem requiring corrective action is encountered, a formal written report will be prepared.

The results of the field audit as well as any office audits conducted during the course of the project will be formally recorded by, or on behalf of, the QA Officer and will be reported to the Sampling, NYSDEC Project Managers. The audit reports will summarize

the results of the audit and will specifically identify any problems identified as well as the corresponding corrective actions.

The results of performance and system audits conducted by the laboratory are compiled by the Lab QA Officer and formally reported to the Lab Director. If a QC problem arises in the laboratory, the Laboratory Director will immediately contact the Project Manager to discuss an appropriate corrective action. Whenever a laboratory QA/QC problem requiring corrective action arises, the Laboratory Director will prepare a formal written report to document the nature of the QA/QC problem and the corrective action(s) taken to resolve the problem. This report will be submitted as soon as possible to the Project Manager.

Serious analytical or sampling problems will be reported to the NYSDEC Project Managers. The time and type of corrective action, if warranted, will depend on the severity of the problem and relative overall importance of the project. Corrective actions may include altering procedures in the field or modifying laboratory protocol. The NYSDEC will be consulted by the Project Manager prior to the selection and implementation of corrective actions that represent significant modifications to the SMP or supporting technical plans.

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TABLE 1

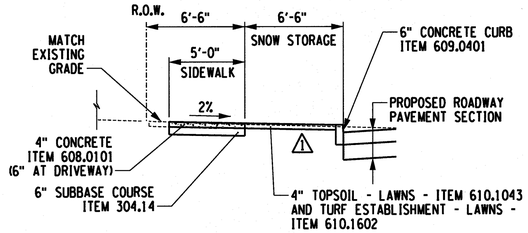
Table 1
Summary of Requirements for Sample Containers, Preservation and Holding Times

			Sample						
Parameter	**Nubmer of Samples**	**Source**	**Containers**	**Size**	**Amount**	**Type** [1]	**Lid**	**Preservation** [2]	**Hold Time**
Groundwater									
TCL Volatiles	8 + 1 (MS/MSD) + 1 (Trip Blank)	Monitoring Wells	2 (per sample)	40 mL	40 mL	VOA	Septum	HCL	10 Days
Air Samples (from SSVVS)									
To Be Determined									

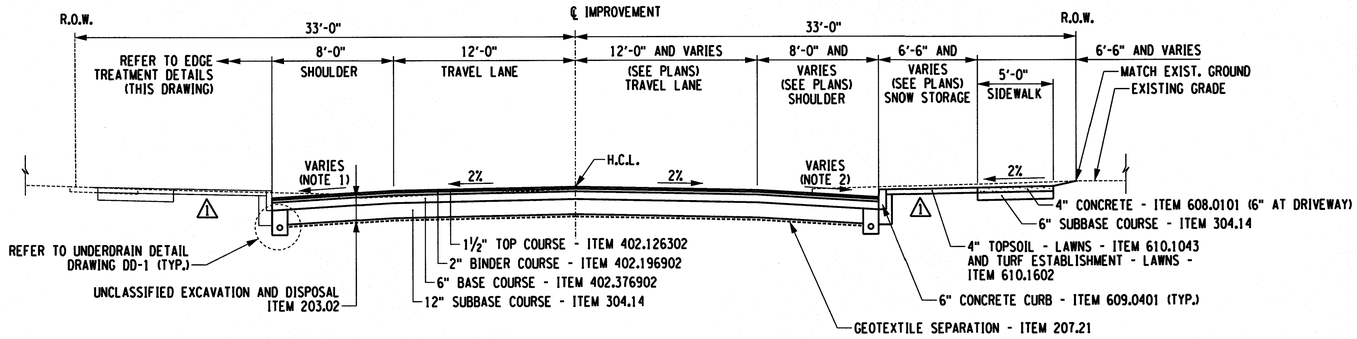
1. VOA= Volatile Organic Analysis Vial, HDPE = High Density Polyethylene, CWM = Clear Wide Mouth, AWM = Amber Wide Mouth
2. Cool samples to 4 degrees celcius.

APPENDIX H

AS-BUILT DRAWINGS



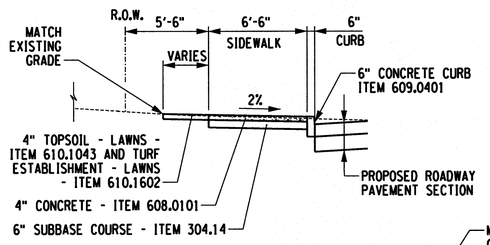
STA. TT 10+22.00 TO STA. TT 21+05.00
(TALCOTT STREET LEFT)



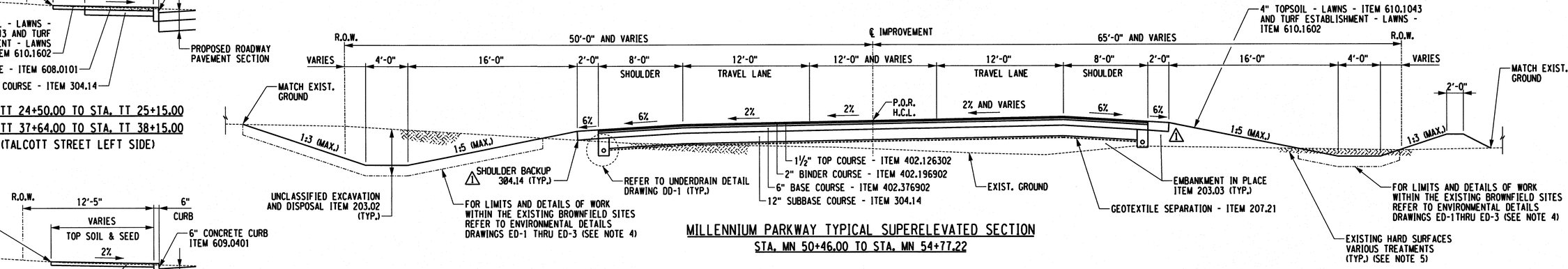
TALCOTT STREET TYPICAL SECTION
STA. TT 10+20.00 TO STA. TT 38+14.98

NOTES:

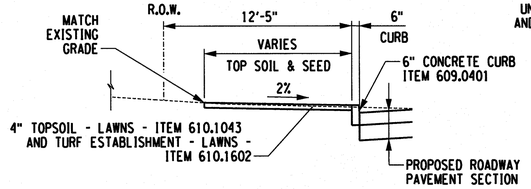
1. THE LEFT SHOULDER CROSS-SLOPE ON TALCOTT ST. SHALL BE 6% EXCEPT AS NOTED BELOW:
   - TRANSITION FROM 6% TO 2%, FROM STA. TT 22+75 TO STA. TT 23+25
   - 2%, FROM STA. TT 23+25 TO STA. TT 24+40
   - TRANSITION FROM 2% BACK TO 6% FROM STA. TT 24+40 TO STA. TT 24+90
2. THE RIGHT SHOULDER CROSS-SLOPE ON TALCOTT ST. SHALL BE 6% EXCEPT AS NOTED BELOW:
   - 2%, FROM STA. TT 10+20 TO STA. TT 20+00
   - TRANSITION FROM 2% TO 6% FROM STA. TT 20+00 TO STA. TT 20+50
3. DILUTED TACK COAT, ITEM 407.0102, SHALL BE APPLIED BETWEEN LIFTS OF NEW PAVEMENT COURSES.
4. REFER TO DRAWINGS ED-1 THRU ED-3 FOR ADDITIONAL EXCAVATION AND EMBANKMENT REQUIREMENTS, PROCEDURES, AND PAY ITEMS FOR WORK WITHIN BROWNFIELDS (STA. MN 50+84+/- TO STA. MN 66+61+/-).
5. EXISTING HARD SURFACES CONSIST OF CONCRETE, ASPHALT CONCRETE, AND RUBBLIZED CONCRETE. REFER TO ENVIRONMENTAL DETAILS DRAWING ED-1 THRU ED-3 FOR DETAILS OF WORK.



STA. TT 24+50.00 TO STA. TT 25+15.00
STA. TT 37+64.00 TO STA. TT 38+15.00
(TALCOTT STREET LEFT SIDE)

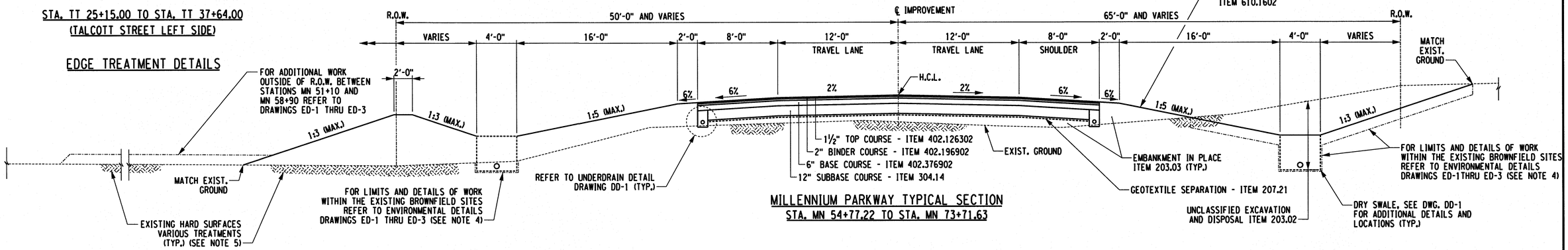


MILLENNIUM PARKWAY TYPICAL SUPERELEVATED SECTION
STA. MN 50+46.00 TO STA. MN 54+77.22



STA. TT 25+15.00 TO STA. TT 37+64.00
(TALCOTT STREET LEFT SIDE)

EDGE TREATMENT DETAILS



MILLENNIUM PARKWAY TYPICAL SECTION
STA. MN 54+77.22 TO STA. MN 73+71.63

5 0 5 10 15 20'
1" = 5'

REVISION	DESCRIPTION	DATE	BY
1	FIELD CHANGE	10-27-14	PJL

KHEOPS
ARCHITECTURE, ENGINEERING & SURVEY, DPC
300 Pearl Street, Suite 100
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P. 716.849.8739
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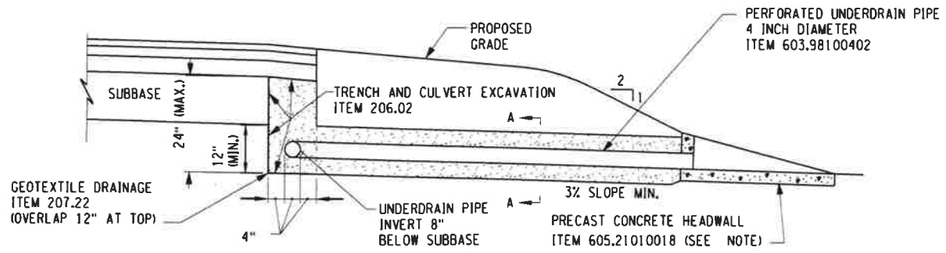
CHAUTAUQUA COUNTY DEPT. OF PUBLIC FACILITIES
454 NORTH WORK STREET - FALCONER , NEW YORK 14733

DESIGNED BY ETF	DATE 10/2012	SHEET TITLE	TYPICAL SECTIONS
DRAWN BY TJB	DATE 10/2012		
CHECKED BY AAS	DATE 10/2012		
APPROVED BY ETF	DATE 11/2012	PROJECT TITLE	CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55
PROJECT NO. 2006.0006.01	SCALE 1"=5'		

ENGINEERING DIVISION

TS-1

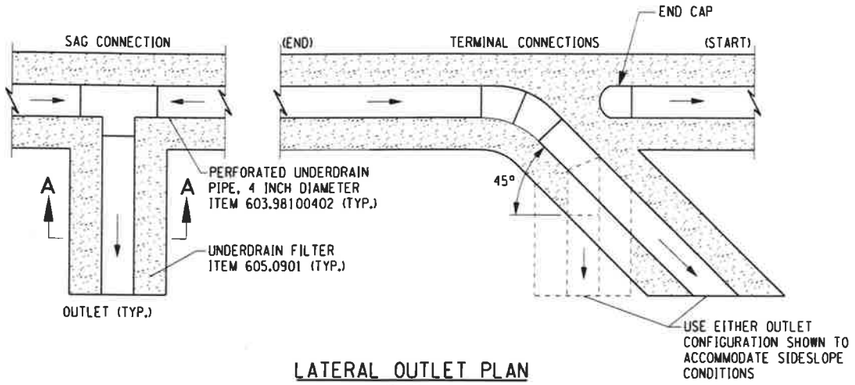
SHEET 9 OF 141



NOTE: PRECAST CONCRETE HEADWALLS SHALL BE USED INSTEAD OF GALVANIZED STEEL END SECTIONS.

UNDERDRAIN DETAIL WITH LATERAL OUTLET

N.T.S.



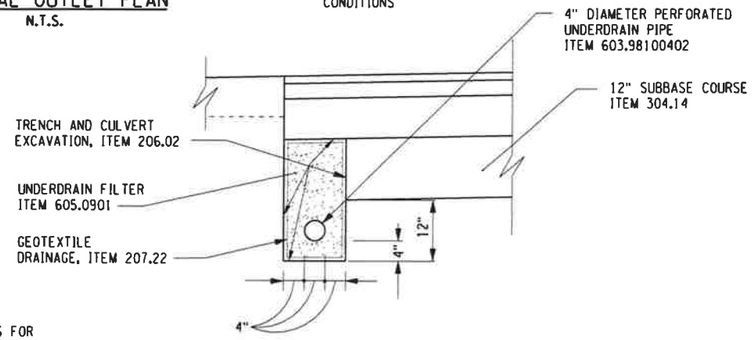
LATERAL OUTLET PLAN

N.T.S.

NOTE:
DETAIL ALSO APPLIES FOR DRY SWALE OUTLET PIPE

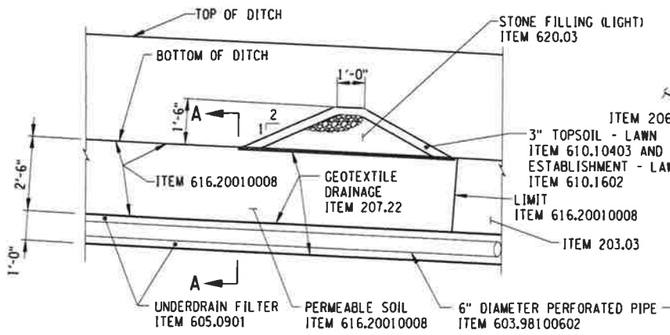
SECTION A-A OUTLET DETAIL

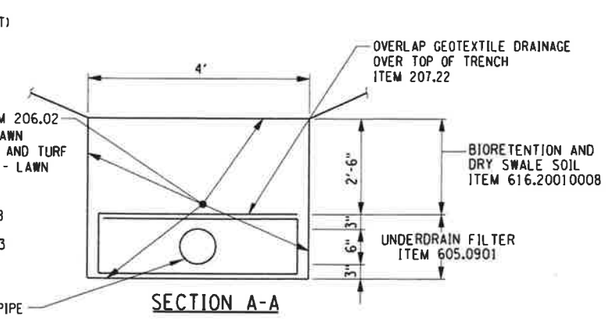
N.T.S.



UNDERDRAIN DETAIL

N.T.S.

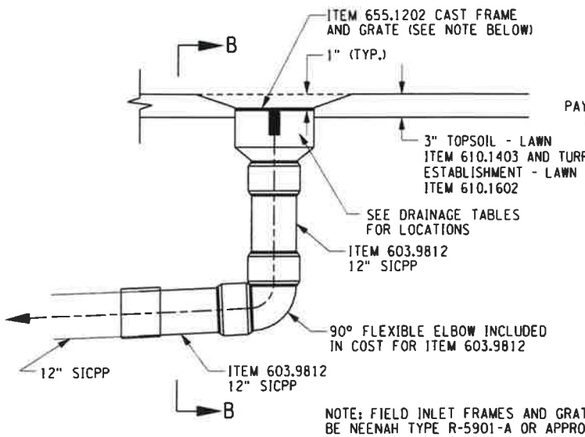




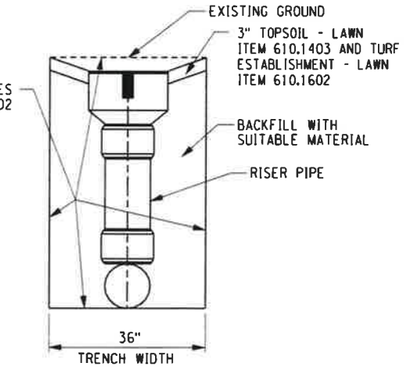
SECTION A-A

DRY SWALE AND CHECK DAM DETAILS

N.T.S.



NOTE: FIELD INLET FRAMES AND GRATES SHALL BE NEENAH TYPE R-5901-A OR APPROVED EQUAL

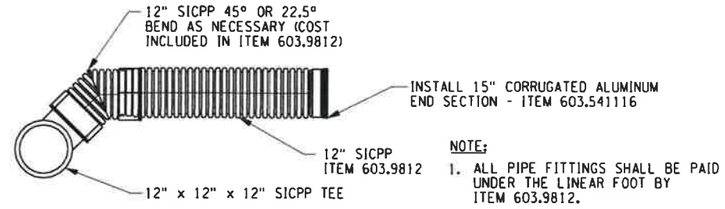


SECTION B-B

N.T.S.

FIELD INLET DETAILS

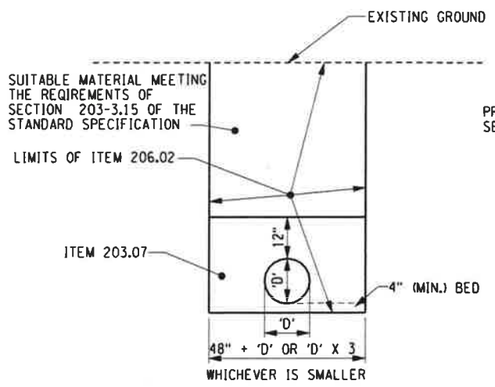
N.T.S.



NOTE:
1. ALL PIPE FITTINGS SHALL BE PAID UNDER THE LINEAR FOOT BY ITEM 603.9812.

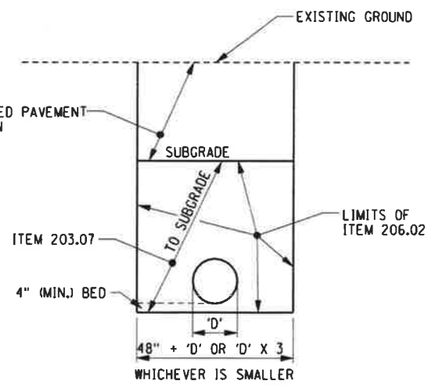
INLET DETAIL (DS 9-6, DS 10-5)

N.T.S.



DRAINAGE PIPE INSTALLATION (OUTSIDE ROADWAY)

N.T.S.



DRAINAGE PIPE INSTALLATION (WITHIN PROPOSED ROADWAY)

N.T.S.

REVISION	DESCRIPTION	DATE	BY

TVGA CONSULTANTS
620 MAIN STREET
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CHAUTAUQUA COUNTY DEPT. OF PUBLIC FACILITIES
454 NORTH WORK STREET - FALCONER , NEW YORK 14733

DESIGNED BY ETF	DATE 11/2012	SHEET TITLE: DRAINAGE DETAILS	ENGINEERING DIVISION
DRAWN BY TJB	DATE 11/2012		
CHECKED BY GMW	DATE 11/2012	PROJECT TITLE: CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55	DRAWING: DD-1
APPROVED BY ETF	DATE 11/2012		
PROJECT NO. 2006.0006.01	SCALE N.T.S.		SHEET 16 OF 141

ENVIRONMENTAL NOTES

GENERAL

1. THIS CONTRACT IS DESIGNED IN GENERAL ACCORDANCE WITH THE SITE MANAGEMENT PLAN AND COMBINED INSTITUTIONAL CONTROL PLAN / OPERATIONS AND MAINTENANCE PLANS FOR THE FORMER ROBLIN STEEL AND ALUMAX SITES RESPECTIVELY. HOWEVER, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE REQUIREMENTS OF EACH OF THESE PLANS. ADDITIONAL GUIDANCE IS PROVIDED IN THE NOTES THAT FOLLOW, WITH REFERENCE TO WHERE COPIES OF THE MANAGEMENT PLANS AND ASSOCIATED GUIDANCE MATERIALS CAN BE OBTAINED.

2. CHAUTAUQUA COUNTY DEPARTMENT OF PUBLIC FACILITIES (CCDPF) WILL HAVE A DESGINATED ENVIRONMENTAL INSPECTOR ON-SITE TO ASSIST, MONITOR, AND APPROVE ALL ACTIVITIES ON BOTH OF THE BROWNFIELD SITES. THE CONTRACTOR SHALL PROVIDE WEEKLY SCHEDULES OF ANTICIPATED ACTIVITIES ON THESE SITES. ANY CHANGES TO THIS SCHEDULE SHALL BE MADE WITH PROPER ADVANCE NOTICE TO THE CCDPF.

3. WORK SHALL NOT BE PERFORMED ON THESE BROWNFIELD SITES WITHOUT PROPER NOTIFICATION.

FORMER ROBLIN STEEL (NYSDEC SITE #B-00173-9):

1. ALL WORK CONDUCTED AT THE FORMER ROBLIN STEEL SITE SHALL BE CONDUCTED IN CONFORMANCE WITH THE *NOVEMBER 2010 SITE MANAGEMENT PLAN (SMP)* A COPY OF WHICH CAN BE OBTAINED FROM THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) - DIVISION OF ENVIRONMENTAL REMEDIATION - REGION 9 AT 270 MICHIGAN AVENUE, BUFFALO, NY 14203, (716)-851-7220.

2. THE NYSDEC REQUIRES A 60 DAY CHANGE OF USE NOTIFICATION PRIOR TO ANY WORK AT THIS SITE. NOTIFICATION PROCEDURES ARE CONTAINED IN SECTION 1.4 OF NYSDEC'S DER-10 MAY 3, 2010 AVAILABLE AT: HTTP://WWW.DEC.NY.GOV/REGULATIONS/2393.HTML. ADDITIONAL NOTIFICATION PROCEDURES ARE INCLUDED IN THE EXCAVATION WORK PLAN WHICH IS INCLUDED IN THE SITE MANAGEMENT PLAN.

3. A COVER SYSTEM CONSISTING OF A VEGETATED SOIL LAYER (12-INCH) WITH AN UNDERLYING DEMARCATION LAYER (AN ORANGE PLASTIC MESH) HAS PREVIOSLY BEEN INSTALLED ACROSS THE ENTIRE FORMER ROBLIN STEEL SITE. SOIL LOCATED ABOVE THE EXISTING DEMARCATION LAYER CAN REUSED WITHOUT SAMPLING.

4. FOLLOWING ANY SOIL COVER REMOVAL AND/OR OTHER INVASIVE ACTIVITIES, THIS COVER SYSTEM MUST BE REPLACED. THE COVER SYSTEM SHALL CONSIST OF A MINIMUM OF 12-INCHES OF SOIL COVER (CAPABLE OF SUPPORTING VEGETATION) WITH AN UNDERLYING DEMARCATION LAYER. NON-VEGETATED AREAS (I.E. BUILDINGS ROADWAYS, PARKING LOTS, ETC.) MUST BE COVERED BY A PAVING SYSTEM OR CONCRETE OF AT LEAST 6-INCHES IN THICKNESS.

5. ANY INTRUSIVE WORK THAT WILL PENETRATE THE SOIL COVER SYSTEM, OR ENCOUNTER OR DISTURB THE REMAINING CONTAMINATION, INCLUDING ANY MODIFICATIONS OR REPAIRS TO THE EXISTING SOIL COVER, SHALL BE PERFORMED IN COMPLIANCE WITH THE EXCAVATION WORK PLAN.

6. THE EXCAVATION WORK PLAN DETAILS INCLUDE: SOIL SCREENING (INITIAL FIELD TESTING), STOCKPILING, EXCAVATION/LOAD OUT, OFF SITE TRANSPORT AND DISPOSAL, POTENTIAL MATERIAL REUSE, FLUIDS MANAGEMENT, COVER RESTORATION, AND PROCEDURES FOR USE OF OFF-SITE BACKFILL. THE EXCAVATION WORK PLAN ALSO IDENTIFIES THE STORMWATER, COMMUNITY AIR MONITORING, ODOR AND DUST CONTROL REQUIREMENTS, AND THE CONTINGENCY PLAN THAT MUST BE FOLLOWED.

7. STORMWATER MANAGEMENT MUST FOLLOW THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).

FORMER ALUMAX SITE (NYSDEC #VCP V00589-9):

1. ALL WORK CONDUCTED AT THE FORMER ALUMAX SITE SHALL BE CONDUCTED IN CONFORMANCE WITH THE *JUNE 23, 2004 COMBINED INSTITUTIONAL CONTROL PLAN / OPERATIONS AND MAINTENANCE PLAN,* A COPY OF WHICH CAN BE OBTAINED FROM THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) - DIVISION OF ENVIRONMENTAL REMEDIATION - REGION 9 AT 270 MICHIGAN AVENUE, BUFFALO, NY 14203, (716)-851-7220.

2. THE NYSDEC REQUIRES A 60 DAY CHANGE OF USE NOTIFICATION PRIOR TO ANY WORK ON THIS SITE. NOTIFICATION PROCEDURES ARE CONTAINED IN SECTION 1.4 OF NYSDEC'S DER-10 MAY 3, 2010 AVAILABLE AT: HTTP://WWW.DEC.NY.GOV/REGULATIONS/2393.HTML.

3. CURRENTLY THERE IS NO COVER SYSTEM ACROSS THE FORMER ALLUMAX SITE.

4. ALL PROJECT DISTURBANCE AREAS WITHIN THIS SITE MUST HAVE A COVER SYSTEM INSTALLED IN ACCORDANCE WITH THE SITE MANAGEMENT PLAN. THE COVER SYSTEM SHALL CONSIST OF ONE OF THE FOLLOWING:
   a) SOIL: 12-INCHES OF VEGETATED SOIL UNDERLAIN BY A DEMARCATION LAYER IN OUTDOOR AREAS: PAYMENT ITEM 207.21 PER SECTION 737.0101
   b) ASPHALT: A MINIMUM OF 6 INCHES OF MATERIAL (ASPHALT AND SUBBASE MATERIAL) IN AREAS THAT WILL BECOME ROADS SIDEWALKS AND PARKING LOTS.
   c) CONCRETE: A MINIMUM OF 6 INCHES OF MATERIAL (CONCRETE AND SUBBASE MATERIAL IN AREAS THAT WILL BECOME SLAB-ON-GRADE STRUCTURES, ROADS SIDEWALKS AND PARKING LOTS IN LIEU OF ASPHALT.

100 - 123 RUGGLES STREET (TALCOTT STREET RIGHT-OF-WAY (ROW) - NORTH OF RUGGLES STREET AND EAST OF TALCOTT STREET) NYSDEC SPILL NO. 0901423

1. PETROLEUM-DISPENSING FACILITIES (EG: A DISPENSING PUMP, FILL PORT AND VENT PIPES) WERE FORMERLY LOCATED IN THIS PORTION OF THE TALCOTT ROW. THESE FACILITIES WERE REMOVED IN 2011, HOWEVER, PETROLEUM CONTAMINATION MAY STILL BE LOCATED UNDER THE ADJACENT PAVEMENT AT DEPTHS GREATER THAN 4 TO 5 FEET.

2. IF PETROLEUM CONTAMINATION IS ENCOUNTERED DURING CONSTRUCTION, NOTIFY THE NEW YORK STATE SPILL HOTLINE IMMEDIATELY (WITHIN 2 HOURS OF DISCOVERY) AT (800) 457-7362. NEW YORK STATE DEPARTMENT OF CONSERVATION REGION 9 SPILLS DIVISION CAN BE REACHED AT (716) 851-7220. REFERENCE NYSDEC SPILL NO. 0901423.

3. LABORATORY ANALYSIS REQUIRED BY THE NYSDEC SHALL BE PAID UNDER ITEM 205.0401.

BROWNFIELD SITE EXCAVATION PROCEDURES AND GUIDELINES

1. PROCEDURES, METHODS, AND PAY ITEMS ASSOCIATED WITH EXCAVATIONS AND RE-USE OF, OR DISPOSAL OF, EXISTING SOILS/MATERIALS ON THE FORMER ROBLIN STEEL AND ALLUMAX SITES ARE PROVIDED HERE FOR GENERAL GUIDANCE AND FOR BIDDING PURPOSES. REFER TO THE NOTED SPECIFICATIONS FOR A FULL UNDERSTANDING OF THE WORK TO BE PERFORMED. NO SEPARATE OR ADDITIONAL PAYMENTS WILL BE MADE FOR OTHER INCIDENTAL WORK REQUIRED TO BE IN COMPLIANCE WITH THE SITE MANAGEMENT PLANS FOR THESE SITES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND, AND TO BE IN FULL COMPLIANCE WITH THESE SITE MANAGEMENT PLANS.

   a) ALL EXCAVATIONS (ITEM 203.02 OR 206.02) OF EXISTING SOILS/MATERIALS ON THESE SITES SHALL BE INSPECTED BY THE CCDPF ENVIRONMENTAL INSPECTOR DURING THE EXCAVATION. THE CONTRACTOR SHALL PROVIDE THE ENVIRONMENTAL INSPECTOR WITH PROPER ACCESS TO THESE MATERIALS FOR BASIC CONTAMINATION FIELD TESTING. AS DETERMINED BY THE ENVIRONMENTAL INSPECTOR:

      i. EXCAVATED SOILS/MATERIALS (ITEM 203.02 AND 206.02) THAT ARE NOT VISIBLY STAINED, DISCOLORED, OR THAT PRODUCE ELEVATED PHOTOIONIZATION DETECTOR (PID) READINGS (SUSTAINED READINGS OF 5 PPM OR GREATER) CAN BE IMMEDIATELY REUSED (ITEM 203.03) ON-SITE WITHOUT ANY FURTHER TESTING.

      ii. EXCAVATED SOILS/MATERIALS (ITEM 203.02 AND 206.02) THAT ARE DETERMINED TO BE STAINED, DISCOLORED, OR THAT PRODUCES ELEVATED PID READINGS (SUSTAINED READINGS OF 5 PPM OR GREATER) SHALL BE STOCKPILED ON-SITE FOR SAMPLING AND LABORATORY TESTING. SEGREGATION AND STOCKPILING SHALL BE PAID FOR UNDER ITEM 205.02NN. LABORATORY ANALYSIS SHALL BE PAID UNDER ITEMS 205.040X. THE RESULTS OF THE LAB TESTING WILL DETERMINE IF THE SOIL/MATERIAL IS:

         1. TO BE REUSED ON-SITE UNDER ITEM 205.06NN
         2. CONTAMINATED NON-HAZARDOUS WASTE SOIL TO BE DISPOSED OF OFF-SITE UNDER ITEM 205.0502NN
         3. CONTAMINATED HAZARDOUS WASTE SOIL TO BE DISPOSED OF OFF-SITE UNDER ITEM 205.0501NN

   b) ANY EXCAVATIONS DEFINED UNDER SECTION (a) DETERMINED TO BE RE-USABLE ON-SITE SHALL:

      i. ONLY BE USED ON THE BROWNFIELD SITE FROM WHICH IT WAS EXCAVATED.
      ii. BE PLACED BELOW THE PROPOSED COVER SOIL / DEMARCATION LAYER.
      iii. NOT BE USED WITHIN A COVER SOIL LAYER (TOP 12" OF SOIL), WITHIN LANDSCAPING BERMS, OR AS BACKFILL FOR SUBSURFACE UTILITY LINES.

2. THE EXISTING SOIL COVER MATERIAL (TOP 12" +/-) LOCATED ABOVE THE DEMARCATION LAYER ON THE FORMER ROBLIN STEEL SITE, IF EXCAVATED, CAN BE REUSED WITHOUT SAMPLING. HOWEVER, SINCE ALL AREAS ON THIS SITE REQUIRE A MINIMUM OF 12-INCHES OF SOIL COVER, THESE AREAS SHOULD REMAIN UNDISTURBED EXCEPT AS SPECIFICALLY NECESSARY TO CONSTRUCT COMPONENTS OF THIS PROJECT.

3. THE FOLLOWING TABLE SUMMARIZES BOTH THE ESTIMATE OF REQUIRED EXCAVATIONS ON EACH OF THE BROWNFIELD SITES, AND BASED UPON PREVIOUSLY PERFORMED TESTS BY CCDPF, QUANTITIES OF SAMPLING AND LABORATORY TESTING, AS WELL AS QUANTITIES OF OFF-SITE DISPOSAL. NOTE THAT THESE QUANTITIES ARE ESTIMATES ONLY AND THAT ONLY ACTUAL FIELD VERIFIED QUANTITIES WILL BE PAID.

BROWNFIELD SITE (REFER TO DWG. ED-2 FOR LOCATIONS AND BOUNDARIES)	SERIALIZATION (NN)	REQUIRED EXCAVATIONS (ITEMS 203.02 & 206.02)	ESTIMATE OF MATERIALS PASSING FIELD TEST (IMMEDIATE RE-USE UNDER ITEM 205.06NN)	ESTIMATE OF MATERIALS TO BE STOCKPILED (ITEM 205.02NN)	ESTIMATE OF LABORATORY ANALYSIS 205.040X	ESTIMATE OF MATERIALS THAT WILL PASS LAB TESTS (RE-USE UNDER ITEM 205.06NN)	ESTIMATE OF CONTAMINATED NON-HAZARDOUS MATERIALS THAT WILL REQUIRE OFF-SITE DISPOSAL (ITEM 205.0502NN)	ESTIMATE OF CONTAMINATED HAZARDOUS MATERIALS THAT WILL REQUIRE OFF-SITE DISPOSAL (ITEM 205.0501NN)
FORMER ROBLIN STEEL SITE	01	325 CY	125 CY	200 CY	2	0 CY	255 TONS (180 CY)	30 TONS (20 CY)
FORMER ALUMAX SITE	02	6000 CY	3500 CY	4000 ~~2500~~ CY	6	500 CY	2100 TONS (1500 CY)	700 TONS (500 CY)

4. THE CONTRACTOR SHOULD TAKE NOTE THAT ALL SOILS/MATERIALS EXCAVATED FROM EITHER OF THESE BROWNFIELD SITES MUST EITHER BE:
   a) USED ON-SITE IN AN APPROVED LOCATION PER ITEM 205.06NN.
   b) PROPERLY DISPOSED OF AS PER ITEM 205.0501NN OR ITEM 205.0502NN

5. IF THE CONTRACTOR ELECTS TO PERFORM ANY WORK/OPERATIONS ON THESE SITES NOT SPECIFICALLY CALLED FOR ON THE PLANS, OR REQUIRED AS DETERMINED BY THE ENGINEER, HE/SHE SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE WORK AND FOR BEING IN COMPLIANCE WITH THE SITE MANAGEMENT PLANS. ANY DEVIATIONS FROM THE CONTRACT PLANS SHOULD BE DISCUSSED AND APPROVED WITH THE ENGINEER AND/OR THE CCDPF ENVIRONMENTAL INSPECTOR BEFOREHAND.

STOCKPILING / SAMPLING / LABORATORY TESTING NOTES

1. ANY SOILS/MATERIALS FAILING THE INITIAL FIELD TESTING SHALL BE STOCKPILED ON-SITE. SEGREGATION AND STOCKPILING WILL BE DONE ON A TIERED APPROACH, AS IDENTIFIED UNDER ITEM 205.02NN, BUT GENERALLY WILL NOT BE REQUIRED AT A GREATER FREQUENCY THAN ONE (1) SAMPLE LAB TEST FOR EVERY 500 CY.

2. STOCKPILES SHALL BE SEPARATED IF THE SOILS/MATERIALS SOURCE/LOCATION, AS DETERMINED BY THE ENVIRONMENTAL INSPECTOR, IF DEEMED TO BE DIFFERENT FROM OTHER STOCKPILES.

3. ALL SAMPLING WILL BE DONE BY THE CCDPF ENVIRONMENTAL INSPECTOR WHOM WILL ALSO BE RESPONSIBLE FOR COORDINATING WITH THE LABORATORY FOR TESTING.

4. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE LABORATORY TESTING AS IDENTIFIED UNDER ITEM 205.040X.

5. THE CONTRACTOR MAY SELECT THE LABORATORY OF HIS CHOICE PROVIDED THEY ARE APPROVED AS PER ITEM 205.040X.

STOCKPILING / SAMPLING / LABORATORY TESTING NOTES (CONTINUED)

6. ALL SOILS/MATERIALS SHALL REMAIN IN THEIR STOCKPILES UNTIL THE CCDPF ENVIRONMENTAL INSPECTOR HAS RECEIVED THE RESULTS OF THE LAB TESTING AND DETERMINED IF:
   a) THE MATERIALS WILL BE USED AS FILL ON-SITE.
   b) THE MATERIALS MUST BE DISPOSED OFF OFF-SITE.

7. IF THE CCDPF ENVIRONMENTAL INSPECTOR APPROVES ANY SOILS/MATERIALS EITHER THROUGH THE INITIAL FIELD TESTING, OR AFTER LABORATORY TESTING, IT IS EXPECTED THAT THESE MATERIALS WILL BE USED IN AN APPROPRIATE LOCATION ON-SITE.

8. CONTAMINATED NON-HAZARDOUS WASTE SOILS APPROVED FOR OFF-SITE DISPOSAL UNDER ITEM 205.0502NN SHALL BE SENT TO AN APPROVED SOLID WASTE LANDFILL. APPROVAL OF THIS FACILITY SHALL BE COORDINATED WITH THE CCDPF ENVIRONMENTAL INSPECTOR. QUANTITY OF LABORATORY ANALYSIS (ITEMS 205.040X) REQUIIRED PRIOR TO DISPOSAL SHALL BE DETERMINED BY THE SOLID WASTE ANALYST.

9. CONTAMINATED HAZARDOUS WASTE SOILS APPROVED FOR OFF-SITE DISPOSAL UNDER ITEM 205.0501NN SHALL BE SENT TO AN APPROVED PART 360 HAZARDOUS WASTE LANDFILL. APPROVAL OF THIS FACILITY SHALL BE COORDINATED WITH THE CCDPF ENVIRONMENTAL INSPECTOR. PROPER WASTE MANIFESTS SHALL BE SUBMITTED ON ALL WASTE SOIL MATERIAL DISPOSED OF UNDER ITEM 205.0501NN. QUANTITY OF LABORATORY ANALYSIS (ITEMS 205.040X) SHALL BE DETERMINED BY THE HAZARDOUS WASTE LANDFILL PRIOR TO DISPOSAL.

10. IF THE CONTRACTOR ELECTS ON HIS OWN TO DISPOSE OF ANY SOILS/MATERIALS THAT HAVE OTHERWISE BEEN APPROVED OR ARE PENDING APPROVAL, HE SHALL DO SO BOTH AT HIS OWN COSTS, AND IN ACCORDANCE WITH THE SITE MANAGEMENT PLAN.

11. THE CONTRACTOR SHALL INCORPORATE THE NECESSARY STEPS AND TIMEFRAMES INTO HIS CONSTRUCTION SCHEDULE.
   a) ALL FIELD TESTING WILL BE DONE THE DAY OF (DURING) EXCAVATION.
   b) IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE STOCKPILING SAMPLING, AND LABORATORY TESTING WITH THE CCDPF ENVIRONMENTAL INSPECTOR.
   c) IT IS ESTIMATED THAT SAMPLING / LAB TESTING WILL TAKE APPROXIMATELY ONE (1) WEEK, THOUGH THIS MAY VARY FROM LAB TO LAB. EXPEDITED TESTING MAY BE AVAILABLE AT SOME LABS.

12. THE ESTIMATED QUANTITIES FOR ITEMS 203.03, 205.0501NN, 205.0502NN AND 205.06NN, IN THE TABLE CONTAINED IN THESE NOTES ARE APPROXIMATE AND FOR BIDDING PURPOSES ONLY. THE CONTRACTOR SHALL MAKE NO CLAIM FOR EXTRA PAYMENTS OR DELAYS IF THESE ESTIMATED QUANTITIES ARE LATER DETERMINED TO BE INACCURATE. THE PROCEDURES OUTLINED IN THE PLANS AND CONTRACT BOOK SHALL BE FOLLOWED FOR ALL EXCAVATIONS ON THESE SITES AND COMPENSATION TO THE CONTRACTOR WILL BE MADE ONLY UNDER THE IDENTIFIED SPECIFICATIONS AT THE BID PRICES IN THE CONTRACT.

REVISION	DESCRIPTION	DATE	BY
1	PER ADDENDUM #1	10/27/14	PJL

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CHAUTAUQUA COUNTY DEPT. OF PUBLIC FACILITIES
454 NORTH WORK STREET - FALCONER , NEW YORK 14733

DESIGNED BY	ETF	DATE	10/2012
DRAWN BY	TJB	DATE	10/2012
CHECKED BY	GMW	DATE	10/2012
APPROVED BY	ETF	DATE	11/2012
PROJECT NO.	2006.0006.01	SCALE	NA

SHEET TITLE: ENVIRONMENTAL NOTES

PROJECT TITLE: CONSTRUCTION
MILLENNIUM PARKWAY
TALCOTT STREET EXTENSION
P.I.N. : 5757.55

ENGINEERING DIVISION

DRAWING: ED-1

SHEET 23 OF 141

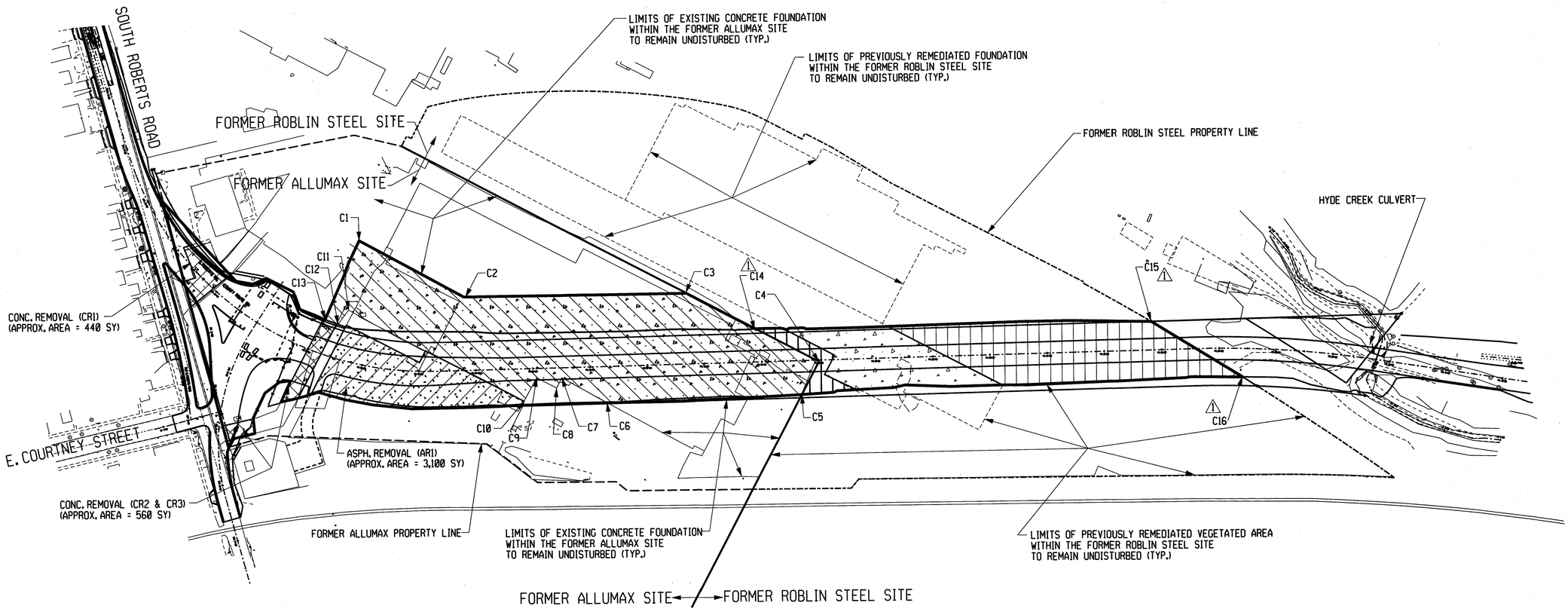

TABLE OF COORDINATES		
PNT. NO.	NORTHING	EASTING
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C2	906655.32	950633.34
C3	906902.33	950933.54
C4	906952.32	951190.9
C5	906888.67	951202.87
C6	906666.76	950944.73
C7	906651.51	950855.44
C8	906631.87	950859.43
C9	906624.34	950820.93
C10	906578.9	950829.13
C11	906512.22	950489.7
C12	906481.18	950490.51
C13	906473.63	950467.64
C14	906937.92	951067.22
1 C15	907367.21	951602.30
C16	907390.76	951788.86

LIMITS OF DISTURBED AREA WITHIN THE BROWNFIELD SITES

FORMER ALLUMAX SITE

A-1 EXISTING CONCRETE FOUNDATION AREAS OF THE FORMER ALLUMAX SITE TO BE RUBBLIZED (PLAN AREA = 13,500 SY) (SEE GRADING PLAN ON DWG. FOR PROPOSED GRADING)

A-2 EXISTING CONCRETE DRIVEWAY / PARKING AREAS ON THE FORMER ALLUMAX SITE TO BE REMOVED (PLAN AREA = 3,660 SY)

A-3 EXISTING ASPHALT CONCRETE PARKING LOT FOR THE FORMER ALLUMAX SITE TO BE REMOVED (PLAN AREA = 3,100 SY)

NOT DEPICTED BY A PATTERN A-4 EXISTING VEGETATED AREAS ON THE FORMER ALLUMAX SITE (WORK PERFORMED ONLY AS REQUIRED WITHIN R.O.W.)

FORMER ROBLIN STEEL SITE

R-1 CONCRETE FOUNDATION OF THE FORMER ROBLIN STEEL SITE THAT HAS BEEN PREVIOSULY REMEDIATED. (RUBBLIZED/ CRUSHED CONCRETE, DEMARCATION LAYER PLACED WITH 1' (MIN.) FILL OVER TOP). (SHOWN FOR INFORMATION PURPOSES ONLY)

R-2 VEGETATED AREAS ON THE FORMER ROBLIN STEEL SITE THAT HAS BEEN PREVIOUSLY BEEN REMEDIATED. (DEMARCATION LAYER PLACED WITH 1' (MIN.) FILL OVER TOP). (SHOWN FOR INFORMATION PURPOSES ONLY)

	AREA	FINISHED SECTION	DESCRIPTION OF WORK	ITEM 502.75960005	ITEM 207.21
FORMER ALLUMAX SITE	A-1	FILL > 1'	RUBBLIZE CONCRETE, PLACE ACCEPTED SITE EXCAVATED BACKFILL, AND BUILD PER PLANS (DEMARCATION LAYER REQUIRED)	13,500	13,500
		CUT OR FILL < 1'	RUBBLIZE CONCRETE, EXCAVATE TO 1' BELOW FINISHED GRADE, AND BUILD PER PLANS (DEMARCATION LAYER REQUIRED)		
	A-2	FILL > 1'	REMOVE CONCRETE, AND BUILD PER PLANS (DEMARCATION LAYER REQUIRED)	-	3,660
		CUT OR FILL < 1'	REMOVE CONCRETE, EXCAVATE TO 1' BELOW FINISHED GRADE, AND BUILD PER PLANS (DEMARCATION LAYER REQUIRED)		
	A-3	FILL > 1'	REMOVE ASPHALT CONCRETE, AND BUILD PER PLANS (DEMARCATION LAYER REQUIRED)	-	3,100
		CUT OR FILL < 1'	REMOVE ASPHALT CONCRETE, EXCAVATE TO 1' BELOW FINISHED GRADE, AND BUILD PER PLANS (DEMARCATION LAYER REQUIRED)		
	A-4	FILL > 1'	BUILD PER PLANS (DEMARCATION LAYER REQUIRED)	-	5,400
		CUT OR FILL < 1'	EXCAVATE TO 1' BELOW FINISHED GRADE, AND BUILD PER PLANS (DEMARCATION LAYER REQUIRED)		
FORMER ROBLIN STEEL	R-1	FILL	BUILD PER PLANS	-	920
	R-2	CUT	EXCAVATE TO 1' BELOW FINISHED GRADE, PLACE NEW DEMARCATION LAYER AT BOTTOM OF EXCAVATION, AND BUILD PER PLANS		

NOTES:

1. ALL WORK DONE ON THE BROWNFIELD SITES (THE FORMER ALLUMAX AND ROBLIN STEEL PROPERTIES) SHALL BE DONE IN CONFORMANCE WITH THE ASSOCIATED INDIVIDUAL SITE MANAGEMENT PLANS. SEE EVIRONMENTAL NOTES ON DWG. ED-1 AND CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION REGARDING THE REQUIREMENTS OF THESE SITE MANAGEMENT PLANS.
2. THE WORK SHOWN ON THIS DRAWING DESCRIBES THE WORK NECESSARY TO BE IN GENERAL CONFORMANCE WITH THE BROWNFIELD SITE MANAGEMENT PLANS. HOWEVER IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND THE ENTIRE SITE MANAGEMENT PLANS AND TO PERFORM HIS ACTIVITIES IN COMPLIANCE.
3. DRAINAGE EXCAVATIONS AND BACKFILLS WITHIN THESE BROWNFIELD SITES SHALL CONFORM TO THE INFORMATION SHOWN ON THIS DRAWING AND THE DETAILS ON ED-3.

   SEE DWG. ED-3 FOR ADDITIONAL DETAILS, AND FOR GRADING OUTSIDE ROW.
4. RUBBLIZATION AREA (OUTSIDE ROW) IS SHOWN AS APPROXIMATE AND IS REQUIRED PER THE PROJECT'S SWPPP. LAYOUT OF THESE AREAS TO BE VERIFIED BY THE ENGINEER.
5. QUANTITES SHOWN IN THE TABLE ON THIS DRAWING ARE ESTIMATED AND SHALL BE FIELD MEASURED FOR ACTUAL PAYMENT.
6. THE CONTRACTOR SHALL NOTE THAT THE AREAS TO BE RUBBLIZED UNDER ITEM 502.75960005 ARE EXISTING FOUNDATION SLABS ON FORMER INDUSTRIAL FACILITIES. THESE SLABS HAVE EXISTING STEEL RAIL AND STEEL CORNER ANGLES EMBEDDED IN THE CONCRETE SURFACE. ALL STEEL NEEDS TO BE REMOVED BY OTHER METHODS PRIOR TO THE RUBBLIZATION PROCESS. THE STEEL WILL BECOME THE PROPERTY OF THE CONTRACTOR, AND ALL COSTS ASSOCIATED WITH THE REMOVAL OF THE STEEL SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 502.75960005.

REVISION	DESCRIPTION	DATE	BY
1	NEW COORDINATES	10/27/14	PJL

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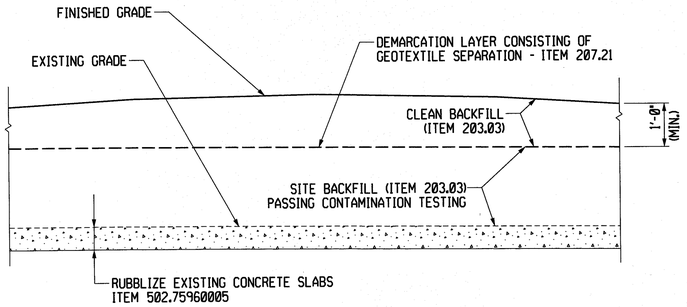
454 NORTH WORK STREET - FALCONER . NEW YORK 14733

ENGINEERING DIVISION

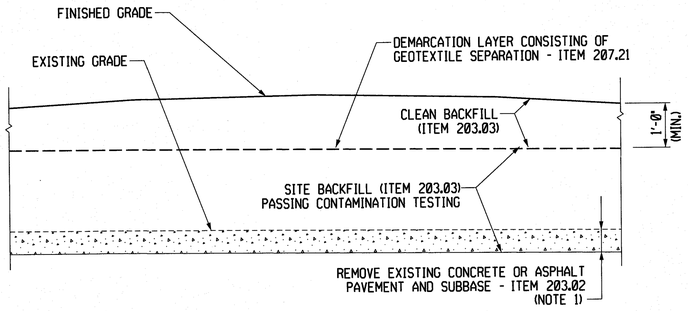
DESIGNED BY ETF	DATE 12/2012	SHEET TITLE: ENVIRONMENTAL PLANS AND DETAILS	
DRAWN BY TJB	DATE 12/2012		
CHECKED BY AAS	DATE 12/2012		
APPROVED BY ETF	DATE 12/2012	PROJECT TITLE: CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55	DRAWING ED-2
PROJECT NO. 2006.0006.01	SCALE 1"=100'		SHEET 24 OF 141



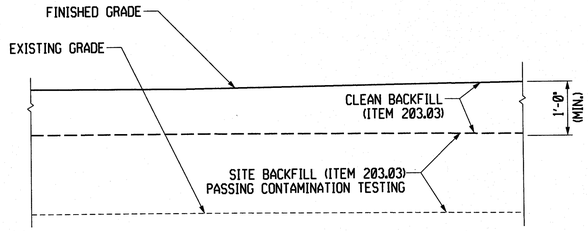
NOTE:

1. SEE NOTE 6 ON DRAWING ED-2.

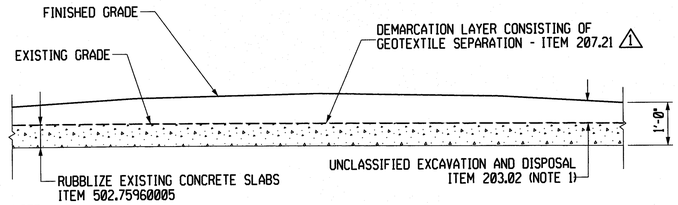
RUBBLIZATION DETAIL - AREA A-1
(FILL > 1'-0")
N.T.S.



CONCRETE AND ASPHALT REMOVAL DETAIL - AREAS A-2 AND A-3
(FILL > 1'-0")
N.T.S.



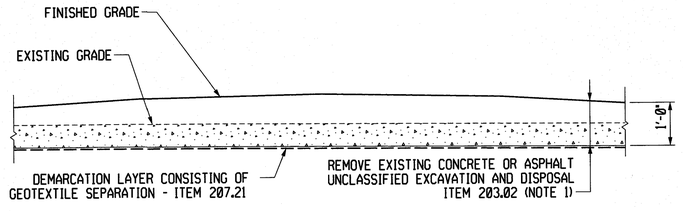
VEGETATED AREAS DETAIL - AREA A-4
(FILL > 1'-0")
N.T.S.



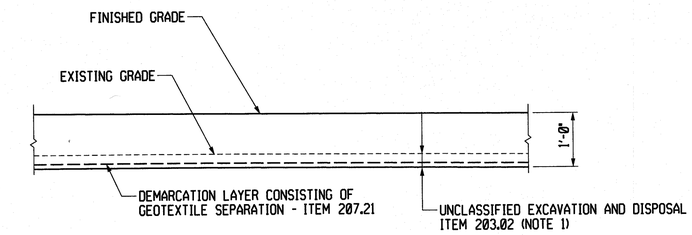
NOTE:

THE CONTRACTOR SHALL NOTE THAT THE AREAS TO RUBBLIZED UNDER ITEM 502.75960005 ARE EXISTING FOUNDATION SLABS ON FORMER INDUSTRIAL FACILITIES. THESE SLABS HAVE EXISTING STEEL RAIL AND STEEL CORNER ANGLES EMBEDDED IN THE CONCRETE SURFACE. ALL STEEL NEEDS TO BE REMOVED BY OTHER METHODS PRIOR TO THE RUBBLIZATION PROCESS. THE STEEL WILL BECOME THE PROPERTY OF THE CONTRACTOR, AND ALL COSTS ASSOCIATED WITH THE STEEL SHALL BE INCLUDED IN THE BASE BID FOR ITEM 502.75960005.

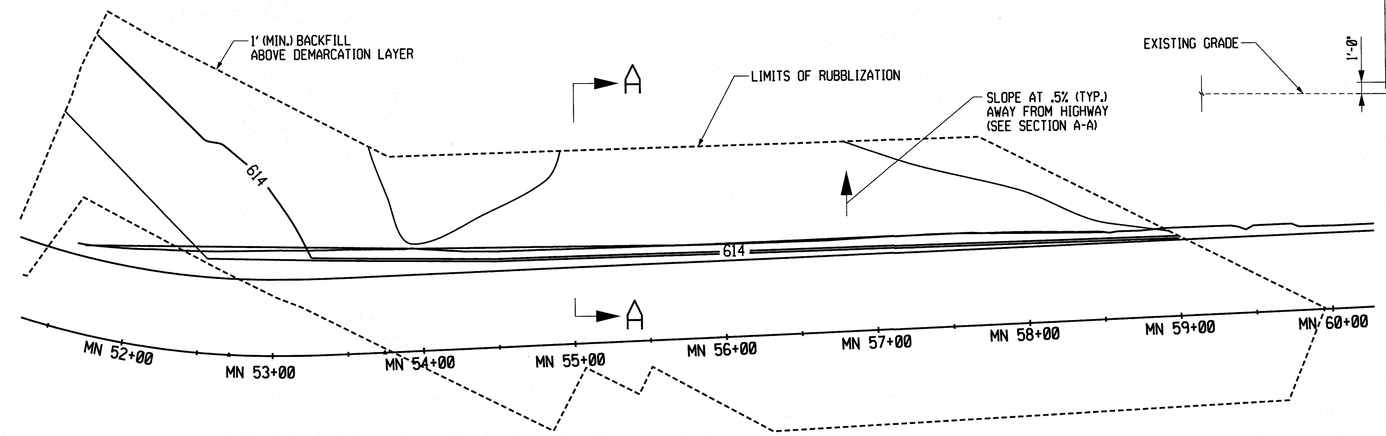
RUBBLIZATION DETAIL - AREA A-1
(CUT OR FILL < 1'-0")
N.T.S.



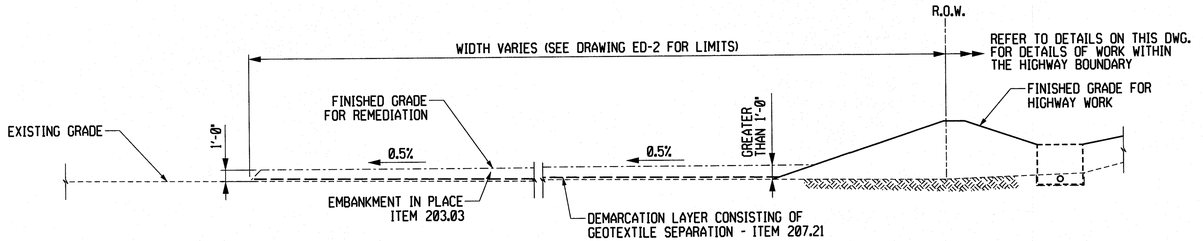
CONCRETE AND ASPHALT REMOVAL - AREAS A-2 AND A-3
(CUT OR FILL < 1'-0")
N.T.S.



VEGETATED AREAS DETAIL - AREA A-4
(CUT OR FILL < 1'-0")
N.T.S.



GRADING PLAN
N.T.S.



SECTION A-A
(WORK OUTSIDE R.O.W.)
N.T.S.

FORMER ALLUMAX SITE DETAILS

NOTES:

1. TEST AND REMEDIATE EXCAVATED SOIL/ASPHALT PER SOIL FILL MANAGEMENT PLAN.

REVISION	DESCRIPTION	DATE	BY
⚠	FIELD CHANGE	10/27/14	PJL

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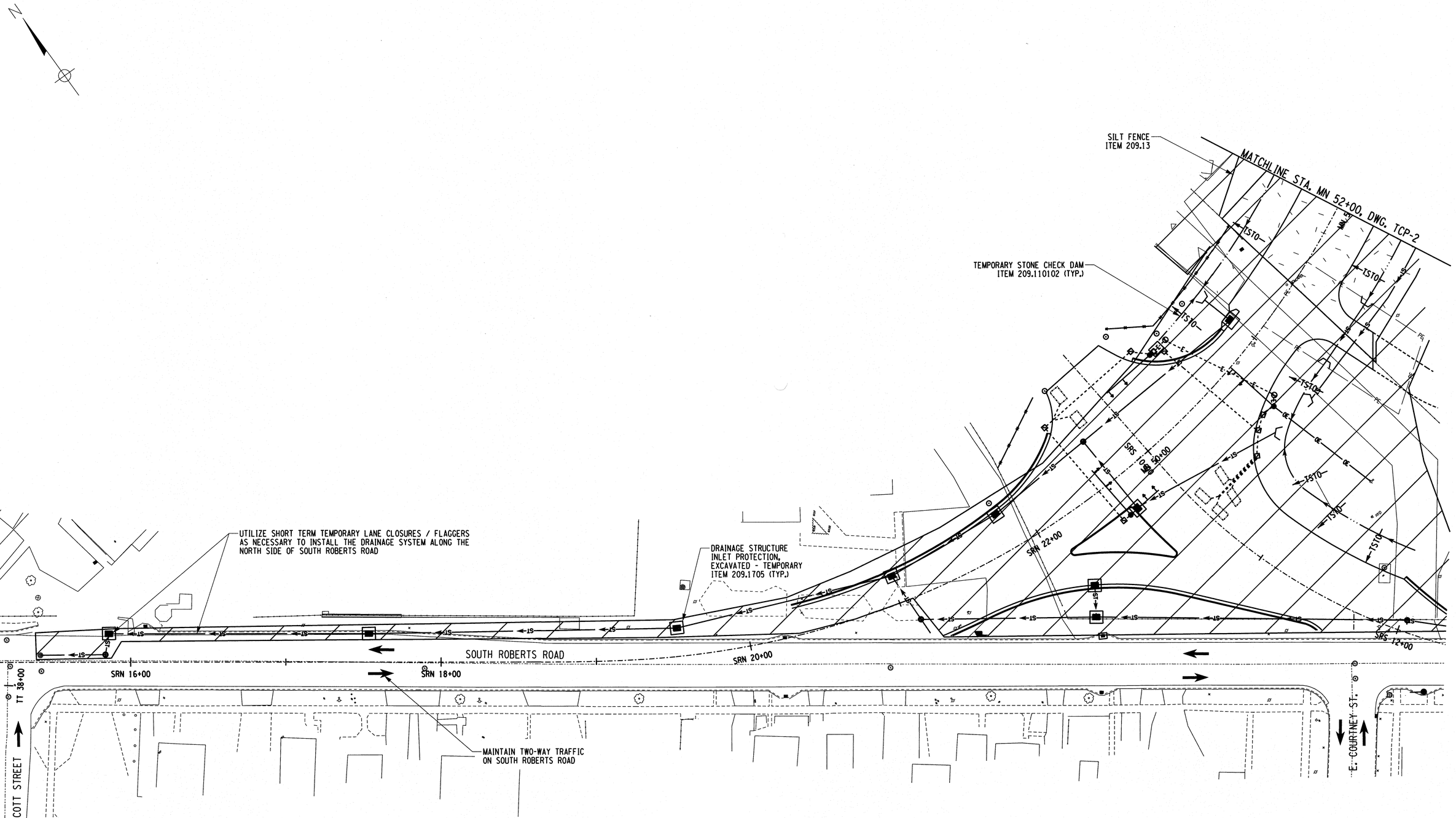
454 NORTH WORK STREET - FALCONER . NEW YORK 14733

DESIGNED BY GMW	DATE 12/2012	SHEET TITLE ENVIRONMENTAL DETAILS	ENGINEERING DIVISION
DRAWN BY TJB	DATE 12/2012		
CHECKED BY GMW	DATE 12/2012		
APPROVED BY ETF	DATE 12/2012	PROJECT TITLE CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55	DRAWING ED-3
PROJECT NO. 2006.0006.01	SCALE N.T.S.		SHEET 25 OF 141



REVISION	DESCRIPTION	DATE	BY
	NO RECORD CHANGES	10/27/14	PJL

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454 NORTH WORK STREET - FALCONER , NEW YORK 14733

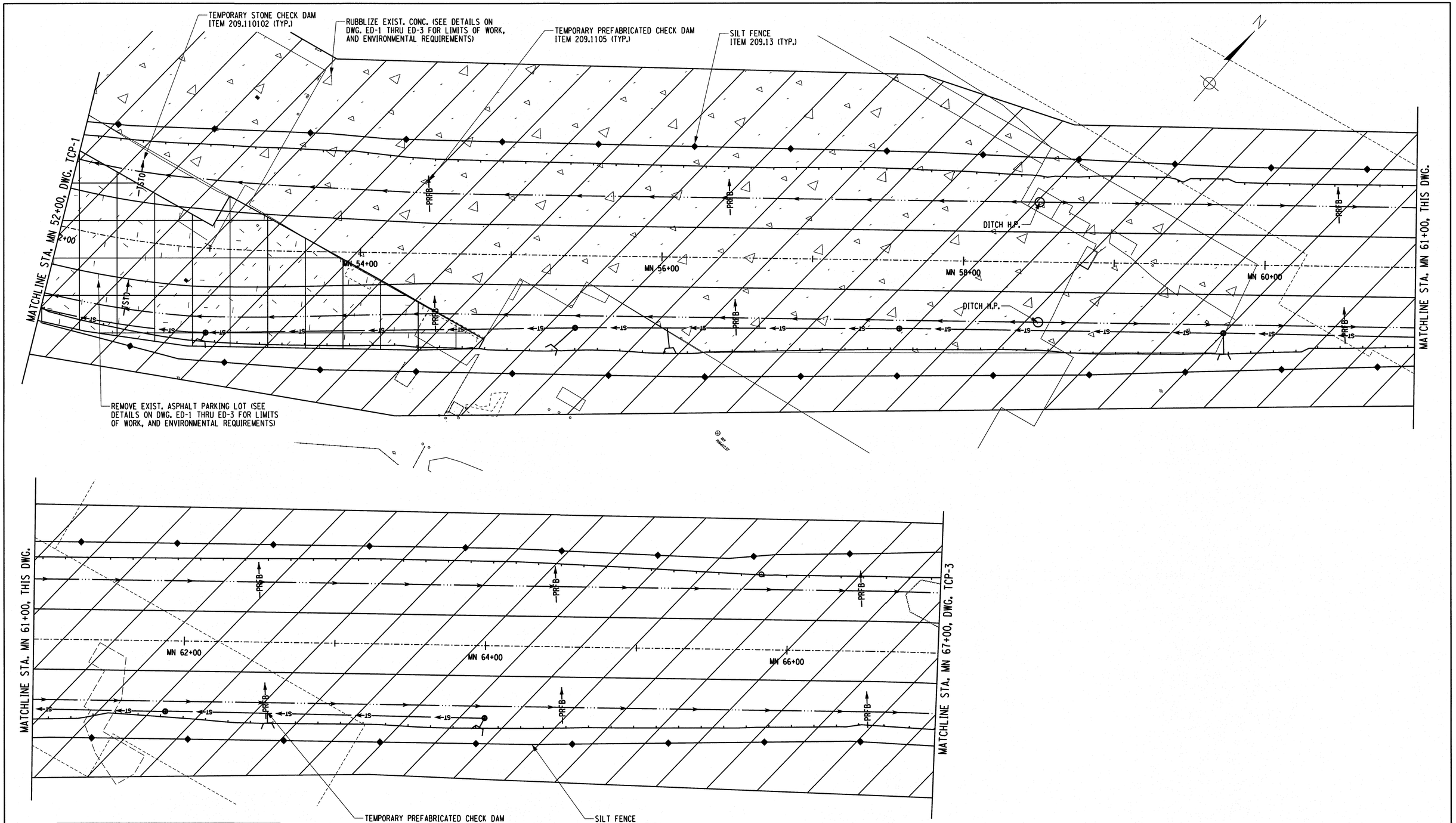
DESIGNED BY	GMW	DATE	10/2012
DRAWN BY	TJB	DATE	10/2012
CHECKED BY	GMW	DATE	10/2012
APPROVED BY	ETF	DATE	11/2012
PROJECT NO.	2006.0006.01	SCALE	1"=30'

SHEET TITLE: TRAFFIC CONTROL AND EROSION CONTROL STAGE 1

PROJECT TITLE: CONSTRUCTION
MILLENNIUM PARKWAY
TALCOTT STREET EXTENSION
P.I.N. : 5757.55

ENGINEERING DIVISION

DRAWING: TCP-1



LEGEND

WORK ZONE

30 0 30 60 90 120′

1" = 30′

REVISION	DESCRIPTION	DATE	BY
	NO RECORD CHANGES	10/27/14	PJL

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454 NORTH WORK STREET - FALCONER , NEW YORK 14733

DESIGNED BY	ETF	DATE	10/2012
DRAWN BY	TJB	DATE	10/2012
CHECKED BY	GMW	DATE	10/2012
APPROVED BY	ETF	DATE	11/2012
PROJECT NO.	2006.0006.01	SCALE	1"=30′

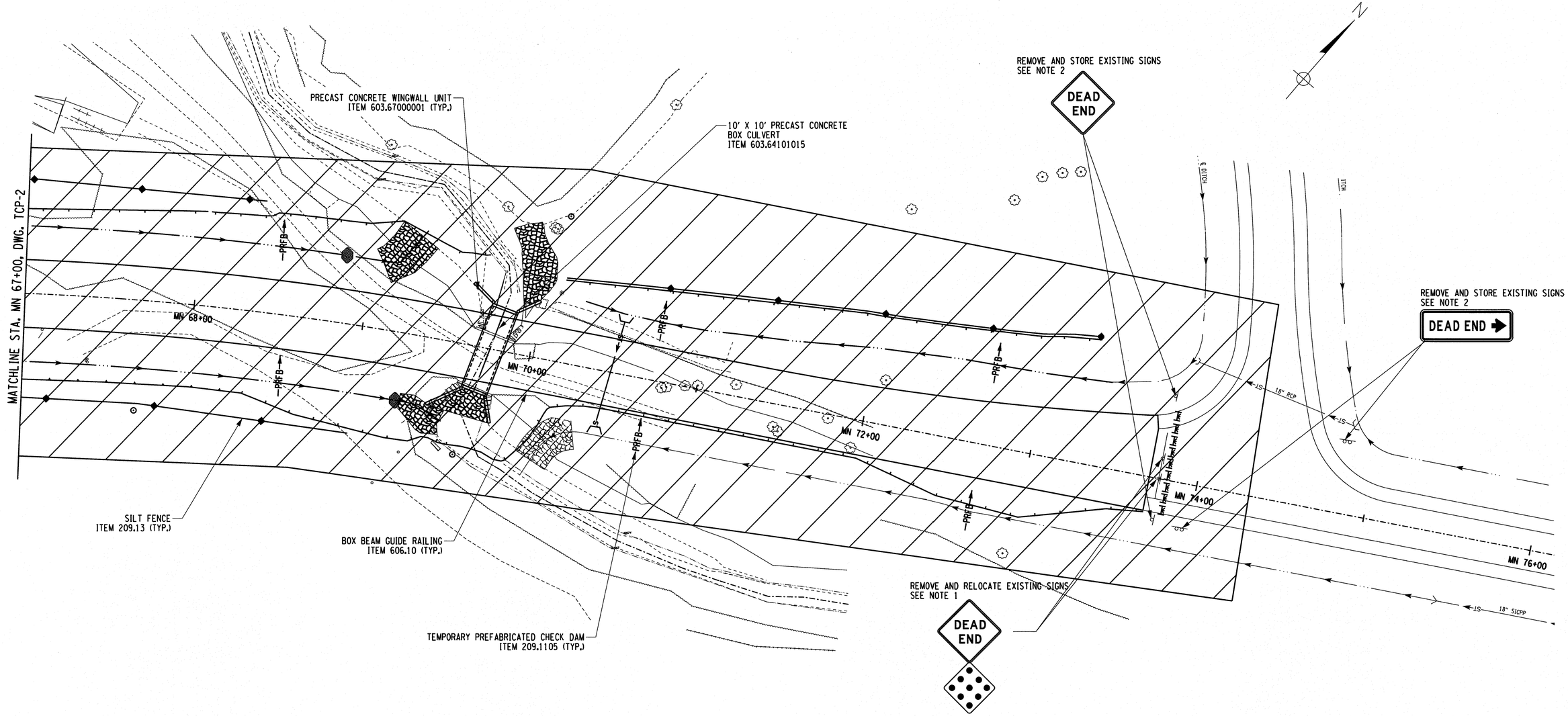
SHEET TITLE: TRAFFIC CONTROL AND EROSION CONTROL STAGE 1

PROJECT TITLE: CONSTRUCTION
MILLENNIUM PARKWAY
TALCOTT STREET EXTENSION
P.I.N. : 5757.55

ENGINEERING DIVISION

DRAWING: TCP-2

SHEET 38 OF 141



NOTES:

1. REMOVE EXISTING GUIDE RAILING BARRICADE AND SIGNAGE, AND REPLACE WITH LIGHTED TYPE III CONSTRUCTION BARRICADES. RELOCATE THE EXISTING SIGNAGE ON THE TYPE III BARRICADES TEMPORARILY. COST FOR SIGN RELOCATIONS TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 619.01 - BASIC WORK ZONE TRAFFIC CONTROL. REFER TO SEQUENCE OF CONSTRUCTION, STAGE 1, STEP 3, NOTE A, ON DRAWING TKM-1 FOR LIMITATIONS ON THIS WORK.
2. REMOVE EXISTING SIGNAGE. REFER TO SEQUENCE OF CONSTRUCTION, STAGE 4, STEP 2, ON DRAWING TKM-1 FOR LIMITATIONS ON THIS WORK.
3. EXISTING SIGNS AND GUIDE RAILING SHALL BE CAREFULLY REMOVED AND TURNED OVER TO CHAUTAUQUA COUNTY.

LEGEND

- WORK ZONE
- LIGHTED TYPE III BARRICADE
- EXISTING SIGNS

30 0 30 60 90 120'

1" = 30'

REVISION	DESCRIPTION	DATE	BY
	NO RECORD CHANGES	10/27/14	PJL

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454 NORTH WORK STREET - FALCONER , NEW YORK 14733

DESIGNED BY ETF	DATE 11/2012	SHEET TITLE	TRAFFIC CONTROL AND EROSION CONTROL STAGE 1
DRAWN BY TJB	DATE 11/2012		
CHECKED BY GMW	DATE 11/2012	PROJECT TITLE	CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55
APPROVED BY ETF	DATE 11/2012		
PROJECT NO. 2006.0006.01	SCALE 1"=30'		

ENGINEERING DIVISION

DRAWING TCP-3

FUTURE HIGHWAY BOUNDARY

INSTALL CHAIN LINK FENCE (BY OTHERS)

MN 51+07.82

CONCRETE PAD (ITEM 608.0101) (SEE NOTES UNDER CONTROLLERS, CABINETS AND DETECTORS ON DRAWING GN-1)

SEE DRAWING TSP-1 FOR TRAFFIC SIGNAL LAYOUT AND DETAILS

MATCHLINE MN 51+20 SEE DWG. PL-9

S. ROBERTS ROAD STA. SRS 10+00.00 = S. ROBERTS ROAD STA. SRN 22+88.53 = MILLENNIUM PARKWAY STA. MN 50+00.00

SRN 22+60.68 71.44' L

MILLENNIUM PKWY

FUTURE DRIVEWAY AND FENCE TO BE DESIGNED BY OTHERS

REMOVE EXIST. CHAIN LINK FENCE (BY OTHERS)

EXIST. CONCRETE DRIVEWAY TO BE REMOVED

FUTURE HIGHWAY BOUNDARY

CLIFFSTAR CORP. 320 SOUTH ROBERTS RD. 79J6-2-4

PROP. ℄ DITCH (TYP.)

EASEMENT FOR INGRESS/EGRESS NATIONAL GRID L2446/P691

M.7 P.7 FEE

SEE NOTE 2 ON DWG. UT-8

REMOVE AND DISPOSE CORRUGATED BEAM GUIDE RAILING ITEM 606.71 - 58 LF

NATIONAL GRID 300 ERIE BLVD. WEST SYRACUSE, NY 79J6-2-13

MOVED TO CURB LINE

S. ROBERTS RD. (COUNTY ROUTE 81)

PROPOSED ASPHALT ISLAND, SEE DWG IGP-4

REMOVE EXIST. CHAIN LINK FENCE (BY OTHERS)

INSTALL CHAIN LINK FENCE (BY OTHERS)

NORFOLK & WESTERN R.R. CO. 79J6-6-25

NATIONAL GRID

BEGIN FULL DEPTH PAVEMENT RECONSTRUCTION STA SRS. 13+62.00

M.8 P.8 FEE

S. ROBERTS ROAD STA. SRS 11+69.40 = COURTNEY STREET STA. CY 2+04.18

SRN 22+00

SRN 21+00

RA 2+00

RA 1+00

RA 3+00

PROPOSED ASPHALT ISLAND, SEE DWG IGP-4

EXIST. CHAINLINK FENCE TO BE REMOVED

SOUTH ROBERTS ROAD

OLD S. ROBERTS ROAD

OSR 11+00

OSR 12+00

OSR 13+00

OSR 13+69

SRS 11+00

SRS 11+92

SRS 12+00

SRS 13+00

SRS 14+00

CY 2+00

CY 1+00

COURTNEY ST

MATCHLINE SRN 20+10 SEE DWG. PL-7

DRIVEWAY (TYP.)

STA OSR 12+00.00

STA OSR 10+15.56

PROP. 5.0' WIDE CONC. SIDEWALK

CONC. GUTTER

TREE PLANTING (TYP.) (SEE NOTE 3)

EXISTING TREE TO BE REMOVED AND REPLACED (TYP.) (SEE NOTE 3)

SAWCUT EXIST. PAVEMENT ITEM 520.50140008 (TYP.)

BEGIN FULL DEPTH PAVEMENT RECONSTRUCTION STA. CY 1+20.00

437 SOUTH ROBERTS ROAD REPUTED OWNER ANGELA GOETZ 79J6-2-57

441 SOUTH ROBERTS ROAD REPUTED OWNER DORIS STUPOY 79J6-2-56

445 SOUTH ROBERTS ROAD REPUTED OWNER WILLIS MARTINEZ 79J6-2-53

447 SOUTH ROBERTS ROAD REPUTED OWNER WILLIS MARTINEZ 79J6-2-52

449 SOUTH ROBERTS ROAD REPUTED OWNER MATHEW J. MARTINEZ 79J6-2-49

453 SOUTH ROBERTS ROAD REPUTED OWNER GREGG T. SKUBIS 79J6-2-48

461 SOUTH ROBERTS ROAD REPUTED OWNER SCOTT SYMANS 79J6-2-14

SOUTH ROBERTS ROAD REPUTED OWNER VIOLET TALABER 79J6-6-1

503 SOUTH ROBERTS ROAD REPUTED OWNER JAMES RESSLER 79J6-6-2

NOTES:

1. SEE UTILITY PLANS FOR EXISTING STORM AND SANITARY LAYOUT, RIMS AND INVERTS.
2. SEE DRAWING IGP-4 FOR PROPOSED GRADING AND ADDITIONAL GEOMETRY INFORMATION.
3. SEE TREE REMOVAL AND TREE PLANTING TABLES ON DWG. MT-2. "R" NEXT TO A TREE REMOVAL INDICATES A NEW PLANTING.

20 0 20 40 60 80'

1" = 20'

REVISION	DESCRIPTION	DATE	BY
⚠	FIELD CHANGE	10-27-14	PJL

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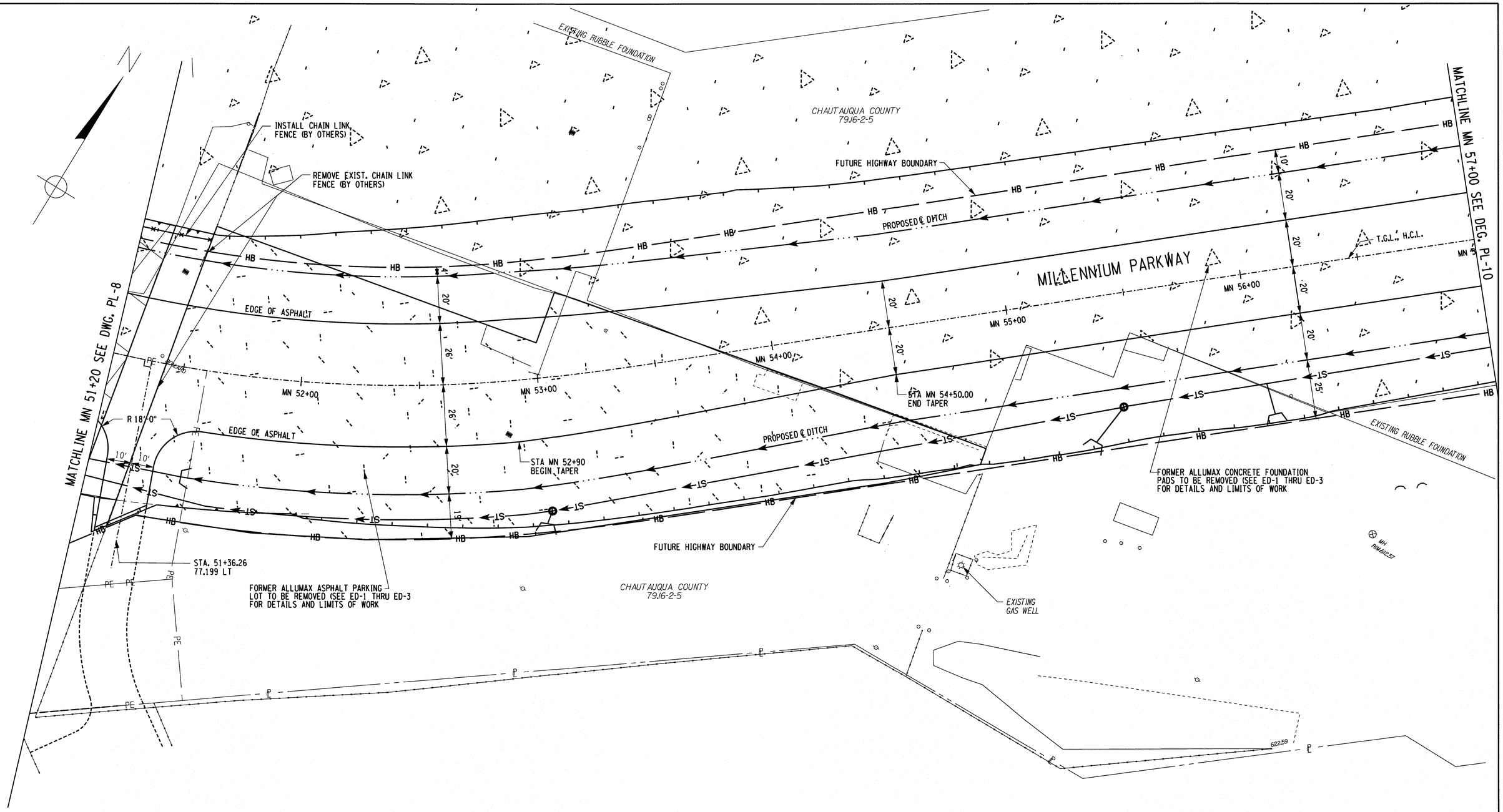
454 NORTH WORK STREET - FALCONER, NEW YORK 14733

DESIGNED BY TJB	DATE 11/2012	SHEET TITLE	GENERAL PLAN STA. SRN 20+10 TO STA. MN 51+20
DRAWN BY TJB	DATE 11/2012		
CHECKED BY GMW	DATE 11/2012		
APPROVED BY ETF	DATE 11/2012	PROJECT TITLE	CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55
PROJECT NO. 2006.0006.01	SCALE 1"=20'	DRAWING	PL-8

ENGINEERING DIVISION

SHEET 53 OF 141



NOTES:

1. SEE UTILITY PLANS FOR EXISTING STORM AND SANITARY LAYOUT, RIMS AND INVERTS.

20 0 20 40 60 80'

1" = 20'

REVISION	DESCRIPTION	DATE	BY
	NO RECORD CHANGES	10-27-14	PJL

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CHAUTAUQUA COUNTY DEPT. OF PUBLIC FACILITIES
454 NORTH WORK STREET - FALCONER, NEW YORK 14733

ENGINEERING DIVISION

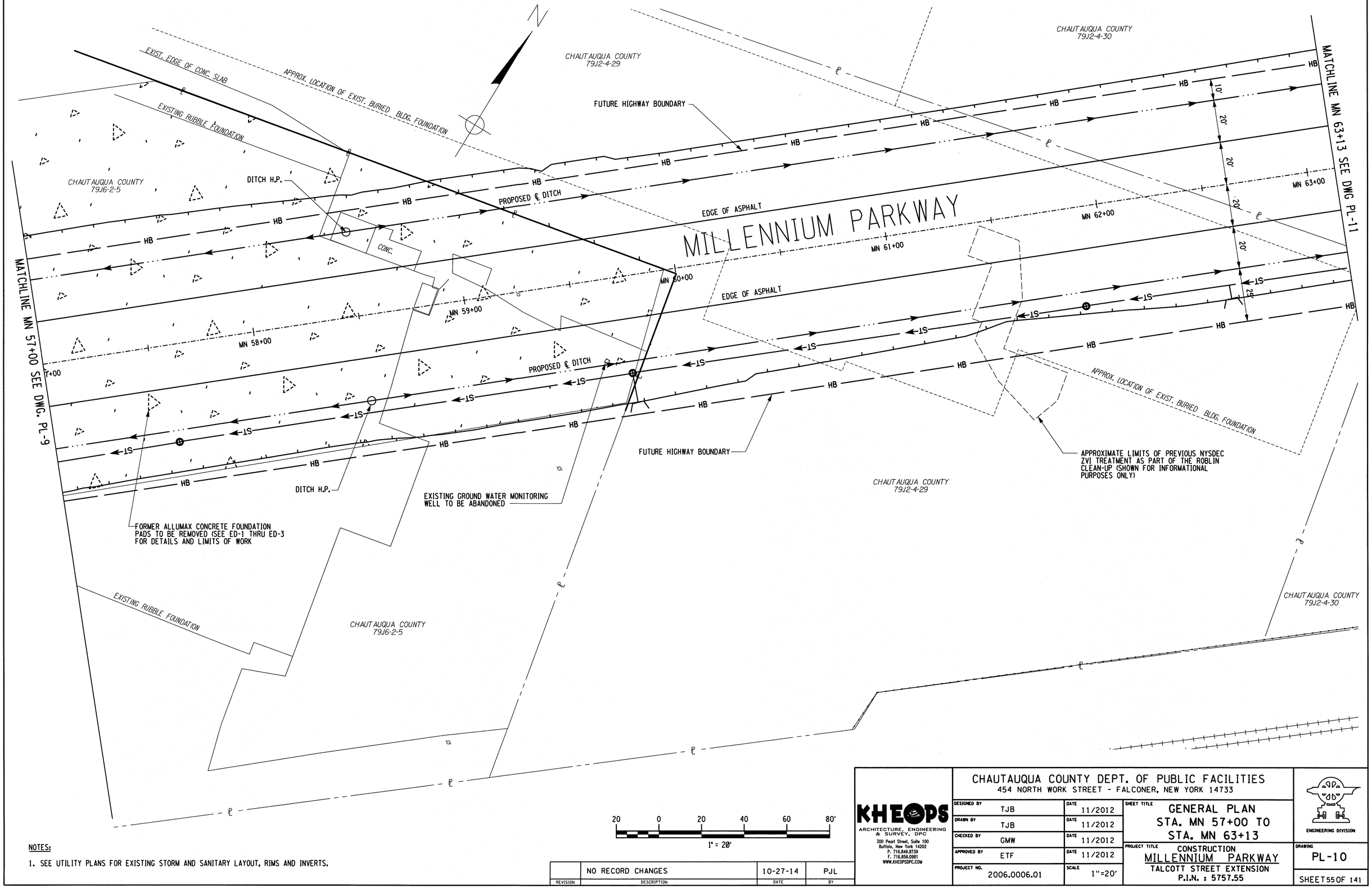
DESIGNED BY	ETF	DATE	11/2012
DRAWN BY	TJB	DATE	11/2012
CHECKED BY	GMW	DATE	11/2012
APPROVED BY	ETF	DATE	11/2012
PROJECT NO.	2006.0006.01	SCALE	1"=20'

SHEET TITLE: GENERAL PLAN STA. MN 51+20 TO STA. MN 57+00

PROJECT TITLE: CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55

DRAWING: PL-9

SHEET 54 OF 141



NOTES:

1. SEE UTILITY PLANS FOR EXISTING STORM AND SANITARY LAYOUT, RIMS AND INVERTS.

REVISION	DESCRIPTION	DATE	BY
	NO RECORD CHANGES	10-27-14	PJL

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454 NORTH WORK STREET - FALCONER, NEW YORK 14733

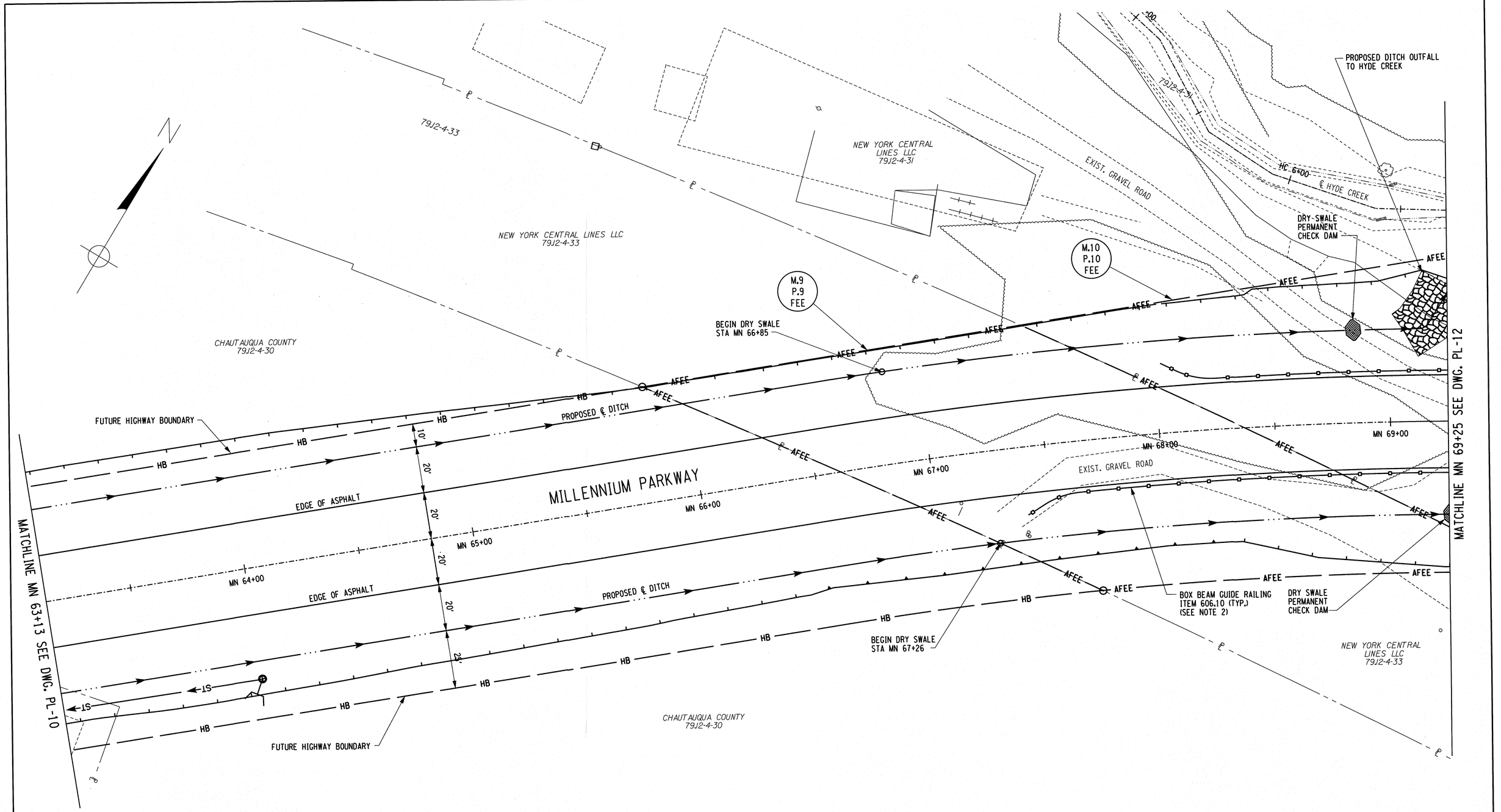
DESIGNED BY	TJB	DATE	11/2012
DRAWN BY	TJB	DATE	11/2012
CHECKED BY	GMW	DATE	11/2012
APPROVED BY	ETF	DATE	11/2012
PROJECT NO.	2006.0006.01	SCALE	1"=20'

SHEET TITLE: GENERAL PLAN STA. MN 57+00 TO STA. MN 63+13

PROJECT TITLE: CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55

ENGINEERING DIVISION

DRAWING: PL-10



NOTES:

1. SEE UTILITY PLANS FOR EXISTING STORM AND SANITARY LAYOUT, RIMS AND INVERTS.
2. REFER TO GUIDE RAILING TABLE, DRAWING MT-2 FOR LIMITS.

20 0 20 40 60 80'

1" = 20'

REVISION	DESCRIPTION	DATE	BY
	NO RECORD CHANGES	10-27-14	PJL

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CHAUTAUQUA COUNTY DEPT. OF PUBLIC FACILITIES
454 NORTH WORK STREET - FALCONER, NEW YORK 14733

DESIGNED BY	TJB	DATE	11/2012
DRAWN BY	TJB	DATE	11/2012
CHECKED BY	GMW	DATE	11/2012
APPROVED BY	ETF	DATE	11/2012
PROJECT NO.	2006.0006.01	SCALE	1"=20'

SHEET TITLE: GENERAL PLAN STA. MN 63+13 TO STA. MN 69+25

PROJECT TITLE: CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55

ENGINEERING DIVISION

DRAWING: PL-11

SHEET 56 OF 141

MATCHLINE MN 69+25 SEE DWG. PL-11

PROPOSED DITCH OUTFALL TO HYDE CREEK

PROPOSED 10' X 10' CONCRETE BOX CULVERT (SEE DWG'S. CUL-1 THRU CUL-4 FOR DETAILS)

NOW OR FORMERLY NEW YORK CENTRAL LINES LLC 79J2-4-31

M.10 P.10 FEE

℄ CULVERT STA. 0+27.04 = MILLENNIUM PARKWAY STA. MN 69+76.21

NOW OR FORMERLY NESTLE PURINA PET FOOD COMPANY 79J2-4-25

BOX BEAM GUIDE RAILING ITEM 606.10 (TYP.) (SEE NOTE 2)

TREE REMOVAL (TYP.) (SEE TABLE, DWG. MT-2)

EXISITNG DITCH TO BE REALIGNED

MIDDLE ROAD

EXISTING ASPHALT SHOULDER (TYP)

NOW OR FORMERLY NESTLE PURINA PET FOOD COMPANY 79J2-4-25

HB

IS

18" RCP

PROPOSED ℄ DITCH

EDGE OF ASPHALT

MILLENNIUM PARKWAY

T.G.L., H.C.L.

MN 70+00

MN 71+00

MN 72+00

MN 73+00

MN 74+00

MN 75+00

20'

28.5'

20.00

EXISTING ASPHALT SHOULDER (TYP)

EXIST. ℄ DITCH

HC 4+00

HC 3+00

HC 2+00

HC 1+00

HEADWALL

℄ HYDE CREEK

NOW OR FORMERLY NEW YORK CENTRAL LINES LLC 79J2-4-33

NOW OR FORMERLY NEW YORK CENTRAL LINES LLC 79J2-4-31

BEGIN FULL DEPTH PAVEMENT CONSTRUCTION STA MN 73+71.63 (MATCH EXISTING PAVEMENT)

PROPOSED DITCH OUTFALL TO HYDE CREEK

DRY SWALE PERMANENT CHECK DAM

EXIST. DITCH OUTFALL TO CREEK

NOTES:

1. SEE UTILITY PLANS FOR EXISTING STORM AND SANITARY LAYOUT, RIMS AND INVERTS.
2. REFER TO GUIDE RAILING TABLE, DRAWING MT-2 FOR LIMITS.

20 0 20 40 60 80'

1" = 20'

REVISION	DESCRIPTION	DATE	BY
	NO RECORD CHANGES	10-27-14	PJL

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PROJECT NO.	2006.0006.01	SCALE	1"=40'

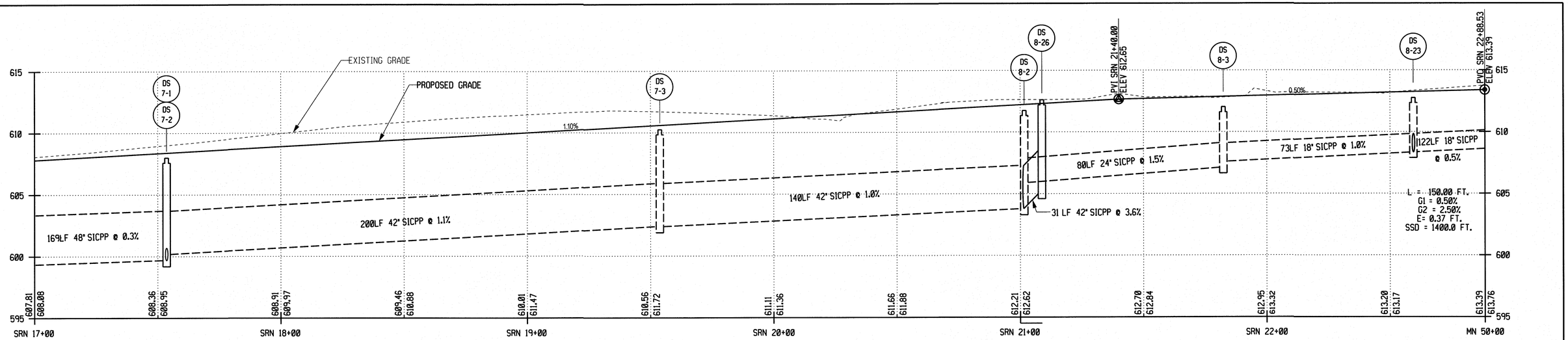
SHEET TITLE: GENERAL PLAN STA. MN 69+25 TO STA. MN 73+71.6±

PROJECT TITLE: CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55

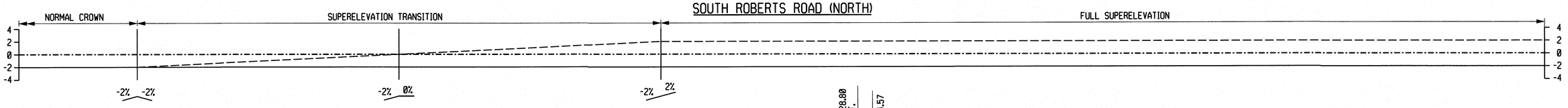
ENGINEERING DIVISION

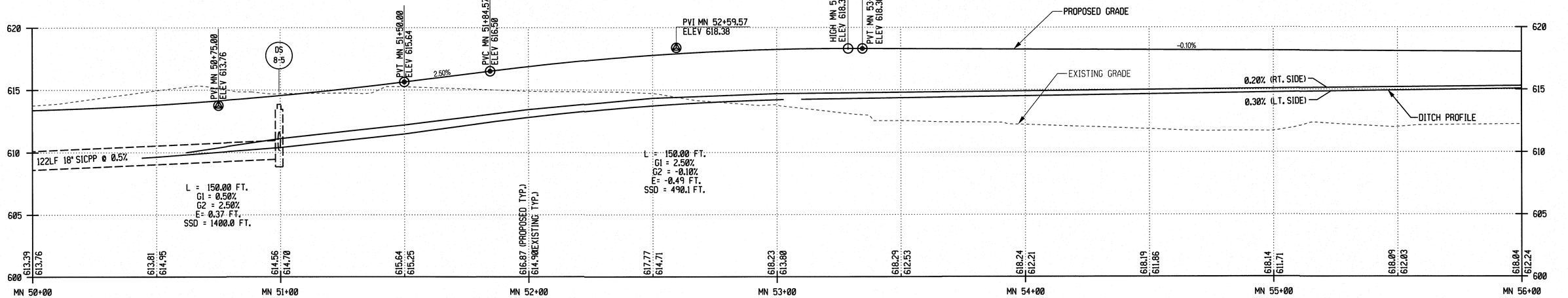
DRAWING: PL-12

SHEET 57 OF 141

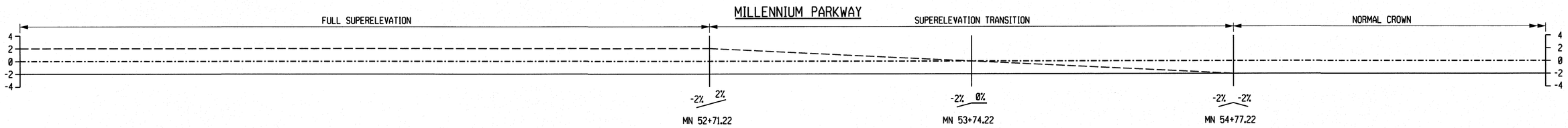


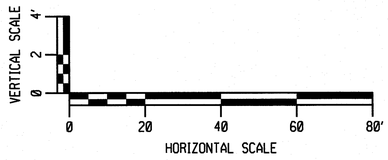
SOUTH ROBERTS ROAD (NORTH)





MILLENNIUM PARKWAY





NOTES:

1. FOR STRUCTURES AND PIPES:
   - DASHED LINES INDICATE STRUCTURES ARE ON LEFT SIDE OF ROAD (SOLID LINES FOR RIGHT SIDE)
   - DARKER LINES ARE PROPOSED STRUCTURES (LIGHTER LINES ARE EXISTING STRUCTURES)

REVISION	DESCRIPTION	DATE	BY
	NO RECORD CHANGES	10-27-14	PJL

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454 NORTH WORK STREET – FALCONER , NEW YORK 14733

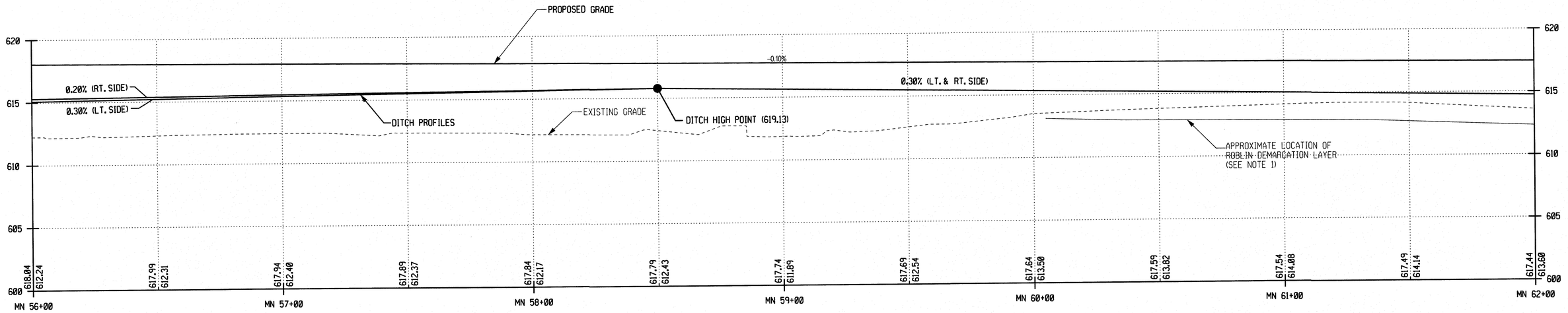
DESIGNED BY	ETF	DATE	10/2012
DRAWN BY	TJB	DATE	10/2012
CHECKED BY	GMW	DATE	10/2012
APPROVED BY	ETF	DATE	11/2012
PROJECT NO.	2006.0006.01	SCALE	AS NOTED

SHEET TITLE: S. ROBERTS N. SRN 17+00 TO MILLENNIUM PKWY. MN 56+00

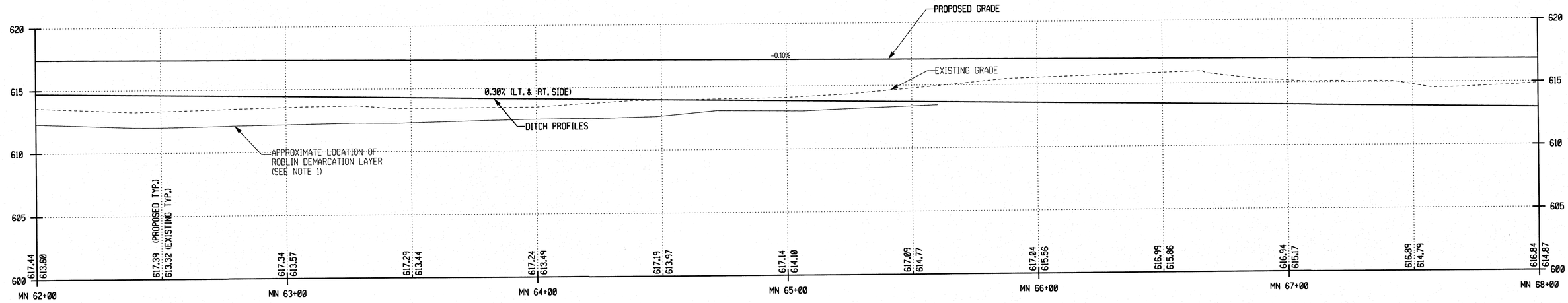
PROJECT TITLE: CONSTRUCTION
MILLENNIUM PARKWAY
TALCOTT STREET EXTENSION
P.I.N. : 5757.55

ENGINEERING DIVISION

DRAWING: PR-4



MILLENNIUM PARKWAY



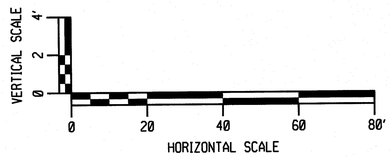
MILLENNIUM PARKWAY

NOTES:

1.

NOTES:

1. REFER TO DRAWING ED-1 FOR INFORMATION AND DETAILS REGARDING THE BROWNFIELD DEMARCATION LAYER AND SITE SOIL MANAGEMENT PLANS.
2. FOR STRUCTURES AND PIPES:
   - DASHED LINES INDICATE STRUCTURES ARE ON LEFT SIDE OF ROAD (SOLID LINES FOR RIGHT SIDE)
   - DARKER LINES ARE PROPOSED STRUCTURES (LIGHTER LINES ARE EXISTING STRUCTURES)



REVISION	DESCRIPTION	DATE	BY
	NO RECORD CHANGES	10-27-14	PJL

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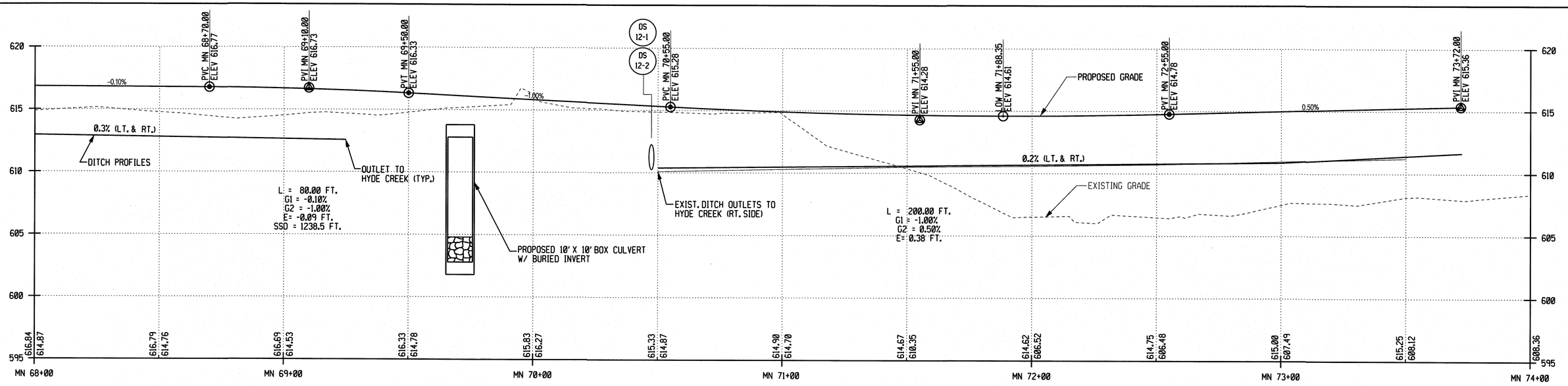
CHECKED BY	GMW	DATE	10/2012
APPROVED BY	ETF	DATE	11/2012
PROJECT NO.	2006.0006.01	SCALE	AS NOTED

SHEET TITLE: MILLENNIUM PARKWAY MN 56+00 TO MN 68+00

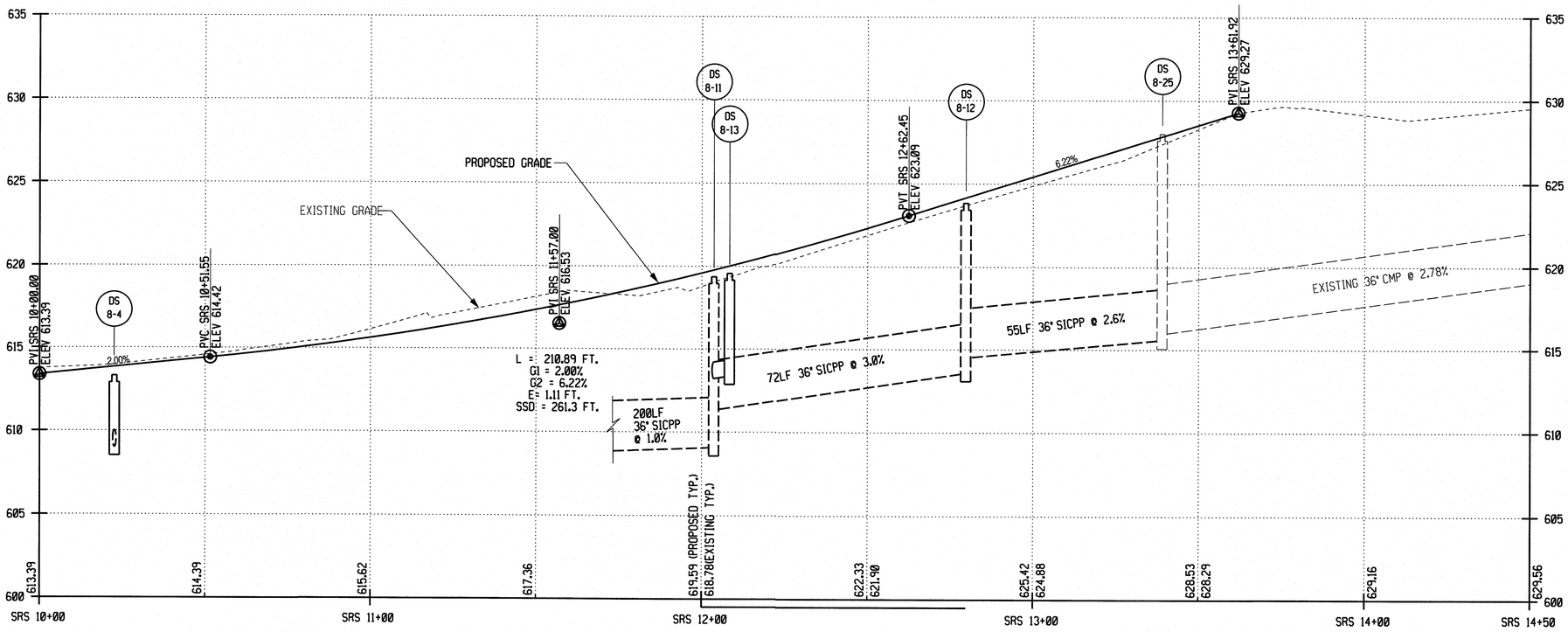
PROJECT TITLE: CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55

ENGINEERING DIVISION

DRAWING: PR-5



MILLENNIUM PARKWAY



SOUTH ROBERTS ROAD (SOUTH)

VERTICAL SCALE 0 2 4'

0 20 40 60 80'

HORIZONTAL SCALE

NOTES:

1. FOR STRUCTURES AND PIPES:
   - DASHED LINES INDICATE STRUCTURES ARE ON LEFT SIDE OF ROAD (SOLID LINES FOR RIGHT SIDE)
   - DARKER LINES ARE PROPOSED STRUCTURES (LIGHTER LINES ARE EXISTING STRUCTURES)

REVISION	DESCRIPTION	DATE	BY

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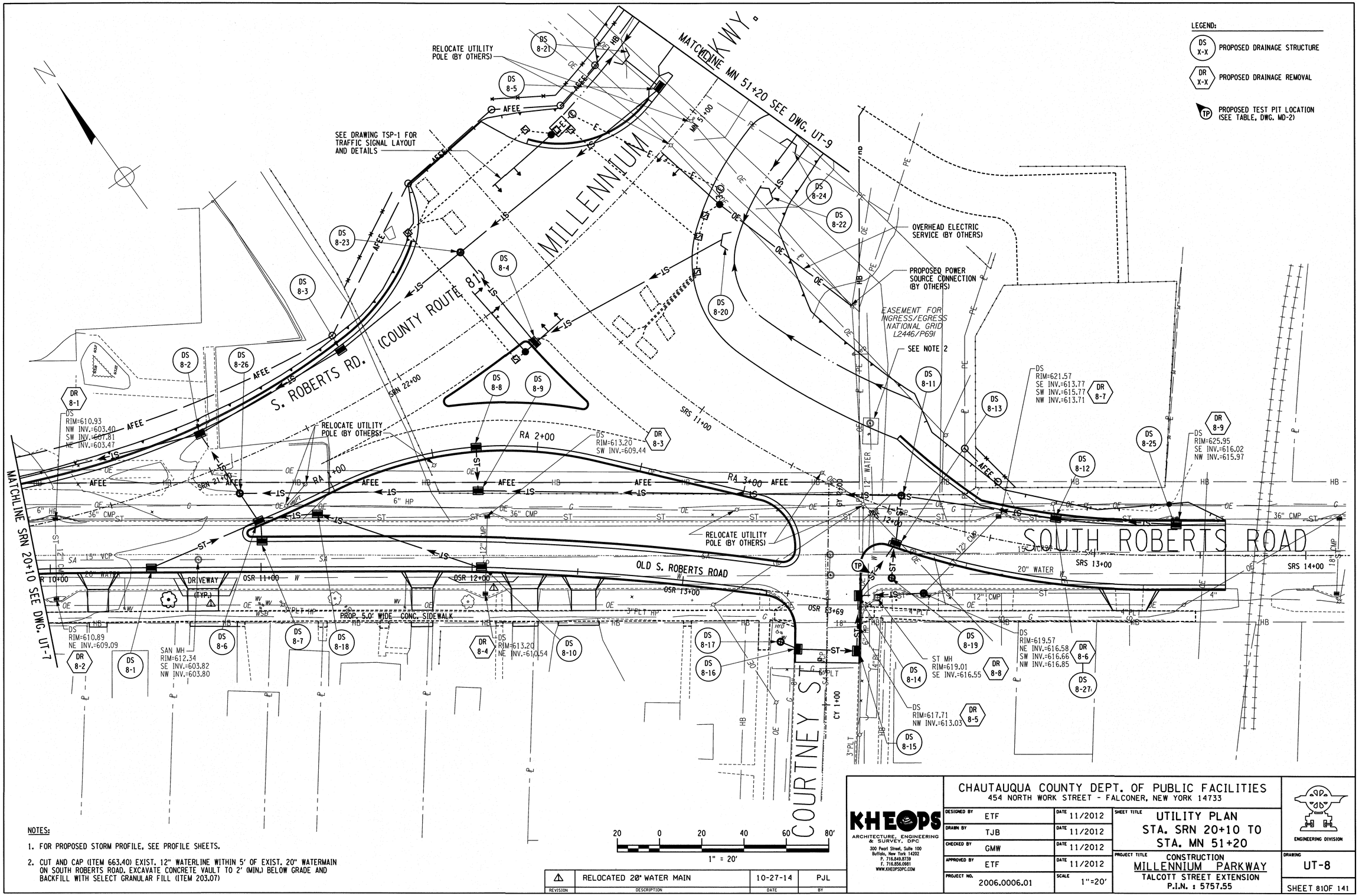
APPROVED BY	ETF	DATE	11/2012
PROJECT NO.	2006.0006.01	SCALE	AS NOTED

SHEET TITLE
MILLENNIUM PARKWAY
MN 68+00 TO MN 74+00
SRS 10+00 TO SRS 14+50

PROJECT TITLE
CONSTRUCTION
MILLENNIUM PARKWAY
TALCOTT STREET EXTENSION
P.I.N. : 5757.55

ENGINEERING DIVISION

DRAWING
PR-6



NOTES:

1. FOR PROPOSED STORM PROFILE, SEE PROFILE SHEETS.
2. CUT AND CAP (ITEM 663.40) EXIST. 12" WATERLINE WITHIN 5' OF EXIST. 20" WATERMAIN ON SOUTH ROBERTS ROAD. EXCAVATE CONCRETE VAULT TO 2' (MIN.) BELOW GRADE AND BACKFILL WITH SELECT GRANULAR FILL (ITEM 203.07)

REVISION	DESCRIPTION	DATE	BY
⚠	RELOCATED 20" WATER MAIN	10-27-14	PJL

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APPROVED BY	ETF	DATE	11/2012
PROJECT NO.	2006.0006.01	SCALE	1"=20'

SHEET TITLE: UTILITY PLAN STA. SRN 20+10 TO STA. MN 51+20

PROJECT TITLE: CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55

ENGINEERING DIVISION

DRAWING: UT-8

SHEET 81OF 141

EXISTING RUBBLE FOUNDATION

CHAUTAUQUA COUNTY
79J6-2-5

FUTURE HIGHWAY BOUNDARY

PROPOSED ℄ DITCH

T.G.L., H.C.L.

MILLENNIUM PARKWAY

MN 56+00

MN 55+00

MN 54+00

MN 53+00

MN 52+00

EDGE OF ASPHALT

EDGE OF ASPHALT

PROPOSED ℄ DITCH

MATCHLINE MN 51+20 SEE DWG. PL-8

MATCHLINE MN 57+00 SEE DEG. PL-10

EXISTING RUBBLE FOUNDATION

DS 9-6

DS 9-2

DS 9-5

DS 9-3

DS 9-1

DS 9-4

CHAUTAUQUA COUNTY
79J6-2-5

MH RIM 622.57

EXISTING GAS WELL

622.59

HB

ST

PE

℄

NOTES:

1. FOR PROPOSED STORM SEWER PROFILE, SEE PROFILE SHEETS.

20 0 20 40 60 80'

1" = 20'

REVISION	DESCRIPTION	DATE	BY
	NO RECORD CHANGES	10-27-14	PJL

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ENGINEERING DIVISION

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PROJECT NO.	2006.0006.01	SCALE	1"=20'

SHEET TITLE: UTILITY PLAN
STA. MN 51+20 TO
STA. MN 57+00

PROJECT TITLE: CONSTRUCTION
MILLENNIUM PARKWAY
TALCOTT STREET EXTENSION
P.I.N. : 5757.55

DRAWING: UT-9

SHEET 82 OF 141

MATCHLINE MN 57+00 SEE DWG. UT-9

MATCHLINE MN 63+13 SEE DWG UT-11

MILLENNIUM PARKWAY

EDGE OF ASPHALT

EDGE OF ASPHALT

PORPOSED ℄ DITCH

PORPOSED ℄ DITCH

FUTURE HIGHWAY BOUNDARY

FUTURE HIGHWAY BOUNDARY

EXIST. EDGE OF CONC. SLAB

APPROX. LOCATION OF EXIST. BURIED BLDG. FOUNDATION

EXISTING RUBBLE FOUNDATION

CONC.

EXISTING RUBBLE FOUNDATION

APPROX. LOCATION OF EXIST. BURIED BLDG. FOUNDATION

MN 57+00

MN 58+00

MN 59+00

MN 60+00

MN 61+00

MN 62+00

MN 63+00

DS 10-1

DS 10-2

DS 10-3

DS 10-4

DS 10-5

HB

ST

OE

℄

LEGEND:

DS X-X — PROPOSED DRAINAGE STRUCTURE

NOTES:

1. FOR PROPOSED STORM SEWER PROFILE, SEE PROFILE SHEETS.

20 0 20 40 60 80′

1" = 20′

REVISION	DESCRIPTION	DATE	BY
	NO RECORD CHANGES	10-27-14	PJL

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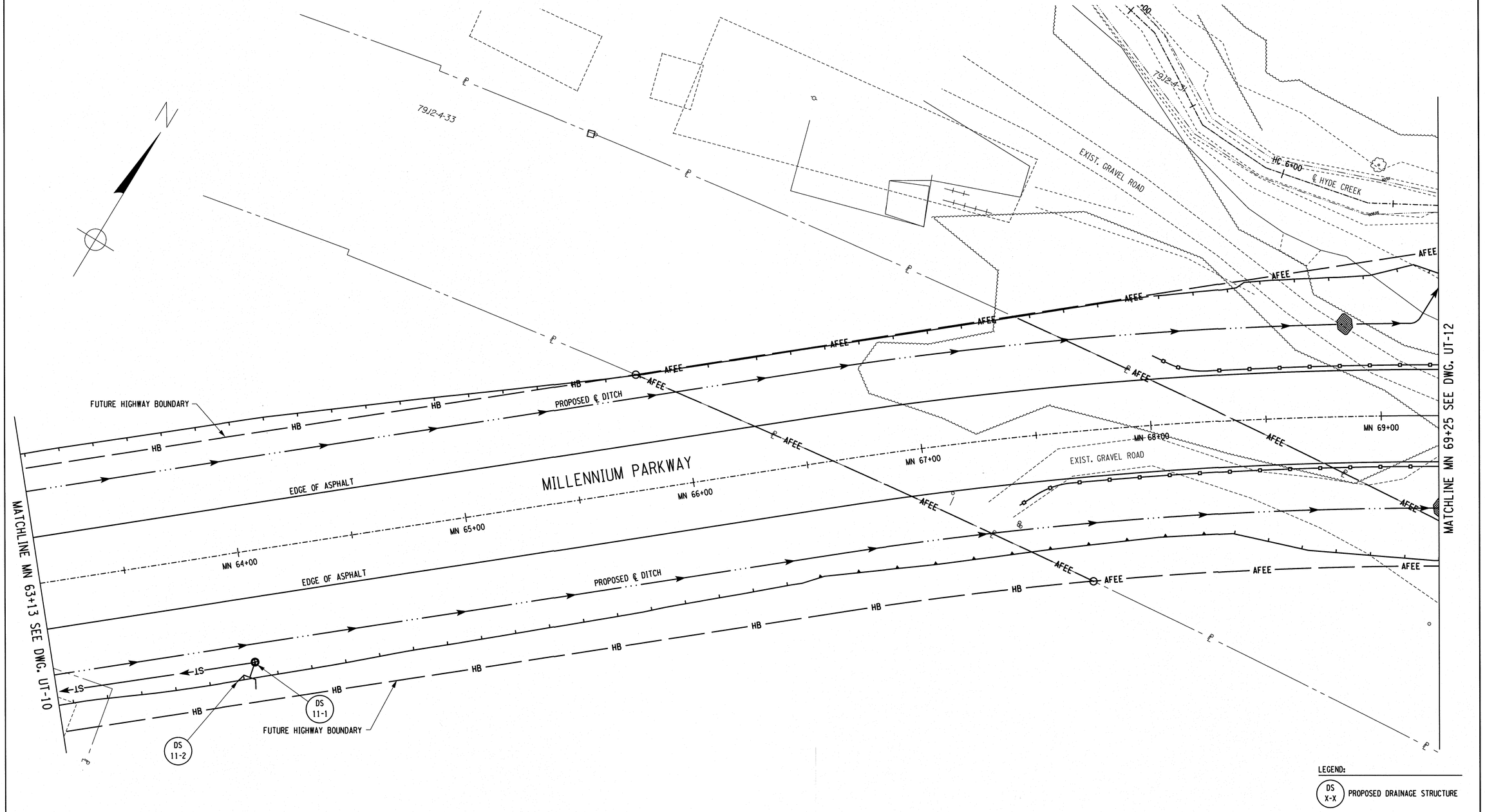
PROJECT NO.	2006.0006.01	SCALE	1"=20′

SHEET TITLE: UTILITY PLAN STA. MN 57+00 TO STA. MN 63+13

PROJECT TITLE: CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55

ENGINEERING DIVISION

DRAWING: UT-10



LEGEND:

DS X-X — PROPOSED DRAINAGE STRUCTURE

NOTES:

1. FOR PROPOSED STORM SEWER PROFILE, SEE PROFILE SHEETS.

20 0 20 40 60 80'

1" = 20'

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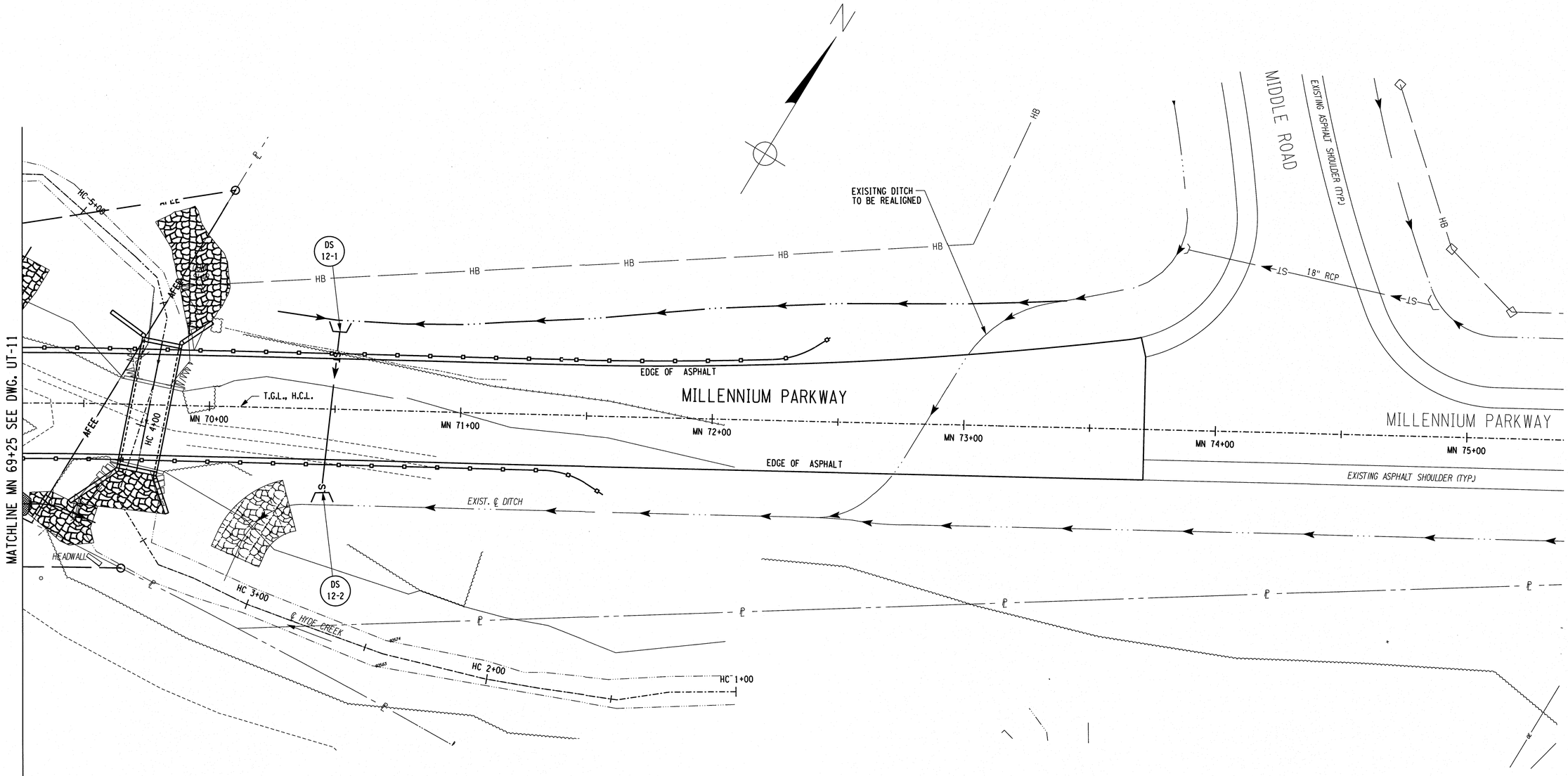
SHEET TITLE: UTILITY PLAN STA. MN 63+13 TO STA. MN 69+25

PROJECT TITLE: CONSTRUCTION MILLENNIUM PARKWAY TALCOTT STREET EXTENSION P.I.N. : 5757.55

DRAWING: UT-11



LEGEND:

DS X-X — PROPOSED DRAINAGE STRUCTURE

NOTES:

1. FOR PROPOSED DRAINAGE CULVERT, SEE DWG. CUL-1 THRU CUL-4 .

20 0 20 40 60 80′

1" = 20′

REVISION	DESCRIPTION	DATE	BY
	NO RECORD CHANGES	10-27-14	PJL

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ENGINEERING DIVISION

DRAWING: UT-12